Table of Contents

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended June 30, 2025

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to _____

Commission File Number: 001-40592

Rapid Micro Biosystems, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**20-8121647**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**
25 Hartwell Avenue **Lexington, MA** **(Address of Principal Executive Offices)**	**02421** **(Zip Code)**

(978) 349-3200
(Registrant's telephone number, including area code)

Not applicable
(Former name, former address and former fiscal year, if changed since last report)

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Trading symbol(s)	Name of Exchange on which registered
Class A common stock, $0.01 par value per share	**RPID**	**The Nasdaq Capital Market**

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☐		
Non-accelerated filer	☒	Smaller reporting company	☒	Emerging growth company	☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of August 8, 2025, there were 39,710,799 shares of the registrant's Class A common stock, par value $0.01, outstanding.
As of August 8, 2025, there were 4,499,529 shares of the registrant's Class B common stock, par value $0.01, outstanding.

TABLE OF CONTENTS

FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q contains forward-looking statements. We intend such forward-looking statements to be covered by the safe harbor provisions for forward-looking statements contained in Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). All statements other than statements of historical facts contained in this Quarterly Report on Form 10-Q may be forward-looking statements. In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "expects," "plans," "anticipates," "could," "intends," "targets," "projects," "contemplates," "believes," "estimates," "forecasts," "predicts," "potential" or "continue" or the negative of these terms or other similar expressions. Forward-looking statements contained in this Quarterly Report on Form 10-Q include, but are not limited to, statements regarding:

- our business strategy for our Growth Direct platform and systems;
- our future results of operations and financial position, including our expectations regarding revenue, gross margin, operating expenses and our ability to achieve positive cash flow;
- our goal to achieve positive cash flow by the end of 2027, our efforts to reduce our use of cash for operating and investing activities and the assumptions underlying such goal;
- the expected impact of our recently-announced debt facility with Trinity Capital Inc., including with respect to our financial position, cash forecast and use of proceeds;
- our expectations and assumptions related to our future funding requirements and available capital resources, which may be impacted by market uptake of our Growth Direct platform and systems, our management of inventory and supply chain, our capital expenditures, our research and development activities and our sales, marketing, manufacturing and distribution activities;
- our ability to maintain and expand our customer base for our Growth Direct platform and systems, including expectations for customer adoption of new applications for our Growth Direct system;
- the effectiveness of our sales force and our sales processes;
- anticipated trends and growth rates in our business and in the markets in which we operate;
- our research and development activities and prospective new features, products and product approvals;
- our ability to anticipate market needs and successfully develop and launch new and enhanced solutions to meet those needs, including prospective products;
- our ability to hire and retain necessary qualified employees to grow our business and expand our operations;
- our expectations regarding the potential impact of inflation and fluctuations in interest rates on our business and operating costs;
- our ability to remain in compliance with the listing requirements of Nasdaq;
- our expectations regarding the potential impact of ongoing conditions in the financial markets and banking system on our operations and financial results; and
- our ability to adequately protect our intellectual property.

We caution you that the foregoing list may not contain all of the forward-looking statements made in this Quarterly Report on Form 10-Q. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. Forward-looking statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements, including, but not limited to, the important factors discussed under Part II, Item 1A, "Risk Factors" of this Quarterly Report on Form 10-Q. The forward-looking statements in this Quarterly Report on Form 10-Q are based upon information available to us as of the date of this Quarterly Report on Form 10-Q, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

You should read this Quarterly Report on Form 10-Q and the documents that we reference in this Quarterly Report on Form 10-Q and have filed as exhibits to this Quarterly Report on Form 10-Q with the understanding that our actual future results, levels of activity, performance and achievements may be materially different from what we expect. We caution you not to place undue reliance on forward-looking statements, which speak only as of the date hereof. We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

SUMMARY RISK FACTORS

Our business is subject to numerous risks and uncertainties, including those described in Part II, Item 1A, “Risk Factors” in this Quarterly Report on Form 10-Q. You should carefully consider these risks and uncertainties as part of your evaluation of an investment in our Class A common stock. The principal risks and uncertainties affecting our business include, but are not limited to, the following:

- We have incurred significant losses since inception, we expect to incur losses in the future and we may not be able to achieve and maintain positive cash flow and profitability;
- Our limited operating history makes it difficult to evaluate our future prospects and the risks and challenges we may encounter;
- Our business depends on the commercial success of our Growth Direct platform, which may not be achieved or maintained;
- Our operating results have fluctuated significantly in the past and will fluctuate significantly in the future, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations;
- We have in the past and may in the future fail to meet our publicly announced guidance or other expectations about our business and future operating results, which could adversely affect our business, reputation and financial results and cause our stock price to decline;
- If we cannot maintain the level of sales of our Growth Direct systems or the sales of our consumables and services to existing customers declines, our future operating results would be adversely affected;
- We may need or otherwise decide to raise additional capital to fund our existing operations, improve our platform or develop and commercialize new products or expand our operations;
- Our existing and any future indebtedness could adversely affect our ability to operate our business;
- Our business relies heavily on establishing and maintaining our position in the market as a leading provider of automated microbial quality control ("MQC") testing;
- We may not be successful in expanding our business with existing customers and driving adoption of our solutions with new customers;
- The size of the markets and forecasts of market growth for automated MQC testing and other of our key performance indicators are based on a number of complex assumptions and estimates, and may be inaccurate;
- New product development involves a lengthy and complex process and we may be unable to develop or commercialize products on a timely basis, or at all;
- Our customers use our Growth Direct platform as part of their quality control workflow, which is subject to regulation by the U.S. Food and Drug Administration ("FDA") and other comparable regulatory authorities;
- If we are unable to manage our inventory and support demand for existing and future products on the Growth Direct platform, our business could suffer;
- We have limited experience in marketing and sales, and if we are unable to successfully market our products to new and existing customers, address our customers’ needs or to expand our customer base, our business may be adversely affected;
- If we cannot compete successfully, we may be unable to increase or sustain our revenue, or achieve and sustain profitability;

- We must develop new products, adapt to rapid and significant technological change and respond to introductions of new products by competitors to remain competitive;
- Due to the significant resources required to enable access in new markets, we must make strategic and operational decisions to prioritize certain markets, products and services. We may expend our resources to access markets and develop products and services that do not yield meaningful revenue or we may fail to capitalize on markets, products or services that may be more profitable or with a greater potential for success;
- The Growth Direct platform may contain undetected errors or defects and may not meet the expectations of our customers, which means our business, financial condition, results of operations and prospects could suffer;
- Potential product liability lawsuits against us could cause us to incur substantial liabilities and limit commercialization of any products that we may develop;
- If we lose key management, cannot recruit qualified employees, directors, officers or other significant personnel or experience increases in our compensation costs, our business may be materially harmed;
- We may not realize the intended benefits of our strategic partnerships and other collaborations, and such relationships may introduce additional risks to our business.
- If our primary manufacturing facility or development facility become damaged or inoperable or we are required to vacate one or both facilities, our ability to conduct and pursue our manufacturing and/or development efforts would be jeopardized;
- Our manufacturing operations are dependent upon third-party suppliers, including single-source suppliers, making us vulnerable to supply shortages and price fluctuations, which could harm our business;
- If we are unable to obtain and maintain sufficient intellectual property protection for our technology, including the Growth Direct platform, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our products may be impaired;
- Patent terms may be inadequate to protect our competitive position on our products for an adequate amount of time;
- The market price of our Class A common stock has been and may continue to be volatile and fluctuate substantially, which could result in substantial losses for our stockholders;
- If our Class A common stock is delisted from the Nasdaq Stock Market, the liquidity of our Class A common stock would be adversely affected and the market price of our common stock could decrease; and
- We have been, and may continue to be, subject to the actions of activist shareholders or unsolicited acquisition proposals, which could cause us to incur substantial costs, divert management's and the board's attention and resources, and have an adverse effect on our business and stock price.

TRADEMARKS

Solely for convenience, our trademarks and trade names in this Quarterly Report on Form 10-Q are referred to without the ® and ™ symbols, but such references should not be construed as any indicator that we will not assert, to the fullest extent under applicable law, our rights thereto.

INTERNET POSTING OF INFORMATION

We routinely post information that may be important to investors in the "Investors" section of our website at www.rapidmicrobio.com. We encourage investors and potential investors to consult our website regularly for important information about us. The contents of our website are not incorporated by reference in this Quarterly Report on Form 10-Q and shall not be deemed "filed" under the Exchange Act.

PART I —FINANCIAL INFORMATION

Item 1. Financial Statements

RAPID MICRO BIOSYSTEMS, INC.
Condensed consolidated balance sheets
(Unaudited)
(In thousands, except share and per share amounts)

	June 30, 2025	December 31, 2024
Assets		
Current assets:		
Cash and cash equivalents	$ 18,333	$ 16,911
Short-term investments	12,922	33,821
Accounts receivable	6,048	7,519
Inventory	20,560	20,200
Prepaid expenses and other current assets	2,283	2,466
Total current assets	60,146	80,917
Property and equipment, net	10,205	11,193
Right-of-use assets, net	4,640	5,163
Other long-term assets	311	531
Restricted cash	284	365
Total assets	$ 75,586	$ 98,169
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 3,334	$ 2,535
Accrued expenses and other current liabilities	5,678	7,217
Deferred revenue	6,136	6,599
Lease liabilities, short-term	1,255	1,214
Total current liabilities	16,403	17,565
Lease liabilities, long-term	4,324	4,954
Other long-term liabilities	314	298
Total liabilities	21,041	22,817
Commitments and contingencies (Note 14)		
Stockholders' equity:		
Class A common stock, $0.01 par value; 210,000,000 shares authorized at June 30, 2025 and December 31, 2024; 39,560,439 shares and 37,729,242 shares issued and outstanding at June 30, 2025 and December 31, 2024, respectively	395	377
Class B common stock, $0.01 par value; 10,000,000 shares authorized at June 30, 2025 and December 31, 2024; 4,499,529 shares and 5,309,529 shares issued and outstanding at June 30, 2025 and December 31, 2024, respectively	45	53
Preferred stock, $0.01 par value: 10,000,000 shares authorized at June 30, 2025 and December 31, 2024; zero shares issued and outstanding at June 30, 2025 and December 31, 2024	—	—
Additional paid-in capital	552,502	550,157
Accumulated deficit	(498,395)	(475,274)
Accumulated other comprehensive income	(2)	39
Total stockholders' equity	54,545	75,352
Total liabilities and stockholders' equity	$ 75,586	$ 98,169

The accompanying notes are an integral part of these condensed consolidated financial statements.

RAPID MICRO BIOSYSTEMS, INC.
Condensed consolidated statements of operations
(Unaudited)
(In thousands, except share and per share amounts)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2025	2024	2025	2024
Revenue:				
Product revenue	$ 4,802	$ 4,537	$ 8,903	$ 8,250
Service revenue	2,460	2,081	5,564	3,979
Total revenue	7,262	6,618	14,467	12,229
Costs and operating expenses:				
Cost of product revenue	5,315	4,917	10,344	10,090
Cost of service revenue	1,672	1,890	3,444	3,851
Research and development	3,230	3,744	6,854	7,586
Sales and marketing	3,114	3,627	5,865	6,908
General and administrative	6,079	5,818	11,769	11,445
Total costs and operating expenses	19,410	19,996	38,276	39,880
Loss from operations	(12,148)	(13,378)	(23,809)	(27,651)
Other income (expense):				
Interest income, net	351	838	817	1,821
Other expense, net	(50)	(23)	(111)	(52)
Total other income, net	301	815	706	1,769
Loss before income taxes	(11,847)	(12,563)	(23,103)	(25,882)
Income tax expense	11	15	18	18
Net loss	$ (11,858)	$ (12,578)	(23,121)	(25,900)
Net loss per share — basic and diluted	$ (0.27)	$ (0.29)	$ (0.52)	$ (0.60)
Weighted average common shares outstanding — basic and diluted	44,648,602	43,616,501	44,321,566	43,431,170

The accompanying notes are an integral part of these condensed consolidated financial statements.

RAPID MICRO BIOSYSTEMS, INC.
Condensed consolidated statements of comprehensive loss
(Unaudited)
(In thousands)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2025	2024	2025	2024
Net loss	$ (11,858)	$ (12,578)	$ (23,121)	$ (25,900)
Other comprehensive income (loss):				
Unrealized gain (loss) on investments, net of tax	(15)	53	(41)	76
Comprehensive loss	$ (11,873)	$ (12,525)	$ (23,162)	$ (25,824)

The accompanying notes are an integral part of these condensed consolidated financial statements.

RAPID MICRO BIOSYSTEMS, INC.
Condensed consolidated statements of stockholders' equity
(Unaudited)
(In thousands, except share amounts)

	Class A Common stock		Class B Common stock		Additional paid-in capital	Accumulated deficit	Accumulated other comprehensive income (loss)	Total
	Shares	Amount	Shares	Amount				
Balances at December 31, 2024	37,729,242	$ 377	5,309,529	$ 53	$ 550,157	$ (475,274)	$ 39	$ 75,352
Issuance of Class A common stock under ESPP	127,335	1	—	—	89	—	—	90
Vesting of restricted stock units	251,707	3	—	—	(3)	—	—	—
Issuance of Class A common stock upon exercise of common stock options	273,385	3	—	—	293	—	—	296
Stock-based compensation expense	—	—	—	—	1,042	—	—	1,042
Conversion of Class B common stock to Class A common stock	810,000	8	(810,000)	(8)	—	—	—	—
Net loss	—	—	—	—	—	(11,263)	—	(11,263)
Other comprehensive loss	—	—	—	—	—	—	(26)	(26)
Balances at March 31, 2025	39,191,669	$ 392	4,499,529	$ 45	$ 551,578	$ (486,537)	$ 13	$ 65,491
Vesting of restricted stock units	415,381	4	—	—	(4)	—	—	—
Tax withholding on settlement of restricted stock units	(158,908)	(2)	—	—	(416)	—	—	(418)
Issuance of Class A common stock upon exercise of common stock options	112,297	1	—	—	126	—	—	127
Stock-based compensation expense	—	—	—	—	1,218	—	—	1,218
Net loss	—	—	—	—	—	(11,858)	—	(11,858)
Other comprehensive loss	—	—	—	—	—	—	(15)	(15)
Balances at June 30, 2025	39,560,439	395	4,499,529	$ 45	$ 552,502	$ (498,395)	$ (2)	$ 54,545

	Class A Common stock		Class B Common stock		Additional paid-in capital	Accumulated deficit	Accumulated other comprehensive (loss) income	Total
	Shares	Amount	Shares	Amount				
Balances at December 31, 2023	37,099,909	$ 371	5,309,529	$ 53	$ 546,051	$ (428,385)	$ (101)	$ 117,989
Issuance of Class A common stock under ESPP	198,299	2	—	—	166	—	—	168
Vesting of restricted stock units	185,331	2	—	—	(2)	—	—	—
Issuance of Class A common stock upon exercise of common stock options	20	—	—	—	—	—	—	—
Stock-based compensation expense	—	—	—	—	1,085	—	—	1,085
Net loss	—	—	—	—	—	(13,322)	—	(13,322)
Other comprehensive income	—	—	—	—	—	—	23	23
Balances at March 31, 2024	37,483,559	375	5,309,529	53	547,300	(441,707)	(78)	105,943
Vesting of restricted stock units	113,074	1	—	—	(1)	—	—	—
Issuance of Class A common stock upon exercise of common stock options	294	—	—	—	—	—	—	—
Stock-based compensation expense	—	—	—	—	1,171	—	—	1,171
Net loss	—	—	—	—	—	(12,578)	—	(12,578)
Other comprehensive income	—	—	—	—	—	—	53	53
Balances at June 30, 2024	37,596,927	$ 376	5,309,529	$ 53	$ 548,470	$ (454,285)	$ (25)	$ 94,589

The accompanying notes are an integral part of these condensed consolidated financial statements.

RAPID MICRO BIOSYSTEMS, INC.
Condensed consolidated statements of cash flows
(Unaudited)
(In thousands)

	Six Months Ended June 30,	
	2025	**2024**
Cash flows from operating activities:		
Net loss	$ (23,121)	$ (25,900)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization expense	1,658	1,634
Loss on fixed asset impairment	19	—
Stock-based compensation expense	2,260	2,256
Provision for excess and obsolete inventory	441	95
Noncash lease expense	609	609
Accretion on investments	149	(890)
Other	17	18
Changes in operating assets and liabilities:		
Accounts receivable	1,471	521
Inventory	(1,119)	(1,564)
Prepaid expenses and other current assets	182	502
Other long-term assets	—	1
Accounts payable	800	207
Accrued expenses and other current liabilities	(1,668)	(2,586)
Deferred revenue	(463)	(547)
Net cash used in operating activities	(18,765)	(25,644)
Cash flows from investing activities:		
Purchases of property and equipment	(685)	(1,044)
Purchases of investments	(2,290)	(4,368)
Maturity of investments	23,000	43,744
Net cash provided by investing activities	20,025	38,332
Cash flows from financing activities:		
Proceeds from issuance of Class A common stock - stock option exercise	423	—
Proceeds from issuance of Class A common stock - employee stock purchase plan	90	168
Tax withholding on settlement of restricted stock units	(418)	—
Payments on finance lease obligations	(14)	(20)
Net cash provided by financing activities	81	148
Net decrease in cash, cash equivalents and restricted cash	1,341	12,836
Cash, cash equivalents and restricted cash at beginning of period	17,276	24,569
Cash, cash equivalents and restricted cash at end of period	$ 18,617	$ 37,405

	Six Months Ended June 30,	
	2025	**2024**
Supplemental disclosure of cash flow information		
Cash paid for interest	$ 24	$ 17
Supplemental disclosure of non-cash investing activities		
Purchases of property and equipment in accounts payable and accrued expenses	$ 75	$ 277

The accompanying notes are an integral part of these condensed consolidated financial statements.

RAPID MICRO BIOSYSTEMS, INC.
Notes to condensed consolidated financial statements
(Amounts in thousands, except share and per share amounts)
(Unaudited)

1. Nature of the business and basis of presentation

Rapid Micro Biosystems, Inc. (the "Company") was incorporated under the laws of the State of Delaware on December 29, 2006. The Company develops, manufactures, markets and sells Growth Direct systems ("Systems") proprietary consumables, laboratory information management system ("LIMS") connection software, and services to address rapid microbial analysis used for quality control in the manufacture of pharmaceuticals, medical devices and personal care products. The Company's technology uses a highly sensitive camera and the natural auto fluorescence of living cells to identify and quantify microbial growth faster and more accurately than the traditional method, which relies on the human eye. The Company currently sells to customers in North America, Europe and the Asia-Pacific region. The Company is headquartered in Lexington, Massachusetts.

Basis of presentation

These condensed consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States of America ("GAAP") and include the accounts of the Company and its wholly owned subsidiaries in Germany and Switzerland. All intercompany accounts and transactions have been eliminated in consolidation. Certain information and note disclosures normally included in the consolidated financial statements prepared in accordance with GAAP have been condensed or omitted. Therefore, these condensed consolidated financial statements should be read in conjunction with the consolidated financial statements and notes included in the Company's audited consolidated financial statements for the year ended December 31, 2024. Any reference in these notes to applicable guidance is meant to refer to the authoritative GAAP as found in the Accounting Standards Codification ("ASC") and Accounting Standards Update ("ASU") of the Financial Accounting Standards Board ("FASB").

The unaudited interim condensed consolidated financial statements have been prepared on the same basis as the audited annual consolidated financial statements and, in the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary for the fair statement of the Company's financial position as of June 30, 2025 and the results of its operations and its cash flows for the three and six months ended June 30, 2025 and 2024. The financial data and other information disclosed in these notes related to the three and six months ended June 30, 2025 and 2024 are also unaudited. The results for the three and six months ended June 30, 2025 are not necessarily indicative of results to be expected for the year ending December 31, 2025, any other interim periods, or any future year or period.

Liquidity

The Company has incurred recurring losses and net cash outflows from operations since its inception. The Company expects to continue to generate operating losses in the near to medium term. To date, the Company has funded operations primarily through proceeds from sales of redeemable convertible preferred stock, borrowings under loan agreements, revenue from sales of our products and services, and proceeds from our Company's initial public offering ("IPO").

On August 8, 2025, the Company entered into a Loan and Security Agreement ("LSA") with the lenders party thereto and Trinity Capital Inc., as administrative agent and collateral agent, with an aggregate principal amount of $45.0 million, with $20.0 million drawn on the first tranche and up to an additional $20.0 million in the aggregate, across two equal tranches, available if certain commercial and operational milestones are met, and up to an additional $5.0 million at the lenders' sole discretion.

If the Company's expectations and underlying assumptions of business performance, including revenue growth, gross margin improvement, and control of operating costs, are not realized, the Company may need to reduce spending or raise additional funding which could be through equity offerings, additional debt financings or a combination thereof. For example, on December 15, 2023, the Company entered into a sales agreement, or the ATM Agreement, to establish an "at-the-market" facility with Cowen and Company, LLC, or Cowen, pursuant to which the Company may issue and sell shares of its Class A common stock. During the three and six months ended June 30, 2025 through the filing date of this Quarterly Report, the Company did not issue or sell any shares of its Class A common stock under this facility. If the Company is unable to raise capital as, if and when, needed, the Company may have to significantly delay, scale back or discontinue its expansion plans including further development and commercialization efforts of one or more of its products.

The Company expects that its existing cash, cash equivalents and investments, together with the Company's initial drawdown of $20.0 million under the LSA, will be sufficient to fund its operating expenses and capital expenditure requirements for at least twelve months following the date these consolidated financial statements were issued.

2. Summary of significant accounting policies

Use of estimates

The preparation of the Company's condensed consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the condensed consolidated financial statements, and the reported amounts of revenue and expenses during the reporting periods. Significant estimates and assumptions reflected in these condensed consolidated financial statements include, but are not limited to, calculating the standalone selling price for revenue recognition, the valuation of inventory, and the valuation of stock-based awards. The Company bases its estimates on historical experience, known trends and other market-specific and relevant factors that it believes to be reasonable under the circumstances. On an ongoing basis, management evaluates its estimates when there are changes in circumstances, facts and experience. Changes in estimates are recorded in the period in which they become known. Actual results could differ from those estimates.

There have been no significant changes to the Company's significant accounting policies during the three and six months ended June 30, 2025, as compared to those disclosed in Note 2 of the audited consolidated financial statements filed with the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2024.

Risk of concentrations of credit, significant customers and significant suppliers

Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash, cash equivalents, short-term investments and accounts receivable. The Company maintains its cash and cash equivalents with financial institutions that management believes to be of high credit quality, and does not believe that it is subject to unusual credit risk beyond the credit risk associated with commercial banking relationships.

Significant customers are those which represent more than 10% of the Company's total revenue or accounts receivable balance at each respective balance sheet date. The following table presents customers that represented 10% or more of the Company's total revenue:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2025	2024	2025	2024
Customer A	11.5 %	17.8 %	14.4 %	18.5 %
Customer B	11.2 %	*	11.7 %	*
	22.7 %	17.8 %	26.1 %	18.5 %

* Represented less than 10%

The following table presents customers that represented 10% or more of the Company's accounts receivable:

	June 30,	December 31,
	2025	2024
Customer C	18.4 %	*
Customer D	16.4 %	*
Customer E	14.3 %	11.5 %
Customer F	11.0 %	*
	60.1 %	11.5 %

* Represented less than 10%

The Company relies on third parties for the supply and manufacture of certain components of its products as well as third-party logistics providers. There were no significant concentrations around a single third-party supplier, manufacturer, or logistics provider for the six months ended June 30, 2025 or 2024.

Cash and cash equivalents

The Company considers all highly liquid investments with an original maturity of 90 days or less at the time of purchase to be cash equivalents. Cash equivalents that are readily convertible to cash are stated at cost, which approximates fair value. At June 30, 2025 and December 31, 2024, the Company held cash of $0.2 million in banks located outside of the United States.

Restricted cash

As of both June 30, 2025 and December 31, 2024, the Company was required to maintain guaranteed investment certificates of $0.3 million with maturities of three months to one year that are subject to an insignificant risk of changes in value. The guaranteed investment certificates are held for the benefit of the landlord in connection with operating leases which have remaining terms of greater than one year and are classified as restricted cash (non-current) on the Company's condensed consolidated balance sheets.

Accounts receivable

Accounts receivable are customer obligations that are unconditional. Accounts receivable are presented net of an allowance for doubtful accounts for expected credit losses, which represents an estimate of amounts that may not be collectible. The Company performs ongoing credit evaluations of its customers and, if necessary, provides an allowance for doubtful accounts and expected credit losses. A provision to the allowance for doubtful accounts for expected credit losses is recorded based on factors including the length of time the receivables are past due, the current business environment, the geographic market, and the Company's historical experience. Provisions to the allowance for doubtful accounts for expected credit losses are recorded to general and administrative expenses in the consolidated statements of operations. The Company writes off accounts receivable against the allowance when it determines a balance is uncollectible and no longer actively pursues collection of the receivable. The Company does not have any off-balance-sheet credit exposure related to customers. As of June 30, 2025 and December 31, 2024, the allowance for doubtful accounts for expected credit losses was zero.

Software development costs

The Company accounts for software development costs for internal-use software under the provisions of ASC 350-40, *"Internal-Use Software*" ("ASC 350"). Accordingly, certain costs to develop internal-use computer software are capitalized, provided these costs are expected to be recoverable. There was $1.6 million of software development costs related to the Company's enterprise resource planning ("ERP") system capitalized in other long-term assets at June 30, 2025 and December 31, 2024, net of accumulated amortization of $1.3 million and $1.1 million, respectively. These capitalized costs are being amortized on a straight-line basis over the initial subscription term of five years. For the three months ended June 30, 2025 and 2024, there was $0.1 million of amortization expense related to capitalized software development costs recorded in the condensed consolidated statements of operations. For the six months ended June 30, 2025 and 2024, there was $0.2 million of amortization expense related to capitalized software development costs recorded in the condensed consolidated statements of operations.

Fair value measurements

Certain assets and liabilities of the Company are carried at fair value under GAAP. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. Financial assets and liabilities carried at fair value are to be classified and disclosed in one of the following three levels of the fair value hierarchy, of which the first two are considered observable and the last is considered unobservable:

- Level 1—Quoted prices in active markets for identical assets or liabilities.

- Level 2—Observable inputs (other than Level 1 quoted prices), such as quoted prices in active markets for similar assets or liabilities, quoted prices in markets that are not active for identical or similar assets or liabilities, or other inputs that are observable or can be corroborated by observable market data.

- Level 3—Unobservable inputs that are supported by little or no market activity that are significant to determining the fair value of the assets or liabilities, including pricing models, discounted cash flow methodologies and similar techniques.

The Company's cash equivalents and short-term investments are carried at fair value, determined according to the fair value hierarchy described above (see Note 3). The carrying values of the Company's accounts receivable, prepaid expenses and other current assets, accounts payable and accrued expenses and other current liabilities approximate their fair values due to the short-term nature of these assets and liabilities.

Product warranties

The Company offers a one-year limited assurance warranty on System sales, which is included in the selling price. The accrual for these warranty obligations is included in accrued expenses and other current liabilities in the condensed consolidated balance sheets. The following table presents a summary of changes in the amount reserved for warranty cost (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2025	2024	2025	2024
Balance, beginning of period	$ 520	$ 689	$ 520	$ 689
Warranty provisions	—	—	—	—
Warranty repairs	(85)	(169)	(85)	(169)
Balance, end of period	$ 435	$ 520	$ 435	$ 520

Segment information

The Company determined its operating segment after considering the Company's organizational structure and the information regularly reviewed and evaluated by the Company's chief operating decision maker ("CODM") in deciding how to allocate resources and assess performance. The Company has determined that its CODM is its Chief Executive Officer. The CODM reviews the financial information on a consolidated basis, specifically net loss on the consolidated statement of operations, for purposes of evaluating financial performance and allocating resources. The CODM reviews all functional expenses (cost of revenues, sales and marketing, research and development, and general and administrative) at the consolidated level to manage the Company's operations. Other segment items included in consolidated net loss are interest income, other expense, and provision for income taxes. These line items are reflected in the consolidated statement of operations. The chief operating decision maker considers budget-to-actual variances on a monthly basis for the profit measure when making decisions about allocating capital and personnel to the segment. On the basis of these factors, the Company determined that it operates and manages its business as one operating segment, that develops, manufactures, markets and sells Systems and related LIMS connection software, consumables and services; and accordingly has one reportable segment for financial reporting purposes. The measure of the segment's assets is reported on the balance sheet as total consolidated assets. Substantially all of the Company's long-lived assets are held in the United States.

Revenue recognition

Remaining performance obligations

The Company does not disclose the value of remaining performance obligations for (i) contracts with an original contract term of one year or less, (ii) contracts for which the Company recognizes revenue at the amount to which it has the right to invoice when that amount corresponds directly with the value of services performed, and (iii) variable consideration allocated entirely to a wholly unsatisfied performance obligation or to a wholly unsatisfied distinct service that forms part of a single performance obligation. The Company does not have material remaining performance obligations associated with contracts with terms greater than one year.

Contract balances from contracts with customers

Contract assets arise from customer arrangements when revenue recognized exceeds the amount billed to the customer and the Company's right to payment is conditional and not only subject to the passage of time. The Company had less than $0.1 million in contract assets as of both June 30, 2025 and December 31, 2024 included in prepaid expenses and other current assets.

Contract liabilities represent the Company's obligation to transfer goods or services to a customer for which it has received consideration (or the amount is due) from the customer. The Company has a contract liability related to service revenue, which consists of amounts that have been invoiced but that have not been recognized as revenue. Amounts expected to be recognized as revenue within 12 months of the balance sheet date are classified as current deferred revenue and amounts expected to be recognized as revenue beyond 12 months of the balance sheet date are classified as non-current deferred revenue. The Company did not record any non-current deferred revenue as of June 30, 2025 or December 31, 2024. Deferred revenue was $6.1 million and $6.6 million at June 30, 2025 and December 31, 2024, respectively. Revenue recognized during the three months ended June 30, 2025 and 2024 that was included in deferred revenue at the prior period-end was $1.1 million and $1.4 million, respectively. Revenue recognized during each of the six months ended June 30, 2025 and 2024 that was included in deferred revenue at the prior period-end was $3.2 million and $2.8 million, respectively.

Disaggregated revenue

The Company disaggregates revenue based on the recurring and non-recurring nature of the underlying sale. Recurring revenue includes sales of consumables and service contracts. The Company considers these to be recurring revenues because customers typically place purchase orders on a periodic basis as they use their Growth Direct system(s) over time. These arrangements typically contain a single performance obligation and thus the entire consideration to which the Company is entitled is allocated entirely to that performance obligation. Non-recurring revenue includes sales of systems, LIMS connection software, RMBNucleus Mold Alarm software, validation services, and field services, and typically contains multiple performance obligations. The Company considers these to be non-recurring revenues because customers typically place single purchase orders for a bundle of products and services on a one-time or infrequent basis. For these arrangements, significant judgment is applied in identifying the distinct performance obligations, determination of the transaction price, transaction price allocation, and determination of standalone selling price for each of the distinct performance obligations.

The following table presents the Company's revenue by the recurring or non-recurring nature of the revenue stream (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2025	2024	2025	2024
Product and service revenue — recurring	$ 4,419	$ 3,844	$ 8,388	$ 7,588
Product and service revenue — non-recurring	2,843	2,774	6,079	4,641
Total revenue	$ 7,262	$ 6,618	$ 14,467	$ 12,229

The following table presents the Company's revenue by customer geography (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2025	2024	2025	2024
United States	$ 2,363	$ 2,661	$ 4,389	$ 4,810
Switzerland	1,637	1,604	3,117	2,575
Germany	2,005	970	3,314	1,434
Japan	296	372	1,421	1,172
All other countries	961	1,011	2,226	2,238
Total revenue	$ 7,262	$ 6,618	$ 14,467	$ 12,229

Advertising costs

Advertising costs are expensed as incurred and are included in sales and marketing expenses in the condensed consolidated statements of operations. Advertising costs were less than $0.1 million during each of the three and six months ended June 30, 2025 and 2024.

Stock-based compensation

The Company measures all stock-based awards granted to employees, officers and directors based on their fair value on the date of the grant and recognizes compensation expense for those awards over the requisite service period, which is generally the vesting period of the respective award. The Company issues stock-based awards with (i) service-based vesting conditions only and (ii) stock-based awards with both service-based and Company performance vesting conditions, and records the expense for these awards using the straight-line method. Forfeitures are accounted for prospectively as they occur.

The Company measures all restricted stock units granted based on the common stock value on the date of grant.

Recently issued accounting pronouncements

The Company qualifies as an “emerging growth company” as defined in the Jumpstart Our Business Startups ("JOBS") Act of 2012 and has elected not to “opt out” of the extended transition related to complying with new or revised accounting standards, which means that when a standard is issued or revised and it has different application dates for public and nonpublic companies, the Company will adopt the newer revised standard at the time nonpublic companies adopt the new or revised standard and will do so until such time that the Company either (i) irrevocably elects to “opt out” of such extended transition period or (ii) no longer qualifies as an emerging growth company. The Company may choose to early adopt any new or revised accounting standards whenever such early adoption is permitted for nonpublic companies.

In December 2023, the FASB issued ASU 2023-09, Income Taxes (Topic 740): Improvements to Income Tax Disclosures. The standard requires the Company to provide further disaggregated income tax disclosures for specific categories on the effective tax rate reconciliation, as well as additional information about federal, state/local and foreign income taxes. The standard also requires the Company to annually disclose its income taxes paid (net of refunds received), disaggregated by jurisdiction. The standard is effective on January 1, 2025 for fiscal year reporting. The standard is to be applied on a prospective basis, although optional retrospective application is permitted. The company is currently evaluating the impact on its consolidated financial statements and related disclosures.

In November 2024, the FASB issued ASU 2024-03, titled "Disaggregation of Income Statement Expenses." This update requires that public businesses provide more detailed disclosures about specific natural expense categories within their footnotes. The primary objective is to enhance transparency and provide investors with a clearer understanding of an entity's cost structure. The amendments in this update are effective for both annual and interim periods beginning after December 15, 2026. Early adoption is permitted. The Company is currently evaluating the impact on its consolidated financial statements and related disclosures.

3. Fair value of financial assets and liabilities

The following tables present information about the Company’s financial assets and liabilities measured at fair value on a recurring basis and indicate the level of the fair value hierarchy used to determine such fair values (in thousands):

	Fair value measurements as of June 30, 2025			
	Level 1	Level 2	Level 3	Total
Assets				
Cash equivalents	$ 15,371	$ —	$ —	$ 15,371
Short-term investments	12,922	—	—	12,922
	$ 28,293	$ —	$ —	$ 28,293

	Fair value measurements as of December 31, 2024			
	Level 1	Level 2	Level 3	Total
Assets				
Cash equivalents	$ 13,721	$ —	$ —	$ 13,721
Short-term investments	33,821	—	—	33,821
	$ 47,542	$ —	$ —	$ 47,542

During the three and six months ended June 30, 2025 and 2024, there were no transfers in or out of Level 3.

Valuation of short-term investments

U.S. Treasury bills and notes included in short-term investments were valued by the Company using quoted prices in active markets for identical securities, which represents a Level 1 measurement within the fair value hierarchy.

4. Investments

Short-term investments by investment type consisted of the following (in thousands):

	June 30, 2025			
	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
Short-term investments				
U.S. Government Treasury Notes	$ 12,925	$ —	$ (3)	$ 12,922
	$ 12,925	$ —	$ (3)	$ 12,922

	December 31, 2024			
	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
Short-term investments				
U.S. Government Treasury Notes	33,783	38	—	33,821
	$ 33,783	$ 38	$ —	$ 33,821

5. Inventory

Inventory consisted of the following (in thousands):

	June 30, 2025	December 31, 2024
Raw materials	$ 10,763	$ 10,560
Work in process	1,897	372
Finished goods	7,900	9,268
Total	$ 20,560	$ 20,200

Raw materials, work in process and finished goods were net of adjustments to net realizable value of $1.0 million and $0.6 million as of June 30, 2025 and December 31, 2024, respectively.

6. Prepaid expenses and other current assets

Prepaid expenses and other current assets consisted of the following (in thousands):

	June 30, 2025	December 31, 2024
Prepaid insurance	$ 219	$ 838
Contract asset	50	6
Deposits	729	489
Prepaid financing fees	529	290
Other	756	843
	$ 2,283	$ 2,466

7. Property and equipment, net

Property and equipment, net consisted of the following (in thousands):

	June 30, 2025	December 31, 2024
Manufacturing and laboratory equipment	$ 15,307	$ 14,457
Computer hardware and software	1,907	1,847
Office furniture and fixtures	681	638
Leasehold improvements	9,378	9,178
Construction-in-process	872	1,594
	28,145	27,714
Less: Accumulated depreciation	(17,940)	(16,521)
	$ 10,205	$ 11,193

Depreciation and amortization expense related to property and equipment was $0.7 million for each of the three months ended June 30, 2025 and 2024 and was $1.4 million for the six months ended June 30, 2025 and 2024.

8. Accrued expenses and other current liabilities

Accrued expenses and other current liabilities consisted of the following (in thousands):

	June 30, 2025	December 31, 2024
Accrued employee compensation and benefits expense	$ 3,230	$ 4,464
Accrued vendor expenses	1,760	1,846
Accrued warranty expense	435	520
Accrued taxes	228	235
Other	25	152
	$ 5,678	$ 7,217

9. Common stock and common stock warrants

As of both June 30, 2025 and December 31, 2024, the Company's restated certificate of incorporation authorized the issuance of Class A and Class B common stock. Each share of Class A common stock entitles the holder to one vote on all matters submitted to a vote of the Company's stockholders. The Company's Class B common stock is non-voting. Class A and Class B common stockholders are entitled to receive dividends, as may be declared by the board of directors, if any, subject to the preferential dividend rights of Preferred Stock. As of June 30, 2025, no cash dividends had been declared or paid.

During the quarter ended March 31, 2025, a stockholder converted 810,000 shares of Class B common stock into Class A common stock on a one-for-one basis pursuant to the terms of the Company's certificate of incorporation. Following the conversion, the total number of Class B shares outstanding decreased by 810,000, and the total number of Class A shares outstanding increased by the same amount. The conversion had no impact on the total number of shares outstanding or the Company's equity balance.

As of June 30, 2025, the Company had reserved 28,498,097 shares of Class A common stock for the exercise of outstanding stock options and warrants, vesting of restricted stock units, the number of shares remaining available for grant under the Company's 2021 Incentive Award Plan (see Note 10), the number of shares available for purchase under the Company's Employee Stock Purchase Plan (see Note 10) and the conversion of Class B common stock.

Outstanding warrants to purchase common stock consisted of the following at both June 30, 2025 and December 31, 2024:

Issuance date	Contractual term	Balance sheet classification	Shares of common stock issuable upon exercise of warrant	Weighted average exercise price
	(in years)			
July 24, 2017	10	Equity	15,035	$ 298.96
April 12, 2018	10	Equity	30,000	$ 1.00
July 14, 2021 *	10	Equity	975,109	$ 1.46
			1,020,144	

* In connection with the Company's IPO, preferred stock warrants were automatically converted to Class A common stock warrants. The contractual term of the converted Class A common stock warrants remained consistent with the original term of the preferred stock warrants, with original issue dates between 2017-2020.

10. Stock-based compensation

2010 Stock Option and Grant Plan

The Company's 2010 Stock Option and Grant Plan (the "2010 Plan") provided for the Company to grant incentive stock options or nonqualified stock options, restricted stock awards and other stock-based awards to employees, officers, directors and consultants of the Company.

Following the effectiveness of the Company's IPO in July 2021, no additional awards are being granted under the 2010 Plan and shares of existing outstanding options that were issued under the 2010 Plan and are forfeited or canceled will be available for grant under the 2021 Incentive Award Plan.

2021 Incentive Award Plan

In July 2021, the board of directors adopted, and the Company's stockholders approved, the 2021 Incentive Award Plan (the "2021 Plan"). The 2021 Plan provides for the grant of stock options, including incentive stock options and non-qualified stock options, stock appreciation rights, restricted stock, restricted stock units, and other stock-based and cash-based awards. The 2021 Plan has a term of ten years. The aggregate number of shares of Class A common stock available for issuance under the 2021 Plan is equal to the sum of (i) 4,200,000 shares; (ii) any shares which are subject to the 2010 Plan awards that become available for issuance under the 2021 Plan; and (iii) an annual increase for ten years on the first day of each calendar year beginning on January 1, 2022, equal to the lesser of (A) 5% of the aggregate number of shares of Class A common stock outstanding on the last day of the immediately preceding calendar year and (B) such smaller amount of shares as determined by the board of directors. No more than 33,900,000 shares of Class A common stock may be issued under the 2021 Plan upon the exercise of incentive stock options. As of June 30, 2025, there were 4,882,459 shares available for issuance under the 2021 Plan.

2023 Inducement Plan

In May 2023, the Company's board of directors adopted the 2023 Inducement Plan (the "Inducement Plan") pursuant to which the Company reserved 330,000 shares of Class A common stock to be used exclusively for grants of equity-based awards to individuals who were not previously employees or directors of the Company as an inducement material to the individual's entry into employment with the Company within the meaning of Rule 5635(c)(4) of the Nasdaq Listing Rules. The Inducement Plan provides for the grant of equity-based awards in the form of nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards, and dividend equivalent rights. The Inducement Plan was adopted by the Company's board of directors without stockholder approval pursuant to Rule 5635(c)(4) of the Nasdaq Listing Rules. As of December 31, 2024, 217,013 shares were available for future issuance under the Inducement Plan. In February 2025, the Company amended the Inducement Plan to reserve an additional 476,000 shares of its Class A common stock. The amendment was adopted by the Company's board of directors, without stockholder approval pursuant to Rule 5635(c)(4) of the Nasdaq Listing Rules. In May 2025, the Company amended the Inducement Plan to reserve an additional 442,987 shares of its Class A common stock. The amendment was adopted by the Company's board of directors, without stockholder approval pursuant to Rule 5635(c)(4) of the Nasdaq Listing Rules.As of June 30, 2025, 250,000 shares were available for future issuance under the Inducement Plan.

Stock options

The following table presents, on a weighted average basis, the assumptions used in the Black-Scholes option-pricing model to determine the grant-date fair value of stock options granted to employees and directors:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2025	2024	2025	2024
Risk-free interest rate	4.2 %	5.2 %	4.3 %	4.3 %
Expected term (in years)	5.9	5.5	6.0	5.9
Expected volatility	53.2 %	50.9 %	51.7 %	49.8 %
Expected dividend yield	0 %	0 %	0 %	0 %

Stock options

The following table summarizes the Company's stock option activity since December 31, 2024:

	Number of shares	Weighted average exercise price	Weighted average remaining contractual term	Aggregate intrinsic value
			(in years)	(in thousands)
Outstanding as of December 31, 2024	6,296,505	$ 2.39	6.18	$ 135
Granted	1,454,250	3.43		
Exercised	(385,682)	1.09		$ 589
Expired	(74,833)	8.22		
Forfeited	(189,414)	2.47		
Outstanding as of June 30, 2025	7,100,826	$ 2.61	6.56	$ 11,871
Options vested and expected to vest as of June 30, 2025	7,100,826	$ 2.61	6.56	$ 11,871
Options exercisable as of June 30, 2025	4,766,902	$ 2.61	5.39	$ 9,318

The aggregate intrinsic value of options is calculated as the difference between the exercise price of the stock options and the fair value of the Company's Class A common stock for those options that had exercise prices lower than such fair value.

The intrinsic value of stock options exercised during each of the three months ended June 30, 2025 and 2024 was $0.3 million and less than $0.1 million, respectively, and during each of the six months ended June 30, 2025 and 2024 was $0.6 million and less than $0.1 million, respectively.

The weighted average grant-date fair value per share of stock options granted during the three months ended June 30, 2025 and 2024 was $1.81 and $0.43, respectively and during the six months ended June 30, 2025 and 2024 was $1.80 and $0.48, respectively.

Restricted stock units

Restricted stock unit grants typically have service-based vesting terms from one to three years. Vesting occurs annually on the anniversary of the grant date. During the six months ended June 30, 2025, the Company granted restricted stock units with service-based vesting conditions only. The Company expenses the fair value of the restricted stock units over the expected vesting period and accounts for forfeitures prospectively as they occur.

The following table summarizes the Company's restricted stock units activity since December 31, 2024:

	Number of shares		Weighted average fair value
Unvested as of December 31, 2024	1,941,688	$	1.46
Granted	2,072,325	$	3.13
Vested	(667,088)	$	2.11
Forfeited	(172,353)	$	2.95
Unvested as of June 30, 2025	3,174,572	$	2.34

The weighted average grant-date fair value per share of restricted stock units granted during each of the three months ended June 30, 2025 and 2024 was $2.76 and $0.93, respectively, and during the six months ended June 30, 2025 and 2024 was $3.13 and $0.94, respectively. The total fair value of shares vested during the years ended June 30, 2025 and 2024 was $2.4 million and $0.4 million, respectively.

2021 Employee Stock Purchase Plan

In July 2021, the board of directors adopted, and the Company’s stockholders approved, the 2021 Employee Stock Purchase Plan (the “2021 ESPP”), which became effective in connection with the IPO of Class A common stock. The aggregate number of shares of Class A common stock available for issuance under the 2021 ESPP is equal to (i) 400,000 shares and (ii) an annual increase for ten years on the first day of each calendar year beginning on January 1, 2022, equal to the lesser of (A) 1% of the aggregate number of shares of Class A common stock outstanding on the last day of the immediately preceding calendar year and (B) such smaller amount of shares as determined by the board of directors. No more than 6,300,000 shares of Class A common stock may be issued under the 2021 ESPP.

Under the 2021 ESPP, eligible employees may purchase shares of the Company’s common stock through payroll deductions of up to 15% of eligible compensation during an offering period. Generally, each offering period will be for 6 months as determined by the Company's board of directors. In no event may an employee purchase more than 100,000 shares per offering period based on the closing price on the first trading date of an offering period or the last trading date of an offering period, or more than $25,000 worth of stock during any calendar year. The purchase price for shares to be purchased under the 2021 ESPP is 85% of the lesser of the market price of the Company's common stock on the first trading date of an offering period or on any purchase date during an offering period (March 14 or September 14).

During the six months ended June 30, 2025, there were 127,335 shares of Class A common stock purchased under the 2021 ESPP. The Company recognized less than $0.1 million of expense related to the 2021 ESPP for each of six months ended June 30, 2025 and 2024. As of June 30, 2025, 1,206,897 shares were available for future issuance under the 2021 ESPP.

The Company estimates the fair value of shares issued to employees under the 2021 ESPP using the Black-Scholes option-pricing model. The following weighted average assumptions were used in the calculation of fair value of shares under the 2021 ESPP at the grant date for both the six months ended June 30, 2025 and 2024:

	Six Months Ended June 30,	
	2025	2024
Risk-free interest rate	4.3 %	5.4 %
Expected term (in years)	0.5	0.5
Expected volatility	51.5 %	49.4 %
Expected dividend yield	0 %	0 %

Stock-based compensation

Stock-based compensation expense was classified in the condensed consolidated statements of operations as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2025	2024	2025	2024
Cost of revenue	$ 120	$ 148	$ 213	$ 295
Research and development	50	142	190	272
Sales and marketing	111	123	200	227
General and administrative	937	758	1,657	1,462
Total stock-based compensation expense	$ 1,218	$ 1,171	$ 2,260	$ 2,256

As of June 30, 2025, total unrecognized compensation expense related to unvested stock options held by employees and directors was $3.0 million, which is expected to be recognized over a weighted average period of 1.2 years. Additionally, unrecognized compensation expense related to unvested restricted stock units held by employees and directors was $6.2 million, which is expected to be recognized over a weighted average period of 1.5 years.

11. Income taxes

During both the six months ended June 30, 2025 and 2024, the pretax losses incurred by the Company, as well as the research and development tax credits generated, received no corresponding tax benefit because the Company concluded that it is more likely than not that the Company will be unable to realize the value of any resulting deferred tax assets. The Company will continue to assess its position in future periods to determine if it is appropriate to reduce a portion of its valuation allowance.

The Company's tax provision and the resulting effective tax rate for interim periods is determined based upon its estimated annual effective tax rate, adjusted for the effect of discrete items arising in that quarter. The income tax provision was generated from operations in Germany and Switzerland.

The impact of such discrete items could result in a higher or lower effective tax rate during a particular quarter, based upon the mix and timing of actual earnings or losses versus annual projections. In each quarter, the Company updates its estimate of the annual effective tax rate, and if the estimated annual tax rate changes, a cumulative adjustment is made in that quarter.

The Company has evaluated the positive and negative evidence bearing upon its ability to realize its deferred tax assets, which primarily consist of net operating loss carryforwards. The Company has considered its history of cumulative net losses, estimated future taxable income and prudent and feasible tax planning strategies and has concluded that it is more likely than not that the Company will not realize the benefits of its deferred tax assets. As a result, as of both June 30, 2025 and December 31, 2024 the Company recorded a full valuation allowance against its net deferred tax assets.

The Company files income tax returns as prescribed by the tax laws of the jurisdictions in which it operates. In the normal course of business, the Company is subject to examination by U.S. federal, state and international jurisdictions,

where applicable. There are currently no pending tax examinations in the U.S., and the Company has not received notice of examination from any jurisdictions in the U.S.

Enactment of the "One Big Beautiful Bill Act" ("OBBBA")

On July 4, 2025, the reconciliation tax bill commonly referred to as the “One Big Beautiful Bill Act” (OBBBA) was signed into law, which date constitutes the enactment date under U.S. GAAP. Key corporate tax provisions of the OBBBA include the restoration of 100% bonus depreciation, the introduction of new Section 174A permitting immediate expensing of domestic research and experimental (R&E) expenditures, modifications to Section 163(j) interest expense limitations, updates to the rules governing global intangible low-taxed income (GILTI) and foreign-derived intangible income (FDII), amendments to energy credit provisions, and the expansion of Section 162(m) aggregation requirements.

Under U.S. GAAP, the effects of changes in tax laws are recognized in the period in which the new law is enacted. Accordingly, the impact of the OBBBA will be reflected in the Company’s financial statements for the third quarter of 2025. The Company is currently assessing the impact of the OBBBA and, based on preliminary analysis, does not expect the new legislation to have a material effect on its financial statements due to the Company’s full valuation allowance.

12. Net loss per share

As of June 30, 2025, the Company had Class A common stock and Class B common stock. Both share classes have the same rights to the Company’s earnings and neither of the classes have any prior or senior rights to dividends to the other share class.

Basic and diluted net loss per share was calculated as follows (in thousands, except share and per share amounts):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2025	2024	2025	2024
Numerator:				
Net loss	$ (11,858)	$ (12,578)	$ (23,121)	$ (25,900)
Denominator:				
Weighted average Class A common shares outstanding—basic and diluted	40,149,073	38,306,972	39,602,755	38,121,641
Weighted average Class B common shares outstanding—basic and diluted	4,499,529	5,309,529	4,718,811	5,309,529
Total shares for EPS—basic and diluted	44,648,602	43,616,501	44,321,566	43,431,170
Net loss per share attributable to Class A common stockholders—basic and diluted	$ (0.27)	$ (0.29)	$ (0.52)	$ (0.60)
Net loss per share attributable to Class B common stockholders—basic and diluted	$ (0.27)	$ (0.29)	$ (0.52)	$ (0.60)

The Company’s potentially dilutive securities, which include stock options, restricted stock units, and common stock warrants, have been excluded from the computation of diluted net loss per share as the effect would be to reduce the net loss per share. Therefore, the weighted average number of common shares outstanding used to calculate both basic and diluted net loss per share is the same. The Company excluded the following potential common shares, presented based on amounts outstanding at each period end, from the computation of diluted net loss per share for the periods indicated because including them would have had an anti-dilutive effect:

	June 30,	
	2025	2024
Options to purchase common stock	7,100,826	7,212,631
Unvested restricted common stock	3,174,572	2,263,307
Warrants to purchase common stock	284,165	286,324
Options to purchase common stock under ESPP	96,214	36,788
	10,655,777	9,799,050

13. Leases

The Company determines if an arrangement is or contains a lease at inception, which is the date on which the terms of the contract are agreed to, and the agreement creates enforceable rights and obligations. Under ASC 842, a contract is or contains a lease when (i) explicitly or implicitly identified assets have been deployed in the contract and (ii) the customer obtains substantially all of the economic benefits from the use of that underlying asset and directs how and for what purpose the asset is used during the term of the contract. The Company also considers whether its service arrangements include the right to control the use of an asset.

The Company made an accounting policy election not to recognize right-of-use ("ROU") assets and lease liabilities for leases with a term of twelve months or less. For all other leases, the Company recognizes ROU assets and lease liabilities based on the present value of lease payments over the lease term at the commencement date of the lease. Lease payments may include fixed rent escalation clauses or payments that depend on an index (such as the consumer price index). Subsequent changes to an index and any other periodic market-rate adjustments to base rent are recorded in variable lease expense in the period incurred. The ROU assets also include any initial direct costs incurred and lease payments made at or before the commencement date and are reduced by any lease incentives.

The Company has made an accounting policy election to account for lease and non-lease components in its contracts as single lease components for all asset classes. The non-lease components typically represent additional services transferred to the Company, such as common area maintenance for real estate, which are variable in nature and recorded in variable lease expense in the period incurred.

The Company uses its incremental borrowing rate which is the rate of interest the Company would have to pay to borrow on a collateralized basis over a similar term and amount in a similar economic environment to determine the present value of lease payments as the Company’s leases do not have a readily determinable implicit discount rate. Judgment is applied in assessing factors such as Company specific credit risk, lease term, nature, and quality of the underlying collateral, currency, and economic environment in determining the incremental borrowing rate to apply to each lease.

The Company leases office and manufacturing space under operating lease agreements that have initial terms ranging from approximately 8 to 10 years. The Company leases furniture under a financing lease agreement that has an initial term of approximately 8 years. The furniture financing lease agreement is immaterial to the Company's condensed consolidated financial statements. Some leases include one or more options to renew, generally at the Company's sole discretion, with renewal terms that can extend the lease term by up to 5 years. In addition, certain leases contain termination options, where the rights to terminate are held by either the Company, the lessor, or both parties. Options to extend a lease are included in the lease term when it is reasonably certain that the Company will exercise the option. Options to terminate a lease are excluded from the lease term when it is reasonably certain that the Company will not exercise the option. The Company’s leases generally do not contain any material restrictive covenants or residual value guarantees.

Supplemental cash flow information related to leases is as follows (in thousands):

	Six Months Ended June 30,	
	2025	2024
Cash paid for amounts included in measurement of lease liabilities:		
Operating cash outflows - payments on operating leases	$ 680	$ 663
Operating cash outflows - payments on financing leases	$ 24	$ 17
Financing cash outflows - payments on financing leases	$ 14	$ 20

Supplemental balance sheet information related to the Company's operating and financing leases is as follows (in thousands):

	June 30, 2025	December 31, 2024
Operating Leases:		
Operating lease assets	$ 4,494	$ 4,998
Operating lease liabilities, short-term	$ 1,205	$ 1,167
Operating lease liabilities, long-term	4,171	4,784
Total operating lease liabilities	$ 5,376	$ 5,951
Financing Leases:		
Office furniture and fixtures	$ 386	$ 386
Accumulated depreciation	(240)	(221)
Net property, plant and equipment	$ 146	$ 165
Lease liabilities, short-term	$ 50	$ 47
Lease liabilities, long-term	153	170
Total financing lease liabilities	$ 203	$ 217
Weighted-average remaining lease term - operating leases (in years):	4.04	4.54
Weighted-average remaining lease term - financing leases (in years):	4.00	4.50
Weighted-average discount rate - operating leases:	3.8 %	3.8 %
Weighted-average discount rate - financing leases:	12.0 %	12.0 %

The components of lease expense were as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2025	2024	2025	2024
Operating lease cost	$ 305	$ 305	$ 609	$ 609
Financing lease cost - amortization of right-of-use asset	9	12	18	24
Financing lease cost - interest on lease liability	12	9	24	17
Variable lease cost	206	237	409	441
Total lease cost	$ 532	$ 563	$ 1,060	$ 1,091

Operating lease cost is recognized on a straight-line basis over the lease term. Total rent expense, including the Company's share of the lessors' operating expenses, was $0.5 million for each of the three months ended June 30, 2025 and 2024, and was $1.0 million and $1.1 million for the six months ended June 30, 2025 and 2024, respectively. Financing lease cost includes asset amortization on a straight-line basis over the lease term and interest accretion calculated using the effective interest method. Total financing lease asset depreciation and interest expense was less than $0.1 million for each of the three and six months ended June 30, 2025 and 2024.

Maturities of the Company's operating lease liabilities as of June 30, 2025 were as follows (in thousands):

	Operating Lease Maturities
2025 (excluding the six months ended June 30)	$ 688
2026	1,401
2027	1,435
2028	1,469
2029	804
Total lease payments	$ 5,797
Less imputed interest	(421)
Total present value of lease liabilities	$ 5,376

Maturities of the Company's financing lease liability as of June 30, 2025 were as follows (in thousands):

	Financing Lease Maturities
2025 (excluding the six months ended June 30)	$ 37
2026	75
2027	75
2028	75
2029	38
Total lease payments	$ 300
Less imputed interest	(97)
Total present value of lease liabilities	$ 203

14. Commitments and contingencies

Supplier agreements

In the ordinary course of business, the Company has and may in the future enter into agreements with suppliers that may require the Company to purchase or pay minimum or fixed amounts over the duration of the agreement. The Company currently has minimum purchase commitments of $0.8 million, $1.8 million, and $1.6 million expected to be incurred for the remainder of 2025, 2026, and 2027, respectively, under such agreements. These commitments are accrued as a liability when it is probable that a related future expenditure will be made, and such expenditure can be reasonably estimated.

Indemnification agreements

In the ordinary course of business, the Company may provide indemnification of varying scope and terms to customers, vendors, lessors, business partners and other parties with respect to certain matters including, but not limited to, losses arising out of breach of such agreements or from intellectual property infringement claims made by third parties. In addition, the Company has entered into indemnification agreements with members of its board of directors and certain of its executive officers that will require the Company, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors or officers. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is, in many cases, unlimited. To date, the Company has not incurred any material costs as a result of such indemnifications. The Company is not currently aware of any indemnification claims and has not accrued any liabilities related to such obligations in its condensed consolidated financial statements as of June 30, 2025 and December 31, 2024.

Legal proceedings

The Company is not a party to any material litigation and does not have contingency reserves established for any litigation liabilities. At each reporting date, the Company evaluates whether or not a potential loss amount or a potential

range of loss is probable and reasonably estimable under the provisions of the authoritative guidance that addresses accounting for contingencies. The Company expenses the costs related to legal proceedings as incurred.

15. Benefit plans

The Company maintains a defined contribution savings plan under Section 401(k) of the Code. This plan covers all U.S. employees who meet minimum age and service requirements and allows participants to defer a portion of their annual compensation on a pre-tax basis. Matching contributions to the plan may be made at the discretion of the Company's board of directors. The Company made contributions of $0.5 million and $0.2 million to the plan during each of the three months ended June 30, 2025 and 2024, respectively, and made contributions of $1.1 million and $0.5 million to the plan during the six months ended June 30, 2025 and 2024, respectively.

16. Subsequent events

Loan and Security Agreement

On August 8, 2025 (the "Closing Date"), the Company entered into a Loan and Security Agreement (the "LSA") with the lenders party thereto (the "Lenders") and Trinity Capital Inc., as administrative agent and collateral agent (the "Agent").

Under the LSA, the Lenders agreed to extend debt capital to the Company, in the form of a term loan, in tranches totaling an aggregate principal amount of up to $45.0 million available as follows: (a) at closing, an aggregate principal amount of $20.0 million (the "First Tranche"), (b) until January 31, 2027, subject to the achievement of certain commercial and operational milestones, an aggregate principal amount of $10.0 million (the "Second Tranche"), (c) until July 31, 2027, subject to the achievement of certain commercial and operational milestones, an aggregate principal amount of $10.0 million (the "Third Tranche"), and (d) an aggregate principal amount of $5.0 million in Lenders' sole discretion (the "Fourth Tranche" and collectively with the First Tranche, the Second Tranche and the Third Tranche, the "Tranches"). The obligations of the Lenders to extend such debt capital are subject to certain conditions precedent described in the LSA. The Company is required to pay a commitment fee of 1.0% of the amount drawn, plus related documentation and funding fees, in connection with each drawdown. On the Closing Date, the Company drew down the First Tranche. The Company's obligations under the facility may be guaranteed by certain subsidiaries and are secured by a first priority security interest in substantially all assets of the Company and any subsidiaries providing a guarantee.

In connection with the drawdown of any Tranche, the Company is required to issue to the Lenders a warrant to purchase shares of the Company's Class A common stock (the "Common Stock"). The exercise price ("Exercise Price") for each warrant shall be equal to the lower of (a) the volume-weighted average price of the Common Stock over the ten days prior to the drawdown and (b) the closing price of the Common Stock on the day immediately prior to the drawdown. The number of shares of Common Stock for which each warrant is exercisable is equal to 3.0% of the drawn down amount of the applicable Tranche, divided by the Exercise Price. Each warrant shall have a term of ten years from the date of issuance and shall permit cashless exercise, all in accordance with its terms. In connection with the drawdown of the First Tranche, the Company issued warrants to purchase up to an aggregate of 179,104 shares of Common Stock, with an Exercise Price of $3.35 per share.

All Tranches will mature on September 1, 2030 (the "Maturity Date"), unless earlier accelerated under the terms of the LSA. At maturity, the Company is required to repay the then-outstanding principal amount, together with any accrued and unpaid interest thereon and any other obligations outstanding under the LSA. In addition, at maturity or early termination of the LSA, including acceleration of the loans, the Company is required to pay the Lenders an additional 4.0% of the amounts drawn down by the Company under the LSA (the "End of Term Payment").

Interest accrues on the Tranches that the Company has drawn down at a floating rate per annum, calculated based on a 360-day year, equal to the greater of (a) the sum of (i) The Wall Street Journal Prime Rate and (ii) 4.0%, and (b) 11.0%. The initial interest rate is 11.5% per annum. For the first 36 months after the Closing Date (the "Interest Only Period"), the Company is required to make only monthly payments of interest in arrears. Following such period, and until the Maturity Date (the "Amortization Period"), the Company is required to make monthly payments of principal and interest in an amount that fully amortizes the outstanding principal balance due over the duration of the Amortization Period. If the Second Tranche is fully drawn down by the Company, the Interest Only Period will be extended by six months. If the Third Tranche is fully drawn down by the Company, the Interest Only Period will be extended by a further six months. In the event of such extensions of the Interest Only Period, the duration of the Amortization Period will decrease by the same amount. In any event, the total term of all Tranches shall not exceed 60 months.

The Company may voluntarily prepay the outstanding loan balance at any time, in whole or in part, subject to the payment of prepayment premiums. If prepayment occurs on or before the first anniversary of the Closing Date, the

premium shall equal 3.0% of the principal being repaid. Thereafter, if prepayment occurs on or before the second anniversary of the Closing Date, the premium shall equal 2.0% of the principal being repaid. Thereafter, the premium shall equal 1.0% of the principal being repaid. For the avoidance of doubt, such prepayment premiums are in addition to the End of Term Payment. Additionally, the Company is required to prepay the outstanding loan balance (plus accrued and unpaid interest thereon, any prepayment premiums and any other obligations that are due and payable) upon a sale, divestment or transfer of all or substantially all assets of the Company and its subsidiaries, taken as a whole, or of a material business line of the Company, the acquisition by a person or group of a sufficient number of the Company's equity securities to elect a majority of the members of the Company's board of directors, or the acceleration of the loans by the Agent on behalf of the Lenders following an event of default under the LSA.

The LSA contains customary affirmative and negative covenants, including with respect to notice obligations, limitations on new indebtedness, liens, investments and transactions with affiliates of the Company, restrictions on the payment of dividends, maintenance of collateral and accounts and maintenance of insurance. The LSA does not contain any covenants to maintain a specified level of revenues, profitability, cash flow or cash resources.

The LSA contains customary representations and warranties of the Company, as well as customary events of default, the occurrence of which may accelerate the obligations of the Company, increase the interest rate by a specified default rate and impose other consequences described in the LSA. Such events include among others, failure to make payments when due, breach of covenants, insolvency, a cross-default to other indebtedness, a judgment event of default, the occurrence of a material adverse change to the Company, and delisting of the Company's securities from Nasdaq.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of our financial condition and results of operations should be read together with our consolidated condensed financial statements and the related notes appearing elsewhere in this Quarterly Report on Form 10-Q and our audited Consolidated Financial Statements and related notes thereto for the year ended December 31, 2024, included in the Annual Report on Form 10-K for the fiscal year ended December 31, 2024, filed with the SEC on February 28, 2025 (the "2024 Form 10-K"). Some of the information contained in this discussion and analysis or set forth elsewhere in this Quarterly Report on Form 10-Q, including information with respect to our plans and strategy for our business, includes forward-looking statements that involve risks and uncertainties. As a result of many factors, including those factors set forth in the "Risk Factors" section of this Form 10-Q, our actual results could differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

We are an innovative life sciences technology company that enables the safe and efficient manufacture of pharmaceutical products through our rapid automated microbial quality control ("MQC") detection platform. We develop, manufacture, market and sell the Growth Direct system and related proprietary consumables, and value-added services to enable rapid MQC testing in the manufacture of biologics and cell and gene therapies, vaccines, sterile injectables, and other healthcare products. Our system delivers the power of industrial automation to bioprocessing and pharmaceutical manufacturing firms by modernizing and digitizing their MQC operations. Our Growth Direct platform, developed with over 15 years of active feedback from our customers, was purpose-built to meet the growing demands posed by the increasing scale, complexity, and regulatory scrutiny confronting global pharmaceutical manufacturing. Our Growth Direct platform comprises the Growth Direct system, optional laboratory information management system ("LIMS") connection software (which the majority of our customers purchase), proprietary consumables, and comprehensive field service, validation services and post-warranty service contracts. Once embedded and validated in our customers' facilities, our Growth Direct platform provides for recurring revenues through ongoing sales of consumables and service contracts.

Our technology fully automates and digitizes the process of pharmaceutical MQC and is designed to enable our customers to perform this critical testing process more efficiently, accurately, and securely. Our Growth Direct platform accelerates time to results by 50% or more compared to the traditional method, and reduces MQC testing to a simple two-step workflow, eliminating up to 85% of the manual steps of traditional MQC, generating significant time, operational, and cost savings for our customers. We seek to establish the Growth Direct as the trusted global standard in automated MQC by delivering the speed, accuracy, security, and data integrity compliance that our customers depend on to ensure patient safety and consistent drug supply.

Since our inception, we have devoted a majority of our resources to designing, developing, and building our proprietary Growth Direct platform and associated products, launching our Growth Direct platform commercially, expanding our sales and marketing infrastructure to grow our sales, building global customer service and support teams to deliver our value-added services, investing in robust manufacturing and supply chain operations to serve our customers globally, and providing general and administrative support for these operations. Prior to our IPO, we funded our operations primarily with proceeds from sales of preferred stock, borrowings under loan agreements and product and service sales, as well as our cost-reimbursement contract with the U.S. Department of Health and Human Services Biomedical Advanced Research & Development Authority ("BARDA").

Since our inception, we have incurred net losses in each year. We generated revenue of $7.3 million and $6.6 million for the three months ended June 30, 2025 and 2024, respectively, and incurred net losses of $11.9 million and $12.6 million for those same periods, respectively. As of June 30, 2025, we had an accumulated deficit of $498.4 million. We expect to continue to incur net losses in connection with our ongoing activities, including:

- growing sales of our products in both the United States and international markets by further expanding our sales and marketing capabilities;
- scaling our manufacturing and supply chain processes and infrastructure to meet growing demand for our products;
- investing in research and development to develop new products and further enhance our existing products;

- protecting and building on our intellectual property portfolio; and
- attracting, hiring and retaining qualified personnel.

We believe that our cash, cash equivalents and investments as of June 30, 2025, together with our initial drawdown of $20.0 million under the LSA (as defined below), enable us to fund our operating expenses and capital expenditure requirements for at least twelve months following the issuance date of the unaudited interim condensed consolidated financial statements contained in this Quarterly Report on Form 10-Q for the quarter ended June 30, 2025. We have based this estimate on assumptions that may prove to be wrong, and we could exhaust our available capital resources sooner than we expect. See "—Liquidity and Capital Resources."

Recent developments

Distribution and Collaboration Agreement

In February 2025, the Company entered into a Distribution and Collaboration Agreement (the "Distribution Agreement") with Millipore S.A.S., a subsidiary of the Life Science business of Merck KGaA, Darmstadt, Germany, which operates in the U.S. as MilliporeSigma ("MilliporeSigma"). Pursuant to the Distribution Agreement, the Company granted MilliporeSigma a global, co-exclusive right to sell our products, initially consisting of our Growth Direct systems and related consumables, into all fields related to industrial quality control applications in the pharmaceutical, medical device, personal care, cosmetics and food and beverage spaces in all regions of the world. During the term of the Distribution Agreement, MilliporeSigma will receive tier-based transfer pricing on such products. The Company will continue to directly market, sell, manufacture and distribute our products and provide all services to customers, including in respect of system installation, validation, maintenance and support.

Over the first two years of the Distribution Agreement, MilliporeSigma has committed to purchase a minimum number of Growth Direct systems. Thereafter, the Company and MilliporeSigma will evaluate and mutually agree on additional purchase commitments, if any. Pursuant to the Distribution Agreement, the Company is permitted to continue to sell its products independently and through its existing distributors, but the Company may not grant the right to sell the products covered by the Distribution Agreement to other third parties so long as a purchase commitment by MilliporeSigma is in place. The initial term of the Distribution Agreement is five years, unless earlier terminated by the Company or MilliporeSigma in accordance with its terms.

The Distribution Agreement also contemplates future collaboration by the parties, including with respect to sourcing materials and service delivery. In that regard, within six months, the parties intend to negotiate in good faith towards a supply agreement, pursuant to which the parties will explore cost-saving measures within the Company's supply chain focused on accelerating gross margin improvement, particularly with respect to consumables. The focus of such supply agreement may include raw materials and components as well as manufacturing and supply chain services. The parties intend to share in any cost savings achieved in the supply of the products through this supply agreement. Additionally, within one year, the parties intend to negotiate in good faith towards a services agreement to permit the Company and MilliporeSigma to provide certain services to each other's customers. The parties also intend to explore additional opportunities for collaboration, such as joint development efforts for the enhancement of our products or introducing new products to be covered by the distribution arrangement. At this time, an estimate of the impact of the Distribution Agreement on our financial statements cannot be made. However, we do expect to make incremental investments in our manufacturing and service organizations over time to support increased sales volumes related to the Distribution Agreement.

Loan and Security Agreement

On August 8, 2025 (the "Closing Date"), the Company entered into a Loan and Security Agreement (the "LSA") with the lenders party thereto (the "Lenders") and Trinity Capital Inc., as administrative agent and collateral agent (the "Agent").

Under the LSA, the Lenders agreed to extend debt capital to the Company, in the form of a term loan, in tranches totaling an aggregate principal amount of up to $45.0 million available as follows: (a) at closing, an aggregate principal amount of $20.0 million (the "First Tranche"), (b) until January 31, 2027, subject to the achievement of certain commercial and operational milestones, an aggregate principal amount of $10.0 million (the "Second Tranche"), (c) until July 31, 2027, subject to the achievement of certain commercial and operational milestones, an aggregate principal amount of $10.0 million (the "Third Tranche"), and (d) an aggregate principal amount of $5.0 million in Lenders' sole discretion (the "Fourth Tranche" and collectively with the First Tranche, the Second Tranche and the Third Tranche, the "Tranches"). The obligations of the Lenders to extend such debt capital are subject to certain conditions precedent described in the LSA. The Company is required to pay a commitment fee of 1.0% of the amount drawn, plus related documentation and funding fees,

in connection with each drawdown. On the Closing Date, the Company drew down the First Tranche. The Company's obligations under the facility may be guaranteed by certain subsidiaries and are secured by a first priority security interest in substantially all assets of the Company and any subsidiaries providing a guarantee.

In connection with the drawdown of any Tranche, the Company is required to issue to the Lenders a warrant to purchase shares of the Company's Class A common stock (the "Common Stock"). The exercise price ("Exercise Price") for each warrant shall be equal to the lower of (a) the volume-weighted average price of the Common Stock over the ten days prior to the drawdown and (b) the closing price of the Common Stock on the day immediately prior to the drawdown. The number of shares of Common Stock for which each warrant is exercisable is equal to 3.0% of the drawn down amount of the applicable Tranche, divided by the Exercise Price. Each warrant shall have a term of ten years from the date of issuance and shall permit cashless exercise, all in accordance with its terms. In connection with the drawdown of the First Tranche, the Company issued warrants to purchase up to an aggregate of 179,104 shares of Common Stock, with an Exercise Price of $3.35 per share.

All Tranches will mature on September 1, 2030 (the "Maturity Date"), unless earlier accelerated under the terms of the LSA. At maturity, the Company is required to repay the then-outstanding principal amount, together with any accrued and unpaid interest thereon and any other obligations outstanding under the LSA. In addition, at maturity or early termination of the LSA, including acceleration of the loans, the Company is required to pay the Lenders an additional 4.0% of the amounts drawn down by the Company under the LSA (the "End of Term Payment").

Interest accrues on the Tranches that the Company has drawn down at a floating rate per annum, calculated based on a 360-day year, equal to the greater of (a) the sum of (i) The Wall Street Journal Prime Rate and (ii) 4.0%, and (b) 11.0%. The initial interest rate is 11.5% per annum. For the first 36 months after the Closing Date (the "Interest Only Period"), the Company is required to make only monthly payments of interest in arrears. Following such period, and until the Maturity Date (the "Amortization Period"), the Company is required to make monthly payments of principal and interest in an amount that fully amortizes the outstanding principal balance due over the duration of the Amortization Period. If the Second Tranche is fully drawn down by the Company, the Interest Only Period will be extended by six months. If the Third Tranche is fully drawn down by the Company, the Interest Only Period will be extended by a further six months. In the event of such extensions of the Interest Only Period, the duration of the Amortization Period will decrease by the same amount. In any event, the total term of all Tranches shall not exceed 60 months.

The Company may voluntarily prepay the outstanding loan balance at any time, in whole or in part, subject to the payment of prepayment premiums. If prepayment occurs on or before the first anniversary of the Closing Date, the premium shall equal 3.0% of the principal being repaid. Thereafter, if prepayment occurs on or before the second anniversary of the Closing Date, the premium shall equal 2.0% of the principal being repaid. Thereafter, the premium shall equal 1.0% of the principal being repaid. For the avoidance of doubt, such prepayment premiums are in addition to the End of Term Payment. Additionally, the Company is required to prepay the outstanding loan balance (plus accrued and unpaid interest thereon, any prepayment premiums and any other obligations that are due and payable) upon a sale, divestment or transfer of all or substantially all assets of the Company and its subsidiaries, taken as a whole, or of a material business line of the Company, the acquisition by a person or group of a sufficient number of the Company's equity securities to elect a majority of the members of the Company's board of directors, or the acceleration of the loans by the Agent on behalf of the Lenders following an event of default under the LSA.

The LSA contains customary affirmative and negative covenants, including with respect to notice obligations, limitations on new indebtedness, liens, investments and transactions with affiliates of the Company, restrictions on the payment of dividends, maintenance of collateral and accounts and maintenance of insurance. The LSA does not contain any covenants to maintain a specified level of revenues, profitability, cash flow or cash resources.

The LSA contains customary representations and warranties of the Company, as well as customary events of default, the occurrence of which may accelerate the obligations of the Company, increase the interest rate by a specified default rate and impose other consequences described in the LSA. Such events include among others, failure to make payments when due, breach of covenants, insolvency, a cross-default to other indebtedness, a judgment event of default, the occurrence of a material adverse change to the Company, and delisting of the Company's securities from Nasdaq.

Effects of inflation and interest rates

The current inflationary and interest rate environment could have a negative impact on our results of operations, cash flows and overall financial condition. The widespread use of tariffs may have an inflationary effect on the prices of goods and services, including those that we utilize in the production of our products and delivery of our services. As a result, due to tariffs and other macroeconomic factors, we may experience inflationary pressures on significant cost categories including labor, materials and freight. We continue to monitor the impact of inflation on these costs in order to minimize its effects through productivity improvements and cost reductions. There can be no assurance, however, that our

operating results will not be affected by inflation in the future. In addition, inflation and increased interest rates (or the impact on the broader macroeconomic environment resulting from the foregoing) may decrease demand for our Growth Direct systems, as our customers may face economic uncertainty as a result. A decrease in demand for our products or increases in our costs, as well as any steps we may take to mitigate changes, could impact our overall growth. However, the related financial impact cannot be reasonably estimated at this time.

Factors affecting our performance

We believe that our financial performance has been, and in the foreseeable future will continue to be, primarily driven by multiple factors as described below, each of which presents growth opportunities for our business. Our ability to successfully address these challenges is subject to various risks and uncertainties, including those described under the section titled “Risk Factors” to this Quarterly Report on Form 10-Q.

New customer adoption of the Growth Direct platform

Our financial performance has largely been driven by, and a key factor to our future success will be, our ability to increase the global adoption of our Growth Direct platform in our key markets. We plan to drive global customer adoption through both direct and indirect sales and marketing organizations in North America, Europe, and the Asia-Pacific region.

We are focused on enhancing customer engagement and experience and improving the efficiency and effectiveness of our sales team. We are making targeted investments in these organizations and expect to continue to do so in the future. Examples of these investments include new tools and training for the sales organization, targeted marketing initiatives, expanding lead generation capabilities and hosting Growth Direct demonstrations and other customer-focused events.

Expansion within our existing customer base

There is an opportunity to broaden adoption and increase utilization of our Growth Direct platform throughout our existing customers' organizations as these customers purchase more systems. These additional systems will allow our existing customers to convert more of their test volume at existing locations, to support multiple locations, to meet redundancy requirements, or to increase capacity. As of June 30, 2025, approximately 40% of our customers have purchased Growth Direct systems for multiple sites, and approximately 60% of our customers have purchased multiple Growth Direct systems. Increased utilization amongst existing customers can also occur as customers advance through the Growth Direct platform adoption cycle, from early validation of initial applications to validation and conversion of multiple applications on the Growth Direct platform, or as the result of new product approvals or increases in their manufacturing volumes for existing products.

Innovating and launching new products on the Growth Direct platform

We believe the depth, scalability and robust capabilities of our Growth Direct platform allow us to address key opportunities and challenges facing MQC testing in the pharmaceutical industry. As an innovative leader in automated MQC testing, we intend to invest in further enhancements in our existing Growth Direct platform as well as end-to-end workflow solutions in our core market. We plan to further invest in research and development to support the expansion of our Growth Direct platform through development and launch of new applications to capture greater share of customer testing volume, new product formats to broaden our ability to serve different market segments and launch of new products and technologies to address adjacent segments of the overall MQC workflow. We plan to continue to hire employees with the necessary scientific and technical backgrounds to enhance our existing products and help us introduce new products to market. We expect to incur additional research and development expenses as a result. By expanding and continuously enhancing the Growth Direct platform, we believe we can drive incremental revenue from existing clients as well as broaden the appeal of our solutions to potential new customers.

We made the Growth Direct Rapid Sterility application available for commercial sale and placed the first Rapid Sterility system at one of our existing customers in the second quarter of 2024. We plan to continue efforts to scale our manufacturing capabilities for the Rapid Sterility application.

Revenue mix

Our revenue is derived from sales of our Growth Direct systems, our LIMS connection and RMBNucleus Mold Alarm software, proprietary consumables, and services. Growth Direct system revenue involves a capital selling process and tends to be somewhat concentrated within a relatively small (but varied) group of customers each year, so it is subject to variability from quarter to quarter.

Gross margin improvement

The majority of our customers are large, global pharmaceutical manufacturers and CDMOs. In order to meet the expectations of our customers, we have made significant investments to build infrastructure and develop capabilities in areas such as procurement, manufacturing, distribution, quality and after-sales service. Since the third quarter of 2024, when we achieved positive gross margins for the first time in our company's history, we have maintained positive gross margins each quarter. Maintaining these positive gross margins in future periods will depend on our ability to execute on our business objectives, including generating sufficient revenues to cover the costs of producing and delivering our products and services. In order to further grow our gross margins, we are actively targeting numerous areas including:

- Reducing instrument and consumable product costs (materials and labor) through activities including strategic sourcing and product redesign;
- Increasing product manufacturing efficiency through activities including increased throughput on our automated consumables manufacturing line and manufacturing process optimization;
- Increasing productivity and efficiency in our service organization;
- Increasing achieved pricing of our existing products and services; and
- Introducing and expanding new, higher margin products and services.

At the same time, we also expect future revenues from both products and services to grow at rates significantly higher than the related costs to provide and support those products and services. As a result, we also expect increasing revenues from both products and services to contribute significantly to future gross margin expansion. While we expect gross margins to continue to trend positively in the future, expansion in gross margins in future periods may not be linear and may be subject to variability from period to period.

Key business metrics

We regularly review the following key business metrics to evaluate our business, measure our performance, identify trends affecting our business, formulate financial projections and make strategic decisions. We believe that the following metrics are representative of our current business; however, we anticipate these may change or be substituted for additional or different metrics as our business grows and evolves.

	Three Months Ended June 30,		Change	
	2025	2024	Amount	%
	(dollars in thousands)			
Systems placed:				
Systems placed in period	4	5	(1)	(20.0)%
Cumulative systems placed	169	149	20	13.4 %
Systems validated:				
Systems validated in period	2	5	-3	(60.0)%
Cumulative systems validated	148	129	19	14.7 %
Product and service revenue — total	$ 7,262	$ 6,618	$ 644	9.7 %
Product and service revenue — recurring	$ 4,419	$ 3,844	$ 575	15.0 %

	Six Months Ended June 30,		Change	
	2025	2024	Amount	%
	(dollars in thousands)			
Systems placed:				
Systems placed in period	7	8	(1)	(12.5)%
Cumulative systems placed	169	149	20	13.4 %
Systems validated:				
Systems validated in period	11	8	3	37.5 %
Cumulative systems validated	148	129	19	14.7 %
Product and service revenue — total	$ 14,467	$ 12,229	$ 2,238	18.3 %
Product and service revenue — recurring	$ 8,388	$ 7,588	$ 800	10.5 %

Growth Direct system placements

We consider a Growth Direct system to be "placed" upon transfer of control of the system to the customer, at which point the revenue for that system is recognized. We regularly review the number of Growth Direct systems placed and cumulative Growth Direct system placements in each period as a leading indicator of our business performance. Our revenue has historically been driven by, and in the future will continue to be impacted by, the rate of Growth Direct system placements as a reflection of our success selling and delivering our products. We expect our Growth Direct system placements to continue to grow over time as we increase penetration in our existing markets and expand into new markets.

The number of Growth Direct system placements and rate of growth varies from period-to-period due to factors including, but not limited to, Growth Direct system order volume and timing as well as access to customer sites (including the timing of customer site construction activities). As a result, we expect to experience continued variability in our period-to-period number of Growth Direct system placements due to the aforementioned factors.

Validated systems

We regularly review the number of Growth Direct systems validated and cumulative Growth Direct systems validated in each period as indicators of our business performance. Management focuses on validated Growth Direct systems as a leading indicator of likely future recurring revenue as well as a reflection of our success supporting our customers in validating placed systems. We expect our validated Growth Direct systems to continue to grow over time as we increase our base of cumulative systems placed and then install and validate those systems. After a Growth Direct system is placed with a customer and installed, we work with the customer to validate the system, which typically has taken anywhere from three to nine months. Once a validation has been completed, we generally expect our customers to transition from their legacy manual method to our automated method and begin regular utilization of consumables over a period of up to three months after the validation is completed. However, the timeline for such transition may be longer depending on the specific circumstances of each individual customer. In addition, in exceptional cases, we have reacquired Growth Direct systems from customers that were previously placed and, in some cases, previously validated. Our metrics showing cumulative systems placed and cumulative systems validated are not reduced to reflect these reacquired systems.

The number of validated Growth Direct systems and rate of growth varies from period-to-period due to factors including, but not limited to, Growth Direct system placement volume and timing, whether customers have previously validated Growth Direct systems within their site or global network, access to customer sites, customer site readiness, availability of required customer personnel and the time to install and validate each individual system. As a result, we expect to experience continued fluctuations in our period-to-period number of Growth Direct systems validated due to the aforementioned factors.

Recurring revenue

We regularly assess trends relating to our recurring revenue, which is the revenue from consumables and service contracts, based on our product offerings, our customer base and our understanding of how our customers use our products. Recurring revenue was 60.9% and 58.1% of our total revenue for the three months ended June 30, 2025 and 2024, respectively. Recurring revenue was 58.0% and 62.0% for the six months ended June 30, 2025 and 2024, respectively. Our

recurring revenue as a percentage of the total product and service revenue will generally vary based upon the number of Growth Direct systems placed and the cumulative number of validated systems in the period, as well as other variables such as the volume of tests being conducted and the test application(s) being used on customers' Growth Direct systems.

Components of results of operations

Revenue

We generate revenue from sales of our Growth Direct system (including our LIMS connection and RMBNucleus Mold Alarm software), consumables, validation services, service contracts, and field service. We have historically primarily sold our products and services through direct sales representatives. Our sales arrangements are noncancellable and nonrefundable after ownership passes to the customer.

	Three Months Ended June 30, 2025	Percentage of Total Revenue	Three Months Ended June 30, 2024	Percentage of Total Revenue
	(in thousands)		(in thousands)	
Product revenue	$ 4,802	66.1 %	$ 4,537	68.6 %
Service revenue	2,460	33.9 %	2,081	31.4 %
Total revenue	$ 7,262	100.0 %	$ 6,618	100.0 %

	Six Months Ended June 30, 2025	Percentage of total revenue	Six Months Ended June 30, 2024	Percentage of total revenue
	(in thousands)		(in thousands)	
Product revenue	$ 8,903	61.5 %	$ 8,250	67.5 %
Service revenue	5,564	38.5 %	3,979	32.5 %
Total revenue	$ 14,467	100.0 %	$ 12,229	100.0 %

Product revenue

We derive product revenue primarily from the sale of our Growth Direct systems and related consumables as well as our LIMS connection software, which the majority of our customers purchase. As of June 30, 2025, we had placed 169 Growth Direct systems with approximately 50 customers globally, including approximately 70% of the top twenty pharmaceutical companies as measured by revenue, and the manufacturers of 16% of globally approved cell and gene therapies, including manufacturers of 86% of approved gene-modified autologous CAR-T cell therapies.

Growth Direct systems

Growth Direct system revenue is a non-recurring product revenue stream that we recognize as revenue upon transfer of control of the system to the customer. The Growth Direct system is fully functional for use by the customer upon delivery. Although we do not require our customers to use our installation and validation services, our customers typically elect to purchase those services from us. As such, transfer of control occurs at shipment or delivery depending on contractual terms.

We expect our Growth Direct system revenue to continue to grow over time as we increase system placements into our existing customers and markets and expand into new customers, markets and products.

Consumables

Our consumable revenue is a recurring product revenue stream comprised of proprietary consumables to capture test samples for analysis on the Growth Direct system. These proprietary consumables are an Environmental Monitoring consumable, a Water/Bioburden consumable and our Sterility consumable that we recently made available for commercial sale. These proprietary consumables support the growth-based compendial method for MQC testing mandated by global regulators and provide results that are comparable to traditional consumables. Our consumables are designed with features that enable automation on the Growth Direct system, with bar coding for tracking and data integrity, and physical characteristics for robotic handling, to support vision detection and prevent counterfeiting.

We expect consumable revenue to increase in future periods as our base of cumulative validated Growth Direct systems grows and those systems enter routine use and utilize our consumables on a recurring, ongoing basis. In addition, greater utilization of our systems by our customers, as well as adoption by customers of new product offerings, including sterility-related consumables, is also expected to increase our consumables revenue.

Software

Our LIMS connection software is a non-recurring product revenue stream. Although optional, the majority of our customers elect to purchase this software, which allows Growth Direct systems to export result reports and securely link to a customer's two-way LIMS connection software to completely eliminate manual data entry and drive productivity.

Our RMBNucleus Mold Alarm software is a recurring or non-recurring product revenue stream depending on the type of software license purchased. This software allows investigations to begin within one day with automated alerts triggered by detection of molds during the early stages of incubation.

Service revenue

We derive service revenue from validation services, field service including installations, and service contracts sold to our customers. Other than revenue from service contracts, which is recurring service revenue, revenue from all other field services as well as validation services are non-recurring service revenue streams.

We offer our customers validation services (including related documentation) that enable them to replace their existing manual testing method and utilize their Growth Direct systems in compliance with relevant MQC regulations. We also offer validation services in connection with our LIMS connection software and RMBNucleus Mold Alarm software. Validation services are recognized as revenue over time as these services are provided to the customer.

We offer our customers service contracts that can be purchased after the expiration of the one-year assurance warranty that all of our customers receive with the purchase of a Growth Direct system. Under these contracts, they are entitled to receive phone support, emergency on-site maintenance support and preventative maintenance visits. These service contracts generally have fixed fees and a term of one year. We recognize revenue from the sale of service contracts over time as these services are provided over the respective contract term.

We also offer our customers field service which primarily consists of services provided by our field service engineers to install Growth Direct systems at customer sites, perform one-time paid field service, and provide preventative maintenance service during the one-year assurance warranty period. We recognize revenue from installation services, one-time paid field service, and preventative maintenance service during the assurance warranty period over time as these services are provided to the customer.

We expect service revenue to increase in future periods as the number of placed and validated Growth Direct systems grows and we are able to generate increasing non-recurring revenue from validation services and field service for newly placed systems and increasing recurring revenue from service contracts for validated systems.

Costs and operating expenses

In July 2024, we completed an enterprise-wide review of opportunities to realize operational efficiencies. Based on the results of this review, we implemented in August 2024 certain actions to reduce costs and expenses across the business (collectively, the "Operational Efficiency Program"). As part of our Operational Efficiency Program, we implemented actions to reduce employee-related expenses and certain other non-employee related costs. The reduced headcount and lower labor costs reflected in costs of revenue and the operating expense categories below was the result of the Operational Efficiency Program announced in August 2024. Our headcount at the end of the second quarter of 2025 was lower than our headcount at the end of the second quarter of 2024.

Costs of revenue

Cost of product revenue primarily consists of costs for raw material parts and associated freight, shipping and handling costs, salaries and other personnel costs including stock-based compensation expense, contract manufacturer costs, scrap, warranty cost, inventory reserves, royalties, depreciation and amortization expense, allocated information

technology and facility-related costs, overhead and other costs related to those sales recognized as product revenue in the period.

Cost of service revenue primarily consists of salaries and other personnel costs including stock-based compensation expense, travel costs, materials consumed when performing installations, validations and other services, allocated information technology and facility-related costs, costs associated with training, and other expenses related to service revenue recognized in the period.

For future periods, we expect our costs of revenue to increase or decrease commensurate with product and service volumes. Such costs may be further impacted by our ongoing efforts to reduce product costs and increase manufacturing productivity and efficiencies as well as service productivity. In addition, our product costs may be adversely impacted by recently enacted and potential future tariffs by the U.S. and other jurisdictions in which we conduct business. At this time, while we do not expect such impacts on our product costs to rise to levels that are material to our results of operations in the near-term, future changes in policies and other macroeconomic conditions could materially and adversely affect our operating expenses and results of operations.

Research and development

Research and development expenses consist primarily of costs incurred for our research activities, product development, hardware and software engineering and consultant services and other costs associated with our technology Growth Direct platform and products, which include:

- employee-related expenses, including costs for salaries, bonuses and other personnel costs including stock-based compensation expense, for employees engaged in research and development functions;
- the cost of developing, maintaining and improving new and existing product designs;
- the cost of hardware and software engineering;
- research materials and supplies;
- external costs of outside consultants engaged to conduct research and development associated with our technology and products; and
- allocated information technology and facility-related costs, which include headcount-related costs for those functions as well as expenses for information technology systems and services, software, rent, facilities maintenance, and insurance as well as related depreciation and amortization.

Our research and development costs are expensed as incurred. We believe that our continued investment in research and development is essential to our long-term competitive position. For future periods, we expect our research and development expenses to increase or decrease commensurate with the size, scope and complexity of our research and development activities.

Sales and marketing

Sales and marketing expenses consist primarily of salaries, commissions, benefits and other personnel costs including stock-based compensation expense as well as costs relating to travel, consulting, public relations and allocated information technology and facility-related costs for our employees engaged in sales and marketing activities. For future periods, we expect sales and marketing expenses to increase or decrease as and when we make investments into our sales and marketing organization, including in the number of sales and marketing personnel and our continued efforts to expand our geographic reach and capabilities, broaden our customer base and introduce new products.

General and administrative

General and administrative expenses consist primarily of salaries, bonuses and other personnel costs including stock-based compensation expense for our executive, finance, legal, human resources and general management employees, as well as director and officer insurance costs and professional fees for legal, patent, accounting, audit, investor relations, recruiting, consulting, regulatory, compliance, board of directors' fees and other services. General and administrative

expenses also include direct and allocated information technology and facility-related costs. For future periods, we expect these expenses to increase or decrease, as applicable, commensurate with the size, scope and complexity of our general and administrative functions.

Other income (expense)

Interest income, net

Interest income, net is comprised primarily of interest income from investments.

Other expense, net

Other expense, net, primarily consists of other miscellaneous income and expense unrelated to our core operations.

Income tax expense

We generated significant taxable losses during each of the three and six months ended June 30, 2025 and 2024 and, therefore, have not recorded any U.S. federal or state income tax expense during those periods. However, we did record an immaterial amount of foreign income tax expense during each of those periods.

Results of operations

Comparison of the three months ended June 30, 2025 and 2024

The following table summarizes our results of operations for the three months ended June 30, 2025 and 2024:

	Three Months Ended June 30,		Change	
	2025	2024	Amount	%
	(in thousands)			
Revenue:				
Product revenue	$ 4,802	$ 4,537	$ 265	5.8 %
Service revenue	2,460	2,081	379	18.2 %
Total revenue	7,262	6,618	644	9.7 %
Costs and operating expenses:				
Cost of product revenue	5,315	4,917	398	8.1 %
Cost of service revenue	1,672	1,890	(218)	(11.5)%
Research and development	3,230	3,744	(514)	(13.7)%
Sales and marketing	3,114	3,627	(513)	(14.1)%
General and administrative	6,079	5,818	261	4.5 %
Total costs and operating expenses	19,410	19,996	(586)	(2.9)%
Loss from operations	(12,148)	(13,378)	1,230	(9.2)%
Other income (expense):				
Interest income, net	351	838	(487)	(58.1)%
Other expense, net	(50)	(23)	(27)	117.4 %
Total other income (expense), net	301	815	(514)	(63.1)%
Loss before income taxes	(11,847)	(12,563)	716	(5.7)%
Income tax expense	11	15	(4)	(26.7)%
Net loss	$ (11,858)	$ (12,578)	$ 720	(5.7)%

Revenue

Product revenue increased by $0.3 million, or 5.8%, with the increase attributable to higher consumable volumes and other system-related revenue partially offset by one fewer system placement in the quarter.

Service revenue increased by $0.4 million, or 18.2%. The increase in service revenue was primarily due to higher revenue related to validations as well as service contract revenue due to an increase in the cumulative number of Growth Direct systems validated and under such contracts.

Costs and operating expenses

Costs of revenue

Cost of product revenue increased by $0.4 million, or 8.1%. The increase was driven by higher consumables sales volume (net of the impact of one fewer system placement) as well as higher inventory reserves in the current year period.

Cost of service revenue decreased by $0.2 million, or 11.5%. The decrease was primarily attributable to lower service headcount and headcount-related costs.

Research and development

	Three Months Ended June 30,		Change	
	2025	2024	Amount	%
	(dollars in thousands)			
Research and development	$ 3,230	$ 3,744	$ (514)	(13.7)%
Percentage of total revenue	44.5 %	56.6 %		

Research and development expenses decreased by $0.5 million, or 13.7%. This decrease was primarily driven by engineering and development work related to our sterility application incurred during the prior year period that did not recur in the current year period.

Sales and marketing

	Three Months Ended June 30,		Change	
	2025	2024	Amount	%
	(dollars in thousands)			
Sales and marketing	$ 3,114	$ 3,627	$ (513)	(14.1)%
Percentage of total revenue	42.9 %	54.8 %		

Sales and marketing expenses decreased by $0.5 million, or 14.1%. This decrease was primarily driven by lower headcount-related and third-party consulting costs.

General and administrative

	Three Months Ended June 30,		Change	
	2025	2024	Amount	%
	(dollars in thousands)			
General and administrative	$ 6,079	$ 5,818	$ 261	4.5 %
Percentage of total revenue	83.7 %	87.9 %		

General and administrative increased by $0.3 million, or 4.5%. The increase was driven primarily by higher non-cash stock compensation expense. This increase was offset by lower public company operating costs.

Other income (expense)

Interest income

Interest income, which is related to interest earned on our investments, decreased $0.5 million, or 58.1%, primarily as a result of lower investment balances during the three months ended June 30, 2025.

Other expense

Other expense, which is comprised of miscellaneous expenses unrelated to our core business, was flat for each of the three months ended June 30, 2025 and 2024.

Income tax expense

Income tax expense was less than $0.1 million for each of the three months ended June 30, 2025 and 2024. The expense in each period was attributable to income tax provisions related to our foreign subsidiaries.

Comparison of the six months ended June 30, 2025 and 2024

The following table summarizes our results of operations for the six months ended June 30, 2025 and 2024:

	Six Months Ended June 30,		Change	
	2025	2024	Amount	%
	(dollars in thousands)			
Revenue:				
Product revenue	$ 8,903	$ 8,250	$ 653	7.9 %
Service revenue	5,564	3,979	1,585	39.8 %
Total revenue	14,467	12,229	2,238	18.3 %
Costs and operating expenses:				
Cost of product revenue	10,344	10,090	254	2.5 %
Cost of service revenue	3,444	3,851	(407)	(10.6)%
Research and development	6,854	7,586	(732)	(9.6)%
Sales and marketing	5,865	6,908	(1,043)	(15.1)%
General and administrative	11,769	11,445	324	2.8 %
Total costs and operating expenses	38,276	39,880	(1,604)	(4.0)%
Loss from operations	(23,809)	(27,651)	3,842	(13.9)%
Other income (expense):				
Interest income, net	817	1,821	(1,004)	(55.1)%
Other (expense) income, net	(111)	(52)	(59)	113.5 %
Total other income (expense), net	706	1,769	(1,063)	(60.1)%
Loss before income taxes	(23,103)	(25,882)	2,779	(10.7)%
Income tax expense	18	18	—	— %
Net loss	$ (23,121)	$ (25,900)	$ 2,779	(10.7)%

Revenue

Product revenue increased by $0.7 million, or 7.9%. The increase was driven primarily by a higher volume of consumables as well as an increase in the average selling price of our systems. Higher system-related revenue, particularly from software sales, also contributed to the increase. The increase from these factors was partially offset by one fewer system placement during the six months ended June 30, 2025 compared to the same period in 2024.

Service revenue increased by $1.6 million, or 39.8%. The increase in service revenue was primarily driven by increases in revenue related to validations and installations (including higher one-time services unrelated to new system

sales) as well as higher service contract revenue as a result of an increase in the cumulative number of Growth Direct systems validated and under such contracts.

Costs and operating expenses

Costs of revenue

Cost of product revenue increased $0.3 million, or 2.5%. The increase was driven by higher consumables sales volume (net of the impact of one fewer system placement) as well as higher inventory reserves in the current year period

Cost of service revenue decreased by $0.4 million, or 10.6%. This decrease was primarily attributable to lower headcount and headcount-related costs due in part to productivity improvements.

Research and development

	Six Months Ended June 30,		Change	
	2025	2024	Amount	%
	(dollars in thousands)			
Research and development	$ 6,854	$ 7,586	$ (732)	(9.6)%
Percentage of total revenue	47.4 %	62.0 %		

Research and development expenses decreased by $0.7 million, or 9.6%. The decrease was primarily driven by lower headcount and headcount-related costs as well as the timing of spending related to new product development activities.

Sales and marketing

	Six Months Ended June 30,		Change	
	2025	2024	Amount	%
	(dollars in thousands)			
Sales and marketing	$ 5,865	$ 6,908	$ (1,043)	(15.1)%
Percentage of total revenue	40.5 %	56.5 %		

Sales and marketing expenses decreased by $1.0 million, or 15.1%. This decrease was primarily due to lower headcount-related and third-party consulting costs.

General and administrative

	Six Months Ended June 30,		Change	
	2025	2024	Amount	%
	(dollars in thousands)			
General and administrative	$ 11,769	$ 11,445	$ 324	2.8 %
Percentage of total revenue	81.4 %	93.6 %		

General and administrative expenses increased by $0.3 million, or 2.8%. This increase was primarily attributable to higher non-cash stock compensation expense, partially offset by a reduction in public company operating expenses.

Other income (expense)

Interest income

Interest income decreased $1.0 million, or 55.1% due to lower investment balances.

Other expense

Other expense, which is comprised of miscellaneous expenses unrelated to our core business, was flat for each of the six months ended June 30, 2025 and 2024.

Income tax expense (benefit)

Income tax expense was less than $0.1 million for each of the six months ended June 30, 2025 and 2024. The expense in each period was attributable to income tax provisions related to our foreign subsidiaries.

Liquidity and capital resources

Since our inception, we have incurred operating losses. To date, we have funded our operations primarily through proceeds from sales of redeemable convertible preferred stock, borrowings under loan agreements, revenue from sales of our products and services, and the proceeds from our IPO. In addition, in August 2025, we entered into the LSA, providing for up to $45.0 million of senior secured term loans available to us in multiple tranches, including an initial $20.0 million advance funded in August 2025. The LSA is described in more detail in Note 16 to our unaudited condensed consolidated financial statements contained in Part I, Item I of this Quarterly Report on Form 10-Q.

We believe that our cash, cash equivalents and investments, together with our initial drawdown of $20.0 million under the LSA, will enable us to fund our operating expenses and capital expenditure requirements for at least twelve months following the date the condensed consolidated financial statements contained in this Quarterly Report on Form 10-Q for the quarter ended June 30, 2025 were issued.

As of June 30, 2025, we had the following cash and investment-related assets on our condensed consolidated balance sheet (in thousands):

	June 30, 2025
Cash and cash equivalents	$ 18,333
Short-term investments	12,922
Restricted cash	284
Total	$ 31,539

Contractual obligations and commitments

In October 2013, we entered into an operating lease for office and manufacturing space in Lowell, Massachusetts. In March 2022, we amended the lease to increase the amount of facility space subject to the lease and extend the expiration of the lease from July 2026 to July 2029. The terms of the amendment include options for a one-time, five-year extension of the lease and early termination of the lease in July 2026 (subject to an early termination fee). Monthly rent payments are fixed and future minimum lease payments under the lease (as amended) are $2.7 million as of June 30, 2025, including $0.6 million in short-term obligations.

In June 2021, we entered into a sublease agreement for our Lexington, Massachusetts headquarters, which expires in June 2029. The sublease includes an option to terminate the sublease in July 2026, subject to an early termination fee. Monthly rent payments are fixed and future minimum lease payments over the term of the sublease are $3.0 million as of June 30, 2025, including $0.7 million in short-term obligations. Concurrent with entering into the sublease agreement, we executed an option agreement with the property owner which provides us the option to enter into a new direct lease for our Lexington, Massachusetts facility for an additional five years following expiration of the sublease.

Cash flows

The following table summarizes our sources and uses of cash for each of the periods presented (in thousands):

	Six Months Ended June 30,	
	2025	2024
Net cash used in operating activities	$ (18,765)	$ (25,644)
Net cash provided by investing activities	20,025	38,332
Net cash provided by financing activities	81	148
Net increase in cash and cash equivalents and restricted cash	$ 1,341	$ 12,836

Operating activities

During the six months ended June 30, 2025, net cash used in operating activities was $18.8 million, a decrease of $6.9 million compared to the six months ended June 30, 2024. The lower use of net cash was primarily a result of lower personnel-related costs due to reduced headcount as well as the volume and timing of payments to vendors and increased customer cash receipts. This decrease was partially offset by increased inventory purchases.

Investing activities

During the six months ended June 30, 2025, net cash provided by investing activities was $20.0 million, a decrease of $18.3 million compared to the six months ended June 30, 2024. Higher investment maturities in the prior-year period coupled with a decline in investment purchases contributed to the reduction in investing activities. Additionally, cash expenditures for property and equipment were lower in the current-year period.

Financing activities

During the six months ended June 30, 2025, net cash provided by financing activities was $0.1 million, a decrease of $0.1 million compared to the six months ended June 30, 2024. The primary driver of this decrease was higher proceeds from stock option exercises, offset by tax withholding on the settlement of vested restricted stock units.

Seasonality

Our revenues vary from quarter to quarter as a result of factors such as our customers' budgetary cycles and extended summer vacation periods that can impact our ability to progress system sales processes, deliver products and provide onsite services to our customers during those periods. We expect this variability to continue for the foreseeable future, which may cause fluctuations in our operating results and financial metrics.

Critical accounting estimates

Our condensed consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States. The preparation of our consolidated financial statements and related disclosures requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, costs and expenses, and the disclosure of contingent assets and liabilities in our consolidated financial statements. Our estimates are based on our historical experience, known trends and events and various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates under different assumptions or conditions.

Our significant accounting policies are described in more detail in Note 2 — Summary of Significant Accounting Policies to our condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q. There have been no significant changes in our critical accounting policies and estimates as compared to the critical accounting policies and estimates disclosed in the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in the 2024 Form 10-K, other than as disclosed in Note 2 — Summary of

Significant Accounting Policies — to our condensed consolidated financial statements appearing elsewhere in this Quarterly Report on Form 10-Q.

Recently issued accounting pronouncements

A description of recently issued accounting pronouncements that may potentially impact our financial position, results of operations or cash flows is disclosed in Note 2 — Summary of Significant Accounting Policies — to our condensed consolidated financial statements appearing elsewhere in this Quarterly Report on Form 10-Q.

Emerging growth company status

The Jumpstart Our Business Startups Act of 2012 (the "JOBS Act"), permits an “emerging growth company” such as us to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies until those standards would otherwise apply to private companies. We have elected to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, we will not be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies, and our financial statements may not be comparable to other public companies that comply with new or revised accounting pronouncements as of public company effective dates. We may choose to early adopt any new or revised accounting standards whenever such early adoption is permitted for private companies.

We are an “emerging growth company,” as defined in the JOBS Act, and may remain an emerging growth company until December 31, 2026. However, if certain events occur prior to such date, including if we become a “large accelerated filer,” our annual gross revenues exceed $1.235 billion or we issue more than $1.0 billion of non-convertible debt in the previous three-year period, we will cease to be an emerging growth company prior to December 31, 2026.

Further, even after we no longer qualify as an emerging growth company, we may still qualify as a “smaller reporting company,” which would allow us to take advantage of many of the same exemptions from disclosure requirements, including reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to market risk in the ordinary course of our business. Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk exposure is primarily a result of fluctuations in interest rates and inflationary pressure. There has been no material change in our exposure to market risks except as disclosed in Part II, Item 1A, "Risk Factors".

Item 4. Controls and Procedures

Limitations on effectiveness of controls and procedures

In designing and evaluating our disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Evaluation of disclosure controls and procedures

Our management, with the participation of our principal executive officer and principal financial officer, evaluated, as of the end of the period covered by this Quarterly Report on Form 10-Q, the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")). Our disclosure controls and procedures are designed to ensure (a) that information required to be disclosed in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms, and (b) that information required to be disclosed

by us in reports filed or submitted under the Exchange Act is accumulated and communicated to our management, including our principal executive officer and principal financial officer to allow timely decisions regarding required disclosures. Based on that evaluation, our principal executive officer and principal financial officer concluded that, as of June 30, 2025, our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the quarter ended June 30, 2025 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II — OTHER INFORMATION

Item 1. Legal Proceedings

From time to time, we may become involved in litigation or other legal proceedings. We are not currently a party to any material litigation or legal proceedings that, in the opinion of our management, are probable to have a material adverse effect on our business. Regardless of outcome, litigation can have an adverse impact on our business, financial condition, results of operations and prospects because of defense and settlement costs, diversion of management resources and other factors.

Item 1A. Risk Factors.

Our business involves significant risks. Stockholders should carefully consider the risks and uncertainties described below and the other information in this Quarterly Report on Form 10-Q. Our business, financial condition, results of operations, or prospects could be materially and adversely affected if any of these risks occurs and, as a result, the market price of our Class A common stock could decline and stockholders could lose all or part of their investment. This Quarterly Report on Form 10-Q also contains forward-looking statements that involve risks and uncertainties. See "Forward-Looking Statements" on page 3. Our actual results could differ materially and adversely from those anticipated in these forward-looking statements as a result of certain important factors, including those set forth below.

The risk factors denoted with a "", if any, are newly added or have been materially updated from our 2024 Form 10-K.*

Risks Related to Our Financial Position and Need for Capital

We have incurred significant losses since inception, we expect to incur losses in the future and we may not be able to achieve and maintain positive cash flow and profitability.

We have incurred significant losses since our inception. For the three months ended June 30, 2025, we incurred a net loss of $11.9 million. As of June 30, 2025, we had an accumulated deficit of $498.4 million. In July 2024, based on our enterprise-wide review of opportunities to realize operational efficiencies, we implemented certain cost-saving actions including a reduction in our workforce, the closure of open and planned positions and reductions in other non-headcount-related expenses across the business (the "Operational Efficiency Program"). However, in future periods, our operating expenses may continue to increase as we grow our business. Since our inception, we have financed our operations primarily from private placements of equity, the incurrence of indebtedness, our initial public offering, and to a lesser extent, revenue derived from our Growth Direct platform and non-commercial contracts. We have devoted substantially all of our resources to the development and commercialization of our Growth Direct platform and to development activities related to advancing and expanding our technological capabilities. While we have a goal of achieving positive cash flow without additional financing, there can be no assurance that we will attain this goal. Our goal to reach positive cash flow is based on our expectations of business performance that are generally consistent with our historical performance, including with respect to revenue and gross margins, which may not be replicated in future periods. Our cash flow goal also depends on our ability to realize additional cost savings that we believe are reasonably achievable, but are not guaranteed. We will need to generate significant additional revenue, significantly improve our gross margin and/or further reduce costs to achieve positive cash flow and profitability, and even if achieved, we cannot be sure that we will sustain positive cash flow and profitability for any substantial period of time. While our goal to achieve positive cash flow is underpinned by our recent and historical performance, such performance is not necessarily indicative of our future results.

Our limited operating history makes it difficult to evaluate our future prospects and the risks and challenges we may encounter.

We launched our current second-generation Growth Direct platform in 2017 for which we are continuing to grow our manufacturing and sales and marketing capabilities. Consequently, predictions about our future success or viability may not be as accurate as they could be if our products had a longer commercial history. While our product and services revenue has continued to increase in recent periods, if our strategy to grow and scale our business is not successful, we may not be able to achieve continued revenue growth. Our limited operating history, evolving business and rapid growth make it difficult to evaluate our future prospects and the risks and challenges we may encounter, and we may not continue to grow at or near historical rates.

In addition, as we seek to innovate in and disrupt the current microbial quality control market, we may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown challenges. We are transitioning to a company capable of supporting commercial manufacturing, sales and marketing at scale in the United States and abroad. We may not be successful in such a transition and, as a result, our business may be adversely affected.

Our business depends on the commercial success of our Growth Direct platform, which may not be achieved or maintained.

Our business is dependent on sales of our Growth Direct systems and related consumables and services. Our ability to achieve and maintain commercial market acceptance of our Growth Direct platform will depend on a number of factors, including:

- significant acceptance by drug manufacturers of automated microbial quality control ("MQC") testing;
- our ability to increase awareness of the capabilities of automated MQC testing and our technology and solutions;
- our customers' willingness to adopt new technologies and workflows;
- our ability to integrate our platform with our customers' existing workflows, including related to regulatory validation processes;
- whether our platform reliably provides advantages over the conventional, manual method of MQC testing and other automated technologies and is perceived by customers to be cost effective;
- the continued growth of the pharmaceutical and biopharmaceutical industry, in particular biologics and cell and gene therapies;
- our ability to execute on our business strategy, including continuing to expand in the market for cell and gene therapies;
- the rate of adoption of our platform and solutions by drug manufacturers;
- prices we charge for our systems and consumables;
- the relative reliability and robustness of our platform as a whole and the components of our platform;
- our ability to develop new products for existing customers and to expand our capabilities within the MQC testing workflow;
- our ability to expand the use of our platform with existing customers;
- other competitive automated MQC testing platforms; and
- the impact of our investments in product innovation and commercial growth.

We cannot assure our stockholders that we will be successful in addressing each of these criteria or other criteria that might affect the market acceptance of our products. If we are unsuccessful in achieving and maintaining commercial market acceptance of our Growth Direct platform, our business, financial condition, results of operations and prospects could be adversely affected.

Our operating results have fluctuated significantly in the past and will fluctuate significantly in the future, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations.

Our quarterly and annual operating results have fluctuated significantly in the past and may fluctuate significantly in the future, which makes it difficult for us to predict our future operating results. For example, we have experienced positive trends in our gross margins, improving from (3)% to 4% for the three months ended June 30, 2024 and June 30, 2025, respectively, and improving from (14)% to 5% for the six months ended June 30, 2024 and June 30, 2025,

respectively. Expansion in gross margins in future periods may not be linear and may be subject to variability from period to period. Additionally, revenue growth and operating expenses may also be subject to variability from period to period. These fluctuations may occur due to a variety of factors, many of which are outside of our control, including, but not limited to:

- our customers' tendency to purchase our Growth Direct system, including multiple systems, in a single transaction, resulting in significant variations in sales of our systems over time;
- the level of demand for our platform and solutions, which may vary significantly;
- the length of time of the sales cycle for purchases of our systems;
- seasonality in our business due to our customers' budgetary cycles and time off during summer vacation and end-of-year periods;
- lead time needed for validation prior to our customers' using and purchasing our consumables;
- changes in demand for our consumables;
- the timing and cost of, and level of investment in, technology development and commercialization activities, which may change from time to time;
- the start, completion, and output of manufacturing runs;
- the costs of manufacturing and shipping our products or of providing services to our customers, which may impact our operating gross margin in any given period;
- system repairs or replacements that may impact our customers' confidence in us and our products and our reputation in the market;
- the relative reliability and robustness of our platform;
- the introduction of new products or product enhancements by us or others in our industry;
- expenditures that we may incur to acquire, develop or commercialize additional products and technologies;
- expenditures involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims;
- future accounting pronouncements or changes in our accounting policies;
- the ability of our sales organization to design and execute effective sales processes;
- our implementation of cost reduction efforts, and the resulting costs and savings related to these actions; and
- general market conditions and other factors, including factors, such as inflation and tariffs, unrelated to our operating performance or the operating performance of our competitors.

The effect of any single factor, or the cumulative effects of a combination of factors, could result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful. Investors should not rely on our past results as an indication of our future performance. We may continue to experience fluctuations in our operating results as a result of these factors.

We have in the past and may in the future fail to meet our publicly announced guidance or other expectations about our business and future operating results, which could adversely affect our business, reputation and financial results and cause our stock price to decline.

From time to time, we announce earnings guidance and other expectations regarding the future performance of our business in our quarterly and annual earnings conference calls, quarterly and annual earnings releases, or otherwise, that represents our management's estimates as of the date of such disclosure. This guidance includes forward-looking

statements based on projections prepared by our management. Projections are based upon a number of assumptions and estimates that are based on information known when they are issued, and, while presented with numerical specificity, are inherently subject to significant business, economic, and competitive uncertainties and contingencies relating to our business, many of which are beyond our control and are based upon specific assumptions with respect to future business decisions, some of which will change. It can be expected that some or all of the assumptions underlying any guidance furnished by us will not materialize or will vary significantly from actual results. From time to time, we provide possible outcomes as high and low ranges, but these are not intended to imply that actual results could not fall outside of the suggested ranges.

Our actual business results may vary significantly from such guidance due to a number of factors, many of which are outside of our control, including our customers' demand for our Growth Direct systems, the length of the sales cycle for purchases of our systems, customer site readiness and the lead time needed for validation of our systems prior to customers using and purchasing our consumables, the costs of manufacturing and shipping our products or of providing services to our customers, as well as the impact of global economic uncertainty and financial market conditions, such as recently imposed and potential future tariffs, geopolitical events, such as conflicts in Ukraine and the Middle East, rising inflation, rising interest rates, and public health crises, all of which have in the past and may in the future adversely affect our business and operating results. For example, guidance that we provide is based on system purchase order commitments that we have in hand or expect to receive in the future, which may not be a reliable indicator. We recognize revenue upon the delivery of our systems to customers, at which point we also classify such systems as placed. Delivery of our systems to customers is dependent on a number of factors, many of which are beyond our control, including our customers' plans and circumstances with respect to their manufacturing capabilities, such as the timing of construction activities. If our systems are not delivered on the timelines that we expect or at all, our expectations with respect to the recognition of revenue and number of systems placed may prove to be incorrect. Furthermore, if we make downward revisions of our previously announced guidance, or if our publicly announced guidance of future operating results fails to meet expectations of securities analysts, investors, or other interested parties, we may experience adverse effects on our business and reputation and the price of our common stock could decline.

Guidance is necessarily speculative in nature, and it can be expected that some or all of the assumptions underlying the guidance furnished by us will not materialize or will vary significantly from actual results. Accordingly, our guidance is only an estimate of what management believes is realizable as of the date of such disclosure. Actual results may vary from our guidance and the variations may be material. Investors are urged to exercise caution when using our guidance in making an investment decision regarding our common stock. Any failure to successfully implement our business strategy or the occurrence of any of the events or circumstances set forth in this Risk Factors section in this Quarterly Report on Form 10-Q could result in the actual operating results being different from our guidance, and the differences may be adverse and material.

If we cannot maintain the level of sales of our Growth Direct systems or the sales of our consumables and services to existing customers declines, our future operating results would be adversely affected.

Many of our customers purchase multiple Growth Direct systems at the same time and we expect them to use these systems for many years before needing to purchase new systems. Our ability to generate revenue depends on our ability to sell our Growth Direct system to new customers or expand the use of our system by existing customers. Our current commercial strategy includes targeting sales to customers that are receptive to entering into multi-system deals with us. As a result, in the near term, we have observed and we continue to expect that a significant portion of our revenue to primarily be generated from a small number of different customers each year. We also rely on consumables and service contracts as a source of recurring revenue from our existing customers. These consumables and service contracts are purchased on an as-needed basis and, as a result, revenue from these sources may be subject to change, as customers' purchasing practices and policies change or their demand for our consumables and service contracts change. For example, in the past, we have experienced occasions in which customers' facilities in which our Growth Direct systems were used have been closed or sold, which resulted in the reduction, suspension, or cessation of purchases of consumables at such sites. If we are unable to sell our Growth Direct system to new customers, if our existing customers do not expand their use of our systems, or if our existing customers decide to purchase fewer of our consumables and service contracts or terminate their relationships with us, our revenue could significantly decrease, which would have an adverse effect on our financial condition and results of operations and could adversely impact our ability to execute on our growth strategy.

Our existing and any future indebtedness could adversely affect our ability to operate our business.

In August 2025, we entered into a Loan and Security Agreement, or the LSA, with the lenders party thereto, or the Lenders, and Trinity Capital Inc., as administrative agent and collateral agent, or the Agent. The LSA provides for up to $45.0 million of senior secured term loans, or the Term Loan, available to us in multiple tranches. The availability of future tranches is subject to certain commercial and operational milestones and other conditions set forth in the LSA and, therefore, there can be no guarantee that we will be able to access any future tranches. The Term Loan will mature on the 60-month anniversary of the closing date. Our obligations under the LSA are secured, subject to customary permitted liens and other agreed-upon exceptions, by a first-priority perfected security interest in all of our tangible and intangible assets, including our intellectual property.

The LSA contains customary affirmative and negative covenants that could prevent us from taking certain actions without the consent of the Lenders. These covenants may limit our flexibility in operating our business and our ability to take actions that might be advantageous to us and our stockholders. Affirmative covenants include, among others, reporting covenants, notice obligations, maintenance of collateral accounts and maintenance of insurance. Negative covenants include, among others: restrictions on disposing our business, assets or intellectual property; incurring additional indebtedness; engaging in mergers or acquisitions; paying dividends or making other distributions; making investments; and creating other liens on our assets, in each case subject to customary exceptions.

The LSA also contains customary events of default, including the failure to make payments when due or comply with other covenants therein. We intend to satisfy our current and future debt service obligations with our then-existing cash and cash equivalents. However, we may not have sufficient funds, and may be unable to arrange for additional financing, to pay the amounts due under LSA or any other debt instruments. Upon the occurrence and continuance of an event of default, the Lenders may accelerate all of our repayment obligations and take control of our pledged assets, potentially requiring us to renegotiate our agreement on terms less favorable to us or to immediately cease operations. Any declaration by the Lenders of an event of default would therefore significantly harm our business and prospects and could cause the price of our common stock to decline.

If we raise any additional debt financing, the terms of such additional debt could further restrict our operating and financial flexibility.

We may need or otherwise decide to raise additional capital to fund our existing operations, improve our platform or develop and commercialize new products or expand our operations.

We expect that our efforts to maintain our position in the MQC industry, including improving our Growth Direct platform and developing new products, will continue to require significant resources. Based upon our current operating plan, we believe our existing cash, cash equivalents, and short-term investments of $31.3 million as of June 30, 2025, together with our initial drawdown of $20.0 million under the LSA, will enable us to fund our operating expenses and capital expenditure requirements for at least twelve months following the date of this Quarterly Report on Form 10-Q. This estimate and our expectation regarding the sufficiency of our existing cash, cash equivalents, and investments are based on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we currently expect. Until such time, if ever, as we can generate sufficient cash flow, we may finance our cash needs through a combination of equity offerings and additional debt financings or other sources. We do not currently have any committed external source of funds. While we have a goal of achieving positive cash flow without additional financing, there can be no assurance that we will attain this goal. Our goal to reach positive cash flow is based on our expectations of business performance that are generally consistent with our historical performance, including with respect to revenue and gross margins, which may not be replicated in future periods. Our goal also depends on our ability to realize additional cost savings that we believe are reasonably achievable, but are not guaranteed. In addition, we may selectively and opportunistically seek additional capital due to favorable market conditions or strategic considerations, even if we believe that we have sufficient funds for our current or future operating plans.

Our funding requirements may increase significantly if one or more of the other risks, events or circumstances described elsewhere in these risk factors are realized. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interests of our common stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common stockholders. In addition, additional debt financing and preferred equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise additional funds through collaborations, strategic alliances or marketing, distribution or licensing arrangements with third parties, we may be required to relinquish valuable rights to our technologies, intellectual property, future revenue streams or products or grant licenses on terms that may not be favorable to us. Furthermore, any capital raising efforts may divert our management from their day-to-day activities, which may

adversely affect our ability to advance product development activities. If we are unable to raise additional funds when needed, we may be required to delay, limit, reduce or terminate product development or commercialization efforts.

Risks Related to Our Business and Strategy

Our business relies heavily on establishing and maintaining our position in the market as a leading provider of automated MQC testing.

Our future profitability will depend on our ability to successfully execute and maintain a sustainable business model and generate continuous streams of revenue. Our business model is premised on our position as a leader in automated MQC testing and the competitive advantages that such position creates. Our Growth Direct platform, among other things, is designed to reduce the amount of time for MQC testing and the opportunity for human error in what we believe is a more cost-effective manner than traditional MQC testing. However, if competitors develop and commercialize an automated MQC testing platform and are able to obtain traction with customers, we may not be able to maintain our lead position and execute our business strategy. If we are unable to expand or continue to expand our customers in growing areas of drug manufacturing, such as biologics and cell and gene therapies, continue to grow market adoption of our Growth Direct platform, and maintain our position as the industry leader in automated MQC testing, our business, prospects, financial condition and results of operation could be adversely affected.

We may not be successful in expanding our business with existing customers and driving adoption of our solutions with new customers.

Our success will depend on our ability to expand our business with existing customers and to target new drug manufacturing customers to capture a greater share of the MQC testing value chain. Our ability to grow our business with existing customers will depend on our ability to broaden the application of our automated MQC testing to a larger portion of the MQC testing workflow and to increase the number of Growth Direct systems in their manufacturing facilities. Our ability to expand our business will also depend on our ability to attract new customers and to integrate our platform with new methods of manufacturing, such as cell and gene therapies. Future revenue growth will also depend on our ability to develop and market new products, technologies and solutions to meet our customers' evolving needs, as well as our ability to identify new applications and customers for our technology in additional industries beyond the drug manufacturing industry.

As we continue to scale our business, we may find that certain of our products, certain customers or certain industries may require a dedicated sales force or sales personnel with different experience than those we currently employ. Identifying, recruiting and training additional qualified personnel would require significant time, expense and attention. If we are unable to drive new customer conversion to automated MQC and our Growth Direct platform, expand adoption of our Growth Direct platform into new industries and markets, or increase the usage and value of our platform to our customers, then our business, financial condition, results of operations and prospects could be adversely affected.

We may not successfully expand our Growth Direct platform to customers who manufacture cell and gene therapies.

Our ability to expand our Growth Direct platform to customers who manufacture cell and gene therapies depends upon our ability to integrate our platform with the novel manufacturing processes being developed for these therapies. Companies that manufacture cell and gene therapies are developing new approaches to handle this manufacturing method, including novel facility layouts, new processes and workflows, and new quality and risk management frameworks. Unlike traditional "small molecule" drug manufacturing, the manufacture of biologics, and cell and gene therapies in particular, is more time sensitive and subject to increased risk of contamination due to material handling and process change-over. There are also currently a small number of cell and gene therapies approved by the FDA. While we have experience providing automated MQC testing for customers that manufacture a number of these approved therapies, we may encounter challenges or unexpected issues as we apply our Growth Direct platform to testing a greater number of therapies as they are approved in future. We cannot be certain that we will be able to successfully or consistently integrate our platform with this novel manufacturing process. If we are unable to successfully expand our Growth Direct platform into this growing segment of therapeutic manufacturing, our business and financial position may be adversely affected.

The size of the markets and forecasts of market growth for automated MQC testing and other of our key performance indicators are based on a number of complex assumptions and estimates, and may be inaccurate.

We estimate annual total addressable markets and forecasts of market growth for our Growth Direct platform. We have also developed a standard set of key performance indicators in order to enable us to assess the performance of our business in and across multiple markets, and to forecast future revenue. These estimates, forecasts and key performance indicators are based on a number of complex assumptions, internal and third-party estimates and market studies, and other business data, including assumptions and estimates relating to our ability to generate revenue from the expansion of our platform into new drug manufacturing areas and new industries. While we believe our assumptions and the data underlying our estimates and key performance indicators are reasonable, there are inherent challenges in measuring or forecasting such information. As a result, these assumptions and estimates may not be correct and the conditions supporting our assumptions or estimates may change at any time, thereby reducing the predictive accuracy of these underlying factors and indicators. As a result, our estimates of the total addressable market and our forecasts of market growth for our current or future products may prove to be incorrect, and our key performance indicators may not reflect our actual performance. If the total addressable market or the potential market growth for our platform is smaller than we have estimated or if the key performance indicators we utilize to forecast revenue are inaccurate, it may impair our sales growth and have an adverse impact on our business, financial condition, results of operations and prospects.

New product development involves a lengthy and complex process and we may be unable to develop or commercialize products on a timely basis, or at all.

Products from our development programs will take time and considerable resources to develop, and may include improvements or changes to our systems, software and consumables. We may not be able to complete development and commercialize them on a timely basis, or at all. There can be no assurance that our development programs will produce commercial products and solutions and before we can commercialize any new products, we will need to expend significant funds in order to:

- conduct substantial research and development, which may include validation studies;
- further develop and scale our engineering and manufacturing processes to accommodate different products;
- further develop and scale our infrastructure to be able to analyze increasingly large amounts of data; and
- utilize data and analytical insights generated from existing Growth Direct platform in our research and development programs in order to advance these programs.

Our product development processes involve a high degree of risk, and these efforts may be delayed or fail for many reasons, including:

- failure of the product to perform as expected;
- higher costs than anticipated; and
- failure to reliably demonstrate the advantages of our products.

In addition, if we are unable to generate additional data and insights from our existing Growth Direct platforms, then we may not be able to advance these programs as quickly, or at all, or without significant additional investment, all of which could have a material adverse effect on our product development efforts.

Even if we are successful in developing new products, it will require us to make significant additional investments in marketing and selling resources in order to commercialize any such products. For example, we recently made generally available for commercial sale our rapid sterility application for use on the Growth Direct system, for which we have expended significant time and resources to develop. We placed our first Growth Direct rapid sterility system with an existing customer in the second quarter of 2024. We are continuing to scale our manufacturing capabilities for the rapid sterility application. However, there can be no assurance that we will successfully commercialize this new sterility test, scale our manufacturing capabilities to support customer demand or that this product will achieve broad acceptance by customers. Furthermore, because this is a new application, we may encounter technical or other product challenges as customers adopt and implement Growth Direct rapid sterility into their workflows. We may be unsuccessful in

commercializing new products that we develop, which could adversely affect our business, financial condition, results of operations and prospects.

Our customers use our Growth Direct platform as part of their quality-control workflow, which is subject to regulation by the FDA and other comparable regulatory authorities.

We provide products and services used for quality-control testing in pharmaceutical product manufacturing. Our customers are subject to extensive regulations by the FDA and similar regulatory authorities in other countries, including, for example, cGMP regulations and associated requirements to validate the methods used to manufacture their products. To meet their regulatory compliance requirements, our customers have implemented quality-control workflows to monitor for microbial growth and contamination. While our Growth Direct platform is not regulated directly by the FDA or other comparable authorities and we have not verified our Growth Direct platform for compliance with such regulations, we have designed our platform to be integrated as part of a compliant quality-control workflow. If our Growth Direct platform is unable to meet regulatory standards for compliance or we are unable to update our platform to meet new regulatory requirements, we will lose customers and our business will be adversely affected. While under our agreements with our customers we are not liable for non-compliance of our Growth Direct platform, if a customer experienced a compliance failure due to our Growth Direct platform, or that the customer attributes to our Growth Direct platform, our reputation could be harmed and our business prospects adversely affected.

If we are unable to manage our inventory and support demand for existing and future products on the Growth Direct platform, our business could suffer.

As the number of customers using the Growth Direct platform grows and our volume of installed systems increases, we will need to continue to increase our capacity for customer service and support, including maintenance services of our systems, and expand our manufacturing capabilities. As a result, we will also need to purchase additional equipment, some of which can take several months or more to procure, setup and validate, and increase our personnel levels to meet increased demand. There is no assurance that any of these measures taken with respect to scale and expansion of personnel, equipment, manufacturing or services will be successfully implemented, or that we will have adequate space, including in our manufacturing facility, to accommodate such required expansion.

Additionally, we maintain certain levels of inventory to support future manufacturing efforts. If our inventory should exceed our customer demand, then it may not be sold at a pace that keeps up with the development of our technology and may therefore become obsolete or no longer be competitive in the marketplace. In addition, it is important for us to manage our consumables inventory to align production volumes with customer demand. We have experienced, and may in the future experience, expiry of certain limited shelf-life consumables in our inventory. Failure by us to adequately manage our inventory would adversely impact our working capital and gross margins.

In addition, if we commercialize additional products in the future, we will need to incorporate new equipment, implement new technology systems and processes, and hire new personnel, possibly with supplemental or different qualifications as compared to our current personnel. Failure to manage this growth or transition could result in product delays, higher cost of product revenue, declining product quality, deteriorating customer service and slower responses to competitive challenges. A failure in any one of these areas could make it difficult for us to meet market expectations for our products and could damage our reputation and the prospects for our business.

We have limited experience in marketing and sales, and if we are unable to successfully market our products to new and existing customers, address our customers' needs or to expand our customer base, our business may be adversely affected.

We have limited experience in marketing and selling our products and we currently rely on a small team to make direct sales in countries around the world. There are significant risks involved with relying on our own marketing and sales capabilities, including our ability to design and execute effective sales processes, generate and convert sufficient sales opportunities into new customers and place additional systems with existing customers. We have recently expanded our sales organization and implemented measures designed to improve the effectiveness of our salesforce, but there can be no assurance that those efforts will translate into improved commercial outcomes.

Competition for employees capable of selling expensive instruments into the pharmaceutical industry is intense. There are significant expenses and risks involved with having our own sales and marketing team, including our ability to hire, train, retain, and appropriately incentivize a sufficient number of qualified individuals, generate sufficient sales leads and provide our sales and marketing team with adequate access to customers who may want to purchase our products,

effectively manage a geographically dispersed sales and marketing team, and other unforeseen costs and expenses. We may not be able to attract and retain personnel or be able to build an efficient and effective sales organization, which could negatively impact sales and market acceptance of our products and limit our revenue growth and potential profitability. In addition, the time and cost of establishing a specialized sales, marketing and service force for a particular product or service may be difficult to justify in light of the revenue generated or projected.

We may engage distributors or other strategic partners for the sale of our products, including in jurisdictions outside of the U.S. There can be no assurance that we can identify and enter into arrangements with distributors or other strategic partners on terms that are favorable to us or at all. In some cases, we would exert limited control over these distributors, and if their sales and marketing efforts for our products are not successful, our business would be materially and adversely affected. We may not be successful in locating, qualifying and engaging distributors with industry experience and knowledge, including that of jurisdictions outside of the U.S. Even if we are successful in identifying distributors, such distributors may engage in sales practices that violate federal, state, local or foreign laws or our internal policies. Furthermore, with respect to distributors in non-U.S. jurisdictions, sales practices utilized by any such distributors that are locally acceptable may not comply with sales practices standards required under U.S. laws that apply to us, which could create additional compliance risk.

Any of these issues could impair our ability to successfully place our Growth Direct systems and meet our revenue expectations.

We may be unable to manage our future growth effectively, which could make it difficult to execute our business strategy.

We have devoted significant efforts to streamline our business operations and refocus our personnel strategy, with the goal of achieving sustained growth in our business operations. The volatility in our growth has required significant time and attention from our management, and placed strains on our operational and manufacturing systems and processes, financial systems and internal controls and other aspects of our business. As needed, we expect to selectively increase headcount and to hire more specialized personnel in the future as we grow our business. We will need to continue to hire, train and manage additional qualified engineers, client and account services personnel, sales and marketing staff, software, manufacturing, distribution and quality assurance personnel in order to develop and launch new products, innovate and improve our existing products and successfully commercialize our platform and solutions. We may also need to hire, train and manage individuals with expertise that is separate, supplemental or different from expertise that we currently have, and accordingly we may not be successful in hiring, training and managing such individuals. If our new hires perform poorly, if we are unsuccessful in hiring, training, managing and integrating these new employees, or if we are not successful in retaining our existing employees, our business may be harmed. In addition, our compensation arrangements, such as our equity award programs, may not always be successful in attracting new employees and retaining and motivating our existing employees. We may need to issue additional equity securities to attract job candidates or issue additional securities to retain personnel. In making employment decisions, job candidates and existing personnel often consider the value of the equity awards they would receive in connection with their employment and fluctuations in our stock price, or a perception that the market price of our stock may not increase or may increase more slowly than stock prices at other companies, may make it more difficult to attract, retain, and motivate employees.

As we have grown, our employees have become more geographically dispersed. We serve customers located in multiple countries and plan to continue to expand to new countries as part of our growth strategy, which will lead to increased dispersion of our employees, including sales employees and employees who are in our service and support groups. We may face challenges integrating, developing and motivating our rapidly growing and increasingly dispersed employee base.

We may not be able to maintain the quality, reliability or robustness of our platform, or the expected turnaround times of our services and support, or to satisfy customer demand as it grows. Our ability to manage our growth properly will require us to continue to improve our operational, financial and management controls, as well as our reporting systems and procedures. To effectively manage our growth, we must continue to improve our operational and manufacturing systems and processes, our financial systems and internal controls and other aspects of our business and continue to effectively expand, train and manage our personnel. The time and resources required to improve our existing systems and procedures, implement new systems and procedures and to adequately staff such existing and new systems and procedures is uncertain, and failure to complete such activities in a timely and efficient manner could adversely affect our operations and negatively impact our business and financial results.

If we cannot compete successfully, we may be unable to increase or sustain our revenue, or achieve and sustain profitability.

We currently primarily compete with established companies that provide consumables for MQC testing and with a limited number of established and early-stage companies that have automated MQC testing systems. In addition, our customers may also elect to continue to use the traditional MQC testing method rather than our platform and may decide to stop using our platform.

Our competitors and potential competitors may enjoy a number of competitive advantages over us, including:

- longer operating histories;
- larger customer bases;
- greater brand recognition and market penetration;
- greater financial resources;
- greater technological and research and development resources;
- better system reliability, robustness and features;
- greater selling and marketing capabilities; and
- better established, larger scale and lower cost manufacturing capabilities.

As a result, our competitors and potential competitors may be able to respond more quickly to changes in customer requirements, devote greater resources to the development, promotion and sale of their platforms or instruments than we can or sell their platforms or instruments, or offer services competitive with our platform and services at prices designed to win significant levels of market share. We may not be able to compete effectively against these organizations.

In addition, competitors may be acquired by, receive investments from or enter into other commercial relationships with larger, well-established and well-financed companies. Certain of our competitors may be able to secure key inputs from vendors on more favorable terms, devote greater resources to marketing and promotional campaigns, adopt more aggressive pricing policies and devote substantially more resources to product development than we can. Further, competition in the automated MQC testing market, while currently limited, is growing and may continue to increase in future, and we may not be able to maintain our leading position in the industry as a result. If we are unable to compete successfully, we may be unable to increase market adoption and sales of our platform, which could prevent us from increasing our revenue or achieving profitability.

We must develop new products, adapt to rapid and significant technological change and respond to introductions of new products by competitors to remain competitive.

We sell our products in industries that are characterized by significant enhancements and evolving industry standards. As a result, our customers' needs are rapidly evolving. If we do not appropriately innovate and invest in new technologies, our products and services may become less desirable in the markets we serve, and our customers could move to new technologies offered by our competitors or decide to revert to the traditional MQC testing method. Although we believe customers in our markets display a significant amount of loyalty to their supplier of a particular product, we also believe that because of the initial time investment required by many of our customers to reach a purchasing decision for a new product, it may be difficult to regain that customer once the customer migrates away from using our solutions to that of a competitor. Without the timely introduction of new products, services and enhancements, our offerings will likely become less competitive over time, thus harming our competitive position. In some instances, specific circumstances of particular customer(s) may require us to innovate on our products to meet those needs, and failure to do so may hinder our ability to sell our solutions to or maintain our relationships with those customer(s). Accordingly, we focus significant efforts and resources on the development and identification of new technologies, products and markets to further broaden our offerings. To the extent we fail to timely introduce new and innovative products or services, adequately predict our customers' needs or fail to achieve market acceptance, our business may suffer and our operating results could be adversely affected.

Due to the significant resources required to enable access in new markets, we must make strategic and operational decisions to prioritize certain markets, products and services. We may expend our resources to access markets and develop products and services that do not yield meaningful revenue or we may fail to capitalize on markets, products or services that may be more profitable or with a greater potential for success.

We believe our platform has potential applications across a wide range of markets and we have targeted certain markets in which we believe our technology has significant advantages or a higher probability of success or greater revenue opportunity, such as the manufacture of cell and gene therapies. We seek to maintain a process of prioritization and resource allocation among our programs to maintain a balance between advancing near-term opportunities and exploring additional markets for our platform. However, due to the significant resources required for the development of products and services for new markets, we must make decisions on which markets to pursue and the amount of resources to allocate to each. Our decisions concerning the allocation of research, development, collaboration, management and financial resources toward particular markets, products or services may not lead to the development of any viable product or service and may divert resources away from better opportunities. Similarly, we may choose to pursue certain markets, which may not be as profitable as other markets that we did not pursue due to our limited resources. As a result, our business, financial condition, results of operations and prospects could be adversely impacted.

The Growth Direct platform may contain undetected errors or defects or may not otherwise meet the expectations of our customers, which means our business, financial condition, results of operations and prospects could suffer.

Our Growth Direct platform includes the Growth Direct system, proprietary consumables and our LIMS connection software. There could be undetected errors or defects despite our rigorous testing of our platform and its components, and the Growth Direct platform may otherwise not meet the expectations of our customers. Disruptions or other performance problems with our platform or with the components that comprise our platform may adversely impact our customers' manufacturing process, compliance workflow or business, harm our reputation and result in reduced revenue or increased costs, such as those associated with repairs, replacements or reacquisitions of our systems. If such challenges occur, the attention of our key personnel could be diverted, or other significant customer relations problems may arise. We may also be subject to warranty claims or breach of contract for damages related to errors or defects in our products. Additionally, we may be subject to legal claims arising from any defects or errors in our platform, and in the systems, consumables and software that comprise our platform. In the past, we have repaired, and in exceptional cases, replaced or reacquired Growth Direct systems under warranty. Our failure to prevent or adequately address any of foregoing risks could have a material adverse effect on our business, operating results and financial condition.

Our success depends on, among other things, the market's confidence that the Growth Direct platform is capable of substantially enhancing quality control in the conduct of manufacturing activities as compared to the traditional method of MQC testing or that of competitive products, and will enable more efficient or improved drug manufacturing. Pharmaceutical companies and contract development and manufacturing organizations, or CDMOs, are likely to be particularly sensitive to defects and errors in the use of our platform, including if our platform fails to deliver meaningful improvements in MQC testing with results at least as good as the results generated using the traditional method of MQC testing, or new methods of automated MQC testing being developed and sold by emerging competitors. There can be no guarantee that our platform will meet the expectations or needs of these companies or CDMOs.

The complexity of our products and the amount of lead time required to deliver products to our customers have caused in the past, and may cause in the future, delays in releasing new products and workflows. In addition, we have experienced in the past, and may experience in the future, challenges with respect to the reliability of our systems. If there are delays in delivering our products to our customers, or if our products fail to perform as well as or better than traditional MQC testing and competitive products or fail to generate reliable results for our customers, our revenue could be reduced or delayed, which could adversely affect our business, financial condition, results of operations and prospects.

These complexities also require that we train our customers to operate our Growth Direct platform, which is expensive and time consuming. Any misuse of our products, including as a result of inadequate training, could cause our products not to perform as expected or to fail to demonstrate the process advantages of our products. The training requirement may also deter some customers from utilizing our products. Any of these results could adversely affect our business, financial condition, results of operations and prospects.

Potential product liability lawsuits against us could cause us to incur substantial liabilities and limit commercialization of any products that we may develop.

The use of any product we may develop and the sale of any products exposes us to the risk of product liability claims. Product liability claims might be brought against us by pharmaceutical companies, contract organizations or others selling or otherwise coming into contact with our products. If we cannot successfully defend against product liability claims, we could incur substantial liability and costs. In addition, regardless of merit or eventual outcome, product liability claims may result in:

- impairment of our business reputation and significant negative media attention;
- withdrawal of customers;
- significant costs to defend the litigation;
- distraction of management's attention from our primary business;
- substantial monetary awards to claimants;
- inability to commercialize a product;
- product recalls or withdrawals;
- decreased market demand for any product; and
- loss of revenue.

The product liability insurance we currently carry, and any additional product liability insurance coverage we acquire in the future, may not be sufficient to reimburse us for any expenses or losses we may suffer. In the future, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses due to liability. A successful product liability claim, or series of claims, brought against us could cause our share price to decline and, if judgments exceed our insurance coverage, could adversely affect our results of operation and business, including preventing or limiting the commercialization of any products we develop.

If we lose key management, cannot recruit qualified employees, directors, officers or other significant personnel or experience increases in our compensation costs, our business may be materially harmed.

We are highly dependent on our management and directors, including our Chief Executive Officer, Robert Spignesi, among others. Due to the specialized knowledge each of our officers and key employees possesses with respect to our products and services and our operations, the loss of service of any of our officers or directors could delay or prevent successful sales and the expansion of our platform. We do not carry key person life insurance on our Chief Executive Officer or our other officers or directors. In general, the employment arrangements that we have with our executive officers do not prevent them from terminating their employment with us at any time.

In addition, our future success and growth will depend in part on the continued service of our directors, employees and management personnel and our ability to identify, hire and retain additional personnel. If we lose one or more of our executive officers or key employees, our ability to implement our business strategy successfully could be seriously harmed. Furthermore, replacing executive officers and key employees may be difficult or costly and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to develop, market and sell our products successfully. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or effectively incentivize these additional key personnel on acceptable terms given the competition among numerous technology companies for similar personnel.

Our Operational Efficiency Program that we implemented in July 2024 included a reduction in our workforce and the closure of open and planned positions. Any future similar actions or announcements, may make it increasingly difficult for us to hire and retain our executive officers, key employees, consultants and advisors. If we are unable to attract qualified personnel and retain our current employees, our ability to develop and sell our products could be limited and our business and customer relationships could be materially harmed.

We depend on our information technology systems, and any failure of these systems could harm our business.

We depend on information technology and telecommunications systems for significant elements of our operations, including our knowledge management system, our customer reporting, our platform, advanced automation systems, and advanced application and LIMS connection software. We have installed, and expect to expand, a number of enterprise software systems that affect a broad range of business processes and functional areas, including for example, systems handling human resources, financial controls and reporting, contract management, compliance and other infrastructure operations. These implementations can be expensive and require significant time and effort. These information technology and telecommunications systems support a variety of functions, including manufacturing operations, data analysis, quality control, customer service and support, billing, research and development activities, and general administrative activities.

Information technology and telecommunications systems are vulnerable to damage from a variety of sources, including telecommunications or network failures, malicious software, bugs or viruses, human acts and natural disasters. For example, in July 2024, many industries and businesses were disrupted globally by a software glitch associated with Crowdstrike's cybersecurity software. While we did not experience material downtime in our information technology systems, similar events in the future may disrupt our operations. Moreover, despite network security and back-up measures, our servers remain potentially vulnerable to physical or electronic break-ins, computer viruses and similar disruptive problems. Any disruption or loss of information technology or telecommunications systems on which critical aspects of our operations depend could have an adverse effect on our business and our reputation.

Cybersecurity incidents and data breaches, data loss and other disruptions could compromise sensitive information related to our business or prevent us from accessing critical information and expose us to liability, which could adversely affect our business and our reputation.

In the ordinary course of our business, we collect and store sensitive data, including personal information, intellectual property and proprietary business information owned or controlled by ourselves or our employees, customers and other parties. We manage and maintain our applications and data utilizing a combination of on-site systems and cloud-based data centers. We utilize external security and infrastructure vendors to manage parts of our data centers. These applications and data encompass a wide variety of business-critical information, including research and development information, customer information, commercial information and business and financial information. We, like all companies storing business-critical information, face a number of risks relative to protecting this critical information, including loss of access, inappropriate use or disclosure, unauthorized access or exfiltration, inappropriate modification, inappropriate destruction, and the risk of our being unable to adequately monitor and audit and modify our controls over our critical information. This risk extends to the third-party vendors and subcontractors we use to manage this sensitive data or otherwise process it on our behalf. The secure processing, storage, maintenance and transmission of this critical information are vital to our operations and business strategy, and we devote significant resources to protecting such information. Although we take measures to protect sensitive data from unauthorized access, use or disclosure, our information technology and infrastructure may still be vulnerable to, and we have in the past experienced and may continue to experience in the future, attacks by hackers or viruses or data breaches due to employee error, malfeasance or other malicious or inadvertent disruptions. Further, attacks upon information technology systems, including ransomware attacks and digital extortion, business email compromises, social engineering, including phishing attacks, denial of service attacks, computer malware, malicious codes, viruses, wrongful intrusions, wrongful conduct by insider employees or vendors, data breaches, and other malicious internet-based activity are increasing in their frequency, levels of persistence, sophistication and intensity, and are being conducted by sophisticated and organized groups and individuals with a wide range of motives, capabilities, and expertise. We may also face increased cybersecurity risks due to our reliance on internet technology and the number of our employees who are working remotely, which may create additional opportunities for cybercriminals to exploit vulnerabilities. Furthermore, because the techniques used to obtain unauthorized access to, or to sabotage, systems change frequently and often are not recognized until launched against a victim entity, we may be unable to anticipate these techniques or implement adequate preventative measures. While we have measures in place to identify, detect and mitigate security threats and incidents, they are not failproof, so we may also experience security incidents that may remain undetected for an extended period. Any such incident could result in the compromise of our information systems, and the data stored there could be accessed, encrypted, corrupted, modified, publicly disclosed, lost or stolen. Any such incident could result in legal notifications and/or disclosures, as well as legal claims or proceedings, including for breaches of confidential information obligations with contractual counterparties, and liability under federal or state laws that protect the privacy of personal information, and regulatory penalties. Notice of cybersecurity incidents and data breaches may be required to affected individuals, customers, or other state, federal or foreign regulators, and for extensive breaches, notice may need to be made to the media or State Attorneys General. Such a notice could harm our reputation and our ability to compete. Although we have implemented security measures to prevent, detect and respond to security incidents, our data is currently accessible through multiple channels, and there is no guarantee we can protect our data from breach.

Unauthorized access to our information systems, and the loss, destruction or, dissemination of data stored within them could also disrupt or halt our operations and damage our reputation, any of which could adversely affect our business.

Further, our contracts may not contain limitations of liability, and even where they do, there can be no assurance that limitations of liability in our contracts are sufficient to protect us from liabilities, damages, or claims related to our privacy and data security obligations. Further, although we maintain cyber liability insurance, this insurance may not provide adequate coverage against potential liabilities related to any experienced cybersecurity incident or breach.

We are currently subject to, and may in the future become subject to additional, U.S., state, federal, and foreign laws and regulations imposing obligations on how we collect, store, safeguard and process personal information. Our actual or perceived failure to comply with such obligations could harm our business. Our efforts to comply with such laws could require significant resources and expenses and also impair our efforts to maintain and expand our customer base, and thereby decrease our revenue.

We are, and may increasingly become, subject to various laws and regulations, as well as contractual obligations, relating to data privacy and security of personal information we collect and process. The regulatory environment in the U.S. and abroad related to data privacy and security is increasingly rigorous, with new and constantly changing requirements applicable to our business, and enforcement practices are likely to remain uncertain for the foreseeable future. These laws and regulations may be interpreted and applied differently over time and from jurisdiction to jurisdiction, and it is possible that they will be interpreted and applied in ways that may have a material adverse effect on our business, financial condition, results of operations and prospects.

In the United States, various federal and state laws relating to the privacy and security of personal information impose obligations on how we collect, store, use, transmit, secure, and otherwise process such data. These laws, such as Section 5 of the Federal Trade Commission Act, the California Consumer Privacy Act (CCPA) and numerous other U.S. state consumer privacy laws, generally provide consumers right to restrict our use of their personal information and limit our disclosure to third parties. The CCPA, for example, establishes data privacy rights for California residents and obligates covered businesses to comply with specific requirements related to data use, transparency, deletion, and opt-out of the selling or sharing of personal information. Certain state laws may be more stringent or broader in scope, or offer greater individual rights, with respect to personal information than federal, international or other state laws, and such laws may differ from each other, all of which may complicate compliance efforts. Such laws may have potentially conflicting requirements that would make compliance challenging.

More than a dozen other U.S. states have passed their own comprehensive privacy laws with more expected to pass in the coming years. Such laws may add additional complexity, variation in requirements, restrictions and potential legal risk, require additional investment of resources in compliance programs, impact strategies and the availability of previously useful data and could result in increased compliance costs and/or adverse changes in business data collection and use practices and policies. Some states have also either passed or proposed privacy and data protection legislation specifically protecting health-related information. The existence of varying and potentially conflicting comprehensive privacy laws in different U.S. states could make our compliance obligations more complex, may require us to expend significant resources in connection with our compliance efforts and subject us to enforcement actions or otherwise incur liability for any actual or perceived noncompliance, including litigation, enforcement actions and reputational harm leading to a loss of existing and future business.

Internationally, laws, regulations and standards in many jurisdictions apply broadly to the collection, use, retention, security, disclosure, transfer and other processing of personal information. For example, with respect to the collection and processing of personal data relating to our personnel, customers and establishments in Europe, we are subject to the EU General Data Protection Regulation, or EU GDPR, the UK General Data Protection Regulation (UK GDPR), as well as applicable data protection laws in effect in the Member States of the EEA and in the UK (including the UK Data Protection Act 2018) which govern the processing of personal data in connection with (a) our offering of goods or services to/the monitoring of the behavior of individuals in the UK and EEA; or (b) the activities of any of our establishments in the UK or any EEA Member State, such as our German subsidiary. In this Quarterly Report on Form 10-Q, references to “GDPR” encompass both the EU GDPR and UK GDPR, unless specific otherwise. The GDPR is wide-ranging in scope and imposes numerous requirements on companies that process personal data, including requiring disclosures to individuals regarding data processing activities, requiring that safeguards are implemented to protect the security and confidentiality of personal data, limiting retention periods for personal data, creating mandatory data breach notification requirements in certain circumstances, and requiring that certain measures (including contractual requirements) are put in place when engaging third-party processors. The GDPR also imposes strict rules on the transfer of personal data to countries outside the EEA or the U.K., including transfers of personal data from Europe to the United States in certain circumstances. Any inability to transfer personal data from Europe to the United States in compliance with data protection laws may impede our operations and may adversely affect our business and financial position. Switzerland has also

implemented data protection laws with similar obligations and triggers to the GDPR which we may be subject to in connection with our Swiss subsidiary, personnel and customers.

The complex and evolving nature of data protection laws and regulations may lead to additional compliance costs, including as a result of diverging international data privacy laws and regulations and related uncertainties. There can be no assurances that we will be successful in our efforts to comply with the multitude of U.S., state, federal, and foreign privacy and data security laws, and violations of such laws could result in regulatory investigations and significant fines, as well as civil claims including class actions, and reputational damage.

Regulators and legislators in the U.S. are increasingly scrutinizing and restricting certain personal data transfers and transactions involving foreign countries. For example, the Department of Justice Rule, implemented as of January 8, 2025, on Preventing Access to U.S. Sensitive Personal Data and Government-Related Data by Countries of Concern or Covered Persons, prohibits data brokerage transactions involving certain sensitive personal data categories, including health data, genetic data, and biospecimens, to countries of concern, including China. The regulations also restrict certain investment agreements, employment agreements and vendor agreements involving such data and countries of concern, absent specified cybersecurity controls. Actual or alleged violations of these regulations may be punishable by criminal and/or civil sanctions, and may result in exclusion from participation in federal and state programs.

Like many companies, we use artificial intelligence and machine learning (AI) technologies, including generative AI, to efficiently grow and manage our business. These technologies have increasingly been the focus of attention for lawmakers and regulators around the globe.

The use of AI tools by our employees or third parties on which we relay may increase over time and may lead to unauthorized or unintended disclosures of confidential information (including personal information or proprietary data). In addition, we may use AI outputs to inform certain decisions we make, and the outputs we rely on may be incomplete, inaccurate, or otherwise flawed, despite appearing to be accurate and reliable. Potential flaws in the AI tools that we use, or our incorrect application of them, could cause us to make decisions that unfairly bias certain individuals or classes of individuals and adversely impact their rights. As a result, we could face adverse consequences, including exposure to reputational and competitive harm, loss of business, and legal and contractual liabilities. A growing number of legislators and regulators are adopting laws and regulations and have focused enforcement efforts on the adoption of AI, and use of such technologies in compliance with safety requirements, intellectual property and privacy laws, ethical standards and societal expectations. These developments may increase our compliance burden and costs in connection with use of AI and lead to legal liability if we fail to meet evolving legal standards or if use of such technologies results in harms or other causes of action we did not predict.

We may evaluate strategic opportunities for our business, including through acquisitions, joint ventures or investments in other companies or technologies that could negatively affect our operating results, dilute our stockholders' ownership, increase our debt or cause us to incur significant expense.

As part of our business strategy, we may opportunistically pursue acquisitions of businesses and assets that we believe may be complementary or synergistic with our own, or strategic alliances and joint ventures that leverage our technology and industry experience to expand our offerings or distribution. We have no experience with acquiring other businesses or assets and limited experience with forming strategic partnerships. We may not be able to find suitable collaborators or acquisition candidates, and we may not be able to complete such transactions on favorable terms, if at all. The competition for collaborators or acquisition candidates may be intense, and the negotiation process will be time consuming and complex. If we make any acquisitions, we may not be able to integrate these acquisitions successfully into our existing business, these acquisitions may not strengthen our competitive position, the transactions may be viewed negatively by customers or investors, we may be unable to retain key employees of any acquired business, relationships with key suppliers, manufacturers or customers of any acquired business may be impaired due to changes in management and ownership, and we could assume unknown or contingent liabilities. Any future acquisitions also could result in contingent liabilities or future write-offs of intangible assets or goodwill, any of which could have a material adverse effect on our business, financial condition, results of operations and prospects. We cannot guarantee that we will be able to fully recover the costs of any acquisition. Integration of an acquired company also may disrupt ongoing operations and require management resources that we would otherwise focus on developing our existing business. We may not realize the anticipated benefits of any acquisition, technology license, strategic alliance or joint venture. We also may experience losses related to investments in other companies, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

To fund any such acquisitions or joint ventures, we may choose from a number of financing alternatives that may be accompanied by drawbacks. For example, if we incur debt, we may be required to abide by restrictive covenants or

grant security interests in our assets to secure such debt. If we issue equity as consideration, such issuances would dilute the ownership of our stockholders or, in the case of preferred equity, may impose preferential terms that are senior to those of our common stockholders. Additional funds may not be available on terms that are favorable to us, or at all. If the price of our Class A common stock is low or volatile, we may not be able to acquire companies or fund a joint venture project using our stock as consideration.

We may not realize the intended benefits of our strategic partnerships and other collaborations, and such relationships may introduce additional risks to our business.

We have entered and continue to seek to enter into strategic partnerships and other kinds of collaborations as part of our business strategy. While we believe that these and similar relationships are critical to our ability to innovate, expand our market reach and deliver comprehensive solutions to our customers, they involve numerous risks and uncertainties. We may not achieve the expected benefits from these types of strategic collaborations and these relationships may introduce complexities and risks into our business.

For example, in January 2025, we announced that Lonza successfully integrated our Growth Direct system with its MODA-EM module to combine paperless processes with automated microbial enumeration for pharmaceutical quality control, as discussed further under Item 1. Business—Integration with MODA® Platform. There can be no assurance that the benefits observed by Lonza will be replicated in the experiences of other customers, or that such benefits, even if achieved by other customers, will drive further market adoption of our platform. In addition, as a large, multinational manufacturing company, Lonza may seek similar collaboration opportunities to integrate other technologies and platforms, including those of our competitors. As a result, despite the current integration of our Growth Direct system with Lonza's MODA-EM module, we may not experience increased sales of our products.

In addition, in February 2025, we entered into a Distribution and Collaboration Agreement with Millipore S.A.S., a subsidiary of the Life Science business of Merck KGaA, Darmstadt, Germany, which operates in the U.S. as MilliporeSigma, pursuant to which we granted our collaborator the co-exclusive right to distribute certain of our products, as described further under Item 1. Business—Distribution and Collaboration Agreement with Millipore S.A.S. Our ability to generate sales and product revenue under this agreement is dependent on the performance and cooperation of our distributor. Our distributor may not meet its obligations, including with respect to its initial purchase commitments, experience financial difficulties, undergo adverse changes in its business or shift its focus away from selling our products. Furthermore, during the term of the agreement, we are prohibited from engaging other third parties to sell our products so long as a purchase commitment by the distributor is in place. There can be no assurance that our distributor will make additional commitments to purchase our products. The interests of our distributor may diverge from ours, and disagreements over key decisions or strategies could lead to conflict, impaired collaboration or the dissolution of the collaboration. We may not successfully manage channel conflicts with our distributor and our selling efforts to certain customers may overlap with those of our distributor, which may lead to disputes over which party should receive credit for a given sale or which party should manage the customer relationships that are created or deepened during the course of the collaboration. Our distributor is headquartered in France and, as a subsidiary of a large, multinational science and technology company, may have different corporate cultures, operational procedures and business practices, all of which can be challenging to manage. In engaging in its selling and marketing efforts, our distributor may place substantial and time-sensitive demands on the attention and resources of our employees and management, including those related to answering questions and fielding requests from its salesforce and otherwise assisting our distributor with its commercial activities in respect of our products, all of which may divert the focus of our personnel.

Our distribution arrangement includes tier-based transfer pricing on the covered products, which may adversely impact the margins that we achieve on sales of our products. If our distributor achieves commercial traction with our products, we may become reliant on our distributor through increased sales to customers. In addition, if we enter into a supply agreement or a services agreement as contemplated by our distribution and collaboration agreement, we may become dependent on the distributor in our efforts to service our customers and lower the costs of our products. In that event, we may suffer significant and adverse consequences to our business operations, sales, revenue, product margins and customer experience in the event our collaboration is terminated.

Additionally, while our distribution arrangement is global and covers all fields related to industrial quality control applications in the pharmaceutical, medical device, personal care, cosmetics and food and beverage spaces, we have historically focused our selling efforts to pharmaceuticals manufacturers and specifically in North America, Europe and, to a lesser extent, Asia-Pacific. There can be no assurance that our distributor will be successful in achieving market penetration of our products in additional fields or geographies. Expanding the application of our products into such additional fields and geographies may introduce additional risks, including in respect of regulatory and compliance, as we seek to navigate and comply with laws and regulations applicable to such fields and territories. Any non-compliance by us or our distributor with applicable laws and regulations could lead to legal liabilities, financial penalties and reputational damage for us.

If we are unable to effectively manage these risks and uncertainties, our relationships with current and prospective collaborators may not deliver the expected benefits, and may also introduce risks that could adversely affect our business operations, financial condition, and results of operations.

Repair or replacement costs due to warranties we provide on our Growth Direct systems could have a material adverse effect on our business, financial condition and results of operations.

Our standard terms and conditions for customers generally provide for a one-year limited assurance warranty on Growth Direct systems, which is included in the sales price. Existing and future warranties place us at the risk of incurring future repair or replacement costs. We establish our accrual for estimated warranty expenses based on historical information, current cost data and future forecasts. We exercise judgment in determining the expected product warranty costs, using estimated material, labor and other costs. While we believe that historical experience provides a reliable basis for estimating such warranty cost, unforeseen quality issues or component failure rates could result in future costs in excess of such estimates. As of June 30, 2025, we had $0.4 million reserved for warranty costs. Substantial amounts of warranty claims could have a material adverse effect on our business, financial condition and results of operations.

Our insurance policies are expensive and protect us only from some business risks, which leaves us exposed to significant uninsured liabilities.

We do not carry insurance for all categories of risk that our business may encounter and our policies have limits and significant deductibles. Some of the policies we currently maintain include general liability, property, umbrella, cybersecurity, and directors' and officers' insurance.

Any additional product liability insurance coverage we acquire in the future, may not be sufficient to reimburse us for any expenses or losses we may suffer. Moreover, insurance coverage is becoming increasingly expensive and in the future we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses. A successful product liability claim or series of claims in which judgments exceed our insurance coverage could adversely affect our business, financial condition, results of operations and prospects, including preventing or limiting the commercialization of any products we develop.

Operating as a public company makes it more difficult and more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced policy limits and coverage, seek alternative insurance options or incur substantially higher costs to obtain the same or similar coverage. As a result, it may be more difficult for us to attract and retain qualified people to serve on our board of directors, our board committees or as executive officers. Any significant uninsured liability may require us to pay substantial amounts, which would adversely affect our business, financial condition, results of operations and prospects.

International expansion of our business exposes us to business, regulatory, political, operational, financial and economic risks associated with doing business outside of the United States.

Our business strategy includes achieving significant and increasing sales to customers and sites outside of the U.S. As a result, we have established relationships with customers outside of the U.S. and in the future intend to expand our international customer base. To that end, our staff is located in North America, Europe and the Asia-Pacific region, and we intend to further expand our international presence. Doing business internationally involves a number of risks, including:

- multiple, conflicting and changing laws and regulations such as privacy regulations, tax laws, export and import restrictions, tariffs, economic sanctions and embargoes, employment laws, regulatory requirements and other governmental approvals, permits and licenses;
- failure by us or our distributors to obtain approvals to conduct our business in various countries;
- differing intellectual property rights;
- complexities and difficulties in obtaining intellectual property protection, enforcing our intellectual property and defending against third-party intellectual property claims;
- difficulties in staffing and managing foreign operations;

- logistics and regulations associated with shipping systems and parts and components for systems and consumables, as well as transportation delays;
- travel restrictions that limit the ability of marketing, presales, sales, services and support teams to service customers;
- financial risks, such as longer payment cycles, difficulty collecting accounts receivable, the impact of local and regional financial crises on demand and payment for our products and exposure to foreign currency exchange rate fluctuations;
- international trade disputes that have resulted or could in the future result in tariffs and other protective measures taken by the U.S. or other countries;
- natural disasters, the severity and frequency of which may be amplified by global climate change, political and economic instability, including wars, terrorism and political unrest, outbreak of disease, boycotts, curtailment of trade and other business restrictions; and
- regulatory and compliance risks, including severe penalties such as criminal and civil penalties, disgorgement and other remedial measures, that relate to the U.S. Foreign Corrupt Practices Act, the U.K. Bribery Act 2010 and similar anti-bribery and anticorruption laws in other jurisdictions.

Any of these factors could significantly harm our future international expansion and operations and, consequently, our business, financial condition, results of operations and prospects. In addition, certain international markets are subject to significant political and economic uncertainty. Significant political and economic developments in international markets for which we intend to operate, or the perception that any of them could occur, creates further challenges for operating in these markets in addition to creating instability in global economic conditions.

Certain legal and political risks are also inherent in foreign operations. There is a risk that foreign governments may nationalize private enterprises in certain countries where we may operate. In certain countries or regions, terrorist activities and the response to such activities may threaten our operations more than in the United States. Social and cultural norms in certain countries may not support compliance with our corporate policies, including those that require compliance with substantive laws and regulations. Also, changes in general economic and political conditions in countries where we may operate are a risk to our financial performance and future growth. In addition, in certain geographies, we may need to rely on distributors, partners and other collaborators to penetrate those markets, and there can be no assurance that we will be able to secure relationships with such parties or that such parties will comply with legal and regulatory standards that are applicable to our business. As we operate our business globally, our success will depend, in part, on our ability to anticipate and effectively manage these and other related risks. There can be no assurance that the consequences of these and other factors relating to our international operations will not have an adverse effect on our business, financial condition or results of operations.

High inflation rates, and the potential for a recession, could negatively impact our revenues and profitability if increases in the prices of our Growth Direct systems or a decrease in customer spending results in lower sales. In addition, if our costs increase and we are not able to pass along these price increases to our customers, our net income would be adversely affected, and the adverse impact may be material.

Increased inflation, and the potential for a recession, may result in decreased demand for our products and services, increased operating costs (including our labor costs), reduced liquidity, and limitations on our ability to access credit or otherwise raise debt and equity capital. Increases in interest rates, especially if coupled with reduced government spending and volatility in financial markets, may have the effect of further increasing economic uncertainty and heightening these risks. Recently imposed and potential future tariffs may have an inflationary effect on the prices of goods and services, including those that we utilize in the production of our products and delivery of our services. In a volatile economic environment, we may be unable to raise the sales prices of our products and services at or above the rate at which our costs increase, which could/would reduce our profit margins and have a material adverse effect on our financial results and net income. We also may experience lower than expected sales and potential adverse impacts on our competitive position if there is a decrease in capital spending by our customers or they have a negative reaction to our pricing. A reduction in our revenue would be detrimental to our profitability and financial condition and could also have an adverse impact on our future growth.

In operating our business, we may experience inflationary pressures on significant cost categories including labor, materials and freight. An inflationary environment, including factors such as tight labor markets and increasing freight and materials prices, could make it more costly for us to do business. In order to meet the compensation expectations of our prospective and current employees due to inflationary factors, we may be required to increase our labor costs, including wages and employee benefits, or risk losing skilled workers to competitors. In addition, changes in global shipping capacity and demand as well as the cost of raw materials and commodities such as oil (including derivative products including fuel and plastics) could negatively impact our freight and materials costs. If we see additional pressure on our labor, materials and freight costs, we could see negative effects on our results of operations (including product costs), cash flows and overall financial condition.

Global economic and political instability and geopolitical events could adversely affect our business, financial condition or results of operations.

Our business could be adversely affected by unstable economic and political conditions within the United States and foreign jurisdictions, including as a result of an economic downturn and geopolitical events, such as changes in U.S. federal policy that affect the geopolitical landscape. Changes to policy implemented by the U.S. Congress, the Trump administration or any new administration have impacted and may in the future impact, among other things, the U.S. and global economy, international trade relations, unemployment, immigration, healthcare, taxation, the U.S. regulatory environment, inflation and other areas. Historically, tariffs have led to increased trade and political tensions, between not only the U.S. and China, but also between the U.S. and other countries in the international community. In response to tariffs, other countries, including China, have implemented retaliatory tariffs on U.S. goods. Political tensions as a result of trade policies could reduce trade volume, investment, technological exchange and other economic activities between major international economies, resulting in a material adverse effect on global economic conditions and the stability of global financial markets. Any changes in political, trade, regulatory, and economic conditions, including U.S. trade policies, could have a material adverse effect on our financial condition or results of operations. Tariffs may also have an inflationary effect on the prices of goods and services, including those that we utilize in the production of our products and delivery of our services. If we are unable to manage such inflationary pressures, such as by passing along price increases to our customers or reduce product costs or operating expenses in other areas of our business, our gross margins, cash position and other elements of our results of operations may suffer. The global credit and financial markets have also generally experienced severe volatility and disruptions. A severe or prolonged economic downturn, such as the global financial crisis, could result in a variety of risks to our business, including our ability to raise additional capital when needed on acceptable terms, if at all. There can be no assurance that further deterioration in credit and financial markets and confidence in economic conditions will not occur.

A weak or declining economy could also result in supply chain disruptions, volatile demand for our products, abrupt changes in our customers' buying patterns, limitations on our customers' access to financial resources and ability to satisfy obligations to us, or other adverse impacts to our ability to place our Growth Direct systems. Furthermore, although we do not have any customer or direct supplier relationships in Ukraine, Russia or the Middle East at this time, the ongoing military conflicts in those regions and related sanctions, as well as export controls or actions that may be initiated by nations including the United States, the European Union, Russia or other jurisdictions, and other potential uncertainties could adversely affect our business and/or our supply chain, business partners or customers. In the event geopolitical

tensions fail to abate or deteriorate further, additional governmental sanctions may be enacted adversely impacting the global economy, its banking and monetary systems, markets or customers for our products.

Our employees, consultants and collaborators may engage in misconduct or other improper activities.

We are exposed to the risk of fraud or other misconduct by our employees, consultants and collaborators. Misconduct by these parties could include intentional failures to comply with the applicable laws and regulations in the United States and abroad, report financial information or data accurately or disclose unauthorized activities to us. These laws and regulations may restrict or prohibit a wide range of pricing, discounting and other business arrangements. Such misconduct could result in legal or regulatory sanctions and cause serious harm to our reputation. It is not always possible to identify and deter misconduct, and any precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses, or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, we could be subject to significant civil, criminal and administrative penalties, which could have a material adverse impact on our business. Whether or not we are successful in defending against such actions or investigations, we could incur substantial costs, including legal fees and divert the attention of management in defending ourselves against any of these claims or investigations, which could have a material adverse impact on our business.

Risks Related to Manufacturing and Supply

If our primary manufacturing facility or development facility becomes damaged or inoperable or we are required to vacate one or both facilities, our ability to conduct and pursue our manufacturing and/or development efforts would be jeopardized.

We currently conduct our primary development and manufacturing efforts at our facility located in Lowell, Massachusetts, and our primary development efforts at our facility located in Lexington, Massachusetts. Our facilities and equipment could be harmed or rendered inoperable or inaccessible by natural or man-made disasters, the severity and frequency of which may be amplified by global climate change, or other circumstances beyond our control, including fire, power loss, communications failure, war or terrorism, or another catastrophic event, such as a pandemic or similar outbreak or public health crisis, which may render it difficult or impossible for us to support our customers and develop products. The inability to manufacture our systems and consumables could develop if our Lowell, Massachusetts facility is inoperable or suffers a loss of utilization for even a short period of time and may result in the loss of customers or harm to our reputation. Disruptions in our manufacturing operations could also adversely affect our efforts to improve the gross margins of our products. Furthermore, our facilities and the equipment we use to perform our manufacturing and development could be unavailable or costly and time consuming to repair or replace. It would be difficult, time consuming and expensive to rebuild our facilities, to locate and qualify a new facility or license or transfer our proprietary technology to a third party. Even in the event we are able to find a third party to assist in manufacturing and development efforts, we may be unable to negotiate commercially reasonable terms to engage with the third party. To mitigate certain of these risks associated with the manufacture of our consumables at our Lowell, Massachusetts facility, our Lexington, Massachusetts facility has been designed to serve as a back-up consumable manufacturing facility if needed. While we believe that we could, if necessary, transfer our manufacturing capabilities to the Lexington, Massachusetts facility, there can be no assurance that we would achieve such transfer in a timely manner or at all and mitigate disruption to our overall business.

Our manufacturing operations are dependent upon third-party suppliers, including single-source suppliers, making us vulnerable to supply shortages and price fluctuations, which could harm our business.

We source the components of our Growth Direct system and consumables from third-party suppliers. We do not have supply agreements with most of our suppliers beyond purchase orders and, although we maintain an inventory of components, forecasted amounts may be inaccurate and we may experience shortages as a result of serious supply problems with these suppliers. There can be no assurance that our supply of components will not be limited, interrupted, or of satisfactory quality or continue to be available at acceptable prices. For example, we experienced disruptions to our supply chain as a result of the coronavirus pandemic and may experience additional disruptions in the future.

Certain critical components of our Growth Direct system and consumables we obtain from single suppliers and the loss of supply from any of these suppliers could materially adversely affect our business. To protect against such loss, we maintain, or are working to obtain, sufficient inventory of these components to allow us to continue to manufacture our systems and consumables during the period required to qualify a new supplier. For example, the manufacturer of the camera used in our Growth Direct system discontinued production of the camera, and we have obtained a supply we believe is sufficient to allow us to meet customer demand while qualifying a new camera supplier. While we believe we have, or will have, sufficient inventory to provide protection against changes in our sole suppliers, our estimates of the

length of time required to qualify a new supplier or inventory level required to manufacture our systems and consumables during that time may be incorrect, and we may run out of inventory sooner than we anticipate. In addition, we have not obtained sufficient inventory for all of our single-source components and we may not be able to do so in the amounts we predict will be required. In addition, any change to a new supplier will require us to devote substantial time and resources, result in additional costs, and could involve a period in which our products might not be produced in a timely or consistent manner. We may also be unable to enter into agreements with new suppliers on commercially reasonable terms or at all. The occurrence of any of these events could adversely affect our business and customer relationships. In addition, loss of any critical component provided by a single-source supplier could require us to change the design of our manufacturing process based on the functions, limitations, features and specifications of the replacement components.

Several other non-critical components and materials that comprise our Growth Direct platform are currently manufactured by a single supplier or a limited number of suppliers. In many of these cases, we have not yet qualified alternate suppliers and rely upon purchase orders, rather than long-term supply agreements. A supply interruption or an increase in demand beyond our current suppliers' capabilities could harm our ability to manufacture our products unless and until new sources of supply are identified and qualified. Our reliance on these suppliers subjects us to a number of risks that could harm our business, including:

- interruption of supply resulting from modifications to or discontinuation of a supplier's operations;
- delays in product shipments resulting from uncorrected defects, reliability issues, or a supplier's variation in a component;
- a lack of long-term supply arrangements for key components with our suppliers;
- inability to obtain adequate supply in a timely manner, or to obtain adequate supply on commercially reasonable terms;
- difficulty and cost associated with locating and qualifying alternative suppliers for our components in a timely manner;
- a modification or change in a manufacturing process or part that unknowingly or unintentionally negatively impacts the operation of our products;
- production delays related to the evaluation and testing of products from alternative suppliers, and corresponding regulatory qualifications;
- delay in delivery due to our suppliers prioritizing other customer orders over ours;
- damage to our brand reputation caused by defective components produced by our suppliers;
- increased cost of our warranty program due to product repair or replacement based upon defects in components produced by our suppliers; and
- fluctuation in delivery by our suppliers due to changes in demand from us or their other customers.

Any interruption in the supply of components or materials, or our inability to obtain substitute components or materials from alternate sources at acceptable prices in a timely manner, could impair our ability to meet the demand of our customers, which would have an adverse effect on our business.

We forecast sales to determine requirements for components and materials used in our products, and if our forecasts are incorrect, we may experience delays in shipments or increased inventory costs.

To manage our operations with our third-party suppliers, we forecast anticipated product orders and material requirements to predict our inventory needs and enter into purchase orders on the basis of these requirements. Our limited historical commercial experience and recent growth may not provide us with enough data to consistently and accurately predict future demand. If our business expands and our demand for components and materials increases beyond our estimates, we or our suppliers may be unable to meet our demand. In addition, if we underestimate our component and material requirements, we may have inadequate inventory, which could interrupt, delay, or prevent delivery of our products to our customers. By contrast, if we overestimate our component and material requirements, we may have excess

inventory, which would increase our expenses. Any of these occurrences would negatively affect our financial performance and business results.

Shipping is a critical part of our business and any changes in our shipping arrangements or damages or losses sustained during shipping could adversely affect our business, financial condition, results of operations and prospects.

Shipments of our products are subject to various regulations in the various countries in which we provide our products. For example, shipments of our growth media consumables may be required to comply with the shipping requirements promulgated by the U.S. Department of Transportation and the U.S. Federal Aviation Administration, as well as shipment rules established by the International Air Transport Association. If we are unable to comply with any of these rules or regulations, our ability to deliver our products in a timely manner may be adversely affected. In addition, even if we are able to comply with these rules and regulations, compliance can result in increased costs. In either event, our financial results and condition may be adversely affected.

We also currently rely on third-party vendors for our shipping. If we are not able to negotiate acceptable pricing and other terms with these entities or they experience performance problems or other difficulties, it could negatively impact our operating results and our customers' experience. Our products could sustain serious damage or be lost in transit. If a product is damaged in transit, including damage due to consumable temperature excursion, it may result in a substantial delay in the fulfillment of the customer's order, and depending on the type and extent of the damage and whether the incident is covered by insurance, it may result in a substantial financial loss. If our products are not delivered in a timely fashion or are damaged or lost during the delivery process, our customers could become dissatisfied and cease using our products or services, which would adversely affect our business, financial condition, results of operations and prospects.

We use biological and hazardous materials that require considerable expertise and expense for handling, storage and disposal and may result in claims against us.

We work with materials, including chemicals, biological agents and compounds that could be hazardous to human health and safety or the environment. Our operations also produce hazardous and biological waste products. Federal, state and local laws and regulations govern the use, generation, manufacture, storage, handling and disposal of these materials and wastes. We are subject to periodic inspections by federal, state and local authorities to ensure compliance with applicable laws. Compliance with applicable environmental laws and regulations is expensive, and current or future environmental laws and regulations may restrict our operations. If we do not comply with applicable regulations, we may be subject to fines and penalties. In addition, we cannot eliminate the risk of accidental injury or contamination from these materials or wastes, which could cause an interruption of our commercialization efforts, research and development programs and business operations, as well as environmental damage resulting in costly clean-up and liabilities under applicable laws and regulations. In the event of contamination or injury, we could be liable for damages or penalized with fines in an amount exceeding our resources and our operations could be suspended or otherwise adversely affected. Furthermore, environmental laws and regulations are complex, change frequently and have tended to become more stringent. We cannot predict the impact of such changes and cannot be certain of our future compliance.

Risks Related to Our Intellectual Property

If we are unable to obtain and maintain sufficient intellectual property protection for our technology, including the Growth Direct platform, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our products may be impaired.

We rely on patent protection as well as trademark, copyright, trade secret and other intellectual property rights protection and contractual restrictions to protect our proprietary technologies, all of which provide limited protection and may not adequately protect our rights or permit us to gain or keep any competitive advantage. If we fail to maintain, protect or enforce our intellectual property, third parties may be able to compete more effectively against us.

Our success depends in large part on our ability to obtain and maintain protection of the intellectual property related to our products and technologies, particularly patents, in the United States and other countries. Obtaining, maintaining and enforcing patents in our industry is costly, time consuming and complex, and we may fail to do so with respect to patents on important products, services and technologies in a timely fashion, at a reasonable cost or at all, in the U.S. or in other potentially relevant jurisdictions. If we delay in filing a patent application, and a competitor files a patent application on the same or a similar technology before we do, we may face a limited ability to secure patent rights. Even if

we can patent the technology, the patent may be limited in scope, and such limitation may be inadequate to protect our products, or to block competitor products that are similar or adjacent to ours. In addition, the USPTO and various non-U.S. governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. There are situations in which non-compliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Therefore, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business.

It is possible that none of our pending patent applications will result in issued patents in a timely fashion or at all, and even if patents are granted, they may not provide a basis for intellectual property protection of commercially viable products or services, may not provide us with any competitive advantages, or may be challenged and invalidated by third parties. It is possible that others will design around our current or future patented technologies.

The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability. Some of our patents or patent applications may be challenged in opposition, derivation, reexamination, inter partes review, post-grant review, interference, or in court proceedings. See "*—We may become involved in lawsuits to protect or enforce our intellectual property, which could be expensive, time consuming and unsuccessful*." Any successful challenge to our patents could result in the unenforceability or invalidity of such patents, which could harm our business. In addition, in patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. The outcome following legal assertions of invalidity and unenforceability during patent litigation is unpredictable. If a defendant were to prevail on a legal assertion of invalidity or unenforceability, we would lose at least part, and perhaps all, of the patent protection on certain aspects of our platform technologies. If the breadth or strength of protection provided by our patents and patent applications is threatened, regardless of the outcome, it could dissuade companies from collaborating with us to license, develop or commercialize current or future products.

Patent terms may be inadequate to protect our competitive position on our products for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date, subject to applicable extensions. Once expired, we may be open to competition from competitive products. If one of our products requires extended development or testing, patents protecting such products might expire before or shortly after such products are commercialized. For example, while our patents and, if issued, our patent applications have terms that will expire through 2045, certain of our earlier U.S. patents are scheduled to expire in 2032. Although we own other patents with later expiration dates that cover various improvements and consumables for the Growth Direct platform, these other patents may not provide the same protection as the earliest-filed patents. As a result, our patent portfolio may not provide us with sufficient rights to exclude others from commercializing similar or identical products to ours, which would have a material adverse effect on our business.

The United States government may exercise certain rights with regard to certain of our inventions developed using government funding.

The United States federal government retains certain rights in inventions produced with its financial assistance under the Patent and Trademark Law Amendments Act, or the Bayh-Dole Act. Certain of our inventions for which we have pursued, and in some cases obtained, patent protection were developed using federal funding from BARDA. As a result, the U.S. government may have certain rights, including so-called march-in rights, to any patent rights that were funded in party by the U.S. government and any products or technology developed from such patent rights. When new technologies are developed with U.S. government funding, the U.S. government generally obtains certain rights in any resulting patents, including a nonexclusive license authorizing the U.S. government to use the invention for non-commercial purposes. These rights may permit the U.S. government to disclose our confidential information to third parties and to exercise march-in rights to use or to allow third parties to use our licensed technology. The U.S. government can exercise its march-in rights if it determines that action is necessary because we fail to achieve the practical application of government-funded technology, because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations, or to give preference to U.S. industry. In addition, our rights in such inventions may be subject to certain requirements to manufacture products embodying such inventions in the United States. Any exercise by the U.S. government of such rights could harm our business, financial condition, results of operations and prospects.

If we are unable to protect the confidentiality of our trade secrets, the value of our technology could be materially adversely affected and our business could be harmed.

We rely on trade secrets and confidentiality agreements to protect our unpatented know-how, technology and other proprietary information, including parts of our technology platform, and to maintain our competitive position and we expect our reliance to increase in the near term as the terms for certain of our earliest patents expire. Any disclosure, either intentional or unintentional, by our employees, consultants or vendors, or misappropriation by third parties (such as through a cybersecurity breach) of our trade secrets or proprietary information could enable competitors to duplicate or surpass our technological achievements, thus eroding our competitive position in our market. From time to time, we may share trade secrets with customers, collaborators, suppliers, vendors and other third parties, which increases the possibility that a competitor will discover them or that our trade secrets will be misappropriated or disclosed.

Trade secrets and know-how can be difficult and expensive to protect. We take steps to protect our intellectual property and proprietary technology by maintaining physical and electronic security measures and by entering into agreements, including confidentiality, non-disclosure and intellectual property assignment agreements, with our employees, consultants, advisors, collaborators and customers. However, we cannot be certain that such agreements have been entered into with all relevant parties, and we cannot be certain that our trade secrets and other confidential proprietary information will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. For example, if any of these parties breach the agreements and disclose our proprietary information, including our trade secrets, we may expend significant time and resources to assert our rights against such parties and we ultimately may not be able to obtain adequate remedies for such breaches. Such agreements may not be enforceable or may not provide meaningful protection in the event of unauthorized use or disclosure or other breaches of the agreements, and we may not be able to prevent such unauthorized disclosure, which could materially adversely impact our business and financial position.

We may not be able to protect our intellectual property rights throughout the world.

We intend to continue to expand our commercial operations in territories outside the United States, including in Europe and the Asia-Pacific region. The laws of some foreign countries do not protect intellectual property rights to the same extent as the laws of the United States, and we may encounter difficulties in protecting and defending such rights in foreign jurisdictions. Consequently, we may not be able to prevent third parties from practicing our inventions in some or all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. In addition, certain countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to other parties. Furthermore, many countries limit the enforceability of patents against other parties, including government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of any patents.

We may not be able to protect and enforce our trademarks and trade names, or build name recognition in our markets of interest thereby harming our competitive position.

Our trademarks or trade names may be challenged, infringed, diluted, circumvented, declared generic or determined to be infringing on other marks. We may not be able to protect our rights in these trademarks or trade names or may be forced to stop using these names, which we need for name recognition by potential partners or customers in our markets of interest. We have not yet registered certain of our trademarks in all of our potential markets. During the trademark registration process, we may receive objections that we may be unable to overcome. In addition, third parties may be given an opportunity to oppose pending trademark applications and/or to seek the cancellation of registered trademarks. If we are unable to obtain a registered trademark or establish name recognition based on our trademarks and trade names, we may not be able to compete effectively and our business may be adversely affected.

We may be subject to claims challenging the inventorship and ownership of our patents and other intellectual property.

We may be subject to claims that former employees, collaborators or other third parties have an interest in our patents, trade secrets or other intellectual property as an inventor or by contract. Inventorship disputes may arise from conflicting views regarding the contributions of different individuals named as inventors, the effects of foreign laws where foreign nationals are involved in the development of the subject matter of the patent, conflicting obligations of third parties involved in our development activities or as a result of questions regarding co-ownership of potential joint inventions. Litigation may be necessary to defend against these and other claims challenging inventorship of patents, trade secrets or other intellectual property. Alternatively, or additionally, we may enter into agreements to clarify the scope of our rights in such intellectual property. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, important intellectual property. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to

management and other employees, and certain customers or partners may defer engaging with us until the particular dispute is resolved.

In addition, while it is our policy to require our employees and contractors who may be involved in the conception or development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who, in fact, conceives or develops intellectual property that we regard as our own. The assignment of intellectual property rights may not be self-executing, or the assignment agreements may be breached, and we may be forced to bring claims against third parties, or defend claims that they may bring against us, to determine the ownership of what we regard as our intellectual property. Any of the foregoing could harm our business, financial condition, results of operations and prospects.

We may be involved in litigation claiming that we have infringed on a third party's intellectual property, which could be time consuming and costly and may adversely affect our business, financial condition, results of operations and prospects.

We may be involved with litigation or actions at the USPTO or foreign patent offices with various third parties that claim we or our collaborators or customers using our solutions and services have infringed, misappropriated or misused other parties' intellectual property rights. We expect that the number of such claims may increase as the number of our products grows, we expand our market share and the level of competition in our markets increases. Moreover, as the automated MQC testing industry expands and more patents are issued, the risk increases that our products may be subject to claims of infringement of third-party patent and other proprietary rights. Any infringement claim, regardless of its validity, could harm our business by, among other things, resulting in time consuming and costly litigation, diverting management's time and attention from the development of the business, requiring the payment of monetary damages, fees and expenses or royalty payments, or result in potential or existing customers delaying purchases of our products or entering into engagements with us pending resolution of the dispute.

There can be no assurance that we will prevail in any suit initiated against us by third parties, successfully settle or otherwise resolve patent infringement claims. Third parties making claims against us may be able to obtain injunctive or other relief, which could block our ability to develop, commercialize and sell products or services, and could result in the award of substantial damages against us, including treble damages, attorneys' fees, costs and expenses, if we are found to have willfully infringed. In the event of a successful claim of infringement against us, we may be required to pay damages and ongoing royalties, and obtain one or more licenses from third parties, or be prohibited from selling certain products or services. We may not be able to obtain these licenses on acceptable or commercially reasonable terms, if at all, or these licenses may be non-exclusive, which could result in our competitors gaining access to the same intellectual property. In addition, we could encounter delays and incur significant costs, in product or service introductions while we attempt to develop alternative products or services, or redesign our products or services, to avoid infringing third party patents or proprietary rights. Defense of any lawsuit or failure to obtain any of these licenses or to develop a workaround could prevent us from commercializing products or services, and the prohibition of sale or the threat of the prohibition of sale of any of our products or services could materially affect our business and our ability to gain market acceptance for our products or services. Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. Further, even if we were successful in defending against a lawsuit, such a defense would distract our management team from our operations, which could have an adverse effect on our business. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations or could otherwise have a material adverse effect on our business, results of operations, financial condition and prospects. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation or other legal proceedings relating to our intellectual property rights, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation or other proceedings.

In addition, our agreements with some of our customers, suppliers or other entities with whom we do business may require us to defend or indemnify these parties to the extent they become involved in infringement claims, including the types of claims described above. We could also voluntarily agree to defend or indemnify third parties in instances where we are not obligated to do so if we determine it would be important to our business relationships. If we are required or agree to defend or indemnify third parties in connection with any infringement claims, we could incur significant costs and expenses that could adversely affect our business, financial condition, results of operations and prospects.

We may become involved in lawsuits to protect or enforce our intellectual property, which could be expensive, time consuming and unsuccessful.

Third parties, including our competitors, could be infringing, misappropriating or otherwise violating our intellectual property rights. Monitoring unauthorized use of our intellectual property is difficult and costly. From time to time, we seek to analyze our competitors' products and services, and may in the future seek to enforce our rights against potential infringement, misappropriation or violation of our intellectual property. However, the steps we have taken to protect our proprietary rights may not be adequate to enforce our rights against such infringement, misappropriation or violation of our intellectual property. We may not be able to detect unauthorized use of, or take appropriate steps to enforce, our intellectual property rights. Any inability to meaningfully enforce our intellectual property rights could harm our ability to compete and reduce demand for our products and services.

Litigation may be necessary for us to enforce our patent and proprietary rights or to determine the scope, coverage and validity of the proprietary rights of others. If we do not prevail in such legal proceedings, we may be required to pay damages, we may lose significant intellectual property protection for our products or services, such that competitors could copy our products or services and we could be forced to cease commercialization of certain of our products or services. Even if resolved in our favor, any award of monetary damages or other remedy we receive may not be commercially valuable.

Any litigation that may be necessary in the future could result in substantial costs and diversion of resources and could have a material adverse effect on our business, financial condition, results of operations and prospects. In any lawsuit we bring to enforce our intellectual property rights, a court may refuse to stop the other party from using the technology at issue on grounds that our intellectual property rights do not cover the technology in question. Further, in such proceedings, the defendant could counterclaim that our intellectual property is invalid or unenforceable and the court may agree, in which case we could lose valuable intellectual property rights. The outcome in any such lawsuits are unpredictable. Even if we do prevail in any future litigation related to intellectual property rights, the cost and time requirements of the litigation could negatively impact our financial results. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could compromise our ability to compete in the marketplace.

Our use of open-source software could compromise our ability to offer our services and subject us to possible litigation.

We use open-source software licensed to us by third-party authors under "open source" licenses in connection with our products and services. Use and distribution of open-source software may entail greater risks than use of third-party commercial software, as open-source licensors generally do not provide support, warranties, indemnification or other contractual protections regarding infringement claims or the quality of the code.

Further, some open-source software licenses require users who distribute software containing open-source software to publicly disclose all or part of the source code to the licensee's software that incorporates, links or uses such open-source software, and make available to third parties for no cost, any derivative works of the open source code created by the licensee, which could include the licensee's own valuable proprietary code. While we monitor our use of open-source software and try to ensure that none is used in a manner that would require us to disclose our proprietary source code or that would otherwise breach the terms of an open source agreement, such use could inadvertently occur, or could be claimed to have occurred, in part because open source license terms are often ambiguous. Additionally, we may from time to time face claims from third parties claiming ownership of, or seeking to enforce the terms of, an open source license, including by demanding release of source code for the open-source software, derivative works or our proprietary source code that was developed using, or that is distributed with, such open-source software. These claims could also result in litigation and could require us to make our proprietary software source code freely available, require us to devote additional research and development resources to change re-engineer our platform, seek costly licenses from third parties or otherwise incur additional costs and expenses, any of which could result in reputational harm and would have a negative effect on our business and operating results.

Risks Related to Our Common Stock

The market price of our Class A common stock has been and may continue to be volatile and fluctuate substantially, which could result in substantial losses for our stockholders.

The market price of our Class A common stock has been and may continue to be volatile. The stock market in general and the market for smaller technology companies in particular has experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, our stockholders may not be

able to sell their Class A common stock at or above the price they paid for them. The market price for our Class A common stock may be influenced by many factors, including:

- actual or anticipated fluctuations in our financial condition and operating results, including fluctuations in our quarterly and annual results;
- the introduction of new products or product enhancements by us or others in our industry;
- variances in product and system reliability;
- overall conditions in our industry and the markets in which we operate;
- disputes or other developments with respect to our or others' intellectual property rights;
- actual or anticipated changes in our operating results or growth rate as a result of our competitors' operating results;
- our ability to develop and market new and enhanced products and expand into new markets on a timely basis;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- product liability claims or other litigation;
- announcement or expectation of additional financing effort;
- sales of our common stock by us or our stockholders;
- share price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- media exposure of our products or of those of others in our industry;
- changes in earnings estimates or recommendations by securities analysts;
- general market conditions and other factors, including factors unrelated to our operating performance or the operating performance of our competitors; and
- the other factors described in this "Risk Factors" section and elsewhere in this Quarterly Report on Form 10-Q.

If our Class A common stock is delisted from the Nasdaq Stock Market, the liquidity of our Class A common stock would be adversely affected and the market price of our common stock could decrease.

The Nasdaq Stock Market LLC ("Nasdaq"), on which our Class A common stock is currently listed has minimum requirements that a company must meet in order to remain listed, including that we maintain a minimum closing bid price of $1.00 per share for our Class A common stock. We have previously received notifications from Nasdaq that we were not in compliance with its minimum bid price requirements. Most recently, on February 2, 2024, we received a letter from Nasdaq notifying us that the closing bid price of our Class A common stock was below $1.00 per share for the preceding 30 consecutive trading days and that, as a result, the Company was not in compliance with the minimum bid price requirement for continued inclusion on the Nasdaq Global Select Market under Nasdaq Listing Rule 5550(a)(2) (the "Bid Price Requirement"). In order to extend the time period during which we were required to seek to regain compliance with the Bid Price Requirement, we transferred the listing of our Class A common stock to the Nasdaq Capital Market effective as of August 5, 2024. On November 11, 2024, we received a letter from the Staff indicating that we had regained compliance with the Bid Price Requirement, following ten (10) consecutive business days during which the closing bid price of our Class A common stock was equal to or greater than $1.00 per share.

Even though we have regained compliance with the Bid Price Requirement, there can be no assurance that we will in the future continue to comply with the Bid Price Requirement and other continued listing standards of Nasdaq in the future. If we fail to comply with one or more other Nasdaq listing rules, our Class A common stock may also become subject to delisting as a result of such deficiencies, then Nasdaq will issue a notice that we are not in compliance and we

will need to take corrective actions in order to not be delisted. Such corrective actions could include a reverse stock split or a buyback of shares of our Class A common stock, which may adversely affect the liquidity of our Class A common stock or our cash balance, respectively.

A delisting of our Class A common stock from Nasdaq could materially reduce the liquidity of our Class A common stock and result in a corresponding material reduction in the price of our Class A common stock. In addition, delisting could harm our ability to raise capital on terms acceptable to us, or at all, and may result in the potential loss of confidence by investors and employees and fewer business development opportunities. Further, any potential delisting of our Class A common stock from Nasdaq would also make it more difficult for our stockholders to sell their shares in the public market.

Sales of a substantial number of shares of our Class A common stock in the public market, or the perception in the market that the holders of a large number of shares intend to sell shares, could depress the market price of our Class A common stock.

Except for shares of our Class A common stock that are held by our directors, officers and affiliates, which are subject to certain restrictions on resale under the Securities Act of 1933, as amended, or the Securities Act, and the rules and regulations promulgated thereunder, all other shares of our Class A common stock listed on Nasdaq are generally freely tradable. These include shares held by stockholders, including those that hold large positions in our securities, that are not our affiliates as such term is defined under Rule 144 of the Securities Act. Sales of a substantial number of shares of our common stock by such stockholders, particularly at a time when daily trading volumes in our stock are low, has had and may continue to have the effect of depressing the trading price of our common stock. Such downward pressure in the trading price of our common stock may also be exerted by investors' expectations or perceptions that such sales could occur.

An active trading market for our Class A common stock may not be sustainable.

It is possible that an active or liquid market for our Class A common stock may not be sustainable. In the absence of an active trading market for our Class A common stock, it may be difficult for stockholders to sell our shares without depressing the market price for the shares, or at all. Furthermore, an inactive market may also impair our ability to raise capital by selling shares of our Class A common stock and may impair our ability to enter into strategic collaborations or acquire companies or products by using our shares of Class A common stock as consideration.

Our executive officers, directors and principal stockholders, if they choose to act together, have the ability to control all matters submitted to stockholders for approval.

Based on the number of shares of Class A common stock outstanding as of June 30, 2025, our executive officers, directors and stockholders who owned more than 5% of our outstanding common stock and their respective affiliates hold, in the aggregate, a majority of our outstanding voting stock. The holders of shares of our Class B common stock have the ability to convert any portion of their Class B common stock into Class A common stock. Our Class B common stock cannot be converted if, immediately following such conversion, the holder would beneficially own more than 4.9% of the issued and outstanding Class A common stock. Due to this conversion right, holders of our Class B common stock could, at any time, increase their voting control of us. As a result of their combined voting power, if our executive officers, directors and stockholders who own more than 5% of our outstanding common stock choose to act together, they would be able to control all matters submitted to our stockholders for approval that require a majority vote, as well as our management and affairs. For example, these persons, if they choose to act together, would control the election of directors, the composition of our management and approval of any merger, consolidation or sale of all or substantially all of our assets.

The dual class structure of our common stock and the option of the holders of shares of our Class B common stock to convert into shares of our Class A common stock may limit our Class A stockholders' ability to influence corporate matters.

Our Class A common stock has one vote per share, while our Class B common stock is non-voting. Nonetheless, each share of our Class B common stock may be converted at any time into one share of issued and outstanding Class A common stock at the option of its holder, subject to the limitations provided for in our restated certificate of incorporation that prohibit the conversion of our Class B common stock into shares of Class A common stock to the extent that, upon such conversion, such holder would beneficially own in excess of 4.9% of our Class A common stock. Consequently, if holders of Class B common stock exercise their option to make this conversion, such exercise will have the effect of increasing the relative voting power of those prior holders of our Class B common stock (subject to the ownership

limitation described in the previous sentence) and increasing the number of outstanding shares of our voting common stock, and correspondingly decreasing the relative voting power of the current holders of our Class A common stock, which may limit our current Class A stockholders' ability to influence corporate matters.

We are an "emerging growth company," and a "smaller reporting company," and the reduced disclosure requirements applicable to us may make our Class A common stock less attractive to investors.

We are an "emerging growth company," as defined in the JOBS Act, and may remain an emerging growth company until December 31, 2026. However, if certain events occur prior to such date, including if we become a "large accelerated filer," our annual gross revenues exceed $1.235 billion or we issue more than $1.0 billion of non-convertible debt in the previous three-year period, we will cease to be an emerging growth company prior to December 31, 2026. For so long as we remain an emerging growth company, we are permitted and intend to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. These exemptions include:

- not being required to comply with the auditor attestation requirements in the assessment of our internal control over financial reporting;
- reduced disclosure obligations regarding executive compensation;
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved and from providing the pay ratio between our Chief Executive Officer and employees; and
- an exemption from compliance with the requirements of the Public Company Accounting Oversight Board regarding the communication of critical audit matters in the auditor's report on the financial statements.

We are also a "smaller reporting company" and are therefore entitled to rely on certain reduced disclosure requirements for as long as we remain a smaller reporting company, such as presenting two years of audited financial statements in our annual Form 10-K or reduced disclosure requirements for executive compensation. This reduced disclosure in our SEC filings due to our status as a smaller reporting company may make it harder for investors to analyze our results of operations and financial prospects.

We cannot predict whether investors will find our Class A common stock less attractive if we rely on these exemptions. If some investors find our Class A common stock less attractive as a result, there may be a less active trading market for our Class A common stock and our stock price may be reduced or more volatile. In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of these accounting standards until they would otherwise apply to private companies. We intend to utilize the extended transition period and, as a result, we will not be required to comply with new or revised accounting standards on the same timeline as other public companies.

If we fail to maintain effective internal control over financial reporting and effective disclosure controls and procedures, we may not be able to accurately report our financial results in a timely manner or prevent fraud, which may adversely affect investor confidence in our company.

As a public company, we are required to maintain internal control over financial reporting and to report any material weaknesses in such internal controls. Section 404 of the Sarbanes-Oxley Act of 2002 requires that we evaluate and determine the effectiveness of our internal control over financial reporting and provide a management report on our internal controls on an annual basis. However, while we remain an emerging growth company, we are not required to include an attestation report on internal control over financial reporting issued by our independent registered accounting firm. If we have material weaknesses in our internal control over financial reporting, we may not detect errors on a timely basis and our consolidated financial statements may be materially misstated. We will need to maintain and enhance the systems, processes and documentation necessary to comply with Section 404 of the Sarbanes-Oxley Act as we grow, and we will require additional management and staff resources to do so.

Additionally, even if we conclude our internal control over financial reporting is effective for a given period, we may in the future identify one or more material weaknesses, in which case our management will be unable to conclude that

our internal control over financial reporting is effective. Our independent registered public accounting firm will be required to issue an attestation report on the effectiveness of our internal control over financial reporting following the date we are no longer an emerging growth company and do not qualify as a non-accelerated filer. Even if our management concludes that our internal control over financial reporting is effective, our independent registered public accounting firm may in the future conclude that there are material weaknesses with respect to our internal controls or the level at which our internal controls are documented, designed, implemented or reviewed.

If we are unable to conclude that our internal control over financial reporting is effective or if our auditors were to express an adverse opinion on the effectiveness of our internal control over financial reporting because we had one or more material weaknesses, investors could lose confidence in the accuracy and completeness of our financial disclosures, which could cause the price of our common stock to decline. Irrespective of compliance with Section 404, any failure of our internal control over financial reporting could have a material adverse effect on our reported operating results and harm our reputation. Internal control deficiencies could also result in a restatement of our financial results.

Our disclosure controls and procedures may not prevent or detect all errors or acts of fraud.

We are subject to the periodic reporting requirements of the Exchange Act. We are continuing to refine our disclosure controls and procedures to provide reasonable assurance that information we must disclose in reports we file or submit under the Exchange Act is accumulated and communicated to management, and recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC. We believe that any disclosure controls and procedures, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met.

These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls. Accordingly, because of the inherent limitations in our control system, misstatements due to error or fraud may occur and not be detected, which could have a material adverse effect on investors' confidence in our reporting and the price of our Class A common stock.

Provisions in our restated certificate of incorporation and amended and restated bylaws and under Delaware law could make an acquisition of our company, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our restated certificate of incorporation and our amended and restated bylaws may discourage, delay or prevent a merger, acquisition or other change in control of our company that stockholders may consider favorable, including transactions in which our stockholders might otherwise receive a premium for their shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of our Class A common stock, thereby depressing the market price of our Class A common stock. In addition, because our board of directors is responsible for appointing the members of our management team, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors. Among other things, these provisions include those establishing:

- a classified board of directors with three-year staggered terms, which may delay the ability of stockholders to change the membership of a majority of our board of directors;
- no cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;
- the exclusive right of our board of directors to elect a director to fill a vacancy created by the expansion of the board of directors or the resignation, death or removal of a director, which prevents stockholders from filling vacancies on our board of directors;
- the ability of our board of directors to authorize the issuance of shares of preferred stock and to determine the terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquirer;
- the ability of our board of directors to alter our bylaws without obtaining stockholder approval;

- the required approval of the holders of at least two-thirds of the shares entitled to vote at an election of directors to adopt, amend or repeal our bylaws or repeal the provisions of our restated certificate of incorporation regarding the election and removal of directors;

- the required approval of the holders of at least two-thirds of the shares entitled to vote thereon to (i) effect a reorganization, recapitalization, share exchange, share classification, consolidation, conversion or merger, (ii) sell, lease, exchange, transfer or otherwise dispose of all or substantially all of our assets, or (iii) dissolve our company or revoke a dissolution of our company;

- a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;

- the requirement that a special meeting of stockholders may be called only by the chairman of the board of directors, the chief executive officer, the president or the board of directors, which may delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors; and

- advance notice procedures that stockholders must comply with in order to nominate candidates to our board of directors or to propose matters to be acted upon at a stockholders' meeting, which may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of us.

We have been, and may continue to be, subject to the actions of activist stockholders or unsolicited acquisition proposals, which could cause us to incur substantial costs, divert management's and the board's attention and resources, and have an adverse effect on our business and stock price.

From time to time, we may be subject to proposals by stockholders urging us to take certain corporate actions, such as changing the composition of our board of directors, our management team, selling our company or similar strategic initiatives. If activist stockholder initiatives ensue, our business could be adversely affected, as responding to such actions can be costly and time-consuming, disrupt our operations and divert the attention of management and our board of directors. For example, in connection with the unsolicited proposal from a stockholder to acquire all of our outstanding common stock in June 2022, we retained the services of various advisors, including legal, financial, and communications professionals, to advise us in considering the stockholder's proposal and during our review of strategic alternatives, the costs of which negatively impacted our financial results, and we may be required to retain such services in the future, which could have a further negative impact on our financial results. In addition, perceived uncertainties as to our future direction, strategy or leadership created as a consequence of activist stockholder initiatives may result in the loss of potential business opportunities, harm our ability to attract new investors, customers, and employees, and cause our stock price to experience periods of volatility or stagnation.

Our restated certificate of incorporation designates specific courts as the exclusive forum for certain litigation that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us.

Our restated certificate of incorporation specifies that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for most legal actions involving claims brought against us by stockholders; provided that, the exclusive forum provision will not apply to suits brought to enforce any liability or duty created by the Securities Act, the Exchange Act, the rules and regulations thereunder or any other claim for which the federal courts have exclusive jurisdiction; and provided further that, if and only if the Court of Chancery of the State of Delaware dismisses any such action for lack of subject matter jurisdiction, such action may be brought in another state or federal court sitting in the State of Delaware. Our restated certificate of incorporation further provides that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States of America shall, to the fullest extent permitted by law, be the sole and exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. Any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock shall be deemed to have notice of and to have consented to the provisions of our restated certificate of incorporation described above; provided, however, that stockholders cannot and will not be deemed to have waived our compliance with the U.S. federal securities laws and the rules and regulations thereunder.

These provisions may have the effect of discouraging lawsuits against our directors, officers, employees and agents as it may limit any stockholder's ability to bring a claim in a judicial forum that such stockholder finds favorable for

disputes with us or our directors, officers, employees or agents and result in additional litigation costs in pursuing any such claims. In addition, while the Delaware Supreme Court ruled in March 2020 that federal forum selection provisions purporting to require claims under the Securities Act be brought in federal court are "facially valid" under Delaware law, there is uncertainty as to whether other courts will enforce our Federal Forum Provision. If a court were to find the choice of forum provision contained in our restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could adversely affect our business, financial condition or results of operations. The choice of forum provision contained in our restated certificate of incorporation may also impose additional litigation costs on stockholders who assert that the provision is not enforceable or invalid. The Court of Chancery of the State of Delaware and the federal district courts of the United States may also reach different judgments or results than would other courts, including courts where a stockholder considering an action may be located or would otherwise choose to bring the action, and such judgments may be more or less favorable to us than our stockholders.

Our ability to use our net operating losses and research and development tax credits to offset future taxable income or income tax liabilities is subject to certain limitations.

As of December 31, 2024, we had U.S. federal and state net operating loss, or NOL, carryforwards of $268.4 million and $114.8 million, respectively. These NOLs may be available to offset future taxable income, if any, that begin to expire in 2038 and 2032, respectively. Additionally, we had federal NOLs of $255.6 million generated since 2018, which do not expire. The Tax Cuts and Jobs Act (TCJA) enacted on December 22, 2017 limits a taxpayer's ability to utilize NOL deduction in a year to 80% taxable income for federal NOL arising in tax years beginning after 2017. In addition, we had federal and state research and development tax credits of $2.8 million and $3.2 million, respectively. These tax credits may be available to offset future tax liabilities and begin to expire in 2038 and 2025, respectively.

In general, under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, or the Code, a corporation that undergoes an "ownership change," generally defined as a greater than 50 percentage point change by value in its equity ownership by one or more stockholders or groups of stockholders owning at least 5% of the corporation's stock over a rolling three-year period, is subject to limitations on its ability to utilize its pre-ownership change NOLs and tax credits to offset future taxable income or income tax liabilities for U.S. federal income tax purposes. Similar rules may apply under state tax laws. The Company has completed a Section 382 study through July 31, 2020 to assess the limitations on use of NOLs and research and development credits due to changes in control. The study determined that ownership changes materially limited the NOL carryforwards and research and development tax credits available to offset future tax liabilities and the limitations have been reflected in the amounts of NOL carryforwards, research and development tax credits, and deferred tax assets disclosed above. The Company has not completed a Section 382 study for post July 31, 2020 transactions which could create an additional limitation although materially all of the current federal NOL carryforwards can be carried forward indefinitely. We have in the past experienced, and we may in the future experience ownership changes, some of which are outside our control. For these reasons, we are not able to utilize a material portion of the NOLs and tax credits even if we attain profitability. For additional information on our use of NOLs, see the section entitled "*Management's Discussion and Analysis of Financial Condition and Results of Operations—Components of results of operations—Income tax (benefit) expense*" and Note 11—*Income taxes* to our consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q.

General risk factors

There is increased attention to environmental, social and governance matters that may impact our business.

There is an increasing focus by U.S. and international regulators, customers, and other stakeholders on environmental, social and governance ("ESG") matters in our industry. Complying with new laws or regulations concerning climate related matters or other ESG matters will result in increased compliance costs and create additional non-compliance risks. Failure to adequately meet our customer's expectations or comply with any such laws or regulations may result in loss of business and an adverse impact on our business, financial condition, and results of operations.

Because we do not anticipate paying any cash dividends on our common stock in the foreseeable future, capital appreciation, if any, would be stockholders' sole source of gain.

We have never declared or paid any cash dividends on our common stock. We currently anticipate that we will retain all available funds and future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. As a result, capital appreciation, if any, of our common stock will be the sole source of gain on an investment in our common stock for the foreseeable future.

If securities or industry analysts do not publish research or reports about our business, or if they issue an adverse or misleading opinion regarding our stock, our stock price and trading volume could decline, even if our business is doing well.

The trading market for our Class A common stock will be influenced by the research and reports that industry or securities analysts publish about us or our business. If the analysts who cover us issue an adverse or misleading opinion regarding us, our business model, or our stock performance, or if our product development or marketing and sales results fail to meet the expectations of analysts, our stock price could decline. If one or more of these analysts ceases coverage of us or fails to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

If our estimates or judgments relating to our critical accounting policies are based on assumptions that change or prove to be incorrect, our operating results could fall below our publicly announced guidance or the expectations of securities analysts and investors, resulting in a decline in the market price of our Class A common stock.

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the amounts reported in our consolidated financial statements and accompanying notes. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets, liabilities, equity, revenue and expenses that are not readily apparent from other sources. If our assumptions change or if actual circumstances differ from our assumptions, our operating results may be adversely affected and could fall below our publicly announced guidance or the expectations of securities analysts and investors, resulting in a decline in the market price of our Class A common stock.

We could be subject to securities class action litigation.

In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because early-stage technology companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs, a diversion of management's attention and resources, and negative publicity, all of which could harm our business.

Conditions in the banking system and financial markets, including the failure of banks and financial institutions, could have an adverse effect on our operations and financial results.

Actual events involving limited liquidity, defaults, non-performance or other adverse developments that affect financial institutions, transactional counterparties or other companies in the financial services industry or the financial services industry generally, or concerns or rumors about any events of these kinds or other similar risks, have in the past and may in the future lead to market-wide liquidity problems. For example, on March 10 and March 12, 2023, the Federal Deposit Insurance Corporation took control and was appointed receiver of Silicon Valley Bank, Signature Bank and Silvergate Capital Corp, respectively, after each bank was unable to continue their operations. Since then, additional financial institutions have experienced similar failures and have been placed into receivership. It is possible that other banks will face similar difficulty in the future.

Although we do not maintain any deposit accounts, credit agreements or letters of credit with any financial institution currently in receivership, we are unable to predict the extent or nature of the impacts of these evolving circumstances at this time. If, for example, other banks and financial institutions enter receivership or become insolvent in the future in response to financial conditions affecting the banking system and financial markets, our ability to access our existing cash, cash equivalents and investments may be threatened. While it is not possible at this time to predict the extent of the impact that the failure of these financial institutions or the high market volatility and instability of the banking sector could have on economic activity and our business in particular, the failure of other banks and financial institutions and the measures taken by governments, businesses and other organizations in response to these events could adversely impact our business, financial condition and results of operations.

Item 2. Unregistered Sales of Equity Securities, Use of Proceeds, and Issuer Purchases of Equity Securities

Recent Sales of Unregistered Securities; Purchases of Equity Securities by the Issuer or Affiliated Purchaser

None.

Use of Proceeds

On July 14, 2021, the Registration Statement on Form S-1 (File No. 333-257431) relating to our IPO was declared effective by the SEC. There has been no material change in the expected use of the net proceeds from our IPO as described in our final prospectus.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

(c) ***Director and Officer Trading Plans and Arrangements***

None of our directors or officers adopted, modified or terminated a Rule 10b5-1 trading arrangement, or adopted, modified or terminated a non-Rule 10b5-1 trading arrangement (as defined in Item 408(c) of Regulation S-K) during the quarter ended June 30, 2025.

Item 6. Exhibits

Exhibit Number	Description of Exhibit
3.1	Restated Certificate of Incorporation, as amended on May 23, 2024 (incorporated by reference to Exhibit 3.1 to the Registrant's Annual Report on Form 10-K (File No. 001-40592) filed on February 28, 2025)
3.2	Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K (File No. 001-40952) filed on July 21, 2021)
10.1†*	Third Amendment to Rapid Micro Biosystems, Inc. 2023 Inducement Plan
10.2+*	Loan and Security Agreement, dated as of August 8, 2025, between the Registrant, Trinity Capital Inc. and the other parties thereto.
10.3*	Form of Warrant issued by the Registrant in connection with the Loan and Security Agreement, dated as of August 8, 2025, between the Registrant, Trinity Capital Inc. and the other parties thereto.
31.1*	Certification of Principal Executive Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2*	Certification of Principal Financial Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1**	Certification of Principal Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2**	Certification of Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS*	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document
101.SCH*	Inline XBRL Taxonomy Extension Schema Document.
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104*	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

* Filed herewith.

** Furnished herewith.

† Indicates management contract or compensatory plan.

\+ Portions of this exhibit (indicated by asterisks) have been redacted in compliance with Regulation S-K Item 601(b)(10)(iv). Certain of the exhibits and schedules to this exhibit have been omitted in accordance with Item 601(a)(5) of Regulation S-K. The registrant agrees to furnish a copy of all omitted exhibits and schedules to the SEC upon its request.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, duly authorized.

Date: August 12, 2025

RAPID MICRO BIOSYSTEMS, INC.

By: /s/ Robert Spignesi

Robert Spignesi
President and Chief Executive Officer
(Principal Executive Officer)

By: /s/ Sean Wirtjes

Sean Wirtjes
Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)

Inducement Plan Amendment

***

THIRD AMENDMENT TO

RAPID MICRO BIOSYSTEMS, INC.

2023 INDUCEMENT PLAN

A. The Rapid Micro Biosystems, Inc. 2023 Inducement Plan, as may be amended from time to time (the "2023 Plan"), is hereby amended by deleting the paragraph in Section 11.23 in its entirety and substituting the following in lieu thereof:

"11.23 ***Overall Share Limit***" means 1,473,987 Shares."

B. The effective date of this Amendment shall be May 22, 2025.

C. Except as amended herein, the 2023 Plan is confirmed in all respects.

Exhibit 10.2

Certain identified information has been excluded from this exhibit because it is both (i) not material and (ii) is the type of information that the registrant treats as private or confidential. Triple asterisks denote omissions.

EXECUTION VERSION

LOAN AND SECURITY AGREEMENT

DATED AS OF

August 8, 2025

among

RAPID MICRO BIOSYSTEMS, INC.,
as Borrower,

THE LENDERS FROM TIME TO TIME PARTY HERETO,

as Lenders, and

TRINITY CAPITAL INC.,

as Administrative Agent and Collateral Agent

LOAN AND SECURITY AGREEMENT

THIS LOAN AND SECURITY AGREEMENT is made as of August 8, 2025 (the "Closing Date"), by and among RAPID MICRO BIOSYSTEMS, INC., a Delaware corporation ("Borrower"), the lenders from time to time party hereto (each, a "Lender" and collectively, the "Lenders") and TRINITY CAPITAL INC., a Maryland corporation, as administrative agent and collateral agent for the Lenders ("Administrative Agent").

RECITALS

WHEREAS, Borrower may, from time to time, desire to borrow from Lenders, and Lenders, may, from time to time, make available to Borrower, term loans (each a "Loan" and collectively the "Loans"); and

WHEREAS, Borrower and Lenders desire that this Agreement shall serve as a master agreement which sets forth the terms and conditions governing any Loan by Lenders to Borrower.

NOW, THEREFORE, in consideration of the agreements and covenants contained herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

ARTICLE 1

DEFINITIONS

As used herein, all capitalized terms shall have the meanings set forth below. All other capitalized terms used but not defined herein shall have the meaning given to such terms in the UCC. Any accounting term used but not defined herein shall be construed in accordance with GAAP and all calculations shall be made in accordance with GAAP (provided, that, for purposes of determining compliance with the negative covenants and any financial covenants and, for purposes of such covenants, any related definitions herein (but, for the avoidance of doubt, not any covenants or obligations in respect of the preparation or provision of financial statements hereunder), any obligations of a Person that would have been treated as operating leases in accordance with Accounting Standards Codification 840 (regardless of whether or not then in effect) shall be treated as operating leases for purposes of all financial definitions, calculations and covenants, without giving effect to Accounting Standards Codification 842 or any subsequent changes in GAAP (or the required implementation of any previously promulgated changes in GAAP) relating to the treatment of a lease as an operating lease or capitalized lease or requiring operating leases to be recharacterized or treated as capital leases). The term "financial statements" shall include the accompanying notes and schedules.

"Account" is, as to any Person, any "account" of such Person as "account" is defined in the UCC with such additions to such term as may hereafter be made, and includes, without limitation, all accounts receivable and other sums owing to such Person.

"Account Control Agreement" means any deposit account control agreement or securities account control agreement in a form reasonably acceptable to Administrative Agent required to perfect Administrative Agent's security interest in Deposit Accounts and Securities Accounts (other than any Excluded Account) pursuant to this Agreement.

"Account Debtor" means, with respect to any Account, the Person or Persons obligated to make payments with respect to such Account, including any guarantor thereof.

"Administrative Agent" means Trinity Capital Inc., in its capacity as administrative agent and collateral agent under the Loan Documents, or any successor administrative agent and collateral agent appointed in accordance with Article 5.

"Administrative Agent's Expenses" means all reasonable and documented costs or expenses (including reasonable and documented attorneys' fees and expenses) incurred by Administrative Agent in connection with the preparation, negotiation, documentation, drafting, amendment, modification, administration, perfection and funding of the Loan Documents; and all of Administrative Agent's attorneys' reasonable and documented fees, costs and expenses incurred in enforcing or defending the Loan Documents (including reasonable and documented attorneys' fees and expenses of appeal or review) and the rights of Administrative Agent in and to the Loans and the Collateral or otherwise hereunder, including the exercise of any rights or remedies afforded hereunder or under applicable law, whether or not suit is brought, whether before or after bankruptcy or insolvency, including all reasonable and documented fees and costs incurred by Administrative Agent in connection with its enforcement of its rights in a bankruptcy or insolvency proceeding filed by or against Borrower, any Subsidiary or their respective Property.

"Advance" means any Loan funds advanced under this Agreement.

"Affiliate" means, with respect to any Person, (i) any other Person that owns or controls directly or indirectly (A) in respect of any Lender or Administrative Agent and for purposes of Section 4.3(i), ten percent (10%) or more of the stock of such Person and (B) otherwise, thirty percent (30%) or more of the stock of such Person, (ii) any other Person that controls or is controlled by or is under common control with such Person and (iii) each of such Person's executive officers, directors, managers, joint venturers or partners. For purposes of this definition, the term "control" of a Person means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of such Person, whether through the ownership of voting Equity Securities, by contract or otherwise and the terms "controlled by" and "under common control with" shall have correlative meanings.

"Agreement" means this Loan and Security Agreement and all Schedules and Exhibits annexed hereto and made a part hereof, as the same may be amended, restated, amended and restated, supplemented or otherwise modified from time to time by the parties hereto.

"Amortization Date" is set forth on Schedule 1 hereto.

"Amortization Schedule" has the meaning provided in Section 2.1(a).

***

"Anti-Terrorism Laws" means any laws relating to terrorism or money laundering, including Executive Order No. 13224 (effective September 24, 2001), the USA PATRIOT Act, the laws comprising or implementing the Bank Secrecy Act, and the laws administered by OFAC.

"Applicable Rate" is set forth on Schedule 1 hereto.

"Assignment and Acceptance" means an assignment and acceptance entered into by an assigning Lender in accordance with Section 8.4 and, to the extent required, consented to by the Administrative Agent and Borrower in accordance with Section 5.4 hereof and substantially in form reasonably acceptable to the Administrative Agent and Borrower.

"Blocked Person" means any Person: (a) listed in the annex to, or is otherwise subject to the provisions of, Executive Order No. 13224, (b) majority owned or controlled by, or acting for or on behalf of, any Person that is listed in the annex to, or is otherwise subject to the provisions of, Executive Order No. 13224, (c) with which any Lender is prohibited from dealing or otherwise engaging in any transaction

by any Anti-Terrorism Law, (d) that commits, threatens or conspires to commit or supports "terrorism" as defined in Executive Order No. 13224, or (e) that is named a "specially designated national" or "blocked person" on the most current list published by OFAC or other similar list.

"Business Day" means a day when the banks in New York, New York are open for business.

"CFC" means any "controlled foreign corporation" as defined in Section 957 of the Code.

"Change of Control" means any of the following (or any combination of the following) whether arising from any single transaction event or series of related transactions or events that, individually or in the aggregate, result in: (a) any "person" or "group" (within the meaning of Section 13(d) and 14(d)(2) of the Exchange Act) becoming the "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of a sufficient number of Equity Securities of Borrower ordinarily entitled to vote in the election of directors, empowering such "person" or "group" to elect a majority of the members of the board directors of Borrower, who did not have such power before such transaction; (b) the Transfer of all or substantially all assets of Borrower and its Subsidiaries, taken as a whole or of a material business line of Borrower ; or (c) Borrower ceasing to own and control, free and clear of any Liens (other than Permitted Liens), directly or indirectly, all of the Equity Securities in each of its Subsidiaries (excluding directors' qualifying shares and other de minimis local ownership requirements, in each case, required by Requirements of Law) or failing to have the power to direct or cause the direction of the management and policies of each such Subsidiary.

"Closing Date" has the meaning set forth in the preamble hereto.

"Code" means the Internal Revenue Code of 1986, as amended.

"Collateral" has the meaning provided in Article 3.

"Commitments" means, with respect to each Lender, such Lender's obligation to make Loans to the Borrower hereunder in a principal amount equal to the amount set forth under the heading "Commitment" opposite such Lender's name on Schedule 2.

"Commitment Fee" is set forth on Schedule 1 hereto.

"Common Stock" means shares of Class A common stock of the Borrower, par value $0.01.

"Compliance Certificate" is that certain certificate in substantially the form attached hereto as Exhibit C.

"Debt" means (a) all indebtedness for borrowed money; (b) all indebtedness for the deferred purchase price of property or services (other than (i) trade payables and accrued expenses incurred in the Ordinary Course of Business, (ii) any earn-out, purchase price adjustment or similar obligation until such obligation appears in the liabilities section of the balance sheet and (iii) any amounts being disputed in good faith by Borrower where such dispute would not cause, or be reasonably expected to cause, a Material Adverse Change); (c) all obligations evidenced by notes, bonds, debentures or other similar instruments; (d) all indebtedness created or arising under any conditional sale or other title retention agreement with respect to property acquired (even though the rights and remedies of the seller or lender under such agreement in the event of default are limited to repossession or sale of such property); (e) equity securities subject to repurchase or redemption, (f) all obligations, contingent or otherwise, as an account party or applicant under acceptance, letter of credit or similar facilities in respect of obligations of the kind referred to in subsections (a) through (e) of this definition; and (g) all obligations of the kind referred to in subsections (a) through (f) above secured by (or which the holder of such obligation has an existing right, contingent or otherwise, to be secured by) any Lien on property (including accounts and

contract rights), but limited to the lesser of the fair market value of such property and the principal amount of such Debt.

"Default Rate" has the meaning set forth in Section 2.2(c).

"Defaulting Lender" means any Lender that (a) has failed to (i) fund all or any portion of its Loans within two Business Days of the date such Loans were required to be funded hereunder, or (ii) pay to the Administrative Agent or any other Lender any other amount required to be paid by it hereunder within two Business Days of the date when due, (b) has notified the Borrower, or the Administrative Agent in writing that it does not intend to comply with its funding obligations hereunder, or has made a public statement to that effect, (c) has failed, within three Business Days after written request by the Administrative Agent or the Borrower, to confirm in writing to the Administrative Agent and the Borrower that it will comply with its prospective funding obligations hereunder (provided that such Lender shall cease to be a Defaulting Lender pursuant to this clause (c) upon receipt of such written confirmation by the Administrative Agent and the Borrower), or (d) has, or has a direct or indirect parent company that has, (i) become the subject of a proceeding under any debtor relief law, (ii) had appointed for it a receiver, custodian, conservator, trustee, administrator, assignee for the benefit of creditors or similar Person charged with reorganization or liquidation of its business or assets, including the Federal Deposit Insurance Corporation or any other state or federal regulatory authority acting in such a capacity or (iii) become the subject of a bail-in action. Notwithstanding anything to the contrary herein, a Lender shall not be a Defaulting Lender solely by virtue of the ownership or acquisition of any Equity Security in that Lender or any direct or indirect parent company thereof by a Governmental Authority so long as such ownership interest does not result in or provide such Lender with immunity from the jurisdiction of courts within the United States or from the enforcement of judgments or writs of attachment on its assets or permits such Lender (or such Governmental Authority) to reject, repudiate, disavow or disaffirm any contracts or agreements made with such Lender. Any determination by the Administrative Agent that a Lender is a Defaulting Lender under clauses (a) through (d) above shall be conclusive and binding absent manifest error, and such Lender shall be deemed to be a Defaulting Lender upon delivery of written notice of such determination to the Borrower and each Lender.

"Deposit Account" means any "deposit account" as defined in the UCC with such additions to the term as may hereafter be made, and includes any checking account, savings account, or certificate of deposit.

"Disqualified Lender" means each those Persons agreed to in writing between Borrower and Administrative Agent on or prior to the Closing Date.

"Documentation and Funding Fees" all reasonable and documented costs related to the applicable Loans, including reasonable and documented travel, UCC search, filing, insurance, and legal costs.

"Domestic Subsidiary" means a Subsidiary organized under the laws of the United States or any state or territory thereof or the District of Columbia.

"EMA" means the European Medicines Agency and any successor agency or entity thereof.

"End of Term Payment" is set forth on Schedule 1 hereto.

"Equity Securities" of any Person means (a) all common stock, preferred stock, participations, shares, partnership interests, membership interests or other equity interests in and of such Person (regardless of how designated and whether or not voting or non-voting) and (b) all warrants, options and other rights to acquire any of the foregoing.

"Event of Default" means the occurrence of any of the following events and conditions at any time, unless waived in writing by Administrative Agent and the Required Lenders:

(a) failure on the part of Borrower to remit to Administrative Agent any (i) payment of principal or interest on any Loan when due (other (A) than any failure to timely make payment of interest on any Loan when due solely due to a technical error or malfunction on the part of Borrower's or Administrative Agent's banking institution, provided that (x) the Borrower immediately notifies the Administrative Agent in writing of such technical error, and (y) the payment is received in full by the Administrative Agent within two (2) Business Days after the original due date (for the avoidance of doubt, this grace period shall apply only in the event of a bona fide technical error or malfunction by a financial institution and shall not apply to payment failures resulting from insufficient funds, administrative oversight, or any other reason), or (B) the failure of Administrative Agent to withdraw the funds in respect of such payment from any Deposit Account of Borrower), or (ii) other Obligations within three (3) Business Days after such Obligations are due and payable and required to be remitted under this Agreement or any Loan Documents (which three (3) Business Day grace period shall not apply to amounts due on the Maturity Date);

(b) failure on the part of Borrower: (A) to perform any obligation arising under Section 4.2 (other than Sections 4.2(b), (c), (d), (f)(iv), (m), (o), (p), and (s)) or to comply with any covenants of Section 4.3 or (B) duly to observe or perform in any other of its respective covenants or agreements in this Agreement or any other Loan Document, which failure continues for a period of ten (10) Business Days after the occurrence of such breach; provided that, if the default cannot by its nature be cured within the ten (10) Business Day period or cannot after diligent attempts by Borrower be cured within such ten (10) Business Day period, and such default is likely to be cured within a reasonable time, then Borrower shall have an additional period (which shall not in any case exceed thirty (30) days) to attempt to cure such default, and within such reasonable time period the failure to cure the default shall not be deemed an Event of Default, and provided further, however, that no Loans shall be made during such cure period

(c) there is (i) a default in any agreement to which Borrower or any of its Subsidiaries is a party with a third party or parties resulting in a right by such third party or parties, whether or not exercised, to accelerate the maturity of any Debt in an amount in excess of Five Hundred Thousand Dollars ($500,000) or that could reasonably be expected to have a Material Adverse Change; or (ii) (A) a revocation or termination (other than an expiration or non-renewal of any Material Agreement in accordance with its terms) of a Material Agreement by any Person other than Borrower or any of its Subsidiaries, provided that this clause (ii)(A) shall not constitute an Event of Default to the extent that Borrower is able to replace such Material Agreement within thirty (30) days of any termination or revocation thereof, or (B) a default under a Material Agreement that could reasonably be expected to cause a Material Adverse Change;

(d) if any representation or warranty of Borrower made in this Agreement or in any certificate or other writing delivered pursuant hereto or any other related document is materially incorrect or misleading in light of the circumstances in which it is made as of the time when the same shall have been made;

(e) any provision of this Agreement or any Lien or security interest of Administrative Agent in a material portion of the Collateral ceases for any reason to be valid, binding and in full force and effect other than as expressly permitted hereunder;

(f) any bankruptcy, insolvency or other similar proceeding is filed by Borrower or any of its Subsidiaries;

(g) any involuntary bankruptcy, insolvency or other similar proceeding is filed against Borrower or any of its Subsidiaries and such proceeding or petition shall not be dismissed within forty-five (45) days after filing;

(h) any assignment is made by Borrower or any attempt by Borrower to assign any of its duties or rights hereunder;

(i) Borrower is consolidated with, merged with, or sells all or substantially all of its properties and assets to another entity without Administrative Agent's and Required Lenders' prior written consent, other than in connection with any transaction not prohibited by this Agreement, provided that no consent of Administrative Agent or Required Lenders shall be required if, in connection with such merger or sale of properties and assets the Obligations (other than inchoate indemnification obligations for which no claims has been made or asserted or other Obligations that, by their express terms, survive the termination of this Agreement) will be paid in full;

(j) (a) If any material portion of Borrower's or any of its Subsidiaries' assets on a consolidated basis (i) is attached, seized, subjected to a writ or distress warrant, or is levied upon or (ii) comes into the possession of any trustee, receiver or person acting in a similar capacity and, in each case, such attachment, seizure, writ or distress warrant or levy has not been removed, discharged or rescinded within thirty (30) days, (b) if Borrower or any of its Subsidiaries is enjoined, restrained or in way prevented by court order from continuing to conduct all or any material part of its business affairs or (c) if a notice of Lien, levy or assessment if filed of record with respect to a material portion of any of Borrower's or any of its Subsidiaries' assets by the United States Government, or any department agency or instrumentality thereof, or by any state, county municipal, or governmental agency, and the same is not paid or discharged within thirty (30) days after Borrower or any Subsidiary receives notice thereof; *provided* that none of the foregoing shall constitute an Event of Default where such action or event is stayed or an adequate bond has been posted pending a good faith contest by Borrower;

(k) if any of the Loan Documents shall cease to be, or Borrower shall assert that any of the Loan Documents is not, a legal, valid and binding obligation of Borrower enforceable in accordance with its terms;

(l) if there occurs a Material Adverse Change to Borrower;

(m) there is (i) a Change of Control, unless, as a condition to the closing of such change of control the Obligations (other than inchoate indemnification obligations for which no claims has been made or asserted or other Obligations that, by their express terms, survive the termination of this Agreement) will be paid in full, or (ii) a resignation of one or more directors from its board of directors in anticipation of the Borrower's insolvency, in either case without the prior written consent of Administrative Agent which may be withheld in Administrative Agent's sole discretion;

(n) a final, non-appealable judgment against Borrower or any Subsidiary for an amount in excess of Five Hundred Thousand Dollars ($500,000) (not covered by insurance by a solvent independent third party insurance carrier that has confirmed coverage in writing) which is not paid or bonded within thirty (30) days of entry; or

(o) the Common Stock of Borrower is delisted from a Trading Market because of failure to comply with continued listing standards thereof or due to a voluntary delisting which results in such Common Stock not being listed on any Trading Market for more than two (2) Business Days.

"Exchange Act" means the Securities Exchange Act of 1934, as amended.

"Excluded Accounts" means any Deposit Account (a) exclusively used for payroll, payroll taxes, and other employee wage and benefit payments to or for the benefit of employees with an account balance not to exceed the amount reasonably estimated to be required for up to two (2) payroll cycles, (b) held with a bank or other financial institution located outside of the United States or (c) holding cash described in clause (o) of the definition of Permitted Liens (and subject to the caps set forth therein).

"Excluded Property" means (a) any property or assets as to which pledges thereof or security interests therein are prohibited or restricted by any contract, agreement, permit, lease or license or applicable law (including any requirement to obtain the consent of any (x) Governmental Authority, (y) similar regulatory third party or (z) under any Restricted License, in each case, except to the extent such consent has been obtained) after giving effect to the applicable anti-assignment provisions of the UCC and other applicable law; (b) any intent-to-use trademark application filed in the United States Patent and Trademark Office, pursuant to Section 1(b) of the Lanham Act, 15 U.S.C. Section 1051, prior to the accepted filing of a "Statement of Use" and issuance of a "Certificate of Registration" pursuant to Section 1(d) of the Lanham Act or an accepted filing of an "Amendment to Allege Use" whereby such intent-to-use trademark application is converted to a "use in commerce" application pursuant to Section 1(c) of the Lanham Act; (c) more than 65% of any voting capital stock and 100% of any non-voting capital stock of any Foreign Sub Holdco or CFC owned directly by the Borrower or any guarantor, solely to the extent a security interest more than 65% of any voting capital stock and 100% of any non-voting capital stock of any Foreign Sub Holdco or CFC owned directly by the Borrower or any guarantor would result in a materially adverse Tax consequence to Borrower, as reasonably determined by the Borrower in writing and in consultation with the Administrative Agent; (d) any equipment, inventory or real property owned by Borrower on the date hereof or hereafter acquired that is subject to a purchase money lien, a lien securing a capital lease obligation or similar financing arrangement, in each case permitted to be incurred under this Agreement, if the contract or other agreement (or the documentation providing for such purchase money obligation, capital lease obligation or similar financing arrangement) in which such lien is granted validly prohibits the creation of any other lien on such equipment, inventory or real property; (e) Excluded Accounts; (f) Accounts transferred in connection with a Permitted Account Transfers, (g) motor vehicles and other assets subject to certificates of title (other than to the extent a lien thereon can be perfected by the filing of a financing statement under the UCC); and (h) those assets that Administrative Agent shall, in good faith consultation with the Borrower, determine in its sole discretion that the cost or other consequence of obtaining a Lien thereon or perfection thereof are excessive in relation to the benefit to the Administrative Agent and Lenders of the security to be afforded thereby; provided that (x) any such limitation described in the foregoing clause (i) on the security interests granted hereunder shall apply only to the extent that any such prohibition could not be rendered ineffective pursuant to the UCC or any other applicable law (including Sections 9-406, 9-407 and 9-408 of the UCC) or principles of equity, (y) in the event of the termination or elimination of any such prohibition or restriction or the requirement for any consent contained in the applicable contract, agreement, permit, lease or license or in any applicable law, to the extent sufficient to permit any such item to become Collateral hereunder, or upon the granting of any such consent, or waiving or terminating any requirement for such consent, a security interest in such contract, agreement, permit, lease, license, franchise, authorization or asset shall be automatically and simultaneously granted hereunder and shall be included as Collateral hereunder, and (z) all rights to payment of money due or to become due pursuant to, and all rights to the proceeds from the sale of, all Excluded Property shall be and at all times remain subject to the security interests created by this Agreement (unless such proceeds would independently constitute Excluded Property). For the avoidance of doubt the foregoing capital stock and assets not included as Collateral pursuant to clause (c) shall constitute Excluded Property for all purposes of the Loan Documents.

"Excluded Taxes" means any of the following Taxes imposed on or with respect to a Lender or Administrative Agent or required to be withheld or deducted from a payment to a Lender or Administrative Agent: (a) Taxes imposed on or measured by net income (however denominated), franchise Taxes and branch profits Taxes, in each case, (i) imposed as a result of such Lender or Administrative Agent being organized under the laws of, or having its principal office or, in the case of any Lender, its applicable lending office located in, the jurisdiction imposing such Tax (or any political subdivision thereof) or (ii) that are Other Connection Taxes, (b) in the case of a Lender, any U.S. federal withholding Taxes imposed on amounts payable to or for the account of such Lender with respect to an applicable interest in a Loan or Commitment pursuant to a law in effect on the date on which such Lender acquires the applicable interest in such Loan or Commitment or changes its lending office, except in each case to the extent that, pursuant to Section 2.11, additional amounts with respect to such Taxes were payable either to such Lender's assignor immediately before such Lender became a party hereto or to such Lender immediately

before it changes its lending office, (c) Taxes attributable to such Lender's or Administrative Agent's failure to comply with Section 2.11(g), and (d) any Taxes imposed under FATCA.

"FATCA" means Sections 1471 through 1474 of the Code, as of the date of this Agreement (or any amended or successor version to the extent such version is substantively comparable and not materially more onerous to comply with), any current or future Treasury Regulations or official administrative interpretations thereof, any agreements entered into pursuant to current Section 1471(b)(1) of the Code (or any amended or successor version described above), any intergovernmental agreement, treaty or convention among Governmental Authorities (and any related fiscal or regulatory legislation, rules or official practices) implementing the foregoing.

"FDA" means the United States Food and Drug Administration and any successor agency or entity thereof or any analogous agency or entity in any other jurisdiction.

"Foreign Pledge Documents" means each of the German Pledge Documents, the Swiss Pledge Documents.

"Foreign Sub Holdco" means any Subsidiary that has no material assets other than capital stock, or capital stock and indebtedness (of the same entity), in one or more CFCs or Foreign Sub Holdcos, other than any Subsidiary formed for the purposes of complying with Section 4.2(y)(iv).

"Foreign Subsidiary" means any Subsidiary that is not a Domestic Subsidiary.

"GAAP" means generally accepted accounting principles, consistently applied, as in effect from time to time in the United States.

"German Pledge Agreement" means a share pledge agreement, by and among Administrative Agent, Borrower and the German Subsidiary, which shall be governed by German law.

"German Pledge Documents" means the German Pledge Agreement and each agreement or instrument delivered in connection with the transactions contemplated by the German Pledge Agreement.

"German Subsidiary" a limited liability company (*Gesellschaft mit beschränkter Haftung (GmbH)*) incorporated under German law, with business seat (*Sitz*) in Munich, Germany and registered with the commercial register (*Handelsregister*) of the local court (*Amtsgericht*) of Munich under HRB 186900.

"Good Faith Deposit" is the fully earned and non-refundable deposit in the amount of One Hundred Thousand Dollars ($100,000), which will be applied toward Administrative Agent's Expenses on the Closing Date.

"Governmental Approval" is any consent, authorization, approval, order, license, franchise, permit, certificate, accreditation, registration, filing or notice, of, issued by, from or to, or other act by or in respect of, any Governmental Authority.

"Governmental Authority" is any nation or government, any state or other political subdivision thereof, any agency, authority, instrumentality, regulatory body (including, without limitation the FDA and the EMA), court, central bank or other entity exercising executive, legislative, judicial, taxing, regulatory or administrative functions of or pertaining to government, any securities exchange and any self-regulatory organization.

"Healthcare Laws" means the Requirements of Law relating to the production, preparation, propagation, compounding, conversion, pricing, marketing, promotion, sale, distribution, coverage, or reimbursement of a drug, device, biological or other medical item, supply or service, including, without limitation, the U.S. Food, Drug and Cosmetic Act of 1938 ("FD&C Act"), 21 U.S.C. § 301 et seq., as

amended from time to time, and the rules, regulations, guidelines, guidance documents and compliance policy guides issued or promulgated thereunder; the federal False Claims Act (31 U.S.C. §§ 3729 et seq.); the federal anti-kickback statute (42 U.S.C. § 1320a- 7b); the Stark laws (42 U.S.C. § 1395nn); the Program Fraud Civil Remedies Act (31 U.S.C.§ 3801 et seq.) and the Federal Health Care Fraud Law (18 U.S.C. § 1347); the Health Insurance Portability and Accountability Act of 1996 (HIPAA), as amended by the Health Information Technology for Economic and Clinical Health (HITECH) Act ("HIPAA"); the federal healthcare program civil money penalty and exclusion authorities (42 U.S.C. §1320a-7a); the Physician Payments Sunshine Act (42 U.S.C. § 1320a-7h); the Requirements of Law applicable to Medicare, Medicaid, and other healthcare programs of other Governmental Authorities, including the Veterans Health Administration and United States Department of Defense healthcare and contracting programs; and the analogous Requirements of Law of any other jurisdiction, including any state and local Governmental Authorities in the United States.

"Indemnified Taxes" means (a) all Taxes, other than Excluded Taxes, imposed on or with respect to any payment made by or on account of any obligation of any Borrower under any Loan Document and (b) to the extent not otherwise described in clause (a), Other Taxes.

"Identified Competitor" means each those Persons agreed to in writing between Borrower and Administrative Agent on or prior to the Closing Date.

"Intellectual Property" means any and all intellectual property, including copyrights, copyright licenses, patents, patent licenses, trademarks, trademark licenses, technology, know-how and processes, all rights therein, and all rights to sue at law or in equity for any past present or future infringement, violation, misuse, misappropriation or other impairment thereof, whether arising under United States, multinational or foreign laws or otherwise, including the right to receive injunctive relief and all proceeds and damages therefrom.

"Intercompany Subordination Agreement" means the Intercompany Subordination Agreement, dated as of the hereof, by and among Borrower, each Subsidiary of Borrower, and Administrative Agent (as amended, amended and restated, supplemented or otherwise modified from time to time).

"Interest Only Period" is set forth on Schedule 1 hereto.

"Investment" means the purchase or acquisition of any capital stock, equity interest, or any obligations or other securities of, or any interest in, any Person, or the extension of any advance, loan, extension of credit or capital contribution to, or any other investment in, or deposit with, any Person.

"IP Security Agreement" means (i) the Intellectual Property Security Agreement, dated as of the date hereof, by and among Administrative Agent and each grantor party thereto (as amended, amended and restated, supplemented or otherwise modified from time to time), and (ii) each other intellectual property security agreement in favor of Administrative Agent delivered pursuant to this Agreement.

"Key Person" is each of Borrower's (i) Chief Executive Officer, who is Robert Spignesi as of the Closing Date, and (ii) Chief Financial Officer, who is Sean Wirtjes as of the Closing Date.

"Knowledge" or "Knowledge of Borrower" means the actual knowledge of a Key Person; provided, that such Key Person, shall use reasonable efforts to obtain actual knowledge with respect to the subject matter of any representations, warranties, certifications, and covenants made or to be made by Borrower under this Agreement, whether as of the date of any Advance or at any other time such representations, warranties, certifications, or covenants are required to be true, accurate, or complied with pursuant to the terms of this Agreement.

"Lien" means a claim, mortgage, deed of trust, levy, charge, pledge, security interest or other encumbrance of any kind, whether voluntarily incurred or arising by operation of law or otherwise against any property.

"Loan Advance Request Form" is that certain form attached hereto as Exhibit D.

"Loan Documents" means this Agreement and any schedules, exhibits, certificates, notices, and any other documents related to this Agreement, the IP Security Agreement, Pledge Agreement, the Foreign Pledge Documents, every Account Control Agreement, the Intercompany Subordination Agreement, any Subordination Agreement or other intercreditor agreement, any documents pertaining to a mortgage, any landlord waivers and bailee waivers, the Perfection Certificate, each Compliance Certificate, each Loan Advance Request Form and every other document evidencing, securing or relating to the Loans, in each case as amended, amended and restated, supplemented or otherwise modified from time to time (but excluding, in all cases, any Warrant).

"Loan Termination Date" means (a) with respect to the Tranche B Loan, the Tranche B Loan Termination Date, (b) with respect to the Tranche C Loan, the Tranche C Loan Termination Date, and (c) with respect to the Tranche D Loan, the day immediately prior to the Maturity Date.

"Loans" has the meaning set forth in the preamble above.

"Material Adverse Change" means (a) a material impairment in the perfection or priority of the Lien in the Collateral pursuant to the Loan Documents to which Borrower or any of its Subsidiaries is a party or in the value of the Collateral, in each case other than as a result of Permitted Liens; (b) a material adverse effect upon: (i) the business, operations, properties, assets or financial condition of Borrower and their Subsidiaries taken as a whole; (ii) the prospect of repayment of any part of the Obligations when due; or (iii) the ability to enforce any rights or remedies under the Loan Documents with respect to any Obligations, in each case, as reasonably determined by Administrative Agent, or (c) a material impairment of the ability of Borrower to perform its obligations under or remain in compliance with this Agreement and the other Loan Documents, taken as a whole.

"Material Agreement" means each (a) license, agreement or other contractual arrangement (***) with a Person or Governmental Authority whereby Borrower or any of its Subsidiaries is reasonably likely to be required to transfer, either in-kind or in cash, prior to the Maturity Date, assets or property valued (book or market) at more than ***, or (b) any agreement or contract to which Borrower is a party, the termination of which (other than an expiration or non-renewal of such agreement or contract in accordance with its terms) could cause a Material Adverse Change.

"Material Foreign Subsidiary" means any Foreign Subsidiary that has assets or revenue in excess of 5% of the consolidated assets or consolidated revenue of Borrower and its Subsidiaries; provided, that, all Foreign Subsidiaries that do not constitute a Material Foreign Subsidiary shall not have assets or revenue in an aggregate amount in excess of 10% of Borrower and its Subsidiaries' consolidated assets or revenue; provided, further, that a Foreign Sub Holdco, shall not be a Material Foreign Subsidiary; provided, further, that, in each case, any assets in respect of intercompany receivables and other intercompany obligations owed by a Borrower or its Subsidiary to a Foreign Subsidiary, in each case to the extent such receivables and obligations are subject to the terms of the Intercompany Subordination Agreement, shall be excluded from such applicable determination.

"Maturity Date" is set forth on Schedule 1 hereto.

"Obligations" means all present and future obligations owing by Borrower to Administrative Agent and the Lenders governed or evidenced by the Loan Documents (other than any Warrant) whether or not for the payment of money, whether or not evidenced by any note or other instrument, whether direct or indirect, absolute or contingent, due or to become due, joint or several, primary or secondary, liquidated

or unliquidated, secured or unsecured, original or renewed or extended, whether arising before, during or after the commencement of any bankruptcy case in which Borrower is a debtor (specifically including interest accruing after the commencement of any bankruptcy, insolvency or similar proceeding with respect to Borrower, whether or not a claim for such post-commencement interest is allowed), including but not limited to any obligations arising pursuant to letters of credit or acceptance transactions or any other financial accommodations.

"OFAC" means the United States Department of the Treasury's Office of Foreign Assets Control.

"Operating Documents" are, for any Person, such Person's formation documents, as certified by the Secretary of State (or equivalent agency) of such Person's jurisdiction of organization on a date that is no earlier than thirty (30) days prior to the Closing Date, and, (a) if such Person is a corporation, its bylaws in current form, (b) if such Person is a limited liability company, its limited liability company agreement (or similar agreement), and (c) if such Person is a partnership, its partnership agreement (or similar agreement), each of the foregoing with all current amendments or modifications thereto.

"Ordinary Course of Business" means, in respect of any transaction involving any Person, the ordinary course of such Person's business as conducted by any such Person in accordance with (a) the usual and customary customs and practices in the kind of business in which such Person is engaged, and (b) the past practice and operations of such Person, and in each case, undertaken by such Person in good faith and not for purposes of evading any covenant or restriction in any Loan Document.

"Other Connection Taxes" means, with respect to any Lender or Administrative Agent, Taxes imposed as a result of a present or former connection between such Lender or Administrative Agent and the jurisdiction imposing such Tax (other than connections arising from such Lender or Administrative Agent having executed, delivered, become a party to, performed its obligations under, received payments under, received or perfected a security interest under, engaged in any other transaction pursuant to or enforced any Loan Document, or sold or assigned an interest in any Loan or Loan Document).

"Other Taxes" means all present or future stamp, court or documentary, intangible, recording, filing or similar Taxes that arise from any payment made under, from the execution, delivery, performance, enforcement or registration of, from the receipt or perfection of a security interest under, or otherwise with respect to, any Loan Document, except any such Taxes that are Other Connection Taxes imposed with respect to an assignment.

"Participant" shall have the meaning provided in Section 8.18.

"Participant Register" shall have the meaning provided in Section 8.18.

"Payment Date" means the first (1st) day of each month, or if such day is not a Business Day, the next Business Day.

"Perfection Certificate" means the perfection certificate delivered to Administrative Agent dated as of the Closing Date, as may be updated by Borrower in accordance with this Agreement.

"Permits" means all licenses, certificates, accreditations, product clearances, approvals, authorizations, provider numbers or provider authorizations, supplier numbers, provider numbers, marketing authorizations, other authorizations, registrations, listing, permits, consents and approvals of the Borrower and each of its Subsidiaries required under any Requirement of Law applicable to Borrower's business or necessary in the developing, manufacturing, importing, exporting, possession, ownership, warehousing, marketing, promoting, sale, labeling, furnishing, distribution, or delivery of goods or services under Requirements of Law applicable to the business of the Borrower or any of its Subsidiaries. Without limiting the generality of the foregoing, "Permits" includes all governmental authorizations and product authorizations of the Borrower and each of its Subsidiaries.

"Permitted Account Transfer" means ***.

"Permitted Debt" means and includes:

(a) Debt of Borrower to Lenders under this Agreement;

(b) Debt of Borrower in an aggregate principal amount not to exceed Five Hundred Thousand Dollars ($500,000) at any time, secured by Liens permitted under clause (g) of the definition of Permitted Liens;

(c) Debt of Borrower existing on Closing Date and set forth on the Perfection Certificate;

(d) Debt in respect of netting services, overdraft protections and otherwise in connection with deposit accounts, in each case, in the Ordinary Course of Business;

(e) Debt consisting of the financing of insurance premiums in the Ordinary Course of Business;

(f) Debt to carriers, warehousemen, mechanics, and materialmen, in each case arising in the Ordinary Course of Business, for sums not yet due and payable or, if due and payable, those being contested in good faith by appropriate proceedings and for which appropriate reserves are maintained in accordance with GAAP;

(g) (i) Debt of any Borrower or guarantor to any other Borrower or a guarantor; (ii) Debt of any Subsidiary that is not a Borrower or a guarantor owing to any other Subsidiary that is not a Borrower or a guarantor; (iii) Debt of any Subsidiary that is not a Borrower or a guarantor owing to a Borrower or a guarantor and (iv) Debt of any Borrower or a guarantor owing to a Foreign Subsidiary in connection with an Investment permitted by clause (f)(iii) of the definition of "Permitted Investments", provided that Debt pursuant to this clause (iv) is subordinated to the Obligations pursuant to the Intercompany Subordination Agreement;

(h) Debt in respect of letters of credit, banker's acceptances or similar arrangements, provided that the aggregate principal amount of any such Debt outstanding at any time shall not exceed Five Hundred Thousand Dollars ($500,000);

(i) Debt in respect of letters of credit, bankers' acceptances or similar instruments issued for the benefit of such Person providing workers' compensation, health, disability, employee or other types of social security benefits pursuant to reimbursement or indemnification obligations to such Person, in each case, incurred in the Ordinary Course of Business; provided that any reimbursement obligations in respect thereof are reimbursed within thirty (30) days following the incurrence thereof (or such longer period as is permitted without interest or other charges under the benefit under which reimbursement is to be made);

(j) Debt in respect of performance bonds, bid bonds, appeal bonds, surety bonds and similar obligations, in each case provided in the Ordinary Course of Business;

(k) Debt incurred as a result of endorsing negotiable instruments received in the Ordinary Course of Business;

(l) Debt of the Borrower and its Subsidiaries in an aggregate principal amount, for all such Debt taken together, not to exceed Five Hundred Thousand Dollars ($500,000) at any time outstanding;

(m) guaranties by a Borrower or Subsidiary of Permitted Debt incurred in the Ordinary Course of Business; provided, any such guaranty shall be subordinated to the Obligations to the same extent and on the same terms and conditions as the Debt guaranteed has been subordinated to the Obligations;

(n) Subordinated Debt;

(o) unsecured Debt in an aggregate principal amount not to exceed Five Hundred Thousand Dollars ($500,000) at any time outstanding incurred in the Ordinary Course of Business in respect of credit cards, credit card processing services, debit cards, stored value cards, commercial cards (including so called "purchase cards", "procurement cards" or "p cards"); and

(p) extensions, refinancings, modifications, amendments and restatements of any items of Permitted Debt under subsections (a)-(c) above; *provided* that the principal amount thereof is not increased or the terms thereof are not modified to impose materially more burdensome terms upon Borrower.

"Permitted Investment" means

(a) Deposits and Deposit Accounts (which shall be subject to Account Control Agreements to the extent required herein) with commercial banks organized under the laws of the United States or a state thereof to the extent: (i) the Deposit Accounts of each such institution are insured by the Federal Deposit Insurance Corporation up to the legal limit; and (ii) each such institution has an aggregate capital and surplus of not less than One Hundred Million Dollars ($100,000,000);

(b) Investments in marketable obligations issued or fully guaranteed by the United States and maturing not more than one (1) year from the date of issuance;

(c) Investments in open market commercial paper rated at least "A1" or "P1" or higher by a national credit rating agency and maturing not more than one (1) year from the creation thereof;

(d) Investments consisting of the endorsement of negotiable instruments for deposit or collection or similar transactions in the Ordinary Course of Business;

(e) Investments outstanding on the Closing Date and set forth on the Perfection Certificate;

(f) Investments (i) by Borrower into another Borrower or a guarantor, (ii) by Borrower in Subsidiaries that are not Borrowers or guarantors hereunder not to exceed One Hundred Fifty Thousand Dollars ($150,000) in the aggregate in any fiscal year, (iii) by Borrower in Foreign Subsidiaries in respect of transfer pricing and cost-sharing arrangements (i.e. "cost-plus" arrangements) that are in the Ordinary Course of Business and consistent with Borrower and its Subsidiaries' historical practices provided that the margin shall not exceed 5% except if approved by Administrative Agent, and (iv) by Subsidiaries that are not Borrowers or guarantors hereunder in other Subsidiaries that are not Borrowers or guarantors hereunder;

(g) Investments (including debt obligations) received in connection with the bankruptcy or reorganization of customers or suppliers and in settlement of delinquent obligations of, and other disputes with, customers or suppliers arising in the Ordinary Course of Business;

(h) Investments consisting of notes receivable of, or prepaid royalties and other credit extensions, to customers and suppliers who are not Affiliates, in the Ordinary Course of Business; provided that this paragraph shall not apply to Investments of Borrower in any Subsidiary;

(i) Investments not to exceed Two Hundred Fifty Thousand Dollars ($250,000) in the aggregate at any time outstanding consisting of (i) travel advances and employee relocation loans and other employee loans and advances in the Ordinary Course of Business, and (ii) loans to employees, officers or directors relating to the purchase of Equity Securities of Borrower or its Subsidiaries pursuant to employee stock purchase plans or agreements approved by Borrower's board of directors;

(j) deposits made to secure the performance of leases, licenses or contracts in the Ordinary Course of Business; and

(k) other Investments aggregating not in excess of Five Hundred Thousand Dollars ($500,000) at any time.

"Permitted Liens" means any of the following:

(a) Liens of the Administrative Agent pursuant to this Agreement or the other Loan Documents;

(b) Liens outstanding on the Closing Date and set forth on the Perfection Certificate;

(c) Liens for taxes and assessments not yet due and payable or, if due and payable, those being contested in good faith by appropriate proceedings and for which appropriate reserves are maintained in accordance with GAAP;

(d) Liens arising in the Ordinary Course of Business (such as Liens of carriers, warehousemen, mechanics, and materialmen) and other similar Liens imposed by law for sums not yet due and payable or, if due and payable, those being contested in good faith by appropriate proceedings and for which appropriate reserves are maintained in accordance with GAAP;

(e) easements, rights of way, restrictions, minor defects or irregularities in title or other similar Liens which alone or in the aggregate do not interfere in any material way with the ordinary conduct of the business of Borrower;

(f) Liens consisting of purchase money security interests and capital leases for equipment financing not to exceed the amount permitted under clause (b) of the definition of "Permitted Debt";

(g) Leases or subleases of real property, and leases, subleases, non-exclusive licenses or sublicenses of personal property (other than Intellectual Property), in each case granted in the in the Ordinary Course of Business, if the leases, subleases, licenses and sublicenses do not prohibit granting Administrative Agent a security interest therein;

(h) non-exclusive licenses of Intellectual Property granted to third parties in the Ordinary Course of Business;

(i) customary Liens in favor of other financial institutions in connection with statutory, common law and contractual rights of setoff and recoupment arising in connection with Borrower's deposit and/or securities accounts held at such institutions, provided that each such account shall be subject to Account Control Agreements as required herein;

(j) Liens on insurance policies and the proceeds thereof granted to secure the financing of insurance premiums with respect thereto to the extent permitted under clause (e) of the definition of Permitted Debt;

(k) Liens on Accounts sold pursuant to a Permitted Account Transfer, where the description of the collateral relating to any such financing statement specifies that such financing statement is intended to create a security interest to the extent that the related sale of Accounts is recharacterized by a court (or otherwise by operation of law) as a secured loan or other transaction that is not a true sale of such Accounts;

(l) Liens incurred in the Ordinary Course of Business (other than Liens imposed by ERISA) in connection with workers' compensation, unemployment insurance and other types of social security, or to secure the performance of tenders, statutory obligations, surety and appeal bonds and other similar obligations (exclusive of obligations for the payment of borrowed money or other Debt);

(m) Liens evidenced by the filing of precautionary UCC financing statements relating solely to operating leases of personal property entered into in the Ordinary Course of Business and permitted under this Agreement;

(n) Liens arising from attachments or judgments, orders, or decrees in circumstances not constituting an Event of Default hereunder;

(o) Liens on cash and cash equivalents securing up to 105% of the amount of obligations of the type described in clause (h) of the definition of "Permitted Debt";

(p) Liens in favor of financial institutions arising in the Ordinary Course of Business in connection with Deposit Accounts and Securities Accounts held at such financial institutions and payment processor accounts, in each case, as permitted under this Agreement, provided that such Liens only secure fees and service charges and customary chargebacks or reversals of credits associated with such accounts, and not Debt; and

(q) other Liens securing obligations in an aggregate principal amount not exceeding Two Hundred Fifty Thousand Dollars ($250,000) at any time.

"Permitted Transfer" means any of the following:

(a) the use or Transfer of cash or cash equivalents in a manner that is not prohibited by the terms of this Agreement or the other Loan Documents;

(b) Transfers of assets by a Borrower or guarantor to a Borrower or guarantor;

(c) non-exclusive licenses of Intellectual Property in the Ordinary Course of Business;

(d) Permitted Account Transfers;

(e) the making of Permitted Investments;

(f) the granting of Permitted Liens;

(g) any involuntary loss, damage or destruction of property;

(h) any involuntary condemnation, seizure or taking, by exercise of the power of eminent domain or otherwise;

(i) the making of any payments expressly permitted by Section 4.3(g);

(j) any abandonment, cancellation, non-renewal or discontinuance of use or maintenance of Intellectual Property (or rights relating thereto) of Borrower or any Subsidiary thereof registered or registrable in any jurisdiction other than the United States that the Borrower reasonably determines in good faith is desirable in the conduct of its business and not adverse to the interests of the Administrative Agent or Lenders;

(k) leases or subleases of real property or equipment not necessary to the business of Borrower or any of its Subsidiaries; and

(l) other Transfers of assets having a fair market value of not more than $250,000 per fiscal year.

"Person" means and includes any individual, any partnership, any corporation, any business trust, any joint stock company, any limited liability company, any unincorporated association or any other entity and any domestic or foreign national, state or local government.

"Pledge Agreement" means the Pledge Agreement, dated as of the date hereof, by and among Administrative Agent and Borrower (as amended, restated, amended and restated, modified or supplemented from time to time).

"Potential Event of Default" means any event or circumstance, which, with the giving of notice or lapse of time or both, would become an Event of Default.

"Prime Rate" means, at any time the rate of interest noted in The Wall Street Journal, Money Rates section, as the "Prime Rate". In the event that The Wall Street Journal quotes more than one rate, or a range of rates, as the Prime Rate, then the Prime Rate shall mean the average of the quoted rates. In the event that The Wall Street Journal ceases to publish a Prime Rate, then the Prime Rate shall be as announced by Administrative Agent based on a national publication reasonably selected by Administrative Agent and notified to Borrower in writing.

"Pro Rata Share" means, with respect to:

(a) a Lender's obligation to make Loans and the right to receive payments of interest, fees and principal with respect thereto, the percentage obtained by dividing (i) such Lender's Commitments, by (ii) the Total Commitments, provided that if the Total Commitments have been reduced to zero, the numerator shall be the aggregate unpaid principal amount of such Lender's portion of the Loans and the denominator shall be the aggregate unpaid principal amount of the Loans, and

(b) all other matters (including, without limitation, the indemnification obligations arising under Section 5.7), the percentage obtained by dividing (i) the sum of the unpaid principal amount of such Lender's portion of the Loans, by (ii) the sum of the aggregate unpaid principal amount of the Loans.

"Product" means any current or future service or product researched, designed, developed, manufactured, licensed, marketed, sold, performed, distributed or otherwise commercialized by the Borrower or any of its Subsidiaries, and any such product in development or which may be developed.

"Property" means any interest in any kind of property or asset, whether real, personal or mixed, whether tangible or intangible.

"Proprietary Consumables" means ***.

"Register" shall have the meaning provided in Section 8.18.

"Required Lenders" means Lenders (other than Defaulting Lenders) whose Pro Rata Shares (without giving effect to the Pro Rata Share of Defaulting Lenders) aggregate at least 50.1%; provided that such Lenders must include Administrative Agent (unless Administrative Agent is a Defaulting Lender).

"Requirement of Law" means as to any Person, any law (including Healthcare Laws), treaty, rule or regulation or determination of an arbitrator or a court or other Governmental Authority (including, for the avoidance of doubt, the Basel Committee on Banking Supervision and any successor thereto or similar authority or successor thereto), in each case applicable to or binding upon such Person or any of its property or to which such Person or any of its property is subject.

"Responsible Officer" means each of the chief executive officer, the chief operating officer, the chief financial officer, president, treasurer, vice president of finance and the controller of Borrower, as well as any other officer or employee identified as an authorized officer in the corporate resolution delivered by Borrower to Administrative Agent in connection with this Agreement.

"Restricted License" means any license or other agreement with respect to which Borrower is the licensee and such license or other agreement is material to Borrower's business and that prohibits or otherwise restricts Borrower from granting a security interest in Borrower's interest in such license or agreement or any other property.

"Secured Parties" means the Lenders, Administrative Agent, each other Indemnified Person and any other holder of any Obligation.

"Securities Account" means any "securities account" as defined in the UCC with such additions to such term as may hereafter be made.

"Solvent" with respect to any person or entity or group as of any date of determination, means that on such date (a) the present fair salable value of the property and assets of such person or entity or group exceeds the debts and liabilities, including contingent liabilities, of such person or entity or group, (b) the present fair salable value of the property and assets of such person or entity or group is greater than the amount that will be required to pay the probable liability of such person or entity or group on its debts and other liabilities, including contingent liabilities, as such debts and other liabilities become absolute and matured, (c) such person or entity or group does not intend to incur, or believe (nor should it reasonably believe) that it will incur, debts and liabilities, including contingent liabilities, beyond its ability to pay such debts and liabilities as they become absolute and matured, and (d) such person or entity or group does not have unreasonably small capital with which to conduct the business in which it is engaged as such business is now conducted and is proposed to be conducted. The amount of contingent liabilities at any time shall be computed as the amount that, in the light of all the facts and circumstances existing at such time, represents the amount that can reasonably be expected to become an actual or matured liability.

"Subordinated Debt" means Debt incurred by Borrower or its Subsidiary which is subordinated to all of Borrower's now or hereafter arising Debt to Administrative Agent and the Lenders pursuant to a Subordination Agreement.

"Subordination Agreement" means a subordination, intercreditor or other similar agreement in form and substance acceptable to Administrative Agent in its sole discretion.

"Subsidiary" as to any Person, means any corporation, partnership, limited liability company, joint venture, trust or estate of or in which more than fifty percent (50%) of (a) the issued and outstanding capital stock having ordinary voting power to elect a majority of the board of directors of such corporation (irrespective of whether at the time capital stock of any other class of such corporation may have voting power upon the happening of a contingency), (b) the interest in the capital or profits of such partnership, limited liability company, or joint venture or (c) the beneficial interest in such trust or estate is at the time

directly or indirectly owned or controlled through one or more intermediaries, or both, by such Person. Unless otherwise qualified, all references to a "Subsidiary" or to "Subsidiaries" in this Agreement shall refer to a Subsidiary or Subsidiaries of the Borrower.

"Swiss Pledge Agreement" means a share pledge agreement, by and among Administrative Agent, Borrower and the Swiss Subsidiary, which shall be governed by the laws of Switzerland.

"Swiss Pledge Documents" means the Swiss Pledge Agreement and each agreement or instrument delivered in connection with the transactions contemplated by the Swiss Pledge Agreement.

"Swiss Subsidiary" means Rapid Micro Biosystems Services Switzerland GmbH.

"Taxes" means all present or future taxes, levies, imposts, duties, deductions, withholdings (including backup withholding), assessments, fees or other charges in the nature of a tax imposed by any Governmental Authority, including any interest, additions to tax or penalties applicable thereto.

"Total Commitments" means the sum of the amounts of the Lenders' Commitments.

"Trading Market" means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market or the New York Stock Exchange (or any successors to any of the foregoing).

"Tranche A Availability Amount" is set forth on Schedule 1 hereto.

"Tranche A Loan" shall have the meaning provided in Section 2.1(b).

"Tranche B Availability Amount" is set forth on Schedule 1 hereto.

"Tranche B Loan" shall have the meaning provided in Section 2.1(b).

"Tranche B Loan Termination Date" is set forth on Schedule 1 hereto.

"Tranche B Milestone" is set forth on Schedule 1 hereto.

"Tranche C Availability Amount" is set forth on Schedule 1 hereto.

"Tranche C Loan" shall have the meaning provided in Section 2.1(b).

"Tranche C Loan Termination Date" is set forth on Schedule 1 hereto.

"Tranche C Milestone" is set forth on Schedule 1 hereto.

"Tranche D Availability Amount" is set forth on Schedule 1 hereto.

"Tranche D Loan" shall have the meaning provided in Section 2.1(b).

"Transfer" means to convey, sell, lease, transfer, assign, or otherwise dispose of.

"UCC" means the Uniform Commercial Code as the same may from time to time be in effect in the State of New York; provided, however, in the event, by reason of mandatory provisions of law, any and all of the attachment, perfection or priority of the security interest of Administrative Agent in and to the Collateral is governed by the Uniform Commercial Code as in effect in a jurisdiction other than New York, the term "UCC" shall mean the Uniform Commercial Code as in effect in such other jurisdiction for

purposes of the provisions relating to such attachment, perfection or priority and for purposes of definitions related to such provisions; provided, further, that the term "UCC" shall include Article 9 thereof as in effect on the Closing Date.

"U.S. Person" means any Person that is a "United States person" as defined in Section 7701(a)(30) of the Code.

"Warrant" means (a) the Warrant to Purchase Common Stock, dated as of the date hereof, issued by Borrower in favor of each Lender and (b) each other warrant or warrants issued by Borrower during the term of any Loans, in favor of any Lender to purchase securities of Borrower.

ARTICLE 2

THE LOANS

2.1 The Loans.

(a) Subject to the terms and conditions of this Agreement, each Lender severally hereby agrees to make a Loan to the Borrower in a principal amount not to exceed the amount of such Lender's Commitments. Borrower hereby unconditionally promises to pay each Lender, ratably, the outstanding principal amount of all Loans advanced by such Lender, accrued and unpaid interest, fees and charges thereon and to pay all other Obligations as and when due in accordance with this Agreement. If the aggregate outstanding principal amount of Loans at any time exceeds the Total Commitments, Borrower shall immediately repay such excess in full. The Obligations of Borrower under this Agreement shall at all times be absolute and unconditional. Borrower acknowledges and agrees that any obligation of any Lender to make any Loan hereunder is strictly contingent upon the satisfaction of the conditions set forth in Sections 2.4, 2.5, and 2.6 (as applicable). For each Loan, Borrower shall make (i) monthly payments of interest only in arrears at the Applicable Rate during the Interest Only Period and (ii) beginning on the Amortization Date, equal monthly payments on each subsequent Payment Date in an amount determined through a calculation fully amortizing the outstanding principal balance due under each Loan at the Applicable Rate over the period from the Amortization Date through (and including) the Maturity Date. For clarity, the payment schedule with respect to the Tranche A Loan as of the Closing Date is reflected in Exhibit A attached hereto, and Administrative Agent may update such payment schedule from time to time in accordance with the terms of the Loan Documents (as amended from time to time, the "Amortization Schedule"). In the event of any inconsistency between the Amortization Schedule and the terms of the Loan Documents (including this Section 2.1), the terms of the Loan Documents shall prevail. Any and all unpaid Obligations, including principal and accrued and unpaid interest in respect of the Loans, fees, charges, and other sums, if any, shall be due and payable in full on the Maturity Date. Borrower shall continue to comply with all of the terms and provisions hereof until all of the Obligations (other than inchoate indemnification obligations for which no claims has been made or asserted or other Obligations that, by their express terms, survive the termination of this Agreement) are paid and satisfied in full. After the applicable Loan Termination Date, no further Loans of the applicable tranche shall be available from the Lenders. Once repaid, no Loans may be reborrowed.

(b) The initial Advance hereunder, to be funded on the date hereof upon satisfaction of the conditions in Sections 2.4 and 2.5, shall be an amount equal to the Tranche A Availability Amount (the "Tranche A Loan"). Thereafter, upon satisfaction of the conditions set forth in Section 2.4 and 2.6(a), Borrower may request, and the Lenders will fund, an additional Advance equal to the Tranche B Availability Amount (the "Tranche B Loan"). Thereafter, upon satisfaction of the conditions set forth in Section 2.4 and 2.6(b), Borrower may request, and the Lenders will fund, an additional Advance equal to the Tranche C Availability Amount (the "Tranche C Loan"). Thereafter, upon satisfaction of the conditions set forth in Section 2.4 and 2.6(c), Borrower may request, and the Lenders will fund, an additional Advance equal to the Tranche D Availability Amount (the "Tranche D Loan").

2.2 Advances and Interest.

(a) All Loans requested by Borrower must be requested by 11:00 A.M. Arizona time, (i) with respect to the Tranche A Loan, on the Closing Date, and (ii) otherwise, five (5) Business Days prior to the date of such requested Loan. All requests or confirmations of requests for a Loan are to be in writing to Administrative Agent and may be sent by telecopy or facsimile transmission or by email provided that Administrative Agent shall have the right to require that receipt of such request not be effective unless confirmed via telephone with Lender. Borrower may not request more than one (1) Loan per calendar month. As express conditions precedent to Lender making each Loan to Borrower, Borrower shall deliver to Administrative Agent the documents, instruments and agreements required pursuant to Sections 2.4, 2.5, and 2.6 (as applicable) of this Agreement (including, without limitation, the Loan Advance Request Form). Except as otherwise provided in this Section 2.2(a), all Loans under this Agreement shall be made by the Lenders simultaneously and proportionately to their Pro Rata Shares of the Commitments of the Lenders with respect to the applicable tranche of Loans, as the case may be, it being understood that no Lender shall be responsible for any default by any other Lender in that other Lender's obligations to make a Loan requested hereunder, nor shall the Commitment of any Lender be increased or decreased as a result of the default by any other Lender in that other Lender's obligation to make a Loan requested hereunder, and each Lender shall be obligated to make the Loans required to be made by it by the terms of this Agreement regardless of the failure by any other Lender.

(b) The following amounts shall be deducted from each Loan advanced hereunder: (i) as to the Tranche A Loan advanced hereunder, the applicable Commitment Fee and the applicable Documentation and Funding Fees, (ii) as to the Tranche B Loan, the applicable Commitment Fee and the applicable Documentation and Funding Fees, (iii) as to the Tranche C Loan, the applicable Commitment Fee and the applicable Documentation and Funding Fees, and (iv) as to the Tranche D Loan, the applicable Commitment Fee and the applicable Documentation and Funding Fees.

(c) Beginning on the date of each Advance, the unpaid principal balance of all advanced Loans and all other Obligations hereunder shall bear interest, payable in arrears, subject to the terms hereof, at the Applicable Rate. All payments shall be due to Administrative Agent on the applicable Payment Date, or if such day is not a Business Day, the next succeeding Business Day. If Borrower fails to make a monthly payment due within five (5) Business Days after the date such payment is due, Administrative Agent, on behalf of the Lenders, shall have the right to require Borrower to pay to Lender a late charge equal to five percent (5%) of the past due payment. After the occurrence and during the continuance of an Event of Default hereunder, Administrative Agent, on behalf of the Lenders, shall have the right to increase the per annum effective rate of interest on all Loans outstanding hereunder to a rate equal to 400 basis points in excess of the Applicable Rate (the "Default Rate"). All contractual rates of interest chargeable on outstanding Loans, shall continue to accrue and be paid even after default, maturity, acceleration, judgment, bankruptcy, insolvency proceedings of any kind or the happening of any event or occurrence similar or dissimilar. In no contingency or event whatsoever shall the aggregate of all amounts deemed interest hereunder and charged or collected pursuant to the terms of this Agreement exceed the highest rate permissible under any law which a court of competent jurisdiction shall, in a final determination, deem applicable hereto. In the event that such court determines Lenders have charged or received interest hereunder in excess of the highest applicable rate, Administrative Agent, shall in its sole discretion and acting on behalf of the Lenders, apply and set off such excess interest received by Lenders against other Obligations hereunder due or to become due and such rate shall automatically be reduced to the maximum rate permitted by such law.

(d) Interest shall be computed on the basis of a 360-day year, and twelve 30-day months. For any partial month interest periods, interest will be charged for the actual number of days elapsed. In computing interest, (i) all payments received after 12:00 p.m. Arizona time on any day shall be deemed received at the opening of business on the next Business Day, and (ii) the date of the making of the Loans shall be included and the date of payment shall be excluded. Changes to the Applicable

Rate based on changes to the Prime Rate, shall be effective as of the day immediately following the date of such change, and to the extent, of such change.

(e) Upon the occurrence and during the continuance of an Event of Default and/or the Maturity Date, any moneys on deposit with Administrative Agent may, at the direction of the Required Lenders, be applied against the Obligations in such order and manner as Administrative Agent may elect or as may otherwise be required under this Agreement.

2.3 Administrative Agent Accounts. Administrative Agent shall maintain accounts in which it shall record (i) the amount of each Loan made hereunder, (ii) the amount of any principal or interest due and payable or to become due and payable from the Borrower to each Lender hereunder, and (iii) the amount of any sum received by Administrative Agent hereunder for the account of the Lenders and each Lender's share thereof.

2.4 Conditions Precedent to Each Advance. It shall be an express condition precedent to each Lender's obligation to make an Advance of each Loan that (i) the representations and warranties contained in Section 4.1 shall be true and correct in all material respects as of the date of such Advance (provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof and provided, further, that those representations and warranties expressly referring to another date shall be true and correct in all material respects as of such other date), (ii) no Event of Default or Potential Event of Default shall have occurred and be continuing, (iii) receipt by Administrative Agent of an executed Loan Advance Request Form in the form of Exhibit D attached hereto, (iv) no circumstance shall exist that could reasonably be expected to have a Material Adverse Change, (v) all governmental and third party approvals necessary in connection with the Loan and this Agreement shall have been obtained and be in full force and effect, and (vi) Administrative Agent's satisfaction, in Administrative Agent's sole discretion, with the results of Administrative Agent's due diligence investigation, including, without limitation, review of the financial statements of Borrower dated no more than thirty (30) days prior to the funding of such Advance (provided, that, Administrative Agent shall notify Borrower in writing as soon as reasonably practical of the satisfaction of the condition set forth in this Section 2.4(vi) or the failure of such condition to be satisfied in connection with the applicable Advance).

2.5 Conditions Precedent to the Tranche A Loan. It shall be an express condition precedent to a Lender's obligation to make an Advance of the Tranche A Loan that Borrower shall provide or cause to be provided to Administrative Agent all of the following items:

(a) UCC-1 financing statements designating Borrower, as debtor, and Administrative Agent, as secured party for the benefit of Lenders, for filing in the state of Borrower's incorporation or formation, as applicable, the state of Borrower's chief executive office which may be perfected under the UCC by the filing of a UCC-1 financing statement, together with any other documents Administrative Agent deems necessary to evidence or perfect Administrative Agent's security interest with respect to the Collateral;

(b) a certificate of the secretary or Responsible Officer of Borrower as to authorizing resolutions and Operating Documents of Borrower with specimen signatures;

(c) the Operating Documents of Borrower and good standing certificates from each of Borrower's jurisdiction of organization and chief executive office location, and each jurisdiction in which Borrower is qualified to conduct business (unless the failure of Borrower to be so qualified in each jurisdiction could not result in a Material Adverse Change);

(d) [reserved];

(e) insurance certificates evidencing that the Borrower, its Subsidiaries, and the Collateral are insured in accordance with the requirements of Section 4.2(q) hereof;

(f) a recent Lien search in each of the jurisdictions where the Borrower is organized and the material assets of Borrower are located, and such searches reveal no Liens on any of the assets of Borrower, except for Permitted Liens;

(g) payment in full of the applicable Commitment Fee and the Tranche A Documentation and Funding Fees;

(h) a fully executed copy of this Agreement;

(i) the fully executed Warrant in respect of the Tranche A Loan;

(j) subject to Section 4.2(y)(i), fully executed Account Control Agreements in respect of each of Borrower's Deposit Accounts and Securities Accounts (other than Excluded Accounts) disclosed on the Perfection Certificate as of the date hereof;

(k) [reserved];

(l) fully executed copies of each other Loan Document;

(m) a duly executed legal opinion of counsel to Borrower dated as of the Closing Date;

(n) a completed Perfection Certificate for Borrower and each of its Subsidiaries; and

(o) such other documents and completion of such other matters as Administrative Agent may reasonably deem necessary and appropriate.

2.6 Conditions Precedent to Subsequent Loans.

(a) It shall be an express condition precedent to each Lender's obligation to make the Advance of the Tranche B Loan that:

(i) the Advance of the Tranche B Loan shall occur on or prior to the Tranche B Loan Termination Date;

(ii) Borrower shall achieved the Tranche B Milestone;

(iii) the amount of such Advance shall be equal to the Tranche B Availability Amount;

(iv) Administrative Agent shall have received payment in full of the Documentation and Funding Fee and the applicable Commitment Fee; and

(v) Borrower shall have executed and delivered to each Lender a Warrant in respect of the Tranche B Loan, in the substantially the same form as the Warrant delivered to the Lenders on the Closing Date;

(b) It shall be an express condition precedent to each Lender's obligation to make the Advance of the Tranche C Loan that:

(i) the Advance of the Tranche C Loan shall occur on or prior to the Tranche C Loan Termination Date;

(ii) Borrower shall achieved the Tranche C Milestone;

(iii) the amount of such Advance shall be equal to the Tranche C Availability Amount;

(iv) Administrative Agent shall have received payment in full of the Documentation and Funding Fee and the applicable Commitment Fee; and

(v) Borrower shall have executed and delivered to each Lender a Warrant in respect of the Tranche C Loan, in the substantially the same form as the Warrant delivered to the Lenders on the Closing Date;

(c) It shall be an express condition precedent to each Lender's obligation to make the Advance of the Tranche D Loan that:

(i) Administrative Agent and the Lenders, in their sole and absolute discretion, shall have determined to proceed with the funding of the Tranche D Loan;

(ii) the Advance of the Tranche D Loan shall occur prior to the Maturity Date;

(iii) the amount of such Advance shall be equal to the Tranche D Availability Amount;

(iv) Administrative Agent shall have received payment in full of the Documentation and Funding Fee and the applicable Commitment Fee; and

(v) Borrower shall have executed and delivered to each Lender a Warrant in respect of the Tranche D Loan, in the substantially the same form as the Warrant delivered to the Lenders on the Closing Date;

2.7 Voluntary Prepayment. Borrower may prepay the Loans at any time, in whole or in part, subject to payment of the premium set forth below ("Prepayment Premium"). The calculated pre-payment amount shall include the outstanding principal due under each Loan at the time of retirement, any partially accrued interest thereon, and a Prepayment Premium based on the following schedule:

(a) on or before the first anniversary of the Closing Date the Prepayment Premium shall be equal to 3% of the principal being repaid.

(b) after the first anniversary of the Closing Date and on or before the second anniversary of the Closing Date the Prepayment Premium shall be equal to 2% of the principal being repaid.

(c) after the second anniversary of the Closing Date and before the Maturity Date the Prepayment Premium shall be equal to 1% of the principal being repaid.

Notwithstanding the foregoing, in the event that (a) Borrower has satisfied all conditions precedent to the funding of a Loan as set forth in Section 2.4 (other than Section 2.4(vi)), and Section 2.6(a), (b), or (c), as applicable, including, without limitation, the achievement of all applicable milestones and the delivery of all required documents, (b) Borrower has duly and timely delivered a request for such Loan in accordance with Section 2.2(a), and (c) such Loan is not funded by the Lenders solely due to a failure to satisfy Section 2.4(vi) of this Agreement, then, for a period of up to

ninety (90) days following the date the Administrative Agent notifies Borrower in writing of such failure to satisfy Section 2.4(vi), any voluntary prepayment of the outstanding principal amount of the Loans shall not be subject to the payment of any Prepayment Premium that would otherwise be applicable under this Section 2.7. For the avoidance of doubt, this waiver shall apply solely to voluntary prepayments made within such ninety (90) day period and solely in connection with the circumstances described in this paragraph, and shall not apply to any other prepayments or at any other time.

2.8 Mandatory Prepayment. If a Change of Control occurs or the Loans are accelerated following the occurrence of an Event of Default, Borrower shall immediately pay to Administrative Agent, for the benefit of Lenders, an amount equal to the sum of: (i) all outstanding principal of the Loans plus accrued and unpaid interest thereon through the prepayment date, (ii) the Prepayment Premium, plus (iii) all other Obligations that are due and payable, including, without limitation, invoiced Administrative Agent Expenses and interest at the rate set forth in Section 2.2(c) with respect to any past due amounts.

2.9 End of Term Payment. On the Maturity Date or on the date of the earlier prepayment of the Loans by Borrower pursuant to Section 2.7 or Section 0 or acceleration of the balance of the Loans by Administrative Agent pursuant to Section 7.1, Borrower shall pay to Administrative Agent, for the benefit of Lenders, the End of Term Payment.

2.10 Proceeds of Collateral. Following the occurrence and during the continuance of an Event of Default, upon the written notice of Administrative Agent, all proceeds from the Collateral shall be immediately delivered to Administrative Agent, at the direction of the Required Lenders, and Administrative Agent may apply such proceeds and payments to any of the Obligations in such order as Administrative Agent may decide in its sole discretion.

2.11 Tax Matters.

(a) Withholding. Payments received by the Administrative Agent or a Lender from Borrower hereunder will be made free and clear of and without deduction for any and all present or future taxes, levies, imposts, duties, deductions, withholdings, assessments, fees or other charges imposed by any Governmental Authority (including any interest, additions to tax or penalties applicable thereto). Specifically, however, (i) if at any time any Governmental Authority, applicable law or regulation requires Borrower to make any withholding or deduction from any such payment or other sum payable hereunder to the Administrative Agent or a Lender, and (ii) such Tax is an Indemnified Tax, Borrower hereby covenants and agrees that the amount due from Borrower with respect to such payment or other sum payable hereunder will be increased to the extent necessary to ensure that, after the making of such required withholding or deduction for Indemnified Taxes, Administrative Agent or such Lender receives a net sum equal to the sum which it would have received had no withholding or deduction for Indemnified Taxes been required and Borrower shall pay the full amount withheld or deducted to the relevant Governmental Authority. Borrower will, upon request, furnish the Administrative Agent with proof reasonably satisfactory to the Administrative Agent indicating that Borrower has made such withholding payment; provided, however, that Borrower need not make any withholding payment if the amount or validity of such withholding payment is contested in good faith by appropriate and timely proceedings and as to which payment in full is bonded or reserved against by Borrower. The agreements and obligations of Borrower contained in this Section 2.11 shall survive the termination of this Agreement.

(b) Borrower shall timely pay to the relevant Governmental Authority in accordance with applicable law, or at the option of the Administrative Agent timely reimburse it for the payment of, any Other Taxes.

(c) The Borrower shall indemnify each Lender and Administrative Agent, within 10 days after demand therefor, for the full amount of any Indemnified Taxes (including Indemnified Taxes imposed or asserted on or attributable to amounts payable under this Section 2.11) payable or paid

by such Lender or Administrative Agent, or required to be withheld or deducted from a payment to such Lender or Administrative Agent, and any reasonable expenses arising therefrom or with respect thereto, whether or not such Indemnified Taxes were correctly or legally imposed or asserted by the relevant Governmental Authority. The relevant Lender or Administrative Agent shall notify the Borrower of the imposition of any Indemnified Tax reasonably promptly after becoming aware of the imposition of such Tax. A certificate as to the amount of such payment or liability delivered to the Borrower by a Lender (with a copy to the Administrative Agent), or by the Administrative Agent on its own behalf or on behalf of a Lender, shall be conclusive absent manifest error.

(d) Each Lender shall severally indemnify the Administrative Agent, within 10 days after demand therefor, for (i) any Indemnified Taxes attributable to such Lender (but only to the extent that Borrower has not already indemnified the Administrative Agent for such Indemnified Taxes and without limiting the obligation of Borrower to do so), (ii) any Taxes attributable to such Lender's failure to comply with the provisions of Section 8.18 relating to the maintenance of a Participant Register and (iii) any Excluded Taxes attributable to such Lender, in each case, that are payable or paid by the Administrative Agent in connection with any Loan Document, and any reasonable expenses arising therefrom or with respect thereto, whether or not such Taxes were correctly or legally imposed or asserted by the relevant Governmental Authority. A certificate as to the amount of such payment or liability delivered to any Lender by the Administrative Agent shall be conclusive absent manifest error. Each Lender hereby authorizes the Administrative Agent to set off and apply any and all amounts at any time owing to such Lender under any Loan Document or otherwise payable by the Administrative Agent to the Lender from any other source against any amount due to the Administrative Agent under this Section 2.11(d).

(e) As soon as practicable after any payment of Taxes by Borrower to a Governmental Authority pursuant to this Section 2.11, Borrower shall deliver to the Administrative Agent the original or a certified copy of a receipt issued by such Governmental Authority evidencing such payment, a copy of the return reporting such payment or other evidence of such payment reasonably satisfactory to the Administrative Agent.

(f) If any Lender or the Administrative Agent determines, in its sole discretion exercised in good faith, that it has received a refund of any Indemnified Taxes as to which it has been indemnified pursuant to Section 2.11 (including by the payment of additional amounts pursuant to Section 2.11(a)), it shall pay to the indemnifying party an amount equal to such refund (but only to the extent of indemnity payments made under Section 2.11 with respect to the Indemnified Taxes giving rise to such refund), net of all out-of-pocket expenses (including Taxes) of such indemnifying party and without interest (other than any interest paid by the relevant Governmental Authority with respect to such refund). Such indemnifying party, upon the request of such indemnified party, shall promptly repay to such indemnified party the amount paid over pursuant to this Section 2.11(f) (plus any penalties, interest or other charges imposed by the relevant Governmental Authority) in the event that such indemnified party is required to repay such refund to such Governmental Authority. Notwithstanding anything to the contrary in this Section 2.11(f), in no event will the indemnified party be required to pay any amount to an indemnifying party pursuant to this Section 2.11(f) the payment of which would place the indemnified party in a less favorable net after-Tax position than the indemnified party would have been in if the Tax subject to indemnification and giving rise to such refund had not been deducted, withheld or otherwise imposed and the indemnification payments or additional amounts with respect to such Tax had never been paid. This Section 2.11(f) shall not be construed to require any indemnified party to make available its Tax returns (or any other information relating to its Taxes that it deems confidential) to the indemnifying party or any other Person.

(g) (i) Any Lender that is entitled to an exemption from or reduction of withholding Tax with respect to any payments made under any Loan Document shall deliver to the Borrower and the Administrative Agent, at the time or times reasonably requested by the Borrower or the Administrative Agent, such properly completed and executed documentation reasonably requested by the Borrower or the Administrative Agent as will permit such payments to be made without withholding or at a reduced rate

of withholding. In addition, any Lender, if reasonably requested by the Borrower or the Administrative Agent, shall deliver such other documentation prescribed by applicable law or reasonably requested by the Borrower or the Administrative Agent as will enable the Borrower or the Administrative Agent to determine whether or not such Lender is subject to backup withholding or information reporting requirements. Notwithstanding anything to the contrary in the preceding two sentences, the completion, execution and submission of such documentation (other than such documentation set forth in Section 2.11(g)(ii)(A), (ii)(B), (ii)(D) and (ii)(E) below) shall not be required if in the Lender's reasonable judgment such completion, execution or submission would subject such Lender to any material unreimbursed cost or expense or would materially prejudice the legal or commercial position of such Lender.

(ii) Without limiting the generality of the foregoing,

(A) any Lender that is a U.S. Person shall deliver to the Borrower and the Administrative Agent (in such number of copies as shall be reasonably requested by the recipient) on or prior to the date on which such Lender becomes a Lender under this Agreement (and from time to time thereafter upon the reasonable request of the Borrower or the Administrative Agent) copies of executed Internal Revenue Service ("IRS") Form W-9 (or any successor form) certifying that such Lender is exempt from U.S. federal backup withholding Tax;

(B) any lender that is not a U.S. Person (a "Non-U.S. Lender") shall, to the extent it is legally entitled to do so, deliver to the Borrower and the Administrative Agent (in such number of copies as shall be reasonably requested by the recipient) on or prior to the date on which such Non-U.S. Lender becomes a Lender under this Agreement (and from time to time thereafter upon the reasonable request of the Borrower or the Administrative Agent), whichever of the following is applicable:

(a) in the case of a Non-U.S. Lender claiming the benefits of an income tax treaty to which the United States is a party, (x) with respect to payments of interest under any Loan Document, copies of executed IRS Form W-8BEN or IRS Form W-8BEN-E establishing an exemption from, or reduction of, U.S. federal withholding Tax pursuant to the "interest" article of such tax treaty and (y) with respect to any other applicable payments under any Loan Document, IRS Form W-8BEN or IRS Form W-8BEN-E establishing an exemption from, or reduction of, U.S. federal withholding Tax pursuant to the "business profits" or "other income" article of such tax treaty;

(b) copies of executed IRS Form W-8ECI (or any successor form);

(c) in the case of a Non-U.S. Lender claiming the benefits of the exemption for portfolio interest under Section 871(h) or Section 881(c) of the Code, (x) a certificate substantially in the form of Exhibit E-1 to the effect that such Non-U.S. Lender is not a "bank" within the meaning of Section 881(c)(3)(A) of the Code, a "10-percent shareholder" of the Borrower within the meaning of Section 881(c)(3)(B) of the Code, a "controlled foreign corporation" related to Borrower as described in Section 881(c)(3)(C) of the Code (a "U.S. Tax Compliance Certificate") and (y) copies of executed IRS Form W-8BEN or IRS Form W-8BEN-E, as applicable (or any successor form); or

(d) to the extent a Non-U.S. Lender is not the beneficial owner, copies of executed IRS Form W-8IMY, accompanied by IRS Form W-8ECI, IRS Form W-8BEN, IRS Form W-8BEN-E, a certificate substantially in the form of Exhibit E-2 or Exhibit E-3, IRS Form W-9, and/or other certification documents from each beneficial owner, as applicable; provided that if the Non-U.S. Lender is a partnership and one or more direct or indirect partners of such Non-U.S. Lender are claiming the portfolio

interest exemption, such Non-U.S. Lender may provide a certificate substantially in the form of Exhibit E-4 on behalf of each such direct and indirect partner;

(C) any Non-U.S. Lender shall, to the extent it is legally entitled to do so, deliver to the Borrower or the Administrative Agent (in such number of copies as shall be reasonably requested by the recipient) on or prior to the date on which such Non-U.S. Lender becomes a Lender under this Agreement (and from time to time thereafter upon the reasonable request of the Borrower or the Administrative Agent), executed copies of any other form prescribed by applicable law as a basis for claiming exemption from or a reduction in U.S. federal withholding Tax, duly completed, together with such supplementary documentation as may be prescribed by applicable law to permit the Borrower or the Administrative Agent to determine the withholding or deduction required to be made;

(D) each Lender and the Administrative Agent shall deliver to the Borrower and the Administrative Agent at the time or times prescribed by law and at such time or times reasonably requested by the Borrower or the Administrative Agent such documentation prescribed by applicable law (including as prescribed by Section 1471(b)(3)(C)(i) of the Code) and such additional documentation reasonably requested by the Borrower or the Administrative Agent as may be necessary for the Borrower and the Administrative Agent to (i) comply with their obligations under FATCA and (ii) determine whether such Lender (or the Administrative Agent, as applicable) has complied with such Lender's (or the Administrative Agent's, as applicable) obligations under FATCA or to determine the amount to deduct and withhold from such payment. Solely for purposes of this clause (D), "FATCA" shall include any amendments made to FATCA after the date of this Agreement; and

(E) the Administrative Agent, and any successor or supplemental Administrative Agent, shall deliver to the Borrower (in such number of copies as shall be requested by the recipient) on or prior to the date on which the Administrative Agent becomes the administrative agent hereunder or under any other Loan Document (and from time to time thereafter upon the reasonable request of the Borrower) executed copies of either (i) IRS Form W-9 (or any successor form) or (ii) a U.S. branch withholding certificate on IRS Form W-8IMY (or any successor form) evidencing its agreement with the Borrower to be treated as a U.S. Person (with respect to amounts received on account of any Lender) and IRS Form W-8ECI (with respect to amounts received on its own account), with the effect that, in either case, the Borrower will be entitled to make payments hereunder to the Administrative Agent without withholding or deduction on account of U.S. federal withholding Tax.

Each Lender and the Administrative Agent agrees that if any documentation it previously delivered expires or becomes obsolete or inaccurate in any respect, it shall promptly update and deliver such form or certification to the Borrower and the Administrative Agent or promptly notify the Borrower and the Administrative Agent in writing of its legal ineligibility to do so.

(h) For the avoidance of doubt, the term "applicable law" includes FATCA.

(i) The agreements and obligations of Borrower contained in this Section 2.11 shall survive the termination of this Agreement, the resignation and/or replacement of the Administrative Agent, any assignment of rights by, or the replacement of, a Lender, the termination of the Commitments and the repayment, satisfaction or discharge of all other Obligations.

(j) Borrower and the Lenders hereby acknowledge and agree that, for U.S. federal income tax purposes, the issue price (within the meaning of Section 1273(b) of the Code) of the Loan will be determined pursuant to Section 1272 through 1275 of the Code and the Treasury Regulations thereunder, including Section 1.1273-2(h)(1) of the Treasury Regulations.

2.12 Apportionment of Payments. All payments of principal and interest in respect of outstanding Loans, all payments of fees and all other payments in respect of any other Obligations, shall be allocated by the Administrative Agent among such of the Lenders as are entitled thereto, in proportion to their respective Pro Rata Shares, or as otherwise provided herein.

2.13 Defaulting Lenders. Notwithstanding anything to the contrary contained in this Agreement, if any Lender becomes a Defaulting Lender, then, until such time as such Lender is no longer a Defaulting Lender, to the extent permitted by applicable law:

(a) Such Defaulting Lender's right to approve or disapprove any amendment, waiver or consent with respect to this Agreement shall be restricted as set forth in the definition of Required Lenders.

(b) Administrative Agent shall not be obligated to transfer to such Defaulting Lender any payments made by Borrower to Administrative Agent for such Defaulting Lender's benefit, and, in the absence of such transfer to such Defaulting Lender, the Administrative Agent shall transfer any such payments to each other non-Defaulting Lender ratably in accordance with their Pro Rata Shares (without giving effect to the Pro Rata Shares of such Defaulting Lender) (but only to the extent that such Defaulting Lender's Loans were funded by the other Lenders).

(c) The operation of this Section shall not be construed to increase or otherwise affect the Commitments of any Lender, to relieve or excuse the performance by such Defaulting Lender or any other Lender of its duties and obligations hereunder, or to relieve or excuse the performance by the Borrower of its duties and obligations hereunder to Administrative Agent or to the Lenders other than such Defaulting Lender.

ARTICLE 3

CREATION OF SECURITY INTEREST; COLLATERAL

3.1 Grant of Security Interests. Borrower grants to Administrative Agent, for the benefit of the Lenders, a valid, continuing security interest in all presently existing and hereafter acquired or arising Collateral in order to secure prompt, full and complete payment of any and all Obligations and in order to secure prompt, full and complete performance by Borrower of each of its covenants and duties under each of the Loan Documents. The "Collateral" shall mean and include all right, title, interest, claims and demands of Borrower in the following:

(a) All goods (and embedded computer programs and supporting information included within the definition of "goods" under the UCC) and equipment now owned or hereafter acquired, including all laboratory equipment, computer equipment, office equipment, machinery, fixtures, vehicles (including motor vehicles and trailers), and other equipment and any interest in any of the foregoing, and all attachments, accessories, accessions, replacements, substitutions, additions, and improvements to any of the foregoing, wherever located;

(b) All inventory now owned or hereafter acquired, including all merchandise, raw materials, parts, supplies, packing and shipping materials, work in process and finished products including such inventory as is temporarily out of Borrower's custody or possession or in transit and including any returns upon any accounts or other proceeds, including insurance proceeds, resulting from the sale or disposition of any of the foregoing and any documents of title representing any of the above, and Borrower's books relating to any of the foregoing;

(c) All contract rights and general intangibles (including Intellectual Property), now owned or hereafter acquired, including goodwill, license agreements, franchise agreements, blueprints,

drawings, purchase orders, customer lists, route lists, infringements, claims, software, computer programs, computer disks, computer tapes, literature, reports, catalogs, design rights, income tax refunds, payment intangibles, commercial tort claims, payments of insurance, Permits, accounts for such Permits, and rights to payment of any kind;

(d) All now existing and hereafter arising accounts, contract rights, royalties, license rights, license fees and all other forms of obligations owing to Borrower arising out of the sale or lease of goods, the licensing of technology or the rendering of services by Borrower (subject, in each case, to the contractual rights of third parties to require funds received by Borrower to be expended in a particular manner), whether or not earned by performance, and any and all credit insurance, guaranties, and other security therefor, as well as all merchandise returned to or reclaimed by Borrower and Borrower's books relating to any of the foregoing;

(e) All documents, cash, Deposit Accounts, letters of credit and letters of credit rights (whether or not the letter of credit is evidenced by a writing) and other supporting obligations, certificates of deposit, instruments, promissory notes, chattel paper (whether tangible or electronic) and investment property, including all securities, whether certificated or uncertificated, security entitlements, Securities Accounts, commodity contracts and commodity accounts, and all financial assets held in any Securities Account or otherwise, wherever located, now owned or hereafter acquired and Borrower's books relating to the foregoing; and

(f) To the extent not covered by clauses (a) through (e), all other personal property of the Borrower, whether tangible or intangible, and any and all rights and interests in any of the above and the foregoing and, any and all claims, rights and interests in any of the above and all substitutions for, additions and accessions to and proceeds thereof, including insurance, condemnation, requisition or similar payments and proceeds of the sale or licensing of Intellectual Property and all of Borrower's books and records related to any items of other Collateral.

Notwithstanding the foregoing, Excluded Property shall not constitute Collateral.

3.2 After-Acquired Property. If Borrower shall at any time acquire a commercial tort claim, as defined in the UCC, where the amount of damages claimed by Borrower is at least two hundred thousand Dollars ($200,000), Borrower shall immediately notify Administrative Agent in writing signed by Borrower of the brief details thereof and grant to Administrative Agent in such writing a security interest therein and in the proceeds thereof, all upon the terms of this Agreement, with such writing to be in form and substance reasonably satisfactory to Administrative Agent.

3.3 Location and Possession of Collateral. The Collateral (other than Collateral that is (a) out for repair or in-transit between Permitted Locations, (ii) mobile equipment such as laptop computers which are in the possession of individual employees or (iii) that is in the possession of customers pursuant to contractual arrangements with sales agencies entered into in the Ordinary Course of Business) is and shall remain in the possession of Borrower at its locations as set forth in the Perfection Certificate (the "Permitted Locations") or such other locations of which Borrower has delivered written notice thereof at least thirty (30) days following such relocation, and, in the event that the Collateral at any new location is valued in excess of Five Hundred Thousand Dollars ($500,000) in the aggregate for all such Collateral at such location, at Administrative Agent's election, Borrower shall cause such bailee or landlord, as applicable, to execute and deliver a bailee waiver or landlord waiver, as applicable, in form and substance reasonably satisfactory to Administrative Agent within thirty (30) days after the addition of any new offices or business locations, or any such storage with or delivery to any such bailee, as the case may be; provided that that the aggregate value of all Collateral held at locations that are not subject to a bailee waiver or landlord wavier, as applicable shall not at any time exceed $1,250,000. Borrower shall remain in full possession, enjoyment and control of the Collateral (except only as may be otherwise required by Administrative Agent for perfection of the security interests therein created hereunder) and so long as no Event of Default has occurred and is continuing, shall be entitled

to manage, operate and use the same and each part thereof with the rights and franchises appertaining thereto; *provided* that the possession, enjoyment, control and use of the Collateral shall at all times be subject to the observance and performance of the terms of this Agreement.

3.4 Delivery of Additional Documentation Required. Borrower shall from time to time execute and deliver to Administrative Agent, at the request of Administrative Agent, all financing statements and other documents Administrative Agent may reasonably request, in form reasonably satisfactory to Administrative Agent, to perfect and continue Administrative Agent's perfected security interests in the Collateral and in order to consummate fully all of the transactions contemplated under the Loan Documents.

3.5 Right to Inspect. Without duplication of the Administrative Agent's rights pursuant to Section 4.2(r), Administrative Agent (through any of its officers, employees, or agents) shall have the right, upon reasonable prior notice, from time to time during Borrower's usual business hours, to inspect the books and records of Borrower and Subsidiaries and to make copies thereof and to inspect, test, and appraise the Collateral in order to verify Borrower's financial condition or the amount, condition of, or any other matter relating to, the Collateral, in each case, at any time with or without prior written notice and as often as may be reasonably desired at any time during an Event of Default or upon prior written notice at reasonable times when no Event of Default is continuing up to one (1) time per year, and to discuss its business operations, properties and financial and other conditions with the Key Persons; provided, that in all cases Borrower and Subsidiaries may exclude information and materials (i) that is subject to attorney-client privilege or constitutes attorney work product, (ii) that constitutes highly sensitive proprietary information, or (iii) that gives rise to an actual or potential conflict of interest between Borrower and Administrative Agent or the Lenders with respect to actions to be taken in connection with refinancings, amendments or modifications of the Loan Documents.

3.6 Intellectual Property. Borrower shall notify Administrative Agent before the federal registration or filing by Borrower of any copyright or copyright application and shall promptly execute and deliver to Lender any grants of security interests in same, in form acceptable to Administrative Agent, to file with the United States Copyright Office. In addition, Borrower shall deliver to Administrative Agent within ten (10) Business Days after the end of each calendar quarter, a report reflecting the patents, patent applications, trademarks, trademark applications that were registered or filed by Borrower during such quarter and shall promptly execute and deliver to Administrative Agent, on behalf of the Lenders, any grants of security interests in same, in form, reasonably acceptable to Administrative Agent, to file with the United States Patent and Trademark Office or United States Copyright Office, as applicable.

3.6 Protection of Intellectual Property. Borrower shall and shall cause its Subsidiaries to:

(a) protect, defend and maintain the validity and enforceability of its Intellectual Property material to its and/or any Subsidiary's business and promptly advise Administrative Agent in writing of material infringements of such Intellectual Property;

(b) not allow any of its Intellectual Property material to Borrower's or its Subsidiaries business to be abandoned, forfeited or dedicated to the public without Administrative Agent's written consent;

(c) provide written notice to the Administrative Agent within fifteen (15) Business Days of entering or becoming bound by any Restricted License (other than over-the-counter software that is commercially available to the public); and

(d) take such commercially reasonable steps as Administrative Agent requests to obtain the consent of, or waiver by, any person whose consent or waiver is necessary for (i) any Restricted License (other than in respect of over-the-counter software that is commercially available to

the public) to be deemed “Collateral” and for Administrative Agent to have a security interest in it that might otherwise be restricted or prohibited by law or by the terms of any such Restricted License, whether now existing or entered into in the future, and (ii) Administrative Agent to have the ability in the event of a liquidation of any Collateral in respect of any Restricted License (other than in respect of over-the-counter software that is commercially available to the public) to dispose of such Collateral in accordance with the Administrative Agent’s rights and remedies under this Agreement and the other Loan Documents.

ARTICLE 4

REPRESENTATIONS, WARRANTIES AND COVENANTS

4.1 Representations and Warranties

. Borrower hereby warrants, represents and covenants that:

(a) Borrower and each Subsidiary is duly organized, validly existing and in good standing under the laws of the state set forth in the Perfection Certificate. Borrower and each Subsidiary is duly qualified to do business and is in good standing in every other jurisdiction where the nature of its business requires it to be qualified, except where failure to be so qualified would not result in a Material Adverse Change, and is not subject to any bankruptcy, insolvency or other similar proceedings. Borrower’s and each Subsidiary’s chief executive office, principal place of business and the place where Borrower maintains its records concerning the Collateral are located at the addresses set forth in the Perfection Certificate. The Collateral (other than Collateral that is (i) out for repair or in-transit between Permitted Locations, (ii) mobile equipment such as laptop computers which are in the possession of individual employees or agents or (iii) that is in the possession of customers pursuant to contractual arrangements with sales agencies entered into in the Ordinary Course of Business) is presently located at the addresses set forth on the Perfection Certificate or as otherwise disclosed to Administrative Agent pursuant to Section 3.3;

(b) Borrower and each Subsidiary has full power, authority and legal right to execute, deliver and perform each Loan Document to which it is a party, and the execution, delivery and performance hereof and thereof have been duly authorized by all necessary action;

(c) Each Loan Document has been duly executed and delivered by Borrower and each constitutes a legal, valid and binding obligation of Borrower and each Subsidiary party thereto, enforceable in accordance with its terms, except as enforceability may be limited by bankruptcy, insolvency or other laws affecting enforcement of creditors’ rights generally and general equitable principles;

(d) The execution, delivery and performance of the Loan Documents (i) is not in contravention of any Material Agreement or indenture by which Borrower or any Subsidiary is bound, or by which its properties may be affected, (ii) does not require any shareholder approval, or any approval or consent of, or filing or registration with, any governmental body or regulatory authority or agency (other than the filing of UCC financing statements and filings with the United States Patent and Trademark Office and United States Copyright Office, in connection with the registration of the security interest granted hereunder), or any approval or consent of any trustees or holders of any of its indebtedness or obligations, unless such approval or consent has been obtained and (iii) does not contravene any law, regulation, judgment or decree applicable to it in any material respect or its Operating Documents;

(e) None of Borrower nor any Subsidiary is a “bank holding company” or a direct or indirect subsidiary of a “bank holding company” as defined in the Bank Holding Company Act of 1956, as amended, and Regulation Y thereunder of the Board of Governors of the Federal Reserve System.

None of Borrower nor any Subsidiary is an "investment company" or a company controlled by an "investment company" under the Investment Company Act of 1940. None of Borrower nor any Subsidiary is engaged in the business of extending credit for the purpose of purchasing or carrying margin stock (as defined in Regulation U of the Board of Governors of the Federal Reserve System) and no proceeds of any Loan will be used to purchase or carry margin stock or to extend credit to others for the purpose of purchasing or carrying any margin stock;

(f) To Borrower's Knowledge, Borrower and each Subsidiary is in compliance, in all material respects, with all requirements of law and orders, rules or regulations of any regulatory authority applicable to Borrower or any Subsidiary or to the business or assets of Borrower or any Subsidiary and no such failure to comply with any such requirement applicable to Borrower or any Subsidiary or any item of Collateral could reasonably be expected to cause a Material Adverse Change;

(g) Borrower is the owner and holder of all right, title and interest in and to the Collateral (other than the right, title and interests granted under the Permitted Liens), and Borrower has not assigned or pledged and hereby covenants that it will not assign or pledge, so long as this Agreement shall remain in effect, the whole or any part of the rights in the Collateral hereby and thereby assigned, to anyone other than Administrative Agent, its designee, its successors or assigns, other than Permitted Liens;

(h) Borrower has good and marketable title to, or other rights to use, the Collateral, and the Collateral is free and clear of all Liens, claims and encumbrances, other than Permitted Liens;

(i) Borrower has delivered to Administrative Agent copies of the most recent annual reviewed financial statements and most recent monthly and quarterly unaudited financial statements required to be delivered pursuant to Section 4.2(f) hereof, or as may hereafter be delivered in connection with the Loans (the "Financial Statements"). Since the date of the last Financial Statement provided to Administrative Agent, no event has occurred which would have a Material Adverse Change on Borrower or any Subsidiary. The Financial Statements delivered to the Administrative Agent fairly present, in conformity with GAAP (and as to unaudited financial statements, subject to normal year-end adjustments and the absence of footnote disclosures), in all material respects, the consolidated financial condition and consolidated results of operations of Borrower and its Subsidiaries at the time and for the periods stated therein;

(j) No default or event of default has occurred and is continuing under or with respect to any Material Agreement;

(k) No action, suit, litigation, or proceeding of or before any arbitrator or governmental or regulatory authority is pending or, to the Knowledge of Borrower threatened in writing, by or against Borrower, any Subsidiary or against any of their property or assets, which action, suit, litigation or proceeding could, individually or in the aggregate, be reasonably expected to result in liabilities for Borrower or its Subsidiaries (excluding insured amounts in respect of which coverage has not been disclaimed) in excess of Five Hundred Thousand Dollars ($500,000);

(l) To Borrower's Knowledge, no facilities or properties leased or operated by Borrower contains any "hazardous materials" in amount or concentrations that could reasonably be expected to constitute a material violation of any federal, state or local law, rule, regulation, order or permit (the "Environmental Laws"). Except as would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change, Borrower has not received notice of any suspected or actual violations of any Environmental Laws and Borrower's business has been operated in compliance in all material respects with all applicable Environmental Laws;

(m) Except as disclosed to Administrative Agent in accordance with Section 4.2(t), Borrower has no Subsidiaries other than those listed on the Perfection Certificate. Neither Borrower nor

any Subsidiary has done business under any name other than that specified on the Perfection Certificate;

(n) To Borrower's Knowledge, as of the date hereof and at all times throughout the term of this Agreement, including after giving effect to any transfers of interests permitted pursuant to the Loan Documents, (a) none of the funds or other assets of Borrower, its Subsidiaries, any of their Affiliates constitute (or will constitute) property of, or are (or will be) beneficially owned, directly or indirectly, by any Blocked Person; (b) no Blocked Person has (or will have) any interest of any nature whatsoever in Borrower, in their Affiliates, with the result that the investment in the respective party (whether directly or indirectly), is prohibited by applicable law or the Loans are in violation of applicable law; and (c) none of the funds of Borrower, or of their Affiliates have been (or will be) derived from any unlawful activity with the result that the investment in the respective party (whether directly or indirectly), is prohibited by applicable law or the Loans are in violation of applicable law;

(o) To Borrower's Knowledge, the Property of Borrower and the Collateral are insured with financially sound and reputable insurance companies in such amounts, with such deductibles and covering such risks as are customarily carried by companies engaged in similar businesses and owning similar properties in localities where the Borrower operates. The Perfection Certificate sets forth a description of all insurance policies maintained by or on behalf of the Borrower as of the Closing Date. Each insurance policy listed on the Perfection Certificate is in full force and effect as of such date and all premiums in respect thereof that are due and payable have been paid;

(p) To Borrower's Knowledge, Borrower owns, or is licensed to use or is otherwise permitted to use, all Intellectual Property necessary for the conduct of its business as currently conducted or proposed to be conducted. No material claim has been asserted in writing against Borrower and is pending by any other person or entity challenging the use, validity or effectiveness of any such Intellectual Property, nor does the Borrower have Knowledge of any basis for any such claim;

(q) Borrower and each Subsidiary has filed all federal, state and other material Tax returns that are required to be filed and has paid all Taxes shown thereon to be due, together with applicable interest and penalties, and all other Taxes, fees or other charges imposed on it or any of its property by any governmental or regulatory authority except (a) Taxes that are being contested in good faith by appropriate proceedings diligently conducted and for which adequate reserves are being maintained in accordance with GAAP or (b) Taxes, fees or other charges not exceeding Fifty Thousand Dollars ($50,000) individually or in the aggregate;

(r) No tax Liens (other than Permitted Liens) have been filed, and, to the Knowledge of Borrower, no unresolved claim is being asserted, with respect to any such Tax, fee or other charge;

(s) This Agreement creates in favor of Administrative Agent, for the benefit of the Lenders, a legal, valid and continuing and enforceable security interest in the Collateral, the enforceability of which is subject to applicable bankruptcy, insolvency, reorganization, moratorium or other laws affecting creditor's rights generally and subject to general principles of equity. To the Knowledge of Borrower, upon Administrative Agent filing UCC-1 financing statements with the central filing location in the state of Borrower's formation or incorporation and/or the State of Borrower's chief executive office and/or the obtaining of "control" (as defined under the UCC) through an Account Control Agreement or otherwise and/or the filing of the IP Security Agreements with the United States Copyright Office or United States Patent and Trademark Office, as applicable, Administrative Agent, for the benefit of the Lenders, will have a perfected first priority Lien on and security interest in the Collateral located in the United States or any state thereof which can be perfected by such filings and Account Control Agreements, subject only to Permitted Liens;

(t) Borrower and its Subsidiaries (taken as a whole on a consolidated basis) are, and after giving effect to the incurrence of the debt evidenced by this Agreement and all obligations hereunder will be, Solvent;

(u) (i) The Perfection Certificate lists all of Borrower's and each Subsidiary's registered or applied for Intellectual Property, including issued patents and pending patent applications, registered trademarks and pending trademark applications, registered domain names, registered copyrights and pending copyright applications and material Intellectual Property licenses owned by Borrower and each Subsidiary as of the date of such Perfection Certificate; (ii) all of Borrower's and each Subsidiary's Intellectual Property that is material to such Borrower or Subsidiary's business is valid, subsisting, unexpired and enforceable and has not been abandoned; (iii) except as described on the Perfection Certificate, Borrower and each Subsidiary is the exclusive owner of all right, title and interest in and to, or has the right to use, all of such Borrower's or Subsidiary's Intellectual Property; (iv) consummation and performance of this Agreement will not result in the invalidity, unenforceability or impairment of any of Borrower's or any Subsidiary's Intellectual Property that is material to such Borrower or Subsidiary's business, or in default or termination of any material Intellectual Property license of Borrower or any Subsidiary; (v) except as described on the Perfection Certificate, as of the date of such Perfection Certificate there are no outstanding holdings, decisions, consents, settlements, decrees, orders, injunctions, rulings or judgments that would limit, cancel or question the validity or enforceability of any of Borrower's or any Subsidiary's Intellectual Property or Borrower's or such Subsidiary's rights therein or use thereof; (vi) to Borrower's Knowledge, except as described on the Perfection Certificate, as of the date of such Perfection Certificate, the operation of Borrower's and each Subsidiary's business and Borrower's or such Subsidiary's use of Intellectual Property in connection therewith, does not infringe or misappropriate the intellectual property rights of any other person or entity; (vii) except as described in the Perfection Certificate, as of the date of such Perfection Certificate, no action or proceeding is pending or, to Borrower's Knowledge, threatened in writing (1) seeking to limit, cancel or question the validity of any of Borrower's or any Subsidiary's Intellectual Property, (2) which, if adversely determined, could be reasonably expected to cause a Material Adverse Change on the value of any such Intellectual Property or (3) alleging that any such Intellectual Property, or Borrower's or such Subsidiary's use thereof in the operation of its business, infringes or misappropriates the intellectual property rights of any person or entity and (viii) to Borrower's Knowledge, there has been no Material Adverse Change on Borrower's or any Subsidiary's rights in its material trade secrets as a result of any unauthorized use, disclosure or appropriation by or to any person, including Borrower's and each Subsidiary's current and former employees, contractors and agents;

(v) Borrower has disclosed on the Perfection Certificate all Material Agreements as of the date of such Perfection Certificate. No statement or information contained in this Agreement or any document or certificate executed or delivered, or hereafter delivered, in connection with this Agreement or the Loans contains or will contain any untrue statement of a material fact or omits to state a material fact necessary to make the statements contained herein or therein not misleading in light of the circumstances under which they were made (it being understood that projections and forecasts provided by Borrower have been prepared in good faith using assumptions believed to be reasonable at the time such information was delivered and are not to be viewed as facts, and that actual results during the period or periods covered by such projections and forecasts may differ from the projected or forecasted results);

(w) [reserved]; and

(x) A materially complete and accurate list of the Products is set forth on the Perfection Certificate, as updated from time to time pursuant to Section 4.2(f)(i)(B). Borrower and each of its Subsidiaries hold all materially necessary Governmental Approvals (if any), a list of which is set forth on the Perfection Certificate, and all such Governmental Approvals are in full force and effect. There are no proceedings in progress, pending or, to Borrower's Knowledge, threatened in writing, that may result in revocation, cancellation, suspension, rescission or any adverse modification of any of such

Governmental Approval nor, to Borrower's Knowledge, after due inquiry, are there any material facts upon which proceedings could reasonably be based. Without limitation of the foregoing:

(i) With respect to any material Product being manufactured by Borrower or its Subsidiary, Borrower and each of its Subsidiaries (as applicable) has received, and such Product is the subject of, all Governmental Approvals (if any) materially necessary in connection with such manufacture of such Product as is currently being conducted by or on behalf of Borrower or any of its Subsidiaries, and neither Borrower nor any of its Subsidiaries has received any written notice from any applicable Governmental Authority, that (i) such Governmental Authority is conducting an investigation or review of Borrower's or any of its Subsidiaries manufacturing facilities and processes for such Product which have disclosed any material deficiencies or violations of any material Requirement of Law or the materially necessary Governmental Approvals related to the manufacture of such Product, or (ii) any materially necessary Governmental Approval has been revoked or withdrawn, nor has any such Governmental Authority issued any order or recommendation stating that the manufacturing of such Product must cease; and

(ii) There have been no material Product recalls or voluntary withdrawals of material Products from any material market.

4.2 Affirmative Covenants of Borrower. Borrower shall, and shall cause each of its Subsidiaries to, do all of the following, so long as any of the Loan Documents remain outstanding:

(a) maintain its corporate existence and its good standing in its jurisdiction of incorporation and maintain qualification in each jurisdiction in which the failure to so qualify could reasonably be expected to cause a Material Adverse Change;

(b) maintain in force all licenses, approvals, agreements and Governmental Approvals, the loss of which could reasonably be expected to cause a Material Adverse Change;

(c) comply with all statutes, laws, ordinances and government rules and regulations to which it is subject, noncompliance with which could reasonably be expected to cause a Material Adverse Change;

(d) if required by applicable law, pay and discharge or cause to be paid and discharged, all material sales, use, rental and personal property or similar taxes and fees (excluding any taxes on any Lender's net income) which arise and are due prior to each Advance in connection with the Collateral;

(e) assist Administrative Agent in obtaining and filing UCC-1 financing statements against the Collateral and Account Control Agreements to the extent that Administrative Agent deems such action reasonably necessary or desirable;

(f) deliver the following to Administrative Agent:

(i) as soon as available, but no later than thirty (30) days after the last day of each month:

(A) unaudited financial statements pertaining to the results of operations for the month then ended covering the consolidated operations of Borrower and its Subsidiaries for such month and certified as true and correct by a Responsible Officer of Borrower, consisting of a consolidated balance sheet, income statement and cash flow statement, prepared in

accordance with GAAP (subject to normal year-end adjustments and the absence of footnote disclosures) applied on a consistent basis;

(B) an updated Perfection Certificate to reflect any amendments, modifications and updates to the information in the Perfection Certificate after the Closing Date (without giving retroactive effect thereto);

(C) together with the monthly financial reports, reports as to the following, in a form reasonably acceptable to Administrative Agent: accounts receivable aging, accounts payable aging, and primary key performance indicators, including system placement (current period and cumulative), systems installed (current period and cumulative), systems validated (current period and cumulative), recurring revenue, consumable volume (sold and shipped), or any other primary key performance indicators mutually agreed between Borrower and Administrative Agent, in each case, in form reasonably satisfactory to Administrative Agent (provided, that, the form of such reports and key performance indicators delivered to Administrative Agent prior to the Closing Date shall be reasonably satisfactory to Administrative Agent);

(D) report of month-end cash and cash equivalents balances of the Borrower and its Subsidiaries for such month (the "Cash Report"), which report shall reasonably identify unrestricted cash and cash equivalents and restricted cash and cash equivalents and whether such amounts are held in deposit accounts or securities accounts subject to an Account Control Agreement;

(E) copies of any material Governmental Approvals obtained by Borrower or any of its Subsidiaries that have not previously been delivered to Administrative Agent;

(F) written notice of the commencement of, and any material development in, the proceedings contemplated by Section 4.2(i) hereof;

(G) a duly completed Compliance Certificate signed by a Responsible Officer of Borrower;

(H) [reserved]; and

(I) written notice of all returns, recoveries, disputes and claims regarding inventory that involve more than Five Hundred Thousand Dollars ($500,000) individually or in the aggregate in any calendar year;

(ii) [reserved];

(iii) unless otherwise provided pursuant to Section 4.2(h), within one hundred and eighty (180) days following the end of each fiscal year, a copy of Borrower's annual, audited financial statements consisting of a consolidated balance sheet, income statement and cash flow statement prepared in conformity with GAAP applied on a basis consistent with that of the preceding fiscal year and presenting fairly Borrower's financial condition as at the end of that fiscal year and the results of its operations for the twelve (12) month period then ended and certified as true and correct by Borrower's chief financial officer ("Annual Financial Statements"), together with an unqualified (other than a "going concern" qualification for the impending maturity of the Obligations) opinion on

the financial statements from an independent certified public accounting firm acceptable to Administrative Agent in its reasonable discretion (for the avoidance of doubt, any "Big Four" or accounting firm of recognized national or regional standing shall be acceptable to Administrative Agent);

(iv) [reserved];

(v) within thirty (30) days of the effective date or filing date thereof, a copy of any amendment to Borrower's Operating Documents;

(vi) as requested by Administrative Agent, have Borrower's chief financial or chief operating officer (or, in the event of any vacancy thereof, a Responsible Officer) participate in monthly management update calls with Administrative Agent to discuss such information about the operations and financial condition of the business of the Borrower as Administrative Agent shall reasonably inquire into, at such times reasonably scheduled by mutual agreement of Borrower and Administrative Agent;

(vii) (A) within ten (10) days after each meeting of the board of directors (or committee or subcommittee thereof) of Borrower, have a Key Person participate in a teleconference with Administrative Agent to discuss such information relating to such meeting as may be reasonably requested by Administrative Agent; and (B) if requested by Administrative Agent, within ten (10) days of such request and in the same manner as it gives to its directors (or, as applicable, the members of any committee or subcommittee of the board of directors), copies of all notices, minutes, consents and other materials that Borrower provides to its directors (or committee or subcommittee members) in connection with meetings of the board of directors (and/or of any committee or subcommittee of the board of directors), and if requested by Administrative Agent minutes of such meeting provided that in all cases Borrower may exclude (x) confidential compensation information, (y) information that is subject to attorney/client privilege, and (z) materials that are reasonably related to Borrower's strategy, negotiation position or other matters materially relating to this Agreement or any other Loan Documents or any permitted refinancings thereof; and

(viii) deliver such other financial information as Administrative Agent shall reasonably request from time-to-time.

Notwithstanding anything to the contrary in this Section 4.2, documents, notices and information required to be delivered pursuant to this Agreement may be delivered electronically and shall be deemed to have been delivered on the date (i) on which the Borrower posts such documents, or provides a link thereto on the Borrower's website; or (ii) on which such documents are posted on the Borrower's behalf on the website of the Securities and Exchange Commission (including the EDGAR website), provided, that in each case, Borrower notifies Administrative Agent in writing (including by e-mail) concurrently with the posting of such documents on such websites.

(g) deliver to Administrative Agent no later than within sixty (60) days after the end of each fiscal year of Borrower, annual operating budgets and financial projections approved by the Borrower's board of directors, in a form consistent with the budgets and financial projections provided by Borrower to Administrative Agent prior to the Closing Date or such other form reasonably acceptable to Administrative Agent;

(h) deliver to Administrative Agent from and after such time as Borrower becomes a publicly reporting company, promptly as they are available and in any event: (i) at the time of filing of

Borrower's Form 10-K with the Securities and Exchange Commission after the end of each fiscal year of Borrower, the financial statements of Borrower filed with such Form 10-K; and (ii) at the time of filing of Borrower's Form 10-Q with the Securities and Exchange Commission after the end of each of the first three fiscal quarters of Borrower, the consolidated financial statements of Borrower filed with such Form 10-Q; *provided* that to the extent the foregoing documents are included in materials otherwise filed with the Securities and Exchange Commission, such documents shall be deemed to have been delivered on the date on which Borrower posts such documents, or provides a link thereto, on Borrower's website;

(i) deliver to Administrative Agent (A) promptly upon becoming available, copies of all material statements, reports and notices sent or made available generally by Borrower to its security holders and (B) as soon as possible, written notice of any litigation or governmental proceedings pending or threatened (in writing) against Borrower or any of its Subsidiaries, which could reasonably be expected to result in damages or costs to Borrower or any of its Subsidiaries in excess of Five Hundred Thousand Dollars ($500,000);

(j) deliver the following to Administrative Agent: (i) as of the date of each Compliance Certificate, a list of all Intellectual Property owned by or licensed to Borrower and since the date of the last Compliance Certificate in such form as reasonably required by Administrative Agent; (ii) monthly after the same are sent by Borrower, copies of any statements, reports, or correspondence required to be delivered to any other Lender; (iii) promptly upon receipt of the same, copies of all notices, requests and other documents received by any other party pursuant any Material Agreement regarding or relating to any breach or default alleged by or against any party thereto or any other event that could materially impair the value of the interests or rights of Administrative Agent or any Lender or could otherwise be reasonably expected to cause a Material Adverse Change; and (iv) such other information respecting the business, condition (financial or otherwise), operations, performance, properties or prospects of Borrower as Administrative Agent may from time to time reasonably request;

(k) make due and timely payment or deposit of all federal, state, and local taxes, assessments, or contributions required of it by law or imposed upon any Property belonging to it, and will execute and deliver to Administrative Agent, on demand, appropriate certificates attesting to the payment or deposit thereof; and Borrower will make timely payment or deposit of all tax payments and withholding taxes required of it by applicable laws, including those laws concerning F.I.C.A., F.U.T.A., state disability, and local, state, and federal income taxes, and will, upon request, furnish Administrative Agent with proof reasonably satisfactory to Administrative Agent indicating that Borrower and each Subsidiary has made such payments or deposits; *provided* that Borrower need not make any payment (x) if the amount or validity of such payment is contested in good faith by appropriate proceedings which suspend the collection and for which adequate reserves are being maintained in accordance with GAAP or (y) Taxes, fees or other charges not exceeding Fifty Thousand Dollars ($50,000) individually or in the aggregate; provided further that Borrower shall not change its respective jurisdiction of residence for taxation purposes, without the prior written consent of Administrative Agent (not to be unreasonably withheld, conditioned or delayed);

(l) make or cause to be made all filings in respect of, and pay or cause to be paid when due, all taxes, assessments, fines, fees and other liabilities (including all taxes and other claims in respect of the Collateral) unless being contested in good faith and for which Borrower maintains adequate reserves;

(m) perform, in all material respects, all of Borrower's and each Subsidiary's obligations imposed by applicable law, rule or regulation with respect to the Collateral;

(n) as soon as possible, and in any event within five (5) Business Days after Borrower having obtained Knowledge of the occurrence of any Event of Default or Potential Event of Default, provide a written notice setting forth the details of such Event of Default or Potential Event of

Default and the action, if any is permitted, which is proposed to be taken by Borrower with respect thereto;

(o) as soon as possible, and in any event, no later than five (5) Business Days after receipt, provide Administrative Agent with a copy of any notice of default, notice of termination or similar notice pertaining to a lease of real property where any Collateral is located;

(p) from time to time execute and deliver such further documents and do such further acts and things as Administrative Agent may reasonably request in order to fully effect the purposes of this Agreement and to protect Administrative Agent's security interest in the Collateral, and Borrower hereby authorizes Administrative Agent to execute and deliver on behalf of Borrower and to file such financing statements (including an indication that the financing statement covers "all assets or all personal property" of Borrower in accordance with Section 9-504 of the UCC), and, upon the occurrence and during the continuance of an Event of Default, collateral assignments, notices, control agreements, security agreements and other documents without the signature of Borrower either in Administrative Agent's name or in the name of Administrative Agent as agent and attorney-in-fact for Borrower;

(q) keep Borrower's and its Subsidiaries' business and the Collateral insured for risks and in amounts standard for companies in Borrower's and its Subsidiaries' industry and location and as Administrative Agent may reasonably request (it being understood that the scope of the Borrower's and its Subsidiaries' insurance coverage in place on the Closing Date shall be deemed satisfactory to the Administrative Agent), including, but not limited to, D&O insurance reasonably satisfactory to Administrative Agent. Insurance policies of Borrower and its Subsidiaries shall be in a form, with companies, and in amounts that are reasonably satisfactory to Administrative Agent (it being understood that the insurance policies in place on the Closing Date and any substantially consistent renewals thereof are satisfactory to the Administrative Agent). All property policies of Borrower shall have a lender's loss payable endorsement showing Administrative Agent as lender loss payee and waive subrogation against Administrative Agent, and all liability policies shall show, or have endorsements showing Administrative Agent, as additional insured. Administrative Agent shall be named as lender loss payee and/or additional insured with respect to any such property or liability insurance providing coverage in respect of any Collateral, and each provider of any such insurance shall agree, by endorsement upon the policy or policies issued by it or by independent instruments furnished to Administrative Agent, that it will give Administrative Agent thirty (30) days prior written notice before any such policy or policies shall be canceled (other than cancellation for non-payment of premiums, for which ten (10) days' prior written notice shall be required). At Administrative Agent's request, Borrower shall deliver true and accurate copies of policies and evidence of all premium payments. Proceeds payable under any policy shall, at Administrative Agent's option, be payable to Administrative Agent, on account of the Obligations. Notwithstanding the foregoing, so long as no Event of Default has occurred and is continuing, Borrower shall have the option of applying the proceeds of any casualty policy up to $250,000 in the aggregate per fiscal year, toward the prompt replacement or repair of destroyed or damaged property. If Borrower or any of its Subsidiaries fails to obtain insurance as required under this Section 4.2(q) or to pay any amount or furnish any required proof of payment to third persons, Administrative Agent may make (but has no obligation to do so), at Borrower's expense, all or part of such payment or obtain such insurance policies required in this Section 4.2(q), and take any action under the policies Administrative Agent deems prudent;

(r) during all times any of the Obligations remain outstanding (other than inchoate indemnification Obligations for which no claim has been made, or any other Obligations that, by their express terms, survive termination of this Agreement), (i) preserve, renew and maintain in full force and effect its corporate existence and take all reasonable action to maintain all rights, privileges and franchises necessary or desirable in the Ordinary Course of Business except to the extent as could not reasonably be expected to result in a Material Adverse Change; (ii) perform and observe all the terms and provisions of any material contract, instrument, or indenture to be performed or observed by it, maintain each such contract, instrument, or indenture in full force and effect, and enforce such rights

under any material contract instrument, or indenture, unless the failure to do so could not be reasonably expected to cause a Material Adverse Change; (iii) keep proper books and records and accounts in which full, true and correct entries in conformity with GAAP and all requirements of any governmental or regulatory authorities shall be made of all dealings and transactions and assets in relations to its business and activities; and (iv) without duplication of the Administrative Agent's rights pursuant to Section 3.5, permit Administrative Agent to visit and inspect any of its and its Subsidiaries' assets and properties and examine and make abstracts from any of its and its Subsidiaries' books and records at any time with or without prior written notice and as often as may be reasonably desired at any time during an Event of Default or upon prior written notice at reasonable times when no Event of Default is continuing up to one (1) time per year, and to discuss its business operations, properties and financial and other conditions with the Key Persons;

(s) make available to the Administrative Agent, without expense to the Administrative Agent, Borrower and each of the Key Persons and Borrower's books, to the extent that the Administrative Agent may reasonably deem them necessary to prosecute or defend any third party suit or proceeding instituted by or against the Administrative Agent or any Lender with respect to any Collateral or relating to Borrower. Notwithstanding anything to the contrary in this Agreement, Borrower will not be required to disclose, permit the inspection, examination or making copies or abstracts of, or discussion of, any document, information or other matter that (i) is subject to attorney-client privilege or constitutes attorney work product, (ii) constitutes highly sensitive proprietary information, or (iii) gives rise to an actual or potential conflict of interest between Borrower and Administrative Agent or the Lenders with respect to actions to be taken in connection with refinancings, amendments or modifications of the Loan Documents;

(t) if, after the Closing Date, any Borrower intends to form any direct or indirect Domestic Subsidiary or Material Foreign Subsidiary, or acquire any direct or indirect Domestic Subsidiary or Material Foreign Subsidiary or any Foreign Subsidiary becomes a Material Foreign Subsidiary, the Borrower shall (or shall cause such Borrower to): (i) no later than ten (10) Business Days prior to such formation or acquisition, provide written notice to Administrative Agent of the formation of such Subsidiary, and, upon Administrative Agent's request, copies of the Operating Documents of such Subsidiary, and (ii) promptly, and in any event within sixty (60) days (or such later date as Administrative Agent may agree in its sole discretion) of such formation or creation: take all such action as may be reasonably required by Administrative Agent to (A) cause such new Subsidiary to either: (x) provide to Administrative Agent a joinder to this Agreement pursuant to which such Subsidiary becomes a Borrower hereunder, or (y) guarantee the Obligations of Borrower under the Loan Documents, (B) grant a security interest in and to the assets which constitute Collateral of such Subsidiary (substantially in accordance with this Agreement), in each case together with such Account Control Agreements and other documents, instruments and agreements reasonably requested by Administrative Agent in accordance with the terms of this Agreement, all in form and substance reasonably satisfactory to Administrative Agent (including being sufficient to grant Administrative Agent a first priority Lien, subject to Permitted Liens) and (C) pledge all of the direct or beneficial Equity Securities in such Subsidiary (other than any Excluded Property); provided, that, the actions set forth in the foregoing clauses (A), (B) and (C) shall not be required to the extent that Administrative Agent shall, in good faith consultation with the Borrower, determine in its sole discretion that the cost or other consequence of taking such actions are excessive in relation to the benefit to the Administrative Agent and Lenders to be afforded thereby;

(u) use the proceeds of the Loan solely as working capital, and to fund its general corporate purposes;

(v) upon the occurrence of an Event of Default, if requested by Administrative Agent, use Lumonic or any other reporting and administration platform designated by Administrative Agent and provide Administrative Agent with continuous online viewing access to the account balance and activity of each Deposit Account and Securities Account owned by Borrower (other than any Excluded Account); and

(w) promptly (and, in any event within five (5) Business Days) after the receipt thereof notify Administrative Agent of:

(i) any written notice from a Trading Market or Affiliate thereof pertaining to Borrower's material noncompliance with listing standards;

(ii) any written notice that a Governmental Authority is materially limiting, revising, suspending or revoking any material Permit,

(iii) any written notice that Borrower or its Subsidiaries has become subject to any material regulatory action,

(iv) any written notice that Borrower or any Subsidiary, or any of their licenses or sublicenses, is being investigated under or is the subject of any allegation of potential or actual material violations of any Healthcare Laws that are then-applicable to Borrower,

(v) any written or verbal notice notifying Borrower of material non-compliance with any requirements under the FD&C Act, including but not limited to an FDA Form 483, Untitled Letter, Warning Letter, and others, to the extent that the FD&C Act is then-applicable to Borrower,

(vi) any material written notice that any Product has been seized, withdrawn, recalled, detained, or is subject to a suspension of manufacturing, any written notice of any pending or threatened, or the commencement of, material proceedings in the United States or any other jurisdiction seeking the withdrawal, recall, suspension, import detention, refusal or seizure of, any Product, and

(vii) to the extent that any products of Borrower become subject to any marketing authorization or labeling requirements, any written notice changing, in any material respect, the scope of marketing authorization or labeling of the material products of Borrower and its Subsidiaries under any Permit.

(x) deliver written notice to Administrative Agent within ten (10) days of any Key Person to ceasing to be actively engaged in the management of Borrower;

(y) deliver the following to Administrative Agent:

(i) no later than ten (10) days following the Closing Date (or such later date as may be agreed by Administrative Agent in writing (including by electronic mail)), fully executed Account Control Agreements in respect of each of Borrower's Deposit Accounts and Securities Accounts (other than Excluded Accounts) disclosed on the Perfection Certificate, to the extent not otherwise delivered on the Closing Date pursuant to Section 2.5(j);

(ii) no later than thirty (30) days following the Closing Date (or such later date as may be agreed by Administrative Agent in writing (including by electronic mail)), (A) landlord waivers and bailee waivers in the form reasonably acceptable to Administrative Agent for (i) 25 Hartwell Avenue, Lexington, MA 02421 and (B) each location in the United States where Collateral with a value in excess of Five Hundred Thousand ($500,000) is located;

(iii) no later than thirty (30) days following the Closing Date (or such later date as may be agreed by Administrative Agent in writing (including by electronic mail)),

insurance endorsements evidencing that the Borrower, its Subsidiaries, and the Collateral are insured in accordance with the requirements of Section 4.2(q) hereof; and

(iv) no later than sixty (60) days following the Closing Date (or such later date as may be agreed by Administrative Agent in writing (including by electronic mail)), duly executed copies of, at the election of Borrower in its sole discretion, (A) the Foreign Pledge Documents, together with any other documents reasonably required to provide the Administrative Agent, on behalf of the Secured Parties, with an enforceable security interest in the Equity Securities owned by the Borrower in the German Subsidiary and the Swiss Subsidiary or (B) such documents as are reasonably required to provide the Administrative Agent, on behalf of the Secured Parties, with an enforceable security interest in the Equity Securities owned by the Borrower in one or more Subsidiaries organized in the United States (or any constituent jurisdiction thereof) which shall be formed for the purpose of holding the Equity Securities issued by the German Subsidiary and the Swiss Subsidiary that are owned by Borrower as of the Closing Date.

4.3 Negative Covenants of Borrower. Borrower shall not, and shall not permit any of its Subsidiaries to, do any of the following without the prior written consent of Administrative Agent, which may be conditioned or withheld in its sole discretion:

(a) (i) change its legal name or jurisdiction of incorporation without ten (10) days' prior written notice to Administrative Agent, or (ii) change its chief executive office or principal place of business without prompt written notice to Administrative Agent;

(b) (i) create, incur, assume, or permit to exist any Lien or security interest on any Property or Collateral now or hereafter acquired by Borrower or any Subsidiary or on any income or rights in respect of any thereof, except Liens and security interests created pursuant to this Agreement or Permitted Liens or (ii) or enter into any agreement with any Person other than Administrative Agent not to grant a security interest in, or otherwise encumber, any of its property, or permit any Subsidiary to do so, except for (A) any Loan Documents, (B) any agreements governing any purchase money Liens or capital lease obligations otherwise permitted hereby (in which case, any prohibition or limitation shall only be effective against the assets financed thereby and subject to the limits permitted in this Agreement), or (C) customary restrictions on the assignment of leases, licenses and other agreements;

(c) (i) merge into or consolidate with any other entity, or permit any other entity to merge or consolidate with Borrower or any Subsidiary, *provided* that (A) a Subsidiary may merge into Borrower if Borrower is the surviving entity, (B) any Borrower may merge into another Borrower, (C) any guarantor may merge into another guarantor, (D) any Subsidiary that is not a Borrower or a guarantor may merge into any other Subsidiary that is not a Borrower or guarantor, and (E) any Subsidiary that is not a Borrower or a guarantor may merge into any Borrower or guarantor if the Borrower or guarantor is the surviving entity, (ii) liquidate or dissolve (other than the solvent liquidation of a Subsidiary of a Borrower or guarantor, provided, that all the assets of such Subsidiary are distributed to such Borrower or guarantor), (iii) acquire, or permit any of its Subsidiaries to acquire, all or substantially all of the capital stock, shares or property of another Person (other than Permitted Investments) or (iv) engage in any business other than the business of the type conducted by Borrower and its Subsidiaries on the date hereof and business reasonably ancillary, incidental or related thereto or a natural extension thereof;

(d) Transfer any of its Property, whether now owned or hereafter acquired except: (i) dispositions of worn-out, obsolete or surplus equipment in the Ordinary Course of Business that is, in the reasonable judgment of such Borrower or Subsidiary as applicable, no longer economically practicable to maintain or useful; (ii) the sale of inventory a Borrower or its Subsidiaries in the Ordinary Course of Business; or (iii) Permitted Transfers;

(e) amend, supplement or otherwise modify (pursuant to waiver or otherwise) (i) its Operating Documents, in any respect that would adversely impact Administrative Agent's or Lenders' rights hereunder or result in a Material Adverse Change, or (ii) any Material Agreement, in any respect that would materially and adversely impact Administrative Agent's or Lenders' rights hereunder or result in a Material Adverse Change;

(f) move any Collateral from the Permitted Locations except in compliance with Section 3.3 above;

(g) (i) pay any dividends or make any distributions, on its Equity Securities; (ii) so long as no Event of Default exists or would result therefrom, purchase, redeem, retire, defease or otherwise acquire, for value any of its Equity Securities (other than (A) repurchases pursuant to the terms of employee stock purchase plans, employee restricted stock agreements or similar arrangements in an aggregate amount not to exceed Two Hundred Fifty Thousand Dollars ($250,000) in any fiscal year, (B) cashless repurchases of its Equity Securities deemed to occur upon the exercise of stock options and (C) any withholding by Borrower or its Subsidiary of Equity Securities payable to a director, officer or employee of Borrower or its Subsidiary from the payment of any ordinary course compensation owed to such Person by Borrower or its Subsidiary for the purpose of satisfying tax obligations of such Person in respect of such compensation); (iii) return any capital to any holder of its Equity Securities as such; (iv) make, any distribution of Property, Equity Securities, obligations or securities to any holder of its Equity Securities; or (v) set apart any sum for any such purpose; provided, however, that Borrower may (A) convert any of its convertible securities into other securities pursuant to the terms of such convertible securities or otherwise in exchange thereof, (B) issue Equity Securities upon the exercise of any warrant (including each Warrant), (C) pay dividends solely in the form of common stock; (D) pay cash in lieu of fractional shares upon exercise or conversion of any option, warrant or other convertible security in an aggregate amount not to exceed Ten Thousand Dollars ($10,000) in any fiscal year; and (E) permit or cause any Subsidiary to pay dividends or make distributions to Borrower or guarantor;

(h) [reserved];

(i) enter into any contractual obligation with any Affiliate or engage in any other transaction with any Affiliate except (i) upon terms at least as favorable to Borrower as an arms-length transaction with Persons who are not Affiliates of Borrower, (ii) equity and bridge financings with Borrower's existing investors, provided that any such equity financing is not otherwise prohibited by this Agreement and any such bridge financing to the extent such financing constitutes Debt is Subordinated Debt; (iii) transactions among Borrowers and guarantors to the extent permitted by this Agreement, (iv) Permitted Investments under clauses (e), (f) and (i) of the definition thereof and Permitted Debt under clauses (c), (g) and (m) of the definition thereof, (v) transactions permitted by Section 4.3(g), and (vi) commercially reasonable and customary compensation, including bonus, arrangements and other customary benefits (including retirement, health, stock option and other benefit plans) and indemnification arrangements with Borrower's employees, officers, directors and managers approved by Borrower's board of directors in the Ordinary Course of Business;

(j) (i) prepay, redeem, purchase, defease or otherwise satisfy in any manner prior to the scheduled repayment thereof any Debt for borrowed money (other than amounts due or permitted to be prepaid under this Agreement, prepayments and repayments of Debt in respect of credit card obligations, or as otherwise agreed in writing by Administrative Agent (including pursuant to the terms of an applicable Subordination Agreement)), or (ii) amend, modify or otherwise change the terms of any Debt for borrowed money or lease obligations so as to accelerate the scheduled repayment thereof or (iii) repay any notes to officers, directors or shareholders, provided that Borrower may convert any such notes into Borrower's Equity Securities or repay or otherwise satisfy such notes by the issuance of Borrower's Equity Securities;

(k) create, incur, assume or permit to exist any Debt except Permitted Debt; provided however, notwithstanding any Debt that is permitted under the definition of Permitted Debt, Borrower shall not create, incur, assume to exist any Debt involving the sale or financing of its accounts receivables or any Debt secured or supported by its accounts receivables, other than any Permitted Account Transfer, without the prior written consent of Administrative Agent;

(l) make, or permit any Subsidiary to make, any Investment except for Permitted Investments;

(m) (i) become an "investment company" or a company controlled by an "investment company" under the Investment Company Act of 1940 or undertake as one of its important activities extending credit to purchase or carry margin stock (as defined in Regulation U of the Board of Governors of the Federal Reserve System), or use the proceeds of any Loan for that purpose; (ii) become subject to any other federal or state law or regulation which purports to restrict or regulate its ability to borrow money; or (iii) except as would not reasonably be expected to have a Material Adverse Change, fail to meet the minimum funding requirements of the Employment Retirement Income Security Act of 1974, and its regulations, as amended from time to time ("ERISA"), permit, or permit any Subsidiary to permit, a Reportable Event or Prohibited Transaction, as defined in ERISA, to occur; or (iv) fail to comply with the Federal Fair Labor Standards Act or violate any other law or regulation, if the violation could reasonably be expected to have a Material Adverse Change;

(n) (x) directly or indirectly, enter into any documents, instruments, agreements or contracts with any Blocked Person or (y) directly or indirectly, (A) conduct any business or engage in any transaction or dealing with any Blocked Person, including the making or receiving of any contribution of funds, goods or services to or for the benefit of any Blocked Person, (B) deal in, or otherwise engage in any transaction relating to, any property or interests in property blocked pursuant to Executive Order No. 13224, any similar executive order or other Anti-Terrorism Law or (C) engage in or conspire to engage in any transaction that evades or avoids, or has the purpose of evading or avoiding, or attempts to violate, any of the prohibitions set forth in Executive Order No. 13224 or other Anti-Terrorism Law. Each Lender hereby notifies Borrower that pursuant to the requirements of Anti-Terrorism Laws and such Lender's policies and practices, such Lender is required to obtain, verify and record certain information and documentation that identifies Borrower and its principals, which information includes the name and address of Borrower and its principals and such other information that will allow each Lender to identify such party in accordance with Anti-Terrorism Laws. Borrower shall immediately notify Administrative Agent if Borrower has Knowledge that Borrower or any Subsidiary is listed on the OFAC Lists or (i) is convicted on, (ii) pleads nolo contendere to, (iii) is indicted on or (iv) is arraigned and held over on charges involving money laundering or predicate crimes to money laundering; or

(o) (i) other than with respect to any Excluded Accounts, maintain any Deposit Account or Securities Account except accounts with respect to which Administrative Agent is able to take such actions as Administrative Agent deems necessary to obtain a perfected security interest in such accounts through one or more Account Control Agreements or other agreements giving Administrative Agent "control" as defined under the UCC or (ii) grant or allow any other Person (other than Administrative Agent or a Lender) to perfect a security interest in, or enter into any agreements with any Persons (other than Administrative Agent or a Lender) accomplishing perfection via control as to, any of its Deposit Accounts or Securities Accounts

(p) Permit any Foreign Subsidiaries that are not a Borrower or guarantor hereunder to hold or maintain (i) any Intellectual Property or (ii) any other assets (excluding any assets in respect of intercompany receivables and other intercompany obligations owed by a Borrower or its Subsidiary to a Foreign Subsidiary, in each case to the extent such receivables and obligations are subject to the terms of the Intercompany Subordination Agreement) having an aggregate value in excess of Five Hundred Thousand Dollars ($500,000).

ARTICLE 5

AGENT

5.1 Appointment.

(a) Each Lender hereby irrevocably designates and appoints Trinity Capital Inc., or its successor or assignee, as Administrative Agent under this Agreement and the other Loan Documents, and each such Lender irrevocably authorizes the Administrative Agent, in such capacity, to take such action on its behalf under the provisions of this Agreement and the other Loan Documents (including without limitation any subordination and intercreditor agreements (or similar agreements)) and to exercise such rights, powers and perform such duties as are expressly delegated to the Administrative Agent by the terms of this Agreement and the other Loan Documents (including without limitation any subordination and intercreditor agreements (or similar agreements)), together with such other powers as are reasonably incidental thereto. Notwithstanding any provision to the contrary elsewhere in this Agreement, the Administrative Agent shall not have any duties or responsibilities, except those expressly set forth herein and in the other Loan Documents, or any fiduciary relationship with any Lender, and no implied covenants, functions, responsibilities, duties, obligations or liabilities shall be read into this Agreement or any other Loan Document or otherwise exist against the Administrative Agent.

(b) Each of the Lenders hereby irrevocably appoints and authorizes the Administrative Agent to act as the agent of such Lender for purposes of acquiring, holding and enforcing any and all Liens on Collateral granted by any Borrower to secure any of the Obligations and to take all other actions, exercise all powers and perform such duties as are delegated to Administrative Agent under the Loan Documents, together with such powers and discretion as are reasonably incidental thereto. In furtherance thereof, the Administrative Agent and any co-agents, sub-agents and attorneys-in-fact appointed by the Administrative Agent pursuant to Section 5.2 for purposes of holding or enforcing any Lien on the Collateral (or any portion thereof) granted under this Agreement or any other Loan Document, or for exercising any rights and remedies thereunder (at the direction of the Administrative Agent), shall be entitled to the benefits of all provisions of this Article 5, as though such co-agents, sub-agents and attorneys-in-fact were the “collateral agent” under the Loan Documents as if set forth in full herein with respect thereto.

5.2 Delegation of Duties. Administrative Agent may execute any of its duties under this Agreement and the other Loan Documents by or through its agents or attorneys-in-fact shall be entitled to advice of counsel concerning all matters pertaining to such duties. The exculpatory and indemnification provisions of this Article 5 shall apply to attorney-in-fact and shall apply to their respective activities in connection with the syndication of the Loans as well as activities as the Administrative Agent. The Administrative Agent shall not be responsible for the negligence or misconduct of any agents or attorneys-in-fact selected by it with reasonable care.

5.3 Exculpatory Provisions. Neither Administrative Agent nor any of its Affiliates nor any of their respective officers, directors, employees, agents, advisors or attorneys-in-fact shall be (i) liable for any action taken or omitted to be taken, (including the making of (or omitting to make) any determination, calculations, selection, request or providing any approval or consent or enter into any amendments, modifications or supplements) by it or such Person under or in connection with this Agreement or any other Loan Document (except to the extent that any of the foregoing are found by a final and nonappealable judgment of a court of competent jurisdiction to have resulted from its or such Person’s own gross negligence or willful misconduct; provided, that no action taken or not taken in accordance with the directions of the Required Lenders or such other percentage of Lenders as shall be necessary hereunder, as applicable, shall be deemed to constitute gross negligence or willful misconduct) or (ii) responsible in any manner to any of the Lenders for (A) any recitals, statements, representations or warranties made by Borrower or any officer thereof contained in this Agreement or any other Loan Document or in any certificate, report, instrument, statement or other document referred to or provided for

in, or received by the Administrative Agent or Lenders under or in connection with, this Agreement or any other Loan Document or the transactions contemplated herein or therein, (B) the value, validity, effectiveness, genuineness, enforceability, execution, collectability or sufficiency of this Agreement or any other Loan Document or for any failure of any Borrower a party thereto to perform its obligations hereunder or thereunder, (C) the financial condition or business affairs of Borrower or any other Person liable for the payment of any Obligations or (D) the attachment, creation and/or perfection of the Liens granted or purported to be granted in the Collateral pursuant to this Agreement or the continuation and/or amendment of any financing statements filed to perfect the Liens in the applicable Collateral (other than to the extent expressly directed by the Required Lenders). The Administrative Agent shall not be under any obligation to any Lender (i) to ascertain or to inquire as to the observance or performance of any of the agreements, terms, covenants or provisions contained in, or conditions of, this Agreement or any other Loan Document, (ii) to inspect the properties, books or records of any Borrower, (iii) to ascertain or to inquire as to the use of the proceeds of the Loans, (iv) to ascertain or to inquire as to the existence or possible existence of any Event of Default, (v) to ascertain or to inquire as to any statement, warranty or representation made in or in connection with this Agreement or any other Loan Document, (vi) to ascertain or to inquire as to the contents of any certificate, report or other document delivered hereunder or under any Loan Documents or in connection herewith or therewith, (vii) to ascertain or to inquire as to the validity, enforceability, effectiveness or genuineness of this Agreement, any other Loan Document or any other agreement, instrument or document, or the creation, perfection or priority of any Lien purported to be created by this Agreement, (viii) to ascertain or to inquire as to the value or the sufficiency of any Collateral, or (ix) to ascertain or to inquire as to the satisfaction of any condition set forth in Article 2 or elsewhere herein, other than to confirm receipt of items expressly required to be delivered to the Administrative Agent or (x) to make any disclosures with respect to the foregoing or otherwise relating to any Borrower unless expressly required herein. Anything contained herein to the contrary notwithstanding, the Administrative Agent shall not have any liability to the Lenders arising from confirmations of the amount of outstanding Loans or the component amounts thereof. Additionally, the Administrative Agent shall not be responsible or have any liability for, or have any duty to ascertain, inquire into, monitor or enforce, compliance with the provisions hereof relating to Defaulting Lenders, Affiliates of a Lender (or otherwise determine whether a Person qualifies as a Defaulting Lender or Affiliate of a Lender). Without limiting the generality of the foregoing, the Administrative Agent shall not (x) be obligated to ascertain, monitor or inquire as to whether any Lender or participant or prospective Lender or participant qualifies as a Defaulting Lender or Affiliate of a Lender and, absent actual knowledge to the contrary (which may be by written notice), shall be permitted to treat each Lender, participant, prospective Lender or prospective participant as if it is not a Defaulting Lender or Affiliate of a Lender or (y) have any liability with respect to or arising out of any assignment or participation of Loans, or disclosure of confidential information, to any Defaulting Lender or Affiliate of a Lender.

5.4 Reliance by the Administrative Agent. Administrative Agent shall be entitled to rely, and shall be fully protected in relying, upon (and shall not be liable for so relying upon) any communication, request, instrument, writing, resolution, notice, consent, certificate, affidavit, letter, telecopy or email message, internet or intranet website posting, statement, order or other document (or other writing) or conversation believed by it to be genuine and correct and to have been signed, sent or made (or authenticated) by the proper Person or Persons and upon advice and statements of legal counsel (including counsel to the Borrower), independent accountants and other experts and professional advisors selected by the Administrative Agent. In determining compliance with any condition hereunder to the making of a Loan, that by its terms must be fulfilled to the satisfaction of a Lender, the Administrative Agent may presume that such condition is satisfactory to such Lender unless the Administrative Agent shall have received notice to the contrary from such Lender prior to the making of such Loan. The Administrative Agent may request instructions from the Required Lenders (or such number or percentage of the Lenders as shall be necessary under the circumstances as provided for herein or in the other Loan Documents) prior to taking any action or enter into any amendments, modifications or supplements, making any determination (including as to whether any agreement, document or instrument is in form and substance satisfactory to the Administrative Agent), making any calculation (which may be confirmed by the Required Lenders), sending any notice, making a selection or request (including failing to make a

selection or request), exercising any voting rights or powers (including failing to exercise any voting rights or powers) or providing any consent or approval (including failing to provide any consent or approval) in connection with this Agreement or any of the other Loan Documents and may refrain (and shall incur no liability from so refraining) from taking or omitting to take any act or making any such determination, calculation, selection, request, exercising such voting rights or powers or providing such notice, approval or consent or entering into or any amendments, modifications or supplements until it receives such instruction (or calculation, as applicable) from the Required Lenders (or such number or percentage of the Lenders as shall be necessary under the circumstances as provided for herein or in the other Loan Documents), in each case as it reasonably deems appropriate (and until such instructions and indemnity, as applicable, are received, the Administrative Agent may (but shall not be obligated to) act, or refrain from acting, as it deems advisable in good faith in the interests of the Lenders). The Administrative Agent shall in all cases be fully protected in acting, or in refraining from acting, under this Agreement and the other Loan Documents in accordance with a request of the Required Lenders (or such number or percentage of the Lenders as shall be necessary under the circumstances as provided for herein or in the other Loan Documents), and such request and any action taken or failure to act pursuant thereto shall be binding upon all the Lenders and all future holders of the Loans. Notwithstanding any other provisions set forth in this Agreement or any other Loan Documents, the Administrative Agent shall not be required to take any action that is in its opinion contrary to applicable requirement of law (including, for the avoidance of doubt, any action that may be in violation of the automatic stay under the Bankruptcy Code (or any similar laws)) or that may effect a forfeiture, modification or termination of property of a Defaulting Lender in violation of Bankruptcy Code (or any similar laws) or the terms of any of the Loan Documents or that would in its reasonable opinion subject it or any of its officers, employees or directors to personal liability. Each Lender, by delivering its signature page to this Agreement, an Assignment and Acceptance and/or funding its Loans, shall be deemed to have acknowledged receipt of, and consented to and approved, each Loan Document and each other document required to be approved by the Administrative Agent, Required Lenders or Lenders, as applicable on the Closing Date or as of the date of funding such Loan. On any applicable date of determination, upon request, the Administrative Agent shall be required to calculate whether a particular group of Lenders constitutes the Required Lenders. The Administrative Agent shall not be required to remit payments, the proceeds of Collateral or any other funds to the Lenders or any other Secured Parties herein except in accordance with the Loan Documents.

5.5 Notice of Default. Administrative Agent shall not be deemed to have knowledge or notice of the occurrence of any Potential Event of Default or Event of Default unless the Administrative Agent has received written notice from a Lender or the Borrower referring to this Agreement, describing such Potential Event of Default or Event of Default and stating that such notice is a “notice of default”. In the event that the Administrative Agent receives such a notice, the Administrative Agent shall give notice thereof to the Lenders. The Administrative Agent shall take such action with respect to such Potential Event of Default or Event of Default as shall be reasonably directed by the Required Lenders (or, if so specified by this Agreement, all Lenders or such number or percentage of the Lenders as shall be necessary under the circumstances as provided for herein or in the other Loan Documents); provided that unless and until the Administrative Agent shall have received such directions, the Administrative Agent may (but shall not be obligated to) take such action, or refrain from taking such action, with respect to such Potential Event of Default or Event of Default as it shall deem advisable in good faith in the interests of the Lenders.

5.6 Non-Reliance on Administrative Agent and Other Lenders. Each Lender expressly acknowledges that neither the Administrative Agent nor any of its Affiliates nor any of their respective officers, directors, employees, agents, advisors or attorneys in fact have made any representations or warranties to it and that no act by the Administrative Agent hereafter taken, including any review of the affairs of a Borrower or any affiliate of a Borrower, shall be deemed to constitute any representation or warranty by the Administrative Agent to any Lender. Each Lender represents to the Administrative Agent that it has, independently and without reliance upon the Administrative Agent or any other Lender, and based on such documents and information as it has deemed appropriate, made its own appraisal of an investigation into the business, operations, property, financial and other condition and creditworthiness of

the Borrower and its affiliates and made its own decision to make its Loans and other extensions of credit hereunder and enter into this Agreement. Each Lender also represents that it will, independently and without reliance upon the Administrative Agent or any other Lender, and based on such documents and information as it shall deem appropriate at the time, continue to make its own credit analysis, appraisals and decisions in taking or not taking action under this Agreement and the other Loan Documents, and to make such investigation as it deems necessary to inform itself as to the business, operations, property, financial and other condition and creditworthiness of the Borrower and its affiliates. Except for notices, reports and other documents expressly required hereunder or otherwise requested by the Borrower in writing to be furnished to the Lenders by the Administrative Agent, the Administrative Agent shall not have any duty or responsibility to provide any Lender with any credit or other information concerning the business, operations, property, condition (financial or otherwise), prospects or creditworthiness of Borrower or any affiliate of Borrower that may come into the possession of the Administrative Agent or any of its officers, directors, employees, agents, advisors, attorneys in fact or affiliates.

5.7 Indemnification. The Lenders agree to indemnify, hold harmless and defend the Administrative Agent and its Affiliates and their respective officers, directors, employees, agents, advisors and controlling persons (each, an "Agent Indemnitee") (to the extent not timely reimbursed by the Borrower and without limiting the obligation of the Borrower to do so), ratably according to their respective Pro Rata Shares in effect on the date on which indemnification is sought under this Section 5.7 (or, if indemnification is sought after the date upon which the Commitments shall have terminated and the Loans shall have been paid in full, ratably in accordance with such Pro Rata Shares immediately prior to such date), from and against any and all liabilities, obligations, losses, damages, penalties, actions, judgments, suits, costs, expenses or disbursements of any kind whatsoever that may at any time (whether before or after the payment of the Loans) be imposed on, incurred by or asserted against such Agent Indemnitee in any way relating to or arising out of, the Commitments, this Agreement, any of the other Loan Documents or any documents contemplated by or referred to herein or therein or the transactions contemplated hereby or thereby or any action taken or omitted by such Agent Indemnitee under or in connection with any of the foregoing including without limitation, exercising any of the Administrative Agent's powers, rights, and remedies and performing their duties hereunder and thereunder (or omitting to do the same); provided that no Lender shall be liable to any Agent Indemnitee for the payment of any portion of such liabilities, obligations, losses, damages, penalties, actions, judgments, suits, costs, expenses or disbursements that are found by a final and nonappealable decision of a court of competent jurisdiction to have resulted from such Agent Indemnitee's bad faith, gross negligence or willful misconduct, provided, however, no action taken or not taken in accordance with the directions of the Administrative Agent, Required Lenders or such other percentage of Lenders as shall be necessary hereunder, as applicable, shall be deemed to constitute gross negligence or willful misconduct. The agreements in this Section 5.7 shall survive the termination of this Agreement and the payment of the Loans and all other amounts payable hereunder.

5.8 Administrative Agent in Its Individual Capacity. Administrative Agent and its affiliates may make loans to, accept deposits from and generally engage in any kind of business with Borrower as though the Administrative Agent were not the Administrative Agent. With respect to its Loans made or renewed by it, the Administrative Agent shall have the same rights and powers under this Agreement and the other Loan Documents as any Lender and may exercise the same as though it were not the Administrative Agent, and the terms "Lender" and "Lenders" shall include the Administrative Agent in its individual capacity.

5.9 Successor Administrative Agent. Administrative Agent may resign as Administrative Agent (which shall include the Administrative Agent's capacities as administrative agent and collateral agent) upon 30 days' notice to the Lenders and the Borrower. If the Administrative Agent shall resign as Administrative Agent under this Agreement and the other Loan Documents, then the Required Lenders shall appoint from among the Lenders a successor agent for the Lenders, which successor agent shall (unless an Event of Default with respect to the Borrower shall have occurred and be continuing) be subject to written approval by the Borrower (which approval shall not be unreasonably withheld or

delayed), whereupon such successor agent shall succeed to the rights, powers and duties of the Administrative Agent (other than any rights to indemnity payments or other amounts owed to the retiring Administrative Agent as of the Resignation Effective Date), and the term "Administrative Agent" shall mean such successor agent effective upon such appointment and approval, and the former Administrative Agent's rights, powers and duties as Administrative Agent shall be terminated, without any other or further act or deed on the part of such former Administrative Agent or any of the parties to this Agreement or any holders of the Loans. Any successor Administrative Agent appointed pursuant to this Section 5.9 shall, upon its acceptance of such appointment, become the successor Administrative Agent for all purposes hereunder unless otherwise agreed. If no successor agent has accepted appointment as Administrative Agent by the date that is 30 days following a retiring Administrative Agent's delivery of its notice of resignation, the retiring Administrative Agent may (but shall not be obligated to), on behalf of the Lenders and with the written consent of the Borrower (such consent not to be unreasonably withheld or delayed or required if an Event of Default shall have occurred and be continuing) appoint a successor Administrative Agent, which shall be a commercial bank organized or licensed under the laws of the United States of America or of any State thereof and having a combined capital and surplus of at least $500,000,000. If no successor agent has accepted appointment as Administrative Agent by the date that is 30 days following a retiring Administrative Agent's notice of resignation ("Resignation Effective Date"), the retiring Administrative Agent's resignation shall nevertheless thereupon become effective in accordance with such notice, and (i) the Lenders shall assume and perform all of the duties of the Administrative Agent hereunder until such time, if any, as the Required Lenders appoint a successor agent as provided for above, (ii) the retiring Administrative Agent shall be discharged from its duties and obligations hereunder and under the other Loan Documents and (iii) except for any indemnity payments or other amounts then owed to the retiring Administrative Agent, all payments, communications and determinations provided to be made by, to or through the Administrative Agent shall instead be made by or to each Lender directly, until such time, if any, as the successor Administrative Agent is appointed as provided for above. After any retiring Administrative Agent's resignation as Administrative Agent, the provisions of this Article 5 shall continue to inure to its benefit as to any actions taken or omitted to be taken by it while it was Administrative Agent. Notwithstanding anything to the contrary, in no event shall a successor agent be a Defaulting Lender.

5.10 Authorization for Intercreditor Agreement and Subordination Agreement. The Lenders irrevocably authorize the Administrative Agent to enter into and perform its obligations under any subordination agreement, intercreditor agreement or other similar arrangement permitted under this Agreement and any amendments, restatements, supplements or other modifications thereto approved in accordance with the terms thereof (without limiting the provisions set forth in Section 5.4 hereof).

5.11 Administrative Agent May File Proofs of Claim. In case of the pendency of any receivership, insolvency, liquidation, bankruptcy, reorganization, arrangement, adjustment, composition or other judicial proceeding relative to any Borrower, the Administrative Agent (on behalf of the Lenders) (irrespective of whether the principal of any Loan shall then be due and payable as herein expressed or by declaration or otherwise and irrespective of whether the Administrative Agent shall have made any demand on the Borrower) shall be entitled and empowered, by intervention in such proceeding or otherwise:

(a) To file a verified statement pursuant to rule 2019 of the Federal Rules of Bankruptcy Procedure that, in its sole opinion, complies with such rule's disclosure requirements for entities representing more than one creditor;

(b) To file and prove a claim for the whole amount of the principal and interest owing and unpaid in respect of the Loans and all other Obligations that are owing and unpaid and to file such other documents as may be necessary or advisable in order to have the claims of the Secured Parties (including any claim for the reasonable compensation, expenses, disbursements and advances of the Secured Parties and their respective agents and counsel and all other amounts due the Secured Parties hereunder) allowed in such judicial proceeding;

(c) To collect and receive any monies or other property payable or deliverable on any such claims and to distribute the same; and

(d) Any custodian, receiver, assignee, trustee, liquidator, sequestrator or other similar official in any such judicial proceeding is hereby authorized by each applicable Lender to make such payments to the Administrative Agent, as applicable, and, in the event that the Administrative Agent shall consent to the making of such payments directly to the Lenders, to pay to the Administrative Agent any amount due for the reasonable compensation, expenses, disbursements and advances of the Administrative Agent and their respective agents and counsel, and any other amounts due to the Administrative Agent.

Each Lender further agrees that it shall not propose, vote in favor of, or otherwise support any plan of reorganization that is in contravention of any plan of reorganization that is proposed or supported by the Administrative Agent, and shall affirmatively vote to "reject" any plan of reorganization that is not affirmatively supported by the Administrative Agent.

5.12 Collateral Matters.

(a) Administrative Agent is hereby authorized on behalf of the Lenders, without the necessity of any notice to or further consent from the Lenders, from time to time (but without any obligation) to take any action with respect to the Collateral and this Agreement or any other Loan Document that may be necessary to perfect and maintain perfected Liens upon the Collateral granted pursuant to this Agreement or any other Loan Document if required or expressly permitted under the terms of any of the other Loan Documents.

(b) Each of the Lenders hereby irrevocably authorize and instruct the Administrative Agent to, and the Administrative Agent shall:

(i) Release (or confirm any release) any Lien granted to or held by the Administrative Agent upon any Collateral (A) upon the date on which all Obligations (other than inchoate indemnification obligations for which no claims has been made or asserted or other Obligations that, by their express terms, survive the termination of this Agreement) have been repaid in full, (B) constituting property sold or to be sold or otherwise disposed of as part of or in connection with any disposition permitted hereunder or under any other Loan Document or to which the Required Lenders have consented, (C) that does not constitute (or ceases to constitute) Collateral, (D) otherwise pursuant to and in accordance with the provisions of any applicable Loan Document or (E) subject to Section 5.11, if approved, authorized or ratified in writing by the Required Lenders, provided, however, that if any action is required by the Administrative Agent to so release such Lien, upon the request of the Administrative Agent, the Borrower shall have delivered to the Administrative Agent a certificate certifying to the permissibility of such release hereunder (and the Administrative Agent shall be permitted to rely upon such certificate without incurring any liability therefor);

(ii) Enter into any subordination agreement and/or similar agreement contemplated hereunder, including with respect to Debt that is (i) required or permitted to be subordinated in right of payment hereunder and/or (ii) secured by Liens and required or permitted to be pari passu with or junior to the Liens securing the Obligations, and with respect to which Debt, a subordination agreement or similar agreement is contemplated under this Agreement.

(c) Anything contained in any of the Loan Documents to the contrary notwithstanding, the Borrower, the Administrative Agent and each Lender hereby agree that (i) no Lender (other than the Administrative Agent) shall have any right individually to realize upon any of the Collateral, (ii) no Lender shall have any right to enforce the Obligations, it being understood and agreed that all powers, rights and remedies hereunder and under any of the Loan Documents may be exercised solely

by the Administrative Agent for the benefit of the Lenders in accordance with the terms hereof and thereof, and (iii) in the event of a foreclosure or similar enforcement action by the Administrative Agent on any of the Collateral pursuant to a public or private sale or other disposition (including pursuant to Section 363(k), Section 1129(b)(2)(a)(ii) or otherwise of the Bankruptcy Code), the Administrative Agent (or any Lender, except with respect to a "credit bid" pursuant to Section 363(k), Section 1129(b)(2)(a)(ii) or otherwise of the Bankruptcy Code), may be the purchaser or licensor of any or all of such Collateral at any such sale or other disposition and the Administrative Agent, as agent for and representative of Lenders (but not any Lender or the Lenders in its or their respective individual capacities) shall be entitled, upon instructions from Required Lenders, for the purpose of bidding and making settlement or payment of the purchase price for all or any portion of the Collateral sold at any such sale or disposition, to use and apply any of the Obligations as a credit on account of the purchase price for any collateral payable by the Administrative Agent at such sale or other disposition.

(d) Administrative Agent shall not be responsible for or have a duty to ascertain or inquire into any representation or warranty regarding the existence or collectability of the Collateral, the existence, priority or perfection of the Administrative Agent's Lien thereon, or any certificate prepared by Borrower in connection therewith, nor shall the Administrative Agent be responsible or liable to the Lenders for any failure to monitor or maintain any portion of the Collateral, Liens therein or financing statements filed in connection therewith. Upon request by the Administrative Agent at any time, the Lenders will confirm in writing the Administrative Agent's authority to release or subordinate its interest in particular types or items of property, or to release any Borrower from its obligations under the Loan Documents or its Lien on any Collateral pursuant this Section 5.12. In each case as specified in this Article 5, the Administrative Agent will and each Lender hereby authorizes the Administrative Agent to, at the Borrower's expense, promptly execute and deliver to Borrower such documents, filings and recordings as Borrower may reasonably request to evidence the release of such item of Collateral from the assignment and security interest granted under this Agreement or any other Loan Document or to subordinate its interest therein, in accordance with the terms of the Loan Documents and this Article 5. Additionally, upon the reasonable request of the Borrower, the Administrative Agent will return possessory Collateral held by it that is released from the security interests of the Loan Documents pursuant to this Article 5; provided that, in the event that any possessory collateral in the possession of the Administrative Agent gets lost or misplaced upon the reasonable request of the Borrower, the Administrative Agent shall provide a loss affidavit to the Borrower in the form customarily provided by the Administrative Agent in such circumstances.

ARTICLE 6

BORROWER'S INDEMNITY

6.1 Indemnity By Borrower. Borrower covenants and agrees, at its sole cost and expense and without limiting any other rights which Administrative Agent and Lenders have hereunder, to indemnify, protect and save Administrative Agent, each Lender, and each of their directors, officers, employees, consultants, agents, attorneys, or any other Person affiliated with or representing Administrative Agent or any Lender (each, an "Indemnified Person") harmless against and from any and all claims, damages, losses, liabilities, obligations, demands, defenses, judgments and reasonable and documented costs, disbursements or expenses of any kind or of any nature whatsoever (but limited, in the case of legal charges and disbursements, to the reasonable and documented out-of-pocket fees, disbursements and other charges of one primary counsel to all Indemnified Persons) which may be imposed upon, incurred by or asserted or awarded against Administrative Agent or a Lender and related to or arising from the following, unless such claim, loss or damage shall be based upon the gross negligence or willful misconduct of Administrative Agent or such Lender:

(a) the transactions contemplated by the Loan Documents (including reasonable and documented attorneys' fees and expenses);

(b) any investigative, response, remedial, administrative or judicial matter or proceeding, whether or not such Indemnified Person shall be designated a party thereto and including any such proceeding initiated by or on behalf of Borrower, and the reasonable and documented expenses of investigation by engineers, environmental consultants and similar technical personnel and any commission, fee or compensation claimed by any broker (other than any broker retained by a Lender) asserting any right to payment for the transactions contemplated hereby which may be imposed on, incurred by or asserted against such Indemnified Person as a result of or in connection with the transactions contemplated hereby and the use or intended use of the proceeds of the loan proceeds;

(c) any breach by Borrower of the representations, warranties, covenants, or other obligations or agreements made by Borrower in this Agreement or in any agreement related hereto or thereto;

(d) the violation by Borrower of any state or federal law, rule or regulation;

(e) a material misrepresentation made by Borrower to Administrative Agent or a Lender; and

(f) any governmental fees, charges, taxes or penalties levied or imposed in respect to any Collateral.

This Section 6.1 shall not apply with respect to Taxes other than any Taxes that represent losses, claims, damages, etc. arising from any non-Tax claim.

6.2 Defense of Claims. Borrower agrees to pay all amounts due under this Article 6 promptly on notice thereof from Administrative Agent. To the extent that Borrower may make or provide, to Administrative Agent's satisfaction, for payment of all amounts due under this Article 6, Borrower shall be subrogated to Administrative Agent's rights with respect to such events or conditions. So long as no Event of Default has occurred and is continuing, Borrower may defend any claims with counsel of its own choosing reasonably acceptable to Administrative Agent, provided if the claim creates a significant exposure for the Lenders in Administrative Agent's its sole judgment, or attempts to establish legal principle adverse to any Lender or Administrative Agent, Administrative Agent, on behalf of Lenders, shall select the defense counsel. Borrower may settle any claims against Administrative Agent or a Lender, provided such settlement includes a complete release of Administrative Agent and Lenders from any claims at no cost to Administrative Agent or Lenders. Notwithstanding the foregoing, Borrower shall not be liable for the fees and expenses of more than one separate counsel as selected by Administrative Agent or a Lender for all Indemnified Persons in each relevant jurisdiction with respect to the same matter.

6.3 Survival. All of the indemnities and agreements contained in this Article 6 shall survive and continue in full force and effect notwithstanding termination of this Agreement, the full payment of any Loans or Borrower's performance of all Obligations.

ARTICLE 7

DEFAULT

7.1 Rights on Default. If an Event of Default occurs and is continuing, Administrative Agent, on behalf of Lenders, shall be entitled to:

(a) declare the unpaid balance of the Loans and this Agreement immediately due and payable, whether then due or thereafter arising;

(b) modify the terms and conditions upon which the Lenders may be willing to consider making Loans hereunder or immediately and automatically terminate any further obligations to make Loans under this Agreement;

(c) require Borrower to, and Borrower hereby agrees that it will at its expense and upon request of Administrative Agent, assemble the Collateral or any part thereof, as directed by Administrative Agent and make it available to Administrative Agent at a place and time to be designated by Administrative Agent, for cash, on credit or for future delivery, and upon such other terms as the Administrative Agent deems commercially reasonable;

(d) ship, reclaim, recover, store, finish, maintain, repair, prepare for sale, advertise for sale, and sell (in the manner provided for herein) the Collateral. Administrative Agent and its agents and any purchasers at or after foreclosure are hereby granted a non-exclusive, irrevocable, perpetual (for so long as such Event of Default is continuing), fully paid, royalty-free license or other right, solely pursuant to the provisions of this Section 7.1, to use, without charge, Borrower's Intellectual Property, including labels, patents, copyrights, rights of use of any name, trade secrets, trade names, trademarks, service marks, and advertising matter, or any Property of a similar nature, now or at any time hereafter owned or acquired by Borrower or in which Borrower now or at any time hereafter has any rights; *provided* that such license shall only be exercisable in connection with the disposition of Collateral upon Administrative Agent's exercise of its remedies hereunder;

(e) without notice except as specified below, sell, resell, assign and deliver or grant a license to use or otherwise dispose of the Collateral or any part thereof, in one or more parcels at public or private sale, at any place designated by Administrative Agent;

(f) occupy any premises owned or leased by Borrower where the Collateral or any part thereof is assembled or located for a reasonable period in order to effectuate its rights and remedies hereunder or under law, without obligation to Borrower in respect of such occupation;

(g) commence and prosecute any bankruptcy, insolvency or other similar proceeding or consent to Borrower commencing any bankruptcy, insolvency or other similar proceeding;

(h) place a "hold" on any account maintained with Administrative Agent and/or deliver a notice of exclusive control, any entitlement order, or other directions or instructions pursuant to any Account Control Agreement or similar agreements providing control of any Collateral;

(i) exercise any and all rights and remedies of Borrower under or in connection with the Collateral, or otherwise in respect of the Collateral, including without limitation, (A) any and all rights of Borrower to demand or otherwise require payment of any amount under, or performance of any provision of, the accounts receivables and the other Collateral, (B) withdraw, or cause or direct the withdrawal, of all funds with respect to any Deposit Accounts, (C) exercise all other rights and remedies with respect to the accounts receivables and the other Collateral, including without limitation, those set forth in Section 9-607 of the UCC and (D) exercise any and all voting, consensual and other rights with respect to any Collateral; and

(j) exercise all rights and remedies available to Administrative Agent and Lenders under the Loan Documents or at law or equity, including all remedies provided under the UCC (including disposal of the Collateral pursuant to the terms thereof).

Borrower agrees that, to the extent notice of sale shall be required by law, at least ten (10) days' notice to Borrower of the time and place of any public sale or the time after which any private sale is to be made shall constitute reasonable notification. At any sale of the Collateral, if permitted by applicable law, the Administrative Agent and Lenders may be the purchaser, licensee, assignee or recipient of the Collateral or any part thereof and shall be entitled, for the purpose of bidding and making settlement or payment of

the purchase price for all or any portion of the Collateral sold, assigned or licensed at such sale, to use and apply any of the Obligations as a credit on account of the purchase price of the Collateral or any part thereof payable at such sale. To the extent permitted by applicable law, Borrower waives all claims, damages and demands it may acquire against the Administrative Agent and Lenders arising out of the exercise by it of any rights hereunder, except for claims based upon gross negligence or willful misconduct of the Administrative Agent or a Lender. Borrower hereby waives and releases to the fullest extent permitted by law any right or equity of redemption with respect to the Collateral, whether before or after sale hereunder, and all rights, if any, of marshalling the Collateral and any other security for the Obligations or otherwise. The Administrative Agent and Lenders shall not be liable for failure to collect or realize upon any or all of the Collateral or for any delay in so doing nor shall it be under any obligation to take any action with regard thereto. The Administrative Agent and Lenders shall not be obligated to make any sale of the Collateral regardless of notice of sale having been given. The Administrative Agent and Lenders may adjourn any public or private sale from time to time by announcement at the time and place fixed therefore, and such sale may, without further notice, be made at the time and place to which it was so adjourned. The Administrative Agent and Lenders shall not be obligated to clean-up or otherwise prepare the Collateral for sale.

(k) all payments received by Borrower in respect of the Collateral shall be received in trust for the benefit of the Administrative Agent and Lenders, shall be segregated from other funds of Borrower and shall be forthwith paid over the Administrative Agent, for the benefit of the Lenders, in the same form as so received (with any necessary endorsement);

(l) the Administrative Agent may, without notice to Borrower except as required by law and at any time or from time to time, charge, set off and otherwise apply all or part of the Obligations against any funds deposited with it or held by it;

(m) upon the written demand of the Administrative Agent, Borrower shall execute and deliver to the Administrative Agent a collateral assignment or assignments of any or all of Borrower's Intellectual Property and such other documents and take such other actions as are necessary or appropriate to carry out the intent and purposes hereof;

(n) if Borrower fails to pay any amounts or furnish any required proof of payment due to third persons or entities, as required under the terms of this Agreement, then Administrative Agent may do any or all of the following: (a) make payment of the same or any part thereof; or (b) obtain and maintain insurance policies of the type discussed in Section 4.2(q) of this Agreement, and take any action with respect to such policies as Administrative Agent deems prudent. Any amounts paid or deposited by Administrative Agent shall constitute Administrative Agent's Expenses, shall be immediately due and payable, shall bear interest at the Default Rate and shall be secured by the Collateral. Any payments made by Administrative Agent shall not constitute an agreement by Administrative Agent to make similar payments in the future or a waiver by Administrative Agent of any Event of Default under this Agreement. Borrower shall pay all reasonable and documented fees and expenses, including Administrative Agent's Expenses, incurred by Administrative Agent in the enforcement or attempt to enforce any of the Obligations hereunder not performed when due;

(o) Lenders' rights and remedies under this Agreement and the Loan Documents. Lenders shall have all other rights and remedies not inconsistent herewith as provided under the UCC, by law, or in equity. No exercise by Administrative Agent or any Lender of one right or remedy shall be deemed an election, and no waiver by Administrative Agent or any Lender of any Event of Default on Borrower's part shall be deemed a continuing waiver. No delay by Administrative Agent or any Lender shall constitute a waiver, election, or acquiescence by it. The Obligations of Borrower to any Lender may be enforced against Borrower in accordance with the terms of this Agreement and the other Loan Documents and, to the fullest extent permitted by applicable law, it shall not be necessary for any other party to be joined as an additional party in any proceeding to enforce such Obligations;

(p) the proceeds and/or avails of the Collateral, or any part thereof, and the proceeds and the avails of any remedy hereunder (as well as any other amounts of any kind held by Administrative Agent, for the benefit of Lenders, at the time of or received by Administrative Agent after the occurrence of an Event of Default hereunder) shall be paid to and applied as follows:

First, to the payment of out-of-pocket costs and expenses, including all amounts expended to preserve the value of the Collateral, of foreclosure or suit, if any, and of such sale and the exercise of any other rights or remedies, and of all proper fees, expenses, liability and advances, including reasonable and documented legal expenses and attorneys' fees, incurred or made hereunder by Administrative Agent, including Administrative Agent's Expenses;

Second, to the payment to Administrative Agent, on behalf of the Lenders of the amount then owing or unpaid on the Loans for any accrued and unpaid interest, the amounts which would have otherwise come due under Sections 2.7, 2.8 or 2.9, if the Loans had been voluntarily prepaid, the principal balance of the Loans, and all other Obligations with respect to the Loans (provided, however, if such proceeds shall be insufficient to pay in full the whole amount so due, owing or unpaid upon the Loans, then first, to the unpaid interest thereon ratably, second, to the amounts which would have otherwise come due under Sections 2.7, 2.8 or 2.9 ratably, if the Loans had been voluntarily prepaid, third, to the principal balance of the Loans ratably, and fourth, to the ratable payment of other amounts then payable to Lenders under any of the Loan Documents); and

Third, to the payment of the surplus, if any, to Borrower, its successors and assigns or to the Person lawfully entitled to receive the same;

(q) Administrative Agent shall have proceeded to enforce any right under this Agreement or any other of the Loan Documents by foreclosure, sale, entry or otherwise, and such proceedings shall have been discontinued or abandoned for any reason or shall have been determined adversely, then and in every such case (unless otherwise ordered by a court of competent jurisdiction), Administrative Agent shall be restored to its former position and rights hereunder with respect to the Property subject to the security interest created under this Agreement.

7.2 Rights Cumulative; Waivers. All rights, remedies and powers granted to Administrative Agent and Lenders hereunder are irrevocable and cumulative, and not alternative or exclusive, and shall be in addition to all other rights, remedies and powers given hereunder, or in or by any other instrument, or available in law or equity. Administrative Agent's and Lender's knowledge at any time of any breach of, or non-compliance with, any representations, warranties, covenants or agreements hereunder shall not constitute or be deemed a waiver of any of such rights or remedies hereunder, and any waiver of any default shall not constitute a waiver of any other default. Notwithstanding any foreclosure or sale of any item of Collateral by Administrative Agent as permitted under this Agreement, Borrower shall remain liable for any deficiency. All amounts realized by Administrative Agent in furtherance of its rights to sell or foreclose upon the Collateral shall first be applied to all costs of the action and all costs of enforcement or interpretation of this Agreement, including any court costs, legal or expert fees and filing fees, then to any outstanding interest or penalties payable under this Agreement, then to repayment of principal of all Loans.

ARTICLE 8

MISCELLANEOUS

8.1 Costs and Expenses. Borrower will pay all Administrative Agent's Expenses within ten (10) Business Days of demand therefor.

8.2 Power of Attorney. Borrower hereby irrevocably constitutes and appoints Administrative Agent as Borrower's attorney-in-fact with full power of substitution, for Borrower and any of its Subsidiary's and in Borrower's or any of its Subsidiary's name to do, at Administrative Agent's option and at Borrower's reasonable and documented expense upon the occurrence and during the continuance of an Event of Default, to (a) ask, demand, collect (including, but not limited to the execution, in Borrower's or any Subsidiary's name, of notification letters), sue for, compound and give acquittance for any and all payments assigned hereunder and to endorse, in writing or by stamp, Borrower's name or otherwise on all checks for any monies in respect of the Collateral; (b) sign Borrower's or any of its Subsidiaries' name on any invoice or bill of lading for any account or drafts against Account Debtors; (c) settle and adjust disputes and claims about any accounts directly with Account Debtors, for amounts and on terms Administrative Agent determines reasonable; (d) make, settle, and adjust all claims under Borrower's insurance policies; (e) pay, contest or settle any Lien, charge, encumbrance, security interest, and adverse claim in or to the Collateral, or any judgment based thereon, or otherwise take any action to terminate or discharge the same; and (f) transfer the Collateral into the name of Administrative Agent or a third party as the UCC or any applicable law permits. Borrower hereby appoints Administrative Agent as its lawful attorney-in-fact to sign Borrower's or any of its Subsidiaries' name on any documents necessary to perfect or continue the perfection of Administrative Agent's security interest in the Collateral regardless of whether an Event of Default has occurred until all Obligations (other than inchoate indemnity obligations) have been satisfied in full and Lenders are under no further obligation to make or extend Loans hereunder. Administrative Agent's foregoing appointment as Borrower's or any of its Subsidiaries' attorney in fact, and all of Administrative Agent's and Lenders' rights and powers, coupled with an interest, are irrevocable until all Obligations (other than inchoate indemnity obligations) have been fully repaid and performed and Lenders' obligation to provide Loans terminates.

8.3 Survival. All representations, warranties and indemnities contained in this Agreement (and any and each other agreement or instrument delivered pursuant hereto) shall survive (i) the execution and delivery of this Agreement, (ii) the consummation of the transactions contemplated hereby, (iii) the payment of the Loans, (iv) the performance of all Obligations, and (v) termination of this Agreement.

8.4 Assignments. Except as herein provided, this Agreement shall be binding upon and inure to the benefit of Administrative Agent, Lenders, and Borrower and their respective representatives, successors and assigns. Any Lender may assign this Agreement in whole or in part or sell participations therein without notice to Borrower or Borrower's consent; provided, however, if no Event of Default exists, Administrative Agent shall not assign this Agreement or any Loan Document to any person who is (a) an Identified Competitor or (b) a Disqualified Lender. Notwithstanding the foregoing, Borrower may not assign, transfer or otherwise convey this Agreement, in whole or in part, without Administrative Agent's and each Lender's prior written consent.

8.5 No Brokers. Borrower represents to Lenders that no brokers or advisors have been or will be retained in connection with the transactions contemplated herein.

8.6 Notice. All notices, consents, requests, instructions, approvals and communications provided herein and under any other Loan Document or Warrant shall be validly given, made or served, effective only if in writing, except as otherwise provided herein, and sent by overnight courier, certified U.S. mail, postage prepaid, or by electronic mail, and shall be deemed received within five (5) Business Days from the date of posting if sent by mail, one Business Day after delivery thereto if sent by overnight courier service, or on the day of transmission if sent by electronic mail with a confirmation receipt obtained, or if such day is not a Business Day, then on the following Business Day. All such notices, consents, requests, instructions, approvals and communications shall be sent to a party at the address set forth for such party on the signature pages hereto, or to such other address as such party may designate in writing. The provisions of this paragraph shall survive the termination of this Agreement.

8.7 Governing Law; Consent to Jurisdiction and Service of Process. THIS AGREEMENT SHALL BE SUBJECT TO AND GOVERNED BY THE LAWS OF THE STATE OF NEW YORK (WITHOUT REGARD TO CONFLICTS OF LAW PRINCIPLES EXCEPT TITLE 14 OF ARTICLE 5 OF THE NEW YORK GENERAL OBLIGATIONS LAW). IN THE EVENT THAT ADMINISTRATIVE AGENT OR ANY LENDER INITIATES AGAINST BORROWER ANY DISPUTE, CLAIM, OR SUIT WHETHER DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS AGREEMENT, OR ANY OTHER LOAN DOCUMENT OR ANY OF BORROWER'S OBLIGATIONS OR INDEBTEDNESS HEREUNDER OR THEREUNDER, EACH PARTY DOES HEREBY IRREVOCABLY SUBMIT TO THE JURISDICTION AND VENUE OF ANY COURTS (FEDERAL, STATE OR LOCAL) HAVING A LOCATION IN THE STATE OF NEW YORK . IN THE EVENT THAT BORROWER INITIATES AGAINST ADMINISTRATIVE AGENT OR ANY LENDER ANY DISPUTE, CLAIM, OR SUIT WHETHER DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS AGREEMENT, OR ANY RELATED ASSIGNMENT OR ANY OF BORROWER'S OBLIGATIONS OR INDEBTEDNESS HEREUNDER, EACH PARTY DOES HEREBY IRREVOCABLY SUBMIT TO THE JURISDICTION AND VENUE OF ANY COURTS (FEDERAL, STATE OR LOCAL) HAVING A LOCATION IN THE STATE OF NEW YORK. EACH PARTY EXPRESSLY WAIVES PERSONAL SERVICE OF PROCESS AND CONSENTS TO SERVICE BY CERTIFIED MAIL, POSTAGE PREPAID, DIRECTED TO ITS LAST KNOWN ADDRESS WHICH SERVICE SHALL BE DEEMED COMPLETED WITHIN FIVE (5) DAYS AFTER THE DATE OF MAILING THEREOF. EACH PARTY HEREBY IRREVOCABLY WAIVES ANY CLAIM THAT THE STATE OF NEW YORK IS AN INCONVENIENT FORUM OR AN IMPROPER FORUM BASED ON LACK OF VENUE AS WELL AS ANY RIGHT IT MAY NOW OR HEREAFTER HAVE TO REMOVE ANY SUCH ACTION OR PROCEEDING, ONCE COMMENCED TO ANOTHER COURT ON THE GROUNDS OF FORUM NON CONVENIENS OR OTHERWISE. THE EXCLUSIVE CHOICE OF FORUM SET FORTH HEREIN SHALL NOT BE DEEMED TO PRECLUDE THE ENFORCEMENT BY EITHER PARTY OF ANY JUDGMENT OBTAINED IN SUCH FORUM OR THE TAKING OF ANY ACTION BY SUCH PARTY TO ENFORCE THE SAME IN ANY OTHER APPROPRIATE JURISDICTION.

8.8 Other Documents. Borrower shall execute such other documents and shall otherwise cooperate with Administrative Agent as Administrative Agent reasonably requires to effectuate the transactions contemplated hereby.

8.9 Severability. If any part of this Agreement shall be contrary to any law which a party might seek to apply or enforce or should otherwise be defective, the other provisions hereof shall not be affected thereby but shall continue in full force and effect, to which end they are hereby declared severable.

8.10 Entirety; Amendments. This Agreement and the Exhibits referred to herein constitute the entire agreement between Administrative Agent, Lenders, and Borrower as to the subject matter contemplated herein, and supersedes all prior agreements (including non-disclosure or confidentiality agreements) and understandings relating thereto. Each of the parties hereto acknowledges that no party hereto nor any agent of any other party whomsoever has made any promise, representation or warranty whatsoever, express or implied, not contained herein, concerning the subject matter hereof, to induce it to execute this Agreement. No other agreements will be effective to change, modify or terminate this Agreement in whole or in part unless such agreement is in writing and duly executed by the party to be charged except as expressly set forth herein.

8.11 Jury Trial. EACH PARTY HEREBY UNCONDITIONALLY WAIVES ITS RIGHT TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION BASED UPON OR ARISING OUT OF, DIRECTLY OR INDIRECTLY, THIS AGREEMENT, ANY RELATED DOCUMENTS, ANY DEALINGS BETWEEN THE PARTIES RELATING TO THE SUBJECT MATTER OF THIS AGREEMENT, AND/OR THE RELATIONSHIP THAT IS BEING ESTABLISHED BY THE PARTIES. THE SCOPE OF THIS WAIVER IS INTENDED TO BE ALL ENCOMPASSING OF ANY AND ALL DISPUTES THAT MAY BE FILED IN ANY COURT (INCLUDING, WITHOUT LIMITATION, TRANSACTION CLAIMS, TORT CLAIMS, BREACH OF DUTY CLAIMS, AND ALL OTHER COMMON LAW AND STATUTORY CLAIMS).

THIS WAIVER IS IRREVOCABLE AND MAY NOT BE MODIFIED ORALLY OR IN WRITING, AND SHALL APPLY TO ANY SUBSEQUENT AMENDMENTS, RENEWALS, SUPPLEMENTS AND MODIFICATIONS TO THIS AGREEMENT. IN THE EVENT OF LITIGATION, THIS AGREEMENT MAY BE FILED AS A WRITTEN CONSENT TO TRIAL BY THE COURT.

8.12 Publicity. Each Lender will have the right to (a) subject to Borrower's prior written approval, make a public announcement and include on its website, social media sites, and other marketing materials information related to this transaction, and (b) include information about this transaction, including but not limited to Borrower's name, the type of investment, principal amount, interest rate and maturity date, in its periodic reports with the Securities and Exchange Commission ("SEC"), to the extent required by SEC rules and regulations.

8.13 Demand Waiver. Borrower waives, to the fullest extent permitted by law, demand, notice of default or dishonor, notice of payment and nonpayment, notice of any default, nonpayment at maturity, release, compromise, settlement, extension, or renewal of accounts, documents, instruments, chattel paper, and guarantees held by the Lenders on which Borrower or any Subsidiary is liable.

8.14 Counterparts. This Agreement may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, is an original, and all taken together, constitute one Agreement. Delivery of an executed counterpart of a signature page of this Agreement by facsimile, portable document format (.pdf) or other electronic transmission will be as effective as delivery of a manually executed counterpart hereof.

8.15 Electronic Execution of Certain Other Documents. The words "execution," "execute", "signed," "signature," and words of like import in or related to any document to be signed in connection with this Agreement and the transactions contemplated hereby (including without limitation assignments, assumptions, amendments, waivers and consents) shall be deemed to include electronic signatures, the electronic matching of assignment terms and contract formations on electronic platforms approved by the Administrative Agent, or the keeping of records in electronic form, each of which shall be of the same legal effect, validity or enforceability as a manually executed signature or the use of a paper-based recordkeeping system, as the case may be, to the extent and as provided for in any applicable law, including the Federal Electronic Signatures in Global and National Commerce Act, the Electronic Signatures and Records Act in effect in the State of New York, or any other similar state laws based on the Uniform Electronic Transactions Act.

8.16 Correction of Loan Documents. Administrative Agent, on behalf of Lenders, may, with the prior written consent of the Borrower (which consent shall be deemed given if Borrower has not responded to any such request for consent within ten (10) Business Days) correct patent errors and fill in any blanks in the Loan Documents consistent with the agreement of the parties so long as Administrative Agent provides Borrower with notice of such correction.

8.17 Right of Set Off. Borrower hereby grants to Administrative Agent, for the benefit of Lenders, a Lien, security interest and right of set off as security for all Obligations to Lenders hereunder, whether now existing or hereafter arising upon and against all deposits, credits, collateral and property (other than Excluded Property), now or hereafter in the possession, custody, safekeeping or control of the Administrative Agent or any entity under the control of the Lenders (including a Lender affiliate) or in transit to any of them. At any time after the occurrence and during the continuance of an Event of Default, without demand or notice, the Administrative Agent, on behalf of Lenders, may set off the same or any part thereof and apply the same to any liability or obligation of Borrower even though unmatured and regardless of the adequacy of any other collateral securing the Obligations. ANY AND ALL RIGHTS TO REQUIRE LENDERS TO EXERCISE THEIR RIGHTS OR REMEDIES WITH RESPECT TO ANY OTHER COLLATERAL WHICH SECURES THE OBLIGATIONS, PRIOR TO EXERCISING THEIR RIGHT OF SETOFF WITH RESPECT TO SUCH DEPOSITS, CREDITS OR OTHER

PROPERTY OF BORROWER ARE HEREBY KNOWINGLY, VOLUNTARILY AND IRREVOCABLY WAIVED BY BORROWER.

8.18 Registers.

(a) Register. The Administrative Agent, acting solely for this purpose as an agent of the Borrower, shall maintain a copy of each Assignment and Acceptance delivered to it and a register for the recordation of the names and addresses of the Lenders, and the Commitments of, and principal amounts (and stated interest) of the Loans owing to, each Lender pursuant to the terms hereof from time to time (the "Register"). The entries in the Register shall be conclusive absent manifest error, and the Borrower, the Administrative Agent and the Lenders shall treat each Person whose name is recorded in the Register pursuant to the terms hereof as a Lender hereunder for all purposes of this Agreement. The Register shall be available for inspection by the Borrower and any Lender, at any reasonable time and from time to time upon reasonable prior notice.

(b) Participant Register. Each Lender that sells a participation shall, acting solely for this purpose as a non-fiduciary agent of the Borrower, maintain a register on which it enters the name and address of each participant and the principal amounts (and stated interest) of each participant's interest in the Loans or other obligations under the Loan Documents (the "Participant Register"); provided that no Lender shall have any obligation to disclose all or any portion of the Participant Register (including the identity of any participant or any information relating to a participant's interest in any commitments, loans, its other obligations under any Loan Document) to any Person except to the extent that such disclosure is necessary to establish that such commitment, loan, letter of credit or other obligation is in registered form under Section 5f.103-1(c) of the United States Treasury Regulations. The entries in the Participant Register shall be conclusive absent manifest error, and such Lender shall treat each Person whose name is recorded in the Participant Register as the owner of such participation for all purposes of this Agreement notwithstanding any notice to the contrary. For the avoidance of doubt, the Administrative Agent (in its capacity as Administrative Agent) shall have no responsibility for maintaining a Participant Register. Borrower agrees that each participant shall be entitled to the benefits of the provisions in Section 2.11 (subject to the requirements and limitations therein, including the requirements under Section 2.11(g) (it being understood that the documentation required under Section 2.11(g) shall be delivered to the participating Lender)) to the same extent as if it were a Lender and had acquired its interest by assignment pursuant to Section 8.4; provided that such participant shall not be entitled to receive any greater payment under Section 2.11, with respect to any participation, than its participating Lender would have been entitled to receive, except to the extent such entitlement to receive a greater payment results from a change in law that occurs after the participant acquired the applicable participation.

8.19 [Reserved].

8.20 Confidentiality. In handling any confidential information, Administrative Agent and each Lender agree to exercise the same degree of care that it exercises for its own proprietary information, but disclosure of information may be made: (a) to its Subsidiaries or Affiliates; (b) to prospective transferees or purchasers of any interest in the Loans, provided that such Persons have agreed to maintain confidentiality on substantially similar terms as those in this Section 8.20; (c) as required by law, regulation, subpoena, or other order and in connection with reporting obligations applicable to Administrative Agent or such Lender, including pursuant to the Securities Exchange Act of 1934; (d) to Administrative Agent or such Lender's regulators or as otherwise required in connection with any examination or audit; (e) as Administrative Agent or such Lender considers appropriate in connection with the exercise of remedies with respect to the Obligations; and (f) to third-party service providers of Administrative Agent or Lenders so long as such service providers are bound by confidentiality terms not more permissive than the terms hereof. Confidential information does not include information that is either: (i) in the public domain or in Administrative Agent or any Lender's possession when disclosed to Administrative Agent or such Lender, as applicable, or becomes part of the public domain (other than as a

result of its disclosure by Administrative Agent or such Lender in violation of this Agreement) after disclosure to Administrative Agent or such Lender, as applicable; or (ii) disclosed to Administrative Agent or a Lender by a third party, if Administrative Agent or such Lender, as applicable, does not know that the third party is prohibited from disclosing the information. The provisions of this paragraph shall survive the termination of this Agreement.

8.21 Managerial Assistance.

Borrower acknowledges that Trinity Capital Inc. has elected to be regulated as a business development company under the 1940 Act, and as such is required to make available significant managerial assistance to its portfolio companies. Significant managerial assistance may include, but is not limited to, guidance and counsel concerning the portfolio company's management, operations, business objectives and policies, arrangement of financing, management of relationships with financing sources, recruitment of management personnel and evaluation of acquisition and divestiture opportunities. Borrower hereby acknowledges and agrees that it may request such assistance at any time from Trinity Capital Inc. by contacting the portfolio manager designated by Trinity Capital Inc.

8.22 Termination.

This Agreement and the other Loan Documents shall terminate upon satisfaction and repayment in full of all Obligations (other than inchoate indemnification Obligations for which no claim has been made or other Obligations that, by their express terms, survive the termination of this Agreement). Those obligations that are expressly specified in this Agreement as surviving this Agreement's termination and the repayment in full of all Obligations shall continue to survive notwithstanding this Agreement's termination and the repayment of all Obligations (other than inchoate indemnification Obligations for which no claim has been made or other Obligations that, by their express terms, survive the termination of this Agreement).

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF, the parties hereto have caused this Loan and Security Agreement to be duly executed as of the day and year first above written.

LENDER:

TRINITY CAPITAL INC.,
a Maryland corporation

By: /s/Sarah Stanton
Name: Sarah Stanton
Its: General Counsel and Chief Compliance Officer

Address for Notices:
Trinity Capital Inc.
1 N. 1st Street, Floor 3
Phoenix, AZ 85004
Attention: Legal Department
Telephone: ***
Email: ***

EPT 16 LLC,
a Delaware limited liability company

By: Trinity Capital Adviser LLC, its Manager
By: Trinity Capital Inc., its Sole Member

By: /s/Sarah Stanton
Name: Sarah Stanton
Its: General Counsel and Chief Compliance Officer

Address for Notices:

EPT 16 LLC
c/o Trinity Capital Inc.
1 N. 1st Street, Floor 3
Phoenix, AZ 85004
Attention: Legal Department
Telephone: ***
Email: ***

BORROWER:

RAPID MICRO BIOSYSTEMS, INC.,
a Delaware corporation

By:_/s/Sean Wirtjes
Name: Sean Wirtjes
Its: Chief Financial Officer

Address for Notices:
Rapid Micro Biosystems, Inc
1001 Pawtucket Blvd.
Lowell, MA 01854
Attention: Sean Wirtjes; Chief Financial Officer
Telephone: ***
Email Address: ***

ADMINISTRATIVE AGENT:

TRINITY CAPITAL INC.,
a Maryland corporation

By: /s/Sarah Stanton
Name: Sarah Stanton
Its: General Counsel and Chief Compliance Officer

Address for Notices:
Trinity Capital Inc.
1 N. 1st Street, Floor 3
Phoenix, AZ 85004
Attention: Legal Department
Telephone: ***
Email: ***

SCHEDULE 1

LSA PROVISIONS

LSA Section	**LSA Provision**
Article 1 – "Amortization Date"	"Amortization Date" means the first Payment Date after expiration of the Interest Only Period.
Article 1 – "Applicable Rate"	"Applicable Rate" means a variable annual interest rate equal to the greater of (i) the Prime Rate plus 4.00% and (ii) 11.00%.
Article 1 – "Commitment Fee"	"Commitment Fee" is for each Advance, the fully earned and non-refundable commitment fee equal to 1.00% of the aggregate principal amount of such Advance.
Article 1 – "End of Term Payment"	"End of Term Payment" is an amount equal to 4.00% of the original principal amount of the Loans advanced hereunder, in addition to all sums payable hereunder.
Article 1 – "Interest Only Period"	"Interest Only Period" means the period from and including the Closing Date and through but excluding the thirty-seventh (37th) Payment Date following the Closing Date; provided, that, (a) if Borrower (i) achieves the Tranche B Milestone, and (ii) borrows the Tranche B Loan in an amount equal to the Tranche B Availability Amount, then with no further action required by the parties hereto, the Interest Only Period shall be the period beginning on the Closing Date and through but excluding the forty-third (43rd) Payment Date following the Closing Date, and (b) if Borrower (i) achieves the Tranche C Milestone, and (ii) borrows the Tranche C Loan in an amount equal to the Tranche C Availability Amount, then with no further action required by the parties hereto, the Interest Only Period shall be the period beginning on the Closing Date and through but excluding the forty-ninth (49th) Payment Date following the Closing Date.
Article 1 – "Maturity Date"	"Maturity Date" means September 1, 2030.
Article 1 – "Tranche A Availability Amount"	"Tranche A Availability Amount" means an aggregate principal amount equal to $20,000,000.
Article 1 – "Tranche B Availability Amount"	"Tranche B Availability Amount" means an aggregate principal amount equal to $10,000,000.
Article 1 – "Tranche B Loan Termination Date"	"Tranche B Loan Termination Date" means January 31, 2027.
Article 1 – "Tranche B Milestone"	"Tranche B Milestone" means that Borrower has provided true and accurate evidence, certified by Borrower's Chief Financial Officer, that Borrower has achieved: ***.
Article 1 – "Tranche C Availability Amount"	"Tranche C Availability Amount" means an aggregate principal amount equal to $10,000,000.

LSA Section	**LSA Provision**
Article 1 – "Tranche C Loan Termination Date"	"Tranche C Loan Termination Date" means July 31, 2027.
Article 1 – "Tranche C Milestone"	"Tranche C Milestone" means that Borrower has provided true and accurate evidence certified by Borrower's Chief Financial Officer, Administrative Agent that Borrower has achieved: ***.
Article 1 – "Tranche D Availability Amount"	"Tranche D Availability Amount" means an aggregate principal amount equal to $5,000,000.

SCHEDULE 2

COMMITMENTS

Lender Name	Tranche A Loan Commitment	Tranche B Loan Commitment	Tranche C Loan Commitment	Tranche D Loan Commitment
Trinity Capital Inc.	***	***	***	***
EPT 16 LLC	***	***	***	***
TOTAL	$20,000,000	$10,000,000	$10,000,000	$5,000,000

EXHIBIT A

AMORTIZATION SCHEDULE – Tranche A

***

EXHIBIT B

[Reserved]

EXHIBIT C

FORM OF COMPLIANCE CERTIFICATE

TO: Trinity Capital Inc., as Administrative Agent
FROM: Rapid Micro Biosystems, Inc.

The undersigned authorized officer ("Officer") of Rapid Micro Biosystems, Inc., a Delaware corporation ("Borrower"), hereby certifies that in accordance with the terms and conditions of the Loan and Security Agreement dated as of August 8, 2025, by and among Borrower, the Lenders party thereto, and Trinity Capital Inc., as administrative agent and collateral agent for the Lenders ("Administrative Agent") (the "Loan Agreement;" capitalized terms used but not otherwise defined herein shall have the meanings given them in the Loan Agreement),

(a) Borrower is in compliance for the period ending _____ with all required covenants except as noted below;

(b) As of the date hereof, there are no Potential Events of Default or Events of Default, except as noted below;

(c) Except as noted below, all representations and warranties of Borrower stated in the Loan Documents are true and correct in all material respects on this date; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date.

(c) Borrower and each Subsidiary has filed all federal, state and other tax returns that are required to be filed and has paid all taxes shown thereon to be due, together with applicable interest and penalties, and all other taxes, fees or other charges imposed on it or any of its property by any governmental or regulatory authority. No tax Liens (other than Permitted Liens) have been filed, and, to the Knowledge of Borrower, no claim is being asserted, with respect to any such tax, fee or other charge.

(d) No Liens have been levied or claims made against Borrower or any of its Subsidiaries relating to unpaid employee payroll or benefits of which Borrower has not previously provided written notification to Administrative Agent.

Attached are the required documents, if any, supporting our certification(s). The Officer, on behalf of Borrower, further certifies that the attached financial statements are prepared in accordance with GAAP applied on a consistent basis from one period to the next except as explained in an accompanying letter or footnotes and except, in the case of unaudited financial statements, for the absence of footnotes and subject to year-end audit adjustments as to the interim financial statements.

Please indicate compliance status since the last Compliance Certificate by circling Yes, No, or N/A under "Complies" column.

	Reporting Covenant	Requirement	Actual	Complies		
1	Monthly financial statements	Monthly within 30 days		Yes	No	N/A
2	Accounts receivable aging, accounts payable aging, and primary key performance indicators	Monthly within 30 days		Yes	No	N/A
3	Compliance Certificate	Monthly within 30 days		Yes	No	N/A
4	Cash Report	Monthly within 30 days		Yes	No	N/A
5	Annual (CPA Audited) statements[**]	Within 180 days after FYE		Yes	No	N/A
6	Annual Financial Projections	No later than 60 days after FYE		Yes	No	N/A
7	8-K, 10-K and 10-Q Filings	At time of filing		Yes	No	N/A
8	IP Report	Concurrently with Compliance Certificate		Yes	No	N/A

Deposit and Securities Accounts
(Please list all accounts; attach separate sheet if additional space needed)

	Institution Name	Account Number	New Account?		Account Control Agreement in place?	
1			Yes	No	Yes	No
2			Yes	No	Yes	No
3			Yes	No	Yes	No
4			Yes	No	Yes	No

Other Matters

1	Have there been any changes in Key Persons since the last Compliance Certificate?	Yes	No
2	Have there been any transfers/sales/dispositions/retirement of Collateral or Intellectual Property prohibited by the Loan Agreement?	Yes	No
3	Have there been any new or pending material claims or causes of action against Borrower or any Subsidiary?	Yes	No
4	Have there been any amendments of or other changes to the Operating Documents of Borrower or any of its Subsidiaries? If yes, provide copies of any such amendments or changes with this Compliance Certificate.	Yes	No
5	Has Borrower or any Subsidiary entered into or amended any Material Agreement? If yes, please explain and provide a copy of the Material Agreement(s) and/or amendment(s).	Yes	No
6	Has Borrower provided the Administrative Agent with all notices required to be delivered under Sections 3.2, 3.6, 3.7(c), 4.2 and 4.3 of the Loan Agreement?	Yes	No
7	Have there been any material updates to the contents of the Perfection Certificate last delivered? If yes, please explain.	Yes	No

Exceptions

Please explain any exceptions with respect to the certification above: (If no exceptions exist, state “No exceptions.” Attach separate sheet if additional space needed.)

RAPID MICRO BIOSYSTEMS, INC.

By: _____
Name: _____
Title: _____

Date:

ADMINISTRATIVE AGENT USE ONLY

Received by:_____ Date: ____
Verified by: _____ Date: ____
Compliance Status: Yes No

EXHIBIT C-4

EXHIBIT D
Loan Advance Request Form

Email To: Date: _____

LOAN PAYMENT:

Rapid Micro Biosystems, Inc., as Borrower

From Account #_____ To Account #_____
(Deposit Account #) (Loan Account #)
Principal $_____ and/or Interest $_____

Authorized Signature:__ Phone Number: __
Print Name/Title: __

LOAN ADVANCE:

Complete *Outgoing Wire Request* section below if all or a portion of the funds from this loan advance are for an outgoing wire.

From Account #_____ To Account #_____
(Loan Account #) (Deposit Account #)

Amount of Advance $_____ to be paid in accordance with the Amortization Schedule, delivered pursuant to Section 2.1 of the Loan and Security Agreement.

All Borrower's representations and warranties in the Loan and Security Agreement will be true, correct and complete in all material respects on the date such advance is made; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date:

Authorized Signature:__ Phone Number: __
Print Name/Title: __

OUTGOING WIRE REQUEST:
Complete only if all or a portion of funds from the loan advance above is to be wired.

Beneficiary Name: _____ Amount of Wire: $__
Beneficiary Bank: _____ Account Number: __
City and State: __

Beneficiary Bank Transit (ABA) #: __ Beneficiary Bank Code (Swift, Sort, Chip, etc.): __
(For International Wire Only)
Intermediary Bank: __ Transit (ABA) #: __
For Further Credit to: __

Special Instruction: __
By signing below, I (we) acknowledge and agree that my (our) funds transfer request shall be processed in accordance with and subject to the terms and conditions set forth in the agreements(s) covering funds transfer service(s), which agreements(s) were previously received and executed by me (us).

Authorized Signature: _____ 2nd Signature (if required): _____
Print Name/Title: _____ Print Name/Title: _____
Telephone #: _____ Telephone #:_____

EXHIBIT E-1

[FORM OF]

U.S. TAX COMPLIANCE CERTIFICATE
(For Foreign Lenders That Are Not Partnerships For U.S. Federal Income Tax Purposes)

Reference is hereby made to the Loan and Security Agreement dated as of August 8, 2025 (as amended, supplemented or otherwise modified from time to time, the "***LSA***"), among RAPID MICRO BIOSYSTEMS, INC., a Delaware corporation ("Borrower"), the lenders from time to time party thereto (each, a "Lender" and collectively, the "Lenders") and TRINITY CAPITAL INC., a Maryland corporation, as administrative agent and collateral agent for the Lenders ("Administrative Agent").

Pursuant to the provisions of Section 2.11 of the LSA, the undersigned hereby certifies that (i) it is the sole record and Beneficial Owner of the Loan(s) (as well as any Note(s) evidencing such Loan(s)) in respect of which it is providing this certificate, (ii) it is not a bank within the meaning of Section 881(c)(3)(A) of the Code, (iii) it is not a ten percent shareholder of the Borrower within the meaning of Section 871(h)(3)(B) of the Code and (iv) it is not a controlled foreign corporation related to the Borrower as described in Section 881(c)(3)(C) of the Code.

The undersigned has furnished the Administrative Agent and the Borrower with a certificate of its non-U.S. Person status on IRS Form W-8BEN or IRS Form W-8BEN-E, as applicable. By executing this certificate, the undersigned agrees that (1) if the information provided on this certificate changes, the undersigned shall promptly so inform the Borrower and the Administrative Agent, and (2) the undersigned shall have at all times furnished the Borrower and the Administrative Agent with a properly completed and currently effective certificate in either the calendar year in which each payment is to be made to the undersigned, or in either of the two calendar years preceding such payments.

Unless otherwise defined herein, terms defined in the LSA and used herein shall have the meanings given to them in the LSA.

[NAME OF LENDER]

By:__
Name: __
Title:__

Date: _____ __, 20[ ]

EXHIBIT E-2

[FORM OF]

U.S. TAX COMPLIANCE CERTIFICATE
(For Foreign Participants That Are Not Partnerships For U.S. Federal Income Tax Purposes)

Reference is hereby made to the Loan and Security Agreement dated as of August 8, 2025 (as amended, supplemented or otherwise modified from time to time, the "***LSA***"), among RAPID MICRO BIOSYSTEMS, INC., a Delaware corporation ("Borrower"), the lenders from time to time party thereto (each, a "Lender" and collectively, the "Lenders") and TRINITY CAPITAL INC., a Maryland corporation, as administrative agent and collateral agent for the Lenders ("Administrative Agent").

Pursuant to the provisions of Section 2.11 of the LSA, the undersigned hereby certifies that (i) it is the sole record and Beneficial Owner of the participation in respect of which it is providing this certificate, (ii) it is not a bank within the meaning of Section 881(c)(3)(A) of the Code, (iii) it is not a ten percent shareholder of the Borrower within the meaning of Section 871(h)(3)(B) of the Code, and (iv) it is not a controlled foreign corporation related to the Borrower as described in Section 881(c)(3)(C) of the Code.

The undersigned has furnished its participating Lender with a certificate of its non-U.S. Person status on IRS Form W-8BEN or IRS Form W-8BEN-E, as applicable. By executing this certificate, the undersigned agrees that (1) if the information provided on this certificate changes, the undersigned shall promptly so inform such Lender in writing, and (2) the undersigned shall have at all times furnished such Lender with a properly completed and currently effective certificate in either the calendar year in which each payment is to be made to the undersigned, or in either of the two calendar years preceding such payments.

Unless otherwise defined herein, terms defined in the LSA and used herein shall have the meanings given to them in the LSA.

[NAME OF PARTICIPANT]

By:__
Name: __
Title:__

Date: _____ __, 20[ ]

EXHIBIT E-3

[FORM OF]

U.S. TAX COMPLIANCE CERTIFICATE
(For Foreign Participants That Are Partnerships For U.S. Federal Income Tax Purposes)

Reference is hereby made to the Loan and Security Agreement dated as of August 8, 2025 (as amended, supplemented or otherwise modified from time to time, the "***LSA***"), among RAPID MICRO BIOSYSTEMS, INC., a Delaware corporation ("Borrower"), the lenders from time to time party thereto (each, a "Lender" and collectively, the "Lenders") and TRINITY CAPITAL INC., a Maryland corporation, as administrative agent and collateral agent for the Lenders ("Administrative Agent").

Pursuant to the provisions of Section 2.11 of the LSA, the undersigned hereby certifies that (i) it is the sole record owner of the participation in respect of which it is providing this certificate, (ii) its direct or indirect partners/members are the sole Beneficial Owners of such participation, (iii) with respect such participation, neither the undersigned nor any of its direct or indirect partners/members is a bank extending credit pursuant to a loan agreement entered into in the ordinary course of its trade or business within the meaning of Section 881(c)(3)(A) of the Code, (iv) none of its direct or indirect partners/members is a ten percent shareholder of the Borrower within the meaning of Section 871(h)(3)(B) of the Code and (v) none of its direct or indirect partners/members is a controlled foreign corporation related to the Borrower as described in Section 881(c)(3)(C) of the Code.

The undersigned has furnished its participating Lender with IRS Form W-8IMY accompanied by one of the following forms from each of its partners/members that is claiming the portfolio interest exemption: (i) an IRS Form W-8BEN or IRS Form W-8BEN-E, as applicable, or (ii) an IRS Form W-8IMY accompanied by an IRS Form W-8BEN or IRS Form W-8BEN-E, as applicable, from each of such partner's/member's Beneficial Owners that is claiming the portfolio interest exemption. By executing this certificate, the undersigned agrees that (1) if the information provided on this certificate changes, the undersigned shall promptly so inform such Lender and (2) the undersigned shall have at all times furnished such Lender with a properly completed and currently effective certificate in either the calendar year in which each payment is to be made to the undersigned, or in either of the two calendar years preceding such payments.

Unless otherwise defined herein, terms defined in the LSA and used herein shall have the meanings given to them in the LSA.

[NAME OF PARTICIPANT]

By:__
Name: __
Title:__

Date: _____ __, 20[ ]

EXHIBIT E-4

[FORM OF]

U.S. TAX COMPLIANCE CERTIFICATE
(For Foreign Lenders That Are Partnerships For U.S. Federal Income Tax Purposes)

Reference is hereby made to the Loan and Security Agreement dated as of August 8, 2025 (as amended, supplemented or otherwise modified from time to time, the "***LSA***"), among RAPID MICRO BIOSYSTEMS, INC., a Delaware corporation ("Borrower"), the lenders from time to time party thereto (each, a "Lender" and collectively, the "Lenders") and TRINITY CAPITAL INC., a Maryland corporation, as administrative agent and collateral agent for the Lenders ("Administrative Agent") .

Pursuant to the provisions of Section 2.11 of the LSA, the undersigned hereby certifies that (i) it is the sole record owner of the Loan(s) (as well as any Note(s) evidencing such Loan(s)) in respect of which it is providing this certificate, (ii) its direct or indirect partners/members are the sole Beneficial Owners of such Loan(s) (as well as any Note(s) evidencing such Loan(s)), (iii) with respect to the extension of credit pursuant to this LSA or any other Loan Document, neither the undersigned nor any of its direct or indirect partners/members is a bank extending credit pursuant to a loan agreement entered into in the ordinary course of its trade or business within the meaning of Section 881(c)(3)(A) of the Code, (iv) none of its direct or indirect partners/members is a ten percent shareholder of the Borrower within the meaning of Section 871(h)(3)(B) of the Code and (v) none of its direct or indirect partners/members is a controlled foreign corporation related to the Borrower as described in Section 881(c)(3)(C) of the Code.

The undersigned has furnished the Administrative Agent and the Borrower with IRS Form W-8IMY accompanied by one of the following forms from each of its partners/members that is claiming the portfolio interest exemption: (i) an IRS Form W-8BEN or IRS Form W-8BEN-E, as applicable, or (ii) an IRS Form W-8IMY accompanied by an IRS Form W-8BEN or IRS Form W-8BEN-E, as applicable, from each of such partner's/member's Beneficial Owners that is claiming the portfolio interest exemption. By executing this certificate, the undersigned agrees that (1) if the information provided on this certificate changes, the undersigned shall promptly so inform the Borrower and the Administrative Agent, and (2) the undersigned shall have at all times furnished the Borrower and the Administrative Agent with a properly completed and currently effective certificate in either the calendar year in which each payment is to be made to the undersigned, or in either of the two calendar years preceding such payments.

Unless otherwise defined herein, terms defined in the LSA and used herein shall have the meanings given to them in the LSA.

[NAME OF LENDER]

By:__
Name: __
Title:__

Date: _____ __, 20[ ]

Exhibit 10.3

Execution Version

THIS WARRANT AND THE SHARES OF COMMON STOCK ISSUABLE UPON THE EXERCISE OF THIS WARRANT (THE "SECURITIES") HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR THE SECURITIES LAWS OF ANY STATE OF THE UNITED STATES. THE SECURITIES HAVE BEEN ACQUIRED FOR INVESTMENT AND MAY NOT BE SOLD, TRANSFERRED OR ASSIGNED UNLESS (I) SUCH SECURITIES HAVE BEEN REGISTERED FOR SALE PURSUANT TO THE SECURITIES ACT, (II) SUCH SECURITIES MAY BE SOLD PURSUANT TO RULE 144 UNDER THE SECURITIES ACT, (III) THE COMPANY HAS RECEIVED AN OPINION OF COUNSEL REASONABLY SATISFACTORY TO IT THAT SUCH TRANSFER MAY LAWFULLY BE MADE WITHOUT REGISTRATION UNDER THE SECURITIES ACT, OR (IV) THE SECURITIES ARE TRANSFERRED WITHOUT CONSIDERATION TO AN AFFILIATE OF SUCH HOLDER OR A CUSTODIAL NOMINEE (WHICH FOR THE AVOIDANCE OF DOUBT SHALL REQUIRE NEITHER CONSENT NOR THE DELIVERY OF AN OPINION).

WARRANT TO PURCHASE COMMON STOCK

Number of Shares: [•] (subject to adjustment)

Warrant No. [•] Original Issue Date: August 8, 2025

Rapid Micro Biosystems, Inc., a Delaware corporation (the "**Company**"), hereby certifies that, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, [•] or its registered assigns (the "**Holder**"), is entitled, subject to the terms set forth below, to purchase from the Company up to a total of [•] shares of Class A common stock, $0.01 par value per share (the "**Common Stock**"), of the Company (each such share, a "**Warrant Share**" and all such shares, the "**Warrant Shares**") at an exercise price per share equal to $3.35 (the "**Exercise Price**"), in each case as adjusted from time to time as provided in Section 9, upon surrender of this Warrant to Purchase Common Stock (including any Warrants to Purchase Common Stock issued in exchange, transfer or replacement hereof, the "**Warrant**") at any time and from time to time on or after the date hereof (the "**Original Issue Date**") and on or prior to 5:00 p.m. (New York City time) on August 8, 2035 (the "**Termination Date**") but not thereafter.

This Warrant is one of a series of similar warrants issuable pursuant to that certain Loan and Security Agreement, dated August 8, 2025, by and among the Company and the Holder, the lenders from time to time party thereto, and Trinity Capital Inc., a Maryland corporation, as administrative Agent.

1. Definitions. For purposes of this Warrant, the following terms shall have the following meanings:

"**Affiliate**" means, with respect to any Person, any other Person that, directly or indirectly through one or more intermediates, controls, is controlled by or is under common control with such Person.

"**Attribution Parties**" means, collectively, the following Persons and entities: (i) any direct or indirect Affiliates of the Holder, (ii) any investment vehicle, including, any funds,

feeder funds or managed accounts, currently, or from time to time after the date hereof, directly or indirectly managed or advised by the Holder's investment manager or any of its Affiliates or principals, (iii) any Person acting or who could be deemed to be acting as a Group together with the Holder or any Attribution Parties and (iv) any other Persons whose beneficial ownership of the Company's Common Stock would or could be aggregated with the Holder's and/or any other Attribution Parties for purposes of Section 13(d) or Section 16 of the Exchange Act. For clarity, the purpose of the foregoing is to subject collectively the Holder and all other Attribution Parties to the Maximum Percentage.

"**Closing Sale Price**" means, for any security as of any date, the last trade price for such security on the Principal Trading Market for such security, as reported by Bloomberg Financial Markets, or, if such Principal Trading Market begins to operate on an extended hours basis and does not designate the last trade price, then the last trade price of such security prior to 4:00 P.M., New York City time, as reported by Bloomberg Financial Markets, or if the foregoing do not apply, the last trade price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg Financial Markets. If the Closing Sale Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Sale Price of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then the Board of Directors of the Company shall use its good faith judgment to determine the fair market value. The Board of Directors' determination shall be binding upon all parties absent demonstrable error. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction during the applicable calculation period.

"**Commission**" means the U.S. Securities and Exchange Commission.

"**Exchange Act**" means the U.S. Securities Exchange Act of 1934, as amended, and all of the rules and regulations promulgated thereunder.

"**Group**" shall have the meaning ascribed to it in Section 13(d) of the Exchange Act, and all related rules, regulations and jurisprudence.

"**Person**" means an individual, partnership, corporation, limited liability company, business trust, joint stock company, trust, incorporated or unincorporated association, joint venture, government (or an agency or subdivision thereof) or any other entity or organization.

"**Principal Trading Market**" means the national securities exchange or other trading market on which the Common Stock is primarily listed on and quoted for trading, which, as of the Original Issue Date, shall be the Nasdaq Capital Market.

"**Securities Act**" means the U.S. Securities Act of 1933, as amended, and all of the rules and regulations promulgated thereunder.

"**Standard Settlement Period**" means the standard settlement period, expressed in a number of Trading Days, for the Principal Trading Market with respect to the Common Stock

that is in effect on the date of delivery of an applicable Exercise Notice, which as of the Original Issue Date was "T+1."

"**Trading Day**" means any weekday on which the Principal Trading Market is normally open for trading.

"**Trading Market**" means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market or the New York Stock Exchange (or any successors to any of the foregoing).

"**Transfer Agent**" means Computershare Trust Company, N.A., the Company's transfer agent and registrar for the Common Stock, and any successor appointed in such capacity.

"**VWAP**" means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on The Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the holders of a majority in interest of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

2. **Issuance of Securities; Registration of Warrants**. The Company shall register ownership of this Warrant, upon records to be maintained by the Company for that purpose (the "**Warrant Register**"), in the name of the record Holder (which shall include the initial Holder or, as the case may be, any assignee to which this Warrant is permissibly assigned hereunder) from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

3. **Registration of Transfers**. This Warrant and all rights hereunder (including, without limitation, any registration rights) are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Subject to compliance with all applicable securities laws, the Company shall, or will cause its Transfer Agent to, register the transfer of all or any portion of this Warrant in the Warrant Register, upon surrender of this Warrant, and payment for all applicable transfer

taxes (if any). Upon any such registration or transfer, a new warrant to purchase Common Stock in substantially the form of this Warrant (any such new warrant, a "**New Warrant**") evidencing the portion of this Warrant so transferred shall be issued to the transferee, and a New Warrant evidencing the remaining portion of this Warrant not so transferred, if any, shall be issued to the transferring Holder. The acceptance of the New Warrant by the transferee thereof shall be deemed the acceptance by such transferee of all of the rights and obligations in respect of the New Warrant that the Holder has in respect of this Warrant. The Company shall, or will cause its Transfer Agent to, prepare, issue and deliver at the Company's own expense any New Warrant under this Section 3. Until due presentment for registration of transfer, the Company may treat the registered Holder hereof as the owner and holder for all purposes, and the Company shall not be affected by any notice to the contrary.

4. Exercise of Warrants.

(a) All or any part of this Warrant shall be exercisable by the registered Holder in any manner permitted by this Warrant (including Section 11) at any time and from time to time on or after the Original Issue Date and on or before the Termination Date.

(b) The Holder may exercise this Warrant by delivering to the Company (i) an exercise notice, in the form attached as Schedule 1 hereto (the "**Exercise Notice**"), completed and duly signed, and (ii) payment of the Exercise Price for the number of Warrant Shares as to which this Warrant is being exercised (which may take the form of a "cashless exercise" if so indicated in the Exercise Notice pursuant to Section 10 below), and the date on which the last of such items is delivered to the Company (as determined in accordance with the notice provisions hereof) is an **"Exercise Date**." The Holder shall not be required to deliver the original Warrant in order to effect an exercise hereunder. Execution and delivery of the Exercise Notice shall have the same effect as cancellation of the original Warrant and issuance of a New Warrant evidencing the right to purchase the remaining number of Warrant Shares, if any. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within two (2) Trading Days of receipt of such notice.

(c) The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this section, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.

5. Delivery of Warrant Shares.

(a) Upon exercise of this Warrant, the Company shall promptly (but in no event later than the number of Trading Days comprising the Standard Settlement Period following the Exercise Date), upon the request of the Holder, cause the Transfer Agent to credit such aggregate number of shares of Common Stock specified by the Holder in the Exercise Notice and to which the Holder is entitled pursuant to such exercise (the "**Exercise Shares**") to (i) the Holder's or its designee's balance account with The Depository Trust Company ("**DTC**") through its Deposit Withdrawal At Custodian system or (ii) in book-entry form via a direct registration system ("**DRS**") maintained by or on behalf of the Transfer Agent, in each case, so

long as either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or the resale of such Warrant Shares by the Holder or (B) the Exercise Shares are eligible for resale by the Holder without volume or manner-of-sale restrictions pursuant to Rule 144 promulgated under the Securities Act (assuming cashless exercise of this Warrant). If (A) and (B) above are not true, the Company shall cause the Transfer Agent to either (i) record the Exercise Shares in the name of the Holder or its designee on the certificates reflecting the Exercise Shares with an appropriate legend regarding restriction on transferability, which shall be issued and dispatched by overnight courier to the address as specified in the Exercise Notice, and on the Company's share register or (ii) issue such Exercise Shares in the name of the Holder or its designee in restricted book-entry form in the Company's share register. The Holder, or any Person so designated by the Holder to receive Warrant Shares, shall be deemed to have become the holder of record of such Warrant Shares as of the Exercise Date, irrespective of the date such Warrant Shares are credited to the Holder's DTC account, the date of the book entry positions or the date of delivery of the certificates evidencing such Exercise Shares, as the case may be.

(b) In addition to any other rights available to the Holder, if the Company fails to cause the Transfer Agent to deliver to the Holder or its designee Exercise Shares in the manner required pursuant to Section 5(a) within the Standard Settlement Period following the Exercise Date (other than a failure caused by incorrect or incomplete information provided by the Holder to the Company) and the Holder or the Holder's broker on its behalf purchases (in an open market transaction or otherwise) shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "**Buy-In**") but did not receive within the Standard Settlement Period, then the Company shall, within two (2) Trading Days after the Holder's request and in the Holder's sole discretion, promptly honor its obligation to deliver to the Holder or its designee the Exercise Shares pursuant to Section 5(a) and pay cash to the Holder in an amount equal to the excess (if any) of the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased in the Buy-In, less the product of (A) the number of shares of Common Stock purchased in the Buy-In, times (B) the Closing Sale Price of a share of Common Stock on the Exercise Date. The Holder shall provide the Company written notice promptly after the occurrence of a Buy-In, indicating the amounts payable to the Holder in respect of the Buy-In together with applicable confirmations and other evidence reasonably requested by the Company.

(c) To the extent permitted by law and subject to Section 5(b), the Company's obligations to issue and deliver Warrant Shares in accordance with and subject to the terms hereof (including the limitations set forth in Section 11 below) are absolute and unconditional, irrespective of any action or inaction by the Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by the Holder or any other Person of any obligation to the Company or any violation or alleged violation of law by the Holder or any other Person, and irrespective of any other circumstance that might otherwise limit such obligation of the Company to the Holder in connection with the issuance of Warrant Shares. Subject to Section 5(b), nothing herein shall limit the Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver Exercise Shares; provided, however, that the

Holder shall not be entitled to both (i) require the Company to reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not timely honored and (ii) receive the number of shares of Common Stock that would have been issued if the Company had timely complied with its delivery requirements under Section 5(a).

6. **Charges, Taxes and Expenses**. Issuance and delivery of Exercise Shares shall be made without charge to the Holder for any issue or transfer tax, transfer agent fee or other incidental tax or expense (excluding any applicable stamp duties) in respect of the issuance of such shares, all of which taxes and expenses shall be paid by the Company; provided, however, that the Company shall not be required to pay any tax that may be payable in respect of any transfer involved in the registration of any Warrant Shares or the Warrants in a name other than that of the Holder or an Affiliate thereof. The Holder shall be responsible for all other tax liability that may arise as a result of holding or transferring this Warrant or receiving Warrant Shares upon exercise hereof.

7. **Replacement of Warrant**. If this Warrant is mutilated, lost, stolen or destroyed, the Company shall issue or cause to be issued in exchange and substitution for and upon cancellation hereof, or in lieu of and substitution for this Warrant, a New Warrant, but only upon receipt of evidence reasonably satisfactory to the Company of such loss, theft or destruction (in such case) and, in each case, a customary and reasonable contractual indemnity, if requested by the Company. If a New Warrant is requested as a result of a mutilation of this Warrant, then the Holder shall deliver such mutilated Warrant to the Company as a condition precedent to the Company's obligation to issue the New Warrant.

8. **Reservation of Warrant Shares**. The Company covenants that it will, at all times while this Warrant is outstanding, reserve and keep available out of the aggregate of its authorized but unissued and otherwise unreserved Common Stock, solely for the purpose of enabling it to issue Warrant Shares upon exercise of this Warrant as herein provided, the number of Warrant Shares that are initially issuable and deliverable upon the exercise of this entire Warrant, free from preemptive rights or any other contingent purchase rights of persons other than the Holder (taking into account the adjustments and restrictions of Section 9). The Company covenants that all Warrant Shares so issuable and deliverable shall, upon issuance and the payment of the applicable Exercise Price in accordance with the terms hereof, be duly and validly authorized, issued and fully paid and non-assessable. The Company will take all such action as may be reasonably necessary to assure that such shares of Common Stock may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of any securities exchange or automated quotation system upon which the Common Stock may be listed. The Company further covenants that it will not, without the prior written consent of the Holder, take any actions to increase the par value of the Common Stock at any time while this Warrant is outstanding.

9. **Certain Adjustments**. The Exercise Price and number of Warrant Shares issuable upon exercise of this Warrant (the "**Number of Warrant Shares**") are subject to adjustment from time to time as set forth in this Section 9.

(a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding, (i) pays a stock dividend on its Common Stock or otherwise makes a

distribution on any class of capital stock issued and outstanding on the Original Issue Date and in accordance with the terms of such stock on the Original Issue Date or as amended, that is payable in shares of Common Stock, (ii) subdivides its outstanding shares of Common Stock into a larger number of shares of Common Stock, (iii) combines its outstanding shares of Common Stock into a smaller number of shares of Common Stock or (iv) issues by reclassification of shares of capital stock any additional shares of Common Stock of the Company, then in each such case the Number of Warrant Shares shall be multiplied by a fraction, the numerator of which shall be the number of shares of Common Stock outstanding immediately after such event and the denominator of which shall be the number of shares of Common Stock outstanding immediately before such event. Any adjustment made pursuant to clause (i) of this paragraph shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution, provided, however, that if such record date shall have been fixed and such dividend is not fully paid on the date fixed therefor, the Number of Warrant Shares shall be recomputed accordingly as of the close of business on such record date and thereafter the Number of Warrant Shares shall be adjusted pursuant to this paragraph as of the time of actual payment of such dividends. Any adjustment pursuant to clause (ii), (iii) or (iv) of this paragraph shall become effective immediately after the effective date of such subdivision, combination or issuance.

(b) Pro Rata Distributions. If, on or after the Original Issue Date, the Company shall declare or make any dividend or other pro rata distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property, options, evidence of indebtedness or any other assets by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction, but, for the avoidance of doubt, excluding any distribution of shares of Common Stock subject to Section 9(a), any distribution of Purchase Rights (as defined below) subject to Section 9(c) and any Fundamental Transaction (as defined below) subject to Section 9(d)) (a "**Distribution**") then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including without limitation, the Maximum Percentage (as defined below)) immediately before the date on which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution; *provided*, that to the extent that the Holder's right to participate in any such Distribution would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Distribution to such extent (and shall not be entitled to beneficial ownership of such shares of Common Stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such Distribution (and any Distributions declared or made on such initial Distribution or on any subsequent Distribution held similarly in abeyance) to the same extent as if there had been no such limitation.

(c) Purchase Rights. If at any time on or after the Original Issue Date, the Company grants, issues or sells any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property, in each case pro rata to the record holders of any class of Common Stock (the "**Purchase Rights**"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including without limitation, the Maximum Percentage) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of Common Stock are to be determined for the grant, issuance or sale of such Purchase Rights; *provided*, that to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Purchase Right to such extent (and shall not be entitled to beneficial ownership of such Common Stock as a result of such Purchase Right (and beneficial ownership) to such extent) and at the Holder's election, in its sole discretion, either (1) such Purchase Right to such extent shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such right (and any Purchase Right granted, issued or sold on such initial Purchase Right or on any subsequent Purchase Right to be held similarly in abeyance, to the same extent as if there had been no such limitation) or (2) the Company shall offer the Holder the right upon exercise of such Purchase Right to acquire a security (e.g. a pre-funded warrant) that would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage but will otherwise to the extent possible have economic and other rights, preferences and privileges substantially consistent and on par with the securities or other property issuable upon exercise of the originally offered Purchase Rights. As used in this Section 9(c), (i) "Options" means any rights, warrants or options to subscribe for or purchase shares of Common Stock or Convertible Securities and (ii) "Convertible Securities" mean any stock or securities (other than Options) directly or indirectly convertible into or exercisable or exchangeable for shares of Common Stock.

(d) Fundamental Transactions. If, at any time while this Warrant is outstanding (i) the Company effects any merger or consolidation of the Company with or into another Person, in which the Company is not the surviving entity or in which the stockholders of the Company immediately prior to such merger or consolidation do not own, directly or indirectly, at least 50% of the voting power of the surviving entity immediately after such merger or consolidation, (ii) the Company effects any sale to another Person of all or substantially all of its assets in one or a series of related transactions or (iii) the Company consummates a stock purchase agreement or other business combination with another Person whereby such other Person acquires more than 50% of the voting power of the capital stock of the Company (except for any such transaction in which the stockholders of the Company immediately prior to such transaction maintain, in substantially the same proportions, the voting power of such Person immediately after the transaction) (in any such case, a "**Fundamental Transaction**"), then following such Fundamental Transaction the Holder shall have the right to receive, upon exercise of this Warrant, the same amount and kind of securities or cash as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it

had been, immediately prior to such Fundamental Transaction, the holder of the number of Warrant Shares then issuable upon exercise in full of this Warrant (including any Distributions or Purchase Rights then held in abeyance pursuant to Sections 9(b) or 9(c) above) without regard to any limitations on exercise contained herein (the "**Alternate Consideration**"). The Company shall not affect any Fundamental Transaction in which the Company is not the surviving entity or the Alternate Consideration includes securities of another Person unless (i) the Alternate Consideration is solely cash and the Company provides for the simultaneous "cashless exercise" of this Warrant pursuant to Section 10 below or (ii) prior to or simultaneously with the consummation thereof, any successor to the Company, surviving entity or other Person (including any purchaser of assets of the Company) shall assume the obligations under this Warrant. The provisions of this paragraph (d) shall similarly apply to subsequent transactions analogous to a Fundamental Transaction type. If the Company undertakes a Fundamental Transaction in which the Company is not the surviving entity and the Alternate Consideration includes securities of another Person, then the Company shall provide that, prior to or simultaneously with the consummation of such Fundamental Transaction, any successor to the Company, surviving entity or other Person (including any purchaser of assets of the Company) shall assume the obligations under this Warrant. The provisions of this paragraph (d) shall similarly apply to subsequent transactions analogous of a Fundamental Transaction type.

(e) Number of Warrant Shares. Simultaneously with any adjustment to the Number of Warrant Shares pursuant to Section 9, the Exercise Price shall be increased or decreased proportionately, so that after such adjustment the aggregate Exercise Price payable hereunder for the increased or decreased Number of Warrant Shares shall be the same as the aggregate Exercise Price in effect immediately prior to such adjustment. Notwithstanding the foregoing, in no event may the Exercise Price be adjusted below the par value of the Common Stock then in effect.

(f) Calculations. All calculations under this Section 9 shall be made to the nearest one-tenth of one cent or the nearest share, as applicable.

(g) Notice of Adjustments. Upon the occurrence of each adjustment pursuant to this Section 9, the Company at its expense will, at the written request of the Holder, promptly compute such adjustment, in good faith, in accordance with the terms of this Warrant and prepare a certificate setting forth such adjustment, including a statement of the adjusted Exercise Price and adjusted number or type of Warrant Shares or other securities issuable upon exercise of this Warrant (as applicable), describing the transactions giving rise to such adjustments and showing in detail the facts upon which such adjustment is based. Upon written request, the Company will promptly deliver a copy of each such certificate to the Holder and to the Company's transfer agent.

(h) Notice of Corporate Events. If, while this Warrant is outstanding, the Company (i) declares a dividend or any other distribution of cash, securities or other property in respect of its Common Stock, including, without limitation, any granting of rights or warrants to subscribe for or purchase any capital stock of the Company or any subsidiary, (ii) authorizes or approves, enters into any agreement contemplating or solicits stockholder approval for any Fundamental Transaction or (iii) authorizes the voluntary dissolution, liquidation or winding up

of the affairs of the Company, then the Company shall deliver to the Holder a notice of such transaction at least ten (10) days prior to the applicable record or effective date on which a Person would need to hold Common Stock in order to participate in or vote with respect to such transaction; provided, however, that the failure to deliver such notice or any defect therein shall not affect the validity of the corporate action required to be described in such notice. In addition, if while this Warrant is outstanding, the Company authorizes or approves, enters into any agreement contemplating or solicits stockholder approval for any Fundamental Transaction contemplated by Section 9(d), other than a Fundamental Transaction under clause (iii) of Section 9(d), the Company shall deliver to the Holder a notice of such Fundamental Transaction at least thirty (30) days prior to the date such Fundamental Transaction is consummated. Holder agrees to maintain any information disclosed pursuant to this Section 9(h) in confidence until such information is publicly available, and shall comply with applicable law with respect to trading in the Company's securities following receipt of any such information.

(i) Voluntary Adjustment By Company. Subject to the rules and regulations of the Principal Trading Market, the Company may at any time during the term of this Warrant, reduce the then-current Exercise Price to any amount and for any period of time deemed appropriate by the board of directors of the Company.

10. Payment of Exercise Price. Notwithstanding anything contained herein to the contrary, the Holder may, in its sole discretion, satisfy its obligation to pay the Exercise Price through a "cashless exercise", in which event the Company shall issue to the Holder the number of Warrant Shares in an exchange of securities effected pursuant to Section 3(a)(9) of the Securities Act, determined as follows:

$$X = Y [(A-B)/A]$$

where:

"X" equals the number of Warrant Shares to be issued to the Holder;

"Y" equals the total number of Warrant Shares with respect to which this Warrant is then being exercised;

"A" equals the Closing Sale Price of the shares of Common Stock (as reported by Bloomberg Financial Market as of the Trading Day on the date immediately preceding the Exercise Date); and

"B" equals the Exercise Price then in effect for the applicable Warrant Shares at the time of such exercise.

For purposes of Rule 144 promulgated under the Securities Act, it is intended, understood and acknowledged that the Warrant Shares issued in a "cashless exercise" transaction shall be deemed to have been acquired by the Holder, and the holding period for the Warrant Shares shall be deemed to have commenced, on the Original Issue Date (provided that the Commission continues to take the position that such treatment is proper at the time of such exercise). In the event that a registration statement registering the issuance of Warrant Shares is, for any reason, not effective at the time of exercise of this Warrant, then this Warrant may only be exercised

through a cashless exercise, as set forth in this Section 10. If the Warrant Shares are issued in such a cashless exercise, the Company acknowledges and agrees that, in accordance with Section 3(a)(9) of the Securities Act, the Exercise Shares issued in such exercise shall take on the registered characteristics of the Warrants being exercised and may be tacked on to the holding period of the Warrants being exercised. Except as set forth in Section 5(b) (Buy-in Remedy) and Section 12 (No Fractional Shares), in no event will the exercise of this Warrant be settled in cash.

11. Limitations on Exercise.

(a) Notwithstanding anything to the contrary contained herein, the Company shall not effect the exercise of any portion of this Warrant, and the Holder of this Warrant shall not have the right to exercise any portion of the Warrant, and any such exercise shall be null and void ab initio and treated as if the exercise had not been made, to the extent that immediately prior to or following such exercise, the Holder, together with the Attribution Parties, beneficially owns or would beneficially own as determined in accordance with Section 13(d) of the Exchange Act and the rules promulgated thereunder, in excess of 4.99% (the "**Maximum Percentage**") of the Common Stock that would be issued and outstanding following such exercise. For purposes of calculating beneficial ownership for determining whether the Maximum Percentage is or will be exceeded, the aggregate number of shares of Common Stock held and/or beneficially owned by the Holder together with the Attribution Parties, shall include the number of shares of Common Stock held and/or beneficially owned by the Holder together with the Attribution Parties plus the number of shares of Common Stock issuable upon exercise of the relevant Warrant with respect to which the determination is being made but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, unexercised Warrant held and/or beneficially owned by the Holder or the Attribution Parties and (ii) exercise or conversion of the unexercised or unconverted portion of any other securities of the Company held and/or beneficially owned by such Holder or any Attribution Party (including, without limitation, any convertible notes, convertible stock or warrants) that are subject to a limitation on conversion or exercise analogous to the limitation contained herein. For purposes of this Paragraph 11(a), beneficial ownership of the Holder or the Attribution Parties shall, except as set forth in the immediately preceding sentence, be calculated and determined in accordance with Section 13(d) of the Exchange Act and the rules promulgated thereunder. For purposes of this Warrant, in determining the number of outstanding shares of Common Stock, a Holder of this Warrant may rely on the number of outstanding shares of Common Stock as reflected in (1) the Company's most recent Form 10-K, Form 10-Q, Current Report on Form 8-K or other public filing with the Securities and Exchange Commission, as the case may be, (2) a more recent public announcement by the Company or (3) any other notice by the Company or the Company's transfer agent setting forth the number of shares of Common Stock outstanding (such issued and outstanding shares, the "**Reported Outstanding Share Number**"). For any reason at any time, upon the written or oral request of the Holder, the Company shall within one business day confirm orally and in writing or by electronic mail to the Holder the number of shares of Common Stock then outstanding. The Holder shall disclose to the Company the number of shares of Common Stock that it, together with the Attribution Parties holds and/or beneficially owns and has the right to acquire through the exercise of derivative securities and any limitations on exercise or conversion analogous to the limitation contained herein contemporaneously or immediately prior to submitting an Exercise Notice for the relevant Warrant. If the Company receives an Exercise Notice from the Holder at a time when the actual number of outstanding

shares of Common Stock is less than the Reported Outstanding Share Number, the Company shall (i) notify the Holder in writing of the number of shares of Common Stock then outstanding and, to the extent that such Exercise Notice would otherwise cause the Holder's, together with the Attribution Parties', beneficial ownership, as determined pursuant to this Section 11(a), to exceed the Maximum Percentage, the Holder must notify the Company of a reduced number of Warrant Shares to be purchased pursuant to such Exercise Notice (the number of shares by which such purchase is reduced, the "**Reduction Shares**") and (ii) as soon as reasonably practicable, the Company shall return to the Holder any exercise price paid by the Holder for the Reduction Shares. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder and the Attribution Parties since the date as of which the Reported Outstanding Share Number was reported. In the event that the issuance of Common Stock to the Holder upon exercise of this Warrant results in the Holder, together with the Attribution Parties, being deemed to beneficially own, in the aggregate, more than the Maximum Percentage of the number of outstanding shares of Common Stock (as determined under Section 13(d) of the Exchange Act), the number of shares so issued by which the Holder's, together with the Attribution Parties', aggregate beneficial ownership exceeds the Maximum Percentage (the "**Excess Shares**") shall be deemed null and void and shall be cancelled ab initio, and the Holder and/or the Attribution Parties shall not have the power to vote or to transfer the Excess Shares. As soon as reasonably practicable after the issuance of the Excess Shares has been deemed null and void, the Company shall return to the Holder the exercise price paid by the Holder for the Excess Shares. By written notice to the Company, a Holder of this Warrant may from time to time increase or decrease the Maximum Percentage to any other percentage not in excess of 19.99% specified in such notice; provided that any increase in the Maximum Percentage will not be effective until the 61st day after such notice is delivered to the Company and shall not negatively affect any partial exercise effected prior to such change.

(b) This Section 11 shall not restrict the number of shares of Common Stock which a Holder or the Attribution Parties may receive or beneficially own in order to determine the amount of securities or other consideration that such Holder or the Attribution Parties may receive in the event of a Fundamental Transaction as contemplated in Section 9(c) of this Warrant. For purposes of clarity, the shares of Common Stock issuable pursuant to the terms of this Warrant in excess of the Maximum Percentage shall not be deemed to be beneficially owned by the Holder or the Attribution Parties for any purpose including for purposes of Section 13(d) of the Exchange Act and the rules promulgated thereunder or Section 16 of the Exchange Act and the rules promulgated thereunder, including Rule 16a-1(a)(1). No prior inability to exercise this Warrant pursuant to this paragraph shall have any effect on the applicability of the provisions of this paragraph with respect to any subsequent determination of exercisability. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 11 to the extent necessary to correct this paragraph or any portion of this paragraph which may be defective or inconsistent with the intended beneficial ownership limitation contained in this Section 11 or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitation contained in this paragraph may not be waived and shall apply to a successor holder of this Warrant.

12. **No Fractional Shares**. No fractional Warrant Shares will be issued in connection with any exercise of this Warrant. In lieu of any fractional shares that would otherwise be issuable, the number of Warrant Shares to be issued shall be rounded down to the next whole number and the Company shall pay the Holder in cash the fair market value (based on the Closing Sale Price) for any such fractional shares.

13. **Notices**. Any and all notices or other communications or deliveries hereunder (including, without limitation, any Exercise Notice) shall be in writing and shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered confirmed e-mail at the e-mail address specified in the books and records of the Transfer Agent prior to 5:30 P.M., New York City time, on a Trading Day, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via confirmed e-mail at the e-mail address specified in the books and records of the Transfer Agent on a day that is not a Trading Day or later than 5:30 P.M., New York City time, on any Trading Day, (iii) the Trading Day following the date of mailing, if sent by nationally recognized overnight courier service specifying next business day delivery, or (iv) upon actual receipt by the Person to whom such notice is required to be given, if by hand delivery.

14. **Warrant Agent**. The Company shall initially serve as warrant agent under this Warrant. Upon 30 days' notice to the Holder, the Company may appoint a new warrant agent. Any corporation into which the Company or any new warrant agent may be merged or any corporation resulting from any consolidation to which the Company or any new warrant agent shall be a party or any corporation to which the Company or any new warrant agent transfers substantially all of its corporate trust or shareholders services business shall be a successor warrant agent under this Warrant without any further act. Any such successor warrant agent shall promptly cause notice of its succession as warrant agent to be mailed (by first class mail, postage prepaid) to the Holder at the Holder's last address as shown on the Warrant Register.

15. **Miscellaneous**.

(a) No Rights as a Stockholder. Except as otherwise set forth in this Warrant, the Holder, solely in such Person's capacity as a holder of this Warrant, shall not be entitled to vote or receive dividends or be deemed the holder of share capital of the Company for any purpose, nor shall anything contained in this Warrant be construed to confer upon the Holder, solely in such Person's capacity as the Holder of this Warrant, any of the rights of a stockholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, amalgamation, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights, or otherwise, prior to the issuance to the Holder of the Warrant Shares which such Person is then entitled to receive upon the due exercise of this Warrant. In addition, nothing contained in this Warrant shall be construed as imposing any liabilities on the Holder to purchase any securities (upon exercise of this Warrant or otherwise) or as a stockholder of the Company, whether such liabilities are asserted by the Company or by creditors of the Company.

(b) Further Assurances. Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its

certificate or articles of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (a) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (b) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and non-assessable Warrant Shares upon the exercise of this Warrant, and (c) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof as may be necessary to enable the Company to perform its obligations under this Warrant. Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

(c) Successors and Assigns. Subject to compliance with applicable securities laws, this Warrant may be assigned by the Holder. This Warrant may not be assigned by the Company without the written consent of the Holder, except to a successor in the event of a Fundamental Transaction. This Warrant shall be binding on and inure to the benefit of the Company and the Holder and their respective successors and assigns. Subject to the preceding sentence, nothing in this Warrant shall be construed to give to any Person other than the Company and the Holder any legal or equitable right, remedy or cause of action under this Warrant. This Warrant may be amended only in writing signed by the Company and the Holder, or their successors and assigns.

(d) Amendment and Waiver. Except as otherwise provided herein, the provisions of this Warrant may be amended and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company has obtained the written consent of the Holder.

(e) Acceptance. Receipt of this Warrant by the Holder shall constitute acceptance of and agreement to all of the terms and conditions contained herein.

(f) Governing Law; Jurisdiction. ALL QUESTIONS CONCERNING THE CONSTRUCTION, VALIDITY, ENFORCEMENT AND INTERPRETATION OF THIS WARRANT SHALL BE GOVERNED BY AND CONSTRUED AND ENFORCED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAW THEREOF. EACH OF THE COMPANY AND THE HOLDER HEREBY IRREVOCABLY SUBMITS TO THE EXCLUSIVE JURISDICTION OF THE STATE AND FEDERAL COURTS SITTING IN THE CITY OF NEW YORK, BOROUGH OF MANHATTAN, FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION HEREWITH OR WITH ANY TRANSACTION CONTEMPLATED HEREBY OR DISCUSSED HEREIN (INCLUDING WITH RESPECT TO THE ENFORCEMENT OF ANY OF THE TRANSACTION

DOCUMENTS), AND HEREBY IRREVOCABLY WAIVES, AND AGREES NOT TO ASSERT IN ANY SUIT, ACTION OR PROCEEDING, ANY CLAIM THAT IT IS NOT PERSONALLY SUBJECT TO THE JURISDICTION OF ANY SUCH COURT. EACH OF THE COMPANY AND THE HOLDER HEREBY IRREVOCABLY WAIVES PERSONAL SERVICE OF PROCESS AND CONSENTS TO PROCESS BEING SERVED IN ANY SUCH SUIT, ACTION OR PROCEEDING BY MAILING A COPY THEREOF VIA REGISTERED OR CERTIFIED MAIL OR OVERNIGHT DELIVERY (WITH EVIDENCE OF DELIVERY) TO SUCH PERSON AT THE ADDRESS IN EFFECT FOR NOTICES TO IT AND AGREES THAT SUCH SERVICE SHALL CONSTITUTE GOOD AND SUFFICIENT SERVICE OF PROCESS AND NOTICE THEREOF. NOTHING CONTAINED HEREIN SHALL BE DEEMED TO LIMIT IN ANY WAY ANY RIGHT TO SERVE PROCESS IN ANY MANNER PERMITTED BY LAW. EACH OF THE COMPANY AND THE HOLDER HEREBY WAIVES ALL RIGHTS TO A TRIAL BY JURY.

(g) Headings. The headings herein are for convenience only, do not constitute a part of this Warrant and shall not be deemed to limit or affect any of the provisions hereof.

(h) Severability. If any part or provision of this Warrant is held unenforceable or in conflict with the applicable laws or regulations of any jurisdiction, the invalid or unenforceable part or provisions shall be replaced with a provision which accomplishes, to the extent possible, the original business purpose of such part or provision in a valid and enforceable manner, and the remainder of this Warrant shall remain binding upon the parties hereto.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the Company has caused this Warrant to be duly executed by its authorized officer as of the date first indicated above.

RAPID MICRO BIOSYSTEMS, INC.

By: _____
Name: Sean Wirtjes
Title: Chief Financial Officer

SCHEDULE 1

FORM OF EXERCISE NOTICE

[To be executed by the Holder to purchase shares of Common Stock under the Warrant]

Ladies and Gentlemen:

(1) The undersigned is the Holder of Warrant No. __ (the "Warrant") issued by Rapid Micro Biosystems, a Delaware corporation (the "Company"). Capitalized terms used herein and not otherwise defined herein have the respective meanings set forth in the Warrant.

(2) The undersigned hereby exercises its right to purchase _____ Warrant Shares pursuant to the Warrant.

(3) The Holder intends that payment of the Exercise Price shall be made as (check one):

☐ Cash Exercise

☐ "Cashless Exercise" under Section 10 of the Warrant

(4) If the Holder has elected a Cash Exercise, the Holder shall pay the sum of $ _____ in immediately available funds to the Company in accordance with the terms of the Warrant.

(5) Pursuant to this Exercise Notice, the Company shall deliver to the Holder the number of Warrant Shares determined in accordance with the terms of the Warrant.

(6) By its delivery of this Exercise Notice, the undersigned represents and warrants to the Company that in giving effect to the exercise evidenced hereby the Holder (i) is an "accredited investor" as defined in Regulation D promulgated under the Securities Act of 1933, as amended and (ii) will not beneficially own in excess of the number of shares of Common Stock (as determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended) permitted to be owned under Section 11(a) of the Warrant to which this notice relates.

Dated: _____

Name of Holder: _____

By: _____

Name: _____

Title: _____

(Signature must conform in all respects to name of Holder as specified on the face of the Warrant)

Exhibit 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO RULES 13a-14(a) OR 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Robert Spignesi, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Rapid Micro Biosystems, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 12, 2025

By: /s/ Robert Spignesi
Name: Robert Spignesi
Title: Chief Executive Officer
(*principal executive officer*)

Exhibit 31.2

**CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO RULES 13a-14(a) OR 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Sean Wirtjes, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Rapid Micro Biosystems, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 12, 2025

By: /s/ Sean Wirtjes
Name: Sean Wirtjes
Title: Chief Financial Officer
(principal financial officer and principal accounting officer)

Exhibit 32.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the quarterly report of Rapid Micro Biosystems, Inc. (the "Company") on Form 10-Q for the period ended June 30, 2025 (the "Report"), as filed with the Securities and Exchange Commission on the date hereof, I, the undersigned, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to the best of my knowledge, that:

(1) The Report fully complies with the requirements of Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 12, 2025

By: /s/ Robert Spignesi
Name: Robert Spignesi
Title: Chief Executive Officer
(principal executive officer)

Exhibit 32.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the quarterly report of Rapid Micro Biosystems, Inc. (the "Company") on Form 10-Q for the period ended June 30, 2025 (the "Report"), as filed with the Securities and Exchange Commission on the date hereof, I, the undersigned, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to the best of my knowledge, that:

(1) The Report fully complies with the requirements of Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 12, 2025

By: /s/ Sean Wirtjes
Name: Sean Wirtjes
Title: Chief Financial Officer
(principal financial officer and principal accounting officer)