



April 1, 2025

Dear Shareholder:

You are cordially invited to attend the 2025 Annual Meeting of Shareholders of MKS Instruments, Inc. to be held on Monday, May 12, 2025 at 10:00 a.m., Eastern Time, at our headquarters at 2 Tech Drive, Suite 201, Andover, Massachusetts 01810.

The attached notice of Annual Meeting and proxy statement describe the business to be transacted at the Annual Meeting and provide additional information about us that you should know when voting your shares. The principal business at the Annual Meeting will be (i) the election of two Class II Directors, each for a three-year term, (ii) the approval of an amendment to our Restated Articles of Organization, as amended, to lower the voting requirement for approval of certain matters from a supermajority to a simple majority voting standard, (iii) the approval of an amendment to our Second Amended and Restated By-Laws to lower the voting requirement for approval of an amendment to our By-Laws from a supermajority to a simple majority voting standard, (iv) the approval of an amendment to our Restated Articles of Organization, as amended, to change our name to MKS Inc., (v) the approval, on an advisory basis, of executive compensation, and (vi) the ratification of the selection of PricewaterhouseCoopers LLP as our independent registered public accounting firm for the year ending December 31, 2025.

Whether or not you plan to attend the Annual Meeting, please carefully review the attached proxy materials and take the time to cast your vote.

On behalf of MKS, I would like to express our appreciation for your continued interest in our Company.

Sincerely,

JOHN T.C. LEE
President and Chief Executive Officer

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MKS INSTRUMENTS, INC.
2 Tech Drive, Suite 201
Andover, Massachusetts 01810

NOTICE OF 2025 ANNUAL MEETING OF SHAREHOLDERS
TO BE HELD ON MONDAY, MAY 12, 2025 at 10:00 A.M. EASTERN TIME

To our Shareholders:

The 2025 Annual Meeting of Shareholders of MKS INSTRUMENTS, INC., a Massachusetts corporation, will be held on Monday, May 12, 2025 at 10:00 a.m., Eastern Time, at our headquarters at 2 Tech Drive, Suite 201, Andover, Massachusetts 01810, for the following purposes:

1. The election of two Class II Directors, each for a three-year term;
2. The approval of an amendment to our Restated Articles of Organization, as amended, to lower the voting requirement for approval of certain matters from a supermajority to a simple majority voting standard;
3. The approval of an amendment to our Second Amended and Restated By-Laws to lower the voting requirement for approval of an amendment to our By-Laws from a supermajority to a simple majority voting standard;
4. The approval of an amendment to our Restated Articles of Organization, as amended, to change our name to MKS Inc.;
5. The approval, on an advisory basis, of executive compensation; and
6. The ratification of the selection of PricewaterhouseCoopers LLP as our independent registered public accounting firm for the year ending December 31, 2025.

The shareholders will also act on any other business as may properly come before the meeting.

We provide access to our proxy materials over the Internet under the U.S. Securities and Exchange Commission's "notice and access" rules. As a result, we mail to our shareholders a Notice of Internet Availability of Proxy Materials, which we refer to as the Notice. We are mailing the Notice on or about April 1, 2025, and it contains instructions on how to access the proxy statement and our Annual Report for the fiscal year ended December 31, 2024, which we refer to as the 2024 Annual Report, over the Internet. The Notice also contains instructions on how our shareholders can receive a paper copy of our proxy materials, including this proxy statement, our 2024 Annual Report, and a form of proxy card or voting instruction card. All shareholders who do not receive the Notice, including shareholders who have previously requested to receive paper copies of proxy materials, will receive a paper copy of the proxy materials by mail unless they have previously requested delivery of proxy materials electronically.

The Board of Directors has fixed the close of business on March 4, 2025 as the record date for the determination of shareholders entitled to notice of, and to vote at, the Annual Meeting and any adjournment or postponement thereof. Your vote is important no matter how many shares you own. Whether or not you expect to attend the meeting, we urge you to vote your shares.

If you are a shareholder of record, you may vote by using the Internet or calling the toll-free telephone number as described in the instructions included in your Notice, or, if you received a paper copy of the proxy materials, by completing, signing, dating, and returning your proxy card or voting instruction card. If you are a beneficial shareholder (meaning the shares you own are held in "street name" by a bank, broker, or other nominee), you may vote by following the instructions your broker, bank, or other nominee provides to you. Your prompt response is necessary to ensure that your shares are represented at the meeting. You can change your vote and revoke your proxy any time before the polls close at the meeting by following the procedures described in the accompanying proxy statement.

By Order of the Board of Directors,

A handwritten signature in black ink that reads "Kathleen F. Burke".

KATHLEEN F. BURKE
Secretary

Andover, Massachusetts
April 1, 2025

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MKS INSTRUMENTS, INC.
2 Tech Drive, Suite 201
Andover, Massachusetts 01810

PROXY STATEMENT

This proxy statement is furnished in connection with the solicitation of proxies by the Board of Directors of MKS Instruments, Inc., a Massachusetts corporation, for use at the 2025 Annual Meeting of Shareholders to be held on Monday, May 12, 2025 at 10:00 a.m., Eastern Time, at our headquarters at 2 Tech Drive, Suite 201, Andover, Massachusetts 01810, and at any adjournment or postponement thereof, which we refer to as the 2025 Annual Meeting. References in this proxy statement to “we,” “us,” the “Company,” or “MKS” refer to MKS Instruments, Inc. and its consolidated subsidiaries.

All proxies will be voted in accordance with the applicable shareholder’s instructions. If no choice is specified in the proxy, the shares will be voted in accordance with the recommendations of our Board of Directors. The Board of Directors recommends that you vote FOR each director nominee and FOR each of Proposals 2, 3, 4, 5, and 6. Any proxy may be revoked by a shareholder at any time before its exercise by delivery of written revocation to the Secretary of MKS or by voting during the 2025 Annual Meeting. Attendance at the 2025 Annual Meeting will not in itself be deemed to revoke a proxy.

We provide access to our proxy materials over the Internet under the “notice and access” rules of the U.S. Securities and Exchange Commission, which we refer to as the SEC. As a result, we mail to our shareholders a Notice of Internet Availability of Proxy Materials, which we refer to as the Notice. We are mailing the Notice on or about April 1, 2025. The Notice contains instructions on how to access the proxy statement and our Annual Report for the fiscal year ended December 31, 2024, which we refer to as the 2024 Annual Report, over the Internet. The Notice also contains instructions on how our shareholders can receive a paper copy of our proxy materials, including this proxy statement, our 2024 Annual Report, and a form of proxy card or voting instruction card. All shareholders who do not receive the Notice, including shareholders who have previously requested to receive paper copies of proxy materials, will receive a paper copy of the proxy materials by mail unless they have previously requested delivery of proxy materials electronically.

Important notice regarding the availability of proxy materials for the 2025 Annual Meeting to be held on May 12, 2025: This proxy statement and the 2024 Annual Report are available for viewing, printing, and downloading free of charge at investor.mks.com/annual-meeting-materials.

VOTING OF SECURITIES AND VOTES REQUIRED

At the close of business on March 4, 2025, the record date for the determination of shareholders entitled to notice of, and to vote at, the 2025 Annual Meeting, there were issued and outstanding and entitled to vote 67,447,167 shares of our common stock, no par value per share, which we refer to as our Common Stock. Each outstanding share entitles the record holder to one vote on each matter submitted at the 2025 Annual Meeting.

In order to transact business at the 2025 Annual Meeting, we must have a quorum. Under our Second Amended and Restated By-Laws, or our By-Laws, the holders of a majority of the shares of Common Stock issued and outstanding and entitled to vote at the 2025 Annual Meeting shall constitute a quorum for the transaction of business at the 2025 Annual Meeting. Shares of Common Stock held by shareholders present at the 2025 Annual Meeting or represented by proxy (including “broker non-votes” and shares that abstain or do not vote with respect to a particular proposal to be voted upon) will be counted for purposes of determining whether a quorum exists at the 2025 Annual Meeting. If a quorum is not present, the meeting will be adjourned until a quorum is obtained.

For the election of directors (Proposal 1), you may vote “For” or “Withhold” for each director nominee. The affirmative vote of the holders of a plurality of the votes cast on the matter is required for the election of directors; provided, however, any director nominee who receives a greater number of withhold votes than affirmative votes, which we refer to as a Majority Withheld Vote, in an uncontested election must offer to tender to the Board of Directors his or her resignation promptly following the certification of election results. The Board of Directors must accept or reject a resignation within 90 days following the certification of election results and publicly disclose its decision. Accordingly, the nominees who receive the highest number of votes of the shares present, in person or by proxy, and entitled to vote shall be elected to the available Class II Director positions, and in the event any nominee receives a Majority Withheld Vote, the resignation policy will apply as summarized here and as set forth

in Section B.4 of our Corporate Governance Guidelines, which are posted on our website at www.mks.com/corporate-governance under Corporate Governance Documents.

For the amendment to our Restated Articles of Organization, as amended, or our Articles, to lower the voting requirement for approval of certain matters from a supermajority to a simple majority voting standard (Proposal 2), the amendment to our By-Laws to lower the voting requirement for approval of an amendment to our By-Laws from a supermajority to a simple majority voting standard (Proposal 3), the amendment to our Articles to change our name to MKS Inc. (Proposal 4), the advisory vote on executive compensation (Proposal 5), and the ratification of PricewaterhouseCoopers LLP (Proposal 6), you may vote "For," "Against," or "Abstain." Because our Board of Directors has approved the amendments to our Articles as described in Proposals 2 and 4, each of Proposal 2 and Proposal 4 requires the affirmative vote of the holders of a majority of our outstanding shares entitled to vote on the matter. Proposal 3 requires the affirmative vote of the holders of two-thirds of our outstanding shares entitled to vote on the matter. Proposals 5 and 6 require the affirmative vote of the holders of a majority of the votes cast on the matter. Proposal 5 is a non-binding proposal.

Shares held by shareholders who abstain from voting as to a particular matter, and "broker non-votes," which are shares held in "street name" by banks, brokers, or other nominees who indicate on their proxies that they do not have discretionary authority to vote such shares as to a particular matter, are not counted as votes with respect to any of the items to be voted on at the 2025 Annual Meeting. We expect that brokers will not have discretionary authority to vote on Proposals 1, 2, 3, and 5 and will have discretionary authority to vote on Proposals 4 and 6. Abstentions and broker non-votes, if any, will have no effect on Proposals 1, 5, and 6, and will have the effect of a vote against Proposals 2, 3, and 4. If the shares you own are held in street name by a bank, broker, or other nominee, then your bank, broker, or other nominee, as the record holder of your shares, is required to vote your shares according to your instructions. In order to vote your shares, you will need to follow the instructions your bank, broker, or other nominee provides to you.

For additional details about voting and attending the 2025 Annual Meeting, see "Voting and Meeting Information" below.

VOTING AND MEETING INFORMATION

The following sections provide additional details about voting and attending the 2025 Annual Meeting.

Voting Your Shares

If you are a **shareholder of record**, you may vote your shares in any of the following ways:

Internet



You may vote your shares in advance of the 2025 Annual Meeting via the Internet by accessing our online portal at www.proxyvote.com. Proxies submitted via the Internet must be received by 11:59 p.m. Eastern Time on May 11, 2025.

Telephone



You may vote your shares in advance of the 2025 Annual Meeting telephonically by calling 1-800-690-6903 and following the instructions on your proxy card. Proxies submitted by telephone must be received by 11:59 p.m. Eastern Time on May 11, 2025.

Mail



If you received a paper copy of the proxy materials, you may vote your shares in advance of the 2025 Annual Meeting by completing, signing, dating, and returning your proxy card or voting instruction card. Proxies submitted via mail must be received by May 11, 2025.

In-Person at the 2025 Annual Meeting



You may vote your shares during the 2025 Annual Meeting by (i) if you received a paper copy of the proxy materials, completing your proxy card or voting instruction card or (ii) if you did not receive a paper copy of the proxy materials, completing a ballot to be provided by the Company at the 2025 Annual Meeting. If you have previously submitted your proxy and you vote your shares in accordance with these instructions during the 2025 Annual Meeting, your previously submitted proxy will be revoked.

If you are a **beneficial shareholder** (meaning the shares you own are held in “street name” by a bank, broker, or other nominee), your bank, broker, or other nominee will provide a vote instruction form to you with this proxy statement, which you may use to direct how your shares will be voted. **You must instruct your bank, broker, or other nominee how to vote with respect to the election of directors, the amendment to our Articles to lower the voting requirement for approval of certain matters from a supermajority to a simple majority voting standard, the amendment to our By-Laws to lower the voting requirement for approval of an amendment to our By-Laws from a supermajority to a simple majority voting standard, and the executive compensation advisory vote; your bank, broker, or other nominee cannot exercise its discretion to vote on these matters on your behalf.** Many banks and brokers offer the option of voting over the Internet or by telephone, instructions for which would be provided by your bank or broker on your vote instruction form. You may only vote your shares in-person at the 2025 Annual Meeting if you obtain a proxy issued in your name from your bank, broker, or other nominee. For instructions on how to revoke or change your vote, you should contact your bank, broker, or other nominee.

Attending the 2025 Annual Meeting

Admission of shareholders of record and beneficial shareholders to the 2025 Annual Meeting will begin at 9:45 a.m. Eastern Time. Shareholders of record who wish to attend the meeting should be prepared to present photo identification and beneficial shareholders who wish to attend the meeting should be prepared to present photo identification and a letter from their bank, broker, or other nominee confirming beneficial ownership of shares of our Common Stock.

Proxy Materials

You can view and download our proxy materials and 2024 Annual Report at our online portal, available to shareholders at www.proxyvote.com.

Shareholder List

During the 2025 Annual Meeting, a complete list of our shareholders of record will be available for viewing by shareholders for any purpose germane to the 2025 Annual Meeting. Shareholders submitting any such request will be asked to provide the 16-digit control number found on their proxy card, voting instruction card, or Notice.

Whether or not you plan to attend the 2025 Annual Meeting, we urge you to vote your shares over the Internet or by telephone, or complete, sign, date, and return the proxy card in the accompanying postage-prepaid envelope if you received a printed proxy card. A prompt response will greatly facilitate arrangements for the 2025 Annual Meeting and your cooperation will be appreciated. Shareholders who attend the 2025 Annual Meeting may vote their shares at the 2025 Annual Meeting even if they have previously sent in their proxies.

PROPOSAL 1 – ELECTION OF DIRECTORS

Our Board of Directors is currently divided into three classes. The term of the Class II Directors expires at the 2025 Annual Meeting, the term of the Class III Directors expires at the 2026 Annual Meeting of Shareholders, or the 2026 Annual Meeting, and the term of the Class I Directors expires at the 2027 Annual Meeting of Shareholders. Pursuant to our By-Laws, our Board of Directors will be declassified over a three-year period beginning with the 2026 Annual Meeting, resulting in the Board being fully declassified (and all directors standing for annual elections) beginning with the 2028 Annual Meeting of Shareholders, or the 2028 Annual Meeting.

Our Board of Directors, upon the recommendation of our Nominating and Corporate Governance Committee, has nominated John T.C. Lee and Jacqueline F. Moloney to serve as Class II Directors for a term to expire at the 2028 Annual Meeting. Dr. Lee and Dr. Moloney currently serve as directors. Each nominee has consented to being named herein and, if elected, to serve as a director until his or her successor is duly elected and qualified.

Michelle M. Warner, who currently serves as a Class II Director, is not standing for re-election to the Board of Directors. The Board of Directors previously approved a decrease in the size of the Board of Directors effective immediately prior to the 2025 Annual Meeting, which eliminates the vacancy that would have existed at the 2025 Annual Meeting. Proxies cannot be voted for a greater number of persons than the number of nominees named in this proxy statement.

Shares represented by all proxies received by the Board of Directors and not so marked as to withhold authority to vote for an individual director will be voted (unless one or more nominees are unable or unwilling to serve) for the election of the nominees named below. The Board of Directors expects that each of the nominees named below will be available for election, but if either of them is not a candidate at the time the election occurs, it is intended that such proxies will be voted for the election of a substitute nominee to be designated by the Board of Directors.

THE BOARD OF DIRECTORS BELIEVES THAT APPROVAL OF THE ELECTION OF JOHN T.C. LEE AND JACQUELINE F. MOLONEY TO SERVE AS CLASS II DIRECTORS IS IN THE BEST INTERESTS OF MKS AND OUR SHAREHOLDERS AND THEREFORE RECOMMENDS A VOTE “FOR” BOTH NOMINEES.

DIRECTORS

Set forth below are the names and ages of each member of our Board of Directors (including those who are nominees for election as Class II Directors) and the positions and offices they hold with the Company. In addition, set forth below are biographies for each continuing director and director nominee, which include information about each individual’s specific experience, qualifications, attributes, or skills that led the Board of Directors to conclude that he or she should serve as a director of MKS. Information with respect to the number of shares of Common Stock beneficially owned by each individual, directly or indirectly, as of March 4, 2025, appears in this proxy statement under the heading “Security Ownership of Certain Beneficial Owners and Management.”

Name	Age	Position	Audit Committee	Compensation Committee	Nominating and Corporate Governance Committee	Class to Which Director Currently Belongs
Rajeev Batra	57	Director				I
Peter J. Cannone III	59	Director				III
Gerald G. Colella	68	Chair				I
Joseph B. Donahue	66	Director				III
Wissam G. Jabre	55	Director				III
John T.C. Lee*	62	Director, President and CEO				II
Jacqueline F. Moloney*	71	Lead Director				II
Elizabeth A. Mora	64	Director				I
Michelle M. Warner	58	Director				II

 Chair

 Member

* Nominee for election at the 2025 Annual Meeting



Rajeev Batra

Chairman and Co-Founder, AxD; Former Siemens U.S. Executive

Age: **57**

Standing Committees: **Compensation** (Chair); **Nominating and Corporate Governance**

Director since: **2018**

Independent

Background

Mr. Batra is a former Siemens U.S. executive who co-founded and has served as Chairman of AxD LLC, a consulting firm specializing in automation and digitization, since 2024. Over his 30+ year career at Siemens, Mr. Batra progressed from an individual contributor in 1993 to a wide range of high-level management, strategy and sales positions, culminating in his role as President of Siemens Digital Industries U.S., an innovation pioneer in industrial automation and digitalization in the discrete and process industries, from 2019 to 2023. He also served as President of Siemens Industry Inc. from 2023 to 2024 and a member of the Siemens U.S. Managing Board from 2021 to 2024, as well as President of the Digital Factory Division from 2014 to 2019; President of the Industry Automation Division from 2009 to 2014; Vice President and General Manager of the Automation & Motion Division from 2007 to 2009; and Vice President and General Manager of the Automotive & Aerospace Vertical Markets from 2002 to 2007, all for Siemens U.S. Mr. Batra has served as an advisory board member of Advanced Technology Services, Inc., a private, global services provider for industrial maintenance, technology and parts, since 2024, a director of Amsted Industries, a private, global manufacturer of industrial components, since 2019, and a member of the Executive Committee of the Manufacturers Alliance, a non-profit manufacturing leadership network, since 2016. Mr. Batra previously served as a director of Shapeways Holdings, Inc. from 2022 to 2024 and Chair and Member of the Board of Governors of the National Electrical Manufacturers Association (NEMA), a trade association of electrical equipment manufacturers, from 2014 to 2023. Mr. Batra received a B.S. in Electrical Engineering from Lawrence Technological University and an M.B.A. from the University of Michigan.

Key Qualifications as Determined by our Board of Directors

- Significant management and leadership experience, cultivated over 25+ years in senior roles in broad global industrial markets
- Extensive technology background, including in automation, industrial software, digitalization, OT/IT convergence, cybersecurity, and I4.0/IoT
- Proven ability to develop and grow product, systems, digital services, and turnkey businesses in the Process and Discrete Markets, and founding Siemens' Automotive & Aerospace Vertical Markets in the United States



Peter J. Cannone III

Former Chairman and CEO, Demand Science

Age: **59**

Standing Committees: **Audit**

Director since: **2021**

Independent

Background

Mr. Cannone served as Chairman and Chief Executive Officer of Demand Science Group, LLC, a leading global revenue intelligence platform delivering a comprehensive suite of business-to-business solutions, from 2020 to 2024, capping a long career as a senior executive for large and mid-market public and private technology companies in both growth and turnaround modes. His previous experience includes serving as General Partner of Optum Ventures, a healthcare-focused venture capital firm, from 2019 to 2020; Chief Executive Officer of UpCurve, Inc., a management company, where he oversaw portfolio firms that provided critical digital, cloud, financial and healthcare solutions to small and midsize businesses, from 2018 to 2019; Chief Executive Officer of ThriveHive, a provider of digital marketing services and one of UpCurve's portfolio firms, from 2015 to 2019; President and Chief Executive Officer of OnForce, a leading vendor of SaaS technology-enabled workforce solutions, from 2007 to 2014; and a member of senior management at PC Connection, Inc. and MicroWarehouse from 1997 to 2006. Mr. Cannone holds a B.A. in Economics from the University of Massachusetts, Amherst and an M.B.A. from Rensselaer Polytechnic Institute.

Key Qualifications as Determined by our Board of Directors

- Proven leader of public and private technology companies with 25+ years of experience in executive and senior management roles
- Direct knowledge of and experience in mergers and acquisitions, capital raising, marketing, and financial planning and analysis
- Track record of building high-performance teams and developing executives



Gerald G. Colella

Chair of the Board and Former CEO, MKS Instruments

Age: **68**

Director since: **2014**

Independent

Other Current Public Company Directorships: **Columbus McKinnon Corporation** (Chair of the Board)

Background

After joining MKS in 1983, Mr. Colella progressed from positions in materials planning and logistics to leading our global business and service operations before assuming senior management roles, including Vice President and Chief Business Officer, President and Chief Operating Officer and, ultimately, Chief Executive Officer. As CEO from 2014 until his retirement in 2020, he steered MKS through a period of unprecedented growth, increasing MKS' revenue from approximately \$780 million to over \$2 billion. Since 2020, Mr. Colella has served as Chair of our Board of Directors. In addition to the other current public company directorship listed above, Mr. Colella served as a director of GCP Applied Technologies Inc. from 2017 to 2020. Mr. Colella holds a B.A. in Secondary Education from the University of Massachusetts and an M.B.A. from Southern New Hampshire University.

Key Qualifications as Determined by our Board of Directors

- Deep insights into our business, industries and markets as a result of 35+ year career at MKS, culminating as CEO
- Direct knowledge of and experience in operations, marketing, business strategy, and growth, organically and through acquisitions
- Extensive background in leadership, management, and governance at the most senior levels of a public company



Joseph B. Donahue

Former EVP and COO, TE Connectivity

Age: 66

Standing Committees: **Audit**

Director since: **2020**

Independent

Background

Mr. Donahue served as Executive Vice President and Chief Operating Officer of TE Connectivity Ltd. (formerly Tyco Electronics Ltd.), a publicly held manufacturer of connectors, sensors, and minimally invasive surgical assemblies for the automotive, industrial, medical, aerospace, and communications/consumer markets, from 2011 until 2017. In this role, Mr. Donahue was responsible for all aspects of corporate global operations, including supply chain, manufacturing, environment, health and safety, facilities, technology, and lean process improvement. He concurrently served as President of the Network Solutions segment of TE Connectivity from 2012 until the divestiture of that business in 2015. He also served at TE Connectivity as President, Transportation Solutions segment from 2010 through 2012, President of the Global Automotive Division from 2008 through 2009, and Senior Vice President of the same division beginning in 2007. From 2006 to 2007, he was Group Vice President, Wood Coatings Division, for Valspar Corporation, a manufacturer of commercial and industrial coatings. Over the prior 16 years, Mr. Donahue held a variety of senior management roles at TE Connectivity and AMP Incorporated. Mr. Donahue has served as a director of Kraton Corporation, a private, global sustainable producer of specialty polymers and high-value biobased products derived from pine wood pulping co-products, since 2023. Mr. Donahue holds a B.S. in Biological Sciences and an M.S. in Plastics Engineering from the University of Massachusetts Lowell. He also holds an M.S. in Manufacturing Systems Engineering from Lehigh University.

Key Qualifications as Determined by our Board of Directors

- Extensive experience in executive leadership roles for companies serving multiple markets, including industrials
- Valuable insights into managing all aspects of global operations and overseeing mergers and acquisitions
- Deep understanding of international organizations, having lived and worked in Japan, China, and Germany



Wissam G. Jabre

EVP and CFO, NetApp

Age: 55

Standing Committees: **Audit**

Director since: **2024**

Independent

Background

Mr. Jabre has served as Executive Vice President and Chief Financial Officer of NetApp, Inc., an intelligent data infrastructure company that provides unified data storage, integrated data services and cloud operations solutions, since March 2025. Previously, Mr. Jabre served as Executive Vice President and Chief Financial Officer of Western Digital Corporation, a leading developer, manufacturer, and provider of data storage devices based on both HDD and NAND flash technologies, from 2022 to February 2025. Prior to that, Mr. Jabre served as Senior Vice President and Chief Financial Officer of Dialog Semiconductor Plc, a provider of semiconductor-based system solutions, from 2016 until it was acquired by Renesas Electronics Corporation in 2021. Mr. Jabre previously served as Corporate Vice President of Finance at Advanced Micro Devices, Inc., from 2014 to 2016. Prior to 2014, he served in various finance leadership positions at Freescale Semiconductor, Inc. (acquired by NXP Semiconductors N.V.). Mr. Jabre holds a B.E. in Electrical Engineering from the American University of Beirut and an M.B.A. from Columbia Business School. He is a CFA[®] charterholder.

Key Qualifications as Determined by our Board of Directors

- Demonstrated leader in financial oversight, risk management, and strategic planning as CFO of three major companies
- Strong familiarity with our business from 20+ years of experience in the semiconductor industry
- Valuable combination of financial and accounting expertise and engineering background



John T.C. Lee

President and CEO, MKS Instruments

Age: **62**

Other Current Public Company Directorships: **Cognex Corporation**

Director since: **2020**

Background

Dr. Lee has served in progressive leadership roles since joining MKS in 2007, culminating in his appointment as our President and Chief Executive Officer in 2020. He previously served as our President from 2019 to 2020; our President and Chief Operating Officer from 2018 to 2019; our Senior Vice President and Chief Operating Officer from 2016 to 2018; our Senior Vice President of Business Units from 2014 to 2016; our Senior Vice President, Controls, HPS (our integrated process solutions business) and Pressure, Flow, Measurement and Control (PFMC) from 2012 to 2013; our Senior Vice President, Controls and PFMC from 2011 to 2012, and our Group Vice President, Controls and Information Technology products from 2007 to 2011. Prior to MKS, Dr. Lee served in leadership roles at Applied Materials, a global leader providing processing equipment to the semiconductor and display markets, from 2002 to 2007, including Managing Director of Factory Technology and Projects within the Solar Business Group and General Manager of the Cleans Product Group and the Maydan Technology Center. Prior to Applied Materials, Dr. Lee served as Research Director of the Silicon Fabrication Research Department at Lucent Technologies, Inc., a voice, data, and video communications provider, from 1997 to 2002 and as a Member of the Technical Staff in the Plasma Processing Research Group within Bell Labs from 1991 to 1997. In addition to the other current public company directorship listed above, he has served as Co-Chair of the Mass Opportunity Alliance since 2024, Chair of the Massachusetts High Technology Council (MHTC) since 2023, and a member of the Executive Committee of the Board of Directors of MHTC since 2021. He previously served as Vice Chair of MHTC from 2021 to 2023. Dr. Lee holds a B.S. from Princeton University and both an M.S.CEP and a Ph.D. from the Massachusetts Institute of Technology, all in Chemical Engineering.

Key Qualifications as Determined by our Board of Directors

- Deep understanding of our extensive and complex product portfolio, driven by strong technical education and background
- Unique leadership perspective from progressive leadership roles at MKS and Applied Materials, one of our largest customers
- Direct knowledge of and experience in engineering, operations, mergers and acquisitions, and business development



Jacqueline F. Moloney

Professor and Chancellor Emerita, the University of Massachusetts Lowell

Lead Director

Age: **71**

Standing Committees: **Compensation; Nominating and Corporate Governance** (Chair)

Director since: **2016**

Other Current Public Company Directorships: **Enterprise Bancorp, Inc.**

Independent

Background

Dr. Moloney is a Professor and Chancellor Emerita at the University of Massachusetts Lowell who has been recognized as a national leader in innovation and entrepreneurship in higher education. During a nearly 40-year career at UMass Lowell, a public university with approximately 17,000 students, Dr. Moloney served as Chancellor from 2015 to 2022, Executive Vice Chancellor from 2007 to 2015, and Dean of Online and Continuing Education from 1994 to 2007, in addition to serving as a Professor since 1986. Dr. Moloney has over 35 years of experience as a leader in non-profit organizations. In recognition of her leadership and business acumen, she was recognized in 2024 as one of the top five college presidents since 2000 by the American Enterprise Institute. In addition, she and UMass Lowell were recognized in the top 20 of the Boston Globe's Top 100 Women-Led Businesses for five consecutive years, she was recognized as one of seven prominent "Women Who Mean Business" by the Boston Business Journal, she was selected by the Massachusetts Technology Leadership Council as a finalist for the CEO of the Year award in 2018 and 2019, and she was named Chief Executive HR Champion by the College and University Professional Association for Human Resources in 2018. In addition to the other current public company directorship listed above, she served as a member of the Board of Directors of the Massachusetts High Technology Council from 2015 to 2022. Dr. Moloney holds a B.S. in Sociology from UMass Lowell, an M.A. in Social Psychology from Goddard College, and an Ed.D. from UMass Lowell.

Key Qualifications as Determined by our Board of Directors

- Valuable knowledge of and insights into emerging strategic planning and management and business trends
- Deep history of working with business and industry, including establishing incubators at UMass Lowell for early-stage companies
- Strong leadership and interpersonal skills and business acumen



Elizabeth A. Mora

Former Chief Administrative Officer, The Charles Stark Draper Laboratory

Age: **64**

Standing Committees: **Audit** (Chair); **Compensation**

Director since: **2012**

Other Current Public Company Directorships: **Inogen, Inc.** (Chair of the Board); **Limoneira Company**

Independent

Background

Over her 30+ year career, Ms. Mora established herself as a financial and accounting expert and business operations leader, culminating in her role as Chief Administrative Officer of The Charles Stark Draper Laboratory, a non-profit engineering innovation company, from 2016 to 2020. Ms. Mora was previously Chief Financial Officer of Draper Labs; Chief Financial Officer and Vice President for Finance of Harvard University; Associate Vice President, Research Administration and the Director of the Office of Sponsored Research of Harvard University; and a founding member of the National Regulatory Consulting Practice at Coopers & Lybrand (now PricewaterhouseCoopers LLP), where she began her career. In addition to the other current public company directorships listed above, Ms. Mora served as a director of NUBURU, Inc. from 2023 to January 2025, a member of the Advisory Board of The Association of LGBTQ+ Corporate Directors from 2022 to 2024, a director of Everest Consolidator Acquisition Corporation from 2021 to 2024 and a director of GCP Applied Technologies Inc. from 2016 to 2020. Ms. Mora is a Certified Public Accountant and holds a B.A. in Political Science from the University of California, Berkeley and an M.B.A. from the Simmons College Graduate School of Management.

Key Qualifications as Determined by our Board of Directors

- Financial and accounting expert who served as the CFO of two major organizations, Draper Labs and Harvard University
- Seasoned director with substantial experience navigating a range of public company corporate governance and regulatory issues
- Critical insights into cybersecurity matters through prior oversight of IT at Draper Labs, a leader in cybersecurity threat detection

Director Skills, Experience, and Background

MKS enables technologies that transform our world, delivering foundational technology solutions to leading edge semiconductor manufacturing, electronics and packaging, and specialty industrial applications. As discussed below under the heading "Corporate Governance – Director Candidates," the Nominating and Corporate Governance Committee is responsible for evaluating the appropriate skills, experience, and background that MKS seeks in Board members in the context of our business and the existing composition of the Board of Directors. This evaluation includes numerous factors, such as integrity, business acumen, knowledge of our business and industries, effectiveness, experience, diligence, conflicts of interest, and the ability to act in the interests of all shareholders.

Listed below are the skills and experience that we consider important for our directors given our current business and organizational structure. The continuing directors' and director nominees' biographies above and the matrix below note each director's and director nominee's relevant experience, qualifications, and skills relative to this list.

Skills/Competencies

- Domain Expertise

We serve a diverse base of customers across our semiconductor, electronics and packaging, and specialty industrial markets. Directors with education and experience in these end markets provide valuable perspectives on research and development, competing products and solutions, manufacturing and assembly, and market dynamics and trends.

- Mergers and Acquisitions/Business Development

Directors with experience in mergers and acquisitions and business development provide critical insights into developing and implementing strategies for growing our business, including skills in assessing and analyzing the “fit” of a proposed acquisition with our long-term strategy, valuing transactions, assessing integration plans, and overseeing integration activities for completed acquisitions into our existing operations.

- Executive Leadership

Directors who have served in executive leadership positions have the experience and perspective to analyze, shape, and oversee the execution of important operational and policy issues.

- Experienced Public Company Director

Directors with board experience at other public companies understand the dynamics and operation of a corporate board, the relationship of a public company board to the chief executive officer and other executive officers, the legal and regulatory landscape in which public companies must operate, and how to oversee an ever-changing mix of strategic, operational, and compliance-related matters.

- Global Business

We are a global organization with manufacturing, research and development, and sales offices in over 35 countries. We sell our products to thousands of customers worldwide and a significant portion of our revenues are from sales to customers in international markets. Directors with international experience provide valuable business, regulatory, and cultural perspectives regarding many important aspects of our business.

- Financial Literacy

Directors with experience analyzing and utilizing financial information to make informed business decisions assist the Board of Directors with advising on and overseeing our capital structure, our financing and investing activities as well as our financial reporting and internal controls.

- Technology/Innovation

Directors with experience in deploying innovative technologies provide critical insights into navigating our markets and industries, many of which are subject to rapid technological advancement that requires frequent innovation.

- Risk Management/Governance

Directors with experience in risk management and governance assist the Board of Directors in fulfilling its oversight responsibilities regarding a range of regulatory, compliance, and risk management matters, including with respect to data privacy, cybersecurity, corporate governance, environmental and social matters.

- Marketing/Sales

Directors with marketing, brand management, and sales experience provide expertise and guidance as we seek to expand the markets in which we compete, grow sales, and strengthen our brands.

- Manufacturing/Operations

As we operate in many cyclical markets, with rapid demand changes, and have a broad footprint of international manufacturing operations, understanding of and experience with manufacturing and other operational processes are valuable assets to our Board of Directors.

Board Skills Matrix

The below matrix notes the experience, qualifications, and skills of each continuing director and director nominee relative to the skills and experience we consider important for our directors.

	Directors							
	1	2	3	4	5	6	7	8
	Rajeev Batra	Peter J. Cannone III	Gerald G. Colella	Joseph B. Donahue	Wissam G. Jabre	John T.C. Lee	Jacqueline F. Moloney	Elizabeth A. Mora
Skills/Competencies								
• Domain Expertise	✓		✓	✓	✓	✓		
• M&A/Business Development		✓	✓	✓	✓	✓	✓	✓
• Executive Leadership	✓	✓	✓	✓	✓	✓	✓	✓
• Experienced Public Company Director	✓		✓			✓	✓	✓
• Global Business	✓	✓	✓	✓	✓	✓	✓	
• Financial Literacy	✓	✓	✓	✓	✓	✓	✓	✓
• Technology/Innovation	✓	✓	✓	✓	✓	✓	✓	✓
• Risk Management/Governance	✓	✓	✓	✓	✓	✓	✓	✓
• Marketing/Sales	✓	✓	✓					
• Manufacturing/Operations	✓		✓	✓	✓	✓		
Personal Demographics								
• Tenure (years)	7	4	11	5	0	5	9	13
• Age	57	59	68	66	55	62	71	64

PROPOSAL 2 – AMENDMENT TO OUR RESTATED ARTICLES OF ORGANIZATION, AS AMENDED, TO LOWER VOTING REQUIREMENT FOR CERTAIN MATTERS FROM A SUPERMAJORITY TO A SIMPLE MAJORITY VOTING STANDARD

Under the Massachusetts Business Corporation Act, unless a corporation's articles of organization provide for a different percentage, the affirmative vote of the holders of at least two-thirds of the outstanding shares of the corporation entitled to vote is required to amend the corporation's articles of organization; approve a sale, lease, exchange, or otherwise dispose of all, or substantially all, of the corporation's property, otherwise than in the usual and regular course of business; approve a plan of merger or share exchange; approve a plan of domestication of the corporation to a foreign jurisdiction; approve a plan of entity conversion to a domestic or foreign other entity; and approve a proposal to dissolve the corporation.

Currently, our Articles require the vote of at least sixty-six and two-thirds percent (66 2/3%) of the shares outstanding and entitled to vote thereon to authorize any amendment to our Articles; the sale, lease or exchange of all or substantially all of our property and assets, including our goodwill; and an agreement of merger or consolidation, unless our Board of Directors has previously approved these matters, in which case the affirmative vote of the holders of a majority of our outstanding shares is required. Therefore, if our Board of Directors has not previously approved these matters, the supermajority default under state law is applicable to shareholder votes on these matters.

After careful consideration and review, our Board of Directors has determined, subject to shareholder approval, to amend our Articles to provide that a simple majority voting standard always applies to shareholder votes on these matters.

While our Board of Directors believes that these actions should not be taken without the support of a substantial proportion of our shareholders, our Board of Directors is committed to corporate governance best practices and effectively addressing issues that matter to our shareholders. In determining to recommend this amendment, our Board of Directors considered the view of shareholders who believe these supermajority voting provisions may impede accountability to shareholders. Our Board of Directors also considered the view of shareholders who suggested that a lower shareholder voting threshold could increase shareholders' ability to participate effectively in corporate governance. At the 2024 Annual Meeting of Shareholders, or the 2024 Annual Meeting, a significant majority of our shareholders approved a shareholder proposal asking us to implement a simple majority voting standard rather than the supermajority default under state law.

On February 10, 2025, the Board of Directors unanimously adopted resolutions approving and declaring the advisability of adopting an amendment to Article VI, Section 6C(d) of our Articles to effect this simple majority voting standard and recommended that shareholders approve the amendment by voting in favor of this proposal. The amendment provides that for any shareholder vote required in connection with:

- (i) an amendment to our Articles;
- (ii) a sale, lease, exchange, or other disposal of all, or substantially all, of our property, otherwise than in the usual and regular course of business;
- (iii) a plan of merger or share exchange;
- (iv) a plan of domestication of our Company to a foreign jurisdiction;
- (v) a plan of entity conversion to a domestic or foreign other entity; or
- (vi) a proposal to dissolve our Company,

the voting standard will be the affirmative vote of the holders of a simple majority of the outstanding shares of the Company entitled to vote on such matter.

If this proposal is approved by our shareholders, we intend to file Restated Articles of Organization with the Secretary of the Commonwealth of the Commonwealth of Massachusetts to effect this amendment promptly after the 2025 Annual Meeting.

The form of Restated Articles of Organization is attached as Appendix A to this Proxy Statement. In Appendix A, text stricken through indicates deletions and text that is underlined indicates additions to implement the proposed amendment. If this proposal is approved by our shareholders, the stricken text will not appear in the Restated Articles of Organization as filed with the Secretary of the Commonwealth of the Commonwealth of Massachusetts.

The above description of this amendment is qualified in its entirety by reference to the actual text of the Restated Articles of Organization set forth in Appendix A. The Restated Articles of Organization set forth in Appendix A also reflects the proposed change in name of the Company from "MKS Instruments, Inc." to "MKS Inc.", as described in Proposal 4 below. If Proposal 2 is approved by our shareholders but Proposal 4 is not approved by our shareholders, Article I of the Restated Articles of Organization will reflect the current name of the Company.

THE BOARD OF DIRECTORS BELIEVES THAT THE PROPOSAL TO AMEND OUR ARTICLES TO LOWER THE VOTING REQUIREMENT FOR CERTAIN MATTERS FROM A SUPERMAJORITY TO A SIMPLE MAJORITY VOTING STANDARD IS IN THE BEST INTERESTS OF MKS AND OUR SHAREHOLDERS AND THEREFORE RECOMMENDS A VOTE "FOR" THIS PROPOSAL.

PROPOSAL 3 – AMENDMENT TO OUR SECOND AMENDED AND RESTATED BY-LAWS TO LOWER VOTING REQUIREMENT FOR AN AMENDMENT TO OUR BY-LAWS FROM A SUPERMAJORITY TO A SIMPLE MAJORITY VOTING STANDARD

Our By-Laws currently require the affirmative vote of the holders of at least two-thirds of the outstanding shares of our Company entitled to vote to amend our By-Laws.

After careful consideration and review, our Board of Directors has determined, subject to shareholder approval, to amend our By-Laws to provide that a simple majority voting standard applies to shareholder votes on amendments to our By-Laws.

While our Board of Directors believes that an amendment to our By-Laws should not be made without the support of a substantial proportion of our shareholders, our Board of Directors is committed to corporate governance best practices and effectively addressing issues that matter to our shareholders. In determining to recommend this amendment, our Board of Directors considered the view of shareholders who believe this supermajority voting provision may impede accountability to shareholders. Our Board of Directors also considered the view of shareholders who suggested that a lower shareholder voting threshold could increase shareholders' ability to participate effectively in corporate governance. At the 2024 Annual Meeting, a significant majority of our shareholders approved a shareholder proposal asking us to implement a simple majority voting standard.

On February 10, 2025, our Board of Directors unanimously adopted resolutions approving and declaring the advisability of adopting this amendment to our By-Laws and recommended that shareholders approve the amendment by voting in favor of this proposal. The amendment provides that for any shareholder vote required to amend our By-Laws, the voting standard will be the affirmative vote of the holders of a simple majority of the outstanding shares of the Company entitled to vote on such matter.

If this proposal is approved by our shareholders, this amendment will become effective immediately.

The proposed amendment to Article VIII of our By-Laws is set forth in Appendix B to this Proxy Statement, and the full text of our current By-Laws immediately follows the proposed amendment set forth therein. The above description of this amendment is qualified in its entirety by reference to the actual text of the proposed amendment set forth in Appendix B.

THE BOARD OF DIRECTORS BELIEVES THAT THE PROPOSAL TO AMEND OUR BY-LAWS TO LOWER THE VOTING REQUIREMENT FOR AN AMENDMENT TO OUR BY-LAWS FROM A SUPERMAJORITY TO A SIMPLE MAJORITY VOTING STANDARD IS IN THE BEST INTERESTS OF MKS AND OUR SHAREHOLDERS AND THEREFORE RECOMMENDS A VOTE "FOR" THIS PROPOSAL.

PROPOSAL 4 – AMENDMENT TO OUR RESTATED ARTICLES OF ORGANIZATION, AS AMENDED, TO CHANGE OUR NAME TO MKS INC.

Our Board of Directors has approved, and recommends that shareholders approve, an amendment to our Articles to change the name of the Company from “MKS Instruments, Inc.” to “MKS Inc.”.

We were founded in 1961 and initially offered industrial instruments to measure and control critical parameters in advanced manufacturing processes. Over the years, we have expanded our business far beyond these processes by organic growth through investment in research and development and entering new markets through strategic acquisitions, such as Newport Corporation, or Newport, in 2016, Electro Scientific Industries, Inc., or ESI, in 2019, and, most recently, Atotech Limited, or Atotech, in 2022. As a result, we have become a global provider of not only industrial instruments but also subsystems, systems, process control solutions, and specialty chemicals technology that improve process performance, optimize productivity, and enable unique innovations for many of the world’s leading technology and industrial companies. The Board of Directors believes that the breadth and scope of the Company’s activities is better reflected by the proposed name “MKS Inc.”. Accordingly, on February 10, 2025, our Board of Directors unanimously adopted resolutions approving and declaring the advisability of adopting this amendment to our Articles and recommended that shareholders approve the amendment by voting in favor of this proposal.

If this proposal is approved by our shareholders, Article I of our Articles will be amended to read as follows:

“The exact name of the corporation is: MKS Inc.”

If this proposal is approved by our shareholders, we intend to file Restated Articles of Organization with the Secretary of the Commonwealth of the Commonwealth of Massachusetts to effect this amendment promptly after the 2025 Annual Meeting.

The form of Restated Articles of Organization, which is attached as Appendix A to this Proxy Statement, also reflects the proposed amendment to lower the voting requirement for certain matters from a supermajority to a simple majority voting standard, as described in Proposal 2 above. If Proposal 4 is approved by our shareholders but Proposal 2 is not approved by our shareholders, we will only amend Article I of our Articles to reflect that our corporate name is “MKS Inc.”.

Changing our corporate name will not change our corporate structure or the names of any of our subsidiaries. Our common stock is listed for trading on The Nasdaq Global Select Market, or Nasdaq, under the symbol “MKSI.” Whether or not the name change becomes effective, our common stock will continue to be listed on Nasdaq under the symbol “MKSI.” If the name change becomes effective, the rights of shareholders holding certificated shares under currently outstanding stock certificates and the number of shares represented by those certificates will remain unchanged. The name change will not affect the validity or transferability of any outstanding stock certificates, nor will it be necessary for shareholders with certificated shares to surrender any stock certificates they currently hold as a result of the name change. After the name change, all new stock certificates we issue and all uncertificated shares held in direct registration accounts, including uncertificated shares currently held in direct registration accounts, will bear the name “MKS Inc.”.

THE BOARD OF DIRECTORS BELIEVES THAT THE PROPOSAL TO AMEND OUR ARTICLES TO CHANGE OUR NAME TO MKS INC. IS IN THE BEST INTERESTS OF MKS AND OUR SHAREHOLDERS AND THEREFORE RECOMMENDS A VOTE “FOR” THIS PROPOSAL.

PROPOSAL 5 – ADVISORY VOTE ON EXECUTIVE COMPENSATION

The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, or the Dodd-Frank Act, enables our shareholders to vote to approve, on a non-binding, advisory basis, the compensation of our Named Executive Officers as disclosed in this proxy statement under the heading “Executive Compensation,” including “Compensation Discussion and Analysis,” the tabular disclosure regarding such compensation, and the accompanying narrative disclosure. This vote is not intended to address any specific item of compensation but rather the overall compensation of our Named Executive Officers and the philosophy, policies, and practices of executive compensation described in this proxy statement. The advisory vote is not a vote on our compensation practices for non-executive employees or our Board of Directors. The Dodd-Frank Act requires the Company to hold the advisory vote on executive compensation at least once every three years, but we have elected to submit the advisory vote to shareholders annually.

As described in detail under the heading “Executive Compensation — Compensation Discussion and Analysis,” our executive compensation program is designed to attract, motivate, and retain our executive officers, who are critical to our success. Under this program, our executive officers are rewarded for the achievement of specific short-term and long-term goals. Please see the “Compensation Discussion and Analysis” for additional details about our executive compensation program and philosophy, including information about the compensation of our Named Executive Officers.

The Compensation Committee continually reviews the compensation program for our executive officers to ensure it achieves the desired goals of aligning our executive compensation structure with our shareholders’ interests and current market practices. At the 2024 Annual Meeting, our shareholders overwhelmingly approved our executive compensation, with approximately 93% of the votes cast voting in favor of the “say-on-pay” proposal. The results of the say-on-pay vote indicate strong shareholder support of our compensation and pay decisions made in relation to our performance.

Our Board of Directors is asking shareholders to approve a non-binding advisory vote on the following resolution:

RESOLVED, that the compensation paid to the Company’s Named Executive Officers, as disclosed pursuant to the compensation disclosure rules of the SEC, including the Compensation Discussion and Analysis, the compensation tables, and any related material disclosed in this proxy statement, is hereby approved.

This vote on the compensation of our Named Executive Officers is advisory, and therefore not binding on the Company, the Compensation Committee, or our Board of Directors. Our Board of Directors and our Compensation Committee value the opinions of our shareholders and, to the extent there is any significant vote against the Named Executive Officers’ compensation as disclosed in this proxy statement, we will consider our shareholders’ concerns and the Compensation Committee will evaluate whether any actions are necessary to address those concerns.

THE BOARD OF DIRECTORS BELIEVES THAT THE PROPOSAL TO APPROVE, ON A NON-BINDING ADVISORY BASIS, THE EXECUTIVE COMPENSATION CONTAINED IN THIS PROXY STATEMENT IS IN THE BEST INTERESTS OF MKS AND OUR SHAREHOLDERS AND THEREFORE RECOMMENDS A VOTE “FOR” THIS PROPOSAL.

PROPOSAL 6 – RATIFICATION OF SELECTION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Our Audit Committee has selected PricewaterhouseCoopers LLP, or PwC, as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2025. PwC was our independent registered public accounting firm for the fiscal year ended December 31, 2024.

Representatives of PwC have been invited to and are expected to attend the 2025 Annual Meeting. They will have the opportunity to make a statement if they so desire and will be available to respond to appropriate questions from shareholders. In the event that the ratification of the selection of PwC as our independent registered public accounting firm is not obtained at the 2025 Annual Meeting, the Board of Directors will reconsider its appointment.

THE BOARD OF DIRECTORS BELIEVES THAT THE PROPOSAL TO RATIFY THE SELECTION OF PWC AS OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE FISCAL YEAR ENDING DECEMBER 31, 2025 IS IN THE BEST INTERESTS OF MKS AND OUR SHAREHOLDERS AND THEREFORE RECOMMENDS A VOTE "FOR" THIS PROPOSAL.

CORPORATE GOVERNANCE

Board Independence

The Board of Directors has determined that all of the members of the Board of Directors, other than Dr. Lee, are independent as defined under applicable Nasdaq rules. Dr. Lee is not independent as he currently serves as our President and Chief Executive Officer.

Board Leadership Structure

Since 2005, we have separated the roles of Chief Executive Officer and Chair of the Board of Directors in recognition of the differences between the two roles. The Chief Executive Officer is responsible for setting the strategic direction of the Company and the day-to-day leadership and performance of the Company, while the Chair of the Board of Directors provides guidance to the Chief Executive Officer, sets the agenda for Board meetings, and presides over meetings of the Board of Directors.

In addition, our Corporate Governance Guidelines provide that during any period in which the Chair of the Board of Directors is not an independent director, and in such other instances as the Board of Directors may determine from time to time, a Lead Director shall be elected by and from the independent directors. While our independent directors are not currently obligated under our Corporate Governance Guidelines to elect a Lead Director, as our Chair is independent, they have elected to continue to do so. Dr. Moloney has served as our Lead Director since 2020.

The primary role of the Lead Director is to serve as a liaison between the independent directors and the Chair of the Board of Directors and/or the Chief Executive Officer and to represent the independent directors, as appropriate. Pursuant to our Corporate Governance Guidelines, the Lead Director shall, among other matters:

- have the authority to call meetings of the independent directors;
- preside at all meetings of the Board of Directors at which the Chair of the Board of Directors is not present;
- assure that at least two meetings per year of only the independent directors are held and chair any such meetings;
- facilitate communications and serve as a liaison between the independent directors and the Chair of the Board of Directors and/or the Chief Executive Officer, provided that any director is free to communicate directly with the Chair of the Board of Directors and with the Chief Executive Officer;
- work with the Chair of the Board of Directors and the Chief Executive Officer in the preparation of the agenda for each Board of Directors meeting and approve each such agenda;
- if a meeting is held between a major shareholder and a representative of the independent directors, the Lead Director shall serve, subject to availability, as such representative of the independent directors; and
- otherwise consult with the Chair of the Board of Directors and the Chief Executive Officer on matters relating to corporate governance and the performance of the Board of Directors.

Our Board of Directors believes that its leadership structure is appropriate at this time for our Company because it strikes an effective balance between management and independent leadership participation in the Board of Directors' process.

Communications from Shareholders

The Board of Directors will give attention to written communications that are submitted by shareholders and will respond if appropriate. The Chair of the Nominating and Corporate Governance Committee, with the assistance of our General Counsel, is primarily responsible for monitoring communications from shareholders and for providing copies or summaries to the other directors as he or she considers appropriate. Communications are forwarded to all directors if they relate to important substantive matters and include suggestions or comments

that the Chair of the Nominating and Corporate Governance Committee considers to be important for the directors to know. In general, communications relating to corporate governance and long-term corporate strategy are more likely to be forwarded than communications relating to ordinary business affairs, personal grievances, and matters as to which we tend to receive repetitive or duplicative communications.

Shareholders who wish to send communications on any topic to the Board of Directors should address such communications to the Board of Directors in care of Kathleen F. Burke, Esq., Executive Vice President, General Counsel, and Secretary, MKS Instruments, Inc., 2 Tech Drive, Suite 201, Andover, MA 01810.

Code of Business Conduct and Ethics

We have adopted a Code of Business Conduct and Ethics that applies to all of our directors, officers, and employees (including the principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions), which is posted on our website at www.mks.com/corporate-governance under Corporate Governance Documents. We intend to disclose on our website any amendments to, or waivers for our executive officers or directors from, our Code of Business Conduct and Ethics.

Board's Role in Risk Oversight

Management is responsible for the day-to-day management of risks the Company faces, while the Board of Directors, as a whole and through its committees, has the ultimate responsibility for the oversight of risk management. Senior management attends quarterly meetings of the Board of Directors, provides presentations on operations, including significant risks, and is available to address any questions or concerns raised by the Board of Directors. Additionally, our three standing Board committees assist the Board of Directors in fulfilling its oversight responsibilities in certain areas of risk. Pursuant to its charter, the Audit Committee coordinates the Board of Directors' oversight of the Company's internal controls over financial reporting, disclosure controls and procedures, and Code of Business Conduct and Ethics. The Audit Committee is also responsible for discussing the Company's policies with respect to financial risk assessment and financial risk management and overseeing the steps management has taken with respect to data privacy and cybersecurity risk exposure. Management regularly reports to the Audit Committee on these areas. The Compensation Committee assists the Board of Directors in fulfilling its oversight responsibilities with respect to the management of risks arising from our compensation policies and programs as well as succession planning for our senior management. The Nominating and Corporate Governance Committee assists the Board of Directors in fulfilling its oversight responsibilities with respect to the management of risks associated with board organization, membership and structure, succession planning for our directors, corporate governance, and environmental, including climate-related, social, and governance risks. In addition, from time to time, the Board of Directors may constitute a special committee to focus on a particular matter or risk. When any of the committees receives a report related to material risk oversight, the chair of the relevant committee reports on the discussion to the full Board of Directors.

Transactions with Related Persons

Our Code of Business Conduct and Ethics sets forth the general principle that our directors, officers, and employees should refrain from engaging in any activity having a personal interest that presents a conflict of interest. Our Code of Business Conduct and Ethics prohibits directors, officers, and employees from engaging in any activity that may reasonably be expected to give rise to a conflict of interest or to adversely affect our interests. Our Code of Business Conduct and Ethics provides that all employees are responsible for disclosing to the Company any transaction or relationship that reasonably could be expected to give rise to a conflict of interest, and executive officers and directors must report such transactions to the Board of Directors, which shall be responsible for determining whether such transaction or relationship constitutes a conflict of interest.

In addition, our written Related Person Transaction Procedures set forth the procedures for reviewing transactions that could be deemed to be "related person transactions" (defined as transactions required to be disclosed pursuant to applicable SEC regulations). In accordance with these procedures, directors and executive officers are required to submit annual certifications regarding interests and affiliations held by them and certain of their family members. We then review our records to determine whether we have engaged in any transactions since the beginning of our prior fiscal year with such affiliated persons and entities or with any person or entity known by MKS to be the beneficial owner of more than 5% of our voting securities, and provide a summary to the Audit Committee of any such material transaction in which the related person has a direct or indirect interest. In

accordance with the procedures, the Audit Committee reviews any such transactions (including, but not limited to, transactions constituting related person transactions). In reviewing any such transaction, the Audit Committee considers, among other things, the related person's interest in the transaction, the approximate dollar value of the transaction, whether the transaction was undertaken in the ordinary course of business, whether the terms of the transaction were at arm's length, the purpose and potential benefits to the Company of the transaction, and whether the transaction is in the best interests of the Company. The Audit Committee may, in its sole discretion, impose such conditions as it deems appropriate in connection with any related person transaction. In accordance with the Audit Committee charter, the Audit Committee reviews the Related Person Transaction Procedures from time to time.

FMR LLC beneficially owned approximately 6% of the Company's outstanding voting shares as of March 4, 2025, based on a filing it made with the SEC. Certain affiliates of FMR LLC provide the Company with recordkeeping and administrative services related to the Company's stock plans, 401(k) plan, and health savings accounts for the Company's employees. In 2024, the Company paid these affiliates of FMR LLC approximately \$127,000 for these services. The service contracts for these services were negotiated at arm's length. As part of our Related Person Transaction Procedures, our Audit Committee reviewed the foregoing relationship with FMR LLC.

Board of Director Meetings and Committees of the Board of Directors

The Board of Directors held six meetings in 2024. During 2024, each director attended all meetings of the Board of Directors and all meetings of all committees of the Board of Directors on which he or she served. Pursuant to our Corporate Governance Guidelines, directors are encouraged to attend our annual meeting of shareholders. All of the directors then serving on the Board of Directors attended the 2024 Annual Meeting.

The Board of Directors has established three standing committees — Audit, Compensation, and Nominating and Corporate Governance — each of which operates under a charter that has been approved by the Board of Directors. Each committee's charter is posted on our website at www.mks.com/corporate-governance under Corporate Governance Documents.

Audit Committee

The Audit Committee consists of Ms. Mora (Chair), Mr. Cannone, Mr. Donahue, and Mr. Jabre. Mr. Jabre joined the Audit Committee in November 2024 upon his appointment to the Board of Directors. The Board of Directors has determined that each of Ms. Mora, Mr. Cannone, Mr. Donahue, and Mr. Jabre is an "audit committee financial expert" as defined in applicable SEC regulations. Each member of the Audit Committee also meets the requirements for independence under applicable Nasdaq and SEC rules. The Audit Committee's responsibilities include:

- appointing, approving the fees of, assessing the independence of, evaluating, retaining and, when necessary, terminating the engagement of our independent registered public accounting firm;
- overseeing the work of our independent registered public accounting firm, including through the receipt and consideration of certain reports from the independent registered public accounting firm;
- reviewing and discussing our annual audited financial statements and related disclosures with management and the independent registered public accounting firm;
- reviewing our quarterly unaudited financial statements;
- coordinating oversight of our internal controls over financial reporting, disclosure controls and procedures, and Code of Business Conduct and Ethics;
- overseeing our internal audit function;
- discussing our policies with respect to financial risk assessment and financial risk management;
- establishing procedures for the receipt and retention of accounting-related complaints and concerns;
- discussing our earnings press releases in advance of public disclosure, as well as generally discussing the types of financial information and earnings guidance, including "pro forma" and other "adjusted" non-GAAP information, provided to analysts, rating agencies, and others;

- meeting independently with our internal audit staff, independent registered public accounting firm, and management;
- reviewing our procedures for reviewing related person transactions, recommending any changes to these procedures, and reviewing any related person transactions;
- reviewing and approving our corporate investment policy, including our hedging policy;
- reviewing and approving derivative financial instruments, including those subject to mandatory clearing;
- overseeing the work of management to monitor and control data privacy and cybersecurity risk exposure;
- reviewing with management our overall tax strategy, including areas requiring significant judgment or risk; and
- preparing the Audit Committee report required to be included in the annual proxy statement.

The Audit Committee held seven meetings in 2024.

Compensation Committee

The Compensation Committee consists of Mr. Batra (Chair), Dr. Moloney, and Ms. Mora. Each member of the Compensation Committee meets the requirements for independence under applicable Nasdaq and SEC rules. The Compensation Committee's responsibilities include:

- reviewing and approving the compensation of our Chief Executive Officer, our other executive officers, and, at the discretion of the Compensation Committee, other direct reports to our Chief Executive Officer;
- overseeing the evaluation of our Chief Executive Officer, our other executive officers, and, at the discretion of the Compensation Committee, other direct reports to our Chief Executive Officer;
- overseeing our Chief Executive Officer and our other executives' succession planning;
- periodically reviewing and approving our management incentive bonus plans;
- overseeing the risks associated with our compensation policies and practices and annually reviewing whether such policies and practices are reasonably likely to have a material adverse effect on the Company;
- reviewing the Compensation Discussion and Analysis required to be included in the annual proxy statement;
- preparing the annual Compensation Committee Report required to be included in the annual proxy statement;
- overseeing and administering our equity incentive plans;
- reviewing the results of advisory shareholder votes on executive compensation and recommending how frequently the Company should conduct such votes;
- overseeing our stock ownership guidelines and monitoring compliance therewith;
- reviewing and approving our clawback policy and monitoring compliance therewith;
- overseeing, reviewing, and reporting to the Board of Directors on the development, implementation, and effectiveness of the Company's initiatives and strategies regarding human capital management;
- reviewing and making recommendations to the Board of Directors with respect to director compensation; and
- appointing, compensating, assessing the independence of, and overseeing the work of any compensation consultant.

The Compensation Committee held six meetings in 2024. See the section below entitled "Executive Compensation — Compensation Discussion and Analysis" for further information about the role of the Compensation Committee and the scope of its activities.

Compensation Risk Assessment

Our Compensation Committee engaged its independent compensation consultant, Pearl Meyer & Partners, LLC, or Pearl Meyer, to conduct a risk assessment of our compensation programs and practices to understand if any risks exist that are reasonably likely to have a material adverse effect on our Company, and the results were reviewed by our Compensation Committee. Based on this assessment, our Compensation Committee concluded that our compensation programs and practices, as a whole, are appropriately structured and do not pose a material risk to our Company. Our compensation programs are intended to reward our executive officers and other employees for strong performance over the long-term, with consideration to short-term actions and results that strengthen and grow our Company. We believe our compensation programs provide the appropriate balance between short-term and long-term incentives, focusing on sustainable and profitable growth for our Company.

Compensation Committee Interlocks and Insider Participation

In 2024, Mr. Batra, Dr. Moloney, and Ms. Mora served on the Compensation Committee. None of the members of the Compensation Committee during 2024 were, at any time, officers or employees of MKS or our subsidiaries, and none of them had any relationship with us requiring disclosure under applicable SEC rules and regulations. None of our executive officers serves, or has served, as a member of the Board of Directors or Compensation Committee (or other committee serving an equivalent function) of any other entity which has one or more executive officers serving as a member of our Board of Directors or Compensation Committee.

Nominating and Corporate Governance Committee

The Nominating and Corporate Governance Committee consists of Dr. Moloney (Chair), Mr. Batra, and Ms. Warner. Upon Ms. Warner's departure from the Board of Directors on May 12, 2025, Mr. Donahue is expected to join the Nominating and Corporate Governance Committee. Each member of the Nominating and Corporate Governance Committee meets the requirements for independence under applicable Nasdaq and SEC rules. The Nominating and Corporate Governance Committee's responsibilities include:

- identifying individuals qualified to become members of the Board of Directors, consistent with criteria approved by the Board of Directors;
- recommending to the Board of Directors the persons to be nominated for election as directors and to each of the committees of the Board of Directors, including the director recommended to serve as chair of each committee;
- designating a Lead Director (if any), subject to the approval of the independent directors;
- reviewing each director's continuation on the Board of Directors at least once every three years;
- overseeing the director succession planning process;
- reviewing each director's independence under Nasdaq listing standards and the applicable rules of the SEC;
- overseeing corporate governance policies and reviewing the Articles, By-Laws, corporate governance guidelines, and other key corporate governance policies, including reviewing and monitoring compliance with the Company's overboarding policy;
- overseeing, reviewing, and reporting to the Board of Directors on the Company's environmental, social, and governance strategy, goals, and initiatives, including climate-related risks and opportunities;
- retaining and terminating any search firm to be used to identify director nominees;
- periodically reviewing the Board of Directors' leadership structure to assess whether it is appropriate;
- conducting the annual evaluations of the Board of Directors, each of the committees of the Board of Directors and the directors who are up for nomination; and
- monitoring communications from shareholders and other interested parties, including shareholder proposals.

The Nominating and Corporate Governance Committee held four meetings in 2024.

For information relating to the nomination of directors, see “Director Candidates” below.

Director Candidates

The Nominating and Corporate Governance Committee recommended to the Board of Directors that the director nominees, Dr. Lee and Dr. Moloney, be nominated by the Board of Directors for election as Class II Directors at the 2025 Annual Meeting. The Nominating and Corporate Governance Committee utilizes a number of processes to identify and evaluate director candidates, including the engagement of a third-party search firm and other resources to identify potential director candidates, as needed. For example, Mr. Jabre, who became a director in November 2024, was identified as a director candidate by a third-party search firm. Activities relating to identifying and selecting nominees include Board assessments of each incumbent director nominee for the current year, requests to Board members and others for recommendations of potential candidates, meetings from time to time to evaluate biographical information and background material relating to potential candidates, and interviews of selected candidates by the members of the Nominating and Corporate Governance Committee and other members of the Board of Directors.

In considering whether to recommend any particular candidate for inclusion in the Board of Directors’ slate of recommended director nominees, the Nominating and Corporate Governance Committee applies the criteria attached to the Company’s Corporate Governance Guidelines. These criteria include the candidate’s integrity, business acumen, knowledge of our business and industries, effectiveness, experience, diligence, conflicts of interest, and the ability to act in the interests of all shareholders. The Nominating and Corporate Governance Committee does not assign specific weights to particular criteria and no particular criterion is a prerequisite for each prospective nominee. The Nominating and Corporate Governance Committee also assesses the candidate’s professional background and skills against those of the existing Board members to ensure a breadth and diversity of expertise that suits the Company’s current and future business risks, industries, and challenges. See “Directors — Board Skills Matrix.” Nominees shall not be discriminated against on the basis of race, religion, national origin, sex, sexual orientation, disability, or any other basis proscribed by law. While the Nominating and Corporate Governance Committee does not have a formal policy with respect to diversity, the Board of Directors and the Nominating and Corporate Governance Committee believe that it is essential that the members of the Board of Directors represent diverse viewpoints, and the Nominating and Corporate Governance Committee actively seeks to have a diverse pool of candidates from which our Board of Director nominees are chosen. In considering candidates for the Board of Directors, the Nominating and Corporate Governance Committee considers the entirety of each candidate’s credentials in the context of these standards. We believe that the backgrounds and qualifications of our directors, considered as a group, should provide a composite mix of experience, knowledge, and abilities that will allow the Board of Directors to fulfill its responsibilities.

Shareholders may recommend individuals to the Nominating and Corporate Governance Committee for consideration as potential director candidates by submitting their names, together with appropriate biographical information and background material and a statement as to whether the shareholder or group of shareholders making the recommendation has beneficially owned at least \$2,000 in market value or 1% of our Common Stock, whichever is less, for at least a year as of the date such recommendation is made, to the Nominating and Corporate Governance Committee, in care of Kathleen F. Burke, Esq., Executive Vice President, General Counsel, and Secretary, MKS Instruments, Inc., 2 Tech Drive, Suite 201, Andover, MA 01810. Assuming that appropriate biographical and background material has been provided on a timely basis, the Nominating and Corporate Governance Committee will evaluate shareholder-recommended candidates by following substantially the same process, and applying the same criteria, as it does in considering other candidates.

Shareholders also have the right under our By-Laws to directly nominate director candidates, without any action or recommendation on the part of the Nominating and Corporate Governance Committee or the Board of Directors, by following the procedures set forth under the heading “Deadline for Submission of Shareholder Proposals for the 2026 Annual Meeting” below.

ENVIRONMENTAL, SOCIAL, AND GOVERNANCE

Governance

Our environmental, social, and governance program and related management system is overseen by the Chief Executive Officer, or the CEO, and the Nominating and Corporate Governance Committee.

This program is supported by a cross-functional steering committee, which meets throughout the year, sets program strategy, defines annual objectives, provides guidance on high-level tactics to achieve its stated objectives, communicates to internal and external stakeholders, and monitors industry trends. In accordance with its charter, the Nominating and Corporate Governance Committee also reviews and reports to the Board of Directors on the Company's strategy, goals, and initiatives in this area, including climate-related risks and opportunities as well as the impact of related issues on the Company.

In addition, our leadership approach is based on our commitment to conduct business with the highest standards of integrity. Our Code of Business Conduct and Ethics and our Human Rights and Labor Standards Policy are designed to ensure that we deliver on this commitment every day.

Human Capital Management

In order to compete and succeed in highly competitive markets and industries that are subject to rapid technological change, we believe it is critical to attract, motivate, and retain a dedicated, talented, and innovative team of employees. As part of these efforts, we strive to foster an inclusive and welcoming community, invest in continuous learning and development, engage meaningfully with employees, offer a competitive compensation and benefits program, and provide a safe and healthy workplace. We are committed to cultivating an inclusive environment where every individual is valued, respected, and empowered to bring their authentic selves to their work. This commitment stems from our belief that diverse viewpoints not only spur innovation but also fuel exceptional performance and sustainable progress. By embracing our global workforce's unique backgrounds and perspectives, we strengthen our collective ability to innovate, collaborate and drive sustainable growth.

To further foster inclusion and belonging at MKS, we operate several initiatives. We recently launched programs — including cultural awareness workshops, book-read discussion groups, bias awareness trainings, and inclusive leadership sessions — to strengthen empathy, foster deeper cross-functional collaboration, and cultivate a workplace culture where every voice is heard and valued. We also recently launched two Employee Resource Groups, or ERGs — Veterans@MKS and Women@MKS. While these ERGs focus on the unique experiences of these groups, they are open to all employees who want to connect, learn and contribute to a culture of belonging at MKS. Our recruitment and selection procedures are bolstered by our MKS Hiring Guide & Toolkit, which is designed to attract top talent while mitigating potential bias. Consistent with our Corporate Governance Guidelines, we actively seek diverse candidates for the pool from which our Board of Director nominees are chosen. We also routinely conduct comprehensive analyses of pay practices in our major regions of operations to identify and, if necessary, rectify any disparities promptly and effectively. Our most recent global compensation analysis has resulted in equitable pay for our workforce with minimal adjustments.

MKS remains steadfast in its dedication to fostering learning and professional growth. We offer our employees a comprehensive catalog of programs, courses, and resources aimed at building leadership capabilities and personal effectiveness. Our performance management framework is designed to provide ongoing, actionable feedback, and facilitate dynamic career development conversations throughout the year. In 2024, we launched a global mentorship program designed to connect our employees across all regions and functions and build mentor and mentee relationships that focus on continuous learning and development. This program reflects our commitment to investing in our people and promoting a culture of growth and development. We also extend financial assistance for higher education to eligible employees, including support for college and graduate studies. In addition, we ensure accessibility to online learning resources via LinkedIn Learning for all employees, cultivating professional development.

In 2024, we conducted our fourth annual global employee engagement survey, with a record 88% participation rate. The survey findings were analyzed and shared with our President and CEO, the executive leadership team, and our Board of Directors. Comprehensive communication of the results was extended to all employees and supplemented with executive videos and both in-person and virtual focus groups to pinpoint prevailing themes. Leveraging these themes and data points, tailored action items were created to encourage meaningful change, with corporate initiatives focusing on communication, innovation, and inclusion.

MKS is also committed to providing total compensation packages that attract, motivate, and retain our employees, as well as recognizing and rewarding our employees' sustained performance and results. In addition, we are committed to ensuring that our total compensation packages are externally competitive and internally equitable, while supporting our business plans and strategies. As employee turnover is an indicator of employee

satisfaction, we monitor turnover globally. MKS has a very stable and committed workforce, as evidenced by low voluntary turnover. Our voluntary turnover for the year ended December 31, 2024 was below 7%. Our average employee tenure as of December 31, 2024 was more than 10 years.

Health & Safety

MKS is committed to providing a safe and healthy workplace for all employees. We accomplish this through compliance with applicable laws and regulations regarding workplace safety, including recognition and control of workplace hazards, tracking injury and illness rates, utilizing a global travel risk management program, and maintaining detailed emergency and business continuity plans. We also provide mandatory environmental, health, and safety training to ensure all employees are provided with the education to perform their jobs safely and to protect the environment. In addition, we offer employees and eligible family members a full range of health and wellness programs, as well as many clinical and administrative services.

We have instituted MEHS, a formal Global MKS Management System for Environmental, Health, and Safety, to protect our employees, other stakeholders, and the environment. We continue to implement this strong foundation across our organization in a stepwise process.

Environmental Management

We play an integral part in delivering enabling solutions in an increasingly connected world. This position provides us with an opportunity to make an impact in furthering not just our own sustainability goals but also those of our customers. We are committed to operating our business in an environmentally and socially responsible manner, in tandem with our employees, customers, suppliers, and communities.

Our products are used in a broad range of industries and applications. Our ability to innovate is critical to achieving and sustaining product differentiation as well as establishing and deepening customer relationships. These innovations have accelerated roadmaps for customers in our primary markets and contributed to driving positive environmental impact and progress, including with respect to clean energy, renewable energy, and other sustainable, ethical applications.

As reported in our 2024 Environmental, Social, Governance Report, we committed to reduce our combined Scope 1 and 2 emissions by 42% by 2030 from our 2022 baseline, in alignment with criteria established by the Science Based Targets initiative, or SBTi. Once we determine our Scope 3 emissions targets, we will submit all of these climate goals to SBTi to be validated against SBTi guidance. As a first step to setting SBTi-aligned Scope 3 emissions targets, we conducted a scope 3 screening analysis to determine Scope 3 categories relevant to our business and are working to develop our consolidated Scope 3 emissions inventory. Once we determine our Scope 3 emissions targets, we will submit these climate goals to SBTi to be validated against SBTi guidance.

Additional information regarding MKS' activities related to its people and sustainability can be found in our 2024 Environmental, Social, Governance Report, which is accessible through our website at www.mks.com/environmental-social-governance. Our Environmental, Social, Governance Report is updated periodically.

DIRECTOR COMPENSATION

Cash Compensation

The following table summarizes the cash compensation payable by us to non-employee directors in 2024:

	Annual Retainer
Base Retainer for All Non-Employee Board Members	\$ 85,000
<i>Additional Retainers for Services:</i>	
Chair	\$105,000
Lead Director	\$ 30,000
Audit Committee Chair	\$ 25,000
Other Audit Committee Members	\$ 12,500
Compensation Committee Chair	\$ 20,000
Other Compensation Committee Members	\$ 10,000
Nominating and Corporate Governance Committee Chair	\$ 15,000
Other Nominating and Corporate Governance Committee Members	\$ 7,500

Retainers are pro-rated based on the time a director serves in the capacities listed. In addition, from time to time, the Board of Directors may form special committees related to specific matters and may elect to compensate directors for their service on such committees on a fee-per-meeting basis or with a retainer.

Equity Compensation

Non-employee directors are eligible for awards under our 2022 Stock Incentive Plan, which is administered by the Compensation Committee. In 2024, under our director compensation program, non-employee directors received automatic grants of restricted stock units, or RSUs, on the date of the 2024 Annual Meeting, with a grant date value of \$200,000, which RSUs will vest in full on the day prior to the 2025 Annual Meeting. In November 2024, our Board of Directors, upon the recommendation of the Compensation Committee, increased the value of the annual RSU grant to \$225,000 for each non-employee director, effective January 1, 2025. Our Compensation Committee recommended this increase after reviewing a competitive analysis of director compensation programs, which was prepared by the Compensation Committee's independent compensation consultant, Pearl Meyer. The analysis found that the equity compensation and total compensation paid to non-employee members of our Board fell below the median of our peer group.

In addition, in 2024, under our director compensation program, if a new non-employee director joined our Board of Directors after our annual meeting of shareholders but before January 1st of the following year, he or she was entitled to an initial RSU grant with a value equal to the annual RSU grant. In the event a non-employee director joined our Board of Directors during the period from January 1st through the date of that year's annual meeting of shareholders, he or she was not entitled to an initial RSU grant but was entitled to the annual RSU grant on the date of the annual meeting of shareholders. In November 2024, our Board of Directors, upon the recommendation of the Compensation Committee, amended our director compensation program, effective January 1, 2025, so that if a new non-employee director joins our Board of Directors other than in connection with an annual meeting of shareholders, he or she will be entitled to an initial RSU grant with a value equal to the annual RSU grant, pro-rated based on the effective date of his or her appointment.

Director Compensation Table for 2024

The following table summarizes compensation earned by or paid to non-employee directors in 2024. Dr. Lee is excluded from the table because he is an executive officer and his compensation is set forth in the Executive Compensation section below, under the heading “Executive Compensation Tables — Summary Compensation Table for 2024.”

<u>Name</u>	<u>Fees Earned or Paid in Cash (\$)</u>	<u>Stock Awards (\$)(1)</u>	<u>All Other Compensation (\$)</u>	<u>Total (\$)</u>
Rajeev Batra	\$112,500	\$198,621	—	\$311,121
Peter J. Cannone III	\$100,500(2)	\$198,621	—	\$299,121
Gerald G. Colella	\$193,000(2)	\$198,621	\$25,122(3)	\$416,743
Joseph B. Donahue	\$100,500(2)	\$198,621	—	\$299,121
Wissam G. Jabre(4)	\$ 15,367	\$198,273	—	\$213,640
Jacqueline F. Moloney	\$140,000	\$198,621	—	\$338,621
Elizabeth A. Mora	\$120,000	\$198,621	—	\$318,621
Michelle M. Warner	\$ 95,500(2)	\$198,621	—	\$294,121

- (1) Represents the aggregate grant date fair value for each RSU granted during the year, calculated in accordance with Financial Accounting Standards Board Accounting Standards Codification 718, or ASC 718. The grant date fair value of the RSU awards was calculated based on the closing price of our Common Stock on the grant date reduced by the present value of dividends expected to be paid on our Common Stock prior to vesting. The outstanding stock awards held as of December 31, 2024 by Mr. Jabre consisted of 2,009 RSUs and by each other non-employee director consisted of 1,622 RSUs.
- (2) Includes consideration for services on a special committee of the Board of Directors for mergers and acquisitions, which compensation consisted of a flat fee of \$3,000 for up to five meetings and \$1,000 per meeting thereafter up to a maximum of \$10,000. In connection with their service on this special committee, Mr. Colella, Mr. Cannone, Mr. Donahue, and Ms. Warner each received \$3,000.
- (3) In connection with his retirement as CEO in January 2020, Mr. Colella receives retiree medical benefits for life for himself and his spouse. In addition, Mr. Colella is reimbursed for certain out-of-pocket health care costs capped at \$4,500 annually. The net present value of these benefits was \$462,061 as of December 31, 2024 and we paid \$25,122 for these benefits in 2024. Mr. Colella receives no other retirement benefits.
- (4) Mr. Jabre became a director in November 2024 and was therefore entitled to a pro-rated retainer for his services and an initial RSU grant with a value equal to the annual RSU grant.

AUDIT AND FINANCIAL ACCOUNTING OVERSIGHT

Audit Committee Report

The Audit Committee of our Board of Directors has reviewed our audited financial statements for the year ended December 31, 2024 and discussed them with our management.

The Audit Committee discussed with PricewaterhouseCoopers LLP, or PwC, our independent registered public accounting firm, the matters required to be discussed by the applicable requirements of the Public Company Accounting Oversight Board and the SEC.

The Audit Committee has received the written disclosures and the letter from our independent registered public accounting firm required by the applicable requirements of the Public Company Accounting Oversight Board regarding the independent accountant’s communications with the Audit Committee concerning independence, and has discussed with the independent accountant the independent accountant’s independence.

Based on the review and discussions referred to above, the Audit Committee recommended to our Board of Directors that the audited financial statements be included in our Annual Report on Form 10-K for the year ended December 31, 2024.

Respectfully submitted,

Elizabeth A. Mora, Chair
 Peter J. Cannone III
 Joseph B. Donahue
 Wissam G. Jabre

Principal Accountant Fees and Services

For the years ended December 31, 2024 and 2023, aggregate fees for professional services rendered by our independent registered public accounting firm, PwC, in the following categories were as follows:

	<u>2024</u>	<u>2023</u>
Audit Fees	\$ 8,011,000	\$ 9,375,200
Audit-Related Fees	—	—
Tax Fees	3,166,000	2,502,320
All Other Fees	3,000	3,000
Total	<u>\$11,180,000</u>	<u>\$11,880,520</u>

Audit Fees

Audit fees billed for both years consisted of fees for professional services rendered for: (i) the audit of our annual consolidated financial statements, (ii) statutory audits, (iii) the review of our consolidated financial statements included in our quarterly reports on Form 10-Q, (iv) audit services related to other reports filed with the SEC, and (v) the audit of our internal controls over financial reporting as required by the rules and regulations promulgated under Section 404 of the Sarbanes-Oxley Act of 2002.

Audit-Related Fees

There were no audit-related fees for the years ended December 31, 2024 and 2023.

Tax Fees

Tax fees for the years ended December 31, 2024 and 2023 were for services related to tax compliance, including the preparation of tax returns, and tax planning and tax advice, including assistance with foreign operations and foreign tax audits.

All Other Fees

All other fees for the years ended December 31, 2024 and 2023 were for accounting research software.

In 2024 and 2023, all fees for professional services rendered by our independent registered public accounting firm were pre-approved pursuant to the Audit Committee’s pre-approval requirements, described below.

Pre-Approval Policy and Procedures

The Audit Committee’s charter sets forth the Audit Committee’s obligations relating to the approval of all audit and non-audit services that are to be performed by our independent registered public accounting firm. The charter provides that we will not engage our independent registered public accounting firm to provide audit or non-audit services unless the service is pre-approved by the Audit Committee. In addition, we will not engage any

other accounting firm to provide audit services unless such services are pre-approved by the Audit Committee. It is the Audit Committee's policy that with respect to services performed or to be performed by PwC in connection with each fiscal year of the Company, the annual fees for non-audit services in such year shall not exceed one half of the aggregate fees payable to PwC for such year, without the prior express approval of the Audit Committee.

In connection with the foregoing, the Audit Committee may approve specific services in advance. In addition, from time to time, the Audit Committee may pre-approve specified types of services that are expected to be provided to us by our independent registered public accounting firm during the next 12 months. Any such pre-approval of types of services is detailed as to the particular service or type of service to be provided and is also generally subject to a maximum dollar amount.

The Audit Committee has also delegated to the Chair of the Audit Committee the authority to approve any audit or non-audit services to be provided to us by our independent registered public accounting firm. Any approval of services by the Chair of the Audit Committee pursuant to this delegated authority is reported on at the next meeting of the Audit Committee.

The Audit Committee has considered and determined that the provision of the non-audit services noted in the foregoing table is compatible with maintaining PwC's independence.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information with respect to the beneficial ownership of our Common Stock by (i) each shareholder known to us to be the beneficial owner of more than 5% of the outstanding shares of our Common Stock; (ii) the Named Executive Officers named in the Summary Compensation Table below; (iii) each of our current directors; and (iv) all of our directors and executive officers as a group. Unless otherwise indicated in the footnotes to the table, all equity amounts set forth in the table are as of March 4, 2025. The address for each of our directors and executive officers is: c/o MKS Instruments, Inc., 2 Tech Drive, Suite 201, Andover, Massachusetts 01810.

<u>Name of Beneficial Owner</u>	<u>Number of Shares Beneficially Owned(1)</u>	<u>Percentage of Common Stock Beneficially Owned</u>
<i>5% Shareholders</i>		
The Vanguard Group	6,892,941(2)	10.22%
BlackRock, Inc.	6,874,519(3)	10.19%
Victory Capital Management Inc.	4,490,779(4)	6.66%
FMR LLC	4,051,183(5)	6.01%
<i>Named Executive Officers</i>		
John T.C. Lee	147,117	*
Ramakumar Mayampurath	—	—
Kathleen F. Burke	50,922	*
David P. Henry	22,419	*
James A. Schreiner	23,496	*
Seth H. Bagshaw	—	—
<i>Non-Employee Directors</i>		
Rajeev Batra	11,344	*
Peter J. Cannone III	5,510	*
Gerald G. Colella	64,132(6)	*
Joseph B. Donahue	7,249	*
Wissam G. Jabre	—	—
Jacqueline F. Moloney	8,061	*
Elizabeth A. Mora	15,762	*
Michelle M. Warner	9,230	*
All directors and executive officers as a group (15 persons)	386,273(7)	*

* Represents less than 1% of the outstanding Common Stock.

(1) We believe that each shareholder has sole voting and investment power with respect to the shares listed, except as otherwise noted. The number of shares beneficially owned by each shareholder is determined under SEC rules, and the information is not necessarily indicative of ownership for any other purpose. Under such rules, beneficial ownership includes any shares as to which the person has sole or shared voting or investment power and also any shares that the individual has the right to acquire within 60 days after March 4, 2025, subject to the vesting of RSUs or the exercise of any stock option or other right. The inclusion herein of any shares of Common Stock deemed beneficially owned does not constitute an admission by such shareholder of beneficial ownership of those shares of Common Stock. Percentage ownership calculations are based on 67,447,167 shares of Common Stock outstanding as of March 4, 2025. Shares of Common Stock which an individual or entity has a right to acquire within the 60-day period following March 4, 2025, pursuant to the vesting of RSUs or the exercise of any stock options or other right, are deemed to be outstanding for the purpose of computing the percentage ownership of such individual or entity, but are not deemed to be outstanding for the purpose of computing the percentage ownership of any other person or entity shown in the table.

- (2) Based on information set forth in a Schedule 13G/A filed by The Vanguard Group on February 13, 2024, reporting stock ownership as of December 29, 2023. The Vanguard Group has shared voting power with respect to 20,184 shares, sole investment power with respect to 6,802,390 shares and shared investment power with respect to 90,551 shares. The Vanguard Group's address is 100 Vanguard Blvd., Malvern, PA 19355.
- (3) Based on information set forth in a Schedule 13G/A filed by BlackRock, Inc. on November 7, 2024, reporting stock ownership as of October 31, 2024. BlackRock, Inc. has sole voting power with respect to 7,091,928 shares and sole investment power with respect to 6,874,519 shares. BlackRock, Inc.'s address is 50 Hudson Yards, New York, NY 10001.
- (4) Based on information set forth in a Schedule 13G/A filed by Victory Capital Management Inc. on February 7, 2024, reporting stock ownership as of December 31, 2023. Victory Capital Management Inc. has sole voting power with respect to 4,409,420 shares and sole investment power with respect to 4,490,779 shares. Victory Capital Management Inc.'s address is 4900 Tiedeman Rd. 4th Floor, Brooklyn, OH 44144.
- (5) Based on information set forth in a Schedule 13G filed by FMR LLC on February 9, 2024, reporting stock ownership as of December 29, 2023. FMR LLC has sole voting power with respect to 4,049,577 shares and sole investment power with respect to 4,051,183 shares. FMR LLC's address is 245 Summer Street, Boston, MA 02210.
- (6) Consists of 4,115 shares held directly by Mr. Colella and 60,017 shares held in the name of The Gerald G. Colella 2019 Trust.
- (7) Consists of 384,533 shares held directly or indirectly by such directors and executive officers and 1,740 shares subject to RSUs that vest within 60 days of March 4, 2025.

To our knowledge, there are no voting trusts or similar arrangements among any of the foregoing persons or entities with respect to the voting of shares of Common Stock.

EXECUTIVE OFFICERS

The following is a brief summary of the background of each of our current executive officers, other than Dr. Lee, whose background is described under the heading “Directors” above.

Executive Officer	Background and Qualifications
 <p>Ramakumar Mayampurath, 61</p> <p>Executive Vice President, Chief Financial Officer, and Treasurer</p>	<p>Mr. Mayampurath has served as Executive Vice President, Chief Financial Officer and Treasurer since October 2024. Prior to joining MKS, he served as Senior Vice President and Chief Financial Officer of Rogers Corporation, a global leader in engineered materials, from May 2021 to August 2024. During his tenure as Senior Vice President and Chief Financial Officer of Rogers, Mr. Mayampurath also served as Treasurer from May 2021 to September 2021 and from June 2022 to August 2024. He previously served in various other senior roles at Rogers, including Vice President, Corporate Finance from December 2020 to April 2021, Vice President, Business Transformation from March 2020 to December 2020, Vice President, Global Financial Planning & Analysis from April 2016 to March 2020, and Vice President, Corporate, Financial Planning & Analysis and Treasurer from November 2014 to March 2016. Prior to joining Rogers, Mr. Mayampurath served in divisional financial leadership roles at Royal Philips Electronics from 2005 to 2014. He is a chartered accountant (inactive) and holds an M.B.A. from Southern Illinois University and a Master of Global Management from Thunderbird School of Global Management.</p>
 <p>Kathleen F. Burke, 60</p> <p>Executive Vice President, General Counsel, and Secretary</p>	<p>Ms. Burke has served as Executive Vice President, General Counsel, and Secretary since February 2023. From May 2017 to February 2023, she served as Senior Vice President and General Counsel, becoming Secretary in May 2019. From April 2011 to May 2017, she served as Vice President and General Counsel, and from January 2005 to May 2019, she served as Assistant Secretary. From January 2005 to April 2011, Ms. Burke served as General Counsel, and from February 2004 to January 2005, she served as Corporate Counsel. Prior to joining MKS, Ms. Burke was a corporate attorney at Wilmer Cutler Pickering Hale and Dorr LLP (formerly Hale and Dorr LLP), a full-service international law firm, from 1994 to 2004. Ms. Burke served as a member of the Board of Directors of the Northeast Chapter of the Association of Corporate Counsel, a global legal association, from 2009 to 2020 and served as the Chapter's President from 2011 to 2013, its Vice President from 2010 to 2011 and its Treasurer from 2009 to 2011. Ms. Burke holds a B.A. from Boston College and a J.D. from Boston College Law School.</p>

Executive Officer



David P. Henry, 53

**Executive Vice President,
Operations and
Corporate Marketing**

Background and Qualifications

Mr. Henry has served as Executive Vice President, Operations and Corporate Marketing since February 2023, where he leads global operations for the Vacuum Solutions Division and Photonics Solutions Division, including manufacturing, supply chain, quality, reliability, and environmental, health, and safety functions, and oversees global corporate marketing and the global service business. From August 2022 to February 2023, he served as Senior Vice President, Operations and Corporate Marketing. From November 2020 to August 2022, he served as Senior Vice President, Corporate Marketing, Project Management Office and Global Service. From January 2020 to November 2020, he served as Senior Vice President of Corporate Marketing and Project Management Office. From July 2016 to December 2019, Mr. Henry served as Vice President of Corporate Marketing. From February 2014 to July 2016, he served as Senior Director of Strategic Marketing. Prior to joining MKS, from December 1999 to February 2014, Mr. Henry served in various supply chain and marketing positions at 3M Company, a diversified technology company with a global presence in the safety and industrial, transportation and electronics, health care and consumer businesses. Mr. Henry holds a B.S. in Industrial Engineering from Worcester Polytechnic Institute and an M.B.A. from Bentley College.



James A. Schreiner, 63

**Executive Vice President
and Chief Operating
Officer, Materials
Solutions Division**

Mr. Schreiner has served as an Executive Vice President since February 2023 and Chief Operating Officer, Materials Solutions Division, since August 2022, a position he assumed upon our acquisition of Atotech. From September 2019 to February 2023, he served as a Senior Vice President and from September 2019 to August 2022, he served as Chief Operating Officer. From July 2017 to September 2019, he served as the Senior Vice President of Global Operations for the Rosemount Measurement & Analytical Group of Automation Solutions at Emerson Electric Co., a multinational corporation that manufactures products and provides engineering services for a wide range of industrial, commercial, and consumer markets. Mr. Schreiner served in other senior roles at Emerson Electric, including Vice President of North America from March 2016 to July 2017, and Vice President of Europe from November 2010 to March 2016, both for the Rosemount Measurement & Analytical Group, as well as Vice President of Global Operations for the Micro Motion Division. Prior to Emerson Electric, Mr. Schreiner served in progressive leadership roles at Plexus Corp., ILX Lightwave Corporation, Tetra Pak and 3M Company. Mr. Schreiner holds a B.S. in Electrical Engineering from Montana State University, Bozeman as well as an Executive M.B.A. from the University of Colorado, Denver.

Executive Officer



Eric R. Taranto, 57

**Executive Vice President
and General Manager,
Vacuum Solutions
Division**

Background and Qualifications

Mr. Taranto has served as an Executive Vice President since February 2023 and General Manager, Vacuum Solutions Division since November 2020. From November 2020 to February 2023, he served as a Senior Vice President. From September 2014 to November 2020, he served as Vice President and General Manager of Business Units in our Vacuum & Analysis Division (now known as our Vacuum Solutions Division). From July 2014 to December 2020, he was also a member of our Office of the Chief Technology Officer (OCTO), and he chaired the OCTO from January 2018 to December 2020. From September 2000 to September 2014, Mr. Taranto served in a range of managerial and senior engineering positions at MKS. From December 1997 to September 2000, he served as a senior engineer for D.I.P. Inc., a digital-control network supplier, until it was acquired by MKS in September 2000.



John E. Williams, 56

**Executive Vice President
and General Manager,
Photonics Solutions
Division**

Mr. Williams has served as Executive Vice President and General Manager, Photonics Solutions Division since May 2024. From April 2020 to May 2024, he served as Vice President and General Manager of the Equipment Solutions Division (which became part of the Photonics Solutions Division in 2022). He joined MKS in February 2019 with the acquisition of ESI, where he served as Vice President of Marketing. Prior to joining ESI, Mr. Williams was Vice President of Corporate & Strategic Marketing at FEI, which became part of Thermo Fisher Scientific in 2016. Earlier in his career, he held various marketing and product management positions at leading capital equipment companies, including Lam Research Corporation and Brooks Automation, Inc. Mr. Williams holds a B.S. in Mechanical Engineering from California Polytechnic State University – San Luis Obispo.

Our executive officers are appointed by the Board of Directors on an annual basis and serve until their successors are duly appointed and qualified. There are no family relationships among any of our executive officers or directors.

EXECUTIVE COMPENSATION

Compensation Discussion and Analysis

Introduction

The purpose of this section of our proxy statement is to provide an overview of our executive compensation program, our compensation philosophy and objectives, and the material decisions we made with respect to each element of our executive compensation program. Throughout this proxy statement, we refer to the “2024 Named Executive Officers” listed below.

Name	Title
John T.C. Lee	President and Chief Executive Officer
Ramakumar Mayampurath	Executive Vice President, Chief Financial Officer, and Treasurer
Kathleen F. Burke	Executive Vice President, General Counsel, and Secretary
David P. Henry	Executive Vice President, Operations and Corporate Marketing
James A. Schreiner	Executive Vice President and Chief Operating Officer, Materials Solutions Division
Seth H. Bagshaw	Former Executive Vice President, Chief Financial Officer, and Treasurer

Ramakumar Mayampurath was appointed Executive Vice President, Chief Financial Officer, and Treasurer, effective October 14, 2024. He succeeded Seth H. Bagshaw, who provided notice to us in December 2023 that he would retire as Executive Vice President, Chief Financial Officer, and Treasurer effective April 1, 2024, following 18 years of service with our Company. Following his retirement from this role, Mr. Bagshaw remained employed as a special advisor from April 1, 2024 until May 1, 2024. In light of his retirement, Mr. Bagshaw did not receive a salary increase, annual cash incentive compensation opportunity, or long-term equity incentive compensation for 2024. Mr. Bagshaw’s salary in effect as of the date of his notice of retirement was paid through May 1, 2024. See “Executive Compensation Tables — Summary Compensation Table.” As a result, no compensation discussions or decisions were made with respect to Mr. Bagshaw during 2024. Therefore, Mr. Bagshaw is not included in the discussion below. We refer to our 2024 Named Executive Officers who did serve through December 31, 2024 as the “Named Executive Officers” throughout this Compensation Discussion and Analysis.

Following this Compensation Discussion and Analysis, you will find a series of tables containing specific information about the compensation earned by or paid to our 2024 Named Executive Officers in 2024.

Executive Summary

Our Business

We enable technologies that transform our world. We deliver foundational technology solutions to leading edge semiconductor manufacturing, electronics and packaging, and specialty industrial applications. We apply our broad science and engineering capabilities to create instruments, subsystems, systems, process control solutions, and specialty chemicals technology that improve process performance, optimize productivity, and enable unique innovations for many of the world’s leading technology and industrial companies. Our solutions are critical to addressing the challenges of miniaturization and complexity in advanced device manufacturing by enabling increased power, speed, feature enhancement, and optimized connectivity. Our solutions are also critical to addressing ever-increasing performance requirements across a wide array of specialty industrial applications.

Company Performance in 2024

In 2024, we achieved improvements in gross margins, operating income, net income per share, and operating cash flow compared to 2023, despite a muted demand environment across our end markets. Our performance was enabled by our broad and deep technology portfolio, which allowed us to balance demand softness in certain markets with growth in others. We generated strong gross margins that demonstrate the value our customers place on our products and capabilities. We also carefully managed operating expenses to maintain overall profitability and solid cash generation.

In addition, we took several actions to proactively manage our leverage and significantly reduce our interest expense. In 2024, we (i) completed an upsized \$1.4 billion convertible notes offering, substantially all of the proceeds of which were used to pay down \$1.2 billion of our existing USD term loan B and purchase \$167 million of capped calls, (ii) made voluntary prepayments of \$426 million on our term loan facility, and (iii) executed a favorable refinancing and repricing of our term loans. We took these actions while maintaining investments in research and development and strategic initiatives, including upgrading and expanding our operations in Romania, breaking ground on our new super center factory in Penang, Malaysia, and purchasing a site for a chemistry factory and tech center in Thailand.

In our Semiconductor market, revenue modestly increased in 2024, constrained by continued softness in semiconductor capital equipment spending, including a pronounced downturn in NAND investment. Our teams remain closely engaged with equipment OEMs and leading semiconductor fabs in addressing a broad range of technology inflections, including in growing markets such as lithography, metrology, and inspection, where we are advancing our strategy to grow segment share. We achieved strategic design wins and secured new customer orders through our World Class Optics initiative, highlighting our increasingly differentiated technology.

Revenue in our Electronics & Packaging market slightly increased in 2024, driven by an increase in industry demand for printed circuit board, or PCB, via drilling systems. While overall demand remained muted, we saw encouraging order activity for our chemistry and equipment solutions for advanced multi-layer board, high-density interconnect, and package substrates related to artificial intelligence applications. We have demonstrated to a wide variety of customers how our combined laser and chemistry capabilities can drive new growth opportunities for their businesses. We achieved a number of design wins, including synergistic wins that have introduced chemistry customers to our laser products and laser customers to our chemistry products.

Sales from our Specialty Industrial market declined in 2024, due to lower solar, general industrial, and material processing sales. Our strategy in Specialty Industrial is to leverage our technology investments in our Semiconductor and Electronics & Packaging markets into niche applications that create market leadership opportunities and generate attractive incremental cash flows.

For a second straight year, our emphasis on corporate responsibility resulted in MKS being recognized as one of *America's Most Responsible Companies for 2025* presented by Newsweek and Statista and a *2025 Best Company to Work For* by U.S. News & World Report. We also released our fourth annual Environmental, Social, and Governance Report and were recognized in Sustainalytics' 2024 list of ESG Top-Rated Companies, demonstrating our continued focus on sustainability.

In 2024, key financial and operating achievements include:

- net revenues of \$3.59 billion, a slight decrease from \$3.62 billion in 2023, due to softer end-market demand;
- Semiconductor market net revenues of \$1.50 billion, an increase of 1% from \$1.48 billion in 2023, led by stronger performance in our lithography, metrology, and inspection related applications, partially offset by softer demand in other parts of our business;
- Electronics & Packaging market net revenues of \$922 million, an increase of 1% from \$916 million in 2023, driven by an increase in industry demand for PCB via drilling systems, partially offset by a decline in palladium prices for chemistry products, which lower prices are passed through to our customers;
- Specialty Industrial market net revenues of \$1.17 billion, a decrease of 5% from \$1.23 billion in 2023, primarily due to lower solar, general industrial, and material processing sales;
- net income of \$190 million, or \$2.81 per diluted share, compared to net loss of \$1.84 billion, or \$27.54 per diluted share, in 2023, with prior year results significantly impacted by goodwill and intangible asset impairment charges;
- operating cash flow of \$528 million, compared to \$319 million in 2023;
- the issuance of \$1.4 billion of 1.25% convertible senior notes due 2030, substantially all of the proceeds of which were used to pay down \$1.2 billion of our existing USD term loan B, which had an interest rate of approximately 7.8%, and to purchase \$167 million of capped calls;

- voluntary prepayments totaling \$426 million on our term loans and a refinancing and repricing that helped reduce our net interest expense to \$49 million in the fourth quarter of 2024 from \$83 million in the fourth quarter of 2023;
- the continued integration of Atotech, including achieving our remaining targeted cost synergies and securing multiple synergistic wins; and
- the return of \$59 million to MKS shareholders in cash dividends.

2024 Compensation Outcomes

Our executive compensation program is designed to reward our Named Executive Officers for performance and to align their interests with those of our shareholders. As a result of our financial performance in 2024, our Named Executive Officers received 30% of their target variable cash compensation under our Management Incentive Plan, which was measured against two financial metrics – non-GAAP operating income and adjusted net debt – and 51% of the portion of their target performance-based equity compensation measured against Adjusted EBITDA, which vests in equal annual installments over three years beginning in February 2025 (each financial metric as further described under “Elements of Compensation” below). We believe these financial metrics are important to our shareholders because each of non-GAAP operating income and Adjusted EBITDA is an indicator of how well we manage the operations and profitability of our Company and adjusted net debt is an indicator of how well we manage our significant debt. The alignment of our financial performance goals with our incentive payout opportunities for 2024 is evidenced by the fact that our Management Incentive Plan and our performance-based equity awards subject to Adjusted EBITDA each paid out well below 100% achievement in a year where our Named Executive Officers needed to achieve “stretch” targets to earn their target performance-based compensation. Although we executed well amid a muted demand environment, we were unable to achieve our stretch targets.

Consideration of 2024 Advisory Vote on Executive Compensation

At our 2024 Annual Meeting, held on May 7, 2024, we submitted to our shareholders an advisory vote on executive compensation. Although annual advisory say-on-pay votes are non-binding, our Compensation Committee considers the outcome of this vote each year when making compensation decisions for our Named Executive Officers. At the 2024 Annual Meeting, our shareholders overwhelmingly approved our executive compensation, with approximately 93% of the votes cast voting in favor of the say-on-pay proposal. The results of the say-on-pay vote indicate strong shareholder support of our compensation and pay decisions made in relation to our performance.

In addition to the results of the say-on-pay vote, the Compensation Committee considers evolving best practices, market compensation information, changing regulatory requirements, and the overall business environment when reviewing our executive compensation program. Based on this review, the Compensation Committee made material changes to our executive compensation program in 2024 by introducing a new metric under our Management Incentive Plan, adjusted net debt, in recognition of our current business strategy of paying down the debt we incurred in connection with our acquisition of Atotech, or the Atotech Acquisition, and introducing a new metric under our long-term equity incentive compensation program, relative total shareholder return, or rTSR, with a three-year measurement period to foster further alignment of executive and shareholder interests. See “Elements of Compensation — Annual Cash Incentive Compensation” and “Elements of Compensation — Long-Term Equity Incentive Compensation” below for more information about these changes.

Compensation Philosophy and Objectives

The primary objectives of our executive compensation program are to:

- attract and retain high caliber executive talent;
- motivate and reward the attainment of short-term objectives that drive long-term value; and
- foster long-term alignment of executive and shareholder interests.

We target each of our Named Executed Officers’ various compensation elements, including base salary, annual cash incentive compensation, and long-term equity incentive compensation, to be within a competitive range around median levels (plus or minus 15% of median) for each such respective position in the market. The

competitive range is considered alongside other key factors when setting compensation levels, and final values for each of our Named Executive Officers may range from approximately the 25th percentile to approximately the 75th percentile. In considering the compensation of our Named Executive Officers relative to the market, we also qualitatively assess each Named Executive Officer's overall performance, tenure, and potential contributions to MKS' ongoing growth. For 2024, the total target compensation for each of Dr. Lee, Ms. Burke, Mr. Henry, and Mr. Schreiner fell between the 30th and 55th percentile of our peer group.

As discussed above, Mr. Mayampurath joined the Company in October 2024, and we entered into an employment agreement with him that set forth his compensation for 2024. This compensation was determined through negotiations and aligned with market standards necessary to secure his employment. Mr. Mayampurath's base salary for 2024 fell within the competitive range of the median of our peer group. Mr. Mayampurath did not receive an annual cash incentive compensation opportunity or performance-based long-term equity incentive compensation for 2024. However, Mr. Mayampurath received (i) a one-time sign-on cash bonus of \$1,000,000, subject to repayment if Mr. Mayampurath voluntarily resigns or his employment is terminated for cause, each prior to the second anniversary of his start date, and (ii) a one-time sign-on equity award with a grant date value of \$1,750,000 in the form of time-based RSUs, which were granted on November 15, 2024 and vest in two equal annual installments. For additional information regarding Mr. Mayampurath's compensation and the terms of his employment agreement, see "Executive Compensation Tables — Potential Payments Upon Termination or Change-in-Control — Other Named Executive Officers" below.

Base salaries are designed to provide executives with a level of predictability and stability with respect to a portion of their total compensation package. Base salaries are a relatively small component of the overall pay packages of our Named Executive Officers because we believe a significant majority of executive compensation should be variable and based on performance.

Our annual cash incentive compensation program is designed to reward the attainment of short-term earnings goals that drive the long-term growth of MKS. We believe that these goals are aligned with significant value creation, and that our plan creates a strong link between pay and performance while providing a meaningful incentive for our Named Executive Officers to deliver financial results that exceed our goals.

We provide our Named Executive Officers with long-term equity incentive compensation in the form of RSUs, at least half of which are performance-based, in order to:

- foster long-term alignment of executive and shareholder interests;
- balance the short-term focus on annual cash incentive compensation with creating long-term shareholder value;
- reward strong operational performance; and
- promote retention by providing equity-based compensation, the vast majority of which vests over a three-year period, with the remaining vesting in full at the end of a three-year period.

In order to further underscore our compensation values and enhance the efficacy of our pay programs, we also adhere to the following practices:

What We Do

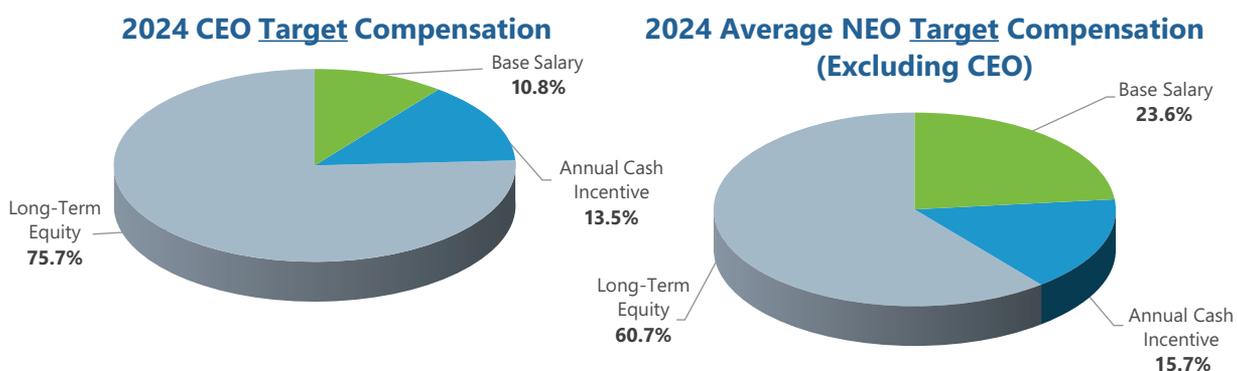
- ✓ Offer a balanced compensation program designed to align with our business strategy, market practices, and shareholder interests
- ✓ Provide maximum payout caps under incentive plans
- ✓ Conduct robust annual reviews and validation of our peer group
- ✓ Conduct annually a comprehensive risk assessment of all compensation programs
- ✓ Maintain a clawback policy for incentive-based compensation that goes beyond the requirements of the Nasdaq rules
- ✓ Provide change-in-control benefits only upon a qualified double-trigger termination of employment
- ✓ Review prior levels of compensation when making executive compensation decisions

- ✓ Maintain stock ownership guidelines
- ✓ Maintain a fully independent Compensation Committee
- ✓ Utilize an independent compensation consultant

What We Do Not Do

- x No repricing of underwater options without shareholder approval
- x No hedging or pledging of MKS shares
- x No incentives for excessive risk taking
- x No tax gross-ups (except for relocation and expatriate service)
- x No perquisites

The following charts show the components of total target compensation on a percentage basis for our Chief Executive Officer and our other Named Executive Officers (excluding Mr. Mayampurath) as a group for 2024.



In May 2023, the Compensation Committee reviewed the peer companies to be used to determine 2024 executive compensation, which at that time consisted of 18 U.S. publicly traded companies that had been primarily selected based on similar industry and size. In determining whether these peer companies should continue to be included in the peer group, the Compensation Committee considered whether these peer companies had (i) a revenue range relative to our projected 2023 revenue between approximately 0.5 to 2.0 times, (ii) a market capitalization range relative to our average market capitalization for the twelve months ended December 31, 2022 between approximately 0.3 and 3.0 times, and (iii) an employee headcount relative to our employee headcount as of December 31, 2022 between approximately 0.5 to 2.0 times. The Compensation Committee also considered secondary factors, including other relevant peer groups, other performance considerations, and whether a company is a competitor for talent. The only change the Compensation Committee elected to make was to remove Revvity, Inc. (formerly PerkinElmer, Inc.) from the existing peer group because of a recent divestiture it made that resulted in no industry overlap with MKS. As a result, publicly available compensation data from the following 17 peer companies was used in determining executive compensation for 2024:

Agilent Technologies, Inc.	Lumentum Holdings Inc.
AMETEK, Inc.	National Instruments Corporation*
Ciena Corporation	Sensata Technologies Holding plc
Coherent Corp.	Skyworks Solutions, Inc.
Entegris, Inc.	Teledyne Technologies Incorporated
IDEX Corporation	Teradyne, Inc.
IPG Photonics Corporation	Trimble Inc.
Keysight Technologies, Inc.	Zebra Technologies Corporation
KLA Corporation	

* National Instruments Corporation was acquired by Emerson Electric Co. in October 2023.

In certain instances where robust peer group benchmark data was not available, our Compensation Committee utilized size and industry-appropriate broad survey data from the Radford Global Compensation Database.

Elements of Compensation

The following summarizes the compensation elements for our Named Executive Officers:

Base Salary

When our Compensation Committee set 2024 annual executive compensation in February 2024, the Compensation Committee approved salary increases of 5.3% for Dr. Lee and approximately 3% for each of Ms. Burke, Mr. Henry, and Mr. Schreiner. The effective date of these increases was delayed from April 2024 until August 2024, consistent with a Company-wide initiative to control costs.

Listed below is the base salary our Compensation Committee approved for Dr. Lee, our President and Chief Executive Officer, in 2023 and 2024.

Chief Executive Officer	2023 Base Salary	2024 Base Salary	Percentage Increase
John T.C. Lee	\$950,000	\$1,000,000	5.3%

Listed below are the base salaries our Compensation Committee approved for our other Named Executive Officers in 2023 and 2024.

Named Executive Officer	2023 Base Salary	2024 Base Salary	Percentage Increase
Ramakumar Mayampurath	\$ N/A	\$625,000	N/A
Kathleen F. Burke	\$504,000	\$519,000	3.0%
David P. Henry	\$450,000	\$464,000	3.1%
James A. Schreiner	\$472,275	\$486,000	2.9%

Annual Cash Incentive Compensation

For 2024, our Compensation Committee modified our annual cash incentive program to better align with our current business strategy of paying down the debt we incurred in connection with the Atotech Acquisition. In 2023, cash bonus payouts under the Management Incentive Plan were based on one performance metric, non-GAAP operating income. Although the Compensation Committee continues to believe non-GAAP operating income serves as a barometer of our success, non-GAAP operating income, defined as our GAAP operating income excluding any charges or income not related to our operating performance, does not directly account for our debt levels, which increased substantially as a result of the Atotech Acquisition and may adversely affect us by increasing our interest expense and decreasing our business flexibility, among other things. Following discussions with management about the importance of generating strong cash flow to reduce our debt, in February 2024, our Compensation Committee determined that a portion of future cash bonus payouts to our Named Executive Officers should be based on a second performance metric, adjusted net debt, defined as our gross debt, less cash and short-term investments, adjusted for the impact of foreign currency changes and certain items that our Compensation Committee considers to be outside the ordinary course of operations. For 2024, cash bonus payouts were based on two performance metrics, (i) non-GAAP operating income, weighted at 70% of each Named Executive Officer's Target Bonus Amount (as defined below), and (ii) adjusted net debt, weighted at 30% of each Named Executive Officer's Target Bonus Amount.

Historically, achievement of our plan of record for a performance metric would result in a cash payout equal to 100% of a Named Executive Officer's Target Bonus Amount for that performance metric. However, in order to address the expected continued softened business environment for 2024, drive increased profits, and reduce costs, our Compensation Committee determined that for 2024, achievement of our plan of record for a performance metric would result in a cash payout equal to 25% of a Named Executive Officer's Target Bonus Amount for that performance metric. For a Named Executive Officer to receive a cash payout equal to 100% of his or her Target

Bonus Amount for a performance metric in 2024, the Company would need to achieve a “Stretch Target” beyond our plan of record for that performance metric.

Under the Management Incentive Plan, each Named Executive Officer (except Mr. Mayampurath) was eligible to receive a performance bonus based on a specified percentage of base salary earned during the 2024 calendar year. Any performance bonus under the Management Incentive Plan would be capped such that payout would not exceed an amount equal to 200% of the Named Executive Officer’s Target Bonus Amount.

In 2024, payouts under the Management Incentive Plan were determined by multiplying each Named Executive Officer’s “Target Bonus Amount” by the Company’s percentage achievement of non-GAAP operating income and adjusted net debt, as described below. Target Bonus Amount consists of each Named Executive Officer’s base salary earned in 2024, multiplied by his or her “Target Bonus Percentage,” as determined by our Compensation Committee. If a Named Executive Officer’s base salary and/or Target Bonus Percentage changed during 2024, the Named Executive Officer’s Target Bonus Amount was pro-rated based on the number of days in 2024 that the Named Executive Officer received such base salary and/or Target Bonus Percentage. When our Compensation Committee met in February 2024, it did not approve any changes to the Target Bonus Percentages for Dr. Lee, Ms. Burke, Mr. Henry, or Mr. Schreiner.

Listed below is the Target Bonus Percentage for each Named Executive Officer in 2023 and 2024.

<u>Named Executive Officer</u>	<u>2023 Target Bonus Percentage</u>	<u>2024 Target Bonus Percentage</u>
John T.C. Lee	125%	125%
Ramakumar Mayampurath	N/A	N/A
Kathleen F. Burke	70%	70%
David P. Henry	65%	65%
James A. Schreiner	65%	65%

For 2024, our Compensation Committee set (i) plan of record achievement for non-GAAP operating income at an amount that was greater than actual achievement in 2023 but less than target achievement in 2023 and (ii) Stretch Target achievement for non-GAAP operating income at an amount that was greater than both actual achievement and target achievement in 2023. Our Compensation Committee set plan of record achievement and Stretch Target achievement for adjusted net debt at an amount that was greater than actual achievement in 2023. The successful alignment of our financial performance goals with our incentive payout opportunities for 2024 is evidenced by the fact that our Management Incentive Plan paid out at 30% achievement in a year where our Named Executive Officers needed to achieve Stretch Targets to earn their Target Bonus Amount. Although we executed well amid a muted demand environment, we were unable to achieve our Stretch Targets.

Non-GAAP Operating Income Metric (70% Weighting): In 2024, Named Executive Officers (excluding Mr. Mayampurath) would receive the following percentage of their Target Bonus Amount tied to non-GAAP operating income under the Management Incentive Plan, with proportional payments for achievement in between the Threshold Bonus Amount and the Maximum Bonus Amount.

<u>Non-GAAP Operating Income (for the year ended December 31, 2024)</u>	<u>% of Target Bonus Amount</u>
≤\$580.5 million (Threshold Bonus Amount)	0%
\$774.0 million (Plan of Record Bonus Amount)	25%
\$874.7 million (Stretch Target Bonus Amount)	100%
≥\$952.1 million (Maximum Bonus Amount)	200%

For purposes of the Management Incentive Plan, non-GAAP operating income was \$776 million for 2024. As a result, Named Executive Officers (excluding Mr. Mayampurath) were eligible to receive 26% of their Target Bonus Amounts under this formula, or 18% when weighted at 70% of their overall cash bonus. In addition to excluding charges or income not related to our operating performance, the calculation of non-GAAP operating income for purposes of determining cash bonuses for 2024 excluded approximately \$13 million associated with our Compensation Committee’s decision to adjust the payout of non-executive cash bonuses to 50% of target. We refer to this amount as the Non-Executive Bonus Adjustment. Our Compensation Committee excluded the Non-Executive Bonus Adjustment to neutralize the negative impact of this adjustment on the Named Executive

Officers' cash bonuses, in order to foster non-executive employee retention and engagement without penalizing the Named Executive Officers. For a full reconciliation of 2024 operating income to 2024 non-GAAP operating income for purposes of the Management Incentive Plan, see Appendix C to this proxy statement.

Adjusted Net Debt Metric (30% Weighting): In 2024, Named Executive Officers (excluding Mr. Mayampurath) would receive the following percentage of their Target Bonus Amount tied to adjusted net debt under the Management Incentive Plan, with proportional payments for achievement in between the Threshold Bonus Amount and the Maximum Bonus Amount.

<u>Adjusted Net Debt (as of December 31, 2024)</u>	<u>% of Target Bonus Amount</u>
≥\$3.89 billion (Threshold Bonus Amount)	0%
\$3.79 billion (Plan of Record Bonus Amount)	25%
\$3.71 billion (Stretch Target Bonus Amount)	100%
≤\$3.69 billion (Maximum Bonus Amount)	200%

For purposes of the Management Incentive Plan, adjusted net debt was \$3.76 billion as of December 31, 2024. As a result, Named Executive Officers (excluding Mr. Mayampurath) were eligible to receive 40% of their Target Bonus Amounts under this formula, or 12% when weighted at 30% of their overall cash bonus. For a full reconciliation of 2024 gross debt to 2024 adjusted net debt, see Appendix C to this proxy statement.

Listed below is the calculation of the combined payout under both metrics.

<u>Non-GAAP Operating Income % of Target Bonus Amount (Weighted at 70%)</u>	<u>Adjusted Net Debt % of Target Bonus Amount (Weighted at 30%)</u>	<u>Overall % of Target Bonus Amount</u>
18%	12%	30%

Listed below are our Named Executive Officers' earned cash bonus payouts for 2024.

<u>Named Executive Officer</u>	<u>Cash Payout</u>	<u>Payment as a Percentage of Target Bonus Amount</u>
John T.C. Lee	\$363,935	30%
Ramakumar Mayampurath	\$ N/A	N/A
Kathleen F. Burke	\$107,131	30%
David P. Henry	\$ 88,869	30%
James A. Schreiner	\$ 93,191	30%

Long-Term Equity Incentive Compensation

When our Compensation Committee set 2024 annual executive compensation in February 2024, it awarded the following time-based and performance-based RSUs to our Named Executive Officers. The performance-based RSUs subject to Adjusted EBITDA, which account for 70% of our Named Executive Officers' target performance-based RSUs, are subject to a one-year performance metric, and the performance-based RSUs subject to rTSR, which account for 30% of our Named Executive Officers' target performance-based RSUs, are subject to a three-year performance metric, each as described below. The time-based RSUs vest in three equal annual installments from the original date of grant. The performance-based RSUs subject to Adjusted EBITDA vest in three equal annual installments from the original date of grant and the performance-based RSUs subject to rTSR vest in full on

or about the third anniversary of the original date of grant, in each case subject to achievement of the respective performance metric.

Named Executive Officer	Performance-Based RSUs subject to Adjusted EBITDA(1)		Performance-Based RSUs subject to rTSR(1)		Time-Based RSUs(1)	
	Grant Date Value	Number	Grant Date Value	Number	Grant Date Value	Number
John T.C. Lee	\$2,940,000	23,738	\$1,260,000	10,174	\$2,800,000	22,608
Ramakumar Mayampurath	\$ N/A	N/A	\$ N/A	N/A	\$ N/A	N/A
Kathleen F. Burke	\$ 428,750	3,462	\$ 183,750	1,484	\$ 612,500	4,945
David P. Henry	\$ 332,500	2,685	\$ 142,500	1,151	\$ 475,000	3,835
James A. Schreiner	\$ 315,000	2,543	\$ 135,000	1,090	\$ 450,000	3,633

- (1) Grant date value of performance-based RSUs and corresponding number of performance-based RSUs assuming 100% achievement, with achievement capped at 200%. Grant date values differ from the amounts shown in the "Stock Awards" column of the Summary Compensation Table, which represent grant date fair values calculated in accordance with ASC 718.

Listed below is the grant date value of the RSUs for each Named Executive Officer in 2023 and 2024.

Named Executive Officer	Grant Date Value of Performance-Based RSUs(1)		Grant Date Value of Time-Based RSUs(1)		Total Grant Date Value(1)	
	2023	2024	2023	2024	2023	2024
John T.C. Lee	\$3,600,000	\$4,200,000	\$2,400,000	\$2,800,000	\$6,000,000	\$7,000,000
Ramakumar Mayampurath	\$ N/A	\$ N/A	\$ N/A	\$ N/A	\$ N/A	\$ N/A
Kathleen F. Burke	\$ 562,500	\$ 612,500	\$ 562,500	\$ 612,500	\$1,125,000	\$1,225,000
David P. Henry	\$ 375,000	\$ 475,000	\$ 375,000	\$ 475,000	\$ 750,000	\$ 950,000
James A. Schreiner	\$ 400,000	\$ 450,000	\$ 400,000	\$ 450,000	\$ 800,000	\$ 900,000

- (1) Grant date value of performance-based RSUs assuming 100% achievement, with achievement capped at 200%. Grant date values differ from the amounts shown in the "Stock Awards" column of the Summary Compensation Table, which represent grant date fair values calculated in accordance with ASC 718.

With respect to performance-based RSUs, our goal is to select Company financial metrics that best align with our Company objectives. From 2020 to 2023, we used one performance metric, Adjusted EBITDA, defined as the Company's GAAP operating income excluding any charges or income not related to the operating performance of the Company plus depreciation and stock compensation expense. We believe Adjusted EBITDA provides a clear indication of how effectively we manage the operations of our Company, while continuing to recognize the cyclical nature and volatility of the markets we serve, as well as to drive continued improvement in our Company's operating model independent of revenue levels. Following a review of market practice, our Compensation Committee determined that a portion of performance-based RSUs awarded to our Named Executive Officers should be based on a second performance metric, rTSR, which is defined as the annualized rate of return of our stock (including appreciation in stock price and reinvestment of dividends) compared to the S&P 1500 Composite Electronic Equipment, Instruments & Components Index. Our Compensation Committee believes measuring a portion of performance-based RSU achievement using rTSR strengthens long-term alignment between executive and shareholder interests and elevates the performance orientation of our executive compensation program. For 2024, Dr. Lee, Ms. Burke, Mr. Henry, and Mr. Schreiner received two performance-based awards, one of which was subject to Adjusted EBITDA and accounted for 70% of his or her target performance-based RSUs and the other of which was subject to rTSR and accounted for 30% of his or her target performance-based RSUs.

Consistent with the modification to our Management Incentive Plan, our Compensation Committee also modified our long-term equity incentive compensation program. Historically, achievement of our plan of record for Adjusted EBITDA would result in 100% achievement of a Named Executive Officer's performance-based RSUs. However, in order to address the expected continued softened business environment for 2024, drive increase profits, and reduce costs, our Compensation Committee determined that achievement of our plan of record for

Adjusted EBITDA would result in 25% achievement of a Named Executive Officer's performance-based RSUs subject to Adjusted EBITDA for 2024. For a Named Executive Officer to receive 100% achievement of his or her performance-based RSUs subject to Adjusted EBITDA in 2024, the Company would need to achieve a "Stretch Target" beyond our plan of record for Adjusted EBITDA.

We choose to measure Adjusted EBITDA over a one-year performance period because of the cyclical nature and volatility of our markets, making it challenging to set multi-year performance targets, as evidenced by continued cyclical challenges in our end markets. To ensure our executive officers are focused on our Company's long-term performance, the performance-based RSUs subject to Adjusted EBITDA vest in equal annual installments over three years from the original date of grant, subject to achievement of the performance metric. In addition, we choose to measure rTSR over a three-year performance period to further ensure executives are aligned with long-term shareholder interests.

We use RSUs as our form of equity incentive compensation because we believe RSUs help to ensure that our executive officers' interests are aligned with our shareholders' interests in both a rising and a declining stock market. We believe RSUs are preferable to stock options, which have a relatively high accounting cost as compared to their potential value to the executive officer, and restricted stock, which gives the executive officer voting and dividend rights prior to full vesting. Also, because RSUs are worth more than stock options on the date of grant, we are able to grant fewer RSUs as compared to stock options, resulting in less potential dilution to shareholders' holdings.

In 2024, our Named Executive Officers would have forfeited all of their performance-based RSUs subject to Adjusted EBITDA if our Adjusted EBITDA was less than or equal to \$553.2 million at an adjusted revenue level of \$3.34 billion or if our Adjusted EBITDA was less than or equal to \$831.7 million at an adjusted revenue level of \$4.09 billion (with intermediate Adjusted EBITDA minimum thresholds at different adjusted revenue levels in between). If we achieved the plan of record for Adjusted EBITDA of \$737.6 million at an adjusted revenue level of \$3.34 billion or \$1.11 billion at an adjusted revenue level of \$4.09 billion (with proportional thresholds in between), then our Named Executive Officers would have received 25% of their target performance-based RSUs subject to Adjusted EBITDA. If we achieved the Stretch Target for Adjusted EBITDA of \$848.2 million at an adjusted revenue level of \$3.34 billion or \$1.28 billion at an adjusted revenue level of \$4.09 billion (with proportional thresholds in between), then our Named Executive Officers would receive 100% of their target performance-based RSUs subject to Adjusted EBITDA. If our Adjusted EBITDA was at or above \$922.0 million at an adjusted revenue level of \$3.34 billion or was at or above \$1.39 billion at an adjusted revenue level of \$4.09 billion (with proportional thresholds in between), then our Named Executive Officers would receive the maximum of 200% of their target performance-based RSUs subject to Adjusted EBITDA. If adjusted revenue was outside the range of \$3.34 billion and \$4.09 billion, then the performance target and payout would be calculated using the same payout formula. Proportional achievement levels would be made for Adjusted EBITDA between the minimum and maximum levels. If the percentage achievement for performance-based RSUs subject to Adjusted EBITDA was greater than 25% of the percentage achievement for the non-GAAP operating income metric of our annual cash incentive program, then our Compensation Committee could apply negative discretion with respect to the performance-based RSUs subject to Adjusted EBITDA up to an amount equal to the percentage achievement for the non-GAAP operating income metric. Our Compensation Committee believes the application of negative discretion under these circumstances helps foster appropriate alignment between pay and performance.

In 2024, because our adjusted revenue was \$3.62 billion and our Adjusted EBITDA for purposes of determining performance-based RSU achievement was \$927 million, our Named Executive Officers received 51% of their target performance-based RSUs subject to Adjusted EBITDA. In addition to excluding charges or income not related to our operating performance, the calculation of Adjusted EBITDA for purposes of determining performance-based RSU achievement for 2024 excluded the Non-Executive Bonus Adjustment, consistent with the adjustment made to the calculation of non-GAAP operating income for purposes of the Management Incentive Plan. For full reconciliations of 2024 revenue to 2024 adjusted revenue and 2024 net income to 2024 Adjusted EBITDA for purposes of determining performance-based RSU achievement, see Appendix C to this proxy statement.

The performance-based RSUs subject to rTSR that were granted to our Named Executive Officers in February 2024 will be measured over a three-year performance period from January 1, 2024 to December 31, 2026. rTSR for this performance period will be measured by comparing the 20-day trading day average of each of MKS and the S&P 1500 Composite Electronic Equipment, Instruments & Components Index at the beginning of the performance period against the respective 20-day trading day average at the end of the performance period.

Our Named Executive Officers will receive the following percentage achievement of their performance-based RSUs subject to rTSR (subject to certain caps discussed below), with proportional payments for achievement in between the Threshold Amount and the Maximum Amount.

rTSR (for the performance period from January 1, 2024 to December 31, 2026)	% Achievement
<25th percentile	0%
25th percentile (Threshold Amount)	25%
50th percentile (Target Amount)	100%
≥75th percentile (Maximum Amount)	200%

Percentage achievement of the performance-based RSUs subject to rTSR is subject to two caps. First, if the Company has a negative absolute rTSR at the end of the performance period but is above the 50th percentile, eligible Named Executive Officers will receive no more than 50% of their target performance-based RSUs subject to rTSR. Second, the total value of the award at vest shall not exceed 8x the value of the award on the grant date.

Additional Information Regarding Equity Awards

It is our practice to make an initial equity-based grant to all of our Named Executive Officers at the time they commence employment in an amount that is consistent with amounts granted to other executive officers in the industry at similar levels of seniority. As discussed under “Compensation Philosophy and Objectives” above, Mr. Mayampurath received a one-time sign-on equity award with a grant date value of \$1,750,000 in connection with his appointment as Executive Vice President, Chief Financial Officer, and Treasurer. We may also make equity-based grants to a Named Executed Officer in connection with a promotion or other change in position. In addition, we typically make an annual grant of equity-based compensation to our Named Executive Officers during the first fiscal quarter of each year. Discretionary equity-based awards may also be made during the year to provide an incentive to achieve a specific goal or to reward a significant achievement or for other reasons that the Compensation Committee determines.

As discussed under “Executive Compensation Tables — Potential Payments Upon Termination or Change-in-Control – Other Named Executive Officers” below, in May 2024, Mr. Schreiner and the Company entered into an amendment to Mr. Schreiner’s employment agreement with the Company to extend his expatriate service in Berlin, Germany for a third year and, in connection therewith, replace an expatriate service cash bonus in the amount of \$500,000 that was due to be paid to him on or shortly after August 17, 2024 with an expatriate service equity award with a grant date value of \$850,000 in the form of time-based RSUs, or the Expatriate RSUs. The Expatriate RSUs were granted on May 15, 2024, 60% of which vested on August 17, 2024 and 40% of which are scheduled to vest on August 18, 2025, subject to Mr. Schreiner’s continued expatriate service.

Perquisites

We do not offer perquisites. Our Compensation Committee believes this practice simplifies and more consistently aligns our compensation and benefits offerings for Named Executive Officers with other employees, while placing greater focus on performance-based compensation.

Severance and Change-in-Control Provisions

Each of our Named Executive Officers is entitled to certain payments and benefits in the event his or her employment terminates under specified circumstances as described in the applicable agreement and subject to his or her entry into a release of claims. In exchange for these payments and benefits, each of these officers has agreed to be restricted from competing with the Company during and following his or her termination of employment for a twelve-month period. In addition, RSU agreements with our Named Executive Officers with time-based vesting generally provide for acceleration of vesting in the event the executive’s employment is terminated without cause or the executive resigns for good reason within 24 months after a change-in-control event. RSU agreements with our Named Executive Officers with performance-based vesting based on Adjusted EBITDA provide for acceleration of vesting at target-level achievement in the event the executive’s employment is terminated without cause or the executive resigns for good reason within 24 months after a change-in-control event. RSU agreements with our Named Executive Officers with performance-based vesting based on rTSR provide

that the performance period for such shares shall end on the day prior to the closing date of a change in control, with the number of shares, if any, that would have vested on such date, as determined in accordance with the terms of such agreements, converting into time-based vesting RSUs subject to acceleration of vesting in the event the executive's employment is terminated without cause or the executive resigns for good reason within 24 months after a change-in-control event. The severance and change-in-control provisions are designed to be competitive in the marketplace, to provide security for each of our Named Executive Officers in the event that we are acquired and his or her respective position is impacted, and to provide an incentive for our Named Executive Officers to stay with us through such a change-in-control event. These provisions are also intended to protect us from competitive harm by compensating our Named Executive Officers for agreeing to substantial non-compete provisions after employment termination. See "Executive Compensation Tables — Potential Payments Upon Termination or Change-in-Control" for more information about these agreements.

Compensation of our Chief Executive Officer

We entered into an employment agreement with Dr. Lee in November 2019 in connection with his promotion to Chief Executive Officer, effective as of January 1, 2020. The terms of Dr. Lee's employment agreement reflected his role as the leader of our Company and the experience he brought to the position. For a detailed discussion of the material compensation terms of Dr. Lee's employment agreement, including all amendments to this employment agreement, see "Executive Compensation Tables — Potential Payments Upon Termination or Change-in-Control."

Compensation of our Other Named Executive Officers

We have entered into employment agreements with each of our other Named Executive Officers. For a detailed discussion of the material compensation terms of these executive employment agreements, including all amendments to these employment agreements, see "Executive Compensation Tables — Potential Payments Upon Termination or Change-in-Control."

Compensation Consultant

We engage a compensation consultant to serve as an independent advisor to the Compensation Committee regarding compensation for our directors and our executive officers. The Compensation Committee utilizes the compensation consultant in the following ways:

- to provide the Compensation Committee with occasional consultation regarding compensation strategies and programs;
- to review our peer group to determine the appropriateness of its composition;
- to conduct formal competitive compensation analysis for the Compensation Committee regarding our directors and each executive officer, on a position-by-position basis, in comparison to similarly situated executive officers in our peer group using benchmarking data;
- to assess the rigor of proposed performance goals on the basis of a probability analysis, a year-over-year growth analysis and a historical payout versus our peer group analysis; and
- to assist the Compensation Committee with conducting a risk assessment of all of the Company's compensation policies and practices.

Since May 2019, the Compensation Committee has engaged Pearl Meyer as its compensation consultant. The Compensation Committee has determined that the engagement of Pearl Meyer as a compensation consultant does not raise any conflicts of interest with MKS.

Role of our Chief Executive Officer

Our Chief Executive Officer reviews with the Compensation Committee the performance of all other Named Executive Officers and makes recommendations relating to compensation of such executive officers. Management develops proposed company financial goals for review and approval by the Compensation Committee for the annual cash incentive plan and long-term performance-based equity incentive compensation, develops proposals relating to potential changes in compensation programs for review and approval by the Compensation Committee, and provides the Compensation Committee and its advisors with information necessary to evaluate and implement compensation proposals and programs. Our Chief Executive Officer does not participate in discussions regarding his own compensation.

Governance Policies

Stock Ownership Guidelines

Our Stock Ownership Guidelines, which apply to members of the Board of Directors, the Chief Executive Officer, and our other Named Executive Officers in their capacities as Executive Vice Presidents, provide for the following ownership goals:

- Non-employee members of the Board of Directors shall own at least the number of shares of our Common Stock equal in value to five times the annual retainer for Board service (exclusive of any compensation for committee service, meeting fees, leadership roles, and the like).
- The Chief Executive Officer shall own at least the number of shares of our Common Stock with a value equal to five times his or her annual base salary (excluding any bonus, award, or special compensation).
- Our other Named Executive Officers, in their capacities as Executive Vice Presidents, shall own at least the number of shares of our Common Stock with a value equal to three times his or her annual base salary (excluding any bonus, award, or special compensation).

Share ownership is measured as of December 31 of each year. Our Stock Ownership Guidelines count shares of our Common Stock and restricted stock units toward share ownership, except that restricted stock units subject to performance conditions are not counted. The Stock Ownership Guidelines provide for a phase-in period over five years to achieve compliance. If an individual has not attained his or her ownership goal, the individual may not sell any shares of our Common Stock acquired through his or her employment or directorship (except sales of shares of our Common Stock to pay taxes on vesting) until the next measurement date where the individual is in compliance with his or her ownership goal. As of December 31, 2024, our directors, CEO, and other Named Executive Officers were all in compliance with our Stock Ownership Guidelines or within the phase-in period.

Clawback Policy

Our Compensation Committee adopted an updated clawback policy, effective October 2, 2023, in accordance with Rule 10D-1 of the Exchange Act, or Rule 10D-1, and Nasdaq listing standards. The clawback policy applies to our current and former executive officers, as defined in Rule 10D-1, as well as other current executives who report to our Chief Executive Officer and other former executives who reported to our Chief Executive Officer. The clawback policy is administered by our Compensation Committee. In the event we are required to prepare an accounting restatement due to material noncompliance with any financial reporting requirement under U.S. federal securities laws, including any required restatement to correct an error in previously issued financial statements that is material to the previously issued financial statements or that would result in a material misstatement if the error were corrected in the current period or left uncorrected in the current period, it is our policy to recover reasonably promptly the amount of erroneously awarded incentive-based compensation received by our executives. The recovery of such compensation applies regardless of whether an executive engaged in misconduct or otherwise cause or contributed to the requirement for a restatement, although the Compensation Committee is authorized to recover additional incentive-based compensation in situations where an executive engaged in intentional misconduct or fraud.

Insider Trading Policy and Prohibition on Hedging and Pledging

We have adopted an Insider Trading Policy governing the purchase, sale, and/or other dispositions of Company securities by our directors, officers, employees, and other covered persons. We believe our Insider Trading Policy is reasonably designed to promote compliance with insider trading laws, rules, and regulations, and Nasdaq listing standards. A copy of our Insider Trading Policy is filed as Exhibit 19.1 to our Annual Report on Form 10-K for the fiscal year ended December 31, 2024.

Our Insider Trading Policy prohibits any of our directors or employees from engaging in purchases of financial instruments or other transactions that hedge or offset, or are designed to hedge or offset, any decrease in the market value of our securities (including pre-paid variable forward contracts, equity swaps, collars, and exchange funds), and prohibits such individuals from purchasing our securities on margin or pledging such securities as collateral for a loan.

Policies and Practices Related to the Grant of Equity Awards

We grant equity awards, including restricted stock units, to our non-employee directors, officers, and certain of our employees on an annual basis. We may also grant equity awards to individuals upon hire or promotion or for retention purposes. We currently do not grant stock options, stock appreciation rights, or similar option-like instruments, and only grant restricted stock units. During the last fiscal year, neither our Board nor our Compensation Committee took material nonpublic information into account when determining the timing or terms of equity awards, nor did the Company time the disclosure of material nonpublic information for the purpose of affecting the value of executive compensation.

Impact of Accounting on Executive Compensation

We account for stock-based compensation in accordance with the requirements of ASC 718. The Compensation Committee considers the impact of ASC 718 on our use of equity incentives as a key retention tool. The Compensation Committee regularly reviews its choice of equity incentives, taking into account both tax and accounting considerations.

COMPENSATION COMMITTEE REPORT

The Compensation Committee has reviewed and discussed the “Compensation Discussion and Analysis” required by Item 402(b) of Regulation S-K with management. Based on such review and discussions, the Committee recommended to the Board of Directors that the “Compensation Discussion and Analysis” be included in this proxy statement.

Respectfully submitted,

Rajeev Batra, Chair
Jacqueline F. Moloney
Elizabeth A. Mora

EXECUTIVE COMPENSATION TABLES

Summary Compensation Table for 2024

The following table sets forth the aggregate amounts of compensation earned by our 2024 Named Executive Officers in the years ended December 31, 2024, 2023, and 2022.

Name and Principal Position	Year	Salary (\$)	Bonus (\$)	Stock Awards (\$)(1)	Non-Equity Incentive Plan Compensation (\$)(2)	All Other Compensation (\$)(3)	Total (\$)
John T.C. Lee, President and CEO (principal executive officer)							
	2024	\$970,492	\$ -	\$7,388,552	\$ 363,935	\$ 37,146	\$8,760,125
	2023	\$950,000	\$ -	\$5,900,090	\$1,021,250	\$ 35,288	\$7,906,628
	2022	\$944,727	\$ -	\$5,909,984	\$1,170,939	\$ 32,732	\$8,058,382
Ramakumar Mayampurath, EVP, CFO, and Treasurer (principal financial officer)(4)							
	2024	\$134,906	\$1,000,000(5)	\$1,721,962	\$ -	\$ 60,601	\$2,917,469
Kathleen F. Burke, EVP, General Counsel, and Secretary							
	2024	\$510,148	\$ -	\$1,278,911	\$ 107,131	\$ 36,264	\$1,932,454
	2023	\$504,000	\$ -	\$1,106,267	\$ 303,408	\$ 35,288	\$1,948,963
	2022	\$499,773	\$ -	\$1,108,122	\$ 349,809	\$ 32,725	\$1,990,429
David P. Henry, EVP, Operations and Corporate Marketing							
	2024	\$455,738	\$ -	\$ 991,808	\$ 88,869	\$ 36,498	\$1,572,913
	2023	\$450,000	\$ -	\$ 737,511	\$ 251,550	\$ 35,403	\$1,474,464
	2022	\$442,604	\$ -	\$ 738,732	\$ 283,116	\$ 33,047	\$1,497,499
James A. Schreiner, EVP and COO, Materials Solutions Division							
	2024	\$477,900	\$ -	\$1,781,290	\$ 93,191	\$320,244	\$2,672,625
	2023	\$465,718	\$ -	\$ 786,679	\$ 260,337	\$494,827	\$2,007,561
	2022	\$457,598	\$ -	\$ 787,982	\$ 297,407	\$ 45,389	\$1,588,376
Seth H. Bagshaw, Former EVP, CFO, and Treasurer (former principal financial officer)(6)							
	2024	\$650,500	\$ -	\$ -	\$ -	\$ 20,332	\$ 670,832
	2023	\$623,775	\$ -	\$1,892,945	\$ 482,802	\$ 40,546	\$3,040,068
	2022	\$615,774	\$ -	\$1,896,120	\$ 554,154	\$ 44,042	\$3,110,090

(1) Represents the aggregate grant date fair value for each RSU granted to the executive officer during the covered year, calculated in accordance with ASC 718. The grant date fair value of time-based RSU awards was calculated based on the closing price of our Common Stock on the grant date reduced by the present value of dividends expected to be paid on our Common Stock prior to vesting. The grant date fair value of performance-based RSU awards subject to Adjusted EBITDA was calculated at target achievement and based on the closing price of our Common Stock on the grant date reduced by the present value of dividends expected to be paid on our Common Stock prior to vesting. The grant date fair value of performance-based RSU awards subject to rTSR was calculated using the Monte Carlo simulation model, which required the use of the following assumptions:

Expected Stock Price Volatility for MKS	Expected Term (Years)	Risk-Free Interest Rate	Expected Dividend Yield
44.13%	2.87	4.28%	0.89%

The amounts under the "Stock Awards" column do not reflect the amount of compensation actually received by the 2024 Named Executive Officers during the fiscal year. Except with respect to Mr. Mayampurath and Mr. Schreiner in 2024, at least fifty percent of the values listed under "Stock Awards" represent performance-based RSUs, which are valued at the grant date based upon the probable outcome of the performance

metrics. The following table sets forth the maximum value of the RSUs, assuming the highest level of performance is achieved for the performance-based portion of the RSUs, if applicable:

Named Executive Officer	2024 Maximum	2023 Maximum	2022 Maximum
Dr. Lee	\$11,048,979	\$9,440,144	\$9,455,975
Mr. Mayampurath	\$ 1,721,962	\$ N/A	\$ N/A
Ms. Burke	\$ 1,812,723	\$1,659,400	\$1,662,183
Mr. Henry	\$ 1,405,785	\$1,106,267	\$1,108,098
Mr. Schreiner	\$ 2,173,478	\$1,180,018	\$1,181,973
Mr. Bagshaw	\$ N/A	\$2,934,065	\$2,938,986

On November 15, 2024, in connection with his hiring, Mr. Mayampurath was granted a one-time sign-on equity award with a grant date value of \$1,750,000 in the form of time-based RSUs, which vests in two equal annual installments beginning in November 2025. He did not receive an annual stock award in 2024.

In addition to his annual stock award for 2024, on May 15, 2024, Mr. Schreiner received an expatriate service equity award with a grant date value of \$850,000 in the form of time-based RSUs, 60% of which vested on August 17, 2024 and 40% of which is scheduled to vest on August 18, 2025, subject to Mr. Schreiner's continued expatriate service. This award was made pursuant to an amendment to Mr. Schreiner's employment agreement with the Company to extend his expatriate service in Berlin, Germany for a third year. This award replaced an expatriate service cash bonus of \$500,000 that was due to be paid to Mr. Schreiner on or shortly after August 17, 2024.

- (2) Each 2024 Named Executive Officer's annual cash performance bonus for 2024, 2023, and 2022 was calculated based on a specified target percentage of his or her eligible earnings for the relevant plan year. For 2024, the threshold bonus payout was 0% of this individual target bonus percentage and the maximum payout was 200% of this individual target bonus percentage, with proportional payouts for performance between these levels. For 2023 and 2022, the threshold bonus payout was 50% of this individual target bonus percentage and the maximum payout was 200% of this individual target bonus percentage, with proportional payouts for performance between these levels. Bonus payments in 2024 were based on the achievement of two financial metrics: (i) non-GAAP operating income (defined as GAAP operating income excluding any charges or income not related to the operating performance of the Company) for 2024, excluding the Non-Executive Bonus Adjustment, and (ii) adjusted net debt (defined as gross debt, less cash and short-term investments, adjusted for the impact of foreign currency changes and certain items that our Compensation Committee considers to be outside the ordinary course of operations) for 2024. Bonus payments in 2023 were based on the achievement of non-GAAP operating income (defined as GAAP operating income after bonus and excluding any charges or income not related to the operating performance of the Company) for 2023. Bonus payments in 2022 were based on the achievement of two financial metrics: (i) non-GAAP operating income (defined as GAAP operating income after bonus and excluding any charges or income not related to the operating performance of the Company) for 2022, excluding the results of Atotech, which we acquired in 2022, and (ii) annualized cost savings (defined as profit enhancements or cost reductions approved by the Chief Executive Officer that result, on an annualized basis, in quantified and measured benefits to the Company's financial performance) for 2022. The individual target bonus percentage and the actual bonus achieved for each of the 2024 Named Executive Officers were as follows:

Named Executive Officer	2024		2023		2022	
	Individual Target Bonus %	Annual Bonus Plan Achievement	Individual Target Bonus %	Annual Bonus Plan Achievement	Individual Target Bonus %	Annual Bonus Plan Achievement
Dr. Lee	125%	30%	125%	86%	125%	100%
Mr. Mayampurath	N/A	N/A	N/A	N/A	N/A	N/A
Ms. Burke	70%	30%	70%	86%	70%	100%
Mr. Henry	65%	30%	65%	86%	65%	100%
Mr. Schreiner	65%	30%	65%	86%	65%	100%
Mr. Bagshaw	N/A	N/A	90%	86%	90%	100%

- (3) Our Compensation Committee elected to discontinue perquisites effective December 31, 2020, with the exception that Mr. Bagshaw and Mr. Schreiner were permitted to retain their company-leased cars until the expiration of their leases in May 2023 and November 2023, respectively, to avoid lease cancellation costs. The amounts paid for such perquisites and the amount of all other compensation consisted of the following:

Named Executive Officer	Year	Auto	Health & Disability	401(k) Match	Global Mobility	Relocation
Dr. Lee	2024	\$ -	\$26,796	\$10,350	\$ -	\$ -
	2023	\$ -	\$25,388	\$ 9,900	\$ -	\$ -
	2022	\$ -	\$23,582	\$ 9,150	\$ -	\$ -
Mr. Mayampurath	2024	\$ -	\$ 3,590	\$ 2,163	\$ -	\$54,848
Ms. Burke	2024	\$ -	\$25,914	\$10,350	\$ -	\$ -
	2023	\$ -	\$25,388	\$ 9,900	\$ -	\$ -
	2022	\$ -	\$23,575	\$ 9,150	\$ -	\$ -
Mr. Henry	2024	\$ -	\$26,148	\$10,350	\$ -	\$ -
	2023	\$ -	\$25,503	\$ 9,900	\$ -	\$ -
	2022	\$ -	\$23,897	\$ 9,150	\$ -	\$ -
Mr. Schreiner	2024	\$ -	\$26,192	\$10,350	\$283,702	\$ -
	2023	\$11,323	\$25,629	\$ 9,900	\$447,976	\$ -
	2022	\$12,280	\$23,959	\$ 9,150	\$ -	\$ -
Mr. Bagshaw	2024	\$ -	\$ 9,982	\$10,350	\$ -	\$ -
	2023	\$ 5,258	\$25,388	\$ 9,900	\$ -	\$ -
	2022	\$11,310	\$23,582	\$ 9,150	\$ -	\$ -

Health & Disability benefits for 2024 included partial payment of premiums for medical, dental, vision, short-term and long-term disability, and life insurance. Global Mobility benefits for 2024 included benefits provided to Mr. Schreiner as a result of his expatriate service in Germany, including housing and utilities, auto, home leave, work permit assistance, local country unemployment insurance, foreign language classes, and tax equalization payments. The tax equalization payments for 2024, which amount to \$176,182, reflect the estimated total net amount of tax equalization designed to cover taxes on Mr. Schreiner's compensation in excess of the taxes he would have incurred in the United States, in accordance with our global mobility program. Relocation benefits for Mr. Mayampurath for 2024 included \$38,750 in moving expenses and taxes with respect to such relocation expenses of \$16,098, in accordance with our relocation policy.

- (4) Mr. Mayampurath joined the Company in October 2024. Accordingly, his compensation is not included with respect to 2023 or 2022.
- (5) Represents a one-time sign-on cash bonus of \$1,000,000, subject to repayment if Mr. Mayampurath voluntarily resigns or his employment is terminated for cause, each prior to the second anniversary of his start date.
- (6) Mr. Bagshaw retired from the Company in May 2024. The amount for Mr. Bagshaw under "Salary" includes a payment of \$441,729 for accrued but unused vacation in connection with his retirement.

Grants of Plan-Based Awards in Fiscal Year 2024 Table

Name	Grant Date(1)	Approval Date(2)	Estimated Future Payouts Under Non-Equity Incentive Plan Awards(3)			Estimated Future Payouts Under Equity Incentive Plan Awards			All Other Stock Awards: Number of Shares of Stock or Units (#)(4)	Grant Date Fair Value of Stock Awards (\$)(5)	
			Threshold (\$)	Target (\$)	Maximum (\$)	Threshold (#)	Target (#)	Maximum (#)			
John T.C. Lee	N/A	N/A	\$ -	\$1,213,115	\$2,426,230				22,608	\$2,762,245	
	2/15/24	2/5/24									
	2/15/24(6)	2/5/24				-	23,738	47,477			\$2,900,357
	2/15/24(7)	2/5/24				2,543	10,174	20,347		\$1,725,951	
Ramakumar Mayampurath . . .	N/A	N/A	\$ N/A	\$ N/A	\$ N/A				16,591	\$1,721,962	
	11/15/24	7/24/24				N/A	N/A	N/A			
Kathleen F. Burke . . .	N/A	N/A	\$ -	\$ 357,103	\$ 714,207				4,945	\$ 604,241	
	2/15/24	2/5/24									
	2/15/24(6)	2/5/24				-	3,462	6,924			\$ 422,969
	2/15/24(7)	2/5/24				371	1,484	2,967		\$ 251,701	
David P. Henry	N/A	N/A	\$ -	\$ 296,230	\$ 592,460				3,835	\$ 468,595	
	2/15/24	2/5/24									
	2/15/24(6)	2/5/24				-	2,685	5,369			\$ 328,017
	2/15/24(7)	2/5/24				288	1,151	2,301		\$ 195,197	
James A. Schreiner	N/A	N/A	\$ -	\$ 310,635	\$ 621,270				3,633	\$ 443,932	
	2/15/24	2/5/24									
	2/15/24(6)	2/5/24				-	2,543	5,087			\$ 310,752
	2/15/24(7)	2/5/24				273	1,090	2,180			\$ 184,923
	5/15/24	5/6/24							6,602	\$ 841,682	
Seth H. Bagshaw	N/A	N/A	\$ N/A	\$ N/A	\$ N/A	N/A	N/A	N/A	N/A	\$ N/A	

- (1) This column shows the date of grant for equity awards granted in 2024, all of which were made under the 2022 Stock Incentive Plan.
- (2) This column shows the date on which the Compensation Committee approved the grant of equity awards.
- (3) Represents aggregate threshold, target, and maximum payout levels under the annual cash incentive plan. The actual amount of annual cash incentive compensation earned by each 2024 Named Executive Officer is reported under the Non-Equity Incentive Plan Compensation column in the Summary Compensation Table for 2024. See Footnote 2 to the Summary Compensation Table for 2024 for details on the terms of the annual cash incentive plan.
- (4) The RSUs granted to Dr. Lee, Ms. Burke, Mr. Henry, and Mr. Schreiner on February 15, 2024 vest in equal annual installments over three years beginning in February 2025. The RSUs granted to Mr. Mayampurath on November 15, 2024 vest in two equal annual installments beginning in November 2025. Sixty percent of the RSUs granted to Mr. Schreiner on May 15, 2024 vested on August 17, 2024, with the remaining RSUs vesting on August 18, 2025.
- (5) Represents the grant date fair value calculated in accordance with ASC 718. See Footnote 1 to the Summary Compensation Table for additional information.
- (6) These RSUs were subject to achievement of Adjusted EBITDA over a one-year performance period. These RSUs vest in equal annual installments over three years beginning in February 2025, subject to achievement of the performance metric, which was established in 2024 and determined in February 2025.
- (7) These RSUs are subject to achievement of rTSR over a three-year performance period. These RSUs vest in full in February 2027, subject to achievement of the performance metric, which was established in 2024 and is expected to be determined in February 2027.

Outstanding Equity Awards at 2024 Fiscal Year-End Table

Name	Stock Awards(1)			
	Number of Shares or Units of Stock That Have Not Vested (#)	Market Value of Shares or Units of Stock That Have Not Vested(2) (\$)	Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights That Have Not Vested (#)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested(2) (\$)
John T.C. Lee	20,777(3)	\$2,168,887	47,477(4)	\$4,956,102
	59,484(5)	\$6,209,503	2,543(6)	\$ 265,505
	21,624(7)	\$2,257,329		
Ramakumar Mayampurath	16,591(8)	\$1,731,916	-	\$ -
Kathleen F. Burke	3,932(3)	\$ 410,444	6,924(4)	\$ 722,765
	10,957(5)	\$1,143,759	371(6)	\$ 38,720
	4,945(7)	\$ 516,261		
David P. Henry	2,447(3)	\$ 255,443	5,369(4)	\$ 560,511
	181(9)	\$ 18,864	288(6)	\$ 30,027
	7,305(5)	\$ 762,540		
	3,835(7)	\$ 400,365		
James A. Schreiner	2,622(3)	\$ 273,734	5,087(4)	\$ 531,011
	181(9)	\$ 18,864	273(6)	\$ 28,447
	7,792(5)	\$ 813,419		
	3,633(7)	\$ 379,294		
	2,641(10)	\$ 275,688		
Seth H. Bagshaw	-	\$ -	-	\$ -

- (1) All stock awards in the above table are RSUs. Except as otherwise noted below, all RSUs vest in three equal annual installments, with an annual vesting date of February 15th or the next business day if February 15th is not a business day. None of the 2024 Named Executive Officers had any outstanding option awards.
- (2) Values were calculated based on the closing price of our Common Stock on December 31, 2024 of \$104.39 per share.
- (3) Grant date is April 29, 2022.
- (4) Grant date is February 15, 2024. Number of shares assumes maximum achievement of performance criteria (Adjusted EBITDA).
- (5) Grant date is February 15, 2023.
- (6) Grant date is February 15, 2024. Number of shares assumes threshold achievement of performance criteria (rTSR).
- (7) Grant date is February 15, 2024.
- (8) Grant date is November 15, 2024. These RSUs vest in two equal annual installments beginning in November 2025.
- (9) Grant date is August 17, 2022.
- (10) Grant date is May 15, 2024. These RSUs vest on August 18, 2025.

Option Exercises and Stock Vested in Fiscal Year 2024 Table

Name	Stock Awards*	
	Number of Shares Acquired on Vesting (#)(1)	Value Realized on Vesting (\$)(2)
John T.C. Lee	67,528(3)	\$8,225,971
Ramakumar Mayampurath	-	\$ -
Kathleen F. Burke	12,458	\$1,521,786
David P. Henry	8,022	\$ 979,946
James A. Schreiner	12,618	\$1,529,143
Seth H. Bagshaw	47,037	\$5,192,358

(1) Reflects the number of shares vested before the surrender of shares in satisfaction of tax withholding obligations.

(2) Reflects the value realized before satisfaction of tax withholding obligations.

(3) Includes 2,994 shares that vested to cover U.S. Federal Insurance Contribution Act (FICA) tax withholding obligations, as Dr. Lee was retirement eligible in 2024.

* There were no option exercises in 2024.

Potential Payments Upon Termination or Change-in-Control

This section, including the tables below, summarizes the estimated payments and other benefits that each Named Executive Officer would be eligible to receive if his or her employment had terminated on December 31, 2024, under the circumstances set forth below.

John T.C. Lee

Pursuant to the terms of Dr. Lee's employment agreement dated as of November 18, 2019, Dr. Lee is entitled to receive a base salary and to participate in the Company's annual cash incentive program and long-term equity incentive plan. From time to time in its sole discretion, our Compensation Committee may review and adjust Dr. Lee's base salary, target compensation goal for the annual cash incentive program, and target award for the long-term equity incentive plan.

Dr. Lee's employment agreement provides for a term that is at-will, with termination upon death or disability or at the election of Dr. Lee or the Company. Under the employment agreement, and consistent with applicable law, on any termination of employment, Dr. Lee is entitled to: (i) any unpaid base salary through the employment end date, (ii) accrued, vested benefits under the Company's benefit plans and programs and pursuant to any equity award agreements relating to awards under the current or any future Company equity incentive plan, (iii) any accrued but unused vacation, and (iv) any unreimbursed expenses incurred through the employment end date in accordance with the Company's expense reimbursement policies.

In the event that Dr. Lee's employment is terminated by the Company without cause (as defined below) or is terminated by Dr. Lee for good reason (as defined below), he is entitled to: (i) continuation of base salary for 18 months, (ii) a lump sum equal to 1.5 times the annual amount of his target cash incentive compensation for which he is eligible, (iii) any cash incentive compensation earned for the calendar year preceding his termination but not yet paid, and (iv) to the extent that he elects to continue coverage, payment by the Company of premiums for medical, vision, and dental insurance coverage under COBRA for a period of 18 months, less the premium contribution paid by similarly situated employees.

In the event that Dr. Lee's employment is terminated by the Company without cause, or is terminated by Dr. Lee for good reason, within 24 months after a change-in-control (as defined in his employment agreement), he is entitled to: (i) a lump sum payment equal to three times his annual base salary, (ii) a lump sum payment equal to three times the annual amount of his target cash incentive compensation, (iii) any cash incentive compensation earned for the calendar year preceding his termination but not yet paid, (iv) a prorated portion of his then-current year's target cash incentive compensation, and (v) to the extent that he elects to continue coverage, payment by

the Company of its usual share of premiums for medical, vision, and dental insurance coverage under COBRA during the period of time Dr. Lee is entitled to elect such coverage under COBRA, and after the end of the COBRA continuation period, if Dr. Lee continues to pay the premium that would be charged for COBRA coverage, he may continue such insurance coverage until the end of the 36 month period following his employment termination date on the same terms as if COBRA coverage were still in effect and the Company will continue to pay the Company's usual share of such premiums. In the event such payments are determined to be subject to an excise tax imposed by Section 4999 of the Internal Revenue Code, such payments will be payable in full or, if applicable, reduced so that no portion of the payments is subject to the excise tax, whichever of the foregoing amounts results in receipt by Dr. Lee on an after-tax basis of the greater amount, taking into account all applicable taxes, including the penalty tax. Dr. Lee is not entitled to any gross-up payment for any such excise tax due.

In the event Dr. Lee's employment is terminated due to death or disability, he (or his estate) is entitled to: (i) any cash incentive compensation earned for the calendar year preceding his termination but not yet paid and (ii) a prorated portion of his then-current year's target cash incentive compensation.

Dr. Lee's employment agreement contains non-competition provisions that provide that he may not, during the term of his employment and for one year after termination of employment, engage in any competitive business or activity. In addition, he may not, during the term of employment and for two years after the termination of employment: (i) solicit, hire or otherwise induce any Company employee to terminate his or her employment with the Company, (ii) solicit or hire any of our suppliers, joint ventures, research partners or customers for the purpose of competing with the Company, (iii) encourage any of such persons or entities not to enter into a business relationship with the Company or interfere with the relationship between the Company and such persons or entities, or (iv) sell to any of the Company's customers any products of the types sold by the Company with respect to which products he had material dealings in the performance of his duties within the period two years prior to his termination.

Any equity awarded to Dr. Lee under the current or any future Company equity incentive plan that is unvested as of Dr. Lee's termination of employment date will be subject to accelerated vesting to the extent provided in the equity award agreements governing the award.

Dr. Lee has entered into time-based RSU agreements; performance-based RSU agreements subject to Adjusted EBITDA, which we refer to as Adjusted EBITDA RSU agreements; and performance-based RSU agreements subject to rTSR, which we refer to as rTSR RSU agreements. In the case of the time-based RSU agreements and the Adjusted EBITDA RSU agreements, if Dr. Lee is terminated without cause or resigns with good reason within 24 months following a change-in-control (as defined in the applicable RSU agreements), the RSU agreements provide for full acceleration of vesting of all RSUs, provided, that, in the case of the Adjusted EBITDA RSU Agreements, if the RSUs are still subject to performance criteria, only the target number of RSUs will vest. In the case of the rTSR RSU agreements, if the RSUs are still subject to performance criteria at the time of the change-in-control, the RSUs will be converted into time-based RSUs, which we refer to as Converted RSUs, based on actual performance, using the per share price paid to holders of our Common Stock in connection with the change-in-control as the "end price" for purposes of determining rTSR. If the acquiring entity refuses to assume the Converted RSUs, the rTSR RSU agreements provide for full acceleration of vesting of all Converted RSUs. If the acquiring entity assumes the Converted RSUs and Dr. Lee is terminated without cause or resigns with good reason within 24 months following the change-in-control, the rTSR RSU agreements provide for full acceleration of vesting of all RSUs.

The RSU agreements for Dr. Lee also provide for full acceleration of vesting of all shares (or, in the case of performance-based RSUs that are still subject to performance criteria, the actual number of RSUs to vest based upon satisfaction of performance criteria) upon retirement, death or disability, or a pro rata portion of such shares and performance-based RSUs upon early retirement. Retirement, in this context, means a voluntary termination of employment by Dr. Lee after he is at least age 65 and has at least 10 years of service with us, and early retirement, in this context, means a voluntary termination of employment by Dr. Lee after he is at least age 60 and has at least 15 years of service with us.

For purposes of the foregoing description of benefits under the employment agreement with Dr. Lee, "cause" will exist if Dr. Lee: (i) commits a felony or engages in fraud, misappropriation or embezzlement, (ii) knowingly fails or refuses to perform his duties in a material way and either the failure or refusal cannot reasonably be cured (as

determined by the Company in its reasonable judgment) or he fails to effect a cure within 10 days after the Company notifies him in writing of the failure or refusal, (iii) knowingly causes, or knowingly creates a serious risk of causing, material harm to the Company's business or reputation or (iv) breaches, in a material way, his employment agreement, the confidential information agreement or any other material agreement between him and the Company, and either the breach cannot be cured (as determined by the Company in its reasonable judgment) or he fails to effect a cure within 10 days after the Company notifies him in writing of the breach.

For purposes of the foregoing description of benefits under the employment agreement with Dr. Lee, subject to compliance with certain procedural requirements, "good reason" for Dr. Lee to resign will exist if, without his express written consent: (i) the Company materially reduces his position, duties, title, reporting relationship, authorities, or responsibilities, (ii) the Company reduces his then-current base salary or target bonus, (iii) the Company changes his principal place of work to a location more than 50 miles from his then-current principal place of work, or (iv) the Company breaches, in a material way, his employment agreement or any other material agreement between him and the Company.

Under the RSU agreements for Dr. Lee entered into prior to February 2023, "cause" means conviction for the commission of a felony, willful failure by him to perform his responsibilities to the Company, or willful misconduct by him. Subject to compliance with certain procedural requirements, "good reason" under these RSU agreements means voluntary separation from service within 90 days following (i) a material diminution in position, duties, and responsibilities from those described in his employment agreement, (ii) a material reduction in his base salary (other than as part of a general salary reduction program affecting senior executives), (iii) a material reduction in the aggregate value of his pension and welfare benefits from those in effect prior to the change-in-control (other than as proportionate to the reductions applicable to other senior executives pursuant to a cost-saving plan that includes all senior executives), (iv) a material breach of any provision of the employment agreement by the Company, or (v) the Company's requiring him to be based at a location causing a one-way commute in excess of 60 miles from his primary residence. Under the RSU agreements for Dr. Lee that were entered into beginning in February 2023, cause will exist if Dr. Lee (i) commits a felony or engages in fraud, misappropriation, or embezzlement, (ii) knowingly fails or refuses to perform his duties in a material way and, to the extent that the Company determines such failure or refusal can reasonably be cured, fails or refuses to effect a cure within 10 days after the Company notifies him in writing of the failure or refusal, (iii) knowingly causes, or knowingly creates a serious risk of causing, material harm to the Company's business or reputation, or (iv) breaches, in a material way, his employment agreement, the confidential information agreement or any other agreement between him and the Company and, to the extent that the Company determines such breach can reasonably be cured, fails or refuses to effect a cure within 10 days after the Company notifies him in writing of the breach. Subject to compliance with certain procedural requirements, "good reason" for Dr. Lee to resign will exist under these RSU agreements if, without his express written consent: (i) the Company materially reduces his position, duties, or responsibilities, (ii) the Company reduces his then-current base salary, or (iii) the Company changes such his principal place of work to a location more than 50 miles from his then-current principal place of work.

Potential Payments Upon Termination or Change-in-Control Table — John T.C. Lee

The following table sets forth the estimated benefits that Dr. Lee would have been entitled to receive upon termination of his employment effective December 31, 2024:

Termination Circumstance	Cash Severance(1)	Value of Accelerated Unvested Equity	Benefits Continuation	Total
Termination by the Company Without Cause	\$3,674,928	\$ -	\$39,099(2)	\$ 3,714,027
Resignation for Good Reason	\$3,674,928	\$ -	\$39,099(2)	\$ 3,714,027
Voluntary Termination or Retirement	\$ 299,928	\$14,175,791(3)	\$ -	\$14,475,719
Death or Disability	\$1,549,928	\$14,175,791(3)	\$ -	\$15,725,719
Within 24 Months Following a Change-in-Control:				
• Termination by the Company Without Cause	\$8,299,928	\$14,175,791(4)	\$78,198(5)	\$22,553,917
• Resignation for Good Reason	\$8,299,928	\$14,175,791(4)	\$78,198(5)	\$22,553,917

(1) For termination by the Company without cause or resignation for good reason, reflects continuation of base salary for 18 months, a lump sum equal to 1.5 times the annual amount of his target cash incentive

compensation, and accrued but unused vacation that we would be required to pay out upon a termination under applicable law and Dr. Lee's employment agreement. For each of voluntary termination and retirement, reflects accrued but unused vacation. For death and disability, reflects a prorated portion of his then-current year's target cash incentive compensation and accrued but unused vacation. For termination by the Company without cause or resignation for good reason, each within 24 months following a change in control, reflects a lump sum payment equal to three times his annual base salary, a lump sum payment equal to three times the annual amount of his target cash incentive compensation, a prorated portion of his then-current year's target cash incentive compensation, and accrued but unused vacation.

- (2) Reflects our estimated cost for continuation of medical, dental, and vision coverage for 18 months, assuming the termination or resignation occurred on December 31, 2024.
- (3) Upon retirement, death, or disability, RSUs fully vest, subject to achievement of any remaining performance criteria. The stated value assumes the retirement, death, or disability occurred on December 31, 2024 and assumes the target number of unvested performance-based RSUs vested.
- (4) The unvested time-based RSUs fully vest and the target number of unvested performance-based RSUs vest.
- (5) Reflects our estimated cost for continuation of medical, dental, and vision coverage for 36 months, assuming the termination or resignation occurred on December 31, 2024.

Other 2024 Named Executive Officers – Ramakumar Mayampurath, Kathleen F. Burke, David P. Henry, and James A. Schreiner

The Company has entered into employment agreements with each of Mr. Mayampurath, Ms. Burke, Mr. Henry, and Mr. Schreiner. Below is a summary of the material terms of these employment agreements in place as of December 31, 2024.

The employment agreements with Mr. Mayampurath, Ms. Burke, Mr. Henry, and Mr. Schreiner provide for a base salary and eligibility to participate in the Company's annual cash incentive compensation program and long-term equity incentive plan, with Mr. Mayampurath eligible to participate beginning in 2025. In addition, the employment agreement with Mr. Schreiner provides for an expatriate service equity award that we refer to as the Expatriate RSUs. The Expatriate RSUs were granted on May 15, 2024, 60% of which vested on August 17, 2024 and 40% of which are scheduled to vest on August 18, 2025, subject to Mr. Schreiner's continued expatriate service. We refer to Mr. Schreiner's expatriate service through August 17, 2025 (or such longer term of service as may be mutually agreed by the Company and Mr. Schreiner) as the Expatriate Service Term.

The employment agreements with Mr. Mayampurath, Ms. Burke, Mr. Henry, and Mr. Schreiner provide for terms that are at-will, with termination upon death or disability or at the election of either the executive or the Company. Under the employment agreements, and consistent with applicable law, on any termination of employment, Mr. Mayampurath, Ms. Burke, Mr. Henry, and Mr. Schreiner are entitled to: (i) any unpaid base salary through the employment end date, (ii) accrued, vested benefits under the Company's benefit plans and programs and pursuant to any equity award agreements relating to awards under the current or any future Company equity incentive plan, (iii) any accrued but unused vacation, and (iv) any unreimbursed expenses incurred through the employment end date in accordance with the Company's expense reimbursement policies.

In the event that the executive resigns from the Company or is terminated by the Company without cause (as defined below), subject to certain procedural requirements, the Company will pay such executive his or her base salary for a period of at least 30 days after the notice of such termination or resignation is delivered. In the event that we terminate Mr. Mayampurath, Ms. Burke, Mr. Henry, or Mr. Schreiner's employment without cause, each executive is entitled to a lump sum payment equal to 12 months base salary and, to the extent that such executive elects to continue coverage, payment by the Company of premiums for medical, vision, and dental insurance coverage under COBRA for a period of 12 months, less the premium contribution paid by similarly situated employees.

In the event that Mr. Mayampurath, Ms. Burke, Mr. Henry, or Mr. Schreiner's employment is terminated without cause or is terminated by the executive for good reason (as defined below) within 24 months after a change-in-control (as defined in the applicable agreement), or, in the case of Mr. Schreiner, Mr. Schreiner resigns for expatriate service good reason (as defined below), such executive is entitled to "enhanced severance

compensation," consisting of: (i) a lump sum payment equal to one and one-half times his or her annual base salary, (ii) a lump sum payment equal to one and one-half times the annual amount of his or her target cash incentive compensation for which such executive is eligible, (iii) a prorated portion of the then-current year's target cash incentive compensation, and (iv) to the extent that such executive elects to continue coverage, payment by the Company of its usual share of premiums for medical, vision, and dental insurance coverage under COBRA for a period of 18 months following termination. In the event such payments are determined to be subject to an excise tax imposed by Section 4999 of the Internal Revenue Code, such payments will be payable in full or, if applicable, reduced so that no portion of the payments is subject to the excise tax, whichever of the foregoing amounts results in receipt by Mr. Mayampurath, Ms. Burke, Mr. Henry, or Mr. Schreiner, as the case may be, on an after-tax basis of the greater amount, taking into account all applicable taxes, including the penalty tax. Mr. Mayampurath, Ms. Burke, Mr. Henry, and Mr. Schreiner are not entitled to any gross-up payment for any such excise tax due.

The employment agreements of Mr. Mayampurath, Ms. Burke, Mr. Henry, and Mr. Schreiner contain non-competition provisions that provide that each executive may not, during the term of his or her employment and for one year after termination of employment, engage in any competitive business or activity. In addition, each of Mr. Mayampurath, Ms. Burke, Mr. Henry, and Mr. Schreiner may not, during the term of employment and for one year after the termination of employment: (i) solicit or otherwise induce any Company employee to terminate his or her employment with the Company (ii) solicit or hire any of our suppliers, joint ventures, research partners or customers for the purpose of competing with the Company, (iii) encourage any of such persons or entities not to enter into a business relationship with MKS or interfere with the relationship between the Company and such persons or entities, or (iv) sell to any of the Company's customers any products of the types sold by the Company with respect to which products the executive officer had material dealings in the performance of his or her duties within the period two years prior to his or her termination.

Any equity awarded to Mr. Mayampurath, Ms. Burke, Mr. Henry, and Mr. Schreiner under the current or any future Company equity incentive plan that is unvested as of the date of their respective terminations of employment will be subject to accelerated vesting to the extent provided in the equity award agreements governing the award.

Mr. Mayampurath, Ms. Burke, Mr. Henry, and Mr. Schreiner have entered into time-based RSU agreements, Adjusted EBITDA RSU agreements and rTSR RSU agreements. In the case of the time-based RSU agreements and the Adjusted EBITDA RSU agreements, if the executive is terminated without cause or resigns with good reason within 24 months following a change-in-control (as defined in the applicable RSU agreements), the RSU agreements provide for full acceleration of vesting of all RSUs, provided, that, in the case of the Adjusted EBITDA RSU Agreements, if the RSUs are still subject to performance criteria, only the target number of RSUs will vest. In the case of the rTSR RSU agreements, if the RSUs are still subject to performance criteria at the time of the change-in-control, the RSUs will be converted into Converted RSUs based on actual performance, using the per share price paid to holders of our Common Stock in connection with the change-in-control as the "end price" for purposes of determining rTSR. If the acquiring entity refuses to assume the Converted RSUs, the rTSR RSU agreements provide for full acceleration of vesting of all Converted RSUs. If the acquiring entity assumes the Converted RSUs and the executive is terminated without cause or resigns with good reason within 24 months following the change-in-control, the rTSR RSU agreements provide for full acceleration of vesting of all RSUs.

The RSU agreements for Mr. Mayampurath, Ms. Burke, Mr. Henry, and Mr. Schreiner provide for full acceleration of vesting of all shares (or, in the case of performance-based RSUs that are still subject to performance criteria, the actual number of RSUs to vest based upon satisfaction of performance criteria) upon death or disability. The RSU agreements for Ms. Burke, and the RSU agreements for Mr. Henry and Mr. Schreiner that were entered into prior to February 2023, provide for full acceleration of vesting of all shares (or, in the case of performance-based RSUs that are still subject to performance criteria, the actual number of RSUs to vest based upon satisfaction of performance criteria) upon retirement, and, for Ms. Burke, Mr. Henry, and Mr. Schreiner, a pro rata portion of such shares and performance-based RSUs upon early retirement. The RSU agreements for Mr. Mayampurath, and the RSU agreements for Mr. Henry and Mr. Schreiner that were entered into beginning in February 2023, provide for the same terms upon retirement, except that (i) any unvested RSUs shall be forfeited if such retirement occurs prior to the one-year anniversary of the date such RSUs were granted and (ii) there is no early retirement option. Retirement, in this context, for Ms. Burke means a voluntary termination of employment by Ms. Burke after she is at least age 65 and has at least 10 years of service with us. Retirement, in this context, for

Mr. Mayampurath, Mr. Henry, and Mr. Schreiner means a voluntary termination of employment by the executive after he is at least age 60 and has at least 10 years of service with us. Early retirement, in this context, for Ms. Burke, Mr. Henry, and Mr. Schreiner means a voluntary termination of employment after he or she is at least age 60 and has at least 15 years of service with us. RSUs granted to executives typically vest in three equal annual installments, and typically at least half of the target annual equity grant value is subject to performance criteria.

For purposes of the foregoing description of benefits under the employment agreements with Mr. Mayampurath, Ms. Burke, Mr. Henry, and Mr. Schreiner, "cause" will exist if the executive: (i) commits a felony or engages in fraud, misappropriation or embezzlement, (ii) knowingly fails or refuses to perform such executive's duties in a material way and, to the extent that the Company determines such failure or refusal can reasonably be cured, fails or refuses to effect a cure within 10 days after the Company notifies such executive in writing of the failure or refusal, (iii) knowingly causes, or knowingly creates a serious risk of causing, material harm to the Company's business or reputation, or (iv) breaches, in a material way, such executive's employment agreement, the confidential information agreement or any other agreement between such executive and the Company and, to the extent that the Company determines such breach can reasonably be cured, fails or refuses to effect a cure within 10 days after the Company notifies such executive in writing of the breach.

For purposes of the foregoing description of benefits under the employment agreements with Mr. Mayampurath, Ms. Burke, Mr. Henry, and Mr. Schreiner, subject to compliance with certain procedural requirements, "good reason" for the applicable executive to resign will exist if, without such executive's express written consent: (i) the Company materially reduces such executive's position, duties or responsibilities, (ii) the Company reduces such executive's then-current base salary, or (iii) the Company changes such executive's principal place of work to a location more than 50 miles from such executive's then-current principal place of work. In addition, for purposes of the foregoing description of benefits under the employment agreement with Mr. Schreiner, subject to compliance with certain procedural requirements, "expatriate service good reason" for Mr. Schreiner to resign will exist if, without Mr. Schreiner's express written consent: (i) the Company fails to return Mr. Schreiner to the position of Executive Vice President and Chief Operating Officer of the Company or a position of at least substantially similar duties and authority within six months after his return to the United States following the completion of his Expatriate Service Term.

Under the RSU agreements for Ms. Burke, Mr. Henry, and Mr. Schreiner that were entered into prior to February 2023, "cause" means conviction for the commission of a felony, willful failure by the executive to perform his or her responsibilities to the Company, or willful misconduct by the executive. Subject to compliance with certain procedural requirements, "good reason" means voluntary separation from service within 90 days following (i) a material diminution in position, duties, and responsibilities from those described in the executive's employment agreement, (ii) a material reduction in the executive's base salary (other than as part of a general salary reduction program affecting senior executives), (iii) a material reduction in the aggregate value of the executive's pension and welfare benefits from those in effect prior to the change-in-control (other than as proportionate to the reductions applicable to other senior executives pursuant to a cost-saving plan that includes all senior executives), (iv) a material breach of any provision of the employment agreement by the Company, or (v) the Company's requiring the executive to be based at a location causing a one-way commute in excess of 60 miles from the executive's primary residence. Under the RSU agreements for Mr. Mayampurath, and under the RSU agreements for Ms. Burke, Mr. Henry, and Mr. Schreiner that were entered into beginning in February 2023, the definitions of "cause" and "good reason" are substantially the same as the definitions of "cause" and "good reason" in the employment agreements for Mr. Mayampurath, Ms. Burke, Mr. Henry, and Mr. Schreiner discussed above.

Potential Payments Upon Termination or Change-in-Control Table - Ramakumar Mayampurath, Kathleen F. Burke, David P. Henry, and James A. Schreiner

The following table sets forth the estimated benefits that Mr. Mayampurath, Ms. Burke, Mr. Henry, and Mr. Schreiner would have been entitled to receive upon termination of his or her employment effective December 31, 2024:

Termination Circumstance	Cash Severance(1)	Value of Accelerated Unvested Equity	Benefits Continuation	Total
Termination by the Company Without Cause				
Ramakumar Mayampurath	\$ 638,188	\$ -	\$18,058(2)	\$ 656,246
Kathleen F. Burke	\$ 704,743	\$ -	\$26,066(2)	\$ 730,809
David P. Henry	\$ 577,376	\$ -	\$25,354(2)	\$ 602,730
James A. Schreiner	\$ 550,385	\$ -	\$25,354(2)	\$ 575,739
Death or Disability				
Ramakumar Mayampurath	\$ 13,188	\$1,731,916(3)	\$ -	\$1,745,104
Kathleen F. Burke	\$ 185,743	\$2,586,724(3)	\$ -	\$2,772,467
David P. Henry	\$ 113,376	\$1,557,322(3)	\$ -	\$1,670,698
James A. Schreiner	\$ 64,385	\$2,140,291(3)	\$ -	\$2,204,676
Voluntary Termination or Retirement				
Ramakumar Mayampurath	\$ 13,188	\$ - (4)	\$ -	\$ 13,188
Kathleen F. Burke	\$ 185,743	\$ - (4)	\$ -	\$ 185,743
David P. Henry	\$ 113,376	\$ - (4)	\$ -	\$ 113,376
James A. Schreiner	\$ 64,385	\$ - (4)	\$ -	\$ 64,385
Within 24 Months Following a Change-in-Control:				
• Termination by the Company Without Cause				
• Resignation for Good Reason				
Ramakumar Mayampurath	\$ 950,688	\$1,731,916(5)	\$27,087(6)	\$2,709,691
Kathleen F. Burke	\$1,872,493	\$2,586,724(5)	\$39,099(6)	\$4,498,316
David P. Henry	\$1,563,376	\$1,557,322(5)	\$38,031(6)	\$3,158,729
James A. Schreiner	\$1,583,135	\$2,140,291(5)	\$38,031(6)	\$3,761,457

- (1) For termination by the Company without cause, reflects a lump sum payment equal to 12 months base salary and accrued but unused vacation that we would be required to pay out upon a termination under applicable law and the applicable employment agreement. For each of death, disability, voluntary termination, and retirement, reflects accrued but unused vacation. For termination by the Company without cause or resignation for good reason, each within 24 months following a change in control, reflects a lump sum payment equal to one and one-half times his or her annual base salary, a lump sum payment equal to one and one-half times the annual amount of his or her target cash incentive compensation, a prorated portion of the then-current year's target cash incentive compensation, and accrued but unused vacation. Mr. Mayampurath was not eligible to participate in the Company's annual cash incentive compensation program in 2024 because he joined the Company in October 2024; therefore, the amount for Mr. Mayampurath for termination by the Company without cause or resignation for good reason, each within 24 months following a change in control, does not include a lump sum payment equal to one and one-half times the annual amount of his target cash incentive compensation or a prorated portion of the then-current year's target cash incentive compensation.
- (2) Reflects our estimated cost for continuation of medical, dental, and vision coverage for 12 months, assuming the termination or resignation occurred on December 31, 2024.
- (3) Upon death or disability, RSUs fully vest, subject to achievement of any remaining performance criteria. The stated value assumes the death or disability occurred on December 31, 2024 and assumes the target number of any unvested performance-based RSUs vested.
- (4) Upon retirement (as defined in the RSU agreements), (i) RSUs that were outstanding as of December 31, 2024 for Ms. Burke fully vest, subject to achievement of any remaining performance criteria, (ii) certain RSUs that were outstanding as of December 31, 2024 for Mr. Henry and Mr. Schreiner fully vest, in each case subject to achievement of any remaining performance criteria, and (iii) none of the RSUs that were outstanding as of December 31, 2024 for Mr. Mayampurath vest. However, Mr. Mayampurath, Ms. Burke, Mr. Henry, and Mr. Schreiner did not meet the requirements for retirement as of December 31, 2024.

- (5) The unvested time-based RSUs fully vest and the target number of unvested performance-based RSUs vest.
- (6) Reflects our estimated cost for continuation of medical, dental, and vision coverage for 18 months, assuming the termination or resignation occurred on December 31, 2024.

Other 2024 Named Executive Officers – Seth H. Bagshaw

Mr. Bagshaw retired as Executive Vice President, Chief Financial Officer, and Treasurer effective April 1, 2024, following 18 years of service with our Company. Following his retirement from this role, Mr. Bagshaw remained employed as a special advisor from April 1, 2024 until May 1, 2024.

Under Mr. Bagshaw's employment agreement, as a result of his retirement, Mr. Bagshaw was entitled to: (i) any unpaid base salary through the employment end date, (ii) accrued, vested benefits under the Company's benefit plans and programs and pursuant to any equity award agreements relating to awards under the current or any future Company equity incentive plan, (iii) any accrued but unused vacation, and (iv) any unreimbursed expenses incurred through the employment end date in accordance with the Company's expense reimbursement policies.

Mr. Bagshaw's employment agreement contained a non-competition provision that provided he may not, during the term of his employment and for one year after termination of employment, (a) engage in any competitive business or activity and (b)(i) solicit or otherwise induce any Company employee to terminate his or her employment with the Company, (ii) solicit or hire any of our suppliers, joint ventures, research partners or customers for the purpose of competing with the Company, (iii) encourage any of such persons or entities not to enter into a business relationship with MKS or interfere with the relationship between the Company and such persons or entities, or (iv) sell to any of the Company's customers any products of the types sold by the Company with respect to which products Mr. Bagshaw had material dealings in the performance of his duties within the period two years prior to his termination.

Any equity awarded to Mr. Bagshaw that was unvested as of the date of his retirement was subject to accelerated vesting, to the extent provided in the RSU agreements governing such awards.

The RSU agreements for Mr. Bagshaw provided for full acceleration of vesting of all shares (or, in the case of performance-based RSUs that are still subject to performance criteria, the actual number of RSUs to vest based upon satisfaction of performance criteria) upon retirement. The value of Mr. Bagshaw's accelerated unvested equity totaled \$2,582,487.

In addition, Mr. Bagshaw received a cash payment for accrued but unused vacation in the amount of \$441,729. Therefore, the total benefits that Mr. Bagshaw received upon his retirement from the Company effective May 1, 2024 was \$3,024,216.

CEO Pay Ratio

We disclose the ratio of our median employee's annual total compensation to our principal executive officer's annual total compensation to provide a measure of equitability of pay within our Company. We believe our compensation philosophy and process yield an equitable result for all of our employees. During 2024, our principal executive officer was our Chief Executive Officer, John T.C. Lee. For 2024, the annual total compensation for Dr. Lee was \$8,760,125 and the annual total compensation for our median employee was \$69,685, resulting in a pay ratio of approximately 125:1.

In accordance with applicable SEC rules, we identified the median employee as of December 18, 2022 (the median employee determination date) by (i) aggregating for each applicable employee (A) annual base salary for salaried employees (or hourly rate multiplied by expected annual work schedule for hourly employees), (B) target bonus and commissions (or local country equivalent), (C) actual overtime and double-time received for 2022, and (D) the accounting value of any equity granted during 2022, and (ii) ranking this compensation measure for our employees from lowest to highest. This calculation was performed for all employees, excluding Dr. Lee, whether employed on a full-time, part-time, or seasonal basis. For purposes of identifying the median employee, we converted amounts paid in foreign currencies to U.S. Dollars based on the applicable average exchange rates for

December 2022. For 2024, we continued to use our 2022 median employee for our pay ratio analysis, as there have been no changes to our employee population or employee compensation arrangements that we reasonably believed would significantly affect our pay ratio disclosure.

The pay ratio reported above is a reasonable estimate calculated in a manner consistent with SEC rules based on our internal records and the methodology described above. Because the SEC rules for identifying the median compensated employee and calculating the pay ratio based on that employee's annual total compensation allow companies to adopt a variety of methodologies, apply certain exclusions, and make reasonable estimates and assumptions that reflect their employee populations and compensation practices, the pay ratio reported by other companies may not be comparable to the pay ratio reported above, as other companies have different employee populations and compensation practices and may utilize different methodologies, exclusions, estimates, and assumptions in calculating their own pay ratios.

Pay Versus Performance

Tabular Disclosure of Compensation Actually Paid versus Performance

The following table discloses information on “compensation actually paid,” or CAP, to our principal executive officers, or PEOs, and the average CAP to our other Named Executive Officers, or non-PEO NEOs, during the previous five fiscal years, alongside Company total shareholder return, or TSR, peer group TSR, net income (loss), and the Company-selected financial performance measure of Adjusted EBITDA.

Year	Summary Compensation Table Total for PEO(1)		CAP to PEO(2)		Average Summary Compensation Table Total for Non-PEO NEOs(3)	Average CAP to Non-PEO NEOs(4)	Value of Initial Fixed \$100 Investment Based On:		Net Income (Loss) (\$ millions)	Adjusted EBITDA (\$ millions)(6)
	Lee	Colella	Lee	Colella			TSR	Peer Group TSR(5)		
2024 ...	\$8,760,125	N/A	\$ 7,389,231	N/A	\$1,953,259	\$1,818,697	\$ 98.47	\$175.92	\$ 190	\$927
2023 ...	\$7,906,628	N/A	\$13,215,067	N/A	\$2,117,764	\$3,083,750	\$ 96.33	\$150.70	\$(1,841)	\$863
2022 ...	\$8,058,382	N/A	\$ 3,494,929	N/A	\$2,046,599	\$ 759,709	\$ 78.58	\$125.15	\$ 333	\$854
2021 ...	\$7,596,357	N/A	\$11,383,747	N/A	\$2,311,088	\$3,336,104	\$160.26	\$160.00	\$ 551	\$868
2020 ...	\$6,082,216	\$422,186	\$ 8,922,167	\$838,753	\$2,270,297	\$3,494,613	\$137.71	\$123.86	\$ 350	\$601

- (1) These amounts reflect the total compensation of Dr. Lee for the previous five years and the total compensation of Mr. Colella for 2020, each as calculated in accordance with the requirements of Item 402(c) of Regulation S-K, or Item 402(c). Dr. Lee succeeded Mr. Colella as our CEO on January 1, 2020.
- (2) These amounts reflect CAP for Dr. Lee for the previous five years and for Mr. Colella for 2020, each as calculated in accordance with Item 402(v) of Regulation S-K, or Item 402(v). The table below summarizes the adjustments required to reconcile total compensation from the summary compensation table to CAP for each of our PEOs for the previous five years.

Adjustment	2024	2023	2022	2021	2020	
	Lee	Lee	Lee	Lee	Lee	Colella
Total Compensation from Summary Compensation Table	\$ 8,760,125	\$ 7,906,628	\$ 8,058,382	\$ 7,596,357	\$ 6,082,216	\$ 422,186
Less Fair Value of Equity Awards Reported in the Summary Compensation Table in the Covered Year	\$(7,388,552)	\$(5,900,090)	\$(5,909,984)	\$(4,478,002)	\$(3,205,190)	\$(198,409)
Plus Fair Value of Covered Year Equity Awards Unvested at Fiscal Year-End	\$ 4,616,322	\$ 9,488,697	\$ 5,503,956	\$ 7,086,150	\$ 5,333,199	\$ 299,195
Year-Over-Year Change in Fair Value of Prior Years' Equity Awards Unvested at Fiscal Year-End	\$ 121,996	\$ 989,809	\$(3,482,934)	\$ 698,646	\$ 651,261	\$ -
Change as of the Vesting Date (From the End of the Prior Fiscal Year) in Fair Value of Prior Years' Equity Awards Vested in the Covered Year	\$ 1,279,340	\$ 730,023	\$(674,491)	\$ 480,596	\$ 60,681	\$ 315,781
Compensation Actually Paid ...	\$ 7,389,231	\$13,215,067	\$ 3,494,929	\$11,383,747	\$ 8,922,167	\$ 838,753

- (3) These amounts reflect the average total compensation of Mr. Mayampurath, Ms. Burke, Mr. Henry, Mr. Schreiner, and Mr. Bagshaw for 2024; Ms. Burke, Mr. Henry, Mr. Schreiner, and Mr. Bagshaw for 2023 and 2022; Ms. Burke, Mr. Schreiner, Mr. Bagshaw, and Dr. Mark Gitin, our former Executive Vice President and General Manager, Photonics Solutions Division, for 2021; and Ms. Burke, Mr. Schreiner, and Mr. Bagshaw for 2020, each as calculated in accordance with the requirements of Item 402(c).

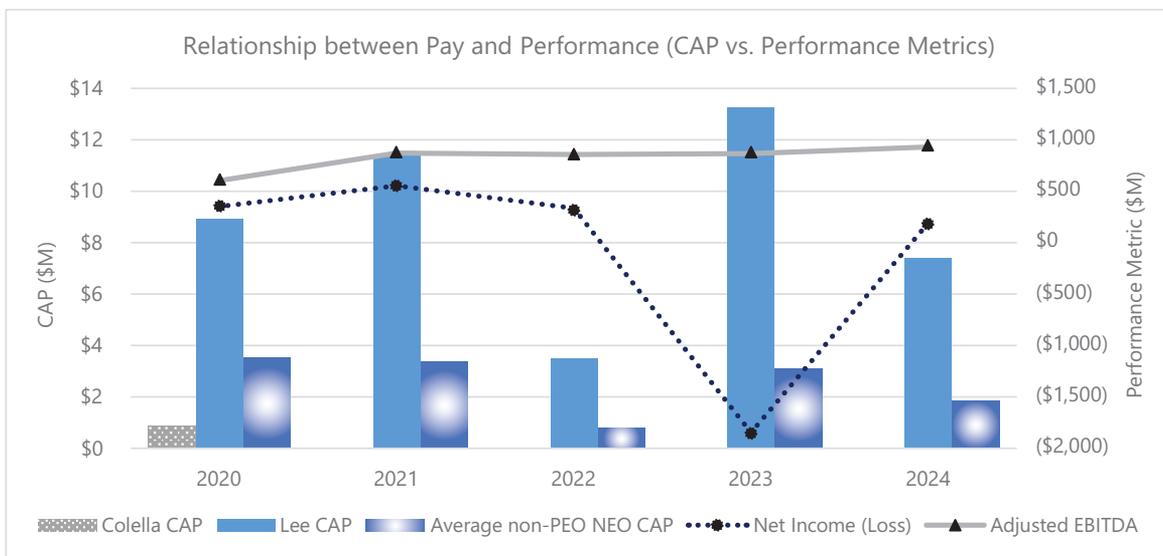
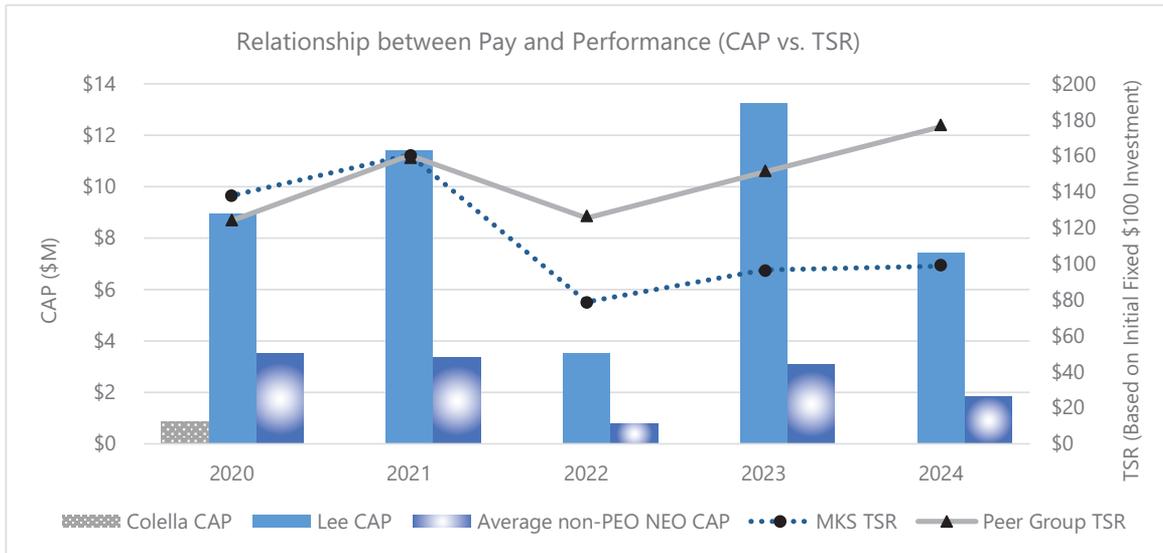
- (4) These amounts reflect the average CAP for our non-PEO NEOs for the previous five years, each as calculated in accordance with the requirements of Item 402(v). The table below summarizes the adjustments required to reconcile average total compensation from the summary compensation table to average CAP for our non-PEO NEOs for the previous five years.

Adjustment	2024	2023	2022	2021	2020
	Non-PEO NEOs	Non-PEO NEOs	Non-NEO PEOs	Non-NEO PEOs	Non-NEO PEOs
Average Total Compensation from Summary Compensation Table	\$ 1,953,259	\$ 2,117,764	\$ 2,046,599	\$ 2,311,088	\$ 2,270,297
Less Average Fair Value of Equity Awards Reported in the Summary Compensation Table in the Covered Year	\$(1,154,794)	\$(1,130,850)	\$(1,132,739)	\$(1,020,430)	\$(1,010,868)
Plus Average Fair Value of Covered Year Equity Awards Unvested at Fiscal Year-End	\$ 833,417	\$ 1,742,044	\$ 1,025,706	\$ 1,577,301	\$ 1,672,797
Year-Over-Year Change in Average Fair Value of Prior Years' Equity Awards Unvested at Fiscal Year-End	\$ 10,766	\$ 198,872	\$ (805,502)	\$ 305,120	\$ 526,229
Change as of the Vesting Date (From the End of the Prior Fiscal Year) in Average Fair Value of Prior Years' Equity Awards Vested in the Covered Year	\$ 176,049	\$ 155,920	\$ (374,355)	\$ 163,025	\$ 36,158
Average Compensation Actually Paid	\$ 1,818,697	\$ 3,083,750	\$ 759,709	\$ 3,336,104	\$ 3,494,613

- (5) Peer Group TSR represents TSR for the S&P 1500 Composite Electronic Equipment Instruments & Components Index, which is the industry peer group used for purposes of Item 201(e) of Regulation S-K.
- (6) We selected this measure as the most important in linking 2024 NEO CAP to Company performance because long-term equity incentive compensation comprised the largest percentage of total NEO compensation and Adjusted EBITDA was the financial measure we used to determine achievement under 70% of the performance-based RSUs granted in 2024. Adjusted EBITDA is defined as the Company's GAAP operating income, excluding any charges or income not related to the operating performance of the Company, plus depreciation and stock compensation expense. For 2024, Adjusted EBITDA excludes the Non-Executive Bonus Adjustment. For 2022, Adjusted EBITDA excludes the results of Atotech, which we acquired in August 2022. For 2021, Adjusted EBITDA excludes the results of Photon Control, which we acquired in July 2021. For further information regarding Adjusted EBITDA and its function in our executive compensation program, see "Executive Compensation — Compensation Discussion and Analysis — Elements of Compensation — Long-Term Equity Incentive Compensation" above.

Disclosure of the Relationship Between Compensation Actually Paid and Financial Performance Measures

The following two graphs further illustrate the relationship between the pay and performance figures that are included in the pay versus performance tabular disclosure above. The first graph below illustrates the relationship among PEO CAP, Average Non-PEO CAP, Company total shareholder return (MKS TSR), and S&P 1500 Composite Electronic Equipment Instruments & Components Index total shareholder return (Peer Group TSR). The second graph below illustrates the relationship among PEO CAP, Average Non-PEO CAP, Company Net Income (Loss), and Company Adjusted EBITDA.



Tabular Disclosure of Most Important Measures Linking Compensation Actually Paid During 2024 to Company Performance

We disclose below the most important measures we used to link 2024 NEO CAP to Company performance. For 2024, Named Executive Officers were granted two performance-based equity awards, one of which was based on achievement of Adjusted EBITDA at different adjusted revenue levels and the other of which was based on achievement of rTSR. For 2024, Named Executive Officers were also eligible for variable cash compensation based on achievement of non-GAAP operating income and adjusted net debt. For further information regarding these measures and their function in our executive compensation program, see “Executive Compensation — Compensation Discussion and Analysis” above.

2024 Most Important Measures

Adjusted EBITDA
Non-GAAP Operating Income
Relative Total Shareholder Return
Adjusted Net Debt
Adjusted Revenue

EQUITY COMPENSATION PLAN INFORMATION

The following table provides information about the securities authorized for issuance under our equity compensation plans as of December 31, 2024:

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants, and rights(1)	Weighted-average exercise price of outstanding options, warrants, and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
	(a)	(b)	(c)
Equity compensation plans approved by security holders	921,365	-	5,102,154(2)
Equity compensation plans not approved by security holders	-	-	-
Total	921,365		5,102,154(2)

- (1) In connection with our acquisition of Newport in April 2016 and ESI in February 2019, we assumed certain RSUs granted under certain Newport and ESI equity plans, which we refer to as the Newport Assumed RSUs and ESI Assumed RSUs, as applicable, and which were converted automatically into RSUs with respect to shares of our Common Stock. As of December 31, 2024, the number of shares reflected in column (a) consists of: (i) Newport Assumed RSUs with respect to 940 shares of our Common Stock, (ii) ESI Assumed RSUs with respect to 3,796 shares of our Common Stock, (iii) RSUs representing the right to receive an aggregate of 89,024 shares of our Common Stock upon vesting under the 2014 Stock Incentive Plan (excluding shares from accrued dividend equivalents), (iv) RSUs representing the right to receive an aggregate of 827,361 shares of our Common Stock upon vesting under the 2022 Stock Incentive Plan (excluding shares from accrued dividend equivalents), and (v) RSUs representing the right to receive an aggregate of 244 shares of our common stock upon vesting under the 2014 Stock Incentive Plan and the 2022 Stock Incentive Plan as a result of accrued dividend equivalents on the Newport Assumed RSUs and the ESI Assumed RSUs in deferred compensation plans.
- (2) As of December 31, 2024, the number of shares reflected in column (c) consists of: (i) 3,858,630 shares available for issuance under our 2022 Stock Incentive Plan and (ii) 1,243,524 shares reserved for issuance under our 2014 Employee Stock Purchase Plan. Shares issued under our 2022 Stock Incentive Plan in respect of RSUs, restricted stock, or other stock-based awards with a per share price lower than 100% of fair market value on the date of grant count against the shares available for grant under the plan as 1.91 shares for every share granted.

OTHER MATTERS

Our Board of Directors does not know of any other matters which may come before the 2025 Annual Meeting. However, if any other matters are properly presented to the 2025 Annual Meeting, it is the intention of the persons named in the accompanying proxy to vote, or otherwise act, in accordance with their judgment on such matters.

Expenses and Solicitation

All costs of solicitation of proxies will be borne by us. In addition to solicitations by mail, our directors, officers, and regular employees, without additional remuneration, may solicit proxies by telephone and personal interviews, and we reserve the right to retain outside agencies for the purpose of soliciting proxies. Brokers, custodians, and fiduciaries will be requested to forward proxy soliciting material to the owners of stock held in their names, and we will reimburse them for their reasonable out-of-pocket expenses incurred in connection with the distribution of proxy materials.

Deadline for Submission of Shareholder Proposals for the 2026 Annual Meeting

Proposals of shareholders intended to be presented at the 2026 Annual Meeting, must be received by us at our principal office in Andover, Massachusetts no later than December 2, 2025 for inclusion in the proxy statement for that meeting.

In addition, our By-Laws (which are on file with the SEC) require that we be given advance notice of matters that shareholders wish to present for action at an annual meeting of shareholders, including director nominations (other than matters included in our proxy statement in accordance with Rule 14a-8 of the Exchange Act). The required written notice must be delivered to our Secretary at our principal office at least 90 days but no more than 120 days prior to the first anniversary of the preceding year's annual meeting or it will be considered untimely. However, in the event that the date of the annual meeting is advanced by more than 20 days, or delayed by more than 60 days, from the first anniversary of the preceding year's annual meeting, a shareholder's notice must be received no earlier than the 120th day prior to the annual meeting and not later than the close of business on the later of (i) the 90th day prior to the annual meeting and (ii) the seventh day following the day on which notice of the date of the annual meeting was mailed or public disclosure of the date of the annual meeting was made, whichever occurs first. Assuming that the 2026 Annual Meeting is not advanced by more than 20 days or delayed by more than 60 days from the anniversary date of the 2025 Annual Meeting, shareholders will need to give us appropriate notice at the address noted above no earlier than January 12, 2026 and no later than February 11, 2026. The advance notice provisions of our By-Laws contain the requirements of the written notice of shareholders (including the information required by Rule 14a-19 under the Exchange Act) that shareholders must provide our Secretary.

Householding of Annual Meeting Materials

Some banks, brokers, and other nominees may participate in the practice of "householding" notices, proxy statements, and annual reports. This means that only one copy of the Notice, this proxy statement, and the 2024 Annual Report may have been sent to multiple shareholders in your household unless we have received contrary instructions from one or more shareholders. We will promptly deliver a separate copy of any such document to you if you contact us at the following address or telephone number: Investor Relations Department, MKS Instruments, Inc., 2 Tech Drive, Suite 201, Andover, MA 01810, (978) 284-4705. If you want to receive separate copies of notices, proxy statements, or annual reports in the future, or if you are receiving multiple copies and would like to receive only one copy per household, you should contact your bank, broker, or other nominee, or you may contact us at the above address or telephone number.

No Incorporation by Reference

As provided under SEC rules, the "Audit Committee Report," the "Compensation Committee Report," and the disclosure under the "Pay Versus Performance" heading are not incorporated by reference into any of our other filings with the SEC, except to the extent we specifically incorporate either report or such disclosure by reference into a filing. This proxy statement includes several website addresses. These website addresses are intended to be inactive textual references only. None of the information on, or accessible through, these websites is part of this proxy statement or is incorporated by reference herein.

By Order of the Board of Directors,

KATHLEEN F. BURKE
Secretary

April 1, 2025

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APPENDIX A

Restated Articles of Organization

The Commonwealth of Massachusetts
William Francis Galvin
Secretary of the Commonwealth
One Ashburton Place, Boston, Massachusetts 02108-1512

Restated Articles of Organization **(General Laws Chapter 156D, Section 10.07; 950 CMR 113.35)**

- (1) Exact name of corporation: MKS Instruments, Inc.
- (2) Registered office address: c/o Cogency Global Inc., 45 School Street, Suite 202, Boston, MA 02108
- (3) Date adopted:
- (4) Approved by:
(check appropriate box)
 the directors without shareholder approval and shareholder approval was not required;
OR
 the board of directors and the shareholders in the manner required by G.L. Chapter 156D and the corporation's articles of organization.
- (5) The following information is required to be included in the articles of organization pursuant to G.L. Chapter 156D, Section 2.02 except that the supplemental information provided for in Article VIII is not required:*

ARTICLE I

The exact name of the corporation is: MKS Inc.

ARTICLE II

Unless the articles of organization otherwise provide, all corporations formed pursuant to G.L. Chapter 156D have the purpose of engaging in any lawful business. Please specify if you want a more limited purpose:**

THE PURPOSES FOR WHICH THE CORPORATION IS FORMED ARE AS FOLLOWS:

To design, manufacture, sell, lease and license instruments of all kinds, including electromechanical, electronic and mechanical gauges for the measurement of pressure, temperature, acceleration, flow and level of liquids and gases; to design, manufacture, sell, lease and license control systems incorporating measuring devices, and control systems separate from measuring devices, for the control of production processes and operations of all kinds; to design, manufacture, sell, lease and license instrumentation for military use; to design, manufacture, sell, lease and license instrumentation for use in research laboratories, in industry, in educational institutions, for medical purposes and for use elsewhere and for other purposes; and in general to design, manufacture, sell, lease and license electro-mechanical, electronic and mechanical devices of all kinds.

To buy and sell at wholesale and retail, or otherwise, to manufacture, produce, adapt, repair, dispose of, export, import and in any other manner to deal in goods, wares, merchandise, articles and things of manufacture

* *Changes to Article VIII must be made by filing a statement of change of supplemental information form.*

** *Professional corporations governed by G.L. Chapter 156A and must specify the professional activities of the corporation.*

or otherwise of all materials, supplies and other articles and things necessary or convenient for use in connection with any of said businesses or any other business or any part thereof; and to manufacture, repair, purchase, sell, lease, dispose of and otherwise deal in machinery, tools, and appliances which are or may be used in connection with the purchase, sale, production, adaptation, repair, disposition of, export, import or other dealings in said goods, wares, merchandise, articles and things.

To purchase, lease or otherwise acquire as a going concern or otherwise all or any part of the franchises, rights, property, assets, business, good will or capital stock of any persons, firm, corporation, trust or association engaged in whole or in part in any business in which this corporation is empowered to engage, or in any other business; to pay for the same in whole or in part in cash, stock, bonds, notes, securities or other evidence of indebtedness of this corporation or in any other manner; to assume as part of the consideration or otherwise any and all debts, contracts or liabilities, matured or unmatured, fixed or contingent, of any such person, firm or corporation, trust or association; and to operate, manage, develop and generally to carry on the whole or any part of any such business under any name or names which it may select or designate.

To construct, lease, hire, purchase or otherwise acquire and hold or maintain, and to rebuild, enlarge, improve, furnish, equip, alter, operate and dispose of warehouses, factories, offices and other buildings, real estate, structures or parts thereof, and appliances for the preparation, manufacture, purchase, sale and distribution of goods, wares, merchandise, things, and articles of all kinds.

To acquire, hold, use, sell, assign, lease, grant licenses in respect of, mortgage, or otherwise dispose of franchises, letters patent of the United States or of any foreign country, patent rights, licenses and privileges, inventions, improvements and processes, systems, copyrights, trade-marks and trade names, relating to, or useful in connection with, any business of this corporation.

To buy or otherwise acquire, to sell, assign, pledge, or otherwise dispose of and deal in stocks, bonds, securities, notes and other obligations of any person, firm or corporation, including this corporation, organized for or engaged in similar or cognate purposes; also stocks, bonds, securities, notes, and other obligations of any person, firm, or corporation, including this corporation, which it may be found or deemed necessary, valuable, or convenient for this corporation to acquire and deal in, in pursuance or furtherance of or in connection with the businesses herein specified, or any other business.

To borrow money and contract indebtedness for all proper corporate purposes, to issue bonds, notes, and other evidences of indebtedness, to secure the same by pledge, mortgage, or lien on all or any part of the property of the corporation, tangible or intangible; and to assume or guarantee or secure in like manner or otherwise, the leases, contracts, or other obligations, fixed or contingent, or the payment of any dividends on any stock or shares or of the principal or interest on any bonds, notes, or other evidences of indebtedness of any person, firm, corporation, trust, or association in which this corporation has a financial interest.

To enter into, make, and perform contracts of every name, nature, and kind with any person, firm, association, or corporation which may be deemed valuable, expedient, or convenient for this corporation in pursuance of or in furtherance of or in connection with any of the objects of incorporation of this corporation or in connection with any of the businesses or purposes herein specified.

The enumeration of specific powers herein shall not be construed as limiting or restricting in any way the general powers herein set forth, but nothing herein contained shall be construed as authorizing the business of banking.

ARTICLE III

State the total number of shares and par value, * if any, of each class of stock that the corporation is authorized to issue. All corporations must authorize stock. If only one class or series is authorized, it is not necessary to specify any particular designation.

WITHOUT PAR VALUE		WITH PAR VALUE		
TYPE	NUMBER OF SHARES	TYPE	NUMBER OF SHARES	PAR VALUE
Common	200,000,000	Common		
Preferred		Preferred	2,000,000	\$0.01

ARTICLE IV

Prior to the issuance of shares of any class or series, the articles of organization must set forth the preferences, limitations and relative rights of that class or series. The articles may also limit the type or specify the minimum amount of consideration for which shares of any class or series may be issued. Please set forth the preferences, limitations and relative rights of each class or series and, if desired, the required type and minimum amount of consideration to be received.

The total number of shares of all classes of stock which the corporation shall have authority to issue is 202,000,000 shares, consisting of (i) 200,000,000 shares of Common Stock, no par value per share ("Common Stock"), and (ii) 2,000,000 shares of Preferred Stock, \$0.01 par value per share ("Preferred Stock"). Upon the filing of the corporation's Restated Articles of Organization on March 24, 1999 (the "Mandatory Conversion Date") each share of Class A Common Stock, no par value per share, and each share of Class B Common Stock, no par value per share (together with the Class A Common Stock, the "Class Common Stock"), shall be converted into one share of Common Stock, no par value per share. All holders of record of shares of Class Common Stock shall be given written notice of the Mandatory Conversion Date and the place designated for mandatory conversion of all such shares of Class Common Stock pursuant to this provision. Such notice need not be given in advance of the occurrence of the Mandatory Conversion Date. Such notice shall be sent by first class or registered mail, postage prepaid, to each record holder of Class Common Stock at such holder's address last shown on the records of the transfer agent for the Class Common Stock (or the records of the corporation, if it serves as its own transfer agent). Upon receipt of such notice, each holder of shares of Class Common Stock shall surrender his or its certificate or certificates for all such shares to the corporation at the place designated in such notice, and shall thereafter receive certificates for the number of shares of Common Stock equal to the number of shares of Class Common Stock represented by such certificates. On the Mandatory Conversion Date, all rights with respect to the Class Common Stock so converted, including the rights, if any, to receive notices and vote (other than as a holder of Common Stock) will terminate, except only the rights of the holders thereof, upon surrender of their certificate or certificates therefor, to receive certificates for the number of shares of Common Stock into which such Class Common Stock has been converted, and payment of any declared but unpaid dividends thereon. If so required by the corporation, certificates surrendered for conversion shall be endorsed or accompanied by written instrument or instruments of transfer, in form satisfactory to the corporation, duly executed by the registered holder or by his or its attorney duly authorized in writing. As soon as practicable after the Mandatory Conversion Date and the surrender of the certificate or certificates for Class Common Stock, the corporation shall cause to be issued and delivered to such holder, or on his or its written order, a certificate or certificates for the number of full shares of Common Stock issuable on such conversion in accordance with the provisions hereof.

All certificates evidencing shares of Class Common Stock which are required to be surrendered for conversion in accordance with the provisions hereof shall, from and after the Mandatory Conversion Date, be deemed to have been retired and cancelled and the shares of Class Common Stock represented thereby converted into Common Stock for all purposes, notwithstanding the failure of the holder or holders thereof to surrender such certificates on or prior to such date.

* G.L. Chapter 156D eliminates the concept of par value, however a corporation may specify par value in Article III. See G.L. Chapter 156D, Section 6.21, and the comments relative thereto.

The following is a statement of the designation and the powers, privileges and rights, and the qualifications, limitations or restrictions thereof in respect of each class of capital stock of the corporation.

A. COMMON STOCK.

1. GENERAL. The voting, dividend and liquidation rights of the holders of the Common Stock are subject to and qualified by the rights of the holders of the Preferred Stock of any series as may be designated by the Board of Directors upon any issuance of the Preferred Stock of any series.

2. VOTING. The holders of the Common Stock are entitled to one vote for each share held at all meetings of stockholders (and written actions in lieu of meetings). There shall be no cumulative voting.

3. DIVIDENDS. Dividends may be declared and paid on the Common Stock from funds lawfully available therefor as and when determined by the Board of Directors and subject to any preferential dividend rights of any then outstanding Preferred Stock.

4. LIQUIDATION. Upon the dissolution or liquidation of the corporation, whether voluntary or involuntary, holders of Common Stock will be entitled to receive all assets of the corporation available for distribution to its stockholders, subject to any preferential rights of any then outstanding Preferred Stock.

B. PREFERRED STOCK.

Preferred Stock may be issued from time to time in one or more series, each of such series to have such terms as stated or expressed herein and in the resolution or resolutions providing for the issue of such series adopted by the Board of Directors of the corporation as hereinafter provided. Any shares of Preferred Stock which may be redeemed, purchased or acquired by the corporation may be reissued except as otherwise provided by law. Different series of Preferred Stock shall not be construed to constitute different classes of shares for the purposes of voting by classes unless expressly provided.

Authority is hereby expressly granted to the Board of Directors from time to time to issue the Preferred Stock in one or more series, and in connection with the creation of any such series, by resolution or resolutions providing for the issue of the shares thereof, to determine and fix such voting powers, full or limited, or no voting powers, and such designations, preferences and relative participating, optional or other special rights, and qualifications, limitations or restrictions thereof, including without limitation thereof, dividend rights, conversion rights, redemption privileges and liquidation preferences, as shall be stated and expressed in such resolutions, all to the full extent now or hereafter permitted by Chapter 156B of the Massachusetts General Laws. Without limiting the generality of the foregoing, the resolutions providing for issuance of any series of Preferred Stock may provide that such series shall be superior or rank equally or be junior to the Preferred Stock of any other series to the extent permitted by law. No vote of the holders of the Preferred Stock or Common Stock shall be a prerequisite to the issuance of any shares of any series of the Preferred Stock authorized by and complying with the conditions of the Articles of Organization, the right to have such vote being expressly waived by all present and future holders of the capital stock of the corporation.

ARTICLE V

The restrictions, if any, imposed by the articles or organization upon the transfer of shares of any class or series of stock are:

None.

ARTICLE VI

Other lawful provisions, and if there are no such provisions, this article may be left blank.

6A. LIMITATION OF DIRECTOR LIABILITY

Except to the extent that Chapter 156B of the Massachusetts General Laws prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty, no director of the corporation shall be personally liable to the corporation or its stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability. No amendment to or repeal of this provision shall apply to or have any effect on the liability or alleged liability of any director of the corporation for or with respect to any acts or omissions of such director occurring prior to such amendment.

6B. INDEMNIFICATION

1. **ACTIONS, SUITS AND PROCEEDINGS.** The corporation shall indemnify each person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he is or was, or has agreed to become, a director or officer of the corporation, or is or was serving, or has agreed to serve, at the request of the corporation, as a director or officer of, or in a similar capacity with, another organization or in any capacity with respect to any employee benefit plan of the corporation (all such persons being referred to hereafter as an "Indemnitee"), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees), judgments and fines incurred by him or on his behalf in connection with such action, suit or proceeding and any appeal therefrom, unless the Indemnitee shall be finally adjudicated in such action, suit or proceeding not to have acted in good faith in the reasonable belief that his action was in the best interests of the corporation or, to the extent such matter relates to service with respect to an employee benefit plan, in the best interests of the participants or beneficiaries of such employee benefit plan. Notwithstanding anything to the contrary in this Article, except as set forth in Section 6 below, the corporation shall not indemnify an Indemnitee seeking indemnification in connection with a proceeding (or part thereof) initiated by the Indemnitee unless the initiation thereof was approved by the Board of Directors of the corporation. Notwithstanding anything to the contrary in this Article, the corporation shall not indemnify an Indemnitee to the extent such Indemnitee is reimbursed from the proceeds of insurance, and in the event the corporation makes any indemnification payments to an Indemnitee and the Indemnitee is subsequently reimbursed from the proceeds of insurance, such Indemnitee shall promptly refund such indemnification payments to the corporation to the extent of such insurance reimbursement.

2. **SETTLEMENTS AND COMPROMISE.** The right to indemnification conferred in this Article shall include the right to be paid by the corporation for amounts paid in settlement or compromise of any such action, suit or proceeding and any appeal therefrom, and all expenses (including attorneys' fees) incurred in connection with such settlement or compromise, pursuant to a consent decree or otherwise, unless and to the extent it is determined pursuant to Section 5 below that the Indemnitee did not act in good faith in the reasonable belief that his action was in the best interests of the corporation or, to the extent such matter relates to service with respect to an employee benefit plan, in the best interests of the participants or beneficiaries of such employee benefit plan.

3. **NOTIFICATION AND DEFENSE OF CLAIM.** As a condition precedent to his right to be indemnified, the Indemnitee must notify the corporation in writing as soon as practicable of any action, suit, proceeding or investigation involving him for which indemnity will or could be sought. With respect to any action, suit, proceeding or investigation of which the corporation is so notified, the corporation will be entitled to participate therein at its own expense and/or to assume the defense thereof at its own expense, with legal counsel reasonably acceptable to the Indemnitee. After notice from the corporation to the Indemnitee of its election so to assume such defense, the corporation shall not be liable to the Indemnitee for any legal or other expenses subsequently incurred by the Indemnitee in connection with such claim, other than as provided below in this Section 3. The Indemnitee shall have the right to employ his own counsel in connection with such claim, but the fees and expenses of such counsel incurred after notice from the corporation of its assumption of the defense thereof shall be at the expense of the Indemnitee unless (i) the employment of counsel by the Indemnitee has been authorized by the corporation, (ii) counsel to the Indemnitee shall have reasonably concluded that there may be a conflict of

interest or position on any significant issue between the corporation and the Indemnitee in the conduct of the defense of such action or (iii) the corporation shall not in fact have employed counsel to assume the defense of such action, in each of which cases the fees and expenses of counsel for the Indemnitee shall be at the expense of the corporation, except as otherwise expressly provided by this Article. The corporation shall not be entitled, without the consent of the Indemnitee, to assume the defense of any claim brought by or in the right of the corporation or as to which counsel for the Indemnitee shall have reasonably made the conclusion provided for in clause (ii) above.

4. ADVANCE OF EXPENSES. Subject to the provisions of Section 5 below, in the event that the corporation does not assume the defense pursuant to Section 3 of this Article of any action, suit, proceeding or investigation of which the corporation receives notice under this Article, any expenses (including attorneys' fees) incurred by an Indemnitee in defending a civil or criminal action, suit, proceeding or investigation or any appeal therefrom shall be paid by the corporation in advance of the final disposition of such matter; PROVIDED, HOWEVER, that the payment of such expenses incurred by an Indemnitee in advance of the final disposition of such matter shall be made only upon receipt of an undertaking by or on behalf of the Indemnitee to repay all amounts so advanced in the event that it shall ultimately be determined that the Indemnitee is not entitled to be indemnified by the corporation as authorized in this Article. Such undertaking shall be accepted without reference to the financial ability of the Indemnitee to make such repayment.

5. PROCEDURE FOR INDEMNIFICATION. In order to obtain indemnification or advancement of expenses pursuant to Section 1, 2 or 4 of this Article, the Indemnitee shall submit to the corporation a written request, including in such request such documentation and information as is reasonably available to the Indemnitee and is reasonably necessary to determine whether and to what extent the Indemnitee is entitled to indemnification or advancement of expenses. Any such indemnification or advancement of expenses shall be made promptly, and in any event within 60 days after receipt by the corporation of the written request of the Indemnitee, unless the corporation determines within such 60-day period that the Indemnitee did not meet the applicable standard of conduct set forth in Section 1 or 2, as the case may be. Such determination shall be made in each instance by (a) a majority vote of a quorum of the directors of the corporation, (b) a majority vote of a quorum of the outstanding shares of stock of all classes entitled to vote for directors, voting as a single class, which quorum shall consist of stockholders who are not at that time parties to the action, suit or proceeding in question, (c) independent legal counsel (who may, to the extent permitted by law, be regular legal counsel to the corporation), or (d) a court of competent jurisdiction.

6. REMEDIES. The right to indemnification or advances as granted by this Article shall be enforceable by the Indemnitee in any court of competent jurisdiction if the corporation denies such request, in whole or in part, or if no disposition thereof is made within the 60-day period referred to above in Section 5. Unless otherwise required by law, the burden of proving that the Indemnitee is not entitled to indemnification or advancement of expenses under this Article shall be on the corporation. Neither the failure of the corporation to have made a determination prior to the commencement of such action that indemnification is proper in the circumstances because the Indemnitee has met the applicable standard of conduct, nor an actual determination by the corporation pursuant to Section 5 that the Indemnitee has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that the Indemnitee has not met the applicable standard of conduct. The Indemnitee's expenses (including attorneys' fees) incurred in connection with successfully establishing his right to indemnification, in whole or in part, in any such proceeding shall also be indemnified by the corporation.

7. SUBSEQUENT AMENDMENT. No amendment, termination or repeal of this Article or of the relevant provisions of Chapter 156B of the Massachusetts General Laws or any other applicable laws shall affect or diminish in any way the rights of any Indemnitee to indemnification under the provisions hereof with respect to any action, suit, proceeding or investigation arising out of or relating to any actions, transactions or facts occurring prior to the final adoption of such amendment, termination or repeal.

8. OTHER RIGHTS. The indemnification and advancement of expenses provided by this Article shall not be deemed exclusive of any other rights to which an Indemnitee seeking indemnification or advancement of expenses may be entitled under any law (common or statutory), agreement or vote of stockholders or directors or otherwise, both as to action in his official capacity and as to action in any other capacity while holding office for the corporation, and shall continue as to an Indemnitee who has ceased to be a director or officer, and shall inure to

the benefit of the estate, heirs, executors and administrators of the Indemnitee. Nothing contained in this Article shall be deemed to prohibit, and the corporation is specifically authorized to enter into, agreement with officers and directors providing indemnification rights and procedures different from those set forth in this Article. In addition, the corporation may, to the extent authorized from time to time by its Board of Directors, grant indemnification rights to other employees or agents of the corporation or other persons serving the corporation and such rights may be equivalent to, or greater or less than, those set forth in this Article.

9. PARTIAL INDEMNIFICATION. If an Indemnitee is entitled under any provision of this Article to indemnification by the corporation for some or a portion of the expenses (including attorneys' fees), judgments, fines or amounts paid in settlement or compromise actually and reasonably incurred by him or on his behalf in connection with any action, suit, proceeding or investigation and any appeal therefrom but not, however, for the total amount thereof, the corporation shall nevertheless indemnify the Indemnitee for the portion of such expenses (including attorneys' fees), judgments, fines or amounts paid in settlement or compromise to which the Indemnitee is entitled.

10. INSURANCE. The corporation may purchase and maintain insurance, at its expense, to protect itself and any director, officer, employee or agent of the corporation or another organization or employee benefit plan against any expense, liability or loss incurred by him in any such capacity, or arising out of his status as such, whether or not the corporation would have the power to indemnify such person against such expense, liability or loss under Chapter 156B of the Massachusetts General Laws.

11. MERGER OR CONSOLIDATION. If the corporation is merged into or consolidated with another corporation and the corporation is not the surviving corporation, the surviving corporation shall assume the obligations of the corporation under this Article with respect to any action, suit, proceeding or investigation arising out of or relating to any actions, transactions or facts occurring prior to the date of such merger or consolidation.

12. SAVINGS CLAUSE. If this Article or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the corporation shall nevertheless indemnify each Indemnitee as to any expenses (including attorneys' fees), judgments, fines and amounts paid in settlement or compromise in connection with any action, suit, proceeding or investigation, whether civil, criminal or administrative, including an action by or in the right of the corporation, to the fullest extent permitted by any applicable portion of this Article that shall not have been invalidated and to the fullest extent permitted by applicable law.

13. SUBSEQUENT LEGISLATION. If the Massachusetts General Laws are amended after adoption of this Article to expand further the indemnification permitted to Indemnitees, then the corporation shall indemnify such persons to the fullest extent permitted by the Massachusetts General Laws, as so amended.

6C. OTHER PROVISIONS

(a) The directors may make, amend, or repeal the By-Laws in whole or in part, except with respect to any provision of such By-Laws which by law or these Articles of Organization or the By-Laws requires action by the stockholders.

(b) Meetings of the stockholders of the corporation may be held anywhere in the United States.

(c) The corporation shall have the power to be a partner in any business enterprise which this corporation would have the power to conduct by itself.

(d) ~~The Notwithstanding any other provisions of these Restated Articles of Organization or the By-Laws or the fact that a higher percentage may be specified by law, the corporation, by vote of at least sixty-six and two-thirds percent (66 2/3%) of the stock outstanding and entitled to vote thereon (or if there are two or more classes of stock entitled to vote as separate classes, then by vote of at least sixty-six and two-thirds percent (66 2/3%) of each such class of stock outstanding), may (i) authorize any amendment to its Articles of Organization pursuant to Section 71 of Chapter 156B of the Massachusetts General Laws, as amended from time to time, (ii) authorize the sale, lease or exchange of all or substantially all of its property and assets, including its goodwill, pursuant to Section 75 of Chapter 156B of the Massachusetts General Laws, as amended from time to time, and (iii) approve an~~

~~agreement of merger or consolidation pursuant to Section 78 of Chapter 156B of the Massachusetts General Laws, as amended from time to time; PROVIDED, however, that if any such (i) amendment to its Articles of Organization, (ii) sale, lease, or exchange or (iii) merger or consolidation (each as more fully described above) has been approved by a majority of the Board of Directors of the corporation, then the corporation may authorize or approve such action by vote of a majority of the stock outstanding and entitled to vote thereon (or if there are two or more classes of stock entitled to vote as separate classes, then by vote of a majority of each such class of stock outstanding); may (i) approve any amendment to these Articles of Organization pursuant to Section 10.03 of Chapter 156D of the Massachusetts General Laws, as amended from time to time, (ii) sell, lease, exchange, or otherwise dispose of all, or substantially all, of its property, otherwise than in the usual and regular course of business, pursuant to Section 12.02 of Chapter 156D of the Massachusetts General Laws, as amended from time to time, (iii) approve a plan of merger or share exchange pursuant to Section 11.04 of Chapter 156D of the Massachusetts General Laws, as amended from time to time, (iv) approve a plan of domestication of the corporation to a foreign jurisdiction pursuant to Section 9.21 of Chapter 156D of the Massachusetts General Laws, as amended from time to time, (v) approve of a plan of entity conversion to a domestic or foreign other entity in accordance with Section 9.52 Chapter 156D of the Massachusetts General Laws, as amended from time to time, and (vi) approve a proposal to dissolve the corporation in accordance with Section 14.02 Chapter 156D of the Massachusetts General Laws, as amended from time to time.~~

(e) Chapter 110F of the Massachusetts General Laws, as it may be amended from time to time, shall not apply to the corporation.

Note: The preceding six (6) articles are considered to be permanent and may be changed only by filing appropriate articles of amendment.

ARTICLE VII

The effective date of organization of the corporation is the date and time the articles were received for filing if the articles are not rejected within the time prescribed by law. If a later effective date is desired, specify such date, which may not be later than the 90th day after the articles are received for filing:

The effective date of the restated Articles of Organization of the corporation shall be the date approved and filed by the Secretary of the Commonwealth. If a later effective date is desired, specify such date which shall not be more than thirty days after the date of filing.

It is hereby certified that these restated articles of organization consolidate all amendments into a single document. If a new amendment authorizes an exchange, or effects a reclassification or cancellation, of issued shares, provisions for implementing that action are set forth in these restated articles unless contained in the text of the amendment.

Specify the number(s) of the article(s) being amended: Article I and Article VI, Section 6C(d)

Signed by: _____,
(signature of authorized individual)

- Chairman of the board of directors,
- President,
- Other officer,
- Court-appointed fiduciary

On the _____ day of _____, _____.

APPENDIX B

Amendment to Second Amended and Restated By-Laws

The proposed amendment to Article VIII of the Company's By-Laws is set forth below. Text stricken through indicates deletions, and text that is underlined indicates additions.

ARTICLE VIII

AMENDMENTS

These By-Laws may be amended by the affirmative vote of the holders of ~~at least sixty-six and two-thirds percent (66 2/3%)~~ a majority of the shares of each class of the capital stock at the time outstanding and entitled to vote at any annual or special meeting of stockholders, if notice of the substance of the proposed amendment is stated in the notice of such meeting. If authorized by the Articles of Organization, the Board of Directors, by a majority of their number then in office, may also make, amend or repeal these By-Laws, in whole or in part, except with respect to (a) the provisions of these By-Laws governing (i) the removal of directors and (ii) the amendment of these By-Laws and (b) any provision of these By-Laws which by law, the Articles of Organization or these By-Laws requires action by the stockholders.

Not later than the time of giving notice of the meeting of stockholders next following the making, amending or repealing by the Board of Directors of any By-Law, notice stating the substance of such change shall be given to all stockholders entitled to vote on amending the By-Laws.

Second Amended and Restated By-Laws

SECOND AMENDED AND RESTATED BY-LAWS
OF
MKS INSTRUMENTS, INC.
BY-LAWS

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ARTICLE I
STOCKHOLDERS

1.1. Annual Meeting. The Corporation shall hold an annual meeting of stockholders at a time to be fixed by the Board of Directors, the Chief Executive Officer or the President and stated in the notice of the meeting. The purposes for which the annual meeting is to be held, in addition to those prescribed by the Articles of Organization, shall be for electing Directors and for such other purposes as shall be specified in the notice for the meeting, and only business within such purposes may be conducted at the meeting. In the event an annual meeting is not held at the time fixed in accordance with these By-Laws or the time for an annual meeting is not fixed in accordance with these By-Laws to be held within 13 months after the last annual meeting, the Corporation may designate a special meeting as a special meeting in lieu of the annual meeting, and such meeting shall have all of the effect of an annual meeting.

1.2. Notice of Business at Annual Meetings.

(a) At any annual meeting of the stockholders, only such business shall be conducted as shall have been properly brought before the meeting. To be properly brought before an annual meeting, business must be specified in the notice of meeting (or any supplement thereto) given by or at the direction of the Board of Directors. For business to be properly brought before an annual meeting by a stockholder, (i) if such business relates to the nomination of a person for election as a Director of the Corporation, the procedures in Section 1.9 must be complied with and (ii) if such business relates to any other matter, the business must constitute a proper matter under Massachusetts law for stockholder action and the stockholder must (x) have given timely notice thereof in writing to the Secretary in accordance with the procedures in Section 1.2(b), (y) be a stockholder of record on the date of the giving of such notice and on the record date for the determination of stockholders entitled to vote at such annual meeting and (z) be entitled to vote at such annual meeting.

(b) To be timely, a stockholder's notice must be received in writing by the Secretary at the principal executive offices of the Corporation not less than 90 days nor more than 120 days prior to the first anniversary of the preceding year's annual meeting; provided, however, that in the event that the date of the annual meeting is advanced by more than 20 days, or delayed by more than 60 days, from the first anniversary of the preceding year's annual meeting, a stockholder's notice must be so received not earlier than the 120th day prior to such annual meeting and not later than the close of business on the later of (A) the 90th day prior to such annual meeting and (B) the seventh day following the day on which notice of the date of such annual meeting was mailed or public disclosure of the date of such annual meeting was made, whichever first occurs. In no event shall the adjournment or postponement of an annual meeting (or the public announcement thereof) commence a new time period (or extend any time period) for the giving of a stockholder's notice.

The stockholder's notice to the Secretary shall set forth: (A) as to each matter the stockholder proposes to bring before the annual meeting (1) a brief description of the business desired to be brought before the annual meeting, (2) the text of the proposal (including the exact text of any resolutions proposed for consideration and, in the event that such business includes a proposal to amend the By-laws, the exact text of the proposed amendment), and (3) the reasons for conducting such business at the annual meeting, and (B) as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the proposal is being made (1) the name and address of such stockholder, as they appear on the Corporation's books, and the name and address of such beneficial owner, (2) the class and number of shares of stock of the Corporation which are, directly or indirectly, owned, beneficially or of record, by such stockholder and such beneficial owner, (3) a description of any material financial interest of such stockholder or such beneficial owner and the respective Affiliates and Associates of, or others Acting in Concert (as defined below) with, such stockholder or such beneficial owner in such business, (4) a description of any agreement, arrangement or understanding between or among such stockholder, such beneficial owner and/or any Stockholder Associated Person (as defined below) and each proposed nominee any other person or persons (including their names) in connection with the proposal of such business or who may participate in the solicitation of proxies in favor of such proposal, (5) a description of any agreement, arrangement or understanding (including any derivative or short positions, swaps, profit interests, options, warrants, convertible securities, stock appreciation or similar rights, hedging transactions, and borrowed or loaned shares) that has been entered into by, or on behalf of, such stockholder, such beneficial owner and/or any Stockholder Associated Person, the effect or intent of which is to

mitigate loss to, manage risk or benefit of share price changes for, or increase or decrease the voting power of, such stockholder, such beneficial owner and/or any Stockholder Associated Person with respect to shares of stock of the Corporation, (6) any other information relating to such stockholder, such beneficial owner and/or any Stockholder Associated Person that would be required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for the business proposed pursuant to Section 14 of the Securities Exchange Act of 1934, as amended (the "Exchange Act") and the rules and regulations promulgated thereunder, (7) a representation that such stockholder intends to appear in person or by proxy at the annual meeting to bring such business before the meeting and (8) a representation whether such stockholder, such beneficial owner and/or any Stockholder Associated Person intends or is part of a group which intends (x) to deliver a proxy statement and/or form of proxy to holders of at least the percentage of the Corporation's outstanding capital stock required to approve or adopt the proposal (and such representation shall be included in any such proxy statement and form of proxy) and/or (y) otherwise to solicit proxies from stockholders in support of such proposal (and such representation shall be included in any such solicitation materials). Not later than 10 days after the record date for the meeting, the stockholder giving such notice shall provide an update, as of the record date, of the information required by Items (A)(3) and (B)(1)-(6) of the prior sentence. Notwithstanding anything in these By-laws to the contrary, no business shall be conducted at any annual meeting of stockholders except in accordance with the procedures in this Section 1.2; provided that any stockholder proposal which complies with Rule 14a-8 of the proxy rules (or any successor provision) promulgated under the Exchange Act and is to be included in the Corporation's proxy statement for an annual meeting of stockholders shall be deemed to comply with the notice requirements of this Section 1.2. A stockholder shall not have complied with this Section 1.2(b) if the stockholder, beneficial owner and/or Stockholder Associated Person solicits or does not solicit, as the case may be, proxies in support of such stockholder's proposal in contravention of the representations with respect thereto required by this Section 1.2.

(c) The chairman of any annual meeting shall have the power and duty to determine whether business was properly brought before the annual meeting in accordance with the provisions of this Section 1.2 (including whether the stockholder or beneficial owner, if any, on whose behalf the proposal is made solicited (or is part of a group which solicited) or did not so solicit, as the case may be, proxies in support of such stockholder's proposal in compliance with the representation with respect thereto required by this Section 1.2), and if the chairman should determine that business was not properly brought before the annual meeting in accordance with the provisions of this Section 1.2, the chairman shall so declare to the meeting and such business shall not be brought before the annual meeting.

(d) Except as otherwise required by law, nothing in this Section 1.2 shall obligate the Corporation or the Board of Directors to include in any proxy statement or other stockholder communication distributed on behalf of the Corporation or the Board of Directors information with respect to any proposal submitted by a stockholder.

(e) Notwithstanding the foregoing provisions of this Section 1.2, unless otherwise required by law, if the stockholder (or a qualified representative of the stockholder) does not appear at the annual meeting to present business, such business shall not be considered, notwithstanding that proxies in respect of such business may have been received by the Corporation. For purposes of this Section 1.2, to be considered a "qualified representative of the stockholder", a person must be authorized by a written instrument executed by such stockholder or an electronic transmission delivered by such stockholder to act for such stockholder as proxy at the meeting of stockholders and such person must produce such written instrument or electronic transmission, or a reliable reproduction of the written instrument or electronic transmission, at the meeting of stockholders.

(f) For purposes of this Section 1.2:

(i) "public disclosure" shall include disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the Corporation with the Securities and Exchange Commission pursuant to Sections 13, 14 or 15(d) of the Exchange Act;

(ii) A person shall be deemed to be "Acting in Concert" with another person if such person knowingly acts pursuant to an agreement, arrangement or understanding (whether or not in writing) in concert with, or toward a common goal relating to the management, governance or control of the corporation in substantial parallel with, such other person; provided that a person shall not be deemed to be Acting in Concert with any other person solely as a result of the solicitation or receipt of revocable proxies or consents from such other person in response to a solicitation made pursuant to, and in accordance with, Section 14(a) (or any successor provision) of the Exchange Act by way of a proxy or consent solicitation statement filed on Schedule 14A; and

(iii) The terms "Affiliate" and "Associate" shall have the meanings given in Rule 12b-2 under the Exchange Act.

1.3. Special Meetings. Special meetings of stockholders may be called by the President or by the Board of Directors. In addition, upon written application of one or more stockholders who are entitled to vote and who hold at least the Required Percentage (as defined below) of the capital stock entitled to vote at the meeting, special meetings shall be called by the Secretary, or in case of the death, absence, incapacity or refusal of the Secretary, by any other officer.

Only business within the purpose or purposes described in the meeting notice may be conducted at a special meeting of stockholders.

For purposes of this Section 1.3, the "Required Percentage" shall be (i) 10% at any time at which the Corporation shall not have a class of voting stock registered under the Exchange Act, and (ii) 40% at any time at which the Corporation shall have a class of voting stock registered under the Exchange Act.

Any request for a call of a special meeting of stockholders (a "Call") by the holders of the Required Percentage of the capital stock entitled to vote at the meeting (the "Voting Stock") shall be governed by and subject to the following:

(a) Any stockholder of record seeking to solicit requests for a Call pursuant to this Section 1.3 shall so notify the Corporation in writing to the Secretary of the Corporation and such written notification shall set forth the reason or reasons for the Call and the purpose of such special meeting.

(b) No solicitation of stockholder requests for a Call (a "Call Solicitation") may be commenced (i) before the Call Request Record Date (as defined in paragraph (c) of this Section 1.3) or (ii) during the period of 90 days following the most recent meeting of the stockholders of the Corporation.

(c) In order that the Corporation may determine the stockholders entitled to request a Call, the Board of Directors of the Corporation shall fix a record date (the "Call Request Record Date"). Any stockholder of record seeking to solicit stockholder requests for a Call shall, with delivery to the Corporation of the written information specified in paragraph (a), request in writing that the Board of Directors fix the Call Request Record Date. The Board of Directors shall, within 10 days after the date on which such request is received, adopt a resolution fixing the Call Request Record Date and such Call Request Record Date shall be not more than 10 days after the date upon which such resolution is adopted by the Board of Directors.

(d) All requests for a Call and revocations thereof shall be delivered to the Corporation no later than the 30th day (the "Delivery Date") after the Call Request Record Date.

(e) Any stockholder may revoke a prior request for a Call or opposition to a Call by an instrument in writing delivered prior to the Delivery Date.

(f) Promptly after the Delivery Date, requests for a Call and revocations thereof shall be counted and verified by an independent party selected by the Corporation.

(g) If, in response to any Call Solicitation, the holders of record of the Required Percentage of the Voting Stock as of the Call Request Record Date submit valid and unrevoked requests for a Call no later than the Delivery Date, the Board of Directors of the Corporation shall fix a record date pursuant to Section 1.12 hereof and a meeting date for the special meeting; provided that the date to be fixed for such meeting shall be no earlier than 60 days or later than 90 days after the Delivery Date; and provided, further, that the Board of Directors shall not be obligated to fix a meeting date or to hold any meeting of stockholders within 60 days of the next scheduled meeting of the stockholders of the Corporation.

(h) In the absence of a quorum at any special meeting called pursuant to a Call Solicitation, such special meeting may be postponed or adjourned from time to time only by the officer of the Corporation entitled to preside at such meeting.

1.4. Place of Meetings. All meetings of stockholders shall be held at the principal office of the Corporation unless a different place is fixed by the Board of Directors, the Chief Executive Officer or the President and specified in the notice of the meeting.

1.5. Requirement of Notice. A written notice of the date, time and place of each annual and special stockholders' meeting describing the purposes of the meeting shall be given to stockholders entitled to vote at the meeting (and, to the extent required by law or the Articles of Organization, to stockholders not entitled to vote at the meeting) no fewer than seven nor more than 60 days before the meeting date. If an annual or special meeting of stockholders is adjourned to a different date, time or place, notice need not be given of the new date, time or place if the new date, time or place is announced at the meeting before adjournment. If a new record date for the adjourned meeting is fixed, however, notice of the adjourned meeting shall be given under this Section 1.5 to persons who are stockholders as of the new record date. All notices to stockholders shall conform to the requirements of Article III of these By-Laws.

1.6. Waiver of Notice. A stockholder may waive any notice required by law, the Articles of Organization or these By-Laws before or after the date and time stated in the notice. The waiver shall be in writing, be signed by the stockholder entitled to the notice, and be delivered to the Corporation for inclusion with the records of the meeting. A stockholder's attendance at a meeting: (a) waives objection to lack of notice or defective notice of the meeting, unless the stockholder at the beginning of the meeting objects to holding the meeting or transacting business at the meeting; and (b) waives objection to consideration of a particular matter at the meeting that is not within the purpose or purposes described in the meeting notice, unless the stockholder objects to considering the matter when it is presented.

1.7. Quorum. The holder or holders of a majority in interest of all stock issued, outstanding, and entitled to vote at a meeting, present in person or represented by proxy, shall constitute a quorum, but the majority of a lesser interest so present may, from time to time, postpone to a new time or place any meeting and the postponed meeting may be held without further notice, except as provided in Section 1.5.

1.8. Voting and Proxies. Each stockholder entitled to vote shall have one vote, to be exercised in person or by proxy, for each share of stock held by him, and a proportionate vote for a fractional share. When a quorum is present at any meeting the vote of the holders of a majority in interest of the stock represented which is entitled to vote and voting shall decide any matter properly brought before the meeting, except in the case of elections by stockholders, which shall be decided by a plurality of the votes cast by stockholders entitled to vote at the election, and except when a larger vote is required by law, the Articles of Organization or these By-Laws. No vote need be taken by ballot unless so requested by any stockholder entitled to vote thereon. Proxies must be in writing and filed with the Secretary of the meeting before being voted. The person named in a proxy may vote at any adjournment of the meeting for which the proxy was given, but the proxy shall terminate after final adjournment of the meeting. Except to the extent permitted by law, no proxy dated more than eleven months before the meeting named in it shall be valid. A proxy purporting to be executed by or on behalf of a stockholder shall be deemed valid unless challenged at or prior to its exercise and the burden of proving invalidity shall rest on the challenger. A proxy with respect to stock held in the name of two or more persons shall be valid if executed by any one of them unless at or prior to the exercise of the proxy the Corporation receives a specific notice to the contrary from any one of them. Inspectors of election, if any, shall be appointed by the Board of Directors or, in the absence of such appointment, by the officer presiding at any meeting of the stockholders. Any person directly or indirectly soliciting proxies from stockholders of the Corporation must use a proxy card color other than white, the color white being reserved for the exclusive use of the Board of Directors.

1.9. Nomination of Directors.

(a) Except for (1) any Directors entitled to be elected by the holders of any class or series of Preferred Stock, (2) any Directors elected by the Board of Directors in accordance with Section 2.3 of these By-Laws to fill vacancies or newly created directorships or (3) as otherwise required by applicable law or stock exchange regulation, only persons who are nominated in accordance with the procedures in this Section 1.9 shall be eligible for election as Directors. Nomination for election to the Board of Directors at a meeting of stockholders may be made only (i) by or at the direction of the Board of Directors, or (ii) by any stockholder of the Corporation who (x) has given timely notice thereof in writing and in proper form to the Secretary in accordance with the procedures set forth in, and otherwise complies with, this Section 1.9, (y) is a stockholder of record who is entitled to vote for the election of such nominee on the date of the giving of such notice and on the record date for the determination of stockholders entitled to vote at such meeting and (z) is entitled to vote at such meeting. The number of nominees a stockholder may nominate for election at a meeting on its own behalf (or in the case of one or more stockholders giving the notice on behalf of a beneficial owner, the number of nominees such stockholders may collectively nominate for election at the meeting on behalf of such beneficial owner) shall not exceed the number of directors to be elected at such meeting.

(b) To be timely, a stockholder's notice of a nomination submitted in accordance with the provisions of this Section 1.9(b) must be received in writing by the Secretary at the principal executive offices of the Corporation as follows: (i) in the case of an election of Directors at an annual meeting of stockholders, not less than 90 days nor more than 120 days prior to the first anniversary of the preceding year's annual meeting; provided, however, that in the event that the date of the annual meeting is advanced by more than 20 days, or delayed by more than 60 days, from the first anniversary of the preceding year's annual meeting, or if no annual meeting was held or deemed to have been held in the preceding year, a stockholder's notice must be so received not earlier than the 120th day prior to such annual meeting and not later than the close of business on the later of (A) the 90th day prior to such annual meeting and (B) the seventh day following the day on which notice of the date of such annual meeting was given or public disclosure of the date of such annual meeting was made, whichever first occurs; or (ii) in the case of an election of Directors at a special meeting of stockholders, provided that the Board of Directors has determined that Directors shall be elected at such meeting, not earlier than the 120th day prior to such special meeting and not later than the close of business on the later of (x) the 90th day prior to such special meeting and (y) the seventh day following the day on which notice of the date of such special meeting was given or public disclosure of the date of such special meeting was made, whichever first occurs. In no event shall the adjournment or postponement of a stockholders' meeting (or the public disclosure thereof) commence a new time period (or extend any time period) for the giving of a stockholder's notice.

To be in proper form, the stockholder's notice to the Secretary shall set forth: (A) as to each proposed nominee (1) such person's name, age, business address and, if known, residence address, (2) such person's principal occupation and employment at present and during the past five years, (3) the class (and, if applicable, series) and number of shares of stock of the Corporation which are directly or indirectly, owned, beneficially or of record by such person, (4) a description of all direct and indirect compensation and other material monetary agreements, arrangements and understandings during the past three years, between or among (x) the stockholder, the beneficial owner, if any, on whose behalf the nomination is being made and the respective Affiliates and Associates of, or others Acting in Concert with, such stockholder and/or such beneficial owner (each, a "Stockholder Associated Person"), on the one hand, and (y) each proposed nominee, and such nominee's respective Affiliates and Associates, or others Acting in Concert with such nominee(s), on the other hand, including all information that would be required to be disclosed pursuant to Item 404 of Regulation S-K under the Exchange Act if the stockholder making the nomination and any beneficial owner on whose behalf the nomination is made or any Stockholder Associated Person were the "registrant" for purposes of such Item and the proposed nominee were a director or executive officer of such registrant, and (5) any other information concerning such person that must be disclosed as to nominees in proxy solicitations pursuant to Regulation 14A under the Exchange Act; and (B) as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the nomination is being made, (1) the stockholder's name and address, as they appear on the Corporation's books, and the name and address of such beneficial owner, (2) the class (and, if applicable series) and number of shares of stock of the Corporation which are directly or indirectly, owned, beneficially or of record, by such stockholder and such beneficial owner, (3) a description of any material financial interest related to the nomination of such stockholder, such beneficial owner and/or any Stockholder Associated Person, (4) a description of any agreement, arrangement or understanding between or among such stockholder, such beneficial owner and/or any Stockholder Associated Person and each proposed nominee and any other person or persons (including their names) pursuant to which the nomination(s) are

being made or who may participate in the solicitation of proxies or votes in favor of electing such nominee(s), (5) a description of any agreement, arrangement or understanding (including any derivative or short positions, swaps, profit interests, options, warrants, convertible securities, stock appreciation or similar rights, hedging transactions, and borrowed or loaned shares) that has been entered into by, or on behalf of, such stockholder, such beneficial owner and/or any Stockholder Associated Person, the effect or intent of which is to mitigate loss to, manage risk or benefit of share price changes for, or increase or decrease the voting power of, such stockholder, such beneficial owner and/or any Stockholder Associated Person with respect to shares of stock or other securities of the Corporation, (6) any other information relating to such stockholder, such beneficial owner and/or any Stockholder Associated Person that would be required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for the election of directors in a contested election pursuant to Section 14 of the Exchange Act and the rules and regulations promulgated thereunder, (7) a representation that such stockholder intends to appear in person or by proxy at the meeting to nominate the person(s) named in its notice, (8) a representation that such stockholder, such beneficial owner and/or any Stockholder Associated Person has complied, and will comply, with all applicable requirements of state law and the Exchange Act with respect to matters set forth in this Section 1.9, and (9) a representation as to whether or not such stockholder, such beneficial owner and/or any Stockholder Associated Person intends or is part of a group which intends (x) to deliver a proxy statement and/or form of proxy to holders of at least the percentage of the Corporation's outstanding capital stock reasonably believed by such stockholder or such beneficial owner to be sufficient to elect the nominee (and such representation shall be included in any such proxy statement and form of proxy) and/or (y) otherwise to solicit proxies or votes from stockholders in support of such nomination (and such representation shall be included in any such solicitation materials). Not later than 10 days after the record date for the meeting, the information required by Items (A)(1)-(5) and (B)(1)-(6) of the prior sentence shall be supplemented by the stockholder giving the notice to provide updated information as of the record date. In addition, to be effective, the stockholder's notice must also be accompanied by the written consent of the proposed nominee to being named in the Corporation's proxy statement and accompanying proxy card as a nominee and to serve as a Director if elected. The Corporation may require any proposed nominee to furnish such other information as the Corporation may reasonably require to determine, among other things, the eligibility of such proposed nominee to serve as a Director of the Corporation or whether such nominee would be independent under applicable Securities and Exchange Commission and stock exchange rules and the Corporation's publicly disclosed Corporate Governance Guidelines. Notwithstanding anything herein to the contrary, a stockholder shall not have complied with this Section 1.9(b) if the stockholder, or beneficial owner and/or any Stockholder Associated Person solicits or does not solicit, as the case may be, proxies or votes in support of such stockholder's nominee in contravention of the representations with respect thereto required by this Section 1.9(b).

Such notice must also be accompanied by a representation as to whether or not such stockholder, beneficial owner and/or any Stockholder Associated Person intends to solicit proxies in support of any director nominees other than the Corporation's nominees in accordance with Rule 14a-19 under the Exchange Act, and, where such stockholder, beneficial owner and/or Stockholder Associated Person intends to so solicit proxies, the notice and information required by Rule 14a-19(b) under the Exchange Act. Notwithstanding anything to the contrary in these By-Laws, unless otherwise required by law, if any stockholder, beneficial owner and/or Stockholder Associated Person (i) provides notice pursuant to Rule 14a-19(b) under the Exchange Act and (ii) subsequently fails to comply with the requirements of Rule 14a-19(a)(2) and Rule 14a-19(a)(3) under the Exchange Act (or fails to timely provide reasonable evidence sufficient to satisfy the Corporation that such stockholder, beneficial owner and/or Stockholder Associated Person has met the requirements of Rule 14a-19(a)(3) promulgated under the Exchange Act in accordance with the following sentence), then the nomination of each of the director nominees proposed by such stockholder, beneficial owner and/or Stockholder Associated Person shall be disregarded, notwithstanding that proxies or votes in respect of the election of such proposed nominees may have been received by the Corporation (which proxies and votes shall be disregarded).

The information required by Section 1.9(b) shall be supplemented by the stockholder giving the notice (i) not later than 10 days after the record date for the meeting, to provide updated information as of such record date and (ii) not later than 10 days before the date for the meeting or any adjournment or postponement thereof, to provide updated information as of the date that is 15 days before such meeting or any adjournment or postponement thereof; provided, that no such supplement shall cure or affect the accuracy (or inaccuracy) of any representations made by any stockholder, beneficial owner, nominee or other Stockholder Associated Person or the validity (or invalidity) of any nomination that failed to comply with this Section 1.9 or is rendered invalid as a result of any inaccuracy

therein. Upon request by the Corporation, if any stockholder, beneficial owner and/or Stockholder Associated Person provides notice pursuant to Rule 14a-19(b) under the Exchange Act, such stockholder, beneficial owner and/or Stockholder Associated Person shall deliver to the Corporation, no later than five business days prior to the applicable meeting, reasonable evidence that it has met the requirements of Rule 14a-19(a)(3) under the Exchange Act.

(c) The chairman of any meeting (and, in advance of any meeting, the Board of Directors) shall have the power and duty to determine whether a nomination was made in accordance with the provisions of this Section 1.9 (including whether the stockholder, beneficial owner and/or any Stockholder Associated Person did or did not so solicit, as the case may be, proxies or votes in support of such stockholder's nominee in compliance with the representations with respect thereto required by this Section 1.9), and if the chairman (or the Board of Directors) should determine that a nomination was not made in accordance with the provisions of this Section 1.9, the chairman shall so declare to the meeting and such nomination shall not be brought before the meeting.

(d) Except as otherwise required by law (including Rule 14a-19 under the Exchange Act), nothing in this Section 1.9 shall obligate the Corporation or the Board of Directors to include in any notice of meeting, proxy statement, proxy card or other stockholder communication distributed on behalf of the Corporation or the Board of Directors the name of and other information with respect to any nominee for Director submitted by a stockholder.

(e) Notwithstanding the foregoing provisions of this Section 1.9, unless otherwise required by law, if the stockholder (or a qualified representative of the stockholder) does not appear at the annual or special meeting of stockholders of the Corporation to present a nomination, such nomination shall be disregarded, notwithstanding that proxies in respect of such vote may have been received by the Corporation.

(f) For purposes of this Section 1.9, the terms "Acting in Concert," "Affiliate," "Associate," "qualified representative of the stockholder," and "public disclosure" shall have the same meaning as in Section 1.2.

1.10. Conduct of Meetings. The Board of Directors may adopt by resolution such rules, regulations and procedures for the conduct of any meeting of stockholders as it shall deem appropriate, including without limitation such guidelines and procedures as it may deem appropriate regarding the participation by means of remote communication of stockholders and proxyholders not physically present at a meeting. Except to the extent inconsistent with such rules, regulations and procedures as adopted by the Board of Directors, the chairman of any meeting of stockholders shall have the right and authority to prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such chairman, are appropriate for the proper conduct of the meeting. Such rules, regulations or procedures, whether adopted by the Board of Directors or prescribed by the chairman of the meeting, may include, without limitation, the following: (a) the establishment of an agenda or order of business for the meeting; (b) rules and procedures for maintaining order at the meeting and the safety of those present; (c) limitations on attendance at or participation in the meeting to stockholders, their duly authorized and constituted proxies or attorneys or such other persons as shall be determined; (d) restrictions on entry to the meeting after the time fixed for the commencement thereof; and (e) limitations on the time allotted to questions or comments by participants. Unless and to the extent determined by the Board of Directors or the chairman of the meeting, meetings of stockholders shall not be required to be held in accordance with the rules of parliamentary procedure.

1.11. Action By Consent. Any action required or permitted to be taken by stockholders may be taken without a meeting if all stockholders entitled to vote on the matter consent in writing to the action and such written consents are filed with the records of the meetings of stockholders. Such consents shall be treated for all purposes as a vote at a meeting.

1.12. Record Date. The Board of Directors may fix the record date in order to determine the stockholders entitled to notice of a stockholders' meeting, to demand a special meeting, to vote or to take any other action. If a record date for a specific action is not fixed by the Board of Directors, and is not supplied by law, except as provided for in Section 1.3, the record date shall be (a) the close of business either on the day before the first notice is sent to stockholders, or, if no notice is sent, on the day before the meeting or (b) in the case of action without a meeting by written consent, the date the first stockholder signs the consent or (c) for purposes of determining stockholders entitled to demand a special meeting of stockholders, the date the first stockholder signs the demand or (d) for purposes of determining stockholders entitled to a distribution, other than one involving a purchase,

redemption or other acquisition of the Corporation's shares, the date the Board of Directors authorizes the distribution. A record date fixed under this Section 1.12 may not be more than 70 days before the meeting or action requiring a determination of stockholders. A determination of stockholders entitled to notice of or to vote at a stockholders' meeting is effective for any adjournment of the meeting unless the Board of Directors fixes a new record date, which it shall do if the meeting is adjourned to a date more than 120 days after the date fixed for the original meeting.

1.13. Meetings by Remote Communication. Unless otherwise provided in the Articles of Organization, if authorized by the Board of Directors: subject to such guidelines and procedures as the Board of Directors may adopt, stockholders and proxyholders not physically present at a meeting of stockholders may, by means of remote communication: (a) participate in a meeting of stockholders; and (b) be deemed present in person and vote at a meeting of stockholders, provided that: (1) the Corporation shall implement reasonable measures to verify that each person deemed present and permitted to vote at the meeting by means of remote communication is a stockholder or proxyholder; (2) the Corporation shall implement reasonable measures to provide such stockholders and proxyholders a reasonable opportunity to participate in the meeting and to vote on matters submitted to the stockholders, including an opportunity to read or hear the proceedings of the meeting substantially concurrently with such proceedings; and (3) if any stockholder or proxyholder votes or takes other action at the meeting by means of remote communication, a record of such vote or other action shall be maintained by the Corporation.

1.14. Form of Stockholder Action.

(a) Any vote, consent, waiver, proxy appointment or other action by a stockholder or by the proxy or other agent of any stockholder shall be considered given in writing, dated and signed, if, in lieu of any other means permitted by law, it consists of an electronic transmission that sets forth or is delivered with information from which the Corporation can determine (1) that the electronic transmission was transmitted by the stockholder, proxy or agent or by a person authorized to act for the stockholder, proxy or agent; and (2) the date on which such stockholder, proxy, agent or authorized person transmitted the electronic transmission. The date on which the electronic transmission is transmitted shall be considered to be the date on which it was signed. The electronic transmission shall be considered received by the Corporation if it has been sent to any address specified by the Corporation for the purpose or, if no address has been specified, to the principal office of the Corporation, addressed to the Secretary or other officer or agent having custody of the records of proceedings of stockholders.

(b) Any copy, facsimile or other reliable reproduction of a vote, consent, waiver, proxy appointment or other action by a stockholder or by the proxy or other agent of any stockholder may be substituted or used in lieu of the original writing for any purpose for which the original writing could be used, but the copy, facsimile or other reproduction shall be a complete reproduction of the entire original writing.

1.15. Stockholder List for Meeting.

(a) After fixing a record date for a stockholders' meeting, the Corporation shall prepare an alphabetical list of the names of all its stockholders who are entitled to notice of the meeting. The list shall be arranged by voting group, and within each voting group by class or series of shares, and show the address of and number of shares held by each stockholder, but need not include an electronic mail address or other electronic contact information for any stockholder.

(b) The list of stockholders shall be available for inspection by any stockholder, beginning two business days after notice is given of the meeting for which the list was prepared and continuing through the meeting: (1) at the Corporation's principal office or at a place identified in the meeting notice in the city where the meeting will be held; or (2) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting.

(c) A stockholder or his or her agent or attorney is entitled on written demand to inspect and, subject to the requirements of Section 6.2(c) of these By-Laws, to copy the list, during regular business hours and at his or her expense, during the period it is available for inspection.

(d) The Corporation shall make the list of stockholders available at the meeting, and any stockholder or his or her agent or attorney is entitled to inspect the list at any time during the meeting or any adjournment.

ARTICLE II

DIRECTORS

2.1. Powers. The business of the Corporation shall be managed by a Board of Directors, who may exercise all the powers of the Corporation except as otherwise provided by law, by the Articles of Organization or by these By-Laws. In the event of a vacancy in the Board of Directors, the remaining Directors, except as otherwise provided by law, may exercise the powers of the full Board until the vacancy is filled.

2.2. Number and Election. The number of Directors which shall constitute the whole Board of Directors shall be determined by vote of the stockholders or the Board of Directors, but shall consist of not less than three Directors (except that whenever there shall be only two stockholders the number of Directors shall be not less than two and whenever there shall be only one stockholder or prior to the issuance of any stock, there shall be at least one Director). The number of Directors may be decreased at any time and from time to time either by the stockholders or by a majority of the Directors then in office, but only to eliminate vacancies existing by reason of the death, resignation, removal or expiration of the term of one or more Directors. The Directors shall be elected at the annual meeting of stockholders by such stockholders as have the right to vote on such election. No Director need be a stockholder of the Corporation.

Notwithstanding the foregoing provisions, if the Corporation is a "public corporation" as defined in the Massachusetts Business Corporation Act, as in effect from time to time (the "MBCA"), and has not elected, pursuant to Section 8.06(c) of the MBCA, to be exempt from the provisions of Section 8.06(b) of the MBCA, then:

(a) In accordance with such Section 8.06(e)(4) of the MBCA, the number of directors shall be fixed only by vote of the Board of Directors.

(b) In accordance with Section 8.06(a) of the MBCA, the Directors of the Corporation shall be classified with respect to the time for which they severally hold office, into three classes, as nearly equal in number as possible, until the Corporation's annual meeting of stockholders held in 2028. As of the effective date of these Second Amended and Restated By-Laws, the term of office of those Directors of the first class ("Class I Directors") shall continue until the Corporation's annual meeting of stockholders held in 2027 and until their successors are duly elected and qualified; the term of office of those Directors of the second class ("Class II Directors") that are duly elected and qualified at the Corporation's annual meeting of stockholders held in 2025 shall continue until the Corporation's annual meeting of stockholders held in 2028 and until their successors are duly elected and qualified; and the term of office of those Directors of the third class ("Class III Directors") shall continue until the Corporation's annual meeting of stockholders held in 2026 and until their successors are duly elected and qualified. Thereafter all Directors shall be elected for terms expiring at the next annual meeting of stockholders and until their successors shall be elected and qualified, subject to prior death, resignation, retirement or removal.

2.3. Enlargement of the Board. The number of Directors may be increased at any time and from time to time by a majority of the Directors then in office. Notwithstanding the foregoing provisions, if the Directors of the Corporation are classified with respect to the time for which they severally hold office pursuant to Section 8.06(c) of the MBCA, the Board of Directors may be enlarged only in accordance with the provisions of 8.06(e).

2.4. Tenure. Except as otherwise provided by law, these By-Laws or the Articles of Organization, each Director shall hold office until the next annual meeting of stockholders and until his successor is elected and qualified, or until his earlier death, resignation or removal.

2.5. Vacancies. Unless and until filled by the stockholders, any vacancy in the Board of Directors, however occurring, including a vacancy resulting from an enlargement of the Board of Directors, may be filled by vote of a majority of the Directors present at the meeting of Directors at which a quorum is present. Each such successor shall hold office for the unexpired term of his predecessor and until his successor is chosen and qualified or until his earlier death, resignation or removal. Notwithstanding the foregoing provisions, if the directors of the Corporation are classified with respect to the time for which they severally hold office pursuant to Section 8.06(c) of the MBCA, any vacancy in the Board of Directors, however occurring, shall be filled solely in accordance with the provisions of Section 8.06(e) of the MBCA.

2.6. Resignation. A Director may resign at any time by delivering written notice of resignation to the Board of Directors, the Chairman of the Board or the Corporation. A resignation is effective when the notice is delivered unless the notice specifies a later effective date.

2.7. Removal. A director may be removed from office with or without cause by vote of the holders of a majority of the shares entitled to vote in the election of directors. However, the directors elected by the holders of a particular class or series of stock may be removed from office with or without cause only by vote of the holders of a majority of the outstanding shares of such class or series. In addition, a director may be removed from office for cause by vote of a majority of the directors then in office. A director may be removed for cause only after reasonable notice and opportunity to be heard before the body proposing to remove him. Notwithstanding the foregoing provision, if the directors of the Corporation are classified with respect to the time for which they severally hold office pursuant to paragraph (a) of Section 50A of the Massachusetts Business Corporation Law, as it may be amended from time to time, directors may only be removed for cause pursuant to paragraph (c) of such Section 50A.

2.8. Regular Meetings. Regular meetings of the Board of Directors may be held at such times and places as shall from time to time be fixed by the Board of Directors without notice of the date, time, place or purpose of the meeting.

2.9. Special Meetings. Special meetings of the Board of Directors may be called by the Chairman of the Board, the Chief Executive Officer, the President, the Secretary, any two Directors or one Director in the event that there is only one Director.

2.10. Notice. Special meetings of the Board of Directors must be preceded by at least two days' notice of the date, time and place of the meeting. The notice need not describe the purpose of the special meeting. All notices to Directors shall conform to the requirements of Article III of these By-Laws.

2.11. Waiver of Notice. A Director may waive any notice before or after the date and time of the meeting. The waiver shall be in writing, signed by the Director entitled to the notice, or in the form of an electronic transmission by the Director to the Corporation, and filed with the minutes or corporate records. A Director's attendance at or participation in a meeting waives any required notice to him or her of the meeting unless the Director at the beginning of the meeting, or promptly upon his or her arrival, objects to holding the meeting or transacting business at the meeting and does not thereafter vote for or assent to action taken at the meeting.

2.12. Quorum. Unless otherwise provided by law, the Articles of Organization or these By-Laws, a quorum of the Board of Directors consists of a majority of the Directors then in office, provided always that any number of Directors (whether one or more and whether or not constituting a quorum) constituting a majority of Directors present at any meeting or at any adjourned meeting may make an adjournment thereof.

2.13. Action at Meeting. If a quorum is present when a vote is taken, the affirmative vote of a majority of Directors present is the act of the Board of Directors unless the Articles of Organization or these By-Laws require the vote of a greater number of Directors. A Director who is present at a meeting of the Board of Directors or a committee of the Board of Directors when corporate action is taken is considered to have assented to the action taken unless: (a) he or she objects at the beginning of the meeting, or promptly upon his or her arrival, to holding it or transacting business at the meeting; (b) his or her dissent or abstention from the action taken is entered in the minutes of the meeting; or (c) he or she delivers written notice of his or her dissent or abstention to the presiding officer of the meeting before its adjournment or to the Corporation immediately after adjournment of the meeting. The right of dissent or abstention is not available to a Director who votes in favor of the action taken.

2.14. Action Without Meeting. Any action required or permitted to be taken by the Directors may be taken without a meeting if the action is taken by the unanimous consent of the members of the Board of Directors. The action must be evidenced by one or more consents describing the action taken, in writing, signed by each Director, or delivered to the Corporation by electronic transmission, to the address specified by the Corporation for the purpose or, if no address has been specified, to the principal office of the Corporation, addressed to the Secretary or other officer or agent having custody of the records of proceedings of Directors, and included in the minutes or filed with the corporate records reflecting the action taken. Action taken under this Section 2.14 is effective when the last Director signs or delivers the consent, unless the consent specifies a different effective date. A consent signed or delivered under this Section 2.14 has the effect of a meeting vote and may be described as such in any document.

2.15. Telephone Conference Meetings. The Board of Directors may permit any or all Directors to participate in a regular or special meeting by, or conduct the meeting through the use of, any means of communication by which all Directors participating may simultaneously hear each other during the meeting. A Director participating in a meeting by this means is considered to be present in person at the meeting.

2.16. Chairman of the Board and Vice-Chairman of the Board. The Board of Directors may appoint a Chairman of the Board. If the Board of Directors appoints a Chairman of the Board, he shall perform such duties and possess such powers as are assigned to him by the Board of Directors. If the Board of Directors appoints a Vice-Chairman of the Board, he shall, in the absence or disability of the Chairman of the Board, perform the duties and exercise the powers of the Chairman of the Board and shall perform such other duties and possess such other powers as may from time to time be vested in him by the Board of Directors.

2.17. Committees. The Board of Directors may create one or more committees and appoint members of the Board of Directors to serve on them. Each committee may have one or more members, who serve at the pleasure of the Board of Directors. The creation of a committee and appointment of members to it must be approved by a majority of all the Directors in office when the action is taken. Article III and Sections 2.10 through 2.15 of these By-Laws shall apply to committees and their members. To the extent specified by the Board of Directors, each committee may exercise the authority of the Board of Directors to the extent permitted by law. The creation of, delegation of authority to, or action by a committee does not alone constitute compliance by a Director with the standards of conduct described in Section 2.19 of these By-Laws.

2.18. Compensation. The Board of Directors may fix the compensation of Directors.

2.19. Standard of Conduct for Directors.

(a) A Director shall discharge his or her duties as a Director, including his or her duties as a member of a committee: (1) in good faith; (2) with the care that a person in a like position would reasonably believe appropriate under similar circumstances; and (3) in a manner the Director reasonably believes to be in the best interests of the Corporation. In determining what the Director reasonably believes to be in the best interests of the Corporation, a Director may consider the interests of the Corporation's employees, suppliers, creditors and customers, the economy of the state, the region and the nation, community and societal considerations, and the long-term and short-term interests of the Corporation and its stockholders, including the possibility that these interests may be best served by the continued independence of the Corporation.

(b) In discharging his or her duties, a Director who does not have knowledge that makes reliance unwarranted is entitled to rely on information, opinions, reports or statements, including financial statements and other financial data, if prepared or presented by: (1) one or more officers or employees of the Corporation whom the Director reasonably believes to be reliable and competent with respect to the information, opinions, reports or statements presented; (2) legal counsel, public accountants or other persons retained by the Corporation, as to matters involving skills or expertise the Director reasonably believes are matters (i) within the particular person's professional or expert competence or (ii) as to which the particular person merits confidence; or (3) a committee of the Board of Directors of which the Director is not a member if the Director reasonably believes the committee merits confidence.

(c) A Director is not liable for any action taken as a Director, or any failure to take any action, if he or she performed the duties of his or her office in compliance with this Section 2.19.

2.20. Conflict of Interest.

(a) A conflict of interest transaction is a transaction with the Corporation in which a Director of the Corporation has a material direct or indirect interest. A conflict of interest transaction is not voidable by the Corporation solely because of the Director's interest in the transaction if any one of the following is true:

(1) the material facts of the transaction and the Director's interest were disclosed or known to the Board of Directors or a committee of the Board of Directors and the Board of Directors or committee authorized, approved or ratified the transaction;

(2) the material facts of the transaction and the Director's interest were disclosed or known to the stockholders entitled to vote and they authorized, approved or ratified the transaction; or

(3) the transaction was fair to the Corporation.

(b) For purposes of this Section 2.20, and without limiting the interests that may create conflict of interest transactions, a Director of the Corporation has an indirect interest in a transaction if: (1) another entity in which he or she has a material financial interest or in which he or she is a general partner is a party to the transaction; or (2) another entity of which he or she is a director, officer or trustee or in which he or she holds another position is a party to the transaction and the transaction is or should be considered by the Board of Directors.

(c) For purposes of clause (1) of subsection (a) of this Section 2.20, a conflict of interest transaction is authorized, approved or ratified if it receives the affirmative vote of a majority of the Directors on the Board of Directors (or on the committee) who have no direct or indirect interest in the transaction, but a transaction may not be authorized, approved or ratified under this Section 2.20 by a single Director. If a majority of the Directors who have no direct or indirect interest in the transaction vote to authorize, approve or ratify the transaction, a quorum is present for the purpose of taking action under this Section 2.20. The presence of, or a vote cast by, a Director with a direct or indirect interest in the transaction does not affect the validity of any action taken under clause (1) of subsection (a) of this Section 2.20 if the transaction is otherwise authorized, approved or ratified as provided in that subsection.

(d) For purposes of clause (2) of subsection (a) of this Section 2.20, a conflict of interest transaction is authorized, approved or ratified if it receives the vote of a majority of the shares entitled to be counted under this subsection (d). Shares owned by or voted under the control of a Director who has a direct or indirect interest in the transaction, and shares owned by or voted under the control of an entity described in clause (1) of subsection (b) of this Section 2.20, may not be counted in a vote of stockholders to determine whether to authorize, approve or ratify a conflict of interest transaction under clause (2) of subsection (a) of this Section 2.20. The vote of those shares, however, is counted in determining whether the transaction is approved under other provisions of these By-Laws. A majority of the shares, whether or not present, that are entitled to be counted in a vote on the transaction under this subsection constitutes a quorum for the purpose of taking action under this Section 2.20.

ARTICLE III

MANNER OF NOTICE

Except as otherwise provided by law, all notices provided for under these By-Laws shall conform to the following requirements:

(a) Notice shall be in writing unless oral notice is reasonable under the circumstances. Notice by electronic transmission is written notice.

(b) Notice may be communicated in person; by telephone, voice mail, telegraph, teletype or other electronic means; by mail; by electronic transmission; or by messenger or delivery service. If these forms of personal notice are impracticable, notice may be communicated by a newspaper of general circulation in the area where published; or by radio, television or other form of public broadcast communication.

(c) Written notice, other than notice by electronic transmission, by the Corporation to any of its stockholders, if in a comprehensible form, is effective upon deposit in the United States mail, if mailed postpaid and correctly addressed to the stockholder's address shown in the Corporation's current record of stockholders.

(d) Written notice by electronic transmission by the Corporation to any of its stockholders, if in comprehensible form, is effective: (1) if by facsimile telecommunication, when directed to a number furnished by the stockholder for the purpose; (2) if by electronic mail, when directed to an electronic mail address furnished by the stockholder for the purpose; (3) if by a posting on an electronic network together with separate notice to the stockholder of such specific posting, directed to an electronic mail address furnished by the stockholder for the purpose, upon the later of (i) such posting and (ii) the giving of such separate notice; and (4) if by any other form of electronic transmission, when directed to the stockholder in such manner as the stockholder shall have specified to the Corporation. An affidavit of the Secretary or an Assistant Secretary of the Corporation, the transfer agent or other agent of the Corporation that the notice has been given by a form of electronic transmission shall, in the absence of fraud, be prima facie evidence of the facts stated therein.

(e) Except as provided in subsection (c) of this Article III, written notice, other than notice by electronic transmission, if in a comprehensible form, is effective at the earliest of the following: (1) when received; (2) five days after its deposit in the United States mail, if mailed postpaid and correctly addressed; (3) on the date shown on the return receipt, if sent by registered or certified mail, return receipt requested; or if sent by messenger or delivery service, on the date shown on the return receipt signed by or on behalf of the addressee; or (4) on the date of publication if notice by publication is permitted.

(f) Oral notice is effective when communicated if communicated in a comprehensible manner.

ARTICLE IV

OFFICERS

4.1. Enumeration. The Corporation shall have a President, a Treasurer, a Secretary and such other officers as may be appointed by the Board of Directors from time to time in accordance with these By-Laws, including, but not limited to, a Chief Executive Officer and one or more Vice Presidents, Assistant Treasurers and Assistant Secretaries.

4.2. Appointment. The officers shall be appointed by the Board of Directors. A duly appointed officer may appoint one or more officers or assistant officers if authorized by the Board of Directors. Each officer has the authority and shall perform the duties set forth in these By-Laws or, to the extent consistent with these By-Laws, the duties prescribed by the Board of Directors or by direction of an officer authorized by the Board of Directors to prescribe the duties of other officers. The appointment of an officer shall not itself create contract rights.

4.3. Qualification. The same individual may simultaneously hold more than one office in the Corporation. No officer need be a stockholder.

4.4. Tenure. Except as otherwise provided by law, the Articles of Organization or these By-Laws, each officer shall hold office until his or her successor is duly appointed, unless a different term is specified in the vote appointing him or her, or until his or her earlier death, resignation or removal.

4.5. Resignation. An officer may resign at any time by delivering notice of the resignation to the Corporation. A resignation is effective when the notice is delivered unless the notice specifies a later effective date. If a resignation is made effective at a later date and the Corporation accepts the future effective date, the Board of Directors may fill the pending vacancy before the effective date if the Board of Directors provides that the successor shall not take office until the effective date. An officer's resignation shall not affect the Corporation's contract rights, if any, with the officer.

4.6. Removal. The Board of Directors may remove any officer at any time with or without cause. An officer's removal shall not affect the officer's contract rights, if any, with the Corporation.

4.7. Vacancies. The Board of Directors may fill any vacancy occurring in any office for any reason and may, in its discretion, leave unfilled for such period as it may determine any offices other than those of President, Treasurer and Secretary. Each such successor shall hold office for the unexpired term of his or her predecessor and until his or her successor is duly appointed, or until he or she sooner dies, resigns or is removed.

4.8. President; Chief Executive Officer. Unless the Board of Directors has designated another person as Chief Executive Officer, the President shall be the Chief Executive Officer. The Chief Executive Officer shall have general charge and supervision of the business of the Corporation, subject to the direction of the Board of Directors. The President shall perform such other duties and shall have such other powers as the Board of Directors or the Chief Executive Officer (if the President is not the Chief Executive Officer) may from time to time prescribe. In the event of the absence, inability or refusal to act of the Chief Executive Officer or the President (if the President is not the Chief Executive Officer), the Vice President (or, if there shall be more than one, the Vice Presidents in the order determined by the Board of Directors) shall perform the duties of the Chief Executive Officer and, when so performing such duties, shall have all the powers of and be subject to all the restrictions upon, the Chief Executive Officer.

4.9. Vice Presidents. Any Vice President shall perform such duties and shall possess such powers as the Board of Directors, the Chief Executive Officer or the President may from time to time prescribe. The Board of Directors may assign to any Vice President the title Executive Vice President, Senior Vice President or any other title selected by the Board of Directors.

4.10. Treasurer and Assistant Treasurers. The Treasurer shall perform such duties and shall have such powers as may from time to time be assigned to him or her by the Board of Directors, the Chief Executive Officer or the President. In addition, the Treasurer shall perform such duties and have such powers as are incident to the office of treasurer, including without limitation the duty and power to keep and be responsible for all funds and securities of the Corporation, to deposit funds of the Corporation in depositories, to disburse such funds as ordered by the Board of Directors, the Chief Executive Officer or the President, to make proper accounts of such funds, and to render as required by the Board of Directors, the Chief Executive Officer or the President statements of all such transactions and of the financial condition of the Corporation.

Any Assistant Treasurer shall perform such duties and possess such powers as the Board of Directors, the Chief Executive Officer, the President or the Treasurer may from time to time prescribe. In the event of the absence, inability or refusal to act of the Treasurer, the Assistant Treasurer (or if there shall be more than one, the Assistant Treasurers in the order determined by the Board of Directors) shall perform the duties and exercise the powers of the Treasurer.

4.11. Secretary and Assistant Secretaries. The Secretary shall perform such duties and shall possess such powers as the Board of Directors, the Chief Executive Officer or the President may from time to time prescribe. In addition, the Secretary shall perform such duties and shall have such powers as are incident to the office of the secretary, including without limitation the duty and power to give notices of all meetings of stockholders and Directors, to attend all meetings of stockholders and Directors, to prepare minutes of the meetings of stockholders and Directors, to authenticate the records of the Corporation, to maintain a stock ledger and prepare lists of stockholders and their addresses as required, to be custodian of corporate records and the corporate seal and to affix and attest to the same on documents.

Any Assistant Secretary shall perform such duties and possess such powers as the Board of Directors, the Chief Executive Officer, the President or the Secretary may from time to time prescribe. In the event of the absence, inability or refusal to act of the Secretary, the Assistant Secretary (or if there shall be more than one, the Assistant Secretaries in the order determined by the Board of Directors) shall perform the duties and exercise the powers of the Secretary.

In the absence of the Secretary or any Assistant Secretary at any meeting of stockholders or Directors, the person presiding at the meeting shall designate a temporary secretary to prepare the minutes of the meeting.

4.12. Salaries. Officers of the Corporation shall be entitled to such salaries, compensation or reimbursement as shall be fixed or allowed from time to time by the Board of Directors.

4.13. Standard of Conduct for Officers. An officer shall discharge his or her duties: (a) in good faith; (b) with the care that a person in a like position would reasonably exercise under similar circumstances; and (c) in a manner the officer reasonably believes to be in the best interests of the Corporation. In discharging his or her duties, an officer who does not have knowledge that makes reliance unwarranted is entitled to rely on information, opinions, reports or statements, including financial statements and other financial data, if prepared or presented by: (1) one or more officers or employees of the Corporation whom the officer reasonably believes to be reliable and competent with respect to the information, opinions, reports or statements presented; or (2) legal counsel, public accountants or other persons retained by the Corporation as to matters involving skills or expertise the officer reasonably believes are matters (i) within the particular person's professional or expert competence or (ii) as to which the particular person merits confidence. An officer shall not be liable to the Corporation or its stockholders for any decision to take or not to take any action taken, or any failure to take any action, as an officer, if the duties of the officer are performed in compliance with this Section 4.13.

ARTICLE V

PROVISIONS RELATING TO SHARES

5.1. Issuance and Consideration. The Board of Directors may issue the number of shares of each class or series authorized by the Articles of Organization. The Board of Directors may authorize shares to be issued for consideration consisting of any tangible or intangible property or benefit to the Corporation, including cash, promissory notes, services performed, contracts for services to be performed, or other securities of the Corporation. Before the Corporation issues shares, the Board of Directors shall determine that the consideration received or to be received for shares to be issued is adequate. The Board of Directors shall determine the terms upon which the rights, options or warrants for the purchase of shares or other securities of the Corporation are issued and the terms, including the consideration, for which the shares or other securities are to be issued.

5.2. Share Certificates. If shares are represented by certificates, at a minimum each share certificate shall state on its face: (a) the name of the Corporation and that it is organized under the laws of The Commonwealth of Massachusetts; (b) the name of the person to whom issued; and (c) the number and class of shares and the designation of the series, if any, the certificate represents. Every certificate for shares of stock that are subject to any restriction on the transfer or registration of transfer of such shares pursuant to the Articles of Organization, these By-Laws, an agreement among stockholders or an agreement among stockholders and the Corporation, shall have conspicuously noted on the front or back of such certificate the existence of such restrictions. If different classes of shares or different series within a class are authorized, then the variations in rights, preferences and limitations applicable to each class and series, and the authority of the Board of Directors to determine variations for any future class or series, must be summarized on the front or back of each certificate. Alternatively, each certificate may state conspicuously on its front or back that the Corporation will furnish the stockholder this information on request in writing and without charge. Each share certificate shall be signed, either manually or in facsimile, by the Chief Executive Officer, the President or a Vice President and by the Treasurer or an Assistant Treasurer or the Secretary or an Assistant Secretary, or any two officers designated by the Board of Directors, and may bear the corporate seal or its facsimile. If the person who signed, either manually or in facsimile, a share certificate no longer holds office when the certificate is issued, the certificate shall be nevertheless valid.

5.3. Uncertificated Shares. The Board of Directors may authorize the issue of some or all of the shares of any or all of the Corporation's classes or series without certificates. The authorization shall not affect shares already represented by certificates until they are surrendered to the Corporation. Within a reasonable time after the issue or transfer of shares without certificates, the Corporation shall send the stockholder a written statement of the information required by the MBCA to be on certificates.

5.4. Transfers; Record and Beneficial Owners. Subject to the restrictions, if any, stated or noted on the stock certificates, shares of stock may be transferred on the books of the Corporation by the surrender to the Corporation or its transfer agent of the certificate representing such shares properly endorsed or accompanied by a written assignment or power of attorney properly executed, and with such proof of authority or the authenticity of signature as the Corporation or its transfer agent may reasonably require. The Corporation shall be entitled to treat the record holder of shares as shown on its books as the owner of such shares for all purposes, including the payment of

dividends and other distributions and the right to vote with respect thereto, regardless of any transfer, pledge or other disposition of such shares until the shares have been transferred on the books of the Corporation in accordance with the requirements of these By-Laws. Notwithstanding anything to the contrary herein, to the extent the Board of Directors has established a procedure by which the beneficial owner of shares that are registered in the name of a nominee will be recognized by the Corporation as a stockholder, the Corporation shall be entitled to treat the beneficial owner of shares as the stockholder to the extent of the rights granted by a nominee certificate on file with the Corporation.

5.5. Replacement of Certificates. The Board of Directors may, subject to applicable law, determine the conditions upon which a new share certificate may be issued in place of any certificate alleged to have been lost, destroyed or wrongfully taken. The Board of Directors may, in its discretion, require the owner of such share certificate, or his or her legal representative, to give a bond, sufficient in its opinion, with or without surety, to indemnify the Corporation against any loss or claim which may arise by reason of the issue of the new certificate.

ARTICLE VI

CORPORATE RECORDS

6.1. Records to be Kept.

(a) The Corporation shall keep as permanent records minutes of all meetings of its stockholders and Board of Directors, a record of all actions taken by the stockholders or Board of Directors without a meeting, and a record of all actions taken by a committee of the Board of Directors in place of the Board of Directors on behalf of the Corporation. The Corporation shall maintain appropriate accounting records. The Corporation or its agent shall maintain a record of its stockholders, in a form that permits preparation of a list of the names and addresses of all stockholders, in alphabetical order by class of shares showing the number and class of shares held by each. The Corporation shall maintain its records in written form or in another form capable of conversion into written form within a reasonable time.

(b) The Corporation shall keep within The Commonwealth of Massachusetts a copy of the following records at its principal office or an office of its transfer agent or of its Secretary or Assistant Secretary or of its registered agent:

- (1) its Articles or Restated Articles of Organization and all amendments to them currently in effect;
- (2) its By-Laws or Restated By-Laws and all amendments to them currently in effect;
- (3) resolutions adopted by its Board of Directors creating one or more classes or series of shares, and fixing their relative rights, preferences and limitations, if shares issued pursuant to those resolutions are outstanding;
- (4) the minutes of all stockholders' meetings, and records of all action taken by stockholders without a meeting, for the past three years;
- (5) all written communications to stockholders generally within the past three years, including the financial statements furnished under Section 16.20 of the MBCA, or any successor Section thereto, for the past three years;
- (6) a list of the names and business addresses of its current Directors and officers; and
- (7) its most recent annual report delivered to the Massachusetts Secretary of State.

6.2. Inspection of Records by Stockholders.

(a) A stockholder is entitled to inspect and copy, during regular business hours at the office where they are maintained pursuant to Section 6.1(b) of these By-Laws, copies of any of the records of the Corporation described in said Section 6.1(b) if he or she gives the Corporation written notice of his or her demand at least five business days before the date on which he or she wishes to inspect and copy.

(b) A stockholder is entitled to inspect and copy, during regular business hours at a reasonable location specified by the Corporation, any of the following records of the Corporation if the stockholder meets the requirements of subsection (c) of this Section 6.2 and gives the Corporation written notice of his or her demand at least five business days before the date on which he or she wishes to inspect and copy:

(1) excerpts from minutes reflecting action taken at any meeting of the Board of Directors, records of any action of a committee of the Board of Directors while acting in place of the Board of Directors on behalf of the Corporation, minutes of any meeting of the stockholders, and records of action taken by the stockholders or Board of Directors without a meeting, to the extent not subject to inspection under subsection (a) of this Section 6.2;

(2) accounting records of the Corporation, but if the financial statements of the Corporation are audited by a certified public accountant, inspection shall be limited to the financial statements and the supporting schedules reasonably necessary to verify any line item on those statements; and

(3) the record of stockholders described in Section 6.1(a) of these By-Laws.

(c) A stockholder may inspect and copy the records described in subsection (b) of this Section 6.2 only if:

(1) his or her demand is made in good faith and for a proper purpose;

(2) he or she describes with reasonable particularity his or her purpose and the records he or she desires to inspect;

(3) the records are directly connected with his or her purpose; and

(4) the Corporation shall not have determined in good faith that disclosure of the records sought would adversely affect the Corporation in the conduct of its business or, in the case of a public corporation, constitutes material non-public information at the time when the stockholder's notice of demand to inspect and copy is received by the Corporation.

(d) For purposes of this Section 6.2, "stockholder" includes a beneficial owner whose shares are held in a voting trust or by a nominee on his or her behalf.

6.3. Scope of Inspection Right.

(a) A stockholder's agent or attorney has the same inspection and copying rights as the stockholder represented.

(b) The Corporation may, if reasonable, satisfy the right of a stockholder to copy records under Section 6.2 of these By-Laws by furnishing to the stockholder copies by photocopy or other means chosen by the Corporation, including copies furnished through an electronic transmission.

(c) The Corporation may impose a reasonable charge, covering the costs of labor, material, transmission and delivery, for copies of any documents provided to the stockholder. The charge may not exceed the estimated cost of production, reproduction, transmission or delivery of the records.

(d) The Corporation may comply at its expense with a stockholder's demand to inspect the record of stockholders under clause (3) of subsection (b) of Section 6.2 of these By-Laws by providing the stockholder with a list of stockholders that was compiled no earlier than the date of the stockholder's demand.

(e) The Corporation may impose reasonable restrictions on the use or distribution of records by the demanding stockholder.

6.4. Inspection of Records by Directors. A Director is entitled to inspect and copy the books, records and documents of the Corporation at any reasonable time to the extent reasonably related to the performance of the Director's duties as a Director, including duties as a member of a committee, but not for any other purpose or in any manner that would violate any duty to the Corporation.

ARTICLE VII

MISCELLANEOUS

7.1. Fiscal Year. Except as otherwise determined from time to time by the Board of Directors, the fiscal year of the Corporation shall in each year end on December 31.

7.2. Seal. The seal of the Corporation shall, subject to alteration by the Board of Directors, bear the Corporation's name, the word "Massachusetts" and the year of its incorporation.

7.3. Voting of Securities. Except as the Board of Directors may otherwise designate, the Chief Executive Officer, President or Treasurer may waive notice of, and act as, or appoint any person or persons to act as, proxy or attorney-in-fact for the Corporation (with or without power of substitution) at, any meeting of stockholders of any other corporation or organization, the securities of which may be held by the Corporation.

7.4. Checks, Notes, Drafts and Other Instruments. Checks, notes, drafts and other instruments for the payment of money drawn or endorsed in the name of the Corporation may be signed by any officer or officers or person or persons authorized by the directors to sign the same. No officer or person shall sign any such instrument as aforesaid unless authorized by the directors to do so.

7.5. Evidence of Authority. A certificate by the Secretary, an Assistant Secretary or a temporary Secretary as to any action taken by the stockholders, Directors, any committee or any officer or representative of the Corporation shall as to all persons who rely on the certificate in good faith be conclusive evidence of such action.

7.6. Articles of Organization. All references in these By-Laws to the Articles of Organization shall be deemed to refer to the Articles of Organization of the Corporation, as amended and in effect from time to time.

7.7. Severability. Any determination that any provision of these By-Laws is for any reason inapplicable, illegal or ineffective shall not affect or invalidate any other provision of these By-Laws.

7.8. Pronouns. All pronouns used in these By-Laws shall be deemed to refer to the masculine, feminine or neuter, singular or plural, as the identity of the person or persons may require.

7.9. Massachusetts Control Share Acquisition Act. The provisions of Chapter 110D of the Massachusetts General Laws shall not apply to the Corporation.

7.10. Interpretation. All references to "Section 50A of the Massachusetts Business Corporation Law, as it may be amended from time to time" or "such Section 50A" are deemed to include Section 8.06 of the MBCA.

ARTICLE VIII

AMENDMENTS

These By-Laws may be amended by the vote of the holders of at least sixty-six and two-thirds percent (66 2/3%) of the shares of each class of the capital stock at the time outstanding and entitled to vote at any annual or special meeting of stockholders, if notice of the substance of the proposed amendment is stated in the notice of such

meeting. If authorized by the Articles of Organization, the Board of Directors, by a majority of their number then in office, may also make, amend or repeal these By-Laws, in whole or in part, except with respect to (a) the provisions of these By-Laws governing (i) the removal of directors and (ii) the amendment of these By-Laws and (b) any provision of these By-Laws which by law, the Articles of Organization or these By-Laws requires action by the stockholders.

Not later than the time of giving notice of the meeting of stockholders next following the making, amending or repealing by the Board of Directors of any By-Law, notice stating the substance of such change shall be given to all stockholders entitled to vote on amending the By-Laws.

Approved as Second Amended and Restated
By-Laws by the Board of Directors on
December 2, 2024

APPENDIX C

Reconciliation of 2024 Income from Operations to 2024 Non-GAAP Operating Income under Management Incentive Plan

<i>(amounts in millions)</i>	Twelve Months Ended December 31, 2024
Income from operations	\$498
Amortization of intangible assets	245
Acquisition and integration costs (Note 1)	9
Restructuring and other (Note 2)	6
Fees and expenses related to repricing of Term Loan Facility (Note 3)	5
Non-GAAP operating income	<u>\$763</u>
Non-Executive Bonus Adjustment (Note 4)	<u>13</u>
Non-GAAP operating income under Management Incentive Plan	<u>\$776</u>

Reconciliation of 2024 Gross Debt to 2024 Adjusted Net Debt

<i>(amounts in millions)</i>	December 31, 2024
Gross Debt	\$4,649
Cash and cash equivalents	714
Foreign exchange rate impact	(18)
Convertible debt costs	193
Adjusted Net Debt	<u>\$3,760</u>

Reconciliation of 2024 Revenue to Adjusted Revenue

<i>(amounts in millions)</i>	Twelve Months Ended December 31, 2024
Revenue	\$3,586
Palladium price adjustment (Note 5)	43
Adjusted Revenue	<u>\$3,629</u>

Reconciliation of 2024 Net Income to 2024 Adjusted EBITDA under Performance-Based RSUs

<i>(amounts in millions)</i>	Twelve Months Ended December 31, 2024
Net income	\$190
Interest expense, net	263
Other income, net	(2)
Benefit for income taxes	(10)
Depreciation	103
Amortization of intangible assets	245
Stock-based compensation	48
Acquisition and integration costs (Note 1)	9
Restructuring and other (Note 2)	6
Loss on extinguishment of debt (Note 6)	57
Fees and expenses related to repricing of Term Loan Facility (Note 3)	5
Adjusted EBITDA	<u>\$914</u>
Non-Executive Bonus Adjustment (Note 4)	<u>13</u>
Adjusted EBITDA under performance-based RSUs	<u>\$927</u>

Note 1: Acquisition and integration costs primarily related to the Atotech Acquisition.

Note 2: Restructuring costs primarily related to severance costs due to global cost-saving initiatives. Other costs related to certain legal matters.

Note 3: We recorded fees and expenses related to (a) the repricing of our USD term loan B and EUR term loan B and (b) an amendment to our term loan facility where we borrowed additional amounts under our USD term loan B and EUR term loan B and fully repaid our term loan A.

Note 4: Non-Executive Bonus Adjustment relates to \$13 million associated with our Compensation Committee's decision to adjust the payout of non-executive cash bonuses to 50% of target, as described under "Executive Compensation – Compensation Discussion and Analysis – Elements of Compensation."

Note 5: We adjusted for changes in the price of palladium when actual palladium prices differed from our budgeted palladium price.

Note 6: We recorded charges to (i) write-off deferred financing fees and original issue discount costs related to voluntary principal prepayments on our USD term loan B and EUR term loan B, (ii) write off deferred financing fees and original issue discount costs related to the repricing of our USD term loan B and EUR term loan B, and (iii) write-off deferred financing fees related to the extinguishment of our term loan A.

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