

MKS INSTRUMENTS INC
Form DEF 14A
March 24, 2014

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, DC 20549

SCHEDULE 14A

(Rule 14A-101)

INFORMATION REQUIRED IN
PROXY STATEMENT

SCHEDULE 14A INFORMATION

Proxy Statement Pursuant to Section 14(a) of the

Securities Exchange Act of 1934

(Amendment No.)

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

- Preliminary Proxy Statement
- Confidential, for Use of the Commission Only** (as permitted by Rule 14a-6(e)(2))
- Definitive Proxy Statement
- Definitive Additional Materials
- Soliciting Material Pursuant to §240.14a-12

MKS Instruments, Inc.
(Name of Registrant as Specified in its Charter)

Payment of Filing Fee (Check the appropriate box):

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- 1) Amount Previously Paid:

- 2) Form, Schedule or Registration Statement No.:

- 3) Filing Party:

4) Date Filed:

MKS INSTRUMENTS, INC.
2 TECH DRIVE, SUITE 201
ANDOVER, MASSACHUSETTS 01810

March 24, 2014

Dear Shareholder:

You are cordially invited to attend the 2014 Annual Meeting of Shareholders of MKS Instruments, Inc. to be held on Monday, May 5, 2014 at 10:00 a.m., local time, at the Wyndham Boston Andover Hotel, 123 Old River Road, Andover, Massachusetts 01810.

The enclosed 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) to elect three Class III Directors, (ii) to approve the Company's 2014 Stock Incentive Plan, (iii) to approve the Company's 2014 Employee Stock Purchase Plan, (iv) to approve a non-binding advisory vote on executive compensation, and (v) to ratify the selection of the Company's independent registered public accounting firm for the year ending December 31, 2014.

Whether or not you plan to attend the Annual Meeting, please complete, date, sign and return your Proxy Card promptly in the enclosed envelope, which requires no postage if mailed in the United States. If you attend the Annual Meeting, you may vote in person if you wish, even if you have previously returned your Proxy Card, in which case your proxy vote will be revoked.

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

Sincerely,

GERALD G. COLELLA

Chief Executive Officer and President

MKS INSTRUMENTS, INC.
2 TECH DRIVE, SUITE 201
ANDOVER, MASSACHUSETTS 01810

NOTICE OF 2014 ANNUAL MEETING OF SHAREHOLDERS
TO BE HELD ON MAY 5, 2014

To our Shareholders:

NOTICE IS HEREBY GIVEN that the 2014 Annual Meeting of Shareholders of MKS INSTRUMENTS, INC., a Massachusetts corporation, will be held on Monday, May 5, 2014 at 10:00 a.m., local time, at the Wyndham Boston Andover Hotel, 123 Old River Road, Andover, Massachusetts 01810. At the meeting, shareholders will consider and vote on the following matters:

1. To elect three Class III Directors, each for a three-year term;
2. To approve the Company's 2014 Stock Incentive Plan;
3. To approve the Company's 2014 Employee Stock Purchase Plan;
4. To approve a non-binding advisory vote on executive compensation; and
5. To ratify the selection of PricewaterhouseCoopers LLP as the Company's independent registered public accounting firm for the year ending December 31, 2014.

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

The Board of Directors has fixed the close of business on March 12, 2014 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. Our stock transfer books will remain open for the purchase and sale of our Common Stock.

If you would like to attend the Annual Meeting and your shares are held by a broker, bank or other nominee, you must bring to the Annual Meeting a letter from the nominee confirming your beneficial ownership of such shares. In order

to vote your shares at the Annual Meeting, you must obtain from the nominee a proxy issued in your name. You must also bring a form of personal identification.

By Order of the Board of Directors,

RICHARD S. CHUTE

Secretary

Andover, Massachusetts

March 24, 2014

IMPORTANT

WHETHER OR NOT YOU EXPECT TO ATTEND THE ANNUAL MEETING IN PERSON, PLEASE PROMPTLY SIGN, DATE, AND RETURN THE ENCLOSED PROXY. PROMPTLY SIGNING, DATING AND RETURNING THE PROXY WILL SAVE US THE EXPENSE AND EXTRA WORK OF ADDITIONAL SOLICITATION. AN ADDRESSED ENVELOPE FOR WHICH NO POSTAGE IS REQUIRED IF MAILED IN THE UNITED STATES IS ENCLOSED FOR THAT PURPOSE. SENDING IN YOUR PROXY WILL NOT PREVENT YOU FROM VOTING YOUR STOCK AT THE ANNUAL MEETING IF YOU DESIRE TO DO SO, AS YOUR PROXY IS REVOCABLE AT YOUR OPTION.

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 2014 Annual Meeting of Shareholders to be held on May 5, 2014 at 10:00 a.m., local time, at the Wyndham Boston Andover Hotel, 123 Old River Road, Andover, Massachusetts 01810, and at any adjournment or postponement thereof (the 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 shareholders' instructions. If no choice is specified in the proxy, the shares will be voted in favor of the matters set forth in the accompanying Notice of 2014 Annual Meeting of Shareholders. Any proxy may be revoked by a shareholder at any time before its exercise by delivery of written revocation to the Secretary of MKS. Attendance at the Annual Meeting will not in itself be deemed to revoke a proxy unless the shareholder gives affirmative notice at the Annual Meeting that the shareholder intends to revoke the proxy and vote in person.

VOTING SECURITIES AND VOTES REQUIRED

At the close of business on March 12, 2014, the record date for the determination of shareholders entitled to notice of, and to vote at, the Annual Meeting, there were issued and outstanding and entitled to vote 53,460,210 shares of our common stock, no par value per share (the Common Stock). Each outstanding share entitles the record holder to one vote on each matter submitted at the Annual Meeting.

In order to transact business at the Annual Meeting, we must have a quorum. Under our Amended and Restated By-Laws, the holders of a majority of the shares of Common Stock issued and outstanding and entitled to vote at the Annual Meeting shall constitute a quorum for the transaction of business at the Annual Meeting. Shares of Common Stock held by shareholders present in person 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 Annual Meeting. If a quorum is not present, the meeting will be adjourned until a quorum is obtained.

The affirmative vote of the holders of a plurality of the votes cast on the matter is required for the election of directors (Proposal One). The approval of the 2014 Stock Incentive Plan (Proposal Two), the approval of the 2014 Employee Stock Purchase Plan (Proposal Three), the approval of the advisory vote on executive compensation (Proposal Four), and the ratification of PricewaterhouseCoopers LLP, or PwC (Proposal Five) require the affirmative vote of the holders of a majority of the votes cast on the matter.

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 nominees, who indicate on their proxies that they do not have discretionary authority to vote such shares as to a particular non-routine matter, including the election of directors, the vote to approve the 2014 Stock Incentive Plan, the vote to approve the 2014 Employee Stock Purchase Plan and the advisory vote on executive compensation, will not be counted as votes in favor of, or as votes cast for, a matter. Accordingly, abstentions and broker non-votes will have no effect on the voting on a matter that requires the affirmative vote of a certain percentage of the shares voting on the matter. Proposal Four is a non-binding proposal. If the shares you own are held in street name by a bank or brokerage firm, your bank or brokerage firm, 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 directions your bank or brokerage firm provides you.

THE NOTICE OF ANNUAL MEETING, THIS PROXY STATEMENT AND OUR ANNUAL REPORT TO SHAREHOLDERS FOR THE YEAR ENDED DECEMBER 31, 2013 ARE BEING MAILED TO SHAREHOLDERS ON OR ABOUT MARCH 27, 2014.

IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE SHAREHOLDER MEETING TO BE HELD ON MAY 5, 2014

A copy of (i) our Annual Report to Shareholders for the year ended December 31, 2013, which contains consolidated financial statements and other information of interest to shareholders, (ii) this Proxy Statement and this Notice, and (iii) information on how to obtain directions to be able to attend the meeting and vote in person can be accessed on our website at <http://investor.mksinst.com/annualproxy.cfm> or by calling (800) 227-8766 ext. 5578 and requesting a copy.

A COPY OF OUR ANNUAL REPORT ON FORM 10-K FOR THE YEAR ENDED DECEMBER 31, 2013 AS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION, OR THE SEC, EXCLUDING EXHIBITS, WILL BE FURNISHED WITHOUT CHARGE TO ANY SHAREHOLDER UPON WRITTEN REQUEST TO: INVESTOR RELATIONS DEPARTMENT, MKS INSTRUMENTS, INC., 2 TECH DRIVE, SUITE 201, ANDOVER, MA 01810. EXHIBITS WILL BE PROVIDED UPON WRITTEN REQUEST AND PAYMENT OF AN APPROPRIATE PROCESSING FEE.

**SECURITY OWNERSHIP OF CERTAIN BENEFICIAL
OWNERS AND MANAGEMENT**

The following table sets forth certain information with respect to the beneficial ownership of Common Stock by (i) each shareholder known to us to be the beneficial owner of more than 5% of the outstanding shares of Common Stock; (ii) the 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 January 1, 2014; and the address for each of our directors and executive officers is: c/o MKS Instruments, Inc., 2 Tech Drive, Suite 201, Andover, Massachusetts 01810.

| Name of Beneficial Owners | Number of Shares Beneficially Owned(1) | Percentage of Common Stock Beneficially Owned |
|-------------------------------------|---|---|
| <i>5% shareholders</i> | | |
| Royce & Associates, LLC | 7,936,052(2) | 14.91% |
| 745 Fifth Avenue | | |
| New York, NY 10151 | | |
| Black Rock, Inc. | 4,656,447(3) | 8.70% |
| 40 East 52 nd Street | | |
| New York, NY 10022 | | |
| The Vanguard Group, Inc. | 3,444,417(4) | 6.47% |
| 100 Vanguard Blvd. | | |
| Malvern, PA 19355 | | |
| Dimensional Fund Advisors LP | 3,353,991(5) | 6.30% |
| Palisades West, Building One | | |
| 6300 Bee Cave Road | | |
| Austin, TX 78746 | | |
| <i>Named Executive Officers</i> | | |
| Gerald G. Colella | 36,621(6) | * |
| Leo Berlinghieri | 202,122(7) | * |
| Seth H. Bagshaw | 43,197(8) | * |
| Paul M. Eyerman | 23,550(9) | * |
| John T.C. Lee | 12,721(10) | * |
| Paul A. Loomis | 13,125(11) | * |
| <i>Directors Not Included Above</i> | | |

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| | | |
|--|---------------|-------|
| Cristina H. Amon | 23,667(12) | * |
| Robert R. Anderson | 28,000(13) | * |
| Gregory R. Beecher | 24,400(14) | * |
| John R. Bertucci | 720,263(15) | 1.33% |
| Richard S. Chute | 38,000(16) | * |
| Peter R. Hanley | 4,000(17) | * |
| Elizabeth A. Mora | 4,375(18) | * |
| All directors and executive officers as a group (15 persons) | 1,200,904(19) | 2.20% |

* 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 rules of the Securities and Exchange Commission (the SEC), 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 January 1, 2014 subject to the vesting of restricted stock units (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 53,363,450 shares

of Common Stock outstanding as of January 1, 2014. Shares of Common Stock which an individual or entity has a right to acquire within the 60-day period following January 1, 2014 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 Schedule 13G/A filed by Royce & Associates, LLC on behalf of itself and its affiliates on February 5, 2014, reporting stock ownership as of December 31, 2013.
- (3) Based on information set forth in Schedule 13G/A filed by Black Rock, Inc. on January 30, 2014, reporting stock ownership as of December 31, 2013, and consists of 4,482,797 shares of which Black Rock, Inc. has sole voting and investment power and 173,650 shares of which Black Rock, Inc. has sole investment power.
- (4) Based on information set forth in Schedule 13G/A filed by The Vanguard Group, Inc. on February 11, 2014, reporting stock ownership as of December 31, 2013, and consists of 3,368,554 shares of which The Vanguard Group, Inc. has sole voting and investment power and 75,863 shares of which The Vanguard Group, Inc. has sole voting power and shared investment power.
- (5) Based on information set forth in Schedule 13G/A filed by Dimensional Fund Advisors LP on February 10, 2014, reporting stock ownership as of December 31, 2013, and consists of 3,271,513 shares of which Dimensional Fund Advisors LP has sole voting and investment power and 82,478 shares of which Dimensional Fund Advisors LP has sole investment power. Dimensional Fund Advisors LP disclaims beneficial ownership of such securities.
- (6) Consists of 3,324 shares held directly by Mr. Colella and 33,297 shares subject to options exercisable or RSUs that will vest within 60 days after January 1, 2014.
- (7) Consists of 157,546 shares held directly by Mr. Berlinghieri and 44,576 shares subject to RSUs that will vest within 60 days of January 1, 2014. Mr. Berlinghieri is a former director and the former Chief Executive Officer of the Company.
- (8) Consists of 23,302 shares held directly by Mr. Bagshaw and 19,895 shares subject to RSUs that are subject to vesting within 60 days after January 1, 2014.
- (9) Consists of 17,375 shares held directly by Mr. Eyerman and 6,175 shares subject to RSUs that are subject to vesting within 60 days after January 1, 2014.
- (10) Consists of 963 shares held directly by Dr. Lee and 11,758 shares subject to RSUs that are subject to vesting within 60 days after January 1, 2014.

(11)

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Consists of 6,531 shares held directly by Mr. Loomis and 6,594 shares subject to RSUs that are subject to vesting within 60 days after January 1, 2014.

(12) Consists of 23,667 shares held directly by Ms. Amon.

(13) Consists of 13,000 shares held directly by Mr. Anderson and 15,000 shares subject to options exercisable within 60 days after January 1, 2014.

(14) Consists of 24,400 shares held directly by Mr. Beecher.

(15) Consists of 414,422 shares held directly by Mr. Bertucci and 305,841 shares held directly or indirectly by Mr. Bertucci's wife.

(16) Consists of 2,000 shares held directly by Mr. Chute and 36,000 shares subject to options exercisable that will vest within 60 days after January 1, 2014.

(17) Consists of 4,000 shares held directly by Mr. Hanley.

(18) Consists of 3,750 shares held directly by Ms. Mora and 625 shares subject to RSUs that are subject to vesting within 60 days after January 1, 2014.

(19) Consists of 1,022,032 shares held directly or indirectly by such persons and 178,872 shares subject to options exercisable or RSUs that will vest within 60 days after January 1, 2014.

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.

PROPOSAL ONE

ELECTION OF DIRECTORS

Our Amended and Restated By-Laws provide for a Board of Directors that is divided into three classes. The term of the Class I Directors expires at the 2015 Annual Meeting, the term of the Class II Directors expires at the 2016 Annual Meeting and the term of the Class III Directors expires at the 2014 Annual Meeting. John R. Bertucci, Robert R. Anderson and Gregory R. Beecher are currently proposed for election to serve as Class III Directors for a term to expire at the 2017 Annual Meeting. Each nominee has consented to being named herein, and, if elected, to serve as a director until his successor is duly elected and qualified.

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 any 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.

BOARD RECOMMENDATION

THE BOARD OF DIRECTORS BELIEVES THAT APPROVAL OF THE ELECTION OF JOHN R. BERTUCCI, ROBERT R. ANDERSON AND GREGORY R. BEECHER TO SERVE AS CLASS III DIRECTORS IS IN THE BEST INTERESTS OF MKS AND OUR SHAREHOLDERS AND THEREFORE RECOMMENDS A VOTE FOR ALL NOMINEES.

DIRECTORS

The Board of Directors, upon the recommendation of the Nominating and Corporate Governance Committee has nominated John R. Bertucci, Robert R. Anderson and Gregory R. Beecher, to serve as Class III 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 III Directors) and the positions and offices held, principal occupation and business experience during at least the past five years, the names of other publicly held companies of which the individual currently serves, or in the past five years has served, as a director and the year of commencement of the term as our director. We have also included information about each director'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 director, directly or indirectly, as of January 1, 2014, appears in this proxy statement under the heading Security Ownership of Certain Beneficial Owners and Management.

| Name | Age | Position | Class to Which Director Currently Belongs |
|---------------------------|-----|--|---|
| *John R. Bertucci | 73 | Director, Chairman | III |
| Cristina H. Amon(2)(3) | 57 | Director | II |
| *Robert R. Anderson(1)(3) | 76 | Director | III |
| *Gregory R. Beecher(1) | 56 | Director | III |
| Richard S. Chute(2) | 75 | Director, Secretary | II |
| Gerald G. Colella | 57 | Director, Chief Executive Officer and President | I |
| Peter R. Hanley(2)(3) | 74 | Director | II |
| Elizabeth A. Mora(1) | 53 | Director | I |

(1) Member of Audit Committee

(2) Member of Nominating and Corporate Governance Committee

(3) Member of Compensation Committee

* Nominee for election at this meeting

John R. Bertucci

Mr. Bertucci has served as our director since 1974, and has been Chairman of the Board of Directors since November 1995. Mr. Bertucci served as Executive Chairman from July 2005 until December 2006. Mr. Bertucci served as our Chief Executive Officer from November 1995 to July 2005 and served as President from 1974 to May 1999 and again from November 2001 to April 2004. From 1970 to 1974, he was our Vice President and General Manager.

Mr. Bertucci holds an M.S. in Industrial Administration and a B.S. in Metallurgical Engineering from Carnegie Mellon University. Mr. Bertucci has served as a member of the Board of Trustees of Carnegie Mellon University since May 2002. He has also served as a member of the Executive Board of The Massachusetts High Technology

Council since February 1999, serving as Chairman from February 2005 to February 2007. He also serves as a member of the Board of Trustees or the Board of Directors of three non-profit organizations. Mr. Bertucci's 30-plus years of experience working for MKS, including a combined 28 years as our President, gives him a unique insight into the challenges and strategies relevant to the semiconductor industry as a whole, and to our Company in particular.

Cristina H. Amon

Ms. Amon has served as our director since 2007. She has served as the Dean, Faculty of Applied Science and Engineering, Alumni Chair Professor of Bioengineering and a member of the Department of Mechanical and Industrial Engineering at the University of Toronto since July 2006. Prior to that, Ms. Amon served at Carnegie Mellon University, as Director of the Institute for Complex Engineered Systems from September 1999 until July 2006, and was a Raymond Lane Distinguished Professor, Mechanical Engineering and Biomedical Engineering

from September 2001 until July 2006. In her roles at the University of Toronto and Carnegie Mellon, Ms. Amon has led research in micro-fabrication, sustainable energy, thermal management of electronics and nano-scale transport in silicon thin films. Ms. Amon has served as Executive Board Member of the American Society for Engineering Education (ASEE), Engineering Deans Council since 2007, and Nominating Committee Member since 2011. Ms. Amon has served as Executive Board Member of the Global Engineering Deans Council (GEDC) since 2007 and as Chair from 2008 through 2009. She has also served as an Executive Board Member of the American Society of Mechanical Engineers (ASME), Electronic and Photonic Packaging division since 2001, served on the External Advisory Board for the Department of Mechanical and Aerospace Engineering at the University of Texas, Department of Mechanical Engineering at Stanford University since 2008, and served on the Board of Visitors for the College of Engineering at the University of Illinois at Urbana-Champaign (UIUC) since 2009. She is a Fellow of ASEE, ASME, the American Association for the Advancement of Science (AAAS), the Engineering Institute of Canada (EIC), the Institute of Electrical and Electronic Engineers (IEEE), the National Academy of Engineering (NAE), the Royal Society of Canada (RSC) and the Canadian Academy of Engineering (CAE). Ms. Amon's extensive engineering background, particularly in micro-fabrication, thermal management and silicon thin-films, provides the Board of Directors with a technical perspective and insight into the challenges and opportunities we face.

Robert R. Anderson

Mr. Anderson has served as our director since January 2001. Mr. Anderson is a private investor. From October 1998 to April 2000, Mr. Anderson served as CEO of Yield Dynamics, Inc., a private semiconductor control software company, which MKS acquired in 2007 and later sold in 2010. Mr. Anderson served as CEO of Silicon Valley Research, Inc., a semiconductor design automation software company, from December 1996 to August 1998 and as Chairman from January 1994 to January 2001. Mr. Anderson was co-founder and served as Chief Financial Officer, Chief Operating Officer and Chairman of KLA Instruments, a supplier of process control and yield management solutions for the semiconductor and related nanoelectronics industries, from 1975 through 1994. He was Chief Financial Officer of Computervision from 1970 through 1975. Mr. Anderson has served as the President and a director of a private family foundation since September 2000. He has also served as a director of Aehr Test Systems, Inc., a publicly traded manufacturer of semiconductor test and burn-in equipment, since October 2000, and currently serves on Aehr's Audit and Compensation committees. He has also served as a director of Energetiq Technology, Inc., a privately held company, since May 2005. In addition, he served as a director of Aviza Technology, Inc., a publicly traded manufacturer of semiconductor capital equipment and process technologies, from December 2005 to March 2009. Mr. Anderson is a Trustee Emeritus of Bentley University, having served as a trustee from 1992 through 2003. Mr. Anderson has served on over 18 public and private boards, and has served as CFO, CEO and Chairman of several public corporations. His extensive business experience, particularly within the semiconductor industry, provides him with insight into the challenges we face within the industry. In addition, his financial acumen is an important asset in his role as a member of our Audit and Compensation Committees.

Gregory R. Beecher

Mr. Beecher has served as our director since August 2006. Mr. Beecher has served as CFO of Teradyne, Inc., a semiconductor and system level test equipment provider, since 2001. Mr. Beecher was an audit partner with PricewaterhouseCoopers LLP from October 1993 to March 2001, working with numerous semiconductor equipment and instrument providers, along with other technology-related enterprises, and advising on complex accounting issues. Mr. Beecher has an M.S. in Accounting from Northeastern University. Mr. Beecher's extensive financial background, including his previous experience at a public accounting firm, and his current role as CFO of a public corporation, provide valuable insights for the Board of Directors and the Audit Committee.

Richard S. Chute

Mr. Chute has served as our director since 1974. Mr. Chute was a member of the law firm of Hill & Barlow, a Professional Corporation, from 1971 to January 2003, with an extensive corporate practice, and is currently an

attorney in private practice. Mr. Chute has served as a director of Massachusetts Audubon Society, Inc. since October 2004, currently serving as Chairman of its Audit Committee and a member of its Administration and Finance Committee, the Committee on the Board and its Diversity Committee. Mr. Chute has also served as a director and member of the Nominating Committee of Manomet, Inc., a privately held company, since November 1993. He has served on over 15 other non-profit and private company boards. Mr. Chute's extensive legal experience provides him with a unique perspective, which is particularly valuable in Mr. Chute's current roles as Secretary of the Company and as Chair of the Nominating and Corporate Governance Committee.

Gerald G. Colella

Mr. Colella has served as our director and as our Chief Executive Officer, in addition to his role as President, since January 2014. From February 2013 until December 2013, Mr. Colella served as our President and Chief Operating Officer. He served as Vice President and Chief Operating Officer from January 2010 until February 2013 and served as our Vice President and Chief Business Officer from April 2005 until January 2010. In addition, Mr. Colella also served as Acting Group Vice President, PRG Products from July 2007 to March 2010. From October 1997 to April 2005, he served as our Vice President, Global Business and Service Operations, from March 1996 to October 1997, he served as our Director of Materials Planning and Logistics and from 1994 to 1996, he served as our Materials Planning and Logistics Manager. Mr. Colella joined MKS in 1983. He holds a B.A. in Secondary Education from the University of Massachusetts and an M.B.A. from Southern New Hampshire University. Mr. Colella's over 30 years of experience within the Company gives him particularly deep insight into the organization.

Peter R. Hanley

Mr. Hanley has served as our director since March 2008. From December 2009 until November 2010, Mr. Hanley served as an occasional consultant to Novellus Systems, Inc. (now Lam Research Corporation), a leading developer of semiconductor manufacturing equipment. From January 2004 until December 2007, Mr. Hanley served as a part-time employee of Novellus, engaged primarily in executive training. Mr. Hanley served as President of Novellus from May 2001 to December 2003. Prior to that, he served as Novellus' Executive Vice President of Worldwide Sales from June 1992 until May 2001. Prior to joining Novellus, Mr. Hanley served from 1985 to 1992 at Applied Materials, Inc., a leader in the semiconductor capital equipment industry, most recently as Group Vice President of Worldwide Sales and Service and previously as Vice President and General Manager of their Etch Products Division. Before joining Applied Materials, Inc., Mr. Hanley served from 1978 to 1984 at Varian Associates, a leader in the semiconductor capital equipment industry, most recently as Vice President of Technology and previously as Vice President and General Manager of their Extrinsic Ion Implantation Division. Mr. Hanley's substantial background in the semiconductor industry for more than 25 years, including senior management roles at Novellus and Applied Materials, two of MKS' largest customers, provides the Board of Directors with insights into the industry's sales and marketing challenges and opportunities.

Elizabeth A. Mora

Ms. Mora has served as our director since May 2012. Ms. Mora has served since 2008 as the Chief Financial Officer of The Charles Stark Draper Laboratory, Inc., a non-profit engineering research and development laboratory serving the national interest in applied research, engineering development, advanced technical education, and technology transfer. From 1997 until 2008, she worked for Harvard University, ultimately serving as Chief Financial Officer and Vice President for Finance at the University, and previously serving as Associate Vice President, Research Administration and the Director of the Office of Sponsored Research. Prior to joining Harvard, Ms. Mora worked for Coopers and Lybrand (now PricewaterhouseCoopers LLP) from 1989 to 1997 and was one of the founding members of its National Regulatory Consulting Practice. Ms. Mora is a Certified Public Accountant and has an M.B.A. from the Simmons College Graduate School of Management. She also serves as a member of the Audit Committee of the Olin College of Engineering. Ms. Mora's extensive financial background, including her current role as CFO of a research

and development organization, provides valuable insights for the Board of Directors and the Audit Committee.

Agreements as to Nomination

Mr. Bertucci resigned from his employment with MKS effective December 31, 2006. Mr. Bertucci's employment agreement provided that if Mr. Bertucci resigned from his employment, then, subject to applicable law, our Amended and Restated By-Laws, our Restated Articles of Organization and the directors' fiduciary duties, the Board of Directors shall nominate Mr. Bertucci for election as a Class III director and consider Mr. Bertucci for appointment as Chairman of the Board of Directors, until such time as Mr. Bertucci is no longer eligible for nomination as a director.

CORPORATE GOVERNANCE

Board Independence

The Board of Directors has determined that all of the members of the Board of Directors, other than Mr. Colella, are independent as defined under the rules of the NASDAQ Stock Market (NASDAQ).

Board Leadership Structure

Since 2005, we have separated the roles of Chief Executive Officer and Chairman 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 for the Company and the day-to-day leadership and performance of the Company, while the Chairman of the Board of Directors provides guidance to the Chief Executive Officer, sets the agenda for Board meetings and presides over meetings of the full Board of Directors.

In addition, the Board of Directors has established the position of Lead Director. Our Corporate Governance Guidelines provide that during any period in which the Chair of the Board of Directors is not an independent director, a Lead Director shall be elected by and from the independent directors. While we are not obligated under our Corporate Governance Guidelines to have a Lead Director, as our Chairman of the Board of Directors is independent, we have currently elected to continue to do so.

The primary role of the Lead Director is to serve as a liaison between the independent directors and the Chairman of the Board of Directors and the Chief Executive Officer and to represent the interest of the independent directors, as appropriate. Gregory R. Beecher has served as Lead Director since 2012. Pursuant to our Corporate Governance Guidelines, which are posted on our website at www.mksinst.com in the Corporate Governance Section under the Investors tab; 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 Chairman of the Board of Directors is not present, including executive sessions of the independent directors.

Assure that at least two meetings per year of only the independent directors are held and chair any such meetings of the independent directors.

Facilitate communications and serve as a liaison between the independent directors and the Chairman of the Board of Directors and 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 Chairman 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.

Otherwise consult with the Chairman of the Board of Directors and the Chief Executive Officer on matters relating to corporate governance and 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.

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 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 control over financial reporting, disclosure controls and procedures and code of conduct. The Audit Committee also is responsible for discussing the Company's policies with respect to financial risk assessment and financial risk management. 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 as it relates to our Chief Executive Officer. 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 and corporate governance. 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.

Board of Director Meetings and Committees of the Board of Directors

The Board of Directors held eleven meetings in 2013. During 2013, each director attended at least 75% of the aggregate of the total number of meetings of the Board of Directors and the total number of 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 2013 Annual Meeting of Shareholders.

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 current charter is posted under the Investors tab on our website, www.mksinst.com, under the heading Corporate Governance.

Audit Committee

The Audit Committee consists of Messrs. Anderson and Beecher (Chair) and Ms. Mora. 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 the Company's 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 generally the types of information to be disclosed in the Company's earnings press releases, as well as in financial information and earnings guidance provided to analysts, rating agencies and others;

meeting independently with our internal auditing staff, independent registered public accounting firm and management;

reviewing the Company's procedures for reviewing related person transactions, recommending any changes to these procedures and reviewing any related person transactions; and

preparing the Audit Committee report required to be included in this proxy statement.

The Audit Committee held five meetings in 2013.

Compensation Committee

The Compensation Committee consists of Ms. Amon, and Messrs. Anderson (Chair) and Hanley. The Compensation Committee's responsibilities include:

reviewing and approving, or making recommendations to the Board of Directors with respect to, the compensation of our CEO and our other executive officers;

overseeing the evaluation of our executive officers;

CEO and other executive officer succession planning;

periodically reviewing and approving our management incentive bonus plan;

overseeing the risks associated with the Company's 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;

overseeing and administering our equity incentive plans;

overseeing the Company's policies on structuring compensation programs compliant with Section 162(m) of the Internal Revenue Code;

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 2013. See section below entitled "Executive Compensation Compensation Discussion and Analysis" for further information about the role of the Compensation Committee and scope of its activities.

Nominating and Corporate Governance Committee

The Nominating and Corporate Governance Committee consists of Ms. Amon and Messrs. Chute (Chair) and Hanley. 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 Board's committees;

reviewing each director's continuation of the Board of Directors at least once every three years;

developing and recommending corporate governance guidelines to the Board of Directors;

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;

overseeing the annual self-evaluations of the Board of Directors and each of the Board's committees; and

monitoring communications from shareholders and other interested parties.

The Nominating and Corporate Governance Committee held two meetings in 2013.

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

Audit Committee Financial Expert

The Board of Directors has determined that each of the three current members of the Audit Committee is an audit committee financial expert as defined in applicable SEC regulations.

Director Candidates

The Nominating and Corporate Governance Committee recommended to the Board of Directors that the director nominees be nominated by the Board of Directors for election as Class III directors. The process followed by the Nominating and Corporate Governance Committee to identify and evaluate director candidates includes requests to Board members and others for recommendations, 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 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 industry, experience, diligence, conflicts of interest and the ability to act in the interests of all shareholders. Nominees should normally be under the age of 75 at the time of nomination. 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. 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. In considering director candidates, the Nominating and Corporate Governance Committee takes into account the value of diversity on the Board of Directors. 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 Board members represent diverse viewpoints. 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 materials and a statement as to whether the shareholder or group of shareholders making the recommendation has beneficially owned more than 5% of our Common Stock 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., Vice President and General Counsel, 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 Amended and Restated 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 2015 Annual Meeting* below.

Communications from Shareholders

The Board of Directors will give appropriate 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 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., Vice President and General Counsel, MKS Instruments, Inc., 2 Tech Drive, Suite 201, Andover, MA 01810.

Code of 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 in the Investors tab on our website, www.mksinst.com; under the heading Corporate Governance. 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.

Compensation Committee Interlocks and Insider Participation

In 2013, the Compensation Committee was comprised of Ms. Amon, and Messrs. Anderson and Hanley. None of the members of the Compensation Committee during 2013 were, at any time, officers or employees of MKS or our subsidiaries, and none of them had any relationship with us requiring disclosure under Item 404 of Regulation S-K under the Securities Exchange Act of 1934, as amended. 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.

EXECUTIVE OFFICERS

The following is a brief summary of the background of each of our current executive officers, other than Mr. Colella, whose background is described under the heading *Directors* above:

Seth H. Bagshaw, Vice President, Chief Financial Officer and Treasurer, Age 54

Mr. Bagshaw has served as our Vice President and Chief Financial Officer since January 2010 and as Treasurer since March 2011. From March 2006 until January 2010, Mr. Bagshaw served as our Vice President and Corporate Controller. Prior to joining MKS, Mr. Bagshaw served as Vice President and Chief Financial Officer of Vette Corp., an integrated global supplier of thermal management systems from 2004 until 2006. From 1999 until 2004,

Mr. Bagshaw served as Vice President and Corporate Controller of Varian Semiconductor Equipment Associates, Inc., a leading producer of ion implantation equipment used in the semiconductor manufacturing industry, and from 1998 until 1999, he served as Vice President and Chief Financial Officer of Palo Alto Products International, Inc., an industrial design, engineering and manufacturing company, until its

acquisition by Flextronics International, Ltd. Prior to that, Mr. Bagshaw held several senior financial management positions at Waters Corporation, a developer of innovative analytical science solutions, most recently as Vice President and Chief Financial Officer of its Asia-Pacific region, and was a Senior Manager at PricewaterhouseCoopers LLP. Mr. Bagshaw is a Certified Public Accountant and has a B.S. in Business Administration from Boston University and an M.B.A. from Cornell University.

John R. Abrams, Senior Vice President of Global Sales, Age 61

Mr. Abrams has served as our Senior Vice President of Global Sales since January 2014. From October 2011 until December 2013, Mr. Abrams served as our Vice President of U.S. Sales. Prior to joining MKS, Mr. Abrams served as a business development consultant to AIRxpert Systems, Inc., an environmental information technology company, from October 2010 to October 2011. From February 2009 until September 2010, Mr. Abrams served as a Senior Marketing Manager for Varian, Inc., a maker of scientific equipment which was acquired by Agilent Technologies, Inc., a maker of measurement tools, in May 2010. From March 1997 until November 2008, Mr. Abrams served in several roles, most recently as Vice President of Global Sales, at Brooks Automation, Inc., a provider of automation vacuum and instrumentation solutions. Mr. Abrams received a B.S. in Biological Sciences from Lowell Technological Institute and an M.B.A. from Boston University.

John T.C. Lee, Senior Vice President of Business Units, Age 51

Dr. Lee has served as our Senior Vice President of Business Units since January 2014. From November 2012 until December 2013, Dr. Lee served as our Senior Vice President, Controls, HPS and PFMC. From January 2011 to November 2012, Dr. Lee served as Senior Vice President, Controls and PFMC. From October 2007 to January 2011, Dr. Lee served as our Group Vice President, CIT Products. Prior to joining MKS, Dr. Lee served as the Managing Director of Factory Technology and Projects within the Solar Business Group at Applied Materials, Inc., a global leader in nanomanufacturing and technology solutions, from February 2007 until October 2007. From 2002 until 2007, he served as General Manager of the Cleans Product Group and the Maydan Technology Center at Applied Materials. Prior to Applied Materials, Dr. Lee served from 1997 until 2002 as the Research Director of the Silicon Fabrication Research Department at Lucent Technologies, Inc., a voice, data and video communications provider, and from 1991 until 1997 as a Member of the Technical Staff in the Plasma Processing Research Group within Bell Labs. Dr. Lee holds a B.S. from Princeton University and both an M.S.C.E.P. and Ph.D. from the Massachusetts Institute of Technology, all in Chemical Engineering.

Brian C. Quirk, Senior Vice President of Global Operations, Age 55

Mr. Quirk has served as our Senior Vice President of Global Operations since January 2014. From May 2006 until December 2013, Mr. Quirk served as our Vice President of Global Operations. Prior to joining MKS, Mr. Quirk served as Vice President of Global Operations and Supply Chain at Brooks Automation, Inc., a provider of automation vacuum and instrumentation solutions. Prior to that, Mr. Quirk held executive leadership roles in global operations at Teradyne, Inc., a semiconductor and system level equipment provider, GenRad, Inc. (acquired by Teradyne, Inc.) and Stratus Computer, Inc. (now known as Stratus Technologies, Inc.), a producer of fault tolerant computer servers. Mr. Quirk has a B.S. in Business Management from Bentley University and an M.B.A. from Suffolk University.

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 following Named Executive Officers:

| Name | Titles on December 31, 2013 |
|-------------------|---|
| Gerald G. Colella | President and Chief Operating Officer |
| Leo Berlinghieri | Former Chief Executive Officer |
| Seth H. Bagshaw | Vice President, Chief Financial Officer and Treasurer |
| Paul M. Eyerman | Vice President and General Manager, ENI Products |
| John T.C. Lee | Senior Vice President of Controls, HPS and PFMC |
| Paul A. Loomis | Vice President and General Manager, ASTeX Products |

On December 30, 2013, Mr. Berlinghieri stepped down as our Chief Executive Officer after more than 33 years of service. Mr. Colella, who had previously been our President and Chief Operating Officer, succeeded Mr. Berlinghieri as Chief Executive Officer, in addition to his role as President, on January 1, 2014. In addition, effective January 1, 2014, Dr. Lee became Senior Vice President of Business Units.

Following this Compensation Discussion and Analysis, you will find a series of tables containing specific information about the compensation earned or paid in 2013 to our Named Executive Officers.

Executive Summary

Founded in 1961, we are a global provider of instruments, subsystems and process control solutions that measure, control, power, monitor and analyze critical parameters of advanced manufacturing processes to improve process performance and productivity. We also provide services relating to the maintenance and repair of our products, software maintenance, installation services and training.

Our long term strategy is focused on being the global leader in vacuum and related technologies by designing innovative solutions to address the needs of semiconductor, thin film and other advanced markets. Our plan to successfully achieve this goal is based on the following principles:

ensure customer satisfaction;

provide innovative technology solutions;

be recognized as the brand leader;

deliver sustainable and profitable growth; and

teamwork.

Our executive compensation program is designed to reward our executive officers for performance and to align their interests with those of our shareholders. In 2013, long-term equity incentive compensation comprised 44% of total target compensation on average for our Named Executive Officers. Total target compensation is defined as the sum of base salary, target annual cash incentive compensation and target long-term equity incentive compensation. By

making equity a substantial component of executive officer compensation, we tie our executive officers' long-term interests to that of our shareholders. Fifty percent of each Named Executive Officer's target long-term equity incentive compensation is based on Company performance as measured by annual adjusted cash flow from operations. We believe this financial performance metric is important to our shareholders because it is an indicator of how well we manage the operations of our Company.

Our annual cash incentive plan is designed to complement our long-term equity incentive plan by focusing on annual financial performance as measured by adjusted operating income. We believe this financial metric is important to our shareholders because it is another indicator of how well we manage the operations of our Company. In 2013, our target annual cash incentive compensation comprised 22% of total target compensation on average for our Named Executive Officers.

In 2013, base salary accounted for 34% of total target compensation on average for our Named Executive Officers. This means that our Named Executive Officers, on average, have 66% of their total target compensation opportunity tied to annual and long-term incentive compensation.

The following chart shows the components of total target compensation for our Named Executive Officers as a group for calendar year 2013.

Compensation Philosophy and Objectives

The primary objective of our executive compensation program is to attract, retain and motivate the critical talent that is required to execute our business strategy and lead us to achieve our long-term growth and earnings goals. This section summarizes our compensation philosophy and objectives relating to our Named Executive Officers.

At our 2013 Annual Meeting of Shareholders, held on May 6, 2013 (the 2013 Annual Meeting), we submitted to our shareholders an advisory vote on executive compensation. Although this annual advisory say-on-pay vote is non-binding, the Compensation Committee has considered, and will continue to consider, the outcome of this vote each year when making compensation decisions for our Named Executive Officers. At the 2013 Annual Meeting, our shareholders overwhelmingly approved the compensation of our Named Executive Officers, with approximately 98.8% of the votes cast voting in favor of the say-on-pay proposal.

The Compensation Committee considered the results of the 2013 say-on-pay vote, and based upon the strong shareholder support, does not believe that our executive compensation program requires material changes. The Compensation Committee will continue to consider the views of our shareholders in connection with our executive compensation program and make improvements based upon evolving best practices, market compensation information and changing regulatory requirements. The Compensation Committee believes that the 2013 shareholder vote was an endorsement of the compensation philosophy of the Company.

Our executive compensation program is guided by the following principles:

Offer compensation programs that are competitive with programs at companies of similar size and in a similar industry.

Reward individual initiative, leadership and achievement.

Provide short-term annual performance bonus incentives for management to meet or exceed our earnings goals.

Provide long-term equity incentive compensation, such as restricted stock units, or RSUs, to encourage management to focus on shareholder return.

Emphasize our pay-for-performance philosophy.

Align our executives' interests with those of our shareholders.

Our executive compensation program is designed to provide an overall compensation package that is competitive, on a position-by-position basis, when benchmarked against that of comparable companies, while factoring in an executive's individual performance, tenure and potential with the Company. The differentiation in compensation among the executive officers reflects the relative value that the market places on these positions, as well as each individual's performance, tenure and potential with MKS. Our goal is to use executive compensation programs to closely align the interests of our management with the interests of shareholders so that our management has incentives to achieve short-term performance goals while building long-term value for our shareholders. We review our executive compensation programs from time to time in order to determine their competitiveness and to take into account factors that are unique to us.

In February 2013, our Compensation Committee approved a clawback policy, which is applicable to incentive-based compensation (specifically our cash incentive bonus plan and our performance-based RSUs) that is awarded to executive officers after the adoption of the policy. Pursuant to the policy, in the event we are required to prepare an accounting restatement due to material noncompliance with financial reporting requirements, we will use reasonable efforts to recover any amount in excess of what would have been paid to such executive officers (or such former executive officers) under the accounting restatement for any such incentive-based compensation during the three-year period preceding the restatement. In addition, in February 2013, our Board of Directors adopted amendments to our Insider Trading Policy which, among other things, prohibit any of our directors or employees from engaging in transactions involving financial instruments that 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.

Elements of Compensation

The following summarizes the compensation elements for our Named Executive Officers. We target each of the various compensation elements, including salary, annual cash incentive compensation, and long-term equity incentive compensation, to be in the range of the competitive median levels for the individual position in the market. This is merely one factor that the Compensation Committee considers and we do not set any specific element or total compensation exactly to the median. In considering the compensation of an executive relative to the market, we also look qualitatively at the individual's overall performance, tenure and potential with MKS. Currently, all of our Named Executive Officers are paid within the competitive range of our peer group. We have entered into employment agreements with each of our Named Executive Officers. See *Executive Compensation - Potential Payments Upon Termination or Change in Control* for more information about these agreements.

Base Salary

Base salaries are designed to provide executives with a level of predictability and stability with respect to a portion of their total compensation package. In establishing base salaries for executive officers, the Compensation Committee considers the executive's responsibilities, performance, historical salary levels, internal equity among executives and the base salaries of executives at comparable companies and, with respect to salaries other than that of the Chief Executive Officer, the Chief Executive Officer's recommendations. Because of the highly cyclical nature of our business, we have from time to time imposed temporary salary reductions. For example, in 2008 and 2009, because of

the economic downturn, our Named Executive Officers at that time were subject to temporary salary reductions.

Annual Cash Incentive Plan

Our annual cash incentive plan provides a short-term incentive to reward management for reaching our annual earnings goal and to reinforce our pay-for-performance philosophy. We believe that our plan provides significant incentive for our executive officers to exceed our financial goal. Under our plan, each executive officer is eligible to receive a performance bonus based on a specified percentage of eligible earnings, which is defined as eligible W-2 earnings received during the plan period (i.e., base salary, including regular, holiday, vacation, sick and retro pay, but excluding bonus payments). Bonus payouts are based entirely on a corporate financial performance objective, which we believe eliminates complexity, fosters a cooperative effort and closely aligns all executives' interests with those of our shareholders. In 2013, each executive officer was eligible to receive 70% of his target bonus if the minimum threshold was achieved. If we had achieved our target results, each executive officer would have been eligible to receive 100% of his target bonus, up to a maximum of 200% for achievement in excess of the target results, with incremental payouts for performance between these levels. In the event the minimum threshold for the corporate financial performance objective was not met, but would have been met but for the payment of the bonuses under the annual cash incentive plan, then in such case a pro rata portion of the bonus would be paid to each executive officer, but only to the extent that the corporate financial performance objective after such payment was no less than the minimum corporate financial performance objective.

While our plan reflects our typical strategy with respect to annual cash incentive bonuses, we do, from time to time, customize our plan to take into account special circumstances. For example, due to the worldwide economic crisis in 2009, MKS did not offer an annual cash incentive plan, and with the return of the market in 2010, MKS offered a six-month component to our annual cash incentive plan, in addition to the annual component, to reward management for exceptional growth in early 2010, which resulted in a bonus payout that year of 230% of target annual cash incentive compensation. We expect any such variations to the plan to occur in unusual circumstances.

In 2013, payouts under the annual cash incentive plan were calculated by multiplying a Named Executive Officer's Target Bonus Amount by the Corporate Performance Multiplier, each as defined below. Target Bonus Amount was calculated by multiplying each Named Executive Officer's eligible earnings in 2013 by the Target Bonus Percentages listed below. When determining Target Bonus Amounts for the Named Executive Officers, the Compensation Committee considers the median level for the individual position in the market, general corporate performance and material economic conditions, comparable Target Bonus Amounts of comparable executive officers, executive officer seniority and experience, individual contributions to our financial, operational and strategic objectives and, with respect to individuals other than the Chief Executive Officer, the Chief Executive Officer's recommendations.

| Named Executive Officer | Target Bonus Percentage |
|--------------------------------|--------------------------------|
| Gerald G. Colella | 75% |
| Leo Berlinghieri | 100% |
| Seth H. Bagshaw | 70% |
| Paul M. Eyeran | 50% |
| John T.C. Lee | 60% |
| Paul A. Loomis | 55% |

Annual achievement under the annual cash incentive plan has varied widely from no payment in some years to a maximum of 230% in 2010, as described above. The average bonus payout in the past ten years through 2013 was approximately 94%. While the Company endeavors to set reasonable but challenging targets for the plan each year, consistent achievement is particularly challenging in the semiconductor industry, which is subject to wide and often unpredictable demand shifts.

The Corporate Performance Multiplier under the annual cash incentive plan in 2013 ranged from 0% for achievement below the specified minimum annual corporate goal to a maximum of 200% for achievement of the maximum annual corporate goal. Accordingly, the maximum payout possible for each executive was 200% of

such individual's Target Bonus Amount and the minimum payout was zero, with incremental payouts for performance between these levels, beginning at a Corporate Performance Multiplier of 70%. In 2013, performance bonuses were based upon our achievement of adjusted operating income after bonus and excluding special items. Participants would not receive any portion of their Target Bonus Amount if such income was less than the minimum threshold of \$27.1 million. Participants would receive 70% of their Target Bonus Amount if such income was \$27.1 million, and would receive the maximum 200% if such income was \$128.3 million or more, with incremental payments for achievement in between. In 2013, because our adjusted operating income after bonus and excluding special items was \$70.3 million, participants received 141% of their Target Bonus Amounts.

Long-Term Equity Incentive Compensation

We provide our executive officers with long-term equity incentive compensation, in the form of restricted stock units, or RSUs, in order to:

align our executives' interests with those of our shareholders;

balance the short-term focus of annual cash incentive compensation with creating long-term shareholder value; and

retain executives because equity-based compensation vests over a three-year period.

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

Our Named Executive Officers receive half of their targeted annual equity grant value in the form of performance-based RSUs to further our pay-for-performance philosophy. The other half of their grant is in the form of time-based RSUs. In 2013, our corporate financial performance metric for performance-based RSUs was adjusted cash flow from operations (net income plus depreciation, amortization and non-cash stock-based compensation and excluding special items) set at varying revenue levels. Our goal is to select a corporate financial performance metric that best aligns with our corporate objective. For example, in 2009, due to the unusual economic conditions at that time, our corporate financial performance metric was the achievement of an annual corporate cash break-even level to motivate executives to control costs during the downturn.

In 2013, Named Executive Officers would forfeit all of their performance-based RSUs if our adjusted cash flow from operations was less than \$34.6 million at a revenue level of \$550 million, or if such cash flow was less than \$116.9 million at a revenue level of \$850 million (with intermediate adjusted cash flow minimum thresholds at different revenue levels in between). However, if we did achieve these adjusted operating cash flow threshold levels at the respective revenue levels identified, Named Executive Officers would receive 50% of their target performance-based RSUs, which would then be subject to a three-year vesting schedule from the original date of grant. If our adjusted cash flow from operations was \$46.8 million or more at a revenue level of \$550 million, or was greater than \$157.7 million at a revenue level of \$850 million (with incremental thresholds in between), then Named Executive Officers would receive the maximum of 150% of their target performance-based RSUs, which would then be subject to a three-year vesting schedule from the original date of grant. Incremental payments would be made for adjusted cash

flow achievements between the minimum and maximum levels. In 2013, because our adjusted cash flow was \$81.8 million at a revenue level of \$669 million, Named Executive Officers received 136% of their target performance-based RSUs. These performance-based RSUs along with the time-based RSUs granted to Named Executive Officers vest in equal annual installments over three years from the original date of grant.

When establishing equity grant values, the Compensation Committee considers the median value for the individual position in the market, general corporate performance and material economic conditions, comparable

equity grant values to comparable executive officers, executive officer seniority and experience, the dilutive impact of the grants, previous grant history for each executive officer, individual contributions to our financial, operational and strategic objectives and, with respect to grants made to individuals other than the Chief Executive Officer, the Chief Executive Officer's recommendations.

It is our practice to make an initial equity-based grant to all executive officers at the time they commence employment, in an amount that is consistent with amounts granted to executive officers in the industry at similar levels of seniority. In addition, we typically make an annual grant of equity-based compensation to executive officers during the first fiscal quarter of each year. Discretionary equity-based grants may be made throughout the year to provide an incentive to achieve a specific goal or to reward a significant achievement.

In January 2013, our Board of Directors adopted Stock Ownership Guidelines which are applicable to members of the Board of Directors, the Chief Executive Officer and any other person who is or was a Named Executive Officer while the guidelines are effective. The Stock Ownership Guidelines provide that:

Members of the Board of Directors shall own an amount of stock of the Company with a value equal to at least three 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 an amount of stock of the Company with a value equal to at least three times his or her annual base salary (excluding any bonus, award or special compensation).

Other Named Executive Officers shall own an amount of stock of the Company with a value equal to at least two times his or her annual base salary (excluding any bonus, award or special compensation), based in each case, on values in effect as of December 31 of the applicable year and subject to the terms in the guidelines.

The guidelines provide for a phase-in period over five years to achieve the respective ownership goals.

Supplemental Retirement Benefits

We provide supplemental retirement benefits (including supplemental lifetime retiree medical benefits) to our current Chief Executive Officer and President, Mr. Colella, and our former Chief Executive Officer, Mr. Berlinghieri or, in the event of each such Named Executive Officer's death, to his spouse. These supplemental benefits were designed to reward long service with us and to serve as a significant incentive for these executive officers to remain with us because these benefits are contingent upon the officer maintaining his employment with us until age 62, with specified exceptions. Mr. Berlinghieri served the Company for over 33 years in various capacities, culminating in Chief Executive Officer for the past eight years until his departure in December 2013. Mr. Colella, who first joined the Company in 1983 as our Materials Planning and Logistics Manager, rose through the ranks over the course of the next 31 years to become our Chief Executive Officer, in addition to his role as President, on January 1, 2014.

Since 2011, it has been our policy not to offer these types of retirement benefits to other executive officers in the future. While these benefits were attractive elements to retain certain of our most senior executive officers historically, the elimination of these benefits more closely meets our objective to align executive compensation with Company financial performance.

Perquisites

We offer certain perquisites to our Named Executive Officers to allow executives to focus on corporate strategy and enhancing shareholder value, to provide competitive pay packages and, in certain circumstances, to entertain customers. Examples of these perquisites are car payments, health cost reimbursements and club memberships. We believe offering these benefits is important to maintaining a competitive position in attracting and retaining key personnel and these benefits are consistent with market practices.

Severance and Change-in-Control Provisions

Each of our Named Executive Officers is entitled to certain payments and benefits in the event his employment terminates under specified circumstances. In exchange for these payments and benefits, each Named Executive Officer is restricted from competing with the Company during and following the termination of employment for a certain period of time. In addition, RSU agreements with our Named Executive Officers provide for acceleration of vesting in the event the executive is terminated without cause or resigns for good reason within 24 months after a change-in-control. The severance and change-in-control provisions are designed to be competitive in the marketplace, to provide security for our Named Executive Officers in the event that we are acquired and his respective position is impacted and to provide an incentive for the Named Executive Officer to stay with us through such a change-in-control event. These provisions are also intended to protect us from competitive harm, by compensating the Named Executive Officers for agreeing to substantial non-compete provisions after termination. See *Executive Compensation Potential Payments Upon Termination or Change in Control* for more information about these agreements.

Compensation of our Chief Executive Officer

On December 30, 2013, Mr. Berlinghieri stepped down as Chief Executive Officer after more than 33 years of service. In connection with his departure, MKS entered into a Separation Agreement with Mr. Berlinghieri. For a detailed discussion of the material terms of the Separation Agreement, please see the summary of the agreement in the section of the proxy statement entitled *Executive Compensation Potential Payments Upon Termination or Change in Control*.

Mr. Colella, who had previously been our President and Chief Operating Officer, succeeded Mr. Berlinghieri as Chief Executive Officer, in addition to his role as President, effective January 1, 2014. In connection with Mr. Colella's promotion, MKS entered into a new employment agreement with him, also effective as of January 1, 2014. The terms of Mr. Colella's new employment agreement reflect his new role as the leader of our Company and the experience he brings to the position having served more than 31 years at MKS. We believe the terms of Mr. Colella's new employment agreement reflect the Company's compensation philosophy and are consistent with the terms of the employment agreement MKS had entered into with our former Chief Executive Officer, Mr. Berlinghieri, with one exception. In the event any payments under Mr. Berlinghieri's employment agreement were subject to any excise taxes imposed under Internal Revenue Code Section 4999, he was entitled to receive a gross-up payment for any such excise taxes. In contrast, Mr. Colella is only entitled to receive a gross-up payment for any such excise taxes with respect to his supplemental retirement benefits. For a detailed discussion of the material terms of Mr. Colella's new employment agreement, please see the summary of the agreement in the section of the proxy statement entitled *Executive Compensation 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 terms of these executive employment agreements, please see the summary of the agreements in the section of the proxy statement entitled *Executive Compensation Potential Payments Upon Termination or Change in Control*.

Compensation Consultant; Market Comparison

MKS periodically engages a compensation consultant to serve as an independent advisor to the Compensation Committee regarding compensation for the Board of Directors and our executive officers. The Compensation Committee utilizes the compensation consultant in the following ways:

to provide the Compensation Committee and the Company with occasional consultation regarding compensation strategies and programs;

to review our peer group to determine the appropriateness of its composition;

to provide benchmarking compensation data for executive officers and non-executive officers;

to conduct, from time to time, formal competitive compensation analysis for the Compensation Committee regarding the Board of Directors and each executive officer, on a position-by-position basis, in comparison to similarly situated executive officers in our peer group; and

to periodically conduct a risk assessment of the Company's compensation policies and practices. Since 2007, the Compensation Committee has engaged Radford, an Aon Hewitt Company (Radford), as its compensation consultant. The Compensation Committee has determined that the engagement of Radford as a compensation consultant does not raise any conflicts of interest with MKS.

When determining executive compensation for 2013, the Compensation Committee, with the assistance of Radford, reviewed size and industry-appropriate broad survey data from The 2012 Radford Global Technology Compensation Survey as well as publicly available compensation data from the following comparable peer companies:

Advanced Energy Industries, Inc.
Brooks Automation, Inc.
Coherent, Inc.
Cymer, Inc.
Entegris, Inc.
ESCO Technologies, Inc.
FEI Company
FLIR System, Inc.
GT Advanced Technologies, Inc.

JDS Uniphase Corporation
Kulicke & Soffa Industries, Inc.
MTS Systems Corporation
Newport Corporation
Photronics, Inc.
Plantronics, Inc.
Teradyne, Inc.
Varian Medical Systems, Inc.
Veeco Instruments, Inc.

These peer companies were selected because they compete in the semiconductor industry and are similar to MKS in terms of revenue size, market capitalization and total headcount.

In October 2012, the Compensation Committee engaged Radford to prepare a competitive compensation analysis for each of our executives on a position-by-position basis for the purposes of determining executive compensation for 2013. This 2013 peer group differs from our 2012 peer group as follows: Varian Semiconductor Equipment Assoc., Inc. was removed because it was acquired. Axcelis Technologies, Inc., Daktronics, Inc. and Itron, Inc. were removed to better align MKS' market capitalization with the median of the peer group; and Coherent, Inc., ESCO Technologies, Inc., FLIR Systems, Inc., GT Advanced Technologies, Inc., JDS Uniphase Corporation, MTS Systems Corporation, Plantronics, Inc., Varian Medical Systems, Inc. and Veeco Instruments, Inc. were added to maintain a robust sample size of similar semiconductor companies in terms of revenue size, market capitalization and total headcount.

In January 2013, the Compensation Committee also engaged Radford to conduct a formal competitive analysis of our compensation for the Board of Directors using board compensation data from the same 2013 peer group listed above. In February 2013, the Compensation Committee recommended, and the Board of Directors approved, changes to the compensation for the Board of Directors to more closely reflect standard practices, by eliminating meeting fees and establishing value-based equity grants. These changes are reflected in greater detail below in the section of the proxy statement entitled Director Compensation.

Role of our Chief Executive Officer

Our Chief Executive Officer reviews with the Compensation Committee the performance of all other executive officers and makes recommendations relating to compensation of such executive officers. Management develops proposed corporate 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.

Impact of Accounting and Tax on the Form of Compensation

Impact of Code Section 162(m)

Section 162(m) of the Internal Revenue Code of 1986, as amended, generally disallows a tax deduction to public companies for compensation in excess of \$1 million per person paid to a company's chief executive officer and the next three most highly-paid executive officers other than the chief financial officer. Certain compensation, including qualified performance-based compensation, will not be subject to the deduction limit if certain requirements are met. The Compensation Committee reviews the potential effect of Section 162(m) periodically. Neither our 2004 Stock Incentive Plan (the "2004 Plan") nor our annual cash incentive plan is designed to qualify as performance-based compensation under Section 162(m). Therefore, it is possible that a portion of any bonus payable to, or compensation arising under equity awards (other than stock options) granted to, the Chief Executive Officer and three other executive officers under the 2004 Plan will not be deductible for federal income tax purposes. The proposed 2014 Stock Incentive Plan, which is subject to shareholder approval at the 2014 Annual Meeting of Shareholders, permits the grant of Section 162(m) qualified performance-based RSUs and restricted stock. The Compensation Committee reserves the right to use its judgment to authorize compensation payments which are not qualified as performance-based compensation under Section 162(m) and which may be in excess of the Section 162(m) limit when the Committee believes such payments are appropriate, after taking into consideration changing business conditions or the officer's performance, and are in the best interests of the shareholders.

Impact of ASC 718

We account for stock-based compensation in accordance with the requirements of Financial Accounting Standards Board Accounting Standards Codification 718 ("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 instruments 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,

Robert R. Anderson, Chair

Cristina H. Amon

Peter R. Hanley

Summary Compensation Table for 2013

The following table sets forth the aggregate amounts of compensation earned by our Named Executive Officers in the years ended December 31, 2013, 2012 and 2011. Mr. Berlinghieri, our Chief Executive Officer since 2005 stepped down on December 30, 2013. Mr. Colella, who served alongside Mr. Berlinghieri for more than 31 years, most recently as President and Chief Operating Officer, succeeded Mr. Berlinghieri and became a director and Chief Executive Officer, in addition to his role as President, effective January 1, 2014.

| Name and Principal Position | Year | Salary (\$) | Stock Awards (\$) | Non-Equity Incentive Plan Compensation (\$) | Change in Pension Value and Non-Equity Nonqualified Deferred Compensation (\$) | | All Other Compensation (\$) | (4) Total (\$) |
|---|------|----------------|----------------------|--|--|-----------------|-----------------------------------|----------------|
| | | | | | (1) | (2) | | |
| Gerald G. Colella, President & COO(5) (principal executive officer) | 2013 | \$ 498,454 | \$ 800,000 | \$ 527,115 | - | \$ 49,870 | \$ 1,875,439 | |
| | 2012 | \$ 431,673 | \$ 550,000 | \$ 236,341 | \$ 1,142,227 | \$ 52,880 | \$ 2,413,121 | |
| | 2011 | \$ 411,200 | \$ 500,000 | \$ 256,178 | \$ 1,578,248 | \$ 55,102 | \$ 2,800,728 | |
| Leo Berlinghieri, Former CEO | 2013 | \$ 661,904 | \$ 1,600,000 | - | - | \$ 5,768,817(6) | \$ 8,030,721 | |
| | 2012 | \$ 624,519 | \$ 1,600,000 | \$ 455,899 | \$ 2,639,240 | \$ 52,773 | \$ 5,372,431 | |
| | 2011 | \$ 600,005 | \$ 1,500,000 | \$ 534,004 | \$ 3,999,642 | \$ 55,768 | \$ 6,689,419 | |
| Seth H. Bagshaw, Vice President , Chief Financial Officer and Treasurer (principal financial officer) | 2013 | \$ 349,423 | \$ 600,000 | \$ 344,881 | N/A | \$ 58,301 | \$ 1,352,605 | |
| | 2012 | \$ 324,519 | \$ 400,000 | \$ 142,139 | N/A | \$ 55,311 | \$ 921,969 | |
| | 2011 | \$ 300,005 | \$ 400,000 | \$ 133,502 | N/A | \$ 54,465 | \$ 887,972 | |
| Paul M. Eyerman, Vice President and General Manager, ENI Products | 2013 | \$ 262,212 | \$ 230,000 | \$ 184,859 | N/A | \$ 23,811 | \$ 700,882 | |
| John T.C. Lee, Sr. Vice President, Controls, HPS and PFMC(7) | 2013 | \$ 349,654 | \$ 340,000 | \$ 295,807 | N/A | \$ 61,438 | \$ 1,046,899 | |
| | 2012 | \$ 334,712 | \$ 250,000 | \$ 146,604 | N/A | \$ 60,125 | \$ 791,441 | |
| | 2011 | \$ 320,002 | \$ 240,000 | \$ 156,641 | N/A | \$ 231,990 | \$ 948,633 | |
| Paul A. Loomis, Vice President and General Manager, ASTeX Products | 2013 | \$ 269,539 | \$ 257,000 | \$ 209,027 | N/A | \$ 27,117 | \$ 762,683 | |

- (1) Represents the grant date fair value for each RSU granted to the executive officer during the covered year, calculated in accordance with FASB ASC Topic 718. The assumptions used in determining the grant date fair values of awards are set forth in Note 18 to our consolidated financial statements, which are included in our Annual Report on Form 10-K filed with the SEC on February 26, 2014. 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. Therefore, the amounts under the Stock Awards column do not reflect the amount of compensation actually received by the Named Executive Officer during the fiscal year. The maximum value of the performance-based RSUs, assuming the highest level of performance is achieved, was as follows for 2013, 2012 and 2011, respectively: Mr. Colella: \$1,000,000, \$687,500 and \$625,000; Mr. Berlinghieri: \$2,000,000, \$2,000,000 and \$1,875,000; Mr. Bagshaw: \$750,000, \$500,000 and \$500,000; Mr. Eyerman: \$287,500; Dr. Lee: \$425,000, \$312,500 and \$300,000; and Mr. Loomis: \$321,250. Based on the achievement against the performance metric, the actual value of the performance-based RSUs awarded in 2013 was as follows: Mr. Colella: \$944,000; Mr. Berlinghieri: \$1,888,000; Mr. Bagshaw: \$708,000; Mr. Eyerman: \$271,400; Dr. Lee: \$401,200 and Mr. Loomis: \$303,260. Based on the

achievement against the performance metric, the actual value of the performance-based RSUs awarded in 2012 was as follows: Mr. Colella: \$679,250; Mr. Berlinghieri: \$1,976,000; Mr. Bagshaw: \$494,000 and Dr. Lee: \$308,750. Based on the achievement against the performance metric, the actual value of the performance-based RSUs awarded in 2011 was as follows: Mr. Colella: \$605,000; Mr. Berlinghieri: \$1,815,000; Mr. Bagshaw: \$484,000 and Dr. Lee: \$290,400.

- (2) Amounts shown reflect compensation under the annual cash incentive plan earned for the year indicated which was paid in the following year. For 2013, 2012 and 2011, each executive was eligible for an annual performance bonus equal to a specified target percentage of eligible earnings for the relevant plan year, called a Target Bonus Amount. The maximum bonus payout possible was 200% of this Target Bonus Amount and the minimum payout was zero, with incremental payouts for performance between these levels. Annual performance bonuses were paid out upon achievement of specific pro forma pre-tax operating income goals. In 2013, the Target Bonus Amount for each of the Named Executive Officers was equal to that Named Executive Officer's Eligible Earnings for 2013 multiplied by the following percentages: Mr. Colella 75%, Mr. Berlinghieri 100%, Mr. Bagshaw 70%, Mr. Eyerman 50%, Dr. Lee 60% and Mr. Loomis 55%. In 2012, the percentages for the Named Executive Officers were: Mr. Colella 75%, Mr. Berlinghieri 100%, Mr. Bagshaw 60% and Dr. Lee 60%. In 2011, the percentages for the Named Executive Officers were: Mr. Colella 70%, Mr. Berlinghieri 100%, Mr. Bagshaw 50%, and Dr. Lee 55%. Messrs. Eyerman and Loomis were not Named Executive Officers in 2011 or 2012. For 2013, we paid a bonus of 141% of the Target Bonus Amount for each Named Executive Officer. For 2012, we paid a bonus of 73% of the Target Bonus Amount for each Named Executive Officer. For 2011, we paid a bonus of 89% of the Target Bonus Amount for each Named Executive Officer.
- (3) The employment agreements for each of Messrs. Colella and Berlinghieri provide for supplemental retirement benefits. For 2013, the decrease in actuarial present value from the prior fiscal year was as follows: Mr. Colella (\$350,177) and Mr. Berlinghieri (\$13,659). For 2012 and 2011, the amounts listed represent the actuarial increase in present value from the prior fiscal year.
- (4) For Mr. Colella, with respect to 2013, this amount was comprised of \$16,165 for car related expenses, \$6,165 for golf club membership, \$19,170 for company paid health and life insurance, \$720 for a length of service award and \$7,650 for 401(k) matching contributions. With respect to 2012, this amount was comprised of \$14,260 for car related expenses, \$5,870 for golf club membership, \$25,250 for company paid health and life insurance and \$7,500 for 401(k) matching contributions. With respect to 2011, this amount was comprised of \$14,102 for car related expenses, \$5,870 for golf club membership, \$26,780 for company paid health and life insurance, \$1,000 for a length of service award and \$7,350 for 401(k) matching contributions. For Mr. Berlinghieri, with respect to 2013, this amount was comprised of \$21,502 for car related expenses, \$6,165 for golf club membership, \$29,463 for company paid health and life insurance and \$7,650 for 401(k) matching contributions. In addition, the following amounts were paid, will be paid or reflect the accrued value of the benefit to Mr. Berlinghieri pursuant to the terms of the Separation Agreement he entered into with the Company on December 30, 2013: \$933,285 cash bonus calculated in accordance with the terms of the annual cash incentive plan; \$3,956,215 representing the value of full acceleration of all unvested restricted stock units Mr. Berlinghieri held as of December 30, 2013, subject to actual performance of any performance criteria under his restricted stock unit agreement under the 2004 Stock Incentive Plan, and \$698,440 for lifetime retiree health benefits for Mr. Berlinghieri and his spouse. Finally, Mr. Berlinghieri was paid \$116,097 for accrued vacation covering more than 33 years of service. With respect to 2012, this amount was comprised of \$13,113 for car related expenses, \$5,870 for golf club membership, \$26,290 for company paid health and life insurance and \$7,500 for 401(k) matching contributions. With respect to 2011, this amount was comprised of \$13,172 for car related expenses, \$5,870 for golf club membership, \$28,385 for company paid health and life insurance, \$1,000 for a length of service award and

\$7,341 for 401(k) matching contributions. For Mr. Bagshaw, with respect to 2013, this amount was comprised of \$17,180 for car related expenses, \$6,165 for golf club membership, \$27,306 for company paid health and life insurance and \$7,650 for 401(k) matching contributions. With respect to 2012, this amount was comprised of \$13,858 for car related expenses, \$5,870 for golf club membership, \$28,083

for company paid health and life insurance and \$7,500 for 401(k) matching contributions. With respect to 2011, this amount was comprised of \$13,799 for car related expenses, \$5,870 for golf club membership, \$26,946 for company paid health and life insurance, \$500 for a length of service award and \$7,350 for 401(k) matching contributions. For Mr. Eyerman, with respect to 2013, this amount was comprised of \$16,161 for company paid health and life insurance and \$7,650 for 401(k) matching contributions. For Dr. Lee, with respect to 2013, this amount was comprised of \$22,880 for car related expenses, \$6,150 for golf club membership, \$24,758 for company paid health and life insurance, and \$7,650 for 401(k) matching contributions. With respect to 2012, this amount was comprised of \$19,779 for car related expenses, \$3,779 for golf club membership, \$28,217 for company paid health and life insurance, \$850 for a patent award and \$7,500 for 401(k) matching contributions. With respect to 2011, this amount was comprised of \$174,913 for relocation expenses, \$15,679 for car related expenses, \$7,121 for golf club membership, \$26,677 for company paid health and life insurance, \$250 for a length of service award and \$7,350 for 401(k) matching contributions. For Mr. Loomis, with respect to 2013, this amount was comprised of \$19,467 for company paid health and life insurance and \$7,650 for 401(k) matching contributions.

- (5) Mr. Colella, who served most recently as President and Chief Operating Officer, succeeded Mr. Berlinghieri and became a director and Chief Executive Officer, in addition to his role as President, effective January 1, 2014.
- (6) Under the terms of Mr. Berlinghieri's Separation Agreement with the Company entered into in connection with his departure on December 30, 2013, Mr. Berlinghieri is subject to certain confidentiality, non-competition, non-solicitation and other covenants. In the event Mr. Berlinghieri breaches any of these restrictive covenants, certain amounts paid or payable to him under the Separation Agreement are subject to forfeiture. These amounts are not included in the above table but are set forth in the table entitled "Actual Payments Upon Termination" Leo Berlinghieri.
- (7) Dr. Lee, most recently serving as Senior Vice President of Controls, HPS and PFMC, was promoted to Senior Vice President of Business Units effective January 1, 2014.

Grants of Plan-Based Awards in Fiscal Year 2013

| Name | Grant Date(1) | Estimated Future Payouts Under Non-Equity Incentive Plan Awards(2) | | | Estimated Future Payouts Under Equity Incentive Plan Awards(3) | | | All Other Stock Awards: Number of Shares or Units(4) | Grant Date Fair Value of Stock Awards(5) |
|-------------------|---------------|--|--------------|-------------|--|------------|-------------|--|--|
| | | Target (\$) | Maximum (\$) | Target (#) | Maximum (\$) | Target (#) | Maximum (#) | | |
| Gerald G. Colella | 2/25/2013 | \$0 | \$375,000 | \$750,000 | 7,429 | 14,859 | 22,288 | 14,859 | \$800,000 |
| Leo Berlinghieri | 2/25/2013 | \$0 | \$645,000 | \$1,290,000 | 14,859 | 29,718 | 44,576 | 29,718 | \$1,600,000 |
| Seth H. Bagshaw | 2/25/2013 | \$0 | \$245,000 | \$490,000 | 5,572 | 11,144 | 16,716 | 11,144 | \$600,000 |
| Paul M. Eyerman | 2/25/2013 | \$0 | \$131,250 | \$262,500 | 2,136 | 4,272 | 6,408 | 4,272 | \$230,000 |
| John T.C. Lee | 2/25/2013 | \$0 | \$210,000 | \$420,000 | 3,157 | 6,315 | 9,473 | 6,315 | \$340,000 |
| Paul A. Loomis | 2/25/2013 | \$0 | \$148,500 | \$297,000 | 2,386 | 4,773 | 7,160 | 4,773 | \$257,000 |

- (1) This column shows the date of grant for all equity awards granted in 2013.
- (2) Represents aggregate threshold, target and maximum payout levels under the annual cash incentive plan. The actual amount of cash bonus earned by each Named Executive Officer in 2013 is reported under the Non-Equity Incentive Plan Compensation column in the Summary Compensation Table for 2013. See footnote 2 to the Summary Compensation Table for 2013 for details on the terms of the plan.
- (3) These RSUs vest in equal annual installments over three years, subject to achievement of performance criteria.
- (4) These RSUs vest in equal annual installments over three years.
- (5) Reflects the combined grant date fair value of performance-based RSUs at the target achievement level, and time-based RSUs. The fair value was \$26.92 per share for RSUs awarded on February 25, 2013.

Outstanding Equity Awards at 2013 Fiscal Year-End

| Name | Option Awards(1) | | | Stock Awards(2) | | | Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Rights That Have Not Vested(3) |
|-------------------|---|---------------------|------------------------|---|---|--|--|
| | Number of Securities Underlying Unexercised Options Exercisable (#) | Exercise Price (\$) | Option Expiration Date | Number of Shares or Units of Stock That Have Not Vested (#) | Market Value of Shares or Units of Stock That Have Not Vested(3) (\$) | Equity Incentive Plan Awards: Number of Unearned Shares, Units or Rights That Have Not Vested(3) (#) | |
| Gerald G. Colella | 7,000 | \$ 29.93 | 01/05/14 | 2,777(4) | \$ 83,081 | 22,288(7) | \$ 666,865 |
| | | | | 3,942(4) | \$ 117,939 | | |
| | | | | 5,828(6) | \$ 174,381 | | |
| | | | | 8,567(6) | \$ 256,327 | | |
| | | | | 14,859(7) | \$ 444,577 | | |
| Leo Berlinghieri | 9,600 | \$ 29.93 | 01/05/14 | | | 44,576(7) | \$ 1,333,730 |
| Seth H. Bagshaw | - | | | 2,221(4) | \$ 66,459 | 16,716(7) | \$ 500,149 |
| | | | | 3,154(4) | \$ 94,351 | | |
| | | | | 4,238(6) | \$ 126,809 | | |
| | | | | 6,231(6) | \$ 186,425 | | |
| | | | | 11,144(7) | \$ 333,432 | | |
| Paul M. Eyerman | - | | | 2,044(5) | \$ 61,153 | 6,408(7) | \$ 191,724 |
| | | | | 2,120(6) | \$ 63,420 | | |
| | | | | 3,115(6) | \$ 93,212 | | |
| | | | | 4,272(7) | \$ 127,816 | | |
| John T.C. Lee | - | | | 1,333(4) | \$ 39,893 | 9,473(7) | \$ 283,418 |
| | | | | 1,892(4) | \$ 56,611 | | |
| | | | | 2,649(6) | \$ 79,267 | | |
| | | | | 3,895(6) | \$ 116,523 | | |
| | | | | 6,315(7) | \$ 188,945 | | |
| Paul A. Loomis | - | | | 2,044(5) | \$ 61,154 | 7,160(7) | \$ 214,230 |
| | | | | 2,120(6) | \$ 63,420 | | |
| | | | | 3,115(6) | \$ 93,212 | | |
| | | | | 4,773(7) | \$ 142,820 | | |

(1) Stock options listed above have a 10-year term and are fully vested. The grant date for each option is the date on or about 10 years prior to the respective date listed under the heading Option Expiration Date.

- (2) RSUs vest in equal annual installments over 3 years commencing on the first anniversary of the grant date. RSUs listed in Equity Incentive Plan Awards column were also subject to achievement of performance criteria.
- (3) The values were calculated based on the closing price of our Common Stock on December 31, 2013 of \$29.92 per share.
- (4) Grant date is February 28, 2011.
- (5) Grant date is April 11, 2011.
- (6) Grant date is February 23, 2012.
- (7) Grant date is February 25, 2013.

Option Exercises and Stock Vested in Fiscal Year 2013

| Name | Option Awards | | Stock Awards | |
|-------------------|---|---------------------------------|--|-----------------------------------|
| | Number of Shares Acquired on Exercise (#) | Value Realized On Exercise (\$) | Number of Shares Acquired on Vesting (#) | Value Realized on Vesting(1) (\$) |
| Gerald G. Colella | - | - | 23,705 | \$ 640,019 |
| Leo Berlinghieri | 31,800 | \$ 60,868 | 158,293 | \$ 4,520,858 |
| Seth H. Bagshaw | - | - | 15,307 | \$ 413,459 |
| Paul M. Eyerman | - | - | 9,659 | \$ 255,563 |
| John T.C. Lee | - | - | 11,391 | \$ 307,560 |
| Paul A. Loomis | - | - | 9,659 | \$ 255,563 |

(1) Value realized represents the fair market value of the shares at the time of vesting.

Pension Benefits

Pursuant to employment agreements, we provide supplemental retirement benefits to Messrs. Colella and Berlinghieri, or, in the event of either such executive officer's death, to his spouse. These supplemental benefits were designed to reward long-term service with us and to serve as a significant incentive for these executives to remain with us. In addition, these benefits are designed to provide for supplemental retirement benefits for executive officers that are not available under our Company-wide employee benefits due to regulatory limitations on benefit accruals.

The benefits vest upon (a) the employee reaching both (i) specified ages, and (ii) 25 years of service with us, in each case while employed with us, or (b) upon the employee's earlier death, disability, termination without cause (as defined in the employment agreements) or a qualifying termination in connection with a change in control (as defined in the agreement), and are forfeited in the event of termination for cause. When vested, the benefits provide for a lump sum payment of an aggregate amount calculated in accordance with actuarial tables, payable not sooner than six months after the date of termination (except in the case of death or disability). The actuarial calculations include assumptions for decreased benefit continuation for each executive's surviving spouse in the event of the executive's death. The supplemental retirement benefits are not subject to any deduction for social security or other offset amounts. The benefit amount is based upon the final average compensation, which is equal to the average of the respective officer's three highest years of compensation (salary plus bonus) during the 10 years prior to the executive officer's year of retirement (or other qualifying termination). The benefits for Mr. Colella will vest 80%, 90% and 100% at the ages of 60, 61 and 62, respectively. The benefits for Mr. Berlinghieri vested on December 30, 2013, the date Mr. Berlinghieri's employment terminated.

With respect to Mr. Colella, the table below sets forth the present value as of December 31, 2013 of the accumulated benefits of Mr. Colella under his Supplemental Pension arrangement. With respect to Mr. Berlinghieri, the table below sets forth the actual value of accumulated benefits under his Supplemental Pension arrangement on December 30, 2013, the date Mr. Berlinghieri's employment terminated. Mr. Berlinghieri will receive this amount in a lump sum payment on June 30, 2014 or shortly thereafter, the date that is at least six months after the date of termination.

PENSION BENEFITS

| Name | Plan Name | Number of Years Credited Service (#)(1) | Present Value of Accumulated Benefit (\$)(2) | Payments During the Last Fiscal Year (\$) |
|-------------------|---|---|--|---|
| Gerald G. Colella | Supplemental Retirement Benefits under Employment Agreement | 25 | \$ 5,870,682 | \$0 |
| Leo Berlinghieri | Supplemental Retirement Benefits under Employment Agreement | 25 | \$ 13,717,557 | \$0 |
| Seth H. Bagshaw | N/A | N/A | N/A | N/A |
| Paul M. Eyerman | N/A | N/A | N/A | N/A |
| John T.C. Lee | N/A | N/A | N/A | N/A |
| Paul A. Loomis | N/A | N/A | N/A | N/A |

(1) Maximum number of years credited is 25.

(2) Present value of accumulated benefit is calculated using the same assumptions we used for financial reporting purposes. The calculations use a discount rate of 1.75%, a maturity value rate of 3.25% and salary increases of 4.0% per annum and the 1994 Group Annuity Reserve Mortality Table. Mr. Colella was not vested in any portion of the amount set forth above as of December 31, 2013. Mr. Berlinghieri was vested as to 100% of the amount set forth above as of December 30, 2013, the last date of his employment with the Company.

Potential Payments Upon Termination or Change in Control

Except with respect to Mr. Berlinghieri, our former Chief Executive Officer, this section (including the following tables) summarizes each Named Executive Officer's estimated payments and other benefits that he would be eligible to receive if his employment had terminated on December 31, 2013, under the circumstances set forth below. The payments and other benefits for Mr. Berlinghieri reflect the actual amounts he received or is entitled to receive as a result of his termination of employment with MKS on December 30, 2013. Mr. Colella succeeded Mr. Berlinghieri as Chief Executive Officer, in addition to his role as President, effective January 1, 2014. This section also includes a summary of the estimated payments and other benefits Mr. Colella would be entitled to receive if his employment had terminated on January 1, 2014 under the circumstances set forth below under the new employment agreement he entered into with MKS in connection with his promotion to Chief Executive Officer and President (the New Employment Agreement).

Except as otherwise set forth below, for purposes of the following description of such benefits, Cause means that the executive has refused to perform the services required of him under his employment agreement or has failed or refused to comply with any of the covenants in the agreement, or any of the following: (i) willful or gross neglect of his duties, (ii) material breach of his employment agreement or of any of the rules, regulations, policies or procedures of the Company, or material violation of the Company's code of conduct, (iii) commission of a felony or other act of material dishonesty, including but not limited to fraud, embezzlement, misappropriation of Company property, moral

turpitude, or breach of fiduciary duty that could possibly have a material adverse effect on the Company, (iv) unlawful use of controlled substances on the Company's premises or while performing his duties and responsibilities or indictment related to the commission of any criminal act, (v) failure or refusal to reasonably cooperate with any Company investigation or government/regulator authority having jurisdiction over the executive and the Company, or (vi) engaging in willful or gross misconduct which is materially injurious to the Company, financially or otherwise, or the Company's reputation. Good Reason means voluntary separation from service within 90 days following (i) a material diminution in positions, duties and responsibilities from those described in the executive's employment agreement, (ii) a 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.

Mr. Colella

On October 22, 2013, in connection with Mr. Colella's appointment as Chief Executive Officer and President, we entered into the New Employment Agreement with Mr. Colella, effective as of January 1, 2014, which superseded his previous employment agreement dated April 25, 2005, as amended (the "Original Employment Agreement"). Below is a summary of the material terms of Mr. Colella's New Employment Agreement and the material differences between it and his Original Employment Agreement.

Under the New Employment Agreement, beginning January 1, 2014, Mr. Colella's base salary is \$600,000 (an increase of \$100,000 from his 2013 salary), he is eligible to participate in the Company's annual cash incentive plan, with a targeted goal of 100% of base salary (compared to a targeted goal of 75% of base salary in 2013) subject to meeting performance goals to be determined by the Company's Compensation Committee, and the targeted value of Mr. Colella's total annual long-term equity-based incentive award is \$1,400,000 (an increase of \$600,000 from his 2013 annual grant), subject to meeting vesting and/or performance goals to be determined by the Company's Compensation Committee. Similar to his Original Employment Agreement, Mr. Colella's employment term is month-to-month, with termination upon 30 days' notice by either party, or upon death, disability, or at the Company's election if Mr. Colella fails to perform his duties or commits any other act constituting Cause.

In the event Mr. Colella's employment is terminated by the Company without Cause (as defined above), he is entitled to one year continuation of each of the following: base salary, payment of any annual cash incentive plan bonus earned for the prior calendar year but not yet paid (a new benefit under his New Employment Agreement), reimbursement for premiums he pays (if any) for continuation of life insurance if he elects the Company's group life insurance conversion feature, and payment for continuation of medical, dental or vision insurance. Payment of such benefits is conditioned upon execution of a release by Mr. Colella and his full compliance with the restrictive covenants described below. Under his Original Employment Agreement, he was entitled to six months continuation of base salary, reimbursement of life insurance premiums and reimbursement of medical, dental and vision insurance premiums. The definition of "cause" under his Original Employment Agreement was conviction for the commission of a felony, willful failure by the executive to perform his responsibilities to the Company, or willful misconduct by the executive.

In the event Mr. Colella's employment is terminated due to death or total disability, or Mr. Colella voluntarily terminates his employment (other than for "Good Reason" as defined above within two years of a change in control), the Company will pay his base salary accrued through the last date of employment, plus any annual cash incentive plan bonus earned for the prior calendar year but not yet paid. Under his Original Employment Agreement, he was not entitled to any bonus earned but not yet paid under the annual cash incentive plan.

In the event Mr. Colella's employment is terminated without Cause or is terminated by Mr. Colella for Good Reason, in either case upon or at any time within two years of a change in control, Mr. Colella will receive a lump sum payment equal to 36 months of base salary and 36 months of target bonus amount, payment of any annual cash incentive plan bonus earned for the prior calendar year but not yet paid, and continued participation in the Company's medical, dental, vision and life insurance plans for 36 months. In the event such payments are determined to be subject to an excise tax imposed by the Internal Revenue Code Section 4999, 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. Colella on an after-tax basis of the greater amount, taking into account all applicable taxes, including the penalty tax. Mr. Colella is not entitled to any gross-up payment for any such excise tax due on such payments. Under his Original Employment Agreement, Mr. Colella was not entitled to these change in control

benefits.

The New Employment Agreement requires Mr. Colella to return all or a portion of any incentive pay, and any severance payments computed by reference thereto, for the performance period(s) in which his termination of employment occurs and any performance period ending within the 36 month period prior to his termination of employment, if it is later determined that that these awards were calculated on the basis of inaccurate information that results in a restatement of our financial statements, or for other required reasons.

The New Employment Agreement provides that Mr. Colella may not, during the term of his employment and for the period of one year after termination of employment (or two years in the event Mr. Colella terminates his employment other than for Good Reason, a new obligation in his New Employment Agreement), (i) engage in any competitive business or activity, (ii) work for any person who was the Company's executive, officer or agent, or establish any business or partnership with such person that is competitive to the Company, (iii) give, sell or lease any competitive services or goods to any of the Company's customers; or (iv) have any material financial interest in or be a director, officer, partner, executive or consultant to or exceed specified shareholding limitations in, any of the Company's competitors.

Mr. Colella is also subject to non-solicitation restrictions. During the term of employment and for a period of two years after termination (as compared to one year after termination under his Original Employment Agreement), Mr. Colella may not solicit any customer to become a customer, distributor or supplier of any other person or entity or to cease doing business with the Company; or solicit or hire any of the Company's executives, officers or agents to terminate such person's employment or engagement with the Company or to work for a third party.

In addition, the New Employment Agreement continues to provide Mr. Colella with the same supplemental retirement benefits as were provided under his Original Employment Agreement. The benefits vest (a) upon Mr. Colella reaching both (i) specified ages, and (ii) 25 years of service with the Company, in each case while employed with the Company, or (b) upon his earlier death, disability, termination without cause (defined as conviction for the commission of a felony, material breach of any employment or other agreements between the executive and the Company, or willful failure by the executive to perform his material responsibilities to the Company) or a qualifying termination for Good Reason within three years of a change in control (as defined in the agreement), and are forfeited in the event of termination prior to vesting as described above, termination for cause or upon violation of the noncompetition, nondisclosure, or nonsolicitation provisions contained in the New Employment Agreement. When vested, subject to his execution of and compliance with customary releases, the supplemental retirement benefit provides for a lump sum payment to Mr. Colella (or in the event of his death, his spouse) of an aggregate amount calculated based upon actuarial assumptions, payable not sooner than six months after the date of termination (except in the case of death). The benefit amount is determined based upon the actuarial equivalent value of an annuity equal to 50% of Mr. Colella's final average compensation, which is equal to the average of his three highest years of compensation (salary plus bonus) during the 10 calendar years prior to the year of retirement (or other qualifying termination). The actuarial calculations include assumptions for decreased benefit continuation (determined as a 50% survivor annuity) for Mr. Colella's surviving spouse in the event of Mr. Colella's death. The benefits for Mr. Colella will vest 80%, 90% and 100% in the event of Mr. Colella's voluntary retirement at the ages of 60, 61 and 62, respectively. In the event that any payment under the supplemental retirement benefit would subject Mr. Colella to any excise tax, interest or penalties imposed under Internal Revenue Code Section 4999, we have agreed to make Mr. Colella gross-up payments for such amounts.

The New Employment Agreement also continues to provide Mr. Colella and his spouse with the same retiree medical benefits as were provided under his Original Employment Agreement. Accordingly, subject to his execution of and compliance with customary releases, Mr. Colella will receive retiree medical benefits for life, in the event he (i) retires by at least age 62, (ii) is terminated without Cause or terminates his employment for Good Reason, in each case within three years after a change in control, or (iii) terminates employment due to death or disability. Mr. Colella (or his surviving spouse) would pay an annual contribution of \$1,500, and, in the event of his retirement before age 65, would pay a decreasing percentage of the costs of the benefit (from 30% to 10%) until he reaches age 65. The retiree medical

benefit is coordinated with any continuation of medical benefits described above to avoid duplication of benefits.

Mr. Colella's RSU agreements provide for full acceleration of vesting of all shares (or, in the case of a performance-based RSU that is still subject to performance criteria, the target number of RSUs) if he is terminated without cause or resigns with Good Reason within 2 years following a change in control, as defined in the applicable agreements, and also provides for full acceleration of vesting of all shares (or, in the case of a performance-based RSU that is still subject to performance criteria, the actual number of RSUs to vest based upon satisfaction of performance criteria) upon retirement, death or disability. Retirement, in this context, means a voluntary termination of employment by the executive after he is at least age 60 and has a combination of years of age plus years of service (full years of employment since the executive's original hire date with the Company or one of its subsidiaries) with us equal to 70 or more. Cause under this agreement means conviction for the commission of a felony, willful failure by the executive to perform his responsibilities to the Company, or willful misconduct by the executive.

Mr. Berlinghieri

The Company entered into a Separation Agreement with Leo Berlinghieri, the Company's former Chief Executive Officer, relating to his agreed retirement as Chief Executive Officer as of December 30, 2013. The Separation Agreement provides for the continuation of base salary payments to Mr. Berlinghieri for 12 months after December 30, 2013. Mr. Berlinghieri and his spouse will also receive retiree medical benefits for life. Mr. Berlinghieri (or his surviving spouse) will make an annual contribution of \$1,500 for these medical benefits, and will in addition pay a decreasing percentage of a portion of the costs of the benefit (from 30% to 10%) from age 62 until he reaches age 65. Mr. Berlinghieri also received a payment equal to the premium for a conversion life insurance policy for one year under the Company's life insurance program, a cash payment equal to the amount of the Company's matching contribution had Mr. Berlinghieri continued in the 401(k) plan for one year after the termination date, and a cash payment equal to the Company's cost of coverage for one year of long term disability insurance. Mr. Berlinghieri received payment under the Company's annual cash incentive plan on the basis of actual performance, at the same time such payment was made to executives who continued in employment.

In addition, in accordance with the terms of the supplemental retirement benefit contained in Mr. Berlinghieri's employment agreement, upon his agreed retirement on December 30, 2013, Mr. Berlinghieri was fully vested in his supplemental retirement benefits. The benefits provide for a lump sum payment of an aggregate amount calculated based upon actuarial assumptions, payable six months after the date of termination. The benefit amount is determined based upon the actuarial equivalent value of an annuity equal to 50% of Mr. Berlinghieri's final average compensation, which is equal to the average of his three highest years of compensation (salary plus bonus) during the 10 calendar years prior to the year of retirement. The actuarial calculations include assumptions for decreased benefit continuation for Mr. Berlinghieri's surviving spouse (determined as a 50% survivor annuity) in the event of Mr. Berlinghieri's death.

The payments to Mr. Berlinghieri were subject to his execution of and compliance with customary releases and to confidentiality obligations and other covenants. In particular, the Separation Agreement provides that Mr. Berlinghieri may not, during the term of his employment and for the period of one year after retirement, (i) engage in any competitive business or activity, (ii) work for any person who was the Company's executive, officer or agent, or establish any business or partnership with such person that is competitive to the Company, or (iii) have any material financial interest in or be a director, officer, partner, executive or consultant to or exceed specified shareholding limitations in, any of the Company's competitors. In addition, for a period of two years after retirement, Mr. Berlinghieri may not solicit any customer to become a customer, distributor or supplier of any other person or corporation or to cease doing business with the Company; or solicit or hire any of the Company's employees, officers or agents to terminate such person's employment or engagement with the Company or to work for a third party.

In addition, Mr. Berlinghieri was entitled to full acceleration of his unvested restricted stock units he held as of December 30, 2013, subject to actual performance of any performance criteria set forth in such agreements.

Mr. Berlinghieri is required to return all or a portion of incentive pay for the performance period(s) in which his termination of employment occurs and any performance period ending within the 36 month period prior to his termination of employment, if it is later determined that these awards were calculated on the basis of inaccurate information that results in a restatement of our financial statements, or for other required reasons.

Other Named Executive Officers

We entered into new employment agreements with Messrs. Bagshaw, Eyerman, Lee and Loomis, each dated as of February 24, 2014. All of these employment agreements provide for terms that are month-to-month, with termination upon death, disability, or at our election if the employee fails to perform his duties or commits any other act constituting Cause. Messrs. Bagshaw and Lee are each entitled to six months continuation of his base salary in the event that his employment is terminated by us without Cause. Messrs. Eyerman and Loomis are each entitled to three months continuation of his base salary in the event that his employment is terminated by us without Cause. Assuming Messrs. Bagshaw, Eyerman, Lee and Loomis employment were terminated on December 31, 2013, under the new employment agreements, they would have been entitled to receive \$175,000, \$65,625, \$175,000 and \$67,500, respectively.

In addition to the amounts payable above, Messrs. Bagshaw and Lee are each entitled to six months continuation of his base salary in the event that his employment is terminated without Cause, or is terminated by Mr. Bagshaw or Lee for Good Reason within six months after a change in control. In the event such payments are determined to be subject to an excise tax imposed by the Internal Revenue Code Section 4999, 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. Bagshaw or Mr. Lee, as the case may be, on an after-tax basis of the greater amount, taking into account all applicable taxes, including the penalty tax. Messrs. Bagshaw and Lee are not entitled to any gross-up payment for any such excise tax due. Assuming Messrs. Bagshaw and Lee's employment were terminated by us without Cause or by Messrs. Bagshaw and Lee for Good Reason within six months after a change in control that occurred on December 31, 2013, Messrs. Bagshaw and Lee would each be entitled to receive an additional payment of \$175,000.

The employment agreements of Messrs. Bagshaw, Eyerman, Lee and Loomis contain non-competition provisions that provide that each Named Executive Officer 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, each of these Named Executive Officers may not, during the term of employment and for two years after the termination of employment, solicit any customer to become a customer, distributor or supplier of any other person or entity or to cease doing business with MKS; or solicit or hire any of the Company's executives, officers or agents to terminate such person's employment or engagement with the Company or to work for a third party. solicit or hire any of our employees or agents to terminate such person's employment or engagement with us or to work for a third party.

Previously, Messrs. Bagshaw, Lee and Loomis were not entitled to specific benefits upon termination other than provided for in their equity grants (discussed below). Under Mr. Eyerman's previous employment agreement, he was entitled to three months continuation of base salary in the event his employment was terminated by the Company without cause, and cause was defined as acts or actions detrimental to the best interests of the Company.

Each Named Executive Officer's RSUs provide for full acceleration of vesting of all shares (or, in the case of a performance-based RSU that is still subject to performance criteria, the target number of RSUs) if the Named Executive Officer is terminated without cause or resigns with Good Reason within 2 years following a change-in-control (as defined in the agreements). Cause under this agreement means conviction for the commission of a felony, willful failure by the executive to perform his responsibilities to the Company, or willful misconduct by the executive. The RSUs also provide for full acceleration of vesting of all shares (or, in the case of a performance-based RSU that is still subject to performance criteria, the actual number of RSUs to vest based upon satisfaction of

performance criteria) upon retirement, death or disability. Retirement, in this context, means a voluntary termination of employment by the executive officer after he is at least age 60 and has a combination

of years of age plus years of service (full years of employment since the executive officer's original hire date with the Company or one of its subsidiaries) with us equal to 70 or more. RSUs granted to Named Executive Officers typically vest in three equal annual installments, and half of the target annual equity grant value is subject to performance criteria. Assuming Messrs. Bagshaw, Eyerman, Lee and Loomis employment were terminated on December 31, 2013 without cause or each resigned for Good Reason and such date fell within 24 months after a change in control, the value of his accelerated unvested equity on December 31, 2013 for each Named Executive Officer would have been as follows: Bagshaw \$1,140,909; Eyerman \$473,417; Lee \$670,184; and Loomis \$503,426. Assuming Messrs. Bagshaw, Eyerman, Lee and Loomis retired (as defined above), died or became disabled on December 31, 2013, the value of his accelerated unvested equity on December 31, 2013 for each Named Executive Officer would have been as follows: Bagshaw \$1,260,945; Eyerman \$519,431; Lee \$738,204; and Loomis \$554,841.

Actual Payments Upon Termination Leo Berlinghieri

The payments and other benefits for Mr. Berlinghieri below reflect the actual amounts he received or is entitled to receive as a result of his termination of employment with MKS on December 30, 2013.

| | Cash | Value of Accelerated Unvested Equity | Retiree Medical Benefits Continuation(3) | Other Benefits Continuation(1)(4) | Acceleration of Pension Benefits(1)(5) | Total |
|-----------------------|-----------------|---|---|--|---|--------------|
| Base Salary(1) | Bonus(2) | | | | | |
| \$645,000 | \$933,285 | \$3,956,215 | \$698,440 | \$24,500 | \$2,743,516 | \$9,000,956 |

- (1) This amount is subject to forfeiture if Mr. Berlinghieri breaches non-compete, non-solicitation, confidentiality or other restrictive covenants in his Separation Agreement effective as of December 30, 2013.
- (2) This amount was paid pursuant to the terms of the Separation Agreement Mr. Berlinghieri entered into with the Company effective as of December 30, 2013. This amount was calculated in accordance with the terms of our annual cash incentive plan.
- (3) Reflects the Company's accrued cost of retiree health benefits for life for Mr. Berlinghieri and his spouse.
- (4) This amount is comprised of a \$10,000 cash payment in lieu of 12 months of disability insurance, a \$7,500 cash payment in lieu of 2014 401(k) match and a \$7,000 cash payment in lieu of 12 months of life insurance.
- (5) This amount represents that portion of the accumulated benefit that accelerated pursuant to the terms of his Supplemental Retirement Benefits upon the termination of his employment on December 30, 2013. See also the description under Pension Benefits above.

Potential Payments Upon Termination or Change in Control Gerald G. Colella

The following table sets forth the estimated benefits that Mr. Colella would have been entitled to receive upon termination of his employment effective December 31, 2013 under his Original Employment Agreement.

Potential Payments Under Mr. Colella's Original Employment Agreement

| Termination Circumstance: | Cash Severance | | | Acceleration of Pension Benefits(1) | Gross up of I.R.C. Golden Parachute Excise Tax Resulting from Change in Control(2) | | Total |
|---|----------------|--|--------------------------|---|--|----|------------|
| | Base Salary | Value of Accelerated Unvested Equity | Benefits Continuation | | | | |
| Involuntary Without Cause Termination | \$250,000 | N/A | \$8,101(3) | \$7,573,095 | N/A | \$ | 7,831,196 |
| Retirement(4) | N/A | \$0 | \$0 | N/A | N/A | \$ | 0 |
| Death(4) | N/A | \$1,743,170 | \$199,605(5) | \$3,786,548 | N/A | \$ | 5,729,323 |
| Disability(4) | N/A | \$1,743,170 | \$552,554(5) | \$7,573,095 | N/A | \$ | 9,868,819 |
| Within 24 Months Following a Change in Control: | | | | | | | |
| Termination by the Company Without Cause(6)(7) | \$250,000 | \$1,743,170 | \$556,054(8) | \$7,573,095 | \$0 | \$ | 10,122,319 |
| Executive Resignation with Good Reason(6)(7) | N/A | \$1,743,170 | \$552,554(5) | \$7,573,095 | \$0 | \$ | 9,868,819 |
| Between 24 Months and 36 Months Following a Change in Control: | | | | | | | |
| Termination by the Company Without Cause | \$250,000 | N/A | \$556,054(8) | \$7,573,095 | \$0 | \$ | 8,379,149 |
| Executive Resignation for Good Reason | N/A | N/A | \$552,554(5) | \$7,573,095 | \$0 | \$ | 8,125,649 |

(1)

This amount represents the present value of the accelerated amount of the accumulated benefit under the Supplemental Retirement Benefits. See also the description under Pension Benefits above.

- (2) For purposes of assessing whether Mr. Colella would be liable for a Section 4999 excise tax on parachute payments (and in turn entitled to a gross-up payment), the calculations assume that if Mr. Colella was terminated within 24 months following a change in control, the vesting of the target number of his unvested performance-based RSUs and all of his unvested time-based RSUs would be accelerated.
- (3) Reflects our cost for continuation of life insurance, medical, dental and vision coverage for 6 months following involuntary without cause termination assuming the termination occurred on December 31, 2013.
- (4) Upon retirement (as defined in the RSU agreements), death or disability, RSUs fully vest, subject to achievement of any remaining performance criteria. Because he was not 60 as of December 31, 2013, Mr. Colella did not qualify for retirement at that time. The stated value assumes the death or disability occurred on December 31, 2013.
- (5) This amount represents the estimated present value of retiree health benefits, in each case assuming the termination occurred on December 31, 2013.
- (6) The unvested time-based RSUs fully vest and the target number of the unvested performance-based RSUs vest.
- (7) Upon a change in control, Mr. Colella may be subject to certain excise taxes under Section 4999 applicable to parachute payments. We agreed to reimburse Mr. Colella for those excise taxes as well as any income and excise taxes payable by Mr. Colella as a result of any reimbursement for the Section 4999 excise taxes. Had Mr. Colella been terminated following a change in control on December 31, 2013, there would not have been an excise tax liability due.
- (8) This amount represents the estimated present value of retiree health benefits, \$552,554, plus our cost for continuation of life insurance for 6 months following termination of employment, \$3,500, assuming the termination occurred on December 31, 2013.

Potential Payments Under Mr. Colella's New Employment Agreement

As previously discussed, Mr. Colella entered into a New Employment Agreement effective January 1, 2014 in connection with his promotion to Chief Executive Officer and President of MKS. The differences in the potential payments and benefits Mr. Colella would be entitled to receive upon termination of employment under the New Employment Agreement assuming Mr. Colella's employment terminated on January 1, 2014 are as follows:

Assuming Mr. Colella's employment was terminated without Cause, except as provided below, he would be entitled to: (i) 12 months' salary continuation (\$600,000), (ii) payment of any bonus earned for the preceding year but not yet paid under the annual cash incentive plan, and (iii) continued participation in the Company's medical, dental, vision and life insurance plans for 12 months at an estimated cost to the Company of \$16,202. He would also be entitled to the same acceleration of pension benefits set forth in the above table.

Assuming Mr. Colella's employment was terminated without Cause or he resigned for Good Reason and such date fell within 24 months after a change in control, he would be entitled to: (i) a lump sum payment of \$3,600,000 equal to 36 months of base salary (\$1,800,000), plus 36 months of his target bonus amount (\$1,800,000), (ii) payment of any bonus earned for the preceding year but not yet paid under the annual cash incentive plan, and (iii) continued participation in the Company's medical, dental, vision and life insurance plans for 36 months at an estimated cost to the Company of \$48,606. The Company will not provide any gross-up for any excise tax due with respect to these payments and benefits. He would also be entitled to the same acceleration of unvested equity, the same acceleration of retiree health benefits and the same acceleration of pension benefits set forth in the above table. In addition, the Company would make an estimated gross-up payment of \$1,647,258 related to the estimated Internal Revenue Code Section 4999 excise tax due solely with respect to his pension benefits.

Assuming Mr. Colella's employment was terminated without Cause or he resigned for Good Reason and such date fell between 24 months and 36 months after a change in control, he would be entitled to: (i) the same acceleration of retiree health benefits and the same acceleration of pension benefits set forth in the above table and (ii) the Company would make an estimated gross-up payment of \$1,387,384 related to the estimated Internal Revenue Code Section 4999 excise tax due solely with respect to his pension benefits and only in the event his employment was terminated without Cause. No excise tax would be due in the event Mr. Colella resigned for Good Reason.

Equity Compensation Plan Information

The following table provides information about the securities authorized for issuance under our equity compensation plans as of December 31, 2013:

| Plan Category | Number of securities to be issued upon exercise of outstanding options, warrants and rights | Weighted-average exercise price of outstanding options, warrants and rights | Number of securities remaining available for future issuance under equity compensation plans |
|----------------------|--|--|---|
|----------------------|--|--|---|

| | (a) | (b) | (c) (excluding securities reflected in column (a)) |
|---|---------|---------|--|
| Equity compensation plans approved by security holders | 867,767 | \$ 3.27 | 11,190,900(1)(2) |
| Equity compensation plans not approved by security holders | - | - | - |
| Total | 867,767 | \$ 3.27 | 11,190,900(1)(2) |

- (1) Securities available for award under the 2004 Stock Incentive Plan increased on January 1 of each year by 5% of the issued and outstanding shares as of December 31 of the prior year, up to an aggregate maximum of 15,000,000 shares authorized by the shareholders. On January 1, 2010, the maximum of 15,000,000 was achieved and accordingly, securities authorized for issuance under the plan have not increased since. The 2004 Stock Incentive Plan expired on March 4, 2014. No additional equity grants may be made under the 2004 Stock Incentive Plan as of March 4, 2014.

- (2) Includes 212,074 shares issuable under the Company's Fourth Restated 1999 Employee Stock Purchase Plan and 62,541 shares issuable under the Company's Third Amended and Restated International Employee Stock Purchase Plan as of December 31, 2013.

DIRECTOR COMPENSATION

Cash Compensation

The following table summarizes cash compensation payable by us to non-employee directors.

| | Annual Retainer |
|---|------------------------|
| Base Retainer for All Non-Employee Board Members | \$ 52,000 |
| <i>Additional Retainers for Services:</i> | |
| Chairman | \$ 43,000 |
| Lead Director | \$ 18,000 |
| Audit Committee Chair | \$ 20,000 |
| Other Audit Committee Members | \$ 10,000 |
| Compensation Committee Chair | \$ 15,000 |
| Other Compensation Committee Members | \$ 7,500 |
| Nominating and Corporate Governance Committee Chair | \$ 10,000 |
| Other Nominating and Corporate Governance Committee Members | \$ 5,000 |

In addition, from time to time the Board of Directors may establish special committees related to specific matters. In 2013, the Board of Directors formed a special committee for the purpose of evaluating potential mergers and acquisitions. The cash compensation for this special committee is \$3,000 in total for the first five meetings, and thereafter \$1,000 per meeting, up to an aggregate maximum of \$10,000 per calendar year.

Equity Compensation

Non-employee directors participate in our 2004 Stock Incentive Plan, which is administered by the Compensation Committee. In 2013, non-employee directors received automatic grants of RSUs on the date of the Annual Meeting of Shareholders, with a grant date value of \$120,000, which RSUs shall vest in full on the day prior to the first annual meeting of shareholders following the date of grant (or if no such meeting is held within 13 months after the date of grant, on the 13 month anniversary of the date of grant).

Mr. Bertucci

Mr. Bertucci resigned from his employment as our Executive Chairman effective December 31, 2006. At that time, he remained a Class III director and became non-executive Chairman of the Board of Directors. Pursuant to the terms of his employment agreement, Mr. Bertucci receives retiree medical benefits for life for himself and his spouse, which had a net present value of \$305,645 as of December 31, 2013, and which requires that he make an annual contribution toward the benefit of \$1,500. Mr. Bertucci also receives a car allowance for life, which had a net present value of \$191,952 as of December 31, 2013. Mr. Bertucci receives no other retirement benefits.

The following table summarizes compensation paid to non-employee directors in 2013. Mr. Colella is excluded from the table because he is an executive officer, and his compensation is set forth in the Executive Compensation section above, under the heading *Executive Compensation Summary Compensation Table for 2013*.

Director Compensation Table for 2013

| Name | Fees Earned or Paid in Cash (\$) | Stock Awards \$(1) | All Other Compensation (\$) | Total (\$) |
|--------------------|---|-----------------------------------|--|-----------------------|
| Cristina H. Amon | \$ 64,500 | \$ 120,000 | \$ 0 | \$ 184,500 |
| Robert R. Anderson | \$ 77,000 | \$ 120,000 | \$ 0 | \$ 197,000 |
| Gregory R. Beecher | \$ 100,000(2) | \$ 120,000 | \$ 0 | \$ 220,000 |
| John R. Bertucci | \$ 105,000(2) | \$ 120,000 | \$ 34,723(3) | \$ 259,723 |
| Richard S. Chute | \$ 62,000 | \$ 120,000 | \$ 0 | \$ 182,000 |
| Peter R. Hanley | \$ 74,500(2) | \$ 120,000 | \$ 0 | \$ 194,500 |
| Elizabeth A. Mora | \$ 62,000 | \$ 120,000 | \$ 0 | \$ 182,000 |

- (1) Represents the grant date fair value for each RSU granted during the year, calculated in accordance with FASB ASC Topic 718. The assumptions used in determining the grant date fair values of these awards are set forth in Note 18 to our consolidated financial statements, which are included in our Annual Report on Form 10-K filed with the SEC on February 26, 2014.
- (2) Includes \$10,000 in consideration for services on a special committee of the Board of Directors.
- (3) In connection with his retirement and pursuant to the terms of his previous employment agreement, Mr. Bertucci receives retiree medical benefits and a car allowance. The retiree medical benefits consist of benefits for life for himself and his spouse, towards which Mr. Bertucci makes an annual contribution of \$1,500. The Company paid \$14,859 for this benefit in 2013. The Company paid \$19,864 for Mr. Bertucci's car allowance in 2013. Mr. Bertucci receives no other retirement benefits.

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. The code of business conduct and ethics prohibits certain specified activities, and also prohibits directors, officers and employees from engaging in any other activity that may reasonably be expected to give rise to a conflict of interest or to adversely affect our interests. The code of business conduct and ethics provides that all employees are responsible to disclose any material transaction or relation that reasonably could be expected to give rise to a material conflict of interest to the Chief Financial Officer, and officers and directors must report such transactions to the Board of Directors, who shall be responsible for determining whether such transaction or relationship constitutes a material 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 Item 404 of Regulation S-K of 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. The Company then reviews its records to determine whether the Company has engaged in any transaction with such affiliated persons and entities since the beginning of the Company's prior fiscal year, and provides 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 related person transaction, the Audit Committee reviews and 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.

REPORT OF THE AUDIT COMMITTEE OF THE BOARD OF DIRECTORS

The Audit Committee of our Board of Directors has reviewed our audited financial statements for the year ended December 31, 2013 and discussed them with our management.

The Audit Committee has also received from and discussed with PwC, our independent registered public accounting firm, various communications that our registered public accounting firm is required to provide to the Audit Committee, including the matters required to be discussed by the Auditing Standard No. 16, *Communications with Audit Committee*.

The Audit Committee has received the written disclosures and the letter from our registered public accounting firm required by Independence Standards Board Standard No. 1 (Independence Standards Board Standard No. 1, *Independence Discussions with Audit Committees*), as adopted by the Public Company Accounting Oversight Board in Rule 3600T, and has discussed with our registered public accounting firm their 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, 2013.

By the Audit Committee of the Board of Directors of MKS Instruments, Inc.

Gregory R. Beecher, Chair

Robert R. Anderson

Elizabeth A. Mora

**SECTION 16(a) BENEFICIAL
OWNERSHIP REPORTING COMPLIANCE**

Section 16(a) of the Securities Exchange Act of 1934, as amended, requires executive officers, directors and shareholders who beneficially own more than ten percent (10%) of our Common Stock to file initial reports of ownership on Form 3 and reports of changes in ownership on Form 4 with the SEC and any national securities exchange on which our securities are registered. Executive officers, directors and greater than ten percent (10%) beneficial owners are required by the SEC's regulations to furnish us with copies of all Section 16(a) forms they file.

Based solely on a review of the copies of such forms, and amendments thereto, furnished to us and written representations from the executive officers and directors, pursuant to Item 405 of Regulation S-K, we believe that all Section 16(a) filing requirements applicable to our executive officers, directors and greater than ten percent (10%) shareholders were complied with.

PROPOSAL TWO

APPROVAL OF THE 2014 STOCK INCENTIVE PLAN

On February 10, 2014, upon the recommendation of the Compensation Committee, our Board of Directors adopted, subject to shareholder approval, the 2014 Stock Incentive Plan (the "2014 Plan"). The 2014 Plan will become effective on the date the 2014 Plan is approved by our Company's shareholders.

The 2014 Plan is intended to replace our 2004 Stock Incentive Plan (the "2004 Plan"), which expired on March 4, 2014. No additional equity grants may be made under the 2004 Plan as of March 4, 2014, but awards granted before such date will remain outstanding. As of March 4, 2014, options to purchase 5,169 shares of Common Stock and 972,643 restricted stock units were outstanding under the 2004 Plan.

The Board of Directors believes that the future success of MKS depends, in large part, upon our ability to maintain a competitive position in attracting, retaining and motivating key personnel. Equity compensation is a critical part of the compensation program we offer to attract and retain key personnel. Equity compensation also aligns employee and shareholder interests because it links employee compensation with company performance.

MKS has a long history of prudently managing our equity award program as evidenced by our historical burn rate. Burn rate provides a measure of the potential dilutive impact of our equity award program and is calculated by dividing the number of shares subject to equity awards granted during a given year by the weighted average number of shares outstanding during such year. For 2013, 2012 and 2011, our burn rate was 1.8%, 1.9% and 2.3%, respectively. When calculating burn rates, all restricted stock units, commonly referred to as full-value awards, were counted as 2.4 shares for each share of Common Stock subject to such award. When determining the number of shares to be reserved under the 2014 Plan, we also considered the relevant burn rate guidelines from Institutional Shareholder Services, or ISS, because of our significant institutional shareholder base. Our burn rate is well below the ISS burn rate maximum of 6.72% for our industry grouping, the Russell 3000 Semiconductor and Semiconductor Equipment. We also considered the dilution and plan cost using guidelines established by a leading proxy advisory service, and believe that our 2014 Plan satisfies all relevant guidelines.

If the 2014 Plan is not approved by our shareholders, MKS would have no further ability to make equity awards to our employees and directors. The Board of Directors believes MKS would suffer a severe competitive disadvantage in the recruitment, retention and motivation of our key employees without our equity award program.

Description of the 2014 Plan

The 2014 Plan provides for the grant of incentive stock options intended to qualify under Section 422 of the Internal Revenue Code of 1986, as amended (the Code), non-statutory stock options, stock appreciation rights (SARs), restricted stock (Restricted Stock), restricted stock units (Restricted Stock Units) and, together with Restricted Stock, Restricted Stock Awards) and other stock-based awards as described below (collectively, Awards).

The following is a brief summary of the 2014 Plan, a copy of which is attached as Appendix A to this proxy statement.

Shares Authorized; Fungible Share Pool

Up to 18,000,000 shares of Common Stock (subject to adjustment in the event of stock splits and other similar events) may be issued pursuant to awards granted under the 2014 Plan.

Any full-value Awards granted under the 2014 Plan will be counted against the shares reserved for issuance under the plan as 2.4 shares for each share of Common Stock subject to such Award and any Award granted under the 2014 Plan that is not a full-value Award (including, without limitation, any option or SAR) will be counted against the shares reserved for issuance under the plan as one share for each one share of Common Stock subject to such Award.

Full-Value Award means any Restricted Stock Award or Other Stock-Based Award with a per share price or per unit purchase price lower than 100% of fair market value on the date of grant. To the extent a share that was subject to an Award that counted as one share is returned to the 2014 Plan, each applicable share reserve will be credited with one share. To the extent that a share that was subject to an Award that counts as 2.4 shares is returned to the 2014 Plan, each applicable share reserve will be credited with 2.4 shares.

If any Award (i) expires or is terminated, surrendered, canceled or forfeited or (ii) results in any Common Stock not being issued (including as a result of an independent SAR that was settleable either in cash or in stock actually being settled in cash), the unused shares of Common Stock covered by such award will again be available for grant under the 2014 Plan, subject, however, in the case of incentive stock options, to any limitations under the Code.

Notwithstanding the foregoing, in the case of an independent SAR, the full number of shares subject to such SAR (or portion thereof) settled in stock will be counted against the number of shares available under the 2014 Plan regardless of the number of shares actually used to settle such SAR (or portion thereof). Any shares of Common Stock delivered (either by actual delivery, attestation or net exercise) to the Company to purchase shares of Common Stock on the exercise of an Award or to satisfy the tax withholding obligations attributable to the exercise of an Option or SAR shall not be added back to the number of shares available for the future grant of Awards under the 2014 Plan. Shares of Common Stock repurchased by the Company on the open market using the proceeds from the exercise of an Award shall not increase the number of shares available for the future grant of Awards under the 2014 Plan.

Types of Awards

Incentive Stock Options and Non-statutory Stock Options. Optionees receive the right to purchase a specified number of shares of Common Stock at a specified option price and subject to such other terms and conditions as are specified in connection with the option grant. Options may be granted at an exercise price which shall not be less than the fair market value of the Common Stock on the date of grant, provided that if the Board of Directors approves the grant of an option with an exercise price to be determined on a future date, the exercise price shall be not less than 100% of the fair market value on such future date. Options may not be granted for a term in excess of 10 years. The 2014 Plan permits the following forms of payment of the exercise price of options: (i) payment by cash, check or in connection with a cashless exercise through a broker, (ii) subject to certain conditions, surrender to the Company of shares of Common Stock, (iii) any other lawful means, or (iv) any combination of these forms of payment.

Stock Appreciation Rights. A SAR is an award entitling the holder, upon exercise, to receive an amount in Common Stock determined by reference to appreciation, from and after the date of grant, in the fair market value of a share of Common Stock. SARs may be granted independently or in tandem with an option. The measurement price of each SAR shall not be less than 100% of the fair market value on the date the SAR is granted; *provided* that if the Board of Directors approves the grant of a SAR effective as of a future date, the measurement price shall be not less than 100% of the fair market value on such future date. No SAR will be granted with a term in excess of 10 years.

Restricted Stock. Restricted Stock entitles recipients to acquire shares of Common Stock, subject to the right of the Company to repurchase all or part of such shares from the recipient in the event that the conditions specified in the applicable Award are not satisfied prior to the end of the applicable restriction period established for such Award.

Restricted Stock Units. Restricted Stock Units entitle the recipient to receive shares of Common Stock to be delivered at the time such Restricted Stock Units vest or at a later delivery date pursuant to the terms and conditions established by the Board of Directors or the Compensation Committee.

Other Stock-Based Awards. Under the 2014 Plan, the Board of Directors or the Compensation Committee has the right to grant other Awards based upon the Common Stock having such terms and conditions as the Board of Directors or the Compensation Committee may determine, including the grant of shares based upon certain conditions, the grant of Awards that are valued in whole or in part by reference to, or otherwise based on, shares of Common Stock, and the grant of Awards entitling recipients to receive shares of Common Stock to be delivered in the future.

Performance Conditions. A committee of the Board of Directors (the Committee) that is comprised solely of two or more directors eligible to serve on a committee making Awards qualifying as performance-based compensation under Section 162(m) of the Code may determine, at the time of grant, that an Award of Restricted Stock, a Restricted Stock Unit Award or an Other Stock-Based Award granted to an officer will vest solely upon the achievement of specified performance criteria designed to qualify for deduction under Section 162(m) of the Code. The performance criteria for each such Award which shall be based on the relative or absolute attainment of specified levels of one or any combination of the following, which may be determined pursuant to generally accepted accounting principles (GAAP) or on a non-GAAP basis, as determined by the Committee: net income, earnings before or after discontinued operations, interest, taxes, depreciation and/or amortization, earnings per share, earnings per share before or after discontinued operations, interest, taxes, depreciation and/or amortization, bookings, bookings growth, revenue, revenue growth, operating profit before or after discontinued operations and/or taxes, operating expenses, gross margin, operating margin, profit margin, cost savings, inventory management, working capital, customer satisfaction, product quality, manufacturing objectives, completion of strategic acquisitions/dispositions, receipt of regulatory approvals, cash position, earnings growth, cash flow or cash position, stock price, market share, return on sales, assets, equity or investment, improvement of financial ratings, achievement of balance sheet, income statement or cash flow objectives or total shareholder return. Such goals may reflect absolute entity or business unit performance or a relative comparison to the performance of a peer group of entities or other external measure of the selected performance criteria and may be absolute in their terms or measured against or in relationship to other companies comparably, similarly or otherwise situated. The Committee may specify that such performance measures shall be adjusted to exclude any one or more of (i) extraordinary, non-recurring charges or other events, (ii) gains or losses on the dispositions of discontinued operations, (iii) other non-standard gains or losses, (iv) the cumulative effects of changes in accounting principles, (v) the writedown of any asset, (vi) fluctuation in foreign currency exchange rates, (vii) amortization of acquired intangible assets, (viii) acquisition and divestiture related charges or credits, (ix) litigation or claim judgments or settlements, (x) gain on sale of assets, (xi) excess and obsolete inventory adjustments, (xii) tax effects of adjustments, (xiii) the effect of changes in tax laws or other laws affecting reported results and (xiv) charges for restructuring and reorganization programs. Such performance measures: (1) may vary by participant and may be different for different Awards; (2) may be particular to a participant or the department, branch, line of business, subsidiary or other unit in which the participant works and may cover such period as may be specified by the Committee; and (3) shall be set by the Committee within the time period prescribed by, and shall otherwise comply with the requirements of, Section 162(m) of the Code.

With respect to Awards that are intended to qualify as performance-based compensation, the Committee may adjust downward, but not upward, the number of shares deliverable with respect to such Award, and the Committee may not waive the achievement of the performance conditions with respect to such Award except in the case of the death or disability of the participant or a change in control of the Company.

Dividends; Dividend Equivalents

Any dividends or dividend equivalents paid with respect to Awards will be subject to the same restrictions on transferability and forfeitability as the Award with respect to which paid.

Limitation on Repricing

Without the approval of our shareholders, we may not (except in connection with recapitalizations, other changes in capitalization or reorganization events): (1) amend any outstanding option or SAR granted under the 2014 Plan to provide an exercise or measurement price per share that is lower than the then-current exercise or measurement price per share of such outstanding option or SAR, (2) cancel any outstanding option or SAR (whether or not granted under the 2014 Plan) and grant in substitution therefor, new Awards under the 2014 Plan (other than certain Substitute Awards as described below) covering the same or a different number of shares of Common Stock and having an exercise or measurement price per share lower than the then-current exercise or measurement price per share of the cancelled option or SAR, (3) cancel in exchange for a cash payment any outstanding option or SAR with an exercise or measurement price per share above the then-current fair market value, or (4) take any other action under the 2014 Plan that constitutes a repricing within the meaning of the rules of the NASDAQ Stock Market (NASDAQ).

Transferability of Awards

Except as the Board of Directors or Compensation Committee may otherwise determine or provide in an Award, Awards may not be sold, assigned, transferred, pledged or otherwise encumbered by the person to whom they are granted, either voluntarily or by operation of law, except by will or the laws of descent and distribution or, other than in the case of an incentive stock option, pursuant to a qualified domestic relations order. During the life of the participant, Awards are exercisable only by the participant.

Eligibility to Receive Awards

Employees, officers, directors, consultants and advisors of the Company, its present and future parent and subsidiary corporations as defined in Sections 424(e) and (f) of the Code, as well as any other business venture (including, without limitation, a joint venture or limited liability company) in which the Company has a controlling interest, as determined by the Board of Directors, are eligible to be granted Awards under the 2014 Plan. Under present law, however, incentive stock options may only be granted to employees of the Company and its subsidiaries.

The maximum number of shares with respect to which Awards may be granted to any participant under the 2014 Plan may not exceed 500,000 shares per calendar year. For purposes of this limit, the combination of an option in tandem with SAR is treated as a single award.

Plan Benefits

As of March 4, 2014, approximately 450 persons were eligible to receive Awards under the 2014 Plan, including our five executive officers and seven non-employee directors. The granting of Awards under the 2014 Plan is discretionary, and we cannot now determine the number or type of Awards to be granted in the future to any particular person or group.

On March 4, 2014, the last reported sale price of our Common Stock on the NASDAQ Stock Market (NASDAQ) was \$30.58.

Administration

The 2014 Plan is administered by the Board of Directors. The Board of Directors has the authority to adopt, amend and repeal the administrative rules, guidelines and practices relating to the 2014 Plan and to interpret the provisions of the 2014 Plan. Pursuant to the terms of the 2014 Plan, the Board of Directors may delegate

authority under the 2014 Plan to one or more committees or subcommittees of the Board of Directors. The Board of Directors has authorized the Compensation Committee to administer certain aspects of the 2014 Plan, including the granting of Awards to executive officers, and has authorized a committee of the Board of Directors, consisting of Mr. Colella, to grant Awards, subject to limitations set by the Board of Directors and the 2014 Plan, to eligible employees who are not executive officers.

Subject to any applicable limitations contained in the 2014 Plan, the Board of Directors, the Compensation Committee, or any other committee to whom the Board of Directors delegates authority, as the case may be, selects the recipients of Awards and determines (i) the number of shares of Common Stock covered by options and the dates upon which such options become exercisable, (ii) the exercise price of options (which may not be less than 100% of fair market value of the Common Stock), (iii) the duration of options (which may not exceed 10 years), and (iv) the number of shares of Common Stock subject to any SAR, Restricted Stock Award, Restricted Stock Unit award or Other Stock-Based Awards and the terms and conditions of such Awards, including conditions for repurchase, issue price and repurchase price.

The Board of Directors is required to make appropriate adjustments in connection with the 2014 Plan and any outstanding Awards to reflect stock splits, stock dividends, recapitalizations, spin-offs and other similar changes in capitalization. The 2014 Plan also contains provisions addressing the consequences of any Reorganization Event, which is defined as (a) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or exchanged for the right to receive cash, securities or other property, or is cancelled, or (b) any exchange of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange transaction, or (c) any liquidation or dissolution of the Company. In connection with a Reorganization Event, the Board of Directors may take any one or more of the following actions as to all or any outstanding Awards (other than Restricted Stock) on such terms as the Board of Directors determines:

provide that Awards will be assumed, or substantially equivalent Awards will be substituted, by the acquiring or succeeding corporation (or an affiliate thereof);

upon written notice, provide that all unexercised options or other unexercised Awards will terminate immediately prior to the consummation of such Reorganization Event unless exercised within a specified period following the date of such notice;

provide that outstanding Awards will become realizable or deliverable, or restrictions applicable to an Award will lapse, in whole or in part prior to or upon such Reorganization Event;

in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof, a cash payment for each share surrendered in the Reorganization Event (the Acquisition Price), make or provide for a cash payment to an Award holder equal to (A) the Acquisition Price times the number of shares of Common Stock subject to the holder's Awards (to the extent the exercise price does not exceed the Acquisition Price) minus (B) the aggregate exercise price of all the holder's outstanding Awards, in exchange for the termination of such Awards;

provide that, in connection with a liquidation or dissolution of the Company, Awards will convert into the right to receive liquidation proceeds (if applicable, net of the exercise price thereof); and

any combination of the foregoing.

In connection with a Reorganization Event, other than a liquidation or dissolution of the Company, the repurchase and other rights of the Company with respect to outstanding Awards of Restricted Stock will inure to the benefit of the Company's successor and will apply to the cash, securities or other consideration into which our Common Stock converts in the transaction. In connection with a liquidation or dissolution of the Company, all restrictions and conditions applicable to the Award of Restricted Stock will automatically be deemed terminated or satisfied.

The Board of Directors or the Compensation Committee may at any time provide that any Award will become immediately exercisable in full or in part, free of some or all restrictions or conditions, or otherwise realizable in full or in part, as the case may be.

Substitute Awards

In connection with a merger or consolidation of an entity with the Company or the acquisition by the Company of property or stock of an entity, the Board of Directors may grant Awards in substitution for any options or other stock or stock-based awards granted by such entity or an affiliate thereof. Substitute Awards may be granted on such terms, as the Board of Directors deems appropriate in the circumstances, notwithstanding any limitations on Awards contained in the 2014 Plan. Substitute Awards will not count against the 2014 Plan's overall share limit, except as may be required by the Code.

Provisions for Foreign Participants

The Board of Directors may establish subplans or procedures under the 2014 Plan to recognize differences in laws, rules, regulations or customs of such foreign jurisdictions with respect to tax, securities, currency, employee benefit or other matters.

Amendment or Termination

No Award may be made under the 2014 Plan after the tenth anniversary of shareholder approval of the 2014 Plan but Awards previously granted may extend beyond that date. The Board of Directors may at any time amend, suspend or terminate the 2014 Plan, provided that no amendment requiring shareholder approval under any applicable legal, regulatory or listing requirement will become effective until such shareholder approval is obtained. No Award will be made that is conditioned upon shareholder approval of any amendment to the 2014 Plan unless the Award provides that (1) it will terminate or be forfeited if shareholder approval of such amendment is not obtained within no more than 12 months from the date of grant, and (2) it may not be exercised or settled (or otherwise result in the issuance of Common Stock) prior to such shareholder approval. If our shareholders do not approve the adoption of the 2014 Plan, the 2014 Plan will not go into effect, and we will not grant any Awards under the 2014 Plan. In such event, the Board of Directors will consider whether to adopt alternative arrangements based on its assessment of the needs of our Company.

Federal Income Tax Consequences

The following is a summary of the United States federal income tax consequences that generally will arise with respect to Awards granted under the 2014 Plan. This summary is based on the federal tax laws in effect as of the date of this proxy statement. In addition, this summary assumes that all Awards are exempt from, or comply with, the rules under Section 409A of the Code regarding nonqualified deferred compensation. Changes to these laws could alter the tax consequences described below.

Incentive Stock Options

A participant will not have income upon the grant of an incentive stock option. Also, except as described below, a participant will not have income upon exercise of an incentive stock option if the participant has been employed by the Company or its corporate parent or 50% or more owned corporate subsidiary at all times beginning with the option grant date and ending three months before the date the participant exercises the option. If the participant has not been so employed during that time, then the participant will be taxed as described below under Non-Statutory Stock Options. The exercise of an incentive stock option may subject the participant to the alternative minimum tax.

A participant will have income upon the sale of the stock acquired under an incentive stock option at a profit (if sales proceeds exceed the exercise price). The type of income will depend on when the participant sells the stock. If a participant sells the stock more than two years after the option was granted and more than one year

after the option was exercised, then all of the profit will be long-term capital gain. If a participant sells the stock prior to satisfying these waiting periods, then the participant will have engaged in a disqualifying disposition and a portion of the profit will be ordinary income and a portion may be capital gain. This capital gain will be long-term if the participant has held the stock for more than one year and otherwise will be short-term. If a participant sells the stock at a loss (sales proceeds are less than the exercise price), then the loss will be a capital loss. This capital loss will be long-term if the participant held the stock for more than one year and otherwise will be short-term.

Non-statutory Stock Options

A participant will not have income upon the grant of a non-statutory stock option. A participant will have compensation income upon the exercise of a non-statutory stock option equal to the value of the stock on the day the participant exercised the option less the exercise price. Upon sale of the stock, the participant will have capital gain or loss equal to the difference between the sales proceeds and the value of the stock on the day the option was exercised. This capital gain or loss will be long-term if the participant has held the stock for more than one year and otherwise will be short-term.

Stock Appreciation Rights

A participant will not have income upon the grant of a stock appreciation right. A participant generally will recognize compensation income upon the exercise of an SAR equal to the amount of the cash and the fair market value of any stock received. Upon the sale of the stock, the participant will have capital gain or loss equal to the difference between the sales proceeds and the value of the stock on the day the SAR was exercised. This capital gain or loss will be long-term if the participant held the stock for more than one year and otherwise will be short-term.

Restricted Stock

A participant will not have income upon the grant of Restricted Stock unless an election under Section 83(b) of the Code is made within 30 days of the date of grant. If a timely 83(b) election is made, then a participant will have compensation income equal to the value of the stock less the purchase price. When the stock is sold, the participant will have capital gain or loss equal to the difference between the sales proceeds and the value of the stock on the date of grant. If the participant does not make an 83(b) election, then when the stock vests the participant will have compensation income equal to the value of the stock on the vesting date less the purchase price. When the stock is sold, the participant will have capital gain or loss equal to the sales proceeds less the value of the stock on the vesting date. Any capital gain or loss will be long-term if the participant held the stock for more than one year and otherwise will be short-term.

Restricted Stock Units

A participant will not have income upon the grant of a Restricted Stock Unit. A participant is not permitted to make a Section 83(b) election with respect to a Restricted Stock Unit award. When the Restricted Stock Unit vests, the participant will have income on the vesting date in an amount equal to the fair market value of the stock on the vesting date less the purchase price, if any. When the stock is sold, the participant will have capital gain or loss equal to the sales proceeds less the value of the stock on the vesting date. Any capital gain or loss will be long-term if the participant held the stock for more than one year and otherwise will be short-term.

Other Stock-Based Awards

The tax consequences associated with any other stock-based Award granted under the 2014 Plan will vary depending on the specific terms of such Award. Among the relevant factors are whether or not the Award has a readily ascertainable fair market value, whether or not the Award is subject to forfeiture provisions or restrictions on transfer,

the nature of the property to be received by the participant under the Award and the participant's holding period and tax basis for the Award or underlying Common Stock.

Tax Consequences to MKS

There will be no tax consequences to MKS except that MKS will be entitled to a deduction when a participant has compensation income. Any such deduction will be subject to the limitations of Section 162(m) of the Code.

THE BOARD OF DIRECTORS BELIEVES THAT THE PROPOSED 2014 PLAN IS IN THE BEST INTERESTS OF MKS AND OUR SHAREHOLDERS AND THEREFORE RECOMMENDS A VOTE FOR THIS PROPOSAL.

PROPOSAL THREE

APPROVAL OF THE 2014 EMPLOYEE STOCK PURCHASE PLAN

Overview

On February 10, 2014, upon the recommendation of the Compensation Committee, our Board of Directors adopted, subject to shareholder approval, the 2014 Employee Stock Purchase Plan (the 2014 ESPP) to provide eligible employees of MKS and certain of our subsidiaries with opportunities to purchase shares of our Common Stock. Under the 2014 ESPP, we are authorized to sell to our eligible employees, through payroll deductions, up to an aggregate of 2,500,000 shares of our Common Stock.

The 2014 ESPP is intended to replace our Fourth Restated 1999 Employee Stock Purchase Plan (the 1999 ESPP) and our Third Amended and Restated International Employee Stock Purchase Plan (the International ESPP). As of March 5, 2014, there were 212,074 shares available for future sale under the 1999 ESPP and 62,541 shares available for future sale under the International ESPP. If approved, the 2014 ESPP will become effective on June 1, 2014 and will replace the 1999 ESPP and the International ESPP, under which no further shares will be sold after May 31, 2014.

The 2014 ESPP is intended to qualify as an employee stock purchase plan as defined in Section 423 of the Code and the regulations issued thereunder.

Summary of the 2014 ESPP

The following summary of the 2014 ESPP is qualified in its entirety by reference to the full text of the 2014 ESPP, a copy of which is attached as [Appendix B](#) to this proxy statement.

Description of the Plan.

The 2014 ESPP permits employees of MKS and its designated subsidiaries to purchase shares of Common Stock through a series of offerings. Offerings under the 2014 ESPP commence every June 1 and December 1, or the first business day thereafter. Each offering commencement date will begin a six month offering period. Each eligible employee may elect to have amounts withheld from compensation, which amounts will accrue in an account for such employee during the offering period. On the last day of the offering period, funds that have accrued in the account will be used to purchase Common Stock, subject to certain limitations, at a purchase price that is generally 85% of the closing price of the Common Stock on either the initial date of each offering period, or on the last day of the offering period, whichever is less. The Board of Directors or a committee of the Board of Directors (the Committee) may choose a different offering period of 12 months or less and/or choose a different commencement date for offerings under the 2014 ESPP.

Administration.

The 2014 ESPP is administered by the Board of Directors or by the Committee. The Board of Directors or the Committee has the authority to adopt, amend and repeal such administrative rules, guidelines and practices relating to the 2014 ESPP as it shall deem advisable. The Board of Directors may also correct any defect, supply

any omission or reconcile any inconsistency in the 2014 ESPP in the manner and to the extent it deems expedient to carry the 2014 ESPP into effect. The Board of Directors or the Committee is the sole and final judge of such expediency and its decisions are final and binding.

Eligibility.

Persons eligible to participate in an offering under the 2014 ESPP are generally those employees who:

are customarily employed by MKS or a designated subsidiary for more than 20 hours a week and for more than five months in a calendar year;

have been employed by MKS or a designated subsidiary for at least three months prior to enrollment;

are MKS employees or employees of a designated subsidiary on the date that the offering period commences; and

do not own five percent (5%) or more of the total combined voting power or value of all classes of MKS stock or that of its subsidiaries.

Limitation.

No employee may be granted an option under the 2014 ESPP which permits the employee's rights to purchase Common Stock under the 2014 ESPP and any other MKS stock purchase plan to accrue at a rate that exceeds \$25,000 of the fair market value (measured based on the fair market value of the stock on the offering period commencement date) of Common Stock for each calendar year in which the option to purchase such stock is outstanding at any time.

Payroll Deductions.

Eligible employees may authorize a payroll deduction up to a maximum of 10% of their compensation. Payroll deductions are then credited to the employee's accounts and are withheld in whole percentages only. Interest will not be paid on any account. The employee may decrease or discontinue payroll deductions once during an offering period by filing a new payroll deduction authorization form. However, the employee may not increase payroll deductions during an offering period. If the employee elects to discontinue payroll deductions, but does not elect to withdraw funds, the funds in the account will be used to purchase Common Stock on the last day of the offering period.

Grant of Option.

On the beginning date of each offering period, MKS will grant each employee who is participating in the 2014 ESPP an option to purchase a certain maximum number of shares on the last day of the offering period. That amount is determined by multiplying \$2,083 by the number of full months in the offering period and dividing the result by the closing price of Common Stock on the beginning date of the offering period. The employee does not become a shareholder of the Common Stock granted by the option until the shares are purchased and issued.

Purchase Price.

The purchase price of the shares of Common Stock to be sold pursuant to any given offering is equal to the lesser of (i) 85% of the closing price of Common Stock on the first business day of the offering period or (ii) 85% of the closing price of Common Stock on the last trading day of the offering period. For so long as Common Stock is traded on the NASDAQ Stock Market (NASDAQ) or another stock exchange the closing price of Common Stock shall be the last reported sales price.

Exercise of Option.

An employee's option to purchase shares is exercised automatically on the last trading date of the offering period. Upon exercise, the employee will purchase the maximum number of full shares of Common Stock allowable on this date based on the applicable purchase price and the accumulated payroll deductions in the employee's account, subject in all cases to the limits described above. Any money left over in the employee's account following the purchase will be returned to the employee, except that any balance that is less than the purchase price of one share of Common Stock will be carried forward into the employee's payroll deduction account for the following offering period, unless the employee elects not to participate in the following offering period, in which case the balance in the employee's account will be refunded.

Changes in Capitalization.

In the event of a stock split, payment of a stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of common stock other than an ordinary cash dividend, the number and class of shares available under the 2014 ESPP, the share limitation and the purchase price shall be equitably adjusted as determined by the Board of Directors or the Committee.

Reorganization Event.

Upon the occurrence of a Reorganization Event, as defined below, our Board of Directors or the Committee is authorized to take any one or more of the following actions as to outstanding options under the 2014 ESPP:

provide that options will be assumed, or substantially equivalent options will be substituted, by the acquiring or succeeding corporation (or an affiliate thereof);

upon written notice to employees, provide that all outstanding options will be terminated immediately prior to the consummation of such Reorganization Event and that all such outstanding options will become exercisable to the extent of accumulated payroll deductions as of a date specified by our Board of Directors;

upon written notice to employees, provide that all outstanding options will be cancelled as of a date prior to the effective date of the Reorganization Event and that all accumulated payroll deductions will be returned to participating employees on such date;

upon the occurrence of a Reorganization Event in which holders of our common stock will receive a cash payment for each share surrendered in the Reorganization Event, change the last day of the purchase plan period to be the date of the consummation of the Reorganization Event and provide that participants will receive a cash payment equal to the acquisition price times the number of shares of common stock that the participant's accumulated payroll deductions as of immediately prior to the Reorganization Event could purchase at the option price minus the result of multiplying such number of shares by such option price; and

provide that, in connection with a liquidation or dissolution of our Company, options will convert into the right to receive liquidation proceeds (net of the option price).

Under the 2014 ESPP, a Reorganization Event is defined as a merger or consolidation of MKS with another corporation with or into another entity as a result of which all of the Common Stock is converted into or exchanged for the right to receive cash, securities or other property or is cancelled; any transfer or disposition of all of the Common Stock for cash, securities or other property pursuant to a share exchange or other transaction; or any liquidation or dissolution of MKS.

Grants to Employees in Foreign Jurisdictions

In order to comply with the laws of a foreign jurisdiction, MKS may grant options to employees of the Company or a designated subsidiary who are citizens of foreign jurisdictions with terms that are less favorable

than the terms of options granted under the 2014 ESPP to employees of the Company or a designated subsidiary who are residents in the United States. The Board of Directors may from time to time establish one or more sub-plans under the 2014 ESPP with respect to one or more designated subsidiaries, provided that such sub-plan complies with Section 423 of the Code.

Amendment and Termination of the 2014 ESPP

Our Board of Directors may at any time, and from time to time, amend or suspend the 2014 ESPP. We will obtain shareholder approval for any amendment if such approval is required by Section 423 of the Code. Further, our Board of Directors may not make any amendment that would cause the 2014 ESPP to fail to comply with Section 423 of the Code. Our Board of Directors may terminate the 2014 ESPP at any time. Upon termination, we will refund all amounts in the accounts of participating employees.

United States Federal Income Tax Consequences

The following generally summarizes the United States federal income tax consequences that will arise with respect to participation in the plan and with respect to the sale of common stock acquired under the plan. This summary is based on the tax laws in effect as of the date of this proxy statement. Changes to these laws could alter the tax consequences described below.

Tax Consequences to Participants. A participant will not have income upon enrolling in the plan or upon purchasing stock at the end of an offering.

A participant may have both compensation income and a capital gain or loss upon the sale of stock that was acquired under the plan. The amount of each type of income and loss will depend on when the participant sells the stock.

If the participant sells the stock more than two years after the commencement of the offering during which the stock was purchased and more than one year after the date that the participant purchased the stock, at a profit (the sales proceeds exceed the purchase price), then the participant will have compensation income equal to the lesser of:

15% of the value of the stock on the day the offering commenced; and

the participant's profit.

Any excess profit will be long-term capital gain. If the participant sells the stock at a loss (if sales proceeds are less than the purchase price) after satisfying these waiting periods, then the loss will be a long-term capital loss.

If the participant sells the stock prior to satisfying these waiting periods, then he or she will have engaged in a disqualifying disposition. Upon a disqualifying disposition, the participant will have compensation income equal to the value of the stock on the day he or she purchased the stock less the purchase price. The participant also will have a capital gain or loss equal to the difference between the sales proceeds and the value of the stock on the day he or she purchased the stock. This capital gain or loss will be long-term if the participant has held the stock for more than one year and otherwise will be short-term.

Tax Consequences to MKS. There will be no tax consequences to MKS except that we will be entitled to a deduction when a participant has compensation income upon a disqualifying disposition. Any such deduction will be subject to the limitations of Section 162(m) of the Code.

THE BOARD OF DIRECTORS BELIEVES THAT THE PROPOSED 2014 ESPP IS IN THE BEST INTERESTS OF MKS AND OUR SHAREHOLDERS AND THEREFORE RECOMMENDS A VOTE FOR THIS PROPOSAL.

PROPOSAL FOUR

ADVISORY VOTE ON EXECUTIVE COMPENSATION

The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, or the Dodd-Frank Act, which added Section 14A to the Exchange 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 the Company's compensation practices for non-executive employees or the Company's 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 the Company has 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 programs are designed to attract, motivate, and retain our Named Executive Officers, who are critical to our success. Under these programs, our Named Executive Officers are rewarded for the achievement of specific short-term and long-term goals. Please see the Compensation Discussion and Analysis above for additional details about our executive compensation philosophy and programs, including information about the fiscal year 2013 compensation of our Named Executive Officers.

The Compensation Committee continually reviews the compensation programs for our Named Executive Officers to ensure they achieve the desired goals of aligning our executive compensation structure with our shareholders' interests and current market practices.

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 Securities and Exchange Commission, 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 FIVE

RATIFICATION OF APPOINTMENT OF INDEPENDENT

REGISTERED PUBLIC ACCOUNTING FIRM

On January 28, 2014, the Audit Committee appointed PwC as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2014. PwC was our independent registered public accounting firm for the fiscal year ended December 31, 2013.

Representatives of PwC are expected to be present at the Annual Meeting and 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 appointment of PwC as our independent registered public accounting firm is not obtained at the Annual Meeting, the Board of Directors will reconsider its appointment.

THE BOARD OF DIRECTORS BELIEVES THAT THE PROPOSAL TO RATIFY THE APPOINTMENT OF PWC AS OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE FISCAL YEAR ENDING DECEMBER 31, 2014 IS IN THE BEST INTERESTS OF MKS AND OUR SHAREHOLDERS AND THEREFORE RECOMMENDS A VOTE FOR THIS PROPOSAL.

OTHER MATTERS

The Board of Directors does not know of any other matters which may come before the meeting. However, if any other matters are properly presented to the 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.

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.

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

For the years ended December 31, 2013 and 2012, aggregate fees for professional services rendered by our independent registered public accounting firm, PwC, in the following categories were as follows:

| | 2013 | 2012 |
|--------------------|---------------------|---------------------|
| Audit Fees | \$ 2,130,951 | \$ 1,977,004 |
| Audit-Related Fees | 11,038 | 90,000 |
| Tax Fees | 361,000 | 356,000 |
| All Other Fees | 1,800 | 1,800 |
| Total | \$ 2,504,789 | \$ 2,424,804 |

Audit Fees

Audit Fees for the years ended December 31, 2013 and 2012 were for professional services provided for the audit of our consolidated financial statements and of our internal control over financial reporting, statutory and subsidiary audits, consents and assistance with review of documents filed with the SEC.

Audit-Related Fees

Audit related fees were for assistance with SEC correspondence and foreign statutory audit compliance advice.

Tax Fees

Tax Fees for the year ended December 31, 2013 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. Tax fees for the year ended December 31, 2012 were for services related to tax compliance, including preparation of tax returns; and tax planning advice, including assistance with foreign operations.

All Other Fees

All Other Fees for the year ended December 31, 2013 and 2012 were for accounting research software.

In 2013 and 2012, all Audit Fees, Audit-Related Fees, Tax Fees and All Other Fees were pre-approved pursuant to the Audit Committee pre-approval requirements, described below.

Pre-Approval Policy and Procedures

The Audit Committee's charter sets forth the 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. In 2013, the Audit Committee approved that with respect to services performed or to be performed by PwC in connection with the Company's fiscal year 2013, the annual fees for non-audit services in such year shall not exceed one half of an aggregate fees payable to PwC for such year, without the prior express approval of the 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.

DEADLINE FOR SUBMISSION OF SHAREHOLDER PROPOSALS

FOR THE 2015 ANNUAL MEETING

Proposals of shareholders intended to be presented at the 2015 Annual Meeting of Shareholders must be received by us at our principal office in Andover, Massachusetts not later than November 24, 2014, for inclusion in the proxy statement for that meeting.

In addition, our Amended and Restated 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 (other than matters included in our proxy statement in accordance with Rule 14a-8 of the Securities Exchange Act of 1934, as amended). The required written notice must be delivered to our Secretary at our principal offices at least 60 days prior to the Annual Meeting, but no more than 90 days prior to such meeting or it will be considered untimely. However, if less than 40 days notice of the Annual Meeting is provided to the shareholders, the written notice of the shareholder must be received by our Secretary no later than 10 days after the notice of the Annual Meeting was mailed or publicly disclosed. The advance notice provisions of our Amended and Restated By-Laws contain the requirements of the written notice of shareholders and supersede the notice requirement contained in Rule 14a-4(c)(1) under the Securities Exchange Act of 1934, as amended.

IMPORTANT NOTICE REGARDING DELIVERY OF SECURITY HOLDER DOCUMENTS

Some banks, brokers and other nominee record holders are currently householding proxy statements and annual reports. This means that only one copy of our proxy statement or annual report may have been sent to multiple shareholders in your household. We will promptly deliver a separate copy of either document to you if you call or write us at the following address or phone number: **MKS Instruments, Inc., 2 Tech Drive, Suite 201, Andover, Massachusetts 01810, Attn: Investor Relations or (800) 227-8766 ext. 5578**. You may also access our proxy statement and related materials at <http://investor.mksinst.com/annualproxy.cfm>. If you want to receive separate copies of the annual report and proxy statement in the future, or if you are receiving multiple copies and would like to receive only one copy for your household, you should contact your bank, broker, or other nominee record holder, or you may contact us at the above address and phone number.

By Order of the Board of Directors,

RICHARD S. CHUTE

Secretary

March 24, 2014

THE BOARD OF DIRECTORS ENCOURAGES SHAREHOLDERS TO ATTEND THE ANNUAL MEETING. WHETHER OR NOT YOU PLAN TO ATTEND, YOU ARE URGED TO COMPLETE, DATE, SIGN AND RETURN THE ENCLOSED PROXY IN THE ACCOMPANYING ENVELOPE. A PROMPT RESPONSE WILL GREATLY FACILITATE ARRANGEMENTS FOR THE MEETING AND YOUR COOPERATION WILL BE APPRECIATED. SHAREHOLDERS WHO ATTEND THIS MEETING MAY VOTE THEIR STOCK PERSONALLY EVEN THOUGH THEY HAVE SENT IN THEIR PROXIES.

MKS Instruments, Inc.2014 STOCK INCENTIVE PLAN**1. Purpose**

The purpose of this 2014 Stock Incentive Plan (the *Plan*) of MKS Instruments, Inc., a Massachusetts corporation (the *Company*), is to advance the interests of the Company's stockholders by enhancing the Company's ability to attract, retain and motivate persons who are expected to make important contributions to the Company and by providing such persons with equity ownership opportunities and performance-based incentives that are intended to better align the interests of such persons with those of the Company's stockholders. Except where the context otherwise requires, the term *Company* shall include any of the Company's present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Internal Revenue Code of 1986, as amended, and any regulations thereunder (the *Code*) and any other business venture (including, without limitation, joint venture or limited liability company) in which the Company has a controlling interest, as determined by the Board of Directors of the Company (the *Board*).

2. Eligibility

All of the Company's employees, officers and directors, as well as consultants and advisors to the Company (as such terms are defined and interpreted for purposes of Form S-8 under the Securities Act of 1933, as amended (the *Securities Act*), or any successor form) are eligible to be granted Awards under the Plan. Each person who is granted an Award under the Plan is deemed a *Participant*. *Award* means Options (as defined in Section 5), SARs (as defined in Section 6), Restricted Stock (as defined in Section 7), Restricted Stock Units (as defined in Section 7) and Other Stock-Based Awards (as defined in Section 8).

3. Administration and Delegation

(a) Administration by Board of Directors. The Plan will be administered by the Board. The Board shall have authority to grant Awards and to adopt, amend and repeal such administrative rules, guidelines and practices relating to the Plan as it shall deem advisable. The Board may construe and interpret the terms of the Plan and any Award agreements entered into under the Plan. The Board may correct any defect, supply any omission or reconcile any inconsistency in the Plan or any Award in the manner and to the extent it shall deem expedient and it shall be the sole and final judge of such expediency. All decisions by the Board shall be made in the Board's sole discretion and shall be final and binding on all persons having or claiming any interest in the Plan or in any Award.

(b) Appointment of Committees. To the extent permitted by applicable law, the Board may delegate any or all of its powers under the Plan to one or more committees or subcommittees of the Board (a *Committee*). All references in the Plan to the *Board* shall mean the Board or a Committee of the Board to the extent that the Board's powers or authority under the Plan have been delegated to such Committee.

(c) Awards to Non-Employee Directors. Discretionary Awards to non-employee directors may be granted and administered only by a Committee, all of the members of which are independent directors as defined by Section 5605(a)(2) of the NASDAQ Marketplace Rules.

4. Stock Available for Awards

(a) Number of Shares; Share Counting.

(1) Authorized Number of Shares. Subject to adjustment under Section 10, Awards may be made under

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the Plan for up to 18,000,000 shares of common stock, no par value per share, of the Company (the **Common Stock**), any or all of which Awards may be in the form of Incentive Stock Options (as defined in Section 5(b)).

(2) **Fungible Share Pool**. Subject to adjustment under Section 10, any Award that is not a Full-Value Award shall be counted against the share limit specified in Section 4(a)(1) as one share for each share of Common Stock subject to such Award and any Award that is a Full-Value Award shall be counted against the share limit specified in Section 4(a)(1) as 2.4 shares for each one share of Common Stock subject to such Full-Value Award. Full-Value Award means any Restricted Stock Award or Other Stock-Based Award with a per share price or per unit purchase price lower than 100% of Fair Market Value (as defined below) on the date of grant. To the extent a share that was subject to an Award that counted as one share is returned to the Plan pursuant to Section 4(a)(3), each applicable share reserve will be credited with one share. To the extent that a share that was subject to an Award that counts as 2.4 shares is returned to the Plan pursuant to Section 4(a)(3), each applicable share reserve will be credited with 2.4 shares.

(3) **Share Counting**. For purposes of counting the number of shares available for the grant of Awards under the Plan:

(A) all shares of Common Stock covered by SARs shall be counted against the number of shares available for the grant of Awards under the Plan; *provided, however*, that if the Company grants an SAR in tandem with an Option for the same number of shares of Common Stock and provides that only one such Award may be exercised (a **Tandem SAR**), only the shares covered by the Option, and not the shares covered by the Tandem SAR, shall be so counted, and the expiration of one in connection with the other's exercise will not restore shares to the Plan;

(B) if any Award (i) expires or is terminated, surrendered or canceled without having been fully exercised or is forfeited in whole or in part (including as the result of shares of Common Stock subject to such Award being repurchased by the Company at the original issuance price pursuant to a contractual repurchase right) or (ii) results in any Common Stock not being issued (including as a result of an SAR that was settleable either in cash or in stock actually being settled in cash), the unused Common Stock covered by such Award shall again be available for the grant of Awards; *provided, however*, that (1) in the case of Incentive Stock Options, the foregoing shall be subject to any limitations under the Code, (2) in the case of the exercise of an SAR, the number of shares counted against the shares available under the Plan shall be the full number of shares subject to the SAR multiplied by the percentage of the SAR actually exercised, regardless of the number of shares actually used to settle such SAR upon exercise and (3) the shares covered by a Tandem SAR shall not again become available for grant upon the expiration or termination of such Tandem SAR;

(C) shares of Common Stock delivered (either by actual delivery, attestation or net exercise) to the Company by a Participant to (i) purchase shares of Common Stock upon the exercise of an Award or (ii) satisfy tax withholding obligations on Options or SARs (including shares retained from the Award creating the tax obligation) shall not be added back to the number of shares available for the future grant of Awards; and

(D) shares of Common Stock repurchased by the Company on the open market using the proceeds from the exercise of an Award shall not increase the number of shares available for future grant of Awards.

(b) **Section 162(m) Per-Participant Limit**. The maximum number of shares of Common Stock with respect to which Awards may be granted to any Participant under the Plan shall be 500,000 per calendar year. For purposes of the foregoing limit, the combination of an Option in tandem with an SAR shall be treated as a single Award. The per Participant limit described in this Section 4(b) shall be construed and applied consistently with Section 162(m) of the Code or any successor provision thereto, and the regulations thereunder (**Section 162(m)**).

(c) **Substitute Awards**. In connection with a merger or consolidation of an entity with the Company or the acquisition by the Company of property or stock of an entity, the Board may grant Awards in substitution for any

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options or other stock or stock-based awards granted by such entity or an affiliate thereof. Substitute Awards may be granted on such terms as the Board deems appropriate in the circumstances, notwithstanding any limitations on Awards contained in the Plan. Substitute Awards shall not count against the overall share limit set forth in Section 4(a)(1), except as may be required by reason of Section 422 and related provisions of the Code.

5. Stock Options

(a) General. The Board may grant options to purchase Common Stock (each, an **Option**) and determine the number of shares of Common Stock to be covered by each Option, the exercise price of each Option and the conditions and limitations applicable to the exercise of each Option, including conditions relating to applicable federal or state securities laws, as it considers necessary or advisable.

(b) Incentive Stock Options. An Option that the Board intends to be an incentive stock option as defined in Section 422 of the Code (an **Incentive Stock Option**) shall only be granted to employees of MKS Instruments, Inc., any of MKS Instruments, Inc.'s present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Code, and any other entities the employees of which are eligible to receive Incentive Stock Options under the Code, and shall be subject to and shall be construed consistently with the requirements of Section 422 of the Code. An Option that is not intended to be an Incentive Stock Option shall be designated a **Nonstatutory Stock Option**. The Company shall have no liability to a Participant, or any other party, if an Option (or any part thereof) that is intended to be an Incentive Stock Option is not an Incentive Stock Option or if the Company converts an Incentive Stock Option to a Nonstatutory Stock Option.

(c) Exercise Price. The Board shall establish the exercise price of each Option and specify the exercise price in the applicable Option agreement. The exercise price shall be not less than 100% of the fair market value per share of Common Stock as determined by (or in a manner approved by) the Board (**Fair Market Value**) on the date the Option is granted; *provided* that if the Board approves the grant of an Option with an exercise price to be determined on a future date, the exercise price shall be not less than 100% of the Fair Market Value on such future date.

(d) Duration of Options. Each Option shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable option agreement; *provided, however*, that no Option will be granted with a term in excess of 10 years.

(e) Exercise of Options. Options may be exercised by delivery to the Company of a notice of exercise in a form (which may be electronic) approved by the Company, together with payment in full (in the manner specified in Section 5(f)) of the exercise price for the number of shares for which the Option is exercised. Shares of Common Stock subject to the Option will be delivered by the Company as soon as practicable following exercise.

(f) Payment Upon Exercise. Common Stock purchased upon the exercise of an Option granted under the Plan shall be paid for as follows:

(1) in cash or by check, payable to the order of the Company;

(2) except as may otherwise be provided in the applicable Option agreement or approved by the Board, in its sole discretion, by (i) delivery of an irrevocable and unconditional undertaking by a creditworthy broker to deliver promptly to the Company sufficient funds to pay the exercise price and any required tax withholding or (ii) delivery by the Participant to the Company of a copy of irrevocable and unconditional instructions to a creditworthy broker to deliver promptly to the Company cash or a check sufficient to pay the exercise price and any required tax withholding;

(3) to the extent provided for in the applicable Option agreement or approved by the Board, in its sole discretion, by delivery (either by actual delivery or attestation) of shares of Common Stock owned by the

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Participant valued at their Fair Market Value provided (i) such method of payment is then permitted under applicable law, (ii) such Common Stock, if acquired directly from the Company, was owned by the Participant for such minimum period of time, if any, as may be established by the Board in its discretion and (iii) such Common Stock is not subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements;

(4) to the extent provided for in the applicable Option agreement or approved by the Board in its sole discretion, by delivery of a notice of net exercise to the Company, as a result of which the Participant would receive (i) the number of shares underlying the portion of the Option being exercised, less (ii) such number of shares as is equal to (A) the aggregate exercise price for the portion of the Option being exercised divided by (B) the Fair Market Value on the date of exercise.

(5) to the extent permitted by applicable law and provided for in the applicable Option agreement or approved by the Board, in its sole discretion, by payment of such other lawful consideration as the Board may determine; or

(6) by any combination of the above permitted forms of payment.

(g) Limitation on Repricing. Unless such action is approved by the Company's stockholders, the Company may not (except as provided for under Section 10): (1) amend any outstanding Option granted under the Plan to provide an exercise price per share that is lower than the then-current exercise price per share of such outstanding Option, (2) cancel any outstanding option (whether or not granted under the Plan) and grant in substitution therefor new Awards under the Plan (other than Awards granted pursuant to Section 4(c)) covering the same or a different number of shares of Common Stock and having an exercise price per share lower than the then-current exercise price per share of the cancelled option, (3) cancel in exchange for a cash payment any outstanding Option with an exercise price per share above the then-current Fair Market Value, other than pursuant to Section 10, or (4) take any other action under the Plan that constitutes a repricing within the meaning of the rules of the NASDAQ Stock Market (**NASDAQ**).

6. Stock Appreciation Rights

(a) General. The Board may grant Awards consisting of stock appreciation rights (**SARs**) entitling the holder, upon exercise, to receive an amount of Common Stock determined by reference to appreciation, from and after the date of grant, in the Fair Market Value of a share of Common Stock over the measurement price established pursuant to Section 6(b). The date as of which such appreciation is determined shall be the exercise date.

(b) Measurement Price. The Board shall establish the measurement price of each SAR and specify it in the applicable SAR agreement. The measurement price shall not be less than 100% of the Fair Market Value on the date the SAR is granted; *provided* that if the Board approves the grant of an SAR effective as of a future date, the measurement price shall be not less than 100% of the Fair Market Value on such future date.

(c) Duration of SARs. Each SAR shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable SAR agreement; *provided, however*, that no SAR will be granted with a term in excess of 10 years.

(d) Exercise of SARs. SARs may be exercised by delivery to the Company of a notice of exercise in a form (which may be electronic) approved by the Company, together with any other documents required by the Board.

(e) Limitation on Repricing. Unless such action is approved by the Company's stockholders, the Company may not (except as provided for under Section 10): (1) amend any outstanding SAR granted under the Plan to provide a measurement price per share that is lower than the then-current measurement price per share of such outstanding SAR, (2) cancel any outstanding SAR (whether or not granted under the Plan) and grant in

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substitution therefor new Awards under the Plan (other than Awards granted pursuant to Section 4(c)) covering the same or a different number of shares of Common Stock and having an exercise or measurement price per share lower than the then-current measurement price per share of the cancelled SAR, (3) cancel in exchange for a cash payment any outstanding SAR with a measurement price per share above the then-current Fair Market Value, other than pursuant to Section 10, or (4) take any other action under the Plan that constitutes a repricing within the meaning of the rules of the NASDAQ.

7. Restricted Stock; Restricted Stock Units

(a) General. The Board may grant Awards entitling recipients to acquire shares of Common Stock (**Restricted Stock**), subject to the right of the Company to repurchase all or part of such shares at their issue price or other stated or formula price (or to require forfeiture of such shares if issued at no cost) from the recipient in the event that conditions specified by the Board in the applicable Award are not satisfied prior to the end of the applicable restriction period or periods established by the Board for such Award. The Board may also grant Awards entitling the recipient to receive shares of Common Stock or cash to be delivered at the time such Award vests (**Restricted Stock Units**) (Restricted Stock and Restricted Stock Units are each referred to herein as a **Restricted Stock Award**).

(b) Terms and Conditions for All Restricted Stock Awards. The Board shall determine the terms and conditions of a Restricted Stock Award, including the conditions for vesting and repurchase (or forfeiture) and the issue price.

(c) Additional Provisions Relating to Restricted Stock.

(1) Dividends. Unless otherwise provided in the applicable Award agreement, any dividends (whether paid in cash, stock or property) declared and paid by the Company with respect to shares of Restricted Stock (**Accrued Dividends**) shall be paid to the Participant only if and when such shares become free from the restrictions on transferability and forfeitability that apply to such shares. Each payment of Accrued Dividends will be made no later than the end of the calendar year in which the dividends are paid to stockholders of that class of stock or, if later, the 15th day of the third month following the lapsing of the restrictions on transferability and the forfeitability provisions applicable to the underlying shares of Restricted Stock.

(2) Stock Certificates. The Company may require that any stock certificates issued in respect of shares of Restricted Stock, as well as dividends or distributions paid on such Restricted Stock, shall be deposited in escrow by the Participant, together with a stock power endorsed in blank, with the Company (or its designee). At the expiration of the applicable restriction periods, the Company (or such designee) shall deliver the certificates no longer subject to such restrictions to the Participant or if the Participant has died, to his or her Designated Beneficiary. **Designated Beneficiary** means (i) the beneficiary designated, in a manner determined by the Board, by a Participant to receive amounts due or exercise rights of the Participant in the event of the Participant's death or (ii) in the absence of an effective designation by a Participant, the Participant's estate.

(d) Additional Provisions Relating to Restricted Stock Units.

(1) Settlement. Upon the vesting of and/or lapsing of any other restrictions (i.e., settlement) with respect to each Restricted Stock Unit, the Participant shall be entitled to receive from the Company one share of Common Stock or (if so provided in the applicable Award agreement) an amount of cash equal to the Fair Market Value of one share of Common Stock. The Board may, in its discretion, provide that settlement of Restricted Stock Units shall be deferred, on a mandatory basis or at the election of the Participant in a manner that complies with Section 409A of the Code.

(2) Voting Rights. A Participant shall have no voting rights with respect to any Restricted Stock Units.

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(3) Dividend Equivalents. The Award agreement for Restricted Stock Units may provide Participants with the right to receive an amount equal to any dividends or other distributions declared and paid on an equal number of outstanding shares of Common Stock (*Dividend Equivalents*). Dividend Equivalents may be settled in cash and/or shares of Common Stock and shall be subject to the same restrictions on transfer and forfeitability as the Restricted Stock Units with respect to which paid, in each case to the extent provided in the Award agreement.

8. Other Stock-Based Awards

(a) General. Other Awards of shares of Common Stock, and other Awards that are valued in whole or in part by reference to, or are otherwise based on, shares of Common Stock or other property, may be granted hereunder to Participants (*Other Stock-Based-Awards*). Such Other Stock-Based Awards shall also be available as a form of payment in the settlement of other Awards granted under the Plan or as payment in lieu of compensation to which a Participant is otherwise entitled. Other Stock-Based Awards may be paid in shares of Common Stock or cash, as the Board shall determine.

(b) Terms and Conditions. Subject to the provisions of the Plan, the Board shall determine the terms and conditions of each Other Stock-Based Award, including any purchase price applicable thereto. Dividend equivalents, if any, paid with respect to Other Stock-Based Awards may be settled in cash and/or shares of Common Stock and shall be subject to the same restrictions on transferability and forfeitability as the Other Stock-Based Awards with respect to which paid, in each case to the extent specified in the Award Agreement.

9. Performance Awards

(a) Grants. Restricted Stock Awards and Other Stock-Based Awards under the Plan may be made subject to the achievement of performance goals pursuant to this Section 9 (*Performance Awards*).

(b) Committee. Grants of Performance Awards to any Covered Employee (as defined below) intended to qualify as performance-based compensation under Section 162(m) (*Performance-Based Compensation*) shall be made only by a Committee (or a subcommittee of a Committee) comprised solely of two or more directors eligible to serve on a committee making Awards qualifying as performance-based compensation under Section 162(m). In the case of such Awards granted to Covered Employees, references to the Board or to a Committee shall be treated as referring to such Committee (or subcommittee). *Covered Employee* shall mean any person who is, or whom the Committee, in its discretion, determines may be, a covered employee under Section 162(m)(3) of the Code.

(c) Performance Measures. For any Award that is intended to qualify as Performance-Based Compensation, the Committee shall specify that the degree of granting, vesting and/or payout shall be subject to the achievement of one or more objective performance measures established by the Committee, which shall be based on the relative or absolute attainment of specified levels of one or any combination of the following, which may be determined pursuant to generally accepted accounting principles (*GAAP*) or on a non-GAAP basis, as determined by the Committee: net income, earnings before or after discontinued operations, interest, taxes, depreciation and/or amortization, earnings per share, earnings per share before or after discontinued operations, interest, taxes, depreciation and/or amortization, bookings, bookings growth, revenue, revenue growth, operating profit before or after discontinued operations and/or taxes, operating expenses, gross margin, operating margin, profit margin, cost savings, inventory management, working capital, customer satisfaction, product quality, manufacturing objectives, completion of strategic acquisitions/dispositions, receipt of regulatory approvals, cash position, earnings growth, cash flow or cash position, stock price, market share, return on sales, assets, equity or investment, improvement of financial ratings, achievement of balance sheet, income statement or cash flow objectives or total stockholder return. Such goals may reflect absolute entity or business unit performance or a relative comparison to the performance of a peer group of entities or other external measure of the selected performance criteria and may be absolute in their terms or measured against or in relationship to other companies

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comparably, similarly or otherwise situated. The Committee may specify that such performance measures shall be adjusted to exclude any one or more of (i) extraordinary, non-recurring charges or other events, (ii) gains or losses on the dispositions of discontinued operations, (iii) other non-standard gains or losses, (iv) the cumulative effects of changes in accounting principles, (v) the writedown of any asset, (vi) fluctuation in foreign currency exchange rates, (vii) amortization of acquired intangible assets, (viii) acquisition and divestiture related charges or credits, (ix) litigation or claim judgments or settlements (x) gain on sale of assets (xi) excess and obsolete inventory adjustments, (xii) tax effects of adjustments, (xiii) the effect of changes in tax laws or other laws affecting reported results and (xiv) charges for restructuring and reorganization programs. Such performance measures: (i) may vary by Participant and may be different for different Awards; (ii) may be particular to a Participant or the department, branch, line of business, subsidiary or other unit in which the Participant works and may cover such period as may be specified by the Committee; and (iii) shall be set by the Committee within the time period prescribed by, and shall otherwise comply with the requirements of, Section 162(m). Awards that are not intended to qualify as Performance-Based Compensation may be based on these or such other performance measures as the Board may determine.

(d) Adjustments. Notwithstanding any provision of the Plan, with respect to any Performance Award that is intended to qualify as Performance-Based Compensation, the Committee may adjust downwards, but not upwards, the cash or number of shares payable pursuant to such Award, and the Committee may not waive the achievement of the applicable performance measures except in the case of the death or disability of the Participant or a change in control of the Company.

(e) Other. The Committee shall have the power to impose such other restrictions on Performance Awards as it may deem necessary or appropriate to ensure that such Awards satisfy all requirements for Performance-Based Compensation. Dividend equivalents, if any, paid with respect to Performance Awards may be settled in cash and/or shares of Common Stock and shall be subject to the same restrictions on transferability and forfeitability as the Performance Awards with respect to which paid, in each case to the extent specified in the Award Agreement.

10. Adjustments for Changes in Common Stock and Certain Other Events

(a) Changes in Capitalization. In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of Common Stock other than an ordinary cash dividend, (i) the number and class of securities available under the Plan, (ii) the share counting rules and sublimit set forth in 4(a) and 4(b), (iii) the number and class of securities and exercise price per share of each outstanding Option, (iv) the share and per-share provisions and the measurement price of each outstanding SAR, (v) the number of shares subject to and the repurchase price per share subject to each outstanding Restricted Stock Award and (vi) the share and per-share-related provisions and the purchase price, if any, of each outstanding Other Stock-Based Award, shall be equitably adjusted by the Company (or substituted Awards may be made, if applicable) in the manner determined by the Board. Without limiting the generality of the foregoing, in the event the Company effects a split of the Common Stock by means of a stock dividend and the exercise price of and the number of shares subject to an outstanding Option are adjusted as of the date of the distribution of the dividend (rather than as of the record date for such dividend), then an optionee who exercises an Option between the record date and the distribution date for such stock dividend shall be entitled to receive, on the distribution date, the stock dividend with respect to the shares of Common Stock acquired upon such Option exercise, notwithstanding the fact that such shares were not outstanding as of the close of business on the record date for such stock dividend.

(b) Reorganization Events.

(1) Definition. A **Reorganization Event** shall mean: (a) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or

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exchanged for the right to receive cash, securities or other property or is cancelled, (b) any transfer or disposition of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange or other transaction or (c) any liquidation or dissolution of the Company.

(2) Consequences of a Reorganization Event on Awards Other than Restricted Stock.

(A) In connection with a Reorganization Event, the Board may take any one or more of the following actions as to all or any (or any portion of) outstanding Awards other than Restricted Stock on such terms as the Board determines (except to the extent specifically provided otherwise in an applicable Award agreement or another agreement between the Company and the Participant): (i) provide that such Awards shall be assumed, or substantially equivalent Awards shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof), (ii) upon written notice to a Participant, provide that all of the Participant's unexercised Awards will terminate immediately prior to the consummation of such Reorganization Event unless exercised by the Participant (to the extent then exercisable) within a specified period following the date of such notice, (iii) provide that outstanding Awards shall become exercisable, realizable, or deliverable, or restrictions applicable to an Award shall lapse, in whole or in part prior to or upon such Reorganization Event, (iv) in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share surrendered in the Reorganization Event (the *Acquisition Price*), make or provide for a cash payment to Participants with respect to each Award held by a Participant equal to (A) the number of shares of Common Stock subject to the vested portion of the Award (after giving effect to any acceleration of vesting that occurs upon or immediately prior to such Reorganization Event) multiplied by (B) the excess, if any, of (I) the Acquisition Price over (II) the exercise, measurement or purchase price of such Award and any applicable tax withholdings, in exchange for the termination of such Award, (v) provide that, in connection with a liquidation or dissolution of the Company, Awards shall convert into the right to receive liquidation proceeds (if applicable, net of the exercise, measurement or purchase price thereof and any applicable tax withholdings) and (vi) any combination of the foregoing. In taking any of the actions permitted under this Section 10(b)(2), the Board shall not be obligated by the Plan to treat all Awards, all Awards held by a Participant, or all Awards of the same type, identically.

(B) Notwithstanding the terms of Section 10(b)(2)(A), in the case of outstanding Restricted Stock Units that are subject to Section 409A of the Code: (i) if the applicable Restricted Stock Unit agreement provides that the Restricted Stock Units shall be settled upon a change in control event within the meaning of Treasury Regulation Section 1.409A-3(i)(5)(i), and the Reorganization Event constitutes such a change in control event, then no assumption or substitution shall be permitted pursuant to Section 10(b)(2)(A)(i) and the Restricted Stock Units shall instead be settled in accordance with the terms of the applicable Restricted Stock Unit agreement; and (ii) the Board may only undertake the actions set forth in clauses (iii), (iv) or (v) of Section 10(b)(2)(A) if the Reorganization Event constitutes a change in control event as defined under Treasury Regulation Section 1.409A-3(i)(5)(i) and such action is permitted or required by Section 409A of the Code; if the Reorganization Event is not a change in control event as so defined or such action is not permitted or required by Section 409A of the Code, and the acquiring or succeeding corporation does not assume or substitute the Restricted Stock Units pursuant to clause (i) of Section 10(b)(2)(A), then the unvested Restricted Stock Units shall terminate immediately prior to the consummation of the Reorganization Event without any payment in exchange therefor.

(C) For purposes of Section 10(b)(2)(A)(i), an Award (other than Restricted Stock) shall be considered assumed if, following consummation of the Reorganization Event, such Award confers the right to purchase or receive pursuant to the terms of such Award, for each share of Common Stock subject to the Award immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); *provided, however*, that if the consideration received as a result of the Reorganization

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Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the exercise or settlement of the Award to consist solely of such number of shares of common stock of the acquiring or succeeding corporation (or an affiliate thereof) that the Board determined to be equivalent in value (as of the date of such determination or another date specified by the Board) to the per share consideration received by holders of outstanding shares of Common Stock as a result of the Reorganization Event.

(3) Consequences of a Reorganization Event on Restricted Stock. Upon the occurrence of a Reorganization Event other than a liquidation or dissolution of the Company, the repurchase and other rights of the Company with respect to outstanding Restricted Stock shall inure to the benefit of the Company's successor and shall, unless the Board determines otherwise, apply to the cash, securities or other property which the Common Stock was converted into or exchanged for pursuant to such Reorganization Event in the same manner and to the same extent as they applied to such Restricted Stock; *provided, however*, that the Board may provide for termination or deemed satisfaction of such repurchase or other rights under the instrument evidencing any Restricted Stock or any other agreement between a Participant and the Company, either initially or by amendment. Upon the occurrence of a Reorganization Event involving the liquidation or dissolution of the Company, except to the extent specifically provided to the contrary in the instrument evidencing any Restricted Stock or any other agreement between a Participant and the Company, all restrictions and conditions on all Restricted Stock then outstanding shall automatically be deemed terminated or satisfied.

11. General Provisions Applicable to Awards

(a) Transferability of Awards. Awards shall not be sold, assigned, transferred, pledged or otherwise encumbered by the person to whom they are granted, either voluntarily or by operation of law, except by will or the laws of descent and distribution or, other than in the case of an Incentive Stock Option, pursuant to a qualified domestic relations order, and, during the life of the Participant, shall be exercisable only by the Participant; *provided, however*, that the Board may permit or provide in an Award for the gratuitous transfer of the Award by the Participant to or for the benefit of any immediate family member, family trust or other entity established for the benefit of the Participant and/or an immediate family member thereof if the Company would be eligible to use a Form S-8 under the Securities Act for the registration of the sale of the Common Stock subject to such Award to such proposed transferee; *provided further*, that the Company shall not be required to recognize any such permitted transfer until such time as such permitted transferee shall, as a condition to such transfer, deliver to the Company a written instrument in form and substance satisfactory to the Company confirming that such transferee shall be bound by all of the terms and conditions of the Award. References to a Participant, to the extent relevant in the context, shall include references to authorized transferees. For the avoidance of doubt, nothing contained in this Section 11(a) shall be deemed to restrict a transfer to the Company.

(b) Documentation. Each Award shall be evidenced in such form (written, electronic or otherwise) as the Board shall determine. Each Award may contain terms and conditions in addition to those set forth in the Plan.

(c) Board Discretion. Except as otherwise provided by the Plan, each Award may be made alone or in addition or in relation to any other Award. The terms of each Award need not be identical, and the Board need not treat Participants uniformly.

(d) Termination of Status. The Board shall determine the effect on an Award of the disability, death, termination or other cessation of employment, authorized leave of absence or other change in the employment or other status of a Participant and the extent to which, and the period during which, the Participant, or the Participant's legal representative, conservator, guardian or Designated Beneficiary, may exercise rights under the Award.

(e) Withholding. The Participant must satisfy all applicable federal, state, and local or other income and employment tax withholding obligations before the Company will deliver stock certificates or otherwise

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recognize ownership of Common Stock under an Award. The Company may decide to satisfy the withholding obligations through additional withholding on salary or wages. If the Company elects not to or cannot withhold from other compensation, the Participant must pay the Company the full amount, if any, required for withholding or have a broker tender to the Company cash equal to the withholding obligations. Payment of withholding obligations is due before the Company will issue any shares on exercise, vesting or release from forfeiture of an Award or at the same time as payment of the exercise or purchase price, unless the Company determines otherwise. If provided for in an Award or approved by the Board in its sole discretion, a Participant may satisfy such tax obligations in whole or in part by delivery (either by actual delivery or attestation) of shares of Common Stock, including shares retained from the Award creating the tax obligation, valued at their Fair Market Value; *provided, however*, except as otherwise provided by the Board, that the total tax withholding where stock is being used to satisfy such tax obligations cannot exceed the Company's minimum statutory withholding obligations (based on minimum statutory withholding rates for federal and state tax purposes, including payroll taxes, that are applicable to such supplemental taxable income). Shares used to satisfy tax withholding requirements cannot be subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements.

(f) Amendment of Award. Except as otherwise provided in Sections 5(g) and 6(e) with respect to repricings, Section 9 with respect to Performance Awards or Section 12(d) with respect to actions requiring stockholder approval, the Board may amend, modify or terminate any outstanding Award, including but not limited to, substituting therefor another Award of the same or a different type, changing the date of exercise or realization, and converting an Incentive Stock Option to a Nonstatutory Stock Option. The Participant's consent to such action shall be required unless (i) the Board determines that the action, taking into account any related action, does not materially and adversely affect the Participant's rights under the Plan or (ii) the change is permitted under Section 10.

(g) Conditions on Delivery of Stock. The Company will not be obligated to deliver any shares of Common Stock pursuant to the Plan or to remove restrictions from shares previously issued or delivered under the Plan until (i) all conditions of the Award have been met or removed to the satisfaction of the Company, (ii) in the opinion of the Company's counsel, all other legal matters in connection with the issuance and delivery of such shares have been satisfied, including any applicable securities laws and regulations and any applicable stock exchange or stock market rules and regulations, and (iii) the Participant has executed and delivered to the Company such representations or agreements as the Company may consider appropriate to satisfy the requirements of any applicable laws, rules or regulations.

(h) Acceleration. The Board may at any time provide that any Award shall become immediately exercisable in whole or in part, free of some or all restrictions or conditions, or otherwise realizable in whole or in part, as the case may be.

12. Miscellaneous

(a) No Right To Employment or Other Status. No person shall have any claim or right to be granted an Award by virtue of the adoption of the Plan, and the grant of an Award shall not be construed as giving a Participant the right to continued employment or any other relationship with the Company. The Company expressly reserves the right at any time to dismiss or otherwise terminate its relationship with a Participant free from any liability or claim under the Plan, except as expressly provided in the applicable Award.

(b) No Rights As Stockholder. Subject to the provisions of the applicable Award, no Participant or Designated Beneficiary shall have any rights as a stockholder with respect to any shares of Common Stock to be distributed with respect to an Award until becoming the record holder of such shares.

(c) Effective Date and Term of Plan. The Plan shall become effective on the date the Plan is approved by the Company's stockholders (the *Effective Date*). No Awards shall be granted under the Plan after the expiration of 10 years from the Effective Date, but Awards previously granted may extend beyond that date.

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(d) Amendment of Plan. The Board may amend, suspend or terminate the Plan or any portion thereof at any time provided that (i) to the extent required by Section 162(m), no Award granted to a Participant that is intended to comply with Section 162(m) after the date of such amendment shall become exercisable, realizable or vested, as applicable to such Award, unless and until the Company's stockholders approve such amendment in the manner required by Section 162(m); (ii) no amendment that would require stockholder approval under the rules of NASDAQ may be made effective unless and until the Company's stockholders approve such amendment; and (iii) if the NASDAQ amends its corporate governance rules so that such rules no longer require stockholder approval of NASDAQ material amendments to equity compensation plans, then, from and after the effective date of such amendment to the NASDAQ rules, no amendment to the Plan (A) materially increasing the number of shares authorized under the Plan (other than pursuant to Section 4(c) or 10), (B) expanding the types of Awards that may be granted under the Plan, or (C) materially expanding the class of participants eligible to participate in the Plan shall be effective unless and until the Company's stockholders approve such amendment. In addition, if at any time the approval of the Company's stockholders is required as to any other modification or amendment under Section 422 of the Code or any successor provision with respect to Incentive Stock Options, the Board may not effect such modification or amendment without such approval. Unless otherwise specified in the amendment, any amendment to the Plan adopted in accordance with this Section 12(d) shall apply to, and be binding on the holders of, all Awards outstanding under the Plan at the time the amendment is adopted, provided the Board determines that such amendment, taking into account any related action, does not materially and adversely affect the rights of Participants under the Plan. No Award shall be made that is conditioned upon stockholder approval of any amendment to the Plan unless the Award provides that (i) it will terminate or be forfeited if stockholder approval of such amendment is not obtained within no more than 12 months from the date of grant and (2) it may not be exercised or settled (or otherwise result in the issuance of Common Stock) prior to such stockholder approval.

(e) Authorization of Sub-Plans (including for Grants to non-U.S. Employees). The Board may from time to time establish one or more sub-plans under the Plan for purposes of satisfying applicable securities, tax or other laws of various jurisdictions. The Board shall establish such sub-plans by adopting supplements to the Plan containing (i) such limitations on the Board's discretion under the Plan as the Board deems necessary or desirable or (ii) such additional terms and conditions not otherwise inconsistent with the Plan as the Board shall deem necessary or desirable. All supplements adopted by the Board shall be deemed to be part of the Plan, but each supplement shall apply only to Participants within the affected jurisdiction and the Company shall not be required to provide copies of any supplement to Participants in any jurisdiction which is not the subject of such supplement.

(f) Compliance with Section 409A of the Code. Except as provided in individual Award agreements initially or by amendment, if and to the extent (i) any portion of any payment, compensation or other benefit provided to a Participant pursuant to the Plan in connection with his or her employment termination constitutes nonqualified deferred compensation within the meaning of Section 409A of the Code and (ii) the Participant is a specified employee as defined in Section 409A(a)(2)(B)(i) of the Code, in each case as determined by the Company in accordance with its procedures, by which determinations the Participant (through accepting the Award) agrees that he or she is bound, such portion of the payment, compensation or other benefit shall not be paid before the day that is six months plus one day after the date of separation from service (as determined under Section 409A of the Code) (the *New Payment Date*), except as Section 409A of the Code may then permit. The aggregate of any payments that otherwise would have been paid to the Participant during the period between the date of separation from service and the New Payment Date shall be paid to the Participant in a lump sum on such New Payment Date, and any remaining payments will be paid on their original schedule.

The Company makes no representations or warranty and shall have no liability to the Participant or any other person if any provisions of or payments, compensation or other benefits under the Plan are determined to constitute nonqualified deferred compensation subject to Section 409A of the Code but do not to satisfy the conditions of that section.

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(g) Limitations on Liability. Notwithstanding any other provisions of the Plan, no individual acting as a director, officer, employee or agent of the Company will be liable to any Participant, former Participant, spouse, beneficiary, or any other person for any claim, loss, liability, or expense incurred in connection with the Plan, nor will such individual be personally liable with respect to the Plan because of any contract or other instrument he or she executes in his or her capacity as a director, officer, employee or agent of the Company. The Company will indemnify and hold harmless each director, officer, employee or agent of the Company to whom any duty or power relating to the administration or interpretation of the Plan has been or will be delegated, against any cost or expense (including attorneys' fees) or liability (including any sum paid in settlement of a claim with the Board's approval) arising out of any act or omission to act concerning the Plan unless arising out of such person's own fraud or bad faith.

(h) Governing Law. The provisions of the Plan and all Awards made hereunder shall be governed by and interpreted in accordance with the laws of the Commonwealth of Massachusetts, excluding choice-of-law principles of the law of such state that would require the application of the laws of a jurisdiction other than the Commonwealth of Massachusetts.

MKS Instruments, Inc.

2014 EMPLOYEE STOCK PURCHASE PLAN

The purpose of this Plan is to provide eligible employees of MKS Instruments, Inc. (the Company) and certain of its subsidiaries with opportunities to purchase shares of the Company's common stock, no par value (the Common Stock), commencing on June 1, 2014. Two million, five hundred thousand (2,500,000) shares of Common Stock in the aggregate have been approved for this purpose, subject to any adjustment pursuant to Section 15 hereof. This Plan is intended to qualify as an employee stock purchase plan as defined in Section 423 of the Internal Revenue Code of 1986, as amended (the Code), and the regulations issued thereunder, and shall be interpreted consistent therewith.

1. **Administration.** The Plan will be administered by the Company's Board of Directors (the Board) or by a Committee appointed by the Board (the Committee). The Board or the Committee has authority to make rules and regulations for the administration of the Plan and its interpretation and decisions with regard thereto shall be final and conclusive.

2. **Eligibility.** All employees of the Company and all employees of any subsidiary of the Company (as defined in Section 424(f) of the Code) designated by the Board or the Committee from time to time (a Designated Subsidiary), are eligible to participate in any one or more of the offerings of Options (as defined in Section 9) to purchase Common Stock under the Plan provided that:

- (a) they are customarily employed by the Company or a Designated Subsidiary for more than twenty (20) hours a week and for more than five (5) months in a calendar year;
- (b) they have been employed by the Company or a Designated Subsidiary for at least three (3) months prior to enrolling in the Plan; and
- (c) they are employees of the Company or a Designated Subsidiary on the first day of the applicable Plan Period (as defined below).

No employee may be granted an Option hereunder if such employee, immediately after the Option is granted, owns 5% or more of the total combined voting power or value of the stock of the Company or any subsidiary. For purposes of the preceding sentence, the attribution rules of Section 424(d) of the Code shall apply in determining the stock ownership of an employee, and all stock that the employee has a contractual right to purchase shall be treated as stock owned by the employee.

The Company retains the discretion to determine which eligible employees may participate in an offering pursuant to and consistent with Treasury Regulation Sections 1.423-2(e) and (f).

3. **Offerings.** The Company will make one or more offerings (Offerings) to employees to purchase stock under this Plan. Offerings will begin each June 1 and December 1, or the first business day thereafter (the Offering Commencement Dates). Each Offering Commencement Date will begin a six (6) month period (a Plan Period) during which payroll deductions will be made and held for the purchase of Common Stock at the end of the Plan Period. The Board or the Committee may, at its discretion, choose a different Plan Period of twelve (12) months or less for subsequent Offerings and/or choose a different commencement date for Offerings under the Plan.

4. **Participation.** An employee eligible on the Offering Commencement Date of any Offering may participate in such Offering by completing and forwarding either a written or electronic payroll deduction authorization form

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to the employee's appropriate payroll office at least thirty (30) days prior to the applicable Offering Commencement Date. The form will authorize a regular payroll deduction from the Compensation, as defined below, received by the employee during the Plan Period. Unless an employee files a new form or withdraws from the Plan, his or her deductions and purchases will continue at the same rate for future Offerings under the Plan as long as the Plan remains in effect. The term "Compensation" means the amount of money reportable on the employee's Federal Income Tax Withholding Statement, including overtime, shift premium, incentive or bonus awards and any other variable sales compensation and excluding allowances and reimbursements for expenses such as relocation allowances for travel expenses, income or gains associated with the grant or vesting of restricted stock, income or gains on the exercise of Company stock options or stock appreciation rights, and similar items, whether or not shown or separately identified on the employee's Federal Income Tax Withholding Statement.

5. Deductions. The Company will maintain payroll deduction accounts for all participating employees. With respect to any Offering made under this Plan, an employee may authorize a payroll deduction in any whole percent amount up to a maximum of 10% of the Compensation he or she receives during the Plan Period or such shorter period during which deductions from payroll are made. The Board or the Committee may, at its discretion, designate a lower maximum contribution rate. The minimum payroll deduction is such percentage of Compensation as may be established from time to time by the Board or the Committee.

6. Deduction Changes. An employee may decrease or discontinue his or her payroll deduction once during any Plan Period, by filing either a written or electronic new payroll deduction authorization form. However, an employee may not increase his or her payroll deduction during a Plan Period. If an employee elects to discontinue his or her payroll deductions during a Plan Period, but does not elect to withdraw his or her funds pursuant to Section 8 hereof, funds deducted prior to his or her election to discontinue will be applied to the purchase of Common Stock on the Exercise Date (as defined below).

7. Interest. Interest will not be paid on any employee accounts, except to the extent that the Board or the Committee, in its sole discretion, elects to credit employee accounts with interest at such rate as it may from time to time determine.

8. Withdrawal of Funds. An employee may at any time prior to the close of business on the last business day in a Plan Period and for any reason permanently draw out the balance accumulated in the employee's account and thereby withdraw from participation in an Offering. Partial withdrawals are not permitted. The employee may not begin participation again during the remainder of the Plan Period during which the employee withdrew his or her balance. The employee may participate in any subsequent Offering in accordance with terms and conditions established by the Board or the Committee.

9. Purchase of Shares.

(a) Number of Shares. On the Offering Commencement Date of each Plan Period, the Company will grant to each eligible employee who is then a participant in the Plan an option (an "Option") to purchase on the last business day of such Plan Period (the "Exercise Date") at the applicable purchase price (the "Option Price") up to a whole number of shares of Common Stock determined by multiplying \$2,083 by the number of full months in the Plan Period and dividing the result by the closing price (as determined below) on the Offering Commencement Date; provided, however, that no employee may be granted an Option which permits his or her rights to purchase Common Stock under this Plan and any other employee stock purchase plan (as defined in Section 423(b) of the Code) of the Company and its subsidiaries, to accrue at a rate which exceeds \$25,000 of the fair market value of such Common Stock (determined at the date such Option is granted) for each calendar year in which the Option is outstanding at any time.

(b) Option Price. The Board or the Committee shall determine the Option Price for each Plan Period, including whether such Option Price shall be determined based on the lesser of the closing price of the Common

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Stock on (i) the first business day of the Plan Period or (ii) the Exercise Date, or shall be based solely on the closing price of the Common Stock on the Exercise Date; provided, however, that such Option Price shall be at least 85% of the applicable closing price. In the absence of a determination by the Board or the Committee, the Option Price will be 85% of the lesser of the closing price of the Common Stock on (i) the first business day of the Plan Period or (ii) the Exercise Date. The closing price shall be (a) the closing price (for the primary trading session) on any national securities exchange on which the Common Stock is listed or (b) the average of the closing bid and asked prices in the over-the-counter-market, whichever is applicable, as published in The Wall Street Journal or another source selected by the Board or the Committee. If no sales of Common Stock were made on such a day, the price of the Common Stock shall be the reported price for the next preceding day on which sales were made.

(c) Exercise of Option. Each employee who continues to be a participant in the Plan on the Exercise Date shall be deemed to have exercised his or her Option at the Option Price on such date and shall be deemed to have purchased from the Company the number of whole shares of Common Stock reserved for the purpose of the Plan that his or her accumulated payroll deductions on such date will pay for, but not in excess of the maximum numbers determined in the manner set forth above.

(d) Return of Unused Payroll Deductions. Any balance remaining in an employee's payroll deduction account at the end of a Plan Period will be automatically refunded to the employee, except that any balance that is less than the purchase price of one share of Common Stock will be carried forward into the employee's payroll deduction account for the following Offering, unless the employee elects not to participate in the following Offering under the Plan, in which case the balance in the employee's account shall be refunded.

10. Issuance of Certificates. Certificates representing shares of Common Stock purchased under the Plan may be issued only in the name of the employee, in the name of the employee and another person of legal age as joint tenants with rights of survivorship, or (in the Company's sole discretion) in the name of a brokerage firm, bank, or other nominee holder designated by the employee. The Company may, in its sole discretion and in compliance with applicable laws, authorize the use of book entry registration of shares in lieu of issuing stock certificates.

11. Rights on Retirement, Death or Termination of Employment. If a participating employee's employment ends before the last business day of a Plan Period, no payroll deduction shall be taken from any pay then due and owing to the employee and the balance in the employee's account shall be paid to the employee. In the event of the employee's death before the last business day of a Plan Period, the Company shall, upon notification of such death, pay the balance of the employee's account (a) to the executor or administrator of the employee's estate or (b) if no such executor or administrator has been appointed to the knowledge of the Company, to such other person(s) as the Company may, in its discretion, designate. If, before the last business day of the Plan Period, the Designated Subsidiary by which an employee is employed ceases to be a subsidiary of the Company, or if the employee is transferred to a subsidiary of the Company that is not a Designated Subsidiary, the employee shall be deemed to have terminated employment for the purposes of this Plan.

12. Optionees Not Stockholders. Neither the granting of an Option to an employee nor the deductions from his or her pay shall make such employee a stockholder of the shares of Common Stock covered by an Option under this Plan until he or she has purchased and received such shares.

13. Options Not Transferable. Options under this Plan are not transferable by a participating employee other than by will or the laws of descent and distribution, and are exercisable during the employee's lifetime only by the employee.

14. Application of Funds. All funds received or held by the Company under this Plan may be combined with other corporate funds and may be used for any corporate purpose.

15. Adjustment for Changes in Common Stock and Certain Other Events.

(a) Changes in Capitalization. In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of Common Stock other than an ordinary cash dividend, (i) the number and class of securities available under this Plan, (ii) the share limitations set forth in Section 9, and (iii) the Option Price shall be equitably adjusted to the extent determined by the Board or the Committee.

(b) Reorganization Events.

(1) Definition. A Reorganization Event shall mean: (a) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or exchanged for the right to receive cash, securities or other property or is cancelled, (b) any transfer or disposition of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange or other transaction or (c) any liquidation or dissolution of the Company.

(2) Consequences of a Reorganization Event on Options. In connection with a Reorganization Event, the Board or the Committee may take any one or more of the following actions as to outstanding Options on such terms as the Board or the Committee determines: (i) provide that Options shall be assumed, or substantially equivalent Options shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof), (ii) upon written notice to employees, provide that all outstanding Options will be terminated immediately prior to the consummation of such Reorganization Event and that all such outstanding Options will become exercisable to the extent of accumulated payroll deductions as of a date specified by the Board or the Committee in such notice, which date shall not be less than ten (10) days preceding the effective date of the Reorganization Event, (iii) upon written notice to employees, provide that all outstanding Options will be cancelled as of a date prior to the effective date of the Reorganization Event and that all accumulated payroll deductions will be returned to participating employees on such date, (iv) in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share surrendered in the Reorganization Event (the Acquisition Price), change the last day of the Plan Period to be the date of the consummation of the Reorganization Event and make or provide for a cash payment to each employee equal to (A) (i) the Acquisition Price times (ii) the number of shares of Common Stock that the employee's accumulated payroll deductions as of immediately prior to the Reorganization Event could purchase at the Option Price, where the Acquisition Price is treated as the fair market value of the Common Stock on the last day of the applicable Plan Period for purposes of determining the Option Price under Section 9(b) hereof, and where the number of shares that could be purchased is subject to the limitations set forth in Section 9(a), minus (B) the result of multiplying such number of shares by such Option Price, (v) provide that, in connection with a liquidation or dissolution of the Company, Options shall convert into the right to receive liquidation proceeds (net of the Option Price thereof) and (vi) any combination of the foregoing.

For purposes of clause (i) above, an Option shall be considered assumed if, following consummation of the Reorganization Event, the Option confers the right to purchase, for each share of Common Stock subject to the Option immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); provided, however, that if the consideration received as a result of the Reorganization Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the exercise of Options to consist solely of such number of shares of common stock of the acquiring or succeeding corporation (or an affiliate thereof) that the Board determines to be equivalent in value (as of the date of such determination or another date specified by the Board) to the per share consideration received by holders of outstanding shares of Common

Stock as a result of the Reorganization Event.

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16. Amendment of the Plan. The Board may at any time, and from time to time, amend or suspend this Plan or any portion thereof, except that (a) if the approval of any such amendment by the shareholders of the Company is required by Section 423 of the Code, such amendment shall not be effected without such approval, and (b) in no event may any amendment be made that would cause the Plan to fail to comply with Section 423 of the Code.
17. Insufficient Shares. If the total number of shares of Common Stock specified in elections to be purchased under any Offering plus the number of shares purchased under previous Offerings under this Plan exceeds the maximum number of shares issuable under this Plan, the Board or the Committee will allot the shares then available on a pro-rata basis.
18. Termination of the Plan. This Plan may be terminated at any time by the Board. Upon termination of this Plan all amounts in the accounts of participating employees shall be promptly refunded.
19. Governmental Regulations. The Company's obligation to sell and deliver Common Stock under this Plan is subject to listing on a national stock exchange (to the extent the Common Stock is then so listed or quoted) and the approval of all governmental authorities required in connection with the authorization, issuance or sale of such stock.
20. Governing Law. The Plan shall be governed by Massachusetts law except to the extent that such law is preempted by federal law.
21. Issuance of Shares. Shares may be issued upon exercise of an Option from authorized but unissued Common Stock or from any other proper source.
22. Notification upon Sale of Shares. Each employee agrees, by entering the Plan, to promptly give the Company notice of any disposition of shares purchased under the Plan where such disposition occurs within two years after the date of grant of the Option pursuant to which such shares were purchased.
23. Grants to Employees in Foreign Jurisdictions. The Company may, to comply with the laws of a foreign jurisdiction, grant Options to employees of the Company or a Designated Subsidiary who are citizens or residents of such foreign jurisdiction (without regard to whether they are also citizens of the United States or resident aliens (within the meaning of Section 7701(b)(1)(A) of the Code)) with terms that are less favorable (but not more favorable) than the terms of Options granted under the Plan to employees of the Company or a Designated Subsidiary who are resident in the United States. Notwithstanding the preceding provisions of this Plan, employees of the Company or a Designated Subsidiary who are citizens or residents of a foreign jurisdiction (without regard to whether they are also citizens of the United States or resident aliens (within the meaning of Section 7701(b)(1)(A) of the Code)) may be excluded from eligibility under the Plan if (a) the grant of an Option under the Plan to a citizen or resident of the foreign jurisdiction is prohibited under the laws of such jurisdiction or (b) compliance with the laws of the foreign jurisdiction would cause the Plan to violate the requirements of Section 423 of the Code. The Company may add one or more appendices to this Plan describing the operation of the Plan in those foreign jurisdictions in which employees are excluded from participation or granted less favorable Options.
24. Authorization of Sub-Plans. The Board may from time to time establish one or more sub-plans under the Plan with respect to one or more Designated Subsidiaries, provided that such sub-plan complies with Section 423 of the Code.
25. Withholding. If applicable tax laws impose a tax withholding obligation, each affected employee shall, no later than the date of the event creating the tax liability, make provision satisfactory to the Board for payment of any taxes required by law to be withheld in connection with any transaction related to Options granted to or shares acquired by such employee pursuant to the Plan. The Company may, to the extent permitted by law, deduct any such taxes from any payment of any kind otherwise due to an employee.

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26. Effective Date and Approval of Shareholders. The Plan shall take effect on June 1, 2014 subject to approval by the shareholders of the Company as required by Section 423 of the Code, which approval must occur within twelve months of the adoption of the Plan by the Board.

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ANNUAL MEETING OF SHAREHOLDERS OF

MKS INSTRUMENTS, INC.

MAY 5, 2014

Please detach and mail in the envelope provided.

Important Notice Regarding the Availability of Proxy Materials for the 2014 Annual Meeting: The Annual Report, Notice & Proxy Statement are available at www.proxyvote.com.

MKS INSTRUMENTS, INC.

2014 Annual Meeting of Shareholders

May 5, 2014 10:00 AM

This proxy is solicited by the Board of Directors

The undersigned shareholder of MKS Instruments, Inc., a Massachusetts corporation (the Company), hereby acknowledges receipt of the Notice of Annual Meeting of Shareholders and Proxy Statement, each dated March 24, 2014, and hereby appoints Gerald G. Colella, Richard S. Chute and Kathleen F. Burke, and each of them acting singly, proxies and attorneys-in-fact, with full power to each of substitution, on behalf and in the name of the undersigned, to represent the undersigned at the 2014 Annual Meeting of Shareholders of the Company to be held on May 5, 2014 at 10:00 a.m., local time, at the Wyndham Boston Andover Hotel, 123 Old River Road, Andover, MA 01810, and at any adjournment or postponement thereof, and to vote all shares of Common Stock which the undersigned would be entitled to vote if then and there personally present, on the matters set forth on the reverse side, and, in their discretion, upon any other matters which may properly come before the meeting.

This proxy, when properly executed, will be voted as directed on the reverse side, or, if no direction is indicated, will be voted FOR the election of each of the three (3) nominees listed on the reverse side as Class III Directors of the Company, and FOR proposals 2, 3, 4 and 5, and as said proxies deem advisable, in their discretion, on such other matters as may properly come before the meeting.

PLEASE DATE, SIGN AND MAIL YOUR PROXY CARD IN THE ENVELOPE PROVIDED AS SOON AS POSSIBLE.

Address changes/comments:

(If you noted any address changes and/or comments above, please mark corresponding box on the reverse side.)

Continued and to be signed on reverse side

MKS Instruments, Inc.
2 TECH DRIVE
SUITE 201
ANDOVER, MA 01810

VOTE BY INTERNET www.proxyvote.com

Use the Internet to transmit your voting instructions and for electronic delivery of information up until 11:59 P.M. Eastern Time the day before the cut-off date or meeting date. Have your proxy card in hand when you access the web site and follow the instructions to obtain your records and to create an electronic voting instruction form.

Electronic Delivery of Future PROXY MATERIALS

If you would like to reduce the costs incurred by our Company in mailing proxy materials, you can consent to receiving all future proxy statements, proxy cards and annual reports electronically via e-mail or the Internet. To sign up for electronic delivery, please follow the instructions above to vote using the Internet and, when prompted, indicate that you agree to receive or access proxy materials electronically in future years.

VOTE BY PHONE 1-800-690-6903

Use any touch-tone telephone to transmit your voting instruction up until 11:59 P.M. Eastern Time the day before the cut-off date or meeting date. Have your proxy card in hand when you call and then following the instructions.

VOTE BY MAIL

Mark, sign and date your proxy card and return it in the postage-paid envelope we have provided or return it to Vote Processing, c/o Broadridge, 51 Mercedes Way, Edgewood, NY 11717.

TO VOTE, MARK BLOCKS BELOW IN BLUE OR BLACK INK AS FOLLOWS: KEEP THIS PORTION FOR YOUR RECORDS

DETACH AND RETURN THIS PORTION ONLY
THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.

The Board of Directors recommends you vote FOR Proposals 1,2,3,4 and 5:

1. To elect all of the nominees listed below as Class III Directors to serve for three-year terms:
Nominees:

01 John R. Bertucci 02 Robert R. Anderson 03 Gregory R. Beecher

“ FOR ALL

“ WITHHOLD ALL

“ FOR ALL EXCEPT

To withhold authority to vote for any individual nominee(s), mark For All Except and write the number(s) of the nominee(s) on the line below.

2. To approve the Company’s 2014 Stock Incentive Plan.

For Against Abstain
..

3. To approve the Company’s 2014 Employee Stock Purchase Plan.

For Against Abstain
..

4. To approve a non-binding advisory vote on executive compensation.

For Against Abstain
..

5. To ratify the selection of PricewaterhouseCoopers LLP as the Company’s independent registered public accounting firm for the year ending December 31, 2014.

For Against Abstain
..

NOTE:To transact such other business as may properly come before the meeting or any adjournment or postponement thereof.

For address changes and/or comments, please check this box and write them on the reverse side where indicated. “

Meeting Attendance

Please indicate if you plan to attend this meeting.

.. ..

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Yes

No

Please sign exactly as your name(s) appear(s) hereon. When signing as attorney, executor, administrator, or other fiduciary, please give full title as such. Joint owners should each sign personally. All holders must sign. If a corporation or partnership, please sign full corporate or partnership name, by authorized officer.

Signature [PLEASE SIGN WITHIN BOX]

Date

Signature (Joint Owners)

Date