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

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of the Securities Exchange Act of 1934 (Amendment No.)

Filed	by the I	Registrant ⊠	Filed by a Party other than the Registrant □		
Check	the ap	propriate box:			
	Prelin	ninary Proxy Statement			
	Confi	dential, for Use of the Comi	nission Only (as permitted by Rule 14a-6(e)(2))		
X	Defini	itive Proxy Statement			
	Defini	itive Additional Materials			
	Solici	ting Material Pursuant to §24	0.14a-12		
			KLA-Tencor Corporation		
			(Name of Registrant as Specified In Its Charter)		
			(Name of Person(s) Filing Proxy Statement, if other than the Registrant)		
_		iling Fee (Check the appropr	ate box):		
X		e required.			
			xchange Act Rules 14a-6(i)(1) and 0-11.		
	(1)	Title of each class of securit	ies to which the transaction applies:		
	(2)	Aggregate number of securi	ties to which the transaction applies:		
	(3)	Per unit price or other under and state how it was determine	lying value of the transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated ined):		
	(4)	Proposed maximum aggrega	ate value of the transaction:		
	(5)	Total fee paid:			
	Fee pa	aid previously with prelimina	ry materials.		
	Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify previous filing by registration statement number, or the Form or Schedule and the date of its filing.				
	(1)	Amount Previously Paid:			
	(2)	Form, Schedule or Registrat	ion Statement No.:		
	(3)	Filing Party:			
	(4)	Date Filed:			



NOTICE OF ANNUAL MEETING OF STOCKHOLDERS November 3, 2010

To the Stockholders:

YOUR VOTE IS IMPORTANT

NOTICE IS HEREBY GIVEN that the Annual Meeting of Stockholders of KLA-Tencor Corporation ("we" or the "Company"), a Delaware corporation, will be held on Wednesday, November 3, 2010 at 12:00 p.m., local time, in Multipurpose Rooms East and West in Building Three of our Milpitas facility, located at Three Technology Drive, Milpitas, California 95035, for the following purposes:

- 1. To elect as Class III Directors the four candidates nominated by our Board of Directors to each serve for a three-year term, each until his or her successor is duly elected.
- 2. To ratify the appointment of PricewaterhouseCoopers LLP as our independent registered public accounting firm for the fiscal year ending June 30, 2011.
- 3. To transact such other business as may properly come before the Annual Meeting or any adjournment thereof.

The foregoing items of business are more fully described in the Proxy Statement accompanying this Notice.

Only stockholders of record at the close of business on September 14, 2010 are entitled to notice of, and to vote at, the Annual Meeting and any adjournment or postponement thereof.

Sincerely,

Richard P. Wallace

President and Chief Executive Officer

Milpitas, California

This Notice of Annual Meeting of Stockholders, Proxy Statement and form of proxy are being distributed and made available on or about September 23, 2010.

All stockholders are cordially invited to attend the Annual Meeting in person; however, regardless of whether you expect to attend the Annual Meeting in person, we encourage you to vote as soon as possible. You may vote by proxy over the Internet or by telephone, or, if you received paper copies of the proxy materials by mail, you can also vote by mail by following the instructions on the proxy card or voting instruction card. Voting over the Internet, by telephone or by written proxy or voting instruction card will ensure your representation at the Annual Meeting regardless of whether you attend in person.

KLA-TENCOR CORPORATION

2010 ANNUAL MEETING OF STOCKHOLDERS – PROXY STATEMENT TABLE OF CONTENTS

QUESTIONS AND ANSWERS REGARDING PROXY MATERIALS	
QUESTIONS AND ANSWERS REGARDING THE ANNUAL MEETING	
QUESTIONS AND ANSWERS REGARDING PROXY SOLICITATION AND VOTING	
QUESTIONS AND ANSWERS REGARDING STOCKHOLDER PROPOSALS, DIRECTOR NOMINATIONS BY STOCKHOLDERS AND RELATED BY	YLAW
<u>PROVISIONS</u>	
PROPOSAL ONE: ELECTION OF DIRECTORS	
INFORMATION ABOUT THE BOARD OF DIRECTORS AND ITS COMMITTEES	
The Board of Directors	
Board Leadership Structure	
Board's Role in Oversight of Risk	
Audit Committee	
Compensation Committee	
Risk Considerations in Our Compensation Programs	
Nominating and Governance Committee	
Director Qualifications and Diversity	
INFORMATION ABOUT THE DIRECTORS AND THE NOMINEES	
PROPOSAL TWO: RATIFICATION OF APPOINTMENT OF PRICEWATERHOUSECOOPERS LLP AS OUR INDEPENDENT REGISTERED PUBLIC	
ACCOUNTING FIRM FOR THE FISCAL YEAR ENDING JUNE 30, 2011	
OUR CORPORATE GOVERNANCE PRACTICES	
DIRECTOR COMPENSATION	
INFORMATION ABOUT EXECUTIVE OFFICERS	
SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT	
Principal Stockholders	
<u>Management</u>	
Section 16(a) Beneficial Ownership Reporting Compliance	
EXECUTIVE COMPENSATION AND OTHER MATTERS	
Compensation Discussion and Analysis	
Compensation Committee Report	
Executive Compensation Tables	
Summary Compensation Table	
Grants of Plan-Based Awards	

i

	Outstanding Equity Awards at Fiscal Year End	70
	Stock Vested	73
	Nonqualified Deferred Compensation	74
	Potential Payments Upon Termination or Change of Control	76
CERTAIN	RELATIONSHIPS AND RELATED TRANSACTIONS	80
EQUITY C	COMPENSATION PLAN INFORMATION	81
REPORT C	OF THE AUDIT COMMITTEE	82

ANNUAL MEETING OF STOCKHOLDERS KLA-TENCOR CORPORATION

To be held on November 3, 2010

PROXY STATEMENT

OUESTIONS AND ANSWERS REGARDING PROXY MATERIALS

1. Why am I receiving these materials?

The Board of Directors (the "Board") of KLA-Tencor Corporation ("KLA-Tencor," the "Company" or "we") is providing these proxy materials to you in connection with KLA-Tencor's Annual Meeting of Stockholders to be held on Wednesday, November 3, 2010 at 12:00 p.m., local time (the "Annual Meeting"). As a stockholder of record, you are invited to attend the Annual Meeting, which will be held in Multipurpose Rooms East and West in Building Three of our Milpitas facility, located at Three Technology Drive, Milpitas, California 95035. The purposes of the Annual Meeting are set forth in the accompanying Notice of Annual Meeting of Stockholders and this Proxy Statement.

These proxy solicitation materials, together with our Annual Report for fiscal year 2010, were first made available on or about September 23, 2010 to all stockholders entitled to vote at the Annual Meeting. KLA-Tencor's principal executive offices are located at One Technology Drive, Milpitas, California 95035, and our telephone number is (408) 875-3000.

2. How may I obtain KLA-Tencor's Annual Report?

A copy of our Annual Report on Form 10-K for fiscal year 2010 is available free of charge on the Internet from the website of the Securities and Exchange Commission (the "SEC") at http://www.sec.gov, as well as on our website athttp://ir.klatencor com

3. Why did I receive a notice in the mail regarding the Internet availability of the proxy materials instead of a paper copy of the proxy materials?

This year, relying on the SEC rule that allows companies to furnish their proxy materials over the Internet, we are again mailing to our stockholders a notice about the Internet availability of the proxy materials instead of a paper copy of the proxy materials. All stockholders will have the ability to access the proxy materials over the Internet and request to receive a paper copy of the proxy materials by mail. Instructions on how to access the proxy materials over the Internet or to request a paper copy may be found in the notice. In addition, the notice contains instructions on how you may request to access proxy materials in printed form by mail or electronically on an ongoing basis.

Internet?

4. How can I access the proxy materials over the Your notice about the Internet availability of the proxy materials, proxy card or voting instruction card will contain instructions on how to:

- View our proxy materials for the Annual Meeting on the Internet; and
- Instruct us to send our future proxy materials to you electronically by e-mail.

Our proxy materials are also available on our website at the following address: http://www.kla-tencor.com/annualmeeting.

Your notice of Internet availability of proxy materials, proxy card or voting instruction card will contain instructions on how you may request to access proxy materials electronically on an ongoing basis. Choosing to access your future proxy materials electronically will help us conserve natural resources and reduce the costs of printing and distributing our proxy materials. If you choose to access future proxy materials electronically, you will receive an e-mail with instructions containing a link to the website where those materials are available and a link to the proxy voting website. Your election to access proxy materials by e-mail will remain in effect until you terminate it.

5. How may I obtain a paper copy of the proxy materials?

Stockholders receiving a notice about the Internet availability of the proxy materials will find instructions in that notice about how to obtain a paper copy of the proxy materials. Stockholders receiving notice of the availability of the proxy materials by e-mail will find instructions in that e-mail about how to obtain a paper copy of the proxy materials. Stockholders who have previously submitted a standing request to receive paper copies of our proxy materials will receive a paper copy of the proxy materials by mail.

of voting materials?

6. What should I do if I receive more than one set You may request delivery of a single copy of our future proxy statements and annual reports by writing to the address provided in the answer to Question 7 below or calling our Investor Relations department at the telephone number below. Stockholders may also request electronic delivery of future proxy statements by writing to the address below, by calling our Investor Relations department at (408) 875-3600 or via our website at http://ir.kla-tencor.com.

7. I received one copy of these materials. May I get additional copies?

Certain stockholders who share an address are being delivered only one copy of this Proxy Statement. You may receive additional copies of this Proxy Statement without charge by sending a written request to KLA-Tencor Corporation, Attention: Investor Relations, One Technology Drive, Milpitas, California 95035. Requests may also be made by calling our Investor Relations department at (408) 875-3600.

QUESTIONS AND ANSWERS REGARDING THE ANNUAL MEETING

8. Who may vote at the Annual Meeting?

You may vote at the Annual Meeting if our records showed that you owned shares of KLA-Tencor Common Stock as of the close of business on September 14, 2010 (the "Record Date"). At the close of business on that date, we had a total of 166,770,498 shares of Common Stock issued and outstanding, which were held of record by approximately 618 stockholders. As of the Record Date, we had no shares of Preferred Stock outstanding. You are entitled to one vote for each share that you own.

The Annual Meeting will be held if a majority of the outstanding Common Stock entitled to vote is represented at the Annual Meeting. If you have returned valid proxy instructions or attend the Annual Meeting in person, your Common Stock will be counted for the purpose of determining whether there is a quorum, even if you wish to abstain from voting on some or all matters at the Annual Meeting.

9. What proposals are being voted on at the Annual Meeting?

In addition to such other business as may properly come before the Annual Meeting or any adjournment thereof, the following two proposals will be presented at the Annual Meeting:

- A. Election of four candidates nominated by our Board to each serve for a three-year term; and
- B. Ratification of the appointment of PricewaterhouseCoopers LLP as our independent registered public accounting firm for the fiscal year ending June 30, 2011.

QUESTIONS AND ANSWERS REGARDING PROXY SOLICITATION AND VOTING

10. How can I vote if I own shares directly?

Most stockholders do not own shares registered directly in their name, but rather are "beneficial holders" of shares held in a stock brokerage account or by a bank or other nominee (that is, shares held "in street name"). Those stockholders should refer to Question 11 below for instructions regarding how to vote their shares.

If, however, your shares are registered directly in your name with our transfer agent, you are considered, with respect to those shares, the stockholder of record, and these proxy materials are being sent directly to you. You may vote in the following ways:

- A. **By Telephone:** Votes may be cast by telephone prior to 11:59 p.m. EST on November 2, 2010. Stockholders of record who have received a notice of availability of the proxy materials by mail must have the control number that appears on their notice available when voting. Stockholders of record who received notice of the availability of the proxy materials by e-mail must have the control number included in the e-mail available when voting. Stockholders of record who have received a proxy card by mail must have the control number that appears on their proxy card available when voting;
- B. By Internet: Votes may be cast through the Internet voting site prior to 11:59 p.m. EST on November 2, 2010. Stockholders who have received a notice of the availability of the proxy materials by mail may submit proxies over the Internet by following the instructions on the notice. Stockholders who have received notice of the availability of the proxy materials by e-mail may submit proxies over the Internet by following the instructions included in the e-mail. Stockholders who have received a paper copy of a proxy card or voting instruction card by mail may submit proxies over the Internet by following the instructions on the proxy card or voting instruction card;
- C. By Mail: Votes may also be cast by mail, as long as the proxy card or voting instruction card is delivered to the Company prior to 11:59 p.m. EST on November 2, 2010. Stockholders who have received a paper copy of a proxy card or voting instruction card by mail may submit proxies by completing, signing and dating their proxy card or voting instruction card and mailing it in the accompanying pre-addressed envelope; or

D. In Person: Attend the Annual Meeting and vote your shares in person.

Whichever of these methods you select to transmit your instructions, the proxy holders will vote your shares in accordance with those instructions.

If you vote by mail, telephone or Internet without giving specific voting instructions, your shares will be voted FOR Proposal One (the election of the four nominees listed herein for the Board) and FOR Proposal Two (the ratification of our independent registered public accounting firm). When proxies are properly dated, executed and returned (whether by returned proxy card, telephone or Internet), the shares represented by such proxies will be voted at the Annual Meeting in accordance with the instructions of the stockholder. However, if no specific instructions are given, the shares will be voted in accordance with the recommendations of our Board and as the proxy holders may determine in their discretion with respect to any other matters that properly come before the meeting.

11. How may I vote if my shares are held in a stock brokerage account, or by a bank or other nominee?

If your shares are held in a stock brokerage account or by a bank or other nominee, you are considered the beneficial owner of shares held "in street name," and your broker or nominee is considered the stockholder of record with respect to those shares. Your broker or nominee should be forwarding these proxy materials to you. As the beneficial owner, you have the right to direct your broker how to vote, and you are also invited to attend the Annual Meeting. However, since you are not the stockholder of record, you may not vote these shares in person at the Annual Meeting. If a broker, bank or other nominee holds your shares, you will receive instructions from them that you must follow in order to have your shares voted.

12. Can I change my vote?

You may change your vote at any time prior to the vote at the Annual Meeting. To change your proxy instructions if you are a stockholder of record, you must:

- Advise our General Counsel in writing at our principal executive offices, before the proxy holders vote your shares, that you wish to revoke your proxy instructions; or
- Deliver proxy instructions dated after your earlier proxy instructions, in any of the voting methods described in the response to Question 10 above.

If you are the beneficial owner of shares held in street name, you should contact the broker, bank or other nominee that holds your shares for instructions regarding how to change your vote.

13. Who will bear the cost of this proxy solicitation?

KLA-Tencor is making this proxy solicitation, and we will pay the entire cost of this solicitation, including preparing, assembling, printing, mailing and distributing the notices and these proxy materials and soliciting votes. We have retained the services of D.F. King & Company to aid in the solicitation of proxies from brokers, bank nominees and other institutional owners. We estimate that we will pay D.F. King fees of approximately \$7,500 (plus reimbursement of out-of-pocket expenses) for this solicitation activity, forwarding solicitation material to beneficial and registered stockholders and

processing the results. Certain of our Directors, officers and regular employees, without additional compensation, may solicit proxies personally or by telephone.

14. Can my broker vote my shares if I do not instruct him or her how I would like my shares voted?

Yes, but only on a limited range of proposals. If your shares are held in a stock brokerage account or by a bank or other nominee, you are considered the "beneficial" owner of shares held "in street name," and these proxy materials are being forwarded to you by your broker or nominee (the "record holder") along with a voting card. As the beneficial owner, you have the right to direct your record holder how to vote your shares, and your record holder is required to vote your shares in accordance with your instructions. Record holders do not have discretion to vote your shares on the election of directors, in the absence of specific instructions from you (the beneficial owner). Therefore, if you do not give instructions to your record holder, the record holder will only be entitled to vote your shares in its discretion on Proposal Two (Ratification of Independent Registered Public Accounting Firm).

15. Are abstentions and broker non-votes counted?

Shares that are voted "FOR," "AGAINST," "WITHHELD" or "ABSTAIN" are treated as being present for purposes of determining the presence of a quorum and are also treated as shares entitled to vote at the Annual Meeting ("Votes Cast").

Since abstentions will be counted for purposes of determining both (i) the presence or absence of a quorum for the transaction of business and (ii) the total number of Votes Cast with respect to a proposal (other than the election of Directors), abstentions will have the same effect as a vote against the proposal (other than the election of Directors).

Shares that are subject to a broker non-vote are counted for purposes of determining whether a quorum exists but not for purposes of determining whether a proposal has passed.

16. How does the Board recommend that I vote? The Board recommends that stockholders vote as follows:

- "FOR" the election of the four Class III Director candidates nominated by our Board: Edward W. Barnholt, Emiko Higashi, Stephen P. Kaufman and Richard P. Wallace; and
- "FOR" the ratification of the appointment of PricewaterhouseCoopers LLP as our independent registered В public accounting firm for the fiscal year ending June 30, 2011.

17. Will any other business be transacted at the **Annual Meeting?**

We are not aware of any matters to be presented other than those described in this Proxy Statement. In the unlikely event that any matters not described in this Proxy Statement are properly presented at the Annual Meeting, the proxy holders will use their own judgment to determine how to vote.

18. What happens if the Annual Meeting is adjourned or postponed?

If the Annual Meeting is adjourned or postponed, the proxy holders can vote your shares on the new meeting date as well, unless you have properly revoked your proxy instructions.

QUESTIONS AND ANSWERS REGARDING STOCKHOLDER PROPOSALS, DIRECTOR NOMINATIONS BY STOCKHOLDERS AND RELATED BYLAW PROVISIONS

from the floor at the Annual Meeting?

19. Can I present other business to be transacted A stockholder may only present a matter from the floor of a meeting of stockholders for consideration at that meeting if certain procedures set forth in our bylaws are followed, including delivery of advance notice by such stockholder to us. We have not received any timely notices with respect to the Annual Meeting regarding the presentation by any stockholders of business from the floor of the meeting. Accordingly, we do not expect to acknowledge any business presented from the floor at the Annual Meeting.

20. What is the deadline to propose actions for consideration at next year's annual meeting of stockholders?

You may submit proposals for consideration at future stockholder meetings. For a stockholder proposal to be considered for inclusion in our proxy statement for the annual meeting next year (which is expected to be held in November 2011), our Corporate Secretary must receive the written proposal at our principal executive offices no later than May 26, 2011. Such proposals also must comply with SEC regulations under Rule 14a-8 regarding the inclusion of stockholder proposals in company-sponsored proxy materials. Proposals should be addressed to:

> Corporate Secretary **KLA-Tencor Corporation** One Technology Drive Milpitas, California 95035 Fax: (408) 875-4144

For a stockholder proposal that is not intended to be included in our proxy statement under Rule 14a-8, the stockholder must provide the information required by our bylaws and give timely notice to our Corporate Secretary in accordance with our bylaws, which, in general, require that the notice be received by our Corporate Secretary:

- Not earlier than the close of business on July 6, 2011, and
- Not later than the close of business on August 5, 2011.

If the date of the stockholders' meeting is moved more than 30 days before or 60 days after November 3, 2011, then notice of a stockholder proposal that is not intended to be included in our proxy statement under Rule 14a-8 must be received no earlier than the close of business 120 days prior to the meeting and not later than the close of business on the later of the following two dates:

- 90 days prior to the meeting; and
- 10 days after public announcement of the meeting date.

21. How may I recommend or nominate individuals to serve as directors?

You may propose director candidates for consideration by the Board's Nominating and Governance Committee. Any such recommendations should include the nominee's name and qualifications for Board membership and should be directed to our Corporate Secretary at the address of our principal executive offices set forth in Question 20 above.

In addition, our bylaws permit stockholders to nominate directors for election at an annual stockholders' meeting. To nominate a director, the stockholder

must deliver the information required by our bylaws and a statement by the nominee acknowledging that he or she will owe a fiduciary obligation to KLA-Tencor and its stockholders. Also, rules recently adopted by the SEC provide certain stockholders with the right to nominate candidates to our Board of Directors in our proxy materials (referred to as "proxy access"), and those rules will be in effect next year for our 2011 annual meeting of stockholders.

22. What is the deadline to propose or nominate individuals to serve as directors?

A stockholder may send a proposed director candidate's name and information to the Board at any time. Generally, such proposed candidates are considered at the first or second Board meeting prior to the annual meeting.

To nominate an individual for election at an annual stockholders' meeting, the stockholder must give timely notice to our Corporate Secretary in accordance with our bylaws, which, for our annual meeting next year, will generally require that the notice be received by our Corporate Secretary between the close of business on July 6, 2011 and the close of business on August 5, 2011, unless the annual meeting is moved by more than 30 days before or 60 days after November 3, 2011, in which case the deadline will be as described in Question 20 above.

As noted above, rules recently adopted by the SEC provide certain stockholders with the right to nominate candidates to our Board of Directors in our proxy materials. Under those rules (which will be in effect next year for our 2011 annual meeting of stockholders), for a director nominee to be considered for inclusion in our proxy statement for the 2011 annual meeting, the nominating stockholder must file a Schedule 14N with the SEC (and provide a copy to us) no earlier than April 26, 2011 and no later than May 26, 2011.

23. How may I obtain a copy of KLA-Tencor's bylaws?

For a free copy of our bylaws, please contact our Investor Relations department at (408) 875-3600. A copy of our bylaws is also available free of charge on the Internet on our website at http://ir.kla-tencor.com and from the SEC's website at http://www.sec.gov.

PROPOSAL ONE: ELECTION OF DIRECTORS

Background

Nominees

We have a classified Board with three classes. At each annual meeting, a class of Directors is elected for a full term of three years to succeed those Directors whose terms expire at the annual meeting. At this Annual Meeting, the terms of the Class III Directors are expiring.

The three incumbent Class I Directors are Robert M. Calderoni, John T. Dickson and Kevin J. Kennedy. The Class I Directors will serve until the annual meeting of stockholders to be held in 2011 or until their respective successors are duly elected and qualified.

The four incumbent Class II Directors are Robert P. Akins, Robert T. Bond, Kiran M. Patel and David C. Wang. The Class II Directors will serve until the annual meeting of stockholders to be held in 2012 or until their respective successors are duly elected and qualified.

The three incumbent Class III Directors are Edward W. Barnholt, Stephen P. Kaufman and Richard P. Wallace. They are up for re-election at the Annual Meeting. Emiko Higashi, who is not an incumbent Director, has also been nominated by the Board for election at the Annual Meeting to serve as a Class III Director.

The term of the three current Class III Directors will expire on the date of the Annual Meeting. The three incumbent Class III Directors and one new Class III Director are nominated for election at the Annual Meeting. The Nominating and Governance Committee, consisting solely of independent Directors as determined under the rules of the NASDAQ Stock Market, recommended the Class III Director nominees as set forth in this Proposal One. Based on that recommendation, the members of the Board resolved to nominate such individuals for election.

The four candidates nominated by the Board for election as Class III Directors by the stockholders are:

- Edward W. Barnholt;
- Emiko Higashi;
- · Stephen P. Kaufman; and
- · Richard P. Wallace.

If elected, the nominees for Class III Directors will serve as Directors until our annual meeting of stockholders in 2013, each until his or her successor is duly elected and qualified. If any nominee declines to serve or becomes unavailable for any reason, or a vacancy occurs before the election, the proxies may be voted for such substitute nominees as the Board may designate. As of the date of this Proxy Statement, the Board is not aware of any nominee who is unable or who will decline to serve as a Director.

Vote Required and Recommendation

If a quorum is present and voting, the four nominees for Class III Directors receiving the highest number of affirmative votes will be elected as Class III Directors. Votes withheld from any Director and broker non-votes are counted

for purposes of determining the presence or absence of a quorum but have no other legal effect on the selection of nominees for Directors. In accordance with our corporate governance policies, anyone who is elected as a Director in any uncontested election by a plurality and not a majority of votes cast will promptly tender his or her resignation to the Board, subject to acceptance, after certification of the election results. The Nominating and Governance Committee will make a recommendation to the Board whether to accept or reject the resignation or take some other appropriate action, taking into account any stated reasons why stockholders withheld votes and any other factors that the Nominating and Governance Committee determines in its sole discretion are relevant to such decision. The Board will in its sole discretion act on the recommendation of the Nominating and Governance Committee within 90 days after the date of certification of the election results. The Director who tenders his or her resignation will not participate in the decisions of the Nominating and Governance Committee or the Board regarding his or her resignation.

THE MEMBERS OF THE BOARD UNANIMOUSLY RECOMMEND A VOTE "FOR" EACH OF THE CLASS III DIRECTOR NOMINEES, WITH THE DIRECTORS WHO ARE NOMINEES ABSTAINING.

The Board of Directors

Board Leadership Structure

INFORMATION ABOUT THE BOARD OF DIRECTORS AND ITS COMMITTEES

Our Board held a total of nine meetings during the fiscal year ended June 30, 2010.

All Directors other than Mr. Wallace meet the definition of independence within the meaning of the NASDAQ Stock Market director independence standards.

The Board has three standing committees: the Audit Committee; the Compensation Committee; and the Nominating and Governance Committee. The Board has determined that each of the members of each of the Committees has no material relationship with the Company (including any relationship that, in the opinion of the Board, would interfere with the exercise of independent judgment as a Director) and is independent within the meaning of the NASDAQ Stock Market director independence standards, including, in the case of the Audit Committee, the heightened "independence" standard required for such Committee members.

Each Committee meets regularly and has a written charter approved by the Board, all of which are available on our website at http://ir.kla-tencor.com. The Board and each Committee regularly review the Committee charters. In addition, at each quarterly Board meeting, a member of each Committee reports on any significant matters addressed by the Committee.

During the fiscal year ended June 30, 2010, each of the incumbent Directors attended at least 85% of the aggregate of (a) the total number of meetings of the Board held during the period for which such person served as a Director and (b) the total number of meetings held by all Committees of the Board on which such Director served (during the periods that such Director served).

Although we do not have a formal policy mandating attendance by members of the Board at our annual meetings of stockholders, we do have a formal policy encouraging their attendance at our annual stockholders' meetings. Nine of the ten members of our Board attended our annual stockholders' meeting held on November 4, 2009.

For more information regarding the responsibilities of our Board Committees, please refer to the various charters which can be found on our corporate governance website located at http://ir.kla-tencor.com.

KLA-Tencor currently separates the positions of Chief Executive Officer and Chairman of the Board. Since October 2006, Mr. Barnholt, one of our independent Directors, has served as our Chairman of the Board. The responsibilities of the Chairman of the Board include: setting the agenda for each Board meeting, in consultation with the Chief Executive Officer; presiding at executive sessions; facilitating and conducting, with the Nominating and Governance Committee, the annual self-assessments by the Board and each standing committee of the Board, including periodic performance reviews of individual directors; and conducting, with the Compensation Committee, a formal evaluation of the Chief Executive Officer and other executive officers in the context of the annual compensation review.

Separating the positions of Chief Executive Officer and Chairman of the Board allows our Chief Executive Officer to focus on our day-to-day business, while allowing the Chairman of the Board to lead the Board in its fundamental role of providing advice to and independent oversight of management. The Board believes that having an independent Director serve as Chairman of the Board is the appropriate leadership structure for the Company at this time.

However, our Corporate Governance Standards permit the roles of the Chairman of the Board and the Chief Executive Officer to be filled by the same or different individuals. This provides the Board with flexibility to determine whether the two roles should be combined in the future based on KLA-Tencor's needs and the Board's assessment of the Company's leadership from time to time. Our Corporate Governance Standards provide that, in the event that the Chairman of the Board is not an independent Director, the independent members of the Board will designate a "lead independent director."

Our Board, as a whole and through its committees, has responsibility for the oversight of risk management. In its oversight role, our Board has the responsibility to satisfy itself that the risk management processes designed and implemented by management are adequate and functioning as designed. The involvement of the Board in working with management to establish our business strategy at least annually is a key part of its oversight of risk management, its assessment of management's appetite for risk and its determination of what constitutes an appropriate level of risk for KLA-Tencor. The Board and its committees regularly receive updates from management (including representatives of our legal and internal audit teams) regarding certain risks that we face, including litigation and various operating risks.

While our Board is ultimately responsible for risk oversight at KLA-Tencor, our Board has delegated to the Audit Committee the primary responsibility for the active oversight of our enterprise risk management activities. Our Audit Committee is not only responsible for overseeing risk management of financial matters, the adequacy of our risk-related internal controls, financial reporting and internal investigations, but its charter also provides that the Committee will discuss at least annually KLA-Tencor's risk assessment, enterprise risk management processes and our major financial exposures, as well as the steps our management has taken to monitor and control those exposures. Our Audit Committee reports its findings and activities to the Board at each quarterly Board meeting.

In addition, our other Board committees each oversee certain aspects of risk management. Our Compensation Committee oversees risks related to our compensation policies and practices, and our Nominating and Governance Committee oversees governance related risks, such as Board independence and conflicts of interest, as well as management and director succession planning. The Committees report their findings and activities to the Board at each quarterly Board meeting.

While the Board is responsible for risk oversight, management is responsible for risk management. KLA-Tencor maintains an effective internal controls

Board's Role in Oversight of Risk

Audit Committee

Compensation Committee

environment and has processes to identify and manage risk, including an Executive Risk Council comprised of representatives from our legal, human resources, finance, internal audit, compliance and operational teams. This council reports to our Chief Executive Officer and has oversight of the various risk assessment, monitoring and controls processes across the Company.

From the beginning of fiscal year 2010 through the date of this Proxy Statement, the Audit Committee has consisted of Messrs. Calderoni, Kaufman, Patel and Wang, with Mr. Calderoni serving as the Chairman of the Committee. Effective November 3, 2010 (the date of the Annual Meeting), in connection with a periodic rotation of committee memberships, Mr. Kaufman will no longer serve as a member of the Audit Committee, and Mr. Bond will be appointed as a member of the Audit Committee.

The Board has determined that, of the current members of the Audit Committee, Messrs. Calderoni and Patel are both "audit committee financial experts" within the meaning of the rules and regulations promulgated by the SEC.

The Audit Committee is responsible for appointing and overseeing the work of our independent registered public accounting firm, approving the services performed by our independent registered public accounting firm, and reviewing and evaluating our accounting principles and system of internal accounting controls. The Audit Committee held seven meetings during the fiscal year ended June 30, 2010.

The Board has determined that each of the members of the Audit Committee: (1) meets the definition of independence within the meaning of NASDAQ's director independence standards, (2) meets the definition of audit committee member independence within the meaning of Rule 10A-3 under the Securities Exchange Act of 1934 and (3) has no material relationship with KLA-Tencor (including any relationship that, in the opinion of the Board, would interfere with the exercise of independent judgment as a Director).

From the beginning of fiscal year 2010 through the date of this Proxy Statement, the Compensation Committee has consisted of Messrs. Akins, Barnholt, Bond, Dickson and Kennedy, with Mr. Kennedy serving as the Chairman of the Committee. Effective November 3, 2010 (the date of the Annual Meeting), in connection with a periodic rotation of committee memberships, Mr. Bond will no longer serve as a member of the Compensation Committee, and Mr. Kaufman, subject to his election at the Annual Meeting, will be appointed as a member of the Compensation Committee.

The Compensation Committee reviews and either approves or recommends to the full Board (depending upon the compensation plan and the executive involved) our executive compensation policy and administers our employee equity award plans. The Compensation Committee also reviews and, except with respect to our Chief Executive Officer and Chairman of the Board, has the authority to approve the cash and equity compensation for our executive officers and for members of the Board. See "Compensation Discussion and Analysis – Compensation Approval Procedures" for more information

concerning the procedures and processes the Compensation Committee follows in setting such compensation and implementing the various cash and equity compensation programs in effect for such individuals, including the retention of an independent compensation consultant to provide relevant market data and advice. The Compensation Committee held eight meetings during the fiscal year ended June 30, 2010.

Risk Considerations in Our Compensation Programs

Our Compensation Committee and management conducted an extensive review of the design and operation of KLA-Tencor's compensation practices, policies and programs for all employees, including the named executive officers, to assess the risks associated with such practices, policies and programs. Based on this review and assessment, we and our Compensation Committee do not believe our compensation program encourages excessive or inappropriate risk-taking for the following reasons:

- Our use of different types of compensation provides a balance of short-term and long-term incentives with fixed and variable components;
- Our equity awards (including performance share awards, to the extent earned) typically vest over a fouryear period, encouraging participants to look to long-term appreciation in equity values;
- The metrics used to determine the amount of a participant's bonus under our incentive bonus plans (and, with respect to executives, the number of shares earnable under their performance share awards) focus on Company-wide metrics such as operating margin percentage, which the Compensation Committee believes encourages the generation of profitable revenue and drives long-term stockholder value;
- Our bonus plans impose caps on bonus awards to limit windfalls;
- Commission-based payments represent a limited component of our historical overall compensation program;
- Our system of internal control over financial reporting, Standards of Business Conduct and whistleblower
 program, among other things, reduce the likelihood of manipulation of our financial performance to
 enhance payments under our performance-based compensation plans; and
- Our insider trading policy provides that our employees may not enter into hedging transactions involving our Common Stock, in an effort to prevent our employees from insulating themselves from the effects of our stock price performance.

Nominating and Governance Committee

At the beginning of fiscal year 2010, the Nominating and Governance Committee consisted of Messrs. Barnholt, Dickson and Kaufman, with Mr. Barnholt serving as the Chairman of the Committee. On August 6, 2009, Mr. Bond was appointed as an additional member of the Nominating and Governance Committee. From August 6, 2009 through the date of this Proxy Statement, the Nominating and Governance Committee has consisted of Messrs. Barnholt, Bond, Dickson and Kaufman, with Mr. Barnholt serving as the Chairman of the Committee.

The Nominating and Governance Committee is primarily responsible for identifying and evaluating the qualifications of all candidates for election to the Board, as well as reviewing corporate governance policies and procedures. The Nominating and Governance Committee held four meetings during the fiscal year ended June 30, 2010.

The Nominating and Governance Committee assesses the appropriate size and composition of the Board, the effectiveness of its leadership structure, and whether any vacancies on the Board are expected. In the event that vacancies are anticipated, or otherwise arise, the Nominating and Governance Committee considers potential candidates that may come to its attention through current members of the Board, professional search firms, management, stockholders or other persons. In evaluating properly submitted stockholder recommendations, the Nominating and Governance Committee uses the evaluation standards discussed in further detail below and seeks to achieve a balance of knowledge, experience and capability on the Board.

It is the Nominating and Governance Committee's policy to consider candidates for the Board recommended by, among other persons, stockholders who have owned one percent (1%) or more of our outstanding shares for at least one year and who state that they have an intent to continue as a substantial stockholder for the long term. Stockholders wishing to nominate candidates for the Board must notify our General Counsel in writing of their intent to do so and provide us with certain information set forth in Article II, Section 11 of our bylaws and all other information regarding nominees that is required to be provided pursuant to Regulation 14A of the Securities Exchange Act of 1934, or as otherwise requested by the Nominating and Governance Committee. In addition, beginning in 2011, stockholders that satisfy applicable ownership requirements and wish to nominate candidates for the Board for inclusion in our proxy materials must file a Schedule 14N with the SEC (and provide a copy to us) containing the information, and within the timeframe, required by the SEC.

Several years ago, we instituted a governance policy applicable to uncontested Director elections, which policy currently remains in effect. Under this policy, anyone who is elected as a Director in any uncontested election by a plurality and not a majority of votes cast will promptly tender his or her resignation to the Board, subject to acceptance, after certification of the election results. The Nominating and Governance Committee will make a recommendation to the Board whether to accept or reject the resignation or take some other appropriate action, taking into account any stated reasons why stockholders withheld votes and any other factors which the Nominating and Governance Committee determines in its sole discretion are relevant to such decision. The Board will in its sole discretion act on the recommendation of the Nominating and Governance Committee within 90 days after the date of certification of the election results. The Director who tenders his or her resignation will not participate in the decisions of the Nominating and Governance Committee or the Board regarding his or her resignation.

Director Qualifications and Diversity

The Board believes that the skill set, backgrounds and qualifications of our Directors, considered as a group, should provide a significant composite mix of diversity in experience, knowledge and abilities that will allow the Board to fulfill its responsibilities. In addition, the Board believes that there are certain attributes that every Director should possess, such as demonstrated business or academic achievements, the highest ethical standards and a strong sense of professionalism. Accordingly, the Board and the Nominating and Governance Committee consider the qualifications of Directors and Director candidates individually and in the broader context of the Board's overall composition and KLA-Tencor's current and future needs.

In considering candidates for Director nomination, including evaluating any recommendations from stockholders as set forth above, the Nominating and Governance Committee only considers candidates who have demonstrated executive experience or significant high level experience in accounting, legal or a technical field or industry applicable to KLA-Tencor. In addition, as set forth in our Corporate Governance Standards, the Nominating and Governance Committee takes into account all factors it considers appropriate when evaluating Director candidates, which may include strength of character, mature judgment, career specialization, diversity and the extent to which the candidate would fill a present need on the Board. With respect to new Board members, it is the standard practice of the Nominating and Governance Committee to engage a third-party recruiting firm to identify a slate of individuals for consideration as Board candidates based on the above-mentioned criteria.

In addition, the Nominating and Governance Committee annually reviews with the Board the appropriate skills and characteristics required of Directors in the context of the current composition of the Board. In seeking a diversity of background, the Nominating and Governance Committee seeks a variety of occupational and personal backgrounds on the Board in order to obtain a range of viewpoints and perspectives. This annual assessment enables the Board to update the skills and experience it seeks in the Board as a whole, and in individual Directors, as KLA-Tencor's needs evolve and change over time.

In evaluating Director candidates, and considering incumbent Directors for renomination to the Board, the Nominating and Governance Committee has considered all of the criteria described above and, for incumbent Directors, past performance on the Board. Among other things, the Nominating and Governance Committee has determined that it is important to have individuals with the following skills and experiences on the Board:

- Current or former executives who demonstrate strong leadership qualities and possess significant operating
 experience that together enable them to contribute practical business advice to the Board and management,
 strategies regarding change and risk management, and valuable insight into developing, implementing and
 assessing our operating plan and business strategy;
- A deep understanding of the key issues relevant to technology companies, including specific knowledge regarding the

- semiconductor industry, which is vital in understanding and reviewing our business goals and challenges, as well as our product development and acquisition strategies;
- Substantial international experience, which is particularly important given our global presence and the international nature of our customer base;
- An understanding of finance and related reporting processes. In the case of members of our Audit Committee, we seek individuals with demonstrated financial expertise with which to evaluate our financial statements and capital structure; and
- Corporate governance experience obtained from service as Board members and/or executives for other
 publicly traded companies, which we believe results in a greater sense of accountability for management
 and the Board and enhanced protection of stockholder interests.

INFORMATION ABOUT THE DIRECTORS AND THE NOMINEES

Our Board and its Nominating and Governance Committee believe that all of the Directors and nominees listed below are highly qualified and have the skills and experience required for service on our Board. The following table sets forth certain information with respect to our Directors and nominees as of the date of this Proxy Statement, including biographies that reflect their significant experiences, qualifications and skills:

Age

67

51

Principal Occupation of Board Members

Nominees for Election as Class III Directors

Edward W. Barnholt

Edward W. Barnholt has been a Director of KLA-Tencor since 1995 and was named Chairman of the Board of KLA-Tencor in October 2006. From March 1999 to March 2005, Mr. Barnholt was President and Chief Executive Officer of Agilent Technologies, Inc., and he was Chairman of the Board of Directors of Agilent from November 2002 to March 2005. In March 2005, Mr. Barnholt retired as the Chairman, President and Chief Executive Officer of Agilent. Before being named Agilent's Chief Executive Officer, Mr. Barnholt served as Executive Vice President and General Manager of Hewlett-Packard Company's Measurement Organization from 1998 to 1999. From 1990 to 1998, he served as General Manager of Hewlett-Packard's Test and Measurement Organization. He was elected Senior Vice President of Hewlett-Packard in 1993 and Executive Vice President in 1996. Mr. Barnholt also currently serves on the Boards of Directors of Adobe Systems Incorporated and eBay Inc., as well as on the Board of Trustees of the Packard Foundation.

As the former President, Chief Executive Officer and Chairman of Agilent, as well as a former senior executive with Hewlett-Packard, Mr. Barnholt possesses significant leadership experience, including on matters particularly relevant to companies with complex technology and international issues. Mr. Barnholt's 15 years of experience as a Board member of KLA-Tencor provide him with an extensive knowledge of our business and industry, and, as a Board member of two other public companies, Mr. Barnholt also has strong corporate governance expertise.

Emiko Higashi

Emiko Higashi, who is not an incumbent Director, has been nominated by the Board for election at the Annual Meeting by the stockholders to become a Class III Director of KLA-Tencor. Ms. Higashi was initially identified by our Chief Executive Officer due to her professional experience, business reputation, financial acumen and overall background. We then engaged a third-party recruiting firm to identify a list of other potential new Directors and to conduct a comprehensive screening process on the candidates, including Ms. Higashi. The Nominating and Governance Committee reviewed the results of that process, conducted interviews, and recommended Ms. Higashi to the full Board as the most appropriate candidate. Following a thorough background review, reference checks and interviews with all of the independent Directors, her nomination was unanimously approved by the Board.

Principal Occupation of Board Members

Age

68

Nominees for Election as Class III Directors

Emiko Higashi (Continued) Ms. Higashi is a founder of Tomon Partners, LLC, a mergers and acquisitions (M&A) and strategy consulting firm, and has served as a managing director of Tomon Partners since its inception in 2003. Prior to Tomon Partners, she was a co-founder and Chief Executive Officer of Gilo Ventures, a technology-focused venture capital firm, from 2000 to 2002. Prior to that, Ms. Higashi spent 15 years in investment banking, including roles as a founding member of Wasserstein Parella and the head of that firm's technology M&A business from 1988 until 1994, as well as a managing director in Merrill Lynch's global technology investment banking M&A practice from 1994 until 2000. Prior to her investment banking career, Ms. Higashi spent two years as a consultant at McKinsey & Co. in Tokyo, Japan.

As a result of her extensive career in technology-focused investment banking and finance, Ms. Higashi brings to the Board significant strategic, business development, M&A and financial experience related to the business and financial issues facing large global technology corporations, as well as a comprehensive understanding of international business matters, particularly in Asia. In addition, as a founder of several consulting and investment advisory firms, Ms. Higashi also possesses significant leadership experience.

Stephen P. Kaufman has been a Director of KLA-Tencor since November 2002. Mr. Kaufman has been a Senior Lecturer at the Harvard Business School since January 2001. He was a member of the Board of Directors of Arrow Electronics, Inc. from 1984 to May 2003. From 1986 to June 2000, he was Chief Executive Officer of Arrow. From 1985 to June 1999, he was also Arrow's President. From 1994 to June 2002, he was Chairman of the Board of Directors of Arrow. Mr. Kaufman also serves on the Board of Directors of Harris Corporation. He previously served on the Boards of Directors of Thermo Fisher Scientific Inc. (July 2007 to May 2010) and Freescale Semiconductor, Inc. (July 2004 to November 2009; publicly traded until December 2006).

As the former President, Chief Executive Officer and Chairman of Arrow Electronics, Mr. Kaufman has extensive leadership experience, as well as familiarity with operational and strategic issues relating to global technology-focused companies, and he also possesses significant experience with business issues as a result of his former executive roles and his current position as a respected lecturer at Harvard Business School. In addition, Mr. Kaufman's service as a Board member of several other public companies in recent years and as a lecturer on issues of Board governance provides Mr. Kaufman with valuable corporate governance expertise.

Stephen P. Kaufman

Principal Occupation of Board Members

Age

50

Nominees for Election as Class III Directors

Richard P. Wallace

Richard (Rick) P. Wallace currently serves as our President and Chief Executive Officer. Mr. Wallace has been a Director and our Chief Executive Officer since January 2006 and has also served as our President since November 2008. He began at KLA Instruments in 1988 as an applications engineer and has held various general management positions throughout his 22 years with us, including positions as President and Chief Operating Officer from July 2005 to December 2005, Executive Vice President of the Customer Group from May 2004 to July 2005, and Executive Vice President of the Wafer Inspection Group from July 2000 to May 2004. He also currently serves as Chairman of the Board of Directors of SEMI and as a member of the Board of Directors of Beckman Coulter, Inc. Earlier in his career, he held positions with Ultratech Stepper and Cypress Semiconductor. He earned his bachelor's degree in electrical engineering from the University of Michigan and his master's degree in engineering management from Santa Clara University, where he also taught strategic marketing and global competitiveness courses after his graduation.

As our President and Chief Executive Officer and a KLA-Tencor employee for over two decades, Mr. Wallace brings to the Board extensive leadership and semiconductor industry experience, including a deep knowledge and understanding of our business, operations and employees, the opportunities and risks faced by KLA-Tencor, and management's strategy and plans for accomplishing our goals. As a member of the Boards of Directors of KLA-Tencor, Beckman Coulter and a significant industry organization, he also has a strong understanding of his role as a Director and a broad perspective on key industry issues and corporate governance matters.

50

Robert M. Calderoni

John T. Dickson

Robert M. Calderoni has been a Director of KLA-Tencor since March 2007. He has served as Chief Executive Officer and a Board member of Ariba, Inc. since October 2001 and as Ariba's Chairman of the Board of Directors since July 2003. From 2001 to 2004, Mr. Calderoni also served as Ariba's President and, before that, as Ariba's Executive Vice President and Chief Financial Officer. From 1997 to 2001, he served as Chief Financial Officer at Avery Dennison Corporation. He is also a member of the Board of Directors of Juniper Networks, Inc.

As the Chief Executive Officer and Chairman of the Board of Ariba, an international technology-focused company, Mr. Calderoni provides our Board with extensive and relevant leadership and operations experience. In addition, Mr. Calderoni is well-qualified to serve as a Board member and as the Chairman of our Audit Committee as a result of his over 20 years of experience as a finance executive, including his past service as the Chief Financial Officer of two publicly traded technology companies. As a Board member of two other public companies, Mr. Calderoni also has familiarity with a range of corporate governance issues.

John T. Dickson has been a Director of KLA-Tencor since May 2007. Mr. Dickson currently serves as Chief Operating Officer of Alcatel-Lucent, a position he has held since May 2010. Mr. Dickson is the former President and Chief Executive Officer of Agere Systems, Inc., a position he held from August 2000 until October 2005, and he also served as a Board member of Agere from March 2001 until October 2005. Prior to joining Agere, Mr. Dickson held positions as the Executive Vice President and Chief Executive Officer of Lucent's Microelectronics and Communications Technologies Group; Vice President of AT&T Corporation's integrated circuit business unit; Chairman and Chief Executive Officer of Shographics, Inc.; and President and Chief Executive Officer of Headland Technology Inc. Mr. Dickson is currently a member of the Boards of Directors of National Semiconductor Corporation and Frontier Silicon, Ltd. He also previously served on the Board of Directors of Mettler-Toledo International Inc. from March 2001 to April 2009.

As a result of his current executive position at Alcatel-Lucent, as well as his former positions as a senior executive at global technology organizations such as Agere, Lucent and the integrated circuit business unit of AT&T, Mr. Dickson provides the Board with significant leadership, operations and technology experience, including extensive knowledge of the semiconductor industry. Also, from his service as a Board member with other companies, including as a current director of two other publicly traded semiconductor companies, Mr. Dickson offers a broad understanding of the role and responsibilities of the Board and valuable insight on a number of significant industry issues.

Principal Occupation of Board Members

Age

54

Class I Directors

Kevin J. Kennedy

Kevin J. Kennedy has been a Director of KLA-Tencor since May 2007. Mr. Kennedy is President and Chief Executive Officer of Avaya Inc., a leading global provider of business communications applications, systems and services. Prior to joining Avaya in January 2009, Mr. Kennedy was President and Chief Executive Officer of JDS Uniphase Corporation, a position he held since September 2003. From 2001 to 2003, he served as Chief Operating Officer of Openwave Systems, Inc. Previously, Mr. Kennedy spent nearly eight years at Cisco Systems, Inc. and 17 years at Bell Laboratories. In 1987, Mr. Kennedy was a Congressional Fellow to the U.S. House of Representatives Committee on Science, Space and Technology. Mr. Kennedy is also a member of the Board of Directors of JDS Uniphase. He also previously served on the Boards of Directors of Rambus, Inc. (April 2003 to May 2008) and Freescale Semiconductor, Inc. (July 2004 to November 2006).

As the current President and Chief Executive Officer of Avaya and a former senior executive at JDS Uniphase and Openwave, Mr. Kennedy possesses a vast amount of leadership and operational experience with companies in high technology industries. Also, as the holder of a Ph.D. degree in engineering from Rutgers University, a former Congressional Fellow to the U.S. House of Representatives Committee on Science, Space and Technology, and the author of more than 30 papers on computational methods, data networking and technology management, Mr. Kennedy offers relevant expertise in a broad range of technology issues. In addition, as a result of his experience on the Boards of Directors of several public companies, Mr. Kennedy offers our Board a deep understanding of corporate governance matters

59

67

62

Class II Directors

Robert P. Akins

Robert T. Bond

Kiran M. Patel

Robert P. Akins has been a Director of KLA-Tencor since May 2008. Mr. Akins is a co-founder of Cymer, Inc. and has served as Cymer's Chairman and Chief Executive Officer since its inception in 1986. Cymer is a leading supplier of excimer light sources for deep ultraviolet photolithography systems used in the semiconductor manufacturing process. Mr. Akins also served as Cymer's President from its inception until May 2000. He is an ex-officio member of the Board of Directors of SEMI (Semiconductor Equipment and Materials International).

As a co-founder of Cymer and the Chairman and Chief Executive Officer of that company for nearly 25 years, Mr. Akins offers our Board vast executive leadership, operations, entrepreneurial and semiconductor industry experience. In addition, through his role with SEMI (a prominent industry organization), he also offers our Board a broad perspective on key industry issues and challenges.

Robert T. Bond has been a Director of KLA-Tencor since August 2000. From April 1996 to January 1998, Mr. Bond served as Chief Operating Officer of Rational Software Corporation. Prior to that, he held various executive positions at Rational Software. Mr. Bond was employed by Hewlett-Packard Company from 1967 to 1983 and held various management positions during his tenure there. Mr. Bond served as a member of the Board of Directors of Portal Software, Inc. from August 2004 to July 2006.

As the former Chief Operating Officer of Rational Software and a member of management at Hewlett-Packard, Mr. Bond has significant operations and corporate management experience dealing with complex issues faced by global technology companies, including managing international operations, mergers and acquisitions, marketing, sales, product development and finance. In addition, as the former Chief Financial Officer of Rational Software, Mr. Bond possesses an extensive understanding of finance matters and corporate capital structure.

Kiran M. Patel has been a Director of KLA-Tencor since May 2008. Mr. Patel serves as Executive Vice President and General Manager, Small Business Group of Intuit Inc., a provider of personal finance and small business software, a position he has held since June 2007. Mr. Patel previously served as Intuit's Senior Vice President and General Manager, Consumer Tax Group and as its Senior Vice President and Chief Financial Officer. Before joining Intuit in September 2005, he was Executive Vice President and Chief Financial Officer of Solectron Corporation from August 2001 to September 2005. He previously worked for Cummins Inc. for 27 years in a variety of finance and business positions, most recently as Chief Financial Officer and Executive Vice President. Mr. Patel also previously served as a member of the Boards of Directors of BEA Systems, Inc. (February 2007 to April 2008), Eaton, Inc. (April 2003 to April 2006) and Westport, Inc. (October 2001 to September 2005).

Principal Occupation of Board Members

Age

66

Class II Directors

Kiran M. Patel (Continued)

David C. Wang

As a current senior officer of Intuit and a former executive at several other companies, Mr. Patel possesses significant international operating and leadership skills, including extensive experience in global sourcing, sales and other business management aspects within manufacturing and technology industries, often involving living and managing businesses overseas. In addition, as a result of his past service as the Chief Financial Officer of several global organizations, including Intuit, Solectron and Cummins, Mr. Patel offers a vast understanding of critical finance matters, which enable him to make significant contributions as a member of our Board and its Audit Committee.

David C. Wang has been a Director of KLA-Tencor since May 2006. Mr. Wang has served as President of Boeing-China and Vice President of International Relations of The Boeing Company since 2002. Prior to joining Boeing, he spent 22 years at General Electric Company ("GE"), where he worked in various capacities, including most recently as Chairman and Chief Executive Officer of GE China. In addition, Mr. Wang served in executive positions with GE in Singapore, Malaysia and Mexico. Prior to joining GE, Mr. Wang held various engineering positions at Emerson Electric Co. He currently resides in Beijing and also serves on the Board of Directors of Terex Corporation, as well as a number of non-profit boards, including the Beijing International MBA Program Advisory Board at Beijing University and Junior Achievement China. Mr. Wang previously served as a member of the Board of Directors of Linktone Ltd. from February 2004 to May 2007.

As the current President of Boeing-China and Vice President, International Relations of The Boeing Company and a former executive in several international locations for GE, Mr. Wang offers significant leadership experience, as well as an extensive knowledge of key business issues in the international locations of some of our most significant customers. With over 30 years of operational experience, primarily in Asia, Mr. Wang offers our Board a deep understanding of growth and competitive issues within changing markets, as well as the challenges involved in building competitive businesses in multi-cultural environments.

PROPOSAL TWO:
RATIFICATION OF APPOINTMENT OF
PRICEWATERHOUSECOOPERS LLP AS OUR
INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM
FOR THE FISCAL YEAR ENDING JUNE 30, 2011

Audit Committee Recommendation

The Audit Committee has the sole authority to retain or dismiss our independent auditors. The Audit Committee has selected PricewaterhouseCoopers LLP, an independent registered public accounting firm, to audit our consolidated financial statements for our fiscal year ending June 30, 2011. Before making its determination, the Audit Committee carefully considered that firm's qualifications as independent auditors.

The Board, following the Audit Committee's determination, unanimously recommends that the stockholders vote for ratification of such appointment.

Although ratification by stockholders is not required by law, the Board has determined that it is desirable to request approval of this selection by the stockholders. If the stockholders do not ratify the appointment of PricewaterhouseCoopers LLP, the Audit Committee may reconsider its selection.

Attendance at the Annual Meeting

Representatives of PricewaterhouseCoopers LLP are expected to be present at the Annual Meeting with the opportunity to make a statement if they desire to do so, and are expected to be available to respond to appropriate questions.

·

Fees

The aggregate fees billed by PricewaterhouseCoopers LLP, KLA-Tencor's independent registered public accounting firm, in fiscal years 2010 and 2009 were as follows:

Services Rendered/Fees	2010			2009		
Audit Fees (1)	\$	1,882,691	\$	2,386,810		
Audit-Related Fees		_		_		
Total Audit and Audit-Related Fees	\$	1,882,691	\$	2,386,810		
Tax Compliance	\$	510,878	\$	362,509		
Tax Planning and Consulting	\$	85,875	\$	295,699		
Total Tax Fees (2)	\$	596,753	\$	658,208		
All Other Fees (3)	\$	4,260		_		

- (1) Represents professional services rendered for the audits of annual financial statements set forth in our Annual Reports on Form 10-K for fiscal years 2010 and 2009, the review of quarterly financial statements included in our Quarterly Reports on Form 10-Q for fiscal years 2010 and 2009, and fees for services related to statutory and regulatory filings or engagements.
- (2) Represents tax services for U.S. and foreign tax compliance, planning and consulting.
- (3) Represents fees (if any) for services other than those described above, such as software license fees.

Pre-Approval Policies and Procedures

The Audit Committee has adopted a policy regarding non-audit services provided by PricewaterhouseCoopers LLP, our independent registered public accounting firm. First, the policy ensures the independence of our auditors by expressly naming all services that the auditors may not perform and reinforcing the principle of independence regardless of the type of service. Second, certain non-audit services such as tax-related services and acquisition

advisory services are permitted but limited in proportion to the audit fees paid. Third, the Chair of the Audit Committee preapproves non-audit services not specifically permitted under this policy, and the Audit Committee reviews the annual plan and any subsequent engagements. All non-audit fees were approved by the Audit Committee pursuant to its pre-approval policies and procedures.

On a quarterly basis, management provides written updates to the Audit Committee with regard to audit and non-audit services, the amount of audit and non-audit service fees incurred to date, and the estimated cost to complete such services.

Independence Assessment by Audit Committee

Our Audit Committee considered and determined that the provision of the services provided by PricewaterhouseCoopers LLP as set forth herein is compatible with maintaining PricewaterhouseCoopers LLP's independence and approved all non-audit related fees and services.

Vote Required and Recommendation

If a quorum is present and voting, the affirmative vote of the majority of Votes Cast is needed to ratify the appointment of PricewaterhouseCoopers LLP as our independent registered public accounting firm, to audit our consolidated financial statements for our fiscal year ending June 30, 2011.

THE BOARD UNANIMOUSLY RECOMMENDS A VOTE "FOR" THE RATIFICATION OF THE APPOINTMENT OF PRICEWATERHOUSECOOPERS LLP AS OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE FISCAL YEAR ENDING JUNE 30, 2011.

OUR CORPORATE GOVERNANCE PRACTICES

At KLA-Tencor, we believe that strong and effective corporate governance procedures and practices are an extremely important part of our corporate culture. In that spirit, we have summarized several of our corporate governance practices below.

Adopting and Maintaining Governance Standards

The Board has adopted, and regularly reviews and updates as necessary, a set of corporate governance standards to establish a framework within which it will conduct its business and to guide management in its running of the Company. The governance standards, portions of which are summarized below, can be found on our website at http://ir.kla-tencor.com.

Monitoring Board Effectiveness

It is important that our Board and its Committees are performing effectively and in the best interests of KLA-Tencor and our stockholders. The Board is responsible for annually assessing its effectiveness and the effectiveness of each of its Committees in fulfilling their respective obligations, and each Committee is responsible for reviewing the Board's assessment of that Committee's effectiveness. In addition, our Nominating and Governance Committee is charged with overseeing an annual review of the Board and its membership.

Conducting Formal Independent Director Sessions

At the conclusion of each regularly scheduled Board meeting, the independent Directors meet in executive session without KLA-Tencor management or any non-independent Directors.

Hiring Outside Advisors

The Board and each of its Committees may retain outside advisors and consultants of their choosing at our expense, without management's consent.

Avoiding Conflicts of Interest

We expect our Directors, executives and employees to conduct themselves with the highest degree of integrity, ethics and honesty. Our credibility and reputation depend upon the good judgment, ethical standards and personal integrity of each Director, executive and employee. In order to provide assurances internally and to our stockholders, we have implemented Standards of Business Conduct which provide clear conflict of interest guidelines to our employees, as well as an explanation of reporting and investigatory procedures.

Providing Transparency

We believe it is important that stockholders understand our governance practices. In order to help ensure transparency of our practices, we have posted information regarding our corporate governance procedures on our website at http://ir.kla-tencor.com.

Communications with the Board

Although we do not have a formal policy regarding communications with the Board, stockholders may communicate with the Board by writing to us at KLA-Tencor Corporation, Attention: Investor Relations, One Technology Drive, Milpitas, California 95035. Stockholders who would like their submission directed to a member of the Board may so specify, and the communication will be forwarded, as appropriate.

Standards of Business Conduct; Whistleblower **Hotline and Website**

The Board has adopted Standards of Business Conduct for all of our employees and Directors, including our principal executive and senior financial officers, and we have prepared and made available versions of our Standards of Business Conduct translated into French, Japanese, Korean and Chinese (Simplified and Traditional) in an effort to maximize the accessibility and understandability of these important guidelines to our employees. You can obtain a copy of our Standards of Business Conduct via our website at http://ir.kla-tencor.com, or by making a written request to us at KLA-Tencor Corporation, Attention: Investor Relations, One Technology Drive, Milpitas, California 95035. We will disclose any amendments to the Standards of Business Conduct, or waiver of a provision therefrom, on our website at the same address.

In addition, we have established a hotline and website for use by employees, as well as third parties such as vendors and customers, to report actual or suspected wrongdoing and to answer questions about business conduct. The hotline and website are both operated by an independent third party, which provides tools to enable individuals to submit reports in a number of different languages and on an anonymous basis.

Ensuring Auditor Independence

KLA-Tencor has taken a number of steps to ensure the continued independence of our outside auditors. Our independent auditors report directly to the Audit Committee, which also has the ability to pre-approve or reject any non-audit services proposed to be conducted by our outside auditors.

Participation

Compensation Committee Interlocks and Insider The Compensation Committee currently consists of Messrs. Kennedy (Chair), Akins, Barnholt, Bond and Dickson. None of these individuals was an officer or employee of KLA-Tencor at any time during fiscal year 2010 or at any other time. During fiscal year 2010, there was no instance where an executive officer of KLA-Tencor served as a member of the Board or compensation committee of any entity and an executive officer of that entity served on our Board or Compensation Committee.

Stockholder Nominations to the Board

Please see "ABOUT THE BOARD OF DIRECTORS AND ITS COMMITTEES - Nominating and Governance Committee."

Majority Voting Policy

Please see "PROPOSAL ONE: ELECTION OF DIRECTORS - Vote Required and Recommendation."

DIRECTOR COMPENSATION

Employee Directors

Members of the Board who are employees of the Company do not receive any additional compensation for their services as Directors

Outside Directors

Non-employee members of the Board ("Outside Directors") receive a combination of equity and cash compensation as approved by the Compensation Committee (or, in the case of the compensation of the Chairman of the Board, as recommended by the Compensation Committee and approved by the Board). Equity compensation to Outside Directors is provided under our 2004 Equity Plan and, to the extent consisting of stock options, may also be provided under our 1998 Outside Director Option Plan, both of which plans were approved by our stockholders.

Outside Director Restricted Stock Unit Awards

In accordance with our current practice, each Outside Director was awarded restricted stock units at the November 4, 2009 Annual Meeting of Stockholders covering shares of our Common Stock with an aggregate fair market value of \$100,000 based on the market closing price of our Common Stock on the date of the award (\$31.77 per share). Accordingly, each Outside Director at that time received a restricted stock unit award covering 3,148 shares of Common Stock (other than the Chairman of the Board, who received 1.5 times that number as described below). The restricted stock units awarded to the Outside Directors at the November 4, 2009 Annual Meeting of Stockholders were made with respect to their Board service for fiscal year 2010. The restricted stock units will vest upon completion of one year of Board service measured from the date of grant, and the underlying shares will be issued immediately at that time. This policy will also be in effect with respect to the Annual Meeting.

If a new Outside Director joins the Board after the date of an annual stockholders' meeting, his or her first restricted stock unit award will be granted promptly after he or she joins the Board and will be prorated to take into account the period of time from the last annual stockholders' meeting to the date the new Outside Director joined the Board.

For fiscal year 2010, each Outside Director received an annual retainer fee of \$75,000 (other than the Chairman of the Board, who received two times that amount as described below), paid quarterly, and meeting fees of \$2,500 for each Board meeting attended in person, \$1,250 for each Board meeting attended by telephone conference call, \$1,500 for each Committee meeting attended in person, and \$750 for each Committee meeting attended by telephone conference call. Each Committee Chair also received an additional annual retainer. For fiscal year 2010, the additional annual retainer paid to the Chairman of the Audit Committee was \$30,000, the additional annual retainer paid to the Chairman of the Compensation Committee was \$20,000, and the additional annual retainer paid to the Chairman of the Nominating and Governance Committee was \$10,000. Outside Directors also are reimbursed for their reasonable expenses incurred in attending Board and Committee meetings.

The cash compensation component of the Outside Director compensation program will continue to remain in effect unchanged for fiscal year 2011.

Outside Director Stock Options

Non-Executive Chairman

Deferred Compensation

Stock Ownership Guidelines

Effective November 15, 2007, Outside Directors no longer receive stock options as a component of their compensation. Accordingly, we did not issue any stock options to the Outside Directors during fiscal year 2010.

For fiscal year 2010, our policy was that, if the Chairman of the Board was not an executive of the Company (as was the case, with Mr. Barnholt serving as Chairman), the Chairman's annual retainer fee would be two times the regular level for Outside Directors, and the Chairman's equity awards would be 1.5 times the regular level for Outside Directors. This policy will continue to remain in effect for fiscal year 2011.

Each Outside Director is entitled to defer all or a portion of his or her director fees, pursuant to our Executive Deferred Savings Plan, a nonqualified deferred compensation plan. Amounts credited to the plan may be allocated by the participant among 23 investment funds. Of the current Outside Directors, only Messrs. Barnholt, Bond, Patel and Wang participated in this plan during fiscal year 2010 (with only Messrs. Patel and Wang making new contributions during the fiscal year).

We have adopted a policy, approved by the Board, pursuant to which each Outside Director is expected to own a specified minimum number of shares of our Common Stock. By the later of (a) November 13, 2012 or (b) the fourth anniversary of the date on which an individual becomes an Outside Director, each Outside Director is expected to own at least a number of shares of our Common Stock with a market value of at least three (3) times the standard annual cash retainer paid to the Outside Directors, as that retainer may be changed from time to time. Shares of Common Stock underlying unvested restricted stock units held by the Directors will count toward this ownership requirement. As of the Record Date, each of our current Outside Directors was in compliance with this stock ownership requirement.

Director Compensation Table

The following table sets forth certain information regarding the compensation earned by or awarded to each Outside Director during fiscal year 2010 who served on our Board during the year.

Name	Fees Earned or Paid in Cash (\$) (1)	Stock Awards (\$) (2)	Option Awards (\$) (3)	Change in Pension Value and Nonqualified Deferred Compensation Earnings (\$)	Total (\$)
Robert P. Akins	96,250	100,012			196,262
Edward W. Barnholt	188,500	149,986	_	109,143(4)	447,629
Robert T. Bond	102,750	100,012	_	25,543(4)	228,305
Robert M. Calderoni	135,000	100,012	_	_	235,012
John T. Dickson	113,750	100,012	_	_	213,762
Stephen P. Kaufman	95,250	100,012	_	_	195,262
Kevin J. Kennedy	123,500	100,012	_	_	223,512
Kiran M. Patel	96,750	100,012	_	5,099(4)	201,861
David C. Wang	96,000	100,012	_	7(4)	196,019

⁽¹⁾ The amounts set forth in this column represent fees earned by each Outside Director during fiscal year 2010, regardless of whether the fees were actually paid during the fiscal year. The aggregate payment amounts include the following categories of payments:

Name	Annual Retainer (\$)	Board Meeting Fees (\$)	Committee Meeting Fees (\$)	Non-Executive Chairman of the Board— Additional Retainer (\$)	Committee Chairperson— Additional Retainer (\$)	Litigation Committee Compensation (\$)	Total (\$)
Robert P. Akins	75,000	13,750	7,500				96,250
Edward W. Barnholt	75,000	15,000	13,500	75,000	10,000	_	188,500
Robert T. Bond	75,000	15,000	12,750	_	_	_	102,750
Robert M. Calderoni	75,000	16,250	7,000	_	30,000	6,750	135,000
John T. Dickson	75,000	16,250	14,250	_	_	8,250	113,750
Stephen P. Kaufman	75,000	11,250	9,000	_	_	_	95,250
Kevin J. Kennedy	75,000	15,000	6,750	_	20,000	6,750	123,500
Kiran M. Patel	75,000	15,000	6,750	_	_	_	96,750
David C. Wang	75,000	15,000	6,000	_	_	_	96,000

(2) The amounts shown represent the aggregate grant date fair value of RSUs awarded to each Outside Director during fiscal year 2010, computed in accordance with the provisions of Financial Accounting Standards Board ("FASB") Accounting Standards Codification Topic 718, referred to in this Proxy Statement as ASC 718 (except that the fair values set forth above have not been reduced by the Company's estimated forfeiture rate). The ASC 718 grant date fair value of each RSU award was calculated based on the fair market value of our Common Stock on the award date. On November 4, 2009, each Outside Director was granted an RSU award covering 3,148 shares of our Common Stock (other than Mr. Barnholt who, as Chairman of the Board, received an RSU award covering 1.5 times that number of shares, or 4,721 shares, as described above under the heading "Non-Executive Chairman"). The closing market price of our Common Stock on November 4, 2009 was \$31.77 per share. The following table shows, for each Outside Director, the aggregate number of unvested shares of our Common Stock underlying all outstanding RSUs held by that Outside Director as of June 30, 2010:

Name	Aggregate Number of Unvested Shares of Common Stock Underlying All of Director's RSU Awards as of June 30, 2010 (#)
Robert P. Akins	3,148
Edward W. Barnholt	4,721
Robert T. Bond	3,148
Robert M. Calderoni	3,148
John T. Dickson	3,148
Stephen P. Kaufman	3,148
Kevin J. Kennedy	3,148
Kiran M. Patel	3,148
David C. Wang	3,148

(3) No stock options were granted to any of the Outside Directors during the 2010 fiscal year. The following table shows, for each Outside Director, the aggregate number of shares subject to all outstanding options held by that Outside Director as of June 30, 2010:

Name	Number of Shares Subject to All Outstanding Options Held as of June 30, 2010 (#)
Robert P. Akins	_
Edward W. Barnholt	63,750
Robert T. Bond	61,250
Robert M. Calderoni	3,750
John T. Dickson	2,500
Stephen P. Kaufman	41,250
Kevin J. Kennedy	2,500
Kiran M. Patel	_
David C. Wang	6,250

(4) Represents investment earnings during fiscal year 2010 on the applicable Outside Director's nonqualified deferred compensation account. The earnings correspond to the actual market earnings on a select group of investment funds utilized to track the notional investment return on the director's account balance for fiscal year 2010. We have not made any determination as to which portion of such earnings may be considered "above market" for purposes of this Director Compensation Table and have elected to report the entire amount of such earnings.

INFORMATION ABOUT EXECUTIVE OFFICERS

Set forth below are the names, ages and positions of the executive officers of KLA-Tencor as of the date of this Proxy Statement.

Name and Position
Richard P. Wallace
President & Chief Executive Officer

Principal Occupation of the Executive Officers

Please see "INFORMATION ABOUT THE DIRECTORS AND THE NOMINEES – Nominees for Election as Class III Directors."

52

48

Mark P. Dentinger Executive Vice President & Chief Financial Officer Mark P. Dentinger joined KLA-Tencor in September 2008 as the Company's Executive Vice President and Chief Financial Officer. Prior to joining KLA-Tencor, from February 2005 to April 2008, Mr. Dentinger most recently served as Executive Vice President and Chief Financial Officer for BEA Systems, Inc., until the company was acquired by Oracle Corporation. Mr. Dentinger was with BEA Systems for a total of nine years, during which he held various senior financial and managerial roles within the company. Prior to joining BEA Systems, Mr. Dentinger served in various financial management positions at Compaq Computer Corporation (now Hewlett-Packard) for six years, culminating in his appointment as Director of Finance, High Performance Systems Manufacturing in 1996. Mr. Dentinger received his bachelor's degree in economics from St. Mary's College of California and his M.B.A. in finance from the University of California at Berkeley.

Brian M. Martin Senior Vice President, General Counsel & Corporate Secretary Brian M. Martin joined KLA-Tencor in April 2007 as the Company's Senior Vice President, General Counsel and Corporate Secretary. Prior to joining KLA-Tencor, Mr. Martin served in senior legal positions at Sun Microsystems, Inc. for ten years, most recently as Vice President, Corporate Law Group, responsible for legal requirements associated with Sun's corporate securities, mergers, acquisitions and alliances, corporate governance and Sarbanes-Oxley compliance, and litigation management. Mr. Martin also supported Sun's worldwide sales activities and for several years served as its chief antitrust counsel. Prior to joining Sun, Mr. Martin was in private practice where he had extensive experience in antitrust and intellectual property litigation. Mr. Martin earned his bachelor's degree in economics from the University of Rochester and his J.D. from the State University of New York at Buffalo Law School. Mr. Martin serves as an adjunct professor of law at SUNY Buffalo Law School where he designed and teaches a course on ethics.

Name and Position

Bobby R. Bell
Executive Vice President, Global Customer
Organization

Principal Occupation of the Executive Officers

Age

Bobby R. Bell currently serves as KLA-Tencor's Executive Vice President, Global Customer Organization, a title he has held since September 2008. In that role, Mr. Bell oversees the Company's global field operations, corporate sales, corporate marketing and service business. Mr. Bell joined KLA Instruments in 1994 as a Senior Engineer in applications development and has held a number of strategic management positions throughout his 16 years with the Company. He has been a key member of the Company's Customer Group since 2004, including his current position and prior roles leading Asia and then worldwide sales and field operations. Before that, he served as a Vice President in the Company's Wafer Inspection group from 2000 to 2004 and in various marketing roles from 1995 to 2000. Prior to joining the Company, Mr. Bell spent 10 years with AT&T Technology Systems and AT&T Microelectronics (including 18 months as AT&T's assignee at SEMATECH, a prominent semiconductor industry consortium) in the area of yield, defect reduction, process integration, product engineering and management. Mr. Bell earned his bachelor's degree in electrical engineering from the University of Arkansas and his master's degree in electrical engineering from the University of Missouri.

Virendra A. Kirloskar Senior Vice President & Chief Accounting Officer Virendra A. Kirloskar has served as the Company's Senior Vice President and Chief Accounting Officer since March 2008. Mr. Kirloskar rejoined the Company as Vice President and Corporate Controller in May 2003 and served in that role until March 2008, other than the period from August 2006 to August 2007 during which he held management responsibilities within KLA-Tencor India. Prior to that, from June 2002 to April 2003, Mr. Kirloskar served as Corporate Controller of Atmel Corporation, a designer and manufacturer of semiconductor integrated circuits. Mr. Kirloskar also held various finance positions within KLA-Tencor from 1993 to 1999. Mr. Kirloskar received his bachelor's degree in commerce from the University of Pune, India and his master's degree in business administration from the University of Massachusetts Amherst.

46

Principal Stockholders

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

As of September 14, 2010, based on our review of filings made with the SEC, we are aware of the following entities being beneficial owners of more than 5% of our Common Stock:

Name and Address	Number of Shares Beneficially Owned	Percent of Shares Beneficially Owned (1)
Capital Research Global Investors (2) 333 South Hope Street Los Angeles, CA 90071	16,321,550	9.8%
Capital World Investors (3) 333 South Hope Street Los Angeles, CA 90071	13,946,418	8.4%
The Growth Fund of America, Inc. (4) 333 South Hope Street Los Angeles, CA 90071	12,940,000	7.8%
Janus Capital Management LLC (5) 151 Detroit Street Denver, CO 80206	12,600,944	7.6%
FMR LLC (6) 82 Devonshire Street Boston, MA 02109	11,576,298	6.9%
AXA Financial, Inc. and affiliates (7) 1290 Avenue of the Americas New York, NY 10104	10,140,496	6.1%
BlackRock, Inc. (8) 40 East 52 nd Street New York, NY 10022	9,219,928	5.5%

- Based on 166,770,498 outstanding shares of our Common Stock as of September 14, 2010.

 All information regarding Capital Research Global Investors ("CRGI") is based solely on information disclosed in an Amendment to Schedule 13G filed by CRGI with the SEC on February 9, 2010. CRGI, a division of Capital Research and Management Company, is deemed to beneficially own 16,321,550 shares of our Common Stock as a result of Capital Research and Management Company acting as investment adviser to various investment companies. According to the Schedule 13G/A filing, of the 16,321,550 shares of our Common Stock reported as beneficially owned by CRGI as of December 31, 2009, CRGI had sole voting power with respect to 2,754,000 shares, had shared voting power with respect to 340,650 shares, and had sole dispositive power with respect to all 16,321,550 shares of our Common Stock reported as beneficially owned by CRGI as of that date.
- All information regarding Capital World Investors ("Capital World") is based solely on information disclosed in an Amendment to Schedule 13G filed by Capital World with the SEC on February 11, 2010. Capital World, a division of Capital Research and Management Company, is deemed to beneficially own 13,946,418 shares of our Common Stock as a result of Capital Research and Management Company acting as investment adviser to various investment companies. According to the Schedule 13G/A filing, of the 13,946,418 shares of our Common Stock reported as beneficially owned by Capital World as of December 31, 2009, Capital World had sole voting power with respect to 6,231,918 shares, did not have shared voting power with respect to any other shares, and had sole dispositive power with respect to all 13,946,418 shares of our Common Stock reported as beneficially owned by Capital World as of that date.
- All information regarding The Growth Fund of America, Inc. ("The Growth Fund") is based solely on information disclosed in an Amendment to Schedule 13G filed by The Growth Fund with the SEC on February 12, 2010. The Growth Fund, an investment company

- registered under the Investment Company Act of 1940 that is advised by Capital Research and Management Company, is the beneficial owner of 12,940,000 shares of our Common Stock. According to the Schedule 13G/A filing, of the 12,940,000 shares of our Common Stock reported as beneficially owned by The Growth Fund as of December 31, 2009, The Growth Fund had sole voting power with respect to all 12,940,000 shares but did not have sole or shared dispositive power with respect to any of the shares of our Common Stock reported as beneficially owned by The Growth Fund as of that date.
- (5) All information regarding Janus Capital Management LLC ("Janus Capital") is based solely on information disclosed in an Amendment to Schedule 13G filed by Janus Capital with the SEC on February 16, 2010. Janus Capital reported its direct ownership of a 91.8% stake in INTECH Investment Management ("INTECH") and a 77.8% stake in Perkins Investment Management LLC ("Perkins"). Janus Capital, INTECH and Perkins are registered investment advisers furnishing investment advice to various investment companies and to individual and institutional clients, and their beneficial holdings are aggregated for purposes of the shares reported in the table above. According to the Schedule 13G/A filing, Janus Capital reported that, as of December 31, 2009, it had sole voting and dispositive power with respect to 10,277,897 shares of our Common Stock (shares for which Janus Capital may be deemed to be the beneficial owner) and had shared voting and dispositive power with respect to the remaining 2,323,047 shares of our Common Stock (shares for which INTECH may be deemed to be the beneficial owner).
- All information regarding FMR LLC ("FMR") is based solely on information disclosed in an Amendment to Schedule 13G filed by FMR LLC and (6) Edward C. Johnson 3d, Chairman of FMR, with the SEC on August 10, 2010. According to the Schedule 13G/A, the 11,576,298 shares of our Common Stock reported by FMR are owned, or may be deemed to be owned, by FMR as of December 31, 2009. Fidelity Management & Research Company ("Fidelity"), a wholly owned subsidiary of FMR, is the beneficial owner of 7,232,486 shares as a result of acting as investment adviser to various investment companies. Edward C. Johnson 3d and FMR, through its control of Fidelity and the Fidelity funds ("Funds"), each has sole dispositive power over the 7,232,486 shares owned by the Funds. Neither FMR nor Edward C. Johnson 3d has sole voting power over the shares owned directly by the Funds, which power resides with the Funds' Boards of Trustees. Fidelity carries out the voting of the shares under written guidelines established by the Funds' Boards of Trustees. Strategic Advisers, Inc., a wholly owned subsidiary of FMR, is the beneficial owner of 536 shares as a result of providing investment advisory services to individuals. Pyramis Global Advisors, LLC ("PGALLC"), an indirect wholly owned subsidiary of FMR and an investment adviser, is the beneficial owner of 259,010 shares as a result of serving as an investment adviser to institutional accounts, non-U.S. mutual funds or investment companies registered under the Investment Company Act of 1940 owning such shares. Edward C. Johnson 3d and FMR, through its control of PGALLC, each has sole dispositive power and sole voting power over the 259,010 shares owned by the institutional accounts or funds advised by PGALLC. Pyramis Global Advisors Trust Company ("PGATC"), an indirect wholly owned subsidiary of FMR and a bank, is the beneficial owner of 96,762 shares as a result of serving as investment manager of institutional accounts owning such shares. Edward C. Johnson 3d and FMR, through its $control \ of \ PGATC, each \ has sole \ dispositive \ power \ and \ sole \ voting \ power \ over \ the \ 96,762 \ shares \ owned \ by \ the \ institutional \ accounts \ managed \ by$ PGATC. FIL Limited ("FIL") provides investment advisory and management services to non-U.S. investment companies and institutional investors Partnerships controlled predominantly by the family of Edward C. Johnson 3d, Chairman of FMR and FIL, or trusts for their benefit, own approximately "group" under the Securities Exchange Act of 1934 and that the shares held by the other therefore do not need to be aggregated, FMR's beneficial ownership includes 3,987,504 shares beneficially owned through FIL (with respect to which FIL has sole dispositive power over all such shares, sole voting power over 3,916,704 of such shares, and no voting power over 70,800 of such shares).
- (7) All information regarding AXA Financial, Inc. and its affiliates is based solely on information disclosed in a Schedule 13G filed with the SEC on February 12, 2010 by (a) AXA Assurances LA.R.D. Mutuelle and AXA Assurances Vie Mutuelle (collectively, the "Mutuelles AXA"), (ii) AXA, and (iii) AXA Financial, Inc. ("AXA Financial"). Mutuelles AXA control AXA, which owns AXA Financial, which is the parent holding company of AllianceBernstein L.P. ("Alliance"), an investment adviser, and AXA Equitable Life Insurance Company ("AXA Equitable"), an insurance company and an investment adviser. According to the Schedule 13G filing, with respect to the 10,140,496 shares of our Common

Stock reported as beneficially owned by AXA Financial and its affiliates of December 31, 2009, the voting and dispositive power with respect to such shares was reported as follows:

	Deemed to Have Sole Power to Vote or to Direct the Vote	Deemed to Have Shared Power to Vote or to Direct the Vote	Deemed to Have Sole Power to Dispose or to Direct the Disposition	Deemed to Have Shared Power to Dispose or to Direct the Disposition
The Mutuelles AXA, as a group	0	0	0	0
AXA	0	0	0	0
AXA Entity or Entities:				
AXA Investment Managers Paris (France)	4,500	0	4,500	0
AXA Investment Managers UK Ltd.	39,000	0	39,000	0
AXA Konzern AG (Germany)	600	0	600	0
AXA Rosenberg Investment Management LLC	74,098	0	74,098	0
AXA Financial, Inc.	0	0	0	0
Subsidiaries of AXA Financial:				
AllianceBernstein	7,288,412	0	9,815,868	0
AXA Equitable Life Insurance	126,830	0	134,930	0
	7,533,440	0	10,140,496	0

⁸⁾ All information regarding BlackRock, Inc. ("BlackRock") is based solely on information disclosed in a Schedule 13G filed by BlackRock with the SEC on January 29, 2010. According to the Schedule 13G filing, BlackRock had sole voting power and sole dispositive power with respect to 9,219,928 shares of our Common Stock as of December 31, 2009.

Management

The following table sets forth the beneficial ownership of our Common Stock as of September 14, 2010 by all current Directors, each of the named executive officers set forth in the Summary Compensation Table, and all current Directors and executive officers as a group. Except for shares held in brokerage accounts which may from time to time, together with other securities held in those accounts, serve as collateral for margin loans made from those accounts, none of the shares reported as beneficially owned are currently pledged as security for any outstanding loan or indebtedness. Shares that have not yet been issued under outstanding restricted stock units (and that are not scheduled to vest within 60 days after September 14, 2010) due to applicable performance or service-vesting requirements that have not yet been satisfied are not included in the table below but are indicated in footnote 14 to such table:

	Number of Shares	Percent of Outstanding
Name of Beneficial Owner	Beneficially Owned	Class (1)
Richard P. Wallace (2)(14)	552,305	*
Robert P. Akins (3)	9,623	*
Edward W. Barnholt (4)	88,760	*
Robert T. Bond (5)	55,702	*
Robert M. Calderoni (6)	15,202	*
John T. Dickson (7)	14,606	*
Stephen P. Kaufman (8)	54,702	*
Kevin J. Kennedy (9)	13,456	*
Kiran M. Patel (10)	11,629	*
David C. Wang (11)	18,198	*
Mark P. Dentinger (12)(14)	21,723	*
Brian M. Martin (14)	5,727	*
Virendra A. Kirloskar (13)(14)	49,035	*
All current Directors and executive officers as a group (14		
persons) (15)	1,048,747	*

- * Less than 1%
- (1) Based on 166,770,498 outstanding shares of our Common Stock as of September 14, 2010. In addition, shares of our Common Stock subject to options that are presently exercisable or will become exercisable within 60 days after September 14, 2010 are deemed to be outstanding for the purpose of computing the percentage ownership of a person or entity in this table, but are not treated as outstanding for the purpose of computing the percentage ownership of any other person or entity.
- (2) Includes 406,125 shares subject to options which are presently exercisable or will become exercisable within 60 days after September 14, 2010, and 43,750 shares subject to restricted stock units that will vest and become deliverable within 60 days after September 14, 2010.
- (3) Includes 3,148 shares subject to restricted stock units that will vest and become deliverable within 60 days after September 14, 2010.
- Includes 53,750 shares subject to options which are presently exercisable or will become exercisable within 60 days after September 14, 2010, and 4,721 shares subject to restricted stock units that will vest and become deliverable within 60 days after September 14, 2010.
- (5) Includes 41,250 shares subject to options which are presently exercisable or will become exercisable within 60 days after September 14, 2010, and 3,148 shares subject to restricted stock units that will vest and become deliverable within 60 days after September 14, 2010.
- Includes 3,750 shares subject to options which are presently exercisable or will become exercisable within 60 days after September 14, 2010, and 3,148 shares subject to restricted stock units that will vest and become deliverable within 60 days after September 14, 2010.
 Includes 2,500 shares subject to options which are presently exercisable or will become exercisable within 60 days after September 14, 2010, and
- (7) Includes 2,500 shares subject to options which are presently exercisable or will become exercisable within 60 days after September 14, 2010, and 3,148 shares subject to restricted stock units that will vest and become deliverable within 60 days after September 14, 2010.

- (8) Includes 41,250 shares subject to options which are presently exercisable or will become exercisable within 60 days after September 14, 2010, and 3,148 shares subject to restricted stock units that will vest and become deliverable within 60 days after September 14, 2010.
- (9) Includes 2,500 shares subject to options which are presently exercisable or will become exercisable within 60 days after September 14, 2010, and 3,148 shares subject to restricted stock units that will vest and become deliverable within 60 days after September 14, 2010
- (10)
- Includes 3,148 shares subject to restricted stock units that will vest and become deliverable within 60 days after September 14, 2010. Includes 6,250 shares subject to options which are presently exercisable or will become exercisable within 60 days after September 14, 2010, and (11)3,148 shares subject to restricted stock units that will vest and become deliverable within 60 days after September 14, 2010.
- (12) Includes 20,000 shares subject to restricted stock units that will vest and become deliverable within 60 days after September 14, 2010.
- Includes 29,511 shares subject to options which are presently exercisable or will become exercisable within 60 days after September 14, 2010, and 7,050 shares subject to restricted stock units that will vest and become deliverable within 60 days after September 14, 2010. (13)
- As of September 14, 2010, the named executive officers listed below each held unvested restricted stock units (which units were not scheduled to vest within 60 days after September 14, 2010 and therefore are not included in the beneficial ownership table above). Each restricted stock unit will entitle that officer to one share of our Common Stock upon satisfaction of the applicable service vesting (and, where applicable, performance vesting) requirement in effect for that unit.

	Subject to Unvested
Name	Restricted Stock Units
Richard P. Wallace	370,745
Mark P. Dentinger	139,300
Brian M. Martin	84,761
Virendra A. Kirloskar	43,100

Number of Shares

(15) Includes options to purchase an aggregate of 680,778 shares of our Common Stock held by the current officers and Directors which are presently exercisable or will become exercisable within 60 days of September 14, 2010, and 110,080 shares subject to restricted stock units that will vest and become deliverable within 60 days after September 14, 2010.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Securities Exchange Act of 1934 requires our executive officers, Board members, and persons who own more than ten percent of a registered class of our equity securities to file reports of ownership and changes in ownership with the SEC, and such persons are also required by SEC regulations to furnish us with copies of all Section 16(a) forms they file. Based solely on our review of the copies of such forms received by us, we believe that during fiscal year 2010 all of our executive officers, Board members and greater than ten percent stockholders complied with all applicable filing requirements.

Executive Overview

EXECUTIVE COMPENSATION AND OTHER MATTERS COMPENSATION DISCUSSION AND ANALYSIS

Though the semiconductor industry has long been acknowledged as being a very cyclical industry, full cycles have recently been measured in terms of four to six years. In the past two years alone, however, we have witnessed dramatic swings in demand in our industry, with equipment demand in fiscal year 2010 recovering significantly off the multi-cycle low recorded in fiscal year 2009.

As we disclosed last year in our Proxy Statement, our fiscal year 2009 executive compensation program was significantly impacted by the decline in our industry during that year. The program was predominantly weighted toward performance-based compensation, both with respect to cash and equity compensation, tied to financial performance objectives that turned out to be unachievable due to global and industry economic conditions during that year, resulting in no bonus payouts or performance shares being earned by the executive team. These results did not reflect the fact that our employees, led by the executive team, performed very well during fiscal year 2009, generating positive operating cash flow, continuing with key product development efforts and rigorously managing our cost structure.

Similarly, our executive compensation program for fiscal year 2010 was affected by the unexpected and dramatic shifts in our industry during the year. In July and August 2009, when our fiscal year 2010 executive compensation program was being established, we were coming off a nine-month period (October 2008 to June 2009) of some of the lowest new order totals in the Company's history. Consistent with our compensation philosophy, our fiscal year 2010 executive compensation structure featured significant performance-based components, both with respect to cash and equity compensation, tied to financial performance objectives that were considered very challenging to achieve at the time they were established. At that time, neither the Compensation Committee nor the Board of Directors anticipated that the industry would recover as quickly and dramatically during fiscal year 2010 as it eventually did.

KLA-Tencor performed extremely well during fiscal year 2010. To some extent, that success was a function of the overall industry's rapid recovery. However, to a greater extent, the Company's financial and operational success was a direct result of our ability to continue developing industry-leading products that meet our customers' ever-increasing demands and our success in maintaining the cost structure and discipline that we instituted during the fiscal year 2009 downturn, even as the industry recovered. This is evidenced by a number of Company-specific accomplishments, including:

- In the fourth quarter of fiscal year 2010, we recorded the highest quarterly level of new orders in our
 history, with the Company's year-over-year growth in bookings considerably exceeding the overall growth
 in wafer fabrication equipment spending by the semiconductor industry;
- We posted strong gross and operating margin percentages for the year, including a Company-record quarterly gross margin percentage (excluding acquisition related charges) during the fourth quarter of fiscal year 2010;

- We sustained our market leadership in our core semiconductor markets and extended our penetration of new growth areas, such as back-end packaging inspection, high brightness LED, photovoltaic and hard disk drives:
- We introduced ten new products to the market, in addition to upgrades to existing products, many of which
 were developed during the industry downturn;
- We generated nearly \$448 million in GAAP operating cash flow during fiscal year 2010, demonstrating the strong cash generating power of our business; and
- During these volatile markets, we sustained high levels of customer satisfaction, as indicated by the strong
 acceptance of our new products and our record level of new orders in the fourth quarter of fiscal year 2010.

These results serve as confirmation that, while we and our competitors certainly benefited from the dramatic recovery experienced in the semiconductor industry during fiscal year 2010, our success was largely attributable to our executive team's ability to ensure that, by focusing our product development efforts on our most strategic projects and intelligently managing our business and expenses throughout the downturn, we remained well-positioned to take advantage of the recent recovery.

However, the Company's stock performance over the same period has not reflected the Company's strong absolute and relative performance, and as a result the relative shareholder return of KLA-Tencor's common stock (stock price appreciation and dividends paid) has underperformed other companies in our industry notwithstanding our superior relative operating performance. In an effort to improve the correlation between our total shareholder return and our actual performance, we recently announced a significant increase in our quarterly dividend level (from \$0.15 to \$0.25 per share), which took effect in August 2010.

The payouts under our fiscal year 2010 compensation program are the result of the outstanding performance of the Company and our management team over the past several years. The named executive officers' performance share awards granted during fiscal year 2010 were fully earned as a result of the Company's operating margin performance, which generated an operating margin percentage equal to more than five (5) times the Company's target percentage that was established at the start of the fiscal year. In addition, due to that operating margin percentage and the Company's overall performance, our fiscal year 2010 cash bonus plan, which was structured to only pay out 40% of the executives' target bonus amounts at the Company's target level of operating margin (because the fiscal year 2010 outlook for the semiconductor industry at the start of the year was so bleak that the Company's target operating margin margin would not support full bonus payouts), paid bonuses of 297% of target bonus amounts, just short of the maximum amount payable under the plan.

The past two years serve as an example of how cyclical and, at times, unpredictable the semiconductor industry can be. However, the Compensation

Committee and the independent members of our Board (the "Independent Board Members," which refers to all of the members of our Board other than our Chief Executive Officer and is the group that makes all determinations regarding our Chief Executive Officer's compensation) believe that, notwithstanding that industry volatility, the Company's executive compensation program is structured in a way that is designed to ensure that, over the long term, the compensation for our executive officers is market competitive and will fairly reflect the Company's performance over that time.

Our executive compensation structure for fiscal year 2011, as described in more detail below, has again been structured to closely align with the Compensation Committee's overall philosophy regarding the balance between performance-based compensation and retention, while also attempting to appropriately reflect the anticipated economic environment over the course of the upcoming fiscal year.

With regard to cash compensation, we have not implemented salary increases for fiscal year 2011 for any of the named executive officers, as existing salary levels (which were increased in fiscal year 2010 for the first time in two years) were determined to be competitive. The fiscal year 2011 cash bonus plan has returned to a more typical plan construct, structured so that the Company's achievement of target operating goals will result in a payment of 100% of the executives' target bonus amounts. Similar to the fiscal year 2010 bonus plan, bonus payments under the fiscal year 2011 bonus plan will be determined by a combination of the Company's operating margin percentage and its performance against a balanced scorecard of key corporate goals.

With regard to long-term compensation, the equity awards for fiscal year 2011 to the named executive officers consist of an annual equity grant of restricted stock units. Half of that annual grant is a performance share award with goals that may be fully achieved over a period of two years (but, unlike the prior year's grants, are not earnable after one year), and the other half of the annual grant is in the form of restricted stock units with only service-based vesting requirements. Consistent with past practices, all equity awards granted to the named executive officers (including the performance shares, to the extent earned) vest over a period of four years. No supplemental restricted stock units have been awarded for fiscal year 2011.

The fiscal year 2011 compensation structure has been designed to be consistent with our compensation philosophy and design principles and to address the specific circumstances that we currently face and anticipate in the coming fiscal year. Similarly, in future years, the Compensation Committee (and, with respect to the compensation of our Chief Executive Officer, the Independent Board Members) will evaluate the environment and will implement the appropriate structural elements and features for the compensation programs warranted at such time.

Compensation Philosophy and Design Principles The philosophy of the Compensation Committee on executive compensation is that it should be designed to:

Attract, retain and reward executives who contribute to the overall success of the Company by offering compensation packages that are

- competitive with those offered by other employers (both in our primary industries and other associated industries) with which we compete for talent; and
- Achieve a balance, appropriate for the circumstances in the particular year, between performance-based
 compensation (which rewards accomplishment of the Company's business objectives and aligns the
 interests of our executives with those of our stockholders) and compensation that supports our long-term
 employee retention efforts.

The Compensation Committee's philosophy is reflected in the following executive compensation design principles:

- With regard to cash compensation, in addition to a competitive base salary, a substantial portion of the
 executives' potential compensation should be tied to a cash bonus plan that rewards corporate and
 individual achievement of challenging performance goals; and
- With regard to long-term incentives, the program should typically provide two forms of compensation (with the allocation between the two forms potentially varying each year based on the particular year's circumstances): (i) service-based awards with vesting conditioned only upon continued service, which serve as an important element of our efforts to retain key employees, and (ii) performance-based awards, comprising a meaningful portion of the executives' overall long-term incentive opportunities, which provide additional long-term compensation as a reward for achievement of corporate and individual goals and which, if earned, also include service-vesting requirements.

Compensation Element	Objective
Base salary	Provide a competitive fixed component of cash compensation.
Annual bonus plan	Offer a variable cash compensation opportunity earned only upon the achievement of challenging corporate performance goals, with adjustments based on individual contribution, and providing incremental opportunities at higher performance.
Long-term incentives	Align long-term management and stockholder interests and strengthen retention with four-year vesting provisions. Service-based awards offer certainty and long-term retention. Performance-based awards provide additional opportunity only upon achievement of corporate performance goals.
Benefit plans	Provide basic employee benefits, though not a significant component of our executive compensation program.

Compensation Committee Decision Making – Process Overview and Market Data The Compensation Committee utilizes a holistic approach to the determination of executive compensation packages. Over the course of several meetings (in closed sessions as well as with our Chief Executive Officer and Senior Vice President of Human Resources) and with the assistance of Semler Brossy Consulting Group, LLC, the Compensation Committee's independent compensation consultant (the "Independent Consultant"), the Compensation Committee engaged in extensive deliberation in developing the fiscal year 2010 and 2011 executive compensation programs to set compensation packages and target performance levels appropriate for each particular year. The Compensation Committee, which has full authority for determining the compensation of our executive officers (other than the Chief Executive Officer, for whom the Committee makes compensation recommendations to the Independent Board Members for approval), applies its philosophy and design principles in determining appropriate executive compensation packages that are aimed at enhancing the Company's financial performance and long-term success.

The Compensation Committee takes into account a number of data sources and factors, including a broad range of market data (as more fully described in the following paragraphs) and the cyclical nature of the industries in which we operate. In addition, the Compensation Committee conducts an individual analysis for each executive officer, which incorporates a review of internal performance reviews and individualized reports for each officer that state the dollar value of the officer's base salary, annual and long-term compensation, vested and unvested equity awards (and future vesting schedule) and benefits. The Committee also considers the executive officers' compensation relative to one another in determining executive compensation, in an effort to ensure internal alignment and equity.

Our ability to continue to attract and retain outstanding contributors, including our core executive team, is essential to our continuing success. Therefore, the Compensation Committee reviews a number of different data sources (including peer group and broader market data) to ensure that we are offering compensation packages that are competitive with those offered by other employers (both in our primary industries and in other associated industries) seeking to attract the same talented individuals. For fiscal year 2010, the Compensation Committee used, in addition to the data described below in this section, a single list of peer group companies, representing companies of comparable size and industry. Our fiscal year 2010 peer group was comprised of Applied Materials, Inc., ASML Holdings, Lam Research Corporation, Novellus Systems, Inc., Teradyne, Inc. and Varian Semiconductor Equipment, Inc., and this same list of peer group companies has been employed in establishing our fiscal year 2011 compensation program as well.

The Compensation Committee reviews the compensation programs and practices of its peer group companies to obtain compensation data and identify compensation trends and practices. Data regarding these peer group companies is primarily obtained through searches of publicly available information, such as the proxy filings of the relevant companies. The market data consists primarily of base salary and total cash compensation rates, as well as incentive bonus and stock programs of other companies considered by the Compensation Committee to be peers in our industry. In addition, we

subscribe to the Radford Executive Survey (with a focus on high technology companies with revenue between \$1 billion to \$3 billion, as well as certain other selected companies within our relevant industries) and the Computer and High Performance Systems (CHiPS) Executive Survey to obtain additional data concerning target cash compensation levels.

Among the various types of market data considered by the Compensation Committee in its deliberations, the Compensation Committee reviews percentile data to understand the spectrum of compensation packages offered by other similarly situated companies. Though the Compensation Committee refers to such percentile data in its analysis, as well as allocations between annual and long-term compensation, the Compensation Committee does not employ specific equations for determining compensation amounts based on such data, as the appropriate percentile and allocation targets will vary, among participants and over time, for each officer based upon individual factors such as performance, experience and market demands for the officer's skill set. Rather, the Compensation Committee's emphasis is on establishing compensation packages for the executive officers that, in the Committee's judgment, are structured to achieve the goals described under "Compensation Philosophy and Design Principles" above. The Compensation Committee references the data points that represent the median to 75th percentile, with an emphasis on the lower end of that range when reviewing base salary data, but structuring the executive officers' packages so that total compensation can be at or above the higher end of that range in years of strong Company performance. The Compensation Committee will continue to evaluate these percentile ranges as a reference point and may use a different reference point in future periods based on Company performance and other market factors.

Named Executive Officers

The executive officers listed in the "Summary Compensation Table" that follows this description of our compensation programs are Richard P. Wallace (our principal executive officer); Mark P. Dentinger (our principal financial officer); Brian M. Martin (our Senior Vice President, General Counsel and Corporate Secretary); and Virendra A. Kirloskar (our Senior Vice President and Chief Accounting Officer). No other individuals served as executive officers of the Company (as determined for purposes of Section 16 of the Securities Exchange Act of 1934, as amended) during fiscal year 2010. These individuals listed in the "Summary Compensation Table" are referred to in this section as the "named executive officers."

Elements of Executive Officer Compensation

The primary elements of our compensation packages are base salary, an annual bonus plan (payments under which are included as "Non-Equity Incentive Plan Compensation" in the Summary Compensation Table) and long-term incentives (which have historically been in the form of equity awards).

Base Salary:

The Compensation Committee engages in annual reviews of the base salaries of the executive officers as part of the overall review and determination of our executive compensation program for the relevant fiscal year. With respect to base salary, the Compensation Committee's objective is to offer a level of fixed cash compensation, determined with reference to the median of the

applicable market data and the other data sources and factors described under "Compensation Committee Decision Making – Process Overview and Market Data" above, that will enable us to attract and retain top talent.

In fiscal year 2010, the Compensation Committee (and the Independent Board Members, with respect to our Chief Executive Officer) implemented salary increases for the executive officers, which increases had been initially approved during fiscal year 2009 but, at the recommendation of management, had not been given effect due to the challenging market conditions that arose shortly after that initial approval.

The salary raises that were approved in fiscal year 2009 (but not implemented until fiscal year 2010) had been intended to address two significant developments within the Company. First, the fiscal year 2009 compensation program had been structured to be more competitive with the market by increasing fixed compensation as a percentage of each executive's total cash compensation opportunity. The salary raises approved in fiscal year 2009, paired with the simultaneous lowering of bonus opportunities (compared to historic payouts, at each level of Company performance relative to applicable target performance), were intended to accomplish this result. Second, the fiscal year 2009 approved salary increases for certain executives were intended to reflect their increased roles and responsibilities as a result of organizational changes at that time. Of our executive officers, the increase in role and responsibilities most directly affected Mr. Wallace, who assumed the role of President and, with it, a number of additional organizational responsibilities. Accordingly, the Independent Board Members approved a fiscal year 2009 salary increase for Mr. Wallace of 14.3%, which exceeded the percentage increase approved for any of the other named executive officers. The conditions that had initially prompted the raises (the reduced bonus plan structure and expanded roles and responsibilities) remained in effect in early fiscal year 2010, and, accordingly, the deferred salary increases were implemented at that time.

In August 2010, in reviewing and determining the overall executive compensation packages for fiscal year 2011, the Compensation Committee (and, with respect to our Chief Executive Officer, the Independent Board Members) determined that the existing base salaries of the named executive officers were competitive with the marketplace for equivalent positions at other companies. Accordingly, no base salary increases were approved for any of the named executive officers for fiscal year 2011. The following table presents the base salaries of our named executive officers for fiscal years 2010 and 2011:

Name and Principal Position	Annual Base Salary Rate as of June 30, 2009 (\$)	Annual Base Salary Rate as of June 30, 2010 (\$)	Year-Over-Year Percentage Increase Represented by the Fiscal Year 2010 Base Salary	Approved Annual Base Salary Rate for Fiscal Year 2011 (\$)	Year-Over-Year Percentage Increase Represented by the Fiscal Year 2011 Base Salary
Richard P. Wallace President & Chief Executive Officer	700,000	800,000	14.3%	800,000	0%
Mark P. Dentinger Executive Vice President & Chief Financial Officer	400,000	400,000	0%	400,000	0%
Brian M. Martin Senior Vice President, General Counsel & Corporate Secretary	325,000	340,000	4.6%	340,000	0%
Virendra A. Kirloskar Senior Vice President and Chief Accounting Officer	270,000	280,800	4.0%	280,800	0%

Annual Bonus Plan:

i. Fiscal Year 2010 Performance Bonus Plan:

Our Performance Bonus Plan (the "Bonus Plan"), an incentive bonus plan administered in conformity with Section 162(m) of the Internal Revenue Code, provides the named executive officers with an opportunity to earn performance-based cash compensation based on the Company's achievement of key financial and strategic Company goals as well as individual performance.

In August 2009, the Compensation Committee and, with respect to our Chief Executive Officer, the Independent Board Members established each officer's target bonus payout (stated as a percentage of the officer's base salary) as well as the Company performance targets and bonus potentials (including threshold, target and maximum payout levels) in effect for fiscal year 2010 under the Bonus Plan. In establishing the officers' target awards for fiscal year 2010, the Compensation Committee (and, with respect to deliberations regarding our Chief Executive Officer, the Independent Board Members) considered a wide range of market data (described under "Compensation Committee Decision Making—Process Overview and Market Data" above), as well as the allocation of total compensation (both between base salary and variable bonus compensation, and between cash and non-cash compensation), competitive factors and the structure of our fiscal year 2010 Bonus Plan. The

officers' target bonus percentages are established at levels that generate total target cash compensation opportunities that the Compensation Committee and, as applicable, the Independent Board Members determine are competitive with the market for comparable positions at other companies.

Under the fiscal year 2010 Bonus Plan, the Company was required to achieve a threshold level of operating margin in order for the plan to be funded.2 Upon achievement of that threshold level of operating margin, a participant's actual bonus amount would then be determined based upon the Company's operating margin percentage and the assessment by the Compensation Committee and the Independent Board Members of the Company's performance as measured against a defined "balanced scorecard." Though the balanced scorecard has been used within the Company for many years as a tool for assessing the Company's performance across a broad range of key areas, fiscal year 2010 represented the first time that the scorecard was formally incorporated into our executive compensation program. The balanced scorecard takes into account our strategic objectives of growth, customer focus, operational excellence and talent (each of which is addressed in more detail below), and applies scores for the Company's performance against a variety of specific goals within each of those variables. The scorecard is tracked throughout the year and is reviewed every quarter, then formally presented to the Compensation Committee and the Independent Board Members following the conclusion of the fiscal year for assessment as to the Company's success in achieving the pre-established annual goals. For fiscal year 2010, the pre-established quantitative goals and objectives were set at levels that, based on a number of factors including the Company's prior year performance and the then-prevailing macro-economic conditions, the Compensation Committee, the Independent Board Members and the Company believed would be very challenging to achieve at the time the plan was adopted. While many of the metrics are quantitative in nature, some are qualitative and therefore introduce an enhanced degree of discretion and subjective judgment into the bonus determination process. We believe that the use of the expanded measures of financial and strategic success, as represented by the balanced scorecard framework, serves to closely align the interests of our executive officers with those of our stockholders.

Specifically, the fiscal year 2010 Bonus Plan was structured as follows:

No payouts would be made under the plan unless the Company achieved at least breakeven operating
margin. Given the Company's operating margin percentage for fiscal year 2009 (1%) and the outlook for
the semiconductor capital equipment industry at the start of fiscal year 2010, this was considered an
outcome that would require significant effort to achieve;

For purposes of our fiscal year 2009, 2010 and 2011 cash bonus and equity incentive plans, "operating margin" is calculated as the Company's total revenues less total costs and operating expenses, including stock-based compensation charges but excluding expenses related to acquisitions, deal-related amortization and other one-time charges.

The satisfaction of this pre-determined threshold level of operating margin would trigger full funding of the Bonus Plan, and of each participant's maximum potential bonus opportunity, for purposes of Section 162(m) of the Internal Revenue Code.

- For Company achievement of operating margin percentage between breakeven and the Company's fiscal year 2010 target operating margin percentage of four percent (4%), the executive officers would be eligible for an award of up to 40% of his or her bonus payout percentage, with the award amount determined by the Compensation Committee or the Independent Board Members (as applicable) in their discretion based upon their assessment of the Company's performance as measured against the balanced scorecard. As a result, the maximum bonus payable under the fiscal year 2010 Bonus Plan for the Company's achievement of target operating margin percentage was 40% of a participant's target bonus amount (as opposed to 100%, which would be a more typical structure under normal market conditions);
- Payouts in excess of 40% of the executive officers' target bonus amounts could be earned based upon
 incremental improvements in the Company's operating margin percentage (above the 4% target). This
 structure was intended to ensure that payment of bonuses in excess of 40% of a participant's target amount
 was conditioned on the Company having generated incremental earnings sufficient to fund those bonuses,
 which was a significant concern given the poor outlook for fiscal year 2010 at that time; and
- The plan would pay out at the maximum level of 300% of the executive officers' target bonus amounts if
 the Company's operating margin equaled or exceeded 21% and the Compensation Committee or the
 Independent Board Members (as applicable) concluded that the Company had fully achieved its fiscal year
 2010 goals based upon an assessment of the balanced scorecard.

In addition, the Compensation Committee had the discretion to adjust the actual bonus amount otherwise payable to an executive based on their assessment of the executive's performance for fiscal year 2010. With respect to our Chief Executive Officer, the Independent Board Members had similar discretion to adjust his actual bonus amount, based on the Company's achievement of pre-determined performance objectives.

The fiscal year 2010 performance goals, both with regard to operating margin percentage and the balanced scorecard objectives, were set at levels that would require very strong operational performance and were considered difficult to achieve at the time they were established, given anticipated market conditions. However, over the course of fiscal year 2010, the semiconductor industry experienced a dramatic and unexpectedly accelerated recovery. That rapid recovery, combined with outstanding management that enabled us to continue developing industry-leading products to meet our customers' everincreasing demands and maintain the cost structure and discipline that we had instituted during the fiscal year 2009 downturn, resulted in outstanding operating results for the Company in fiscal year 2010.

Following the completion of fiscal year 2010, the Compensation Committee and the Independent Board Members reviewed the Company's performance against the primary strategic objectives set forth in the fiscal year 2010 balanced scorecard, which were assessed as follows:

Growth

- The Company aimed to achieve a year-over-year growth rate at least five (5) percentage points higher than the growth rate of the overall semiconductor capital equipment industry, and that goal was satisfied by the Company's year-over-year growth in bookings, which exceeded 120% and was considerably (i.e., appreciably more than five (5) percentage points) higher than orders growth in the overall industry. The Company's revenue growth rate, however, was not at least five (5) percentage points higher than the overall industry's revenue growth rate, though that was largely because the strong bookings growth in fiscal year 2010 occurred late in the fiscal year, and revenue from a significant portion of those bookings will not be realized until the subsequent fiscal year;
- The Company's product adoption objectives were satisfied by broad-based demand for the Company's newest products and strong levels of foundry adoption of the Company's offerings at sub-45nm (nanometer) technology nodes; and
- The Company's goal of growth outside of its core semiconductor markets was achieved, as evidenced by a
 year-over-year increase of nearly 85% in bookings for the Company's Growth and Emerging Markets
 division (the division that houses most of the Company's non-core products, including those acquired in the
 Company's recent acquisitions).

Customer Focus

- Through strong bookings across multiple markets (the best indication that the Company is successfully
 differentiating its products versus competitors and that customers are satisfied with the Company's
 offerings), the primary goal under customer focus was accomplished, as the Company not only maintained,
 but enhanced, its market leadership position in core markets during fiscal year 2010; and
- The Company's collaboration objective was achieved based on the ongoing successful product development
 efforts with several key memory and foundry customers, evidencing alignment with customer product
 roadmaps and advanced technology development relative to our competitors.

Operational Excellence

 Through strict cost discipline and efficient performance, the Company's operating model yielded significantly lower cost levels, improving profitability such that the Company achieved a Company-record quarterly gross margin percentage (excluding acquisition related charges) during the fourth quarter of fiscal year

- 2010, notwithstanding the fact that revenue during the quarter was 24% lower than the Company's all-time highest quarterly revenue;
- The Company introduced ten new products during fiscal year 2010, consistent with the Company's product development plan for the year; and
- Program execution goals were achieved, as the Company implemented the planned increased production levels in our Israel and Singapore manufacturing facilities, while also successfully responding to the unanticipated and dramatic increase in product demand that we experienced during fiscal year 2010.

Talent

- Retention efforts were effective, with the actual level of voluntary employee turnover (4%) being better
 than the forecasted rate of 5%, and turnover among top talent of only 3%, only slightly exceeding the
 expected level of 2.5%;
- Early career hiring objectives were achieved, with early career hires (including new college graduates) representing 64% of the Company's global new hires during the year (in excess of the 50% target); and
- The completion of the Company's first ever global employee engagement survey, providing valuable information to support the Company's ongoing talent retention efforts.

As a result of the Company's financial success (generating an operating margin percentage for fiscal year 2010 equal to 20.9%) and strategic success (a determination by the Compensation Committee and the Independent Board Members that, based on the factors above, the Company had fully achieved its strategic goals in the fiscal year 2010 balanced scorecard), the payouts under the fiscal year 2010 Bonus Plan were equal to 297% of the participants' target bonus amounts, just short of the maximum amount payable under the plan.

The Compensation Committee and Independent Board Members established the individual multiplier for each of the named executive officers at 1.0 (that is, there was no reduction or increase of the bonus amount payable to any named executive officer based on individual performance), as the performance reviews of each of the named executive officers indicated that they had all performed well in their respective areas of responsibility.

The following table sets forth, for each named executive officer, the officer's target bonus (as a percentage of base salary and in dollars, based on actual salary paid during the year), the bonus percentage that would have been paid to the officer if the Company had generated target operating margin (assuming full satisfaction of the balanced scorecard goals), and the actual bonus amount paid to the officer:

Name and Principal Position	Officer's Target Bonus Award Under Bonus Plan (as a Percentage of Base Salary Paid During FY10) (1)	Officer's Target Bonus Award Under Bonus Plan (\$)	Officer's Bonus Payout if the Company Had Generated Target Operating Margin (\$) (2)	Actual Bonus Payout Under Fiscal Year 2010 Bonus Plan (\$)
Richard P. Wallace President & Chief Executive Officer	135%	1,054,038	421,615	3,130,494
Mark P. Dentinger Executive Vice President & Chief Financial Officer	75%	300,000	120,000	891,000
Brian M. Martin Senior Vice President, General Counsel & Corporate Secretary	70%	235,981	94,392	700,863
Virendra A. Kirloskar Senior Vice President and Chief Accounting Officer	65%	181,170	72,468	538,075

- (1) The amounts in this column represent the applicable officer's fiscal year 2010 full target bonus (stated as a percentage of the officer's base salary). Under the fiscal year 2010 Bonus Plan, this percentage, when multiplied by the payout percentage (determined by the Company's actual performance relative to pre-determined target strategic and financial results) provided for under the Bonus Plan, would generate the officer's actual bonus payment amount.
- (2) As described above, under the construct of the fiscal year 2010 Bonus Plan, the Company's achievement of its target operating margin percentage for the year (assuming full achievement of the balanced scorecard strategic goals) would have resulted in a payout of only 40% of the executive officers' target bonus amounts. This column reflects those amounts (that is, the applicable officer's fiscal year 2010 target bonus award multiplied by 40%).

ii. Fiscal Year 2011 Performance Bonus Plan:

In August 2010, the Compensation Committee and, with respect to our Chief Executive Officer, the Independent Board Members established the executive officers' target bonus payout (stated as a percentage of the executive officer's base salary) and the Company performance targets and bonus potentials (at threshold, target and maximum payout levels) in effect for fiscal year 2011 under the Bonus Plan. As with prior years, the initial threshold performance target, which is necessary to fund the fiscal year 2011 Bonus Plan, is tied to the Company's achievement of a pre-determined level of operating margin. If that threshold level of operating margin is achieved, the fiscal year 2011 Bonus Plan maintains a similar structure to the one employed for fiscal year 2010 for determining the actual bonus amount, if any, that will be payable to the participants under the plan.

Under the fiscal year 2011 Bonus Plan, a participant's bonus amount will again be determined by a combination of the Company's operating margin percentage and its performance against the balanced scorecard goals established for the year. In fiscal year 2011, however, unlike in the prior year, these two components (operating margin percentage and the numeric score based on achievement of the Company's balanced scorecard goals) have been integrated into a two-axis matrix that will determine the participants' bonus payout percentage, so that these two comprehensive indicators of Company performance will be co-dependent at all levels of performance.

Because the anticipated market conditions for fiscal year 2011 are currently expected to be more consistent with typical years in our industry (as compared to the extremely volatile market conditions experienced over the prior two years), the fiscal year 2011 Bonus Plan provides for payment of 100% of the participants' target bonuses upon the Company's achievement of target operating results. This differs from the atypical structures employed in the past two years, when anticipated adverse market conditions led the Compensation Committee and the Independent Board Members to structure the fiscal year 2009 and 2010 Bonus Plans to only pay out 70% and 40%, respectively, of participants' target bonus amounts for Company performance at the applicable fiscal year's target.

Another feature of the fiscal year 2011 Bonus Plan is the flattening of the slope of the bonus payout curve. The appropriate threshold amount (that is, the minimum amount of operating margin that must be achieved before bonuses will become payable under the year's bonus plan) and the slope of the payout curve are determined each year based upon the expected operating performance for the year. In any event, the threshold amount will be set at a level that is considered realistic as of the date it is established. In years where the Company's operating results are projected to generate low levels of operating income, as was the case at the start of fiscal year 2010, the threshold will typically be set at the point where the Company will actually be generating sufficient income to pay bonus amounts for the year (which level may not be far below the target performance level for the year), and the slope of the payout curve will in that case be relatively steep, as each increment of improved performance represents a significant percentage increase in results. However, in years where more typical operating results are expected, the threshold may be set considerably below the Company's target performance level for the year, and the slope of the payout curve will typically be flatter, representing the belief that strong performance should be fairly compensated without incentivizing employees to take inappropriate or excessive risks to achieve unrealistic results.

As in prior years, the Compensation Committee will have the discretion to adjust the actual bonus amount otherwise payable to the executive officers based on their assessment of the officer's performance for fiscal year 2011, compared against the individual performance objectives established for the officer early in the year. With respect to our Chief Executive Officer, the Independent Board Members will have similar discretion to adjust his actual bonus amount, based on the Company's achievement of pre-determined performance objectives.

The following named executive officers will participate in our fiscal year 2011 Bonus Plan, with bonus potentials at the following payout levels (assuming, in each case, that the executive officer's base salary remains unchanged for the duration of fiscal year 2011):

	Award Level Under Fiscal Year 2011 Bonus Plan			Plan
Name and Principal Position	Minimum (\$)	Minimum Bonus Payout if Initial Threshold Achieved (\$) (1)	Anticipated Bonus Payout if Company Performs at Target Performance Levels (\$) (2)	Maximum (\$)
Richard P. Wallace President & Chief Executive Officer	0	64,800	1,080,000	3,240,000
Mark P. Dentinger Executive Vice President & Chief Financial Officer	0	18,000	300,000	900,000
Brian M. Martin Senior Vice President, General Counsel & Corporate Secretary	0	14,280	238,000	714,000
Virendra A. Kirloskar Senior Vice President & Chief Accounting Officer	0	10,951	182,520	547,560

- (1) The amounts in this column are calculated as the minimum amounts that will be payable under the fiscal year 2011 Bonus Plan to the applicable individual assuming satisfaction of the initial Company performance threshold required to fund the Bonus Plan. Assumes (a) the Company's operating margin percentage for fiscal year 2011 is equal to precisely the threshold required to fund the plan; (b) the Compensation Committee (or the Independent Board Members, as applicable) awards the lowest possible score for the Company's performance against the fiscal year 2011 balanced scorecard goals; and (c) the Compensation Committee (or the Independent Board Members, as applicable) does not apply any downward adjustment based on individual performance criteria (the plan allows them the discretion to apply an individual multiplier of as low as 0.8 to the officer's bonus payout as determined under the plan's payout matrix).
- (2) The amounts in this column are calculated as the bonus amounts that will be payable under the fiscal year 2011 Bonus Plan to the applicable officer assuming (a) the Company's achievement of its target level of operating margin percentage and (b) the Compensation Committee (or the Independent Board Members, as applicable) determines that the Company fully achieves its fiscal year 2011 balanced scorecard goals. Under the structure of the fiscal year 2011 Bonus Plan, a participant will receive 100% of his or her target bonus amount if the Company performs at its target performance levels, so the participant's target bonus amount is the amount that is presented in this column.

The actual bonus award (if any) will depend upon the actual level at which the performance targets for fiscal year 2011 are attained. No executive officer will receive a bonus award under the fiscal year 2011 Bonus Plan in excess of three (3) times his target bonus amount, and no executive officer will receive any bonus award under such plan if the threshold level of Company performance (tied to operating margin) is not attained.

Long-Term Incentives:

The purpose of the long-term incentive component of our executive compensation program is to align long-term management and stockholder interests and strengthen retention through service-based and performance-based awards with four-year vesting provisions. The Compensation Committee believes that these long-term objectives serve as an effective means of building long-term stockholder value. The long-term incentives offered by the Company have historically been in the form of equity awards.

Since the beginning of fiscal year 2007, the long-term incentive awards to our executive officers have been comprised entirely of performance shares and restricted stock units (that is, no stock options have been granted to the officers). The mix between performance shares and restricted stock units may vary from year to year, as appropriate depending on the facts and circumstances in existence for the applicable year. These factors include the executive officers' unvested equity positions, the vesting schedules of existing equity awards, the existence of unique strategic or financial goals for the particular performance period, and organizational or industry changes that could put at risk our efforts to attract and retain top talent.

The Compensation Committee believes that restricted stock units and performance shares provide greater retention value than do stock options, due to the more certain value provided by such awards. Furthermore, the Compensation Committee believes that compensation plans that incorporate comprehensive measures of Company performance are an appropriate way to provide incentives to executive officers and reward success. Therefore, the Compensation Committee believes that equity awards in the form of performance shares and restricted stock units are highly motivating, provide a major incentive for employees to build stockholder value and significantly strengthen our retention efforts.

i. Annual Equity Grants for Fiscal Year 2010:

The "annual equity" component of our executive compensation program refers to the executive officer equity grants that represent the target equity value that the Compensation Committee aims to deliver to each executive officer as part of his annual compensation. The size of each annual grant is established with reference to the officer's role and responsibilities within the Company, as well as market data from the Radford Executive Survey and the Independent Consultant regarding the dollar value of annual grants made to similarly situated executives. In establishing the number of shares subject to the annual grants, the Compensation Committee typically attempts to position the opportunity to fall between the median and 75th percentile for annual equity compensation, though the Compensation Committee will continue to evaluate that particular percentile range as a reference point and may use a different reference point in future periods based on Company performance and other market factors. This annual equity component is distinguished from any "supplemental equity" awards that may be granted for a particular year based on the specific circumstances applicable to that year.

The Compensation Committee's design objective with respect to the annual equity component is that it should be structured so as to accomplish both goals

of the equity program – reward achievement of key performance objectives and enhance our ability to retain our key employees.

Each officer's fiscal year 2010 annual award was divided into two equally sized grants: one of which was a performance share award, and the other of which was a restricted stock unit award with vesting tied solely to continued service with us. The shares covered by the performance share award were earnable over the course of one to three fiscal years, based on the Company's operating margin percentage over those periods. The performance goals that the Compensation Committee and Independent Board Members set for the fiscal year 2010 performance share awards were set at levels that would require very strong operational performance and were considered difficult to achieve at the time, given anticipated market conditions. Shares subject to the performance share awards were able to be fully earned in the first year following grant if the Company were to achieve an operating margin percentage at or above the target level established for fiscal year 2010. To the extent the performance shares were not earned following that first year, the officers would have had additional opportunities to earn those shares in the two subsequent years if the Company were to achieve pre-established levels of weighted average operating margin percentage (which increased over time).

As a result of the unexpectedly rapid industry recovery and the Company's outstanding operational performance and financial results during fiscal year 2010, the Company's operating margin percentage for the year significantly exceeded the pre-established target of four percent (4%), which was the performance level required to fully earn the performance shares in the first year of the three-year performance period. Therefore, the fiscal year 2010 performance share awards have been fully earned

All of the executive officers' fiscal year 2010 annual equity awards (the restricted stock unit awards and the earned performance share awards) are subject to a four-year service-based vesting period. Fifty percent (50%) of the shares subject to these awards will vest two years from the date of the award, and the remaining fifty percent (50%) will vest four years from the date of the award, in each case subject to the individual's continued employment with us on the applicable vesting date.

The following table sets forth the minimum and target/maximum shares achievable by each named executive officer, as well as the actual number of shares awarded to the officer, with respect to such officer's annual equity award for fiscal year 2010:

Name and Principal		Minimum	Target Shares/ Maximum Shares	Actual Shares
Position	Type of Grant	Shares	Achievable	Awarded
Richard P. Wallace	Annual Grant (Performance)	0	57,500	57,500
President & Chief Executive Officer	Annual Grant (Service-Based)	57,500	57,500	57,500
Mark P. Dentinger Executive Vice President & Chief Financial Officer	Annual Grant (Performance) Annual Grant (Service-Based)	0 20,000	20,000 20,000	20,000 20,000
Brian M. Martin	Annual Grant (Performance)	0	11,050	11,050
Senior Vice President, General Counsel & Corporate Secretary	Annual Grant (Service-Based)	11,050	11,050	11,050
Virendra A. Kirloskar	Annual Grant (Performance)	0	5,900	5,900
Senior Vice President & Chief Accounting Officer	Annual Grant (Service-Based)	5,900	5,900	5,900

ii. Supplemental Equity Grants for Fiscal Year 2010:

In addition to the annual equity awards granted to the named executive officers for fiscal year 2010, the Compensation Committee and the Independent Board Members also awarded supplemental equity grants to each of our named executive officers, as well as other senior members of management throughout the Company.

On a regular basis, the Compensation Committee (and, with respect to our Chief Executive Officer, the Independent Board Members) reviews the retentive power of the unvested equity grants held by each executive. These equity holdings are intended to provide a certain amount of potential future value at all times as an incentive for continued service and strong performance. The Compensation Committee and Independent Board Members determined, as part of their evaluation in early fiscal year 2010, that it was appropriate to grant supplemental service-based equity awards as a result of that evaluation, primarily based on equity award levels in prior years, the elimination of the executives' fiscal year 2009 annual equity awards (which were structured as entirely performance-based awards, none of which were earned due to the unexpected downturn during fiscal year 2009) and market reviews of equity positions of other companies' similarly situated executives (taking into consideration increases in roles and responsibilities of Company executives during fiscal year 2009). The number of shares subject to each fiscal year 2010 supplemental award was determined based on the market value of the executives' unvested equity holdings as compared to the market data for other companies' executives, the market price of the Company's Common Stock at the time of grant and issues of internal equity among the executive officers.

Each of the executive officers' supplemental grants will vest based solely on the officer's continued service with us, with fifty percent (50%) of the shares vesting two years from the date of the award, and the remaining fifty percent (50%) vesting four years from the date of the award, in each case subject to the executive's continued employment with us on the applicable vesting date.

The following table sets forth the number of shares subject to each named executive officer's supplemental equity award for fiscal year 2010:

Name and Principal Position	Type of Grant	Shares
Richard P. Wallace	Supplemental Grant	74,000
President & Chief Executive Officer	(Service-Based)	
Mark P. Dentinger Executive Vice President & Chief Financial Officer	Supplemental Grant (Service-Based)	43,000
Brian M. Martin Senior Vice President, General Counsel & Corporate Secretary	Supplemental Grant (Service-Based)	19,400
Virendra A. Kirloskar Senior Vice President & Chief Accounting Officer	Supplemental Grant (Service-Based)	10,400

iii. Annual Equity Grants for Fiscal Year 2011:

In August 2010, the Compensation Committee and, with respect to grants to our Chief Executive Officer, the Independent Board Members approved fiscal year 2011 annual equity awards for our executive officers, including the minimum, target and maximum potential opportunities under such awards. The blend of equity granted with respect to fiscal year 2011 (which includes both performance shares and service-based awards) is designed to strike an appropriate balance between the two objectives of the equity program – rewarding strong performance and strengthening retention.

Supplemental awards have not been included as a component of our executive compensation program in fiscal year 2011, and we do not currently anticipate that supplemental equity awards will be a regular part of our executive compensation program going forward.

The aggregate number of shares subject to each executive officer's annual equity award is intended to represent a long-term incentive component of the officer's overall compensation package that is competitive with the market. As in prior years, the total size of each officer's fiscal year 2011 annual award was established based upon individual performance and market data regarding the dollar value of annual grants to other companies' executives, targeting the grants between the median and 75th percentile of annual equity compensation and applying the average closing price of our Common Stock over a recent period of time. Each officer's fiscal year 2011 annual award has been divided into two equally sized grants: one of which is a performance share award, and the other of which is a restricted stock unit award with vesting tied solely to continued service with us. The Compensation Committee will evaluate the allocation between performance-based and service-based awards, as well as

the continued usefulness of the particular percentile range as a reference point, and may use different allocations, percentile reference points or other features in future periods based on Company performance and other market factors.

The shares covered by the fiscal year 2011 performance share awards are not earnable following year one but instead are earnable based solely on the Company's two-year weighted average operating margin percentage over fiscal years 2011 and 2012. This marks a change from the fiscal year 2010 performance shares, which were capable of being earned (and were fully earned) after the first year of a multi-year performance period. The Compensation Committee is continuously evaluating different ways to structure long-term incentives in a manner that will properly account for the cyclical nature of our primary industries. Under the current circumstances, the Compensation Committee and Independent Board Members have determined that it is desirable to use a longer term metric and performance period with respect to the Company's fiscal year 2011 performance share awards.

Each of the executive officers' annual equity grants (the service-based restricted stock units and, to the extent earned, the performance share awards) require continued service with us in order to vest, with fifty percent (50%) of the shares vesting two years from the date of the award, and the remaining fifty percent (50%) vesting four years from the date of the award, in each case subject to the executive's continued employment with us on the applicable vesting date.

The size and vesting terms of the equity awards to the executive officers are determined by the Compensation Committee (or, with respect to our Chief Executive Officer, the Independent Board Members) after reviewing external market data to ensure that our compensation packages are competitive, while also taking into account retention issues and the portion of each officer's equity position that remains unvested. The minimum and target/maximum numbers of shares potentially issuable to each of the named executive officers under the annual awards made for fiscal year 2011, as approved by the Compensation Committee and the Independent Board Members in August 2010, are as follows:

Name and Principal Position	Type of Grant	Minimum Shares	Shares/ Maximum Shares Achievable
Richard P. Wallace	Annual Grant (Performance)	0	52,800
President & Chief Executive Officer	Annual Grant (Service-Based)	52,800	52,800
Mark P. Dentinger	Annual Grant (Performance)	0	18,150
Executive Vice President & Chief Financial Officer	Annual Grant (Service-Based)	18,150	18,150
Brian M. Martin	Annual Grant (Performance)	0	9,900
Senior Vice President, General Counsel & Corporate Secretary	Annual Grant (Service-Based)	9,900	9,900
Virendra A. Kirloskar	Annual Grant (Performance)	0	4,950
Senior Vice President & Chief Accounting Officer	Annual Grant (Service-Based)	4,950	4,950

Compensation Approval Procedures

Pursuant to the charter of the Compensation Committee, the Committee has the authority to approve the compensation packages for our executive officers, other than our Chief Executive Officer, without submitting them to the Board of Directors. However, with respect to the Chief Executive Officer's compensation, the Compensation Committee must make recommendations to the Independent Board Members, who possess the authority to approve the Chief Executive Officer's compensation.

In structuring the fiscal year 2010 compensation packages for all of the named executive officers (other than our Chief Executive Officer), the Compensation Committee received comprehensive industry compensation data and analysis from the Independent Consultant and initial recommendations regarding such packages from our Chief Executive Officer and our Senior Vice President of Human Resources based upon internal performance reviews and the external compensation data described under the section entitled "Compensation Committee Decision Making—Process Overview and Market Data" above. With regard to our Bonus Plan and performance-based equity program, the proposed financial metrics and payout percentages were developed by our Chief Executive Officer, Chief Financial Officer and Senior Vice President of Human Resources, with the assistance of the Independent Consultant. The Compensation Committee reviewed the data provided by the Independent Consultant and the Company's recommendations and engaged in detailed discussions over the course of multiple meetings, in closed sessions as well as with the Chief Executive Officer, to determine the final compensation packages for the executives for fiscal year 2010. Following these discussions, the Chief Executive Officer presented final recommendations regarding the fiscal year 2010 compensation packages for the named executive officers that reflected these discussions, which recommendations were adopted by the Compensation Committee and the Independent Board Members in August 2009.

In the case of our Chief Executive Officer's compensation, the Compensation Committee developed a proposed compensation package for fiscal year 2010 using the process described above (except that Mr. Wallace was not involved in the process) and recommended it to the Independent Board Members. The Independent Board Members then discussed and, in August 2009, approved the Compensation Committee's recommendation with respect to the fiscal year 2010 compensation for our Chief Executive Officer, who was not present and did not participate in the discussion.

In each case, when establishing each element of compensation and the overall packages for the officers, the Compensation Committee and the Independent Board Members exercised their discretion and judgment based upon the data provided, and no specific formula was applied to determine the weight of each data point.

The executive officers' fiscal year 2011 compensation levels, including base salary, performance targets, target bonus amounts and equity awards, were determined in August 2010. The Compensation Committee grants equity awards for new hires and promotions on a quarterly basis and usually makes equity award grants to the executive officers one time per year, typically in August. All equity awards to our employees, including the named executive officers, and to our directors have been granted and reflected in our consolidated financial statements, based upon the applicable accounting guidance.

Advisor to the Compensation Committee

The Compensation Committee retains an independent compensation consultant to provide the Committee with independent, objective analysis and advice on executive compensation matters. The Compensation Committee's Independent Consultant, Semler Brossy Consulting Group, LLC, reports directly to the Chair of the Compensation Committee and performs no other work for the Company.

The Independent Consultant generally attends all meetings of the Compensation Committee in which evaluations of the effectiveness of overall executive compensation programs are conducted or in which compensation for executive officers is analyzed or approved. During fiscal year 2010, the Independent Consultant's duties included providing the Compensation Committee with relevant market and industry data and analysis, reviewing all materials and participating in the meetings in which the Compensation Committee made decisions regarding changes to executive compensation for fiscal year 2010. In fulfilling these duties, the Independent Consultant met, as needed and with the knowledge of the Chairman of the Compensation Committee, with our Chief Executive Officer, Senior Vice President of Human Resources and General Counsel

Perquisites and Other Compensation

We make only nominal use of perquisites in compensating our executive officers. All of our executive officers are entitled to be reimbursed for the cost of professional financial services. These services include tax planning, preparation and filing, as well as financial and estate planning services, up to a maximum of \$20,000 per calendar year.

In addition, our executive officers are eligible to participate in our 401(k) plan (including a Company match on employee 401(k) plan contributions) and the other employee benefit plans sponsored by us on the same terms and conditions that apply to all other employees.

Severance Benefits and Change of Control Agreements

We have adopted an Executive Severance Plan that specifies the compensation and benefits that plan participants will receive in the event their employment with us terminates under certain defined circumstances, including a change of control. For further information, please see the section of this Proxy Statement entitled "Potential Payments Upon Termination or Change of Control." We believe that the Executive Severance Plan is important for the long-term retention of our senior executives and enhances their commitment to the attainment of our strategic objectives. The benefits provided under the Executive Severance Plan will allow the participating executives to continue to focus their attention on our business operations and strategic plans without undue concern over their own financial situation during periods when substantial disruptions and distractions might otherwise prevail. We believe that the severance benefits provided under the Executive Severance Plan are fair and reasonable in light of the level of dedication and commitment the participating executive officers have rendered the Company, the contribution they have made to our growth and financial success and the value that we expect to receive from retaining their services, including during challenging transition periods following a change of control.

Deferred Compensation

We maintain an Executive Deferred Savings Plan, a nonqualified deferred compensation plan, which enables eligible employees to defer all or a portion

Executive Retiree Medical Plan

Stock Ownership Guidelines; Policy Regarding Hedging

of certain components of their compensation, with no Company match. For further information, please see the section of this Proxy Statement entitled "Nonqualified Deferred Compensation." We do not provide any defined benefit pension benefits or any other retirement benefits to named executive officers, other than the 401(k) Savings Plan available to all of our employees. Accordingly, it is the objective of the Executive Deferred Savings Plan, in conjunction with gains realized from awards made under the 2004 Equity Incentive Plan and the benefits payable under the Executive Severance Plan, to provide named executive officers with a meaningful opportunity to accumulate resources to fund their retirement income.

Certain current and former senior executive officers who meet defined eligibility criteria, and their eligible dependents, are entitled to continued medical benefits following their retirement. To be eligible, an executive must be at least 55 years old with ten years of service with us, and must be in good standing with us at the time of his or her retirement. Eligible executives are entitled to participate until age 65. Spouses of eligible executives may also participate until age 65, but subject to a maximum participation period of 15 years. Children of eligible executives may also participate until age 19 (or age 25, for full-time students), but their eligibility terminates upon the termination of coverage for an eligible parent. The Company and the participant share the cost of the premiums of such medical coverage, with our portion of the premium being equal to the amount that we pay to provide such coverage for current employees. No named executive officers are currently eligible to participate in the program.

In November 2008, our Board of Directors adopted revised stock ownership guidelines applicable to our executive officers. Under that policy, our executives are expected to own KLA-Tencor common stock having a minimum value, denominated as a multiple of their annual base salaries, as follows:

Title	Shares
CEO	Value of at least four times annual base salary
EVP/SVP	Value of at least two times annual base salary

Unexercised options and unearned performance shares or units do not count for purposes of measuring compliance with the ownership guidelines. The value of unvested restricted stock or stock units is included in measuring compliance. The recommended time period for reaching the guidelines is the later of (a) November 13, 2012 or (b) the fourth anniversary from when the individual becomes subject to these guidelines. With respect to our Chief Executive Officer, the Compensation Committee will conduct an annual review to assess compliance with the guidelines, once they become effective. Vice Presidents' compliance will be evaluated by the Chief Executive Officer. We believe that each of our executives subject to these ownership guidelines is on schedule to be in compliance with the guidelines by the applicable deadline.

Under our Policy on Insider Trading and Unauthorized Disclosures, our Directors and employees (including our named executive officers) are not permitted to engage in short sales of the Company's securities or any hedging or derivative securities transactions relating to the Company's securities.

Accounting and Tax Considerations

Section 162(m) of the Internal Revenue Code disallows an income tax deduction to publicly-traded companies for compensation paid to the Chief Executive Officer and the three other highest paid executive officers (other than the Chief Financial Officer), to the extent that compensation exceeds \$1 million per officer in any taxable year and does not otherwise qualify as performance-based compensation. Our existing equity compensation plans, including the 2004 Equity Incentive Plan, are structured so that the compensation deemed paid to an executive officer in connection with the vesting of performance share awards and the exercise of stock options granted under those plans should qualify as performance-based compensation. However, awards made under those plans may or may not qualify as performance-based compensation. For example, the service-based restricted stock units (as differentiated from the performance share awards) granted to our executive officers in August 2010 will not qualify as performance-based compensation because the vesting of those awards is tied solely to continued service over a four-year period, whereas the performance shares granted to the executive officers in August 2010 are expected to qualify as performance-based compensation (to the extent they are earned).

Our annual Performance Bonus Plan is a cash bonus plan structured in a manner that will allow us to qualify all or part of the compensation earned under that plan as performance-based compensation. As a result, it is anticipated that a substantial portion of any incentive compensation earned by the executive officers under that plan for fiscal year 2011 should qualify as performance-based compensation and should therefore not be subject to the \$1 million limitation.

The Compensation Committee continues to consider steps that might be in our best interests to comply with Section 162(m). However, in establishing the cash and equity incentive compensation programs for the executive officers, the Compensation Committee believes that the potential deductibility of the compensation payable under those programs should be only one of a number of relevant factors taken into consideration, and not the sole or primary factor. The Compensation Committee believes that cash and equity incentive compensation must be maintained at the requisite level to attract and retain the executive officers essential to the Company's financial success, even if all or part of that compensation may not be deductible by reason of the Section 162(m) limitation.

We maintain a clawback policy, set forth in the Compensation Committee's charter, which provides that in the event of a significant restatement of financial results resulting from fraud, misconduct, material non-compliance or material errors, the Compensation Committee may (in its sole discretion, but acting in good faith and in compliance with applicable laws) direct that the Company recover all or a portion of performance-based compensation, including bonuses and long term incentive awards, made to executive officers during the restatement period. The amount to be recovered from an executive officer will be the amount by which the performance-based compensation exceeded the amount that would have been payable to the executive officer had the financial statements been initially filed as restated, or any greater or lesser amount (including, but not limited to, the entire award) that the Compensation Committee determines. The Compensation Committee may

Clawback Policy

determine to recover different amounts from different executive officers on such basis it deems appropriate. The Compensation Committee will determine whether the Company is to effect any such recovery: (i) by seeking repayment from the applicable executive officer, (ii) by reducing (subject to applicable law and the terms and conditions of the applicable plan, program or arrangement) the amount that would otherwise be payable to the executive officer under any compensatory plan, program or arrangement maintained by us, (iii) by withholding (subject to applicable law and the terms and conditions of the applicable plan, program or arrangement) payment of future increases in compensation (including the payment of any discretionary bonus amount) or grants of compensatory awards that would otherwise have been made in accordance with our otherwise applicable compensation practices, or (iv) by any combination of the foregoing or otherwise.

COMPENSATION COMMITTEE REPORT

The information contained in this report shall not be deemed to be "soliciting material" or "filed" with the SEC or subject to the liabilities of Section 18 of the Securities Exchange Act of 1934, as amended, except to the extent that KLA-Tencor specifically incorporates it by reference into a document filed under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended.

The Compensation Committee has reviewed and discussed with management the Compensation Discussion and Analysis. Based on that review and its discussions, the Compensation Committee recommended to the Board that the Compensation Discussion and Analysis be included in this Proxy Statement.

Kevin J. Kennedy, Chairman Robert P. Akins Edward W. Barnholt Robert T. Bond John T. Dickson

EXECUTIVE COMPENSATION TABLES

Summary Compensation Table

The following table sets forth certain summary information concerning the compensation earned for services rendered in all capacities to the Company and its subsidiaries for the fiscal years ended June 30, 2010, 2009 and 2008 by our Chief Executive Officer, our Chief Financial Officer and each of the other executive officers whose total compensation for that fiscal year exceeded \$100,000 and who were serving as executive officers as of June 30, 2010. No other executive officers who would have otherwise been includable in such table on the basis of their compensation for the fiscal year ended June 30, 2010 have been excluded by reason of their termination of employment or change in executive status during that year. The individuals named in the table below will be referred to as the "named executive officers."

Name and Principal Position	Year (b)	Salary (\$) (1)	Bonus (\$) (2) (d)	Stock Awards (\$) (3)	Non-Equity Incentive Plan Compensation (\$) (1) (4)	in Pension Value and Nonqualified Deferred Compensation Earnings (\$) (5)	All Other Compensation (\$) (6)	Total (\$)
(a) Richard P. Wallace	2010	(c) 780,769	(u) —	5,898,690(7)	3,130,494	(g) 131,120	(h) 21,684	(i) 9,962,757
President & Chief Executive Officer	2009 2008	700,000 695,308	— 368,618(10)	3,696,000(8) 4,427,000(11)	1,078,422	— (9) — (9)	21,246 19,727	4,417,246 6,589,075
Mark P. Dentinger Executive Vice President & Chief Financial Officer	2010 2009	400,000 320,000	_	2,674,260(7) 763,200	891,000 —	_	21,211 3,234	3,986,471 1,086,434
Brian M. Martin Senior Vice President, General Counsel & Corporate Secretary	2010 2009 2008	337,115 325,000 325,000	_ _ _	1,337,130(7) 1,096,800(8) 220,163(11)	700,863 — 229,125	2,948 — (9) — (9)	10,862 21,114 18,454	2,388,918 1,442,914 792,742
Virendra A. Kirloskar Senior Vice President & Chief Accounting Officer	2010 2009 2008	278,723 270,000 233,959	9,057(12)	715,284(7) 584,960(8) 651,220	538,075 — 116,638	_ _ _	6,343 15,848 41,853	1,538,425 870,808 1,052,727

- (1) Includes amounts deferred under our 401(k) Plan, a tax-qualified deferred compensation plan under Section 401(k) of the Internal Revenue Code, and our Executive Deferred Savings Plan ("EDSP"), a nonqualified deferred compensation program available to the executive officers and certain other employees.
- Includes amounts deferred under our EDSP.
- (3) The amounts shown in column (e) represent the aggregate grant date fair value, calculated in accordance with the SEC's applicable requirements (including the recent changes in the SEC's disclosure rules), of all restricted stock units ("RSUs") and performance shares awarded to the particular executive officer during the applicable fiscal year. The SEC's disclosure rules, as in effect for our fiscal year 2009 proxy statements, previously required that we present stock award information in the Summary Compensation Table based on the amount recognized during the corresponding year for financial statement reporting purposes with respect to all stock awards outstanding during that year (regardless of when they had been granted). However, the recent changes in the SEC's disclosure rules require that we now present the stock award amounts in this column (e) using the grant date fair value of the awards granted during the applicable year, not only for fiscal year 2010 but also for fiscal years 2009 and 2008. Since this requirement differs from the SEC's past disclosure rules, the amounts reported in the table above for stock awards in fiscal years 2009 and 2008 differ from the amounts previously reported in our Summary Compensation Table for these years. As a result, each named executive officer's total compensation amounts for fiscal years 2009 and 2008 also differ from the amounts previously reported in our Summary Compensation Table for these years.

With respect to RSUs (i.e., awards issued with only service-based vesting criteria and no performance-based vesting criteria), the grant date fair value of each such RSU has been computed in accordance with the provisions of Financial Accounting Standards Board ("FASB") Accounting Standards Codification Topic 718, referred to in this Proxy Statement as ASC 718 (except that the fair values set forth above have not been reduced by the Company's estimated forfeiture rate). The ASC 718 grant date fair value of each RSU award was calculated based on the fair market value of our Common Stock on the award date.

With respect to performance shares (i.e., awards issued with both service-based and performance-based vesting criteria), the grant date fair value of each such RSU has been computed in accordance with ASC 718 based on the probable outcome (determined as of the grant date) of the performance-based conditions applicable to the awards and the fair market value of our Common Stock on the award date. For more information regarding specific awards, please refer to footnotes (7), (8) and (11) to this Summary Compensation Table.

We did not grant any stock options to any of the named executive officers during fiscal years 2010, 2009 or 2008

(4) The amounts shown in column (f) for fiscal year 2010 reflect the payments earned by each named executive officer under our fiscal year 2010 Performance Bonus Plan.

The amounts shown in column (f) for fiscal year 2009 reflect the fact that, due to the Company's financial performance during fiscal year 2009, no payments were made to any of the named executive officers under our fiscal year 2009 Performance Bonus Plan.

The amounts shown in column (f) for fiscal year 2008 reflect the following payments earned by each named executive officer under our fiscal year 2008 Performance Bonus Plan: Mr. Wallace: \$1,078,422; Mr. Martin: \$229,125; and Mr. Kirloskar: \$48,320. In addition, during the 2008 fiscal year, Mr. Kirloskar earned bonuses of \$22,315 under the Company's FY08 Vice President PFO Incentive Plan and \$46,003 under our fiscal year 2008 Annual Incentive Bonus Plan prior to becoming an executive officer of the Company.

(5) The amounts in column (g) for fiscal year 2010 represent investment earnings (if any) credited during that fiscal year to each named executive officer's deferred compensation account under our EDSP. The credited earnings (as applicable) correspond to the actual market earnings on a select group of investment funds utilized to track the notional investment return on the named executive officer's account balance for the fiscal year. We have not made any determination as to which portion of such earnings may be considered above market for purposes of this Summary Compensation Table and have elected to report the entire amount of such earnings.

The amounts in column (g) for fiscal years 2008 and 2009 represent zero values for all named executive officers, as all named executive officers either (i) did not participate in the EDSP or (ii) incurred a loss for the fiscal year on their investments in the EDSP (which losses, if any, are not reported in the Summary Compensation Table above so as to not understate the applicable officers' aggregate compensation). For more information regarding the participation of the named executive officers in the EDSP, please refer to footnote (9) to this Summary Compensation Table and the section of this Proxy Statement below entitled "Nonqualified Deferred Compensation."

(6) The amounts presented in column (h) consist of the following:

For the fiscal year ended June 30, 2010:

				Tax Payments		
		Reimbursement		and Tax		
	Company	of Financial		Gross-Up		
	Matching	Planning	Term Life	Amounts		
	Contribution	and Tax	Insurance	Related to		
	to 401(k)	Preparation	Premiums	Foreign	Total	
Name	Plan (\$)	Costs (\$)	(\$)	Assignment (\$)	(\$)	
Richard P. Wallace	3,000	18,135	549	_	21,684	
Mark P. Dentinger	3,000	17,930	281	_	21,211	
Brian M. Martin	1,700	8,925	237	_	10,862	
Virendra A Kirloskar	3,000	600	195	2 548	6 343	

For the fiscal year ended June 30, 2009:

	Company Matching Contribution	Reimbursement of (or Imputed Income for) Financial Planning and Tax	Term Life Insurance	Tax Payments and Tax Gross-Up Amounts Related to	
	to 401(k)	Preparation	Premiums	Foreign	Total
Name	Plan (\$)	Costs (\$)	(\$)	Assignment (\$)	(\$)
Richard P. Wallace	3,000	17,700	546	_	21,246
Mark P. Dentinger	3,000	_	234	_	3,234
Brian M. Martin	3,000	17,860	254	_	21,114
Virendra A. Kirloskar	3,000	600	211	12,037	15,848

For the fiscal year ended June 30, 2008:

		Reimbursement						
		of (or						
	Imputed				Tax			
		Income for)			Gross-Up			
	Company	Financial		Housing,	Amounts			
	Matching	Planning and	Term Life	Moving	Related to			
	Contribution	Tax	Insurance	and Other	Foreign			
	to 401(k)	Preparation	Premiums	Relocation	Assignment	Total		
Name	Plan (\$)	Costs (\$)	(\$)	Costs (\$)	(\$)	(\$)		
Richard P. Wallace	3,000	16,185	542	_	_	19,727		
Brian M. Martin	2,044	16,178	232	_	_	18,454		
Virendra A. Kirloskar	3,000	600	183	19,157	18,913	41,853		

⁽⁷⁾ A portion of this amount reflects the estimated fair value of performance shares based on the probable outcome (determined as of the grant date) of the performance-based conditions applicable to the awards and the fair market value of our Common Stock on the award date. Because the performance awards granted during fiscal year 2010 were structured so that they would be fully earned upon achievement by

- KLA-Tencor of its target level of operating margin percentage for that fiscal year (a target that was considered difficult to achieve at the time of grant), the probable outcome of the performance-based conditions applicable to the awards as of the grant date, for purposes of the calculations set forth in this table, has been determined to be equal to the maximum number of shares potentially issuable under the applicable award. The amounts included in the table above attributable to performance awards granted during fiscal year 2010 are as follows: (a) for Mr. Wallace, \$1,794,575; (b) for Mr. Dentinger, \$644,400; (c) for Mr. Martin, \$356,031; and (d) for Mr. Kirloskar, \$190,098. Following the completion of fiscal year 2010, the Compensation Committee (and, with respect to Mr. Wallace, the independent members of the Board) determined that the Company had fully achieved the performance-based conditions applicable to the fiscal year 2010 performance shares and that the maximum number of shares issuable under the fiscal year 2010 performance shares had been earned.
- (8) A portion of this amount reflects the estimated fair value of performance shares based on the probable outcome (determined as of the grant date) of the performance-based conditions applicable to the awards and the fair market value of our Common Stock on the award date. Because the performance awards granted during fiscal year 2009 were structured so that they would be fully earned upon achievement by KLA-Tencor of its target level of operating margin for that fiscal year (a target that was considered difficult to achieve at the time of grant), the probable outcome of the performance-based conditions applicable to the awards as of the grant date, for purposes of the calculations set forth in this table, has been determined to be equal to the maximum number of shares potentially issuable under the applicable award. The amounts included in the table above attributable to performance awards granted during fiscal year 2009 are as follows: (a) for Mr. Wallace, \$3,696,000 (i.e., all stock awards issued to Mr. Wallace during fiscal year 2009 were performance awards); (b) for Mr. Martin, \$548,400; and (c) for Mr. Kirloskar, \$292,480. However, following the completion of fiscal year 2009, the Compensation Committee (and, with respect to Mr. Wallace, the independent members of the Board) determined that the Company had not achieved the threshold performance-based conditions applicable to the fiscal year 2009 performance shares and that none of the shares issuable under the fiscal year 2009 performance shares had been earned.
- (9) During fiscal year 2009, the investment returns on the deferred compensation accounts under our EDSP for certain executive officers were negative and are therefore not considered above market for purposes of the Summary Compensation Table and not reported in the Summary Compensation Table above. The aggregate investment losses during fiscal year 2009 for such accounts were as follows: Mr. Wallace: \$256,572; and Mr. Martin: \$1,797. During fiscal year 2008, the investment returns on the deferred compensation accounts under our EDSP for certain executive officers were negative and are therefore not considered above market for purposes of the Summary Compensation Table and not reported in the Summary Compensation Table above. The aggregate investment losses during fiscal year 2008 for such accounts were as follows: Mr. Wallace: \$64,640; and Mr. Martin: \$152. (10) In connection with a review of our past equity award practices, it was determined that the actual measurement dates that should have been used for financial accounting purposes for certain stock options granted to employees,
- (10) In connection with a review of our past equity award practices, it was determined that the actual measurement dates that should have been used for financial accounting purposes for certain stock options granted to employees, including certain of the named executive officers, differed from the measurement dates previously used by the Company in accounting for those grants. In December 2006, following such review, the Company and certain executive officers (including Mr. Wallace, but not including any of the other named executive officers) agreed to increase the exercise price of certain then outstanding options held by such executive officers in exchange for a bonus payment equal to the aggregate increase in exercise price. To compensate Mr. Wallace for such increase, we paid a bonus to Mr. Wallace in January 2008 in the amount of \$358,618.
- (11) A portion of this amount reflects the estimated fair value of performance shares based on the probable outcome (determined as of the grant date) of the performance-based conditions applicable to the awards and the fair market value of our Common Stock on the award date. The annual performance awards granted during fiscal year 2008 were structured so that eighty percent (80%) of the maximum number of shares potentially issuable under the applicable award would be earned upon achievement by KLA-Tencor of its target level of operating margin for that fiscal year, which is deemed to be the probable outcome of the performance-based conditions applicable to the awards as of the grant date for purposes of the calculations set forth in this table. In addition, Mr. Wallace was granted a supplemental performance award during fiscal year 2008 that was structured so that it would be fully earned upon achievement by Mr. Wallace of certain strategic objectives (and achievement by KLA-Tencor of a threshold level of operating margin for that fiscal year), and the probable outcome of the performance-based conditions applicable to that supplemental award as of the grant date, for purposes of the calculations set forth in this table, has been determined to be equal to the maximum number of shares potentially issuable under that supplemental award. Following the completion of fiscal year 2008, the Compensy's financial performance at slightly above target operating margin, 83.7% of the maximum number of shares potentially issuable under the annual performance awards for fiscal year 2008 supplemental performance shares had been earned. The following table presents the aggregate grant date fair value of the performance awards included in the "Stock Awards" column for fiscal year 2008 and the aggregate grant date value of these awards assuming that the highest level of performance conditions had been achieved:

	Aggregate Grant	Aggregate Grant
	Date Fair Value	Date Fair Value
	(Based on	(Based on
	Probable	Maximum
	Outcome)	Performance)
Name	(\$)	(\$)
Richard P. Wallace	4,427,000	5,160,875
Brian M. Martin	220,163	275,174

(12) Following a review of our past equity award practices, we commenced an offer to our employees to amend or replace certain retroactively priced stock options in our Schedule TO filed with the SEC on February 27, 2007 (the "409A Tender Offer"). Mr. Kirloskar elected to participate in the 409A Tender Offer and tendered his eligible stock options. Accordingly, in June 2007, the Company and Mr. Kirloskar agreed to increase the exercise price of certain then outstanding options held by Mr. Kirloskar. In accordance with the terms of the 409A Tender Offer, to compensate Mr. Kirloskar for such increase, we paid a bonus to Mr. Kirloskar in January 2008 in the amount of \$9.057.

Grants of Plan-Based Awards

The following table provides certain summary information concerning each grant of an award made to a named executive officer during the fiscal year ended June 30, 2010 under a compensation plan. No stock appreciation rights were granted to any of the named executive officers during the fiscal year ended June 30, 2010

		Potential Payouts Under Non-Equity Incentive Plan Awards (1)				Potential Future Payouts Under Equity Incentive Plan Awards			
Name and Principal Position (a)	Grant Date (b)	Threshold (\$)(2) (c)	Payout at Company's Target Performance (\$) (3) (d)	Payout at Executive's Target Payout Level (\$)(4) (e)	Maximum (\$) (f)	Threshold (#) (g)	Target	Maximum (#) (i)	Grant Date Fair Value of Equity Awards (\$) (5)
Richard P. Wallace President & Chief Executive Officer	8/6/2009(6) 8/6/2009(7) 8/6/2009(8)	0	421,615	1,054,038	3,162,114	28,750 57,500 74,000	57,500 57,500 74,000	57,500 57,500 74,000	1,794,575 1,794,575 2,309,540
Mark P. Dentinger Executive Vice President & Chief Financial Officer	8/3/2009(6) 8/3/2009(7) 8/3/2009(8)	0	120,000	300,000	900,000	10,000 20,000 43,000	20,000 20,000 43,000	20,000 20,000 43,000	644,400 644,400 1,385,460
Brian M. Martin Senior Vice President, General Counsel & Corporate Secretary	8/3/2009(6) 8/3/2009(7) 8/3/2009(8)	0	94,392	235,981	707,942	5,525 11,050 19,400	11,050 11,050 19,400	11,050 11,050 19,400	356,031 356,031 625,068
Virendra A. Kirloskar Senior Vice President & Chief Accounting Officer	8/3/2009(6) 8/3/2009(7) 8/3/2009(8)	0	72,468	181,170	543,510	2,950 5,900 10,400	5,900 5,900 10,400	5,900 5,900 10,400	190,098 190,098 335,088

- (1) The amounts set forth in the table as "Potential Payouts Under Non-Equity Incentive Plan Awards" reflect the potential cash payouts (threshold, target and maximum) that could have been earned under our Performance Bonus Plan (the "Bonus Plan") based on the Company's performance for fiscal year 2010. In August 2010, following the completion of fiscal year 2010, the Company's actual performance was measured against the pre-established performance targets. Based on that measurement, the actual bonus amount under the fiscal year 2010 Bonus Plan was calculated for each named executive officer. That bonus amount is reflected in the Summary Compensation Table in the column "Non-Equity Incentive Plan Compensation."
- (2) The threshold amount is calculated as the minimum amount that would have been payable under the fiscal year 2010 Bonus Plan to the applicable named executive officer assuming satisfaction of the initial performance threshold required to fund the Bonus Plan. Under the structure of the fiscal year 2010 Bonus Plan, even if the Company achieved the threshold level of operating margin required to fund the plan, the actual percentage of the executive's target bonus payable under the plan would be determined by the Compensation Committee (or the independent members of the Board, as applicable) based upon their assessment of the extent to which the Company's balanced scorecard goals had been achieved. For the initial range of operating margin performance results above the threshold level required to fund the plan, the Compensation Committee and the independent members of the Board had the discretion to set such percentage as low as zero based on such assessment.
- (3) The amount in column (d) reflects the amount that would have been payable under the fiscal year 2010 Bonus Plan to the applicable named executive officer assuming Company achievement of target operating margin percentage for the year (with a determination by the Compensation Committee (or the independent members of the Board, as applicable) that the Company had fully achieved the goals set forth in the Company's balanced scorecard for the year). Under the structure of the fiscal year 2010 Bonus Plan, such an outcome (operating margin percentage equal to the target set for the year) and determination (full achievement of the Company's balanced scorecard goals) would have resulted in a payment equal to 40% of the officer's target bonus amount approved by the Compensation Committee or the independent members of the Board, as applicable.
- (4) The amount in column (e) reflects the amount that would have been payable under the fiscal year 2010 Bonus Plan to the applicable named executive officer assuming payment of the officer's full target bonus. As explained above, under the structure of the fiscal year 2010 Bonus Plan, a payout of 100% of a participant's target bonus would only be payable upon Company achievement of not only its target level of operating margin percentage, but an operating margin percentage significantly in excess of the Company's target performance level for fiscal year 2010.
- (5) The dollar value reported in column (j) represents the grant date fair value of the applicable RSU or performance share award calculated in accordance with the SEC's applicable requirements (including the recent changes in the SEC's disclosure rules).

With respect to RSUs (i.e., awards issued with only service-based vesting criteria and no performance-based vesting criteria), the grant date fair value of each such RSU has been computed in accordance with ASC 718 (except that the fair values set forth above have not been reduced by the Company's estimated forfeiture rate). The ASC 718 grant date fair value of each RSU award was calculated based on the fair market value of our Common Stock on the award date.

- With respect to performance shares (i.e., awards issued with both service-based and performance-based vesting criteria), the grant date fair value of each such RSU has been computed in accordance with ASC 718 based on the probable outcome (determined as of the grant date) of the performance-based conditions applicable to the awards and the fair market value of our Common Stock on the award date. Because the performance awards granted during fiscal year 2010 were structured so that they would be fully earned upon achievement by KLA-Tencor of its target level of operating margin percentage for that fiscal year (a target that was considered difficult to achieve at the time of grant), the probable outcome of the performance-based conditions applicable to the awards as of the grant date, for purposes of the calculations set forth in this table, has been determined to be equal to the maximum number of shares potentially issuable under the applicable award.
- (6) Reflects an award of performance shares (equal to one-half of the executive officer's annual equity award for fiscal year 2010) that have both a performance-vesting component tied to the Company's operating margin percentage for the 2010 fiscal year and a service-vesting component tied to continued service beyond that fiscal year. The performance vesting component has, on the basis of the Company's attained level of operating margin percentage for the 2010 fiscal year, been earned at a level of 100% of target, and each of the named executive officers accordingly has the opportunity to earn up to 100% of the target number of shares underlying his performance share award, if he satisfies the applicable service-vesting requirements. Fifty percent (50%) of the earned shares will vest on the two-year anniversary of the grant date, provided the named executive officer continues in our employ through each applicable vesting date. The underlying shares may also vest on an accelerated basis in the event the officer's employment terminates under certain circumstances, as described in the section "Potential Payments Upon Termination or Change of Control."
- (7) Reflects an award of RSUs (equal to one-half of the executive officer's annual equity award for fiscal year 2010) that only has a service-vesting component tied to continued service beyond fiscal year 2010. Fifty percent (50%) of the shares will vest on the two-year anniversary of the grant date, provided the named executive officer continues in our employ through each applicable vesting date. The underlying shares may also vest on an accelerated basis in the event the officer's employment terminates under certain circumstances, as described in the section "Potential Payments Upon Termination or Change of Control."
- (8) Reflects a supplemental RSU award during fiscal year 2010 (in addition to the executive officer's annual equity award for the fiscal year), which award only has a service-vesting component tied to continued service beyond fiscal year 2010. Fifty percent (50%) of the shares subject to the RSU will vest on the two-year anniversary of the grant date, and the remaining fifty percent (50%) will vest on the four-year anniversary of the grant date, provided the applicable named executive officer continues in our employ through each applicable vesting date. The underlying shares may also vest on an accelerated basis in the event the officer's employment terminates under certain circumstances, as described in the section "Potential Payments Upon Termination or Change of Control."

Outstanding Equity Awards at Fiscal Year End

The following table provides certain summary information concerning outstanding equity awards held by the named executive officers as of June 30, 2010.

		Option Awa	Stock Awards			
Name and Principal Position	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price (\$/Sh)	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 (\$) (1)
Richard P. Wallace	43,333(2)	6,667	52.53	2/17/2013		
President & Chief Executive Officer	118,750(2) 75,000(3) 11,250(3) 18,750(3) 15,000(3) 30,000(3) 20,000(3) 12,500(3) 10,000(3) 1,000(3) 9,000(3) 16,500(3) 3,792(3) 4,667(3) 3,791(3) 3,209(3) 2,014(3) 17,155(3)	6,250	47.95 41.79 40.66 45.16 58.10 53.86 34.67 51.23 37.05 40.14 29.31 45.25 32.75 50.82 26.25 32.88 44.69 44.69	9/26/2012 9/21/2014 8/2/2014 4/26/2014 1/27/2013 1/28/2013 7/30/2013 11/8/2012 5/22/2013 10/2/2011 10/2/2011 4/4/2011 11/10/2010 8/13/2010 8/13/2010	57,500(4) 57,500(5) 74,000(5) 12,500(5) 26,145(5) 31,250(5)	1,603,100 1,603,100 2,063,120 348,500 728,922 871,250
					37,500(6)	1,045,500
Mark P. Dentinger Executive Vice President & Chief Financial Officer					12,500(6) 20,000(4) 20,000(5) 43,000(5) 40,000(5)	348,500 557,600 557,600 1,198,840 1,115,200
Brian M. Martin Senior Vice President, General Counsel & Corporate Secretary					11,050(4) 11,050(5) 19,400(5) 15,000(5) 1,961(5) 14,000(5)	308,074 308,074 540,872 418,200 54,673 390,320

		Option Aw	otion Awards Stock Awards			wards
Name and Principal Position	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price (\$/Sh)	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 (\$) (1)
Virendra A. Kirloskar	3,792(7)	325	39.89	9/16/2014		
Senior Vice President & Chief Accounting Officer	9,500(2)	500	47.95	9/26/2012		
	6,067(3)		39.89	9/16/2014		
	760(3)		40.66	8/2/2014		
	1,267(3)		45.16	4/26/2014		
	1,600(3)		58.10	1/27/2014		
	3,200(3)		53.86	10/27/2013		
	2,500(3)		39.35	5/21/2013		
	2,000(0)		07.00	0,21,2010	5,900(4)	164,492
					5,900(5)	164,492
					10,400(5)	289,952
					8,000(5)	223,040
					4,000(5) 3,000(5) 4,000(5) 3,050(6)	111,520 83,640 111,520 85,034

Calculated based on the \$27.88 closing price per share of our Common Stock on June 30, 2010.

These particular options are part of a grant that vests over a five-year period of service with the Company measured from the grant date. Information concerning these grants is set forth below. Twenty percent (20%) of the total number of shares subject to these options vest and become exercisable upon completion of one year of service measured from the grant date, and the remaining eighty percent (2) (80%) vests in equal installments on a monthly basis for the subsequent 48 months of service. The options will vest on an accelerated basis in the event the officer's employment terminates under certain circumstances, as described in the section "Potential Payments Upon Termination or Change of Control."

Name	Option Grant Date	Total Number of Shares Granted	Number of Shares Exercised Before July 1, 2010
Richard P. Wallace	2/17/2006	50,000	_
	9/26/2005	125,000	_
Virendra A. Kirloskar	9/26/2005	10.000	_

These options are fully vested and exercisable.

These grants represent the maximum number of shares of our Common Stock that could have been earned under performance share awards that were granted to the applicable executive officer in August 2009 in connection with their service during fiscal year 2010. In August 2010, following the completion of fiscal year 2010, the Compensation Committee of our Board (and, with respect to the awards issued to Mr. Wallace, the independent members of the Board) reviewed the level of achievement during the fiscal year of the applicable performance criteria for the awards and formally determined

that all of the shares were earned under such performance share awards.

These particular RSUs are part of an award that vests over a four-year period of service with the Company measured from the award date. Each RSU represents the right to receive one share of our Common Stock upon the vesting of that unit. Information concerning these RSU awards is set forth below. Fifty percent (50%) of the total number of shares underlying these awards will vest and (5) become issuable upon completion of two years of service measured from the award date, and the remaining fifty percent (50%) will vest and become issuable upon completion of four years of service measured from the award date. The RSUs will vest on an accelerated basis in the event the officer's employment terminates under certain circumstances, as described in the section "Potential Payments Upon Termination or Change of Control."

Name	RSU Award Date	Total Number of Shares Subject to Award	Number of Shares Vested and Issued Before July 1, 2010
Richard P. Wallace	8/6/2009	57,500	_
	8/6/2009	74,000	_
	8/13/2007	25,000	12,500
	8/8/2007	52,291	26,146
	9/19/2006	62,500	31,250
Mark P. Dentinger	8/3/2009 8/3/2009 11/11/2008	20,000 43,000 40,000	_ _ _
Brian M. Martin	8/3/2009 8/3/2009 8/5/2008 8/8/2007 5/8/2007	11,050 19,400 15,000 3,922 28,000	
Virendra A. Kirloskar	8/3/2009 8/3/2009 8/5/2008 5/5/2008 11/15/2007	5,900 10,400 8,000 8,000 6,000	4,000 3,000
	9/19/2006	8,000	4,000

⁽⁶⁾ These particular RSUs are part of an award that vests over a five-year period of service with the Company measured from the award date. Each RSU represents the right to receive one share of our Common Stock upon the vesting of that unit. Information concerning these RSU awards is set forth below. Fifty percent (50%) of the total number of shares underlying these awards will vest and become issuable upon completion of four years of service measured from the award date, and the remaining fifty percent (50%) will vest and become issuable upon completion of five years of service measured from the award date. The RSUs will vest on an accelerated basis in the event the officer's employment terminates under certain circumstances, as described in the section "Potential Payments Upon Termination or Change of Control."

	RSU	Total Number of Shares Subject	Number of Shares Vested and Issued
Name	Award Date	to Award	Before July 1, 2010
Richard P. Wallace	2/17/2006	75,000	37,500
	9/26/2005	25,000	12,500
Virendra A. Kirloskar	10/18/2005	6,100	3,050

⁽⁷⁾ This particular option is part of a grant on September 16, 2004 to purchase 6,500 shares of our Common Stock (2,383 of which had been exercised before July 1, 2010) that vests over a six-year period of service with the Company measured from the grant date. Twenty percent (20%) of the total number of shares subject to this option vested and became exercisable upon completion of two years of service measured from the grant date, and the remaining eighty percent (80%) vests in equal installments on a monthly basis for the subsequent 48 months of service.

Stock Vested

The following table sets forth information with respect to shares of our Common Stock subject to restricted stock, RSU or performance share awards held by the named executive officers that vested during the fiscal year ended June 30, 2010. No stock options were exercised, and no stock appreciation rights were held or exercised, by the named executive officers during the fiscal year ended June 30, 2010.

	Stock Awards		
Name and Principal Position	Number of Shares Acquired on Vesting (#)	Value Realized on Vesting (\$) (1)	
Richard P. Wallace President & Chief Executive Officer	109,201(2)	3,521,114	
Brian M. Martin Senior Vice President, General Counsel & Corporate Secretary	1,961(2)	61,203	
Virendra A. Kirloskar Senior Vice President & Chief Accounting Officer	10,050(2)	340,309	

- (1) Based on the market price of the vested shares on the vesting date.
- (2) Our 2004 Equity Incentive Plan allows us to withhold shares issuable upon a vesting event to pay for the applicable withholding tax with respect to such vesting event. The gross number of shares acquired on vesting, which is set forth in the table above, was reduced by the withheld shares, and the net remaining shares were issued to each officer. The following reflects the net number of shares that were issued to each officer, after giving effect to such withholding, during the fiscal year ended June 30, 2010: Mr. Wallace: 65,373 shares; Mr. Martin: 1,259 shares; and Mr. Kirloskar: 6,369 shares.

Nonqualified Deferred Compensation

We have established the Executive Deferred Savings Plan (the "EDSP") in order to provide our executive officers and other key employees with the opportunity to defer all or a portion of their cash compensation each year. Pursuant to the plan, each participant can elect to defer between 5 to 100% of his or her salary, commissions and bonuses for the fiscal year. The deferred amount is credited to an account maintained in his or her name on our books. The portion of the account attributable to the participant's deferred salary, commissions and bonuses under our annual bonus plans is fully vested at all times. The account is periodically adjusted to reflect earnings (or losses) based on the participant's investment elections among a select group of investment funds utilized to track the notional investment return on the account balance. There are a total of 23 investment funds available for selection under the EDSP, and the participant may change his or her investment elections on a daily basis. The participant may elect to receive his or her vested account balance upon termination of employment or at an earlier designated date. The distribution may, at the participant's election, be made in a lump sum or in quarterly installments over a period ranging from five years to fifteen years, depending on the circumstances triggering the distribution event. A participant can receive an early distribution of a portion of his or her vested account balance in the event of a financial hardship or in the event he or she agrees to forfeit a designated percentage of his or her remaining account balance. We maintain life insurance policies on the plan participants as a funding vehicle for a portion of our obligations under the plan.

The following table shows the deferred compensation activity for each named executive officer during the fiscal year ended June 30, 2010.

Name and Principal Position (a) Richard P. Wallace President & Chief Executive Officer	Executive Contributions in Fiscal Year 2010 (S) (b) 20,000	Company Contributions in Fiscal Year 2010 (\$) (c)	Aggregate Earnings (Losses) in Fiscal Year 2010 (\$) (1)(2) (d) 131,120	Aggregate Withdrawals/ Distributions (\$) (e)	Aggregate Balance as of June 30, 2010 (\$) (3) (f) 762,804
Mark P. Dentinger Executive Vice President & Chief Financial Officer	_	_	_	_	-
Brian M. Martin Senior Vice President, General Counsel & Corporate Secretary	8,356	_	2,948	_	45,186
Virendra A. Kirloskar Senior Vice President & Chief Accounting Officer	_	_	_	_	_

⁽¹⁾ The reported amount corresponds to a composite of the actual market earnings on a group of investment funds selected by the applicable executive officer for purposes of tracking the notional investment return on his account balance for fiscal year 2010. Positive amounts reported in this column (d) for each named executive officer are also reported in the "Change in Pension Value and Nonqualified Deferred Compensation Earnings" column of the Summary Compensation Table.

(2) The 23 investment funds named below were available for selection under the EDSP for fiscal year 2010. The rate of return for each such fund for fiscal year 2010 was as follows:

Name of Fund	% Rate of Return for Fiscal Year 2010
Invesco V.I. Global Health Care Fund	8.69%
Invesco V.I. Technology Fund	18.40%
Invesco V.I. Utilities	5.50%
American Funds Growth Fund	16.69%
DWS Dreman Small-Midcap Value	23.14%
DWS Small Cap Index	20.99%
Janus Aspen Series Worldwide Growth	14.52%
PIMCO Total Return Fund	12.55%
Royce Micro-Cap	27.83%
Royce Small-Cap	25.83%
Rydex Energy	6.13%
Transamerica Diversified Equity	9.25%
T. Rowe Price Blue Chip Growth	11.79%
T. Rowe Price Equity Income Fund	17.07%
T. Rowe Price International Stock	12.97%
T. Rowe Price Mid Cap Growth	24.42%
Vanguard VIF Balanced Index Fund	12.63%
Vanguard Equity Index	14.32%
Vanguard High-Yield Bond	20.03%
Vanguard International Growth	12.60%
Vanguard REIT Index Fund	54.82%
Vanguard Total Bond Index	9.35%
Wells Fargo Cash Investment Money Market	0.19%

(3) Includes, for each named executive officer, any earnings reported for him in the "Change in Pension Value and Nonqualified Deferred Compensation Earnings" column of the Summary Compensation Table.

Potential Payments Upon Termination or Change of Control

Our Board has adopted an Executive Severance Plan (as amended to date, the "Severance Plan"), which provides certain compensation and benefits in the event the participant's employment with us terminates under certain defined circumstances. In exchange for receiving severance benefits under the Severance Plan, the participant will be subject to a non-compete covenant and non-solicitation restrictions for the period of time co-terminous with the period for which he or she will receive continued compensation and benefits under the Severance Plan. All of our named executive officers participate in the Severance Plan.

If Messrs. Wallace, Dentinger, Martin or Kirloskar is terminated other than for cause, or voluntarily resigns for good reason, prior to a change of control, then such officer will receive (i) salary continuation payments for two years, (ii) a pro-rated annual incentive payment for the fiscal year of his termination or resignation (calculated based on such officer's annual incentive bonus for the then-most recently completed fiscal year and the proportion of the then-current fiscal year served through the date of termination or resignation), (iii) pro-rated vesting of all of his outstanding equity awards through the date of his termination or resignation (rounded up to the next whole month and disregarding any "cliff-vesting" provisions applicable to the award), and (iv) the extension of the post-termination exercise period of each stock option or stock appreciation right granted after January 1, 2006 so that the option or right will remain exercisable for twelve months following the date of termination or resignation, but in no event beyond the original term of the award. The calculation in clause (iii) of this paragraph with respect to any performance-based equity awards for which the achievement of the applicable performance criteria has not yet been determined as of the participant's termination date will be delayed until the extent of the achievement of those criteria (and thus the maximum number of shares issuable under the applicable award) has been finally determined.

If Mr. Wallace is terminated other than for cause, or voluntarily resigns for good reason, within two years following a change of control, he will receive (i) salary continuation payments for three years, (ii) an amount equal to three times his average annual bonus for the preceding three completed fiscal years, payable in equal installments over the salary continuation period, (iii) a pro-rated annual incentive payment for the fiscal year of his termination or resignation (calculated as described in clause (ii) of the preceding paragraph), (iv) 100% vesting acceleration of all of his outstanding equity awards, (v) an additional \$2,000 per month for the three-year severance period and (vi) the extension of the post-termination exercise period of each stock option or stock appreciation right granted after January 1, 2006 so that the option or right will remain exercisable for twelve months following the date of termination or resignation, but in no event beyond the original term of the award. The calculation in clause (iv) of this paragraph with respect to any performance-based equity awards for which the achievement of the applicable performance criteria has not yet been determined as of the participant's termination date will be delayed until the extent of the achievement of those criteria (and thus the maximum number of shares issuable under the applicable award) has been finally determined.

If Mr. Dentinger or Mr. Martin is terminated other than for cause, or voluntarily resigns for good reason, within two years following a change of control, then such officer will receive (i) salary continuation payments for two years, (ii) an amount equal to two times his average annual bonus for the preceding three completed fiscal years (or, if an officer has not been employed by us for at least three full fiscal years, two times the annualized average of (A) the bonuses earned by such officer for each of the preceding completed fiscal years that the officer has been with us and (B) a pro-rated amount of the actual bonus that would have been earned by such officer for the fiscal year of his termination or resignation), payable in equal installments over the salary continuation period, (iii) a pro-rated annual incentive payment for the fiscal year of his termination or resignation (calculated as described in clause (ii) two paragraphs above), (iv) 100% vesting acceleration of all of his outstanding equity awards, (v) an additional \$2,000 per month for the two-year severance period and (vi) the

extension of the post-termination exercise period of each stock option or stock appreciation right granted after January 1, 2006 so that the option or right will remain exercisable for twelve months following the date of termination or resignation, but in no event beyond the original term of the award. The calculations in clauses (ii) (with respect to an officer who has been with us for less than three full fiscal years) and (iv) of this paragraph with respect to any performance-based equity or bonus awards for which the achievement of the applicable performance criteria has not yet been determined as of the participant's termination date will be delayed until the extent of the achievement of those criteria (and thus the maximum amounts that would have been issuable with respect to such awards) has been finally determined

In addition, Messrs. Wallace, Dentinger and Martin will each be entitled under certain circumstances to a full tax gross-up payment to cover any excise tax liability they may incur under Internal Revenue Code Section 4999 and the resulting income and employment tax liability attributable to that payment, should the benefits to which they become entitled in connection with a change of control constitute parachute payments that exceed by more than \$50,000 the maximum parachute payment otherwise allowable under the federal tax laws without the imposition of Section 4999 excise tax.

The Severance Plan also contains a mitigation provision in which the benefits payable are subject to reduction to the extent the participant earns post-termination compensation from sources other than the Company.

The following table shows the estimated amounts that would have been payable to Messrs. Wallace, Dentinger, Martin and Kirloskar upon the occurrence of the indicated event, had the applicable event occurred on June 30, 2010. For such officers, the amount attributable to the accelerated vesting of stock options, performance shares and restricted stock units is based upon the closing fair market value of our Common Stock on the last trading day of fiscal year 2010. That value was \$27.88 per share, as reported on the NASDAQ Global Select Market on June 30, 2010. The actual compensation and benefits the officer would receive at any subsequent date would likely vary from the amounts set forth below as a result of certain factors, such as a change in the price of our Common Stock and any additional benefits the officer may have accrued as of that time under applicable benefit or compensation plans.

The amounts that would have been payable to Messrs. Wallace, Dentinger, Martin and Kirloskar upon the occurrence of the indicated event had the applicable event occurred on June 30, 2010 are as follows:

		Salary/		Stock	Options			
Name and	_	Bonus Continuation & Additional Monthly	Pro-rated	Accelerated Vesting of Stock	Extension of Post- Termination Exercise	Accelerated Vesting of Stock	Excise Tax Gross-Up	
Principal Position	Event	Payments (\$)	Bonus (\$)	Options (\$)	Period (\$) (1)	Awards (\$)	(\$)	Total (\$)
Richard P. Wallace President & Chief Executive Officer	Termination without Cause or Resignation for Good Reason (2)	1,600,000	_	_	10,407	3,638,563	_	5,248,970
	Termination without Cause or Resignation for Good Reason following Change of Control (2)(3)	5,658,295	_	_	11,782	8,611,993	2,871,528	17,153,598
Mark P. Dentinger Executive Vice President & Chief Financial Officer	Termination without Cause or Resignation for Good Reason (2)	800,000	_	_	_	995,037	_	1,795,037
	Termination without Cause or Resignation for Good Reason following Change of Control (2)(3)	2,630,000	_	_	_	3,429,240	1,736,266	7,795,506
Brian M. Martin Senior Vice President, General Counsel & Corporate Secretary	Termination without Cause or Resignation for Good Reason (2)	680,000	_	-	_	718,356	_	1,398,356
	Termination without Cause or Resignation for Good Reason following Change of Control (2)(3)	961,133	_	-	_	2,020,213	-	2,981,346
Virendra A. Kirloskar Senior Vice President & Chief Accounting Officer	Termination without Cause or Resignation for Good Reason (2)	561,600	_	_	_	464,760	_	1,026,360

⁽¹⁾ Reflects the incremental compensation charge that would be recorded by the Company in connection with the extension, in accordance with the Severance Plan, of the post-termination exercise period of the applicable stock options (if any) held by the participant.

⁽²⁾ For purposes of the Severance Plan, "Cause" means (A) outside of the two-year period following a Change of Control, the occurrence of any of the following events: (i) the participant's conviction of, or plea of nolo contendre to, a felony; (ii) the participant's gross misconduct; (iii) any material act of personal dishonesty taken by the participant in connection with his or her responsibilities as an employee of the Company, or (iv) the participant's willful and continued failure to perform the duties and responsibilities of his or her position after there has been delivered to the participant a written demand for performance from the Board which describes the basis for the Board's belief that the participant has not substantially performed his or her duties and provides the participant with thirty (30) days to take corrective action, and (B) within the two-year period following a Change of Control, the occurrence of any of the following events: (i) the participant's conviction of, or plea of nolo contendre to, a felony that the Board reasonably believes has had or will have a material detrimental effect on our reputation or business; (ii) the participant's willful gross misconduct with regard to the Company

that is materially injurious to us; (iii) any act of personal dishonesty taken by the participant in connection with his or her responsibilities as an employee of the Company with the intention or reasonable expectation that such action may result in substantial personal enrichment of the participant or (iv) the participant's willful and continued failure to perform the duties and responsibilities of his or her position after there has been delivered to the participant a written demand for performance from the Board which describes the basis for the Board's belief that the participant has not substantially performed his or her duties and provides the participant with thirty (30) days to take corrective action.

For purposes of the Severance Plan, "Good Reason" means (A) outside of the two-year period following a Change of Control, the occurrence of any of the following events: (i) a material reduction of the participant's duties, title, authority or responsibilities; (ii) a reduction in the participant's base salary, other than a reduction that applies to other executives generally; (iii) a material reduction in the aggregate level of the participant's employee benefits, or overall compensation, other than a reduction that applies to other executives generally; or (iv) the relocation of the participant's office more than thirty-five (35) miles from its then present location, unless such relocated office is closer to the participant's then principal residence, and (B) within the two-year period following a Change of Control, the occurrence of any of the events listed above in this paragraph except that any reduction in the participant's base salary shall constitute Good Reason even if such reduction applies to other executives generally; provided however, that in no event shall Good Reason exist unless the participant provides us with thirty (30) days written notice specifying in detail the grounds for a purported Good Reason resignation and we fail to cure the purported grounds for the Good Reason within such thirty (30) day notice period.

(3) For purposes of the Severance Plan, a "Change of Control" means the occurrence of any of the following events: (i) any "person" (as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act")) becoming the "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities representing 50% or more of the total votting power represented by our then outstanding votting securities; (ii) the sale or disposition by us of all or substantially all of our assets; (iii) the consummation of a merger or consolidation of the Company with any other corporation, other than a merger or consolidation which would result in our voting securities outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity) more than 50% of the total voting power represented by the voting securities of the Company or such surviving entity outstanding immediately after such merger or consolidation, or (iv) a change in the composition of our Board, as a result of which fewer than a majority of the directors are Incumbent Directors (where "Incumbent Directors" means directors whose elicter (A) were directors of the Company as of February 16, 2006 or (B) are elected, or nominated for election, to the Board with the affirmative votes of at least a majority of those directors whose election or nomination was not in connection with any transactions described in subsections (i), (ii) or (iii) or in connection with an actual or threatened proxy contest relating to the election of directors of the Company).

Review, Approval or Ratification of Related Party Transactions

CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

Our Standards of Business Conduct require that all employees and Directors avoid conflicts of interests, including situations in which their personal interests interfere in any way, or appear to interfere, with the interests of KLA-Tencor.

In addition, our Board has adopted a written policy and procedures for the review, approval or ratification of related party transactions. Under this policy, the Audit Committee reviews transactions, arrangements or relationships in which the Company (including any of its subsidiaries) is a participant, the amount involved exceeds \$100,000 in any fiscal year, and one of our executive officers, Directors, Director nominees or 5% stockholders (or their immediate family members) has a direct or indirect material interest (other than solely as a result of being a director or beneficial owner of less than a specified percentage of shares of the other entity (5% for publicly traded entities and 10% for other entities)). As part of that review, the Audit Committee may consider such factors as it determines to be appropriate under the circumstances, which factors may include the position of the related party with the Company, the related party's interest in the transaction, the materiality of the transaction, the business purpose for and reasonableness of the transaction, and comparable market terms for similar transactions that do not involve related parties.

Following such review, if the Audit Committee concludes that the terms of the related party transaction are acceptable and appropriate, the Audit Committee either approves or ratifies (as applicable) the transaction. No member of the Audit Committee participates in the review of a transaction for which he or she is the related party. The related party transaction policy created standing pre-approval for certain recurring related party transactions, including, among others, (i) executive officer or Director compensation that has been approved by the Compensation Committee or the Board, and (ii) any contract, transaction or arrangement with any party who was not a related party at the time such contract, transaction or arrangement was entered into with the Company, and renewals or extensions thereof pursuant to contractual arrangements in effect and binding on the Company prior to the date that the party became a related party.

Transactions with Related Persons – Purchases of Goods and Services

The following represents the only transaction (or collection of transactions) in which KLA-Tencor was a participant during fiscal year 2010, the aggregate amount involved exceeded \$120,000, and any related person had a material direct or indirect interest (as determined, and as required to be reported, in accordance with SEC rules and regulations):

Mr. Calderoni's brother, Frank Calderoni, serves as an executive officer of Cisco Systems Inc. ("Cisco"). During fiscal year 2010, we purchased approximately \$315,792 in telecommunications equipment and services from Cisco.

The transactions with Cisco were reviewed and approved or ratified by the Audit Committee in accordance with the policies and procedures described above.

EQUITY COMPENSATION PLAN INFORMATION

The following table provides information as of June 30, 2010 with respect to shares of our Common Stock that may be issued under our existing equity compensation plans.

	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights (1) A	xercise Outstandi ptions, Options		Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (excluding securities reflected in Column A) C
Equity Compensation Plans Approved by Stockholders (3)	15,217,304	\$	44.39	17,759,445(4)(5)(6)
Equity Compensation Plans Not Approved by Stockholders (7)(8)	2,581,666	s	41.56	_
Total	17,798,970	\$	43.74	17,759,445

- (1) Includes 6,470,101 shares of our Common Stock subject to restricted stock units that will entitle each holder to the issuance of one share of our Common Stock for each unit that vests over the holder's period of continued employment with the Company. Excludes purchase rights accruing under our 1997 Amended and Restated Employee Stock Purchase Plan (the "Purchase Plan"). Under the Purchase Plan, each eligible employee may purchase shares of Common Stock at each semi-annual purchase date (the last business day of June and December each year), up to a maximum of \$25,000 worth of stock (determined on the basis of the fair market value per share on the date the purchase right is granted) for each calendar year the purchase right remains outstanding. As of June 30, 2010, the date of the information set forth in the table above (and a date on which a purchase occurred under the Purchase Plan), the purchase price payable per share under the terms of the Purchase Plan was equal to eighty-five percent (85%) of the lower of (i) the closing selling price per share of our Common Stock on the first day of the six-month offering period and (ii) the closing selling price per share of our Common Stock on the purchase date. As of June 30, 2010, the weighted-average remaining contractual term of all outstanding options was 2.74
- (2) Calculated without taking into account 6,470,101 shares of our Common Stock subject to outstanding restricted stock units that will become issuable as those units vest, without any cash consideration or other payment required for such shares.
- (3) Consists of our (a) 2004 Equity Incentive Plan ("2004 Equity Plan"), (b) 1982 Stock Option Plan, (c) Purchase Plan and (d) 1998 Outside Director Option Plan (the "Outside Director Plan").
- (4) Includes shares of our Common Stock available for future issuance under the 2004 Equity Plan, the Purchase Plan and the Outside Director Plan. No further shares are available for issuance under the 1982 Stock Option Plan.
- (5) As of June 30, 2010, 13,548,948 shares of our Common Stock were available for issuance under the 2004 Equity Plan. Shares reserved for issuance under this plan may be issued upon the exercise of stock options or stock appreciation rights or pursuant to full value awards such as restricted stock awards or restricted stock units that vest upon the completion of designated service periods or performance units or performance shares that vest upon the attainment of prescribed performance milestones. Shares issued pursuant to full value awards made under the 2004 Equity Plan will reduce the share reserve available under such plan by 1.8 shares for every one full value share issued.
- (6) As of June 30, 2010, 2,597,157 shares of our Common Stock were reserved for issuance under the Purchase Plan. This plan contains an annual automatic share renewal provision pursuant to which the number of shares of our Common Stock reserved for issuance under this plan will automatically increase on the first day of each fiscal year by an amount equal to the lesser of 2,000,000 shares or the number of shares which we estimate will be required to be issued under the plan during the forthcoming fiscal year. Two million shares were registered and added to the Purchase Plan during the fiscal year ended June 30, 2010.
- (7) Consists solely of the 2000 Non-Statutory Plan pursuant to which options have been granted to our employees and consultants. The 2000 Non-Statutory Plan was terminated during the fiscal year ended June 30, 2005, and no further options may be granted under that plan.
- (8) Excludes information for options assumed by us in connection with acquisitions of companies. As of June 30, 2010, a total of 29,168 shares of our Common Stock were issuable upon exercise of outstanding options assumed in those acquisitions and issued under the following plans, which have not been approved by our stockholders: Therma-Wave, Inc. 2000 Equity Incentive Plan (as amended), ADE Corporation 1995 Stock Option Plan, ADE Corporation 1997 Employee Stock Option Plan (as amended) and ADE Corporation 2000 Employee Stock Option Plan (as amended). The weighted average exercise price of those outstanding options is \$34.61 per share. No additional options may be granted under the plans under which these options were assumed.

REPORT OF THE AUDIT COMMITTEE

KLA-Tencor's Audit Committee is comprised of non-employee Directors, each of whom meets current standards of independence and financial experience requirements of the NASDAQ Stock Market. From the beginning of fiscal year 2010 through the date of this Proxy Statement, the Audit Committee has consisted of Messrs. Calderoni, Kaufman, Patel and Wang, with Mr. Calderoni serving as the Chairman of the Committee. The Board has determined that, of the current members of the Audit Committee, both Mr. Calderoni and Mr. Patel are "audit committee financial experts" within the meaning of the rules and regulations promulgated by the SEC. The Board has adopted a written charter for the Audit Committee that details the responsibilities of the Audit Committee. This report relates to the activities undertaken by the Audit Committee in fulfilling such responsibilities. The charter is reviewed at least annually for changes, as appropriate, and is posted on KLA-Tencor's website at http://ir.kla-tencor.com, in the Investor Presentations and Corporate Governance section.

KLA-Tencor's management is responsible for establishing and maintaining a system of internal controls and the financial reporting process. The Audit Committee is responsible for overseeing the Company's auditing, accounting and financial reporting processes, system of internal controls, and legal and ethical compliance. This report relates to the activities undertaken by the Audit Committee in fulfilling such responsibilities. During fiscal year 2010 and subsequent to the completion of the fiscal year, the Audit Committee reviewed, discussed and provided input on the Company's audited consolidated financial statements contained in the Company's Annual Report on Form 10-K for the fiscal year ended June 30, 2010. The Audit Committee also met routinely with the independent auditors, with and without members of the Company's management team present, to evaluate and approve the Company's internal controls and the overall quality of the Company's financial reporting. The Audit Committee also met with the Company's Chief Executive Officer and Chief Financial Officer to discuss and act, as necessary, on accounting issues and risks facing the Company.

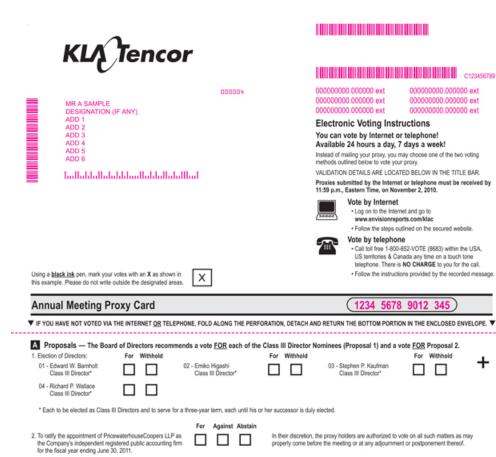
The Audit Committee also discussed with the Company's auditors the matters required to be discussed by Statement on Auditing Standards No. 61 (Communication With Audit Committees), as amended, as adopted by the Public Company Accounting Oversight Board in Rule 3200T.

The Audit Committee received the written disclosures and the letter from the auditors required by Independence Standards Board Standard No. 1, *Independence Discussions with Audit Committees*, as adopted by the Public Company Accounting Oversight Board in Rule 3200T. In addition, on a quarterly basis, the members of the Audit Committee discussed with the auditors their independence, and the auditors reaffirmed the independence of the Audit Committee members. After reviewing such information, the Audit Committee determined that the independent auditors are independent from management and KLA-Tencor. The Audit Committee also concluded that the provision of services covered by fees paid to the independent auditors was compatible with maintaining their independence.

Based on the reviews and discussions referred to above, the Audit Committee recommended to the Board, and the Board approved, the inclusion of the audited financial statements in the Company's Annual Report on Form 10-K for the fiscal year ended June 30, 2010, filed with the SEC on August 6, 2010.

MEMBERS OF THE AUDIT COMMITTEE

Robert M. Calderoni, Chairman Stephen P. Kaufman Kiran M. Patel David C. Wang



B Non-Voting Items

Change of Address — Please print new address below

C Authorized Signatures — This section must be completed for your vote to be counted. — Date and Sign Below Please sign exactly as name(s) appears hereon. Joint owners should each sign. When signing as attorney, executor, administrator, corporate officer, trustee, guardian, or custodian, please give full title.

C 1234567890

JNT

41AV 1014011

Signature 2 — Please keep signature within the box

MR A SAMPLE (THIS AREA IS SET UP TO ACCOMMODATE 140 CHARACTERS) MR A SAMPLE AND MR A SAMPLE AND



🔻 IF YOU HAVE NOT VOTED VIA THE INTERNET OR TELEPHONE, FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE.



Proxy — KLA-TENCOR CORPORATION

Notice of Annual Meeting of Stockholders

One Technology Drive Milpitas, CA 95035

Proxy Solicited by Board of Directors for Annual Meeting - November 3, 2010

To the Stockholders:

NOTICE IS HEREBY GIVEN that the Annual Meeting of Stockholders of KLA-Tencor Corporation (the "Company"), a Delaware corporation, will be held on Wednesday, November 3, 2010 at 12:00 p.m., local time, in Multipurpose Rooms East and West in Building Three of the Company's Milpitas facility, located at Three Technology Drive, Milpitas, CA 95035, for the purposes stated on the reverse side.

The undersigned hereby appoints Mark P. Dentinger and Brian M. Martin, or either of them, as proxies, each with the power to appoint his substitute, and hereby authorizes them to represent and to vote, as designated on the reverse side, all of the shares of Common Stock of the Company that the undersigned is entitled to vote at the Annual Meeting of Stockholders or at any adjournment or postponement thereof.

THIS PROXY, WHEN PROPERLY EXECUTED, WILL BE VOTED AS DIRECTED BY THE UNDERSIGNED STOCKHOLDER. IF NO SUCH DIRECTIONS ARE MADE, THIS PROXY WILL BE VOTED FOR THE ELECTION OF THE NOMINEES LISTED ON THE REVERSE SIDE FOR THE BOARD OF DIRECTORS AND FOR PROPOSAL 2.

PLEASE MARK, SIGN, DATE AND RETURN THIS PROXY CARD PROMPTLY USING THE ENCLOSED REPLY ENVELOPE.

CONTINUED AND TO BE SIGNED ON THE REVERSE SIDE