

Edgar Filing: NANOMETRICS INC - Form PRER14A

NANOMETRICS INC
Form PRER14A
August 01, 2005

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. 1)

Filed by the Registrant [X]
Filed by a party other than the Registrant []

Check the appropriate box:

- Preliminary Proxy Statement
 Definitive Proxy Statement
 Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))
 Definitive Additional Materials
 Soliciting Material Pursuant to Rule 14a-11(c) or Rule 14a-12

NANOMETRICS INCORPORATED

(Name of Registrant as Specified in its Charter)

(Name of Person(s) Filing Proxy Statement if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

- No fee required.
 Fee computed on table below per Exchange Act Rules 14a-6(i)(4) and 0-11.
 (1) Title of each class of securities to which transactions applies:
 (2) Aggregate number of securities to which transactions applies:
 (3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (Set forth the amount on which the filing fee is calculated and state how it was determined):
 (4) Proposed maximum aggregate value of transaction:
 (5) Total fee paid:
 Fee paid previously with preliminary 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 the 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 Registration Statement No.:
 (3) Filing Party:
 (4) Date Filed:

NANOMETRICS INCORPORATED

Edgar Filing: NANOMETRICS INC - Form PRER14A

NOTICE OF ANNUAL MEETING OF SHAREHOLDERS

TO THE SHAREHOLDERS OF NANOMETRICS INCORPORATED:

NOTICE IS HEREBY GIVEN that the annual meeting of shareholders of Nanometrics Incorporated, a California corporation (the "Company"), will be held on Friday, August 26, 2005 at 1:00 p.m., local time, at the Company's principal offices located at 1550 Buckeye Drive, Milpitas, California 95035. At the annual meeting, you will be asked to consider and vote upon the following:

1. A proposal to elect seven candidates nominated by the board of directors to serve until the next annual meeting of shareholders at which their respective successors are elected and qualified, or until the earlier of their death, resignation or removal.

2. A proposal to approve the reincorporation of the Company under the laws of the State of Delaware through a merger with Big League Merger Corporation, a wholly-owned subsidiary of the Company.

3. Proposals to approve various governance-related provisions in the form of certificate of incorporation of the Company to be effective upon the completion of the reincorporation merger consisting of the following proposals:

- o 3A--a proposal to approve a provision limiting the Company's stockholders' right to call special meetings of stockholders;
- o 3B--a proposal to approve a provision limiting the Company's stockholders' ability to act by written consent;
- o 3C--a proposal to approve a provision requiring a super-majority vote of the Company's stockholders to amend certain provisions of its certificate of incorporation;
- o 3D--a proposal to approve a provision requiring a super-majority vote of the Company's stockholders to amend certain provisions of the Company's bylaws;
- o 3E--a proposal to approve a provision limiting the Company's stockholders' right to remove directors from the board without cause;
- o 3F--a proposal to approve the classification of the board of directors into separate classes with staggered terms; and
- o 3G--a proposal to approve a provision limiting cumulative voting rights in connection with the election of directors.

4. A proposal to approve the adoption of the Company's 2005 Equity Incentive Plan (the "Plan") and the reservation of 1,200,000 shares of common stock for issuance thereunder.

5. A proposal to ratify the appointment of BDO Seidman, LLP as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2005.

6. Such other business as may properly come before the annual meeting or any postponements or adjournments thereof.

The foregoing items of business are more fully described in the proxy statement accompanying this notice of annual meeting of shareholders.

Edgar Filing: NANOMETRICS INC - Form PRER14A

Only shareholders of record at the close of business on July 12, 2005 are entitled to notice of and to vote at the annual meeting and any postponements or adjournments thereof.

All shareholders are cordially invited to attend the annual meeting in person. However, to ensure representation at the annual meeting, you are urged to mark, sign, date and return the enclosed proxy card as promptly as possible in the postage-prepaid envelope enclosed for that purpose. Any shareholder of record attending the annual meeting may vote in person even if that shareholder previously returned a proxy card for the annual meeting.

BY ORDER OF THE BOARD OF DIRECTORS,

Vincent J. Coates
Chairman of the Board of Directors and Secretary

Milpitas, California
August __, 2005

NANOMETRICS INCORPORATED

PROXY STATEMENT

INFORMATION CONCERNING SOLICITATION AND VOTING

General

This proxy statement is being provided to the shareholders of Nanometrics Incorporated (the "Company") as part of a solicitation of proxies by the board of directors for use at the 2005 annual meeting of shareholders. This proxy statement provides shareholders with information they need to know to be able to vote or instruct their vote to be cast at the annual meeting.

Date, Time and Place

The annual meeting will be held on Friday, August 26, 2005 at 1:00 p.m., local time, at the Company's principal offices located at 1550 Buckeye Drive, Milpitas, California 95035.

Purpose; Other Matters

The annual meeting is being held to consider and vote upon the following:

1. A proposal to elect seven director nominees to the board of directors to serve until the next annual meeting of shareholders at which their respective successors are elected and qualified, or until the earlier of their death, resignation or removal.

2. A proposal to approve the reincorporation of the Company under the laws of the State of Delaware through a merger with Big League Merger Corporation, a wholly-owned subsidiary of the Company.

3. Proposals to approve various governance-related provisions in the form of certificate of incorporation of the Company to be effective upon the completion of the reincorporation merger consisting of the following proposals:

- o 3A--a proposal to approve a provision limiting the Company's

Edgar Filing: NANOMETRICS INC - Form PRER14A

stockholders' right to call special meetings of stockholders;

- o 3B--a proposal to approve a provision limiting the Company's stockholders' ability to act by written consent;
- o 3C--a proposal to approve a provision requiring a super-majority vote of the Company's stockholders to amend certain provisions of its certificate of incorporation;
- o 3D--a proposal to approve a provision requiring a super-majority vote of the Company's stockholders to amend certain provisions of the Company's bylaws;
- o 3E--a proposal to approve a provision limiting the Company's stockholders' right to remove directors from the board without cause;
- o 3F--a proposal to approve the classification of the board of directors into separate classes with staggered terms; and
- o 3G--a proposal to approve a provision limiting cumulative voting rights in connection with the election of directors.

4. A proposal to approve the adoption of the Company's 2005 Equity Incentive Plan (the "Plan") and the reservation of 1,200,000 shares of common stock for issuance thereunder.

5. A proposal to ratify the appointment of BDO Seidman, LLP as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2005.

Shareholders will also be asked to consider and vote upon any other business as may properly come before the annual meeting or any adjournments or postponements of the annual meeting. The Company does not expect that any matter other than the proposals presented in this proxy statement will be brought before the annual meeting. However, if other matters incident to the conduct of the annual meeting are properly presented at the annual meeting or any adjournment or postponement of the annual meeting, the persons named as proxies will vote in accordance with their best judgment with respect to those matters.

If you vote "AGAINST" any of the proposals, the proxy holders will not be authorized to vote for any adjournments or postponements of the annual meeting, including for the purpose of soliciting additional proxies, unless you so indicate by marking the appropriate box on the proxy card for the annual meeting.

Recommendation of the Board of Directors

The board of directors unanimously recommends that you vote:

- o "FOR" the proposal to elect seven candidates nominated by the board of directors to serve until the next annual meeting of shareholders at which their respective successors are elected and qualified, or until the earlier of their death, resignation or removal;
- o "FOR" the proposal to approve the reincorporation of the Company under the laws of the State of Delaware through a merger with Big League Merger Corporation, a wholly-owned subsidiary of the Company;

Edgar Filing: NANOMETRICS INC - Form PRER14A

- o "FOR" the proposals to approve the governance-related provisions in the Company's certificate of incorporation to be effective upon completion of the reincorporation merger;
- o "FOR" the proposal to approve the adoption of the Plan and the reservation of 1,200,000 shares of common stock for issuance thereunder; and
- o "FOR" the proposal to ratify the appointment of BDO Seidman, LLP as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2005.

Record Date; Outstanding Shares; Voting Rights

Only holders of record of common stock at the close of business on the record date for the annual meeting, July 12, 2005, are entitled to notice of and to vote at the annual meeting. As of the record date, there were 12,793,207 shares of common stock outstanding and entitled to vote at the annual meeting, held by approximately 140 holders of record. Each record holder of common stock on the record date is entitled to one vote for each share of common stock held as of the record date with respect to all proposals except with respect to the election of directors.

The candidates receiving the seven highest vote totals will be elected to the board of directors. Every shareholder voting for the election of the board of directors may (i) cumulate such shareholder's votes and give any one candidate a number of votes equal to the number of directors to be elected multiplied by the number of shares that such shareholders holds on the record date for the annual meeting, or (ii) distribute such shareholder's votes on the same principle among as many candidates as the shareholder may select, provided that votes cannot be cast for more than seven candidates. However, no shareholder will be entitled to cumulate votes for a candidate unless the candidate's name has been placed in nomination prior to the voting and the shareholder, or any other shareholder, has given notice at the annual meeting prior to the voting of the intention to cumulate votes.

A list of shareholders will be available for review at the annual meeting and at the Company's executive offices during regular business hours for a period of ten days before the annual meeting.

Admission to the Annual Meeting

Only shareholders, their designated proxies and guests of the Company may attend the annual meeting. If you plan to attend the annual meeting and wish to vote in person, you will be given a ballot at the annual meeting. Please note, however, that if your shares are held in "street name," which means your shares are held of record by a broker, bank or other nominee, and you wish to vote at the annual meeting, you must bring to the annual meeting a "legal proxy" from the record holder of your shares authorizing you to attend and vote at the annual meeting.

Quorum and Vote Required

A quorum of shareholders is necessary to hold a valid annual meeting of shareholders. In order to have a quorum for the transaction of business at the annual meeting, a majority of shares of common stock issued and outstanding and entitled to vote on the record date must be present in person or by proxy at the annual meeting. Shares that are voted "FOR," "AGAINST," "ABSTAIN" or "WITHHOLD AUTHORITY" a matter are treated as being present at the annual meeting for purposes of establishing a quorum.

Edgar Filing: NANOMETRICS INC - Form PRER14A

In addition, the vote required to approve each proposal is as follows:

Proposal 1

The candidates for the board of directors receiving the seven highest vote totals will be elected to serve as directors of the Company.

Proposal 2

Approval of the reincorporation merger will require the affirmative vote of the holders of a majority of the outstanding shares of common stock entitled to vote on the record date.

2

Proposals 3A-G

Under applicable state law, shareholder approval of the reincorporation merger is sufficient to implement the proposed governance-related provisions in the certificate of incorporation of the Company. Under rules promulgated by the Securities and Exchange Commission, however, we are required to present each of the proposed governance-related provisions as a separate proposal for shareholder approval. Accordingly, if we complete the reincorporation merger, we have determined that we will not implement the proposed governance-related provisions unless they are independently approved by the affirmative vote of the holders of a majority of the shares of the Company's common stock represented and voting on each proposed governance-related provision at the annual meeting.

Proposal 4

Approval of the Plan and the reservation of shares of common stock for issuance thereunder will require the affirmative vote of the holders of a majority of the shares of common stock represented in person or by proxy and voting at the annual meeting.

Proposal 5

Approval by the shareholders of the selection of the independent registered public accounting firm is not required, but the audit committee believes it is desirable as a matter of good corporate governance to submit this matter to the shareholders. If holders of a majority of the common stock represented and voting at the annual meeting do not ratify the appointment of BDO Seidman, LLP as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2005, the audit committee will consider whether it should select another independent registered public accounting firm.

Voting

General

Shareholders of record as of the record date may vote their shares by attending the annual meeting and voting their shares in person or by completing, signing and dating their respective proxy cards for the annual meeting and mailing them in the postage pre-paid envelope enclosed for that purpose. Shareholders holding shares of common stock in "street name," which means that their shares are held of record by a broker, bank, or other nominee, may vote by mail by completing, signing and dating the voting instruction forms for the annual meeting provided by their respective brokers, banks, or other nominees and returning their respective voting instruction forms to the record holders of their shares of common stock. Even if you plan to attend the annual meeting, the

Edgar Filing: NANOMETRICS INC - Form PRER14A

Company recommends that you vote by proxy prior to the annual meeting. You can always change your vote as described below.

Voting by Proxy

All properly executed proxies that are received prior to the annual meeting and not revoked will be voted at the annual meeting according to the instructions indicated on the proxies. If your proxy does not specify how you wish the Company to vote your shares, your shares will be voted:

- o "FOR" the proposal to elect seven candidates nominated by the board of directors to serve until the next annual meeting of shareholders at which their respective successors are elected and qualified, or until the earlier of their death, resignation or removal;
- o "FOR" the proposal to approve the reincorporation of the Company under the laws of the State of Delaware through a merger with Big League Merger Corporation, a wholly-owned subsidiary of the Company;
- o "FOR" the proposals to approve the governance-related provisions in the Company's certificate of incorporation to be effective upon completion of the reincorporation merger;
- o "FOR" the proposal to approve the adoption of the Plan and the reservation of 1,200,000 shares of common stock for issuance thereunder; and
- o "FOR" the proposal to ratify the appointment of BDO Seidman, LLP as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2005.

You may receive more than one proxy card depending on how you hold your shares of common stock. Generally, you need to sign and return all of your proxy cards to vote all of your shares. For example, if you hold shares through someone else, such as a broker, you may get proxy material from that person.

Changing Your Vote

If you are the record holder of your shares of common stock, you can change your vote at any time before your proxy is voted at the annual meeting by:

- o delivering to the Company's corporate secretary a signed notice of revocation;

3

- o granting the proxy holders a new, later-dated proxy, which must be signed and delivered to the Company's corporate secretary in advance of the vote at the annual meeting; or
- o attending the annual meeting and voting in person.

Your attendance alone, however, will not revoke your previously granted proxy. If you hold your shares in street name and you have provided voting instructions to your broker, bank or other nominee for the annual meeting, you must follow the instructions provided by your broker, bank or other nominee in order to change your vote or revoke your proxy for the annual meeting.

Abstentions and Broker Non-Votes

Edgar Filing: NANOMETRICS INC - Form PRER14A

An abstention occurs when a shareholder attends a meeting, either in person or by proxy, but abstains from voting. While there is no definitive statutory or case law authority in California as to the proper treatment of abstentions, the Company believes that abstentions should 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 shares of common stock represented and voting with respect to a proposal. In the absence of controlling authority to the contrary, the Company intends to treat abstentions in this manner.

"Broker non-votes" are shares held by a broker or other nominee that are represented at the annual meeting, but with respect to which the broker or nominee is not instructed by the beneficial owner of the shares to vote on the particular proposal and the broker does not have discretionary voting power on the proposal. Broker non-votes will be counted for purposes of determining the presence or absence of a quorum but will not be counted for purposes of determining the number of shares represented and voting with respect to a proposal.

For proposal 1, neither abstentions nor broker non-votes will have any effect on the election of the seven directors.

For proposal 2, abstentions and broker non-votes will have the same effect as voting against approval of the reincorporation merger.

For proposals 3A-3G, neither abstentions nor broker non-votes will have any effect on the approvals of the governance-related proposals.

For proposal 4, abstentions will have the same effect as voting against the approval of the Plan and the reservation of shares of common stock for issuance thereunder; broker non-votes will have no effect.

For proposal 5, abstentions will have the same effect as voting against ratification of the appointment of BDO Seidman, LLP as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2005; broker non-votes will have no effect.

Proxy Solicitation

The Company is soliciting proxies for the annual meeting from its shareholders. The Company will bear the entire cost of soliciting proxies from the shareholders. In addition to the solicitation of proxies by mail, the Company will request that brokers, banks and other nominees send proxies and proxy materials to the beneficial owners of common stock held by them and secure their voting instructions, if necessary. The Company will reimburse those record holders for their reasonable expenses. The Company also may use several of its regular employees, who will not be specially compensated, to solicit proxies from shareholders, either personally or by telephone, Internet, telegram, facsimile or special delivery letter.

Assistance

If you need assistance in completing your proxy card or have questions regarding the annual meeting, please contact Investor Relations at (408) 435-9600 or write to Nanometrics Incorporated, 1550 Buckeye Drive, Milpitas, California 95035, Attn: Investor Relations.

Edgar Filing: NANOMETRICS INC - Form PRER14A

The attached proxy card grants the proxy holders discretionary authority to vote on any matter raised at the 2005 Annual Meeting. Shareholders are entitled to present proposals for action at the Company's annual meetings. For any proposal to be considered for inclusion in the Company's proxy statement and form of proxy for submission to the shareholders at an annual meeting, the proposal must comply with the requirements of Rule 14a-8 under the Exchange Act and be submitted in writing by notice delivered or mailed by first-class United States mail, postage prepaid, to Nanometrics Incorporated, 1550 Buckeye Drive, Milpitas, California 95035, Attention: Office of the Secretary. Typically, proposals must be received by the Company no later than 120 calendar days before the date the proxy statement was released to shareholders in connection with the previous year's annual meeting. If the Company changes the date of its annual meeting to a date more than 30 days from the date of the previous year's annual meeting, then the deadline for receipt of shareholder proposals will be changed to a reasonable time before the Company begins to print and mail its proxy. The submission of a shareholder proposal does not guarantee that it will be included in the Company's proxy statement. Additionally, shareholder proposals to be considered at an annual meeting outside the processes of Rule 14a-8 (which are not intended to be included in the proxy materials for such annual meeting) must be delivered to or mailed and received at the Company's executive offices at least 45 days before the date that the proxy statement was released to shareholders in connection with the previous year's annual meeting.

Material Proceedings

To the best of management's knowledge, there are no material proceedings to which any director or officer is a party and (i) is adverse to the Company or any of its subsidiaries or (ii) has a material interest adverse to the Company or any of its subsidiaries.

5

PROPOSAL 1 ELECTION OF NANOMETRICS' DIRECTORS

Nominees

At the 2005 annual meeting of shareholders, unless otherwise instructed, the proxy holders will vote the proxies received by them for the seven nominees named below, each of whom is presently a director of the Company. In the event that any nominee is unable or declines to serve as a director at the time of the annual meeting, the proxies will be voted for any nominee who shall be designated by the present board of directors to fill the vacancy. The proxy holders intend to vote all proxies received by them in such a manner and in accordance with cumulative voting as will ensure the election of as many of the nominees listed below as possible and, in such event, the specific nominees to be voted for will be determined by the proxy holders. The Company is not aware of any nominee who will be unable or will decline to serve as a director

The names of the seven nominees and certain information about them are set forth below:

Name of Nominee -----	Age ---	Director Since -----
Vincent J. Coates	80	1975
John D. Heaton	45	1995
Edmond R. Ward	65	1999

Edgar Filing: NANOMETRICS INC - Form PRER14A

William G. Oldham	66	2000
Stephen J Smith	58	2004
J. Thomas Bentley	55	2004
Norman V. Coates	55	2004

Vincent J. Coates has been Chairman of the Board since the Company was founded in 1975. He has been the Company's Secretary since February 1989. He also served as Chief Executive Officer through April 1998 and President from the Company's founding through May 1996, except for the period of January 1986 through February 1987 when he served exclusively as Chief Executive Officer. Mr. Coates has also served as Chairman of the Board of Nanometrics Japan Ltd., a subsidiary of the Company, since its inception in November 1984. Prior to his employment at the Company, Mr. Coates co-founded Coates and Welter Instrument Corporation, a designer of electron microscopes, the assets of which were subsequently acquired by the Company. Mr. Coates also spent over twenty years working in engineering, sales and international operations for the Perkin-Elmer Corporation, a manufacturer of analytical instruments. In 1995, he received an award which recognized his contribution to the industry from Semiconductor and Equipment and Materials International, an industry trade organization.

John D. Heaton has served as a director of the Company since July 1995. Since April 1998, he has been Chief Executive Officer of the Company. From May 1996 to April 1998, he served as the Company's President and Chief Operating Officer. Mr. Heaton has also served as President of Nanometrics Japan Ltd., a subsidiary of the Company, since January 1998. Beginning in 1978, Mr. Heaton served in various technical positions at National Semiconductor, a semiconductor manufacturer, and prior to joining the Company in 1990.

Edmond R. Ward has served as a director of the Company since July 1999. Beginning in January 2002, Mr. Ward has served as Chief Technical Officer of Unity Semiconductor, a semiconductor design and manufacturing company. Since April 1999, Mr. Ward has been a General Partner of Virtual Founders, a venture capital firm. From April 1992 to June 1997, Mr. Ward was the Vice President of Technology at Silicon Valley Group, Inc., a supplier of wafer processing equipment.

William G. Oldham has served as a director of the Company since June 2000. Since 1964, Mr. Oldham has been a faculty member at the University of California, Berkeley, where he researches EUV and Maskless Lithography and, since 1996, has been the Director of the DARPA/SRC Research Network for Advanced Lithography. He has served as a consultant in various intellectual property matters and serves on the board of directors of Cymer, Inc., a supplier of light sources for deep ultraviolet (DUV) photolithography systems used in the manufacturing of semiconductors.

Stephen J Smith has served as a director of the Company since April 2004. Dr. Smith has been a professor in the Department of Molecular and Cellular Physiology at the Stanford University School of Medicine since 1989, where he researches brain development and function with special interests in the dynamic and structural aspects of synapse and circuit formation and synaptic plasticity. Dr. Smith is the author of numerous research articles in the fields of cellular and molecular neuroscience.

J. Thomas Bentley has served as a director of the Company since April 2004.

Edgar Filing: NANOMETRICS INC - Form PRER14A

Mr. Bentley is a co-founder of Alliant Partners, a leading merger and acquisition firm for emerging and mid-market technology companies. For the past 10 years, Mr. Bentley has worked with some of Alliant's largest clients on their strategic acquisitions and divestitures. His expertise is in financial, tax and accounting structuring of merger transactions. Mr. Bentley holds a Master of Science degree in Management from M.I.T. and currently serves as a senior advisor to Alliant Partners.

Norman V. Coates served as a director of the Company from May 1988 through June 2001. He was re-appointed to the board of directors on June 30, 2004. He has operated Gem of the River Produce, a farming and produce packing operation in Orleans, California, as a sole proprietor since 1978. He has also been manager of the Boise Creek Farm operation since 1985 and a manager of Coates Vineyards since 1997.

The candidates for the board of directors receiving the seven highest vote totals will be elected to serve as directors of the Company. The directors elected at the annual meeting will serve until the next annual meeting or until such director's successor has been elected or qualified.

THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE SHAREHOLDERS VOTE "FOR" THE SEVEN NOMINEES SET FORTH HEREIN.

Security Ownership of Management and Certain Beneficial Owners

The following table sets forth beneficial ownership of common stock of the Company as of July 12, 2005, the record date, by each director or nominee, by each of the Named Officers (as defined in the section of this proxy statement entitled "Compensation of Executive Officers" beginning on page 13), by all directors and Named Officers as a group, and by all persons known to the Company to be the beneficial owners of more than 5% of the Company's common stock. Quentin Wright and Michael Weber are not listed on the table below because they did not join the Company in their capacities as executive officers until after January 1, 2005 and are not Named Officers. Unless otherwise indicated, all persons named below can be reached at Nanometrics Incorporated, 1550 Buckeye Drive, Milpitas, California 95035.

Name of Beneficial Owner -----	Number of S of Common S Beneficia Owned (1 -----
Vincent J. Coates(2)	3,376,27
Artemis Investment Management LLC(3) 437 Madison Avenue New York, New York 10022	881,80
Dimensional Fund Advisors Inc.(4) 1299 Ocean Avenue 11th Floor Santa Monica, CA 90401	913,14
John D. Heaton(5)	365,00
Edmond R. Ward(6)	32,00
William G. Oldham(7)	30,00
Paul B. Nolan(8)	28,33

Edgar Filing: NANOMETRICS INC - Form PRER14A

Roger Ingalls, Jr. (9)	22,66
Stephen J Smith (10)	3,33
J. Thomas Bentley (11)	3,33
Norman V. Coates (12)	3,33
All Named Officers and directors as a group (nine(9)persons) (13)	5,659,22

* Represents less than 1% of outstanding shares of common stock.

- (1) Beneficial ownership is determined in accordance with the rules of the Securities and Exchange Commission. The number of shares beneficially owned by a person includes shares of common stock subject to options held by that person that are currently exercisable or exercisable within 60 days of July 12, 2005. Such shares issuable pursuant to such options are deemed outstanding for computing the percentage ownership of the person holding such options but are not deemed outstanding for the purposes of computing the percentage ownership of each other person.
- (2) Includes 3,376,154 shares of common stock held of record by the Vincent J. Coates Separate Property Trust, U/D/T dated August 7, 1981, for which Mr. Coates acts as trustee.
- (3) According to a Schedule 13G filed on February 10, 2004, Artemis Investment Management LLC may be deemed to be the beneficial owner of 881,800 shares of common stock.
- (4) According to a Schedule 13G/A filed on February 9, 2005, Dimensional Fund Advisors Inc. may be deemed to be the beneficial owner of 913,148 shares of common stock.
- (5) Includes 365,000 shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of July 12, 2005.
- (6) Includes 30,000 shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of July 12, 2005.
- (7) Includes 30,000 shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of July 12, 2005.
- (8) Includes 23,334 shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of July 12, 2005.

8

- (9) Includes 22,667 shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of July 12, 2005.
- (10) Includes 3,333 shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of July 12, 2005.
- (11) Includes 3,333 shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of July 12, 2005.
- (12) Includes 3,333 shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of July 12, 2005.
- (13) Includes 481,000 shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of July 12, 2005.

Edgar Filing: NANOMETRICS INC - Form PRER14A

Board Meetings and Committees

The board of directors met (or acted by written consent) a total of nine (9) times during fiscal year ended January 1, 2005. During the fiscal year ended January 1, 2005, all incumbent directors attended at least 75% of meetings of the board of directors and meetings of committees, if any, upon which such directors served. The standing committees of the board of directors include an audit committee, a compensation/stock option committee and a nominating/governance committee.

The board of directors has determined that all of its directors meet the independence requirements of the Nasdaq National Market, with the exception of Vincent J. Coates, Norman V. Coates and John D. Heaton.

It is the policy of the Company to require its directors to attend its annual meetings absent a valid reason, such as a schedule conflict. All of the directors who served on the board of directors for the entire fiscal year attended the 2004 annual meeting of shareholders.

Audit Committee

The audit committee of the board of directors reviews and monitors the Company's financial reporting as well as its internal and external audits, including among other things, the Company's internal audit and control functions, the results and scope of the annual audit and other services provided by the Company's independent auditors, and the Company's compliance with legal matters that may have a significant impact on the Company's financial reports. In addition, the audit committee has the responsibility to consider and recommend the employment of, and to review fee arrangements with, the Company's independent auditors. The audit committee also monitors transactions between the Company and its officers, directors and employees for any potential conflicts of interest. The audit committee met (or acted by written consent) five (5) times during the fiscal year ended January 1, 2005.

The members of the audit committee during the fiscal year ended January 1, 2005 were William Oldham, Nathaniel Brenner (through March 2004), Edmond R. Ward and J. Thomas Bentley (beginning in April 2004). Mr. Brenner, the audit committee's financial expert in the fiscal year ended January 3, 2004, resigned his position as director as well as his committee assignments effective as of March 2004. At the recommendation of the nominating/governance committee, the board of directors appointed J. Thomas Bentley to the audit committee as of May 26, 2004. Mr. Bentley was appointed by the board of directors to serve as the audit committee's financial expert and chairman.

Each member of the Company's audit committee is an "independent director" as that term is defined under the applicable Nasdaq National Market listing standards. The audit committee has adopted a written charter, which is available on the Company's website at www.nanometrics.com.

Compensation/Stock Option Committee

The compensation/stock option committee reviews and makes recommendations to the board of directors regarding the Company's compensation policy and all forms of compensation to be provided to certain of the executive officers of the Company, including the chief executive officer.

The compensation/stock option committee is responsible for approving the grant of stock options to the Company's employees under the Company's 2000

Edgar Filing: NANOMETRICS INC - Form PRER14A

Employee Stock Option Plan and 2002 Nonstatutory Stock Option Plan.

The members of the compensation/stock option committee serving in the fiscal year ended January 1, 2005 were Edmond Ward, J. Thomas Bentley, Stephen J Smith and Nathaniel Brenner. Mr. Ward was appointed as chairman of the compensation/stock option committee by the board of directors. As indicated above, Mr. Brenner resigned his position as director as well as his committee assignments effective as of March 2004. The compensation/stock option committee met (or acted by written consent) seven (7) times during fiscal 2004. The compensation/stock option committee has adopted a written charter, which is available on the Company's website at www.nanometrics.com.

Nominating/Corporate Governance Committee

The Company maintains a standing nominating/corporate governance committee that assists the board of directors in identifying and qualifying candidates to join the board of directors and addressing governance issues. All members of the nominating committee are independent. The nominating committee utilizes a variety of methods for identifying and evaluating nominees. Its general policy is to assess the appropriate size of the board of directors and whether any vacancies are expected due to retirement or otherwise. In the event those vacancies are anticipated, or otherwise arise, the nominating committee will consider recommending various potential candidates to fill such vacancies. Candidates may come to the attention of the nominating committee through its current members, shareholders or other persons. The board of directors may consider properly submitted shareholder nominations for candidacy. Nominees may be submitted by shareholders in accordance with the shareholder communication policy described below.

The nominating/corporate governance committee has no specific, minimum qualifications for director candidates. In general, however, persons considered for board of directors positions must have demonstrated leadership capabilities, be of sound mind and high moral character, have no personal or financial interest that would conflict or appear to conflict with the interests of the Company and be willing and able to commit the necessary time for board of directors and committee service.

The nominating/corporate governance committee believes that board members should represent a balance of diverse backgrounds and skills, including marketing, finance, manufacturing, engineering, science, and international experience. The nominating/corporate governance committee consists of William Oldham and Stephen Smith. Mr. Oldham was appointed as chairman of the nominating/corporate governance committee by the board of directors. The nominating/corporate governance committee met once in the fiscal year ended January 1, 2005 and has adopted a written charter, which is available on the Company's website at www.nanometrics.com.

Shareholder Communication Policy

The board of directors has established a formal process for shareholders to send communications to the board of directors or to individual directors. The names of all directors are available to shareholders in this proxy statement. If the Company receives any shareholder communication intended for the full board of directors or any individual director, the Company will forward the communication to the full board of directors or the individual director, unless the communication is clearly of a marketing nature or is unduly hostile, threatening, illegal or similarly inappropriate, in which case the Company has the authority to discard the communications or take appropriate legal action regarding the communication.

Compensation/Stock Option Committee Interlocks and Insider Participation

Edgar Filing: NANOMETRICS INC - Form PRER14A

No member of the compensation/stock option committee of the Company's board of directors serves as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving as a member of the Company's board of directors or compensation/stock option committee.

Compensation of Directors

Directors who are not also employees of the Company receive an annual retainer fee of \$5,000, plus \$1,000 for each board and committee meeting attended. Directors are also eligible to participate in the Company's Directors' Stock Option Plan. Each audit committee member receives an additional \$3,000 annual retainer and \$500 for attending

10

quarterly earnings release conference calls. Additionally, the audit committee chairman receives an incremental \$2,000 retainer for serving in such capacity.

Compensation of Executive Officers

The following table sets forth the compensation paid by the Company during the past three fiscal years to (i) the chief executive officer, (ii) each of the four most highly compensated executive officers (or such lesser number of executive officers as the Company may have) of the Company not serving as chief executive officer and (iii) up to an additional two individuals that would have been included under item (ii) but for the fact that the individuals were not serving as executive officers as of January 1, 2005, all of whom are collectively referred to as the "Named Officers". Quentin Wright and Michael Weber are not listed on the table below because they did not join the Company in their capacities as executive officers until after January 1, 2005.

Summary Compensation Table

Name -----	Annual Compensation		
	Fiscal Year	Salary	B
John D. Heaton President and Chief Executive Officer	2004	\$ 341,800	\$
	2003	342,800	
	2002	343,800	
Vincent J. Coates Chairman of the Board and Secretary	2004	\$ 204,800	
	2003	204,800	
	2002	204,800	
Roger Ingalls, Jr. Senior Vice President of Standalone Sales	2004	\$ 195,265	\$
	2003	198,965	
	2002	201,834	
Paul B. Nolan Vice President and Chief Financial Officer	2004	\$ 183,055	\$
	2003	179,050	
	2002	162,234	

Edgar Filing: NANOMETRICS INC - Form PRER14A

Stock Options Granted in the Fiscal Year Ended January 1, 2005

The following table sets forth information with respect to stock options granted during the fiscal year ended January 1, 2005 to each of the Named Officers. Quentin Wright and Michael Weber are not listed on the table below because they did not join the Company in their capacities as executive officers until after January 1, 2005. All options were granted under the Company's 2000 Stock Option Plan. The potential realizable value amounts in the last two columns of the following chart represent hypothetical gains that could be achieved for the respective options if exercised at the end of the option term. The assumed 5% and 10% annual rates of stock price appreciation from the date of grant to the end of the option term are provided in accordance with rules of the Securities and Exchange Commission and do not represent the Company's estimate or projection of the future common stock price. Actual gains, if any, on stock option exercises are dependent on the future performance of the common stock, overall market conditions and the option holder's continued employment through the vesting period.

11

Option Grants in Last Fiscal Year

Name	Individual Grants			
	Number of Securities Underlying Options Granted (#) (1)	% of Total Options Granted to Employees in Fiscal Year (2)	Exercise Price (\$/Sh)	Expiration Date
John D. Heaton	100,000	22%	\$ 12.02	5/26/11
Vincent J. Coates	0	0	--	
Roger Ingalls, Jr.	5,000	1.1%	10.37	8/23/11
Paul B. Nolan	0	0	--	

(1) All options granted to the Named Officers in fiscal 2004 were granted at exercise prices equal to the fair market value of the Company's common stock on the dates of grant. Historically, options granted become exercisable at the rate of 33% on the first anniversary date of the option grant and 33% of the total number of option shares each full year thereafter, such that full vesting occurs three years after the date of grant. Options (whether vested or unvested) expire after 7 years or 90 days after termination of employment.

(2) Based on 453,550 options granted during the fiscal year ended January 1, 2005.

Aggregated Option Exercises in Last Fiscal Year and Fiscal Year-End Option Values

The following table sets forth the number of shares covered by both exercisable and unexercisable stock options held by each of the Named Officers

Edgar Filing: NANOMETRICS INC - Form PRER14A

at January 1, 2005. Quentin Wright and Michael Weber are not listed on the table below because they did not join the Company in their capacities as executive officers until after January 1, 2005. As indicated below, two (2) Named Officers, John D. Heaton and Paul B. Nolan, exercised stock options during the fiscal year ended January 1, 2005.

Name	Shares Acquired on Exercise (#)	Value Realized (\$) (1)	Number of Securities Underlying Unexercised Options at Fiscal Year-End (#)	
			Exercisable	Unexercisable
John D. Heaton	100,000	\$ 674,000	219,583	402,917
Vincent J. Coates	--	--	--	--
Roger Ingalls, Jr.	--	--	15,750	20,750
Paul B. Nolan	26,666	213,594	16,666	16,668

(1) The value realized upon exercise is (i) the fair market value of the Company's common stock on the date of exercise, less the option exercise price per share, multiplied by (ii) the number of shares underlying the options exercised.

(2) The value of unexercised options is (i) the fair market value of the Company's common stock on December 31, 2004 (\$16.12 per share), less the option exercise price of in-the-money options, multiplied by (ii) the number of shares underlying such options.

Employment Contracts and Termination of Employment and Change-in-Control Arrangements

Pursuant to the terms of an agreement between the Company and Vincent J. Coates, the Chairman of the Board of the Company, dated May 1, 1985, as amended and restated in August 1996 and April 1998, the Company is obligated to continue to pay Mr. Coates his salary and benefits for five years from the date of his resignation in the event Mr. Coates is required to resign as Chairman of the Board under certain circumstances, including a change of control.

12

In April 1998, the Company entered into an agreement with John D. Heaton pursuant to which the Company agreed to pay Mr. Heaton his annual salary (excluding bonuses) for a period of one year from the date that he is required or requested for any reason not involving good cause, including a change of control, to involuntarily relinquish his positions with the Company as President, Chief Executive Officer and director. If Mr. Heaton leaves the Company voluntarily, or if he is asked to leave under certain circumstances, no such severance payment is required.

In March 1995, the Company entered into an agreement with Roger Ingalls, Jr. pursuant to which the Company agreed to pay Mr. Ingalls his annual salary (excluding bonuses) for a period of one hundred twenty (120) days from the date he is terminated without cause.

Equity Compensation Plan Information

Edgar Filing: NANOMETRICS INC - Form PRER14A

All of the Company's equity compensation plans except the 2002 Non Statutory Stock Option Plan were approved by the Company's shareholders. The following table sets forth, for all of the Company's existing equity compensation plans, the number of outstanding option grants and the number of shares remaining available for issuance as of the fiscal year ended January 1, 2005.

	Number of Securities to be Issued Upon Exercise of Outstanding Options	Weigh Avera Exercise of Outst Optio
	-----	-----
Equity Compensation Plans Approved by Security Holders	1,555,629	\$ 11.
Equity Compensation Plans Not Approved by Security Holders	1,076,646	\$ 8.

(1) Excludes securities to be issued upon exercise of outstanding options.

Certain Relationships

Vincent J. Coates is the father of Norman V. Coates. There are no other family relationships between any of the foregoing nominees or between any such nominees and any of the executive officers of the Company.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act requires the Company's executive officers and directors, and persons who own more than ten percent of a registered class of the Company's equity securities, to file reports of ownership and changes in ownership with the Securities and Exchange Commission and the Nasdaq National Market. Executive officers, directors and greater than ten percent shareholders are required by Securities and Exchange Commission regulations to furnish the Company with copies of all Section 16(a) forms that they file. Based solely on its review of the copies of such forms received by it or written representations from certain reporting persons, the Company believes that, with the exception of Roger Ingalls, Jr., during the fiscal year ended January 1, 2005, its executive officers, directors and greater than ten percent shareholders complied with all applicable filing requirements. Mr. Ingalls failed to timely report an option grant on Form 4.

13

Report of the Audit Committee of the Board of Directors

The following is the report of the audit committee of the board of directors describing its review of materials and determinations with respect to its auditors and financial statements for the fiscal year ended January 1, 2005. The information contained in this report shall not be deemed to be "soliciting material" or to be "filed" with the Securities and Exchange Commission, nor shall such information be incorporated by reference into any future filing under the Securities Act or Exchange Act, except to the extent that the Company specifically incorporates it by reference into such filing.

In accordance with its written charter adopted by the board of directors,

Edgar Filing: NANOMETRICS INC - Form PRER14A

the audit committee assists the board of directors in fulfilling its responsibility for oversight of the quality and integrity of the accounting, auditing and financial reporting practices of the Company. During the fiscal year ended January 1, 2005, the audit committee met (or acted by written consent) five (5) times, and the audit committee chairman, as representative of the committee, discussed the interim financial information contained in quarterly earnings announcements with the chief financial officer and independent auditors prior to public release.

The audit committee received from the Company's independent auditors a formal written statement, consistent with Independence Standards Board Standard No. 1, "Independence Discussions with Audit Committees," which describes all relationships between the auditors and the Company that, in the auditors' professional opinion, might reasonably be thought to bear on the auditors' independence. The audit committee discussed with the auditors these relationships and satisfied itself as to the auditors' independence.

The audit committee also discussed and reviewed with the independent auditors all communications required by the Public Company Accounting Oversight Board (the "PCAOB") standards, including those described in Statement on Auditing Standards No. 61, as amended, "Communication with Audit Committees" and, with and without management present, discussed and reviewed the results of the independent auditors' Audit of the Company's financial statements.

Additionally, the audit committee reviewed and discussed the audited financial statements of the Company as of and for the fiscal year ended January 1, 2005 with management and the independent auditors. Management has the responsibility for the preparation of the Company's financial statements and the independent auditors have the responsibility for the Audit of those statements.

Based on the foregoing review and discussions with management and the independent auditors, the audit committee recommended to the board of directors that the Company's audited financial statements as of and for the year ended January 1, 2005 be included in its Annual Report on Form 10-K for the fiscal year ended January 1, 2005 for filing with the Securities and Exchange Commission. The audit committee also recommended the appointment, subject to shareholder approval, of the independent auditors and the board of directors concurred in such recommendation.

Members of the Audit Committee

J. Thomas Bentley, Chairman
Edmond R. Ward
William G. Oldham

14

Report of the Compensation/Stock Option Committee of the Board of Directors

The following is the report of the compensation/stock option committee of the board of directors describing compensation policies and rationales applicable to certain of its executive officers with respect to the compensation paid to such executive officers for the fiscal year ended January 1, 2005. The information contained in such report shall not be deemed to be "soliciting material" or to be "filed" with the Securities and Exchange Commission, nor shall such information be incorporated by reference into any future filing under the Securities Act or Exchange Act, except to the extent that the Company specifically incorporates it by reference into such filing.

General. The compensation/stock option committee is responsible for making

Edgar Filing: NANOMETRICS INC - Form PRER14A

recommendations to the board of directors with respect to cash compensation levels for certain of the Company's executive officers. During fiscal year ended January 1, 2005, the compensation/stock option committee also was responsible for determining levels of equity-based compensation for the Company's employees.

Compensation Philosophy. The compensation/stock option committee makes recommendations as to the salaries of certain of the executive officers by considering (i) the salaries of executive officers in similar positions at comparably-sized peer companies, (ii) the Company's financial performance over the past year based upon revenues and operating results and (iii) the achievement of individual performance goals related to each executive officer's duties and areas of responsibility. The compensation/stock option committee makes recommendations as to the levels of cash bonuses awarded to certain of the Company's executive officers and views such bonuses as being an integral part of its performance based compensation program. Such bonuses are based on the Company's profits and are determined as a percentage of the officer's salaries.

Equity-Based Compensation. The compensation/stock option committee views stock options as an important part of its long-term, performance-based compensation program. The compensation/stock option committee grants stock options to all employees of the Company under its 2000 Stock Option Plan and 2002 Nonstatutory Stock Option Plan based upon the committee's estimation of each employee's contribution to the long-term growth and profitability of the Company. The 2000 Stock Option Plan is intended to provide additional incentives to the executive officers to maximize shareholder value. Options are granted under the 2000 Stock Option Plan and the 2002 Nonstatutory Stock Option Plan at the then-current market price and are generally subject to three-year vesting periods to encourage key employees to remain with the Company.

Compensation of the Chief Executive Officer. The compensation/stock option committee has reviewed all components of the chief executive officer's compensation, including salary, bonus, equity, stock options, and the obligations under the Company's change of control severance agreement with Mr. Heaton.

Based on this review, the compensation/stock option committee found Mr. Heaton's total compensation (and, in the case of the change of control severance agreement, potential payout) in the aggregate to be reasonable and not excessive. Furthermore, although Mr. Heaton made valuable contributions to the Company during fiscal year ended January 3, 2004, in light of economic conditions, the compensation/stock option committee determined that an increase to the base salary of the chief executive officer would not be appropriate. It should be noted that when the compensation/stock option committee considers any component of the chief executive officer's total compensation, the aggregate amounts and mix of all the components, including accumulated (realized and unrealized) option gains are taken into consideration in the compensation/stock option committee's decisions.

Section 162(m). The Company intends that awards granted under the Company's 2000 Stock Option Plan and 2002 Nonstatutory Stock Option Plan be deductible by the Company under Section 162(m) of the Internal Revenue Code of 1986, as amended.

Members of the Compensation/Stock Option Committee

Edmond Ward, Chairman
J. Thomas Bentley
Stephen J Smith

Edgar Filing: NANOMETRICS INC - Form PRER14A

Stock Performance Graph

The following graph compares the cumulative total return to shareholders of the Company's common stock from December 31, 1999 through December 31, 2004 to the cumulative total return over such period of (i) the Nasdaq Stock Market (U.S.) Index and (ii) the RDG Technology Composite Index. The results shown assume that \$100 was invested on December 31, 1999 in the Company's common stock and in each of the other two indices with any dividends reinvested. Information about RDG Technology Composite Index may be obtained at the Research Data Group, Inc. website address www.researchdatagroup.com/ComponentsTech.htm or by calling Research Data Group at (415) 643-6000.

The information contained in the performance graph shall not be deemed to be "soliciting material" or to be "filed" with the Securities and Exchange Commission, nor shall such information be incorporated by reference into any future filing under the Securities Act or Exchange Act, except to the extent that the Company specifically incorporates it by reference into such filing.

COMPARISON OF 5-YEAR CUMULATIVE TOTAL RETURN AMONG NANOMETRICS INCORPORATED, THE NASDAQ STOCK MARKET (U.S.) INDEX AND THE RDG TECHNOLOGY COMPOSITE INDEX

[GRAPHIC OMITTED] [GRAPHIC OMITTED]
(Performance Graph)

16

"Householding" of Proxy Materials

The Securities and Exchange Commission has adopted rules that permit companies and intermediaries such as brokers to satisfy delivery requirements for proxy statements with respect to two or more shareholders sharing the same address by delivering a single proxy statement addressed to those shareholders. This process, which is commonly referred to as "householding," potentially provides extra convenience for shareholders and cost savings for companies. The Company and some brokers household proxy materials, delivering a single proxy statement to multiple shareholders sharing an address unless contrary instructions have been received from the affected shareholders. Once you have received notice from your broker or the Company that the broker or the Company will be householding materials to your address, householding will continue until you are notified otherwise or until you revoke your consent. Upon written or oral request to the Investor Relations department of the Company, by mail at 1550 Buckeye Drive, Milpitas, California, 95035 or by telephone at (408) 435-9600, the Company will promptly deliver a copy of its proxy statement to a shareholder if that shareholder shares an address with another shareholder to which a single copy of the proxy statement was delivered. A shareholder may notify the Company as described above if the shareholder wishes to receive a separate copy of the proxy statement in the future or, alternatively, if the shareholder wishes to receive a single copy of the materials instead of multiple copies.

17

PROPOSAL 2
REINCORPORATION FROM CALIFORNIA INTO DELAWARE
(THE REINCORPORATION MERGER)

Edgar Filing: NANOMETRICS INC - Form PRER14A

General

The board of directors, by a unanimous vote at a special meeting of the board of directors, adopted a resolution approving a change in the state of its incorporation from California to Delaware. If approved by the requisite vote of the Company's shareholders, this reincorporation shall be effected through a merger of the Company with its wholly owned subsidiary, Big League Merger Corporation, a Delaware corporation.

Proposal

The Company is proposing to merge with and into Big League Merger Corporation. This merger is referred to herein as the reincorporation merger. Big League Merger Corporation will succeed to all of the rights, properties, assets and liabilities of the Company. Upon completion of the reincorporation merger, the Company will cease to exist and Big League Merger Corporation will continue to operate the business of the Company under the name "Nanometrics Incorporated" as a Delaware corporation. For convenience, Nanometrics Incorporated, after the reincorporation merger, is sometimes referred to as the Delaware company. Each outstanding share of the Company's common stock, no par value per share, will be automatically converted into one share of common stock of the Delaware company, \$0.001 par value per share, upon the effective date of the reincorporation merger. It will not be necessary for shareholders of the Company to exchange their existing stock certificates for stock certificates of the Delaware company. Upon completion of the reincorporation merger, certificates which immediately prior to the reincorporation merger represented shares of common stock of the Company will be deemed for all purposes to represent the same number of shares of the Delaware company's common stock. Nevertheless, shareholders may exchange their certificates if they so choose. The Company's common stock is listed for trading on the Nasdaq National Market and, after the reincorporation merger, the Delaware company's common stock will continue to be traded on the Nasdaq National Market without interruption, under the same symbol, NANO, as the shares of the Company's common stock are currently traded.

The reincorporation merger has been approved by the Company's board of directors, by a unanimous vote at a special meeting. If approved by the requisite vote of the Company's shareholders, it is anticipated that the reincorporation merger will become effective as soon as practicable following the annual meeting of shareholders. The Company's shareholders will have no appraisal rights with respect to the reincorporation merger.

Immediately following the completion of the reincorporation merger, the composition of the board of directors of Big League Merger Corporation will be the same as the composition of the board of directors of the Company immediately prior to the reincorporation merger.

After the reincorporation merger, the rights of the Company's stockholders and the Company's corporate affairs will be governed by the Delaware General Corporation Law, and the certificate of incorporation and bylaws of the Delaware company, or the Delaware charter documents, rather than by the California General Corporation Law, and the current articles of incorporation and bylaws of the Company, or the California charter documents. There are differences between the California charter documents and the Delaware charter documents that may be important to you. See the section of this proxy statement entitled "Comparison of Rights of Holders and Corporate Governance Matters" for a comparison of the material rights of equity holders and matters of corporate governance before and after the reincorporation merger.

The summary and discussion of the proposed reincorporation merger set forth in this proxy statement is qualified in its entirety by reference to the California General Corporation Law, the Delaware General Corporation Law, the

Edgar Filing: NANOMETRICS INC - Form PRER14A

California charter documents and the Delaware charter documents. Copies of the California charter documents are available for inspection at the Company's executive offices. Additionally, the Company will send such documents to you upon request. Copies of the Delaware company charter documents are attached to this proxy statement as Appendix A and B. We urge you to read each of these documents carefully for a complete understanding of your rights.

Principal Reasons for the Reincorporation Merger

As the Company plans for the future, the board of directors and management believe that it is essential to be able to draw upon well-established principles of corporate governance in making legal and business decisions. The prominence and predictability of Delaware corporate law provide a reliable foundation on which the Company's

18

corporate governance decisions can be based, and the Company believes that its shareholders will benefit from the responsiveness of Delaware corporate law to their needs and to those of the corporation they own.

Prominence, Predictability and Flexibility of Delaware Law

For many years, Delaware has followed a policy of encouraging incorporation in that state and, in furtherance of that policy, has been a leader in adopting, construing and implementing comprehensive, flexible corporate laws responsive to the legal and business needs of corporations organized under its laws. Many corporations have chosen Delaware initially as a state of incorporation or have subsequently changed their corporate domicile to Delaware. Because of Delaware's prominence as the state of incorporation for many major corporations, both the legislature and courts in Delaware have demonstrated an ability and a willingness to act quickly and effectively to meet changing business needs. The Delaware courts have developed considerable expertise in dealing with corporate issues, and a substantial body of case law has developed construing Delaware law, resulting in greater predictability with respect to corporate legal affairs.

Increased Ability to Attract and Retain Qualified Directors

Both California and Delaware law permit a corporation to include a provision in its charter which reduces or limits the monetary liability of directors for breaches of fiduciary duty in certain circumstances. The increasing frequency of claims and litigation directed against directors and officers has expanded the risks facing directors and officers of corporations in exercising their respective duties. The amount of time and money required to respond to such claims and to defend such litigation can be substantial. The Company desires to reduce these risks to its directors and officers and to limit situations in which monetary damages can be recovered against its directors so that it may continue to attract and retain qualified directors who otherwise might be unwilling to serve because of the risks involved. The Company believes that, in general, Delaware law provides greater protection to directors than California law and that Delaware law regarding a corporation's ability to limit director liability is more developed and provides more guidance than California law.

Well Established Principles of Corporate Governance

There is substantial judicial precedent in the Delaware courts as to the legal principles applicable to measures that may be taken by a corporation and as to the conduct of the board of directors, such as the business judgment rule

Edgar Filing: NANOMETRICS INC - Form PRER14A

and other standards. This tends to assure a significant measure of certainty to legal aspects of the conduct of business and a sound basis for planning. Therefore, the Company believes that its shareholders will benefit from the well-established principles of corporate governance that Delaware law affords.

No Change in Board Members, Business, Management, Employee Benefit Plans or Location of Principal Facilities

The reincorporation merger will effect a change in the legal domicile of the Company and certain other changes of a legal nature which are described in this proxy statement. Except as contemplated in connection with the reincorporation merger, the reincorporation merger will NOT result in any change in the Company's business, management, assets or liabilities or the location of its principal facilities. Under United States generally accepted accounting principles, the proposed reincorporation will not result in any gain or loss to the Company. The consolidated financial statements and results of operations of the Delaware company immediately following the reincorporation merger will be identical to that of the Company immediately prior to the reincorporation merger. The directors of the Company immediately prior to the reincorporation merger will become the directors of the Delaware company immediately following the reincorporation merger. All employee benefit, stock option and employee stock purchase plans of the Company will be assumed and continued by the Delaware company, and each option or right issued pursuant to such plans will automatically be converted into an option or right to purchase the same number of shares common stock of the Delaware company, at the same price per share, upon the same terms, and subject to the same conditions. Shareholders should note that approval of this proposal 2 will also constitute approval of the assumption of these plans by the Delaware company. Other employee benefit arrangements of the Company will also be continued by the Delaware company upon the terms and subject to the conditions currently in effect. As noted above, after the reincorporation merger, the shares of common stock of the Delaware company will continue to be traded, without interruption, in the same principal market (the Nasdaq National Market) and under the same symbol, NANO, as the shares of common stock of the Company are currently traded. The Company believes that the proposed reincorporation will not affect any of its material contracts with any third parties and that the Company's rights and obligations under such material contractual arrangements will continue and be assumed by the Delaware company. See the section of this proxy statement entitled "Comparison of Rights of Holders and Corporate Governance Matters" for a comparison of the material rights of equity holders and matters of corporate governance before and after the reincorporation merger.

19

Material United States Federal Income Tax Consequences of the Reincorporation Merger

This section of the proxy statement summarizes the material United States federal income tax considerations of the reincorporation merger to the Company's shareholders. The summary is based on the Internal Revenue Code of 1986, as amended, applicable United States Treasury regulations under the Internal Revenue Code, administrative rulings and judicial authority, all as of the date of this proxy statement. All of the foregoing authorities are subject to change, with or without retroactive effect, and any change could affect the continuing validity of this summary. A ruling from the Internal Revenue Service in connection with the reincorporation merger will not be requested, and we cannot assure you that the Internal Revenue Service will conclude that the reorganization merger qualifies as a reorganization under Section 368(a) of the Internal Revenue Code.

Edgar Filing: NANOMETRICS INC - Form PRER14A

The summary assumes that the Company's shareholders hold their shares as capital assets. The summary does not address the tax consequences that may be applicable to particular shareholders in light of their individual circumstances or to shareholders who are subject to special tax rules, such as non-United States persons, dealers in securities, shareholders who acquired shares of common stock through the exercise of options or otherwise as compensation or through a qualified retirement plan, and shareholders who hold their common stock as part of a straddle, hedge, or conversion transaction. In addition, this summary does not address the tax consequences of the reincorporation merger to holders of options or warrants to acquire capital stock of or the tax consequences of transactions effectuated prior or subsequent to, or concurrently with, the reincorporation merger, whether or not any such transactions are undertaken in connection with the reincorporation merger. This summary also does not address any consequences arising under the tax laws of any state, local, or foreign jurisdiction.

The reincorporation merger will qualify as a reorganization within the meaning of Section 368(a) of the Internal Revenue Code, which will result in the following federal income tax consequences to the Company's shareholders:

- o shareholders will not recognize any gain or loss upon the receipt of common stock in the reincorporation merger;
- o the aggregate tax basis of the common stock received by shareholders in the reincorporation merger will be the same as the aggregate tax basis of the common stock surrendered in exchange therefor;
- o the holding period of the common stock received by each shareholder in the reincorporation merger will include the period for which common stock surrendered in exchange therefor was considered to be held; and
- o the Company will not recognize gain or loss solely as a result of the reincorporation merger.

SHAREHOLDERS SHOULD CONSULT THEIR OWN TAX ADVISORS WITH RESPECT TO THE SPECIFIC TAX CONSEQUENCES OF THE PROPOSED REINCORPORATION TO THEM, INCLUDING THE APPLICATION AND EFFECT OF UNITED STATES FEDERAL, STATE, LOCAL AND FOREIGN INCOME AND OTHER TAX LAWS.

Vote Required

The affirmative vote of the holders of a majority of the outstanding shares of common stock entitled to vote on the record date is required to approve its reincorporation from a California corporation to a Delaware corporation. Unless otherwise instructed, the proxies will vote "FOR" this proposal 2.

THE BOARD OF DIRECTORS RECOMMENDS THAT THE SHAREHOLDERS VOTE "FOR" PROPOSAL 2.

PROPOSALS 3A-G GOVERNANCE PROVISIONS OF THE COMPANY'S CERTIFICATE OF INCORPORATION AND BYLAWS

If approved by the requisite vote of the Company's shareholders, the Company will change the state of its incorporation from California to Delaware. Upon completion of the reincorporation merger, the Company will be governed by

Edgar Filing: NANOMETRICS INC - Form PRER14A

the Delaware General Corporation Law and the certificate of incorporation of Big League Merger Corporation, currently a wholly-owned subsidiary of the Company. The proposed certificate of incorporation that will govern the Company following the completion of the reincorporation merger differs in some material respects from the Company's existing articles of incorporation. At the annual meeting, you will be asked to consider and vote on each of the governance-related provisions in the Company's certificate of incorporation to be in effect after the reincorporation merger described below.

The following is a summary of selected governance-related provisions of the form of certificate of incorporation of the Company to be in effect after the reincorporation merger. While the Company believes that this description covers the material governance-related provisions of the certificate of incorporation of the Company to be in effect after the reincorporation merger which differ materially from the Company's existing articles of incorporation, it may not contain all of the information that is important to you and is qualified in its entirety by reference to the form of certificate of incorporation and bylaws of the Company which are attached to this proxy statement as Appendix A and B, respectively. We urge you to read each of these documents carefully. See also the section of this proxy statement entitled "Comparison of Rights of Holders and Corporate Governance Matters" for a comparison of rights of equity holders and matters of corporate governance before and after the reincorporation merger.

Proposal 3A: A proposal to approve a provision limiting the Company's stockholders' right to call special meetings of stockholders.

Under the Company's current bylaws, a special meeting of shareholders may be called at any time by one or more shareholders holding shares in the aggregate entitled to cast at least 10% of the votes at that meeting. However, the Company's certificate of incorporation to be in effect after the reincorporation merger provides that special meetings of stockholders may be called by the chairman of the board of directors or by a majority of the board of directors, but such special meetings may not be called by any other person or persons.

See Article VIII of the form of certificate of incorporation of the Company to be in effect after the reincorporation merger.

Proposal 3B: A proposal to approve a provision limiting the Company's stockholders' ability to act by written consent.

Under the Company's current bylaws, any action which may be taken at any annual or special meeting of shareholders may be taken without a meeting and without prior notice, if a consent in writing, setting forth the action so taken, is signed by the holders of outstanding shares having not less than the minimum number of votes that would be necessary to authorize or take that action at a meeting at which all shares entitled to vote on that action were present and voted. In the case of election of directors, such a consent shall be effective only if signed by the holders of all outstanding shares entitled to vote for the election of directors.

Delaware law permits stockholders to act by written consent, unless otherwise provided in the certificate of incorporation. However, the Company's certificate of incorporation to be in effect after the reincorporation merger does not permit stockholder action by written consent and provides that no action may be taken by the

stockholders except at an annual or special meeting of stockholders called in

Edgar Filing: NANOMETRICS INC - Form PRER14A

accordance with the certificate of incorporation and bylaws.

See Article VIII of the form of certificate of incorporation of the Company to be in effect after the reincorporation merger.

Proposal 3C: A proposal to approve a provision requiring a super-majority vote of the Company's stockholders to amend certain provisions of its certificate of incorporation.

Under the Company's current articles of incorporation, certain amendments to the articles of incorporation requires the affirmative vote of board of directors and the holders of at least a majority of the outstanding shares entitled to vote. The certificate of incorporation of the Company to be in effect after the reincorporation merger requires the affirmative vote of the holders of at least 66.67% of the outstanding shares entitled to vote to amend, repeal or adopt a provision inconsistent with the provisions of the certificate of incorporation relating to (i) shares authorized; (ii) amendment of bylaws; (iii) authority to call special stockholder meetings; and (iv) amendment of the certificate of incorporation.

See Article X of the form of certificate of incorporation of the Company to be in effect after the reincorporation merger.

Proposal 3D: A proposal to approve a provision requiring a super-majority vote of the Company's stockholders to amend certain provisions of the Company's bylaws.

Under California law and the Company's current bylaws, the bylaws may be adopted, amended or repealed either by the board of directors or a majority of the outstanding shares entitled to vote. Under the Company's certificate of incorporation to be in effect after the reincorporation merger, bylaws may be adopted, amended, altered or repealed by the board of directors or the affirmative vote of the holders of at least 66.67% of the shares of capital stock of the corporation issued, outstanding and entitled to vote.

See Article VI of the form of certificate of incorporation of the Company to be in effect after the reincorporation merger.

Proposal 3E: A proposal to approve a provision limiting the Company's stockholders' right to remove directors from office without cause.

Under California law, any director or the entire board of directors may be removed, with or without cause, with the approval of a majority of the outstanding shares entitled to vote. However, the Company's certificate of incorporation to be in effect after the reincorporation merger provides that directors may be removed from office by the stockholders only for cause. Under Delaware law, such stockholder action must occur by a majority of outstanding stock entitled to vote.

See Article V of the form of certificate of incorporation of the Company to be in effect after the reincorporation merger.

Proposal 3F: A proposal to approve the classification of the board of directors into separate classes with staggered terms.

The Company's current articles of incorporation and bylaws do not classify the board of directors into separate classes with staggered terms. However, the Company's bylaws to be in effect after the reincorporation merger provides for the classification of the board of directors into three separate classes, consisting as nearly equal in number as may be practicable of 1/3 of the total number of directors constituting the entire board of directors, with staggered three-year terms. Any vacancies which occur during a year may be filled by a

Edgar Filing: NANOMETRICS INC - Form PRER14A

majority of the directors then in office. Persons elected to fill vacancies in this manner may serve until the next election of the class for which such director shall have been chosen

See Article III, Section 3.4 of the form of bylaws of the Company to be in effect after the reincorporation merger.

22

Proposal 3G: A proposal to approve a provision limiting cumulative voting rights in connection with the election of directors.

The Company's current bylaws provide for cumulative voting for the election of directors at meetings of shareholders. Every shareholder voting for the election of the Company's board of directors may (i) cumulate such shareholder's votes and give one candidate a number of votes equal to the number of directors to be elected multiplied by the number of shares that such shareholders holds or (ii) distribute such shareholder's votes on the same principle among as many candidates as the shareholder may select, provided that votes cannot be cast for more than the number of candidates standing for election. However, no shareholder shall be entitled to cumulate votes for a candidate unless the candidate's name has been placed in nomination prior to the voting and the shareholder, or any other shareholder, has given notice at the meeting prior to the voting of the intention to cumulate votes.

The Company's certificate of incorporation to be in effect after the reincorporation merger will not provide for cumulative voting in connection with the election of directors. Under Delaware law, directors are elected by the affirmative vote of a plurality of the shares present in person or by proxy at a stockholder meeting entitled to vote on the election of directors.

Purpose

The Company's board of directors has approved the certificate of incorporation that includes the provisions described above. These provisions, including, for example, the elimination of shareholders' rights to call special meetings, may have the effect of delaying or deterring unsolicited takeover transactions. The board of directors determined that it was appropriate to adopt these provisions in the Company's certificate of incorporation to be in effect after the reincorporation merger, notwithstanding the fact that such provisions are absent from the Company's current articles of incorporation in order to enhance stockholder value by helping the Company thwart hostile or coercive overtures that are not supported by the board of directors.

Vote Required

Under applicable state law, stockholder approval of the reincorporation merger is sufficient to implement the proposed governance-related provisions in the Company's certificate of incorporation. Under rules promulgated by the Securities and Exchange Commission, however, we are required to present each of the proposed governance-related provisions as a separate proposal for stockholder approval. Accordingly, we have determined that we will not implement any of the proposed governance-related provisions unless it is approved by the affirmative vote of the holders of a majority of the shares of the Company's common stock represented and voting on each proposed governance-related provision at the annual meeting.

THE BOARD OF DIRECTORS RECOMMENDS THAT THE
SHAREHOLDERS VOTE "FOR" PROPOSALS 3A-G.

COMPARISON OF RIGHTS OF HOLDERS AND CORPORATE GOVERNANCE MATTERS

The Company is incorporated under the laws of the State of California and accordingly, the rights of the shareholders of Company are currently governed by the California General Corporation Law and the Company's articles of incorporation and bylaws. Upon completion of the reincorporation merger, the Company will be a Delaware corporation, and the rights of the stockholders of the Company will be governed by the Delaware General Corporation law and the Company's certificate of incorporation and bylaws.

The following is a summary of the material differences between the current rights of holders of the Company's common stock and the rights of holders of the Company's common stock upon completion of the reincorporation merger. The Company will send copies of the Company's articles of incorporation and bylaws to you, without charge, upon your request. Copies of the Delaware company certificate of incorporation and bylaws are attached to this proxy statement as Appendix A and B, respectively.

	Nanometrics (California Corporation)	Nanometrics (Delaware Corporation)
	-----	-----
Authorized Capital Stock	The authorized capital stock of the Company consists of 50,000,000 shares of common stock, no par value per share.	The authorized capital stock of the Delaware company consists of 47,000,000 shares of common stock, no par value \$0.001 per share. The Delaware company is authorized to issue 3,000,000 shares of preferred stock in series, to be designated by the board of directors, to fix the designation, relative rights of each series, and the qualifications, limitations and preferences thereof.
Number of Directors	The Company's bylaws provide that the board of directors shall consist of not less than five nor more than seven members. The exact number shall be seven, however, until an amendment to the bylaws otherwise fixing the number is duly adopted by the board of directors or shareholders. The number of directors may be changed by an amendment to the articles of incorporation or by an amendment to the bylaws, duly adopted by the vote or written consent of holders of a majority of the outstanding shares entitled to vote; provided, however, that an amendment reducing the fixed number or the minimum number of directors to a number less than five	No fixed number of directors is required by either the California or Delaware certificate of incorporation of the Delaware company. The number of directors is determined from time to time by resolution of the board of directors. The board of directors of the Delaware company currently consists of seven directors. Upon completion of the reincorporation merger, the Delaware company board of directors is authorized to be expanded to consist of up to ten directors.

Edgar Filing: NANOMETRICS INC - Form PRER14A

cannot be adopted if the votes cast against its adoption at a meeting, or the shares not consenting in the case of an action by written consent, are equal to more than 16 (2)/3% of the outstanding shares entitled to vote thereon. No amendment may change the stated maximum number of authorized directors to a number greater than two times the stated minimum number of directors minus one.

24

Nanometrics
(California Corporation)

Nanometrics
(Delaware Corporation)

Cumulative Voting

The Company's bylaws provide for cumulative voting for the election of directors at meetings of shareholders. Accordingly, the Company's shareholders have cumulative voting rights in connection with the election of directors.

The certificate of incorporation and bylaws, as proposed, provide for cumulative voting for the election of directors. Under the Company's shareholding proposal 3G, the Delaware stockholders will not have cumulative voting rights in connection with the election of directors. Under the Company's shareholding proposal 3G, the Delaware bylaws will provide for cumulative voting.

Classification of Board of Directors

The Company's articles of incorporation and bylaws do not classify the Company's board of directors into separate classes with staggered terms.

The Delaware company's articles of incorporation do not classify the board of directors into separate classes as small as practicable, with three-year terms. This is difficult for a potential acquirer to gain control of the Delaware company's board of directors.

Removal of Directors

Under California law, the board of directors may declare vacant the office of a director who has been declared of unsound mind by an order of court or convicted of a felony. Further, any director or the entire board of directors may be removed, with or without cause, with the approval of a majority of the outstanding shares entitled to vote thereon; however, no director may be removed (unless the entire board is removed) if the number of shares voted to elect the director under cumulative voting. Shareholders holding at least 10% of the outstanding shares in any class may sue in superior

The Delaware company's articles of incorporation, as proposed, provide that directors may be removed from office by the stockholders for cause. If the Company's shareholders approve proposal 3E, a vote of the Delaware stockholders would be required to remove a director from office.

Edgar Filing: NANOMETRICS INC - Form PRER14A

county court to remove from office any officer or director for fraud, dishonest acts or gross abuse of authority or discretion.

Filling Vacancies on the Board of Directors

Under California law, any vacancy on the board of directors other than one created by removal of a director may be filled by the board of directors, unless otherwise provided in the articles of incorporation or bylaws. If the number of directors is less than a quorum, a vacancy may be filled by the unanimous written consent of the directors then in office, by the affirmative vote of a majority of the directors at a meeting held pursuant to notice or waivers of notice, or by a sole remaining director. A vacancy created by removal of a director can only be filled by the shareholders unless board approval is authorized by a corporation's articles of incorporation or by a bylaw approved by the corporation's shareholders. Neither the articles of incorporation nor the bylaws of the Company permit the board of directors to fill a vacancy created by the removal of a director.

Under Delaware law, u provided in the certi incorporation or the vacancies on a board (ii) newly created di resulting from an inc number of directors, a majority of the dir office. In the case o board of directors of company, directors el vacancies or newly cr directorships will ho the next election of which the directors h The certificate of in bylaws of the Delawa that any vacancies on directors may be fill affirmative vote of a remaining directors i less than a quorum, o remaining director.

25

Nanometrics
(California Corporation)

Nanometrics
(Delaware Corporon

Special Meetings of Shareholders

The Company's bylaws, in accordance with California law, provide that a special meeting of shareholders may be convened at any time by the board directors, or by the chairman of the board of directors, or by the president, or by one or more shareholders holding shares in the aggregate entitled to cast at least 10% of the votes at that meeting.

The Delaware company' incorporation, as pro that special meetings for any purpose or pu at any time by the ch directors or by a maj number of directors, may not be called by persons. If the Compa approve proposal 3A, company stockholders ability to call speci

Advance Notice Provisions for Meetings of Shareholders

The Company's bylaws, in accordance with California law, provide that written notice of a special meeting of the shareholders specifying the place, date and hour of the meeting and the purpose of the meeting must be given to each

The Delaware company' incorporation, in acc law, provides that wr meeting of the stockh if any, date and hour remote communication, meeting must be given entitled to vote not days before the date

Edgar Filing: NANOMETRICS INC - Form PRER14A

shareholder not less than 10 nor more than 60 days before the date of the meeting.

Action by Written Consent of the Shareholders

The Company's bylaws provide that any action which may be taken at any annual or special meeting of shareholders may be taken without a meeting and without prior notice, if a consent in writing, setting forth the action so taken, is signed by the holders of outstanding shares having not less than the minimum number of votes that would be necessary to authorize or take that action at a meeting at which all shares entitled to vote on that action were present and voted. In the case of election of directors, such a consent shall be effective only if signed by the holders of all outstanding shares entitled to vote for the election of directors. This provision allows the Company's shareholders to take action without a shareholder meeting and thereby dispense with the limits on who may call, and the notice requirements of, shareholders meetings.

The Delaware company's incorporation, as proposed, allow action to be taken by the stockholders by written consent. The Company's shareholders, upon approval of proposal 3B, then no meeting is to be taken by the Delaware stockholders except a special meeting of stockholders in accordance with the provisions of the company's certificate of incorporation and bylaws.

26

Nanometrics (California Corporation)

Nanometrics (Delaware Corporation)

Proxies

The Company's bylaws, in accordance with California law, provide that any shareholder entitled to vote for directors, or any other matter, shall have the right to do so by designating another person to act for such shareholder by proxy. No proxy, however, shall be voted or acted upon after 11 months from its date, unless the proxy provides for a longer period.

The Delaware company's bylaws provide that each stockholder entitled to vote at a meeting of stockholders may, in person or by another person or person acting by proxy, vote by proxy. The proxy instrument in writing must be signed by the stockholder or the person permitted by law to act for the stockholder. The proxy shall be filed with the secretary of the company in accordance with the procedure established in the bylaws. No proxy, however, may be acted upon after three years from its date, unless the proxy specifies a longer period.

Charter Amendment

Under California law, unless otherwise specified in the articles of incorporation, an amendment to the articles of incorporation requires the approval of the corporation's board of directors and the affirmative vote of a majority of the outstanding shares entitled to vote thereon, either before or after the board of directors approval, although certain minor amendments may be adopted by the board

Under Delaware law, unless otherwise specified in the certificate of incorporation, an amendment to the certificate of incorporation requires the affirmative vote of a majority of the outstanding stock entitled to vote thereon, either before or after the board of directors approval, although certain minor amendments may be adopted by the board

by affirmative vote, repeal the bylaws of If the Company's share proposal 3D, then it for the Delaware comp amend the Delaware co it is for the Company to amend the Company'

Dividends and Repurchases of Shares

Under California law, no distributions to a corporation's shareholders may be made unless: (i) the amount of the retained earnings of the corporation immediately prior to the distribution equals or exceeds the amount of the proposed distribution; (ii) immediately after the distribution, the sum of the assets of the corporation (excluding certain items) is at least equal to 1 (1)/4 times its liabilities; and the current assets of the corporation is at least equal to its current liabilities, or if the average of the earnings of the corporation before taxes on income and before interest expense for the two preceding fiscal years was less than the average of the interest expense of the corporation for those fiscal years, at least equal to 1 (1)/4 times its current liabilities. California law generally provides that a corporation may acquire its own shares, with the payment for such shares being subject to the same restrictions as dividend payments.

Under Delaware law, t directors of a corpor subject to any restri in its certificate of declare and pay divid shares of its capital out of its surplus; o is not surplus, out o the fiscal year in wh is declared or the pr year, provided that i the corporation is le amount of capital rep issued and outstandin classes having a pref distributions of the corporation, then the directors may not dec dividends out of net law generally provide corporation may redee shares only if such r repurchase would not capital of the corpor

Nanometrics
(California Corporation)

Nanometrics
(Delaware Corpor

Dissenters' Rights

Under California law, if the approval of the outstanding shares of the corporation is required for a merger or reorganization, each shareholder entitled to vote on the transaction, and who did not vote in favor of the merger or reorganization, may require the corporation to purchase for cash at fair market value the shares owned by such shareholder. No appraisal rights are available for shares listed on any national securities exchange certified by the Commissioner of Corporations or listed on the Nasdaq National Market, unless there exists with respect to such shares any restriction on transfer

Under Delaware law, s corporation that is a corporation in a merg the right to demand a payment of the fair v stock in lieu of rece consideration. Howeve rights are not availa shares: (i) listed on securities exchange; as a national market on an interdealer quo operated by the Natio of Securities Dealers held of record by mor stockholders; unless

also provide that the advance expenses incurred by or officers in defending against a criminal action, such as because that person is an officer, and may advance expenses incurred by any employee of the corporation. Such payments made only upon receipt or on behalf of the individual such amount if it shall be determined that the indemnified party is entitled to indemnification.

Indemnity Insurance

The Company's bylaws authorize the purchase of indemnity insurance for the benefit of any person required or permitted to be indemnified pursuant to the Company's bylaws. The Company has not, however, purchased any such indemnity insurance to date.

The Delaware company's bylaws authorize the purchase of indemnity insurance for the benefit of any person required or permitted to be indemnified pursuant to the company's bylaws.

30

Nanometrics
(California Corporation)

Nanometrics
(Delaware Corporation)

Preemptive Rights

Under California law, a shareholder is not entitled to preemptive rights to subscribe for additional issuances of stock, or any security convertible into stock, unless the rights are specifically granted in the articles of incorporation. The Company's articles of incorporation do not provide for any such preemptive rights.

Under Delaware law, a shareholder is not entitled to preemptive rights to subscribe for additional issuances of stock, or any security convertible into stock, unless the rights are specifically granted in the certificate of incorporation. The Delaware company's certificate of incorporation does not provide for any such preemptive rights.

Certain Business Combination Restrictions

Under California law, except where the fairness of the transaction has been approved by the California Commissioner of Corporations and except in a "short-form" merger (the merger of a parent corporation with a subsidiary in which the parent owns at least 90% of the outstanding shares of each class of the subsidiary's stock), if the surviving corporation or its parent corporation owns, directly or indirectly, shares of the target corporation representing more than 50% of the voting power of the target corporation prior to the merger, the nonredeemable common stock of a target corporation may be converted only into nonredeemable common stock of the surviving corporation or its parent

Section 203 of the Delaware Corporation Law prohibits business combinations," including consolidations, sales of assets, issuances of securities, or similar transactions, or a subsidiary with a majority of its shares owned by who beneficially owns shares of the corporation's voting stock for three years after the person becomes an interested stockholder unless (i) prior to the time the stockholder became an interested stockholder, the board of directors approved either the business combination or the transaction, or (ii) the business combination resulted in the stockholder becoming an interested stockholder.

corporation, unless all of the shareholders of the class consent. The effect of this provision is to prohibit a cash-out merger of minority shareholders, except where the majority shareholders already own 90% or more of the voting power of the target corporation and could, therefore, effect a short-form merger to accomplish such a cash-out of minority shareholders.

California law also provides that, except in certain circumstances, when a tender offer or a proposal for reorganization or for a sale of assets is made by an interested party (generally a controlling or managing party of the target corporation), an affirmative opinion in writing as to the fairness of the consideration to be paid to the shareholders must be delivered to shareholders. This fairness opinion requirement does not apply to a corporation that does not have shares held of record by at least 100 persons or to a transaction that has been qualified under California state securities laws. Furthermore, if a tender of shares or vote is sought pursuant to an interested party's proposal and a later proposal is made by another party at least 10 days prior to the date of acceptance of the interested party's proposal, the shareholders must be informed of the later offer and be afforded a reasonable opportunity to withdraw any vote, consent or proxy, or to withdraw any tendered shares.

completion of the tra
the stockholder becam
stockholder, the inte
stockholder holds at
voting stock of the c
including: (a) shares
directors who are als
(b) shares granted un
employee benefit plan
the stockholder becom
stockholder, the busi
is approved by the bo
and the holders of at
of the outstanding vo
excluding shares held
interested stockholder

A Delaware corporatio
its certificate of in
to be governed by Sec
Delaware company's ce
incorporation, howeve
such an opt-out provi

31

Nanometrics
(California Corporation)

Nanometrics
(Delaware Corpora

Vote on Extraordinary
Corporate Transactions

Under California law, the principal terms of a merger or reorganization must be approved by a vote of the board of directors of each constituent corporation in a merger or sale of assets reorganization. California law also generally requires the affirmative vote of a majority of the outstanding shares of each class entitled to vote thereon (two classes of common stock differing only as to voting rights are

Under Delaware law, u
provided in the certi
incorporation, a sale
disposition of all or
all of the corporatio
merger or a consolida
corporation with anot
requires the affirmat
majority of the board
(except in certain li
circumstances) and, w

considered to be a single class for these purposes), except that, unless required by its articles of incorporation, no authorizing shareholder vote is required of a corporation surviving a merger if the shareholders of such corporation shall own, immediately after the merger, more than 5/6 of the voting power of the surviving corporation. Regardless of the voting power exercised by the shareholders in the resulting corporation, however, California law requires the affirmative vote of a majority of the outstanding shares entitled to vote thereon if (i) the surviving corporation's articles of incorporation will be amended and would otherwise require shareholder approval; or (ii) shareholders of such corporation will receive shares of the surviving corporation having different rights, preferences, privileges or restrictions (shares in a foreign corporation are, by definition, considered to have different rights) than the shares surrendered. The Company's articles of incorporation do not modify these statutory requirements.

exceptions, the affirmative majority of the outstanding shares entitled to vote on the Delaware company's certificate of incorporation does not require requirements for extraordinary corporate transaction or different from the mandated by law.

Furthermore, under Delaware law, unless otherwise provided in the corporation's certificate of incorporation, approval of the stockholders of a surviving corporation in a merger is required if: (i) the surviving corporation does not amend in any way its certificate of incorporation; (ii) the surviving corporation immediately before the merger are not changed; (iii) either no shares of the surviving corporation are convertible into this corporation's common stock issued or delivered under the merger, or the authorized shares or the treasury shares of the surviving corporation to be issued under the plan of merger are initially issuable up to the number of shares delivered under the plan of merger; or (iv) shares of common stock of the surviving corporation outstanding immediately before the merger. The Delaware law of incorporation does not

Nanometrics
(California Corporation)

Nanometrics
(Delaware Corporation)

Fiduciary Duties of Directors

Under California law, the duty of loyalty requires directors to perform their duties in good faith in a manner that the director reasonably believes to be in the best interests of the corporation and its shareholders. The duty of care requires that the directors act with such care, including reasonable inquiry, as an ordinarily prudent person in a like position would use under similar circumstances.

Under Delaware law, the duty of loyalty may be summarized as the duty to act in good faith, in the best interests of the corporation, and not in the director's self-interest and in the best interests of the corporation. The duty of care requires that the directors act in an informed and deliberative manner and in the best interests of the corporation, prior to making a decision, of all material information reasonably available

Edgar Filing: NANOMETRICS INC - Form PRER14A

Interested Party Transactions

Under California law, no contract or transaction that is between a corporation and one or more of its directors, or between a corporation and another firm in which one or more of the corporation's directors has a material financial interest is void or voidable solely because such director or other corporation or firm is a party or because the director is present at or participates in the meeting of the board of directors or committee that authorizes the contract or transaction, if one or more of the following is true: (i) the material facts of the transaction and the director's interest are fully disclosed to or known by the board of directors or a committee of the board of directors, and the board of directors or the committee authorizes or ratifies the transaction in good faith by a vote sufficient without counting the vote of any interested director, and such contract or transaction is just and reasonable as to the corporation at the time the board of directors approves or ratifies it; (ii) the material facts of the transaction and the director's interest are fully disclosed to or known by the uninterested shareholders entitled to vote on the matter and they specifically approve in good faith the contract or transaction; or (iii) the contract or transaction is just and reasonable to the corporation at the time it was approved or ratified.

Under Delaware law, no contract or transaction that is between a corporation and one or more of its directors or officers or between a corporation and another corporation in which one or more of its directors or officers or officers, or between a corporation and one or more of the corporation's directors or officers has a financial interest is void or voidable solely because such relationship or transaction is present at or participated in the meeting of the board of directors or committee that authorizes or ratifies the contract or transaction, or so long as the director's or officer's interest is not counted for this purpose and more of the following material facts of the transaction and the director's or officer's relationship are disclosed to or known by the board of directors or a committee of the board of directors, and the board of directors or the committee authorizes the transaction in good faith by an affirmative vote of the majority of the directors (even though there are less than a quorum) and the material facts of the transaction and the director's or officer's relationship are disclosed to or known by the uninterested shareholders entitled to vote on the matter and they specifically approve in good faith the contract or transaction; or (iii) the contract or transaction is fair to the corporation as of the time it was approved or ratified.

Nanometrics
(California Corporation)

Nanometrics
(Delaware Corporation)

Shareholder Suits

Under California law, a shareholder bringing a derivative action on behalf of the corporation need not have been a shareholder at the time of the transaction in question, provided that

Under Delaware law, a shareholder may not initiate a derivative action to enforce a right of the corporation wrongfully taken unless the shareholder can enforce the right itself.

Edgar Filing: NANOMETRICS INC - Form PRER14A

certain tests are met concerning the fairness of allowing the action to go forward. The shareholder must make his or her demands on the board of directors before filing suit.

California law also provides that the corporation or the defendant in a derivative suit may make a motion to the court for an order requiring the plaintiff shareholder to furnish a security bond.

individual may also c
action suit on behalf
other similarly situa
to enforce an obligat
stockholders directly
for maintaining a cla
Delaware law have bee
complaint must: (i) s
plaintiff was a stock
time of the transacti
plaintiff complains o
shares thereafter dev
operation of law; and
derivative action: (a
the efforts made by t
action the plaintiff
or (b) allege with pa
would have been futil

Additionally, the pla
stockholder through t
action will not be di
without the approval
Chancery.

Inspection of Books and Records

Under California law, shareholders holding an aggregate of 5% or more of the corporation's voting shares, or shareholders holding an aggregate of 1% or more of such shares who have contested the election of directors and who have filed a Schedule 14A with the Securities and Exchange Commission, an absolute right to inspect and copy the corporation's shareholder list.

In addition, Section 1601 of the California General Corporation Law provides that any shareholder may inspect the accounting books and records and minutes of a corporation, provided that the inspection is for a purpose reasonably related to the person's interests as a shareholder.

Under Delaware law, a
entitled to inspect a
records, including th
stock ledger and a li
stockholders, as long
inspection is for a p
during the usual hour

Section 1601 of the C
Corporation Law appli
corporation with its
executive offices in
California, even if t
is incorporated in an
jurisdiction. The pri
offices of the Delawa
be in California even
Delaware will be inco
Delaware. Accordingly
company stockholders
inspect the books and
company pursuant to S
California General La

PROPOSAL 4
APPROVAL OF THE
2005 EQUITY INCENTIVE PLAN

We are asking stockholders to approve the Company's adoption of the 2005 Equity Incentive Plan (the "2005 Plan") so that we can use the 2005 Plan to achieve the Company's goals and also receive a federal income tax deduction for

Edgar Filing: NANOMETRICS INC - Form PRER14A

certain compensation paid under the 2005 Plan. The board of directors and the Company's compensation committee have approved the 2005 Plan, subject to stockholder approval at the annual meeting. Our named executive officers and directors have an interest in this proposal by virtue of their being eligible to receive equity awards under the 2005 Plan. The full text of the 2005 Plan is attached hereto as Appendix C.

A total of 1,200,000 shares of common stock have initially been reserved for issuance under the 2005 Plan, plus an annual increase to be added on the first day of the Company's fiscal year for three years (beginning in 2006 and ending after the 2008 increase), equal to the least of (i) 3% of the Company's outstanding common stock on that date or (ii) an amount determined by the board of directors.

We strongly believe that the approval of the 2005 Plan is essential to our continued success. The board of directors and management believe that equity awards motivate high levels of performance, align the interests of employees and stockholders by giving employees the perspective of an owner with an equity stake in the Company, and provide an effective means of recognizing employee contributions to the success of the Company. The board of directors and management believe that equity awards are of great value in recruiting and retaining personnel who help the Company meet its goals, as well as rewarding and encouraging current employees. The board of directors and management believe that the ability to grant equity awards will be important to the future success of the Company.

The Company's 2000 Stock Option Plan had only 518,803 shares remaining available for issuance as of January 1, 2005. As a result, if the stockholders do not approve this proposal, the Company will be limited in its ability to make discretionary option or other equity award grants under an equity incentive plan to assist in recruiting and retaining personnel.

Summary of the Plan

The following paragraphs provide a summary of the principal features of the 2005 Plan and its operation. The Plan is set forth in its entirety as Appendix C to this proxy statement. The following summary is qualified in its entirety by reference to the 2005 Plan.

Background and Purpose of the 2005 Plan

The 2005 Plan permits the grant of stock options, stock appreciation rights, restricted stock, restricted stock units and performance shares (each individually, an "Award"). The 2005 Plan is intended to attract and retain the best available personnel for positions of substantial responsibility, including (1) employees of the Company and any parent or subsidiary, (2) consultants who provide services to the Company and any parent or subsidiary, and (3) directors of the Company. The 2005 Plan also is designed to provide additional incentive to these services providers, to promote the success of the Company's business and to permit the payment of compensation that qualifies as performance-based compensation under Section 162(m) of the Internal Revenue Code of 1986, as amended ("Section 162(m)").

Administration of the 2005 Plan

A committee (the "Committee") of the board of directors will administer the 2005 Plan. The Committee generally will be the compensation/stock option committee, which will consist of two or more directors who qualify as "non-employee directors" under Rule 16b-3 of the Securities Exchange Act of 1934, and as "outside directors" under Section 162(m) (so that the Company is entitled to a federal tax deduction for certain compensation paid under the 2005 Plan). Notwithstanding the foregoing, the Board may itself administer the 2005

Edgar Filing: NANOMETRICS INC - Form PRER14A

Plan or appoint one or more committees to administer the 2005 Plan with respect to different groups of service providers. The Board, the compensation committee or other committee administering the 2005 Plan is referred to herein as the "Administrator."

Subject to the terms of the 2005 Plan, the Administrator has the sole discretion to select the employees, consultants, and directors who will receive Awards, determine the terms and conditions of Awards (for example, the

35

exercise price and vesting schedule), and interpret the provisions of the 2005 Plan and outstanding Awards. The Administrator may not, however, reprice Awards or exchange Awards for other Awards, cash or a combination thereof, without the approval of the stockholders.

If an Award is settled is cancelled, expires, or is forfeited or repurchased by the Company for any reason without having been fully exercised or vested, the unvested, cancelled, forfeited or repurchased number of shares of Company common stock ("Shares") generally will be returned to the available pool of Shares reserved for issuance under the 2005 Plan. Any Shares subject to options or stock appreciation rights generally will be counted against the available pool as one Share for every Share subject to the option or stock appreciation rights. Any Shares of restricted stock or Shares subject to performance shares or restricted stock units with a per share or unit purchase price lower than 100% of Fair Market Value on the date of grant generally will be counted against the available pool as two Shares for every one Share subject thereto. Shares actually issued under the 2005 Plan or withheld to pay the exercise price of an Award or to satisfy tax withholding obligations with respect to an Award will not be returned to the 2005 Plan and will not be available for future issuance under the plan. Also, if the Company experiences any dividend or other distribution (whether in the form of cash, Shares, other securities, or other property), recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase, or exchange of Shares or other securities of the Company, or other change in the corporate structure of the Company affecting the Shares, a proportional adjustment will be made to the number of Shares available for issuance under the 2005 Plan, the number and price of Shares subject to outstanding Awards and the per-person limits on Awards, as appropriate to reflect the stock dividend or other change, should the Administrator determine that such an adjustment is appropriate in order to prevent dilution or enlargement of the benefits or potential benefits intended to be made available under the 2005 Plan.

Eligibility to Receive Awards

The Administrator selects the employees, consultants, and directors who will be granted Awards under the 2005 Plan. The actual number of individuals who will receive Awards cannot be determined in advance because the Administrator has the discretion to select the participants.

Stock Options

A stock option is the right to acquire Shares at a fixed exercise price for a fixed period of time. Under the 2005 Plan, the Administrator may grant nonstatutory stock options and/or incentive stock options (which entitle employees, but not the Company, to more favorable tax treatment). The Administrator will determine the number of Shares covered by each option, but during any fiscal year of the Company, no participant may be granted options and

Edgar Filing: NANOMETRICS INC - Form PRER14A

stock appreciation rights together covering more than 500,000 Shares.

The exercise price of the Shares subject to each option is set by the Administrator but cannot be less than 100% of the fair market value (on the date of grant) of the Shares covered by the option. In addition, the exercise price of an incentive stock option must be at least 110% of fair market value if (on the grant date) the participant owns stock possessing more than 10% of the total combined voting power of all classes of stock of the Company or any of its subsidiaries. The aggregate fair market value of the Shares (determined on the grant date) covered by incentive stock options which first become exercisable by any participant during any calendar year also may not exceed \$100,000.

Options issued under the 2005 Plan become exercisable at the times and on the terms established by the Administrator. The Administrator also establishes the time at which options expire, but the expiration of an incentive stock option may not be later than ten years after the grant date (such term to be limited to 5 years in the case of an incentive stock option granted to a participant who owns stock possessing more than 10% of the total combined voting power of all classes of stock of the Company or any of parent or subsidiary of the Company).

The exercise price of each option must be paid in full at the time of exercise. The exercise price may be paid in any form as determined by the Administrator, including, but not limited to, cash, check, surrender of Shares that have a fair market value on the date of surrender equal to the aggregate exercise price of the shares as to which the option is being exercised, consideration received pursuant to a cashless exercise program, promissory note, through a reduction in the amount of Company liability to the participant, or other legal methods of consideration.

36

If a participant's service relationship with us terminates for any reason (excluding death or disability), then the participant may exercise the option within a period of time as determined by the Administrator and specified in the Award agreement to the extent that the Award is vested on the date of termination (but in no event later than the expiration of the term of such Award). In the absence of a specified time set forth in the Award agreement, the option will remain exercisable for three months following the termination of the participant's service relationship. If a participant's service relationship terminates due to the participant's disability or death, the participant (or his or her estate or beneficiary) may exercise the option within a period of time as determined by the Administrator and specified in the Award agreement to the extent the Award was vested on the date of termination of the service relationship (but in no event later than the expiration of the term of such Award). In the absence of a specified time in the Award agreement, the option will remain exercisable for the twelve months following the termination of the participant's service due to disability or death.

Stock Appreciation Rights

Stock appreciation rights are Awards that grant the participant the right to receive an amount equal to (1) the number of Shares exercised, times (2) the amount by which the Company's stock price exceeds the exercise price. The Administrator set the exercise price. An individual will be able to profit from a stock appreciation right only if the fair market value of the stock increases above the exercise price. The Company's obligation arising upon the exercise of a stock appreciation right may be paid in Shares or in cash, or any combination thereof, as the Administrator may determine.

Edgar Filing: NANOMETRICS INC - Form PRER14A

Awards of stock appreciation rights may be granted in connection with all or any part of an option or may be granted independently of options. No participant may be granted stock appreciation rights and options together covering more than 500,000 shares in any fiscal year of the Company.

The Administrator determines the terms of stock appreciation rights. A stock appreciation right will be exercisable, in whole or in part, at such time as the Administrator will specify in the Award agreement, but will expire no later than ten (10) years after the date of grant.

If a participant's service relationship with us terminates for any reason (excluding death or disability), then the participant may exercise the stock appreciation right within a period of time as determined by the Administrator and specified in the Award agreement to the extent that the Award is vested on the date of termination (but in no event later than the expiration of the term of such Award). In the absence of a specified time set forth in the Award agreement, the stock appreciation right will remain exercisable for three months following the termination of the participant's service relationship. If a participant's service relationship terminates due to the participant's disability or death, the participant (or his or her estate or beneficiary) may exercise the stock appreciation right within a period of time as determined by the Administrator and specified in the Award agreement to the extent the Award was vested on the date of termination of the service relationship (but in no event later than the expiration of the term of such Award). In the absence of a specified time in the Award agreement, the stock appreciation right will remain exercisable for the twelve months following the termination of the participant's service due to disability or death.

Restricted Stock

Awards of restricted stock are Shares that vest in accordance with the terms and conditions established by the Administrator. The Administrator may set vesting criteria based upon the achievement of Company-wide, departmental, business unit or individual goals, which may include continued employment or service, applicable federal or state securities or any other basis determined by the Committee. If the Administrator desires that the Award qualify as performance-based compensation under Section 162(m), any restrictions will be based on a specified list of performance goals (see "Performance Goals" below for more information). The Administrator will determine the number of Shares of restricted stock granted to any employee, consultant or director, but during any fiscal year of the Company, no participant may be granted more than 250,000 Shares in the aggregate of restricted stock, performance shares or restricted stock units.

37

Unless the Administrator determines otherwise, Shares of restricted stock will be held by the Company as escrow agent until any restrictions on the Shares have lapsed. The Administrator may accelerate the time at which any restriction may lapse or be removed.

On the date set forth in the Award agreement, all unvested restricted stock will be forfeited to the Company.

Restricted Stock Units

Awards of restricted stock units are Shares that vest in accordance with terms and conditions established by the Administrator. The Administrator determines the number of restricted stock units granted to any employee, consultant or director, but during any fiscal year of the Company, no

Edgar Filing: NANOMETRICS INC - Form PRER14A

participant may be granted more than 250,000 Shares in the aggregate subject to restricted stock units, performance shares or restricted stock.

In determining whether an Award of restricted stock units should be made, and/or the vesting schedule for any such Award, the Administrator may impose whatever conditions to vesting it determines to be appropriate. The number of restricted stock units paid out to the participant will depend on the extent to which the vesting criteria are met. The Administrator may set vesting criteria based upon the achievement of Company-wide, departmental, business unit or individual goals, which may include continued employment or service, applicable federal or state securities or any other basis determined by the Committee. Notwithstanding the foregoing, if the Administrator desires that the Award qualify as performance-based compensation under Section 162(m), any restrictions will be based on a specified list of performance goals (see "Performance Goals" below for more information).

Upon satisfying the applicable vesting criteria, the participant shall be entitled to the payout specified in the Award agreement. Notwithstanding the foregoing, at any time after the grant of restricted stock units, the Administrator may reduce or waive any vesting criteria that must be met to receive a payout. The Administrator, in its sole discretion, may pay earned restricted stock units in cash, Shares, or a combination thereof. Shares represented by restricted stock units that are fully paid in cash will again be available for grant under the Plan. On the date set forth in the Award agreement, all unearned restricted stock units will be forfeited to the Company.

Performance Shares

Performance shares are Awards that will result in a payment to a participant only if performance objectives established by the Administrator are achieved or the Awards otherwise vest. The Administrator may set vesting criteria based upon the achievement of Company-wide, departmental, business unit or individual goals, which may include continued employment or service, applicable federal or state securities or any other basis determined by the Committee. Notwithstanding the foregoing, if the Administrator desires that the Award qualify as performance-based compensation under Section 162(m), any restrictions will be based on a specified list of performance goals (see "Performance Goals" below for more information).

Performance shares have an initial value equal to the fair market value of a share on the date of grant. Performance shares may be granted to employees, consultants or directors at any time as shall be determined by the Administrator in its sole discretion. Subject to the terms of the 2005 Plan, the Administrator will have complete discretion to determine the number of shares subject to a performance share award and the conditions that must be satisfied, which typically will be based principally or solely on achievement of performance milestones but may include a service based component, upon which is conditioned on the grant or vesting of performance shares. Subject to the terms of the Plan, the Administrator will determine the number of performance shares granted to a service provider, during any fiscal year of the Company, no participant may be granted more than 250,000 Shares in the aggregate subject to performance shares, restricted stock units, or restricted stock.

On the date set forth in the Award agreement, all unearned or unvested performance shares will be forfeited to the Company.

Performance Goals

Edgar Filing: NANOMETRICS INC - Form PRER14A

Under Section 162(m) of the Code, the annual compensation paid to our Chief Executive Officer and to each of our other four most highly compensated executive officers may not be deductible to the extent it exceeds \$1 million. However, we are able to preserve the deductibility of compensation in excess of \$1 million if the conditions of Section 162(m) are met. These conditions include stockholder approval of the 2005 Plan, setting limits on the number of awards that any individual may receive and for awards other than options, establishing performance criteria that must be met before the award actually will vest or be paid.

We have designed the Plan so that it permits us to pay compensation that qualifies as performance-based under Section 162(m). Thus, the Administrator (in its discretion) may make performance goals applicable to a participant with respect to an award. At the Administrator's discretion, one or more of the following performance goals may apply (all of which are defined in the Plan): annual revenue, cash position, earnings per share, net income, individual performance objectives, marketing and sales expenses as a percentage of sales, net income as a percentage of sales, net income, operating cash flow, operating income, return on assets, return on equity, return on sales, and total stockholder return. The Performance Goals may differ from Participant to Participant and from Award to Award.

Any criteria used may be measured, as applicable (1) in absolute terms, (2) in relative terms (including, but not limited to, passage of time and/or against another company or companies), (3) on a per-share basis, (4) against the performance of the Company as a whole or a business unit of the Company, and/or (5) on a pre-tax or after-tax basis. The Administrator also will adjust any evaluation of performance under a performance goal to exclude (i) any extraordinary non-recurring items, or (ii) the effect of any changes in accounting principles affecting the Company's or a business units' reported results.

Merger or Change in Control

In the event of a merger "change in control" of the Company, the successor corporation will either assume or provide a substitute award for each outstanding Award. In the event the successor corporation refuses to assume or provide a substitute award, the Award will immediately vest and become exercisable as to all of the Shares subject to such Award, or, if applicable, the Award will be deemed fully earned and will be paid out prior to the merger or change in control. In addition, if an option, stock appreciation right or right to purchase restricted stock has become fully vested and exercisable in lieu of assumption or substitution, the Committee will provide at least 15 days' notice that the option, stock appreciation right or right to purchase restricted stock will immediately vest and become exercisable as to all of the Shares subject to such Award and all outstanding options, stock appreciation rights and rights to purchase restricted stock will terminate upon the expiration of such notice period.

Awards to be Granted to Certain Individuals and Groups

The number of Awards (if any) that an employee, consultant, or director may receive under the 2005 Plan is in the discretion of the Administrator and therefore cannot be determined in advance. Our executive officers and directors have an interest in this proposal because they are eligible to receive Awards under the 2005 Plan. To date, stock options have been granted under existing Company equity plans. The following table sets forth for each of the Company's executive officers and directors (a) the total number of Shares subject to options granted during the last fiscal year and (b) the average per Share exercise price of such options. Quentin Wright and Michael Weber are not listed on the table below because they did not join the Company in their capacities as executive officers until after January 1, 2005.

Edgar Filing: NANOMETRICS INC - Form PRER14A

Name of Individual or Group	Number of Options Granted	Average Per Share Exercise Price
Vincent J. Coates	--	\$
John D. Heaton	100,000	\$12.02
Edmond R. Ward	--	\$
William G. Oldham	--	\$
Paul B. Nolan	--	\$
Roger Ingalls, Jr.	5,000	\$10.37
Stephen J Smith, Jr.	10,000	\$16.71
J. Thomas Bentley	10,000	\$16.71
Norman V. Coates	10,000	\$11.39
All executive officers, as a group (4 persons)	105,000	\$11.94
All directors who are not executive officers, as a group (5 persons)	30,000	\$14.94
All employees who are not executive officers, as a group	308,550	\$12.64

39

Limited Transferability of Awards

Awards granted under the 2005 Plan generally may not be sold, transferred, pledged, assigned, or otherwise alienated or hypothecated, other than by will or by the applicable laws of descent and distribution and may be exercised during the lifetime of the participant, only by the participant. Notwithstanding the foregoing, the Administrator may permit an individual to transfer an Award. Any transfer shall be made in accordance with procedures established by the Administrator.

Federal Tax Aspects

The following paragraphs are a summary of the general federal income tax consequences to U.S. taxpayers and the Company of Awards granted under the 2005 Plan. Tax consequences for any particular individual may be different.

Nonstatutory stock options

No taxable income is recognized when a nonqualified stock option is granted to a participant. Upon exercise, the participant will recognize ordinary income in an amount equal to the excess of the fair market value of the Shares on the exercise date over the exercise price. Any additional gain or loss recognized upon later disposition of the Shares is capital gain or loss.

Incentive Stock Options

No taxable income is recognized when an incentive stock option is granted or exercised (except for purposes of the alternative minimum tax, in which case taxation is the same as for nonstatutory stock options). If the participant exercises the option and then later sells or otherwise disposes of the Shares more than two years after the grant date and more than one year after the exercise date, the difference between the sale price and the exercise price will be taxed as capital gain or loss. If the participant exercises the option and then later sells or otherwise disposes of the Shares before the end of the two- or one-year holding periods described above, he or she generally will have ordinary income at the time of the sale equal to the fair market value of the Shares on the exercise date (or the sale price, if less) minus the exercise

Edgar Filing: NANOMETRICS INC - Form PRER14A

price of the option. Any additional gain or loss will be capital gain or loss.

Stock Appreciation Rights

No taxable income is reportable when a stock appreciation right is granted to a participant. Upon exercise, the participant generally will recognize ordinary income in an amount equal to the amount of cash received and the fair market value of any Shares received. Any additional gain or loss recognized upon any later disposition of the Shares would be capital gain or loss.

Restricted Stock, Restricted Stock Units and Performance Shares

A participant will not have taxable income upon grant unless he or she elects to be taxed at that time. Instead, he or she generally will recognize ordinary income at the time of vesting equal to the fair market value (on the vesting date) of the Shares or cash received minus any amount paid for the Shares.

Tax Effect for the Company

The Company generally will be entitled to a tax deduction in connection with an Award under the 2005 Plan in an amount equal to the ordinary income realized by a participant and at the time the participant recognizes such income (for example, the exercise of a nonqualified stock option). As discussed above, special rules limit the deductibility of compensation paid to our Chief Executive Officer and to each of our four most highly compensated executive officers.

40

However, the 2005 Plan has been designed to permit the Administrator to grant Awards that qualify as performance-based compensation under Section 162(m), thereby permitting the Company to receive a federal income tax deduction in connection with such Awards.

Amendment and Termination of the Plan

The Board generally may amend, alter, suspend or terminate the 2005 Plan at any time and for any reason. However, no amendment, alter, suspension, or termination may impair the rights of any participant in the 2005 Plan without his or her consent. Amendments will be contingent on stockholder approval if required by applicable law. Unless terminated earlier by the Board, the 2005 Plan will continue in effect until ten (10) years following the date of the Board of Director's adoption of the 2005 Plan.

Summary

We believe strongly that the approval of the 2005 Plan is essential to our continued success. Awards such as those provided under the 2005 Plan constitute an important incentive and help us to attract and retain people whose skills and performance are critical to our success. Our employees and directors are our most important asset. The Company's 2000 Stock Option Plan has only 518,803 shares remaining available for issuance. As a result, if the stockholders do not approve the 2005 Plan, the Company will be severely limited in its ability to make any discretionary option or other equity award grants under an equity incentive plan to assist in recruiting and retaining personnel. The board of directors believes that the 2005 Plan is vital to our ability to attract and retain outstanding and highly skilled individuals to work for the Company and serve on our board of directors.

Edgar Filing: NANOMETRICS INC - Form PRER14A

THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE SHAREHOLDERS VOTE "FOR" PROPOSAL 4.

41

PROPOSAL 5 RATIFICATION OF APPOINTMENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The audit committee of the board of directors has appointed BDO Seidman, LLP, independent registered public accounting firm, to audit the consolidated financial statements of the Company for the fiscal year ending December 31, 2005.

Deloitte & Touche LLP previously audited the Company's financial statements from fiscal 1991 through the fiscal year ended January 3, 2004. Deloitte & Touche LLP resigned effective as of August 23, 2004. BDO Seidman, LLP was selected by the audit committee to serve as the Company's independent registered public accounting firm effective as of September 3, 2004.

The reports of Deloitte & Touche LLP on the Company's financial statements for the fiscal years ended December 28, 2002 and January 3, 2004 do not contain an adverse opinion or a disclaimer of opinion, and are not qualified or modified as to uncertainty, audit scope or accounting principles, except that such reports include an explanatory paragraph relating to a change in method of accounting for goodwill and other intangible assets.

During the fiscal years ended December 28, 2002 and January 3, 2004, and through August 23, 2004, there were no disagreements between the Company and Deloitte & Touche LLP on any matter of accounting principles or practices, financial statements disclosure, or auditing scope or procedure which disagreements, if not resolved to the satisfaction of Deloitte & Touche LLP, would have caused Deloitte & Touche LLP to make reference thereto in the firm's reports on the Company's financial statements for such periods. In addition, no reportable events, as defined in Item 304 (a) (1) (v) of Regulation S-K, occurred during the Company's two most recent fiscal years.

Representatives of BDO Seidman, LLP are expected to be present at the Company's annual meeting with the opportunity to make a statement if they desire to do so, and are also expected to be available to respond to appropriate questions.

Audit Fees

The following table summarizes the aggregate fees that the Company expects to pay BDO Seidman, LLP for fiscal 2004 and fees billed to the Company by Deloitte & Touche LLP for fiscal 2003 and 2002.

Type of fees	Fiscal 2004(5)	Fiscal 2003	Fiscal 2002
Audit Fees(1)	\$ 221,335	\$ 263,680	\$ 264,239
Audit-Related Fees(2)	4,400	--	--
Tax Fees(3)	--	127,690	222,255
All Other Fees(4)	--	7,500	--
Total Fees	\$ 225,735	\$ 398,870	\$ 486,494

Edgar Filing: NANOMETRICS INC - Form PRER14A

- (1) Fees for audit services consist of:
 - o Audit of the Company's annual financial statements
 - o Reviews of the Company's quarterly financial statements
 - o Statutory and regulatory audits, consents and other services related to Securities and Exchange Commission filings
- (2) Fees for audit-related services billed in fiscal 2004 consisted of consultations on Securities and Exchange Commission comment letters
- (3) Fees for tax services billed in fiscal 2003 consisted of tax compliance assistance, transfer pricing documentation and assistance with tax return filings in certain foreign jurisdictions
- (4) All other fees consisted of training on the requirements of Section 404 of the Sarbanes-Oxley Act of 2002
- (5) In fiscal 2004, Deloitte & Touche LLP billed the Company \$74,036, \$57,330, \$13,913 and \$0 for audit, audit-related, tax and all other fees, respectively.

42

In considering the nature of the services provided by the independent registered public accountants, the audit committee determined that such services are compatible with the provision of independent audit services. The audit committee discussed these services with the independent registered public accountants and the Company's management to determine that they are permitted under the rules and regulations concerning auditors' independence promulgated by the Securities and Exchange Commission to implement the Sarbanes-Oxley Act of 2002, as well as the American Institute of Certified Public Accountants.

Audit Committee Pre-Approval Policy

Pursuant to the audit committee charter, the audit committee must pre-approve all audit and non-audit services, and the related fees, provided to the Company by its independent auditors, or subsequently approve non-audit services in those circumstances where a subsequent approval is necessary and permissible under the Exchange Act or the rules of the Securities and Exchange Commission. Accordingly, the audit committee pre-approved all services and fees provided by Deloitte & Touche LLP and BDO Seidman, LLP during the year ended January 1, 2005 and has concluded that the provision of these services is compatible with the accountants' independence.

Matters Not Required to be Submitted to Security Holders

Approval by the shareholders of the selection of the independent registered public accounting firm is not required, but the audit committee believes it is desirable as a matter of good corporate governance to submit this matter to the shareholders. If holders of a majority of the common stock represented and voting at the annual meeting do not ratify the appointment of BDO Seidman, LLP as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2005, the audit committee will consider whether it should select another independent registered public accounting firm.

Vote Required

Edgar Filing: NANOMETRICS INC - Form PRER14A

As a matter of good corporate governance, the Company is seeking the affirmative vote of the holders of a majority of the shares of common stock represented and voting at the annual meeting to approve this proposal.

THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT SHAREHOLDERS VOTE "FOR" THE RATIFICATION OF THE APPOINTMENT OF BDO SEIDMAN, LLP AS THE COMPANY'S INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE FISCAL YEAR ENDING DECEMBER 31, 2005.

43

OTHER MATTERS

The Company knows of no other matters to be submitted to the annual meeting. If any other matters properly come before the annual meeting, it is the intention of the persons named in the enclosed proxy card to vote the shares they represent as the board of directors may recommend.

THE BOARD OF DIRECTORS

Dated: August __, 2005

44

NANOMETRICS INCORPORATED

THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS
2005 ANNUAL MEETING OF SHAREHOLDERS
August 26, 2005

The undersigned shareholder(s) of Nanometrics Incorporated, a California corporation, hereby acknowledges receipt of the Notice of Annual Meeting of Shareholders and Proxy Statement, each dated August __, 2005, and hereby appoints Vincent J. Coates and Paul B. Nolan, and each of them, Proxies and Attorneys-in-Fact, with full power to each of substitution, on behalf and in the name of the undersigned, to represent the undersigned at the 2005 Annual Meeting of Shareholders of Nanometrics Incorporated to be held on Friday, August 26, 2005 at 1:00 p.m., local time, at the principal offices of the Company located at 1550 Buckeye Drive, Milpitas, California, 95035 and at any adjournments thereof, and to vote all shares of common stock which the undersigned is entitled to vote on the matters set forth below:

ITEM 1. Election of Directors:

- () FOR all nominees listed below (except as indicated)
- () WITHHOLD AUTHORITY to vote for all nominees listed below

IF YOU WISH TO WITHHOLD AUTHORITY TO VOTE FOR ANY INDIVIDUAL NOMINEE, STRIKE A LINE THROUGH THAT NOMINEE'S NAME IN THE LIST BELOW:

Edgar Filing: NANOMETRICS INC - Form PRER14A

Vincent J. Coates J. Thomas Bentley John D. Heaton

Stephen J Smith Edmond R. Ward William G. Oldham Norman V. Coates

ITEM 2. Proposal to approve the reincorporation of the Company under the laws of the State of Delaware through a merger with Big League Merger Corporation, a wholly-owned subsidiary of the Company.

() FOR () AGAINST () ABSTAIN

ITEM 3. PLEASE COMPLETE EITHER THIS ITEM OR THE INDIVIDUAL PROPOSALS BELOW, BUT NOT BOTH. You may vote on all proposals to approve the governance and other provisions in the certificate of incorporation and bylaws of the Company to be contingent and effective upon the completion of the reincorporation merger by marking the box below. If you mark both this item and any individual proposal below only your vote on this item will be counted.

() FOR () AGAINST () ABSTAIN

A. Proposal to approve a provision limiting the Company's stockholders' right to call special meetings of stockholders.

() FOR () AGAINST () ABSTAIN

B. Proposal to approve a provision limiting the Company's stockholders' ability to act by written consent.

() FOR () AGAINST () ABSTAIN

C. Proposal to approve a provision requiring a super-majority vote of the Company's stockholders to amend certain provisions of its certificate of incorporation.

() FOR () AGAINST () ABSTAIN

D. Proposal to approve a provision requiring a super-majority vote of the Company's stockholders to amend certain provisions of the Company's bylaws.

() FOR () AGAINST () ABSTAIN

E. Proposal to approve a provision limiting the Company's stockholders' right to remove directors from the board without cause.

() FOR () AGAINST () ABSTAIN

F. Proposal to approve the classification of the board of directors into separate classes with staggered terms.

() FOR () AGAINST () ABSTAIN

G. Proposal to approve a provision limiting cumulative voting rights in connection with the election of directors.

() FOR () AGAINST () ABSTAIN

ITEM 4. Proposal to approve the adoption of the Company's 2005 Employee Stock Option Plan and the reservation of 1,200,000 shares of common stock

Edgar Filing: NANOMETRICS INC - Form PRER14A

for issuance thereunder.

() FOR () AGAINST () ABSTAIN

ITEM 5. Proposal to ratify the appointment of BDO Seidman, LLP as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2005:

() FOR () AGAINST () ABSTAIN

(Continued and to be signed, on reverse side)

(Continued from other side)

In their discretion, the Proxies are authorized to vote upon such other business as may properly come before the meeting.

THIS BALLOT WILL BE VOTED AS DIRECTED OR, IF NO CONTRARY DIRECTION IS INDICATED, WILL BE VOTED "FOR" THE ELECTION OF DIRECTORS NAMED HEREIN, "FOR" THE PROPOSALS LISTED, AND AS SAID PROXIES DEEM ADVISABLE ON SUCH OTHER MATTERS AS MAY COME BEFORE THE MEETING.

Typed or Printed Name(s)

Signature

Signature

Title, if applicable

Type and Number of Shares owned

Dated: _____, 2005

THIS PROXY SHOULD BE MARKED, DATED, SIGNED BY THE SHAREHOLDER(S) EXACTLY AS HIS OR HER NAME APPEARS HEREON AND RETURNED PROMPTLY IN THE ENCLOSED ENVELOPE. PERSONS SIGNING IN A FIDUCIARY CAPACITY SHOULD SO INDICATE. IF SHARES ARE HELD BY JOINT TENANTS OR AS COMMUNITY PROPERTY, BOTH SHOULD SIGN.

APPENDIX A

RESTATED

CERTIFICATE OF INCORPORATION

NANOMETRICS INCORPORATED

Edgar Filing: NANOMETRICS INC - Form PRER14A

Nanometrics Incorporated, a corporation organized and existing under the laws of the State of Delaware, hereby certifies as follows:

A. The corporation was originally incorporated under the name of Minor League Merger Corporation, and the original Certificate of Incorporation of the corporation was filed with the Secretary of State of the State of Delaware on January 18, 2005.

B. Pursuant to Section 251 of the General Corporation Law of the State of Delaware (the "DGCL"), this Restated Certificate of Incorporation amends and restates the provisions of the original Certificate of Incorporation of the corporation.

C. This Restated Certificate of Incorporation has been duly approved by the Board of Directors of the corporation in accordance with Section 251 of the DGCL.

D. The Certificate of Incorporation of the corporation is hereby amended and restated in its entirety to read as follows:

ARTICLE I

The name of the corporation is Nanometrics Incorporated.

ARTICLE II

The address of the corporation's registered office in the State of Delaware is Corporation Trust Center, 1209 Orange Street, Wilmington, New Castle County, Delaware 19801. The name of its registered agent at such address is The Corporation Trust Company.

ARTICLE III

The purpose of the corporation is to engage in any lawful act or activity for which corporations may be organized under the DGCL.

ARTICLE IV

The corporation shall have authority to issue shares as follows:

47,000,000 shares of Common Stock, par value \$0.001 per share. Each share of Common Stock shall entitle the holder thereof to one (1) vote on each matter submitted to a vote at a meeting of stockholders.

A-1

3,000,000 shares of Preferred Stock, par value \$0.001 per share, which may be issued from time to time in one or more series pursuant to a resolution or resolutions providing for such issue duly adopted by the Board of Directors of the corporation (authority to do so being hereby expressly vested in the Board of Directors of the corporation). The Board of Directors of the corporation is further authorized, subject to limitations prescribed by law, to fix by resolution or resolutions the designations, powers, preferences and rights, and the qualifications, limitations or restrictions thereof, of any wholly unissued series of Preferred Stock, including without limitation authority to fix by resolution or resolutions the dividend rights, dividend rate, conversion rights, voting rights, rights and terms of redemption (including sinking fund provisions), redemption price or prices, and liquidation preferences of any such series, and the number of shares constituting any such series and the designation thereof, or any of the foregoing.

Edgar Filing: NANOMETRICS INC - Form PRER14A

The Board of Directors of the corporation is further authorized to increase (but not above the total number of authorized shares of the class) or decrease (but not below the number of shares of any such series then outstanding) the number of shares of any series, the number of which was fixed by it, subsequent to the issuance of shares of such series then outstanding, subject to the powers, preferences and rights, and the qualifications, limitations and restrictions thereof stated in this Certificate of Incorporation or the resolution of the Board of Directors of the corporation originally fixing the number of shares of such series. If the number of shares of any series is so decreased, then the shares constituting such decrease shall resume the status which they had prior to the adoption of the resolution originally fixing the number of shares of such series.

ARTICLE V

The number of directors that constitutes the entire Board of Directors of the corporation shall be determined in the manner set forth in the Bylaws of the corporation. At each annual meeting of stockholders, each director of the corporation shall be elected to hold office, and shall serve, until the expiration of the term for which he or she is elected and until his or her successor is duly elected and qualified or until his or her death, resignation, or removal; except that if any such election shall not be so held, such election shall take place at a stockholders' meeting called and held in accordance with the DGCL.

Any director may be removed from office by the stockholders of the corporation only for cause. Vacancies occurring on the Board of Directors of the corporation for any reason and newly created directorships resulting from an increase in the authorized number of directors may be filled only by vote of a majority of the remaining members of the Board of Directors of the corporation, although less than a quorum, at any meeting of the Board of Directors of the corporation. A person so elected by the Board of Directors of the corporation to fill a vacancy or newly created directorship shall hold office until the next election of the class for which such director shall have been chosen and until his or her successor shall have been duly elected and qualified.

ARTICLE VI

In furtherance and not in limitation of the powers conferred by statute, the Board of Directors of the corporation is expressly authorized to adopt, amend or repeal the Bylaws of the corporation. Notwithstanding the foregoing, the holders of at least 66.67% of the shares of capital stock of the corporation issued and outstanding and entitled to vote may by affirmative vote adopt, amend, alter or repeal the Bylaws of the corporation.

ARTICLE VII

The election of directors need not be by written ballot unless the Bylaws of the corporation shall so provide.

A-2

ARTICLE VIII

Special meetings of the stockholders of the corporation for any purpose or purposes may be called at any time by the chairperson of the Board of Directors of the corporation or a majority of the authorized number of directors, but such special meetings may not be called by any other person or persons. No action

Edgar Filing: NANOMETRICS INC - Form PRER14A

shall be taken by the stockholders of the corporation except at an annual or special meeting of the stockholders called in accordance with this Certificate of Incorporation or the Bylaws of the corporation, and no action shall be taken by the stockholders by written consent.

ARTICLE IX

The corporation shall indemnify and hold harmless, to the fullest extent permitted by the DGCL as it presently exists or may hereafter be amended, any director or officer of the corporation who was or is made or is threatened to be made a party or is otherwise involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative (a "Proceeding") by reason of the fact that he or she, or a person for whom he or she is the legal representative, is or was a director, officer, employee or agent of the corporation or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust, enterprise or non-profit entity, including service with respect to employee benefit plans, against all liability and loss suffered and expenses reasonably incurred by such person in connection with any such Proceeding. The corporation shall be required to indemnify a person in connection with a Proceeding initiated by such person only if the Proceeding was authorized by the Board of Directors of the corporation.

The corporation shall have the power to indemnify and hold harmless, to the extent permitted by applicable law as it presently exists or may hereafter be amended, any employee or agent of the corporation who was or is made or is threatened to be made a party or is otherwise involved in any Proceeding by reason of the fact that he or she, or a person for whom he or she is the legal representative, is or was an employee or agent of the corporation or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust, enterprise or non-profit entity, including service with respect to employee benefit plans, against all liability and loss suffered and expenses reasonably incurred by such person in connection with any such Proceeding.

Neither any amendment nor repeal of this Article IX, nor the adoption of any provision of this Certificate of Incorporation inconsistent with this Article IX, shall eliminate or reduce the effect of this Article IX in respect of any matter occurring, or any cause of action, suit or claim accruing or arising or that, but for this Article IX, would accrue or arise, prior to such amendment, repeal or adoption of an inconsistent provision.

ARTICLE X

Except as provided in Article IX above, the corporation reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon stockholders herein are granted subject to this reservation. Notwithstanding the foregoing, any other provision of law, this Certificate of Incorporation or the Bylaws of the corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least 66.67% of the shares of capital stock of the corporation issued and outstanding and entitled to vote shall be required to amend or repeal, or to adopt any provision inconsistent with, Article IV, Article VI, Article VIII or Article X of this Certificate of Incorporation.

Edgar Filing: NANOMETRICS INC - Form PRER14A

IN WITNESS WHEREOF, Nanometrics Incorporated has caused this Restated Certificate of Incorporation to be signed by the President and Chief Executive Officer of the corporation on this day of 2005.

By:

John D. Heaton
President and Chief Executive
Officer

A-4

APPENDIX B

AMENDED AND RESTATED BYLAWS OF

NANOMETRICS INCORPORATED

(initially adopted on January 18, 2005)

(as amended and restated on [_____, 2005])

TABLE OF CONTENTS

	Page

ARTICLE I - CORPORATE OFFICES	B- 1
1.1 REGISTERED OFFICE	B- 1
1.2 OTHER OFFICES	B- 1
ARTICLE II - MEETINGS OF STOCKHOLDERS	B- 1
2.1 PLACE OF MEETINGS	B- 1
2.2 ANNUAL MEETING	B- 1
2.3 SPECIAL MEETING	B- 1
2.4 ADVANCE NOTICE PROCEDURES; NOTICE OF STOCKHOLDERS' MEETINGS	B- 1
2.5 MANNER OF GIVING NOTICE; AFFIDAVIT OF NOTICE	B- 3
2.6 QUORUM	B- 3
2.7 ADJOURNED MEETING; NOTICE	B- 3
2.8 CONDUCT OF BUSINESS	B- 3
2.9 VOTING	B- 3
2.10 RECORD DATE FOR STOCKHOLDER NOTICE; VOTING; GIVING CONSENTS	B- 4
2.11 PROXIES	B- 4
2.12 LIST OF STOCKHOLDERS ENTITLED TO VOTE	B- 4
2.13 INSPECTORS OF ELECTION	B- 4
ARTICLE III - DIRECTORS	B- 5
3.1 POWERS	B- 5
3.2 NUMBER OF DIRECTORS	B- 5

Edgar Filing: NANOMETRICS INC - Form PRER14A

3.3	ELECTION, QUALIFICATION AND TERM OF OFFICE OF DIRECTORS	B- 5
3.4	CLASS OF DIRECTORS	B- 5
3.5	RESIGNATION AND VACANCIES	B- 6
3.6	PLACE OF MEETINGS; MEETINGS BY TELEPHONE	B- 6
3.7	REGULAR MEETINGS	B- 7
3.8	SPECIAL MEETINGS; NOTICE	B- 7
3.9	QUORUM	B- 7
3.10	BOARD ACTION BY WRITTEN CONSENT WITHOUT A MEETING	B- 7
3.11	FEES AND COMPENSATION OF DIRECTORS	B- 7
3.12	REMOVAL OF DIRECTORS	B- 8
 ARTICLE IV - COMMITTEES		 B- 8
4.1	COMMITTEES OF DIRECTORS	B- 8
4.2	COMMITTEE MINUTES	B- 8
4.3	MEETINGS AND ACTION OF COMMITTEES	B- 8
 ARTICLE V - OFFICERS		 B- 9
5.1	OFFICERS	B- 9
5.2	APPOINTMENT OF OFFICERS	B- 9
5.3	SUBORDINATE OFFICERS	B- 9
5.4	REMOVAL AND RESIGNATION OF OFFICERS	B- 9
5.5	VACANCIES IN OFFICES	B- 9
5.6	REPRESENTATION OF SHARES OF OTHER CORPORATIONS	B- 9
5.7	AUTHORITY AND DUTIES OF OFFICERS	B- 9

B-i

TABLE OF CONTENTS (continued)

		Page -----
 ARTICLE VI - RECORDS AND REPORTS		 B- 10
6.1	MAINTENANCE AND INSPECTION OF RECORDS	B- 10
6.2	INSPECTION BY DIRECTORS	B- 10
 ARTICLE VII - GENERAL MATTERS		 B- 10
7.1	EXECUTION OF CORPORATE CONTRACTS AND INSTRUMENTS	B- 10
7.2	STOCK CERTIFICATES; PARTLY PAID SHARES	B- 10
7.3	SPECIAL DESIGNATION ON CERTIFICATES	B- 11
7.4	LOST CERTIFICATES	B- 11
7.5	CONSTRUCTION; DEFINITIONS	B- 11
7.6	DIVIDENDS	B- 11
7.7	FISCAL YEAR	B- 11
7.8	SEAL	B- 12
7.9	TRANSFER OF STOCK	B- 12
7.10	STOCK TRANSFER AGREEMENTS	B- 12
7.11	REGISTERED STOCKHOLDERS	B- 12
7.12	WAIVER OF NOTICE	B- 12
 ARTICLE VIII - NOTICE BY ELECTRONIC TRANSMISSION		 B- 12
8.1	NOTICE BY ELECTRONIC TRANSMISSION	B- 12
8.2	DEFINITION OF ELECTRONIC TRANSMISSION	B- 13
8.3	INAPPLICABILITY	B- 13

Edgar Filing: NANOMETRICS INC - Form PRER14A

ARTICLE IX - INDEMNIFICATION	B- 13
9.1 INDEMNIFICATION OF DIRECTORS AND OFFICERS	B- 13
9.2 INDEMNIFICATION OF OTHERS	B- 13
9.3 PREPAYMENT OF EXPENSES	B- 14
9.4 DETERMINATION; CLAIM	B- 14
9.5 NON-EXCLUSIVITY OF RIGHTS	B- 14
9.6 INSURANCE	B- 14
9.7 OTHER INDEMNIFICATION	B- 14
9.8 AMENDMENT OR REPEAL	B- 14
ARTICLE X - AMENDMENTS	B- 14

B-ii

AMENDED AND RESTATED BYLAWS
OF
NANOMETRICS INCORPORATED

ARTICLE I - CORPORATE OFFICES

1.1 REGISTERED OFFICE.

The registered office of Nanometrics Incorporated shall be fixed in the corporation's certificate of incorporation, as the same may be amended from time to time.

1.2 OTHER OFFICES.

The corporation's board of directors (the "Board") may at any time establish other offices at any place or places where the corporation is qualified to do business.

ARTICLE II - MEETINGS OF STOCKHOLDERS

2.1 PLACE OF MEETINGS.

Meetings of stockholders shall be held at any place, within or outside the State of Delaware, designated by the Board. In the absence of any such designation or determination, stockholders' meetings shall be held at the corporation's principal executive office.

2.2 ANNUAL MEETING.

The annual meeting of stockholders shall be held each year. The Board shall designate the date and time of the annual meeting. In the absence of such designation the annual meeting of stockholders shall be held on the second Tuesday of May of each year at 10:00 a.m. However, if such day falls on a legal holiday, then the meeting shall be held at the same time and place on the next succeeding business day. At the annual meeting, directors shall be elected and any other proper business may be transacted.

2.3 SPECIAL MEETING.

A special meeting of the stockholders may be called as provided in the certificate of incorporation.

No business may be transacted at such special meeting other than the business specified in such notice to stockholders. Nothing contained in this

Edgar Filing: NANOMETRICS INC - Form PRER14A

paragraph of this Section 2.3 shall be construed as limiting, fixing, or affecting the time when a meeting of stockholders called by action of the Board may be held.

2.4 ADVANCE NOTICE PROCEDURES; NOTICE OF STOCKHOLDERS' MEETINGS.

(i) At an annual meeting of the stockholders, only such business shall be conducted as shall have been properly brought before the meeting. To be properly brought before an annual meeting, business must be: (A) specified in the notice of meeting (or any supplement thereto) given by or at the direction of the Board, (B) otherwise properly brought before the meeting by or at the direction of the Board, or (C) otherwise properly brought before the meeting by a stockholder. For business to be properly brought before an annual meeting by a stockholder, the stockholder must have given timely notice thereof in writing to the secretary of the corporation. To be timely, a stockholder's notice must be delivered to or mailed and received at the principal executive offices of the corporation not less than one hundred twenty (120) calendar days before the one year anniversary of the date on which the corporation first mailed its proxy statement to stockholders in connection with the previous year's annual meeting of stockholders; provided, however, that in the event that no annual meeting was held in the previous year or the date of the annual meeting has been

B-1

changed by more than thirty (30) days from the date of the prior year's meeting, notice by the stockholder to be timely must be so received not later than the close of business on the later of one hundred twenty (120) calendar days in advance of such annual meeting and ten (10) calendar days following the date on which public announcement of the date of the meeting is first made. A stockholder's notice to the secretary shall set forth as to each matter the stockholder proposes to bring before the annual meeting: (a) a brief description of the business desired to be brought before the annual meeting and the reasons for conducting such business at the annual meeting, (b) the name and address, as they appear on the corporation's books, of the stockholder proposing such business, (c) the class and number of shares of the corporation that are beneficially owned by the stockholder, (d) any material interest of the stockholder in such business, and (e) any other information that is required to be provided by the stockholder pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended (the "1934 Act"), in his capacity as a proponent to a stockholder proposal. Notwithstanding the foregoing, in order to include information with respect to a stockholder proposal in the proxy statement and form of proxy for a stockholder's meeting, stockholders must provide notice as required by the regulations promulgated under the 1934 Act. Notwithstanding anything in these bylaws to the contrary, no business shall be conducted at any annual meeting except in accordance with the procedures set forth in this paragraph (i). The chairman of the annual meeting shall, if the facts warrant, determine and declare at the meeting that business was not properly brought before the meeting and in accordance with the provisions of this paragraph (i), and, if he should so determine, he shall so declare at the meeting that any such business not properly brought before the meeting shall not be transacted.

(ii) Only persons who are nominated in accordance with the procedures set forth in this paragraph (ii) shall be eligible for election as directors. Nominations of persons for election to the Board may be made at

Edgar Filing: NANOMETRICS INC - Form PRER14A

a meeting of stockholders by or at the direction of the Board or by any stockholder of the corporation entitled to vote in the election of directors at the meeting who complies with the notice procedures set forth in this paragraph (ii). Such nominations, other than those made by or at the direction of the Board, shall be made pursuant to timely notice in writing to the secretary of the corporation in accordance with the provisions of paragraph (i) of this Section 2.4. Such stockholder's notice shall set forth (a) as to each person, if any, whom the stockholder proposes to nominate for election or re-election as a director: (A) the name, age, business address and residence address of such person, (B) the principal occupation or employment of such person, (C) the class and number of shares of the corporation that are beneficially owned by such person, (D) a description of all arrangements or understandings between the stockholder and each nominee and any other person or persons (naming such person or persons) pursuant to which the nominations are to be made by the stockholder, and (E) any other information relating to such person that is required to be disclosed in solicitations of proxies for elections of directors, or is otherwise required, in each case pursuant to Regulation 14A under the 1934 Act (including without limitation such person's written consent to being named in the proxy statement, if any, as a nominee and to serving as a director if elected); and (b) as to such stockholder giving notice, the information required to be provided pursuant to paragraph (i) of this Section 2.4. At the request of the Board, any person nominated by a stockholder for election as a director shall furnish to the secretary of the corporation that information required to be set forth in the stockholder's notice of nomination which pertains to the nominee. No person shall be eligible for election as a director of the corporation unless nominated in accordance with the procedures set forth in this paragraph (ii). The chairman of the meeting shall, if the facts warrant, determine and declare at the meeting that a nomination was not made in accordance with the procedures prescribed by these bylaws, and if he should so determine, he shall so declare at the meeting, and the defective nomination shall be disregarded.

These provisions shall not prevent the consideration and approval or disapproval at an annual meeting of reports of officers, directors and committees of the Board, but in connection therewith no new business shall be acted upon at any such meeting unless stated, filed and received as herein provided. Notwithstanding anything in these bylaws to the contrary, no business brought before a meeting by a stockholder shall be conducted at an annual meeting except in accordance with procedures set forth in this Section 2.4.

B-2

All notices of meetings of stockholders shall be sent or otherwise given in accordance with either Section 2.5 or Section 8.1 of these bylaws not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting. The notice shall specify the place, if any, date and hour of the meeting, the means of remote communication, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such meeting, and, in the case of a special meeting, the purpose or purposes for which the meeting is called.

2.5 MANNER OF GIVING NOTICE; AFFIDAVIT OF NOTICE.

Notice of any meeting of stockholders shall be given:

- (i) if mailed, when deposited in the United States mail, postage

Edgar Filing: NANOMETRICS INC - Form PRER14A

prepaid, directed to the stockholder at his or her address as it appears on the corporation's records; or

(ii) if electronically transmitted as provided in Section 8.1 of these bylaws.

An affidavit of the secretary or an assistant secretary of the corporation or of the transfer agent or any other agent of the corporation that the notice has been given by mail or by a form of electronic transmission, as applicable, shall, in the absence of fraud, be prima facie evidence of the facts stated therein.

2.6 QUORUM.

The holders of a majority of the stock issued and outstanding and entitled to vote, present in person or represented by proxy, shall constitute a quorum for the transaction of business at all meetings of the stockholders. If, however, such quorum is not present or represented at any meeting of the stockholders, then either (i) the chairperson of the meeting, or (ii) the stockholders entitled to vote at the meeting, present in person or represented by proxy, shall have power to adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum is present or represented. At such adjourned meeting at which a quorum is present or represented, any business may be transacted that might have been transacted at the meeting as originally noticed.

2.7 ADJOURNED MEETING; NOTICE.

When a meeting is adjourned to another time or place, unless these bylaws otherwise require, notice need not be given of the adjourned meeting if the time, place if any thereof, and the means of remote communications if any by which stockholders and proxy holders may be deemed to be present in person and vote at such adjourned meeting are announced at the meeting at which the adjournment is taken. At the adjourned meeting, the corporation may transact any business which might have been transacted at the original meeting. If the adjournment is for more than 30 days, or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

2.8 CONDUCT OF BUSINESS.

The chairperson of any meeting of stockholders shall determine the order of business and the procedure at the meeting, including such regulation of the manner of voting and the conduct of business.

2.9 VOTING.

The stockholders entitled to vote at any meeting of stockholders shall be determined in accordance with the provisions of Section 2.12 of these bylaws, subject to Section 217 (relating to voting rights of fiduciaries, pledgors and joint owners of stock) and Section 218 (relating to voting trusts and other voting agreements) of the Delaware General Corporation Law (the "DGCL").

Except as may be otherwise provided in the certificate of incorporation or these bylaws, each stockholder shall be entitled to one vote for each share of capital stock held by such stockholder.

Edgar Filing: NANOMETRICS INC - Form PRER14A

2.10 RECORD DATE FOR STOCKHOLDER NOTICE; VOTING; GIVING CONSENTS.

In order that the corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof, or entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for the purpose of any other lawful action, the Board may fix, in advance, a record date, which record date shall not precede the date on which the resolution fixing the record date is adopted and which shall not be more than 60 nor less than 10 days before the date of such meeting, nor more than 60 days prior to any other such action.

If the Board does not so fix a record date:

(i) The record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held.

(ii) The record date for determining stockholders for any other purpose shall be at the close of business on the day on which the Board adopts the resolution relating thereto.

A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the Board may fix a new record date for the adjourned meeting.

2.11 PROXIES.

Each stockholder entitled to vote at a meeting of stockholders may authorize another person or persons to act for such stockholder by proxy authorized by an instrument in writing or by a transmission permitted by law filed in accordance with the procedure established for the meeting, but no such proxy shall be voted or acted upon after three years from its date, unless the proxy provides for a longer period. The revocability of a proxy that states on its face that it is irrevocable shall be governed by the provisions of Section 212 of the DGCL.

2.12 LIST OF STOCKHOLDERS ENTITLED TO VOTE.

The officer who has charge of the stock ledger of the corporation shall prepare and make, at least 10 days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. The corporation shall not be required to include electronic mail addresses or other electronic contact information on such list. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting for a period of at least 10 days prior to the meeting: (i) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (ii) during ordinary business hours, at the corporation's principal executive office. In the event that the corporation determines to make the list available on an electronic network, the corporation may take reasonable steps to ensure that such information is available only to stockholders of the corporation. If the meeting is to be held at a place, then the list shall be produced and kept at the time and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present. If the meeting is to be held solely by means of remote communication, then the list shall also be open to the examination of any stockholder during the whole

Edgar Filing: NANOMETRICS INC - Form PRER14A

time of the meeting on a reasonably accessible electronic network, and the information required to access such list shall be provided with the notice of the meeting. Such list shall presumptively determine the identity of the stockholders entitled to vote at the meeting and the number of shares held by each of them.

2.13 INSPECTORS OF ELECTION

A written proxy may be in the form of a telegram, cablegram, or other means of electronic transmission which sets forth or is submitted with information from which it can be determined that the telegram, cablegram, or other means of electronic transmission was authorized by the person.

B-4

Before any meeting of stockholders, the Board shall appoint an inspector or inspectors of election to act at the meeting or its adjournment. The number of inspectors shall be either one (1) or three (3). If any person appointed as inspector fails to appear or fails or refuses to act, then the chairperson of the meeting may, and upon the request of any stockholder or a stockholder's proxy shall, appoint a person to fill that vacancy.

Such inspectors shall:

(i) determine the number of shares outstanding and the voting power of each, the number of shares represented at the meeting, the existence of a quorum, and the authenticity, validity, and effect of proxies;

(ii) receive votes, ballots or consents;

(iii) hear and determine all challenges and questions in any way arising in connection with the right to vote;

(iv) count and tabulate all votes or consents;

(v) determine when the polls shall close;

(vi) determine the result; and

(vii) do any other acts that may be proper to conduct the election or vote with fairness to all stockholders.

The inspectors of election shall perform their duties impartially, in good faith, to the best of their ability and as expeditiously as is practical. If there are three (3) inspectors of election, the decision, act or certificate of a majority is effective in all respects as the decision, act or certificate of all. Any report or certificate made by the inspectors of election is prima facie evidence of the facts stated therein.

ARTICLE III - DIRECTORS

3.1 POWERS.

Subject to the provisions of the DGCL and any limitations in the certificate of incorporation or these bylaws relating to action required to be approved by the stockholders or by the outstanding shares, the business and affairs of the corporation shall be managed and all corporate powers shall be exercised by or under the direction of the Board.

Edgar Filing: NANOMETRICS INC - Form PRER14A

3.2 NUMBER OF DIRECTORS.

The authorized number of directors shall be determined from time to time by resolution of the Board. No reduction of the authorized number of directors shall have the effect of removing any director before that director's term of office expires.

3.3 ELECTION, QUALIFICATION AND TERM OF OFFICE OF DIRECTORS.

Except as provided in Section 3.5 of these bylaws, each director, including a director elected to fill a vacancy, shall hold office until the expiration of the term for which elected and until such director's successor is elected and qualified or until such director's earlier death, resignation or removal. Directors need not be stockholders unless so required by the certificate of incorporation or these bylaws. The certificate of incorporation or these bylaws may prescribe other qualifications for directors.

3.4 CLASS OF DIRECTORS

The directors shall be divided into three classes as nearly equal in size as is practicable, hereby designated Class I, Class II and Class III. The term of office of the initial Class I directors shall expire at the first regularly-scheduled annual meeting of the stockholders following the effective date of these bylaws (the "Effective Date"), the term of office of the initial

B-5

Class II directors shall expire at the second annual meeting of the stockholders following the Effective Date and the term of office of the initial Class III directors shall expire at the third annual meeting of the stockholders following the Effective Date. At each annual meeting of stockholders, commencing with the first regularly-scheduled annual meeting of stockholders following the Effective Date, each of the successors elected to replace the directors of a Class whose term shall have expired at such annual meeting shall be elected to hold office until the third annual meeting next succeeding his or her election and until his or her respective successor shall have been duly elected and qualified.

If the number of directors is hereafter changed, any newly created directorships or decrease in directorships shall be so apportioned among the classes as to make all classes as nearly equal in number as is practicable, provided that no decrease in the number of directors constituting the Board shall shorten the term of any incumbent director.

3.5 RESIGNATION AND VACANCIES.

Any director may resign at any time upon notice given in writing or by electronic transmission to the corporation. When one or more directors so resigns and the resignation is effective at a future date, a majority of the directors then in office, including those who have so resigned, shall have power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective, and each director so chosen shall hold office as provided in this section in the filling of other vacancies.

Unless otherwise provided in the certificate of incorporation or these bylaws, vacancies and newly created directorships resulting from any increase in the authorized number of directors elected by all of the stockholders having the right to vote as a single class may be filled by a majority of the directors then in office, although less than a quorum, or by a sole remaining director. A person so elected by the directors then in office to fill a vacancy or newly created directorship shall hold office until the next election of the class for

Edgar Filing: NANOMETRICS INC - Form PRER14A

which such director shall have been chosen and until his or her successor shall have been duly elected and qualified.

If at any time, by reason of death or resignation or other cause, the corporation should have no directors in office, then any officer or any stockholder or an executor, administrator, trustee or guardian of a stockholder, or other fiduciary entrusted with like responsibility for the person or estate of a stockholder, may call a special meeting of stockholders in accordance with the provisions of the certificate of incorporation or these bylaws, or may apply to the Court of Chancery for a decree summarily ordering an election as provided in Section 211 of the DGCL.

If, at the time of filling any vacancy or any newly created directorship, the directors then in office constitute less than a majority of the whole Board (as constituted immediately prior to any such increase), then the Court of Chancery may, upon application of any stockholder or stockholders holding at least 10% of the total number of the shares at the time outstanding having the right to vote for such directors, summarily order an election to be held to fill any such vacancies or newly created directorships, or to replace the directors chosen by the directors then in office as aforesaid, which election shall be governed by the provisions of Section 211 of the DGCL as far as applicable.

3.6 PLACE OF MEETINGS; MEETINGS BY TELEPHONE.

The Board may hold meetings, both regular and special, either within or outside the State of Delaware.

Unless otherwise restricted by the certificate of incorporation or these bylaws, members of the Board, or any committee designated by the Board, may participate in a meeting of the Board, or any committee, by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and such participation in a meeting shall constitute presence in person at the meeting.

B-6

3.7 REGULAR MEETINGS.

Regular meetings of the Board may be held without notice at such time and at such place as shall from time to time be determined by the Board.

3.8 SPECIAL MEETINGS; NOTICE.

Special meetings of the Board for any purpose or purposes may be called at any time by the chairperson of the Board, the chief executive officer, the president, the secretary or a majority of the authorized number of directors.

Notice of the time and place of special meetings shall be:

- (i) delivered personally by hand, by courier or by telephone;
- (ii) sent by United States first-class mail, postage prepaid;
- (iii) sent by facsimile; or
- (iv) sent by electronic mail,

directed to each director at that director's address, telephone number, facsimile number or electronic mail address, as the case may be, as shown on the

Edgar Filing: NANOMETRICS INC - Form PRER14A

corporation's records.

If the notice is (i) delivered personally by hand, by courier or by telephone, (ii) sent by facsimile or (iii) sent by electronic mail, it shall be delivered or sent at least 24 hours before the time of the holding of the meeting. If the notice is sent by United States mail, it shall be deposited in the United States mail at least four days before the time of the holding of the meeting. Any oral notice may be communicated to the director. The notice need not specify the place of the meeting (if the meeting is to be held at the corporation's principal executive office) nor the purpose of the meeting.

3.9 QUORUM.

At all meetings of the Board, a majority of the authorized number of directors shall constitute a quorum for the transaction of business. The vote of a majority of the directors present at any meeting at which a quorum is present shall be the act of the Board, except as may be otherwise specifically provided by statute, the certificate of incorporation or these bylaws. If a quorum is not present at any meeting of the Board, then the directors present thereat may adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum is present.

A meeting at which a quorum is initially present may continue to transact business notwithstanding the withdrawal of directors, if any action taken is approved by at least a majority of the required quorum for that meeting.

3.10 BOARD ACTION BY WRITTEN CONSENT WITHOUT A MEETING.

Unless otherwise restricted by the certificate of incorporation or these bylaws, any action required or permitted to be taken at any meeting of the Board, or of any committee thereof, may be taken without a meeting if all members of the Board or committee, as the case may be, consent thereto in writing or by electronic transmission and the writing or writings or electronic transmission or transmissions are filed with the minutes of proceedings of the Board or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

3.11 FEES AND COMPENSATION OF DIRECTORS.

Unless otherwise restricted by the certificate of incorporation or these bylaws, the Board shall have the authority to fix the compensation of directors.

B-7

3.12 REMOVAL OF DIRECTORS.

Any director may be removed from office by the stockholders of the corporation only for cause.

No reduction of the authorized number of directors shall have the effect of removing any director prior to the expiration of such director's term of office.

ARTICLE IV - COMMITTEES

4.1 COMMITTEES OF DIRECTORS.

The Board may, by resolution passed by a majority of the authorized number of directors, designate one or more committees, each committee to consist of one

Edgar Filing: NANOMETRICS INC - Form PRER14A

or more of the directors of the corporation. The Board may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the Board to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the Board or in these bylaws, shall have and may exercise all the powers and authority of the Board in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers that may require it; but no such committee shall have the power or authority to (i) approve or adopt, or recommend to the stockholders, any action or matter expressly required by the DGCL to be submitted to stockholders for approval, or (ii) adopt, amend or repeal any bylaw of the corporation.

4.2 COMMITTEE MINUTES.

Each committee shall keep regular minutes of its meetings and report the same to the Board when required.

4.3 MEETINGS AND ACTION OF COMMITTEES.

Meetings and actions of committees shall be governed by, and held and taken in accordance with, the provisions of:

- (i) Section 3.6 (place of meetings and meetings by telephone);
- (ii) Section 3.7 (regular meetings);
- (iii) Section 3.8 (special meetings and notice);
- (iv) Section 3.9 (quorum);
- (v) Section 7.12 (waiver of notice); and
- (vi) Section 3.10 (board action by written consent without a meeting)

with such changes in the context of those bylaws as are necessary to substitute the committee and its members for the Board and its members. However:

- (i) the time of regular meetings of committees may be determined either by resolution of the Board or by resolution of the committee;
- (ii) special meetings of committees may also be called by resolution of the Board; and
- (iii) notice of special meetings of committees shall also be given to all alternate members, who shall have the right to attend all meetings of the committee. The Board may adopt rules for the government of any committee not inconsistent with the provisions of these bylaws.

B-8

ARTICLE V - OFFICERS

5.1 OFFICERS.

The officers of the corporation shall be a president and a secretary. The

Edgar Filing: NANOMETRICS INC - Form PRER14A

corporation may also have, at the discretion of the Board, a chairperson of the Board, a vice chairperson of the Board, a chief executive officer, a chief financial officer or treasurer, one or more vice presidents, one or more assistant vice presidents, one or more assistant treasurers, one or more assistant secretaries, and any such other officers as may be appointed in accordance with the provisions of these bylaws. Any number of offices may be held by the same person.

5.2 APPOINTMENT OF OFFICERS.

The Board shall appoint the officers of the corporation, except such officers as may be appointed in accordance with the provisions of Sections 5.3 and 5.5 of these bylaws, subject to the rights, if any, of an officer under any contract of employment.

5.3 SUBORDINATE OFFICERS.

The Board may appoint, or empower the chief executive officer or, in the absence of a chief executive officer, the president, to appoint, such other officers and agents as the business of the corporation may require. Each of such officers and agents shall hold office for such period, have such authority, and perform such duties as are provided in these bylaws or as the Board may from time to time determine.

5.4 REMOVAL AND RESIGNATION OF OFFICERS.

Subject to the rights, if any, of an officer under any contract of employment, any officer may be removed, either with or without cause, by an affirmative vote of the majority of the Board at any regular or special meeting of the Board or, except in the case of an officer chosen by the Board, by any officer upon whom such power of removal may be conferred by the Board.

Any officer may resign at any time by giving written notice to the corporation. Any resignation shall take effect at the date of the receipt of that notice or at any later time specified in that notice. Unless otherwise specified in the notice of resignation, the acceptance of the resignation shall not be necessary to make it effective. Any resignation is without prejudice to the rights, if any, of the corporation under any contract to which the officer is a party.

5.5 VACANCIES IN OFFICES.

Any vacancy occurring in any office of the corporation shall be filled by the Board or as provided in Section 5.2.

5.6 REPRESENTATION OF SHARES OF OTHER CORPORATIONS.

The chairperson of the Board, the president, any vice president, the treasurer, the secretary or assistant secretary of this corporation, or any other person authorized by the Board or the president or a vice president, is authorized to vote, represent, and exercise on behalf of this corporation all rights incident to any and all shares of any other corporation or corporations standing in the name of this corporation. The authority granted herein may be exercised either by such person directly or by any other person authorized to do so by proxy or power of attorney duly executed by such person having the authority.

5.7 AUTHORITY AND DUTIES OF OFFICERS.

All officers of the corporation shall respectively have such authority and perform such duties in the management of the business of the corporation as may be designated from time to time by the Board or the stockholders and, to the

Edgar Filing: NANOMETRICS INC - Form PRER14A

extent not so provided, as generally pertain to their respective offices, subject to the control of the Board.

B-9

ARTICLE VI - RECORDS AND REPORTS

6.1 MAINTENANCE AND INSPECTION OF RECORDS.

The corporation shall, either at its principal executive office or at such place or places as designated by the Board, keep a record of its stockholders listing their names and addresses and the number and class of shares held by each stockholder, a copy of these bylaws as amended to date, accounting books, and other records.

Any stockholder of record, in person or by attorney or other agent, shall, upon written demand under oath stating the purpose thereof, have the right during the usual hours for business to inspect for any proper purpose the corporation's stock ledger, a list of its stockholders, and its other books and records and to make copies or extracts therefrom. A proper purpose shall mean a purpose reasonably related to such person's interest as a stockholder. In every instance where an attorney or other agent is the person who seeks the right to inspection, the demand under oath shall be accompanied by a power of attorney or such other writing that authorizes the attorney or other agent so to act on behalf of the stockholder. The demand under oath shall be directed to the corporation at its registered office in Delaware or at its principal executive office.

6.2 INSPECTION BY DIRECTORS.

Any director shall have the right to examine the corporation's stock ledger, a list of its stockholders, and its other books and records for a purpose reasonably related to his or her position as a director. The Court of Chancery is hereby vested with the exclusive jurisdiction to determine whether a director is entitled to the inspection sought. The Court may summarily order the corporation to permit the director to inspect any and all books and records, the stock ledger, and the stock list and to make copies or extracts therefrom. The Court may, in its discretion, prescribe any limitations or conditions with reference to the inspection, or award such other and further relief as the Court may deem just and proper.

ARTICLE VII - GENERAL MATTERS

7.1 EXECUTION OF CORPORATE CONTRACTS AND INSTRUMENTS.

The Board, except as otherwise provided in these bylaws, may authorize any officer or officers, or agent or agents, to enter into any contract or execute any instrument in the name of and on behalf of the corporation; such authority may be general or confined to specific instances. Unless so authorized or ratified by the Board or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

7.2 STOCK CERTIFICATES; PARTLY PAID SHARES.

The shares of the corporation shall be represented by certificates, provided that the Board may provide by resolution or resolutions that some or all of any or all classes or series of its stock shall be uncertificated shares.

Edgar Filing: NANOMETRICS INC - Form PRER14A

Any such resolution shall not apply to shares represented by a certificate until such certificate is surrendered to the corporation. Notwithstanding the adoption of such a resolution by the Board, every holder of stock represented by certificates and upon request every holder of uncertificated shares shall be entitled to have a certificate signed by, or in the name of the corporation by the chairperson or vice-chairperson of the Board, or the president or vice-president, and by the treasurer or an assistant treasurer, or the secretary or an assistant secretary of such corporation representing the number of shares registered in certificate form. Any or all of the signatures on the certificate may be a facsimile. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate has ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the corporation with the same effect as if he were such officer, transfer agent or registrar at the date of issue.

B-10

The corporation may issue the whole or any part of its shares as partly paid and subject to call for the remainder of the consideration to be paid therefor. Upon the face or back of each stock certificate issued to represent any such partly paid shares, upon the books and records of the corporation in the case of uncertificated partly paid shares, the total amount of the consideration to be paid therefor and the amount paid thereon shall be stated. Upon the declaration of any dividend on fully paid shares, the corporation shall declare a dividend upon partly paid shares of the same class, but only upon the basis of the percentage of the consideration actually paid thereon.

7.3 SPECIAL DESIGNATION ON CERTIFICATES.

If the corporation is authorized to issue more than one class of stock or more than one series of any class, then the powers, the designations, the preferences, and the relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of the certificate that the corporation shall issue to represent such class or series of stock; provided, however, that, except as otherwise provided in Section 202 of the DGCL, in lieu of the foregoing requirements there may be set forth on the face or back of the certificate that the corporation shall issue to represent such class or series of stock a statement that the corporation will furnish without charge to each stockholder who so requests the powers, the designations, the preferences, and the relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

7.4 LOST CERTIFICATES.

Except as provided in this Section 7.5, no new certificates for shares shall be issued to replace a previously issued certificate unless the latter is surrendered to the corporation and cancelled at the same time. The corporation may issue a new certificate of stock or uncertificated shares in the place of any certificate theretofore issued by it, alleged to have been lost, stolen or destroyed, and the corporation may require the owner of the lost, stolen or destroyed certificate, or such owner's legal representative, to give the corporation a bond sufficient to indemnify it against any claim that may be made against it on account of the alleged loss, theft or destruction of any such certificate or the issuance of such new certificate or uncertificated shares.

7.5 CONSTRUCTION; DEFINITIONS.

Edgar Filing: NANOMETRICS INC - Form PRER14A

Unless the context requires otherwise, the general provisions, rules of construction and definitions in the DGCL shall govern the construction of these bylaws. Without limiting the generality of this provision, the singular number includes the plural, the plural number includes the singular, and the term "person" includes both a corporation and a natural person.

7.6 DIVIDENDS.

The Board, subject to any restrictions contained in either (i) the DGCL, or (ii) the certificate of incorporation, may declare and pay dividends upon the shares of its capital stock. Dividends may be paid in cash, in property, or in shares of the corporation's capital stock.

The Board may set apart out of any of the funds of the corporation available for dividends a reserve or reserves for any proper purpose and may abolish any such reserve. Such purposes shall include but not be limited to equalizing dividends, repairing or maintaining any property of the corporation, and meeting contingencies.

7.7 FISCAL YEAR.

The fiscal year of the corporation shall be fixed by resolution of the Board and may be changed by the Board.

B-11

7.8 SEAL.

The corporation may adopt a corporate seal, which shall be adopted and which may be altered by the Board. The corporation may use the corporate seal by causing it or a facsimile thereof to be impressed or affixed or in any other manner reproduced.

7.9 TRANSFER OF STOCK.

Upon surrender to the corporation or the transfer agent of the corporation of a certificate for shares duly endorsed or accompanied by proper evidence of succession, assignation or authority to transfer, it shall be the duty of the corporation to issue a new certificate to the person entitled thereto, cancel the old certificate, and record the transaction in its books.

7.10 STOCK TRANSFER AGREEMENTS.

The corporation shall have power to enter into and perform any agreement with any number of stockholders of any one or more classes of stock of the corporation to restrict the transfer of shares of stock of the corporation of any one or more classes owned by such stockholders in any manner not prohibited by the DGCL.

7.11 REGISTERED STOCKHOLDERS.

The corporation:

(i) shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends and to vote as such owner;

(ii) shall be entitled to hold liable for calls and assessments the

Edgar Filing: NANOMETRICS INC - Form PRER14A

person registered on its books as the owner of shares; and

(iii) shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of another person, whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

7.12 WAIVER OF NOTICE.

Whenever notice is required to be given under any provision of the DGCL, the certificate of incorporation or these bylaws, a written waiver, signed by the person entitled to notice, or a waiver by electronic transmission by the person entitled to notice, whether before or after the time of the event for which notice is to be given, shall be deemed equivalent to notice. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the stockholders need be specified in any written waiver of notice or any waiver by electronic transmission unless so required by the certificate of incorporation or these bylaws.

ARTICLE VIII - NOTICE BY ELECTRONIC TRANSMISSION

8.1 NOTICE BY ELECTRONIC TRANSMISSION.

Without limiting the manner by which notice otherwise may be given effectively to stockholders pursuant to the DGCL, the certificate of incorporation or these bylaws, any notice to stockholders given by the corporation under any provision of the DGCL, the certificate of incorporation or these bylaws shall be effective if given by a form of electronic transmission consented to by the stockholder to whom the notice is given. Any such consent shall be revocable by the stockholder by written notice to the corporation. Any such consent shall be deemed revoked if:

(i) the corporation is unable to deliver by electronic transmission two consecutive notices given by the corporation in accordance with such consent; and

B-12

(ii) such inability becomes known to the secretary or an assistant secretary of the corporation or to the transfer agent, or other person responsible for the giving of notice.

However, the inadvertent failure to treat such inability as a revocation shall not invalidate any meeting or other action.

Any notice given pursuant to the preceding paragraph shall be deemed given:

(i) if by facsimile telecommunication, when directed to a number at which the stockholder has consented to receive notice;

(ii) if by electronic mail, when directed to an electronic mail address at which the stockholder has consented to receive notice;

(iii) if by a posting on an electronic network together with separate

Edgar Filing: NANOMETRICS INC - Form PRER14A

notice to the stockholder of such specific posting, upon the later of (A) such posting and (B) the giving of such separate notice; and

(iv) if by any other form of electronic transmission, when directed to the stockholder.

An affidavit of the secretary or an assistant secretary or of the transfer agent or other agent of the corporation that the notice has been given by a form of electronic transmission shall, in the absence of fraud, be prima facie evidence of the facts stated therein.

8.2 DEFINITION OF ELECTRONIC TRANSMISSION.

An "electronic transmission" means any form of communication, not directly involving the physical transmission of paper, that creates a record that may be retained, retrieved, and reviewed by a recipient thereof, and that may be directly reproduced in paper form by such a recipient through an automated process.

8.3 INAPPLICABILITY.

Notice by a form of electronic transmission shall not apply to Sections 164, 296, 311, 312 or 324 of the DGCL.

ARTICLE IX - INDEMNIFICATION

9.1 INDEMNIFICATION OF DIRECTORS AND OFFICERS

The corporation shall indemnify and hold harmless, to the fullest extent permitted by the DGCL as it presently exists or may hereafter be amended, any director or officer of the corporation who was or is made or is threatened to be made a party or is otherwise involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative (a "Proceeding") by reason of the fact that he or she, or a person for whom he or she is the legal representative, is or was a director, officer, employee or agent of the corporation or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust, enterprise or non-profit entity, including service with respect to employee benefit plans, against all liability and loss suffered and expenses reasonably incurred by such person in connection with any such Proceeding. The corporation shall be required to indemnify a person in connection with a Proceeding initiated by such person only if the Proceeding was authorized by the Board.

9.2 INDEMNIFICATION OF OTHERS

The corporation shall have the power to indemnify and hold harmless, to the extent permitted by applicable law as it presently exists or may hereafter be amended, any employee or agent of the corporation who was or is made or is threatened to be made a party or is otherwise involved in any Proceeding by reason of the fact that he or she, or a person for whom he or she is the legal representative, is or was an employee or agent of the corporation or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust,

B-13

enterprise or non-profit entity, including service with respect to employee benefit plans, against all liability and loss suffered and expenses reasonably incurred by such person in connection with any such Proceeding.

Edgar Filing: NANOMETRICS INC - Form PRER14A

9.3 PREPAYMENT OF EXPENSES

The corporation shall pay the expenses incurred by any officer or director of the corporation, and may pay the expenses incurred by any employee or agent of the corporation, in defending any Proceeding in advance of its final disposition; provided, however, that the payment of expenses incurred by a person in advance of the final disposition of the Proceeding shall be made only upon receipt of an undertaking by the person to repay all amounts advanced if it should be ultimately determined that the person is not entitled to be indemnified under this Article IX or otherwise.

9.4 DETERMINATION; CLAIM

If a claim for indemnification or payment of expenses under this Article IX is not paid in full within sixty days after a written claim therefor has been received by the corporation the claimant may file suit to recover the unpaid amount of such claim and, if successful in whole or in part, shall be entitled to be paid the expense of prosecuting such claim. In any such action the corporation shall have the burden of proving that the claimant was not entitled to the requested indemnification or payment of expenses under applicable law.

9.5 NON-EXCLUSIVITY OF RIGHTS

The rights conferred on any person by this Article IX shall not be exclusive of any other rights which such person may have or hereafter acquire under any statute, provision of the certificate of incorporation, these bylaws, agreement, vote of stockholders or disinterested directors or otherwise.

9.6 INSURANCE

The corporation may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against him or her and incurred by him or her in any such capacity, or arising out of his or her status as such, whether or not the corporation would have the power to indemnify him or her against such liability under the provisions of the DGCL.

9.7 OTHER INDEMNIFICATION

The corporation's obligation, if any, to indemnify any person who was or is serving at its request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust, enterprise or non-profit entity shall be reduced by any amount such person may collect as indemnification from such other corporation, partnership, joint venture, trust, enterprise or non-profit enterprise.

9.8 AMENDMENT OR REPEAL

Any repeal or modification of the foregoing provisions of this Article IX shall not adversely affect any right or protection hereunder of any person in respect of any act or omission occurring prior to the time of such repeal or modification."

ARTICLE X - AMENDMENTS

These bylaws may be adopted, amended or repealed by the affirmative vote of the holders of at least 66.67% of the shares of capital stock of the corporation issued and outstanding and entitled to vote. However, the corporation may, in its certificate of incorporation, confer the power to adopt,

Edgar Filing: NANOMETRICS INC - Form PRER14A

amend or repeal these bylaws upon the directors. The fact that such power has been so conferred upon the directors shall not divest the stockholders of the power, nor limit their power to adopt, amend or repeal these bylaws as set forth above.

B-14

NANOMETRICS INCORPORATED

CERTIFICATE OF AMENDMENT OF BYLAWS

The undersigned hereby certifies that he or she is the duly elected, qualified, and acting Secretary of Nanometrics Incorporated, a Delaware corporation and that the foregoing bylaws, comprising seventeen (17) pages, were amended and restated on , 2005 by the corporation's board of directors.

IN WITNESS WHEREOF, the undersigned has hereunto set his or her hand this day of , 2005.

Secretary

B-15

APPENDIX C

NANOMETRICS INCORPORATED

2005 EQUITY INCENTIVE PLAN

1. Purposes of the Plan. The purposes of this Plan are:

- o to attract and retain the best available personnel for positions of substantial responsibility,
- o to provide additional incentive to Service Providers, and
- o to promote the success of the Company's business.

Awards granted under the Plan may be Incentive Stock Options, Nonstatutory Stock Options, Restricted Stock, Stock Appreciation Rights, Performance Shares and Restricted Stock Units, as determined by the Administrator at the time of grant.

2. Definitions. As used herein, the following definitions shall apply:

(a) "Administrator" means the Board or any of its Committees as shall be administering the Plan, in accordance with Section 4 of the Plan.

(b) "Annual Revenue" means the Company's or a business unit's net sales for the Fiscal Year, determined in accordance with generally accepted accounting principles.

Edgar Filing: NANOMETRICS INC - Form PRER14A

(c) "Applicable Laws" means the requirements relating to the administration of equity compensation plans under U.S. state corporate laws, U.S. federal and state securities laws, the Code, any stock exchange or quotation system on which the Common Stock is listed or quoted and the applicable laws of any other country or jurisdiction where Awards are, or will be, granted under the Plan.

(d) "Award" means, individually or collectively, a grant under the Plan of Options, Restricted Stock, Stock Appreciation Rights, Performance Shares or Restricted Stock Units.

(e) "Award Agreement" means the written or electronic agreement setting forth the terms and provisions applicable to each Award granted under the Plan. The Award Agreement is subject to the terms and conditions of the Plan.

(f) "Awarded Stock" means the Common Stock subject to an Award.

(g) "Board" means the Board of Directors of the Company.

C-1

(h) "Cash Position" means the Company's level of cash and cash equivalents.

(i) "Change in Control" means the occurrence of any of the following events, in one or a series of related transactions:

(i) any "person," as such term is used in Sections 13(d) and 14(d) of the Exchange Act, other than the Company, a subsidiary of the Company or a Company employee benefit plan, including any trustee of such plan acting as trustee, is or becomes the "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing fifty percent (50%) or more of the combined voting power of the Company's then outstanding securities entitled to vote generally in the election of directors; or

(ii) the consummation of a merger or consolidation of the Company or any direct or indirect subsidiary of the Company with any other corporation, other than a merger or consolidation which would result in the voting securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity) at least fifty percent (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

(iii) the sale or disposition by the Company of all or substantially all the Company's assets; or

(iv) a change in the composition of the Board, as a result of which fewer than a majority of the directors are Incumbent Directors. "Incumbent Directors" shall mean directors who either (A) are Directors as of the date this Plan is approved by the Board, or (B) are elected, or nominated for election, to the Board with the affirmative votes of at least a majority of the Incumbent Directors and whose election or nomination was not in connection with any transaction described in (i) or (ii) above or in connection with an actual or threatened proxy contest relating to the election of directors of the Company.

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

Edgar Filing: NANOMETRICS INC - Form PRER14A

(k) "Committee" means a committee of Directors appointed by the Board in accordance with Section 4 of the Plan.

(l) "Common Stock" means the common stock of the Company.

(m) "Company" means Nanometrics Incorporated, a California corporation.

(n) "Consultant" means any person, including an advisor, engaged by the Company or a Parent or Subsidiary to render services and who is compensated for such services.

C-2

(o) "Continuous Status as a Service Provider" means the absence of any interruption or termination of the employment or service relationship with the Company or any Subsidiary. Continuous Status as a Service Provider shall not be considered interrupted in the case of (i) medical leave, military leave, family leave, or any other leave of absence approved by the Administrator, provided, in each case, that such leave does not result in termination of the employment and service relationship with the Company or any Subsidiary, as the case may be, under the terms of the respective Company policy for such leave; however, vesting may be tolled while a Service Provider is on an approved leave of absence under the terms of the respective Company policy for such leave; or (ii) in the case of transfers between locations of the Company or between the Company, its Parent or any Subsidiary, or any successor. For purposes of Incentive Stock Options, no such leave may exceed ninety days, unless reemployment upon expiration of such leave is guaranteed by statute or contract. If reemployment upon expiration of a leave of absence approved by the Company is not so guaranteed, then three (3) months following the 91st day of such leave any Incentive Stock Option held by the Participant shall cease to be treated as an Incentive Stock Option and shall be treated for tax purposes as a Nonstatutory Stock Option.

(p) "Director" means a member of the Board.

(q) "Disability" means total and permanent disability as defined in Section 22(e) (3) of the Code.

(r) "Dividend Equivalent" means a credit, payable in cash, made at the discretion of the Administrator, to the account of a Participant in an amount equal to the cash dividends paid on one Share for each Share represented by an Award held by such Participant.

(s) "Earnings Per Share" means as to any Performance Period, the Company's or a business unit's Net Income, divided by a weighted average number of common shares outstanding and dilutive common equivalent shares deemed outstanding, determined in accordance with generally accepted accounting principles.

(t) "Employee" means any person, including Officers and Directors, employed by the Company or any Parent or Subsidiary of the Company. Neither service as a Chairman nor as a Director nor payment of a director's fee by the Company shall be sufficient to constitute "employment" by the Company.

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

(v) "Exchange Program" means a program under which (i) outstanding Awards are surrendered or cancelled in exchange for Awards of the same type (which may have lower exercise prices and different terms), Awards of a

Edgar Filing: NANOMETRICS INC - Form PRER14A

different type, and/or cash, and/or (ii) the exercise price of an outstanding Award is reduced. The terms and conditions of any Exchange Program will be determined by the Administrator in its sole discretion.

C-3

(w) "Fair Market Value" means, as of any date, the value of Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or a national market system, including without limitation the Nasdaq National Market or The Nasdaq SmallCap Market of The Nasdaq Stock Market, its Fair Market Value shall be the closing sales price for such stock (or the closing bid, if no sales were reported) as quoted on such exchange or system, on the last market trading day prior to the date of determination, as reported in The Wall Street Journal or such other source as the Administrator deems reliable;

(ii) If the Common Stock is regularly quoted by a recognized securities dealer but selling prices are not reported, the Fair Market Value of a Share of Common Stock shall be the mean between the high bid and low asked prices for the Common Stock on the last market trading day prior to the date of determination; or

(iii) In the absence of an established market for the Common Stock, the Fair Market Value shall be determined in good faith by the Administrator.

(x) "Fiscal Year" means a fiscal year of the Company.

(y) "Individual Performance Objective" means as to a Participant, the objective and measurable goals set by a "management by objectives" process and approved by the Committee (in its discretion).

(z) "Incentive Stock Option" means an Option intended to qualify as an incentive stock option within the meaning of Section 422 of the Code and the regulations promulgated thereunder and is expressly designated by the Administrator at the time of grant as an incentive stock option.

(aa) "Marketing and Sales Expenses as a Percentage of Sales" means as to any Performance Period, the Company's or a business unit's marketing and sales expenses stated as a percentage of sales, determined in accordance with generally accepted accounting principles.

(bb) "Net Income as a Percentage of Sales" means as to any Performance Period, the Company's or a business unit's Net Income stated as a percentage of sales, determined in accordance with generally accepted accounting principles.

(cc) "Net Income" means as to any Performance Period, the income after taxes of the Company or a business unit determined in accordance with generally accepted accounting principles, provided that prior to the beginning of the Performance Period, the Committee shall determine whether any significant item(s) shall be included or excluded from the calculation of Net Income with respect to one or more Participants.

(dd) "Nonstatutory Stock Option" means an Option that by its terms does not qualify or is not intended to qualify as an Incentive Stock Option.

(ee) "Officer" means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act and the rules and regulations promulgated thereunder.

Edgar Filing: NANOMETRICS INC - Form PRER14A

C-4

(ff) "Operating Cash Flow" means the Company's or a business unit's sum of Net Income plus depreciation and amortization less capital expenditures plus changes in working capital comprised of accounts receivable, inventories, other current assets, trade accounts payable, accrued expenses, product warranty, advance payments from customers and long-term accrued expenses, determined in accordance with generally acceptable accounting principles.

(gg) "Operating Income" means the Company's or a business unit's income from operations determined in accordance with generally accepted accounting principles.

(hh) "Outside Director" means a Director who is not an Employee.

(ii) "Option" means a stock option granted pursuant to the Plan.

(jj) "Participant" means the holder of an outstanding Award granted under the Plan.

(kk) "Parent" means a "parent corporation," whether now or hereafter existing, as defined in Section 424(e) of the Code.

(ll) "Performance Goals" means the goal(s) (or combined goal(s)) determined by the Committee (in its discretion) to be applicable to a Participant with respect to an Award. As determined by the Committee, the Performance Goals applicable to an Award may provide for a targeted level or levels of achievement using one or more of the following measures: (a) Annual Revenue, (b) Cash Position, (c) Earnings Per Share, (d) Individual Performance Objectives, (e) Marketing and Sales Expenses as a Percentage of Sales, (f) Net Income as a Percentage of Sales, (g) Net Income, (h) Operating Cash Flow, (i) Operating Income, (j) Return on Assets, (k) Return on Equity, (l) Return on Sales, and (m) Total Shareholder Return. The Performance Goals may differ from Participant to Participant and from Award to Award. The Committee shall appropriately adjust any evaluation of performance under a Performance Goal to exclude (i) any extraordinary non-recurring items as described in Accounting Principles Board Opinion No. 30 and/or in management's discussion and analysis of financial conditions and results of operations appearing in the Company's annual report to shareholders for the applicable year, or (ii) the effect of any changes in accounting principles affecting the Company's or a business units' reported results. Any criteria used may be measured, as applicable, (i) in absolute terms, (ii) in relative terms (including, but not limited to, passage of time and/or against another company or companies), (iii) on a per-share basis, (iv) against the performance of the Company as a whole or of a business unit of the Company, and/or (v) to the extent not otherwise specified by the definition of the Performance Goal, on a pre-tax or after-tax basis.

(mm) "Performance Period" means the time period of any Fiscal Year or such longer period as determined by the Committee in its sole discretion during which the performance objectives must be met.

(nn) "Performance Share" means a performance share Award granted to a Participant pursuant to Section 14.

C-5

(oo) "Period of Restriction" means the period during which the transfer

Edgar Filing: NANOMETRICS INC - Form PRER14A

of Shares of Restricted Stock are subject to restrictions and therefore, the Shares are subject to a substantial risk of forfeiture. Such restrictions may be based on the passage of time (including the continuation of employment or service), the achievement of target levels of performance, or the occurrence of other events as determined by the Administrator.

(pp) "Plan" means this 2005 Equity Incentive Plan.

(qq) "Restricted Stock" means shares of Common Stock granted pursuant to Section 12 of the Plan, as evidenced by an Award Agreement.

(rr) "Restricted Stock Unit" means a bookkeeping entry representing an amount equal to the Fair Market Value of one Share, granted pursuant to Section 13. Each Restricted Stock Unit represents an unfunded and unsecured obligation of the Company.

(ss) "Return on Assets" means the percentage equal to the Company's or a business unit's Operating Income before incentive compensation, divided by average net Company or business unit, as applicable, assets, determined in accordance with generally accepted accounting principles.

(tt) "Return on Equity" means the percentage equal to the Company's Net Income divided by average shareholder's equity, determined in accordance with generally accepted accounting principles.

(uu) "Return on Sales" means the percentage equal to the Company's or a business unit's Operating Income before incentive compensation, divided by the Company's or the business unit's, as applicable, revenue, determined in accordance with generally accepted accounting principles.

(vv) "Rule 16b-3" means Rule 16b-3 of the Exchange Act or any successor to Rule 16b-3, as in effect when discretion is being exercised with respect to the Plan.

(ww) "Section 16(b)" means Section 16(b) of the Exchange Act.

(xx) "Service Provider" means an Employee, Director or Consultant.

(yy) "Share" means a share of the Common Stock, as adjusted in accordance with Section 17 of the Plan.

(zz) "Stock Appreciation Right" or "SAR" means a stock appreciation right granted pursuant to Section 10 below.

(aaa) "Subsidiary" means a "subsidiary corporation", whether now or hereafter existing, as defined in Section 424(f) of the Code.

C-6

(bbb) "Total Shareholder Return" means the total return (change in share price plus reinvestment of any dividends) of a share of the Company's common stock.

3. Stock Subject to the Plan. Subject to the provisions of Section 17 of the Plan, the maximum aggregate number of Shares which may issued under the Plan is 1,200,000 Shares, plus an annual increase to be added on the first day of the Company's Fiscal Year for three years beginning in 2006 and ending after the 2008 annual increase equal to the least of (i) 3% of the outstanding Shares on such date or (ii) an amount determined by the Board. The Shares may be authorized, but unissued, or reacquired Common Stock.

Edgar Filing: NANOMETRICS INC - Form PRER14A

Any Shares subject to Options or SARs shall be counted against the numerical limits of this Section 3 as one Share for every Share subject thereto. Any Shares of Restricted Stock or Shares subject to Performance Shares or Restricted Stock Units with a per share or unit purchase price lower than 100% of Fair Market Value on the date of grant shall be counted against the numerical limits of this Section 3 as two Shares for every one Share subject thereto. To the extent that a Share that was subject to an Award that counted as two Shares against the Plan reserve pursuant to the preceding sentence is recycled back into the Plan under the next paragraph of this Section 3, the Plan shall be credited with two Shares.

If an Award expires or becomes unexercisable without having been exercised in full or is surrendered pursuant to an Exchange Program, or, with respect to Options, Restricted Stock, Performance Shares or Restricted Stock Units, is forfeited to or repurchased by the Company, the unpurchased Shares (or for Awards other than Options and SARs, the forfeited or repurchased shares) which were subject thereto shall become available for future grant or sale under the Plan (unless the Plan has terminated). With respect to SARs, Shares actually issued pursuant to an SAR as well as the Shares withheld to pay the exercise price shall cease to be available under the Plan. Shares that have actually been issued under the Plan under any Award shall not be returned to the Plan and shall not become available for future distribution under the Plan; provided, however, that if Shares of Restricted Stock, Performance Shares or Restricted Stock Units are repurchased by the Company at their original purchase price or are forfeited to the Company, such Shares shall become available for future grant under the Plan. Shares used to pay the exercise price of an Option or the purchase price of Restricted Stock shall not become available for future grant or sale under the Plan. Shares used to satisfy tax withholding obligations shall not become available for future grant or sale under the Plan. To the extent an Award under the Plan is paid out in cash rather than stock, such cash payment shall not reduce the number of Shares available for issuance under the Plan. Any payout of Dividend Equivalents, because they are payable only in cash, shall not reduce the number of Shares available for issuance under the Plan. Conversely, any forfeiture of Dividend Equivalents shall not increase the number of Shares available for issuance under the Plan.

4. Administration of the Plan.

(a) Procedure.

(i) Multiple Administrative Bodies. The Board or different Committees with respect to different groups of Service Providers may administer the Plan.

C-7

(ii) Section 162(m). To the extent that the Administrator determines it to be desirable to qualify Awards granted hereunder as "performance-based compensation" within the meaning of Section 162(m) of the Code, the Plan shall be administered by a Committee of two or more "outside directors" within the meaning of Section 162(m) of the Code.

(iii) Rule 16b-3. To the extent desirable to qualify transactions hereunder as exempt under Rule 16b-3, the transactions contemplated hereunder shall be structured to satisfy the requirements for exemption under Rule 16b-3.

(iv) Other Administration. Other than as provided above, the Plan shall be administered by (a) the Board or (b) a Committee, which committee shall be constituted to satisfy Applicable Laws.

Edgar Filing: NANOMETRICS INC - Form PRER14A

(b) Powers of the Administrator. Subject to the provisions of the Plan, and in the case of a Committee, subject to the specific duties delegated by the Board to such Committee, the Administrator shall have the authority, in its discretion:

(i) to determine the Fair Market Value;

(ii) to select the Service Providers to whom Awards may be granted hereunder;

(iii) to determine the number of shares of Common Stock or equivalent units to be covered by each Award granted hereunder;

(iv) to approve forms of Award Agreement for use under the Plan;

(v) to determine the terms and conditions, not inconsistent with the terms of the Plan, of any Award granted hereunder. Such terms and conditions include, but are not limited to, the exercise price, the date of grant, the time or times when Awards may be exercised (or are earned) (which may be based on performance criteria), any vesting acceleration or waiver of forfeiture restrictions, and any restriction or limitation regarding any Award or the Shares relating thereto, based in each case on such factors as the Administrator, in its sole discretion, shall determine;

(vi) to institute an Exchange Program; however, the Administrator may not institute an Exchange Program without shareholder approval.

(vii) to construe and interpret the terms of the Plan and Awards granted pursuant to the Plan;

(viii) to prescribe, amend and rescind rules and regulations relating to the Plan, including rules and regulations relating to sub-plans established for the purpose of satisfying applicable foreign laws and/or qualifying for preferred tax treatment under foreign tax laws;

C-8

(ix) to modify or amend each Award (subject to Section 19(c) of the Plan), including the discretionary authority to extend the post-termination exercisability period of Options and SARs longer than is otherwise provided for in the Plan;

(x) to allow Participants to satisfy withholding tax obligations by electing to have the Company withhold from the Shares or cash to be issued upon exercise of an Option, SAR or right to purchase Restricted Stock or upon vesting or payout of another Award, that number of Shares or cash having a Fair Market Value equal to the minimum amount required to be withheld. The Fair Market Value of the Shares to be withheld shall be determined on the date that the amount of tax to be withheld is to be determined. All elections by a Participant to have Shares or cash withheld for this purpose shall be made in such form and under such conditions as the Administrator may deem necessary or advisable;

(xi) to determine whether Awards will be adjusted for Dividend Equivalents;

(xii) to authorize any person to execute on behalf of the Company any instrument required to effect the grant of an Award previously granted by the Administrator; and

Edgar Filing: NANOMETRICS INC - Form PRER14A

(xiii) to make all other determinations deemed necessary or advisable for administering the Plan.

(c) Effect of Administrator's Decision. The Administrator's decisions, determinations and interpretations shall be final and binding on all Participants and any other holders of Awards.

5. Eligibility. Awards may be granted to Service Providers; provided, however, that Incentive Stock Options may be granted only to Employees.

6. No Employment Rights. Neither the Plan nor any Award shall confer upon a Participant any right with respect to continuing the Participant's relationship as an Employee or other Service Provider with the Company or its Subsidiaries, nor shall they interfere in any way with the Participant's right or the Company's or Subsidiary's right, as the case may be, to terminate such relationship at any time, with or without cause.

7. Code Section 162(m) Provisions.

(a) Option and SAR Annual Share Limit. No Participant shall be granted, in any Fiscal Year, Options and Stock Appreciation Rights to purchase more than 500,000 Shares; provided, however, that such limit shall be 250,000 Shares in the Participant's first Fiscal Year of Company service.

(b) Restricted Stock, Performance Share and Restricted Stock Unit Annual Limit. No Participant shall be granted, in any Fiscal Year, more than 250,000 Shares in the aggregate of the following: (i) Restricted Stock, (ii) Performance Shares, or (iii) Restricted Stock Units; provided, however, that such limit shall be 125,000 Shares in the Participant's first Fiscal Year of Company service.

C-9

(c) Section 162(m) Performance Restrictions. For purposes of qualifying grants of Restricted Stock, Performance Shares or Restricted Stock Units as "performance-based compensation" under Section 162(m) of the Code, the Administrator, in its discretion, may set restrictions based upon the achievement of Performance Goals. The Performance Goals shall be set by the Administrator on or before the latest date permissible to enable the Restricted Stock, Performance Shares or Restricted Stock Units to qualify as "performance-based compensation" under Section 162(m) of the Code. In granting Restricted Stock, Performance Shares or Restricted Stock Units which are intended to qualify under Section 162(m) of the Code, the Administrator shall follow any procedures determined by it from time to time to be necessary or appropriate to ensure qualification of the Award under Section 162(m) of the Code (e.g., in determining the Performance Goals).

(d) Changes in Capitalization. The numerical limitations in Sections 7(a) and (b) shall be adjusted proportionately in connection with any change in the Company's capitalization as described in Section 17(a).

(e) If an Award is cancelled in the same Fiscal Year in which it was granted (other than in connection with a transaction described in Section 17 of the Plan), the cancelled Award will be counted against the limits set forth in subsections (a) and (b) above. For this purpose, if the exercise price of an Option is reduced, the transaction will be treated as a cancellation of the Option and the grant of a new Option.

8. Term of Plan. Subject to Section 23 of the Plan, the Plan will become effective upon its adoption by the Board. It will continue in effect for a term

Edgar Filing: NANOMETRICS INC - Form PRER14A

of ten (10) years unless terminated earlier under Section 19 of the Plan.

9. Stock Options.

(a) Type of Option. Each Option shall be designated in the Award Agreement as either an Incentive Stock Option or a Nonstatutory Stock Option. However, notwithstanding such designation, to the extent that the aggregate Fair Market Value of the Shares with respect to which Incentive Stock Options are exercisable for the first time by the Participant during any calendar year (under all plans of the Company and any Parent or Subsidiary) exceeds \$100,000, such Options shall be treated as Nonstatutory Stock Options. For purposes of this Section 9(a), Incentive Stock Options shall be taken into account in the order in which they were granted. The Fair Market Value of the Shares shall be determined as of the time the Option with respect to such Shares is granted.

(b) Term. The term of each Option shall be stated in the Award Agreement. In the case of an Incentive Stock Option, the term shall be ten (10) years from the date of grant or such shorter term as may be provided in the Award Agreement. Moreover, in the case of an Incentive Stock Option granted to a Participant who, at the time the Incentive Stock Option is granted, owns stock representing more than ten percent (10%) of the total combined voting power of

C-10

all classes of stock of the Company or any Parent or Subsidiary, the term of the Incentive Stock Option shall be five (5) years from the date of grant or such shorter term as may be provided in the Award Agreement.

(c) Option Exercise Price and Consideration.

(i) Exercise Price. The per Share exercise price for the Shares to be issued pursuant to exercise of an Option will be determined by the Administrator, subject to the following:

(1) In the case of an Incentive Stock Option granted to an Employee who, at the time the Incentive Stock Option is granted, owns stock representing more than ten percent (10%) of the voting power of all classes of stock of the Company or any Parent or Subsidiary, the per Share exercise price will be no less than 110% of the Fair Market Value per Share on the date of grant.

(2) In the case of all other Options, the per Share exercise price will be no less than 100% of the Fair Market Value per Share on the date of grant.

(3) Notwithstanding the foregoing, Options may be granted with a per Share exercise price of less than 100% of the Fair Market Value per Share on the date of grant pursuant to a merger or other corporate transaction.

(ii) Waiting Period and Exercise Dates. At the time an Option is granted, the Administrator shall fix the period within which the Option may be exercised and shall determine any conditions which must be satisfied before the Option may be exercised.

(iii) Form of Consideration. The Administrator shall determine the acceptable form of consideration for exercising an Option, including the method of payment. In the case of an Incentive Stock Option, the Administrator shall determine the acceptable form of consideration at the time of grant. Subject to Applicable Laws, such consideration may consist entirely of:

Edgar Filing: NANOMETRICS INC - Form PRER14A

- (1) cash;
- (2) check;
- (3) promissory note;
- (4) other Shares which have a Fair Market Value on the date of surrender equal to the aggregate exercise price of the Shares as to which said Option shall be exercised and which meet the conditions established by the Administrator to avoid adverse accounting consequences (as determined by the Administrator);

C-11

- (5) consideration received by the Company under a cashless exercise program implemented by the Company in connection with the Plan;
- (6) a reduction in the amount of any Company liability to the Participant, including any liability attributable to the Participant's participation in any Company-sponsored deferred compensation program or arrangement;
- (7) any combination of the foregoing methods of payment;
- (8) such other consideration and method of payment for the issuance of Shares to the extent permitted by Applicable Laws; or
- (9) any combination of the foregoing methods of payment.

10. Stock Appreciation Rights.

(a) Grant of SARs. Subject to the terms and conditions of the Plan, a SAR may be granted to Service Providers at any time and from time to time as will be determined by the Administrator, in its sole discretion.

(b) Number of Shares. The Administrator will have complete discretion to determine the number of SARs granted to any Service Provider, subject to the limits set forth in Section 7.

(c) Exercise Price and Other Terms. The Administrator, subject to the provisions of the Plan, will have complete discretion to determine the terms and conditions of SARs granted under the Plan.

(d) Exercise of SARs. SARs will be exercisable on such terms and conditions as the Administrator, in its sole discretion, will determine.

(e) SAR Agreement. Each SAR grant will be evidenced by an Award Agreement that will specify the exercise price, the term of the SAR, the conditions of exercise, and such other terms and conditions as the Administrator, in its sole discretion, will determine.

(f) Expiration of SARs. An SAR granted under the Plan will expire upon the date determined by the Administrator, in its sole discretion, and set forth in the Award Agreement; provided, however, that no SAR will have a term of more than ten (10) years from the date of grant.

(g) Payment of SAR Amount. Upon exercise of an SAR, a Participant will be entitled to receive payment from the Company in an amount determined by multiplying:

Edgar Filing: NANOMETRICS INC - Form PRER14A

(i) The difference between the Fair Market Value of a Share on the date of exercise over the exercise price; times

(ii) The number of Shares with respect to which the SAR is exercised.

C-12

(h) Form of Payment. The Company's obligation arising upon the exercise of a SAR may be paid in Common Stock or in cash, or in any combination of Common Stock and cash, as the Administrator, in its sole discretion, may determine. Shares issued upon the exercise of a SAR shall be valued at their Fair Market Value as of the date of exercise.

11. Exercise of Option or SAR.

(a) Procedure for Exercise; Rights as a Shareholder. Any Option or SAR granted hereunder shall be exercisable according to the terms of the Plan and at such times and under such conditions as determined by the Administrator and set forth in the Award Agreement. An Option may not be exercised for a fraction of a Share.

An Option or SAR shall be deemed exercised when the Company receives: (i) written or electronic notice of exercise (in accordance with the terms of the Option or SAR) from the person entitled to exercise the Option or SAR, and (ii) full payment for the Shares with respect to which the Option is exercised. Full payment may consist of any consideration and method of payment authorized by the Administrator and permitted by the Award Agreement and the Plan. Shares issued upon exercise of an Option or SAR shall be issued in the name of the Participant or, if requested by the Participant, in the name of the Participant and his or her spouse. Until the Shares are issued (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company), no right to vote or receive dividends or any other rights as a shareholder shall exist with respect to the Awarded Stock, notwithstanding the exercise of the Option. The Company shall issue or cause to be issued (and which issuance may be in electronic entry form) such Shares promptly after the Option is exercised. No adjustment will be made for a dividend or other right for which the record date is prior to the date the Shares are issued, except as provided in Section 17 of the Plan.

Exercising an Option in any manner shall decrease the number of Shares thereafter available, both for purposes of the Plan and for sale under the Option, by the number of Shares as to which the Option is exercised. Exercise of a SAR in any manner shall, to the extent the SAR is exercised, result in a decrease in the number of Shares which thereafter shall be available for purposes of the Plan, and the SAR shall cease to be exercisable to the extent it has been exercised.

(b) Termination of Continuous Status as a Service Provider. Upon termination of a Participant's Continuous Status as a Service Provider (other than termination by reason of the Participant's death or Disability), the Participant may exercise his or her Option or SAR within such period of time as is specified in the Award Agreement to the extent that the Award is vested on the date of termination (but in no event later than the expiration of the term of such Award as set forth in the Award Agreement). In the absence of a specified time in the Option Agreement, the Option shall remain exercisable for three (3) months following the Participant's termination. If the Option or SAR is not so exercised within the time specified herein, the Option or SAR shall terminate, and the Shares covered by such Option or SAR shall revert to the

Edgar Filing: NANOMETRICS INC - Form PRER14A

Plan. Unless otherwise provided by the Administrator, if on the date of termination the Participant is not vested as to his or her entire Option or SAR, the Shares covered by the unvested portion of the Option or SAR will revert to the Plan on the date one (1) month following the Participant's termination. Notwithstanding the foregoing, in no event shall an Option or SAR be exercisable after the expiration of the term of the Award as provided in the Award Agreement.

C-13

(c) Disability of Participant. If a Participant terminates his or her Continuous Status as a Service Provider as a result of his or her Disability, the Participant may exercise his or her Option or SAR within such period of time as is specified in the Award Agreement to the extent the Option or SAR is vested on the date of termination (but in no event later than the expiration of the term of such Option or SAR as set forth in the Award Agreement). In the absence of a specified time in the Award Agreement, the Option or SAR shall remain exercisable for twelve (12) months following the Participant's termination. If, after termination, the Participant does not exercise his or her Option or SAR within the time specified herein, the Option or SAR shall terminate, and the Shares covered by such Option or SAR shall revert to the Plan. Unless otherwise provided by the Administrator, if on the date of termination the Participant is not vested as to his or her entire Option or SAR, the Shares covered by the unvested portion of the Option or SAR will revert to the Plan on the date one (1) month following the Participant's termination. Notwithstanding the foregoing, in no event shall an Option or SAR be exercisable after the expiration of the term of the Award as provided in the Award Agreement.

(d) Death of Participant. If a Participant dies while a Service Provider, the Option or SAR may be exercised following the Participant's death within such period of time as is specified in the Award Agreement (but in no event may the option be exercised later than the expiration of the term of such Option or SAR as set forth in the Award Agreement), by the Participant's designated beneficiary, provided such beneficiary has been designated prior to Participant's death in a form acceptable to the Administrator. If no such beneficiary has been designated by the Participant, then such Option may be exercised by the personal representative of the Participant's estate or by the person(s) to whom the Option or SAR is transferred pursuant to the Participant's will or in accordance with the laws of descent and distribution. In the absence of a specified time in the Award Agreement, the Option or SAR shall remain exercisable for twelve (12) months following Participant's death. If the Option or SAR is not so exercised within the time specified herein, the Option or SAR shall terminate, and the Shares covered by such Option or SAR shall revert to the Plan. Unless otherwise provided by the Administrator, if on the date of termination the Participant is not vested as to his or her entire Option or SAR, the Shares covered by the unvested portion of the Option or SAR will revert to the Plan on the date one (1) month following the Participant's termination. Notwithstanding the foregoing, in no event shall an Option or SAR be exercisable after the expiration of the term of the Award as provided in the Award Agreement.

12. Restricted Stock.

(a) Grant of Restricted Stock. Subject to the terms and provisions of the Plan (including the limits set forth in Section 7), the Administrator, at any time and from time to time, may grant Shares of Restricted Stock to Service Providers in such amounts as the Administrator, in its sole discretion, will determine.

(b) Restricted Stock Agreement. Each Award of Restricted Stock will be

Edgar Filing: NANOMETRICS INC - Form PRER14A

evidenced by an Award Agreement that will specify the Period of Restriction, the number of Shares granted, and such other terms and conditions as the

C-14

Administrator, in its sole discretion, will determine. Unless the Administrator determines otherwise, Shares of Restricted Stock will be held by the Company as escrow agent until the restrictions on such Shares have lapsed.

(c) Transferability. Unless determined otherwise by the Administrator, Shares of Restricted Stock may not be sold, pledged, assigned, hypothecated, transferred, or disposed of in any manner other than by will or by the laws of descent or distribution until the end of the applicable Period of Restriction.

(d) Other Restrictions. The Administrator, in its sole discretion, may impose such other restrictions on Shares of Restricted Stock as it may deem advisable or appropriate.

(i) General Restrictions. The Administrator may set restrictions based upon the achievement of Company-wide, departmental, business unit, or individual goals (including, but not limited to, continued employment or service), applicable federal or state securities laws, or any other basis determined by the Administrator in its discretion.

(ii) Section 162(m) Performance Restrictions. For purposes of qualifying grants of Restricted Stock as "performance-based compensation" under Section 162(m) of the Code, the Committee, in its discretion, may set restrictions based upon the achievement of Performance Goals. The Performance Goals shall be set by the Committee on or before the latest date permissible to enable the Restricted Stock to qualify as "performance-based compensation" under Section 162(m) of the Code. In granting Restricted Stock which is intended to qualify under Section 162(m) of the Code, the Committee shall follow any procedures determined by it from time to time to be necessary or appropriate to ensure qualification of the Restricted Stock under Section 162(m) of the Code (e.g., in determining the Performance Goals).

(e) Removal of Restrictions. Except as otherwise provided in this Section 12, Shares of Restricted Stock covered by each Restricted Stock grant made under the Plan will be released from escrow as soon as practicable after the last day of the Period of Restriction. The Administrator, in its discretion, may accelerate the time at which any restrictions will lapse or be removed.

(f) Voting Rights. During the Period of Restriction, Service Providers holding Shares of Restricted Stock granted hereunder may exercise full voting rights with respect to those Shares, unless the Administrator determines otherwise.

(g) Dividends and Other Distributions. During the Period of Restriction, Service Providers holding Shares of Restricted Stock will be entitled to receive all dividends and other distributions paid with respect to such Shares unless otherwise provided in the Award Agreement. If any such dividends or distributions are paid in Shares, the Shares will be subject to the same restrictions on transferability and forfeitability as the Shares of Restricted Stock with respect to which they were paid.

C-15

(h) Return of Restricted Stock to Company. On the date set forth in the

Edgar Filing: NANOMETRICS INC - Form PRER14A

Award Agreement, the Restricted Stock for which restrictions have not lapsed will revert to the Company and again will become available for grant under the Plan.

13. Restricted Stock Units.

(a) Grant. Restricted Stock Units may be granted at any time and from time to time as determined by the Administrator. Each Restricted Stock Unit grant shall be evidenced by an Award Agreement that shall specify such other terms and conditions as the Administrator, in its sole discretion, shall determine, including all terms, conditions, and restrictions related to the grant, the number of Restricted Stock Units (subject to the limitations set forth in Section 7) and the form of payout, which, subject to Section 13(d), may be left to the discretion of the Administrator.

(b) Vesting Criteria and Other Terms. The Administrator shall set vesting criteria in its discretion, which, depending on the extent to which the criteria are met, will determine the number of Restricted Stock Units that will be paid out to the Participant.

(i) General Restrictions. The Administrator may set vesting criteria based upon the achievement of Company-wide, departmental, business unit, or individual goals (including, but not limited to, continued employment or service), applicable federal or state securities laws, or any other basis determined by the Administrator in its discretion.

(ii) Section 162(m) Performance Restrictions. For purposes of qualifying grants of Restricted Stock Units as "performance-based compensation" under Section 162(m) of the Code, the Committee, in its discretion, may set performance objectives based upon the achievement of Performance Goals. The Performance Goals shall be set by the Committee on or before the latest date permissible to enable the Restricted Stock Units to qualify as "performance-based compensation" under Section 162(m) of the Code. In granting Restricted Stock Units that are intended to qualify under Section 162(m) of the Code, the Committee shall follow any procedures determined by it from time to time to be necessary or appropriate to ensure qualification of the Restricted Stock Units under Section 162(m) of the Code (e.g., in determining the Performance Goals).

(c) Earning Restricted Stock Units. Upon meeting the applicable vesting criteria, the Participant shall be entitled to receive a payout as specified in the Award Agreement. Notwithstanding the foregoing, at any time after the grant of Restricted Stock Units, the Administrator, in its sole discretion, may reduce or waive any vesting criteria that must be met to receive a payout.

(d) Form and Timing of Payment. Payment of earned Restricted Stock Units shall be made as soon as practicable after the date(s) set forth in the Award Agreement. The Administrator, in its sole discretion, may pay earned Restricted Stock Units in cash, Shares, or a combination thereof. Shares represented by Restricted Stock Units that are fully paid in cash again shall be available for grant under the Plan.

C-16

(e) Cancellation. On the date set forth in the Award Agreement, all unearned Restricted Stock Units shall be forfeited to the Company.

14. Performance Shares.

(a) Grant of Performance Shares. Subject to the terms and conditions of

Edgar Filing: NANOMETRICS INC - Form PRER14A

the Plan, Performance Shares may be granted to Service Providers at any time as shall be determined by the Administrator, in its sole discretion. Subject to Section 7 hereof, the Administrator shall have complete discretion to determine the number of Shares subject to a Performance Share Award granted to any Service Provider.

(b) Value of Performance Shares. Each Performance Share will have an initial value equal to the Fair Market Value of a Share on the date of grant.

(c) Performance Objectives and Other Terms. The Administrator will set performance objectives in its discretion which, depending on the extent to which they are met, will determine the number or value of Performance Shares that will be paid out to the Service Providers. Each Award of Performance Shares will be evidenced by an Award Agreement that will specify the performance period during which the applicable objectives must be met, and such other terms and conditions as the Administrator, in its sole discretion, will determine.

(i) General Restrictions. The Administrator may set performance objective based upon the achievement of Company-wide, departmental, business unit, or individual goals (including, but not limited to, continued employment or service), applicable federal or state securities laws, or any other basis determined by the Administrator in its discretion.

(ii) Section 162(m) Performance Restrictions. For purposes of qualifying grants of Performance Shares as "performance-based compensation" under Section 162(m) of the Code, the Committee, in its discretion, may set performance objectives based upon the achievement of Performance Goals. The Performance Goals shall be set by the Committee on or before the latest date permissible to enable the Performance Shares to qualify as "performance-based compensation" under Section 162(m) of the Code. In granting Performance Shares that are intended to qualify under Section 162(m) of the Code, the Committee shall follow any procedures determined by it from time to time to be necessary or appropriate to ensure qualification of the Performance Shares under Section 162(m) of the Code (e.g., in determining the Performance Goals).

(d) Earning of Performance Shares. After the applicable Performance Period has ended, the holder of Performance Shares will be entitled to receive a payout of the number of Performance Shares earned by the Participant over the Performance Period, to be determined as a function of the extent to which the corresponding performance objectives have been achieved. After the grant of a Performance Share, the Administrator, in its sole discretion, may reduce or waive any performance objectives for such Performance Share.

C-17

(e) Form and Timing of Payment of Performance Shares. Payment of earned Performance Shares will be made as soon as practicable after the expiration of the applicable Performance Period. The Administrator, in its sole discretion, may pay earned Performance Shares in the form of cash, in Shares (which have an aggregate Fair Market Value equal to the value of the earned Performance Shares at the close of the applicable performance period) or in a combination thereof.

(f) Cancellation of Performance Shares. On the date set forth in the Award Agreement, all unearned or unvested Performance Shares will be forfeited to the Company, and again will be available for grant under the Plan.

15. Leaves of Absence. Unless the Administrator provides otherwise or except as otherwise required by Applicable Laws, vesting of Awards granted hereunder shall cease commencing on the first day of any unpaid leave of absence and shall only recommence upon return to active service.

Edgar Filing: NANOMETRICS INC - Form PRER14A

16. Transferability of Awards. Unless determined otherwise by the Administrator or as otherwise provided in the Plan, an Award may not be sold, pledged, assigned, hypothecated, transferred, or disposed of in any manner other than by will or by the laws of descent or distribution, and may be exercised, during the lifetime of the Participant, only by the Participant. If the Administrator makes an Award transferable, such Award shall contain such additional terms and conditions as the Administrator deems appropriate.

17. Adjustments Upon Changes in Capitalization, Dissolution, Merger or Change in Control.

(a) Changes in Capitalization. Subject to any required action by the shareholders of the Company, the number of shares of Common Stock covered by each outstanding Award and the number of shares of Common Stock which have been authorized for issuance under the Plan but as to which no Awards have yet been granted or which have been returned to the Plan upon cancellation or expiration of an Award, as well as the price per share, if any, of Common Stock covered by each such outstanding Award and the 162(m) fiscal year share issuance limits under Sections 7(a) and (b) hereof shall, shall be proportionately adjusted for any dividend or other distribution (whether in the form of cash, Shares, other securities, or other property), recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase, or exchange of Shares or other securities of the Company, or other change in the corporate structure of the Company affecting the Shares should the Committee (in its sole discretion) determine such an adjustment to be appropriate in order to prevent dilution or enlargement of the benefits or potential benefits intended to be made available under the Plan. Such adjustment shall be made by the Board or the Committee, whose determination in that respect shall be final, binding and conclusive. Except as expressly provided herein, no issuance by the Company of shares of stock of any class, or securities convertible into shares of stock of any class, shall affect, and no adjustment by reason thereof shall be made with respect to, the number or price of shares of Common Stock subject to an Award.

(b) Dissolution or Liquidation. In the event of the proposed dissolution or liquidation of the Company, all outstanding Awards will terminate

C-18

immediately prior to the consummation of such proposed action, unless otherwise provided by the Administrator. The Administrator in its discretion may provide for a Participant to have the right to exercise his or her Option, SAR or right to purchase Restricted Stock until ten (10) days prior to such transaction as to all of the Awarded Stock covered thereby, including Shares as to which the Award would not otherwise be exercisable. In addition, the Administrator may provide that any Company repurchase option or forfeiture rights applicable to any Award shall lapse 100%, and that any Award vesting shall accelerate 100%, provided the proposed dissolution or liquidation takes place at the time and in the manner contemplated. To the extent it has not been previously exercised (with respect to Options, SARs and right to purchase Restricted Stock) or vested (with respect to other Awards), an Award will terminate immediately prior to the consummation of such proposed action.

(c) Merger or Change in Control. In the event of a merger or Change in Control, each outstanding Award shall be assumed or an equivalent award substituted by the successor corporation or a Parent or Subsidiary of the successor corporation. In the event that the successor corporation refuses to assume or substitute for the Award, the Participant shall (i) fully vest in and have the right to exercise the Option, SAR or right to purchase Restricted Stock

Edgar Filing: NANOMETRICS INC - Form PRER14A

as to all of the Awarded Stock, including Shares as to which it would not otherwise be vested or exercisable, and (ii) fully earn and receive a payout with respect to other Awards. If an Award is not assumed or substituted for in the event of a merger or Change in Control, the Administrator shall notify the Participant in writing or electronically that (i) the Option, SAR or right to purchase Restricted Stock shall be fully vested and exercisable for a period of fifteen (15) days from the date of such notice, and (ii) all outstanding Options, SARs and rights to purchase Restricted Stock shall terminate upon the expiration of such period and (iii) all other outstanding Awards shall be paid out immediately prior to the merger or Change in Control. For the purposes of this paragraph, the Award shall be considered assumed if, following the merger or Change in Control, the assumed Award confers the right to purchase or receive, for each Share of Awarded Stock subject to the Award immediately prior to the merger or Change in Control, the consideration (whether stock, cash, or other securities or property) received in the merger or Change in Control by holders of Common Stock for each Share held on the effective date of the transaction (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding Shares); provided, however, that if such consideration received in the merger or Change in Control is not solely common stock of the successor corporation or its Parent, the Administrator may, with the consent of the successor corporation, provide for the consideration to be received upon the exercise (or payout or vesting, as applicable) of the Award, for each Share of Awarded Stock subject to the Award, to be solely common stock of the successor corporation or its Parent equal in fair market value to the per share consideration received by holders of Common Stock in the merger or Change in Control.

18. Date of Grant. The date of grant of an Award shall be, for all purposes, the date on which the Administrator makes the determination granting such Award, or such other later date as is determined by the Administrator. Notice of the determination shall be provided to each Participant within a reasonable time after the date of such grant.

19. Amendment and Termination of the Plan.

C-19

(a) Amendment and Termination. The Board may at any time amend, alter, suspend or terminate the Plan.

(b) Shareholder Approval. The Plan will be subject to approval by the shareholders of the Company within twelve (12) months after the date the Plan is adopted. Such shareholder approval will be obtained in the manner and to the degree required under Applicable Laws. The Company shall obtain shareholder approval of any Plan amendment to the extent necessary and desirable to comply with Applicable Laws.

(c) Effect of Amendment or Termination. No amendment, alteration, suspension or termination of the Plan shall impair the rights of any Participant, unless mutually agreed otherwise between the Participant and the Administrator, which agreement must be in writing (or electronic format) and signed by the Participant and the Company. Termination of the Plan shall not affect the Administrator's ability to exercise the powers granted to it hereunder with respect to Awards granted under the Plan prior to the date of such termination.

20. Conditions Upon Issuance of Shares.

(a) Legal Compliance. Shares shall not be issued pursuant to the exercise or payout, as applicable, of an Award unless the exercise or payout, as

Edgar Filing: NANOMETRICS INC - Form PRER14A

applicable, of such Award and the issuance and delivery of such Shares shall comply with Applicable Laws and shall be further subject to the approval of counsel for the Company with respect to such compliance.

(b) Investment Representations. As a condition to the exercise or payout, as applicable, of an Award, the Company may require the person exercising such Option, SAR or right to purchase Restricted Stock, or in the case of another Award, the person receiving the payout, to represent and warrant at the time of any such exercise that the Shares are being purchased only for investment and without any present intention to sell or distribute such Shares if, in the opinion of counsel for the Company, such a representation is required.

21. Inability to Obtain Authority. The inability of the Company to obtain authority from any regulatory body having jurisdiction, which authority is deemed by the Company's counsel to be necessary to the lawful issuance and sale of any Shares hereunder, shall relieve the Company of any liability in respect of the failure to issue or sell such Shares as to which such requisite authority shall not have been obtained.

22. Severability. Notwithstanding any contrary provision of the Plan or an Award to the contrary, if any one or more of the provisions (or any part thereof) of this Plan or the Awards shall be held invalid, illegal or unenforceable in any respect, such provision shall be modified so as to make it valid, legal and enforceable, and the validity, legality and enforceability of the remaining provisions (or any part thereof) of the Plan or Award, as applicable, shall not in any way be affected or impaired thereby.

23. Shareholder Approval. Subject to Section 19 of the Plan, the Plan will become effective upon its adoption by the Board. It will continue in effect for

C-20

a term of five (5) years from the date of approval by the shareholders of the Company unless terminated earlier under Section 19 of the Plan.

24. Non-U.S. Employees. Notwithstanding anything in the Plan to the contrary, with respect to any employee who is resident outside of the United States, the Administrator may, in its sole discretion, amend the terms of the Plan in order to conform such terms to the requirements of local law or to meet the objectives of the Plan. The Administrator may, where appropriate, establish one or more sub-plans for this purpose.

C-21