

AMENDED AND RESTATED CERTIFICATE OF INCORPORATION

ZYOPTICS, INC.

Zyoptics, Inc., (the "Company") a corporation organized and existing under the laws of the State of Delaware hereby certifies as follows:

A. The undersigned is the duly elected and acting President and Chief Executive Officer of the Company.

B. The name of the corporation is Zyoptics, Inc. The original Certificate of Incorporation of the Company was filed with the Secretary of State of the State of Delaware on March 13, 2000. All amendments to the Certificate of Incorporation reflected herein have been duly authorized and adopted by the Company's Board of Directors and stockholders in accordance with the provisions of Sections 242 and 245 of the Delaware General Corporation Law.

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

I

The name of the corporation is Zyoptics, Inc. (the "**Company**").

II

The address of the registered office of the Company in the State of Delaware is 1013 Centre Road, City of Wilmington, County of New Castle, Delaware, and the name of its registered agent at such address is Corporation Service Company.

III

The purpose of the Company is to engage in any lawful act or activity for which a corporation may be organized under the Delaware General Corporation Law.

IV

Upon this Amendment and Restatement of the Certificate of Incorporation of the Company becoming effective pursuant to the Delaware General Corporation Law (the "**Effective Time**"), each share of Common Stock, par value \$.01 per share, of the Company issued and outstanding immediately prior to the Effective Time ("**Old Common Stock**"), shall be automatically reclassified and converted into Ten Thousand (10,000) shares of Common Stock, par value \$.01 per share, of the Company. Any stock certificate that, immediately prior to the Effective Time, represented shares of Old Common Stock shall, from and after the Effective Time, automatically, and without the necessity of presenting same for exchange, represent that number of shares of Common Stock obtained by multiplying the number of shares of Old

Common Stock represented by such certificate immediately prior to the Effective Time by Ten Thousand (10,000).

The Company is authorized to issue two classes of stock to be designated Common Stock and Preferred Stock. The aggregate number of shares that the Company shall have authority to issue is Twenty-Six Million Two Hundred Fifty Thousand (26,250,000) consisting of Twenty Million (20,000,000) shares of Common Stock, par value \$.01 per share, and Six Million Two Hundred Fifty Thousand (6,250,000) shares of Preferred Stock, par value \$.01 per share.

The shares of Preferred Stock may be issued from time to time in one or more series. The first series shall be designated "Series A Preferred Stock" and shall consist of Six Million Two Hundred Fifty Thousand (6,250,000) shares. The rights, preferences, privileges and restrictions granted to and imposed upon the Series A Preferred Stock are as follows:

1. **Definitions.** For purposes of this Article, the following definitions shall apply:

(a) "Additional Shares of Common Stock" shall mean all shares of Common Stock issued (or, pursuant to subsection 4(d)(ii), deemed to be issued) by the Company after the Series A Original Issue Date, other than shares of Common Stock issued or issuable (or, pursuant to subsection 4(d)(ii), deemed to be issued):

(i) upon conversion of shares of Series A Preferred Stock;

(ii) as a dividend or distribution on Series A Preferred Stock or any event for which adjustment is made pursuant to subsection 4(d)(v), subsection 4(d)(vi) or subsection 4(d)(vii) hereof;

(iii) in connection with acquisition transactions, to financial institutions or lessors in connection with commercial credit arrangements or equipment financings, and strategic partnering arrangements and the like, which issuances are approved by the Company's Board of Directors and are primarily for purposes other than equity financing and which are cumulatively not more than 175,000 shares (as appropriately adjusted for anti-dilution and any subsequent stock splits, stock dividends, recapitalizations and the like);

(iv) Pursuant to grants of options to purchase Common Stock to directors and employees of, and consultants to, the Company in a manner determined by the Board of Directors and which are cumulatively not more than 2,000,000 shares (as appropriately adjusted for anti-dilution and any subsequent stock splits, stock dividends, recapitalizations and the like); or

(v) with the consent of a majority of the then-outstanding Series A Preferred Stock; or

(vi) in a Qualifying Public Offering or other registered public offering of the Common Stock prior to which or in connection with which all of the Series A Preferred Stock shall have been converted to Common Stock; or

(vii) by way of dividend or other distribution on shares of Common Stock excluded from the definition of Additional Shares of Common Stock by the foregoing clause(s) (i)–(vi) or this clause (vii).

(b) “**Affiliate**” shall mean, as to any person or entity, a person or entity that, directly or indirectly through one or more intermediaries, controls, is controlled by, or is under common control with, such person or entity.

(c) “**Common Stock**” shall mean the Common Stock of the Company, par value \$.01 per share.

(d) “**Convertible Securities**” shall mean any evidences of indebtedness, shares or other securities (other than shares of Series A Preferred Stock) convertible into or exchangeable for Common Stock.

(e) “**Options**” shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock or Convertible Securities.

(f) “**Series A Original Issue Date**” shall mean the date on which shares of Series A Preferred Stock were first issued.

(g) “**Series A Original Issue Price**” shall mean \$1.00 per share for the Series A Preferred Stock (as appropriately adjusted for anti-dilution and any subsequent stock splits, stock dividends, recapitalizations and the like).

(h) “**Series A Preference Amount**” shall mean \$1.00 per share for the Series A Preferred Stock (as appropriately adjusted for anti-dilution and any subsequent stock splits, stock dividends, recapitalizations and the like).

(i) “**Stock Option Plan**” means a stock option plan that has been approved by the Company’s Board of Directors.

(j) “**Transfer**” or “**Transferred**” shall mean to sell or in any other way directly or indirectly transfer, assign, distribute, encumber or otherwise dispose of, either voluntarily or involuntarily.

(k) “**Voting Shares**” shall mean any shares of the Company’s capital stock entitled to vote in any election of directors of the Company.

2. ***Dividends***

(a) ***Dividend Preference.*** The holders of outstanding shares of Series A Preferred Stock shall be entitled to receive dividends out of any assets at the time legally available therefor, prior and in preference to any declaration or payment of any dividend (payable other than in Common Stock or other securities or rights convertible into or entitling the holder thereof to receive, directly or indirectly, additional shares of Common Stock) on the Common Stock or any other security of the Company. Dividends on Series A Preferred Stock will accrue at the rate of 8% per annum, per share (calculated as a percentage of the Series A Original Issue Price), on

each outstanding share of Series A Preferred Stock (as appropriately adjusted for anti-dilution and any subsequent stock splits, stock dividends, recapitalizations and the like). The Series A Preferred Stock will also participate in any dividend or distribution declared or paid on the Common Stock, pro rata, on the basis of the number of shares of Common Stock (as determined on an as-converted basis for the Series A Preferred Stock) into which it is then convertible. Dividends shall be payable when, as and if declared by the Board of Directors of the Company (the "**Board of Directors**"); *provided, however*, that, except as provided below, the Board of Directors is under no obligation to pay dividends to such holders, and such dividends, if any, shall be noncumulative. Notwithstanding the foregoing, dividends on the Series A Preferred Stock shall accrue at the rate set forth above and shall be cumulative solely for the purposes of (i) payment upon liquidation, dissolution, or winding up of the Company (or the deemed occurrence of such event pursuant to subsection 3(d) below) as provided in Section 3(a) or (ii) payment upon redemption of the Series A Preferred Stock as provided in Section 6(b). Except as provided in the preceding sentence, no rights shall accrue to the holders of the Series A Preferred Stock if dividends are not declared in any prior fiscal year. If and to the extent that after payment of the dividends provided for in the first sentence of this paragraph, the Board of Directors shall declare and set aside for payment any other and further amount of cash or property as a distribution (other than a distribution pursuant to Section 3 hereof), such distribution shall be made with equal priority to the Common Stock and the Series A Preferred Stock, with each share of Series A Preferred Stock being treated for such purpose as if it had been converted into Common Stock at the then effective Conversion Rate (as defined in Section 4(a)). For the purpose of the preceding sentence, all shares of Series A Preferred Stock held by each holder of Series A Preferred Stock shall be aggregated, and any resulting fractional share of Common Stock shall be disregarded.

(b) *Priority of Dividends.* The Company shall make no Distribution (as defined below) to the holders of shares of Common Stock in any fiscal year unless and until dividends at the rate set forth in subsection (a) above shall have been paid upon applicable shares of Series A Preferred Stock.

(c) *Distribution.* As used in this Section 2, "**Distribution**" means the transfer by the Company with respect to its Common Stock or Preferred Stock of cash or property without consideration, whether by way of dividend or otherwise (except a dividend in shares of Common Stock) or the purchase by the Company of shares of Common Stock or Preferred Stock (other than purchases in connection with the repurchase of shares of Common Stock issued to or held by employees, consultants, officers and directors upon termination of their employment or services pursuant to agreements providing for the right of said repurchase) for cash or property.

3. *Liquidation Rights.* In the event of any liquidation, dissolution, or winding up of the Company (or the deemed occurrence of such event pursuant to subsection 3(d) below), either voluntary or involuntary, distributions to the stockholders of the Company shall be made in the following manner:

(a) *Amount of Liquidation Preference.* The holders of the Series A Preferred Stock shall be entitled to receive, prior and in preference to any distribution of any of the assets or surplus funds of the Company to the holders of the Common Stock by reason of their ownership of such stock, all accrued but unpaid dividends plus the Series A Original Issue Price

per share on each outstanding share of Series A Preferred Stock (the "**Series A Liquidation Preference**"). If the assets and funds thus available for distribution among the holders of the Series A Preferred Stock shall be insufficient to permit the payment to such holders of their full aforesaid preferential amount, then the entire amount of the assets and funds of the Company legally available for distribution shall be distributed ratably among the holders of the Series A Preferred Stock in proportion to the aggregate Series A Liquidation Preference for the shares of such Series A Preferred Stock owned by each such holder.

(b) *Distribution after Payment of Liquidation Preference.* After payment has been made to the holders of the Series A Preferred Stock of the full preferential amounts set forth in Section 3(a) above, the entire remaining assets and funds of the Company legally available for distribution, if any, shall be distributed ratably among the holders of Common Stock and Series A Preferred Stock (on an as-converted basis) until such time as the holders of Series A Preferred Stock shall have received an amount per share equal to three times the Series A Conversion Price then in effect for the Series A Preferred Stock, after which the remaining assets and funds of the Company legally available for distribution, if any, shall be distributed ratably among the holders of Common Stock.

(c) *Shares not Treated as Both Series A Preferred Stock and Common Stock in any Distribution.* Shares of Series A Preferred Stock shall not be entitled to be converted into shares of Common Stock in order to participate in any distribution, or series of distributions, as shares of Common Stock, without first foregoing participation in the distribution, or series of distributions, as shares of Series A Preferred Stock pursuant to Section 3(a) and (b) above.

(d) *Deemed Liquidation.* For purposes of this Section 3, a merger or consolidation of the Company with or into any other corporation or corporations, unless the stockholders of the Company immediately prior to any such transaction are holders of at least a majority of the voting power of the surviving corporation, the acquiring corporation or the entity controlling the surviving corporation immediately thereafter, or a sale or other transfer of more than 50% of the assets of the Company (or any series of related transactions resulting in the sale or other transfer of all or substantially all of the assets of the Company), shall be treated as a liquidation, dissolution or winding up. Notwithstanding the foregoing, the rights of all the holders of Series A Preferred Stock under this Section 3 may be waived by the holders of a majority of the then outstanding shares of Series A Preferred Stock.

(e) *Non-Cash Distribution.* Whenever the distribution provided for in this Section 3 shall be payable in securities or property other than cash, the value of such distribution shall be the fair market value of such securities or other property as determined in good faith by the Board of Directors. Any securities shall be valued as follows:

(i) Securities not subject to investment letter or other similar restrictions on free marketability (which cases are covered by (ii) below):

(A) If traded on a securities exchange or through the Nasdaq National Market, the value shall be deemed to be the average of the closing prices of the securities on such quotation system over the thirty (30) day period ending three (3) days prior to the closing;

(B) If actively traded over-the-counter, the value shall be deemed to be the average of the closing bid or sale prices (whichever is applicable) over the thirty (30) day period ending three (3) days prior to the closing; and

(C) If there is no active public market, the value shall be the fair market value thereof, as determined by the Board of Directors in good faith.

(ii) The method of valuation of securities subject to investment letter or other restrictions on free marketability (other than restrictions arising solely by virtue of a stockholder's status as an affiliate or former affiliate) shall be to make an appropriate discount from the market value determined as above in (i)(A), (B) or (C) to reflect the approximate fair market value thereof, as determined by the Board of Directors.

(f) *Consent to Certain Repurchases.* Each holder of an outstanding share of Series A Preferred Stock shall be deemed to have consented to distributions made by the Company in connection with the repurchase of shares of Common Stock issued to or held by officers, directors, employees or consultants upon termination of their employment or services pursuant to agreements providing for the right of said repurchase between the Company and such persons, provided that the terms of such repurchase shall have been approved by the Board of Directors.

4. **Conversion.** The holders of the Series A Preferred Stock shall have conversion rights as follows (the "Conversion Rights"):

(a) *Right to Convert.* Subject to Section 4(c), each share of Series A Preferred Stock shall be convertible, at the option of the holder thereof, at any time after the issuance of such share at the office of the Company or any transfer agent for the Series A Preferred Stock, into that number of fully paid and nonassessable shares of Common Stock that is equal to the Series A Original Issue Price divided by the appropriate conversion price. The initial conversion price per share of Series A Preferred Stock (the "**Series A Conversion Price**") shall be \$1.00 and shall be subject to adjustment as provided herein. The number of shares of Common Stock into which each share of Series A Preferred Stock may be converted is hereinafter referred to as the "**Conversion Rate**." The Series A Conversion Price and the Conversion Rate shall be subject to adjustment as described in this Section 4.

(b) *Automatic Conversion.* Each share of Series A Preferred Stock shall automatically be converted into shares of Common Stock at the then effective Conversion Rate for such share immediately upon the earlier of (i) the consummation of the Company's first firmly underwritten public offering of the Company's Common Stock registered under the Securities Act of 1933, as amended (the "**Securities Act**"), provided that the public offering price per share is not less than \$5.00 (subject to appropriate adjustment for stock splits, stock dividends, combinations, recapitalizations and the like) and the aggregate gross proceeds to the Company exceed \$20,000,000 (before deducting underwriting discounts or commissions) (a "**Qualifying Public Offering**") or (ii) the date specified by written consent or agreement of the holders of the majority of the then outstanding shares of Series A Preferred Stock.

(c) *Mechanics of Conversion.* No fractional shares of Common Stock shall be issued upon conversion of Series A Preferred Stock. In lieu of any fractional shares to which the holder would otherwise be entitled, the Company shall pay cash equal to such fraction multiplied by the then fair market value of such fractional shares as determined by the Board of Directors of the Company. Before any holder of Series A Preferred Stock shall be entitled to convert the same into full shares of Common Stock, and to receive certificates therefor, he shall surrender the certificate or certificates therefor, duly endorsed, at the office of the Company or of any transfer agent for the Series A Preferred Stock, and shall give written notice to the Company at such office that he elects to convert the same; *provided, however*, that in the event of an automatic conversion pursuant to Section 4(b), the outstanding shares of Series A Preferred Stock shall be converted automatically without any further action by the holders of such shares and whether or not the certificates representing such shares are surrendered to the Company or its transfer agent; *provided, further*, that the Company shall not be obligated to issue certificates evidencing the shares of Common Stock issuable upon such automatic conversion unless either the certificates evidencing such shares of Series A Preferred Stock are delivered to the Company or its transfer agent as provided above, or the holder notifies the Company or its transfer agent that such certificates have been lost, stolen or destroyed and executes an agreement and provides, if requested by the Company, a bond satisfactory to the Company to indemnify the Company from any loss incurred by it in connection with such certificates.

The Company shall, as soon as practicable after such delivery, or after such agreement and indemnification, issue and deliver at such office to such holder of Series A Preferred Stock, a certificate or certificates for the number of shares of Common Stock to which such holder shall be entitled as aforesaid and a check payable to the holder in the amount of any cash amounts payable as the result of a conversion into fractional shares of Common Stock, plus any declared and unpaid dividends on the converted Series A Preferred Stock. Such conversion shall be deemed to have been made immediately prior to the close of business on the date of such surrender of the shares of Series A Preferred Stock to be converted, and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or holders of such shares of Common Stock on such date; *provided, however*, that if the conversion is in connection with the consummation of the first firmly underwritten public offering of the Company's Common Stock registered under the Securities Act (an "IPO") or any liquidation, dissolution or winding up of the Company (or deemed occurrence of such event pursuant to subsection 3(d) above) (a "Liquidation Event"), the conversion may, at the option of any holder tendering Series A Preferred Stock for conversion, be conditioned upon the closing of the sale of securities pursuant to such IPO or Liquidation Event, in which event the person(s) entitled to receive the Common Stock issuable upon such conversion of the Series A Preferred Stock shall not be deemed to have converted such Series A Preferred Stock until immediately prior to the closing or consummation of the IPO or Liquidation Event, subject to the Series A Conversion Price adjustment, if any, pursuant to Section 4(d)(iii) below.

(d) *Adjustments to Series A Conversion Price for Diluting Issues.* The Series A Conversion Price shall be subject to adjustment from time to time as follows:

(i) *No Adjustment of Series A Conversion Price.* No adjustment in the Series A Conversion Price shall be made in respect of the issuance of Additional Shares of

Common Stock, unless the consideration per share for the Additional Shares of Common Stock issued or deemed to be issued by the Company is less than the Series A Conversion Price in effect on the date of, and immediately prior to, the issue of such Additional Shares of Common Stock.

(ii) *Deemed Issuances of Additional Shares of Common Stock.*

(A) *Options and Convertible Securities.* In the event the Company at any time or from time to time after the Series A Original Issue Date shall issue any Options or Convertible Securities or shall fix a record date for the determination of holders of any class of securities entitled to receive any such Options or Convertible Securities, then the maximum number of shares (as set forth in the instrument relating thereto without regard to any provisions contained therein for a subsequent adjustment of such number) of Common Stock issuable upon the exercise of such Options or, in the case of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in the case such a record date shall have been fixed, as of the close of business on such record date, provided that Additional Shares of Common Stock shall not be deemed to have been issued with respect to an adjustment of the Series A Conversion Price unless the consideration per share (determined pursuant to Section 4(d)(iv) hereof) of such Additional Shares of Common Stock would be less than the Series A Conversion Price in effect on the date of and immediately prior to such issue, or such record date, as the case may be, and provided further that in any such case in which Additional Shares of Common Stock are deemed to be issued:

(1) no further adjustment in the Series A Conversion Price shall be made upon the subsequent issue of Convertible Securities or shares of Common Stock upon the exercise of such Options or conversion or exchange of such Convertible Securities;

(2) if such Options or Convertible Securities by their terms provide, with the passage of time or otherwise, for any increase or decrease in the consideration payable to the Company, or decrease or increase in the number of shares of Common Stock issuable, upon the exercise, conversion or exchange thereof, the Series A Conversion Price computed upon the original issue thereof (or upon the occurrence of a record date with respect thereto), and any subsequent adjustments based thereon, shall, upon any such increase or decrease becoming effective, be recomputed to reflect such increase or decrease insofar as it affects such Options or the rights of conversion or exchange under such Convertible Securities;

(3) upon the expiration of any such Options or any rights of conversion or exchange under such Convertible Securities which shall not have been exercised, the Series A Conversion Price computed upon the original issue thereof (or upon the occurrence of a record date with respect thereto) and any subsequent adjustments based thereon shall, upon such expiration, be recomputed as if:

a. in the case of Convertible Securities or Options for Common Stock, the only Additional Shares of Common Stock issued were the shares of Common Stock, if any, actually issued upon the exercise of such Options or the conversion or exchange of such Convertible Securities and the consideration received therefor was the

consideration actually received by the Company for the issue of such Options, whether or not exercised, plus the consideration actually received by the Company upon such exercise or for the issue of all such Convertible Securities which were actually converted or exchanged, plus the additional consideration, if any, actually received by the Company upon such conversion or exchange, and

b. in the case of Options for Convertible Securities only the Convertible Securities, if any, actually issued upon the exercise thereof were issued at the time of issue of such Options, and the consideration received by the Company for the Additional Shares of Common Stock deemed to have been then issued was the consideration actually received by the Company for the issue of such Options, whether or not exercised, plus the consideration deemed to have been received by the Company (determined pursuant to Section 4(d)(iv)) upon the issue of the Convertible Securities with respect to which such Options were actually exercised;

(4) no readjustment pursuant to clause (2) or (3) above shall have the effect of increasing the Series A Conversion Price to an amount which exceeds the lower of (i) the Series A Conversion Price on the original adjustment date, or (ii) the Series A Conversion Price that would have resulted from any issuance of Additional Shares of Common Stock between the original adjustment date and such readjustment date;

(5) in the case of any Options which expire by their terms not more than 30 days after the date of issue thereof, no adjustment of the Series A Conversion Price shall be made until the expiration or exercise of all such Options issued on the same date, whereupon such adjustment shall be made in the same manner provided in clause (3) above; and

(6) if such record date shall have been fixed and such Options or Convertible Securities are not issued on the date fixed therefor, the adjustment previously made in the Series A Conversion Price which became effective on such record date shall be canceled as of the close of business on such record date, and thereafter the Series A Conversion Price shall be adjusted pursuant to this Section 4(d)(ii) as of the actual date of their issuance.

(B) *Stock Dividends, Stock Distributions and Subdivisions.* In the event the Company at any time or from time to time after the Series A Original Issue Date shall declare or pay any dividend or make any other distribution on the Common Stock payable in Common Stock or effect a subdivision of the outstanding shares of Common Stock (by reclassification or otherwise than by payment of a dividend in Common Stock), then and in any such event, Additional Shares of Common Stock shall be deemed to have been issued:

(1) in the case of any such dividend or distribution, immediately after the close of business on the record date for the determination of holders of any class of securities entitled to receive such dividend or distribution, or

(2) in the case of any such subdivision, at the close of business on the date immediately prior to the date upon which such corporate action becomes effective.

If such record date shall have been fixed and such dividend shall not have been paid on the payment date fixed therefor, the adjustment previously made in the Series A Conversion Price which became effective on such record date shall be canceled as of the close of business on such record date, and thereafter the Series A Conversion Price shall be adjusted pursuant to this Section 4(d)(ii) as of the time of actual payment of such dividend, if any.

(iii) **Adjustment of Series A Conversion Price Upon Issuance of Additional Shares of Common Stock.** In the event the Company shall issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to Section 4(d)(ii), but excluding Additional Shares of Common Stock issued pursuant to Section 4(d)(ii)(B), which event is dealt with in Section 4(d)(v) hereof), without consideration or for a consideration per share less than the Series A Conversion Price in effect on the date of and immediately prior to such issue, then and in such event, the Series A Conversion Price shall be reduced, concurrently with such issue, to a price (calculated to the nearest cent) determined by multiplying such Series A Conversion Price by a fraction (x) the numerator of which shall be (1) the number of shares of Common Stock outstanding immediately prior to such issue, plus (2) the number of shares of Common Stock which the aggregate consideration received by the Company for the total number of Additional Shares of Common Stock so issued would purchase at that Series A Conversion Price, and (y) the denominator of which shall be (1) the number of shares of Common Stock outstanding immediately prior to such issue plus (2) the number of such Additional Shares of Common Stock so issued, provided that for the purposes of this Section 4(d)(iii), all shares of Common Stock issuable upon exercise, conversion or exchange of outstanding Options, Convertible Securities and shares of Series A Preferred Stock, as the case may be, shall be deemed to be outstanding, and immediately after any Additional Shares of Common Stock are deemed issued pursuant to Section 4(d)(ii) above, such Additional Shares of Common Stock shall be deemed to be outstanding, and provided further that the Series A Conversion Price shall not be so reduced at such time if the amount of such reduction would be an amount less than \$0.01, but any such amount shall be carried forward and reduction with respect thereto made at the time of and together with any subsequent reduction which, together with such amount and any other amount or amounts so carried forward, shall aggregate \$0.01 or more.

(iv) *Determination of Consideration.* For purposes of this Section 4(d), the consideration received by the Company for the issue of any Additional Shares of Common Stock shall be computed as follows:

(A) *Cash and Property.* Such consideration shall:

(1) insofar as it consists of cash, be computed at the aggregate amount of cash received by the Company excluding amounts paid or payable for accrued interest or accrued dividends;

(2) insofar as it consists of property other than cash, be computed at the fair value thereof at the time of such issue, as determined in good faith by the Board of Directors; and

(3) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Company for consideration which covers both, be the proportion of such consideration so received, computed as provided in clauses (1) and (2) above, as determined in good faith by the Board of Directors.

(B) *Options and Convertible Securities.* The consideration per share received by the Company for Additional Shares of Common Stock deemed to have been issued pursuant to Section 4(d)(ii)(A), relating to Options and Convertible Securities, shall be determined by dividing:

(1) the total amount, if any, received or receivable by the Company as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such consideration) payable to the Company upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by

(2) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or the conversion or exchange of such Convertible Securities.

(v) *Adjustments for Subdivisions, Combinations or Consolidation of Common Stock.* In the event the outstanding shares of Common Stock shall be subdivided (by stock split, or otherwise), into a greater number of shares of Common Stock, the Series A Conversion Price then in effect shall, concurrently with the effectiveness of such subdivision, be proportionately decreased. In the event the outstanding shares of Common Stock shall be combined or consolidated, by reclassification or otherwise, into a lesser number of shares of Common Stock, the Series A Conversion Price then in effect shall, concurrently with the effectiveness of such combination or consolidation, be proportionately increased.

(vi) *Adjustments for Other Distributions.* In the event the Company at any time or from time to time makes, or fixes a record date for the determination of holders of Common Stock entitled to receive any distribution payable in securities of the Company other than shares of Common Stock and other than as otherwise adjusted in this Section 4(d), then and in each such event provision shall be made so that the holders of Series A Preferred Stock shall receive upon conversion thereof, in addition to the number of shares of Common Stock receivable thereupon, the amount of securities of the Company which they would have received had their Series A Preferred Stock been converted into Common Stock on the date of such event and had they thereafter, during the period from the date of such event to and including the date of conversion, retained such securities receivable by them as aforesaid during such period, subject to all other adjustments called for during such period under this Section 4(d) with respect to the rights of the holders of the Series A Preferred Stock.

(vii) *Adjustments for Reclassification, Exchange and Substitution.* If the Common Stock issuable upon conversion of the Series A Preferred Stock shall be changed into the same or a different number of shares of any other class or classes of stock, whether by capital reorganization, reclassification or otherwise (other than a subdivision or combination of shares provided for above), the Series A Conversion Price then in effect shall, concurrently with the effectiveness of such reorganization or reclassification, be proportionately adjusted such that the Series A Preferred Stock shall be convertible into, in lieu of the number of shares of Common Stock which the holders would otherwise have been entitled to receive, a number of shares of such other class or classes of stock equivalent to the number of shares of Common Stock that would have been subject to receipt by the holders upon conversion of the Series A Preferred Stock immediately before that change.

(viii) *Reorganization, Mergers, Consolidations, or Sales of Assets.* To the extent that Section 3 hereof does not apply or the holders of Series A Preferred Stock waive their rights under Section 3, if at any time or from time to time, there shall be a capital reorganization of the Common Stock (other than a subdivision, combination, reclassification, or exchange of shares provided for elsewhere in this Section 4) or a merger or consolidation of the Company with or into another corporation, or the sale of all or substantially all of the Company's properties and assets to any other person, then, as a part of such reorganization, merger, consolidation, or sale, provision shall be made so that the holders of the Series A Preferred Stock shall thereafter be entitled to receive upon conversion of the Series A Preferred Stock held by them, the number of shares of stock or other securities or property of the Company, or of the successor Company resulting from such merger or consolidation or sale, to which a holder of Common Stock deliverable upon conversion would have been entitled upon such capital reorganization, merger, consolidation, or sale. In any such case, appropriate adjustment shall be made in the application of the provisions of this Section 4 with respect to the rights of the holders of the Series A Preferred Stock after the reorganization, merger, consolidation, or sale to the end that the provisions of this Section 4 (including adjustment of the Series A Conversion Price then in effect and the number of shares purchasable upon conversion of the Series A Preferred Stock) shall be applicable after that event as nearly equivalent as may be practicable.

(e) *No Impairment.* The Company will not, by amendment of its Certificate of Incorporation or through any reorganization, recapitalization, transfer of assets, merger, consolidation, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms to be observed or performed hereunder by the Company but will at all times in good faith assist in the carrying out of all the provisions of this Section 4 and in the taking of all such action as may be necessary or appropriate in order to protect the conversion rights of the holders of the Series A Preferred Stock against impairment.

(f) *Certificate as to Adjustments.* Upon the occurrence of each adjustment or readjustment of any Series A Conversion Price pursuant to this Section 4, the Company at its expense shall promptly compute such adjustment or readjustment in accordance with the terms hereof and furnish to each holder of Series A Preferred Stock a certificate setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or

readjustment is based. The Company shall, upon the written request at any time of any holder of Series A Preferred Stock, furnish or cause to be furnished to such holder a like certificate setting forth (i) such adjustments and readjustments, (ii) the Series A Conversion Price at the time in effect, and (iii) the number of shares of Common Stock and the amount, if any, of other property which at the time would be received upon the conversion of Series A Preferred Stock.

(g) *Notices of Record Date.* In the event that the Company shall propose at any time:

(i) to declare any dividend or distribution upon its Common Stock, whether in cash, property, stock or other securities, whether or not a regular cash dividend and whether or not out of earnings or earned surplus;

(ii) to offer for subscription pro rata to the holders of any class or series of its stock any additional shares of stock of any class or series or any other securities or property, or to receive any other rights;

(iii) to effect any reclassification or recapitalization of its Common Stock outstanding involving a change in the Common Stock; or

(iv) to merge with or into any other corporation, or sell, lease or convey all or substantially all its property or business, or to liquidate, dissolve or wind up;

then, in connection with each such event, this Company shall send to the holders of the Series A Preferred Stock at least 20 days' prior written notice of the date on which a record shall be taken for such dividend, distribution or subscription rights (and specifying the date on which the holders of Common Stock shall be entitled thereto) or for determining rights to vote in respect of the matters referred to in (iii) and (iv) above. With regard to the matters referenced in (iii) and (iv) above, such written notice shall describe the material terms and conditions of the proposed transaction.

Each such written notice shall be given as provided in Section 7 below.

(h) *Reservation of Stock Issuable Upon Conversion.* The Company shall at all times reserve and keep available out of its authorized but unissued shares of Common Stock solely for the purpose of effecting the conversion of the shares of the Series A Preferred Stock, such number of its shares of Common Stock as shall from time to time be sufficient to effect the conversion of all then outstanding shares of the Series A Preferred Stock; and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of the Series A Preferred Stock, the Company will take such corporate action as may, in the opinion of its counsel, be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purpose, including without limitation using its best efforts to obtain the requisite stockholder approval for any necessary amendment to this certificate.

5. **Voting.** The holders of Series A Preferred Stock and the holders of Common Stock shall vote as a single class except as otherwise provided herein in this Section 5.

(a) *Series A Preferred Stock.* Each holder of shares of Series A Preferred Stock shall be entitled to the number of votes equal to the number of shares of Common Stock into which such shares of Series A Preferred Stock held by such holder of Series A Preferred Stock could then be converted. The holders of shares of the Series A Preferred Stock shall be entitled to vote on all matters on which the Common Stock shall be entitled to vote. The holders of the Series A Preferred Stock shall be entitled to notice of any stockholders' meeting in accordance with the Bylaws of the Company (the "Bylaws"). Fractional votes shall not, however, be permitted and any fractional voting rights resulting from the above formula (after aggregating all shares into which shares of Series A Preferred Stock held by each holder could be converted), shall be rounded to the nearest whole number (with one-half being rounded upward).

(b) *Common Stock.* Except as otherwise required by law, each holder of shares of Common Stock shall be entitled to one vote for each share thereof held.

(c) *Election of Directors.* The authorized number of directors shall be as specified in the Bylaws. So long as (i) at least 25% of the Series A Preferred Stock issued on the Series A Original Issue Date (subject to appropriate adjustment for anti-dilution and any subsequent stock splits, stock dividends, recapitalizations and the like) remain outstanding (for this purpose, the shares to be issued at the "Subsequent Closing" shall be deemed to have been issued on the Series A Original Issue Date and shall be deemed outstanding for such a period of time following the "Closing" as provided for the occurrence of the "Subsequent Closing" in that certain Series A Preferred Stock Purchase Agreement executed in connection with this Amended and Restated Certificate, all such terms are as defined in such Series A Stock Purchase Agreement), and (ii) the outstanding shares of Series A Preferred Stock (subject to appropriate adjustment for anti-dilution and any subsequent stock splits, stock dividends, recapitalizations and the like) constitute at least 10% of the Company's total outstanding Voting Shares, the holders of the Series A Preferred Stock, voting together as a single class, shall be entitled to elect two (2) directors. Any vacancies on the Board of Directors shall be filled by vote of the holders of that class or series of stock originally entitled to elect the director whose absence or resignation created such vacancy.

(d) *Amendments and Changes.*

(i) *No Series Voting.* Other than as provided herein or by law, there shall be no voting by Series A Preferred Stock as a separate class.

(ii) *Approval by Class.* So long as (i) at least 25% of the Series A Preferred Stock issued on the Series A Original Issue Date (subject to appropriate adjustment for anti-dilution and any subsequent stock splits, stock dividends, recapitalizations and the like) remain outstanding (for this purpose, the shares to be issued at the "Subsequent Closing" shall be deemed to have been issued on the Series A Original Issue Date and shall be deemed outstanding for such a period of time following the "Closing" as provided for the occurrence of the "Subsequent Closing" in that certain Series A Stock Purchase Agreement executed in connection with this Amended and Restated Certificate, all such terms are as defined in such Series A Stock Purchase Agreement), and (ii) the outstanding shares of Series A Preferred Stock (subject to appropriate adjustment for anti-dilution and any subsequent stock splits, stock dividends, recapitalizations and the like) constitute at least 10% of the Company's total outstanding Voting

Shares, the Company shall not, without first obtaining the approval (by vote or written consent as provided by law) of the holders of the majority of the then outstanding shares of Series A Preferred Stock:

(A) authorize or issue any security (including options, warrants and other rights), other than pursuant to the Company's Stock Option Plan, with rights and privileges senior to or pari passu with those of the holders of the Series A Preferred Stock;

(B) grant or award any registration rights, anti-dilution rights or redemption rights which are pari passu or superior to the rights of the holders of the Series A Preferred Stock;

(C) repurchase or redeem shares of the equity securities of the Company (other than purchases of shares of Common Stock issued to or held by employees, consultants, officers and directors upon termination of their employment or services pursuant to agreements providing for the right of said repurchase or pursuant to the redemption obligations contained herein in this Amended and Restated Certificate of Incorporation);

(D) take any action to alter or change the rights, preferences or privileges of the shares of Series A Preferred Stock so as to affect adversely the shares of such series;

(E) increase the total number of authorized shares of Series A Preferred Stock;

(F) consummate any merger, consolidation, recapitalization, reorganization or similar transaction that results in the holders of the Company's capital stock prior to the transaction owning less than 50% of the voting power of the surviving corporation (and for purposes of this calculation equity securities which any stockholder of the Company owned immediately prior to such merger, consolidation, recapitalization, reorganization or similar transaction as a stockholder of another party to the transaction shall be disregarded), the acquiring corporation or the entity controlling the surviving entity after the transaction;

(G) consummate the sale of more than 50% of the Company's assets or the liquidation or dissolution of the Company;

(H) increase the number of shares available for awards under the Company's Stock Option Plan above 2,000,000 shares (except by stock splits, recapitalizations and the like);

(I) pay dividends on any class of the Company's equity securities;

(J) enter into or amend any agreement or compensation arrangement with any of its officers or directors or any transaction or agreement with any Affiliate of the Company, other than in the ordinary course of the Company's business;

(K) permit any subsidiary of the Company to issue or sell, or obligate itself to issue or sell, any stock of such subsidiary;

(L) amend this Amended and Restated Certificate of Incorporation or the Bylaws to change the authorized number of directors; or

(M) amend this Section 5(d).

6. **Redemption.** For the purposes of this Section 6, the Series A Preferred Stock shall be considered "**Redeemable Stock**" on the fifth anniversary of the Series A Original Issue Date.

(a) **Qualifying Request and Notice.** Upon the written request of any holder of the then outstanding Redeemable Stock at any time on or after the fifth anniversary of the Series A Original Issue Date (a "**Qualifying Request**"), to the extent the shares of Redeemable Stock have not been redeemed or converted prior to such date, to the extent permitted by law, the Company shall redeem the number of shares of such holder's Redeemable Stock specified in the Qualifying Request, provided that such number must be equal to all or a portion not less than one-half of such holder's holdings of Redeemable Stock at the time of such request, in accordance with the terms and conditions set forth below. Upon receipt of a Qualifying Request, the Company shall give, not less than 30 days prior to the Redemption Date (as defined below), written notice (the "**Redemption Notice**") to all holders of the then outstanding Redeemable Stock at the address of each such holder appearing on the books of the Company or given by such holder to the Company for the purpose of notice. Any holder of Redeemable Stock shall be entitled to submit an amount equal to all or any portion not less than one-half of such holder's holdings of Redeemable Stock at such time in response to a Redemption Notice. The failure of any holder of Redeemable Stock to submit shares of Redeemable Stock in response to a Redemption Notice shall not preclude such holder from making a Qualifying Request in the future. Subject to the foregoing, in the event the Company receives a Qualifying Request, the Company shall, to the extent permitted by law, redeem on the date specified in the Redemption Notice (the "**Redemption Date**") (which date shall not be later than 90 days after the receipt of the Qualifying Request) the shares of Redeemable Stock submitted for redemption on such Redemption Date. The Redemption Notice shall further require each holder submitting shares for redemption to surrender to the Company on or before the Redemption Date, at the place designated in the Redemption Notice, such holder's certificate or certificates representing the shares of Redeemable Stock to be redeemed. On or prior to the Redemption Date, each holder of shares of Redeemable Stock submitted for redemption shall surrender the certificate or certificates evidencing such shares to the Company, at the place designated in the Redemption Notice and shall thereupon be entitled to receive payment of the appropriate Redemption Price (as defined below). The Company shall be under no obligation to redeem shares of Redeemable Stock (i) for which no stock certificate or affidavit of lost stock certificate is surrendered on or prior to such Redemption Date, or (ii) to the extent that any such redemption would be in violation of applicable law.

(b) **Redemption Price.** The redemption price for each share of Series A Preferred Stock repurchased shall be equal to the Series A Original Issue Price (as appropriately adjusted for anti-dilution and any subsequent stock splits, stock dividends, recapitalizations and the like)

with respect to such shares of the Redeemable Stock), plus any accrued but unpaid dividends. Such amount shall be paid by the Company to each holder requesting redemption pursuant to Section 6(a) above out of funds legally available therefor, or, to the extent such funds are not legally available to fully redeem each share of Redeemable Stock requested to be redeemed, legally available funds shall be distributed pro rata among the holders requesting redemption (determined on the basis of the number of shares of Redeemable Stock requested to be redeemed) and the Company shall continue to pay the redemption price as funds become legally available therefor until the entire redemption price is paid with respect to each share of Redeemable Stock requested to be redeemed.

(c) *Cessation of Rights.* From and after the applicable Redemption Date, all rights of the holders of shares of the Redeemable Stock submitted for redemption in response to a Redemption Notice (except the right to receive the Redemption Price without interest upon surrender of their certificate or certificates) shall cease with respect to such shares, and such shares shall not thereafter be outstanding for any purpose whatsoever. The shares of Redeemable Stock not submitted for redemption shall remain outstanding and entitled to all rights and preferences provided herein.

7. *Notices.* Any notice, demand, offer, request or other communication required or permitted to be given by the Company to the holders of Series A Preferred Stock pursuant to this Article IV shall be in writing and shall be deemed effectively given the earlier of (i) when received, (ii) when delivered personally, (iii) upon confirmed transmission of delivery by facsimile, (iv) one (1) business day after being deposited with an overnight courier (with receipt of appropriate delivery) service or (v) four (4) days after being deposited in the U.S. mail, First Class with postage prepaid, and addressed to each holder of record at such holder's address appearing on the books of the Company.

8. *Status of Converted Stock.* In case any shares of Series A Preferred Stock shall be converted pursuant to Section 4 hereof, the shares so converted shall be cancelled and may not be reissued.

V

Perpetual Existence. The Company is to have perpetual existence.

VI

Amendment, Repeal of Bylaws. In furtherance and not in limitation of the powers conferred by the laws of the State of Delaware, the Board of Directors of the Company is expressly authorized to adopt, amend or repeal the Bylaws of the Company.

VII

1. *Limitation of Directors' and Officers' Liability.* To the fullest extent permitted by the Delaware General Corporation Law as the same exists or may hereafter be amended, a

director of the Company shall not be personally liable to the Company or its stockholders for monetary damages for breach of fiduciary duty as a director, except to the extent such exception from liability or limitation thereof is not permitted under the Delaware General Corporation Law as the same exists or may hereafter be amended. Neither any amendment nor repeal of this Article, nor the adoption of any provisions of this Amended and Restated Certificate of Incorporation inconsistent with this Article, shall eliminate or reduce the effect of this Article in respect of any matter occurring, or any cause of action, suit or claim that, but for this Article, would accrue or arise, prior to such amendment, repeal or adoption of an inconsistent provision.

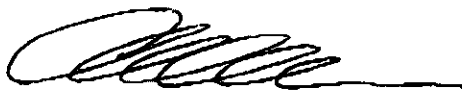
To the fullest extent permitted by applicable law, this Company is authorized to provide indemnification of (and advancement of expenses to) directors, officers, employees and other agents of this Company (and any other persons to which Delaware law permits this Company to provide indemnification), through bylaw provisions, agreements with any such director, officer, employee or other agent or other person, vote of stockholders or disinterested directors, or otherwise, in excess of the indemnification and advancement otherwise permitted by the Delaware General Corporation Law, subject only to limits created by applicable Delaware law (statutory or nonstatutory), with respect to actions for breach of duty to a corporation, its stockholders and others.

2. ***Repeal or Modification.*** Neither any amendment, repeal or modification of the foregoing provisions of this Article VII by the stockholders of this Company, nor the adoption of any provision of this Company's Certificate of Incorporation inconsistent with this Article VII, shall adversely affect any right or protection of an agent of the Company existing at the time of such amendment, repeal or modification.

IN WITNESS WHEREOF, Zyoptics, Inc. has caused this Amended and Restated Certificate of Incorporation to be signed by its President and Chief Executive Officer on this 31st day of August, 2000.

ZYOPTICS, INC.

By



Name: Anthony Mazzarella

Title: President and Chief Executive Officer