

# Delaware

PAGE 1

*The First State*

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED ARE TRUE AND CORRECT COPIES OF ALL DOCUMENTS FILED FROM AND INCLUDING THE RESTATED CERTIFICATE OR A MERGER WITH A RESTATED CERTIFICATE ATTACHED OF "LUNA INNOVATIONS INCORPORATED" AS RECEIVED AND FILED IN THIS OFFICE.

THE FOLLOWING DOCUMENTS HAVE BEEN CERTIFIED:

RESTATED CERTIFICATE, FILED THE SEVENTH DAY OF JUNE, A.D. 2006, AT 12:41 O'CLOCK P.M.

CERTIFICATE OF RENEWAL, FILED THE FOURTEENTH DAY OF MAY, A.D. 2008, AT 12 O'CLOCK P.M.

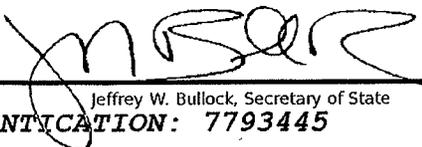
CERTIFICATE OF DESIGNATION, FILED THE TWELFTH DAY OF JANUARY, A.D. 2010, AT 10:05 O'CLOCK P.M.

3636813 8100X

100099709



You may verify this certificate online  
at [corp.delaware.gov/authver.shtml](http://corp.delaware.gov/authver.shtml)

  
Jeffrey W. Bullock, Secretary of State  
AUTHENTICATION: 7793445

DATE: 02-02-10

**AMENDED AND RESTATED CERTIFICATE OF INCORPORATION**  
**OF**  
**LUNA INNOVATIONS INCORPORATED**

Kent A. Murphy hereby certifies that:

**ONE:** The original name of the corporation is Luna Innovations Incorporated and the Certificate of Incorporation of this corporation was first filed with the Secretary of State of the State of Delaware on April 4, 2003 and was amended and restated on August 1, 2003, August 2, 2005, September 30, 2005, December 30, 2005, February 8, 2006, April 4, 2006, May 23, 2006, June 2, 2006 and June 7, 2006.

**TWO:** He is the duly elected and acting President and Chief Executive Officer of Luna Innovations Incorporated, a Delaware corporation.

**THREE:** Pursuant to Sections 242 and 245 of the General Corporation Law of the State of Delaware (the "DGCL"), this Amended and Restated Certificate of Incorporation restates and amends the provisions of the Amended and Restated Certificate of Incorporation of the corporation.

**FOUR:** This Amended and Restated Certificate of Incorporation has been duly approved by the Board of Directors of the corporation in accordance with Sections 242 and 245 of the DGCL.

**FIVE:** This Amended and Restated Certificate of Incorporation has been duly approved by the written consent of the stockholders of the corporation in accordance with Sections 228, 242 and 245 of the DGCL.

**SIX:** The Certificate of Incorporation of this corporation is hereby amended and restated to read as follows:

**ARTICLE I**

The name of the corporation is Luna Innovations Incorporated (the "Corporation").

**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:

100,000,000 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.

5,000,000 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 (authority to do so being hereby expressly vested in the Board of Directors). The Board of Directors 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.

The Board of Directors 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 the Certificate of Incorporation or the resolution of the Board of Directors 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, directors of the Corporation shall be elected to hold office until the expiration of the term for which they are elected and until their successors have been duly elected and qualified; 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.

The directors of the Corporation 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 this Corporation's initial public offering (the "Effective Date"), the term of office of the initial 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.

Notwithstanding the foregoing provisions of this Article, each director shall serve until his or her successor is duly elected and qualified or until his or her death, resignation, or removal. 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 of Directors shall shorten the term of any incumbent director.

Any director may be removed from office by the stockholders of the Corporation only for cause. Vacancies occurring on the Board of Directors 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, although less than a quorum, at any meeting of the Board of Directors. A person so elected by the Board of Directors 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 any of the Bylaws of the Corporation. Any adoption, amendment or repeal of the Bylaws of the Corporation by the Board of Directors shall require the approval of a majority of the Board of Directors. The stockholders shall also have power to adopt, amend or repeal the Bylaws of the Corporation; provided, however, that, in addition to any vote of the holders of any class or series of stock of the Corporation required by law or by this Certificate of Incorporation, the affirmative vote of the holders of at least two-thirds (66 $\frac{2}{3}$ %) of the voting power of the then outstanding shares of voting stock entitled to vote generally in the election of directors, voting together as a single class, shall be required to adopt, amend or repeal all or any portion of Article II, Section 3.2, Section 3.3, Section 3.4, Section 3.14, Article VI or Article IX of 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.

Advance notice of stockholder nominations for the election of directors and of business to be brought by stockholders before any meeting of the stockholders of the Corporation shall be given in the manner provided in the Bylaws of the Corporation.

Special meetings of stockholders of the Corporation may be called only by the Chairman of the Board of Directors, the Chief Executive Officer of the Corporation, the President of the Corporation (if there is no Chief Executive Officer), or the Board of Directors acting pursuant to a resolution adopted by a majority of the Board of Directors and any power of stockholders to call a special meeting is specifically denied. Only such business shall be considered at a special meeting of stockholders as shall have been stated in the notice for such meeting.

### ARTICLE VIII

To the fullest extent permitted by the DGCL, as it presently exists or may hereafter be amended from time to time, a director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. If the DGCL is amended to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL, as so amended.

The Corporation shall indemnify and hold harmless, to the fullest extent permitted by the DGCL, as it presently exists or may hereafter be amended from time to time, 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.

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 from time to time, 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 VIII, nor the adoption of any provision of this Corporation's Certificate of Incorporation inconsistent with this Article VIII, shall eliminate or

reduce the effect of this Article VIII in respect of any matter occurring, or any cause of action, suit or claim accruing or arising or that, but for this Article VIII, would accrue or arise, prior to such amendment, repeal or adoption of an inconsistent provision.

#### ARTICLE IX

Except as provided in Article VIII 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 the laws of the State of Delaware and all rights conferred upon stockholders are granted herein subject to this reservation; provided, however, that, notwithstanding any other provision of this Certificate of Incorporation, or any provision of law that might otherwise permit a lesser vote or no vote, but in addition to any vote of the holders of any class or series of the stock of this Corporation required by law or by this Certificate of Incorporation, the affirmative vote of the holders of at least two-thirds (66⅔%) of the voting power of the then outstanding shares of voting stock entitled to vote generally in the election of directors, voting together as a single class, shall be required to amend or repeal this Article IX, Article V, Article VI, Article VII or Article VIII.

\* \* \*

**IN WITNESS WHEREOF, LUNA INNOVATIONS INCORPORATED** has caused this Amended and Restated Certificate of Incorporation to be signed by its President and Chief Executive Officer this 7<sup>th</sup> day of June, 2006.

**LUNA INNOVATIONS INCORPORATED**

By: /s/ Kent A. Murphy  
Kent A. Murphy  
President and Chief Executive Officer

State of Delaware  
Secretary of State  
Division of Corporations  
Delivered 10:12 PM 01/12/2010  
FILED 10:05 PM 01/12/2010  
SRV 100032961 - 3636813 FILE

**LUNA INNOVATIONS INCORPORATED**

---

**CERTIFICATE OF DESIGNATIONS  
OF  
SERIES A CONVERTIBLE PREFERRED STOCK**

(Pursuant to Section 151 of the Delaware General Corporation Law)

---

Luna Innovations Incorporated, a Delaware corporation (the "**Corporation**"), in accordance with the provisions of Section 103 of the Delaware General Corporation Law (the "**DGCL**") does hereby certify that, in accordance with Section 141(c) of the DGCL, the following resolution was duly adopted by the Board of Directors of the Corporation as of January 11, 2010:

RESOLVED, that the Board of Directors of the Corporation pursuant to authority expressly vested in it by the provisions of the Amended and Restated Certificate of Incorporation of the Corporation, hereby authorizes the issuance of a series of Preferred Stock designated as the Series A Convertible Preferred Stock, par value \$0.001 per share, of the Corporation and hereby fixes the designation, number of shares, powers, preferences, rights, qualifications, limitations and restrictions thereof (in addition to any provisions set forth in the Certificate of Incorporation of the Corporation which are applicable to the Preferred Stock of all classes and series) as follows:

**SERIES A CONVERTIBLE PREFERRED STOCK**

1. Designation, Amount and Par Value. The following series of Preferred Stock shall be designated as the Corporation's Series A Convertible Preferred Stock (the "**Series A Preferred Stock**"), and the number of shares so designated shall be 1,321,514. Each share of Series A Preferred Stock shall have a par value of \$0.001 per share. The "**Stated Value**" for each share of Series A Preferred Stock shall equal \$4.69159.

2. Definitions. In addition to the terms defined elsewhere in this Certificate of Designations the following terms have the meanings indicated:

"**Business Day**" means any day other than Saturday, Sunday, any day which shall be a federal legal holiday in the United States or any day on which banking institutions in The State of New York are authorized or required by law or other governmental action to close.

"**Calendar Quarter**" means each of the following periods: the period beginning on and including January 1 and ending on and including March 31; the period beginning on and including April 1 and ending on and including June 30; the period beginning on and including July 1 and ending on and including September 30; and the period beginning on and including October 1 and ending on and including December 31.

“**Closing Price**” means the last reported publicly traded price of the Corporation’s Common Stock at the closing of trading during a Trading Day on the Company’s applicable Trading Market.

“**Common Share**” means one share of the Common Stock.

“**Common Stock**” means the common stock of the Corporation, par value \$0.001 per share, and any securities into which such common stock may hereafter be reclassified.

“**Conversion Notice**” has the meaning set forth in Section 7.

“**Conversion Price**” means initially \$4.69159, subject to adjustment in accordance with Section 9.

“**Conversion Rate**” means, for each share of Series A Preferred Stock, the result of the quotient of (i) the Stated Value, divided by (ii) the Conversion Price.

“**Dividends**” has the meaning set forth in Section 3.

“**Dividend Date**” has the meaning set forth in Section 3.

“**Dividend Rate**” has the meaning set forth in Section 3.

“**Dividend Shares**” has the meaning set forth in Section 3.

“**Equity Conditions**” means, with respect to a specified issuance of Common Stock, that each of the following conditions is satisfied: (i) the number of authorized but unissued and otherwise unreserved shares of Common Stock is sufficient for such issuance; (ii) the Common Stock is listed or quoted (and is not suspended from trading) on the Trading Market and such shares of Common Stock are approved for listing upon issuance; and (iii) the conversion of the Series A Preferred Stock is permitted by the Trading Market and all other applicable laws, rules and regulations.

“**Exchange Act**” means the Securities Exchange Act of 1934, as amended.

“**Fundamental Transaction**” means the occurrence of any of the following in one or a series of related transactions: (i) a merger or consolidation of the Corporation or any Subsidiary or a sale of all or substantially all of the assets of the Corporation in one or a series of related transactions, unless following such transaction or series of transactions, the holders of the Corporation’s securities prior to the first such transaction continue to hold at least half of the voting rights or voting equity interests in of the surviving entity or acquirer of such assets; or (ii) a recapitalization, reorganization or other transaction involving the Corporation or any Subsidiary that constitutes or results in a transfer of more than one half of the voting rights or voting equity interests in the Corporation.

“**Holder**” means any holder of Series A Preferred Stock.

**“Junior Securities”** means the Common Stock and all other equity or equity equivalent securities of the Corporation.

**“Liquidation Event”** means (i) any liquidation, dissolution or winding up of the Corporation, either voluntary or involuntary, or (ii) the closing of a Fundamental Transaction.

**“Optional Conversion”** has the meaning set forth in Section 7.

**“Original Issue Date”** means the date of the first issuance of any shares of the Series A Preferred Stock, regardless of the number of transfers of any particular shares of Series A Preferred Stock and regardless of the number of certificates that may be issued to evidence shares of Series A Preferred Stock.

**“Person”** means any individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

**“Purchase Agreement”** means the Securities Purchase and Exchange Agreement, dated as of January 12, 2010, between the Corporation and the purchaser of the Series A Preferred Stock, as may be amended from time to time.

**“Registration Rights”** means the registration rights set forth in the Registration Rights Agreement.

**“Registration Rights Agreement”** means the Amended and Restated Investor Rights Agreement dated as of the Original Issue Date, by and among the Corporation, certain stockholders of the Corporation and the purchaser of the Series A Preferred Stock, as may be amended from time to time.

**“Required Holders”** means the Holders of shares of Series A Preferred Stock representing at least a majority of the aggregate shares of Series A Preferred Stock then outstanding.

**“Rule 144”** means Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended from time to time, or any similar rule or regulation hereafter adopted by the Securities and Exchange Commission having substantially the same effect as such Rule.

**“Series A Preferred Stock”** has the meaning set forth in Section 1.

**“Securities”** means, collectively, the Series A Preferred Stock and the Underlying Shares issued or issuable pursuant to the Purchase Agreement.

**“Securities Act”** means the Securities Act of 1933, as amended.

**“Stockholder Approval”** means the approval by the holders of a majority of the Company’s Common Stock of the issuance of all the Securities as contemplated by the Transaction Documents.

**“Subsidiary”** means any “significant subsidiary” of the Corporation as defined in Rule 1-02(w) of Regulation S-X promulgated by the Commission.

**“Trading Day”** means (i) a day on which the Common Stock is traded on a Trading Market (other than the OTC Bulletin Board), or (ii) if the Common Stock is not listed or quoted on a Trading Market (other than the OTC Bulletin Board), a day on which the Common Stock is traded in the over-the-counter market, as reported by the OTC Bulletin Board, or (iii) if the Common Stock is not listed or quoted on any Trading Market, a day on which the Common Stock is quoted in the over-the-counter market as reported by the Pink Sheets LLC (or any similar organization or agency succeeding to its functions of reporting prices); provided, that in the event that the Common Stock is not listed or quoted as set forth in (i), (ii) and (iii) hereof, then Trading Day shall mean a Business Day.

**“Trading Market”** means whichever of the New York Stock Exchange, the American Stock Exchange, the NASDAQ Global Select Market, the NASDAQ Global Market, the NASDAQ Capital Market or OTC Bulletin Board on which the Common Stock is listed or quoted for trading on the date in question.

**“Transaction Documents”** means the Purchase Agreement, the Registration Rights Agreement, the Warrants, the Certificate of Designations, and all schedules and exhibits attached hereto and any other documents or agreements executed or delivered in connection with the transactions contemplated under the Purchase Agreement and thereunder.

**“Underlying Shares”** means the shares of Common Stock issuable upon conversion of the shares of Series A Preferred Stock and in satisfaction of any other obligation of the Corporation to issue shares of Common Stock pursuant to the Transaction Documents.

**“Warrants”** means the warrants issued to the Holder pursuant to the Purchase Agreement.

3. **Dividends.** The Series A Preferred Stock shall accrue cumulative dividends (**“Dividends”**) for each share of Series A Preferred Stock at the rate of six percent (6%) of the Stated Value per annum (the **“Dividend Rate”**). Dividends on the shares of Series A Preferred Stock shall commence accruing on the Original Issue Date and shall be computed on the basis of a 360-day year consisting of twelve 30-day months and shall be payable in arrears for each Calendar Quarter on the first day of the succeeding Calendar Quarter during the period beginning on the Original Issue Date (each, a **“Dividend Date”**) with the first Dividend Date being April 1, 2010. Dividends accrued during a partial Calendar Quarter shall be appropriately pro rated by the actual number of days such Dividends accrued during such Calendar Quarter. Dividends shall not be payable in cash but shall be payable only in fully paid and non-assessable shares of

Common Stock ("**Dividend Shares**"), unless a Liquidation Event occurs, in which case, the Dividend Shares shall be payable in cash as provided in Section 4 herein. The number of Dividend Shares payable in respect of each share of Series A Preferred Stock on any Dividend Date shall be equal to the quotient obtained by dividing (i) the cumulative aggregate balance of accrued but unpaid Dividends on such share of Series A Preferred Stock as of such Dividend Date (the "**Dividend Balance**"), by (ii) the Conversion Price. The accrual of Dividends shall terminate ("**Dividend Termination**") on the earlier of the conversion of the Series A Preferred Stock into Common Stock or at any time after December 31, 2012, provided that: (a) the Closing Price of the Company's Common Stock at the time of the proposed termination has been greater than one hundred ten percent (110%) of the Conversion Price, subject to adjustment pursuant to Section 9, for the immediately preceding 30 consecutive Trading Days (the "**Dividend Termination Event**"), and (b) the Company has delivered written notice of the Dividend Termination Event ("**Dividend Termination Notice**") to Holder. Upon satisfaction of the conditions for a Dividend Termination Event, Dividend Termination shall occur on the last day of the month in which the Dividend Termination Notice is provided. In connection with the issuance of Dividend Shares on a Dividend Date, the Corporation shall upon written request of the Holder, (i) provided the Corporation's designated transfer agent (the "**Transfer Agent**") is participating in The Depository Trust Company ("**DTC**") Fast Automated Securities Transfer Program, credit such aggregate number of shares of Common Stock to which the Holder shall be entitled to the Holder's or its designee's balance account with DTC through its Deposit Withdrawal Agent Commission system, within two (2) Business Days of the applicable Dividend Date, or (Y) if the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program, issue and deliver to such Holder, a certificate, registered in the name of the Holder or its designee, for the number of shares of Common Stock to which the Holder shall be entitled within three (3) Business Days of the applicable Dividend Date. The Dividend Balance shall be appropriately reduced by the issuance of any Dividend Shares to the Holder. In addition to payment of the foregoing Dividends, in the event dividends are declared and paid on the Common Stock (or any other class of capital stock of the Corporation), an equivalent dividend shall be paid on each share of Series A Preferred Stock.

4. Registration of Issuance and Ownership of Series A Preferred Stock. The Corporation shall register the issuance and ownership of shares of the Series A Preferred Stock, upon records to be maintained by the Corporation or its Transfer Agent for that purpose (the "**Series A Preferred Stock Register**"), in the name of the record Holders thereof from time to time. The Corporation may deem and treat the registered Holder of shares of Series A Preferred Stock as the absolute owner thereof for the purpose of any conversion hereof or any distribution to such Holder, and for all other purposes, absent actual notice to the contrary.

5. Registration of Transfers. The Corporation shall register the transfer of any shares of Series A Preferred Stock in the Series A Preferred Stock Register, upon surrender of certificates evidencing such Shares to the Corporation at its address specified herein. Upon any such registration or transfer, a new certificate evidencing the shares of Series A Preferred Stock so transferred shall be issued to the transferee and a new certificate evidencing the remaining portion of the shares not so transferred, if any, shall be issued to the transferring Holder.

6. Liquidation.

(a) In the event of any Liquidation Event, the Holders of 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 Corporation to the holders of Junior Securities by reason of their ownership thereof, an amount per share in cash equal to the sum of (i) Stated Value for each share of Series A Preferred Stock then held by them, plus (ii) the aggregate dollar amount of all accrued but unpaid Dividends on such Series A Preferred Stock as of the date of such event (such sum, the "**Series A Stock Liquidation Preference**"). If, upon the occurrence of a Liquidation Event, the assets and funds thus distributed among the holders of the Series A Preferred Stock shall be insufficient to permit the payment to such Holders of the full Series A Stock Liquidation Preference, then the Holders of the Series A Preferred Stock shall share ratably in any such distribution of the assets and funds of the Corporation in proportion to the aggregate Series A Stock Liquidation Preference that would otherwise be payable to each of such Holders.

(b) After the Holders have been paid the full Series A Stock Liquidation Preference to which they are entitled, the Holders will have no right or claim to any of the assets or funds of the Corporation, and any remaining assets and funds shall be shares ratably among the holders of Common Stock.

(c) The Corporation shall provide written notice of any Liquidation Event to each record Holder not less than forty-five (45) days prior to the payment date or effective date thereof, provided that such information shall be made known to the public prior to or in connection with such notice being provided to the Holders.

(d) In the event that, immediately prior to the closing of a Liquidation Event the cash distributions required by Section 6(a) have not been made, the Corporation shall forthwith either: (i) cause such closing to be postponed until such time as such cash distributions have been made, or (ii) cancel such transaction, in which event the rights, preferences and privileges of the holders of the Series A Preferred Stock shall revert to and be the same as such rights, preferences and privileges existing immediately prior to the date of the first notice by the Corporation delivered pursuant to Section 6(c).

7. Conversion. At the option of any Holder, each share of Series A Preferred Stock held by such Holder may be converted into that number of shares of Common Stock equal to the Conversion Rate. A Holder may convert shares of Series A Preferred Stock into Common Stock pursuant to this paragraph at any time and from time to time after the Original Issue Date, by delivering to the Corporation a conversion notice (the "**Conversion Notice**"), in the form attached hereto as Exhibit A, appropriately completed and duly signed, and the date any such Conversion Notice is delivered to the Corporation (as determined in accordance with the notice provisions hereof) is a "**Conversion Date**."

8. Mechanics of Conversion.

(a) The number of Underlying Shares issuable upon any conversion of each share of Series A Preferred Stock shall equal the Conversion Rate.

(b) Upon conversion of any shares of Series A Preferred Stock, the Corporation shall promptly (but in no event later than three (3) Trading Days after the Conversion Date) issue or cause to be issued and cause to be delivered to or upon the written order of the Holder and in such name or names as the Holder may designate a certificate for the Underlying Shares issuable upon such conversion. The Holder agrees to the imprinting of a restrictive legend on any such certificate evidencing any of the Underlying Shares, until such time as the Underlying Shares are no longer required to contain such legend or any other legend. Certificates evidencing the Underlying Shares shall not be required to contain such legend or any other legend (i) while a registration statement covering the resale of the Underlying Shares is effective under the Securities Act, (ii) following any sale of such Underlying Shares pursuant to Rule 144 if the Holder Provides the Corporation with a legal opinion reasonably acceptable to the Corporation to the effect that the Underlying Shares can be sold under Rule 144, (iii) if the Underlying Shares are eligible for sale under Rule 144 without any volume limitation, or (iv) if the Holder provides the Corporation with a legal opinion reasonably acceptable to the Corporation to the effect that the legend is not required under applicable requirements of the Securities Act (including controlling judicial interpretations and pronouncements issued by the Staff of the SEC). The Holder, or any Person so designated by the Holder to receive Underlying Shares, shall be deemed to have become holder of record of such Underlying Shares as of the Conversion Date. If the shares are then not required to bear a restrictive legend, the Corporation shall, upon request of the Holder, deliver Underlying Shares hereunder electronically through The Depository Trust Corporation ("DTC") or another established clearing corporation performing similar functions, and shall credit the number of shares of Common Stock to which the Holder shall be entitled to the Holder's or its designee's balance account with DTC through its Deposit Withdrawal Agent Commission System.

(c) A Holder shall deliver the original certificate(s) evidencing the Series A Preferred Stock being converted in connection with the conversion of such Series A Preferred Stock. Upon surrender of a certificate following one or more partial conversions, the Corporation shall promptly deliver to the Holder a new certificate representing the remaining shares of Series A Preferred Stock.

(d) The Corporation's obligations to issue and deliver Underlying Shares upon conversion of Series A Preferred Stock in accordance with the terms hereof are absolute and unconditional, irrespective of any action or inaction by any Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by any Holder or any other Person of any obligation to the Corporation or any violation or alleged violation of law by any Holder or any other Person, and irrespective of any other circumstance which might otherwise limit such obligation of the Corporation to any Holder in connection with the issuance of such Underlying Shares.

9. Certain Adjustments. The Conversion Price is subject to adjustment from time to time as set forth in this Section 9.

(a) Stock Dividends and Splits. If the Corporation, at any time while Series A Preferred Stock is outstanding, (i) pays a stock dividend on its Common Stock or otherwise makes a distribution on any class of capital stock that is payable in shares of Common Stock

(other than Dividends paid pursuant to Section 3 in respect of the Series A Preferred Stock); (ii) subdivides outstanding shares of Common Stock into a larger number of shares, or (iii) combines outstanding shares of Common Stock into a smaller number of shares, then in each such case the applicable Conversion Price for Series A Preferred Stock shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event. Any adjustment made pursuant to clause (i) of this paragraph shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution, and any adjustment pursuant to clause (ii) or (iii) of this paragraph shall become effective immediately after the effective date of such subdivision or combination.

(b) Pro Rata Distributions. If the Corporation, at any time while Series A Preferred Stock is outstanding, distributes or pays as a dividend to holders of Common Stock (i) evidences of its indebtedness, (ii) any security (other than a distribution of Common Stock covered by the preceding paragraph), (iii) rights or warrants to subscribe for or purchase any security, or (iv) any other asset (including, without limitation, cash) (in each case, "**Distributed Property**"), then in each such case the Corporation shall simultaneously deliver to each Holder the Distributed Property that each such Holder would have been entitled to receive in respect the number of Underlying Shares then issuable pursuant to Section 7 above had the Holder been the record holder of such Underlying Shares immediately prior to the applicable record or payment date.

(c) Fundamental Transactions. If the Corporation, at any time while Series A Preferred Stock is outstanding, effects any Fundamental Transaction, then upon any subsequent conversion of Series A Preferred Stock, each Holder shall have the right to receive, for each Underlying Share that would have been issuable upon such conversion absent such Fundamental Transaction, the same kind and amount of securities, cash or property as it could have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of one share of Common Stock (the "**Alternate Consideration**"). For purposes of any such conversion, the determination of the applicable Conversion Price for the Series A Preferred Stock shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Corporation shall apportion the Conversion Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then each Holder shall be given the same choice as to the Alternate Consideration it receives upon any conversion of Series A Preferred Stock following such Fundamental Transaction. To the extent necessary to effectuate the foregoing provisions, any successor to the Corporation or surviving entity in such Fundamental Transaction shall issue to the Holder a new series of preferred stock consistent with the foregoing provisions and evidencing the Holders' right to convert such preferred stock into Alternate Consideration. The terms of any agreement pursuant to which a Fundamental Transaction is effected shall include terms requiring any such successor or surviving entity to comply with the provisions of this paragraph (c) and insuring that the Series A Preferred Stock (or any such replacement security)

will be similarly adjusted upon any subsequent transaction analogous to a Fundamental Transaction.

(d) Calculations. All calculations under this Section 9 shall be made to the nearest cent or the nearest 1/100th of a share, as applicable. The number of shares of Common Stock outstanding at any given time shall not include shares owned or held by or for the account of the Corporation, and the disposition of any such shares shall be considered an issue or sale of Common Stock.

(e) Notice of Adjustments. Upon the occurrence of each adjustment pursuant to this Section 9, the Corporation at its expense will promptly compute such adjustment in accordance with the terms hereof and prepare a certificate describing in reasonable detail such adjustment and the transactions giving rise thereto, including all facts upon which such adjustment is based. Upon written request, the Corporation will promptly deliver a copy of each such certificate to each Holder and to the Corporation's Transfer Agent.

(f) Notice of Corporation Events. If the Corporation (i) declares and pays a dividend (other than a Dividend pursuant to Section 3 above) or effects any other distribution of cash, securities or other property in respect of its Common Stock, including without limitation any granting of rights or warrants to subscribe for or purchase any capital stock of the Corporation or any Subsidiary, (ii) authorizes or approves, enters into any agreement contemplating or solicits stockholder approval for any Fundamental Transaction or (iii) authorizes the voluntary dissolution, liquidation or winding up of the affairs of the Corporation, then the Corporation shall deliver to each Holder a notice describing the material terms and conditions of such transaction, at least twenty (20) calendar days prior to the applicable record or effective date on which a Person would need to hold Common Stock in order to participate in or vote with respect to such transaction.

10. Voting; Protective Provisions. Except as otherwise provided herein or as required by applicable law, the Holders of the Series A Preferred Stock shall have no voting rights. Notwithstanding anything of the foregoing to the contrary in this Section 10, the consent of the holders of a majority of the outstanding shares of Series A Preferred Stock shall be required for any action which: (i) changes the rights, preferences or privileges of the Series A Preferred Stock, or amends, alters or repeals any provision of the Corporation's Amended and Restated Certificate of Incorporation or the By-Laws of the Company, including by merger or consolidation, in a manner that adversely affects the rights, preferences or privileges of the Series A Preferred Stock; (ii) increases or decreases the authorized number of shares of any class or series of capital stock including, without limitation, the Series A Preferred Stock; or (iii) creates or issues any class or series of capital stock (including any security convertible into or exercisable for any capital stock) which ranks superior to or *pari passu* with the Series A Preferred Stock in any respect.

11. Priority. The Series A Preferred Stock, whether now or hereafter issued, shall, with respect to dividend rights (other than the right to receive additional shares of Series A Preferred Stock pursuant to Section 14) and rights on liquidation, winding up or dissolution, whether voluntary or involuntary, rank senior to the Common Stock of the Corporation and to any other series of Preferred Stock established hereafter by the Board of Directors the terms of

which shall specifically provide that such series shall rank junior to the Series A Preferred Stock with respect to dividend rights and rights on liquidation, winding up or dissolution. The Corporation shall not, without the prior approval of Holders of at least a majority of the shares of Series A Preferred Stock then outstanding, voting as a separate class, issue any additional shares of the Series A Preferred Stock, or create any other class or series of capital stock that ranks senior to or on a parity with the Series A Preferred Stock.

12. Charges, Taxes and Expenses. Issuance of certificates for shares of Series A Preferred Stock and for Underlying Shares issued on conversion of (or otherwise in respect of) the Series A Preferred Stock shall be made without charge to the Holders for any issue or transfer tax, withholding tax, transfer agent fee or other incidental tax or expense in respect of the issuance of such certificates, all of which taxes and expenses shall be paid by the Corporation. The Holder shall be responsible for all other tax liability that may arise as a result of holding or transferring the Series A Preferred Stock or receiving Underlying Shares in respect of the Series A Preferred Stock.

13. Replacement Certificates. If any certificate evidencing Series A Preferred Stock or Underlying Shares is mutilated, lost, stolen or destroyed, or a Holder fails to deliver such certificate as may otherwise be provided herein, the Corporation shall issue or cause to be issued in exchange and substitution for and upon cancellation thereof, or in lieu of and substitution for such certificate, a new certificate, but only upon receipt of evidence reasonably satisfactory to the Corporation of such loss, theft or destruction (in such case) and, in each case, customary and reasonable indemnity, if requested. Applicants for a new certificate under such circumstances shall also comply with such other reasonable regulations and procedures and pay such other reasonable third-party costs as the Corporation may prescribe.

14. Reservation of Underlying Shares. The Corporation covenants that it shall at all times reserve and keep available out of the aggregate of its authorized but unissued and otherwise unreserved Common Stock, solely for the purpose of enabling it to issue Underlying Shares as required hereunder, the number of Underlying Shares which are then issuable and deliverable upon the conversion of (and otherwise in respect of) all outstanding Series A Preferred Stock (taking into account the adjustments of Section 9), free from preemptive rights or any other contingent purchase rights of persons other than the Holder. The Corporation covenants that all Underlying Shares so issuable and deliverable shall, upon issuance in accordance with the terms hereof, be duly and validly authorized, issued and fully paid and nonassessable. The Corporation covenants that it shall satisfy subparagraph (i) of the Equity Conditions and shall use its best efforts to satisfy each of subparagraphs (ii) and (iii) of the Equity Conditions. The Corporation has reserved from its duly authorized capital stock the maximum number of shares of Common Stock issuable upon conversion of the Series A Preferred Stock.

15. Fractional Shares. The Corporation shall not be required to issue or cause to be issued fractional Common Shares on conversion of Series A Preferred Stock or in payment of any Dividend. If any fraction of a Common Share would, except for the provisions of this Section, be issuable upon conversion of Series A Preferred Stock or in payment of any Dividend, the number of Common Shares to be issued will be rounded up to the nearest whole share.

16. Notices. Any and all notices or other communications or deliveries hereunder (including without limitation any Conversion Notice) shall be in writing and shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number specified in this Section prior to 4:30 p.m. (New York City time) on a Trading Day, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number specified in this Section on a day that is not a Trading Day or later than 4:30 p.m. (New York City time) on any Trading Day, (iii) the Trading Day following the date of mailing, if sent by nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given. The addresses for such communications shall be: (i) if to the Corporation, to 1 Riverside Circle, Suite 400, Roanoke, VA 24016, Attention: Chief Financial Officer, or (ii) if to a Holder, to the address or facsimile number appearing on the Corporation's stockholder records or such other address or facsimile number as such Holder may provide to the Corporation in accordance with this Section.

17. Miscellaneous.

(a) The headings herein are for convenience only, do not constitute a part of this Certificate of Designations and shall not be deemed to limit or affect any of the provisions hereof.

(b) No provision of this Certificate of Designations may be amended, except in a written instrument signed by the Corporation and Holders of at least a majority of the shares of Series A Preferred Stock then outstanding. Any of the rights of the Holders of Series A Preferred Stock set forth herein, including any Equity Conditions or any other similar conditions for the Holders' benefit, may be waived by the affirmative vote of Holders of at least a majority of the shares of Series A Preferred Stock then outstanding. No waiver of any default with respect to any provision, condition or requirement of this Certificate of Designations shall be deemed to be a continuing waiver in the future or a waiver of any subsequent default or a waiver of any other provision, condition or requirement hereof, nor shall any delay or omission of either party to exercise any right hereunder in any manner impair the exercise of any such right.

**IN WITNESS WHEREOF**, Luna Innovations Incorporated has caused this Certificate of Designations to be duly executed as of this 12<sup>th</sup> day of January, 2010.

LUNA INNOVATIONS INCORPORATED

By: /s/ Kent A. Murphy  
Name: Kent A. Murphy  
Title: Chief Executive Officer

**EXHIBIT A**

**FORM OF CONVERSION NOTICE**

(To be executed by the registered Holder in order to convert shares of Series A Preferred Stock)

The undersigned hereby elects to convert the number of shares of Series A Convertible Preferred Stock indicated below into shares of common stock, par value \$0.001 per share (the "Common Stock"), of Luna Innovations Incorporated, a Delaware corporation (the "Corporation"), according to the conditions hereof, as of the date written below.

\_\_\_\_\_  
Date to Effect Conversion

\_\_\_\_\_  
Number of shares of Series A Preferred Stock owned prior to Conversion

\_\_\_\_\_  
Number of shares of Series A Preferred Stock to be Converted

\_\_\_\_\_  
Stated Value of shares of Series A Preferred Stock to be Converted

\_\_\_\_\_  
Number of shares of Common Stock to be Issued

\_\_\_\_\_  
Applicable Conversion Price

\_\_\_\_\_  
Number of shares of Series A Preferred Stock subsequent to Conversion

\_\_\_\_\_  
Name of Holder

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_