

CERTIFICATE OF INCORPORATION

OF

Advanced Electron Beams, Inc.

FIRST: The name of the corporation (the "Corporation") is Advanced Electron Beams, Inc.

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

THIRD: The nature of the business or purposes to be conducted or promoted by the Corporation is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of the State of Delaware.

FOURTH: The total number of shares of capital stock that the Corporation has the authority to issue shall be 16,000,000 shares of common stock ("Common Stock"), each of which shall have a par value of \$.00025, amounting to an aggregate par value of \$4,000.

FIFTH: In furtherance of and not in limitation of powers conferred by statute, it is further provided that:

(a) Subject to the limitations and exceptions, if any, contained in the by-laws of the Corporation, such by-laws may be adopted, amended or repealed by the board of directors of the Corporation; and

(b) Elections of directors need not be by written ballot unless, and only to the extent, otherwise provided in the by-laws of the Corporation; and

(c) Subject to any applicable requirements of law, the books of the Corporation may be kept outside the State of Delaware at such location or locations as may be designated by the board of directors of the Corporation or in the by-laws of the Corporation; and

(d) Except as provided to the contrary in the provisions establishing a class of stock, the number of authorized shares of such class may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the stock of the Corporation entitled to vote, voting as a single class.

SIXTH: The Corporation shall indemnify each person who at any time is, or shall have been, a director or officer of the Corporation and was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he or she is or was a director or officer of the Corporation, or is or was serving at the request of the Corporation as a director, officer, employee, or agent of another corporation, partnership, joint venture, trust or other

enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement incurred in connection with any such action, suit or proceeding, to the maximum extent permitted by the General Corporation Law of the State of Delaware, as the same exists or may hereafter be amended. The foregoing right of indemnification shall in no way be exclusive of any other rights of indemnification to which any such director or officer may be entitled, under any by-law, agreement, vote of directors or stockholders or otherwise. No amendment to or repeal of the provisions of this Article SIXTH shall deprive a director or officer of the benefit hereof with respect to any act or failure to act occurring prior to such amendment or repeal. In furtherance of and not in limitation of the foregoing, the Corporation shall advance expenses, including attorneys' fees, incurred by an officer or director of the Corporation in defending any civil, criminal, administrative or investigative action, suit or proceeding in advance of the final disposition of such action, suit or proceeding upon receipt of an undertaking by or on behalf of such director or officer to repay such advances if it shall be ultimately determined that he is not entitled to be indemnified by the Corporation. Notwithstanding the foregoing, the Corporation shall not be required to indemnify or advance expenses to any person in connection with any action, suit, proceeding, claim or counterclaim initiated by or on behalf of such person.

SEVENTH: Whenever a compromise or arrangement is proposed between this Corporation and its creditors or any class of them or between this Corporation and its stockholders or any class of them, any court of equitable jurisdiction within the State of Delaware may, on the application in a summary way of this Corporation or of any creditor or stockholder thereof or on the application of any receiver or receivers appointed for this Corporation under Section 291 of Title 8 of the Delaware Code or on the application of trustees in dissolution or of any receiver or receivers appointed for this Corporation under Section 279 of Title 8 of the Delaware Code order a meeting of the creditors or class of creditors, and/or of the stockholders or class of stockholders of this Corporation, as the case may be, to be summoned in such manner as said court directs. If a majority in number representing three-fourths in value of the creditors or class of creditors, and/or of the stockholders or class of stockholders of this Corporation, as the case may be, agree to any compromise or arrangement and to any reorganization of this Corporation as a consequence of such compromise or arrangement, the said compromise or arrangement and the said reorganization shall, if sanctioned by the court to which the said application has been made, be binding on all the creditors or class of creditors, and/or on all the stockholders or class of stockholders, of this Corporation, as the case may be, and also on this Corporation.

EIGHTH: No director of the Corporation shall be personally liable to the Corporation or to any of its stockholders for monetary damages arising out of such director's breach of fiduciary duty as a director of the Corporation, except to the extent that the elimination or limitation of such liability is not permitted by the General Corporation Law of the State of Delaware, as the same exists or may hereafter be amended. No amendment to or repeal of the provisions of this Article EIGHTH shall deprive any director of the Corporation of the benefit hereof with respect to any act or failure to act of such director occurring prior to such amendment or repeal.

NINTH: 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 General Corporation Law of the State of Delaware and this Certificate of Incorporation, and all rights conferred upon stockholders herein are granted subject to this reservation.

TENTH: The name of the sole incorporator of the Corporation is Mark A. Barnett, and his mailing address is c/o Foley Hoag LLP, Seaport World Trade Center West, 155 Seaport Boulevard, Boston, Massachusetts 02210.

IN WITNESS WHEREOF, I have hereunto set my hand as of September 1, 2005.


Mark A. Barnett, Sole Incorporator