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Please record the attached original document(s) or copy(ies).

Submission Type

☒ New

12-30-03

☐ Resubmission (Non-Recordation)
Document ID#☐ Correction of PTO Error
Reel # Frame #☐ Corrective Document
Reel # Frame #

Conveyance Type

☐ Assignment☐ License☐ Merger☒ Security Agreement☐ Change of Name☐ Other

U.S. Government

(For Use ONLY by U.S. Government Agencies)

☐ Departmental File☐ Secret File

Conveying Party(ies)

☐ Mark if additional names of conveying parties attached

Name (line 1) ADVANCED LIGHTING TECHNOLOGIES, INC.

Execution Date
Month Day Year
12 10 2003

Name (line 2)

Second Party

Name (line 1)

Execution Date
Month Day Year

Name (line 2)

Receiving Party

☐ Mark if additional names of conveying parties attached

Name (line 1) WELLS FARGO FOOTHILL, INC., as Agent

Name (line 2)

☐ If document to be recorded is an assignment and the receiving party is not domiciled in the United States, an appointment of a domestic representative is attached. (Designation must be a separate document from Assignment)

Address (line 1) One Boston Place

Address (line 2) 18th Floor

Address (line 3) Boston

Massachusetts USA

02108

City

State/Country

Zip Code

Domestic Representative Name and Address

Enter for the first Receiving Party only.

Name Andrew M. Kramer, Esq.

Address (line 1) Otterbourg, Steindler, Houston & Rosen, PC

Address (line 2) 230 Park Avenue

Address (line 3) New York, New York 10169

Address (line 4)

12/31/2003 LMIJL 00000063 09973916

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Mail documents to be recorded with required cover sheet(s) information to:
Commissioner of Patents and Trademarks, Box Assignments, Washington, D.C. 20231

PATENT

REEL: 014836 FRAME: 0621

Correspondent Name and Address

Area Code and Telephone Number

212-661-9100

Name

Joseph T. Makseyn

Address (line 1)

Otterbourg, Steindler, Houston & Rosen, PC

Address (line 2)

230 Park Avenue

Address (line 3)

New York, New York 10169

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Pages

Enter the total number of pages of the attached conveyance document
including any attachments.

27

Application Number(s) or Patent Number(s)

☒ Mark if additional numbers attached

Enter either the Patent Application Number or the Patent Number (DO NOT ENTER BOTH numbers for the same property).

Patent Application Number(s)

SEE EXHIBIT A

Patent Number(s) SEE EXHIBIT A

If this document is being filed together with a new Patent Application, enter the date the patent application
was signed by the first named executing inventor.

Month Day Year

Patent Cooperation Treaty (PCT)

Enter PCT application number
only if a U.S. Application Number
has not been assigned.

PCT

PCT

PCT

PCT

PCT

PCT

Number of Properties

Enter the total number of properties involved.

65

Fee Amount

Fee Amount for Properties Listed (37 CFR 3.41):

\$ 2,600.00

Method of Payment:

Enclosed ☒ Deposit Account ☐

Deposit Account

(Enter for payment by deposit account or if additional fees can be charged to the account)

Deposit Account Number:

#

Authorization to charge additional fees:

Yes ☐ No ☐

Statement and Signature

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document. Charges to deposit account are authorized, as indicated herein.

Joseph Makseyn

Name of Person Signing



Signature

12/29/03

Date

LIST OF UNITED STATES PATENTS AND APPLICATIONS**ADVANCED LIGHTING TECHNOLOGIES, INC.**

Country	Short Title	Serial No.	Filing Date	Patent No.	Issue Date
U.S.	Method Of Flushing Outer Lamp Jackets	09/973,916	10/11/01		
U.S.	Coatings On Plasma Lamps	10/112,024	4/1/02		
U.S.	Coatings On Plasma Lamps	60/446,535	2/12/03		
U.S.	Helical Coil Resonator	10/112,349	4/1/02		
U.S.	Silver Amalgam	10/153,787	5/24/02		
U.S.	Thermal Protection Apparatus	60/446,252	2/11/03		
U.S.	Thermally Protected Ballast	60/448,144	2/20/03		
U.S.	Method Of Strengthening Pellets	09/434,462	11/5/99	6,284,165	9/4/01
U.S.	High Intensity Arc Discharge Lamp	08/354,425	12/12/94	5,539,271	7/23/96
U.S.	Auxiliary Lighting Control	08/600,262	2/12/96	5,896,013	4/20/99
U.S.	Weldless Lamp Mount	09/534,443	3/24/00		
U.S.	Weldless Lamp Mount	10/628,396	7/29/03		
U.S.	Low Halide Doses	09/801,653	3/9/01	6,661,175	12/9/03
U.S.	Low Halide Doses	10/682,932	10/14/03		
U.S.	Low Halide Doses	10/682,933	10/14/03		
U.S.	Horizontal Burning HID Lamps and Arc Tubes	09/597,547	6/19/00		
U.S.	Auxiliary Lighting Control	08/899,881	7/24/97	6072286	6/6/00
U.S.	Zinc Amalgam	10/044,907	1/15/02		
U.S.	Zinc Amalgam	08/299,292	9/1/94	6,339,287	1/15/02
U.S.	Zinc Amalgam	08/833,256	4/4/97	5882237	3/16/99
U.S.	Barrier Coatings	60/424,714	11/8/02		
U.S.	Barrier Coatings	10/703,593	11/10/03		
U.S.	Power Supply For Gas Discharge Lamp	319217	2/21/95	5530321	6/25/96
U.S.	Mercury Alloys As Dispensers For Mercury For Discharge Lamps	09/832,875	4/12/01		

Country	Short Title	Serial No.	Filing Date	Patent No.	Issue Date
U.S.	Halogen Lamps, Fill Material And Method Of Dosing Halogen Lamps	09/782,204	2/14/01		
U.S.	Strengthening Agent	08/702,031	8/23/96	5972442	10/26/99
U.S.	Method Of Making Arc Tubes	09/597,549	6/19/00		
U.S.	Methods Of Improving The Performance Of Horizontally Burning HID Lamps	09/597,548	6/19/00		
U.S.	Oxidation Resistant Foil	60/424,338	11/7/02		
U.S.	Oxidation Resistant Foil	10/702,558	11/7/03		
U.S.	Tipless Arc Tubes	09/800,669	3/8/01	6,612,892	9/2/03
U.S.	Efficient Directional Lighting System	09/565,257	5/5/00	6,554,456	4/29/03
U.S.	High Pressure Tipless Arc Tubes	09/866,700	5/30/01	6,517,404	2/11/03
U.S.	Dimming System	09/227,831	1/11/99	6,271,635	8/7/01
U.S.	Electrodes For Single Ended Arc Discharge Tubes	07/018,468	2/25/87	5055740	10/8/91
U.S.	Gear Pack	08/958,933	10/28/97	6022125	2/8/00
U.S.	DC Ballast	09/695,257	10/25/00		
U.S.	Gear Pack Design	09/078,976	11/5/97	DES 403,100	12/22/98
U.S.	Metal Halide Lamps And Method Of Manufacture	08/645,115	5/13/96	5924787	7/20/99
U.S.	Low Pressure Tipless Arc Tubes	10/457,442	6/10/03		

DEPOSITION SCIENCES, INC.

Country	Title	Serial No.	Filing Date	Patent No.	Issue Date
U.S.	Method And Apparatus For Making Precision Optical Filters Using A Sputter Deposition	60/436,658	12/30/02		

Country	Title	Serial No.	Filing Date	Patent No.	Issue Date
U.S.	Method And Apparatus For Adjusting The Pass Bandwidth Of An Optical Filter	60/426,449	11/15/02		
U.S.	Red, Orange, And Yellow Emitting Lamp Burners With Improved Color Purity And Lumen Output	60/468,265	5/7/03		
U.S.	Masks For Improved Sputter Deposition Uniformity On Non-Planar Substrates	60/468,264	5/7/03		
U.S.	System And Method For Coating Substrates With Improved Capacity And Uniformity	09/473980	12/29/99	6,485,616	11/26/02
U.S.	Method For Making Pigment Flakes	07/274380	11/21/88	4,879,140	11/7/89
U.S.	An Optical Interference Coating Capable Of Withstanding Severe Temperature Environments	08/753574	11/26/96	5,923,471	7/13/99
U.S.	An Optical Interference Coating Capable Of Withstanding Severe Temperature Environments	09/332,092	6/14/99	6,331,914	12/18/01
U.S.	Apparatus And Method For A Reliable Return Current Path For Sputtering Processes	08/388,191	2/13/95	6,402,902	6/11/02
U.S.	Apparatus For Generating Large Distributed Plasmas By Means Of Plasma-Guided Microwave Power	08/371,195	1/11/95	5,714,009	2/3/98

Country	Title	Serial No.	Filing Date	Patent No.	Issue Date
U.S.	Apparatus For Reducing The Intensity And Frequency Of Arcs Which Occur During A Sputtering Process	08/437,816	5/9/95	5,616,224	4/1/97
U.S.	Multi-Spectral Filter	728,724	7/11/91	5,164,858	11/17/92
U.S.	Gemstones And Decorative Objects Comprising A Substrate And An Optical Interference Film	08/296,779	8/26/94	6,197,428	3/6/01
U.S.	Objects Comprising A Substrate And Optical Interference Film	09/901,671	7/11/01		
U.S.	Photocell Array With Multi-Spectral Filter	07/490,043	3/7/90	5,072,109	12/10/91
U.S.	Wear Resistant Transparent Dielectric Coatings	08/869,621	4/16/92	5,234,769	8/10/93
U.S.	System And Method Of Coating Substrates And Assembling Devices Having Coated Elements	09/537,095	3/29/00		
U.S.	Sputtering Device	08/428,612	4/25/95	5,849,162	12/15/98
U.S.	Solar Cell Cover And Coating	08/972,372	11/18/97	6,107,564	8/22/00
U.S.	Apparatus And Process For Sputter Deposition Of Reacted Thin Films	07/485,556	4/15/83	4,420,385	12/13/83
U.S.	Feedforward Control Methods	60/509,248	10/8/03		
U.S.	Mixed Composition TiO ₂ Films	Not yet assigned	10/7/03		
U.S.	High Rate Deposition Of Rutile TiO ₂	60/508,871	10/7/03		
U.S.	Improved Deposition Of Mixed Composition Materials	60/512,002	10/17/03		

Country	Title	Serial No.	Filing Date	Patent No.	Issue Date
U.S.	Multilayer Thin Films Containing Low Scatter High Index Layers	60/517,108	11/5/03		

**AMENDED AND RESTATED PATENT COLLATERAL
ASSIGNMENT AND SECURITY AGREEMENT**

THIS AGREEMENT ("Agreement"), dated December 10, 2003, is by and between ADVANCED LIGHTING TECHNOLOGIES, INC., an Ohio corporation with its chief executive office at 32000 Aurora Road, Solon, Ohio 44139 ("Parent"), and each of Parent's subsidiaries identified on the signature pages hereof or from time to time party hereto (such subsidiaries, together with Parent, hereinafter referred to individually as a "Debtor" and individually and collectively, jointly and severally, as "Debtors") and WELLS FARGO FOOTHILL, INC., a California corporation, as the arranger and administrative agent for the Lenders (as defined below), having an office at One Boston Place, 18th Floor, Boston, Massachusetts 02108 (in such capacity, "Secured Party"). All capitalized terms used and not defined shall have the meanings given to them in the Loan Agreement (as defined below).

W I T N E S S E T H:

WHEREAS, each Debtor has adopted, used and is using, and is the owner of the entire right, title, and interest in and to the patents and applications therefor described in Exhibit A hereto and made a part hereof; and

WHEREAS, Secured Party, Lenders, Parent, and certain of Parent's subsidiaries (collectively, "Borrowers") have entered into financing arrangements pursuant to which Lenders may make loans and advances and provide other financial accommodations to Borrowers as set forth in the Amended and Restated Loan and Security Agreement, dated as of the date hereof, by and among Secured Party, the financial institutions from time to time party thereto as lenders ("Lenders"), Borrowers and the other Loan Parties thereto (as the same now exists or may hereafter be amended, modified, supplemented, extended, renewed, restated or replaced, the "Loan Agreement") and other agreements, documents and instruments referred to therein or at any time executed and/or delivered in connection therewith or related thereto, including, but not limited to, this Agreement (all of the foregoing, together with the Loan Agreement, as the same now exist or may hereafter be amended, modified, supplemented, extended, renewed, restated or replaced, being collectively referred to herein as the "Loan Documents"); and

WHEREAS, in order to induce Secured Party to enter into the Loan Agreement and the other Loan Documents and to continue to make loans and advances and provide other financial accommodations to Borrowers pursuant thereto, Debtors have agreed to grant to Secured Party certain collateral security as set forth herein;

NOW, THEREFORE, in consideration of the premises and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each Debtor hereby agrees as follows:

1. GRANT OF SECURITY INTEREST

As collateral security for the prompt performance, observance and payment in full of all of the Obligations (as hereinafter defined), each Debtor hereby grants to Secured Party a continuing security interest in and a general lien upon, and an assignment (which assignment shall be effective as of the occurrence of an Event of Default) of, the following (being collectively referred to herein as the "Collateral"): (a) all of such Debtor's now existing or hereafter acquired right, title, and interest in and to all of such Debtor's interest in any patents and all applications, registrations and recordings relating to the foregoing as may at any time be filed in the United States Patent and Trademark Office or in any similar office or agency of the United States, any State thereof, any political subdivision thereof or in any other

country, including, without limitation, those patents, applications, registrations and recordings described in Exhibit A hereto, together with all rights and privileges arising under applicable law with respect to such Debtor's use of any patents and all reissues, divisions, continuations, extensions and renewals thereof (all of the foregoing being collectively referred to herein as the "Patents"); (b) all present and future inventions and improvements described and claimed therein; (c) all income, fees, royalties and other payments at any time due or payable with respect thereto, including, without limitation, payments under all licenses at any time entered into in connection therewith; (d) the right to sue for past, present and future infringements thereof; (e) all rights corresponding thereto throughout the world; and (f) any and all other proceeds of any of the foregoing, including, without limitation, damages and payments or claims by such Debtor against third parties for past or future infringement of the Patents.

2. OBLIGATIONS SECURED

The security interest, lien and other interests granted to Secured Party pursuant to this Agreement shall secure the prompt performance, observance and payment in full of any and all obligations, liabilities and indebtedness of every kind, nature and description owing by each Debtor to Secured Party and/or its affiliates, and the due performance and observation by each of the Debtors of all of their obligations from time to time existing in respect of the Loan Agreement with all other Loan Documents, in each case including principal, interest, charges, fees, costs and expenses, however evidenced, whether as principal, surety, endorser, guarantor or otherwise, whether arising under this Agreement, the Loan Agreement, or the other Loan Documents, whether now existing or hereafter arising, whether arising before, during or after the initial or any renewal term of the Loan Agreement or after the commencement of any case with respect to any Debtor under the United States Bankruptcy Code or any similar statute (including, without limitation, the payment of interest and other amounts which would accrue and become due but for the commencement of such case), whether direct or indirect, absolute or contingent, joint or several, due or not due, primary or secondary, liquidated or unliquidated, secured or unsecured, and however acquired by Secured Party (all of the foregoing being collectively referred to herein as the "Obligations").

3. REPRESENTATIONS, WARRANTIES AND COVENANTS

Each Debtor hereby represents, warrants and covenants with and to Secured Party the following (all of such representations, warranties and covenants being continuing so long as any of the Obligations are outstanding):

(a) As of the Closing Date, all of the existing Collateral is in full force and effect, and such Debtor owns the sole, full and clear title thereto, and the right and power to grant the security interest and conditional assignment granted hereunder. Debtors shall, at Debtors' joint and several expense, perform all acts and execute all documents necessary to maintain the existence of the Collateral consisting of registered Patents as registered patents and to maintain all of the Collateral in full force and effect, including, without limitation, the payment of maintenance fees and the filing of any renewal affidavits and applications except where the failure to pay such fees or to file any such renewal affidavits or applications could not be expected to cause a Material Adverse Change, as defined in the Loan Agreement. The Collateral is not subject to any liens, claims, mortgages, assignments, licenses, security interests or encumbrances of any nature whatsoever, except: (i) the security interests granted hereunder and pursuant to the Loan Agreement, (ii) the security interests permitted under the Loan Agreement, and (iii) the licenses permitted under Section 3(d) below.

(b) Debtors shall not assign, sell, mortgage, lease, transfer, pledge, hypothecate, grant a security interest in or lien upon, encumber, grant an exclusive or non-exclusive license relating to the Collateral, or otherwise dispose of any of the Collateral, in each case without the prior written consent of Secured Party, except as otherwise permitted herein or in the Loan Agreement. Nothing in this Agreement shall

be deemed a consent by Secured Party to any such action, except as such action is expressly permitted hereunder.

(c) As of the date hereof, Debtors do not have any Patents issued, or subject to pending applications, in the United States Patent and Trademark Office or any similar office or agency in the United States, any State thereof, any political subdivision thereof or in any other country, other than those described in Exhibit A hereto and has not granted any licenses with respect thereto other than as set forth in Exhibit B hereto.

(d) Each Debtor shall, concurrently with the execution and delivery of this Agreement, execute and deliver to Secured Party five (5) originals of a Special Power of Attorney in the form of Exhibit C annexed hereto for the implementation of the assignment, sale or other disposition of the Collateral pursuant to Secured Party's exercise of the rights and remedies granted to Secured Party hereunder.

(e) Secured Party may, in its Permitted Discretion, pay any amount or do any act which any Debtor fails to pay or do as required hereunder or as requested by Secured Party to preserve, defend, protect, maintain, record or enforce the Obligations, the Collateral, or the security interest and conditional assignment granted hereunder, including, but not limited to, all filing or recording fees, court costs, collection charges, attorneys' fees and legal expenses. Debtors shall be liable to Secured Party for any such payment, which payment shall be deemed an advance by Secured Party to Debtors, shall be payable on demand together with interest at the rate then applicable to the Obligations set forth in the Loan Agreement and shall be part of the Obligations secured hereby.

(f) Debtors shall not file any application for the registration of a Patent with the United States Patent and Trademark Office or any similar office or agency in the United States, unless Debtors have given Secured Party thirty (30) days written notice of such action. If, after the date hereof, any Debtor shall (i) obtain any patent, including any reissue, division, continuation, continuation-in-part, or extension of any patent, file any patent application, including any application for reissue or extension of any patent, or any divisional, continuation, or continuation-in-part application in the United States Patent and Trademark Office or in any similar office or agency in the United States, any State thereof, any political subdivision thereof or in any other country, or (ii) become the owner of any patent or new patentable inventions used in the United States or any State thereof, political subdivision thereof or in any other country, the provisions of Section 1 hereof shall automatically apply thereto. Upon the request of Secured Party, the appropriate Debtor shall promptly execute and deliver to Secured Party any and all assignments, agreements, instruments, documents and such other papers as may be requested by Secured Party to evidence the security interest in and conditional assignment of such Patent in favor of Secured Party.

(g) Debtors have not abandoned any of the Patents and Debtors will not do any act, nor omit to do any act, whereby the Patents may become abandoned, invalidated, unenforceable, avoided, or avoidable without written approval by Secured Party, except where such abandonment, invalidation, unenforceability, avoidance or avoidability could not be expected to cause a Material Adverse Change. Debtors shall notify Secured Party promptly if any Debtor knows or has reason to know of any reason why any application, registration, or recording with respect to the Patents may become abandoned, canceled, invalidated, avoided, or avoidable.

(h) Debtors shall render any assistance, as Secured Party shall determine is necessary, to Secured Party in any proceeding before the United States Patent and Trademark Office, any federal or state court, or any similar office or agency in the United States, any State thereof, any political subdivision thereof or in any other country, to maintain such application and registration of the Patents as a Debtor's exclusive

property and to protect Secured Party's interest therein, including, without limitation, filing of renewals, affidavits of use, affidavits of incontestability and opposition, interference, and cancellation proceedings.

(i) Debtors have no knowledge of any material infringement or unauthorized use presently is being made of any of the Patents that would adversely affect in any material respect the fair market value of the Patents or the benefits of this Agreement granted to Secured Party, including, without limitation, the remedies of Secured Party hereunder. There has been no judgment holding any of the Patents invalid or unenforceable, in whole or part nor is the validity or enforceability of any of the Patents presently being questioned in any litigation or proceeding to which any Debtor is a party. Debtors shall promptly notify Secured Party if any Debtor (or any affiliate or subsidiary thereof) learns of any use by any person of any other process or product which Debtors believe infringes upon any Patent. If requested by Secured Party, Debtors (or the applicable individual Debtor, as appropriate), at Debtors' joint and several expense, shall join with Secured Party in such action as Secured Party, in Secured Party's discretion, may deem advisable for the protection of Secured Party's interest in and to the Patents, subject to Debtors' rights to abandon Patents pursuant to (g) above.

(j) Debtors assume all responsibility and liability arising from the use of the Patents and each Debtor hereby indemnifies and holds Secured Party harmless from and against any claim, suit, loss, damage, or expense (including attorneys' fees and legal expenses) arising out of any alleged defect in any product manufactured, promoted, or sold by any Debtor (or any affiliate or subsidiary thereof) in connection with any Patent or out of the manufacture, promotion, labeling, sale or advertisement of any such product by any Debtor (or any affiliate or subsidiary thereof). The foregoing indemnity shall survive the payment of the Obligations, the termination of this Agreement and the termination or non-renewal of the Loan Agreement.

(k) Debtors shall pay Secured Party for any and all expenditures made by Secured Party pursuant to the provisions of this Agreement or for the defense, protection or enforcement of the Obligations, the Collateral, or the security interests and conditional assignment granted hereunder, including, but not limited to, all filing or recording fees, court costs, collection charges, travel expenses, and reasonable attorneys' fees and legal expenses. Such expenditures shall be promptly payable on demand, together with interest at the rate then applicable to the Obligations set forth in the Loan Agreement and shall be part of the Obligations secured hereby.

4. EVENTS OF DEFAULT

All Obligations shall become immediately due and payable, without notice or demand, at the option of Secured Party, upon acceleration after the occurrence of any Event of Default, as such term is defined in the Loan Agreement (each an "Event of Default" hereunder).

5. RIGHTS AND REMEDIES

At any time an Event of Default exists or has occurred and is continuing, in addition to all other rights and remedies of Secured Party, whether provided under this Agreement, the Loan Agreement, the other Loan Documents, applicable law or otherwise, Secured Party shall have the following rights and remedies which may be exercised without notice to, or consent by Debtors except as such notice or consent is expressly provided for hereunder:

(a) Secured Party may require that neither any Debtor nor any affiliate or subsidiary of any Debtor make any use of the Patents for any purpose whatsoever. Secured Party may make use of any Patents for the sale of goods, completion of work-in-process or rendering of services or otherwise in

connection with enforcing any other security interest granted to Secured Party by Debtors or any subsidiary or affiliate of any Debtor or for such other reason as Secured Party may determine.

(b) Secured Party may grant such license or licenses relating to the Collateral for such term or terms, on such conditions, and in such manner, as Secured Party shall in its discretion deem appropriate. Such license or licenses may be general, special or otherwise, and may be granted on an exclusive or non-exclusive basis throughout all or any part of the United States of America, its territories and possessions, and all foreign countries.

(c) Secured Party may assign, sell or otherwise dispose of the Collateral or any part thereof, either with or without special conditions or stipulations except that if notice to any Debtor of intended disposition of Collateral is required by law, the giving of five (5) days prior written notice to such Debtor of any proposed disposition shall be deemed reasonable notice thereof and each Debtor waives any other notice with respect thereto. Secured Party shall have the power to buy the Collateral or any part thereof, and Secured Party shall also have the power to execute assurances and perform all other acts which Secured Party may, in its discretion, deem appropriate or proper to complete such assignment, sale, or disposition. In any such event, Debtors shall be liable for any deficiency.

(d) In addition to the foregoing, in order to implement the assignment, sale, or other disposition of any of the Collateral pursuant to the terms hereof, Secured Party may at any time execute and deliver on behalf of Debtors or any individual Debtor, pursuant to the authority granted in the Powers of Attorney described in Section 3(f) hereof, one or more instruments of assignment of the Patents (or any application, registration, or recording relating thereto), in form suitable for filing, recording, or registration. Each Debtor agrees to pay Secured Party on demand all costs incurred in any such transfer of the Collateral, including, but not limited to, any taxes, fees, and attorneys' fees and legal expenses. Each Debtor agrees that Secured Party has no obligation to preserve rights to the Patents against any other parties.

(e) Secured Party may first apply the proceeds actually received from any such license, assignment, sale or other disposition of any of the Collateral to the costs and expenses thereof, including, without limitation, attorneys' fees and all legal, travel and other expenses which may be incurred by Secured Party. Thereafter, Secured Party may apply any remaining proceeds to such of the Obligations as Secured Party may in its discretion determine. Each Debtor shall remain liable to Secured Party for any of the Obligations remaining unpaid after the application of such proceeds, and each Debtor shall pay Secured Party on demand any such unpaid amount, together with interest at the rate then applicable to the Obligations set forth in the Loan Agreement.

(f) Each Debtor shall make available to Secured Party or to Secured Party's designee, such Debtor's knowledge and expertise relating to the manufacture and sale of the products and services to which the Patents relate and such Debtor's customer lists and other records relating to the Patents and the distribution thereof.

(g) Nothing contained herein shall be construed as requiring Secured Party to take any such action at any time. All of Secured Party's rights and remedies, whether provided under this Agreement, the other Loan Documents, applicable law, or otherwise, shall be cumulative and none is exclusive. Such rights and remedies may be enforced alternatively, successively, or concurrently.

6. JURY TRIAL WAIVER; OTHER WAIVERS AND CONSENTS; GOVERNING LAW

(a) The validity, interpretation and enforcement of this Agreement and the other Loan Documents and any dispute arising out of the relationship between the parties hereto, whether in contract,

tort, equity or otherwise, shall be governed by the internal laws of the State of New York but excluding any principles of conflicts of law or other rule of law that would cause the application of the law of any jurisdiction other than the laws of the State of New York.

(b) Debtors and Secured Party irrevocably consent and submit to the non-exclusive jurisdiction of the Supreme Court of the State of New York for New York County and the United States District Court for the Southern District of New York, whichever Secured Party may elect, and waive any objection based on venue or forum non conveniens with respect to any action instituted therein arising under this Agreement or any of the other Loan Documents or in any way connected or related or incidental to the dealings of Debtors and Secured Party in respect of this Agreement or the other Loan Documents or the transactions related hereto or thereto, in each case whether now existing or thereafter arising, and whether in contract, tort, equity or otherwise, and agree that any dispute with respect to any such matters shall be heard only in the courts described above (except that Secured Party shall have the right to bring any action or proceeding against any Debtor or its property in the courts of any other jurisdiction which Secured Party deems necessary or appropriate in order to realize on the Collateral or to otherwise enforce its rights against any Debtor or its property).

(c) Each Debtor acknowledges and agrees that notice sent by Secured Party in connection with the exercise of enforcement rights against Collateral under the provisions of the Code shall be sent in accordance with Section 12 of the Loan Agreement.

(d) EACH DEBTOR AND SECURED PARTY EACH HEREBY WAIVES ANY RIGHT TO TRIAL BY JURY OF ANY CLAIM, DEMAND, ACTION OR CAUSE OF ACTION (i) ARISING UNDER THIS AGREEMENT OR ANY OF THE OTHER LOAN DOCUMENTS OR (ii) IN ANY WAY CONNECTED WITH OR RELATED OR INCIDENTAL TO THE DEALINGS OF ANY DEBTOR AND SECURED PARTY IN RESPECT OF THIS AGREEMENT OR ANY OF THE OTHER LOAN DOCUMENTS OR THE TRANSACTIONS RELATED HERETO OR THERETO IN EACH CASE WHETHER NOW EXISTING OR HEREAFTER ARISING, AND WHETHER IN CONTRACT, TORT, EQUITY OR OTHERWISE. EACH DEBTOR AND SECURED PARTY EACH HEREBY AGREES AND CONSENTS THAT ANY SUCH CLAIM, DEMAND, ACTION OR CAUSE OF ACTION SHALL BE DECIDED BY COURT TRIAL WITHOUT A JURY AND THAT SUCH DEBTOR OR SECURED PARTY MAY FILE AN ORIGINAL COUNTERPART OF A COPY OF THIS AGREEMENT WITH ANY COURT AS WRITTEN EVIDENCE OF THE CONSENT OF SUCH DEBTOR AND SECURED PARTY TO THE WAIVER OF THEIR RIGHT TO TRIAL BY JURY.

(e) Secured Party shall not have any liability to Debtors (whether in tort, contract, equity or otherwise) for losses suffered by Debtors in connection with, arising out of, or in any way related to the transactions or relationships contemplated by this Agreement, or any act, omission or event occurring in connection herewith, unless it is determined by a final and non-appealable judgment or court order binding on Secured Party that the losses were the result of acts or omissions constituting gross negligence or willful misconduct. In any such litigation, Secured Party shall be entitled to the benefit of the rebuttable presumption that it acted in good faith and with the exercise of ordinary care in the performance by it of the terms of this Agreement and the other Loan Documents.

7. MISCELLANEOUS

(a) All notices, requests and demands required or permitted under this Agreement shall be given in accordance with Section 12 of the Loan Agreement.

(b) All references to the plural herein shall also mean the singular and to the singular shall also mean the plural. All references to Debtor and Secured Party pursuant to the definitions set forth in the

recitals hereto, or to any other person herein, shall include their respective successors and assigns. The words "hereof," "herein," "hereunder," "this Agreement" and words of similar import when used in this Agreement shall refer to this Agreement as a whole and not any particular provision of this Agreement and as this Agreement now exists or may hereafter be amended, modified, supplemented, extended, renewed, restated or replaced. An Event of Default shall exist or continue or be continuing until such Event of Default is waived in accordance with Section 7(e) hereof. All references to the term "Person" or "person" herein shall mean any individual, sole proprietorship, partnership, corporation (including, without limitation, any corporation which elects subchapter S status under the Internal Revenue Code of 1986, as amended), limited liability company, limited liability partnership, business trust, unincorporated association, joint stock company, trust, joint venture or other entity or any government or any agency or instrumentality or political subdivision thereof.

(c) This Agreement, the other Loan Documents and any other document referred to herein or therein shall be binding upon each Debtor and its successors and assigns and inure to the benefit of and be enforceable by Secured Party and its successors and assigns.

(d) If any provision of this Agreement is held to be invalid or unenforceable, such invalidity or unenforceability shall not invalidate this Agreement as a whole, but this Agreement shall be construed as though it did not contain the particular provision held to be invalid or unenforceable and the rights and obligations of the parties shall be construed and enforced only to such extent as shall be permitted by applicable law.

(e) Neither this Agreement nor any provision hereof shall be amended, modified, waived or discharged orally or by course of conduct, but only as set forth in Section 15.1 of the Loan Agreement.

8. AMENDATORY PROVISION

This Agreement amends, restates, replaces and supercedes in its entirety, without a breach in continuity, that certain Patent Collateral Assignment and Security Agreement, dated June 30, 2003, among Debtor and each of Debtor's affiliates identified on the signature pages thereof or from time to time party thereto and Secured Party, as such agreement has heretofore been amended, restated, renewed, extended, supplemented, substituted or otherwise modified.

IN WITNESS WHEREOF, each Debtor and Secured Party have executed this Agreement as of the day and year first above written.

ADVANCED LIGHTING TECHNOLOGIES, INC., an
Ohio corporation

By: Christopher F. Zerull
Name: Christopher F. Zerull
Title: Vice President and Chief Accounting Officer

[SIGNATURES CONTINUED ON NEXT PAGE]

[SIGNATURES CONTINUED FROM PREVIOUS PAGE]

APL ENGINEERED MATERIALS, INC.,
an Illinois corporation

By: Christopher F. Zerull
Name: Christopher F. Zerull
Title: Vice President

VENTURE LIGHTING INTERNATIONAL, INC., an
Ohio corporation

By: Christopher F. Zerull
Name: Christopher F. Zerull
Title: Vice President

BALLASTRONIX (DELAWARE), INC.,
a Delaware corporation

By: Christopher F. Zerull
Name: Christopher F. Zerull
Title: Vice President

MICROSUN TECHNOLOGIES INC.,
an Ohio corporation

By: Christopher F. Zerull
Name: Christopher F. Zerull
Title: Vice President

LIGHTING RESOURCES INTERNATIONAL, INC.,
an Ohio corporation

By: Christopher F. Zerull
Name: Christopher F. Zerull
Title: Vice President

ADLT SERVICES, INC., an Ohio corporation

By: Christopher F. Zerull
Name: Christopher F. Zerull
Title: Vice President

[SIGNATURES CONTINUED ON NEXT PAGE]

DEPOSITION SCIENCES, INC.,
an Ohio corporation

By: Christopher F. Zerull
Name: Christopher F. Zerull
Title: Vice President

**UNISON FIBER OPTIC LIGHTING SYSTEMS
LLC**

**By: Venture Lighting International, Inc., an
Ohio corporation**

By: Christopher F. Zerull
Name: Christopher F. Zerull
Title: Vice President

**WELLS FARGO FOOTHILL, INC.,
as Agent**

By: _____

Name: _____

Title: _____

DEPOSITION SCIENCES, INC.,
an Ohio corporation

By: _____

Name: Christopher F. Zerull

Title: Vice President

**UNISON FIBER OPTIC LIGHTING SYSTEMS
LLC**

**By: Venture Lighting International, Inc., an
Ohio corporation**

By: _____

Name: Christopher F. Zerull

Title: Vice President

**WELLS FARGO FOOTHILL, INC.,
as Agent**


By: _____

Name: Anthony ADP

Title: SVP.

STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

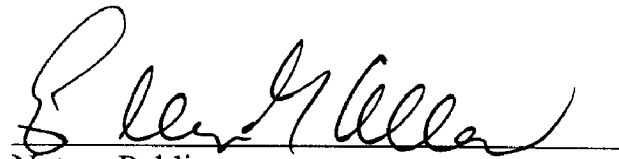
On this 10 day of December, 2003, before me personally came Christopher F. Zerull, to me known, who being duly sworn, did depose and say, that he is the Vice President and Chief Accounting Officer of ADVANCED LIGHTING TECHNOLOGIES, INC., the corporation described in and which executed the foregoing instrument; and that he signed his name thereto by order of the Board of Directors of said corporation.


Notary Public

STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

2006

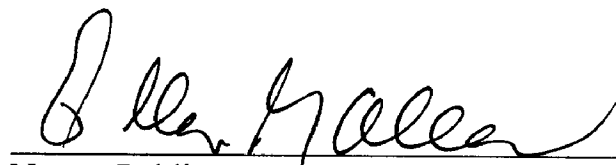
On this 10 day of December, 2003, before me personally came Christopher F. Zerull, to me known, who being duly sworn, did depose and say, that he is the Vice President of APL ENGINEERED MATERIALS, INC., the corporation described in and which executed the foregoing instrument; and that he signed his name thereto by order of the Board of Directors of said corporation.


Notary Public

STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

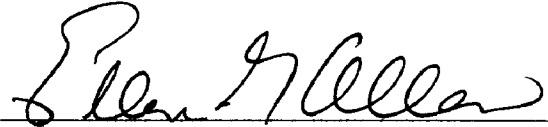
2006

On this 10 day of December, 2003, before me personally came Christopher F. Zerull, to me known, who being duly sworn, did depose and say, that he is the Vice President of VENTURE LIGHTING INTERNATIONAL, INC., the corporation described in and which executed the foregoing instrument; and that he signed his name thereto by order of the Board of Directors of said corporation.


Notary Public

STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

On this 10 day of December, 2003, before me personally came Christopher F. Zerull, to me known, who being duly sworn, did depose and say, that he is the Vice President of BALLASTRONIX (DELAWARE), INC., the corporation described in and which executed the foregoing instrument; and that he signed his name thereto by order of the Board of Directors of said corporation.




Notary Public

STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

2006

On this 12 day of December, 2003, before me personally came Christopher F. Zerull, to me known, who being duly sworn, did depose and say, that he is the Vice President of MICROSUN TECHNOLOGIES INC., the corporation described in and which executed the foregoing instrument; and that he signed his name thereto by order of the Board of Directors of said corporation.

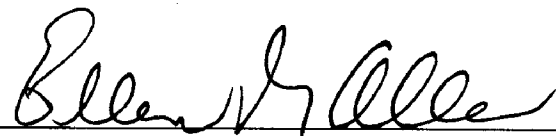


Notary Public

STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

2006

On this 10 day of December, 2003, before me personally came Christopher F. Zerull, to me known, who being duly sworn, did depose and say, that he is the Vice President of LIGHTING RESOURCES INTERNATIONAL, INC., the corporation described in and which executed the foregoing instrument; and that he signed his name thereto by order of the Board of Directors of said corporation.

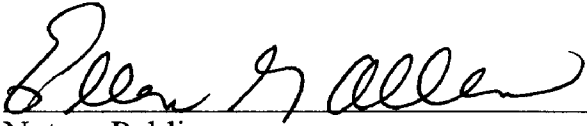


Notary Public

2006

STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

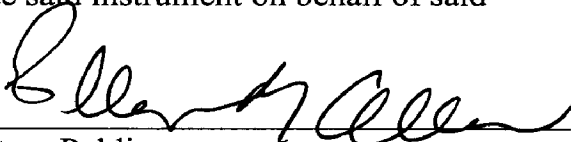
On this 10 day of December, 2003, before me personally came Christopher F. Zerull, to me known, who being duly sworn, did depose and say, that he is the Vice President of ADLT SERVICES, INC., the corporation described in and which executed the foregoing instrument; and that he signed his name thereto by order of the Board of Directors of said corporation.


Notary Public

STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

2006

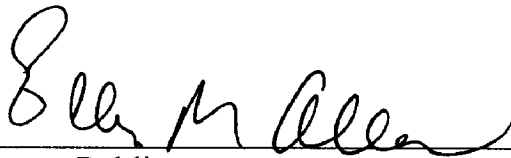
On this 10 day of December, 2003, before me personally came Christopher F. Zerull, to me known, who being duly sworn, did depose and say, that he is the Vice President of Venture Lighting International, Inc., an Ohio corporation and a member of UNISON FIBER OPTIC LIGHTING SYSTEMS LLC, the limited liability company described in and which executed the foregoing instrument and that he is authorized to execute said instrument on behalf of said company.


Notary Public

STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

2004


On this 10 day of December, 2003, before me personally came Christopher F. Zerull, to me known, who being duly sworn, did depose and say, that he is the Vice President of DEPOSITION SCIENCES, INC., the corporation described in and which executed the foregoing instrument; and that he signed his name thereto by order of the Board of Directors of said corporation.


Notary Public

2006

STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

On this 10 day of December, 2003, before me personally came ANTHONY ADI,
to me known, who being duly sworn, did depose and say, that he is the SVP of WELLS
FARGO FOOTHILL, INC., the corporation described in and which executed the foregoing
instrument; and that he signed his name thereto by order of the Board of Directors of said
corporation.



Notary Public

ELLEN M. ALLEN
Notary Public, State of New York
No. 01415057123
Qualified in Suffolk County
Commission Expires March 12, 2006

LIST OF UNITED STATES PATENTS AND APPLICATIONS**ADVANCED LIGHTING TECHNOLOGIES, INC.**

Country	Short Title	Serial No.	Filing Date	Patent No.	Issue Date
U.S.	Method Of Flushing Outer Lamp Jackets	09/973,916	10/11/01		
U.S.	Coatings On Plasma Lamps	10/112,024	4/1/02		
U.S.	Coatings On Plasma Lamps	60/446,535	2/12/03		
U.S.	Helical Coil Resonator	10/112,349	4/1/02		
U.S.	Silver Amalgam	10/153,787	5/24/02		
U.S.	Thermal Protection Apparatus	60/446,252	2/11/03		
U.S.	Thermally Protected Ballast	60/448,144	2/20/03		
U.S.	Method Of Strengthening Pellets	09/434,462	11/5/99	6,284,165	9/4/01
U.S.	High Intensity Arc Discharge Lamp	08/354,425	12/12/94	5,539,271	7/23/96
U.S.	Auxiliary Lighting Control	08/600,262	2/12/96	5,896,013	4/20/99
U.S.	Weldless Lamp Mount	09/534,443	3/24/00		
U.S.	Weldless Lamp Mount	10/628,396	7/29/03		
U.S.	Low Halide Doses	09/801,653	3/9/01	6,661,175	12/9/03
U.S.	Low Halide Doses	10/682,932	10/14/03		
U.S.	Low Halide Doses	10/682,933	10/14/03		
U.S.	Horizontal Burning HID Lamps and Arc Tubes	09/597,547	6/19/00		
U.S.	Auxiliary Lighting Control	08/899,881	7/24/97	6072286	6/6/00
U.S.	Zinc Amalgam	10/044,907	1/15/02		
U.S.	Zinc Amalgam	08/299,292	9/1/94	6,339,287	1/15/02
U.S.	Zinc Amalgam	08/833,256	4/4/97	5882237	3/16/99
U.S.	Barrier Coatings	60/424,714	11/8/02		
U.S.	Barrier Coatings	10/703,593	11/10/03		
U.S.	Power Supply For Gas Discharge Lamp	319217	2/21/95	5530321	6/25/96
U.S.	Mercury Alloys As Dispensers For Mercury For Discharge Lamps	09/832,875	4/12/01		

Country	Short Title	Serial No.	Filing Date	Patent No.	Issue Date
U.S.	Halogen Lamps, Fill Material And Method Of Dosing Halogen Lamps	09/782,204	2/14/01		
U.S.	Strengthening Agent	08/702,031	8/23/96	5972442	10/26/99
U.S.	Method Of Making Arc Tubes	09/597,549	6/19/00		
U.S.	Methods Of Improving The Performance Of Horizontally Burning HID Lamps	09/597,548	6/19/00		
U.S.	Oxidation Resistant Foil	60/424,338	11/7/02		
U.S.	Oxidation Resistant Foil	10/702,558	11/7/03		
U.S.	Tipless Arc Tubes	09/800,669	3/8/01	6,612,892	9/2/03
U.S.	Efficient Directional Lighting System	09/565,257	5/5/00	6,554,456	4/29/03
U.S.	High Pressure Tipless Arc Tubes	09/866,700	5/30/01	6,517,404	2/11/03
U.S.	Dimming System	09/227,831	1/11/99	6,271,635	8/7/01
U.S.	Electrodes For Single Ended Arc Discharge Tubes	07/018,468	2/25/87	5055740	10/8/91
U.S.	Gear Pack	08/958,933	10/28/97	6022125	2/8/00
U.S.	DC Ballast	09/695,257	10/25/00		
U.S.	Gear Pack Design	09/078,976	11/5/97	DES 403,100	12/22/98
U.S.	Metal Halide Lamps And Method Of Manufacture	08/645,115	5/13/96	5924787	7/20/99
U.S.	Low Pressure Tipless Arc Tubes	10/457,442	6/10/03		

DEPOSITION SCIENCES, INC.

Country	Title	Serial No.	Filing Date	Patent No.	Issue Date
U.S.	Method And Apparatus For Making Precision Optical Filters Using A Sputter Deposition	60/436,658	12/30/02		

Country	Title	Serial No.	Filing Date	Patent No.	Issue Date
U.S.	Method And Apparatus For Adjusting The Pass Bandwidth Of An Optical Filter	60/426,449	11/15/02		
U.S.	Red, Orange, And Yellow Emitting Lamp Burners With Improved Color Purity And Lumen Output	60/468,265	5/7/03		
U.S.	Masks For Improved Sputter Deposition Uniformity On Non-Planar Substrates	60/468,264	5/7/03		
U.S.	System And Method For Coating Substrates With Improved Capacity And Uniformity	09/473980	12/29/99	6,485,616	11/26/02
U.S.	Method For Making Pigment Flakes	07/274380	11/21/88	4,879,140	11/7/89
U.S.	An Optical Interference Coating Capable Of Withstanding Severe Temperature Environments	08/753574	11/26/96	5,923,471	7/13/99
U.S.	An Optical Interference Coating Capable Of Withstanding Severe Temperature Environments	09/332,092	6/14/99	6,331,914	12/18/01
U.S.	Apparatus And Method For A Reliable Return Current Path For Sputtering Processes	08/388,191	2/13/95	6,402,902	6/11/02
U.S.	Apparatus For Generating Large Distributed Plasmas By Means Of Plasma-Guided Microwave Power	08/371,195	1/11/95	5,714,009	2/3/98

Country	Title	Serial No.	Filing Date	Patent No.	Issue Date
U.S.	Apparatus For Reducing The Intensity And Frequency Of Arcs Which Occur During A Sputtering Process	08/437,816	5/9/95	5,616,224	4/1/97
U.S.	Multi-Spectral Filter	728,724	7/11/91	5,164,858	11/17/92
U.S.	Gemstones And Decorative Objects Comprising A Substrate And An Optical Interference Film	08/296,779	8/26/94	6,197,428	3/6/01
U.S.	Objects Comprising A Substrate And Optical Interference Film	09/901,671	7/11/01		
U.S.	Photocell Array With Multi-Spectral Filter	07/490,043	3/7/90	5,072,109	12/10/91
U.S.	Wear Resistant Transparent Dielectric Coatings	08/869,621	4/16/92	5,234,769	8/10/93
U.S.	System And Method Of Coating Substrates And Assembling Devices Having Coated Elements	09/537,095	3/29/00		
U.S.	Sputtering Device	08/428,612	4/25/95	5,849,162	12/15/98
U.S.	Solar Cell Cover And Coating	08/972,372	11/18/97	6,107,564	8/22/00
U.S.	Apparatus And Process For Sputter Deposition Of Reacted Thin Films	07/485,556	4/15/83	4,420,385	12/13/83
U.S.	Feedforward Control Methods	60/509,248	10/8/03		
U.S.	Mixed Composition TiO ₂ Films	Not yet assigned	10/7/03		
U.S.	High Rate Deposition Of Rutile TiO ₂	60/508,871	10/7/03		
U.S.	Improved Deposition Of Mixed Composition Materials	60/512,002	10/17/03		

Country	Title	Serial No.	Filing Date	Patent No.	Issue Date
U.S.	Multilayer Thin Films Containing Low Scatter High Index Layers	60/517,108	11/5/03		

EXHIBIT B
TO
AMENDED AND RESTATED
PATENT COLLATERAL ASSIGNMENT AND SECURITY AGREEMENT
(LIST OF LICENSES)

1. Cross License Agreement executed February 1, 2000 between Advanced Lighting Technologies, Inc. and Fiberstars, Inc.

EXHIBIT C
TO
AMENDED AND RESTATED PATENT COLLATERAL
ASSIGNMENT AND SECURITY AGREEMENT

SPECIAL POWER OF ATTORNEY

STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

KNOW ALL MEN BY THESE PRESENTS, that [DEBTOR] ("Debtor"), having an office at 32000 Aurora Road, Solon, Ohio 44139, hereby appoints and constitutes, severally, WELLS FARGO FOOTHILL, INC., as arranger and administrative agent ("Secured Party"), and each of its officers, its true and lawful attorney, with full power of substitution and with full power and authority to perform the following acts on behalf of Debtor:

1. Execution and delivery of any and all agreements, documents, instrument of assignment, or other papers which Secured Party, in its discretion, deems necessary or advisable for the purpose of assigning, selling, or otherwise disposing of all right, title, and interest of Debtor in and to any patents and all registrations, recordings, reissues, extensions, and renewals thereof, or for the purpose of recording, registering and filing of, or accomplishing any other formality with respect to the foregoing.

2. Execution and delivery of any and all documents, statements, certificates or other papers which Secured Party, in its discretion, deems necessary or advisable to further the purposes described in Subparagraph 1 hereof.

This Power of Attorney is made pursuant to an Amended and Restated Patent Collateral Assignment and Security Agreement, dated of even date herewith, among Debtor and each of Debtor's affiliates identified on the signature pages thereof or from time to time party thereto and Secured Party (the "Security Agreement") and is subject to the terms and provisions thereof. This Power of Attorney, being coupled with an interest, is irrevocable until all "Obligations", as such term is defined in the Security Agreement, are paid in full and the Security Agreement is terminated in writing by Secured Party.

Dated: December __, 2003

[DEBTOR]

By: _____

Title: _____

STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

On this ____ day of December, 2003, before me personally came _____, to me known, who being duly sworn, did depose and say, that he is the _____ of [DEBTOR], the corporation described in and which executed the foregoing instrument; and that he signed his name thereto by order of the Board of Directors of said corporation.

Notary Public