

**LUMENCO, INC.  
3600 S. Huron St.  
Englewood, CO 80110**

**SUBSCRIPTION AGREEMENT  
For Accredited Investors Only  
\$10,000.00 Minimum Per Investor**

**\$3,000,000.00 Maximum Amount to be Raised**

**THE NOTES OFFERED HEREBY ARE SPECULATIVE AND INVOLVE A HIGH DEGREE OF RISK. NO INVESTMENT IN THE NOTES SHOULD BE MADE BY ANY PERSON NOT FINANCIALLY ABLE TO LOSE THE ENTIRE AMOUNT OF ITS INVESTMENT. SEE THE “RISK FACTORS” CONTAINED HEREIN.**

**SUBSCRIPTION AGREEMENT  
For Accredited Investors Only**

This Subscription Agreement (the “Agreement”) is made as of \_\_\_\_\_, 2022, between Lumenco, Inc., a Colorado corporation (the “Company”), located at 3600 Huron St., Englewood, Colorado 80110, and \_\_\_\_\_ (the “Purchaser”).

**WHEREAS**, the Company intends to raise a maximum of \$3,000,000.00 through the offering and sale of Subordinated Convertible Promissory Notes (collectively the “Notes” or each individually a “Note”), at a purchase price equal to the face value of each of the Notes (the “Offering”); and

**WHEREAS**, the Notes will be offered through December 31, 2022, which period may be extended by the Company, in its sole discretion, to a date not later than May 31, 2023; and

**WHEREAS**, the Offering is being made only to accredited investors, as defined under the Securities Act of 1933, as amended (the “Securities Act”); and

**WHEREAS** the minimum amount that an investor may invest in this offering is \$10,000.00, but the Company reserves the right, in its sole discretion, to sell less than the minimum amount to any investor in its sole discretion; and

**WHEREAS**, the Company reserves the right to hold a closing at any time after Subscription Agreements have been received and accepted for an aggregate amount which the Company believes, when combined with any and all other sources of funds as described herein, is sufficient to commence its business operations, and may thereafter conduct further closings until the termination or expiration of the Offering; and

**WHEREAS**, pursuant to the terms and conditions set forth in this Agreement, the Purchaser has agreed to purchase the Notes set forth in this Agreement.

**NOW, THEREFORE**, in consideration of the foregoing, the undersigned Purchaser and the Company hereto agree as follows:

1. **Subscription.** The Purchaser, intending to be legally bound, hereby irrevocably agrees to purchase from the Company a Subordinate Convertible Promissory Note at a purchase price of \$\_\_\_\_\_. This Agreement is submitted to the Company with the agreement and understanding that the Notes are being sold in accordance with, and will be subject to, the terms and conditions described in this Agreement and any exhibits and attachments thereto, including but not limited to **Exhibit A** attached hereto and incorporated herein by reference.

2. **Payment.** The Purchaser hereby delivers a completed and executed Agreement and a check payable to Lumenco, Inc. (or notification that the Purchaser will immediately make

a wire transfer payment to “Lumenco, Inc.” in the full amount of the purchase price of the Note being subscribed for.

3. **Acceptance of Agreement.** The Purchaser understands and agrees that the Company, in its discretion, reserves the right to accept or reject this or any other subscription for Notes, in whole or in part, notwithstanding prior receipt by the Purchaser of notice of acceptance of this or any other subscription. The Company shall have no obligation hereunder until the Company shall execute and deliver to the Purchaser an executed copy of this Agreement. If this Agreement is rejected in whole, all funds received from the Purchaser will be returned without interest, penalty, expense or deduction, and this Agreement shall thereafter be of no further force or effect. If this Agreement is rejected in part, the funds for the rejected portion of the subscription will be returned without interest, penalty, expense or deduction, and this Agreement will continue in full force and effect to the extent the subscription was accepted.

4. **Release of Funds to the Company.** The Purchaser understands and agrees that the Company has the right to hold a closing at any time after Subscription Agreements have been received in an amount which the Company believes, when combined with any and all other sources of funds as described herein, is sufficient to commence its business operations. Thereafter, the Company may, in its sole discretion, conduct further closings, or choose to use any proceeds received from a Purchaser immediately after Purchaser’s Subscription Agreement has been received and accepted.

5. **Intentionally Omitted.**

6. **Investment Representations and Warranties of the Purchaser.** The Purchaser hereby acknowledges, represents, warrants, and agrees as follows:

(a) The Purchaser is aware of the Company’s business affairs and financial condition and has acquired sufficient information about the Company, including the disclosures contained in Section 9 hereof, to reach an informed and knowledgeable decision to acquire the Notes.

(b) The Notes offered pursuant to the Offering are registered under the Securities Act, or any state securities laws. The Purchaser understands that the offering and sale of the Notes contemplated hereby is intended to be exempt from registration under the Securities Act, by virtue of Section 4(2) thereof and the provisions of Regulation D promulgated thereunder, based, in part, upon the representations, warranties and agreements of the Purchaser contained in this Agreement;

(c) Neither the Securities and Exchange Commission (the “SEC”) nor any state securities commission has approved the Notes, or passed upon or endorsed the merits of the Offering or confirmed the accuracy or determined the adequacy of this Agreement. Any representation to the contrary is a criminal offense. This Agreement has not been reviewed by any federal, state or other regulatory authority. The Notes are subject to restrictions on transferability and resale and may not be transferred or resold except as permitted under the Securities Act, and the applicable state securities laws, pursuant to registration or exemption therefrom;

(d) The Purchaser and its advisors, if any, have had an opportunity to ask questions of and receive answers from the Company concerning the terms and conditions of the investment and the business and affairs of the Company, and to obtain any additional information necessary

to verify such information as the Purchaser considers necessary or advisable in order to form a decision concerning an investment in the Company;

(e) In evaluating the suitability of an investment in the Company, the Purchaser has not relied upon any representation or other information (oral or written) other than as stated in this Agreement or as contained in documents furnished to the Purchaser or its Advisors, if any, by the Company;

(f) The Purchaser has taken no action which would give rise to any claim by any person for brokerage commissions, finder' fees or the like relating to this Agreement or the transactions contemplated hereby;

(g) The Purchaser, either alone or together with its advisors, if any, has such knowledge and experience in financial, tax, and business matters, and, in particular, investments in securities, so as to enable it to utilize the information made available to it in connection with the Offering to evaluate the merits and risks of an investment in the Notes and the Company and to make an informed investment decision with respect thereto;

(h) The Purchaser is not relying on the Company, or any of its employees or agents, with respect to the legal, tax, economic and related considerations of an investment in the Notes, and the Purchaser has relied on the advice of, or has consulted with, only its own advisors;

(i) The Purchaser is acquiring the Notes solely for such Purchaser's own account for investment purposes only and not with a view to or intent of resale or distribution thereof, in whole or in part. The Purchaser has no agreement or arrangement, formal or informal, with any person to sell or transfer all or any part of the Notes, and the Purchaser has no plans to enter into any such agreement or arrangement;

(j) The purchase of the Notes represents a high risk capital investment and the Purchaser is able to afford an investment in a speculative venture having the risks and objectives of the Company. The Purchaser must bear the substantial economic risks of the investment in the Notes indefinitely because none of the Notes may be sold, hypothecated or otherwise disposed of unless subsequently registered under the Securities Act and applicable state securities laws or an exemption from such registration is available. Legends shall be placed on the Notes to the effect that they have not been registered under the Securities Act or applicable state securities laws and appropriate notations thereof will be made in the Company's books. There can be no assurance that there will be any market for resale of the Notes;

(k) The Purchaser has adequate means of providing for such Purchaser's current financial needs and foreseeable contingencies and has no need for liquidity of its investment in the Notes for an indefinite period of time;

(l) The Purchaser is aware that an investment in the Notes involves a number of very significant risks and has carefully read and considered the matters set forth herein, including those matters set forth within **Exhibit G** attached hereto under the caption "Risk Factors," and, in particular, acknowledges that the Company has a limited operating history and limited assets and is engaged in a highly competitive business;



(m) The Purchaser meets the requirements of at least one of the suitability standards for an “accredited investor” as that term is defined in Regulation D under the Securities Act, and has truthfully and accurately completed the accredited investor section of this Agreement;

(n) The Purchaser: (i) if a natural person, represents that the Purchaser has reached the age of 21 and has full power and authority to execute and deliver this Agreement and all other related agreements or certificates and to carry out the provisions hereof and thereof; (ii) if a corporation, partnership, or limited liability company or partnership, or association, joint stock company, trust, unincorporated organization or other entity, such entity is duly organized, validly existing and in good standing under the laws of the state of its organization, the consummation of the transactions contemplated hereby is authorized by, and will not result in a violation of state law or its charter or other organizational documents, such entity has full power and authority to execute and deliver this Agreement and all other related agreements or certificates and to carry out the provisions hereof and thereof and to purchase and hold the Notes, the execution and delivery of this Agreement has been duly authorized by all necessary action, this Agreement has been duly executed and delivered on behalf of such entity and is a legal, valid and binding obligation of such entity; or (iii) if executing this Agreement in a representative or fiduciary capacity, represents that it has full power and authority to execute and deliver this Agreement in such capacity and on behalf of the subscribing individual, ward, partnership, trust, estate, corporation, or limited liability company or partnership, or other entity for whom the Purchaser is executing this Agreement, and such individual, partnership, ward, trust, estate, corporation, or limited liability company or partnership, or other entity has full right and power to perform pursuant to this Agreement and make an investment in the Company, and represents that this Agreement constitutes a legal, valid and binding obligation of such entity. The execution and delivery of this Agreement will not violate or be in conflict with any order, judgment, injunction, agreement or controlling document to which the Purchaser is a party or by which it is bound;

(o) Any information which the Purchaser has heretofore furnished or is furnishing herewith to the Company is complete and accurate and may be relied upon by the Company in determining the availability of an exemption from registration under Federal and state securities laws in connection with the Offering. The Purchaser further represents and warrants that it will notify and supply corrective information to the Company immediately upon the occurrence of any change therein occurring prior to the Company's issuance of the Notes;

(p) The Purchaser acknowledges that any estimates or forward-looking statements or projections included herein were prepared by the Company in good faith but that the attainment of any such projections, estimates or forward-looking statements cannot be guaranteed and will not be updated by the Company and should not be relied upon;

(q) No oral or written representations have been made, or oral or written information furnished, to the Purchaser or its advisors, if any, in connection with the Offering which are in any way inconsistent with the information contained herein; and

(r) A copy of the Company's Business Plan is attached hereto as **Exhibit B** and incorporated herein by reference. The Purchaser acknowledges and agrees that such Business Plan contains certain estimates, projections and other forecasts, and certain plan and budget information. The Purchaser acknowledges that the Purchaser has been informed by the Company, and fully understands, that there are substantial uncertainties inherent in attempting to make such estimates, projections, forecasts, plans and budgets and that the Purchaser is familiar with such uncertainties, that the Purchaser is taking full responsibility for making the Purchaser's

own evaluation of the adequacy and accuracy of all estimates, projections, forecasts, plans and budgets contained in the Company's Business Plan, and that the Purchaser will not assert any claim against the Company or any its affiliates, or hold the Company or any of its affiliates liable with respect thereto.

**7. Accredited Status of the Purchaser.** The Purchaser is (check all that apply):

- (a) A natural person whose individual net worth (assets less liabilities), or joint net worth with his or her spouse, exceeds \$1,000,000, excluding the value of the investor's primary residence.
- (b) A natural person whose individual income was in excess of \$200,000, or whose joint income with his or her spouse or "Spousal Equivalent" was in excess of \$300,000, in each of the two most recent years, and who has a reasonable expectation of reaching the same income level for the current year.
- (c) A bank, insurance company, registered investment company, business development company, small business investment company, or employee benefit plan.
- (d) A savings and loan association, credit union, or similar financial institution, or a registered broker or dealer.
- (e) A private business development company.
- (f) An organization described in Section 501(c)(3) of the Internal Revenue Code with assets in excess of \$5,000,000.
- (g) A corporation, Massachusetts or similar business trust, or partnership with assets in excess of \$5,000,000.
- (h) A trust with assets in excess of \$5,000,000 whose purchase is directed by a sophisticated person as defined in Rule 506(b)(2)(ii) of Regulation D.
- (i) A director or executive officer of the Company.
- (j) An entity in which all of the equity owners are accredited investors (Not available for an Irrevocable Trust).
- (k) A self-directed IRA, Keogh, or similar plan of which the individual directing the investments qualifies as an "accredited investor" under one or more of the above items (a)-(j), above (also check the applicable items(s) that apply).
- (l) An individual presently in possession of certain professional certifications, credentials, or designations (e.g., FINRA Series 7 (General Securities Representative), 65 (Investment Adviser Representative), or 82 (Private Securities Offerings Representative) licenses) approved by the SEC from time to time;

- \_\_\_\_\_ (m) An individual who is a “knowledgeable employee” of a private fund, or of an investment adviser to such fund, or such person’s spouse (with respect to offerings of that fund’s securities);
- \_\_\_\_\_ (n) A limited liability company with assets in excess of \$5 million and that were not formed for the purpose of investing in securities offered in a given case, exempt reporting advisers, registered investment advisers, and rural business investment companies (“RBICs”);
- \_\_\_\_\_ (o) An entity, including any Indian tribe or governmental body, that owns “investments” (as defined in Rule 2a51-1(b) under the Investment Company Act of 1940 (the “Investment Company Act”)) valued in excess of \$5 million and not formed for the specific purpose of investing in securities offered in a given case;
- \_\_\_\_\_ (p) A “Family Office” with at least \$5 million in assets under management and its “family clients,” as each term is defined under the Investment Advisers Act of 1940 (the “Advisers Act”), provided that the family office is not formed for the specific purpose of acquiring the securities offered and that the investment is directed by a person who has such knowledge and experience in financial and business matters that the family office is capable of evaluating the merits and risks of the investment; and
- \_\_\_\_\_ (q) Non-accredited. Subscriber is not an accredited investor but desires to subscribe for the Interest notwithstanding the fact that Subscriber does not meet any of the investor suitability standards set forth hereinabove. To that end, Subscriber affirms and represents that Subscriber alone, or with Subscriber’s purchaser representative(s), if any, has such knowledge and experience in financial and business matters that Subscriber is capable of evaluating the merits and risks of the prospective investment in the Company. Company may require additional information to substantiate the suitability of the investment for non-accredited investors.

8. **Representations, Warranties and Covenants of the Company.** The Company hereby represents, warrants, acknowledges and agrees as follows:

(a) The Company is a corporation duly incorporated, validly existing and in good standing under the laws of the State of Colorado. The Company is not in violation of any of the provisions of its Articles of Incorporation, Bylaws or other organizational or charter documents. Copies of the Company’s Articles of Incorporation and Bylaws are attached hereto as **Exhibit H** and **Exhibit I**, respectively.

(b) The Company has all power and authority to: (i) conduct its business as presently conducted and as proposed to be conducted; (ii) enter into and perform its obligations under this Agreement and any other documents relating to the Offering which may be referenced herein (collectively, the “Transaction Documents”); and (iii) issue, sell and deliver the Notes. The execution and delivery of each of the Transaction Documents has been duly authorized by the

necessary corporate action. This Agreement has been duly executed and when delivered will constitute, and each of the other Transaction Documents, upon due execution and delivery, will constitute, valid and binding obligations of the Company, enforceable against the Company in accordance with their respective terms (i) except as enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or other similar laws now or hereafter in effect relating to or affecting creditors' rights generally, including the effect of statutory and other laws regarding fraudulent conveyances and preferential transfers, and except that no representation is made herein regarding the enforceability of the Company's obligations to provide indemnification and contribution remedies under the securities laws and (ii) subject to the limitations imposed by general equitable principles (regardless of whether such enforceability is considered in a proceeding at law or in equity).

## 9. **Other Disclosures of the Company.**

(a) **The Company.** For information about the Company please review the Company's Business Plan, a copy of which is attached hereto as **Exhibit B.**

The Company's principal place of business is located at 3600 Huron St., Englewood, Colorado 80110.

The Company is governed by the individuals listed within **Exhibit C** attached hereto.

Prior to this Offering, the Shareholders of the Company are as set forth within **Exhibit E.** If the maximum number of Notes are sold in this Offering, upon conversion of the Notes the existing shareholders will collectively own 92.5% of the Company's voting stock.

(b) **Risk Factors.** The acquisition of an ownership interest in the Company involves a high degree of risk. Investors who cannot afford the loss of their entire investment should not participate in the financing. In evaluating the Company and the Company's business, investors should carefully consider the risk factors set forth on **Exhibit G** attached hereto, in addition to other information provided by the Company.

(c) **Use of Proceeds.** The Company intends to use the proceeds of this Offering (prior to payment of Offering expenses) as more fully set forth within **Exhibit E** attached hereto. The use of proceeds set forth therein represents an estimate only of the use of the net proceeds of the Offering based upon the Company's plans and current economic and industry conditions, and is subject to reallocation of proceeds between or among the categories listed above or to new and additional areas of use.

(d) **Current Capitalization.** **Exhibit F** sets forth the actual capitalization of the Company as of August 2022, and on an as-adjusted basis to reflect sales and conversion of the maximum amount of the Notes offered in the Offering, prior to deduction of estimated legal, accounting and other Offering expenses. The table does not reflect the use of proceeds.

(e) **Dilution.** There will be little, if any, dilution to investors in this Offering. The existing Shareholders contributed \$5,000,000.00 of equity in the aggregate. Investors in this Offering will contribute cash. The expenses of this Offering may reduce the net tangible book value per Unit by a nominal amount.

(f) **Terms of Offering.** See **Exhibit A** attached hereto.

(g) Articles of Incorporation. A copy of the Company's Articles of Incorporation (and any amendments thereto) is attached hereto as **Exhibit H**.

(h) Financial Statements. Attached hereto as **Exhibit D** are copies of the Company's most recent financial statements, which have been prepared in accordance with generally accepted accounting principals (GAAP).

(i) Purchase Price. The purchase price of the Notes has been established at face value.

(j) Liabilities of the Company. A schedule of the Company's current liabilities and documents related thereto is attached hereto as **Exhibit J**.

(k) Form of Note. A form of the Note to be issued to investors is attached hereto as **Exhibit K**.

10. **Indemnification**. The Purchaser agrees to indemnify and hold harmless the Company, and its officers, directors, employees, agents, attorneys, control persons and affiliates from and against all losses, liabilities, claims, damages, costs, fees and expenses whatsoever (including, but not limited to, any and all expenses incurred in investigating, preparing or defending against any litigation commenced or threatened) based upon or arising out of any actual or alleged false acknowledgment, representation or warranty, or misrepresentation or omission to state a material fact, or breach by the Purchaser of any covenant or agreement made by the Purchaser herein or in any other document delivered in connection with this Agreement.

11. **Irrevocability; Binding Effect**. The Purchaser hereby acknowledges and agrees that the subscription hereunder is irrevocable by the Purchaser, except as required by applicable law, and that this Agreement shall survive the death or disability of the Purchaser and shall be binding upon and inure to the benefit of the parties and their heirs, executors, administrators, successors, legal representatives, and permitted assigns. If the Purchaser is more than one person, the obligations of the Purchaser hereunder shall be joint and several and the agreements, representations, warranties, and acknowledgments herein shall be deemed to be made by and be binding upon each such person and such person's heirs, executors, administrators, successors, legal representatives, and permitted assigns.

12. **Modification**. Any of the terms or provisions of this Agreement shall not be modified or waived except by an instrument in writing signed by the party against whom any such modification or waiver is sought.

13. **Immaterial Modifications to the Offering Documents**. The Company may, at any time prior to the First Closing, amend the Offering documents if necessary to clarify any provision therein, without first providing notice or obtaining prior consent of the Purchaser, if, and only if, such modification is not material in any respect.

14. **Notices**. Any notice or other communication required or permitted to be given hereunder shall be in writing and shall be mailed by certified mail, return receipt requested, or delivered against receipt to the party to whom it is to be given (a) if to the Company, at the address set forth above, or (b) if to the Purchaser, at the address set forth on the signature page hereof (or, in either case, to such other address as the party shall have furnished in writing in accordance with the provisions of this section). Any notice or other communication given by

certified mail shall be deemed given at the time of certification thereof, except for a notice changing a party's address which shall be deemed given at the time of receipt thereof.

15. **Assignability.** This Agreement and the rights, interests and obligations hereunder are not transferable or assignable by the Purchaser and the transfer or assignment of the Notes shall be made only in accordance with all applicable laws.

16. **Applicable Law.** This Agreement shall be governed by and construed under the laws of the State of Colorado as applied to agreements among Colorado residents entered into and to be performed entirely within Colorado. Each of the parties hereto (1) agree that any legal suit, action or proceeding arising out of or relating to this Agreement shall be instituted exclusively in the state or federal courts located in Arapahoe County, Colorado, (2) waive any objection which the Company may have now or hereafter to the venue of any such suit, action or proceeding, and (3) irrevocably consent to the jurisdiction of such courts in any such suit, action or proceeding. Each of the parties hereto further agrees to accept and acknowledge service of any and all process which may be served in any such suit, action or proceeding in such courts and agree that service of process upon it mailed by certified mail to its address shall be deemed in every respect effective service of process upon it, in any such suit, action or proceeding. **THE PARTIES HERETO AGREE TO WAIVE THEIR RESPECTIVE RIGHTS TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION BASED UPON OR ARISING OUT OF THIS AGREEMENT OR ANY DOCUMENT OR AGREEMENT CONTEMPLATED HEREBY.**

17. **Blue Sky Qualification.** The purchase of Notes under this Agreement is expressly conditioned upon the exemption from qualification of the offer and sale of the Notes from applicable federal and state securities laws. The Company shall not be required to qualify this transaction under the securities laws of any jurisdiction and, should qualification be necessary, the Company shall be released from any and all obligations to maintain its offer, and may rescind any sale contracted, in the jurisdiction.

18. **Use of Pronouns.** All pronouns and any variations thereof used herein shall be deemed to refer to the masculine, feminine, neuter, singular or plural as the identity of the person or persons referred to may require.

19. **Confidentiality.** The Purchaser acknowledges and agrees that any information or data the Purchaser has acquired from or about the Company, not otherwise properly in the public domain, was received in confidence (the "**Confidential Information**"). Any distribution of the Confidential Information to any person other than the Purchaser named above, in whole or in part, or the reproduction of the Confidential Information, or the divulgence of any of its contents (other than to the Purchaser's tax and financial advisers, attorneys and accountants, who will likewise be required to maintain the confidentiality of the Confidential Information) is unauthorized, except that any Purchaser (and each employee, representative, or other agent of such Purchaser) may disclose to any and all persons, without limitations of any kind (except as provided in the next sentence) the tax treatment and tax structure of the transaction and all materials of any kind (including opinions or other tax analyses) that are provided to the Purchaser relating to such tax treatment and tax structure. Any such disclosure of the tax treatment, tax structure and other tax-related materials shall not be made for the purpose of offering to sell the Notes offered hereby or soliciting an offer to purchase any such securities. Except as provided above with respect to tax matters, the above named Purchaser agrees not to divulge, communicate or disclose, except as may be required by law or for the performance of this Agreement, or use to the detriment of the Company or for the benefit of any other person or

persons, or misuse in any way, any Confidential Information of the Company, including any scientific, technical, trade or business secrets of the Company and any scientific, technical, trade or business materials that are treated by the Company as confidential or proprietary, including, but not limited to, ideas, discoveries, inventions, developments and improvements belonging to the Company and confidential information obtained by or given to the Company about or belonging to third parties.

**20. Miscellaneous.**

(a) This Agreement, together with all exhibits and attachments hereto, constitutes the entire agreement between the Purchaser and the Company with respect to the subject matter hereof and supersedes all prior oral or written agreements and understandings, if any, relating to the subject matter hereof.

(b) The representations and warranties of the Company made in this Agreement shall survive the execution and delivery hereof and delivery of the Notes hereunder for a period of twelve (12) months from the date of issuance. The representations and warranties of the Purchaser made in this Agreement shall survive the execution and delivery hereof and delivery of the Notes hereunder indefinitely.

(c) Each of the parties hereto shall pay its own fees and expenses (including the fees of any attorneys, accountants, appraisers or others engaged by such party) in connection with this Agreement and the transactions contemplated hereby whether or not the transactions contemplated hereby are consummated.

(d) This Agreement may be executed in one or more counterparts each of which shall be deemed an original, but all of which shall together constitute one and the same instrument.

(e) Each provision of this Agreement shall be considered separable and, if for any reason any provision or provisions hereof are determined to be invalid or contrary to applicable law, such invalidity or illegality shall not impair the operation of or affect the remaining portions of this Agreement.

(f) Paragraph titles are for descriptive purposes only and shall not control or alter the meaning of this Agreement as set forth in the text.

**[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]**

INDIVIDUAL SIGNATURE PAGE

All individual investors must complete and sign this page. Total payment to be tendered by the Subscription Date is the amount on line 8. Where the Interest is to be held in joint tenancy or tenancy in common, both parties must sign and both Social Security numbers should be indicated.

THIS AGREEMENT SHALL NOT BIND COMPANY UNTIL IT HAS COUNTERSIGNED THIS PAGE.

1. Investor Name(s) (please print):
2. Social Security Number(s):
3. Form of Ownership (e.g., individual, joint tenants with rights of survivorship, tenants in common, community property):
4. Residence Address:
5. Mailing Address:
6. Home: Tel. No. (\_\_\_\_\_) \_\_\_\_\_; Facsimile No. (\_\_\_\_\_) Business: Tel. No. (\_\_\_\_\_) \_\_\_\_\_  
Facsimile No. (\_\_\_\_\_) \_\_\_\_\_
7. Total Purchase Price: \_\_\_\_\_ Dollars (\$\_\_\_\_\_)
8. Subscription Date (payment to be tendered on or before this date): \_\_\_\_\_

SIGNATURE OF SUBSCRIBER:

Date of Subscriber's Signature: \_\_\_\_\_, 2022

ACCEPTANCE:

**LUMENCO, INC.** hereby accepts Subscriber's offer to purchase a Convertible Promissory Note in the amount of \$\_\_\_\_\_.

By: \_\_\_\_\_  
Mark Raymond, President/CEO

Dated: \_\_\_\_\_, 2022

**Please return this Subscription Agreement and Letter of Investment Intent to:  
LUMENCO, INC.**

Attn: Mark Raymond, President/CEO  
3600 Huron St.  
Englewood, CO 80110



ENTITY SIGNATURE PAGE

All entity investors must complete and sign this page. Total payment to be made now is the amount on line 6.

THIS AGREEMENT SHALL NOT BIND COMPANY UNTIL IT HAS COUNTERSIGNED THIS PAGE.

1. Entity Name (please print): \_\_\_\_\_, a \_\_\_\_\_-
2. Employer Identification Number: \_\_\_\_\_ (Also include Social Security Numbers if a Trust or Partnership)
3. Business (Residence) Address:
4. Mailing Address (if different from above):
5. Business: Tel. No. (\_\_\_\_\_) \_\_\_\_\_; Facsimile No. (\_\_\_\_\_) \_\_\_\_\_
6. Total Purchase Price: \_\_\_\_\_ Dollars (\$\_\_\_\_\_)
7. Subscription Date: (Payment to be tendered on or before this date) \_\_\_\_\_, \_\_\_\_\_.

SIGNATURE:

Entity: \_\_\_\_\_

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

Its: \_\_\_\_\_

Date: \_\_\_\_\_

ACCEPTANCE:

**LUMENCO, INC.** hereby accepts Subscriber's offer to purchase a Convertible Promissory Note in the amount of \$\_\_\_\_\_.

By: \_\_\_\_\_  
Mark Raymond, President/CEO

Dated: \_\_\_\_\_, 2022

**Please return this Subscription Agreement and Letter of Investment Intent to:  
LUMENCO, INC.**

Attn: Mark Raymond, President/CEO  
3600 Huron St.  
Englewood, CO 80110

## **NOTICE REGARDING FINANCIAL PROJECTIONS**

**THIS AGREEMENT AND THE ACCOMPANYING EXHIBITS INCLUDE CERTAIN PROJECTIONS AND OTHER FORWARD-LOOKING INFORMATION PROVIDED BY THE COMPANY WITH RESPECT TO THE ANTICIPATED FUTURE PERFORMANCE OF THE COMPANY. THE ASSUMPTIONS AND ESTIMATES UNDERLYING THE PROJECTIONS ARE INHERENTLY UNCERTAIN AND, THOUGH CONSIDERED REASONABLE BY THE COMPANY, ARE SUBJECT TO SIGNIFICANT BUSINESS, ECONOMIC, REGULATORY, COMPETITIVE AND OTHER UNCERTAINTIES AND CONTINGENCIES, ALL OF WHICH ARE DIFFICULT TO PREDICT AND MANY OF WHICH ARE BEYOND THE CONTROL OF THE COMPANY. ACCORDINGLY, THERE CAN BE NO ASSURANCE THAT THE PROJECTED RESULTS WILL BE REALIZED. THE COMPANY DOES NOT INTEND TO UPDATE OR OTHERWISE REVISE THESE PROJECTIONS TO REFLECT CIRCUMSTANCES EXISTING AFTER THE DATE HEREOF OR TO REFLECT THE OCCURRENCE OF FUTURE EVENTS, EVEN IN THE EVENT THE ASSUMPTIONS OR ESTIMATES UNDERLYING THE PROJECTIONS ARE SHOWN TO BE IN ERROR. THE PROJECTIONS SHOULD NOT BE RELIED UPON BY INVESTORS AS PREDICTIONS OF FUTURE EVENTS. RATHER, INVESTORS ARE EXPECTED TO CONDUCT THEIR OWN INVESTIGATIONS AS TO THE COMPANY. IN MAKING AN INVESTMENT DECISION, INVESTORS MUST RELY ON THEIR OWN EXAMINATIONS OF THE COMPANY AND THE TERMS OF THE OFFERING, INCLUDING THE MERITS AND RISKS INVOLVED.**

## **LIST OF EXHIBITS**

Exhibit A:	Terms of Offering
Exhibit B:	Business Plan
Exhibit C:	Governance
Exhibit D:	Financial Statements
Exhibit E:	Use of Funds
Exhibit F:	Capitalization
Exhibit G:	Risk Factors
Exhibit H:	Articles of Incorporation
Exhibit I:	Bylaws
Exhibit J:	Schedule of Liabilities
Exhibit K:	Form of Subordinated Convertible Promissory Note

**EXHIBIT A**  
**TERMS OF OFFERING**

## LUMENCO, INC. OFFERING SYNOPSIS

**Securities:** Subordinated convertible Notes

**Amount:** up to \$3,000,000

**Purchase Price:** Face Value

**Interest Rate:** Annual interest rate of 10%, payable at maturity

**Minimum Investment:** \$10,000

### **Automatic Conversion**

Finance event of equity financing expected to be Series A preferred Stock with an aggregate of \$1,500,000 "Qualified Financing". Notes will convert with principal and interest to a price per share equal to 80% of the price per share paid by other investors for investments of less than \$100,000 and 70% of the price per share paid by the other purchasers of the Preferred Stock for the holders of notes with principal balance equal or greater than \$100,000.

### **Voluntary Conversion**

If the Company consummates a preferred stock financing that does not constitute a Qualified Financing, the Notes will be convertible into the preferred stock issued in the financing at a conversion price equal to the price per share paid by the other investors in the financing. If the Company does not consummate a Qualified Financing on or prior to the Maturity Date, the Notes will be convertible into common stock at a conversion price equal to \$0.80 per share; provided, however, that the Notes with principal balance equal to or greater than \$100,000 will be convertible into common stock at a conversion price of \$0.70 per share (approximately \$40 million pre-money value).

### **Liquidity Events**

Upon a change of control or an IPO, the Notes will be convertible into common stock at a conversion price equal to \$1.00 per share. Upon a change of control, the Note holder will have the option to have the Note instead be repaid with interest and a 25% premium.

### **Subordination**

The Notes will be subordinated to all the Company's indebtedness for borrowed money, whether or not such indebtedness for borrowed money is secured.

### **Other**

**This Summary of Terms is intended as an outline of certain of the material terms of the Notes and does not purport to summarize all the conditions, covenants, representations, warranties, and other provisions that would be contained in definitive documentation for the Note.**

**EXHIBIT B**  
**BUSINESS PLAN**

See attached.

# CONFIDENTIAL BUSINESS PLAN



# Lumenco

[www.lumenco.com](http://www.lumenco.com)

May 12, 2022

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# Executive Summary

## Opportunity

### Problem Summary

Lumenco is targeting two markets, the banknotes security features and EMI (electromagnetic interference) shielding.

#### **a) EMI:**

With growing advancements in wireless technology and increased signal sensitivity in devices, there has been a greater demand for shielding in avionic equipment.

The electromagnetic interference caused by induction or external radiation may affect the electrical circuit of the aircraft. Electromagnetic interference can cause temporary and permanent disruption in the circuit components. The induced electric fields may be intentional or unintentional but is a significant problem for advanced devices that degrade or entirely destroy the avionic equipment.

#### **b) Banknote Security Feature:**

Today, banknotes are high-tech products with numerous different security features distributed over well-defined security levels. “The key drivers determining the requirement for, and the type of, banknotes used around the world remain the need to provide security in the banknote ahead of the counterfeiter’s capabilities, the durability and efficiency of the banknote in circulation and the level of economic activity. Market demand for banknotes continues to grow on average at about 4 per cent annually although the rate varies around the world reflecting local circumstances.

### Target Market / Competition

#### **a) EMI**

The **global EMI shielding** market size is projected to grow from USD 6.2 billion in 2021 to reach USD 7.7 billion by 2026; it is expected to grow at a CAGR of 4.4% from 2021 to 2026.

The growth of the EMI shielding market is majorly driven by surging demand for consumer electronics, increasing electromagnetic pollution, and ongoing field trials and pilot tests evincing the viability of 5G.

#### **b) Banknote Security Feature:**

There are currently around 357 billion banknotes in circulation worldwide. Their average circulation lifespan ranges from under 12 months to several years. About 150 billion banknotes are printed every year to replace the worn notes taken out of circulation. For example, the European Union is producing around 8 billion new banknotes a year.

## **Solution Summary**

Lumenco has been a micro-optics company with a large patent portfolio in currency anti-counterfeiting, brand protection, lighting, solar, projection screens and most recently EMI. Lumenco has multi-year license agreements in brand protection, currency, and lighting providing minimum guarantees and much larger future revenues. Lumenco is just now coming out of pre revenue into revenue after about 9 years of development.

Lumenco's ownership in LenSys Sarl, a joint venture with Koenig and Bauer in Switzerland in the banknote anticounterfeiting space and projected future royalties of over \$50 million in the next 10 years.

## **Marketing Summary**

Lumenco will use the capital to commercialize new anti-counterfeiting currency features owned by Lumenco but developed under a research program with the US Government, as well as exciting new lightweight electromagnetic shielding technologies developed for the aerospace industry.

## **Break-Even Summary**

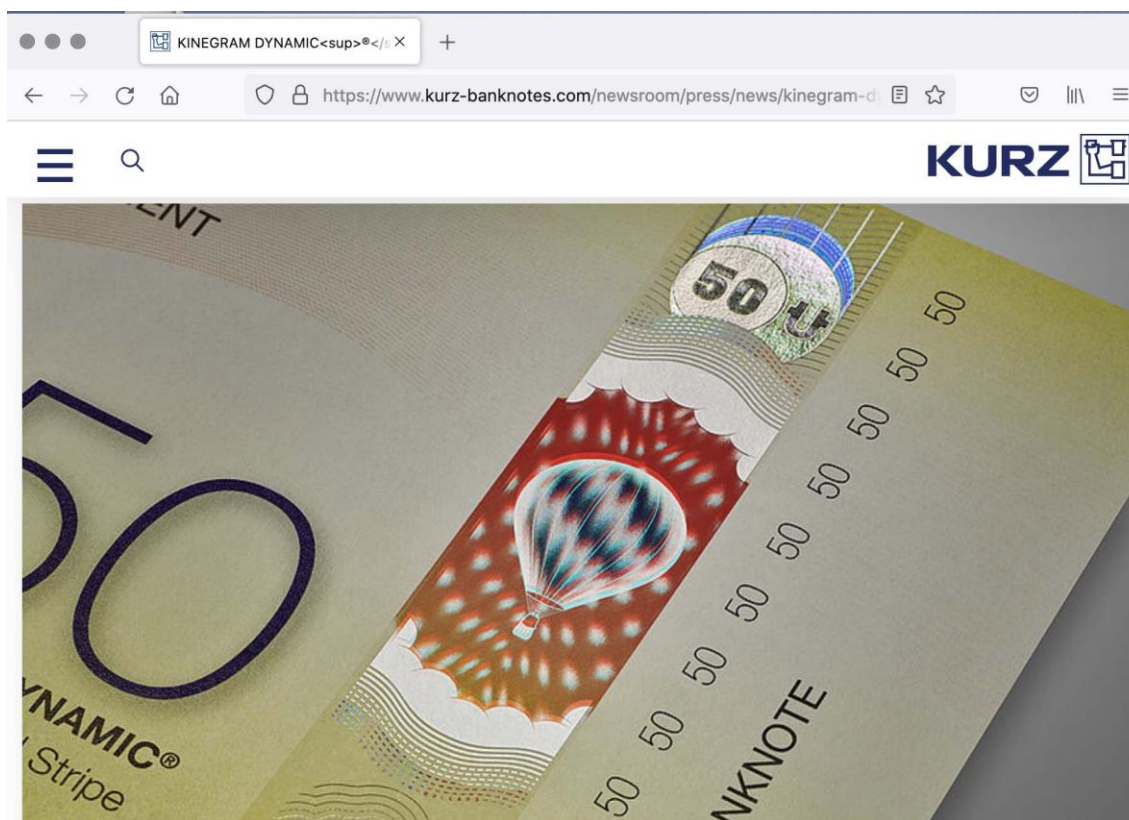
Current Overhead is roughly \$95,000 per month. Since revenues are mostly royalties, licensing and R and D currently break-even is about \$110-\$150,000 per month. Again, with additional capital to commercialize new opportunities Lumenco should cash flow well past break even.

## **Why Us?**

Lumenco now has dozens of patents in several industries worldwide and has been profitable for the last few years, and more importantly has designed and built custom equipment and processes for these features.

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- *Lumenco Websites*
    - [www.lumenco.com](http://www.lumenco.com)
    - [www.nanopixel.com](http://www.nanopixel.com)
    - [www.lumencoclarify.com](http://www.lumencoclarify.com)
  
  - *Lumenco Partners & Licensees*
    - Brand Protection, Accessos Holográficos: <https://accesosholograficos.com.mx/>
    - Currency Joint Venture (LenSys Sarl) Partner, Koenig, and Bauer: <https://banknote-solutions.koenig-bauer.com/en/>
    - Currency JV Licensee, Leonard Kurz: <https://www.leonhard-kurz.com/>
    - Kurz New Licensed Feature (Lumenco tech): [https://www.youtube.com/watch?v=M3Y\\_nNCHiMY](https://www.youtube.com/watch?v=M3Y_nNCHiMY)
    - Lumenco Lighting Technology Licensee, Bixby International: <https://www.bixbyintl.com/>
    - Theater Light Diffusion Licensee, Rosco: <https://us.rosco.com/en>
    - Mirraviz -Direct throw laser screen technologies: <https://mirraviz.com/products/mirraviz-laser-tv-screen-projector?variant=41741052772520>
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## KINEGRAM DYNAMIC® – New Dynamics for Safer Banknotes

KURZ has been a global leader in banknote security for more than 30 years. Based on the proprietary KINEGRAM® origination technology, the portfolio of security effects and technologies is constantly advanced.

The latest development marks the ultimate combination of security and appearance: KINEGRAM DYNAMIC®, unveiled on February 16<sup>th</sup>, 2022, in a webinar hosted by KURZ, is a solution that takes banknote security to a new level. Lens-based security elements for banknotes combine striking deep-view effects with eye-catching movement and engaging colors. The resulting features are nothing short of a revolution in visual appearance and security.

Highly attractive and truly intuitive, the authenticity of banknotes can be verified at a glance, with the 3D effect of KINEGRAM DYNAMIC® virtually absorbing the viewer into the feature. Multiple colors add to the visual allure and the versatile design options. The technology combines the best of all worlds in one highly secure, intuitive and visually appealing security element.

To experience KINEGRAM DYNAMIC® in a short interview with our experts, [🔗](#) please click here or [🔗](#) contact our sales team for samples. More information on our [🔗](#) global references is available here.

KURZ is a globally leading supplier of banknote security elements, providing feature design, project consultancy, application expertise, as well as machine and stamping die technology. KURZ solutions are the essential element for banknote security.

KBA-NotaSys and Lumenco launch LenSys joint-venture

10 December 2014

Lausanne, 10 December 2014. KBA-NotaSys S.A. of Lausanne, Switzerland and Lumenco Inc. of Englewood, CO, United States of America are pleased to announce that they are combining their technologies and expertise through the formation of a joint venture, LenSys Sarl, which will focus on the development, sales and marketing, of a new range of novel level-one security features.

The family of features proposed by LenSys combines Lumenco's patented micro lens optics with KBA-NotaSys' precise multi-color offset elements produced on the Super Simultan press. The strength of the feature is the easy recognition by the general public with stunning color and shape changing effects.

The offset element and its associated lens structure are designed and originated in combination to ensure both functionality and security. The combination of elements - the lenses themselves and the offset print enhance the security of the feature through the layered construction and at the same time provide unrivalled flexibility in banknote design even allowing the integration of the feature in an existing note design. color and shape changing effects.

The offset element and its associated lens structure are designed and originated in combination to ensure both functionality and security. The combination of elements - the lenses themselves and the offset print enhance the security of the feature through the layered construction and at the same time provide unrivalled flexibility in banknote design even allowing the integration of the feature in an existing note design.

Eric Boissonnas, CEO of KBA-NotaSys, describes KBA-NotaSys' motivation to create this joint venture as: "Another step in positioning our Super Simultan technology as the most cost-efficient way of creating highly-secure level-one security features. The combination of Lumenco's expertise in micro lens technology and the improved Simultan technology will create very striking security features. We are thrilled to now be able to present this to the market and develop the features even further.

Mark Raymond and Hector Porras, founders of Lumenco, comment: "Lumenco's goal was to find a respected development and commercialization partner that understood the technical aspects of its technology and the potential of printed micro lenses integrated into banknotes.

KBA-NotaSys represents a solid partner that will allow Lumenco to commercialize its micro lens technologies at the highest level and we are very excited to have the best possible partner in the banknote industry."

The new company, LenSys Sarl, is registered in Switzerland and will be managed by a board composed of representatives from both KBA-NotaSys and Lumenco. The day-to-day operation of the company will be headed by Michael Blesovsky who has a long established track-record in the industry.

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## **Financing**

### **Financing Needed**

Lumenco is looking for capital to commercialize banknote technology developed under contract with the Federal Reserve and BEP, as well as its newly tested lightweight EMI shielding for aircraft and satellites.

### **Sources of Funds**

Lumenco has been reinvesting in technologies since inception (self-funding all development) and has done only one round of capital investment from outside sources in about 10 years. Lumenco now has fully developed technologies ready for market and requires more capital to fully commercialize these technologies and take them to market.

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# Opportunity

## Problem & Solution

### A) EMI

#### Problem Worth Solving

With growing advancements in wireless technology and increased signal sensitivity in devices, there has been a greater demand for shielding in avionic equipment.

The electromagnetic interference caused by induction or external radiation may affect the electrical circuit of the aircraft. Electromagnetic interference can cause temporary and permanent disruption in the circuit components. The induced electric fields may be intentional or unintentional but is a significant problem for advanced devices that degrade or entirely destroy the avionic equipment. Thus, there has been a greater need for aircraft EMI shielding to save the electronics and prevent severe accidents that might occur due to electronic interference between the pilot and the connecting tower.

The **global EMI shielding** market size is projected to grow from USD 6.2 billion in 2021 to reach USD 7.7 billion by 2026; it is expected to grow at a CAGR of 4.4% from 2021 to 2026.

The growth of the EMI shielding market is majorly driven by surging demand for consumer electronics, increasing electromagnetic pollution, and ongoing field trials and pilot tests evincing the viability of 5G.

The global **Aircraft/Airspace EMI shielding market is projected to reach US\$ 993.0 million in 2024**. Increasing use of modern electronic equipment, advancement in EMI shielding technologies, and rising global aircraft fleet size are the major growth drivers of the market.

The market is segmented based on the aircraft type as Commercial Aircraft, Military Aircraft, Regional Aircraft, General Aviation, Helicopter, and UAV. **Commercial aircraft is expected to remain the growth engine** of the market during the forecast period.

The market is segmented as Equipment Shielding, Structural Shielding, and Bonding. **Equipment shielding is expected to remain the most dominant application segment** of the market during the forecast period, propelled by increasing shielding requirements for electrical equipment, avionics, and aircraft wiring and growing usage of electronic devices and digital systems in avionic systems.

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Based on the product type, the market is segmented as Conductive Coatings & Paints, Laminates, Tapes & Foils, Cable Over braids, Conductive Gaskets, and others. Conductive coatings & paints are expected to remain the dominant product type in the market during the forecast period, whereas the laminates, **tapes & foils** segment is expected to witness the highest growth in the same period, driven by an ongoing replacement of metal parts with composite ones, owing to the advantage of excellent strength-to-weight ratio at a relatively low weight.

#### **Global Aircraft/Airspace EMI Shielding Market Key Player**

Some of the market participants identified across the value chain of global Aircraft/Airspace EMI Shielding market are:

- Glenair, Inc
- Parker Hannifin Corporation (Chomerics Division)
- W. L. Gore & Associates, Inc.
- The 3M Company
- Laird Plc
- PPG Industries, Inc.
- Simotec (Thailand) Co. Ltd.
- HEICO Corporation
- Henkel AG & Co. KGaA

#### **Pricing of commercially available EMI Shielded films and Tapes**

The price of EMI Shielding products depends on their shielding effectiveness requirements, applications, conductive material type, and volumes.

3M and Laird are the largest suppliers of EMI shielding tapes charge between \$170/m<sup>2</sup> and \$500/m<sup>2</sup> for their products. Usually, the tape dimensions are from 1" or 3" wide, ranging from 50ft to 100ft.

Parker Chomerics, the largest supplier of EMI shielding films, charges between \$200/m<sup>2</sup> and \$300/m<sup>2</sup> for their films.

In our case, the price will mostly depend on the metal and deposition type and the volumes. Roughly assuming that the cost of our microstructure EMI shielding film (12" wide, with a length of 2500ft) is \$10,000, we are talking about \$43/m<sup>2</sup>, which gives us a relatively good profit margin with the selling price between \$200 and \$300/m<sup>2</sup>.

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## Our Solution

### EMI SHIELDING

Hi-Tech Application of Lumenco Technology



EMI (ElectroMagnetic Interference) Shielding is an essential concept to many devices as a protectant for critical components against electromagnetic fields. This is especially crucial for complex machines and assemblies in the aerospace and computing fields.

NASA lists the costs-per-pound to put a payload into orbit at rough \$10,000. As such, the ideal system for this involves an extremely lightweight material that disperses these fields effectively.

Lumenco recently lab-tested one of their experimental materials (patents pending) with very positive results. The material is a microstructured-film with a very thin metallized layer deposition coating. As this test was pursued to simply see if we are "in the ballpark", we did not expect such great results. The material was able to shield evenly across a large frequency range, where standard shielding has various peaks/valleys throughout the frequency bands. Our material is also significantly lighter (over 50% lighter) than the top competitors, which makes this approach highly attractive.

### **Proposed Proof of Concept Development Paths of Preparation Conductive Micro-Structured Film/Tape for Multiple EMI Shielding Applications**

#### ***Solution One: ITO Sputter Deposition on multiple microfacet-based micro structured polypropylene film***

ITO, or tin-doped indium-oxide, coatings used on optically clear polymer films are specially designed to reduce glare and enhance clarity in digital displays. The ITO coatings provide excellent electrical conductivity and optical transparency and are used as transparent electrodes in most display products.

These unique coatings can be deposited by reactive electron-beam evaporation or magnetron sputtering onto microcavities of micro structured, flexible films. ITO is robust and has a good sheet resistance range and high UV-Visible and Near IR transmission.

In addition, we can deposit other conductive metals like silver, chromium, and copper using evaporation, sputtered, or electron-beam deposition processes on different microstructure elements, including patterned and positive lens designs. However, the alternative metals are more expensive, heavier, and less transmissive than ITO.

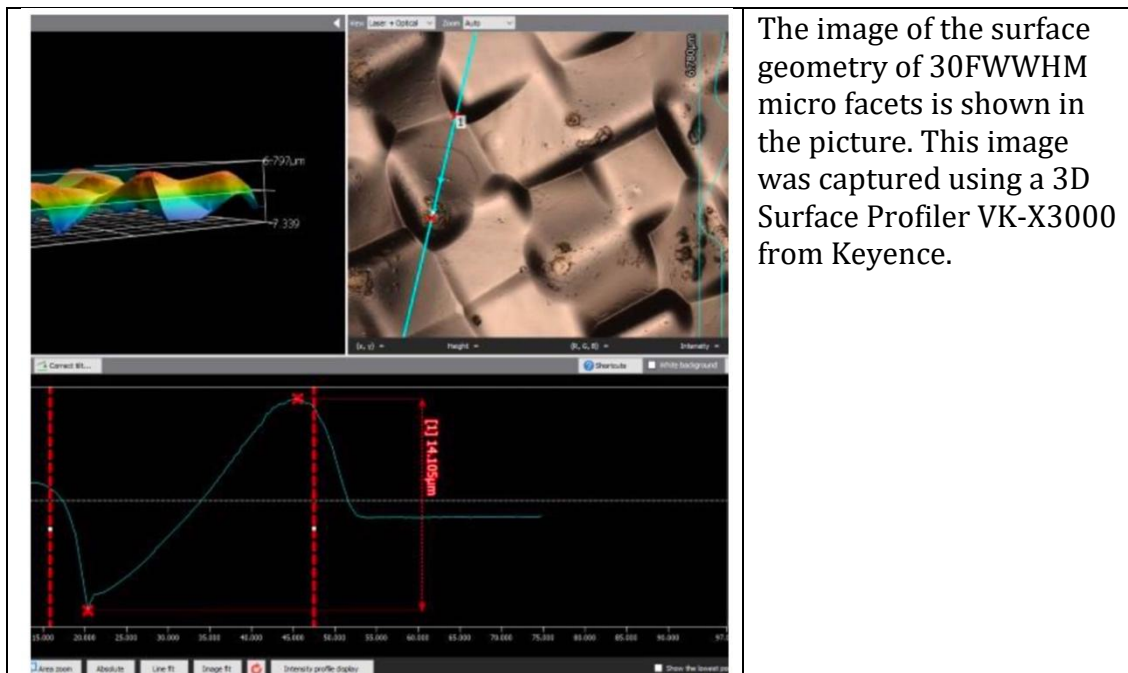
#### ***Solution Two: Extrusion Embossing and/or Injection Molding of Conductive Plastics that have micro structured surface***

Conductive plastics blend thermoplastic and conductive fillers that provide world-class shielding effectiveness and require no machining, plating, painting, or other added

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processing steps. Depending on the application (gaskets, grounding products, EMI Shielding tapes, etc.) and EMI shielding requirements, a blend can be based on any lightweight thermoplastic polymer (like PP, PC, ABS, etc.) and a conductive filler like nickel-plated carbon fibers, nickel graphite powder, etc. Usually, the conductive masterbatch is a single component pellet system ready for injection molding or extrusion. These materials provide shielding effectiveness greater than 85 dB, mechanical durability, high electrical conductivity, and low weight.

The two largest suppliers of conductive plastics can provide the conductive masterbatches and plastic compounds for EMI shielding applications: Parker Chomerics and RTP.



**The comparison technical data of competitive EMI shielding foils is shown in the table**

**Lumenco's micro structured EMI shielding copper film performing better and much lighter weight.**

EMI Shielding Foil Type	Micro structured EMI Shielding copper film	EMI Shielding Copper Foil No. 3006	EMI Shielding Copper Foil C-18	EMI Shielding Amucor aluminum foil 4701
Supplier	Lumenco	Zippertubing	Lamart Corporation	Holland Shielding Systems
Total Film Thickness,	60 $\mu\text{m}$	33 $\mu\text{m}$	41.2 $\mu\text{m}$	38 $\mu\text{m}$
PET film thickness	50 $\mu\text{m}$	20.3 $\mu\text{m}$	23.4 $\mu\text{m}$	23 $\mu\text{m}$
Cast micro structured pattern	10 $\mu\text{m}$	n/a	n/a	n/a
<b>Metal film thickness, <math>\mu\text{m}</math></b>	<b>0.1 <math>\mu\text{m}</math></b>	<b>12.7 <math>\mu\text{m}</math></b>	<b>17.8 <math>\mu\text{m}</math></b>	<b>12 <math>\mu\text{m}</math></b>
<b>Weight per square meter</b>	<b>87g/m<sup>2</sup></b>	<b>175g/m<sup>2</sup></b>	<b>245g/m<sup>2</sup></b>	<b>68 g/m<sup>2</sup></b>
<b>Shielding Effectiveness at 100MHz</b>	<b>52</b>	<b>85</b>	<b>105</b>	<b>53</b>
Elongation at Break	>5%	10%	>5%	>90%
Resistivity, $\mu\text{ohm. Cm}$	<2.5	<2.5	<2.5	2.7-2.9
Dielectric Strength, kV	>2	>2	5	>4

## B) Banknote Security Feature

## **Problem Worth Solving**

Today, banknotes are high-tech products with numerous different security features distributed over well-defined security levels. “The key drivers determining the requirement for, and the type of, banknotes used around the world remain the need to provide security in the banknote ahead of the counterfeiter’s capabilities, the durability and efficiency of the banknote in circulation and the level of economic activity. Market demand for banknotes continues to grow on average at about 4 per cent annually although the rate varies around the world reflecting local circumstances.

## **Our Solution**

Under BEP contract, Lumenco developed a completely different algorithm and IP than what was licensed and used by both KURZ and KBBS. Over \$10 million dollars was spent on this technology by the BEP. The project was discontinued with the BEP due to capacity issues at the BEP in Dallas and DC.

This new algorithm and corresponding software have been tested and used for 6 years. It has full freedom to operate from any other micro lens technology in the market. To be clear the IP and software is not what was licensed to Lensys or Kurz.

The pixel mapping used to generate the images is a completely new approach, that combined with Lumenco’s proprietary high-res printing or high res demet technology can generate dramatic and sophisticated (hard to mimic) effects on paper bank notes. A thread product on a single denomination can require about 100,000 Km / month. High end products in this market are sold for \$160/ KM  
Lumenco technology is ready for market.

## **Target Market / Competition**

### **Market Size & Segments**

#### **Currency Anti-Counterfeiting**

The currency anti-counterfeiting market is about a \$4 billion market per year, with about a dozen companies in the supply chain. The largest players in the market are G and D, Kurz,

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Sicpa and Crane currency. Each of these companies represent more than \$500 million in annual sales. Kurz is the largest feature (non-thread provider) provider for anti-counterfeiting solutions and is a licensee of Lumenco technology through Lumenco's joint venture partner Koenig and Bauer and has just launched and commercialized Kinegram Dynamic, Lumenco technology after about \$5 million in commercialization costs.

Lumenco will focus its "Pixel Displacement" technology developed for the BEP in the thread market with manufacturing in Mexico and France. South American countries are being targeted (such as Brazil and Argentina). Lumenco is in discussion with the currency paper providers for these countries for supply into these countries. Potential current opportunities for these countries are more than \$3 million per month for this feature.

#### **EMI Shielding**

Per the above the market is estimated at \$6.2 billion for 2021 and expected to be over \$7 billion by 2025.

## **Our Solution**

### **Unfair Competitive Advantages / Solving Unmet Needs**

Lumenco's core competency revolves around creative abilities to that allow the creation of micro-optic solutions for industries from currency anti-counterfeiting to solar energy. From this foundation, Lumenco™ has generated a large IP portfolio with patents in light diffusion and management, anti-counterfeiting, micro mirror reflectors, screen technologies, thin film solar devices, and ultra-lightweight electromagnetic shielding for aircrafts and aerospace.

## **Marketing & Sales**

### **Marketing Plan**

#### ***Light Diffusion and Light Management***

- Bixby International, Lumenco's lighting licensee with Lumenco's patented technologies is a 100+ year old company and is building both a marketing and sales team for lighting. Potential customers include Acuity Brands, Heil and others. Lumenco receives royalties and annual guarantees in that agreement.
- Rosco is already in the marketplace and Lumenco receives royalties on that technology.

#### ***Brand Protection (Nanopixel™ brand)***

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- Accesos Holográficos is our core licensee and is in Mexico City. They have sales offices throughout Mexico and South America and have a technology and royalty agreement with Lumenco, as well as a reciprocal manufacturing agreement for brand protection for Lumenco clients.
- Lumenco has several products and ongoing marketing efforts in the United States and has clients such as Colgate, Allergan, Diageo and others in the prototype stages as paying customers. Press releases, Zoom marketing emails and other promotions will continue.

### ***Currency Anti-Counterfeiting***

- Lumenco has a joint venture with Koenig and Bauer Banknote Solutions. K & B Solutions makes over 95% of the equipment used to produce banknotes worldwide and has every central bank in the world as a customer. With this reach, new features are being presented by the JV into the banknote area directly and through licensee Leonard Kurz. Kurz is the largest anti-counterfeiting feature provider in the world with features in more than 100 countries and is the exclusive feature provider for the Euro. As a licensee through Lumenco's JV, they have an aggressive marketing and sales operation worldwide as can be seen with Lumenco's licensed feature, Kinegram Dynamic [https://www.youtube.com/watch?v=M3Y\\_nNCHiMY](https://www.youtube.com/watch?v=M3Y_nNCHiMY)
- Lumenco New Technology "Pixel Displacement" developed under contract with the United States BEP. The BEP spent more than \$10 million developing this technology with Lumenco but is now completely owned by Lumenco. With the new success of Kinegram Dynamic, Lumenco has a great deal of credibility in the banknote arena. Several articles are coming out soon for Lumenco in currency News and other publications and several large, international companies are in talks with Lumenco to commercialize this technology for the banknote industry.

### ***EMI Shielding***

- Lumenco will begin to pursue an aggressive strategy of press releases, articles as PR for this new lightweight EMI shielding.
- Online advertising will also be a focus for EMI tapes, window and building coverings and so forth.
- Another specific target area will be the aerospace industry and associated publications.

## **Sales Plan**

Lumenco's licensees in different sectors include dozens of salespeople in their key areas. However, Lumenco will take the lead in the new currency technologies and EMI shielding and will use raised capital to put a team together.

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# Operations

## Locations & Facilities

Lumenco occupies an 8,000 square foot facility in Englewood, Colorado with lab, offices, warehouse, and manufacturing. Lumenco looks to move in about 12 months to a slightly larger, but less expensive facility in a different zone.

## Technology

Software of all types including ray tracing software, interlacing software and optical design software has been written internally at Lumenco for years. The software is protected and proprietary for Lumenco and its licensees. Lumenco has an extensive IP portfolio per the below.

Case Number	Country	Subcase	Title	Application Status	Application Number	Filing Date	Patent Number	Issue Date
79906.001	AU	01	PIXEL MAPPING, ARRANGING, AND IMAGING FOR ROUND AND SQUARE-BASED MICRO LENS ARRAYS TO ACHIEVE FULL VOLUME 3D AND MULTI-DIRECTIONAL MOTION	Granted	2013312883	4-Sep-13	2013312883	27-Jan-17
79906.001	CA	03	PIXEL MAPPING, ARRANGING, AND IMAGING FOR ROUND AND SQUARE-BASED MICRO LENS ARRAYS TO ACHIEVE FULL VOLUME 3D AND MULTI-DIRECTIONAL MOTION	Granted	2,884,155	4-Sep-13	2,884,155	11-Apr-17
79906.001	CH	05	PIXEL MAPPING, ARRANGING, AND IMAGING FOR ROUND AND SQUARE-BASED MICRO LENS ARRAYS TO ACHIEVE FULL VOLUME 3D AND MULTI-DIRECTIONAL MOTION	Granted	13835055.8	4-Sep-13	2893390	16-Nov-16
79906.001	CN	34	PIXEL MAPPING, ARRANGING, AND IMAGING FOR ROUND AND SQUARE-BASED MICRO LENS ARRAYS TO ACHIEVE FULL VOLUME 3D AND MULTI-DIRECTIONAL MOTION	Granted	201380055465.0	4-Sep-13	ZL201380055465.0	26-Sep-17
79906.001	DE	05	PIXEL MAPPING, ARRANGING, AND IMAGING FOR ROUND AND SQUARE-BASED MICRO LENS ARRAYS TO ACHIEVE FULL VOLUME 3D AND MULTI-DIRECTIONAL MOTION	Granted	13835055.8	4-Sep-13	602013014265.3	16-Nov-16
79906.001	EP	05	PIXEL MAPPING, ARRANGING, AND IMAGING FOR ROUND AND SQUARE-BASED MICRO LENS ARRAYS TO ACHIEVE FULL VOLUME 3D AND MULTI-DIRECTIONAL MOTION	Appealed	13835055.8	4-Sep-13	2893390	16-Nov-16
79906.001	FR	05	PIXEL MAPPING, ARRANGING, AND IMAGING FOR ROUND AND SQUARE-BASED MICRO LENS ARRAYS TO ACHIEVE FULL VOLUME 3D AND MULTI-DIRECTIONAL MOTION	Granted	13835055.8	4-Sep-13	2893390	16-Nov-16
79906.001	GB	05	PIXEL MAPPING, ARRANGING, AND IMAGING FOR ROUND AND SQUARE-BASED MICRO LENS ARRAYS TO ACHIEVE FULL VOLUME 3D AND MULTI-DIRECTIONAL MOTION	Granted	13835055.8	4-Sep-13	2893390	16-Nov-16
79906.001	HK	08	PIXEL MAPPING, ARRANGING, AND IMAGING FOR ROUND AND SQUARE-BASED MICRO LENS ARRAYS TO ACHIEVE FULL VOLUME 3D AND MULTI-DIRECTIONAL MOTION	Granted	16100261.4	4-Sep-13	1212454B	16-Nov-16
79906.001	MX	13	PIXEL MAPPING, ARRANGING, AND IMAGING FOR ROUND AND SQUARE-BASED MICRO LENS ARRAYS TO ACHIEVE FULL VOLUME 3D AND MULTI-DIRECTIONAL MOTION	Granted	MX/a/2015/002911	4-Sep-13	348176	5-Jun-17
79906.001	RU	77	PIXEL MAPPING, ARRANGING, AND IMAGING FOR ROUND AND SQUARE-BASED MICRO LENS ARRAYS TO ACHIEVE FULL VOLUME 3D AND MULTI-DIRECTIONAL MOTION	Granted	2015112287	4-Sep-13	2621173	31-May-17
79906.001	US	00	PIXEL MAPPING, ARRANGING, AND IMAGING FOR ROUND AND SQUARE-BASED MICRO LENS ARRAYS TO ACHIEVE FULL VOLUME 3D AND MULTI-DIRECTIONAL MOTION	Granted	14/017,415	4-Sep-13	9,132,690	15-Sep-15
79906.001	US	17	PIXEL MAPPING, ARRANGING, AND IMAGING FOR ROUND AND SQUARE-BASED MICRO LENS ARRAYS TO ACHIEVE FULL VOLUME 3D AND MULTI-DIRECTIONAL MOTION	Granted	14/820,861	7-Aug-15	9,701,150	11-Jul-17
79906.002	AU	01	PIXEL MAPPING AND PRINTING FOR MICRO LENS ARRAYS TO ACHIEVE DUAL-AXIS ACTIVATION OF IMAGES	Granted	2014315695	27-Feb-14	2014315695	9-May-19
79906.002	CA	03	PIXEL MAPPING AND PRINTING FOR MICRO LENS ARRAYS TO ACHIEVE DUAL-AXIS ACTIVATION OF IMAGES	Granted	2923132	3-Mar-16	2923132	8-Sep-20
79906.002	CN	34	PIXEL MAPPING AND PRINTING FOR MICRO LENS ARRAYS TO ACHIEVE DUAL-AXIS ACTIVATION OF IMAGES	Granted	201480060437.2	27-Feb-14	ZL201480060437.2	7-May-19
79906.002	CN	82	PIXEL MAPPING AND PRINTING FOR MICRO LENS ARRAYS TO ACHIEVE DUAL-AXIS ACTIVATION OF IMAGES	Granted	201810338774.3	27-Feb-14	201810338774.3	21-Apr-20
79906.002	EP	05	PIXEL MAPPING AND PRINTING FOR MICRO LENS ARRAYS TO ACHIEVE DUAL-AXIS ACTIVATION OF IMAGES	Published	14842836	27-Feb-14		



Case Number	Country	Subcase	Title	Application Status	Application Number	Filing Date	Patent Number	Issue Date
79906.002	JP	10	PIXEL MAPPING AND PRINTING FOR MICRO LENS ARRAYS TO ACHIEVE DUAL-AXIS ACTIVATION OF IMAGES	Granted	2016-540873	27-Feb-14	6349401	8-Jun-18
79906.002	MX	13	PIXEL MAPPING AND PRINTING FOR MICRO LENS ARRAYS TO ACHIEVE DUAL-AXIS ACTIVATION OF IMAGES	Granted	MX/a/2016/002927	27-Feb-14	359175	18-Sep-18
79906.002	US	00	PIXEL MAPPING AND PRINTING FOR MICRO LENS ARRAYS TO ACHIEVE DUAL-AXIS ACTIVATION OF IMAGES	Granted	14/190,592	26-Feb-14	9,019,613	28-Apr-15
79906.002	US	17	PIXEL MAPPING AND PRINTING FOR MICRO LENS ARRAYS TO ACHIEVE DUAL-AXIS ACTIVATION OF IMAGES	Granted	14/658,304	16-Mar-15	9,592,700	14-Mar-17
79906.003	AU	01	SLANTED LENS INTERLACING	Granted	2013352469	25-Nov-13	2013352469	7-Dec-17
79906.003	CA	03	SLANTED LENS INTERLACING	Granted	2,892,915	25-Nov-13	2,892,915	17-Oct-17
79906.003	CN	74	SLANTED LENS INTERLACING	Granted	201380071266.9	25-Nov-13	ZL201380071266.9	27-Apr-18
79906.003	EP	05	SLANTED LENS INTERLACING	Published	13859072.4	25-Nov-13		
79906.003	MX	13	SLANTED LENS INTERLACING	Granted	MX/a/2015/006866	25-Nov-13	348257	5-Jun-17
79906.003	US	00	SLANTED LENS INTERLACING	Granted	14/088,519	25-Nov-13	9,383,588	5-Jul-16
79906.004	AU	01	SLANT LENS INTERLACING WITH LINEARLY ARRANGED SETS OF LENSES	Granted	2015264559	25-Nov-16	2015264559	6-Feb-20
79906.004	CN	34	SLANT LENS INTERLACING WITH LINEARLY ARRANGED SETS OF LENSES	Granted	201580037897.8	12-May-15	ZL201580037897.8	6-Nov-18
79906.004	EP	05	SLANT LENS INTERLACING WITH LINEARLY ARRANGED SETS OF LENSES	Published	15795987.5	24-Nov-16		
79906.004	HK	08	SLANT LENS INTERLACING WITH LINEARLY ARRANGED SETS OF LENSES	Granted	16103333.2	25-Nov-13	HK1215474	19-Jul-19
79906.004	IN	56	SLANT LENS INTERLACING WITH LINEARLY ARRANGED SETS OF LENSES	Pending	201617040793	12-May-15		
79906.004	US	00	SLANT LENS INTERLACING WITH LINEARLY ARRANGED SETS OF LENSES	Granted	14/282,271	20-May-14	9,052,518	9-Jun-15
79906.004	US	17	SLANT LENS INTERLACING WITH LINEARLY ARRANGED SETS OF LENSES	Granted	14/722,992	27-May-15	9,482,791	1-Nov-16
79906.008	AU	01	SLANT LENS INTERLACING WITH LINEARLY ARRANGED LENSES	Granted	2014395153	25-Nov-16	2014395153	27-Feb-20
79906.008	CA	03	SLANT LENS INTERLACING WITH LINEARLY ARRANGED LENSES	Granted	2,950,253	20-May-14	2,950,253	12-Feb-19
79906.008	CH	05	SLANT LENS INTERLACING WITH LINEARLY ARRANGED LENSES	Granted	14892272.7	24-Nov-16	3145728	12-Feb-20
79906.008	CN	34	SLANT LENS INTERLACING WITH LINEARLY ARRANGED LENSES	Granted	201480080534.8	20-May-14	ZL201480080534.8	3-Sep-19
79906.008	DE	05	SLANT LENS INTERLACING WITH LINEARLY ARRANGED LENSES	Granted	14892272.7	24-Nov-16	602014061088.9	12-Feb-20
79906.008	EP	05	SLANT LENS INTERLACING WITH LINEARLY ARRANGED LENSES	Granted	14892272.7	24-Nov-16	3145728	12-Feb-20
79906.008	FR	05	SLANT LENS INTERLACING WITH LINEARLY ARRANGED LENSES	Granted	14892272.7	24-Nov-16	3145728	12-Feb-20
79906.008	GB	05	SLANT LENS INTERLACING WITH LINEARLY ARRANGED LENSES	Granted	14892272.7	24-Nov-16	3145728	12-Feb-20
79906.008	LI	05	SLANT LENS INTERLACING WITH LINEARLY ARRANGED LENSES	Granted	14892272.7	24-Nov-16	3145728	12-Feb-20
79906.008	NL	05	SLANT LENS INTERLACING WITH LINEARLY ARRANGED LENSES	Granted	14892272.7	24-Nov-16	3145728	12-Feb-20
79906.009	US	00	OPTICAL SECURITY ELEMENTS WITH OPAQUE MASKS FOR ENHANCED LENS-TO-PRINTED PIXEL ALIGNMENT	Granted	15/980,352	15-May-18	10,369,832	6-Aug-19
79906.009	WO	16	OPTICAL SECURITY ELEMENTS WITH OPAQUE MASKS FOR ENHANCED LENS-TO-PRINTED PIXEL ALIGNMENT	Published	PCT/US2018/032782	15-May-18		

Case Number	Country	Subcase	Title	Application Status	Application Number	Filing Date	Patent Number	Issue Date
79897.001	US	00	CONVERSION OF A DIGITAL STEREO IMAGE INTO MULTIPLE VIEWS WITH PARALLAX FOR 3D VIEWING WITHOUT GLASSES	Granted	13/749,861	25-Jan-13	9,786,253	10-Oct-17
79897.005	US	00	MULTI-LAYERED WAVEGUIDE FOR CAPTURING SOLAR ENERGY	Granted	14/258,759	22-Apr-14	9,477,033	25-Oct-16
79897.014	DE	05	ARRAYS OF MICRO MIRRORS FOR USE IN IMAGING SECURITY DEVICES	Granted	16871264.4	16-May-18	3362827	29-Sep-21
79897.014	DE	07	ARRAYS OF MICRO MIRRORS FOR USE IN IMAGING SECURITY DEVICES	Granted	202016008971.0	1-Feb-21	202016008971.0	15-Feb-21
79897.014	EP	05	ARRAYS OF MICRO MIRRORS FOR USE IN IMAGING SECURITY DEVICES	Granted	16871264.4	16-May-18	3362827	29-Sep-21
79897.014	EP	93	ARRAYS OF MICRO MIRRORS FOR USE IN IMAGING SECURITY DEVICES	Allowed	21184802.3	9-Jul-21		
79897.014	FR	05	ARRAYS OF MICRO MIRRORS FOR USE IN IMAGING SECURITY DEVICES	Granted	16871264.4	16-May-18	3362827	29-Sep-21
79897.014	HK	08	ARRAYS OF MICRO MIRRORS FOR USE IN IMAGING SECURITY DEVICES	Unfiled				
79897.014	IE	05	ARRAYS OF MICRO MIRRORS FOR USE IN IMAGING SECURITY DEVICES	Granted	16871264.4	16-May-18	3362827	29-Sep-21
79897.014	MT	05	ARRAYS OF MICRO MIRRORS FOR USE IN IMAGING SECURITY DEVICES	Granted	16871264.4	16-May-18	3362827	29-Sep-21
79897.014	US	00	ARRAYS OF MICRO MIRRORS FOR USE IN IMAGING SECURITY DEVICES	Granted	15/162,113	23-May-16	10,189,294	29-Jan-19
79897.014	US	17	ARRAYS OF MICRO MIRRORS FOR USE IN IMAGING SECURITY DEVICES	Granted	16/203,128	28-Nov-18	10,901,191	26-Jan-21
79897.014	US	36	ARRAYS OF MICRO MIRRORS FOR USE IN IMAGING SECURITY DEVICES	Published	17/152,623	19-Jan-21		
79897.015	US	00	ARRAYS OF INDIVIDUALLY ORIENTED MICRO MIRRORS PROVIDING INFINITE AXIS ACTIVATION IMAGING FOR IMAGING SECURITY DEVICES	Granted	15/588,831	8-May-17	10,317,691	11-Jun-19
79897.020	AT	05	LENS-BASED SECURITY DEDICATED TO INDIVIDUAL COLORS FOR CURRENCY AND BRAND AUTHENTICATION	Granted	17860563.0	14-May-19	3526053	17-Feb-21
79897.020	CH	05	LENS-BASED SECURITY DEDICATED TO INDIVIDUAL COLORS FOR CURRENCY AND BRAND AUTHENTICATION	Granted	17860563.0	14-May-19	3526053	17-Feb-21
79897.020	DE	05	LENS-BASED SECURITY DEDICATED TO INDIVIDUAL COLORS FOR CURRENCY AND BRAND AUTHENTICATION	Granted	17860563.0	14-May-19	602017032978.9	17-Feb-21
79897.020	EP	05	LENS-BASED SECURITY DEDICATED TO INDIVIDUAL COLORS FOR CURRENCY AND BRAND AUTHENTICATION	Granted	17860563.0	14-May-19	3526053	17-Feb-21
79897.020	ES	05	LENS-BASED SECURITY DEDICATED TO INDIVIDUAL COLORS FOR CURRENCY AND BRAND AUTHENTICATION	Granted	17860563.0	14-May-19	3526053	17-Feb-21
79897.020	FR	05	LENS-BASED SECURITY DEDICATED TO INDIVIDUAL COLORS FOR CURRENCY AND BRAND AUTHENTICATION	Granted	17860563.0	14-May-19	3526053	17-Feb-21
79897.020	GB	05	LENS-BASED SECURITY DEDICATED TO INDIVIDUAL COLORS FOR CURRENCY AND BRAND AUTHENTICATION	Granted	17860563.0	14-May-19	3526053	17-Feb-21
79897.020	IT	05	LENS-BASED SECURITY DEDICATED TO INDIVIDUAL COLORS FOR CURRENCY AND BRAND AUTHENTICATION	Granted	17860563.0	14-May-19	502021000037676.0	17-Feb-21
79897.020	LI	05	LENS-BASED SECURITY DEDICATED TO INDIVIDUAL COLORS FOR CURRENCY AND BRAND AUTHENTICATION	Granted	17860563.0	14-May-19	3526053	17-Feb-21
79897.020	MT	05	LENS-BASED SECURITY DEDICATED TO INDIVIDUAL COLORS FOR CURRENCY AND BRAND AUTHENTICATION	Granted	17860563.0	14-May-19	3526053	17-Feb-21
79897.020	SE	05	LENS-BASED SECURITY DEDICATED TO INDIVIDUAL COLORS FOR CURRENCY AND BRAND AUTHENTICATION	Granted	17860563.0	14-May-19	3526053	17-Feb-21
79897.029	US	00	MULTI-FACETED DIFFUSER PROVIDING SPECIFIC LIGHT DISTRIBUTIONS FROM A LIGHT SOURCE	Granted	16/894,489	5-Jun-20	10,914,875	9-Feb-21
79897.029	US	17	MULTI-FACETED DIFFUSER PROVIDING SPECIFIC LIGHT DISTRIBUTIONS FROM A LIGHT SOURCE	Published	17/144,504	8-Jan-21		
79897.029	WO	16	MULTI-FACETED DIFFUSER PROVIDING SPECIFIC LIGHT DISTRIBUTIONS FROM A LIGHT SOURCE	Published	PCT/US2020/041390	9-Jul-20		
79897.032	US	00	DIFFUSER COMBINING A MULTI-FACETED SURFACE AND A LENS-COVERED SURFACE TO PROVIDE SPECIFIC LIGHT DISTRIBUTIONS	Published	17/185,680	25-Feb-21		
79897.033	US	50	MICRO DE-METALLIZATION FOR PRODUCING METALLIZED MASKS FOR OPTICAL FEATURES AND EMI APPLICATIONS	Pending	63/318,039	9-Mar-22		

## Equipment & Tools

Lumenco is moving about \$1 million in equipment to its licensee in Mexico City after spending three years developing manufacturing processes for brand protection and currency to a

secured location. The equipment will be fully staffed and available for Lumenco to manufacture.

Lumenco will keep its chemistry lab and associated equipment in Denver as well as its fiber optic welding system for micro-optic tooling.

However, with a successful fund raise new equipment for casting optical structures will be purchased for EMI shielding and other security projects for possible installation in Denver.

## Key Relationships

- *Lumenco Partners & Licensees*
  - Brand Protection, Accessos Holográficos: <https://acesosholograficos.com.mx/>
  - Currency Joint Venture (LenSys Sarl) Partner, Koenig, and Bauer: <https://banknote-solutions.koenig-bauer.com/en/>
  - Currency JV Licensee, Leonard Kurz: <https://www.leonhard-kurz.com/>
  - Kurz New Licensed Feature (Lumenco tech): [https://www.youtube.com/watch?v=M3Y\\_nNCHiMY](https://www.youtube.com/watch?v=M3Y_nNCHiMY)
  - Lumenco Lighting Technology Licensee, Bixby International: <https://www.bixbyintl.com/>
  - Theater Light Diffusion Licensee, Rosco: <https://us.rosco.com/en>

## Milestones & Metrics

### Milestones

Lumenco has signed deals in different categories per the above.

#### Other Key Milestones

- Lumenco will seek to close another license deal in the currency sector in Europe in 2022 with at least \$500K per year in minimum guarantees.
- Lumenco will install equipment in Mexico for currency thread production with its partners in Mexico in 2022.
- Lumenco install equipment for EMI shielding in the United States or Mexico in 2022 and put together a sales team for this market.

### Key Metrics

INSTRUCTIONS: Explain which performance metrics are most important for understanding how your business is doing. What does success mean for you, and how will you know it when you see it?

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## **Break Even Analysis & Commentary**

With a \$500K EBIDA in 2020 and about \$150K in 2021, Lumenco has been cash flowing and more than breaking even, despite multimillion-dollar investments in new technologies in the last few years. Lumenco will continue this trend on an upward scale, both investing and commercializing and moving into real revenue in 2022 and beyond. Management sees no reason that losses during this growth phase will be necessary and they are not projected.

# Financial Plan

## Forecast

### Key Assumptions

Lumenco will use the capital to commercialize new anti-counterfeiting currency features owned by Lumenco but developed under a research program with the US Government, as well as exciting new lightweight electromagnetic shielding technologies developed for the aerospace industry. For this round of capital, a valuation of \$40 million will be used based upon overall IP, Lumenco's ownership in LenSys Sarl, a joint venture with Koenig and Bauer in Switzerland in the banknote anticounterfeiting space and projected future royalties of over \$50 million in the next 10 years. Post investment, Lumenco will look to achieve a \$120 million plus valuation within 3 years and monetize investors capital. A valuation was done by an outside investment bank in 2021 at \$70 million for Lumenco.

Lumenco has been a micro-optics company with a large patent portfolio in currency anti-counterfeiting, brand protection, lighting, solar, projection screens and most recently EMI. Lumenco has multi-year license agreements in brand protection, currency, and lighting providing minimum guarantees and much larger future revenues. Lumenco is just now coming out of pre revenue into revenue after about 9 years of development.

Through its joint venture in Switzerland with Koenig and Bauer Banknote Solutions (LenSys Sarl), Lumenco licensed previously developed micro-optic currency tech to a large currency feature provider in Germany (Leonard Kurz). This technology has been launched into the currency world in the last few months after 4 years and more than \$5 million in commercialization costs. The feature has been very well received by central banks and now is the leader in decisions for several large volume iconic banknotes in the next 3 years. These banknotes could provide royalties of about \$30-\$40 million to Lumenco in the next 10 years, with the first revenues hitting in late 2025 and approximate royalties of \$5 million the first year of implementation, and about \$3-\$4 million per year thereafter.

Forecast: See statement section

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# Company

## Overview

Founded in 2012 by Mark Raymond and Hector Porras, Lumenco Inc. is a development -stage company. In 2013, we incorporated as a C Corporation, registered in Colorado, USA.

Lumenco™ has specific expertise in micro-optics and associated software. Our micro-optic technologies represent a platform that has application across a wide array of diverse markets and industries. We have identified three primary markets to focus our initial development efforts, and we expect near-term commercialization in two of these three markets.

Mark, Hector, and Lumenco™ inventors are recognized in the micro-optics space as leaders in technology development with over forty patents either issued or filed. Additional senior management includes seasoned professionals with extensive experience in development-stage businesses. The Board of Directors is composed of senior management professionals, as well as two outside directors with years of successful business and investment credentials.

## Team

### Management Team

#### **Mark Raymond**

Founder, Chief Executive Officer, Chairman of the Board of Directors

Mark Raymond is a serial entrepreneur and scientist, having founded multiple companies and authored or co-authored over 50 patents in micro-optics in fields from currency anti-counterfeiting to solar, lighting and screen technologies.

Mark has served on the board of directors for various companies over the years and enjoys helping entrepreneurs build and sell businesses.

Mark is considered one of the world's foremost authorities on micro-lens imaging design and reproduction including software development, lab testing and production.

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### **Hector Porras**

Founder, Vice President of Research + Development, Director.

Hector brings significant experience in developing new lenticular technologies with a wide variety of applications to Lumenco. He began his career as a television show producer for Chilean National Television.

In 2006, Hector shifted gears and served as Account Manager for DCL Motion Products, a developer of lenticular products. Prior to joining the Lumenco team, Hector served as Product Development Engineer for Genie Lens Technologies, LLC, a developer of anti-counterfeiting, solar, and lenticular products. An industrial civil engineer, Hector also contributes his experience as COO in several manufacturing and logistics companies.

### **Michael German**

Brand Solutions Development

Michael German leads Scientific development of pigments, inks, and coating chemistries, now for new Lumenco® NanoDye™ process. Michael has a long career beginning in digital printing ink at Indigo® (Israel), launching the original USA strategic development projects in 2001, and later launched Gans Security Ink in California for years.

### **Tyler Kapus**

Technology Development Supervisor

With a background in 3D animation, Tyler Kapus has utilized his passion for knowledge and technology by bringing new ideas into the field of light management. During his five-year career at Lumenco, he has been a driving force in pushing many of Lumenco's light-based technologies forward. In addition to being the primary designer and operator of Lumenco's proprietary raytracing software, he also leads a design team focused specifically on lens-based graphic security technologies.

### **Advisors**

**INSTRUCTIONS:** Describe any mentors, investors, former professors, industry or subject-matter experts, knowledgeable friends or family members, small-business counselors, or others who can help you as a business owner.

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**EXHIBIT C**

**GOVERNANCE**

**DIRECTORS OF THE COMPANY**

4. Provide the following information about each manager (and any persons occupying a similar status or performing a similar function) of the issuer:

Name:  Rick Keister  Dates of Service:  2013 - Present

Principal Occupation:  Investor / Retired

Employer:  N/A  Dates of Service:

Employer's principal business:

List all positions and offices with the issuer held and the period of time in which the director served in the position or office:

Position:   Dates of Service:

Business Experience: List the employers, titles and dates of positions held during past three years with an indication of job responsibilities: leading sales/marketing efforts, product and process development, and business management.

Employer:  N/A

Employer's principal business:

Title:   Dates of Service:

Responsibilities:

Name:  Mike Acks  Dates of Service:  2013 - Present

Principal Occupation:  Investor / Retired

Employer:  N/A  Dates of Service:

Employer's principal business:

List all positions and offices with the issuer held and the period of time in which the director served in the position or office:

Position:   Dates of Service:

Business Experience: List the employers, titles and dates of positions held during past three years with an indication of job responsibilities: leading sales/marketing efforts, product and process development, and business management.

Employer:  N/A

Employer's principal business:

Title:   Dates of Service:

Responsibilities:



Name: Mark Raymond Dates of Service: 2012 - Present

Principal Occupation: CEO / President

Employer: Lumenco, LLC Dates of Service: 2012 - Present

Employer's principal business: Security Solutions

List all positions and offices with the issuer held and the period of time in which the director served in the position or office:

Position: \_\_\_\_\_ Dates of Service: \_\_\_\_\_

Business Experience: List the employers, titles and dates of positions held during past three years with an indication of job responsibilities: leading sales/marketing efforts, product and process development, and business management.

Employer: Lumenco, LLC

Employer's principal business: \_\_\_\_\_

Title: \_\_\_\_\_ Dates of Service: \_\_\_\_\_

Responsibilities: \_\_\_\_\_

Name: Hector Porras Dates of Service: 2012 - Present

Principal Occupation: Vice President

Employer: Lumenco, LLC Dates of Service: 2012 - Present

Employer's principal business: Security Solutions

List all positions and offices with the issuer held and the period of time in which the director served in the position or office:

Position: \_\_\_\_\_ Dates of Service: \_\_\_\_\_

Business Experience: List the employers, titles and dates of positions held during past three years with an indication of job responsibilities: leading sales/marketing efforts, product and process development, and business management.

Employer: Lumenco, LLC

Employer's principal business: \_\_\_\_\_

Title: \_\_\_\_\_ Dates of Service: \_\_\_\_\_

Responsibilities: \_\_\_\_\_

**OFFICERS OF THE COMPANY**

5. Provide the following information about each officer (and any persons occupying a similar status or performing a similar function) of the issuer:

Name: Mark Raymond

Title: CEO / President Dates of Service: 2012 - Present

Responsibilities: \_\_\_\_\_

List any prior positions and offices with the issuer and the period of time in which the officer served in the position or office:

Business Experience: List any other employers, titles and dates of positions held during past three years with an indication of job responsibilities: N/A

Employer: \_\_\_\_\_

Employer's principal business: \_\_\_\_\_

Title: \_\_\_\_\_ Dates of Service: \_\_\_\_\_

Responsibilities: \_\_\_\_\_

Name: Hector Porras

Title: Vice President Dates of Service: 2012 - Present

Responsibilities: \_\_\_\_\_

List any prior positions and offices with the issuer and the period of time in which the officer served in the position or office:

Business Experience: List any other employers, titles and dates of positions held during past three years with an indication of job responsibilities:

Employer: \_\_\_\_\_

Employer's principal business: \_\_\_\_\_

Title: \_\_\_\_\_ Dates of Service: \_\_\_\_\_

Responsibilities: \_\_\_\_\_

INSTRUCTION TO QUESTION 5: For purposes of this Question 5, the term officer means a president, vice president, secretary, treasurer or principal financial officer, comptroller or principal accounting officer, and any person routinely performing similar functions.

**EXHIBIT D**  
**FINANCIAL STATEMENTS**

**Lumenco, Inc. & Subsidiary**  
**Consolidated Balance Sheets**  
**December 31, 2021**

	12/31/2021	12/31/20
<b>ASSETS</b>		
Current Assets:		
Cash	\$ 333,628	\$ 74,224
Accounts Receivable	44,367	214,845
Inventory	103,470	100,872
Other Current Assets	7,554	7,170
Total Current Assets	<u>489,019</u>	<u>397,111</u>
Property, Plant and Equipment	1,025,941	974,804
Accumulated Depreciation	<u>(607,715)</u>	<u>(443,621)</u>
Net Property, Plant and Equipment	418,226	531,183
Patents	360,016	360,016
Accumulated Amortization	<u>(157,920)</u>	<u>(133,919)</u>
Net Patents	202,096	226,097
Total Assets	<u>\$ 1,109,341</u>	<u>\$ 1,154,391</u>
<b>LIABILITIES AND SHAREHOLDERS EQUITY</b>		
Current Liabilities:		
Accounts Payable and Accrued Expenses	\$ 8,318	\$ 26,326
Down Payment on Equipment Sale	250,000	-
Interest Payable, Related Party	304,102	249,184
Accrued Wages Payable	-	19,632
Related Party Notes Payable	26,367	57,991
Related Party Convertible Notes Payable	<u>300,000</u>	<u>300,000</u>
Total Current Liabilities	888,787	653,133
Long Term Debt	408,784	539,532
Total Liabilities	<u>1,297,571</u>	<u>1,192,665</u>
Shareholders Equity:		
Series A Preferred Stock, no par value: 1,000,000 shares authorized; 714,285 issued and outstanding; liquidation preference of \$2,499,998	2,499,998	2,499,998
Common Stock, no par value: 100,000,000 shares authorized; 35,000,000 shares issued and outstanding	3,050,500	3,050,500
Contributed Capital	621,346	621,346
Accumulated Deficit	<u>(6,360,074)</u>	<u>(6,210,118)</u>
Total Shareholders Equity	(188,230)	(38,274)
Total Liabilities and Shareholders Equity	<u>\$ 1,109,341</u>	<u>\$ 1,154,391</u>

**Lumenco, Inc. & Subsidiary**  
**Consolidated Income Statements**  
**December and 2021**

	December	2021
Revenue	\$ 43,502	\$ 1,955,789
Cost of Sales	<u>\$ 175,123</u>	<u>\$ 206,733</u>
Gross Profit	\$ (131,621)	\$ 1,749,056
Operating Expenses:		
Salaries and Benefits	71,921	1,094,661
Research & Development	1,338	123,964
Occupancy:		
Rent	9,434	112,712
Utilities	1,527	19,896
Cleaning Expense	264	3,338
Total Occupancy	<u>11,225</u>	<u>135,946</u>
Corporate Insurance	3,423	45,960
Marketing	-	7,112
Auto Expense	850	14,541
Bank Service Charge	218	4,356
Travel	344	27,570
Meals & Entertainment	60	10,454
Office Expenses	3,992	37,680
Postage & Delivery	2,571	35,035
Incoming Freight	826	21,393
Software Expense	109	11,933
Outside Services	177	15,213
Professional Fees	1,500	162,208
Other	235	4,802
Total Operating Expenses	<u>98,789</u>	<u>1,752,828</u>
PPP Income	-	137,534
EBIDA	(230,410)	133,762
Interest Expense	57,661	95,623
Depreciation	13,916	164,094
Amortization	2,000	24,001
Net Income	<u>\$ (303,987)</u>	<u>\$ (149,956)</u>

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**Lumenco, Inc. & Subsidiary**  
**Consolidated Statement of Cash Flows**  
**Year Ending December 31, 2021**

**Cash Flow Provided by (Used In) Operating Activities:**

Net Income	\$ (149,956)
Depreciation	164,094
Amortization	24,001
<b>Changes in Current Assets and Liabilities:</b>	
Decrease (Increase) in Accounts Receivable	170,478
Decrease (Increase) in Inventory	(2,598)
Decrease (Increase) in Other Current Assets	(384)
Increase (Decrease) in Accounts Payable and Accrued Expenses	36,910
Increase (Decrease) in Down Payments	250,000
Increase (Decrease) in Accrued Wages Payable	(19,632)
Increase (Decrease) in Related Party Notes Payable	(31,624)
<b>Net Cash Provided by (Used In) Operating Activities</b>	<u>441,289</u>
<b>Cash Flow Provided by (Used In) Investing Activities:</b>	
Purchase of Property, Plant and Equipment	(51,137)
<b>Cash Flow Provided by (Used In) Financing Activities:</b>	
Principal Payments of Long Term Debt	(130,748)
<b>Change in Cash Flow</b>	<u>259,404</u>
Beginning Cash	74,224
<b>Ending Cash</b>	<u><u>\$ 333,628</u></u>

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**EXHIBIT E**  
**USE OF FUNDS**

## LUMENCO, INC.

### Use of Offering Proceeds

	If Minimum Offering Amount Sold	If Maximum Offering Amount Sold
Total Proceeds	\$ 50,000	\$ 3,000,000
Net Proceeds of Offering	\$ 50,000	\$ 3,000,000
Legal related to patents, trademarks, and commissions	16,000	225,000
Testing	9,000	85,000
Sales Samples	12,000	0
Marketing	13,000	0
Equipment	N/A	685,000
Inventory	N/A	N/A
New currency tech development	0	105,000
Debt retirement	0	700,000
Equity buy back LenSys Sarl	0	800,000
Working Capital	0	400,000
Total Use of Net Proceeds of Offering	\$ 50,000	\$ 3,000,000



**EXHIBIT F**  
**CAPITALIZATION**



**EXHIBIT G**  
**RISK FACTORS**

*AN INVESTMENT IN THE SECURITIES OFFERED HEREBY IS SPECULATIVE IN NATURE, INVOLVES A HIGH DEGREE OF RISK AND SHOULD NOT BE MADE BY ANY INVESTOR WHO CANNOT AFFORD THE LOSS OF HIS ENTIRE INVESTMENT. EACH PROSPECTIVE PURCHASER SHOULD CAREFULLY CONSIDER THE FOLLOWING RISKS AND SPECULATIVE FACTORS ASSOCIATED WITH THIS OFFERING, AS WELL AS OTHERS DESCRIBED ELSEWHERE IN THE AGREEMENT, BEFORE MAKING ANY INVESTMENT. THE AGREEMENT CONTAINS CERTAIN STATEMENTS RELATING TO FUTURE EVENTS OR THE FUTURE FINANCIAL PERFORMANCE OF OUR COMPANY. PROSPECTIVE INVESTORS ARE CAUTIONED THAT SUCH STATEMENTS ARE ONLY PREDICTIONS, INVOLVE RISKS AND UNCERTAINTIES, AND THAT ACTUAL EVENTS OR RESULTS MAY DIFFER MATERIALLY. IN EVALUATING SUCH STATEMENTS, PROSPECTIVE INVESTORS SHOULD SPECIFICALLY CONSIDER THE VARIOUS FACTORS IDENTIFIED IN THE AGREEMENT, INCLUDING THE MATTERS SET FORTH BELOW, WHICH COULD CAUSE ACTUAL RESULTS TO DIFFER MATERIALLY FROM THOSE INDICATED BY SUCH FORWARD-LOOKING STATEMENTS.*

## **Risks Related to the Company's Business and Financial Condition**

### ***Limited History***

The Company was incorporated on April 29, 2013, and has limited data and history that you can use to evaluate our business strategies and prospects. Our business model is evolving and is distinct from other companies in our industry and it may not be successful. As a result of these factors, the future revenue and income potential of our business is uncertain. Any evaluation of our business and prospects must be considered in light of these factors and the risks and uncertainties often encountered by companies in the early stage of development. Some of these risks and uncertainties relate to our ability to:

- raise adequate financing
- respond effectively to competition, and
- attract and retain qualified employees

There can be no assurance that the Company will ever generate sufficient revenues to achieve or sustain profitability or generate positive cash flow. There can be no assurance that the Company will be successful in implementing its business plan.

### ***Key Personnel***

The Company is highly dependent on its key management. The loss of these individuals could have a material adverse effect on the Company. The Company does not presently maintain key person life insurance on any of these individuals.

### ***Financial Statements***

The Company is a start-up entity and currently has no financial statements. The Company intends to retain an accountant to prepare annual financial statements.

## **Risks Associated with this Offering and the Notes**

***This Offering is being made in reliance on an exemption from registration requirements and there is no guarantee the Offering will comply with the requirements for such exemption.***

This Offering will not be registered with the Securities and Exchange Commission (“SEC”) under the Securities Act or with the securities agency of any state. The securities are being offered in reliance on an exemption from the registration provisions of the Securities Act and state securities laws applicable to offers and sales to investors meeting the investor suitability requirements set forth herein. If this Offering should fail to comply with the requirements of such exemption, investors may have the right to rescind their investment. This might also occur under applicable state securities or “blue sky” laws and regulations in states where the securities will be offered without registration or qualification pursuant to a private offering or other exemption.

***The Offering has not been reviewed by Securities Agencies.***

The sale of the securities offered hereby has not been approved or disapproved by the SEC or any state regulatory agencies, and no regulatory body has passed upon or endorsed the accuracy, adequacy, or completeness of this document. Accordingly, prospective investors must rely on their own examination of the document, including, without limitation, the merits of, and risks involved in, acquiring the securities.

***There are significant restrictions on the transferability of the securities.***

The securities are restricted securities under the Securities Act and cannot be resold or otherwise transferred unless they are registered under the Securities Act and any applicable state securities laws or are transferred in a transaction exempt from such registration.

Consequently, each investor’s ability to control the timing of the liquidation of his or her investment in the Company may be restricted. Investors should be prepared to hold their securities for an indefinite period of time.

***There is no market, and there may never be a market, for the Notes, which may make it difficult for you to sell your Notes.***

The Company is a private company and there is no trading market for any of the Company’s securities. Accordingly, there can be no assurance as to the liquidity of any markets that may develop for the Notes, the ability of holders of the Notes to sell the same, or the prices at which holders may be able to sell such Notes.

***The Company’s officers and directors may be subject to indemnification by the Company in connection with this Offering.***

Colorado law provides for indemnification of directors, and, to the extent permitted by such law, eliminate or limit the personal liability of directors to the Company and its creditors of monetary damages for certain breaches of fiduciary duty. Such indemnification may be available for

liabilities arising in connection with this Offering. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to governors, officers or persons controlling the Company pursuant to the foregoing provisions, the Company has been informed that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

### **Risks Related to Tax Issues**

EACH PROSPECTIVE MEMBER SHOULD CONSULT HIS, HER OR ITS OWN TAX ADVISOR CONCERNING THE IMPACT THAT HIS, HER OR ITS PARTICIPATION IN THE COMPANY MAY HAVE ON HIS, HER OR ITS FEDERAL INCOME TAX LIABILITY AND THE APPLICATION OF STATE AND LOCAL INCOME AND OTHER TAX LAWS TO HIS, HER OR ITS PARTICIPATION IN THE OFFERING.

*The IRS may classify your investment as a passive activity, resulting in your inability to deduct losses associated with your investment.*

If you are not involved in our operations on a regular, continuing and substantial basis, it is likely that the IRS will classify your interest in the Company as a passive activity. The passive activity rules could restrict an investor's ability to currently deduct any of the Company's losses that are passed through to such investor.

*Income allocations assigned to an investor's Note(s) may result in taxable income in excess of cash distributions, which means you may have to pay income tax on your investment with personal funds.*

Investors will pay tax on their allocated Notes of our taxable income. An investor may receive allocations of taxable income that result in a tax liability that is in excess of any cash distributions the Company may make to the investor. Accordingly, investors may be required to pay some or all of the income tax on their allocated Notes of the Company's taxable income with personal funds.

*An IRS audit could result in adjustment to the Company's allocations of income, gain, loss and deduction causing additional tax liability to the Company's Shareholders.*

The IRS may audit the Company's income tax returns and may challenge positions taken for tax purposes and allocations of income, gain, loss and deduction to investors. If the IRS were successful in its challenge, an investor may have additional tax liabilities.

**IN ADDITION TO THE ABOVE RISKS, BUSINESSES ARE OFTEN SUBJECT TO RISKS NOT FORESEEN OR FULLY APPRECIATED BY MANAGEMENT. IN REVIEWING THIS AGREEMENT, POTENTIAL INVESTORS SHOULD KEEP IN MIND OTHER POSSIBLE RISKS THAT COULD BE IMPORTANT.**

**EXHIBIT H**

**AMENDED AND RESTATED ARTICLES OF INCORPORATION**



Colorado Secretary of State  
 Date and Time: 06/14/2022 10:40 AM  
 ID Number: 20131267361  
 Document number: 20221585045  
 Amount Paid: \$25.00

Document must be filed electronically.  
 Paper documents are not accepted.  
 Fees & forms are subject to change.  
 For more information or to print copies  
 of filed documents, visit [www.sos.state.co.us](http://www.sos.state.co.us).

ABOVE SPACE FOR OFFICE USE ONLY

**Amended and Restated Articles of Incorporation**

filed pursuant to §7-90-301, et seq. and §7-110-107 and §7-90-304.5 of the Colorado Revised Statutes (C.R.S.)

1. For the entity, its ID number and entity name are

ID number 20131267361  
(Colorado Secretary of State ID number)  
 Entity name Lumenco, Inc.

2. The new entity name (if applicable) is \_\_\_\_\_.

3. The amended and restated constituent filed document is attached.

4. If the amendment provides for an exchange, reclassification or cancellation of issued shares, the attachment states the provisions for implementing the amendment.

5. *(Caution: Leave blank if the document does not have a delayed effective date. Stating a delayed effective date has significant legal consequences. Read instructions before entering a date.)*

*(If the following statement applies, adopt the statement by entering a date and, if applicable, time using the required format.)*

The delayed effective date and, if applicable, time of this document is/are \_\_\_\_\_.  
(mm/dd/yyyy hour:minute am/pm)

**Notice:**

Causing this document to be delivered to the Secretary of State for filing shall constitute the affirmation or acknowledgment of each individual causing such delivery, under penalties of perjury, that such document is such individual's act and deed, or that such individual in good faith believes such document is the act and deed of the person on whose behalf such individual is causing such document to be delivered for filing, taken in conformity with the requirements of part 3 of article 90 of title 7, C.R.S. and, if applicable, the constituent documents and the organic statutes, and that such individual in good faith believes the facts stated in such document are true and such document complies with the requirements of that Part, the constituent documents, and the organic statutes.

This perjury notice applies to each individual who causes this document to be delivered to the Secretary of State, whether or not such individual is identified in this document as one who has caused it to be delivered.

6. The true name and mailing address of the individual causing the document to be delivered for filing are

Raymond Mark  
(Last) (First) (Middle) (Suffix)  
3600 Huron Street  
(Street name and number or Post Office Box information)  
Englewood CO 80110  
(City) (State) (Postal/Zip Code)  
United States  
(Province – if applicable) (Country – if not US)



*(If the following statement applies, adopt the statement by marking the box and include an attachment.)*

This document contains the true name and mailing address of one or more additional individuals causing the document to be delivered for filing.

**Disclaimer:**

This form/cover sheet, and any related instructions, are not intended to provide legal, business or tax advice, and are furnished without representation or warranty. While this form/cover sheet is believed to satisfy minimum legal requirements as of its revision date, compliance with applicable law, as the same may be amended from time to time, remains the responsibility of the user of this form/cover sheet. Questions should be addressed to the user's legal, business or tax advisor(s).

**AMENDED AND RESTATED ARTICLES OF INCORPORATION  
OF  
LUMENCO, INC.**

**Lumenco, Inc.**, a corporation organized and existing under and by virtue of the provisions of the Colorado Business Corporations Act (the "Act"),

**DOES HEREBY CERTIFY:** that the Articles of Incorporation of this corporation (as amended) be amended and restated in its entirety as follows:

**ARTICLE I**

**Name**

The name of this corporation is Lumenco, Inc.

**ARTICLE II**

**Offices**

The address of the registered office and principal office of this corporation in the State of Colorado is 3600 South Huron Street, Englewood, Colorado 80110. The name of its registered agent at such address is Mark Raymond.

**ARTICLE III**

**Business and Purposes**

The nature of the business or purposes to be conducted or promoted is to engage in any lawful act or activity for which corporations may be organized under the Act.

**ARTICLE IV**

**Capital**

A. Authorization of Stock. This corporation is authorized to issue two classes of stock to be designated, respectively, common stock and preferred stock. The total number of shares that this corporation is authorized to issue is One Hundred Two Million (102,000,000). The total number of shares of common stock authorized to be issued is One Hundred Million (100,000,000), no par value per share (the "Common Stock"). The total number of shares of preferred stock authorized to be issued is Two Million (2,000,000), no par value per share (the "Preferred Stock"), all of which shares are designated as "Series A Preferred Stock."

B. Rights, Preferences and Restrictions of Series A Preferred Stock. The rights, preferences, privileges and restrictions granted to and imposed on the Series A Preferred Stock are as set forth below in this Article IV(B).



1. Dividend Provisions. All dividends of the corporation shall be distributed among all holders of Common Stock and Series A Preferred Stock in proportion to the number of shares of Common Stock that would be held by each such holder if all shares of Series A Preferred Stock were converted to Common Stock at the then effective conversion rate set forth herein.

2. Liquidation Preference.

(a) In the event of any Liquidation Event (as defined below), either voluntary or involuntary, the holders of Series A Preferred Stock shall be entitled to receive out of the proceeds or assets of this corporation available for distribution to its shareholders (the "Proceeds"), prior and in preference to any distribution of the Proceeds of such Liquidation Event to the holders of Common Stock by reason of their ownership thereof, an amount per share equal to the sum of the Original Issue Price (as defined below), plus declared but unpaid dividends on such share. If, upon the occurrence of such event, the Proceeds thus distributed among the holders of the Series A Preferred Stock shall be insufficient to permit the payment to such holders of the full aforesaid preferential amounts, then the entire Proceeds legally available for distribution shall be distributed ratably among the holders of the Series A Preferred Stock in proportion to the full preferential amount that each such holder is otherwise entitled to receive under this subsection (a). For purposes of these Amended and Restated Articles of Incorporation (the "Restated Articles of Incorporation"), "Original Issue Price" shall mean \$3.50 per share for each share of the Series A Preferred Stock (as adjusted for any stock splits, stock dividends, combinations, subdivisions, recapitalizations or the like with respect to such Series A Preferred Stock).

(b) Upon completion of the distribution required by subsection (a) of this Section 2, all of the remaining Proceeds available for distribution to shareholders shall be distributed among the holders of Common Stock pro rata based on the number of shares of Common Stock held by each such holder.

(c) Notwithstanding the above, for purposes of determining the amount each holder of shares of Series A Preferred Stock is entitled to receive with respect to a Liquidation Event, each such holder of shares of Series A Preferred Stock shall be deemed to have converted (regardless of whether such holder actually converted) such holder's shares of Series A Preferred Stock into shares of Common Stock immediately prior to the Liquidation Event if, as a result of an actual conversion, such holder would receive, in the aggregate, an amount greater than the amount that would be distributed to such holder if such holder did not convert such shares of Series A Preferred Stock into shares of Common Stock. If any such holder shall be deemed to have converted shares of Series A Preferred Stock into Common Stock pursuant to this paragraph, then such holder shall not be entitled to receive any distribution that would otherwise be made to holders of Series A Preferred Stock that have not converted (or have not been deemed to have converted) into shares of Common Stock.

(d) (i) For purposes of this Section 2, a "Liquidation Event" shall include (A) the closing of the sale, transfer or other disposition of all or substantially all of this corporation's and its subsidiaries' assets (taken as a whole), (B) the consummation of the merger or consolidation of this corporation (or a subsidiary of the corporation if the corporation issues

capital stock in such transaction) with or into another entity (except a merger or consolidation in which the holders of capital stock of this corporation immediately prior to such merger or consolidation continue to hold at least 50% of the voting power of the capital stock of this corporation or the surviving or acquiring entity), (C) the closing of the transfer (whether by merger, consolidation or otherwise), in one transaction or a series of related transactions, to a person or group of affiliated persons (other than an underwriter of this corporation's securities), of this corporation's securities by the Company's shareholders if, after such closing, such person or group of affiliated persons would hold more than 50% of the outstanding voting stock of this corporation (or the surviving or acquiring entity), (D) a liquidation, dissolution or winding up of this corporation, (E) an exclusive license of all or substantially all of the corporation's and its subsidiaries' intellectual property (taken as a whole) to a third party, or (F) the sale of a majority of the equity interests of Lumenco, LLC by the corporation to a third party. The treatment of any particular transaction or series of related transactions as a Liquidation Event may be waived by the vote or written consent of the holders of a majority of the outstanding Series A Preferred Stock (voting together as a separate class).

(ii) In any Liquidation Event, if Proceeds received by this corporation or its shareholders is other than cash, its value will be deemed its fair market value. Any securities shall be valued as follows:

(A) Securities not subject to investment letter or other similar restrictions on free marketability covered by (B) below:

(1) If traded on a securities exchange, the value shall be deemed to be the average of the closing prices of the securities on such exchange over the twenty (20) trading-day period ending three (3) trading days prior to the closing of the Liquidation Event;

(2) If actively traded over-the-counter, the value shall be deemed to be the average of the closing bid or sale prices (whichever is applicable) over the twenty (20) trading-day period ending three (3) trading days prior to the closing of the Liquidation Event; and

(3) If there is no active public market, the value shall be the fair market value thereof, as determined by this corporation's Board of Directors.

(B) The method of valuation of securities subject to investment letter or other restrictions on free marketability (other than restrictions arising solely by virtue of a shareholder's status as an affiliate or former affiliate) shall be to make an appropriate discount from the market value determined as above in clauses (A)(1), (2) or (3) above to reflect the approximate fair market value thereof, as determined by this corporation's Board of Directors.

(C) The foregoing methods for valuing non-cash consideration to be distributed in connection with a Liquidation Event shall be superseded by the determination of such value set forth in the definitive agreements governing such Liquidation Event.

3. Redemption. The Series A Preferred Stock is not redeemable at the option of the holder thereof.

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

(a) Right to Convert. Each share of Series A Preferred Stock shall be convertible, at the option of the holder thereof, at any time after the date of issuance of such share, at the office of this corporation or any transfer agent for such stock, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing the Original Issue Price for the Series A Preferred Stock by the Conversion Price (the conversion rate for the Series A Preferred Stock into Common Stock is referred to herein as the "Conversion Rate"), determined as hereafter provided, in effect on the date the certificate is surrendered for conversion. The initial Conversion Price per share of Series A Preferred Stock shall be the Original Issue Price; provided, however, that the Conversion Price for the Series A Preferred Stock shall be subject to adjustment as set forth in subsection 4(d).

(b) Automatic Conversion. Each share of Series A Preferred Stock shall automatically be converted into shares of Common Stock at the Conversion Rate at the time in effect for the Series A Preferred Stock immediately upon the earlier of (i) the closing of this corporation's sale of its Common Stock in a firm commitment underwritten public offering, the public offering price of which was not less than \$7.00 per share (as adjusted for any stock splits, stock dividends, combinations, subdivisions, recapitalizations or the like) and \$25,000,000 in the aggregate (a "Qualified Public Offering") or (ii) the date, or the occurrence of an event, specified by vote or written consent or agreement of the holders of a majority of the then outstanding shares of Series A Preferred Stock (voting together as a separate class).

(c) Mechanics of Conversion. Before any holder of Series A Preferred Stock shall be entitled to voluntarily convert the same into shares of Common Stock, he or she shall surrender the certificate or certificates therefor, duly endorsed, at the office of this corporation or of any transfer agent for the Series A Preferred Stock (or, if the holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the corporation to indemnify the corporation against any claim that may be made against the corporation on account of the alleged loss, theft or destruction of such certificate), and shall give written notice to this corporation at its principal corporate office, of the election to convert the same and shall state therein the name or names in which the certificate or certificates for shares of Common Stock are to be issued. This corporation shall, as soon as practicable thereafter, issue and deliver at such office to such holder of Series A Preferred Stock, or to the nominee or nominees of such holder, a certificate or certificates for the number of shares of Common Stock to which such holder shall be entitled as aforesaid. Such conversion shall be deemed to have been made immediately prior to the close of business on the date set forth for conversion in the written notice of the election to convert irrespective of the surrender of the shares of Series A Preferred Stock to be converted, and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or holders of such shares of Common Stock as of such date. If the conversion is in connection with an underwritten offering of securities registered pursuant to the Securities Act of 1933, as amended, the conversion may, at the option of any holder tendering

Preferred Stock for conversion, be conditioned upon the closing with the underwriters of the sale of securities pursuant to such offering, in which event the persons entitled to receive the Common Stock upon conversion of the Series A Preferred Stock shall not be deemed to have converted such Preferred Stock until immediately prior to the closing of such sale of securities. If the conversion is in connection with the conversion provisions of subsection 4(b)(ii) above, such conversion shall be deemed to have been made on the conversion date described in the shareholder vote or consent approving such conversion, and the persons entitled to receive shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holders of such shares of Common Stock as of such date.

(d) Conversion Price Adjustments of Preferred Stock for Splits and Combinations. The Conversion Price of the Series A Preferred Stock shall be subject to adjustment from time to time as follows:

(i) In the event this corporation should at any time or from time to time after December 5, 2014 fix a record date for the effectuation of a split or subdivision of the outstanding shares of Common Stock or the determination of holders of Common Stock entitled to receive a dividend or other distribution payable in additional shares of Common Stock or other securities or rights convertible into, or entitling the holder thereof to receive directly or indirectly, additional shares of Common Stock (hereinafter referred to as "Common Stock Equivalents") without payment of any consideration by such holder for the additional shares of Common Stock or the Common Stock Equivalents (including the additional shares of Common Stock issuable upon conversion or exercise thereof), then, as of such record date (or the date of such dividend distribution, split or subdivision if no record date is fixed), the Conversion Price of the Series A Preferred Stock shall be appropriately decreased so that the number of shares of Common Stock issuable on conversion of each share of Series A Preferred Stock shall be increased in proportion to such increase of the aggregate of shares of Common Stock outstanding and those issuable with respect to such Common Stock Equivalents.

(ii) If the number of shares of Common Stock outstanding at any time after December 5, 2014 is decreased by a combination of the outstanding shares of Common Stock, then, following the record date of such combination, the Conversion Price for the Series A Preferred Stock shall be appropriately increased so that the number of shares of Common Stock issuable on conversion of each share of the Series A Preferred Stock shall be decreased in proportion to such decrease in outstanding shares.

(e) Other Distributions. In the event this corporation shall declare a distribution payable in securities of other persons, evidences of indebtedness issued by this corporation or other persons, assets (excluding cash dividends) or options or rights not referred to in subsection 4(d)(i), then, in each such case for the purpose of this subsection 4(e), the holders of the Series A Preferred Stock shall be entitled to a proportionate share of any such distribution as though they were the holders of the number of shares of Common Stock of this corporation into which their shares of the Series A Preferred Stock are convertible as of the record date fixed for the determination of the holders of Common Stock of this corporation entitled to receive such distribution.



(f) Recapitalizations. If at any time or from time to time there shall be a recapitalization, reorganization, reclassification, consolidation or merger involving the corporation (other than a subdivision, combination or merger or sale of assets transaction provided for elsewhere in this Section 4 or in Section 2), provision shall be made so that the holders of the Series A Preferred Stock shall thereafter be entitled to receive upon conversion of the Series A Preferred Stock the number of shares of stock or other securities or property of this corporation or otherwise, to which a holder of Common Stock deliverable upon conversion would have been entitled on such event. In any such case, appropriate adjustment shall be made in the application of the provisions of this Section 4 with respect to the rights of the holders of the Series A Preferred Stock after the event to the end that the provisions of this Section 4 (including adjustment of the Conversion Price then in effect and the number of shares purchasable upon conversion of the Series A Preferred Stock) shall be applicable after that event as nearly equivalently as may be practicable.

(g) No Fractional Shares and Certificate as to Adjustments.

(i) No fractional shares shall be issued upon the conversion of any share or shares of the Series A Preferred Stock and the aggregate number of shares of Common Stock to be issued to particular shareholders, shall be rounded down to the nearest whole share and this corporation shall pay in cash the fair market value of any fractional shares as of the time when entitlement to receive such fractions is determined. Whether or not fractional shares would be issuable upon such conversion shall be determined on the basis of the total number of shares of the Series A Preferred Stock the holder is at the time converting into Common Stock and the number of shares of Common Stock issuable upon such conversion.

(ii) Upon the occurrence of each adjustment or readjustment of the Conversion Price of the Series A Preferred Stock pursuant to this Section 4, this corporation, at its expense, shall promptly compute such adjustment or readjustment in accordance with the terms hereof and prepare and furnish to each holder of the Series A Preferred Stock a certificate setting forth such adjustment or readjustment (including the prior and new Conversion Prices for the Series A Preferred Stock) and showing in detail the facts upon which such adjustment or readjustment is based. This corporation shall, upon the written request at any time of any holder of Series A Preferred Stock, furnish or cause to be furnished to such holder a like certificate setting forth (A) such adjustment and readjustment, (B) the Conversion Price for the Series A Preferred Stock at the time in effect, and (C) the number of shares of Common Stock and the amount, if any, of other property that at the time would be received upon the conversion of a share of the Series A Preferred Stock.

(h) Reservation of Stock Issuable Upon Conversion. This corporation shall at all times reserve and keep available out of its authorized but unissued shares of Common Stock, solely for the purpose of effecting the conversion of the shares of the Series A Preferred Stock, such number of its shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding shares of the Series A Preferred Stock; and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of the Series A Preferred Stock, in addition to such other remedies as shall be available to the holder of such Series A Preferred Stock, this corporation will take such corporate action as may, in the opinion of its counsel, be necessary to

increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purposes, including, without limitation, engaging in best efforts to obtain the requisite shareholder approval of any necessary amendment to these Restated Articles of Incorporation.

(i) Waiver of Adjustment to Conversion Price. Notwithstanding anything herein to the contrary, any downward adjustment of the Conversion Price of the Series A Preferred Stock may be waived, either prospectively or retroactively and either generally or in a particular instance, by the consent or vote of the holders of a majority of the outstanding shares of the Series A Preferred Stock. Any such waiver shall bind all then current and future holders of shares of the Series A Preferred Stock.

(j) Taxes. The corporation shall pay any and all issue and other similar taxes that may be payable in respect of any issuance or delivery of shares of Common Stock upon conversion of shares of Series A Preferred Stock pursuant to this Section 4. The corporation shall not, however, be required to pay any tax which may be payable in respect of any transfer involved in the issuance and delivery of shares of Common Stock in a name other than that in which the shares of Series A Preferred Stock so converted were registered, and no such issuance or delivery shall be made unless and until the person or entity requesting such issuance has paid to the corporation the amount of any such tax or has established, to the satisfaction of the corporation, that such tax has been paid.

5. Voting Rights. The holders of each share of the Series A Preferred Stock shall have the right to one vote for each share of Common Stock into which such Series A Preferred Stock could then be converted, and with respect to such vote, such holder shall have full voting rights and powers equal to the voting rights and powers of the holders of Common Stock, and shall be entitled, notwithstanding any provision hereof, to notice of any shareholders' meeting in accordance with the Bylaws of this corporation, and except as provided by law, shall be entitled to vote, together with holders of Common Stock, with respect to any question upon which holders of Common Stock have the right to vote. Fractional votes shall not, however, be permitted and any fractional voting rights available on an as-converted basis (after aggregating all shares into which shares of Series A Preferred Stock held by each holder could be converted) shall be rounded to the nearest whole number (with one-half being rounded upward). There shall be no cumulative voting. The corporation shall not, without the consent of the holders of a majority of the outstanding shares of Series A Preferred Stock, amend these Restated Articles of Incorporation or the corporation's bylaws if such amendment adversely changes or amends the rights, preferences or privileges of the Series A Preferred Stock.

6. Status of Converted Stock. In the event any shares of Series A Preferred Stock shall be converted pursuant to Section 4 hereof, the shares so converted shall be cancelled and shall not be issuable by this corporation. The Restated Articles of Incorporation of this corporation shall be appropriately amended to effect the corresponding reduction in this corporation's authorized capital stock.

7. Notices. Any notice required by the provisions of this Article IV(B) to be given to the holders of shares of Preferred Stock shall be deemed given (i) if deposited in the United States mail, postage prepaid, and addressed to each holder of record at his, her or its



address appearing on the books of this corporation, (ii) if such notice is provided by electronic transmission in a manner permitted by the Act or (iii) if such notice is provide in another manner then permitted by the Act.

C. Rights, Preferences and Restrictions of Series B Preferred Stock. The rights, preferences, privileges and restrictions granted to and imposed on the Series B Preferred Stock are as set forth below in this Article IV(C).

1. No Voting Rights. The holders of the shares of the Corporation's Series B Preferred Stock shall not be entitled to voting rights.

2. Dividend Provisions. All dividends of the corporation shall be distributed among all holders of Common Stock and Series A Preferred Stock and Series B Preferred Stock in proportion to the number of shares of Common Stock that would be held by each such holder if all shares of Series A Preferred Stock and Series B Preferred Stock were converted to Common Stock at the then effective conversion rate set forth herein.

3. Series B Preferred Distribution. Each holder of Series B Preferred Stock shall receive, to the extent sufficient funds are available, an annual cumulative preferred distribution equal to five percent (5%) of each such shareholder's Initial Capital Contribution on December 31 of each year (hereinafter the "Series B Preferred Distribution"), with the first such Series B Preferred Distribution to be made pursuant to this Agreement on December 31 and on December 31 of each year thereafter up to a maximum of three (3) years (and in the event that funds are not available in any particular year to make the preferred distributions specified herein, such distributions shall cumulate and the Corporation shall pay the same upon the availability of sufficient funds; provided, however, that the Corporation shall not postpone the making of a Series B Preferred Distribution beyond one (1) year from the date upon which said Series B Preferred Distribution was due and payable without the consent of all of the Series B Preferred shareholders).

4. Redemption. The Series B Preferred Stock is not redeemable at the option of the holder thereof.

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

(a) Corporation's Option to Convert. Each share of Series B Preferred Stock shall be convertible, at the option of the corporation, at any time after the third (3<sup>rd</sup>) anniversary of the date of issuance of such share, at the office of this corporation or any transfer agent for such stock, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing the Original Issue Price for the Series B Preferred Stock by the Conversion Price (the conversion rate for the Series B Preferred Stock into Common Stock is referred to herein as the "Conversion Rate"), determined as hereafter provided, in effect on the date the certificate is surrendered for conversion. The initial Conversion Price per share of Series B Preferred Stock shall be the Original Issue Price; provided, however, that the Conversion Price for the Series B Preferred Stock shall be subject to adjustment as set forth in subsection 5(d).

(b) Mechanics of Conversion. Before any holder of Series B Preferred Stock shall be entitled to convert the same into shares of Common Stock, he or she shall surrender the certificate or certificates therefor, duly endorsed, at the office of this corporation or of any transfer agent for the Series B Preferred Stock (or, if the holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the corporation to indemnify the corporation against any claim that may be made against the corporation on account of the alleged loss, theft or destruction of such certificate), and shall give written notice to this corporation at its principal corporate office, of the election to convert the same and shall state therein the name or names in which the certificate or certificates for shares of Common Stock are to be issued. This corporation shall, as soon as practicable thereafter, issue and deliver at such office to such holder of Series B Preferred Stock, or to the nominee or nominees of such holder, a certificate or certificates for the number of shares of Common Stock to which such holder shall be entitled as aforesaid. Such conversion shall be deemed to have been made immediately prior to the close of business on the date set forth for conversion in the written notice of the election to convert irrespective of the surrender of the shares of Series A Preferred Stock to be converted, and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or holders of such shares of Common Stock as of such date. If the conversion is in connection with an underwritten offering of securities registered pursuant to the Securities Act of 1933, as amended, the conversion may, at the option of any holder tendering Preferred Stock for conversion, be conditioned upon the closing with the underwriters of the sale of securities pursuant to such offering, in which event the persons entitled to receive the Common Stock upon conversion of the Series B Preferred Stock shall not be deemed to have converted such Preferred Stock until immediately prior to the closing of such sale of securities. If the conversion is in connection with the conversion provisions of subsection 4(b)(ii) above, such conversion shall be deemed to have been made on the conversion date described in the shareholder vote or consent approving such conversion, and the persons entitled to receive shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holders of such shares of Common Stock as of such date.

(c) Conversion Price Adjustments of Preferred Stock for Splits and Combinations. The Conversion Price of the Series B Preferred Stock shall be subject to adjustment from time to time as follows:

(i) In the event this corporation should at any time or from time to time after the date hereof fix a record date for the effectuation of a split or subdivision of the outstanding shares of Common Stock or the determination of holders of Common Stock entitled to receive a dividend or other distribution payable in additional shares of Common Stock or other securities or rights convertible into, or entitling the holder thereof to receive directly or indirectly, additional shares of Common Stock (hereinafter referred to as "Common Stock Equivalents") without payment of any consideration by such holder for the additional shares of Common Stock or the Common Stock Equivalents (including the additional shares of Common Stock issuable upon conversion or exercise thereof), then, as of such record date (or the date of such dividend distribution, split or subdivision if no record date is fixed), the Conversion Price of the Series B Preferred Stock shall be appropriately decreased so that the number of shares of Common Stock issuable on conversion of each share of Series B Preferred Stock shall be

increased in proportion to such increase of the aggregate of shares of Common Stock outstanding and those issuable with respect to such Common Stock Equivalents.

(ii) If the number of shares of Common Stock outstanding at any time after the date hereof is decreased by a combination of the outstanding shares of Common Stock, then, following the record date of such combination, the Conversion Price for the Series B Preferred Stock shall be appropriately increased so that the number of shares of Common Stock issuable on conversion of each share of the Series B Preferred Stock shall be decreased in proportion to such decrease in outstanding shares.

(d) Other Distributions. In the event this corporation shall declare a distribution payable in securities of other persons, evidences of indebtedness issued by this corporation or other persons, assets (excluding cash dividends) or options or rights not referred to in subsection 5(d)(i), then, in each such case for the purpose of this subsection 5(e), the holders of the Series B Preferred Stock shall be entitled to a proportionate share of any such distribution as though they were the holders of the number of shares of Common Stock of this corporation into which their shares of the Series B Preferred Stock are convertible as of the record date fixed for the determination of the holders of Common Stock of this corporation entitled to receive such distribution.

(e) Recapitalizations. If at any time or from time to time there shall be a recapitalization, reorganization, reclassification, consolidation or merger involving the corporation (other than a subdivision, combination or merger or sale of assets transaction provided for elsewhere in this Section 5 or in Section 2), provision shall be made so that the holders of the Series B Preferred Stock shall thereafter be entitled to receive upon conversion of the Series B Preferred Stock the number of shares of stock or other securities or property of this corporation or otherwise, to which a holder of Common Stock deliverable upon conversion would have been entitled on such event. In any such case, appropriate adjustment shall be made in the application of the provisions of this Section 5 with respect to the rights of the holders of the Series B Preferred Stock after the event to the end that the provisions of this Section 4 (including adjustment of the Conversion Price then in effect and the number of shares purchasable upon conversion of the Series B Preferred Stock) shall be applicable after that event as nearly equivalently as may be practicable.

(f) No Fractional Shares and Certificate as to Adjustments.

(i) No fractional shares shall be issued upon the conversion of any share or shares of the Series B Preferred Stock and the aggregate number of shares of Common Stock to be issued to particular shareholders, shall be rounded down to the nearest whole share and this corporation shall pay in cash the fair market value of any fractional shares as of the time when entitlement to receive such fractions is determined. Whether or not fractional shares would be issuable upon such conversion shall be determined on the basis of the total number of shares of the Series B Preferred Stock the holder is at the time converting into Common Stock and the number of shares of Common Stock issuable upon such conversion.

(ii) Upon the occurrence of each adjustment or readjustment of the Conversion Price of the Series B Preferred Stock pursuant to this Section 5, this corporation,

at its expense, shall promptly compute such adjustment or readjustment in accordance with the terms hereof and prepare and furnish to each holder of the Series B Preferred Stock a certificate setting forth such adjustment or readjustment (including the prior and new Conversion Prices for the Series B Preferred Stock) and showing in detail the facts upon which such adjustment or readjustment is based. This corporation shall, upon the written request at any time of any holder of Series B Preferred Stock, furnish or cause to be furnished to such holder a like certificate setting forth (A) such adjustment and readjustment, (B) the Conversion Price for the Series B Preferred Stock at the time in effect, and (C) the number of shares of Common Stock and the amount, if any, of other property that at the time would be received upon the conversion of a share of the Series B Preferred Stock.

(g) Reservation of Stock Issuable Upon Conversion. This corporation shall at all times reserve and keep available out of its authorized but unissued shares of Common Stock, solely for the purpose of effecting the conversion of the shares of the Series B Preferred Stock, such number of its shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding shares of the Series B Preferred Stock; and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of the Series B Preferred Stock, in addition to such other remedies as shall be available to the holder of such Series B Preferred Stock, this corporation will take such corporate action as may, in the opinion of its counsel, be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purposes, including, without limitation, engaging in best efforts to obtain the requisite shareholder approval of any necessary amendment to these Restated Articles of Incorporation.

(h) Waiver of Adjustment to Conversion Price. Notwithstanding anything herein to the contrary, any downward adjustment of the Conversion Price of the Series B Preferred Stock may be waived, either prospectively or retroactively and either generally or in a particular instance, by the consent or vote of the holders of a majority of the outstanding shares of the Series B Preferred Stock. Any such waiver shall bind all then current and future holders of shares of the Series B Preferred Stock.

(i) Taxes. The corporation shall pay any and all issue and other similar taxes that may be payable in respect of any issuance or delivery of shares of Common Stock upon conversion of shares of Series B Preferred Stock pursuant to this Section 4. The corporation shall not, however, be required to pay any tax which may be payable in respect of any transfer involved in the issuance and delivery of shares of Common Stock in a name other than that in which the shares of Series B Preferred Stock so converted were registered, and no such issuance or delivery shall be made unless and until the person or entity requesting such issuance has paid to the corporation the amount of any such tax or has established, to the satisfaction of the corporation, that such tax has been paid.

6. Status of Converted Stock. In the event any shares of Series B Preferred Stock shall be converted pursuant to Section 5 hereof, the shares so converted shall be cancelled and shall not be issuable by this corporation. The Restated Articles of Incorporation of this corporation shall be appropriately amended to effect the corresponding reduction in this corporation's authorized capital stock.



7. Notices. Any notice required by the provisions of this Article IV(B) to be given to the holders of shares of Preferred Stock shall be deemed given (i) if deposited in the United States mail, postage prepaid, and addressed to each holder of record at his, her or its address appearing on the books of this corporation, (ii) if such notice is provided by electronic transmission in a manner permitted by the Act or (iii) if such notice is provide in another manner then permitted by the Act.

D. Common Stock. The rights, preferences, privileges and restrictions granted to and imposed on the Common Stock are as set forth below in this Article IV(D).

1. Dividend Rights. All dividends of the corporation shall be distributed among all holders of Common Stock and Preferred Stock in proportion to the number of shares of Common Stock that would be held by each such holder if all shares of Series A Preferred Stock were converted to Common Stock at the then effective conversion rate set forth herein

2. Liquidation Rights. Upon the liquidation, dissolution or winding up of this corporation, the assets of this corporation shall be distributed as provided in Section 2 of Article IV(B) hereof.

3. Redemption. The Common Stock is not redeemable at the option of the holder.

4. Voting Rights. The holder of each share of Common Stock shall have the right to one vote for each such share, and shall be entitled to notice of any shareholders' meeting in accordance with the Bylaws of this corporation, and shall be entitled to vote upon such matters and in such manner as may be provided by law; provided, however, that, except as otherwise required by law, holders of Common Stock, as such, shall not be entitled to vote on any amendment to the Articles of Incorporation that relates solely to the terms of the Series A Preferred Stock if the holders of the Series A Preferred Stock are entitled to vote separately as a class thereon pursuant to the Articles of Incorporation or pursuant to the Act. There shall be no cumulative voting.

## ARTICLE V

### Action Without Meetings

Any action required or permitted to be taken at any annual or special meeting of shareholders may be taken without a meeting, without prior notice and without a vote, if a consent or consents in writing, setting forth the action(s) so taken, shall be signed by shareholders holding the number of shares equal to or greater than the minimum number of votes that would be necessary to authorize or take such action(s) at a meeting at which all of the shares entitled to vote thereon were present and voted and received by the corporation.



## ARTICLE VI

### Number of Directors; Bylaws

Subject to any additional vote required herein, the number of directors of this corporation shall be determined in the manner set forth in the Bylaws of this corporation. Except as otherwise provided in these Restated Articles of Incorporation or as restricted by the Act, in furtherance and not in limitation of the powers conferred by statute, the Board of Directors is expressly authorized to make, repeal, alter, amend and rescind any or all of the Bylaws of this corporation.

## ARTICLE VII

### Election of Directors

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

## ARTICLE VIII

### Shareholder Meetings; Books

Meetings of shareholders may be held within or without the State of Colorado, as the Bylaws of this corporation may provide. The books of this corporation may be kept (subject to any provision contained in the statutes) outside the State of Colorado at such place or places as may be designated from time to time by the Board of Directors or in the Bylaws of this corporation.

## ARTICLE IX

### Limitation on Liability

A director of this corporation shall not be personally liable to this corporation or its shareholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director's duty of loyalty to this corporation or its shareholders, (ii) for acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law, (iii) acts specified under Section 7-108-403 of the Act, or (iv) for any transaction from which the director derived any improper personal benefit. If the Act is amended after approval by the shareholders of this Article IX to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of this corporation shall be eliminated or limited to the fullest extent permitted by the Act as so amended. Any amendment, repeal or modification of the foregoing provisions of this Article IX by the shareholders of this corporation shall not adversely affect any right or protection of a director of this corporation existing at the time of, or increase the liability of any director of this corporation with respect to any acts or omissions of such director occurring prior to, such amendment, repeal or modification.

## ARTICLE X

### Right to Amend

This corporation reserves the right to amend, alter, change or repeal any provision contained in these Restated Articles of Incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon shareholders herein are granted subject to this reservation.

## ARTICLE XI

### Indemnification

To the fullest extent permitted by applicable law, this corporation is authorized to provide indemnification of (and advancement of expenses to) directors, officers, employees and agents of this corporation (and any other persons to which the Act permits this corporation to provide indemnification) through Bylaw provisions, agreements with such persons, vote of shareholders or disinterested directors or otherwise, in excess of the indemnification and advancement otherwise permitted by the Act, subject only to limits created by the Act (statutory or non-statutory). Any amendment, repeal or modification of the foregoing provisions of this Article XI shall not adversely affect any right or protection of a director, officer, employee, agent or other person existing at the time of, or increase the liability of any such person with respect to any acts or omissions of such person occurring prior to, such amendment, repeal or modification.

\* \* \*

**IN WITNESS WHEREOF**, these Restated Articles of Incorporation have been executed by a duly authorized officer of this corporation on this 13<sup>th</sup> day of June, 2022.

  
\_\_\_\_\_  
Mark Raymond, Chief Executive Officer



**EXHIBIT I**

**BYLAWS**

# AMENDED AND RESTATED BYLAWS

## OF

### LUMENCO, INC.

#### ARTICLE I

##### Meetings of Stockholders

Section 1.1 Annual Meetings. If required by applicable law, an annual meeting of stockholders shall be held for the election of directors at such date, time and place, if any, either within or without the State of Colorado, as may be designated by resolution of the Board of Directors from time to time. Any other proper business may be transacted at the annual meeting.

Section 1.2 Special Meetings. Special meetings of stockholders for any purpose or purposes may be called at any time by the Board of Directors, but such special meetings may not be called by any other person or persons. Business transacted at any special meeting of stockholders shall be limited to the purposes stated in the notice.

Section 1.3 Notice of Meetings. Whenever stockholders are required or permitted to take any action at a meeting, a written notice of the meeting shall be given that shall state the place, if any, date and hour of the meeting, the record date for determining stockholders entitled to vote at the meeting, if such date is different from the record date for determining stockholders entitled to notice of the meeting, and, in the case of a special meeting, the purpose or purposes for which the meeting is called. Unless otherwise provided by law, the Articles of Incorporation or these bylaws, the notice of any meeting shall be given by regular mail not less than ten (10) nor more than sixty (60) days before the date of the meeting to each stockholder entitled to vote at such meeting, as of the record date for determining the stockholders entitled to notice of the meeting. Such notice shall be deemed to be given on the business day following the date on which such notice is sent by regular mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the records of the corporation.

Section 1.4 Adjournments. Any meeting of stockholders, annual or special, may adjourn from time to time to reconvene at the same or some other place, and notice need not be given of any such adjourned meeting if the time and place thereof are announced at the meeting at which the adjournment is taken. At the adjourned meeting the corporation may transact any business which might have been transacted at the original meeting. If the adjournment is for more than thirty (30) days, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting. If after the adjournment a new record date for stockholders entitled to vote is fixed for the adjourned meeting, the Board of Directors shall fix a new record date for notice of such adjourned meeting in accordance with Section 1.8 of these bylaws, and shall give notice of the adjourned meeting to each stockholder of record entitled to vote at such adjourned meeting as of the record date fixed for notice of such adjourned meeting.



Section 1.5 Quorum. Except as otherwise provided by law, the Articles of Incorporation or these bylaws, at each meeting of stockholders the presence in person or by proxy of the holders of a majority in voting power of the outstanding shares of stock entitled to vote at the meeting shall be necessary and sufficient to constitute a quorum. In the absence of a quorum, the stockholders so present may, by a majority in voting power thereof, adjourn the meeting from time to time in the manner provided in Section 1.4 of these bylaws until a quorum shall attend. Shares of its own stock belonging to the corporation or to another corporation, if a majority of the shares entitled to vote in the election of directors of such other corporation is held, directly or indirectly, by the corporation, shall neither be entitled to vote nor be counted for quorum purposes; provided, however, that the foregoing shall not limit the right of the corporation or any subsidiary of the corporation to vote stock, including but not limited to its own stock, held by it in a fiduciary capacity.

Section 1.6 Organization. Meetings of stockholders shall be presided over by the Chairperson of the Board, if any, or in his or her absence by the Vice Chairperson of the Board, if any, or in his or her absence by the President, or in his or her absence by a Vice President, or in the absence of the foregoing persons by a chairperson designated by the Board of Directors, or in the absence of such designation by a chairperson chosen at the meeting. The Secretary shall act as secretary of the meeting, but in his or her absence the chairperson of the meeting may appoint any person to act as secretary of the meeting.

Section 1.7 Voting; Proxies. Except as otherwise provided by or pursuant to the provisions of the Articles of Incorporation, each stockholder entitled to vote at any meeting of stockholders shall be entitled to one vote for each share of stock held by such stockholder which has voting power upon the matter in question. Each stockholder entitled to vote at a meeting of stockholders or to express consent to corporate action in writing without a meeting may authorize another person or persons to act for such stockholder by proxy, but no such proxy shall be voted or acted upon after three years from its date, unless the proxy provides for a longer period. A proxy shall be irrevocable if it states that it is irrevocable and if, and only as long as, it is coupled with an interest sufficient in law to support an irrevocable power. A stockholder may revoke any proxy which is not irrevocable by attending the meeting and voting in person or by delivering to the Secretary of the corporation a revocation of the proxy or a new proxy bearing a later date. Voting at meetings of stockholders need not be by written ballot. At all meetings of stockholders for the election of directors at which a quorum is present a plurality of the votes cast shall be sufficient to elect. All other elections and questions presented to the stockholders at a meeting at which a quorum is present shall, unless otherwise provided by the Articles of Incorporation, these bylaws, or an agreement by corporation, the rules or regulations of any stock exchange applicable to the corporation, or applicable law or pursuant to any regulation applicable to the corporation or its securities, be decided by the affirmative vote of the holders of a majority in voting power of the shares of stock of the corporation which are present in person or by proxy and entitled to vote thereon.

Section 1.8 Fixing Date for Determination of Stockholders of Record. In order that the corporation may determine the stockholders entitled to notice of any meeting of stockholders or any adjournment thereof, or to express consent to corporate action in writing without a meeting, or entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for



the purpose of any other lawful action, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which record date: (1) in the case of determination of stockholders entitled to notice of any meeting of stockholders or any adjournment thereof, shall, unless otherwise required by law, not be more than sixty (60) nor less than ten (10) days before the date of such meeting and, unless the Board of Directors determines, at the time it fixes such record date, that a later date on or before the date of the meeting shall be the date for determining the stockholders entitled to vote at such meeting, such date shall also be the record date for determining the stockholders entitled to vote at such meeting; (2) in the case of determination of stockholders entitled to express consent to corporate action in writing without a meeting, shall not be more than ten (10) days from the date upon which the resolution fixing the record date is adopted by the Board of Directors; and (3) in the case of any other action, shall not be more than sixty (60) days prior to such other action. If no record date is fixed: (1) the record date for determining stockholders entitled to notice of and to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held; (2) the record date for determining stockholders entitled to express consent to corporate action in writing without a meeting, when no prior action of the Board of Directors is required by law, shall be the first date on which a signed written consent setting forth the action taken or proposed to be taken is delivered to the corporation in accordance with applicable law, or, if prior action by the Board of Directors is required by law, shall be at the close of business on the day on which the Board of Directors adopts the resolution taking such prior action; and (3) the record date for determining stockholders for any other purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating thereto. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the Board of Directors may fix a new record date for the determination of stockholders entitled to vote at the adjourned meeting, and in such case shall also fix as the record date for the stockholders entitled to notice of such adjourned meeting the same or an earlier date as that fixed for the determination of stockholders entitled to vote in accordance with the foregoing provisions of this Section 1.8 at the adjourned meeting.

Section 1.9 List of Stockholders Entitled to Vote. The officer who has charge of the stock ledger shall prepare and make, at least ten (10) days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting; provided, however, if the record date for determining the stockholders entitled to vote is less than ten (10) days before the meeting date, the list shall reflect the stockholders entitled to vote as of the tenth day before the meeting date, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting for a period of at least ten (10) days prior to the meeting (i) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of meeting or (ii) during ordinary business hours at the principal place of business of the corporation. The list of stockholders must also be open to examination at the meeting as required by applicable law. Except as otherwise provided by law, the stock ledger shall be the only evidence as to who are the stockholders entitled to examine the list of stockholders required by this Section 1.9 or to vote in person or by proxy at any meeting of stockholders.



Section 1.10 Action By Written Consent of Stockholders. Unless otherwise restricted by the Articles of Incorporation, any action required or permitted to be taken at any annual or special meeting of the stockholders may be taken without a meeting, without prior notice and without a vote, if a consent or consents in writing, setting forth the action so taken, shall be signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present and voted and shall be delivered to the corporation by delivery to its registered office in the State of Colorado, its principal place of business, or an officer or agent of the corporation having custody of the book in which minutes of proceedings of stockholders are recorded. Delivery made to the corporation's registered office shall be by hand or by certified or registered mail, return receipt requested or by overnight courier. Prompt notice of the taking of the corporate action without a meeting by less than unanimous written consent shall, to the extent required by law, be given to those stockholders who have not consented in writing and who, if the action had been taken at a meeting, would have been entitled to notice of the meeting if the record date for notice of such meeting had been the date that written consents signed by a sufficient number of holders to take the action were delivered to the corporation.

Section 1.11 Inspectors of Election. The corporation may, and shall if required by law, in advance of any meeting of stockholders, appoint one or more inspectors of election, who may be employees of the corporation, to act at the meeting or any adjournment thereof and to make a written report thereof. The corporation may designate one or more persons as alternate inspectors to replace any inspector who fails to act. In the event that no inspector so appointed or designated is able to act at a meeting of stockholders, the person presiding at the meeting shall appoint one or more inspectors to act at the meeting. Each inspector, before entering upon the discharge of his or her duties, shall take and sign an oath to execute faithfully the duties of inspector with strict impartiality and according to the best of his or her ability. The inspector or inspectors so appointed or designated shall (i) ascertain the number of shares of capital stock of the corporation outstanding and the voting power of each such share, (ii) determine the shares of capital stock of the corporation represented at the meeting and the validity of proxies and ballots, (iii) count all votes and ballots, (iv) determine and retain for a reasonable period a record of the disposition of any challenges made to any determination by the inspectors, and (v) certify their determination of the number of shares of capital stock of the corporation represented at the meeting and such inspectors' count of all votes and ballots. Such certification and report shall specify such other information as may be required by applicable law. In determining the validity and counting of proxies and ballots cast at any meeting of stockholders of the corporation, the inspectors may consider such information as is permitted by applicable law. No person who is a candidate for an office at an election may serve as an inspector at such election.

Section 1.12 Conduct of Meetings. The date and time of the opening and the closing of the polls for each matter upon which the stockholders will vote at a meeting shall be announced at the meeting by the person presiding over the meeting. The Board of Directors may adopt by resolution such rules and regulations for the conduct of the meeting of stockholders as it shall deem appropriate. Except to the extent inconsistent with such rules and regulations as adopted by the Board of Directors, the person presiding over any meeting of stockholders shall have the right and authority to convene and to adjourn the meeting, to prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such presiding person, are appropriate for the proper conduct of the meeting. Such rules, regulations or procedures, whether



adopted by the Board of Directors or prescribed by the presiding person at the meeting, may include, without limitation, the following: (i) the establishment of an agenda or order of business for the meeting; (ii) rules and procedures for maintaining order at the meeting and the safety of those present; (iii) limitations on attendance at or participation in the meeting to stockholders of record of the corporation, their duly authorized and constituted proxies or such other persons as the presiding person of the meeting shall determine; (iv) restrictions on entry to the meeting after the time fixed for the commencement thereof, and (v) limitations on the time allotted to questions or comments by participants. The presiding person at any meeting of stockholders, in addition to making any other determinations that may be appropriate to the conduct of the meeting, shall, if the facts warrant, determine and declare to the meeting that a matter or business was not properly brought before the meeting and, if such presiding person should so determine, such presiding person shall so declare to the meeting, and any such matter or business not properly brought before the meeting shall not be transacted or considered. Unless and to the extent determined by the Board of Directors or the person presiding over the meeting, meetings of stockholders shall not be required to be held in accordance with the rules of parliamentary procedure.

## ARTICLE II

### Board of Directors

Section 2.1 Number; Qualifications. The Board of Directors shall consist of one or more members, with the exact number being determined from time to time by resolution of the Board of Directors. Directors need not be stockholders. This Section 2.1 may be changed by a duly adopted amendment to the Articles of Incorporation or by a Bylaw amending this Section 2.1

Section 2.2 Election; Resignation; Vacancies. The Board of Directors shall initially consist of the persons named as directors in the Articles of Incorporation or elected by the incorporator of the corporation, and each director so elected shall hold office until the first annual meeting of stockholders and until his or her successor is duly elected and qualified. At the first annual meeting of stockholders and at each annual meeting thereafter, the stockholders shall elect directors each of whom shall hold office for a term of one year or until his or her successor is duly elected and qualified, subject to such director's earlier death, resignation, disqualification or removal. Any director may resign at any time upon notice to the corporation. Unless otherwise provided by law, the Articles of Incorporation, any newly created directorship or any vacancy occurring in the Board of Directors for any cause may be filled by a majority of the remaining members of the Board of Directors, although such majority is less than a quorum, or by a plurality of the votes cast at a meeting of stockholders, and each director so elected shall hold office until the expiration of the term of office of the director whom he or she has replaced and until his or her successor is elected and qualified.

Section 2.3 Regular Meetings. Regular meetings of the Board of Directors may be held at such places within or without the State of Colorado and at such times as the Board of Directors may from time to time determine.



Section 2.4 Special Meetings. Special meetings of the Board of Directors may be held at any time or place within or without the State of Colorado whenever called by the President or by any member of the Board of Directors. Notice of a special meeting of the Board of Directors shall be given by the person or persons calling the meeting at least twenty-four hours before the special meeting.

Section 2.5 Telephonic Meetings Permitted. Members of the Board of Directors, or any committee designated by the Board of Directors, may participate in a meeting thereof by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation in a meeting pursuant to this by-law shall constitute presence in person at such meeting.

Section 2.6 Quorum: Vote Required for Action. At all meetings of the Board of Directors a majority of the then authorized number of directors as set by Section 2.1 of these bylaws shall constitute a quorum for the transaction of business. Except in cases in which the Articles of Incorporation, these bylaws, or applicable law otherwise provides, a majority of the votes entitled to be cast by the directors present at a meeting at which a quorum is present shall be the act of the Board of Directors.

Section 2.7 Organization. Meetings of the Board of Directors shall be presided over by the Chairperson of the Board, if any, or in his or her absence by the Vice Chairperson of the Board, if any, or in his or her absence by the President, or in their absence by a chairperson chosen at the meeting. The Secretary shall act as secretary of the meeting, but in his or her absence the chairperson of the meeting may appoint any person to act as secretary of the meeting.

Section 2.8 Action by Unanimous Consent of Directors. Unless otherwise restricted by the Articles of Incorporation or these bylaws, any action required or permitted to be taken at any meeting of the Board of Directors, or of any committee thereof, may be taken without a meeting if all members of the Board of Directors or such committee, as the case may be, consent thereto in writing or by electronic transmission and the writing or writings or electronic transmissions are filed with the minutes of proceedings of the board or committee in accordance with applicable law.

### ARTICLE III

#### Committees

Section 3.1 Committees. The Board of Directors may designate one or more committees, each committee to consist of one or more of the directors of the corporation. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of the committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not he, she or they constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in place of any such absent or disqualified member. Any such committee, to the extent permitted by law and to the extent provided in the resolution of the Board of Directors or these



bylaws, shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers which may require it.

Section 3.2 Committee Rules. Unless the Board of Directors otherwise provides, each committee designated by the Board of Directors may make, alter and repeal rules for the conduct of its business. In the absence of such rules, each committee shall conduct its business in the same manner as the Board of Directors conducts its business pursuant to Article II of these bylaws.

## ARTICLE IV

### Officers

Section 4.1 Executive Officers; Election; Qualifications; Term of Office, Resignation; Removal; Vacancies. The Board of Directors shall elect a President and Secretary, and it may, if it so determines, choose a Chairperson of the Board and a Vice Chairperson of the Board from among its members. The Board of Directors may also choose one or more Vice Presidents, one or more Assistant Secretaries, a Treasurer and one or more Assistant Treasurers and such other officers as it shall from time to time deem necessary or desirable. Each such officer shall hold office until the first meeting of the Board of Directors after the annual meeting of stockholders next succeeding his or her election, and until his or her successor is elected and qualified or until his or her earlier death, resignation or removal. Any officer may resign at any time upon written notice to the corporation. The Board of Directors may remove any officer with or without cause at any time, but such removal shall be without prejudice to the contractual rights of such officer, if any, with the corporation. Any number of offices may be held by the same person. Any vacancy occurring in any office of the corporation by death, resignation, removal or otherwise may be filled for the unexpired portion of the term by the Board of Directors at any regular or special meeting.

Section 4.2 Powers and Duties of Executive Officers. The officers of the corporation shall have such powers and duties in the management of the corporation as may be prescribed in a resolution by the Board of Directors and, to the extent not so provided, as generally pertain to their respective offices, subject to the control of the Board of Directors. The Board of Directors may require any officer, agent or employee to give security for the faithful performance of his or her duties.

Section 4.3 Appointing Attorneys and Agents; Voting Securities of Other Entities. Unless otherwise provided by resolution adopted by the Board of Directors, the Chairperson of the Board, the President or any Vice President may from time to time appoint an attorney or attorneys or agent or agents of the corporation, in the name and on behalf of the corporation, to cast the votes which the corporation may be entitled to cast as the holder of stock or other securities in any other corporation or other entity, any of whose stock or other securities may be held by the corporation, at meetings of the holders of the stock or other securities of such other corporation or other entity, or to consent in writing, in the name of the corporation as such holder, to any action by such other corporation or other entity, and may instruct the person or persons so appointed as to the manner of casting such votes or giving such consents, and may



execute or cause to be executed in the name and on behalf of the corporation and under its corporate seal or otherwise, all such written proxies or other instruments as he or she may deem necessary or proper. Any of the rights set forth in this Section 4.3 which may be delegated to an attorney or agent may also be exercised directly by the Chairperson of the Board, the President or the Vice President.

## ARTICLE V

### Stock

Section 5.1 Certificates. Every holder of stock represented by certificates shall be entitled to have a certificate signed by or in the name of the corporation by the Chairperson or Vice Chairperson of the Board of Directors, if any, or the President or a Vice President, and by the Treasurer or an Assistant Treasurer, or the Secretary or an Assistant Secretary, of the corporation certifying the number of shares owned by such holder in the corporation. Any of or all the signatures on the certificate may be a facsimile. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent, or registrar before such certificate is issued, it may be issued by the corporation with the same effect as if such person were such officer, transfer agent, or registrar at the date of issue. The corporation shall not have the power to issue a certificate in bearer form.

Section 5.2 Lost, Stolen or Destroyed Stock Certificates; Issuance of New Certificates. The corporation may issue a new certificate of stock in the place of any certificate theretofore issued by it, alleged to have been lost, stolen or destroyed, and the corporation may require the owner of the lost, stolen or destroyed certificate, or such owner's legal representative, to give the corporation a bond, in each case reasonably satisfactory to the corporation to indemnify it against any claim that may be made against it on account of the alleged loss, theft or destruction of any such certificate or the issuance of such new certificate.

## ARTICLE VI

### Indemnification

Section 6.1 Right to Indemnification. The corporation shall indemnify and hold harmless, to the fullest extent permitted by applicable law as it presently exists or may hereafter be amended, any person (a "Covered Person") 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 or officer of the corporation or, while a director or officer of the corporation, 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 nonprofit entity, including service with respect to employee benefit plans, against all liability and loss suffered and expenses (including attorneys' fees) reasonably incurred by such Covered Person. Notwithstanding the preceding sentence, except as otherwise provided in Section 6.3, the corporation shall be required to indemnify a Covered



Person in connection with a proceeding (or part thereof) commenced by such Covered Person only if the commencement of such proceeding (or part thereof) by the Covered Person was authorized in the specific case by the Board of Directors of the corporation.

Section 6.2 Prepayment of Expenses. The corporation shall to the fullest extent not prohibited by applicable law pay the expenses (including attorneys' fees) incurred by a Covered Person in defending any proceeding in advance of its final disposition, provided, however, that, to the extent required by law, such payment of expenses in advance of the final disposition of the proceeding shall be made only upon receipt of an undertaking by the Covered Person to repay all amounts advanced if it should be ultimately determined that the Covered Person is not entitled to be indemnified under this Article VI or otherwise.

Section 6.3 Claims. If a claim for indemnification (following the final disposition of such action, suit or proceeding) or advancement of expenses under this Article VI is not paid in full within thirty days after a written claim therefor by the Covered Person has been received by the corporation, the Covered Person may file suit to recover the unpaid amount of such claim and, if successful in whole or in part, shall be entitled to be paid the expense of prosecuting such claim. In any such action the corporation shall have the burden of proving that the Covered Person is not entitled to the requested indemnification or advancement of expenses under applicable law.

Section 6.4 Nonexclusivity of Rights. The rights conferred on any Covered Person by this Article VI shall not be exclusive of any other rights which such Covered Person may have or hereafter acquire under any statute, provision of the Articles of Incorporation, these bylaws, agreement, vote of stockholders or disinterested directors or otherwise.

Section 6.5 Other Sources. The corporation's obligation, if any, to indemnify or to advance expenses to any Covered Person who was or is serving at its request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust, enterprise or nonprofit entity shall be reduced by any amount such Covered Person may collect as indemnification or advancement of expenses from such other corporation, partnership, joint venture, trust, enterprise or non-profit enterprise.

Section 6.6 Amendment or Repeal. Any repeal or modification of the foregoing provisions of this Article VI shall not adversely affect any right or protection hereunder of any Covered Person in respect of any act or omission occurring prior to the time of such repeal or modification.

Section 6.7 Other Indemnification and Prepayment of Expenses. This Article VI shall not limit the right of the corporation, to the extent and in the manner permitted by law, to indemnify and to advance expenses to persons other than Covered Persons when and as authorized by appropriate corporate action.

## ARTICLE VII

### Miscellaneous

Section 7.1 Fiscal Year. The fiscal year of the corporation shall be determined by resolution of the Board of Directors.

Section 7.2 Seal. The corporate seal, if any, shall have the name of the corporation inscribed thereon and shall be in such form as may be approved from time to time by the Board of Directors.

Section 7.3 Manner of Notice. Except as otherwise provided herein or permitted by applicable law, notices to directors and stockholders shall be in writing and delivered personally, mailed, or sent by reputable overnight courier services (charges prepaid) to the directors or stockholders at their addresses appearing on the books of the corporation. Notice to directors may be given by telecopier, telephone or other means of electronic transmission.

Section 7.4 Waiver of Notice of Meetings of Stockholders, Directors and Committees. Any waiver of notice, given by the person entitled to notice, whether before or after the time stated therein, shall be deemed equivalent to notice. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at nor the purpose of any regular or special meeting of the stockholders, directors, or members of a committee of directors need be specified in a waiver of notice.

Section 7.5 Form of Records. Any records maintained by the corporation in the regular course of its business, including its stock ledger, books of account, and minute books, may be kept on, or by means of, or be in the form of, any information storage device or method, provided that the records so kept can be converted into clearly legible paper form within a reasonable time.

Section 7.6 Amendment of Bylaws. These bylaws may be altered, amended or repealed, and new bylaws made, by the Board of Directors, but the stockholders may make additional bylaws and may alter and repeal any bylaws whether adopted by them or otherwise; provided, however, neither the Board of Directors nor the stockholders may alter, amend or repeal these bylaws, or make new bylaws.



SECRETARY'S CERTIFICATE OF ADOPTION OF BYLAWS

OF

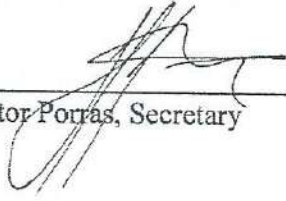
LUMENCO, INC.,  
a Colorado corporation

I, the undersigned, do hereby certify:

1. That I am the duly elected and acting Secretary of LUMENCO, INC., a Colorado corporation.

2. That the foregoing Amended and Restated Bylaws constitute the Bylaws of said corporation as adopted by Joint Written Consent of a Majority of Shareholders and the Board of Directors of the Corporation dated as of the date hereof.

IN WITNESS WHEREOF, I have hereunto set my hand as of September 23, 2013.

  
\_\_\_\_\_  
Hector Porras, Secretary

**EXHIBIT J****SCHEDULE OF LIABILITIES**  
**(Notes, Mortgages and Accounts Payable)**

Name of Creditor	Original amount	Original date	Current balance	Current or delinquent?	Maturity date	Monthly Payment
Pawnee Leasing	\$206,539.63	9/15/2019	\$99,327.21	Current	8/15/2024	\$4,713.32
Int'l Finance Services	\$193,159.77	3/15/2018	\$30,179.88	Current	3/15/2023	\$3,881.00
Bryn Mawr	\$77,192.32	1/15/2021	\$34,221.17	Current	10/15/2023	\$2,393.96
Navitas	\$56,478.00	6/15/2020	\$15,264.01	Current	4/15/2023	\$1,746.61
Targeted Leasing	\$22,979.12	10/1/2019	\$8,671.42	Current	9/1/2023	\$697.72
SBA Loan	\$199,300.00	6/8/2020	\$199,300.00	Current	5/1/2051	\$1,013.00
Convertible Note - Keister	\$150,000.00	9/2/2014	\$302,051.15	Current	N/A	N/A
Convertible Note - Acks	\$150,000.00	9/2/2014	\$302,051.15	Current	N/A	N/A

**EXHIBIT K**

**FORM OF SUBORDINATED CONVERTIBLE PROMISSORY NOTE**

THIS CONVERTIBLE PROMISSORY NOTE HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "1933 ACT"), OR UNDER THE PROVISIONS OF ANY APPLICABLE STATE SECURITIES LAWS, BUT HAVE BEEN ISSUED AND SOLD IN RELIANCE UPON EXEMPTIONS FROM THE REGISTRATION REQUIREMENTS OF SUCH ACTS. THE SECURITIES HAVE BEEN ACQUIRED FOR INVESTMENT ONLY AND MAY NOT BE SOLD, PLEDGED, TRANSFERRED OR ASSIGNED, EXCEPT (I) PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE 1933 ACT AND ANY APPLICABLE STATE SECURITIES ACTS; OR (II) UPON THE ISSUANCE TO THE ISSUER OF AN OPINION OF COUNSEL, OR THE SUBMISSION TO THE ISSUER OF SUCH OTHER EVIDENCE AS MAY BE SATISFACTORY TO THE COMPANY, THAT SUCH PROPOSED SALE, TRANSFER, PLEDGE OR OTHER DISPOSITION WILL NOT BE IN VIOLATION OF THE 1933 ACT AND ANY APPLICABLE STATE SECURITIES ACTS.

THIS OBLIGATIONS EVIDENCED BY THIS CONVERTIBLE PROMISSORY NOTE (AND ALL PAYMENT AND ENFORCEMENT PROVISIONS HEREIN) SHALL BE SUBORDINATE TO THOSE LIABILITIES LISTED WITHIN SCHEDULE A ATTACHED HERETO AND INCORPORATED HEREIN BY REFERENCE.

SUBORDINATED CONVERTIBLE PROMISSORY NOTE  
(the "Note")

\$ \_\_\_\_\_

Issue Date: \_\_\_\_\_, 2022

For value received LUMENCO, INC., a Colorado corporation (the "Company") promises to pay to \_\_\_\_\_ (together with its successors and assigns, the "Holder"), at the address listed below, or at such other address as the holder hereof may from time to time designate in writing, the principal sum of \$ \_\_\_\_\_, or such lesser amount as shall be equal to the outstanding principal amount hereof (the "Principal Amount"), together with all accrued and unpaid interest thereon, upon the terms and conditions specified below.

So long as any portion of this Note remains outstanding and unpaid, the Company will comply with the following provisions to which this Note is subject and by which it is governed:

1. Interest. Interest shall accrue on the principal outstanding from time to time, commencing from the Issue Date of this Note and continuing until repayment of this Note in full, at a rate equal to ten percent (10%) per annum. Upon an Event of Default (as defined below), this Note will bear interest at a default rate of interest equal to the sum of the interest rate set forth in the immediately preceding sentence plus an additional two percent (2%) per annum (collectively, "Default Interest"). Interest shall be payable on the Conversion Date or Maturity Date (as defined below), provided that Default Interest shall be payable on demand. Interest shall accrue on the basis of actual days elapsed in a year consisting of 360 days. Notwithstanding anything herein to the contrary, if during any period for which interest is computed under this Note, the amount of interest computed on the basis provided for in this Note, together with all fees, charges and other payments which are treated as interest under applicable law, would exceed the amount of such interest computed on the basis of the Highest Lawful Rate (as defined below), the Company's obligations hereunder shall, automatically and retroactively, be deemed reduced to the Highest Lawful Rate, and during any such period the interest payable under this Note shall be computed on the basis of the Highest Lawful Rate. In the event the Holder receives as interest an amount which would exceed the Highest Lawful Rate, then the amount of any excess interest shall not be applied to the payment of interest hereunder, but shall be applied to the reduction of the unpaid principal balance due hereunder. As used herein, "Highest Lawful Rate" means the maximum non-usurious rate of interest, as in effect from time to time, which may be lawfully charged, contracted for, reserved, received or collected by the Holder in connection with this Note under applicable law.

2. Principal. All unpaid principal, together with any then unpaid and accrued interest and any other amounts payable hereunder, shall be due and payable on the earlier of (a) the Maturity Date (as defined below) or (b) when, upon the occurrence of an Event of Default, such amounts are declared due and payable by the Holder or made automatically due and payable, in each case, in accordance with the terms hereof. The "Maturity Date" shall mean the earlier of (i) the fourth (4<sup>th</sup>) anniversary of the Issue Date or (ii) a Change in Control or Initial Public Offering ("IPO").

3. Payment Terms. Unless earlier converted, all payments of principal and interest shall be in lawful money of the United States of America. Payments under this Note shall be applied first to the payment of all accrued and unpaid interest and then to the payment of principal. Prepayment of the principal amount of this Note, together with all accrued and unpaid interest on the portion of principal so prepaid, may be made in whole or in part at any time without penalty.

4. Conversion.

(a) If the Company at any time prior to earlier of (i) this Note being paid in full sells equity securities (other than a Change in Control or IPO), or debt with equity features in an aggregate amount of \$1,500,000.00 (a “*Qualified Financing*”), the Company shall convert all principal and accrued interest into the class of equity being offered at a conversion price equal to 80% of the price per share paid by other investors for investments of less than \$100,000 or 70% of the price per share paid by the other purchasers of the Preferred Stock for the holders of notes with principal balance equal or greater than \$100,000 (the “*Conversion Price*”).

(b) If the Company consummates a preferred stock financing that does not constitute a Qualified Financing, the Company shall convert all principal and accrued interest into the preferred stock issued in the financing at a conversion price equal to the price per share paid by the other investors in the financing. If the Company does not consummate a Qualified Financing on or prior to the Maturity Date, this Note will be convertible into common stock at a conversion price equal to \$0.80 per share; provided, however, that this Note with principal balance equal to or greater than \$100,000 will be convertible into common stock at a conversion price of \$0.70 per share (approximately \$40,000,000 pre-money value).

(c) Upon a change of control or an IPO, this Note will be convertible into common stock at a conversion price equal to \$1.00 per share. Upon a change of control, the Note holder will have the option to have this Note instead be repaid with interest and a 25% premium.

5. Mechanics of Conversion.

(a) Upon conversion of this Note, the Holder shall surrender this Note, duly endorsed, at the principal offices of the Company (or a notice to the effect that the original Note has been lost, stolen or destroyed and an agreement acceptable to the Company whereby the Holder agrees to indemnify the Company from any loss incurred by it in connection with this Note). The Company shall, as soon as practicable thereafter, cause to be issued and delivered to the Holder a certificate or certificates for the number of shares to which the Holder shall be entitled upon such conversion, including a check payable to the Holder for any cash amounts payable as described in Section 5(b).

(b) No fractional shares shall be issued upon conversion of this Note. In lieu of the Company issuing any fractional shares to the Holder upon the conversion of this Note, the Company shall pay to the Holder an amount equal to the product obtained by multiplying the Conversion Price by the fraction of a share not issued pursuant to the previous sentence. Upon conversion of this Note in full and the payment of the amounts specified in this Section 5, Company shall be forever released from all its obligations and liabilities under this Note and this Note shall be deemed of no further force or effect, whether or not the original of this Note has been delivered to the Company for cancellation.

6. Representations and Warranties of Company. The Company warrants and represents to the Holder as follows:

(a) The Company is a corporation duly organized, validly existing and in good standing under the laws of the jurisdiction of its organization and has the corporate power and authority and the legal right to own and operate its properties and to conduct the business in which it is currently engaged.

(b) The Company has the power and authority and the legal right to execute and deliver, and to perform its obligations under, this Note and has taken all necessary corporate action to authorize such execution, delivery and performance.

(c) This Note constitutes a legal, valid and binding obligation of the Company enforceable in accordance with its terms, except as enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or similar laws affecting the enforcement of creditors’ rights generally and by general equitable principles (whether enforcement is sought by proceedings in equity or at law).



(d) The execution, delivery and performance of this Note will not (i) violate any provision of any law, statute, rule or regulation or any order, writ, judgment, injunction, decree, determination or award of any court, governmental agency or arbitrator presently in effect having applicability to the Company, (ii) violate or contravene any provision of the Certificate of Incorporation or bylaws of the Company, or (iii) result in a breach of or constitute a default under any indenture, loan or credit agreement or any other agreement, lease or instrument to which the Company is a party or by which it or any of its properties may be bound or result in the creation of any Lien thereunder. The Company is not in default under or in violation of any such law, statute, rule or regulation, order, writ, judgment, injunction, decree, determination or award or any such indenture, loan or credit agreement or other agreement, lease or instrument in any case in which the consequences of such default or violation could have a material adverse effect on the business, operations, properties, assets or condition (financial or otherwise) of the Company.

(e) No order, consent, approval, license, authorization or validation of, or filing, recording or registration with, or exemption by, any governmental or public body or authority is required on the part of the Company to authorize, or is required in connection with the execution, delivery and performance of, or the legality, validity, binding effect or enforceability of, this Note, except for filings pursuant to Regulation D of the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder, and applicable state securities laws.

(f) There are no actions, suits or proceedings pending or, to the knowledge of the Company, threatened against or affecting the Company or any of its properties before any court or arbitrator, or any governmental department, board, agency or other instrumentality which, if determined adversely to the Company, would have a material adverse effect on the business, operations, property or condition (financial or otherwise) of the Company or on the ability of the Company to perform its obligations hereunder.

(g) The Company is not obligated on any indebtedness or contingent obligation except pursuant to (i) that certain Convertible Promissory Note and Warrant Purchase Agreement, dated June 11, 2010, as amended to date and (ii) that certain Loan and Security Agreement dated as of April 21, 2008, as amended to date.

**7. Representations and Warranties of Holder.** The Holder represents and warrants to the Company that:

(a) The Note and the shares of Common Stock of the Company (collectively the “*Securities*”) are and will be acquired by Holder for Holder’s own account for purposes of investment, not as a nominee or agent, and not with a view to or in connection with the distribution or resale of all or any part thereof, and that Holder does not have any (i) present intention of selling, transferring granting any participation in, or otherwise distributing the same, or (ii) contract, undertaking, agreement or arrangement with any individual, company, corporation, partnership, association, trust, estate or partnership (each, a “*Person*”) to sell, transfer, grant any participation in or otherwise distribute all or any part of the Securities;

(b) The Holder understands that the Securities will not be registered under the Securities Act or applicable state securities laws prior to the Merger, by reason of specific exemptions therefrom, which exemptions depend upon, among other things, Holder’s representations set forth herein and Holder understands that no public market now exists for the Securities and that the Company has made no assurances that a public market will ever exist for the Securities;

(c) The Holder (i) has sufficient knowledge and experience in financial or business matters that it is capable of evaluating the merits and risks of its investment in the Securities; (ii) is an investor in securities of companies in the development stage such as the Company; (iii) is able to protect its interests and fend for itself in the transactions contemplated by this Note; and (iv) has the ability to bear the economic risks of its investment;

(d) The Holder is an “accredited investor” as such term is defined in Rule 501(a) of Regulation D promulgated under the Securities Act;

(e) The Holder understands that the Securities are characterized as “restricted” under the federal securities laws in as much as they are being acquired from the Company in a transaction not involving a public offering and that under such laws and applicable regulations such Securities prior to the Merger may be resold without registration under the Securities Act only in certain limited circumstances. In this

connection, Holder represents that it is familiar with Rule 144, as presently in effect, and understands the resale limitations imposed thereby and by the Securities Act;

(f) The Holder has satisfied itself as to the full observance by it of the laws of its jurisdiction in connection with the purchase of the Securities including the tax consequences, if any, which may be relevant to the acquisition, holding, conversion, sale or transfer of the Securities;

(g) The Holder has all requisite power and authority to enter into this Note to perform its obligations hereunder, and this Note constitutes a valid and binding obligation of Holder enforceable against Holder in accordance with their terms, subject as to enforcement of remedies to applicable bankruptcy, insolvency, reorganization or similar laws affecting generally the enforcement of creditors' rights and subject to a court's discretionary authority with respect to the granting of a decree ordering specific performance or other equitable remedies; and

(h) The Holder represents that the Holder has had an opportunity to ask questions and receive answers from the Company regarding the Company, its business and the terms and conditions of the offering of the Securities. The foregoing, however, does not limit or modify the representations and warranties of the Company in Section 6 of this Note or the right of the Holder to rely thereon. With respect to tax considerations involved in the investment, the Holder is not relying on the Company.

#### 8. Further Limitations on Disposition.

(a) Without in any way limiting the representations set forth in Section 7 hereof, Holder hereby further agrees not to make any sale, transfer or other disposition of all or any portion of the Securities unless and until:

(i) There is then in effect a registration statement under the 1933 Act covering such proposed sale, transfer or other disposition and such sale, transfer or other disposition is made in accordance with such registration statement;

(ii) (A) The Holder shall have notified the Company of the proposed disposition and shall have furnished the Company with a detailed statement of the circumstances surrounding the proposed disposition, and (B) if requested by the Company, Holder shall have furnished the Company with an opinion of counsel, reasonably satisfactory to the Company, that such sale, transfer or other disposition will not require registration of such shares under the Securities Act, provided, however, that the Company will not require such an opinion of counsel for transactions made pursuant to Rule 144, as currently in existence, except in unusual circumstances; or

(iii) The submission to the Company of such other evidence, as may be satisfactory to the Company, that such proposed sale, transfer or other disposition will not be in violation of the Securities Act and any applicable state securities laws or regulations.

(b) Notwithstanding the provisions of subsection (a) immediately above, no such registration statement or opinion of counsel shall be required for a transfer to (i) any affiliate of Holder as defined under Rule 144 of the Securities Act; (ii) Holder's partners, stockholders, members or other equity holders; (iii) any immediate family member of a Holder; (iv) Holder's executors or legal representatives; or (v) trustees of an inter-vivos trust or testamentary trust for the benefit of members of a Holder's immediate family, provided that, in the case of the foregoing clauses (i) through (v), the transferee makes in writing the representations and warranties in favor of the Company contained in, and agrees in writing to the terms of, Sections 7, 8, 9, 10 and 11 hereof as if such transferee were the original Holder hereunder, all in form and substance reasonably satisfactory to the Company.

(c) Holder understands and agrees that any sale, transfer or other disposition of all or any portion of the Securities in violation of the provisions of this Section 8 shall be null and void and prohibited, and that the Company shall not be required to recognize the same on its books and records any such purported sale, transfer or other disposition.

9. Legends. It is understood that the certificates evidencing the Securities may bear the following legends, as applicable:

(a) THE SECURITIES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "1933 ACT"), OR UNDER THE PROVISIONS OF ANY APPLICABLE STATE SECURITIES LAWS, BUT HAVE BEEN ISSUED AND SOLD IN RELIANCE UPON EXEMPTIONS FROM THE REGISTRATION REQUIREMENTS OF SUCH ACTS. THE SECURITIES HAVE BEEN ACQUIRED FOR INVESTMENT ONLY AND MAY NOT BE SOLD, PLEDGED, TRANSFERRED OR ASSIGNED, EXCEPT (i) PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE 1933 ACT AND ANY APPLICABLE STATE SECURITIES ACTS; OR (ii) UPON THE ISSUANCE TO THE COMPANY OF AN OPINION OF COUNSEL, OR THE SUBMISSION TO THE COMPANY OF SUCH OTHER EVIDENCE, AS MAY BE SATISFACTORY TO THE COMPANY, THAT SUCH PROPOSED SALE, TRANSFER, PLEDGE OR OTHER DISPOSITION WILL NOT BE IN VIOLATION OF THE 1933 ACT AND ANY APPLICABLE STATE SECURITIES ACTS.

THE COMPANY IS AUTHORIZED TO ISSUE MORE THAN ONE CLASS OR SERIES OF STOCK. UPON WRITTEN REQUEST, THE COMPANY WILL FURNISH WITHOUT CHARGE TO EACH STOCKHOLDER WHO SO REQUESTS THE POWERS AND DESIGNATIONS, AND THE RELATIVE PREFERENCES AND RIGHTS, OF EACH CLASS OF STOCK OR SERIES THEREOF AND THE RELATIVE QUALIFICATIONS, LIMITATIONS OR RESTRICTIONS OF SUCH PREFERENCES AND/OR RIGHTS.

(b) Any other legend required by the securities laws of states or other jurisdictions to the extent such laws are applicable to the securities represented by the instrument so legended.

10. Brokerage. There are no claims for and no Person is entitled to any brokerage commissions, finder's fees or similar compensation from Holder or based on any arrangement or agreement made by or on behalf of Holder in connection with the transactions contemplated by this Note.

11. Residence. If the Holder is an individual, then the Holder resides in the state or province identified in the address of the Holder set forth on the signature page hereto; if the Holder is a partnership, corporation, limited liability company or other entity, then the office or offices of the Holder in which its principal place of business is located at the address or addresses of the Holder set forth on the signature page hereto.

12. Events of Acceleration. Upon the occurrence of any Event of Default and so long as any Event of Default is continuing, the Holder may, with the written consent of Investors (as defined below), inclusive of the Holder, holding more than the higher of (i) 66 2/3% of the aggregate outstanding principal amount of the Notes, declare the entire unpaid balance of this Note, together with all accrued and unpaid interest on this Note, to be immediately due and payable prior to the Maturity Date (in the case of any occurrence of any of the events described in paragraphs (c) and (d) below, this Note shall become automatically due and payable, including unpaid interest accrued hereon, without notice or demand). In the event the Company fails to make any payment of principal or accrued interest on this Note to Holder when due after demand is made in accordance herewith, Holder will be entitled to exercise all rights and remedies available to it without the consent or approval of any other party and the Company will reimburse Holder for its reasonable costs and expenses, including attorneys' fees, incurred in connection with the enforcement of its rights under this Note. In addition to any other rights Holder may have under applicable laws, during an Event of Default, Holder shall have the right to set off the indebtedness evidenced by this Note against any other indebtedness of the Holder to the Company. For purposes of this Section 7, each of the following events will constitute an "Event of Default":

(a) *Failure to Pay*. The Company shall fail to pay (i) when due any principal payment on the due date hereunder or (ii) any interest payment or other payment required under the terms of this Note or the Security Agreement (as defined below) on the date due and such payment shall not have been made within five (5) days following the date when due.

(b) *Failure to Comply*. The Company shall fail to comply in any material respect with the terms, conditions and covenants of this Note including, without limitation, any representation or warranty provided herein is untrue or incorrect in any material respect as to Company.

(c) *Voluntary Bankruptcy or Insolvency Proceedings*. The Company shall (i) apply for or consent to the appointment of a receiver, trustee, liquidator or custodian of itself or of all or a substantial part of its property, (ii) admit in writing its inability to pay its debts generally as they mature, (iii) make a general assignment for the benefit of its or any of its creditors, (iv) be dissolved or liquidated, (v) commence a

voluntary case or other proceeding seeking liquidation, reorganization or other relief with respect to itself or its debts under any bankruptcy, insolvency or other similar law now or hereafter in effect or consent to any such relief or to the appointment of or taking possession of its property by any official in an involuntary case or other proceeding commenced against it, or (vi) take any action for the purpose of effecting any of the foregoing.

(d) *Involuntary Bankruptcy or Insolvency Proceedings.* Proceedings for the appointment of a receiver, trustee, liquidator or custodian of the Company, or of all or a substantial part of the property thereof, or an involuntary case or other proceedings seeking liquidation, reorganization or other relief with respect to the Company, if any, or the debts thereof under any bankruptcy, insolvency or other similar law now or hereafter in effect shall be commenced and an order for relief entered or such proceeding shall not be dismissed or discharged within 90 days of commencement.

(e) *Cross Default.* A default (however denominated or defined) shall occur under any other indebtedness for borrowed money (not covered hereunder) of the Company, which shall not have been cured within applicable notice and grace periods and the holders thereof shall have accelerated payment of such indebtedness.

(f) *Judgments.* A final nonappealable judgment or order for the payment of money in excess of One Hundred Thousand dollars (\$100,000) shall be rendered against the Company and the same shall remain undischarged for a period of 30 days during which execution shall not be effectively stayed, or any judgment, writ, assessment, warrant of attachment, or execution or similar process shall be issued or levied against a substantial part of the Company's property, if any and such judgment, writ, or similar process shall not be released, stayed, vacated or otherwise dismissed within 30 days after issue or levy.

13. Change in Control: Closing Payment. For the purposes of this Note, a "Change in Control" shall be deemed to occur upon (i) the sale, lease, license or transfer, in a single transaction or a series of transactions, of all or substantially all of the Company's assets; (ii) the sale or transfer, in a single transaction or a series of transactions, of 50% or more of the presently outstanding shares of capital stock of the Company, or (iii) the issuance by the Company of stock, whether in one or more transactions, which individually or in the aggregate results in the ownership, following such transaction or transactions, by the present stockholders of the Company of less than 50% of the issued and outstanding shares of voting stock of the Company. In the event of a Change in Control prior to the consummation of the Merger, the Company shall pay to the Holder the outstanding principal balance under the Note and all accrued and unpaid interest hereunder, which payments shall be paid to the Holder on or before the closing of such Change in Control. Notwithstanding the foregoing, in no event shall a Change of Control result from a debt or equity financing where the purpose of such transaction is raising capital for the Company.

14. No Stockholder Rights. This Note, as such, shall not entitle the Holder to any rights as a stockholder of the Company.

15. Pari Passu Notes. The Holder acknowledges and agrees that the payment of all or any portion of the outstanding principal amount of this Note and all interest hereon shall be pari passu in right of payment and in all other respects to the other Secured Convertible Promissory Notes issued by the Company as provided in the Subscription Agreement (collectively with this Note, the "Notes" and the holders of all Notes, the "Investors"). In the event the Holder receives payments in excess of its pro rata share of the Company's payments to the Investors, then the Holder shall hold in trust all such excess payments for the benefit of the other Investors and shall pay such amounts held in trust to such other Investors upon demand by such Investors.

16. Miscellaneous.

(a) Waivers. The Company hereby waives demand for payment, notice of dishonor, presentment, protest and notice of protest. No failure or delay on the part of the holder of this Note in exercising any power or right under this Note shall operate as a waiver thereof, nor shall any single or partial exercise of any such power or right preclude any other or further exercise thereof of the exercise of any other power or right. No notice to or demand on the Company in any case shall entitle the Company to any notice or demand in similar or other circumstances.

(b) Amendment. This Note may not be amended or modified; nor may any of its terms be waived, except by written instruments signed by the Company and the Requisite Investors, and then only to the

extent set forth therein. “*Requisite Investors*” shall mean Investors holding a majority of the principal indebtedness represented by the outstanding Notes (defined in Section 16).

(c) Binding; Successors and Assigns. If any provision of this Note is determined to be invalid, illegal or unenforceable, in whole or in part, the validity, legality and enforceability of any of the remaining provisions or portions of this Note shall not in any way be affected or impaired thereby, and this Note shall nevertheless be binding between the Company and the Holder. This Note shall be binding upon, inure to the benefit of and be enforceable by the Company, the Holder and their respective successors and assigns.

(d) Governing Law; Venue. The terms of this Note shall be construed and governed in all respects by the laws of the State of Colorado, without regard to principles of conflict of laws. Any and all disputes arising out of or related to this Note or the Security Agreement shall be adjudicated exclusively in the state or federal courts located in Colorado. Each of the parties hereto submits itself to the jurisdiction of the courts of the State of Colorado and the Federal courts of the United States located in such state in respect of all actions arising out of or in connection with the interpretation or enforcement of the Note, waives any argument that venue in such forums is not convenient and agrees that any actions initiated by either party hereto shall be appropriately venued in such forums.

(e) Notices. All notices or other communications required or permitted hereunder shall be in writing and shall be deemed effectively given: (i) upon personal delivery to the party to be notified; (ii) when sent by confirmed facsimile if sent during the normal business hours of the recipient, if not, then on the next business day; (iii) one (1) business day after deposit with a nationally recognized overnight courier designating next business day delivery; or (iv) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid. All notices and other communications shall be sent to the address or facsimile number as set forth on the signature page hereof or at such other address as such party may designate by ten (10) days’ advance written notice to the other parties.

(f) Time of the Essence; Remedies. Time is of the essence of this Note. The rights and remedies under this Note are cumulative and not exclusive of any rights, remedies, powers and privileges that may otherwise be available to the Holder.

(g) Severability. If one or more provisions of this Note are held to be unenforceable under applicable law, such provision shall be excluded from this Note, the balance of the Note shall be interpreted as if such provision were so excluded and shall be enforceable in accordance with its terms, and the parties shall use good faith to negotiate a substitute, valid and enforceable provision that replaces the excluded provision and that most nearly effects the parties’ intent in entering into this Note.

(h) Entire Note. This Note constitutes the full and entire understanding, promise and agreement between the Company and the Holder with respect to the subject matter hereof and thereof, and supersede, merge and render void every other prior written and/or oral understanding, promise or agreement between the Company and the Holder with respect to the subject matter hereof and thereof.

(i) Headings. Section headings are inserted herein for convenience only and do not form a part of this Note.

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IN WITNESS WHEREOF, the parties have executed this CONVERTIBLE PROMISSORY NOTE as of the date first written above.

LUMENCO, INC.

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

Agreed to and Accepted:

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

Address:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Email: \_\_\_\_\_

Phone: \_\_\_\_\_

[Signature page to Secured Convertible Promissory Note]

SCHEDULE A

**SCHEDULE OF LIABILITIES**  
 (Notes, Mortgages and Accounts Payable)

Name of Creditor	Original amount	Original date	Current balance	Current or delinquent?	Maturity date	Monthly Payment
Pawnee Leasing	\$206,539.63	9/15/2019	\$99,327.21	Current	8/15/2024	\$4,713.32
Int'l Finance Services	\$193,159.77	3/15/2018	\$30,179.88	Current	3/15/2023	\$3,881.00
Bryn Mawr	\$77,192.32	1/15/2021	\$34,221.17	Current	10/15/2023	\$2,393.96
Navitas	\$56,478.00	6/15/2020	\$15,264.01	Current	4/15/2023	\$1,746.61
Targeted Leasing	\$22,979.12	10/1/2019	\$8,671.42	Current	9/1/2023	\$697.72
SBA Loan	\$199,300.00	6/8/2020	\$199,300.00	Current	5/1/2051	\$1,013.00
Convertible Note - Keister	\$150,000.00	9/2/2014	\$302,051.15	Current	N/A	N/A
Convertible Note - Acks	\$150,000.00	9/2/2014	\$302,051.15	Current	N/A	N/A