REQUEST FOR PROPOSALS (RFP) FOR PURCHASE OF LED STREETLIGHTS

ON BEHALF OF THE VILLAGE OF GREAT NECK, NEW YORK



RFP # 17-NY-P-0471-F

Issued April 7, 2017

Bids Due: April 28, 2017



NOTICE TO BIDDERS

Agency:	RealTerm Energy US, L.P., on behalf of the Village of Great Neck, NY.
Bid Number:	17-NY-P-0471-F
	This is an invitation-only RFP. Only those directly receiving this email are eligible to respond.
Description:	RealTerm Energy, on behalf of the Village of Great Neck, NY, is requesting bids from LED luminaire suppliers for approximately 800 streetlights.
Contact:	If you have any questions about this RFP, please send all inquiries to Silvia Sepulveda at <u>RTE_bid_submissions@realtermenergy.com</u>
	Email Subject: RFP 17-NY-P-0471-F LED STREETLIGHTS
Deadline:	Bids will be received until 11:00 a.m. local time on Friday April 28, 2017 by the Great Neck Clerk Treasurer at 61 Baker Hill Road, Great Neck, NY 11023.
Public Opening:	All bids received by 11:00 a.m. local time on April 28, 2017 at the above address will be publicly opened and all respondent names will be read aloud. Pricing will not be distributed until a full review and evaluation is completed.
Informalities:	The Board of Trustees of the Village of Great Neck reserves the right to waive any informalities in the bids not inconsistent with law or to reject all bids or to accept any bid which is deemed to be in the best interest of the Village.
	By Order of the Board of Trustees Village of Great Neck Pedram Bral, Mayor loe Gill, Clerk Treasurer



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1. INSTRUCTIONS TO BIDDERS AND GENERAL CONDITIONS

- 1. In order to be valid, all bids must be properly signed and received by the Village by the time and date specified. DO NOT REMOVE ANY SHEETS FROM THIS BID DOCUMENT.
- 2. All bids must be priced per unit, if requested, as specified in the bid specifications. All prices in the proposal must be plainly stated in figures and words, where indicated. In case of conflict, words will



- 10. <u>ADDENDA AND INTERPRETATION</u>: No interpretation of the meaning of the specifications or other contract documents will be made to any bidder orally. Every request for such interpretation should be made in writing addressed to the Project Manager (contact details and instructions provided on page 2), and to be given consideration must be received by 2:00 p.m. on Tuesday April 18, 2017. Any and all such interpretations and any supplemental instructions will be in the form of a written addenda to the specifications which, if issued, will be emailed to the respective bidders furnished, not later than three days prior to the date fixed for the opening of bids. All addenda so issued shall become part of the contract documents. All addenda must be acknowledged as received by the respective bidder, and included in the bid submission.
- 11. <u>SUBMISSION OF BID PROPOSALS</u>: One (1) computer printed original, one (1) computer printed copy of the proposal and one (1) electronic copy (USB storage device) must be submitted. The original bid proposal shall be placed in a separate sealed envelope, manually signed in ink by a person having the authority to bind the firm in the contract and marked clearly on the outside as outlined below:

"Purchase of LED Streetlights RFP # 17-NY-P-0471-F"

Submitted to: Great Neck Clerk Treasurer 61 Baker Hill Road Great Neck, NY 11023

NO LATER THAN 11:00 A.M. local time, April 28, 2017

RFP PROPOSALS MUST BE RECEIVED BEFORE THE BID CLOSING DATE/TIME IN ORDER TO BE ACCEPTED.

- 12. <u>LATE PROPOSALS</u>. Proposals received after submission deadline shall be returned unopened and will be considered void and unacceptable. The Village of Great Neck is not responsible for lateness of mail, carrier, etc. and time/date stamp by the Village shall be the official time of receipt.
- 13. <u>ALTERING PROPOSALS</u>: Any interlineations, alteration, or erasure made before receiving time must be initialed by the signer of the proposal, guaranteeing authenticity.
- 14. <u>WITHDRAWAL OF PROPOSAL</u>: A proposal may not be withdrawn or cancelled by the proposer for a period of ninety (90) days following the date designated for the receipt of proposal, and proposers so agree upon submittal of their proposal.
- 15. <u>SUCCESSFUL PROPOSER</u>: The successful proposer or proposer(s) shall defend, indemnify and save harmless the Village of Great Neck and all its officers, agents, and employees from all suits, actions, or other claims of any character, name and description brought for or on account of any injuries or damages received or sustained by any person, persons, or property on account of any negligent act or fault of the successful proposer; or of any agent, employee, subcontractor or supplier in the execution of, or performance under any judgment cost, which may be obtained against the Village of Great Neck growing out of such injury or damage.
- 16. <u>VENUE</u>: This agreement will be governed and construed according to the laws of the State of New York. This agreement is performable in the Village of Great Neck, New York.



- 17. <u>PREVAILING WAGES (if applicable)</u>: The Village of Great Neck, a village in New York State, requires contractors engaged by the Village on public works projects to abide by Articles 8 and 9 of New York State Labor Law concerning Prevailing Wage. Proposals submitted in response to this RFP must include rates which reflect paying the of prevailing wage and supplements (fringe benefits) to all workers, laborers and mechanics who will perform work on the project. The successful bidder shall comply with the State's Prevailing Wage Laws, and all applicable regulations promulgated thereunder. To the extent required by law, the successful bidder shall provide the Village with certified payroll showing the wages paid to laborers, workers and mechanics who perform work on this project.
- 18. <u>EQUAL OPPORTUNITY EMPLOYER</u>: A successful proposer agrees that, during the term of this agreement, he/she will not engage in any employment practices which have the effect of discriminating against any employee or applicant for employment on the basis of race, color, religion, national origin, sex, age, gender, sexual orientation, disability or any other category protected by law; further, successful proposer will take affirmative steps to insure that applicants and employees are treated during employment without regard to their race, color, religion, national origin, sex, age, gender, sexual orientation, or disability.
- 19. <u>TERMINATION FOR DEFAULT</u>: The Village of Great Neck reserves the right to enforce the performance of the contract in any manner prescribed by law or deemed to be in the interest of the Village of Great Neck in the event of breach or default of the resulting contract award.
- 20. <u>CHANGE ORDERS</u>: No oral statement of any persons shall modify or otherwise change, or affect the terms, conditions or specifications stated in the resulting contract. All change orders to the contract shall be made in writing by the Village of Great Neck.
- 21. <u>PURCHASE ORDER</u>: Provided that the Village issues an award of this contract, a purchase order(s) shall be generated by the Village of Great Neck to the successful bidder(s).



2. BID PROPOSAL FORM

RFP # 17-NY-P-0471-F

Clerk Treasurer Great Neck, NY

Name of Bidder: _____

The Village of Great Neck is soliciting proposals for the purchase and installation of new LED streetlights to replace approximately 800 fixtures that are a variety of high pressure sodium and other outdated lighting fixtures throughout the Village. The goals are to improve lighting conditions, lower electric costs, reduce lighting maintenance expenses, and reduce energy consumption.

The intent of this RFP is to award a contract to the best value vendor in accordance with the New York State Procurement Guidelines.

All new LED fixtures are required to meet the design specifications as stated herein. All fixtures provided by the bidder must be DesignLights Consortium (DLC) listed.

A bidder must affirmatively demonstrate their responsibility and meet the following requirements:

- 1. Have adequate financial resources, or the ability to obtain such resources as required;
- 2. Have adequate coverage area that conforms to the requirements of the RFP;
- 3. Have satisfactory record of performance;
- 4. Be otherwise qualified and eligible to receive an award.

The Village of Great Neck may request representation and other information sufficient to determine proposer's ability to meet these minimum standards listed above.



BID PROPOSAL FORM (CONT'D.) RFP # 17-NY-P-0471-F

Date:	
	Firm Name:
(Corporate Seal)	By:
	Signature:
Telephone Number:	_ Title:
Email Address:	_ Street Address:
Facsimile Number:	-



3. PRICING

Bidder must include and itemize in the bid price every component or sub-component required for the LED fixture replacement lighting to perform satisfactorily as a fully functioning system. Any hardware, cabling, wiring, brackets, batteries, or other parts required for proper operation as a working network of lights must be included in the bid price. If not included in the fixture unit price, Bidder must include the Adaptor/Bracket, etc. model number in Appendix B "Product Submittal Form" form and indicate the price.

All product unit prices (i.e. luminaires, brackets, photocell, etc.) submitted on Appendix B "Product Submittal Form" must include all shipping and handling costs of indicated products to the address of within the Village or within close proximities.

Bidder shall identify and price any components that are recommended as "spare" or stocking repair parts or supplies to provide timely repairs for broken equipment, if not covered under fixture warranty. Bidder must identify an authorized provider for installation, repairs, service and warranty.

Appendix B "Product Submittal Form" includes Luminaire types and Estimated Quantities. These reflects the estimates of the luminaires to be purchased by the Village during the LED conversion project. Estimated quantities will be used for comparison of responses. The quantities, as estimated, may or may not be purchased during the conversion project. The Village reserves the right to exceed or not meet the estimated quantities as its needs dictate. In the event that, as a result of a final audit/inventory/photometric review, new LED products (s) need to be included in the replacement inventory, this will be handled as a change order.



4. STATEMENT BY BIDDER

It is understood and agreed that this bid and any contract awarded hereon shall be subject to provisions of Section 103-a and Section 103-g of the General Municipal Law, which provides as follows:

§103-a. Grounds for cancellation of contract by municipal corporations and fire districts.

A clause shall be inserted in all specifications or contracts made or awarded by a municipal corporation or any public department, agency or official thereof on or after the first day of July, nineteen hundred fifty-nine or by a fire district or any agency or official thereof on or after the first day of September, nineteen hundred sixty, for work or services performed or to be performed, or goods sold or to be sold, to provide that upon the refusal of a person, when called before a grand jury, head of a state department, temporary state commission or other state agency, the organized crime task force in the department of law, head of a village department, or other village agency, which is empowered to compel the attendance of witnesses and examine them under oath, to testify in an investigation concerning any transaction or contract had with the state, any political subdivision thereof, a public authority or with any public department, agency or official of the state or of any political subdivision thereof or of a public authority, to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning such transaction or contract,

(a) such person, and any firm, partnership or corporation of which he is a member, partner, director or officer shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with any municipal corporation or fire district, or any public department, agency or official thereof, for goods, work or services, for a period of five years after such refusal, and to provide also that

(b) any and all contracts made with any municipal corporation or any public department, agency or official thereof on or after the first day of July, nineteen hundred fifty-nine or with any fire district or any agency or official thereof on or after the first day of September, nineteen hundred sixty, by such person, and by any firm, partnership, or corporation of which he is a member, partner, director or officer may be cancelled or terminated by the municipal corporation or fire district without incurring any penalty or damages on account of such cancellation or termination, but any monies owing by the municipal corporation or fire district for goods delivered or work done prior to the cancellation or termination shall be paid.

The provisions of this section as in force and effect prior to the first day of September, nineteen hundred sixty, shall apply to specifications or contracts made or awarded by a municipal corporation on or after the first day of July, nineteen hundred fifty-nine, but prior to the first day of September, nineteen hundred sixty.

§103-g. The Iran Divestment Act of 2012.

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to paragraph (b) of subdivision 3 of section 165-a of the State Finance Law.

Dated: _____

Firm Name: _____



By:

Signature and Title



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5. NON-COLLUSIVE BIDDING CERTIFICATION

(A) By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of knowledge and belief:

- (1) The prices in this bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
- (2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to



RFP # 17-NY-P-0471-F

6. CERTIFICATE OF AUTHORITY

I am the
(Title)
on duly organized and in good
named in the
ew York Business Corp. Law)
who signed said
the Contractor was, at the time of execution of the
behalf of said Contractor by authority of its Board of
y is in full force and effect at the date hereof.

Date:		
		By: Signature and Title
(Corporate S	Seal)	
STATE OF NI	ew york	SS:
COUNTY OF	NASSAU	
On this	day of	, 20, before me personally came
	, to me kno of the corpo	n, and known to me to be the ation
described in	h and which exe	uted the above certificate, who being by me duly sworn did depose and say
that he/she	e resides at	, and that he/she is
corporation order of the order.	a; that the seal a e Board of Direct	or said corporation and knows the corporate seal of said fixed to the above certificate is such corporate seal and that it was affixed by ors of said corporation, and that he/she signed his/her name thereto by like

Notary Public



7. EVALUATION OF PROPOSALS

Final selection will be based upon an evaluation and analysis of the information and materials required under the RFP.

Proposals that meet the Quality Requirements will be reviewed in accordance with the comparative evaluation criteria below. Each member of the Evaluation Committee will assign a rating of Highly Advantageous, Advantageous, Not Advantageous or Unacceptable, to each comparative evaluation criterion.

Based on these evaluation criteria ratings, a composite rating by each evaluator will be determined for each proposal. After the evaluations are complete, the price proposals will be evaluated and ranked based on total price.

The contract will not necessarily be awarded to the proposal that receives the highest ranking with respect to the price proposal.

Before awarding the contract, the Village may request clarification or additional information from the proposer. The Village reserves the right to reject any and all proposals if it determines that the criteria established herein have not been met.

Mandatory Submission Requirements

Mandatory Requirements are evaluated on a pass or fail basis. Failure to adhere to the following mandatory requirements shall result in a Proposal being declared a Non-Compliant Proposal and will be given no further consideration. The Village of Great Neck may decide to terminate the evaluation upon the first finding of non-compliance with a mandatory requirement.

- Proposal, required signature forms and digital files must be received at the closing location prior to closing date and time.
- Proposal must be in English.
- Any changes on the original proposal should be made in ink and initialed by the person signing the proposal. Please use Appendix form "F" Deviation Sheet to list any changes to the proposal and/or specs.
- All Addenda must be acknowledged using the Additional Certifications Form.
- Inclusion of all point rated requirements as outlined below.

Comparative Evaluation Criteria

The purpose of information requested in this section is to assist the Evaluation Committee in making fair judgments and evaluations regarding the proposers' overall qualifications, including its technical abilities, and previous experience. Proposers should respond in writing to each comparative criteria listed in the following sections. Emphasis should be on completeness and clarity of contents.



A Best Value approach to product costing will be employed that includes the initial capital costing plus the operating cost of the fixtures. Replacement costs will not be utilized as it is a requirement that all fixtures come with a 10 year warranty and this is being utilized as the product life for the purpose of this analysis. Costing will thus be analyzed in terms of the fixtures' delivered lumens per watt divided by the dollar cost per each fixture put forth by the proponents.

The proposals will be evaluated based on the criteria listed below, and scored as follows: Highly Advantageous, Advantageous, Not Advantageous and Unacceptable.

1) Experience

a) Highly Advantageous:

Manufacturer has Ten (10) or more years of experience in manufacturing streetlight fixtures

b) Advantageous:

Manufacturer has more than five (5) years of experience in manufacturing streetlight fixtures

c) Not Advantageous:

Manufacturer has less than three (3) years of experience in manufacturing streetlight fixtures

d) Unacceptable:

Manufacturer has less than one (1) year of experience in manufacturing streetlight fixtures

2) <u>Qualifications and References</u>

a) Highly Advantageous:

For each family of cobra head luminaires being proposed, Manufacturer has five (5) or more completed projects with luminaires the same or similar as those proposed herein, in the United States or a jurisdiction with a similar climate (projects must include at least 5,000 fixtures)

b) Advantageous:

For each family of cobra head luminaires being proposed, Manufacturer has three (3) or four (4) completed projects with luminaires the same or similar as those proposed herein, in the United States or a jurisdiction with a similar climate (projects must include at least 5,000 fixtures)

c) Not Advantageous:

For each family of cobra head luminaires being proposed, Manufacturer has less than three (3) completed projects with luminaires the same or similar as those proposed herein, in the United States or a jurisdiction with a similar climate (projects must include at least 5,000 fixtures)

d) Unacceptable:

For each family of cobra head luminaires being proposed, Manufacturer completed no projects with luminaires the same or similar as those proposed herein, in the United States or a jurisdiction with a similar climate (projects must include at least 5,000 fixtures)

For each project include the following information:

- 1. Installation end date, total number of luminaires supplied, installed, and operating
- 2. List and contact information of customer

Number of project and references provided shall not exceed seven (7).



3) Quality Control

a) Highly Advantageous:

The facility/facilities that manufacture(s) the LED luminaires and associated components are ISO9001 certified or equivalent, indicating quality management systems.

b) Not Advantageous:

The facility/facilities that manufacture(s) the LED luminaires and associated components are not ISO9001 certified or equivalent.

c) Product Origin

Highly Advantageous:

LED Products are manufactured in North America.

d) Unacceptable:

LED Products are not manufactured in North America.

4) Luminaire Performance and Requirements

a) Highly Advantageous:

100% of the proposed luminaires meet or exceed the lighting performance criteria described in Section 8 – Item 8 "Computer-generated point-by-point photometric analysis of maintained light levels." This includes all criteria a) Average luminance at pavement, b) Avg:min uniformity ratio, c) Max:min uniformity ratio, and d) Max. veiling luminance ratio.

b) Advantageous:

100% of the proposed luminaires meet or exceed the lighting performance criteria described in Section 8 – Item 8 "Computer-generated point-by-point photometric analysis of maintained light levels." This includes only criteria a) Average luminance at pavement while keeping an acceptable uniformity on the surface.

c) Not Advantageous:

Between 95% and 99% of the total Proposed luminaires meet or exceed the lighting performance criteria described in Section 8 – Item 8 "Computer-generated point-by-point photometric analysis of maintained light levels." This includes only criteria a) Average luminance at pavement while keeping an acceptable uniformity on the surface.

d) Unacceptable:

Less than 75% of the total Proposed luminaires meet or exceed the lighting performance criteria described in Section 8 – Item 8 "Computer-generated point-by-point photometric analysis of maintained light levels." This includes only criteria a) Average luminance at pavement while keeping an acceptable uniformity on the surface.



5) Energy Savings

a) Highly Advantageous:

Luminaires recommended provide energy savings in Demand (kW) of more than 60% (in comparison to the existing baseline).

b) Advantageous:

Luminaires recommended provide energy savings in Demand (kW) of more than 50% but less than 60% (in comparison to the existing baseline).

c) Not Advantageous:

Luminaires recommended provide energy savings in Demand (kW) of less than 50% (in comparison to the existing baseline).

6) Lumens Per Watt

a) Highly Advantageous:

Supplier's total package provides an average of 100 or more lumens per watt for the 800 LED fixtures.

b) Advantageous:

Supplier's total package provides an average of 95 to 99 lumens per watt for the 800 LED fixtures.

c) Not Advantageous:

Supplier's total package provides an average up to 95 lumens per watt for the 800 LED fixtures.

7) <u>Product Specifications</u>

a) Highly Advantageous:

More than 95% of the Proposed Luminaires meet or exceed all technical specification requirements listed in Exhibit A – Products Specifications.

b) Advantageous:

Between 90% and 94% of the Proposed Luminaires meet or exceeds all technical specification requirements listed in Exhibit A – Products Specifications.

c) Not Advantageous:

Between 75% and 89% and of the Proposed Luminaires meet or exceeds all technical specification requirements listed in Exhibit A – Products Specifications.

d) Unacceptable:

Less than 75% of the Proposed Luminaires meet or exceeds all technical specification requirements listed in Exhibit A – Products Specifications.



8) Ability to Deliver Light Fixtures

a) Highly Advantageous:

Supplier can deliver Cobrahead fixtures between 4-6 weeks after of signing contract. Supplier can deliver Decorative fixtures between 5-8 weeks after of signing contract.

b) Advantageous:

Supplier can deliver Cobrahead fixtures between 7-9 weeks after of signing contract. Supplier can deliver Cobrahead fixtures between 8-10 weeks after of signing contract.

c) Not Advantageous:

Supplier can deliver Cobrahead fixtures after 10 or more weeks of signing contract. Supplier can deliver Cobrahead fixtures between 10-14 weeks after of signing contract.

9) Ability to Deliver Sample Light Fixtures with proposal

a) Highly Advantageous:

Supplier can deliver Cobrahead sample fixtures between 1-2 days after submitting bid. Supplier can deliver Decorative sample fixtures between 1-2 days after submitting bid.

b) Advantageous:

Supplier can deliver Cobrahead sample fixtures between 3-5 days after submitting bid. Supplier can deliver Decorative sample fixtures between 3-5 days after submitting bid.

c) Not Advantageous:

Supplier can deliver Cobrahead sample fixtures between 6-7 days after submitting bid. Supplier can deliver Decorative sample fixtures between 6-7 days after submitting bid.



8. LED PRODUCT SPECIFICATIONS

The following specifications cover the requirements for LED Solid State Luminaires for Street Lighting. Village Owned Roadway Luminaires shall be configured as traditional cobra head style or alternative approved style(s) used in street lighting applications. Non-Cobra head style luminaires including but not limited to Decorative, Floodlight, Area, Wall Pack, etc. shall be similar to the Village's current standard. Only new LED fixtures will be considered. Retrofit kits will not be considered.

All respondents should use luminaires of 4000K when preparing Computer-generated point-by-point photometric analysis of maintained light levels. However, all models of fixtures proposed must be available in 3000K at the same price of the 4000K. The Village reserves the right to order fixtures in 4000K for Major, Intersections, and Collector Roads and 3000K for local roads and residential areas, independent from the pedestrian activity.

1. Normative References

The publications listed below form a part of this specification to the extent referenced. Publications are referenced within the text by their basic designation only. Versions listed shall be superseded by updated versions as they become available.

- 1.1. American National Standards Institute (ANSI):
 - 1.1.1. C78.377-2011 (or latest), American National Standard for the Chromaticity of Solid State Lighting Products
 - 1.1.2. C82.77-2002 (or latest), American National Standard for Harmonic Emission Limits -Related Power Quality Requirements for Lighting Equipment
 - 1.1.3. C136.2-2014 (or latest), American National Standard for Roadway and Area Lighting Equipment – Dialectric Withstand and Electrical Immunity Requirements
 - 1.1.4. C136.10-2010 (or latest), American National Standard for Roadway and Area Lighting Equipment – Locking-Type Photocontrol Devices and Mating Receptacles— Physical and Electrical Interchangeability and Testing
 - 1.1.5. C136.15-2011 (or latest), American National Standard for Roadway and Area Lighting Equipment – Luminaire Field Identification
 - 1.1.6. C136.22-2004 R2009 (or latest), American National Standard for Roadway and Area Lighting Equipment – Internal Labeling of Luminaires
 - 1.1.7. C136.31-2010 (or latest), American National Standard for Roadway Lighting Equipment – Luminaire Vibration
 - 1.1.8. C136.37-2011 (or latest), American National Standard for Roadway and Area Lighting Equipment - Solid State Light Sources Used in Roadway and Area Lighting
 - 1.1.9. C136.41-2013 (or latest), American National Standard for Roadway and Area Lighting Equipment—Dimming Control Between an External Locking Type Photocontrol and Ballast or Driver
- 1.2. American Society for Testing and Materials International (ASTM):
 - 1.2.1. B117-11 (or latest), Standard Practice for Operating Salt Spray (Fog) Apparatus
 - 1.2.2. D523-08 (or latest), Standard Test Method for Specular Gloss
 - 1.2.3. D1654-08 (or latest), Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
 - 1.2.4. G154-06 (or latest), Standard Practice for Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials
- 1.3. ENERGY STAR®:
 - 1.3.1. ENERGY STAR TM-21 Calculator, rev. 020712 (or latest, www.energystar.gov/TM-21Calculator)



1.4. European Union (EU):

- 1.4.1. RoHS II Directive 2011/65/EU, on the restriction of the use of certain hazardous substances in electrical and electronic equipment (recast)
- 1.5. Federal Communications Commission (FCC):
 - 1.5.1. 47 CFR Part 15, Telecommunication Radio Frequency Devices
- 1.6. Federal Trade Commission (FTC):



2. Related Documents

- 2.1. Plan-view drawings (see Appendix A) and conditions of Contract (including General requirements, Addendum to the General Conditions, Special Conditions, and all other Contract Documents) apply to the work of this section.
- 2.2. Companion specification for ANSI-compliant photocontrols.

3. Definitions

- 3.1. Lighting terminology used herein is defined in IES RP-16. See referenced documents for additional definitions.
- 3.2. Exception: The term "driver" is used herein to broadly cover both drivers and power supplies, where applicable.
- 3.3. Clarification: The term "LED light source(s)" is used herein per IES LM-80 and TM-21 to broadly cover LED package(s), module(s), and array(s).

4. Product Requirements

4.1. Tabulated summary of key parameters and product criteria (see following pages):



Luminaire Designation: "250W HPS Cobrahead - Layout 01 - Major Medium"

SITE PARAMETERS (See dr	awings in App	awings in Appendix A)					
ROADWAY DATA	Median widt	h (including	curbs, gu	tters,	and should	ers)	8 ft
	Number of v	ehicular lane	es (total d	on both	n sides of		4
	median)						4
	Width of one	e vehicular la	ne				10 ft
	IES paveme	nt class.	IR1 □	R2 🖸	₫ R3 🗆 R4	1	
SIDEWALK DATA	Berm width	(from curb to	o sidewal	k)			2 ft
	Sidewalk wi	dth					6 ft
	Sidewalk on	⊠ Bo	oth sides	of stre	et 🗆 Pole	side	□ Other side
LIGHT POLE DATA	Luminaire m	nounting heig	ght				29 ft
	Arm length	(horizontal)					6 ft
	Luminaires	per pole					2
	Pole set-bac	k from curb					4 ft
	Pole spacing	g (one pole c	ycle, para	allel to	path of trav	vel)	68 ft
	Pole layout	🗆 On	ie side	🗆 Орр	osite 🗆 S	taggei	red 🗹 Median
PERFORMANCE CRITERIA							
MAINTAINED ROADWAY IL	LUMINATION						
LUMINANCE	Average lun	ninance at pa	vement				0.9 cd/m ²
	Avg: min un	iformity ratio					3.0
	Max: min un	iformity ratio)				5.0
DISABILITY GLARE	Max. veiling	luminance r	atio				0.3
MAINTAINED SIDEWALK IL	LUMINATION						
PHOTOPIC	Average hor	izontal at pa	vement				5.0 lux (0.5 fc)
ILLUMINANCE	Avg: min un	iformity ratio	(horizon	tal)			4.0
	Min. vertica	l illum. at 4.9	9 ft, in dir	ection	s of travel		2.0 lux (0.2 fc)
LED LUMINAIRE	•						
INPUT POWER	Max. nomin	al luminaire i	nput pow	/er			NA
VOLTAGE	Nominal lun	ninaire input	voltage (or ran	ge as applic	able)	120-277
LUMEN MAINT.	Min. % of ir	itial output a	t 36,000	hours	operation		90%
WARRANTY	Min. lumina	ire warranty					10 years
	Datad corre	latad calor to	moratu				3000&4000 ±
NOMINAL CCT	Rated corre		mperatur	е			200K
BUG RATINGS	Max. nomin	al backlight-u	acklight-uplight-glare ratings			B1-U0-G1	
FINISH	Luminaire housing finish color			Gray			
MOUNTING	Method Dost-top Side-arm Trun./yoke			Swivel-tenon			
	Tenon nominal pipe size (NPS)			2"-3/8 - 3"			
VIBRATION	ANSI C136.31 Level 1 (normal) Z Level 2 (bridge			ge/overpass)			
	Typical min. ambient temperature during operation			-40 °C (-40°F)			
THERIVIAL ENVIRONMENT	Typical max. ambient temperature during operation			40 °C (104°F)			
	ANSI C136.2 Comb.		□ Elevated				
	Wave Test L	evel	(6kV /	3kA)	(10kV /	5kA)	(20kV / 10kA)
CONTROL	□ None	ANSI C13	36.10		ISI C136.41	, E	ANSI C136.41,
INTERFACE		(3-pin)		5	-pin		7-pin
LED DRIVER	□ Not dimm	nable	☑ Dimn	nable,	0-10V	🗆 Dir	mmable, DALI
			(IEC	6092	9)	(1	EC 62386)



Luminaire Designation: "100W HPS Cobrahead - Layout 02 - Collector Low"

SITE PARAMETERS (See dr	awings in App	pendix A)					
ROADWAY DATA	Median widt	h (including	curbs, gu	tters,	and should	ers)	0 ft
	Number of v	/ehicular lane	es (total d	on both	n sides of		2
	median)						2
	Width of one	e vehicular la	ne				16 ft
	IES paveme	ent class.	IR1 □	R2 🖸	1 R3 □ R4	4	·
SIDEWALK DATA	Berm width	(from curb to	o sidewal	k)			1 ft
	Sidewalk wi	dth					9 ft
	Sidewalk on	⊠ Bo	oth sides	of stre	et 🗆 Pole	e side	□ Other side
LIGHT POLE DATA	Luminaire m	nounting heig	ght				28 ft
	Arm length	(horizontal)					8 ft
	Luminaires	per pole					1
	Pole set-bac	k from curb					1 ft
	Pole spacing	g (one pole c	ycle, para	allel to	path of tra	vel)	93 ft
	Pole layout	☑ On	ie side	🗆 Орр	osite 🗆 S	tagge	red 🛛 Median
PERFORMANCE CRITERIA							
MAINTAINED ROADWAY IL	LUMINATION						
LUMINANCE	Average lun	ninance at pa	vement				0.4 cd/m ²
	Avg: min un	iformity ratio					4.0
	Max: min un	iformity ratio)				8.0
DISABILITY GLARE	Max. veiling	luminance r	atio				0.4
MAINTAINED SIDEWALK IL	LUMINATION						
РНОТОРІС	Average hor	izontal at pa	vement				4.0 lux (0.4 fc)
ILLUMINANCE	Avg: min un	iformity ratio	(horizon	tal)			4.0
	Min. vertica	l illum. at 4.9	ft, in dir	ection	s of travel		1.0 lux (0.1 fc)
LED LUMINAIRE							
INPUT POWER	Max. nomin	al luminaire i	nput pow	/er			NA
VOLTAGE	Nominal lun	ninaire input	voltage (or ran	ge as applic	able)	120-277
LUMEN MAINT.	Min. % of ir	itial output a	t 36,000	hours	operation		90%
WARRANTY	Min. lumina	ire warranty					10 years
	Datad carro	lated color to	mananatu				3000&4000 ±
NOMINAL CCT	Rated corre	ated color te	mperatur	е			200K
BUG RATINGS	Max. nomin	al backlight-u	uplight-gl	are rat	tings		B2-U0-G2
FINISH	Luminaire housing finish color			Gray			
MOUNTING	Method Dost-top Side-arm Trun./yoke		Swivel-tenon				
	Tenon nominal pipe size (NPS)			2"-3/8 - 3"			
VIBRATION	ANSI C136.31			ge/overpass)			
	Typical min. ambient temperature during operation			-40 °C (-40°F)			
THERMAL ENVIRONMENT	Typical max. ambient temperature during operation			40 °C (104°F)			
	ANSI C136.2 Comb. Basic Enhanced		□ Elevated				
ELECTRICAL IMMUNITY	Wave Test L	evel	(6kV /	3kA)	(10kV /	5kA)	(20kV / 10kA)
CONTROL	□ None	ANSI C13	36.10		ISI C136.41	, [ANSI C136.41,
INTERFACE		(3-pin)		5	-pin		7-pin
LED DRIVER	□ Not dimm	nable	🗹 Dimn	nable,	0-10V	🗆 Di	mmable, DALI
			(IEC	6092	9)	(IEC 62386)



Luminaire Designation: "250W HPS Cobrahead - Layout 03 - Local Medium"

SITE PARAMETERS (See dr	awings in App	pendix A)					
ROADWAY DATA	Median widt	h (including	curbs, gu	tters,	and should	ers)	0 ft
	Number of v	/ehicular lane	es (total o	on both	n sides of		2
	median)						2
	Width of one	e vehicular la	ne				14 ft
	IES paveme	nt class.	IR1 □	R2 🖸	IR3 □R4	4	
SIDEWALK DATA	Berm width	(from curb to	o sidewal	k)			1 ft
	Sidewalk wi	dth					5 ft
	Sidewalk on	⊠ Bo	oth sides	of stre	et 🗆 Pole	e side	□ Other side
LIGHT POLE DATA	Luminaire m	nounting heig	ght				28 ft
	Arm length	(horizontal)					6 ft
	Luminaires	per pole					1
	Pole set-bac	k from curb					1 ft
	Pole spacing	g (one pole c	ycle, para	allel to	path of tra	vel)	203 ft
	Pole layout	☑ On	ie side	🗆 Орр	osite 🛛 S	tagge	red 🛛 Median
PERFORMANCE CRITERIA							
MAINTAINED ROADWAY IL	LUMINATION						
LUMINANCE	Average lun	ninance at pa	vement				0.5 cd/m ²
	Avg: min un	iformity ratio					6.0
	Max: min un	iformity ratio)				10.0
DISABILITY GLARE	Max. veiling	luminance r	atio				0.4
MAINTAINED SIDEWALK IL	LUMINATION						
PHOTOPIC	Average hor	izontal at pa	vement				5.0 lux (0.5 fc)
ILLUMINANCE	Avg:min un	iformity ratio	(horizon	tal)			4.0
	Min. vertica	l illum. at 4.9	9 ft, in dir	ection	s of travel		2.0 lux (0.2 fc)
LED LUMINAIRE							
INPUT POWER	Max. nomin	al luminaire i	nput pow	/er			NA
VOLTAGE	Nominal lun	ninaire input	voltage (or ran	ge as applic	able)	120-277
LUMEN MAINT.	Min. % of in	itial output a	it 36,000	hours	operation		90%
WARRANTY	Min. lumina	ire warranty					10 years
	Dated corre	atad color to	moratur				3000&4000 ±
NOMINAL CCT	Rated corre		inperatur	e			200K
BUG RATINGS	Max. nomin	al backlight-u	uplight-gl	are rat	tings		B2-U0-G2
FINISH	Luminaire housing finish color		Gray				
MOUNTING	Method Dest-top Side-arm Trun./yoke		Swivel-tenon				
	Tenon nominal pipe size (NPS)			2"-3/8 – 3"			
VIBRATION	ANSI C136.31 Level 1 (normal)			ge/overpass)			
	Typical min. ambient temperature during operation			-40 °C (-40°F)			
	Typical max. ambient temperature during operation			40 °C (104°F)			
	ANSI C136.	2 Comb.	□ Basic		☑ Enhanc	ed	□ Elevated
	Wave Test L	evel	(6kV /	3kA)	(10kV /	5kA)	(20kV / 10kA)
CONTROL	□ None	ANSI C13	36.10		ISI C136.41	,	☑ ANSI C136.41,
INTERFACE		(3-pin)		5	-pin		7-pin
LED DRIVER	□ Not dimm	nable	☑ Dimn	nable,	0-10V	🗆 Di	mmable, DALI
			(IEC	6092	9)	(IEC 62386)



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	Luminaire Designation: "100W HPS Victoria Lanter	n Post Top with Arm - Layout 04 – Local Low"
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SITE PARAMETERS (See dra	wings in Appendix A)						
ROADWAY DATA	Median width	(including curb	s, gutters,	and sh	oulders)		0 ft
	Number of ve	hicular lanes (t	otal on bo	th sides	s of		2
	median)						2
	Width of one	vehicular lane					16 ft
	IES pavemen	t class.	R1l	R2 ;	R3R4	4	
SIDEWALK DATA	Berm width (fro	om curb to side	walk)				4 ft
	Sidewalk widt	th					5 ft
	Sidewalk on	; Во	th sides of	street	Pole	side	Other side
LIGHT POLE DATA	Luminaire mou	unting height					15 ft
	Arm length (h	orizontal)					6 ft
	Luminaires pe	er pole					1
	Pole set-back	from curb					3 ft
	Pole spacing	(one pole cycle	e, parallel t	o path	of travel)		134 ft
	Pole layout	; On	e side	Opp	ositeS	stagger	edMedian
PERFORMANCE CRITERIA							
MAINTAINED ROADWAY ILLI	JMINATION						_
LUMINANCE	Average lumin	ance at paven	nent				0.3 cd/m ²
	Avg:min unifo	ormity ratio					6.0
	Max:min unifo	ormity ratio					10.0
DISABILITY GLARE	Max. veiling lur	minance ratio					0.4
MAINTAINED SIDEWALK ILLI	JMINATION						
PHOTOPIC	Average horiz	zontal at paven	nent				4.0 lux (0.4 fc)
ILLUMINANCE	Avg:min unifo	ormity ratio (hor	izontal)				4.0
	Min. vertical i	llum. at 4.9 ft, i	n direction	s of trav	vel		1.0 lux (0.1 fc)
LED LUMINAIRE							
INPUT POWER	Max. nominal	luminaire input	power				NA
VOLTAGE	Nominal lumir	naire input volta	age (or ran	ige as a	applicable)		120-277
LUMEN MAINT.	Min. % of initia	l output at 36,0	00 hours	operatio	on		90%
WARRANTY	Min. Iuminaire	e warranty					10 years
NOMINAL CCT	Rated correlat	ed color tempe	rature				3000&4000 r
		ou color tompo					200K
BUG RATINGS	Max. nominal backlight-uplight-glare ratings			B1-U0-G1			
FINISH	Luminaire housing finish color			Gray			
MOUNTING	Method ; Post-topSide-armTrun./yoke			Swivel-tenon			
	Tenon nominal pipe size (NPS)			2"-3 / 8 – 3"			
VIBRATION	ANSI C136.31 Level 1 (normal) ; Level 2 (bridge/or			/overpass)			
THERMAL ENVIRONMENT	Typical min. ambient temperature during operation			-40 °C (-40°F)			
	Typical max.	ambient tempe	rature dur	ing ope	ration		40 °C (104°F)
ELECTRICAL IMMUNITY	ANSI C136.2	Comb.	Basic		; Enhance	ed	Elevated
	Wave Test Le	evel	(6kV / 3k	(A)	(10kV / 5	kA)	(20kV / 10kA)
CONTROL	None	ANSI C136	5.10	AN	SI C136.41,		; ANSI C136.41,
INTERFACE		(3-pin)	_	5-p	Din		7-pin
LED DRIVER	Not dimma	ble	; Dimm	able, 0	-10V	Dir	mmable, DALI
			(IEC	60929)		(IE	EC 62386)

Luminaire Designation: "100W HPS Victoria Lantern Post Top - Layout 04 – Local Low"

SITE PARAMETERS (See dr	awings in App	awings in Appendix A)					
ROADWAY DATA	Median widt	h (including	curbs, gu	tters,	and should	ers)	0 ft
	Number of v	/ehicular lane	es (total d	on both	n sides of		2
	median)						2
	Width of one	e vehicular la	ne				15 ft
	IES paveme	nt class.	R1 🗆	R2 🖸	1 R3 □ R4	4	
SIDEWALK DATA	Berm width	(from curb to	o sidewal	k)			3 ft
	Sidewalk wi	dth					5 ft
	Sidewalk on	⊠ Bo	oth sides	of stre	et 🗆 Pole	e side	Other side
LIGHT POLE DATA	Luminaire m	nounting heig	ht				12 ft
	Arm length	(horizontal)					0 ft
	Luminaires	per pole					1
	Pole set-bac	k from curb					2 ft
	Pole spacing	g (one pole cy	ycle, para	Ilel to	path of trav	vel)	156 ft
	Pole layout	☑ On	e side	🗆 Орр	osite 🛛 S	tagge	red 🛛 Median
PERFORMANCE CRITERIA							
MAINTAINED ROADWAY IL	LUMINATION						
LUMINANCE	Average lun	ninance at pa	vement				0.3 cd/m ²
	Avg: min un	iformity ratio					6.0
	Max: min un	iformity ratio					10.0
DISABILITY GLARE	Max. veiling	luminance ra	atio				0.4
MAINTAINED SIDEWALK IL	LUMINATION						·
PHOTOPIC	Average hor	rizontal at pa	vement				4.0 lux (0.4 fc)
ILLUMINANCE	Avg: min un	iformity ratio	(horizon	tal)			4.0
	Min. vertica	l illum. at 4.9	ft, in dir	ection	s of travel		1.0 lux (0.1 fc)
LED LUMINAIRE							
INPUT POWER	Max. nomin	al luminaire i	nput pow	er			NA
VOLTAGE	Nominal lun	ninaire input	voltage (or ran	ge as applic	able)	120-277
LUMEN MAINT.	Min. % of ir	itial output a	t 36,000	hours	operation		90%
WARRANTY	Min. lumina	ire warranty					10 years
	Dated corre	atod color to	moratur				3000&4000 ±
NOMINAL CCT	Rated corre		mperatui	e			200K
BUG RATINGS	Max. nomin	ninal backlight-uplight-glare ratings			B1-U0-G1		
FINISH	Luminaire housing finish color			Gray			
MOUNTING	Method 🗹 Post-top 🗆 Side-arm 🗆 Trun./yoke			Swivel-tenon			
	Tenon nominal pipe size (NPS)			2"-3/8 – 3"			
VIBRATION	ANSI C136.31 Level 1 (normal) Level 2 (bride			dge/overpass)			
	Typical min. ambient temperature during operation				-40 °C (-40°F)		
THERIMAL ENVIRONMENT	Typical max. ambient temperature during operation				40 °C (104°F)		
	ANSI C136.2 Comb. Basic Enhanced			□ Elevated			
	Wave Test L	evel	(6kV /	3kA)	(10kV /	5kA)	(20kV / 10kA)
CONTROL	□ None	ANSI C13	36.10		ISI C136.41	, [☑ ANSI C136.41,
INTERFACE		(3-pin)		5	-pin		7-pin
LED DRIVER	Not dimm	nable	☑ Dimn	nable,	0-10V	🗆 Di	mmable, DALI
			(IEC	6092	9)	(IEC 62386)



	Luminaire Designation: "100W H	PS Victoria Lantern Post	Top with Arm - Layout 04	4 – Collector Low"
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SITE PARAMETERS (See drawings in Appendix A)									
ROADWAY DATA	Median width (including curbs, gutters, and shoulders)						0 ft		
	Number of vehicular lanes (total on both sides of						2		
	median)	2							
	Width of one	16 ft							
	IES paveme								
SIDEWALK DATA	Berm width	1 ft							
	Sidewalk wi	4 ft							
	Sidewalk on	⊠ Bo	oth sides	of stre	et 🗆 Pole	e side	□ Other side		
LIGHT POLE DATA	Luminaire m	15 ft							
	Arm length	6 ft							
	Luminaires	1							
	Pole set-bac	k from curb					2 ft		
	Pole spacing	g (one pole c	ycle, para	allel to	path of tra	vel)	107 ft		
	Pole layout	☑ Or	ne side	🗆 Орр	osite 🗆 S	tagge	red 🗆 Median		
PERFORMANCE CRITERIA									
MAINTAINED ROADWAY IL	LUMINATION								
LUMINANCE	Average lun	ninance at pa	avement				0.4 cd/m ²		
	Avg: min un	iformity ratio)				4.0		
	Max: min un	Max:min uniformity ratio							
DISABILITY GLARE	Max. veiling luminance ratio 0.4								
MAINTAINED SIDEWALK ILLUMINATION									
РНОТОРІС	Average hor	4.0 lux (0.4 fc)							
ILLUMINANCE	Avg: min un	4.0							
	Min. vertica	l illum. at 4.9	9 ft, in dir	ection	s of travel		1.0 lux (0.1 fc)		
LED LUMINAIRE	•								
INPUT POWER	Max. nomin	NA							
VOLTAGE	Nominal lun	120-277							
LUMEN MAINT.	Min. % of ir	90%							
WARRANTY	Min. lumina	10 years							
	Datad aarma	atad aalar ta	3000&4000 ±						
NOMINAL CCT	Rated corre	200K							
BUG RATINGS	Max. nomin	B1-U0-G1							
FINISH	Luminaire housing finish color Gray								
MOUNTING	Method	Ø Post-top	□ Side	-arm	□ Trun./y	oke	Swivel-tenon		
	Tenon nomi	nal pipe size	(NPS)			2"-3/8 - 3"			
VIBRATION	ANSI C136.	31 🗆 Le	evel 1 (no	rmal)	☑ Level	2 (brid	dge/overpass)		
	Typical min.	-40 °C (-40°F)							
THERMAL ENVIRONMENT	Typical max	40 °C (104°F)							
	ANSI C136.2 Comb. Basic Enhanced					□ Elevated			
ELECTRICAL IMMUNITY	Wave Test L	(6kV / 3kA) (10kV / 5kA			5kA)	(20kV / 10kA)			
CONTROL	□ None	36.10				☑ ANSI C136.41,			
INTERFACE	(3-pin)				-pin	7-pin			
LED DRIVER	□ Not dimmable					mmable, DALI			
			(IEC	6092	9)	IEC 62386)			

Luminaire Designation: "100W HPS Victoria Lantern Post Top - Layout 04 – Collector Low"

SITE PARAMETERS (See drawings in Appendix A)									
ROADWAY DATA	Median width (including curbs, gutters, and shoulders)						0 ft		
	Number of vehicular lanes (total on both sides of						2		
	median)	2							
	Width of one	14 ft							
	IES paveme	·							
SIDEWALK DATA	Berm width	1 ft							
	Sidewalk wi	5 ft							
	Sidewalk on	⊠ Bo	oth sides	of stre	et 🗆 Pole	e side	□ Other side		
LIGHT POLE DATA	Luminaire m	12 ft							
	Arm length	0 ft							
	Luminaires	1							
	Pole set-bac	Pole set-back from curb							
	Pole spacing	g (one pole c	ycle, para	allel to	path of tra	vel)	152 ft		
	Pole layout	☑ On	ne side	🗆 Орр	osite 🛛 S	taggei	red 🛛 Median		
PERFORMANCE CRITERIA									
MAINTAINED ROADWAY IL	LUMINATION								
LUMINANCE	Average lun	ninance at pa	vement				0.4 cd/m ²		
	Avg: min un	Avg:min uniformity ratio							
	Max: min un	iformity ratio)				8.0		
DISABILITY GLARE	Max. veiling luminance ratio 0.4								
MAINTAINED SIDEWALK ILLUMINATION									
PHOTOPIC	Average hor	4.0 lux (0.4 fc)							
ILLUMINANCE	Avg: min un	4.0							
	Min. vertica	l illum. at 4.9	9 ft, in dir	ection	s of travel		1.0 lux (0.1 fc)		
LED LUMINAIRE	•								
INPUT POWER	Max. nomin	NA							
VOLTAGE	Nominal lun	120-277							
LUMEN MAINT.	Min. % of ir	90%							
WARRANTY	Min. lumina	10 years							
	Dated corre	3000&4000 ±							
NOMINAL CCT	Rated corre	200K							
BUG RATINGS	Max. nomin	al backlight-u	uplight-gl	are rat	tings		B1-U0-G1		
FINISH	Luminaire h	ousing finish	color				Gray		
MOUNTING	Method	☑ Post-top	□ Side-	-arm	□ Trun./y	oke	□ Swivel-tenon		
	Tenon nomi	nal pipe size	(NPS)				2"-3/8 - 3"		
VIBRATION	ANSI C136.	31 🗆 Le	evel 1 (no	rmal)	☑ Level 2	2 (brid	ge/overpass)		
	Typical min.	-40 °C (-40°F)							
THERMAL ENVIRONMENT	Typical max	40 °C (104°F)							
	ANSI C136.	□ Basic				□ Elevated			
	Wave Test Level		(6kV / 3kA) (10kV / 5kA			5kA)	(20kV / 10kA)		
CONTROL	□ None	36.10 🛛 ANSI C136.41, 🛛				☑ ANSI C136.41,			
INTERFACE	(3-pin) 5-pin					7-pin			
LED DRIVER	□ Not dimmable					mmable, DALI			
	(IEC 60929) (IEC					IEC 62386)			



4.2. General Requirements

- 4.2.1. Products shall be selected in part on the basis of best value. Provide summary of luminaire attributes that significantly exceed the key criteria and/or detail items that do not satisfy criteria but could be determined to be acceptable.
- Luminaries must be Design Light Consortium listed and must appear in the DLC 4.2.2. Qualified Product list at the time of submission. Respondent must indicate whether LED products are DLC Standard or Premium.
- 4.2.3. Luminaires shall satisfy the key criteria summarized in Section 4. Product Requirements.
- 4.2.4. Transmissive optical components shall be applied in accordance with OEM design guidelines to ensure suitability for the environment (e.g., electromagnetic, thermal, mechanical, chemical).
- 4.2.5. Luminaire shall be designed for ease of component replacement and end-of-life disassembly.
- 4.2.6. LED light source(s) and driver(s) shall be RoHS compliant.
- 4.2.7. Nominal luminaire input wattage shall account for nominal applied voltage and any reduction in driver efficiency due to sub-optimal driver loading.
- Luminaire shall accept the voltage or voltage range specified at 50/60 Hz, and shall 4.2.8. operate normally for input voltage fluctuations of plus or minus 10 percent.
- 4.2.9. All internal components shall be assembled and pre-wired using modular electrical connections.
- 4.2.10. The following shall be in accordance with corresponding sections of ANSI C136.37: 4.2.10.1. Wiring and grounding
 - 4.2.10.2. Terminal blocks for incoming AC lines (electrical mains wires)
 - 4.2.10.3. Photocontrol receptacle
 - 4.2.10.4. 4.2.10.5. Latching and hinging
 - Mounting provisions
 - Ingress protection 4.2.10.6.
- The luminaire shall have the capability to install a light shield on the house side of the 4.2.11. luminaire.
- 4.3. Painted or finished luminaire surfaces exposed to the environment
 - 4.3.1. Shall exceed a rating of six per ASTM D1654 after 1000 hours of testing per ASTM B117.
 - 4.3.2. The coating shall exhibit no greater than 30% reduction of gloss per ASTM D523, after 500 hours of QUV testing at ASTM G154 Cycle 6.
- 4.4. Thermal management:
 - 4.4.1. Luminaire shall start and operate in ambient temperature range specified.
 - 4.4.2. Maximum rated case temperature of driver and other internal components shall not be exceeded when luminaire is operated in ambient temperature range specified.
 - 4.4.3. Mechanical design of protruding external surfaces (heat sink fins) shall facilitate hosedown cleaning and discourage debris accumulation.
 - 4.4.4. Liquids or other moving parts shall be clearly indicated in submittals, shall be consistent with product testing, and shall be subject to review by the Village.
- 4.5. LED driver, photocontrol receptacle, and control interface:
 - Luminaire designation(s) indicated "None" in section 4.1 need not accept a control 4.5.1. signal, and do not require a dimmable driver. If luminaire cannot be furnished without photocontrol receptacle, luminaire shall be furnished with ANSI C136.10 compliant photocontrol receptacle and shorting cap as directed by the Village.
 - 4.5.2. Luminaire designation(s) indicated "ANSI C136.10, 3-pin" in section 4.1 shall be fully prewired and shall incorporate an ANSI C136.10 compliant receptacle. If a dimmable LED driver is specified, its control wires shall be accessible and electrically isolated.
 - 4.5.3. Luminaire designation(s) indicated "ANSI C136.41, 5-pin" in section 4.1 shall be fully prewired and shall incorporate an ANSI C136.41 compliant receptacle. If a dimmable LED



driver is specified, its 0-10V or DALI control wires shall be connected to the receptacle pads as specified in ANSI C136.41.

- 4.5.4. Luminaire designation(s) indicated "ANSI C136.41, 7-pin" in Section 4 shall be fully prewired and shall incorporate an ANSI C136.41 compliant receptacle. If a dimmable LED driver is specified, its 0-10V or DALI control wires shall be connected to the receptacle pads as specified in ANSI C136.41; connection of the two remaining pads shall be by Supplier, as directed by the Village.
- 4.6. Electrical safety testing:
 - 4.6.1. Luminaire shall be listed for wet locations by a U.S. Occupational Safety Health Administration (OSHA) Nationally Recognized Testing Laboratory (NRTL).
 - 4.6.2. Luminaire shall have locality-appropriate governing mark and certification.
 - 4.6.3. Luminaire shall meet the performance requirements specified in ANSI C136.2 for dielectric withstand, using the DC test level and configuration.
- 4.7. Electrical immunity:
 - 4.7.1. Luminaire shall meet the performance requirements specified in ANSI C136.2 for electrical immunity, using the combination wave test level indicated in section 4.1. If not specified in the tables, this must be Enhanced (10kV / 5kA).
 - 4.7.2. Manufacturer shall indicate on submittal form whether failure of the electrical immunity system can possibly result in disconnect of power to luminaire.
- 4.8. Interference and power quality:
 - 4.8.1. Luminaire shall comply with FCC 47 CFR part 15 interference criteria for Class B (residential) digital devices.
 - 4.8.2. Luminaire shall comply with section 5.2.5 (luminaires rated for outdoor use) of ANSI C82.77 at full input power and across specified voltage range.
- 4.9. Color attributes:
 - 4.9.1. Color Rendering Index (CRI) shall be no less than 70.
 - 4.9.2. Nominal Correlated Color Temperature (CCT) shall be as specified in section 4.1.
 - 4.9.2.1. If submitted nominal CCT is listed in Table 8.1 below, measured CCT and Duv shall be as listed in Table 8.1.

Manufacturer-Rated	Allowable IES LM-79 Chromaticity Values						
Nominal CCT (K)	Measured CCT (K)	Measured Duv					
2700	2580 to 2870	-0.006 to 0.006					
3000	2870 to 3220	-0.006 to 0.006					
3500	3220 to 3710	-0.005 to 0.007					
4000	3710 to 4260	-0.005 to 0.007					
4500	4260 to 4746	-0.004 to 0.008					
5000	4746 to 5311	-0.004 to 0.008					
5700	5312 to 6020	-0.003 to 0.009					
6500	6022 to 7040	-0.003 to 0.009					

 Table 8.1.
 Allowable CCT and Duv (adapted from ANSI C78.377)

4.10. Identification:

- 4.10.1. Luminaire shall have an external label per ANSI C136.15.
- 4.10.2. Luminaire shall have an internal label per ANSI C136.22.



^{4.9.2.2.} If submitted nominal CCT is not listed in Table 8.1, measured CCT and Duv shall be as per the criteria for Flexible CCT defined in ANSI C78.377.

5. Required Submittals

- 5.1. Completed submittal form, filled in, with a printed and signed copy of the Summary Page. Include the complete spreadsheet digital file and submit electronically as explained in the Introduction.
 - 5.1.1. Family grouping in accordance with LED Lighting Facts is permitted, provided this is clearly indicated on the submittal form provided, and clearly communicated via a letter that includes detailed calculations relating the tested product(s) to the submitted product.
- 5.2. Product cutsheets
 - 5.2.1. Luminaire and Photocell cutsheets
 - 5.2.2. Cutsheets for LED light source(s)
 - 5.2.3. Cutsheets for LED driver(s)
 - 5.2.3.1. If dimmable LED driver is specified, provide diagrams illustrating light output



- 5.11.1. Applicable testing bodies are determined by the US Occupational Safety Health Administration (OSHA) as Nationally Recognized Testing Laboratories (NRTL) and include: CSA (Canadian Standards Association), ETL (Edison Testing Laboratory), and UL (Underwriters Laboratory).
- 5.12. Documentation supporting any U.S. origin claims for the product, in accordance with FTC guidance.

6. Quality Assurance

- 6.1. Before approval and purchase, the Village may request luminaire sample(s) identical to product configuration(s) submitted for inspection. In addition, the Village may request IES LM-79 testing of luminaire sample(s) to verify performance is within manufacturer-reported tolerances.
- 6.2. Electrically test fully assembled luminaires before shipment from factory.
- 6.3. After installation, the Village may perform IES LM-50 field measurements to verify performance requirements, giving consideration to manufacturing tolerances and measurement uncertainties as outlined in IES LM-61 and NEMA LSD 63.
- 6.4. All components must be constructed using new materials.
- 6.5. The facility/facilities that manufacture(s) the LED luminaires and associated components shall be ISO9001 certified or equivalent, indicating quality management systems.

7. Warranty

- 7.1. Warranty shall be of the minimum duration specified in section 4.1, and shall cover maintained integrity and functionality of the following
 - 7.1.1. Luminaire housing, wiring, and connections
 - 7.1.2. LED light source(s)
 - 7.1.2.1. Negligible light output from more than 10 percent of the LED packages constitutes luminaire failure.
 - 7.1.3. LED driver(s)
 - 7.1.4. Finish shall have a 10 year limited warranty against cracking, peeling, excessive fading and corrosion defects
- 7.2. Any packaging, shipping and handling costs, to and from the manufacturer, on returned components or luminaires under the warranty shall be at the expense of the supplier for at least the first year.
- 7.3. Fixtures replaced pursuant to a purchase order issued to a successful bidder under this RFP must have a manufacturers' warranty of ten (10) years from the date of installation and any defective or dysfunctional LED fixture under normal use and service in this period will be replaced at no additional cost to the Village for the fixture.
- 7.4. Extended warranty options, if available, must be priced and outlined within this proposal and bid.

8. Manufacturer Services

8.1. Manufacturer or local sales representative shall provide installation and troubleshooting support via telephone and/or email.

9. Eligible Manufacturers

9.1. Any manufacturer offering products that comply with the required product performance and operation criteria may be considered.



9. EXPLANATION SHEET FOR SPECIFICATIONS

List below specific item(s) where bidder's proposal does not meet specification herein and explain why what the bidder is including is equal or better than what is included in the bid specification. Indicate this information in the space below.



10. LONG LIFE PHOTO CONTROLS SPECIFICATIONS

Please note that the Village may opt to install lighting control nodes instead of basic photocells on some or all fixtures.

Minimum requirements

- 1. Electrical:
 - 1.1. Load Rating: 1,000W/1,800 VA
 - 1.2. 15 Amp relay tested to 15,000 operations at 1,000 watts.
 - 1.3. Operating Temperature -40° C to $+70^{\circ}$ C (-40° F to $+158^{\circ}$)
 - 1.4. Surge Protection: 40,000 Amps 640 Joule
 - 1.5. Power Consumption: <0.5 Watts @ 120 V
 - 1.6. Rated 105- 305 VAC for 120, 208, 240 and 277 VAC systems
 - 1.7. Dielectric Strength: Between current carrying parts and metal surfaces
 - 1.8. Frequency: 50/60Hz
- 2. Mechanical:
 - 2.1. Photocell: Silicon light sensor
 - 2.2. Operating Light Levels: Turn-on: 1.5 FC, 1.5:1 Off/On Ratio and/or other options available.
- 3. Other:
 - 3.1. Must meet or exceed ANSI C136.10
 - 3.2. ROHS compliant
 - 3.3. UL listed to U.S.
 - 3.4. "Fail On" option must be available.
- 4. Warranty:
 - 4.1. 10 years or more.



APPENDIX A — POLE LAYOUT ILLUSTRATIONS

The plan-view drawings provided on the following pages illustrate pole layouts indicated in the "system" specification method of section 4.1. These drawings are not to scale.



		-		Arm Length						
j ret zoje Bikeway <u>,,,,</u>			&	0						One-sided Pole Layout
	Wa		Shoulder, t	Vehicul	/ledian (Including Shc	N Vehicul	Shoulder,	œ	Wa	
Pole Spacing	ау	0	er & Curb	ane(s)	ers, Gutters, & Curbs)	ane(s)	er & Curb		ау	
Pole Setback										





REALTERM

				1	I			ı	I I	
	Wa	@	Shoulder, t	Vehicul	Median (Including Sho	Vehicul	Shoulder, i	B	We	One Luminaire Per Pole No Dedicated Bikeway
Pole Spacing	ay	@	er & Curb	e Setback	ers, Gutters, & Curbs)	ane(s)	er & Curb		ау	





APPENDIX B — PRODUCT SUBMITTAL FORM

Please refer to attached excel sheet "Exhibit B – Product Submittal Form".

