

**TOWN OF HANOVER**  
**LED Streetlight Conversion Project**  
**REQUEST FOR PROPOSAL**  
**August 21, 2023**

- 1) The TOWN of HANOVER is seeking proposals from qualified companies (CONTRACTOR) to perform services as described in the following documents. The services shall consist of a turnkey conversion by the CONTRACTOR of the Utility owned streetlights in HANOVER to Light Emitting Diode (LED) fixtures and controls with the TOWN owning the new fixtures after installation.

By submitting a response to this document, the CONTRACTOR is stating it has read the entire document and fully understands the content, purpose, and requirements hereof.

- 2) Submission of proposals: To submit a proposal, the CONTRACTOR should be aware of the requirements contained in this Request for Proposals and any additional specifications or attachments and make every attempt to submit a proposal meeting all requirements.
- 3) Format of proposals submitted: The CONTRACTOR shall provide one hard copy to: Peter Kulbacki, P.E. Director of Public Works, TOWN of HANOVER, 194 Lebanon Street, Hanover, NH 03755. The proposal may be hand-delivered or mailed and a digital copy shall be sent to [DPW@HanoverNH.org](mailto:DPW@HanoverNH.org).
  - a) Proposals must be properly sealed and marked: **Hanover LED Streetlight Conversion Project** and must be received on or **before September 20, 2023 at 1:30 PM EST** at which time the proposals shall be opened and read. Proposals submitted via facsimile, or delivered any other way than in a sealed, marked envelope as instructed above, will not be accepted. No proposal submitted shall be further altered in any way after the bid opening, but the TOWN reserves the right to ask CONTRACTORS submitting proposals for clarification on the proposals submitted before forwarding a recommendation to the HANOVER TOWN Manager.
  - b) Proposals must include pricing for all requested services, including everything listed in the attached specifications.
  - c) A project work schedule and plan must also be submitted.
  - d) All proposals must be signed by the CONTRACTOR'S authorized representative and must include: name, position, and signature of that representative. The contents of the submission of the successful CONTRACTOR shall be considered a contractual obligation. Failure to meet these obligations may result in violation of the contract and/or other appropriate action.
  - e) The TOWN of HANOVER reserves the right to reject any or all responses to this

document, or to waive minor irregularities in the responses. The TOWN of HANOVER reserves the right to accept any proposal that will in its opinion best serve the interests of the TOWN of HANOVER, regardless of whether that bid is the lowest submitted.

- f) Questions: Contact Peter Kulbacki, P.E. Director of Public Works [peter.kulbacki@hanoverNH.org](mailto:peter.kulbacki@hanoverNH.org) with the email subject heading: **Hanover LED Streetlight Conversion Project**. Questions must be submitted in writing prior to September 13, 2023 @ 3:30 p.m. EST.

- g) Responses will be posted as an addendum on the Public Works Department Current Projects page of the TOWN's website:

<https://nh-hanover.civicplus.com/286/Current-Projects>

4) Proposal format:

a) Cover Letter

A cover letter signed by an authorized representative of the CONTRACTOR shall outline the intent of the response and shall state that the information contained in the Proposal accurately describes the services to be provided.

b) Company profile

- i) Provide a description of company or business, its purpose, history, and successes, including the number of years in LED street lighting business.
- ii) Describe your own and your SUBCONTRACTORS' experience developing projects that conform to relevant state laws, local standards, and NH Public Utility Commission rules.
- iii) Provide 3 examples where the CONTRACTOR has successfully assisted municipalities with evaluation and acquisition of their streetlights from electric utilities.
- iv) Describe partnerships with vendors, technology companies or service providers and describe how these have added value to previous projects.

c) Key personnel:

Identify key personnel that would be employed for this program and provide a detailed resume of their relevant experience, education, and success. Key personnel should demonstrate ample experience in managing turnkey street lighting projects.

d) The quotation shall include, but is not limited to, the following:

- i) A lump sum price photometric study, design, and first year of maintenance.
- ii) Unit price for providing and installation of network control nodes with integral photocells.
- iii) Unit price for providing and installing LED replacement Luminaries based on replacement of the following wattages and types:
  - 1) 50 HPS Watts mounted on Metal Post top
  - 2) 100 HPS Watts mounted on Metal Post top

- 3) 250 HPS Watts mounted on Metal Post top
- 4) 400 HPS Watts mounted on Metal Post Top
- 5) 250 HPS Watt Flood mounted on bracket on Wooden Utility Pole
- 6) 30 Watt LED mounted on bracket on Wooden Utility Pole
- 7) 50 Watt LED mounted on bracket on Wooden Utility Pole
- 8) 50 Watt HPS mounted on bracket on Wooden Utility Pole
- 9) 100 Watt HPS mounted on bracket on Wooden Utility Pole
- 10) 250 Watt HPS mounted on bracket on Wooden Utility Pole
- 11) 100 MV mounted on bracket on Wooden Utility Pole
- 12) 175 MV mounted on bracket on Wooden Utility Pole
- 13) 400 MV mounted on bracket on Wooden Utility Pole
- iv) Lump sum price for extended manufacturer's warranty through 10 years.
- v) Components covered by the extended warranty, to included: luminaires, photocells, network controls and other major components.
- vi) Quote (cost per year) for maintenance starting with the second year through the 10th year. (not part of the base contract)
- vii) Response time from notice of component failure.

#### 5) Project Schedule

Include with the proposal a schedule indicating the number of weeks from contract execution to each major milestone. At a minimum, include the following:

- a. Procurement of major components.
- b. Submission of "for approval" documents of all luminaires and components to be installed during this contract.
- c. Start, duration and submission time(s) of audit.
- d. Installation of demonstration lights.
- e. Start and completion time for installation of the luminaires.

#### 6) References

Include a list of at least three (3) projects where the CONTRACTOR has successfully completed an LED retrofit along with value and size of the project. Provide associated references and contact information for the persons or organizations that engaged the CONTRACTOR. Preferably these references will describe New England projects, if possible, in the New Hampshire Liberty Utilities service area. By submitting a proposal, the CONTRACTOR consents to TOWN contacting these references, and consents to TOWN also contacting any other organization for the purposes of evaluating the Proposal.

## **Project Description and Requirements**

### **1) Project background**

Currently streetlights are owned by Liberty Utilities. This project will allow HANOVER to replace and own streetlights converted to LED (see **Appendix C: LED-2 Streetlight Tariff** as approved by the New Hampshire Public Utilities Commission on June 30, 2020 in DE 19-067). An inventory list is attached (**Appendix D**) that identifies 503 streetlights within the TOWN. It is possible HANOVER may add or reduce the number of lights or adjust wattages after the CONTRACTOR's survey and inventory is completed and has identified those lights that will be owned by the TOWN. The Unit Pricing section of the bid sheet will be used for adjustment of the total quantity.

### **2) Scope of services**

The TOWN is seeking proposals from qualified service providers referred to as "CONTRACTOR." This proposal is to be a design-build proposal that includes the tasks outlined below.

- i) Undertake and provide a comprehensive geographic information system (GIS) compliant audit of the streetlights and their components. HANOVER will provide a base layer shapefile indicating known locations of existing lights. However, the CONTRACTOR shall field-verify actual light locations.
- ii) Perform an independent and certified lighting design analysis that includes designing each replacement luminaire to provide perceived light levels on the ground equal to or more than existing light levels.
- iii) The CONTRACTOR doing the installation work must be approved by Liberty Utilities to work on utility owned components. The CONTRACTOR shall obtain all approvals including certifications and licensing required by Liberty Utilities prior to beginning of work on Liberty owned facilities.
- iv) All electrical work shall be performed by a New Hampshire licensed CONTRACTOR with proper training and certification.
- v) During the audit phase, the CONTRACTOR shall identify and list the condition of all components comprising the streetlights. Any component that is deteriorated or unsuitable for service shall be flagged and reported to HANOVER.
- vi) Provide a financial analysis to indicate ROI (Return on Investment), savings and payback period.
- vii) The CONTRACTOR shall obtain all federal, state, and local permits as necessary. The CONTRACTOR shall comply with all associated inspections, schedules, etc. All costs shall be included in the CONTRACTOR's BID. The cost of the TOWN-issued obstruction permit will be waived.
- vii) Carrying out all procurement requirements to complete the conversion.
- viii) Apply on behalf of the TOWN for all incentives, grants and/or rebates relating to the LED conversion project.
- ix) Perform project management functions.

- x) Undertake or oversee the LED luminaires, photocells/control nodes, communication system, and related component installation and commissioning.
- xi) The CONTRACTOR shall be responsible for all damage to persons or property that occurs as a result of its fault or negligence in connection with the prosecution of the work. The property and persons shall be protected from damage during the course of the work.
- xii) HANOVER will negotiate with and compensate Liberty Utilities for the remaining book value of the removed equipment. The CONTRACTOR will be responsible for returning to Liberty Utilities all removed equipment and waste materials or recycling/disposal.
- xiii) CONTRACTOR's quote shall include the maximum response time for repairs after being notified of the failure.

### **3) Audit Requirements:**

- i) The CONTRACTOR shall submit an audit report and a shape file to the TOWN that includes the following information, but not limited to the following:
  - (a) Global Positional System location of each fixture.
  - (b) Street name that each fixture is located on or the intersecting street name (if applicable).
  - (c) Pole number, type, height, shape, condition, etc. for each fixture.
  - (d) Mounting configuration, size, and condition of each fixture.
  - (e) Each fixture's type, size, condition, Tag ID number(s), bulb type and wattage.
- ii) The CONTRACTOR shall also submit a report at the conclusion of the audit that includes the following:
  - a) Light levels in the current street lighting network.
  - b) Baseline energy use, energy cost, and operations & maintenance costs for the existing fixtures.
  - c) Estimated retrofit energy use and operations & maintenance costs for the replacement LED luminaires.
  - d) Any estimated sources rebates or incentives.

### **4) Luminaires, network controls nodes and components:**

- a) The CONTRACTOR shall supply and install approximately 503 luminaires (+/- 5%) at a per unit cost specified in the RFP response.
- b) Products shall be Design Light Consortium (DLC) compliant. Where DLC standards do not exist, CONTRACTOR shall provide proof of comparable standards.

- c) Correlated Color Temperature (CCT)  $\leq 3000$  K. with a color rendering index (CRI) of 70 or greater.
- d) Products and components are warranted for a minimum of ten (10) years. The warrantee shall cover standard maintenance of the lights as recommended by the manufacturer(s) and any labor requirements associated with replacement parts or components that are under warranty. All parts replaced under the warranty shall be new parts. The CONTRACTOR shall provide the first year of warranty maintenance service in their BID price and provide a separate contract for the life of the luminaires. The start of the first year of service shall be at the completion of the installation of all lights and commissioning of monitoring system. CONTRACTOR's quote shall include the maximum response time for repairs after being notified of the failure.
- e) Fixtures to be installed on Liberty Utilities poles and brackets shall be suitable for approval by Liberty Utilities and must be compatible with existing line voltage and brackets. (**APPENDIX E Liberty Utilities' standards for streetlight brackets.**)
- f) Fixtures to be installed on post top shall be decorative design similar in character to existing post top units available from Liberty (**Appendix F Pole top Luminaire & Floodlights**) on the following Streets: Haskins Rd, Laurel St, Low Rd, Martin Ln, Pine Dr, & Webster Ave.
- g) Flood lights on Liberty Utilities poles shall be equivalent to Lumark Night Falcon LED as shown in **Appendix F Pole top Luminaire & Floodlights.**
- h) Fixtures to be installed will minimize streetlight spread onto private buildings and property and shall be part of the streetlight photometric.
- i) Adjustable "Dimmable" luminaire designed to receive smart networked controls with 0-10V dimmable drivers and NEMA C136.41 7-pin twist lock photocontrol receptacle.
- j) Minimum IP65 rated, suitable for wet locations. xi. 10kV surge suppression test (ANSI CGZ.41.2).
- k) System Wattage labels are required on each fixture in compliance with ANSIC136.15-2011 Luminaire Field Identification Requirements.
- l) All components shall be Electromagnetically Compatible (EMC) with EMC CISPR15:2018 standards.
- m) Manufacturer's product specification "cut" sheets shall be supplied with each product specified or offered in the proposal.

## 5) **Control Nodes & Communication System**

- a) The CONTRACTOR shall supply and install approximately 503 control nodes (+/- 5%) at a per unit cost specified in the RFP response.
- b) Each control node shall be NEMA 7-pin compliant.
- c) Control nodes must support 0-10v dimming.
- d) Control nodes should default to integral autonomous photocell control of on and off power to luminaires.

- e) Control nodes should be capable of on-off, trimming, dimming, and brightening functionality by schedule and dynamically over the air through control software.
- f) AES 128 or 256-bit encryption for communication and control.
- g) Capable of OTA secure software/firmware update.
- h) Operating voltage of 120-240 volts AC minimum.
- i) Integral surge protection (to be specified in proposal).
- j) Minimum 5-year warranty. The warrantee shall cover standard maintenance of the Control Nodes and Communication System as recommended by the manufacturer(s) and any labor requirements associated with replacement parts or components that are under warranty. All parts replaced under the warranty shall be new parts. The CONTRACTOR shall provide the first year of warranty maintenance service in their BID price and provide a separate contract for the life of the luminaires. The start of the first year of service shall be at the completion of the installation of all lights and commissioning of monitoring system.
- k) Integral revenue grade metering to ANSI C12.20.
- l) Manufacturer certification by an independent lab that metering meets or exceeds applicable ANSI C12.20 standards.
- m) IR or optical pulse output for rapid verification of power measurement calibration.
- n) Active and reactive power measurement (power factor).
- o) Capable of collecting and reporting hourly interval (or more frequent) energy consumption readings.
- p) The TOWN prefers cellular or LTE data connections using existing or extended networks but will consider proposals for any type of RF (radio frequency) communication and control system using licensed or unlicensed frequencies.

**6) Materials and equipment code compliance:**

All materials and equipment used, as well as all methods of installation, shall comply with all federal, OSHA, state and/or local codes, including applicable TOWN ordinances and regulations. All work on or near power poles and power lines shall comply with Liberty Utilities' requirements.

**7) Payment schedule:**

The TOWN of HANOVER shall pay within 30 days following receipt of invoice of materials installed, functioning as designed, and verified by the TOWN.

Invoices shall be submitted on a maximum of once every 30 days.

The TOWN is exempt from the state's sales and use tax as well as all federal excise taxes.

**8) Insurance**

CONTRACTOR shall maintain during the term of the agreement insurance coverage that meets or exceeds the TOWNs' requirements and provide a Certificate of insurance naming the TOWN of Hanover as additional insured at the following levels:

- a) General (Comprehensive) Liability of such insurance shall be as follows:

Bodily Injury or Death - Each Person	\$ 1,000,000
Bodily Injury or Death - Each Accident	\$ 1,000,000
Property Damage - Each Accident	\$ 500,000
Aggregate	\$ 2,000,000

- b) Automobile and Truck Liability

Bodily Injury or Death - Each Person	\$ 1,000,000
Bodily Injury or Death - Each Accident	\$ 1,000,000
Property Damage - Each Accident	\$ 1,000,000
Aggregate	\$ 2,000,000

- c) Owner's Protective Liability

Bodily Injury (each occurrence)	\$ 1,000,000
Property Damage, including Explosion, Collapse and Underground Coverage - each occurrence	\$ 1,000,000
Aggregate	\$ 2,000,000

- d) SUBCONTRACTORs General Liability

Each Occurrence	\$ 1,000,000
Aggregate	\$ 2,000,000

- e) Workmen's Compensation

The CONTRACTOR shall procure and shall maintain during the life of this contract Workmen's Compensation Insurance as required by applicable State law for all of his employees to be engaged in work at the site of the project under this contract and, in case of any such work, the CONTRACTOR shall require the SUBCONTRACTOR similarly to provide Workmen's Compensation Insurance for all of the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the CONTRACTOR's Workmen's Compensation Insurance. In case any class of employees engaged in hazardous work on the project under this contract is not protected under the Workmen's Compensation Statute, the CONTRACTOR shall provide and shall cause each SUBCONTRACTOR to provide adequate employer's liability insurance for the protection of his employees that are not otherwise protected.

**9) Hold harmless:**

The CONTRACTOR shall defend, indemnify and hold the TOWN of HANOVER, its officers, employees and agents harmless from any liability for damage or claims of same, including but not limited to: personal injury, property damage and death, which may arise from the bidder or bidder's CONTRACTORs, SUBCONTRACTORs, agents or employees operating under this agreement, excepting suits and actions brought by the bidder for default of this agreement or to the extent the claim arises out of the sole negligent or willful misconduct of the TOWN. The TOWN shall cooperate reasonably in the defense of any action and the bidder shall employ



competent counsel reasonably acceptable to the TOWN's legal counsel.

**10) Equal employment opportunities**

The CONTRACTOR shall comply with any and all applicable federal, state and local laws, executive orders, and regulations prohibiting discrimination in employment. The CONTRACTOR shall not discriminate against any qualified employee or applicant for employment because of race, color, national origin, ancestry, age, sex, religion, handicap, or sexual orientation.

**BUILD AMERICA, BUY AMERICA**

On November 15, 2021, the Infrastructure Investment and Jobs Act (IIJA) was signed into law (the Bipartisan Infrastructure Law, or BIL), which includes the Build America, Buy America Act (BABA). Pub. L. No. 117-58. BABA strengthens existing Buy America regulations and specifically states that no Federal funds made available for infrastructure may be obligated for a project unless all of the iron, steel, manufactured products, and construction materials permanently incorporated into the project are produced in the United States. Any project within the scope of a finding, determination, or decision under the National Environmental Policy Act (NEPA), regardless of the funding source for the individual project, are subject to BABA regulations if at least one contract within the scope of the NEPA decision is funded Federally. This project is subject to BABA, and will require certification in the following item categories (an article, material, or supply should only be classified into one of the categories below):

- a) Iron and Steel: All iron and steel permanently incorporated into the project must be produced in the United States. The only exception to this requirement is the production of pig iron and the processing, pelletizing, and reduction of iron ore, which may occur in another country. This means all manufacturing processes, from the initial melting stage through the application of coatings, must occur in the United States.
  - Steel products include, but are not limited to, structural steel, piles, reinforcing steel, structural plate, steel culverts, guardrail, steel supports for signs, signals (mast arms), and luminaires.
  - Iron products include, but are not limited to, cast iron frames and grates.
- b) Manufactured Products\*: All manufactured products permanently incorporated into the project must be produced in the United States. This means the manufactured product must be manufactured in the United States, and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States must be greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation.
- c) Construction Materials: All construction materials permanently incorporated into the project must be manufactured in the United States. This means the final manufacturing process and the immediately preceding manufacturing stage for the construction material must occur in the United States.

- Construction Materials include an article, material, or supply that is or consists primarily of:
  - i. Non-ferrous metals;
  - ii. Plastic and polymer-based products (including polyvinylchloride, composite build materials, and polymers used in fiber optic cables);
  - iii. Glass (including optic glass);
  - iv. Lumber; or
  - v. Drywall.
- Construction Materials do not include:
  - i. Items of primarily iron or steel;
  - ii. Manufactured Products;
  - iii. Cement and cementitious materials;
  - iv. Aggregates such as stone, sand, or gravel; or
  - v. Aggregate binding agents or additives.

Items that consist of two or more of the listed materials that have been combined through a manufacturing process, and items that include at least one of the listed materials combined through a manufacturing process with a material that is not listed, should be treated as manufactured products, rather than as construction materials. Equipment, tools, and temporary items are not required to meet the BABA requirements.

A **Certificate of Compliance** shall be furnished for all the above materials, regardless of item category. The form for this certification is entitled “**Certificate of Compliance**” and is provide in **Appendix G**.

For steel and iron materials and for manufactured products produced predominantly of steel or iron, records to be maintained by the CONTRACTOR for compliance with this Special Attention shall include a signed mill test report and a signed certification by each supplier, distributor, fabricator, and manufacturer that has handled the materials affirming that every process, including the application of a coating, performed on the steel or iron has been carried out in the United States of America, except as allowed by this Special Attention. The lack of these certifications will be justification for rejection of the material provided.

Manufacturer’s certificate of compliance for construction materials must identify where the construction material was manufactured and attest specifically to compliance with BABA.

The requirements of said law and regulations do not prevent a minimal use of foreign steel and iron materials if the cost of such materials used does not exceed one-tenth of one percent (0.1%) of the total contract price or \$2,500.00, whichever is greater.

Upon completion of the project, the Contractor shall certify in writing as to compliance with BABA and also provide the total project delivered cost of all foreign steel and iron, provided under this requirement, that are permanently incorporated into the project.

## **Appendices**

**Appendix A: Proposal Form**

**Appendix B: Pricing Sheet**

**Appendix C: LED-2 Streetlight Tariff**

**Appendix D: Hanover Streetlight Inventory List**

**APPENDIX E: Liberty Utilities' standards for streetlight brackets.**

**Appendix F: Pole top Luminaire & Floodlights**

**Appendix G: Certificate of Compliance**

**Appendix H: Recent TOWN of HANOVER Street Light Invoice**

# **Appendix A:**

## **Proposal Form**

## PROPOSAL FORM

### Hanover LED Street Conversion Project

**\*\*THIS SHEET MUST BE INCLUDED IN YOUR PROPOSAL\*\***

The undersigned hereby declares that he/she or they are the only person(s), proposer or corporation interested in this proposal as principal, that it is made without any connection with any other person(s), proposer or corporation submitting a proposal for the same, and that no person acting for or employed by the TOWN of HANOVER is directly or indirectly interested in this proposal or in any anticipated profits which may be derived therefrom.

The undersigned hereby declares that they have read and understand all conditions as outlined in this Request for Proposals, and that the proposal is made in accordance with the same. The bidder acknowledges the receipt of Addenda Numbered: \_\_\_\_\_

COMPANY NAME: \_\_\_\_\_

AUTHORIZED SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

PRINT NAME & TITLE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_

PHONE NUMBER: \_\_\_\_\_ FAX NUMBER: \_\_\_\_\_

TYPE OF ORGANIZATION

(PARTNERSHIP, CORPORATION, INDIVIDUAL, OTHER): \_\_\_\_\_

STATE OF INCORPORATION: \_\_\_\_\_

FEDERAL TAX IDENTIFICATION NUMBER (Required): \_\_\_\_\_

\_\_\_\_\_

## **Appendix B**

### **Pricing Sheet**

APPENDIX B - PRICING SHEET  
TOWN OF HANOVER, NEW HAMPSHIRE

EXISTING LUMINAIRE DESCRIPTION							PROPOSAL								
ITEM	UNIT	ESTIMATED QUANTITY	LAMP WATTAGE & TYPE	FIXTURE TYPE	MOUNTING	Supply	UNIT PRICING	TOTAL	PROPOSED WATTAGE	Current (mA)	LUMEN OUTPUT	CCT	CRI	NOTES (Manufacturer, Model Number)	
1	Each	18	50 HP	Post Top	Metal Post top	Underground		\$ -							
2	Each	15	100 HPS	Post Top	Metal Post top	Underground		\$ -							
3	Each	6	250 HPS	Post Top	Metal Post top	Underground		\$ -							
4	Each	1	400 HPS	Post Top	Metal Post top	Underground		\$ -							
5	Each	2	250 HPS	Flood	Bracket on Wood Utliity Pole	Overhead		\$ -							
6	Each	15	30 LED	Roadway	Bracket on Wood Utliity Pole	Overhead		\$ -							
7	Each	19	50 LED	Roadway	Bracket on Wood Utliity Pole	Overhead		\$ -							
8	Each	245	50 HPS	Roadway	Bracket on Wood Utliity Pole	Overhead		\$ -							
9	Each	118	100 HPS	Roadway	Bracket on Wood Utliity Pole	Overhead		\$ -							
10	Each	51	250 HPS	Roadway	Bracket on Wood Utliity Pole	Overhead		\$ -							
11	Each	7	100 MV	Roadway	Bracket on Wood Utliity Pole	Overhead		\$ -							
12	Each	5	175 MV	Roadway	Bracket on Wood Utliity Pole	Overhead		\$ -							
13	Each	1	400 MV	Roadway	Bracket on Wood Utliity Pole	Overhead		\$ -							
SUBTOTAL:		503													
14	Each	503	Control Nodes with intergral photocell					\$ -							
	Lump														
15	Sum	1	PHOTOMETRIC STUDY					\$ -							
							TOTAL:	\$ -							
									Notes						
A	Annual Cost	1	Extended Waranty					\$ -							
B	Cost/unit	1	Yearly Maintenace - years 2-10 per unit					\$ -							
C	n/a		Response Time from notice of component failure												
NOTES:															
<div><div>Unit Prices shall govern over extended total when discrepancies occur. All prices in dollars and cents. All work included in this proposal is dependent upon the proposed pricing and available funding. Actual quantities are subject to change.  Complete information on Wattage, current (mA), CRI, Lumen output, CCT, Manufacturer, model number, and response time from notice of component failure</div><div><div>Signature of Authorized Representative: _____</div><div>Name: _____ Title: _____ Date: _____</div></div></div>															

# **Appendix C**

## **LED-2 Streetlight Tariff**



### **Outdoor Lighting Service Rate LED-2**

#### **Availability**

This rate is only available to customers that are as governmental entities, inclusive of the state, municipalities, or other public authorities who are converting from high pressure sodium, mercury vapor, or incandescent lighting to Light Emitting Diode ("LED") or that want new LED street light installations and that want to purchase and own the LED fixtures including the option to install advanced controls for alternative lighting schedules. Installations on limited access highways, tunnels, bridges and the access and egress ramps thereto are subject to the Special Rate Conditions of this tariff.

#### **Public Lighting**

Available for Street or Highways and areas within the public domain for customers designated as governmental entities, inclusive of the state, municipalities, or other public authorities. Installations on limited access highways, tunnels, bridges and the access and egress ramps thereto are subject to the Special Rate Conditions of this tariff.

#### **Lighting Services**

Service under this rate is for full-night, part-night or an alternative schedule with the use of advanced controls. Service under this rate for full-night service street lighting is where the luminaire operates for the entire night time period pursuant to the Hours of Operation provision below. In addition, customers may, at their option, take advantage of part-night service in which the luminaire operates for a portion of the night pursuant to the Hours of Operation provision below. Customers may select the part-night service option at the time of lighting installation or at any time during service. Any request to select the part-time night service option must be made in writing. Service under the alternative schedule with advanced controls is where the luminaire operates for an alternative schedule pursuant to the Use of Advanced Controls provision below.

#### **Conversion**

Customers choosing to convert from service under Rate M, LED-1, or requesting new service under Rate LED-2 must:

1. Furnish any fixtures accepted by the Company, and pay either the Company per the Installation provision below or a private line contractor, as described under the "Additional Requirements" section below, for the installation of these fixtures.
2. Contribute to the Company either the cost of removal per the Removal provision below or arrange for the private line contractor installing the new LED fixtures to remove and return to the Company the existing fixtures and be responsible for paying the remaining undepreciated value of any street and area lighting fixtures as of the date that such fixtures are removed and replaced with LED fixtures per the Undepreciated Value provision under Rates M and LED-1; and

Issued: July 1, 2020

Effective: July 1, 2020

Issued by: /s/ Susan L. Fleck  
Susan L. Fleck  
Title: President

3. Provide, at least annually, a street light inventory including location of fixtures by pole number, wattage, Kelvin and lumens of all fixtures; The Customer will hold title to all fixtures.

#### Mounting Brackets and Line Taps

The Company will maintain ownership and maintenance responsibility for mounting brackets and line taps to the point where the Customer's fixture is attached.

#### Hours of Operation

Full-night outdoor lighting service on an annual basis totaling approximately 3,938 hours of operation per year or approximately 328 average monthly hours and part-night outdoor lighting service on an annual basis totaling no more than 1,969 hours of operation per year or approximately 164 average monthly hours shall be provided for under this rate. Alternative hours of operation shall also be provided under this rate per the Use of Advanced Controls provision below.

#### Removal and Installation

A customer may request removal only of their lights by the Company for which the customer will be billed \$50 per light to cover labor costs associated with removal. Alternatively, the customer may arrange for the private line contractor installing the new LED fixtures to remove and return to the Company the existing fixtures. Customers will be responsible to pay the remaining undepreciated value of the Company's fixtures to be removed prior to removal. The removal will be completed in a period as agreed upon between the Company and the customer. Under this option, the customer shall pay a private contractor for the installation of the new fixtures per the Additional Requirements below.

A customer may choose to have the Company both remove the old fixtures and install the new fixtures. For this service, the customer will be billed \$215 per old light fixture by the Company to remove the old fixture and install the new fixture to cover labor costs associated with removal and installation. Customers will be responsible to pay the remaining undepreciated value of the fixtures to be removed prior to removal and installation. The installation will be completed in a period as agreed upon between the Company and the customer.

#### Replacement and Maintenance

Any customer requesting replacement or maintenance of a light by the Company will be billed \$215 per light to cover labor costs associated with replacement and maintenance. Ongoing maintenance or replacement of fixtures owned by the customer, including photocell or advanced controls, may be performed by the customer through a Company approved contractor as described below under Additional Requirements or by a customer employee that is a licensed electrician.

Issued: July 1, 2020

Issued by: /s/ Susan L. Fleck

Effective: July 1, 2020

Title: Susan L. Fleck  
President

Fixtures must be provided by the Customer for installation on the Company's facilities. Fixtures shall be accepted by the Company in advance of installation and must be compatible with existing line voltage and brackets, and must require no special tools or training to install and maintain. Customers who are replacing existing fixtures with LED fixtures are responsible for the cost of removal and installation. Customers may choose to have this work completed by the Company or may opt to hire and pay a private line contractor to perform the work. Any private contractor shall have all the requisite training, certifications and insurance to safely perform the required installations, and shall be licensed by the State and accepted by the Company. Prior to commencement of work, the municipality must provide written certification of the qualifications to the Company. Contractors shall coordinate the installation work with the Company and submit a work plan subject to approval by the Company, including provisions for either returning removed fixtures to the Company or otherwise disposing of them as approved by the Company. The Customer shall bear all expenses related to the use of such labor, including any expenses arising from damage to the Company's electrical system caused by the contractor's actions.

The energy charges for each luminaire will be determined by multiplying the energy charges per kilowatt-hour by the average monthly kilowatt-hours. The Customer is responsible for providing the list of fixtures and wattages to allow the Company to calculate the kWh to be billed. The kWh will be calculated based on the 2020 Farmer's Almanac hours of daylight.

Distribution Charge per kWh	4.152
Reliability Enhancement/Vegetation Management	0.001
Total Distribution	4.153
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Transmission Charge	1.928
Stranded Cost Charge	(0.052)
Storm Recovery Adjustment Factor	0.000

## Failure of Lights to Burn

Should any light fail to burn for the full period provided above, a deduction will be made from the calculated monthly kWh of such light, upon presentation of a claim from the Customer. The provisions of this paragraph do not apply when failure to burn is due to an act of God, or an act or order of any Public Authority or accidental or malicious breakage, provided, however, the necessary repairs are made with reasonable dispatch upon notification by the Customer.

Issued:	May 13, 2022	Issued by:	<u>/s/ Neil Proudman</u>
Effective:	May 1, 2022	Title:	Neil Proudman President

**Appendix D**  
**Hanover Streetlight Inventory List**

Pole No	Pole Suffix	Street Name	Street Suffix	Route	Source Type	Bill Print and Tariff Description	Lamp Wattage	Cogsdale Account No
5	000	ALLEN	ST	0001	Overhead	LUM HPS RWY 50W	50	44618286-44358106
8	002	ALLEN	ST	0001	Overhead	LUM HPS RWY 50W	50	44618286-44358106
8	001	ALLEN	ST	0001	Overhead	LUM HPS RWY 50W	50	44618286-44358106
7	000	ALLEN	ST	0001	Overhead	LUM HPS RWY 50W	50	44618286-44358106
9	000	ALLEN	ST	0001	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	001	ALLEN	ST	0001	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	002	ALLEN	ST	0001	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	003	ALLEN	ST	0001	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	BALCH HILL	ST	0098	Overhead	LUM HPS RWY 50W	50	44618286-44358106
5	000	BALCH HILL	ST	0098	Overhead	LUM HPS RWY 100W	100	44618286-44358106
7	000	BALCH HILL	ST	0098	Overhead	LUM HPS RWY 100W	100	44618286-44358106
12	000	BALCH HILL	ST	0098	Overhead	LUM HPS RWY 100W	100	44618286-44358106
3	000	BALCH HILL	LN	0100	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	BALCH HILL	ST	0098	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	BARRETT	RD	0003	Overhead	LUM HPS RWY 100W	100	44618286-44358106
2	000	BARRYMORE	RD	0004	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	BARRYMORE	RD	0004	Overhead	LUM HPS RWY 50W	50	44618286-44358106
5	000	BARRYMORE	RD	0004	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	BRIDGEMAN	RD	0139	Overhead	LUM HPS RWY 100W	100	44618286-44358106
2	000	BROCKWAY	RD	0006	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	BROOK	RD	0007	Overhead	LUM HPS RWY 100W	100	44618286-44358106
6	000	BROOK	RD	0007	Overhead	LUM HPS RWY 100W	100	44618286-44358106
7	000	BROOK	RD	0007	Overhead	LUM HPS RWY 100W	100	44618286-44358106
1	000	BROOK	RD	0007	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	BROOK	RD	0007	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	BUCK	RD	0033	Overhead	LUM HPS RWY 50W	50	44618286-44358106
5	000	BUCK	RD	0033	Overhead	LUM HPS RWY 50W	50	44618286-44358106
7	000	BUCK	RD	0033	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	BUELL	ST	0008	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	BUELL	ST	0008	Overhead	LUM HPS RWY 50W	50	44618286-44358106
6	000	BUELL	ST	0008	Overhead	LUM HPS RWY 50W	50	44618286-44358106
8	000	BUELL	ST	0008	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	BURTON	RD	0009	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	BUTTERNUT	LN	0165	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	CARTER	ST	0010	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	CARTER	ST	0010	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	CHANDLER	DR	0107	Overhead	LUM HPS RWY 50W	50	44618286-44358106
6	000	CHANDLER	DR	0107	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	001	CHASE	RD	0011	Overhead	LUM HPS RWY 100W	100	44618286-44358106
3	000	CHASE	RD	0011	Overhead	LUM HPS RWY 100W	100	44618286-44358106
2	000	CHOATE	RD	0012	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	CHOATE	RD	0012	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	CHOATE	RD	0012	Overhead	LUM HPS RWY 50W	50	44618286-44358106
5	000	CHOATE	RD	0012	Overhead	LUM HPS RWY 50W	50	44618286-44358106
7	000	CHOATE	RD	0012	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	CLAFLIN	CIR	0013	Overhead	LUM HPS RWY 100W	100	44618286-44358106
3	000	CLAFLIN	CIR	0013	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	CLEMENT	RD	0014	Overhead	LUM HPS RWY 100W	100	44618286-44358106
5	000	CLEMENT	RD	0014	Overhead	LUM HPS RWY 100W	100	44618286-44358106
7	000	CLEMENT	RD	0014	Overhead	LUM HPS RWY 100W	100	44618286-44358106
1	000	CLEMENT	RD	0014	Overhead	LUM HPS RWY 100W	100	44618286-44358106
4	000	COLLEGE	ST	0050	Overhead	LUM HPS RWY 100W	100	44618286-44358106

Pole No	Pole Suffix	Street Name	Street Suffix	Route	Source Type	Bill Print and Tariff Description	Lamp Wattage	Cogsdale Account No
1	000	COLLEGE	ST	0050	Overhead	LUM HPS RWY 250W	250	44618286-44358106
8	000	COLLEGE	ST	0050	Overhead	LUM HPS RWY 100W	100	44618286-44358106
10	000	COLLEGE	ST	0050	Overhead	LUM HPS RWY 100W	100	44618286-44358106
2	000	COLLEGE	ST	0050	Overhead	LUM HPS RWY 250W	250	44618286-44358106
1	000	CONANT	RD	0015	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	CONANT	RD	0015	Overhead	LUM HPS RWY 50W	50	44618286-44358106
6	000	CONANT	RD	0015	Overhead	LUM HPS RWY 50W	50	44618286-44358106
8	000	CONANT	RD	0015	Overhead	LUM HPS RWY 50W	50	44618286-44358106
9	000	CONANT	RD	0015	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	CROSBY	ST	0016	Overhead	LUM HPS RWY 100W	100	44618286-44358106
2	000	CROSBY	ST	0016	Overhead	LUM HPS RWY 100W	100	44618286-44358106
3	000	CROSBY	ST	0016	Overhead	LUM HPS RWY 100W	100	44618286-44358106
5	000	CROSBY	ST	0016	Overhead	LUM HPS RWY 100W	100	44618286-44358106
9	000	CURRIER	PL	0018	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	CURRIER	PL	0018	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	CURRIER	PL	0018	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	CURTIS	RD	0118	Overhead	LUM HPS RWY 100W	100	44618286-44358106
4	000	CURTIS	RD	0118	Overhead	LUM HPS RWY 100W	100	44618286-44358106
6	000	CURTIS	RD	0118	Overhead	LUM HPS RWY 100W	100	44618286-44358106
2	000	DANA	RD	0019	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	DAYTON	DR	0198	Overhead	LUM HPS RWY 100W	100	44618286-44358106
2	050	DAYTON	DR	0198	Overhead	LUM HPS RWY 100W	100	44618286-44358106
2	000	DORRANCE	PL	0020	Overhead	LUM HPS RWY 50W	50	44618286-44358106
5	000	DOWNING	RD	0021	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	DOWNING	RD	0021	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	DOWNING	RD	0021	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	DRESDEN	RD	0116	Overhead	LUM HPS RWY 100W	100	44618286-44358106
4	000	DRESDEN	RD	0116	Overhead	LUM HPS RWY 100W	100	44618286-44358106
1	000	DRESDEN	RD	0116	Overhead	LUM HPS RWY 100W	100	44618286-44358106
1	000	DUNSTER	DR	0022	Overhead	LUM HPS RWY 50W	50	44618286-44358106
6	000	DUNSTER	DR	0022	Overhead	LUM HPS RWY 50W	50	44618286-44358106
8	000	DUNSTER	DR	0022	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	DUNSTER	DR	0022	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	DUNSTER	DR	0022	Overhead	LUM HPS RWY 50W	50	44618286-44358106
7	000	EAST SOUTH	ST	0024	Overhead	LUM HPS RWY 50W	50	44618286-44358106
8	000	EAST WHEELock	ST	0025	Overhead	LUM HPS RWY 250W	250	44618286-44358106
31	000	EAST WHEELock	ST	0025	Overhead	LUM HPS RWY 50W	50	44618286-44358106
12	000	EAST WHEELock	ST	0025	Overhead	LUM HPS RWY 100W	100	44618286-44358106
19	000	EAST WHEELock	ST	0025	Overhead	LUM HPS RWY 100W	100	44618286-44358106
21	000	EAST WHEELock	ST	0025	Overhead	LUM HPS RWY 100W	100	44618286-44358106
23	000	EAST WHEELock	ST	0025	Overhead	LUM HPS RWY 100W	100	44618286-44358106
25	000	EAST WHEELock	ST	0025	Overhead	LUM HPS RWY 100W	100	44618286-44358106
35	000	EAST WHEELock	ST	0025	Overhead	LUM HPS RWY 100W	100	44618286-44358106
17	000	EAST WHEELock	ST	0025	Overhead	LUM HPS RWY 100W	100	44618286-44358106
10	000	EAST WHEELock	ST	0025	Overhead	LUM HPS RWY 100W	100	44618286-44358106
14	000	EAST WHEELock	ST	0025	Overhead	LUM HPS RWY 100W	100	44618286-44358106
27	000	EAST WHEELock	ST	0025	Overhead	LUM HPS RWY 100W	100	44618286-44358106
1	000	FAIRVIEW	AVE	0027	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	FAIRVIEW	AVE	0027	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	FLETCHER	CIR	0106	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	FLETCHER	CIR	0106	Overhead	LUM HPS RWY 50W	50	44618286-44358106
5	000	FLETCHER	CIR	0106	Overhead	LUM HPS RWY 50W	50	44618286-44358106

Pole No	Pole Suffix	Street Name	Street Suffix	Route	Source Type	Bill Print and Tariff Description	Lamp Wattage	Cogsdale Account No
8	000	FLETCHER	CIR	0106	Overhead	LUM HPS RWY 50W	50	44618286-44358106
10	000	FLETCHER	CIR	0106	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	FOX FIELD	LN	0112	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	FOX FIELD	LN	0112	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	FREEMAN	RD	0028	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	050	GRANGER	CIR	0030	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	GRANGER	CIR	0030	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	GRANGER	CIR	0030	Overhead	LUM HPS RWY 50W	50	44618286-44358106
8	000	GREENSBORO	RD	0037	Overhead	LUM HPS RWY 100W	100	44618286-44358106
64	000	GREENSBORO	RD	0037	Overhead	LUM HPS RWY 100W	100	44618286-44358106
11	000	GREENSBORO	RD	0037	Overhead	LUM HPS RWY 50W	50	44618286-44358106
75	000	GREENSBORO	RD	0037	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	GREENSBORO	RD	0037	Overhead	LUM HPS RWY 100W	100	44618286-44358106
6	000	GREENSBORO	RD	0037	Overhead	LUM HPS RWY 100W	100	44618286-44358106
12	050	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 30W	30	44618286-44358106
19	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 30W	30	44618286-44358106
22	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 30W	30	44618286-44358106
24	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 30W	30	44618286-44358106
28	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 30W	30	44618286-44358106
35	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 30W	30	44618286-44358106
37	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 30W	30	44618286-44358106
41	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 30W	30	44618286-44358106
44	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 30W	30	44618286-44358106
48	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 30W	30	44618286-44358106
51	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 30W	30	44618286-44358106
54	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 30W	30	44618286-44358106
57	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 30W	30	44618286-44358106
73	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 30W	30	44618286-44358106
3	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 50W	50	44618286-44358106
7	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 50W	50	44618286-44358106
11	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 50W	50	44618286-44358106
16	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 50W	50	44618286-44358106
25	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 50W	50	44618286-44358106
30	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 50W	50	44618286-44358106
32	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 50W	50	44618286-44358106
42	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 50W	50	44618286-44358106
58	000	HANOVER CENTE	RD	0126	Overhead	LUM LED RWY 50W	50	44618286-44358106
16	000	HANOVER PALT	ST	0184	Overhead	LUM HPS RWY 250W	250	44612181-44357933
17	000	HANOVER PALT	ST	0184	Underground	LUM HPS RWY 250W	250	44612181-44357933
15	000	HANOVER PALT	ST	0184	Underground	LUM HPS RWY 50W	50	44612181-44357933
18	000	HANOVER PALT	ST	0184	Underground	LUM MV RWY 400W	400	44612181-44357933
19	000	HANOVER PLANT	ST	0184	Underground	LUM HPS RWY 250W	250	44612181-44357933
1	000	HASKINS	RD	0169	Underground	LUM HPS RWY 50W	50	44618286-44358106
2	000	HASKINS	RD	0169	Underground	LUM HPS RWY 50W	50	44618286-44358106
3	000	HASKINS	RD	0169	Underground	LUM HPS RWY 50W	50	44618286-44358106
4	000	HASKINS	RD	0169	Underground	LUM LED POST 50W	50	44618286-44358106
5	000	HASKINS	RD	0169	Underground	LUM LED POST 50W	50	44618286-44358106
6	000	HASKINS	RD	0169	Underground	LUM LED POST 50W	50	44618286-44358106
7	000	HASKINS	RD	0169	Underground	LUM LED POST 50W	50	44618286-44358106
2	000	HEMLOCK	RD	0115	Overhead	LUM HPS RWY 100W	100	44618286-44358106
2	000	HENEAGE	LN	0124	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	HENEAGE	LN	0124	Overhead	LUM HPS RWY 50W	50	44618286-44358106

Pole No	Pole Suffix	Street Name	Street Suffix	Route	Source Type	Bill Print and Tariff Description	Lamp Wattage	Cogsdale Account No
1	000	HIGHLAND	AVE	0031	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	HIGHLAND	AVE	0031	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	HIGHLAND	AVE	0031	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	HIGHLAND	AVE	0031	Overhead	LUM HPS RWY 50W	50	44618286-44358106
5	000	HIGHLAND	AVE	0031	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	HILTON FIELD	LN	0032	Overhead	LUM HPS RWY 100W	100	44618286-44358106
3	000	HILTON FIELD	LN	0032	Overhead	LUM HPS RWY 100W	100	44618286-44358106
1	000	HILTON FIELD	LN	0032	Overhead	LUM HPS RWY 100W	100	44618286-44358106
10	000	HOVEY	LN	0034	Overhead	LUM MV RWY 100W	100	44618286-44358106
2	000	HOVEY	LN	0034	Overhead	LUM HPS RWY 50W	50	44618286-44358106
8	000	HOVEY	LN	0034	Overhead	LUM HPS RWY 50W	50	44618286-44358106
9	000	HOVEY	LN	0034	Overhead	LUM HPS RWY 50W	50	44618286-44358106
7	000	HOVEY	LN	0034	Overhead	LUM MV RWY 100W	100	44618286-44358106
4	000	HOVEY	LN	0034	Overhead	LUM HPS RWY 50W	50	44618286-44358106
6	000	HOVEY	LN	0034	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	HUNTER	LN	0035	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	HUNTER	LN	0035	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	HUNTLEY	RD	0036	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	HUNTLEY	RD	0036	Overhead	LUM HPS RWY 50W	50	44618286-44358106
7	000	JUNIPER HILL	LN	0147	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	KINGSFORD	RD	0038	Overhead	LUM HPS RWY 50W	50	44618286-44358106
5	000	KINGSFORD	RD	0038	Overhead	LUM HPS RWY 50W	50	44618286-44358106
7	000	KINGSFORD	RD	0038	Overhead	LUM HPS RWY 50W	50	44618286-44358106
11	000	KINGSFORD	RD	0038	Overhead	LUM HPS RWY 100W	100	44618286-44358106
9	000	KINGSFORD	RD	0038	Overhead	LUM HPS RWY 50W	50	44618286-44358106
12	000	KINGSFORD	RD	0038	Overhead	LUM HPS RWY 50W	50	44618286-44358106
14	000	KINGSFORD	RD	0038	Overhead	LUM HPS RWY 50W	50	44618286-44358106
16	000	KINGSFORD	RD	0038	Overhead	LUM HPS RWY 50W	50	44618286-44358106
17	000	KINGSFORD	RD	0038	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	LAUREL	ST	0192	Underground	LUM HPS RWY 100W	100	44618286-44358106
2	000	LAUREL	ST	0192	Underground	LUM HPS RWY 100W	100	44618286-44358106
23	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 50W	50	44618286-44358106
8	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 250W	250	44618286-44358106
25	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 250W	250	44618286-44358106
41	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 100W	100	44618286-44358106
45	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 100W	100	44618286-44358106
49	001	LEBANON	ST	0039	Overhead	LUM HPS RWY 100W	100	44618286-44358106
13	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 100W	100	44618286-44358106
15	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 100W	100	44618286-44358106
9	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 250W	250	44618286-44358106
43	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 100W	100	44618286-44358106
38	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 100W	100	44618286-44358106
39	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 100W	100	44618286-44358106
11	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 100W	100	44618286-44358106
19	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 50W	50	44618286-44358106
21	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 50W	50	44618286-44358106
27	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 50W	50	44618286-44358106
29	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 50W	50	44618286-44358106
31	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 50W	50	44618286-44358106
33	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 50W	50	44618286-44358106
35	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 50W	50	44618286-44358106
37	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 50W	50	44618286-44358106



Pole No	Pole Suffix	Street Name	Street Suffix	Route	Source Type	Bill Print and Tariff Description	Lamp Wattage	Cogsdale Account No
47	002	LEBANON	ST	0039	Overhead	LUM HPS RWY 100W	100	44618286-44358106
17	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 250W	250	44618286-44358106
24	000	LEBANON	ST	0039	Overhead	LUM HPS RWY 250W	250	44618286-44358106
5	000	LEDYARD	LN	0040	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	LEDYARD	LN	0040	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	LEWIN	RD	0041	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	LOW	RD	0178	Underground	LUM HPS RWY 100W	100	44618286-44358106
2	000	LOW	RD	0178	Underground	LUM HPS RWY 50W	50	44618286-44358106
3	000	LOW	RD	0178	Underground	LUM HPS RWY 50W	50	44618286-44358106
4	000	LOW	RD	0178	Underground	LUM HPS RWY 50W	50	44618286-44358106
5	000	LOW	RD	0178	Underground	LUM HPS RWY 50W	50	44618286-44358106
6	000	LOW	RD	0178	Underground	LUM HPS RWY 50W	50	44618286-44358106
7	000	LOW	RD	0178	Underground	LUM HPS RWY 50W	50	44618286-44358106
8	000	LOW	RD	0178	Underground	LUM HPS RWY 50W	50	44618286-44358106
9	000	LOW	RD	0178	Underground	LUM HPS RWY 50W	50	44618286-44358106
31	000	LYME	RD	0043	Overhead	LUM HPS RWY 250W	250	44618286-44358106
108	000	LYME	RD	0043	Overhead	LUM MV RWY 175W	175	44618286-44358106
17	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
19	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
185	002	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
21	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
23	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
25	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
170	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
48	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
50	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
52	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
54	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
32	000	LYME	RD	0043	Overhead	LUM HPS RWY 250W	250	44618286-44358106
27	000	LYME	RD	0043	Overhead	LUM HPS RWY 250W	250	44618286-44358106
29	000	LYME	RD	0043	Overhead	LUM HPS RWY 250W	250	44618286-44358106
56	000	LYME	RD	0043	Overhead	LUM HPS RWY 250W	250	44618286-44358106
34	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
37	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
39	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
41	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
43	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
46	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
47	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
1	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
3	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
5	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
9	001	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
11	001	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
13	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
44	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
165	000	LYME	RD	0043	Overhead	LUM HPS RWY 100W	100	44618286-44358106
28	000	LYME	RD	0043	Overhead	LUM HPS RWY 250W	250	44618286-44358106
28	000	LYME	RD	0043	Overhead	LUM HPS RWY 250W	250	44618286-44358106
2	000	MAIN ST	ST	0182	Underground	LUM HPS RWY 250W	250	44618286-44358106
4	000	MAIN ST	ST	0182	Underground	LUM HPS RWY 250W	250	44618286-44358106
6	000	MAIN ST	ST	0182	Underground	LUM HPS RWY 250W	250	44618286-44358106

Pole No	Pole Suffix	Street Name	Street Suffix	Route	Source Type	Bill Print and Tariff Description	Lamp Wattage	Cogsdale Account No
10	001	MAIN ST	ST	0182	Underground	LUM HPS RWY 250W	250	44618286-44358106
2	000	MAPLE	ST	0044	Overhead	LUM HPS RWY 50W	50	44618286-44358106
8	000	MAPLE	ST	0044	Overhead	LUM HPS RWY 50W	50	44618286-44358106
11	000	MAPLE	ST	0044	Overhead	LUM HPS RWY 50W	50	44618286-44358106
13	000	MAPLE	ST	0044	Overhead	LUM HPS RWY 50W	50	44618286-44358106
15	000	MAPLE	ST	0044	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	MAPLE	ST	0044	Overhead	LUM HPS RWY 100W	100	44618286-44358106
18	000	MAPLE	ST	0044	Overhead	LUM HPS RWY 50W	50	44618286-44358106
6	000	MAPLE	ST	0044	Overhead	LUM MV RWY 100W	100	44618286-44358106
2	000	MARTIN	LN	0195	Underground	LUM HPS RWY 50W	50	44618286-44358106
1	000	MARTIN	LN	0195	Underground	LUM HPS RWY 50W	50	44618286-44358106
2	002	MEADOW	LN	0046	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	MEADOW	LN	0046	Overhead	LUM HPS RWY 50W	50	44618286-44358106
7	000	MEADOW	LN	0046	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	MITCHELL	LN	0047	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	MITCHELL	LN	0047	Overhead	LUM HPS RWY 50W	50	44618286-44358106
5	000	MITCHELL	LN	0047	Overhead	LUM HPS RWY 50W	50	44618286-44358106
6	000	MITCHELL	LN	0047	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	NORTH BALCH	ST	0049	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	NORTH BALCH	ST	0049	Overhead	LUM HPS RWY 50W	50	44618286-44358106
6	000	NORTH BALCH	ST	0049	Overhead	LUM HPS RWY 50W	50	44618286-44358106
9	000	NORTH BALCH	ST	0049	Overhead	LUM HPS RWY 50W	50	44618286-44358106
11	000	NORTH BALCH	ST	0049	Overhead	LUM HPS RWY 50W	50	44618286-44358106
9	000	NORTH MAIN	ST	0051	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	NORTH PARK	ST	0052	Overhead	LUM LED RWY 50W	50	44618286-44358106
3	000	NORTH PARK	ST	0052	Overhead	LUM LED RWY 50W	50	44618286-44358106
5	000	NORTH PARK	ST	0052	Overhead	LUM LED RWY 50W	50	44618286-44358106
6	000	NORTH PARK	ST	0052	Overhead	LUM LED RWY 50W	50	44618286-44358106
7	000	NORTH PARK	ST	0052	Overhead	LUM LED RWY 50W	50	44618286-44358106
8	000	NORTH PARK	ST	0052	Overhead	LUM LED RWY 50W	50	44618286-44358106
10	000	NORTH PARK	ST	0052	Overhead	LUM LED RWY 50W	50	44618286-44358106
11	000	NORTH PARK	ST	0052	Overhead	LUM LED RWY 50W	50	44618286-44358106
13	000	NORTH PARK	ST	0052	Overhead	LUM LED RWY 50W	50	44618286-44358106
14	000	NORTH PARK	ST	0052	Overhead	LUM LED RWY 50W	50	44618286-44358106
3	000	OCCOM	RD	0053	Overhead	LUM HPS RWY 100W	100	44618286-44358106
6	000	OCCOM	RD	0053	Overhead	LUM HPS RWY 50W	50	44618286-44358106
8	000	OCCOM	RD	0053	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	OCCOM	RD	0053	Overhead	LUM HPS RWY 50W	50	44618286-44358106
17	000	OCCOM	RD	0053	Overhead	LUM HPS RWY 100W	100	44618286-44358106
10	000	OCCOM	RD	0053	Overhead	LUM HPS RWY 50W	50	44618286-44358106
12	000	OCCOM	RD	0053	Overhead	LUM HPS RWY 50W	50	44618286-44358106
14	000	OCCOM	RD	0053	Overhead	LUM HPS RWY 50W	50	44618286-44358106
15	000	OCCOM	RD	0053	Overhead	LUM HPS RWY 50W	50	44618286-44358106
18	000	OCCOM	RD	0053	Overhead	LUM HPS RWY 50W	50	44618286-44358106
19	000	OCCOM	RD	0053	Overhead	LUM HPS RWY 50W	50	44618286-44358106
20	000	OCCOM	RD	0053	Overhead	LUM HPS RWY 50W	50	44618286-44358106
21	000	OCCOM	RD	0053	Overhead	LUM HPS RWY 50W	50	44618286-44358106
22	000	OCCOM	RD	0053	Overhead	LUM HPS RWY 50W	50	44618286-44358106
23	000	OCCOM	RD	0053	Overhead	LUM HPS RWY 50W	50	44618286-44358106
24	000	OCCOM	RD	0053	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	OF PI LEB	ST	0187	Overhead	LUM HPS RWY 100W	100	44618286-44358106
3	000	OF PI LEB	ST	0187	Overhead	LUM HPS RWY 100W	100	44618286-44358106

Pole No	Pole Suffix	Street Name	Street Suffix	Route	Source Type	Bill Print and Tariff Description	Lamp Wattage	Cogsdale Account No
2	000	OLEARY	AVE	0054	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	PARKWAY	ST	0055	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	PINE	DR	0056	Overhead	LUM HPS RWY 50W	50	44618286-44358106
0	097	PINE	DR	0056	Underground	LUM HPS RWY 100W	100	44618286-44358106
0	098	PINE	DR	0056	Underground	LUM HPS RWY 100W	100	44618286-44358106
0	099	PINE	DR	0056	Underground	LUM HPS RWY 100W	100	44618286-44358106
3	000	PINE	DR	0056	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	PLEASANT	ST	0057	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	PLEASANT	ST	0057	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	PROSPECT	ST	0058	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	RAYTON	RD	0059	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	RAYTON	RD	0059	Overhead	LUM HPS RWY 50W	50	44618286-44358106
6	000	RAYTON	RD	0059	Overhead	LUM HPS RWY 50W	50	44618286-44358106
8	000	RAYTON	RD	0059	Overhead	LUM HPS RWY 50W	50	44618286-44358106
10	000	RAYTON	RD	0059	Overhead	LUM HPS RWY 50W	50	44618286-44358106
12	000	RAYTON	RD	0059	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	READ	RD	0061	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	RESERVOIR	RD	0120	Overhead	LUM HPS RWY 250W	250	44618286-44358106
6	000	RESERVOIR	RD	0120	Overhead	LUM HPS RWY 100W	100	44618286-44358106
10	000	RESERVOIR	RD	0120	Overhead	LUM HPS RWY 100W	100	44618286-44358106
13	000	RESERVOIR	RD	0120	Overhead	LUM HPS RWY 100W	100	44618286-44358106
15	000	RESERVOIR	RD	0120	Overhead	LUM HPS RWY 100W	100	44618286-44358106
17	000	RESERVOIR	RD	0120	Overhead	LUM HPS RWY 100W	100	44618286-44358106
8	000	RESERVOIR	RD	0120	Overhead	LUM HPS RWY 100W	100	44618286-44358106
2	000	RESERVOIR	RD	0120	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	RIDGE	RD	0062	Overhead	LUM HPS RWY 50W	50	44618286-44358106
5	000	RIDGE	RD	0062	Overhead	LUM HPS RWY 50W	50	44618286-44358106
16	000	RIP	RD	0063	Overhead	LUM HPS RWY 100W	100	44618286-44358106
2	000	RIP	RD	0063	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	RIP	RD	0063	Overhead	LUM HPS RWY 50W	50	44618286-44358106
6	000	RIP	RD	0063	Overhead	LUM HPS RWY 50W	50	44618286-44358106
8	000	RIP	RD	0063	Overhead	LUM HPS RWY 50W	50	44618286-44358106
10	000	RIP	RD	0063	Overhead	LUM HPS RWY 50W	50	44618286-44358106
12	000	RIP	RD	0063	Overhead	LUM HPS RWY 50W	50	44618286-44358106
14	000	RIP	RD	0063	Overhead	LUM HPS RWY 50W	50	44618286-44358106
18	000	RIP	RD	0063	Overhead	LUM HPS RWY 50W	50	44618286-44358106
20	000	RIP	RD	0063	Overhead	LUM HPS RWY 50W	50	44618286-44358106
21	000	RIP	RD	0063	Overhead	LUM HPS RWY 50W	50	44618286-44358106
23	000	RIP	RD	0063	Overhead	LUM HPS RWY 50W	50	44618286-44358106
25	000	RIP	RD	0063	Overhead	LUM HPS RWY 50W	50	44618286-44358106
27	000	RIP	RD	0063	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	RIPLEY	RD	0064	Overhead	LUM HPS RWY 50W	50	44618286-44358106
37	000	RIVER	RD	0162	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	RIVER RIDGE	RD	0065	Overhead	LUM MV RWY 100W	100	44618286-44358106
5	000	RIVER RIDGE	RD	0065	Overhead	LUM MV RWY 100W	100	44618286-44358106
1	000	RIVER RIDGE	RD	0065	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	RIVERCREST	ST	0104	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	RIVERCREST	ST	0104	Overhead	LUM HPS RWY 50W	50	44618286-44358106
5	000	RIVERCREST	ST	0104	Overhead	LUM HPS RWY 50W	50	44618286-44358106
7	000	RIVERCREST	ST	0104	Overhead	LUM HPS RWY 50W	50	44618286-44358106
9	000	RIVERCREST	ST	0104	Overhead	LUM HPS RWY 50W	50	44618286-44358106
11	000	RIVERCREST	ST	0104	Overhead	LUM HPS RWY 50W	50	44618286-44358106

Pole No	Pole Suffix	Street Name	Street Suffix	Route	Source Type	Bill Print and Tariff Description	Lamp Wattage	Cogsdale Account No
13	000	RIVERCREST	ST	0104	Overhead	LUM HPS RWY 50W	50	44618286-44358106
15	000	RIVERCREST	ST	0104	Overhead	LUM HPS RWY 50W	50	44618286-44358106
7	000	ROPE FERRY	RD	0066	Overhead	LUM HPS RWY 50W	50	44618286-44358106
9	000	ROPE FERRY	RD	0066	Overhead	LUM HPS RWY 50W	50	44618286-44358106
12	000	ROPE FERRY	RD	0066	Overhead	LUM HPS RWY 50W	50	44618286-44358106
14	000	ROPE FERRY	RD	0066	Overhead	LUM HPS RWY 50W	50	44618286-44358106
16	000	ROPE FERRY	RD	0066	Overhead	LUM HPS RWY 50W	50	44618286-44358106
18	000	ROPE FERRY	RD	0066	Overhead	LUM HPS RWY 50W	50	44618286-44358106
5	000	ROPE FERRY	RD	0066	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	ROPE FERRY	RD	0066	Overhead	LUM HPS RWY 50W	50	44618286-44358106
10	001	ROUTE 120	ST	0197	Overhead	LUM HPS RWY 250W	250	44618286-44358106
3	000	ROUTE 120	ST	0197	Overhead	LUM HPS RWY 50W	50	44618286-44358106
5	000	ROUTE 120	ST	0197	Overhead	LUM HPS RWY 50W	50	44618286-44358106
7	000	ROUTE 120	ST	0197	Overhead	LUM HPS RWY 50W	50	44618286-44358106
11	000	ROUTE 120	ST	0197	Overhead	LUM MV RWY 175W	175	44618286-44358106
2	000	RTE120 GRENS	ST	0181	Overhead	LUM HPS RWY 250W	250	44618286-44358106
3	000	RTE120 GRENS	ST	0181	Overhead	LUM HPS RWY 250W	250	44618286-44358106
4	000	RTE120 GRENS	ST	0181	Overhead	LUM HPS RWY 250W	250	44618286-44358106
5	000	RTE120 GRENS	ST	0181	Overhead	LUM HPS RWY 250W	250	44618286-44358106
6	000	RTE120 GRENS	ST	0181	Overhead	LUM HPS RWY 250W	250	44618286-44358106
2	000	SANBORN	RD	0067	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	SARGENT	PL	0068	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	SARGENT	ST	0069	Overhead	LUM HPS RWY 50W	50	44618286-44358106
6	000	SARGENT	ST	0069	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	SARGENT	ST	0069	Overhead	LUM MV RWY 100W	100	44618286-44358106
2	000	SCHOOL	ST	0070	Overhead	LUM HPS RWY 50W	50	44618286-44358106
6	000	SCHOOL	ST	0070	Overhead	LUM HPS RWY 50W	50	44618286-44358106
8	000	SCHOOL	ST	0070	Overhead	LUM HPS RWY 50W	50	44618286-44358106
11	000	SCHOOL	ST	0070	Overhead	LUM HPS RWY 50W	50	44618286-44358106
13	000	SCHOOL	ST	0070	Overhead	LUM HPS RWY 50W	50	44618286-44358106
16	000	SCHOOL	ST	0070	Overhead	LUM HPS RWY 50W	50	44618286-44358106
18	000	SCHOOL	ST	0070	Overhead	LUM HPS RWY 50W	50	44618286-44358106
20	000	SCHOOL	ST	0070	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2287	000	SCHOOL	ST	0070	Overhead	LUM HPS FLD 250W	250	44612181-44357933
4	000	SCHOOL	ST	0070	Overhead	LUM HPS RWY 250W	250	44618286-44358106
9	000	SCHOOL	ST	0070	Overhead	LUM HPS RWY 50W	50	44618286-44358106
24	005	SOUTH	ST		Overhead	LUM LED RWY 30W	30	44612181-44357933
2	000	SOUTH BALCH	ST	0072	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	SOUTH COLLEGE	ST	0166	Overhead	LUM HPS RWY 100W	100	44618286-44358106
9	000	SOUTH MAIN	ST	0073	Overhead	LUM HPS RWY 250W	250	44618286-44358106
11	000	SOUTH MAIN	ST	0073	Overhead	LUM HPS RWY 250W	250	44618286-44358106
14	000	SOUTH MAIN	ST	0073	Overhead	LUM HPS RWY 250W	250	44618286-44358106
16	000	SOUTH MAIN	ST	0073	Overhead	LUM MV RWY 400W	400	44618286-44358106
18	000	SOUTH MAIN	ST	0073	Overhead	LUM HPS RWY 250W	250	44618286-44358106
2	000	SOUTH MAIN	ST	0073	Overhead	LUM HPS RWY 100W	100	44618286-44358106
5	000	SOUTH MAIN	ST	0073	Overhead	LUM HPS RWY 100W	100	44618286-44358106
7	000	SOUTH MAIN	ST	0073	Overhead	LUM HPS RWY 100W	100	44618286-44358106
21	000	SOUTH MAIN	ST	0073	Overhead	LUM HPS RWY 250W	250	44618286-44358106
2	000	SOUTH PARK	ST	0074	Overhead	LUM HPS RWY 100W	100	44618286-44358106
4	000	SOUTH PARK	ST	0074	Overhead	LUM HPS RWY 100W	100	44618286-44358106
6	000	SOUTH PARK	ST	0074	Overhead	LUM HPS RWY 100W	100	44618286-44358106
14	000	SOUTH PARK	ST	0074	Overhead	LUM HPS RWY 100W	100	44618286-44358106

Pole No	Pole Suffix	Street Name	Street Suffix	Route	Source Type	Bill Print and Tariff Description	Lamp Wattage	Cogsdale Account No
15	000	SOUTH PARK	ST	0074	Overhead	LUM HPS RWY 100W	100	44618286-44358106
19	000	SOUTH PARK	ST	0074	Overhead	LUM HPS RWY 100W	100	44618286-44358106
12	000	SOUTH PARK	ST	0074	Overhead	LUM HPS RWY 250W	250	44618286-44358106
10	000	SOUTH PARK	ST	0074	Overhead	LUM HPS RWY 250W	250	44618286-44358106
18	000	SOUTH PARK	ST	0074	Overhead	LUM HPS RWY 250W	250	44618286-44358106
17	000	SOUTH PARK	ST	0074	Overhead	LUM HPS RWY 100W	100	44618286-44358106
8	000	SOUTH PARK	ST	0074	Overhead	LUM HPS RWY 250W	250	44618286-44358106
20	000	SOUTH PARK	ST	0074	Overhead	LUM HPS RWY 250W	250	44618286-44358106
1	000	SPENCER	RD	0075	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	SPENCER	RD	0075	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	SPENCER	RD	0075	Overhead	LUM HPS RWY 50W	50	44618286-44358106
6	000	SPENCER	RD	0075	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	STORRS	RD	0076	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	STORRS	RD	0076	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	STORRS	RD	0076	Overhead	LUM HPS RWY 50W	50	44618286-44358106
7	000	STORRS	RD	0076	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	SUMMER	ST	0077	Overhead	LUM HPS RWY 250W	250	44618286-44358106
7	000	SUNSET ROCK	RD	0361	Overhead	LUM MV RWY 100W	100	44618286-44358106
13	002	THAYER	DR	0088	Overhead	LUM HPS RWY 100W	100	44618286-44358106
2	000	TYLER	RD	0128	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	TYLER	RD	0128	Overhead	LUM HPS RWY 50W	50	44618286-44358106
8	000	TYLER	RD	0128	Overhead	LUM HPS RWY 50W	50	44618286-44358106
10	000	TYLER	RD	0128	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	URD ROUTE	ST	9207	Underground	LUM HPS RWY 100W	100	44618286-44358106
2	000	URD ROUTE	ST	9207	Underground	LUM HPS RWY 100W	100	44618286-44358106
5	000	VALLEY	RD	0078	Overhead	LUM HPS RWY 50W	50	44618286-44358106
7	000	VALLEY	RD	0078	Overhead	LUM HPS RWY 50W	50	44618286-44358106
16	000	VALLEY	RD	0078	Overhead	LUM HPS RWY 50W	50	44618286-44358106
18	000	VALLEY	RD	0078	Overhead	LUM HPS RWY 50W	50	44618286-44358106
20	000	VALLEY	RD	0078	Overhead	LUM HPS RWY 50W	50	44618286-44358106
14	000	VALLEY	RD	0078	Overhead	LUM HPS RWY 100W	100	44618286-44358106
9	000	VALLEY	RD	0078	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	VALLEY	RD	0078	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	VERONA	AVE	0080	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	VERONA	AVE	0080	Overhead	LUM HPS RWY 50W	50	44618286-44358106
5	000	WEATHERBY	RD	0081	Overhead	LUM HPS RWY 50W	50	44618286-44358106
11	000	WEBSTER	AVE	0082	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	WEBSTER	AVE	0082	Underground	LUM HPS RWY 100W	100	44618286-44358106
4	000	WEBSTER	AVE	0082	Underground	LUM HPS RWY 100W	100	44618286-44358106
5	000	WEBSTER	AVE	0082	Underground	LUM HPS RWY 100W	100	44618286-44358106
6	000	WEBSTER	AVE	0082	Underground	LUM HPS RWY 100W	100	44618286-44358106
7	000	WEBSTER	AVE	0082	Underground	LUM HPS RWY 100W	100	44618286-44358106
9	000	WEBSTER	AVE	0082	Underground	LUM HPS RWY 100W	100	44618286-44358106
1	000	WEBSTER	TER	0084	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	WEBSTER	TER	0084	Overhead	LUM HPS RWY 50W	50	44618286-44358106
8	000	WEBSTER	AVE	0082	Underground	LUM HPS RWY 100W	100	44618286-44358106
12	000	WEBSTER	AVE	0082	Overhead	LUM HPS RWY 50W	50	44618286-44358106
1	000	WEST	ST	0086	Overhead	LUM MV RWY 175W	175	44618286-44358106
3	000	WEST	ST	0086	Overhead	LUM HPS RWY 100W	100	44618286-44358106
5	000	WEST	ST	0086	Overhead	LUM HPS RWY 100W	100	44618286-44358106
7	000	WEST	ST	0086	Overhead	LUM HPS RWY 100W	100	44618286-44358106
7	000	WEST LEBANON	RD	0122	Overhead	LUM HPS RWY 100W	100	44618286-44358106

Pole No	Pole Suffix	Street Name	Street Suffix	Route	Source Type	Bill Print and Tariff Description	Lamp Wattage	Cogsdale Account No
9	000	WEST LEBANON	RD	0122	Overhead	LUM HPS RWY 100W	100	44618286-44358106
1	000	WEST LEBANON	RD	0122	Overhead	LUM HPS RWY 250W	250	44618286-44358106
11	000	WEST LEBANON	RD	0122	Overhead	LUM HPS RWY 250W	250	44618286-44358106
3	000	WEST LEBANON	RD	0122	Overhead	LUM MV RWY 175W	175	44618286-44358106
5	000	WEST LEBANON	RD	0122	Overhead	LUM MV RWY 175W	175	44618286-44358106
4	000	WEST SOUTH	ST	0085	Overhead	LUM HPS FLD 250W	250	44612181-44357933
2	000	WEST SOUTH	ST	0085	Overhead	LUM HPS RWY 100W	100	44618286-44358106
3	000	WEST SOUTH	ST	0085	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	WEST SOUTH	ST	0085	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	WEST WHEELOCK	ST	0087	Overhead	LUM HPS RWY 250W	250	44618286-44358106
16	000	WEST WHEELOCK	ST	0087	Overhead	LUM HPS RWY 100W	100	44618286-44358106
6	001	WEST WHEELOCK	ST	0087	Overhead	LUM HPS RWY 250W	250	44618286-44358106
8	000	WEST WHEELOCK	ST	0087	Overhead	LUM HPS RWY 250W	250	44618286-44358106
10	000	WEST WHEELOCK	ST	0087	Overhead	LUM HPS RWY 250W	250	44618286-44358106
12	000	WEST WHEELOCK	ST	0087	Overhead	LUM HPS RWY 250W	250	44618286-44358106
12	099	WEST WHEELOCK	ST	0087	Overhead	LUM HPS RWY 250W	250	44618286-44358106
14	001	WEST WHEELOCK	ST	0087	Overhead	LUM HPS RWY 250W	250	44618286-44358106
15	000	WEST WHEELOCK	ST	0087	Overhead	LUM HPS RWY 250W	250	44618286-44358106
18	000	WEST WHEELOCK	ST	0087	Overhead	LUM HPS RWY 250W	250	44618286-44358106
1	000	WEST WHEELOCK	ST	0087	Overhead	LUM HPS RWY 250W	250	44618286-44358106
9	002	WEST WHEELOCK	ST	0087	Overhead	LUM HPS RWY 250W	250	44618286-44358106
13	000	WEST WHEELOCK	ST	0087	Overhead	LUM HPS RWY 250W	250	44618286-44358106
20	003	WEST WHEELOCK	ST	0087	Overhead	LUM HPS RWY 250W	250	44618286-44358106
21	000	WEST WHEELOCK	ST	0087	Overhead	LUM HPS RWY 250W	250	44618286-44358106
2	000	WILLOW SPRING	LN	0089	Overhead	LUM HPS RWY 50W	50	44618286-44358106
3	000	WILLOW SPRING	LN	0089	Overhead	LUM HPS RWY 50W	50	44618286-44358106
5	000	WILLOW SPRING	LN	0089	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	WOODMORE	DR	0119	Overhead	LUM HPS RWY 100W	100	44618286-44358106
6	000	WOODMORE	DR	0119	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	WOODROW	RD	0090	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	WREN	LN	0091	Overhead	LUM HPS RWY 50W	50	44618286-44358106
2	000	WYETH	RD	0092	Overhead	LUM HPS RWY 50W	50	44618286-44358106
4	000	WYETH	RD	0092	Overhead	LUM HPS RWY 50W	50	44618286-44358106
6	000	WYETH	RD	0092	Overhead	LUM HPS RWY 50W	50	44618286-44358106
8	000	WYETH	RD	0092	Overhead	LUM HPS RWY 50W	50	44618286-44358106

Existing Lamps	Count
LUM HPS RWY 50W	259
LUM HPS RWY 100W	133
LUM HPS RWY 250W	57
LUM LED RWY 30W	15
LUM LED RWY 50W	19
LUM MV RWY 400W	2
LUM LED POST 50W	4
LUM MV RWY 100W	7
LUM MV RWY 175W	5
LUM HPS FLD 250W	2

## **Appendix E**

**Liberty Utilities' standards for streetlight brackets.**

**1. APPLICATION** – This STANDARD covers specifications for aluminum brackets used to install horizontal roadway luminaires on wood poles.

**2. SPECIFICATION** – All wood pole streetlight brackets shall conform to the following specification:

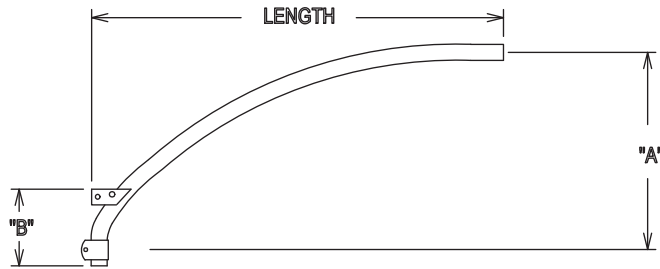


Figure 1 - Upsweep Pipe Bracket

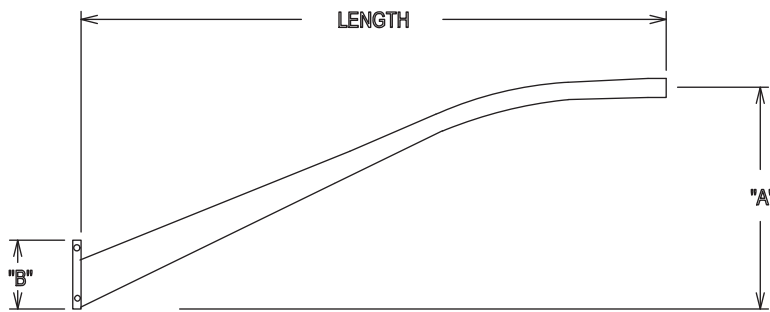


Figure 2 - Tapered Elliptical Bracket

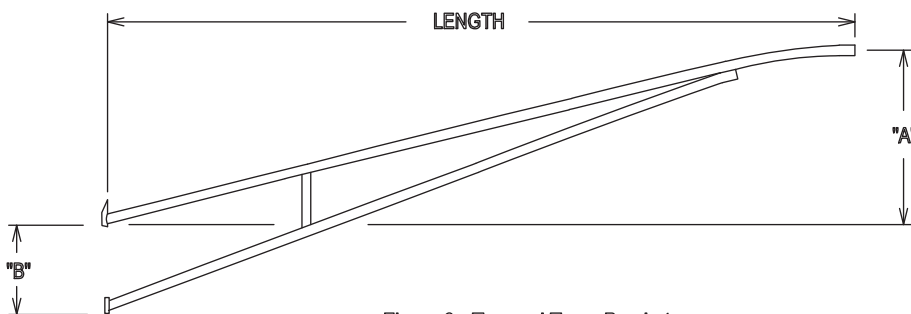


Figure 3 - Tapered Truss Bracket



	<b>STREETLIGHT BRACKETS</b>	<b>LU-MS6310</b> Page 2 of 4
	<b>Material Specification</b>	Ver. 1.0 – 12/15 Issue

**General** – Bracket, streetlight, material and physical details in accordance with Table I. Bracket styles shall be substantially in accordance with Figures 1 through 3. All brackets shall be in accordance with ANSI C-136.13, latest issue, unless noted otherwise within this specification.

### **Load Supporting Rating –**

**UPSWEEP PIPE BRACKETS** – These brackets shall be capable of supporting a horizontal roadway style luminaire with a maximum effective projected area of 1.0 square feet and a maximum weight of 50 pounds when subjected to a sustained 90 MPH wind.

**TAPERED ELLIPTICAL BRACKETS** - These brackets shall be capable of supporting a horizontal roadway style luminaire with a maximum effective projected area of 2.0 square feet and a maximum weight of 80 pounds when subjected to a sustained 90 MPH wind.

**TAPERED TRUSS BRACKETS** - These brackets shall be capable of supporting a horizontal roadway style luminaire with a maximum effective projected area of 2.0 square feet and a maximum weight of 80 pounds when subjected to a sustained 90 MPH wind.

**Pole Attachment** – All brackets shall be designed to be attached to a round wood pole with a diameter of 7-inches to 10-inches, inclusive.

**UPSWEEP PIPE BRACKETS** – These brackets shall have two fixed, welded, pole plates. Attachment to the wood pole shall be accomplished using one 5/8" square head thru bolt and two ½" lag screws (hardware supplied by others). The thru bolt hole shall be keyhole shaped and shall be positioned such that the square head thru bolt head is visible when the bracket is installed.

**TAPERED ELLIPTICAL BRACKETS** - These brackets shall have one fixed, welded, pole plate. Attachment to the wood pole shall be accomplished using one 5/8" square head thru bolt and two ½" lag screws (hardware supplied by others). The thru bolt hole shall be keyhole shaped and shall be positioned such that the square head thru bolt head is visible when the bracket is installed.

**TAPERED TRUSS BRACKETS** – Each truss member shall have a fixed, welded, pole plate. Attachment to the wood pole shall be accomplished using one 5/8" square head thru bolt and two ½" lag screws on the upper pole plate and two ½" lag screws on the lower pole plate (hardware supplied by others). The thru bolt hole shall be keyhole shaped and shall be positioned such that the square head thru bolt head is visible when the bracket is installed.

**Wiring Access** – All brackets shall accommodate internal wiring. All pipe ends which will carry electrical conductors shall be chamfered to avoid cutting or nicking the wiring insulation. Tapered Elliptical brackets shall include a grommeted hole on the underside near the pole end for wiring access. Tapered truss brackets shall use the upper truss member as the wiring path and shall include a grommeted hole on the underside near the pole end for wiring access.

**Luminaire Attachment** – The luminaire end of all brackets shall include a tenon designed to accept a horizontal roadway luminaire with a slipfitter designed to accept 2" pipe. The bracket tenon shall be in accordance with ANSI C136.3, latest issue.

**Grounding** – All brackets shall include a captive bolt, washer, lock washer, and nut for the exclusive purpose of grounding the bracket with a #4 AWG copper wire lead.


**Surface Finish** – All brackets shall have a natural finish, free of dents and scratches, and requiring no surface preparation, painting, or maintenance.

**Identification** – All brackets shall be permanently stamped in a field readable location near the pole end with the manufacturer ID and date of manufacture.

### **3. BRACKET PHYSICAL DETAILS** - See Table I.

**TABLE I**

<b>Bracket Length</b>	<b>Bracket Style</b>	<b>Material</b>	<b>Luminaire Attachment Tenon</b>	<b>Maximum Rise "A" (see Figures 1 – 3)</b>	<b>Maximum Pole Space "B" (see Figures 1 – 3)</b>	<b>Approximate Bracket Weight</b>
2 foot	Upsweep Pipe	aluminum	2 inch	2 inches	12 inches	6 pounds
4 foot	Upsweep Pipe	aluminum	2 inch	22 inches	12 inches	8 pounds
6 foot	Upsweep Pipe	aluminum	2 inch	28 inches	12 inches	11 pounds
6 foot	Tapered Elliptical	aluminum	2 inch	30 inches	12 inches	13 pounds
8 foot	Upsweep Pipe	aluminum	2 inch	30 inches	12 inches	15 pounds
8 foot	Tapered Elliptical	aluminum	2 inch	30 inches	12 inches	18 pounds
10 foot	Tapered Truss	aluminum	2 inch	39 inches	24 inches	25 pounds
12 foot	Tapered Truss	aluminum	2 inch	39 inches	24 inches	28 pounds
16 foot	Tapered Truss	aluminum	2 inch	39 inches	24 inches	45 pounds
20 foot	Tapered Truss	aluminum	2 inch	39 inches	24 inches	60 pounds

	<b>STREETLIGHT BRACKETS</b>	<b>LU-MS6310</b> Page 4 of 4
	<b>Material Specification</b>	Ver. 1.0 – 12/15 Issue

**4. ITEM ID** – See Table II.

**TABLE II**

<b>Standard Item #</b>	<b>Item ID</b>	<b>Description</b>
SB02	<i>future item</i>	2 foot ,Upsweep Pipe, Aluminum Streetlight Bracket
SB04	8830-5820352	4 foot ,Upsweep Pipe, Aluminum Streetlight Bracket
SB06	8830-0811030	6 foot ,Upsweep Pipe, Aluminum Streetlight Bracket
SB06A	8830-5820378	6 foot ,Tapered Elliptical, Aluminum Streetlight Bracket
SB08	8830-0811029	8 foot ,Upsweep Pipe, Aluminum Streetlight Bracket
SB08A	8830-5820379	8 foot ,Tapered Elliptical, Aluminum Streetlight Bracket
SB10	8830-5820487	10 foot ,Tapered Truss, Aluminum Streetlight Bracket
SB12	8830-5820468	12 foot ,Tapered Truss, Aluminum Streetlight Bracket
SB16	8830-5820563	16 foot ,Tapered Truss, Aluminum Streetlight Bracket
SB20	8830-9200483	20 foot ,Tapered Truss, Aluminum Streetlight Bracket

<b><u>Version</u></b>	<b><u>Date</u></b>	<b><u>Description of Revision</u></b>
1.0	12/01/15	Initial Version of Document – Revised and updated from National Grid

**1. APPLICATION** – This STANDARD covers specifications for aluminum brackets used to install floodlight luminaires on wood poles.

**2. SPECIFICATION** – All wood pole floodlight brackets shall conform to the following specification:

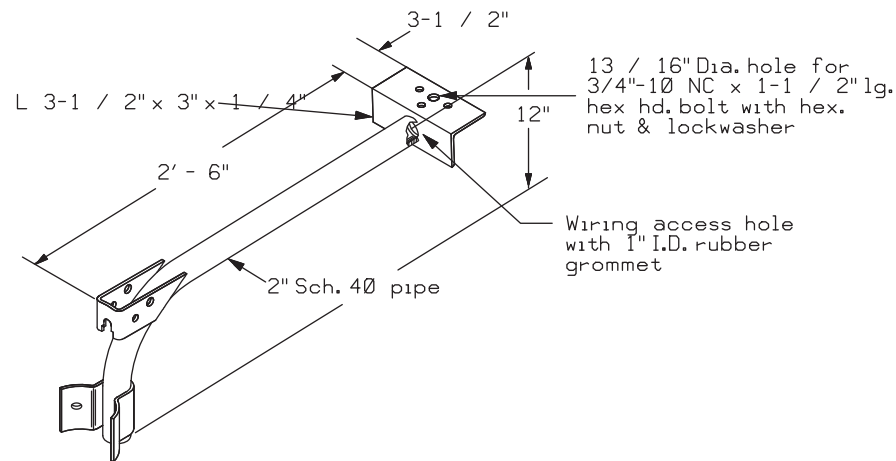


Figure 1 - Bracket for Single Floodlight Installation

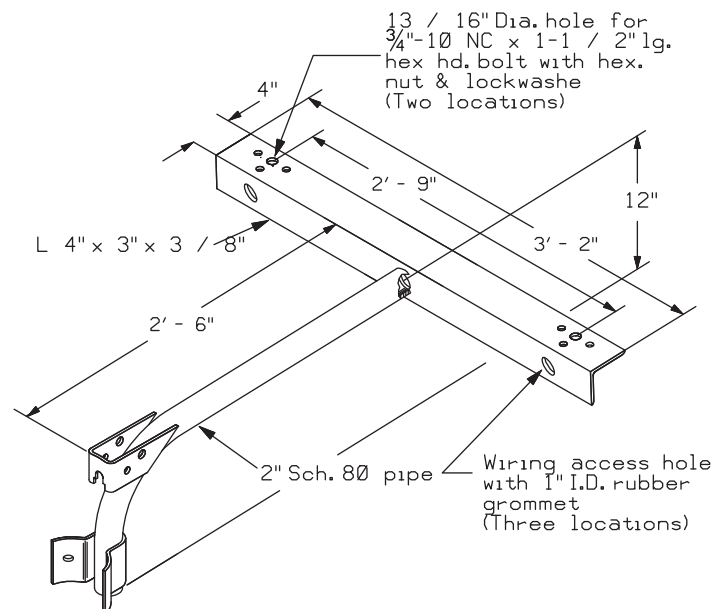


Figure 2 - Bracket for Twin Floodlight Installation

	<b>FLOODLIGHT BRACKETS</b>	<b>LU-MS6320</b> Page 2 of 3
	<b>Material Specification</b>	Ver. 1.0 – 10/15 Issue

**General** – Bracket, floodlight, material and physical details in accordance with Table I. Bracket styles shall be substantially in accordance with Figures 1 or 2.

**Load Supporting Rating** – Floodlight brackets shall be capable of supporting one or two floodlight luminaires, each one having a maximum effective projected area of 3.5 square feet and a weight of 60 pounds when subjected to a sustained 90 MPH wind.

**Pole Attachment** – Floodlight brackets shall be designed to be attached to a round wood pole with a diameter of 7 inches to 10 inches, inclusive. Floodlight brackets shall have two fixed, welded, pole plates. Attachment to the wood pole shall be accomplished using one  $\frac{5}{8}$ " square head thru bolt and two  $\frac{1}{2}$ " lag screws (hardware supplied by others). The thru bolt hole shall be keyhole shaped and shall be positioned such that the square head thru bolt head is visible when the bracket is installed.

**Wiring Access** – All brackets shall accommodate internal wiring. All pipe ends which will carry electrical conductors shall be chamfered to avoid cutting or nicking the wiring insulation. The wiring opening at the luminaire end shall be grommited. The twin floodlight bracket shall include two additional grommited holes in the vertical section of the angle iron, in line with the luminaire attachment bolts, to aid in dressing the wiring.

**Luminaire Attachment** – Floodlight brackets shall include a fixed, welded, angle iron for luminaire attachment. Floodlight brackets shall accommodate a trunnion style floodlight mounting with full 360 degree adjustment. Floodlight bracket shall include one  $\frac{3}{4}$ " x  $1\frac{1}{2}$ " stainless steel bolt, nut, and lock washer for each floodlight luminaire to be mounted.

**Grounding** – All floodlight brackets shall include a captive bolt, washer, lock washer, and nut for the exclusive purpose of grounding the bracket with a #4 AWG copper wire lead.

**Surface Finish** – All floodlight brackets shall have a natural finish, free of dents and scratches, and requiring no surface preparation, painting, or maintenance.

**Identification** – All brackets shall be permanently stamped in a field readable location near the pole end with the manufacturer's ID and date of manufacture.

	<b>FLOODLIGHT BRACKETS</b>	<b>LU-MS6320</b> Page 3 of 3
	<b>Material Specification</b>	Ver. 1.0 – 10/15 Issue

### **3. FLOODLIGHT BRACKET PHYSICAL DETAILS** - See Table I.

**TABLE I**

<b>Bracket Length</b>	<b>Bracket Style</b>	<b>Material</b>	<b>Pipe Size</b>	<b>Angle Iron Size</b>	<b>Approximate Bracket Weight</b>
30 inch	Single Floodlight	aluminum	2" - schedule 40	3½" x 3" x ¼" - 8" length	7 pounds
30 inch	Twin Floodlight	aluminum	2" - schedule 80	4" x 3" x ⅜" - 36" length	17 pounds

### **4. ITEM ID** – See Table II.

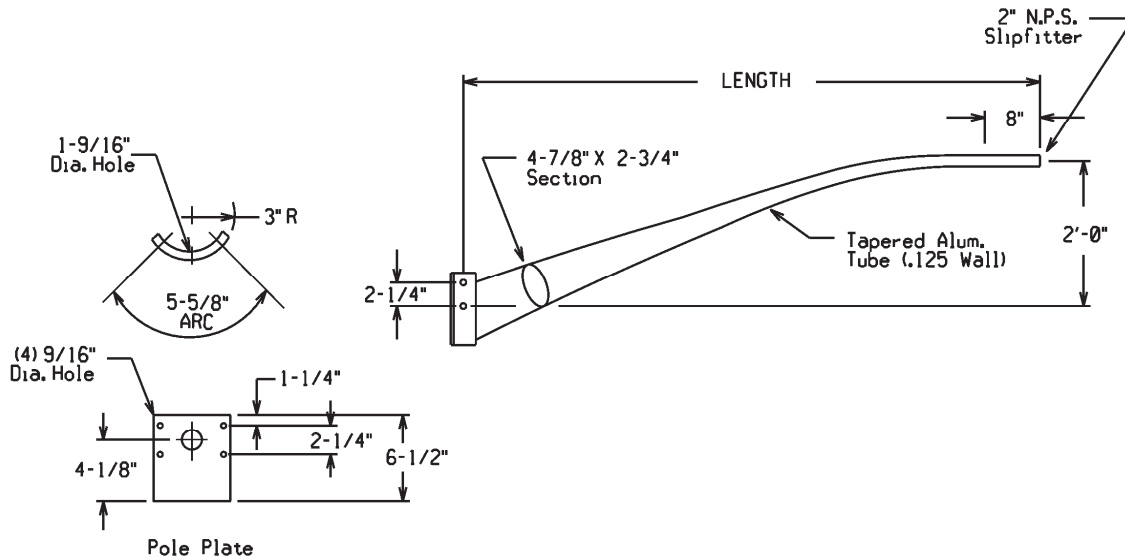
**TABLE II**

<b>Standard Item #</b>	<b>Item ID</b>	<b>Description</b>
SB30	8830-0811027	30" Floodlight Bracket – for single floodlight installation
SB31	8830-0811032	30" Floodlight Bracket – for twin floodlight installation

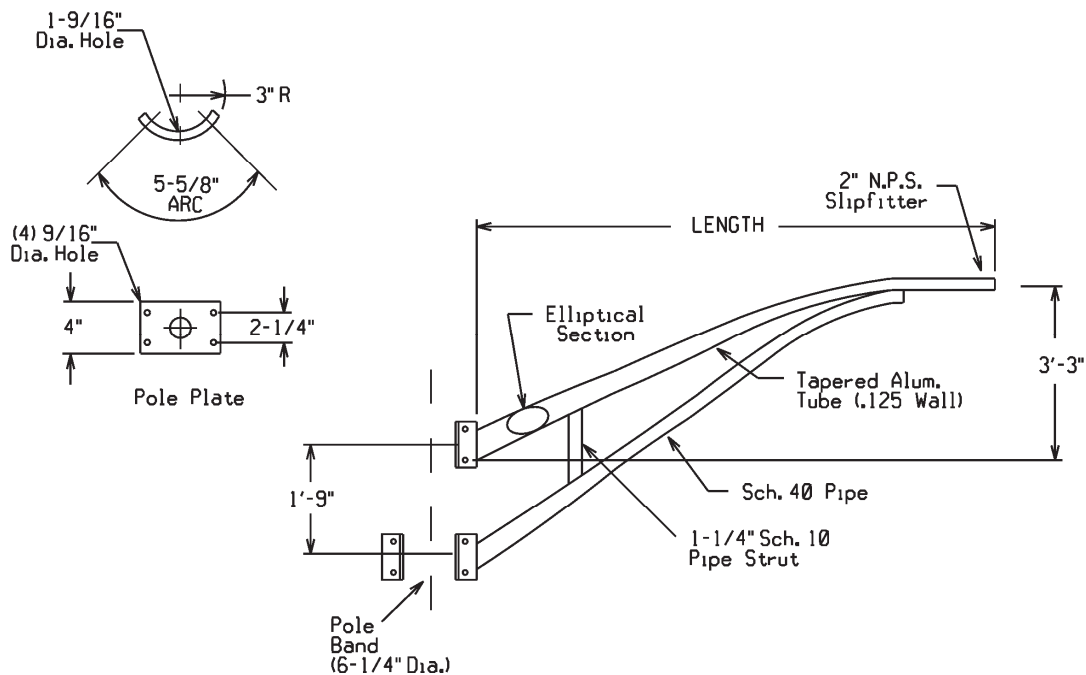
<b><u>Version</u></b>	<b><u>Date</u></b>	<b><u>Description of Revision</u></b>
1.0	10/01/15	Initial Version of Document

**1. APPLICATION** – Aluminum streetlight arms are used to install horizontal roadway luminaires on aluminum pendant poles.

**2. SPECIFICATIONS** - All aluminum streetlight arms for aluminum pendant poles shall conform to the following specifications, including Figures 1 and 2 and Table I.



**Figure 1 – Tapered Elliptical Aluminum Arm**



**Figure 2 – Tapered Truss Aluminum Arm**

 Liberty Utilities	<b>STREETLIGHT ARMS FOR ALUMINUM PENDANT POLES</b>	<b>LU-MS6711</b> Page 2 of 2
	<b>Material Specification</b>	Ver. 1.0 – 12/15 Issue

**General:** - Arm, streetlight, aluminum, for installation on aluminum pendant pole. Arms shall be in accordance with Figures 1 or 2, and Table 1.

**Load Supporting Rating:** - All arms shall be rated capable of supporting a horizontal roadway luminaire with a maximum weight of 80 pounds and a maximum effective projected area of 2.0 square feet when subjected to a sustained 90 MPH wind.

**Pole attachment:** - All arms shall be designed to be attached to an aluminum pole with an outside diameter of 6.0 inches.

**TAPERED ELLIPTICAL ARMS** - These arms shall have one welded, fixed pole plate. This plate shall accommodate attachment to the aluminum pole with (4) ½" x 1½" long, stainless steel, hex head bolts, nuts, washers, and lock washers (hardware is to be provided attached to the arm.)

**TAPERED TRUSS ARMS** - Each truss member shall have a fixed, welded pole plate. The upper pole plate shall accommodate attachment to the aluminum pole with four ½" x 1½" long, stainless steel, hex head bolts, nuts, washers and lock washers. The lower pole plate shall clamp around the perimeter of the pole using a pole band and (4) ½" x 2½" long stainless steel, hex head, bolts, nuts, washers and lock washers. (all hardware is to be provided attached to the truss arm.)

**Wiring Access:** - All arms shall accommodate internal wiring. All pipe ends which will carry conductors shall be chamfered to avoid cutting or nicking the wiring insulation. Tapered truss arms shall use the upper truss member as the wiring path.

**Luminaire Attachment:** - The luminaire end of all arms shall accommodate a horizontal roadway style luminaire. The arm tenon shall be 2" O.D. and be in accordance with ANSI C136.3, latest issue.

**Surface Finish:** - All arms shall have a natural finish, free of dents and scratches, and requiring no surface preparation, painting, or maintenance.

**Identification:** - All arms shall be permanently stamped in a field readable location near the pole end with the manufacturer I.D. and date of manufacturer.

### **3. ITEM ID** - See Table I.

**TABLE I**

STANDARD ITEM	ITEM ID	DESCRIPTION
ST01X1	8830-0811023	6 Foot Tapered Elliptical Arm for Aluminum Pendant Pole
ST01X2	8830-0811024	8 Foot Tapered Elliptical Arm for Aluminum Pendant Pole
ST01X3	8830-0811026	10 Foot Tapered Truss Arm for Aluminum Pendant Pole
ST01X4	8830-0811025	12 Foot Tapered Truss Arm for Aluminum Pendant Pole
ST01X5	8830-9202269	16 Foot Tapered Truss Arm for Aluminum Pendant Pole

<b><u>Version</u></b>	<b><u>Date</u></b>	<b><u>Description of Revision</u></b>
1.0	12/01/15	Initial Version of Document – Revised and updated from National Grid



# **Appendix F**

## **Pole top Luminaire & Flood lights**

# Lumark

## DESCRIPTION

The Night Falcon™ LED floodlight luminaire combines high-efficiency optics, superior thermal management and energy efficiency in a cost-effective solution. The compact, robust design incorporates a separate driver compartment for maximum heat dissipation to insure longevity of both the fixture and the LEDs. The Night Falcon luminaire uses precision engineered optics delivering superior uniformity and excellent illumination to the targeted application. Typical applications include area lighting for security, building facade lighting, accent and signage lighting in both commercial and industrial applications. The Night Falcon luminaire is UL/cUL listed for wet locations and is IP66 rated.

## SPECIFICATION FEATURES

### Construction

Heavy-duty, die-cast aluminum housing, driver compartment and driver housing door. A separate driver compartment and external fins provide optimal thermal management that result in longer LED and driver life. The housing, driver compartment and optical chamber are IP66 rated. Access to the driver for maintenance is achieved with a removable driver door using pan head screws. A one-piece silicone gasket seals the door to the fixture housing. The fixture is 3G vibration rated (ANSI C136.31) to ensure durability in area and site lighting applications. Suitable for mounting within 4' (1.2m) of the ground.

### Optics

The LED chamber incorporates a vacuum metalized reflector that provides high-efficiency illumination. Optics are precisely designed to shape the the NEMA 6H x 6V wide distribution and the 3H x 3V spot distribution, maximizing efficiency and application spacing. Clear glass tempered lens with full circumference form-in-place silicone gasket protects the optics from damage. Offered standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 5700K, 5000K and 3000K CCT and minimum 70 CRI are available.

### Electrical

LED driver is mounted to the removable die-cast aluminum door for optimal heat sinking and ease of maintenance. 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. Integral 6kV surge is standard. 10kV/10kA common- and differential- mode surge protection available as an option. 0-10V dimming driver is available to accommodate controls capability such as dimming and occupancy. Standard NEMA 3-PIN twistlock photocontrol receptacle and NEMA 7-PIN twistlock photocontrol receptacles are available as options. Suitable for ambient temperatures from -40°C to 40°C. Optional 50°C HA (high ambient) available. 92% lumen maintenance greater than 60,000 hours per IESNA TM-21 at 25°C.

### Accessories

Heavy-duty steel top and side visors control glare and spill light. 1/8" thick UV stabilized vandal guard shields glass lens from impact when mounted at low levels. Easy to install wire guard features a heavy-gauge welded construction with corrosion resistant polyester powder coat finish to protect glass from projected objects.

### Mounting

Mounting options include an integral die-cast aluminum slipfitter that is preset to a tilt of 45°. The knuckle base is supplied with a tooth lock adjustment that can be adjusted in 5° increments to provide flexibility in aiming the fixture from a variety of surfaces. Visual 15° adjustment indicators on the knuckle allow for 180° field rotation of the floodlight assembly. The slipfitter fits standard 2-3/8"-3" O.D. tenon. The trunnion mounting includes a 3/16" polyester powder coated galvanized steel trunnion with a 16/3 SOW cord. The trunnion mount uses an interlocking slide adjustment that is locked into place with a set screw.

### Finish

Housing and cast parts finished in five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard color is carbon bronze. Additional colors available in summit white, white, grey, bronze, black, dark platinum and graphite metallic. Consult your lighting representative at Eaton for a complete selection of standard colors.

### Warranty

Five-year warranty.



## NFFLD NIGHT FALCON

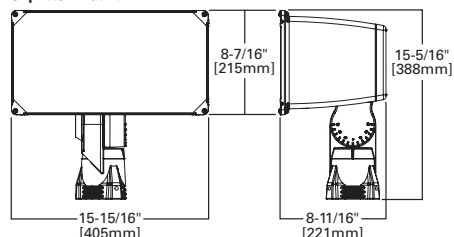
Solid State LED

FLOODLIGHT

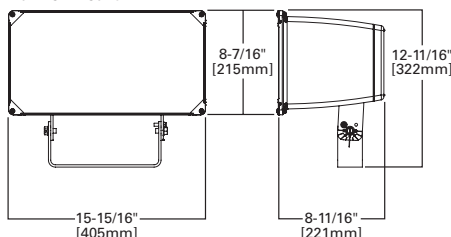


## DIMENSIONS

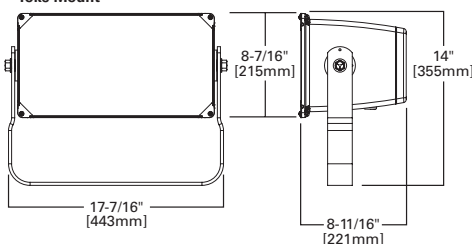
### Slipfitter Mount



### Trunnion Mount



### Yoke Mount



## CERTIFICATION DATA

UL/cUL Wet Location Listed  
IP66 Fixture and Optical Chamber  
LM79/LM80 Compliant  
3G Vibration Rated  
RoHS Compliant  
DesignLights Consortium® Qualified\*

## ENERGY DATA

**Electronic LED Driver**  
> 0.9 Power Factor  
< 20% Total Harmonic Distortion  
120V 50/60Hz, 347V/60Hz and 480V/60Hz  
-40°C Minimum Ambient Temperature Rating  
+40°C Maximum Ambient Temperature Rating

## EPA

Effective Projected Area (Sq. Ft.): 1.25

## SHIPPING DATA

Approximate Net Weight:  
20 lbs. (9.09 kgs.)



\*www.designlights.org

TD506007EN  
February 6, 2018 12:05 PM

## POWER AND LUMENS

	6x6				3x3			
C25 LED	NFFLD-C25	NFFLD-C25-7030	NFFLD-C25-7050	NFFLD-C25-7060	NFFLD-C25	NFFLD-C25-7030	NFFLD-C25-7050	NFFLD-C25-7060
Delivered Lumens	10,530	10,122	10,383	10,217	10,272	9,874	10,128	9,967
CCT (Kelvin)	4000K	3000K	5000K	5700K	4000K	3000K	5000K	5700K
CRI (Color Rendering Index)	70	70	70	70	70	70	70	70
Power Consumption (Watts)	85W	85W	85W	85W	93W	93W	93W	93W
C40 LED	NFFLD-C40	NFFLD-C40-7030	NFFLD-C40-7050	NFFLD-C40-7060	NFFLD-C40	NFFLD-C40-7030	NFFLD-C40-7050	NFFLD-C40-7060
Delivered Lumens	16,932	16,268	16,686	16,421	14,113	13,567	13,916	13,694
CCT (Kelvin)	4000K	3000K	5000K	5700K	4000K	3000K	5000K	5700K
CRI (Color Rendering Index)	70	70	70	70	70	70	70	70
Power Consumption (Watts)	128W	128W	128W	128W	143W	143W	143W	143W
C55 LED	NFFLD-C55	NFFLD-C55-7030	NFFLD-C55-7050	NFFLD-C55-7060				
Delivered Lumens	19,943	19,407	20,144	20,285				
CCT (Kelvin)	4000K	3000K	5000K	5700K				
CRI (Color Rendering Index)	70	70	70	70				
Power Consumption (Watts)	145W	145W	145W	145W				
C70 LED	NFFLD-C70	NFFLD-C70-7030	NFFLD-C70-7050	NFFLD-C70-7060				
Delivered Lumens	23,797	23,157	24,037	24,205				
CCT (Kelvin)	4000K	3000K	5000K	5700K				
CRI (Color Rendering Index)	70	70	70	70				
Power Consumption (Watts)	184W	184W	184W	184W				

## CURRENT DRAW

Voltage (V)	Model Series					
	6x6				3x3	
	NFFLD-C25	NFFLD-C40	NFFLD-C55	NFFLD-C70	NFFLD-C25	NFFLD-C40
	Current (A)	Current (A)	Current (A)	Current (A)	Current (A)	Current (A)
120V	0.708	1.070	1.2299	1.5695	0.778	1.190
277V	0.340	0.465	0.535	0.6726	0.340	0.531
347V	0.251	0.377	0.4213	0.5334	0.271	0.419
480V	0.195	0.273	0.3044	0.3831	0.207	0.320

## LUMEN MAINTENANCE

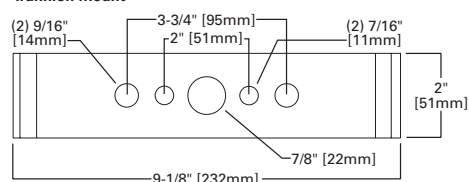
Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)	Theoretical L70 (Hours)
<b>6H x 6V (Wide)</b>		
25°C	> 94.55%	> 388,000
40°C	> 93.58%	> 327,000
50°C	--	--
<b>3H x 3V (Spot)</b>		
25°C	>92.18%	>262,000
40°C	>91.81%	>249,000

## LUMEN MULTIPLIER

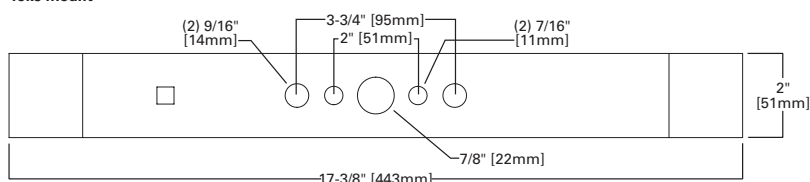
Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)
10°C	1.03
15°C	1.02
25°C	1.00
40°C	0.97
50°C	0.96

## DRILLING PATTERNS

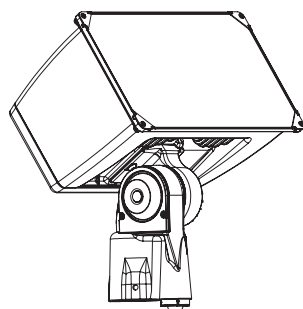
Trunnion Mount



Yoke Mount

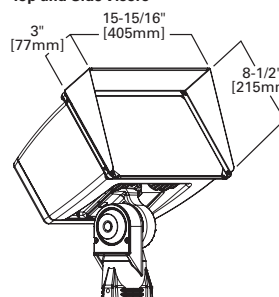


## OPTIONAL INTEGRATED SENSOR

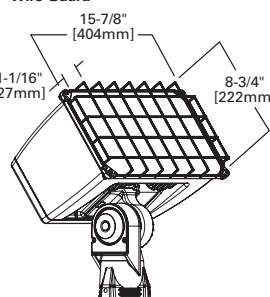


## ACCESSORIES

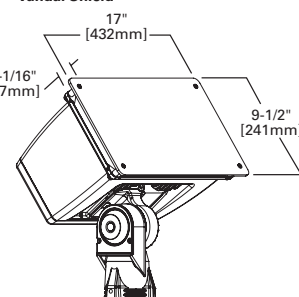
Top and Side Visors



Wire Guard



Vandal Shield



## ORDERING INFORMATION

Sample Number: NFFLD-C40-E-UNV-66-S-CB-PER

Product Family <sup>1</sup>	Light Engine <sup>2</sup>	Driver <sup>3</sup>	Voltage	Distribution	Mounting	Color
NFFLD=Night Falcon LED Floodlight	C25=10,500 Nominal Lumens C40=16,900 Nominal Lumens C55=20,000 Nominal Lumens C70=24,000 Nominal Lumens	E=Non-Dimming D=Dimming (0-10V)	UNV=120-277V 347=347V <sup>4</sup> 480=480V <sup>4</sup>	66=NEMA 6H x 6V Wide 33=NEMA 3H x 3V Wide <sup>5</sup>	S=Slipfitter <sup>6</sup> T=Trunnion Y=Yoke	CB=Carbon Bronze (Standard) BK=Black BZ=Bronze AP=Grey WH=White WHT=Summit White DP=Dark Platinum GM=Graphite Metallic
Options (Add as Suffix)				Accessories (Order Separately) <sup>11</sup>		
<b>7030=70 CRI / 3000K</b> <sup>7</sup> <b>7050=70 CRI / 5000K</b> <sup>7</sup> <b>7060=70 CRI / 5700K</b> <sup>7</sup> <b>PER=NEMA 3-PIN Twistlock Photocontrol Receptacle</b> <b>PER7=NEMA 7-PIN Twistlock Photocontrol Receptacle</b> <sup>8</sup> <b>10K=10kV/10kA UL 1449 Surge Protective Device</b> <b>HA=50°C High Ambient Temperature</b> <b>D10=&lt;10% Dimming</b> <sup>8</sup> <b>MSP/DIM-L12=Integrated Sensor for Dimming Operation, 8' - 12' Mounting Height</b> <sup>9,10</sup> <b>MSP/DIM-L30=Integrated Sensor for Dimming Operation, 12' - 30' Mounting Height</b> <sup>9,10</sup> <b>MSP-L12=Integrated Sensor for ON/OFF Operation, 8' - 12' Mounting Height</b> <sup>9,10</sup> <b>MSP-L30=Integrated Sensor for ON/OFF Operation, 12' - 30' Mounting Height</b> <sup>9,10</sup>				<b>FA63=3" O.D. Surface Mount Bracket</b> <sup>12</sup> <b>OA1223=10kV/10kA UL 1449 Surge Protective Device Replacement</b> <b>OA/RA1013=Photocontrol Shorting Cap</b> <b>OA/RA1014=NEMA Photocontrol - 120V</b> <b>OA/RA1016=NEMA Photocontrol - Multi-Tap</b> <b>OA/RA1027=NEMA Photocontrol - 480V</b> <b>OA/RA1201=NEMA Photocontrol - 347V</b> <b>RAB-XX=Right Angle Pipe Bracket for Slipfitter</b> <b>SAB-XX=Steel Angle Bracket for Trunnion</b> <b>TYS-XX=Slipfitter Adapter for 2-3/8", 3" or 3-1/2" O.D. Tenon</b> <sup>13</sup> <b>TS2/NFFLD-XX=Top and Side Visors</b> <sup>14</sup> <b>Possible optional accessory of interest to the City.</b> <b>VS/NFFLD=Vandal Shield</b> <sup>14</sup> <b>WG/NFFLD=Wire Guard</b> <sup>14</sup> <b>ISHH-01=Integrated Sensor Programming Remote</b>		

### NOTES:

- DesignLights Consortium® Qualified. Refer to [www.designlights.org](http://www.designlights.org) Qualified Products List under Family Models for details.
- Standard 4000K CCT and minimum 70 CRI. Consult IES file for actual lumen output.
- Consult factory for driver surge protection values.
- Not recommended for use with ungrounded, delta configured systems.
- Only available in C25 and C40 light engines.
- Fits 2-3/8" to 3" O.D. tenon, wire leads run through slipfitter.
- Extended lead times apply. Use dedicated IES files for 3000K and 5700K when performing layouts. These files are published on the Night Falcon luminaire product page on the website.
- Must order with dimming driver.
- 0-10V dimming driver required. Integrated sensor option only available in slipfitter mounting.
- Not available with Photocontrol.
- Replace XX with color designation. Additional brackets and adaptors available on the poles product page on the website.
- Not available with tenon mount.
- Not available with slipfitter mount.
- Cannot combine TS2 (Top and Side Visor), VS (Vandal Shield), or WG (Wire Guard), limited to one external guard per fixture.

## STOCK ORDERING INFORMATION

Stock Sample Number: NFFLD-C40-S

Series	Light Engine	Mounting	Voltage
NFFLD=Night Falcon	C25=10,500 Nominal Lumens C40=16,900 Nominal Lumens	S=Slipfitter T=Trunnion	[BLANK]=120-277V 347=347V

NOTES: Options not available with stock products. Order accessories as separate items for field installation. Refer to standard ordering information to add options. Refer to In-Stock Guide for availability. Stock fixture is 4000K, non-dimming, 120-277V or 347V 6Hx6V, carbon bronze only.

### DESCRIPTION

<b>Catalog #</b>		<b>Type</b>
<b>Project</b>		
<b>Comments</b>		<b>Date</b>
<b>Prepared by</b>		

## Construction

house-side shield accessory can be field or factory installed. Optics are IP66 enclosure rated.

## Electrical

LED drivers mount to die-cast aluminum back housing for optimal heat sinking, operation efficacy, and prolonged life. Standard drivers feature electronic universal voltage (120-277V 50/60Hz), 347V 60Hz or 480V 60Hz operation, greater than 0.9 power factor, less than 20% harmonic distortion, and is suitable for operation in -40°C to 40°C ambient environments. All fixtures are shipped standard with 10kV/10kA common – and differential – mode surge protection and 10kV MOV as an optional alternate.

## Mounting

**mounting**  
Self-aligning pole-top fitter for 3" O.D. pole tops or vertical tenons. Square headed 1-1/4" polymer coated mounting bolts with a lock nut.

## Finish

Cast components finished in a super durable black TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Optional colors include: bronze, grey and white. RAL and custom color matches available.

## Warranty

Five-year warranty.



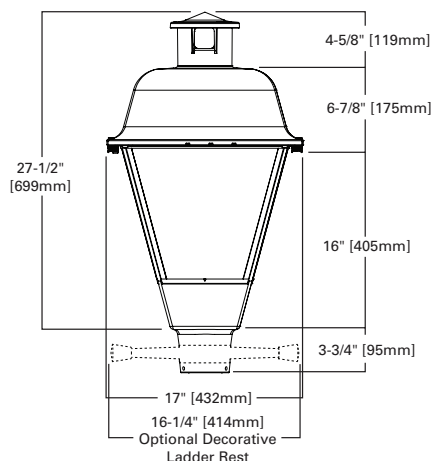
**UTLD**  
TRADITIONNAIRE  
LED DOWNLIGHT

AF24

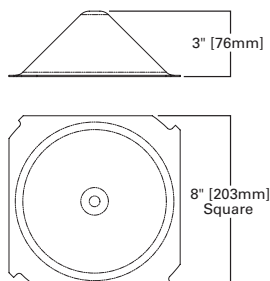
### Solid State LED

DECORATIVE POST TOP  
LUMINAIRE

## DIMENSIONS



### OPTIONAL BIRD CONE



## CERTIFICATION DATA

UL and cUL Wet Location Listed  
3G Vibration Rated  
IP66 Rated  
ISO 9001

## ENERGY DATA

**Electronic LED Driver**  
 >0.9 Power Factor  
 <20% Total Harmonic Distortion  
 120-277V/50 & 60Hz, 347V/60Hz,  
 480V/60Hz  
 -40°C Minimum Temperature  
 40°C Ambient Temperature Rating

## EPA

**Effective Projected Area: (Sq. Ft.)**  
2.3

## SHIPPING DATA

**Approximate Net Weight:**  
22.8 lbs. (10.34 kgs.)

**POWER AND LUMENS (STANDARD CONFIGURATION - NO LENSES OR BIRD CONE)**

Light Engine		AF24-20	AF24-30	AF24-40	AF24-50	AF24-60	AF24-70	AF24-80	AF24-90	AF24-100
Nominal Power (Watts)		21	31	40	54	64	74	83	94	96
Wattage Label		20	30	40	50	60	70	80	90	100
Current @ 120V (A)		0.18	0.26	0.34	0.45	0.53	0.62	0.70	0.78	0.80
Current @ 277V (A)		--	0.12	0.15	0.21	0.24	0.28	0.31	0.35	0.35
Current @ 347V (A)		--	0.10	0.13	0.16	0.19	0.22	0.24	0.28	0.28
Current @ 480V (A)		--	0.07	0.09	0.13	0.14	0.17	0.18	0.21	0.21
Optics										
T2U	4000K	2,429	3,400	4,420	5,666	6,587	7,371	8,064	8,722	8,740
	BUG Rating	B1-U1-G1	B1-U1-G1	B2-U1-G2	B2-U1-G2	B2-U1-G2	B2-U1-G2	B2-U1-G2	B3-U1-G3	B3-U1-G3
	3000K	2,150	3,010	3,912	5,016	5,831	6,524	7,139	7,720	7,737
	BUG Rating	B1-U1-G1	B1-U1-G1	B1-U1-G1	B2-U1-G2	B2-U1-G2	B2-U1-G2	B2-U1-G2	B2-U1-G2	B2-U1-G2
T3	4000K	2,410	3,373	4,384	5,621	6,534	7,312	8,000	8,652	8,670
	BUG Rating	B1-U1-G1	B1-U1-G1	B1-U1-G1	B1-U1-G2	B1-U1-G2	B2-U1-G2	B2-U1-G2	B2-U1-G2	B2-U1-G2
	3000K	2,133	2,985	3,881	4,976	5,784	6,472	7,082	7,659	7,675
	BUG Rating	B1-U1-G1	B1-U1-G1	B1-U1-G1	B1-U1-G2	B1-U1-G2	B1-U1-G2	B2-U1-G2	B2-U1-G2	B2-U1-G2
T4W	4000K	2,413	3,377	4,390	5,628	6,542	7,321	8,010	8,663	8,681
	BUG Rating	B1-U1-G1	B1-U1-G1	B1-U1-G2	B1-U1-G2	B1-U1-G2	B2-U1-G2	B2-U1-G2	B2-U1-G2	B2-U1-G2
	3000K	2,136	2,989	3,886	4,982	5,791	6,480	7,090	7,668	7,684
	BUG Rating	B1-U1-G1	B1-U1-G1	B1-U1-G1	B1-U1-G2	B1-U1-G2	B1-U1-G2	B2-U1-G2	B2-U1-G2	B2-U1-G2
5WQ	4000K	2,510	3,513	4,567	5,855	6,806	7,616	8,333	9,012	9,031
	BUG Rating	B2-U1-G1	B3-U1-G1	B3-U1-G1	B3-U1-G2	B3-U1-G2	B3-U1-G2	B3-U1-G2	B4-U1-G2	B4-U1-G2
	3000K	2,222	3,110	4,043	5,183	6,025	6,742	7,376	7,977	7,994
	BUG Rating	B2-U1-G1	B2-U1-G1	B3-U1-G1	B3-U1-G2	B3-U1-G2	B3-U1-G2	B3-U1-G2	B3-U1-G2	B3-U1-G2

**LUMEN MAINTENANCE**

Ambient Temperature	TM-21 Lumen Maintenance (50,000 hours)	TM-21 Lumen Maintenance (75,000 hours)	TM-21 Lumen Maintenance (100,000 hours)	Theoretical L70 (Hours)
25°C - 50°C	>91%	>87%	>83%	>204,000

**LUMEN MULTIPLIER**

Ambient Temperature	Lumen Multiplier
10°C	1.02
15°C	1.01
25°C	1.00
40°C	0.99
50°C	0.96

## ORDERING INFORMATION

Sample Number: UTLD-AF24-30-D-U-T3-4N7-7030

Product Family <sup>1</sup>	Light Engine <sup>2</sup>	Wattage Bucket	Driver	Voltage	Distribution
UTLD=Traditionaire™ LED Downlight	AF24	20 <sup>3</sup> 30 40 50 60 70 80 90 100	D=Dimming (0-10V) 5LTD=DALI <sup>4</sup>	U=Universal (120-277V) 8=480V <sup>5,6</sup> 9=347V <sup>5,6</sup>	T2U=Type II Urban T3=Type III T4W=Type IV Wide 5WQ=Type V Square Wide
Options (Add as Suffix)			Color	Accessories (Order Separately)	
[BLANK]=10kV UL 1449 Surge Protection Device <sup>7</sup> 10MSP=10kV MOV Surge Protection Device <sup>7</sup> 7030=70 CRI / 3000K CCT <sup>8</sup> 4=NEMA Photocontrol Receptacle <sup>9</sup> 4N7=NEMA 7-PIN Twistlock Photocontrol Receptacle HA=50C High Ambient Temperature <sup>10</sup> W=20' #10 Leads S=Snap Latches for Tool-less Light Replacement J=Factory Installed Ladder Rest A=Refractive Lens Panels <sup>11</sup> BC=Bird Cone <sup>11</sup> HSS=Factory Install UTLD House Side Shield for AF24 <sup>12</sup>			[BLANK]=Black <sup>13</sup> AP=Grey BZ=Bronze WH=White	TA1BK=Decorative Ladder Rest for Field Installation (Black) OA/RA1013=NEMA Photocontrol - 120V OA/RA1014=Photocontrol Shorting Cap OA/RA1016=NEMA Photocontrol - Multi-Tap OA/RA1027=NEMA Photocontrol - 480V OA/RA1201=NEMA Photocontrol - 347V OA1223=10kV Surge Module Replacement HS-UTLD-24=Field Installed UTLD House Side Shield for AF24 <sup>12</sup>	

### NOTES:

- Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional support information.
- Standard 4000K CCT and nominal 70 CRI.
- AF24-20 only available in universal voltage.
- Only available in universal voltage. Consult your lighting representative at Eaton if custom programming is required. Not available with AF24-90, AF24-100. Consult your lighting representative at Eaton if greater than AF-80 (83W) is needed.
- Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
- Not available with 5LTD driver.
- 10kV UL 1449 Surge Protection Device standard unless 10MSP option specified.
- Use dedicated IES files for 3000K when performing layouts. These files are published on the UTLD Traditionaire product page on the website.
- If "4" selected, dimming functionality not available, dimming leads will be capped.
- Not available with HSS or 5LTD driver.
- Refractive lens panels and bird cone cannot be ordered together.
- HSS not available with 5WQ distribution.
- Black finish standard unless other color option specified.

# END OF RFP DOCUMENT

**Appendix G**  
**Certificate of Compliance**



## CERTIFICATE OF COMPLIANCE

Date: \_\_\_\_\_, 20\_\_\_\_

WE, \_\_\_\_\_  
(Manufacturer, Supplier, or Contractor)

Address: \_\_\_\_\_

HEREBY CERTIFY THAT \_\_\_\_\_  
(Type of Product)

\_\_\_\_\_  
(Product Trade Name)

Manufactured by: \_\_\_\_\_

Supplied by: \_\_\_\_\_

Furnished to: \_\_\_\_\_

Contractor (Prime or Sub.)

Delivered and Used on:

_____ Project Name	_____ Federal No.	_____ State No.
Used for Item No. _____	_____ Name of Item	

MEETS THE REQUIREMENTS OF THE PERTINENT PROJECT PLANS, SPECIAL PROVISIONS AND SPECIFICATIONS OF THE TOWN OF HANOVER NEW HAMPSHIRE IN ALL RESPECTS. ADDITIONALLY, ON FEDERAL AID PROJECTS, THIS ITEM MEETS THE REQUIREMENTS OF BUILD AMERICA, BUY AMERICA (PUBLIC LAW 117-58). PROCESSING, PRODUCT TESTING, AND INSPECTION CONTROL OF RAW MATERIALS ARE IN CONFORMANCE WITH ALL APPLICABLE SPECIFICATIONS, DRAWINGS AND STANDARDS OF ALL ARTICLES FURNISHED.

All records and documents pertinent to this certificate and not submitted herewith will be maintained available by the undersigned for a period of not less than three years from the date the Project has been completed and accepted.

Signed by \_\_\_\_\_ Title \_\_\_\_\_  
(Officer of Organization)

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_  
Notary Public/Justice of the Peace

My Commission Expires: \_\_\_\_\_

**TO BE COMPLETED BY CONTRACTOR.** Location information for products listed on the QPL

Bid Item

No.: \_\_\_\_\_

**Appendix H**  
**Recent TOWN of HANOVER Street Light Invoice**

**Account Information**

Customer Name: TOWN OF HANOVER

Service Address: 0 HANOVER CENTER RD ST LTS, HANOVER NH US 03755

Account Number: 200003627672



0001918

What do I owe?

\$12,356.14

When is it due?

Jun 30, 2023

**Your Bill At a Glance**

Previous Balance as of 05/03/2023	\$	12,372.52
Payment(s) Received as of 06/02/2023	\$	-6,180.05
<b>Balance Forward</b>	<b>\$</b>	<b>6,192.47</b>
<b>TOTAL NEW CHARGES</b>	<b>\$</b>	<b>6,163.67</b>

**Total Amount Due****\$ 12,356.14****Important messages from Liberty****ELECTRIC EMERGENCIES:** For electric emergencies, or to report power outages, call 800-375-7413.

01-501-4622

Pay online at LibertyEnergyandWater.com, or return this portion with your payment. Please include your account number on your check and make payable to Liberty Utilities.

**Account Number:**

200003627672

**Service Address:**

0 HANOVER CENTER RD ST LTS

**Bill Date:**

02-JUN-2023

**Due Date:**

30-JUN-2023

~~\$12,356.14~~

Amount Due

6163.67

Amount Enclosed

000439 000003972

TOWN OF HANOVER  
PO BOX 483  
HANOVER NH 03755-0483**REMIT TO:**LIBERTY UTILITIES - NH  
75 REMITTANCE DR, SUITE 1032  
CHICAGO, IL 60675-1032

30702000036276720012356142

energy and water for life



## Summary of Luminaire Type

SIZE OF STREET LIGHT LUMENS	KWH USAGE	MULTIPLIER (NO # OF BULBS)	TOTAL KWH
High Pressure Sodium 27,500	82	54	4428
High Pressure Sodium 4,000	16	262	4192
High Pressure Sodium 4,000 PN	8	1	8
High Pressure Sodium 9,600	33	123	4059
LED Roadway/Highway 4,000	10	15	150
LED Roadway/Highway 6,500	16	19	304
LED Underground 3,000	10	3	30
Mercury Vapor 22,000	131	1	131
Mercury Vapor 4,000	33	6	198
Mercury Vapor 8,000	57	5	285

## What am I paying for?

## Additional messages

### Current Charges

#### MONTHLY FIX LUMINAIRE CHARGES

	QUANTITY USED	COST PER LUMINAIRE		
50 Watts	263.00	\$ 8.28000	\$	2,177.64
100 Watts	123.00	\$ 9.58000	\$	1,178.34
250 Watts	54.00	\$ 15.90000	\$	858.60
100 Watts	6.00	\$ 7.35000	\$	44.10
175 Watts	5.00	\$ 8.26000	\$	41.30
400 Watts	1.00	\$ 14.77000	\$	14.77
30 Watts Pole Top	15.00	\$ 5.37000	\$	80.55
50 Watts Pole Top	19.00	\$ 5.60000	\$	106.40
30 Watts URD	3.00	\$ 12.52000	\$	37.56
<b>TOTAL FIX LUMINAIRE CHARGES</b>			\$	<b>4,539.26</b>

#### DELIVERY CHARGES

	QUANTITY USED	COST PER KWH		
Distribution Charge	13,785.00 KWH	\$ 0.03946	\$	543.96
Stranded Cost Charge	13,785.00 KWH	\$ -0.00031	\$	-4.27
System Benefits Charge	13,785.00 KWH	\$ 0.00700	\$	96.50
Transmission Charge	13,785.00 KWH	\$ 0.01701	\$	234.48
Storm Recovery Adjustment	13,785.00 KWH	\$ -0.00202	\$	-27.85
<b>TOTAL DELIVERY CHARGES</b>			\$	<b>842.82</b>

#### POLE CHARGES

	QUANTITY USED	COST PER UNIT		
Wood Poles	4.00	\$ 9.39000	\$	37.56
Metal Poles - Direct Embedded	33.00	\$ 19.67000	\$	649.11
Metal Poles with Foundation	4.00	\$ 23.73000	\$	94.92
<b>TOTAL POLE CHARGES</b>			\$	<b>781.59</b>

#### TOTAL CURRENT CHARGES

	\$	<b>6,163.67</b>
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## Total Amount Due

**\$12,356.14**

**You have chosen Town of Hanover to be your Electricity supply provider.** If you have any questions about your Electricity supply charges, please contact Town of Hanover at 603-643-3327 or email them at [Peter.Kulbacki@hanovernh.org](mailto:Peter.Kulbacki@hanovernh.org).

We want to hear from you! Visit [libertyenergyandwater.com](http://libertyenergyandwater.com) to learn how you can be part of Liberty Listens, our new customer feedback panel.

