

L&S

Enterprises, LLC

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3/4/2019

Mike Reals

City of Ft. Pierce

RE: LED Post Top retrofits

Mike,

In an effort to address any concerns as to the Post Top Lighting Retrofit for the Downtown area of Ft. Pierce, I would submit the following.

In 2014, L&S Enterprises, under the direction of ConEdison Solutions performed an extensive lighting evaluation and subsequently developed a proposal for energy efficient lighting retrofits throughout the city. This included multiple facilities both interior and exterior. Street lighting was also included in this evaluation.

Many factors are taken into consideration when selecting the appropriate retrofit solution. As for the Down Town Post Top lights L&S proposed a self-ballasted LED Corn Cob lamp to replace the existing Metal Halide High Intensity Discharge Lamp. The wattage of the selected retrofit was 60 Watts. This is an industry standard equivalent replacement for the 175 Watt MH lamps originally in the Post Top fixtures.

There are many factors that can affect the amount of usable light reflecting from a given surface. Some examples might be dirty or discolored lenses, available ambient light from surrounding sources, and natural light from the moon or stars.

I have attached 2 case studies for this retrofit. In one case the retrofit lamp was a 40 Watt and the other was an 80 Watt. Our selection fell in between these 2.

If you need any further information please feel free to reach out to me at any time.

Thanks,

Len Blanton

President

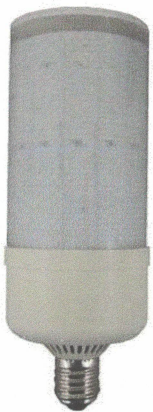
L&S Enterprises, LLC



Municipal Lighting Retrofit Newtown, CT

Case Study: Reducing Energy & Maintenance Costs

Fairfield Hills Campus is a redevelopment site owned by the Town of Newtown, Connecticut. They have recently retrofitted their existing Acorn Light Fixtures with the Neptun LED - Acorn retrofit bulb. The City had previously used a mix of 150W & 175W Metal Halide bulbs, which they have replaced with a 40W LED. With the Energy Efficient Neptun LED retrofit bulb, the city will save around \$12,000 a year in energy cost. The Neptun LED Acorn Retrofit Bulb has a rated life of 70,000 hours, which is 4 times longer than the life of any Metal Halide or HPS lighting system. Over the life of these LED bulbs, Newtown, CT will save around \$180,000 in energy costs and another \$16,000 in maintenance and material costs.



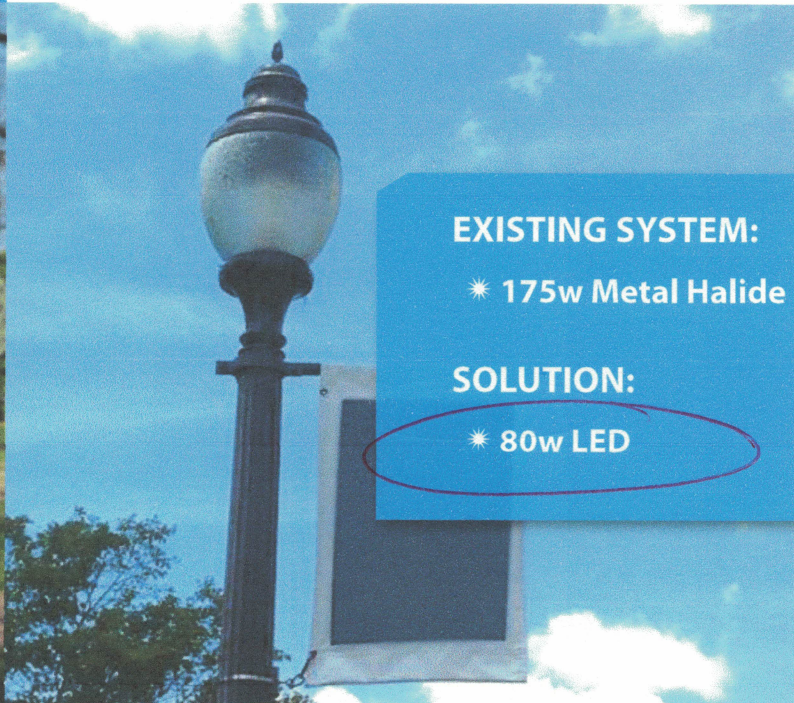
Neptun Light
LED - Self-Ballasted Bulb

Bulb Type	Wattage	Fixture Wattage	Qty.	Annual kWh	Annual Energy Costs
Metal Halide Bulb	150	190	55	45,771	\$7,323
Neptun LED Bulb	40	40	55	9,636	\$1,542
Annual Energy Savings					\$5,781

Kilowatt Rate = \$ 0.16
Fixtures Running = 4,380 hrs. per year

Bulb Type	Wattage	Fixture Wattage	Qty.	Annual kWh	Annual Energy Costs
Metal Halide Bulb	175	205	55	49,385	\$7,902
Neptun LED Bulb	40	40	55	9,636	\$1,542
Annual Energy Savings					\$6,360

Kilowatt Rate = \$ 0.16
Fixtures Running = 4,380 hrs. per year



EXISTING SYSTEM:

- * 175w Metal Halide

SOLUTION:

- * 80w LED

Project Description

Duke University is a private research university located in Durham, North Carolina. They came to **Neptun Light, Inc.** with the challenge of reducing overall power consumption and maintenance costs at their university campus. With Neptun's wide range of energy efficient lighting products, they were able to utilize LED technologies in the retrofit. This lighting provides increased visibility and safety, long life energy savings, and a significant decrease in overall maintenance. Utilizing the existing fixtures with **Neptun's** LED Acorn Retrofit kit provided the most cost effective solution while maintaining high quality lighting results.

THE RESULTS

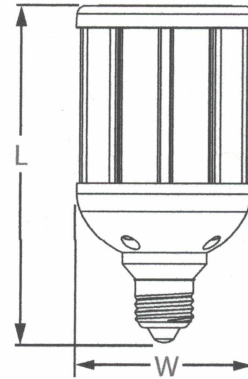
	Metal Halide	LED Retrofit
* Rated Wattage	175w	80w
Input Wattage	210w	82w
Life span	16,000 hrs.	70,000 hrs.
No. of Fixtures	1,450	1,450
Running Time/Year	4,380 (12hrs./day)	4,380 (12hrs./day)
kWh Rate	\$0.06	\$0.06
Annual (kWh)	1,333,710	520,782
Annual (kWh) Savings		812,928
Annual Energy Costs	\$80,023	\$31,247

Overall annual energy savings = **\$48,776**

Total savings over life of product = **\$731,635**

Products





Product Dimensions

Wattage	E26 (L)	E40 (L)	Width (W)
15W	6.75 in.	7.25 in.	2.75 in.
20W	7.50 in.	8.00 in.	2.75 in.
25W	8.25 in.	8.75 in.	3.75 in.
30W	8.25 in.	8.75 in.	3.75 in.
35W	9.25 in.	9.75 in.	3.75 in.
40W	9.25 in.	9.75 in.	3.75 in.
60W	10.00 in.	10.50 in.	4.25 in.

Incredible **50,000 hrs**

GENERAL DESCRIPTION

Neptun's LED retrofit lamp is designed for use in a variety of applications to replace existing HID or HPS lamps. The LED-N148 series retrofit lamp features excellent optics for increased visibility and security with a 360° light engine to evenly illuminate area. Offered in a variety of color temperatures to closely resemble HID or HPS style bulbs. Can replace existing HID & HPS lamps up to 175 Watts.

APPLICATION

- Decorative Post Top Fixtures
- Decorative Acorn Fixtures
- Base Down Applications

STRUCTURE, MATERIALS, & FEATURES

- Cast aluminum heat sink.
- High efficiency, heat and impact resistant, UV protected, non yellowing polycarbonate lens / refractor.
- Internally driven (self-ballasted) driver for easy installation.
- High Output LED's.
- High power factor, low THD driver.
- Instant-On flicker-free Cold Start and Hot Re-Start.
- Bright white light (5000°K) for greater visibility and safety.
- LED engine design with Advanced Thermal Management.
- Up to 15 year maintenance free operation.
- 5 Year Warranty.

ORDERING INFORMATION

Sample Number: LED-N148015-UNV-850-E26
Custom options and accessories available. Please consult factory

Source	Series	Wattage	Voltage	Color Temp	Base
LED	N148	060	UNV	850	E40
LED = LED	N148 = Retrofit Lamp	015 = 15 W 020 = 20 W 025 = 25 W 030 = 30 W 035 = 35 W 040 = 40 W 060 = 60 W	UNV = 120-277 VAC	830 = 3000°K 841 = 4100°K 850 = 5000°K	E26 = Medium Base E40 = Mogul Base



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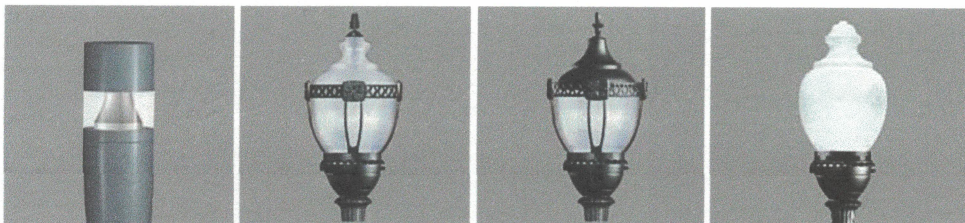
PRODUCT INFORMATION

Model No.	Description	Rated Watts	Input Watts	Delivered Lumens	Universal Line Voltage (VAC)	Max Line Current (Amp) @ 120 - 277	THD	Power Factor	Weight
LED-N148015-UNV	LED Retrofit Lamp	15	16	1,650	120-277	0.13 - 0.06	<20%	>0.90	0.60 lb
LED-N148020-UNV	LED Retrofit Lamp	20	21	2,200	120-277	0.14 - 0.07	<20%	>0.90	0.70 lb
LED-N148025-UNV	LED Retrofit Lamp	25	26	2,850	120-277	0.21 - 0.09	<20%	>0.90	1.10 lb
LED-N148030-UNV	LED Retrofit Lamp	30	31	3,400	120-277	0.26 - 0.11	<20%	>0.90	1.10 lb
LED-N148035-UNV	LED Retrofit Lamp	35	36	4,000	120-277	0.30 - 0.13	<20%	>0.90	1.30 lb
LED-N148040-UNV	LED Retrofit Lamp	40	41	4,560	120-277	0.34 - 0.15	<20%	>0.90	1.30 lb
LED-N148060-UNV	LED Retrofit Lamp	60	61	7,000	120-277	0.52 - 0.23	<20%	>0.90	1.60 lb

SPECIFICATIONS

- LED Driver Constant Current
- Power Supply 350mA
- Start Method InstantON
- Hot Re-start InstantON
- Universal Input Line Voltage 120-277 VAC
- Input Line Frequency 50/60 Hz
- Driver Off-State Draw 0 Watts
- Sound Rating Class A
- Projected (L70) @ 85°C > 50,000 hrs.
- Color Temperature 3000°K, 4100°K, 5000°K
- Color Rendering Index (CRI) > 80
- Minimum Starting Temperature -40°C
- Maximum Starting Temperature 50°C
- Lumens per Watt > 100
- Shock / Vibration Resistant Yes
- Power Factor > 0.90
- Total Harmonic Distortion < 20%
- Inrush Current Peak < 10 Amp
- FCC Compliance Part 15, Subp. C
- ETL Listed / UL Standard 1993 Yes
- Warranty 5 Year

RECOMMENDED APPLICATION FIXTURES



- * Suitable for Base Down Mounting only
- * 2" (inch) spacing between housing and lamp
- * Contact Factory for Application Verification.

MOUNTING OPTIONS



Base Down

Neptun Light, Inc.
13950 Business Center Drive
Lake Forest, IL 60045
Fax: 847.735.8004

Neptun Light, Inc. reserves the right to change materials or modify the design of its product without notification as part of the company's continuing product improvement program.
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Spec. Rev. 1-2017