

R E T R O F I T



LED RETROFIT KITS

Our leadership in the decorative post-top lighting market segment gives us the advantage of knowing the lighting requirements and most common fixture designs that are in the market place. As the desire for energy efficiency has grown, so had the desire to maintain the lighting levels that existing systems are providing.

In many installations, the existing lighting equipment is structurally adequate and is expected to serve the owner for another 10, 15, or 20 years of service, but the desire to reduce energy and maintenance costs is motivating a city / municipality / university to retrofit their lighting with an LED option.

Beacon has therefore developed 2 specific retrofit kits. The first is the 'vertical' version. This unit is designed to retrofit post-top luminaires that have a prismatic refractor globe as the major element for light distribution.

The second retrofit kit is designed with a 'direct' optical system. This kit give the designer several choices of optics and is generally slightly more efficient. It is designed to be used with either gives clear or slightly diffuse globes.

FEATURING

LED Wattages from 30W to 60W

Designed specifically for **refractor globes**

Designed for **clear, diffuse and textured globes**

Designed specifically for equivalent **lighting performance**

Optional replacement globes available

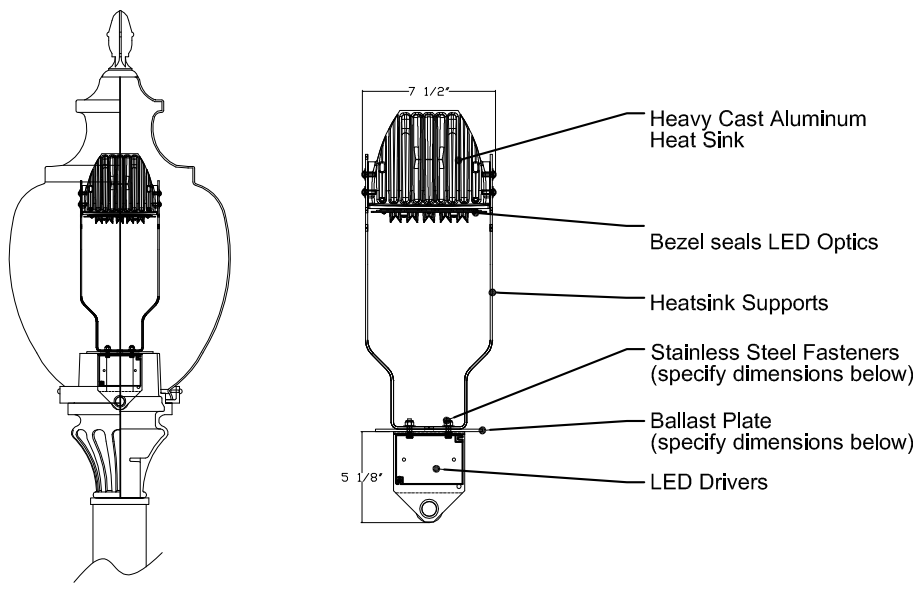
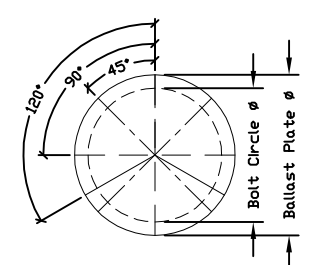
Type:

Ordering Code:

Job Name:




Notes:

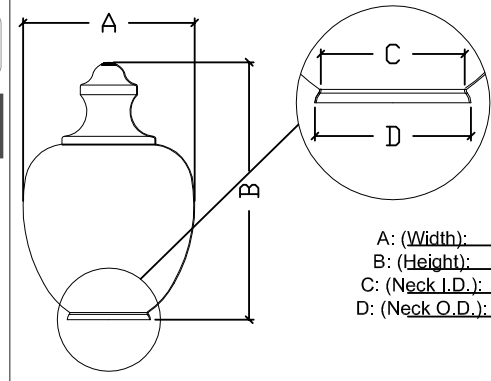
LRK-3D

details	bolt circle
 <p> Heavy Cast Aluminum Heat Sink Bezel seals LED Optics Heatsink Supports Stainless Steel Fasteners (specify dimensions below) Ballast Plate (specify dimensions below) LED Drivers </p>	 <p>the mounting plate facilitates a simplified conversion process of many of the existing globe style luminaires.</p>

optional replacement globes

ORDERING EXAMPLE: RG-A / R-ACT / ? / ? / ? / ? / ?

replacement globe (optional)	replacement globe lens (optional)	width	height	neck inner Ø	neck outer Ø
RG-A 	R-ACT acrylic clear, textured R-PCT polycarb clear, textured	specify	specify	specify	specify
RG-B 					
RG-C 					



A: (Width): _____
 B: (Height): _____
 C: (Neck I.D.): _____
 D: (Neck O.D.): _____

ORDERING EXAMPLE: LRK-3D / 30W / DIR5 / UNV / LSP / 2 / 45 / ? / ? / ? / ? / ?

model	source (LED)	optics	voltage	# of bolts	bolt pattern	mounting plate Ø	bolt length	bolt circle Ø	bolt size
LRK-3D	30W	DIR2 direct type II	UNV 120-277V	2	45°	specify	specify	specify	specify
	60W	DIR3 direct type III	347V	3	90°				
		DIR4 direct type IV	480V	4	120°				
		DIR5 direct type V			180°				
						— other			

Correlated Color Temperature

Luminaire Nominal CCT (0K) shall be 4500K (CCT)

Color Rendering Index (CRI)

Luminaire shall have a minimum CRI of 70.

Off State Power Consumption

The power draw of the luminaire including PE devices must be zero watts when in the off state.

Operating Environment

Shall be able to operate normally in temperatures from -20°C to 25°C

Cooling System

Shall not consist of any fan, pump or liquids and must be resistant to debris buildup.

LED heat sink

The LED module and heat sink shall be removable and up-gradable. The drivers shall be mounted on a removable plate and protected by a 10,000 amp transient surge protector. The heat sink shall be 356 cast aluminum and be fitted with 24 Cree XPG / 130 lumen LEDs.

LED Array

The 24 LED Array shall be 60 watts maximum and be provided with Type II, III, IV, or V distributions. Each LED shall have one optical lens. The Heat Sink & LED Array shall be mounted to a mounting plate and pointed downward. Aiming of individual LEDs will not be accepted.

LED Array board

Board will be mounted to the heat sink using 12-#4-40 screws to ensure contact with thermal pad and heat sink. Use of thermal grease will not be allowed. The board will be provided with two circuits of 12 LEDs each. Each circuit shall be supplied with one driver for a total of two drivers for two circuits. If one driver fails the other driver shall still light up one circuit of 12-LEDs.

Lumen Depreciation of LED Light

Must comply with IESNA LM-80

Source

LED module shall deliver at least 70% of initial lumens, when installed for a minimum of 70,000 hours.

Light Distribution Shall be:

Street Classification Lighting Distribution Pattern Roadway / Area
Type II, III, IV & V

Power Supply/Driver Requirements:

U.L. UL1310, Class 2 and UL48 compliant

Power Factor

Shall have a power factor not less than 90% at full load

Operating Voltage

120-277 volts

Driver Operating Temperature

Shall operate between -30°C and 60°C

Driver Frequency

Output operating frequency 47 to 63 Hz

Interference

Shall meet FCC 47 CFR Part 2, part15 and Cispr PUB, 22 Class B

Noise

Shall have a class A sound rating

Protection

Over-voltage, Over current and Short circuit protection: Auto-recovery

Startup

Must be instant restart

Surge Protection:

Transient over voltage protection shall be provided rated at 10,000 amps per standard 8/20 uSec wave.

File/Test Requirements:**UL/CSA**

Provide copy of UL or CSA certification as recognized component

Warranty:

Manufacturer shall offer a 5 year warranty on all components of the retro-fit unit. The warranty period shall start at the date of shipment. The manufacturer shall supply contact information to the owner for warranty replacements as well as a written confirmation from the manufacturer confirming the warranty terms. Warranty components must be readily available with-in normal lead times. Warranty must include parts, labor and shipping.

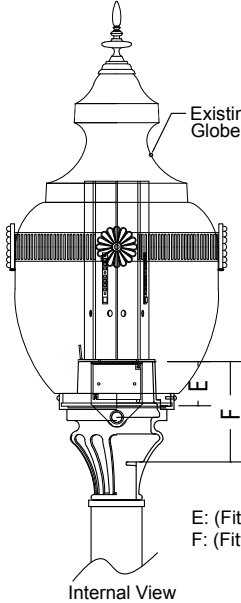
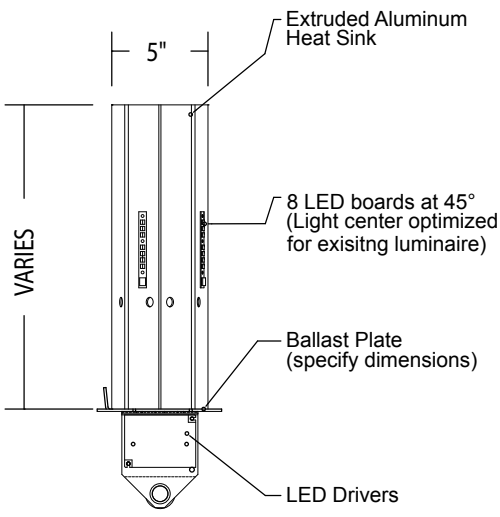
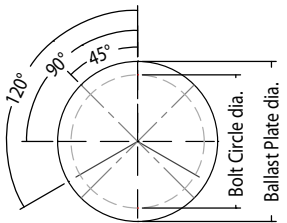
Type:

Ordering Code:

Job Name:

Notes:

LRK-2V

details	bolt circle
 <p>Existing Prismatic Globe</p> <p>E: (Fitter inside globe): F: (Fitter cavity depth):</p> <p>Internal View</p>  <p>5"</p> <p>Extruded Aluminum Heat Sink</p> <p>8 LED boards at 45° (Light center optimized for existing luminaire)</p> <p>Ballast Plate (specify dimensions)</p> <p>LED Drivers</p> <p>VARIES</p>	 <p>Bolt Circle & Ballast Plate Worksheet</p> <p>the mounting plate facilitates a simplified conversion process of many of the existing globe style luminaires.</p>

ORDERING EXAMPLE: LRK-2V / 55W / T5 / UNV / LSP / 2 / 45 / ? / ? / ? / ?

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

model	source (LED)	optics *	voltage	# of bolts	bolt pattern	mounting plate Ø	bolt length	bolt circle Ø	bolt size
LRK-2V	35W	<i>(consult factory)</i>	UNV 120-277V	2	45°	specify	specify	specify	specify
	55W		347V	3	90°				
			480V	4	120°				
				— other					

* The LRK-2V is designed to maximize performance of refractor style globes.

Correlated Color Temperature

Luminaire Nominal CCT (0K) shall be 45000K Plus or Minus 250k (CCT)

Color Rendering Index (CRI)

Luminaire shall have a minimum CRI of 70.

Off State Power Consumption

The power draw of the luminaire including PE devices must be zero watts when in the off state.

Operating Environment

Shall be able to operate normally in temperatures from -20°C to 40°C

Cooling System

Shall not consist of any fan, pump or liquids and must be resistant to debris buildup.

Dimensions (Approx.)

Luminaires to be retrofitted are existing and are approximately 38" tall x 19" diameter and have prismatic refractor globes.

LED heat sink

The LED module and heat sink shall be removable and up-gradable. The drivers shall be mounted on a removable plate and protected by a 10,000 amp transient surge protector. The retrofit kit plate shall fit on the existing luminaire without field modifications. The heat sink shall be extruded aluminum and be tested with 28 Nichia / 107/114 lumen LEDs mounted on four PCB boards 90-degrees apart to simulate a bare arc-tube.

LED Array

The 28 LED Array shall be 55 watts maximum and be provided with 120 degree lenses.. The total absolute lumens shall be a minimum of 2397 lumens on the Type II. The peak candle power shall occur at 62.5 degrees in the vertical and 65-degrees in the horizontal and be a minimum of 732 candle power. The total absolute lumens on the Type V shall be a minimum of 2926 lumens. The peak candle power shall occur at 62.5 degrees in the vertical and be a minimum of 1548 candle power. Aiming of individual LEDs will not be accepted.

Photometric Testing

Manufactures will not be considered unless independent photometric testing is provided per LM-79 for the Type II distribution and the Type V distribution. The independent testing shall be with the LED retrofit kit mounted inside the prismatic refractive globes. (one Type V & one Type II) Prorating or Scaling of lumens from existing reports will not be allowed. LM-79 testing shall confirm performance, delivered lumens per watt and CCT Kelvin temperature of LEDs.

LED Manufacture

The board shall be provide with 28 Nitchia 119 LEDs using (107/114 lumens) at 350 ma. per LM80 specifications. The boards will be provided with two circuits of 14 LEDs each. Each circuit shall be supplied with one driver for a total of two drivers for two circuits. If one driver fails the other driver shall still light up one circuit of 14-LEDs.

Lumen Depreciation of LED Light

Must comply with IESNA LM-80

Source

LED module shall deliver at least 70% of initial lumens, when installed for a minimum of 70,000 hours.

Light Distribution Shall be:

Light Distribution Shall from the bare light engine shall have a Street Classification Lighting Distribution Pattern of Type V , however when used in conjunction with a refractor style globe, the lighting pattern will be that of the refractor itself..

Power Supply/Driver Requirements:

U.L.
UL1310, Class 2 and UL48 compliant

Power Factor

Shall have a power factor not less than 90% at full load

Operating Voltage

120-277 volts

Operating Temperature

Shall operate between -300° C and 60° C

Frequency

Output operating frequency 47 to 63 Hz

Interference

Shall meet FCC 47 CFR Part 2, part15 and Cispr PUB, 22 Class B

Noise

Shall have a class A sound rating

Protection

Over-voltage, Over current and Short circuit protection: Auto-recovery

Startup

Must be instant restart

Surge Protection:

ransient over voltage protection shall be provided rated at 10,000 amps per standard 8/20 uSec wave.

File\Test Requirements:**UL/CSA**

Provide copy of UL or CSA certification as recognized component