

# SOLID STATE LIGHTING

## RAZAR BOLLARD-LED

### S P E C I F I C A T I O N S

#### OPTICAL HOUSING

Heavy cast low copper aluminum (A356 alloy; <0.2% copper) assembly with integral cooling fins. The Optical Panel mounting surface is milled flat (surface variance  $\leq \pm .003"$ ) to facilitate thermal transfer of heat to housing and cooling fins. Minimum wall thickness is .188".

#### SHAFT & BASE

Extruded aluminum (6061-T6 alloy) riser welded to heavy cast aluminum (A356 alloy; <0.2% copper) base. Riser has minimum wall thickness of .188". Electrical assembly including LED mains driver, LED Emergency driver (optional LED-EM) with batteries, and quick connectors suspended inside riser. Concealed bolts attach the Optical Housing bolts to Riser.

#### ANCHOR BOLTS

Four 3/8" x 10" x 2" galvanized anchor bolts with couplings, leveling nuts, washers, template, and stainless bolts.

#### PLED™ OPTICAL MODULES

Emitters (LED's) are arrayed on a metal core PCB panel with each emitter located on a copper thermal transfer pad and enclosed by an LED refractor. The asymmetric distributions have a micro-reflector inside the refractor that re-directs the house side emitter output towards the street side and functions as a house side shielding element. Refractors are injection molded H12 acrylic. Each LED refractor is sealed to the PCB over an emitter and all refractors are retained by an aluminum frame. All refractors in a Panel have the same optical pattern. LED refractors produce standard site/area distributions - Type II, and Type IV. Panels are field replaceable and field rotatable in 90° increments.

#### LED DRIVER(S)

Constant current electronic with a power factor of >.90 and a minimum operating temperature of -40°F/-40°C. Driver(s) is/are UL and cUL recognized and mounted directly against the Electrical Housing to facilitate thermal transfer, held down by universal clamps to facilitate easy removal. In-line terminal blocks facilitate wiring between the driver and optical arrays. Drivers accept an input of 120-277V, 50/60Hz or 347V-480V, 50,60Hz. (0 - 10V dimmable driver is standard. Driver has a minimum of 3KV internal surge protection. Luminaire supplied with 20KV surge protector for field accessible installation.)

#### LED EMITTERS

High output LED's are utilized with drive currents ranging from 175mA to 350mA. 70CRI Minimum. LED's are available in standard Neutral White (4000K), or optional Cool White (5000K) or Warm White (3000K). Consult Factory for other LED options.

#### AMBER LED's

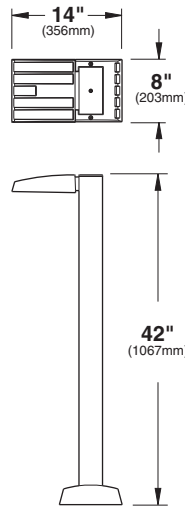
**PCA** (Phosphor Converted Amber) LED's utilize phosphors to create color output similar to LPS lamps and have a slight output in the blue spectral bandwidth. **TRA** (True Amber) LED's utilize material that emits light in the amber spectral bandwidth only without the use of phosphors.

#### FINISH

Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

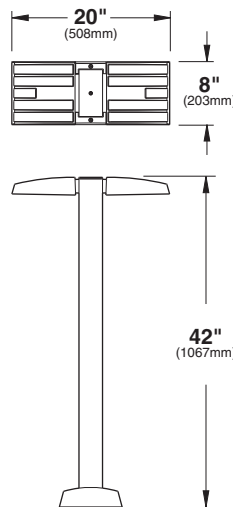
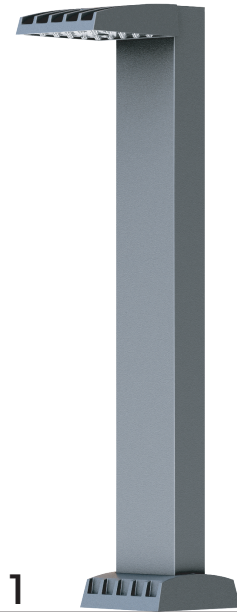
PROJECT NAME: \_\_\_\_\_

FIXTURE TYPE: \_\_\_\_\_



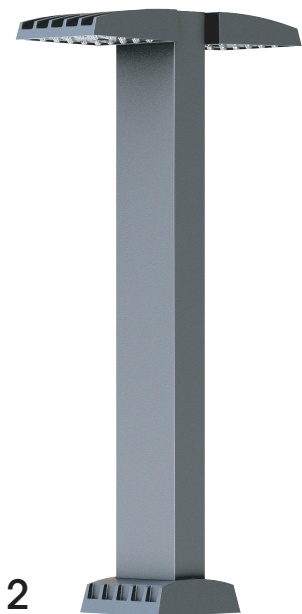
RZR B1

PATENT PENDING



RZR B2

PATENT PENDING

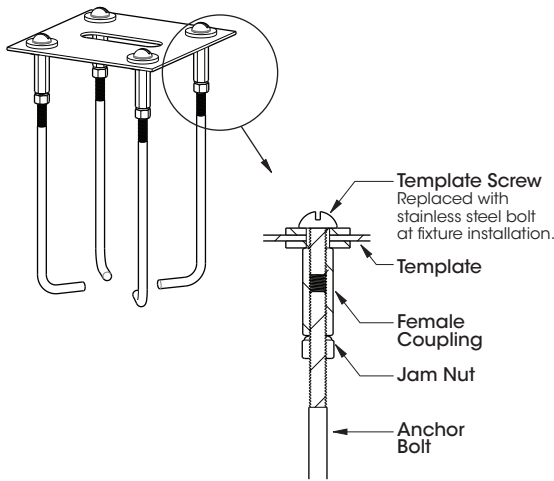


2023080

# RAZAR BOLLARD SERIES - LED

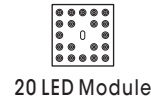
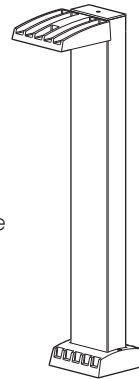
## S P E C I F I C A T I O N S

### ANCHOR BOLT ASSEMBLY

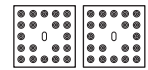
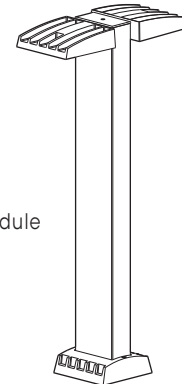


### PLED® MODULES

**RZRB1**  
Available in:  
20 LED Module



**RZRB2**  
Available in:  
2 X 20 LED Module



### OVERVIEW

PRECISE CAST ALUMINUM LED MODULE. HOUSING IS VENTED TO PROVIDE AIR FLOW FOR THERMAL MANAGEMENT.

LED DRIVER ACCEPTS FROM 100-277 VAC INPUT VOLTAGE.

### MAX INPUT WATTAGE

# OF LED'S	DRIVE CURRENT			
	175mA	HID EQUIV. 50W	350mA	HID EQUIV. 70W
40	22W	50W	44W	70W
20	12W	50W	22W	70W

Spec/Order Example: RZRB1/PLED-IV/20LED-350mA/CW/277/RAL-8019-S/DF

## S P E C / O R D E R I N G I N F O R M A T I O N

MODEL	OPTICS	LED MODE			FINISH	OPTIONS
MODEL	OPTICS	LED	LED		FINISH	OPTIONS
<input type="checkbox"/> RZRB1	<b>PLED® DISTRIBUTION TYPE</b> <input type="checkbox"/> TYPE II PLED-II .....	<b>No. LEDs</b> RZRB1 <sup>1</sup> <input type="checkbox"/> 20LED	<b>DRIVE CURRENT</b> <input type="checkbox"/> 175mA <sup>1</sup> <input type="checkbox"/> 350mA	<b>COLOR</b> <input type="checkbox"/> NW (4000K)* *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K)	<b>STANDARD TEXTURED FINISH</b> <input type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T	<input type="checkbox"/> HOUSE SIDE SHIELDING ..... <b>HS-PLED</b> <input type="checkbox"/> HIGH-LOW DIMMING FOR SWITCHING BY OTHERS/SELECT LEVELS 50/100 OR 25/100 (EXAMPLE: HLSW/25) ..... <b>HLSW</b> <input type="checkbox"/> SINGLE FUSE (120V & 277V) ..... <b>SF</b> <input type="checkbox"/> DOUBLE FUSE (208V & 240V) ..... <b>DF</b> <input type="checkbox"/> EMERGENCY BACKUP ... <b>EM-RZRB</b>
<input type="checkbox"/> RZRB2	<input type="checkbox"/> TYPE II FRONT ROW PLED-II-FR ..... <input type="checkbox"/> TYPE III MED. PLED-III-M ..... <input type="checkbox"/> TYPE III WIDE PLED-III-W ..... <input type="checkbox"/> TYPE IV PLED-IV ..... <input type="checkbox"/> TYPE IV PLED-IV-FT .....	RZRB2 <input type="checkbox"/> 40LED	<b>VOLTAGE</b> <input type="checkbox"/> 120 <input type="checkbox"/> 208 <input type="checkbox"/> 240 <input type="checkbox"/> 277 <input type="checkbox"/> 347 <input type="checkbox"/> 480	<b>AMBER<sup>2</sup></b> <input type="checkbox"/> PHOSPHOR CONVERTED AMBER PCA <input type="checkbox"/> TRUE AMBER TRA	<input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T  FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH SUFFIX "S" (EXAMPLE: RAL-9500-S)	THE EM-LED SYSTEM PROVIDES POWER TO THE LED ARRAY TO MEET THE FOLLOWING LIGHT LEVELS FOR A MINIMUM OF 90 MINUTES: RZRB1 = 90% @ 175mA RZRB1 = 45% @ 350mA RZRB2 = 50% @ 175mA RZRB2 = 36% @ 350mA  *MULTIPLY THE % ABOVE BY THE LUMEN OUTPUT @ 350mA  <b>OPTIONAL HEIGHTS:</b> <input type="checkbox"/> 30" <input type="checkbox"/> 36"

NOTES:  
 1 - DIMMING NOT AVAILABLE IN RZRB1 AT 175mA DRIVE CURRENT.  
 2 - NARROW BAND AMBERS HAVE NO DEFINABLE CCT EQUIVALENT



# RAZAR BOLLARD-LED

## LAMP/ELECTRICAL GUIDE

LED COUNT	SOURCE TYPE	SOURCE	INITIAL LUMENS - 4000K	INITIAL LUMENS - 3000K	INITIAL LUMENS - 5000K	L70 GREATER THAN (HR)	STARTING TEMP.	SYSTEM WATTS	VOLTS	MAX INPUT AMPS
20	LED	20 PLED® Optical Module - 175mA	1,401 - 1,404	1,226 - 1,229	1,434 - 1,438	60,000+	-20°F	12	120 277	0.24 0.10
20	LED	20 PLED® Optical Module - 350mA	2,501 - 2,508	2,190 - 2,196	2,561 - 2,568	60,000+	-20°F	22	120 277	0.34 0.15
40	LED	40 PLED® Optical Module - 175mA	2,801 - 2,808	2,452 - 2,459	2,561 - 2,568	60,000+	-20°F	22	120 277	0.38 0.17
40	LED	40 PLED® Optical Module - 350mA	5,002 - 5,015	4,379 - 4,391	5,122 - 5,136	60,000+	-20°F	44	120 277	0.38 0.17

### NOTES:

1. Max Input Amps is the highest of starting, operating, or open circuit currents
2. Lumen values for LED Modules vary according to the distribution type
3. System Watts includes the source watts and all driver components.
4. Fuse value should be sufficient to protect all wiring components. For electronic driver and LED component protection, use 10KV - 20KV surge suppressors.
5. L70(10K) - TM-21 6x rule applied

**WARNING:** All fixtures must be installed in accordance with local codes or the National Electrical Code. Failure to do so may result in serious personal injury.

