

SOLID STATE AREA LIGHTING

RAZAR SERIES-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 $\leq \pm .002"$) to facilitate thermal transfer of heat to housing and cooling fins. Solid barrier wall separates optical and electrical compartments. The optical and electrical compartments are integrated to create one assembly. Minimum wall thickness is .188".

ELECTRICAL HOUSING w/ INTEGRATED ARM

Heavy cast low copper aluminum (A356 alloy; <0.2% copper) assembly with integral cooling ribs surrounding the electrical compartment and a flat surface on the top of the arm to accommodate a photocell receptacle. Solid barrier wall separates optical and electrical compartments. The optical compartment and electrical compartment with the integrated support arm combine to create one assembly. Minimum wall thickness is .188". Cast and hinged driver assembly cover is integrated with wiring compartment cover.

PLED™ OPTICS

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. LED optics completely seal each individual emitter to meet an IP66 rating. In asymmetric distributions, a micro-reflector inside the refractor 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. Any one Panel, or group of Panels in a luminaire, have the same optical pattern. LED refractors produce standard site/area distributions. 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 350mA to 1050mA. 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

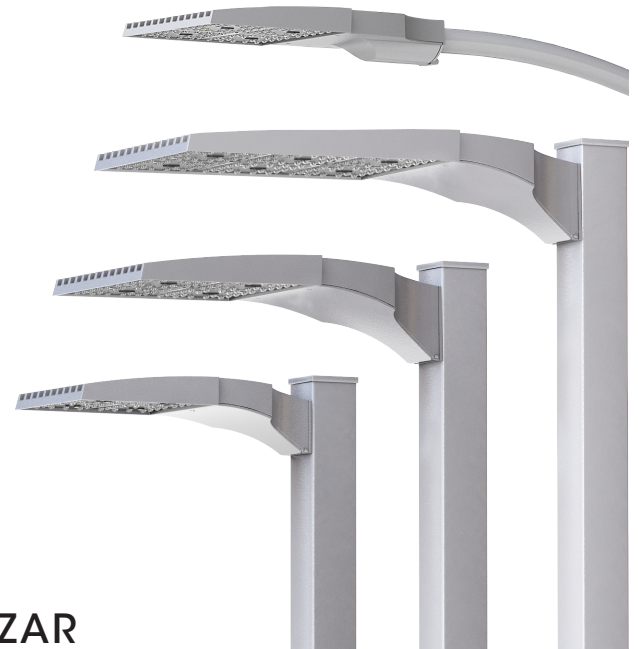
Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

MAST ARM FITTER/ELECTRICAL HOUSING

Replaces standard Electrical Housing. Fits standard 2 3/8" O.D. horizontal tenon. Two (2) straps with two (2) bolts each encircle the lower half of the tenon. Upper half of the tenon rests on self-centering steps that position the angle of the luminaire at 0°, +1.5°, +1.5 or +3° up from the horizontal. All hardware is stainless steel.

PROJECT NAME: 446 HIGH STREET

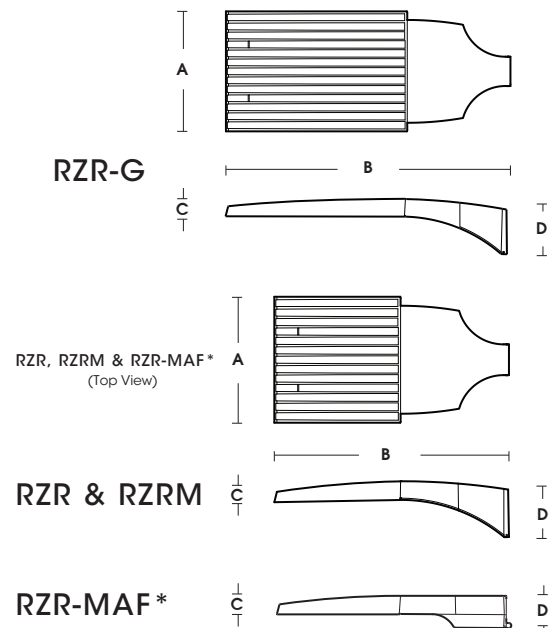
PROJECT TYPE: R4FT



RAZAR

(MODELS: RZRM, RZR, RZR-G & RZR-MAF*)

PATENT PENDING



FIXTURE	A	B	C	D
RZR-G	15" 381mm	36.5" 927mm	3" 76mm	7" 187mm
RZR	14.75" 375mm	28.25" 718mm	2.75" 70mm	6.5" 165mm
RZRM	11.5" 292mm	22" 559mm	2.5" 64mm	5.25" 133mm
RZR-MAF	15" 381mm	28.25" 724mm	2.5" 64mm	4" 102mm

*DLC PENDING AS OF 7/19



2020248



Approximate Average Lumens - 4000K (Lumens median of all distributions)

	350mA			525mA			700mA			1050mA		
	Watts	Lumens	HID Eq.	Watts	Lumens	HID Eq.	Watts	Lumens	HID Eq.	Watts	Lumens	HID Eq.
24	28	3541	50	41	5058	70-100	53	6567	100	81	8773	150-175
40	45	5997	70-100	66	8653	100-150	87	10995	175	134	14647	200-250
48	55	7046	100	81	10018	150-175	105	12600	200	160	17566	250
80	87	11622	175-200	131	16736	200-250	174	21235	400	266	28190	450-575
120	127	17405	250	195	24860	450	260	31592	575-750	396	43323	750-1000

LED COUNT	SOURCE TYPE	SOURCE	INITIAL LUMENS - 4000K CCT	INITIAL LUMENS - 3000K CCT	INITIAL LUMENS - 5000K CCT	L70 GREATER THAN (HR)	STARTING TEMP.	SYSTEM WATTS	VOLTS	MAX INPUT AMPS
24	LED	24 PLED® Optical Module - 350mA	3,298 - 3,784	3,133 - 3,595	3,463 - 3,973	60,000+	-20°F	29	120 277	0.24 0.10
24	LED	24 PLED® Optical Module - 525mA	4,711 - 5,405	4,475 - 5,135	4,947 - 5,675	60,000+	-20°F	42	120 277	0.34 0.15
24	LED	24 PLED® Optical Module - 700mA	6,023 - 6,911	5,722 - 6,565	6,324 - 7,256	60,000+	-20°F	56	120 277	0.45 0.20
24	LED	24 PLED® Optical Module - 1050mA	8,171 - 9,375	7,762 - 8,906	8,580 - 9,844	60,000+	-20°F	82	120 277	0.68 0.30
40	LED	40 PLED® Optical Module - 350mA	5,585 - 6,408	5,306 - 6,088	5,864 - 6,729	60,000+	-20°F	43	120 277	0.38 0.17
40	LED	40 PLED® Optical Module - 525mA	8,059 - 9,246	7,656 - 8,784	8,462 - 9,709	60,000+	-20°F	65	120 277	0.55 0.24
40	LED	40 PLED® Optical Module - 700mA	10,240 - 11,749	9,728 - 11,162	10,752 - 12,337	60,000+	-20°F	87	120 277	0.73 0.32
40	LED	40 PLED® Optical Module - 1050mA	13,642 - 15,652	12,960 - 14,870	14,324 - 16,435	60,000+	-20°F	128	120 277	1.12 0.49
48	LED	48 PLED® Optical Module - 350mA	6,562 - 7,529	6,234 - 7,153	6,890 - 7,909	60,000+	-20°F	53	120 277	0.46 0.20
48	LED	48 PLED® Optical Module - 525mA	9,330 - 10,705	8,864 - 10,170	9,797 - 11,240	60,000+	-20°F	79	120 277	0.68 0.29
48	LED	48 PLED® Optical Module - 700mA	11,735 - 13,464	11,148 - 12,791	12,322 - 14,137	60,000+	-20°F	106	120 277	0.88 0.38
48	LED	48 PLED® Optical Module - 1050mA	16,360 - 18,771	15,542 - 17,832	17,178 - 19,709	60,000+	-20°F	160	120 277	1.33 0.58
RZR										
80	LED	80 PLED® Optical Module - 350mA	10,824 - 12,419	10,283 - 11,798	11,365 - 13,040	60,000+	-20°F	86	120 277	0.75 0.33
80	LED	80 PLED® Optical Module - 525mA	15,587 - 17,884	14,808 - 16,990	16,366 - 18,778	60,000+	-20°F	130	120 277	1.10 0.48
80	LED	80 PLED® Optical Module - 700mA	19,767 - 22,680	18,779 - 21,546	20,755 - 23,814	60,000+	-20°F	174	120 277	1.45 0.63
80	LED	80 PLED® Optical Module - 1050mA	26,255 - 30,124	24,942 - 28,618	27,568 - 31,630	60,000+	-20°F	257	120 277	2.22 0.96
RZR-G										
80	LED	80 PLED® Optical Module - 350mA	10,950 - 12,564	10,403 - 11,936	11,498 - 13,192	60,000+	-20°F	87	120 277	0.75 0.33
80	LED	80 PLED® Optical Module - 525mA	15,735 - 18,054	14,948 - 17,151	16,522 - 18,957	60,000+	-20°F	129	120 277	1.10 0.48
80	LED	80 PLED® Optical Module - 700mA	20,074 - 23,032	19,071 - 21,881	21,078 - 24,184	60,000+	-20°F	174	120 277	1.45 0.63
80	LED	80 PLED® Optical Module - 1050mA	27,651 - 31,725	26,268 - 30,139	29,033 - 33,311	60,000+	-20°F	266	120 277	2.22 0.96



LED COUNT	SOURCE TYPE	SOURCE	INITIAL LUMENS - 4000K CCT	INITIAL LUMENS - 3000K CCT	INITIAL LUMENS - 5000K CCT	L70 GREATER THAN (HR)	STARTING TEMP.	SYSTEM WATTS	VOLTS	MAX INPUT AMPS
120	LED	120 PLED® Optical Module - 350mA	16,211 - 18,599	15,400 - 17,669	17,021 - 19,529	60,000+	-20°F	130	120 277	1.06 0.46
120	LED	120 PLED® Optical Module - 525mA	23,154 - 26,566	21,996 - 25,238	24,312 - 27,894	60,000+	-20°F	192	120 277	1.63 0.70
120	LED	120 PLED® Optical Module - 700mA	29,424 - 33,760	27,953 - 32,072	30,895 - 35,448	60,000+	-20°F	260	120 277	2.17 0.94
120	LED	120 PLED® Optical Module - 1050mA	40,350 - 46,296	38,333 - 43,981	42,368 - 48,611	60,000+	-20°F	398	120 277	3.33 1.43

- 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. 80LED array appears in both the RZR and RZR-G models.
 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 surge suppressor supplied with luminaire.
Note: Surge suppressors are considered a perishable device.
 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.

