

PROJECT _____

TYPE _____

MEMO _____

ORDERING CODE BREAKDOWN

TWO-OPTIC ROADWAY LED LUMINAIRE

MAIN FEATURES

- Designed with a die-cast, 100% recycled aluminum alloy housing for optimal thermal performance and exceptional corrosion resistance
- Delivering up to 153 lumens per watt
- 14,000- to 29,000 lumen packages (93-243W)
- TGIC polyester super durable powder coating with superior gloss, color retention, and weather resistance
- Heavy-duty UL1059 terminal block rated for 600V/85A and capable of terminating #2 to #14 AWG wire
- 0-10V dimming standard; DALI-2 dimming option available
- BAA/BABA Compliance available; *Consult factory to confirm specific fixture code is compliant if this is a requirement*
- **Designed and assembled in U.S.A.!**



EPA: 0.43 sq. ft.

WEIGHT: 13.9 lbs.



FIXTURE	LUMENS	BEAM SPREAD	CRI	CCT	VOLTAGE	CONTROL	SURGE	RECEPTACLE	FINISH	OPTIONS
HLL	14H : 14,000 lm; 93W	2RM : Type II Roadway Medium	7 : 70 CRI	30 : 3000K	HVL : 277- 480V	10 : 0-10V	1PS : 10kV 5kA, 120-277V	00 : None	SGY : Grey (RAL7038)	FAO : Field Adjustable Output Module
	15H : 15,000 lm; 103W	3RM : Type III Roadway Medium		40 : 4000K	STD : 120- 277V	DA : DALI-2	2PS : *20kV 10kA, 120-277V	30 : 3-pin	SBZ : Bronze (RAL8019)	ZT1 : 0-10V Zhaga Ambient Light Control
	16H : 16,000 lm; 113W	4WS : Type IV Wide Short		50 : 5000K			2PH : *20kV 10kA, 277-480V	70 : 7-pin	SBK : Black (RAL9017)	ZT3 : 0-10V Zhaga IR + Ambient Light Control
	18H : 18,000 lm; 123W	5QM : Type V Square Medium						0Z : Z receptacle	MGY : *Marine Grey (RAL7038)	ZT4 : 0-10V Zhaga PIR Occupancy/Motion + IR + Ambient Light Control
	19H : 19,000 lm; 133W	5QS : Type V Square Short						3Z : 3-pin + Z	MBZ : *Marine Bronze (RAL8019)	ZT5 : 0-10V Zhaga Casambi BLE + ALC
	20H : 20,000 lm; 143W							7Z : 7-pin + Z	MBK : *Marine Black (RAL9017)	6P : 6-ft Pigtail with 3 solid leads
	21H : 21,000 lm; 151W									KM : Knuckle Mount
	22H : 22,000 lm; 162W									
	23H : 23,000 lm; 171W									
	24H : 24,000 lm; 181W									
	25H : 25,000 lm; 193W									
	26H : 26,000 lm; 213W									
	27H : 27,000 lm; 223W									
	28H : 28,000 lm; 233W									
	29H : 29,000 lm; 243W									

Notes: *Consult factory for lead time and availability.
HSS not compatible with 4WS optics, instead use SS.
80 and 90 CRI, as well as additional color temperatures, available upon request.

Marine grade and other finish color options available. Consult Factory.
FAO is factory-installed. See Spec Sheet for field-installed accessories.

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FINISH

- TGIC polyester super-durable powder coating with superior gloss, color retention and weather resistance
- Standard finishes provided at 3 mil nominal thickness, salt-spray-tested to 3,000 hours as per ASTM B117
- For marine-grade finish, consult factory. Provided at 5 mil nominal thickness, salt-spray-tested to 4,000 hours as per ASTM B117

CONSTRUCTION

- Die-cast, aluminum alloy housing for optimal thermal performance and exceptional corrosion resistance
- 100% recycled aluminum

OPTICS + PERFORMANCE

- Up to 153 lumens per watt
- 14,000-29,000 lumen packages (93-243W)
- 5 customized distributions available
 - Type II Roadway Medium
 - Type III Roadway Medium
 - Type IV Wide Short
 - Type V Square Short
 - Type V Square Medium
- Multiple shielding options available

CONTROLS

- 0-10 V dimming standard; DALI-2 option available
- Receptacle options:
 - ANSI C136.41 3-pin
 - ANSI C136.41 7-pin (for DALI-2 or dimming)
 - Zhaga Book 18 (for Dali-2 control)
- Proprietary Z receptacle
 - ZT1: 0-10V Ambient Light Control (ALC)
 - ZT3: 0-10V IR + ALC
 - ZT4: 0-10V Occupancy + IR + ALC; CA Title 24 compliant
 - ZT5: Casambi Bluetooth Low Energy + ALC

ELECTRICAL

- 120-277V Standard; 277-480V option available
- PF>0.9, THD<20%
- Parallel surge protection: enhanced 10kV standard, extreme 20kV optional (ANSI C136.2-2015)
- Heavy-duty UL1059 terminal block rated for 600V/85A and capable of terminating #2 to #14 AWG wire
- For series surge protection, consult factory
- Rated for operation -40°C to 40°C
- For 50°C option, consult factory

MOUNTING

- Integral die cast mounting pipe stop
- Slip fitter with $\pm 5^\circ$ tilt adjustment in $2\frac{1}{2}^\circ$ steps
- Adjustable for $1\frac{1}{2}''$ to $2\frac{1}{2}''$ O.D. tenon; Recommended with $2\frac{3}{8}''$ O.D. with $>6''$ length tenon
- Wildlife shield and leveling bubble standard

LISTINGS

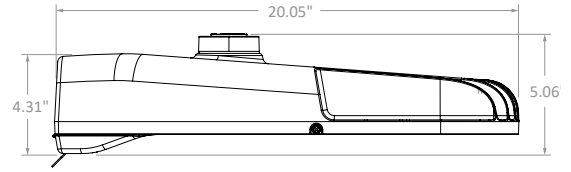
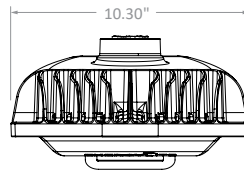
- IDA Dark Sky listed $\leq 3000K$
- IP66 rated optical chamber
- 3G Vibration rated (ANSI C136.31)
- UL listed for wet locations (E487976)
- DLC + DLC Premium listings (Family code: QQQVNT)
- Zhaga D4i listed
- NEMA and distribution labeling standard
- *BAA/BABA Compliance available; Consult factory to confirm specific fixture code is compliant if this is a requirement
- **Designed and assembled in U.S.A.**

WARRANTY

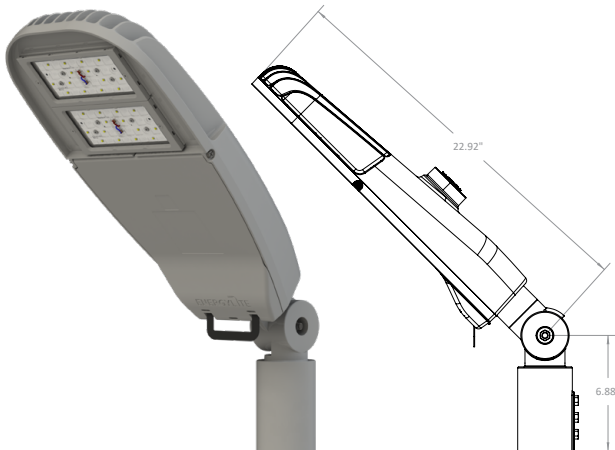
- 5-year warranty

- Slip fitter with $\pm 5^\circ$ tilt adjustment in $2\frac{1}{2}^\circ$ steps
- Adjustable for $1\frac{1}{2}''$ to $2\frac{1}{2}''$ O.D. tenon; Recommended with $2\frac{3}{8}''$ O.D. with $>6''$ length tenon

EPA: 0.43 sq. ft.
WEIGHT: 13.9 lbs.



KNUCKLE MOUNT DETAILS



LUMEN AMBIENT TEMPERATURE (LAT) MULTIPLIERS

Ambient Temperature		Lumen Multiplier
Celsius	Fahrenheit	
0°C	32°F	1.02
10°C	50°F	1.01
25°C	77°F	1.00
40°C	104°F	0.99
50°C	122°F	0.97

TM-21 LUMEN MAINTENANCE PROJECTION

- Calculated by utilizing the LED manufacturer's LM80 test data in conjunction with third party verified in-situ LED drive current and LED temperature data. Use data below to determine light loss factors.

Performance Package	50,000 hrs	60,000 hrs	100,000 hrs
14H to 23H	99.67%	99.49%	98.77%
24H to 27H	98.95%	98.62%	97.30%
28H to 29H	96.41%	95.66%	92.72%

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TWO-OPTIC ROADWAY LED LUMINAIRE

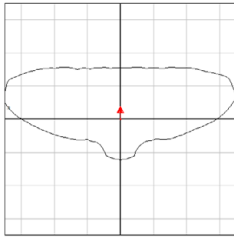
PERFORMANCE DATA

Performance Package	Wattage Label	Drive Current	Color Temp. (CCT)	Input Power (Watts)	TYPE II ROADWAY MED AT 70 CRI			TYPE III ROADWAY MED AT 70 CRI			TYPE IV WIDE SHORT AT 70 CRI			TYPE V SQUARE SHORT AT 70 CRI		
					Lumens	Efficacy (lm/W)	BUG Rating	Lumens	Efficacy (lm/W)	BUG Rating	Lumens	Efficacy (lm/W)	BUG Rating	Lumens	Efficacy (lm/W)	BUG Rating
14H	90	525mA	5000K	93.2	14,186	152	2 0 2	14,250	153	2 0 2	13,418	144	2 0 2	14,220	153	4 0 2
			4000K		14,072	151	2 0 2	14,135	152	2 0 2	13,310	143	2 0 2	14,105	151	4 0 2
			3000K		12,878	138	2 0 2	12,935	139	2 0 2	12,180	131	2 0 2	12,908	138	4 0 2
15H	100	578mA	5000K	102.8	15,428	150	3 0 2	15,497	151	2 0 2	14,593	142	2 0 2	15,465	150	4 0 2
			4000K		15,303	149	3 0 2	15,372	150	2 0 2	14,475	141	2 0 2	15,340	149	4 0 2
			3000K		14,004	136	2 0 2	14,067	137	2 0 2	13,246	129	2 0 2	14,038	137	4 0 2
16H	110	630mA	5000K	112.7	16,662	148	3 0 2	16,737	149	2 0 2	15,760	140	2 0 3	16,702	148	4 0 2
			4000K		16,528	147	3 0 2	16,602	147	2 0 2	15,633	139	2 0 3	16,567	147	4 0 2
			3000K		15,125	134	3 0 2	15,193	135	2 0 2	14,306	127	2 0 2	15,161	135	4 0 2
18H	120	683mA	5000K	122.5	17,785	145	3 0 2	17,865	146	2 0 2	16,823	137	2 0 3	17,828	146	4 0 2
			4000K		17,642	144	3 0 2	17,721	145	2 0 2	16,687	136	2 0 3	17,684	144	4 0 2
			3000K		16,145	132	3 0 2	16,217	132	2 0 2	15,270	125	2 0 3	16,183	132	4 0 2
19H	130	735mA	5000K	132.8	18,983	143	3 0 2	19,068	144	2 0 2	17,955	135	2 0 3	19,028	143	4 0 2
			4000K		18,829	142	3 0 2	18,914	142	2 0 2	17,810	134	2 0 3	18,874	142	4 0 2
			3000K		17,231	130	3 0 2	17,309	130	2 0 2	16,298	123	2 0 3	17,272	130	4 0 2
20H	140	788mA	5000K	142.9	20,089	141	3 0 3	20,179	141	2 0 2	19,001	133	2 0 3	20,137	141	4 0 2
			4000K		19,926	139	3 0 3	20,016	140	2 0 2	18,848	132	2 0 3	19,974	140	4 0 2
			3000K		18,235	128	3 0 2	18,317	128	2 0 2	17,248	121	2 0 3	18,279	128	4 0 2
21H	150	830mA	5000K	151.0	20,916	139	3 0 3	21,010	139	2 0 2	19,783	131	2 0 3	20,966	139	4 0 2
			4000K		20,747	137	3 0 3	20,840	138	2 0 2	19,624	130	2 0 3	20,796	138	4 0 2
			3000K		18,986	126	3 0 3	19,071	126	2 0 2	17,958	119	2 0 3	19,031	126	4 0 2
22H	160	921mA	5000K	161.7	22,044	136	3 0 3	22,143	137	3 0 2	20,850	129	3 0 3	22,096	137	4 0 2
			4000K		21,866	135	3 0 3	21,964	136	3 0 2	20,682	128	3 0 3	21,918	136	4 0 2
			3000K		20,010	124	3 0 3	20,100	124	2 0 2	18,927	117	2 0 3	20,058	124	4 0 2
23H	170	972mA	5000K	171.2	22,960	134	3 0 3	23,063	135	3 0 2	21,717	127	3 0 3	23,015	134	4 0 2
			4000K		22,775	133	3 0 3	22,877	134	3 0 2	21,542	126	3 0 3	22,829	133	4 0 2
			3000K		20,842	122	3 0 3	20,936	122	2 0 2	19,713	115	3 0 3	20,891	122	4 0 2
24H	180	1022mA	5000K	180.5	23,769	132	3 0 3	23,876	132	3 0 3	22,482	125	3 0 3	23,826	132	4 0 2
			4000K		23,577	131	3 0 3	23,683	131	3 0 3	22,301	124	3 0 3	23,633	131	4 0 2
			3000K		21,576	120	3 0 3	21,673	120	3 0 2	20,408	113	3 0 3	21,627	120	4 0 2
25H	190	1089mA	5000K	193.2	24,809	128	3 0 3	24,920	129	3 0 3	23,466	121	3 0 4	24,868	129	5 0 3
			4000K		24,608	127	3 0 3	24,719	128	3 0 3	23,276	120	3 0 3	24,667	128	5 0 3
			3000K		22,520	117	3 0 3	22,621	117	3 0 3	21,301	110	3 0 3	22,574	117	4 0 2
26H	210	1189mA	5000K	213.3	26,688	125	3 0 3	26,808	126	3 0 3	25,243	118	3 0 4	26,751	125	5 0 3
			4000K		26,472	124	3 0 3	26,591	125	3 0 3	25,039	117	3 0 4	26,535	124	5 0 3
			3000K		24,225	114	3 0 3	24,334	114	3 0 3	22,914	107	3 0 4	24,283	114	4 0 2
27H	220	1240mA	5000K	222.9	27,377	123	3 0 3	27,500	123	3 0 3	25,895	116	3 0 4	27,442	123	5 0 3
			4000K		27,156	122	3 0 3	27,278	122	3 0 3	25,686	115	3 0 4	27,221	122	5 0 3
			3000K		24,851	111	3 0 3	24,963	112	3 0 3	23,506	105	3 0 4	24,910	112	5 0 3
28H	230	1290mA	5000K	233.1	28,184	121	3 0 3	28,311	121	3 0 3	26,658	114	3 0 4	28,251	121	5 0 3
			4000K		27,956	120	3 0 3	28,082	120	3 0 3	26,443	113	3 0 4	28,023	120	5 0 3
			3000K		25,584	110	3 0 3	25,699	110	3 0 3	24,199	104	3 0 4	25,645	110	5 0 3
29H	240	1340mA	5000K	243.4	28,754	118	3 0 3	28,883	119	3 0 3	27,197	112	3 0 4	28,823	118	5 0 3
			4000K		28,522	117	3 0 3	28,650	118	3 0 3	26,978	111	3 0 4	28,590	117	5 0 3
			3000K		26,101	107	3 0 3	26,219	108	3 0 3	24,688	101	3 0 4	26,163	107	5 0 3

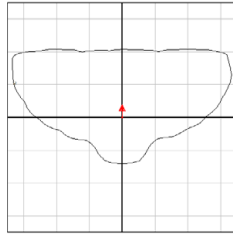


PHOTOMETRIC DISTRIBUTION

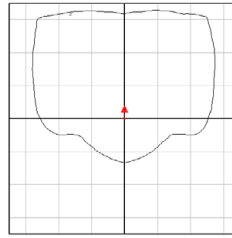
TYPE II ROADWAY MEDIUM (2RM)



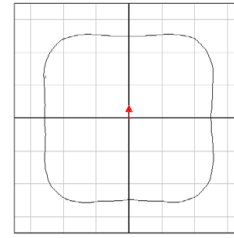
TYPE III ROADWAY MEDIUM (3RM)



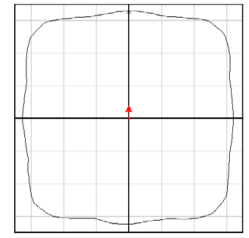
TYPE IV WIDE SHORT (4WS)



TYPE V SQUARE SHORT (5QS)



TYPE V SQUARE MEDIUM (5QM)



SHIELD ACCESSORY DETAILS

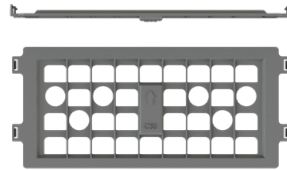
HOUSE SIDE SHIELD (HSS)

- Flat-black, injection molded plastic resin
- Tool-less, clip-on discrete shield
- Blocks light behind the fixture



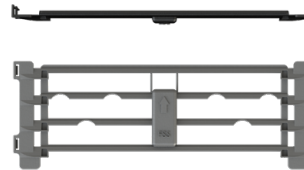
CUL-DE-SAC SHIELD (CSS)

- Flat-black, injection molded plastic resin
- Tool-less, clip-on discrete shield
- Blocks light to left and right of the fixture



FRONT SIDE SHIELD (FSS)

- Flat-black, injection molded plastic resin
- Tool-less, clip-on discrete shield
- Blocks light in front of the fixture.



SCOOP SHIELD (SS)

- Flat-black, injection-molded plastic resin
- Tool-less, clip-on discrete shield
- Blocks light behind the fixture (4WS only)



CONTROLS

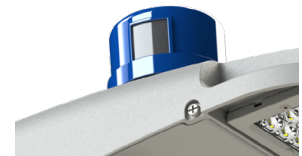
0-10 V ZHAGA OPTIONS

- ZT1: Ambient Light Control
- ZT3: IR + Ambient Light Control
- ZT4: Occupancy + IR + Ambient Light Control
- ZT5: Casambi Bluetooth Low Energy + Ambient Light Control



PHOTOCELL OPTIONS

- PCL01: 120-277 V Photocell (640J, IP65); Blue
- PCL02: 120-277 V Photocell (1280J, IP66); Blue
- PCL03: 277-480 V Photocell (1280J, IP66); Yellow



FIELD ADJUSTABLE OUTPUT MODULE (FAO)



FAO Setting	Output
A	100%
B	90%
C	85%
D	80%
E	75%
F	65%
G	60%
H	55%
J	50%