

FEATURES

- Elegant form factor
- High performance optics up to 17,500 delivered lumens
- Diffusion lens for low glare comfort
- NX™ wireless control options



CONTROL TECHNOLOGY



SPECIFICATIONS

CONSTRUCTION

- One piece die-cast, low copper (<0.6% Cu) Aluminum Alloy 360 with vents and .100" minimum wall thickness.
- Separate internal driver compartment rated for IP66 ingress protection.
- Finish: fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) polyester powdercoat.
- Optional lens is impact resistant 1/8" tempered glass with anti-reflective coating.
- Lens has a one-piece extruded vulcanized silicone gasket.
- Lens frame one piece die-cast, low copper (<0.6% Cu) Aluminum Alloy 360 and .100" minimum wall thickness.
- Lens frame has a one-piece O-ring extruded vulcanized silicone gasket.
- Mid-frame one piece die-cast, low copper (<0.6% Cu) Aluminum Alloy 360 and .100" minimum wall thickness.
- Mid-frame secures to Lens Frame and housing by stainless steel recessed Allen-head screws.
- Silicone gaskets throughout.
- All external fasteners are stainless steel.

OPTICS

- LEDs mount to a metal printed circuit board assembly (MCPCB.)
- Optical lenses are clear injection molded PMMA acrylic.
- Optional Backlight Control on each LED module to completely control unwanted backlight.
- Optional fixture finish optical surfaces will not exceed BUG ratings of the standard white finish and will be greater than or equal to the delivered lumens of the optional matte black optical surface finish.

INSTALLATION

- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.

ELECTRICAL

- Universal voltage, 120 through 277V with a $\pm 10\%$ tolerance. Driver is Underwriters Laboratories recognized.
- High voltage configurations, 347/480. Driver has a 0-10V dimming interface for multi-level illumination options. Driver is Underwriters Laboratories recognized.
- "Thermal Shield", secondary side, thermistor provides protection for the sustainable life of LED module and electronic components.
- Drivers have greater than a 0.9 power factor, less than 20% harmonic distortion, and be suitable for operation in -40°C to 40°C ambient environments.

Altitude®



RELATED PRODUCTS

[Ouro](#)

[Pavilion](#)

[PGL8](#)

ELECTRICAL (CONTINUED)

- Luminaire are capable of operating at 100% brightness in a 40°C environment. Both driver and optical array have integral thermal protection that will dim the luminaire upon detection of temperatures in excess of 85°C.
- Modular wiring harness in the service area provides user access to the dimming circuitry.
- Optional factory programmed dimming profile.
- Surge protection: 10,000k in parallel, 20,000k in series.
- SF for 120, 277, 347 Line volts. DF for 208, 240, 480 Line volts.
- Wiring: No. 18AWM rated 105°C, wet rating.

(Controls continued on page 3)

KEY DATA	
Lumen Range	1,673–18,463
Wattage Range	22–156
Efficacy Range (LPW)	53–148
Reported Life (Hours)	L70/60,000
Weight	21.5 lbs 9.75 kg
EPA Front View / Side View	.37 / .64

DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

ORDERING GUIDE

Example: ALT1-54L-120-3K8-3-UNV-A34-GTT-NXSPW30F-CLR

CATALOG #	
-----------	--

HOUSING

ALT1						
Housing	LED Engine	CCT/CRI	Distribution	Rotation	Voltage	
ALT1 Architectural Area/Site	28L-20	20W, 3,000 lm	AM ¹¹ Amber, 595nm	FR Type I/Front Row	Blank for no rotation	UNV 120–277V
	28L-40	40W, 5,000 lm	27K8 ¹² 2700K, 80 CRI	2 Type II	L ¹ Optic rotation left	347 347V
	28L-60	60W, 7,500 lm	3K7 3000K, 70 CRI	3 Type III	R ¹ Optic rotation right	480 480V
	28L-85 ¹¹	85W, 10,000 lm	3K8 3000K, 80 CRI	4 Type IV		
	54L-95	95W, 12,500 lm	35K8 ¹² 3500K, 80 CRI	4W Type IV Wide		
	54L-120	120W, 15,000 lm	4K7 4000K, 70 CRI	5QM Type V Square Medium		
	54L-155 ¹¹	155W, 17,500 lm	4K8 4000K, 80 CRI	5QN Type V Square Narrow		
			5K7 5000K, 70 CRI	5R Type V Rectangular		
			Consult factory for other CCTs and CRIs	5W Type V Wide (Round)		
				CL Corner Left		
				CR Corner Right		

Mounting	Fixture Finish	Control Options	Options	Control Accessories
ASQ Arm Square pole	BLS Black Gloss Smooth	7PR 7 pin PCR, wireless control enabled	BC ⁷ Backlight Control	SCPREMOTE Remote control for SCP option. Order at least one per project to program and control the occupancy sensor
A34 Arm mt 3.3–4.2" OD pole	BLT Black Matte Textured	7PR-TL 7 pin PCR with twist lock photocontrol	SF Single Fuse	
A46 Arm mt 4.5–6.0" OD pole	DBS Dark Bronze Gloss Smooth	7PR-SC 7 pin PCR with shorting cap	DF Double Fuse	
MAF Horizontal Slipfitter 2.375" OD arm	DBT Dark Bronze Matte Textured	AD-012 ³ AstroDIM: 50% output at midnight	TB Terminal Block	SW7PR SiteSync™ on fixture module via 7PR
SVSF Vertical Slipfitter Mount square for 2" pipe tenon, (2.375" OD)	GTT Graphite Matte Textured	AD-022 ³ AstroDIM: 50% output midnight to 4AM	CLR Clear Lens	SWUSB SiteSync™ Software on USB
VSF Vertical Slipfitter Mount for 2" pipe tenon, (2.375" OD)	LGS Light Grey Gloss Smooth	AD-032 ³ AstroDIM: 50% output 10PM	HDL ⁷ Diffuse Lens	SWTAB ⁸ SiteSync™ Windows Tablet
WB Wall Bracket for area wall mount	LGT Light Grey Matte Textured	AD-042 ³ AstroDIM: 50% output 10PM to 4AM		SWBRG SiteSync™ Wireless Bridge Node
	PSS Platinum Silver Gloss Smooth	NXSP14F ^{3,4} Wired NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 14'		SWFC SiteSync™ Field Commission Service
	VGT Verde Green Matte Textured	NXSP30F ^{3,4} Wired NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30'		WIR-RME-L wiSCAPE™ External Fixture Module
	WHS White Gloss Smooth	NXSPW14F ^{3,4} NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, 14'		NXOFM-1R1D-UNV NX External Control Node
	WHT White Matte Textured	NXSPW30F ^{3,4} NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30'		
	Color Option	NXWE NX Wireless Enabled		
	CC ² Custom Color	SCL-8F Low voltage sensor for 3rd party wireless controls via 7PR. For mounting heights up to 8' ¹⁰		
		SCL-40F Low voltage sensor for 3rd party wireless controls via 7PR. For mounting heights 9' to 40' ¹⁰		
		SCP-8F Remote control programmable line voltage sensor, use with SCPREMOTE		
		SCP-40F Remote control programmable line voltage sensor, use with SCPREMOTE		
		SWP ^{3,4,5} Site Sync™ Pre Commission Wireless Module		
		SWPM-40F ^{3,4,5} Site Sync with Sensor 9' to 40' MH		

Notes:

- Not available with 5QM and 5W distributions.
- Consult factory for custom color, marine and corrosive finish options.
- Not available with other sensor or wireless control options.
- Not available in 480V.
- Specify group and zone at time of order. See www.hubbellighting.com/sitesync for more details. Order at least one SiteSync interface accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node
- Not available with Type 5 distributions, CLR, or HDL option.
- Only available in Type 3 or Type 5W.
- Microsoft, Encarta, MSN, and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Turtle friendly.
- UNV only.
- Not available with 28L-20 configuration of the LED Engine
- Please see Delivered Lumens chart on Page 5 for lumen scaling factor. Consult factory for more details.

SPECIFICATIONS (CONTINUED)

Certifications and Listings:

- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations and 40°C ambient temperatures.
- ANSI C136.31-2010 Vibration tested and compliant 1.5G and 4G reference page 15
- RoHS compliant.
- IP65 rated with lens, IP66 rated with non-lens version
- IEC 66262 Mechanical Impact Code IK08.
- IDA approved, 3000K and warmer CCTs only.
- DLC® (DesignLights Consortium) Qualified, with some Premium Qualified configurations. Please refer to the DLC website for specific product qualifications at www.designlights.org

WARRANTY

- 5 year warranty
- See [HLI Standard Warranty](#) for additional information

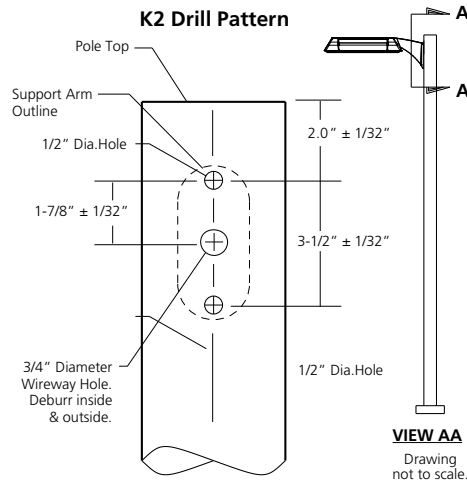
Mounting:

Support Arm:

- Die-cast, low copper aluminum alloy, with splice access cover.
- Die-cast pole adapter and an internal reinforcing plate are provided with a wire strain relief.
- The arm adapter is square or circular cut for specified pole size and shape.
- For field wire connections, a terminal block is mounted in the arm cavity and accessible behind the splice access cover. The block accepts #14 to #8 wire sizes and is factory prewired to the electrical module's quick-disconnect plug inside the electrical compartment.

Optional Wall Mount:

- Optional, cast aluminum mounting plate attaches to a wall over a junction box and the speed mount is bolted to the cover plate. To complete the wiring, the luminaire assembly slides over the mounting plate.



PRODUCT EXCEPTIONS & DETAILS

Configuration			EPA
	1SA	1 Arm Side Mount	0.64
	2SL	2 Arm Side Mount	1.01
	2SB	2 Arm Side Mount	1.28
	3SY	3 Arm Side Mount	1.48

Configuration			EPA
	3ST*	3 Arm Side Mount	1.48
	4SC	4 Arm Side Mount	1.65
	1W	Single Wall Mount	1.65
	HSF	Horizontal Slipfitter	1.48

SPECIFICATIONS (CONTINUED)

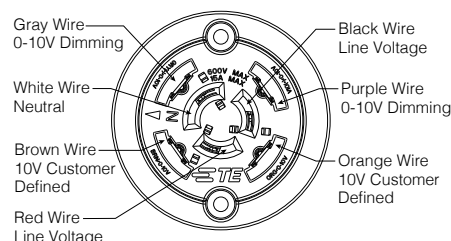
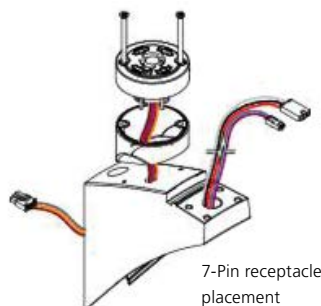
CONTROLS:

7PR

Fully gasketed and wired 7-pin receptacle option. Easy access location above the electrical compartment. 7-pin construction allows for a user-defined interface and provides a controlled definition of operational performance. ANSI twist-lock control module by-others.

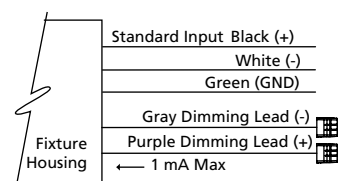
Standard customer operation modes:

1. Traditional on/off photoelectric control.
2. 5-pin wireless photoelectric control for added dimming feature.
3. 7-pin wireless photoelectric control for dimming and additional I/O connections for customer use.



Dimming:

- Dimming range from 100% to 10% through the use of the standard 0-10V interface on the programmable driver.



- Modular wiring harness in the service area provides user access to the dimming circuitry.
- Dimming circuitry compatible with 0-10V, user-defined control devices.
- Optional factory programmed dimming profile.

Wireless Controls wiSCAPE™

Hubbell Control Solution's wiSCAPE™ wireless control modules allow an individual fixture to be managed, monitored and measured. The modules communicate securely over a robust certified meshed radio signal. The wiSCAPE modules provide on/off/dim control, external device input, alerts and metering.

WIR-RME-L

wiSCAPE External Module, 120-480V, 1000ft range (LOS), Internal Photocell, 1 Digital Input, Compatible with the A-25-7H option

SiteSync™¹

SiteSync™ wireless control system for reduction in energy and maintenance cost while optimizing light quality 24/7. See ordering information or visit www.hubbellighting.com/products/sitesync for more details.

NX Distributed Intelligence™

Hubbell Control Solutions' NX Distributed Intelligence™ lighting control platform utilizes a Distributed Network Architecture (DNA) that connects intelligent devices including luminaires, controllers, panels, occupancy sensors, photocells, wall switches and dimmers, creating a system with an unmatched level of reliability, scalability and simplicity

Dimming WASP Occupancy Sensor WSP

The Dimming WASP Outdoor Occupancy Sensor is specifically designed to provide 0-10VDC output for the control of dimmable fixtures. Easy to use dipswitches allow the user to adjust sensor time delay and sensitivity as well as set unoccupied and occupied dimming levels. Sensors also feature a daylight sensor for ON/OFF control of fixtures when there is sufficient natural light. Visit https://hubbellcdn.com/installationmanuals/2102B_Dimming_WASP_Install.pdf for more details.

Round Pole-Mounted Occupancy Sensor up to 30'. Select voltage and finish color.

SCH-R

Round Pole-Mounted Occupancy Sensor: up to 30' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCH-R4¹/277²/BL³

Square Pole-Mounted Occupancy Sensor up to 30'. Select voltage and finish color.

SCH-S

Square Pole-Mounted Occupancy Sensor: up to 30' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCH-S/277²/BL³

AstroDIM

AstroDIM provides multi-stage night-time power reduction based on an internal timer referenced to the power on/off time. There is no need for an external control infrastructure. The unit automatically performs a dimming profile based on the predefined scheduled reference to the midpoint, which is calculated based on the power on/off times.

Optional Fusing:

SF for 120, 277, and 347 Line volts
DF for 208, 240, and 480 Line volts

High temperature fuse holders factory installed inside the fixture housing.

Fuse is included.

CAUTION:

Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.

¹PRECOMMISSIONED SITESYNC ORDERING INFORMATION: When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project location, Group information, and Operating schedules. For more detailed information please visit www.HubbellLighting.com/products/sitesync or contact Hubbell Lighting tech support at (800) 345-4928.

SiteSync fixtures with occupancy sensor (SWPM) require the mounting height of the fixture for selection of the lens.

DELIVERED LUMENS

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	20	3,000	No Lens	FR	3110	0	0	0	141	3274	0	0	0	149	3318	1	0	0	148
				FR-BC	2036	0	0	0	93	2143	0	0	0	97	2172	0	0	0	97
				2	2903	1	0	1	132	3056	1	0	1	139	3097	1	0	1	138
				2-BC	1771	0	0	0	80	1864	0	0	0	85	1889	0	0	0	84
				3	2945	1	0	1	131	3100	1	0	1	138	3141	1	0	1	140
				3-BC	1779	0	0	1	81	1873	0	0	1	85	1898	0	0	1	85
				4	2943	0	0	1	134	3098	0	0	1	141	3139	0	0	1	141
				4-BC	2189	0	0	1	100	2304	0	0	1	105	2335	0	0	1	104
				4W	2927	1	0	1	133	3081	1	0	1	140	3122	1	0	1	139
				4W-BC	1673	0	0	1	76	1761	0	0	1	80	1785	0	0	1	80
				5R	3025	2	0	2	137	3184	2	0	2	145	3227	2	0	2	144
				5QM	3069	2	0	0	139	3230	2	0	0	147	3273	2	0	0	146
				5QN	3051	2	0	0	139	3211	2	0	0	146	3254	2	0	0	145
				5W	3024	2	0	1	137	3183	2	0	1	145	3226	2	0	1	144
			Clear Lens	FR	2909	0	0	0	132	3062	0	0	0	139	3103	0	0	0	141
				2	2715	1	0	1	123	2858	1	0	1	130	2896	1	0	1	132
				3	2754	1	0	1	125	2899	1	0	1	132	2938	1	0	1	134
				4	2752	0	0	1	125	2897	0	0	1	132	2936	0	0	1	133
				4W	2738	1	0	1	124	2882	1	0	1	131	2920	1	0	1	133
				5R	2829	2	0	2	129	2978	2	0	2	135	3018	2	0	2	137
				5QM	2870	2	0	0	130	3021	2	0	0	137	3062	2	0	0	139
				5QN	2853	2	0	0	130	3003	2	0	0	137	3044	2	0	0	138
			HDL Lens	5W	2829	2	0	1	129	2977	2	0	1	135	3017	2	0	1	137
				3	2341	1	0	1	106	2464	1	0	1	112	2497	1	0	1	114
				5W	2405	1	0	1	109	2531	1	0	1	115	2565	1	0	1	117

Scaling factors 27K8 = 0.859, 35K8 = 0.906 of 5K7 lumen packages

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	40	5,000	No Lens	FR	4870	1	0	0	128	5127	1	0	0	135	5195	1	0	0	137
				FR-BC	3189	0	0	0	84	3356	0	0	0	88	3401	0	0	0	90
				2	4546	1	0	1	120	4785	1	0	1	126	4849	1	0	1	128
				2-BC	2773	0	0	1	73	2919	0	0	1	77	2958	0	0	1	78
				3	4611	1	0	2	121	4854	1	0	2	128	4919	1	0	2	129
				3-BC	2786	0	0	1	73	2933	0	0	1	77	2972	0	0	1	78
				4	4608	1	0	2	121	4851	1	0	2	128	4915	1	0	2	129
				4-BC	3428	0	0	1	90	3608	0	0	1	95	3656	0	0	1	96
				4W	4584	1	0	2	121	4825	1	0	2	127	4889	1	0	2	129
				4W-BC	2621	0	0	1	69	2758	0	0	1	73	2795	0	0	1	74
				5R	4737	2	0	2	125	4986	3	0	1	131	5053	3	0	3	133
				5QM	4806	2	0	1	126	5058	2	0	1	133	5126	2	0	1	135
				5QN	4777	2	0	0	126	5028	2	0	0	132	5096	2	0	0	134
				5W	4736	3	0	1	125	4985	2	0	2	131	5052	3	0	1	133
			Clear Lens	FR	4555	1	0	0	120	4795	1	0	0	126	4859	1	0	0	128
				2	4252	1	0	1	112	4476	1	0	1	118	4536	1	0	1	119
				3	4333	1	0	1	114	4561	1	0	1	120	4622	1	0	1	121
				4	4310	0	0	2	113	4537	1	0	2	119	4598	1	0	2	121
				4W	4287	1	0	2	113	4513	1	0	2	119	4573	1	0	2	120
				5R	4431	2	0	2	117	4663	2	0	2	123	4726	2	0	2	124
				5QM	4495	2	0	1	118	4731	2	0	1	125	4794	2	0	1	126
				5QN	4468	2	0	0	118	4703	2	0	0	124	4766	2	0	0	125
				5W	4430	3	0	1	117	4663	3	0	1	123	4725	3	0	1	124
			HDL Lens	3	3741	1	0	1	98	3937	1	0	1	104	3990	1	0	1	105
				5W	3891	2	0	1	102	4095	2	0	1	108	4150	2	0	1	109

Scaling factors 27K8 = 0.859, 35K8 = 0.906 of 5K7 lumen packages

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	60	7,500	No Lens	FR	7347	1	0	1	122	7733	1	0	1	129	7837	1	0	1	131
				FR-BC	4810	0	0	0	80	5063	0	0	0	84	5131	0	0	0	86
				2	6858	1	0	2	114	7218	1	0	2	120	7315	1	0	2	122
				2-BC	4183	0	0	1	70	4403	0	0	1	73	4462	0	0	1	74
				3	6956	1	0	2	116	7322	1	0	2	122	7420	1	0	2	123
				3-BC	4203	0	0	1	70	4424	0	0	1	74	4483	0	0	1	75
				4	6951	1	0	2	116	7317	1	0	2	122	7415	1	0	2	124
				4-BC	5171	0	0	2	86	5443	0	0	2	91	5516	0	0	2	92
				4W	6915	1	0	2	115	7278	1	0	2	121	7376	1	0	2	123
				4W-BC	3953	0	0	2	66	4161	0	0	2	69	4216	0	0	2	70
				5R	7145	3	0	3	119	7521	3	0	3	125	7622	3	0	3	127
				5QM	7249	3	0	1	121	7630	3	0	1	127	7732	3	0	1	129
				5QN	7206	3	0	0	120	7585	3	0	0	126	7687	3	0	0	128
				5W	7144	3	0	2	119	7520	3	0	2	125	7620	3	0	2	127
			Clear Lens	FR	6872	1	0	1	115	7233	1	0	1	121	7330	1	0	1	122
				2	6414	1	0	2	107	6751	1	0	2	113	6842	1	0	2	114
				3	6506	1	0	2	108	6848	1	0	2	114	6940	1	0	2	116
				4	6502	1	0	2	108	6844	1	0	2	114	6935	1	0	2	116
				4W	6468	1	0	2	108	6807	1	0	2	113	6899	1	0	2	115
				5R	6683	3	0	3	111	7035	3	0	3	117	7129	3	0	3	119
				5QM	6780	3	0	1	113	7137	3	0	1	119	7232	3	0	1	121
				5QN	6740	2	0	0	112	7094	3	0	0	118	7189	3	0	0	120
				5W	6682	3	0	2	111	7033	3	0	2	117	7128	3	0	2	119
			HDL Lens	3	5531	2	0	1	92	5821	2	0	1	97	5899	2	0	1	98
				5W	5680	2	0	1	95	5979	2	0	1	100	6059	2	0	1	101

Scaling factors 27K8 = 0.859, 35K8 = 0.906 of 5K7 lumen packages

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	85	10,000	No Lens	FR	9699	1	0	1	113	10209	1	0	1	119	10346	1	0	1	120
				FR-BC	6350	0	0	1	74	6684	0	0	1	78	6773	0	0	1	79
				2	9054	1	0	2	105	9530	2	0	2	111	9657	2	0	2	112
				2-BC	5523	0	0	1	64	5813	0	0	1	68	5891	0	0	1	68
				3	9183	1	0	2	107	9666	1	0	2	112	9795	1	0	2	114
				3-BC	5549	0	0	2	65	5841	0	0	2	68	5919	0	0	2	69
				4	9177	1	0	2	107	9660	1	0	2	112	9789	1	0	2	114
				4-BC	6827	0	0	2	79	7186	0	0	2	84	7282	0	0	2	85
				4W	9129	1	0	3	106	9609	1	0	3	112	9737	1	0	3	113
				4W-BC	5219	0	0	2	61	5493	0	0	2	64	5567	0	0	2	65
				5R	9433	3	0	3	110	9929	3	0	3	115	10062	3	0	3	117
				5QM	9570	3	0	1	111	10073	3	0	1	117	10208	3	0	1	119
				5QN	9514	3	0	0	111	10014	3	0	0	116	10148	3	0	0	118
				5W	9432	4	0	2	110	9927	4	0	2	115	10060	4	0	2	117
			Clear Lens	FR	9072	1	0	1	105	9549	1	0	1	111	9677	1	0	1	113
				2	8468	1	0	2	98	8913	1	0	2	104	9033	1	0	2	105
				3	8589	1	0	2	100	9041	1	0	2	105	9162	1	0	2	107
				4	8584	1	0	2	100	9035	1	0	2	105	9156	1	0	2	106
				4W	8538	1	0	2	99	8987	1	0	3	105	9108	1	0	3	106
				5R	8823	3	0	3	103	9287	3	0	3	108	9411	3	0	3	109
				5QM	8951	3	0	1	104	9422	3	0	1	110	9548	3	0	1	111
				5QN	8898	3	0	0	103	9366	3	0	0	109	9491	3	0	0	110
				5W	8822	3	0	2	103	9285	4	0	2	108	9410	4	0	2	109
			HDL Lens	3	7302	2	0	2	85	7685	2	0	2	89	7788	2	0	2	91
				5W	7499	2	0	1	87	7893	2	0	1	92	7999	2	0	1	93

Scaling factors 27K8 = 0.859, 35K8 = 0.906 of 5K7 lumen packages

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
54L	95	12,500	No Lens	FR	11792	1	0	1	125	12412	1	0	1	132	12578	1	0	1	134
				FR-BC	7848	0	0	1	83	8260	0	0	1	88	8371	0	0	1	90
				2	11210	2	0	2	119	11800	2	0	2	126	11958	2	0	2	126
				2-BC	5993	0	0	1	64	6308	0	0	1	67	6392	0	0	1	69
				3	11225	1	0	2	119	11815	2	0	2	126	11974	2	0	2	127
				3-BC	6273	0	0	2	67	6603	0	0	2	70	6691	0	0	2	72
				4	11311	1	0	2	120	11906	1	0	3	127	12065	1	0	3	128
				4-BC	7291	0	0	2	78	7674	0	0	2	82	7777	0	0	2	84
				4W	11203	2	0	3	119	11792	2	0	3	125	11950	2	0	3	127
				4W-BC	5603	0	0	2	60	5898	0	0	2	63	5977	0	0	2	65
				5R	11623	3	0	3	124	12234	3	0	3	130	12398	3	0	3	131
				5QM	11770	3	0	2	125	12389	3	0	2	132	12555	3	0	2	133
				5QN	11799	3	0	0	126	12420	3	0	0	132	12586	3	0	0	133
				5W	11594	4	0	2	123	12204	4	0	2	130	12367	4	0	2	131
			Clear Lens	FR	11029	1	0	1	117	11609	1	0	1	124	11765	1	0	1	125
				2	10485	2	0	2	112	11036	2	0	2	117	11184	2	0	2	119
				3	10555	1	0	2	112	11110	1	0	2	118	11259	1	0	2	120
				4	10579	1	0	2	113	11136	1	0	2	118	11285	1	0	2	120
				4W	10479	1	0	3	111	11029	2	0	3	117	11177	2	0	3	119
				5R	10871	3	0	3	116	11443	3	0	3	122	11596	3	0	3	123
				5QM	11009	3	0	2	117	11588	3	0	2	123	11743	3	0	2	125
				5QN	11036	3	0	0	117	11616	3	0	0	124	11772	3	0	0	125
				5W	10845	4	0	2	115	11415	4	0	2	121	11568	4	0	2	123
			HDL Lens	3	8736	2	0	2	93	9195	2	0	2	98	9318	2	0	2	100
				5W	9152	3	0	1	97	9633	3	0	1	102	9762	3	0	1	104

Scaling factors 27K8 = 0.859, 35K8 = 0.906 of 5K7 lumen packages

DELIVERED LUMENS (CONTINUED)

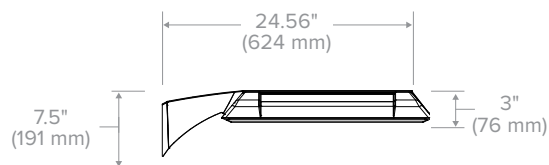
LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
54L	120	15,000	No Lens	FR	14390	1	0	1	118	15146	1	0	1	124	15349	1	0	1	125
				FR-BC	9577	1	0	1	78	10080	1	0	1	83	10215	1	0	1	84
				2	13680	2	0	2	112	14399	2	0	2	118	14592	2	0	2	120
				2-BC	7313	0	0	1	60	7697	0	0	2	63	7800	0	0	2	64
				3	13698	2	0	3	112	14418	2	0	3	118	14611	2	0	3	120
				3-BC	7655	0	0	2	63	8057	0	0	2	66	8165	0	0	2	67
				4	13803	1	0	3	113	14528	1	0	3	119	14723	1	0	3	121
				4-BC	8897	0	0	2	73	9365	0	0	2	77	9490	0	0	2	78
				4W	13671	2	0	3	112	14390	2	0	3	118	14583	2	0	4	120
				4W-BC	6838	1	0	2	56	7197	1	0	2	59	7294	1	0	2	60
				5R	14184	4	0	4	116	14929	4	0	4	122	15129	4	0	4	124
				5QM	14363	3	0	2	118	15118	4	0	2	124	15321	4	0	2	126
				5QN	14399	4	0	4	118	15156	4	0	1	124	15359	4	0	1	126
				5W	14149	4	0	2	116	14893	4	0	2	122	15092	4	0	2	124
			Clear Lens	FR	13459	1	0	1	110	14167	1	0	1	116	14356	1	0	2	118
				2	12795	2	0	2	105	13468	2	0	2	110	13648	2	0	2	112
				3	12812	2	0	2	105	13486	2	0	2	111	13666	2	0	2	112
				4	12910	1	0	3	106	13589	1	0	3	111	13771	1	0	3	113
				4W	12787	2	0	3	105	13459	2	0	3	110	13640	2	0	3	112
				5R	13266	4	0	4	109	13964	4	0	4	114	14151	4	0	4	116
				5QM	13434	3	0	2	110	14140	3	0	2	116	14330	3	0	2	117
				5QN	13467	4	0	0	110	14175	4	0	0	116	14365	4	0	0	118
				5W	13234	4	0	2	108	13929	4	0	2	114	14116	4	0	2	116
			HDL Lens	3	10892	3	0	2	89	11464	3	0	2	94	11618	3	0	2	95
				5W	11250	3	0	1	92	11841	3	0	2	97	12000	3	0	2	98

Scaling factors 27K8 = 0.859, 35K8 = 0.906 of 5K7 lumen packages

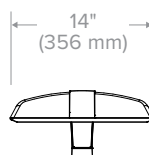
DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
54L	155	17,500	No Lens	FR	17299	2	0	2	111	18208	2	0	2	117	18452	2	0	2	119
				FR-BC	11513	1	0	1	74	12118	1	0	1	78	12280	1	0	1	79
				2	16445	2	0	2	105	17310	2	0	3	111	17542	2	0	3	112
				2-BC	8791	0	0	2	56	9253	0	0	2	59	9377	0	0	2	60
				3	16467	2	0	3	106	17333	2	0	3	111	17565	2	0	3	113
				3-BC	9202	1	0	2	59	9686	1	0	2	62	9816	1	0	2	63
				4	16593	1	0	3	106	17465	1	0	3	112	17699	1	0	4	113
				4-BC	10696	0	0	2	69	11258	1	0	2	72	11409	1	0	2	73
				4W	16435	2	0	4	105	17299	2	0	4	111	17531	2	0	4	112
				4W-BC	8220	1	0	2	53	8652	1	0	2	55	8768	1	0	2	56
				5R	17051	4	0	4	109	17947	4	0	4	115	18188	4	0	4	117
				5QM	17267	4	0	2	111	18174	4	0	2	117	18418	4	0	2	118
				5QN	17309	4	0	1	111	18219	4	0	1	117	18463	4	0	1	118
				5W	17009	4	0	2	109	17903	4	0	2	115	18143	4	0	2	116
			Clear Lens	FR	16180	1	0	2	104	17030	1	0	2	109	17258	1	0	2	111
				2	15382	2	0	2	99	16190	2	0	2	104	16407	2	0	2	105
				3	15402	2	0	3	99	16212	2	0	3	104	16429	2	0	3	105
				4	15520	1	0	3	99	16336	1	0	3	105	16555	1	0	3	106
				4W	15372	2	0	4	99	16180	2	0	4	104	16397	2	0	4	105
				5R	15948	4	0	4	102	16787	4	0	4	108	17011	4	0	4	109
				5QM	16150	4	0	2	104	16999	4	0	2	109	17227	4	0	2	110
				5QN	16190	4	0	1	104	17041	4	0	1	109	17269	4	0	1	111
				5W	15909	4	0	2	102	16745	4	0	2	107	16969	4	0	2	109
			HDL Lens	3	13093	3	0	2	84	13782	3	0	2	88	13966	3	0	2	90
				5W	13524	3	0	2	87	14235	3	0	2	91	14426	3	0	2	92

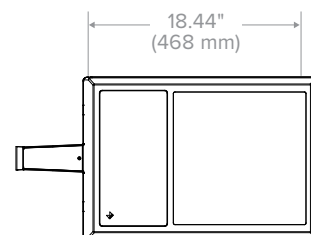
Scaling factors 27K8 = 0.859, 35K8 = 0.906 of 5K7 lumen packages

DIMENSIONS


Side View



Front View



Top View

PHOTOMETRY

ALT1-54L-155-4k7-FR

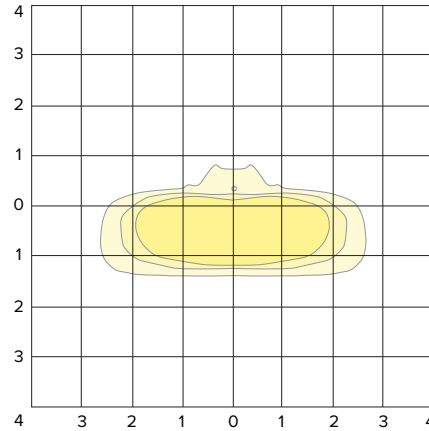
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	18208
Watts	156
Efficacy	116.7
IES Type	I
BUG Rating	B2-U0-G2
Mounting Height	30 ft
Grid Scale	30 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	16101	88.4%
Downward House Side	2107	11.6%
Downward Total	18208	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	18208	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-2

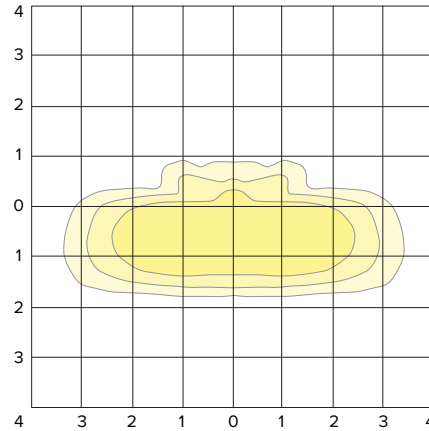
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	17309
Watts	156
Efficacy	111.0
IES Type	II
BUG Rating	B2-U0-G3
Mounting Height	30 ft
Grid Scale	30 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	14323	82.7%
Downward House Side	2986	17.3%
Downward Total	17309	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17309	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-3

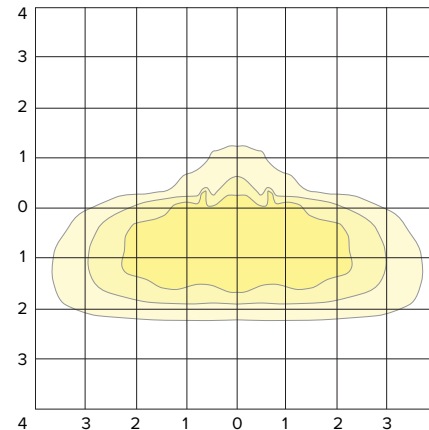
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	17332
Watts	156
Efficacy	111.1
IES Type	III
BUG Rating	B2-U0-G3
Mounting Height	30 ft
Grid Scale	30 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	14911	86.0%
Downward House Side	2421	14.0%
Downward Total	17332	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17332	100%

ISOFOOT CANDLE PLOT



PHOTOMETRY

ALT1-54L-155-4k7-4

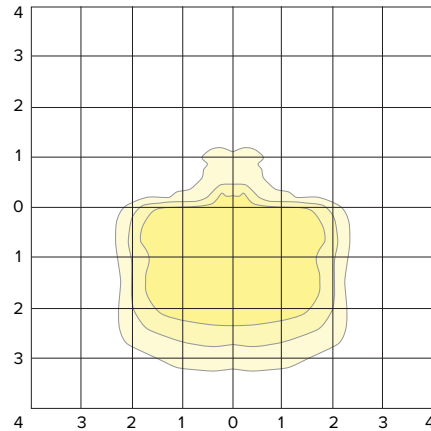
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	17465
Watts	156
Efficacy	112.0
IES Type	IV
BUG Rating	B1-U0-G3
Mounting Height	30 ft
Grid Scale	30 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	15757	90.2%
Downward House Side	1708	9.8%
Downward Total	17465	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17465	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-4W

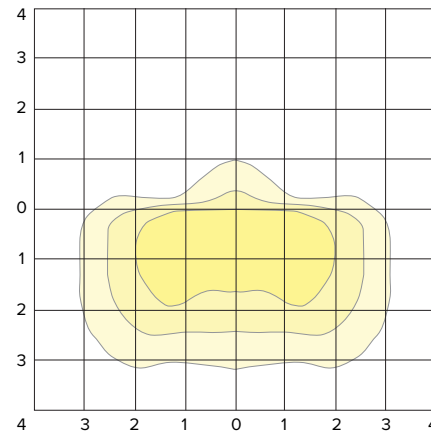
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	17299
Watts	156
Efficacy	110.9
IES Type	IV
BUG Rating	B2-U0-G4
Mounting Height	30 ft
Grid Scale	30 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	15320	88.6%
Downward House Side	1979	11.4%
Downward Total	17299	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17299	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-5R

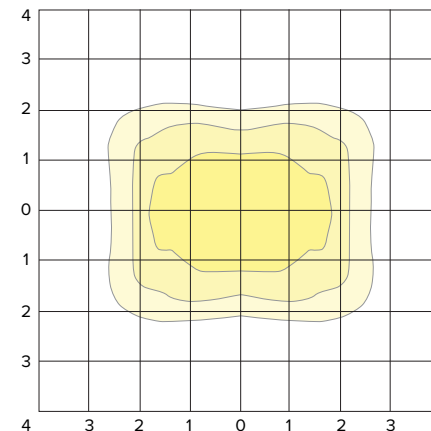
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	17947
Watts	156
Efficacy	115.0
IES Type	III
BUG Rating	B4-U0-G4
Mounting Height	30 ft
Grid Scale	30 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	8974	50.0%
Downward House Side	8974	50.0%
Downward Total	17947	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17947	100%

ISOFOOT CANDLE PLOT



PHOTOMETRY

ALT1-54L-155-4k7-5QM

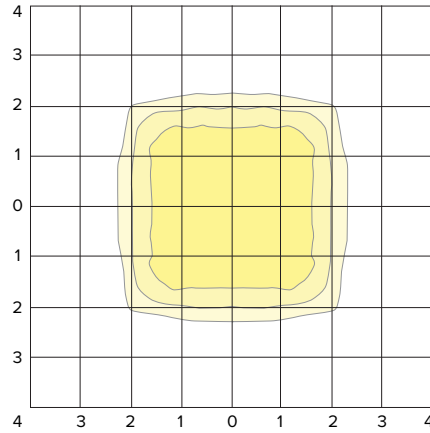
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	18173
Watts	156
Efficacy	116.5
IES Type	V
BUG Rating	B4-U0-G2
Mounting Height	30 ft
Grid Scale	30 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	9087	50.0%
Downward House Side	9087	50.0%
Downward Total	18173	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	18173	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-5QN

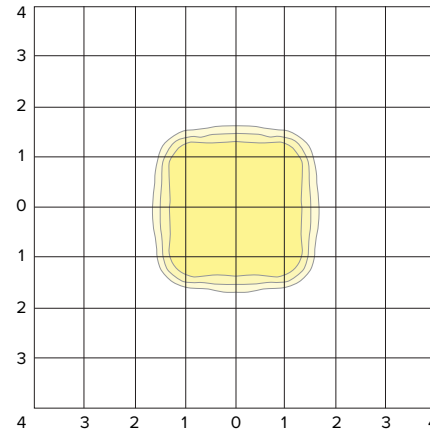
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	18219
Watts	156
Efficacy	116.8
IES Type	V
BUG Rating	B4-U0-G1
Mounting Height	30 ft
Grid Scale	30 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	9110	50.0%
Downward House Side	9110	50.0%
Downward Total	18219	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	18219	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-5W

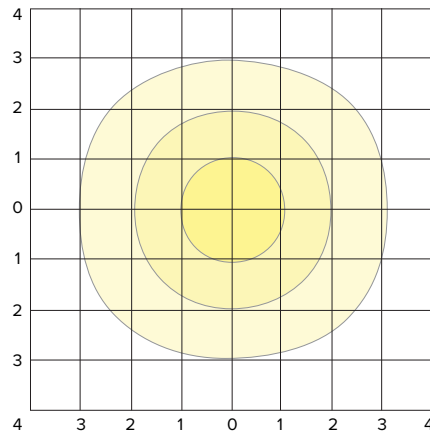
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	17904
Watts	156
Efficacy	114.8
IES Type	V
BUG Rating	B4-U0-G2
Mounting Height	30 ft
Grid Scale	30 ft

ZONAL LUMEN SUMMARY

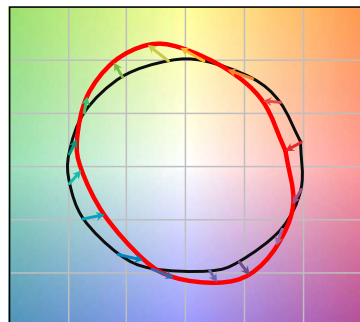
Zone	Lumens	% Luminaire
Downward Street Side	8952	50.0%
Downward House Side	8952	50.0%
Downward Total	17904	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17904	100%

ISOFOOT CANDLE PLOT



TM-30 DATA

COLOR VECTOR GRAPHIC

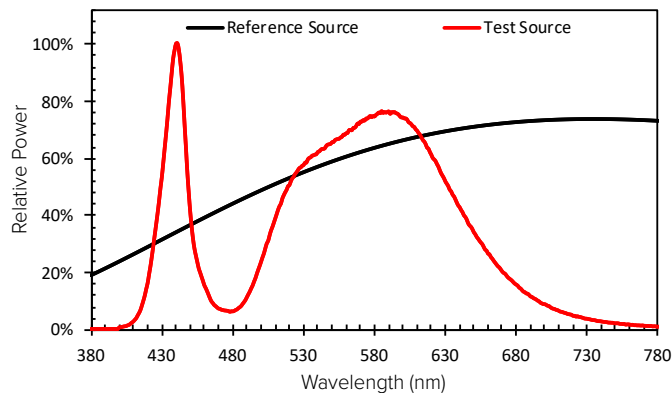


— Reference Illuminant — Test Source

TEST SOURCE

R _f	68
R _a	99
CCT(K)	3947
D _{uv}	0.0004
x	0.3831
y	0.3793
CIE R _a	72

SPECTRAL POWER DISTRIBUTION COMPARISON



ELECTRICAL DATA

Electrical												Dimming					
# LED	System Watts	Drive Current	Line Voltage		Amps AC						Min. Power Factor	Max THD (%)	Dimming Range	Source current out of 0-10V		Absolute voltage range on 0-10V (+)	
			VAC	Hz	120	208	240	277	347	480				Min	Max	Min	Max
28	22	250 mA	120-480	50/60	0.18	0.11	0.09	0.08	0.06	0.05	>0.9	20	10% to 100%	0mA	1mA	0V	10V
	38	400 mA			0.32	0.18	0.16	0.14	0.11	0.08							
	60	650 mA			0.50	0.29	0.25	0.22	0.17	0.13							
	86	950 mA			0.72	0.41	0.36	0.31	0.25	0.18							
54	94	550 mA			0.78	0.45	0.39	0.34	0.27	0.20							
	122	700 mA			1	0.59	0.51	0.44	0.35	0.25							
	156	900 mA			1.30	0.75	0.65	0.56	0.45	0.33							

TM-21 Lifetime Calculation - Projected Lumen Maintenance (25°C / 77°C)

Hours	0	25,000	36,000	50,000	100,000	Reported L70
Projected Lumen Maintenance	100%	96.9%	95.3%	93.3%	86.6%	> 60,000

CRI Lumen Multiplier

CCT	Amber	70 CRI	80 CRI	90 CRI
Amber	0.1727s	—	—	—
2700K	—	—	0.859	—
3000K	—	1	0.9119	0.7033
3500K	—	—	0.906	—
4000K	—	1	0.8941	0.734
5000K	—	1	0.879	0.7712

Scaling factors 27K8 = 0.859, 35K8 = 0.906 of 5K7 lumen packages

VIBRATION RATINGS

ALT 1		ALT 2		ALT 3	
Ordering Code	Rating	Ordering Code	Rating	Ordering Code	Rating
WM	1.5G	WM	1.5G	WM	1.5G
VSF	1.5G	VSF	1.5G	VSF	1.5G
SVSF	1.5G	SVSF	1.5G	SVSF	1.5G
A34	4G	A34	1.5G	A34	1.5
MAF	4G	MAF	4G	MAF	3G