



by Signify

Site & Area

PureForm

PPT post top
with comfort optics



Gardco PureForm LED post top features a sleek, low profile design. Comfort optics are designed to enhance visual comfort by reducing glare. Type 1, 2, 3, and 5 optical distributions are available with lumen output up to 9000 lumens. A full range of control options provides additional energy savings. Optional integral emergency battery backup is available for path-of-egress illumination.

Project: _____

Location: _____

Cat.No: _____

Type: _____

Lamps: _____ Qty: _____

Notes: _____

Ordering guide

example: PPT-196L-450-NW-G2-T3-1-UNV-DGY

Prefix	Number of LEDs	Drive Current	LED Color - Generation	Mounting	Distribution	Emergency	Voltage
PPT							
PPT PureForm post top, comfort optics	196L 196 LEDs	450 450mA 650 650mA 1150 1150mA ¹ 1675 1675mA ¹ 2100 2100mA ^{1,2}	WW-G2 Warm White 3000K, 80CRI Generation 2 NW-G2 Neutral White 4000K, 80CRI Generation 2 CW-G2 Cool White 5000K, 70CRI Generation 2 WY-G2 Warm Yellow 2700K, 80CRI Generation 2 ³ BW-G2 Balanced White 3500K (80CRI) Generation 2 ³	T3 Mounts to a 3" x 4" Tenon (standard) T2 Mounts to a 2-3/8" x 4" Tenon (must be ordered and shipped as a separate accessory)	1 Comfort Type 1 2 Comfort Type 2 3 Comfort Type 3 5 Comfort Type 5	Leave blank for no battery EBPC Emergency battery pack cold weather ^{2,4,5,6,7} EBP Emergency battery pack ^{1,4,5,7}	120 120V 208 208V 240 240V 277 277V 347 347V 480 480V UNV 120-277V (50/60Hz) HVV 347-480V (50/60Hz)
	140L 140 LEDs		AM-G2 Amber Generation 2 ^{3,11}				

Options					
Dimming controls		Motion sensing	Photo-sensing	Electrical/Shield	Finish
<div></div>		<div></div>	<div></div>	<div></div>	<div></div>
DD	0-10V External dimming (by others) ⁴	IMRI3 Integral with #3 lens ¹²	PCB Photocontrol Button ^{7,8}	Fusing	Textured
FAWS	Field Adjustable Wattage Selector ^{4,5}		TLRD5 Twist Lock Receptacle 5 Pin ^{9,14}	F1 Single (120, 277, 347VAC) ⁸	BK Black
LLC	Integral wireless module ^{4,6,7,13}		TLRD7 Twist Lock Receptacle 7 Pin ^{9,14}	F2 Double (208, 240, 480VAC) ⁸	WH White
BL	Bi-level functionality ^{4,13}		TLRPC Twist Lock Receptacle w/Photocell ^{8,10,14}	F3 Canadian Double Pull (208, 240, 480VAC) ⁸	BZ Bronze
DynaDimmer: Automatic Profile Dimming ^{4,7}					DGY Dark Gray
CS50	Security 50% Dimming, 7 hours			MGY Medium Gray	
CM50	Median 50% Dimming, 8 hours			Customer specified	
CS30	Security 30% Dimming, 7 hours			RAL Specify optional color or RAL (ex: RAL7024)	
CM30	Median 30% Dimming, 8 hours			CC Custom color (Must supply color chip for required factory quote)	
				Surge Protection (10kA standard)	
				SP2 Increased 20kA	
				EHS External house side shield (factory installed)	

- 1150, 1675, and 2100mA not available with emergency battery backup (EBP).
- 2100mA not available with emergency battery backup cold weather (EBPC).
- Extended lead times apply. Contact factory for details.
- Not available with other control options.

- Not available with motion sensor.
- Not available with photocontrol.
- Not available in 347 or 480V.
- Must specify input voltage.
- Dimming will not be connected to NEMA receptacle if ordering with other control options.
- Not available in 480V.

- Not available in 2100mA.
- Not available with DD and FAWS dimming control options.
- Must specify a motion sensor lens.
- Cannot be combined with HVU and BL-IMRI3.



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PureForm Accessories¹ (order separately)

PPT-T2

Post top tenon adapter for 2 3/8" x 4"

FSIR-100

BL Optional Remote Programming Tool

1. Consult Signify to confirm whether specific accessories are BAA-compliant.

LED Wattage and Lumen Values – 5000K

Ordering Code	LED QTY	System Current (mA)	Color Temp	Avg System Wattage (W)	Type 1			Type 2			Type 3			Type 5		
					Lumen Output	BUG Rating	Efficacy (Lm/W)	Lumen Output	BUG Rating	Efficacy (Lm/W)	Lumen Output	BUG Rating	Efficacy (Lm/W)	Lumen Output	BUG Rating	Efficacy (Lm/W)
PPT-196L-450-CW-G2-x-UNV	196	450	5000	21	2090	B1-U0-G1	100	2103	B1-U0-G1	101	2411	B1-U0-G1	115	2323	B1-U0-G1	111
PPT-196L-650-CW-G2-x-UNV	196	650	5000	30	3012	B2-U0-G2	100	3031	B1-U0-G1	101	3474	B2-U0-G2	116	3347	B2-U0-G1	112
PPT-196L-1150-CW-G2-x-UNV	196	1150	5000	51	5148	B3-U0-G3	101	5180	B2-U0-G2	102	5938	B2-U0-G2	116	5721	B3-U0-G2	112
PPT-196L-1675-CW-G2-x-UNV	196	1675	5000	74	7185	B3-U0-G3	97	7230	B3-U0-G3	98	8288	B3-U0-G3	112	7984	B3-U0-G2	108
PPT-196L-2100-CW-G2-x-UNV	196	2100	5000	93	8598	B3-U0-G3	92	8652	B3-U0-G3	93	9918	B3-U0-G3	107	9554	B3-U0-G2	103

LED Wattage and Lumen Values – 4000K

Ordering Code	LED QTY	System Current (mA)	Color Temp	Avg System Wattage (W)	Type 1			Type 2			Type 3			Type 5		
					Lumen Output	BUG Rating	Efficacy (Lm/W)	Lumen Output	BUG Rating	Efficacy (Lm/W)	Lumen Output	BUG Rating	Efficacy (Lm/W)	Lumen Output	BUG Rating	Efficacy (Lm/W)
PPT-196L-450-NW-G2-x-UNV	196	450	4000	21	1991	B1-U0-G1	95	2003	B1-U0-G1	96	2296	B1-U0-G1	110	2212	B1-U0-G1	106
PPT-196L-650-NW-G2-x-UNV	196	650	4000	30	2868	B2-U0-G2	96	2886	B1-U0-G1	96	3309	B2-U0-G2	110	3187	B2-U0-G1	106
PPT-196L-1150-NW-G2-x-UNV	196	1150	4000	51	4903	B3-U0-G3	96	4933	B2-U0-G2	97	5656	B2-U0-G2	111	5448	B3-U0-G2	107
PPT-196L-1675-NW-G2-x-UNV	196	1675	4000	74	6843	B3-U0-G3	93	6886	B3-U0-G3	93	7894	B3-U0-G3	107	7604	B3-U0-G2	103
PPT-196L-2100-NW-G2-x-UNV	196	2100	4000	93	8188	B3-U0-G3	88	8240	B3-U0-G3	89	9446	B3-U0-G3	101	9099	B3-U0-G2	98

LED Wattage and Lumen Values –3000K

Ordering Code	Total LEDs	LED Current (mA)	Color Temp.	Average System Watts	Type 1			Type 2			Type 3			Type 5		
					Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)
PPT-196L-450-WW-G2-x-UNV	196	450	3000	21	1914	B1-U0-G1	92	1926	B1-U0-G1	92	2208	B1-U0-G1	106	2127	B1-U0-G1	102
PPT-196L-650-WW-G2-x-UNV	196	650	3000	30	2758	B2-U0-G2	92	2775	B1-U0-G1	93	3182	B2-U0-G2	106	3065	B2-U0-G1	102
PPT-196L-1150-WW-G2-x-UNV	196	1150	3000	51	4714	B3-U0-G3	92	4744	B2-U0-G2	93	5438	B2-U0-G2	107	5239	B3-U0-G2	103
PPT-196L-1675-WW-G2-x-UNV	196	1675	3000	74	6579	B3-U0-G3	89	6621	B3-U0-G3	90	7590	B3-U0-G3	103	7312	B3-U0-G2	99
PPT-196L-2100-WW-G2-x-UNV	196	2100	3000	93	7873	B3-U0-G3	85	7923	B3-U0-G3	85	9083	B3-U0-G3	98	8749	B3-U0-G2	94

Values from photometric tests performed in accordance with IESNA LM-79 and are representative of the configurations shown. Actual performance may vary due to installation and environmental variables, LED and driver tolerances, and field measurement considerations. It is highly recommended to confirm performance with a photometric layout.

NOTE: Some data may be scaled based on tests of similar (but not identical) luminaires. Contact factory for configurations not shown.

LED Wattage and lumen values (Emergency Mode)

Ordering Code	LED Qty	LED Current (mA)	Color Temp.	Temp. Range (°C)	Lumen Outputs									
					Avg. System Watts		Type 1		Type 2		Type 3		Type 5	
					Normal Mode	Emergency Mode	Normal Mode	Emergency Mode	Normal Mode	Emergency Mode	Normal Mode	Emergency Mode	Normal Mode	Emergency Mode
PPT-196L-450-NW-G2-x-EBP-UNV	196	450	4000	0 to 40	22	10	1971	1526	1951	1510	2421	1747	2254	1744
PPT-196L-650-NW-G2-x-EBP-UNV	196	650	4000	0 to 40	30	10	2636	1526	2609	1510	3237	1747	3014	1744
PPT-196L-450-NW-G2-x-EBPC-UNV	196	450	4000	-20 to 40	22	18	1971	2178	1951	2155	2421	2493	2254	2490
PPT-196L-650-NW-G2-x-EBPC-UNV	196	650	4000	-20 to 40	30	18	2636	2178	2609	2155	3237	2493	3014	2490
PPT-196L-1150-NW-G2-x-EBPC-UNV	196	1150	4000	-20 to 40	52	18	4736	2178	4686	2155	5816	2493	5415	2490
PPT-196L-1675-NW-G2-x-EBPC-UNV	196	1675	4000	-20 to 40	75	18	6574	2178	6506	2155	8074	2493	7517	2490

For emergency EBPC and EBP option, published values are based on initial lumens.

Predicted Lumen Depreciation Data

Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions.L70 is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L70 hours limited to 6 times actual LED test hours

Ambient Temperature °C	Driver mA	Calculated L ₇₀ Hours	L ₇₀ per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	up to 2100mA	>100,000 hours	>60,000 hours	>84%

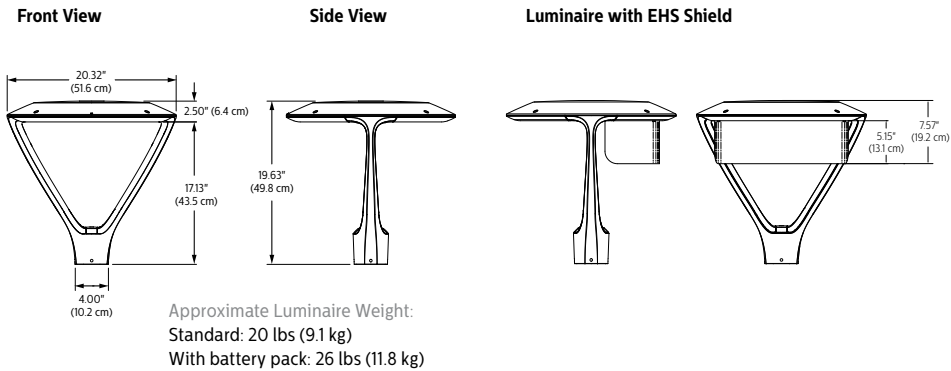
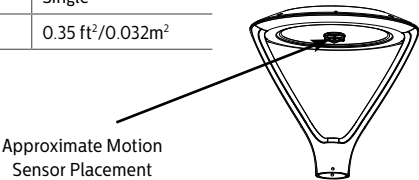
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Dimensions – Post Top Luminaire

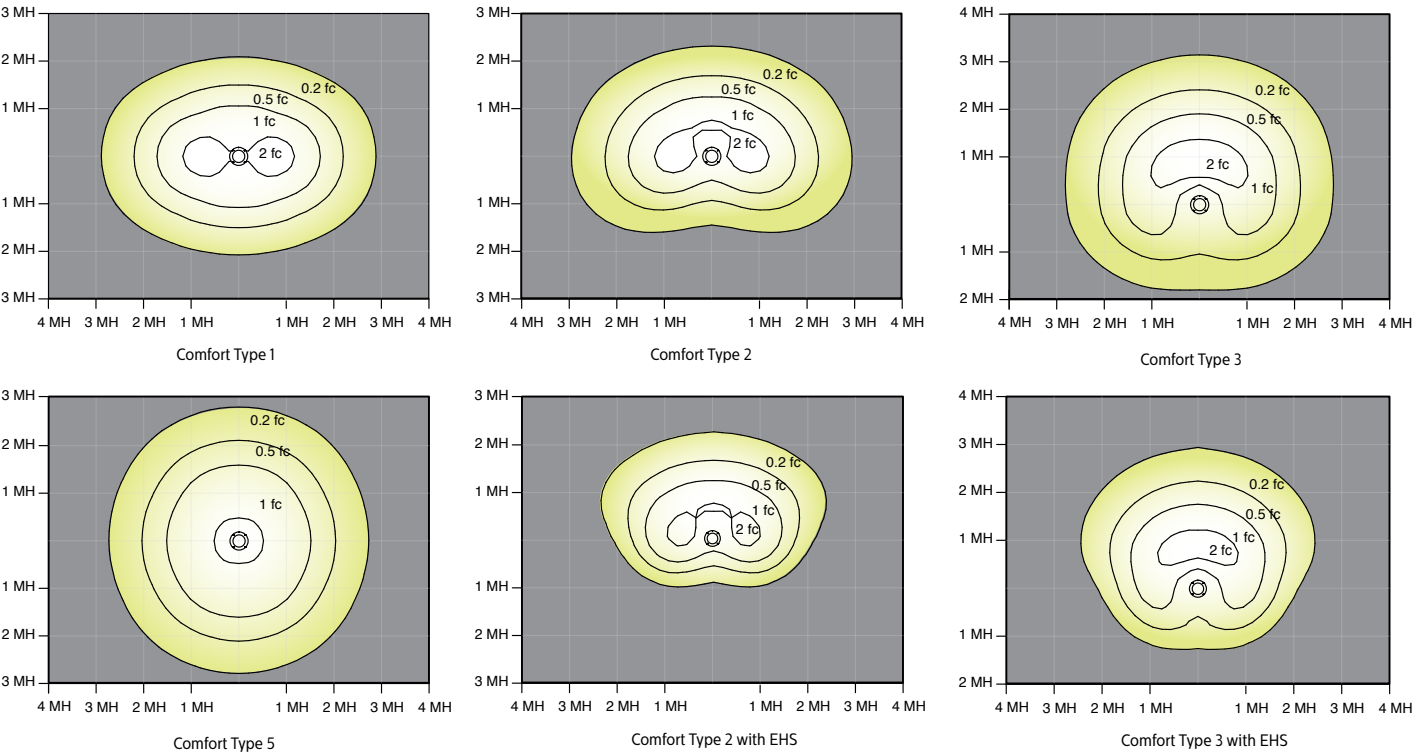
Effective Projected Area ft² / m²

Type	Single
PPT	0.35 ft²/0.032m²



Optical Distributions

Based on configuration PPT-196L-2100-NW-G2 mounted at 20ft.

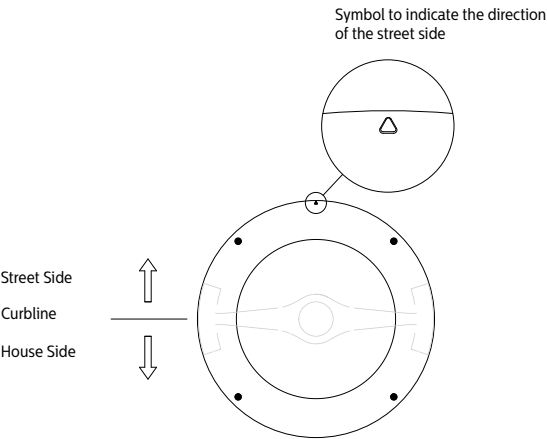


Asymmetric Optical Orientation Information

Standard Optic Position

Aimed Between The Yoke Supports

Luminaires ordered with asymmetric optical systems in the standard optic position will have the optical system oriented as shown below:



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Specifications

Housing

Two-piece sealed enclosure with main part of the housing designed as the structural and heat sink frame, enclosed by cover to give its unique form. It also includes yoke arm with arm covers. All die-cast parts are made of low-copper, die-cast aluminum alloy for a high resistance to corrosion. The sleek profile with optimized surface area allows housing to provide excellent convection heat transfer with minimum use of heat fins, giving the freedom to have a clean minimalist aesthetic design. Luminaire housing rated to IP66, tested in accordance to Section 9 of IEC 60598-1.

Vibration resistance

Luminaire is tested and rated 3G over 100,000 cycles conforming to standards set forth by ANSI C136.31-2010. Testing includes vibration to 3G acceleration in three axes, all performed on the same luminaire.

Light engine

Light guide technology provides low-glare, uniform illumination. Composed of LEDs strategically positioned on the edge of the optical plate. Light engine luminous opening size optimized to best achieve a balance between lumen output and optical performance with the need to provide visual comfort. Light engine frame ensures contact with housing to provide heat conduction and sealing against the elements. Light engine is RoHS compliant. . Standard color temperatures: 3000K +/- 130K, 4000K +/- 130K, 5000K +/- 225K. Minimum CRI of 70. Also available in 2700K and Amber (Dominant wavelength 589nm, peak wavelength 633nm, and minimum wavelength 486nm) with extended lead times. Contact factory for details.

Energy saving benefits

System efficacy up to 111 lms/W with significant energy savings over Pulse Start Metal Halide luminaires. Optional control options provide added energy savings during unoccupied periods.

Optical systems

The advanced LED comfort optical system provides Types 1, 2, 3, and 5. Composed of high performance UV-stabilized optical grade lens with molded micro-optics to achieve desired distribution optimized to get a exceptional lighting uniformity. Performance tested per LM-79 and TM-15 (IESNA) certifying its photometric performance. Luminaire designed with 0% uplight (U0 per IESNA TM-15).

Mounting

PureForm Post Top mounts standard to a 3" x 4" Tenon, but can also be mounted to a 2-3/8" x 4" Tenon if a separate sleeve is ordered as an accessory.

Control options

0-10V dimming (DD): Access to 0-10V dimming leads supplied through the yoke of the luminaire (for secondary dimming controls by others). Cannot be used with other control options.

Field Adjustable Wattage Selector (FAWS): Luminaire equipped with the ability to manually adjust the wattage in the field to reduce total luminaire lumen output and light levels. Comes pre-set to the highest position at the lumen output selected. Use chart below to estimate reduction in lumen output desired. Cannot be used with other control options or motion response.

FAWS Position	Percent of Typical Lumen Output
1	25%
2	50%
3	55%
4	65%
5	75%
6	80%
7	85%
8	90%
9	95%
10	100%

Note: Typical value accuracy +/- 5%

Automatic Profile Dimming (CS/CM): Standard dimming profiles provide flexibility towards energy savings goals while optimizing light levels during specific dark hours. Dimming profiles include two dimming settings including dim to 30% or 50% of the total lumen output. When used in combination with not programmed motion response it overrides the controller's schedule when motion is detected. After 5 minutes with no motion, it will return to the automatic diming profile schedule. Automatic dimming profile scheduled with the following settings:

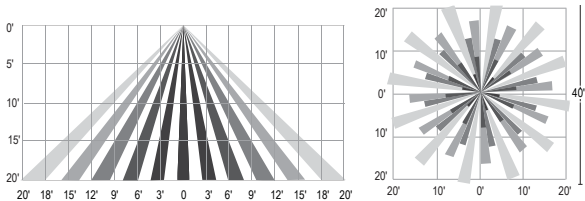
- **CS50/CS30:** Security for 7 hours night duration (Ex., 11 PM – 6 AM)
- **CM50/CM30:** Median for 8 hours night duration (Ex., 10 PM – 6 AM)

All above profiles are calculated from mid point of the night. Dimming is set for 6 hours after the mid point and 2, or 3 hours before depending of the duration of dimming. Cannot be used with other dimming control options.

Emergency Battery Backup (EBP/EBPC): Emergency battery packs included integral to the luminaire, allowing for a consistent look between emergency and non-emergency luminaires. EBP is suitable for use in ambient temperature conditions from 0°C (32°F) to 40°C (104°F) available on 450mA and 650mA only. EBPC cold weather rated down to -20°C (-4°F) available on all wattage except the 2100mA configuration. Both systems are designed to have a secondary driver with relay to immediately detect AC power loss to power luminaire for a minimum of 90 minutes from the time power is lost. Available with 120-277V, or 'UNV' only.

Wireless system (LLC): Optional wireless controller integral to luminaire ready to be connected to a Limelight system (sold by others). The system allows you to wirelessly manage the entire site, independent lighting groups or individual luminaires while on-site or remotely. Based on a high-density mesh network with an easy to use web-based portal, you can conveniently access, monitor and manage your lighting network remotely. Wireless controls can be combined with site and area, pedestrian, and parking garage luminaires as well, for a completely connected outdoor solution. Equipped with motion response with #3 lens (LLC3-IMRI3) for 8-25' mounting heights. Also available with remote pod accessory where pod is mounted separate from luminaire to pole or wall.

LLC-IMRI3 Luminaire with #3 lens



Motion response options

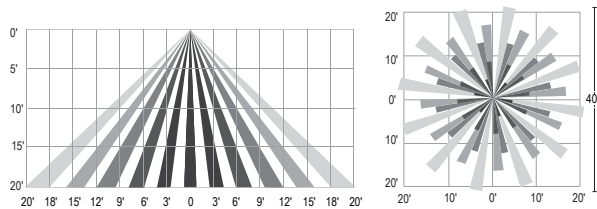
Bi-Level Infrared Motion Response (BL-IMRI3): Motion Response module is mounted integral to luminaire factory pre-programmed to 50% dimming when not ordered with other control options. BL-IMRI3 is set/operates in the following fashion: The motion sensor is set to a constant 50%. When motion is detected by the PIR sensor, the luminaire returns to full power/light output. Dimming on low is factory set to 50% with 5 minutes default in "full power" prior to dimming back to low. When no motion is detected for 5 minutes, the motion response system reduces the wattage by 50%, to 50% of the normal constant wattage reducing the light level. Other dimming settings can be provided if different dimming levels are required. This can also be done with FSIR-100 Wireless Remote Programming Tool (contact Technical Support for details).

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Infrared Motion Response with Other Controls (IMRI3): When used in combination with other controls (Automatic Dimming Profile), motion response device will simply override controller's schedule with the added benefits of a combined dimming profile and sensor detection. In this configuration, the motion response device cannot be re-programmed with FSIR-100 Wireless Remote Programming Tool. The profile can only be re-programmed via the controller.

Infrared Motion Response Lenses (IMRI3): Infrared Motion Response Integral module is available lens #3 (IMRI3), which is designed for mounting heights up to 20' with a 40' diameter coverage area. See chart for approximate detection patterns:



Electrical

Twist-Lock Receptacle (TLRD5/TLRD7/ TLRPC): Twist Lock Receptacle with 5 pins enabling dimming or with 7 pins with additional functionality (by others) can be used with a twistlock photoelectric cell or a shorting cap. Dimming Receptacle Type B (5-pin) and Type D-24 (7-pin) in accordance to ANSI C136.41. Can be used with third-party control system. Receptacle located on top of luminaire housing. When specifying receptacle with twistlock photoelectric cell, voltage must be specified. When ordering Twist-lock receptacle (TLRD5 or TLRD7), photocell or shorting cap is not included.

Driver: Driver efficiency (>90% standard). 120-480V available (restrictions apply). Open/short circuit protection. Optional 0-10V dimming to 10% power. RoHS compliant.

Button Photocontrol (PCB): Button style design for internal luminaires mounting applications. The photocontrol is constructed of a high impact UV stabilized polycarbonate housing. Rated voltage of 120V or 208-277V with a load rating of 1000 VA. The photocell will turn on with 1-4Fc of ambient light.

Surge protection (SP1/SP2): Surge protection device tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with DOE MSSLC Model Specification for LED Roadway Luminaires Appendix D Electrical Immunity High test level 10kV/10kA. 20kV / 10kA surge protection device that provides extra protection beyond the SP1 10kV/10kA level.

Buy American Act of 1933 (BAA):

This product is manufactured in one of our US factories and, as of the date of this document, this product was considered a commercially available off-the-shelf (COTS) item meeting the requirements of the BAA. This BAA designation hereunder does not address (i) the applicability of, or availability of a waiver under, the Trade Agreements Act, or (ii) the "Buy America" domestic content requirements imposed on states, localities, and other non-federal entities as a condition of receiving funds administered by the Department of Transportation or other federal agencies. Prior to ordering, please visit www.signify.com/baa to view a current list of BAA-compliant products to confirm this product's current compliance.

Listings

UL/cUL wet location listed to the UL 1598 standard, suitable for use in ambient temperatures from -40° to 40°C (-40° to 104°F). Most PureForm PPT comfort configurations are qualified under Standard DesignLights Consortium® category. Consult DLC Qualified Products list to confirm your specific luminaire selection is approved. CCTs 3000K and warmer are Dark Sky Approved.

Finish

Each standard color luminaire receives a fade and abrasion resistant, electrostatically applied, thermally cured, triglycidic isocyanurate (TGIC) textured polyester powdercoat finish. The surface treatment achieves a minimum of 1000 hours for salt spray resistant finish in accordance with testing performed and per ASTM B117 standard. Standard colors include bronze (BZ), black (BK), white (WH), dark gray (DGY), and medium gray (MGY). Consult factory for specs on optional or custom colors.

Warranty

PureForm luminaires feature a 5-year limited warranty. See signify.com/warranties for complete details and exclusions.

