



Gardco PureForm LED area small square comfort P15 features a sleek, low profile design. Comfort optics are designed to enhance visual comfort by reducing glare and are ideally suited for pedestrian scale applications. Multiple optical distributions and color temperatures are available to allow you to customize your selection.

Project: _____
 Location: _____
 Cat.No: _____
 Type: _____
 Lumens: _____ Qty: _____
 Notes: _____

Ordering guide

example: **P15-C-A01-840-T5S-AR1-UNV-BL30-MW-EHS-BZ**

Prefix	Optic Technology	Configuration (nominal lumens)	Color Temperature	Distribution	Mounting	Voltage	
P15	C						
P15	PureForm area small, 15" square	C Comfort	A01 2,000 lumens A02 4,000 lumens A03 6,000 lumens A04 8,000 lumens A05 10,000 lumens	830 80CRI 3000K 840 80CRI 4000K 750² 70CRI 5000K	T1S Type 1 Short T2S Type 2 Short T4S Type 4 Short 4CD Type 4 Concentrated Downlight T5S Type 5 Short	AR1³ Arm mount (Standard) RAM³ Retrofit arm mount kit WAL Wall mount	120 120V 208 208V 240 240V 277 277V 347 347V 480 480V UNV 120-277V (50/60Hz) HVU 347-480V (50/60Hz)

Options				
Dimming controls	Motion sensor lens	Electrical/Shielding	Emergency	Finish
(0-10V dimming driver standard) DLEA⁴ Dimming Leads Externally Accessible (controls by others) FAWS^{4,5} Field Adjustable Wattage Selector BL30^{4,6} Bi-level set at 30% dimming SRDR^{1,4,7,8,15} SR driver connected to Zhaga socket, top mounted <u>DynaDimmer: Automatic Profile Dimming</u> CS50^{4,8} Security 50% Dimming, 7 hours CM50^{4,8} Median 50% Dimming, 8 hours CS30^{4,8} Security 30% Dimming, 7 hours CM30^{4,8} Median 30% Dimming, 8 hours	MW^{6,12,14} Microwave HF Sensor	PCB^{8,9} Photocontrol Button TR7^{8,10} 7-pin Twist Lock Receptacle TLP^{9,11} 7-pin Twist Lock Receptacle w/3-pin Photocell SP2¹³ Increased 20kA FS1⁹ Single Fuse (120, 277, 347VAC) FS2⁹ Double Fuse (208, 240, 480VAC) The following option must be ordered separately (See accessories) EHS External house side shield	EM^{1,4,5,8} Emergency battery pack	<u>Textured</u> BK Black WH White BZ Bronze DG Dark Gray MG Medium Gray <u>Customer specified</u> RAL Specify optional color or RAL (ex: RAL7024) CC Custom color (Must supply color chip for required factory quote)

1. Only available with A01 and A03.
2. Extended lead times apply. Contact factory for details.
3. Mounts to a 4-5" OD round pole with adapter included for square poles.
4. Not available with other dimming control options (mutually exclusive).
5. Not available with motion sensor.
6. BL30 must be specified with Microwave HF Sensor (MW).
7. Not available with photocontrols.
8. Not available in 347 or 480V.
9. Must specify input voltage.
10. All 7 pins in NEMA receptacle are connected to SR driver.
11. Not available in 480V. Order photocell separately with TR7.
12. Not available with DLEA, SRDR, FAWS, CS50, CM50, CS30, and CM30 dimming control options.
13. Product ships standard with 10kA.
14. Only available in 120/277/347V.
15. When ordering SRDR, controller to be used on socket must be SR compatible (See specifications for more details)



P15 PureForm LED small square

Area light with comfort optics

PureForm P15 Accessories² (ordered separately, field installed)

Mounting Accessories

P15-RAM-G2-(F)	Retrofit Arm mount kit
P15-WS-G2-(F)	Wall mount with surface conduit rear entry permitted
P15-EHS-BK ¹	External House Side Shield, Black

(F) = Specify finish

1. External house side shield must be ordered with luminaire and ships separately. It cannot be added on to an existing luminaire not originally ordered with EHS shielding option.
2. Consult Signify to confirm whether specific accessories are BAA-compliant.

LED Wattage and Lumen Values - 3000K

Ordering Code	Color Temp.	Average System Watts	T1S			T2S			T4S			4CD			T5S		
			Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)
P15-C-A01-830-x	3000	21	2051	B1-U0-G1	99	2162	B1-U0-G1	104	2277	B1-U0-G1	109	2388	B1-U0-G1	115	2258	B2-U0-G1	109
P15-C-A02-830-x	3000	36	3580	B2-U0-G2	100	3774	B1-U0-G1	106	3975	B2-U0-G2	112	4168	B1-U0-G1	117	3941	B2-U0-G2	111
P15-C-A03-830-x	3000	52	5310	B2-U0-G2	100	5598	B2-U0-G2	106	5895	B2-U0-G2	111	6182	B2-U0-G2	117	5845	B3-U0-G2	110
P15-C-A04-830-x	3000	72	7176	B3-U0-G3	100	7565	B3-U0-G3	106	7967	B3-U0-G3	111	8354	B3-U0-G3	117	7900	B3-U0-G3	110
P15-C-A05-830-x	3000	90	8736	B3-U0-G3	97	9210	B3-U0-G3	102	9699	B3-U0-G3	108	10170	B3-U0-G3	113	9617	B3-U0-G3	107

LED Wattage and Lumen Values - 4000K

Ordering Code	Color Temp.	Average System Watts	T1S			T2S			T4S			4CD			T5S		
			Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)
P15-C-A01-840-x	4000	21	2211	B1-U0-G1	104	2331	B1-U0-G1	110	2455	B1-U0-G1	116	2574	B1-U0-G1	122	2434	B2-U0-G1	115
P15-C-A02-840-x	4000	36	3860	B2-U0-G2	108	4070	B1-U0-G1	114	4286	B2-U0-G2	120	4494	B1-U0-G1	126	4250	B2-U0-G2	119
P15-C-A03-840-x	4000	52	5644	B2-U0-G2	109	5950	B2-U0-G2	114	6266	B2-U0-G2	121	6570	B2-U0-G2	126	6213	B3-U0-G2	119
P15-C-A04-840-x	4000	72	7627	B3-U0-G3	107	8041	B3-U0-G3	112	8145	B3-U0-G3	114	8879	B3-U0-G3	124	8397	B3-U0-G3	117
P15-C-A05-840-x	4000	90	9286	B3-U0-G3	103	9790	B3-U0-G3	109	10310	B3-U0-G3	115	10810	B3-U0-G3	120	10223	B3-U0-G3	114

Lumen Table for Emergency

Ordering Code	80CRI			T1S			T2S			T4S			4CD			T5S		
	Color Temp	Average System Watts(W)	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)	Lumen Output	BUG Rating	Efficacy (Lm/W)	
P15-C-10W-840-x-UNV-EM (EM Mode)	4000	10	1243		124.3	1311		131.1	1380		138.0	1447		144.7	1369		136.9	
P15-C-A01-840-x	4000	21	2211	B1-U0-G1	104.4	2331	B1-U0-G1	110.1	2455	B1-U0-G1	115.9	2574	B1-U0-G1	121.6	2434	B2-U0-G1	114.9	
P15-C-A02-840-x	4000	36	3860	B2-U0-G2	108.3	4070	B1-U0-G1	114.2	4286	B2-U0-G2	120.3	4494	B1-U0-G1	126.1	4250	B2-U0-G2	119.3	
P15-C-A03-840-x	4000	52	5644	B2-U0-G2	108.5	5950	B2-U0-G2	114.4	6266	B2-U0-G2	120.5	6570	B2-U0-G2	126.3	6213	B3-U0-G2	119.5	

Ordering Code	80CRI			T1S			T2S			T4S			4CD			T5S		
	Color Temp	Average System Watts(W)	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)	Lumen Output	BUG Rating	Efficacy (Lm/W)	
P15-C-10W-830-x-UNV-EM (EM Mode)	3000	10	1153		115.3	1216		121.6	1280		128.0	1343		134.3	1270		127.0	
P15-C-A01-830-x	3000	21	2051	B1-U0-G1	98.6	2162	B1-U0-G1	103.9	2277	B1-U0-G1	109.5	2388	B1-U0-G1	114.8	2258	B2-U0-G1	108.6	
P15-C-A02-830-x	3000	36	3580	B2-U0-G2	100.5	3774	B1-U0-G1	105.9	3975	B2-U0-G2	111.5	4168	B1-U0-G1	117.0	3941	B2-U0-G2	110.6	
P15-C-A03-830-x	3000	53	5310	B2-U0-G2	100.2	5598	B2-U0-G2	105.6	5895	B2-U0-G2	111.2	6182	B2-U0-G2	116.6	5845	B3-U0-G2	110.3	

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.

P15 PureForm LED small square

Area light with comfort optics

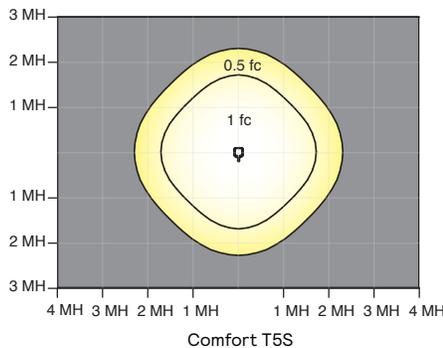
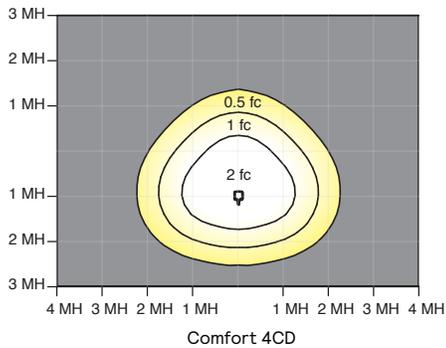
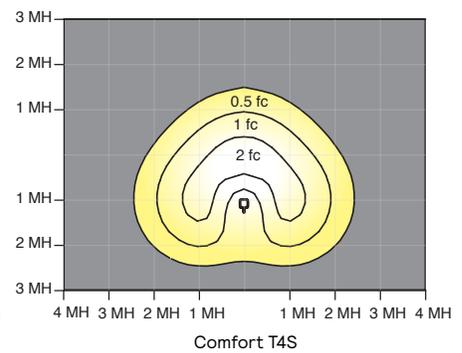
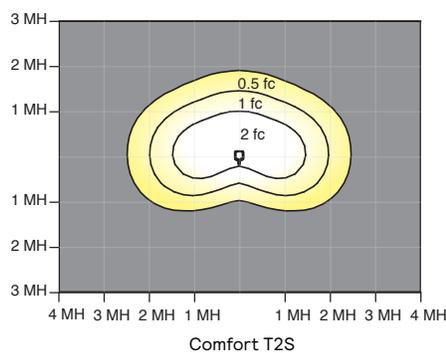
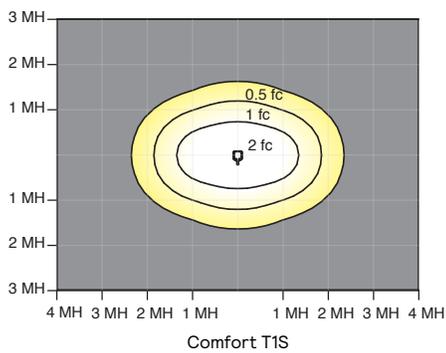
Predicted Lumen Depreciation Data

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	Calculated L ₇₀ Hours	L ₇₀ per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	>100,000 hours	>72,000 hours	>90%

Optical Distributions

Based on configuration P15-C-A03-840 mounted at 15ft

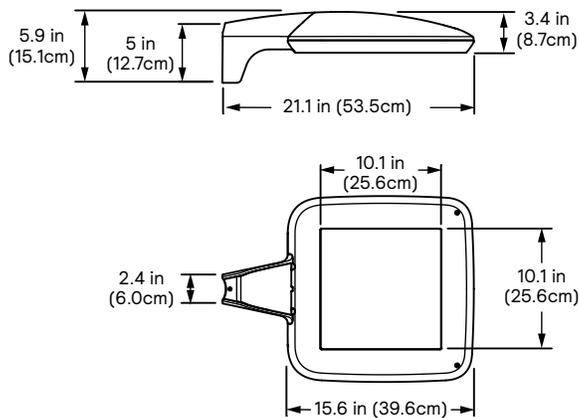


P15 PureForm LED small square

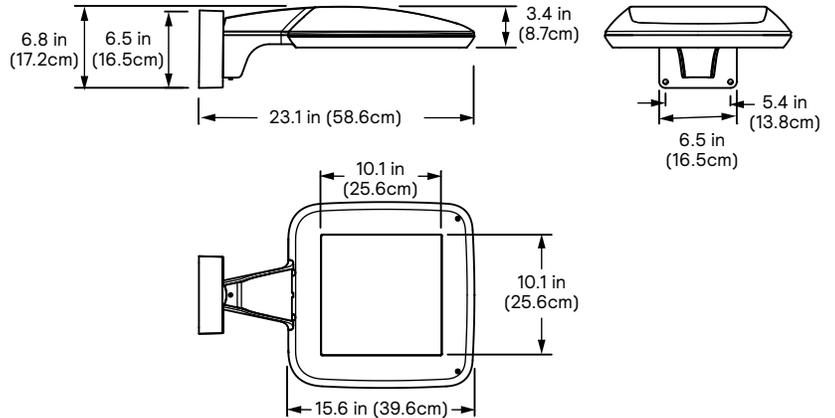
Area light with comfort optics

Dimensions

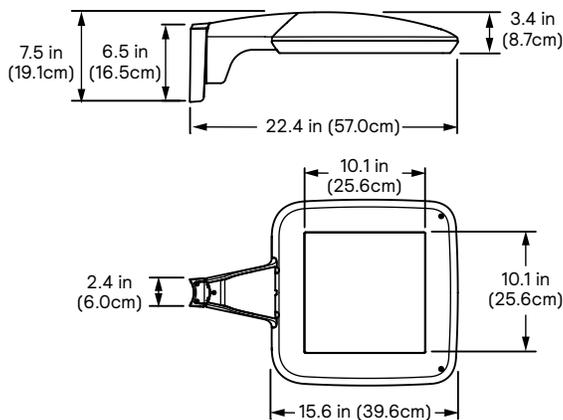
Standard Arm (AR1)



Wall Mount (WAL)

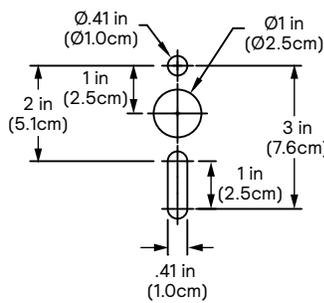


Retrofit Arm (RAM)

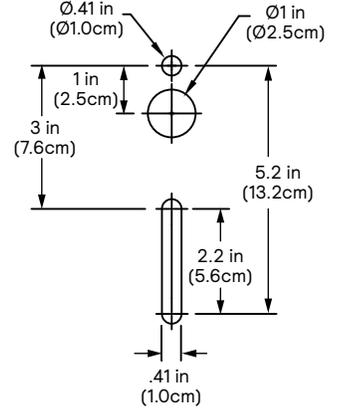


Drill Patterns

Standard Arm (AR1)

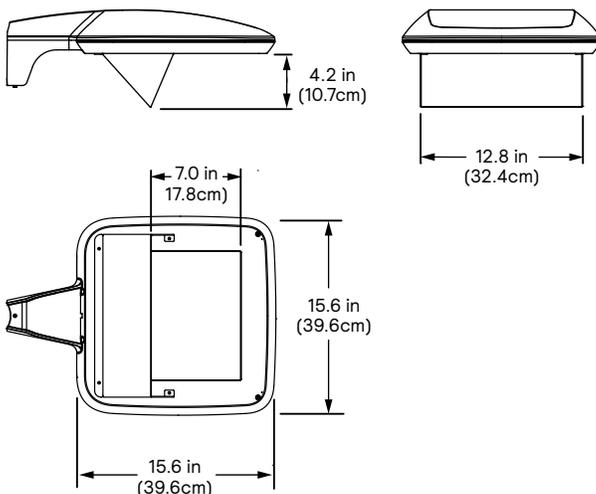


Retrofit Arm (RAM)



Weight: 17 Lbs (7.7 kg)
EPA: 0.24ft² (.02m²)

With External House Shield option (EHS)



P15 PureForm LED small square

Area light with comfort optics

Specifications

Housing

One-piece cast aluminum housing with integral arm and die cast light engine frame. Luminaire housing rated to IP65, tested in accordance to Section 9 of IEC 60598-1.

Vibration resistance

Luminaire is tested and rated to Level 2 (3.8G) over 100,000 cycles conforming to standards set forth by ANSI C136.31-2018. Testing includes vibration 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 ensures contact with housing to provide efficient heat path through conduction and convection to ambient air. Light engine is RoHS compliant. Standard color temperatures: 3000K +/- 175K, 4000K +/- 275K. Minimum CRI of 80. Also available in 5000K (70 CRI).

Energy saving benefits

System efficacy up to 126 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 IES type II short, type IV short, type V short. Additional optics include a type 1 and a type 4 concentration down light for pedestrian applications. Composed of high performance UV-stabilized optical grade lens with laminated micro-optics to achieve desired distribution optimized to get an 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).

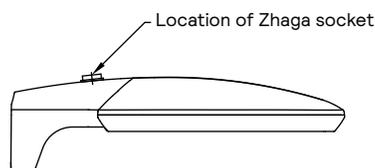
Mounting

Standard luminaire arm mounts to 4" round poles. Can also be used with 5" O.D. poles. Square pole adapter included with every luminaire. PureForm features a retrofit arm kit. When specified with the retrofit arm (RAM) option, PureForm seamlessly simplifies site conversions to LED by eliminating the need for additional pole drilling on most existing poles. RAM will be boxed separately. Also optional are wall mounting accessories.

Control options

0-10V dimming (DLEA): Order this option if you want access to 0-10V dimming leads supplied through the arm of luminaire (for secondary dimming controls by others). Cannot be used with other control options.

Sensor Ready Zhaga Socket Connector (SRDR): Product equipped with Sensor Ready drivers connected to 4-pin Zhaga Book 18 compliant receptacle designed for sensor and other control system applications. Receptacle is rated IP66 assembly in a compact design that provides a sealed electrical interface and rated UV resistance mounted on top of the luminaire arm. When a controller not provided by Signify is used with Sensor Ready Zhaga socket connector, the controller must be certified to work with the Xitanium SR LED drivers as part of the SR certified program.



Automatic Profile Dimming (CS/CM/CE/CA): 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 dimming 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 1 or 2 hours before depending of the duration of dimming. Cannot be used with other dimming control options.

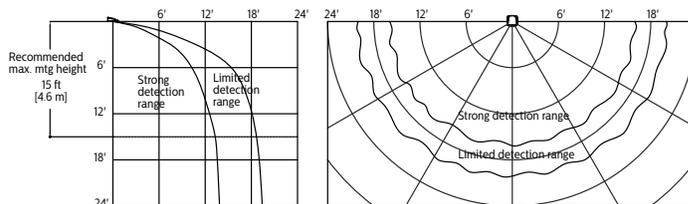
Field Adjustable Wattage Selector (FAWS): Luminaire equipped with the ability to manually adjust the wattage in the field to reduce total luminaire lumen output and light levels. Comes pre-set to the highest position at the lumen output selected. Use chart below to estimate reduction in lumen output 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%

Motion response options

Bi-Level Microwave HF Motion Response (BL30-MW): High frequency (5.8GHz +/- 75MHz microwave ISM wave band with <0.5 mW transmitting power) motion sensor is mounted integral to the luminaire. This bi-level motion sensor is designed to detect motion through the light engine so it can be used inside the luminaire without any protruded components. Sensor allows energy savings and meeting code requirements without compromising comfort and aesthetics. The product comes with factory pre-programmed standard settings including a dimming level of 30%, hold time of 3 minutes with no stand-by period. This means that in operations, the sensor will keep the luminaire at 30% of total lumen output and when motion is detected, the luminaire returns to 100% output. It will remain on full power for 3 minutes default prior to dimming back to low when no motion is observed. Other dimming levels, holding times, and stand-by periods are possible. Please contact factory technical support for details.



Emergency Battery Backup (EM): Emergency battery pack included integral to the luminaire, allowing for a consistent look between emergency and non-emergency luminaires. EM is suitable for use in ambient temperature conditions from 0°C (32°F) to 40°C (104°F) available on A01 and A02 only. The system is 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.

P15 PureForm LED small square

Area light with comfort optics

Specifications (cont'd)

Electrical

Twist-Lock Receptacle (TR7/TLP): Twist-Lock Receptacle with 7 pins enabling dimming with additional functionality (by others) can be used with a twist-lock photoelectric cell or a shorting cap. Dimming Receptacle 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 arm. When specifying receptacle with twist-lock photoelectric cell, voltage must be specified. When ordering 7-pin Twist-lock receptacle (TR7), all 7 pins are wired to respective pins with the Sensor Ready (SR) driver, and photocell or shorting cap is not included. When ordering a twist-lock receptacle with a photocell (TLP), the receptacle used is a 7-pin receptacle, but pins 6 and 7 are not connected (no SR driver). 0-10V dimming leads (pins 4 and 5) are connected if not ordered with any other dimming option.

Driver: Driver efficiency (>90% standard). 120-480V available (restrictions apply). Open/short circuit protection. All drivers are 0-10V dimming to 10% power standard, except when using Sensor Ready (SR) drivers, which uses DALI protocol (options CS50/CM50/CS30/CM30, SRDR, and TR7). Drivers are RoHS and FCC Title 47 CFR Part 15 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.

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 P15 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, triglycidal 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 (DG), and medium gray (MG). Consult factory for specs on optional or custom colors.

Warranty

PureForm luminaires feature a 5-year limited warranty. See [signify.com/warranties](https://www.signify.com/warranties) for complete details and exclusions.

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.



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