

Job:
Type:
Notes:

PureForm LED

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P21 Area and Pedestrian Scale Luminaires

Philips Gardco PureForm luminaires combine LED performance excellence and advanced Gardco LED thermal management technology with a distinct purity of style to provide outdoor area lighting that is both energy efficient and aesthetically pleasing. PureForm is defined by its high performance, sleek low profile design and rugged construction. The die cast aluminum housing mounts directly to a pole or wall, and has a maximum profile of just 3". The advanced LED optical systems provide IES Types II, III, IV and V distributions, as well as a Backlight Control optic. Special LEED corner control optics are also available. The luminaire features a state of the art integral thermal control system to maximize LED performance and life, and to extend component life. All LED wattages utilize high performance Class 1 LED systems. The door frame is die cast aluminum. Luminaires are finished with a fade and abrasion resistant TGIC powdercoat. PureForm luminaires are available in a wide variety of mountings and arms. All PureForm luminaires provide full cutoff performance.

A1 - 9" Standard Arm Mount



A2 - 5" Short Arm Mount



A3 - Decorative Arm Mount



MA - Mast Arm Mount



PREFIX	ARM	MOUNTING	OPTICAL SYSTEM	LED WATTAGE	LED SELECTION	VOLTAGE	FINISH	OPTIONS
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Enter the order code into the appropriate box above. Note: Philips Gardco reserves the right to refuse a configuration. Not all combinations and configurations are valid. Refer to notes below for exclusions and limitations. For questions or concerns, please consult the factory.

PREFIX

(See page 4 and page 5 for details on luminaire configurations.)

P21	21" PureForm Luminaire - Constant Wattage
P21-DIM	21" PureForm with 0-10V Dimming
P21-MR50¹	21" PureForm with Motion Response - 50% Low, Pole Mounted Motion Sensor
P21-APD²	21" PureForm with Automatic Profile Dimming
P21-APD-MRO¹	21" PureForm - APD with Motion Response Override, Pole Mounted Motion Sensor
P21-MRI^{2,3}	21" PureForm with Motion Response - 50% Low, Integral Motion Sensor
P21-APD-MRI^{2,3}	21" PureForm - APD with Motion Response Override, Integral Motion Sensor

1. MR50 and APD-MRO luminaires require one motion sensor per pole, ordered separately. See **Accessories** on page 2. Motion Response luminaires available 120V or 277V only.
2. Available 120V through 277V only.
3. MRI and APD-MRI luminaires include an integral motion sensor.

MOUNTING

Direct to Pole Mount (Available with A1, A2 or A3 Arms)

1	Single Pole Mount
2	Twin Pole Mount at 180°
2@90	Twin Pole Mount at 90°
3	3-way Pole Mount at 90°
3@120°	3-way Pole Mount at 120°
4	4-way Pole Mount

Mast Arm Mount

MA Mast Arm Mount (Requires 2 3/8" OD Mast Arm)

Wall Mount

(Available with A1 or A2 Arms Only. Not available in P21-MR50, or P21-APD-MRO.)

W	Wall Mount
WS	Wall Mount, Surface Conduit

ARM (Omit for Mast Arm Mount luminaires)

Arm Style

A1	Standard 9" Arm
A2	Short 5" Arm
A3	Decorative Arm

Available Mountings

	Direct to Pole Mount and Wall Mount
	Direct to Pole Mount and Wall Mount
	Direct to Pole Mount Only

Note: All Arm Styles shown above mount to a round pole with no adapter. If mounting to a square pole, specify the appropriate Square Pole Adapter option: **SPA1-2** for A1 or A2 arms, **SPA3** for A3 arms. See page 2 for options.

OPTICAL SYSTEM⁴ Featuring unitized optic lens construction.

2⁵	Type II
3⁵	Type III
4⁵	Type IV
5M	Type V Medium
5W	Type V Wide
BLC⁵	Backlight Control
LCR⁶	LEED Corner Cutoff Optic - Right
LCL⁶	LEED Corner Cutoff Optic - Left

4. Luminaire door frame and optic assembly provided standard without glass lens. Specify CLR option for clear glass lens. See **Options** on page 2.
5. Optics are field rotatable.
6. Available with 90LA or 130LA LED wattages only.

LED WATTAGE AND LUMEN VALUES

Ordering Code	Average System Watts ⁷	LED Current (mA)	LED Selection	Luminaire Initial Absolute Lumens ^{8,9}				
				TYPE 2	TYPE 3	TYPE 4	TYPE 5M	TYPE 5W
55LA	55	350	NW	*4,505	*4,462	*4,339	*5,084	*5,282
70LA	70	350	NW	*6,007	*5,950	*5,785	*6,778	*7,006
90LA	90	350	NW	7,508	7,437	*7,231	*8,473	8,571
80LA	80	530	NW	*6,497	*6,352	*6,198	*7,262	7,546
105LA	105	530	NW	*8,662	*8,469	*8,264	*9,683	10,008
130LA	130	530	NW	10,828	10,586	10,331	12,104	12,553

7. Wattage may vary by +/- 8% due to LED manufacturer forward volt specification and ambient temperature. Wattage shown is average for 120V through 277V input. Actual wattage may vary by an additional +/- 10% due to actual input voltage.
8. Values shown are for luminaires without the CLR, DL or EHHS options. Tests are in process for configurations not shown. "*" indicates that values are scaled from tests on similar, but not identical luminaire configurations. Contact Gardco.applications@philips.com if any approximate estimates are required for design purposes.
9. Lumen values based on tests performed in compliance with IESNA LM-79.

LED SELECTION

CW Cool White - 5700°K - 75 CRI
NW Neutral White - 4000°K - 75 CRI
WW Warm White - 3000°K - 75 CRI

VOLTAGE

UNIV 120V through 277V, 50hz or 60hz
HVU 347V through 480V, 50hz or 60hz (High Voltage Universal)

FINISH

BRP Bronze Paint
BLP Black Paint
WP White Paint
NP Natural Aluminum Paint
OC Optional Color Paint
Specify Optional Color or RAL ex: OC-LGP or OC-RAL7024.
SC Special Paint
Specify. Must supply color chip.

OPTIONS

F¹⁰ Fusing
LF In-Line/In-Pole Fusing
BD¹¹ Bird Deterrent Spike Kit
PC^{12,13} Photocontrol and Receptacle
PCR¹³ Photocontrol Receptacle only
PCB^{12,13} Button Photocontrol
EHHS External Houseside Shield
PTF2 Pole Top Fitter - 2 3/8" - 3" Dia. Tenon
PTF3 Pole Top Fitter - 3" - 3 1/2" Dia. Tenon
PTF4 Pole Top Fitter - 3 1/2" - 4" Dia. Tenon
SPA1-2 Square Pole Adapter (*for use with A1 or A2 Arms*)
SPA3 Square Pole Adapter (*for use with A3 Arms*)

DL Diffusing Lens (*reduces performance significantly*)
CLR Clear Glass Lens (*reduces performance*)
POLY¹⁴ Polycarbonate Lens (*reduces performance*)
SPR Surge Protection for 120V through 277V Input meeting ANSI C62.41.2
SPRH Surge Protection for 347V through 480V Input meeting ANSI C62.41.2
TB Terminal Block
TL Provides for access to the LED arrays and driver without tools

10. Available with A1 arm or with MA mounting only.

11. Kits consist of 25 injection molded plastic bird deterrent spikes.

Field installation only.

12. Not available in 480V.

13. Available with A1 or A2 arms, or with MA mounting only.

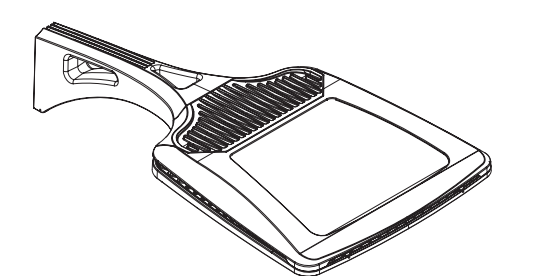
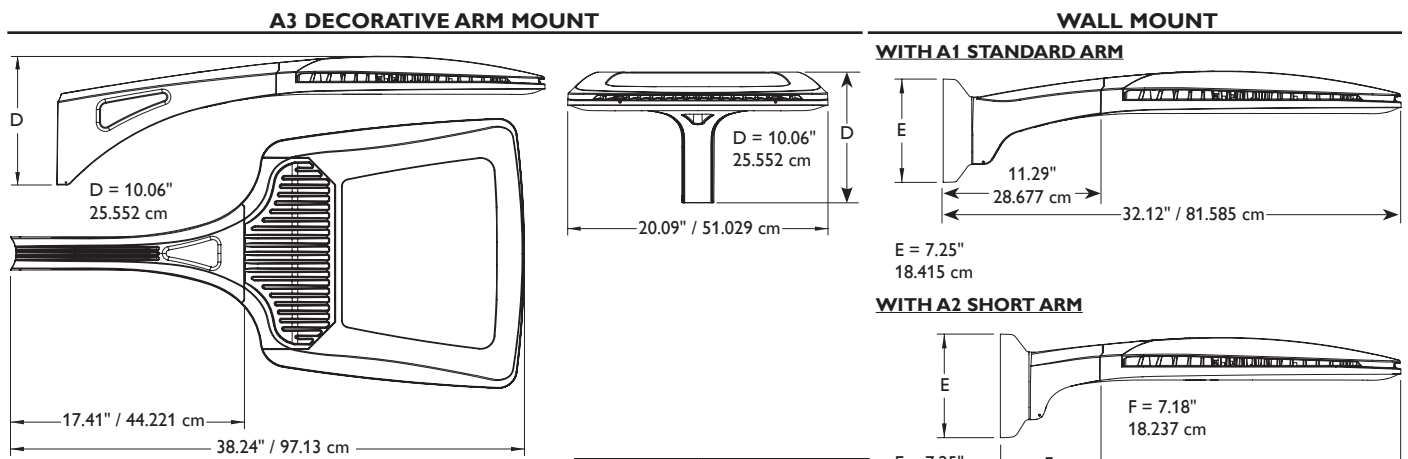
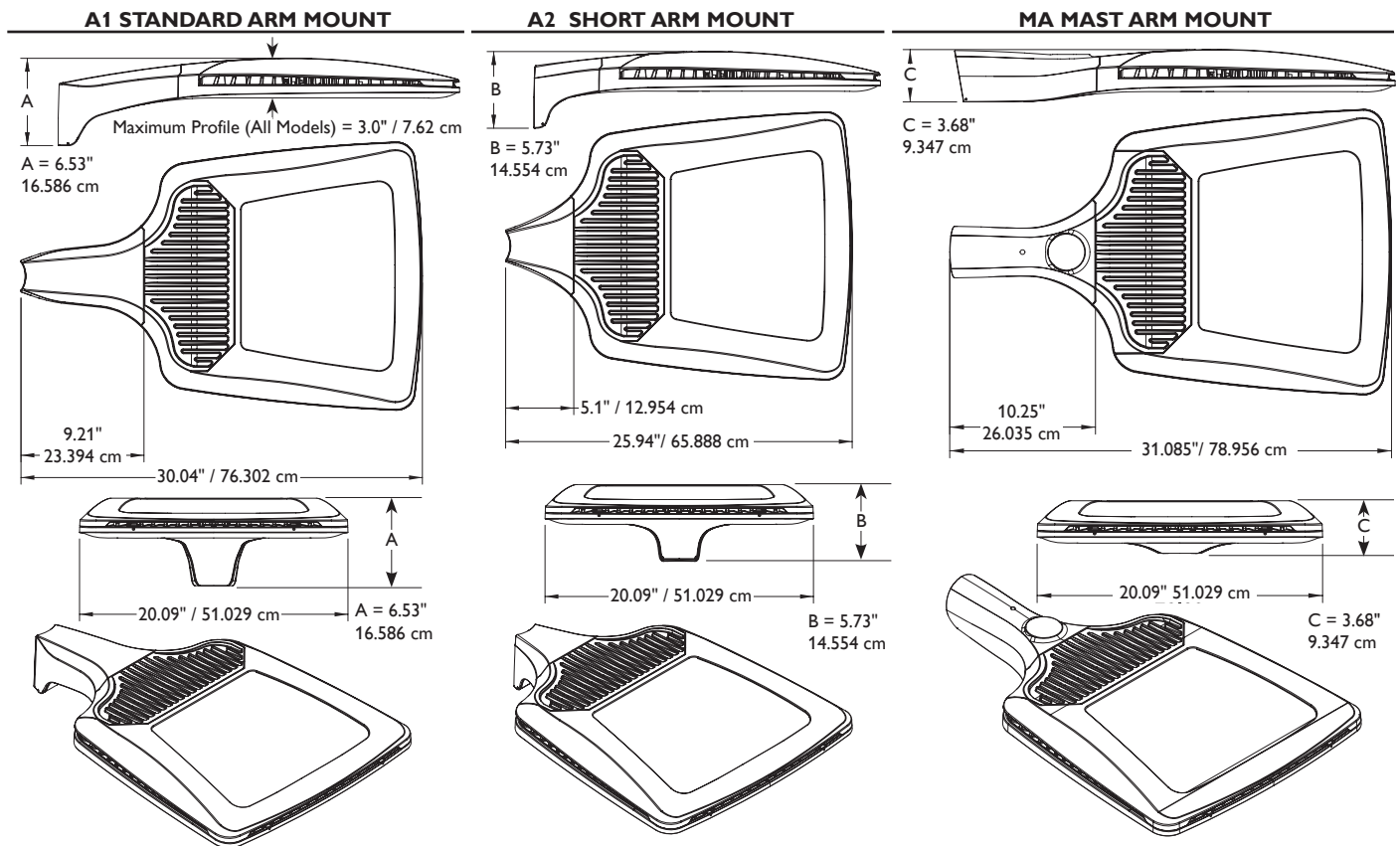
14. Polycarbonate lenses feature a 1 year warranty only.

ACCESSORIES (Ordered separately)

MS-A-120V 120V Input - Area Motion Sensor for P21-MR50 (Motion Response) or P21-APD-MRO (Automatic Profile Dimming with Motion Response Override)
MS-A-277V 277V Input - Area Motion Sensor for P21-MR50 (Motion Response) or P21-APD-MRO (Automatic Profile Dimming with Motion Response Override)

Motion Sensors are ordered separately, with one (1) motion sensor required per pole location for P21-MR50 or P21-APD-MRO luminaires. See Luminaire Configuration Information on page 4-5 for more details. Area motion sensor color is Arctic White. MRI and APD-MRI luminaires include an integral motion sensor.

DIMENSIONS AND EPA



Single Luminaire Weight	
Mounting	Approximate Weight
A1	38 lbs / 17.237 kg
A2	37 lbs / 16.783 kg
A3	41.5 lbs / 18.824 kg
MA	38 lbs / 17.237 kg
W or WS	39 lbs / 17.69 kg

Effective Projected Area ft ² / m ²			
Mounting	Single	Twin @ 180	3/4
A1	0.35 / 0.033	0.70 / 0.066	1.25 / 0.117
A2	0.30 / 0.028	0.60 / 0.056	1.10 / 0.103
A3	0.50 / 0.047	1.0 / 0.093	1.70 / 0.158
MA	0.35 / 0.033	N/A	N/A

P21 Area and Pedestrian Scale Luminaires

LUMINAIRE CONFIGURATION INFORMATION (CONTINUED ON PAGE 5)

P21: Philips Gardco PureForm LED standard luminaire providing constant wattage and constant light output when power to the luminaire is energized.

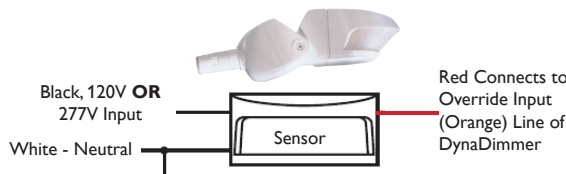
P21-DIM: Philips Gardco PureForm LED luminaire provided with 0 -10V dimming for connection to a control system provided by others.

P21-MR50: Philips Gardco PureForm LED luminaire with motion response, providing a 50% power reduction on low and a commensurate reduction in light output. The power and light output reduction is accomplished utilizing the Philips DynaDimmer module, programmed for a constant 50% power. Power supplied by the motion sensor connected to the override line on the DynaDimmer takes the luminaire to high setting, 100% power and light output, when motion is detected. The luminaire remains on high until no motion is detected for the motion sensor duration period, after which the luminaire returns to low. Duration period is factory set at 15 minutes, and is field adjustable from 5 minutes up to 15 minutes.

This configuration is not available for use with wall mounted luminaires.

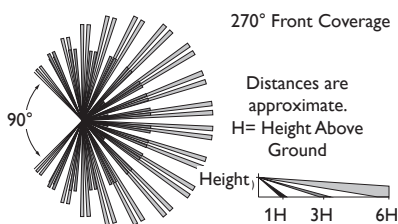
P21-MR50 is available in 120V through 277V input only to the luminaire. Motion sensors require single voltage 120V or 277V input.

The Area PIR motion sensor is the WattStopper EW-200-120-W (120V Input - MSA-120V) or the WattStopper EW-200-277-W (277V Input - MSA-277V.) One motion sensor per pole is required and is ordered separately. Area sensors require single voltage 120V or 277V input.

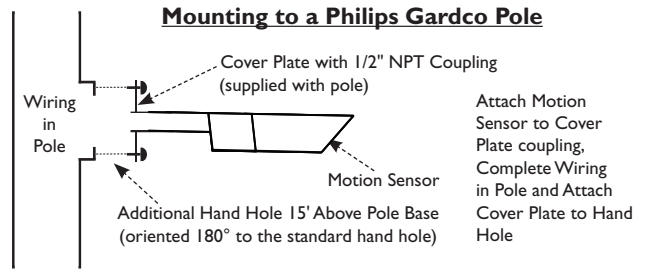


The area motion detector provides coverage equal to up to 6 times the sensor height above ground, 270° from the front-center of the sensor.

Area PIR Motion Sensor Coverage Pattern:



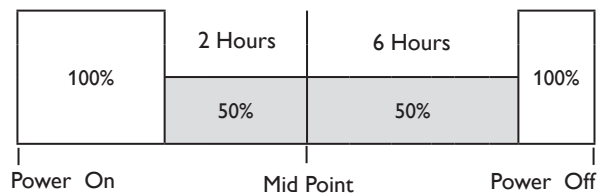
Motion response requires that the pole include an additional hand hole 15 feet above the pole base, normally oriented 180° to the standard hand hole. For Philips Gardco poles, order the pole with the Motion Sensor Mounting (MSM) option which includes the hand hole and a special hand hole cover plate for the sensor with a 1/2" NPT receptacle centered on the hand hole cover plate into which the motion sensor mounts. Once the motion sensor is connected to the hand hole cover plate, then wiring connections are completed in the pole. The plate (complete with motion sensor attached and wired) is then mounted to the hand hole. **If poles are supplied by others, the customer is responsible for providing suitable mounting accommodations for the motion sensor in the pole.**



P21-APD: Philips Gardco PureForm LED luminaire with Automatic Profile Dimming. Luminaire is provided with a programmable LED Driver, programmed to go to 50% power, 50% light output two (2) hours prior to night time mid-point and remain at 50% for six (6) hours after night time mid-point. Mid-point is continuously recalculated by the programmable LED Driver based on the average mid-point of the last two full night cycles. Short duration cycles, and power interruptions are ignored and do not affect the determination of mid-point.

P21-APD is available in 120V through 277V input only.

P21-APD Dimming Profile:



The P21-APD offers many of the advantages of a sophisticated control system, including an average energy savings of at least 33% versus constant wattage, constant light output systems, without the need for a control system.

P21-APD-MRO: Philips Gardco PureForm LED luminaire with Automatic Profile Dimming, with Motion Response Override. The P21-APD-MRO combines the benefits of both automatic profile dimming and motion response, using the Philips DynaDimmer module. The luminaire will dim to 50% power, 50% light output, per the dimming profile shown for the P21-APD. If motion is detected during the time that the luminaire is operating at 50%, the luminaire returns to 100% power and light output. The luminaire remains on high until no motion is detected for the duration period, after which the luminaire returns to low. Duration period is factory set at 15 minutes, and is field adjustable from 5 minutes up to 15 minutes.

This configuration is not available for use with wall mounted luminaires.

P21-APD-MRO is available in 120V through 277V input only to luminaire. The motion sensor requires either 120V or 277V input to the motion sensor.

The P21-APD-MRO has the same pole requirements and utilizes the same motion sensors as the P21-MR50. The motion sensor mounts and wires identically as well. The P21-APD-MRO utilizes the identical dimming profile as shown for the P21-APD.

By combining the benefits of automatic profile dimming and motion response, the P21-APD-MRO assures maximum energy savings, and insures that adequate light is present if motion is detected.

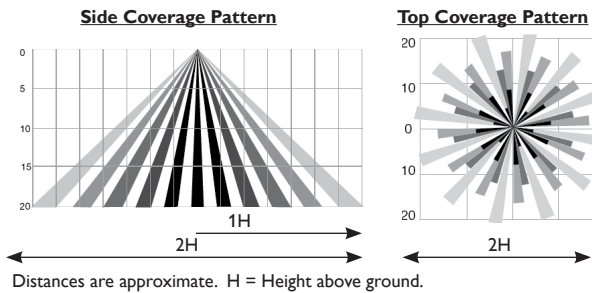
Note: All motion sensors utilized consume 0.0 watts in the off state.

LUMINAIRE CONFIGURATION INFORMATION (CONTINUED FROM PAGE 4)

Luminaires with Integral Motion Sensor - P21-MRI: Luminaires with Motion Response and an integral motion sensor include a programmable LED driver and an integral motion sensor. The programmable LED driver is set to a constant 50%. When motion is detected, the luminaire goes to 100%. The luminaire remains on high until no motion is detected for the motion sensor duration period, after which the luminaire returns to low. Duration period is factory set at 15 minutes. Available with 120V through 277V (UNIV) only.

P21-MRI luminaires are provided with the WattStopper FS-305-L3W motion sensor, with a maximum recommended 20 ft. mounting height. The area coverage and range of the integral sensors make them most suitable for applications not requiring long range detection. For longer range detection applications, configurations with pole mounted motion sensors are recommended.

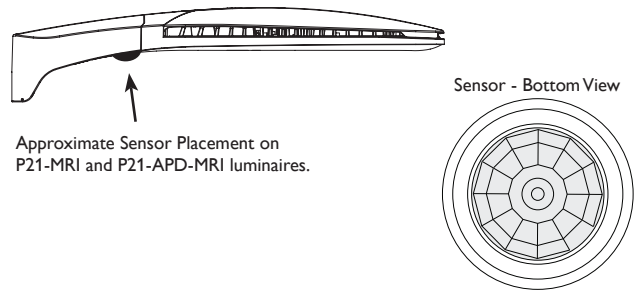
FS-305-L3W - Supplied with PureForm MRI Luminaires



Luminaires with Integral Motion Sensor - P21-APD- MRI: Luminaires with Automatic Profile Dimming and Motion Response Override combine the benefits of both automatic profile dimming and motion response. APD-MRI luminaires utilize a programmable LED driver. The luminaire will dim to 50% power, 50% light output, per the dimming profile shown for APD luminaires (see page 4). If motion is detected during the time that the luminaire is operating at 50%, the luminaire goes to 100% power and light output. The luminaire remains on high until no motion is detected for the duration period, after which the luminaire returns to low. Duration period is factory set at 15 minutes.

APD-MRI luminaires are available with 120V through 277V (UNIV) input voltages only.

APD-MRI luminaires use the identical motion sensor as MRI lumaires. See motion sensor details for P21-MRI.



SPECIFICATIONS

GENERAL DESCRIPTION: Philips Gardco PureForm luminaires combine LED performance excellence and advanced Gardco LED thermal management technology with a distinct purity of style to provide outdoor area lighting that is both energy efficient and aesthetically pleasing. PureForm is defined by its high performance, sleek low profile design and rugged construction.

HOUSING: A die cast aluminum housing mounts directly to a pole or wall. The low profile rounded form reduces the effective projected area of the luminaire significantly.

IP RATING: PureForm luminaires have a rating of IP66.

LED RELIABILITY:

PREDICTED LUMEN DEPRECIATION DATA		
Ambient Temperature °C	Driver mA	L ₇₀ Hours ¹⁵
25 °C	350 mA	240,000
	530 mA	180,000
40 °C	350 mA	225,000
	530 mA	160,000

15. 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.

THERMAL MANAGEMENT: The Philips Gardco PureForm LED provides die cast aluminum integral thermal radiation fins to provide the excellent thermal management so critical to long LED system life.

ELECTRICAL: Luminaires are equipped with an LED driver that accepts 120V through 277V, or 347V through 480V, 50hz to 60hz, input. Driver output is based on the LED wattage selected. Component-to-component wiring within the luminaire will carry no more than 80% of rated current and is listed by UL for use at 600 VAC at 302°F / 150°C or higher. Plug disconnects are listed by UL for use at 600 VAC, 15A or higher. Power factor is not less than 90%. Luminaire consumes 0.0 watts in the off state. All motion sensors utilized consume 0.0 watts in the off state.

FINISH: Each standard color luminaire receives a fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) textured polyester powdercoat finish. Standard colors include bronze (BRP), black (BLP), white (WP), and natural aluminum (NP). Consult factory for specs on optional or custom colors.

LABELS: All luminaires bear UL or CUL (where applicable) Wet Location labels.

WARRANTY: Philips Gardco luminaires feature a 5 year limited warranty. Philips Gardco LED luminaires with LED arrays feature a 5 year limited warranty covering the LED arrays. Motion sensors are covered by warranty for 5 years by the motion sensor manufacturer. See Warranty Information on www.sitelighting.com for complete details and exclusions. Polycarbonate lenses carry a 1 year warranty.

FULL CUTOFF PERFORMANCE: Full cutoff performance means a luminaire distribution where zero candela intensity occurs at an angle at or above 90° above nadir. Additionally, the candela per 1000 lamp lumens does not numerically exceed 100 (10 percent) at a vertical angle of 80° above nadir. This applies to all lateral angles around the luminaire.