



SolarForm Gen 3 Hybrid is an integrated solar lighting solution designed to provide high-quality illumination and reliable performance. It features an LED light integrated with a solar photovoltaic panel, a battery, and a smart controller, simplifying specification, sales, installation, configuration, and maintenance processes. Equipped with field-configurable operating profiles tailored to night activities and expected solar energy available. This solution offers a reliable lighting option for areas where electricity is not reliable or costly. The system operates primarily on solar power and battery, seamlessly switching to the grid when solar irradiance or battery capacity is insufficient, ensuring uninterrupted illumination throughout the night.

Project: _____

Location: _____

Cat.No: _____

Type: _____

Lumens: _____ Qty: _____

Notes: _____

Ordering guide

Example: VGP726 LED90 730 HY-BLE DW50 OSB-SDP1 BK 12A

Prefix	Source Lumens	CRI/CCT ¹	Configuration	Optic
VGP726				
VGP726 SolarForm G3	LED20 2000lm LED30 3000lm LED40 4000lm LED50 5000lm LED60 6000lm LED70 7000lm LED80 8000lm LED90 9000lm LED100 10000lm	727 70CRI, 2700K 730 70CRI, 3000K 740 70CRI, 4000K	HY-BLE ² Hybrid with Bluetooth	DM32 Type 2 Short DN11 Type 2 Medium DW10 Type 3 Short DW50 Type 3 Medium DN25 Type 3 Medium High Tilt DX52 Type 4 DS50 Type 5
Backlight Shield		Operating Profile ⁴	Finish ^{5,6}	Battery Capacity
[blank] No backlight shield BL1 Limited backlight shield BL2 ³ Sharp backlight shield	Fixed dimming without motion sensor SDP1 SDP2 SDP3 SDP4 Profile dimming with motion sensor OSB-SDP1 OSB-SDP2 OSB-SDP3 OSB-SDP4 OSB-SDP5	BK Black GR Light Gray ALU Gray Aluminum WH Signal White SI White Aluminum RAL (Specify RAL Color)	12A 12Ah (307Wh) 18A 18Ah (460Wh)	

- 1800K, 2200K and 5700K CCTs are available upon request with an extended lead time.
- Input voltage is universal 100-277V 50/60Hz.
- Not available with Type 5.

- Operating profiles can be updated on-site using Service Tag App.
- All finishes are made with a Marine Salt Protection (MSP) paint.
- Standard finishes RAL colors are listed below.

Luminaire Standard Finishes

Code	RAL Color
BK	Black (RAL 9005)
GR	Light Gray (RAL 7035)
ALU	Gray Aluminum (RAL 9007)
WH	Signal White (RAL 9003)
SI	White Aluminum (RAL 9006)

Vertical Pole-Wrap Panel

12NC	Description
911401822202	200Wp Vertical Panel Subsystem Vmpp 36V
912300058711	Installation KIT Vertical PV Panel 200Wp

SolarForm Gen 3

Hybrid/Grid-Smart Solar Powered System



High efficacy LED modules with up to 9K lumens output

High efficiency, integrated mono-crystalline PV panel

Bluetooth module for easy monitoring and configuration from bottom of pole via Service Tag app

Replaceable spare parts for maintenance via Service Tag app

Tool-less opening of top housing via clips for easy access to components

Two mounting options, post-top and side entry via same spigot

Optional multi-sensor for light on demand and forward triggering

Optional Top-up pole-wrap PV panel to increase the power generation without replacing the whole unit

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Predicted Lumen Depreciation Data

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 TM21-21.

Ambient Temperature °C	L70 per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	>100,000 hours	>97%

Power and Lumen Maintenance

Ordering Code	Average System Watts (W)
VGP726 LED30	11
VGP726 LED40	19
VGP726 LED50	25
VGP726 LED60	29
VGP726 LED70	35
VGP726 LED80	43
VGP726 LED90	49
VGP726 LED100	55

LED Lumen Values

4000K, 70CRI

Ordering Code	DM32: Type 2 Short			DN11: Type 2 Medium			DW10: Type 3 Short		
	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
VGP726 LED30 740	2029	180	B1-U0-G0	1992	176	B1-U0-G1	2023	179	B1-U0-G1
VGP726 LED40 740	3219	169	B1-U0-G1	3161	166	B1-U0-G1	3209	169	B1-U0-G1
VGP726 LED50 740	4120	165	B1-U0-G1	4045	162	B1-U0-G1	4107	164	B1-U0-G1
VGP726 LED60 740	5021	174	B1-U0-G1	4931	171	B1-U0-G1	5006	174	B1-U0-G1
VGP726 LED70 740	5910	171	B1-U0-G1	5803	168	B2-U0-G1	5893	171	B1-U0-G1
VGP726 LED80 740	7230	167	B1-U0-G1	7100	164	B2-U0-G1	7209	167	B2-U0-G1
VGP726 LED90 740	8101	164	B2-U0-G1	7955	161	B2-U0-G2	8077	164	B2-U0-G1
VGP726 LED100 740	8966	162	B2-U0-G2	8804	159	B2-U0-G2	8939	161	B2-U0-G2

4000K, 70CRI (cont'd)

Ordering Code	DW50: Type 3 Medium			DN25: Type 3 Medium High Tilt			DX52: Type 4			DS50: Type 5		
	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
VGP726 LED30 740	1942	172	B1-U0-G1	2004	177	B1-U0-G1	1985	176	B1-U0-G1	1957	173	B1-U0-G1
VGP726 LED40 740	3081	162	B1-U0-G1	3180	167	B1-U0-G1	3148	166	B1-U0-G1	3105	163	B2-U0-G1
VGP726 LED50 740	3943	158	B1-U0-G1	4070	163	B1-U0-G1	4030	161	B1-U0-G1	3974	159	B2-U0-G1
VGP726 LED60 740	4806	167	B2-U0-G2	4960	172	B1-U0-G1	4912	171	B1-U0-G1	4844	168	B3-U0-G1
VGP726 LED70 740	5657	164	B2-U0-G2	5838	169	B2-U0-G1	5781	168	B2-U0-G1	5701	165	B3-U0-G1
VGP726 LED80 740	6920	160	B2-U0-G2	7142	165	B2-U0-G1	7072	163	B2-U0-G2	6974	161	B3-U0-G2
VGP726 LED90 740	7754	157	B2-U0-G2	8003	162	B2-U0-G1	7925	161	B2-U0-G2	7815	159	B3-U0-G2
VGP726 LED100 740	8582	155	B2-U0-G2	8857	160	B2-U0-G2	8770	158	B2-U0-G2	8649	156	B3-U0-G2

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Hybrid/Grid-Smart Solar Powered System

LED Lumen Values

3000K, 70CRI

Ordering Code	DM32: Type 2 Short			DN11: Type 2 Medium			DW10: Type 3 Short		
	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
VGP726 LED30 730	1927	171	B1-U0-G0	1892	167	B1-U0-G1	1921	170	B1-U0-G1
VGP726 LED40 730	3057	161	B1-U0-G1	3002	158	B1-U0-G1	3048	160	B1-U0-G1
VGP726 LED50 730	3913	157	B1-U0-G1	3842	154	B1-U0-G1	3901	156	B1-U0-G1
VGP726 LED60 730	4769	166	B1-U0-G1	4683	163	B1-U0-G1	4755	165	B1-U0-G1
VGP726 LED70 730	5613	163	B1-U0-G1	5512	160	B1-U0-G1	5597	162	B1-U0-G1
VGP726 LED80 730	6867	159	B1-U0-G1	6743	156	B2-U0-G1	6847	158	B2-U0-G1
VGP726 LED90 730	7694	156	B1-U0-G1	7555	153	B2-U0-G2	7672	156	B2-U0-G1
VGP726 LED100 730	8516	154	B2-U0-G1	8362	151	B2-U0-G2	8490	153	B2-U0-G2

3000K, 70CRI (cont'd)

Ordering Code	DW50: Type 3 Medium			DN25: Type 3 Medium High Tilt			DX52: Type 4			DS50: Type 5		
	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
VGP726 LED30 730	1844	163	B1-U0-G1	1903	168	B1-U0-G1	1885	167	B1-U0-G1	1859	165	B1-U0-G1
VGP726 LED40 730	2926	154	B1-U0-G1	3020	159	B1-U0-G1	2990	157	B1-U0-G1	2949	155	B2-U0-G1
VGP726 LED50 730	3745	150	B1-U0-G1	3865	155	B1-U0-G1	3827	153	B1-U0-G1	3774	151	B2-U0-G1
VGP726 LED60 730	4565	159	B2-U0-G2	4711	164	B1-U0-G1	4665	162	B1-U0-G1	4600	160	B3-U0-G1
VGP726 LED70 730	5373	156	B2-U0-G2	5545	161	B2-U0-G1	5491	159	B2-U0-G1	5415	157	B3-U0-G1
VGP726 LED80 730	6573	152	B2-U0-G2	6783	157	B2-U0-G1	6717	155	B2-U0-G2	6624	153	B3-U0-G1
VGP726 LED90 730	7365	149	B2-U0-G2	7601	154	B2-U0-G1	7527	153	B2-U0-G2	7422	151	B3-U0-G2
VGP726 LED100 730	8151	147	B2-U0-G2	8412	152	B2-U0-G1	8330	150	B2-U0-G2	8214	148	B3-U0-G2

2700K, 70CRI

Ordering Code	DM32: Type 2 Short			DN11: Type 2 Medium			DW10: Type 3 Short		
	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
VGP726 LED30 727	1741	154	B0-U0-G0	1710	151	B1-U0-G1	1736	154	B1-U0-G0
VGP726 LED40 727	2762	145	B1-U0-G1	2712	143	B1-U0-G1	2754	145	B1-U0-G1
VGP726 LED50 727	3535	141	B1-U0-G1	3471	139	B1-U0-G1	3525	141	B1-U0-G1
VGP726 LED60 727	4309	150	B1-U0-G1	4231	147	B1-U0-G1	4296	149	B1-U0-G1
VGP726 LED70 727	5072	147	B1-U0-G1	4980	144	B1-U0-G1	5057	147	B1-U0-G1
VGP726 LED80 727	6204	143	B1-U0-G1	6092	141	B2-U0-G1	6186	143	B1-U0-G1
VGP726 LED90 727	6952	141	B1-U0-G1	6827	139	B2-U0-G1	6931	141	B2-U0-G1
VGP726 LED100 727	7694	139	B1-U0-G1	7555	136	B2-U0-G2	7671	139	B2-U0-G1

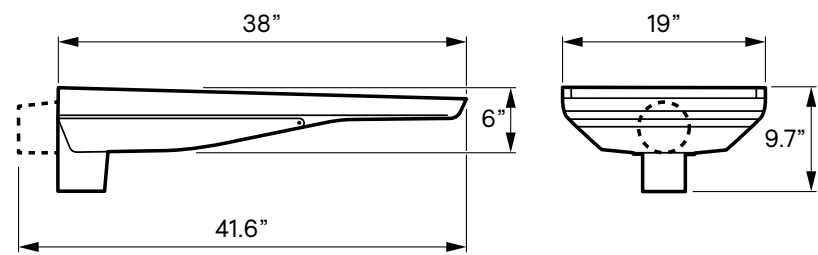
2700K, 70CRI (cont'd)

Ordering Code	DW50: Type 3 Medium			DN25: Type 3 Medium High Tilt			DX52: Type 4			DS50: Type 5		
	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
VGP726 LED30 727	1666	148	B1-U0-G1	1720	152	B1-U0-G0	1703	151	B1-U0-G1	1679	149	B1-U0-G1
VGP726 LED40 727	2644	139	B1-U0-G1	2728	144	B1-U0-G1	2702	142	B1-U0-G1	2664	140	B2-U0-G1
VGP726 LED50 727	3384	135	B1-U0-G1	3492	140	B1-U0-G1	3458	138	B1-U0-G1	3410	136	B2-U0-G1
VGP726 LED60 727	4124	143	B1-U0-G1	4257	148	B1-U0-G1	4215	146	B1-U0-G1	4157	144	B3-U0-G1
VGP726 LED70 727	4854	141	B2-U0-G2	5010	145	B1-U0-G1	4961	144	B1-U0-G1	4892	142	B3-U0-G1
VGP726 LED80 727	5939	137	B2-U0-G2	6129	142	B2-U0-G1	6069	140	B2-U0-G1	5985	138	B3-U0-G1
VGP726 LED90 727	6654	135	B2-U0-G2	6867	139	B2-U0-G1	6800	138	B2-U0-G2	6706	136	B3-U0-G1
VGP726 LED100 727	7364	133	B2-U0-G2	7600	137	B2-U0-G1	7526	136	B2-U0-G2	7422	134	B3-U0-G2

SolarForm Gen 3

Hybrid/Grid-Smart Solar Powered System

Dimensions



Optical Distributions

Type 2 Short (R2S)

Type 2 Medium (R2M)



Type 3 Short (R3S)

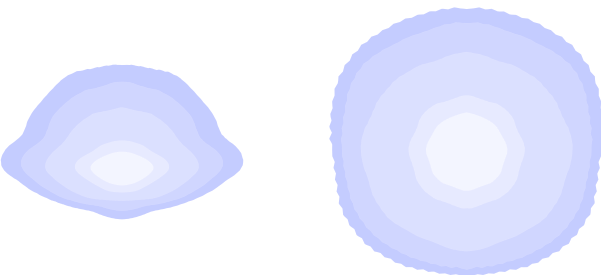
Type 3 Medium (R3M)

Type 3 Medium High Tilt (R3TM)



Type 4 (T4)

Type 5 (T5)



SolarForm Gen 3

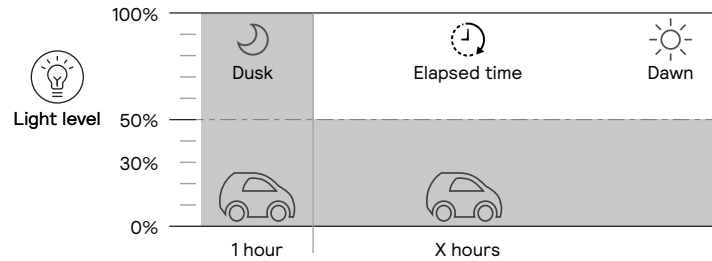
Hybrid/Grid-Smart Solar Powered System

Operating Profiles

Fixed Dimming (Without Motion Sensor)

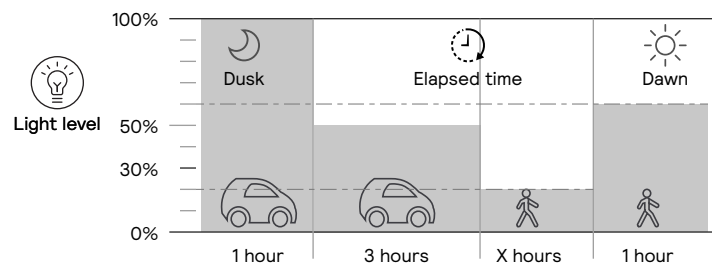
SDP1: Default for all products without motion sensor

- First Hour After Dusk: Light level fixed at 100%
- Remaining Hours to Dawn: Light level fixed at 50%



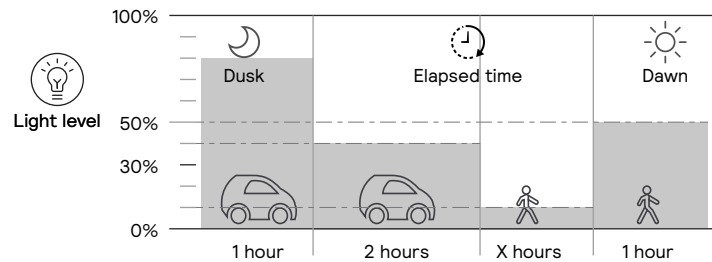
SDP2: Fixed Dimming Profile #2

- First Hour After Dusk: Light level fixed at 100%
- Three Hours: Light level fixed at 50%
- Remaining Hours to Dawn - 1 hour: Light level fixed at 20%
- One Hour before Dawn: Light level fixed at 60%



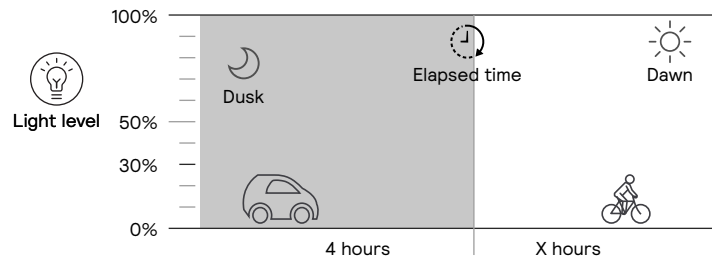
SDP3: Fixed Dimming Profile #3

- First Hour After Dusk: Light level fixed at 80%
- Two Hours: Light level fixed at 40%
- Remaining Hours to Dawn - 1 hour: Light level fixed at 10%
- One Hour before Dawn: Light level fixed at 50%



SDP4: Fixed Dimming Profile #4

- Four Hours After Dusk: Light Level fixed at 100%
- Luminaire then is OFF for the rest of the night



SolarForm Gen 3

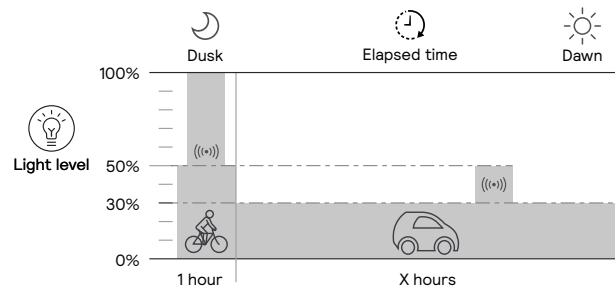
Hybrid/Grid-Smart Solar Powered System

Sensor Dimming (With Motion Sensor)

Profile Dimming

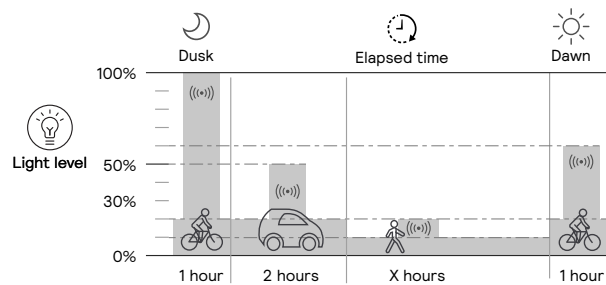
OSB-SDP1: Default for all products with sensor

- One Hour After Dusk: Light Level at 100% with motion and 50% without motion
- Remaining of the night: Light level at 50% with motion and 30% without motion



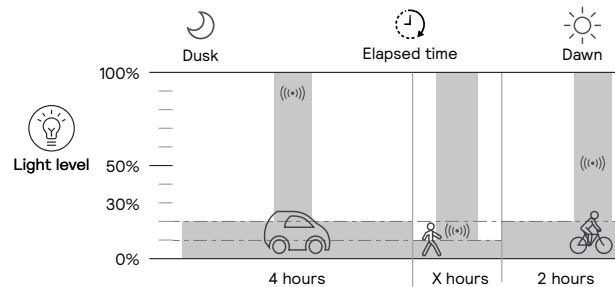
OSB-SDP2: Sensor Dimming Profile #2

- One Hour After Dusk: Light Level at 100% with motion and 20% without motion
- Two Hours: Light Level at 50% with motion and 20% without motion
- Remaining Hours to Dawn – 1 hour: Light level at 20% with motion and 10% without motion
- One Hour before Dawn: Light level at 60% with motion and 20% without motion



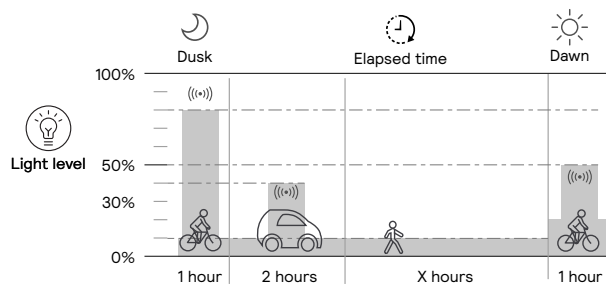
OSB-SDP3: Sensor Dimming Profile #3

- Four Hour After Dusk: Light Level at 100% with motion and 20% without motion
- Remaining Hours to Dawn – 2 hours: Light level at 100% with motion and 10% without motion
- Two Hour before Dawn: Light level at 100% with motion and 20% without motion



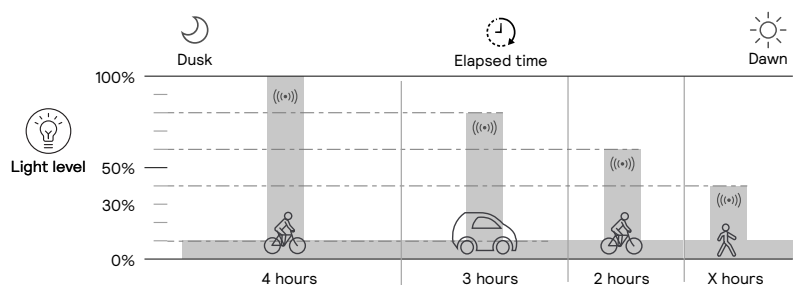
OSB-SDP4: Sensor Dimming Profile #4

- One Hour After Dusk: Light Level at 80% with motion and 10% without motion
- Two Hours: Light level at 40% with motion and 10% without motion
- Remaining Hours to Dawn – 1 hour: Light level fixed at 10%
- One Hour before Dawn: Light level at 50% with motion and 10% without motion



OSB-SDP5: Sensor Dimming Profile #5

- Four Hours After Dusk: Light Level at 100% with motion and 10% without motion
- Three Hours: Light level at 80% with motion and 10% without motion
- Two Hours: Light level at 60% with motion and 10% without motion
- One Hour before Dawn: Light level at 40% with motion and 10% without motion



SolarForm Gen 3

Hybrid/Grid-Smart Solar Powered System

Effective Projected Area

		Tilt Angle			
		0°	5°	10°	15°
Mounting	Post Top	0.834 ft ²	0.875 ft ²	1.014 ft ²	1.612 ft ²
	Side Entry	0.806 ft ²	0.896 ft ²	1.526 ft ²	–

Poles and Brackets

Poles ordering guide

Example: SRS-CB-4-11-20-T2D6L-N-BK

Family	Base	Pole Size	Pole Gauge	Height	Drilling/Tenon Configuration	Drilling Template	Finish
SRS Straight Round Steel	CB Carbon Steel Base with Base Cover	4 4in	11 11 ga	10 10ft	T2D4L [†] 2-3/8" OD x 4" length	N	Match the luminaire finish
				12 12ft			
				14 14ft			
		5 5in	11 11 ga	16 16ft			
				20 20ft			
				25 25ft			
		5 5in	7 7 ga	20 20ft			
				25 25ft			

1. Tenon for direct post-top mounting.
2. For side-mounting, SBRKT bracket needed, sold separately.

Bracket for side-mounting ordering guide

Example: SBRKT-SPK-L1-12-T2D4L-BK

Bracket Material	Bracket Type	Configuration and Spacing	Mounting	Finish
SBRKT Steel Bracket	SPK Spoke	L1-12 Single Luminaire L2-12 Double Luminares (back-to-back)	T2D4L 2-3/8" OD x 4" Length Tenon	Match the luminaire finish

* **Warning:** Additional wind loading, in terms of EPA, from banners, cameras, floodlights and other accessories attached to the pole, must be added to the luminaire(s) EPA before selecting the pole with the appropriate wind load capability. See pole spec sheets for the most up to date EPA data and general design warnings.

† Factory supplied template must be used when setting anchor bolts. Gardco will not honor any claim for incorrect anchorage placement resulting from failure to use factory supplied templates.

SolarForm Gen 3

Hybrid/Grid-Smart Solar Powered System

Specifications

Net lumen output range	Up to 9,000
Color temperature	4000K, 3000K, 2700K
CRI	>70
Optical distributions	Type 2, 3, 4 and 5
Integrated solar panel capacity	73Wp, 38V
Module Type	TopCon PV panel
Secondary solar panel capacity	Horizontal: 335Wp Max Vertical Pole Wrap: 3x200Wp Max
Battery type	Lithium Iron Phosphate (LiFePO4)
Battery capacity options	307Wh (12AH, 25.6V) 460Wh (18AH, 25.6V)
Charging ambient temperature	32°F to 104°F (0°C to 40°C)
Discharge ambient temperature	-4°F to 104°F (-20°C to 40°C)
Motion sensor range	Mounting Height: 13 to 39 ft Max Detection Distance: 50 ft for pedestrians and cyclists / 98 ft for vehicles Max Detection Speed: 90 MPH
Charge controller	Integrated, MPPT type charge controller with LED driver
Configurable	Yes (via Bluetooth through Service Tag App)
Operating Profiles	Programmable up to 5 steps
Run Time Extension (RTE)	Disabled (Hybrid)
Driver Efficiency	>90%
Supply Mains Input	120~277V/50~60Hz (tolerance ±10%)
Inrush Current	37A during 180µs at 120V mains measured at 50% peak 90A during 172µs at 277V mains measured at 50% peak
Mobile app data monitoring	PV, LED and battery voltage and current Battery temperature
Mobile app fault status monitoring	Load short-circuit Load disconnected PV overvoltage Board overtemperature
IP rating	IP66
Housing	Die-cast aluminum with anti-corrosive coating
Housing finishes available	White, Aluminum, Black, Grey, Dark Grey, RAL Colors
Front cover	Tempered glass
Mounting	Horizontal and vertical pole mounting options (requires 2-3/8" x 4" long tenon)

Adjustable tilt angle	Post-Top: 0-15 degree adjustable Side-Entry: 0-10 degrees adjustable
Outer mounting diameter	1.9" (48mm) O.D. or 2 3/8" (60mm) O.D.
Operating humidity	Up to 95%
Dimensions	41.6 x 19 x 9.7" (1057 x 480 x 152 mm)
Weight	65.7 lbs
Estimated autonomy days	Varies by location and operating profile. Contact factory for calculation details.
Luminaire Installation	Outdoor: Side entry and Pole top mounting. Should NOT be installed under shadow of trees, buildings, poles, snowing regions, etc. Refer to mounting instruction sheet for full information/limitations.
Certification and compliance	PV Panel: IEC 61215:2016 / IEC 61730-1 & 2:2016 Battery: IEC 60896-22 Charge Controller: IEC 62109-1, IEC 61547, IEC 61347, CISPR 15 Poles: Compliant with AASHTO 2001, CSA, AAMA 2603, ASTM D2244, ASTM D523, ASTM D2247
Limited warranty	5-Year warranty on luminaire including PV Panel and charge controller 3-Year warranty on battery