



## DX3-3001S Cold Climate Solar Lighting System

**(for Canada & other cold climate applications)**

Millions of street lights are installed worldwide every year, creating a significant impact on the available electrical generation. DX3's solar power solution removes lighting from the power grid or reduces the demand using our highly efficient LED lights. Our solar lighting system is a cost effective alternative and a proven clean outdoor lighting solution for anywhere, anytime.

DX3 Solar products are manufactured using the very latest technologies with optional light weight, electrically robust, Lithium Polymer batteries. Our main components are custom designed & assembled in Canada.



### KEY FEATURES

- Works in -40C to +70C
- Flexible Selection for Solar Radiation Levels
- 3 Years Reliable Maintenance Free Operation
- Durable Aluminum & Steel Construction (powder coated)

### FEATURE BENEFITS

- **Low Capital Cost** (no power cables, trenches, or power system required)
- **Zero Operating Cost** (and minimal routine maintenance cost)
- **No Grid Connection** (improved safety factor)
- **Fast & Simple Installation** (reduced labour & installation cost)

## DX3-3001S Cold Climate Solar Lighting System

### Luminaire (Lighthouse)

Available in Grey or Black (RAL9007 grey, RAL9005 black)

Input Voltage:	DC 24V
System Power Consumption:	30W
LEDs:	145 Lumens/Watt
Luminaire Initial Flux:	~3000 Effective Lumen
Color Temperature:	5000K
Light Distribution:	IESNA Type II, Short
LED Junction Temperature:	< 75°C
Power Factor:	> 0.92
Total Harmonic Distortion:	< 25% (Isolated System)
Surge Protection:	> 6.5KV
Operating Temperature:	-40°C~50°C, 10%~95%RH
Ingress Rating:	IP 66
Operating Life:	50,000 hrs Degradation < 30%
Module Quantity:	2
Weight:	8Kg
Dimensions:	L: 578mm(22.76") x W: 286mm(11.26") x H: 149mm(5.87")



*The lighthouse includes an LED driver to ensure constant current to the LEDs (eliminates potential flicker issues). LEDs do not produce infrared; this minimizes attraction of insects/birds.*

### Charge/Discharge Controller

Input Voltage:	DC 24V
Max. Charging Current:	20A
Max. Discharge Current:	20A
Max. Solar Panel:	720W @ 24V
Overcharge Protection:	29V @ 25°C
Under-voltage Default:	22V
Weight:	263g (1/2 lb)
Dimensions:	L: 97mm(3.82") x W: 76mm(3.00") x H: 23mm(0.91")



*The charge/discharge controller is waterproof, wirelessly programmable, and provides temperature-sensitive charging for batteries based upon ambient voltage of the batteries.*

## Battery System

Standard Battery Type – Absorbed Glass Mat  
(Two required in series)

Nominal Capacity:	121Ah (1.0A) @25°C
Nominal Voltage:	12V
Discharge Temperature:	-40°C - 60°C
Charge Temperature:	-20°C - 50°C
Storage Temperature:	-20°C - 45°C
Capacity @ -15°C:	65%
Operating Life:	3-5 Years (Depends on Environment)
Weight:	29Kg (64 lbs)
Dimensions:	L: 310mm(12.17") x W: 168mm(6.61") x H: 211mm(8.30")



Two 12V batteries are placed in series inside of an insulated battery box.

Temperature of a minimum -5°C is maintained during the day via small strip heaters with temperature sensors. The charge/discharge controller and miscellaneous wiring are also located within the insulated battery box.

Optional Battery Type – Lithium Polymer 24V, 50AH (Additional Cost)

## Solar Panel

### Kyocera KD F Series – KD250

Nominal Capacity:	250W
Maximum Voltage:	29.8V
Weight:	21Kg (46.3 lbs)
Dimensions:	L: 1661mm(65.4") x W: 991mm(39.0") x H: 46mm(1.8")

### Conergy PH 255P

Nominal Capacity:	255W
Maximum Voltage:	30.68V
Weight:	19.5Kg (43 lbs)
Dimensions:	L: 1652mm(65") x W: 994mm(39.1") x H: 40mm(1.57")

One solar panel (~ 250W) is used to generate electricity to charge the solar system.



The solar panel is over-sized to compensate for shorter daylight hours, low solar radiation, and very cold winter temperatures. In warmer climates, a smaller solar panel may be used.

## Solar Panel Mount & Battery Enclosure (for metal pole applications)

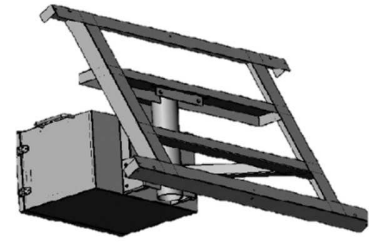
### Solar Panel Frame – Steel Pole

Material Type:	Powder-Coated Steel
Weight:	31.5Kg (69.5 lbs)
Dimensions:	L: 466mm(18.36") x W: 1288mm(50.3") x H: 1003mm(39.5")

### Solar Battery System Enclosure – Steel Pole

Material Type:	Powder-Coated Steel
Weight:	35.4Kg (78 lbs)
Dimensions:	L: 660mm(26") x W: 660mm(26") x H: 477mm(18.77")

*This system enables the correct orientation of the solar panel toward the sun. It is a two-piece system where the insulated battery box locks onto the solar panel mount. This design provides optimal weight balance for the pole.*



*The solar panel mount & battery enclosure system for metal poles is custom-designed to mount onto a specially designed metal pole.*

## Solar Panel Mount & Battery Enclosure (for wood pole applications)

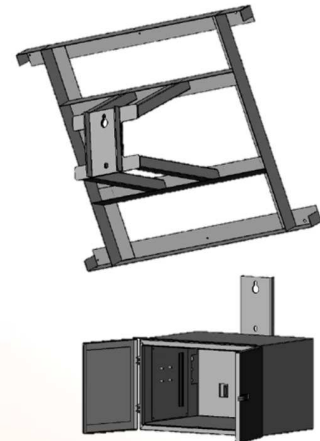
### Solar Panel Frame – Wood Pole

Material Type:	Powder-Coated Steel
Weight:	27Kg (59.51 lbs)
Dimensions:	L: 546mm(54.52") x W: 1288mm(50.3") x H: 1003mm(39.5")

### Solar Battery System Enclosure – Wood Pole

Material Type:	Powder-Coated Steel
Weight:	31.3Kg (69 lbs)
Dimensions:	L: 469mm(18.45") x W: 660mm(26") x H: 657mm(25.88")

*This system enables the correct orientation of the solar panel toward the sun. It is a two-piece system where the insulated battery box mounts opposite the polearm. This design provides optimal weight balance for the pole.*



*The solar panel mount and battery enclosure for wood poles is a custom-designed system to mount onto any wood pole.*

## Solar Panel Mount & Battery Enclosure (for skid applications)

### Solar Battery System Enclosure – Skid

Material Type:	Powder-Coated Steel
Weight:	68.0Kg (150 lbs)
Dimensions:	L: 1689mm(66.5") x W: 1296mm(51") x H: 1854mm(73")

*This system enables the correct orientation of the solar panel toward the sun. It is a one-piece system where the insulated battery box mounts behind the solar panel. The luminaire can be mounted to a building, on a wood pole, to a tank, or other surface.*



*The solar panel mount & battery enclosure for skid systems is a custom-designed system to mount onto a metal skid.*

## Polearm

(Universal; used for metal, wood or skid applications)

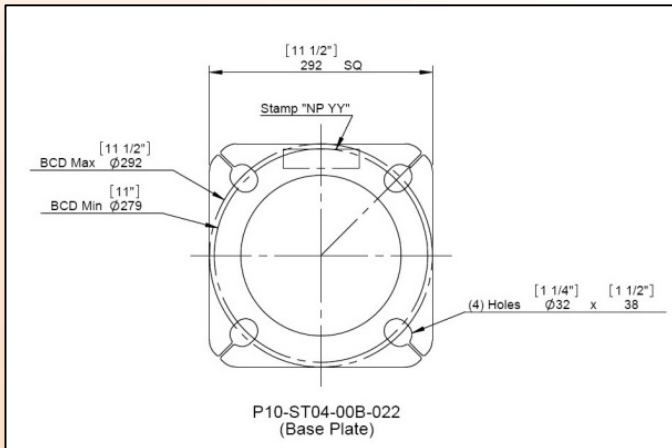
Material Type	Powder-Coated Aluminum
Weight:	8.7Kg (19.18 lbs)
Dimensions:	L: 1829mm(6') x W: 108mm(4.235") x H: 276mm(10.875")



*The elliptical aluminum polearm is a default length of 6', and is also available in 4' or up to 15'. It attaches to metal poles, wood poles, or can be used in conjunction with a skid system (could be attached to a pole, building or client-selected surface).*

## Metal Pole

Material Type:	Powder-Coated Steel
Bolt Pattern:	11" to 11.5"
Weight:	149.9Kg (330.47 lbs)
Dimensions:	L: 292mm(11.5") x W: 292mm(11.5") x H: 8077mm(26.5')



*Our custom metal pole is made from heavy duty galvanized steel. Aluminum is not available due to wind shear requirements. The pole supports one fixture (3.6 sqft EPA) and one solar panel. It is designed for 160 kph wind loading including an AASHTO gust factor of 1.3. It is designed in accordance with AASHTO Standard Specifications for Highway Signs, Luminaires, and Traffic Signals.*

## Wood Pole

Material Type	Cedar, bottom treated
Minimum Thickness:	12" diameter
Weight:	varies
Dimensions:	L: 9144mm(30') x W: 305mm(12")

*A wood pole can be used for the solar lighting system. A minimum depth of 6' is recommended, however a geotechnical study should be done to confirm this.*

