

**BULLARD
SOLAR**
One with the Sun

AOSPRO 20 INTEGRATED SOLAR STREET LIGHT



FIXTURE TYPE: _____

PROJECT NAME: _____



CERTIFICATIONS **IEC / TUV / EMC / LM-79- 08
AND LM-80 TEST STANDARDS
/ IK8 / IP65 / CE / ULOR**

**5
YEARS**

* Bullard Solar offers a 5 Year Limited Warranty for the AOSPRO-Series luminaire shall be free from defects in material and workmanship for up to five (5) years from date of shipment. This limited warranty covers all components when installed and operated according to Bullard Solar instructions. Fixture suitable for ambient temperature from -10° to 50°. PV Panels - 20 year performance warranty Controller & Batteries: 5 years

Bullard Solar retains the right to modify or change product specifications without prior notice, as part of our ongoing commitment to improvement

GENERAL INFORMATION:

AOSPRO is a fully integrated solar street light system with all the components together in one single unit. The AOSPRO series is extremely simple to install and operate, making it the ultimate solution for area lighting with motion sensors.

NOMINAL FLUX	3920 LUMENS
NOMINAL POWER	20 WATTS

LIGHTING

Efficiency	196 Lumens/Watts
Chips LED	PHILIPS Luxeon 30-30 / 2300K to 6500K
LED lifetime	Over 80 000 hours LM80
Optics/CCT	TII-S / 2300 to 6500K
Light Height	From 3 to 4 meters (118.11" - 157.48")

BATTERY

Technology	Lithium Iron Phosphate LIFEPO4
Capacity	230 Wh
Autonomy	Over 24 hours at full charge - 4 Rainy Days back up
Charging time	5-6 hours
Lifespan	Over 3000 CYCLES @ 80% DOD over 10 years Lifetime
Working temp	14°F to 158°F (optional -40°F to 158°F) -10°C to 70°C (optional -40°C TO 70°C)

ENERGY

Solar panel	60 Watts /18V
Cells type	Monocrystalline Panel Grade A 25 years
Certificates	IEC 61215 - IEC 61730 I and II - IEC 60904

ELECTRONIC

Controller	MPPT SMART CONTROLLER (Bullard Solar BRIDGE optional)
Sensor	Microwave 360° Motion Sensor
Cabling	Waterproof Connector, Plug and Play
Protection	Battery Management System (BMS)

MECHANICAL

Pole mounting	89mm - 76mm (3.50" x 3.00")
Material	Aluminium and Stainless Steel

DIMENSIONS

Product	91 cm x 39.8 cm x 34.3 cm (35.83" x 15.67" x 13.50")
Carton size	98 cm x 46 cm x 26 cm (38.58" x 18.11" x 10.24")
Net Weight	11.5 KG (25.35 lb)
Gross Weight	15 KG (33.07 lb)
QTY /CTN 20"/40".....	240/505

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LUMINAIRE HOUSING & LEDS

20 WATTS - 3920 LUMENS - 2300 TO 6500 K

High pressure die-cast low-copper aluminum. Protection class (IP65). Bullard Solar uses a high quality Polyester Powder Coating from AKZO NOBEL. This powder coating provides an excellent salt and humidity resistance as well as ultra violet resistance for color retention for this product.

Our Luminaire is equipped with PHILIPS LUXEON HE PLUS High efficiency Chips offering and overall 196 Lumens per Watt efficacy.

Our luminaire also complies with the DARK SKY requirement for light pollution with an Upward lighting of 0,71%.

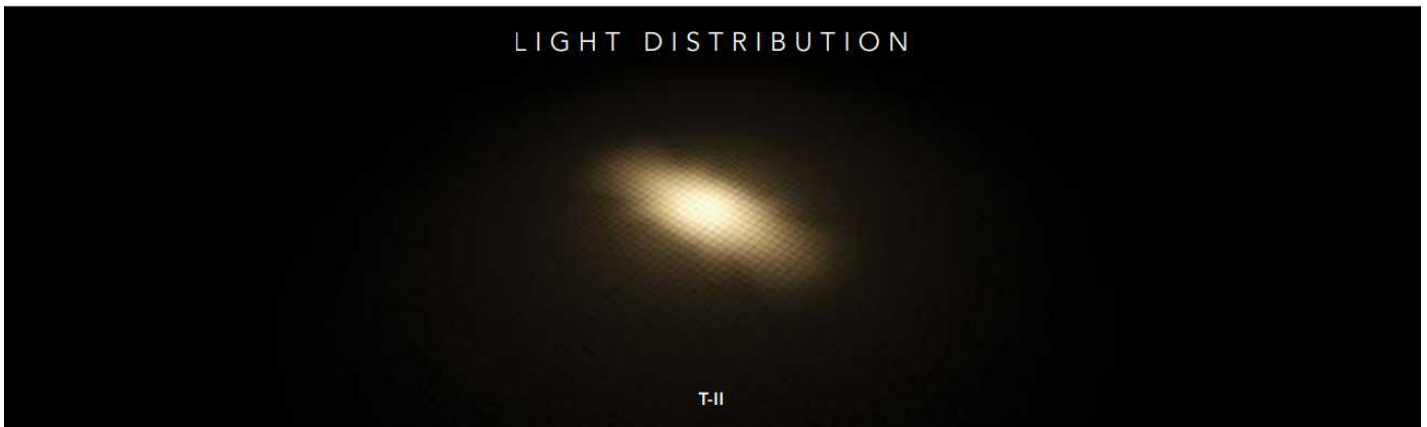
IP₆₅



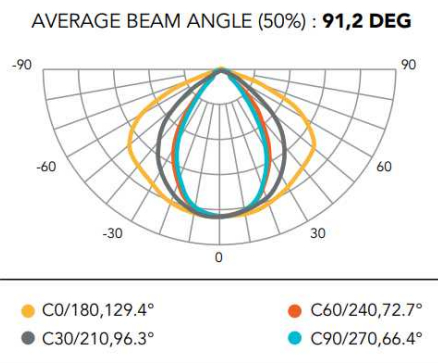
LED	3030	LED QTY (PCS)	40	LENS (PCS)	4	CRI	> 80
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LUXEON
BY PHILIPS LUMILEDS

AOSPRO OPTICS



LIGHT DISTRIBUTION CURVES



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+ OVER 10 YEARS LIFESPAN

The AOSPRO Series is equipped with Iron Phosphate Lithium LiFePo₄ battery. This technology is proved to be the best chemical technology for solar application on the market. With a cycle life of over 3000 Cycles @ 80% DOD, the battery enjoys over 10 years lifetime.

EXTREME TEMPERATURE

14°F to 158°F / -10 °C to 70°C

When Standard Lithium LiFePo₄ batteries enjoy a working temperature range from 14°F to 158°F (-10°C TO 70°C). Bullard Solar offers as optional a new Special LIFEPO₄ battery with working range of -40°F to 158°F (-40 °C. to 70 °C).

EASY MAINTENANCE & ANTI THEFT SCREWS

Easy and direct access to the battery casing for maintenance. The fixation are made with anti theft screws, which request special tooling to unscrew.

BMS ELECTRONIC PROTECTION BATTERY MANAGEMENT SYSTEM

Our batteries are equipped with electronic circuit boards for a higher protection, ensuring battery functioning optimization no matter the situation.

THE BMS PROTECTS AGAINST

OVER/UNDER CURRENT • OVERLOAD • OVER/UNDER VOLTAGE
• OVER/UNDER CHARGE • TEMPERATURE MANAGEMENT

BATTERY LIFEPO₄



ALUMINUM WATERPROOF CASING & NATURAL AIRFLOW


High temperatures greatly negatively affect the battery's lifespan. This is why our batteries are encapsulated in an aluminum waterproof casing for a perfect heat dissipation. In addition to that, the casing enjoys a natural airflow which keeps the battery to ambient temperature.


COMPARISONS OF DIFFERENT BATTERY TECHNOLOGIES

LIFETIME & CYCLES AT 80% DOD*

Comparison of different battery technologies


Lead Acid
200

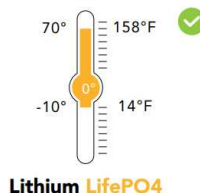
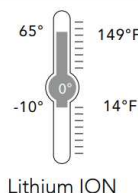
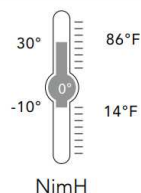
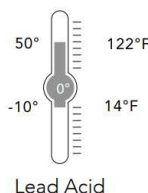

NimH
700


Lithium ION
800


Lithium LifePO₄
3 000

CHARGING TEMPERATURE RANGE WITHOUT CAPACITY LOSS

Minimum & Maximum temperature range for Optimal charging during the day



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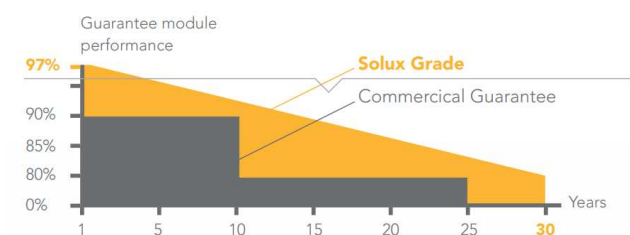
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SOLAR PANEL

60 WATTS

High efficiency mono-crystalline Solar panels. Carefully selected Grade A Solar cells. Up to 19.4% efficiency. Its octagonal Anodized aluminium alloy frame gives it a modern and elegant design as well as perfect resistance to corrosion. They are also equipped with fully waterproof Plug and Play connectors.

OUR PV PERFORMANCE GUARANTEE



solar cells
GRADE A



CONTROLLER MPPT



**WATERPROOF CONNECTORS
"PLUG & PLAY"**

All our components are assembled **seamless and easy to access**

In a search for performance and reliability, our products are equipped with MPPT technology controller offering the best charging efficiency on the market up to 98%

REMOTE CONTROL MONITORING

In order to facilitate all maintenance operations and above all to diagnose any possible problem, without having to intervene mechanically on the luminaire, BULLARD SOLAR luminaires are equipped with a wireless diagnostic system via remote control



**With a simple click it is possible
to have real-time information such as:**

- Automatic diagnosis in case of malfunction
- State of charge and battery history
- Real Time load and solar panel energy production history
- Age of the product and installation Temperature and its history

FEATURES

- Minimal stand-by power consumption
- Current consumption $\leq 10\text{mA}$
- Intelligent battery management

3 Phases charging:

- Charge MPPTT
- Constant voltage
- Floating voltage

- Intelligent LED driver Auto detecting of Dusk and Dawn for automatic operation, 7 Lighting Programs Configuration.
- ANTI BLACK OUT: Load adjust according to battery capacity assuring all night long lighting in any weather conditions.
- The controller also acts against:

- OVERLOAD
- OVERCURREN
- OVERTEMPERATURE
- OVERVOLTAGE / OVERLOAD
- OVERDISCHARGE

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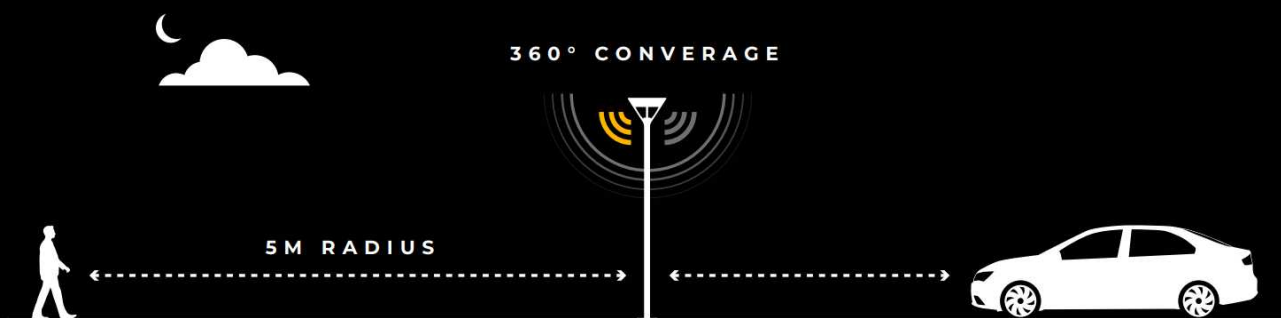
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MOTION SENSOR MICROWAVE

Bullard Solar luminaires are equipped with microwave detectors that use the Doppler effect (like car radars) to detect a nearby objects and measure the distance. The sensor emits a high frequency wave to reflect off of and analyze the objects in the vicinity.

Since the microwaves only detect specific objects, detection reliability increases resulting in:

- Much better reliability compared to the Infrared detector
- Up to 360° Directivity
- Insensitivity to other environmental variations such as light, color, temperature, etc.



OPERATION MODE & LIGHTING SCHEDULE

In addition to automatic switching on and off , you have the possibility of choosing among different modular operating modes according to the needs of the project.

	Sunset	Night	Sunrise
Pr 1	2 h	10 h	2 h
Pr 2	2 h	12 hours	
Pr 3	2 h	10 h	2 h
Pr 4		14 h	

☐ 100% ON
 ☒ 30% Dim
 ☐ Sensor 30% Dim +100% Power

CONTACT US FOR **MORE PROGRAM OPTIONS**

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**BULLARD
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AP

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EASY INSTALLATION

**NO CABLING
NO TRENCHING**

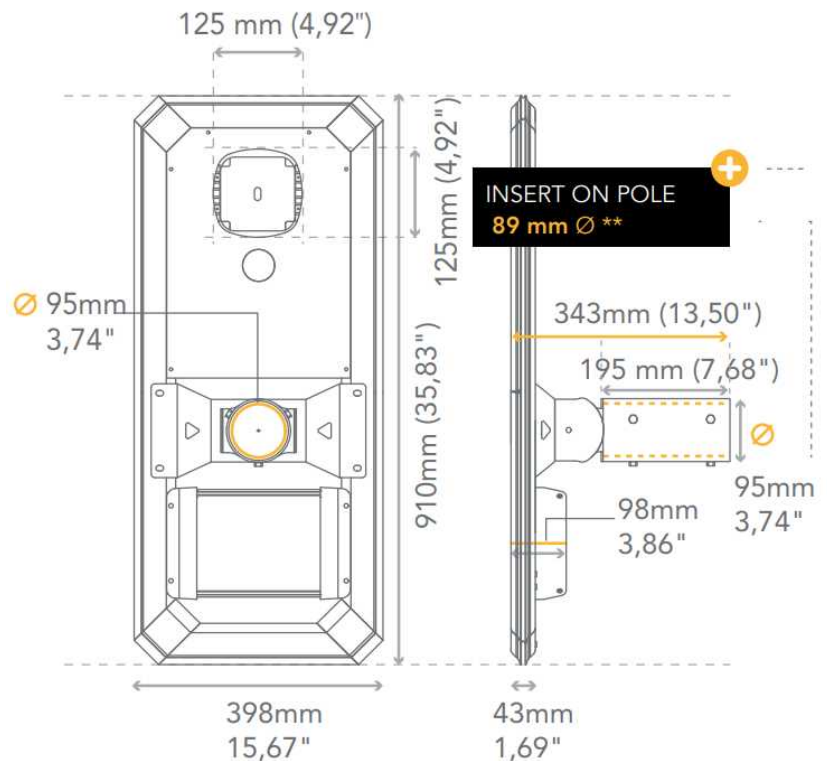
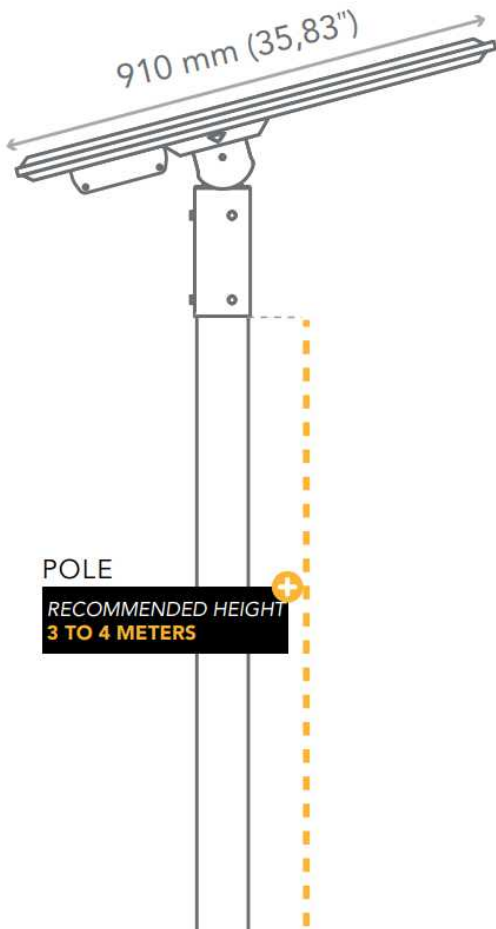
With a well designed bracket support AOSPRO is effortless and flexible to install.

INSERT, ORIENTATE & CHOOSE YOUR TILT



DIMENSIONS *

SOLAR PANEL & LED



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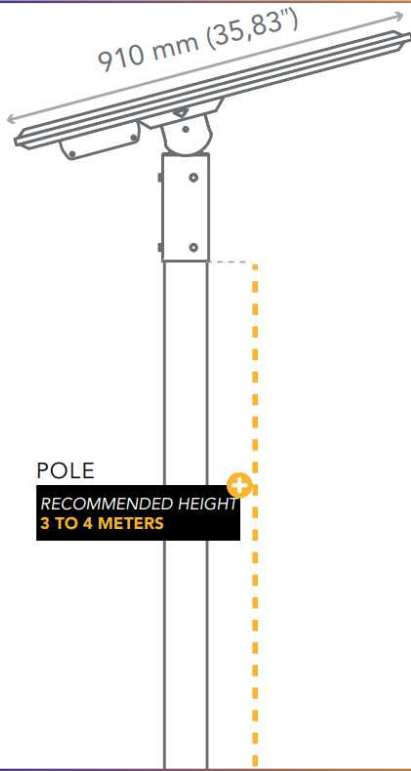
Due to the dynamic nature of lighting products and the associated technologies, luminaire data on all specification sheets is subject to change at the discretion of Gordon Bullard LLC and associated companies.

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Updated 07/09/2024

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HOW TO ORDER:

CODE:

Example:
CODE: AP-20-BL-30K

AP-20-BL-30K

DIMENSIONS:

91 cm x 39.8 cm x 34.3 cm (35.83" x 15.67" x 13.50")

2

FINISH OPTIONS:

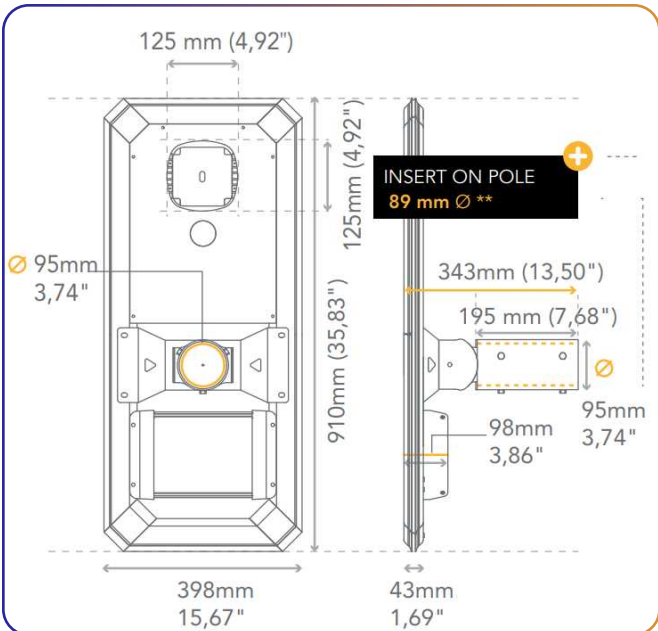
-BL

-BL Black

3

CCT:

-23K 2300K
-30K 3000K
-40K 4000K
-50K 5000K
-65K 6500K



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