

**BULLARD
SOLAR**
One with the Sun

**ROR 110
SOLAR BOLLARD**





FIXTURE TYPE: _____

PROJECT NAME: _____



Parks & gardens



Pathways



Campsites

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 Solar Bollard-Series luminaire to 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

GENERAL INFORMATION:

Designed in aluminum and treated to withstand the harshest conditions, the BULLARD SOLAR will be perfect for all your lighting, marking, and beautification applications for your outdoor living spaces with total energy autonomy. Equipped with high-efficiency solar cells, the light fixture charges in the sun but also in cloudy weather, ensuring optimal lighting throughout the year.

NOMINAL FLUX 250 LUMENS
NOMINAL POWER 1.8 WATTS

LIGHTING

Efficiency 120 Lumens/Watts
Chips LED PHILIPS Luxeon 30-30
LED lifetime Over 80 000 hours LM80
Optics/CCT T-V / 2300K to 6500K (Dual CCT optional)
Light Height 43.30" (110 cm)

BATTERY

Technology Lithium Iron Phosphate LIFEPO4
Capacity 28Wh
Autonomy Over 24 hours at full charge - 4 Rainy Days back up
Charging time 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 4.5 Wc
Cells type Monocrystalline Panel Grade A 25 years
Certificates IEC 61215 - IEC 61730 I and II - IEC 60904

ELECTRONIC

Sensor..... PIR 180° sensor (optional)

DIMENSIONS

Product D: 9.84" x H: 43.30" (D: 25 cm x H: 110 cm)
Carton size 45.28" x 12.60" x 13.00" (115 cm x 32 cm x 33 cm)
Weight 15,00 lb (6.8 KG)
Materials Die cast aluminum
Installation Concrete base or insert on support
Product code SL-002-110

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

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sales@gordonbullard.com
www.bullardsolar.com
1-877-964-4646



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LUMINAIRE & LEDS

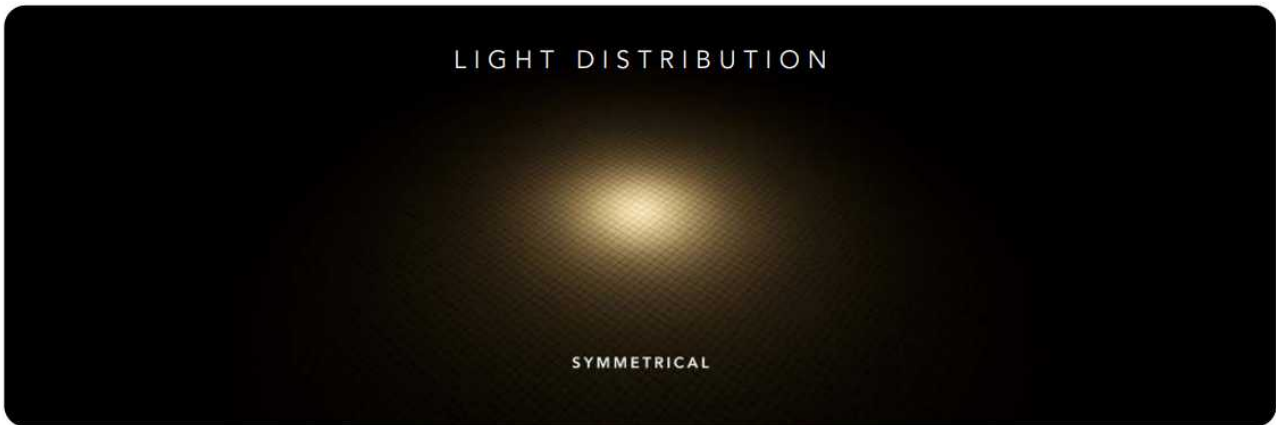
The ROR 110 bollard incorporates the latest LED technologies, its elegance and ease of installation will meet your lighting needs. ROR 110 is equipped with LED chips, combining performance and robustness with 120 lumens per watt.

A TOTAL OF 250 LUMENS

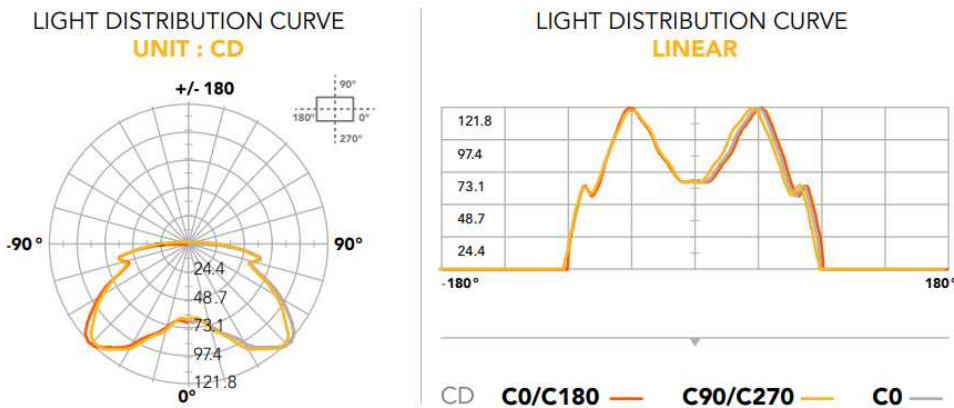
Our light fixture also complies with current standards concerning light pollution.



SYMMETRICAL DISTRIBUTION



PHOTOMETRIC CURVE



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OVER 10 YEARS LIFESPAN

The ROR 110 bollard is equipped with Lithium Iron Phosphate LIFEP04 batteries, recognized as the best battery technology in terms of longevity, safety, and performance for solar applications. Our batteries enjoy a lifespan of over 3000 cycles, which is more than 10 years at 80% DOD.

EXTREME TEMPERATURE

14°F to 158°F
-10 °C to 70°C

While standard batteries benefit from an operating temperature of -10°C to 70°C, Bullard Solar offers as optional a new Special LIFEP04 battery with working range of -40°F to 158°F / -40°C to 70°C.

BATTERY LIFEP04

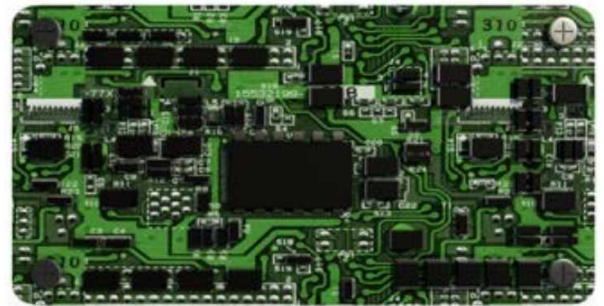


BMS ELECTRONIC PROTECTION BATTERY MANAGEMENT SYSTEM

Our batteries are equipped with electronic circuit boards for a higher protection, ensuring battery functioning optimization in any situation.

THE BMS PROTECTS AGAINST

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



COMPARISONS OF DIFFERENT BATTERY TECHNOLOGIES

LIFETIME & CYCLES AT 80% DOD*
Comparison of different battery technologies



Lead Acid
200



NimH
700

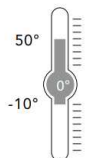


Lithium ION
800

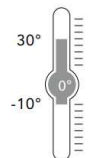


Lithium LifePO4
3 000

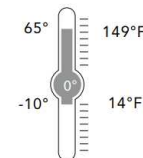
**CHARGING TEMPERATURE RANGE
WITHOUT CAPACITY LOSS**
*Minimum & Maximum temperature range for
Optimal charging during the day*



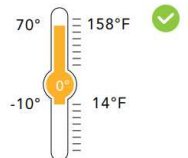
Lead Acid



NimH



Lithium ION



Lithium LifePO4

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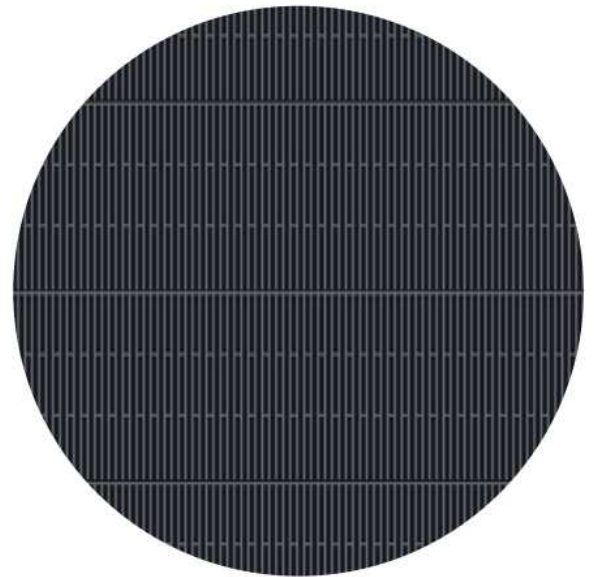
PROJECT NAME: _____

Solar cells **GRADE A**

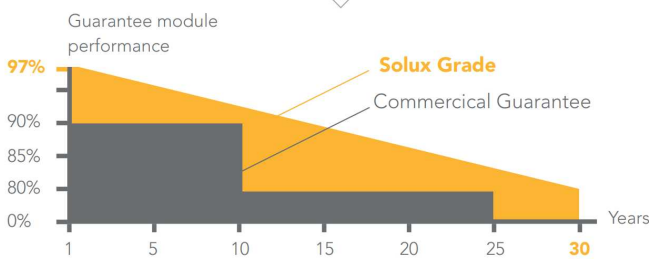
SOLAR PANEL

4.5 WATTS

Encapsulated Monocrystalline Solar Panel Grade A Solar Cell with Tempered Glass.



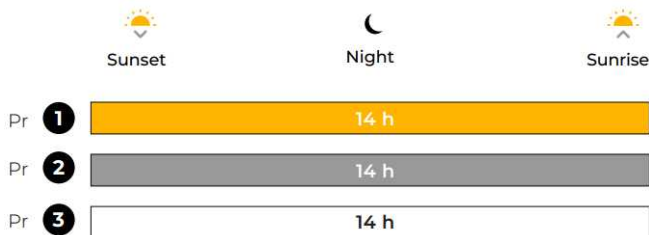
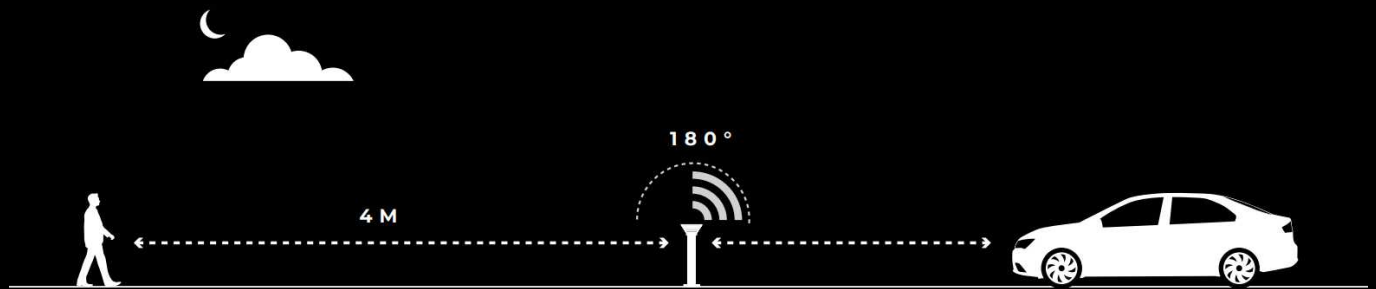
OUR PV PERFORMANCE GUARANTEE



PRESENCE DETECTOR INFRA-RED SENSOR

THE ROR 110 BOLLARD AUTOMATICALLY TURNS ON AT DUSK AND OFF AT DAWN.

BULLARD SOLAR offers optional PIR movement sensor. The infra red detector integrated into the light fixture will increase the light power as pedestrians or vehicles pass, thus providing a higher level of safety while respecting the environment.



Depending on the geographical area, we will select the % of light reduction.

- **Program 1** > 40% Dim + 100% ON during 20 sec
- **Program 2** > 30% Dim + 100% ON during 20 sec
- **Program 3** > 20% Dim + 100% ON during 20 sec

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CODE:
SL-002-110

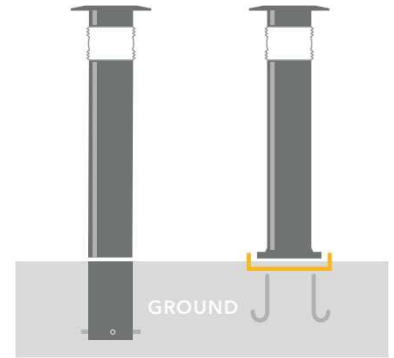
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EASY INSTALLATION

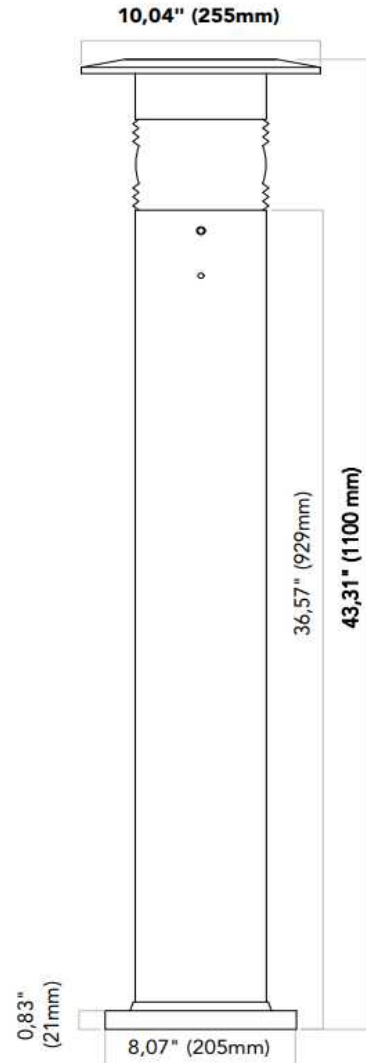
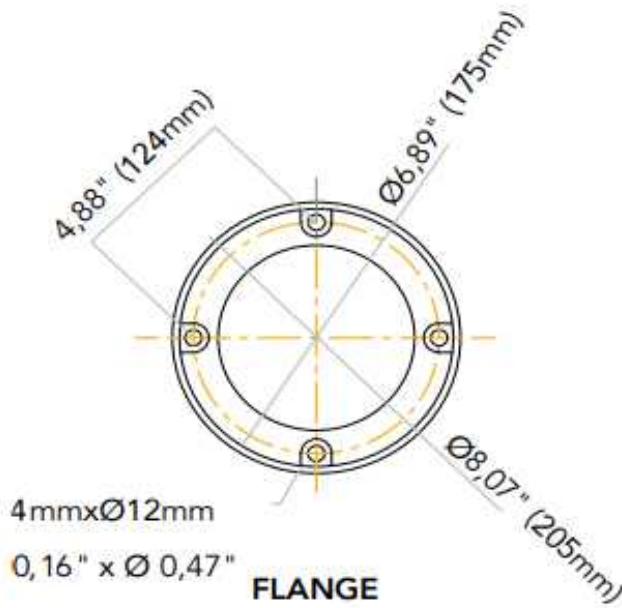
NO CABLING & TRENCHING

No wiring or trenching is necessary, you just need to embed the ROR in concrete or on anchor rods.



1 DIRECT BURIED 2 FLAT MOUNT

DIMENSIONS



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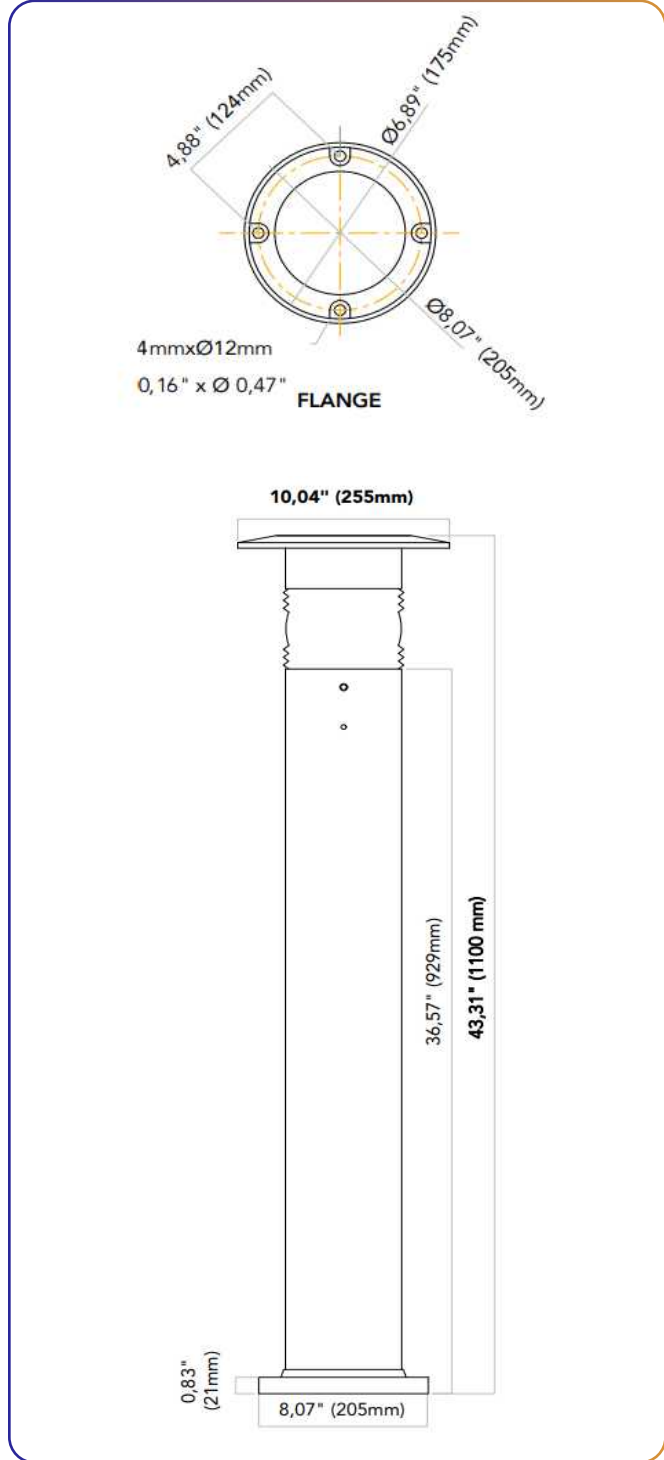


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HOW TO ORDER:

CODE:

Example:
CODE: SL-002-110-BL-23K

SL-002-110-BL-23K

1 DIMENSIONS:

-110 Ø: 9.84" (25 cm) x H: 43.30" (110 cm)

2 FINISH OPTIONS:

-BL Black

3 CCT:

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

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