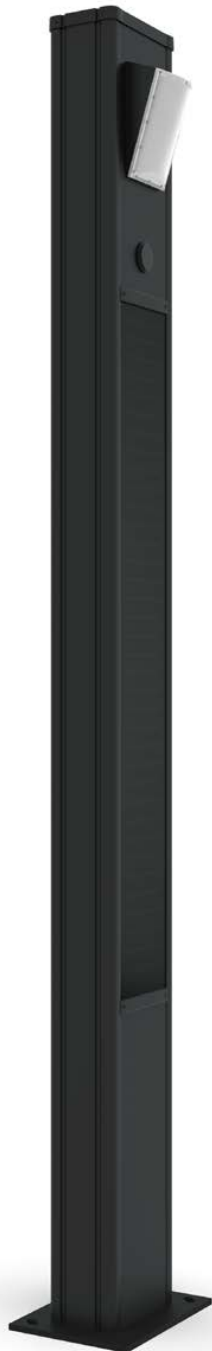


# TOTEM 20

## LIGHTING COLUMN



TOTEM combines a unique design with integrated panels within the structure, striking a perfect balance between elegance and performance. Equipped with SHINGLED PERC solar cells, **the solar column can charge under both the sun and cloudy weather, always ensuring an optimal lighting all year long.**

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 ..... **106,30" (2.7m)**

### BATTERY

Technology ..... Lithium Iron Phosphate LIFEPO4  
Capacity ..... 346Wh  
Autonomy ..... Over 24 hours at full charge - 4 Rainy Days back up  
Charging time ..... 6-7 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 ..... 115 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 (optional SOLUX BRIDGE)  
Sensor ..... Microwave 180° Sensor  
Cabling ..... Waterproof Connector, Plug and Play  
Protection ..... Battery Management System (BMS)

### MECHANICAL

Wind speed ..... 160 Km/h  
Material ..... Aluminium and Stainless Steel

### DIMENSIONS

Product ..... 106,30" x 12,20" x 14,57" (2700mm x 310mm x 370mm)  
Carton size ..... 108,27" x 12,99" x 14,96" (2750mm x 330mm x 380mm)  
Net Weight ..... 77,16lb (35 KG)  
Gross Weight ..... 81,57lb (37 KG)  
Product code ..... **TT-20**



Parks & gardens



Pedestrian street



Places



Pathways



Secondary Roads



Campsites

### CERTIFICATIONS

**IEC / TUV / EMC / LM-79- 08 and LM-80 test standards / IK8 / IP65 / CE**



\* Solux offers a 5 Year Limited Warranty for the TOTEM-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 Solux instructions. Fixture suitable for ambient temperature from -10° to 50°. PV Panels - 20 year performance warranty Controller & Batteries : 5 years





# LUMINAIRE HOUSING & LEDS

**3920 LUMENS 2300 TO 6500K**

High pressure die-cast low-copper aluminum. **Protection class** (IP65). Solux 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 efficiency**. Our lighting fixture also complies with the current standards regarding light pollution ULR (Upward Light Ratio).



▶ LED <b>3030</b>	LED QTY (PCS) <b>72</b>	OPTICS (PCS) <b>4</b>	CRI <b>&gt; 70</b>
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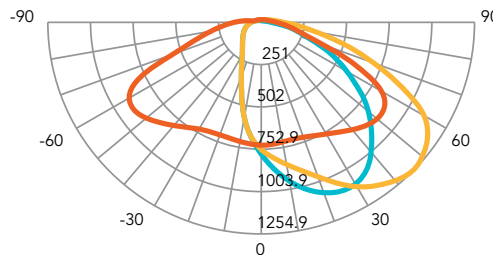


## LIGHTING DISTRIBUTION



## LIGHT DISTRIBUTION CURVES

AVERAGE BEAM ANGLE (50%) : **106,2 DEG**



● C0/180,141.3°    ● C30/210,122.3°    ● C60/240,87.2°



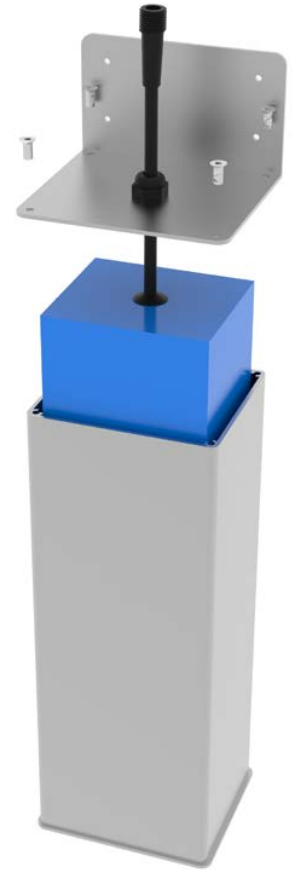


# BATTERY LIFEPO4

## OVER 10 YEARS LIFESPAN

The TOTEM 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 lifespan of **over 10 years**.



### EXTREME TEMPERATURE

**14°F to 158°F (-40 °F OPTIONAL)**

**-10 °C TO 70 °C (-40 °C OPTIONAL)**

When Standard Lithium LiFePo4 batteries enjoy a working temperature range from **14°F to 158°F (-10°C TO 70 °C)**. Solux 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

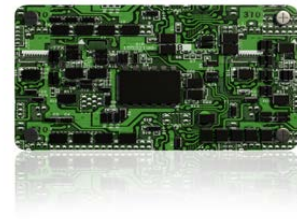
Easy and direct access to the battery casing for maintenance. The fixation are made with anti theft screws, which request special tooling to unscrew.

### ALUMINUM BOX

High temperatures greatly affect the lifespan of batteries. To solve this problem, our batteries are placed in a sealed extruded aluminum box, which is known for its heat dissipation properties

## 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

## COMPARISONS OF DIFFERENT BATTERY TECHNOLOGIES

### LIFETIME & CYCLES AT 80% DOD\*

Comparisons of different battery technologies



Lead Acid  
**200**



NimH  
**700**



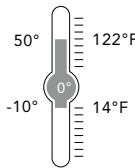
Lithium ION  
**800**



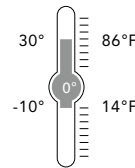
Lithium LifePO4  
**3 000**

### CHARGING TEMPERATURE RANGE WITHOUT CAPACITY LOSS

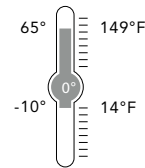
Minimum & Maximum temperature range for Optimal charging during the day



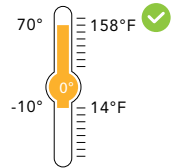
Lead Acid



NimH



Lithium ION



Lithium LifePO4





# SOLAR PANEL

## 115 WATTS

For high performance and a sleek design, the TOTEM lights are equipped with **SHINGLED PERC** photovoltaic technology, providing very high efficiency, as well as **improved performance in low irradiation**. It allows maximizing the installed power in a limited space.

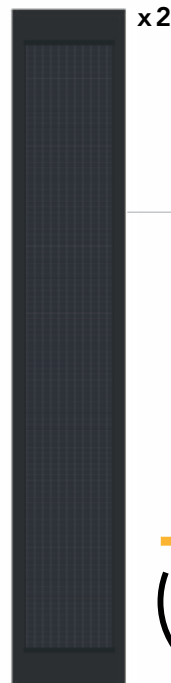
### SHINGLED PERC ADVANTAGES

POWER LOSS DUE TO SHADING

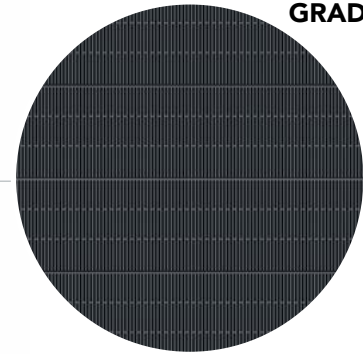


### DISCRETION

With **no visible connections or circuits**, TOTEM is fully integrated into its environment and most people will not notice the presence of solar panels.



Solar cells  
**GRADE A**



**SHINGLED SOLAR**  
PANEL TECHNOLOGY



# 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, **Solux 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

## F E A T U R E S

- Minimal stand-by power consumption
- Current consumption  $\leq 10\text{mA}$
- Intelligent battery management  
**3 Phases charging :**
  - Charge MPPT
  - 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
  - OVERCURRENT
  - OVERTEMPERATURE
  - OVERVOLTAGE / OVERLOAD
  - OVERDISCHARGE

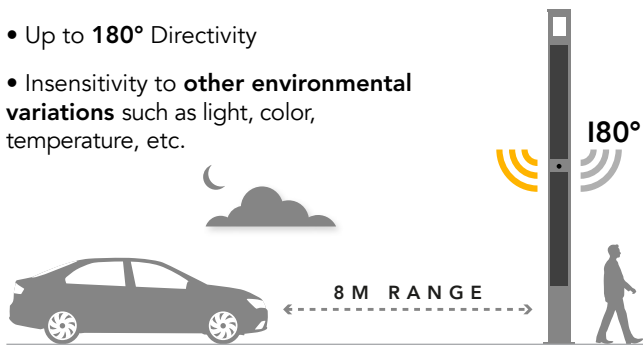




# MOTION SENSOR MICROWAVE

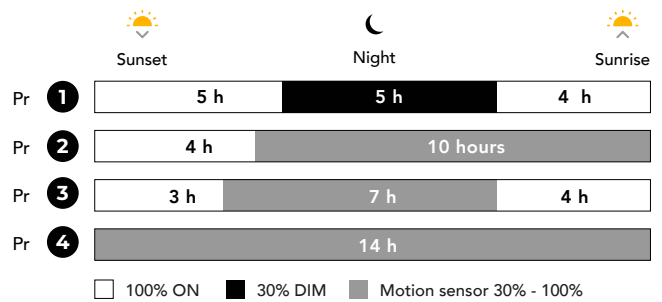
Solux luminaires are equipped with microwave detectors. The microwave detectors that use the **Doppler effect** (like car radars) to detect a nearby objects and measure the distance. The sensor emits a high frequency wave to reflect off of and analyze the objects in the vicinity. Since the microwaves **only detect specific objects**, detection reliability increases resulting in :

- Much better reliability compared to the Infrared detector
- Up to **180°** Directivity
- Insensitivity to **other environmental variations** such as light, color, temperature, etc.



## OPERATION MODE & LIGHTING SCHEDULE

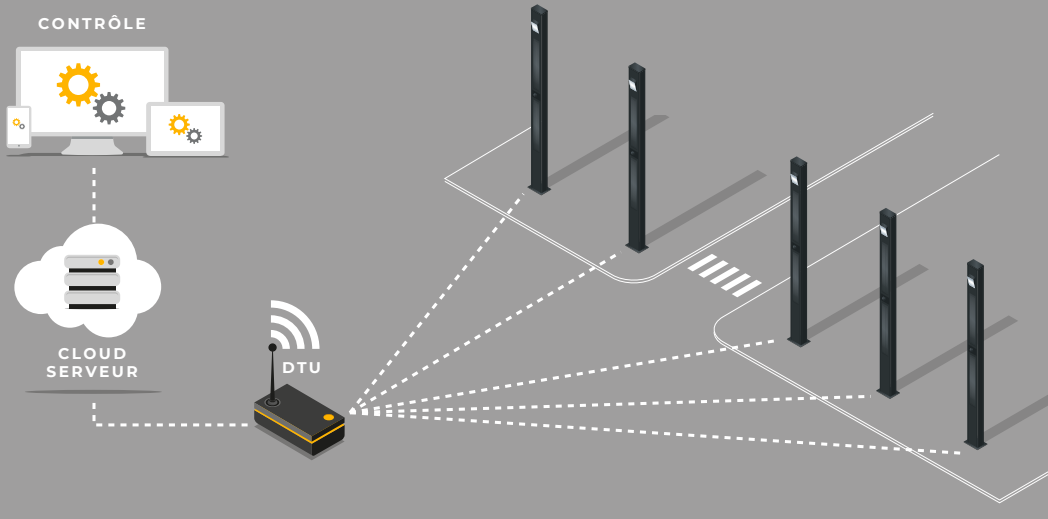
In addition to automatic switching on and off , you have the possibility of choosing among **different modular operating modes** according to the needs of the project



CONTACT US FOR MORE PROGRAM OPTIONS

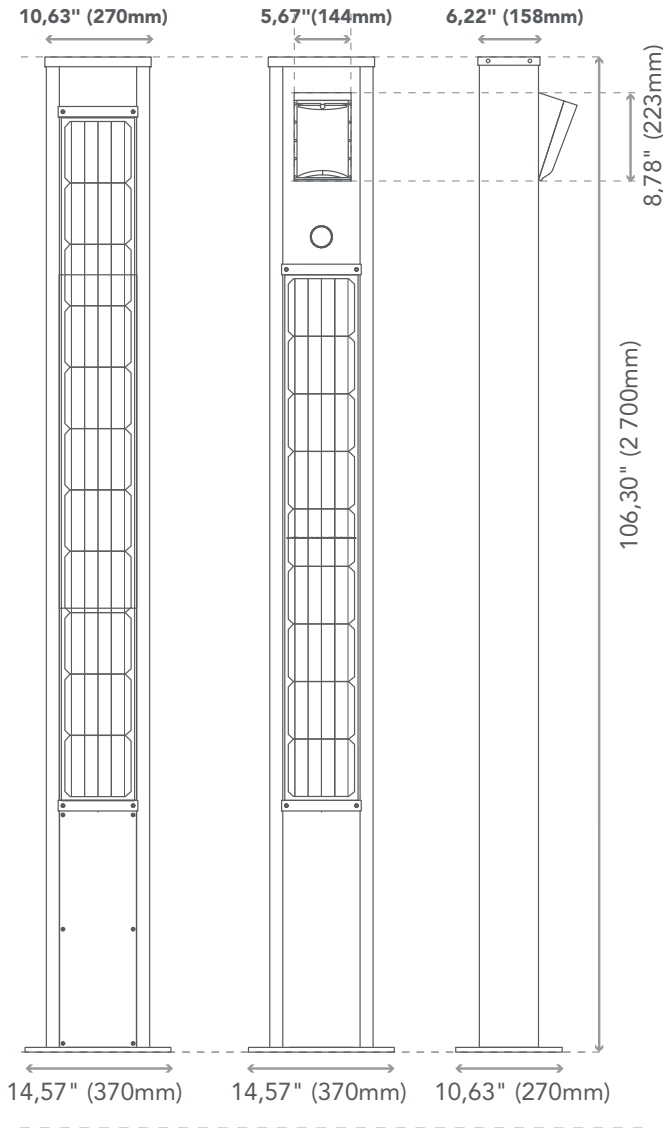
# SOLUX BRIDGE REMOTE MONITORING

As part of his continuous effort for development, the solux team is proud to have developed a special tool for **remote monitoring** of our solar street light. **Solux Bridge** uses low frequency technology LORA or ZIGBEE to **monitor in real time a batch of solar street lights**. YOU CAN NOW **MANAGE YOUR SOLAR PARK REMOTELY**:



- INTERNET 2G/3G/4G
- CONNEXION SÉCURISÉE
- GRANDE PORTÉE DE COMMUNICATION
- BASSE CONSOMMATION



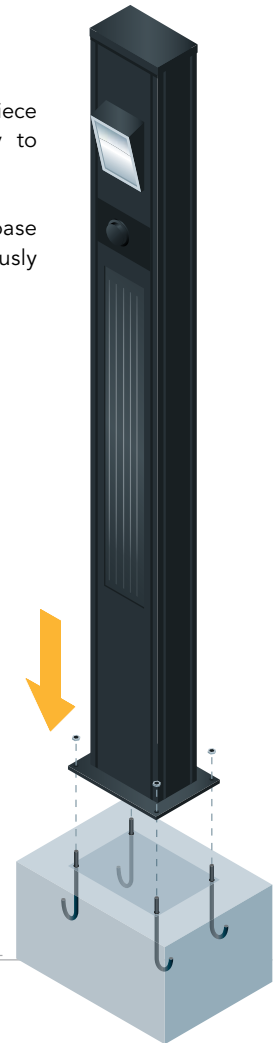


## EASY INSTALLATION

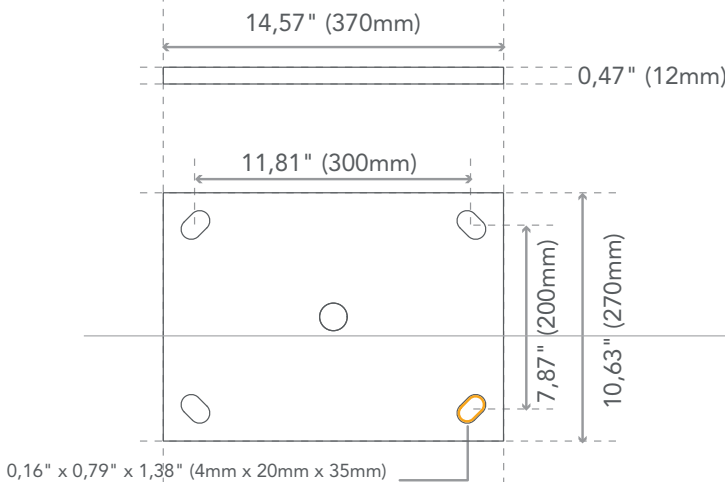
**NO WIRING**  
**NO TRENCHES**

TOTEM is delivered in a single piece which makes it extremely easy to install.

You just need to insert the base onto the anchoring rods previously cast into a concrete foundation.



### BASE SIDE & TOP VIEW



\*All dimensions are in mm

