



**FlexSo  
Solutions**

**Soluxio catalogue 2019-2020**

## Bringing light to the future

FlexSol Solutions believes in the power of solar energy. In our vision, energy production will be 100% sustainable in the future. With the Soluxio, Soluxio PoE+ and Soluxio NxT we present a range of smart and sustainable solar solutions. The Soluxio solar product range offers revolutionary wireless lighting, charging and connectivity systems to anyone, anywhere. Soluxio products are sustainable, reliable and built to last.

Lennert van den Berg  
CEO FlexSol Solutions



## Soluxio product range



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## The beauty of solar

FlexSol Solutions is at the forefront of solar technology. FlexSol Solutions is the inventor of an unique technique for curving high-efficiency mono-crystalline silicon solar cells. This technique is used to create astonishing cylindrical solar modules, applied in all Soluxio products. The great advantage of using solar energy for the Soluxio range is that the poles do not have to be connected to the electricity grid. All energy from the sun is stored in top-notch lithium-ion battery packs. The patented flexible solar cells are the best available in the market. Using glass as a front sheet rather than a plastic, the optical quality of the solar modules is conserved even after decades of operation. The smooth and hard surface is built to withstand the toughest conditions.





## State-of-the-art technology

Developed with world leading partners, the products feature the best solutions in all minor details. Every single product is extensively tested, to ensure only the highest quality is delivered.

The smart design makes it possible to configure Soluxio products to your specific application.

Soluxio products are made for easy maintenance. Failures or defects can be detected remotely, reducing maintenance costs while increasing reliability.

Every single Soluxio product is equipped with its own SIM card in order to communicate wirelessly over the internet. The open, universal databus makes Soluxio the ideal platform for smart city technology.

The Soluxio, Soluxio PoE+, and Soluxio NxT can be controlled with a simple click on the button. Even after the products are installed, the lighting scheme can be reconfigured or adjusted remotely.

Various foundation types can be used to anchor the poles in the ground. We offer a special ground screw for extremely quick and easy installation without digging, with the possibility to easily (re)move the pole again if needed. Depending on the local soil, placing the column directly in the ground or on a concrete foundation is also possible.



# Soluxio

## The fully autonomous solar-powered street light

Soluxio is the most advanced and most sophisticated solar light pole available on the market. The solar light pole is completely off-grid and works autonomously, using sustainable solar power. This means there is no need for expensive cabling and invasive trenching, which results in fast installation, easy operation and a low total cost of ownership (TCO). Soluxio is built to withstand the toughest conditions and has proven its outstanding quality at numerous locations worldwide, from U.S.A. to the Middle East, and from Mauritius to the Netherlands. The durability is the result of only using high-quality components. Curved solar panels display the elegant and stylish character of the sustainable product. The highly efficient LED-luminaire provides effective and powerful lighting. Solar energy generated during the day is stored in lithium batteries, which are long-lasting and require minimum maintenance. Dedicated electronics and smart machine-learning algorithms optimize the performance of the light pole. All Soluxio light posts are connected to an online platform which enables remote management and monitoring. This reduces maintenance costs and increases its reliability. This makes Soluxio the most advanced solar light pole available in the market.

**Height**  
Pole length: 4-12 meter  
1-4 Solar modules  
1-2 Luminaires



### LED lighting

Powerful and energy saving.



### Smart city connectivity

Attach sensors and communication hardware to build the smart city.



### 100% solar-powered

Unique cylindrical solar panels with high-efficiency mono-Si solar cells.



### Steel or aluminium construction

Durable, sustainable and recyclable pole constructions.



### Customizable finishes

High quality powder coating or anodizing in many colours.



### Lithium battery

Long lasting, maintenance-free, high capacity batteries.







### **Light at impossible locations**

Bring light for function and safety to areas thought to be impossible.



### **Quick return on investment**

No cabling + no electricity bill + low maintenance costs = quick return on investment.



### **100% solar-powered**

No need for expensive and invasive trenching.



### **LED lighting**

Powerful, illuminating, efficient and energy saving.



### **Advanced connectivity**

Attach smart city hardware, now or in the future.



### **High-quality components**

Soluxio is made in the Netherlands. The high-quality components are durable, reliable and sustainable, resulting in low total cost of ownership.



## Soluxio configurations



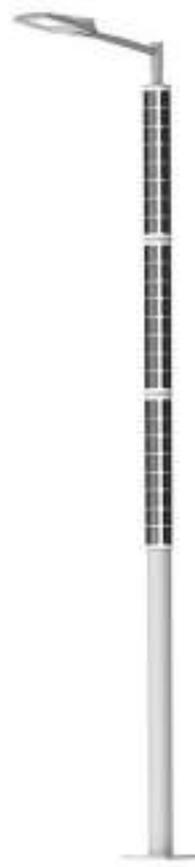
Soluxio P110  
1 PV module  
4-8 meter  
up to 60 W LED



Soluxio P220  
2 PV modules  
5-12 meter  
up to 80 W LED



Soluxio P220D  
2 PV modules  
5-12 meter  
up to 80 W LED



Soluxio P330  
3 PV modules  
8-12 meter  
up to 120 W LED



Soluxio P330D  
3 PV modules  
8-12 meter  
up to 120 W LED



P440D  
4 PV modules  
8-12 meter  
up to 160 W LED

## Choose your luminaire

FlexSol offers its own line of luminaires, optimised for use in combination with the Soluxio. However, it is also possible to choose luminaire of your liking. The Soluxio's specially developed LED driver is highly efficient and can be fitted to most third-party luminaires. Various luminaire types with a range of wattages can be fitted onto the solar pole. This means that a suitable solution for every location can be found.



## Off-grid, on-grid or hybrid street lighting

Soluxio street lights can be installed in 3 modes, optimized for any environment.

By installing a Soluxio **off-grid**, invasive and expensive trenching is a thing of the past. As no cables are necessary, installation is quick and simple. This results in minimal installation costs and no electricity costs. Off-grid also means reliable. The Soluxio, Soluxio PoE+ and Soluxio NxT are in this way insensitive to power blackouts, making the Soluxio the best option in unpredictable circumstances.

Soluxio can also be installed **on-grid**. The green electricity that is generated by the PV modules is then directly fed into the electricity grid. At night, the LEDs are powered by grid electricity. This way, energy neutral lighting without the need for battery storage can be achieved.

**A hybrid** combination of a battery and grid connectivity is also possible. The solar energy is stored in the battery which serves as a back-up in case of grid-failure. When maximum reliability under all circumstances is required, this is the best solution.





**Off-grid**

Battery only  
Easy installations  
No electricity costs



**Hybrid**

Battery and grid connection  
Ideal for locations with unreliable grid

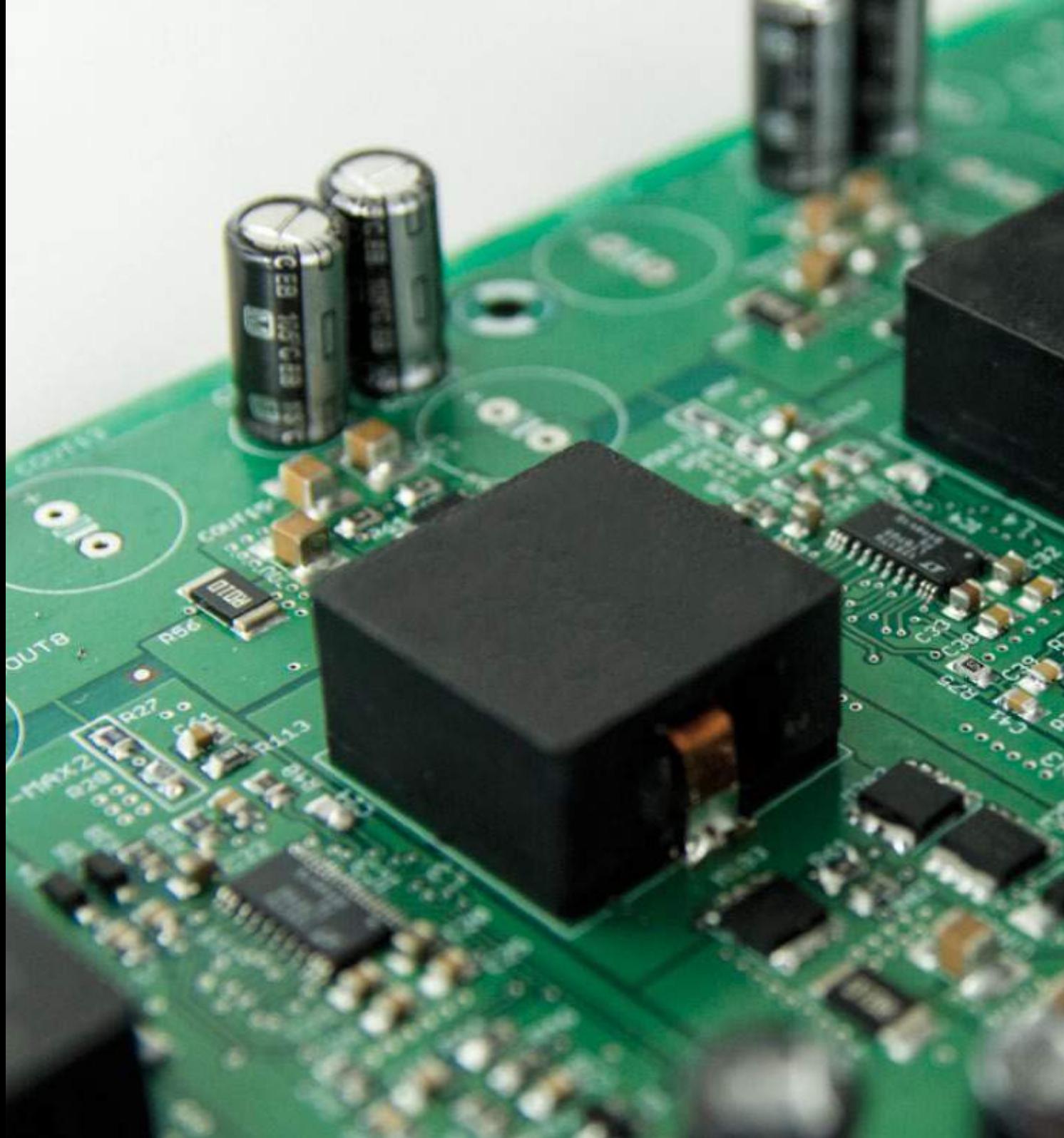


**On-grid**

Grid connected, no battery  
Feed electricity in grid

## Maximized performance

At the heart of each Soluxio product is a custom designed micro-controller unit (MCU) that directs all energy flows and maximises system performance. Each side of every solar module is individually tracked for maximum power output. Furthermore, all battery cells are continuously balanced and monitored to extend battery life. This means maintenance is reduced to a minimum. Additionally, every Soluxio is equipped with a GPS receiver. The exact time and location given by the GPS receiver ensure automatic adaptation to sunset and sunrise. The electronics can also be coupled to other smart city systems for integration of additional functionalities. The Soluxio and Soluxio PoE+ can optionally be fitted with USB charging ports.



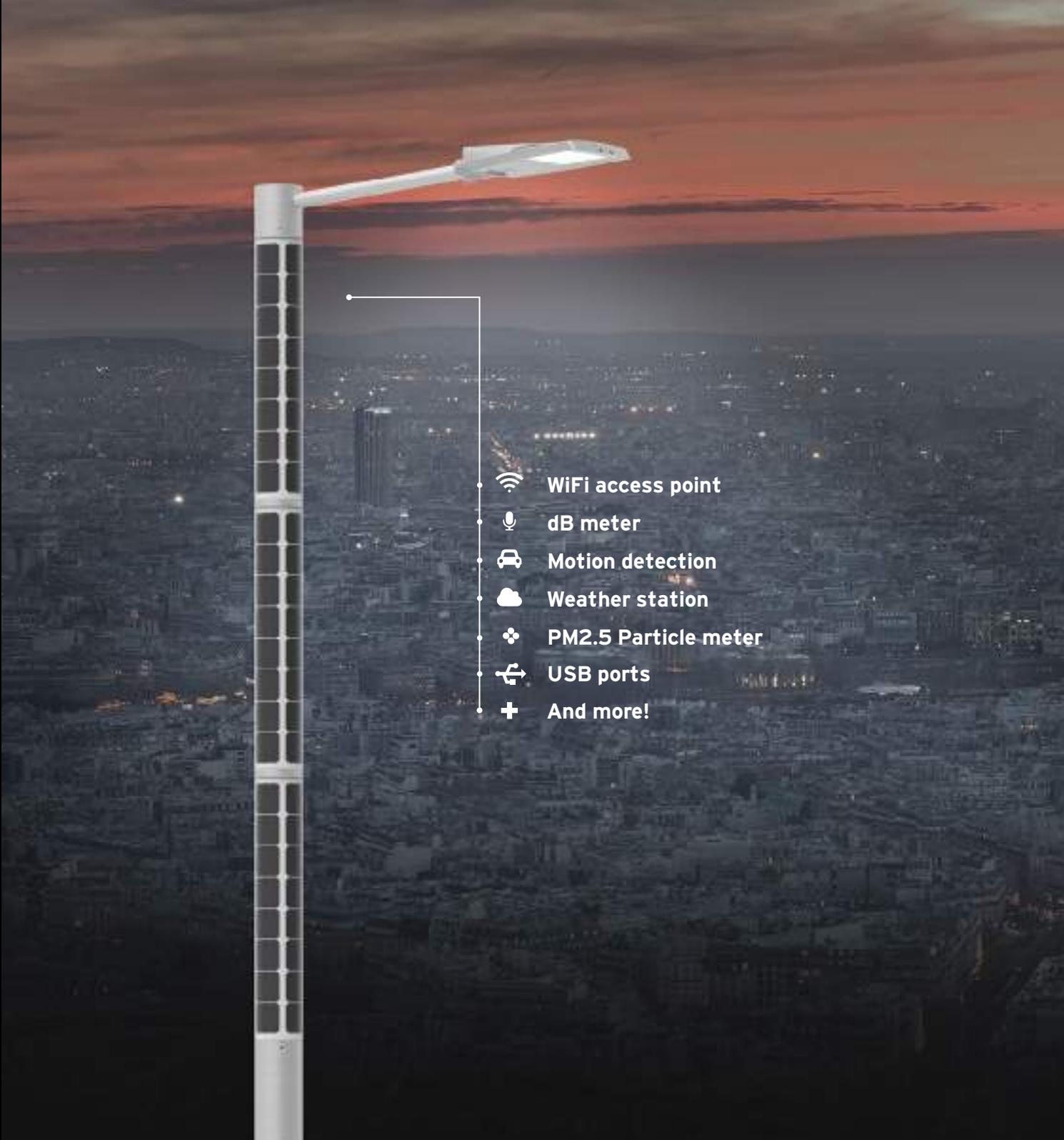


## Building blocks for the smart city

With the capacity for advanced connectivity, Soluxio is part of the Internet of Things. Because every product has its own SIM card, the Soluxio can communicate wirelessly over the internet. Soluxio uses the integrated GPS receiver to tell exactly where it is and what time it is. This means it can automatically adapt to seasons and to local weather conditions.

Sensors can easily be inserted, even after installation. If there is a need for more functionalities or a new type of sensor, the Soluxio can support it. Access to the data generated by the sensors can also be given to third party (smart city) platforms. With this smart technology and ability to sense the city, the Soluxio is a useful member of the Internet of Things (IoT).

Through the integration of optional features, such as a USB charging station, Soluxio connects the world of today with the city of the future!

- 
- WiFi access point
  - dB meter
  - Motion detection
  - Weather station
  - PM2.5 Particle meter
  - USB ports
  - And more!



## Remote management

There is no need anymore to go out on the streets to see if all your lights are working: monitor the products from behind your desk. Every Soluxio pole is connected to a secure online platform. This platform grants you full control over your installations. Through an intuitive visual user interface, the smart management platform presents clear insights in the performance data of each individual product. The management platform can be accessed and regulated from anywhere in the world.

The online platform makes management it easy to keep track of all your installations. The smart electronics continuously monitor the performance of the poles. The automatically generated graphs give clear insight in the performance of the separate components such as the battery, solar panel and LED light. In this way, maintenance is made easy and maintenance costs can be kept to a minimum.





# Soluxio PoE+

## Solar-powered WiFi hotspot

The Soluxio PoE+ makes wireless internet truly wireless. Use the Soluxio PoE+ to power your PoE (802.3af) or PoE+ (802.3at) device. Due to Soluxio's advanced solar technology, the PoE+ (Power over Ethernet) injector is 100% powered by sustainable solar energy. This means there is no need for expensive cabling and invasive trenching. It is therefore the ideal power solution for providers of WiFi hotspots at places where no grid connection is available, such as campsites, parks, smart cities, rural areas and more.

This results in fast installation, easy operation and a low total cost of ownership (TCO). Soluxio PoE+ is built to withstand the toughest conditions and has proven its outstanding quality at numerous locations worldwide, from the U.S.A. to the Middle East and from Mauritius to the Netherlands. The curved vertically integrated solar panels are wind-resistant and self-cleaning, as dirt and dust cannot stick on the design. Solar energy generated during the day is stored in high-quality lithium batteries, which are long-lasting and require minimum maintenance. All Soluxio light posts can be connected to an online platform which enables remote monitoring and management. This reduces maintenance costs and makes the pole extremely reliable.



### Create a mesh network

The mesh network topology allows for unlimited network scaling.



### Solar-powered electricity source

Use the Soluxio PoE+ to power a wide variety of applications and sensors.

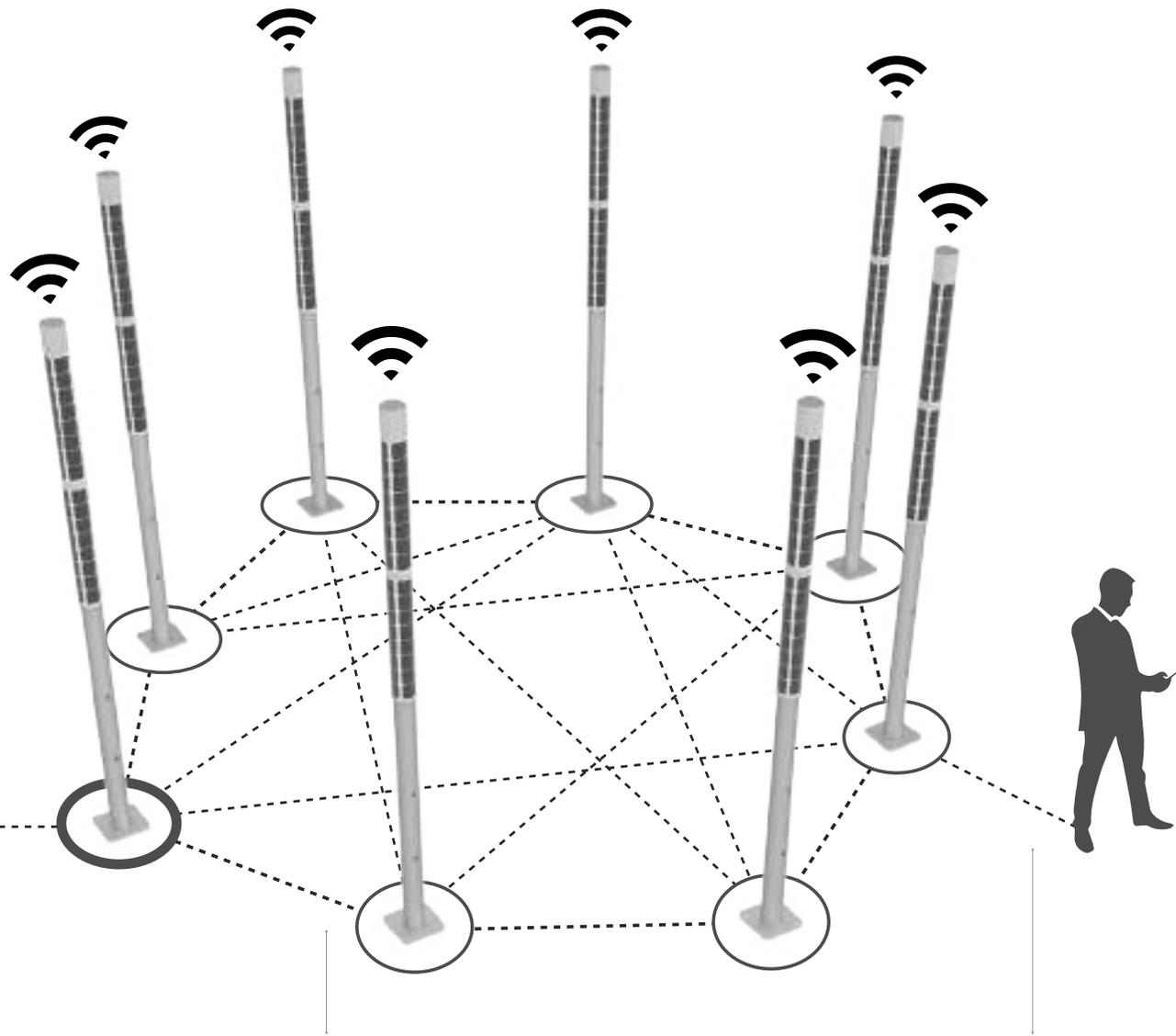


### 4G WiFi Access point

Provide wireless internet to anyone, anywhere.

## Create a network anywhere

A network that covers a large area is easy to set up with the Soluxio PoE+. To create a network, wirelessly connect one of the Soluxio PoE+ to an existing internet connection or use a 4G router. The other Soluxio PoE+ poles in the network can be wireless connected and can extend the signal.



Create a wired or wireless connection with existing network or 4G network

Wireless extension of signal between Soluxio PoE+ poles in mesh network

User connects to network via WiFi

# Soluxio NxT

## Capture the sun

The Soluxio NxT solar bollard offers a rainbow palette of lighting options for private and public terrains. This solar-powered outdoor lamp operates completely wirelessly, eliminating the need to dig across property to install an electrical grid. Installation is a matter of plug and play.

The Soluxio NxT solar bollard features cutting-edge technology. The unique diffuse glass light module spreads the LED light in all directions. Controlling the NxT is easy with the seamless integration of Z-Wave automation systems and wireless programming. The Soluxio NxT can also be set to automatically adapt to sunset & sunrise.

The modular design allows for customization, with a wide variety of exclusive finishes and colours to choose from. Designed to last and with recyclability in mind, the NxT solar outdoor lamp is the sustainable outdoor lighting choice.



### **100% green energy**

Fully off-grid. No need to dig for cables. Plug & play.



### **RGBW LED lighting**

Pick any colour of the rainbow, according to your mood.



### **Z-Wave home automation**

Connect the NxT to your smart home. Adjust the customizable lighting scheme and take full control with your smartphone.

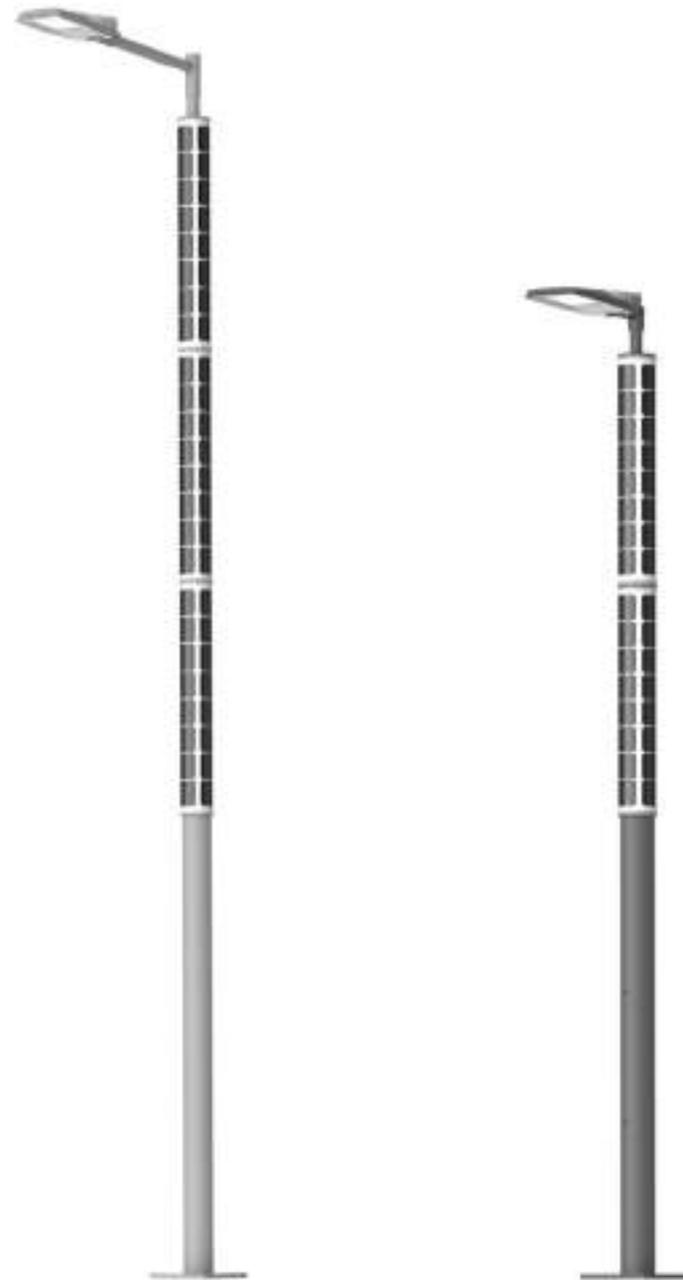


## Poles that are built to last

The Soluxio technology is what makes the products unique, but the supporting pole structure is just as special. All poles are designed specifically for the Soluxio, resulting in an aesthetic and durable street light that is easy to install. All Soluxio products come with a cylindrical pole; this creates an astonishing look and also offers superior resistance against deflection, torsion and buckling. There are 2 types of pole constructions to choose from:

- S-line: Galvanized powder coated steel
- A-line: Aluminium (marine grade 6060 T66 alloy)

Soluxio poles get their final look by powder coating or anodization. This creates a smooth finish and ensures a beautiful look throughout the entire lifetime.



**A-line**

**S-line**





## Your style in every detail

Soluxio poles can be custom configured and will fit in every environment. Whether a high-tech feel or a more natural look is desired, it is all possible. Mast colour and finish can be chosen to match the surroundings. FlexSol offers anodising and powder coating in various colours and finishes. Solar modules are available with a black or white backsheet.

Custom designs are possible on request for larger projects. Soluxio's designers and the in-house electronics department are ready to help you realize your vision and bring your ideas alive, designed especially for your project. Work together with us and use our off-grid technology to create a reliable and sustainable product with the features you need. We can help you implement the newest technologies and the smartest sensors to create the environment you desire!





## Technical specifications

### Soluxio

### Soluxio PoE+

### NxT

| <b>General</b>                      |   |                             |                             |
|-------------------------------------|---|-----------------------------|-----------------------------|
| Height                              | 4 - 12 m  | 6 - 12 m                    | 1.5 m                       |
| Mast diameter                       | 200 mm  | 200 mm                      | 200 mm                      |
| Mast material                       | Steel / aluminium   | Steel / aluminium           | Steel / aluminium           |
| Finish options                      | Powder coating / Anodizing  | Powder coating / Anodizing  | Powder coating / Anodizing  |
| Mounting options                    | Base plate / in-ground  | Base plate / in-ground      | -                           |
| Operating temperature               | -20°C to 60°C   | -20°C to 60°C               | -20°C to 60°C               |
| <b>Solar</b>                        |   |                             |                             |
| Solar modules                       | 1-4   | 3-4                         | 1                           |
| Solar cell technology               | Monocrystalline silicon   | Monocrystalline silicon     | Monocrystalline silicon     |
| Outer material                      | Borosilicate glass  | Borosilicate glass          | Borosilicate glass          |
| Maximum Power Point Tracking        | 4 channels per solar module   | 4 channels per solar module | 4 channels per solar module |
| <b>Lighting</b>                     |   |                             |                             |
| Maximum LED Power                   | 160 W   | -                           | 12 W                        |
| LED Driver                          | Custom  | -                           | Custom                      |
| Dimming                             | Dynamic   | -                           | Dynamic                     |
| <b>Battery</b>                      |   |                             |                             |
| Battery type                        | LFP, NMC, LTO   | LFP, NMC, LTO               | LFP, NMC, LTO               |
| Battery capacity                    | up to 1600Wh  | up to 1600Wh                | up to 256 Wh                |
| <b>Communication</b>                |   |                             |                             |
| Communication                       | GSM, RF   | GSM, RF, WiFi               | GSM, RF, Z-Wave             |
| Remote programming & monitoring     | Yes   | Yes                         | Yes                         |
| Automatic sunset & sunrise tracking | Yes   | Yes                         | Yes                         |
| <b>Optional features</b>            |   |                             |                             |
|                                     | Motion detection, WiFi access point, USB charging ports, pyranometer, weather station, smart city sensors |                             |                             |



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**Solutions**  
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