luminexence

Smart City Design Solutions

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LOTUS COLLECTION

4M | 5M | 6M ARC LINE CURVE SPLINE ADVERTISING RECHARGE

BENCH

PETAL WIDE CUT LINE CURVE HOLE

BENCH | STOOL

PROFILE

International factory

LumineXence is the innovative brand owned by the Turkish Mitas Group, one of the world's leading manufactures in the production of energy transmission line towers, substation steel structures and telecommunication towers. Exporting to more than 135 countries with 7 factories operating in 4 separate locations and a production capacity of 235,000 tons per year. LumineXence, founded in 2010 from the passion for design that is able to combine advanced technological content and strong aesthetic impact, has over time specialised in the production of high-design products for Smart City, able to exploit solar and wind energy.

MISSION

Ecosustainability

Planners, landscapers, businesses and, more than anything, institutions are now forced to think of new ways of constructing the environment where we all live. Technological innovation combined with environmental awareness is now indispensable for quality urban solutions ranging from micro to macro architecture where primary building needs involve energy efficiency, the use of renewable energy sources and materials recycling to be achieved. This is why LumineXence, ever sensitive to ecological issues, has created Smart City Designs, street lighting, photovoltaic parking and outdoor furniture modular systems able to meet the growing demand for constructions based on environmentally friendly criteria effectively.

VISION

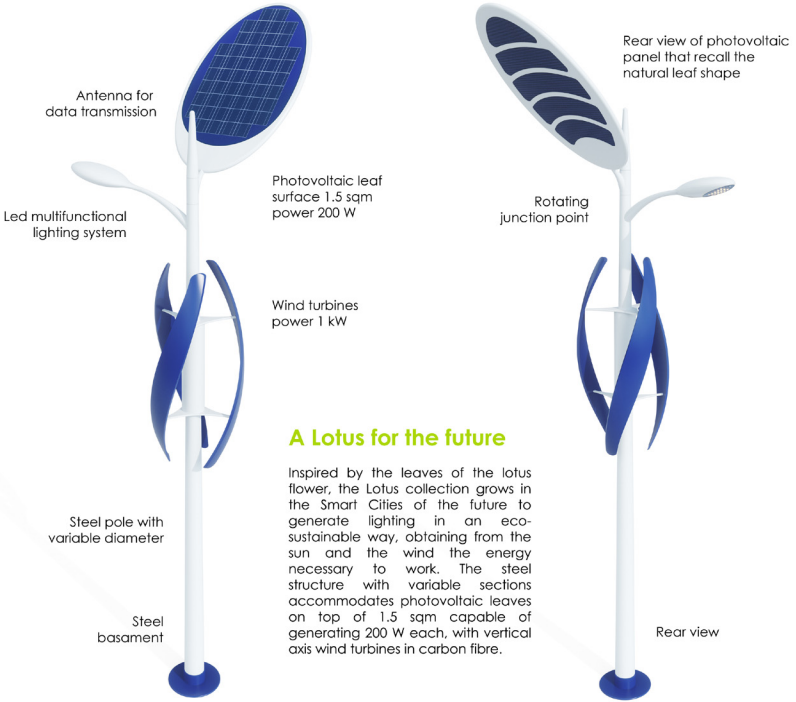
Innovative design

The LumineXence in its vision of a sustainable future, has entrusted to the Italian architect Giancarlo Zema the design of a dream: to create a highly innovative projects of eco-urban designs in complete harmony with nature. The architect Zema always attracted by nature and its forms, creates collections very sculptural and functional art-designs, to answer in a poetic and unconsciously attractive way to the world of urban furniture with solar and eolic technology. From 2001 Zema is CEO of the Giancarlo Zema Design Group, an architecture practice in Rome, specialized in eco-sustainable projects, semisubmerged architectural structures, marine parks, floating habitats, yacht and interior design.

LOTUS COLLECTION

Design by Giancarlo Zema

STREET LIGHTING | SOLAR+WIND POWERED
LIGHT TOWER | SOLAR+WIND POWERED
SHELTER | SOLAR POWERED
RECHARGE | SOLAR POWERED
SEATING | RECYCLED STEEL



A Lotus for the future

Inspired by the leaves of the lotus flower, the Lotus collection grows in the Smart Cities of the future to generate lighting in an eco-sustainable way, obtaining from the sun and the wind the energy necessary to work. The steel structure with variable sections accommodates photovoltaic leaves on top of 1.5 sqm capable of generating 200 W each, with vertical axis wind turbines in carbon fibre.

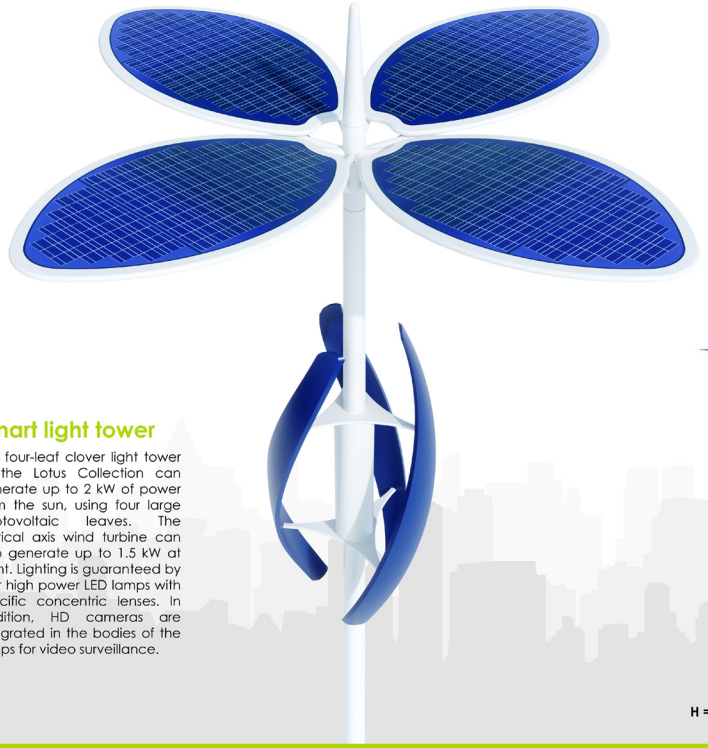
Smart street lighting

With the Lotus collection, you can have a smart street lighting system using solar and wind energy. The 360° adjustable leaves allow the maximum possible sunshine to be obtained in all locations. The wind turbine also generates energy at night. Lighting is guaranteed by high power LED lamps with specific concentric lenses. In addition, an HD camera is integrated in the body for video surveillance. The pole becomes smart, thanks to the large optional touch screen display. Perfect for communicating tourist and advertising information, as well as for recharging smart phones.

LINE | 6 M	LINE | 8 M	LINE | 10 M	SINGLE	DOUBLE	TRIPLE	LIGHTING HEIGHT
150 W	150 W	150 + 150 W				LED POWER
200 W	400 W	600 W				PHOTOVOLTAIC ENERGY
1 kW	1 kW	1 kW				EOLIC ENERGY

CURVE | 6 M	CURVE | 6 M + 8 M	CURVE | 6 M + 10 M	SINGLE	DOUBLE	TRIPLE	LIGHTING HEIGHT
150 W	150 W + 150 W	150 W +150 W				LED POWER
200 W	400 W	600 W				PHOTOVOLTAIC ENERGY

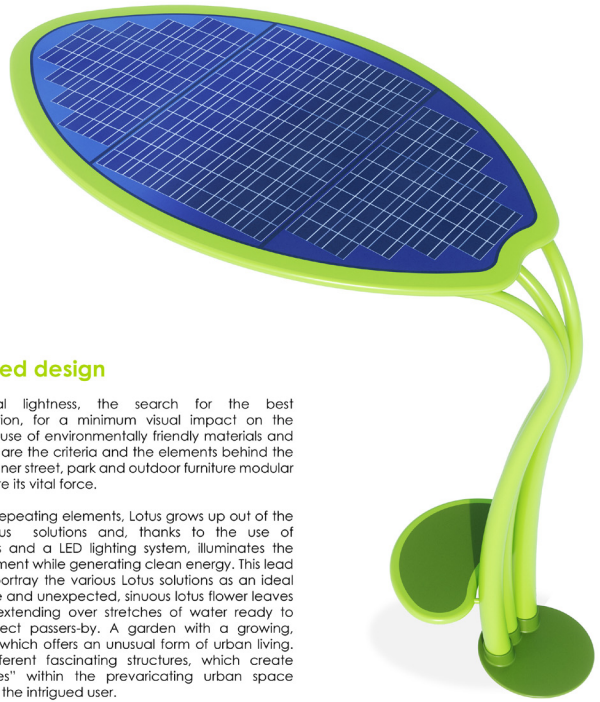
SPLINE | 6 M	SPLINE | 8 M	SPLINE | 10 M	SINGLE	DOUBLE	TRIPLE	LIGHTING HEIGHT
150 W	150 W	150 + 150 W				LED POWER
200 W	400 W	600 W				PHOTOVOLTAIC ENERGY
1 kW	1 kW	1 kW				EOLIC ENERGY



Smart light tower

The four-leaf clover light tower of the Lotus Collection can generate up to 2 kW of power from the sun, using four large photovoltaic leaves. The vertical axis wind turbine can also generate up to 1.5 kW at night. Lighting is guaranteed by four high power LED lamps with specific concentric lenses. In addition, HD cameras are integrated in the bodies of the lamps for video surveillance.

H = 15 | 35 M



Solar-powered design

Simplicity, structural lightness, the search for the best environmental solution, for a minimum visual impact on the landscape and the use of environmentally friendly materials and technologies. These are the criteria and the elements behind the creation of this designer street, park and outdoor furniture modular system and which are its vital force.

Consisting in a few repeating elements, Lotus grows up out of the ground in numerous solutions and, thanks to the use of photovoltaic panels and a LED lighting system, illuminates the surrounding environment while generating clean energy. This lead to the decision to portray the various Lotus solutions as an ideal garden where, large and unexpected, sinuous lotus flower leaves grow in soft lines, extending over stretches of water ready to welcome and protect passers-by. A garden with a growing, polymorphic effect which offers an unusual form of urban living. A garden with different fascinating structures, which create comfortable "groves" within the prevaricating urban space designed to seduce the intrigued user.

Nature inspired technologies

The project features two significant aspects: structural lightness and innovative technology. One sole element composed of three moulded tubes, 280 cm in height with a 14 cm diameter, combined in a radial arrangement, mounted on a pressure die-cast base, support a covering "leaf" which houses a photovoltaic plant. The technology of the covering and the simplicity of the structural elements is complemented by a particularly interesting naturalistic image creating a strong and elegant supporting structure for the cells of the solar photovoltaic system which, with their 4 sqm. Size, are able to generate total power from 500 W to 2.8 kW.

This means that Lotus is totally independent from the national electric system and enables it to power both the polycarbonate LED diffusers mounted below the covering and the info-point computer located on the structural stem and the recharging system for electric cars independently. Thanks to its modular flexibility Lotus can be adapted to numerous functions. Its elegant design together with its unique colour-changing ability, the only one of its kind, mean it can upgrade even the most anonymous town areas.

Solar-powered modular shelters

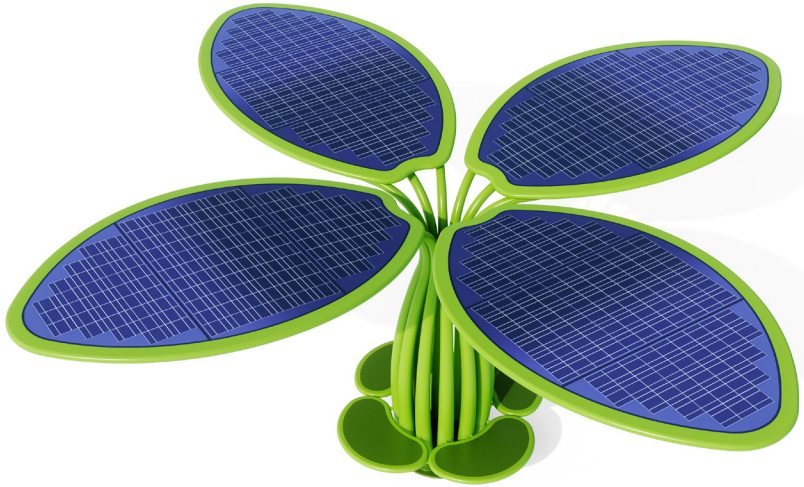
The Lotus collection photovoltaic canopy system has been designed to be self-sufficient and modular, so as to assume different configurations: small single leaf, double leaf, cloverleaf and medium and large leaf, for electric car or e-bike parking or charging stations.

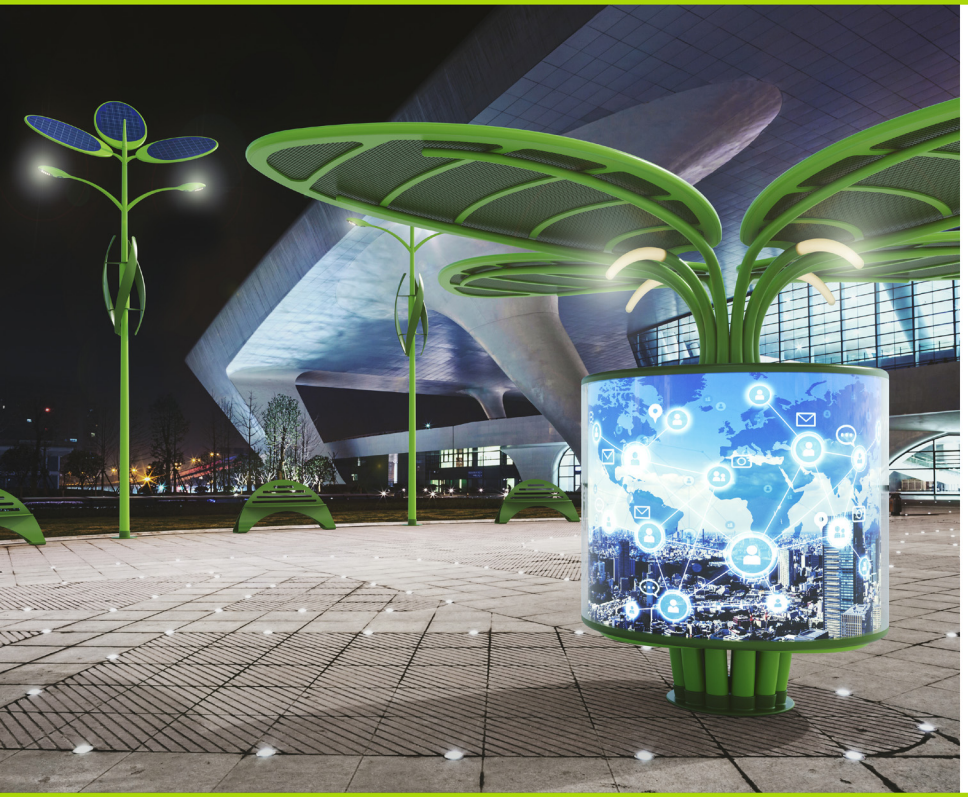
Technological Partner

NITEKO ILLUMINAZIONE

Technological tree

The 2 kW cloverleaf Lotus shelter is the ideal solar-powered solution for the public parks of the Smart Cities of the future, an evocative break in the greenery, under a "cloverleaf" that is perfectly integrated with the soul of the park, keeping the perception of being in contact with nature intact. Comfortable circular benches and lighting independent of the public electricity grid.





Solar-powered advertising system

Here, thanks to a sophisticated 360° LED Video Display system, Lotus becomes a futuristic communications totem. A cylindrical outdoor display, diam. 195 cm and h.135 cm can be installed on every Lotus – Quatrefoil of 2 kW. The resulting highly impacting advertising space has real-time wireless updating and is ideal for road roundabouts, airports, railway stations, shopping centres, museums or exhibition locations.

Lotus smart bus stop

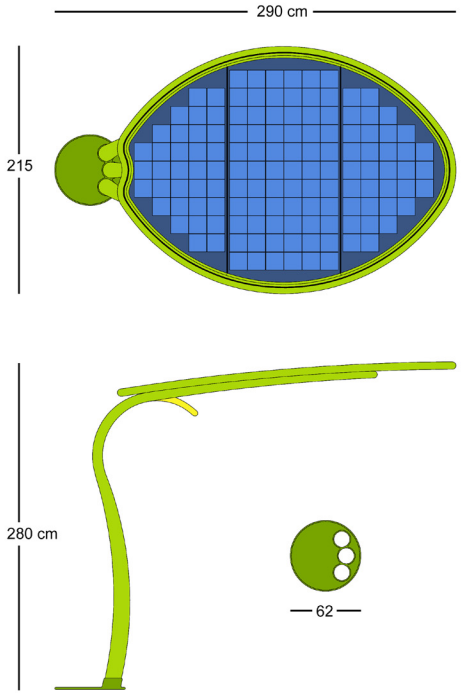
Here the Lotus eco-furniture system is also a sculpturally intriguing bus shelter. The 8.7 sqm (500 x 220 cm) photovoltaic shelter can generate 1.2 kW. The large oval central element (400 x 200 cm) also contains comfortable eco-plastic seating together and an extensive area containing a LED 16/9 (220 x 120 cm) screen able to host advertising or local information, with real-time wireless updating.

Solar-powered carpark

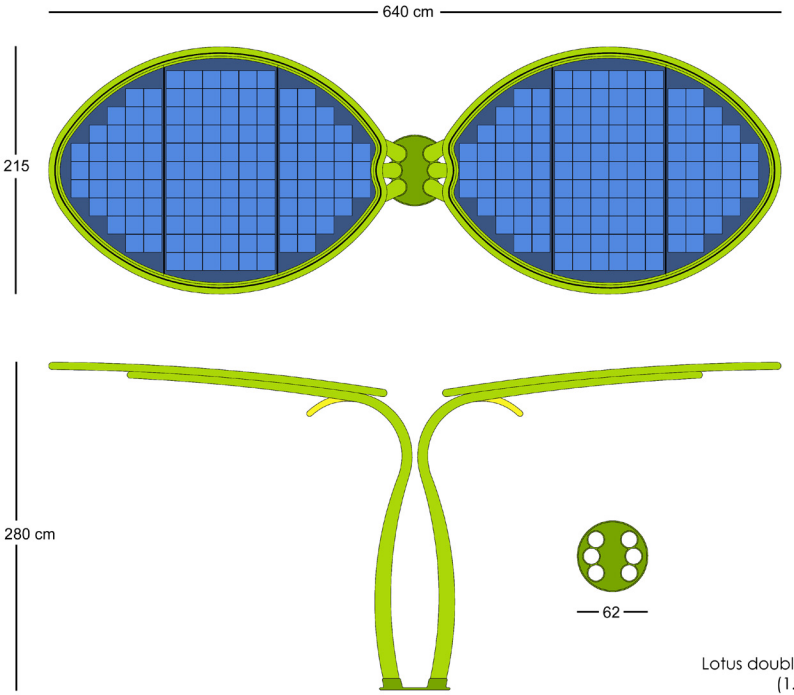
By alternating small and large leaves of the Lotus Collection photovoltaic canopy system, it is possible to create an elegant eco-sustainable car park that generates energy from the sun, with small leaves of 500 W and large leaves of 2.8 kW. In addition, after installation it is also possible to position charging points for electric cars, complete with info point touch screen.

Color variations

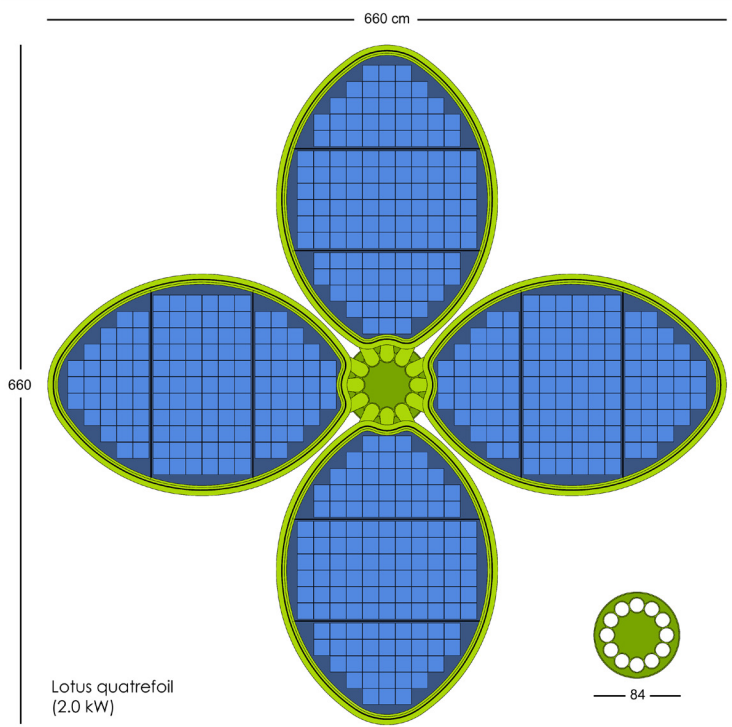
The infinite colour combinations offered by a vast range of ecological paints means Lotus is able to offer optimum environmental integration. Just like a chameleon, Lotus takes on the most suitable colour for the context where it is installed, from the colours of town parks to those of company trademarks / brands / names in private parking areas.



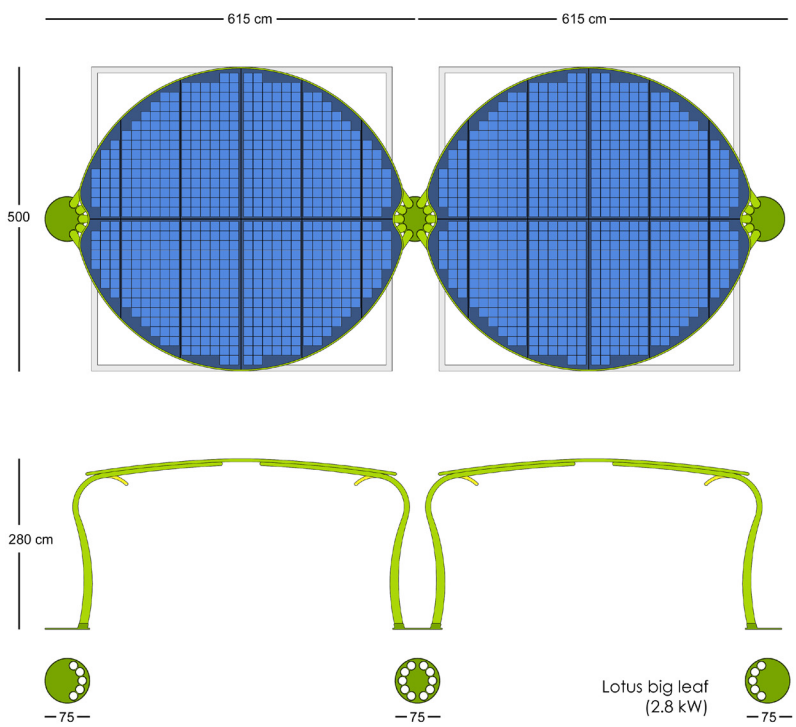
Lotus small leaf
(500 W)



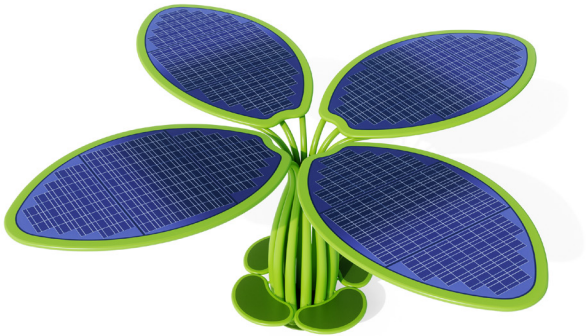
Lotus double leaf
(1.0 kW)



Lotus quatrefoil
(2.0 kW)



Lotus big leaf
(2.8 kW)



GENERAL DATA

Product name: Lotus

Producer: LumineXence

Designer: Giancarlo Zema

Environment: green parks and car parking

Material: coloured steel and photovoltaic panels

Colours: white | black | violet | red | green | blu

DIMENSIONS

Height: 280 cm

Small leaf surface: 4 sqm

Medium leaf surface: 8.7 sqm

Big leaf surface: 19 sqm

ILLUMINATION

Type: LED

Power: 50 W

PHOTOVOLTAIC SPECIFICATIONS

Type: n.132 cells 6" multicrystalline silicon

Frontal glass: tempered, prismatic glass with low iron contents, thickness 4mm

Cell encapsulation: E.V.A. (Ethilen Vinil Acetate)

Backsheets: PVF/PET/PVF in blu color

Juntion box: IP65 class with 3 by-pass diodes, n.2 cables diam. 4mm2 with IP67 polarized connectors included

Temperature range: from -40°C to +85°C

Maximum surface load capacity: 540 Kg/m2

Hail impact: diameter of 25mm with impact speed of 83 Km/h

Modules output: assures that the modules output will be 90% in 10 years and 80% in 25 years

Moduls warranty: 10 years for manufacturing defects

ELECTRICAL SPECIFICATIONS

Module class peak power (+/- 5Wp): 530 Wp/Mod.

Rated voltage (Vmpp): 67,9 V

Rated current (Impp): 7,86 A

Open circuit voltage (Voc): 87,5 V

Short-circuit current (Isc): 8,32 A

Module efficiency: 13%

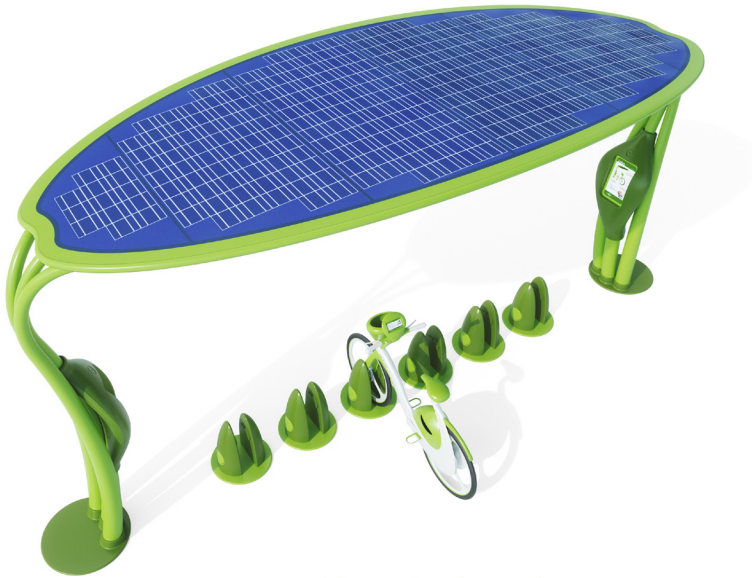
Module productivity: 127 W/m2

Area per Kwp: 7,8 m2/Kwp

Maximum system voltage: 1000 V

Lotus smart charging leaf

A large 19 inch touch screen allows, in addition to the car's recharge status, also tourist information, traffic and advertising.



Lotus E-bike recharging station

Here the Lotus system is also an amusing and functional electric bike recharging point. Its 8.7 sqm (500 x 220 cm) photovoltaic shelter can generate 1.2 kW. The six "bud" bike docks are the perfect design solution for recharging and parking individual E-bikes. A special electronic system means top-ups can be paid by cash point or credit card.

Lotus E-bike

Lotus is an innovative eco-sustainable, pedal assisted electric bike sophisticatedly designed. The main aluminium structure is just one single curve starting from the front of the bike, to incorporate the pedals at the centre, before enveloping the back wheel concealing the integrated battery and the brushless BionX electric motor, which finally ends below the comfortable saddle. The maintenance-free cardan shaft transmits pedaling power accurately and silently. The large LED touch screen display also gives information on charge status, road systems and conditions and the nearest Lotus recharging points. A highly intuitive system and maximum comfort are the happy result of its extremely ergonomic shape and practical storage containers.

GENERAL DATA

Product name: Lotus E-bike

Producer: LumineXence

Designer: Giancarlo Zema

E-Bike frame: aluminium

Motor: brushless BionX integrated into the rear wheel hub

Power: 250 W nominal*

Max. speed with motor assistance: 25 km/h**

Max. torque: 35 Nm

CHARACTERISTICS

Lighting: front and rear LED

Tyres: Continental EcoContact Plus, 26" x 1.75"

Brakes: hydraulic disc

Weight: 27 kg

Max. load: 150 kg (incl. luggage)

Dimensions (width x length x height): 65cm x 170cm x 115cm

BATTERY

Type: lithium-ion

Capacity: 423 Wh nominal*

Voltage: 48V

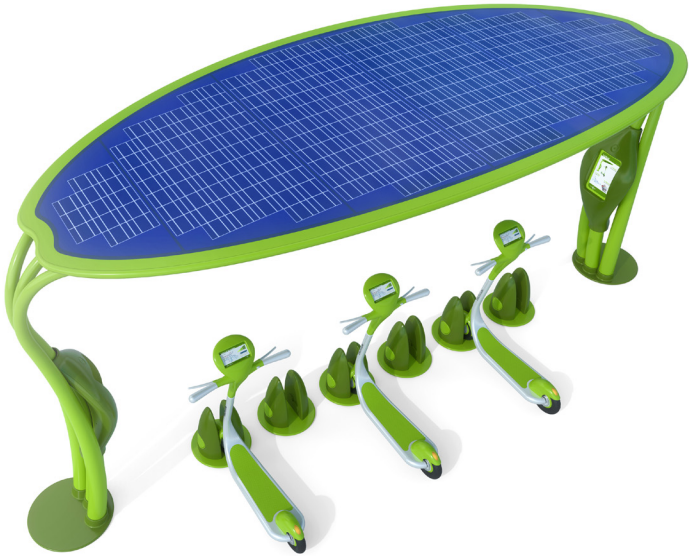
Weight: 3.5 kg

Recharging time: (0-100%) approx. 5 hours; (20-80%) approx. 3 hours

Recharging cycles: residual capacity min. 80% for 2 years and 500 complete cycles

Range: up to a 100 km***

*** Specific differences by country: 250 Watt for EU countries and Switzerland.**
**** It is possible to reach higher speeds using muscle power only.**
***** Depending on the rider, the riding style, the landscape, the traction level and the generator level.**



Lotus E-scooter recharging station

Here the Lotus system is also an amusing and functional electric scooter recharging point. Its 8.7 sqm (500×220 cm) photovoltaic shelter can generate 1.2 kW. The six "bud" scooter docks are the perfect design solution for recharging and parking individual E-scooters. A special electronic system means top-ups can be paid by cash point or credit card.

Lotus E-scooter

Lotus is also an innovative electric scooter with an attractive design. The main structure in aluminum with a sinuous and elegant shape starts from the handlebar to get to the rear wheel through the large platform that allows you to rest your feet even parallel. The large LED touch screen display also gives information on charge status, road systems and conditions and the nearest Lotus recharging points. A highly intuitive system and maximum comfort are the happy result of its extremely ergonomic shape.

GENERAL DATA

Product name: Lotus E-scooter

Producer: LumineXence

Designer: Giancarlo Zema

E-Scooter frame: aluminium

Motor: electric integrated into the rear wheel hub

Power: 250 W nominal*

Max. speed: 30 km/h

Max. torque: 20 Nm

CHARACTERISTICS

Lighting: automatic front and rear LEDs

Wheels: 9" semi solid pneumatic

Brakes: hydraulic disc

Weight: 17 kg

Max. load: 150 kg (incl. luggage)

Dimensions (width x length x height): 45cm x 110cm x 120cm

BATTERY

Type: lithium-ion

Capacity: 470 Wh nominal*

Voltage: 36V | 12.8Ah

Weight: 3.5 kg

Recharging time: (0-100%) approx. 5 hours; (20-80%) approx. 3 hours

Recharging cycles: residual capacity min. 80% for 2 years and 500 complete cycles

Range: up to a 50 km**

*** Specific differences by country: 250 Watt for EU countries and Switzerland.**
**** Depending on the rider, the riding style, the landscape, the traction level and the generator level.**

Single

Double

Lotus seating

Ispirata alle foglie di fior di loto, le sedute della collezione Lotus crescono nelle Smart City del futuro per generare sedute singole e doppie dal piacevole design organico e dalle infinite possibilità cromatiche con sedile fresato per evitare il ristagno dell'acqua piovana. Dim. L. 200cm W. 85cm H. 42cm

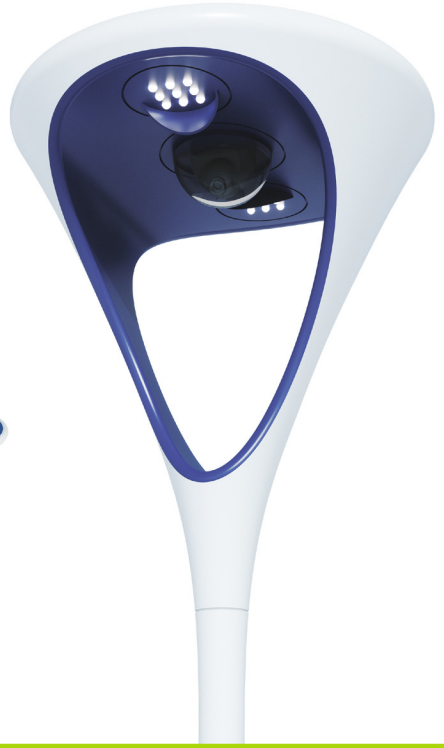
POD COLLECTION

Design by Giancarlo Zema

URBAN LIGHTING | SOLAR-POWERED
SEATING | RECYCLED STEEL

Pod smart urban lighting

With the Pod collection, you can have an intelligent solar-powered urban lighting system. The large photovoltaic panel covering is able to generate over 65W, enough to power the double high-power LED lighting with specific concentric lenses. In addition, an HD camera for video surveillance is also integrated into the body. The pole becomes smart, thanks to the large optional touch screen display. Perfect for communicating tourist and advertising information, as well as for recharging smart phones.



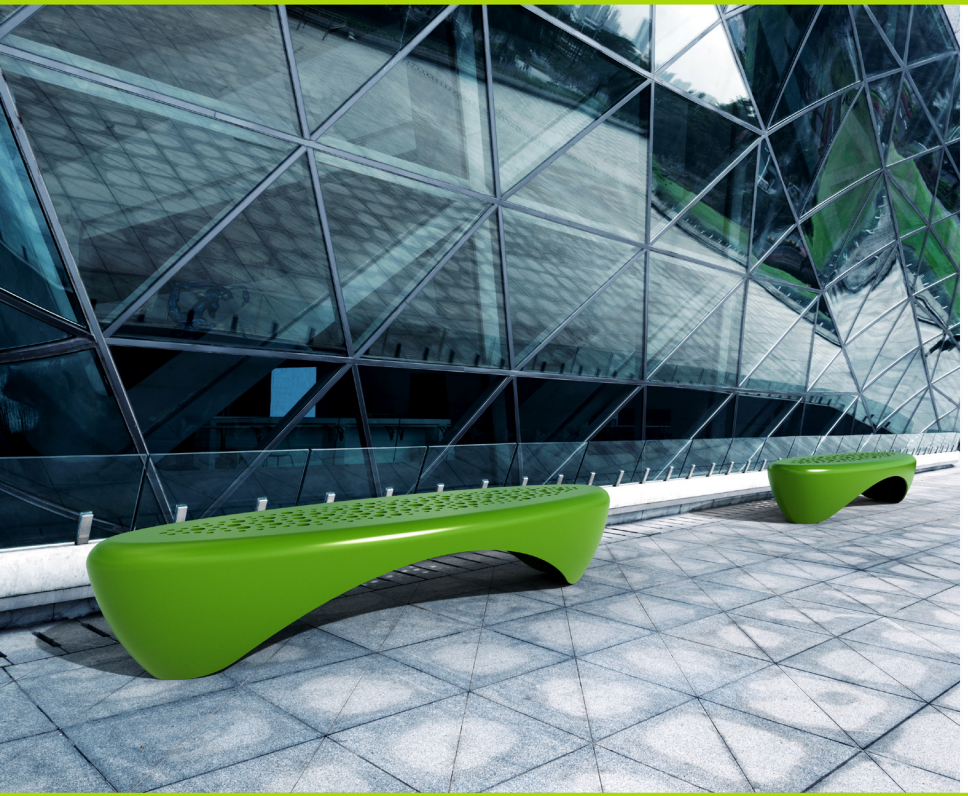
PHOTOVOLTAIC
DIAM. 100 cm
SURFACE: 0.6 SQM
ENERGY: 65 W

4 M	5 M	6 M	ARC	LINE	CURVE	SPLINE	LIGHTING HEIGHT
30 W + 30 W	30 W + 30 W	30 W + 30 W					LED POWER
65 W	65 W	65 W					PHOTOVOLTAIC ENERGY
FULL HD	FULL HD	FULL HD					VIDEO SURVEILLANCE

Smart advertising pole

The solar-powered urban lighting of the Pod collection becomes Smart, thanks to the double, large, optional touch screen display. Perfect for communicating tourist and advertising information, as well as for recharging smart phones.

Pod smart charging pole



Pod seating

Inspired by the pods of lotus flowers, the Pod seating collection is expanding in the Smart Cities of the future to generate seats with a pleasant organic design and infinite chromatic possibilities, with a micro-perforated seat to avoid stagnation from rainwater. Size L. 200cm W. 60cm H. 42cm

COROLLA COLLECTION

Design by Giancarlo Zema

LIGHT TOWERS | SOLAR + WIND-POWERED

Smart light tower

The "Petal" light tower of the Corolla Collection has a body made up of 6 sections in double-coloured recycled aluminium, 4m in diametrer, covered with photovoltaic surfaces capable of generating more than 1.2 kW of energy from the sun, as well as a vertical axis wind turbine that can generate up to 1.5 kW even at night. Lighting is guaranteed by 6 high-power LED lamps with specific concentric lenses. In addition, it is possible to have an HD camera for video surveillance integrated in the body.

H = 15 | 35 M

Smart light tower

The "Wide" light tower of the Corolla Collection has a body made up of 6 sections in double-coloured recycled aluminium, 4m in diametrer, covered with photovoltaic surfaces capable of generating more than 1.2 kW of energy from the sun, as well as a vertical axis wind turbine that can generate up to 1.5 kW even at night. Lighting is guaranteed by 6 high-power LED lamps with specific concentric lenses. In addition, it is possible to have an HD camera for video surveillance integrated in the body.

H = 15 | 35 M

Smart light tower

The "Cut" light tower of the Corolla Collection has a body made up of 6 sections in double-coloured recycled aluminium, 4m in diametrer, covered with photovoltaic surfaces capable of generating more than 1.2 kW of energy from the sun, as well as a vertical axis wind turbine that can generate up to 1.5 kW even at night. Lighting is guaranteed by 6 high-power LED lamps with specific concentric lenses. In addition, it is possible to have an HD camera for video surveillance integrated in the body.

H = 15 | 35 M

Smart light tower

The "Line" light tower of the Corolla Collection has a shell composed of 6 sections of recycled aluminium in double colouring, 4m in diametrer, scratched by a series of engravings characterising its design. The vertical axis wind turbine can generate up to 1.5 kW even at night. Lighting is guaranteed by 6 high-power LED lamps with specific concentric lenses. In addition, it is possible to have an HD camera for video surveillance integrated in the body.

H = 15 | 35 M

Smart light tower

The "Curve" light tower of the Corolla Collection has a shell composed of 6 sections in double-coloured recycled aluminium with soft and harmonious shapes, 4m in diametrer. The vertical axis wind turbine can generate up to 1.5 kW even at night. Lighting is guaranteed by 6 high-power LED lamps with specific concentric lenses. In addition, it is possible to have an HD camera for video surveillance integrated in the body.

H = 15 | 35 M

Smart light tower

The "Hole" light tower of the Corolla Collection has a shell composed of 6 sections in double-coloured recycled aluminium, 4m in diametrer, punctuated by a series of holes that characterize its captivating and harmonious design. The vertical axis wind turbine can generate up to 1.5 kW even at night. Lighting is guaranteed by 6 high-power LED lamps with specific concentric lenses. In addition, it is possible to have an HD camera for video surveillance integrated in the body.

H = 15 | 35 M

STONE COLLECTION

Design by Giancarlo Zema

SEATING | ECO CONCRETE

Stone seating

Inspired by the shapes of the stones on the grass, this collection of seats with organic shapes and pleasant to the touch, are made of eco concrete with different colours available.

THE FUTURE

Our Smart City vision

Our cities aim to be increasingly rich in sun, wind, water and renewable energy sources in the near future. In the vision of a clean world where architecture and design will merge with the most sophisticated technologies within a circular economy, allowing us to live in harmony with the continuous challenges of the new millennium. Urban design will always be simpler and smarter, but above all beautiful and evocative. Our daily challenge is to better interpret the needs of urban communities, design excellent products and promote our suppliers and partners, so as to continuously improve the technological performance of our products. We pursue the desire to improve our world - the near future awaits us.

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