
NOWATT
LIGHTING
ARCHITECTURAL
SOLAR
LIGHTING

AUTONOMOUS, INTELLIGENT AND CONNECTED LIGHTING

AVAILABLE IN 3 LINES

MARKING

LIGHTING

POWERING

We are lighting manufacturers. We thought of products that get rid of energy and installation costs, simple and friendly, that we take out of the box and start up in one click.

Thanks to technological leaps, the efficiency of our solar lighting devices is boosted by the efficiency gains of their various components.

#lightupeverywhere

NOWATT LIGHTING

100% AUTONOMOUS

REMOTE CONTROL

THE INTELLIGHTGENCE

CHOOSE YOU LIGHT SCENARIO

ONE MILLION COLORS

TURN IT ON, IT UNDERSTANDS INSTANTLY **ITS POSITION ON THE GLOBE**

IT MANAGES ITS LOAD AND CALCULATES **AN OPTIMAL POWER ALL THE YEAR**

TAKING INTO ACCOUNT **LATITUDE, SEASON AND WEATHER CONDITIONS**

CHOOSE
YOUR LIGHT SCENARIO

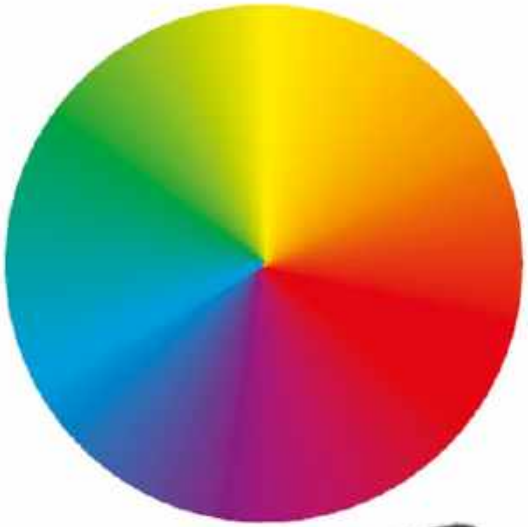
1 6 HOURS OF CONTINUOUS LIGHTING FROM SUNSET

2 4 HOURS FROM THE SUNSET AND 2 HOURS BEFORE SUNRISE

3 MOTION SENSOR FROM SUNSET TO SUNRISE

4 YOUR CUSTOMIZED SCENARIO

CHOOSE AMONG 1 MILLION COLORS



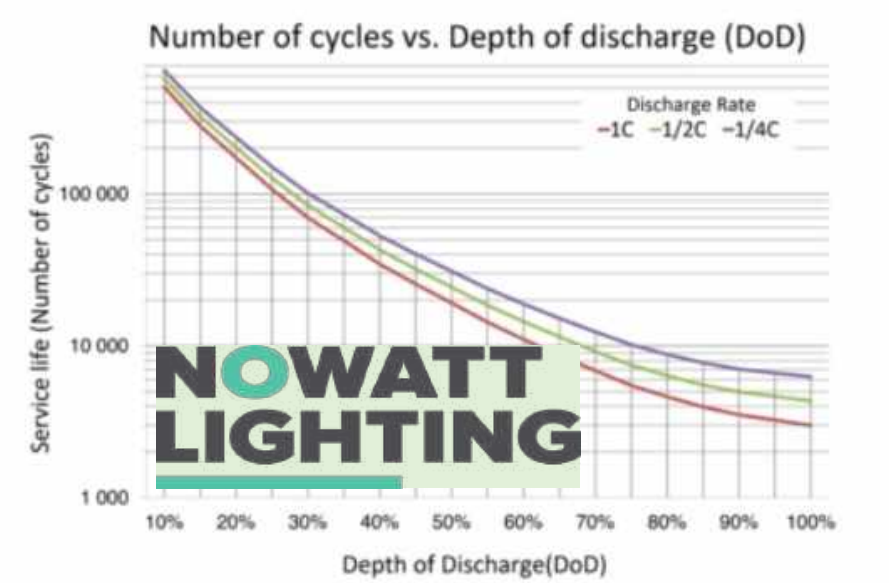
CREATE DIRECTLY FROM YOUR SMARTPHONE WITH OUR APP

Google play

App Store

LIFESPAN BATTERY

The abacus below represents the number of cycles estimated for the Lithium Iron Phosphate batteries (LFP, LiFePO4), depending on the discharge power and the DOD. The testing conditions are those of a laboratory (constant temperature of 25°C, charging and discharging power constant).



In a standard environment, and for cycles done at 1C, the abacus gives an estimated number of cycles for the LiFePO4 of:

- **2000** cycles at **100% of DOD** **5 years**
- **3000** cycles at **80% of DOD** **8 years**
- **8000** cycles at **55% of DOD** **22 years**

After the number of cycles done, the batteries still have a capacity **superior to 80% of the original capacity.**

NOWATT LIGHTING

PRESENTATION

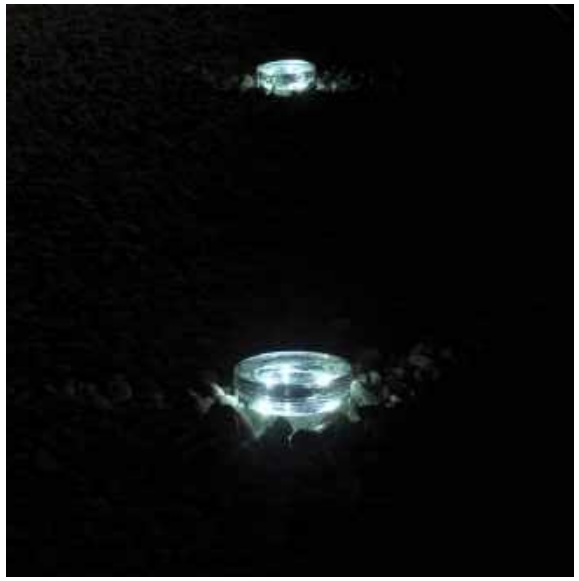
CONTENT

- Marking
  - Crystal studs
- Lighting
  - Onyx Projectors
  - Onyx Bollards
  - E-Onyx Stud
  - Onyx Column
- Powering
  - Onyx Power
- Novelties
  - Solar Marking Firefly
  - Walls and Floors
- Other productions
- Appendices
  - Lifespan and maintenance
  - Round Crystal Studs installation manuals
  - Brief story of shade

NOWATT LIGHTING

MARKING

CRYSTAL STUDS PROJECTS



Maison Jean Prouvé
Marking
Friche de l'Escalette – Marseille - France

Lighting designer:

Architect:

Delivery:
June 2017

Products:
PLR1

NOWATT LIGHTING

LA POSSESSION I
Marking of a cycle track
LA REUNION, France

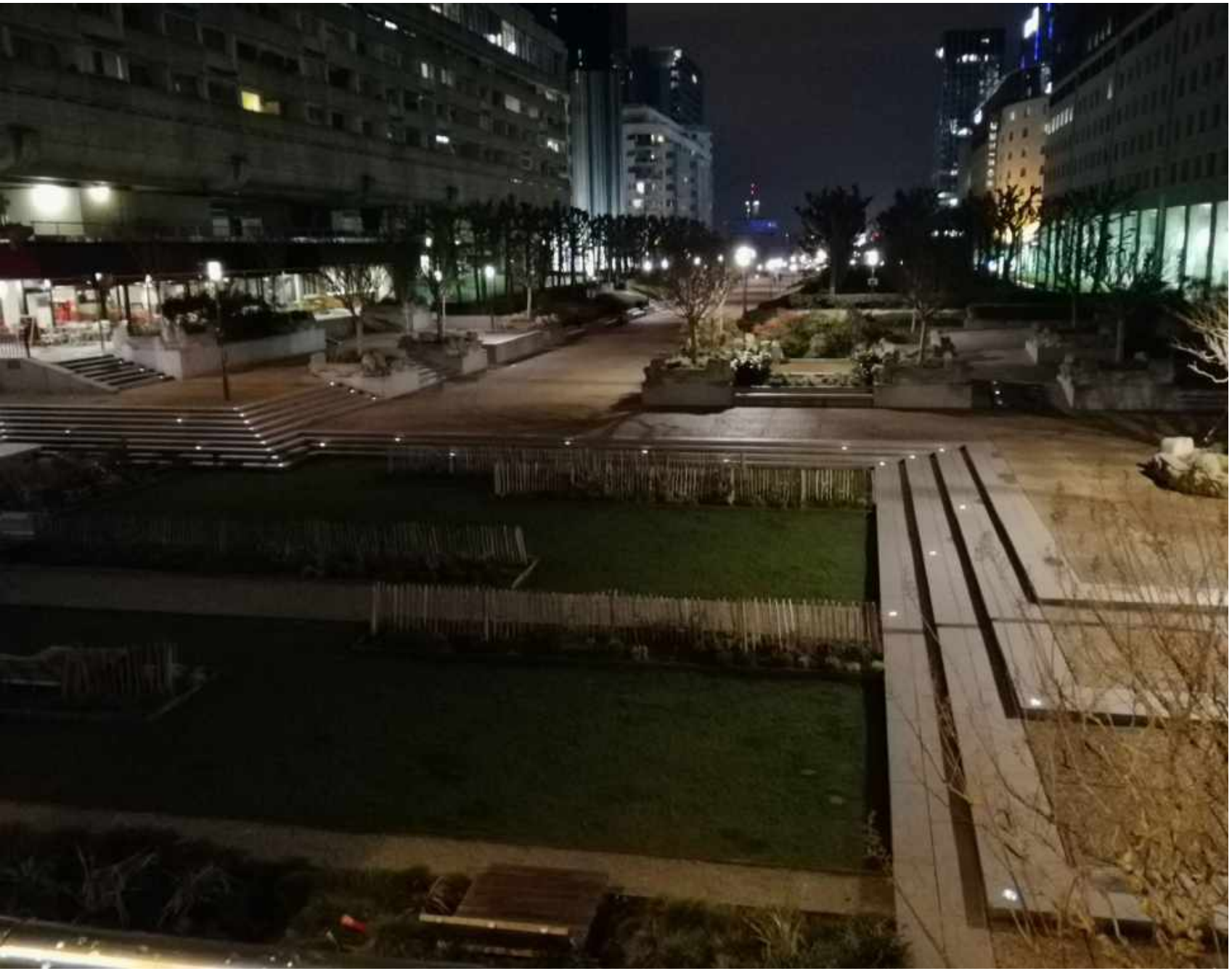
Lighting designer:
Agence Scène publique

Landscaper: Leu Réunion

Delivery:
June 2017

Products:
160 PLR1

NOWATT LIGHTING



Place Basse
Marking of the forecourt of
La Défense – Paris - France

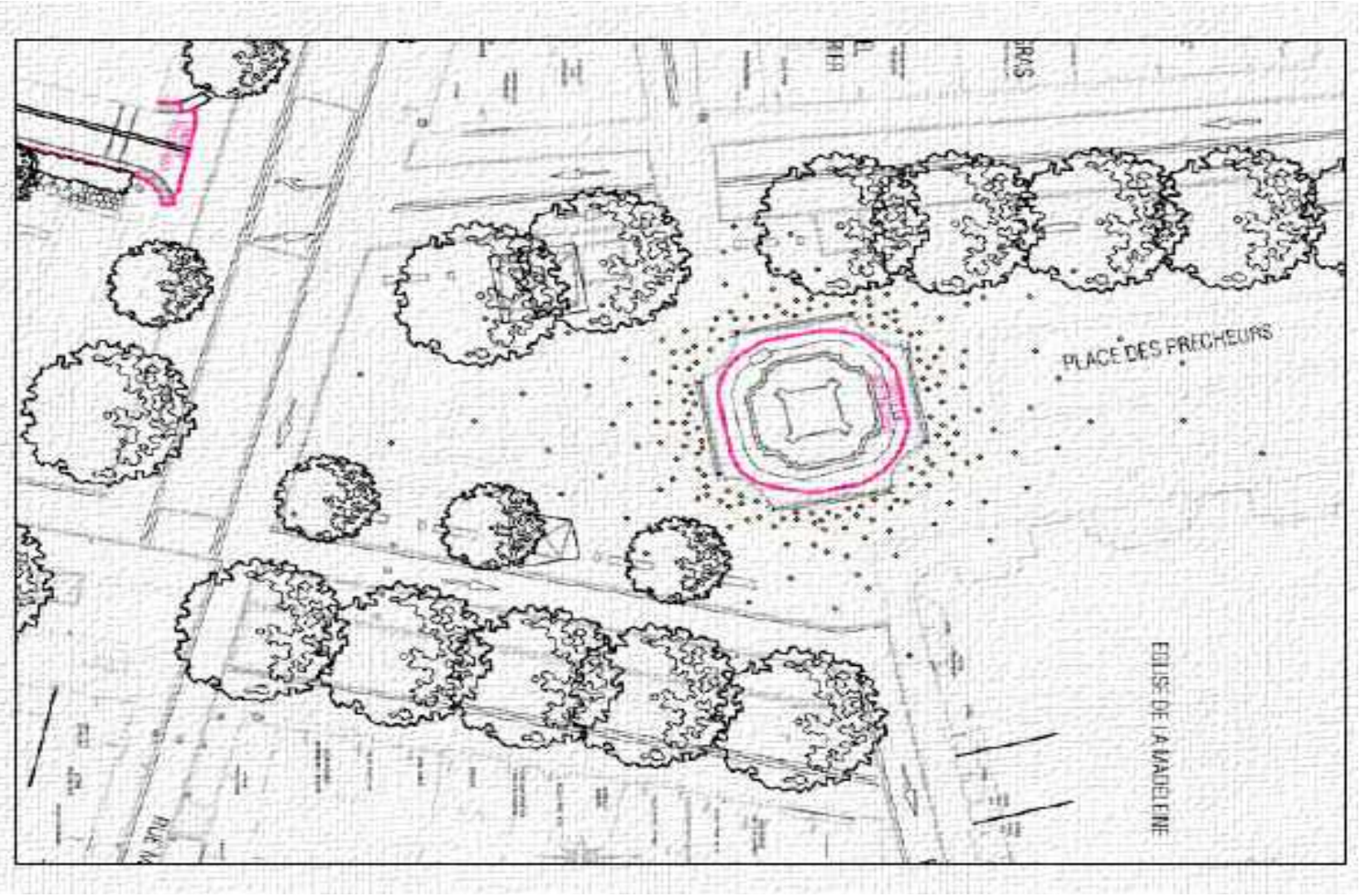
Lighting designer:
Atelier Coup d'Eclat

Architect:
Agence Philippe Hamelin

Delivery:
December 2017

Products :
120 PLR1

NOWATT LIGHTING



Place des Prêcheurs
Marking « water drops effect »
Aix-en-Provence - France

Lighting designer:
Atelier Jéol

Landscaper:
Agence Guillermin

Delivery:
August 2019

Products:
279 PLRE2-3

NOWATT LIGHTING

Place des Prêcheurs
Marking « water drops effect »
Aix-en-Provence - France

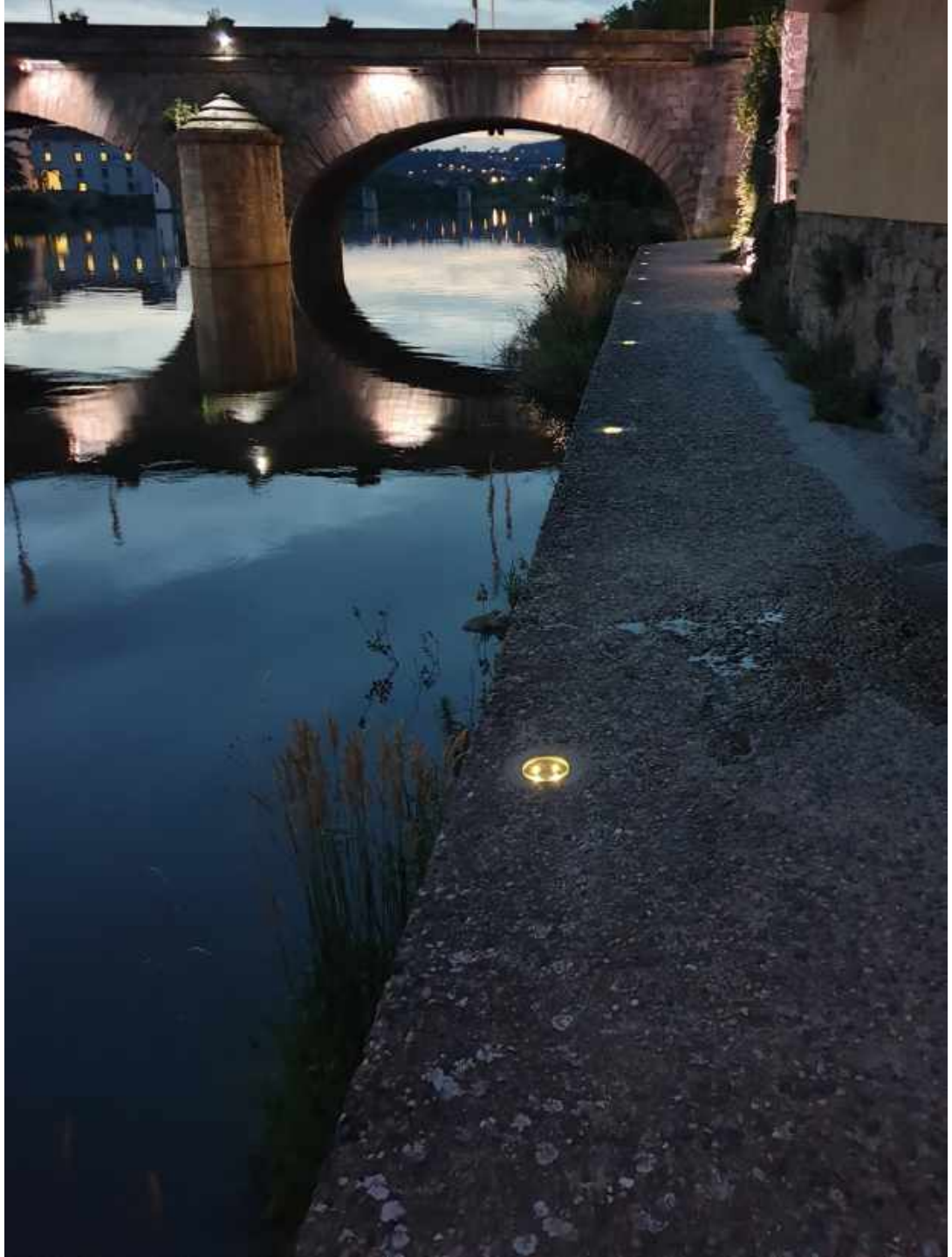
Lighting designer:
Atelier Jéol

Landscaper:
Agence Guillermin

Delivery:
August 2019

Products:
279 PLRE2-3

NOWATT LIGHTING



Quai le long de la Loire
Marking the way
Brive Charensac - France

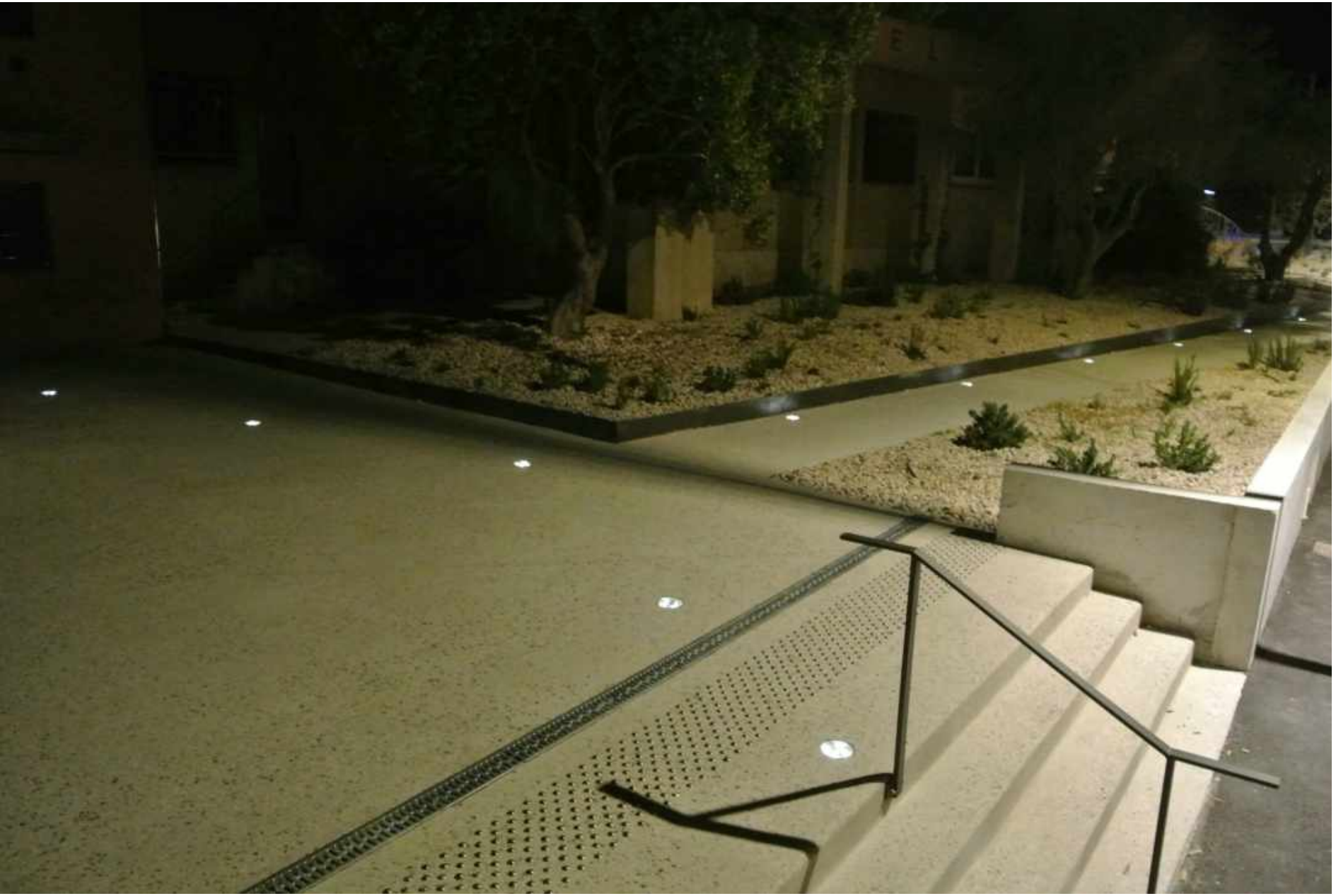
Lighting designer:
Luminescence

Landscaper:

Delivery:
August 2018

Products:
26 PLRE4

NOWATT LIGHTING



Marking the access path to the Cityhall
Ensuès La Redonne – France

Lighting designer:

Landscaper:

Delivery:
May 2019

Products:
13 PLRE4

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Project La Ciotat
Forecourt Gare SNCF
La Ciotat - FRANCE

Lighting designer:

Landscaper:

Delivery:
September 2019

Products:
18 PLRE4

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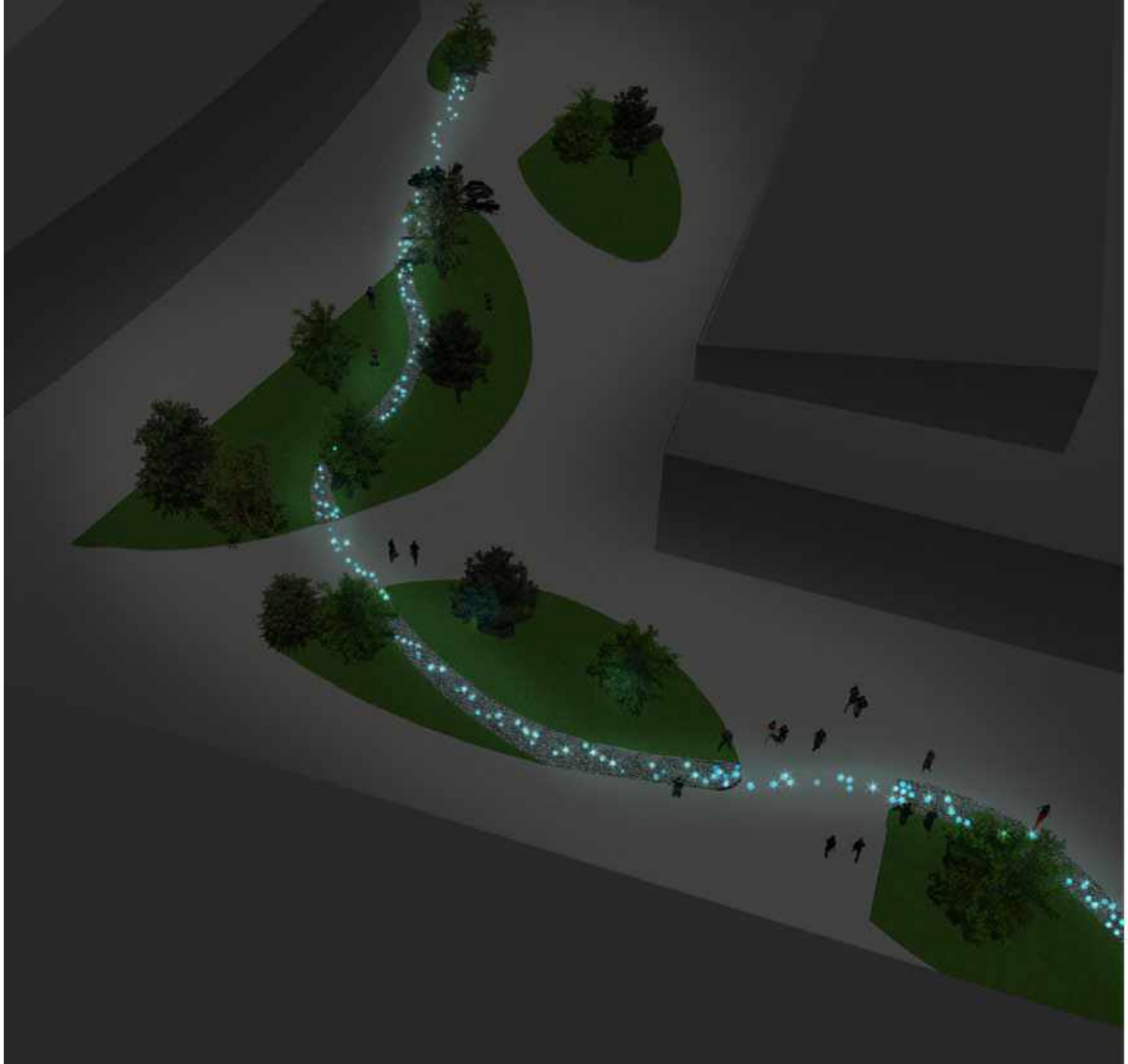

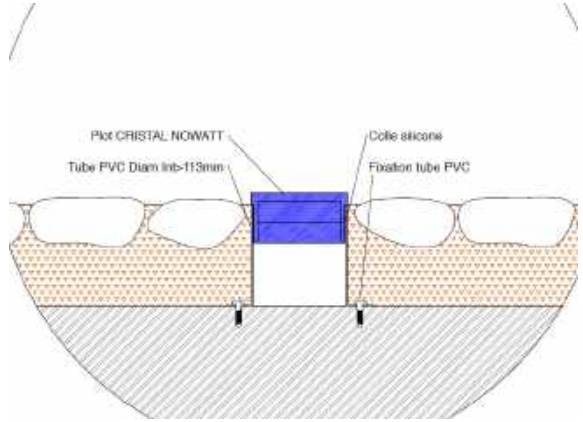

The enlighted river
Clermont-Ferrand - France

Lighting designer: Dominique Colinot. City of Clermont.

Landscaper: City of Clermont

Delivery:
June 2019

Products:
200 PLRE5

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VIDEO:
CLICK HERE

The enlighted river
Clermont-Ferrand - France

Lighting designer: Dominique Colinot. City of Clermont.

Landscaper: City of Clermont

Delivery:
June 2019

Products:
200 PLRE5

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Cycling track
Etang de Thau France

Lighting designer: Cabinet Ilex – Aurélie Le Bouroulec

Landscaper: Ilex

Delivery:
October 2019

Products:
600 PLRE2

NOWATT LIGHTING

Cycling track
Etang de Thau France

Lighting designer: Cabinet Ilex – Aurélie Le Bouroulec

Landscaper: Ilex

Delivery:
October 2019

Products:
600 PLRE2

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LIGHTING

ONYX PROJECTORS

PROJECTS

Réalisation :
Le Jardin Clamard
Petit Arbois

Le Jardin Clamart
Petit Arbois France

Concepteur Lumière:

Paysagiste:

Livraison :

Produits : NOWATT LIGHTING

Lighting a path
Mezidon-Canon France

Lighting designer: Agence Noctiluca

Landscaper:

Delivery:
June 2017

Products:
Onyx projector

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Solar Lighting
First area of Urban Art

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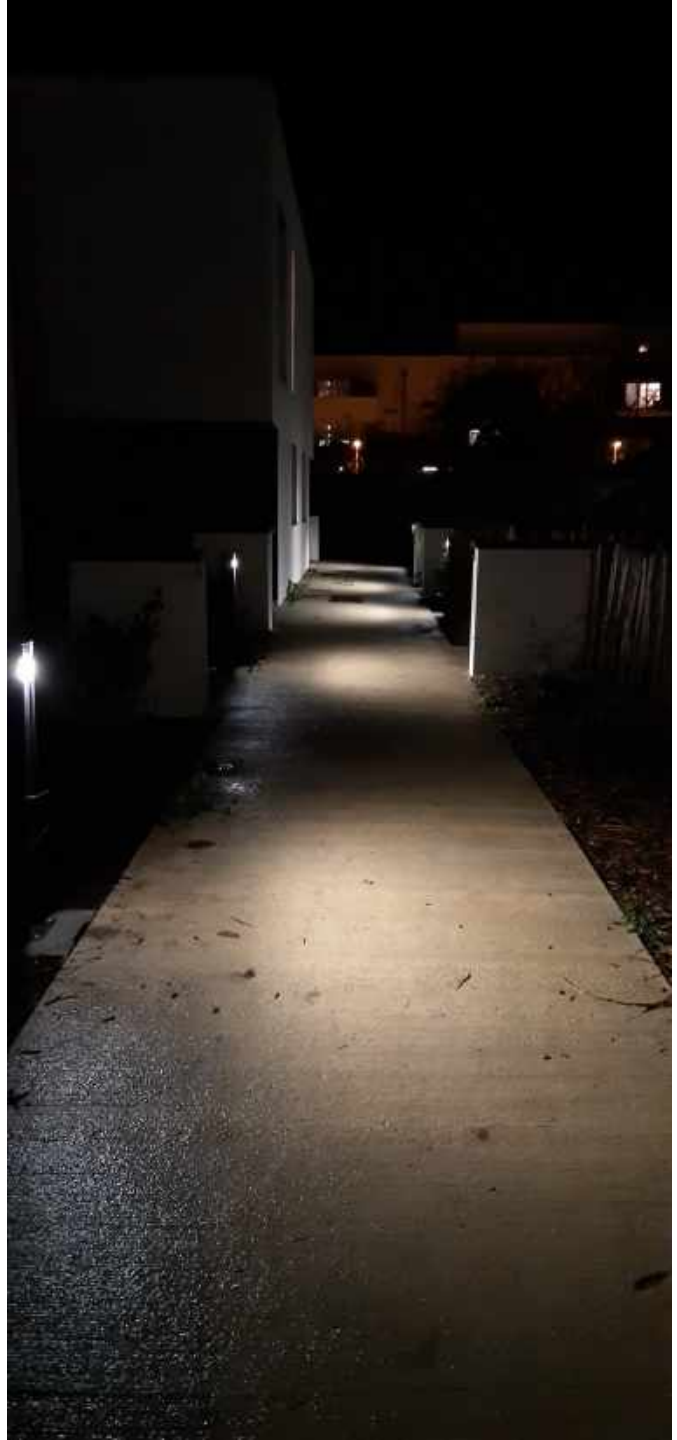
LIGHTING

ONYX BOLLARDS PROJECTS



Lighting an access path to the car park
Blanquefort France

Lighting designer:

Landscaper:

Delivery:
October 2019

Products:
Onyx bollards

NOWATT LIGHTING

Lighting an access path to the car park
Roussillon France

Lighting Designer:

Landscaper:

Delivery:
May 2019

Products:
Onyx bollards

NOWATT LIGHTING

Lighting an access path to a residence
Sydney - Canada

Lighting designer:

Landscaper:

Delivery:
May 2019

Products:
Onyx bollards

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Installation of a USB bollard
Venelles France

Lighting designer:

Landscaper:

Delivery:
February 2019

Products:
USB bollards

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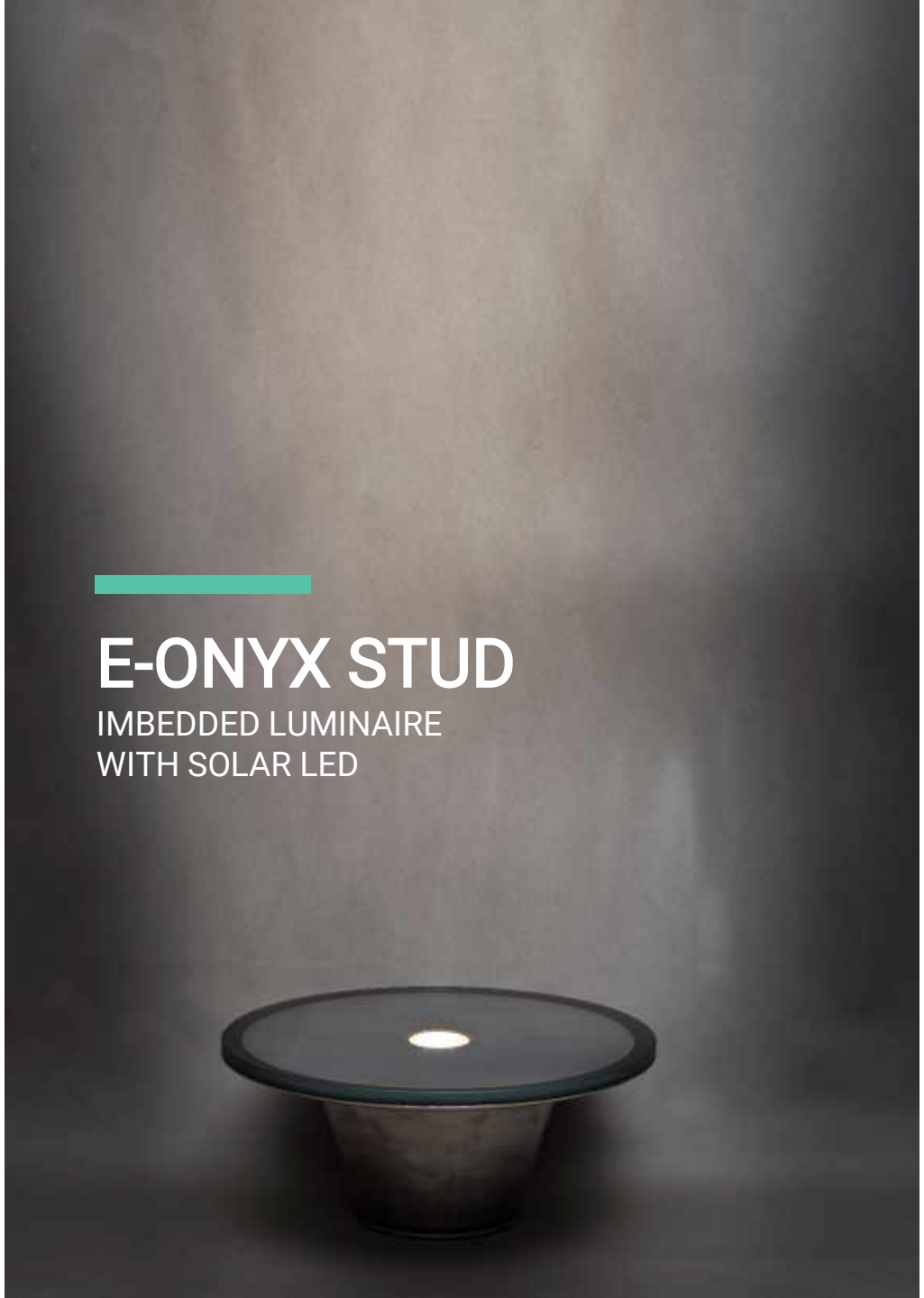
LIGHTING

E-ONYX STUD PRESENTATION

Solar luminaire created to illuminate trees, palm trees without the need to make trenches or create electrical networks. So without the risk of sealing the electrical connections and without destroying the existing plantations.

The LED and solar technologies implemented facilitate your landscape lighting projects. Thanks to its Bluetooth control, you choose the shades of white adapted to your project and you program your lighting duration.

Good light, but without wasting energy.



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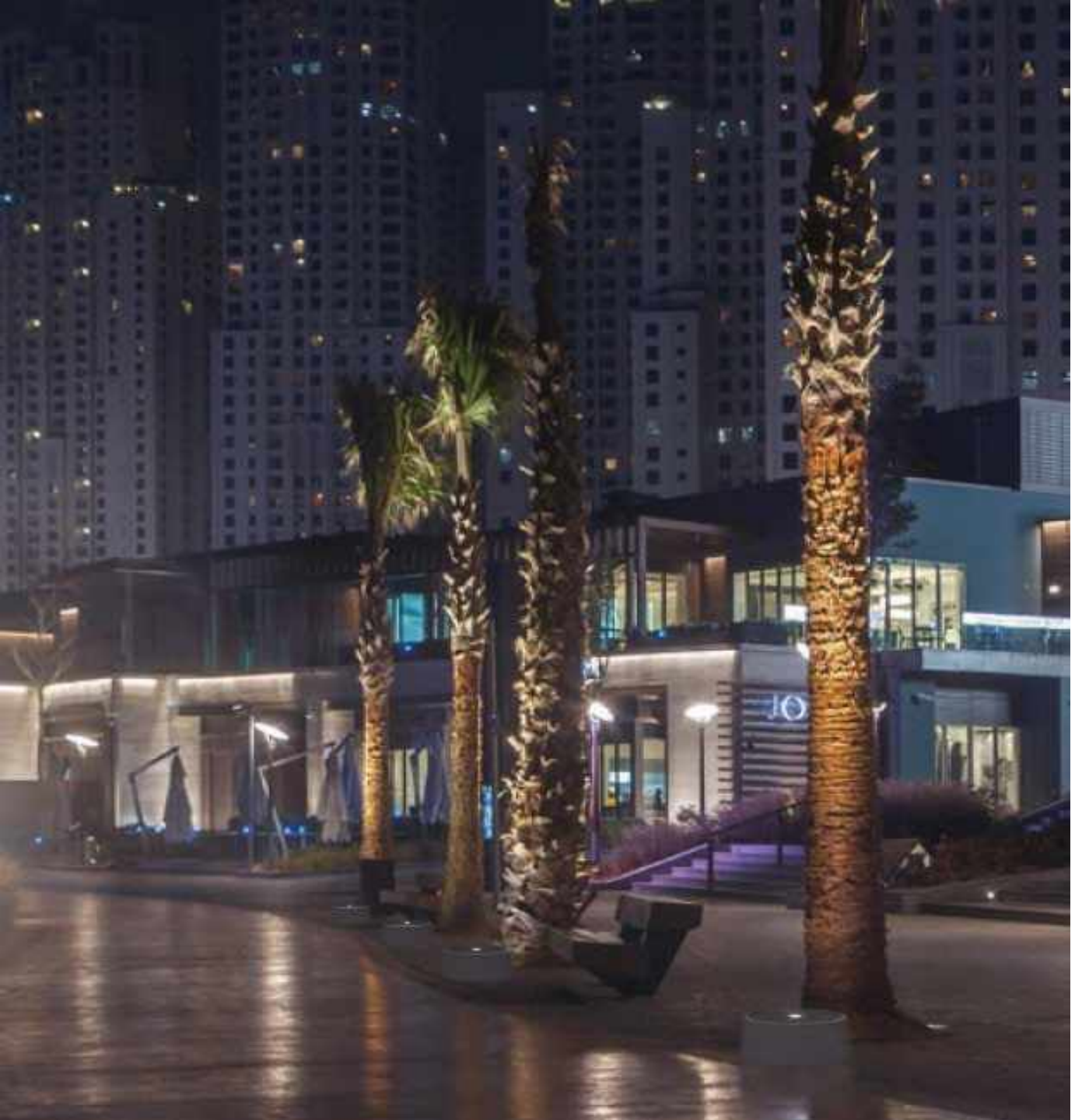

E-Onyx Stud
Integrated in a concrete device

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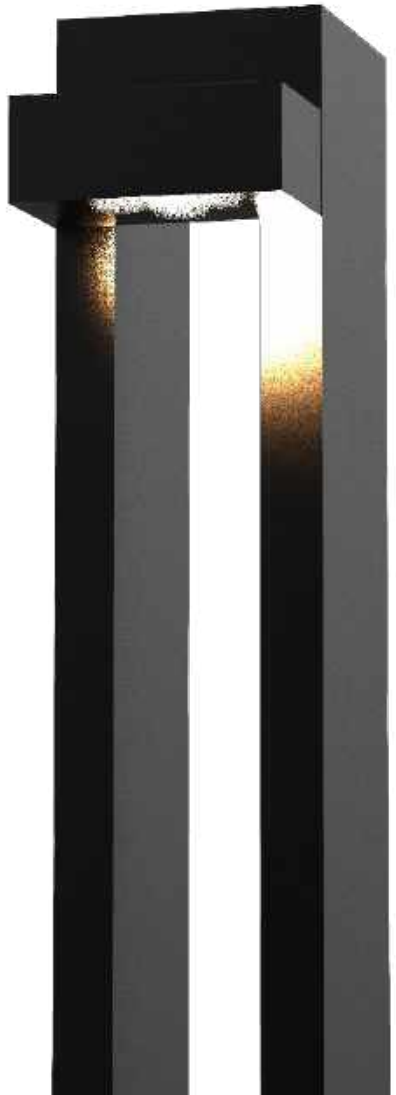

LIGHTING

ONYX COLUMN PRESENTATION

THE TECHNOLOGICAL LEAP OF SOLAR

SOLAR CELLS

Use of Back Contact cells.
Efficiency **24%.**
85% of production still preserved after **25 YEARS** of use.

BATTERIES

The use of LiFePO4 batteries
8000 cycles at 50% DOD.
Lifespan greater than
20 YEARS
of use.

COMPONENTS & SOFTWARES

The use of microprocessors, of MPPT and algorithms to optimize the Watts produced by the cells.

LEDS

Latest generation of Leds achieving an efficiency ratio of **215 lumens/Watt** for a white **3000K**, thanks to binning and our low intensity steering.

The efficiency of our solar lighting devices is boosted by the efficiency gains of their different components.

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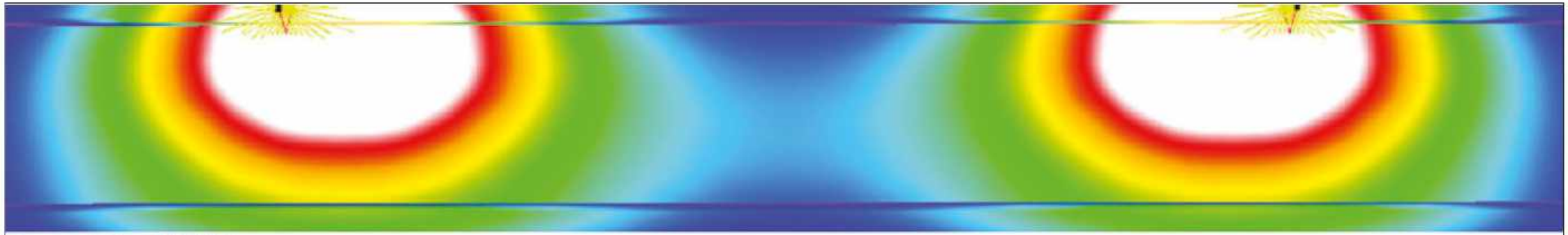


Trame: 128 x 64 Points

E_{moy} [lx]	E_{min} [lx]	E_{max} [lx]	E_{min} / E_{moy}	E_{min} / E_{max}
13	5.48	32	0.431	0.172

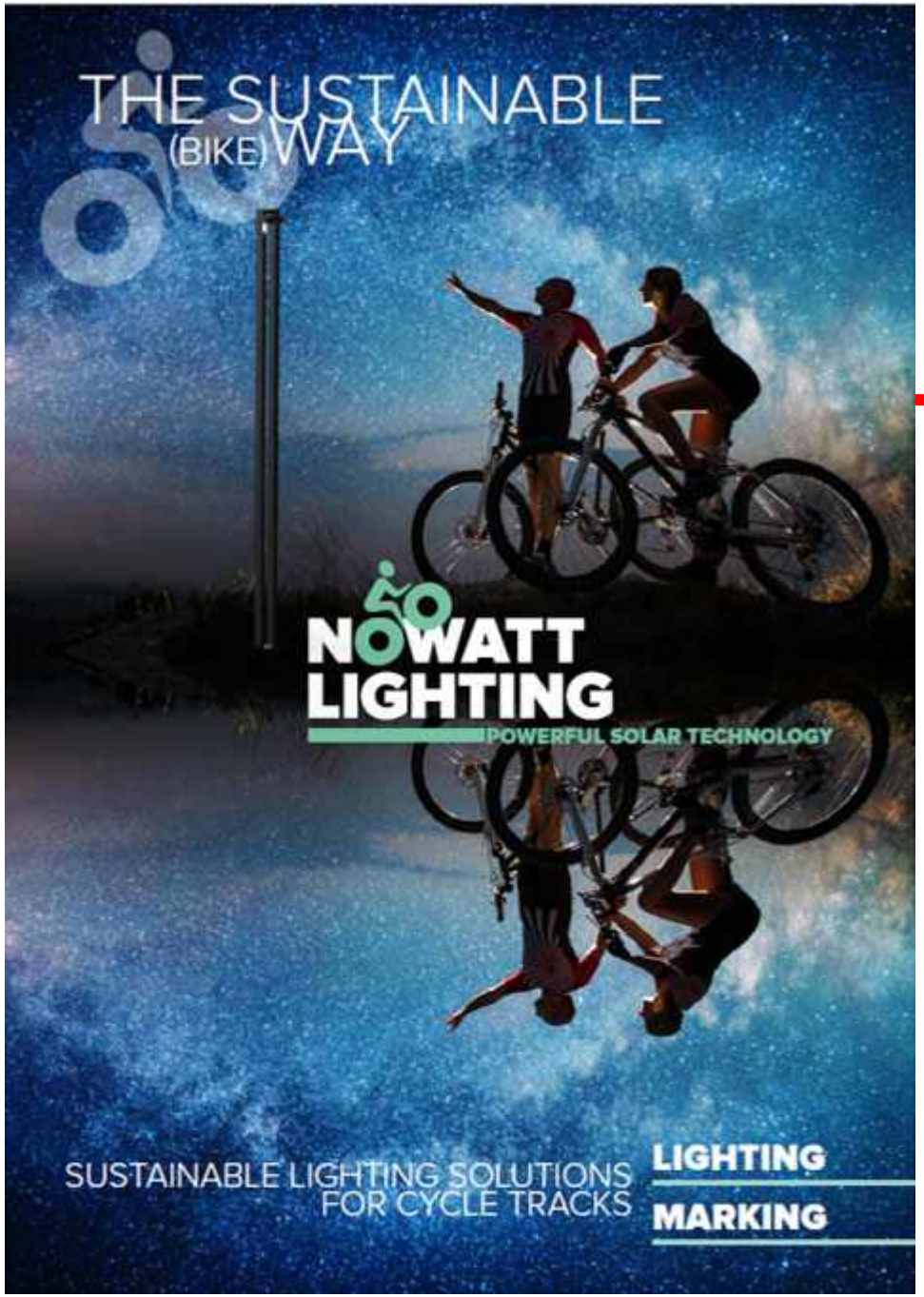
COURBES ISOLUX

NOWATT LIGHTING

PARIS

INTERDISTANCE 20 M - PATH WIDTH 4M, 4M HIGH COLUMN, PRESENCE DETECTION - 13 LUX IN AVERAGE

norm EN 13201.1



Click here to read the Cycleways Booklet

Columns from 3 to 5 meters

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Columns
from 3 to
5 meters
NOWATT
LIGHTING

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POWERING

E-ONYX POWER PROJECTS

Projet Pépite
Mons en Baroeul France

Lighting designer: Noctiluca - Rozenn Lecouillard

Artchitect:

Delivery:
September 2018

Products :
75 sets with
1 Onyx Power
1 Lumteam 5° 4 Leds W

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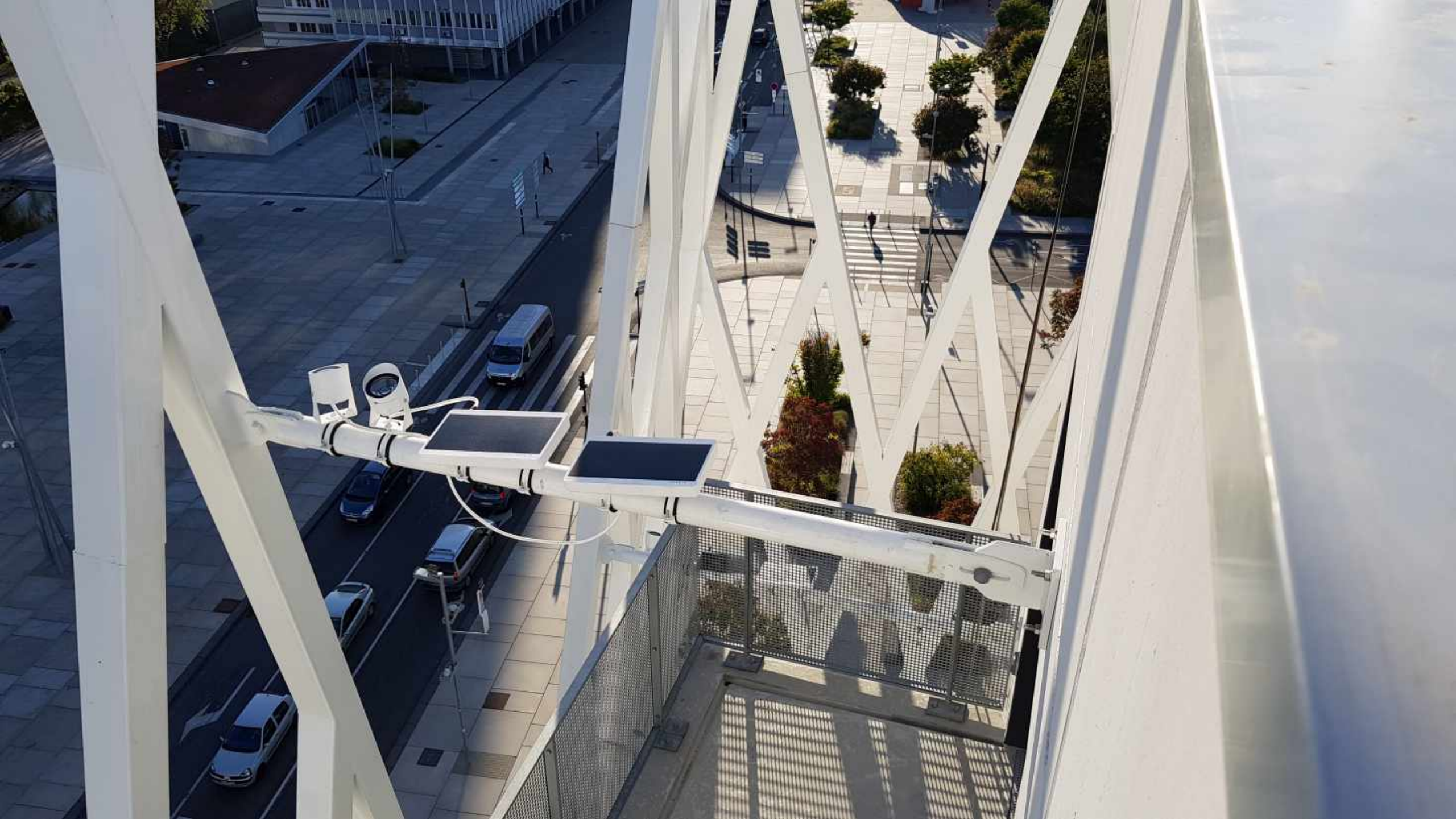
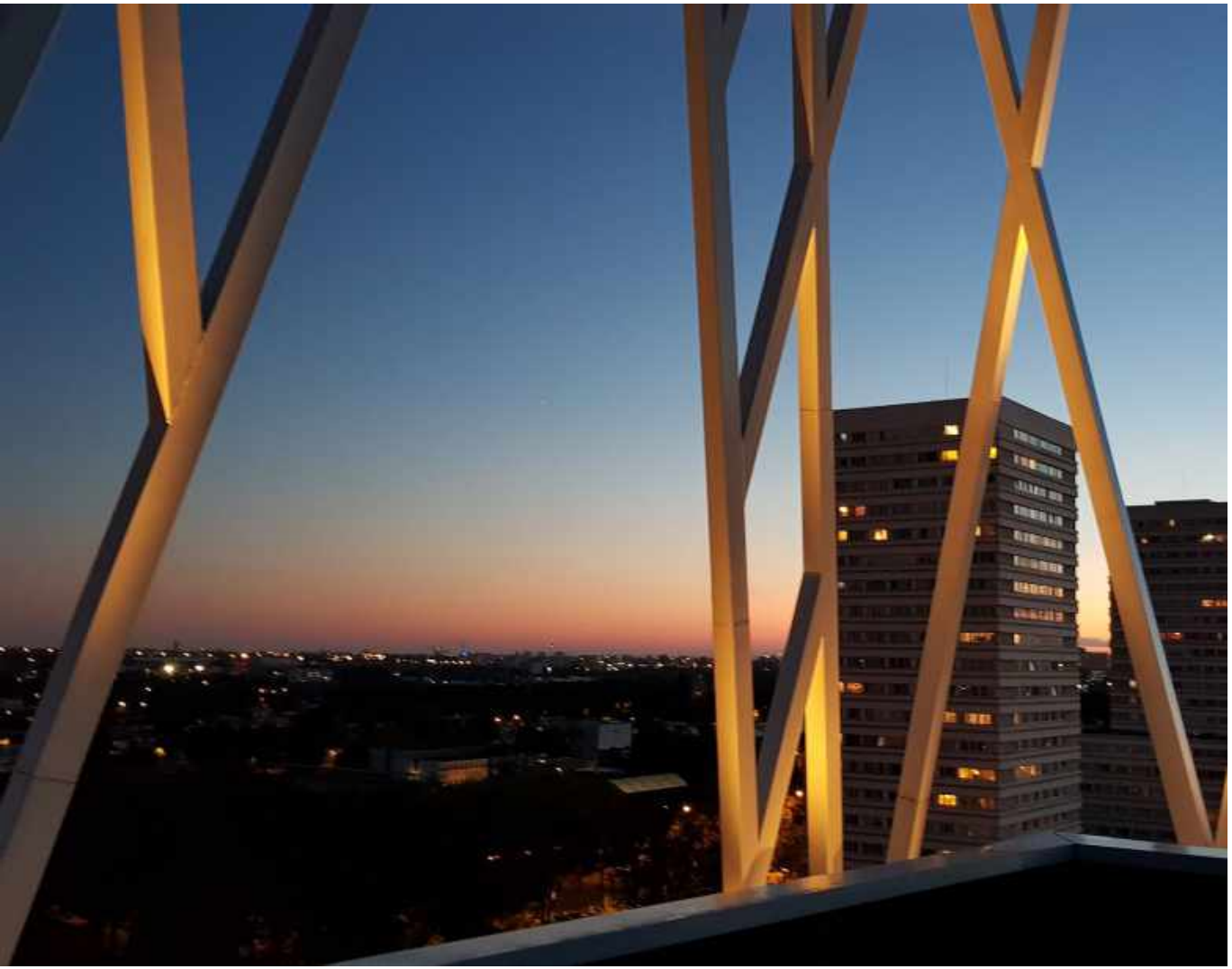
LIGHTING





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NOVELTIES

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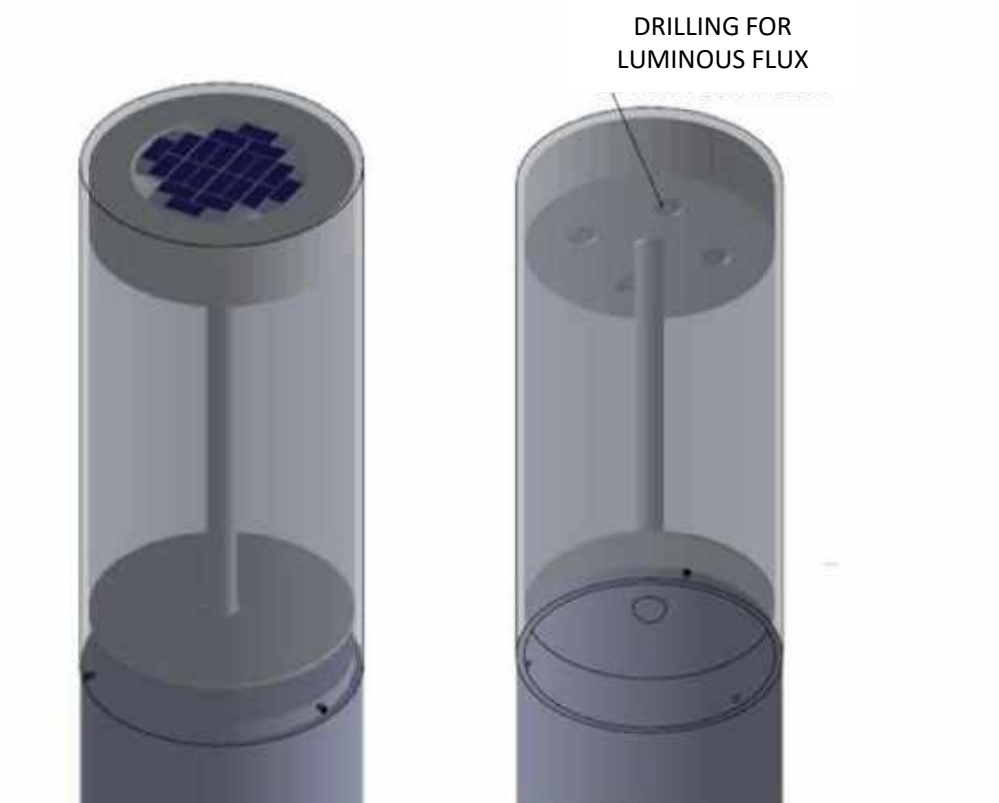
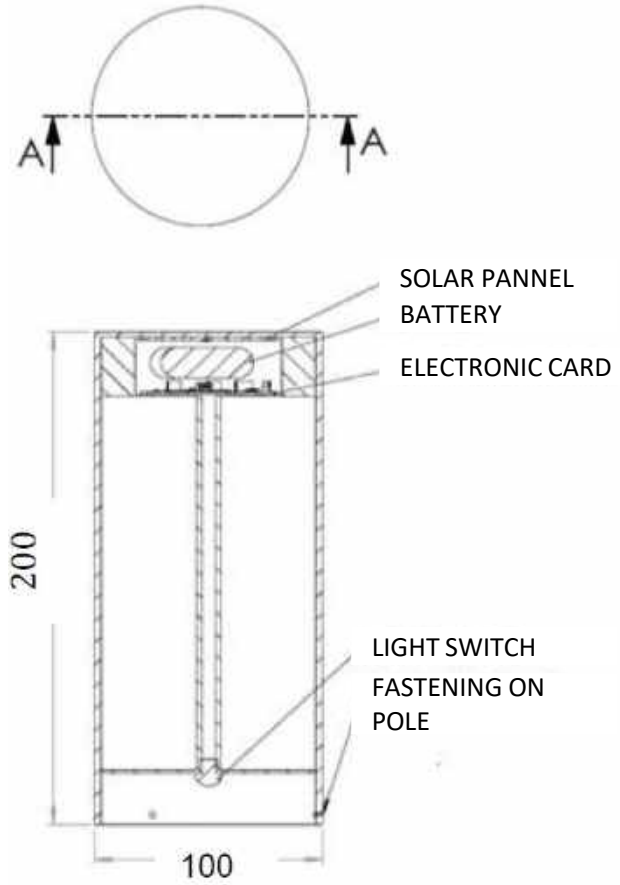
NEW LINE

SOLAR MARKING FIREFLY





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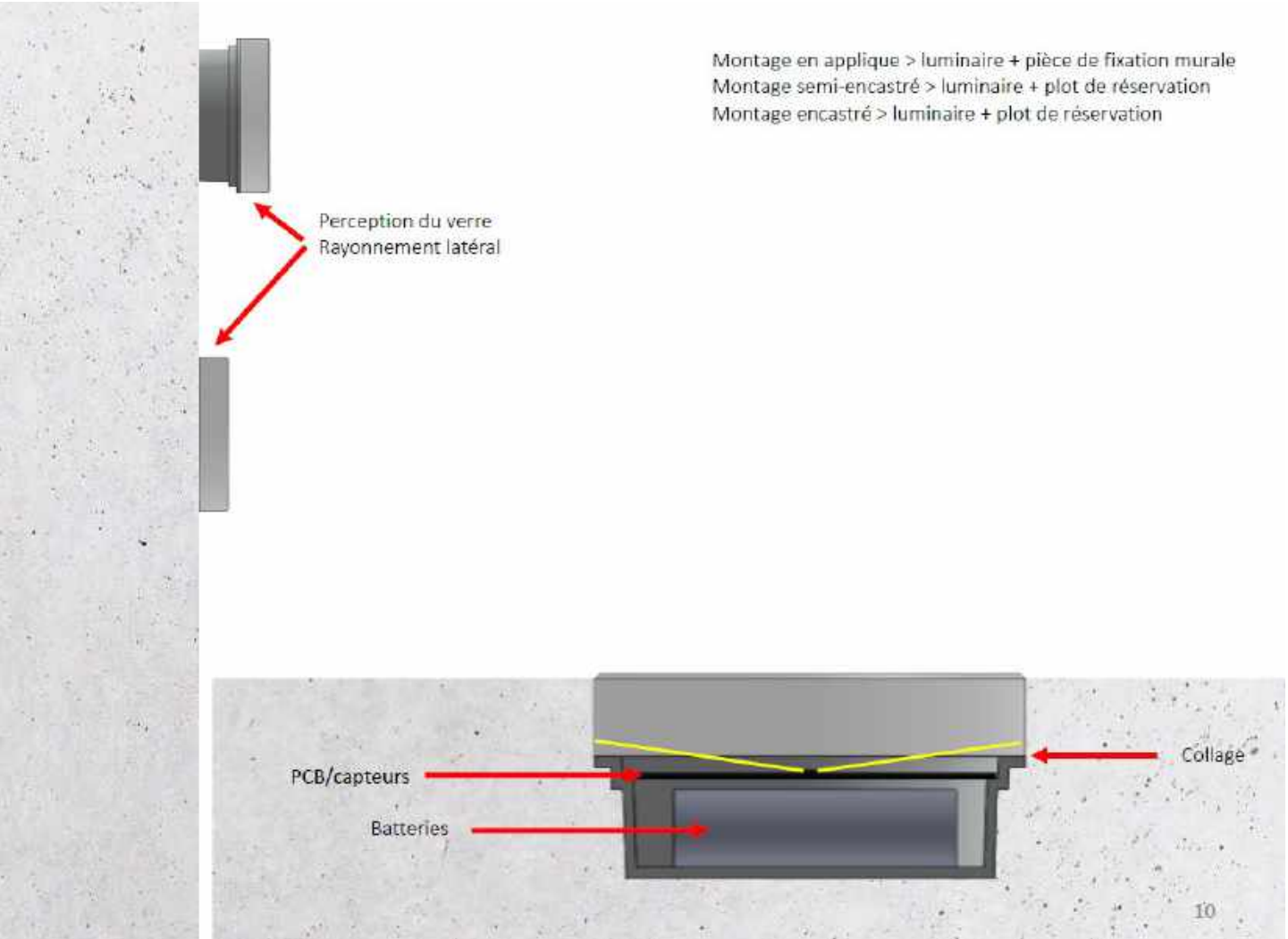
NEW LINE

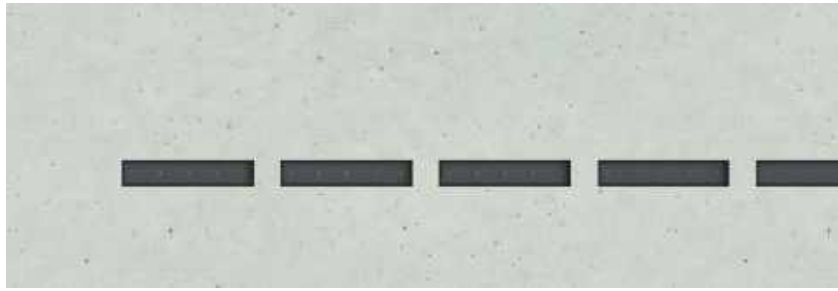
WALLS AND FLOORS

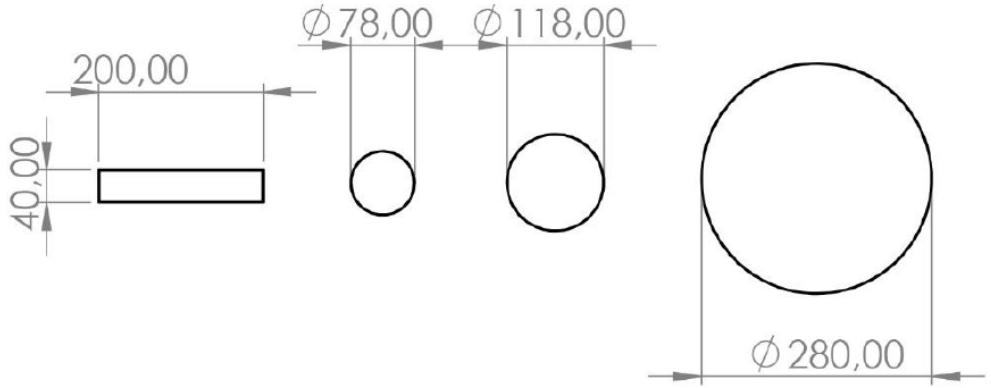


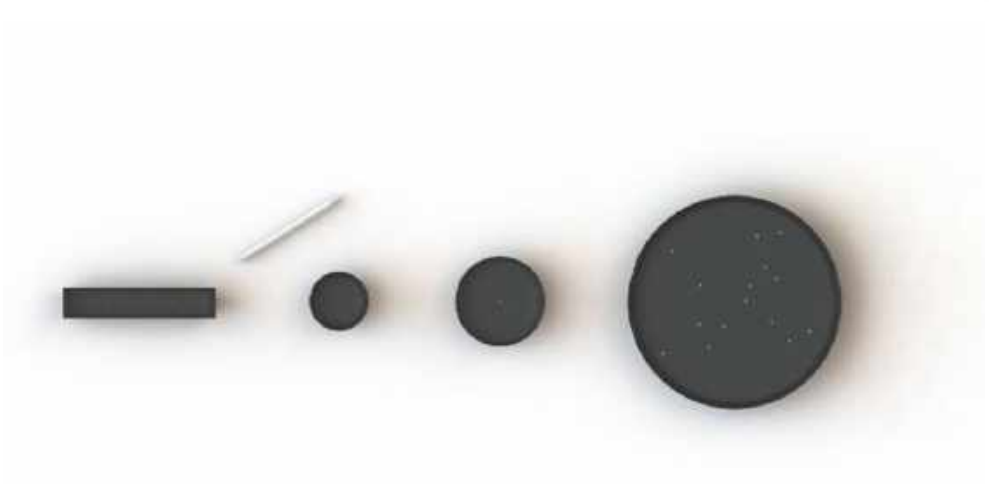
Front lighting elements - recessed, semi-recessed, or surface-mounted

NOWATT LIGHTING

Front lighting elements - recessed, semi-recessed, or surface-mounted







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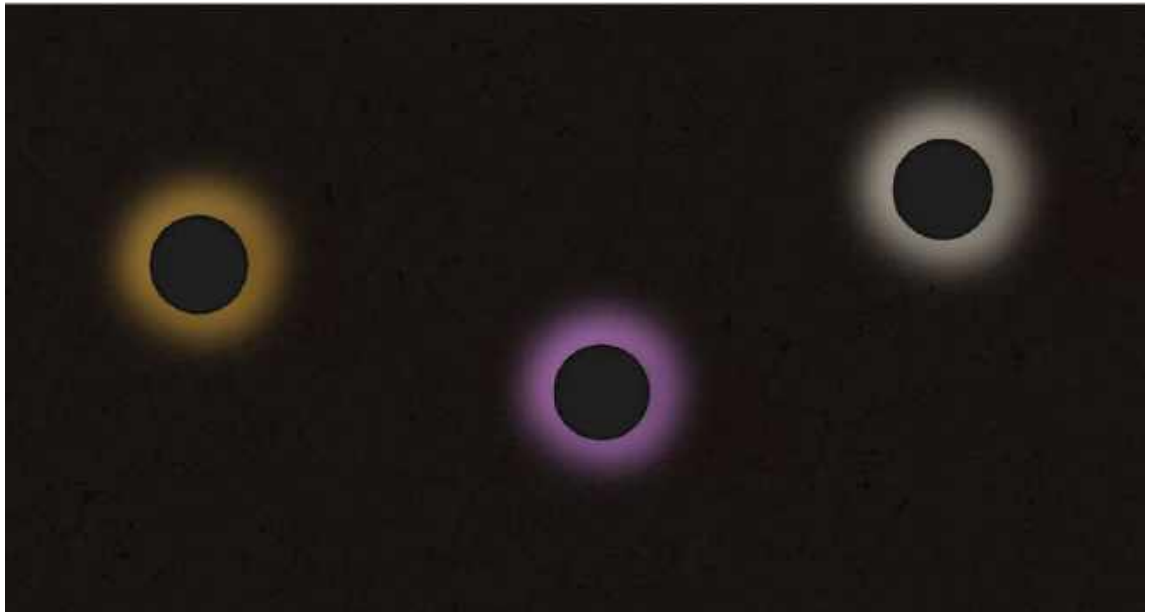
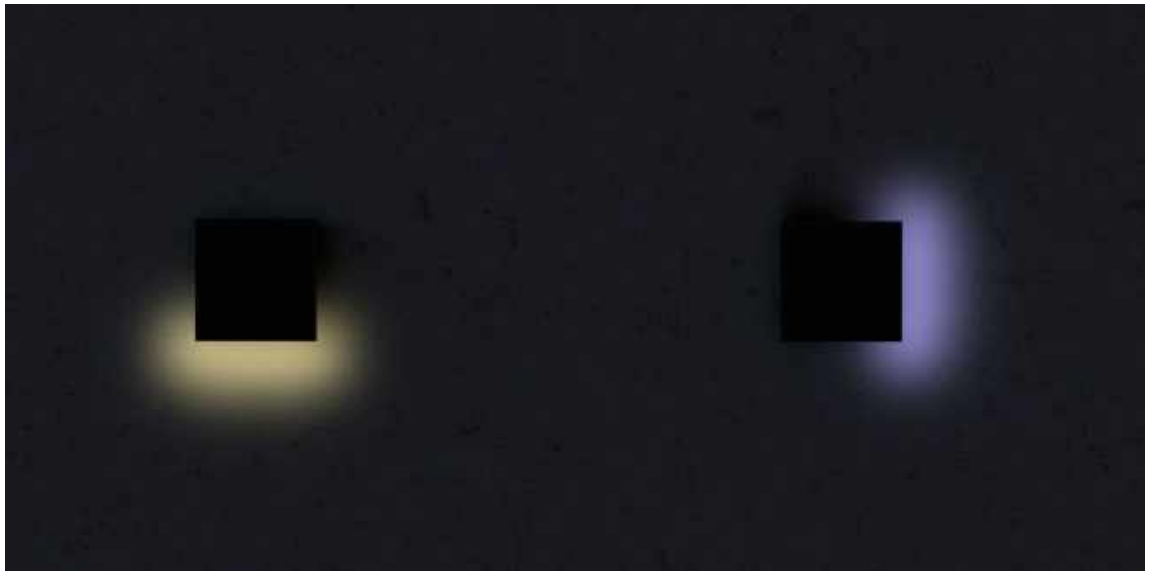
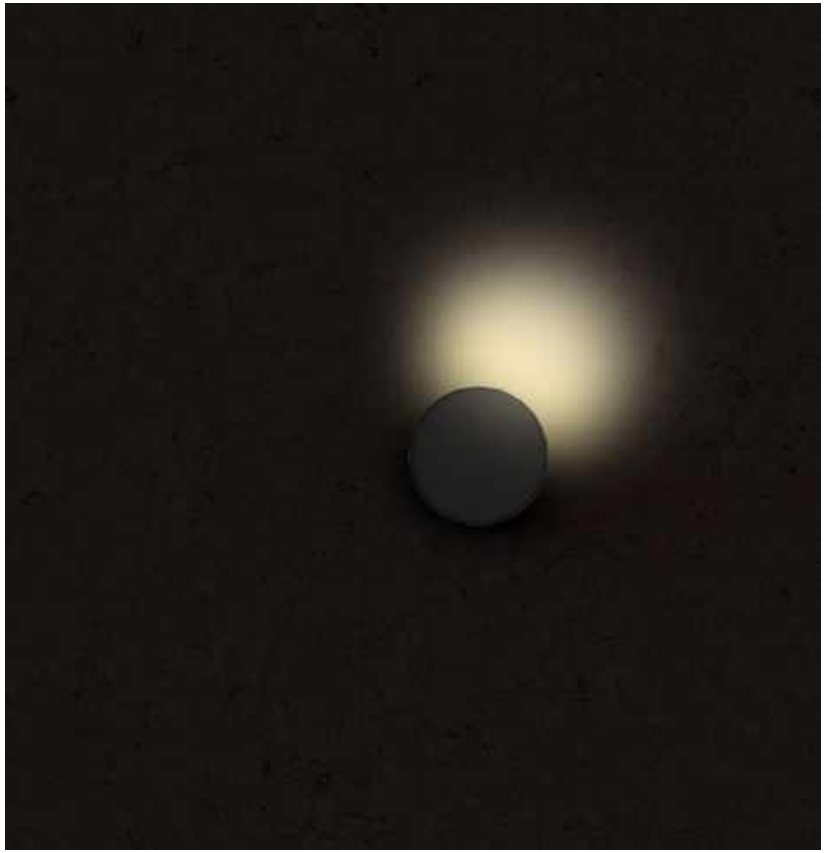




Grazing lighting elements - surface installation



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OTHER PRODUCTIONS

NOWATT LIGHTING

Place d'Italie
Paris France

Lighting designer:
Agathe Argod

Landscaper:

Delivery:
September 2019

Products:
500 Glass Lens

NOWATT LIGHTING

Place d'Italie
Paris France

Lighting designer:
Agathe Argod

Landscaper:

Delivery:
September 2019

Products:
500 Glass Lens

NOWATT LIGHTING

Place d'Italie
Paris France

Lighting designer:
Agathe Argod

Landscaper:

Delivery:
September 2019

Products:
500 Glass Lens

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APPENDICES

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LIFESPAN ET MAINTENANCE

BENEFITS

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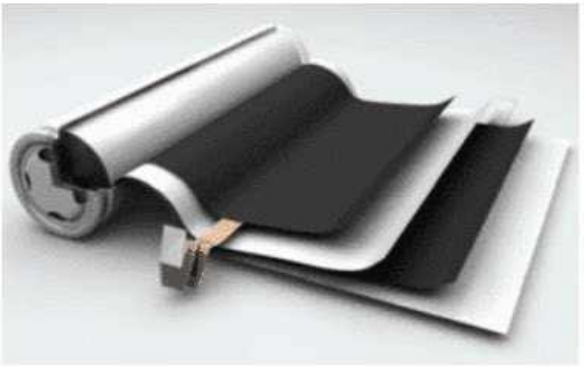
Batteries LiFePO4: batteries Lithium Iron Phosphate

Lithium Iron Phosphate (LFP or LiFePO4) :

Lithium Ferro Phosphate technology (also known as LFP or LiFePO4), which appeared in 1996, is replacing other battery technologies because of its technical advantages and very high level of safety.



Due to its high power density, this technology is used in medium-power traction applications (robotics, AGV, E-mobility, last mile delivery, etc.) or heavy-duty traction applications (marine traction, industrial vehicles, etc.)

The long service life of the LFP and the possibility of deep cycling make it possible to use LiFePO4 in energy storage applications (stand-alone applications, Off-Grid systems, self-consumption with battery) or stationary storage in general.

Major advantages of Lithium Iron Phosphate:

- Very safe and secure technology (No Thermal Runaway)
- Very low toxicity for environment (use of iron, graphite and phosphate)
- Calendar life > 10 ans
- Cycle life : from 2000 to several thousand (see chart below)
- Operational temperature range :up to 70°C
- Very low internal resistance. Stability or even decline over the cycles.
- Constant power throughout the discharge range
- Ease of recycling

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Life-cycle ofLithium Iron Phosphate technology (LiFePO4)

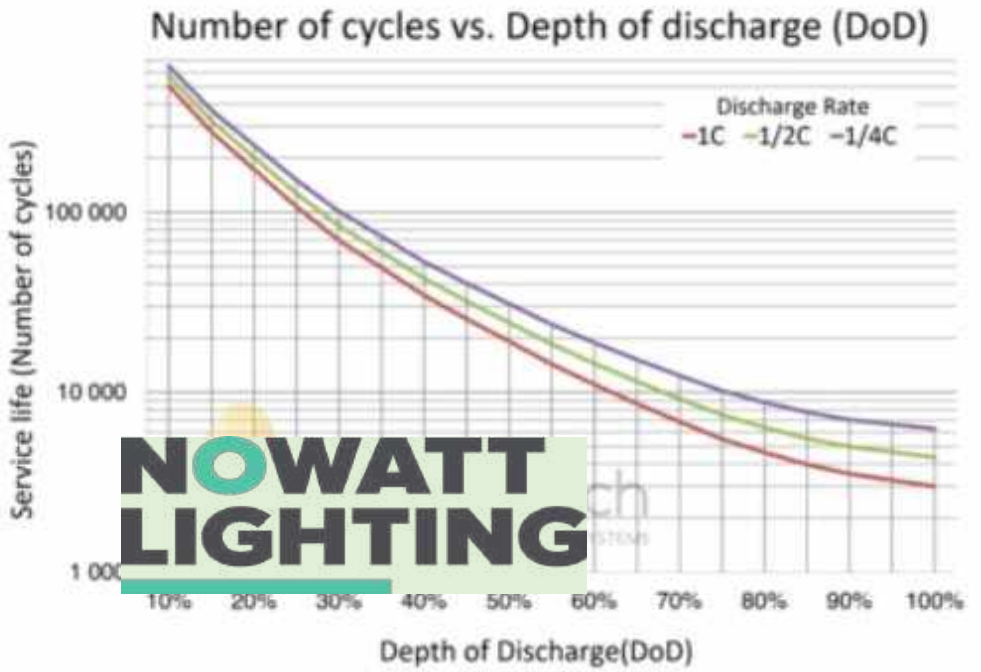
Lithium Iron Phosphate technology is that which allows the greatest number of charge / discharge cycles. That is why this technology is mainly adopted in stationary energy storage systems (self-consumption, Off-Grid, UPS, etc.) for applications requiring long life.

The actual number of cycles that can be performed depends on several factors:

- **Quality of Lithium Cell**
- Level of power in **C-Rate** (1C rate means full discharge or charge in 1 hour, 2C is the same but in half an hour)
- Depth of Discharge (DOD)
- Operational environment : temperature, humidity, etc.

Below chart shows the estimated number of cycles for our Lithium Iron Phosphate battery cells (LFP, LiFePO4) according to the discharge power and DOD figures. The test conditions are those of a laboratory (constant temperature of 25 ° C, constant charge and discharge power).

NOWATT LIGHTING



Lithium Iron Phosphate Life Cycle

In standard environment, and for 1C cycles, we can get from the chart the below life cycle estimation for LFP :

- 3 000 cycles at 100% DoD
- 4 500 cycles at 80% DoD
- 10 000 cycles at 60% DoD
- etc.

Nowatt works with oversized batteries. This decreases our DoD to 55% 9 months out of 12. This gives an expected lifespan of over 20 years

It should be noted that following the number of completed cycle, the batteries still have a nominal capacity > 80% of the original capacity.

Panneaux solaires SunPower Backcontact

	SunPower® Complete Confidence Panel Warranty	Conventional Solar Panel Warranties[6]
Product		
Panel	25 Years	10 Years
Power	**Performance Panels**	
Year 0	97%	97%
Yearly decline	0.6%	0.7%
Year 25	82.6%	80.2%
Service[7]		
Shipping – old panel	Yes	No[8]
Shipping – new panel	Yes	No[9]
Installation – new panel[10]	Yes	No

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Maintenance

During maintenance operations, you just have to unscrew the fixing screws and change the defective or damaged components *.
They are interconnected by easily removable waterproof automotive connectors.
* (Electronic card, batteries, solar modules)

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Advantages of solar

1 / The environmental impact of solar lighting.
No power consumption
No work, no ducts and cables with a high environmental impact

2 / The quality of the devices
Today, the products made in Europe illuminate all year round.
Guaranteed lighting 365 nights

3 / The aesthetics of the devices
Now there are real architectural lighting solutions

4 / The Nowatt Intellightgence
-Our devices are equipped with microprocessors and sensors allowing them to learn where they are installed
-They are connected individually or gathered in radio frequency allowing their piloting easily
-They can be interfaced with DMX solutions

NOWATT LIGHTING

INSTALLATION MANUAL

ROUND CRYSTAL STUDS

A. **Concrete floor**
   1 - Poured concrete, paving stones, slabs
   2 - Pouring concrete
B. **Coated soil**
C. **Facade**
D. **Gravel**
E. **Caillebottis**
F. **Large pebbles**
G. **Gabion**
H. **Flood zone**
I. **Tropical zone**

NOWATT LIGHTING

A. SUBSTRATE : POURED CONCRETE, PAVING STONES, SLABS

Step 1: Make the cavity with core drill diam: 130

Make a core hole of 130 mm in diameter for a minimum depth of 95 mm.

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Step 2: Remove the carrot, oterwise remove it with a perforator.
Then position the pedestal with a suction cup.

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Step 3: Régler la hauteur du plot

Pour a resting mortar (if rolling space) or fill with sand according to the following two configurations:

Flush stud:
H (mortar height) = D (coring depth) - 75mm

Stud protruding from the height of the collar:
H (mortar height) = D (core drilling depth) - 60mm

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Step 4: Adjust flush or horizontality

NOWATT LIGHTING

Step 5: Fill the vertical cavity up to 2 cm before the finished floor (sand or mortar). Pack well.

At the end of this step if you fear vandalism you can make a silicone or polyurethane-based gasket that will bond the stud to the cavity.

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Step 6: Make finishing mortar (rather liquid, match the sand to the color of the ground)

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Step 7: Clean, let dry the gasket 24 hours.
That’s it, next.

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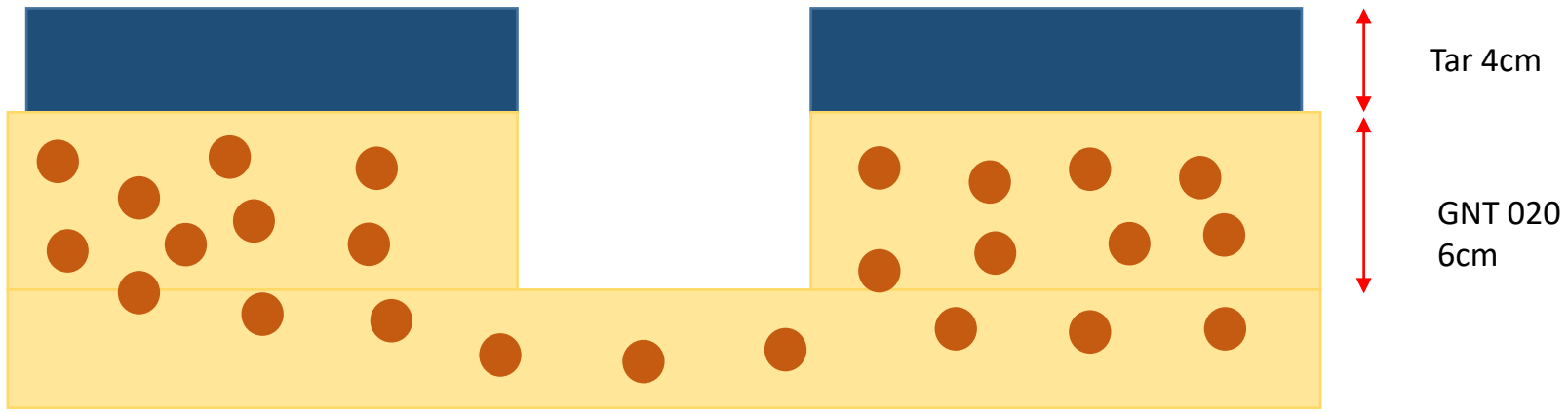
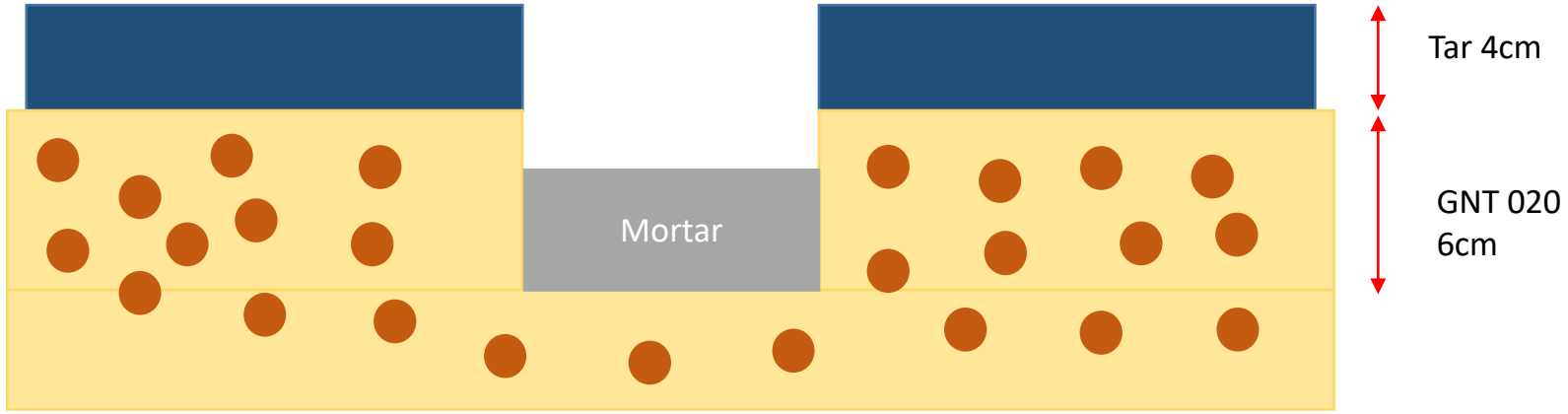
B. SUBSTRATES: COATED SOIL, BITUMEN, ASFALT

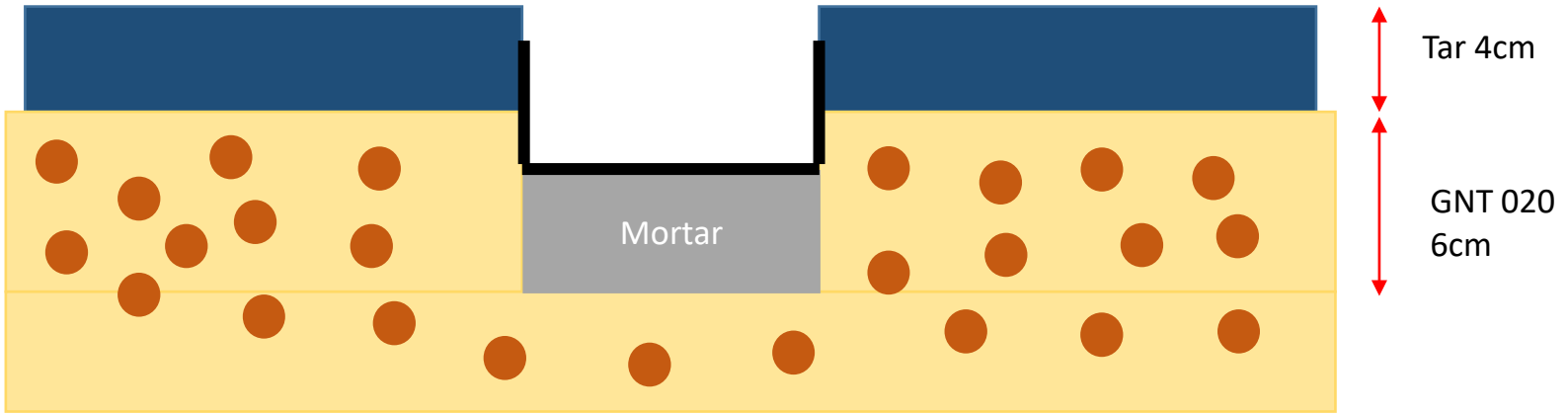
Step 1: Make a 122/130 mm diameter coring.
90 mm depth if flush stud.



Step 2: Pour a resting mortar over 1 to 1,5 cm.
Make a template to reproduce it easily.



Step 3: apply the primer



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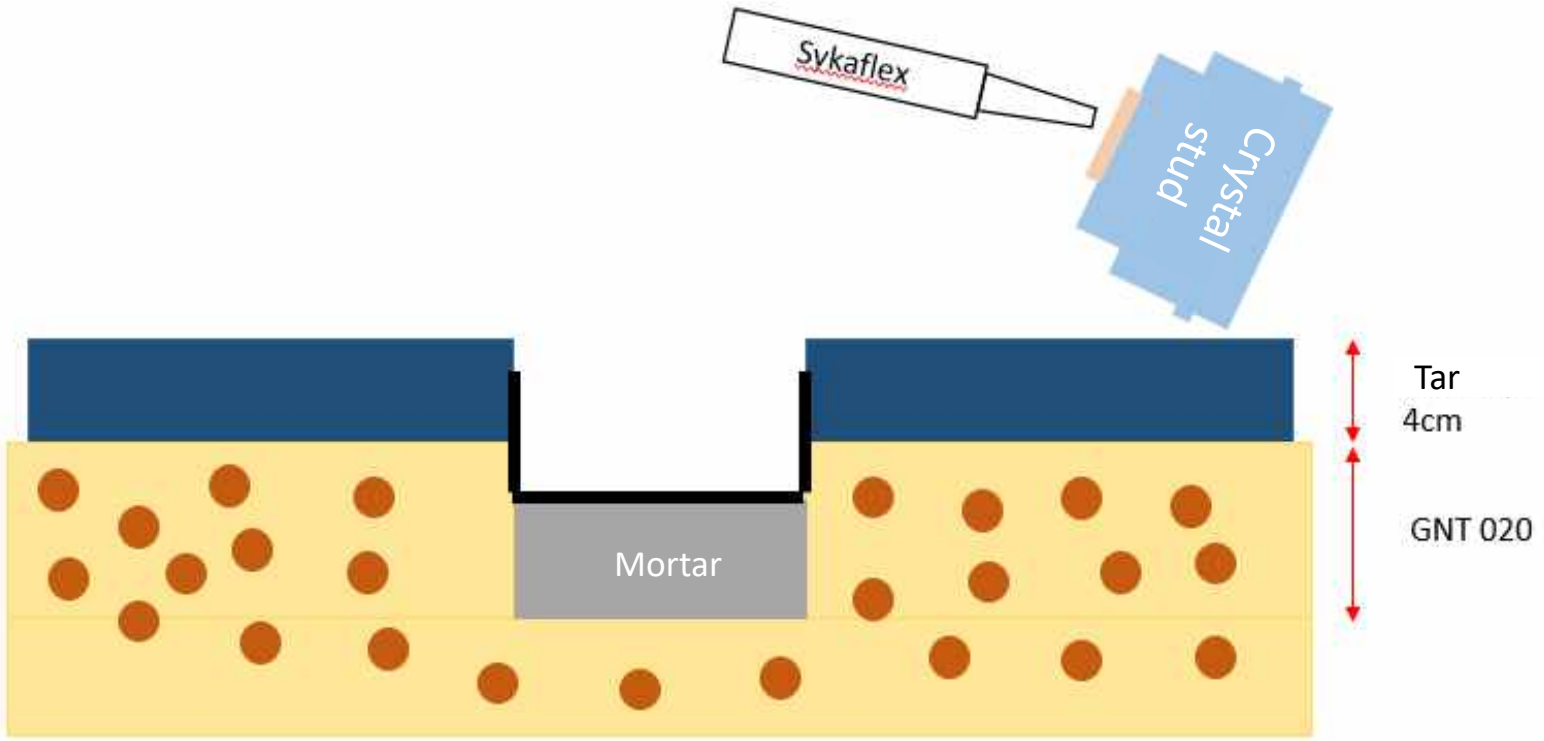
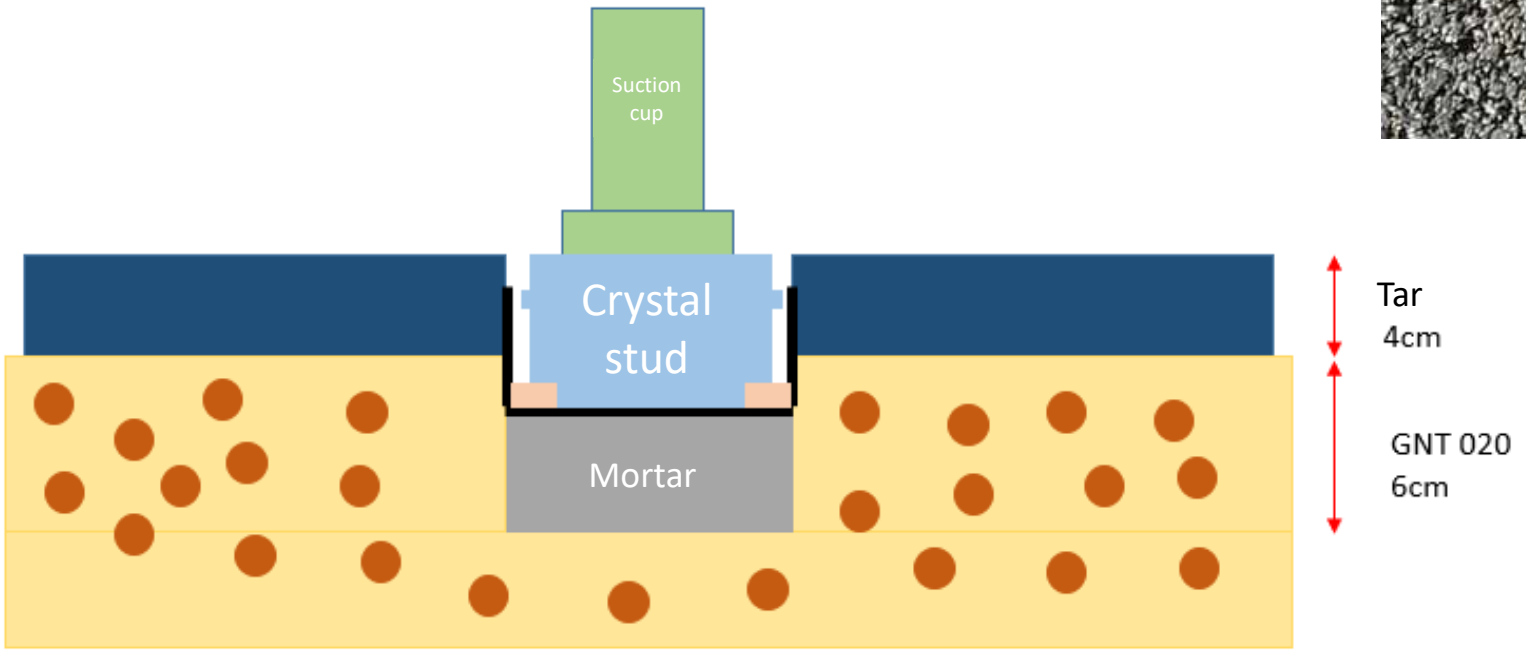
Step 4: Apply Sykaflex on the bottom of the stud
Only on the metal background.



Step 5: Set the stud with a suction cup.



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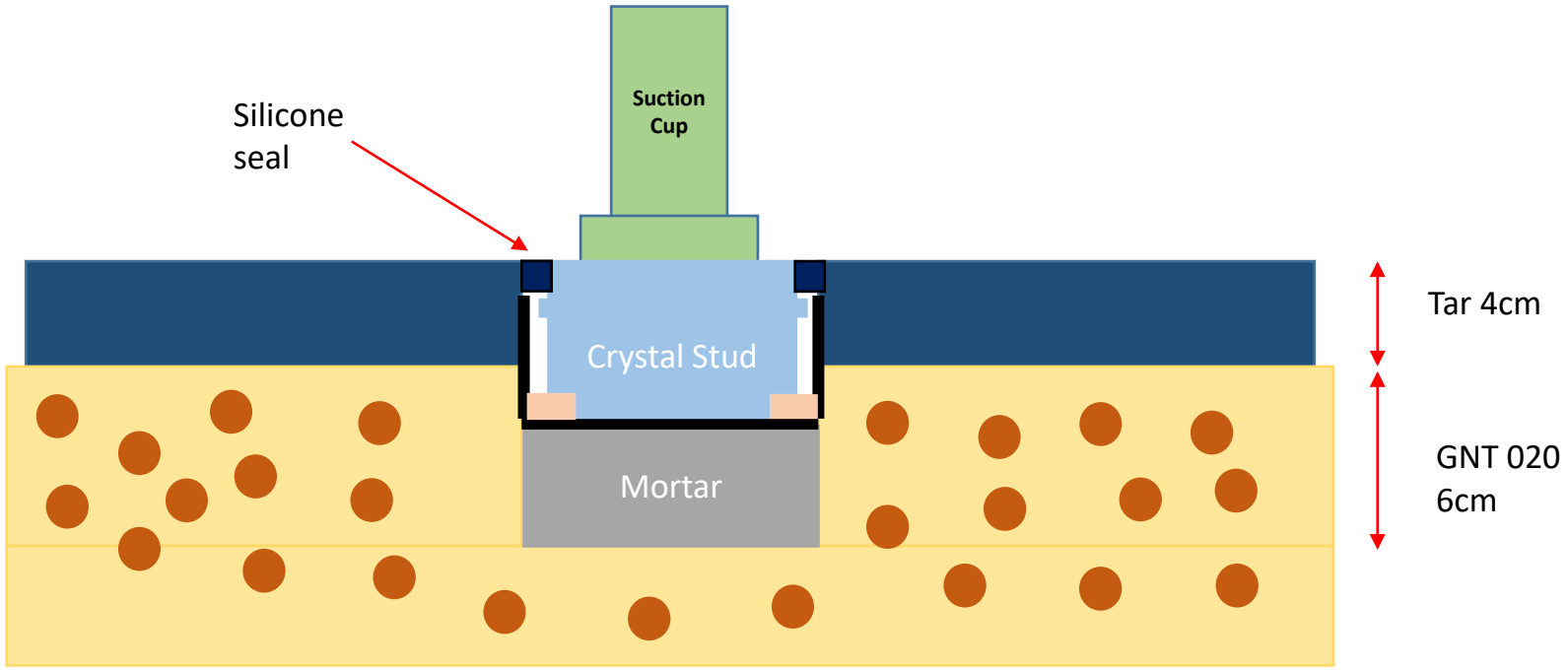
Step 6: Make a finishing silicone seal (matching the color of the asphalt)



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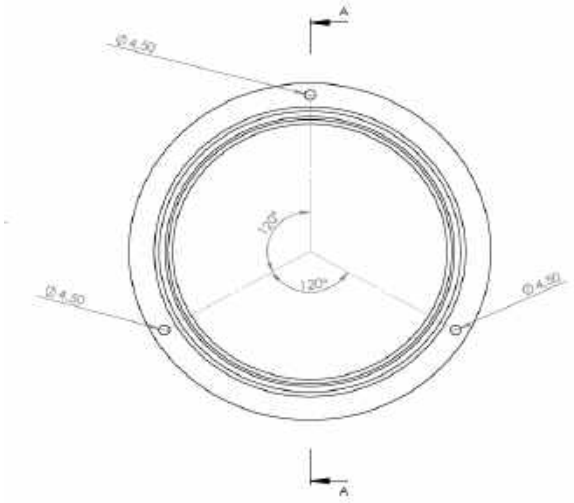
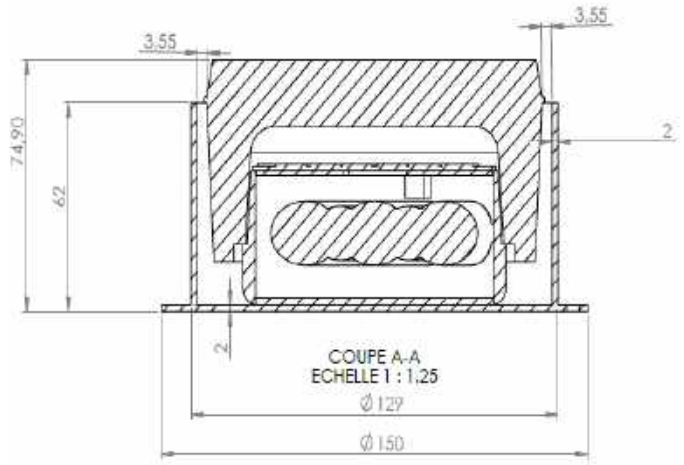
C. FIXING DEVICE – SURFACE FACADE

Glass protruding
Height: 62 mm



Flush glass
Height: 75 mm



Stainless steel fixing for PLR stud
Low flange
Maintained by 3 M4 screws

Two possible heights:
Tube height: 62 mm
Tube height: 75 mm

Soil type:
Gravel
Stabilized

This device is screwed onto concrete blocks

Fixing the stud in the device

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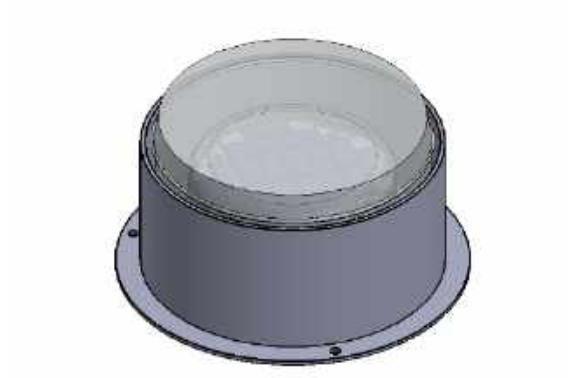
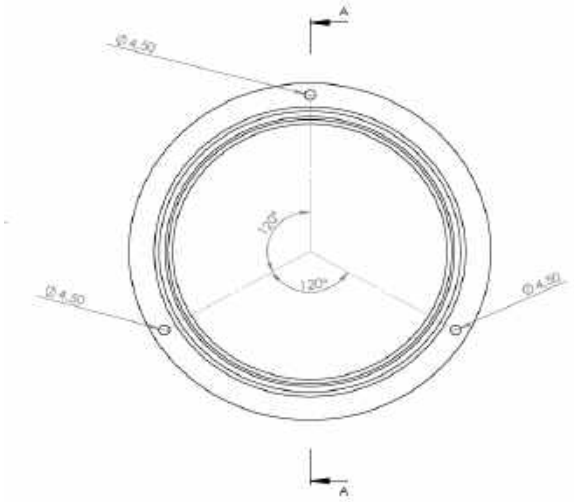
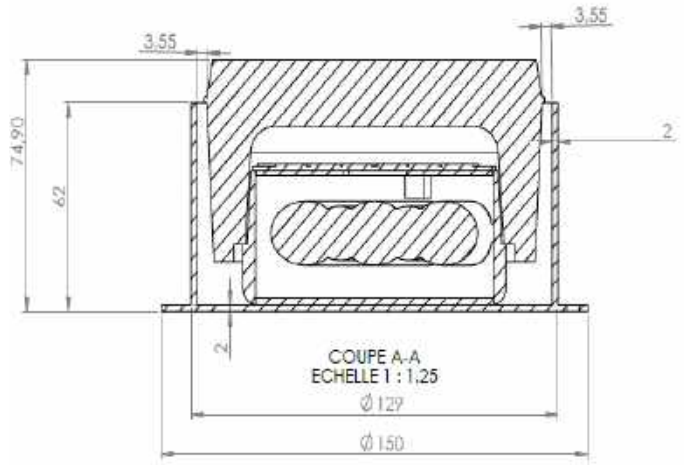
D. FIXING DEVICE – GRAVEL GROUND

Glass protruding
Height: 62 mm





Flush glass
Height: 75 mm



Stainless steel fixing for PLR stud
Low flange
Maintained by 3 M4 screws

Two possible heights:
Tube height: 62 mm
Tube height: 75 mm

Soil type:
Gravel
Stabilized

This device is screwed onto concrete blocks

Fixing the stud in the device

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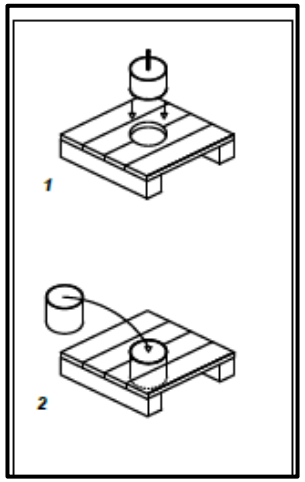
E. FIXING DEVICE - CAILLEBOTIS

Glass protruding
Height: 62 mm

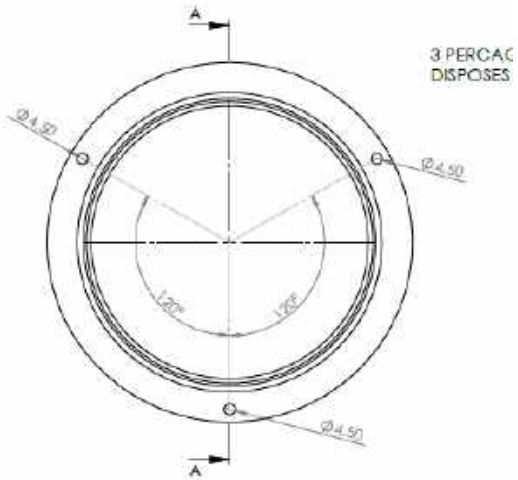


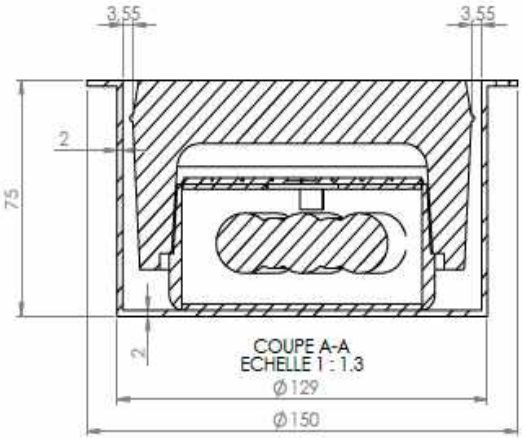
Stainless steel fixing for PLR stud
Low flange
Maintained by 3 M4 screws

Two possible heights:
Tube height: 62 mm
Tube height: 75 mm

Fixing the stud in the device

Flush glass
Height: 75 mm





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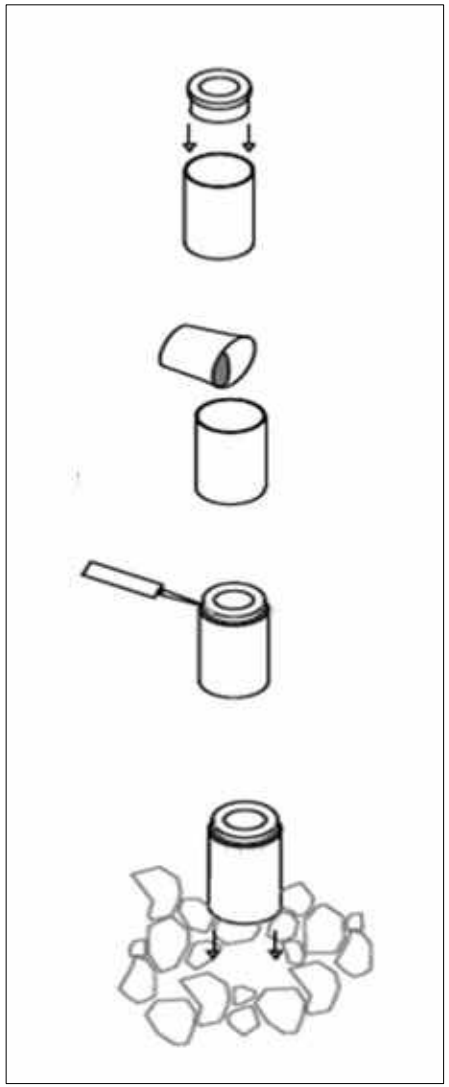
F. FIXING DEVICES – LARGE PEBBLES



1– Use 140 mm PVC tubes. Cut lengths equal to the depth of the installation of the rollers.

2- Check that your stud is in OFF mode. Then install it at the end of the tube.

3- Fill the PVC tube with mortar or concrete.

4- Pour the polyurethane mastic of the color of your choice (white, gray or black), ref. : PU BOND 40 ATE VITRATEC, between the stud and the PVC tube. Smooth the gasket using a plastic spatula previously moistened.

Drying time = 20mins

5- Integrate the tube and the stud in the stones of the gabion.
Then put the stud in ON mode according to the instructions.

The material needed for the installation: - PVC tube
- Resting mortar

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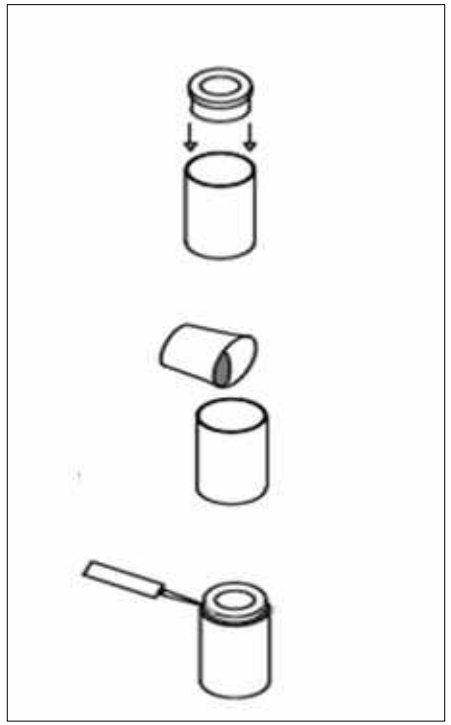
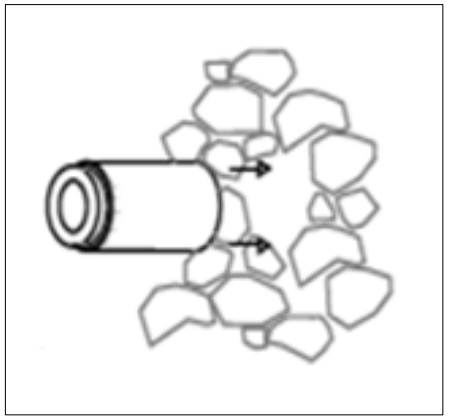
G. FIXING DEVICES - GABION





1– Use 140 mm PVC tubes. Cut lengths equal to the depth of the installation of the rollers.

2- Check that your stud is in OFF mode. Then install it at the end of the tube.

3- Fill the PVC tube with mortar or concrete.

4- Pour the polyurethane mastic of the color of your choice (white, gray or black), ref. : PU BOND 40 ATE VITRATEC, between the stud and the PVC tube. Smooth the gasket using a plastic spatula previously moistened.

Drying time = 20mins

5- Integrate the tube and the stud in the stones of the gabion.
Then put the stud in ON mode according to the instructions.

The material needed for the installation: - PVC tube
- Resting mortar

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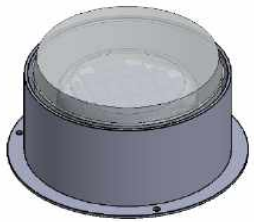
H. FLOOD ZONES



For situations where the studs could be covered with water for several hours a day, we recommend:

Provide drainage for the cavity.

And use our stainless steel fastening device with or without a collar and fill the device with polyurethane.

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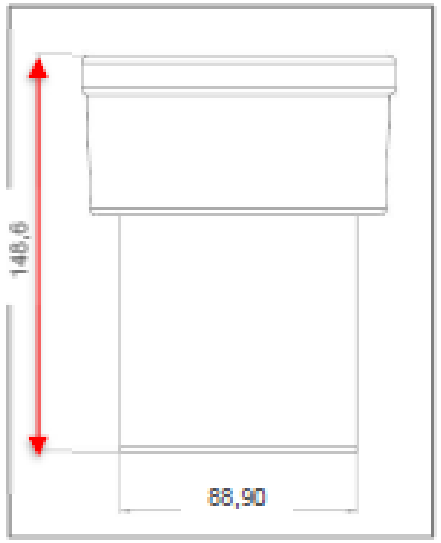
I. TROPICAL ZONES

We suggest the use of our tropicalized stud.



Outdoor LED marking device RGB + W
Led Nichia RGB NSSM124 +
Led Luxeon 3014 white 4000K IRC 80

15 mm thick tempered glass frame 4500 mAh LiFePO4 battery integrated in a stainless steel tube with thermal insulation of the battery
Custom Sunpower Back Contact solar panel with MPPT technology

Algorithmic management by microprocessor guaranteeing:
- **charging management and calculation of optimum power all year round, taking into account the latitude, the season and the weather conditions**
- **management of battery usage temperatures for increased lifespan**

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BRIEVE STORY OF SHADE

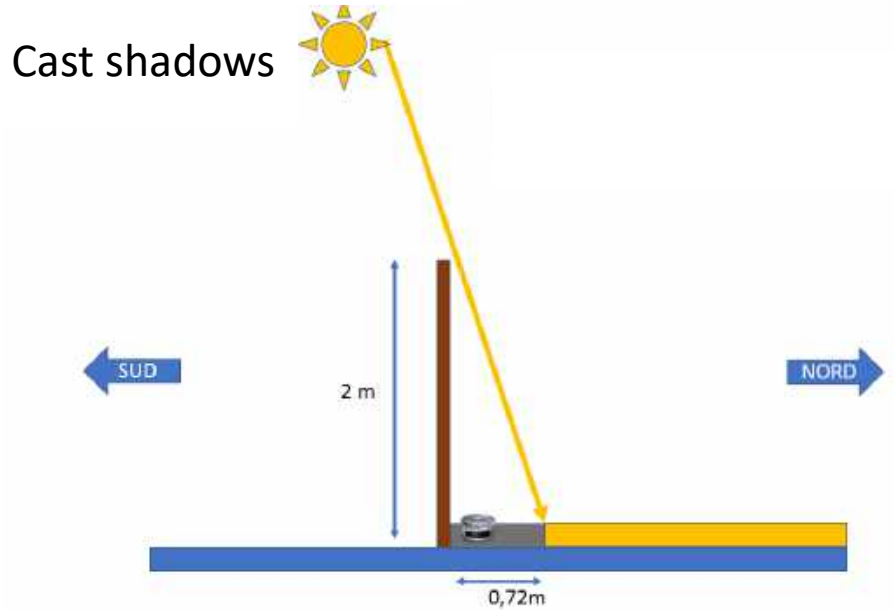
Main characteristic of a project with solar studs:

The studs are in most cases placed on the ground. They can be in the shade more easily than a solar device installed in height….

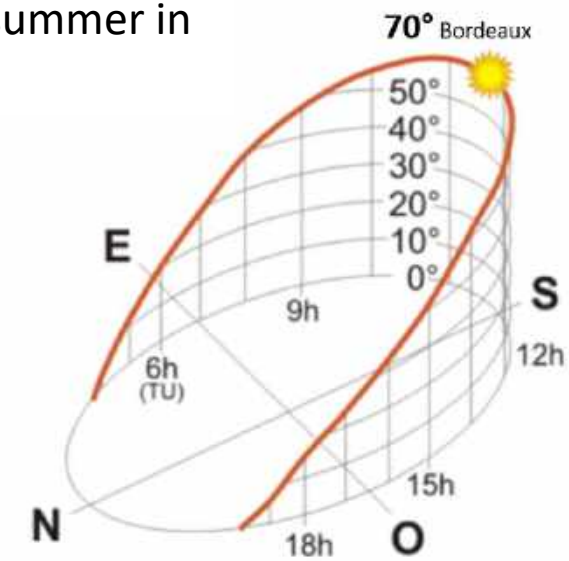
We must therefore assess the possible shade areas and estimate their duration.

For this, it is necessary to know the apparent movements of the sun and the resulting cast shadows.

Cast shadows



Apparent movement of the sun in summer in France



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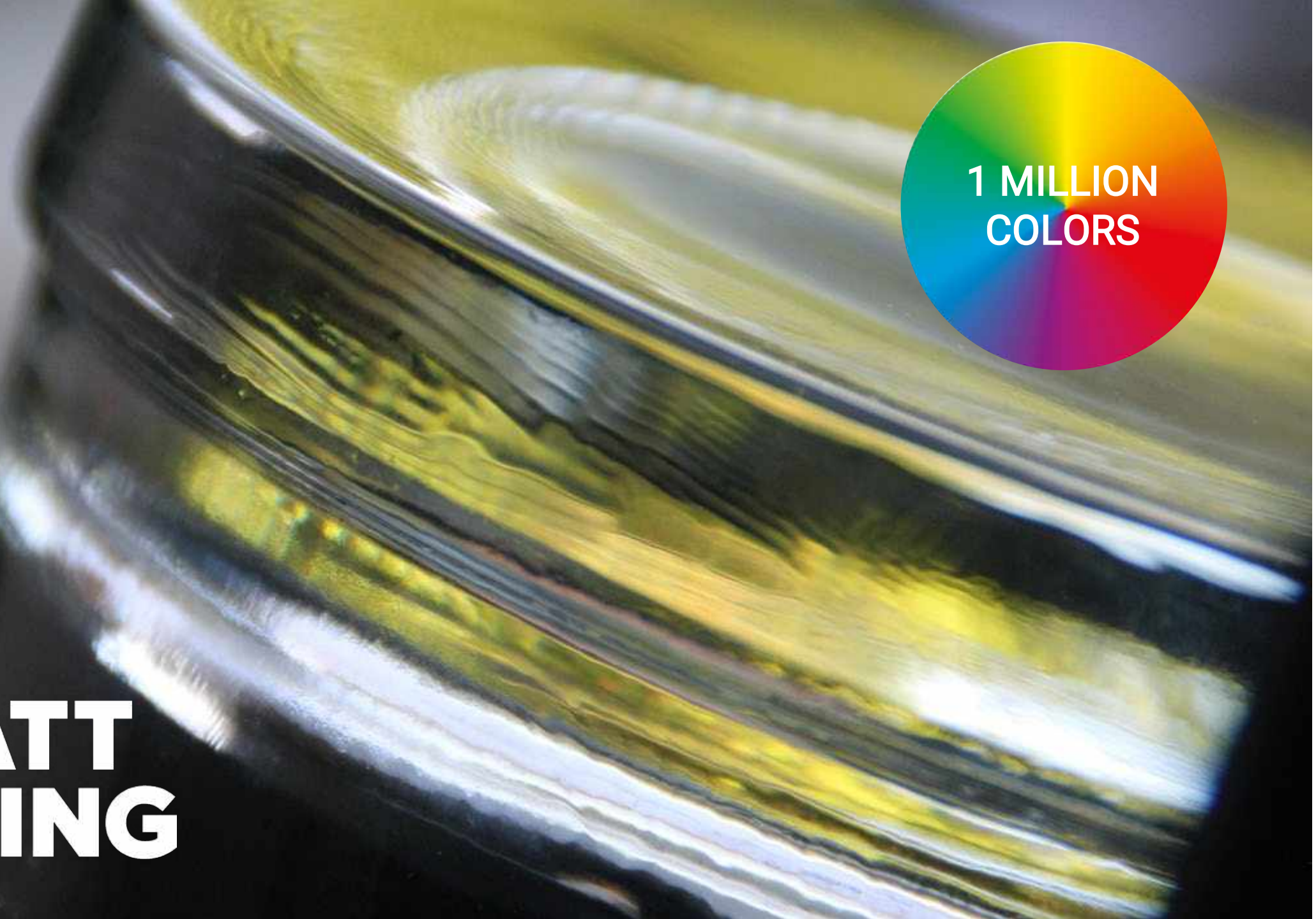

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