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## THE LED PINBALL ISSUE - N°1

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LED intro  
Spock & O'Leaf  
The pinball story  
Pinball artist David Christensen  
Lotis tubed  
Projects  
Sales network

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# LEADING THE LED STORY

By consistently creating clever, amazing and energy-friendly lighting solutions, Modular is constantly pushing the boundaries of architectural lighting. With the new cutting-edge LED technology, Modular continues to set this trend. Beautifully effective and energy efficient, the current Modular LED portfolio offers a wide range of possibilities for lighting whatever the application. To differentiate our offering we have established four segments.

## ORIENTATION

**Luminous flux**  
0 - 500lm

**Color temperature**  
2700K / 3000K

As the name suggests, these LED engines generate sufficient light for guidance in specific spaces, such as stairway, hallway or decorative lighting. The result is a very soft lighting.

## ACCENT

**Luminous flux**  
450 - 1500lm

**Color temperature**  
3000K / 4000K / 5600K

These LED engines are mainly used for functional reasons. To accentuate interior details such as paintings. E.g. functional home lighting in the kitchen, object lighting, exclusive shop lighting, ...



## DYNAMIC

**Luminous flux**  
0 - 5000lm

**Color temperature**  
Tunable white and RGB

Lighting designers are often looking for solutions to create an optimal light experience by changing the feeling or overall physical dynamic of the light. The LED engines (tunable white and RGB) can be tuned accordingly.

## GENERAL

**Luminous flux**  
1000 - 5000lm

**Color temperature**  
3000K / 4000K

These LED engines are mostly used as the main light source in specific rooms or spaces. E.g. in large shops, offices, airports,...



# LED PRODUCTS

overview

continuous upgrading our technology

With 60% of our product range already available in one or more LED versions, Modular is leading the LED story.



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Discover our full product range of architectural lighting solutions on [www.supermodular.com](http://www.supermodular.com)



Despite the minimal height of the Spock, all of the fixtures are hidden away invisibly. The thin LED housing, with a cross-section of barely 12.5 mm, contains 16 high-quality LEDs, aligned flat towards the outer edge of the circumference so that they are concealed from the eye. Using a reflector and redirecting plate, the light is diverted and focused via a lens into a powerful beam with a beam angle of 32 or 56 degrees. For the developers it was very important for the light disc to belong to the so-called "Exempt Group": the highest safety class, which means that the eye (even with lengthy exposure) can never ever be damaged. In other words, the LED disc satisfies the standards in this class in contrast to increasingly inexpensive models in stores that are not so strict with safety instructions and all of the associated consequences.

An advantage of the large surface of the disc enables optimum cooling for the LEDs, ensuring a long life of 50,000 hours. The LED engine is fitted with a built-in thermal sensor. When it exceeds a certain temperature under extreme conditions, the Spock is dimmed, so that durability is guaranteed even under exceptional circumstances.



**SPOCK**  
design & technology

innovative use

*Modular would not be Modular if it did not combine the introduction of a full range of LEDs with a new and unparalleled development. May we introduce the SPOCK: a design fitting with a flat LED disc, developed with the help of young designers Couvreur & Devos. From this day on ecology, technology and aesthetics go hand in hand.*

Though the Copenhagen summit failed to deliver the goods, the realization that we have to take urgent action to save our blue planet was brought home to most of the world's population. The automotive, energy and raw materials industries have all put green thinking at the top of their agendas. However, an 'eco-product' is only of interest to the broad public if the ordinary, 'polluting' product is replaced by a device that can rival it in performance. The green car will only make its breakthrough when it is as powerful and durable as the classic internal combustion engine.

We hear the same story from a lot of consumers about eco-friendly lights: though they have been on the market for a while, the green alternatives have never matched the color temperature

of traditional halogen or incandescent bulbs. Until now, that is. Modular has applied the very latest technology in an ingenious design.

We now introduce you to the Spock: the very first design fitting with a flat LED disc.

**Technology**  
*Invisibly ingenious*

The LED technology and the design are the result of years of research.

With its revolutionary inner works, the LED disc which, thanks to its asymmetrical hinge joint, can be turned horizontally through 359° and vertically through -10/+45°, may turn out to be the first valid substitute for the familiar halogen spotlight.

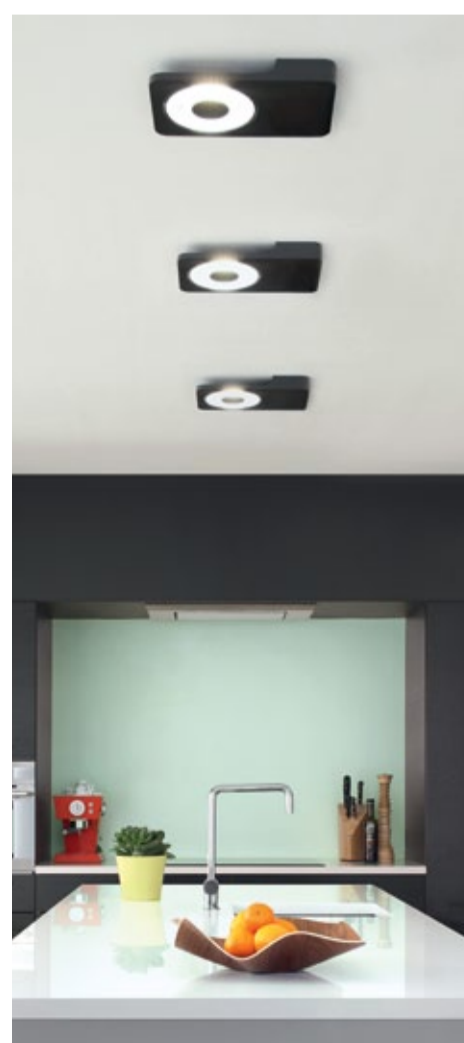
**Design**  
*Sleek intelligence*

A technical revolution on the inside does not mean sacrificing the beauty of the outside. Quite the reverse. When it comes to design, Modular intends to stay far ahead of its time, now and in the future. Precisely because the LED disc redraws the borders of light, Modular's R&D department went looking for a fitting that could take the ingenious disc to an even higher level. Along with the young creative duo Couvreur & Devos, the R&D lab came up with a minimalist cast aluminium fitting, finished with a tactile powder coating that accentuates its light technology.

This striking but never obtrusive fitting will suit every interior environment, whether on the ceiling, the wall or trackmounted. With its meticulous design, the Spock does not leave a single wire showing: neither on the rotating LED disc incorporated into an attractive, chrome-plated ring hinge, nor at the mains connection at the base of the fitting. The Spock shines through with an ingenious design refined to the last detail.

**Flexibility**  
*Hot practicality*

Should individual Spocks be positioned horizontally on a wall in a row, or preferably on the ceiling, with or without a track? Anything goes. This revolutionary comes in three versions, available in black or white:



'foot', 'track' and 'wall'. Whatever type of installation is used, the base of the fitting is fixed close to the surface so that all elements are neatly concealed. In either white or black, any version of this light of the future looks good in either contemporary or classic surroundings and in a professional or home environment, as well as being ideal for either ambient or task lighting.

The Spock is available in two colour temperatures: a 3,000-Kelvin (warm white) and a 4,000-Kelvin (neutral white) model. The specifications of these two high-tech units thus also comply with modern lighting standards.

### Eco-friendliness

*Green lights*

The Spock is the first valid alternative on the market to energy-unfriendly

halogen. It generates a luminous intensity up to 1,000 lumens, which is comparable with the well-known classic halogen spot at between 50 and 75 watts. Where the familiar home or office light uses 75 watts, the Spock goes three times better with a maximum consumption of 22 watts, which can only benefit our environment and our energy bills. Due to rapid development it will even be possible to lower the LED disc's consumption further in the future.

Where the traditional halogen spot gives up the ghost after 5,000 hours, the Spock goes on burning for no fewer than 50,000 hours (4,166 12-hour days).

In other words, the Spock has the same luminous intensity as the earlier conventional halogen light, but delivers benefits for our planet and our wallets in terms of both consumption and longevity.

'THE SPOCK GOES THREE TIMES BETTER WITH A MAXIMUM CONSUMPTION OF 22 WATTS, WHICH CAN ONLY BENEFIT OUR ENVIRONMENT AND OUR ENERGY BILLS.'



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**O'LEAF**  
OLED light design

pushing the boundaries

*Modular keeps on stretching its boundaries. Within the broad spectrum of possibilities that LED offered, the OLED intrigued our research and development department. OLED, a totally different form of light source deserves a different way of designing. Just like with Spock. The Modular designers together with two young designers Couvreur and Devos needed to outperform themselves to create a fixture with OLED.*

### Technology

*Unconventional light technology*

OLED is an organic LED. OLEDs are created using organic semiconductors (like those for organic solar cells), while LEDs are built in crystals from an inorganic material. There are other visible differences: Unusual appearance. The most important and challenging one is the thin flat nature of OLEDs. Its flat nature offers possibilities for an unconventional use of light source into luminaires.

Soft glowing clouds of light. The extremely flat panel emits light over the total surface. The illumination they produce is calm, diffuse and more glowing. OLED will never replace LED. They are complementing one another. LED is used both in orientation, accent or general lighting. OLED, in its current development stage, is mostly used for decorative lighting. The two, however, complement each other very well, providing different options in a new type of digital lighting that

is becoming increasingly important in an energy-conscious world. Who knows what the OLED will bring in the future?

### Design

*Natural intelligence*

Optimizing the different form of the light source was the briefing. Not an easy task for the designers. Inspired by the organic DNA of the light source, they took it one step further by using the natural organic form and nature into the fixture. The fixture symbolizes an elegant flower with the wafer-thin OLED as the flower petal on a slim stalk. The O'Leaf was born. The O refers to the technology and the leaf to the natural shape of the fixture.

The O'Leaf exists in white and black version and has multiples possibilities of integrating it in your interior. O'Leaf family contains a ceiling (with modupoints), a wall, a foot and a desk version. Standalone, O'Leaf is an eye catcher, a design object. Presenting it in clusters you create your own flower lighting garden. Why not bringing your garden into your home?



# History of **PINBALL**

Pinball is a coin-operated arcade game where players score points by shooting metal balls on a inclined playfield, hitting special targets, and avoiding losing their balls.

FIRST MECHANICAL GAMES AS 'BAFFLE BALL'



FIRST GAME WITH A SPRING MECHANISM



1750

MONTEQUE REDGAVE & BAGATELLE



1871

POWERED MACHINES



1933



THE DROP TARGET WAS INVENTED



BUMPERS, FLIPPERS AND SCOREBOARDS



INTRODUCING OF DIGITAL SCORING BOARDS



THE FIRST TILT MECHANISM



THE FUTURE OF PINBALL



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## DAVID CHRISTENSEN

Pinball machine artist

*David G. Christensen (Mad Dog Dave) is 'THE' pinnacle of pinball artists. As a master illustrator artist, his ability and imagination sets the highest standard of vintage 'flipperkast-pinball' art. While the mechanics of pinball were developed by engineers, the illustrations were handled by graphic artists. Without computer-techniques we can call it 'real drawing'. These pages are a great example of his fine art of line illustration and shows the back glass and the playing field of some machine.*

'Mad Dog Dave' started his career with 'fireball' in 1971 and ending his career at Bally with its sequel, 'Fireball 2' in 1980. Dave Christensen is certainly one of the most notable designers of pinball machine graphics. He began his career solely as a technical artist. But after presenting the company with pinball design work created on the side, he was soon asked to produce new machine graphics, eventually working exclusively on art and design.

The first artist to include his signature on the play field, calling himself 'Mad Dog Dave'. Christensen's art is provocative in its use of unconventional and risqué motifs. His engaging and distinctive style exemplifies the machines as of their era. Christensen's work is brash, sexy and playful and highlights his penchant for comic book themes and titillating portraits of women. Also characteristic of his work are encoded and ribald references that were regularly included in detailed backgrounds.



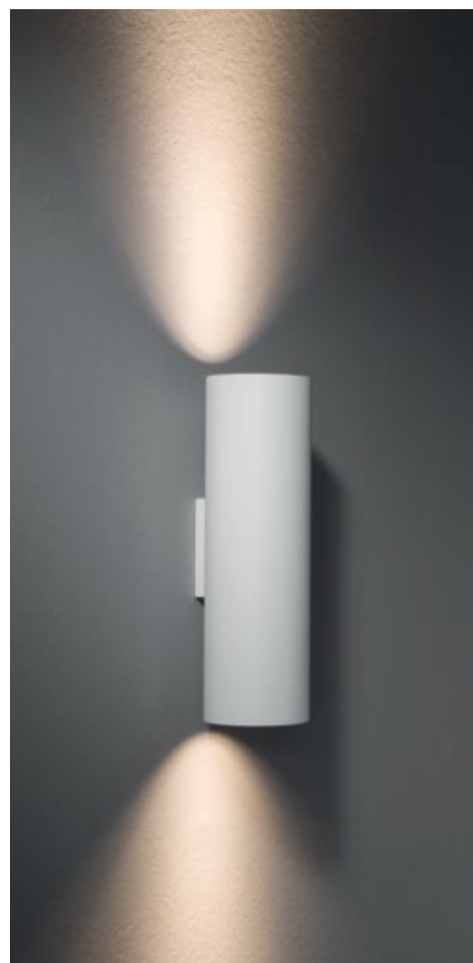




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Lotis tubed wall 2x **NEW**



Lotis tubed wall 1x **NEW**



Lotis tubed suspension **NEW**



Lotis tubed surface XL



Lotis tubed surface / recessed



**Lotis tubed Family expansion**

The LOTIS family has been a top performer within the extensive range of Modular Lighting Instruments for years. With the introduction of the **Lotis tubed** almost 2 years ago, the Lotis became even more popular and interesting.

The newcomers **Lotis tubed wall** and the **Lotis tubed suspension** make the family complete. Lotis tubed wall and suspension are truly Modular products: minimalist, pure, unobtrusive and subtle in its use. Lotis tubed is a design by the Modular Design Team.

**Colour interplay**

# MODULO

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The deeply recessed and quasi-invisible light source that is the hallmark of the Lotis has been maintained in the Lotis tubed. Furthermore, the colour interplay between the inner and outer side of the units provides rich gradations and beautiful contrasts. The anodised golden interior also makes the lamp colour slightly more yellow and therefore warmer.



Starring: Lotis tubed surface, Square moon mirror  
Project: private residence, Hunters Hill (AU)



LOTIS  
tubed

game's on

 **MODULO**   
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## RANGE DETAILS

### colours available

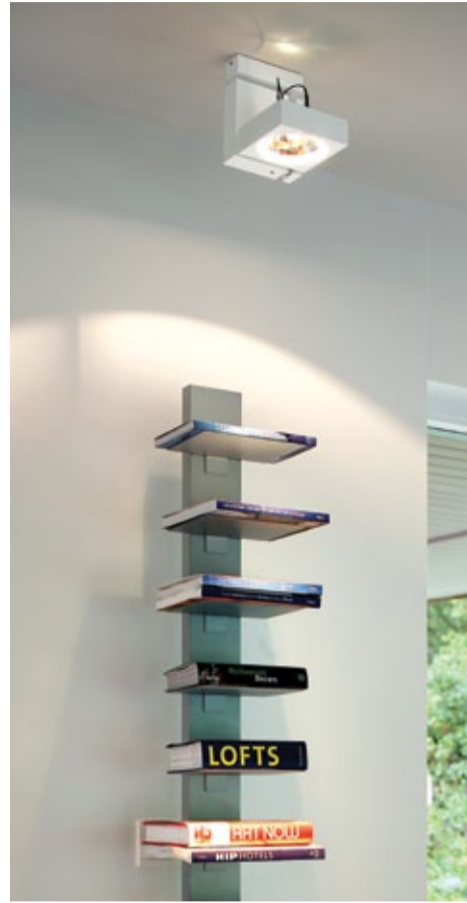
black struc - gold interior  
black struc - white struc interior  
white struc - black interior  
white struc - gold interior  
white struc - white struc interior

### light sources

LED <350lm (surface, suspension, wall)  
LED <900lm (surface XL, suspension)  
ES50 (surface, suspension, wall)  
MR16 (surface, recessed)  
HIPAR-C16 (recessed)

## GETTING INSPIRED

Modular Lighting Instruments delivers innovative lighting projects worldwide. Discover the endless possibilities of our lighting solutions!



Starring: Every square  
Interior architect: Nanne Schuiveling  
Interieur advies & ontwerp bureau  
Project: private residence, Oisterwijk (NL)  
Photo: Filip Dujardin



Starring: Downnut, Nomad minimal desk  
Interior architect: Intérieur Bauwens  
Project: private residence (LU)  
Photo: Antoine Huot



Starring: Bolster recessed, SL mini, Nomad linestra  
Interior architect: Nanne Schuiveling Interieur advies & ontwerp bureau  
Project: private residence, Oisterwijk (NL)  
Photo: Filip Dujardin



Starring: Nomad, Slide  
Architect: Bedaux De Brouwer Architecten  
Project: private residence, Kamperland (NL)  
Photo: Filip Dujardin



Starring: SL149, Mini-multami(e)  
Interior architect: Intérieur Bauwens  
Project: private residence (LU)  
Photo: Antoine Huot

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Starring: Halfpipe  
Project: private residence, Hunters Hill (AU)



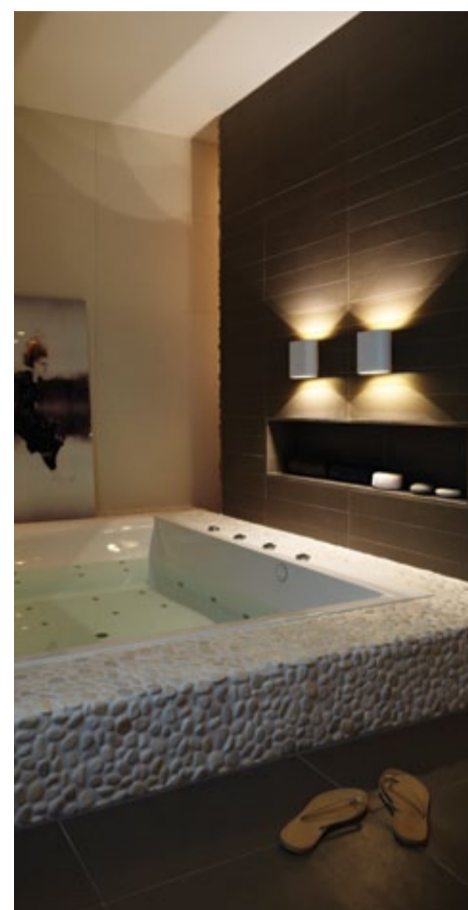
Starring: Multiple  
Interior architect: Intérieur Bauwens  
Project: private residence, (LU)  
Photo: Antoine Huot



Starring: Nomad linestra  
Interior architect: Fokkema architecten  
Project: private residence, Noord-Holland (NL)  
Photo: Aemelie Deelder



Starring: SL mini  
Interior architect: Waterproof bathrooms  
Project: private residence, Amsterdam (NL)  
Photo: Rogier Bos



Starring: Duell Wall  
Interior architect: osirishertman.com  
Project: private residence, Amsterdam (NL)  
Photo: kasiagatkowska.com



Starring: A(r)mor  
Interior architect: Nanne Schuiveling Interieur advies & ontwerp bureau  
Project: private residence, Oisterwijk (NL)  
Photo: Filip Dujardin



Starring: Spock  
Project: private residence, Torhout (BE)  
Photo: Filip Dujardin



Starring: 45only  
Project: Eltra Engineering, Tilburg (NL)  
Photo: Filip Dujardin

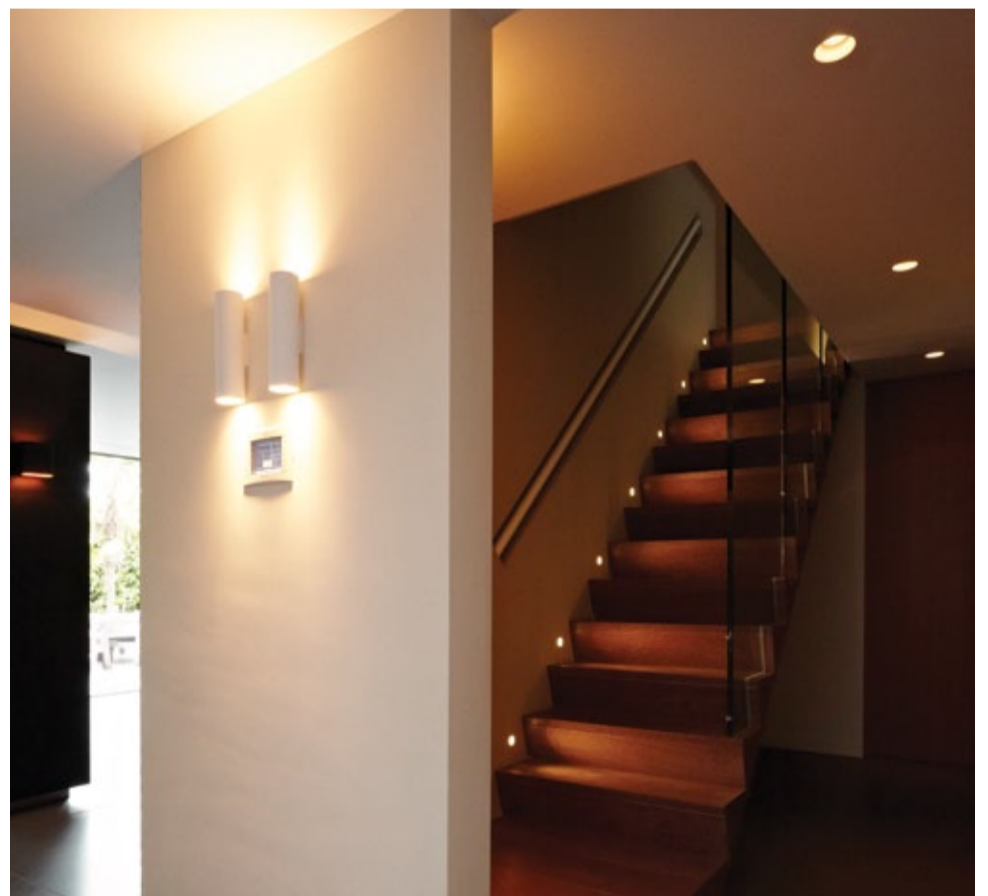


Starring: SL75  
Project: Eltra Engineering, Tilburg (NL)  
Photo: Filip Dujardin

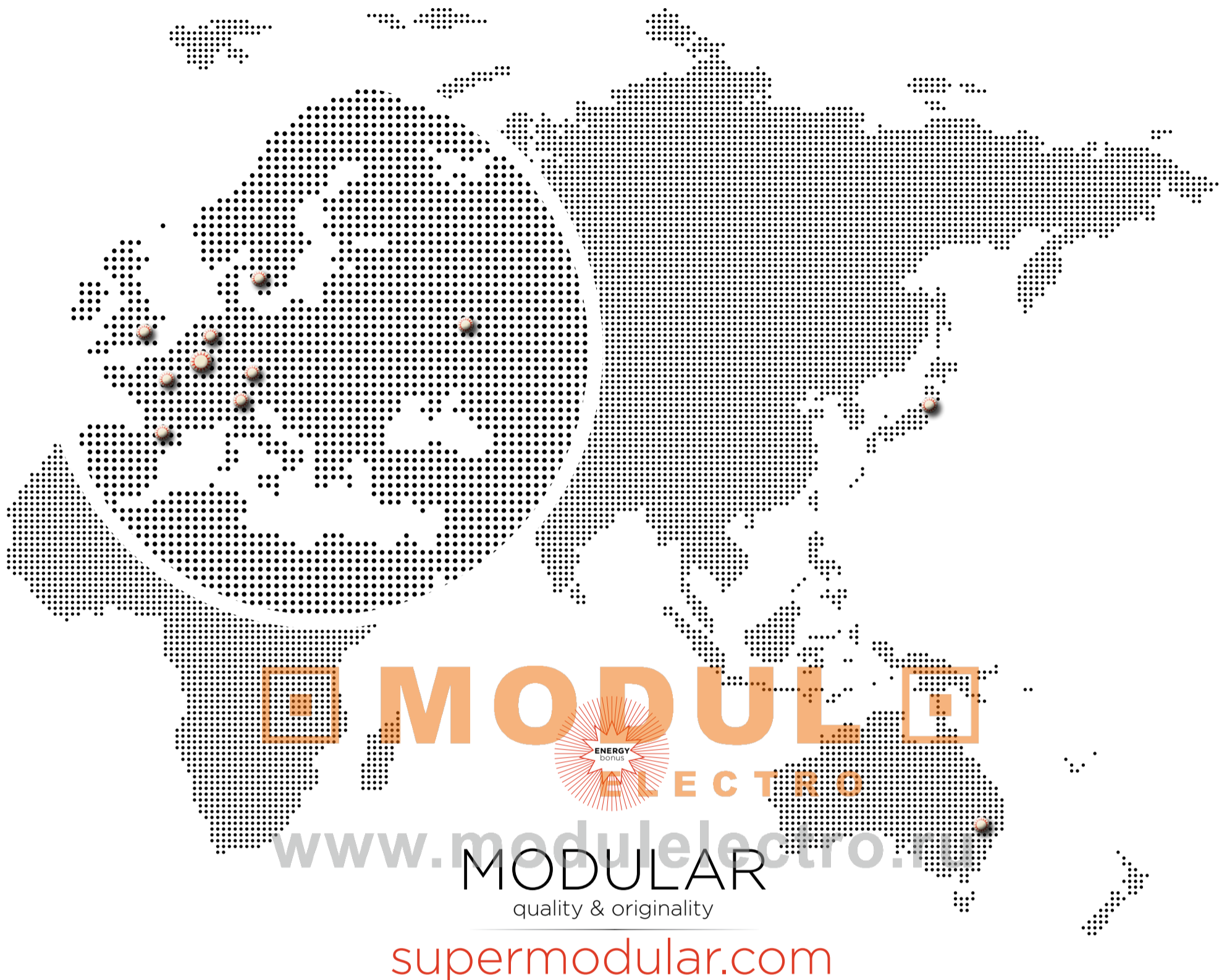
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Starring: Bolster, Lotis  
Interior architect: Nanne Schuiveling Interieur advies & ontwerp bureau  
Project: private residence, Oisterwijk (NL)  
Photo: Filip Dujardin



Starring: Nude, Lotis  
Interior architect: osirishertman.com  
Project: private residence, Amsterdam (NL)  
Photo: kasiagatkowska.com



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