

DOBPLER LED SYSTEM

Null Ohm presents a design by Stig Skjelvik

RESPONDENT ELEMENTS



null ohm

ELECTRONICS HARD TO RESIST

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A light system with the Light Emitting Diode's great energy saving potential with the added savings made possible by "light on demand" functionality.

Not as a primitive on/off experience, but gradually and smooth, increasing the amount of lights exactly to the amount of people, their movements and speed.

The result is not only maximum energy efficiency, robust and less demanding in regards of maintenance, costs etc. Its a artistic experience of play and fun into the public space, with the bonus of creating the experience of a safer local environment.

Prototype installation done for the Norwegian Snøhetta Architects.

Later tuning of the system has created a clean effect of silhouettes for both day and nigh time, now running at its fourth year:

Project in 2006, the City of Sandnes, Norway. As part of European City of Culture.



Implementation in architecture

The envelope protecting the system from the environment may be built in several designs.

If there is an existing glass wall, the system may be implemented indoors simply by hanging interconnected rows of modules behind it. The suited opal effect on the light may then be achieved by adding an opal plastic film on the glass wall. An alternative to the opal effect is a bright effect created by using black or another dark color on the modules, with clear glass in front.

A standard system is developed for water and dust-tight implementation and reduction of working hours on site. Made of MDF boards with acrylic or hardened safety glass. Framed by aluminium.

Framed modules:

4 mm Perspex system

100 cm wide modules with desired height, -like 240-300 cm.

8 mm Safety glass system

The weight and strength of the glass makes it necessary to make the modules smaller and divided in two rows. Sized 100 cm wide and 130 cm height.

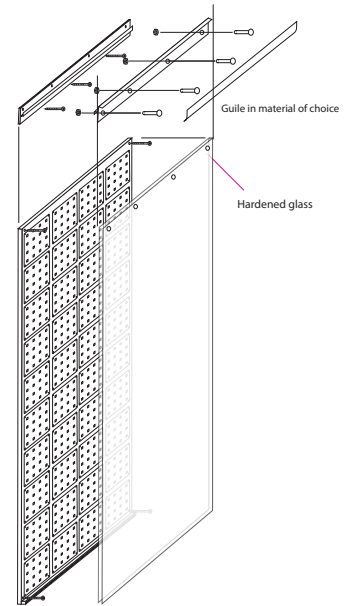
Basic back modules

Available in different sizes made of MDF for construction using existing glass, or local supplier. A moisture tight version made by water-resistant MDF and thin clear acrylic is also available to use in demanding outdoor environment with extra construction done on site.

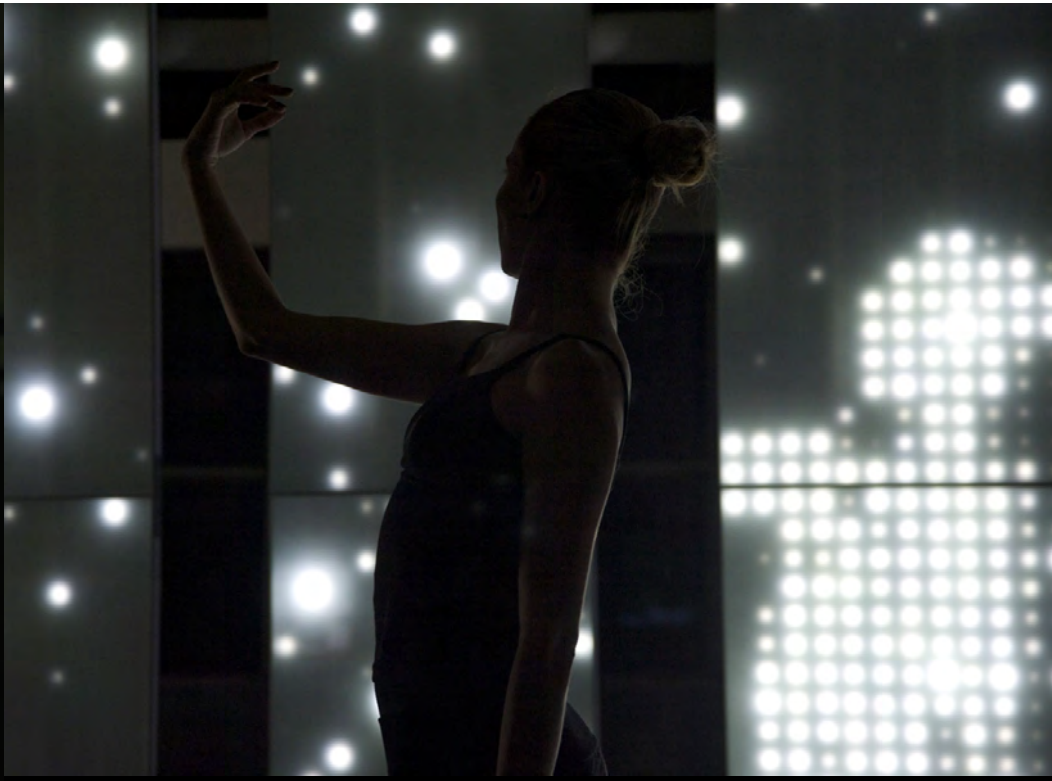
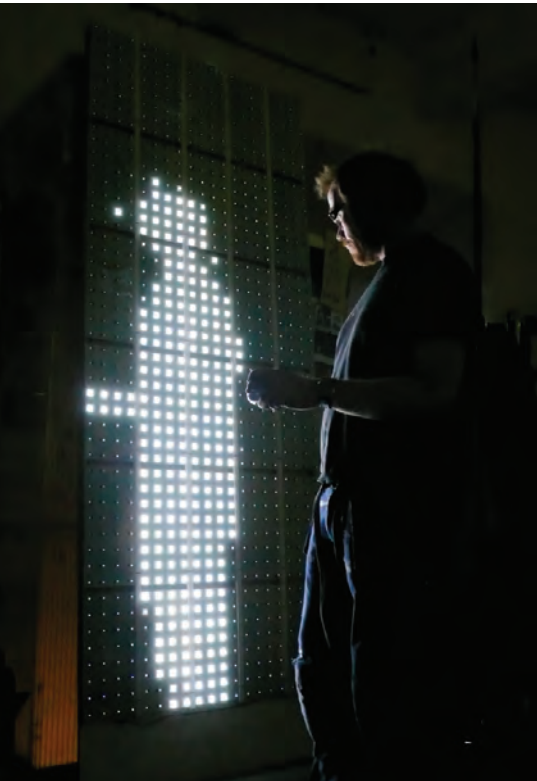
Custom made envelopes

Demanding requirements on the location mostly needs a custom made system in demands of existing architectural plan.

The image on page two and four shows the custom built system for European Capital of Culture 2008, in Sandnes, Norway. Its made up by 100 x 280 cm wide modules using laminated opal safety-glass 10 mm, Stainless steel framing and corner protections. This system is extreme durable and is the suited choice when traffic, extreme weather and risk of vandalism is to be considered.



Example of a custom made envelope for hanging removable glass. Suited for changing printed graphic foils on inside.



Costs

In ordinary range for professional lighting systems, the larger production volume on the order, the lower the cost per square meter.

Power-supply

Power-supply is regular DIN Rack components, or internally in casing mounted double isolated shift-mode power-supplies as a "plug and play system"

Durability

A autonom circuit design with parallel power distribution guaranties a functioning system even if a number of pixel cells or connectors malfunctions. When the LEDs reaches their life time expectancy a degradation of color-temperature may occur. The autonom system then ensures a even longer lifespan until a critical number of bad or malfunctioning pixels in a esthetic matter are reached.

Energy consumption

5 volt DC current.

One panel consumes 100 ma, 0,5w.

120 panels, (3840 LEDs (10m²)) consumes the same as a 60w incandescent lightbulb.

LEDs

inGaN White is standard color, other colors may be considered used in a suited setting...

Square, 5ø Dome, 4 Lead, Superflux

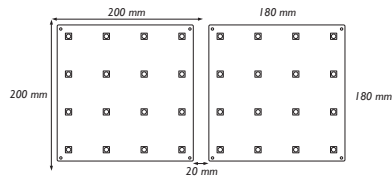
- High Flux Output
- Low Thermal Resistance.
- Low Power Consumption

Pb free, RoHs

10 00-16 000 mcd Luminous Intensity (+- 10%)

Operating temperature -250-+850 C

Viewing angle 50 Deg



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ELECTRONICS HARD TO RESIST

Working in the field often termed Physical Computing in combination with traditional industrial design.

Located in Oslo, Norway a nation who has been described as having a strong fascination for light due to the dark winters with the Aurora as well as the midnight sun.

Our goal is to create fusions between architecture, design, and art,- into innovative and inspiring surroundings and objects.

III PRODUCTS

Respondent Elements

VAWT LAMP.

A light that is directly respondent to the movement of air masses and will visualize the invisible- Amplifying the human experience of nature, landscapes and elements. Designed as a lamp post with its own power supply, - a Vertical Wind generator.

RESONANCE

A respondent LED light fixture with *light on demand functionality* and a inspiring story of interaction that creates safety in public space. Simple to mount, robust and with a impressive light output.

III SERVICES

We work for a number of clients creating interactive systems focusing on the human interaction. Mostly with light and kinetics, but also projects with advanced RF systems combined with internet solutions and Graphical Interfaces.

The LED lamp has been our favorite "construction material" for more than seven years. We cooperate with a large base of suppliers. Electronics in Asia. Metals, wood, polymers and glass in Norway. Together with our partners Prototyper AS we have the full capacity to create any interior or exterior, combining custom made electronics with craftsmanship.

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