

Innovative Energy Saving LED Technology

IKEA Parking, Hengelo, The Netherlands

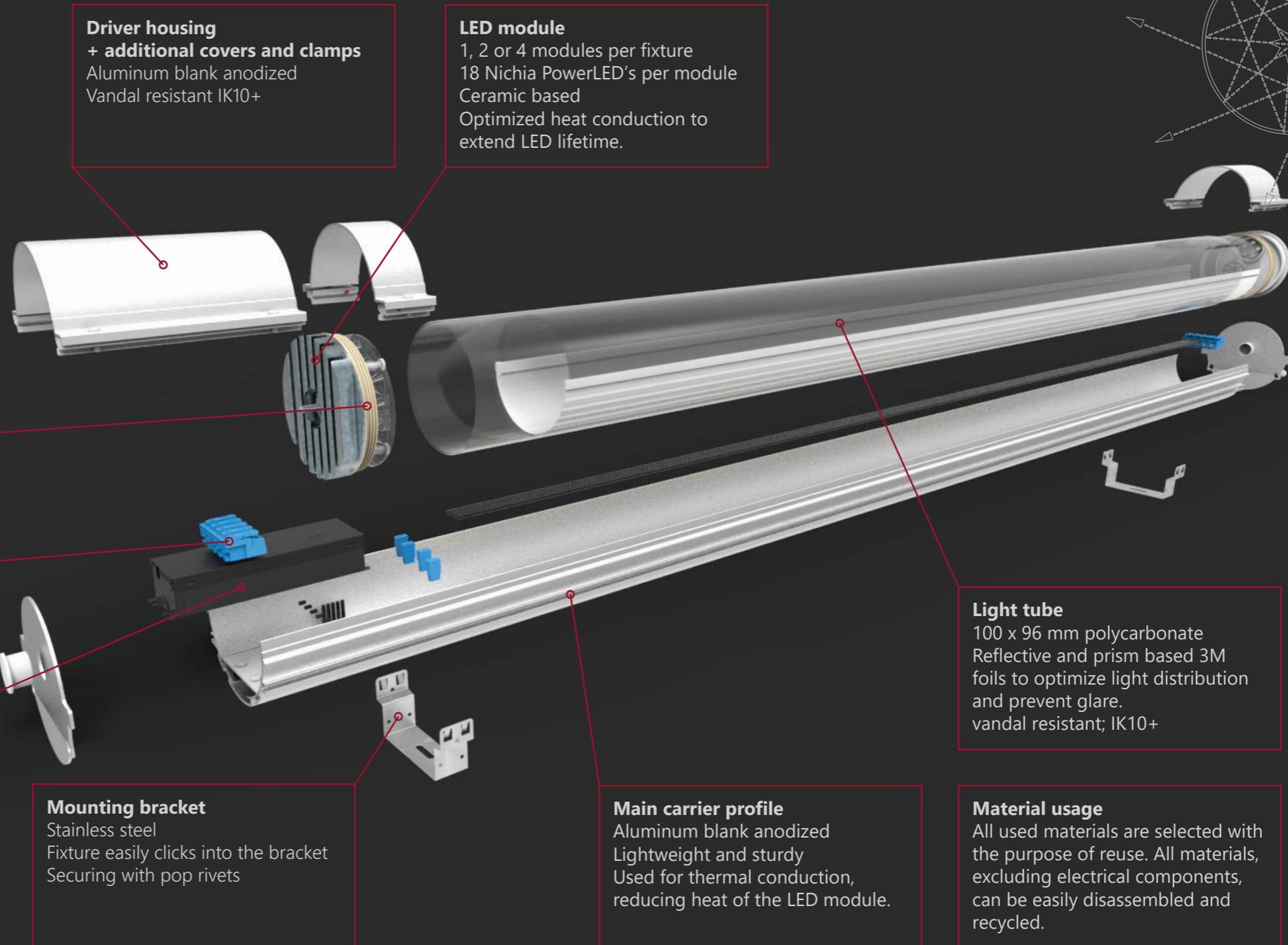
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Product description

The system includes a continuous optical and modular lighting made of polycarbonate tubes in an aluminium carrier profile. A LED module emits light into an impact-proof polycarbonate tube (100mm), which internally has a special foil technique including 3M's O.L.F. foil. This foil ensures a constant, even and anti-glare light distribution.

The uniform lighting with its 180° angle of light distribution increases the feeling of comfort and guarantees a feeling of safety in large areas such as parking garages and shopping centres.



Driver housing + additional covers and clamps

Aluminum blank anodized
Vandal resistant IK10+

LED module

1, 2 or 4 modules per fixture
18 Nichia PowerLED's per module
Ceramic based
Optimized heat conduction to extend LED lifetime.

Rigged seal

Completely closed light tube
Water resistant IP66

Plug & play connectors

For a fast and easy installation
Internally through-wired

LED driver

High quality Philips Xitanium LED driver for outdoor applications.
LED current 700 mA
Lifetime (min): 100.000 hours
Types: 40, 75 or 150 Watt

Mounting bracket

Stainless steel
Fixture easily clicks into the bracket
Securing with pop rivets

Main carrier profile

Aluminum blank anodized
Lightweight and sturdy
Used for thermal conduction, reducing heat of the LED module.

Light tube

100 x 96 mm polycarbonate
Reflective and prism based 3M foils to optimize light distribution and prevent glare.
vandal resistant; IK10+

Material usage

All used materials are selected with the purpose of reuse. All materials, excluding electrical components, can be easily disassembled and recycled.

Long lifespan

Using high-power ceramic NICHIA LEDs and an excellent heat transfer of the LED module to the aluminium section keeps the LED temperature low. This results in a very low lumen depreciation of the LED.

LED lifetime (according to IEC/PAS62717)

L90F50 = 200.000 hours

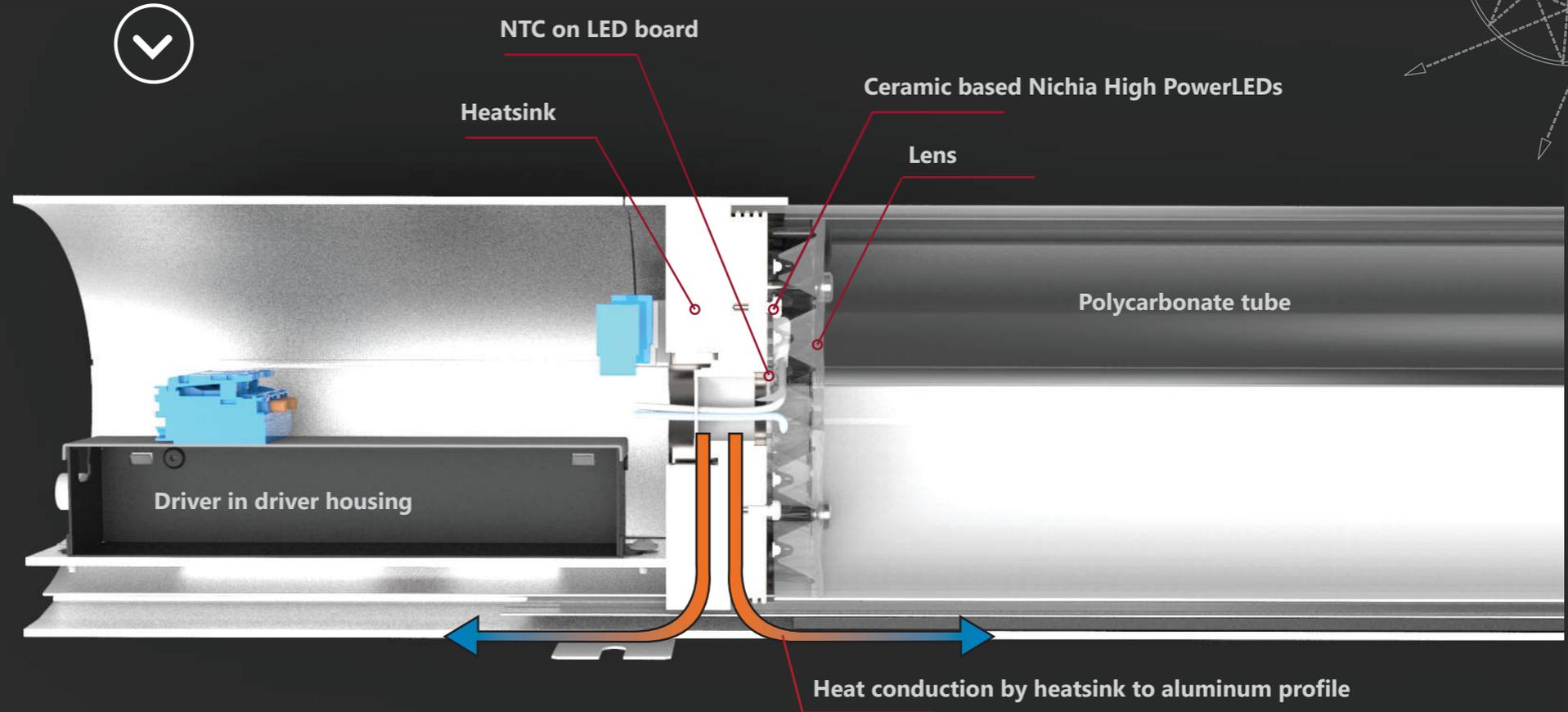
L90F10 = 100.000 hours

Lifetime of the driver according to the manufacturer = min. 100.000 hours

A NTC is positioned on to the LED board to protect the LEDs in the rare case of overheating.

A lighting installation driven by DALI ensures substantial energy savings. Dimming the light also extends the lifespan of the LEDs and the driver.

Light source assembly:



LED PERFORMANCE

- Energy efficient
 - Lifetime confirmed
 - Stable light performance
- www.dekra-seal.com



DEKRA LED Performance Seal

DEKRA had the performance of the BB LEDlightpipe® EVO verified and certified externally and it has consequently granted the LED performance seal according to IEC/PAS 62722-2-1 and DEKRA K173.

The DEKRA authenticates the statements for energy efficiency, lifetime and stable light performance.

Maintenance

There is no need to replace the light source during the entire lifespan of the fixture. We recommend replacing the LED driver after 12 years. If a fault occurs, the LED module and driver can be replaced easily.

The fixture can be cleaned easily and quickly thanks to the smooth and enclosed design.

It is impossible for insects or dirt to accumulate in the light system. The light emitting components do not generate heat so it is also impossible for grease and/or soot particles to get burnt into these components.

Glare free

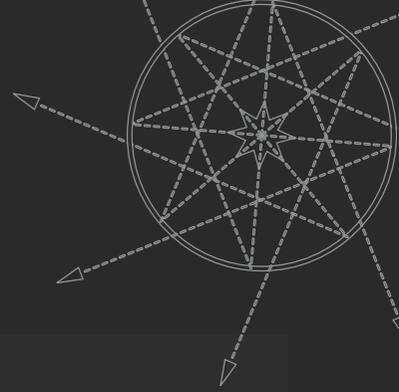
Advanced lighting via lens and foil techniques create a constant and even light distribution. This makes it impossible to look directly into the LEDs from any position and therefore eliminates glare.



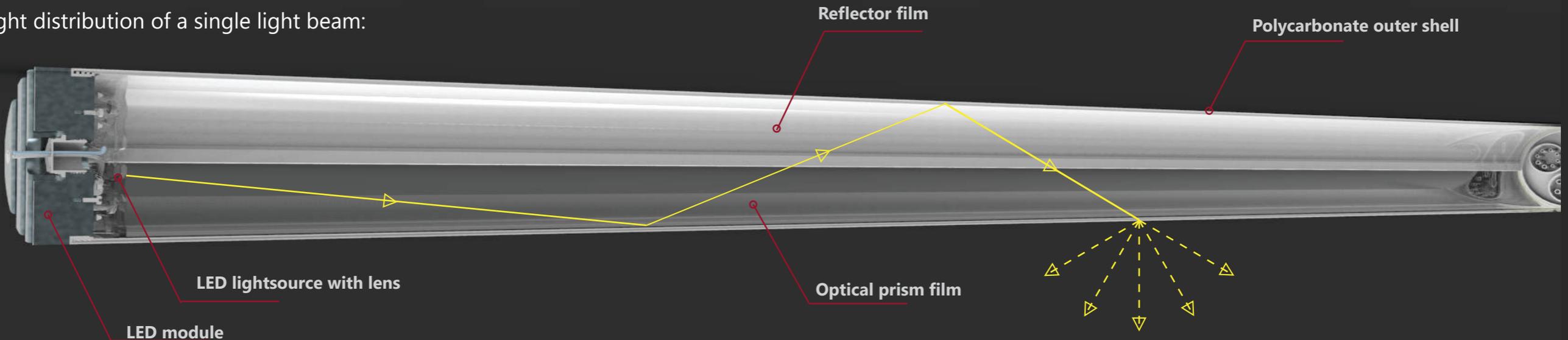
The BB LEDlightpipe uses the patented 3M OLF film technology composed of micro-prisms to extract and spread light over the full length of the tube.

The OLF is a transparent plastic film with a smooth side and a prismatic side manufactured using 3M microreplication technology.

The even light distribution in combination with the 180° beaming angle results in the highly comfortable illumination. This contributes to a safe experience of the location.



Light distribution of a single light beam:



Cradle to Cradle

Michael Braungart and William McDonough are the founders of the C2C (cradle-to-cradle) concept with their WASTE = FOOD proposition. The main idea behind this is that all components used in a product can be returned into the production process at the end of useful life. Therefore, not decycling but 100% recycling. All BB LEDlightpipe® fittings meet the criteria and are certified by the C2C organisation EPEA.

To comply with the standards set by EPEA meant a complete redesign of the fixture. For example, the foils in the polycarbonate tube shown above are folded together and put into the tube using vacuum tooling. This means no environmentally unfriendly glue is needed and the fixture can easily be disassembled and taken back into the production process at the end of its lifetime.

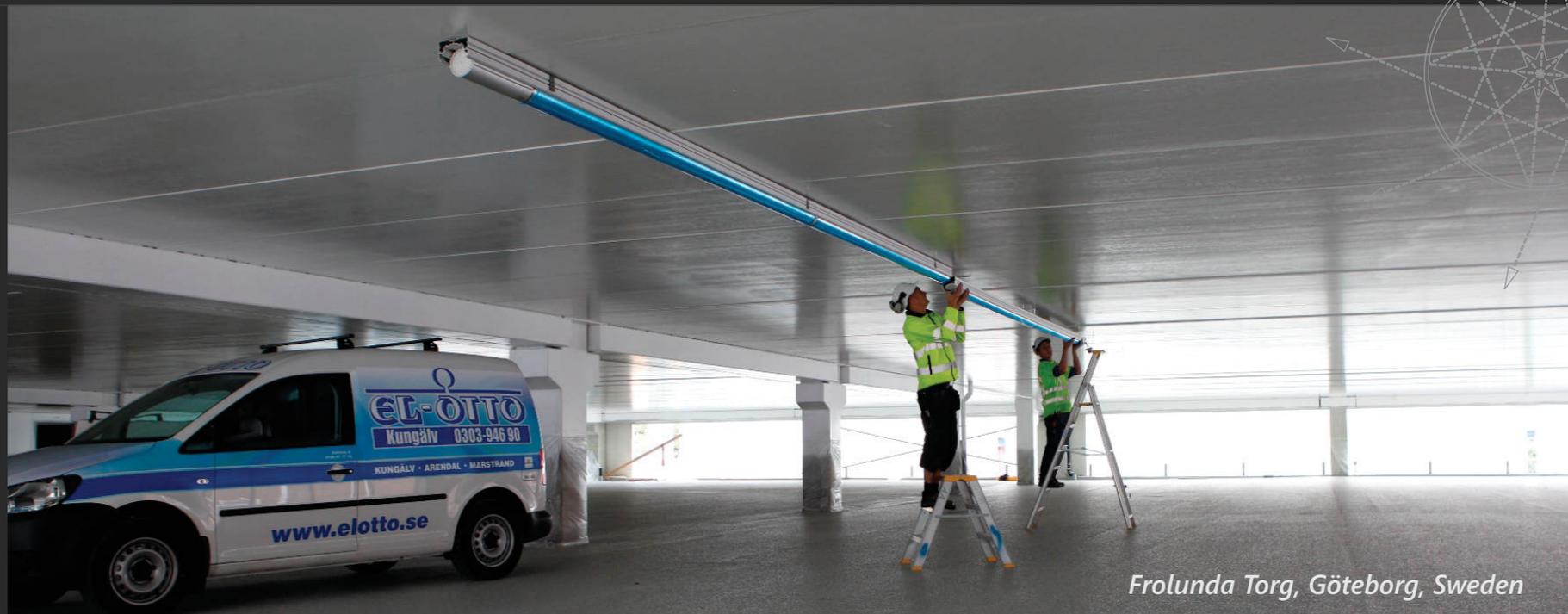
External influences

The BB LEDlightpipe® is completely dust-proof and water-resistant. Thanks to its shape and the material used (aluminium and polycarbonate), the BB LEDlightpipe EVO is very strong and extremely vandal-resistant. The impact-resistance is assessed for IK10+.

Easy installation

The modular light lines have Plug&Play connectors and stainless steel mounting brackets. Installation of the fixtures is quick and easy. The light lines are entirely pre-wired with 3-phase wiring so that long light lines up to 300 metres can be connected to a single power supply point. This way, fewer pouring facilities or surface-mounted wiring are needed.

It is possible to click an additional section onto the fixture so that the light line can also be used as a cable duct: for example, extra cables for a parking guidance or public address system can be inserted.



Frolunda Torg, Göteborg, Sweden



Balder parking, Sundsvall, Sweden

DALI light management

DALI is standard fitted in each BB LEDlight-pipe, which results in a unique address enabling the light management system to regulate the light level on site and per each individual BB LEDlightpipe.

With the use of LED technology combined with unique electronics, the programmable dim scenarios can achieve substantial energy savings and CO2 reduction. Earlier projects have already demonstrated additional savings of minimum 60% compared to systems at full load.



Light management software is available per customer specification.

Solutions

Parkings

In parkings with a 24/7 lighting demand a lot of energy is wasted. Energy consumption can be optimized with a BB LEDlightpipe installation in combination with motion sensors.



Infrastructure

Maintenance is extremely expensive in tunnels and underpasses. With the long lifetime of the BB LEDlightpipe a lot of maintenance cost can be saved.



Industry

In storage facilities there can be a lot of discomfort by glare with high bay fixtures. The BB LEDlightpipe uses advanced foil technologies to prevent blinding.



Oil & Gas

The BB LEDlightpipe ATEX is zone II certified to be allowed in a work environment with an explosive atmosphere.



Design types

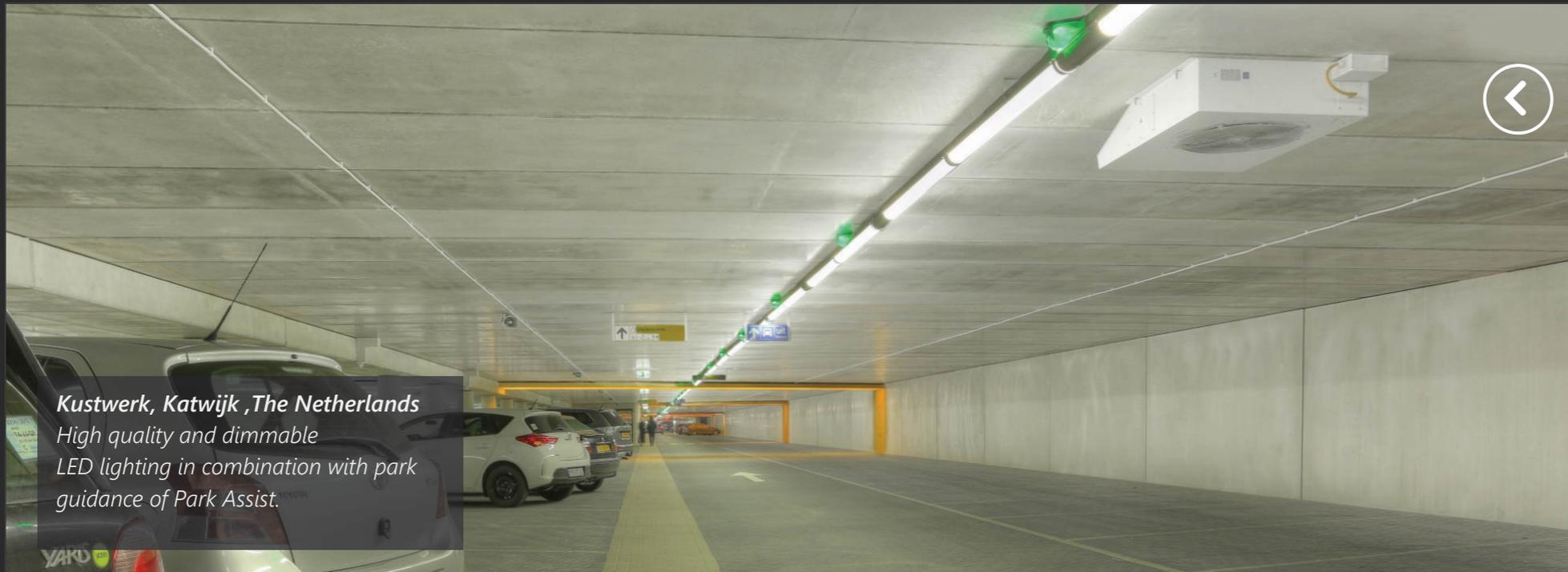
BB LEDlightpipe EVO

The EVO is suited for the through-wired BB LEDlightpipe solution for making light lines. The EVO has plug & play connectors to make mounting easy and fast. The EVO is suited for application in parkings, factory halls, tunnels, underpasses, warehouses, etc.

On the EVO DALI is standard, so an advanced light management is possible to optimize energy consumption and extend lifetime and warranty.



**Medical Centre parking,
Zaandam, The Netherlands**
DALI control to save energy and
reduce light pollution to the
surroundings at night



Kustwerk, Katwijk, The Netherlands
High quality and dimmable
LED lighting in combination with park
guidance of Park Assist.

BB LEDlightpipe EVO + Park Assist

The BB LEDlightpipe EVO is expandable with an integrated park guidance system of Park Assist.

The intelligent park guidance system gives customers the ease of finding a parking space quick and therefore reduce search traffic.

The Park Assist L4 system is a camera based system and is therefore expandable with features such as the Park Finder, where the customer can easily find where they left their car. The system also offers extensions for parking insights, alerts, surveillance and selected ratings.

Design types

BB LEDlightpipe ECO

The ECO is the economic variant of the BB LEDlightpipe.

With its length of 1,5 meters the ECO is suited for one on one replacement of existing high fluorescent fixtures in renovational projects such as parkings, industry or infrastructure.

The ECO is available with DALI, but also with a PIR motion sensor in every fixture individually. This way dimming is possible to optimize energy consumption without having to implement DALI wiring.



Parking Gewest, Bussum, Netherlands
1 on 1 replacement of existing HFF.
Energy saving by making use of motion sensors.
Vandal resistancy in public garage.



Blonden tunnel, Liege, Belgium

Substantial maintenance cost reduction due to long lifetime and reliability.
No blinding lighting for the road users.

BB LEDlightpipe HLO

The HLO is a short BB LEDlightpipe (1,3 meters) with a high lumen output.

The HLO is designed for tunnel entrance lighting where a high luminance is required and can be implemented as a symmetric lighting.

The HLO has a very low maintenance requirement just as the other BB LEDlightpipe fixtures. The HLO used the same reflective foils as the other BB LEDlightpipe products so has the same glare-free qualities.

A selection of unique BB LEDlightpipe projects



Pedestrian Tunnels, Sundsvall, Sweden
Vandal resistant LED lighting.
The cold environment improves the efficiency and lifetime even more.



Park 2020, Hoofddorp, the Netherlands
The first full service Cradle to Cradle work environment in the Netherlands.
DALI light sensors to optimize energy savings.



ArtEZ School of Arts, Enschede, the Netherlands
Industrial look and feel in old textile factory.
LEDs with high color rendering



De Hoge Devel, Zwijndrecht, The Netherlands
The Netherlands
DALI control to create scenes for competition and relaxation.
Energy optimized by daylight sensor.



Campus Woudenstein
Rotterdam, the Netherlands
*Important architectural look.
DALI control used to optimize energy
consumption.*



Jobarco, Benthuizen, the Netherlands
*Maintenance cost saved.
Energy consumption reduced by making
use of DALI motion and light sensors*

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