



EXPIERENCE LIGHT  
**RELIABILITY**  
PROFESSIONALISM  
**UKRAINE** LIGHT  
**SOLUTIONS**  
**SECURITY** FUTURE  
EFFICIENCY  
**FUTURE DESIGN**  
**INNOVATIONS**  
OPPORTUNITIES  
QUALITY LIGHT  
UKRAINE DEUTSCHLAND  
TECHNOLOGY  
**Kazakhstan**  
SOLUTIONS FUTURE  
**DEUTSCHLAND**  
EXPERIENCE  
**LIGHT**  
FUTURE  
**DESIGN**  
**LIGHT** SERVICE  
**RUSSIA**  
INNOVATIONS  
**OPPORTUNITIES**  
PRODUCT RANGE  
**RELIABILITY**  
**INDIA** FUTURE  
**ESPAÑA** DESIGN  
RUSSIA  
**SERVICE** EXPERIENCE  
FUTURE  
**INNOVATIONS**  
RELIABILITY LIGHT



Lighting  
Technologies |

20  
YEARS

PRODUCT CATALOGUE

# Our awards



Lighting Technologies is a registered trade mark

# Better Light for a better world

Lighting Technologies, founded in 1997, was created with one clear priority – to create high-quality luminaires. Light that requires minimum energy. Light that meets environmental requirements. Light that complements the way people live today. And light that would reduce energy use and environmental impact tomorrow.

We have evolved these aspirations into our integrated Corporate Sustainability Strategy – a cornerstone of our overall commitment to Quality, Customers, and the Environment. A systematic way of looking at how we fill the world with better light that will enable us to make the right decisions in the field of lighting technology. We strive for a balance of social, economic and environmental priorities at every stage of production – from the selection of the materials to final delivery of fixtures to our clients.

We continuously invest in innovative technological advances that enable us to create luminaires that last longer, deliver more light per watt of electricity and make better use of precious resources. Our achievements are supported by international certifications, including VDE, ENEC and ISO.

As part of our SUN quality standard, we continuously increase efficiency in our processes, reduce waste and increase recycling. We invest in our employees, building their professional skills and knowledge.

We have already achieved so much and remain very enthusiastic about the future potential of lighting. Creating aesthetic, cost-effective and environmentally friendly light, we continue on our path of innovation.

A warm welcome to our Partners in the Lighting Technologies' Universe! We sincerely hope to become your long term partner of choice.



Dmitry Nalagin  
President

Sergei Mishkin  
Vice-President

Pazhedath Gopakumar  
Vice-President  
Investment Project Department

Ninkileri Satish  
Vice-President  
Production Development

# Partners' Club

# Mobile App

The Professional Partners' Club of Lighting Technologies consists of more than 6000 members. Our Partners include Distributors, Designers, Architects, Engineers and Specialists working in the lighting industry. We invite you to join the Lighting Technologies Partners' Club and enjoy the following benefits:

#### Company and Luminaire Updates

As a Partner Club member, you will receive regular updates about new and planned luminaires, special discounts and offers, access to new content and materials, as well as unique promotions and Partner contests/events with valuable prizes.

#### Partner Training and Sponsorships

Especially for our Club members, we sponsor admissions to selected conferences, forums and seminars to enhance our Partners' Industry knowledge and share Lighting Technologies knowledge and overall market experience.

#### Knowledge Exchange

We routinely share, distribute, and discuss critical market analysis, third party reports, and competitive information with our Partners.

#### Professional Consultations

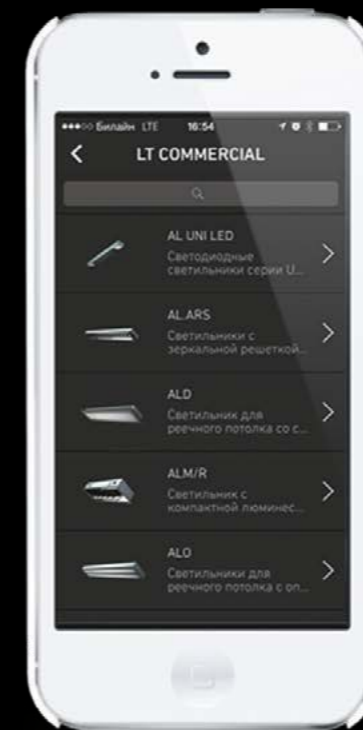
Our full range of professional staff in Product Management, Marketing, Technical and Sales Consultants are available to address your requirements.

#### Personal Account

Your registration in the personal account will allow you to perform such activities, as special information content, technical support and others.

#### Join the Professional Partners' Club of Lighting Technologies!

Visit our web page for more details [www.LTcompany.com](http://www.LTcompany.com)



LT Company Application – is the application, that comprises full information about production, projects, news, distributors of the Lighting Technologies, and also provides comfortable instruments for the calculations. Such application is suitable for designers and end customers. All information is provided on-line.



# 1998 - 2002

Starting own plant in Ryazan. Starting the distribution network, first exports to Europe.

# 2003 - 2006

Launching the production of a wide range of plastic luminaires. Certification of Quality Management Systems in conformity with ISO 9001 international standard. Commissioning of the plant for production of lighting products in Slavutich (Ukraine). We became an official partner of DIAL GmbH in Russia.

# 2008 - 2011

Initiation of cooperation with leading European design studios to create new light fixtures. Obtaining the ENEC certificate for the main range of products. Acquisition of one of the leading European emergency lighting manufacturers – TRQ Plant (Spain).

# 2012 - 2013

In 2012, the plant in Ryazan launched an aluminium die-casting shop. A laboratory for testing finished products, materials and components took up operations. In 2013 an SMD workshop was opened at the plant in Ryazan, and laser cutting technology was introduced. Our own standard for marking energy-efficient luminaires that comply with stringent quality standards. Following the results of 2013, the company entered the TOP 100 Best Employers list (HeadHunter rating).

# 2014

Opening of an office and logistics warehouse in Germany, as well as offices in China and India. Launching the production of LED products at the Ukrainian plant. Getting started in a new segment – explosion-proof luminaires (LT Ex sub-brand). Gaining the status of DIAL GmbH premium partner. Developing the network of service partners. The company signed the Anti-Corruption Charter and supported the establishment of the Honest Position Association.

# 2015

Opening of the plant for manufacture of LED luminaires in Bangalore (India). Launching the production of our own drivers (power supplies) and optics (lenses). Important steps taken when developing intelligent lighting control systems:

- Intelligent lighting solution developed jointly with DEUS R&D company was presented – a cloud-based control system using wireless technologies and DALI;
- Lighting Innovation Company (LIC), our subsidiary, was established. It focuses on control solutions based on supply cable (PLC) and creates unique solutions for a variety of specialized industries (Russian Railways, metro, fuel and energy sector, road lighting, etc.).
- The lighting projects accomplished are awarded with ISA, a most prestigious international industry prize.

# 2016

Lighting Technologies is recognized as the winner of the all-Russian contest of the program "100 Best Goods of Russia" in the "Lighting for Industrial Enterprises" category. The wide range of our products passed the voluntary certification for compliance with ENEC requirements. The certification was carried by the world-famous organization VDE (Association of German Electrical Engineers). The lighting projects accomplished were awarded with ISA, a most prestigious industry prize. The range of luminaires for tunnels, stations, bridges and open sections of the Moscow Metro was developed.

# 2017

We gained the status of the Russian manufacturer (official confirmation of the Ministry of Industry and Trade of the Russian Federation No. 44707/03 dated 11.07.2017). The most extensive investment in developing new products and services in the company's history. Emphasis on innovation, development of smart lighting.



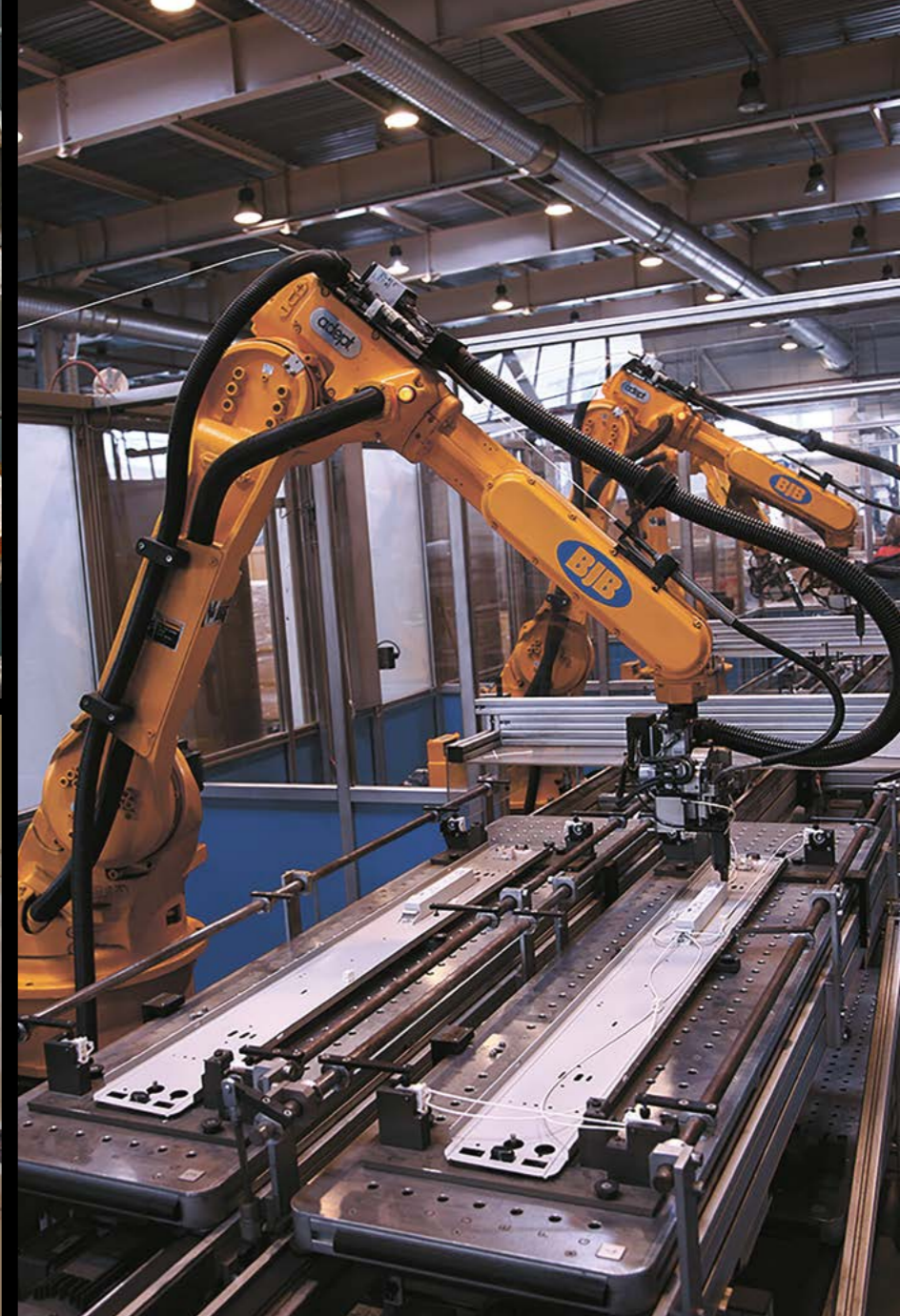
# Production Facilities

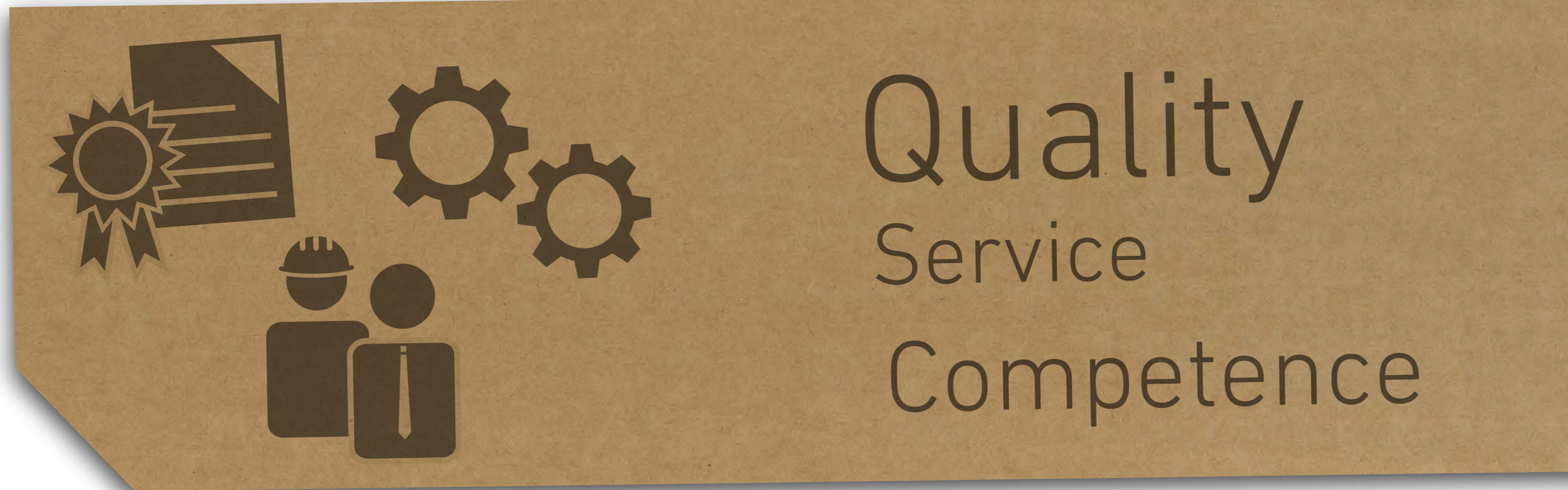
General and special-purpose luminaires are manufactured in Ryazan (Russia), Vinaros (Spain), Bangalore (India), and Slavutich (Ukraine).

**Our production facilities have state-of-the-art equipment including:**

- surface mounting technology (SMT)
- new aluminum die-casting workshop
- 3D printing
- BJB automation
- a state of the art lighting design and testing laboratory, where all our products undergo stringent quality testing

Total production area occupies 84 000 sq m.  
ISO 9001





**We value our reputation and we are aimed at a long-term cooperation with our partners**

It is our ongoing responsibility that LT customers receive the highest quality. We use the best and reliable materials in production. All of our luminaires meet European and international quality standards.



**We follow fair competition principles**

Lighting Technologies is a member of the Honest Position Association. We guarantee that the actual specification of our products fully match the declared one.



**All of our products undergo several stages of quality control:**

- selection of the best materials and components required for the production of lighting equipment,
- monitoring of each production stage,
- testing of finished products in the in-house laboratory.



**The quality of our luminaires is confirmed by awards and certificates**

Our project of biologically and emotionally effective lighting is awarded by International SSL Alliance (ISA). Our luminaires are the winners of the Eurasian Light Technology Award.



**We guarantee high quality for all luminaires ranges**

We expand our assortment with cost effective solutions. These luminaires combine affordable price and high reliability in compliance with international standards.



**We invest into innovations to provide our customers with the most advanced lighting technologies**

Our goal is to produce luminaires that meet and exceed market expectations. Each year we upgrade energy-efficient solutions that guarantee long service life of the lighting system. Today we offer solutions, which will be used in future.



**We provide high level of customer service:**

- full range of services associated with warranty and after-warranty maintenance, diagnostics of objects, and customer consulting,
- consideration of complaints during 48 hours,
- continued expansion of the LT sales network.



**Hotline  
+49 (0) 89 550 59 8611**



**Warranty responsibilities**

Lighting Technologies International is permanently occupied with improvement of quality and reliability of its products. We can state with full confidence that our company is the leading one on the Russian market. Warranty package of Lighting Technologies, which applies to all fixtures, control elements, installation systems and accessories, exceeds requirements of Russian legislation considerably. Lighting Technologies offers an extended 5-year warranty and basic 3-years basic warranty on its products.

**1. Goods**

The warranty package applies in general to the luminaires, its housing, optical elements, ballasts, starting devices and other electrical components, to the fastening and installation elements and connection of the fixtures to the electrical network. The warranty does not cover lamps and other light sources, as well as fluorescent lamp starters.

**2. Warranty period**

Basic warranty is valid for 3 years from the date of fixture manufacturing and covers all the products of the company if the terms and conditions specified in point 3 are fulfilled. The extended 5-year warranty on company products is granted in case of signing of a corresponding contract with a distributor (dealer) and registration of the lighting equipment project and its specification on a particular object, use of certain compounds in the luminaires and carrying out monitoring of installation and start up of a project by a representative from Lighting Technologies are required. The extended warranty is valid for 5 years if the terms and conditions specified in point 3 are fulfilled.

**3. Warranty conditions**

The Company undertakes the warranty will be revised under the following conditions: the Goods are delivered, stocked, mounted/installed and operated in conditions and requirements specified in product's passport, engineering specifications, mounting and service instructions, delivery terms, rules for technical maintenance of electrical installations, rules and in compliance with other indispensable conditions of the contract (including amendments and addenda to the contract). The warranty does not apply to discoloration of painted surfaces and plastic parts of the Goods under operation.

**4. Implementation of warranty responsibilities**

At occurrence of a reasonable claim the manufacturer accepts a defective product for carrying out of technical examination and making a decision under the claim. The Company reserves the right to examine the claims and subsequently replace the Goods (its parts) or compensate for defective equipment even after the warranty period is over.

**5. Submitting claims**

Claims to quality of the goods may be submitted during the warranty period specified in product's passport. Claims are to be submitted to the manufacturer through a distributor in the form established in the contract.

**6. Legal framework**

Implementation of the warranty obligations is carried out under the legislation of the Russian Federation and in accordance with contracts between partners and Lighting Technologie.

**Company Profile**

Lighting Technologies is an international group of companies, manufacturer and supplier of innovative, energy-efficient lighting solutions with sales offices and production facilities across Europe, Russia, the CIS countries, and India.

Range of products over 9000 luminaires  
 Production space – 84,000 sq.m.  
 Our team ~ over 1000 employees

**International Sales with local Presence**

LT has a global sales office presence including Russia, Europe, CIS countries and India with regional sales representatives, and an export team based in Moscow at your service. Our network includes facilities in Russia, Spain, Ukraine and India. Working closely with industry stakeholders, architects, designers, builders, and influencers, our products are ideal for projects. In addition, we offer a global network of distributors and dealers.

**Innovative and diverse Portfolio for every Lighting Solution**

Our product portfolio includes over 9,000 different luminaires designed to optimally meet your lighting requirements across a range of applications including: indoor, outdoor, commercial (office and trade), industrial, residential, and sports facilities.

**Best-in-Class Manufacturing using State-of-the-art Components and Equipment**

Research and Development, translated into innovative, efficient and price competitive designs, and brought to life in modern production facilities, enables Lighting Technologies to lead the industry's evolution to advanced luminaires and solutions. Our in-house Industrial Design Bureau, in

cooperation with leading European designers and consultants, continuously monitors the markets, materials, methods and applications to deliver the luminaires our customers envision. Our production facilities have state of the art equipment including Surface Mounting Technology (SMT), an aluminum foundry, 3D printing, lighting design and testing laboratories. Finished products undergo stringent quality testing.

**A Commitment to high Quality and Sustainable Development**

We understand the importance of quality for our customers and partners and also as a member of the world community. We actively embrace this commitment through active participation and implementation of in key industry quality standards.

We also understand the values of sustainable development. This means the introduction of "green" technologies that enable higher energy efficiency, waste reduction, and environmentally friendly product features. Our design teams are experienced at using LEED and BREEAM project design methods and criteria.

**Lighting Technologies is an official DIAL GmbH premium-partner**

Our specialists are annually trained by DIAL business development team, which allows us to receive the latest and updated information about the product and use it during the seminars we provide to our clients. The result of this everyday cooperation is the release of a special premium LT plug-in, containing up to 9000 luminaires to be used in lighting design calculations.



	Ingress protection class (IP)		Compatible with automated outdoor lighting control system
	Suitable for heavy operating conditions		Luminaire modifications with built-in motion sensor
	Grounding connection mark (class I protection against electrical shock)		Build-in control module (via power supply net)
	Class II protection against electrical shock		Build-in wireless control module
	Class III protection against electrical shock		Color-dynamic lighting
	Luminaires are designed for direct installation on normally flammable surfaces		Luminaire dimming according to DMX protocol
	Mark of compliance with European Norms of Electromagnetic Compatibility (EMC)		Recess size
	Mark of compliance with European Standards EN 60598-1:2008; EN 60598-2-2:1996		Light emitting diode (LED)
	Mark of electromagnetic efficiency		Tilt angle
	Luminaire dimming according to DALI protocol		Vertical axis rotation angle
	Energy efficiency class		Climatic application
	Dimming of luminaire according 1-10V protocol		Ambient temperature
	Operation from AC/DC mains		Luminous flux flickering
	Luminaire modifications with built-in wireless control module		Rated frequency of supply voltage
	Rated voltage		Impact protection rating (IK)
	Emergency power supply unit (1 hour) for LED luminaires		
	Emergency power supply unit (3 hours) for LED luminaires		
	Powder coating of lighting fixtures in RAL scale colors		
	Color rendering index		



	Shopping malls		Clean rooms
	Car parks		Workshops
	Stadiums		Hotels/restaurants/cafes
	Sports grounds		Libraries
	Warehouses		Petrol filling stations
	Exhibition halls		Industrial enterprises
	Educational Institution		Architectural and local illumination of facades
	Laundries		Garden/park and landscape lighting
	Hotels		Underwater and swimming pool lighting
	Offices/administrative rooms		Squares and large open spaces
	Conference and meeting rooms		A category road lighting
	Housing/business premises		B category road lighting
	Stores		C category road lighting
	Stairways/corridors		Railways and junctions
	Conference halls		Transport units (stations, airports)
	Lounges		New luminaires
	Hospitals		High color rendering index > 90
	Garages		Color fusion luminaire modifications with variable color temperature, Human Centric Lighting technology
	Car parks		



## COMMERCIAL

### OFFICE LIGHTING

HFR	The luminaire is equipped with dimmable control gear (1-10V), for example OPTIMA.OPL ECO LED 595 HFR 4000K
HFD	The luminaire is equipped with DALI dimmable control gear, for example OPTIMA.OPL ECO LED 595 HFD 4000K
CF	The luminaire is equipped with Color Fusion Technology (Human Centric Lighting), for example OTX LED 595 CF
ME6	The luminaire is equipped with ME6-R control system, for example OPL/R ECO LED 595 ME6 4000K
MS	The luminaire is equipped with microwave sensor, for example CD LED 18 MS 4000K
EM	The luminaire with LED light sources is equipped with emergency power supply unit for operation in emergency mode within 1 hour, for example OPL/R ECO LED 595 EM 4000K
EM3	The luminaire with LED light sources is equipped with emergency power supply unit for operation in emergency mode within 3 hour, for example OPL/R ECO LED 595 EM3 4000K
SET	The luminaire consists of several parts (set). Each part of the luminaire is supplied in separate box. For example, DR. OPL ECO LED 595 4000K SET
TH	The luminaire is produced in thin housing, for example LINER/R D LED 1200 TH S 4000K
ARMSTRONG, GRILIATO, ECOPHON, ROCKFON	Special ceiling type, where the luminaire can be used, for example OPL/R ECO LED 1200 ROCKFON 4000K
300... 1200x200... 1800x190	Length and width of the LED luminaire's housing, for example OPL/R ECO LED 1200x600 4000K
LED	Light-emitting diode light sources are installed in the luminaire, for example TITAN 12 LED 5000K
UNI LED	The luminaire is equipped with semiconductor light sources, operating on principle of universal modules, for example AOT.OPL UNI LED 600 4000K
2M	The LED luminaire has 2 light modules, for example WAVE ECO LED 2M 4000K
3M	The LED luminaire has 3 light modules, for example WAVE ECO LED 3M 3000K 4000K
3000 K...5600 K	Color temperature of the light sources used in the LED luminaire, for example OPL/R ECO LED 595 4000K
OPL	The luminaire with opal diffuser made of plastic or glass, for example ALS.OPL UNI LED 1200 4000K
PRS	The luminaire has clear microprismatic diffuser, for example ALS.PRS UNI LED 1200 4000K
D	The luminaire is designed for single installation, for example LINER/R D LED 1200 TH S 4000K
DR	The luminaire is designed for in-line installation, for example LINER/R DR LED 600
CS	Initial element of modular system, for example REFLECT LED 1500 CS 4000K
CE	Main element of modular system, for example REFLECT LED 1500 CE 4000K
CF	Final element of odular system, for example REFLECT LED 1500 CF 4000K
CC	Corner element in modular system, connecting two luminaire at an angle of 90°, for example LINER/R CC LED 600 TH W 4000K
CW	Corner element, allowing luminaires to be connected into wall-ceiling arrangement, for example LINER/R CW LED W 4000K
/R	Recessed luminaire, for example OPL/R ECO LED 1200 4000K
/S	Surface mounted luminaire, for example OPL/S ECO LED 1200 4000K
S	Luminaire's color – metallic, for example LINER/R DR LED 1500 S 4000K
W	Luminaire's color – white, for example LINER/R DR LED 1200 TH W 4000K
B	Luminaire's color – black, for example LINER/S DR LED 1500 B HFD 4000K
AS	The luminaire is completed with asymmetric reflector, for example BAT UNI LED 1500 AS 4000K
RS	The luminaire is completed with symmetric reflector, for example BAT UNI LED 1500 RS 4000K
up/down	The luminaire in addition to the general lighting (down light) features an indirect light distribution (up), for example SPACE LED dream 1000 up/down 4000K



## COMMERCIAL

### TRADE LIGHTING

HFR	The luminaire is equipped with dimmable control gear (1-10V), for example SAFARI DL LED 31 HFR 4000K
HFD	The luminaire is equipped with DALI dimmable control gear, for example DL POWER LED 40 D80 HFD 4000K
ME6	The luminaire is equipped with ME6-R control router, for example LED MALL ECO 70 IP54 ME6 4000K
EM	The luminaire with LED light sources is equipped with emergency power supply unit for operation in emergency mode within 1 hour, for example COLIBRI DL LED 19 EM 4000K
EM3	The luminaire with LED light sources is equipped with emergency power supply unit for operation in emergency mode within 3 hour, for example COLIBRI DL LED 19 EM3 4000K
/main line harness/	The luminaire has line harness wiring, for example LED MALL ECO 70 IP54 /main line harness/ 4000K
10...140	Approximate power consumption of LED luminaire, for example LED MALL ECO 70 IP54 4000K
2x35...2x80	Double housing length multiplied by approximate power consumption of LED luminaire, for example DOMINO LED 2x40 D60 4000K
LED	Light-emitting diode light sources are installed in the luminaire, for example JET/T LED 35 B D15 4000K
1M...4M	Quantity of modules in the luminaire, for example SNS LED 3M 30 W D20
1750K...5000K	Color temperature of the light sources used in the LED luminaire, for example BELL/T LED 35 S D45 2700K
mat	The luminaire has mat diffuser (not transparent), for example DL POWER LED 60 D40 IP66 4000K mat
/S	Surface mounted luminaire, for example UFO/S DL LED 25 D10 4000K
/T	The luminaire is designed for installation on euro-DIN track, for example JET/T LED 35 S D25
D10...D60/45...D120	Reflector angle at degrees (°), for example DL POWER LED 40 D80 4000K
S	Luminaire's color – metallic, for example LED MALL ECO 70 S IP54 4000K
W	Luminaire's color – white, for example DL TURN LED 28 W D40 4000K
B	Luminaire's color – black, for example LED MALL ECO 70 B IP54 4000K
IP20... IP66	The luminaire's housing and optical part ingress protection (IP) class, for example DL POWER LED 60 D80 IP66 4000K
EO	The luminaire is equipped with additional emergency output, for example LED MALL LINE 70 D90 IP54 EO 3000K (main line harness)
OPL	The luminaire has opal glass/plastic diffuser, for example LNK.OPL ECO LED 70 4000K
LINE	The luminaire is designed for in-line installation, for example LED MALL LINE 2x70 D90 IP54 4000K (main line harness)

## INDUSTRIAL

HFR	The luminaire is equipped with dimmable control gear (1-10V), for example SLICK.PRS ECO LED 30 HFR 5000K
HFD	The luminaire is equipped with DALI dimmable control gear, for example SLICK.PRS ECO LED 45 HFD 5000K
ME6	The luminaire is equipped with ME6-R control router, for example HB LED 152 D64 HFR ME6 4000K
MS	The luminaire is equipped with integrated microwave sensor, for example INSEL LB/S LED 80 D65 HFD MS 5000K
class II	The luminarie has high electric shock protection, for example SLICK.PRS ECO LED 60 3000K class II
class I	The luminarie has standard electric shock protection, for example ARCTIC.OPL ECO LED 600 EM 5000K class I
EM	The luminaire with LED light sources is equipped with emergency power supply unit for operation in emergency mode within 1 hour, for example ARCTIC.OPL ECO LED 1200 EM 4000K



EM3	The luminaire with LED light sources is equipped with emergency power supply unit for operation in emergency mode within 3 hour, for example ARCTIC.OPL ECO LED 1200 EM3 4000K
with tempered glass	The luminaire is equipped with clear tempered glass diffuser, for example HB LED 225 D60 5000K with tempered glass
M	The luminaire with mat diffuser made of polycarbonate (PC) or glass, for example LB/S M ECO LED 75 5000K
C	The luminaire with clear diffuser made of polycarbonate (PC) or glass, for example LB/S C ECO LED 75 5000K
OPL	The luminaire with opal diffuser made of plastic or glass, for example ARCTIC.OPL ECO LED 1200 5000K
PRS	The luminaire has clear microprismatic diffuser, for example SLICK.PRS ECO LED 30 5000K
TH	The luminaire is produced in thin housing, for example ARCTIC.OPL ECO LED 1200 TH 5000K
OVP	The luminaire with additional over-voltage protecting module, for example INOX LED 70 OVP 5000K
with through wiring	The luminaire is equipped with through wiring, for example SLICK.PRS ECO LED 45 with through wiring 5000K
18...800	Approximate power consumption of LED luminaire, for example HB LED 100 D64 5000K
600...600x200...1500	Length and width of LED luminaire's housing, for example ALS.OPL UNI LED 600x600 4000K
LED	Light-emitting diode light sources are installed in the luminaire, for example SLICK.OPL LED 50 5000K
UNI LED	The luminaire is equipped with universal LED modules, for example ALS.OPL UNI LED 1200 4000K
3000K...5000K	Color temperature of light sources, used in LED luminaires, for example INOX LED 50 5000K
/R	Recessed luminaire, for example INSEL LB/R LED 100 D120 4000K
/S	Surface mounted luminaire, for example INSEL LB/S LED 100 D120 5000K
D15...D90x30...D140	Light beam angle in °, HB LED 225 D80 5000K
white	The luminaire's housing powder coated in white, for example LB/S M ECO LED 75 5000K white
IP23... IP65	The luminaire's housing and optical part ingress protection (IP) class, for example FACTORY.PRS LED 50 IP54 5000K
AGRO	Range of luminaires for animal production unit, for example SLICK.PRS AGRO LED 30 5000K

## OUTDOOR

HFD	The luminaire is equipped with DALI dimmable control gear, for example DAMIN L LED 40 HFD silver 4000K
PLC	Supply main controll option, for example FREGAT LED 110 (W) PLC 5000K
DMX512	DMX512 contrill option, for example WASHLINE LED 12 (60) RGBW DMX512 220VAC 500
EM	The luminaire with LED light sources is equipped with emergency power supply unit for operation in emergency mode within 1 hour, for example GRANDA NBT LED 18 EM3 4000K
EM3	The luminaire with LED light sources is equipped with emergency power supply unit for operation in emergency mode within 3 hour, for example GRANDA NBT LED 18 EM3 4000K
35...110	Approximate power consumption of LED luminaire, for example FREGAT LED 110 (W) 5000K
500...1500	Length of LED luminaire's housing, for example WASHLINE LED 36 (15x30) WW 1000
LED	Light-emitting diode light sources are installed in the luminaire, for example FREGAT LED 110 (W) 5000K
2700K...6000K	Color temperature of light sources, used in LED luminaires, for example FREGAT LED 110 (W) 5000K
RGB	The luminaire of color dynamic version, for example WASHLINE LED 12 (60) RGB DMX512 220VAC 500
RGBW	The luminaire of white light with color dynamic version, for example WASHLINE LED 12 (60) RGBW DMX512 220VAC 500
/R	Recessed luminaire, for example MATRIX/R LED (26) silver 4000K
/S	Surface mounted luminaire, for example MATRIX/S LED (26) silver 4000K



silver	The luminaire's housing powder coated in metallic/silver, for example: DAMIN LED 40 silver 4000K
white	The luminaire's housing powder coated in white, for example: DAMIN LED 40 white 4000K
black	The luminaire's housing powder coated in black, for example: DAMIN LED 40 black 4000K
(12)...(30x65)	Light beam angle, for example FREGAT FLOOD LED 55 (60) 5000K
(W)	Wide side optics, for example FREGAT LED 110 (W) 5000K
(SW)	Semiwide optics, for example FREGAT LED 110 (SW) 5000K
(A)	Asymmetrical projector optics, for example FREGAT FLOOD LED 55 (A) 5000K
(L)	Special optics for pedestrian crossings, for example FREGAT CROSSING LED 55 (L) 5000K

## MEDICAL

HFR	The luminaire is equipped with dimmable control gear (1-10V), for example OWS ECO LED 595 IP54/IP54 HFR 4000K
HFD	The luminaire is equipped with DALI dimmable control gear, for example OWS ECO LED 595 IP54/IP54 HFD 4000K
EM	The luminaire with LED light sources is equipped with emergency power supply unit for operation in emergency mode within 1 hour, for example ADV/K UNI LED 600 EM 4000K
EM3	The luminaire with LED light sources is equipped with emergency power supply unit for operation in emergency mode within 3 hour, for example ADV/K UNI LED 600 EM3 4000K
300...600..1200	Length and width of LED luminaire's housing, for example OWP/R ECO LED 595 IP54/IP40 4000K
/595/.../600x1200/	Length and width of LED luminaire's housing, for example ADV/K UNI LED 600 4000K
GRILIATO	Special ceiling type, where the luminaire can be used, for example OWP ECO LED 589 IP54/IP54 4000K mat GRILIATO
LED	Light-emitting diode light sources are installed in the luminaire, for example SLIM CLEAN LED 595 4000K
3000K.....5000K	Color temperature of light sources, used in LED luminaires, for example OWP OPTIMA LED 595 IP54/IP54 4000K
mat	The luminaire has mat diffuser (not transparent), for example OWP ECO LED 595 IP54/IP54 4000K mat
/R	Recessed luminaire, for example OWP/R ECO LED 595 IP54/IP40 4000K
/K	The luminaire can be installed into Clip-in ceiling, for example ADV/K UNI LED 600 4000K
IP43/IP20	The luminaire's housing and optical part ingress protection (IP) class, with first value (IP54) for optical part, and the second (IP40) - for housing, for example OWP ECO LED 300 IP54/IP40 4000K
(50)	The luminaire modification with custom power consumption, for example OWP OPTIMA LED 595 (50) IP54/IP54 4000K

COMMERCIAL 

MEDICAL 

INDUSTRIAL 

OUTDOOR 

EMERGENCY 

EMOTIONS 

SOLUTIONS 

Introductory information page 1 – 31

Product overview page 32 – 39

Commercial page 40 – 97

Medical page 98 – 105

Industrial page 106 – 127

Outdoor page 128 – 153

Emergency page 154 – 161

Emotions page 162 – 191

Solutions page 192 – 228

Lighting solutions page 229 – 243

Information page 244 – 253

Alphabetical Index page 254





COLIBRI DL LED page 81  
DL POWER LED MINI page 82  
DL POWER LED page 83



PILOT DL LED page 85  
SAFARI DL LED page 86  
UFO/S DL LED page 90  
UFO DL LED page 91  
DL TURN LED page 88  
MATRIX R LED page 147  
FARO page 183

**Downlight**



FIORE page 183  
ALD UNI LED page 61  
SNS LED page 89



INSEL LB/R LED page 110  
OWP ECO LED page 102  
ADV/K UNI LED page 101  
OTX LED page 59  
OTR/R LED page 58  
OPL/R ECO LED page 55  
PRS/R ECO LED page 56

**Recessed**



LED MALL ECO page 74  
LED MALL LINE page 76  
DOMINO LED page 78



INSEL LB/S LED page 120  
HB LED page 114  
SLICK LED page 108  
ARCTIC STANDARD page 123  
ALS UNI LED page 63  
LZ.OPL ECO LED page 126  
INOX LED page 116

**Surface mounted and suspended**



MATRIX S LED page 146  
REFLECT LED page 46  
SPACE LED DREAM page 47  
EAGLE LED page 48

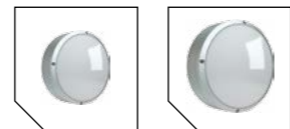


FLAME UNI LED page 49  
AOT UNI LED page 62  
OPL/S ECO LED page 64  
PRS/S ECO LED page 65  
RKL LED page 68  
OLYMPIC LED page 67  
MOTION OLED page 166



TILE/T LED page 97  
BELL LED page 93  
JET/T LED page 94

**Wall and track mounted**

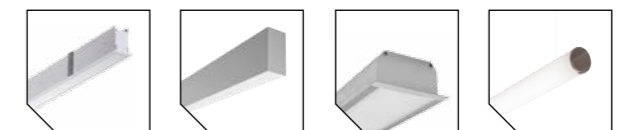


STAR LED page 139  
GRANDA LED page 140



DAMIN LED page 141  
RKL LED page 68  
TITAN LED page 72  
OD LED page 73  
CD LED page 69  
K LED page 70  
OLYMPIC LED page 67

**Surface mounted**

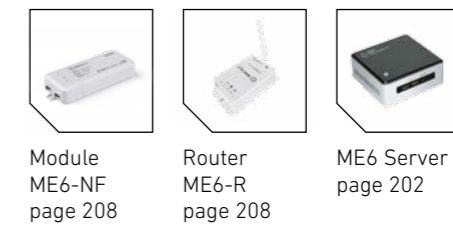


LINER LED page 50  
PROFILE H page 177  
PROFILE page 178  
T120 page 179

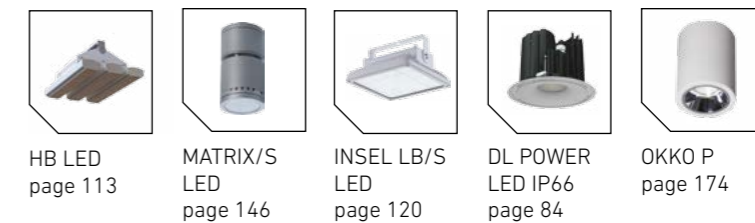
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Luminaires with high IP



Control system



Luminaires for high spans

Outdoor lighting. Overview of LED luminaires of installation and light distribution

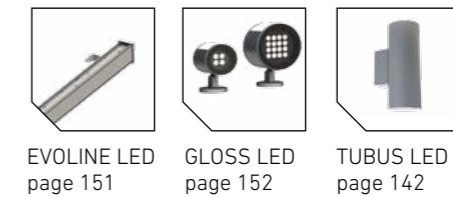
Outdoor lighting. Overview of LED luminaires of installation and light distribution



Street



Floodlights



Architectural



Park



Surface mounted



Recessed

**BEST  
SELLERS**



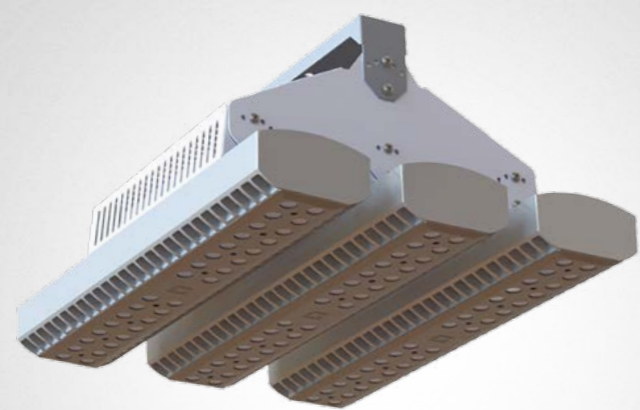
**FREGAT LED** page 133



**SPACE LED DREAM** page 47



**DOMINO LED** page 78



**HB LED** page 114



**OLYMPIC LED** page 67



**SLICK** page 110



 COMMERCIAL

page 40 – 97



 MEDICAL

page 98 – 105



 INDUSTRIAL

page 106 – 127



 OUTDOOR

page 128 – 153

# Experience Light



**EMERGENCY**  
page 154 – 161



**EMOTIONS**  
page 162 – 191



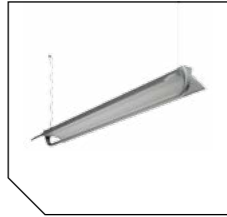
**SOLUTIONS**  
page 192 – 228



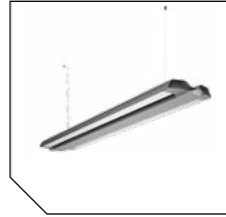
**INFORMATION**  
page 242 – 243



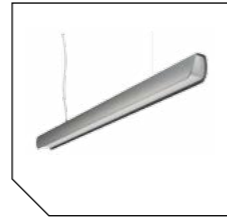
Office Lighting.  
Suspended



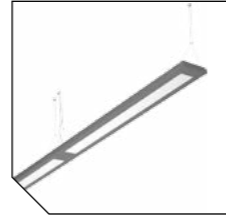
REFLECT LED  
page 46



SPACE LED DREAM  
page 47



EAGLE LED  
page 48

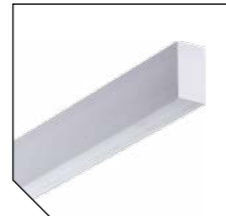


FLAME UNI LED  
page 49

Continuous Line

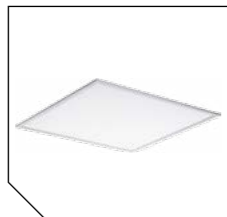


LINER/R LED TH  
page 50



LINER/S LED TH  
page 52

Recessed



SLIM LED  
page 54



OPL/R ECO LED  
page 55



PRS/R ECO LED  
page 56



DR.OPL ECO LED  
page 57



OTR/R LED  
page 58



OTX LED  
page 59



**NEW**  
PRB/R UNI LED  
page 60



ALD UNI LED  
page 61

Surface Mounted



AOT UNI LED  
page 62



ALS UNI LED  
page 63



OPL/S ECO LED  
page 64



PRS/S ECO LED  
page 65



PTF UNI LED  
page 66



OLYMPIC LED  
page 67



RKL LED  
page 68



Surface Mounted,  
Water Proof



CD LED  
page 69



K LED  
page 70



**NEW**  
C LED  
page 71



TITAN LED  
page 72



OD LED  
page 73

Trade Lighting,  
Suspended



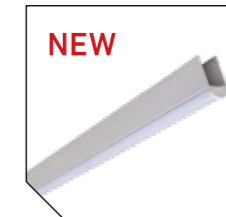
LED MALL ECO IP54  
page 74



LED MALL LINE IP54  
page 76



DOMINO LED  
page 78



**NEW**  
LNK LED MINI  
page 80

Downlights



COLIBRI DL LED  
page 81



DL POWER LED MINI  
page 82



DL POWER LED  
page 83



DL POWER LED IP66  
page 84



PILOT DL LED  
page 85



SAFARI DL LED  
page 86



**NEW**  
DLK LED  
page 87



DL TURN LED  
page 88



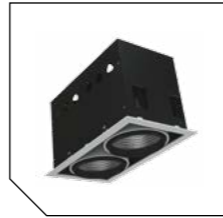
UFO/S DL LED  
page 90



UFO DL LED  
page 91



Recessed



SNS LED  
page 89

Wall and Track mounted



BELL/T LED  
page 92



BELL/S LED  
page 93



JET/T LED  
page 94



**NEW**  
COPER/T LED  
page 96



TILE T LED  
page 97

MEDICAL



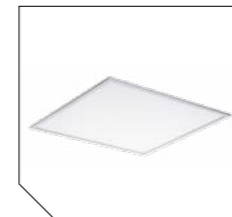
ADV/K UNI LED  
page 101



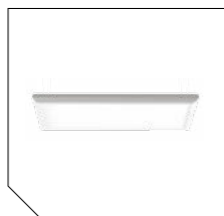
OWP ECO LED  
page 102



OWP/R ECO LED  
page 103



SLIM CLEAN LED  
page 104



DENTAL  
page 105



**NEW**  
SLICK LED  
page 108



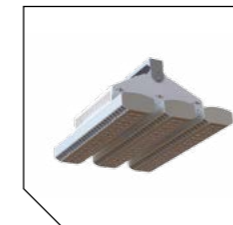
SLICK.PRS ECO LED  
page 110



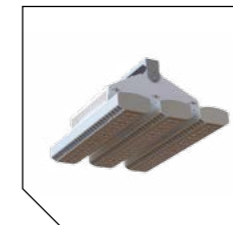
SLICK.PRS AGRO LED  
page 111



**NEW**  
HB FLOODLIGHT LED  
page 112



HB LED LOGISTIC  
page 113



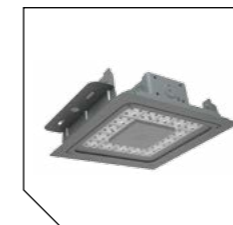
HB LED  
page 114



INOX LED  
page 116



LB/S ECO LED  
page 117



INSEL LB/R LED  
page 118



INSEL LB/S LED  
page 120



PLANTADOR LED  
page 122



**NEW**  
ARCTIC STANDARD  
page 123



ARCTIC.OPL ECO LED  
page 124



ARCTIC.OPL ECO LED TH  
page 125



LZ.OPL ECO LED  
page 126



LZ.OPL ECO LED TH  
page 127



Street



MAGISTRAL LED  
page 132



FREGAT LED  
page 133



FREGAT CROSSING LED  
page 134

Park



CLASSIC LED  
page 135



TERES LED  
page 136



SKYLINE LED  
page 153

Floodlights



LEADER LED  
page 137



FREGAT FLOOD LED  
page 138

Wall



STAR LED  
page 139



GRANDA LED  
page 140



DAMIN LED  
page 141



TUBUS LED  
page 142



TETRA LED  
page 143



KVARTA LED  
page 144



KAMPI LED  
page 145

Ceiling



MATRIX/S LED  
page 146



MATRIX/R LED  
page 147



PIPE LED  
page 148

Wall Recessed

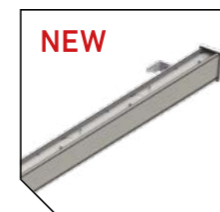


DECA LED  
page 149

Ground



NOTA LED  
page 150



EVOLINE LED  
page 151

Architectural Floodlights



GLOSS LED  
page 152

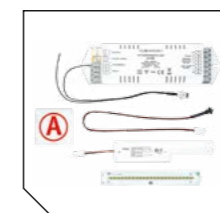
EMERGENCY



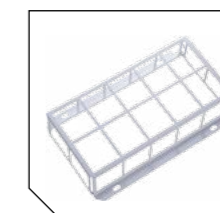
MIZAR LED  
page 158



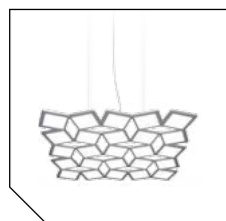
LYRA LED  
page 159



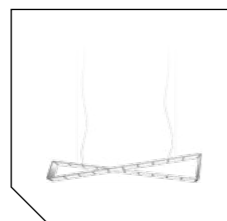
CONVERSION KIT LED  
page 160



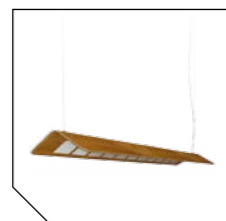
Accessories  
page 161



MOTION OLED  
page 166



INFINITY OLED  
page 167



NATURE OLED  
page 168



NEW  
SOL P  
page 169



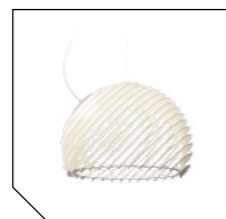
NEW  
PHANTOM  
page 170



NEW  
FLEX  
page 171



COIL  
page 172



SATURNO  
page 173



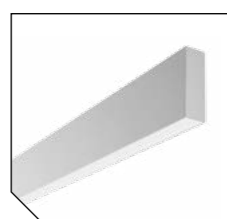
OKKO P  
page 174



OKKO S  
page 175



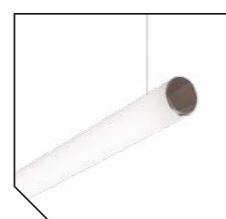
NEW  
SOL S  
page 176



PROFILE H  
page 177



PROFILE  
page 178



T 120  
page 179



COOL, SOON  
page 180



RADO, RAMO  
page 181



UNO, UMO  
page 182



FARO  
page 183



FIORE  
page 183



EOS  
page 184



ARNO  
page 184



QUO  
page 185



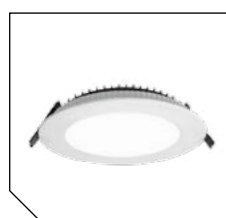
SPLAY  
page 185



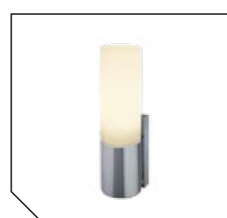
OKKO  
page 186



OKKO IP  
page 187



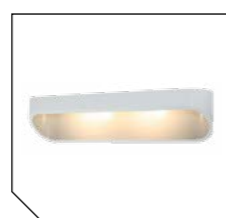
ACQUA LED  
page 188



PARETTE  
page 189



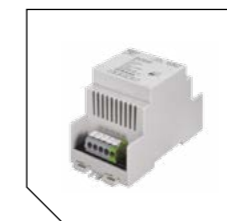
HUGO  
page 191



ORSAY  
page 191



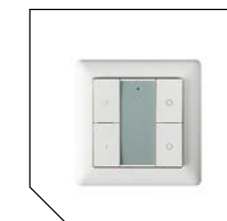
Routers ME6 RD  
page 200



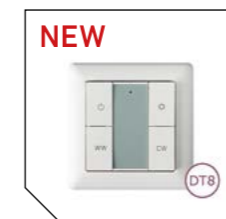
Power supplies ME6  
DALI D2400PS, page 200



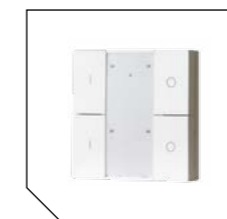
Control modules ME6  
page 200



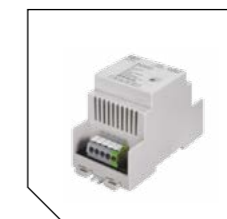
Controlling keypad ME6  
DALI page 201



NEW  
Controlling keypad ME6  
DALI page 201



Control panel DALI  
page 201



ME6 DALI D10X  
page 201



ME6 Server Lite/  
Enterprise page 202



ME6 Server Industrial  
page 203



Sensor ME6 EBDSPiR  
page 203



Sensor ME6 EBDHS  
page 203



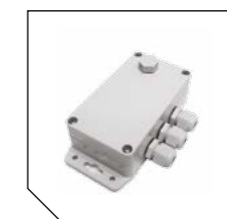
Sensor ME6 EBDMR  
page 203



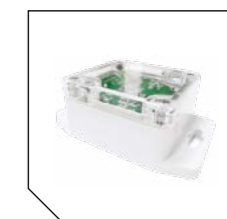
Router ME6-R  
page 208



Module ME6-NF  
page 208



Module ME6-NF (IP65)  
page 209



Sensor ME6-LSO  
page 209



CORVETE LED ME6  
page 210



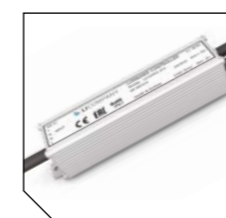
NLC044-PLC  
page 214



Antena GA01  
page 214



NLC008-PLC  
page 214



LLC102LV-PLC  
page 214



Sensor DS01  
page 214



Sensor LS01  
page 214



Current transformer  
page 214



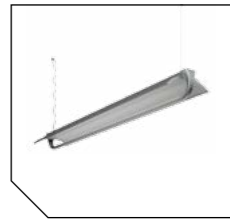
COMMERCIAL



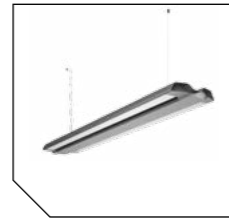
# Commercial lighting



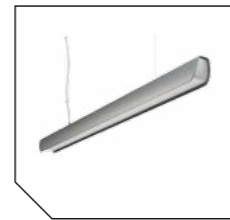
Office Lighting.  
Suspended



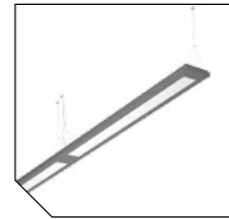
REFLECT LED  
page 46



SPACE LED DREAM  
page 47



EAGLE LED  
page 48

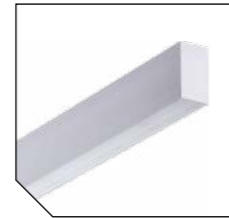


FLAME UNI LED  
page 49

Continuous Line

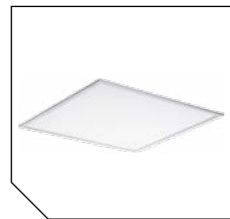


LINER/R LED TH  
page 50

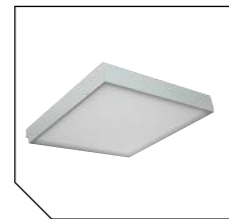


LINER/S LED TH  
page 52

Recessed



SLIM LED  
page 54



OPL/R ECO LED  
page 55



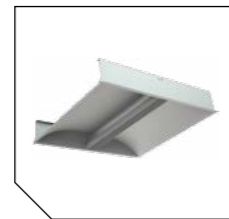
PRS/R ECO LED  
page 56



DR.OPL ECO LED  
page 57



OTR/R LED  
page 58



OTX LED  
page 59



PRB/R UNI LED  
page 60



ALD UNI LED  
page 61

Surface Mounted



AOT UNI LED  
page 62



ALS UNI LED  
page 63



OPL/S ECO LED  
page 64



PRS/S ECO LED  
page 65



PTF UNI LED  
page 66

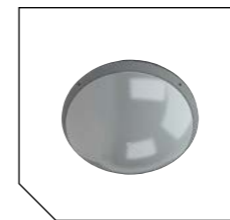


OLYMPIC LED  
page 67



RKL LED  
page 68

Surface Mounted,  
Water Proof



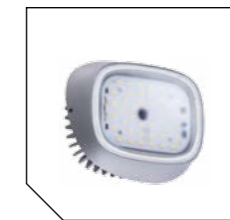
CD LED  
page 69



K LED  
page 70



C LED  
page 71

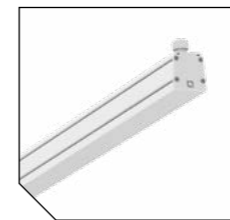


TITAN LED  
page 72



OD LED  
page 73

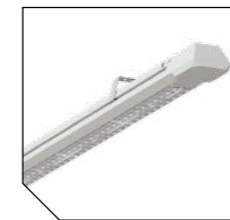
Trade Lighting.  
Suspended



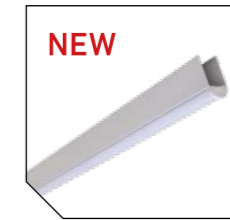
LED MALL ECO IP54  
page 74



LED MALL LINE IP54  
page 76



DOMINO LED  
page 78



LNK LED MINI  
page 80

Downlights



COLIBRI DL LED  
page 81



DL POWER LED MINI  
page 82



DL POWER LED  
page 83



DL POWER LED IP66  
page 84



PILOT DL LED  
page 85



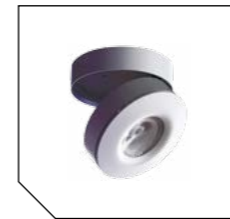
SAFARI DL LED  
page 86



DLK LED  
page 87



DL TURN LED  
page 88

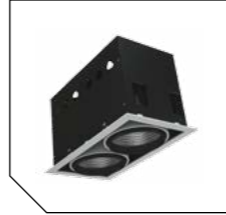


UFO/S DL LED  
page 90



UFO DL LED  
page 91

Recessed



SNS LED  
page 89

Wall and Track mounted



BELL/T LED  
page 92



BELL/S LED  
page 93



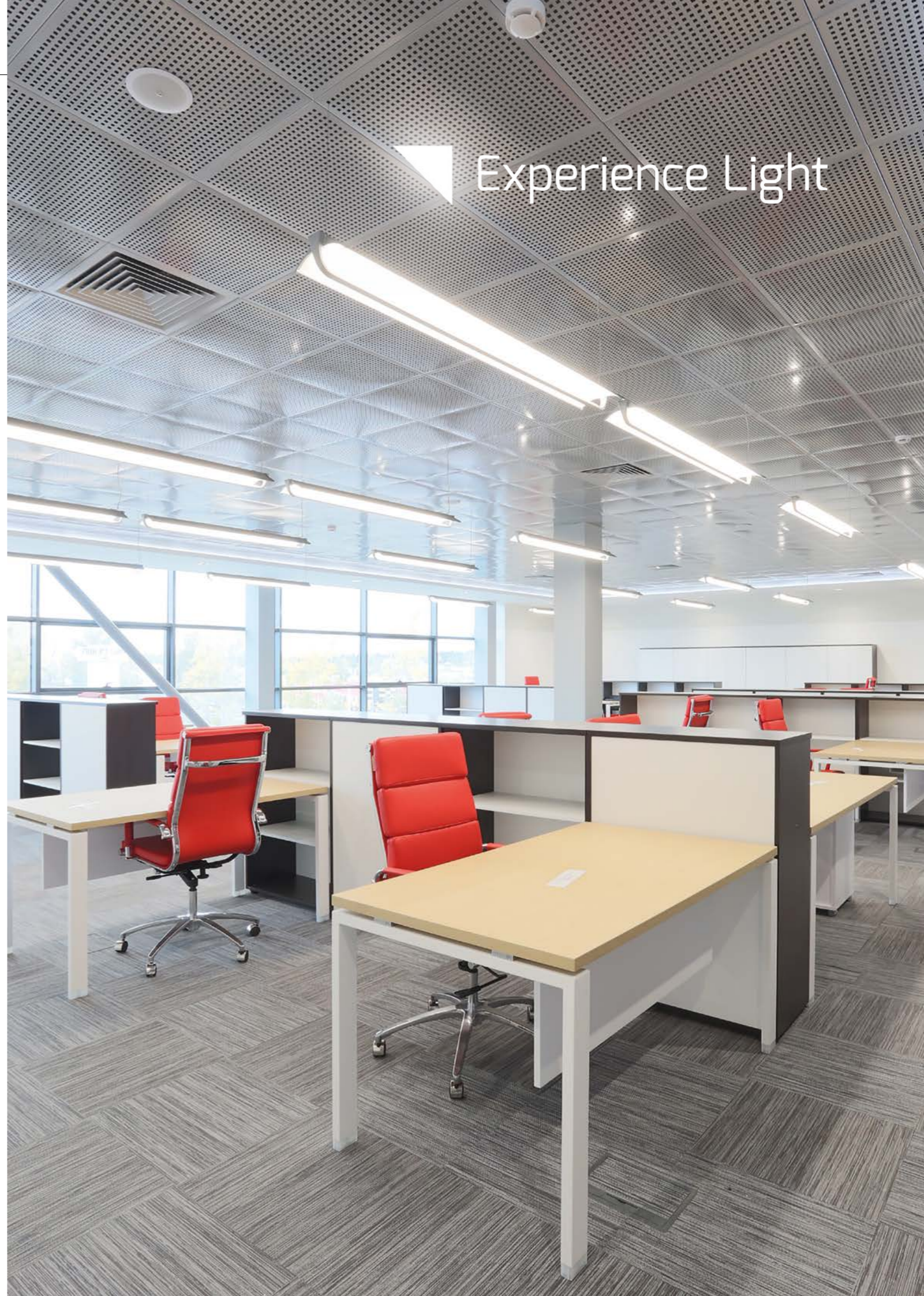
JET/T LED  
page 94

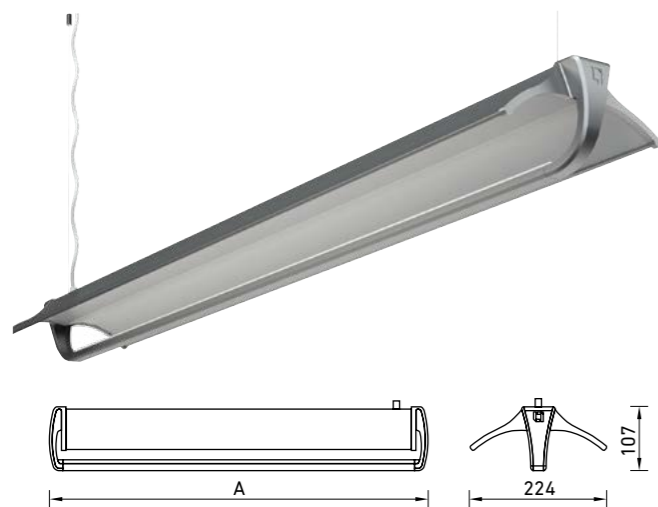


**NEW**  
COPER/T LED  
page 96



TILE T LED  
page 97





**About**

Modular LED suspension lighting system for offices, classrooms, and meeting rooms. Combines stylish exterior, high luminous flux (> 100 lm), and highly-comfortable reflected light.

**Installation**

Mounted on the ceiling surface using the included wire rope suspensions.

**Design**

The luminaire housing is made of aluminum profile, powder coated in metallic. End covers are made of die-cast aluminum. The driver is located inside the housing.

**Package contents**

Suspension system included. For continuous line installation, please use: CS - a starting element of the modular system, the luminaire with one end cover, set of connecting elements and power input; CL - a element of the modular system, the luminaire with one end cover and a set of connecting elements; CE - a main element of the modular system, the luminaire without end cover and with a set of connecting elements. The maximum number of luminaires grouped in one continuous line with through wiring: 60 pcs.

**Optical part**

The LED module is installed on the aluminium heat sink and covered with an translucent PMMA diffuser

	A
REFLECT LED 1000 4000K	1142
REFLECT LED 1500 4000K	1642
REFLECT LED 1500 CS 4000K	1581
REFLECT LED 1500 CE 4000K	1520
REFLECT LED 1500 CL 4000K	1581

that prevents individual LEDs from being reflected. Diffuse reflective film from White Optics is used as the reflecting material. LED type: SMD.

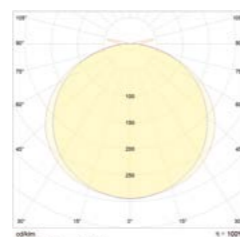
**Features**

Color temperature – 4000 K (3000 K, 5000 K by request)  
Color rendering index > 80 (> 90 by request)  
Luminous flux flickering < 3%

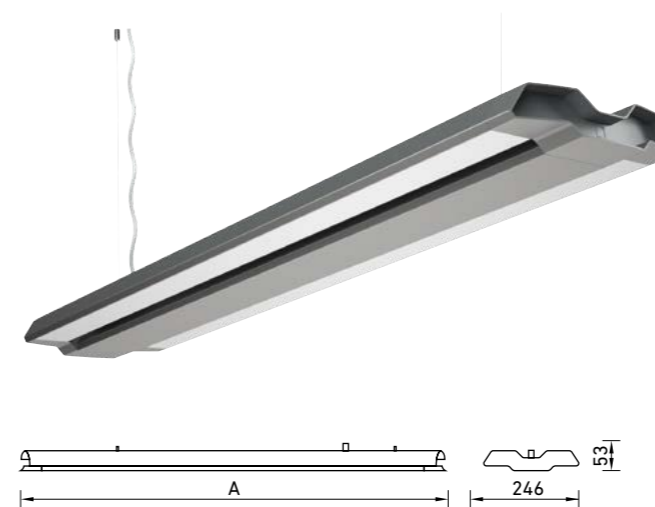
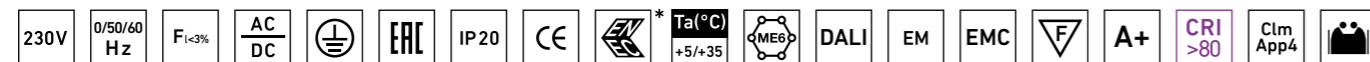
**Lighting control**

The luminaire can be supplied with a 1–10V, DALI, or ME6 dimmable driver. Modifications with changable color temperature are available.

**REFLECT LED 1500 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
REFLECT LED 1000 4000K	2400	24	100	4,5	1997018210	≥ 0,97
REFLECT LED 1500 4000K*	3600	34	106	6,5	1997018220	≥ 0,97
REFLECT LED 1500 CS 4000K	3600	34	106	6,5	1997018240	≥ 0,97
REFLECT LED 1500 CE 4000K	3600	34	106	6,2	1997018230	≥ 0,97
REFLECT LED 1500 CL 4000K	3600	34	106	6,2	1997021750	≥ 0,97
<b>Luminaires with changable light temperature</b>						
REFLECT LED 1000 CH CF	2000	24	83	4,5	1997026370	≥ 0,92
REFLECT LED 1500 CH CF	3000	36	83	6,5	1997026380	≥ 0,92



**About**

Modular LED suspension lighting system for offices, classrooms, and meeting rooms. Combines stylish exterior and high energy efficiency. Up/down light versions produce ambient light reflected from a ceiling.

**Installation**

Mounted on the ceiling surface using the included wire rope suspensions.

**Design**

The luminaire housing is made of aluminum profile, powder coated in metallic. End covers are made of die-cast aluminum. The driver is located inside the housing.

**Package contents**

Suspension system included. For continuous line installation, please use: CS – a starting element of the modular system, a luminaire with one end cover, set of connecting elements and the power input; CL – a final element of the modular system, the luminaire with

one end cover and a set of connecting elements; CE – a main element of the modular system, the luminaire without end covers and with a set of connecting elements. The maximum number of luminaires that can be installed in one line with through wiring is 30 pcs and 60 pcs for up/down version.

**Optical part**

LED module is installed on the aluminum profile, which is a heat sink and closed by opal diffuser made of PMMA. Up/down light modification creates ambient light reflected from a ceiling. LED type: SMD.

**Features**

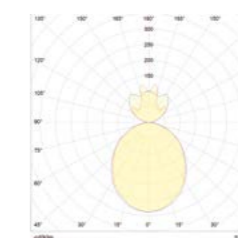
Color temperature – 4000 K (3000 K, 5000 K– by request)  
Color rendering index > 80 (> 90 by request)  
Luminous flux flickering < 2%

	A
SPACE LED DREAM 1000	1108
SPACE LED DREAM 1500	1404

**Lighting control**

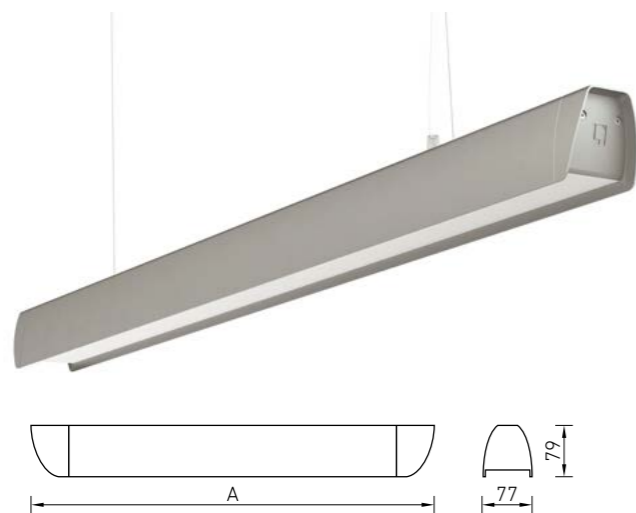
The luminaire can be supplied with a 1–10V, DALI, or ME6 dimmable driver.

**SPACE LED DREAM 1500 up/down 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
SPACE LED DREAM 1000 4000K	3400	35	97	5,6	1997018670	≥ 0,95
SPACE LED DREAM 1500 4000K	4500	46	98	6,4	1997018690	≥ 0,95
SPACE LED DREAM 1500 CE 4000K	4500	46	98	6,4	1997018700	≥ 0,95
SPACE LED DREAM 1500 CS 4000K	4500	46	98	6,4	1997018720	≥ 0,95
SPACE LED DREAM 1500 CL 4000K	4500	46	98	6,4	1997018710	≥ 0,95
SPACE LED DREAM 1000 up/down 4000K	4300	46	93	5,6	1997018680	≥ 0,95
SPACE LED DREAM 1500 up/down 4000K	6300	62	102	6,4	1997018730	≥ 0,95
SPACE LED DREAM 1500 up/down CE 4000K	6300	62	102	6,4	1997018740	≥ 0,95
SPACE LED DREAM 1500 up/down CL 4000K	6300	62	102	6,4	1997018750	≥ 0,95
SPACE LED DREAM 1500 up/down CS 4000K	6300	62	102	6,4	1997018760	≥ 0,95





**About**

Modular suspension lighting system for offices, classrooms, and meeting rooms. The stylish exterior will make the EAGLE LED a highlight of any indoor environment.

**Installation**

Mounted on the ceiling surface using the included wire rope suspensions.

**Design**

Housing is made of aluminum profile, powder coated in metallic. Possibility of painting according to RAL scale. The driver is located inside the housing.

**Package contents**

Suspension system included. For continuous line installation, please, use: CS – a starting element of the modular system, the luminaire with one end cover, set of connecting elements and a power input; CL – a final element of the modular system, the luminaire with one end cover and a set of connecting elements; CE – the key element of the modular system, the luminaire without end covers but with the set of connecting elements. The maximum number of luminaires grouped in one continuous line with through wiring: 60 pcs.

	A
EAGLE LED 1000 4000K	1067
EAGLE LED 1500 4000K	1567
EAGLE LED 1500 CS 4000K	1584
EAGLE LED 1500 CE 4000K	1551
EAGLE LED 1500 CL 4000K	1534

**Optical part**

Opal PMMA diffuser. LED type: SMD.

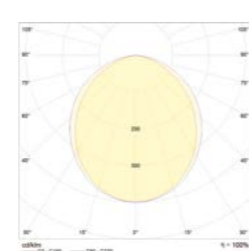
**Features**

Color temperature – 4000 K (3000 K, 5000 K by request)  
Color rendering index > 80 (> 90 by request)  
Luminous flux flickering < 2%

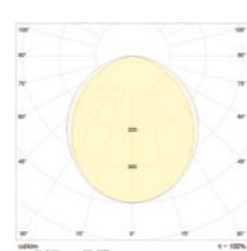
**Lighting control**

The luminaires can be supplied with a 1–10V, DALI, or ME6 dimmable driver.

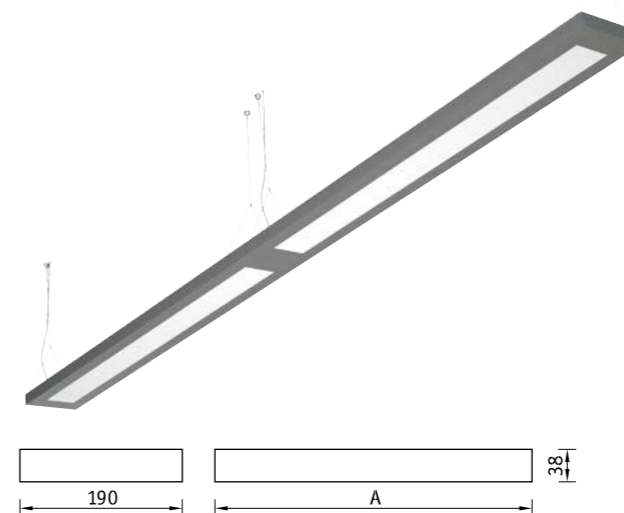
EAGLE LED 1000 4000K



EAGLE LED 1500 4000K



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
EAGLE LED 1000 4000K	2400	26	92	2,6	1997019650	≥ 0,95
EAGLE LED 1500 4000K	3600	38	95	3,9	1997017090	≥ 0,95
<b>Luminaires for in-line installation</b>						
EAGLE LED 1500 CE 4000K	3600	38	95	3,4	1997019680	≥ 0,95
EAGLE LED 1500 CL 4000K	3600	38	95	3,3	1997019670	≥ 0,95
EAGLE LED 1500 CS 4000K	3600	38	95	3,8	1997019660	≥ 0,95



**About**

FLAME UNI LED suspension system for the illumination of office spaces, meeting rooms, lobbies, and reception areas. Can be installed individually or used to build various lighting constructions. The simple shape will emphasize the status of the area and become its distinctive feature.

**Installation**

Mounted on the ceiling surface using the included wire rope suspensions.

**Design**

Housing made of aluminum profile, powder coated in metallic. The driver is located inside the housing.

**Package contents**

Suspension system is included. For continuous line installation you will need to order FL connection set, which includes 2 end covers, fixing elements for end covers, power supply wire, ceiling cap. L, T and X connection using additional elements is possible.

**Optical part**

Opal PMMA diffuser.  
LED type: SMD.

**Features**

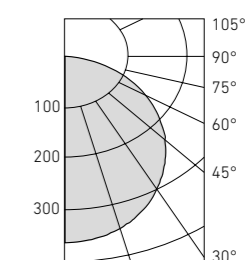
Color temperature – 4000 K (3000 K, 5000 K by request)  
Color rendering index > 80 (> 90 by request)  
Luminous flux flickering < 2%

**Lighting control**

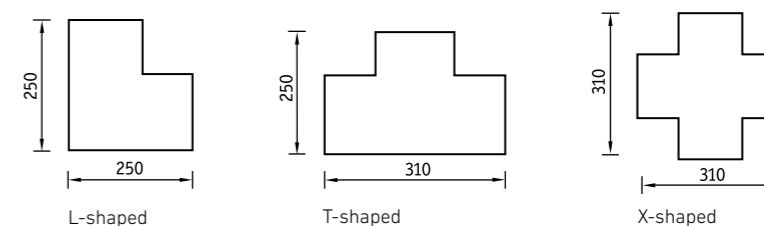
The luminaires can be supplied with a 1–10V, DALI, or ME6 dimmable driver.

	A
FLAME UNI LED 1200×190	1242
FLAME UNI LED 1800×190	1799

FLAME UNI LED 1200



Accessories	Code
FL L-shaped connection element metallic	2617000010
FL T-shaped connection element metallic	2617000020
FL X-shaped connection element metallic	2617000030
FL connection set	2617000060



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
FLAME UNI LED 1200×190 4000K	3300	33	100	5,0	1997022820	≥ 0,96
FLAME UNI LED 1800×190 4000K	5000	50	100	6,7	1997022830	≥ 0,96
<b>Luminaires for in-line installation</b>						
FLAME DR UNI LED 1200×190 4000K*	3300	33	100	5,0	1997022800	≥ 0,96
FLAME DR UNI LED 1800×190 4000K	5000	50	100	6,7	1997022810	≥ 0,96





**About**

Recessed modular LED lighting system for offices, meeting rooms, corridors, lobbies, and lounges. Line width is 6 cm. One of the main advantage of this system is a continuous diffuser excludes visible joints between luminaires in one line.

**Installation**

The luminaire is installed in false plasterboard ceilings. Both single installation and connection of luminaires in shadowless lines are possible. LINER/R LED TH luminaires are designed for single installation. LINER/R DR LED TH luminaires are designed for in-line installation. The maximum number of luminaires that can be installed in one line with through wiring is 50 pcs. Using angle elements (LINER/S CC LED 600 TH 4000K) it is possible to create lines at an angle of 90°.

**Package contents**

For continuous line installation you will need to order 2 end covers and a diffuser of required length. Connecting elements should be ordered separately.

**Design**

Housing is made of aluminum profile, powder coated in metallic, white. The driver is located inside the housing.

**Optical part**

LED-module is closed by opal PMMA diffuser, which eliminates the visibility of individual LEDs. LED-type: SMD.

**Features**

Color temperature – 4000 K (3000 K, 5000 K by request)  
 Color rendering index – 80  
 Luminous flux flickering < 2%

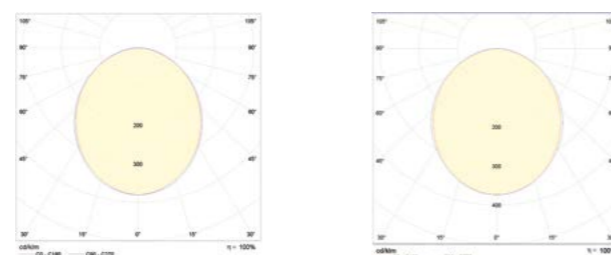
**Lighting control**

The luminaires can be supplied with a 1–10V, DALI, or ME6 dimmable driver. Modifications with changable color temperature are available.

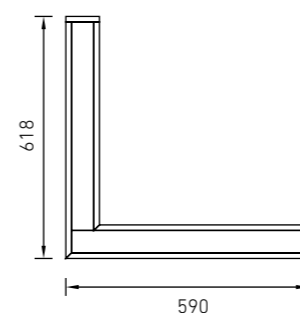
**Color temperatures examples**



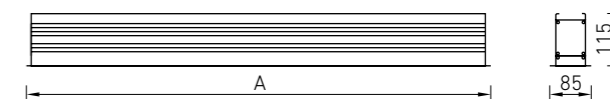
**LINER/R DR LED 600 TH S 4000K    LINER/R D LED 1200 TH S 4000K**



LINER/R CC LED TH



LINER/R DR LED TH



Accessories	Code
Diffuser LINER LED TH 2246 mm	2473000060
Diffuser LINER LED TH 4500 mm	2473000070
Diffuser LINER LED TH 6750 mm	2473000080
Diffuser LINER LED TH 9000 mm	2473000090
Diffuser LINER LED TH 13500 mm	2473000100
End cap set LINER/R LED TH W	2474000060
End cap set LINER/R LED TH S	2474000070

	A
LINER/R CC LED 600 TH S 4000K	618
LINER/R DR LED 600 TH S 4000K	562
LINER/R DR LED 1200 TH S 4000K	1123
LINER/R LED 1200 TH S 4000K	1153



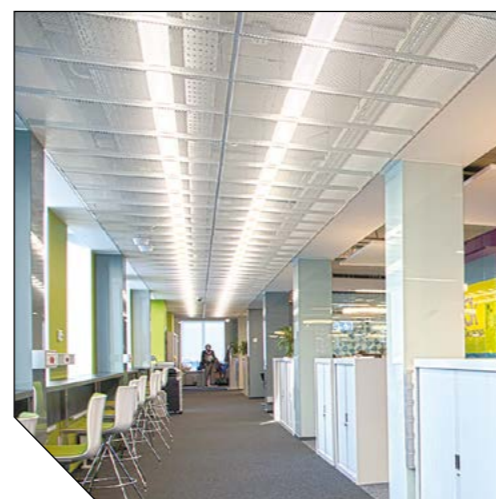
End cap set  
LINER/R DR LED TH



Diffuser  
LINER/R DR LED TH

Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
LINER/R DR LED 600 TH W 4000K	1500	18	83	1,6	1997021640	≥ 0,96
LINER/R DR LED 600 TH S 4000K	1500	18	83	1,6	1997021630	≥ 0,96
LINER/R CC LED 600 TH W 4000K	3200	32	100	3,4	1997017200	≥ 0,95
LINER/R CC LED 600 TH S 4000K	3200	32	100	3,4	1997017190	≥ 0,95
LINER/R LED 1200 TH W 4000K	3000	32	94	3,5	1997021620	≥ 0,96
LINER/R LED 1200 TH S 4000K	3000	32	94	3,5	1997021610	≥ 0,96
LINER/R DR LED 1200 TH W 4000K	3000	32	94	3,2	1997017230	≥ 0,96
LINER/R DR LED 1200 TH S 4000K	3000	32	94	3,2	1997017220	≥ 0,96
<b>Luminaires with changable light temperature</b>						
LINER/R LED 1200 TH W CH CF	2500	32	78	3,2	1997028370	≥ 0,94





**About**

Suspended or surface mounted modular LED lighting system for offices and classrooms, cabinets and meeting rooms, lobbies and lounges. Line width is 6 cm. One of advantages of this suspension system is continuous diffuser excludes visible joints between luminaires in one line.

**Installation**

The luminaires are mounted to the ceiling surface directly by means of rope hangers (max 2 m). Both single and continuous line installations are possible. LINER/S D LED TH luminaires are designed for single installation. LINER/S DR LED TH luminaires are designed for continuous line installation. A maximum number of luminaires that can be installed in one line with through wiring is 60 pcs. Using angle elements LINER/S CC it is possible to create lines at an angle of 90°.

**Package contents**

Suspension system should be ordered separately (order code 2477000020). Elements for surface mounting are included. DR/CC luminaires set of end caps and diffuser should be ordered for each light line/separate mounted luminaire separately.

**Design**

Housing is made of aluminum profile, powder coated in metallic, white. The driver is located inside the housing.

**Optical part**

LED module is closed with opal diffuser made of PMMA, which eliminates the visibility of individual LEDs. LED type: SMD.

**Features**

- Color temperature – 4000 K
- Color rendering index – 80
- Luminous flux flickering < 2%

**Lighting control**

The luminaires can be supplied with a 1–10V, DALI, or ME6 dimmable driver. Modifications with changable color temperature are available.

**Color temperatures examples**

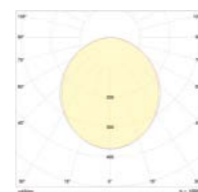


5800 K

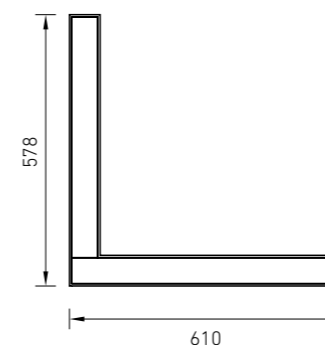
4000 K

2800 K

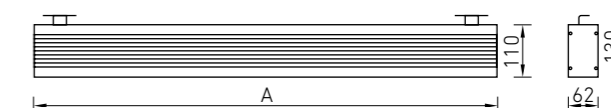
**LINER/S DR LED 1200 TH S 4000K**



**LINER/S CC LED TH**



**LINER/S DR LED TH**



Accessories	Code
Diffuser LINER LED TH 2246 mm	2473000060
Diffuser LINER LED TH 4500 mm	2473000070
Diffuser LINER LED TH 6750 mm	2473000080
Diffuser LINER LED TH 9000 mm	2473000090
Diffuser LINER LED TH 13500 mm	2473000100
Suspension kit LINER/S TH	2477000020
End cap set LINER/S LED TH S	2473000020
End cap set LINER/S LED TH W	2473000010

	A	B*
LINER/S DR LED 600 TH	562	60
LINER/S LED 1200 TH	1123	60

\* with end caps for separate instalation



End cap set LINER/S LED TH



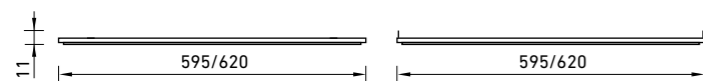
Diffuser LINER/S LED TH



Suspension kit LINER/S LED TH

Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
LINER/S DR LED 600 TH W 4000K	1500	18	83	1,6	1997021670	≥ 0,96
LINER/S DR LED 600 TH S 4000K	1500	18	83	1,6	1997021680	≥ 0,96
LINER/S CC LED 600 TH W 4000K	3200	32	100	3,6	1997017320	≥ 0,95
LINER/S CC LED 600 TH S 4000K	3200	32	100	3,6	1997017310	≥ 0,95
LINER/S LED 1200 TH W 4000K	3200	32	100	3,2	1997021660	≥ 0,96
LINER/S LED 1200 TH S 4000K	3200	32	100	3,2	1997021650	≥ 0,96
LINER/S DR LED 1200 TH W 4000K	3000	32	94	3,0	1997017350	≥ 0,96
LINER/S DR LED 1200 TH S 4000K	3000	32	94	3,0	1997017340	≥ 0,96
<b>Luminaires with changable light temperature</b>						
LINER/S LED 1200 TH W CH CF	2500	32	78	3,2	1997028400	≥ 0,94





**About**

Slim LED luminaire for office and classroom premises. SLIM LED is the best choice for indoor areas where soft diffused light and uniform diffuser illumination are required. High luminous efficiency.

**Installation**

Suitable for Armstrong type suspended ceilings with 15 and 24 mm width of supported T-shaped profile shelf or suspend to ceiling surface on hangers.

**Design**

Ultrathin housing made of aluminum profile.

**Package contents**

Suspension system is not included in the delivery kit (order code - 4901000010). Luminaire housing equipped with elements for suspension fixing.

**Optical part**

Opal diffuser made of PMMA. LEDs are mounted on the outer parameters of the fitting. LED type: SMD.

**Features**

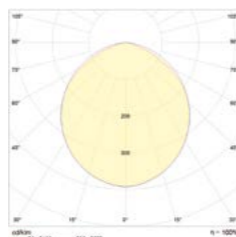
Color temperature - 4000 K (3000 K, 5000 K by request)  
 Color rendering index > 80  
 Luminous flux flickering < 5%

**Lighting control**

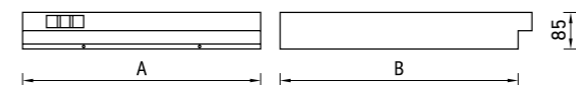
The luminaire can be supplied with a 1-10V, DALI, or ME6 dimmable driver.

Accessories	Code
Suspension kit SLIM	4901000010

**SLIM LED 595 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
SLIM LED 595 4000K	4560	38	120	2,9	1997018500	≥ 0,96
SLIM LED 620 4000K	4560	38	120	3,0	1997026360	≥ 0,96



**About**

Recessed LED luminaire for office and classroom environments with uniform shadowless diffuser illumination. OPL/R ECO LED is optimal for indoor areas where soft diffused light and high energy efficiency are required.

**Installation**

Suitable for Armstrong type suspended ceilings with 15 and 24 mm width of supported T-shaped profile shelf or plasterboard ceilings by means of clips.

**Design**

All-metal housing made of sheet steel, powder coated in white. Driver located inside the housing.

**Package contents**

For installation in plasterboard ceilings mouting clips should be ordered separately. Order code - 2997000470 (4 pieces for 1 luminaire).

**Optical part**

ECO LED module provides uniform illumination. Opal diffuser made of PMMA in metal frame. LED type: SMD.

**Features**

Color temperature - 4000 K (3000 K, 5000 K by request)  
 Color rendering index - 80  
 Luminous flux flickering < 2%

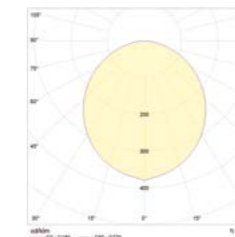
	A	B	⊙
OPL/R ECO LED 300 4000K	295	595	275×575
OPL/R ECO LED 595 4000K	595	595	575×575
OPL/R ECO LED 620 4000K	620	620	620×620
OPL/R ECO LED 1200 4000K	1215	295	1175×275
OPL/R ECO LED 1200×600 4000K	1215	595	1175×575

**Lighting control**

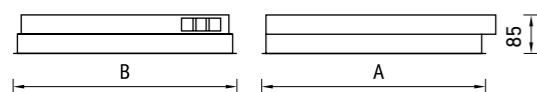
The luminaire can be supplied (equipped) with a 1-10V, DALI, or ME6 dimmable driver. Modifications with changable color temperature are available.

Accessories	Code
Clips for p/b	2997000470
Grid 1200 SPORT LED	2451000010

**OPL/R ECO LED 595 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
OPL/R ECO LED 300 4000K	1600	18	89	2,8	1997017750	≥ 0,98
OPL/R ECO LED 595 4000K	3350	35	96	4,5	1997017760	≥ 0,98
OPL/R ECO LED 595 4000K ARMSTRONG	3350	35	96	3,8	1997017770	≥ 0,98
OPL/R ECO LED 620 4000K	3350	35	96	4,5	1997012910	≥ 0,98
OPL/R ECO LED 1200 4000K	3400	36	94	5,0	1997017730	≥ 0,98
OPL/R ECO LED 1200×600 4000K	6650	72	92	8,8	1997017740	≥ 0,98
<b>Luminaires with changable color temperature</b>						
OPL/R ECO LED 595 CH CF	3250	34	96	4,5	1997026400	≥ 0,95



**About**

Recessed LED luminaire for office and classroom premises with uniform shadowless diffuser illumination and high luminous efficiency.

**Installation**

Suitable for Armstrong type suspended ceilings with 15 and 24 mm width of supported T-shaped profile shelf or plaster-board ceilings by means of clips.

**Design**

All-metal housing made of sheet steel, powder coated in white. Driver located inside the housing.

**Package contents**

For installation in plasterboard ceilings special mounting clips shall be ordered separately. Order code – 2997000470 (4 pieces for 1 luminaire).

**Optical part**

ECO LED module provides uniform illumination of luminaire diffuser. Diffuser made of PMMA with prismatic structure in metal frame. LED type: SMD.

**Features**

Color temperature – 4000 K (3000 K, 5000 K by request)  
Color rendering index > 80  
Luminous flux flickering < 2%

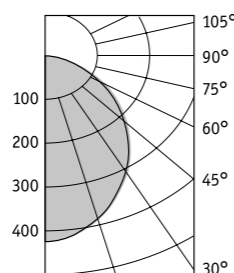
	A	B	⊕
PRS/R ECO LED 300 4000K	295	595	275×575
PRS/R ECO LED 595 4000K	595	595	575×575
PRS/R ECO LED 620 4000K	620	620	620×620
PRS/R ECO LED 1200 4000K	1215	295	1175×275
PRS/R ECO LED 1200×600 4000K	1215	595	1175×575

**Lighting control**

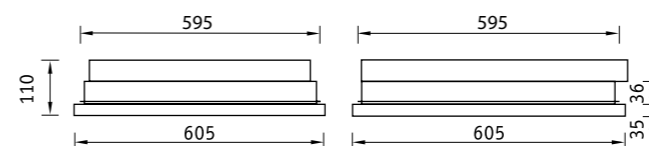
The luminaires can be supplied with a driver with a control function via DALI, 1-10V, ME6 protocol.

Accessories	Code
Clips for p/b	2997000470
Grid 1200 SPORT LED	2451000010

PRS/R ECO LED 595



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
PRS/R ECO LED 300 4000K	1800	18	100	2,8	1997018070	≥ 0,98
PRS/R ECO LED 595 4000K	3700	35	106	4,5	1997018080	≥ 0,98
PRS/R ECO LED 595 4000K ARMSTRONG	3700	35	106	3,8	1997024580	≥ 0,98
PRS/R ECO LED 620 4000K	3700	35	106	4,5	1997012880	≥ 0,98
PRS/R ECO LED 1200 4000K	3700	35	106	5,0	1997013390	≥ 0,98
PRS/R ECO LED 1200×600 4000K	7300	66	111	4,5	1997014180	≥ 0,98



**About**

Recessed luminaire for office and classroom environments. Diffuser protrudes by 3.5 cm from the ceiling and provides uniform illumination is a special feature. High luminous efficiency.

**Installation**

Suitable for Armstrong type suspended ceilings with 15 and 24 mm width of supported T-shaped profile shelf or plaster-board ceilings by means of clips.

**Design**

All-metal housing made of sheet steel, powder coated in white.

**Package contents**

Luminaire is delivered as housing with installed driver, LED modules and diffuser. For installation in plasterboard ceilings special mounting clips shall be ordered separately. Order code – 2997000470 (4 pieces for 1 luminaire).

**Optical part**

Opal diffuser made of PMMA. Fixed inside the housing by means of non-visible springs. Diffuser and housing packed separately. Diffuser is included in the delivery kit. LED type: SMD.

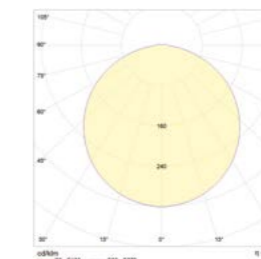
**Features**

Color temperature – 4000 K (3000 K, 5000 K by request)  
Color rendering index > 80  
Luminous flux flickering < 3%

**Lighting control**

The luminaire can be supplied with a 1–10V, DALI, or ME6 dimmable driver.

DR.OPL ECO LED 595 4000K



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
DR.OPL ECO LED 595 4000K SET	3380	33	102	4,7	1997015730	≥ 0,96

\* IP43 for the optical part



**About**

Recessed LED luminaires for office and classroom premises, where soft diffused light is required. Stylish exterior and uniform light distribution of the diffuser will make OTR/R LED a highlight of any indoor environment. High luminous efficiency.

**Installation**

Suitable for Armstrong type suspended ceilings with 15 and 24 mm width of supported T-shaped profile shelf.

**Design**

All-metal housing made of sheet steel, powder coated in white.

**Package contents**

Luminaire assembly.

**Optical part**

LED module provides a uniform shadowless illumination of the diffuser. Polycarbonate diffuser. LED type: SMD.

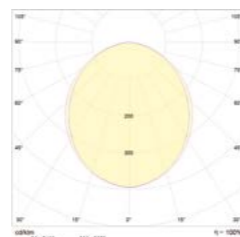
**Features**

Color temperature – 4000 K (3000 K, 5000 K by request)  
Color rendering index > 80  
Luminous flux flickering < 2%

**Lighting control**

The luminaire can be supplied with a 1–10V, DALI, or ME6 dimmable driver.

**OTR/R LED 595 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
OTR/R LED 595 4000K	3150	32	98	4,5	1997021090	≥ 0,95
OTR/R LED 620 4000K	3150	32	98	4,5	1997021690	≥ 0,95



**About**

Recessed LED luminaire for offices, classrooms, cabinets and meeting rooms with the unique combination of an excellent style, comfortable reflected light, and high energy efficiency (> 90 lm/W).

**Installation**

Suitable for Armstrong type suspended ceilings with 15 and 24 mm width of supported T-shaped profile shelf.

**Design**

All-metal housing made of sheet steel, powder coated in white.

**Package contents**

Luminaire assembly.

**Optical part**

Metal profile, powder coated in mat white, with LEDs fixed on the internal side, covered with PMMA diffuser.

**Features**

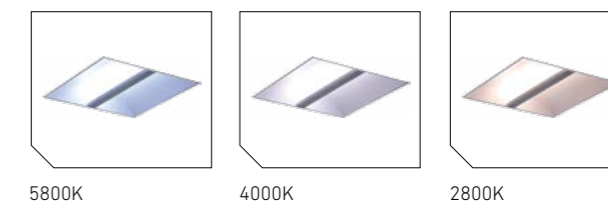
Color temperature – 4000 K (3000 K, 5000 K by request)  
Color rendering index > 80  
Luminous flux flickering < 5%

**Lighting control**

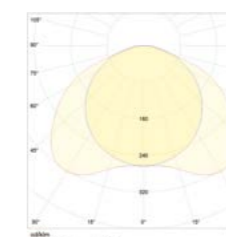
The luminaire can be supplied with a 1–10V, DALI, or ME6 dimmable driver.

Accessories	Code
Control panel ("7 button module", mat, steel)	4911002900
Router DigiDim 905	4911003310
Module 111202, mat steel	4911002910
Router DigiDim 910	5911000100

**Color temperatures examples**

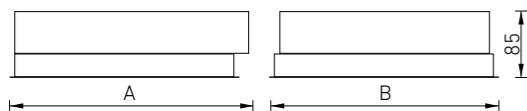


**OTX LED 595 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
OTX LED 595 4000K*	3200	34	94	4,3	1997013580	≥ 0,95
OTX LED 595/45 4000K	3940	45	88	4,3	1997013680	≥ 0,95
OTX LED 620 3000K	3100	34	91	4,4	1997023830	≥ 0,95
OTX LED 620 4000K	3200	34	94	4,4	1997013200	≥ 0,95
OTX LED 620/45 4000K	3940	45	88	4,3	1997020410	≥ 0,95
<b>Luminaires with changable color temperature</b>						
OTX LED 595 CH CF	3800	39	97	4,3	1997026390	≥ 0,96
OTX LED 620 CH CF	3800	39	97	4,4	1997026520	≥ 0,96



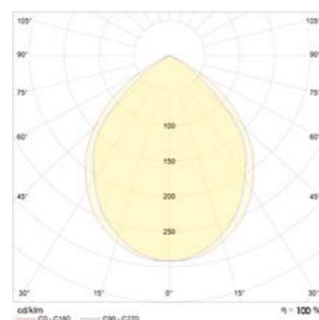


	A	B
PRB/R UNI LED 595	595	595
PRB/R UNI LED 620	620	620
PRB/R UNI LED 1200	1195	295

**Lighting control**

The luminaire can be supplied with a dimmable DALI driver.

**PRB/R UNI LED 595 4000K**



**About**

NEW

Recessed luminaire for office and classroom premises with an Alanod parabolic aluminum louver ensuring high efficiency and optimal light distribution.

**Installation**

Installed recessed in Armstrong type suspended ceilings or plasterboard ceilings using mounting clips.

**Package contents**

Luminaire assembly. For installation into plaster-board ceilings a set of clips has to be ordered separately. Order code for clips is 2997000470 (4 pcs per luminaire).

**Design**

All-metal housing made of sheet steel, powder coated in white. Driver fixed inside the housing.

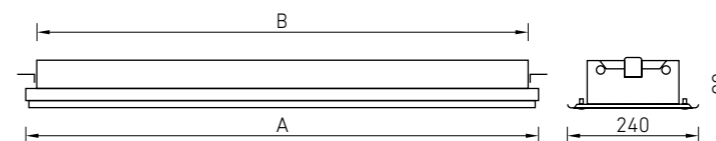
**Optical part**

Parabolic louver from mirror-finish aluminum. LED type: SMD.

**Features**

Color temperature – 4000 K (3000 K, 5000 K by request)  
 Color rendering index > 80  
 Luminous flux flickering < 2%

Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
PRB/R UNI LED 595 4000K	3200	32	100	4,0	1997018050	> 0,95
PRB/R UNI LED 620 4000K	3200	32	100	4,4	1997013220	> 0,95
PRB/R UNI LED 1200 4000K	3200	32	100	4,2	1997028450	> 0,95



**About**

LED luminaire compatible with most common slat ceiling types. Can be used indoors as well as outdoors under a canopy (IP54).

	A	B
ALD UNI LED 600 4000K	680	640
ALD UNI LED 1200 4000K	1289	1250

**Installation**

Recessed into strip suspended ceilings: German design with hidden/open joints, Italian design with hidden/open joints, Omega and S-design.

**Design**

All-metal housing made of sheet steel, powder coated in white.

**Package contents**

Luminaire assembly.

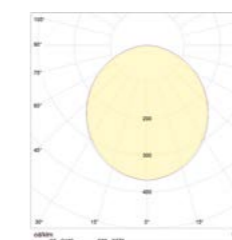
**Optical part**

PMMA diffuser in a white metal frame. The frame is attached to the housing with screws. LED type: SMD.

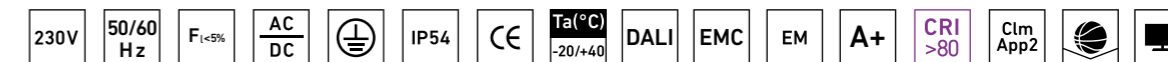
**Features**

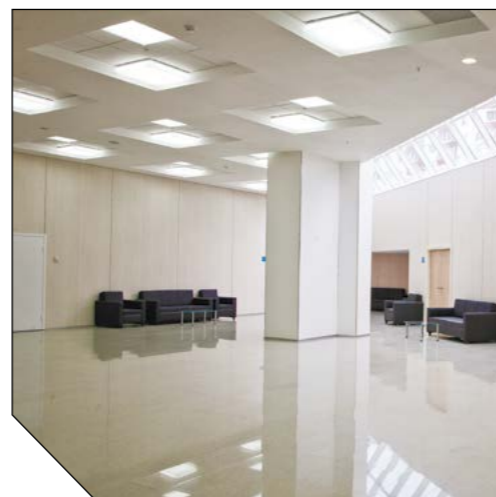
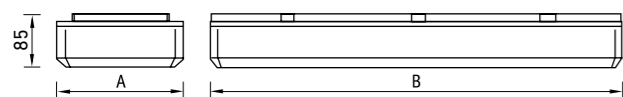
Color temperature – 4000 K  
 Color rendering index – 80  
 Luminous flux flickering < 5%

**ALD UNI LED 1200 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
ALD UNI LED 600 4000K	2200	24	92	4,1	1997021110	≥ 0,96
ALD UNI LED 1200 4000K	3000	30	100	5,1	1997021120	≥ 0,96





**About**

Surface mounted LED luminaire for office and classroom premises with front and end face diffuser illumination. AOT.OPL UNI LED is the best choice for indoor areas where soft diffused light is required, and AOT.PRS UNI LED is suitable for indoor areas where high energy efficiency (112 lm/W) is a priority. AOT.OPL ECO LED is a luminaire with uniform shadowless diffused lighting.

**Installation**

Suitable for mounting on ceiling surface.

**Design**

All-metal housing made of sheet steel, powder coated in white or metallic. Driver fixed inside the housing.

**Package contents**

Luminaire assembly.

**Optical part**

Prismatic (PRS) or opal (OPL) diffuser of PMMA. LED type: SMD.

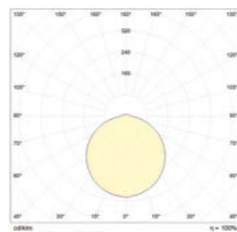
	A	B
AOT.OPL ECO LED 600 4000K	640	640
AOT.OPL UNI LED 600 4000K	640	640
AOT.OPL UNI LED 1200x200 4000K	1270	190
AOT.PRS UNI LED 1200x200 4000K	1270	190

**Features**

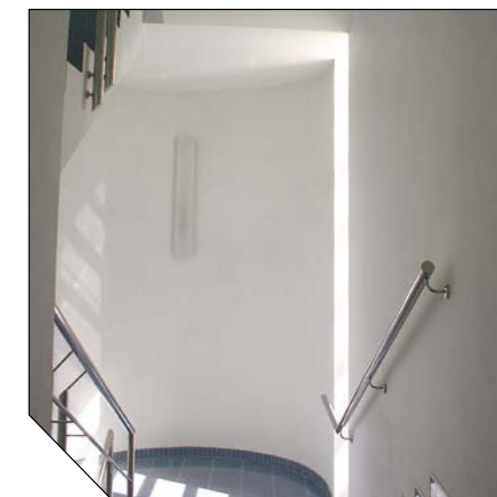
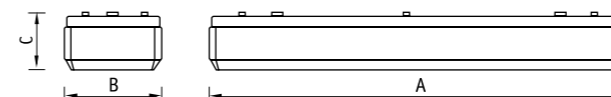
Color temperature - 4000 K (3000 K, 5000 K by request)  
 Color rendering index > 80  
 Luminous flux flickering < 2%

Accessories	Code
Mounting kit X4	2995000040

**AOT.OPL ECO LED 600 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
AOT.OPL ECO LED 600 4000K	3350	33	102	5,0	1997014400	> 0,98



	A	B	C
ALS UNI LED 600x600	640	640	110
ALS UNI LED 1200	1270	190	95

**About**

Luminaire series featuring an opal on prismatic diffuser, IP54 degree of protection, and high luminous efficiency. Versions can be manufactured with emergency power supply unit, lighting control, and a built-in motion sensor. For installation in indoor areas with ceiling heights of 2,5 to 4 meters.

**Installation**

Luminaire is installed from ceiling surface in the premises or under the shelter.

**Design**

Grey polyester housing, strengthened with fiber glass.

**Package contents**

Luminaire assembly.

**Optical part**

Opal blow diffuser of PMMA. LED type: SMD.

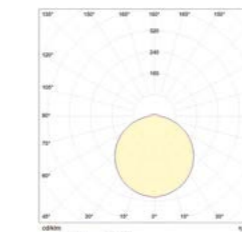
**Features**

Color temperature – 4000 K (3000 K, 5000 K by request)  
 Color rendering index > 80  
 Luminous flux flickering < 2%

**Lighting control**

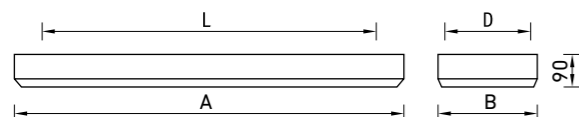
The luminaire can be supplied with a 1–10V, DALI, or ME6 dimmable driver.

**ALS OPL ECO LED 600x600 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
ALS.OPL UNI LED 600x600 4000K	3300	33	100	6,0	1997014340	> 0,96
ALS.OPL UNI LED 1200 4000K	3300	33	100	4,0	1997021830	> 0,95
ALS.PRS UNI LED 600x600 4000K	3800	33	115	6,0	1997014380	> 0,96
ALS.PRS UNI LED 1200 4000K	3800	33	115	4,0	1997014360	> 0,96





**About**

Surface mounted LED luminaire for office and classroom premises with uniform shadowless diffuser illumination. OPL/S ECO LED is the best choice for indoor areas where soft diffused light and high energy efficiency are required.

**Installation**

Suitable for mounting on ceiling surface.

**Design**

All-metal housing made of sheet steel, powder coated in white. Driver fixed inside the housing.

**Package contents**

Luminaire assembly.

**Optical part**

ECO LED module provides uniform illumination. Opal diffuser made of PMMA in metal frame. LED type: SMD.

	A	B	D	L
OPL/S ECO LED 300 4000K	625	310	270	492
OPL/S ECO LED 600 4000K	625	610	480	560
OPL/S ECO LED 1200 4000K	1225	310	270	1050
OPL/S ECO LED 1200×600 4000K	1227	610	535	1050

**Features**

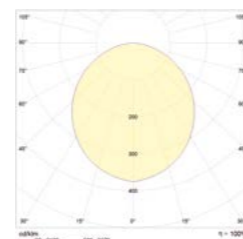
Color temperature – 4000 K (3000 K, 5000 K by request)  
 Color rendering index > 80  
 Luminous flux flickering < 2%

**Lighting control**

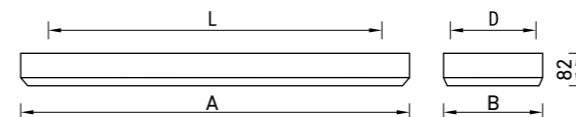
The luminaire can be supplied with a 1–10V, DALI, or ME6 dimmable driver.

Accessories	Code
Mounting kit X4	2995000040

**OPL/S ECO LED 600 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
OPL/S ECO LED 300 4000K	1600	18	89	3,2	1997017830	≥ 0,98
OPL/S ECO LED 600 4000K	3350	35	96	5,0	1997017840	≥ 0,98
OPL/S ECO LED 1200 4000K	3350	33	102	5,0	1997017810	≥ 0,98
OPL/S ECO LED 1200×600 4000K	6650	70	95	9,0	1997017820	≥ 0,98



**About**

Surface mounted LED luminaire for office and classroom premises with uniform shadowless diffuser illumination and high luminous efficiency.

**Installation**

Mounting on ceiling surface.

**Design**

All-metal housing made of sheet steel, powder coated in white. Driver located inside the housing.

**Package contents**

Luminaire assembly.

**Optical part**

ECO LED module provides uniform shadowless illumination of diffuser. Diffuser made of transparent polymeric material with prismatic structure in metal frame. LED type: SMD.

**Features**

Color temperature – 4000 K (3000 K, 5000 K by request)  
 Color rendering index > 80  
 Luminous flux flickering < 2%

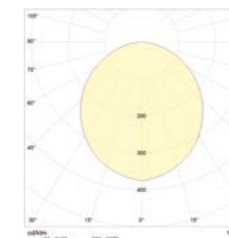
	A	B	D	L
PRS/S ECO LED 300 4000K	625	310	270	492
PRS/S ECO LED 600 4000K	625	610	480	560
PRS/S ECO LED 1200 4000K	1225	310	270	1050
PRS/S ECO LED 1200×600 4000K	1227	610	535	1050

**Lighting control**

The luminaire can be supplied with a 1–10V, DALI, or ME6 dimmable driver.

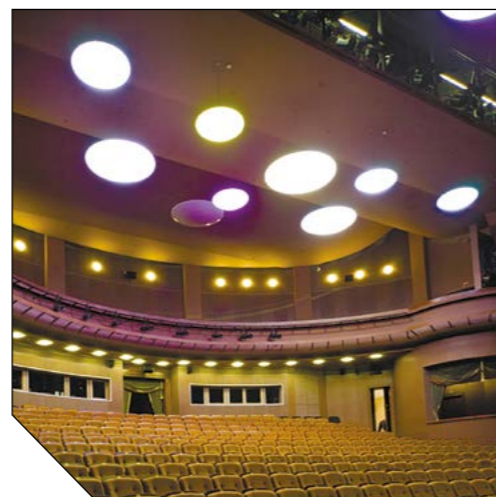
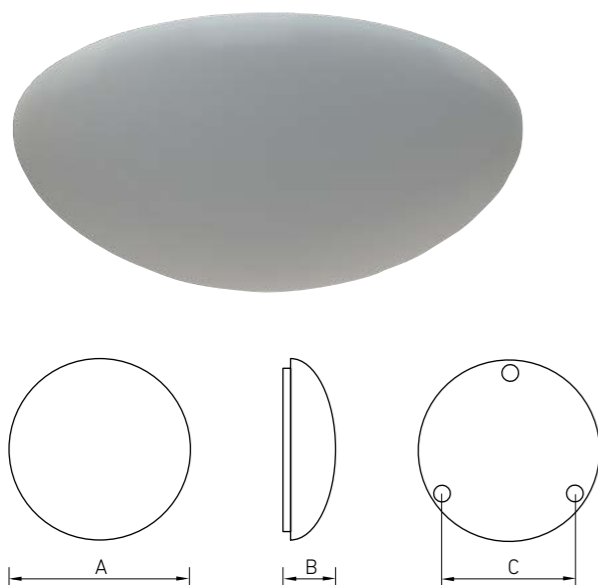
Accessories	Code
Mounting kit X4	2995000040

**PRS/S ECO LED 600 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
PRS/S ECO LED 300 4000K	1800	18	100	3,2	1997018120	≥ 0,98
PRS/S ECO LED 600 4000K	3700	35	106	5,0	1060000300	≥ 0,98
PRS/S ECO LED 1200 4000K	3700	34	109	5,0	1997014190	≥ 0,98
PRS/S ECO LED 1200×600 4000K	7400	66	112	9,0	1997014200	≥ 0,98





**About**

Surface mounted luminaires. Opal diffuser makes the luminaires optimal for indoor areas where soft diffused light is required. High luminous efficiency.

**Installation**

Suitable for ceiling or wall surface mounting.

**Design**

Stamped steel housing, powder coated in white.

**Package contents**

Luminaire assembly.

**Optical part**

Opal diffuser made of PMMA. LED type: SMD.

**Features**

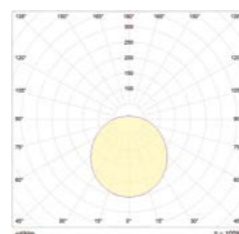
Color temperature – 4000 K (3000 K, 5000 K by request)  
 Color rendering index > 80  
 Luminous flux flickering < 2%

	A	B	C
RKL LED 13 4000K	367	125	276
RKL LED 29 4000K	476	150	360
RKL LED 38 4000K	476	150	360

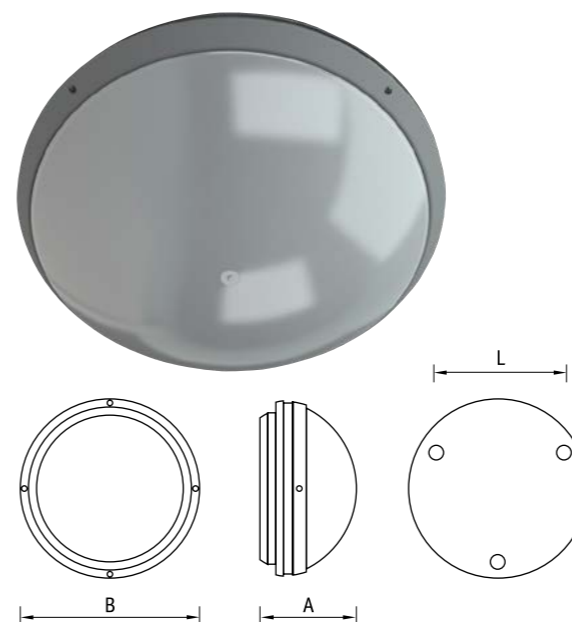
**Lighting control**

The luminaire can be supplied with a 1–10V, DALI, or ME6 dimmable driver.

**RKL LED 13 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
RKL LED 13 4000K*	1400	14	100	1,5	1997020550	≥ 0,96
RKL LED 29 4000K	2000	22	91	2,0	1997018350	≥ 0,96
RKL LED 38 4000K	3600	33	109	2,0	1997018360	≥ 0,96
<b>Luminaires with changable light temperature</b>						
RKL LED 38 CH CF	3200	33	97	2,0	1997028420	≥ 0,96



**About**

Surface mounted LED luminaire for outdoor facade lighting under a canopy (IP65) and indoor lighting in areas with high dust and moisture content. Can be supplied with a built-in motion sensor or an emergency power supply unit.

Note: the luminaire is designed for operation in domestic (non-industrial) networks.

**Installation**

Suitable for ceiling or wall surface mounting indoors or under a canopy.

**Design**

Housing made of white polycarbonate.

**Package contents**

Luminaire assembly.

**Optical part**

Opal diffuser made of PMMA. LED type: SMD.

**Features**

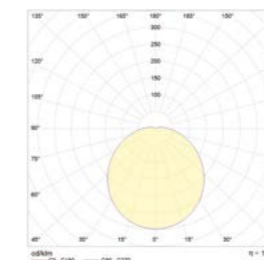
Color temperature – 4000 K (5000 K by request)  
 Color rendering index – 80

	A	B	L
CD LED 13 4000K	280	110	158
CD LED 18 4000K	390	144	255
CD LED 27 4000K	390	144	255

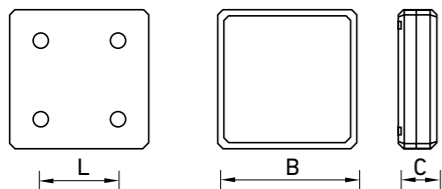
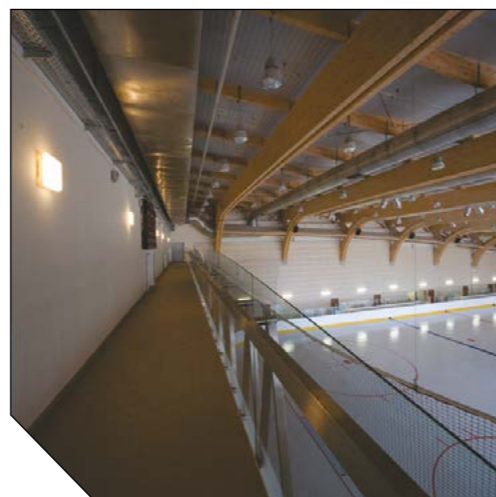
**Lighting control**

The luminaire can be supplied with a built-in motion sensor.

**CD LED 18 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
CD LED 13 4000K	900	13	69	1,2	1997020700	≥ 0,95
CD LED 18 4000K	1300	18	72	2,0	1997015250	≥ 0,9
CD LED 27 4000K	2350	24	98	2,3	1997015260	≥ 0,95



**About**

Simple and reliable LED luminaire series with IP54 rating. Can be used in a harsh indoor environment or outdoors under a canopy (-40 °C to +40 °C).

Note: the luminaire is designed for operation in domestic (non-industrial) networks.

**Installation**

The luminaire is suitable for indoor or under canopy.

**Design**

Polyamide housing. A protective grid is available for K200 (order code – 2135000020) and K300 (order code – 2135000040).

**Package contents**

Luminaire assembly. For installation you need to order "X2 mounting kit" (order code – 2995000020).

**Optical part**

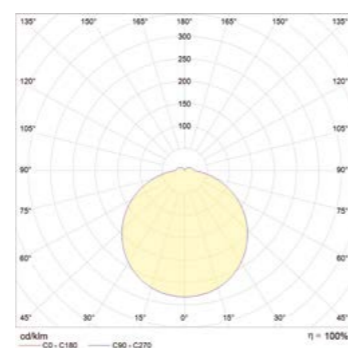
Matt PMMA diffuser. LED type: SMD.

**Features**

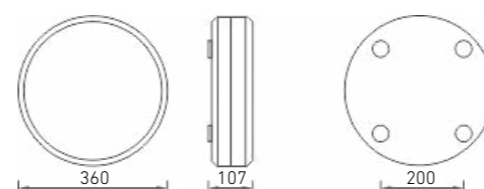
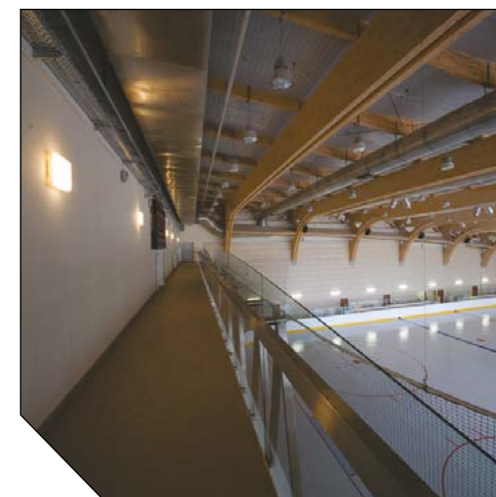
Color temperature – 4000 K  
Color rendering index – 80

	B	C	L
K LED 200 4000K	200	58	145
K LED 300 4000K	300	83	200

K LED 300 4000K



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
K LED 200 4000K	850	12	71	0,8	1997016570	≥ 0,96
K LED 300 4000K	1100	14	79	1,2	1997021720	≥ 0,96



**NEW**

**About**

Highly efficient circle LED luminaire for wall and ceiling surface mounting indoor or outdoors under a canopy. Features a high degree of environmental protection (IP65), can be equipped with emergency power supply unit or motion sensor.

**Installation**

Wall and ceiling surface mounting.

**Design**

Polyamide housing. Driver fixed inside the housing

**Package contents**

Luminaire assembly.

**Optical part**

Opal PMMA diffuser. LED type: SMD.

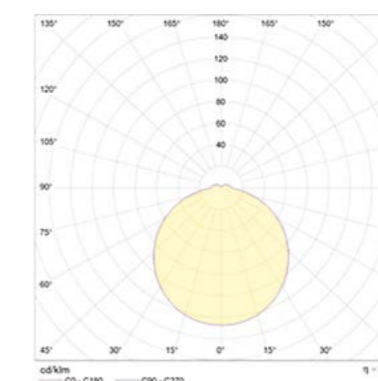
**Features**

Color temperature - 4000 K (5000 K by request)  
Color rendering index > 80

**Lighting control**

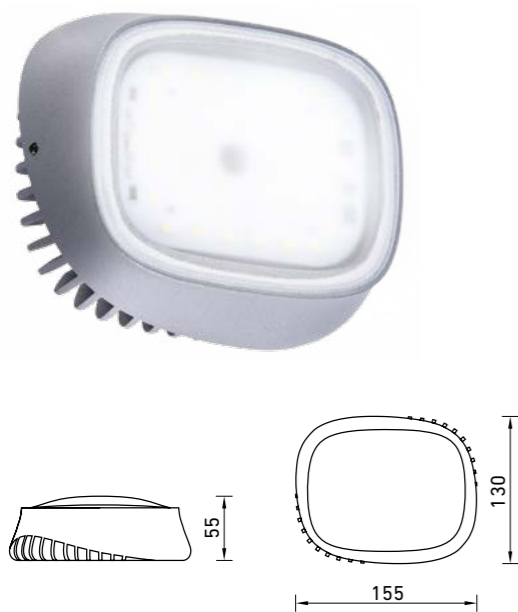
The luminaire can be supplied with a motion sensor. Order code: CD LED 18 MS 4000K – 1133000270.

C LED 360 4000K



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
C LED 360 4000K	1150	14	82	1,4	1997028470	> 0,96





**About**

Highly efficient indoor/outdoor luminaire with a wide application range, high degree of environmental protection (IP65, IK08), attractive design, easy mounting, and high luminous efficiency.

Note: the luminaire is designed for operation in domestic (non-industrial) networks.

**Installation**

Suitable for ceiling or wall surface mounting indoors or outdoors.

**Design**

Housing is made of die-cast aluminum.

**Package contents**

Luminaire assembly. Allen key for mounting complete.

**Optical part**

Translucent or opal (OPL) polycarbonate diffuser. LED type: SMD.

**Features**

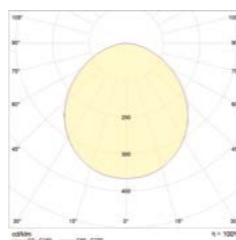
Color temperature – 4000 K, 5000 K (3000 K by request)

Color rendering index > 80

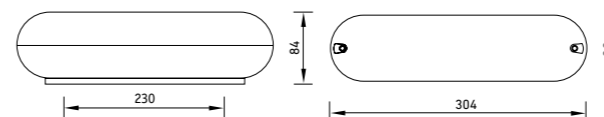
**Lighting control**

Version with sensor is available.

**TITAN 8 LED 5000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
TITAN 8 LED 5000K / 4000K	800	9	89	0,6	1997019120 / 1997025400	≥ 0,96
TITAN 8 LED OPL 5000K / 4000K	715	8	89	0,6	1997019130 / 1997025410	≥ 0,96
TITAN 12 LED 5000K / 4000K	1100	12	92	0,6	1997019080 / 1997025420	≥ 0,96
TITAN 12 LED OPL 5000K / 4000K	1000	12	83	0,6	1997019090 / 1997025430	≥ 0,96
TITAN 16 LED 5000K / 4000K	1400	15	93	0,6	1997017000 / 1997025440	≥ 0,96
TITAN 16 LED OPL 5000K / 4000K	1250	15	83	0,6	1997019100 / 1997025450	≥ 0,96



**About**

Ideal solution for the housing and utility sector for residential and utility environments offering maximum protection and low operating costs.

Well-thought-out design of the housing and high-quality materials, the luminaire is protected from dust, moisture IP65, shock resistant IK08 and ultraviolet radiation to the maximum possible extent. High luminous efficiency, zero maintenance costs, and affordable price – all these are economical arguments for OD LED.

Note: the luminaire is designed for operation in domestic (non-industrial) networks.

**Installation**

Suitable for ceiling or wall surface mounting indoors or outdoors.

**Design**

Housing made of die cast aluminum, powder coated in grey.

**Package contents**

Luminaire assembly.

**Optical part**

Opal diffuser made of clear polycarbonate.

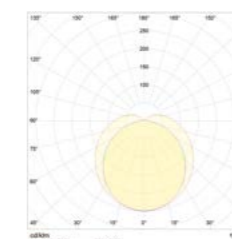
LED type: SMD

**Features**

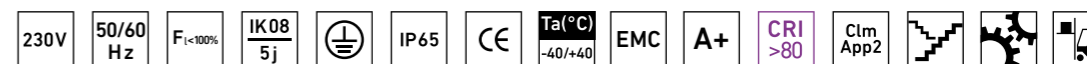
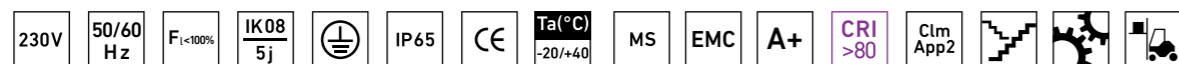
Color temperature – 4000 K, 5000 K

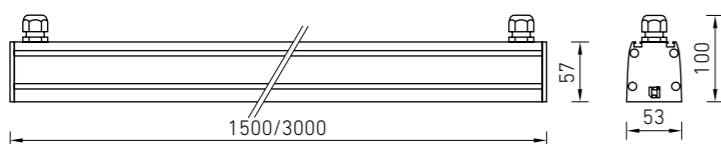
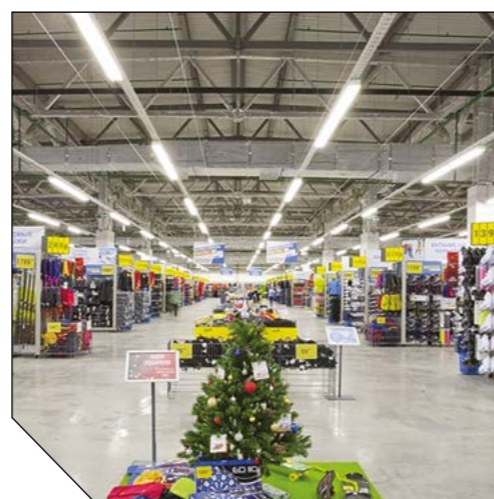
Color rendering index > 80

**OD LED 8 5000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
OD LED 8 5000K / 4000K	650	8	81	0,8	1997017660 / 1997025460	≥ 0,95
OD LED 12 5000K / 4000K	1000	12	83	0,8	1997017650 / 1997025470	≥ 0,95





**About**

LED MALL ECO IP54 series of waterproof LED luminaires in a compact extruded aluminum housing can efficiently replace continuous-row lighting systems based on fluorescent lamps. The high efficiency luminous flux, luminous efficiency high LDC options expand the range of applications for these luminaires, enabling their use both in large and mid-size retail sales areas as well as in auxiliary and storage facilities.

**Installation**

Mounting on ceiling surface or on suspensions. The minimum required number of suspensions for in-line installation is 1 suspension/ ceiling bracket kit per 1,5 m luminaire and 2 suspensions/ceiling bracket kit per 3 m luminaire.

**Design**

White powder coated extruded aluminum housing. The power supply unit is installed inside the housing.

**Package contents**

Suspensions are not included in delivery kit. The ceiling bracket kit for surface mounting, and suspension kit shall be ordered separately.

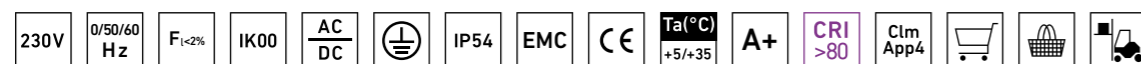
**Optical part**

PMMA opal diffuser or lens. LED type: SMD.

**Features**

- Color temperature – 4000 K (3000 K by request)
- Color rendering index > 80
- Luminous flux flickering < 2%

Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
LED MALL ECO 35 IP54 4000K	4100	38	108	3,0	1997023380	≥ 0,98
LED MALL ECO 35 D30 IP54 4000K	4500	38	118	3,4	1997023780	≥ 0,98
LED MALL ECO 70 IP54 4000K	8100	74	109	3,1	1997020990	≥ 0,98
LED MALL ECO 70 D30 IP54 4000K	8900	74	120	3,5	1997021070	≥ 0,98
LED MALL ECO 70 D60 IP54 4000K	9450	73	129	3,4	1997027230	≥ 0,98
LED MALL ECO 70 D60/15 IP54 4000K	8900	73	122	3,4	1997027240	≥ 0,98
LED MALL ECO 70 D120 IP54 4000K	8900	73	122	3,4	1997027250	≥ 0,98
LED MALL ECO 2x35 IP54 4000K	8100	74	109	6,7	1997024420	≥ 0,98
LED MALL ECO 2x70 IP54 4000K	16000	150	106	7,1	1997024430	≥ 0,98

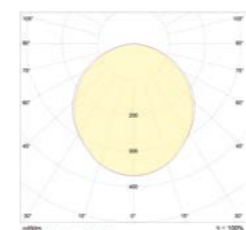


Suspension kit

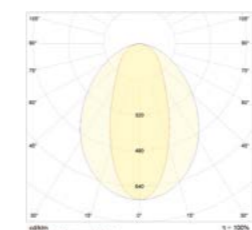


Ceiling bracket

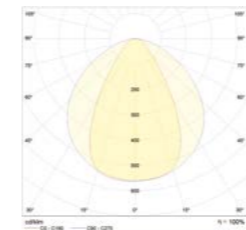
**LED MALL ECO 70 D90 IP54 4000K**



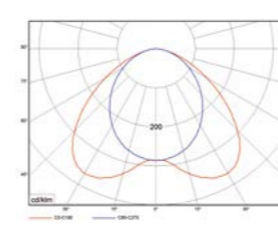
**LED MALL ECO 70 D30 IP54 4000K**



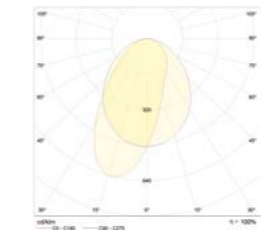
**LED MALL ECO 70 D60 IP54 4000K**



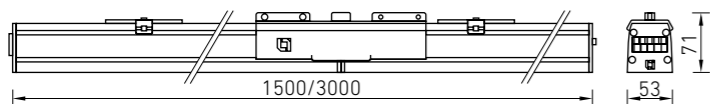
**LED MALL ECO D120 IP54 4000K**



**LED MALL ECO D60/15 IP54 4000K**



Accessories	Code
Ceiling bracket LED MALL ECO	2997000670
Suspension kit LED MALL ECO	2997000550



**About**

LED luminaires with dust and moisture protection for creating continuous light lines serving as a perfect substitution for traditional main systems based on luminescent lamps. Possibility to create long light lines, simple installation and compliance with stringent requirements to quality of light make this product an ideal solution for large and medium scale retail facilities.

**Installation**

Installation on the ceiling surface using brackets or suspensions. The minimum number of suspensions for installation in a line is as follows: 1 suspension/bracket set per 1.5-meter luminaire and 2 suspension/bracket sets per 3-meter luminaire. Luminaires are hooked up using connectors installed in the end sides; for mechanical connection, connecting brackets are used. Power is supplied by using of LED MALL LINE power supply set.

**Design**

Extruded aluminium housing with white powder coating. The power supply is installed inside the housing.

**Package contents**

Bracket set for installation on the supporting surface, suspension set and power supply set shall be ordered separately. Connecting brackets are included.

**Optical part**

PMMA opal diffuser or lens. LED type: SMD

**Features**

- Color temperature: 4000 K (3000 K by request)
- Color rendering index > 80
- Luminous flux flickering < 2%

Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
LED MALL LINE 35 D30 IP54 /main line harness/ 4000K	4500	38	118	3,4	1997024480	≥ 0,98
LED MALL LINE 35 D90 IP54 /main line harness/ 4000K	4000	35	114	3,0	1997024470	≥ 0,98
LED MALL LINE 70 D30 IP54 /main line harness/ 4000K	8900	74	120	3,1	1997024460	≥ 0,98
LED MALL LINE 70 D90 IP54 /main line harness/ 4000K	8000	70	114	3,0	1997024450	≥ 0,98
LED MALL LINE 70 D60 IP54 /main line harness/ 4000K	9458	73	129	3,1	1997027260	≥ 0,98
LED MALL LINE 70 D60/15 IP54 /main line harness/ 4000K	8900	73	122	3,1	1997027270	≥ 0,98
LED MALL LINE 70 D120 IP54 /main line harness/ 4000K	8900	73	122	3,1	1997027280	≥ 0,98
LED MALL LINE 2x35 D30 IP54 /main line harness/ 4000K	8100	75	108	6,5	1997024500	≥ 0,98
LED MALL LINE 2x35 D90 IP54 /main line harness/ 4000K	8000	75	107	6,5	1997024490	≥ 0,98
LED MALL LINE 2x70 D30 IP54 /main line harness/ 4000K	16000	148	108	6,5	1997024440	≥ 0,98
LED MALL LINE 2x70 D90 IP54 /main line harness/ 4000K	16000	150	107	6,5	1997024510	≥ 0,98



Suspension kit



Ceiling bracket

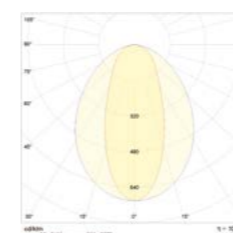


Connecting bracket

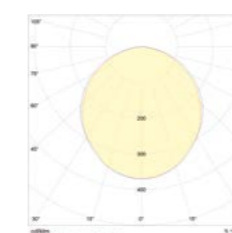


Power supply set

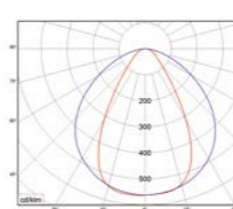
LED MALL LINE 70 D30 IP54 4000K



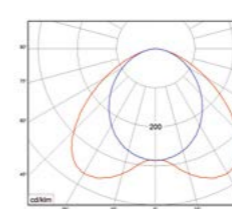
LED MALL LINE 70 D90 IP54 4000K



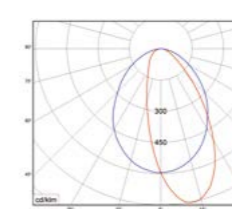
LED MALL LINE 70 D60 IP54 4000K



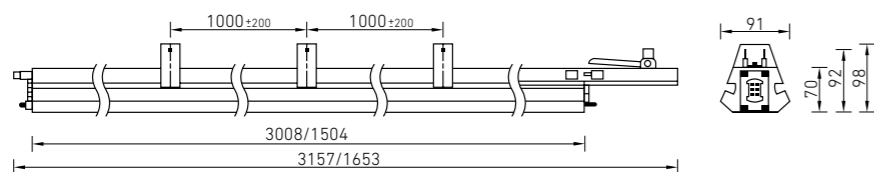
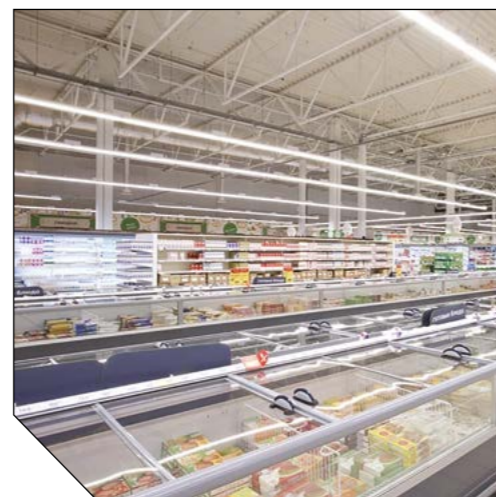
LED MALL LINE 70 D120 IP54 4000K



LED MALL LINE 70 D60/15 IP54 4000K



Accessories	Code
Ceiling bracket LED MALL ECO	2997000670
Power supply set LED MALL LINE	2997000680
Suspension kit LED MALL ECO	2997000550



**About**

LED main line system in steel housing of a compact design, simple in installation. Creating different geometric light systems is possible by using L-, T-, X-shaped connectors. Versions with different light distribution curves (LDCs) make this luminaire an ideal choice for designing large- and mid-size retail lighting systems.

**Installation**

Suitable for mounting on ceiling surface by means of steel wiring or surface mounting. The electric connectors at the ends of the luminaires provide mechanical and electrical connection without the use of additional tools. Clamps on the end of the housing provides the stiffness of the line. The minimum required number of fixtures for installation - 1 set for luminaires of 1504 mm long or 2 sets for luminaires of 3008 mm long.

**Design**

White powder coated weld sheet steel housing. A driver is installed inside the housing.

**Package contents**

Suspensions, end caps, connection and mounting kits are not included in delivery kit and shall be ordered separately.

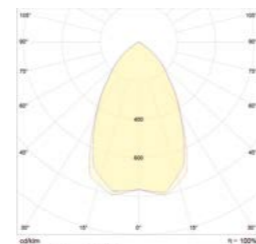
**Optical part**

PC lenses. LED type: SMD. Four LDC types are available: D60; D90; D120; D60/15.

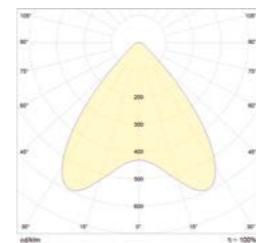
**Features**

Color temperature – 4000 K (3000 K by request)  
Color rendering index > 80  
Luminous flux flickering < 2%

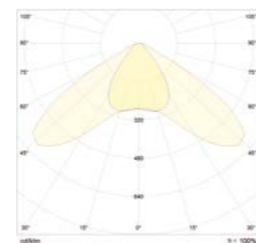
**DOMINO LED 80 D60 4000K**



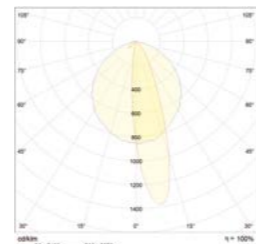
**DOMINO LED 80 D90 4000K**



**DOMINO LED 80 D120 4000K**



**DOMINO LED 80 D60x15 4000K**



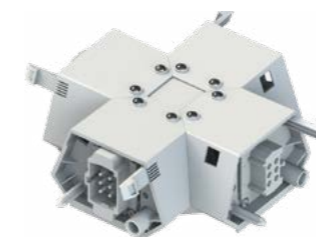
End cap DOMINO



L-shaped connector DOMINO MF



T-shaped connector DOMINO FMF



X-shaped connector DOMINO FMFM



Line connection

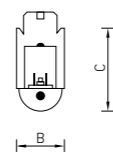
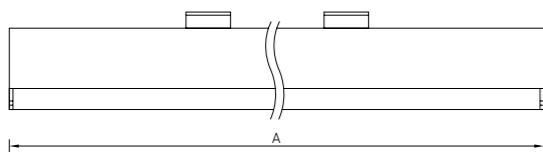


Line connection

Accessories	Code
Ceiling bracket kit DOMINO (2 brackets included)	2997000770
Suspension kit DOMINO (2 brackets, 2 wire ropes)	2997000760
End cap DOMINO (1 pcs)	2997000630
L-shaped connector DOMINO (without electrical connector)	2997000730
T-connector DOMINO (without electrical connector)	2997000740
X-shaped connector DOMINO (without electrical connector)	2997000750
L-shaped connector DOMINO (MF)	2997000690

Accessories	Code
L-shaped connector DOMINO (FM)	2997000650
T-shaped connector DOMINO (FMF)	2997000640
T-shaped connector DOMINO (FMM)	2997000700
T-shaped connector DOMINO (MFF)	2997000710
T-shaped connector DOMINO (MFM)	2997000720
X-shaped connector DOMINO (FMFM)	2997000660

Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
DOMINO LED 40 D120 4000K	4900	38	129	4,0	1997021430	≥ 0,95
DOMINO LED 40 D60 4000K	4900	38	129	4,0	1997021440	≥ 0,95
DOMINO LED 40 D60/15 4000K	4900	38	129	4,0	1997021450	≥ 0,95
DOMINO LED 40 D90 4000K	4900	38	129	3,7	1997021460	≥ 0,95
DOMINO LED 80 D120 4000K	9200	75	123	4,0	1997021470	≥ 0,95
DOMINO LED 80 D60 4000K	9200	75	123	4,0	1997021480	≥ 0,95
DOMINO LED 80 D60/15 4000K	9200	75	123	4,0	1997021490	≥ 0,95
DOMINO LED 80 D90 4000K	9200	75	123	3,7	1997021500	≥ 0,95
DOMINO LED 2x40 D120 4000K	9800	75	131	7,0	1997021350	≥ 0,95
DOMINO LED 2x40 D60 4000K	9800	75	131	7,0	1997021360	≥ 0,95
DOMINO LED 2x40 D60/15 4000K	9800	75	131	7,0	1997021370	≥ 0,95
DOMINO LED 2x40 D90 4000K	9800	75	131	7,5	1997021380	≥ 0,95
DOMINO LED 2x80 D120 4000K	18400	150	123	7,0	1997021390	≥ 0,95
DOMINO LED 2x80 D60 4000K	18400	150	123	7,0	1997021400	≥ 0,95
DOMINO LED 2x80 D60/15 4000K	18400	150	123	7,0	1997021410	≥ 0,95
DOMINO LED 2x80 D90 4000K	18400	150	123	7,5	1997021420	≥ 0,95



	A	B	C
LNK LED MINI 30 / 50	1520	55	95
LNK LED MINI 2x30 / 2x50	3020	55	95

**About**

Compact linear LED luminaire for using in mid-size sales areas with ceilings up to 4,5 m high. Allows to create both extended straight lines and complex geometry of the lighting system by using L-, T-, X-shaped connectors.

**Installation**

Suspended on wires. The minimum required number of suspensions for an in-line arrangement is two kits for 3 m luminaires and one kit for 1,5 m luminaires.

**Package contents**

Suspension kits, end caps, connecting brackets etc. are ordered separately.

**Design**

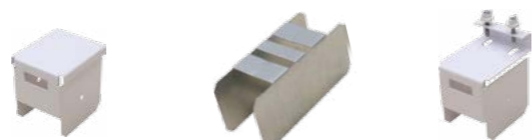
White powder coated welded sheet steel housing.

**Optical part**

Mat profiled PMMA diffuser. LED type: SMD.

**Features**

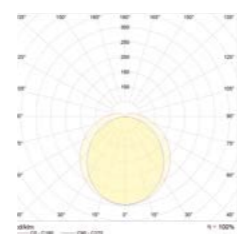
Color temperature – 4000 K (3000 K by request)  
 Color rendering index > 80  
 Luminous flux flickering < 2%



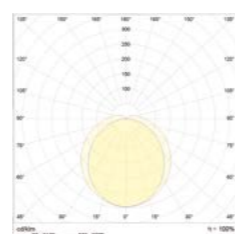
End cap      Connection bracket      Connection bracket 90°

Accessories	Code
Bracket connecting LNK LED MINI (90 deg.)	2997000840
Bracket connecting LNK LED MINI	2997000830
End cap LNK LED MINI	2997000850
Suspension kit LNK LED MINI	2997000860

LNK LED MINI 30 4000K



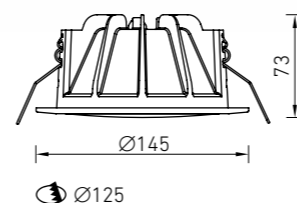
LNK LED MINI 50 4000K



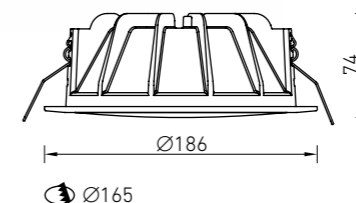
Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
LNK LED MINI 30 /main line harness/ 4000K	4300	30	143	3,2	1997027090	≥ 0,98
LNK LED MINI 50 /main line harness/ 4000K	6550	45	146	3,2	1997027100	≥ 0,98
LNK LED MINI 2x50 /main line harness/ 4000K	8600	60	143	5,6	1997027070	≥ 0,98
LNK LED MINI 2x30 /main line harness/ 4000K	13100	90	146	5,6	1997027080	≥ 0,98



COLIBRI DL LED 11



COLIBRI DL LED 15/19



**About**

Compact LED luminaire in a die-cast aluminum housing. The opal PMMA diffuser provides smooth diffused light without glare.

**Installation**

Suitable for Armstrong type suspended ceilings or plasterboard ceilings. Surface-mount accessory for COLIBRI DL15/19 (order code – 2997000880) can be supplied by request.

**Design**

White powder coated die-cast aluminum housing. The driver (included) is installed separately.

**Package contents**

Luminaire assembly.

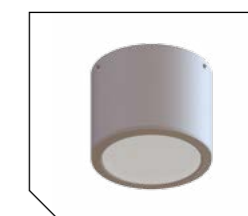
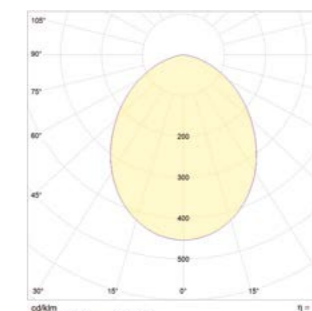
**Optical part**

PMMA opal diffuser. LED type: SMD.

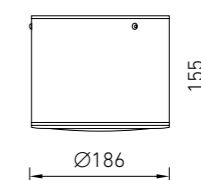
**Features**

Color temperature – 4000 K (3000 K by request)  
 Color rendering index > 80 (> 90 by request)  
 Luminous flux flickering < 5%

COLIBRI DL LED 19 4000K

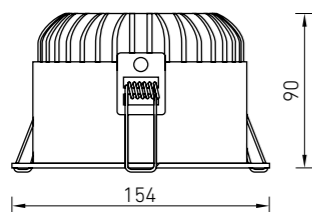


Surface-mount accessory (general form).



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
COLIBRI DL LED 11 4000K	900	10	90	0,5	1997015290	≥ 0,90
COLIBRI DL LED 15 4000K	1300	14	93	0,7	1997015300	≥ 0,90
COLIBRI DL LED 19 4000K	1950	20	98	0,7	1997015310	≥ 0,90





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**About**

Compact LED downlights with different reflector angels providing a great variety of lighting solutions. Wide range of installation options.

**Installation**

Suitable for Armstrong type suspended ceilings, plasterboard ceilings, or Grilliatio type ceilings (on a wire suspension).

**Design**

Die-cast aluminum housing. LED module with secondary optics is installed in the housing. The driver is located outside of the housing.

**Package contents**

Luminaire assembly.

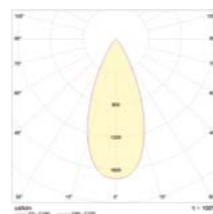
**Optical part**

Satin PMMA diffuser.  
LED type: COB.  
Reflector angles:  
40, 60, 50x60 or 80 degrees.

**Features**

Color temperature – 4000 K (3000 K by request)  
Color rendering index > 80 (> 90 by request)  
Luminous flux flickering < 3%

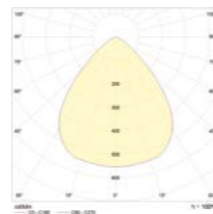
**DL POWER LED MINI 24 D40 4000K**



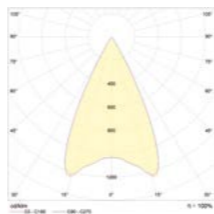
**DL POWER LED MINI 24 D60 4000K**



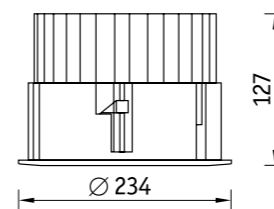
**DL POWER LED MINI 24 D80 4000K**



**DL POWER LED MINI 24 D50x60 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
DL POWER LED MINI 10 D40 4000K	1000	10	100	0,9	1997021220	≥ 0,95
DL POWER LED MINI 10 D60 4000K	1000	10	100	0,9	1997021230	≥ 0,95
DL POWER LED MINI 10 D80 4000K	1000	10	100	0,9	1997021240	≥ 0,95
DL POWER LED MINI 13 D40 4000K	1400	13	108	0,9	1997021250	≥ 0,95
DL POWER LED MINI 13 D60 4000K	1400	13	108	0,9	1997021260	≥ 0,95
DL POWER LED MINI 13 D80 4000K	1400	13	108	0,9	1997021270	≥ 0,95
DL POWER LED MINI 17 D40 4000K	1750	17	103	0,9	1997021280	≥ 0,95
DL POWER LED MINI 17 D60 4000K	1750	17	103	0,9	1997021290	≥ 0,95
DL POWER LED MINI 17 D80 4000K	1750	17	103	0,9	1997021300	≥ 0,95
DL POWER LED MINI 24 D40 4000K	2600	24	108	0,9	1997021310	≥ 0,95
DL POWER LED MINI 24 D50x60 4000K	2600	24	108	0,9	1997021320	≥ 0,95
DL POWER LED MINI 24 D60 4000K	2600	24	108	0,9	1997021330	≥ 0,95
DL POWER LED MINI 24 D80 4000K	2600	24	108	0,9	1997021340	≥ 0,95



Ø 210



**About**

High-power LED luminaire. High luminous flux and light output allow using the luminaire in premises with high ceilings up to 9 meters. Different reflector angels for different lighting solutions are available. Wide choice of installation options.

**Installation**

Suitable for Armstrong type suspended ceilings, plasterboard ceilings, or Grilliatio type ceilings (on a wire suspension).

**Design**

Die-cast aluminum housing. LED module with secondary optics is installed in the housing. The driver is located outside of the housing.

**Package contents**

Luminaire assembly.

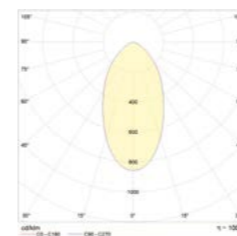
**Optical part**

Satin PMMA diffuser. LED type: COB.  
Reflector angles: 40, 60, 80 degrees.

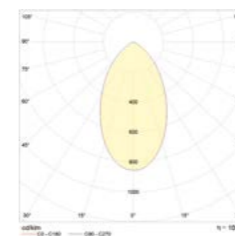
**Features**

Color temperature – 4000 K (3000 K by request)  
Color rendering index > 80 (> 90 by request)  
Luminous flux flickering < 3%

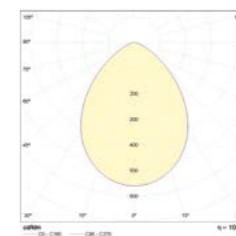
**DL POWER LED 60 D40 4000K**



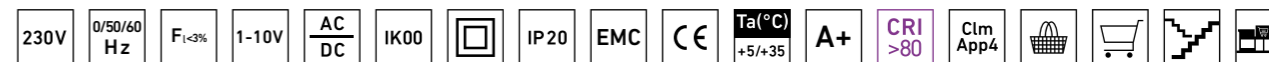
**DL POWER LED 60 D60 4000K**

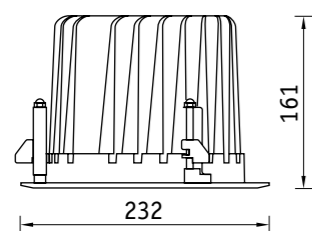


**DL POWER LED 60 D80 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
DL POWER LED 40 D40 4000K	4300	36	120	2,9	1997015440	≥ 0,95
DL POWER LED 40 D60 4000K	4300	36	120	2,9	1997013360	≥ 0,95
DL POWER LED 40 D80 4000K	4300	36	120	2,9	1997015520	≥ 0,95
DL POWER LED 60 D40 4000K	6800	56	120	2,9	1997015550	≥ 0,95
DL POWER LED 60 D60 4000K	6800	56	120	2,9	1997015580	≥ 0,95
DL POWER LED 60 D80 4000K	6800	56	120	2,9	1997015640	≥ 0,95





3 Ø 215



**About**

High-power dust- and water-proof directional luminaire. The IP66 rating allows using it not only for indoor sales areas and office/administrative facilities but also for petrol stations, entrances, industrial facilities etc.

**Installation**

Suitable for Armstrong type suspended ceilings, plasterboard ceilings, or Grilliatio type ceilings (on a wire rope suspension).

**Design**

Die-cast aluminium housing. The driver in an IP-rated external box is located outside of the housing. External box weight with the driver: 1,7 kg.

**Package contents**

Luminaire assembly.

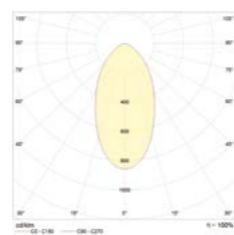
**Optical part**

Transparent or satin glass diffuser. Reflector angles: 40, 60, 80 degrees. LED type: COB.

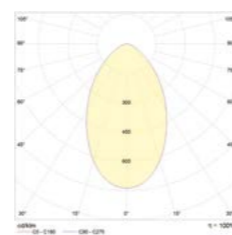
**Features**

- Color temperature – 4000 K
- Color rendering index > 80
- Luminous flux flickering < 3%

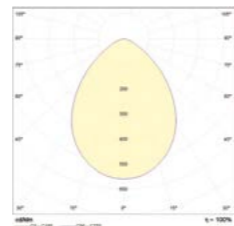
**DL POWER LED 60 D40 IP66 4000K**



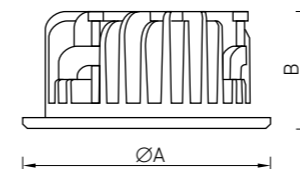
**DL POWER LED 60 D60 IP66 4000K**



**DL POWER LED 60 D80 IP66 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
DL POWER LED 40 D40 IP66 4000K	4300	36	119	5,2	1997015460	≥ 0,95
DL POWER LED 40 D40 IP66 4000K mat	4000	36	111	5,2	1997015450	≥ 0,95
DL POWER LED 40 D60 IP66 4000K	4300	36	119	5,2	1997015480	≥ 0,95
DL POWER LED 40 D60 IP66 4000K mat	4000	36	111	5,2	1997015470	≥ 0,95
DL POWER LED 40 D80 IP66 4000K	4300	36	119	5,2	1997015540	≥ 0,95
DL POWER LED 40 D80 IP66 4000K mat	4000	36	111	5,2	1997015530	≥ 0,95
DL POWER LED 60 D40 IP66 4000K	6800	58	117	5,2	1997015570	≥ 0,95
DL POWER LED 60 D40 IP66 4000K mat	6000	58	103	5,2	1997015560	≥ 0,95
DL POWER LED 60 D60 IP66 4000K	6800	58	117	5,2	1997015600	≥ 0,95
DL POWER LED 60 D60 IP66 4000K mat	6000	58	103	5,2	1997015590	≥ 0,95
DL POWER LED 60 D80 IP66 4000K	6800	58	117	5,2	1997015660	≥ 0,95
DL POWER LED 60 D80 IP66 4000K mat	6000	58	103	5,2	1997015650	≥ 0,95



**About**

Direct luminaire. Simple in installation. The COB LED matrix and faceted reflector provide balanced bright illumination.

**Installation**

Suitable for Armstrong type suspended ceilings or plasterboard ceilings.

**Design**

Die-cast aluminium housing. The driver is located outside the housing.

**Package contents**

Luminaire assembly.

**Optical part**

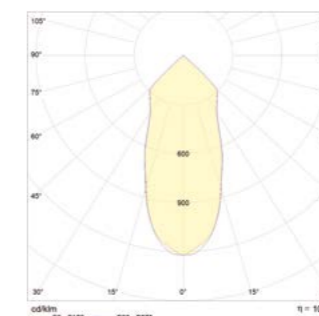
Transparent protective glass. Mirror reflector of anodized aluminum. Reflector angle 40 degrees. LED type: COB.

**Features**

- Color temperature – 4000 K (3000 K by request)
- Color rendering index > 80
- Luminous flux flickering < 3%

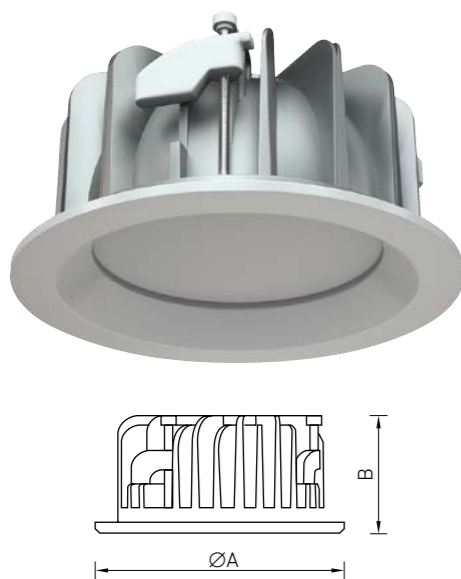
	A	B	3
PILOT DL LED 10 4000K	135	68	113
PILOT DL LED 15 4000K	160	74	137
PILOT DL LED 21 4000K	186	86	162
PILOT DL LED 30 4000K	208	92	184
PILOT DL LED 42 4000K	230	102	208

**PILOT DL LED 42 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
PILOT DL LED 10 4000K	910	11	83	1,1	1997017900	≥ 0,97
PILOT DL LED 15 4000K	1250	15	83	1,2	1997017910	≥ 0,97
PILOT DL LED 21 4000K	1900	22	86	1,3	1997017920	≥ 0,97
PILOT DL LED 30 4000K	2700	29	93	1,4	1997017930	≥ 0,97
PILOT DL LED 42 4000K	3500	43	81	1,5	1997017940	≥ 0,97

\* for optical part



**About**

LED downlight designed for easy mounting. The optical part with a mat PMMA diffuser provides soft diffused light without of glare.

**Installation**

Suitable for Armstrong type suspended ceilings or plasterboard ceilings.

**Design**

Die-cast aluminium housing. The driver is located outside the housing.

**Package contents**

Luminaire assembly.

**Optical part**

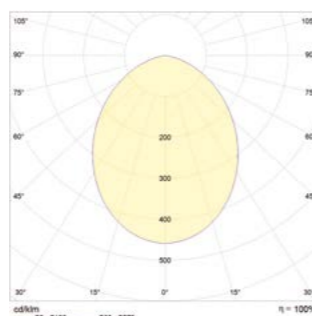
Mat diffuser made of PMMA. LED type: SMD.

**Features**

Color temperature – 4000 K (3000 K by request)  
 Color rendering index > 80  
 Luminous flux flickering < 3%

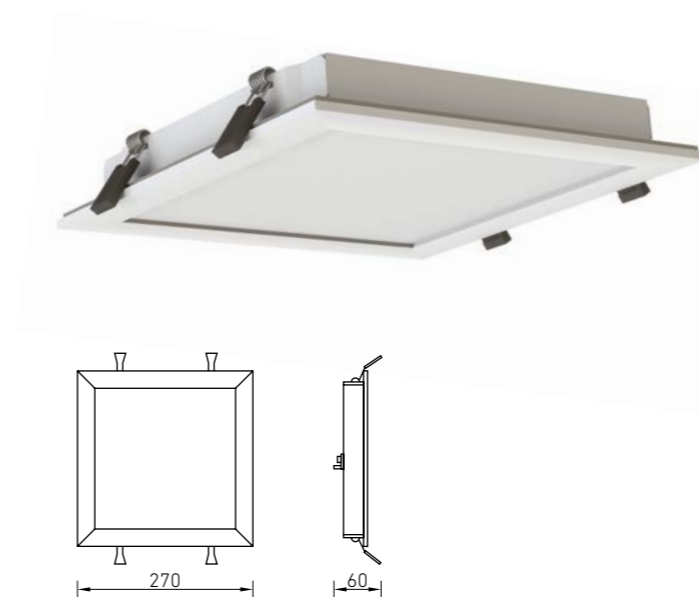
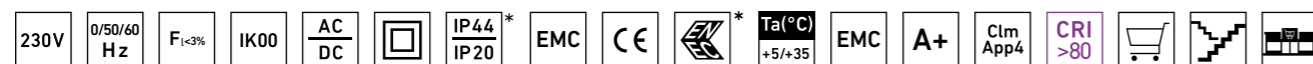
	A	B	Eye
SAFARI DL LED 10 4000K	135	68	113
SAFARI DL LED 20 4000K	160	74	137
SAFARI DL LED 26 4000K	186	86	162
SAFARI DL LED 31 4000K	208	92	184
SAFARI DL LED 41 4000K	230	102	208

SAFARI DL LED 41 4000K



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
SAFARI DL LED 10 4000K	900	10	90	1,1	1997018390	≥ 0,97
SAFARI DL LED 20 4000K	1770	20	89	1,2	1997018400	≥ 0,97
SAFARI DL LED 26 4000K	2200	25	88	1,3	1997018410	≥ 0,97
SAFARI DL LED 31 4000K	2700	30	90	1,4	1997018420	≥ 0,97
SAFARI DL LED 41 4000K	3500	38	92	1,5	1997018430	≥ 0,97

\* for optical part



NEW

**About**

LED downlight in a square form factor. The luminaire is direct replacement of luminaires with CFL.

**Installation**

Suitable for Armstrong type suspended ceilings or plasterboard ceilings.

**Design**

White powder coated die-cast aluminum frame. Steel housing.

**Package contents**

Luminaire assembly.

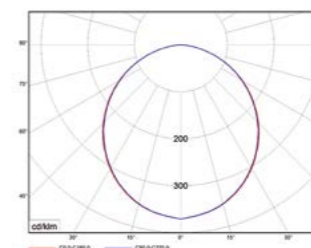
**Optical part**

Mat PMMA diffuser. LED type: SMD.

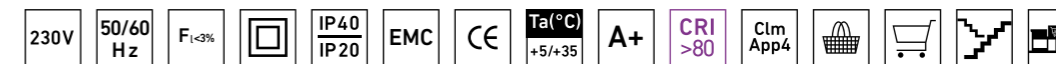
**Features**

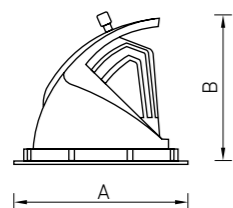
Color temperature – 4000 K (3000 K by request)  
 Color rendering index > 80  
 Luminous flux flickering < 3%

DLK LED 20 4000K



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
DLK LED 20 4000K	1950	18	108	2,5	1997027130	> 0,95
DLK LED 30 4000K	2850	28	102	2,5	1997027140	> 0,95
DLK LED 40 4000K	3700	40	92	2,5	1997027120	> 0,95





**About**

Direct LED luminaire with rotary optical part that makes it possible to change the light direction after installation. The choice of reflector angles allows using the luminaire both for accent lighting and as a bright luminaire for general lighting.

	A	B	⊙
DL TURN LED 15	112	88	100
DL TURN LED 28	162	138	150
DL TURN LED 35	188	165	175

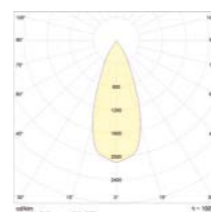
**Installation**

Suitable for Armstrong type suspended ceilings or plasterboard ceilings.

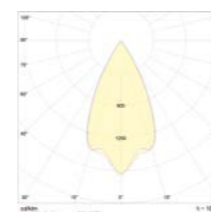
**Design**

White powder coated die-cast aluminum body. The optical part can be tilted up to 60 degrees from the horizontal axis and up to 355 degrees from the vertical.

DL TURN LED 35W D40 4000K



DL TURN LED 15W D50 4000K



**Package contents**

Luminaire assembly.

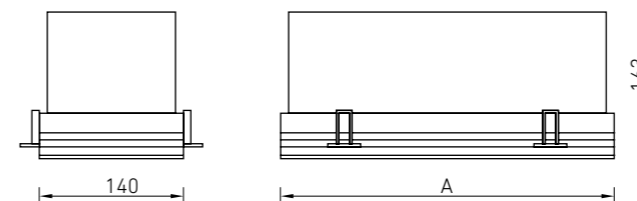
**Optical part**

Aluminum reflector. Transparent tempered glass. LED type: COB.

**Features**

Color temperature – 4000 K (3000 K by request)  
Color rendering index > 80  
Luminous flux flickering < 3%

Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
DL TURN LED 15 W D50 4000K	1100	15	73	0,4	1997024410	≥ 0,97
DL TURN LED 28 W D40 4000K	2500	28	89	0,7	1997015680	≥ 0,97
DL TURN LED 28 W D70 4000K	2500	28	89	0,7	1997015690	≥ 0,97
DL TURN LED 35 W D40 4000K	3150	35	90	1,1	1997015710	≥ 0,97



**About**

CARDAN LED luminaire with adjustable light output direction. Three options of reflector angles, from 10 to 70 degree allow implementing different light scenes for both general and accent lighting.

**Installation**

Suitable for plasterboard ceilings.

**Design**

White powder coated weld sheet steel housing. The optical part can be tilted 30 degrees from the horizontal.

**Package contents**

Luminaire assembly.

**Optical part**

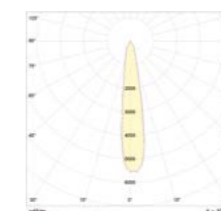
Silicate tempered glass diffuser. LED type: COB. Reflector angles: 10, 40, 70 degrees.

**Features**

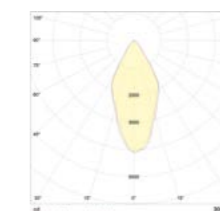
Color temperature – 4000 K  
Color rendering index > 80  
Luminous flux flickering < 3%

	A	⊙
SNS LED 1M	140	125×125
SNS LED 2M	247	125×229
SNS LED 3M	354	125×336
SNS LED 4M	461	125×443
SNS LED 4M (square)	256	238×238

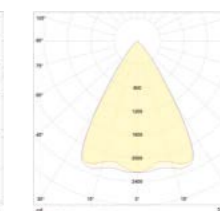
SNS LED 1M 30 W D10 4000K



SNS LED 1M 30 W D40 4000K

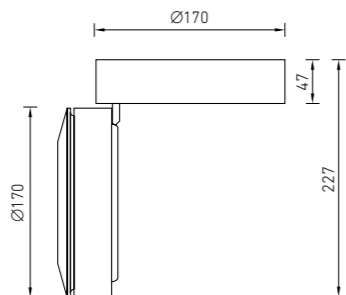


SNS LED 1M 30 W D70 4000K



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
SNS LED 1M 30 W D10 4000K	2400	29	83	0,8	1997018510	≥ 0,97
SNS LED 1M 30 W D40 4000K	2400	29	83	0,8	1997018530	≥ 0,97
SNS LED 1M 30 W D70 4000K	2400	29	83	0,8	1997018540	≥ 0,97
SNS LED 2M 30 W D10 4000K	4800	58	83	2,2	1997018550	≥ 0,97
SNS LED 2M 30 W D40 4000K	4800	58	83	2,2	1997018570	≥ 0,97
SNS LED 2M 30 W D70 4000K	4800	58	83	2,2	1997018580	≥ 0,97
SNS LED 3M 30 W D10 4000K	7200	87	83	4,2	1997024520	≥ 0,97
SNS LED 3M 30 W D40 4000K	7200	87	83	4,2	1997024530	≥ 0,97
SNS LED 3M 30 W D70 4000K	7200	87	83	4,2	1997021530	≥ 0,97
SNS LED 4M 30 W D10 4000K	9500	116	82	5,5	1997018600	≥ 0,97
SNS LED 4M 30 W D10 4000K (square)	9500	116	82	5,5	1997018590	≥ 0,97
SNS LED 4M 30 W D40 4000K	9500	116	82	5,5	1997018640	≥ 0,97
SNS LED 4M 30 W D40 4000K (square)	9500	116	82	5,5	1997018630	≥ 0,97
SNS LED 4M 30 W D70 4000K	9500	116	82	5,5	1997018660	≥ 0,97
SNS LED 4M 30 W D70 4000K (square)	9500	116	82	5,5	1997018650	≥ 0,97





**About**

Exclusively-styled rotary surface-mounted luminaire. The compact size and a choice of reflector angles from narrow to medium give an immense freedom to create unique and memorable interiors.

**Installation**

Mounted on the ceiling surface.

**Design**

Powder coated extruded aluminum body. The driver is located inside the housing. The optical part can be tilted up to 90 degrees from the horizontal and up to 355 degrees from the vertical.

**Package contents**

Luminaire assembly.

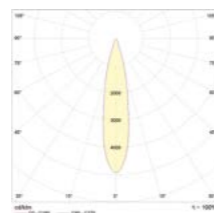
**Optical part**

Hybrid lens with 10, 24, and 45 degrees beam angles. LED type: COB.

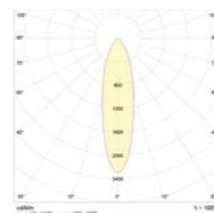
**Features**

Color temperature – 4000 K (3000 K by request)  
 Color rendering index > 80 (> 90 by request)  
 Luminous flux flickering < 3%

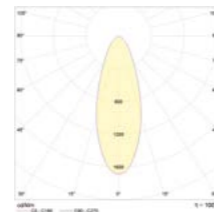
**UFO/S DL LED 25  
D10 4000K**



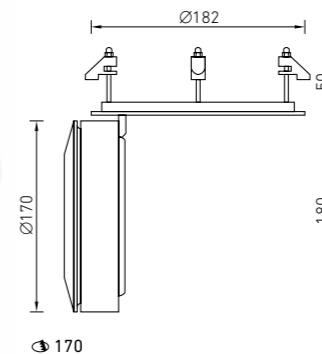
**UFO/S DL LED 25  
D24 4000K**



**UFO/S DL LED 25  
D45 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
UFO/S DL LED 25 D10 4000K	2100	20	105	2,0	1997019320	≥ 0,95
UFO/S DL LED 25 D24 4000K	2100	20	105	2,0	1997019330	≥ 0,95
UFO/S DL LED 25 D45 4000K	2100	20	105	2,0	1997019340	≥ 0,95



**About**

Exclusively-styled rotary recessed luminaire. The compact size and a choice of reflector angles from narrow to medium give an immense freedom to create unique and memorable interiors.

**Installation**

Suitable for Armstrong type suspended ceilings or plasterboard ceilings.

**Design**

Powder coated extruded aluminum body. External driver. The optical part can be tilted up to 90 degrees from the horizontal and up to 355 degrees from the vertical.

**Package contents**

Luminaire assembly.

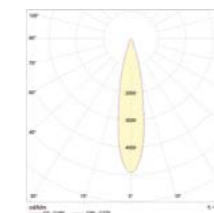
**Optical part**

Hybrid lens with 10, 24, and 45 degrees beam angles. LED type: COB.

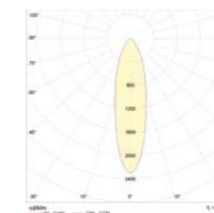
**Features**

Color temperature – 4000 K (3000 K by request)  
 Color rendering index > 80 (> 90 by request)  
 Luminous flux flickering < 3%

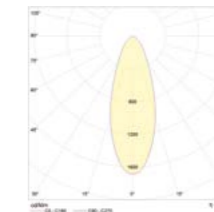
**UFO DL LED 35 D10  
4000K**



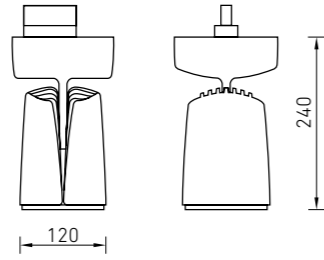
**UFO DL LED 35 D24  
4000K**



**UFO DL LED 35 D45  
4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
UFO DL LED 25 D10 4000K	2100	20	105	1,8	1997019260	≥ 0,97
UFO DL LED 25 D24 4000K	2100	20	105	1,8	1997019270	≥ 0,97
UFO DL LED 25 D45 4000K	2100	20	105	1,8	1997019280	≥ 0,97
UFO DL LED 35 D10 4000K	3700	34	109	1,8	1997019290	≥ 0,97
UFO DL LED 35 D24 4000K	3700	34	109	1,8	1997019300	≥ 0,97
UFO DL LED 35 D45 4000K	3700	34	109	1,8	1997019310	≥ 0,97



**About**

Luminaire with concentrating optics designed for track installation. Two color temperature options 3000 K and 4000 K, and a choice of reflector angles from narrow to medium give an immense freedom to create unique and memorable interiors.

**Installation**

Mounted on a three-phase euro-DIN track.

**Design**

Powder coated die-cast aluminum housing. The luminaire can be tilted up to 90 degrees from the vertical and up to 355 degrees from the horizontal. Driver is located in a box.

**Package contents**

Luminaire assembly.

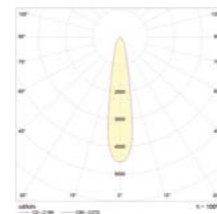
**Optical part**

Aluminium reflector. Tempered glass diffuser.  
LED type: COB.

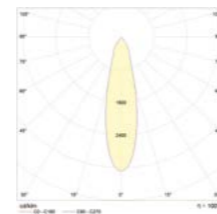
**Features**

Color temperature – 4000 K (3000 K by request)  
Color rendering index > 80 (> 90 by request)  
Luminous flux flickering < 3%

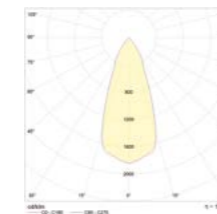
**BELL T LED 50 D15 4000K**



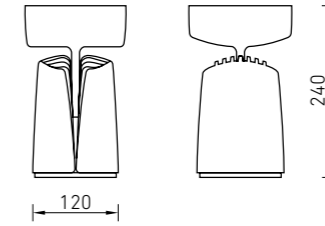
**BELL T LED 50 D25 4000K**



**BELL T LED 50 D45 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
BELL/T LED 35 B D15 4000K	3850	35	110	2,3	1997015020	≥ 0,96
BELL/T LED 35 B D25 4000K	3850	35	110	2,3	1997015030	≥ 0,96
BELL/T LED 35 B D45 4000K	3850	35	110	2,3	1997015040	≥ 0,96
BELL/T LED 35 S D15 4000K	3850	35	110	2,3	1997015050	≥ 0,96
BELL/T LED 35 S D25 4000K	3850	35	110	2,3	1997015060	≥ 0,96
BELL/T LED 35 S D45 4000K	3850	35	110	2,3	1997015070	≥ 0,96
BELL/T LED 35 W D15 4000K	3850	35	110	2,3	1997015080	≥ 0,96
BELL/T LED 35 W D25 4000K	3850	35	110	2,3	1997015090	≥ 0,96
BELL/T LED 35 W D45 4000K	3850	35	110	2,3	1997015100	≥ 0,96
BELL/T LED 50 B D15 4000K	4800	48	100	2,3	1997015110	≥ 0,96
BELL/T LED 50 B D25 4000K	4800	48	100	2,3	1997015120	≥ 0,96
BELL/T LED 50 B D45 4000K	4800	48	100	2,3	1997015130	≥ 0,96
BELL/T LED 50 S D15 4000K	4800	48	100	2,3	1997015140	≥ 0,96
BELL/T LED 50 S D25 4000K	4800	48	100	2,3	1997015150	≥ 0,96
BELL/T LED 50 S D45 4000K	4800	48	100	2,3	1997015160	≥ 0,96
BELL/T LED 50 W D15 4000K	4800	48	100	2,3	1997015170	≥ 0,96
BELL/T LED 50 W D25 4000K	4800	48	100	2,3	1997015180	≥ 0,96
BELL/T LED 50 W D45 4000K	4800	48	100	2,3	1997015200	≥ 0,96



**About**

Accent luminaire with concentrating optics designed for direct surface mounting. Two color temperature options 3000 K and 4000 K, and a choice of reflector angles from narrow to medium give an immense freedom to create unique and memorable interiors.

**Installation**

Mounted on a surface.

**Design**

Powder coated die-cast aluminum housing. The luminaire can be tilted up to 90 degrees from the vertical and up to 355 degrees from the horizontal. Driver is located in a separate box.

**Package contents**

Luminaire assembly.

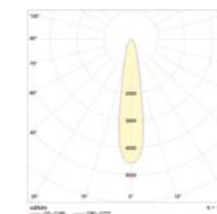
**Optical part**

Aluminium reflector. Tempered glass diffuser. LED type: COB.

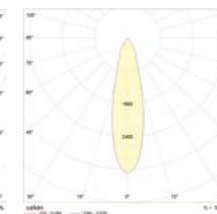
**Features**

Color temperature – 4000 K (3000 K by request)  
Color rendering index > 80 (> 90 by request)  
Luminous flux flickering < 3%

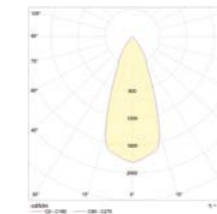
**BELL S LED 50 D15 4000K**



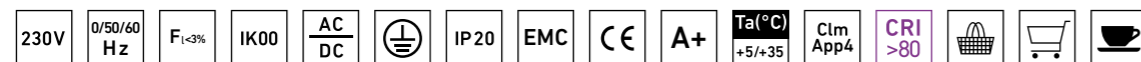
**BELL S LED 50 D25 4000K**



**BELL S LED 50 D45 4000K**



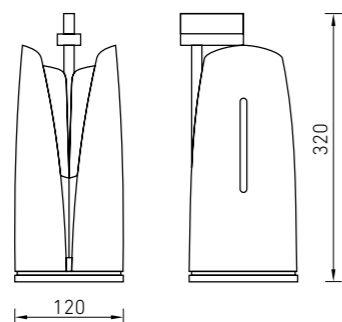
Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
BELL/S LED 35 B D15 4000K	3850	35	110	2,3	1997014840	≥ 0,96
BELL/S LED 35 B D25 4000K	3850	35	110	2,3	1997014850	≥ 0,96
BELL/S LED 35 B D45 4000K	3850	35	110	2,3	1997014860	≥ 0,96
BELL/S LED 35 S D15 4000K	3850	35	110	2,3	1997014870	≥ 0,96
BELL/S LED 35 S D25 4000K	3850	35	110	2,3	1997014880	≥ 0,96
BELL/S LED 35 S D45 4000K	3850	35	110	2,3	1997014890	≥ 0,96
BELL/S LED 35 W D15 4000K	3850	35	110	2,3	1997014900	≥ 0,96
BELL/S LED 35 W D25 4000K	3850	35	110	2,3	1997014910	≥ 0,96
BELL/S LED 35 W D45 4000K	3850	35	110	2,3	1997014920	≥ 0,96
BELL/S LED 50 B D15 4000K	4800	48	100	2,3	1997014930	≥ 0,96
BELL/S LED 50 B D25 4000K	4800	48	100	2,3	1997014940	≥ 0,96
BELL/S LED 50 B D45 4000K	4800	48	100	2,3	1997014950	≥ 0,96
BELL/S LED 50 S D15 4000K	4800	48	100	2,3	1997014960	≥ 0,96
BELL/S LED 50 S D25 4000K	4800	48	100	2,3	1997014970	≥ 0,96
BELL/S LED 50 S D45 4000K	4800	48	100	2,3	1997014980	≥ 0,96
BELL/S LED 50 W D15 4000K	4800	48	100	2,3	1997014990	≥ 0,96
BELL/S LED 50 W D25 4000K*	4800	48	100	2,3	1997015000	≥ 0,96
BELL/S LED 50 W D45 4000K	4800	48	100	2,3	1997015010	≥ 0,96





JET/T LED

Commercial lighting



**About**  
LED luminaire with concentrating optics for installation on three-phase euro-DIN track. The minimalistic design, absence of a visible driver box, choice of color temperatures, reflector angles from narrow (15°) to medium (45°) make it ideal for a variety of lighting and design applications.

**Installation**  
Mounted on a three-phase euro-DIN track.

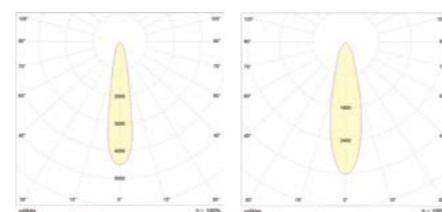
**Design**  
Powder coated die-cast aluminum housing. The luminaire can be tilted up to 90° from the vertical and up to 355° from the horizontal. The driver is mounted inside the housing.

**Package contents**  
Luminaire assembly.

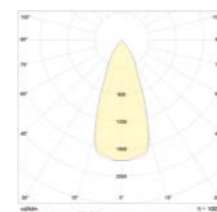
**Optical part**  
Aluminium reflector. Tempered glass diffuser. LED type: COB.

**Features**  
Color temperature – 4000 K (3000 K by request)  
Color rendering index > 80 (> 90 by request)  
Luminous flux flickering < 3%

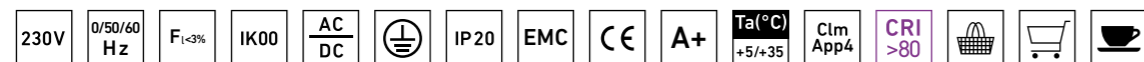
JET/T LED 50 S D15 4000K    JET/T LED 50 S D25 4000K



JET/T LED 50 S D45 4000K



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
JET/T LED 35 B D15 4000K	3850	35	110	2,0	1997016390	≥ 0,97
JET/T LED 35 B D25 4000K	3850	35	110	2,0	1997016400	≥ 0,96
JET/T LED 35 B D45 4000K	3850	35	110	2,0	1997016410	≥ 0,96
JET/T LED 35 S D15 4000K	3850	35	110	2,0	1997016420	≥ 0,96
JET/T LED 35 S D25 4000K	3850	35	110	2,0	1997016430	≥ 0,96
JET/T LED 35 S D45 4000K	3850	35	110	2,0	1997016440	≥ 0,96
JET/T LED 35 W D15 4000K	3850	35	110	2,0	1997016450	≥ 0,96
JET/T LED 35 W D25 4000K	3850	35	110	2,0	1997016460	≥ 0,96
JET/T LED 35 W D45 4000K	3850	35	110	2,0	1997016470	≥ 0,96
JET/T LED 50 B D15 4000K	4800	48	100	2,0	1997016480	≥ 0,96
JET/T LED 50 B D25 4000K	4800	48	100	2,0	1997016490	≥ 0,96
JET/T LED 50 B D45 4000K	4800	48	100	2,0	1997016500	≥ 0,96
JET/T LED 50 S D15 4000K	4800	48	100	2,0	1997016510	≥ 0,96
JET/T LED 50 S D25 4000K	4800	48	100	2,0	1997016520	≥ 0,96
JET/T LED 50 S D45 4000K	4800	48	100	2,0	1997016530	≥ 0,96
JET/T LED 50 W D15 4000K	4800	48	100	2,0	1997016540	≥ 0,96
JET/T LED 50 W D25 4000K	4800	48	100	2,0	1997016550	≥ 0,96
JET/T LED 50 W D45 4000K	4800	48	100	2,0	1997016560	≥ 0,96



Accent lighting devices with a special spectrum

Commercial lighting

Using luminaires with different color temperatures for illumination of various product zones is an effective way to increase visual attractiveness of the goods. For example, warm color temperature for bakery and cold color temperature for fish and seafood. The reason of this effect is accordance of a lighting source's spectrum to product's spectrum features.

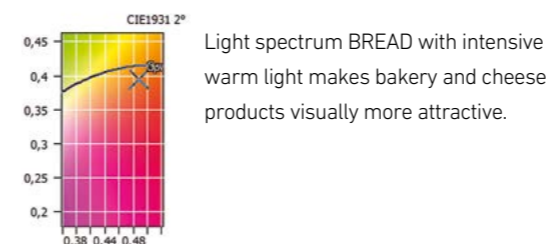
Until quite recently retailers used accent MHL or LED luminaires with different color temperature. Sometimes light filters were added to correct spectrum features and increase product attraction. At the same time luminaire features were degraded due to the filters.

Today, Lighting Technologies presents the unique solution: accent luminaires with displaced spectrum.

Thanks to many years of experience in commercial lighting segment and close cooperation with leading LED manufacturers we were able to create luminaires that have required spectral characteristics from the very beginning and solve a particular lighting task.

The use of lighting fixtures with displaced spectrum for different lighting scenarios is the best choice to increase sales and save lighting equipment performance. The are available luminaires with displaced spectrum for JET LED and BELL LED.

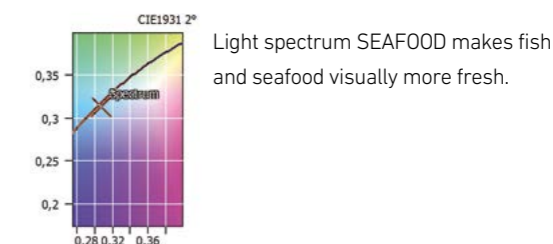
**BREAD**  
illumination of bakery & cheese product zones



Light spectrum BREAD with intensive warm light makes bakery and cheese products visually more attractive.



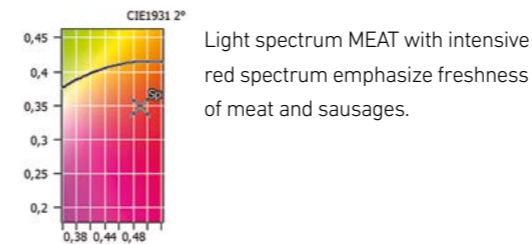
**SEAFOOD**  
illumination of seafood product zone



Light spectrum SEAFOOD makes fish and seafood visually more fresh.



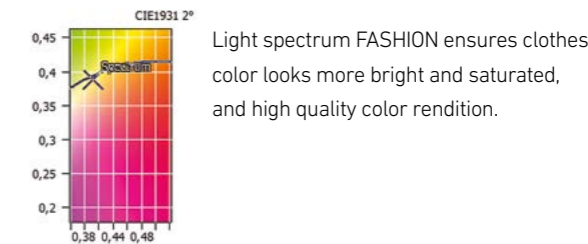
**MEAT**  
illumination of meat



Light spectrum MEAT with intensive red spectrum emphasize freshness of meat and sausages.

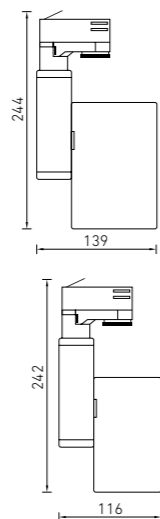


**FASHION**  
illumination of clothes and accessories



Light spectrum FASHION ensures clothes color looks more bright and saturated, and high quality color rendition.





NEW

**About**  
Adjustable LED luminaire with concentrating lens optics for installation on three-phase euro-DIN track.

**Installation**  
Mounted on a three-phase euro-DIN track

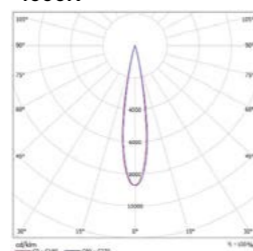
**Design**  
Powder coated aluminum housing. The luminaire can be tilted up to 90° from the vertical and up to 355° from the horizontal. The driver is mounted outside in the plastic box.

**Package contents**  
Luminaire assembly.

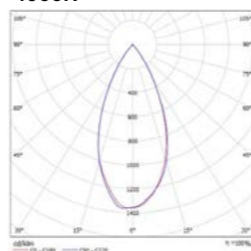
**Optical part**  
PMMA lens. LED type: COB.

**Features**  
Color temperature 3000 K, 4000 K (2700 K, 5000 K by request)  
Color rendering index >80 (> 90 by request)  
Luminous flux flickering < 3%

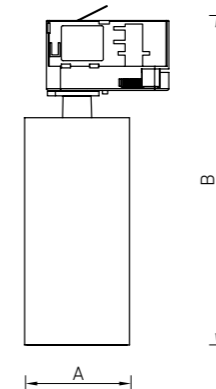
COPER/T LED 46 D15 W 4000K



COPER/T LED 46 D45 W 4000K



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
COPER/T LED 30 W D45 3000K	2600	30	87	0,9	1997027110	> 0,9
COPER/T LED 30 W D45 4000K	2900	30	97	0,9	1997027150	> 0,9
COPER/T LED 38 W D45 3000K	3250	38	86	1,1	1997027160	> 0,9
COPER/T LED 38 W D45 4000K	3600	38	95	1,1	1997027170	> 0,9
COPER/T LED 46 W D15 4000K	4700	46	102	1,1	1997027180	> 0,9
COPER/T LED 46 W D45 3000K	4050	46	88	1,1	1997027190	> 0,9
COPER/T LED 46 W D45 4000K	4500	46	98	1,1	1997027200	> 0,9



**About**  
Adjustable luminaire with concentrating optics installed on a three-phase euro-DIN track. Reflector angles ranging from narrow (15°) to medium (45°) and a range of power from 8 to 38W provide possibilities for various accent lighting scenarios.

**Installation**  
Mounted on three-phase euro-DIN track.

**Design**  
Aluminium housing with white powder coating. The luminaire design allows adjusting the angle for 90° from horizontally, and 350° axially. The driver is installed inside the housing.

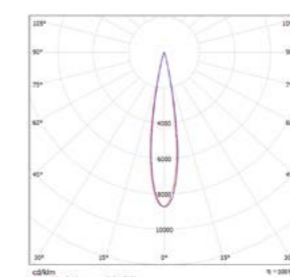
**Package contents**  
Luminaire assembly.

**Optics**  
PMMA lens. LED type: COB.

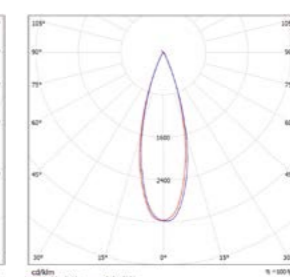
**Features**  
Color temperature: 4000 K, 3000 K (2700 K by request)  
Color rendering index > 80 (> 90 by request)  
Luminous flux flickering < 3%

	A	B
TILE T 06	60	172
TILE T 09	60	197
TILE T 18	86	217
TILE T 33	109	249

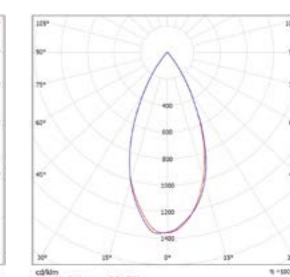
TILE T D15 LED



TILE T D30 LED



TILE T D45 LED



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
TILE T 06 WH D45 3000K	500	8	63	0,5	1997025160	≥ 0,95
TILE T 06 WH D45 4000K	550	8	69	0,5	1997025170	≥ 0,95
TILE T 09 WH D45 3000K	700	12	58	0,7	1997025180	≥ 0,95
TILE T 09 WH D45 4000K	750	12	63	0,7	1997025190	≥ 0,95
TILE T 18 WH D45 3000K	1680	20	84	1,4	1997025200	≥ 0,95
TILE T 18 WH D45 4000K	1760	20	88	1,4	1997025210	≥ 0,95
TILE T 33 WH D15 3000K	3300	38	87	1,5	1997025220	≥ 0,95
TILE T 33 WH D15 4000K	3460	38	91	1,5	1997025230	≥ 0,95
TILE T 33 WH D30 3000K	3260	38	86	1,5	1997025240	≥ 0,95
TILE T 33 WH D30 4000K	3420	38	90	1,5	1997025250	≥ 0,95
TILE T 33 WH D45 3000K	2950	38	78	1,5	1997025260	≥ 0,95
TILE T 33 WH D45 4000K	3100	38	82	1,5	1997025270	≥ 0,95



 MEDICAL



Clean and medical  
spaces lighting



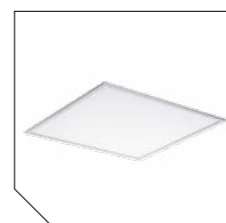
ADV/K UNI LED  
page 101



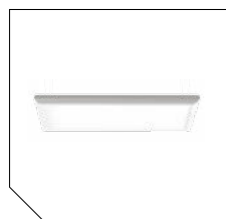
OWP ECO LED  
page 102



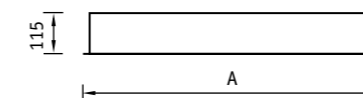
OWP/R ECO LED  
page 103



SLIM CLEANLED  
page 104



DENTAL  
page 105



**About**

Luminaire is specially designed for use in high-grade clean rooms, such as operating rooms, pharmaceutical production, and medical labs. ADV/K UNI LED is thought-out to the last detail and is ideal for situations where longevity, efficiency, and affordable-for-the-class price are required.

**Installation**

Suitable for in clip-in and sandwich type ceilings for clean rooms as well as plasterboard ceilings. Special mounted junctions (included) and a seal provide a IP65 degree of protection between ceiling panels and the luminaire.

**Design**

Powder coated weld sheet steel housing. A silicone seal is attached along the perimeter. Linear LED modules and a driver are installed inside the housing.

**Package contents**

Luminaire assembly.

**Optical part**

Protective tempered silicate glass (or PMMA) resistant to desinfectant and UV. No protruding components or screws, where dust could build up. LED type: SMD.

**Features**

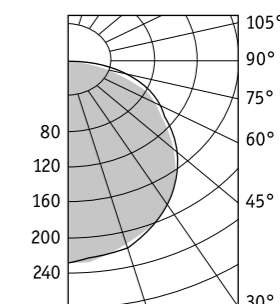
Color temperature – 4000 K  
Color rendering index > 80 (> 90 by request)  
Ingress protection level IP65  
Luminous flux flickering < 2%

**Lighting control**

The luminaire can be supplied with a 1–10V, DALI, or ME6 dimmable driver.

	A	B
ADV/K UNI LED 6000	600	570×570
ADV/K UNI LED 1200	1200	570×1170

**ADV/K UNI LED 600 4000K**



Name	Light flux, Lm	Power consumption, W	Lm/W	Weight, kg	Order code	PFC
ADV/K UNI LED 600 4000K	3300	36	94	8,6	1997021540	> 0,98
ADV/K UNI LED 1200 4000K	3100	33	94	9,0	1997024600	> 0,98



**About**

IP54 luminaire is designed as a universal solution for clean rooms such as food production, high-grade clean room entrances, production floors, and warehouses. The luminaire can be used in rooms with increased humidity levels like swimming pools, shower rooms, and bathrooms.

**Installation**

Suitable for Armstrong and Griliato types suspended ceilings or mounted on the ceiling surface.

**Design**

Powder coated all-metal welded housing. Silicone seal is attached along the perimeter.

**Package contents**

Luminaire assembly.

**Optical part**

Opal PMMA diffuser in a metal frame. Fixed to the housing with screws. Can be optionally supplied with a tempered silicate mat glass. LED type: SMD.

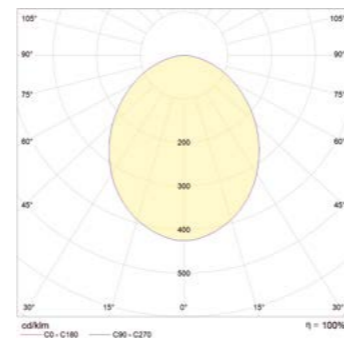
**Features**

Color temperature – 4000 K (5000 K by request)  
Color rendering index > 80 (>90 by request)  
Luminous flux flickering < 2%

**Lighting control**

The luminaire can be supplied with a 1–10V, DALI, or ME6 dimmable driver.

**OWP ECO LED 595 IP54/IP54 4000K**



Name	Light flux, Lm	Power consumption, W	Lm/W	Weight, kg	Order code	PFC
OWP ECO LED 595 IP54/IP54 4000K	3250	35	96	5,0	1997017870	≥ 0,95
OWP ECO LED 595 IP54/IP54 4000K mat	3400	35	100	5,0	1997021570	≥ 0,95
OWP ECO LED 1200 IP54/IP54 4000K	3250	35	96	5,0	1997027220	≥ 0,95



**About**

Simple and reliable OWP/R ECO LED luminaire with IP54 protection degree is designed for indoor areas with increased humidity and dustiness levels. Large LED board area ensures uniform diffuser illumination.

**Installation**

Suitable for Armstrong and Griliato types suspended ceilings. IP 54/20 modifications can be installed in plasterboard ceilings by clips, order code - 2997000470 (4 pcs per one luminaire).

**Design**

Powder coated all-metal welded sheet steel housing. Silicone seal is attached along the perimeter.

**Package contents**

Luminaire assembly.

**Optical part**

Opal PMMA diffuser in a metal frame. Installed in the housing by screws. Can be optionally supplied with a tempered silicate mat glass. LED type: SMD.

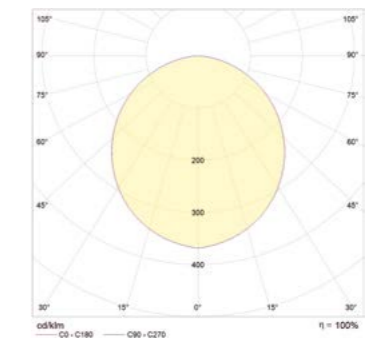
**Features**

Color temperature – 4000 K  
Color rendering index > 80 (90 by request)  
Luminous flux flickering < 2%

**Lighting control**

The luminaire can be supplied with a 871–10V, DALI, or ME6 dimmable driver.

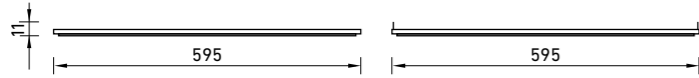
**OWP/R ECO LED 595 IP54 IP40 4000K**



Name	Light flux, Lm	Power consumption, W	Lm/W	Weight, kg	Order code	PFC
OWP/R ECO LED 595 IP54/IP40 4000K	3250	35	96	5,9	1997021580	> 0,9

\* IP54 for optical part





**About**  
LED luminaire is designed for clean rooms with tight ceiling void spaces. Efficient LEDs and opal diffuser produce soft uniform light.

**Installation**  
Recessed into Armstrong type suspended ceilings. Suitable for clean rooms with tight ceiling void spaces.

**Package contents**  
Luminaire assembly.

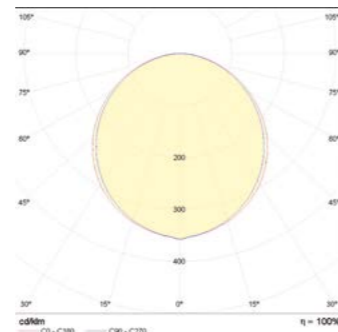
**Design**  
Thin aluminum profile housing with LED mounted on end faces.

**Optical part**  
Disinfectant- and UV-resistant opal PMMA diffuser. LED type: SMD.

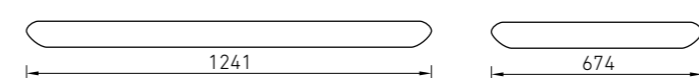
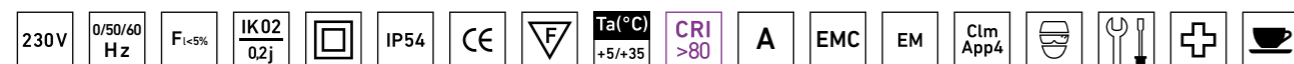
**Features**  
Color temperature – 4000 K  
Color rendering index  $\geq 80$   
Luminous flux flickering <5%

**Lighting control**  
The luminaire can be supplied with a 1–10V, DALI, or ME6 dimmable driver.

**SLIM CLEAN LED 595 4000K**



Name	Light flux, Lm	Power consumption, W	Lm/W	Weight, kg	Order code	cos $\phi$
SLIM CLEAN LED 595 4000K	4200	40	105	4,6	1997021590	> 0,9



**About**  
Dentist's workspace requires special shadowless illumination, which allows distinguishing between the thinnest shades of dental materials. In DENTAL luminaires, this is achieved due to a larger lighted area, special diffuser and LEDs with CRI>90.

**Installation**  
Mounting on suspensions (in delivery set). The suspensions allow height adjustment. The typical height is 1.2m from the work area.

**Design**  
The luminaire housing is made of aluminium shape with mat powder coating. Driver is installed inside the luminaire. The luminous flux is adjusted in the range from 10 to 100% with the remote controller. The enclosure has IP40 protection and is resistant to disinfectants (30% hydrogen dioxide) and UV.

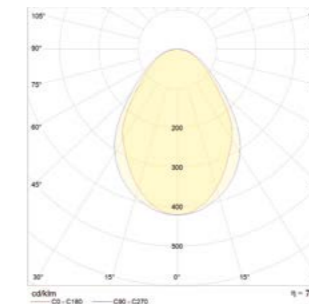
**Package contents**  
Luminaire assembly. Wire suspension is included in delivery kit.

**Optical part**  
PMMA diffuser provides uniform shadowless illumination of the work area. LED type: SMD.

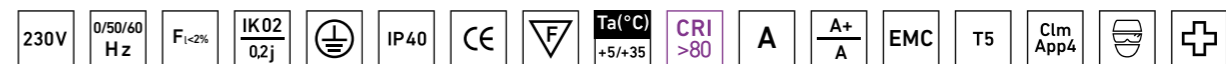
**Features**  
Color temperature – 6500 K  
Color rendering index > 90  
Luminous flux flickering < 2%

**Lighting control**  
Control (dimming, shutdown of lamps, luminaire on-off function) is performed with the remote controller.

**DENTAL 230**



Name	Light flux, Lm	Power consumption, W	Lm/W	Weight, kg	Order code	cos $\phi$
DENTAL SHADOWLESS 230 LED dimmable	19000	270	70	12,5	1997022660	> 0,95

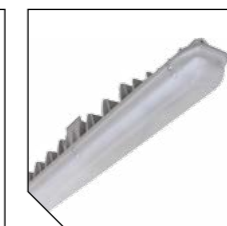




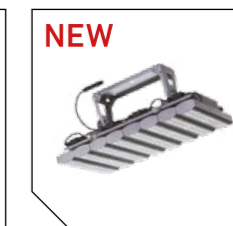
**NEW**  
SLICK LED  
page 108-109



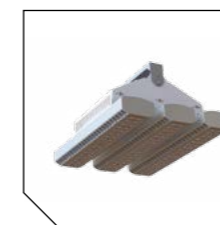
SLICK.PRS ECO LED  
page 110



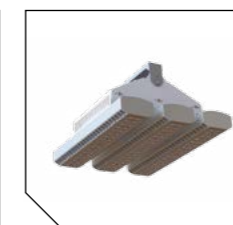
SLICK.PRS AGRO LED  
page 111



**NEW**  
HB FLOODLIGHT LED  
page 112



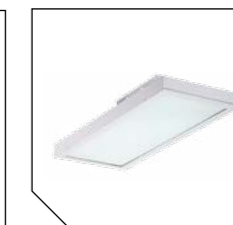
HB LED LOGISTIC  
page 113



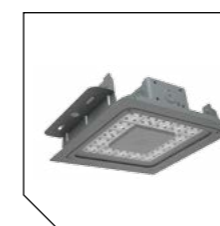
HB LED  
page 114-115



INOX LED  
page 116



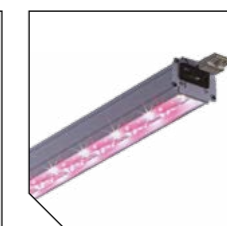
LB/S ECO LED  
page 117



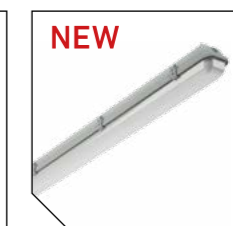
INSEL LB/R LED  
page 118-119



INSEL LB/S LED  
page 120-121



PLANTADOR LED  
page 122



**NEW**  
ARCTIC STANDARD  
page 123



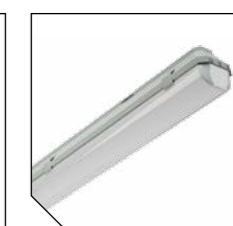
ARCTIC.OPL ECO LED  
page 124



ARCTIC.OPL ECO LED TH  
page 125



LZ.OPL ECO LED  
page 126



LZ.OPL ECO LED TH  
page 127

INDUSTRIAL



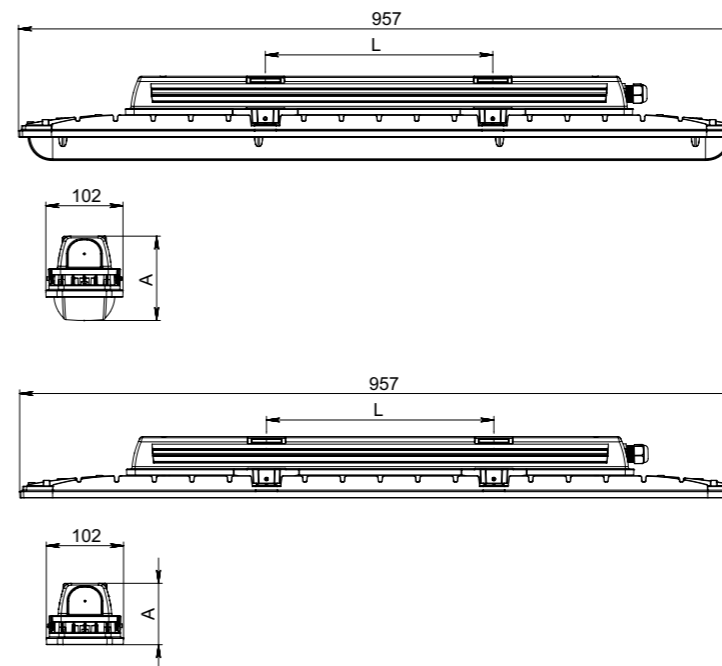
# Industrial lighting



SLICK.PRS LED with driver box



SLICK.PRS LED with driver box/ tempered glass



NEW

**About**

The luminaires of SLICK.PRS LED series with the possibility of changing LED modules during the maintenance. SLICK.PRS LED is the best solution for illuminating workshops, technical premises, underroof parking lots, and small warehouses. Designed to replace 2x18, 2x36, 2x58 conventional luminaires.

**Installation**

Mounted on ceiling/wall surface or suspended on a wire.

**Package contents**

Luminaire assembly. The delivery kit of the modification '....with driver box' includes the incoming cable cover. The delivery kit of the modification '....with driver box' includes external IP driver.

**Electrical connection**

Maximum power cable conductor cross-section: 3.2.5 mm<sup>2</sup>. Incoming cable diameter 5-10 mm.

**Design**

Die-cast aluminum housing with hammer coating. The modification '....with driver box' has the cover connected with the housing by 4 screws. There is a possibility of changing LED modules during the maintenance to increase luminaire technical features.

**Optical part**

Translucent micro prism diffuser. As an option, the luminaires can be supplied with a clear tempered glass (SLICK.PRS LED xx xxx /tempered glass/ xx00K) or opal glass (SLICK.OPL LED xx xxx /tempered glass/ xx00K)

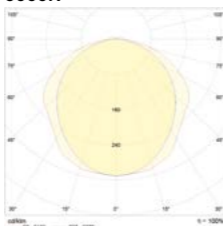
**Features**

Color temperature: 4000 K, 5000 K  
Color rendering index > 80  
Luminous flux flickering < 3%

**Lighting control**

The luminaires can be supplied with a 1-10V, DALI, or ME6 dimmable driver.

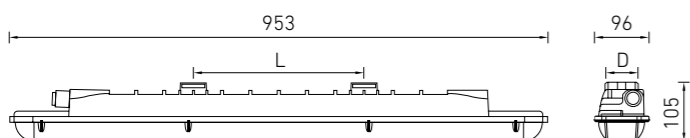
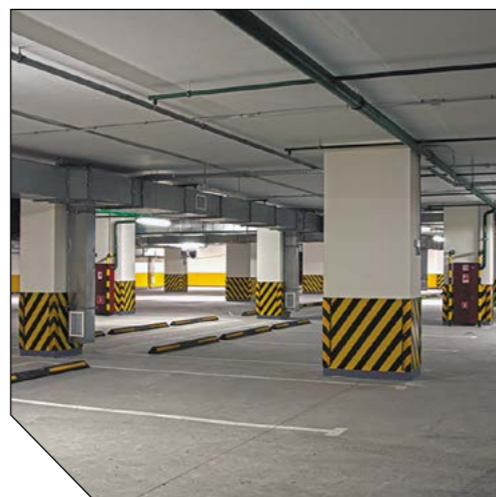
SLICK.PRS LED 50 5000K



	A	L
SLICK.PRS LED 20/30/50 with driver box	110	302
SLICK.PRS LED 20/30/50 w/o driver box	125	586
SLICK.PRS LED 20/30/50 with driver box /tempered glass/	80	302
SLICK.PRS LED 20/30/50 w/o driver box /tempered glass/	95	586

Name	Light flux, Lm**	Power consumption, W	lm/W	Weight, kg	Order code	PFC
SLICK.PRS LED 20 with driver box 5000K / 4000K	2950	20	148	3,6	1997026750 / 1997026910	≥ 0,95
SLICK.PRS LED 30 with driver box 5000K / 4000K	4550	30	151	3,6	1997026760 / 1997026920	≥ 0,95
SLICK.PRS LED 50 with driver box 5000K / 4000K	7400	50	148	3,6	1997026770 / 1997026930	≥ 0,95
SLICK.PRS LED 60 with driver box 5000K / 4000K	8900	60	148	3,6	1997026780 / 1997026940	≥ 0,95
SLICK.PRS LED 20 w/o driver box 5000K / 4000K	2950	20	148	4,2	1997026790 / 1997026950	≥ 0,95
SLICK.PRS LED 30 w/o driver box 5000K / 4000K	4550	30	151	4,2	1997026800 / 1997026960	≥ 0,95
SLICK.PRS LED 50 w/o driver box 5000K / 4000K	7400	50	148	4,2	1997026810 / 1997026970	≥ 0,95
SLICK.PRS LED 60 w/o driver box 5000K / 4000K	8900	60	148	4,2	1997026820 / 1997026980	≥ 0,95
SLICK.PRS LED 20 with driver box /tempered glass/ 5000K / 4000K	3150	20	158	4,3	1997026830 / 1997026990	≥ 0,95
SLICK.PRS LED 30 with driver box /tempered glass/ 5000K / 4000K	4600	30	153	4,3	1997026840 / 1997027000	≥ 0,95
SLICK.PRS LED 50 with driver box /tempered glass/ 5000K / 4000K	7550	50	151	4,3	1997026850 / 1997028520	≥ 0,95
SLICK.PRS LED 60 with driver box /tempered glass/ 5000K / 4000K	9050	60	150	4,3	1997026860 / 1997027010	≥ 0,95
SLICK.PRS LED 20 w/o driver box /tempered glass/ 5000K / 4000K	3150	20	158	3,5	1997026870 / 1997027020	≥ 0,95
SLICK.PRS LED 30 w/o driver box /tempered glass/ 5000K / 4000K	4600	30	153	3,5	1997026880 / 1997027030	≥ 0,95
SLICK.PRS LED 50 w/o driver box /tempered glass/ 5000K / 4000K	7400	50	148	3,5	1997026890 / 1997027040	≥ 0,95
SLICK.PRS LED 60 w/o driver box /tempered glass/ 5000K / 4000K	9050	60	150	3,5	1997026900 / 1997027050	≥ 0,95

\* for modification with emergency power supply unit EM  
\*\* There may be a small changes in characteristics at the time of the availability to order



**About**

SLICK.PRS ECO LED is the best solution for illuminating workshops, technical premises, underroof parking lots, and small warehouses. Designed to replace luminaires with fluorescent lamps.

**Installation**

Luminaires are fixed directly to ceiling or wall surface by means of mounting plates. Suspension of the luminaire on wire is possible. Manufacture of luminaire with through wiring is possible by request.

**Electrical connection**

Maximum power cable conductor cross-section: 3x2,5 mm<sup>2</sup>. Incoming cable diameter 5-10 mm.

**Design**

Housing is made of die-cast aluminum alloy, powder coated in grey paint. Modifications with through wiring, and emergency power supply unit in outer box (EM) are available.

**Package contents**

Luminaire assembly. Mounting plates, hanger brackets, an electrical connector are included in delivery set.

**Optical part**

Translucent micro prism diffuser (PRS) diffuser of polycarbonate. LED type: SMD.

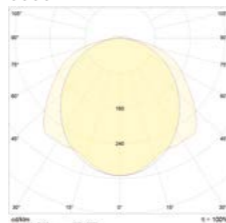
**Features**

Color temperature – 4000 K, 5000 K (3000 K by request)  
 Color rendering index > 80  
 Luminous flux flickering < 3%

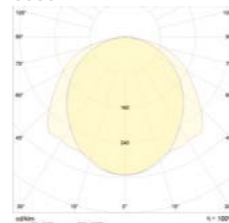
**Lighting control**

The luminaires can be supplied with a 1–10V, DALI, or ME6 dimmable driver.

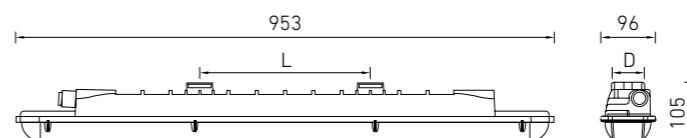
SLICK.PRS ECO LED 45 5000K



SLICK.PRS ECO LED 60 5000K



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
SLICK.PRS ECO LED 30 5000K / 4000K	3950	32	123	2,2	1997013740 / 1997020720	≥ 0,96
SLICK.PRS ECO LED 45 5000K / 4000K	5200	42	123	2,2	1997013750 / 1997020710	≥ 0,96
SLICK.PRS ECO LED 60 5000K / 4000K	7650	60	127	2,2	1997013760 / 1997020730	≥ 0,96



**About**

A robust luminaire with a high IP level for illuminating agricultural premises. The die cast aluminium housing and ABS diffuser are resistant to ammonia. The wide range of options includes modifications with control via DALI protocol, through wiring, different color temperature options.

**Installation**

Ceiling-mounted. Can be suspended on a wire.

**Electrical connection**

Max cross-section of power cable conductors: 3x2,5 mm<sup>2</sup>. Incoming cable diameter 5-10 mm.

**Design**

Die cast aluminium housing with powder coating.

**Package contents**

Luminaire assembly. Mounting plates, hanger brackets, an electrical connector are included in delivery set.

**Optical part**

Transparent microprism ABS diffuser. LED type: SMD.

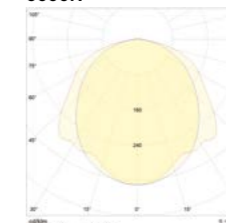
**Features**

Color temperature: 4000 K, 5000 K (3000 K by request)  
 Color rendering index > 80  
 Luminous flux flickering < 2%

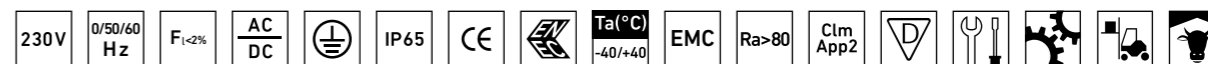
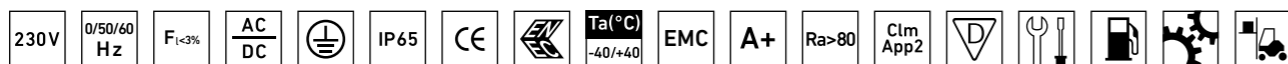
**Lighting control**

The luminaires can be supplied with a 1–10V, DALI, or ME6 dimmable driver.

SLICK.PRS AGRO LED 18 5000K

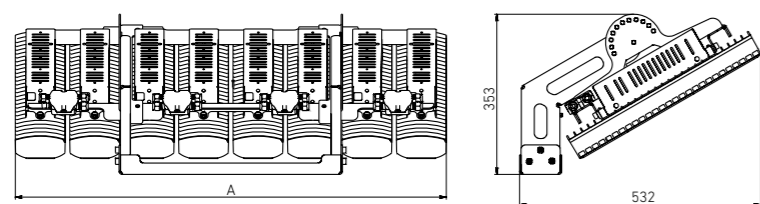


Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
SLICK.PRS AGRO LED 18 5000K / 4000K	2400	18	123	2,2	1997027350 / 1997027340	≥ 0,97
SLICK.PRS AGRO LED 30 5000K / 4000K	3950	32	123	2,2	1997025890 / 1997025880	≥ 0,97
SLICK.PRS AGRO LED 45 5000K / 4000K	5200	42	123	2,2	1997026640 / 1997025680	≥ 0,97
SLICK.PRS AGRO LED 60 5000K / 4000K	7650	60	127	2,2	1997025900 / 1997027360	≥ 0,97

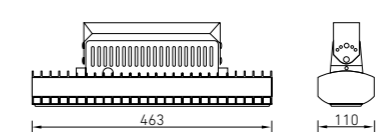
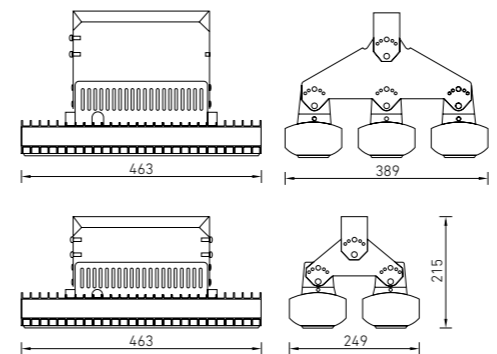




HB LED 800 D15 5000K



	A
HB LED 400	495
HB LED 800	950



	A	B	C
HB LED 75	463	110	160
HB LED 150	463	250	215
HB LED 225	463	390	245

**About**

A series of energy efficient modular luminaires for illuminating warehouses and large logistics centres with ceiling heights ranging from 8 to 20m. Special secondary optics ensures uniform illumination of the working surface and racks' vertical surfaces from the top to the bottom tier.

**Installation**

Luminaires are fixed to the ceiling surface with a dowel. Base surface inclination angle can be adjusted in the range from 0° to 45°. Can be suspended on a wire (2 attachment points).

**Electrical connection**

Max cross-section of power cable conductors: 3x2,5 mm<sup>2</sup> (for luminaires with I class). Max cross-section of power cable conductors: 2x1,5 mm<sup>2</sup> (for luminaires with II class). Incoming cable diameter 5-10,5 mm.

**Design**

Cast aluminium housing with metallic powder coating. Inside the housing, LED modules with secondary optics and a power source are installed. HB LED 75 luminaire consists of a LED module and a suspension device (lyra). HB LED 150 luminaire consists of two LED modules, connection brackets, and a suspension device (lyra). HB LED 225 luminaire consists of three LED modules, connection brackets, and a suspension device (lyra).

**Package contents**

Luminaire assembly. Mounting device (u-bracket - lyra) and an electric connector are included in delivery kit.

**Optical part**

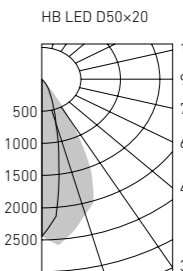
Polycarbonate lenses. Optionally, the device can be supplied with a transparent tempered glass (order code - 2224000120).

**Features**

Color temperature - 4000 K, 5000 K  
Color rendering index > 80  
Luminous flux flickering < 5%

**Lighting control**

The luminaires can be supplied with a 1-10V, DALI dimmable driver.



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
HB LED 75 D50x20 5000K / 4000K	8500	72	118	3,5	1997021910 / 1997024020	≥ 0,96
HB LED 150 D50x20 5000K / 4000K	16500	145	114	7,0	1997021950 / 1997023920	≥ 0,96
HB LED 225 D50x20 5000K / 4000K	25000	220	113	10,5	1997021980 / 1997023960	≥ 0,96

**About**

A series of LED floodlights is designed on HB LED modular base. For installation on high-altitude masts or poles in open big-scale production spaces, construction careers and training sports grounds.

**Installation**

Surface mounting using an U-bracket (lyra). The bracket can resist from wind loads to the floodlight at high-altitude installation. Modules can be tilted 0° to 160° relative to the U-bracket (tilt step 20°). Can be suspended.

**Package contents**

Luminaire assembly. Mounting device (u-bracket - lyra) and an electric connector are included in delivery kit.

**Electrical connection**

Maximum power cable conductor cross-section: 3x2.5mm<sup>2</sup>.

**Design**

Floodlights are designed based on 4 and 8 HB LED modules. Metallic powder coated die-cast aluminum housing. Modules mounted on a steel frame, painted same color. Adjustable U-bracket (lyra) secured to the frame.

**Optical part**

PMMA (15/30) and polycarbonate (40/60/80) lenses.

**Features**

Color temperature - 4000 K, 5000 K  
Color rendering index > 80 (> 90 by request)  
Luminous flux flickering < 3%

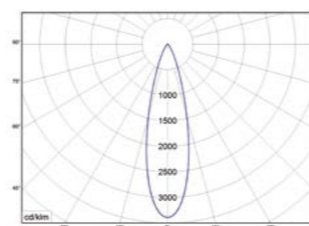
**Lighting control**

The luminaires can be supplied with a 1-10V, DALI dimmable driver.



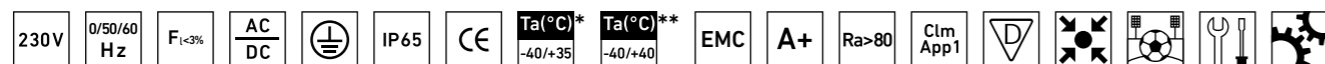
Clear tempered glass HB LED (order code - 2224000120)

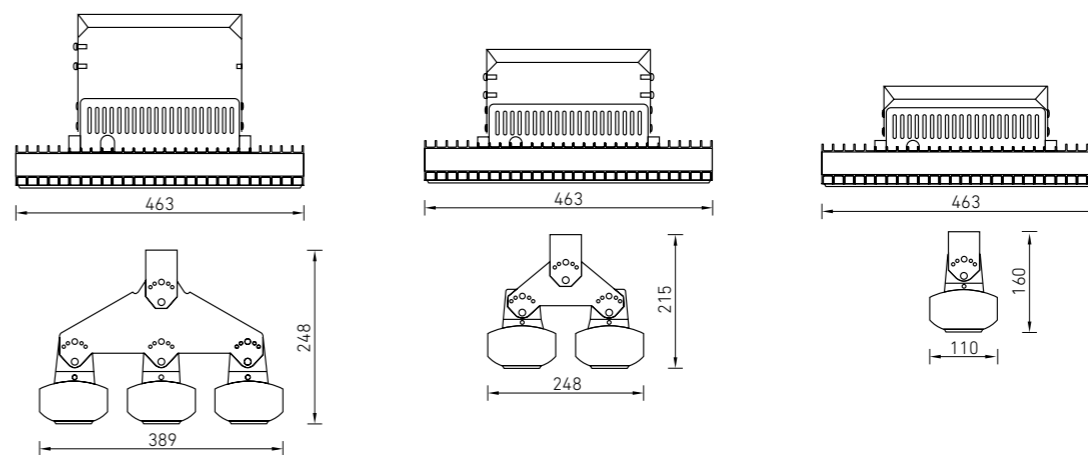
HB LED 400 D30 5000K



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
HB LED 400 D15 5000K	52000	445	116	14,6	1997026720	≥ 0,96
HB LED 400 D30 5000K	52000	440	118	13,5	1997026730	≥ 0,96
HB LED 800 D15 5000K	91600	874	104	37,0	1997026740	≥ 0,96
HB LED 800 D60 5000K	90300	910	99	37,0	1997027060	≥ 0,96

\* for modifications HB LED 400 D30 5000K  
\*\* for other modifications





**About**

Second generation of energy-efficient modular luminaires for illuminating industrial shop floors and logistics facilities with ceilings higher than 8 m. The key advantages of this series are high luminous efficiency and a unique heat removal system that ensures stable characteristics during the entire service life. For operating in harsh environmental conditions and fire-hazardous areas, the luminaires can be supplied with a clear tempered glass.

**Installation**

Mounted on the ceiling or wall surface using an U-bracket. Adjustable angle relative to the mounting surface (0° to 45°). Modules can be tilted 0° to 45° relative to the U-bracket. Can be suspended.

**Electrical connection**

Maximum power cable conductor cross-section: 2×1,5 mm<sup>2</sup> (for luminaires with II class).  
Maximum power cable conductor cross-section: 3×2,5 mm<sup>2</sup> (for luminaires with I class).  
Incoming cable diameter 5-10,5 mm.

**Design**

Metallic painted cast aluminum housing. LED modules with secondary optics and a driver are installed inside the housing. HB 75 LED has one LED module and a U-bracket for suspension. HB 150 LED has two LED modules, two connection brackets, and a U-bracket for suspension. HB 225 LED has three LED modules, two connection brackets, and a U-bracket for suspension.

**Package contents**

Luminaire assembly. Mounting device (u-bracket - lyra) and an electric connector are included in delivery kit.

**Optical part**

Polycarbonate lenses. As an option, the luminaires can be supplied with a clear tempered glass (order code – 2224000120).

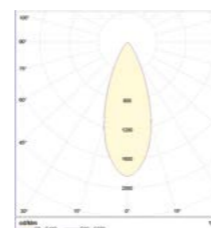
**Features**

Color temperature – 4000 K, 5000 K  
Color rendering index > 80  
Luminous flux flickering < 5%

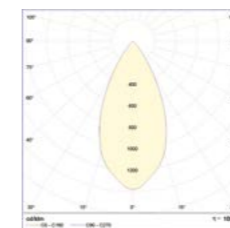
**Lighting control**

The luminaires can be supplied with a 1–10V, DALI dimmable driver.

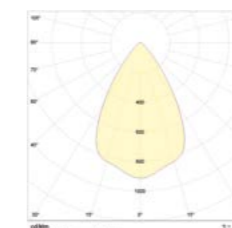
HB LED 75 D40 5000K



HB LED 150 D60 5000K

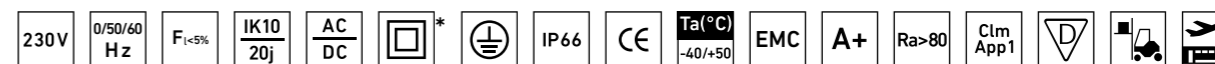


HB LED 225 D80 5000K



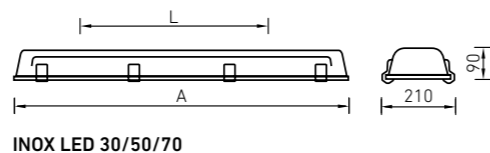
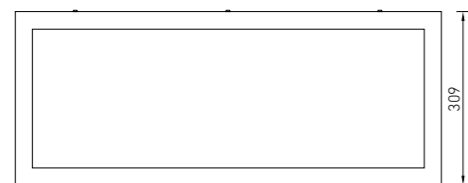
Clear tempered glass HB LED (order code – 2224000120)

Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
HB LED 75 D40 5000K / 4000K	8500	72	118	3,7	1997021880 / 1997024000	≥ 0,96
HB LED 75 D60 5000K / 4000K	8500	72	118	3,7	1997021890 / 1997024030	≥ 0,96
HB LED 75 D80 5000K / 4000K	8900	72	123	3,7	1997021900 / 1997024040	≥ 0,96
HB LED 75 D100 5000K / 4000K	7900	75	105	3,5	1997021140 / 1997023990	≥ 0,96
HB LED 150 D40 5000K / 4000K	16500	144	114	7,5	1997021920 / 1997023910	≥ 0,96
HB LED 150 D60 5000K / 4000K	16500	144	114	7,5	1997021930 / 1997023930	≥ 0,96
HB LED 150 D80 5000K / 4000K	16600	144	115	7,5	1997021940 / 1997023940	≥ 0,96
HB LED 150 D100 5000K / 4000K	16500	144	115	7,5	1997025920 / 1997025910	≥ 0,96
HB LED 225 D40 5000K / 4000K	25000	217	115	11,5	1997021960 / 1997023950	≥ 0,96
HB LED 225 D60 5000K / 4000K	25100	217	115	11,5	1997021970 / 1997023970	≥ 0,96
HB LED 225 D80 5000K / 4000K	25300	217	116	11,5	1997022470 / 1997023980	≥ 0,96
HB LED 225 D100 5000K / 4000K	22500	230	103	10,5	1997025940 / 1997025930	≥ 0,96

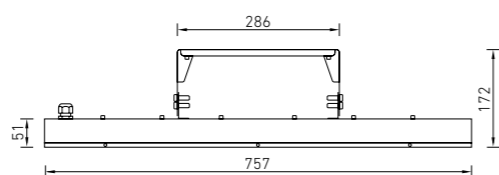




INOX LED 80



INOX LED 30/50/70



	A	L
INOX LED 30	700	560
INOX LED 50	1295	1015
INOX LED 70	1600	1320

**About**

Luminaire series for harsh operating environments. Designed for use in chemical, defense, and food processing industry. Can be used in fire-hazardous areas. INOX LED are easy to install thanks to magnet attachment of the plate with LED clusters and driver to the housing. Versions can be manufactured with emergency power supply unit (EM).

**Installation**

Luminaire is installed on the ceiling surface or on the suspensions by means of eye bolts (included into delivery set).

**Electrical connection**

Maximum power cable conductor cross-section 3x2,5 mm<sup>2</sup>.

**Design**

Stamped housing made of sheet stainless steel with thickness of 0.8 mm.

**Package contents**

Luminaire assembly. Eye bolt for mounting included into delivery kit.

**Optical part**

Protecting translucent tempered silicate glass. Glass is connected to the housing by means of metal clamps. LED type: SMD.

**Features**

Color temperature – 4000 K, 5000 K  
Color rendering index > 80  
Luminous flux flickering < 2%

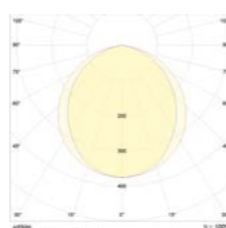
**Lighting control**

An option of built-in motion sensor is possible. The luminaires can be supplied with a 1–10V, DALI dimmable driver.

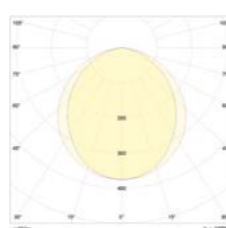


Metal pipe for cable DEFENCE

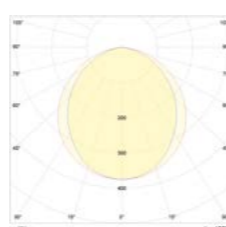
**INOX LED 30 5000K**



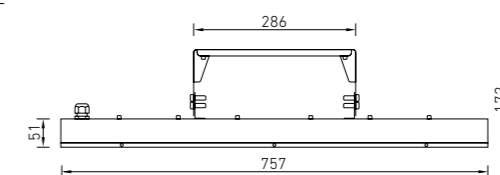
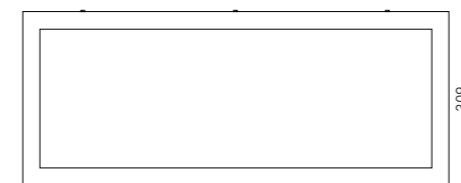
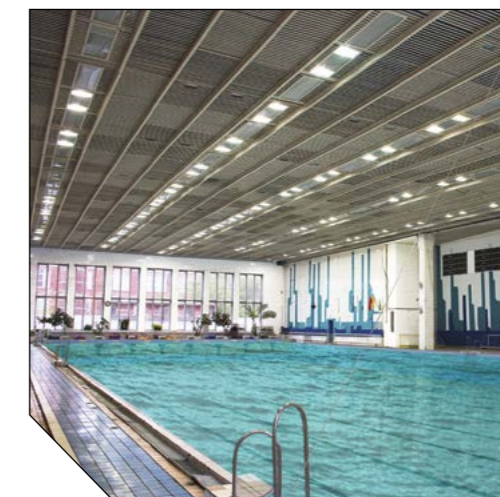
**INOX LED 50 5000K**



**INOX LED 70 5000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
INOX LED 30 5000K / 4000K	2600	26	100	4,4	1997016030 / 1997026220	≥ 0,98
INOX LED 50 5000K / 4000K	4500	45	100	8,0	1997016040 / 1997026230	≥ 0,98
INOX LED 70 5000K / 4000K	7000	67	104	9,7	1997016050 / 1997026240	≥ 0,98
INOX LED 80 5000K / 4000K	8400	72	116	6,4	1997025280 / 1997026250	≥ 0,97



**About**

Energy-efficient luminaire for plant floors with ceiling heights of 5 to 8 meters. Designed as a replacement for metall hollide lamp 150 W and mercury lamp 250 W type luminaires. LB/S M ECO LED series luminaires are supplied as standard with a power supply unit that accepts both DC and AC input voltage.

**Installation**

Luminaires are installed on the ceiling or wall surface or on suspensions.

**Electrical connection**

Maximum power cable conductor cross-section: 3x2,5 mm<sup>2</sup>.

**Design**

Solid metal welded housing of sheet steel, covered with white powder paint.

**Package contents**

Luminaire assembly. Fastening element (U – bracket) included in delivery kit.

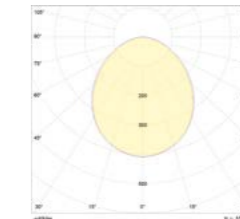
**Optical part**

LB/S C LED – protecting translucent tempered silicate glass.  
LB/S M LED – protecting mat tempered silicate glass.  
LED type: SMD.

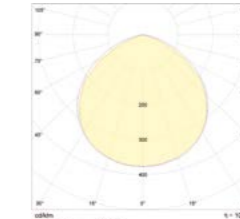
**Features**

Color temperature – 5000 K (4000 K by request)  
Color rendering index > 80  
Luminous flux flickering < 3%

**LB/S M ECO LED 75 4000K**

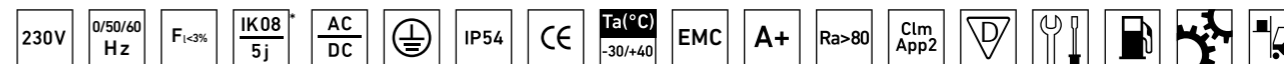
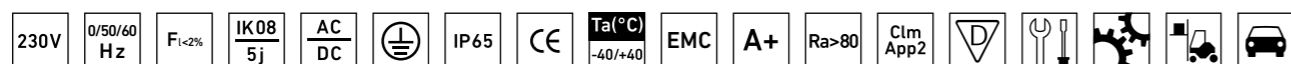


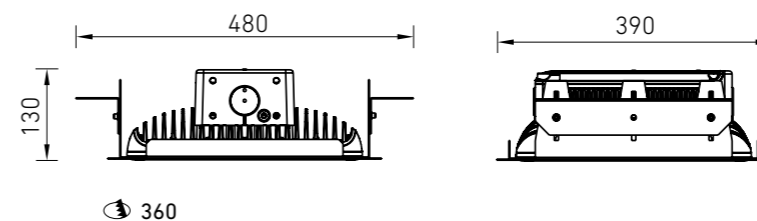
**LB/S C ECO LED 75 5000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
LB/S M ECO LED 75 4000K	7800	72	108	6,4	1997026580	≥ 0,96
LB/S M ECO LED 75 5000K	7800	72	108	6,4	1997020940	≥ 0,96
LB/S C ECO LED 75 5000K	9100	72	126	6,4	1997021050	≥ 0,96

\*only for LB/S C ECO LED D75 5000K





**About**

High IP rating, energy-efficient luminaire for recessed mounting (including under a petrol station canopy). Can be powered from 90–250 V, 50–60 Hz AC or 130–430 V DC mains. Replaces luminaires with metall halide lamp (MHL), mercury lamp, high pressure sodium lamp (HPS).

**Installation**

Luminaires are installed into niches by means of fixing set (included into delivery set).

**Electrical connection**

Maximum power cable conductor cross-section: 3×2.5 mm<sup>2</sup>. Incoming cable diameter 5-10,5 mm.

**Design**

Housing of die-cast aluminum. Solid metal welded frame, covered by white powder paint. Secondary optics of PMMA with different light distribution angles.

**Package contents**

Luminaire assembly.

**Optical part**

Translucent tempered glass. LED type: SMD.

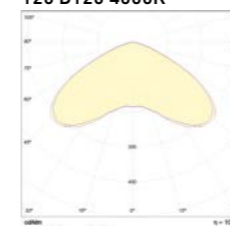
**Features**

Color temperature – 5000 K (4000 K by request)  
Color rendering index > 80  
Luminous flux flickering < 3%

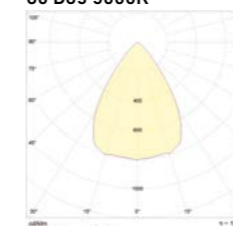
**Lighting control**

The luminaires can be supplied with a 1–10V, DALI dimmable driver and a built-in motion and illumination sensor.

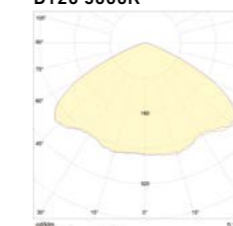
INSEL LB/R LED  
120 D120 4000K



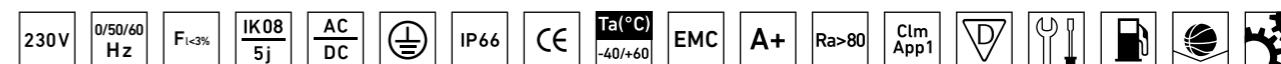
INSEL LB/R LED  
80 D65 5000K

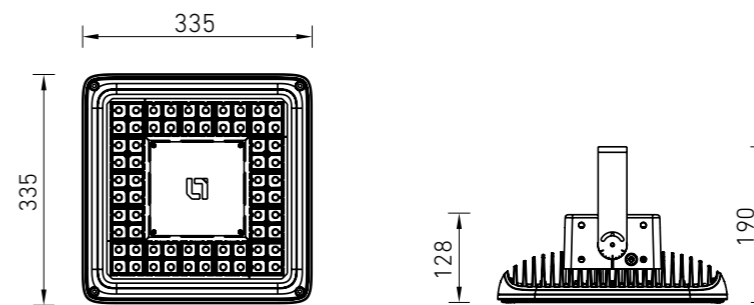


INSEL LB/R 80 LED  
D120 5000K



Name	Light flux, Lm.	Power consumption, W	lm/W	Weight, kg	Order code	PFC
INSEL LB/R LED 70 D65 5000K	7100	66	107	11,8	1997016160	≥ 0,96
INSEL LB/R LED 70 D90×30 5000K	6600	66	100	11,8	1997016170	≥ 0,96
INSEL LB/R LED 70 D120 5000K	7000	66	106	11,8	1997016140	≥ 0,96
INSEL LB/R LED 70 D140 5000K	6900	66	104	11,8	1997016150	≥ 0,96
INSEL LB/R LED 80 D65 5000K	8000	76	105	11,8	1997016210	≥ 0,96
INSEL LB/R LED 80 D90×30 5000K	7900	76	103	11,8	1997016220	≥ 0,96
INSEL LB/R LED 80 D120 5000K	8000	76	105	11,8	1997016180	≥ 0,96
INSEL LB/R LED 80 D140 5000K	7800	76	102	11,8	1997016200	≥ 0,96
INSEL LB/R LED 100 D65 5000K	10000	88	113	12,3	1997016080	≥ 0,96
INSEL LB/R LED 100 D120 5000K	10000	88	113	12,3	1997016060	≥ 0,96
INSEL LB/R LED 120 D65 5000K	12300	120	102	12,3	1997016120	≥ 0,96
INSEL LB/R LED 120 D90×30 5000K	12100	120	100	12,3	1997016130	≥ 0,96
INSEL LB/R LED 120 D120 5000K	12200	120	101	12,3	1997016100	≥ 0,96





**About**

INSEL LB/S LED series of industrial luminaires designed for plant floors with 5 m to 12 m ceiling height, sports facilities, and petrol stations. Compact dimensions, high IP rating, high energy efficiency. Versions can be manufactured with light control function and a built-in light sensor.

**Installation**

Luminaires are installed on the ceiling surface indoors or under the shelter. Luminaires may be fixed at the wall or console by means of wall mounting bracket INSEL LB/S LED (order code – 2334000010) or pole mounting bracket INSEL LB/S LED (order code – 2334000020).

**Electrical connection**

Maximum power cable conductor cross-section: 3x2,5 mm<sup>2</sup>. Incoming cable diameter 5-10,5 mm.

**Design**

Housing of die-cast aluminum, covered with white powder paint.

**Package contents**

An assembled luminaire with a mounting device (U-bracket) and an electronic connector.

**Lighting control**

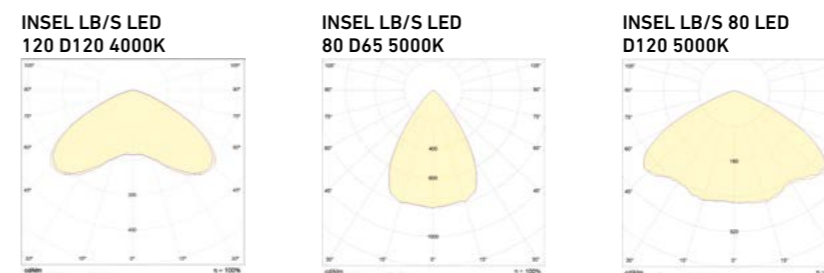
The luminaires can be supplied with a 1–10V, DALI dimmable driver and built-in motion and illumination sensor.

**Optical part**

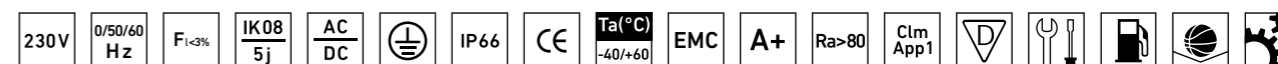
Secondary optics of PMMA with different light distribution angles. Translucent tempered glass. LED type: SMD.

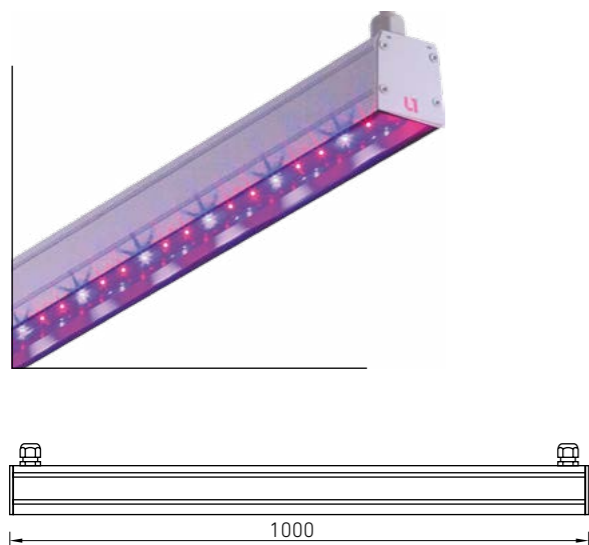
**Features**

Color temperature – 5000 K (4000 K by request)  
Color rendering index > 80  
Luminous flux flickering < 3%



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
INSEL LB/S LED 70 D65 5000K	7100	66	107	10,0	1997016330	≥ 0,96
INSEL LB/S LED 70 D90x30 5000K	6600	66	100	10,0	1997016340	≥ 0,96
INSEL LB/S LED 70 D120 5000K	7000	66	106	10,0	1997016310	≥ 0,96
INSEL LB/S LED 70 D140 5000K	6900	66	104	10,0	1997016320	≥ 0,96
INSEL LB/S LED 80 D65 5000K	8000	76	105	10,0	1997016370	≥ 0,96
INSEL LB/S LED 80 D90x30 5000K	7900	76	103	10,0	1997016380	≥ 0,96
INSEL LB/S LED 80 D120 5000K	8000	76	105	10,0	1997016350	≥ 0,96
INSEL LB/S LED 80 D140 5000K	7800	76	102	10,0	1997016360	≥ 0,96
INSEL LB/S LED 100 D65 5000K	10000	88	113	10,5	1997016250	≥ 0,96
INSEL LB/S LED 100 D90x30 5000K	9750	88	110	10,5	1997016260	≥ 0,96
INSEL LB/S LED 100 D120 5000K	10000	88	113	11,0	1997016230	≥ 0,96
INSEL LB/S LED 100 D140 5000K	9950	88	113	10,5	1997016240	≥ 0,96
INSEL LB/S LED 120 D65 5000K	12300	120	102	11,0	1997016290	≥ 0,96
INSEL LB/S LED 120 D90x30 5000K	12100	120	100	11,0	1997016300	≥ 0,96
INSEL LB/S LED 120 D120 5000K	12200	120	101	10,7	1997016270	≥ 0,96
INSEL LB/S LED 120 D140 5000K	12000	120	100	10,7	1997016280	≥ 0,96





**About**

A series of greenhouse luminaires designed for artificial lighting in greenhouses as sources of side and general supplemental light. Additional application, for illuminating different types of seedlings in shelf cultivation. The luminaire emits light in the range from 400 to 700 nm, which drives photosynthesis in plants. Due to special composition of luminophor in the LEDs, full spectrum modifications are applicable for growing plants in systems without natural light, and can also be used as supplemental lighting in greenhouses with natural light.

**Installation**

Luminaires are fixed at the surface of the ceiling by means of mounting kits (not included). Three types of mounting kits are available: A wire hanger kit (ordering code: 2598000130), a kit for mounting to supporting surface (ordering code: 2598000120), a pivoting arm kit (ordering code: 2598000190). The power supply set PLANTADOR LED should be ordered separately (order code - 2340000040).

**Electrical connection**

Max cross-section of power cable conductors: 3x2.5 mm<sup>2</sup>.

**Design**

Extruded aluminium housing with white powder coating.

**Package contents**

Hangers and connection components are not included in delivery kit.

**Optical part**

Opalescent PMMA diffuser or lens. LED type: SMD.

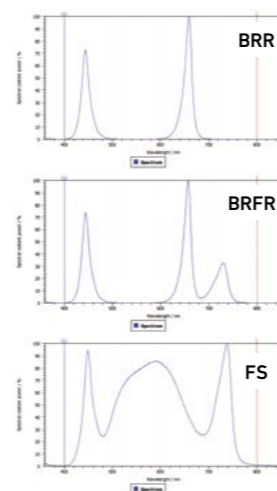
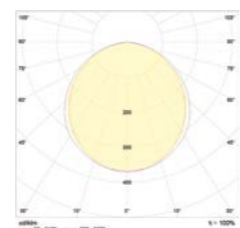
**Features**

Photosynthetic photon flux (PPF) - 65 µmol/s (for BRR modifications), 46 µmol/s (for BRFR modifications)  
 Emission color: BRR - red-and-blue (light distribution: blue, red, red); BRFR - red-and-blue (light distribution: blue, red, far red); FS - red+NW (full spectrum - light distribution: red, neutral white 4000K).  
 Luminous flux flickering < 2%

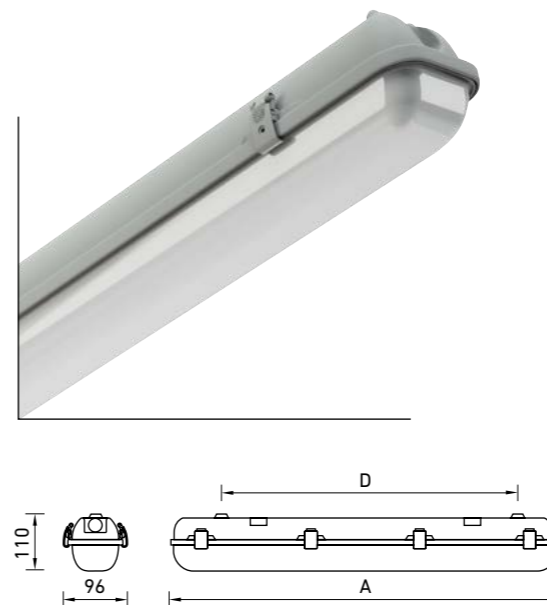
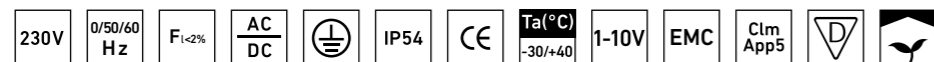
**Lighting control**

The luminaires can be supplied with a 1-10V, DALI dimmable driver.

**PLANTADOR LED 30 D120**



Name	PPF, µmol/s	Light flux, Lm	Power consumption, W	PPF, µmol/s	Weight, kg	Order code	PFC
PLANTADOR LED 30 D120 HFR IP54 BRFR	55	470	30	1,8	2,3	1997027370	≥ 0,96
PLANTADOR LED 30 D120 HFR IP54 FS	650	2800	36	1,4	2,3	1997027390	≥ 0,96
PLANTADOR LED 30 D120 HFR IP54 BRR	61	650	32	1,9	2,3	1997027380	≥ 0,96



**About**

Economical efficient slim-bodied (TH) luminaire series with IP65 degree of protection and luminous efficiency up to 100 Lm/W. Easy replacement of conventional luminaires due to similar overall and mounting dimensions.

**Installation**

Mounted directly on the ceiling or wall surface without mounting plates. For suspension, a special mounting kit is required (ARCTIC Luminaire Wire Rope/ Curly Hook Mounting Kit, order code 2069000330). EM modification is available (except ARCTIC STANDARD 600 TH).

**Package contents**

Luminaire assembly.

**Electrical connection**

Maximum power cable conductor cross-section: 3x2.5mm<sup>2</sup>.

**Design**

Fiberglass-reinforced SMC polyester housing.

**Optical part**

Opal polymeric diffuser secured in the housing with polyamide latches. LED type: SMD.

	A	D
ARCTIC STANDARD 600 TH	671	445
ARCTIC STANDARD 1200 TH	1280	932
ARCTIC STANDARD 1500 TH	1582	1234

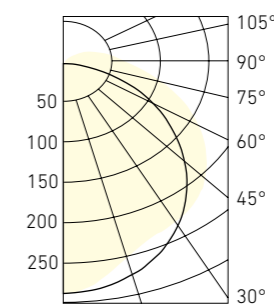
**Features**

Color temperature - 4000 K (5000 K by request)  
 Color rendering index > 80  
 Luminous flux flickering <3%

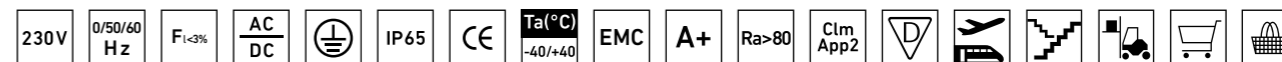
**Lighting control**

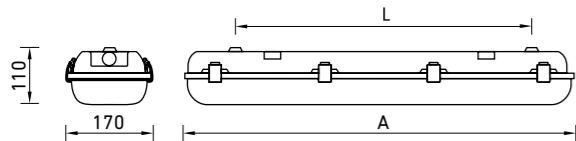
The luminaires can be supplied with a 1-10V, DALI dimmable driver.

**ARCTIC STANDARD 600 TH 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
ARCTIC STANDARD 600 TH 4000K	2000	20	100	1,7	1997026700	≥ 0,95
ARCTIC STANDARD 1200 TH 4000K	3300	33	100	2,2	1997026690	≥ 0,95
ARCTIC STANDARD 1500 TH 4000K	4500	45	100	3,1	1997026710	≥ 0,95





**About**

High IP class (IP65), high luminous efficiency industrial luminaire for indoor applications. Many versions with different dimensions and luminous flux. Designed as a replacement for luminaires with fluorescent lamps.

**Installation**

Mounted directly on the ceiling or wall surface without mounting plates. For suspension, a special mounting kit is required (ARCTIC Luminaire Wire Rope/Curly Hook Mounting Kit, order code – 2069000330). Modification with through wiring is possible by request.

**Electrical connection**

Maximum power cable conductor cross-section: 2x2,5 mm<sup>2</sup>. Incoming cable diameter 5-10 mm.

**Design**

Fiberglass-reinforced SMC polyester housing.

**Package contents**

Luminaire assembly.

**Optical part**

Opal (OPL) polycarbonate diffuser secured in the housing with polyamide latches. Can be supplied to order with stainless steel latches. LED type: SMD.

**Features**

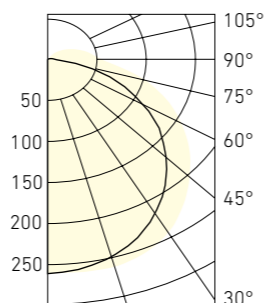
Color temperature – 4000 K, 5000 K  
Color rendering index > 80  
Luminous flux flickering < 2%

**Lighting control**

The luminaires can be supplied with a 1–10V, DALI dimmable driver.

	A	L
ARCTIC.OPL ECO LED 600	671	445
ARCTIC.OPL ECO LED 1200	1276	930
ARCTIC.OPL ECO LED 1500	1577	1230

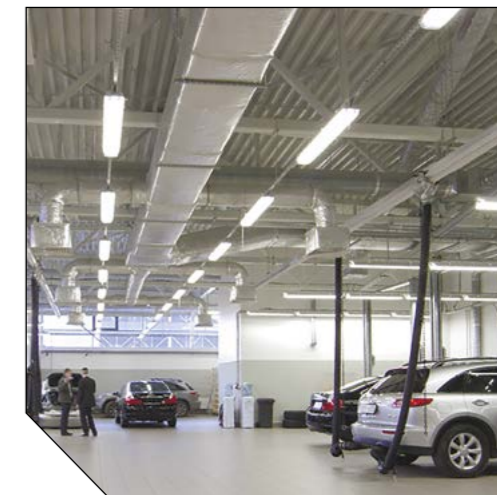
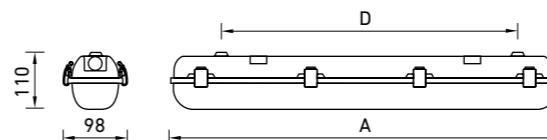
ARCTIC.OPL ECO LED 600 5000K



Suspension mounting kit with twisted hook

Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
ARCTIC.OPL ECO LED 600 5000K*/4000K	2650	28	95	1,9	1997021770 / 1997024270	≥ 0,95
ARCTIC.OPL ECO LED 1200 5000K/4000K	4850	47	103	3,2	1997021780 / 1997023420	≥ 0,95
ARCTIC.OPL ECO LED 1500 5000K/4000K	6100	55	110	5,4	1997021790 / 1997025870	≥ 0,95

\* luminaire can not be equipped with emergency power supply unit



**About**

Slim-bodied (TH) luminaire series with IP65 degree of protection and high luminous efficiency. Many versions with different dimensions and luminous flux. Designed for indoor applications as a replacement for luminaires with fluorescent lamps.

**Installation**

Mounted directly on the ceiling or wall surface without mounting plates. For suspension, a special mounting kit is required (suspension mounting kit with twisted hook, order code – 2069000330). Modification with through wiring is possible by request.

**Electrical connection**

Maximum power cable conductor cross-section: 2x2,5 mm<sup>2</sup>. Incoming cable diameter 5-10 mm.

**Design**

Fiberglass-reinforced SMC polyester housing.

**Package contents**

Luminaire assembly.

**Optical part**

Opal (OPL) polycarbonate diffuser secured in the housing with polyamide latches. By request can be supplied with stainless steel latches. LED type: SMD.

	A	D
ARCTIC.OPL ECO LED 600 TH*	671	445
ARCTIC.OPL ECO LED 1200 TH*	1276	930

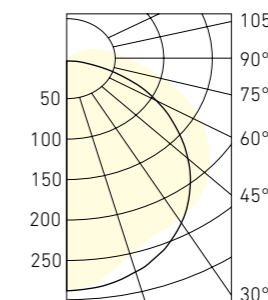
**Features**

Color temperature – 4000 K, 5000 K  
Color rendering index > 80  
Luminous flux flickering < 2%

**Lighting control**

The luminaires can be supplied with a 1–10V, DALI dimmable driver.

ARCTIC.OPL ECO LED 600 TH 5000K

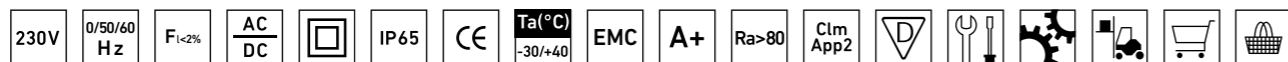


Suspension mounting kit with twisted hook (order code - 2069000330)

Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
ARCTIC.OPL ECO LED 600 TH** 5000K / 4000K	1800	18	100	1,8	1997021800 / 1997028500	≥ 0,95
ARCTIC.OPL ECO LED 1200 TH** 5000K / 4000K	3350	33	112	2,4	1997021810 / 1997028490	≥ 0,95
ARCTIC.OPL ECO LED 1500 TH** 5000K / 4000K	4000	39	102	3,2	1997021820 / 1997028510	≥ 0,95

\* luminaire can not be equipped with emergency power supply unit

\*\* TH is a designation for the slim - bodied variant of the ARCTIC.OPL ECO LED





**About**

Luminaire series with IP65 degree of protection and high luminous efficiency for illuminating small technical premises, car repair shops, and parking lots. Quick and easy surface mounting using mounting plates. Many versions with different dimensions and luminous flux. Designed as a replacement for FLC type luminaires.

**Installation**

Mounted on ceiling/wall surface or suspended indoors or under canopy.

**Electrical connection**

Maximum power cable conductor cross-section: 2x2,5 mm<sup>2</sup>. Incoming cable diameter 5-10 mm.

**Design**

Grey polycarbonate housing.

**Package contents**

Luminaire assembly. Mounting plates and brackets included into delivery kit.

**Optical part**

Opal (OPL) polycarbonate diffuser fixed to the housing with metal latches. LED type: SMD.

**Features**

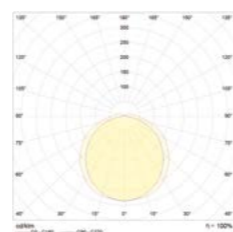
Color temperature – 5000 K (4000 K by request)  
Color rendering index > 80  
Luminous flux flickering < 2%

**Lighting control**

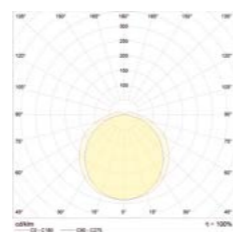
The luminaires can be supplied with a 1–10V, DALI, or ME6 dimmable driver.

	A	D
LZ.OPL ECO LED 600	660	360
LZ.OPL ECO LED 1200	1270	800
LZ.OPL ECO LED 1500	1572	800

**LZ.OPL ECO LED 600 5000K**

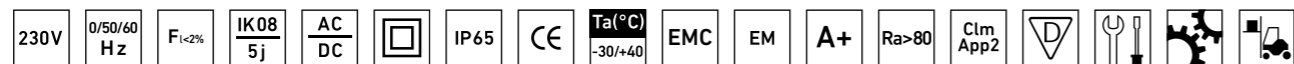


**LZ.OPL ECO LED 1200 5000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
LZ.OPL ECO LED 600 5000K*	2700	26	104	2,4	1997021850	≥ 0,95
LZ.OPL ECO LED 1200 5000K	4500	45	104	3,7	1997021860	≥ 0,95
LZ.OPL ECO LED 1500 5000K	6000	60	107	4,9	1997021870	≥ 0,95

\* not equipped with emergency power supply unit



**About**

Slim-bodied (TH) industrial luminaire for illuminating small technical premises, car repair shops, and parking lots. Quick and easy surface mounting using mounting plates.

**Installation**

Mounted on ceiling/wall surface or suspended indoors or under canopy.

**Electrical connection**

Maximum power cable conductor cross-section: 2x2,5 mm<sup>2</sup>. Incoming cable diameter 5-10 mm.

**Design**

Grey polycarbonate housing.

**Package contents**

Luminaire assembly. Mounting plates included into delivery kit. Mounting kit for luminaire installation on track system, on wall or on suspension cable should be ordered separately.

**Optical part**

Opal (OPL) polycarbonate diffuser attached to the housing with metal latches. LED type: SMD.

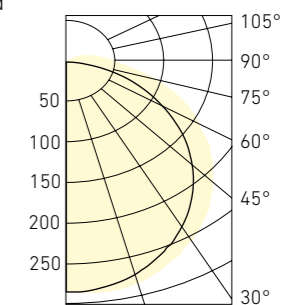
**Features**

Color temperature – 5000 K (4000 K by request)  
Color rendering index > 80  
Luminous flux flickering < 2%

**Lighting control**

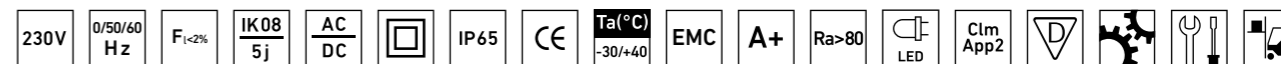
The luminaires can be supplied with a 1–10V, DALI dimmable driver.

**LZ.OPL ECO LED 1200 TH 5000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Order code	PFC
LZ.OPL ECO LED 1200 TH* 5000K	3300	33	100	2,4	1997021840	≥ 0,95

\* TH is the designation for the slim-bodied variant of the LZ.OPL ECO luminaire





OUTDOOR



# Outdoor lighting



Street



MAGISTRAL LED  
page 132



FREGAT LED  
page 133



FREGAT CROSSING LED  
page 134

Park



CLASSIC LED  
page 135



TERES LED  
page 136



SKYLINE LED  
page 153

Floodlights



LEADER LED  
page 137



FREGAT FLOOD LED  
page 138

Wall



STAR LED  
page 139



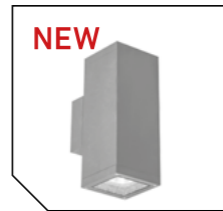
GRANDA LED  
page 140



DAMIN LED  
page 141



TUBUS LED  
page 142



TETRA LED  
page 143



KVARTA LED  
page 144



KAMPI LED  
page 145

Ceiling



MATRIX/S LED  
page 146



MATRIX/R LED  
page 147



PIPE LED  
page 148

Wall Recessed

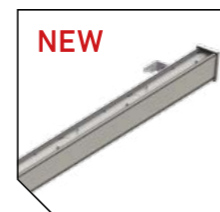


DECA LED  
page 149

Ground



NOTA LED  
page 150

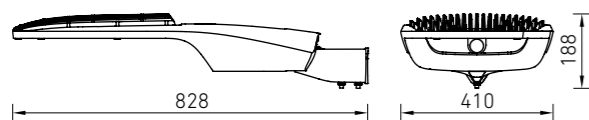


EVOLINE LED  
page 151

Architectural Floodlights



GLOSS LED  
page 152



**About**

MAGISTRAL LED luminaires are specially designed for illuminating wide-lane highways. Efficiency and the optical system of the product allow to replace traditional Na luminaires up to 600 W.

**Installation**

Post top or side entry mounting Ø 48/60. Adjustable tilt angle.

**Design**

The housing and the universal adjustable bracket are made of die cast aluminium. The power supply is inside the housing.

**Package contents**

Luminaire assembly. Support included.

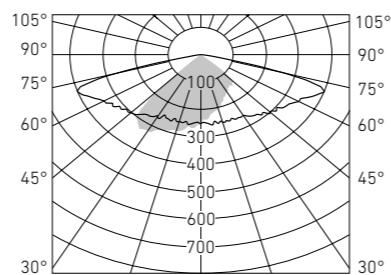
**Optical part**

Complex group optics with wide lateral and axial light distribution. The diffuser is made of tempered glass. LED type: SMD.

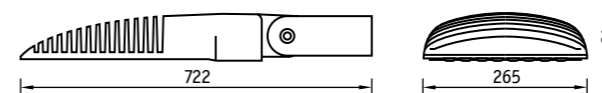
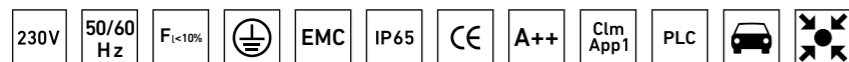
**Features**

Operating temperature range: -40 °C...+60 °C.  
 EXTREME modification is available for operation up to -60°C.  
 Color temperature – 4000 K (5000 K by request)  
 Color rendering index > 70  
 Luminous flux flickering < 1%

MAGISTRAL LED 150 (W) 5000K



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Order code	PFC
MAGISTRAL LED 150 (SW) 4000K	20190	159	127	15,0	Silver	1997024290	≥ 0,95
MAGISTRAL LED 150 (W) 4000K	19875	159	125	15,0	Silver	1997024730	≥ 0,95
MAGISTRAL LED 240 (SW) 4000K	28800	225	128	15,0	Silver	1997024740	≥ 0,95
MAGISTRAL LED 240 (W) 4000K	27450	225	122	15,0	Silver	1997024750	≥ 0,95
MAGISTRAL LED 300 (SW) 4000K	35695	295	121	15,2	Silver	1997024760	≥ 0,95
MAGISTRAL LED 300 (W) 4000K	35695	295	121	15,2	Silver	1997024770	≥ 0,95



**About**

Street luminaire series with a unique optical systems, wide range of wattages, elegant design, optimum lighting characteristics, and a universal rotary mounting bracket. FREGAT LED is an effective solution for illuminating roadways of different categories.

**Installation**

Post top or side entry mounting Ø 48/60. Adjustable tilt angle with 5° step.

**Design**

Housing and universal adjustable bracket is made of die-cast aluminum.

**Package contents**

Luminaire assembly. Support included.

**Optical part**

Complex group optics with special road wide distribution. Diffuser is made of tempered glass. LED type: SMD.

**Features**

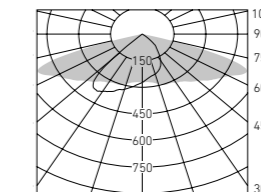
Operating temperature range: -40 °C...+60 °C.  
 EXTREME modification is available for operation up to -60°C.

Color temperature – 4000 K, 5000 K  
 Color rendering index > 70  
 Luminous flux flickering < 5%  
 Modifications with class II electrical protection are available on request.

**Lighting control**

Power line control (PLC) via LT CITYLIGHT lighting control system and GSM network using the ME6 are available by request.

FREGAT LED 110 5000K



Wall mounting bracket - optionally available.  
 Order code - 2997000780)



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Order code	PFC
FREGAT LED 35 (W) 4000K	4500	35	130	9,0	Silver	1997022000	≥ 0,95
FREGAT LED 35 (W) 5000K	4500	35	130	9,0	Silver	1997020430	≥ 0,95
FREGAT LED 55 (W) 4000K	7400	55	135	9,0	Silver	1997022010	≥ 0,95
FREGAT LED 55 (W) 5000K*	7400	55	135	9,0	Silver	1997013890	≥ 0,95
FREGAT LED 75 (W) 4000K	9350	75	125	9,0	Silver	1997022020	≥ 0,95
FREGAT LED 75 (W) 5000K	9350	75	125	9,0	Silver	1997022030	≥ 0,95
FREGAT LED 110 (W) 4000K	14450	107	135	9,6	Silver	1997013870	≥ 0,95
FREGAT LED 110 (W) 5000K*	14450	107	135	9,6	Silver	1997013880	≥ 0,95
FREGAT LED 150 (W) 4000K	18100	145	125	9,6	Silver	1997022040	≥ 0,95
FREGAT LED 150 (W) 5000K	18100	145	125	9,6	Silver	1997022050	≥ 0,95

\*\* optional





**About**

FREGAT CROSSING LED is a special version of street luminaires FREGAT LED, designed for illumination of crosswalks. The unique optical system enhances contrast and vertical illuminance, that allows a driver to see pedestrians from a greater distance, and to respond to changes of road conditions in advance.

**Installation**

Post top or side entry mounting Ø 48/60.  
Adjustable tilt angle with 5° step.

**Design**

Housing and universal adjustable bracket is made of die-cast aluminum.

**Package contents**

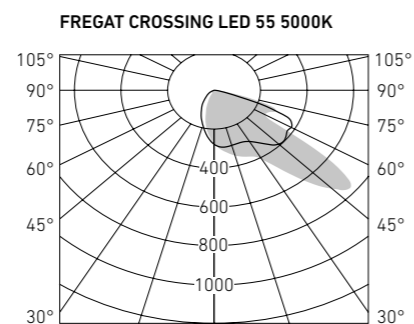
Luminaire assembly. Bracket included.

**Optical part**

Complex group optics with special light distribution for crosswalks with right-hand traffic. Diffuser is made of tempered glass. LED type: SMD.

**Features**

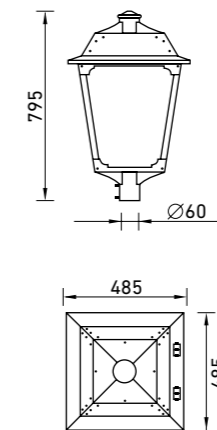
Operating temperature range: -40 °C...+60 °C.  
EXTREME modification is available for operation up to -60°C.  
Color temperature – 5000 K, 4000 K  
Color rendering index > 70  
Luminous flux flickering < 5%



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Order code	PFC
FREGAT CROSSING LED 55 (R) 5000K	6500	55	118	9,5	Silver	1997022060	≥ 0,9
FREGAT CROSSING LED 55 (R) 4000K	6500	55	118	9,5	Silver	1997023810	≥ 0,9
FREGAT CROSSING LED 55 (R) II class 4000K	6500	55	118	9,5	Silver	1997026350	≥ 0,9
FREGAT CROSSING LED 110 (R) 5000K	12600	107	118	9,5	Silver	1997020970	≥ 0,9



Product under development: II quarter of 2018



**NEW**

**About**

CLASSIC LED - a retro design luminaire with up-to-date light sources for the illumination of historical areas, parks and squares. The luminaire can be mounted on a mast or as a suspension luminaire, is easy to install and provides a comfortable and uniform light.

**Installation**

Post top mounting Ø60 mm.

**Design**

The housing is made of zinc-contained powder coated steel. The power supply and LEDs are inside the housing.

**Optical part**

Protecting glass. Polycarbonate diffuser (in OPL version).

**Features**

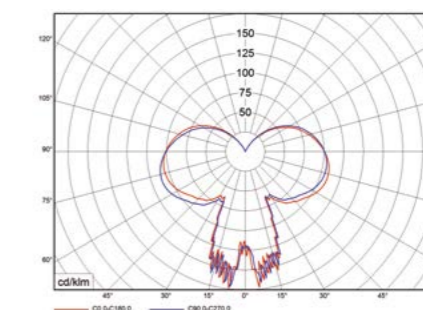
Color temperature – 3000 K, 4000 K  
Color rendering index > 75  
Luminous flux flickering < 3%

**Classical masts for CLASSIC LED**

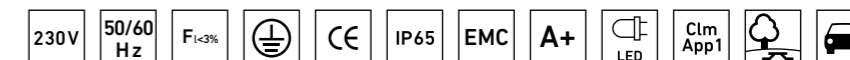
Article	Name
4702000010	AVANT
4702000020	AVANT 2
4702000030	CLASSIC
4702000040	CLASSIC 2
4702000070	YARD
4702000080	YARD 2

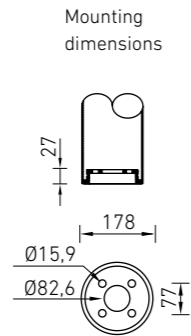
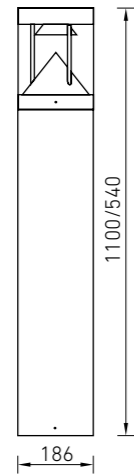


**CLASSIC LED 35 4000K**



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Order code	PFC
CLASSIC LED 35 3000K	3300	35	94	16,8	Black	1997028220	≥ 0,95
CLASSIC LED 35 4000K	3300	35	100	16,8	Black	1997028230	≥ 0,95
CLASSIC LED 35 OPL 3000K	2350	35	67	16,8	Black	1997027400	≥ 0,95
CLASSIC LED 35 OPL 4000K	2500	35	71	16,8	Black	1997027410	≥ 0,95
CLASSIC LED 70 3000K	6600	70	94	17,0	Black	1997028240	≥ 0,95
CLASSIC LED 70 4000K	7000	70	100	17,0	Black	1997028250	≥ 0,95
CLASSIC LED 70 OPL 3000K	4700	70	67	17,0	Black	1997027420	≥ 0,95
CLASSIC LED 70 OPL 4000K	5000	70	71	17,0	Black	1997027430	≥ 0,95





**About**

TERES LED designed for landscape and pedestrian area lighting. Due to the minimalistic design and high efficiency, this luminaire can be used in parks or gardens as well as in urban areas. The product is available in two heights, 1 m and 0.5 m. A special optical system produces comfortable efficient light without glare.

**Installation**

The luminaire shall be installed by the set of anchor bolts (optional).

**Design**

Housing is made of aluminum, covered with powder paint. Power supply source and LED module are located inside the housing.

**Package contents**

Luminaire assembly. Set of anchor bolts is not included in delivery kit.

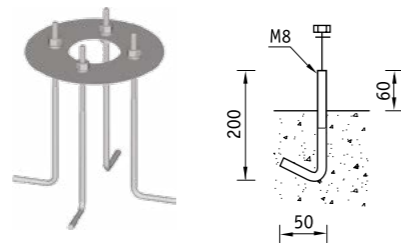
**Optical part**

Gauze screen made of anodized aluminum. Translucent diffuser made of polycarbonate. LED type: SMD.

**Features**

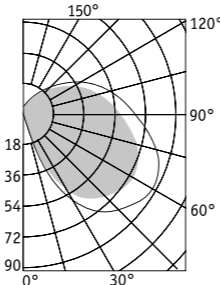
- Color temperature – 4000 K
- Color rendering index > 80
- Luminous flux flickering < 3%

**Accessories**

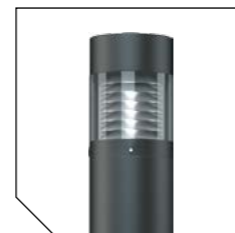


Set of anchor bolts AB 178  
Order code – 2407000020

**TERES LED 30**



**TERES E60**

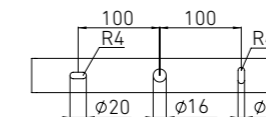
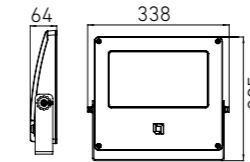
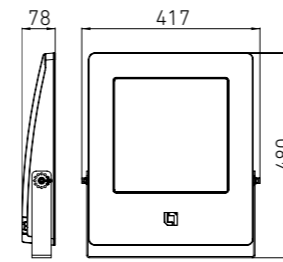


Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Order code	PFC
TERES LED 30 black 4000K*	2360	35	79	8,7	Black	1997019050	≥ 0,95
TERES MINI LED 30 black 4000K	2360	35	79	5,6	Black	1997020950	≥ 0,95



LEADER LED 100-140

LEADER LED 30-50



**About**

LEADER LED – universal family of floodlights both for architectural and functional lighting. The luminaires are designed for functional and architectural lighting

**Installation**

Surface mounting with U-bracket with adjustable angle.

**Design**

Die cast aluminium housing with powder coating. LED module and driver are inside the housing. Universal adjustable lyra made of stainless steel.

**Package contents**

Luminaire assembly. Mounting bracket (lyra) is included.

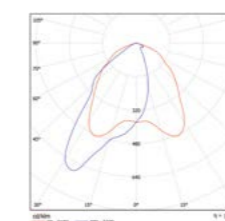
**Optical part**

Tempered glass diffuser. Standard light beams (15°, 75°, assymetric). LED type: SMD.

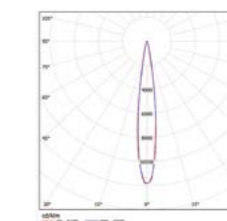
**Features**

- Color temperature – 5000 K (3000 K, 4000 K by request)
- Color rendering index > 70
- Luminous flux flickering < 5%

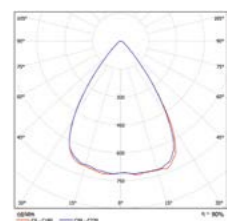
LEADER LED A30



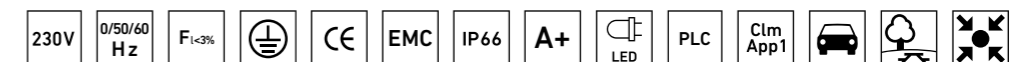
LEADER LED D15

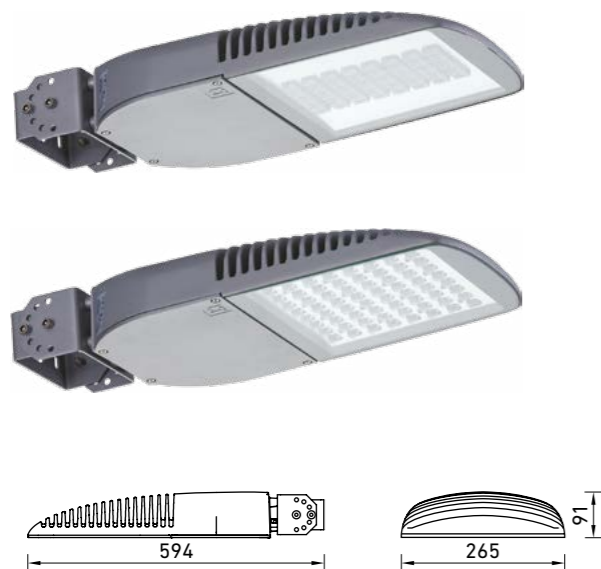


LEADER LED D75



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Order code	PFC
LEADER LED 30 D15 5000K	3400	27	126	4,4	Silver	1997024680	> 0,85
LEADER LED 30 D75 5000K	3400	27	126	4,4	Silver	1997024690	> 0,95
LEADER LED 30 A30 5000K	3000	27	111	4,4	Silver	1997024670	> 0,95
LEADER LED 50 D15 5000K	6500	56	116	4,9	Silver	1997024710	> 0,95
LEADER LED 50 D75 5000K	6500	56	116	4,9	Silver	1997024720	> 0,95
LEADER LED 50 A30 5000K	6100	56	109	4,9	Silver	1997024700	> 0,95
LEADER LED 100 D15 5000K	12800	108	119	11,1	Silver	1997024620	> 0,95
LEADER LED 100 D75 5000K	12800	108	119	11,1	Silver	1997024630	> 0,95
LEADER LED 100 A30 5000K	12000	108	111	11,1	Silver	1997024610	> 0,95
LEADER LED 140 D15 5000K	17000	148	115	11,1	Silver	1997024650	> 0,95
LEADER LED 140 D75 5000K	17000	148	115	11,1	Silver	1997024660	> 0,95
LEADER LED 140 A30 5000K	15800	148	107	11,1	Silver	1997024640	> 0,95





**About**

FREGAT FLOOD LED is a floodlight version of FREGAT LED luminaire series with concentrating optics and U-bracket mounting. This universal solution can be used for architectural and area lighting.

**Features**

- Color temperature – 5000 K
- Color rendering index > 70
- Luminous flux flickering < 5%

**Installation**

Fixation using adjustable mounting bracket.  
Adjustment step - 30°.

**Design**

Housing is made of die-cast aluminum.  
Adjustable bracket is made of steel.

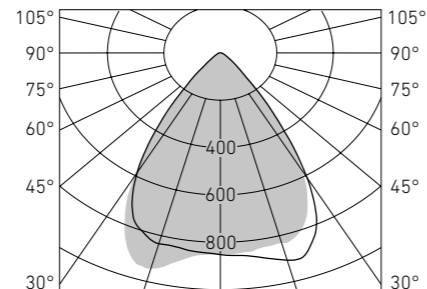
**Package contents**

Luminaire assembly. Fixing bracket is included.

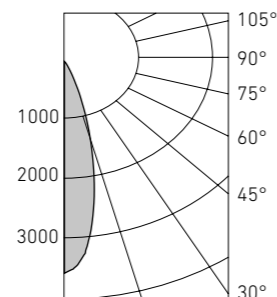
**Optical part**

Complex cluster-type optics with different beam configurations (30°, 60°, 90°x30°). Protective tempered silicate glass diffuser.  
LED type – SMD.

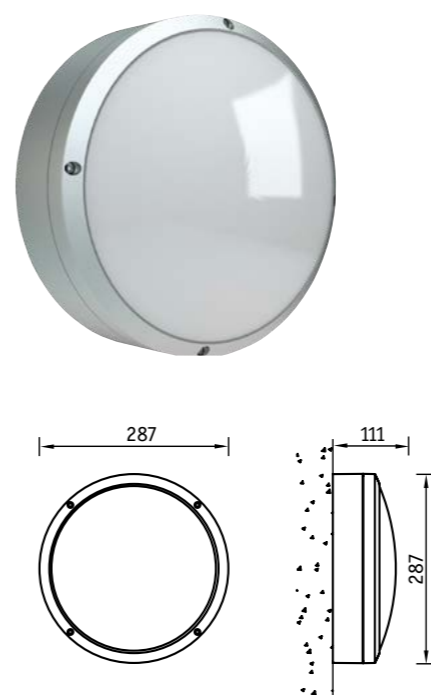
FREGAT FLOOD LED (60)



FREGAT FLOOD LED (30)



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Order code	PFC
FREGAT FLOOD LED 55 (30) 5000K	6325	55	115	9,6	Silver	1997022280	≥ 0,9
FREGAT FLOOD LED 55 (60) 5000K	6325	55	115	9,6	Silver	1997022290	≥ 0,9
FREGAT FLOOD LED 55 (A) 5000K	6325	55	115	9,6	Silver	1997022300	≥ 0,9
FREGAT FLOOD LED 110 (30) 5000K	12305	107	115	9,6	Silver	1997022250	≥ 0,9
FREGAT FLOOD LED 110 (60) 5000K	12305	107	115	9,6	Silver	1997022260	≥ 0,9
FREGAT FLOOD LED 110 (A) 5000K	12305	107	115	9,6	Silver	1997022270	≥ 0,9



**About**

STAR LED is a family of vandal-proof luminaires in a compact aluminum housing with a high degree of protection (IP65) for illuminating passages, utility rooms, entrances, and building areas.

**Features**

- Color temperature – 4000 K
- Color rendering index > 80
- Luminous flux flickering < 3%

**Installation**

Luminaire shall be fixed at wall or ceiling surface.

**Design**

Housing is made of die-cast aluminum.

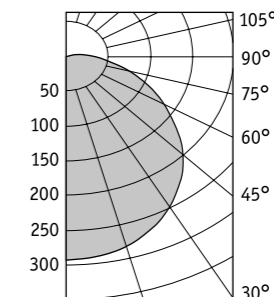
**Package contents**

Luminaire assembly.

**Optical part**

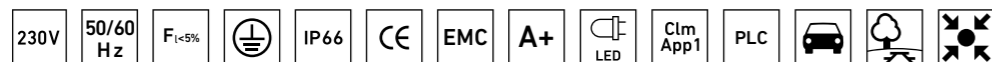
Opal diffuser of polycarbonate. LED type – SMD.

STAR NBT LED 32



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Order code	PFC
STAR NBT LED 12 silver 4000K	1010	13	77	2,0	Silver	1997022090	≥ 0,9
STAR NBT LED 18 silver 4000K	1580	18	88	2,0	Silver	1997013370	≥ 0,9
STAR NBT LED 32 silver 4000K*	2170	32	67	1,7	Silver	1997019030	≥ 0,9
STAR NBT LED 12 black 4000K	1010	13	77	2,0	Black	1997018980	≥ 0,9
STAR NBT LED 18 black 4000K	1580	18	88	2,0	Black	1997019000	≥ 0,9
STAR NBT LED 32 black 4000K	2170	32	67	1,7	Black	1997019020	≥ 0,9

\*\* except STAR NBT LED 32 4000K version





**About**

GRANDA LED is a family of vandal-proof luminaires in a compact aluminum housing with a high degree of protection (IP65) for illuminating passages, utility rooms, entrances, and areas adjacent to buildings. A version with a decorative grid is available by request.

**Installation**

Mounted on the ceiling or wall surface.

**Design**

Powder coated die-cast aluminum housing,

**Package contents**

Luminaire assembly.

**Optical part**

Opal polycarbonate diffuser or glass diffuser.  
LED type: SMD.

**Features**

Color temperature – 4000 K  
Color rendering index > 80  
Luminous flux flickering < 45%

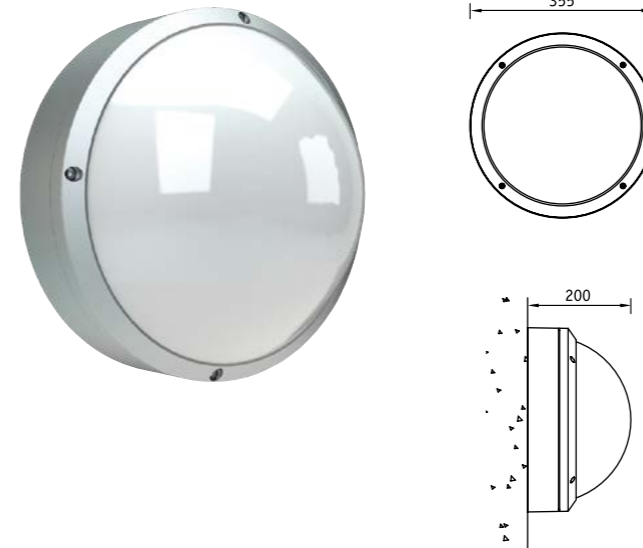
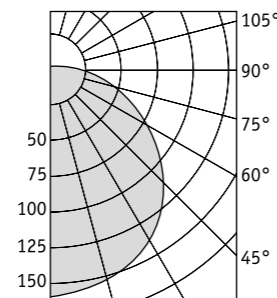
**Options**

Emergency power unit – EM

Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Order code	PFC
GRANDA NBT LED 18 4000K*	1370	18	78	3,1	Silver	1997022100	≥ 0,95
GRANDA NBT LED 18 GLASS 4000K	1743	18	97	3,5	Silver	1997027910	≥ 0,95

\*\* IK10 for modifications with PC diffuser

**GRANDA NBT LED**



**About**

DAMIN LED is a family of vandal-proof luminaires in a compact aluminum housing with a high degree of protection (IP65) for illuminating passages, utility rooms, entrances, and areas adjacent to buildings. A version with a decorative grid is available by request.

**Installation**

Luminaire shall be fixed at wall or ceiling surface.

**Design**

Housing is made of die-cast aluminum.

**Package contents**

Luminaire assembly.

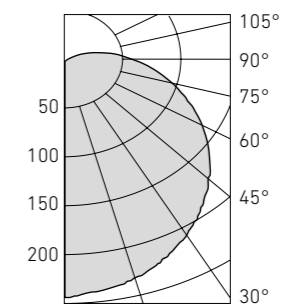
**Optical part**

Opal diffuser of polycarbonate. LED type: SMD.

**Features**

Color temperature – 4000 K  
Color rendering index > 80  
Luminous flux flickering < 5%

**DAMIN LED 40**

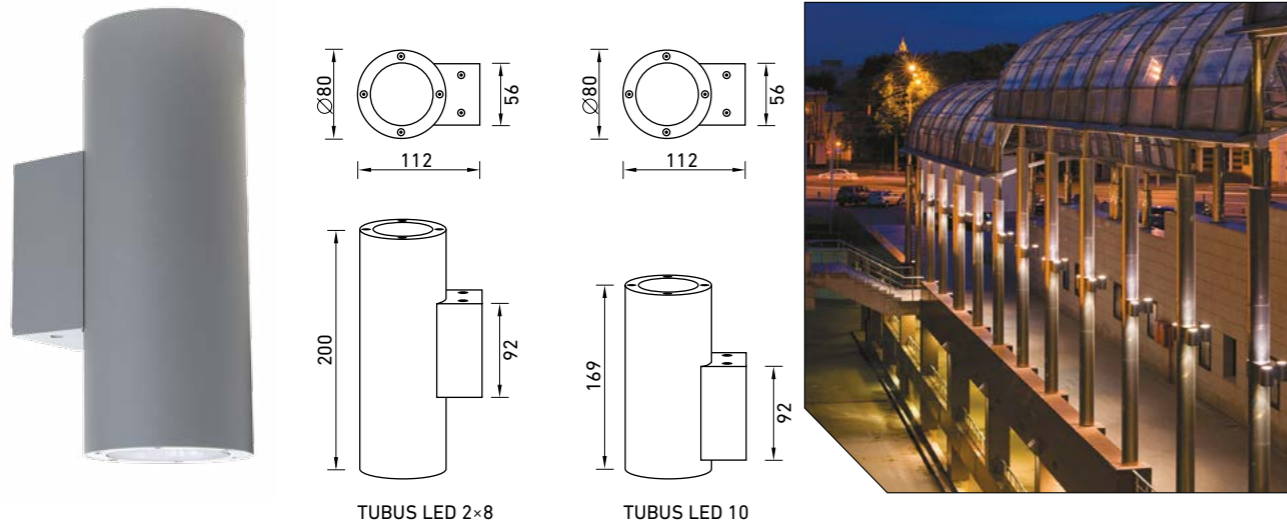


Housing color – black



DAMIN L LED with decorative grid

Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Order code	PFC
DAMIN LED 40 black 4000K	2600	33	79	4,0	Black	1997015350	≥ 0,96
DAMIN LED 40 silver 4000K*	2600	33	79	4,0	Silver	1997015360	≥ 0,96
DAMIN LED 40 white 4000K	2600	33	79	4,0	White	1997015370	≥ 0,96
DAMIN L LED 40 black 4000K	2600	33	79	4,0	Black	1997020350	≥ 0,96
DAMIN L LED 40 silver 4000K	2600	33	79	4,0	Silver	1997020360	≥ 0,96
DAMIN L LED 40 white 4000K	2600	33	79	4,0	White	1997020370	≥ 0,96



TUBUS LED 2x8

TUBUS LED 10

**About**

NEW

TUBUS LED is a family of architectural luminaires designed for facade lighting. Efficient and easy-to-install lighting solution for any object. TUBUS LED series has a one-side and two-side light distribution.

**Installation**

The luminaire shall be fixed at the wall surface.

**Design**

Housing is made of die-cast aluminum.

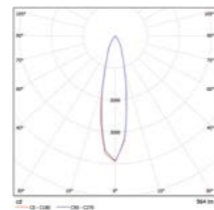
**Optical part**

Protecting translucent tempered glass. LED type: COB

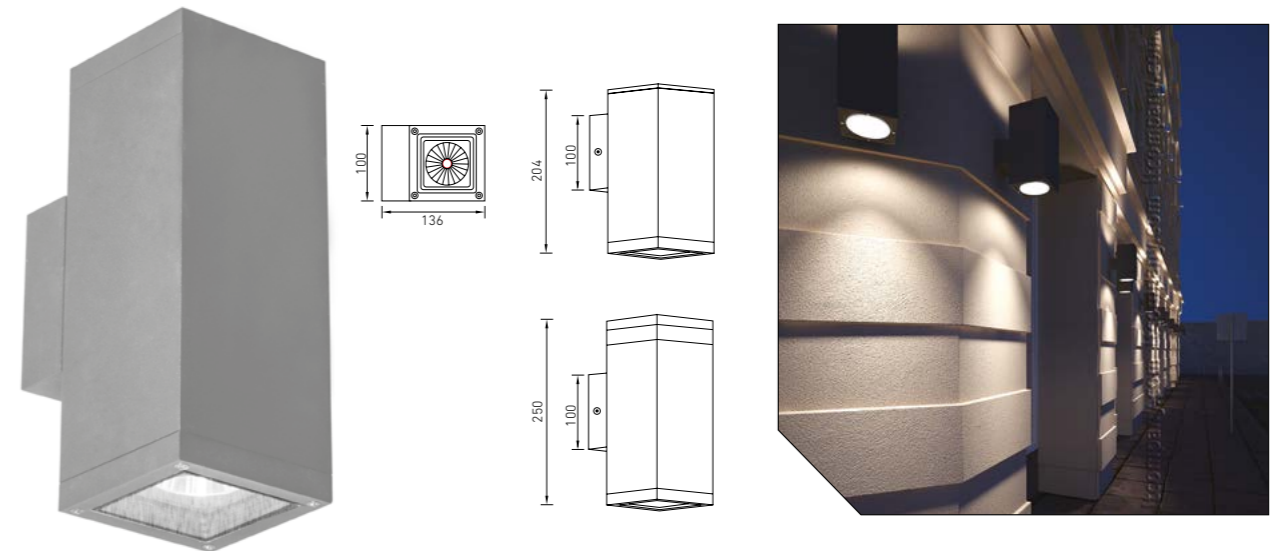
**Features**

Color temperature – 3000 K, 4000 K  
Color rendering index > 70  
Luminous flux flickering < 20%

TUBUS LED 10 (24) 4000K



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing Color	Order code	PFC
TUBUS LED 10 (24) 3000K	1170	13	90	1	Silver	1997027440	> 0,90
TUBUS LED 10 (24) 4000K	1300	13	100	1	Silver	1997027450	> 0,90
TUBUS LED 2x8 (24) 3000K	2x950	21	90	1,4	Silver	1997027460	> 0,90
TUBUS LED 2x8 (24) 4000K	2x1050	21	100	1,4	Silver	1997027470	> 0,90



**About**

NEW

TETRA LED is a family of architectural luminaires designed for facade lighting. Efficient and easy-to-install lighting solution for any object with up-down light distribution.

**Features**

Color temperature – 3000 K, 4000 K  
Color rendering index > 80  
Luminous flux flickering < 30%

**Installation**

The luminaire shall be fixed at the wall surface.

**Package contents**

Luminaire assembly.

**Design**

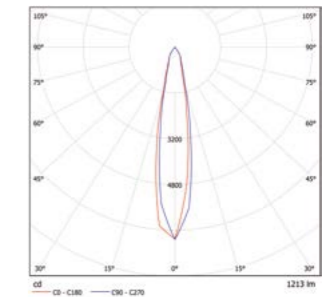
Housing is made of die-cast aluminum.  
Driver is placed inside the housing.

**Optical part**

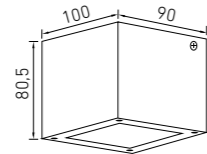
Protecting translucent tempered glass. LED type: COB.



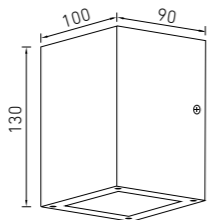
TETRA LED 20 D30 3000K



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing Color	Order code	PFC
TETRA LED 20 D12 3000K	1700	21	81	1,2	Silver	1997027480	> 0,90
TETRA LED 20 D12 4000K	1750	21	83	1,2	Silver	1997027490	> 0,90
TETRA LED 20 D30 3000K	1700	21	81	1,2	Silver	1997027500	> 0,90
TETRA LED 20 D30 4000K	1750	21	83	1,2	Silver	1997027510	> 0,90
TETRA LED 2x13 D12 3000K	2x1250	26	96	1,8	Silver	1997027520	> 0,90
TETRA LED 2x13 D12 4000K	2x1300	26	100	1,8	Silver	1997027530	> 0,90
TETRA LED 2x13 D30 3000K	2x1250	26	96	1,8	Silver	1997027540	> 0,90
TETRA LED 2x13 D30 4000K	2x1300	26	100	1,8	Silver	1997027550	> 0,90



KVARTA LED 8



KVARTA LED 2x8



**NEW**

**About**  
KVARTA LED is a family of architectural luminaires designed for facade lighting. Efficient and easy-to-install lighting solution for any object with up-down light distribution.

**Installation**  
The luminaire shall be fixed at the wall surface.

**Package contents**  
Luminaire assembly.

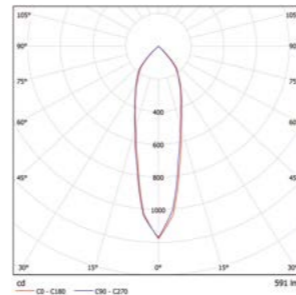
**Design**  
Housing is made of die-cast aluminum.  
Driver is placed inside the housing.

**Optical part**  
Protecting translucent tempered glass. LED type: COB.

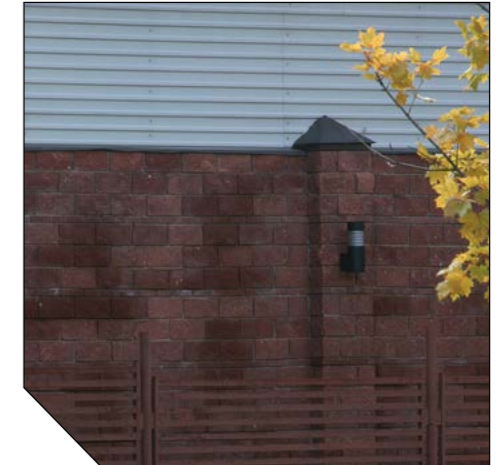
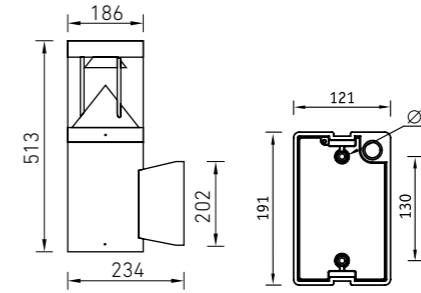
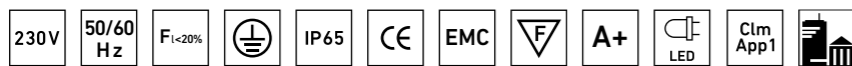
**Features**  
Color temperature – 3000 K, 4000 K  
Color rendering index > 70  
Luminous flux flickering < 20%



KVARTA LED 8 D18 4000K



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing Color	Order code	PFC
KVARTA LED 8 D18 3000K	650	8	81	1,0	Silver	1997027560	> 0,90
KVARTA LED 8 D18 4000K	750	8	94	1,0	Silver	1997027570	> 0,90
KVARTA LED 8 D40 3000K	650	8	81	1,0	Silver	1997027580	> 0,90
KVARTA LED 8 D40 4000K	750	8	94	1,0	Silver	1997027590	> 0,90
KVARTA LED 2x8 D18 3000K	2x650	16	81	1,2	Silver	1997027600	> 0,90
KVARTA LED 2x8 D18 4000K	2x700	16	88	1,2	Silver	1997027610	> 0,90
KVARTA LED 2x8 D40 3000K	2x650	16	81	1,2	Silver	1997027620	> 0,90
KVARTA LED 2x8 D40 4000K	2x700	16	88	1,2	Silver	1997027630	> 0,90



**About**  
KAMPI LED is a family of decorative and functional for illuminating building facades, malls, business centers, and adjacent areas. Combines minimalistic design and high efficiency. A special optical system produces comfortable yet efficient light without glare.

**Installation**  
The luminaire shall be fixed at the wall surface.

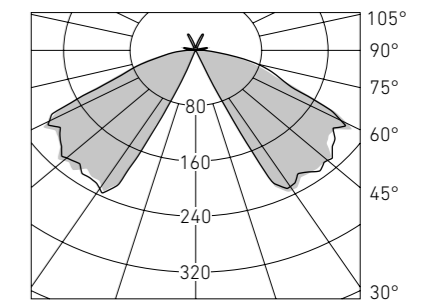
**Design**  
Housing is made of powder coated aluminum.

**Package contents**  
Luminaire assembly. Wall bracket is included.

**Optical part**  
Aluminum reflector powder coated in white. Transparent diffuser of polycarbonate. LED type: COB.

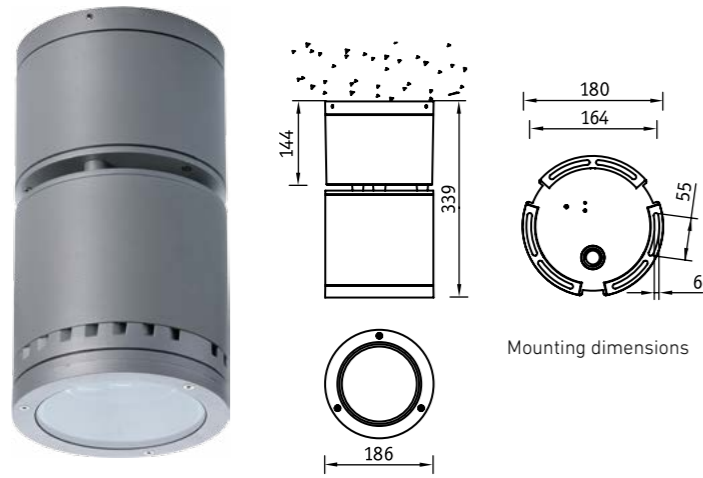
**Features**  
Color temperature – 4000 K  
Color rendering index > 80  
Luminous flux flickering < 5%

KAMPI LED 30



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Order code	PFC
KAMPI LED 30 black 4000K	2300	35	66	6,2	Black	1997016580	≥ 0,9





Mounting dimensions



**About**

MATRIX S LED is a family of luminaires designed for entrances, sales areas, exhibition halls, and utility rooms. The die-cast aluminum housing has a high ingress protection rating (IP66) and IK10 impact resistance code, allowing industrial use. The efficient optics and the LED module used as the light source allows using the luminaire at heights of up to 10 m.

**Installation**

The luminaire shall be fixed at the ceiling surface.

**Design**

Housing is made of die-cast aluminum.

**Package contents**

Luminaire assembly.

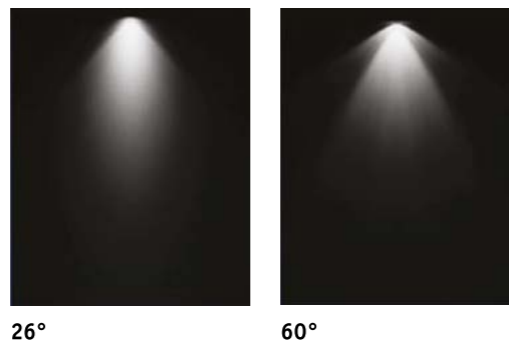
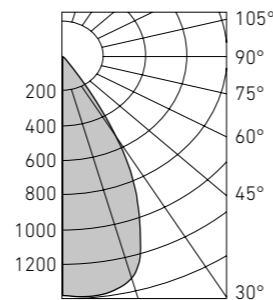
**Optical part**

Protecting translucent tempered glass. Beam angle - 26° or 60°. LED type - COB.

**Features**

Color temperature – 4000 K, 5000 K  
Color rendering index > 80  
Luminous flux flickering < 5%

MATRIX S LED 55 (60°)

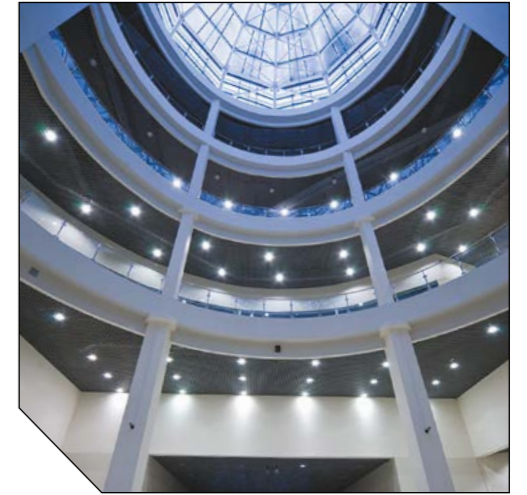
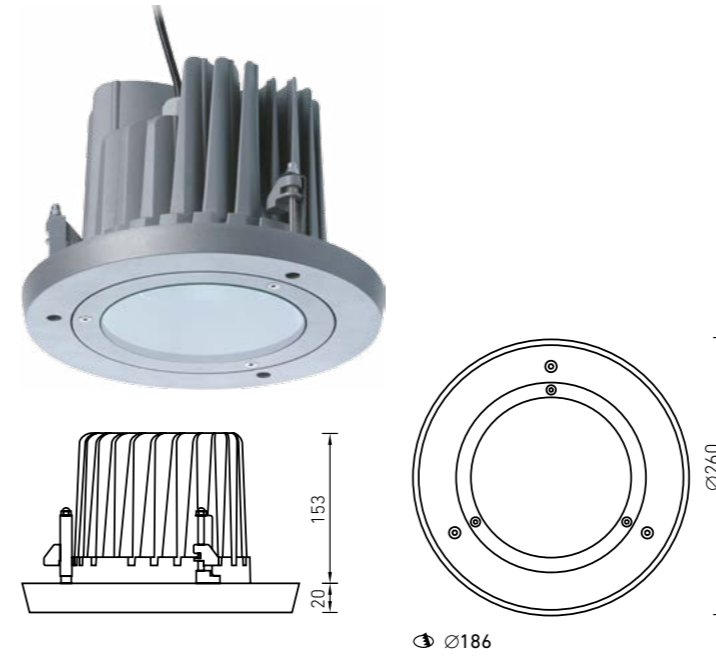


26°

60°

Accessories	Code
Suspension chain 1,5 m MATRIX S	1424000130

Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Order code	PFC
MATRIX/S LED (26) silver 4000K	5100	58	88	7,0	Silver	1997022340	≥ 0,95
MATRIX/S LED (60) silver 4000K	5100	58	88	7,0	Silver	1997022350	≥ 0,95
MATRIX/S LED (26) silver 5000K	5200	58	90	7,0	Silver	1997017540	≥ 0,95
MATRIX/S LED (60) silver 5000K	5200	58	90	7,0	Silver	1997017550	≥ 0,95



**About**

MATRIX R LED is a family of ceiling luminaires designed for entrances, sales areas, exhibition halls, and utility rooms. The die-cast aluminum housing has a high ingress protection rating (IP66) and IK10 impact resistance code, allowing industrial use. The efficient optics and the LED module used as the light source allows using the luminaire at heights of up to 10 m.

**Installation**

Luminaires shall be built-in into the ceiling.

**Design**

Housing is made of die-cast aluminum. Driver is placed in outer box. Suitable for top maintenance.

**Package contents**

Luminaire assembly.

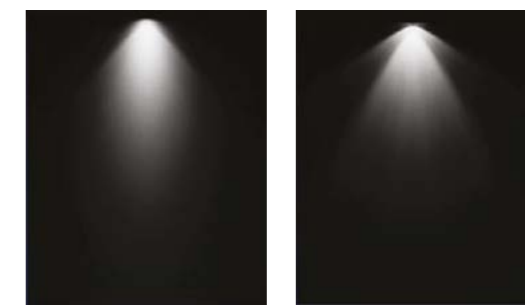
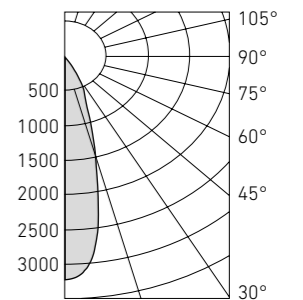
**Optical part**

Mirror reflector is made of anodized aluminum. Protecting translucent tempered glass. Beam angle - 26° or 60°. LED type - COB.

**Features**

Color temperature – 4000 K, 5000 K  
Color rendering index > 80  
Luminous flux flickering < 5%

MATRIX R LED (26°)

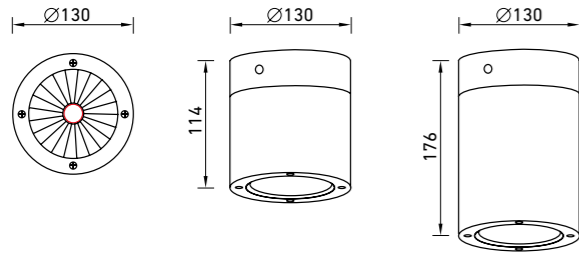


26°

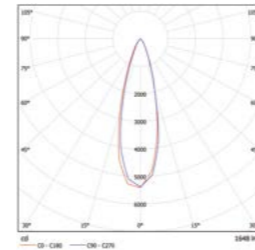
60°

Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Order code	PFC
MATRIX/R LED (26) silver 4000K	7300	88	83	5,2	Silver	1997022080	≥ 0,95
MATRIX/R LED (60) silver 4000K	7300	88	83	5,2	Silver	1997022070	≥ 0,95
MATRIX/R LED (26) silver 5000K	7500	88	85	5,2	Silver	1997017520	≥ 0,95
MATRIX/R LED (60) silver 5000K	7500	88	85	5,2	Silver	1997017530	≥ 0,95





PIPE LED 21 (30) 3000K



NEW

**About**  
PIPE LED is a family of surface mounted downlights designed for facades and entrances.

**Installation**  
The luminaire shall be fixed at the ceiling surface.

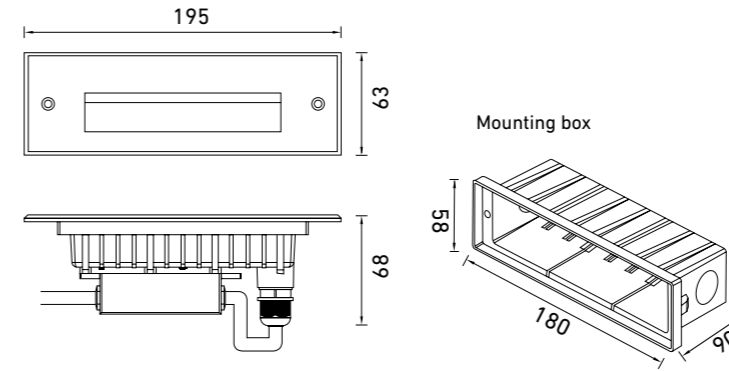
**Design**  
Powder coated die-cast aluminum housing.

**Package contents**  
Luminaire assembly.

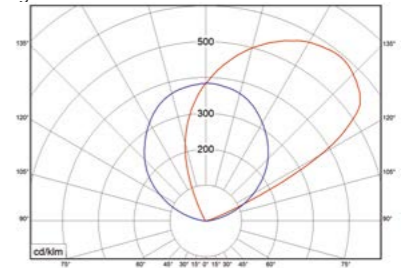
**Optical part**  
Protecting translucent tempered glass. LED type: COB.

**Features**  
Color temperature – 3000 K, 4000 K  
Color rendering index – 70  
Luminous flux flickering < 20%

Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Order code	PFC
PIPE LED 9 D30 3000K	850	10	85	0,9	Silver	1997027640	> 0,90
PIPE LED 9 D30 4000K	900	10	90	0,9	Silver	1997027650	> 0,90
PIPE LED 21 D15 3000K	2100	21	100	1,2	Silver	1997027660	> 0,90
PIPE LED 21 D15 4000K	2300	21	110	1,2	Silver	1997027670	> 0,90
PIPE LED 21 D30 3000K	2100	21	100	1,2	Silver	1997027680	> 0,90
PIPE LED 21 D30 4000K	2300	21	110	1,2	Silver	1997027690	> 0,90



Luminous flux flickering < 1% DECA LED 4 3000K



NEW

**About**  
Recessed DECA LED luminaires for sidewalks, stairs and facades. Quality light with asymmetric distribution and hidden light source ensures smooth illumination and visual comfort.

**Installation**  
Luminaires shall be integrated into walls (stairs) by means of plastic mounting box (included).

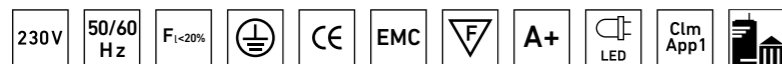
**Design**  
Powder coated die-cast aluminum housing.

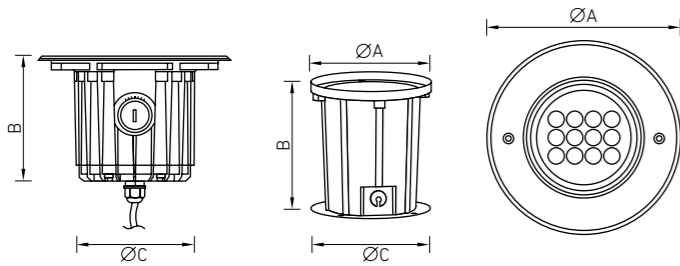
**Package contents**  
Luminaire assembly. Mounting box is included.

**Optical part**  
Protecting translucent tempered glass. LED type: SMD.

**Features**  
Color temperature – 3000 K, 4000 K  
Color rendering index > 70

Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Order code	PFC
DECA LED 4 3000K	112	4	28	1,0	Silver	1997027700	> 0,90
DECA LED 4 4000K	120	4	30	1,0	Silver	1997027710	> 0,90





	Dimensions			Box dimensions		
	A	B	C	A	B	C
NOTA LED 3	116	98	68	106	152	116
NOTA LED 9	173	128	109	155	220	163
NOTA LED 18	250	190	153	222	220	218

NEW

**About**  
NOTA LED is a series of in-ground LED luminaires with rotary optics and the possibility to adjust light distribution during mounting.

**Installation**  
Suitable for in-ground using the included plastic mounting box 0,5 m neoprene cable.

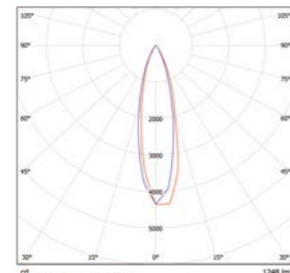
**Package contents**  
Luminaire assembly. Mounting box is included.

**Design**  
Housing is made of die-cast aluminum powder coated. Stainless steel frame.

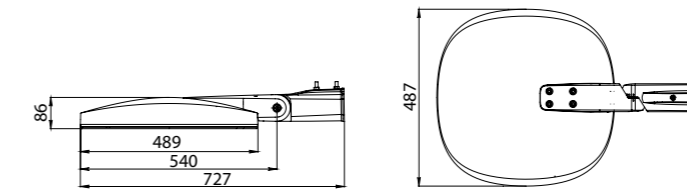
**Optical part**  
Individual optics. Protecting translucent tempered glass. Max load – 2500 kg. LED type: SMD.

**Features**  
Color temperature – 3000 K, 4000 K  
Color rendering index > 70  
Luminous flux flickering < 90%

NOTA LED 9 D30 R 4000K



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Order code	PFC
NOTA LED 3 D15 R 3000K	190	3	63	1,0	Silver	1997027720	> 0,90
NOTA LED 3 D15 R 4000K	230	3	77	1,0	Silver	1997027730	> 0,90
NOTA LED 3 D30 R 3000K	190	3	63	1,0	Silver	1997027740	> 0,90
NOTA LED 3 D30 R 4000K	230	3	77	1,0	Silver	1997027750	> 0,90
NOTA LED 9 D15 R 3000K	570	9	63	2,2	Silver	1997027760	> 0,90
NOTA LED 9 D15 R 4000K	650	9	72	2,2	Silver	1997027770	> 0,90
NOTA LED 9 D30 R 3000K	570	9	63	2,2	Silver	1997027780	> 0,90
NOTA LED 9 D30 R 4000K	650	9	72	2,2	Silver	1997027790	> 0,90
NOTA LED 18 D15 R 3000K	1400	18	78	3,8	Silver	1997027800	> 0,90
NOTA LED 18 D15 R 4000K	1600	18	89	3,8	Silver	1997027810	> 0,90
NOTA LED 18 D30 R 3000K	1400	18	78	3,8	Silver	1997027820	> 0,90
NOTA LED 18 D30 R 4000K	1600	18	89	3,8	Silver	1997027830	> 0,90



NEW

**About**  
Urban luminaire series with unique optical systems, wide range of wattages and mounting accessories, modern design, optimum lighting characteristics, and high efficiency. SKYLINE LED is made to improve a city in night time.

**Installation**  
Post top or side entry mounting 48/60. Adjustable tilt angle with 5° step. Optional pendant and tross mounting versions available.

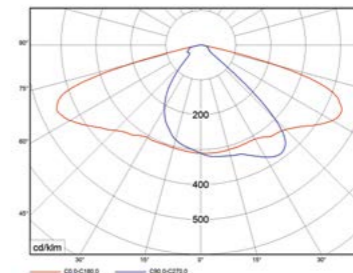
**Package contents**  
Luminaire assembly.

**Design**  
Housing and universal adjustable bracket is made of die-cast aluminum.

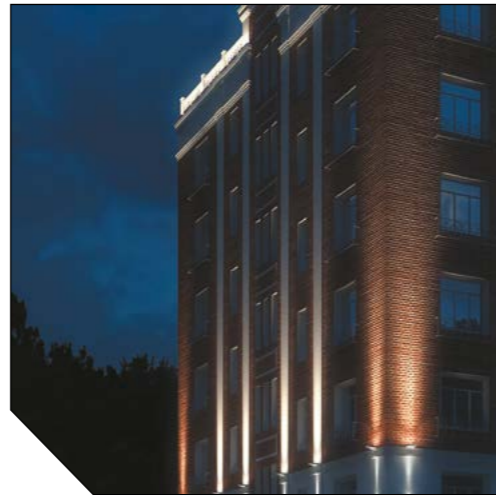
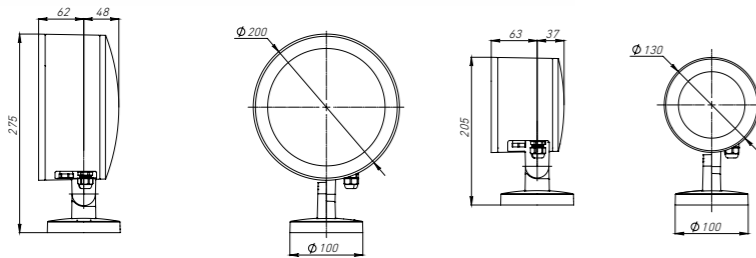
**Optical part**  
Complex group optics with special road wide (DW), symmetric wide (DS) and comfort distribution (DK). Diffuser is made of tempered glass. LED type: SMD.

**Features**  
Operating temperature range: -40 °C to +40 °C  
Color temperature – 3000 K, 4000 K  
Color rendering index > 75  
Luminous flux flickering < 5%

SKYLINE LED 120 DW



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Order code	PFC
SKYLINE LED 30 DW 4000K	3900	30	130	12	Silver	1997027840	> 0,90
SKYLINE LED 60 DW 4000K	7280	56	130	12	Silver	1997027850	> 0,90
SKYLINE LED 90 DW 4000K	11700	90	130	12	Silver	1997027860	> 0,90
SKYLINE LED 120 DW 4000K	15000	120	125	12	Silver	1997027870	> 0,90
SKYLINE LED 30 DK 3000K	3450	30	115	12,2	Silver	1997027880	> 0,90
SKYLINE LED 60 DK 3000K	6440	56	115	12,2	Silver	1997027890	> 0,90



Product under development: II quarter of 2018

NEW

**About**  
GLOSS LED is a new modern architectural luminaires family. Suitable for façade lighting, accent illumination. Provides professional architectural light quality with minimum visibility of luminaire.

**Installation**  
Surface mounting. Adjustable bracket with 5° step.

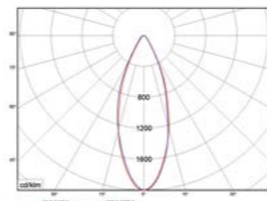
**Package contents**  
Luminaire assembly.

**Design**  
Housing and universal adjustable bracket is made of die-cast aluminum.

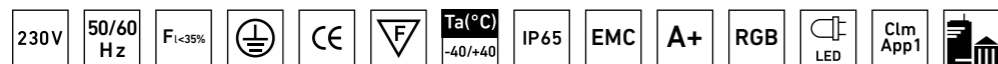
**Optical part**  
Complex group optics with special road wide distribution. Diffuser is made of tempered glass. LED type: SMD. Tempered glass. Beam angle - 10°, 25° (40°, 90° by request)

**Features**  
Operating temperature range -40 °C to +40 °C  
Color temperature – 2700 K, 4000 K  
Color rendering index – 80  
Luminous flux flickering < 5%

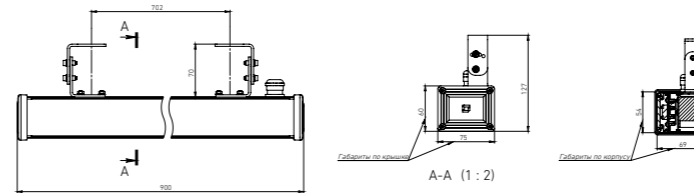
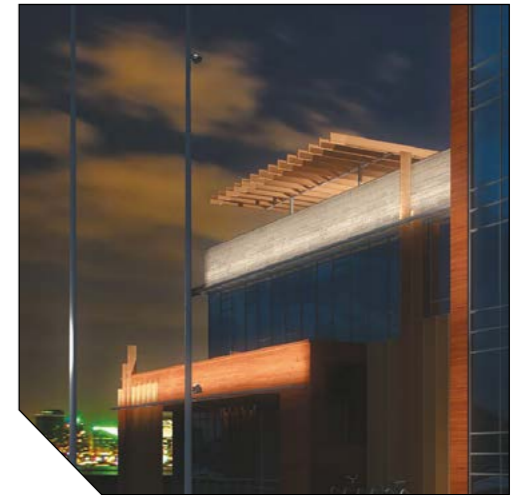
GLOSS LED 30 D25



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Order code	PFC
GLOSS LED 5 D10 2700K	425	5	85	1,3	Silver	1997027900	> 0,90
GLOSS LED 5 D10 4000K	450	5	90	1,3	Silver	1997027950	> 0,90
GLOSS LED 5 D25 2700K	425	5	85	1,3	Silver	1997027960	> 0,90
GLOSS LED 5 D25 4000K	450	5	90	1,3	Silver	1997027970	> 0,90
GLOSS LED 10 D10 2700K	850	10	85	1,5	Silver	1997027980	> 0,90
GLOSS LED 10 D10 4000K	900	10	90	1,5	Silver	1997027990	> 0,90
GLOSS LED 10 D25 2700K	850	10	85	1,5	Silver	1997028000	> 0,90
GLOSS LED 10 D25 4000K	900	10	90	1,5	Silver	1997028010	> 0,90
GLOSS LED 20 D10 2700K	1700	20	85	2,5	Silver	1997028020	> 0,90
GLOSS LED 20 D10 4000K	1800	20	90	2,5	Silver	1997028030	> 0,90
GLOSS LED 20 D25 2700K	1700	20	85	2,5	Silver	1997028040	> 0,90
GLOSS LED 20 D25 4000K	1800	20	90	2,5	Silver	1997028050	> 0,90
GLOSS LED 30 D10 2700K	2550	30	85	2,7	Silver	1997028060	> 0,90
GLOSS LED 30 D10 4000K	2700	30	90	2,7	Silver	1997028070	> 0,90
GLOSS LED 30 D25 2700K	2550	30	85	2,7	Silver	1997028080	> 0,90
GLOSS LED 30 D25 4000K	2700	30	90	2,7	Silver	1997028090	> 0,90



Product under development: II quarter of 2018



NEW

**About**  
EVOLINE LED is a new series of professional architectural luminaires that designed for linear facade lighting. Efficient optics, adjustable bracket with a locking system, and a range of length and power levels make it possible to achieve flexibility, quality light, and efficiency in any lighting design.

**Installation**  
Luminaire shall be fixed at the surface by means of adjustable stainless steel brackets. 2 adjustable brackets are included.

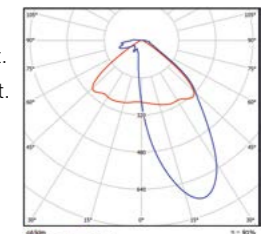
**Package contents**  
Luminaire assembly.

**Design**  
Housing is made of aluminum. Complex group optics made of PMMA. Diffuser is made of tempered glass. LED type: SMD.

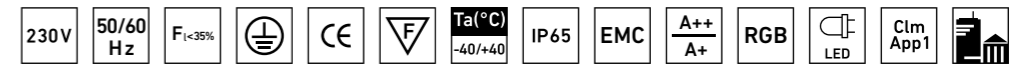
**Optical part**  
Tempered protection glass. Beam angle - 30x90°, 30°(other optics are available by request).

**Features**  
Operating temperature range: -40 °C to +40 °C  
Color temperature – 2700 K, 4000 K  
Color rendering index – 80  
Luminous flux flickering < 5%

**Options**  
300 mm length available by request. EVOLINE LED 36 A30x90  
Other optics available by request.  
Through wiring available by request.  
Version 24W/m available by request.



Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Housing color	Length, mm	Order code	PFC
EVOLINE LED 24 A30x90 2700K 600	2800	28	100	1,5	Silver	600	1997028100	> 0,95
EVOLINE LED 24 A30x90 4000K 600	3080	28	110	1,5	Silver	600	1997028110	> 0,95
EVOLINE LED 24 D30 2700K 600	2800	28	100	1,5	Silver	600	1997028120	> 0,95
EVOLINE LED 24 D30 4000K 600	3080	28	110	1,5	Silver	600	1997028130	> 0,95
EVOLINE LED 36 A30x90 2700K 900	4100	41	100	2,5	Silver	900	1997028140	> 0,95
EVOLINE LED 36 A30x90 4000K 900	4510	41	110	2,5	Silver	900	1997028150	> 0,95
EVOLINE LED 36 D30 2700K 900	4100	41	100	2,5	Silver	900	1997028160	> 0,95
EVOLINE LED 36 D30 4000K 900	4510	41	110	2,5	Silver	900	1997028170	> 0,95
EVOLINE LED 48 A30x90 2700K 1200	5400	54	100	3,5	Silver	1200	1997028180	> 0,95
EVOLINE LED 48 A30x90 4000K 1200	5940	54	110	3,5	Silver	1200	1997028190	> 0,95
EVOLINE LED 48 D30 2700K 1200	5400	54	100	3,5	Silver	1200	1997028200	> 0,95
EVOLINE LED 48 D30 4000K 1200	5940	54	110	3,5	Silver	1200	1997028210	> 0,95



ВЫХОД

EMERGENCY



EMERGENCY



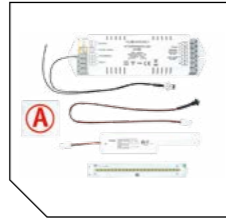
Emergency lighting



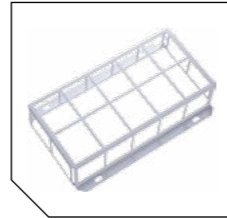
MIZAR LED  
page 158



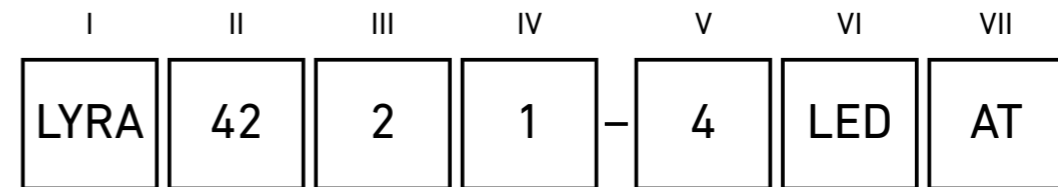
LYRA LED  
page 159



CONVERSION KIT LED  
page 160



Accessories  
page 161



I. Name of the range of the luminaires.

II. Ingress protection rating (IP).

III. Type of the luminaire:

- 1 – luminaire of non-maintained operation
- 2 – luminaire of maintained operation
- 3 – luminaire of combined operation
- 0 – for central battery system (CBS)

Operating hours in the emergency mode:

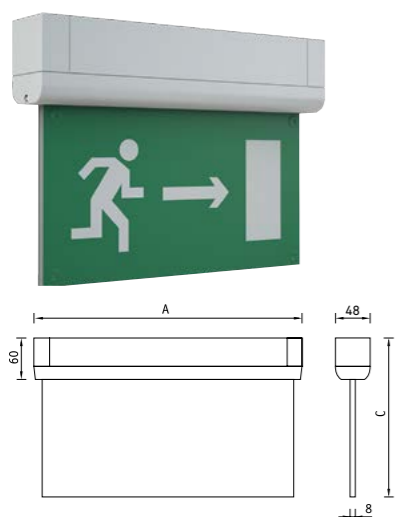
- 1 – 1 hours
- 2 – 2 hours
- 3 – 3 hours
- 0 – for central battery system (CBS)

IV. Capacity:

- Light source capacity in the emergency mode – for linear tubetype lamps,
- compact fluorescent and incandescent light sources
- (i) – increased luminous flux
- LED luminaire power consumption

V. LED – LED light.

VI. AT – autotest function.



MIZAR SI

**About**

Versatile double-side solution in the light sign segment, the MIZAR luminaire can be mounted directly on the ceiling or wall surface or on flexible or rigid suspensions of a different length (supplied separately).

**Installation**

Mounted on the wall surface (side or front mounting), ceiling surface (directly or using suspensions kit), or recessed in the ceiling using the ST 36 frame (order code – 2501002150). Accessories are ordered separately.

**Design**

Polycarbonate housing. An operational status LED is installed on the housing panel. Emergency lighting testing and control are performed from a TELEMANDO device (order code – 4501003010). Rechargeable batteries are included.

**Package contents**

Luminaire assembly. Pictograms are ordered separately. Fasteners for fastening luminaire on wall and on ceiling included into delivery kit.

Optional accessories (ST 50 – flexible suspension, ST 52 – rigid hanger, ST 36 – frame for fixing in ceiling) should be ordered separately.

**Optical part**

Double-sided PMMA diffuser. Recognition distance: 33 m (S), 25 m (SP), 40 m (SI), 10 m (SPS).

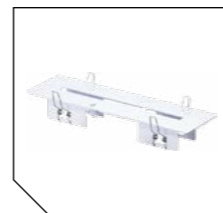
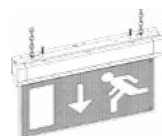
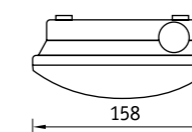
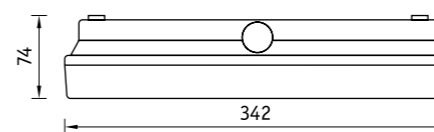
**Features**

Luminous flux flickering < 5%

**Lighting control**

Group testing function (up to 35 luminaires) is carried out with the TELEMANDO device. The same modifications are possible with the function automatic testing.

	A	C
MIZAR S	366	233
MIZAR SP	271	194
MIZAR SPS	271	117
MIZAR SI	271	270

ST 36. Frame  
MIZAR SP/SPS/SICeiling mounting on chain  
(flexible suspension ST 50)Ceiling mounting on post  
(rigid hanger ST 52)**About**

Lightweight and reliable light sign with a decorative aluminum frame. Universal solution with 30 m recognition distance. The IP65, centrally operated versions work at low down to -30 °C (parking lots).

**Installation**

Mounted on a wall or ceiling.

**Design**

Polycarbonate housing. An operational status LED is installed on the housing panel. Emergency lighting testing and control are performed from a TELEMANDO device (order code – 4501003010). Rechargeable batteries are included.

**Package contents**

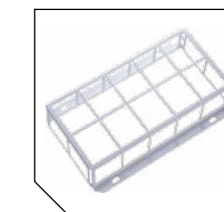
Luminaire assembly. Pictograms are ordered separately. For installation on parkings, you need to order the Grid URAN/ LYRA grill (order code is 2501003130).

**Optical part**

Polycarbonate diffuser. Recognition distance 31 m. Lamps are included.

**Lighting control**

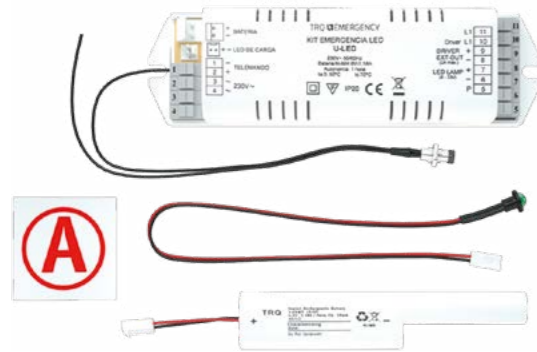
Group testing function (up to 35 luminaires) is carried out with the TELEMANDO device. The same modifications are possible with the function automatic testing. Each luminaire is equipped with an individual test button located under the diffuser.



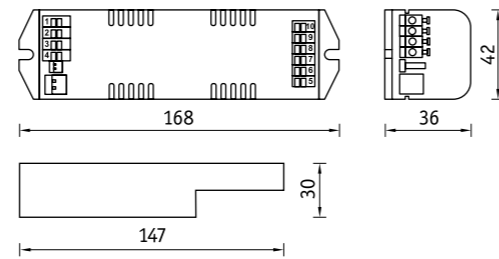
«Grid LYRA»

Name	Autonomy time, h	Work mode	Power consumption, W	Ni-Cd battery	Weight, kg	Order code	Recognition distance, m
MIZAR 4000-3 LED SI	–	centralized	3,1	--	1,2	4502002310	40
MIZAR 4000-3 LED SP	–	centralized	3,2	--	1,0	4502002210	25
MIZAR 4000-4 LED S	–	centralized	4,1	--	1,0	4502002110	33
MIZAR 4023-3 LED SI	3	maintained	3,1	RB 6,0 V 0,8 A*h	1,4	4502001310	40
MIZAR 4023-3 LED SP	3	maintained	3,2	RB 6,0 V 0,8 A*h	1,3	4502001210	25
MIZAR 4023-3 LED SP AT	3	maintained	3,2	RB 6,0 V 0,8 A*h	1,4	4502002420	25
MIZAR 4023-4 LED S	3	maintained	4,1	RB 6,0 V 0,8 A*h	1,6	4502001110	33

Name	Autonomy time, h	Work mode	Power consumption, W	Ni-Cd battery	Weight, kg	Order code	Recognition distance, m
LYRA 4200-4 LED	–	centralized	3,5	--	0,8	4502002320	31
LYRA 4221-4 LED	1	maintained	3,6	RB 6,0 V 0,8 A*h	1,0	4502000020	31
LYRA 4221-4 LED AT	1	maintained	3,6	RB 6,0 V 0,8 A*h	1,0	4502002430	31
LYRA 4223-4 LED	3	maintained	3,6	RB 6,0 V 1,5 A*h	1,1	4502000030	31
LYRA 6500-4 LED	–	centralized	3,6	--	0,9	4502002330	31
LYRA 6521-4 LED	1	maintained	3,6	RB 6,0 V 0,8 A*h	1,1	4502000010	31
LYRA 6523-4 LED	3	maintained	3,6	RB 6,0 V 1,5 A*h	1,4	4502000040	31



CONVERSION KIT LED K-303



### About

Emergency power units (EPUs) can be added to luminaires produced both by Lighting Technologies and external manufacturers, where luminaires have no pre-installed EPUs. Some EPU modifications are connected to the standard LED module of the luminaire. To order LED luminaires by Lighting Technologies with a pre-installed EPU, indicate the luminaire's Part No. plus EM (for modification c/w EPU).

### Installation

Inside the luminaire housing or in an external box (not included).

### Package contents

The product is a set of the following components: an emergency power unit, a charge indicator (green LED), a battery, a TEST button for luminaire testing in emergency mode, an A label (for identifying emergency lights).

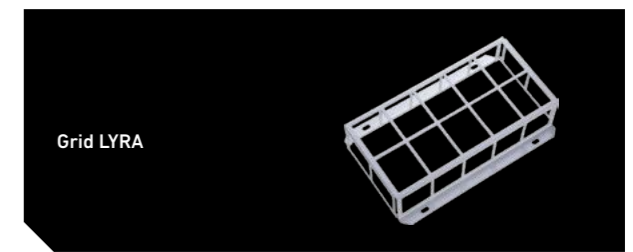
### Design

Luminaires with EPUs shall be arranged so as to ensure an adequate illumination level for situational awareness and evacuation from the room (0.5 to 1 lx at the floor level). In EPU modifications that include a LED module, the module is installed on the luminaire housing with the (supplied) double-sided adhesive tape. Luminaires with EM index (with pre-installed EPUs) use own LED clusters as an emergency light source.

Name	Ni-Cd battery	Autonomy time, h	Weight, kg	Order code
CONVERSION KIT LED K-301	RB 6,0V 1,2 A*h	1	0,4	6501000330
CONVERSION KIT LED K-303	RB 6,0V 2,5 A*h	3	0,6	6501000370
CONVERSION KIT LED K-501	RB 6,0V 1,5 A*h	1	0,5	6501000400



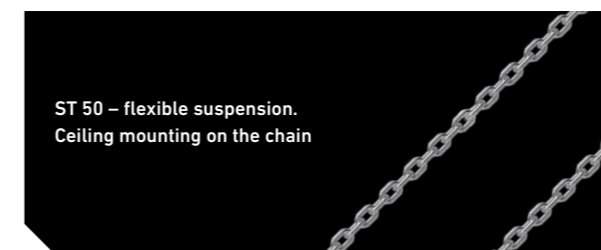
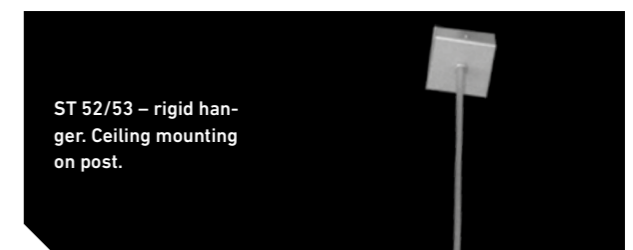
Decorative frame



Grid LYRA

Name	Order code
ST-36 CEILING RECESS FRAME S	4234000010
ST-36 CEILING RECESS FRAME SP	2501002150
ST-34 LY-7 DOWN EXIT - DOUBLE SIDED DIFFUSER	2501002220
ST-34 LY-8/9 RIGHT/LEFT EXIT - DOUBLE SIDED DIFFUSER	4234000020
ST-34 LY-10 UP EXIT - DOUBLE SIDED DIFFUSER	4234000030

Name	Order code
Grid LYRA	2501003130

ST 50 – flexible suspension.  
Ceiling mounting on the chainST 52/53 – rigid hanger.  
Ceiling mounting on post.

Name	Length, m	Order code
ST 50-1500 flexible suspension MIZAR 2x1,5	1,5	2501002170
ST 50-1000 flexible suspension MIZAR 2x1,0	1,0	2501002460
ST 50-500 flexible suspension MIZAR 2x0,5	0,5	2501002450

Name	Length, m	Order code
ST 52-1000 rigid hanger MIZAR	1,0	2501002190
ST 52-300 rigid hanger MIZAR	0,3	2501002470
ST 52-500 rigid hanger MIZAR	0,5	2501002180

### Pictograms

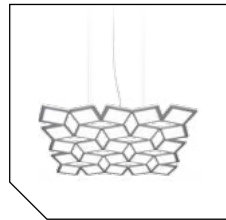
Name	Order code
PICTO MIZAR SP-7 ISO DOWN EXIT	4234000040
PICTO MIZAR SP-8/9 ISO RIGHT/LEFT	4234000050
PICTO MIZAR SP-10 ISO UP EXIT	4234000060
PICTO MIZAR S-7 ISO DOWN EXIT	4234000070
PICTO MIZAR S-10 ISO UP EXIT	4234000080
PICTO MIZAR S-8/9 RIGHT/LEFT	4234000090
PICTO MIZAR SI-1 EXTINGUISHER	4234000100
PICTO MIZAR SI-2 BUTTON	4234000110
PICTO MIZAR SI-3 HOSE	4234000120
PICTO LYRA STICKER DOWN EXIT	4234000130
PICTO LYRA STICKER UP EXIT	4234000140
PICTO LYRA STICKER RIGHT EXIT	4234000150
PICTO LYRA STICKER LEFT EXIT	4234000160



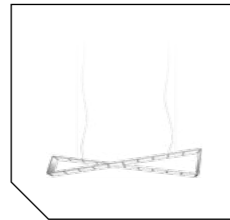
EMOTIONS



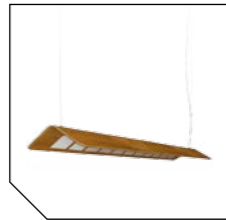
# Decorative lighting



MOTION OLED  
page 166



INFINITY OLED  
page 167



NATURE OLED  
page 168



**NEW**  
SOL P  
page 169



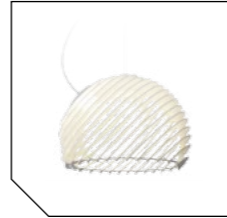
**NEW**  
PHANTOM  
page 170



**NEW**  
FLEX  
page 171



COIL  
page 172



SATURNO  
page 173



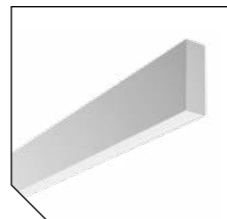
OKKO P  
page 174



OKKO S  
page 175



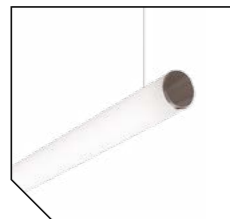
**NEW**  
SOL S  
page 176



PROFILE H  
page 177



PROFILE  
page 178



T 120  
page 179



COOL  
page 180



SOON  
page 180



RADO  
page 181



RAMO  
page 181



UNO  
page 182



UMO  
page 182



FARO  
page 183



FIORE  
page 183



EOS  
page 184



ARNO  
page 184



QUO  
page 185



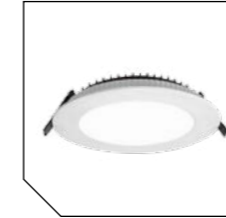
SPLAY  
page 185



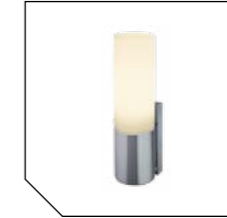
OKKO  
page 186



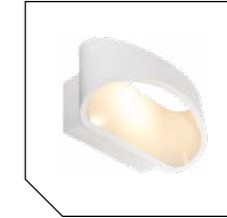
OKKO IP  
page 187



ACQUA LED  
page 188



PARETTE  
page 189



HUGO  
page 190




ORSAY  
page 191



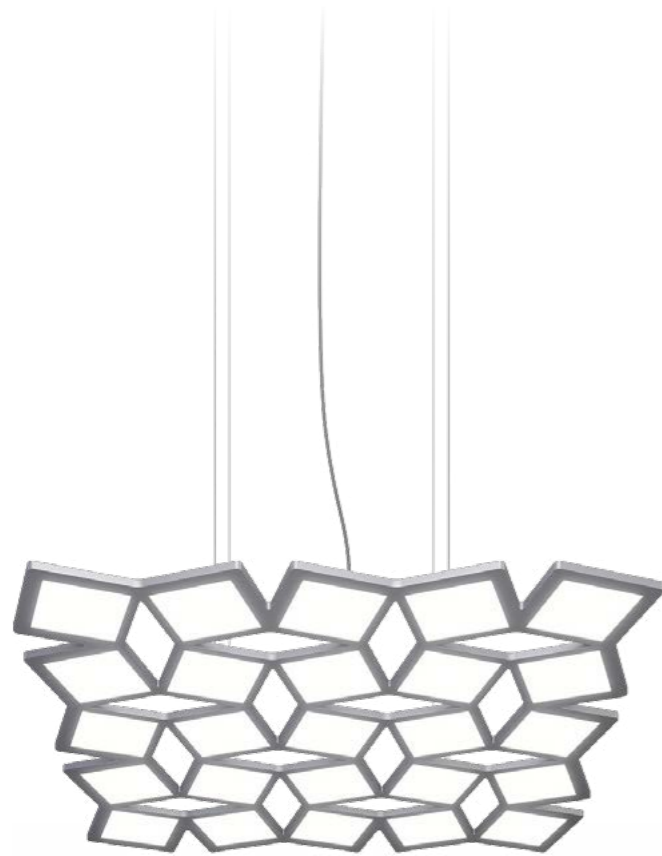
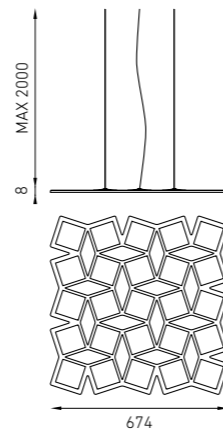
Suspended luminaire with direct diffused light. Organic Light Emitting Diode (OLED) is used as the light source. The luminaire housing is made of white artificial stone.

IP20 0/50/60 Hz F<sub>1</sub><1%     

MOTION OLED 3000K  4,0

Code: 1997024120

OLED 37,5 W 3000K CRI > 90 1875 lm



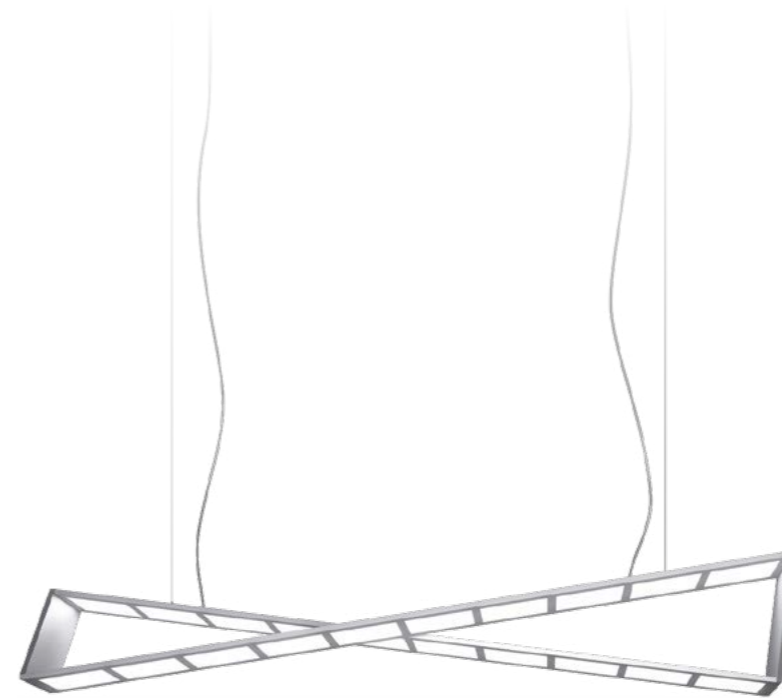
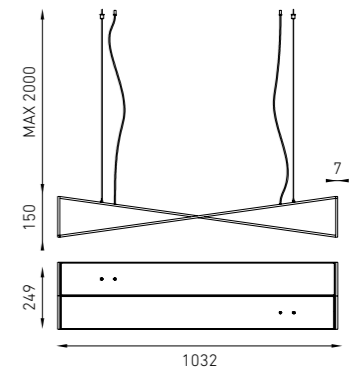
Suspended luminaire with direct diffused light. Organic Light Emitting Diode (OLED) is used as the light source. The luminaire housing is made of aluminum, with metallic mat paint.

IP20 0/50/60 Hz F<sub>1</sub><1%     

INFINITY OLED 3000K  3,6

Code: 1997024140


OLED 30 W 3000K CRI > 90 1500 lm

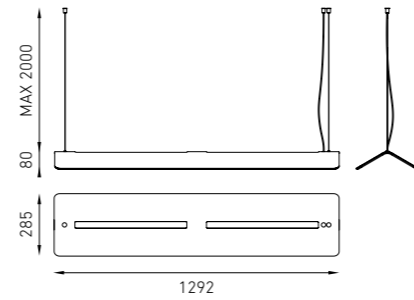




Suspended luminaire with direct diffused light. Organic Light Emitting Diode (OLED) is used as the light source. The luminaire housing is made of natural veneer.

IP20 0/50/60 Hz F<sub>1</sub><1%     

NATURE OLED 3000K	 5,2
Code: 1997024130	
OLED 33 W 3000K CRI > 90 1650 lm	



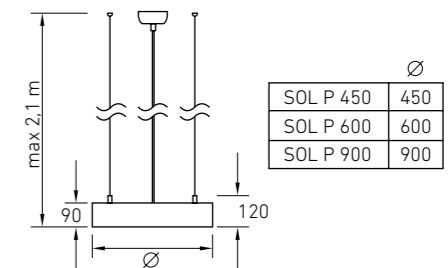
NEW

Suspended decorative luminaire with diffused light. The luminaire housing is made of folded aluminum profile. Diffuser is made of PMMA. LED cluster over the whole surface of the luminaire provides an ideal illumination and high optical efficiency. Classic design of the luminaire is suitable for any office interior. Three basic dimensions. Modification is possible by request.

IP20 0/50/60 Hz F<sub>1</sub><1%    



Name	Code	Power consumption , W	Luminous flux, lm	lm/W	A	B	Weight, kg
SOL P 450 WH LED 3000K	1470000270	42	4000	95	450	90	4,8
SOL P 450 WH LED 3000K (low lumen)	1470000320	21	2150	102	450	90	4,8
SOL P 450 WH LED 4000K	1997027920	42	4300	100	450	90	4,8
SOL P 450 WH LED 4000K (low lumen)	1470000230	21	2280	109	450	90	4,8
SOL P 600 WH LED 3000K	1470000280	55	5800	105	600	90	7,8
SOL P 600 WH LED 3000K (low lumen)	1470000310	42	4200	100	600	90	7,8
SOL P 600 WH LED 4000K	1997027930	55	6100	111	600	90	7,8
SOL P 600 WH LED 4000K (low lumen)	1470000250	42	4400	105	600	90	7,8
SOL P 900 WH LED 3000K	1470000290	112	1250	112	900	90	18,5
SOL P 900 WH LED 3000K (low lumen)	1470000300	86	8800	102	900	90	18,5
SOL P 900 WH LED 4000K	1997027940	112	1350	121	900	90	18,5
SOL P 900 WH LED 4000K (low lumen)	1470000240	86	9200	107	900	90	18,5





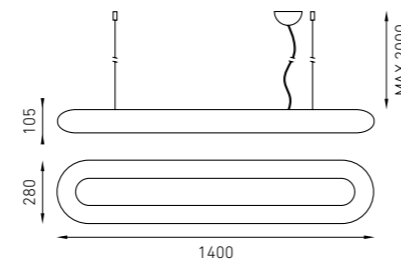
NEW

Suspended luminaire creating diffused illumination. Opal diffuser made of rotational molding polyethylene. Metal mounting plate coated in mat white paint. Color fusion (CF) series with adjustable color temperature from 2800K to 5800K by use of DALI control system. The luminaires can be used both for automated solutions with imitation of solar cycle change of color temperature within a day, and for simple solutions where a user can manually change color temperature by DALI DT8 lighting controls.

IP20 0/50/60 Hz F<sub>1</sub><1%     






Name	Code	Power consumption, W	Light flux, Lm	lm/W	Weight, kg
PHANTOM LED 35 3000K	1997027320	35	4500	128	6,5
PHANTOM LED 35 4000K	1997027290	35	5000	143	6,5
PHANTOM LED 70 3000K	1997027310	71	8600	121	6,5
PHANTOM LED 70 4000K	1997027300	71	9500	134	6,5
<b>Luminaires with changable color temperature</b>					
PHANTOM LED CH CF	1997028430	35	5000	143	6,9



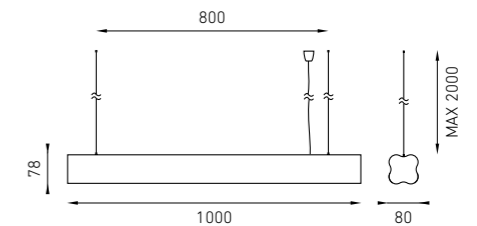
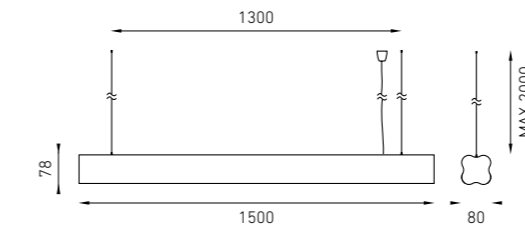
NEW

Suspended luminaire creating diffused illumination. FLEX is an upgraded LED version of the luminaire. Two standard housing colors: black and red. The luminaire housing is made of aluminum profile with powder coating. The reflector is powder coated mat white.

IP20 0/50/60 Hz F<sub>1</sub><1%   



Name	Code	Power consumption, W	Light flux, Lm	lm/W	Weight, kg
FLEX LED BL/WH 1000 3000K	1102400010	2200	21	105	4.0
FLEX LED BL/WH 1000 4000K	1102400020	2350	21	110	4.0
FLEX LED RD/WH 1000 3000K	1102400040	2200	21	105	4.0
FLEX LED RD/WH 1000 4000K	1102400030	2350	21	110	4.0
FLEX LED BL/WH 1500 3000K	1102400050	3300	33	100	5.8
FLEX LED BL/WH 1500 4000K	1102400060	3500	33	106	5.8
FLEX LED RD/WH 1500 3000K	1102400080	3300	33	100	5.8
FLEX LED RD/WH 1500 4000K	1102400070	3500	33	106	5.8





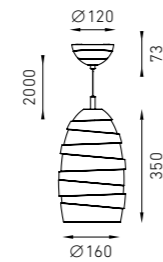
Suspended luminaire with direct diffused light. The lampshade and ceiling cap are made of plaster allowing individual plaster surface painting by the owner (N.B.: surface painting is not supplied by the manufacturer; the luminaire is provided in original white plaster color).

The luminaire has a built-in ceiling cap (supplied separately), which is mounted into gypsum-cardboard sheet insets on rails.

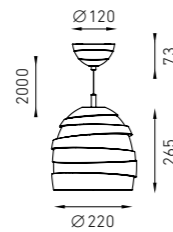
IP20



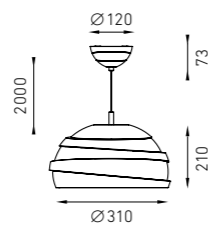
Coil S	5,0
Code: 1997024100	
1 x MAX 60 W E27	



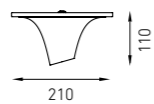
Coil M	4,5
Code: 1997024110	
1 x MAX 60 W E27	



Coil L	4,7
Code: 1997025290	
1 x MAX 60 W E27	



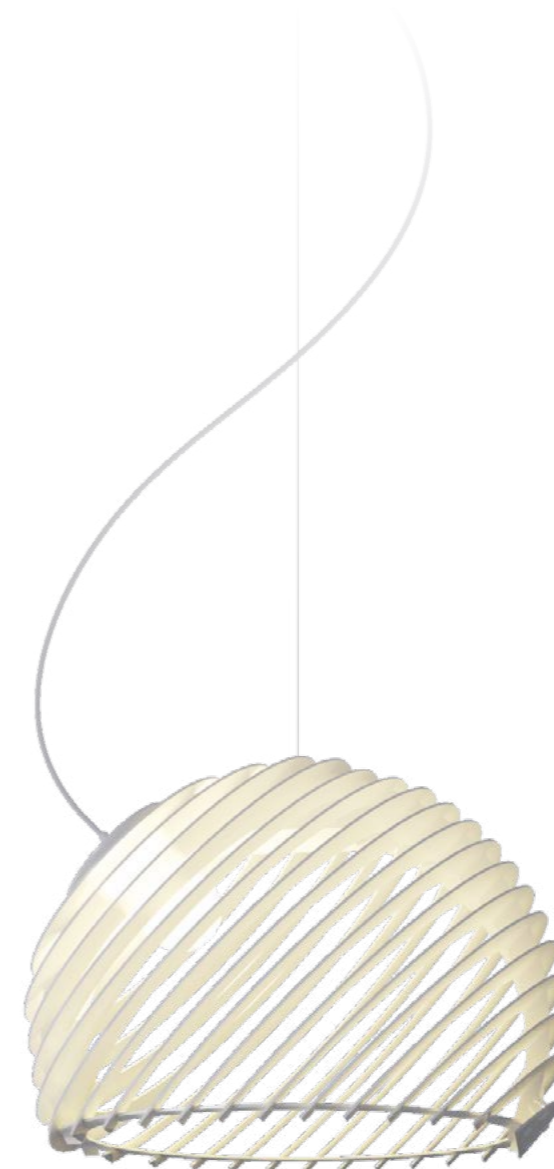
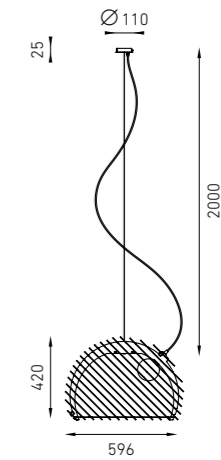
COIL (COIL trimless ceiling cap)	1,3
Code: 2691000040	



Suspended decorative luminaire. The lampshade consists of 22 details, inter connected within a hemispherical luminaire housing. The lampshade is made of white glossy polycarbonate. E27, G45 LED lamps can be installed.

IP20 0/50/60 Hz  $F_1 < 1\%$

SATURNO	6,0
Code: 1575000010	
1 x MAX 18 W E27	

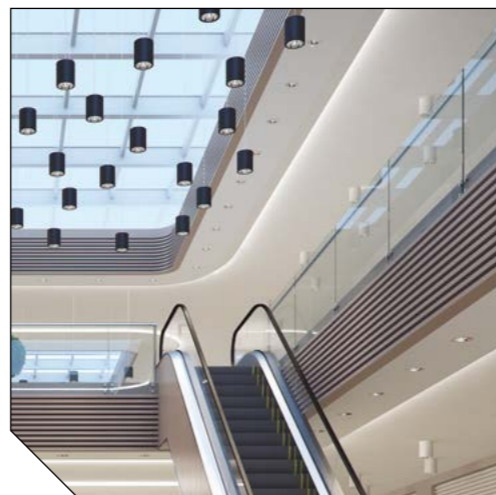




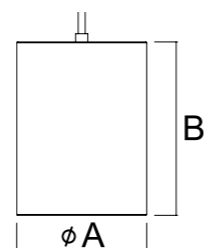
Suspended LED downlight. The luminaire housing is made of aluminum, coated in mat paint. Deep decorative frame of mirrored aluminum creates a large protective angle and the "turn off" effect of light source – "dark light". Optical part is closed by faceted glass. Standard color – white (WH). Standard suspension – 1500 mm.

IP20 50/60 Hz  $F_1 < 5\%$  UGR<19

Power consumption, W	13, 18, 26, 38
Color temperature, K	3000, 4000
Housing color	WH – white, BL – black



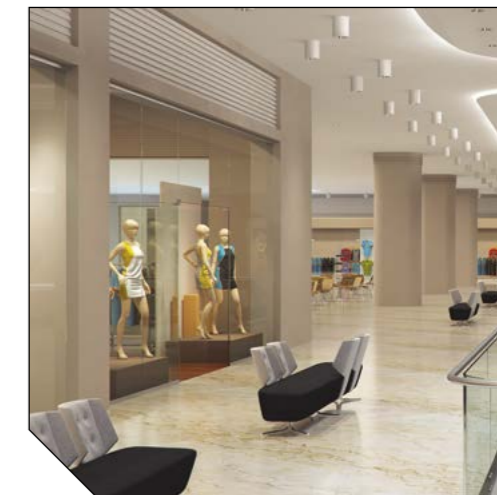
Name	Code	Power consumption, W	Light flux, Lm	A	B	Weight, kg
OKKO P 13 WH D45 3000K	1235000220	13	1325	120	171	0,5
OKKO P 13 WH D45 4000K	1235000510	13	1350	120	171	0,5
OKKO P 18 WH D45 3000K	1235000230	19	1445	150	201	1,1
OKKO P 18 WH D45 4000K	1235000320	19	1500	150	201	1,1
OKKO P 26 WH D45 3000K	1235000240	29	2700	180	236	1,2
OKKO P 26 WH D45 4000K	1235000330	29	2800	180	236	1,2
OKKO P 38 WH D45 3000K	1235000250	40	3850	230	281	2,1
OKKO P 38 WH D45 4000K	1235000340	40	3950	230	281	2,1
OKKO P 13 BL D45 3000K	1235000410	13	1325	120	171	0,5
OKKO P 13 BL D45 4000K	1235000520	13	1350	120	171	0,5
OKKO P 18 BL D45 3000K	1235000420	19	1445	150	201	1,1
OKKO P 18 BL D45 4000K	1235000530	19	1500	150	201	1,1
OKKO P 26 BL D45 3000K	1235000430	29	2700	180	236	1,2
OKKO P 26 BL D45 4000K	1235000540	29	2800	180	236	1,2
OKKO P 38 BL D45 3000K	1235000440	40	3400	230	281	2,1
OKKO P 38 BL D45 4000K	1235000550	40	3500	230	281	2,1



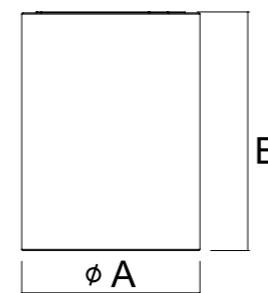
Surface mounted LED downlight. The luminaire body is made of aluminum, coated in mat paint. Deep decorative frame of mirrored aluminum creates a large protective angle and the "turn off" effect of light source – "dark light". Optical part closed by faceted glass. Standard color – white (WH).

IP20 50/60 Hz  $F_1 < 5\%$  UGR<19

Power consumption, W	13, 18, 26, 38
Color temperature, K	3000, 4000
Housing color	WH – white, BL – black



Name	Code	Power consumption, W	Light flux, Lm	A	B	Weight, kg
OKKO S 18 WH D45 3000K	1997025850	19	1445	150	201	1,1
OKKO S 18 WH D45 4000K	1235000730	19	1500	150	201	1,1
OKKO S 26 WH D45 3000K	1235000640	29	2700	180	236	1,2
OKKO S 26 WH D45 4000K	1235000740	29	2800	180	236	1,2
OKKO S 38 WH D45 3000K	1235000650	40	3850	230	281	2,0
OKKO S 38 WH D45 4000K	1235000750	40	3950	230	281	2,0
OKKO S 18 BL D45 3000K	1997025480	19	1445	150	201	1,1
OKKO S 18 BL D45 4000K	1235000930	19	1500	150	201	1,1
OKKO S 26 BL D45 3000K	1235000840	29	2700	180	236	1,2
OKKO S 26 BL D45 4000K	1235000940	29	2800	180	236	1,2
OKKO S 38 BL D45 3000K	1235000850	40	3400	230	281	2,0
OKKO S 38 BL D45 4000K	1235000950	40	3500	230	281	2,0





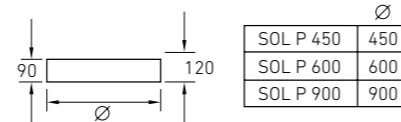
NEW

Surface mounted decorative luminaire creating diffused light. The luminaire housing is made of folded aluminum profile. The diffuser is made of mat satin PMMA. LED cluster over the whole surface of the luminaire provides an ideal illumination. Classic design of the luminaire is suitable for any office interior. Three basic modifications of SOL S. Dimensions modification is possible by request




IP20 0/50/60 Hz  $F_1 < 1\%$     



Name	Code	Power consumption, W	Light flux, Lm	lm/W	A	B	Weight, kg
SOL S 450 WH LED 3000K (low lumen)	1470000330	21	2150	102	450	90	4,8
SOL S 450 WH LED 4000K (low lumen)	1470000340	21	2280	109	450	90	4,8
SOL S 600 WH LED 3000K (low lumen)	1470000360	42	4200	100	600	90	7,8
SOL S 600 WH LED 4000K (low lumen)	1470000350	42	4400	105	600	90	7,8
SOL S 900 WH LED 3000K (low lumen)	1470000370	86	8800	102	900	90	18,5
SOL S 900 WH LED 4000K (low lumen)	1470000380	86	9200	107	900	90	18,5




Suspension system based on the PROFILE H, creating a diffuse lighting. The housing is made of extruded anodized aluminum profiles, diffuser is made of extruded polycarbonate profile. End caps are made of aluminum with metallic paint. The power supply is installed in the luminaire housing. Ready-made models and individual components are available. More information is available on the website. The luminaire can be supplied with a DALI or ME6 dimmable driver. Modifications with custom lengths over 10 cm are available by request.

IP20 50/60 Hz  $F_1 < 1\%$    

Accessories for self-configuration of luminaires. FLEXLINE LED strip (page 202-209 in EMOTIONS catalog 2017) are used as the light source.

Components for product assembly. LED STRIP FLEXLINE can be used as a light source.

**PROFILE 30H (profile + diffuser 2500 mm)**  4,2

Code: 2398000080

**PROFILE 30H end cap (2 pcs)**

Code: 2398000120

**PROFILE 30H electrical set (with driver 75W)**

Code: 2398000150

**PROFILE 30H/60H kit for connection profiles**

Code: 2398000190



**PROFILE 60H (profile + diffuser 2500 mm)**  5,3

Code: 2398000100

**PROFILE 60H end cap (2 pcs)**

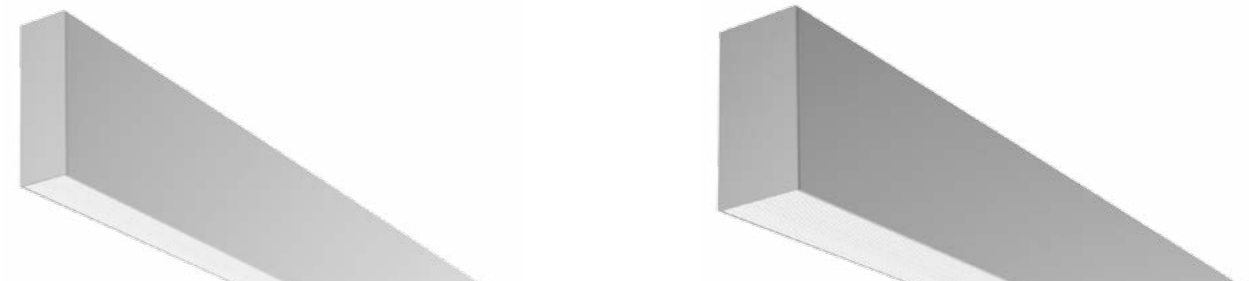
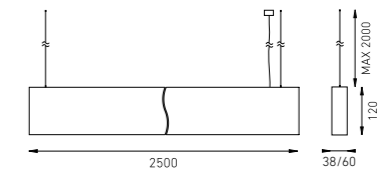
Code: 2398000140

**PROFILE 60H electrical set (with driver 150W)**

Code: 2398000210

**PROFILE L/H suspension kit (1 pc)**

Code: 2398000180





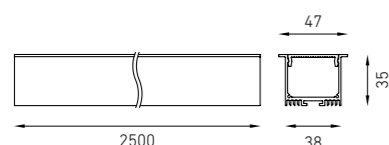
Built-in lighting system based on the PROFILE, creating diffuse light. The housing is made of extruded anodized aluminum profiles, diffuser is made of extruded polycarbonate profile. End caps are made of aluminum coated in metallic paint. The power supply installed in the ceiling cap or in the ceiling void. Ready-made models and individual components are available. More information is available on the website. The luminaire can be supplied with a DALI or ME6 dimmable driver. Modifications with custom lengths over 10 cm are available by request.

IP20 50/60 Hz  $F_l < 1\%$

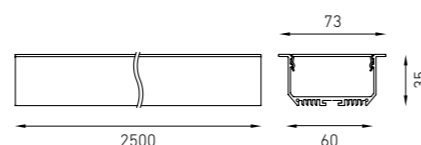
FLEXLINE LED strip can be used as a light source. Please see pages 202-209 EMOTIONS catalog 2017 for accessories for self-configuration of PROFILE (FLEXLINE LED strip and drivers).

Components for product assembly. LED STRIP FLEXLINE can be used as a light source.

<b>PROFILE 30 (profile + diffuser 2500 mm)</b> 1,9
Code: 2398000030
<b>PROFILE 30 end cap (2 pcs)</b>
Code: 2398000050
<b>PROFILE 30 mounting set (1 pc)</b>
Code: 2398000010



<b>PROFILE 60 (profile + diffuser 2500 mm)</b> 2,4
Code: 2398000040
<b>PROFILE 60 end cap (SET OF 2 pcs)</b>
Code: 2398000060
<b>PROFILE 60 mounting set (1 pc)</b>
Code: 2398000020

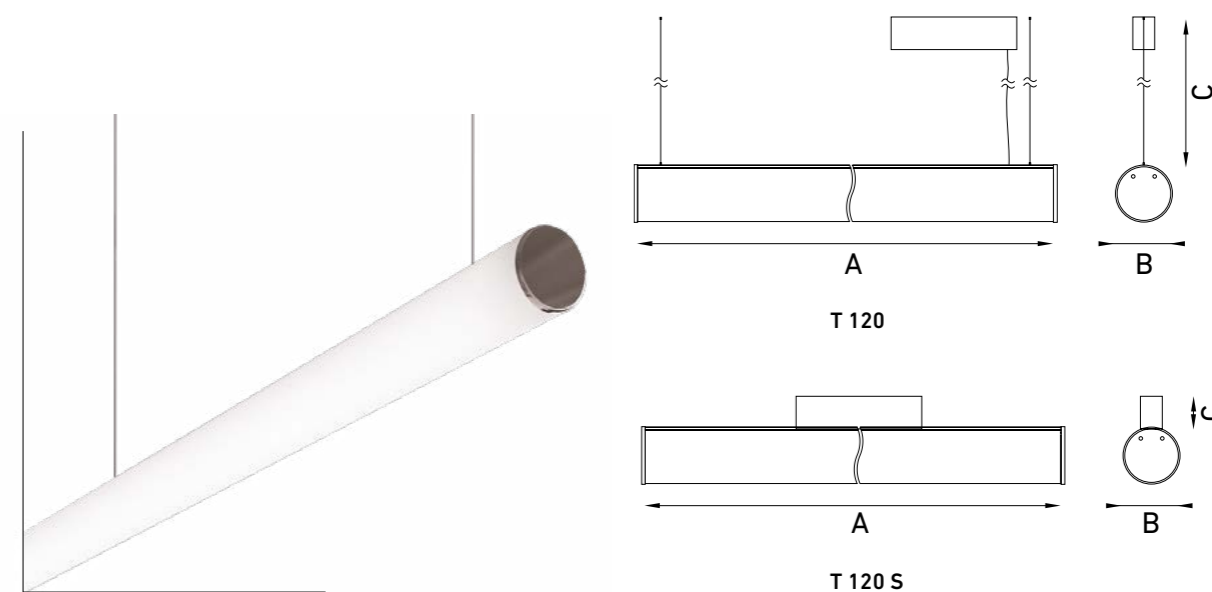


Hanging profile system for decorative lighting effects and for special lighting. End caps are made of plastic with chrome coating application by vacuum metallization. The feed driver is in the ceiling cap. The luminaire can be supplied with a DALI or ME6 dimmable driver. Modifications with custom lengths over 10 cm are available by request.

IP20 0/50/60 Hz  $F_l < 3\%$



Name	Code	Power consumption, W	Light flux, Lm	lm/W	A	B	C	Weight, kg
T120 2250 LED 3000K (77W)	1250000070	80	8800	110	2250	117	2000	5,4
T120 2250 LED 4000K (77W)	1250000080	80	9750	122	2250	117	2000	5,4
T120 2250 LED 3000K (39W)	1250000170	40	4500	113	2250	117	2000	5,4
T120 2250 LED 4000K (39W)	1250000120	40	4900	123	2250	117	2000	5,4
T120 1700 LED 3000K (58W)	1250000160	58	7000	121	1700	117	2000	4,0
T120 1700 LED 4000K (58W)	1250000100	58	7300	126	1700	117	2000	4,0
T120 1700 LED 4000K (29W)	1250000130	29	3700	128	1700	117	2000	3,7
T120 1150 LED 3000K (38W)	1250000050	40	4500	113	1150	117	2000	3,2
T120 1150 LED 4000K (38W)	1250000060	40	4900	123	1150	117	2000	3,2
T120 1150 LED 4000K (19W)	1250000110	20	2300	115	1150	117	2000	3,2
T120 600 LED 4000K (10W)	1250000140	10	1200	120	600	117	2000	2,3
T120 600 LED 4000K (20W)	1250000090	20	2300	115	600	117	2000	2,3
T120 S 2250 LED 4000K (77W)	1250000040	80	8800	110	2250	117	40	5,3
T120 S 2250 LED 3000K (77W)	1250000030	80	9750	122	2250	117	40	5,3
T120 S 1150 LED 3000K (38W)	1250000010	40	4500	113	2250	117	40	3,1
T120 S 1150 LED 4000K (38W)	1250000020	40	4900	123	2250	117	40	3,1



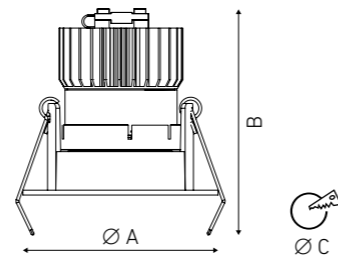


Recessed LED downlight, made of aluminum, coated in mat paint. Inner decorative frame is made of colored plastic. Optical part is protected by glass. Standard housing color: WH – white; standard decorative frame color: BL – black. Standard lens – 45°. Standard color temperature – 3000 K, 4000 K.

IP20 50/60 Hz  $F_l < 5\%$



COOL BL



Power consumption, W	7, 13, 18
Color temperature, K	2700, 3000, 4000
Color finish	WH – white, BL – black
Frame's color finish	WH – white, BL – black, GL – gold
Dispersion angle	15°, 30°, 45°
LED driver	Not dimmable, DALI, 1-10V, ME6

Name	Code	Power consumption, W	Light flux, Lm	A	B	C	Weight, kg
COOL 07 WH/BL D45 3000K (with driver)	1997025820	7	550	81	76	70	0,2
COOL 07 WH/BL D45 4000K (with driver)	1412000010	7	570	81	76	70	0,2
COOL 13 WH/BL D45 3000K (with driver)	1412000240	13	1050	81	96	70	0,3
COOL 13 WH/BL D45 4000K (with driver)	1412000250	13	1120	81	96	70	0,3

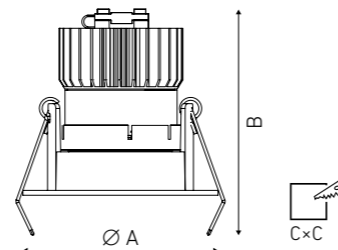
## SOON

Recessed LED downlight, made of aluminum, coated in mat paint. Inner decorative frame is made of colored plastic. Optical part is protected by glass. Standard housing color: WH – white; standard decorative frame color: BL – black. Standard lens – 45°. Standard color temperature – 3000 K, 4000 K.

IP20 50/60 Hz  $F_l < 5\%$



SOON BL



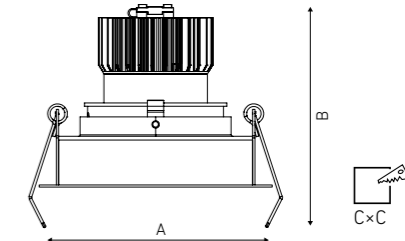
Power consumption, W	7, 13, 18
Color temperature, K	2700, 3000, 4000
Color finish	WH – white, BL – black
Frame's color finish	WH – white, BL – black, GL – gold
Dispersion angle	15°, 30°, 45°
LED driver	Not dimmable, DALI, 1-10V, ME6

Name	Code	Power consumption, W	Light flux, Lm	A	B	C	Weight, kg
SOON 07 WH/BL D45 3000K (with driver)	1442000050	7	550	80	76	68	0,2
SOON 07 WH/BL D45 4000K (with driver)	1442000060	7	570	80	76	68	0,2
SOON 13 WH/BL D45 3000K (with driver)	1997025950	13	1050	80	96	68	0,8
SOON 13 WH/BL D45 4000K (with driver)	1997025330	13	1120	80	96	68	0,8



Recessed LED downlight, made of aluminum, coated in mat paint. Optical part protected by glass. Standard housing color: WH – white. Standard lens – 45°. Standard color temperature – 3000 K, 4000 K.

IP20 50/60 Hz  $F_l < 5\%$



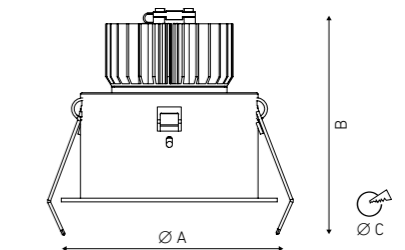
Power consumption, W	7, 13, 18, 26, 33, 43, 52
Color temperature, K	2700, 3000, 4000
Color finish	WH – white, BL – black
Dispersion angle	15°, 30°, 45°
LED driver	Not dimmable, DALI, 1-10V, ME6

Name	Code	Power consumption, W	Light flux, Lm	A	B	C	Weight, kg
RADO 07 WH D45 3000K (with driver)	1278000010	7	600	108	88	96	0,5
RADO 07 WH D45 4000K (with driver)	1278000040	7	600	108	88	96	0,5
RADO 13 WH D45 3000K (with driver)	1997025370	13	1140	108	108	96	0,6
RADO 13 WH D45 4000K (with driver)	1278000030	13	1200	108	108	96	0,6
RADO 18 WH D45 3000K (with driver)	1278000170	18	1700	108	120	96	0,8
RADO 18 WH D45 4000K (with driver)	1278000240	18	1750	108	120	96	0,8

## RAMO

Recessed LED downlight, made of aluminum, coated in mat paint. Optical part protected by glass. Standard housing color: WH – white. Standard lens – 45°. Standard color temperature – 3000 K, 4000 K.

IP20 50/60 Hz  $F_l < 5\%$



Power consumption, W	7, 13, 18
Color temperature, K	2700, 3000, 4000
Color finish	WH – white, BL – black
Dispersion angle	15°, 30°, 45°
LED driver	Not dimmable, DALI, 1-10V, ME6

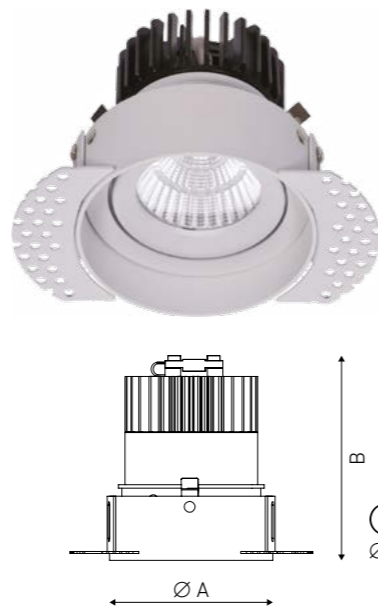
Name	Code	Power consumption, W	Light flux, Lm	A	B	C	Weight, kg
RAMO 07 WH D45 3000K (with driver)	1258000010	7	600	90	88	83	0,4
RAMO 07 WH D45 4000K (with driver)	1258000040	7	600	90	88	83	0,4
RAMO 13 WH D45 3000K (with driver)	1258000070	13	1140	90	108	83	0,5
RAMO 13 WH D45 4000K (with driver)	1258000030	13	1200	90	108	83	0,5
RAMO 18 WH D45 3000K (with driver)	1258000090	18	1700	90	120	83	0,6
RAMO 18 WH D45 4000K (with driver)	1258000220	18	1750	90	120	83	0,6



Recessed LED downlight, made of aluminum, coated in mat paint. Optical part protected by glass. Standard housing color: WH – white. Standard lens – 45°. Standard color temperature – 3000 K, 4000 K.

IP20

Power consumption, W	7, 13, 18
Color temperature, K	2700, 3000, 4000
Color finish	WH – white, BL – black
Dispersion angle	15°, 30°, 45°
LED driver	Not dimmable, DALI, 1-10V, ME6



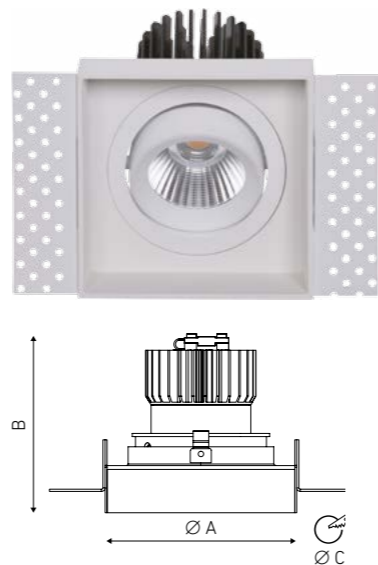
Name	Code	Power, W	Flux, lm	A	B	C	Weight, kg
UNO 07 WH D45 3000K (with driver)	1080000030	7	599	111	88	83	0,35
UNO 07 WH D45 4000K (with driver)	1080000060	7	618	111	88	83	0,35
UNO 13 WH D45 3000K (with driver)	1080000090	13	1140	111	108	83	0,45
UNO 13 WH D45 4000K (with driver)	1080000050	13	1216	111	108	83	0,45
UNO 18 WH D45 3000K (with driver)	1997026060	18	1700	111	120	83	0,63
UNO 18 WH D45 4000K (with driver)	1080000190	18	1750	111	120	83	0,63

## UMO

Recessed LED downlight, made of aluminum, coated in mat paint. Optical part protected by glass. Standard housing color: WH – white. Standard lens – 45°. Standard color temperature – 3000 K, 4000 K.

IP20

Power consumption, W	7, 13, 18
Color temperature, K	2700, 3000, 4000
Color finish	WH – white, BL – black
Dispersion angle	15°, 30°, 45°
LED driver	Not dimmable, DALI, 1-10V, ME6



Name	Code	Power, W	Flux, lm	A	B	C	Weight, kg
UMO 07 WH D45 3000K (with driver)	1252000010	7	599	142	88	94	0,35
UMO 07 WH D45 4000K (with driver)	1252000040	7	618	142	88	94	0,35
UMO 13 WH D45 3000K (with driver)	1252000070	13	1140	142	108	94	0,45
UMO 13 WH D45 4000K (with driver)	1252000030	13	1216	142	108	94	0,45
UMO 18 WH D45 3000K (with driver)	1252000090	18	1700	142	120	94	0,63
UMO 18 WH D45 4000K (with driver)	1252000140	18	1750	142	120	94	0,63



Recessed LED downlight, made of aluminum, coated in mat paint. Optical part protected by glass. Standard housing color: WH – white. Standard lens – 45°. Standard color temperature – 3000 K, 4000 K.

IP20 50/60 Hz  $F_L < 5\%$

Power consumption, W	7, 13, 18, 26, 33, 43, 52
Color temperature, K	2700, 3000, 4000
Color finish	WH – white, BL – black, DG – dark grey, GL – dark gold
Dispersion angle	15°, 30°, 45°
LED driver	Not dimmable, DALI, 1-10V, ME6

Name	Code	Power consumption, W	Light flux, Lm	A	B	C	Weight, kg
FARO 07 WH D45 3000K (with driver)	1542000060	8	650	82	104	77	0,3
FARO 07 WH D45 4000K (with driver)	1542000410	8	700	82	104	77	0,3
FARO 13 WH D45 3000K (with driver)	1542000200	15	1400	82	124	77	0,4
FARO 13 WH D45 4000K (with driver)	1542000220	15	1500	82	124	77	0,4
FARO 18 WH D45 3000K (with driver)	1542000500	18	1700	82	144	77	0,5
FARO 18 WH D45 4000K (with driver)	1542000550	18	1750	82	144	77	0,5



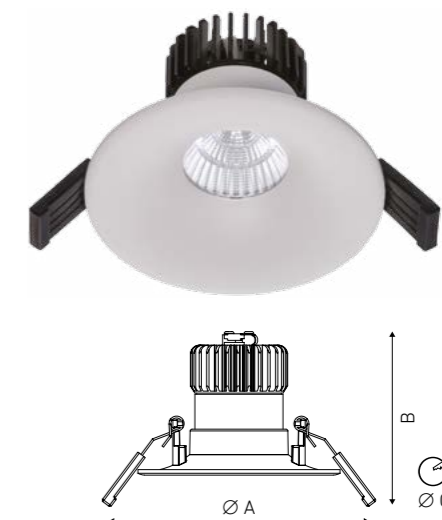
## UMO

Recessed LED downlight, made of aluminum, coated in mat paint. Optical part protected by glass. Standard housing color: WH – white. Standard lens – 45°. Standard color temperature – 3000 K, 4000 K.

IP20 50/60 Hz  $K_n < 5\%$

Power consumption, W	7, 13, 18
Color temperature, K	2700, 3000, 4000
Color finish	WH – white
Dispersion angle	15°, 30°, 45°
LED driver	Not dimmable, DALI, 1-10V, ME6

Name	Code	Power consumption, W	Light flux, Lm	A	B	C	Weight, kg
FIORE 07 WH D45 3000K (with driver)	1237000030	7	600	110	88	100	0,4
FIORE 07 WH D45 4000K (with driver)	1237000070	7	600	110	88	100	0,4
FIORE 13 WH D45 3000K (with driver)	1237000040	13	1140	110	108	100	0,5
FIORE 13 WH D45 4000K (with driver)	1237000090	13	1200	110	108	100	0,5
FIORE 18 WH D45 3000K (with driver)	1237000100	18	1700	110	120	100	0,7
FIORE 18 WH D45 4000K (with driver)	1237000170	18	1750	110	120	100	0,7

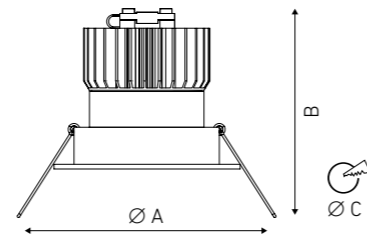




Recessed LED downlight, made of aluminum, coated in mat paint. Optical part protected by glass. Standard housing color: WH – white. Standard lens – 45°. Standard color temperature – 3000 K, 4000 K.

IP20 50/60 Hz  $F_1 < 5\%$

Power consumption, W	7, 13, 18, 26, 33, 43, 52
Color temperature, K	2700, 3000, 4000
Color finish	WH – white, BL – black, DG – dark grey, GL – dark gold
Dispersion angle	15°, 30°, 45°
LED driver	Not dimmable, DALI, 1-10V, ME6



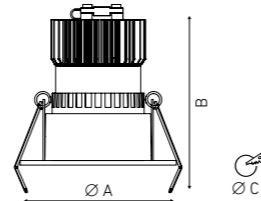
Name	Code	Power consumption, W	Light flux, Lm	A	B	C	Weight, kg
EOS 07 WH D45 3000K (with driver)	1693000050	8	650	78	68	67	0,3
EOS 07 WH D45 4000K (with driver)	1693000080	8	700	78	68	67	0,3
EOS 13 WH D45 3000K (with driver)	1693000170	15	1400	78	88	67	0,4
EOS 13 WH D45 4000K (with driver)	1693000190	15	1500	78	88	67	0,4
EOS 18 WH D45 3000K (with driver)	1693000540	18	1700	78	108	67	0,5
EOS 18 WH D45 4000K (with driver)	1693000550	18	1750	78	108	67	0,5

## ARNO

Recessed LED downlight, made of aluminum, coated in mat paint. Optical part protected by glass. Standard housing color: WH – white. Standard lens – 45°. Standard color temperature – 3000 K, 4000 K.

IP20

Power consumption, W	7, 13, 18
Color temperature, K	2700, 3000, 4000
Color finish	WH – white, BL – black
Dispersion angle	15°, 30°, 45°
LED driver	Not dimmable, DALI, 1-10V, ME6



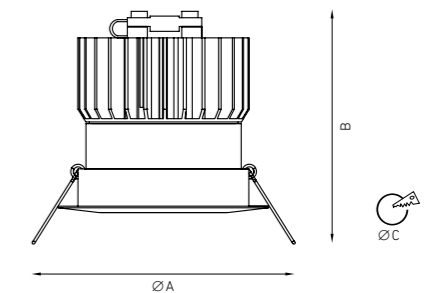
Name	Code	Power consumption, W	Flux, lm	A	B	C	Weight, kg
ARNO 07 WH D45 2700K (with driver)	1282000100	7	498	88	92	75	0,18
ARNO 07 WH D45 3000K (with driver)	1282000010	7	523	88	92	75	0,18
ARNO 07 WH D45 4000K (with driver)	1997025770	7	540	88	92	75	0,18
ARNO 13 WH D45 2700K (with driver)	1282000110	13	955	88	112	75	0,2
ARNO 13 WH D45 3000K (with driver)	1282000020	13	996	88	112	75	0,2
ARNO 13 WH D45 4000K (with driver)	1997025780	13	1062	88	112	75	0,2



Recessed LED downlight, made of aluminum, coated in mat paint. Optical part protected by glass. Standard housing color: WH – white. Standard lens – 45°. Standard color temperature – 3000 K, 4000 K. Modification with IP65 is available on request: QUO IP65/20.

IP20 50/60 Hz  $F_1 < 5\%$

Power consumption, W	7, 13, 18, 26, 33, 43, 52
Color temperature, K	2700, 3000, 4000
Color finish	WH – white, BL – black, DG – dark grey, GL – dark gold
Dispersion angle	15°, 30°, 45°
LED driver	Not dimmable, DALI, 1-10V, ME6



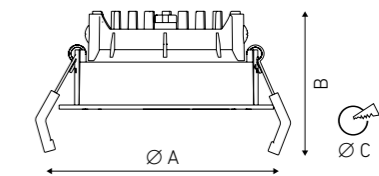
Name	Code	Power consumption, W	Flux, lm	A	B	C	Weight, kg
QUO 07 WH D45 3000K (with driver)	1507000370	7	631	65	64	58	0,18
QUO 07 WH D45 4000K (with driver)	1507000390	7	651	65	64	58	0,18
QUO 13 WH D45 3000K (with driver)	1507000160	13	1200	65	84	58	0,21
QUO 13 WH D45 4000K (with driver)	1507000180	13	1280	65	84	58	0,21
QUO 18 WH D45 3000K (with driver)	1997025350	18	1789	65	104	58	0,25
QUO 18 WH D45 4000K (with driver)	1507000590	18	1842	65	104	58	0,25

## SPLAY

Recessed LED downlight, made of aluminum, coated in mat paint. Optical part protected by glass. Standard housing color: WH – white. Luminaire optics "WallWasher" – for uniform illumination of walls.

IP20 50/60 Hz  $F_1 < 5\%$





Power consumption, W	9, 18
Color temperature, K	3000, 4000
Color finish	WH – white
Dispersion angle	WallWasher
LED driver	Not dimmable, DALI, 1-10V, ME6



Name	Code	Power consumption, W	Light flux, Lm	A	B	C	Weight, kg
SPLAY 09 WH DWW 3000K (with driver)	1997026050	9	560	115	52	105	0,4
SPLAY 09 WH DWW 4000K (with driver)	1239000040	9	600	115	52	105	0,4
SPLAY 18 WH DWW 3000K (with driver)	1239000060	18	1200	170	91	150	1,1
SPLAY 18 WH DWW 4000K (with driver)	1239000050	18	1250	170	91	150	1,1



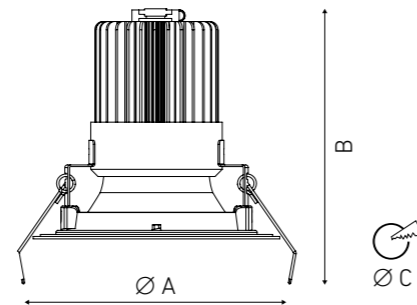
Recessed LED downlight. The luminaire housing is made of aluminum, coated in mat paint. Deep decorative frame of mirrored aluminum creates a large protective angle and the "turn off" effect of the light source – "dark light". Optical part closed by faceted glass. Standard color of decorative frame – WH white. More information is available on the website.

IP20 50/60 Hz F<sub>1</sub><5%    





Power consumption, W	13, 18, 26, 38, 53
Color temperature, K	3000, 4000
Color finish	WH – white, BL – black



Name	Code	Power consumption, W	Light flux, Lm	A	B	C	Weight, kg
OKKO 13 WH D45 3000K (with driver)	1997025830	15	1325	120	112	100	0,5
OKKO 13 WH D45 4000K (with driver)	1235001120	15	1400	120	112	100	0,5
OKKO 18 WH D45 3000K (with driver)	1235001030	21	1950	145	130	125	0,9
OKKO 18 WH D45 4000K (with driver)	1235001130	21	2050	145	130	125	0,9
OKKO 26 WH D45 3000K (with driver)	1235001040	31	3000	175	141	150	1,2
OKKO 26 WH D45 4000K (with driver)	1235001140	31	3200	175	141	150	1,2
OKKO 38 WH D45 3000K (with driver)	1235001050	42	3900	230	182	200	1,6
OKKO 38 WH D45 4000K (with driver)	1235001150	42	4200	230	182	200	1,6
OKKO 53 WH D45 3000K (with driver)	1235001060	56	5100	230	206	200	1,7
OKKO 53 WH D45 4000K (with driver)	1235001160	56	5300	230	206	200	1,7

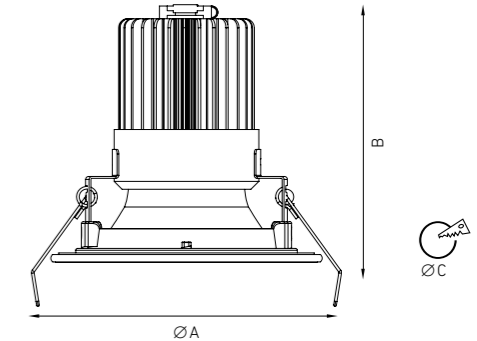


Recessed LED downlight. The luminaire housing is made of aluminum, coated in mat paint. Deep decorative frame of mirrored aluminum creates a large protective angle and the "turn off" effect of the light source – "dark light". Optical part closed by faceted glass. Standard color: WH – white.

IP54 50/60 Hz F<sub>1</sub><5%    

Power consumption, W	13, 18, 26, 38, 53
Color temperature, K	3000, 4000
Color finish	WH – white, BL – black
Dispersion angle	15°, 30°, 45°
LED driver	Not dimmable, DALI, 1-10V, ME6

Name	Code	Power consumption, W	Light flux, Lm	A	B	C	Weight, kg
OKKO IP 13 WH D45 3000K (with driver)	1235001220	13	1325	120	115	100	0,5
OKKO IP 13 WH D45 4000K (with driver)	1235001230	13	1350	120	115	100	0,5
OKKO IP 18 WH D45 3000K (with driver)	1258000230	19	1445	145	123	132	0,9
OKKO IP 18 WH D45 4000K (with driver)	1258000240	19	1500	145	123	132	0,9
OKKO IP 26 WH D45 3000K (with driver)	1235001240	29	2700	175	147	143	1,2
OKKO IP 26 WH D45 4000K (with driver)	1997026500	29	2800	175	147	143	1,2
OKKO IP 38 WH D45 3000K (with driver)	1235001260	40	3850	230	179	183	1,6
OKKO IP 38 WH D45 4000K (with driver)	1235001270	40	3950	230	179	183	1,6
OKKO IP 53 WH D45 3000K (with driver)	1235001280	56	5100	230	179	208	1,6
OKKO IP 53 WH D45 4000K (with driver)	1235001290	56	5300	230	179	208	1,6



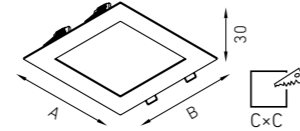
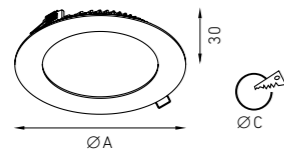


Built-in luminaire provides straight diffused light. Luminaire housing is made of aluminum with powder paint. Optical part is covered with milk tempered glass.

IP54 50/60 Hz F<sub>1</sub><5%



Name	Code	Power consumption, W	Light flux, Lm	A	B	C	Weight, kg
ACQUA C 03 WH 3000K (with driver)	1596000090	5	250	85	-	70	0.2
ACQUA C 03 WH 4000K (with driver)	1596000160	5	280	85	-	70	0.2
ACQUA C 06 WH 3000K (with driver)	1997025750	8	560	110	-	95	0.3
ACQUA C 06 WH 4000K (with driver)	1997025320	8	620	110	-	95	0.3
ACQUA C 12 WH 3000K (with driver)	1997025740	13	1100	150	-	135	0.4
ACQUA C 12 WH 4000K (with driver)	1596000180	13	1200	150	-	135	0.4
ACQUA C 18 WH 3000K (with driver)	1997025760	22	1800	180	-	155	0.4
ACQUA C 18 WH 4000K (with driver)	1997026480	22	2000	180	-	155	0.4
ACQUA S 03 WH 3000K (with driver)	1596000120	5	250	85	85	75	0.2
ACQUA S 03 WH 4000K (with driver)	1596000200	5	250	85	85	75	0.2
ACQUA S 06 WH 3000K (with driver)	1997024310	8	560	110	110	95	0.3
ACQUA S 06 WH 4000K (with driver)	1596000210	8	620	110	110	95	0.3
ACQUA S 12 WH 3000K (with driver)	1997025730	13	1100	150	150	135	0.4
ACQUA S 12 WH 4000K (with driver)	1596000220	13	1200	150	150	135	0.4
ACQUA S 18 WH 3000K (with driver)	1997025720	22	1800	180	180	160	0.4
ACQUA S 18 WH 4000K (with driver)	1596000230	22	2000	180	180	160	0.4

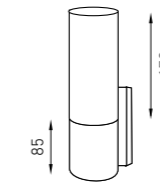


Wall-mounted luminaires for diffused illumination. Diffuser made of hand blown three-layered opal glass. The housing is made of chrome plated metal.

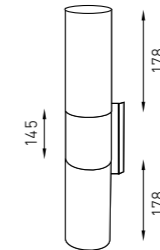
IP44



<b>PARETE</b>	0,7
Code: 1559000020	
1 × MAX 15 W E14	



<b>PARETE 2</b>	1,0
Code: 1997020180	
2 × MAX 15 W E14	





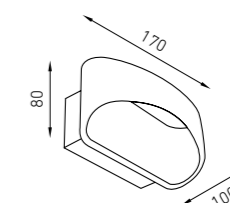
Wall-mounted indirect luminaire. Housing is made of extruded aluminum coated in mat white. Color finish: AL – polished aluminum, BL/GL – black & gold, WH- white. Standard color: WH – white.

IP20

HUGO 3000K 0,6

Code: 1997025840

LED 5 W 3000K CRI > 80



## ORSAY



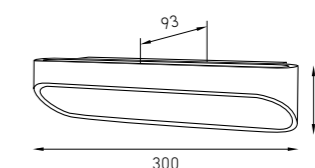
Wall-mounted indirect luminaire. Housing is made of extruded aluminum coated in mat white. Color finish: AL – polished aluminum, BL/GL – black & gold, WH- white. Standard color: WH – white.

IP20

ORSAY 3000K 0,85

Code: 1997025860

LED 10 W 3000K CRI > 80





# Lighting control



			<b>NEW</b> 
Routers ME6 RD page 214	Power supplies ME6 DALI D2400PS, page 214	Control modules ME6 page 214	DALI controlling keypad page 215
<b>NEW</b> 			
DALI controlling keypad page 215	Control panel DALI page 215	ME6 DALI D10X page 215	ME6 Server Lite/ Enterprise page 216
			
ME6 Server Industrial page 217	Sensor ME6 EBDSPiR page 217	Sensor ME6 EBDHS page 217	Sensor ME6 EBDSPiR page 217
			
Router ME6-R page 222	Module ME6-NF page 222	Module ME6-NF (IP65) page 223	Sensor ME6-LSO page 223
			
CORVETE LED ME6 page 224	NLC044-PLC page 228	Antena GA01 page 228	NLC008-PLC page 228
			
LLC102LV-PLC page 228	Sensor DS01 page 228	Sensor LS01 page 228	Current transformer page 228



In 2017, the Nobel prize in physiology and medicine has been awarded to American biologists for their discoveries on the molecular mechanisms controlling circadian rhythms. Circadian rhythms are the cycles of sleep and waking that are related to the daily rotation of the Planet. Human biological clock controls processes in the human body, determining the level of working capacity and physical activity.

Lighting Technologies has been continuously developing biologically and emotionally effective lighting over past few years. Our product range contains luminaires with adjustable color temperatures taking into consideration human biorhythms and maximum amount of natural lighting environment required for a productive and healthy quality of life.

SYSTEM

LUMINAIRE CF + CONTROL SYSTEM + CONTROL PANELS = HCL

- CF luminaires are luminaires with adjusted Tcol.
- Control system for any solutions (DALI, Wireless, 1..10)
- Control panels (wall-mounted, portable, smartphone-controlled)

SPHERE OF APPLICATION OF HCL



AREAS OF IMPLEMENTATION AND BENEFITS EFFECT FROM HCL

Segment / Beneficial effects	COMMERCIAL (office and administrative space, trade lighting)	INDUSTRIAL (room for staff, office, recreation areas)	MEDICAL (halls, hallways, doctors office, recreation areas)	EDUCATION (classes, rooms for teachers, offices, halls)
working ability	✓	✓	✓	✓
health	✓	✓	✓	✓
mood	✓	✓	✓	✓
recession of season depression	✓	✓	✓	✓
improve immunity	✓	✓	✓	✓
reduction of manufacturing defects		✓		
no sense of temporary disorientation	✓	✓	✓	✓
reducing per cent of return products	✓			
increase productivity				✓
reduce the percentage of errors	✓			✓



A distinctive feature of such luminaires is a compliance with the latest DALI Device Type 8 (DALI DT8) enabling changes of color temperature under the DALI protocol. The LED driver implementation fully corresponds to the latest DALI EN62386 Part 209 (Color Control/Tunable White) protocol version. These modifications simplify

complicated solutions with automated dynamic change of color temperature throughout the day to imitate solar cycle changes, also known as Human Centric Lighting. The color temperature can be manually changed by a rotary dimmer, button panel and other tools that support DALI DT8 protocol providing for a quick and easy-to-handle lighting solution.



**REFLECT LED 1500 CH CF**  
Order code: 1997026380



**LINER/R LED 1200 CH CF**  
Order code: 1997028360



**PHANTOM LED CH CF**  
Order code: 1997028430



**REFLECT LED 1000 CH CF**  
Order code: 1997026370



**LINER/R LED 1200 TH W CH CF**  
Order code: 1997028370



**RKL LED 38 CH CF**  
Order code: 1997028420



**LINER/S LED 1200 CH CF**  
Order code: 1997028390



**OPL/R ECO LED 595 CH CF**  
Order code: 1997026400



**OWP OPTIMA LED 595 IP54/IP54 CH CF**  
Order code: 1997028410



**LINER/S LED 1200 TH W CH CF**  
Order code: 1997028400

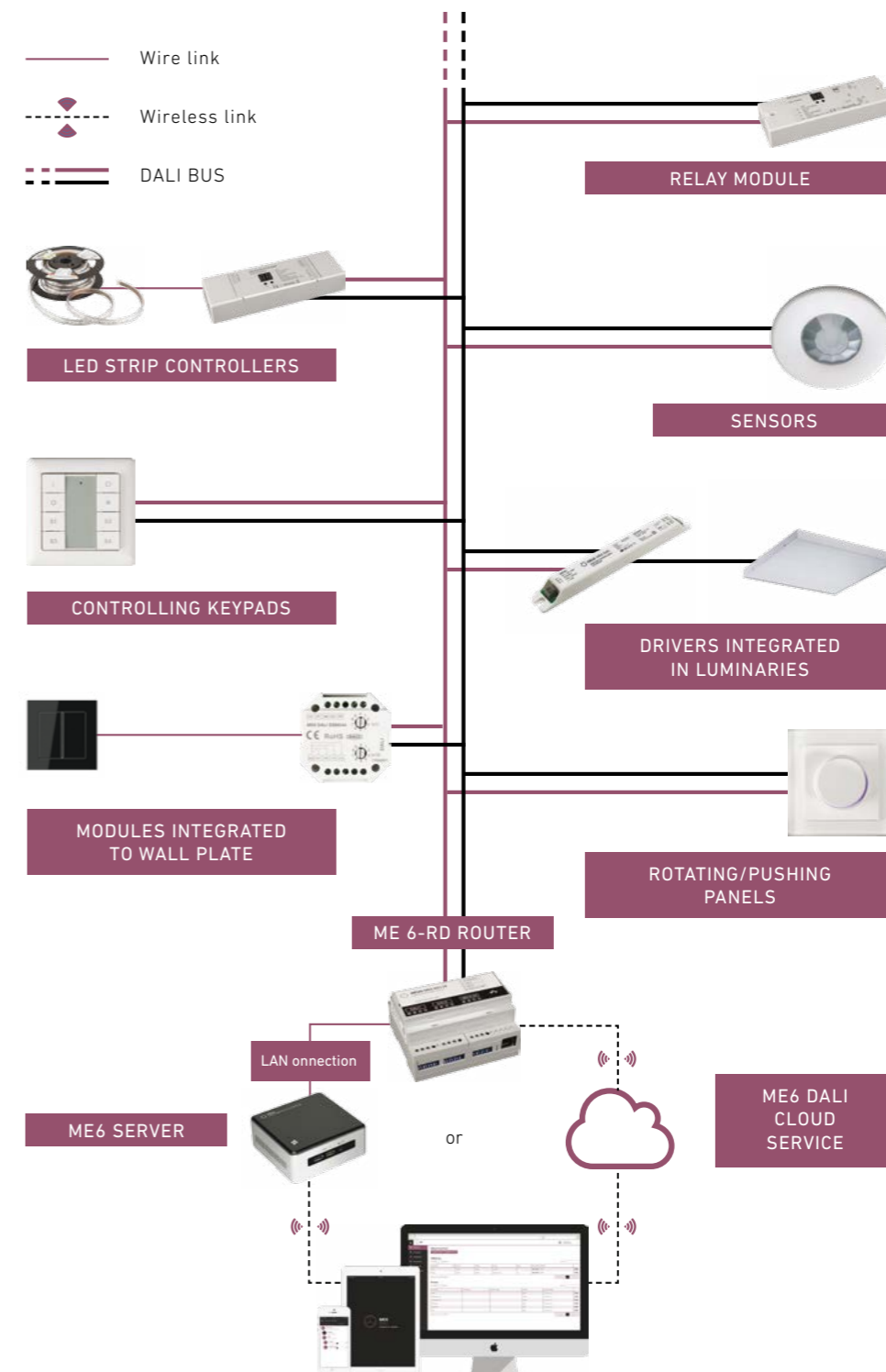


**OTX LED 595 CH CF**  
Order code: 1997026390

**ME6 DALI Lighting Control System**

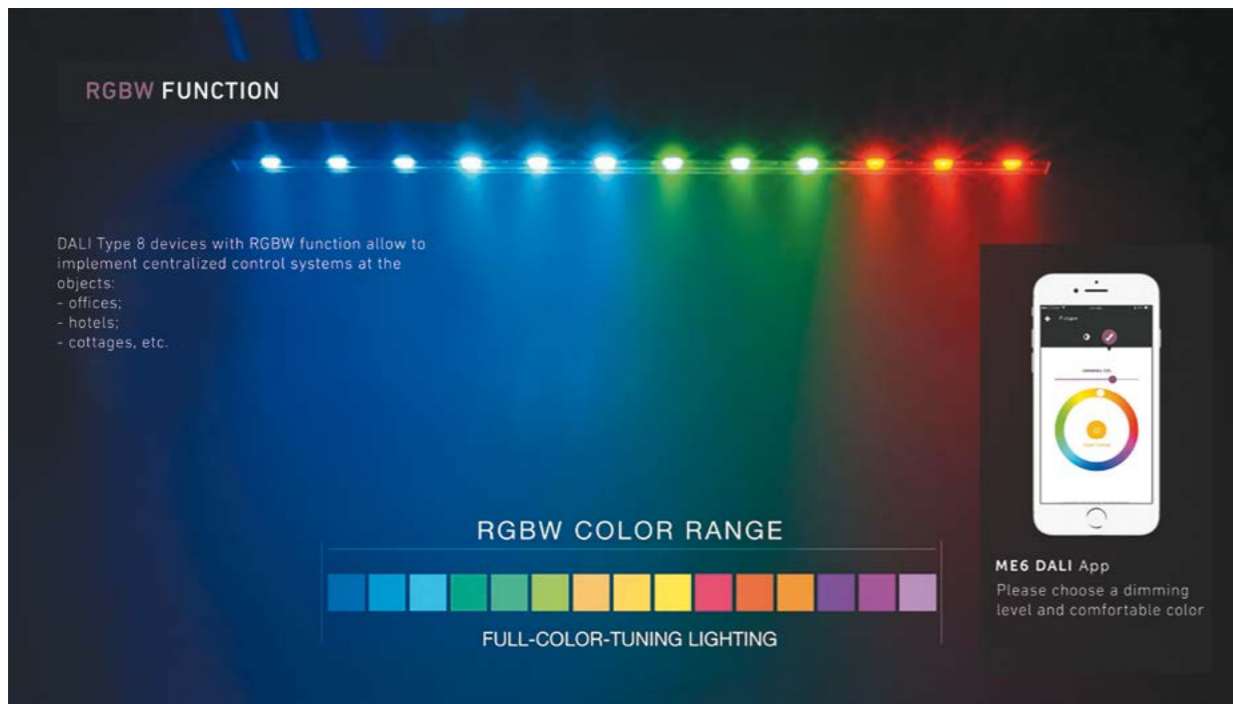
ME6 DALI is a cloud system based on the DALI protocol having user friendly interface to control system configuration which does not require special knowledge. The systems offers almost unlimited capability to control and monitor the lighting unit and all peripheral devices, including sensors, breakers, relays and many others. The ME6 DALI platform is easy to integrate with BMS System of a building, and provides more safety as compared to standard solutions.

**ME6 DALI System Workflow**

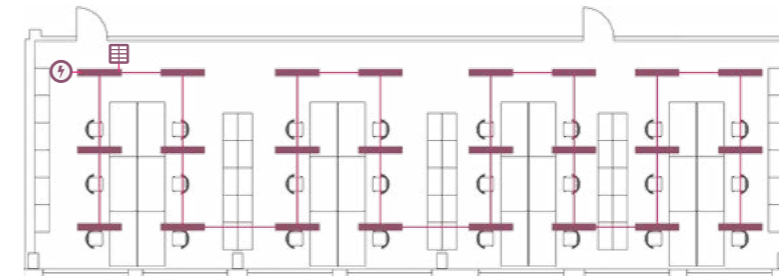




ME6 DALI system fully supports Human Centric Lighting (HCL Tunable White) and Color Tuning algorithms based on the latest DALI standard Part 209 (Device Type 8 DT8).



**CONTROL SYSTEM SOLUTIONS. SIMPLE LOCAL CONTROL**

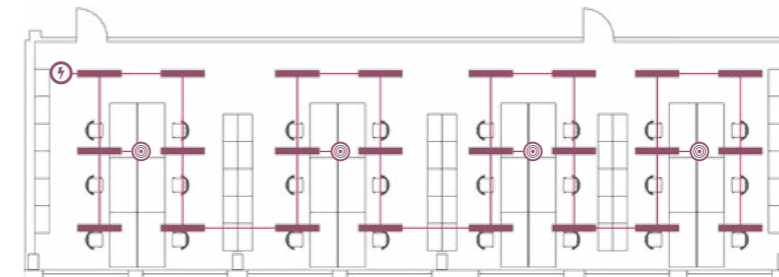


- DALI bus power supply
- DALI dimmable luminaire
- 8-button control panel ME6 DALI 8K-DIM-4G

**LOCAL CONTROL SYSTEM:**

- Groups control
- Scenario management
- Switch on / off
- Dimming

**CONTROL SYSTEM SOLUTIONS. AUTOMATIC CONTROL**

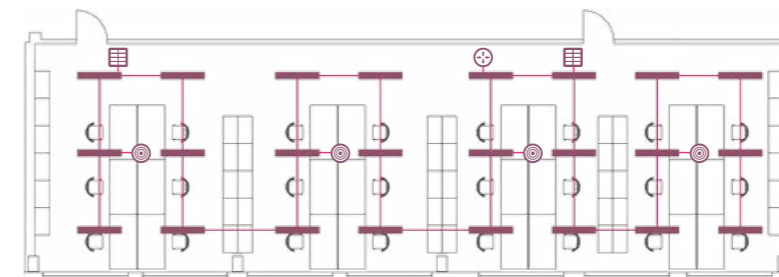


- DALI bus power supply
- Sensor ME6 EBDSPiR-DD
- DALI dimmable luminaire

**AUTOMATIC CONTROL SYSTEM:**

- Movement detecting management
- Illumination level management
- Energy saving up to 80%

**CONTROL SYSTEM SOLUTIONS. COMBINED CONTROL**



- Router ME6-RD 128
- Sensor ME6 EBDSPiR-DD
- DALI dimmable luminaire
- 8-button control panel ME6 DALI 8K-DIM-4G

**REMOTE CONTROL:**

- Switch on / off
- Dimming
- Schedules set-up and control
- Groups set-up and control
- Scenarios set-up and control
- Service information
- Energy consumption graphs
- Analytics


**LOCAL CONTROL SYSTEM:**


- Groups control
- Scenario management
- Switch on / off
- Dimming


**AUTOMATIC CONTROL SYSTEM:**

- Movement detecting management
- Illumination level management
- Energy saving up to 80%





Photo	Specification																																																
<b>Router series ME6 RD (ME6 RD64; ME6 RD128)</b>																																																	
 <p>50/60 Hz</p>	<p>Router based on DALI. Designed to interface DALI network components (modules, drivers, sensors) with ME6 Cloud server. It provides communication between the remote (or local) "cloud" server and make a component DALI network.</p> <p>Technical data:</p> <table border="1"> <tr> <td>Model</td> <td>ME6 RD64</td> <td>ME6 RD128</td> </tr> <tr> <td>Article</td> <td>4911004840</td> <td>4911004850</td> </tr> <tr> <td>Communication protocol</td> <td colspan="2">DALI (IEC62386)</td> </tr> <tr> <td>Internet interface</td> <td colspan="2">Ethernet IEEE 802.3</td> </tr> <tr> <td>Available DALI</td> <td>1*250 mA</td> <td>2*250 mA</td> </tr> <tr> <td>Numbers of bus DALI</td> <td>1</td> <td>2</td> </tr> <tr> <td>Maximum number of devices on the DALI bus</td> <td>64</td> <td>2*64</td> </tr> <tr> <td>Receiving network settings</td> <td colspan="2">DHCP (RFC2131)</td> </tr> <tr> <td>Maximum length of the DALI bus</td> <td colspan="2">to 300 m</td> </tr> <tr> <td>Supply voltage (POE)</td> <td colspan="2">48 W (from 36 to 57 B) DC</td> </tr> <tr> <td>Power consumption (max)</td> <td colspan="2">15 V</td> </tr> <tr> <td>Overall dimensions</td> <td colspan="2">127x70,6x35,5 mm</td> </tr> <tr> <td>Class protection</td> <td colspan="2">II</td> </tr> <tr> <td>Degree protection</td> <td colspan="2">IP 20</td> </tr> <tr> <td>Ambient temperature</td> <td colspan="2">-30 ... +50 °C</td> </tr> <tr> <td>Weight</td> <td colspan="2">150 g</td> </tr> </table>	Model	ME6 RD64	ME6 RD128	Article	4911004840	4911004850	Communication protocol	DALI (IEC62386)		Internet interface	Ethernet IEEE 802.3		Available DALI	1*250 mA	2*250 mA	Numbers of bus DALI	1	2	Maximum number of devices on the DALI bus	64	2*64	Receiving network settings	DHCP (RFC2131)		Maximum length of the DALI bus	to 300 m		Supply voltage (POE)	48 W (from 36 to 57 B) DC		Power consumption (max)	15 V		Overall dimensions	127x70,6x35,5 mm		Class protection	II		Degree protection	IP 20		Ambient temperature	-30 ... +50 °C		Weight	150 g	
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Weight	150 g																																																


<b>Power supplies series ME6 DALI D2400PS (ME6 D2400PS; ME6 D2400PSA)</b>																																								
 <p>50/60 Hz</p>	<p>Generates on the bus given the necessary voltage and provides a current according to requirement of the standard, allowing data transmission in the system.</p> <p>Technical data:</p> <table border="1"> <tr> <td>Model</td> <td>ME6 D2400PS</td> <td>ME6 D2400PSA</td> </tr> <tr> <td>Article</td> <td>4911004890</td> <td>4911004900</td> </tr> <tr> <td>Input voltage</td> <td colspan="2">AC 100 ... 240 W</td> </tr> <tr> <td>Power supply frequency</td> <td colspan="2">50/60 Hz</td> </tr> <tr> <td>Maximum input current</td> <td colspan="2">0.07 A</td> </tr> <tr> <td>Output voltage</td> <td colspan="2">DC 16 V</td> </tr> <tr> <td>Input current</td> <td colspan="2">70 mA</td> </tr> <tr> <td>Maximum output current</td> <td colspan="2">250 mA</td> </tr> <tr> <td>Maximum power output</td> <td colspan="2">4 V</td> </tr> <tr> <td>Degree protection</td> <td colspan="2">IP20</td> </tr> <tr> <td>Ambient temperature</td> <td colspan="2">-20 ... +50 °C</td> </tr> <tr> <td>Dimensions</td> <td>100x51x53 mm</td> <td>168x58x28 mm</td> </tr> <tr> <td>Maximum case temperature (tc)</td> <td colspan="2">75 °C</td> </tr> </table>	Model	ME6 D2400PS	ME6 D2400PSA	Article	4911004890	4911004900	Input voltage	AC 100 ... 240 W		Power supply frequency	50/60 Hz		Maximum input current	0.07 A		Output voltage	DC 16 V		Input current	70 mA		Maximum output current	250 mA		Maximum power output	4 V		Degree protection	IP20		Ambient temperature	-20 ... +50 °C		Dimensions	100x51x53 mm	168x58x28 mm	Maximum case temperature (tc)	75 °C	
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<b>Series control modules with access to circuit breakers (ME6 DSM04A; ME6 DSM04G; ME6 DSM04S)</b>																
 <p>50/60 Hz</p>	<p>DALI MASTER device. ME6 DSM04A (management addressees) – to 4 DALI addresses, ME6 DSM04G (management groups DALI) – 4 DALI groups, ME6, DSM04S (management scenarios DALI) – 4 DALI scenarios. Corresponds to the standard protocol DALI IEC60929 and DALI compatible with products from other manufacturers.</p> <p>Technical data:</p> <table border="1"> <tr> <td>Model</td> <td colspan="2">ME6 DSM04A; ME6 DSM04G; ME6 DSM04S</td> </tr> <tr> <td>Article</td> <td colspan="2">4911004860 / 4911004870 / 4911004880</td> </tr> <tr> <td>Operating voltage</td> <td colspan="2">provided bus DALI</td> </tr> <tr> <td>Output</td> <td colspan="2">signal DALI</td> </tr> <tr> <td>Dimensions</td> <td colspan="2">52x52x22.9</td> </tr> </table>	Model	ME6 DSM04A; ME6 DSM04G; ME6 DSM04S		Article	4911004860 / 4911004870 / 4911004880		Operating voltage	provided bus DALI		Output	signal DALI		Dimensions	52x52x22.9	
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Article	4911004860 / 4911004870 / 4911004880															
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<b>Series of DALI controlling keypads</b>																										
 <p>50/60 Hz</p>	<p>Technical data:</p> <table border="1"> <tr> <td>Model</td> <td>ME6 DALI 4K-DIM-2G</td> <td>ME6 DALI 8K-DIM-4G</td> </tr> <tr> <td>Article</td> <td>4911005020</td> <td>4911004980</td> </tr> <tr> <td>Input signal</td> <td colspan="2">DALI</td> </tr> <tr> <td>Source of power</td> <td colspan="2">bus DALI (16V 250 mA)</td> </tr> <tr> <td>Permitted air humidity</td> <td colspan="2">from 8% to 80%</td> </tr> <tr> <td>Working temperature</td> <td colspan="2">0 – 40 °C</td> </tr> <tr> <td>Overall dimensions</td> <td colspan="2">71,2x71,2x13,6 mm</td> </tr> <tr> <td>Operation current</td> <td colspan="2">4mA</td> </tr> </table>		Model	ME6 DALI 4K-DIM-2G	ME6 DALI 8K-DIM-4G	Article	4911005020	4911004980	Input signal	DALI		Source of power	bus DALI (16V 250 mA)		Permitted air humidity	from 8% to 80%		Working temperature	0 – 40 °C		Overall dimensions	71,2x71,2x13,6 mm		Operation current	4mA	
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 <p>50/60 Hz</p>	<p>Technical data:</p> <table border="1"> <tr> <td>Model</td> <td>ME6 DALI 4K-CCT-1G</td> <td>ME6 DALI 8K-CCT-1G-2S</td> </tr> <tr> <td>Article</td> <td>4911005420</td> <td>4911005370</td> </tr> <tr> <td>Input signal</td> <td colspan="2">DALI DT8</td> </tr> <tr> <td>Source of power</td> <td colspan="2">bus DALI (16V 250 mA)</td> </tr> <tr> <td>Permitted air humidity</td> <td colspan="2">from 8% to 80%</td> </tr> <tr> <td>Working temperature</td> <td colspan="2">0 – 40 °C</td> </tr> <tr> <td>Overall dimensions</td> <td colspan="2">71,2x71,2x13,6 mm</td> </tr> <tr> <td>Operation current</td> <td colspan="2">4mA</td> </tr> </table>		Model	ME6 DALI 4K-CCT-1G	ME6 DALI 8K-CCT-1G-2S	Article	4911005420	4911005370	Input signal	DALI DT8		Source of power	bus DALI (16V 250 mA)		Permitted air humidity	from 8% to 80%		Working temperature	0 – 40 °C		Overall dimensions	71,2x71,2x13,6 mm		Operation current	4mA	
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Operation current	4mA																									

<b>Control key-panels series DALI (ME6 K4-2402-G2; ME6 K8-2402-G4)</b>																										
 <p>50/60 Hz</p>	<p>Series of push-button wall panel to control 2 groups (ME 6 K4-2402-G2) and 4 groups lighting groups (ME6 K8-2402-G4) with dimming. Device can be supplied without a frames and compatible with decorative frames from other manufacturers.</p> <p>Technical data:</p> <table border="1"> <tr> <td>Model</td> <td>ME6 K4-2402-G2</td> <td>ME6 K8-2402-G4</td> </tr> <tr> <td>Article</td> <td>4911005020</td> <td>4911004980</td> </tr> <tr> <td>Input signal</td> <td colspan="2">DALI</td> </tr> <tr> <td>Source of power</td> <td colspan="2">bus DALI (16V 250mA)</td> </tr> <tr> <td>Permitted air humidity</td> <td colspan="2">from 8% to 80%</td> </tr> <tr> <td>Working temperature</td> <td colspan="2">0- 40 °C</td> </tr> <tr> <td>Overall dimensions</td> <td colspan="2">71,2x71,2x13,6mm</td> </tr> <tr> <td>Operation current</td> <td colspan="2">4mA</td> </tr> </table>		Model	ME6 K4-2402-G2	ME6 K8-2402-G4	Article	4911005020	4911004980	Input signal	DALI		Source of power	bus DALI (16V 250mA)		Permitted air humidity	from 8% to 80%		Working temperature	0- 40 °C		Overall dimensions	71,2x71,2x13,6mm		Operation current	4mA	
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<b>Dimmer series ME6 DALI D10X (ME6 D101LS; ME6 D104LS)</b>																																									
 <p>50/60 Hz</p>	<p>Dimmers are designed for PWM control of LED strip, LED rulers and modules powered with constant voltage 12/24/36 W.</p> <p>Technical data:</p> <table border="1"> <tr> <td>Model</td> <td>ME6 D101LS</td> <td>ME6 D104LS</td> </tr> <tr> <td>Article</td> <td>4911004920</td> <td>4911004930</td> </tr> <tr> <td>Input voltage</td> <td colspan="2">DC 12/24/36 W</td> </tr> <tr> <td>Output voltage</td> <td colspan="2">DC 12/24/36 W</td> </tr> <tr> <td>Numbers of outputs</td> <td colspan="2">4 outputs</td> </tr> <tr> <td>Numbers of control addresses</td> <td>1 address</td> <td>1,2,3 or 4 addresses</td> </tr> <tr> <td>One maximum current output</td> <td colspan="2">5A</td> </tr> <tr> <td>Maximum total power load</td> <td colspan="2">240 V (12 W), 480 V (24 W), 720 V (36 W)</td> </tr> <tr> <td>Load circuit diagram</td> <td colspan="2">common anod</td> </tr> <tr> <td>Degree of protection</td> <td colspan="2">IP20</td> </tr> <tr> <td>Ambient temperature (ta)</td> <td colspan="2">-20 ... +50 °C</td> </tr> <tr> <td>Maximum case temperature (tc)</td> <td colspan="2">75 °C</td> </tr> <tr> <td>Overall dimensions</td> <td colspan="2">98x65x53 mm</td> </tr> </table>		Model	ME6 D101LS	ME6 D104LS	Article	4911004920	4911004930	Input voltage	DC 12/24/36 W		Output voltage	DC 12/24/36 W		Numbers of outputs	4 outputs		Numbers of control addresses	1 address	1,2,3 or 4 addresses	One maximum current output	5A		Maximum total power load	240 V (12 W), 480 V (24 W), 720 V (36 W)		Load circuit diagram	common anod		Degree of protection	IP20		Ambient temperature (ta)	-20 ... +50 °C		Maximum case temperature (tc)	75 °C		Overall dimensions	98x65x53 mm	
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**Optional equipment**

(It is compatible with both ME6 Enterprise and ME6 DALI)

**ME6 Server Lite**

50/60 Hz



Local visualization, control and configuration server of wireless lighting control system ME6.	
Technical data:	
Order code	4911004310
Number of server managed ME6 components	up to 300 pcs
Operating system	*NIX Server (Ubuntu, Debian)
Pre-installed software for wireless ME6 components control	ME6 Cloud
Processor	Core i3-5010U, 2.1 GHz
Memory	RAM SODIMM 2048 Mb DDR3 1600 MHz
Hard disc	SSD 60 Gb SATA-III
Graphics	Intel® HD Graphics 5500 1 port Mini HDMI 1.4a 1 port Mini DisplayPort 1.2a
Peripheral connection	4 USB 3.0
Network	Network adapter Intel 10/100/1000 Mbit/s Intel Wireless-AC 72.65 M.2 (IEEE 802.11ac, Bluetooth 4)
Housing	Aluminium and plastics
Dimensions	115 × 111 × 48.7 mm
Power supply voltage	230 (±10 %) V, 50-60Hz
Power consumed	150 W
Degree of protection	IP20
Options:	Mounting brackets VESA and mounting holes

**ME6 Server Enterprise**

50/60 Hz



Local visualization, control and configuration server of wireless lighting control system ME6.	
Technical data:	
Order code	4911004320
Number of server managed ME6 components	300 to 1000 pcs
Operating system	*NIX Server (Ubuntu, Debian)
Pre-installed software for wireless ME6 components control	ME6 Cloud
Processor	Core i5-5250U, 1.6-2.7 GHz
Memory	RAM SODIMM 4096 Mb DDR3 1600 MHz
Hard disc	SSD 120 Gb SATA-III
Graphics adapters	Intel® HD Graphics 6000 1 port Mini HDMI 1.4a 1 port Mini DisplayPort 1.2a
Peripheral connection	4 USB 3.0
Network	Network adapter Intel 10/100/1000 Mbit/s Intel Wireless-AC 72.65 M.2 (IEEE 802.11ac, Bluetooth 4)
Housing	Aluminium and plastics
Overall dimensions	115 × 111 × 48.7 mm
Power supply voltage	230 (±10 %) V, 50-60Hz
Power consumed	150 W
Degree of protection	IP20
Options:	Mounting brackets VESA and mounting holes

**ME6 Server Industrial**

50/60 Hz



Industrial server with extended temperature range maintains ME6 lighting control system operation. It is mounted on DIN-rail in control box. The redundant communication channel is provided by GSM network: 3G/4G.

Technical data:	
Order code	4911004420
Number of server managed ME6 components	up to 1000 pcs
Operating system	*NIX Server (Ubuntu, Debian)
Pre-installed software for wireless ME6 components control	ME6 Cloud
Processor	Intel® 4th Gen. Core™ i3-4010U ULT 1.7 GHz Haswell Dual Core
Memory	On-board 8GB DDR3L 1333/1600 MHz
Hard disc	SSD 120 Gb SATA-II
Graphics adapters	Intel® HD Graphics 4400 1 VGA port 1 port Mini DisplayPort 1.2a
Peripheral connection	4x USB, 1x RS-232, 2x RS-422/485
Network	4x RJ45, 10/100/1000 Mbps IEEE 802.3u 1000Base-T Fast Ethernet
Wireless communication	4G/3G/GPS/GPRS/WiFi
Housing	Aluminium
Dimensions	106 × 139 × 198 mm
Power supply voltage	230 (±10 %) V, 50-60Hz
Power consumed	120 W
Operation temperature	-20° ... +60 °C
Degree of protection	IP20
Options: mounting	DIN-rail, on wall

ME6 EBDSPIR-	Name	Control	Order code
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50/60 Hz



<b>-DNET1</b>	DALI	4911005220
Universal infra red motion and presence sensor with recognition distance till 7 meters and automatic light control (connection with ventilation and heating systems is possible). Recessed or surface mounted by means of DDB box. Sensor can operate automatically or as a part of the system. For distance operation please use the additional control unit.		

ME6 EBDHS-	Name	Control	Order code
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50/60 Hz



<b>-DNET1</b>	DALI	4911005230
Universal infra red motion and presence sensor for high ceilings facilities with recognition distance till 40 meters and automatic light control (connection with ventilation and heating systems is possible). Recessed or surface mounted by means of DDB box. Sensor can operate automatically or as a part of the system. For distance operation please use the additional control unit.		

ME6 EBDMR-	Name	Control	Order code
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50/60 Hz



<b>-DNET1</b>	DALI	4911006180
Universal infra red motion and presence sensor with recognition distance till 15 meters and automatic light control (connection with ventilation and heating systems is possible). Recessed or surface mounted by means of DDB box. Sensor can operate automatically or as a part of the system. For distance operation please use the additional control unit.		

OFFICE ROOM. WIRELESS ME6 CONTROLLING SYSTEM



**ME6-RD64/128**  
Designed to interface DALI network components with ME6 Cloud server. It provides communication between remote (or local) "cloud" server and DALI network components.



**ME6 EBDMR-DNET1**  
Combined motion and light sensor with recognition distance up to 15m for automatic operating and illumination level maintenance via DALI system.



**INTEGRATION**  
DALI protocol enables integration of ME6 Enterprise with any BMS Systems in a building as well as other cloud services.



**ANALYTICS**  
Collection of data on resource consumption, information processing and storage, its presentation in Excel, PDF and some other formats.



**REMOTE CONTROL**  
Control either via iOS- or Android-based mobile devices, or browser.

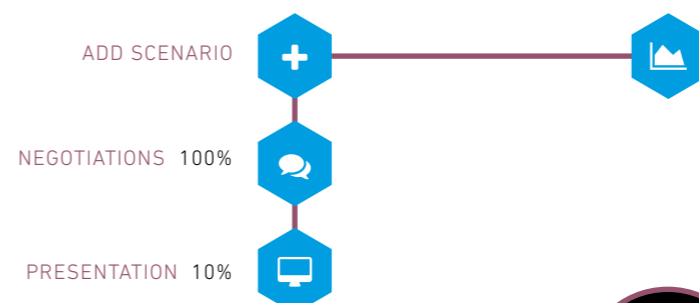


**ME6 SERVER**  
An Intel-based configuration and control server, connected to the router via Ethernet cable.



**SCHEDULE**  
You can activate the lighting on/off and dimming schedule by using an easy, user friendly interface.

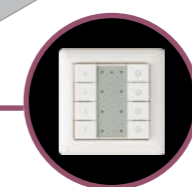
RECEPTION SCHEDULE	
9.00-18.00	100%
18.00-22.00	50%
22.00-9.00	10%



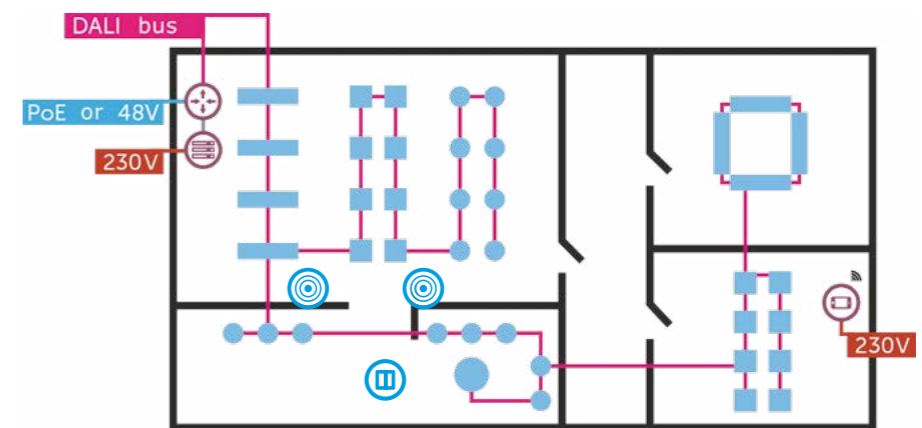
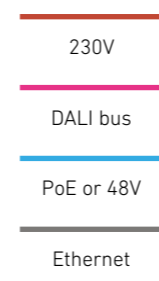
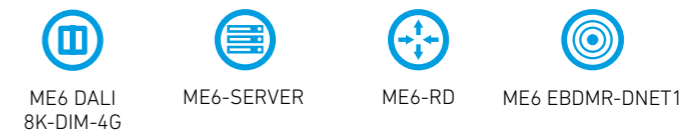
**SCENARIOS**  
You can create any scenario — from simple on/off sequences to daylight imitation by changing the luminaire color temperature during the day.



**DEUS B1X40/80W DALI**  
DALI driver for AC LED modules.



**ME6 DALI 8K-DIM-4G**  
A wall-mounted key-operated panel to control four lighting groups, including dimming.



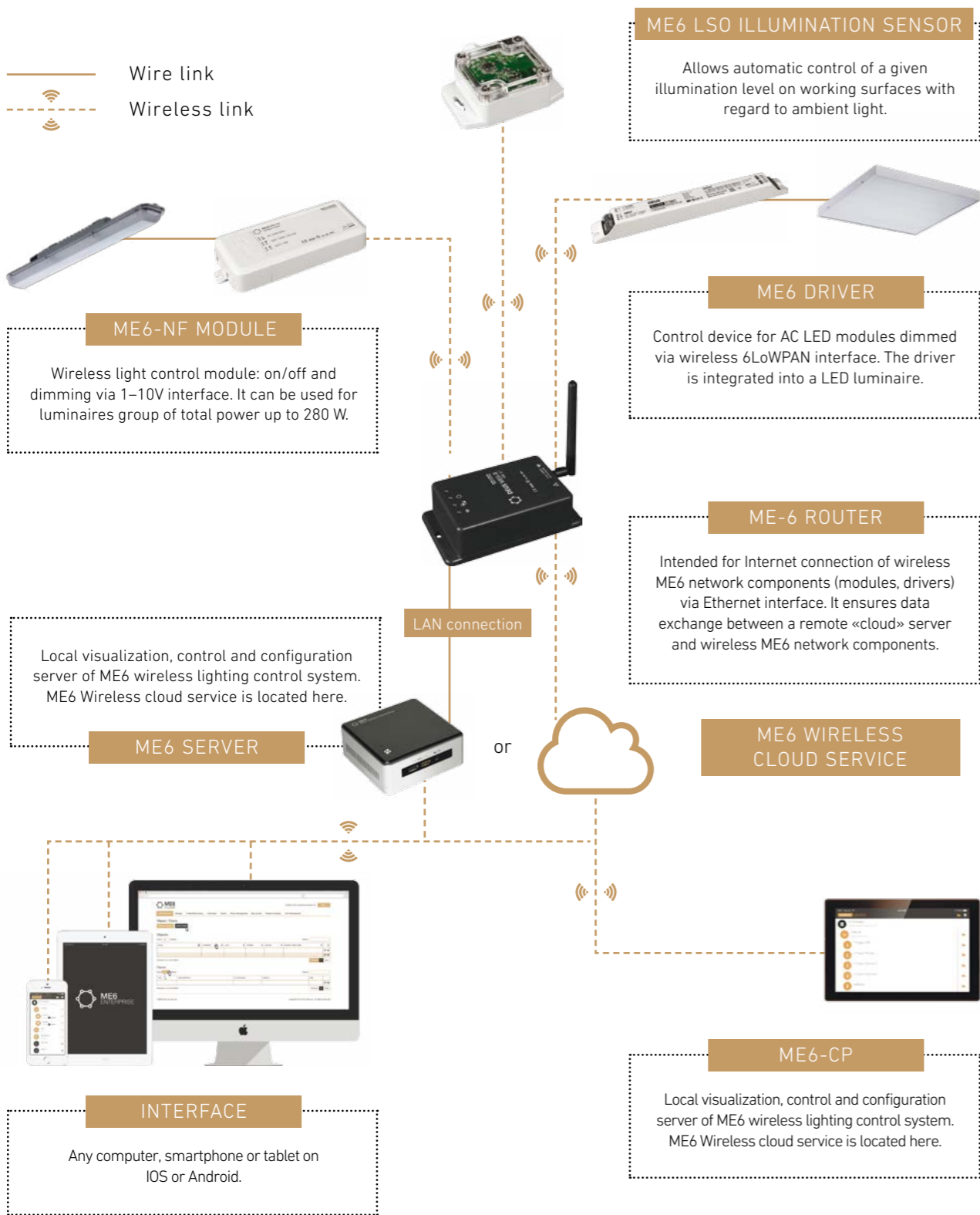


**Wireless lighting control system ME6**

The ME6 wireless system allows you to implement comfortable, energy-efficient lighting control. For example: on, off, dimming (1-100%), apply lighting control scenarios to groups and individual luminaires. System in real time builds a schedule of electricity consumption devices. Electricity savings at introduction of the system

and replacement of luminaires on LED is up to 80%. Application of the management system for LED lighting allows significantly increase the energy savings for lighting installation, including reducing the terms of its payback up to 3-4 years.

**WIRELESS LIGHTING CONTROL SYSTEM ME6**



**Features of ME6 system interaction with various luminaires**

ME6 light control system functions available	Luminaires with drivers controlled by 1-10V (version HFR)	Luminaires (version HFR ME6) with ME6 integrated control module	Luminaires with drivers non controlled by 1-10V
	<ul style="list-style-type: none"> <li>- on/off, dimming</li> <li>- schedule and scenario-based operation</li> <li>- power consumption monitoring</li> </ul>		<ul style="list-style-type: none"> <li>- on/off</li> <li>- schedule and scenario-based operation</li> </ul>

The fullest potential of the system functions can be seen with HFR luminaires dimmable by 1-10V or ME6 luminaires with integrated module.

At the same time there is a possibility for non-dimmable

luminaires control as well. This provides for a comprehensive approach to fulfillment of project tasks.

Free mobile application ME6 (iOS, Android) provides really individual and mobile lighting control.

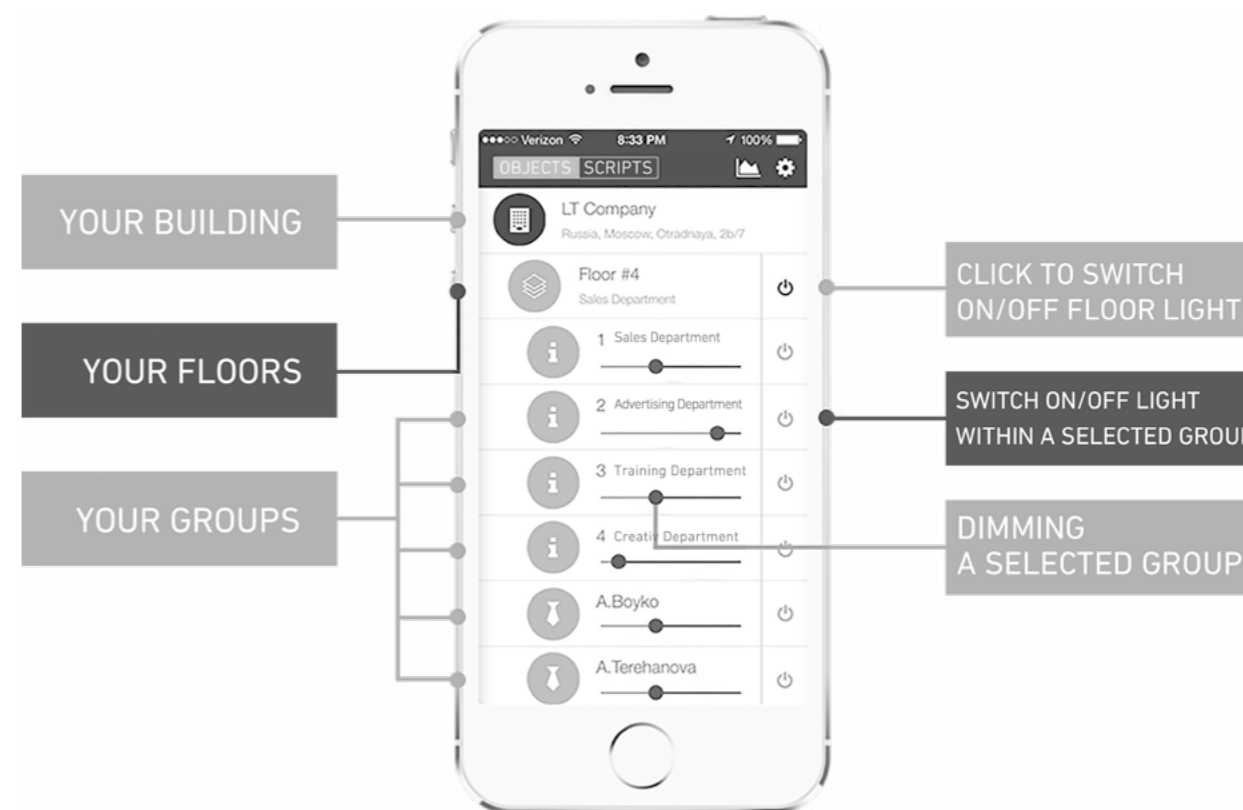





Photo	Specification																												
<b>Router ME6-R</b>																													
	<p>50/60 Hz</p> <p>It is intended for Internet connection of wireless ME6 network components (modules, drivers) via Ethernet interface. It ensures data exchange between a remote „cloud“ server and wireless ME6 network components.</p> <p>Technical data:</p> <table border="1"> <tr><td>Order code</td><td>4911004240</td></tr> <tr><td>Wireless communication protocol</td><td>ME6 Protocol</td></tr> <tr><td>Internet interface</td><td>Ethernet IEEE 802.3</td></tr> <tr><td>Interface to interact with wireless ME6 system devices</td><td>IEEE 802.15.4</td></tr> <tr><td>Frequency range</td><td>2.4 GHz</td></tr> <tr><td>Maximum output power, dBm</td><td>4</td></tr> <tr><td>Source of network settings</td><td>DHCP (RFC2131)</td></tr> <tr><td>Coverage radius</td><td>up to 50 m</td></tr> <tr><td>Power supply voltage</td><td>230 V ±10 %, 50-60Hz</td></tr> <tr><td>Power consumed</td><td>2 W</td></tr> <tr><td>Overall dimensions</td><td>127 × 70,6 × 35,5 mm</td></tr> <tr><td>Protection class</td><td>II</td></tr> <tr><td>Degree of protection</td><td>IP20</td></tr> <tr><td>Ambient temperature</td><td>-30...+50 °C</td></tr> </table>	Order code	4911004240	Wireless communication protocol	ME6 Protocol	Internet interface	Ethernet IEEE 802.3	Interface to interact with wireless ME6 system devices	IEEE 802.15.4	Frequency range	2.4 GHz	Maximum output power, dBm	4	Source of network settings	DHCP (RFC2131)	Coverage radius	up to 50 m	Power supply voltage	230 V ±10 %, 50-60Hz	Power consumed	2 W	Overall dimensions	127 × 70,6 × 35,5 mm	Protection class	II	Degree of protection	IP20	Ambient temperature	-30...+50 °C
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<b>Module ME6-NF</b>																													
	<p>50/60 Hz</p> <p>Wireless light control module: on/off and dimming via interface 1–10 V. It can be used for luminaires group of total power up to 260 W. On request you could order more powerful module modifications for 2,2 and 3,5kW.</p> <p>Technical data:</p> <table border="1"> <tr><td>Order code</td><td>4911004240</td></tr> <tr><td>Wireless communication protocol</td><td>ME6 Protocol</td></tr> <tr><td>Internet interface</td><td>Ethernet IEEE 802.3</td></tr> <tr><td>Interface to interact with wireless ME6 system devices</td><td>IEEE 802.15.4</td></tr> <tr><td>Frequency range</td><td>2.4 GHz</td></tr> <tr><td>Maximum output power, dBm</td><td>4</td></tr> <tr><td>Source of network settings</td><td>DHCP (RFC2131)</td></tr> <tr><td>Coverage radius</td><td>up to 50 m</td></tr> <tr><td>Power supply voltage</td><td>230 V ±10 %, 50-60Hz</td></tr> <tr><td>Power consumed</td><td>2 W</td></tr> <tr><td>Overall dimensions</td><td>127 × 70,6 × 35,5 mm</td></tr> <tr><td>Protection class</td><td>II</td></tr> <tr><td>Degree of protection</td><td>IP20</td></tr> <tr><td>Ambient temperature</td><td>-30...+50 °C</td></tr> </table>	Order code	4911004240	Wireless communication protocol	ME6 Protocol	Internet interface	Ethernet IEEE 802.3	Interface to interact with wireless ME6 system devices	IEEE 802.15.4	Frequency range	2.4 GHz	Maximum output power, dBm	4	Source of network settings	DHCP (RFC2131)	Coverage radius	up to 50 m	Power supply voltage	230 V ±10 %, 50-60Hz	Power consumed	2 W	Overall dimensions	127 × 70,6 × 35,5 mm	Protection class	II	Degree of protection	IP20	Ambient temperature	-30...+50 °C
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Photo	Specification																																
<b>Module ME6-NF (IP65)</b>																																	
	<p>50/60 Hz</p> <p>Wireless luminaire control module: switching on, switching off (by switching the luminaire supply line) and dimming (brightness adjustment) via the 0-10 V interface.</p> <p>Technical data:</p> <table border="1"> <tr><td>Order code</td><td>4911004810 / 4911004820 / 4911004830</td></tr> <tr><td>Switching capacity, W</td><td>280W / 1000W / 2000W</td></tr> <tr><td>Wireless communication protocol</td><td>ME6 Protocol</td></tr> <tr><td>Interface to interact with wireless ME6 system devices</td><td>IEEE 802.15.4</td></tr> <tr><td>Frequency range</td><td>2,4 GHz</td></tr> <tr><td>Maximum output power</td><td>4</td></tr> <tr><td>Coverage radius</td><td>to 35 m</td></tr> <tr><td>Power supply voltage</td><td>230 W, 50 Hz</td></tr> <tr><td>Light control interface</td><td>0-10 V</td></tr> <tr><td>1–10 V interface max. current</td><td>25 mA</td></tr> <tr><td>Switching load max. current</td><td>1,2 A / 10 A</td></tr> <tr><td>Connected cable section</td><td>0,5..2,5 mm<sup>2</sup></td></tr> <tr><td>Overall dimensions</td><td>150 x 55,6 x 27,5 mm</td></tr> <tr><td>Protection class</td><td>II</td></tr> <tr><td>Degree of protection</td><td>IP 65</td></tr> <tr><td>Ambient temperature</td><td>-30 °C ... +50 °C</td></tr> </table>	Order code	4911004810 / 4911004820 / 4911004830	Switching capacity, W	280W / 1000W / 2000W	Wireless communication protocol	ME6 Protocol	Interface to interact with wireless ME6 system devices	IEEE 802.15.4	Frequency range	2,4 GHz	Maximum output power	4	Coverage radius	to 35 m	Power supply voltage	230 W, 50 Hz	Light control interface	0-10 V	1–10 V interface max. current	25 mA	Switching load max. current	1,2 A / 10 A	Connected cable section	0,5..2,5 mm <sup>2</sup>	Overall dimensions	150 x 55,6 x 27,5 mm	Protection class	II	Degree of protection	IP 65	Ambient temperature	-30 °C ... +50 °C
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<b>Illumination sensor ME6-LSO</b>																					
	<p>50/60 Hz</p> <p>The ME6-LS illumination sensor allows automatic control of a given level of illumination on the working surfaces with regard to ambient light. The sensor is easy to install, mounted on a supporting surface. High degree of protection (up to IP 65) allows. Use it, including in difficult industrial conditions..</p> <p>Technical data:</p> <table border="1"> <tr><td>Order code</td><td>4911004590</td></tr> <tr><td>Wireless communication protocol</td><td>ME6 Protocol</td></tr> <tr><td>Sensitivity range</td><td>1 - 80000 lx</td></tr> <tr><td>Interface to interact with wireless ME6 system devices</td><td>IEEE 802.15.4</td></tr> <tr><td>Frequency range</td><td>2,4 GHz</td></tr> <tr><td>Viewing angle</td><td>80°</td></tr> <tr><td>Power supply</td><td>230 V, 0.1 W</td></tr> <tr><td>Protection class</td><td>IP 65</td></tr> <tr><td>Mounting type</td><td>to the ceiling</td></tr> <tr><td>Ambient temperature</td><td>-30 °C ... +70 °C</td></tr> </table>	Order code	4911004590	Wireless communication protocol	ME6 Protocol	Sensitivity range	1 - 80000 lx	Interface to interact with wireless ME6 system devices	IEEE 802.15.4	Frequency range	2,4 GHz	Viewing angle	80°	Power supply	230 V, 0.1 W	Protection class	IP 65	Mounting type	to the ceiling	Ambient temperature	-30 °C ... +70 °C
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**ME6 CITYSENCE**

ME6 CitySense is an innovative cloud-based up-to-date street LED lighting control system. The system allows not only to manage street LED lighting effectively, save significant amount of electricity and minimize operating costs, but also allows to collect additional information about environment, using various integrated sensors. This information involves background radiation, outside temperature and humidity, traffic density and other important details. Thus an end user will get a unique smart eco-system.

**ADVANTAGES OF GSM MODEL**

The main advantages of LED-based street luminaires GSM-based ME6 CitySense

- POWER EFFICIENCY**  
High power efficiency of complex solution
- STREET LUMINAIRES STATE MONITORING**  
The status of each street luminaire is displayed online
- MANAGEMENT**  
Remote management from a single control station and from anywhere in the world
- SCALABILITY**  
The solution is easy to scale for small and large municipalities
- FLEXIBLE SETTINGS**  
Street luminaire groups are controlled independently from power lines
- RELIABILITY**  
High reliability and fault tolerance (failure of one module does not affect the performance of the entire system, top-level redundancy)

**ME6 CITYSENCE EQUIPMENT**

**CORVETTE LED ME6 CitySense**

0..50/60 Hz F<sub>1</sub>≤35%



The luminaire was developed by Lighting Technologies in collaboration with DEUS company. Special features include: an advanced optics system, wide line of power consumptions, elegant design, optimal combination of lighting features, and universal rotary bracket. CORVETTE LED is an effective solution for illumination of roads and streets of different categories. Every luminaire is equipped with wireless GSM – module and 5-year contract with operator. Each customer receives a free access to ME6 CitySense cloud-based lighting control system.

Name	Light flux, Lm	Power consumption, W	lm/W	Weight, kg	Color	Order code	PFC
CORVETTE LED 55 (W) CSLITE 4750K	6300	55	115	9,3	Silver	1206000250	≥ 0,9
CORVETTE LED 75 (W) CSLITE 4750K	8100	75	108	9,3	Silver	1206000260	≥ 0,9
CORVETTE LED 90 (W) CSLITE 4750K	10500	90	117	9,6	Silver	1206000270	≥ 0,9
CORVETTE LED 120 (W) CSLITE 4750K	12500	107	117	9,6	Silver	1206000280	≥ 0,9
CORVETTE LED 145 (W) CSLITE 4750K	16000	145	110	9,6	Silver	1206000330	≥ 0,9
CORVETTE LED 55 (W) CSPREMIUM 4750K	6300	55	115	9,3	Silver	1206000290	≥ 0,9
CORVETTE LED 75 (W) CSPREMIUM 4750K	8100	75	108	9,3	Silver	1206000300	≥ 0,9
CORVETTE LED 90 (W) CSPREMIUM 4750K	10500	90	117	9,6	Silver	1206000310	≥ 0,9
CORVETTE LED 120 (W) CSPREMIUM 4750K	12500	107	117	9,6	Silver	1206000320	≥ 0,9
CORVETTE LED 145 (W) CSPREMIUM 4750K	16000	145	110	9,6	Silver	1206000340	≥ 0,9

**FINANCIAL INSTRUMENTS**

**B2B LEASING**

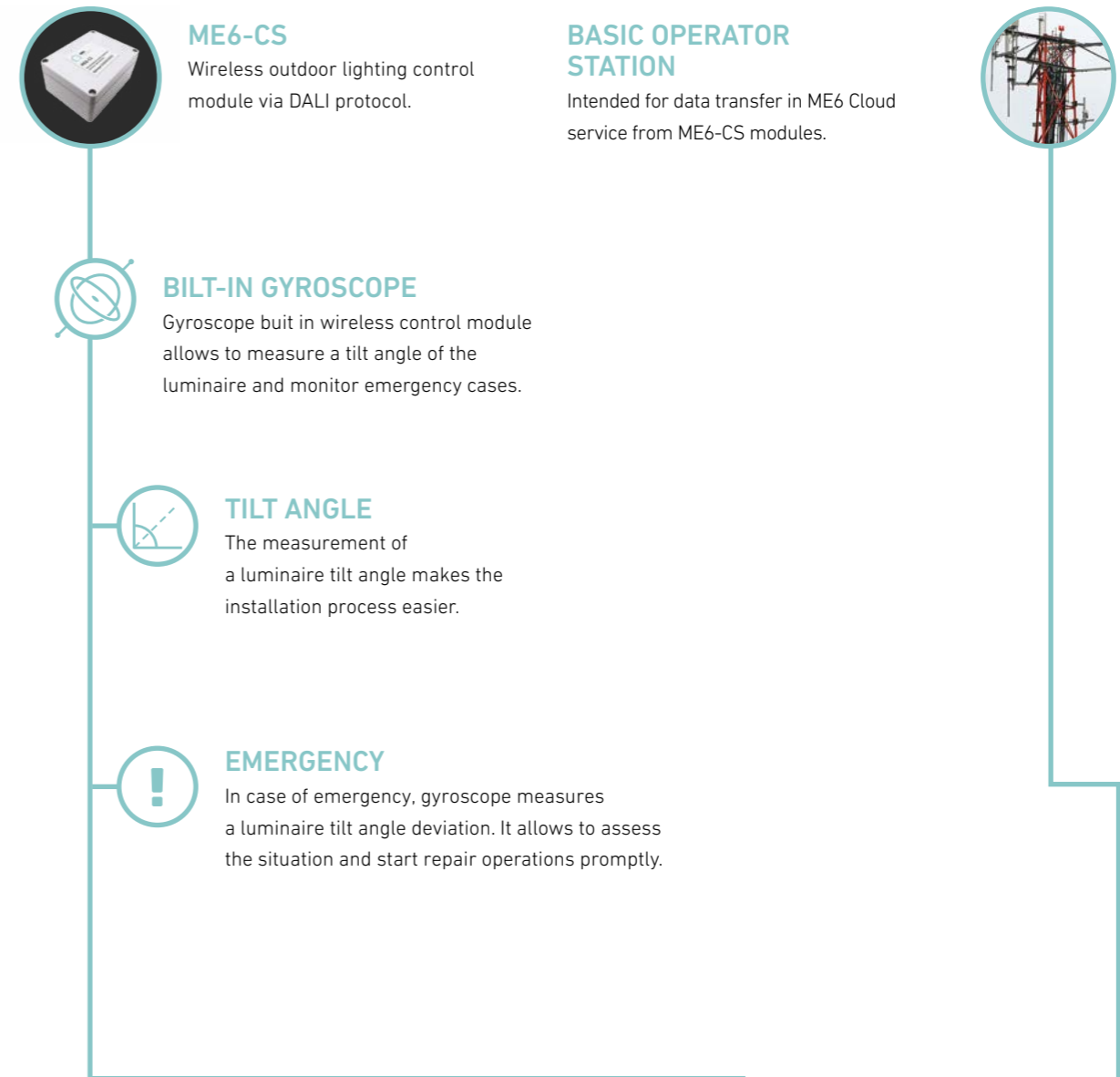
Having the bank as a partner will allow for the implementation of commercial projects with high profitability for all project participants (the manufacturer, the bank, the integrator). The customer gets the opportunity to implement the power efficient solution for optimization of its activities without spending additional money.

**POWER EFFICIENT CONTRACT FOR B2G**

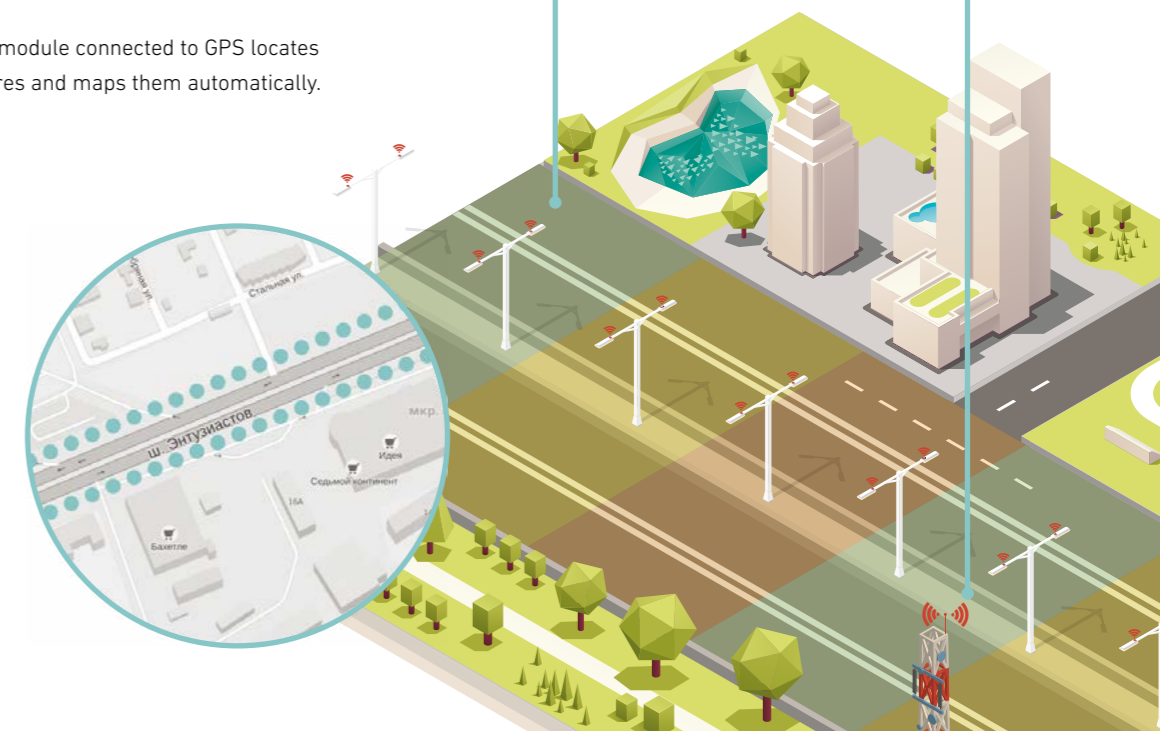
Power companies will implement power efficient contracts of any technological complexity without additional budgetary funding from the customer (state).



ME6 CITYSENCE OPERATION SCHEME



**GPS**  
Control module connected to GPS locates luminaires and maps them automatically.



# LIC Outdoor Lighting control system

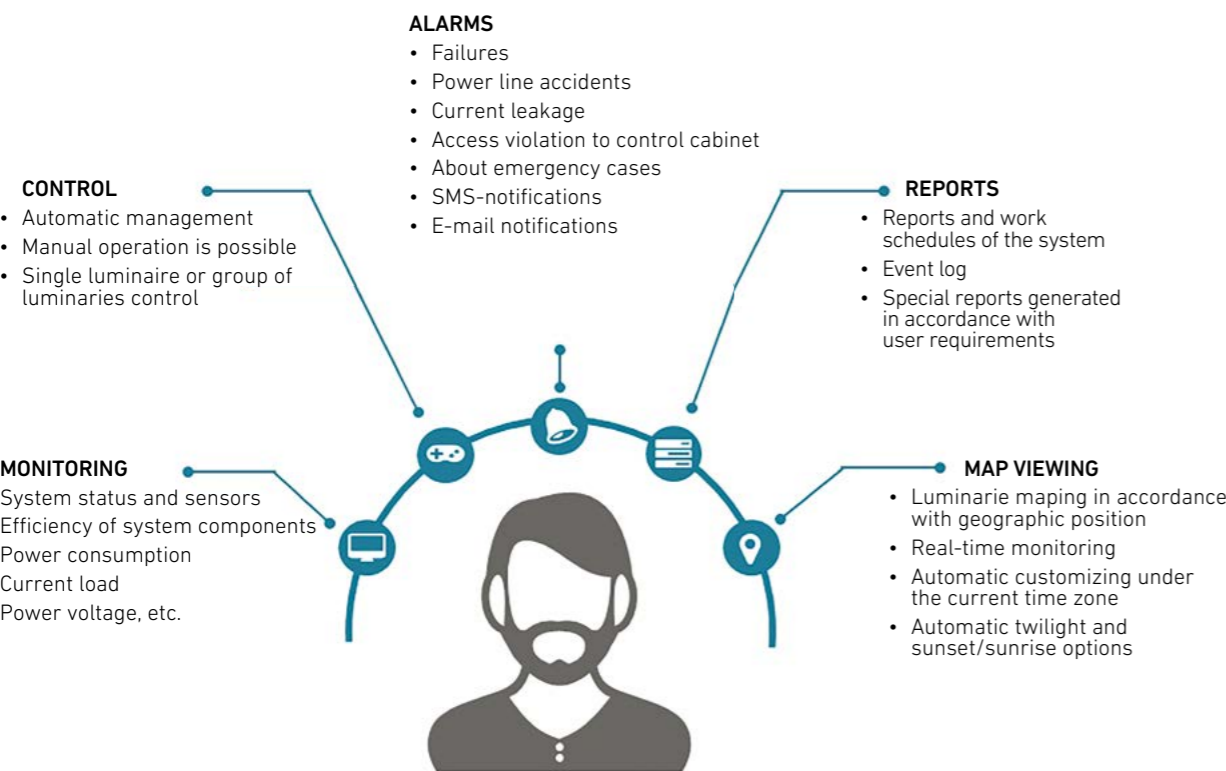
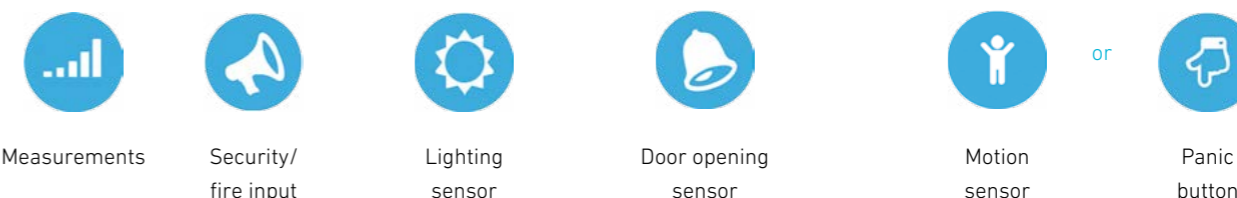
# LIC Outdoor Lighting control system

## System AlfaLMS

Alfa LMS is a modern street and city lighting control system, as well as lighting of industrial facilities and other areas where the use of lighting equipment involves significant energy consumption. The installation of the Alfa LMS at the site does not require a complete upgrade of the lighting system. For data transmission within the Alfa LMS using the power network to exchange data between the controllers in the system. Alfa LMS allows to realize such functions

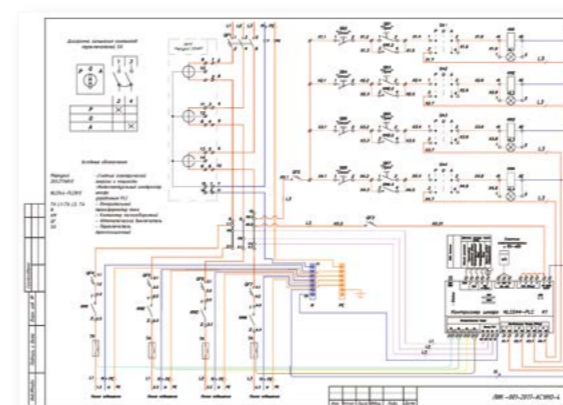
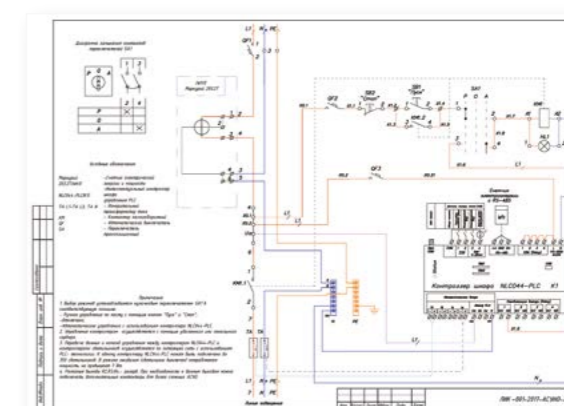
as monitoring of the condition of luminaires and other components in the system, remote control of luminaires, collection and processing of statistical information, notification of the occurrence of alarm events in the system, creation of a dynamic schedule for automatic operation of the lighting system and much more. You can control the lighting system and learn about its state from anywhere in the world.

## AlfaLMS system components



LIGHTING SYSTEM OPERATES IN AUTOMATIC MODE COMPLETELY

## Technical documentation example



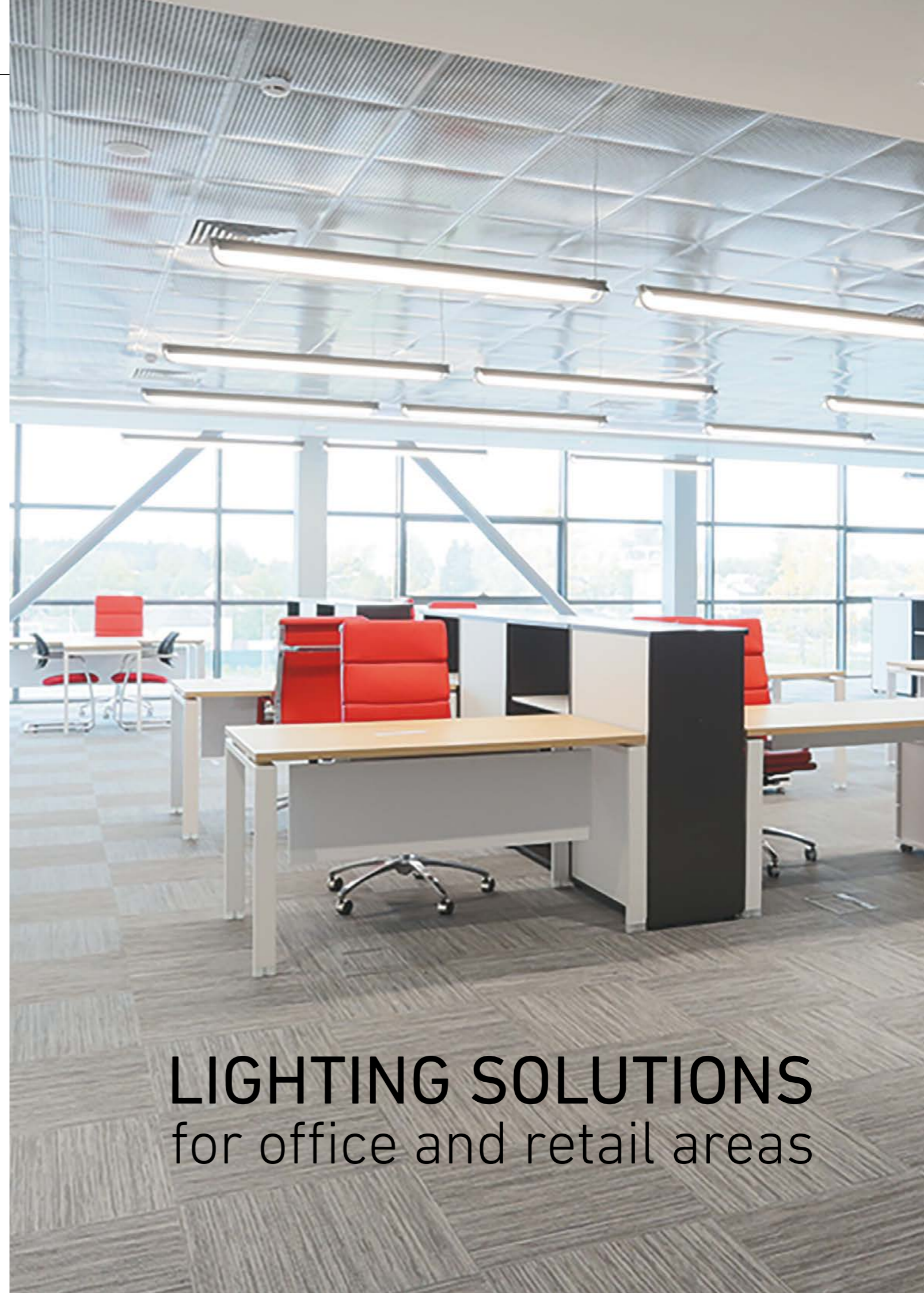
Обозначение	Наименование	Ед.
ИИ-001.001.42900	Столбец	2
ИИ-001.001.42902	Фонарные арматуры	2,2
ИИ-001.001.42907	Узел трансформатора	1
ИИ-001.001.42908	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
ИИ-001.001.42909	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
ИИ-001.001.42910	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
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ИИ-001.001.42912	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
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ИИ-001.001.42915	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
ИИ-001.001.42916	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
ИИ-001.001.42917	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
ИИ-001.001.42918	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
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ИИ-001.001.42923	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
ИИ-001.001.42924	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
ИИ-001.001.42925	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
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ИИ-001.001.42934	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
ИИ-001.001.42935	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
ИИ-001.001.42936	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
ИИ-001.001.42937	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
ИИ-001.001.42938	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
ИИ-001.001.42939	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
ИИ-001.001.42940	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
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ИИ-001.001.42945	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
ИИ-001.001.42946	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
ИИ-001.001.42947	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
ИИ-001.001.42948	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
ИИ-001.001.42949	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1
ИИ-001.001.42950	Узел для ввода питания в кабелепровод СИП-1, автоматический контроль	1,1



## LIC Outdoor Lighting control system

Lighting control

Image	Order code	Description	
<b>Cabinet controller NLC044-PLC</b>			
	4911005350	The main cabinet controller (PLC control protocol)	Connection with the operator by GSM-channel
<b>Antenna GA01</b>			
	4911006110	This device provides GSM connection	
<b>Cabinet controller NLC088-PLC</b>			
	4911006030	The main cabinet controller (PLC control protocol)	Connection with the operator by Ethernet-channel
<b>Luminaire controller LLC102 LV-PLC</b>			
	2911000020	Addressable luminaire controller (PLC control protocol)	
<b>Sensor DS01</b>			
	4911006140	Door opening sensor	
<b>Sensor LS01</b>			
	4911006130	Illumination sensor for outside installation	
<b>Current transformer CT01</b>			
	4911006150	Current transformer	



# LIGHTING SOLUTIONS

for office and retail areas



# OFFICE SPACE

The mono-functional approach to office space lighting dominated recently – the only task of a lighting system was to ensure hygienic requirements for the light environment. Today lighting becomes more and more human-oriented. Light controls our biorhythms and emotions, helps us to orient in time and space. Our physiological and psychological comfort directly depends on the quality of light. In addition, modern lighting systems become a part of an architectural solution.



## Office usability

Visual comfort is one of the main factors in office lighting. It consists of 3 components: visual performance, space perception and well-being. The quality of space usability parameters depend of qualitative and quantitative illumination values.

## Illumination level

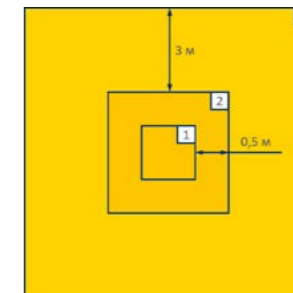
The illumination level is the main quantitative characteristic of any light environment. The lighting intensity has direct impact on visual comfort of office employees, their performance and productivity. Office space lighting intensity is strictly regulated by both, Russian and European regulations. According to Russian regulations, the minimum illumination level on the working surface should be 400 lx, European regulations define the value of 500 lx.

## Office illuminating requirements according to EN 12464 standard

Facility type	Uniformity rating	Minimum illumination level, lm	Unified glare rating (UGR), less than	Luminous flux flickering rating*	CRI level
• offices • workspaces	0,6	500	19	5	80
• computer rooms	0,6	500	14	5	80
• meeting rooms • board rooms	0,6	500	19	5	80

\* is limited in Russian sanitary lighting standards

Balanced light distribution can reduce fatigue, make stay in the office more comfortable and safe for health, so the ratio of illumination levels for different workspace areas is currently regulated as well. According to latests researches, environmental illumination level should be a little less than working area illumination.



- 1 – Task area (workspace)
- 2 – Surrounding area
- 3 – Background area

Zone 1 illumination level	Zone 2 illumination level	Zone 3 illumination level
100%	70%	Not less than 30%

**Color temperature**

The color temperature is also an important characteristic of lighting, and should be selected with care. The color of lighting can influence on the human biorhythms, hormonal balance and psycho-emotional state. Wrong color temperature can result in fatigue of office employees and make them feel unwell. Optimal color temperature value for office space is 4000 K.

**Luminous flux flickering**

The absence of lighting flickering is an important indicator of proper lighting solution. Sometimes even invisible pulsations have a strong influence on the human body, which in turn affects the productivity. Russian sanitary lighting standards limits this parameter by the value of 5 for common office spaces.

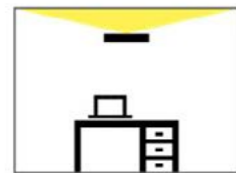
**Color Rendering Index**

The color rendering index of a light source ensures correct perception of colors used in room design as compared to daylight. The greater color rendering index, the more accurately light is perceived. According to EN 12 464-1, minimum value of Ra is 80 for premises where people stay permanently. Lower values are allowed for corridors, warehouses and other auxiliary areas only.

**Office lighting schemes**



Direct light



Reflected light



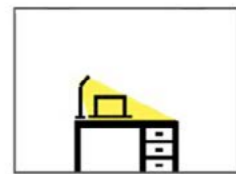
Direct / indirect light



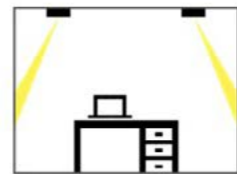
Direct light and walls illumination



Reflected light and walls illumination



Accent work surface lighting



Accent walls lighting



Accent work surface and walls lighting

**Glare effect**

Glare on the working surface or a computer monitor has a negative impact on visual perception of information, increases load on the eye and results in loss of focus. A parameter characterizing the glare of a lighting unit is called index of discomfort (M), its European counterpart is UGR (Unified Glare Rating). EN 12464-1 recommends the following indexes: UGR19 for main work surfaces, UGR22 for foyers, UGR25 for archive rooms.

**Filling of space with light**

Harmony of light and color is also influenced by direction of light going from devices and the ratio of contrasts of surfaces being illuminated. The right choice of these parameters will help 'ease' the space architecture, expand its volume visually, make the space more natural and the man stay more comfortable. The combination of direct and reflected light is the best solution for office illumination. Additional illumination of working spaces and walls allows to avoid monotony and add lighting accents.

**Human biorhythms control**

Today's office is a multifunctional place. For example, „open space“ combines many activity types: working process, negotiations, recreation areas. As work activities change, concurrently various biochemical reactions occur in the body that influence the worker's performance at different tasks, well-being, and mood. Human biorhythms are a key factor in these reactions, and we can control it by changing of color temperature and illumination level. For example, warm

spectrum lighting makes the human body relax. Lighting with cool color temperatures energizes the body, thereby improving alertness, coordination, and response time. Having this information, we can and should use biologically and emotionally efficient lighting in the office by implementing Human Centric Lighting conception.

**Neutral color temperature (4000 K)**



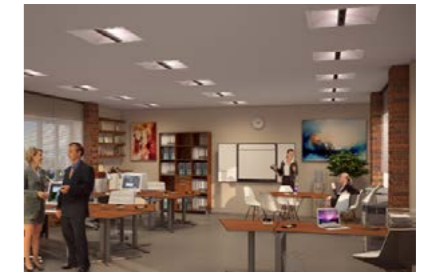
Standard office activities

**Cool color temperature (5800 K)**



Negotiations, brainstorm

**Warm color temperature (2800 K)**



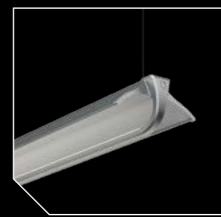
Relax

**Efficiency**

Office spaces are energy-consuming objects. Using smart lighting control system, we can concentrate on power saving. Light and motion sensors allow to control the luminaries: switch on/off, make a dimming automatically. Energy-efficient system provides the required illumination level where necessary and constant visual comfort of the lighting environment.



EAGLE LED



REFLECT LED



RKL LED

Meeting room

Corridor



DL POWER LED MINI



LINER/R DR LED TH

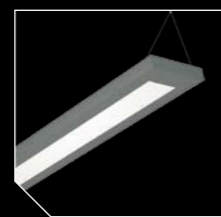
Main office space



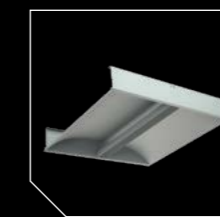
EAGLE LED



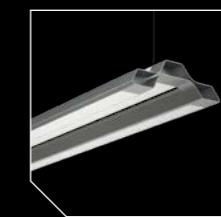
DLK LED



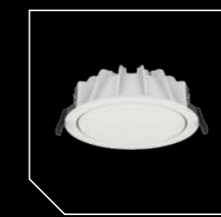
FLAME UNI LED



OTX LED



SPACE LED DREAM



COLIBRI DL LED

Emergency lighting

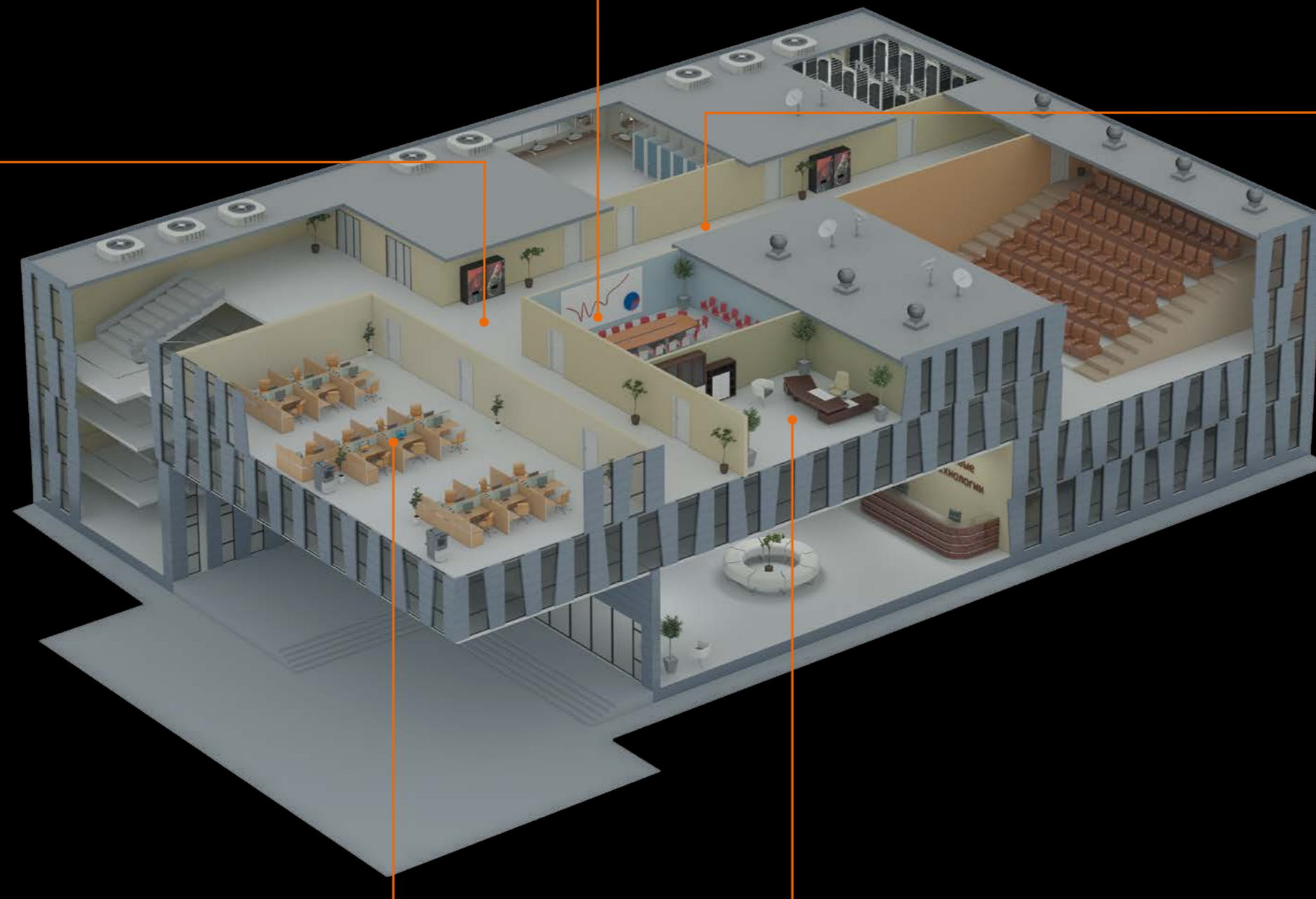


MIZAR LED



MARS LED

Office





# EDUCATIONAL INSTITUTIONS

## Illumination level

Main quantitative index of lighting is illumination level on work surface. Rated values of illumination are set depending on required accuracy and complexity of visual operations. Illumination can be either flat (horizontal or vertical) or 3D (cylindrical).

## Illumination distribution

Design of lighting fixtures for the educational institutions shall consider illumination distribution uniformity besides of the given illumination level. Illumination distribution uniformity is defined as ratio of the minimal illumination level to the maximal illumination level. Required parameters of illumination distribution uniformity are achieved by right choice of lighting fixtures and their arrangement.

## Energy efficiency

Energy efficiency of the lighting fixtures deserve special attention considering design of the educational institutions. Efficient lighting fixture shall provide high quality lighting and preserve its characteristics for a long time, during its service life, at the minimal capital and operating costs, including minimal power consumption. Basic characteristics of energy efficiency are specific power rating and luminary efficiency of the applied light sources and the lighting fixtures.

Using LED equipment and intellectual lighting control systems, we can develop efficient lighting systems meeting actual regulations and requirements.

## Color Rendering Index and chromaticity (Hue)

Proper color discrimination not only plays important part in many training aspects, but also helps to create comfortable environment. Color rendering index (CRI) is the feature indicating accuracy of color rendered by a light source. Light sources featuring color rendering index at least 80 shall be used for lighting of the educational institutions.

Color temperature is another important feature of the light source, as is indicates chromacity of emitted light. Warm light (2800 K-3000 K) creates ambient and relaxing atmosphere, and vice versa, cold light (above 5000 K) facilitates alertness. This feature can be used for design of different lighting scenarios, depending upon the purpose to be achieved.

## Visual comfort

Direct and reflected glares within vision field affect alertness and provoke more fatigue. Glares hinder perception of information indicated on displays and other glazed surfaces. Thus, one of the major tasks of lighting design for the educational institutions is to limit glares.

Glare limitation is regulated by UGR - Unified Glare Rating, internationally accepted criteria. This rating considers joint action of all the lighting fixtures installed inside the room. Rated values of UGR for educational institutions are from 16 to 25, depending on room purpose.

One more factor influencing on visual comfort is luminous flux flickering. Nonperceptible pulsations affect on biological activity of human brain, can speed up fatigue and cause headache.

## Educational institutions requirements according to EN 12464 standard

Facility type	Uniformity rating	Minimum illumination level, lm	Unified glare rating (UGR), less than	Luminous flux flickering rating*	CRI level
<ul style="list-style-type: none"> <li>• class rooms</li> <li>• lecture rooms</li> <li>• offices</li> <li>• board rooms</li> <li>• medical stations</li> </ul>	0,6	500	19	5	80
<ul style="list-style-type: none"> <li>• computer rooms</li> </ul>	0,6	500	19	5	80
<ul style="list-style-type: none"> <li>• sport halls</li> </ul>	0,4	200	19	5	80

\* is limited in Russian sanitary lighting standards



Staff rooms



Lavatories



Passages and stairs



Class rooms, lecture rooms



Canteens and cafeteria



School assembly halls and conference halls



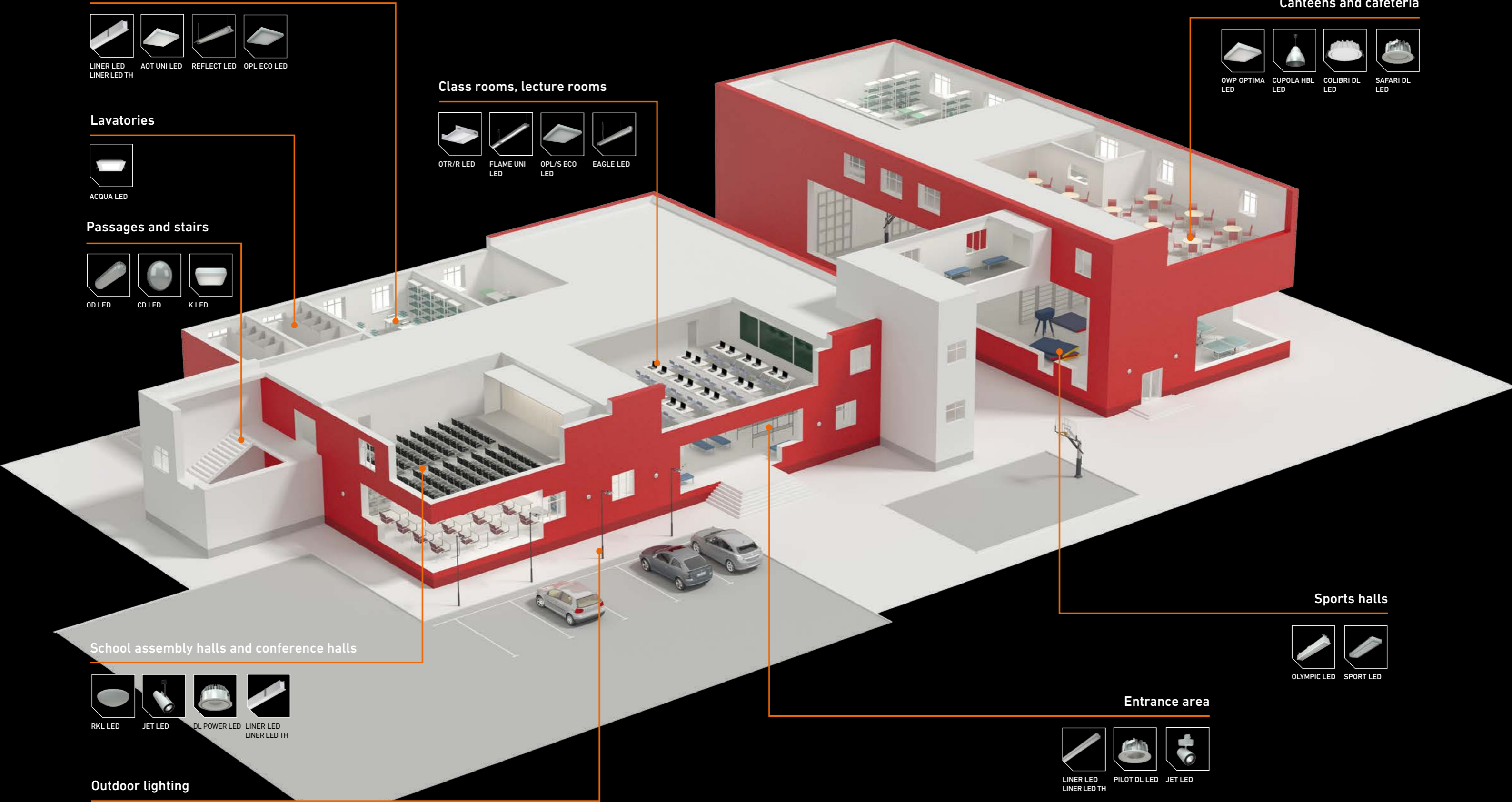
Outdoor lighting



Sports halls



Entrance area





# TRADE SPACE

Today's shopping is more than just a way to satisfy our primary needs, but one of recreational spheres. Every retailer seeks to impress the potential buyer, draw their attention to the brand. One of the most important tools used for this purpose is lighting.

The tasks of lighting at modern shopping facilities are multifunctional. Light creates the atmosphere of retail space, manages customer focus and move them in the required direction, supports unique characteristics of commodity groups.



## ERGONOMICS

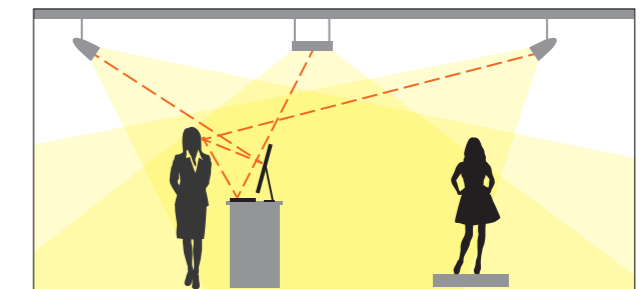
### Illumination level

The illumination level is the main quantitative characteristics of lighting. The illumination level for most of public spaces has a strict regulation and depends on visual performance rate. However, light efficiency in trade spaces is also determined by an emotional component. That is why both regulations and experience recommendations should be considered while planing of the lighting system. The distribution of illumination levels and contrast ratio in retail space can manage customers' attention, generate emotional message of the store and serve as a powerful tool for sales promotion.

### Glare effect

Direct and indirect glare within view causes tiredness, negative effect on eyes adaptation and, as a result, reduce time of customer stay in the trade space. The limitation of glare effect is an important step for creating ergonomic light environment. Glare can be direct, when light source falls under the sight, and indirect, when the customer see light source reflected from glazed surfaces. The indirect glare is the most harmful as it strikes human eyes from the bottom, at an angle that human sight is the most sensible to.

### Color rendering index



Properties of light that falls on an object and properties of the material form visible color of the object. This means that when we light objects with light sources having different spectral structure we will see colors of the same objects in a different way.

A parameter of lighting that characterizes the quality of color reproduction is called the color rendering index. The greater color rendering index, the more accurately light of an object is perceived. Minimum allowed CRI index for trading surfaces is 80.

Light performance standard for trade spaces, according to EN 12464

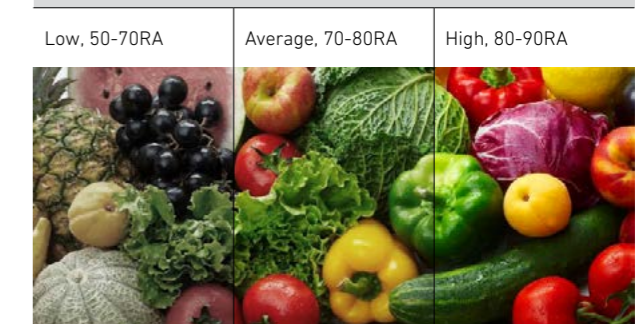
Premises type	Illumination regulation plane	Minimum illumination level, lx	Minimum cylindrical illumination level, lx	Unified glare rating UGR, max	Luminous flux flickering, max*
Trading floors of outlets: daily consumption goods, brown and white goods, clothing and accessories without self-service	H-0,8	300	100	21	15
Trading floors of outlets: self-service daily consumption goods	H-0,8	400	100	21	10
Trading floors of outlets: home improvement goods, sports and baby goods	H-0,8	300	100	21	15
Fitting rooms	V-1,5	300	-	-	15

\* is limited in Russian sanitary lighting standards

### Light saturation of premises

Cylindrical illumination is the value featuring light saturation of premises. Lack of cylindrical illumination has a great impact on ergonomics of lighting environment. With an insufficient level of cylindrical illumination, surrounding spaces look heterogeneous and gloomy, though level of horizontal illumination in trade space can be quite high.

Influence of color rendering index on quality of goods presentation



**NAVIGATION**
**Object position**

Trade space shall attract potential customers itself. That is why the first thing, attention should be paid to while choosing illumination level and contrast gradation is object position. For single hypermarket this issue is not essential as entrance lobby will contrast with street light and minimum regulated light level will be enough for it.

However if the object is located in a mall, it should stand out against general lighting of the mall. In this case, illumination level shall be increased for entrance lobby in such way that its correlation to lighting in the mall is minimum 1:2.

**Accent lighting**

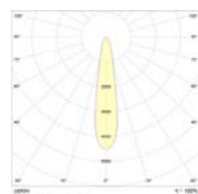
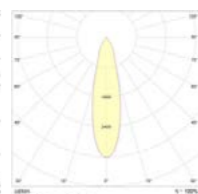
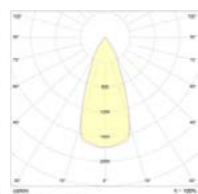
Accent lighting is used for creating necessary light contrasts, pointing key commodity goods and navigation elements in trade spaces.

Generally, accent lighting is implemented with luminaires of floodlight type fixed on tracksystem or integrated in object architecture.

In all cases luminaires should have an option of rotation the optical part that helps to focus light directly on the goods. Use of track systems provides a flexibility of light installation as the luminaire can be easily moved to adapt its position for changes in product display.

The choose of luminaire light distribution type depends on the task, installation height and unique features of lighted object. The light distribution of focused luminaires is divided into the following types:

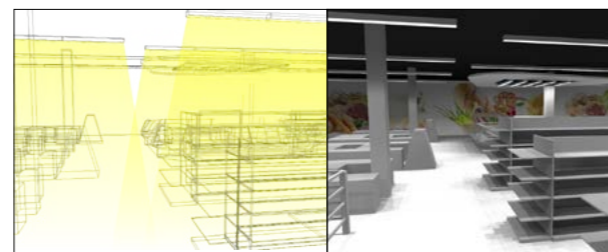
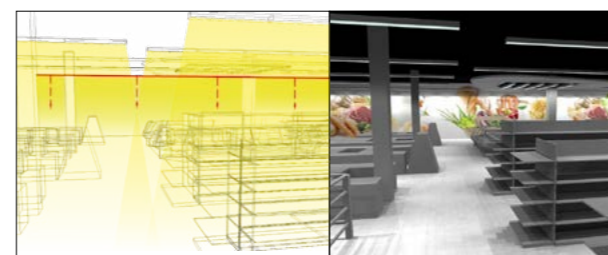
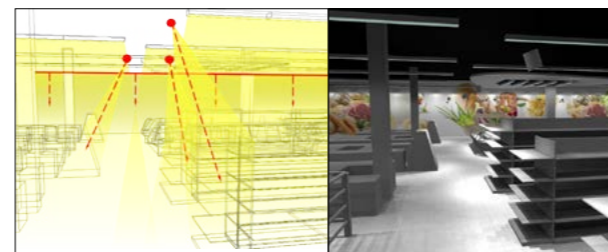
- SPOT – is used to create deep contrasts in premium stores, highlight promotional areas as well as when focusing equipment is located at high altitudes.
- FLOOD – the most popular type of light distribution in the retail sector used to create average light contrasts, highlighting of separate areas of the store and product groups.
- WIDE FLOOD – this type of light distribution is used for lighting of spaces using focused lighting.

**SPOT**

**FLOOD**

**WIDE FLOOD**

**Perimeter lighting**

Well-lighted outlet perimeter facilitate customer navigation, makes space more completed and light saturated. This trick is especially actual for large-scale trade spaces such as super and hypermarkets.

Luminaires with asymmetric light distribution are usually used for perimeter lighting. Use of these luminaires allow focusing luminous flux on vertical shelf surfaces and making perimeter product display readable from any point of trade floor.

Other ways of perimeter highlighting can also be used, for example use of accent fixtures with wide light distribution or use of general light luminaires of greater power consumption.

**General lighting**

**General and perimeter lighting**

**General, perimeter and accent lighting**

**INDIVIDUALITY**
**Light and brand positioning**

The choice of color temperature contrast ratio, luminaire type and other parameters of lighting system influences both on object ergonomics and attractiveness for customer, as well as creating of definite image of the trade space.

For example, a trade space with big quantity of accent lighting where the intensity of illumination of vertical surfaces dominates over the level of horizontal illumination, will be subconsciously perceived by the consumer as more premium.

In opposite, a uniform light distribution of all surfaces, reduction of light contrasts and accent light make the customer perceive outlet as economic segment.

Thus, trade object can be orientated for a given targeted audience by choosing different lighting concept.

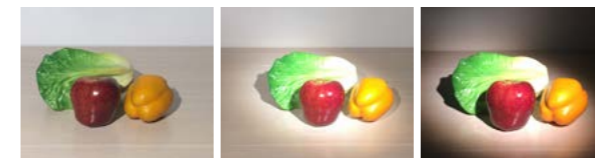
**PROMOTION**
**Contrast**

Monotonous lighting creates a monotonous space, which has a negative effect on mood and leads to decrease in purchasing power.

Creating of light contrasts in the trade space is the key to goods promoting. Subconsciously, we always move towards the most illuminated object, so the pointing of individual product categories, promotions and marketing communication elements will draw customer attention to these objects.

The minimum contrast depth discernible by the human eye is 1: 2, however this value can be increased for creating commodity categories hierarchy. At the same time, the frequent use of high contrasts (more than 1: 5) should be avoided, as this can cause visual discomfort. Recommendations for choosing the contrast (comparing to general lighting):

- product displays requiring accent light - 1:2;
- promotion stands and shelf side - 1:3;
- product dominates – 1:3 - 1:5.

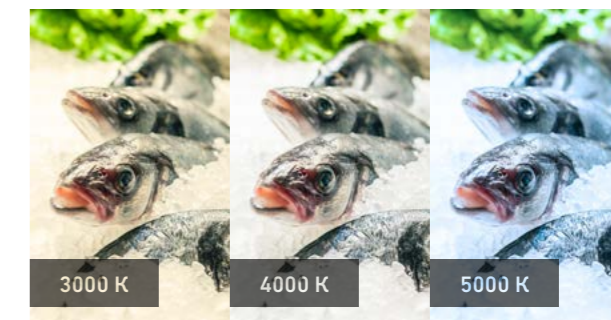

**Color temperature**

Color temperature is a characteristic of spectral composition of a light source. As a rule, white light sources are divided into cold (over 5000K), neutral (4000K to 5000K) and warm (less than 4000K). A material having a cold color when lighted with a cold spectrum

light source will look brighter and more saturated than when lighted with a 'warm' light source. In its turn, a material having a warm color will on the contrary appear more saturated when lighted with the light source having a warm color temperature. This optical property provides for more advantageous demonstration of certain products by varying the color of the light source. In addition, the color of light influences the atmosphere of retail space: we subconsciously associate warm colors with a cozy, home atmosphere, it makes us have rest, whereas cold colors look fresh and invigorative. When choosing a particular colority of lighting or combining light sources of different colority within the same retail space, different visual effects to control emotional condition of customers can be achieved. The choice of color temperature depends on the characteristics of the displayed goods and type of trade object.

Recommendations on choose of color temperature for large-scale retail:

- General light for outlets with home improvement goods – neutral white, 4000K;
- General light for outlets with sports and baby goods - neutral white, 4000K;
- General light for outlets with brown and white goods – cold white, 5000K or neutral white, 4000K;
- General light for outlets with food and daily consumption goods - neutral white, 4000K;
- light in accent areas – color should be chosen depending on area specific features.


**Light distribution in space**

In the normative documents on lighting of trade spaces, the requirements are first of all placed on the level of horizontal illumination. However, when designing a lighting system for large format retail objects, attention should be paid to the vertical illumination, since most of the goods displays have vertical features and human visual work is made exactly in this surface.

Choose of light distribution type of the luminaires and their position should be made in the way when goods display will be evenly illuminated, without shading and sharp brightness changes.



## EFFICIENCY

While choosing luminaires, attention should be paid to effective LED solutions.

### Choose of luminaire

Large retail objects have several special features: working time up to 24 hours per day, large spaces and high ceilings. It is obvious that in these terms power consumption will be high, so while choosing lighting equipment, attention should be paid to effective LED solutions.

In addition to energy efficiency, the use of LED equipment provides a range of other advantages: absence of mercury contained in luminous lamps and other hazardous substances makes the light equipment more ecologic, lower heat radiation comparing to halogen and metal halide light sources ensures better safety of the goods affected by heat.

The other important parameter attention should be paid to is light distribution of the luminaire. Special features of light distribution of accent luminaires are discussed above – their choice depends on goods display type, desired contrast level and height of luminaire installation. However, choose of general lighting is crucial factor for large retail objects.

Main light distribution types and their aims:

- For objects with small ceiling height (3 – 4 meters), it is reasonable to use luminaires with diffused light distribution. This allows to light uniformly both vertical and horizontal surfaces with compliance to the requirements for ergonomics of the light environment.

- For objects with ceiling height from 5 to 8 meters it is recommended to choose luminaires with deep light distribution curve. This light distribution type provides necessary lighting levels at high luminaire installation height.
- Increase of vertical lighting level is made by use of luminaires with semi wide (biasymmetric) light distribution. Optical systems of this type direct the luminous flux primary on the vertical surfaces of the shelves, creating a minimal light contrast without the use of accent lighting.
- Asymmetric light distribution is used for pointing a perimeter of the trading floor or to illuminate one-way goods displays.

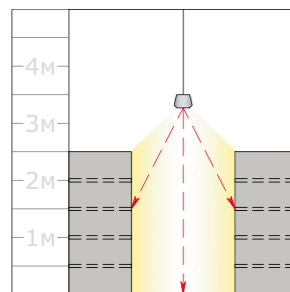
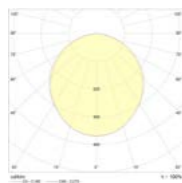
### Lighting control systems

Use of lighting control systems is also reasonable for increase of energy efficiency of the lighting equipment. For example, the use of simple lighting control systems such as motion and presence sensors allows to configure automatic switching on and off of lighting in rooms with inconstant people (warehouses, utility rooms and technical rooms).

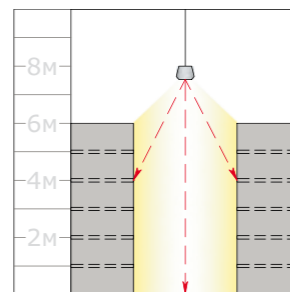
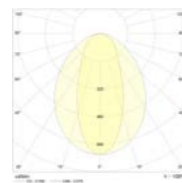
In case of a large share of natural light in trading floor, control systems that automatically adjust the intensity of lighting can be used.

### Choose of luminaire

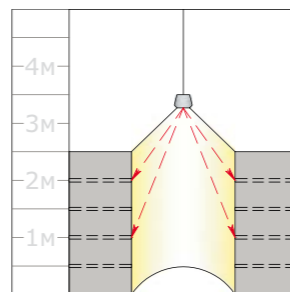
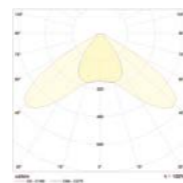
Diffuse



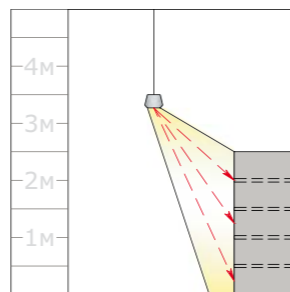
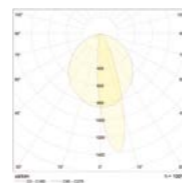
Deep



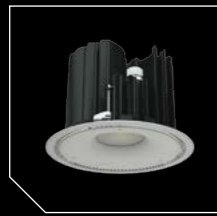
Semiwide



Asymmetric



Entrance area



DL POWER LED IP66



MATRIX/S LED

Atrium



HB LED

Cafe



CUPOLA HBL LED



DL TURN LED



LYRA LED

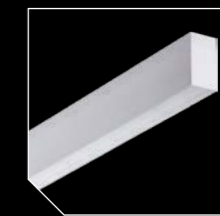


URAN LED



SLICK LED

Parking



LINER/S LED TH



DL POWER LED



DL POWER LED MINI



COLIBRI DL LED



MIZAR LED



DLK LED

Sanitary IP44



PILOT DL LED



SAFARI DL LED

Public areas  
(height up to 3 m)



Accent areas



JET/T LED



BELL/S LED



COPER/T LED



TILE T LED

Cashier area



CUPOLA HBL LED

Entrance area



MIZAR LED



DLK LED

Basic commodity layout (ceiling level up to 6 m)



LED MALL ECO



DOMINO LED



LED MALL LINE

Warehouse (ceiling level up to 4 m)



URAN LED

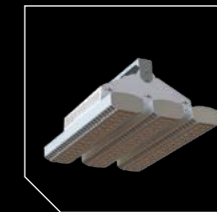


OD LED



SLICK LED

Warehouse (ceiling level up to 10 m)



HB LED LOGISTIC

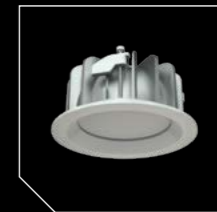


TITAN LED

Gastronomy (ceiling level up to 3 m)



DL TURN LED

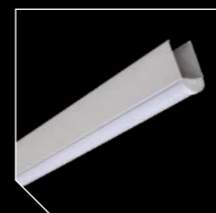


SAFARI DL LED



DL POWER LED

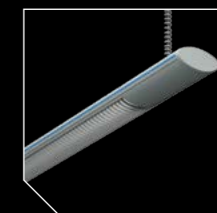
Basic commodity layout (ceiling level up to 4 m)



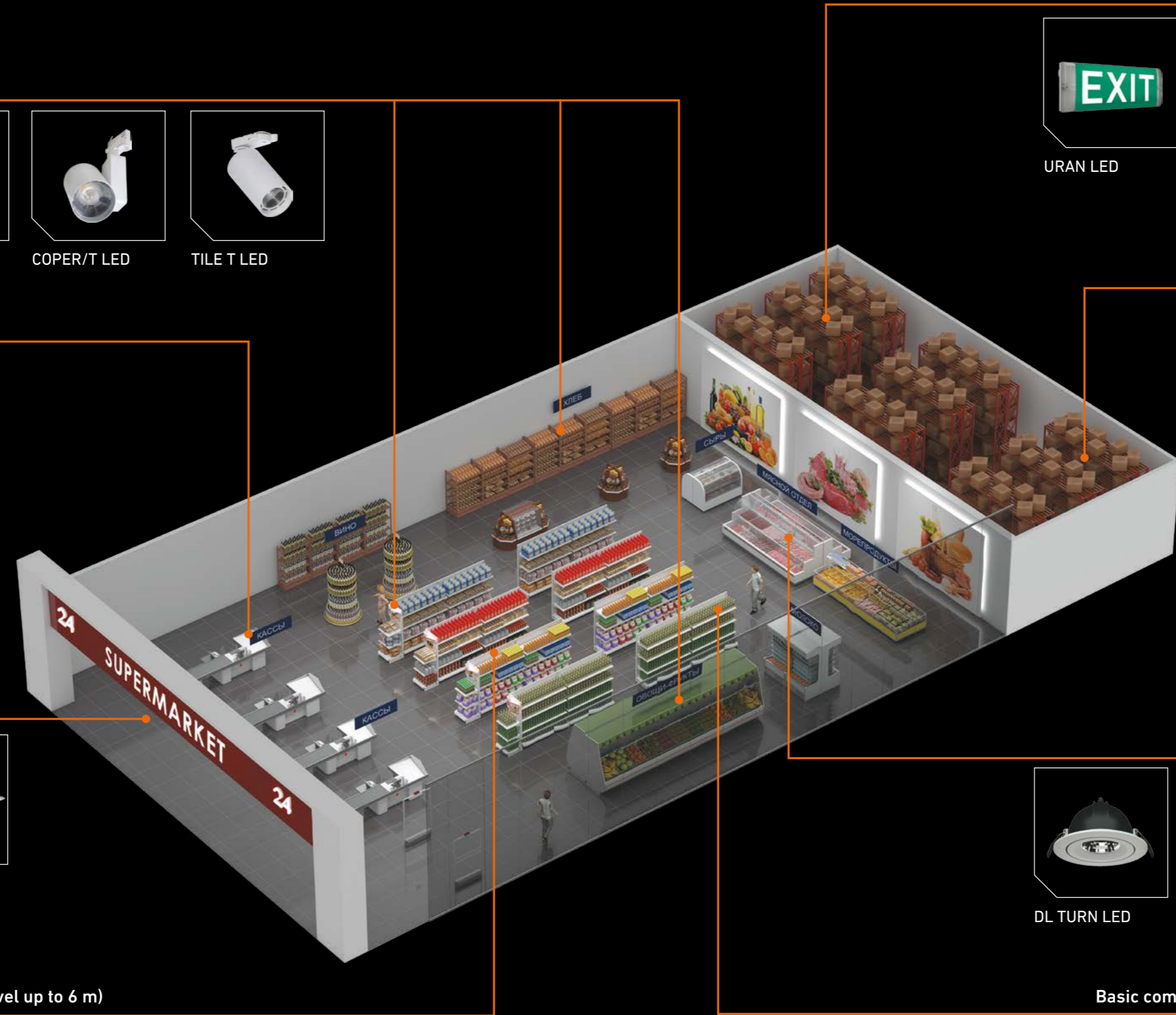
LNK MINI LED



STORE ECO LED



RIVAL LED



Warehouse

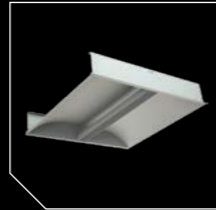


OPL/R ECO LED

Office



OTR/R LED



OTX LED

Fitting rooms



COLIBRI DL LED



SAFARI DL LED



DL POWER LED MINI



LINER/R DR LED TH

Window case



BELL/S LED



JET/T LED

Cashbox



CUPOLA HB LED

Trading hall



UFO DL LED



UFO/S DL LED



SNS LED





# INDUSTRIAL FACILITIES

Well-chosen lighting equipment and professional design of industrial lighting are the key to personnel safety and high quality of products manufactured. The main factors that should be considered when selecting luminaires for industrial sites are operating conditions and architectural features of the site.

Increased dust and humidity, risk of mechanical damage to the lighting equipment are typical conditions at industrial sites that require lighting equipment with a high in-gress protection (IP) and impact protection (IK) ratings. Also, attention must be paid to chemically aggressive compounds or explosive mixtures in the air. When choosing luminaires for such sites

materials of the enclosure, and the diffuser are important, in some cases the use of special explosion-proof equipment may be required. An additional criterion limiting the choice of luminaires for use at the industrial site may be temperature range.

Architectural features of the site include the height of the room, presence of roof trusses, technological bridges, dimensions of construction module that indicate properties of the walls, ceiling, floor and work surfaces.

## Ergonomics

The illumination level, allowable light flux pulsations, discomfort index and other quality parameters of lighting environment of industrial premises are strictly regulated by local and international standards. Compliance with normative requirements is an important condition for ensuring production process safety and comfort of personnel.

## Illumination level

The illumination level is the key factor of light environment determines the quality and safety of industrial process. A choice of illumination level depends on visual work character on the site and regulated with local and international industry norms.

## Luminous lux flickering

The absence of flickering is especially important in industrial lighting. Here a luminous flux flickering have an influence not only on personnel productivity and human comfort, but can cause injury due to a stroboscopic effect. Usually a stroboscopic effect takes place when flickering exceeds 20%. Sometimes when luminous flux flickering frequency is a multiple of object rotation or movement frequency, a stroboscopic effect can occur even at a depth of flickering slightly exceeding 5%.

## Color rendering index

The color rendering index (Ra) determines correct color perception under artificial lighting. European norms define the minimum level of CRI 80 for industrial spaces. At the same time particular industries, such as textile, printing, painting workshops, and other color-critical applications require higher CRI to prevent production on defective products.

## Operation features

Premise features and peculiarity of production process should be taken into account while choosing an appropriate luminaire, its design, lighting features and installation type.

## Dust and moisture protection

High humidity and dustiness are common conditions for industrial environments. Obviously, luminaires used in most should have a high degree of protection against dust and moisture. The choice of luminaire according to IP class depends on production premises type. Separately, it is necessary to allocate clean rooms with possibility of controlling a concentration of suspended particles in the air, found, for example, in the segment of microelectronics and pharmaceuticals. Minimum protection degree for luminaires used in such premises is IP 54.

## Mechanical strength

A risk of mechanical damage of lighting fixtures during production process is distinctive for a number of industrial facilities, so it is important to pay attention to luminaire body and diffuser materials to ensure an appropriate impact resistance degree (IK). The most durable light transmitting materials are polycarbonate and tempered glass. Housings of impact resistant luminaires could be made from die-casting aluminum, steel and opaque polycarbonate. Fixture materials used in lighting equipment production must correspond to EN 60598-1-2003 standard requirements. There are various test methods for mechanical strength of different luminaires depending on application.

## Chemical strength

The stability of lighting fixtures to aggressive environment is ensured by an appropriate choice of materials and their processing nature. The most chemical resistant light-transmitting material is silicate glass. Polymer materials are not resistant from one or another chemical, such as acids, alkalis, and some solvents. Lighting fixtures designed for operation in the most severe conditions are made of stainless steel. Despite the price of such luminaires is quite high, their use is usually economically viable.





### Energy efficiency

Due to high power consumption on industrial sites, an increase of energy efficiency of lighting fixtures is one of direction in saving facility expenses.

Lighting expenses includes:

- lighting and electrical design expenses
- lighting and electrical equipment expenses
- cost of connected capacity (for construction and reconstruction)
- mounting, testing and commissioning expenses
- cost of electricity consumed by lighting fixtures
- lighting system operational expenses

Thus, energy efficiency is not only using of innovative equipment with maximum light output, but also compliance with lighting standards, timely maintenance, application of light and motion sensors, dimming, and smart lighting control systems

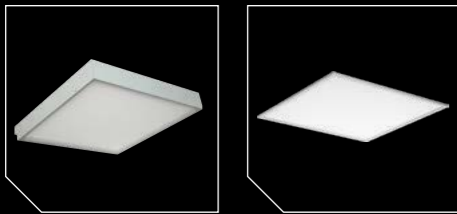
### Explosion proof equipment

Chemical, oil and gas, and some other industrial sectors are associated with the hazard of inflammable and explosive compounds, and lighting equipment should not create any explosive situations. For illumination of such facilities special luminaries to be used, where design in one way or another prevents a possibility of explosion.

In certain premises where a danger of explosions is particularly high, fixtures are installed outdoors, and light is introduced through special light apertures or by means of hollow slotted fibers.



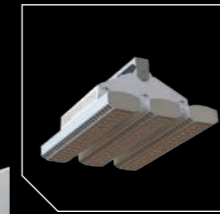
Office spaces



OPL/R ECO LED

SLIM LED

Warehouse



HB LED LOGISTIC

Utility spaces



CD LED



TITAN LED

Parking area



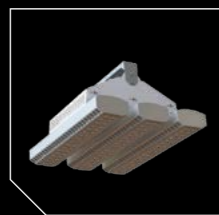
FREGAT LED

Manufacturing and packing lines



LB/S ECO LED

Workshops, production areas



HB LED

Testing rooms and laboratories



ADV/K UNI LED



INOX LED

Loading area



SLICK LED



# Technical information



## Operating conditions of luminaires taking into consideration influence of climatic and ambient factors

Design of a luminaire, properties of the materials and components used, as well as features of the light sources installed in it determine acceptable application field of the lighting fixture. High rate of ingress protection (IP) doesn't mean that a fixture can be used in any climatic conditions.

are mentioned in the accompanying documents (passport and application manual).

Table below specify climatic application version of luminaires and categories of its application fields in compliance with GOST 15150-69.

Type of the climatic application version and category, which determine lighting fixture's application field,

Version of luminaire and its application field	Category specification (applicable luminaires)	Possible values of climatic factors			
		Air temperature, °C*		Relative humidity, %	
		Upper value	Lower value	Upper value	The average annual value
CLM APP 1*	FOR OUTDOOR OPERATION (OUTDOOR LUMINAIRES, FLOODLIGHTS)	+40	-40	100 AT 25 °C	80 AT 15 °C
CLM APP 2*	FOR OPERATION UNDER A CANOPY OR IN PREMISES WITH THE TEMPERATURE FLUCTUATION AND HUMIDITY, WHICH DOES NOT SIGNIFICANTLY DIFFER FROM THE OUTDOOR FLUCTUATIONS. EXCLUDING DIRECT INFLUENCE OF SOLAR RADIATION AND PRECIPITATION (FOR INDUSTRIAL LUMINAIRES AS WELL AS FOR CD, KD, OD, C, K, OWP(IP54), ALD)	+40	-20	100 AT 25 °C	80 AT 15 °C
CLM APP 4*	FOR OPERATION IN PREMISES WITH CONTROLLED CLIMATE FEATURES (ALL TYPES OF LUMINAIRES)	+35	+5	80 AT 25 °C	60 AT 20 °C
CLM APP 5*	FOR OPERATION IN PREMISES WITH HIGH HUMIDITY, LONG PRESENCE OF WATER OR FREQUENT CONDENSATION ON THE WALLS AND CEILING (PLANTADOR)	+35	+5	100 AT 25 °C	90 AT 15 °C

\*Values are based are specified basic on features of discharge type of light sources when operating at low temperatures conditions

Normal environmental factors are the following:

- temperature – +25±10 °C;
- relative humidity – 45–80%;
- atmospheric pressure - 630–800 mm hg

Lighting fixtures designed for operation under high temperatures (hot premises) and low temperatures (cold stores) are developed taking into consideration all crucial factors. Luminaires are also equipped with special type of light sources for providing reliable operation in extreme conditions.

Selecting a luminaire for application under certain operating conditions, lighting fixtures regulations, stated in the Electrical Installation Devices Regulations (EIDR) and manufacturer's instructions, are to be considered.

Dynamic development of LEDs and appearance of new class of lamps and luminaires based at LEDs led to the necessity of introduction of new laws, regulating this sphere. Laws are intended for promotion of usage of qualitative end energy efficient LS, provision to the user of full information on technical parameters of LS, exclusion of unfair competition in this sphere. Package of documents has already been adopted in Europe. Taking into consideration policy of the

#### Method of energy efficiency class determination

Classification of luminaires according to energy efficiency is based on the determination of energy efficiency of LS, which is used (or may be used) in the luminaire. Class of energy efficiency is not connected with construction of the luminaires, used unit etc.

#### Class of lamp energy efficiency

Lamp	Capacity, W	Energy efficiency class
Filament lamp	-	E
Tungsten filament lamp	-	B
		C
		D
		A+
Compact fluorescent lamp	-	A
		B
		A+
Fluorescent lamp T5	-	A
		A
		A+
		A++
High pressure sodium lamp	400; 600	A+
	70;150;250	A+
	1000; 2000	A+
	150; 250; 400	A+
Metal halide lamp	20;35;70	A
		A+
		B
LED lamp	-	A++
		A+
		A

#### Example 1: luminaire ASR/R 418

Luminaire is intended for fluorescent lamp of T8 type. According to the table we chose type of LS "fluorescent lamp T8". In column capacity there is "-" accordingly we understand that independent of capacity of LS for luminaire ASR/R 418 energy efficiency class is A. So – luminaire is compatible with lamps of A energy efficiency class.

RF, aimed at harmonizing with the EU, we may expect adoption of these laws in Russia in upcoming years. European directive – IM:874/2012 provides requirements for classification and marking of luminaires. According to directive – IM:874/2012 - producer shall determine class of luminaire energy efficiency and specify this information into the official documentation, available to the buyer before the purchase of the luminaire.

#### Classification of luminaires with replaceable lamps

Class of energy efficiency is assigned in accordance with energy efficiency class of lamp, which may be installed in the luminaire.

#### Example 2: luminaire DASH DOT HG35

Luminaire is intended for metal halide lamp. In accordance with the table we chose type of LS "metal halide lamp". In the column capacity we see "35 W". For the luminaires DASH DOT HG35 class of energy efficiency may be B; A; A+. So luminaire is compatible with lamps of energy efficiency class A+;A,B.

#### Example 3: luminaire CD 160

Luminaire is intended for compact fluorescent lamp. According to the table we chose LS "compact fluorescent lamp". For the CFL or filament lamps and base E27 energy efficiency class shall correspond to energy efficiency class of sources: filament lamp, tungsten filament lamp, CFL, LED. For luminaire CD 160 classes of energy efficiency are the following: E; D; C; B; A; A+; A++ So luminaire is compatible with lamps of energy efficiency from A++ to E.

#### Classification of luminaires with integrated LEDs

Energy efficiency class for luminaires with LED LS is calculated according to the method, described in European directive IM:874/2012.

#### Example 4: luminaire OTX LED 595 4000K

Luminaire has LED light source. According to the method of LED energy efficiency class determination, we shall calculate EEI (energy efficient index). Taking into consideration technical parameters of OTX LED 595 4000K (light flux, consuming capacity), EEI shall be 0.116. this value corresponds to energy efficiency class A+. So luminaire corresponds to energy efficiency class A+.

#### Illumination flickering

Nowadays more and more attention is paid to the questions of attestation of work places both in offices and at the territory of industrial enterprises. One of the most important parameters of the work place illumination is flickering of light flux.

In case lighting units are powered with AX of industrial frequency, they begin to pulse with frequency of 100 Hz. Visually light flux flickering is not apprehended, but the scientists proved negative influence of light flux flickering at human beings. Research centers performed many studies, in the results of which the following statements were made:

- Flickering negatively affect bioelectric activity of brain, causing increased fatigue
- Negative influence of light flickering at photoreceptors of retina was proved as well as at functional state of CNS, which is connected with development of inhibitory processes and decrease of lability of nervous processes
- Negative effect at working ability in case of both long term staying in conditions if illumination flickering and short term staying within 15-30 minutes, particularly: eye stress, increased fatigability, low concentration, headache

It is experimentally proved that negative influence of light flickering is comparatively low only in case of flickering depth less than 5-6% (at frequency 100Hz). In case of light flickering frequency of 300Hz and more flickering depth has no meaning, as human brain doesn't react to this frequency.

Light flickering is extremely dangerous in the presence of moving and rolling objects in the vision field of the person, as stroboscopic effect may take place, which causes risk of traumas. As a rule stroboscopic effect takes place if the depth of flickerings of light flux is more than 20%, but in the some cases, when the frequency of light flux flickering is divisible by frequency of rotation or movement of the object, stroboscopic effect may take place even at the flickering depth insignificantly exceeding 5%. In the SP 52.13330.2011 you can find strict norms concerning value of light flickerings, which shall be observed during the choice of luminaire for certain type of premises. As the main quantitative parameter of lighting equipment is the level of illumination, coefficient of work place light flickerings, characterizing its depth, was accepted as a criterion for estimation of depth of light flickering in lighting units, powered by AC. It is equal to the ratio of half max difference of lighting level for the period of flickering to the average lighting level for the period, expressed in per cent. This parameter is a normalized value. As a rule solutions, providing adherence to normative requirements concerning lighting (both quantitative and qualitative requirements) are formed at the stage of development, consequently, for the formation of appropriate project of LU, presence of all relevant information is required. Flickering parameter is a very important technical characteristic of the luminaire, that's why choosing the lighting unit you should pay your special attention to it.

When forming this article materials of the following sources were used:

1. Article of Work Safety RSI, Ivanovo [http://www.niit.su/?option=com\\_content&view=article&id=46](http://www.niit.su/?option=com_content&view=article&id=46)
2. Reference book concerning lighting engineering\ rev. Yu.B.Aizenberg\ p74 pub,3, Moscow:Znak – 972 p.

Quality confirmation issues and safety of manufactured fixtures are very important for Lighting Technologies. At the present moment activity of the company in this area is carried out according with the Federal Law of 27.12.2002 № 184-FL (as amended on 28.07.2012 with the changes that came into force from 30.07.2012) "On technical regulation". In accordance with this law, all fixtures (for the entire life cycle) and services of the company meet the statutory requirements and the requirements applied to them on a voluntary basis. These requirements are set out in technical regulations and standards.

Confirmation of compliance, ie documentary certification of conformity of products can be realized on a voluntary basis and on a mandatory basis. The last one is held in the form of mandatory certification or declaration of conformity.

Mandatory certification is carried out by a certification body basing on a contract. Declaration may be based on evidence or with assistance, for example, of an accredited testing laboratory or center.

At present our factory is operating basing on the quality management system which meets requirements of ISO 9001. All the products, manufactured by Lighting Technologies, are certified in accordance to GOST R IEC 60598-1-2011, which sets general requirements to the luminaires with light sources under 1000V. Requirements and relevant tests according to GOST R MEK 605 98-1-2011 cover the classification, marking, mechanical and electrical requirements. Main assortment of products manufactured under the trademark Lighting Technologies is certified by European certification bodies in compliance with the EN 60598-1:2008 and are marked with ENEC quality confirming sign.

Increasing range of LED luminaires, specific issues connected to it and emerging base of standards in this segment force our designers to approach testing and certification issues with increased level of attention.

Lately it became common for Russia and abroad to pay increased attention to the issues of power consumption, environmental safety and level of comfort created by the illumination. All the new items in the assortment of Lighting Technologies are carefully checked in correspondence to the official regulatory documents. First of all it has to comply with the Federal law 261 "On energy saving and energy efficiency", Government Regulation of Russian Federation of July 20, 2011 Nr.602 "On approval of requirements for lighting devices and electrical lamps, used for illumination purposes in the AC circuits", Technical regulations EurAsEC "On requirements of household energy efficiency and other

energy-consuming devices and their labeling", GOST IEC 62031 – 2009. LEDs modules for general lighting, etc.

#### International standards BREEAM and LEED

Along with mentioned above, we have noticed that our customers are increasingly interested in compliance of our lighting fixtures and projects with the standards adopted in European countries and the USA. First of all, with the recognized international standards of so-called "green construction" - BREEAM ([www.breeam.org](http://www.breeam.org)) and LEED ([www.usgbc.org](http://www.usgbc.org)). This standards are covering issues of sustainable development and environmental protection and allow developers and designers to implement benefits of eco-efficient technologies into design and construction of buildings and facilities. BREEAM was the first environmental standard which was established in 1990 by the Building Research Establishment (BRE) in the UK.

BREEAM

LEED was developed in 1998 by the US Council for environmental (green) building especially for use in North America. Nowadays, it is actively used in more than 100 countries.



The main attention in the standards is paid to the rational application of indoor and outdoor lighting and effective use of the resources. For instance, LEED standard consists of 40 chapters, 28 of it are associated with illumination systems.

The reliable design of lighting systems is an integral part of the work related to the drafting of a project and its compliance with the norms for degree of illumination, uniformity of illumination, etc. Core requirements stated in BREEAM are energy efficiency issues of the whole illumination system and of each luminaire in particular. Requirements to the outdoor luminaires are regulating luminous efficacy depending on the application field and color rendering of the applicable light sources.

According to the BREEAM standard and in order to increase comfort degree for people, staying in the room, it is needed to use the high frequency control gears in the luminaires with fluorescent light sources with the main aim to reduce the flickering radiation. Moreover, it is highly important to consider discomfort degree in the rooms where people are working with computers. LEED rating system in the part, which is applicable for illumination, is created for designing of a favorable atmosphere inside of the premises.

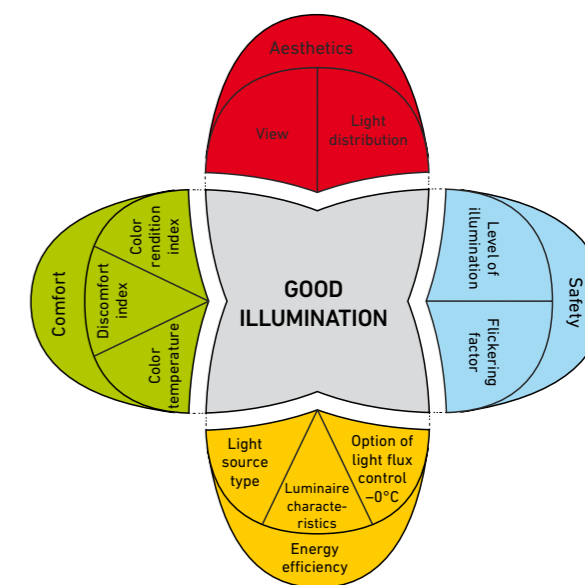
In the part of the outdoor lighting it is important to remember about the light pollution of the environment and energy efficiency of the lighting equipment. To provide acceptable results in illumination it is important to develop a holistic concept of illumination using lighting control systems.

Avoiding application of mercury light sources and using of green LED light sources is an important part of the environmental protection. It is emphasized in the standard that proper lighting concept and the use of lighting control systems will reduce electricity costs by up to 80%. Taking into account increase of globalization trend, Russian designers and developers should consider closely requirements of BREEAM and LEED standards.

Project department of Lighting Technologies is following the recommendations and norms of the above-mentioned green standards in their professional work. Range of luminaires manufactured under the trademark of Lighting Technologies allows realization of projects of any complexity, satisfying the most stringent international environmental requirements.

#### Criteria for selection of luminaires and examples of illumination calculation

Design of lighting systems (LS) is an integral part of the process of development and compilation of the project documentation for the construction of enterprises, buildings and premises. Lighting project consists of two parts: lighting and electro technical engineering. Lighting calculation plays the main role in lighting engineering of LS. It allows determination of light sources, power capacity, placement and direction of the lighting fixtures, which will comply with the requirements to the illumination of the area. Harmoniously implemented, lighting project has to provide illumination, which will satisfy not only the rated norms but also will create comfortable and safe conditions, comply with the selected aesthetic styles and will be energy efficient. Let us consider analysis of the facilities features, lighting requirements, criteria for the luminaires selection and calculation basing on the example of an office building.



#### Selection of luminaires

First of all it is needed to determine the type of ceiling in the room for better understanding of the installation method. Let's assume that we have plaster-board cell ceiling. That is why the best option for the illumination of this office is to install the recessed type of the luminaires.



JEBEL SIFFAH SUBSTATION / OMAN



EXCHANGE BUILDING OFFICE / IRELAND

BALLAST HOUSE OFFICE BUILD / IRELAND



NIA SPORT COMPLEX PHASE II / IRELAND



ÄÄSMÄE MÕIS / ESTONIA



PATROL STATION SHELL / LATVIA

# In the course of our activities we have completed

numerous projects in various fields. Lighting equipment manufactured by Lighting Technologies is successfully employed at such facilities as:

- IBC Office / Azerbaijan / Baku
- Siemens New Head Office / Egypt / Cairo
- Öpiku ärihoone office building / Estonia / Tallin
- Hoops Factory Basketball Hall / France / Aubercilliers
- Brandner Hof riding stables / Germany / Hamburg
- Bauer Wagner livestock farm / Germany / Passau
- Betonstangl factory hall / Germany / Kraiburg
- Agrofarm / Germany / Eichigt, Vogtland
- VW production temporary tent for spare parts / Germany / Spanntech
- Marina Mall / Ghana / Akkra
- National Indoor Arena / Ireland / Dublin
- Ballast House / Ireland / Dublin
- Palace of Culture / Palestine / Bet Lahem
- Civil ID building / Kuwait / Jahra
- Tautas Nams Aluksne / Latvia / Aluksne
- Latvijas Finieris / Latvia / Riga
- Petrol station Shell / Latvia / Riga
- VUGD Ape Fire Station / Latvia / Ape
- Lebanese University, North Campus / Lebanon / Beirut
- Duty Free Zone, International Airport / Mauritius / Plaine Magnien
- State Audit Building / Oman / Muscat
- STF Residential Complex / Oman / Al Khoud
- Main Command building and control centre / Oman / Salalah
- SBB Telepark / Serbia / Belgrade
- Savoy Resort & Spa Project / Seyshellas / Victoria
- Ruwais Housing Complex / UAE / Ruwais
- Medeor Hospital 24X7 LLC / UAE / Al Ain
- Coffee shop / UK / Derby
- Chennai Bypass Road / India
- Mobel Inhofer Logistik / Germany
- Infosys Campus / India
- Marriott Hotel / Spain
- And many other facilities in Russia, CIS countries, Europe, Asia and the Middle East

BAUER WAGNER LIVESTOCK FARM / GERMANI





AGROFARM / GERMANY



BRANDER HOF RIDING STABLES / GERMANY



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VOLKSWAGEN LAGER / GERMANY



INFOSYS CONFERENCE ROOM / INDIA

TN ALUKSNE / LATVIA



FATORDA STADIUM / INDIA

ROAD LIGHTING / INDIA



<b>A</b>	<b>F</b>	LED MALL LINE IP54 ..... 77	PLANTADOR LED ..... 122	TUBUS LED..... 142
ACQUA LED ..... 188	FARO ..... 183	LED MALL LINE IP54 ..... 77	PRB/R UNI LED ..... 60	
ADV/K UNI LED ..... 101	FIORE..... 183	LINER/R LED TH ..... 50	PROFILE..... 178	<b>U</b>
ALD UNI LED ..... 61	FLAME UNI LED ..... 49	LINER/R LED TH ..... 51	PROFILE H..... 177	UFO DL LED ..... 91
ALS UNI LED ..... 63	FLEX..... 171	LINER/S LED TH ..... 52	PRS/R ECO LED ..... 56	UFO/S DL LED ..... 90
AOT ECO LED ..... 62	FREGAT CROSSING LED..... 134	LINER/S LED TH ..... 53	PRS/S ECO LED ..... 65	UMO ..... 182
ARCTIC STANDARD ..... 123	FREGAT FLOOD LED..... 138	LNK LED MINI..... 80	PTF UNI LED ..... 66	UNO..... 182
ARCTIC.OPL ECO LED TH ..... 125	FREGAT LED ..... 133	LYRA LED..... 159		
ARCTIC.OPL ECO LED ..... 124		LZ.OPL ECO LED TH ..... 127	<b>Q</b>	Accessories EMERGENCY..... 161
ARNO ..... 184	<b>G</b>	LZ.OPL ECO LED ..... 126	QUO..... 185	CONVERSION KIT LED..... 160
	GLOSS LED ..... 152			
<b>B</b>	GRANDA LED..... 140	<b>M</b>		
BELL/S LED ..... 93		MAGISTRAL LED..... 132	<b>R</b>	
BELL/T LED ..... 92	<b>H</b>	MATRIX/R LED ..... 147	RADO ..... 181	
	HB FLOODLIGHT LED ..... 112	MATRIX/S LED ..... 146	RAMO..... 181	
<b>C</b>	HB LED LOGISTIC ..... 113	MIZAR LED..... 158	REFLECT LED ..... 46	
C LED ..... 71	HB LED ..... 114	MOTION OLED ..... 166	RKL LED ..... 68	
CD LED ..... 69	HB LED ..... 115			
CLASSIC LED..... 135		<b>N</b>	<b>S</b>	
COIL..... 172	<b>I</b>	NATURE OLED..... 168	SAFARI DL LED ..... 86	
COLIBRI DL LED ..... 81	INFINITY OLED ..... 167	NOTA LED ..... 150	SATURNO..... 173	
COOL ..... 180	INOX LED ..... 116		SKYLINE LED..... 151	
COPER/T LED ..... 96	INSEL LB/R LED ..... 118	<b>O</b>	SLICK LED ..... 108	
	INSEL LB/R LED ..... 119	OD LED ..... 73	SLICK LED ..... 109	
<b>D</b>	INSEL LB/S LED ..... 120	OKKO..... 186	SLICK.PRS AGRO LED ..... 111	
DAMIN LED..... 141	INSEL LB/S LED ..... 121	OKKO IP..... 187	SLICK.PRS ECO LED ..... 110	
DECA LED..... 149		OKKO P..... 174	SLIM CLEAN LED ..... 104	
DENTAL ..... 105	<b>J</b>	OKKO S..... 175	SLIM LED ..... 54	
DL POWER LED IP66 ..... 84	JET/T LED ..... 94	OLYMPIC LED ..... 67	SNS LED ..... 89	
DL POWER LED MINI ..... 82		OPL/R ECO LED ..... 55	SOL P..... 169	
DL POWER LED ..... 83	<b>K</b>	OPL/S ECO LED ..... 64	SOL S..... 176	
DL TURN LED ..... 88	K LED ..... 70	OTR/R LED ..... 58	SOON ..... 180	
DLK LED ..... 87	KAMPI LED..... 145	OTX LED ..... 59	SPACE LED DREAM ..... 47	
DOMINO LED ..... 78	KVARTA LED ..... 144	OWP ECO LED ..... 102	SPLAY..... 185	
DOMINO LED ..... 79		OWP/R ECO LED ..... 103	STAR LED ..... 139	
DR.OPL ECO LED ..... 57	<b>L</b>			
	LB/S ECO LED ..... 117	<b>P</b>	<b>T</b>	
<b>E</b>	LEADER LED ..... 137	PARETE ..... 189	T 120..... 179	
EAGLE LED ..... 48	LED MALL ECO IP54 ..... 74	PHANTOM..... 170	TERES LED..... 136	
EOS..... 184	LED MALL ECO IP54 ..... 75	PILOT DL LED ..... 85	TETRA LED..... 143	
EVOLINE LED..... 153	LED MALL LINE IP54 ..... 76	PIPE LED..... 148	TILE T LED ..... 97	

**Sales in the EU:**  
**Lighting Technologies Europe GmbH**  
Fraunhoferstrasse 7, 85737 Ismaning, Germany  
T +49 89 550 59 86 11  
[eu.sales@LTcompany.com](mailto:eu.sales@LTcompany.com)

**Sales & Production in Spain:**  
Lighting Technologies TRQ, S.L.U. Avda. Pio XII, 38, 12500  
Vinaros, Spain  
T +34 (964) 404 024  
[info@trqsl.com](mailto:info@trqsl.com) [www.trqsl.com](http://www.trqsl.com)

**Sales & Production in Russia:**  
LLC "Lighting Technologies IGC"  
#2B bld. 7, Otradnaya Str.,  
127273, Moscow, Russia  
T +7 (495) 995 55 95  
[export.sales@LTcompany.com](mailto:export.sales@LTcompany.com)

LLC "Lighting Technologies IGC"  
#11, build. A, Magistralnaya Str.,  
390010, Ryazan, Russia  
T +7 (495) 995 55 95  
[info@rzn.LTcompany.com](mailto:info@rzn.LTcompany.com)

**Sales & Production in India:**  
Lighting Technologies India Pvt. Ltd.  
MC Junction, No. 201, 3rd Main, Kasturi Nagar, Bangalore,  
560043, India  
T +91 (991) 638 03 99  
[india@LTcompany.com](mailto:india@LTcompany.com)

**Sales in Kazakhstan:**  
"Lighting Technologies Kazakhstan" LLP  
#905/906, 4, Bejbitshilik,  
010000, Astana, Kazakhstan  
T +7 (717) 279 76 40  
[astana@LTcompany.com](mailto:astana@LTcompany.com)

**Sales & Production in Ukraine:**  
"Vitava" Company" Ltd.  
6, Vladimira Sosiury Str.,  
02090, Kiev, Ukraine  
T +38 (044) 585 47 88  
[info@kiev.LTcompany.com](mailto:info@kiev.LTcompany.com)

"Vitava" Company" Ltd.  
8, Entuziastov Avenue,  
07100, Slavutich, Ukraine  
T +38 (044) 585 47 88  
[info@slv.LTcompany.com](mailto:info@slv.LTcompany.com)

