

### **Oculus LED**

The new generation high-bay





## **Made in Poland**

We are a lighting manufacturer with 34 years of presence on the market, which is why we know everything about luminaires and lighting systems: we design, comprehensively test and manufacture them. We combine practice with modernity.

We have technologically advanced manufacturing facilities at our command, which guarantees a high level of flexibility and operational efficiency. We produce over 4 million luminaires annually, and each product leaving the Lena Lighting production line strengthens our position of the leader in the market of luminaires in the country and in the world – every day.

When designing new luminaires, we take advantage of the latest achievements in technology. For years, we have cooperated with leading international manufacturers of electrotechnical components, who, in addition to providing us with their solutions, also implement individual projects of our Engineers at the Research and Development Department of Lena Lighting S.A., allowing for a significant reduction in energy consumption, while improving the quality of lighting. We are constantly enhancing our know-how using the latest global solutions in LED technology and lighting control.

34+

years of experience



#### **Modern LED production line**

Środa Wielkopolska



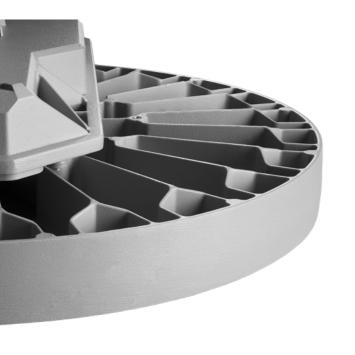
## It really matters

We make our products according to the highest environmental standards.



Being aware of the importance of environmental protection behaviours and future generations inspires us to put maximum effort into offering the highest quality, energy-efficient products; and to make sure that the entire process and technology of their production do not have a negative impact on the ecosystem.

Our efforts and their effectiveness have been confirmed by the ISO 14001 certificate. This means that Lena Lighting has successfully implemented an environmental management system. The overall goal of this system is to create conditions for the functioning of the enterprise in order to minimise the negative impact on the natural environment. We have already succeeded, but we are going to continue our journey and invest in technology and knowledge aimed at care for the natural environment.



Design perfectly
Create consistently
Offer comprehensively
Hit precisely

It is worth choosing products supplied by renowned manufacturers, employing both highly-skilled engineering staff with many years of experience in designing lighting systems, as well as having properly equipped laboratories allowing for constant quality control of manufactured products.

Considering the professional R&D facilities and the state-of-the-art laboratory operated by specialists, as well as the constantly controlled production process, Lena Lighting is able to provide its customers, with full responsibility, with a 5-year warranty on each luminaire it manufactures.



We are responsible for the highest quality of lighting

## Efficient and modern

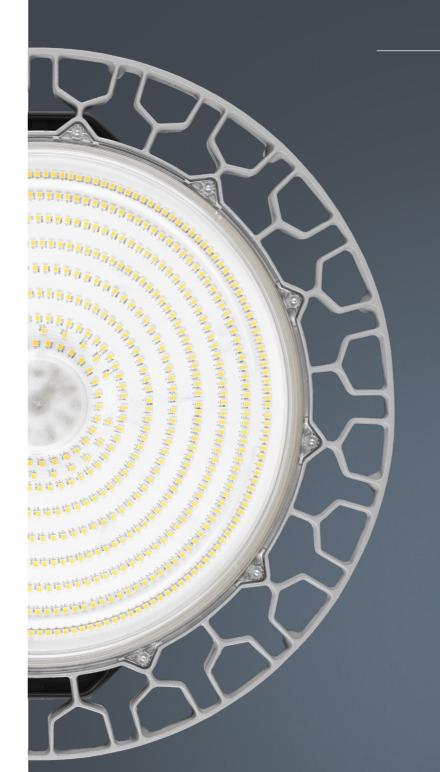
High-Bay

Let us introduce a state-of-the-art HIGH-BAY, constituting a new generation of luminaires dedicated to LED technology. Thanks to the use of high-performance diodes, the luminaire is distinguished by very high luminous flux of up to 49,200 lm and luminous efficiency of up to 176 lm/W. Its undoubted, noteworthy advantages include: energy efficiency, durability and suitability to work in high temperatures up to  $60^{\circ}$ C and up to  $75^{\circ}$ C (Endura version).

The luminaire uses a modern optical system. It is available in two versions. One with a glass diffuser and the other with a diffuser made of polycarbonate. The polycarbonate version can have a transparent diffuser or a diffuser with an integrated linear lens array.

176 max. lm/W

196.000 h



#### Oculus LED family

different versions

- 01 **Oculus LED**Very high luminous f
- 02 **Oculus LED UGR**Drastically reduced alare effec
- Oculus LED Endura

  High ambient temperature environmen
- Oculus LED Mini
  Compact size (diameter 32 cm)
- Oculus LED Mini UGR
  Reduced glare effect
- O6 Oculus LED P1

  Mounted to the pole
- Oculus LED P2
  Fastened to the frame and to the ba



## Proven in

## difficult conditions

Oculus LED is a great solution not only for large-format warehouse halls and logistics centres, but also a solution that will work well in demanding production conditions with high humidity, dust or temperature raising up to 60°C. Due to its high ingress protection, it can be mounted outside buildings.

## Robust and impact-resistant design

The robust aluminium body and diffuser made of polycarbonate (PC) or tempered glass provide the luminaire with a high level of impact resistance IK09 or IK08.

## Perfect for places with high humidity and dust

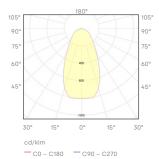
Oculus LED is equipped with silicone sealing and a breathing gland, which protect the luminaire against moisture condensation inside and provide it with a very high level of ingress protection IP66. Thus, it can be used in areas with increased humidity and dust concentration.

## Powerful and precise

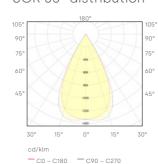
## optical system

The luminaire uses a modern optical system. It is available in two versions. One with a glass diffuser (105° light distribution) and the other with a diffuser made of polycarbonate. The polycarbonate version can be delivered with a smooth diffuser (105° distribution), a diffuser with an integrated linear lens array (55°, 75° light distribution) or a diffuser with reduced UGR.

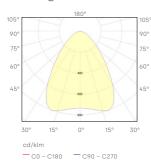
#### 55° light distribution



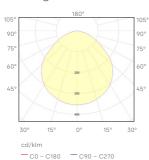
#### UGR 55° distribution



120° light distribution



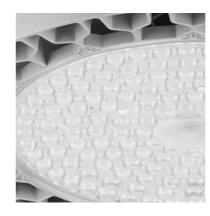
105° light distribution





**UGR 55° distribution** 

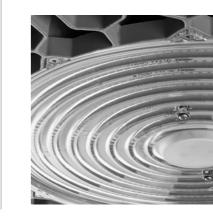
Luminaire with a polycarbonate diffuser with a reduced UGR value.





75° and 55° distribution

Luminaire with a polycarbonate diffuser and an integrated linear lens array.





105° distribution

Luminaire with a glass or polycarbonate diffuser.



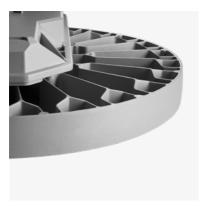
## Well-thought-out and effective heat dissipation management.

When designing the Oculus LED luminaire, we were inspired by nature.



The luminaire structure and materials used for its construction ensure excellent heat management. Thanks to the conduction and convection effects as well as the designed shapes and surface finish, heat is effectively removed from the luminaire, guaranteeing optimal thermal conditions for the operation of the power supply system.





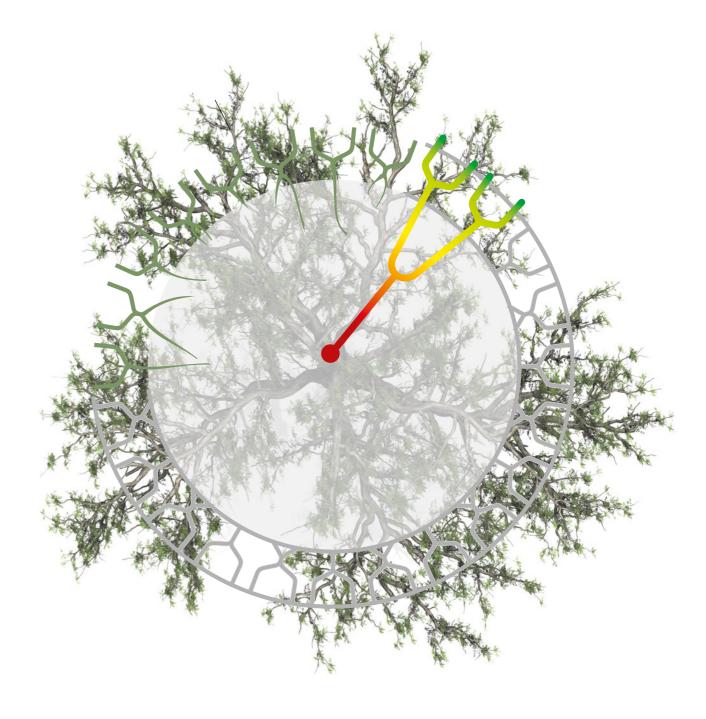
#### Refined shape of the body

The shape of the body with an integrated, effective heat sink and high-quality materials ensure maximum heat dissipation from the LED module.



#### Separated power system

The driver's external compartment, separated from the body, guarantees optimal thermal working conditions for the power supply system



01 / 02 — Heat sink branched architecture effectively dissipates heat

02 / 02 — Heat sink design inspired by the shape of a tree

Oculus LED industrial lighting Oculus LED industrial lighting





Body material:

Body colour:

Diffuser material:

Dimensions A/B [mm]:

Diffuser type:

#### **Oculus LED**

max. 176 lm/W

IP66

Light source:

Rated power [W]:

Luminous flux [lm]:

Mounting method:

Colour temperature [K]:

max. 167 lm/W	IP66	IK09	-

powder-coated aluminium

grey

PC

transparent

Ø320/107

Light source:	LED module	Body material:
Rated power [W]:	75 – 316	Body colour:
Luminous flux [lm]:	12200 – 49200	Diffuser materio
Colour temperature [K]:	3000, 4000, 5700	Diffuser type:
Mounting method:	suspended, surface-mounted	Dimensions A/B

Body material:	powder-coated aluminium	
Body colour:	grey	
Diffuser material:	PC, tempered glass	
Diffuser type:	transparent	
Dimensions A/B [mm]:	Ø371/125	

#### Distinguishing features:

- Very high working temperature up to 60°C
- High luminous flux up to 49200 lm
- Robust aluminium body, designed for effective heat dissipation.
- 4 light distributions and a version with a tempered glass diffuser
- Quick connector mounting is faster and cheaper
- Ra 70 and Ra 80 colour rendering as standard; Ra 90 available on request



## Distinguishing features:

Quick connector – mounting is faster and cheaper

- Very high working temperature up to 45°C
- High luminous flux value
- Robust aluminium body, designed for effective heat dissipation.

LED module

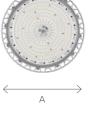
11400 - 23800

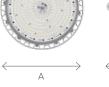
3000, 4000, 5700

suspended, surface-mounted

72 - 148

Very high ingress protection







Oculus LED industrial lighting ——





#### **Oculus LED UGR**

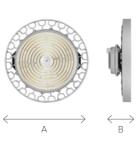
max. 153 lm/W IP66 IK09

Light source:	LED module
Rated power [W]:	74-218
Luminous flux [lm]:	11300-28800
Colour temperature [K]:	3000, 4000, 5700
Mounting method:	suspended, surface-mounted

Body material:	powder-coated aluminium
Body colour:	grey
Diffuser material:	PC
Diffuser type:	transparent
Dimensions A/B [mm]:	Ø371/125

#### Distinguishing features:

- Robust aluminium body, designed for effective heat dissipation
- LEDs from a reputable manufacturer and new LED panels enable very high luminous efficiency
- With the UGR value of 19 22, it minimises the glare effect, increasing people's well-being and reducing their fatigue and the number of errors they make.



#### **Oculus LED Mini UGR**

Light source:	LED module	Body material:	powder-coated aluminium
Rated power [W]:	74 – 151	Body colour:	grey
Luminous flux [lm]:	11300 – 21500	Diffuser material:	PC
Colour temperature [K]:	3000, 4000, 5700	Diffuser type:	transparent
Mounting method:	suspended, surface-mounted	Dimensions A/B [mm]:	Ø371/106

#### Distinguishing features:

- Very high working temperature up to 55°C
- Robust aluminium body, designed for effective heat dissipation
- With the UGR value of 19 22, it minimises the glare effect, increasing people's well-being and reducing their fatigue and the number of errors they make



max. 153 lm/W

IP66

IK09



#### Oculus LED industrial lighting







#### **Oculus LED Endura**

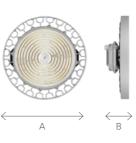
max. 174 lm/W IP66 IK09

Light source:	LED module
Rated power [W]:	109-203
Luminous flux [lm]:	18300-28300
Colour temperature [K]:	3000, 4000, 5700
Mounting method:	suspended, surface-mounted

Body material:	powder-coated aluminium
Body colour:	grey
Diffuser material:	PC, tempered glass
Diffuser type:	transparent
Dimensions A/B [mm]:	Ø371/106

#### Distinguishing features:

- Robust aluminium body, designed for effective heat dissipation
- The driver's compartment, separated from the body and connected to the luminaire with a 10 m cable, guarantees optimal thermal working conditions for the power supply system.
- $\bullet$   $\,$  The luminaire can work in ambient temperature up to +75°C, and the driver up to +45°C.





Oculus LED industrial lighting Oculus LED industrial lighting





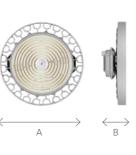
#### **Oculus LED P1**

max. 167 lm/W IP66 IK09

Light source:	LED module	Body material:	powder-coated aluminium
Rated power [W]:	109-316	Body colour:	grey
Luminous flux [lm]:	18300-47500	Diffuser material:	PC
Colour temperature [K]:	3000, 4000, 5700	Diffuser type:	transparent
Mounting method:	mounted to the pole	Dimensions A/B [mm]:	Ø371/106 (556 – width with the bracket)

#### Distinguishing features:

- ullet Adapted for mounting to a lighting pole, mast  $\emptyset$  60-120 mm
- Robust aluminium body, designed for effective heat dissipation
- LEDs from a reputable manufacturer and new LED panels enable very high luminous efficiency



#### **Oculus LED P2**

Light source:	LED module	Body material:	powder-coated aluminium
Rated power [W]:	109-316	Body colour:	grey
Luminous flux [lm]:	18300-47500	Diffuser material:	PC
Colour temperature [K]:	3000, 4000, 5700	Diffuser type:	transparent
Mounting method:	mounted to the pole, to the bar	Dimensions A/B [mm]:	Ø371/106 (422 – width with the bracket)

#### Distinguishing features:

- Adapted for mounting to a lighting pole, a mast to the bar, surface-mounted
- Robust aluminium body, designed for effective heat dissipation
- LEDs from a reputable manufacturer and new LED panels enable very high luminous efficiency



max. 167 lm/W

IP66





# **Light**under control

Lighting control systems are comfortable, give a sense of comfort, save time, but above all optimise processes and are energy-saving and environmentally friendly.

Active RCR and dusk sensor providing a more efficient use of lighting – it reduces energy consumption and the corresponding costs of energy. The sensor identifies the illuminance (day-night identification), length of working time (switch off delay) and effective range of operation (detection field radius). It allows to adjust the luminaire's operation mode to save up to 90% of the energy consumed.

#### What **Clue In** offers?

energy savings

scalability – from one room to the entire integrated multi-building complex

selection of lighting dedicated for specific tasks

easily and quickly changeable light scenes depending on the type of performed work

automatic modification of lighting depending on the time of day and external conditions

adaptation of lighting to room's occupancy level

The ergonomic and efficient use of lighting can also be achieved through fitting Oculus LED luminaires in their DIMM DALI versions. The possibility of communication between luminaires and the dimming function have a significant impact on the comfort of use and energy-efficiency of the solution.

Web ap











— Case study

## Fewer luminaires

## better effect

The investor has retrofitted the lighting in the warehouse hall.

Facility dimensions: 80x33 m (2640 m²), luminaire mounting height: 11 m.

Due to the functional purpose of the space, a lighting level of 150 lx on the work surface was required. Due to the 16-hour mode of lamp usage duration, energy efficiency was the most important criterion for their selection. Another condition for choosing the product was its reliability, because each downtime in the logistic process generates unnecessary costs.

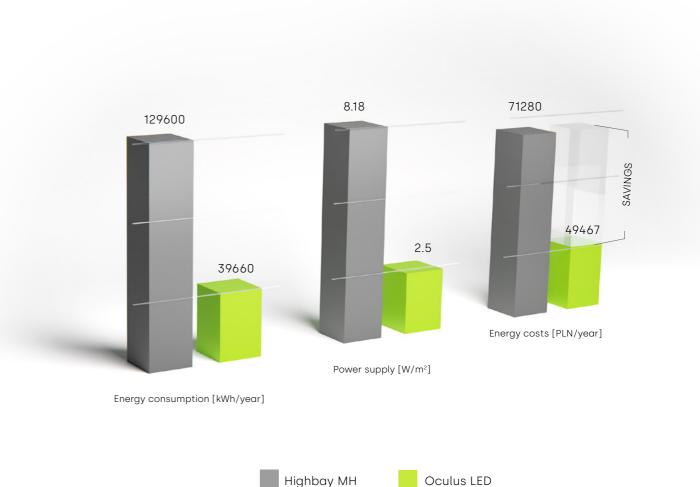
So far, the facility has been fitted with HIGH-BAY luminaires equipped with regular 400 W metal halide discharge sources. Considering investor's key requirements, we proposed replacing traditional luminaires with Oculus LED 126 W, 4000 K, 21950 lm, IP66.

energy savings

485 days return on investment



#### Comparison of energy consumption and costs



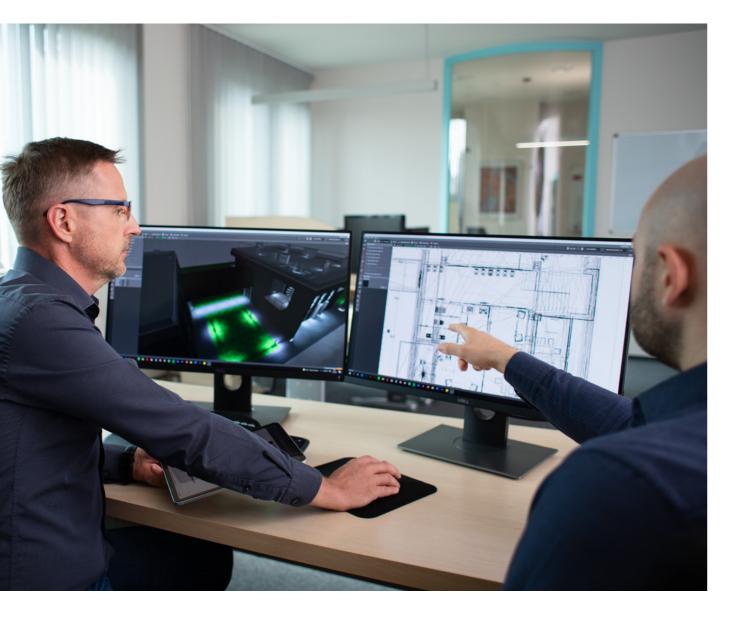
The comparative analysis has shown multiple benefits resulting from using LED luminaires. As per the proposed design, the number of installed luminaires was 4 pieces less. With Oculus LED luminaires, the energy costs have substantially decreased. This is due to the reduction in electricity consumption by almost 70% and minimisation of luminaire servicing costs (e.g. replacement of traditional sources), made possible through fitting the LEDs with modern LED light modules, characterised by a long-lasting period of operation. The cost of purchasing Oculus LED luminaires is offset by a reduction in the cost of electricity and pays back in less than 16 months. After that period, the investor will experience a constant and dynamic increase in profits due to the use of LED luminaires.

#### Basic assumptions:

The luminaire's lighting time is 16 hours per day; price for 1 kWh = PLN 0.55 (EUR 0.128); market cost of lamps according to the knowledge of Lena Lighting S.A.; lamp replacement frequency – according to the declared service life.

## Entrust lighting design to professionals

Office: Środa Wielkopolska





Our customers can take advantage of our experts' professional advice at any time during the implementation of the investment. We will support you in choosing the lighting concept and the products. We will make visualisations and comprehensive lighting projects using the latest computer software. We make calculations of profitability and energy efficiency of lighting.

**We invite you** to cooperate with us

#### - Available versions

Index	Luminaire name	Rated power [W]	Luminous flux [lm]	Beam angle [°]	Diffuser
	Oculus LED				
964169	OCULUS LED 12850 lm 840 IP66 class I 55D SP10kV	75	12850	55	PC
964152	OCULUS LED 12850 lm 840 IP66 class I 75D SP10kV	75	12850	75	PC
964145	OCULUS LED 13300 lm 840 IP66 class I 105D SP10kV	75	13300	105	PC
964961	OCULUS LED DALI 12500 lm 840 IP66 class I GLASS 105D SP10kV	75	12500	105	tempered glass
963971	OCULUS LED 12200 lm 840 IP66 class I 55D SP10kV	76	12200	55	PC
963964	OCULUS LED 12200 lm 840 IP66 class I 75D SP10kV	76	12200	75	PC
963957	OCULUS LED 12650 lm 840 IP66 class I 105D SP10kV	76	12650	105	PC
963919	OCULUS LED 16450 lm 840 IP66 class I 55D SP10kV	106	16450	55	PC
963902	OCULUS LED 16450 lm 840 IP66 class I 75D SP10kV	106	16450	75	PC
963896	OCULUS LED 17000 lm 840 IP66 class I 105D SP10kV	106	17000	105	PC
964084	OCULUS LED 18300 lm 840 IP66 class I 55D SP10kV	109	18300	55	PC
964077	OCULUS LED 18300 lm 840 IP66 class I 75D SP10kV	109	18300	75	PC
964060	OCULUS LED 19000 lm 840 IP66 class I 105D SP10kV	109	19000	105	PC
964923	OCULUS LED 17900 lm 840 IP66 class I GLASS 105D SP10k	109	17900	105	tempered glass
964053	OCULUS LED 21950 lm 840 IP66 class I 55D SP10kV	132	21950	55	PC
964046	OCULUS LED 21950 lm 840 IP66 class I 75D SP10kV	132	21950	75	PC
964039	OCULUS LED 22700 lm 840 IP66 class I 105D SP10kV	132	22700	105	PC
964930	OCULUS LED 21300 lm 840 IP66 class I GLASS 105D SP10kV	132	21300	105	tempered glass
963940	OCULUS LED 22250 lm 840 IP66 class I 55D SP10kV	148	22250	55	PC
963933	OCULUS LED 22250 lm 840 IP66 class I 75D SP10kV	148	22250	75	PC
963926	OCULUS LED 23000 lm 840 IP66 class I 105D SP10kV	148	23000	105	PC
963377	OCULUS LED 21600 lm 840 IP66 class I GLASS 105D SP10kV	148	21600	105	tempered glass
964015	OCULUS LED 25500 lm 840 IP66 class I 55D SP10kV	154	25500	55	PC
964008	OCULUS LED 25500 lm 840 IP66 class I 75D SP10kV	154	25500	75	PC
964022	OCULUS LED 26400 lm 840 IP66 class I 105D SP10kV	154	26400	105	PC
964947	OCULUS LED 24800 lm 840 IP66 class I GLASS 105D SP10kV	154	24800	105	tempered glass
964107	OCULUS LED 34650 lm 840 IP66 class I 55D SP10kV	216	34650	55	PC
964091	OCULUS LED 34650 lm 840 IP66 class I 75D SP10kV	216	34650	75	PC
964114	OCULUS LED 35850 lm 840 IP66 class I 105D SP10kV	216	35850	105	PC
964954	OCULUS LED 33600 lm 840 IP66 class I GLASS 105D SP10kV	216	33600	105	tempered glass

#### —— Available versions

Index	Luminaire name	Rated power [W]	Luminous flux [lm]	Beam angle [°]	Diffuser
963773	OCULUS LED 47500 lm 740 IP66 class I 55D SP10kV	316	47500	55	PC
963766	OCULUS LED 47500 lm 740 IP66 class I 75D SP10kV	316	47500	75	PC
963780	OCULUS LED 49200 lm 740 IP66 class I 105D SP10kV	316	49200	105	PC
967245	OCULUS LED 45800 lm 740 IP66 class I GLASS 105D SP10kV	316	45800	105	tempered glass
	Oculus LED Endura				
963759	OCULUS LED ENDURA 75°C 18300 lm 840 IP66 class I 75D SP10kV	109	18300	75	PC
964282	OCULUS LED ENDURA 75°C 27000 lm 840 IP66 class I 55D SP10kV	203	2700	55	PC
964275	OCULUS LED ENDURA 75°C 27000 lm 840 lP66 class I 75D SP10kV	203	2700	75	PC
964268	OCULUS LED ENDURA 75°C 28300 lm 840 IP66 class I 105D SP10kV 203W	203	28300	105	PC
963506	OCULUS LED ENDURA 75°C 25600 lm 840 IP66 class I GLASS 105D SP10kV 203W	203	25600	105	tempered glass
	Oculus LED UGR				
561238	OCULUS LED UGR 11300 lm 840 IP66 class I SP10kV	74	11300	55	PC
561221	OCULUS LED UGR 15900 lm 840 IP66 class I SP10kV	109	15900	55	PC
561214	OCULUS LED UGR 18700 lm 840 IP66 class I SP10kV	129	18700	55	PC
561108	OCULUS LED UGR 21500 lm 840 IP66 class I SP10kV	151	21500	55	PC
561139	OCULUS LED UGR 28800 lm 840 IP66 class I SP10kV	218	28800	55	PC
	Oculus LED P1				
967115	OCULUS LED P1 16450 lm 840 IP66 class I 55D SP10kV	106	16450	55	PC
963520	OCULUS LED P1 25500 lm 840 IP66 class I 55D SP10kV	154	25500	55	PC
963360	OCULUS LED P1 25500 lm 840 IP65 class I 75D SP10kV	154	25500	75	PC
963834	OCULUS LED P1 34650 lm 840 IP66 class I 55D SP10kV	216	34650	55	PC
963513	OCULUS LED P1 47500 lm 740 IP66 class I 55D SP10kV	316	47500	55	PC
	Oculus LED P2				
999819	OCULUS LED P2 18300 lm 840 IP66 class I 55D SP10kV	109	18300	55	PC
999864	OCULUS LED P2 21950 lm 840 IP66 class I 75D SP10kV	132	21950	75	PC
998577	OCULUS LED P2 25500 lm 840 IP66 class I 55D SP10kV	154	25500	55	PC

#### Available versions

Index	Luminaire name	Rated power [W]	Luminous flux [lm]	Beam angle [°]	Diffuser
963827	OCULUS LED P2 34650 lm 840 IP66 class I 55D SP10kV	216	34650	55	PC
967351	OCULUS LED P2 47500 lm 740 IP66 class I 55D SP10kV	316	47500	55	PC
963667	OCULUS LED P2 49200 lm 740 IP66 class I 105D SP10kV	316	49200	105	PC

	Oculus LED Mini				
967726	OCULUS LED MINI 11700 lm 840 IP66 class I 55D SP10kV	72	11700	55	PC
967733	OCULUS LED MINI 11700 lm 840 IP66 class I 75D SP10kV	72	11700	75	PC
967740	OCULUS LED MINI 12100 lm 840 IP66 class I 105D SP10kV	72	12100	105	PC
967757	OCULUS LED MINI 11400 lm 840 IP66 class I GLASS 105D SP10kV	72	11400	105	tempered glass
967634	OCULUS LED MINI 11400 lm 840 IP66 class I 55D SP10kV	73	11400	55	PC
967641	OCULUS LED MINI 11400 Im 840 IP66 class I 75D SP10kV	73	11400	75	PC
967658	OCULUS LED MINI 11700 lm 840 IP66 class I 105D SP10kV	73	11700	105	PC
967665	OCULUS LED MINI 15400 lm 840 IP66 class I 55D SP10kV	103	15400	55	PC
967672	OCULUS LED MINI 15400 lm 840 IP66 class I 75D SP10kV	103	15400	75	PC
967689	OCULUS LED MINI 15900 lm 840 IP66 class I 105D SP10kV	103	15900	105	PC
967795	OCULUS LED MINI 16600 lm 840 IP66 class I 55D SP10kV	106	16600	55	PC
967801	OCULUS LED MINI 16600 lm 840 IP66 class I 75D SP10kV	106	16600	75	PC
967818	OCULUS LED MINI 17200 lm 840 IP66 class I 105D SP10kV	106	17200	105	PC
967825	OCULUS LED MINI 16300 lm 840 IP66 class I GLASS 105D SP10kV	106	16300	105	tempered glass
967863	OCULUS LED MINI 20700 lm 840 IP66 class I 55D SP10kV	128	20700	55	PC
967870	OCULUS LED MINI 20700 lm 840 IP66 class I 75D SP10kV	128	20700	75	PC
967887	OCULUS LED MINI 21400 lm 840 IP66 class I 105D SP10kV	128	21400	105	PC
967894	OCULUS LED MINI 19400 lm 840 IP66 class I GLASS 105D SP10kV	128	19400	105	tempered glass
967696	OCULUS LED MINI 20500 lm 840 IP66 class I 55D SP10kV	143	20500	55	PC
967702	OCULUS LED MINI 20500 lm 840 IP66 class I 75D SP10kV	143	20500	75	PC
967719	OCULUS LED MINI 21200 lm 840 IP66 class I 105D SP10kV	143	21200	105	PC
967931	OCULUS LED MINI 23000 lm 840 IP66 class I 55D SP10kV	148	23000	55	PC
967948	OCULUS LED MINI 23000 lm 840 IP66 class I 75D SP10kV	148	23000	75	PC
967955	OCULUS LED MINI 23800 lm 840 IP66 class I 105D SP10kV	148	23800	105	PC
967962	OCULUS LED MINI 22600 lm 840 IP66 class I GLASS 105D SP10kV	148	22600	105	tempered glass

All versions shown are also available with DALI control, with an emergency module or in the 5700K version. Additional indexes and details of products are available in index cards on our website.

#### Accessories available



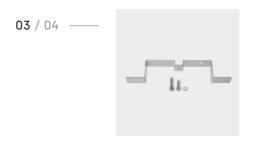
#### **RCR** and dusk sensor

The RCR sensor detects movement and activates the luminaire. Similarly, the dusk sensor activates the light when dusk is detected. Both sensors contribute to optimising the light and electricity consumption.



#### **Protective grid**

The protective grid additionally protects the luminaire against mechanical damage. It is used, for example, on sports fields and in sports halls, where the luminaire is exposed to strong impacts from the ball.



#### Surface mounting bracket

With this bracket the luminaire can be surface-mounted. It allows the mounting process go quickly and efficiently.



#### Multi-purpose mounting bracket

The multi-purpose mounting bracket enables not only surface and wall mounting, but also mounting to a lighting pole, a mast or a bar.











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