

VIZULO



MUSTANG



Sports Lighting

Airport infrastructure

Port infrastructure

Ventilation cable gland

Pressure equalisation. It ensures high air flow rates as well as high water protection capacity

Glass

Flat glass. Glass is fixed to die-cast aluminium frame with metal clips and can easily be replaced

LED module

High quality LED's with optimal thermal resistance and energy consumption characteristic, for high lumen output and long expected life time. Color temperature available: 2700 K, 3000 K, 4000 K

(1800 K, 2200 K, 3500 K, 5000 K, 5700 K, 6500 K available on customer request)

Sockets

Zhaga and NEMA sockets compatible

Protection

IP66 for the complete luminaire

Module temperature control

The LED driver will start reducing the light output when the LED's approach critical temperature. The temperature is measured via a sensor placed on the PCB

(function available on customer request)

Body

Die-cast aluminium

Lighting protection

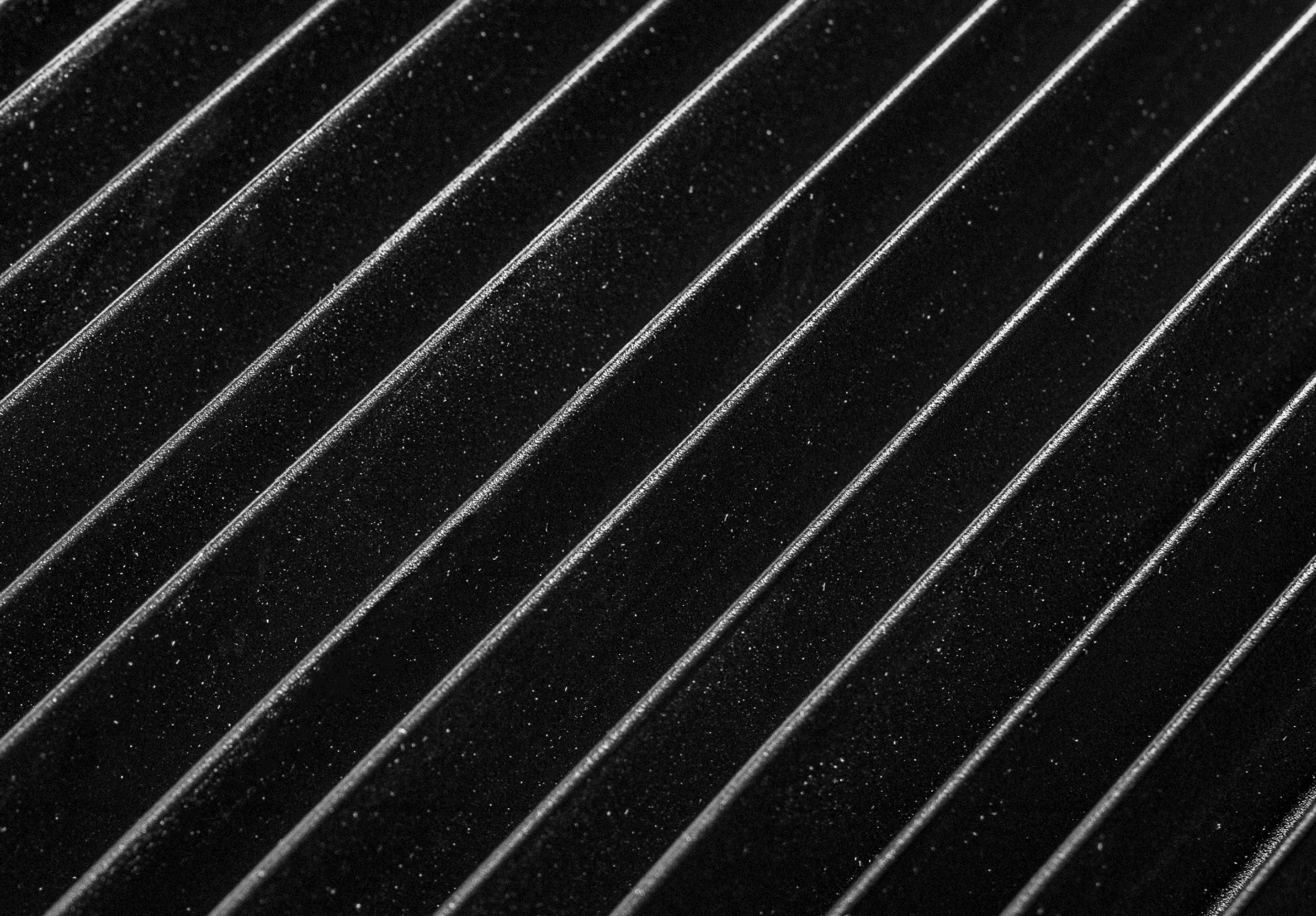
Built-in surge protection 10 kV

Light regulation

MUSTANG drivers offer integrated midnight dimming and network-controlled 1-10 V and DALI protocols

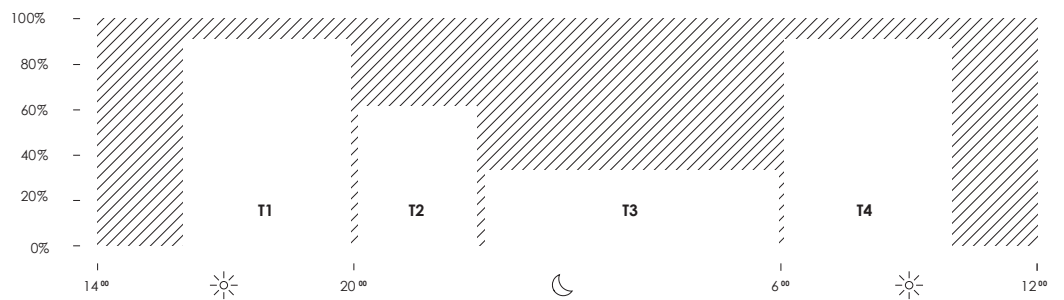
Opening

Die-cast aluminium clip for tool-less opening or closing, fixed to the frame with stainless steel spring for easy maintenance

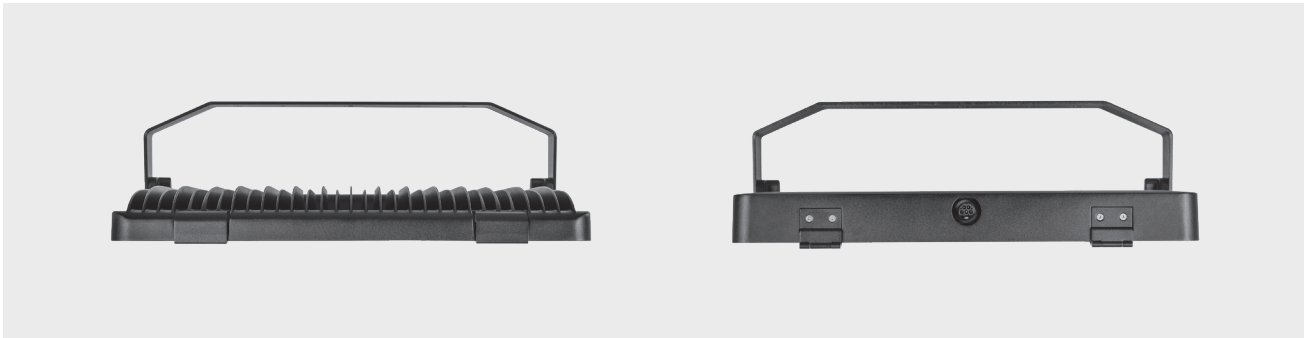


Midnight dimming

Midnight dimming provides multi-stage night-time power reduction based on an internal timer referenced to the power on/off time. There is no need for an external control infrastructure. The unit automatically performs a dimming profile based on the predefined scheduled reference to the midpoint, which is calculated based on the power on/off times.



Mustang



Note! Glass with black print on request!
(standard - gray print glass)



RAL7035



RAL9006



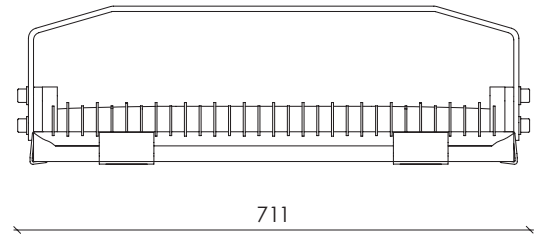
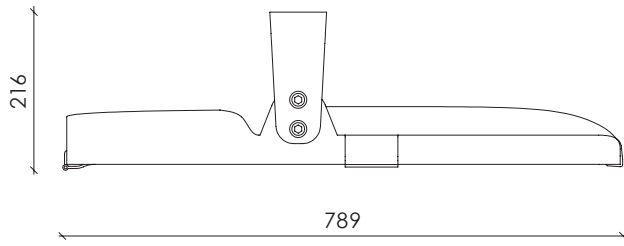
DB703



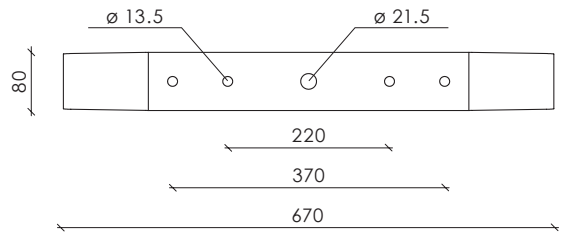
RAL9005

Other colors
available on request

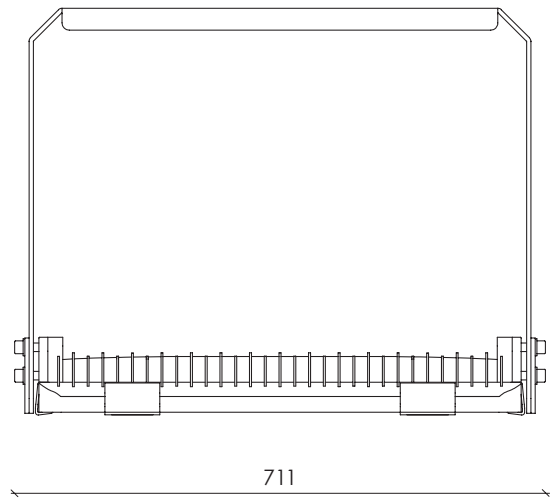
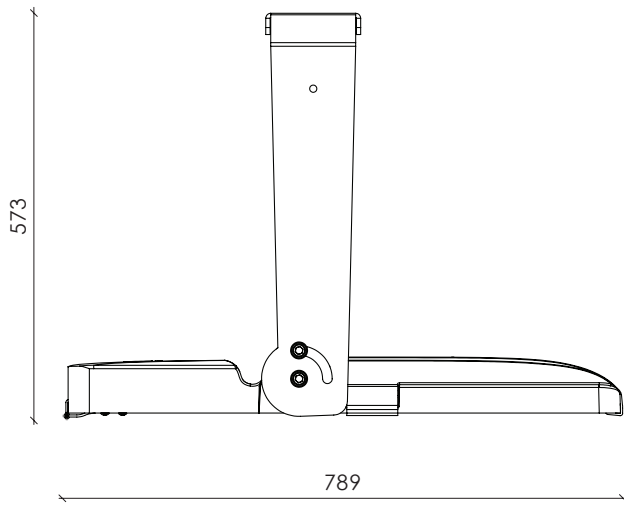
Dimensions with standard console



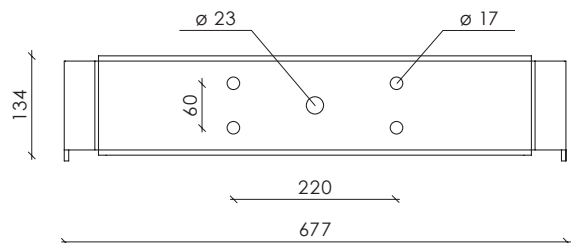
Mounting bracket

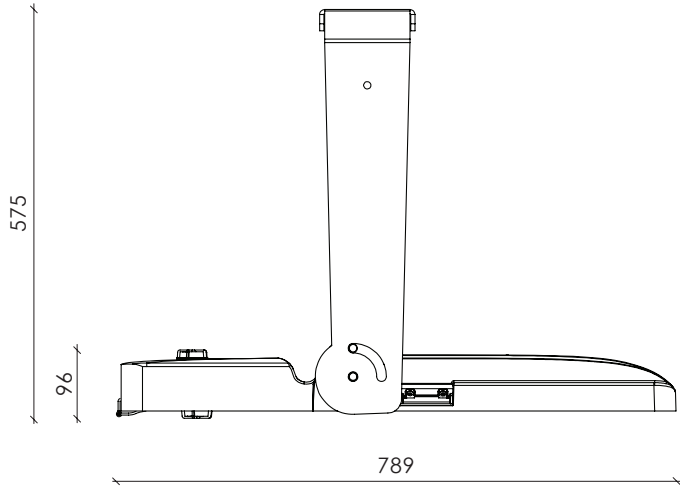


Dimensions with floodlight console

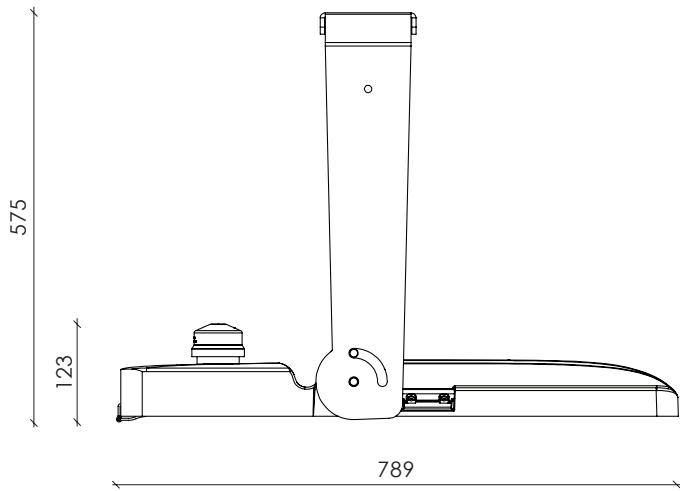


Mounting bracket





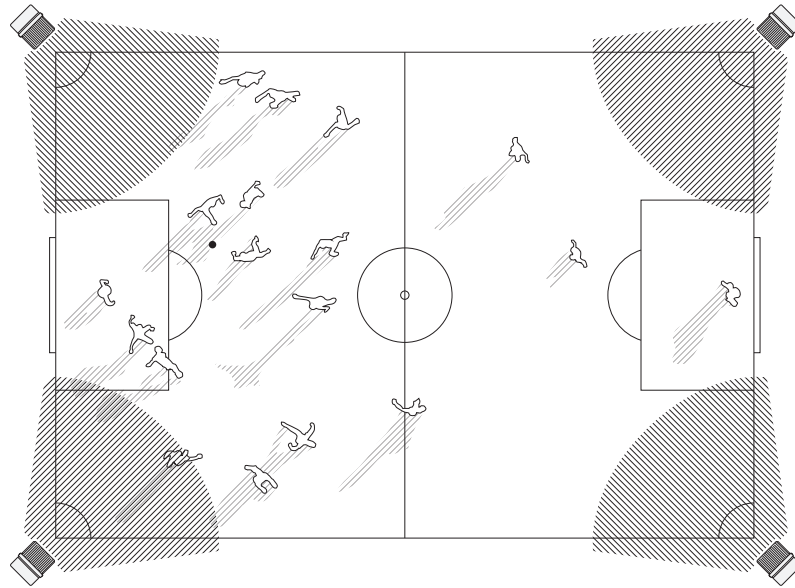
Dimensions with 2 Zhaga connectors



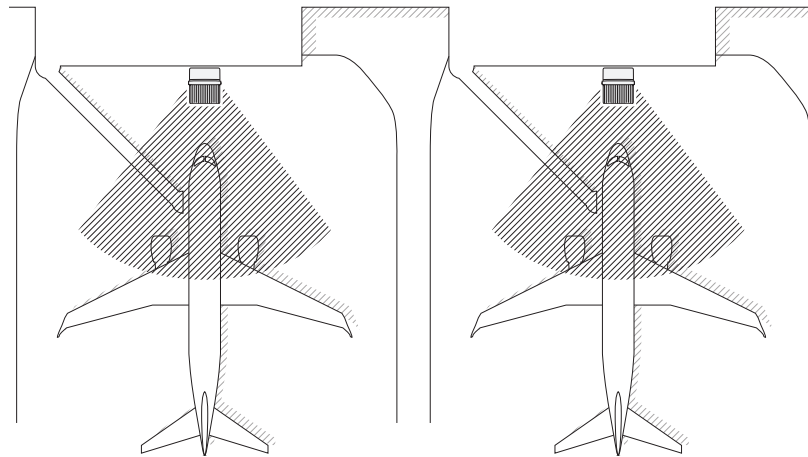
Dimensions with NEMA

Applications

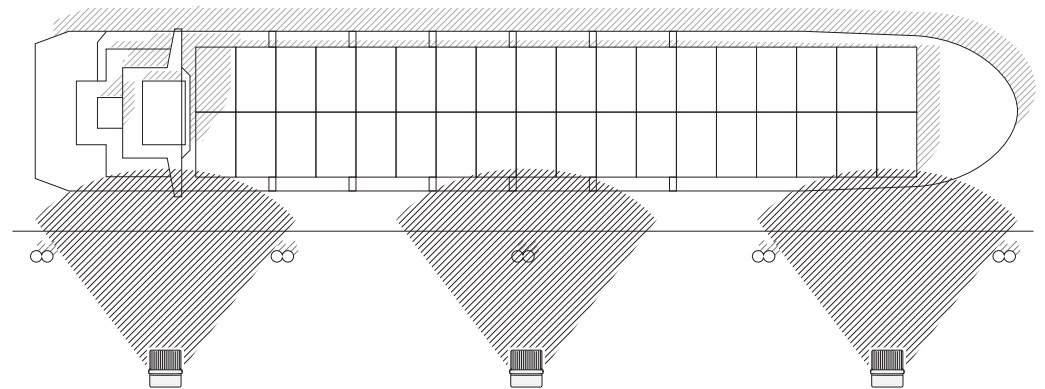
Sports lighting



Airport infrastructure



Port infrastructure



Technical information



V	198 - 264 / 110 - 277 ⁽¹⁾
Hz	50 - 60
W	50 - 700
lm	29535 - 103320 ⁽²⁾
lm/W	119 - 165
K	2700 / 3000 / 4000 ⁽³⁾
°C	-40 to +50
CRI	>70 / >80 / >90 ⁽³⁾

Body:	Die-cast aluminium
Dimming:	DALI / 1-10 V / Midnight dimming / Step dimming / Mains dimming
Initial chromaticity:	MacAdam 5
Lifetime:	Eco 100 000 h (L90B10) at Ta = 25 °C* Standard 100 000 h (L98B10) at Ta = 25 °C* High density 100 000 h (L98B10) at Ta = 25 °C*
Warranty:	5 years
Installation:	On bracket / wall / ceiling
Socket:	NEMA Top / Zhaga Top
Intelligent Control:	Stand-alone / Group / CMS
Sensor:	Daylight
Surge protection:	10 kV
Corrosion protection:	Up to C5
Neto weight:	Up to 31 kg standard version Up to 41 kg floodlight version
Max. wind load area, SCd:	0.083 m ²

¹⁾ Maximum operating voltage, ENEC certificate voltage 220 - 240 V, UL certificate voltage 110 - 277 V

²⁾ Lumen output indicated at CRI > 70

³⁾ 1800 / 2200 / 3500 / 5000 / 5700 / 6500 K available on request along with other not listed CRI and CCT

⁴⁾ IK08 refers to version with glass cover, IK09 refers to version with housing

⁵⁾ Ball proof: tested according to DIN 57710-13

⁶⁾ Coming soon

* This value is only informative and may change according to selected article. LED Lifetime is strongly depending from LEDs current and junction temperature – increase in LED current and luminaire power lead to increase of junction temperature and as consequence lifetime decrease. Thus, luminaire models with lower power, lower current (and lower junction temperature) will have higher lifetime than standard models. And high power and high current luminaire models may have negative lifetime deviation comparing to standard models. To receive precise value please contact VIZULO export representatives.

Technical parameters for final product can differ from typical data by 7% due to special conditions of LED manufacturing processes.

Standard modules

* Data for L01 optic.

Check VIZULO members section for additional information

4000 K | CRI 70

Number of LED's	352		
Nominal current, mA	160	480	670
Power, W	279	500	700
Luminous Flux, lm	45900	77900	103320
Efficacy, lm/W	165	156	148
Power factor, PF	Up to 0.98		

Luminaire efficacy	2700 K	279 - 700 W	39330 - 88530 lm	127 - 141 lm/W
	3000 K	279 - 700 W	43260 - 97400 lm	139 - 155 lm/W
	5000 K	279 - 700 W	45900 - 103320 lm	148 - 165 lm/W
	5700 K	279 - 700 W	45900 - 103320 lm	148 - 165 lm/W

ECO

* Data for L01 optic.

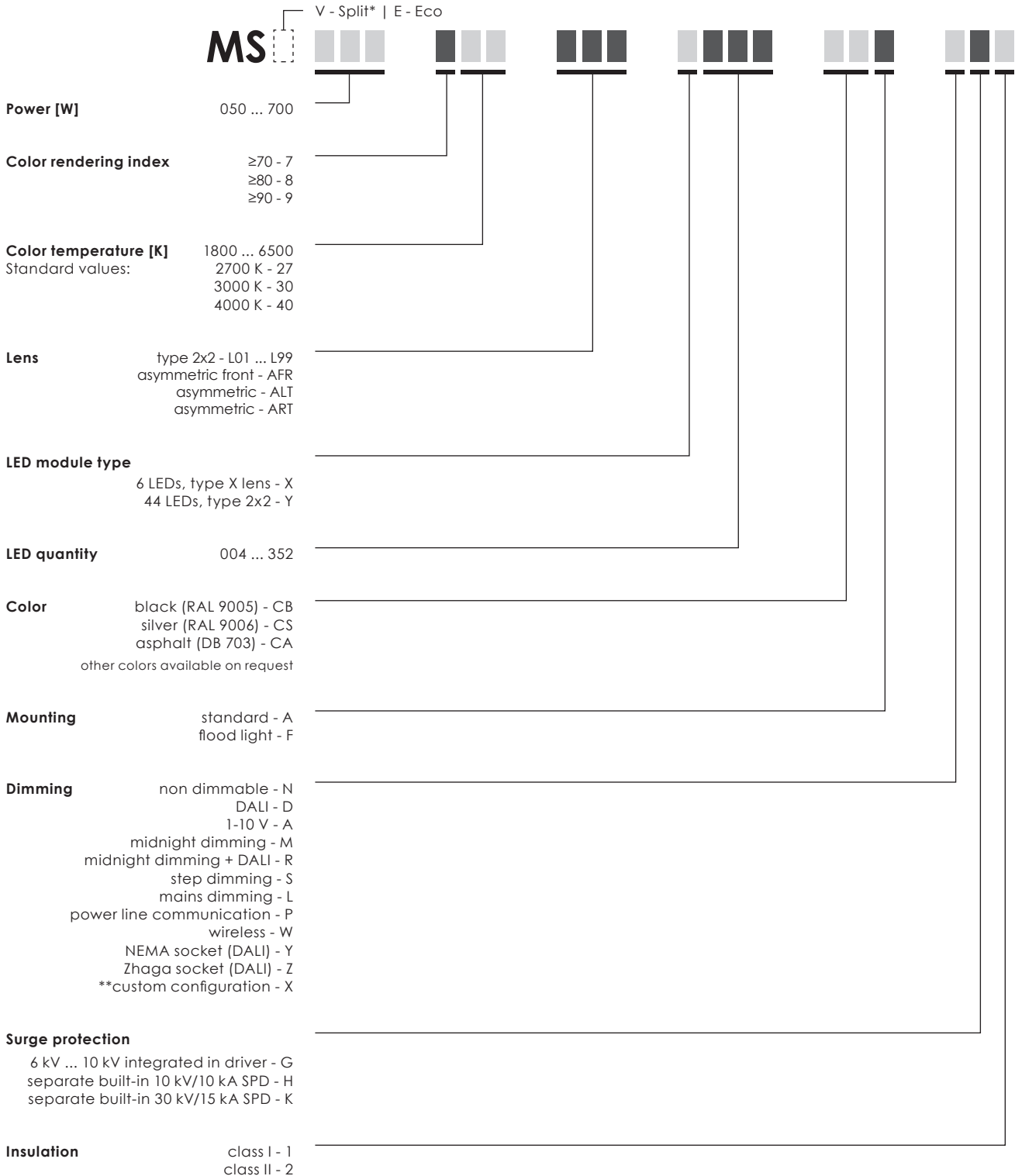
Check VIZULO members section for additional information

4000 K | CRI 70

Number of LED's	132			176		
Nominal current, mA	270	490	710	270	460	630
Power, W	215	400	600	286	500	700
Luminous Flux, lm	31520	60600	75000	41800	65900	84230
Efficacy, lm/W	147	152	125	146	132	120
Power factor, PF	Up to 0.98			Up to 0.98		

Luminaire efficacy	2700 K	215 - 700 W	29535 - 78930 lm	119 - 139 lm/W
	3000 K	215 - 700 W	30730 - 82125 lm	125 - 142 lm/W
	5000 K	215 - 700 W	31520 - 84230 lm	125 - 146 lm/W
	5700 K	215 - 700 W	31520 - 84230 lm	125 - 146 lm/W

Model name principles



EXAMPLE MS 700 730 L01 Y352 CSA NH1

* External driver

** CUSTOM CONFIGURATION EXAMPLE:
NEMA socket + Zhaga socket; NEMA socket + Zhaga socket + midnight dimming; etc.
Custom configuration information is available in order confirmation.

Cable core count

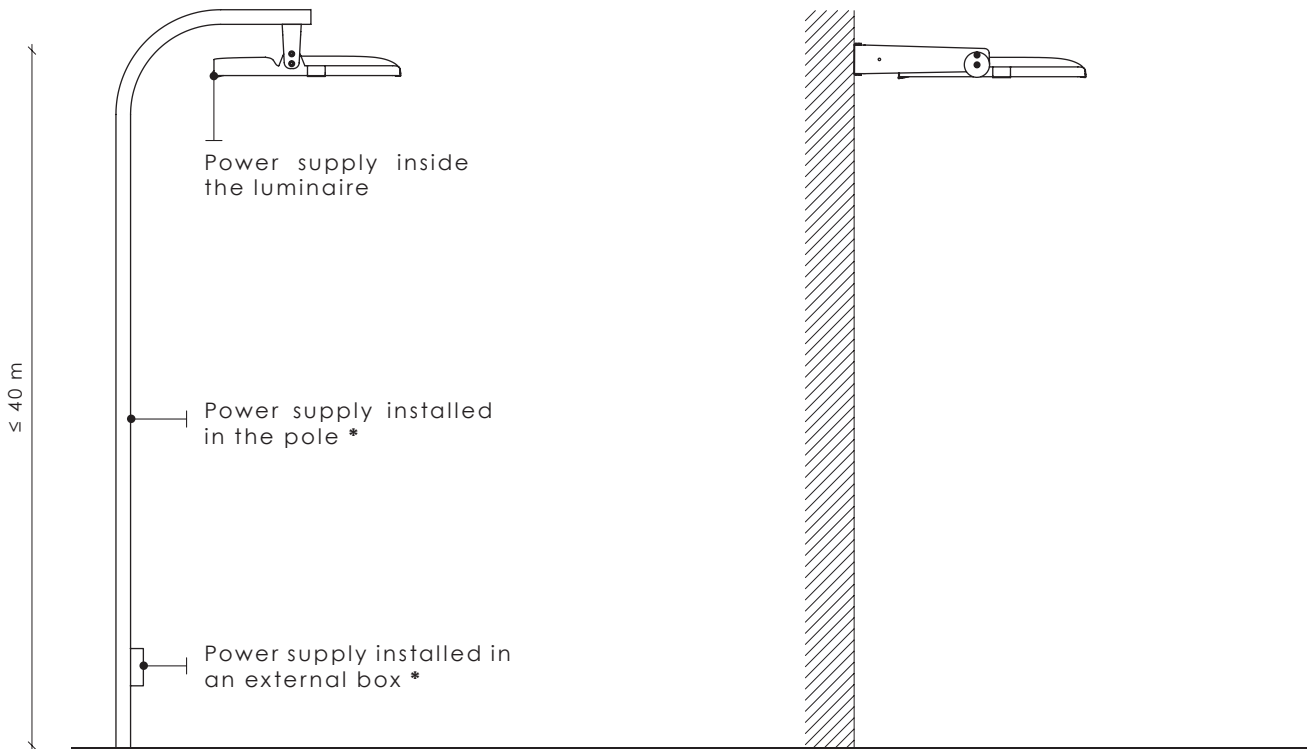
Socket	Dimming	Model number abbreviation	Input cable core count - Class I	Input cable core count - Class II
None	None	N	3	2
None	DALI	D	5	4
None	Midnight dimming	M	3	2
None	Midnight dimming + DALI	R	5	4
None	Step dimming	S	5 ⁽¹⁾	4 ⁽¹⁾
None	Mains dimming	L	3	2
Zhaga	DALI	Z	3 ⁽²⁾	2 ⁽²⁾
Zhaga	Midnight dimming	X	3	2
Zhaga	Mains dimming	X	3	2
NEMA	DALI	Y	3 / 5 ⁽³⁾	2 / 4 ⁽³⁾
NEMA	Midnight dimming	X	3	2
NEMA	Step dimming	X	5 ⁽¹⁾	4 ⁽¹⁾
NEMA	Mains dimming	X	3	2

¹⁾ 1 core unused

²⁾ DALI wires used only for internal connection between driver and Zhaga socket(s)

³⁾ +2 cores for external DALI connection

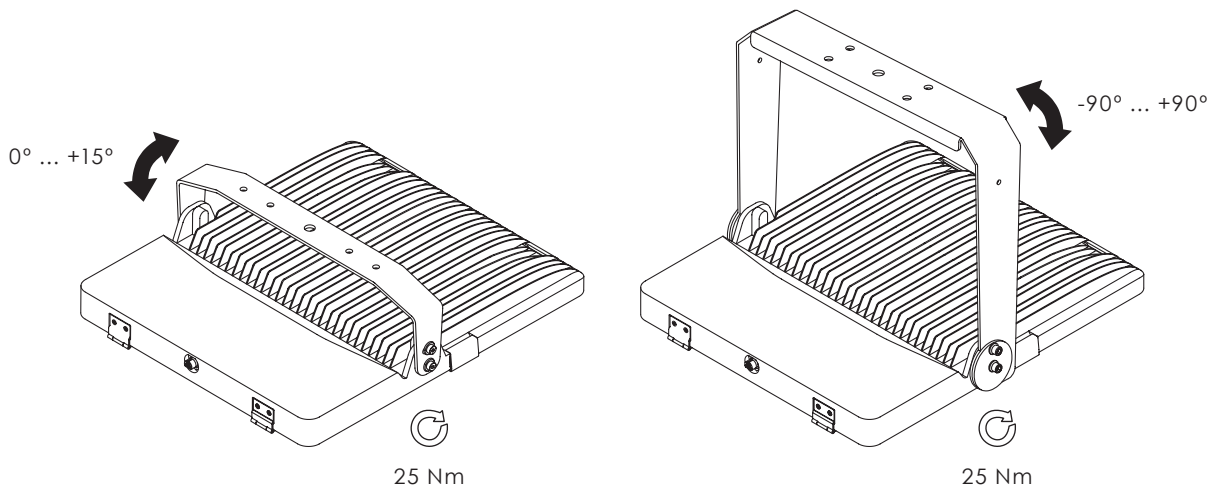
Console



Max. cable length between drivers and luminaire/LED modules: **50 m**

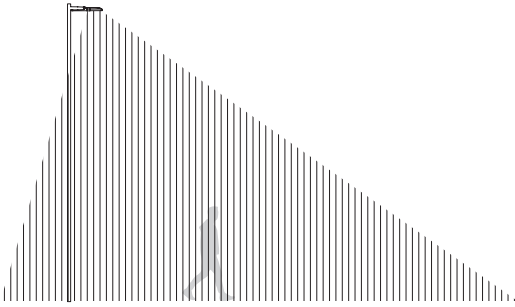
Min. conductor cross section area: **1.5 mm²**

* Luminaire to driver cable must be ordered from the accessories list

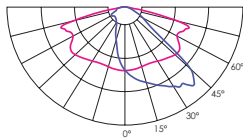


Optics

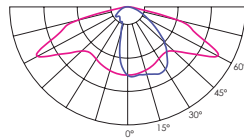
Asymmetric



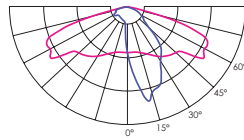
L01



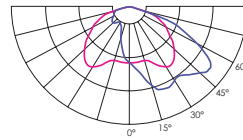
L02



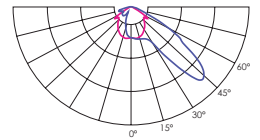
L04



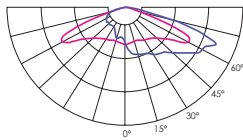
L07



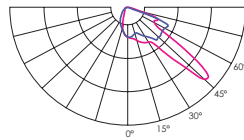
L08



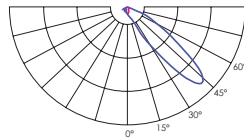
L35



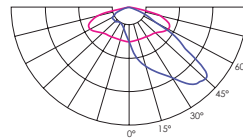
L36



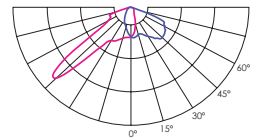
L37



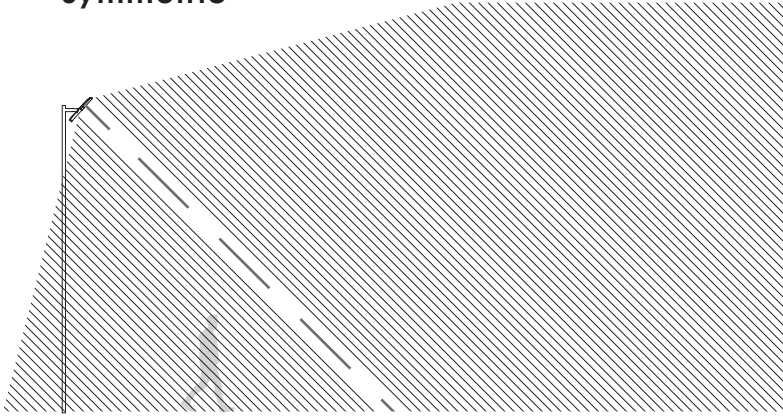
L42



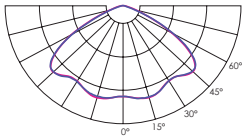
L46



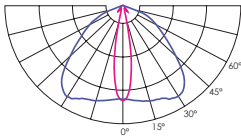
Symmetric



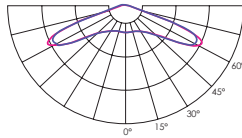
L10



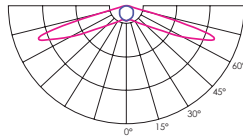
L16



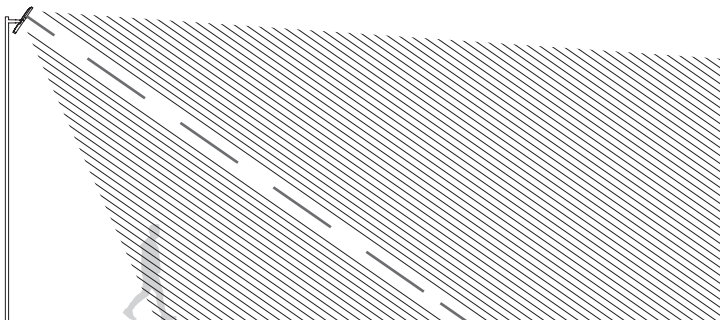
L20



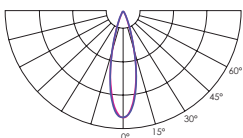
L45



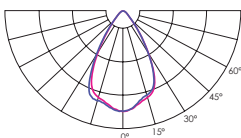
Rotosymmetric



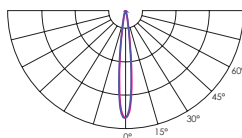
L13



L14



L15

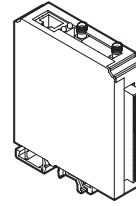


Accessories

MAUGLO Segment controller

Art. 70010004

Segment Controller receives commands from MAUGLO server via GSM and transmits tasks to Luminaire Controller via radio frequency communication.

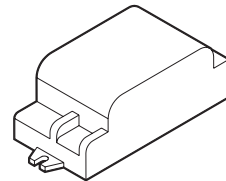


MAUGLO Luminaire controller

Art. 70010001 /
LC2M-23-05-R Luminaire
Controller - 2 relays

Luminaire Controller is wireless mesh-networking device that uses 868 MHz for communication with Segment Controller and other Luminaire Controllers. It is delivered in various configurations to meet the needs of your applications.

Art. 70010002 /
LC2M-12-05-R Luminaire
Controller - 1 relay



MAUGLO Surge Protection device

Art. 70020001

Surge Protection device offers protection against lighting surges;

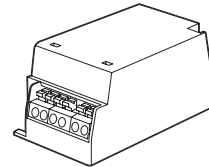
Voltage Protection level up (L-N) $\leq 1,5$ kV

Voltage Protection level up (L/N-PE) $\leq 2,0$ kV

$U_{oc} = 10$ kV

$I_{max} = 10$ kA

$I_{nom} = 5$ kA



Radio Frequency Antenna

Art. 70000108

Heavy duty IP67 enclosure

Mounted in cabinet or luminaire body

with 14 mm screw

SMA connector



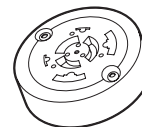
NEMA Socket

2213362-3, 5 pin NEMA socket 105°C wires

Art. 70000362

2213362-4, 7 pin NEMA socket 105°C wires

Art. 70000333

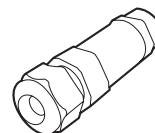


Connector

Art. 70000313

IP66 rated connector offers easy installation of the street luminaires.

3 wire cable connector

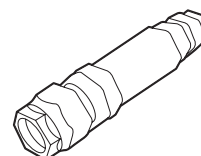


Connector

Art. 70000304

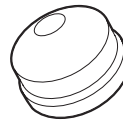
IP66 rated connector offers easy installation of the street luminaires.

5 wire cable connector



Dummy Link for NEMA Socket

Art. 70000113



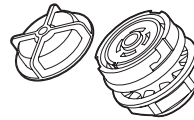
Zhaga socket no cap

Art. 70000612



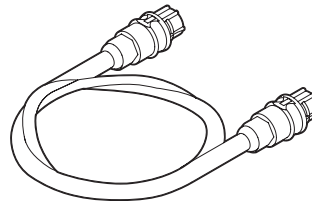
Zhaga socket with cap

Art. 70000613



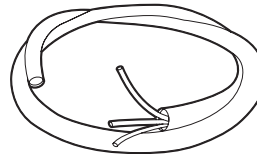
**Pre-installed cable sets
For external power supply**

0,5 m long cable.....	Art. 70000436
5 m long cable.....	Art. 70000437
6 m long cable.....	Art. 70000438
8 m long cable.....	Art. 70000439
10 m long cable.....	Art. 70000440
12 m long cable.....	Art. 70000441
18 m long cable.....	Art. 70000442
20 m long cable.....	Art. 70000443
22 m long cable.....	Art. 70000444
25 m long cable.....	Art. 70000445

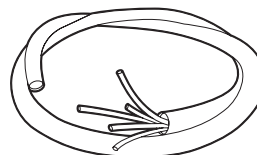


**Pre-installed cable sets
For internal power supply**

3 x 1,5 mm - 0,5 m long cable.....	Art. 70000319
3 x 1,5 mm - 5 m long cable.....	Art. 70000320
3 x 1,5 mm - 6 m long cable.....	Art. 70000321
3 x 1,5 mm - 8 m long cable.....	Art. 70000322
3 x 1,5 mm - 10 m long cable.....	Art. 70000323
3 x 1,5 mm - 12 m long cable.....	Art. 70000324
3 x 1,5 mm - 18 m long cable.....	Art. 70000325
3 x 1,5 mm - 20 m long cable.....	Art. 70000425
3 x 1,5 mm - 22 m long cable.....	Art. 70000426
3 x 1,5 mm - 25 m long cable.....	Art. 70000427
3 x 1,5 mm - 32 m long cable.....	Art. 70000430
3 x 1,5 mm - 42 m long cable.....	Art. 70000431
3 x 1,5 mm - 50 m long cable.....	Art. 70000432



5 x 1,5 mm - 0,5 m long cable.....	Art. 70000305
5 x 1,5 mm - 5 m long cable.....	Art. 70000316
5 x 1,5 mm - 6 m long cable.....	Art. 70000317
5 x 1,5 mm - 8 m long cable.....	Art. 70000318
5 x 1,5 mm - 10 m long cable.....	Art. 70000306
5 x 1,5 mm - 12 m long cable.....	Art. 70000307
5 x 1,5 mm - 18 m long cable.....	Art. 70000308
5 x 1,5 mm - 20 m long cable.....	Art. 70000428
5 x 1,5 mm - 22 m long cable.....	Art. 70000429
5 x 1,5 mm - 25 m long cable.....	Art. 70000429
5 x 1,5 mm - 32 m long cable.....	Art. 70000433
5 x 1,5 mm - 42 m long cable.....	Art. 70000434
5 x 1,5 mm - 50 m long cable.....	Art. 70000435



Certification



CE – conformity with European Union's health, safety and environmental protection standards

The CE mark is placed on products to state conformity with the relevant EU health, safety and environmental protection standards. In case of electronic products, the standards are, for example, the Restriction of Hazardous Substances in Electrical and Electronic Equipment (RoHS) directive, Waste Electrical and Electronic Equipment (WEEE) directive, the Electromagnetic Compatibility (EMC) directive etc. The mark ensures that the product can be sold anywhere in the European Economic Area (EEA).



UKCA - conformity with the relevant essential requirements of Great Britain

UKCA is a product mark intended to demonstrate compliance with the directives set by Great Britain (England, Scotland and Wales). It is analogous to the European Union's CE marking, meaning that depending on the type of product the applicable regulations are different. In case of LED lighting, the relevant requirements are compliance with the Electromagnetic Compatibility Regulations, the Electrical Equipment (Safety) Regulations, the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations and the Ecodesign for Energy-Related Products and Energy Information (Lighting Products) Regulations.



EAC - compliance with the regulations of the Eurasian Customs Union

The EAC Mark demonstrates conformity with all technical regulations defined by the Eurasian Customs Union. The conformity is assessed by an accredited independent testing laboratory. The EAC marking is a requirement in order to place a product on the market of Russia and the Eurasian Economic Union.



RoHS – compliance with European Union's RoHS directive

The RoHS (Restriction of Hazardous Substances in Electrical and Electronic Equipment) directive restricts (with exceptions) the use of ten hazardous materials in the manufacture of various types of electronic and electrical equipment. The aim of the directive is to prevent the risks posed to human health and the environment related to the management of electronic and electrical waste.



Ball-proof – compliance with the requirements of the DIN 57710-13 testing standard

The ball-proof test is described in the standard DIN 57710-13 (Luminaires with operating voltages below 1000 V; luminaires safety to ball throwing). The standard defines the requirements set for impact resistance of luminaires meant for use in indoor sports facilities. It states that a luminaire struck by a ball must withstand any damage that could cause parts of the luminaire to fall to the ground.



Zhaga-D4i - compliance with the requirements of Zhaga Book 18 or 20 and DALI standard

The Zhaga-D4i Mark represents the fact that a product is certified following the Zhaga-D4i joint certification program – a program established by Zhaga and the DALI Alliance (DiiA). The Zhaga part of the Mark represents that a product meets the requirements of Zhaga Book 18 or 20 – Zhaga standards that describe a smart interface between outdoor luminaires and sensing/ communication nodes. The DALI Alliance part of the Mark signifies that the product conforms with the DALI standard for intelligent, IoT-ready luminaires.



UL - compliance with UL standards for LED lighting **[Coming soon]**

UL stands for Underwriter Laboratories, a third-party certification company that's been around for over a century. UL sets industry-wide standards for products and performs testing according to these standards to ensure that the products marked with the UL mark are safe and high quality.



ENEC - compliance with European standards for electrical equipment

The ENEC Mark is the high quality European Mark for electrical equipment. It is governed by the European Testing Inspection Certification System which ensures that the testing of products is conducted at ENEC – accredited laboratories, following additional requirements regarding the testing procedures. The ENEC Mark means that the testing procedure was followed scrupulously and that the consumer can be certain of the product's safety and quality.



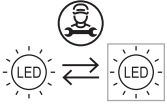
International EPD System – Environmental Product Declaration available

An Environmental Product Declaration (EPD) is a declaration of the materials, energy, transportation and other resources involved in the production, use and end-of life of a specific product. It is based on a Life Cycle Assessment (LCA) study that complies with standards EN ISO 14040 and EN ISO 14044. A product's EPD can help evaluate its impact on the environment and make sustainable choices.



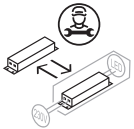
Synergrid approved - compliance with Synergrid requirements for LED lighting **[Coming soon]**

Synergrid is a federation of electricity and natural gas network operators in Belgium. The Synergrid approval mark means that the product is compliant with the design, safety and performance requirements set by Synergrid. The approval can be confirmed by checking the official list of Synergrid approved luminaires on the Synergrid website.



LED module replaceable by a professional

This pictogram shows that the LED modules included in the luminaire are only replaceable by a professional. This labeling is a requirement following the introduction of European Union's Regulation on energy labelling for light sources (EU) 2019/2015.



LED driver replaceable by a professional

This pictogram shows that the LED driver included in the luminaire is only replaceable by a professional. This labeling is a requirement following the introduction of European Union's Regulation on energy labelling for light sources (EU) 2019/2015.

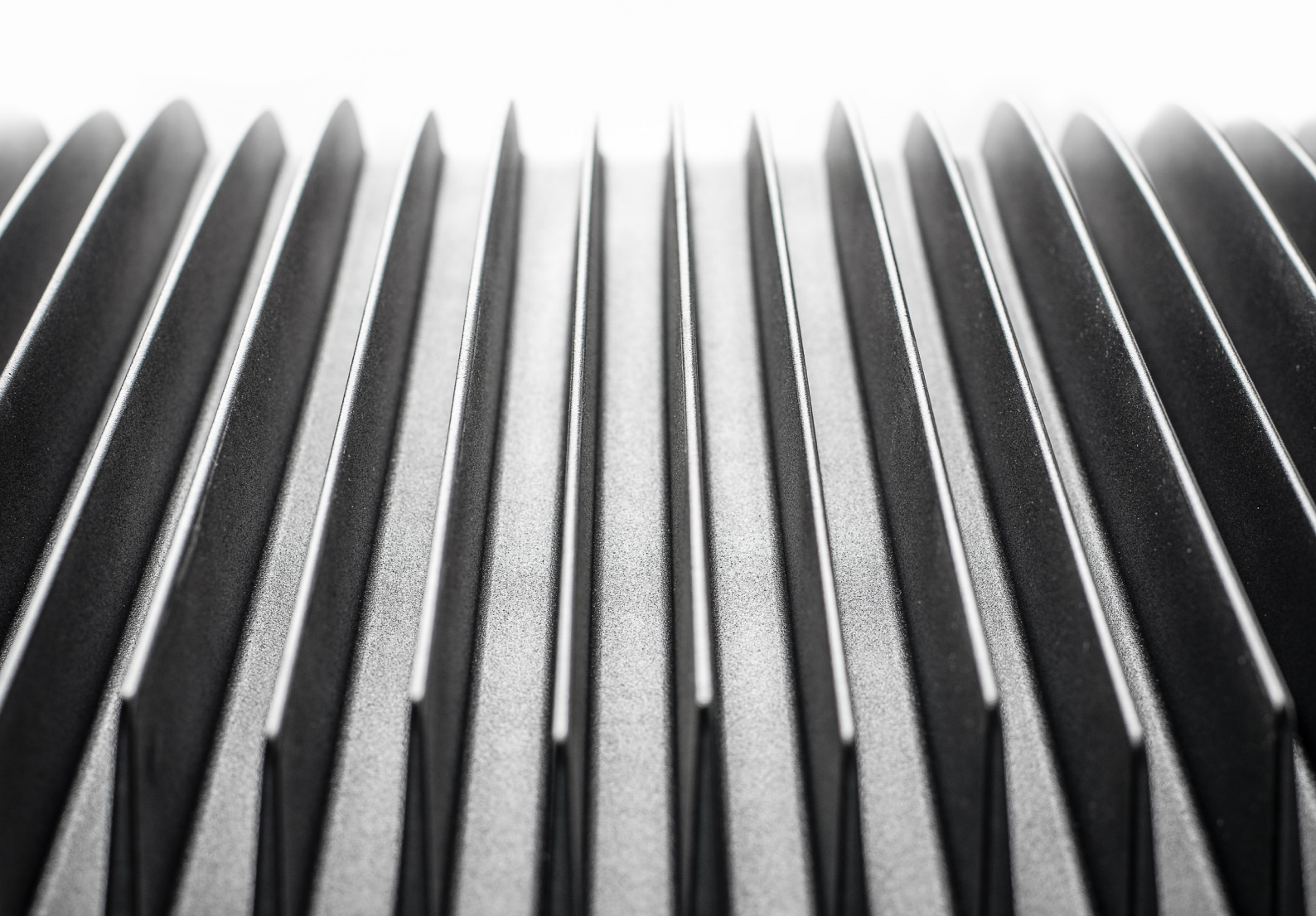
References



↘
Courchevel,
France



↘
Riga International
Airport, Latvia



VIZULO

Bukultu street 11
Riga, LV – 1005, Latvia

Sales: + 371 67 383 023
Production: + 371 67 383 024

sales@vizulo.com
www.vizulo.com

 VIZULO

 VIZULOSOLUTIONS