

VIZULO



Blackbird

MUSHROOM



Architectural & Landscape

Outdoor Industrial Area

Residential Street/Area

**Ventilation cable gland**

Combines pressure equalization and cable gland in a single unit. 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 screws

**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)*

**Socket**

Zhaga or NEMA

**Protection**

IP65 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 starting from 6 kV till 10 kV

**Light regulation**

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

**Impact resistance**

IK10 (Vandal protected)  
for the complete luminaire

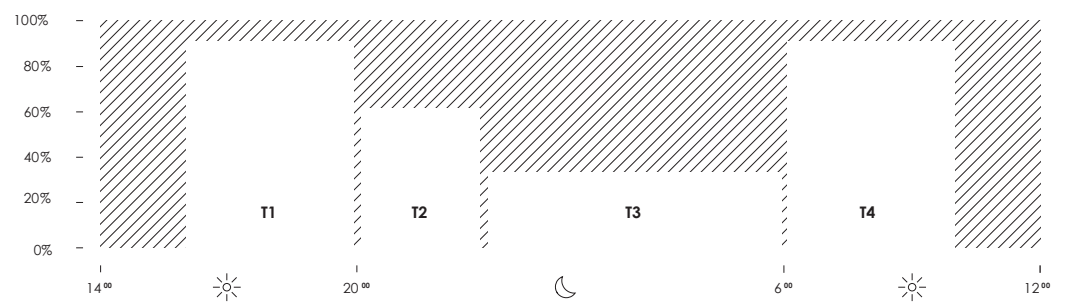
Traffic Roads

Pedestrian Roads

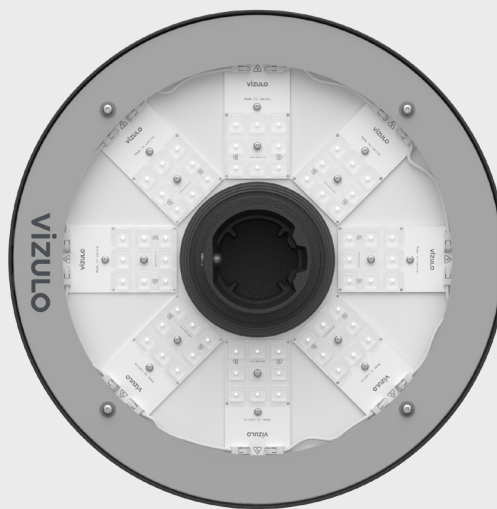
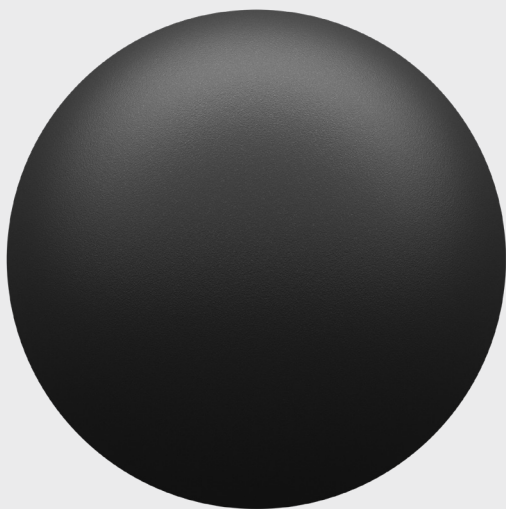
City Centre

## 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.



# Blackbird mushroom



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



RAL7035



RAL9006



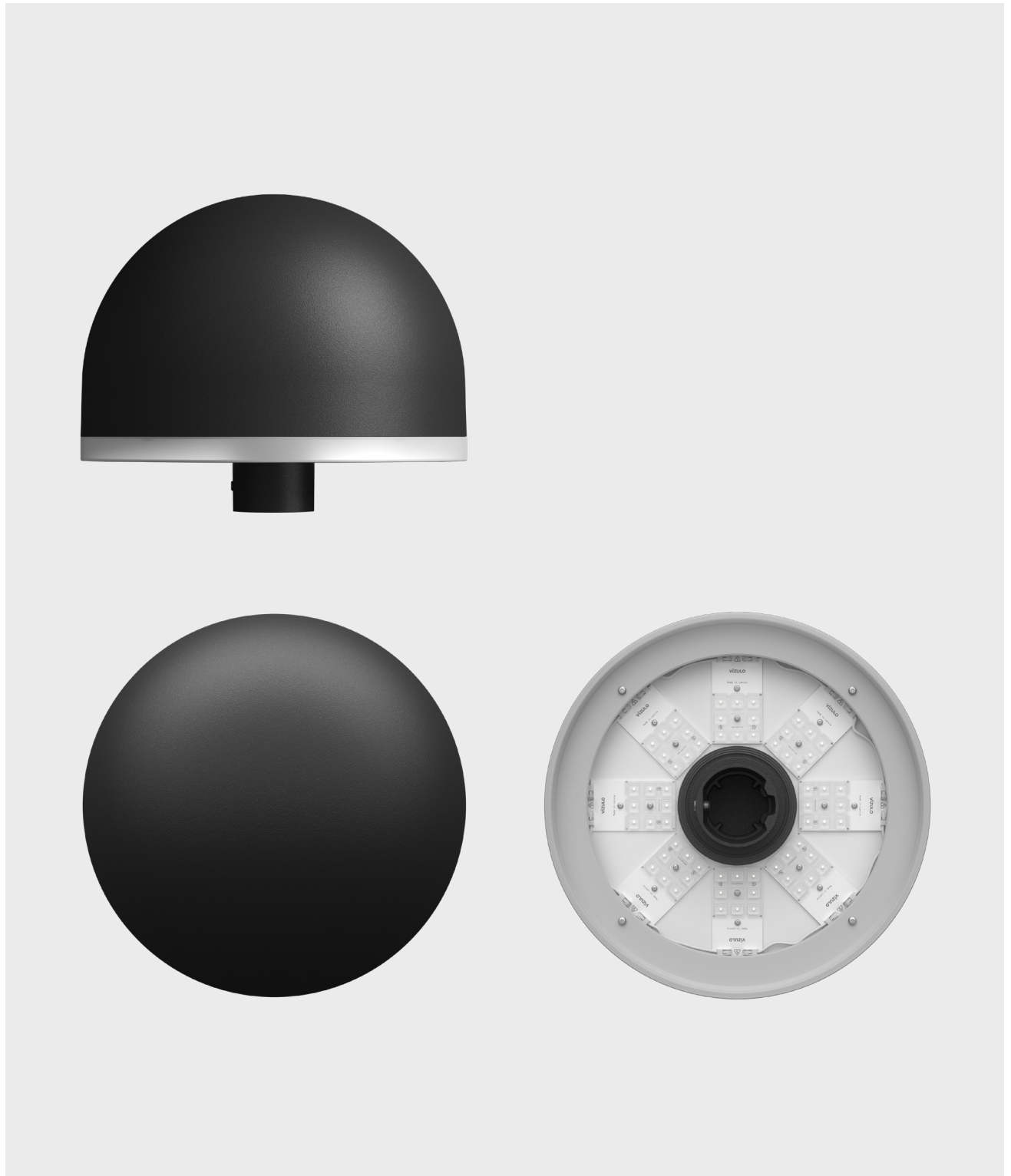
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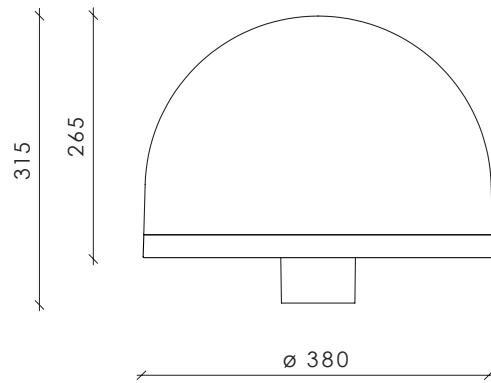
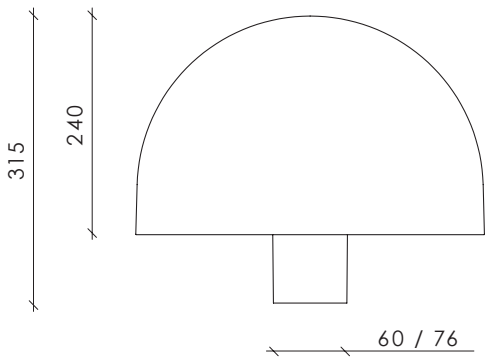


RAL9005

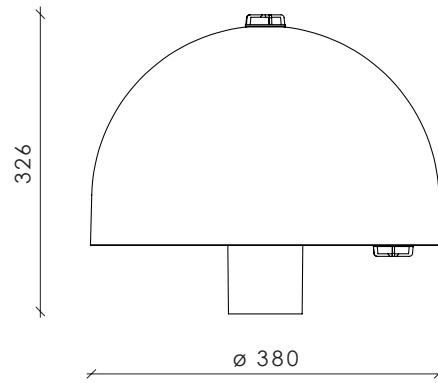
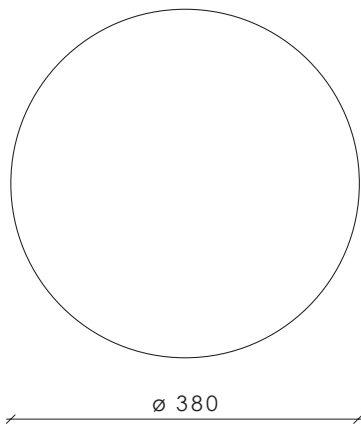
Other colors  
available on request

# Blackbird mushroom with Halo

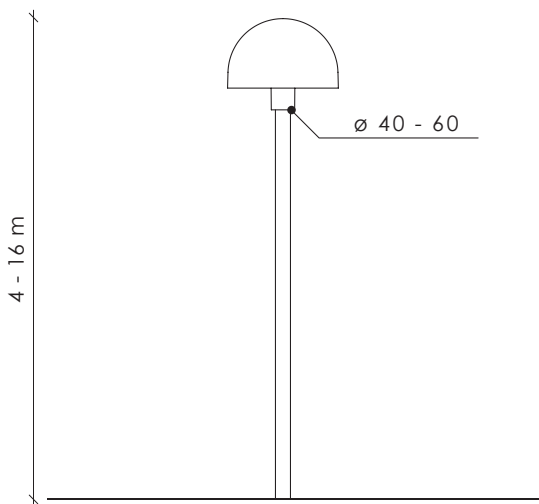




Dimensions with Halo



Dimensions with 2 Zhaga connectors



**Note!** Only those models with fixed mounting position (0° relative to the ground) are DarkSky approved!

## Technical information



<b>V</b>	198 - 264 / 110 - 277 <sup>(1)</sup>
<b>Hz</b>	50 - 60
<b>W</b>	5 - 100
<b>lm</b>	480 - 14700 <sup>(2)</sup>
<b>lm/W</b>	96 - 158
<b>K</b>	2700 / 3000 / 4000 / TW 2700 - 6500 <sup>(3)</sup>
<b>°C</b>	-40 to +50   5 - 85 W -40 to +35   5 - 100 W
<b>CRI</b>	>70 / >80 / >90 <sup>(3)</sup>

<b>Body:</b>	Die-cast aluminium
<b>Dimming:</b>	DALI / 1 - 10 V / Midnight dimming / Step dimming / Mains dimming
<b>Initial chromaticity:</b>	MacAdam 5
<b>Lifetime:</b>	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*
<b>Warranty:</b>	5 years
<b>Installation:</b>	Pre-wired cable 30 cm <sup>(4)</sup>
<b>Spigot:</b>	32 - 40 mm <sup>(5)</sup> / 40 - 60 mm / 76 mm <sup>(5)</sup>
<b>Socket:</b>	NEMA Top / Zhaga Top and Bottom
<b>Intelligent Control:</b>	Stand-alone / Group / CMS
<b>Sensor:</b>	Motion / Motion + Daylight / Daylight
<b>Surge protection:</b>	4 / 6 / 10 kV <sup>(6)</sup>
<b>Corrosion protection:</b>	Up to C5
<b>Neto weight:</b>	Up to 8.3 kg
<b>Max. wind load area, SCd:</b>	0.10 m <sup>2</sup>

<sup>1)</sup> Maximum operating voltage, ENEC certificate voltage 220 - 240 V, UL certificate voltage 110 - 277 V

<sup>2)</sup> Lumen output indicated at CRI > 70

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

**Note!** Only fixtures with CCT of 3000 K or lower are DarkSky approved!

<sup>4)</sup> Other lengths available on request

<sup>5)</sup> Achievable with an adapter for 40 - 60 mm spigot

<sup>6)</sup> 10 kV (L-N; L/N-PE) surge protection device available on request

<sup>7)</sup> 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

<b>Number of LED's</b>	8			16			24			32		
<b>Nominal current, mA</b>	150	550	710	150	500	780	260	480	710	350	500	760
<b>Power, W</b>	5	15	19	15	25	39	20	35	52	35	50	75
<b>Luminous Flux, lm</b>	560	2000	2500	2180	3600	5400	3000	5100	7200	5400	7400	10400
<b>Efficacy, lm/W</b>	112	133	132	145	144	138	150	149	140	154	148	139
<b>Power factor, PF</b>	Up to 0.94			Up to 0.95			Up to 0.97			Up to 0.97		

Luminaire efficacy	2700 K	5 - 75 W	480 - 8900 lm	96 - 132 lm/W
	3000 K	5 - 75 W	530 - 9800 lm	106 - 146 lm/W
	5000 K	5 - 75 W	560 - 10400 lm	112 - 154 lm/W
	5700 K	5 - 75 W	560 - 10400 lm	112 - 154 lm/W

## High density modules

\* Data for V01 optic.

Check VIZULO members section for additional information

4000 K | CRI 70

<b>Number of LED's</b>	16			32			48			64		
<b>Nominal current, mA</b>	150	500	780	350	500	760	280	510	680	250	390	520
<b>Power, W</b>	15	25	39	35	50	75	40	75	100	50	75	100
<b>Luminous Flux, lm</b>	2180	3600	5400	5400	7400	10400	6300	11000	14000	7800	11400	14700
<b>Efficacy, lm/W</b>	145	144	138	154	148	139	158	147	140	156	152	147
<b>Power factor, PF</b>	Up to 0.95			Up to 0.97			Up to 0.97			Up to 0.96		

Luminaire efficacy	2700 K	15 - 100 W	1830 - 12600 lm	115 - 134 lm/W
	3000 K	15 - 100 W	2020 - 13900 lm	127 - 148 lm/W
	5000 K	15 - 100 W	2180 - 14700 lm	138 - 158 lm/W
	5700 K	15 - 100 W	2180 - 14700 lm	138 - 158 lm/W

## ECO

\* Data for L01 optic.

Check VIZULO members section for additional information

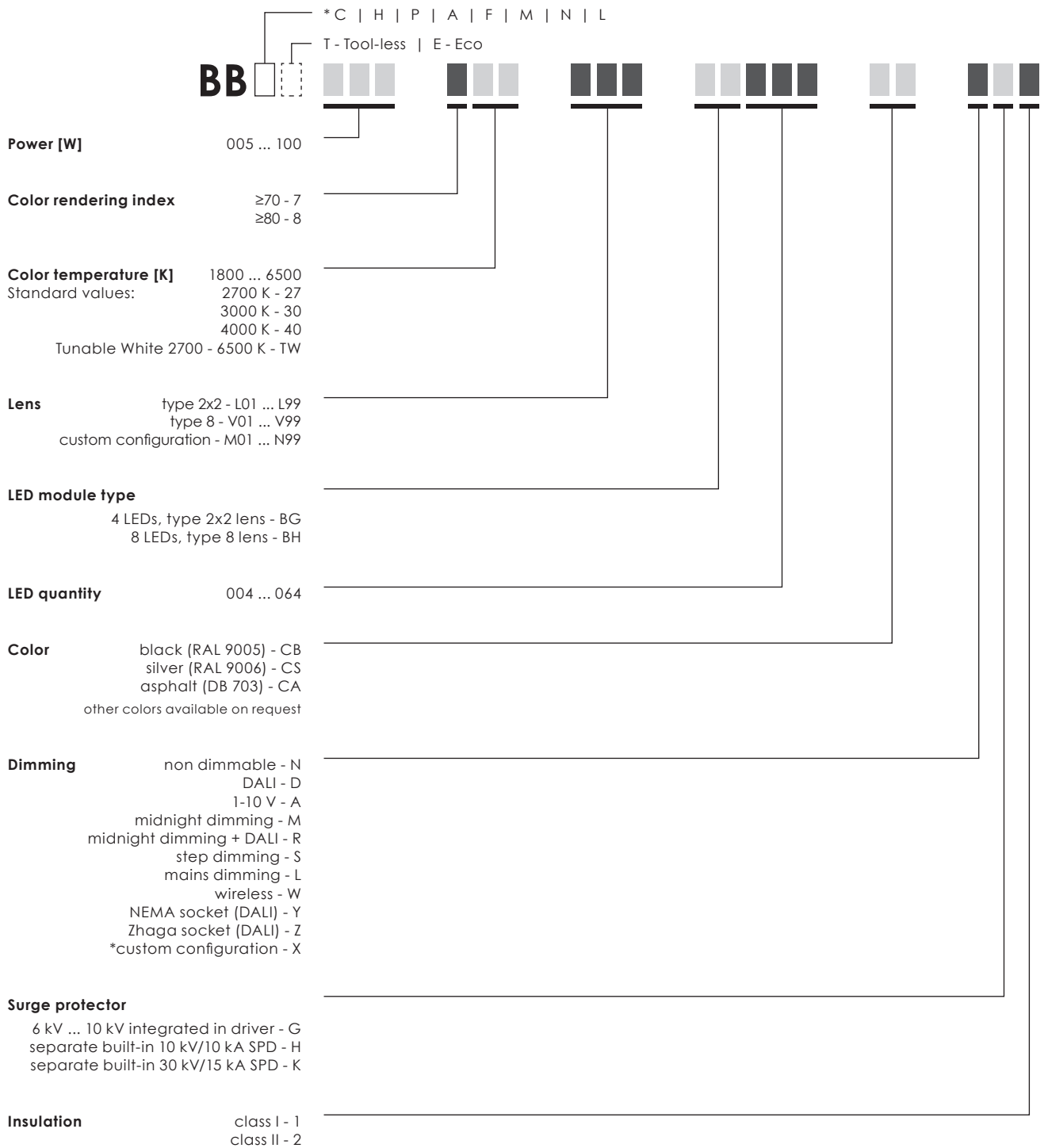
4000 K | CRI 70

<b>Number of LED's</b>	8			16			24			32		
<b>Nominal current, mA</b>	280	470	700	280	490	720	270	490	650	260	380	500
<b>Power, W</b>	15	25	38	28	50	75	40	75	100	50	75	100
<b>Luminous Flux, lm</b>	2130	3400	4600	4200	6800	9100	6050	10100	12400	7620	10700	13400
<b>Efficacy, lm/W</b>	142	136	121	150	136	121	151	135	124	152	143	134
<b>Power factor, PF</b>	Up to 0.98			Up to 0.97			Up to 0.97			Up to 0.97		

Luminaire efficacy	2700 K	5 - 100 W	1990 - 12400 lm	110 - 141 lm/W
	3000 K	5 - 100 W	2100 - 12900 lm	115 - 146 lm/W
	5000 K	5 - 100 W	2130 - 13400 lm	121 - 152 lm/W
	5700 K	5 - 100 W	2130 - 13400 lm	121 - 152 lm/W



# Model name principles

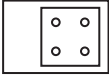
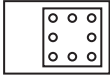


**EXAMPLE** BBM 050 730 L01 BG032 CB DG1

\* C - Street (side-entry) | H - Hanging | P - Post-top | A - Top-entry | F - Flood (flood light)  
 M - Mushroom (42 - 60 mm) | N - Mushroom (76 mm) | L - Scepter

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

# LED modules

Type	Max module quantity	Min LED quantity per module	Max LED quantity per module	Max LED quantity per luminaire	LED step	LED type	Lens type	Layout
BG	8	4	4	32	2	Standard Eco	type 2x2 L01...LZ9	
BH	8	4	8	64	4	Standard	type 8 V01...VZ9	

# 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 <sup>(1)</sup>	4 <sup>(1)</sup>
None	Mains dimming	L	3	2
Zhaga	DALI	Z	3 <sup>(2)</sup>	2 <sup>(2)</sup>
Zhaga	Midnight dimming	X	3	2
Zhaga	Mains dimming	X	3	2
NEMA	DALI	Y	3 / 5 <sup>(3)</sup>	2 / 4 <sup>(3)</sup>
NEMA	Midnight dimming	X	3	2
NEMA	Step dimming	X	5 <sup>(1)</sup>	4 <sup>(1)</sup>
NEMA	Mains dimming	X	3	2

<sup>1)</sup> 1 core unused

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

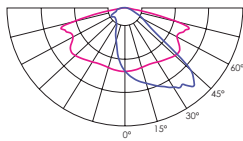
<sup>3)</sup> +2 cores for external DALI connection

# Optics

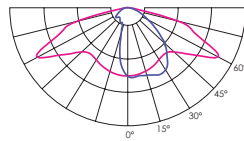
Standard modules \*

\* Optic distribution diagrams are **only for visual purposes**.  
Check VIZULO members section for precise information.

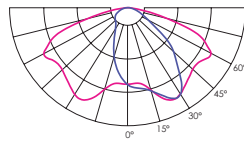
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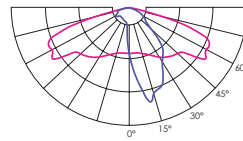
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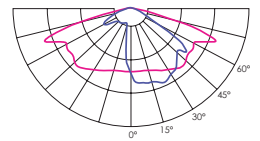
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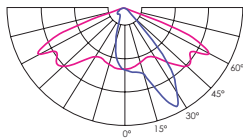
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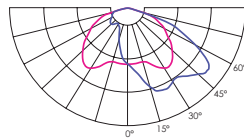
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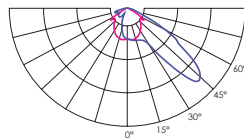
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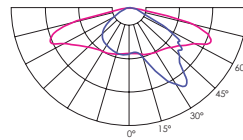
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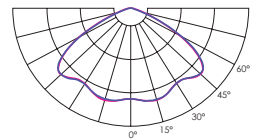
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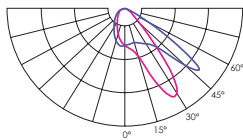
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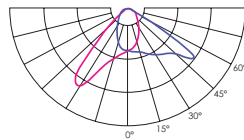
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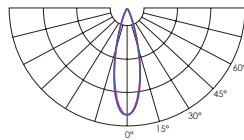
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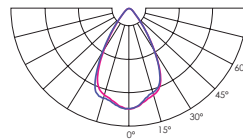
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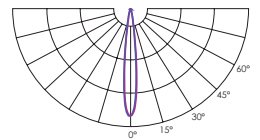
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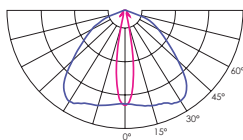
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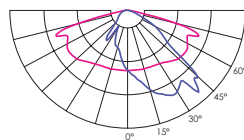
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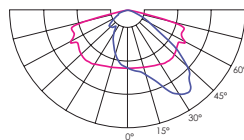
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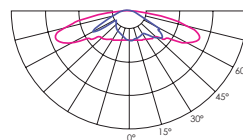
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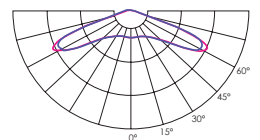
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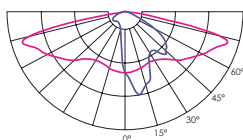
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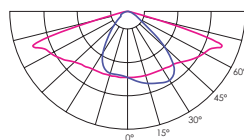
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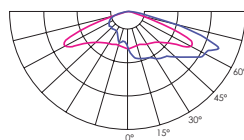
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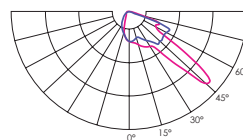
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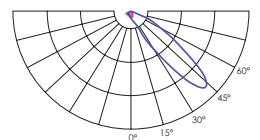
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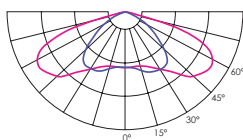
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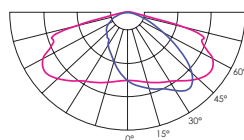
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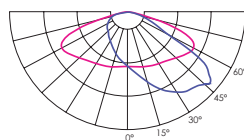
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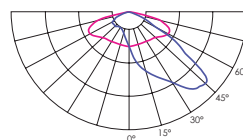
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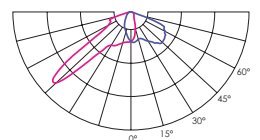
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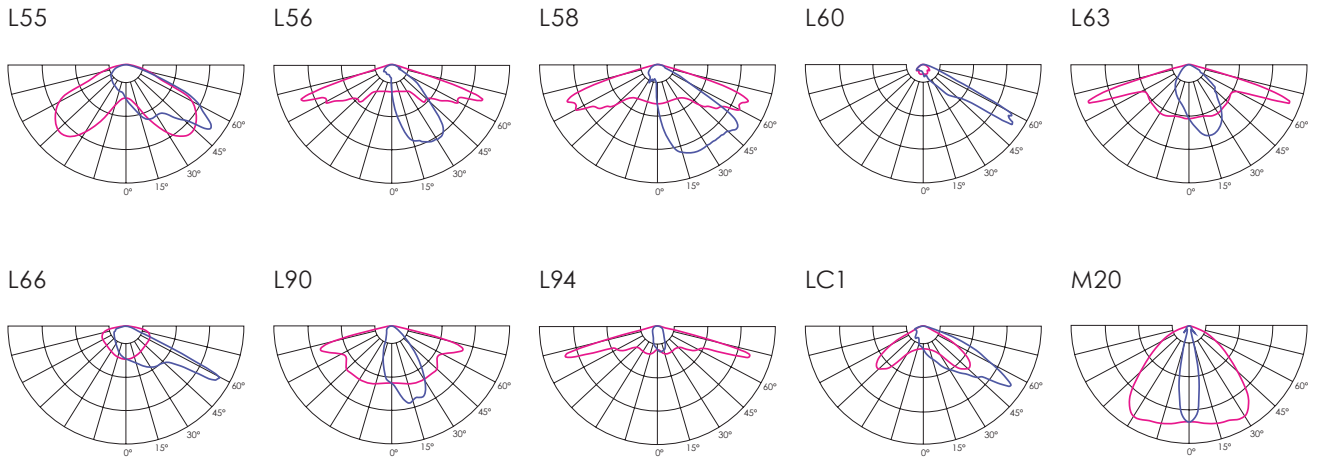


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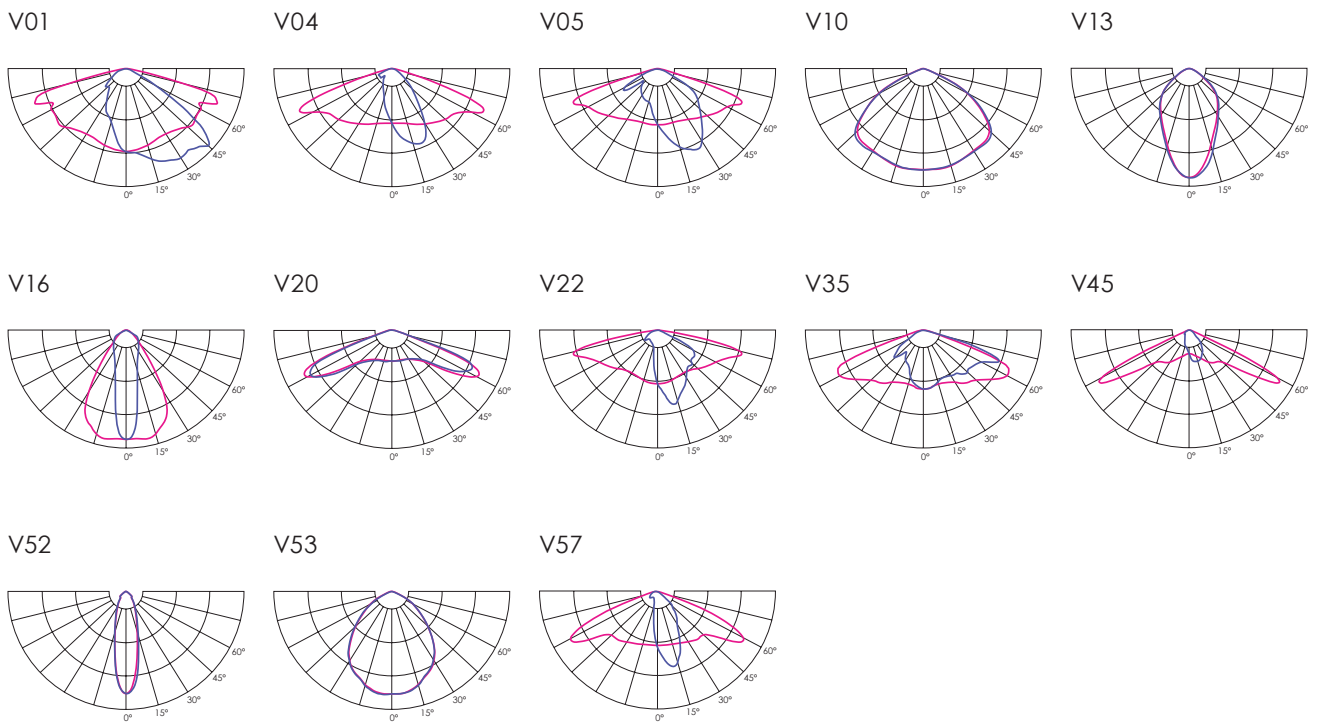
L46





High density modules \*

\* Optic distribution diagrams are **only for visual purposes**.  
Check VIZULO members section for precise information.





# Pedestrian crossing optics



<b>V</b>	198 - 264 / 110 - 277 <sup>1)</sup>	<b>Body:</b>	Die-cast aluminium
<b>Hz</b>	50 - 60	<b>Dimming:</b>	DALI / 1 - 10 V / Midnight dimming / Step dimming / Mains dimming
<b>W</b>	5 - 75 <sup>2)</sup> 5 - 100 <sup>3)</sup>	<b>Initial chromaticity:</b>	MacAdam 5
<b>lm</b>	Up to 10400 <sup>2)</sup> Up to 13400 <sup>3)</sup>	<b>Lifetime:</b>	Eco 100 000 h (L90B10) at Ta = 25 °C* Standard 100 000 h (L98B10) at Ta = 25 °C*
<b>lm/W</b>	96 - 154 <sup>2)</sup> 110 - 152 <sup>3)</sup>	<b>Warranty:</b>	5 years
<b>K</b>	2700 / 3000 / 4000 / TW 2700 - 6500 <sup>4)</sup>	<b>Installation:</b>	Pre-wired cable 30 cm <sup>5)</sup>
<b>°C</b>	-40 to +50   5 - 85 W -40 to +35   5 - 100 W	<b>Spigot:</b>	32 - 40 mm <sup>6)</sup> / 40 - 60 mm / 76 mm <sup>6)</sup>
<b>CRI</b>	>70 / >80 / >90 <sup>4)</sup>	<b>Socket:</b>	NEMA Top / Zhaga Top and Bottom
		<b>Intelligent Control:</b>	Stand-alone / Group / CMS
		<b>Sensor:</b>	Motion / Motion + Daylight / Daylight
		<b>Surge protection:</b>	4 / 6 / 10 kV <sup>7)</sup>
		<b>Corrosion protection:</b>	Up to C5
		<b>Neto weight:</b>	Up to 8.3 kg
		<b>Max. wind load area, SCd:</b>	0.10 m <sup>2</sup>

<sup>1)</sup> Maximum operating voltage, ENEC certificate voltage 220 - 240 V, UL certificate voltage 110 - 277 V

<sup>2)</sup> Standard modules, lumen output indicated at CRI > 70

<sup>3)</sup> ECO modules, lumen output indicated at CRI > 70

<sup>4)</sup> 1800 / 2200 / 3500 / 5000 / 5700 / 6500 K available on request along with other not listed CRI and CCT

**Note!** Only fixtures with CCT of 3000 K or lower are DarkSky approved!

<sup>5)</sup> Other lengths available on request

<sup>6)</sup> Achievable with an adapter for 40 - 60 mm spigot

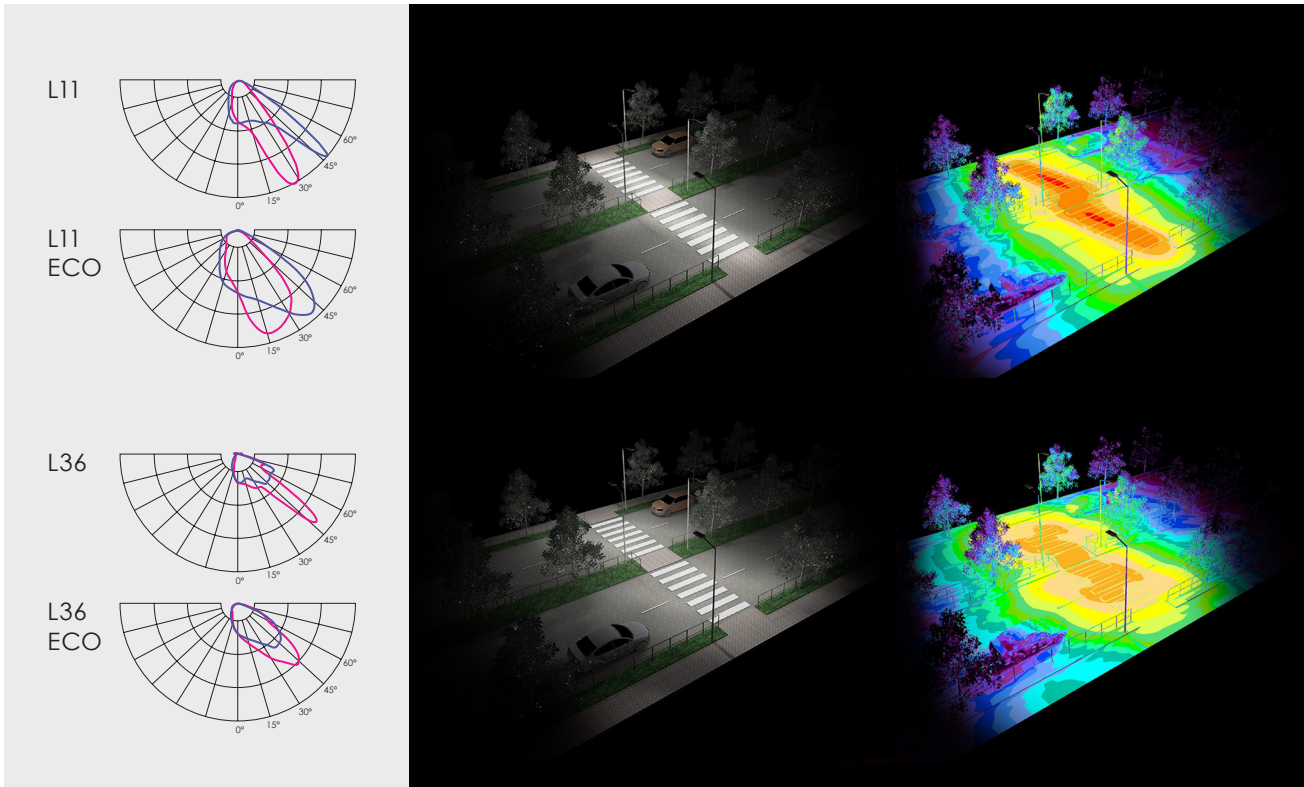
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<sup>8)</sup> Coming soon

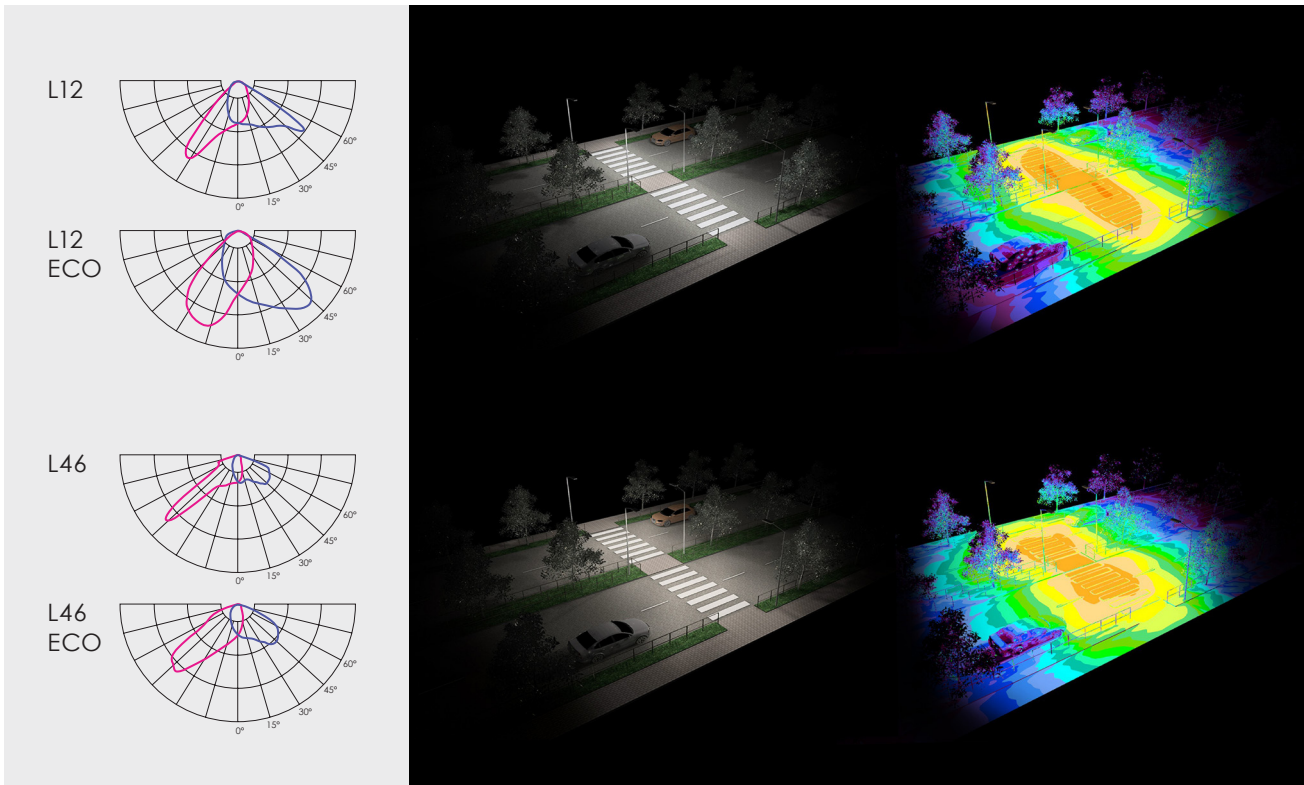
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Technical parameters for final product can differ from typical data by 7% due to special conditions of LED manufacturing processes.

## Right side traffic



## Left side traffic



# MCB / Inrush current table

## Tridonic LED driver

Standard/High density	In-rush current (peak/duration)	B10A	B16A	B20A	B25A	C10A	C16A	C20A	C25A
BB 8-16 LED, 8-33 W	36 A (195 µs)	10	16	21	28	16	21	35	44
BB 16-24 LED, 19-60 W	32 A (267 µs)	7	12	15	19	11	20	25	30
BB 32-40 LED, 28-80 W	37 A (287 µs)	7	12	15	19	11	20	25	30
BB 40-64 LED, 44-100 W	56 A (280 µs)	5	8	11	14	10	16	22	22
BB 64-84 LED, 88-100 W	84 A (255 µs)	3	5	8	11	6	10	16	17
BB 84 LED, 92-100 W	112 A (280 µs)	2	4	5	7	5	8	11	11
BB 96 LED, 100 W	121 A (287 µs)	2	3	5	6	3	5	9	10
<i>Eco</i>		<i>B10A</i>	<i>B16A</i>	<i>B20A</i>	<i>B25A</i>	<i>C10A</i>	<i>C16A</i>	<i>C20A</i>	<i>C25A</i>
BBE 6-10 LED, 12-33 W	36 A (195 µs)	10	16	21	28	16	21	35	44
BBE 6-12 LED, 16-59 W	32 A (267 µs)	7	12	15	19	11	20	25	30
BBE 10-18 LED, 19-80 W	37 A (287 µs)	7	12	15	19	11	20	25	30
BBE 16-34 LED, 37-100 W	56 A (280 µs)	5	8	11	14	10	16	22	22
BBE 20-48 LED, 46-100 W	84 A (255 µs)	3	5	8	11	6	10	16	17
BBE 48 LED, 100 W	121 A (287 µs)	2	3	5	6	3	6	9	10

## Osram LED driver

Standard/High density	In-rush current (peak/duration)	B10A	B16A	B20A	B25A	C10A	C16A	C20A	C25A
BB 8-16 LED, 8-40 W	45 A (180 µs)	10	17	21	28	16	27	33	44
BB 20-32 LED, 18-66 W	53 A (200 µs)	7	12	15	20	11	19	24	32
BB 32-48 LED, 28-96 W	57 A (210 µs)	7	12	15	20	11	19	24	32
BB 48-84 LED, 52-100 W	62 A (330 µs)	4	8	10	14	6	12	16	22
BB 84 LED, 90-100 W	114 A (210 µs)	3	6	7	10	5	9	12	16
BB 96 LED, 100 W	119 A (330 µs)	2	4	6	8	3	7	9	12
<i>Eco</i>		<i>B10A</i>	<i>B16A</i>	<i>B20A</i>	<i>B25A</i>	<i>C10A</i>	<i>C16A</i>	<i>C20A</i>	<i>C25A</i>
BBE 4-8 LED, 11-41 W	45 A (180 µs)	10	17	21	28	16	27	33	44
BBE 6-16 LED, 16-66 W	53 A (200 µs)	7	12	15	20	11	19	24	32
BBE 12-24 LED, 28-96 W	57 A (210 µs)	7	12	15	20	11	19	24	32
BBE 18-44 LED, 41-100 W	62 A (330 µs)	4	8	10	14	6	12	16	22
BBE 48 LED, 100 W	119 A (330 µs)	2	4	6	8	3	7	9	12

# Backlight cutter

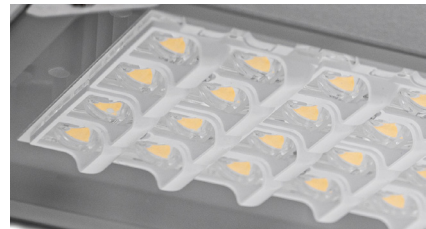
## Backlight cutter | black

Art. 70000661



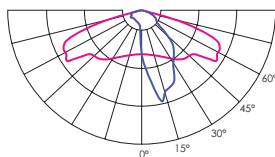
## Backlight cutter | white

Art. 70000662

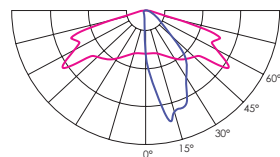


Optical losses from 10% to 31% depending from used optic.

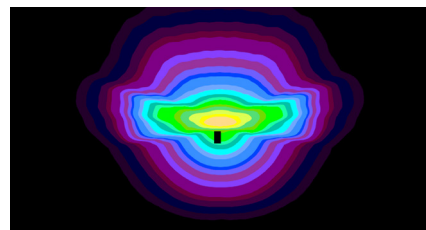
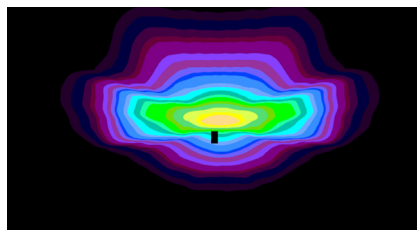
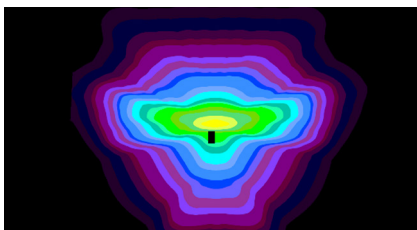
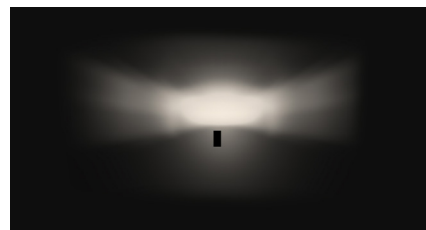
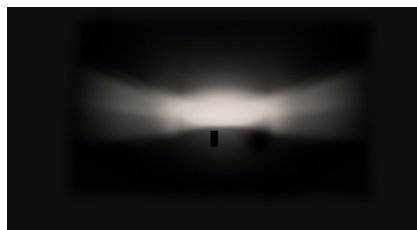
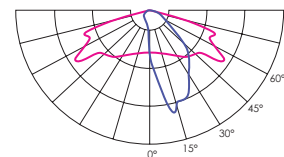
Without backlight cutter



Backlight cutter | black



Backlight cutter | white





# Accessories

## Blackbird halo, PMMA, matt standard

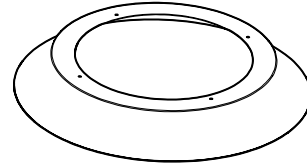
Art. 70082006



## Blackbird skirt

RAL 9005 .....Art. 70082023

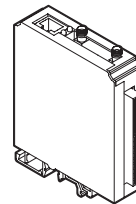
RAL 9005 with primer .....Art. 70082021



## MAUGLO Segment controller

Art. 70010004

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

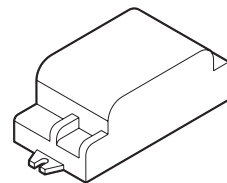


## MAUGLO Luminaire controller

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 lightning surges;

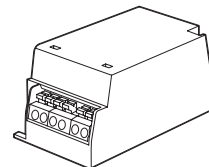
Voltage Protection level up (L-N)  $\leq 1,5$  kV

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



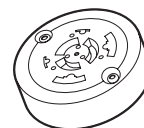
## NEMA Socket

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

Art. 70000362

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

Art. 70000333



## Dummy Link for NEMA Socket

Art. 70000113



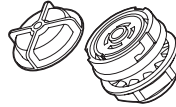
**Zhaga socket no cap**

Art. 70000612



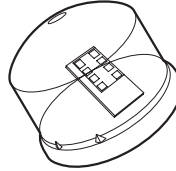
**Zhaga socket with cap**

Art. 70000613



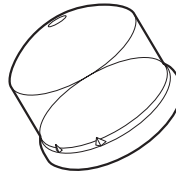
**MSLC205RG Luminaire controller + radar, Zhaga, 80 mm**

Art. 70010027



**MSLC205RGL Luminaire controller, Zhaga, 80 mm**

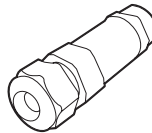
Art. 70010029



**Connector**

Art. 70000313

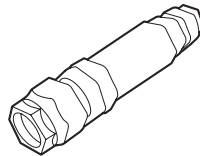
IP66 rated connector offers easy installation of the street luminaires.  
3 wire cable connector



**Connector**

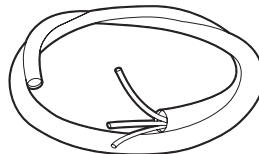
Art. 70000304

IP66 rated connector offers easy installation of the street luminaires.  
5 wire cable connector

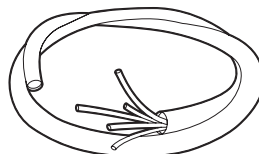


**Pre-installed cable sets  
For internal power supply**

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.



**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.



**ENEC+** - compliance with European standards for LED – based electronic products

The ENEC+ Mark is the high quality European Mark for LED – based electronic products. It demonstrates the product's compliance with the IEC standards for performance of LED modules and LED based luminaires. The ENEC+ Mark can only be granted to a product that has already acquired the ENEC Mark.



**DarkSky Approved** - a DarkSky program seal of approval

DarkSky Approved certification is granted to outdoor lighting fixtures meeting the criteria outlined by DarkSky, an organization that aims to reduce light pollution, enabling clearer night skies and mitigating the impact on wildlife and human health. DarkSky Approved luminaires are shielded to cut off uplight, utilize energy-efficient light sources, and employ measures to limit glare. This certification reflects a dedication to responsible outdoor lighting, valued by communities, businesses, and individuals striving to protect nocturnal environments.



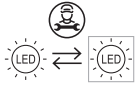
**International EPD System** – Environmental Product Declaration available

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.



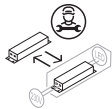
**Synergrid approved** - compliance with Synergid requirements for LED lighting **[Coming soon]**

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.

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