

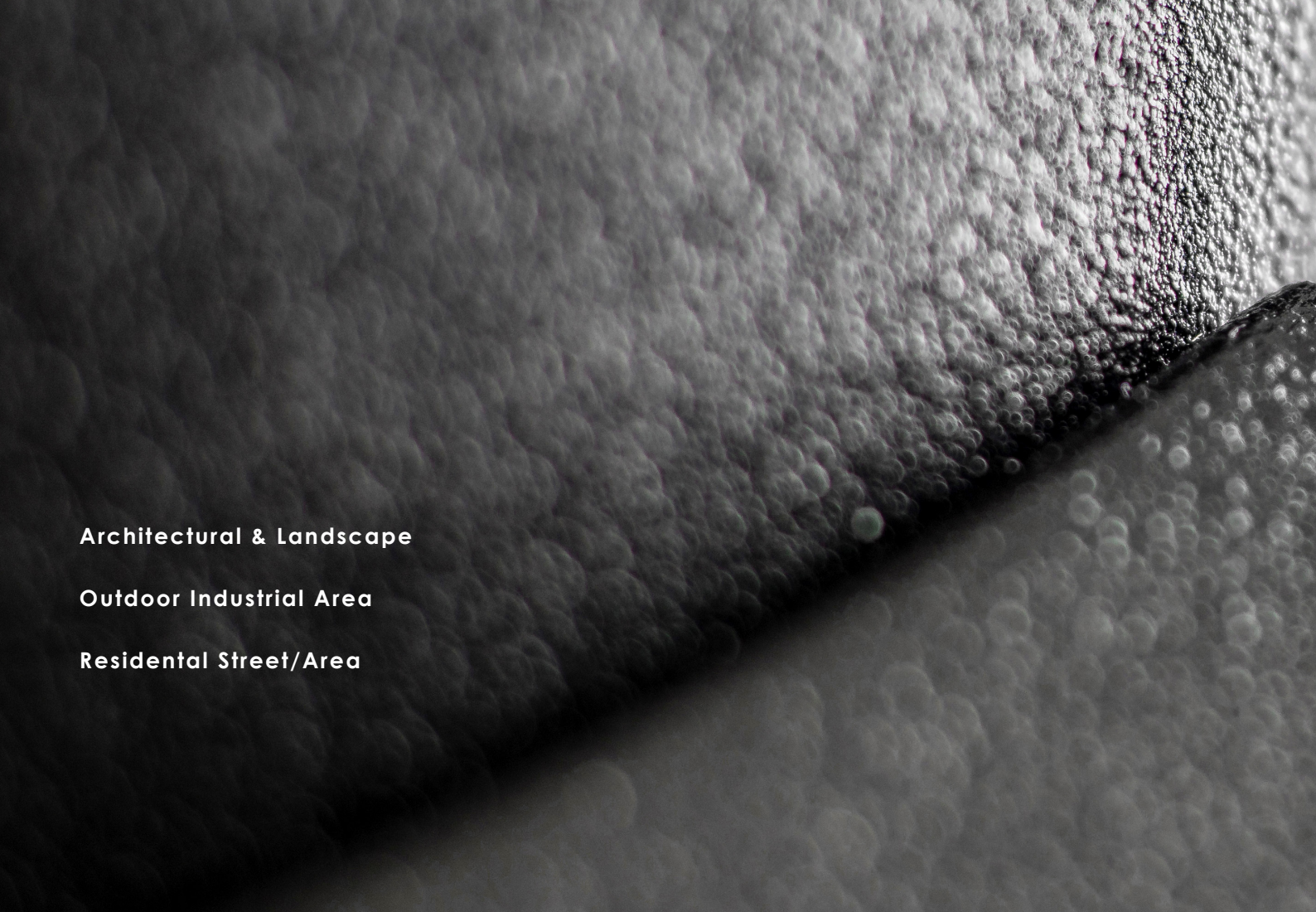
VIZULO



Blackbird

SIDE-ENTRY





**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, 5000 K, 5700 K, 6500 K available on customer request)*

**Intelligent light control system**

Power line or radio frequency

**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 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**

IK08 (Vandal protected) for the complete luminaire



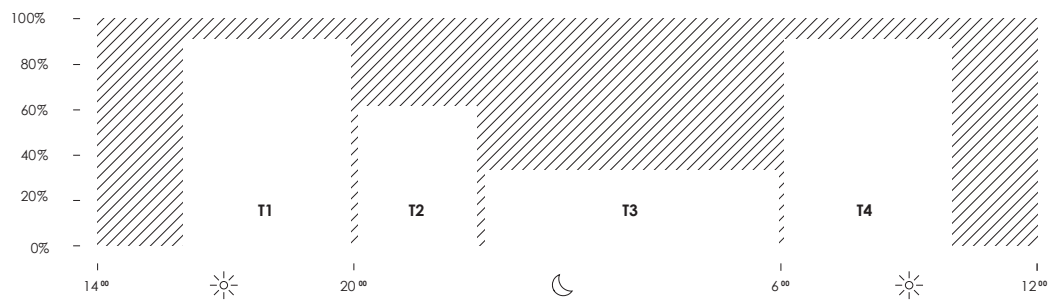
**Traffic Roads**

**Pedestrian Roads**

**City Centre**

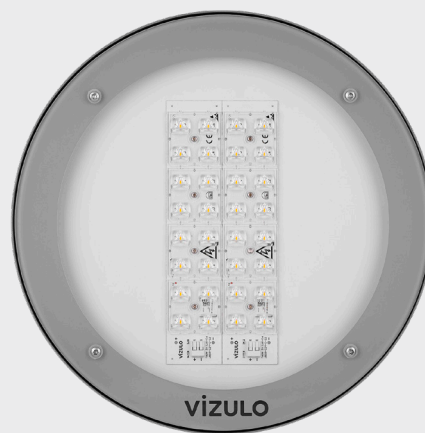
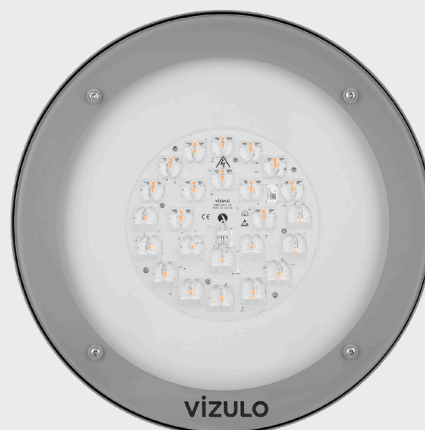
## Midnight dimming

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 side entry



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



RAL9006



DB703

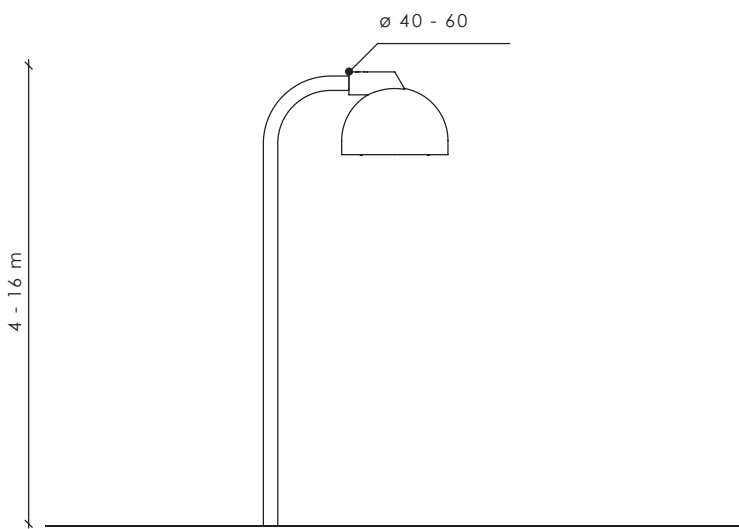
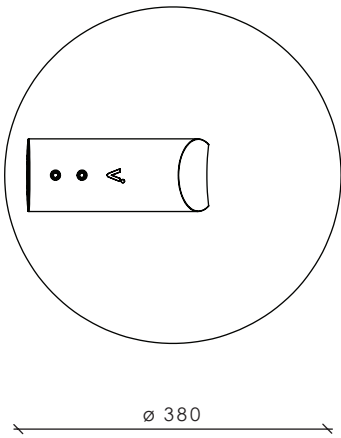
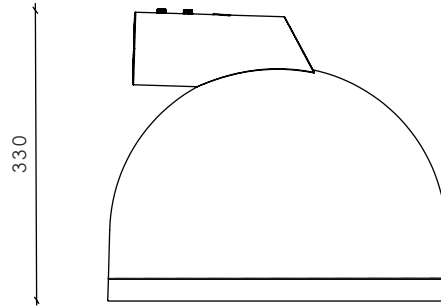
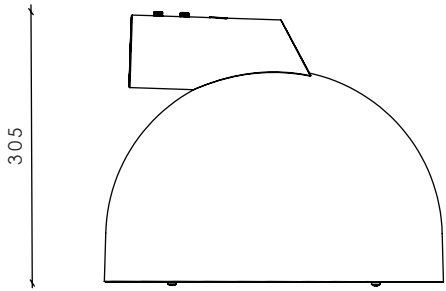


RAL9005

Other colors available on request

# Blackbird side entry with Halo





Max. wind load area, SCd, m<sup>2</sup>: 0,10

## Technical information



<b>V</b>	220 - 240	1 - 10 V; DALI; Midnight dimming
<b>Hz</b>	50 - 60	Chromaticity tolerance (initial MacAdam): 5
<b>W</b>	5 - 100	Warranty 5 years
<b>lm</b>	441 - 15500 <sup>(1)</sup>	100 000 h (L98B10) at Ta = 25 °C
<b>lm/W</b>	88 - 160	100 000 h (L80B10) at Ta = 25 °C (ECO) <sup>(4)</sup>
<b>K</b>	2700 / 3000 / 4000 <sup>(2)</sup>	
<b>°C</b>	-40 to +50	
<b>CRI</b>	>70 / >80 <sup>(3)</sup>	<i>Surge protection:</i> 6 kV, 10 kV (optional) <sup>(5)</sup>
		<i>Spigot:</i> ø 40 - 60 mm
		<i>Body:</i> Die-cast aluminium
		<i>Intelligent light control system:</i> Radio frequency / Power line <sup>(6)</sup>
		<i>Socket:</i> Zhaga

<sup>(1)</sup> Lumen output indicated at CRI > 70

<sup>(2)</sup> 1800 / 2200 / 5000 / 5700 / 6500 K available on request;

Tunable white option available (2700 - 6500 K);

Amber option available

<sup>(3)</sup> Luminaries with color rendering index (CRI): Ra > 90 on request

<sup>(4)</sup> Average lifetime value for ECO model at Ta = 25 °C is 100 000 h L80/B10\*

<sup>(5)</sup> 10 kV ( L-N; L/N-PE ) surge protection device available on request

<sup>(6)</sup> Optional. Available only with DALI ; 1 - 10 V

\*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 will reach 100 000 h L90/B10. 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

	4			8			16		
<b>Number of LED's</b>	4			8			16		
<b>Nominal current, mA</b>	270	500	730	140	540	700	270	480	760
<b>Power, W</b>	5	8	11	5	15	19	15	25	39
<b>Luminous Flux, lm</b>	520	900	1300	560	2000	2500	2200	3530	5240
<b>Efficacy, lm/W</b>	104	113	118	110	133	132	147	141	134
<b>Power factor, PF</b>	0,83	0,89	0,93	0,69	0,90	0,94	0,83	0,93	0,98

	24			32			48		
<b>Number of LED's</b>	24			32			48		
<b>Nominal current, mA</b>	260	470	700	280	510	680	270	510	680
<b>Power, W</b>	20	35	52	28	50	75	40	75	100
<b>Luminous Flux, lm</b>	3000	5100	7200	4300	7300	10230	6100	11000	14000
<b>Efficacy, lm/W</b>	150	146	138	154	146	136	153	147	140
<b>Power factor, PF</b>	0,86	0,94	0,97	0,81	0,93	0,97	0,79	0,97	0,96

Luminaire efficacy	2700 K	5 - 100 W	441 - 12000 lm	88 - 134 lm/W
	3000 K	5 - 100 W	485 - 13200 lm	97 - 144 lm/W
	5000 K	5 - 100 W	520 - 14000 lm	104 - 154 lm/W
	5700 K	5 - 100 W	520 - 14000 lm	104 - 154 lm/W

## High density modules

\* Data for V01 optic.

Check VIZULO members section for additional information

4000 K | CRI 70

	16			24			32		
<b>Number of LED's</b>	16			24			32		
<b>Nominal current, mA</b>	280	480	760	260	470	700	290	500	760
<b>Power, W</b>	15	25	39	20	35	52	29	50	75
<b>Luminous Flux, lm</b>	2200	3530	5240	3000	5100	7200	4450	7300	10300
<b>Efficacy, lm/W</b>	147	141	134	150	146	138	153	146	137
<b>Power factor, PF</b>	0,83	0,93	0,98	0,86	0,93	0,97	0,82	0,93	0,97

	48			96		
<b>Number of LED's</b>	48			96		
<b>Nominal current, mA</b>	270	510	680	270	320	350
<b>Power, W</b>	40	75	100	76	90	100
<b>Luminous Flux, lm</b>	6300	11000	14000	12100	14100	15500
<b>Efficacy, lm/W</b>	158	147	140	159	157	155
<b>Power factor, PF</b>	0,89	0,97	0,96	0,97	0,98	0,96

Luminaire efficacy	2700 K	15 - 100 W	1840 - 13210 lm	115 - 136 lm/W
	3000 K	15 - 100 W	2015 - 14530 lm	127 - 150 lm/W
	5000 K	15 - 100 W	2200 - 15500 lm	134 - 159 lm/W
	5700 K	15 - 100 W	2200 - 15500 lm	134 - 159 lm/W



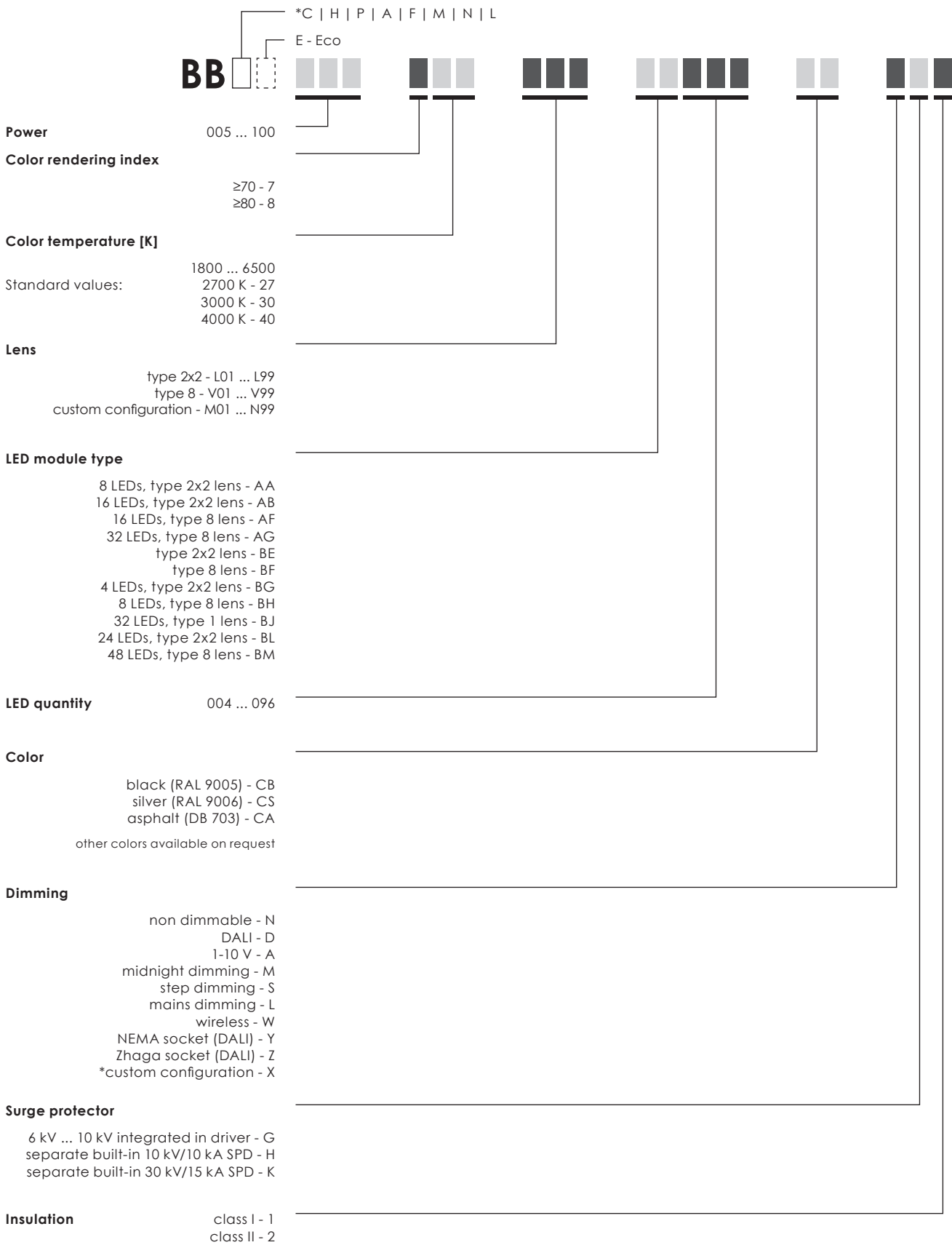
4000 K | CRI 70

<b>Number of LED's</b>	4			8			16		
<b>Nominal current, mA</b>	140	490	670	280	490	700	140	250	390
<b>Power, W</b>	5	14	19	15	26	38	15	25	39
<b>Luminous Flux, lm</b>	55	1730	2300	2100	3430	4640	2300	3750	5560
<b>Efficacy, lm/W</b>	111	124	121	140	132	122	153	150	143
<b>Power factor, PF</b>	0,69	0,89	0,94	0,83	0,94	0,98	0,83	0,93	0,98

<b>Number of LED's</b>	24			32			48		
<b>Nominal current, mA</b>	270	530	650	260	380	500	140	260	350
<b>Power, W</b>	42	80	100	50	75	100	40	75	100
<b>Luminous Flux, lm</b>	6050	10600	12400	7620	11000	13400	6410	11500	14500
<b>Efficacy, lm/W</b>	144	133	124	152	147	134	160	153	145
<b>Power factor, PF</b>	0,98	0,97	0,96	0,93	0,97	0,96	0,79	0,92	0,96

Luminaire efficacy	2700 K	5 - 100 W	520 - 13560 lm	104 - 150 lm/W
	3000 K	5 - 100 W	555 - 14500 lm	111 - 160 lm/W
	5000 K	5 - 100 W	555 - 14500 lm	111 - 160 lm/W
	5700 K	5 - 100 W	555 - 14500 lm	111 - 160 lm/W

# Model name principles

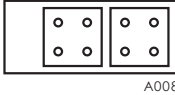
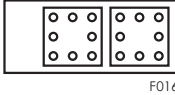
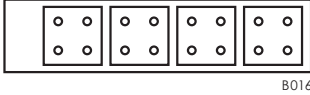
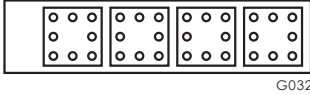
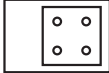
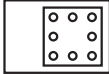
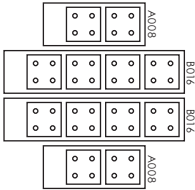
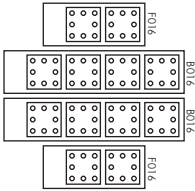
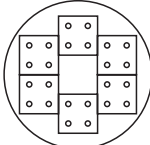
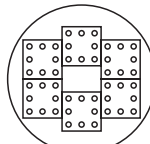
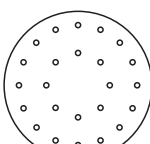


**EXAMPLE** BBCE 050 730 L01 AB032 CB DG1

\* 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 quantity	Min LED quantity	Max LED quantity	Max LED quantity per luminaire	LED step	LED type	Lens type	Layout
AA	4	4	8	32	2	Standard Eco	type 2x2 L01...LZ9	
AF	4	4	16	64	4	Standard	type 8 V01...VZ9	
AB	2	8	16	32	2	Standard Eco	type 2x2 L01...LZ9	
AG	2	16	32	64	4	Standard	type 8 V01...VZ9	
BG	8	4	4	32	2	Standard Eco	type 2x2 L01...LZ9	
BH	8	4	8	64	4	Standard	type 8 V01...VZ9	
BE	1	40	48	48	2	Standard Eco	type 2x2 L01...LZ9	
BF	1	72	96	96	4	Standard	type 8 V01...VZ9	
BL	1	24	24	24	-	Standard Eco	type 2x2 L01...LZ9	
BM	1	24	48	48	-	Standard	type 8 V01...VZ9	
BJ	1	8	24	24	2	Standard Eco	type 1 P01...PZ9	

# 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	N	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

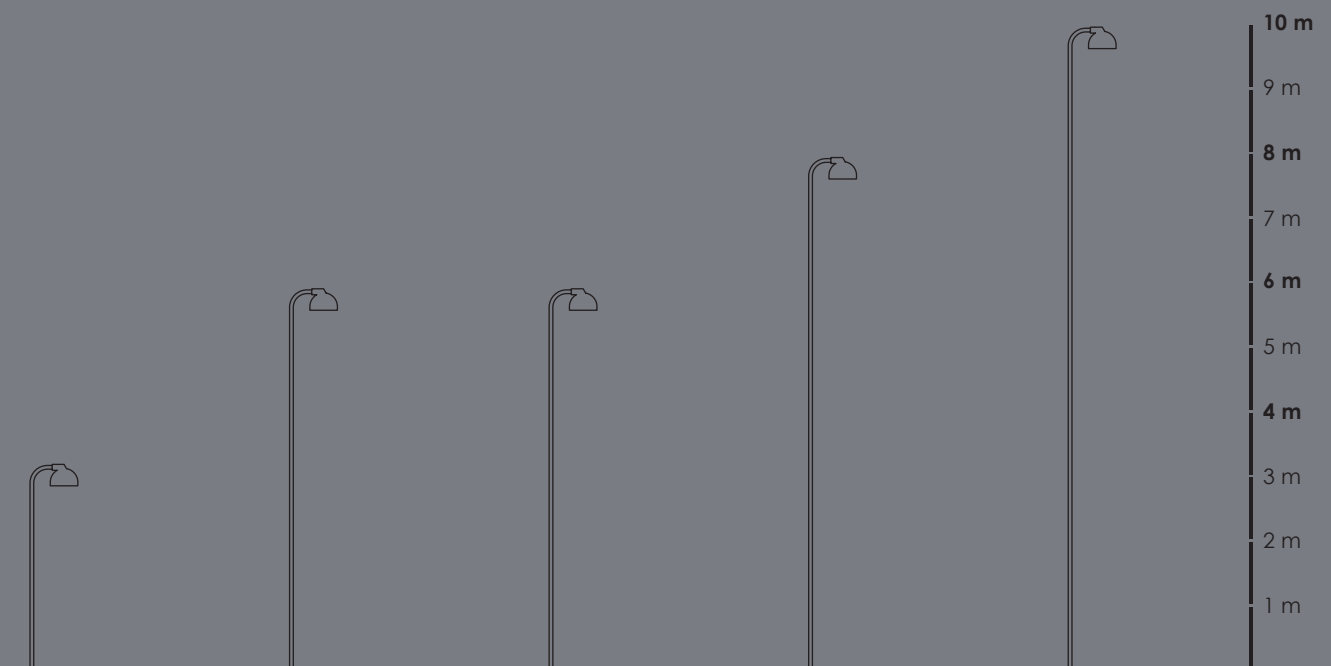
<sup>(1)</sup> 1 core unused

<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



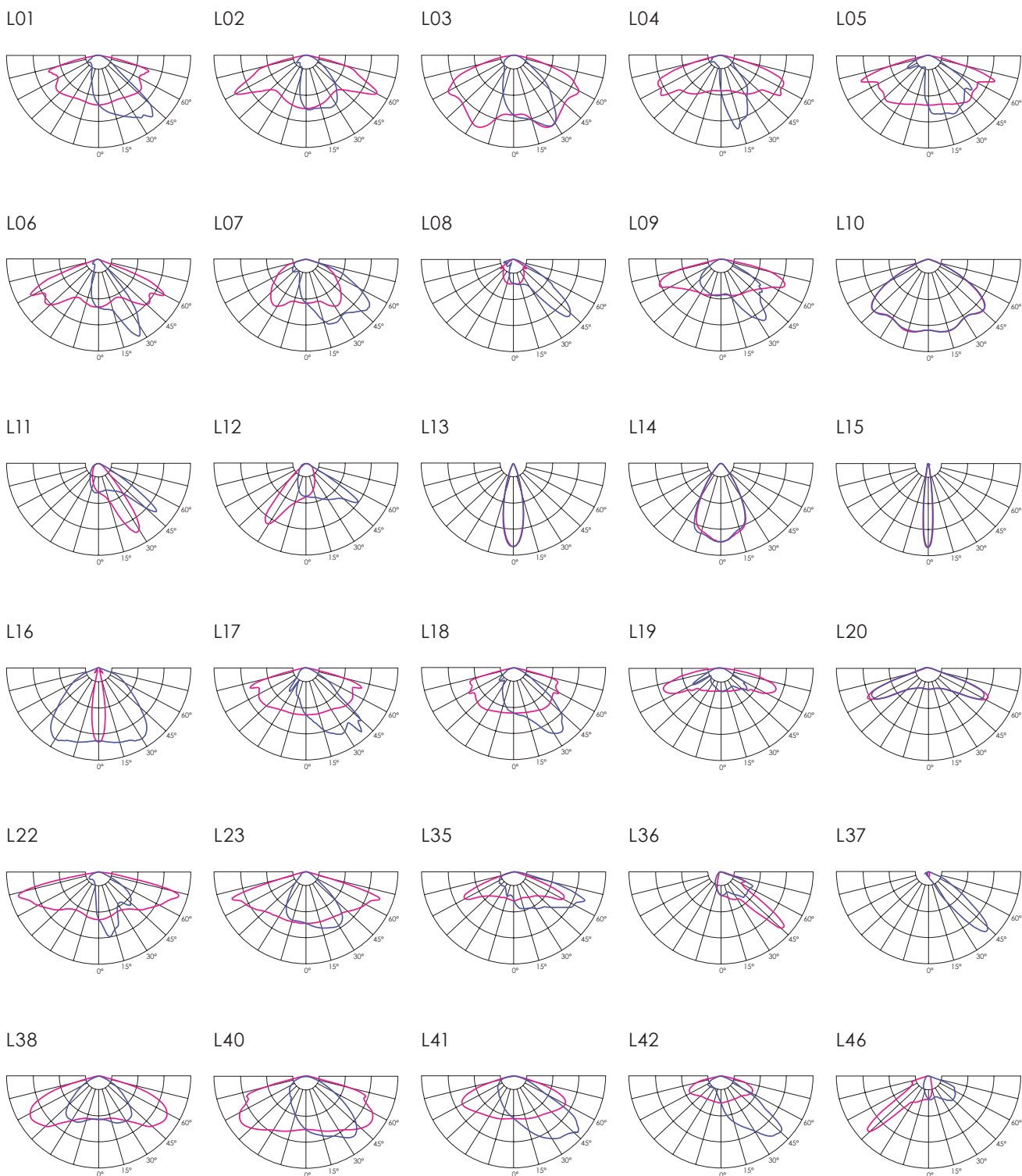
# Pole height proposition



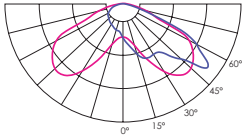
<b>Pole height</b>	<b>4 m</b>	<b>6 - 8 m</b>	<b>8 - 10 m</b>	<b>10 m</b>
Standard modules	18 W	37 W	68 W	100 W

# Optics

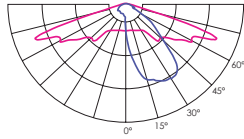
## Standard modules



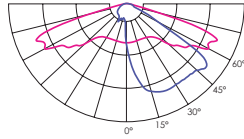
L55



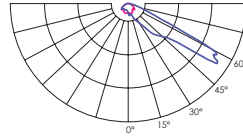
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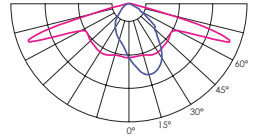
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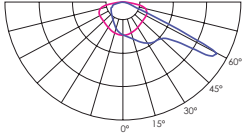
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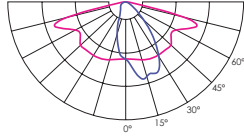
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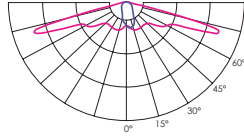
L66



L90

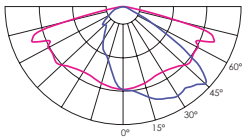


L94

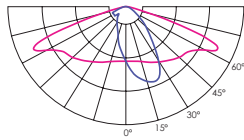


High density modules

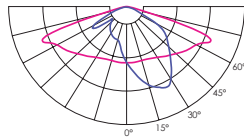
V01



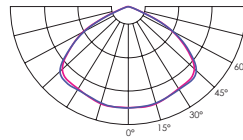
V04



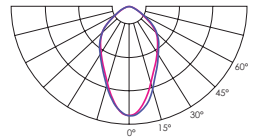
V05



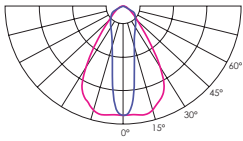
V10



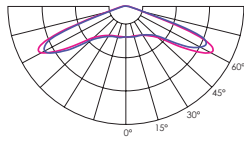
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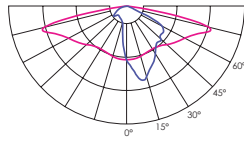
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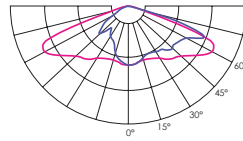
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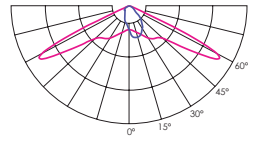
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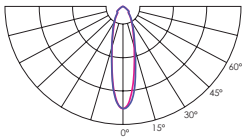
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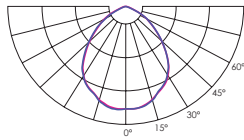
V45



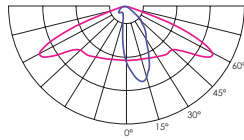
V52



V53



V57





# Pedestrian crossing optics



<b>V</b>	220 - 240	1 - 10 V; DALI; Midnight dimming
<b>Hz</b>	50 - 60	Chromaticity tolerance (initial MacAdam): 5
<b>W</b>	5 - 100	Warranty 5 years
<b>lm</b>	Up to 14000 <sup>(1)</sup> Up to 14500 <sup>(2)</sup>	100 000 h (L95B10) at Ta = 25 °C 100 000 h (L80B10) at Ta = 25 °C (ECO) <sup>(5)</sup>
<b>lm/W</b>	88 - 154 <sup>(1)</sup> 104 - 160 <sup>(2)</sup>	
<b>K</b>	2700 / 3000 / 4000 <sup>(3)</sup>	<i>Surge protection:</i> 6 kV, 10 kV (optional) <sup>(6)</sup>
<b>°C</b>	-40 to +50	<i>Spigot:</i> ø 40 - 60 mm
<b>CRI</b>	>70 / >80 <sup>(4)</sup>	<i>Body:</i> Die-cast aluminium
		<i>Intelligent light control system:</i> Radio frequency / Power line <sup>(7)</sup>
		<i>Socket:</i> Zhaga

<sup>(1)</sup> Standard modules

<sup>(2)</sup> ECO modules

<sup>(3)</sup> 1800 / 2200 / 5000 / 5700 / 6500 K available on request;  
Tunable white option available (2700 - 6500 K);  
Amber option available

<sup>(4)</sup> Luminaires with color rendering index (CRI): Ra > 90 on request

<sup>(5)</sup> Average lifetime value for ECO model at Ta = 25 °C is 100 000 h L80/B10\*

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

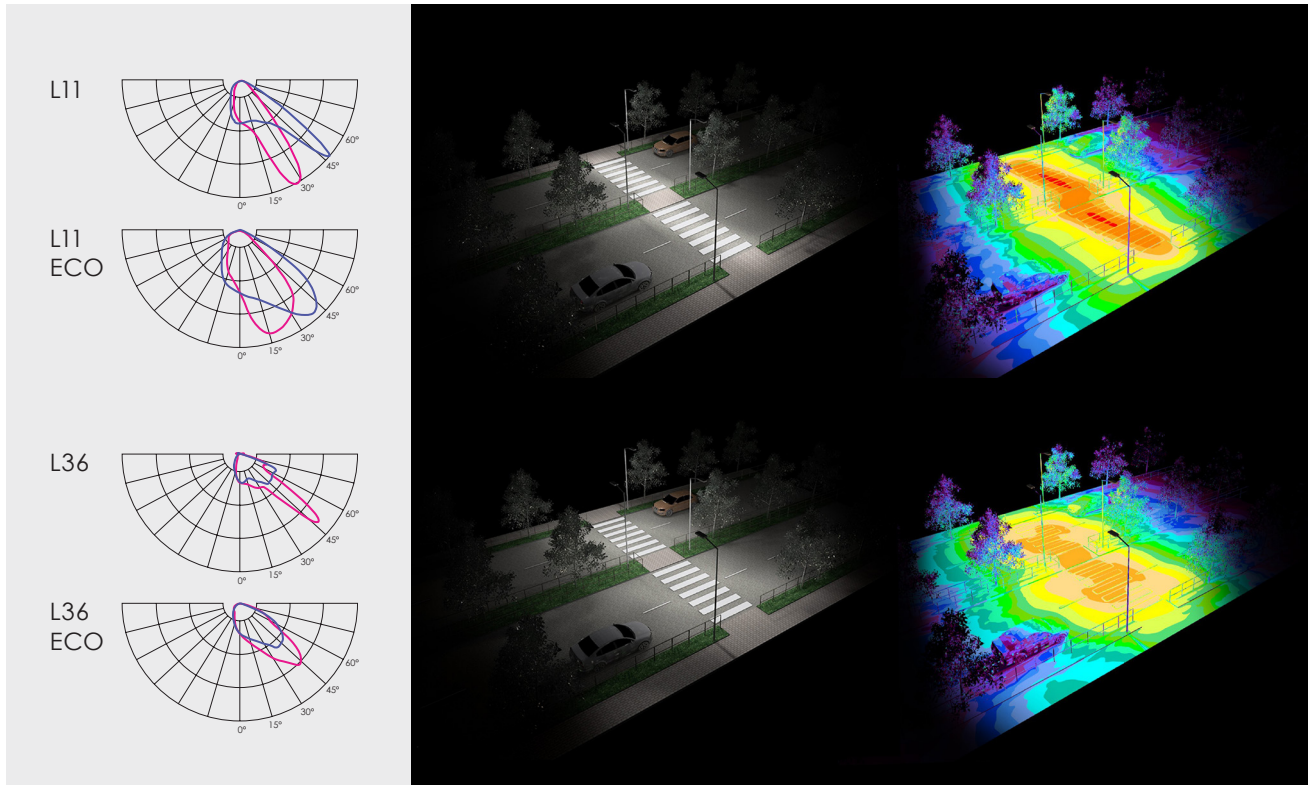
<sup>(7)</sup> Optional. Available only with DALI ; 1 - 10 V

\*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 will reach 100 000 h L90/B10. 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.

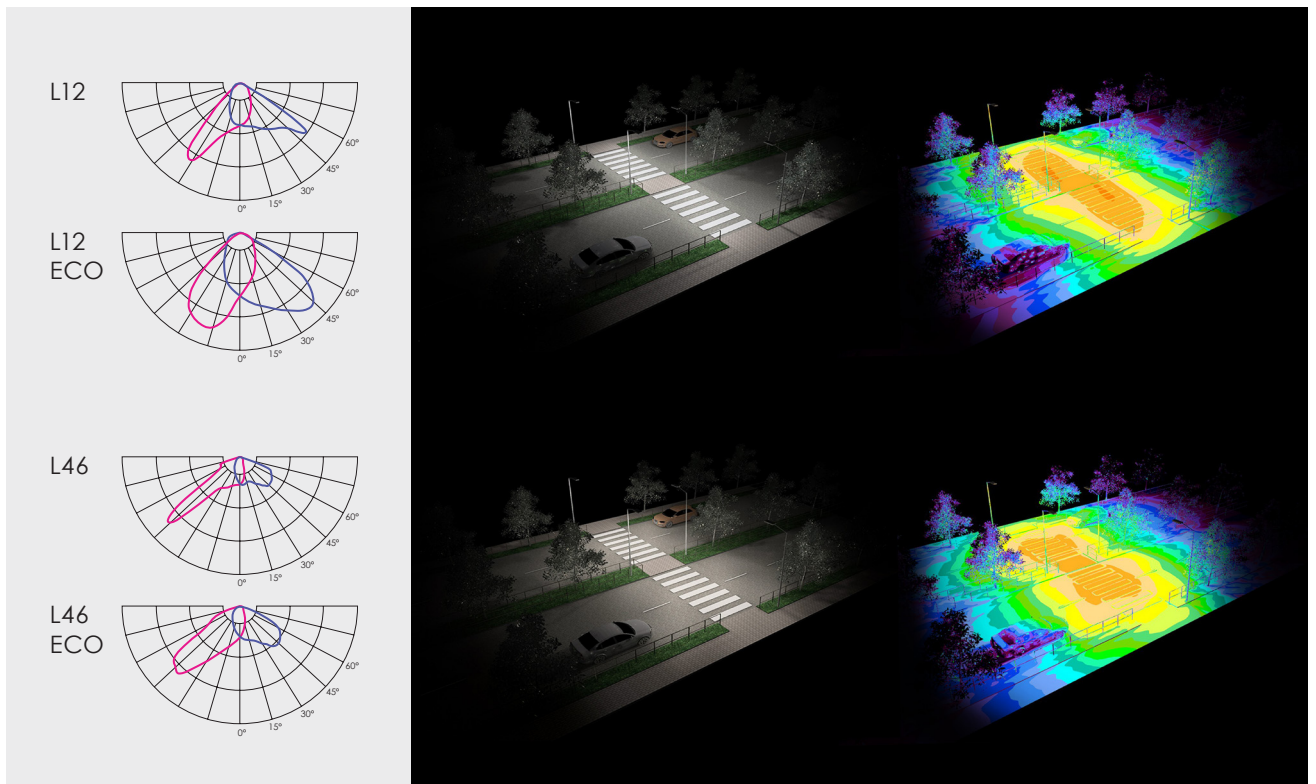
Technical parameters for final product can differ from typical data by 7% due to special conditions of LED manufacturing processes



## 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>		B10A	B16A	B20A	B25A	C10A	C16A	C20A	C25A
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

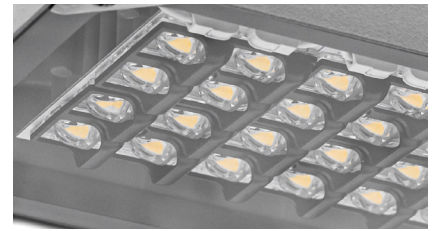
## Osram LED driver

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>		B10A	B16A	B20A	B25A	C10A	C16A	C20A	C25A
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



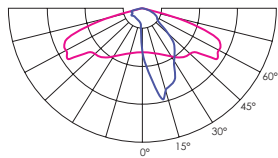
## Backlight cutter | white

Art. 70000662

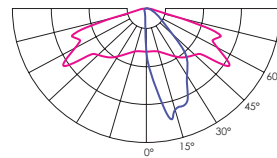


Optical losses from 10% to 31% depending from used optic.

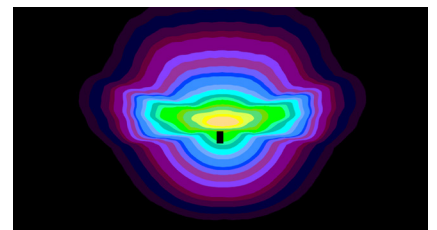
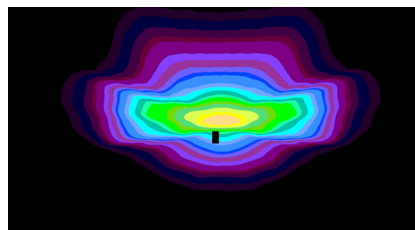
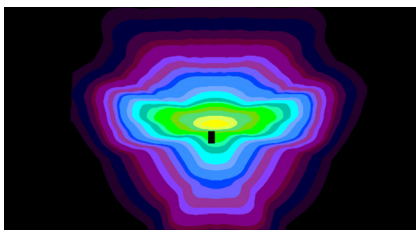
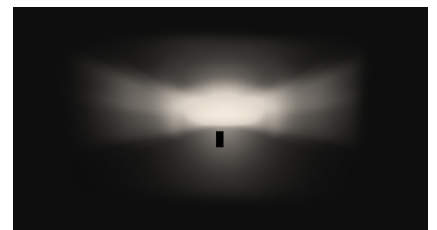
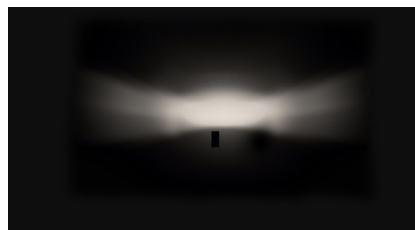
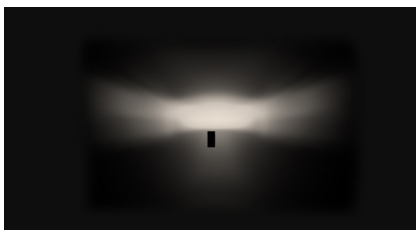
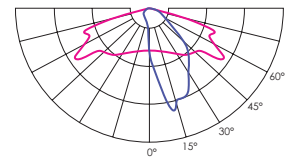
Without backlight cutter



Backlight cutter | black



Backlight cutter | white

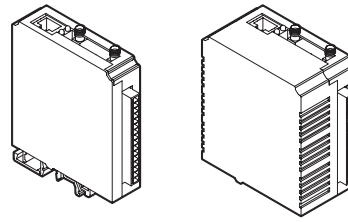


# Accessories

## Citintelly Segment controller

Art. 70010004

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

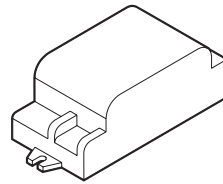


## Citintelly Luminaire controller

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

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



## Citintelly Surge Protection device

Art. 70020001

Surge Protection device offers protection against lighting surges;

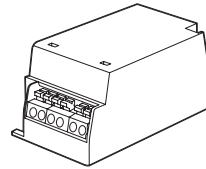
Voltage Protection level up (L-N)  $\leq 1,5$  kV

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

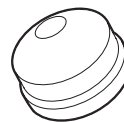
2213362-4, 7 pin NEMA socket 105°C wires

Art. 70000333



## Dummy Link for NEMA Socket

Art. 70000113



## Zhaga socket no cap

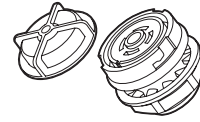
Art. 70000612





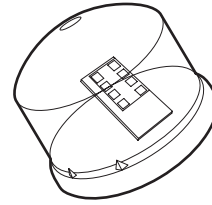
**Zhaga socket with cap**

Art. 70000613



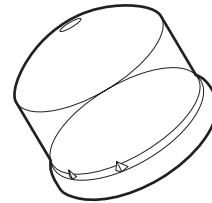
**MSLC205RG Luminaire controller + radar, Zhaga, 80 mm**

Art. 70010027



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

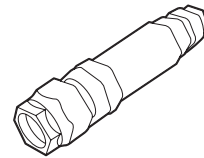
Art. 70010029



**Connector**

Art. 70000313

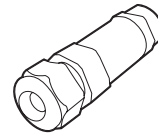
IP66 rated connector offers easy installation of the street luminaires.  
3 wire cable connector



**Connector**

Art. 70000304

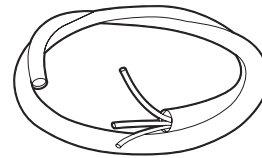
IP66 rated connector offers easy installation of the street luminaires.  
5 wire cable connector



**Pre-installed cable sets**

For internal power supply:

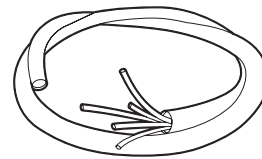
3 x 1,5 mm - 0,5 m long cable.....	Art. 70000319
3 x 1,5 mm - 5 m long cable.....	Art. 70000320
3 x 1,5 mm - 6 m long cable.....	Art. 70000321
3 x 1,5 mm - 8 m long cable.....	Art. 70000322
3 x 1,5 mm - 10 m long cable.....	Art. 70000323
3 x 1,5 mm - 12 m long cable.....	Art. 70000324
3 x 1,5 mm - 18 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



**Pre-installed cable sets**

For internal power supply:

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).



**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

**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.



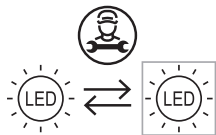
**ENEC** - compliance with European standards for electrical equipment

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.



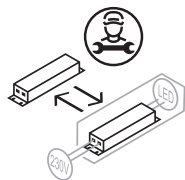
**Zhaga-D4i** - compliance with the requirements of Zhaga Book 18 or 20 and DALI standard

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.



**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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