4S4 GROUP

LED Lighting

The most comfortable light is
light from an invisible source.

Dear colleagues!

The 4S4 Group welcomes you.

Before you open our Lighting catalogue, we would like to inform you that the products described in the catalogue are only a part of what can be done based on them. The development of new products is ongoing, and if you need a product that is not in the catalogue, please do not hesitate to contact our managers with a description of what you need. We will consider your request and provide you with a solution in a short time. Also, if you note any drawback or imperfection of our products, inform us and we will appreciate it.

You will see a number of patented solutions in our catalogue; some of them have no comparable counterparts in the world, so please pay your attention to them.

We wish you good health and success in business.

Dr. Y. Sokolov

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LIGHTING COMPONENTS

Lighting Management Systems (LMS)

Production Facilities in Bulgaria

Offices: Sofia and Botevgrad

Distributors in Azerbaijan, Armenia, Georgia, Kazakhstan, Tajikistan, Uzbekistan, Bulgaria, Hungary, Greece, Germany, Poland, Romania, Serbia, Croatia, Angola, Benin, Zimbabwe, Kenya, Congo, Liberia, Namibia, Niger, Tanzania, Uganda, Argentina, Chile and other countries

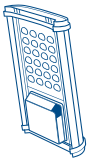
More than 800 types of products

Export of products to more than 30 countries of the world

Implementation of the latest technologies into production

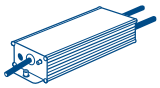
Cooperation with the world's leading suppliers of electronic components

MAIN AREAS OF ACTIVITY



LED Lighting luminaires and lamps

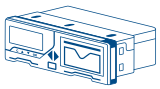
Electricity Metering Systems



LED drivers with increased reliability, including ones with the exceptional up to 0.99 efficiency

Commercial and trade electronic equipment

Lighting Management Systems



Tachographs, Taximeters

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2A Nedelcho Bonchev St.,
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Phone: +359 2 968 6035
Fax: +359 88 210 7517

Production location

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Botevgrad, BG–2140,
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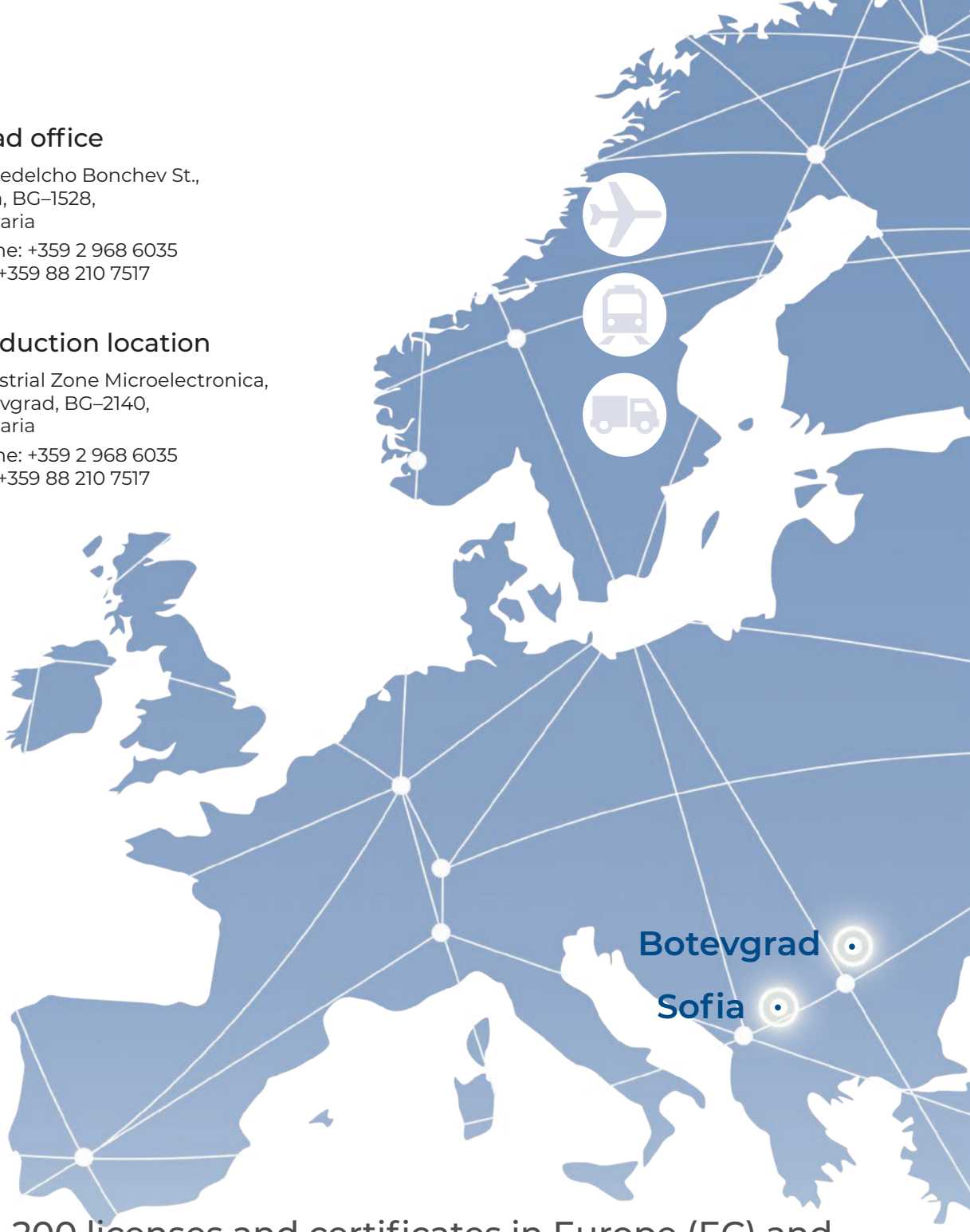
Fax: +359 88 210 7517



More than 200 licenses and certificates in Europe (EC) and other countries for individual products and product series

The international group of companies **4S4 Group** develops and produces radio-electronic devices, occupies one of the leading positions in the field of energy-saving LED equipment under the brand of **4S4 Lighting.**

4S4 Group is the most advanced company in Bulgaria. More than 200 patents have been obtained for the in-house designs used in the products, including, those effective in the USA, India, Korea, Germany and other countries. The company has a number of trademarks, more than 200 licenses and certificates in Europe (EC) and other countries for individual products and product series.

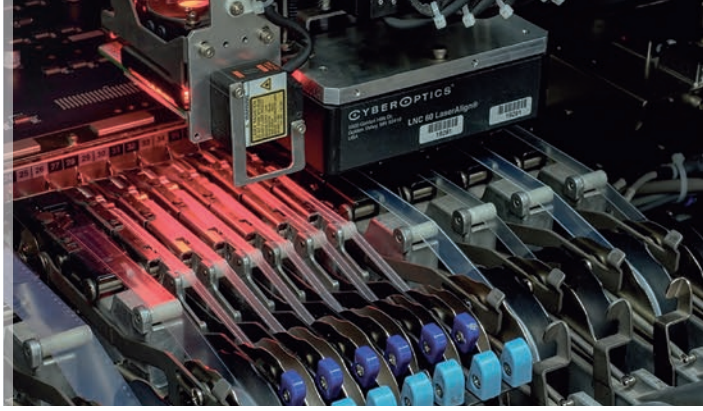
4S4 Group is continuously expanding its product range, taking into account the latest market trends, changes in customer needs and legal requirements.

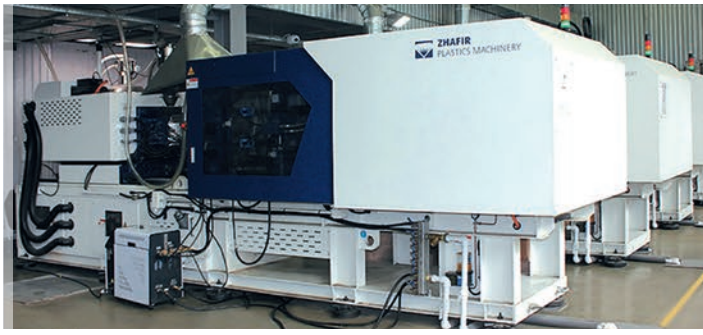
A wide range of products manufactured under the brand name **4S4 Lighting** are used in a variety of fields, including:

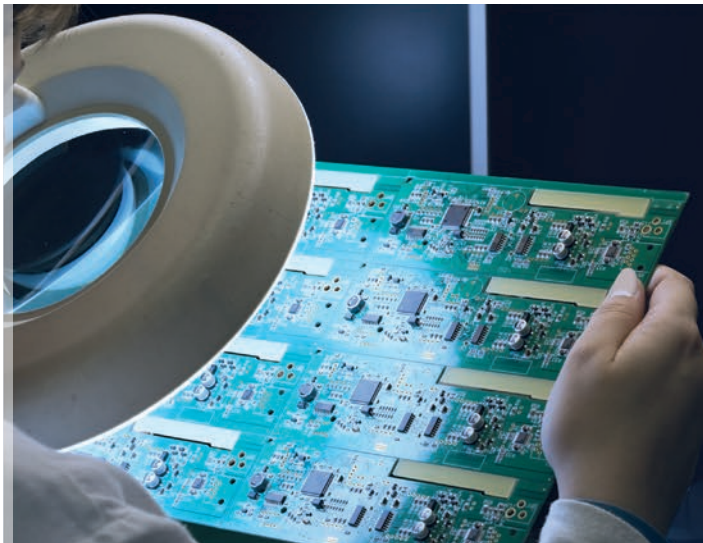
- street and road lighting;
- park lighting;
- tunnel lighting;
- architectural lighting;
- sports floodlight;
- office lighting and commercial lighting;
- auxiliary room lighting;
- industrial lighting (including luminaires for poultry and livestock farms, explosion- proof luminaires, horticultural (phyto) -luminaries).

All products undergo multi-level quality control and fully comply with international standards.

The Quality Management System is certified for compliance with international standard ISO 9001-2015 including national standards such as DQS (Germany), CISQ (Italy), AENOR (Spain) and others.







SYMBOLS

Symbols of patented solutions used in the products.

“Carbon neutrality” product.

Products comply with European safety standards.

Product does not contain prohibited substances according to the international ROHS directive.

Certification system of the international standard and quality compliance supported by the Institute of Certification and Testing.

Design Features

IP65 — Dust and moisture ingress protection of luminaires.

Allowed for heavy-duty conditions.

IK10 — Impact strength category.

±20° — Rotation angle in relation to the horizontal axis.

Zhaga — Equipped with a Zhaga connector.

RAL — Possibility of painting the luminaire in a RAL color.

Characteristics of Light

CRI >70 — Standard CRI.

4000 K — Standard color temperature.

UGR <19 — Indicator of light discomfort.

Special Lighting

Explosion protection.

For medical premises.

For use in horticulture.

For use in educational institutions.

For use in poultry farming.

Electrical characteristics and control

230V — Rated input voltage.

Protection class IEC I.

Protection class IEC II.

Product complies with European standards of electromagnetic compatibility and safety.

SY Lighting — SY-LIGHTING driver.

AC Direct — AC-Direct driver.

380V — Overvoltage protection in 380 V network.

PWM — PWM control.

DMX — Options of luminaires controlled by DMX512

RF — Luminaire modifications with radio control.

CLO — Constant Light Output. Luminous flux compensation during a luminaire operation.

EPS — Possibility of using an emergency power supply.

DALI2 — Luminaire modifications controlled via DALI 2 protocol.

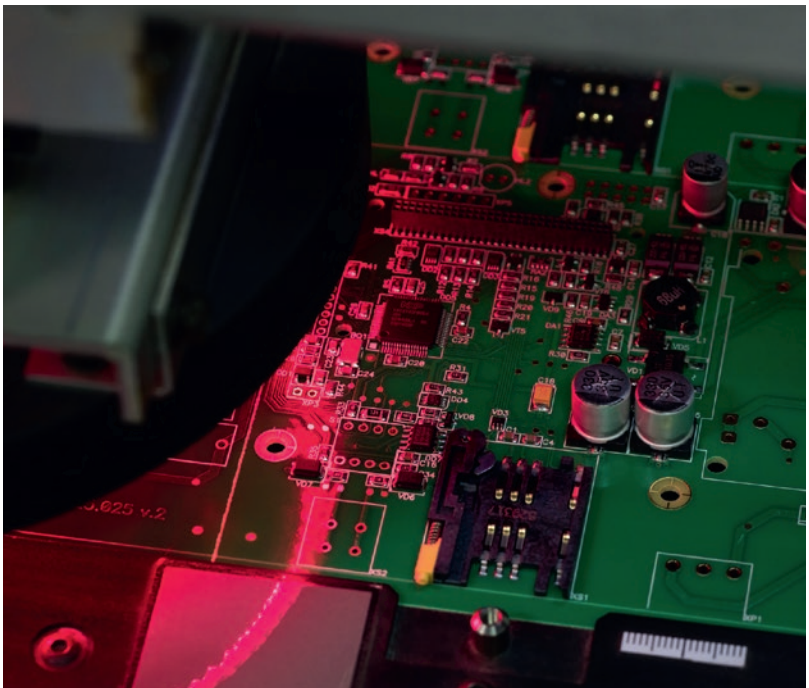
Bluetooth control.

Standard Colors of Products

Grey
RAL7036

Black
RAL9005

White
RAL9003



Luminaire and Lamp Marking Structure

This is the unified marking system for all types of lighting equipment.

Each value has a certain number of characters (X) that correspond to the decryption in the tables (from one to eleven) given in this chapter.

X	–	XX	–	XXX	–	XX	–	X	–	XX	–	XX	–	XXX	–	X	–	XX	–	XX
1		2		3		4		5		6		7		8		9		10		11

- Product Type
- Series Code
- Power, W
- Driver Type
- Control Type
- LDC and Lens
- Type and Parameters of Mounting
- Product Dimensions
- CRI
- Color Temperature, K
- IP Rating, IP

1. (7) – Product Type

Code	Scope of Application
7	Finished Lighting Products

2. (01-99) – Series Code

Code	Class
01	MAG31
02	MAG32
04	MAG41
05	MAG42
07	MAG44
09	MAG9
10	MAG10
12	MAG45
13	MAG95
14	BALL
15	STREET

Code	Class
16	LEDPARK
20	ELEMENTS.S
21	ELEMENTS.L
22	FACADE
23	ELEMENTS.SPORT
26	SLIMPANEL.3
32	SLIMDISC
33	LINE.V
35	LINEMALL
36	INDUSTRY.3
40	INDUSTRY.9

Code	Class
41	INDUSTRY.10
44	LINE.PROM
47	INDUSTRY.T30
49	CLASTER
52	PLANTALUX.GB
57	POULTRY.T30
58	DELTA
61	ROLLAMP
71	INDUSTRY.B

3. (01-999) – Power Consumption from the Network, W

4. (01-99) – Driver Type

Code	Class
01	LONG LIFE Z (Zhaga on driver)
02	STANDARD Z (Zhaga on driver)
03	COMPACT Z (Zhaga on housing)
05	AC-Direct (on SD card)
06	AC-Direct (separate driver)
07	SY-LIGHTING (three-phase)

Code	Class
08	STANDARD (without additional power supply)
09	COMPACT (without additional power supply)
11	Driver
12	Driver + emergency power supply
13	INDUSTRIAL (single-phase)

5. (0-9) – Type of Control

Code	Class
0	Without control
1	RF Z (RF Modem, Zhaga connector)
2	RF N (RF Modem, NEMA connector)
3	PLC – from a three-phase network
4	PLC – from a single-phase network
5	Occupancy Sensor
6	Bluetooth (BLE) Control

6. (01-99) – Lens Type, Light Distribution Curve (LDC)

Lens Type

Code	LDC	Description
01	P1	Honeycombs
02	P2	Prism
03	P2	Opal
04	P2	Transparent

Light Distribution Curve (LDC)

Code	LDC	Description
10	WA 1	140°x70° (Wide Asymmetric TYPE 1)
11	WA 2	150°x80° (Wide Asymmetric TYPE 2)
12	WA 3	135°x60° (Wide Asymmetric TYPE 3)
13	WA 4	Wide Asymmetric TYPE 4
14	WS 1	Wide Special TYPE 1
19	Cos 120°	Cosine 120°
23	Ct 45°	Concentrated 45°
24	Ct 60°	Concentrated 60°
26	Cos Sp 110°	Cosine Special 110°
27	Cos Sp 130°	Cosine Special 130°
28	Cos 130°	Cosine 130°
30	D 60°	Deep 60°
32	D 80°	Deep 80°
33	DSp 70°	Deep Special 70°
34	Ct 10°	Concentrated 10°
36	Ct 15°	Concentrated 15°

Code	LDC	Description
38	Ct 25°	Concentrated 25°
39	Ct 30°	Concentrated 30°
40	Ct 42°	Concentrated 42°
41	P 1	Park TYPE 1
42	P 2	Park TYPE 2
43	P 3	Park TYPE 3
46	P 6	Park TYPE 6
47	AS 1	Asymmetric TYPE 1
48	AS 2	Asymmetric TYPE 2
51	LA	Lamp Asymmetric
52	LS 1	Lamp Symmetric TYPE
55	Ct E 15°x35°	Concentrated Elliptical 15°x35°
56	Ct E 15°x60°	Concentrated Elliptical 15°x60°
60	Ct A 25°x60°	Concentrated Asymmetric 25°x60°
61	Ct A 30°x70°	Concentrated Asymmetric 30°x70°
62	WA 5	Wide Asymmetric TYPE 5

7. (01-99) – Mounting

Code	Class
01	On the console with a mounting diameter of 48 mm
02	On the console with a mounting diameter of 48 mm, adjustable
03	On the console with a mounting diameter of 60 mm
04	On the console with a mounting diameter of 60 mm, adjustable
05	Floor lamp mount, diameter 48 mm
06	Floor lamp mount, diameter 60 mm
07	Floor lamp mount, diameter 76 mm
08	On the wall or ceiling with a transverse swivel mounting
09	On the wall or ceiling with a linear swivel mounting
10	On the wall or ceiling on two dismountable brackets
11	On the vertical cable
12	On the horizontally stretched cable

Code	Class
13	On two horizontally stretched cables
14	Multipurpose: recessed, surface-mounted, suspended
15	Surface-mounted
16	Suspended
17	Recessed
18	Grigliato
19	Single-phase track adapter
20	Three-phase track adapter
22	E27 (Base)
26	On the console with a mounting diameter of 76 mm
27	On the console with a mounting diameter of 48–60 mm
28	On the console with a mounting diameter of 48–60 mm, adjustable

8. (001-999) – Dimensions

Code	L x W x H, mm
001	585x105x104
002	695x105x104
003	800x105x104
004	910x105x104
005	565x105x104
006	665x105x104
007	760x105x104
008	860x105x104
014	830x205x101
015	940x205x101
016	1,050x205x101
017	800x205x101
018	900x205x101
019	1,000x205x101

Code	L x W x H, mm
023	830x205x109
024	1,050x205x109
026	960x147x120
027	480x106x70
028	570x106x70
029	670x106x70
030	390x126x66
032	495x126x66
033	361x179x63.5
034	524x179x63.5
035	687x179x63.5
038	765x106x70
039	870x105x104
040	650x205x101

Code	L x W x H, mm
041	750x205x101
042	850x205x101
043	1,270x293x280
044	1,174x1,032x280
045	1,174x793x280
054	205x126x79
055	303x126x79
056	401x126x79
063	316x126x35
064	612x126x35
066	300x155x90
067	600x155x90
068	1,200x155x90
081	600x600x690

8. (001-999) – Dimensions

Code	L x W x H, mm
082	600x600x640
083	540x540x720
084	370x370x670
085	440x440x770
087	295x295x17
088	295x595x17
089	595x595x17
090	625x625x17
091	295x1,195x17
092	595x1,195x17
103	580x28x40
104	1,200x28x40
105	285x110x180
106	485x110x180
107	485x230x180
108	267x135x127
109	212x115x150
110	212x106x136
114	550x150x790
117	150x150x55
124	235x235x40
126	94x145x110
128	136x146x151
129	232x146x290
143	304x205x87

Code	L x W x H, mm
144	407x205x87
147	440x180x69
148	540x180x69
157	2,400x28x40
160	145x145x110
161	196x145x110
162	218x145x110
163	320x145x110
164	475x145x110
165	145x145x209
166	196x145x209
167	232x146x151
168	318x146x151
169	411x146x151
170	597x146x151
171	785x146x151
172	318x146x290
173	600x97x63
174	1,200x97x63
198	260x139x100
199	400x139x100
201	600x100x35
202	1,200x100x35
203	664.5x252x438
204	816x252x560

Code	Diameter x Height/ Length
900	400x600
905	73x225
906	36x1,000
907	36x1,500
908	36x2,000
909	36x900
910	36x1,300
911	35x500
912	73x245
914	400x800
917	95x32
919	375x35
920	742x30

9. (1-9) – Color Rendering Index (CRI)

Code	Class
7	70
8	80
9	90

10. (01-99) – Color Temperature (K)

Code	Class
02	R01 Phyto (Spectrum 01)
03	R02 Phyto (Spectrum 02)

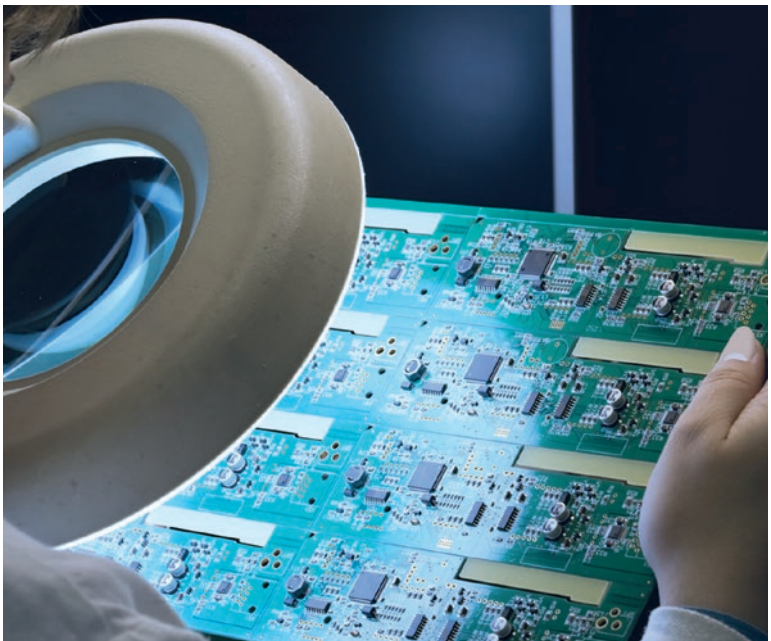
Code	Class
27	2,700 K
30	3,000 K
35	3,500 K
40	4,000 K

Code	Class
45	4,500 K
50	5,000 K
57	5,700 K
65	6,500 K

11. (00-99) – Ingress protection (IP)

First Digit	Dust Ingress Protection Class (IP _X)
0	No Protection
1	Protected against external solid objects of over 50 mm in diameter
2	Protected against external solid objects of over 12.5 mm in diameter
3	Protected against external solid objects of over 2.5 mm in diameter
4	Protected against external solid objects of over 1.0 mm in diameter
5	Protected against coarse dust
6	Completely protected against dust

Second Digit	Liquid Ingress Protection Class (IP X_)
0	No Protection
1	Protected against vertically falling water drops
2	Protected against water drops falling at an angle of up to 15°
3	Protected against water falling as rain
4	Protected against continuous splashing
5	Protected against water jets
6	Protected against strong water jets
7	Protected against short-time immersion exposure, depth not exceeding 1 m
8	Protected against long-time immersion exposure, depth not exceeding 1 m



LUMINAIRES
UNDER DEVELOPMENT

MAG.B

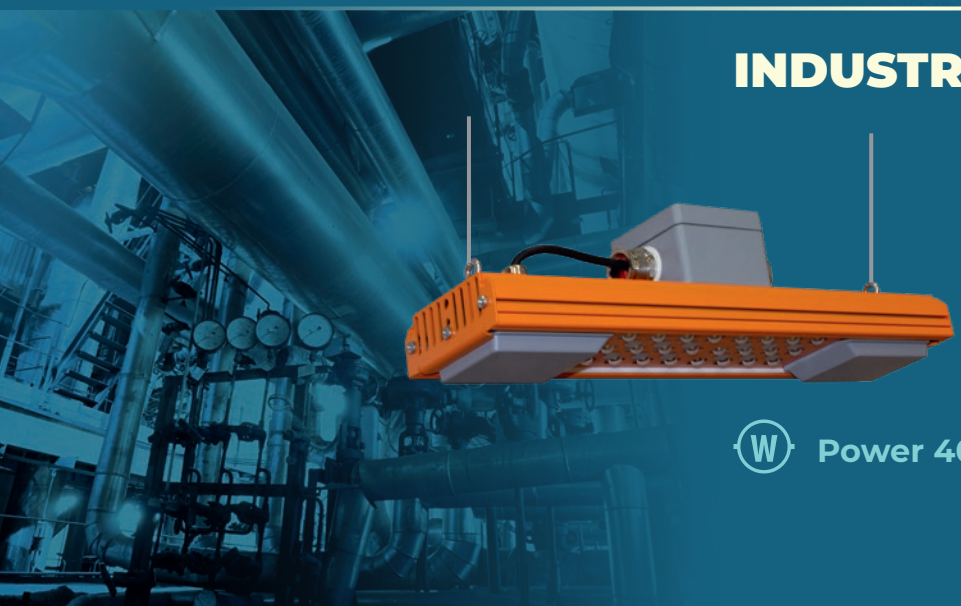
Road LED luminaire is intended for lighting urban roads, industrial areas, railway stations, yard areas, etc.

Power 60–180 W

ELEMENTS.B.SPORT

LED floodlight is intended for lighting stadiums, sports centers, indoor arenas, etc.

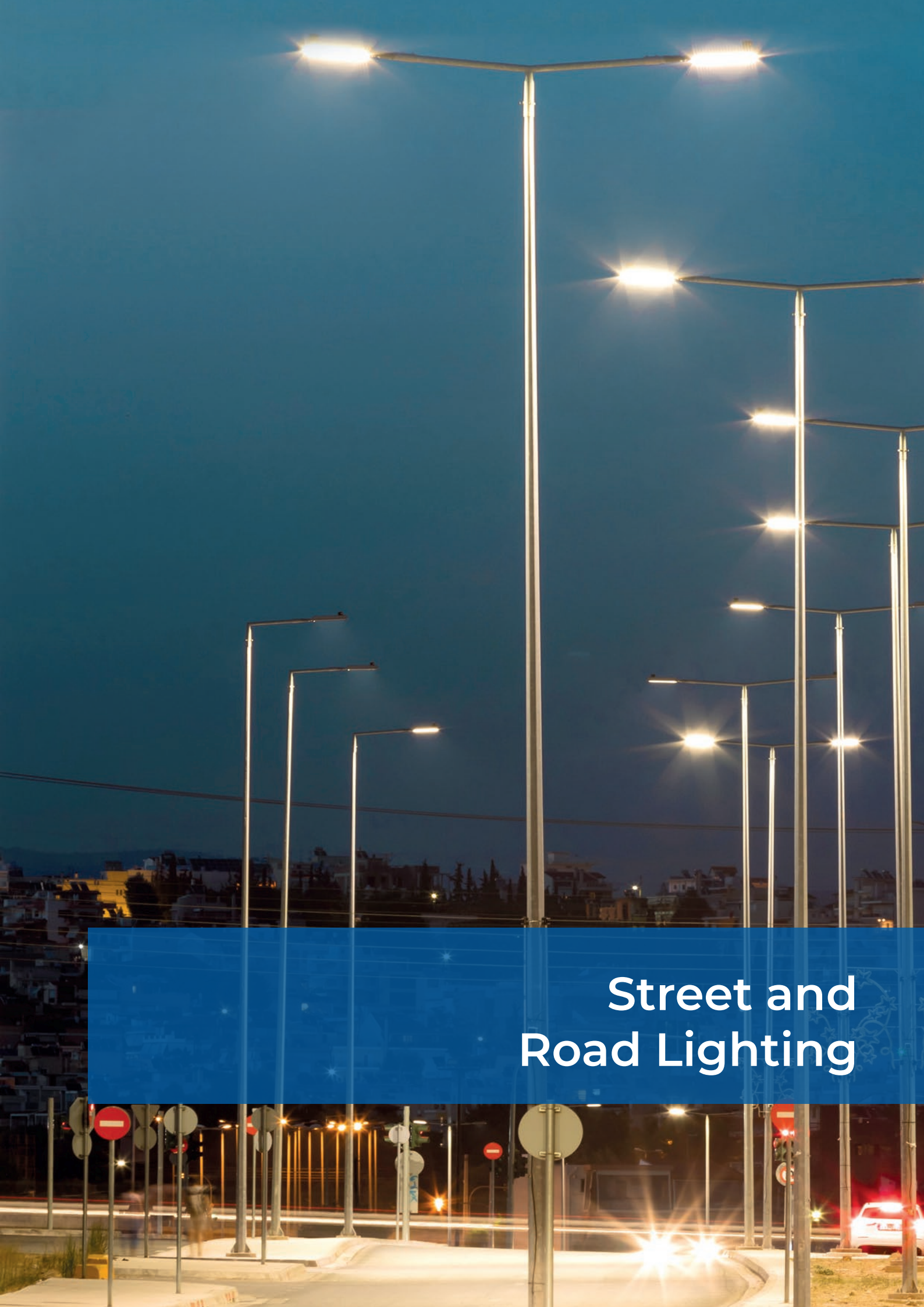
Power 320–1,500 W



INDUSTRY.EX

Explosion-proof LED luminaire is intended for use in explosive gas and dust atmospheres in oil and gas, metallurgical, wood working, textile industry facilities, etc.

Power 40–200 W



Street and Road Lighting

STREET AND ROAD LIGHTING

This chapter describes the road and street LED luminaires that differ by:
- design of housings;
- types of drivers;
- types of LEDs used;
- efficacy;
- terms of financial guarantee, etc.

The luminaires are arranged in order of decreasing cost — from elite high-end ones **(MAG31, MAG41)** to the **KASKAD series** with a reasonable price and high characteristics. The high-power group luminaires are described below.

All luminaires, without exception, have an outdoor version with lightning protection.

The technical solutions are protected by USA, Europe (Germany, France, UK) and other countries patents.

A table of comparative characteristics of luminaires is also provided herein.

All series of road LED luminaires have a number of specific features.

Multi lenses in the LED module are used not only as secondary optics, but also as protective enclosures. This eliminates optical losses from additional protective glass and prevents a decrease in the luminous flux caused by dusting of the internal cavity of the optical system during its operation (see Fig.1).

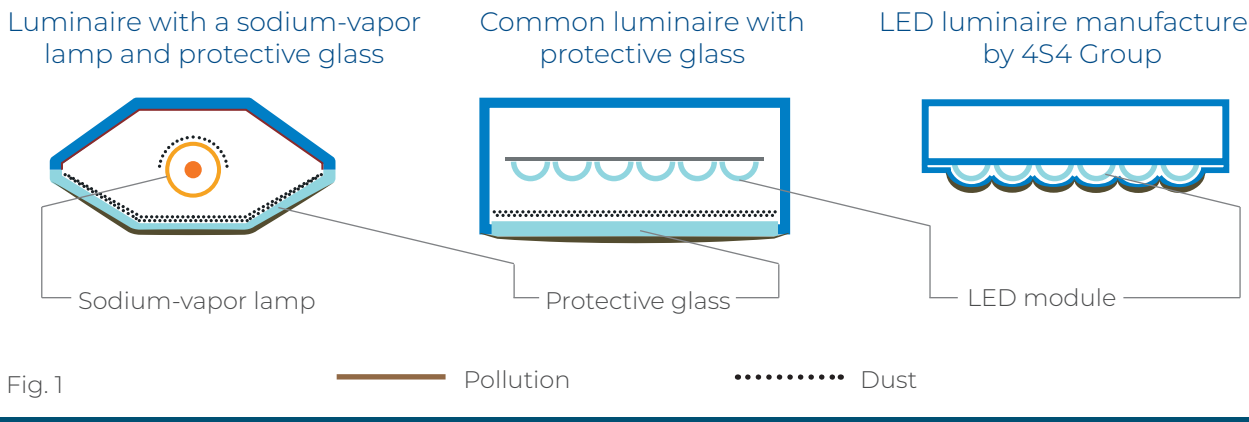
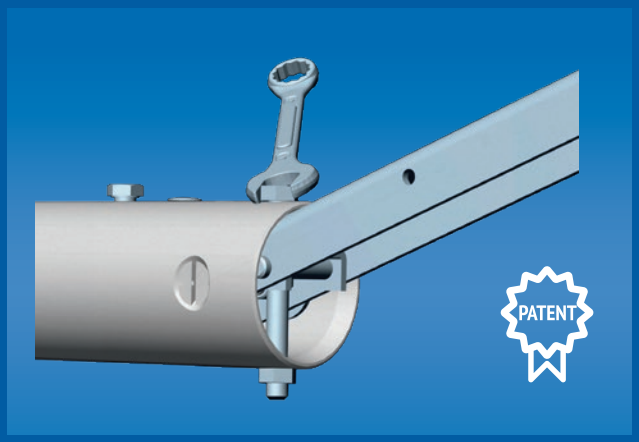
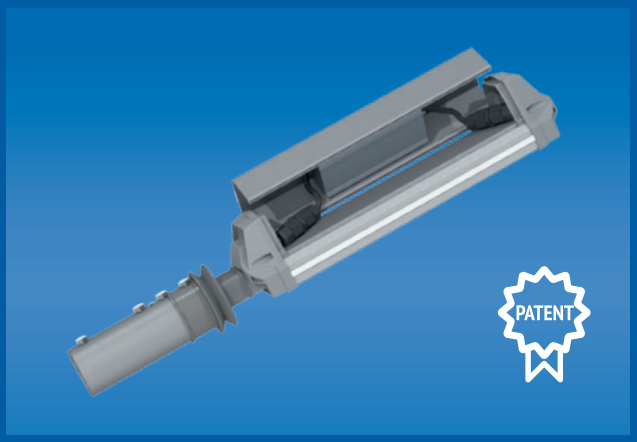


Fig. 1

Easy adjustment of the tilt angle from -20° to +20° with no need to disassemble or loosen a luminaire mount



Serviceable electrical compartment (for luminaires of series **MAG31, MAG32, MAG33**)



Road Luminaires of series MAG3, MAG4, MAG9, MAG10

The proprietary «floating» design of the LED module mount allows compensating the difference in thermal expansion coefficients of the LED boards and multi lenses. The absence of mounting holes (for self-tapping screws) significantly improves the resistance to weather effects.

Specifications

The characteristics concerning the network parameters and some standard parameters are the same for all types of the road series and the distinctive features are specified individually for each series:

Rated Voltage / Frequency	230 V / 50 Hz
Standard Color Temperature	4,000 K
Standard Color Rendering Index (CRI)	>70
Power Factor	>0.96
Percent Flicker	<5%
Standard Operating Temperature Declared According to Climatic Conditions	-45°...+50°C
Standard Color	Gray

Road LED Luminaires of series MAG3, MAG4

The luminaires consist of an LED module, a driver, a heat sink housing and a mount fitting. The heat sink is made of powder coated aluminum profile. A smooth top cover for the **MAG3** series and a separate driver compartment for the **MAG4 series** provide a comfortable thermal mode of operation of the luminaire throughout its service life. The light source is high-efficiency LEDs from first-line manufacturers.

- The driver has no thermal contact through the metal with the LED module and is equipped with its own heat sink.
- The design of the luminaire allows the tool-less replacement of the driver in 2-3 minutes.
- The initial power of the luminaire can be changed upon customer request.

MAG31

CO2 NEUTRAL

230V | 380V | DALI2 | Zhaga | 4000K | RF | CRI >70 | IP66 | IK10 | CLO

PATENT

US 10113737 B2
EP 3165810
IN 201617039316

“ MAG31 are LED luminaires of premium high-end series designed for highways and roads of all categories.

The light source consists of high-efficiency LEDs from OSRAM and CREE companies.

- **The service life of a luminaire is over 80,000 hours.**

Features

“ Highest efficacy >165 lm/W

7 and 10 year warranty

depending on the customer’s expectations.

Protection from high energy microsecond pulses

6 kV – “line–line”,
10 kV – “line–ground”.

Matrix-like system

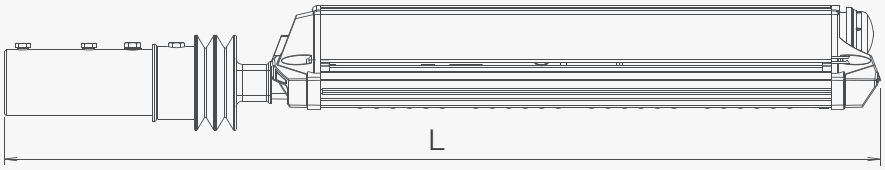
of LED connections along with their operation at 25% of the maximum power ensure the durability of the luminaire and its operability in case of failure of any LED.

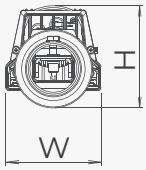
The luminaires are equipped with original LONG LIFE drivers of in-house design, which have several significant advantages:

- Do not include electrolytic capacitors, which significantly increases the service life;
- The driver is a power stabilizer, which saves additional 5 – 10% of energy at “cold” start and operation at subzero temperatures;
- Provide reliable switching on and operability at temperatures up to -60°C;
- Have a 380 V surge protection system;
- The Zhaga connector installed on the driver allows switching on/off, dimming the luminaire according to a set program using the DALI-2 protocol; transmitting information about power consumption, operating current of the LEDs and other parameters of the luminaires to the central control panel via the **4S4net** lighting management system.

Table of Standard Options

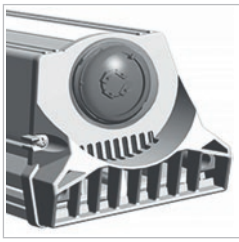
Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
MAG31	7-01-075-01-1-12-02-001-7-40-66	75	12,400	585x105x104	3.8
MAG31	7-01-105-01-1-12-02-002-7-40-66	105	17,400	695x105x104	4.7
MAG31	7-01-130-01-1-12-02-003-7-40-66	130	21,500	800x105x104	5.3
MAG31	7-01-155-01-1-12-02-004-7-40-66	155	25,570	910x105x104	5.8



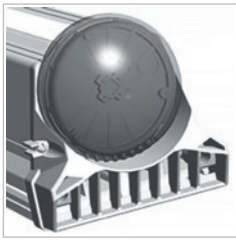


Custom-made Options

Power, W	Any within the range of 50 – 155
Standard CRI	80
Color temperature, K	2,700; 3,000; 5,000; 5,700
Mount Fitting	60R – adjustable for 60 mm consoles 48, 60 – non-adjustable for 48 and 60 mm consoles
Control	System Ready – can be connected to a lighting management system



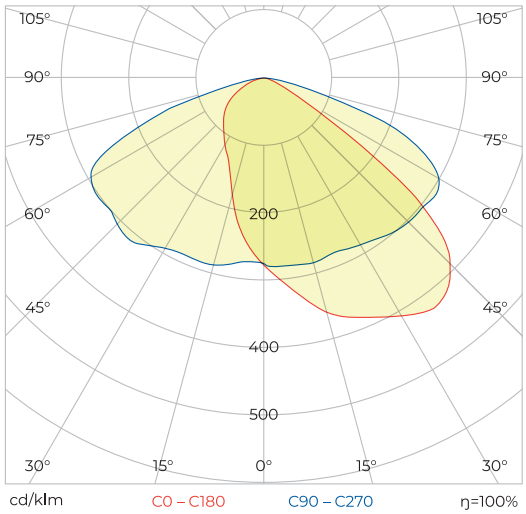
Luminaire MAG31 / MAG32 with a luminaire modem



Luminaire MAG31 / MAG32 with a luminaire group controller (Master)

Light Distribution Curve (LDC)

Wide Asymmetric TYPE 3



MAG32

CO2 NEUTRAL

230V | 380V | Zhaga | 4000K | PWM | CRI >70 | IP66 | IK10

PATENT

US 10113737
EP 3165810
IN 201617039316

“ LED luminaires **MAG32** designed for highways and roads.

- **The service life of the luminaire is over 50,000 hours.**

Features

“ High efficacy >150 lm/W

Driver

The luminaires are equipped with STANDARD drivers and Zhaga connectors.

Operability

The luminaires are operable within an extremely wide range of input voltages – from 170 to 290 V AC.

Stability

In full compliance with the technical requirements of national railways in Eastern Europe (including the “A” criterion of functioning in case of dips / interruptions of supply voltage).

Matrix-like system

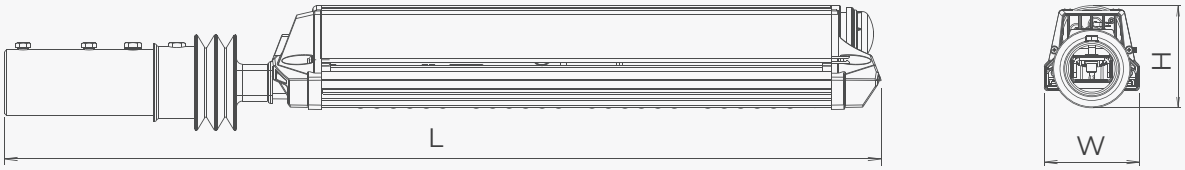
The use of LEDs at 45 – 55% of the maximum power ensures the durability of the luminaire and its operability in case of failure of any LED.

Protection from high energy microsecond pulses
6 kV – “line–line”,
10 kV – “line–ground”.

5 year warranty

Table of Standard Options

Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
MAG32	7-02-075-02-0-11-02-005-7-40-66	75	11,250	565x105x104	3.6
MAG32	7-02-105-02-0-11-02-006-7-40-66	105	15,750	665x105x104	4.4
MAG32	7-02-130-02-0-11-02-007-7-40-66	130	19,500	760x105x104	4.9
MAG32	7-02-155-02-0-11-02-008-7-40-66	155	23,250	860x105x104	5.3

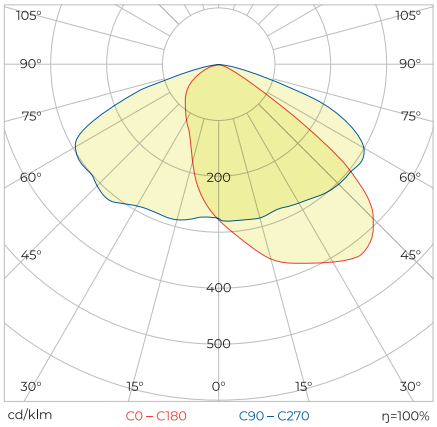


Custom-made Options

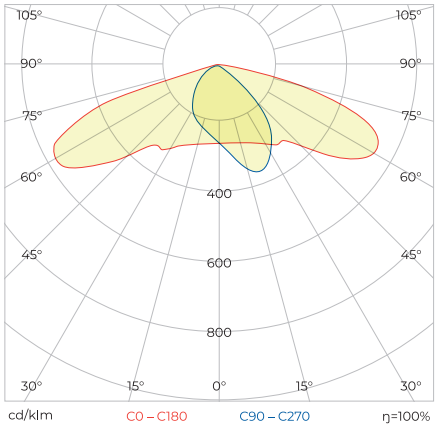
Power, W	Any within the range of 50 – 155
Standard CRI	80
Color temperature, K	2,700; 3,000; 5,000; 5,700
LDC	Wide Asymmetric TYPE 5; Cosine 120°
Mount Fitting	60R – adjustable for 60 mm consoles 48, 60 – non-adjustable for 48 and 60 mm consoles
Control	System Ready – can be paired with a lighting control system
	The luminaires are equipped with a Zhaga connector, which makes it easy to install (at the customer’s request) an occupancy sensor, modems of the PWM lighting management system (allowing further modifications), etc. Additional elements are mounted directly on a support, without removing the luminaire or changing its design

Light Distribution Curves (LDC)

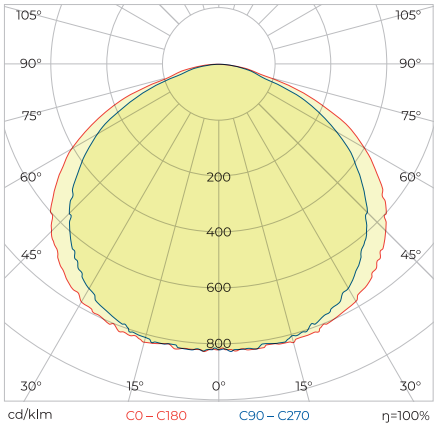
Wide Asymmetric TYPE 5



Wide Asymmetric TYPE 2



Cosine 120°



MAG41

CO2 NEUTRAL

230V | 380V | DALI2 | 4000K | Zhaga | CRI >70 | IP66 | IK10 | CLO

PATENT

US 10036547
EP 3165823
IN 201617039318

“ MAG41 are LED luminaires of premium high-end series designed for highways and roads.

The light source consists of highefficiency LEDs from OSRAM and CREE companies.

- **The service life of the luminaire is over 80,000 hours.**

Features

“ Highest efficacy >165 lm/W

7 and 10 year warranty

depending on the customer’s expectations.

Protection from high energy microsecond pulses

6 kV – “line–line”,
10 kV – “line–ground”.

Matrix-like system

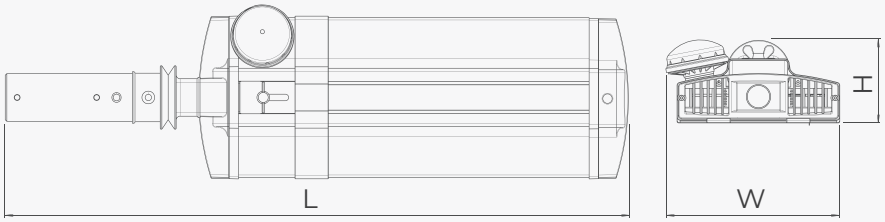
of LED connection along with their use at 25% of the maximum power ensures the durability of the luminaire and its operability in case of failure of any LED.

The luminaires are equipped with original LONG LIFE drivers of our own design, which have several significant advantages:

- Do not contain electrolytic capacitors, which ensures a long service life;
- The driver is a power stabilizer, which saves additional 5 – 10% of energy at “cold” start and operation at subzero temperatures;
- Provide reliable switching on and operability at temperatures up to -60°C;
- Have a 380 V surge protection system;
- The Zhaga connector installed on the driver allows switching on/off, dimming the luminaire according to a set program using the DALI-2 protocol;
- Transmitting information about power consumption, operating current of the LEDs and other parameters of the luminaires to the central control panel via the **4S4net** lighting management system.

Table of Standard Options

Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
MAG41	7-04-200-01-1-12-02-014-7-40-66	200	33,400	830x205x101	6.7
MAG41	7-04-250-01-1-12-02-015-7-40-66	250	41,800	940x205x101	7.4
MAG41	7-04-300-01-1-12-02-016-7-40-66	300	50,000	1,050x205x101	8.1

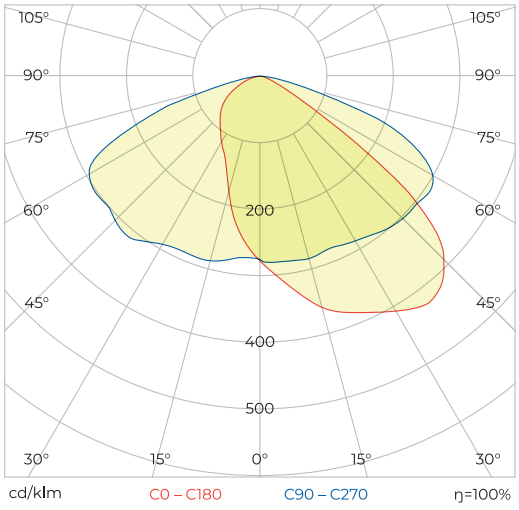


Custom-made Options

Power, W	Any within the range of 180 – 320
Standard CRI	80
Color temperature, K	2,700; 3,000; 5,000; 5,700
Mount Fitting	60R – adjustable for 60 mm consoles 48, 60 – non-adjustable for 48 and 60 mm consoles
Control	System Ready – can be connected to a lighting management system

Light Distribution Curve (LDC)

Wide Asymmetric TYPE 3



Special end cap design for better heat dissipation

MAG42

CO2 NEUTRAL

230 V | 380 V | Zhaga | 4000 K | PWM | CRI >70 | IP66 | IK10 | CLO

PATENT

US 10036547
EP 3165823
IN 201617039318

“ MAG42 are LED luminaires designed for highways and roads.

The light source consists of highefficiency LEDs from first-line manufacturers.

- **The service life of the luminaire is over 50,000 hours.**

Features

“ High efficacy >150 lm/W

Protection from high energy microsecond pulses

6 kV – “line–line”,
10 kV – “line–ground”.

5 year warranty

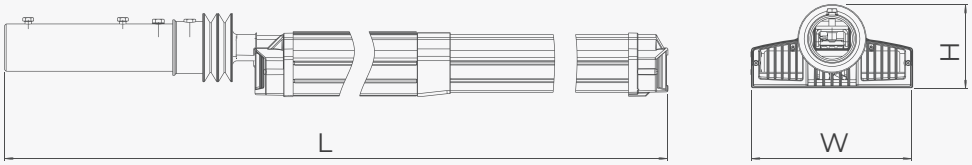
The luminaire is offered with a financial warranty.

Driver

The luminaires are equipped with STANDARD drivers and Zhaga connectors.

Table of Standard Options

Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
MAG42	7-05-200-02-0-62-02-017-7-40-66	200	30,000	800x205x101	6.6
MAG42	7-05-250-02-0-62-02-018-7-40-66	250	37,500	900x205x101	7.2
MAG42	7-05-300-02-0-62-02-019-7-40-66	300	45,000	1,000x205x101	7.9

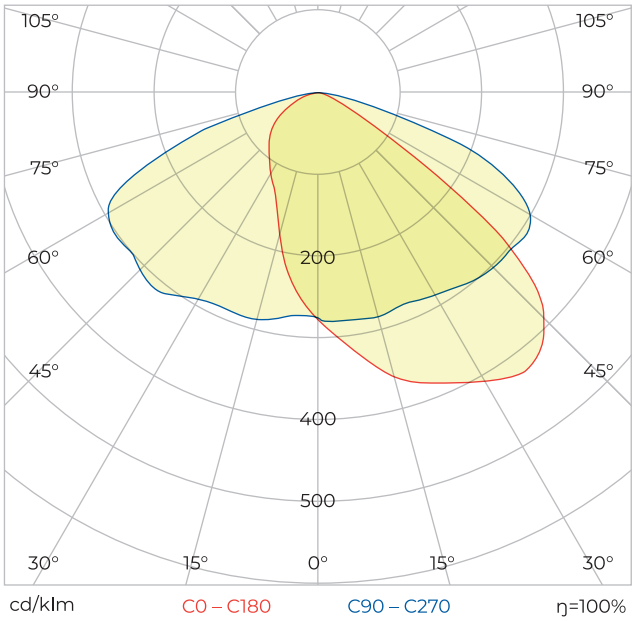


Custom-made Options

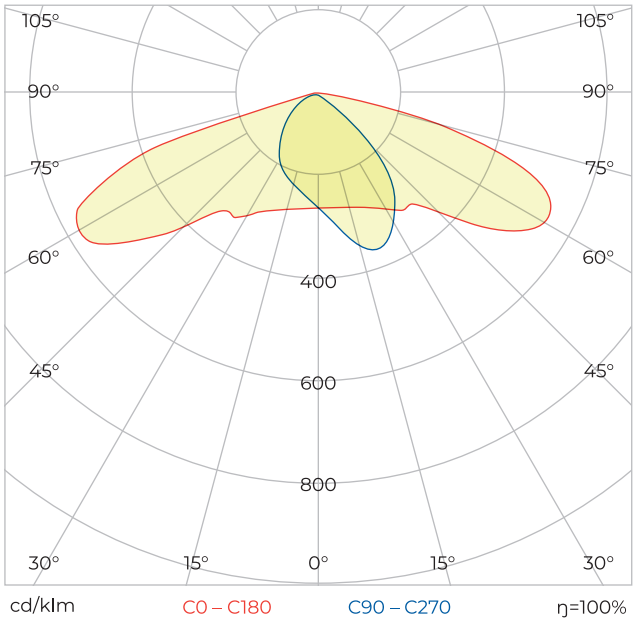
Power, W	Any within the range of 180 – 320
Standard CRI	80
Color temperature, K	2,700; 3,000; 5,000; 5,700
LDC	Wide Asymmetric TYPE 2
Mount Fitting	60R – adjustable for 60 mm consoles 48, 60 – non-adjustable for 48 and 60 mm consoles
Control	System Ready – can be connected to a lighting management system
	The luminaires are equipped with a Zhaga connector, which makes it easy to install (at the customer's request) an occupancy sensor, modem of the PWM lighting management system (allowing further modifications), etc.

Light Distribution Curves (LDC)

Wide Asymmetric TYPE 5



Wide Asymmetric TYPE 2



MAG44

CO2 NEUTRAL

CLO | 230B | 380B | AC direct | 4000 K | CRI >70 | IP65 | IK10 | RF

“ MAG44 is an LED luminaire designed for highways and roads.

The luminaires are based on LED clusters with a driver integrated on the common board.

- IEC protection class – II.
- The service life of the luminaire is over 50,000 hours.

Features

“ Efficacy >140 lm/W

Protection from high energy microsecond pulses
2 kV – “line–line”,
4 kV – “line–ground”.

Low percent flicker

Surge protection ≥300 V

Constant power mode

Thermal stabilization

3 year warranty

AC-Direct

An AC-Direct driver is integrated into each LED module.

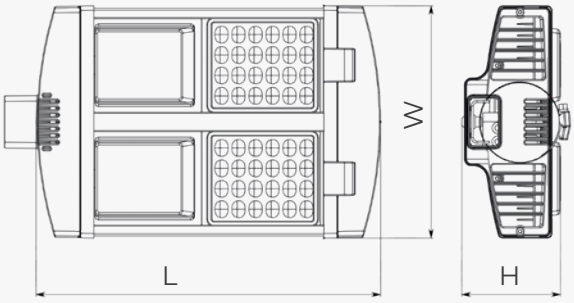
Cost-effective option

of a road luminaire with a lightweight housing and a driver.

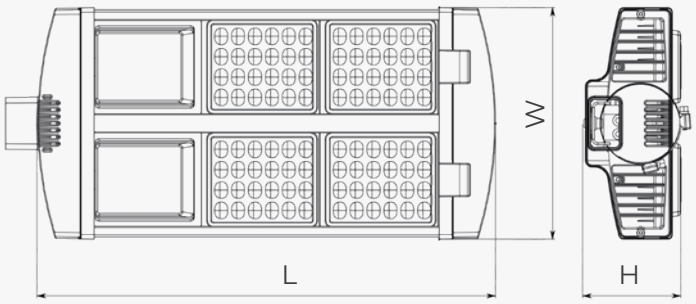
Table of Standard Options

Series	Product Code	Power, W	Luminous Flux, lm	Modificaion	Size, mm LxWxH	Weight, kg
MAG44	7-07-120-05-0-12-27-143-7-40-65	120	16,800	1	304x205x87	1.7
MAG44	7-07-160-05-0-12-27-144-7-40-65	160	22,400	2	407x205x87	2.4
MAG44	7-07-200-05-0-12-27-144-7-40-65	200	28,000	2	407x205x87	2.4

Mod. 1



Mod. 2

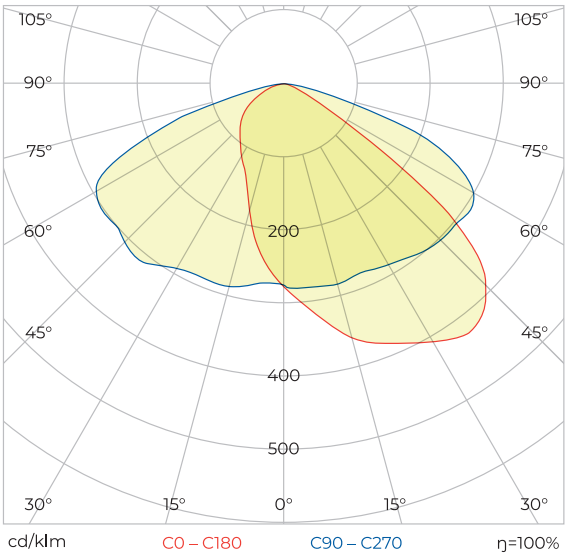


Custom-made Options

Standard CRI	80
Color temperature, K	3,000; 5,000; 5,700
Mount Fitting	48R, 60R – adjustable for 48 and 60 mm consoles 48, 60 – non-adjustable for 48 and 60 mm consoles
Control	The luminaires are equipped with a built-in modem 4S4 mod.CR or modem 4S4 mode.CB and supplied as System Ready

Light Distribution Curve (LDC)

Wide Asymmetric TYPE 3



Special end cap design for better heat dissipation

MAG9

230 V | CRI >70 | IP66 | IK10 | 4000 K

> **LED luminaires MAG9 are designed for urban roads, industrial areas, railway stations, allotment association areas, community garages.**

The light source consists of high-efficiency LEDs from world's leading manufacturers.

The luminaire is assembled on a single lightweight housing and equipped with a driver of the COMPACT family.

- **The service life of the luminaire is over 50,000 hours.**

Features

> **Efficacy >140 lm/W**

3 year warranty

Protection from high energy microsecond pulses
2 kV – "line–line",
4 kV – "line–ground".

Table of Standard Options

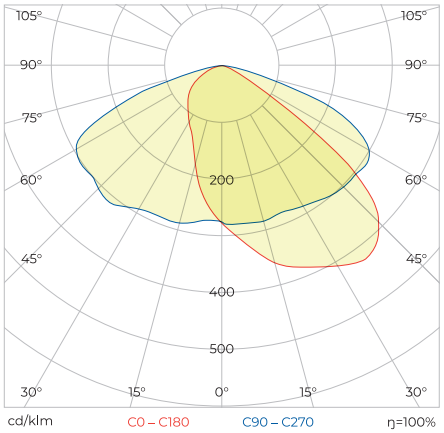
Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
MAG9	7-09-030-03-0-12-01-027-7-40-66	30	4,400	480x106x70	2.3
MAG9	7-09-045-03-0-12-01-028-7-40-66	45	6,300	570x106x70	2.6
MAG9	7-09-065-03-0-12-01-029-7-40-66	65	9,230	670x106x70	2.8

Custom-made Options

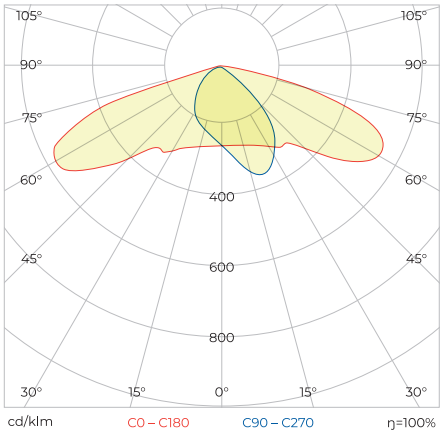
Power, W	Any within the range of 18 – 90
Standard CRI	80
Color temperature, K	2,700; 3,000; 5,000
LDC	Wide Asymmetric TYPE 2; Cosine 120°
Mount Fitting	48R, 60R – adjustable for 48 and 60 mm consoles 60 – non-adjustable for 60 mm consoles
Control	PWM; dimmable

Light Distribution Curves (LDC)

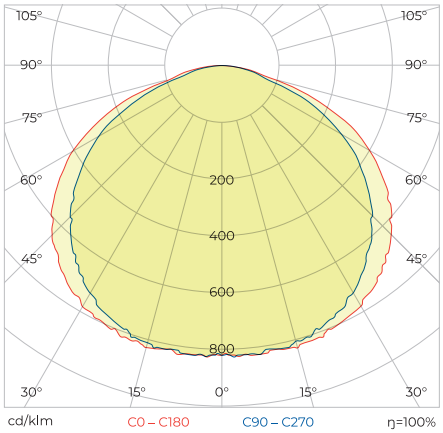
Wide Asymmetric TYPE 3



Wide Asymmetric TYPE 2



Cosine 120°



MAG10

230V | 380V | AC Direct | 4000K | RF | CRI >70 | IP65 | IK10

> **The elegant and lightweight MAG10 luminaires are designed for roads, courtyards, open spaces, etc.**

The luminaires are based on LED clusters with a driver integrated on the common board. The board is sealed by the multi lenses and cover of the driver compartment. The board is mounted on a lightweight aluminum profile with low thermal resistance.

- IEC protection class – II.
- The service life of the luminaire is over 50,000 hours.

Features

> **Efficacy >140 lm/W**

Cost-effective
modification of an outdoor luminaire with a lightweight housing.

Protection from high energy microsecond pulses
2 kV – “line–line”,
4 kV – “line–ground”.

Thermal stabilization

AC-Direct
An AC-Direct driver is integrated into each LED module.

Low percent flicker

Surge protection ≥300 V

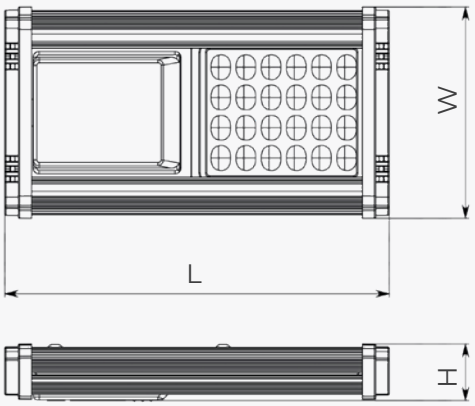
Constant power mode

3 year warranty

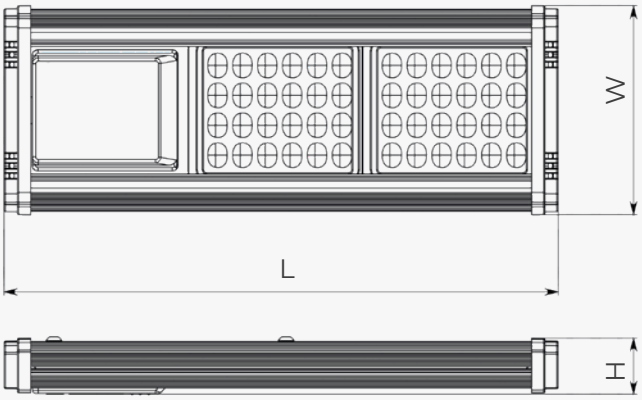
Table of Standard Options

Series	Product Code	Power, W	Luminous Flux, lm	Modificaion	Size, mm LxWxH	Weight, kg
MAG10	7-10-025-05-0-12-27-**141**-7-40-65	25	3,500	1	229x126x34	0,65
MAG10	7-10-060-05-0-12-27-**141**-7-40-65	60	8,400	1	229x126x34	0,65
MAG10	7-10-090-05-0-12-27-**142**-7-40-65	90	12,600	2	334x126x34	0,85

Mod. 1



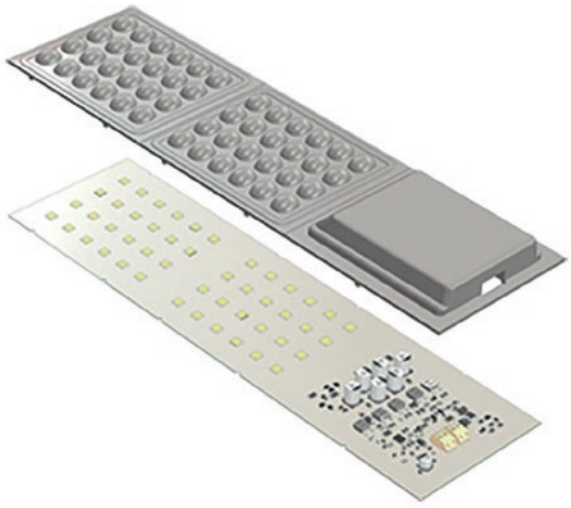
Mod. 2



Custom-made Options

Standard CRI	80
Color temperature, K	3,000; 5,000
Mount Fitting	48R, 60R – adjustable for 48 and 60 mm consoles 48, 60 – non-adjustable for 48 and 60 mm consoles
Control	The luminaires are equipped with a built-in modem 4S4 mod.CR or modem 4S4 mode.CB and supplied as System Ready

LED Cluster with a single driver for the complete luminaire



Light Distribution Curve (LDC)

Wide Asymmetric TYPE 3

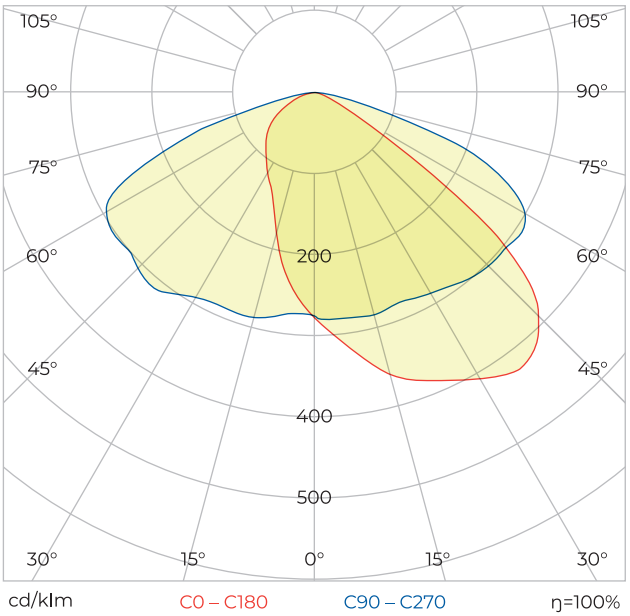


Table of comparative characteristics of street and road luminaires

Series	Warranty Period, years	Control System Ready	Driver	Power Range, W (over the network)	Lightning Protection, kV	Operating life, hour
MAG31	7...10	**4S4net** RF and others	LONG LIFE	50 – 155	10 / 6	80,000
MAG32	5	**4S4net** RF and others	STANDARD	50 – 155	10 / 6	50,000
MAG41	7...10	**4S4net** RF and others	LONG LIFE	180 – 320	10 / 6	80,000
MAG42	5	**4S4net** RF and others	STANDARD	180 – 320	10 / 6	50,000
MAG44	3	Possible	AC-Direct 2 pcs.	160 – 290	– / 4	50,000
MAG9	3	Possible	COMPACT	18 – 90	4 / 2	50,000
MAG10	3	Possible	AC-Direct on the common board with LEDs	24 – 120	– / 4	50,000

Table of comparative characteristics of street and road luminaires (continuation)

Series	Housing (material)	Power Meter	Control Connector Availability	Communication with the Modem	Efficacy, lm/W	Sensor Ready
MAG31	MAG -3 AL	+	Zhaga in driver	DALI 2	>165	+
MAG32	MAG -3 AL	—	Zhaga in driver	PWM	>150	—
MAG41	MAG -4 AL	+	Zhaga in driver	DALI 2	>165	+
MAG42	MAG -4 AL	—	Zhaga in driver	PWM	>150	—
MAG44	MAG -4 AL	—	Zhaga in driver	PWM	>140	—
MAG9	MAG -9 lightweight AL	—	Zhaga on housing	PWM	>140	—
MAG10	MAG -10 light AL	—	Integrated in housing	PWM	>130	—

Split Luminaires and Multisplit Systems

All the presented models of luminaires have a classic design, which is characterized by the location of all the constituent elements inside the luminaire. Therefore, the attachment of luminaires to the top of 4 meter masts results in some difficulties in their maintenance.

Any defect in the devices (driver, lightning protection, modem, LEDs, etc.) can cause a failure of the luminaire. Accordingly, all activities related to the repair (the need to call a sky lift vehicle, to block a part of the roadway and perform work at height) result in significant financial costs. Therefore, easy tool-less replacement of the driver is required, although the design of the luminaire becomes complicated.

On the other hand, modern LED modules are highly reliable (more than 100,000 hours) and do not require replacement for quite a long time. That is, if the luminaire consists of LEDs only and all other things are placed at the basement of the mast, no repair at height will be needed for 10...15 years.

Placing the circuits and electronics at the bottom of the mast simplifies maintenance of the drivers and provides control of the entire lighting system via the PLC (Power Line Communication) electrical network. At the same time, the environment, which already includes BLE, WiFi, GSM, 4G and other communication systems, is not contaminated with additional energy.

It is also possible to power high-power luminaires from a 3-phase network. It gives a great advantage in terms of the complete absence of phase distortions regardless of the condition of luminaires, their number, etc.

Placing the driver at the bottom of the mast is possible for classic drivers and SY-LIGHTING drivers only because the use of AC-Direct drivers will require additional wiring inside the mast, which is unacceptable.

The direct current goes in the mast from below by the same wires that were previously intended for the alternating current of 50 Hz. In order to avoid the supply of reverse polarity voltage to the LEDs by mistake, a diode is installed, which ensures protection.

Considering all of the above, lighting networks have been developed that are based on a different principle.

Split Systems single-phase

CO2 NEUTRAL

230V | 4000K | IP66 | IK10 | 380V | CRI >70

PATENT

US 10113737
EP 3165810
IN 201617039316

> **The MAG9 housing is used without a driver, the luminaire operates up to 155 W. Starting from 160 W, the housing of MAG4 is used, which operates up to 300 W.**

The basement of the mast includes a classic driver – STANDARD or COMPACT, depending on the power of the luminaire (MAG95.XXX.08.0..; MAG95.XXX.08.0..; MAG45.XXX.08.0..; MAG45.XXX.08.0..).

Luminaire marking:

- Luminaire series (MAG95).
- XXX is the power consumption from the network.
- Driver (08 – STANDARD driver, 11 – imported driver).
- Control type (0 – no lighting management system).

▸ **The service life of the luminaire is over 50,000 hours.**

Features

> High efficacy >145 lm/W

Protection from high energy microsecond pulses
6 kV – “line–line”,
10 kV – “line–ground”.

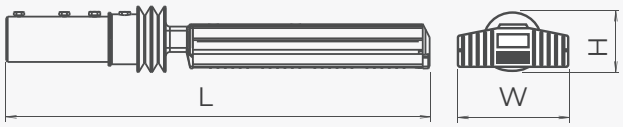
Location and access to the driver

The driver is installed at the basement of the mast, which makes it possible to replace the driver without using sky lift vehicles.

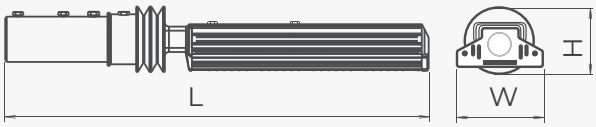
Table of Standard Options

Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
MAG95	7-13-075-08-0-10-01-028-7-40-66	75	10,800	570x106x70	2.1
MAG95	7-13-105-08-0-10-01-029-7-40-66	105	15,200	670x106x70	2.3
MAG95	7-13-130-08-0-10-01-038-7-40-66	130	18,900	765x106x70	2.5
MAG95	7-13-155-08-0-10-01-039-7-40-66	155	22,500	870x105x104	2.8
MAG45	7-12-200-08-0-10-01-040-7-40-66	200	29,000	650x205x101	4.8
MAG45	7-12-250-08-0-10-01-041-7-40-66	250	36,250	750x205x101	5.3
MAG45	7-12-300-08-0-10-01-042-7-40-66	300	43,500	850x205x101	6.0

MAG45



MAG95



Custom-made Options

Power, W	Any within the range of 50 – 320
Standard CRI	80
Color temperature, K	2,700; 3,000; 5,000; 5,700
Mount Fitting	48R, 60R – adjustable for 48 and 60 mm consoles 60 – non-adjustable for 60 mm consoles

LED split systems with PLC control (single-phase network).

Connecting a PLC modem to the drivers –
obtaining a system controlled via the electrical network.

Applicable to luminaires MAG95.XXX.08.4, MAG95.XXX.08.4..,
MAG45.XXX.08.4.., MAG45.XXX.08.4... –
the digit 4 means the type of control: PLC modem via the single-phase network.

Multisplit Systems three-phase

CO2 NEUTRAL

SY Lighting | 380V | 4000K | CRI >70 | IP66 | IK10

PATENT

US 10036547
EP 3165823
IN 201617039318

“ LED three-phase split lighting systems are an efficient substitute for high-power luminaires with sodium-vapor lamps, they allow reducing energy consumption 2 – 3 time.

Suitable for lighting highways, large areas, large railway and motorway interchanges, and airports.

The three-phase split lighting system includes an LED module, a heat sink housing, a group mount fitting to the mast and only one SY-LIGHTING driver at the basement of the mast.

The location of the driver at the basement of the mast allows a significant increase in its service life, since it is in comfortable temperature conditions (no heating from the LED module or by direct sunlight).

The LED modules are equipped with diodes to protect against the wrong polarity of the power supply.

The light source consists of high-efficiency LEDs from world’s leading manufacturers.

The system is installed at the top of high masts (over 8 meters high), it has a mounting hole of up to 79 mm in diameter and can include 2, 3, 4, 6 LED modules.

- Rated voltage / frequency 380 V / 50 Hz
- The service life of the luminaire is over 80,000 hours.
- The mounting (tilt) angle of the luminaires is 15°.

Features

> High efficacy >170 lm/W

Location and access to the driver

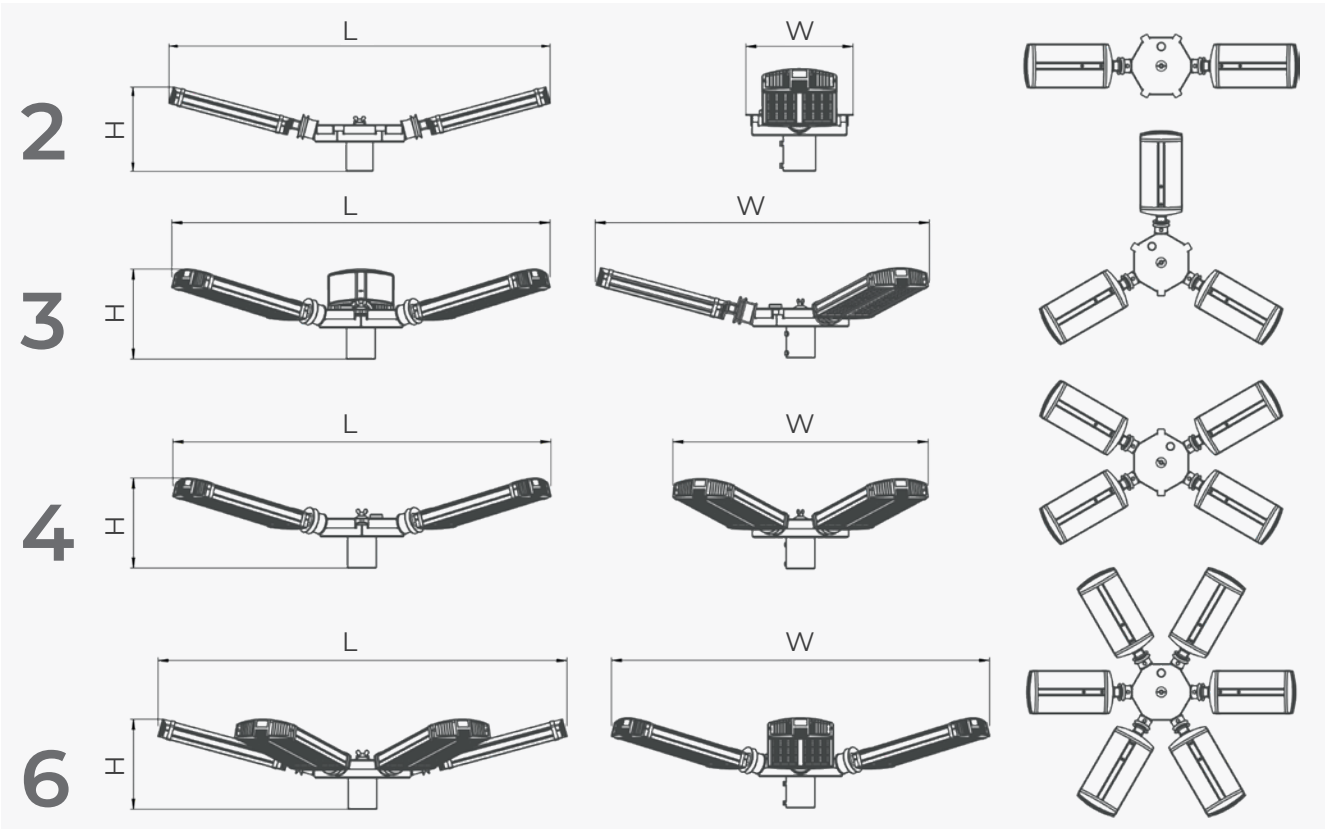
The driver of the SY-LIGHTING series provides a unique efficiency – 98 – 99%. Mounting at the basement of the mast allows replacing the driver without the use of special sky lift vehicles.

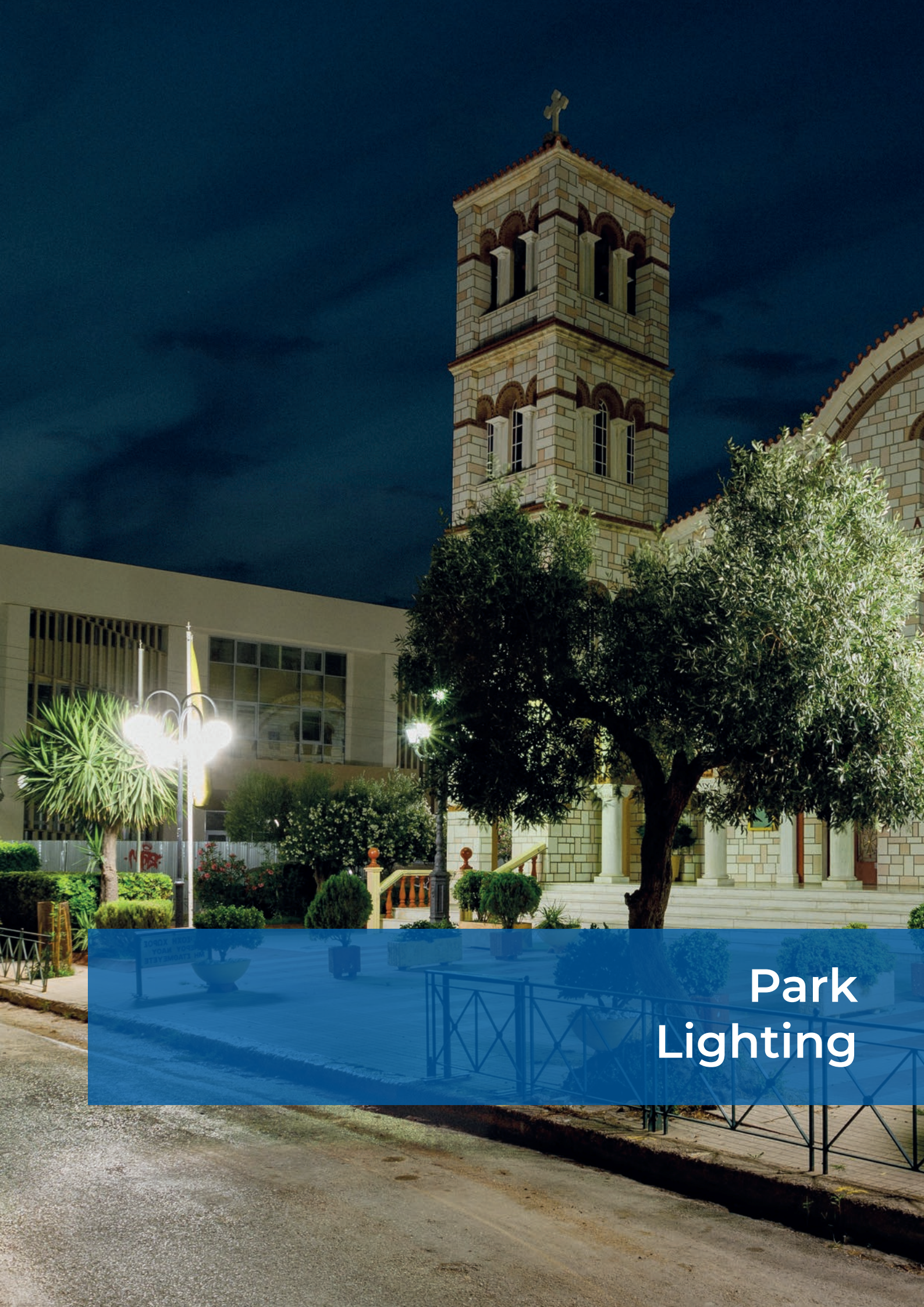
Table of Standard Options

Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
MAG45.2	7-12-465-07-0-10-26-043-7-40-66	465	79,050	1,270x293x280	15.5
MAG45.3	7-12-650-07-0-10-26-044-7-40-66	650	110,500	1,174x1032x280	21.1
MAG45.4	7-12-950-07-0-10-26-045-7-40-66	950	161,500	1,174x793x280	26.7

Custom-made Options

Power, W	Under development (from 50 W to 2.5 kW)
Standard CRI	80
Color temperature, K	3,000; 5,000; 5,700
LDC	Deep 60°; Wide Asymmetric TYPE 3





Park Lighting

CO2 NEUTRAL

CRI >70 | 4000K

> **The park lights luminaire series is manufactured based on the in-house design of proprietary LED modules, drivers or lamps.**

The luminaire housings are usually imported and made of aluminum alloy, the lenses are made of plexiglass or polycarbonate. The luminaires of this series provide a soft, comfortable light. The percent flicker is below 5%. The LDC type is optimal for parks.

Specifications

Rated voltage / Frequency	176 – 264 V / 50 Hz
Standard CRI	70
Power factor	>0.95
Operating temperature	-45°...+45°C
IEC protection class	I; II
Service life of luminaires	>50,000 h

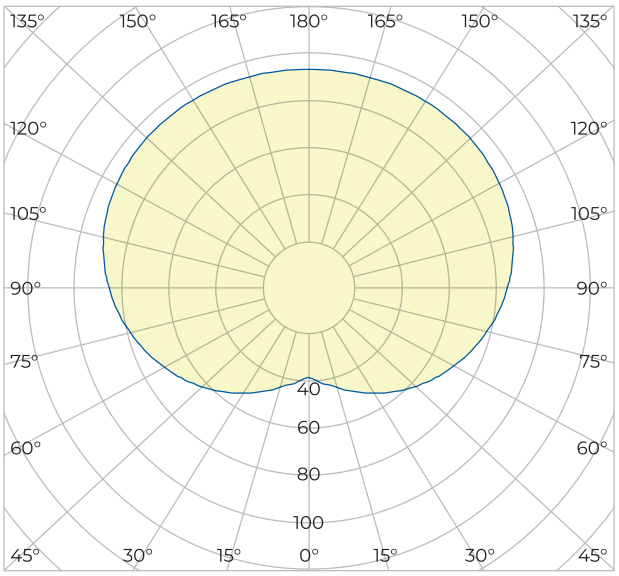
Table of Standard Options

The power and color temperature can be adjusted on the customer's request.

Series	Product Code	Power, W	Luminous Flux, lm	Size LxWxH, mm ØxH, mm	Weight, kg
STREET 56	7-15-055-11-0-46-06-083-7-40-65	55	6,050	540x540x720	8.0
LedPark 02	7-16-028-11-0-43-06-084-7-40-54	28	3,080	370x370x670	5.0
LedPark 01	7-16-075-11-0-42-06-085-7-40-54	75	8,250	440x440x770	7.8
BALL 400	7-14-060-11-0-41-06-900-7-40-65	60	6,600	400x600	4.5

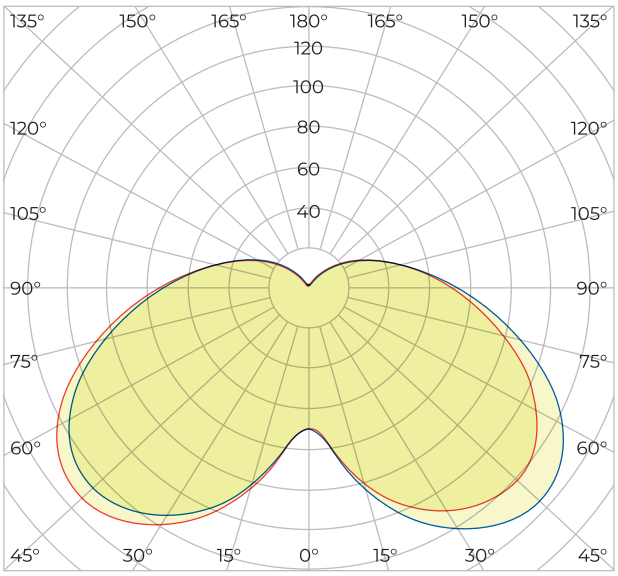
Light Distribution Curves (LDC)

BALL 400-060 – LDC P1



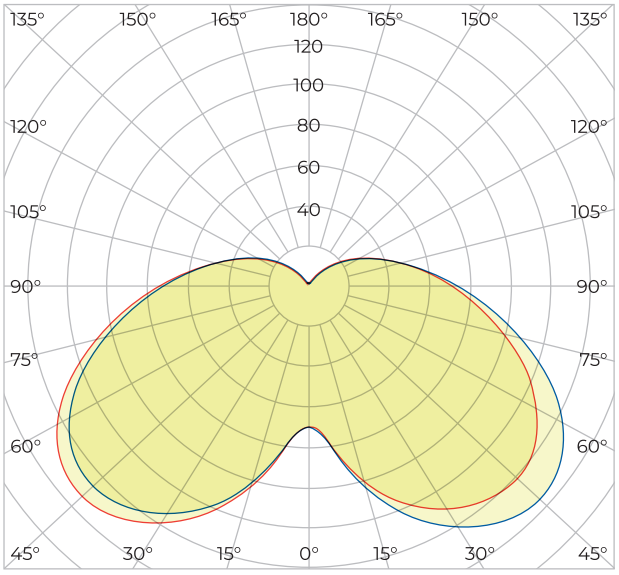
cd/klm C0 – C180 C90 – C270 ŋ=100%

LedPark 01-075 740.D.60.N – LDC P2



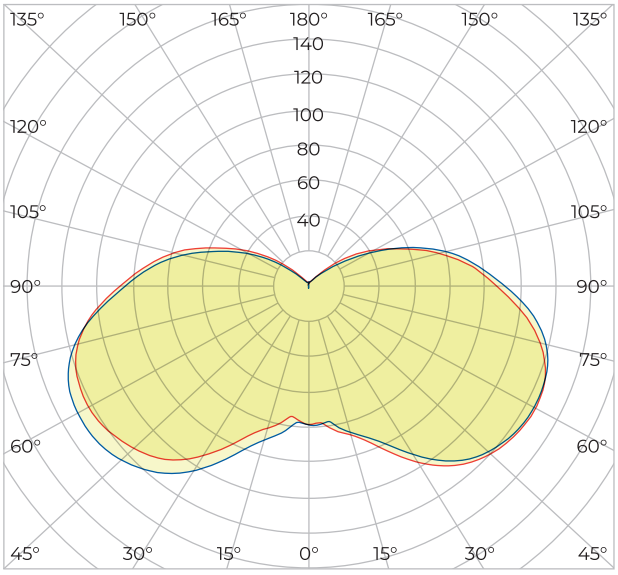
cd/klm C0 – C180 C90 – C270 ŋ=100%

LedPark 02-028 740.D.60.N – LDC P3



cd/klm C0 – C180 C90 – C270 ŋ=100%

STREET 56-055 740.D.60.N – LDC P6



cd/klm C0 – C180 C90 – C270 ŋ=100%

Architectural Lighting

ARCHITECTURAL LIGHTING

LED luminaires of the **ELEMENTS.S, ELEMENTS.L** families are used for various types of architectural sites providing the emission of the luminous flux both in one direction and in two directions.

The patented compact design of the luminaire housing (extruded profile with outer sections of 50x50 mm and 92x92 mm) consists of two heat sinks of the outer and inner circuits, connected by radial walls.

The mount fitting allows installing the luminaire almost anywhere and adjust the luminous flux horizontally from -180° to 180°, vertically from -90° to 90°.

Combined with a wide range of high quality secondary optics, it provides ideal solutions for an optimal light environment.

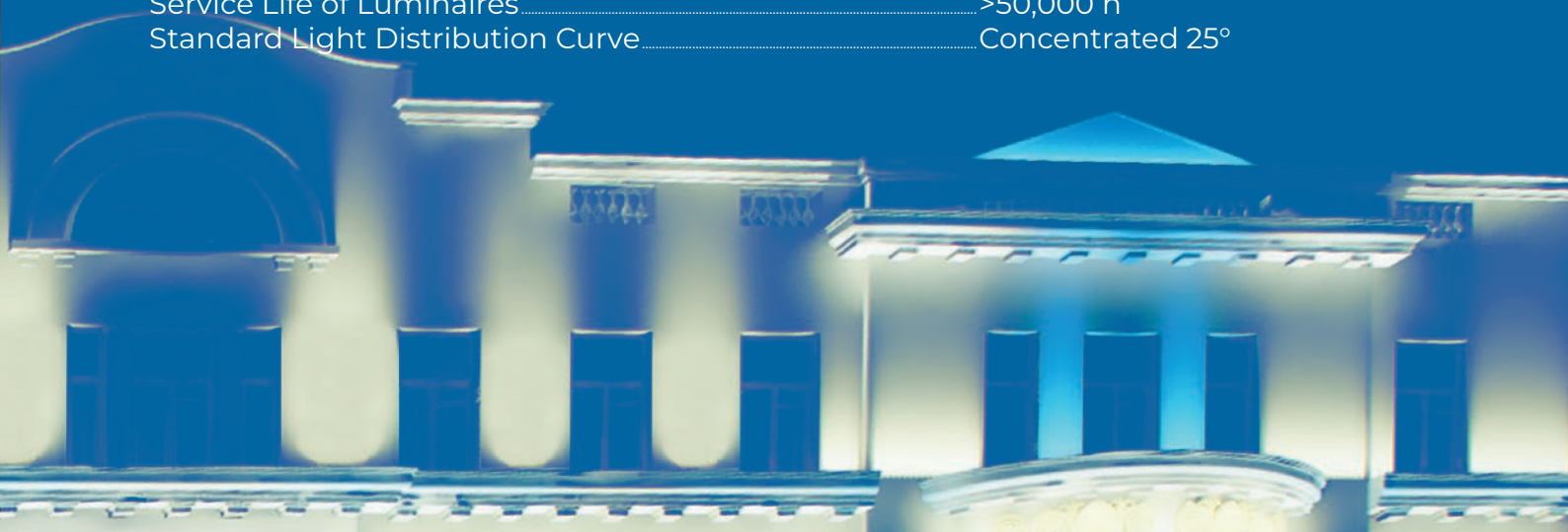
The driver is located inside the heat sink housing.

Features:

- Optimal solution for highlighting architectural sites, facades of buildings, columns, advertising structures, accent lighting inside shopping malls and business centers.
- Lighting of construction sites, large areas, storage yards, car parks.
- Wide range of luminaire adjustment in the direction of the luminous flux.
- High reliability.

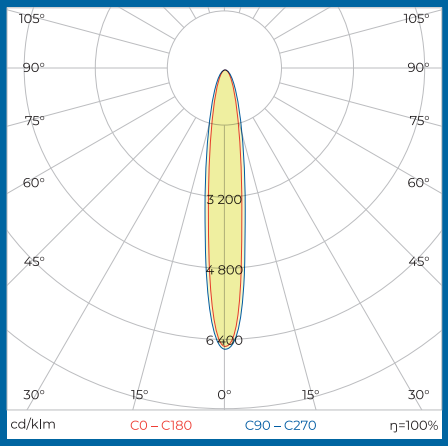
Specifications:

Efficacy	>120 lm/W
Rated Voltage / Frequency	230 V / 50 Hz
Power Factor	>0.95
Standard Color Temperature	4,000 K
Standard Color Rendering Index (CRI)	>70
Operating Temperature	-45°...+50°C
IEC Protection Class	I
Ingress Protection	IP65
Standard Color	Grey / Black
Service Life of Luminaires	>50,000 h
Standard Light Distribution Curve	Concentrated 25°

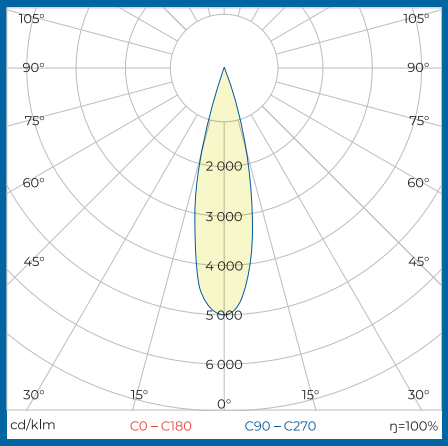


Light Distribution Curves (LDC)

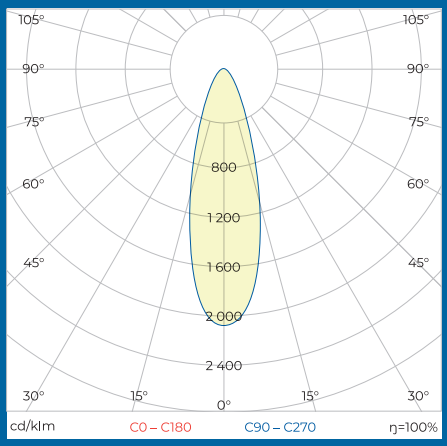
Concentrated 15°



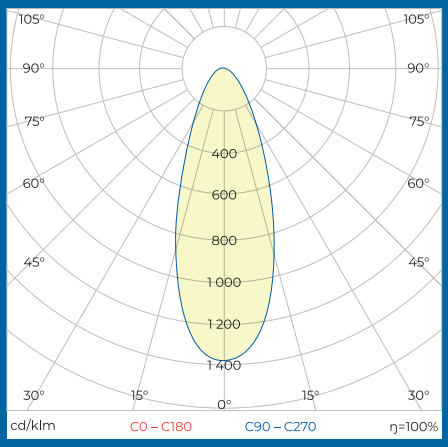
Concentrated 25°



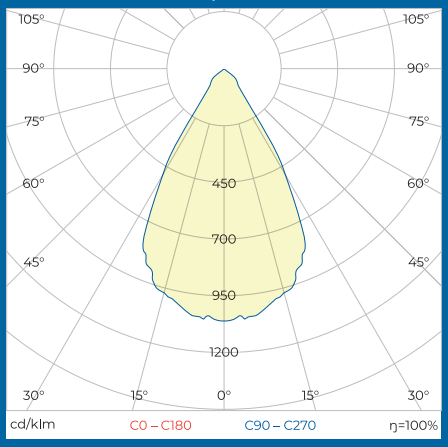
Concentrated 30°



Concentrated 45°



Deep 60°



ELEMENTS.S

CO2 NEUTRAL

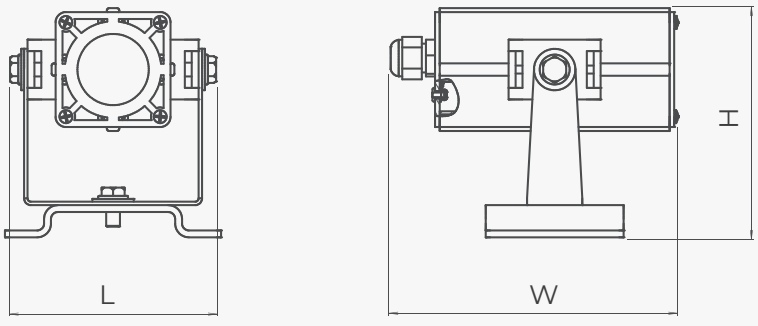
230V | CRI >70 | IP65 | IK10 | 4000K

> **LED luminaires of the ELEMENTS.S series of 10 to 20 W are used to highlight various types of architectural sites with the emission of the luminous flux both in one direction and in two directions.**

Table of Standard Options

The options shown in the table are for information only.
Facade lighting projects are implemented according to individual parameters.

Series	Product Code	Power, W	Luminous flux, lm	Size, mm LxWxH	Weight, kg
ELEMENTS.S	7-20-XXX-11-0-XX-09-126-7-40-65	10 – 20	1,200 – 1,400	94x145x110	0.8



Custom-made Options

CRI	80; 90
Color temperature, K	2,400; 2,700; 3,000; 5,000 Possible with LEDs in yellow, amber, blue, red and green colors
LDC	Concentrated 15°; Concentrated 45°

Options for combining modules connected to each other on an I-beam

H2V1
20 – 40 W, 2,200 – 4,400 lm

H3V1
30 – 60 W, 3,300 – 6,600 lm

H4V1
40 – 80 W, 4,400 – 8,800 lm

H6V1
60 – 120 W, 6,600 – 13,200 lm

H8V1
80 – 160 W, 8,800 – 17,600 lm

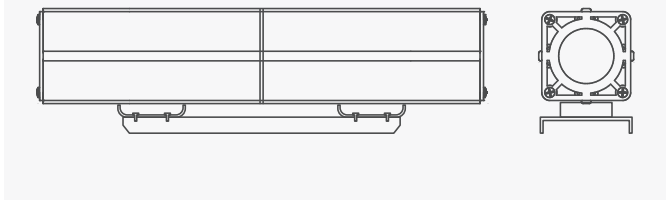
H2V2
40 – 80W, 4,400 – 8,800 lm

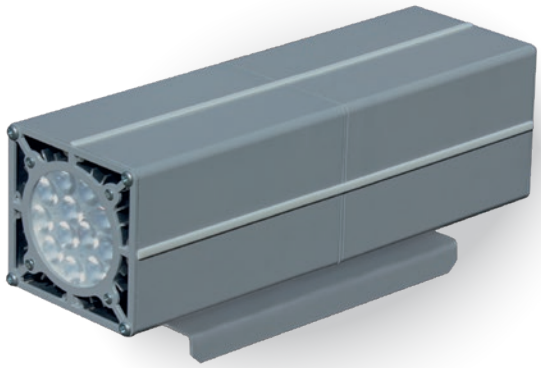
H3V2
60 – 120 W, 6,600 – 13,200 lm

H4V2
80 – 160 W, 8,800 – 17,600 lm

Number of modules – horizontal (H), vertical (V); power (W), luminous flux (lm).

The luminaire modification with a two-directional luminous flux emission





ELEMENTS.L

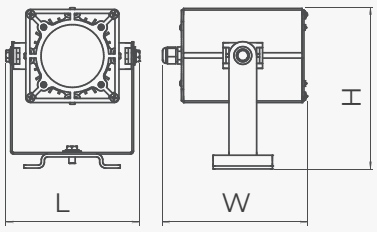
CO2 NEUTRAL | 230V | CRI >70 | IP65 | IK10 | 4000K

Table of Standard Options

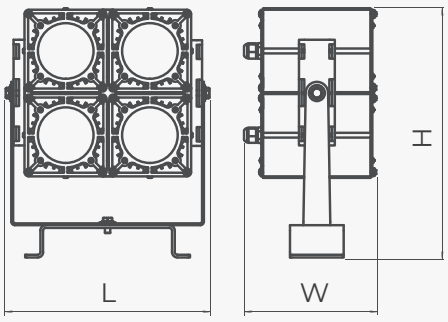
The options shown in the table are for information only.
Facade lighting projects are implemented according to individual parameters.

Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
ELEMENTS.L1	7-21-XXX-11-0-XX-09-128-7-40-65	30 – 70	3,600 – 8,400	136x146x151	2.2
ELEMENTS.L4	7-21-XXX-11-0-XX-09-129-7-40-65	120 – 280	14,400 – 33,600	232x146x290	5.8

ELEMENTS.L1



ELEMENTS.L4

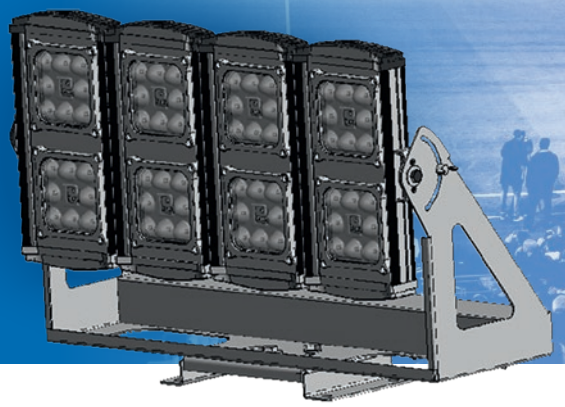


Custom-made Options

CRI	80; 90
Color temperature, K	2,400; 2,700; 3,000; 5,000 Possible with LEDs in yellow, amber, blue, red and green colors
LDC	Concentrated 15°; Concentrated 45°; Deep 60°

Sports Floodlights

ELEMENTS.SPORT.B



CO2 NEUTRAL

SY Lighting | 380V | DMX | CRI >80 | IP65 | IK08

PATENT

US 10938316
EP 3461234

“ The ELEMENTS.SPORT LED floodlight is designed for stadiums, sports complexes and indoor arenas.

Improved multi-module LED floodlights **of ELEMENTS.SPORT.B** series are intended for solving a complicated light engineering task — lighting of sport industry facilities.

ELEMENTS.SPORT.B floodlights meet the main requirements to lighting devices — it is the steady standardized lighting of big areas, considering the position of the floodlights at considerable distances, as well as meet the conditions of TV companies, broadcasting sport competitions.

Two types of multi-module sports floodlights of the Elements.Sport series with high-intensity luminous fluxes and powers of 450 W and 900 W solve these problems in full.

The basis of the floodlight is LED modules, connected by the power supply system and swivel mount.

- **The service life of the luminaire: more than 80,000 h. – on a three-phase LED-driver of SY-LIGHTING series, more than 30,000 h. – on single-phase LED-driver of INDUSTRIAL series.**

Features

Efficacy:
> 158 lm/W (LED floodlight on LED driver INDUSTRIAL);
> 170 lm/W (LED floodlight on LED driver SY-LIGHTING).

TV broadcasts in HD format

Fully comply with the requirements for broadcasting sports competitions in HD format (stable color temperature, no flicker, uniform spectral characteristic, minimum deviation of reproduced colors from the reference ones).

Floodlight mounting

Mounting of sports floodlight involves installation on a support, pilot bridges, girders of structures and buildings.

Floodlight adjustment range:
relative to the mounting axis – 360°;
vertically – 180°.

Control

Possibility of dynamic light control from the director's console via DMX512 and 1-10 V protocols (optimal solutions for stadiums, including on/off, brightness and lighting management functions in line with entertainment programs).

LED modules

A LED module is one LED board with a lens, mounted on it. It enables to change the floodlights configuration at any moment, at this only one board type is necessary.

Linsen aus Borosilikatglas.

7 year warranty

LED floodlight on LED driver SY-LIGHTING.

3 year warranty

LED floodlight on LED driver INDUSTRIAL.

Specifications

	Floodlight on LED driver SY-LIGHTING	Floodlight on LED driver INDUSTRIAL
Rated voltage / Frequency	343 – 440 V / 47 – 63 Hz	176 – 264 V / 47 – 63 Hz
Standard color temperature	5,000 K	
Standard CRI	>80	
Power factor	>0.9	>0.96
Operating temperature	-40°...+50° C	
IEC Protection class	I	
Ingress protection	IP65	
Standard color	Grey / Black	
Impact resistance	IK08	
Standard LDC	Concentrated 15°	

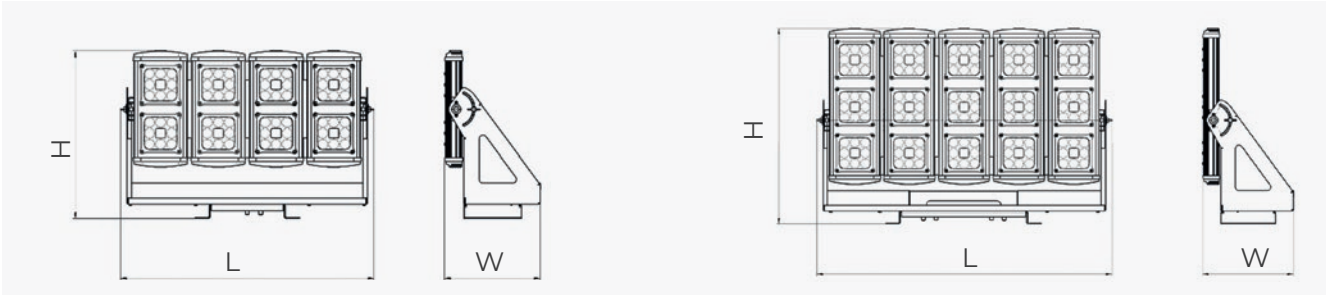
Table of Standard Options

When using a three-phase LED-driver of the SY-LIGHTING series.

Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
ELEMENTS.SPORT.450	7-23-448-07-0-36-09-203-8-50-65	448	76,000	664.5x252x438	11.2
ELEMENTS.SPORT.900	7-23-840-07-0-36-09-204-8-50-65	840	142,500	816x252x560	17.6

When using a single-phase LED-driver of the INDUSTRIAL series.

Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
ELEMENTS.SPORT.450	7-23-448-13-0-36-09-203-8-50-65	448	71,000	664.5x252x438	11.2
ELEMENTS.SPORT.900	7-23-840-13-0-36-09-204-8-50-65	840	133,125	816x252x560	17.6

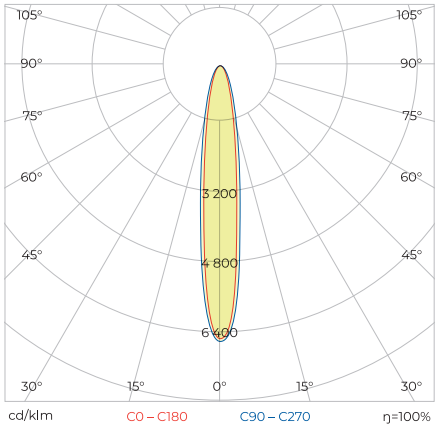


Custom-made Options

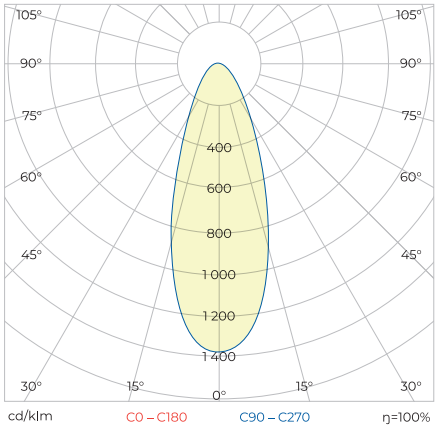
CRI	90
Color temperature, K	5,700
LDC	Concentrated 30°; Concentrated 45°; Deep 60°; Deep 90°

Light Distribution Curves (LDC)

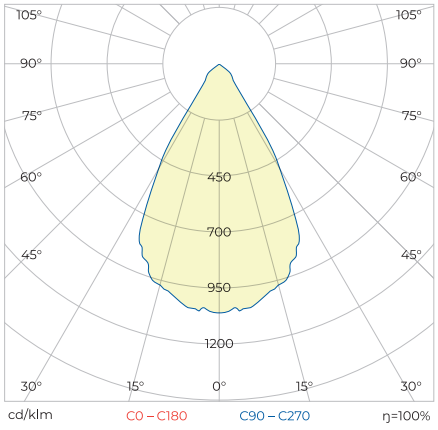
Concentrated 15°



Concentrated 45°



Deep 60°



Office Lighting

OFFICE LIGHTING

Luminaires of the SLIMPANEL series

DRIVER INSIDE LUMINAIRE

Thin edge-lighted LED luminaires.
The main feature of **SLIMPANEL** is that the LEDs provide EDGE lighting (on the edge of the light guide).
The absence of an external driver makes the luminaires multipurpose.
Possible mounting methods: recessed, surface-mounted or suspended.
Proprietary design and technological solutions provide high efficacy of the luminaires.
The luminaires are intended for use as ceiling and wall lights in commercial, health care, educational facilities and offices.
The luminaires of the SLIMPANEL series have a uniform glare-free glow.

Specifications

Rated voltage / Frequency	230 V / 50 Hz
Power factor	>0.95
Standard color temperature	4,000 K
Standard Color Rendering Index (CRI)	>80
Operating temperature	+1°...+45°C
Protection class IEC	II
Standard color	White
Service life of luminaires	>50,000 h

Custom-made Options:

Standard Color Rendering Index (CRI	90
Standard color temperature	3,000; 5,000

4S4 GROUP

4S4net Office Lighting is a modern solution for managing **SLIMPANEL** office luminaires. Upon request, **SLIMPANEL** can be dimmable using smartphones via the BLE (Bluetooth) protocol.

Color temperature control will be available from 2023.
For large orders, SLIMPANEL luminaire can be manufactured in square and rectangular shapes of any size, taking into account our production capacities.

SLIMPANEL.3

RoHS COMPLIANT

230V | CRI >80 | UGR <19 | IP40 | 4000K | CE

PATENT US 10641949 EP 3505809 KZ 34275

The LED luminaire housing is made by extrusion of plastic. Proprietary design and technological solutions provide high efficacy of the luminaires.

Features

- High efficacy >145 lm/W
- 3 mm thick light guide
- Ingress protection IP40

Table of Standard Options

Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
SLIMPANEL.3	7-26-008-11-0-03-14-087-8-40-40	8	1,160	295x295x17	0.8
SLIMPANEL.3	7-26-015-11-0-03-14-088-8-40-40	15	2,180	595x295x17	1.3
SLIMPANEL.3	7-26-024-11-0-03-14-089-8-40-40	24	3,480	595x595x17	2.4
SLIMPANEL.3	7-26-024-11-0-03-14-090-8-40-40	24	3,480	625x625x17	2.7
SLIMPANEL.3	7-26-024-11-0-03-14-091-8-40-40	24	3,480	295x1,195x17	2.6
SLIMPANEL.3	7-26-048-11-0-03-14-092-8-40-40	48	6,960	595x1,195x17	5.0

Luminaire Mounting

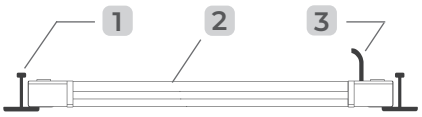
Mounting kit for surface-mounted (bulkhead)
Product Code: M0000035454

Mounting kit for suspended luminaires
Product Code: M0000035455

The mount fittings of the suspension system are supplied separately.

Luminaire Mounting Options

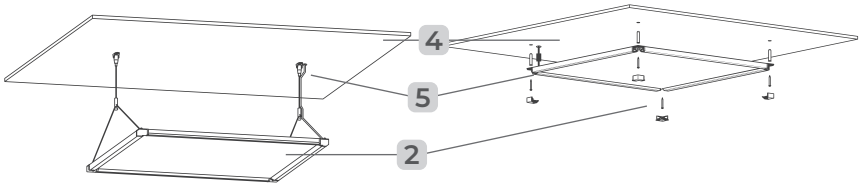
Mounting into a suspended ceiling (recessed option)



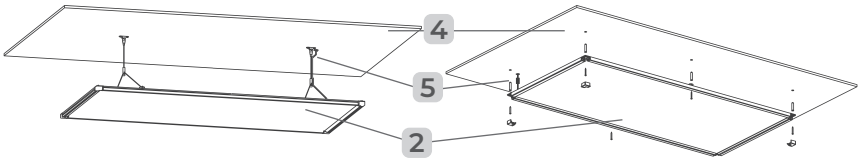
1. Suspended ceiling profile
2. Luminaire
3. Power cable
4. Ceiling
5. Power cable with terminal block

Mounting with cables

For luminaires with dimensions up to 600x600 mm.



For luminaires with dimensions over 600x600 mm.

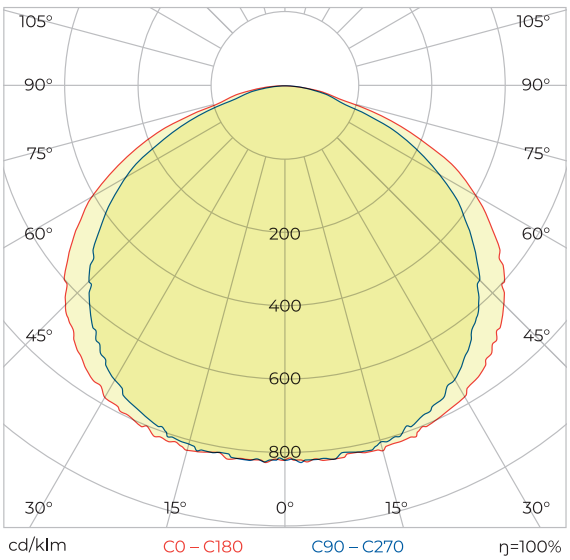


Maximum cable length in standard supply – 1,100 mm.

Mounting on surface

Light Distribution Curve (LDC)

Cosine 120°



Commercial and Decorative Lighting

SLIMDISC

CO2 NEUTRAL | 230V | CRI >80 | UGR <19 | IP20 | CE | 4000K

SLIMDISC is an original luminaire, which is a thin circular device that gives soft diffused light uniform over the entire surface of the luminaire. It was developed as an alternative to the Spot luminaire (D = 350 mm).

Features

> High efficacy >125 lm/W

INDOOR use

Suitable for administrative, office and retail salesroom premises and seamless in the design of restaurants, cafés, hotels and homes.

Mounting options

The luminaires are available in a recessed/surface-mounted and suspended options.

Soft light

The illumination of the diffusor plane creates a soft, comfortable light and cozy atmosphere.

Beam direction options

Possibility of choosing the direction of the luminous flux: “down” or “down and up”.

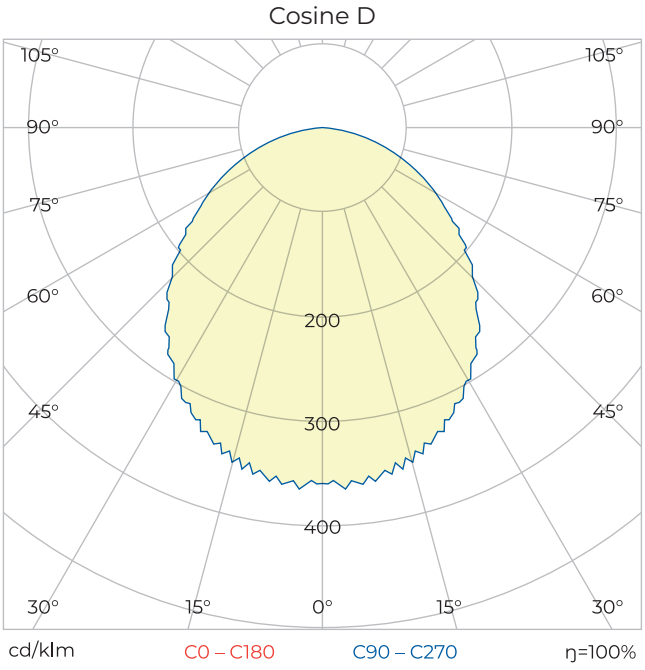
Table of Standard Options

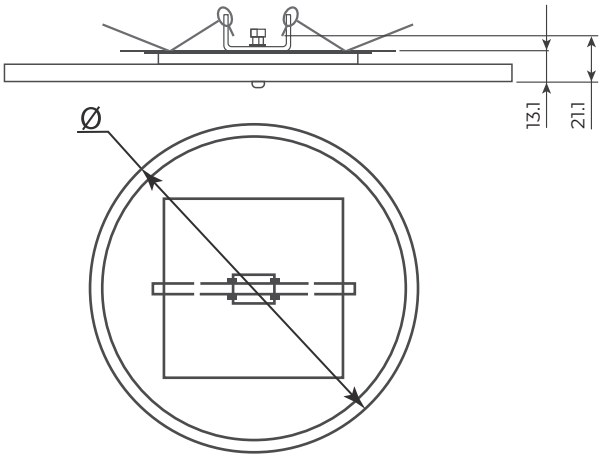
Series	Product Code	Power, W	Luminous Flux, lm	Size, mm ØxH	Weight, kg
SLIMDISC	7-32-012-06-0-03-17-919-8-40-20	12	1,320	375x35	0.72

Specifications

Rated voltage / Frequency	230 V / 50 Hz
Standard color temperature	4,000 K
Standard-CRI	>80
Power factor	>0.95
Operating temperature	+1°...+45°C
IEC protection class	II
Ingress protection	IP20
Standard color	White
Service life of luminaires	>50,000 h

Light Distribution Curve (LDC)





The **Spot** lamps (diameter ≈ 50 mm) are produced in hundred million copies and they are widely used due to their low cost and ease of installation.
However, their big drawback is harsh, blinding light, which causes serious discomfort. In this regard, SLIMDISC has a significant advantage.

Mounting options

Recessed / surface-mounted (bulkhead)

Suspended

LINEMALL

CO2 NEUTRAL | 230V | EPS | CRI >80 | UGR <19 | IP40 | CE | 4000K

LINEMALL is an accent LED luminaire. Mountabe in a suspended way. Suitable for retail salesroom areas. Modular design principle and various options of optics allow providing a wide range of lighting solutions both for retail and other applications using basic elements. The length of a single luminaire is up to 2.5 m.

Features

> Efficacy >130 lm/W

Mobile and transformable

Arrangement in one continuous glowing line.

Suitable for storefronts

Can be embedded into shop windows and showcases.

Table of Standard Options

Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
LINEMALL	7-35-015-11-0-19-11-103-8-40-40	15	2,000	580x28x40	0.36
LINEMALL	7-35-015-11-0-47-11-103-8-40-40	15	2,000	580x28x40	0.36
LINEMALL	7-35-015-11-0-48-11-103-8-40-40	15	2,000	580x28x40	0.36
LINEMALL	7-35-023-11-0-19-11-104-8-40-40	23	3,000	1,200x28x40	0.72
LINEMALL	7-35-023-11-0-47-11-104-8-40-40	23	3,000	1,200x28x40	0.72
LINEMALL	7-35-023-11-0-48-11-104-8-40-40	23	3,000	1,200x28x40	0.72

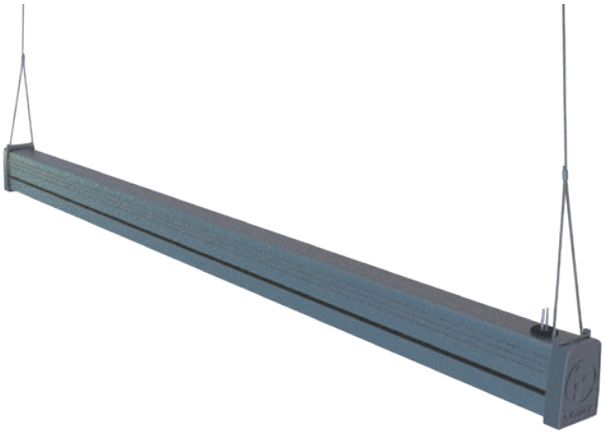
Custom-made Options

CRI	90
Color temperature, K	3,000; 5,000
LDC	Asymmetric TYPE 1; Asymmetric TYPE 2; Cosine 120°

Specifications

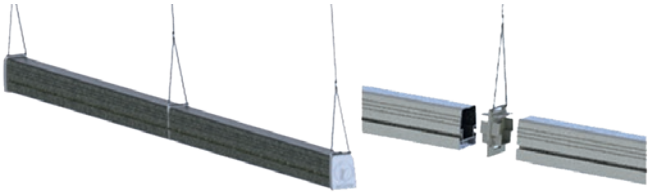
Rated voltage / Frequency	230 V / 50 Hz
Standard color temperature	4,000 K
Standard CRI	>80
Luminous flux flicker	<5%
Power factor	>0.95
Operating temperature	+1°...+45°C
IEC protection class	I
Ingress protection	IP40
Standard color	White
Service life of luminaires	>50,000 h

Mounting options



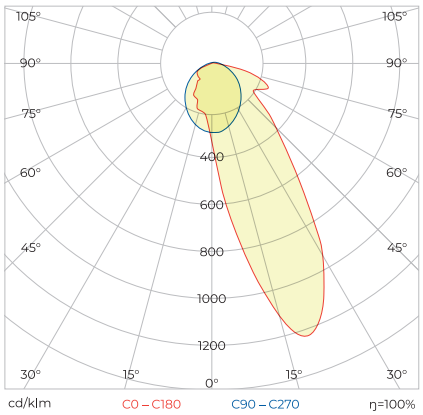
Side by side, 2 and more

As a light line

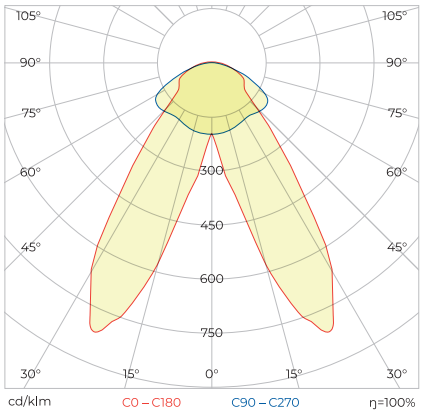


Light Distribution Curves (LDC)

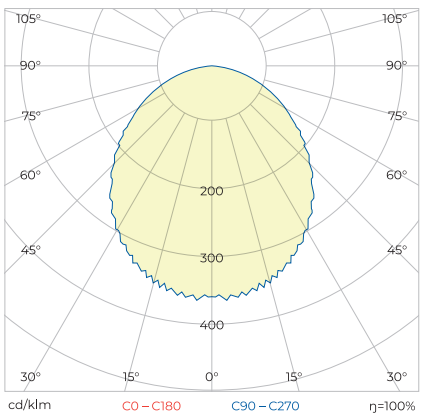
Asymmetric TYPE 1



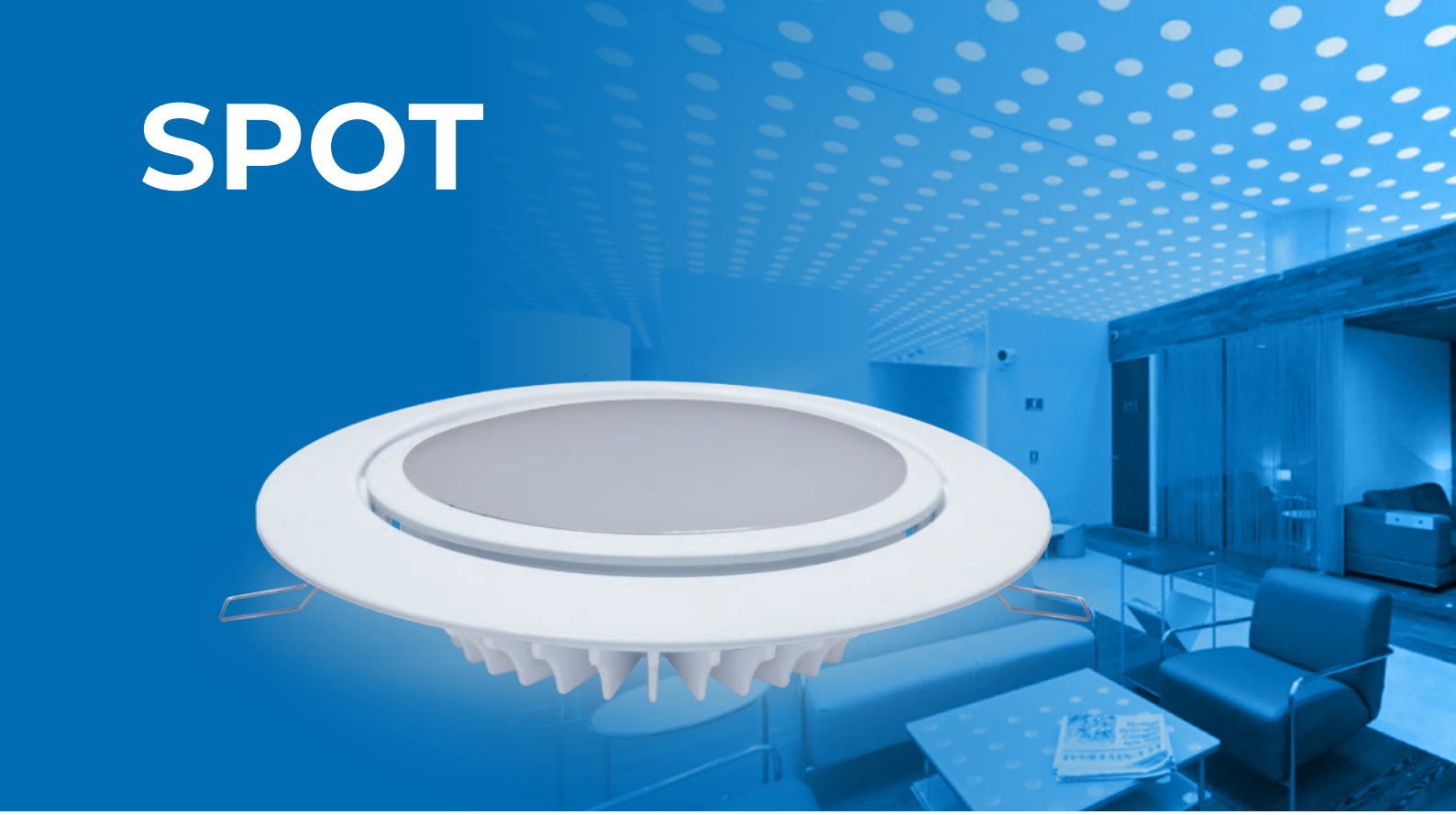
Asymmetric TYPE 2



Cosine 120°



SPOT



IP44 | CRI >80 | 4000K | 230V

> **Light built-in SPOT LED luminaire, made of polycarbonate with embedded driver and rotating gear.**

- Luminaire of electric shock protection class II.
- Service life of the luminaire more than 50,000 hours.

Features

> **Efficacy > 120 lm/W**

Opal diffuser
is made of polycarbonate, decontaminant and UV resistant.

Housing structure
Built-in. Rotating gear around an axis for 90°.

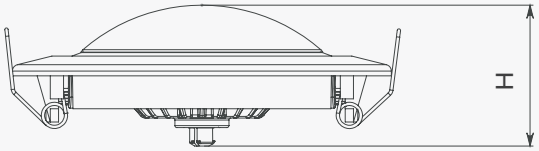
3 year warranty

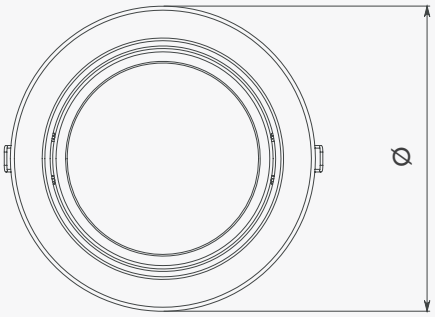
Table of Standard Options

Series	Product Code	Power, W	Luminous flux, lm	Mounting hole size, Ø mm	Size, mm Ø x H	Weight, kg
SPOT	7-58-004-05-0-03-17-917-8-40-44	4	457	85	95x32	0.052

Specifications

Rated voltage / Frequency	230 V / 50 Hz
Standard colour temperature	4,000 K
Standard CRI	>80
Power factor	>0.97
Operating temperature	+1°...+50° C
IEC Protection class	II
Ingress protection	IP44
Standard color	White
Standard LDC	Cosine D
Climatic version	UCL (Temperate and Cold climate) 4

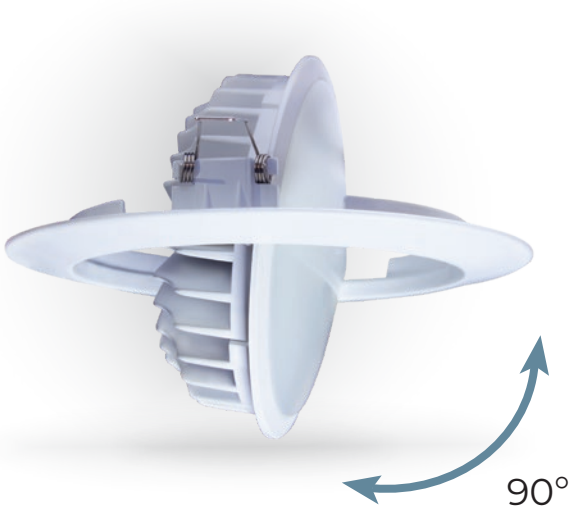




Custom-made Options

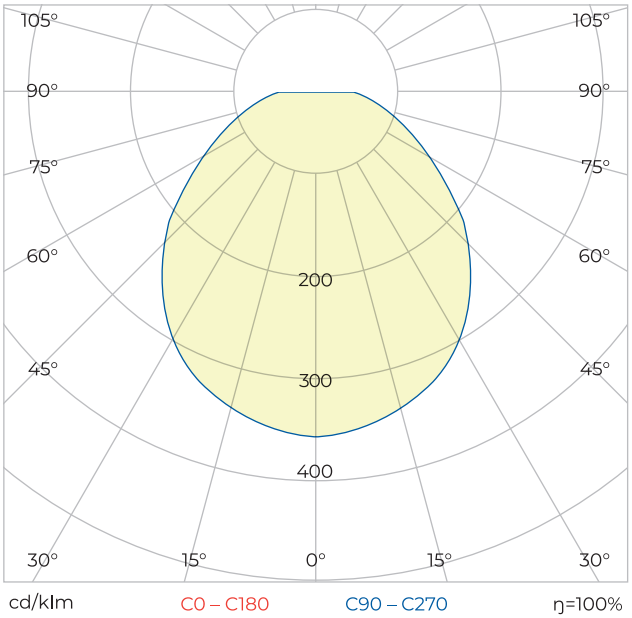
CRI	80
Color temperature, K	3,000; 5,000

Rotating Gear



Light Distribution Curve (LDC)

Cosine D



LINE.V

230B | CRI >80 | UGR <19 | IP20 | 4000K | RAL

LINE.V linear recessed luminaires with an integrated driver are used for mounting into gypsum board ceilings.

The luminaire housing is made from aluminum profiles, protected from weather impact by a paint, applied by powder method.

White high-efficacy LEDs are used as the light source.

Features

High efficacy >120 lm/W

Mounting options
Mounting in a line is possible.

INDOOR–purpose
Suitable for administrative, office premises, shops and sales areas.

Luminaire mild light
Frontal illumination of the diffuser plane creates a comfortable light.

Table of Standard Options

Series	Product Code	Power, W	Luminous flux, lm	Size, mm LxWxH	Weight, kg
LINE.V	7-31-015-05-0-03-17-201-8-40-20	15	1,800	600x100x35	0.75
LINE.V	7-31-030-05-0-03-17-202-8-40-20	30	3,600	1,200x100x35	1.45

Specifications

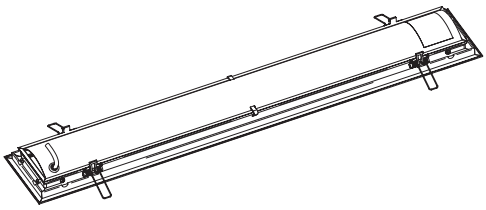
Rated voltage / Frequency	230 V / 50 Hz
Standard CRI	>80
Power factor	>0,95
Luminous flux flicker	<5%
Operating temperature	+1 ...+45° C
IEC Protection class	I
Ingress protection	IP20
Standard color	White
Service life of luminaires	>50,000 h

Custom-made Options

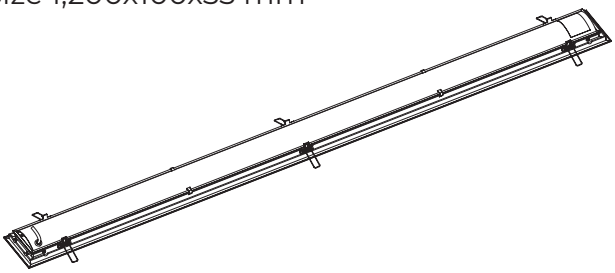
CRI	90
Color temperature, K	3 000; 5 000
Housing	Customized housing painting in accordance with RAL standard

Luminaire mount

Size 600x100x35 mm

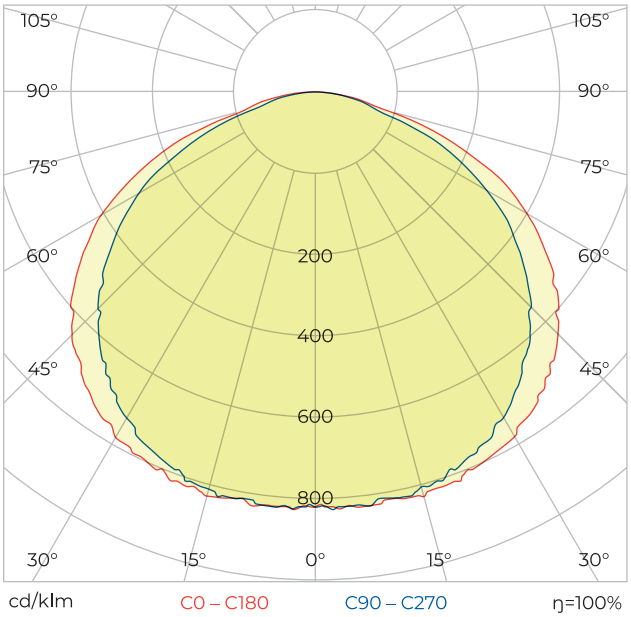


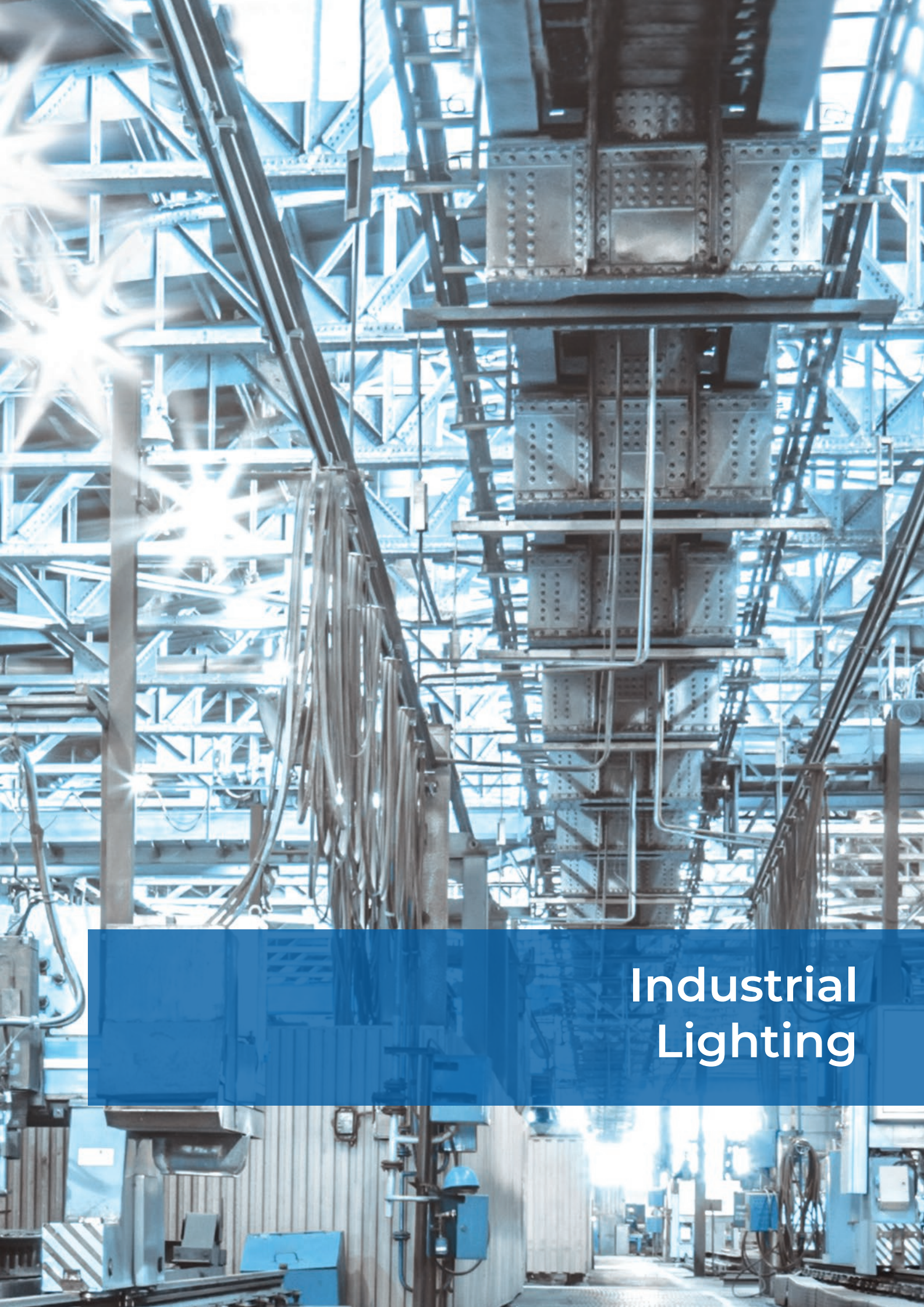
Size 1,200x100x35 mm



Light Distribution Curve (LDC)

Cosine 120°





Industrial Lighting

INDUSTRIAL LIGHTING

The series of industrial LED luminaires **INDUSTRY.3, INDUSTRY.4, INDUSTRY.9, INDUSTRY.10** is represented by luminaires based on the same profiles as the road&street series of MAG3, MAG4, MAG9, MAG10. Both series have the same power and efficacy. They differ in the mount fitting types and light distribution curves.

Industrial LED luminaires series **INDUSTRY.3, INDUSTRY.4** are an efficient substitute for luminaires with mercury lamps, allowing 4-5 time reduction of energy consumption.

Designed for industrial areas and workshops with high ceilings (option of mounting on vertical cables), hangars, warehouses, railway platforms, loading-unloading ramps, for street lighting mounted on cross street cables (as an option of mounting on horizontal cables) and for tunnels.

The luminaires consist of an LED module, driver, heat sink housing and mount fitting.

The luminaire housing is made of powder coated aluminum profile.

The light source consists of high-efficiency LEDs from world's leading manufacturers.

INDUSTRY.3 has a heat sink with a smooth upper cover on and **INDUSTRY.4** has a smooth upper surface, which prevents dust accumulation on the housing during operation.

Features of the INDUSTRY.3, INDUSTRY.4 luminaires

- Multi lenses in the LED module play the role of not only secondary optics, but also protective enclosures. This eliminates optical losses due to an additional protective glass and prevents a decrease in the luminous flux caused by dusting of the internal part of the optical system during its operation.
- The proprietary “floating” design of the LED module mount allows compensating the difference in thermal expansion coefficients of the LED boards and multi lenses.
- The matrix-like LED connection system in combination with the use of LEDs at 40 – 70% of their maximum power ensures high durability of the luminaire and its operability in case of failure of any LED.
- Protection against microsecond pulse interference of 2 kV “line-line”, 4 kV “line-ground”.
- The initial power of the luminaire can be changed upon customer request.

Specifications

Rated Voltage / Frequency	230 V / 50 Hz
Standard Color Temperature	4,000 K
Standard Color Rendering Index (CRI)	>70
Power Factor	>0.96
Percent Flicker	<5%
Operating Temperature	-45°...+50°C
IEC Protection Class	I
Ingress Protection	IP67
Standard Color	Gray
Service Life of luminaire	>50,000 h

INDUSTRY.3

CO2 NEUTRAL

230V | CRI >70 | IP66 | IK10 | 4000K

PATENT

US 10113737 B2
EP 3165810
IN 201617039316

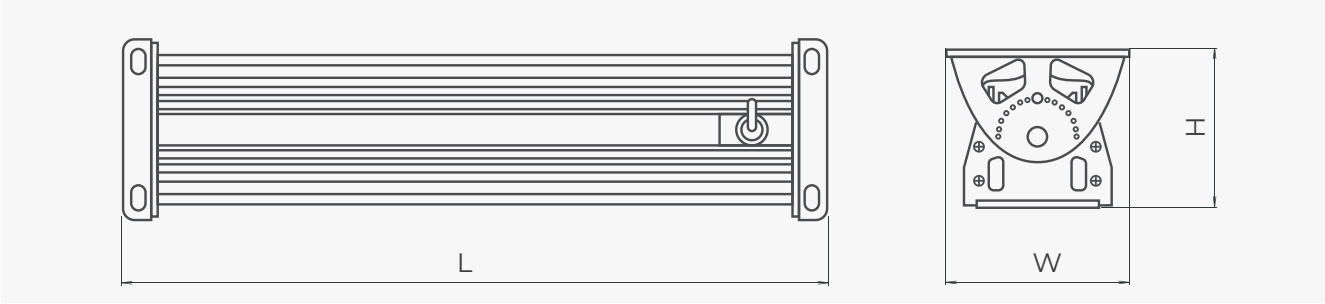
Features

- High efficacy >150 lm/W

The driver has no thermal contact through the metal with the LED module

Table of Standard Options

Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
INDUSTRY.3	7-36-075-08-0-19-09-047-7-40-66	75	11,250	344x105x95	2.9
INDUSTRY.3	7-36-105-08-0-19-09-048-7-40-66	105	15,750	440x105x95	3.2
INDUSTRY.3	7-36-130-08-0-19-09-049-7-40-66	130	19,500	536x105x95	3.5
INDUSTRY.3	7-36-155-08-0-19-09-050-7-40-66	155	23,250	632x105x95	3.9

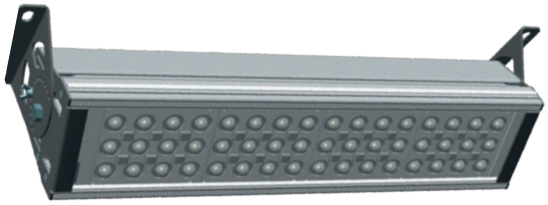


Custom-made Options

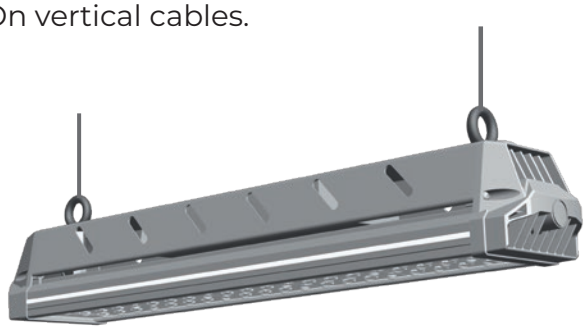
CRI	80
Color temperature, K	3,000; 5,000
Mount Fitting	On the wall or ceiling with a linear swivel mount fitting; on vertical cables

Mounting Options

With a linear swivel mount fitting.

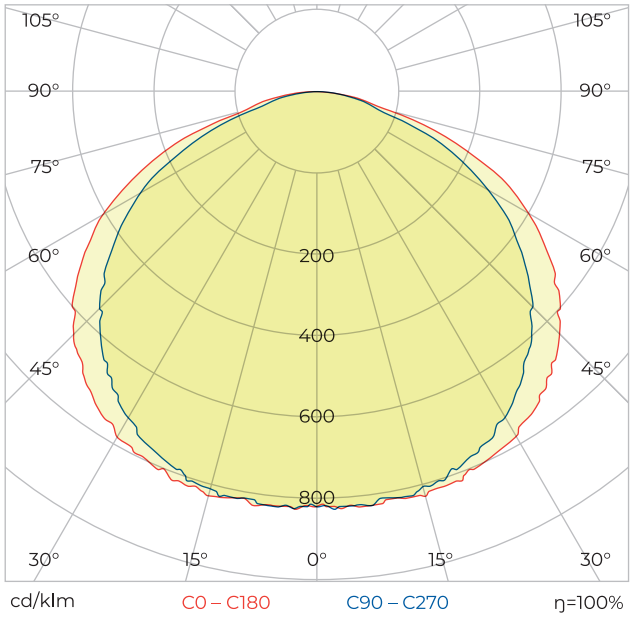


On vertical cables.



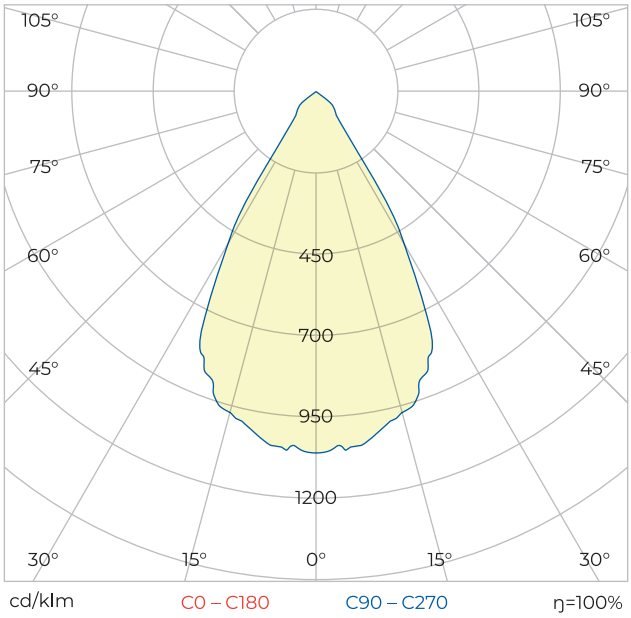
Light Distribution Curves (LDC)

Cosine 120°



cd/klm C0 – C180 C90 – C270 η=100%

Deep 60°



cd/klm C0 – C180 C90 – C270 η=100%

INDUSTRY.4

CO2 NEUTRAL

230V | CRI >70 | IP67 | IK10 | 4000K

PATENT

US 10036547
EP 3165823
IN 201617039318

Features

> High efficacy >150 lm/W

The driver has no thermal contact with the LED module and is located outside the profile containing the LED module.

Operability

The luminaires are operable in an extremely wide range of output voltage – 90 to 400 V AC.

Stability

In full compliance with the technical requirements of national railways in Eastern Europe (including the “A” criterion of functioning in case of dips/interruptions of supply voltage)

Table of Standard Options

Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
INDUSTRY.4	7-37-200-01-0-19-09-051-7-40-67	200	30,000	454x203x94	5.5
INDUSTRY.4	7-37-250-01-0-19-09-052-7-40-67	250	37,500	559x203x94	6.1
INDUSTRY.4	7-37-300-01-0-19-09-053-7-40-67	300	45,000	664x203x94	6.7

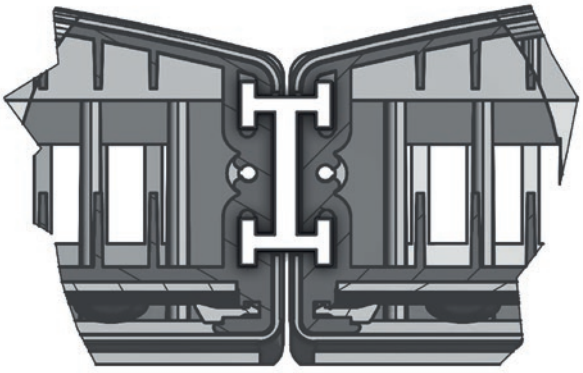
Custom-made Options

The modular design allows increasing the power from 180 W subject to agreement with the Customer.

CRI	80
Color temperature, K	3,000; 5,000
Mount Fitting	On the wall or ceiling with a linear swivel mount fitting; on vertical cables

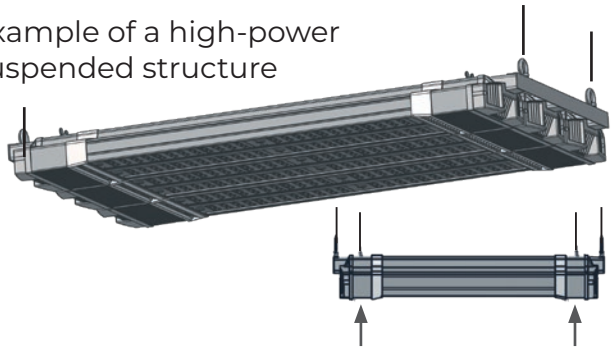
Mounting Options

Connection of the luminaires to each other on the I-beam



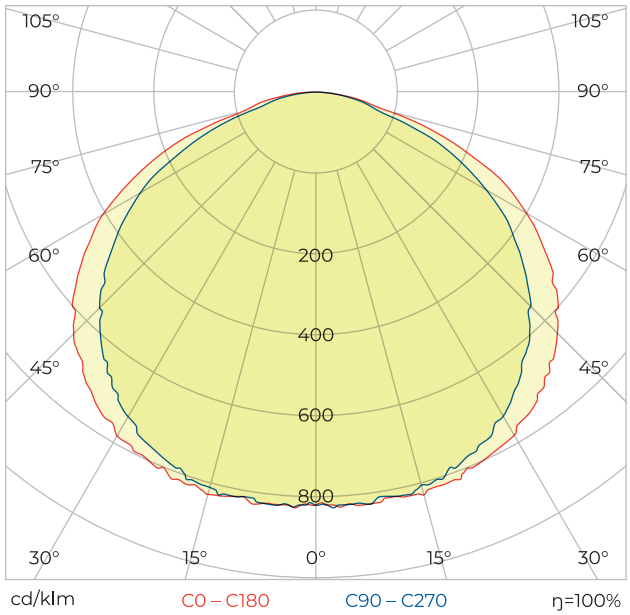
With a linear swivel mount fitting

Example of a high-power suspended structure

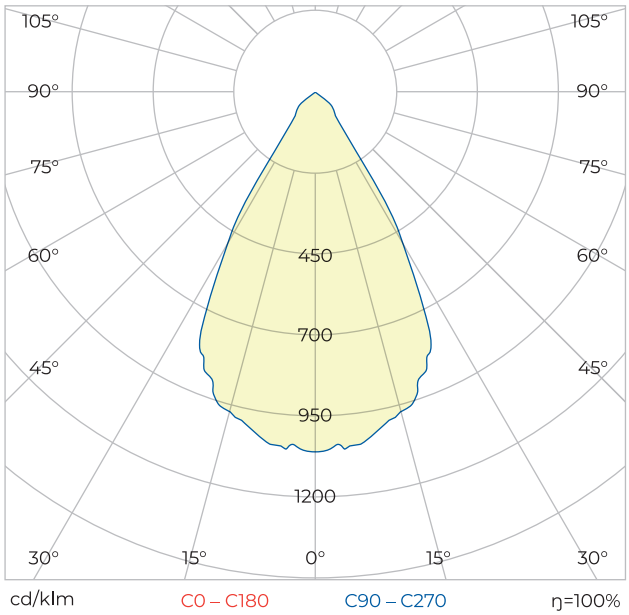


Light Distribution Curves (LDC)

Cosine 120°



Deep 60°



INDUSTRY.9

CO2 NEUTRAL

230B | CRI >70 | IP66 | IK10 | 4000K

LED luminaires INDUSTRY.9 are a series of low-power (20 – 65 W) single-unit luminaires. Used for external illumination of buildings, illumination of industrial areas, workshops, hangars, warehouses, as well as storage yards and tunnels.

The luminaire includes an LED module, a driver, a heat sink housing and a mount fitting. The luminaire housing is made of powder coated aluminum profile. The light source consists of high-efficiency LEDs from world's leading manufacturers.

Features

High efficacy >140 lm/W

No air space inside the LED module

prevents decrease in luminous flux caused by dusting of the internal part of the luminaire.

Patented "floating" design

of the LED module mounting allows compensating for the difference in thermal expansion coefficients of the LED boards and multi lenses.

Protection from high energy microsecond pulses

2 kV – "line–line",
4 kV – "line–ground".

Specifications

Rated voltage / Frequency	230 V / 50 Hz
Standard color temperature	4,000 K
Standard-CRI	>70
Percent flicker	≤5%
Power factor	>0.96
Operating temperature	-45°...+50°C
IEC protection class	I
Ingress protection	IP66
Standard color	Gray
Service life of luminaires	50,000 h

Table of Standard Options

Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
INDUSTRY.9	7-40-030-09-0-19-09-054-7-40-66	30	4,200	205x126x79	0.9
INDUSTRY.9	7-40-045-09-0-19-09-055-7-40-66	45	6,300	303x126x79	1.2
INDUSTRY.9	7-40-065-09-0-19-09-056-7-40-66	65	9,100	401x126x79	1.5

Custom-made Options

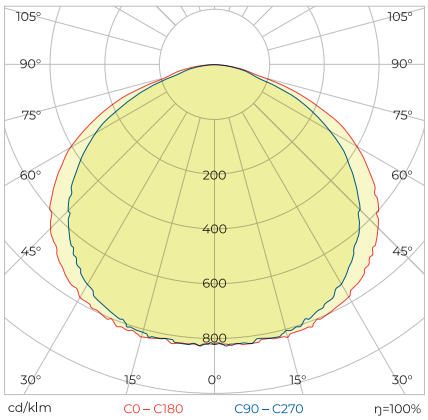
Power, W	Single power supply up to 200
CRI	80
Color temperature, K	3,000; 5,000
LDC	Deep 60°
Mount Fitting	On the wall or ceiling with a linear swivel mount fitting

Mounting option

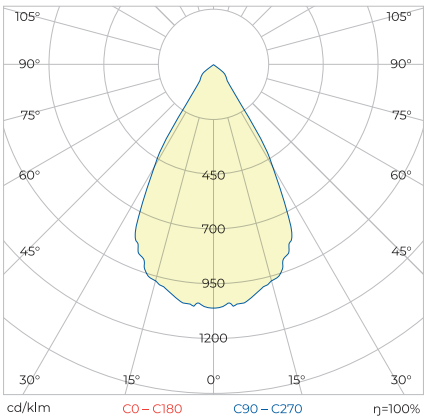
With a linear swivel mount fitting

Light Distribution Curves (LDC)

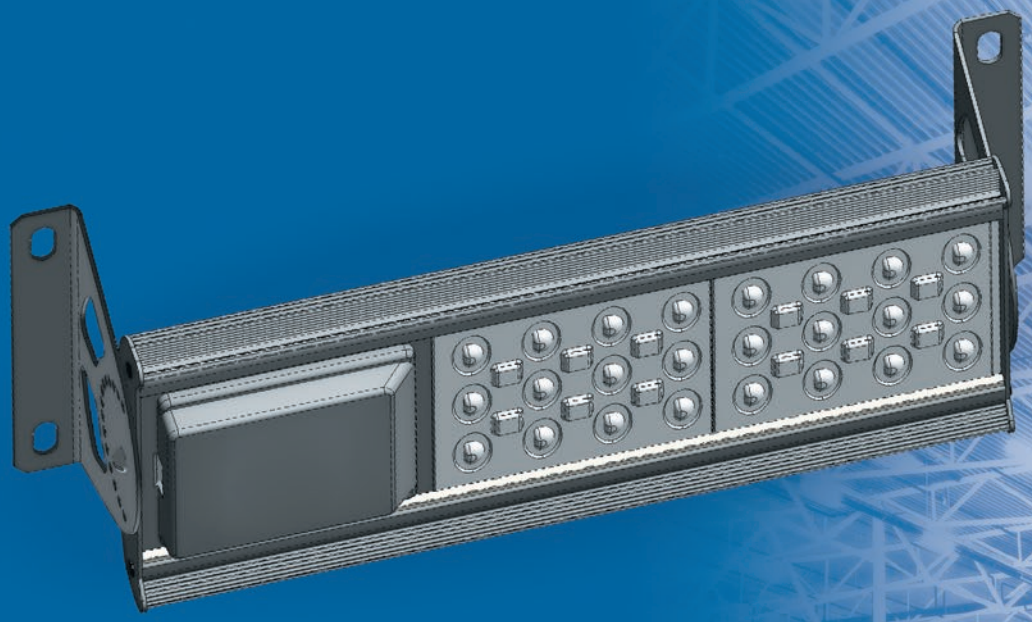
Cosine 120°



Deep 60°



INDUSTRY.10



CO2 NEUTRAL

230V | 380V | AC Direct | CRI >70 | IP65 | IK10 | 4000K

> LED luminaire **INDUSTRY.10** is designed for industrial areas, workshops, open spaces, etc.

The luminaires are based on LED clusters with a driver, integrated on a common board.

The board is hermetically sealed by multi lenses and the cover of the driver compartment. The board is mounted on a lightweight aluminum profile with low thermal resistance.

Features

> High efficacy >130 lm/W

Cost-effective option
of industrial luminaire with a lightweight housing.

Protection from high energy microsecond pulses
2 kV – “line–line”.

AC-Direct
A unique design with an integrated AC-Direct driver.

Surge protection ≥300 V

Thermal stabilization

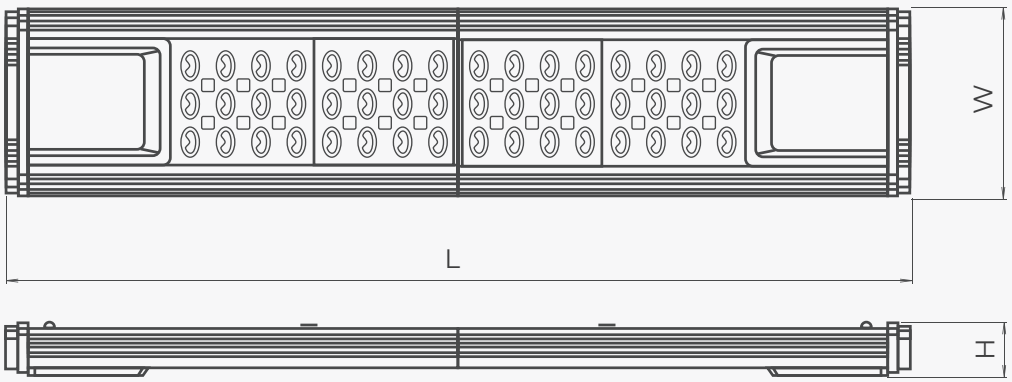
Low percent flicker

Specifications

Rated voltage / Frequency	230 V / 50 Hz
Standard color temperature	4,000 K
Standard-CRI	>70
Percent flicker	≤5%
Power factor	>0.97
Operating temperature	-40°...+50°C
IEC protection class	II
Ingress protection	IP65
Standard color	Gray
Service life of luminaires	>50,000 h

Table of Standard Options

Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
INDUSTRY.10	7-41-060-05-0-19-09-063-7-40-65	60	7,500	316x126x35	0.82
INDUSTRY.10	7-41-100-05-0-19-09-064-7-40-65	100	12,500	612x126x35	1.2
INDUSTRY.10	7-41-120-05-0-19-16-064-7-40-65	120	15,000	612x126x35	1.2
INDUSTRY.10	7-41-140-05-0-19-16-064-7-40-65	140	17,500	612x126x35	1.2



Custom-made Options

Power, W	Any within the range of 24 – 160
CRI	80
Color temperature, K	3,000; 5,000
LDC	Cosine 120°; Deep 60°

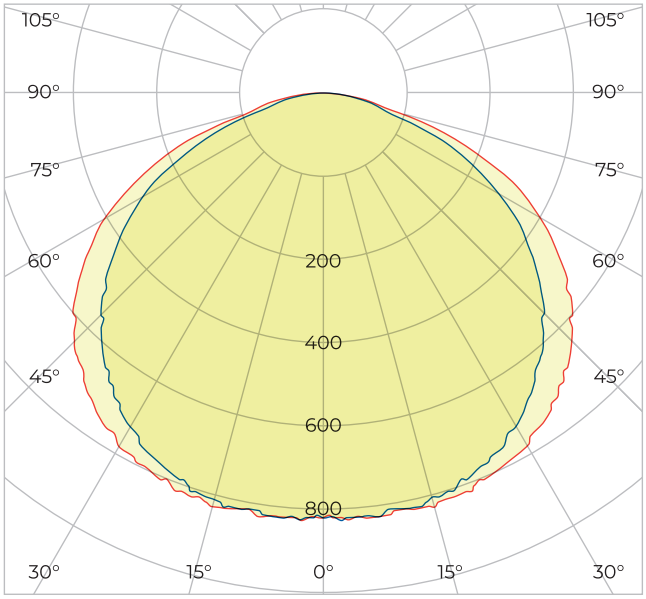
Mount Fitting Options

INDUSTRY.10 (60 – 100 W)

INDUSTRY.10 (100 – 200 W)

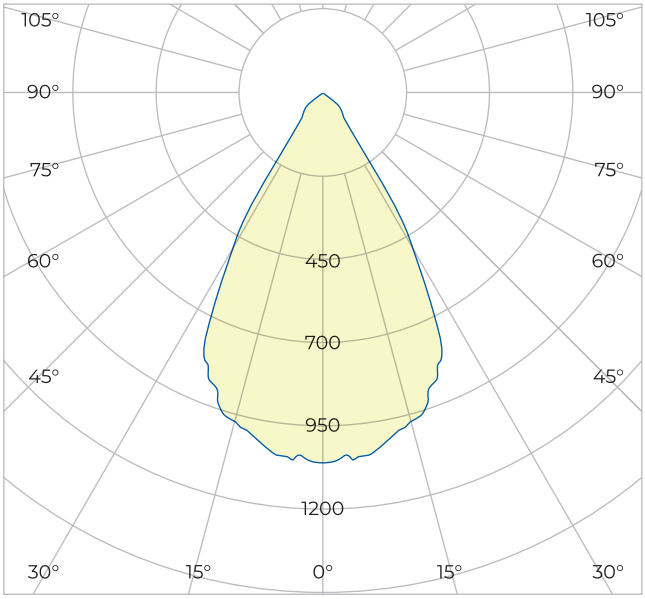
Light Distribution Curves (LDC)

Cosine 120°



cd/klm C0 – C180 C90 – C270 η=100%

Deep 60°



cd/klm C0 – C180 C90 – C270 η=100%

INDUSTRY.B

CO2 NEUTRAL

230V | AC Direct | CRI >70 | IP66 | IK10 | 4000K

> **LED luminaires of the INDUSTRY.B series are designed for workshops, industrial areas, railway stations, etc.**

The luminaires are based on unique patented LED modules with integrated drivers for joint use with borosilicate glass lenses. This allows using the luminaire in places with abrasive dust and vapors of chemically active substances in the air.

Features

> **High efficacy >150 lm/W**

AC-Direct
Unique design with integrated AC-Direct driver

High reliability

Protection from high energy microsecond pulses
2 kV – “line–line”.

Thermal stabilization

Low percent flicker

Specifications

Rated voltage / Frequency	230 V / 50 Hz
Standard color temperature	4,000 K
Standard-CRI	>70
Percent flicker	≤5%
Power factor	>0.97
Operating temperature	-40°...+50°C
IEC protection class	II
Ingress protection	IP66
Standard color	Gray

Table of Standard Options

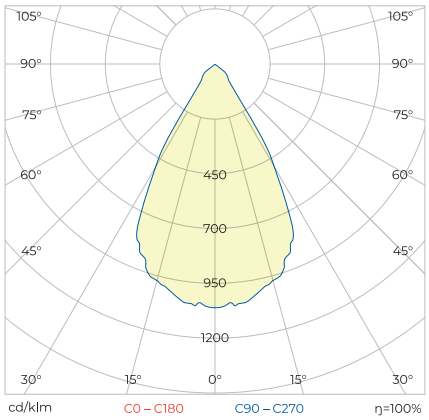
Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
INDUSTRY.B	7-71-050-05-0-19-09-198-7-40-66	50	7,500	260x139x100	1.1
INDUSTRY.B	7-71-100-05-0-19-09-199-7-40-66	100	15,000	400x139x100	1.5

Custom-made Options

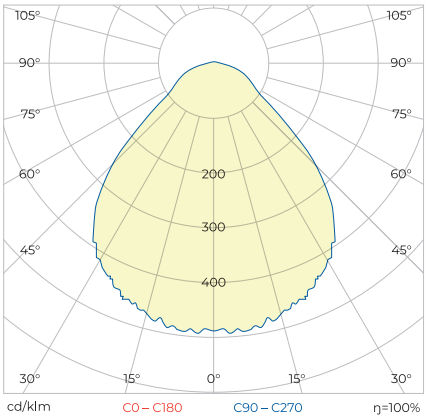
Power, W	50 – 500 W
CRI	80
Color temperature, K	3,000; 5,000
LDC	Deep 60°, Cosine 90°, Concentrated Special 45° or others as agreed with the Customer
Mount Fitting	On a wall or ceiling with a linear swivel mount fitting; on vertical cables

Light Distribution Curves (LDC)

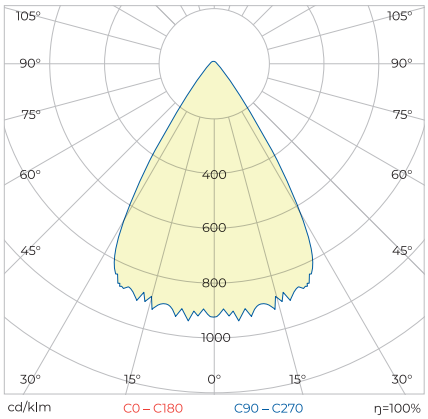
Deep 60°



Cosine 90°



Concentrated Special 45°



LINE.PROM

CO2 NEUTRAL

230V | CRI >80 | IP65 | IK10 | 4000K

> **The original LINE.PROM LED luminaire is made on the basis of a unique closed polycarbonate profile and LED lines with integrated drivers.**

Designed for rooms with high moisture and dust content.
The luminaire provides a comfortable uniform light with a low glare rating.

Suitable for installation in tunnels and as outdoor lighting.

Features

> **High efficacy >130 lm/W**

Vandal-proof design

Opal diffusor provides
a uniform comfortable glow.

Dimming with a conventional light regulator
(phase dimmer) through a supply network without laying additional control cables.

Impact resistant
polycarbonate housing.

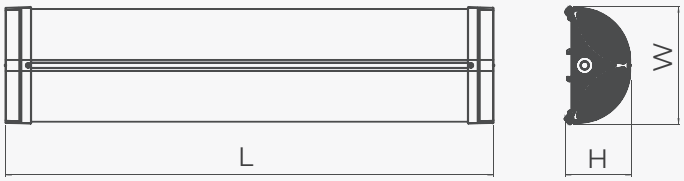
Easy mounting
Mounted using a 35 mm DIN rail.

Specifications

Rated voltage / Frequency	230 V / 50 Hz
Standard color temperature	4,000 K
Standard-CRI	>80
Percent flicker	≤5%
Power factor	>0.92
Operating temperature	-40°...+50°C
IEC protection class	II
Ingress protection	IP65
Standard color	Opal
Service life of luminaires	>50,000 h

Table of Standard Options

Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
LINE.PROM	7-44-015-05-0-19-15-066-8-40-65	15	1,950	300x155x90	0.4
LINE.PROM	7-44-030-05-0-19-15-067-8-40-65	30	3,900	600x155x90	0.8
LINE.PROM	7-44-050-05-0-19-15-068-8-40-65	50	6,500	1,200x155x90	1.5



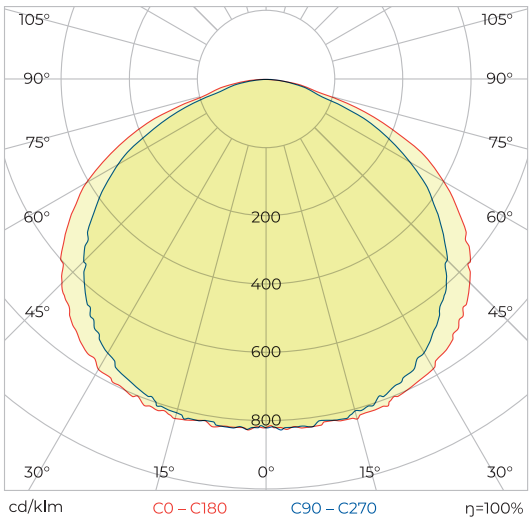
Custom-made Options

Possible length of a single luminaire is up to 2.4 meters. The luminaires can be mounted in one continuous luminous line.

Power, W	Any within the range of 10 – 55
Color temperature, K	3,000; 5,000

Light Distribution Curve (LDC)

Cosine 120°



INDUSTRY.T30

CO2 NEUTRAL | 230V | AC Direct | CRI >80 | IP66 | IK10 | 4000K

> **A lightweight linear LED luminaire designed for workshops, warehouses, car washes, indoor parking areas, shops and utility rooms. Suitable for poultry and livestock farms. LED luminaires suitable for illumination herbs, potted flowers and seedlings on racks.**

Made on the basis of a polycarbonate profile of circular cross-section with lines of LEDs inside and integrated drivers.

The inner surface of the profile has a light-scattering surface for comfortable uniform illumination.

Features

> **High efficacy >130 lm/W**

Easy mounted

on any surface in any arbitrary position.

Dimming with a conventional light regulator

(a phase dimmer) through a supply network without laying additional control cables.

Resistance to aggressive environment

The diffuser housing is resistant to aggressive media (ammonia, alkali and acid vapors).

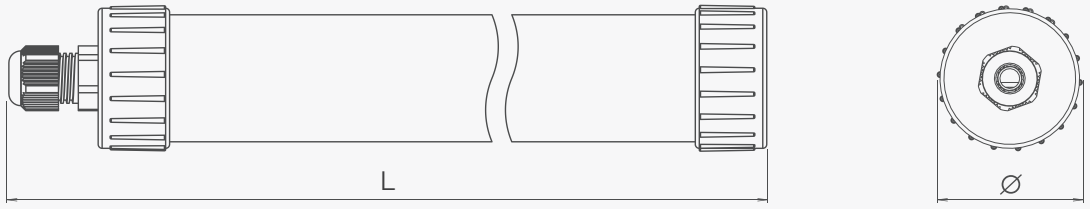
Specifications

Rated voltage / Frequency	230 V / 50 Hz
Standard color temperature / Standard spectrum*	4,000 K / R01
Standard-CRI	>80
Power factor	>0.92
Operating temperature	-40°...+40°C
IEC protection class	II
Ingress protection	IP66
Service life of luminaires	>50,000 h

* Standard spectrum – only for the luminaire PLANETACLIX.GB

Table of Standard Options

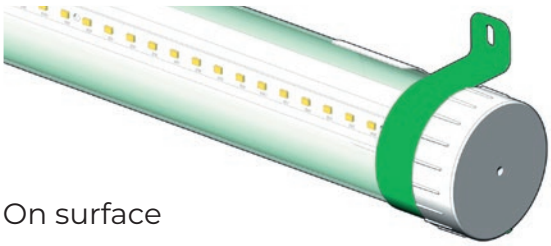
Series	Product Code	Power, W	Luminous Flux, lm	Size, mm ØxL	Weight, kg
INDUSTRY.T30	7-47-020-05-0-28-14-906-8-40-66	20	2,600	36x1,000	0.4
INDUSTRY.T30	7-47-030-05-0-28-14-907-8-40-66	30	3,900	36x1,500	0.6
PLANTALUX.GB	7-52-024-05-0-27-14-909-X-02-66	24	—	36x900	0.35
POULTRY.T30	7-57-020-05-0-28-10-906-8-40-66	20	2,500	36x1,000	0.4



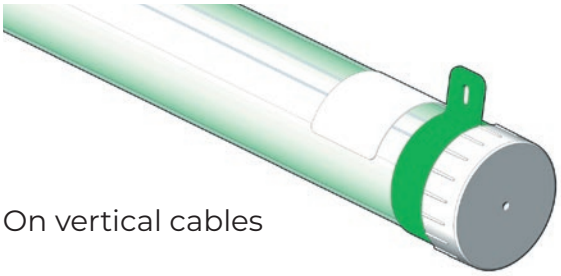
Custom-made Options

Color temperature, K	3,000; 5,000

Mounting Options



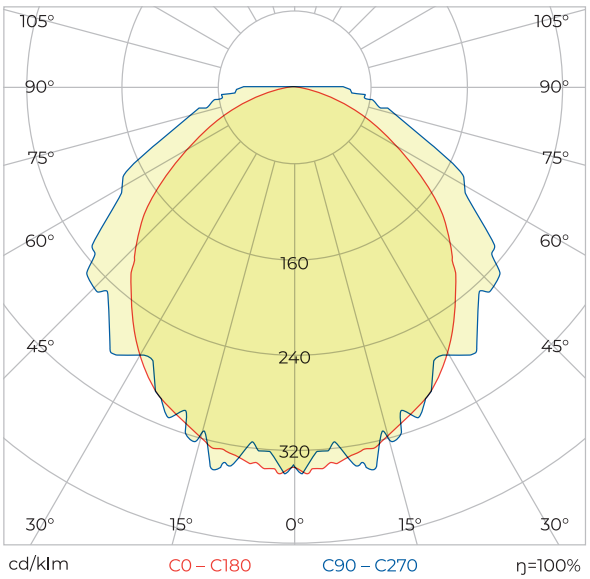
On surface



On vertical cables

Light Distribution Curve (LDC)

Cosine 130°



CLASTER

CO2 NEUTRAL

AC Direct | 230V | IP65

> **The CLASTER LED module is designed for individual assembly of luminaires with a power from 60 W. The modules can be installed on any suitable heat sink subject to an area of at least 6 – 10 W per sq. cm.**

The module is a complete AC powered solution. It includes protection against microsecond pulses.
It can be equipped with any glass lens of 100 mm in diameter.
The module is manufactured for general lighting.

Features

> **Efficacy >130 lm/W**

Protection from high energy microsecond pulses
2 kV – “wire-wire”.

High reliability

Integrated driver
Unique design with an integrated driver.

Optical System
Borosilicate glass lenses.

Thermal stabilization

Specifications

Rated voltage / Frequency	230 V / 50 Hz
Luminous flux flicker	<5%
Power factor	>0.97
Operating temperature	-55°...+50°C
IEC protection class	II
Ingress protection	IP65
Standard color	Grey / White
Service life of luminaires	>50,000 h

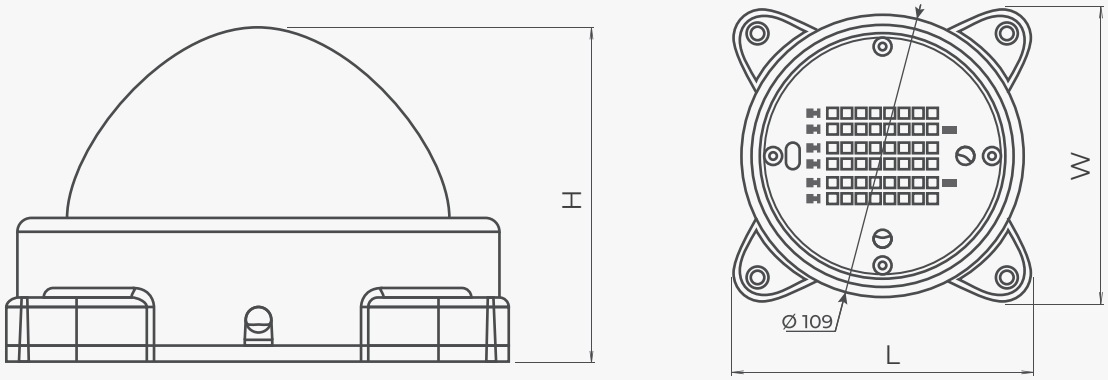


Table of Standard Options

▸ **Module for general lighting**

Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
CLASTER	7-49-060-05-0-19-15-117-7-40-65	60	8,000	150x150x55	0.68*

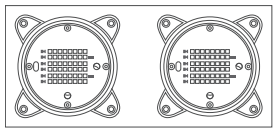
*weight with a D100 lens.

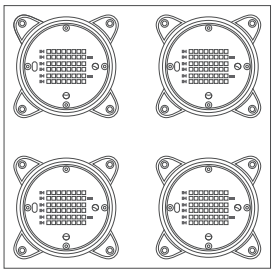
Custom-made Options

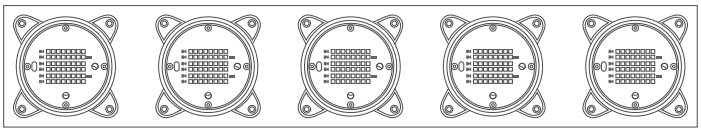
Color temperature, K	White light; 3,000; 4,000; 5,000
LDC	Deep 60°; Cosine 90°; Cosine 120°; Concentrated Special 45°; Wide Special TYPE 1; Wide Special TYPE 2

Options for combinations of modules within the luminaire

Some examples of module layouts inside the luminaire are given below. Layouts are designed according to individual parameters.

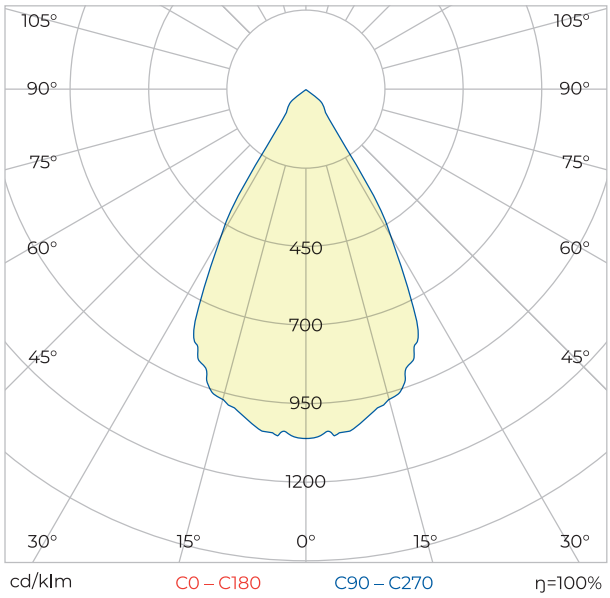




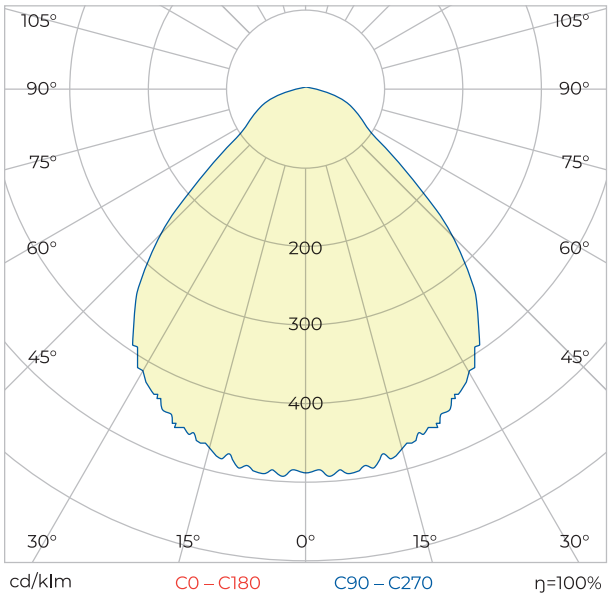


Light Distribution Curves (LDC)

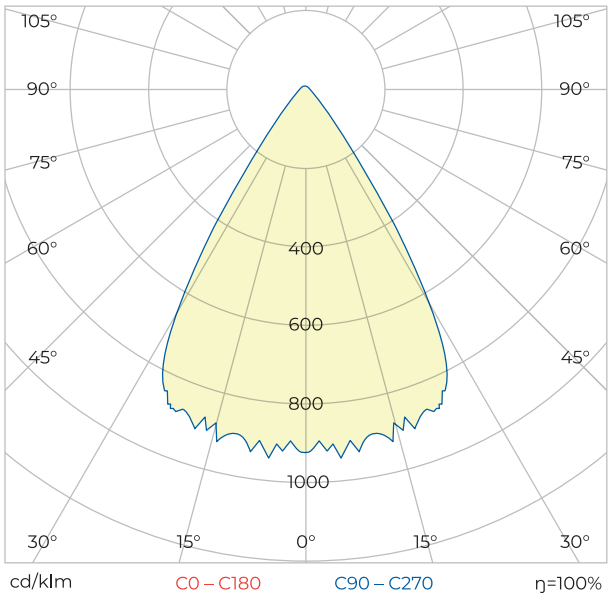
Deep 60°



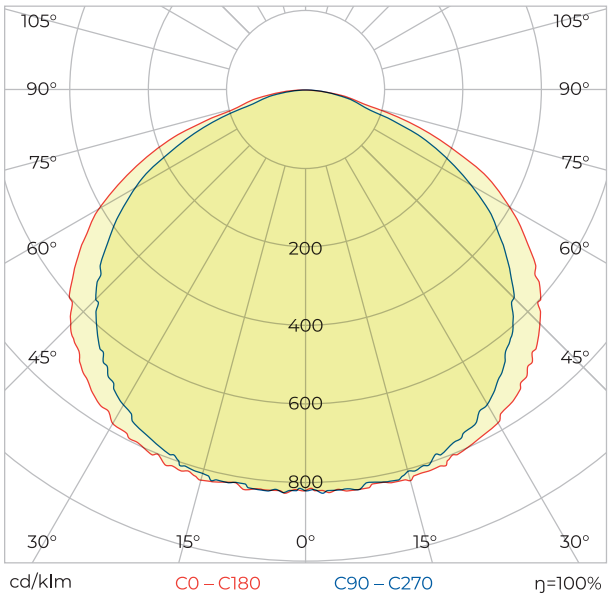
Cosine 90°



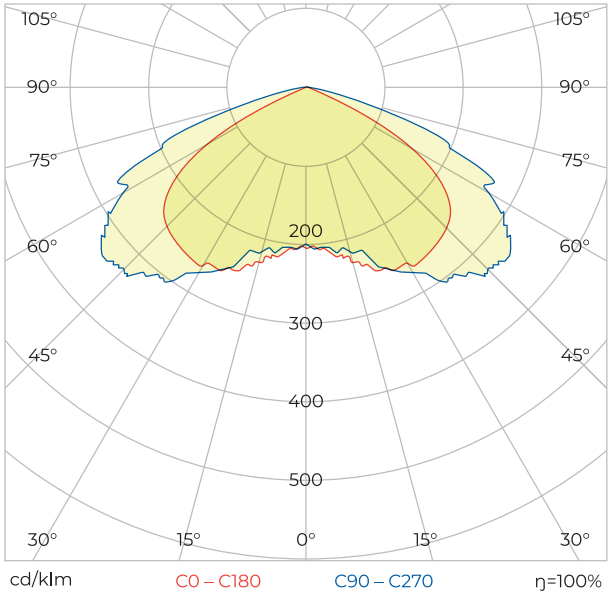
Concentrated Special 45°



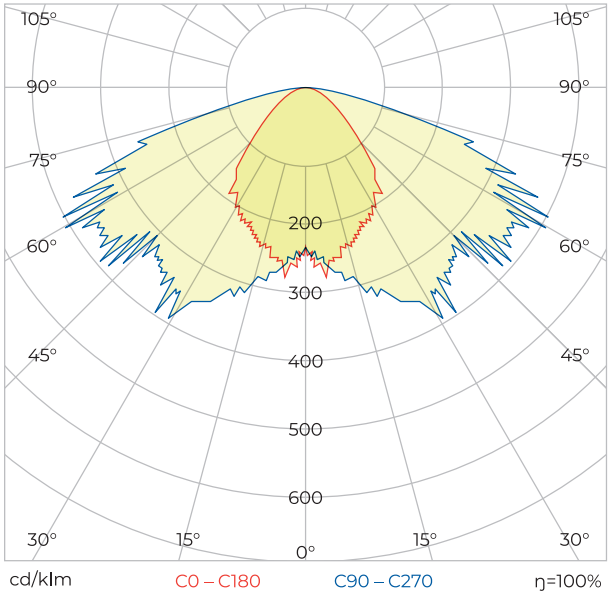
Cosine 120°

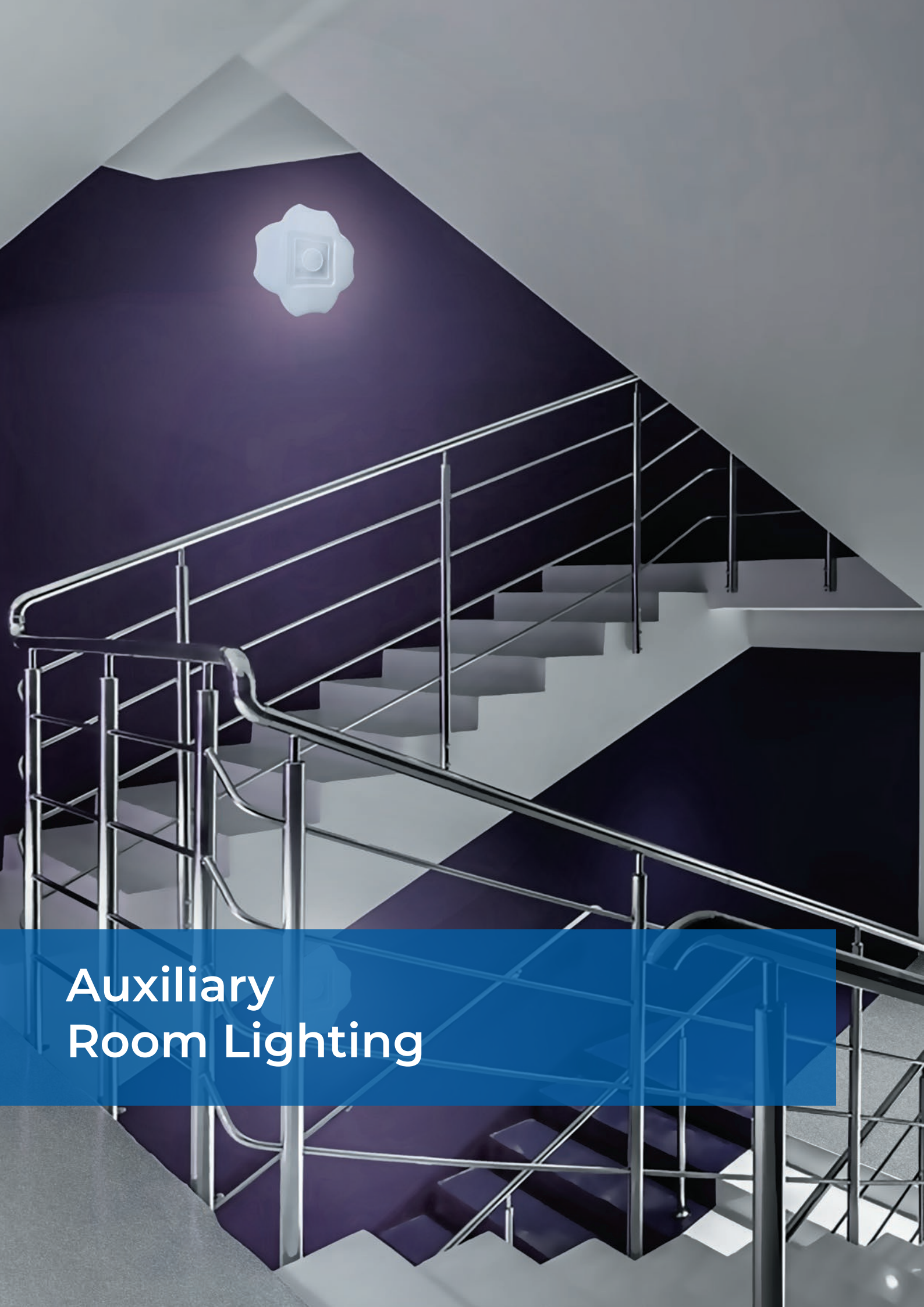


Wide Special TYPE 1



Wide Special TYPE 2





Auxiliary Room Lighting

DELTA.3

CO2 NEUTRAL | 230V | RFS | CRI >80 | IP40 | IK08 | 4000K

Reliable and energy-efficient LED luminaires of the **DELTA** series are equipped with microwave occupancy sensors based on the Doppler effect. The housing is made of impact-resistant white polycarbonate. Suitable for auxiliary rooms, corridors, halls, entrances, stairwells, elevator halls, bathrooms, residential and utility rooms.

The central element can be custom-made. Embossed, white.

Features

- Efficacy >130 lm/W

Resistance to mechanical impacts

The housing is made of impact-resistant polycarbonate.

The luminaires are equipped with an anti-theft mount fitting

The scope of delivery includes a special tool for dismantling.

Equipped with microwave occupancy sensors

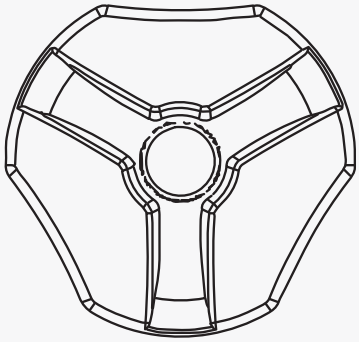
They guarantee switching on not only when a person is within the detection radius, but also when the front door or elevator doors are opened (you will always enter the illuminated room without the need to clap your hands, make sounds or move in the darkness), the detection radius is 5 – 8 meters; switching on does not depend on the ambient temperature or amount of clothing on a person, which guarantees reliable operation even at -40°C (unlike PIR sensors); no false switching on caused by direct sunlight dropping on the luminaire.

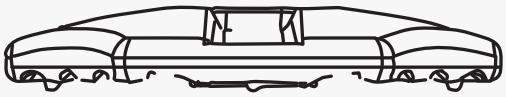
Specifications

Rated voltage / Frequency	230 V / 50 Hz
Power factor	>0.95
Standard color temperature	4,000 K
Standard-CRI	>80
Operating temperature	-10°...+50°C
IEC protection class	II
Ingress protection	IP40
Impact resistance	IK08
Standard color	Opal
Service life of luminaires	>50,000 h

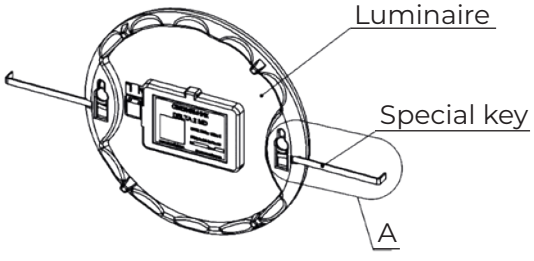
Table of Standard Options

Series	Product Code	Power, W	Luminous Flux, lm	Size, mm LxWxH	Weight, kg
DELTA.3	7-58-018-05-5-03-15-124-8-40-40	18	2,340	235x235x40	0.45





Mount Fitting



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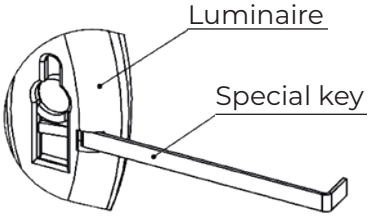
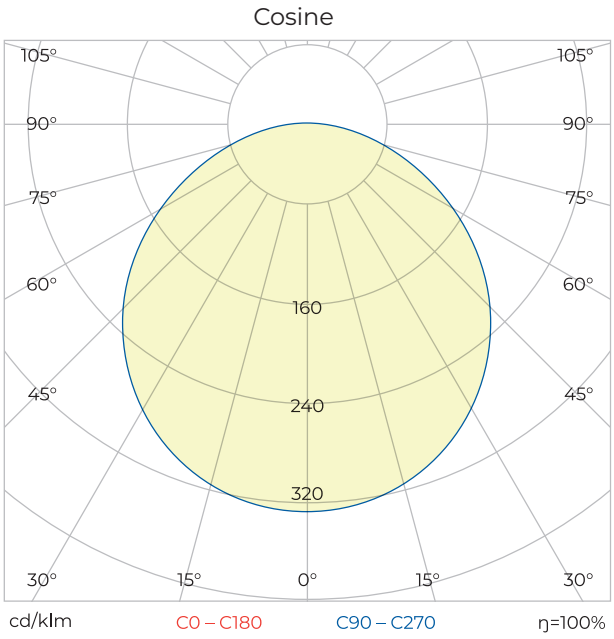


Light Distribution Curve (LDC)



LED Lamps

ROLLAMP

Rollamp 35/30 W with circular glow

Rollamp 45/40 W with circular glow

Rollamp(S) 40 W with sectoral glow

CO2 NEUTRAL

230V | CRI >80 | 4000K

“ Unique LED lamps designed as direct replacement for sodium-vapor and mercury lamps in park, garden and street luminaires.

The lamps are manufactured by original, patented technology on a flexible aluminium printed circuit board with an integrated driver and LEDs.

The board is rolled into a cylinder in a special way and, due to the large surface area, it performs the functions of a heat sink. Accordingly, it does not need an additional heat sink. This ensures a record low weight of these products.

Features

“ High efficacy >135 lm/W

Low percent flicker

No special requirements for disposal

Thermal stabilization

High reliability

Options

Rollamp 30/35/40/45 W – non-directional light lamps with LEDs located in the 360⁰ sector. Designed for use in park and other luminaires with a circular diagram of the luminous flux distribution.

Rollamp 30/40 W, Rollamp(S) 40 W They have ingress protection of enclosure IP54.

Rollamp (S) 40 W – directional light lamps with LEDs located in the 90⁰ sector. Designed for use in retrofit street luminaires as a replacement for discharge lamps. An appropriate adapter is used for installation in the holder with the E40 base.

Rollamp 35/45 W lamps have ingress protection of the enclosures IP20.

Specifications

Rated voltage / Frequency	230 V / 50 Hz
Standard color temperature	4,000 K
Standard-CRI	>80
Standard base	E27 / E40
Percent flicker	≤5%
Operating temperature	-40°...+45°C
Ingress protection	IP20; IP54
Standard color	White
Service life of luminaires	>50,000 h

Table of Standard Options

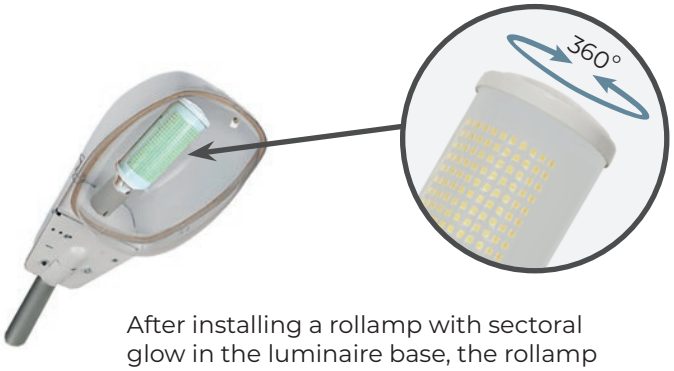
Series	Product Code	Power, W	Luminous Flux, lm	Size, mm ØxH	Weight, kg
Rollamp	7-61-035-05-0-52-22-905-8-40-20	35	4,725	73x225	0.16
Rollamp	7-61-030-05-0-52-22-905-8-40-54	30	4,100	73x225	0.16
Rollamp	7-61-045-05-0-52-22-912-8-40-20	45	6,075	73x245	0.19
Rollamp	7-61-040-05-0-52-22-912-8-40-54	40	5,400	73x245	0.19
Rollamp(S)	7-61-040-05-0-51-22-912-8-40-54	40	5,400	73x245	0.19

(S) – sectoral light emission.
IP54 and reduced power – it corresponds to lamps with sealed covers.

Lamp mounting and installation

Lamps with circular glow **Rollamp 30/35/40/45 W** are installed in street, garden and park luminaires with circular lighting.

Lamps with sectoral glow **Rollamp(S) 40 W** are installed in retrofit street luminaires with directional lighting.

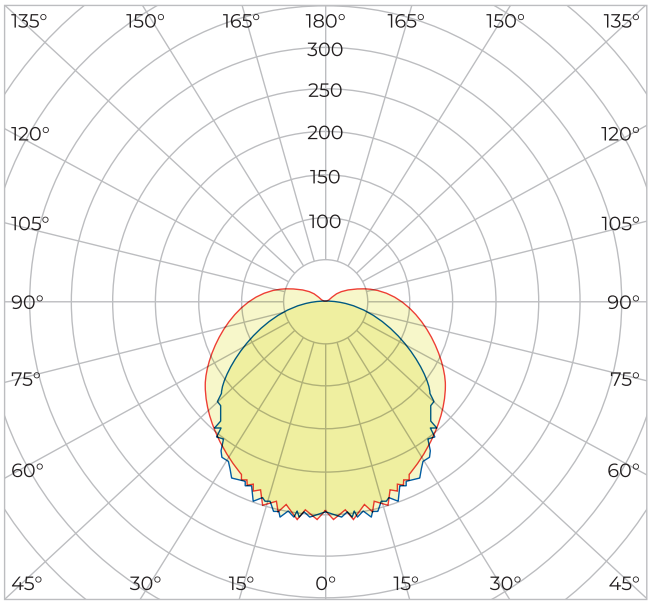


After installing a rollamp with sectoral glow in the luminaire base, the rollamp can be positioned in the required direction of illumination by rotating its body by 360°.

Versatile adapter for lamps with circular and sectoral glow: E27-E40.

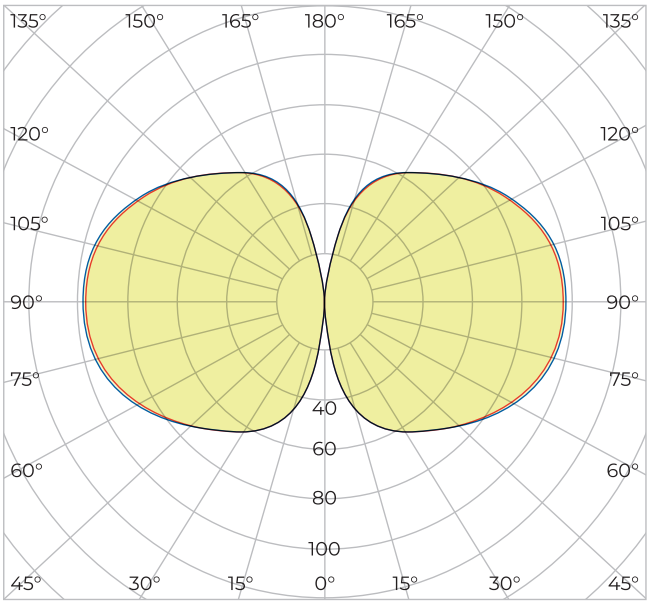
Light Distribution Curves (LDC)

Rollamp(S) – Lamp Asymmetric



cd/klm C0 – C180 C90 – C270 η=100%

Rollamp – Lamp Symmetric TYPE 1



cd/klm C0 – C180 C90 – C270 η=100%

Lighting Management System (LMS)

LIGHTING MANAGEMENT SYSTEM (LMS)

LMS is an in-house development of the 4S4 Group. It is based on a patented technology of building a data transmission network. The system allows the control of luminaires and acquisition of required data from them.

The uniqueness of the 4S4net LMS is that subject to the correct construction of a network it has an unlimited coverage and unlimited number of controlled luminaires.

The high reliability of the system is ensured by the possibility of autonomous operation of each luminaire based on set algorithms. In case of any failure in any segment, the control is provided based on the data received from the GPS receiver located in each luminaire. The system is able to operate in different environments (BLE, RF, PLC, etc.). The existing feedback allows collecting information.

4S4net includes technical solutions that allow the control of both a small number of luminaires and the lighting of large cities (including road, street and office lighting).

4S4net reduces lighting costs 1.5–3 times (depending on the set lighting mode).

4S4net is a complex of hardware and software that provide switching on/off, dimming (intensity) of the luminous flux of luminaires according to a set schedule, as well as obtaining information about the operation of luminaires, depending on the availability of appropriate sensors (electricity meters, housing temperature sensors, lighting sensors, etc.).

The solutions realized in the **4S4net** have been implemented in a number of countries, including Bulgaria, Greece, Kazakhstan, and others.

The composition of the 4S4net system. Options.

Any lighting management system structure consists of several main components.

The luminaire itself includes an LED unit, driver and modem.

The driver powers the LEDs and modem.
There is one-way or two-way communication between the modem and driver.
The Control Center commands are communicated to the modem via the segment controller (or directly). The modem controls the LEDs current via the driver.

The universal modem used in the 4S4net system – 4S4 mod.ZR, 4S4 mod.ZRD:
– Zhaga connector (Z);
– RF communication 868 MHz (R);
– communication with the driver via the Dali-2 protocol (D) or PWM (depending on factory settings);
– it works from both 12 V and 24 V.

The radio segment controller 4S4 master.ZRGD is made inside the Zhaga housing of Ø 80 mm:
– Zhaga connector (Z);
– RF communication 868 MHz (R);
– GSM communication (G);
– Dali-2(D) protocol or PWM (depending on the firmware);
– manages a group of luminaires (up to 500 pcs).

Table 1 — Main drivers used in the system.
Tables 2, 3 — Parameters of the modems used.
Table 4 — Parameters of controllers.
Table 5 — The **4S4net** system construction options.

Table 1

Item No.	Driver	Warranty Period, year	Power Range, W	Lightning Protection, kV	Durability, hour	Communication with the Modem
1.	LONG LIFE	10	70 – 275	10/6	80,000	Dali-2
2.	STANDARD	5	35 – 160	10/6	50,000	PWM
3.	Imported	5	50 – 250	10/6	50,000	PWM
4.	AC-Direct	3	20 – 160	–/4	50,000	PWM
5.	COMPACT	5	30 – 65	4/2	50,000	PWM
6.	AC-Direct	3	20 – 160	–/4	50,000	PWM
7.	SY-LIGHTING*	10	465 – 2,500	2/4**	120,000	PLC

■ Table 1 (continued)

Item No.	Driver	Auxiliary PS voltage	Protection against 380 V	Connection of Sensors	Modem Location (Connector)	Luminaire	Comment
1.	LONG LIFE	24	+	+	on driver	MAG31, MAG41	
2.	STANDARD	12	+	—	on driver	MAG32, MAG42	
3.	Imported	12	—	—	on housing of the luminaire	MAG33	
4.	AC-Direct	12	+	—	on driver	MAG44	
5.	COMPACT	12	—	—	on housing of the luminaire	MAG9 optional	
6.	AC-Direct	12	—	—	in on housing of the luminaire	MAG10 optional	
7.	SY-LIGHTING*	12	+	—	at the bottom of the mast, high-power group luminaires	MAG45 LEDs only, group luminaire	PLC control

* High-power group luminaires over 400 W MAG45 – 2, 3, 4, 5, 6 (2, 3..... – number of luminaires on one mast)

** For option 002

Table 2

· Modems powered by the luminaire

Item No.	Model	RF 868 MHZ	Bluetooth (BLE)	GPS	Power	Application	Comment
1.1	4S4 mod.ZRD	+	—	+	24 V Dali-2	Outdoor luminaire	Zhaga connector
1.2	4S4 mod.ZR	+	—	+	12 V PWM	Outdoor luminaire	Zhaga connector
2.	4S4 mod.NR	+	—	+	12 V PWM	Outdoor luminaire	NEMA connector optional
3.	4S4 mod.B	—	+	—	3.3 V PWM	Indoor luminaire SlimPanel	
4.	4S4 mod.CR	+	—	+	12 V PWM	Outdoor luminaire	For installation inside the luminaire

· An auxiliary USB modem

Item No.	Model	RF 868 MHZ	USB	Antenna	Power	Application	Comment
5.	4S4 USB	+	+	+	from USB	Auxiliary, operates in pair with a smartphone	To configure the network and provide local management

D – Dali-2 interface N– NEMA connector R – RF available C– built-in
Z – Zhaga connector B – BLE available G – GSM available

■ Table 2 (continued)

· Controllers **(4S4 master)** powered by the luminaire

Item No.	Model	RF 868 MHZ	GSM	GPS	Wi-Fi	Ethernet	LTE	RS-485	Application	Comment
5.1	4S4 master. ZRGD	+	+	+	—	—	—	—	outdoor luminaire 7...24 V	Zhaga connector Dali-2
5.2	4S4 master. ZRG	+	+	+	—	—	—	—	outdoor luminaire 12 V	Zhaga connector PWM
6.	4S4 CU	+	+	+	+	+	+	+	part of OLCC 12 V from external PS	Mounted on DIN rail
7.	4S4 master. NRG	+	+	+	—	—	—	—	optional outdoor luminaire 12 V	NEMA connector optional

CU is a universal controller for Outdoor Lighting Control Cabinets (OLCC) in a metal housing (Positions 2 and 7 are outdated, they are used only for special orders).

■ Table 3

Item No.	Parameters	 4S4 mod.NR	 4S4 mod.ZRD	 4S4 mod.ZR	 4S4 mod.CR	 4S4 mod.B	 4S4 USB
1.	Dimensions, mm	Ø84x66	Ø48x46	Ø48x46	52x36x27	30x14	
2.	Supply voltage, V	12	24	12	12	3.3	USB
3.	Power consumption, W	0.5	0.5	0.5	0.5	0.1	0.2
4.	Interfaces	868 MHZ	868 MHZ	868 MHZ	868 MHZ	BLE	868 MHZ
5.	GPS	+	+	+	+	—	—
6.	Maximum speed via 868 MHZ, kbit/s	50	50	50	50	—	50
7.	Ingress protection	IP65	IP65	IP65	IP65	—	—
8.	Maximum line-of-sight communication range, m	300	300	300	300	100	300
9.	Mech. impact protection	IK 8	IK 8	IK 8	IK 8	—	—
10.	Operating temperature, degree, °C	-40...+45	-40...+45	-40...+45	-40...+45	0...+40	0...+40
11.	Connector	NEMA optional	Zhaga	Zhaga	In-house design	Without housing	Small-size housing with integrated antenna 868
12.	Control by driver	PWM	DALI-2	PWM	PWM	PWM	

■ Table 4

Item No.	Parameters	 4S4 master.ZRGD	 4S4 master.ZRG	 4S4 master.NRG	 4S4 CU
1.	Dimensions, mm	Ø 80x50	Ø 80x50	Ø 84x100	130x124x45
2.	Supply voltage, V	24	12	12	12
3.	Power consumption, W	2	2	2	12
4.	Interfaces	868 MHZ/GSM/ GPRS	868 MHZ/GSM/ GPRS	868 MHZ/GSM/ GPRS	868 MHZ/GSM/ GPRS/LTE/ Ethernet/RS485/ Wi-Fi
5.	GPS	+	+	+	+
6.	Maximum speed via 868 MHZ, kbit/s	50	50	50	50
7.	Ingress protection	IP65	IP65	IP65	IP20
8.	Maximum line-of-sight communication range, m	300	300	300	300
9.	Mech. impact protection	IK 8	IK 8	IK 8	—
10.	Operating temperature, degree, °C	-40...+45	-40...+45	-40...+45	-40...+45
11.	Operation with meters via RS 485 protocol	—	—	—	+
12.	Connector	Zhaga	Zhaga	NEMA optional	on DIN rail
13.	Location	Luminaire	Luminaire	Luminaire	Power cabinet

* In tight urban conditions, the coverage of modems is 150 m.

■ Table 5

Systems differ depending on the complexity, cost and size.
The construction options are shown in Table 5.

Item No.	System	Modem	Controller	Luminaire	Driver	Modem-to-driver communication	Software	Comment
1.	**4S4net**-1	4S4 mod.CR	4S4 USB	MAG9 MAG10	COMPACT AC-Direct	PWM	**4S4net Manager** for smartphones	Controller Smartphone
2.	**4S4net**-2	4S4 mod.CR	4S4 master. ZRG	MAG32 MAG9 MAG10	STANDARD COMPACT AC-Direct	PWM	**4S4net Lite**	For smartphones and PCs
3.	**4S4net**-3	4S4 mod.NR	4S4 master. NRG	MAG33	Imported 12 V	PWM	**4S4net Professional**	Optional
4.	**4S4net**-4	4S4 mod.ZR	4S4 master. ZRG	MAG32 MAG42	STANDARD	PWM	**4S4net Professional**	
5.	**4S4net**-5	4S4 mod. ZRD	4S4 CU or 4S4 master. ZRGD	MAG31 MAG41	LONG LIFE 24 V	Dali-2	**4S4net Professional**	OLCC Cabinet
6.	**4S4net** Indoor	4S4 mod.B	—	SlimPanel, etc.	Built-in Indoor	PWM	**4S4net Office Ligting**	Smartphone – remote control

4S4net-1

Fig. 1 shows the diagram of a simple movement system – **4S4net**-1 (mainly in retail).

All luminaires have **4S4 mod.CR** modems programmable to control the driver via PWM. The system is configured using a smartphone that has the **4S4net Manager** software application. The **4S4 USB** modem is connected to the USB port of the smartphone. Luminaires that can be used in this option of **4S4net**-1: MAG9 with the COMPACT driver and MAG10 with the AC-Direct driver.

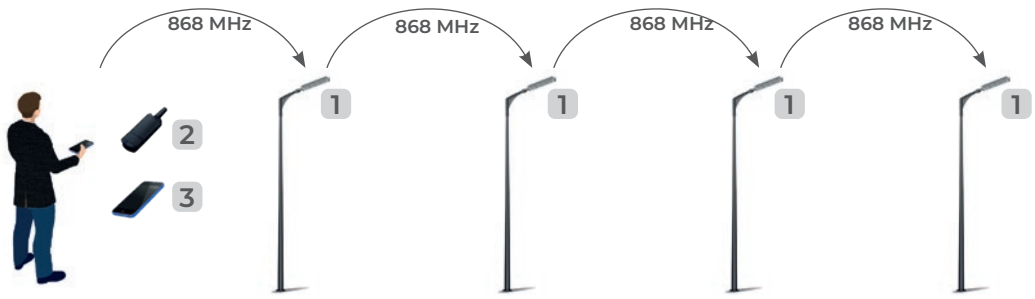


Fig. 1
4S4net-1 lighting management diagram

1. 4S4 mod.CR modem on each luminaire.
2. 4S4 USB modem.
3. Smartphone with **4S4net Manager** software.

4S4net-2

Fig. 2 shows the **4S4net**-2 diagram for retail when the customer has several segments that are remote from each other. Here, the 4S4 **master.ZRG** module on MAG32 is used as a controller. The rest of the luminaires have **4S4 mod.CR** modems. The controller can control a network of luminaires via a smartphone or PC using the 4S4net Lite software.

This option of **4S4net-2** can use the following luminaires: MAG9 with the COMPACT driver, MAG10 with the AC-Direct driver and MAG32 with the STANDARD.

Fig. 2
4S4net-2 lighting management diagram

1. 4S4 mod.CR modem on each luminaire.
2. Controller 4S4 master.ZRG.
3. Smartphone or PC with **4S4net Lite** software.

4S4net-3

Fig. 3 shows the management diagram of a segment of the large **4S4net**-3 system with control modules in the **NEMA 4S4 mod.NR** housing and controller **4S4 master.NRG.** This system can only be supplied optionally and used with **MAG33** luminaires and imported drivers. The net is managed from the Center through via a GSM channel. The software is **4S4net Professional.**

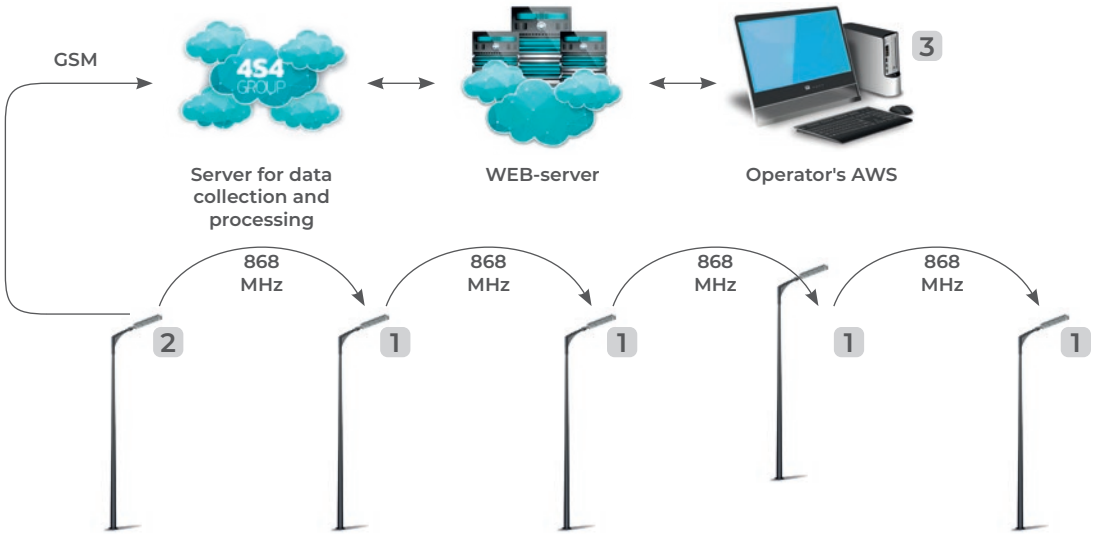


Fig. 3 **4S4net**-3 segment management diagram

1. 4S4 mod.NR modem in the NEMA housing on each luminaire.
2. Controller 4S4 master.NRG.
3. **4S4net Professional** software.

4S4net-4

Fig. 4 shows a management diagram similar to the previous one. The **4S4net**-4 system uses **MAG32** and **MAG42** luminaires with control modules in the **Zhaga 4S4 mod.ZR** housing and an **4S4 master.ZRG** controller. Communication between the luminaires is provided via RF, and control and feedback – via GSM. The software is **4S4net Professional**.

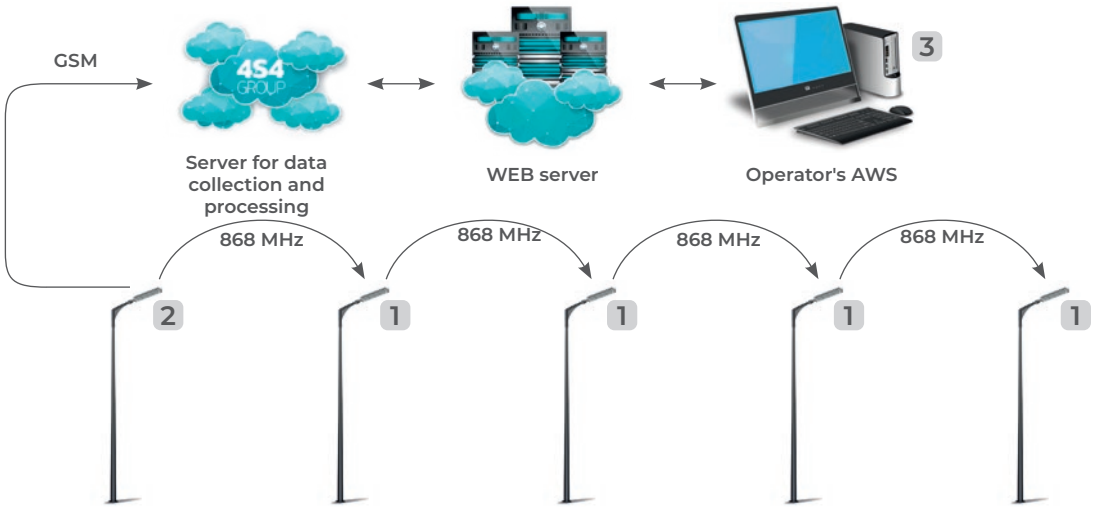


Fig. 4 **4S4net-4** segment management diagram

1. 4S4 mod.ZR modem in Zhaga housing on each luminaire.
2. Controller 4S4 master.ZRG.
3. **4S4net Professional** software.

Fig. 5 shows a management diagram applied on a large and responsible scale (large village, city, highway, etc.). 2 branches of luminaires are shown schematically, but the circuit can include much more ones (up to 500 luminaires per segment). Communication between the luminaires is normally made via RF868 and the control and feedback between the Center and the segments – via a GSM modem.

As in all schemes, a GPS module is installed in each modem and controller. In case of failure in the general system, each luminaire will operate according to its internal program guided by the time received from GPS/Glonass. **4S4net**-5 uses state-of-the-art **LONG LIFE** drivers (warranty up to 10 years) without electrolytic capacitors. They may include an electric energy meter. **LONG LIFE** communicates with modems and controllers via the Zhaga connector installed directly on the driver housing or via OLCC with an 4S4 CU controller.
The connection to the modem is provided via the Dali-2 interface powered by 24 V.
The system is controlled from the Center with **4S4net Professional** software.

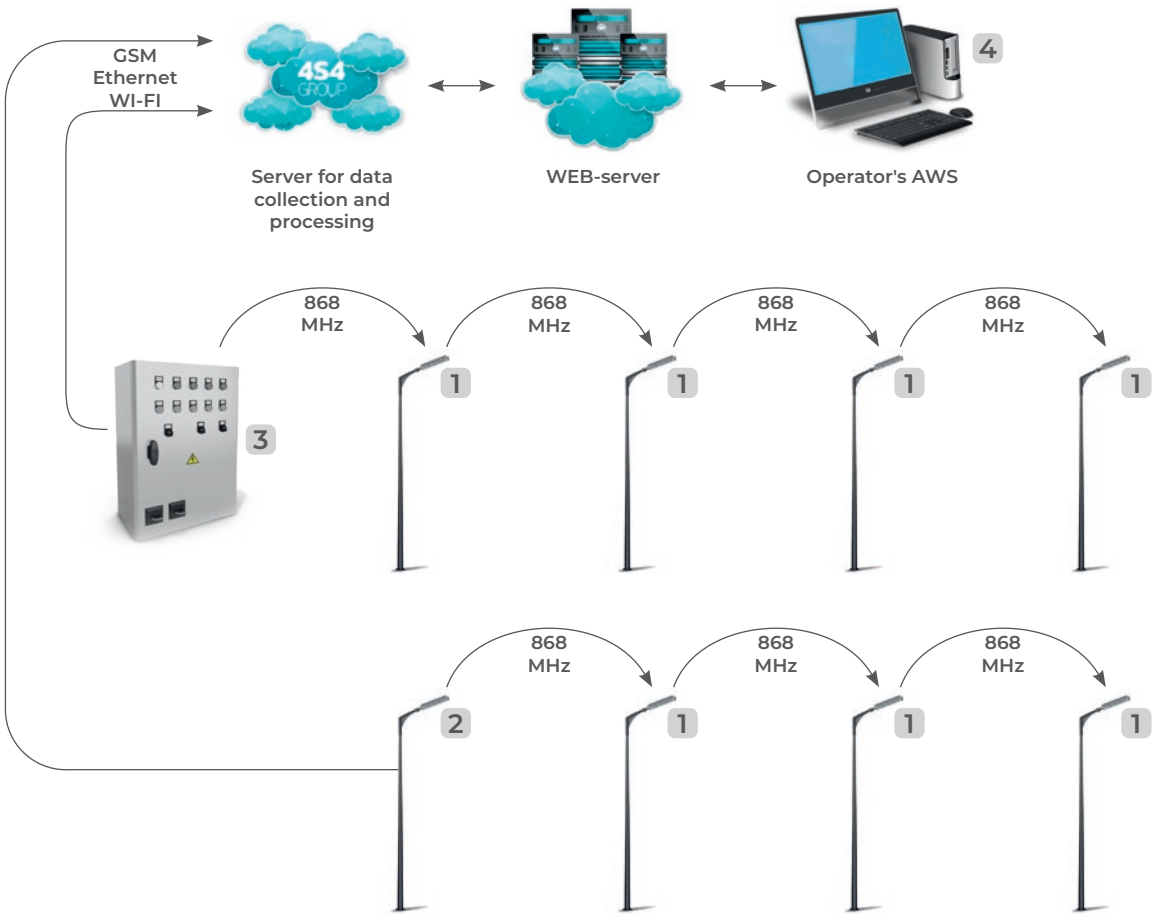


Fig. 5
Schematic segments of the **4S4net**-5 management system

1. An 4S4 mod.ZRD modem in Zhaga housing is on each luminaire.
2. Segment controller 4S4 master.ZRGD.
3. Segment controller 4S4 CU.
4. **4S4net Professional** software.

OLCC

Fig. 6 General view of OLCC

Fig. 6

The composition of a typical OLCC:

- three-phase electricity meter;
- three-phase 4S4ming switch;
- **4S4 CU** segment controller + antenna;
- +12 V (DC) power supply to energize the controller;
- contactors for each power line;
- automatic circuit breakers for each power line;
- cabinet door opening sensor;
- switch – “manual/automatic” operation mode;
- connection terminals;
- a set of relays and other equipment to control OLCC.

OLCC functions as part of 4S4net ALMS:

1. Control of luminaires by radio channel using the **4S4 CU** segment controller.
2. Control of power contactors of power lines.
3. Monitoring of the condition of outlet lines.
4. Monitoring of the status of the "manual/automatic" operation mode switches for repair and maintenance work.
5. Cabinet door opening control.
6. Data acquisition and transmission from the meter via RS-485 channel.

4S4net Indoor Luminaires Lighting Management System

The indoor lighting managemen system is shown in Fig. 7.
It is based on data transmission via the 2.4 Hz Bluetooth (BLE) channel.
The 4S4 MOD.B (BLE) modem is embedded in the luminaire (most often in the SLIMPANEL). Indoor luminaires can be divided into segments (up to 16 segments in total), each of them is controlled separately using a smartphone or tablet and the **4S4net Office Lighting** software application. If the luminaire has a relevant option, the system can also change the color of the lighting.

Since the BLE coverage is up to 100 m, the size of the illuminated room can be significant. The Integrated management for large buildings with many rooms is under development.

Fig. 7 shows an indoor lighting management diagram via BLE.

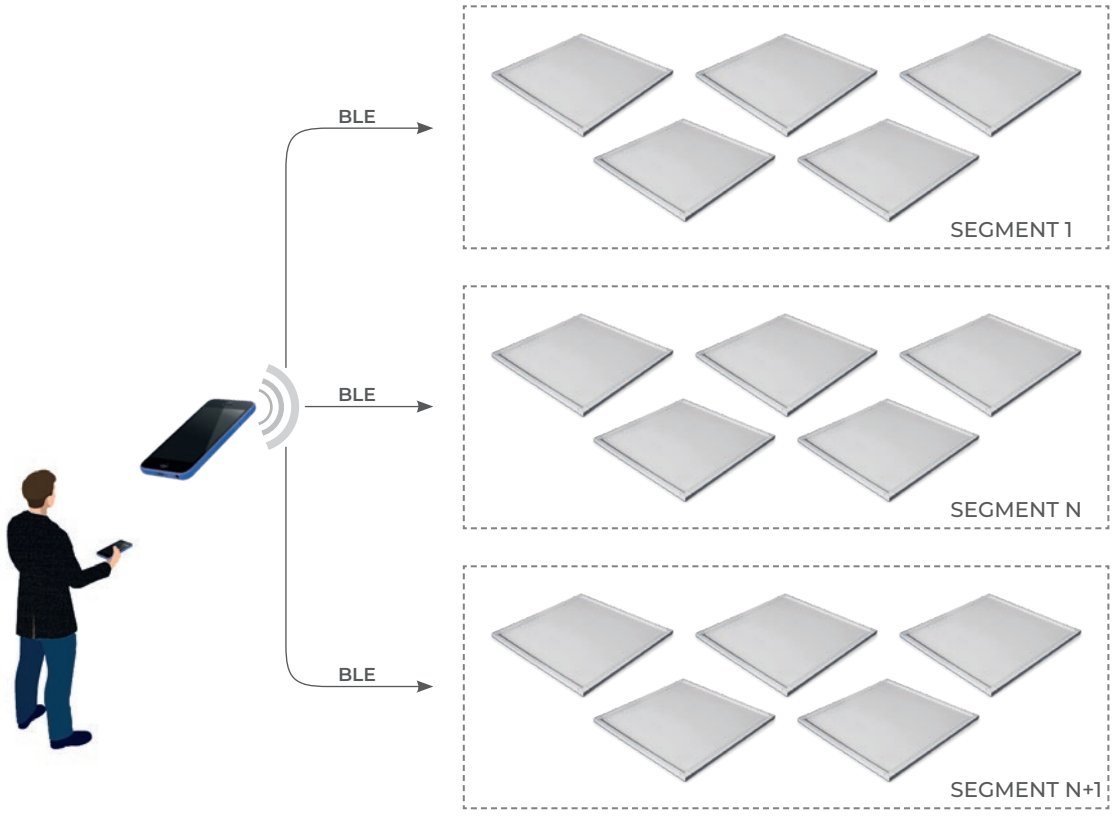


Fig. 7
Lighting management diagram in one hall with n+1 rooms or segments

1. 4S4 mod.B modem in each luminaire.
2. Smartphone or tablet with **4S4net Office Lighting** software.

The signal from the smartphone via BLE directly controls all the luminaires divided into segments. Sometimes, with a good signal throughput, it is possible to control segments located in isolated rooms.
The **4S4net Office Lighting** software application is installed in the smartphone.

4S4net Software

The software includes a number of packages.

Local management for small networks:

- **4S4net Manager** for smartphone and networks **4S4net**-1;
- **4S4net Lite** for smartphones, PCs and networks **4S4net**-2.

For large networks:

- **4S4net Professional** software – for networks **4S4net**-3;
- **4S4net Professional** software – for networks **4S4net**-4;
- **4S4net Professional** software – for networks **4S4net**-5;

For Indoor applications:

- **4S4net Office Lighting** software – for smartphone and networks **Indoor**;
- **4S4net Office Lighting** Solution software – for larger networks **Indoor** (under development).

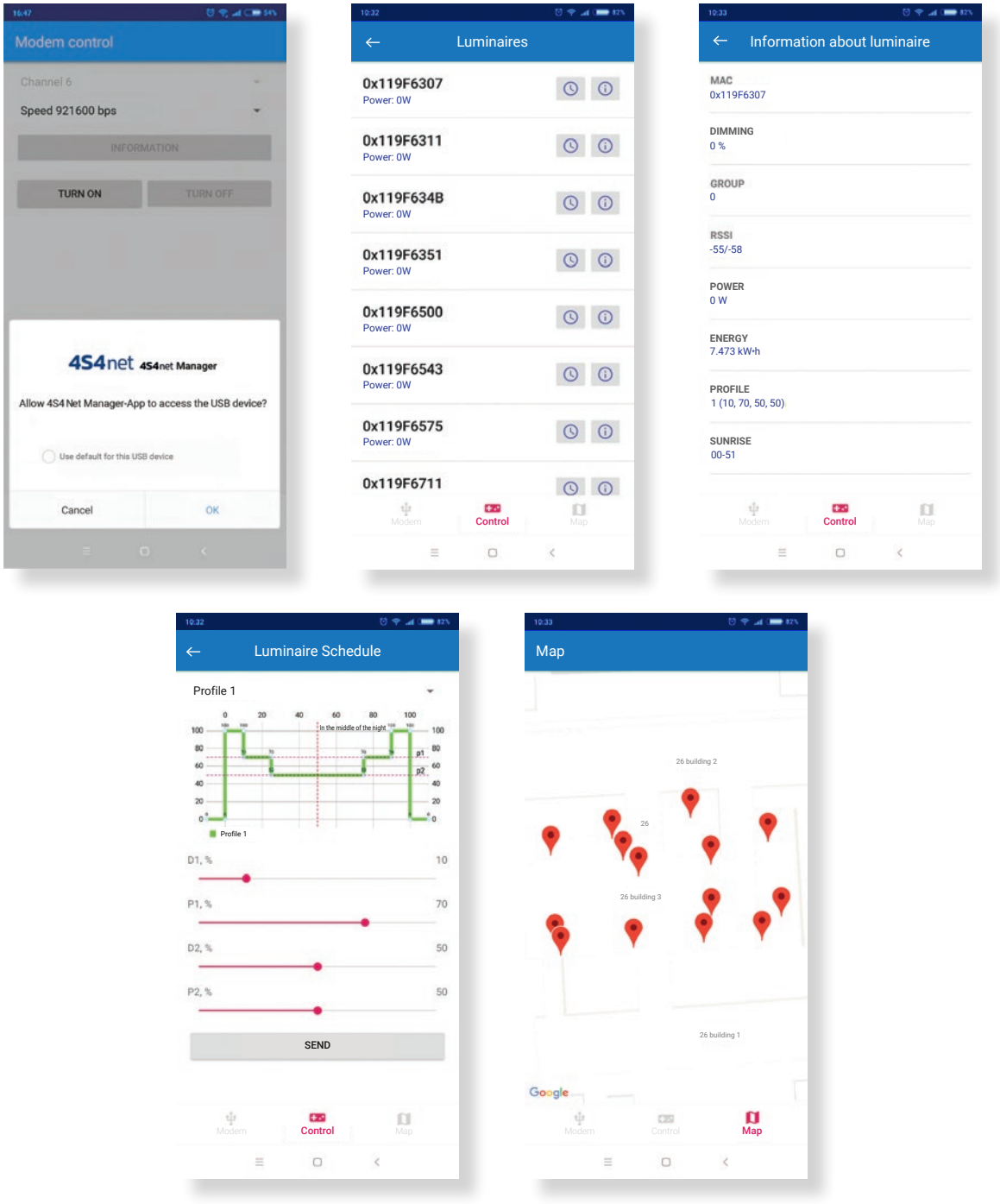
4S4net Manager – for networks 4S4net-1

This is an application for mobile devices with Android OS. Designed for operation, configuration and local management of luminaires with installed modems **4S4 mod.CR**. Operates via USB controller **4S4 USB** connected directly to the mobile device.

Lighting managed is via a radio channel with 868 MHz frequency through any luminaire in the immediate vicinity.

The application allows to:

- control the brightness of each individual luminaire or all at once, as well as groups of luminaires;
- create/add/delete groups of luminaires (up to 16 groups);
- see luminaires on the map;
- change luminaires dimming profile.



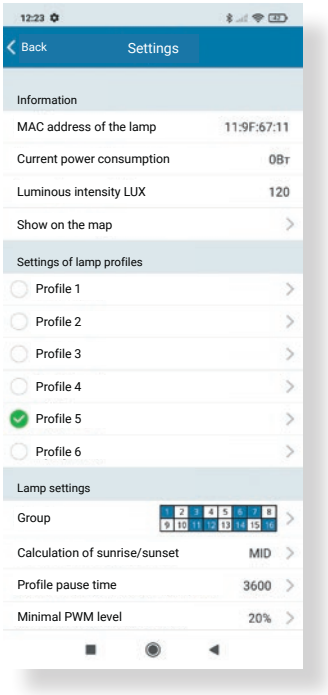
4S4net Lite – for networks 4S4net-2

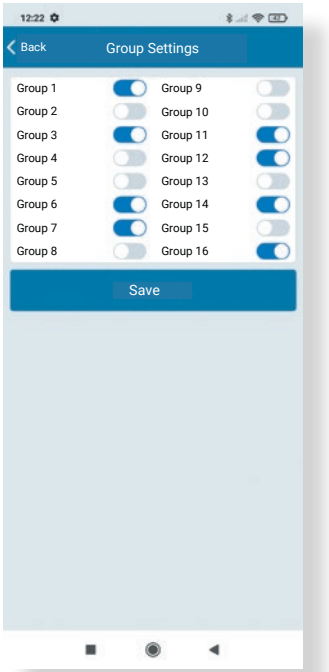
This is an application for smartphones and PCs. Designed for operation, setup and local management of luminaires with installed modems 4**S4 mod.CR**.

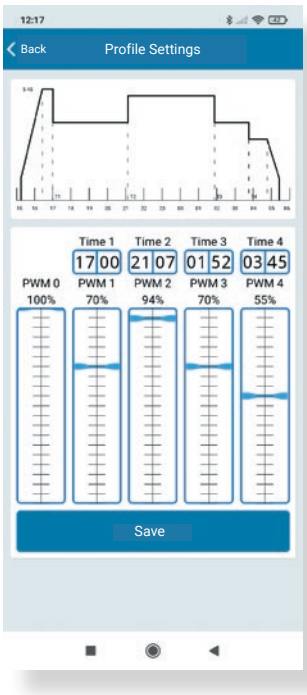
The control and adjustment of luminaires is provided through the “master”-luminaire with the installed controller **4S4 master.ZRG**, using a PC via a GSM channel.

The application allows to:

- control the brightness of each individual luminaire or all at once, as well as groups of luminaires;
- create/add/delete groups of luminaires (up to 16 groups);
- see luminaires on a map;
- change luminaires dimming profile.







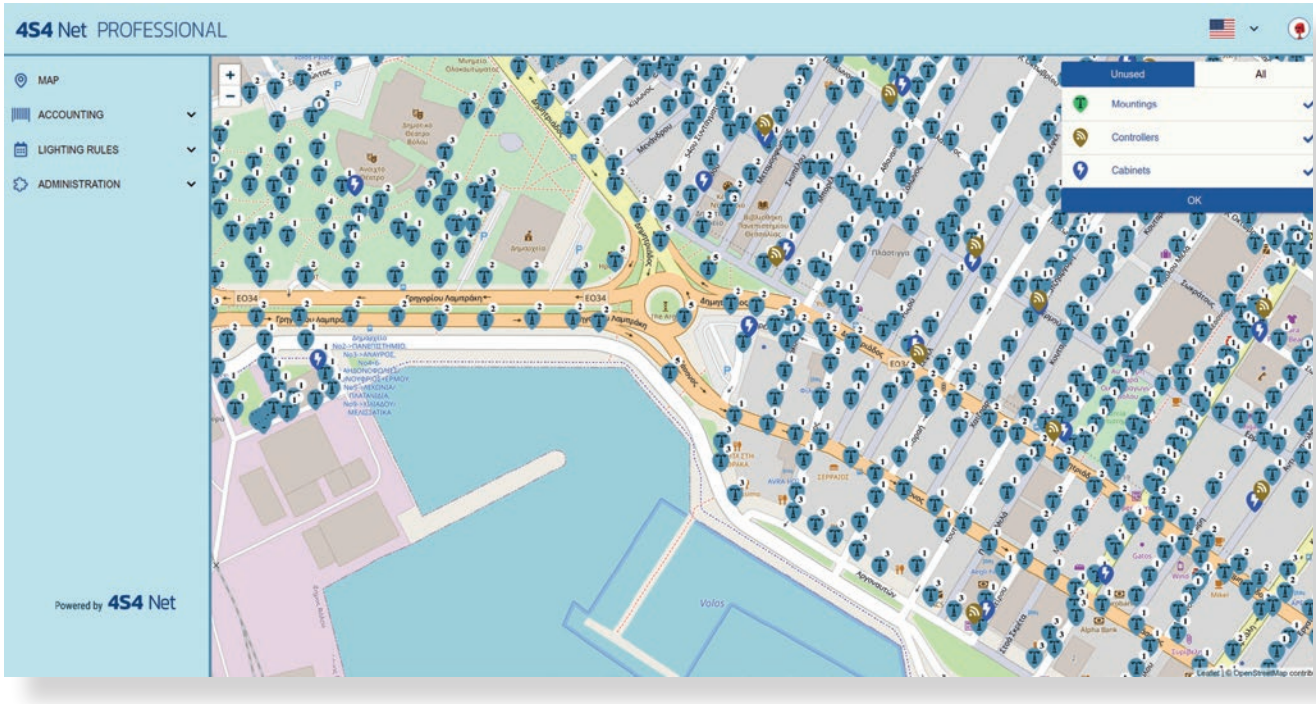
4S4net Professional – for larger networks

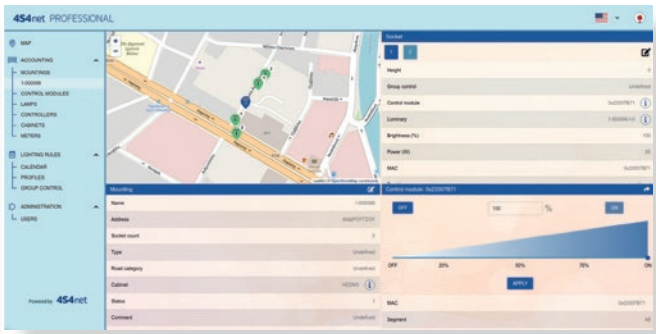
The **4S4net Professional** software package is designed for centralized control of street lighting, management, power supply points automation, equipment accounting and automation of business processes related to lighting of urban spaces, highways and complex facilities.

System Architecture:
- enables cloud or on-premises deployment;
- is based on the latest web technologies for building a user interaction interface;
- gives the possibility to consolidate information flows, creating a single information space for all participants in providing street lighting services.

4S4net Professional is a universal platform for facilities of any complexity level.
It differs only in sets of functions available for different clients.
The software is designed to configure the system, provide local or remote control of the network **4S4net**. It provides visualization of control processes, data aggregation, collection of analytics and reports generation.

4S4net Professional software allows the implementation of all the functions necessary for a lighting system management:
- Displaying the status of all system devices on Geoinformation Systems (GIS maps).
- Managing and configuring user access rights to the system.
- Remote control and configuration of controller parameters.
- Single or group management of luminaires, setting their dimming profiles.
- Logging of accidents, work, user actions, etc.
- Monitoring the status of the power supply network.
- Data acquisition from metering devices.






4S4net PROFESSIONAL
MAP
ACCOUNTING
MOUNTINGS
CONTROL MODULES
LAMPS
CONTROLLERS
CABINETS
METERS
LIGHTING RULES
CALENDAR
PROFILES
GROUP CONTROL
ADMINISTRATION
USERS
Powered by 4S4net
MAC
Brightness (%)
Accumulated power (W)
Power (W)
Latitude
Longitude
Sync date
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0x233E8A56 100 329.071 84 39.353992 22.961147 March 25, 2022 5:37 AM
0x23307BEF 100 336.656 88 39.351398 22.963903 March 25, 2022 5:49 AM
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0x23307856 100 327.655 84 39.351971 22.963354 March 25, 2022 5:27 AM
0x233B5AE3 100 345.101 87 39.367828 22.948635 March 25, 2022 6:45 AM
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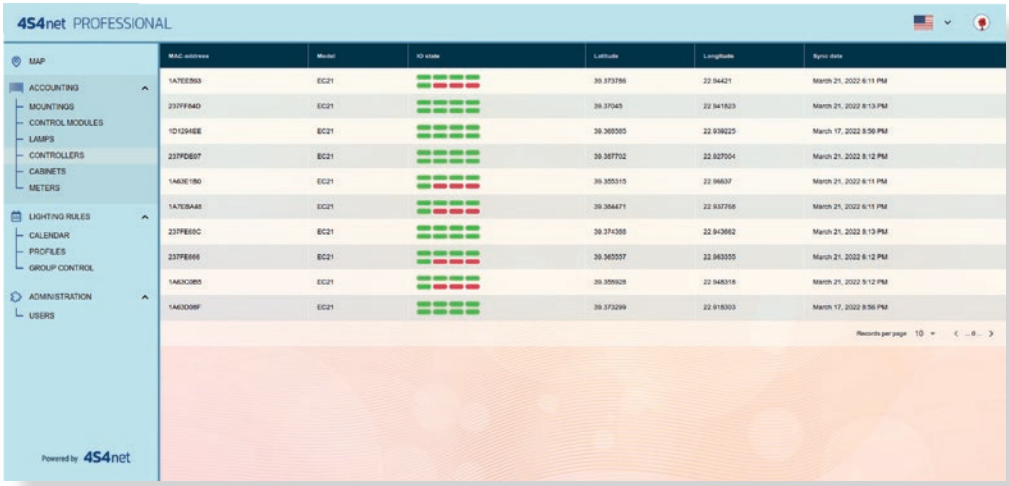
4S4net PROFESSIONAL
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CALENDAR
PROFILES
GROUP CONTROL
ADMINISTRATION
USERS
Powered by 4S4net
MAC-address
Model
IO state
Latitude
Longitude
Sync date
1A7EEE593 EC21 39.373786 22.94421 March 21, 2022 6:11 PM
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4S4net PROFESSIONAL
March 2022
25 March
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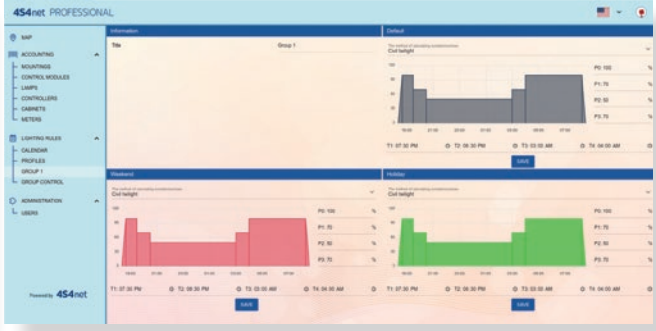
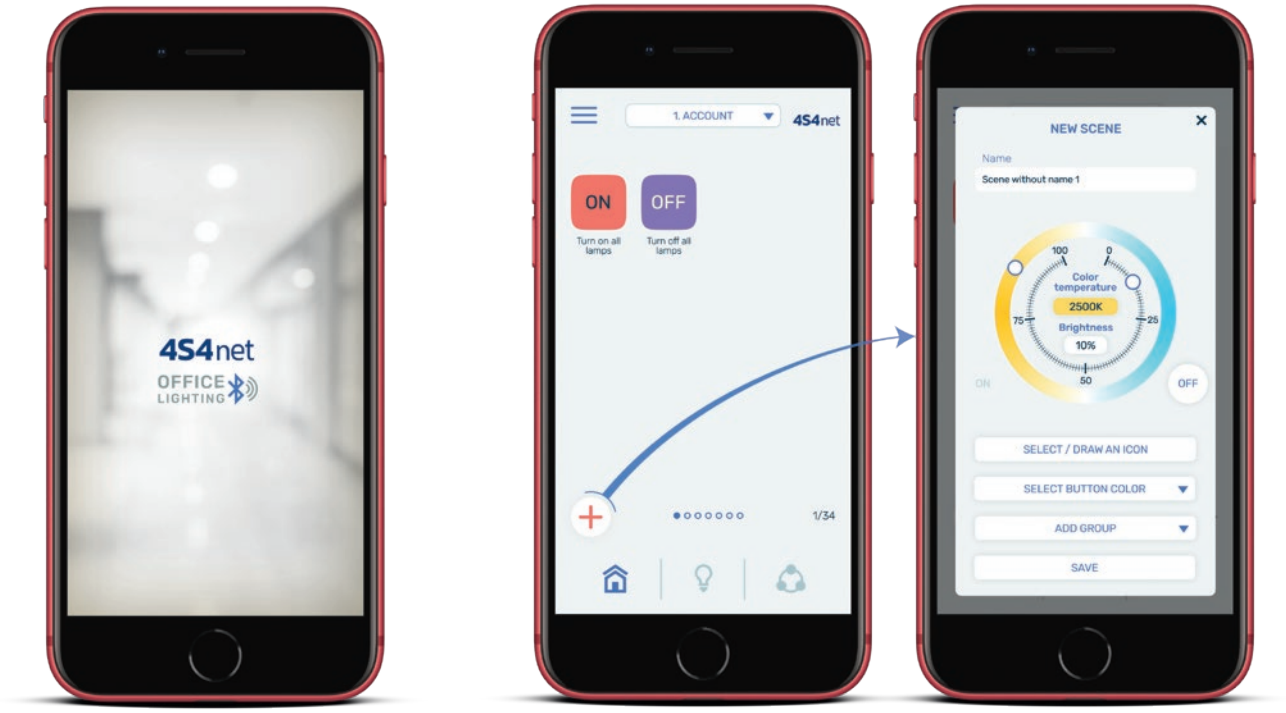

4S4net PROFESSIONAL

4S4net Office Lighting – for smartphone, for networks Indoor

This is an application for mobile devices with Android OS. Designed for operation, setup and local control of Indoor luminaires with installed modems 4S4 mod.B.
The lighting is controlled using a mobile device via the BLE protocol (2.4 GHz) through any luminaire.

The application allows to:

- Control the brightness of luminaires individually or all at once, as well as groups of luminaires;
- Create/add/delete groups of luminaires (up to 16 groups);
- Control luminaires color temperature (if available).



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