

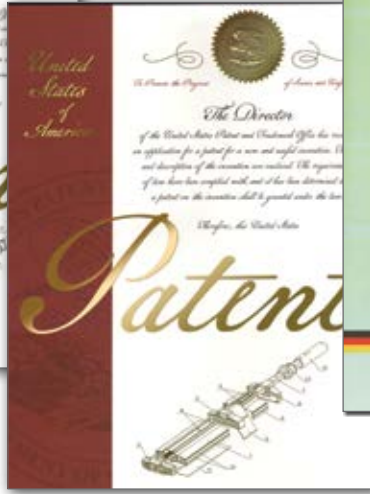
LED for Life



2020

LED LIGHTING

OVER 100 PATENTS FOR LUMINAIRES



CONTENTS

COMPANY'S PROFILE	2
OFFICE LUMINAIRES	4
STREET AND ROAD LUMINAIRES	18
STREET LIGHTING CONTROL SYSTEM	26
INDUSTRIAL LUMINAIRES	40
EXPLOSION PROOF LUMINAIRES	56
LINEAR LUMINAIRES	64
UTILITY LUMINAIRES	72
TRACK FLOODLIGHTS	74
HORTICULTURAL LUMINAIRES	80
POULTRY AND LIVESTOCK FARMING LUMINAIRES.....	90
PARK LUMINAIRES	94
LAMP FOR PARK LUMINAIRES	97
FLOODLIGHTS FOR ARCHITECTURAL LIGHTING	98
SPORTS VENUE FLOODLIGHTS	106
LED LAMPS	112
POWER SUPPLY	114
PACKAGING	116

INCOTEX Electronics Group is



4 plants in Russia and 1 in Bulgaria



Offices in Russia, Bulgaria and Dubai



Distributors in Kazakhstan, Belarus, Poland, Greece and Argentina



Over **1,200** product types



Over 200 patents inclusive over 60 international ones



Products export to more than **30 countries worldwide**



Implementation of solely state-of-the-art manufacturing technologies



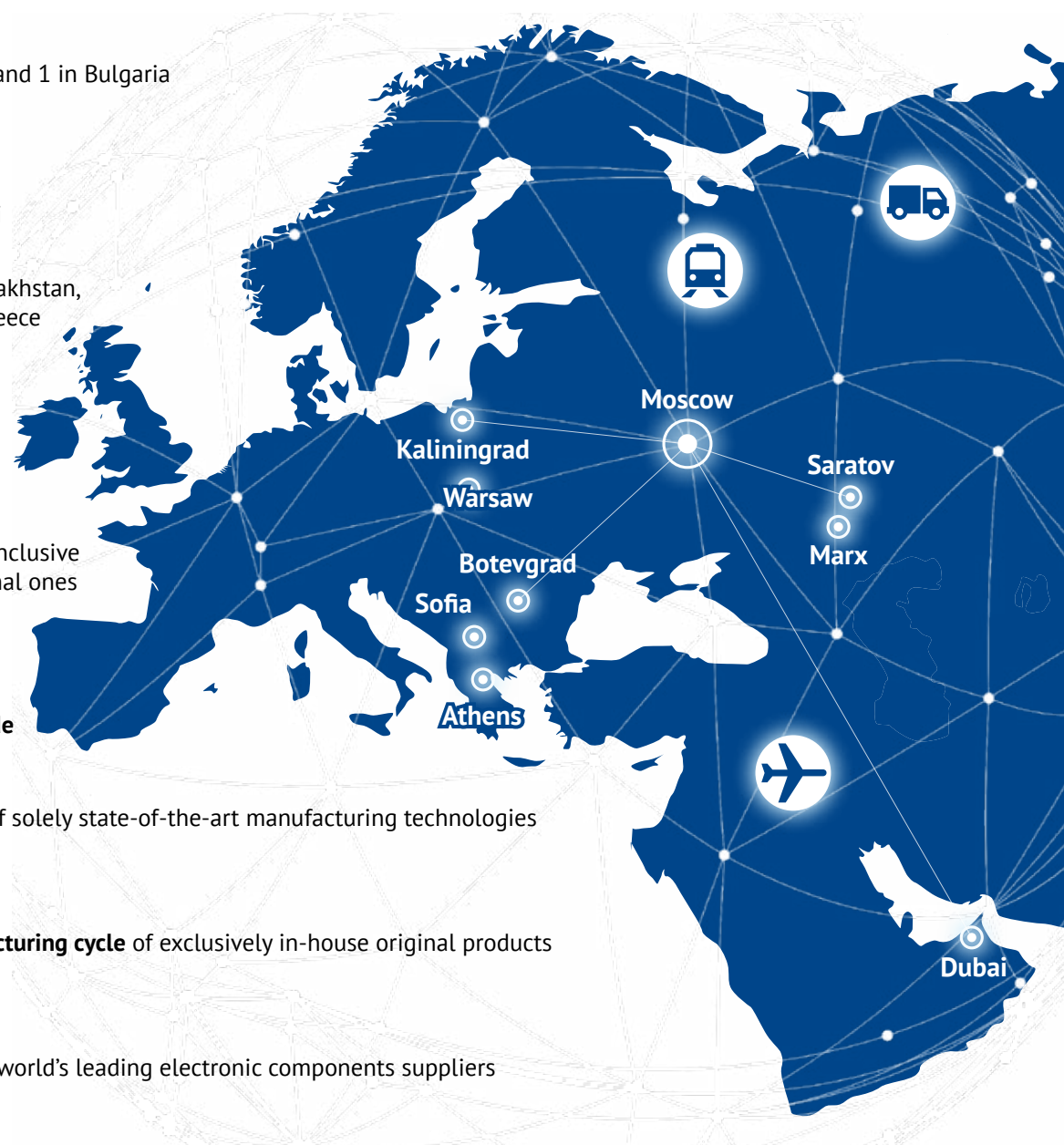
Complete manufacturing cycle of exclusively in-house original products



Cooperation with world's leading electronic components suppliers



Quality management system certificate of compliance with the international standard IQNet ISO 9001-2015 as well as certificates of compliance with the standards of Germany, Italy and Spain.



Core business areas



Electric power metering systems



Electronic trading equipment



LED lighting



Video information display systems (video stands, video screens, display boards)



Video surveillance systems, digital IP cameras, digital recorders



Professional equipment for digital TV



High reliability power suppliers



"SafeTel" system

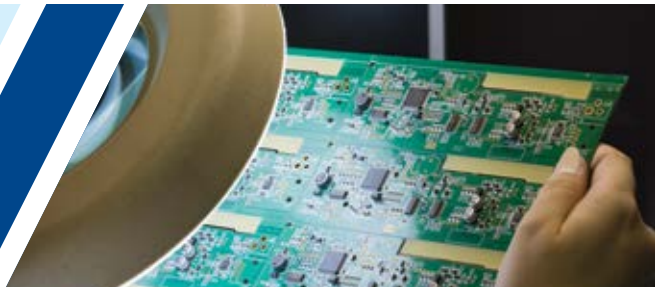
Research and Production Company “Incotex” as a part of the INCOTEX Electronics Group occupies one of the leading positions in the sphere of development and manufacture of energy saving LED equipment and owns a number of international patents for unique designs in the sphere of LED lighting. The Company’s production capacities ensure a complete manufacturing cycle of LED luminaires and lamps, from engineering development and up to manufacture of end user products.



- A wide range of manufactured products is used in a variety of areas:
- municipal roads and highways
 - street and industrial areas
 - railway platforms and ramps
 - office, trading and stock premises
 - sports venue floodlights
 - architectural lighting
 - parade halls, staircases and apartments
 - special purpose illumination of dangerous manufactures including metro
 - horticultural lighting for greenhouses



The Company constantly increases its product range, considering recent lighting market development trends. We implement the technologies which allow increasing efficiency of the luminaires and their resistance to environmental conditions. All products successfully pass a multilevel quality control process and comply with international standards.



We offer You a high quality and reliable product.





OFFICE
LED LUMINAIRES



Messe Frankfurt 2018 was the first in the world to see presentation of the luminaires with uniform light, integrated driver and over 140 lm/W power efficiency introduced in the series “COMFORT” and “COMFORT UNIQUE”.

General information:

Perfect solution for medical, preschool, school and other institutions. No spot light sources. Impeccable glare free uniform light.

Undifferentiated design of the plastic panels makes it possible to recess them into Armstrong type suspended ceilings or to fix the lamp directly on a ceiling of any type. High efficiency LEDs are used as the light source.

Areas of application:

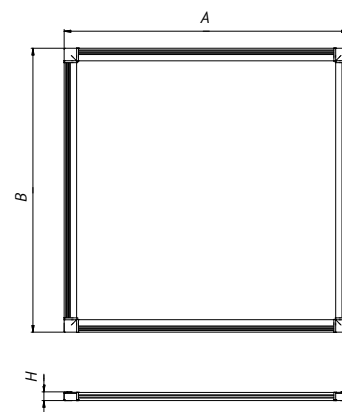
- administration premises and office rooms
- shops and trading floors
- children's institutions, inclusive preschool, school institutions, hospitals etc.
- perfect light for photo and video shooting

Advantages:

- narrow plastic housing with integrated driver
- uniform light all over the diffuser area
- high energy efficiency (from 110 up to 145 lm/W)
- universal housing: integrated, surface-mounted, suspended
- UGR < 19 is available

Product details:

- | | |
|----------------------------------|--------------|
| • voltage, V/ frequency, Hz | 230 / 50 |
| • power factor | > 0.9 |
| • wire section, mm ² | 2x0.75 |
| • color rendering index, CRI | > 80 |
| • luminous flux flickering index | < 5% |
| • ambient temperature, °C | +1 ... +25 |
| • ingress protection | IP 20, IP 40 |
| • electrical safety class | II |
| • operational life (L70), hours | > 50,000 |



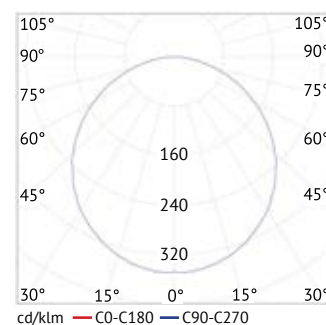
Types of diffusers:

- opal

Optionally:

- version with emergency power unit
- RF control

Light distribution diagram
120° “D” (Lambertian), cd/ 1,000 lm
(normalized diagram)



OFFICE LUMINAIRES

“COMFORT” SERIES



Product	Power max, W	CCT, K*	Luminous flux, lm
SLIMPANEL.1-600x600-25 / DS-DVO-028-1-P600x600		Dimensions, AxBxH, mm - 595x595x23, net weight, kg - 2.5	
	24	3,000	3,000
	24	4,000	3,600
	24	5,000	3,600

“COMFORT UNIQUE” SERIES



Product	Power max, W	CCT, K*	Luminous flux, lm
SLIMPANEL.2-300x300-8 / DS-DVO-008-2-P300x300		Dimensions, AxBxH, mm - 295x295x17, net weight, kg - 0.8	
	8	3,000	800
	8	4,000	900
	8	5,000	900
SLIMPANEL.2-300x600-15 / DS-DVO-015-2-P300x600		Dimensions, AxBxH, mm - 295x595x17, net weight, kg - 1.3	
	15	3,000	1,500
	15	4,000	1,800
	15	5,000	1,800
SLIMPANEL.2-600x600-25 / DS-DVO-028-2-P600x600		Dimensions, AxBxH, mm - 595x595x17, net weight, kg - 2.4	
	24	3,000	2,600
	24	4,000	3,100
	24	5,000	3,100
Version for Germany		Dimensions, AxBxH, mm - 625x625x17, net weight, kg - 2.7	
	24	3,000	2,600
	24	4,000	3,100
	24	5,000	3,100
SLIMPANEL.2-300x1200-25 / DS-DVO-028-2-P300x1200		Dimensions, AxBxH, mm - 295x1,195x17, net weight, kg - 2.6	
	24	3,000	2,500
	24	4,000	3,000
	24	5,000	3,000
SLIMPANEL.2-600x1200-50 / DS-DVO-056-2-P600x1200		Dimensions, AxBxH, mm - 595x1,195x17, net weight, kg - 4.3	
	48	3,000	5,200
	48	4,000	6,200
	48	5,000	6,200
SLIMPANEL.2-P1200x1200-100 / DS-DVO-112-2-P1200x1200		Dimensions, AxBxH, mm - 1,195x1,195x17, net weight, kg - 8	
	96	3,000	10,400
<i>Big size</i>	96	4,000	12,400
	96	5,000	12,400

- luminous flux is given for the ambient temperature +25 °C

- luminous flux can be increased by request.

* - 4,000 K – main product, other color temperatures are available by request

Dimensions of the luminaires are customizable by request.

OFFICE LUMINAIRES

LUMINAIRE PRODUCT NAMING CONVENTION

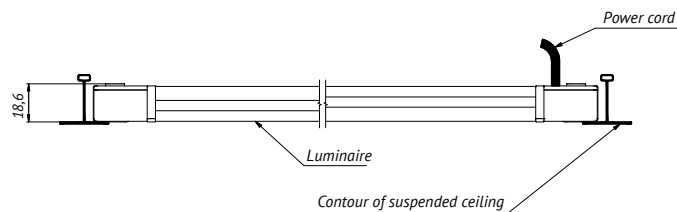
SLIMPANEL. 2 - 300x300 - 008 (840.1.50.00)

1 2 3 4 5 6 7 8

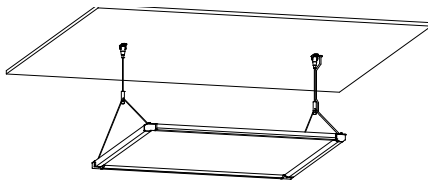
- 1 – product family name (Slimpanel)
- 2 – height of housing (1- 23 mm, 2 – 17 mm)
- 3 – mounting dimensions, mm
- 4 – power, W
- 5 – the first figure CRI and two figures of the color temperature:
30 – 3,000 K, 40 – 4,000 K, 50 – 5,000 K
- 6 – light distribution classification
 - 1 – direct light
 - 2 – mainly direct light
 - 3 – diffused light
- 7 – types of diffusers of the luminaire's upper and lower sides (4 – transparent, 5 – “Opal” 75% of light transmission, 6 – “Opal” 92% of light transmission, 0 – no diffuser)
- 8 – modification No, or availability of control system (ASTRO, DALI)

LUMINAIRES MOUNTING OPTIONS

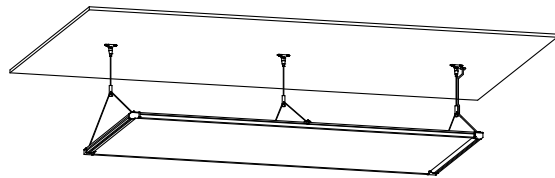
Option #1 Integration into suspended ceiling



Option #2 Mounting with cable wires

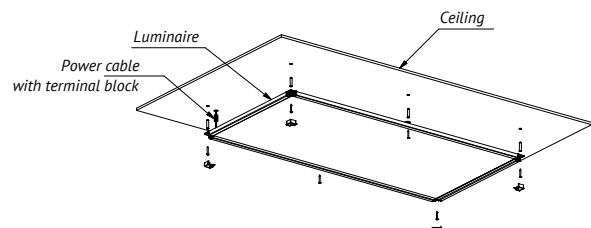
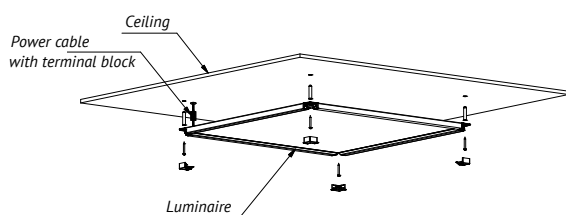


Maximum cable wire length in standard delivery - 1,100 mm



Maximum cable wire length in standard delivery - 1,100 mm

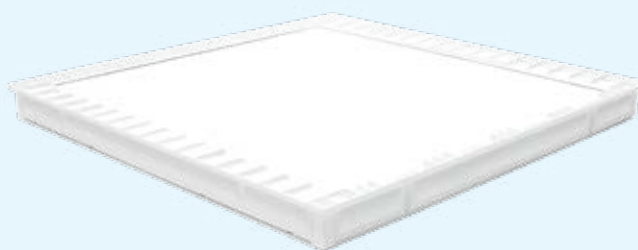
Option #3 Surface mounting



Mounting elements for suspended system are delivered separately.

OFFICE P (universal plastic housing)

Patented luminaire's construction design



Electricity safety class II

General information:

The luminaires in plastic housings possess a patented construction, which allows recessing them into "Armstrong" type ceilings as well as surface mounting them on different types of ceilings.

The power supplier is integrated into the luminaire and is invisible during surface mounting. It is still possible to access the power supplier after surface mounting the luminaire, which ensures convenient installation.

Areas of application:

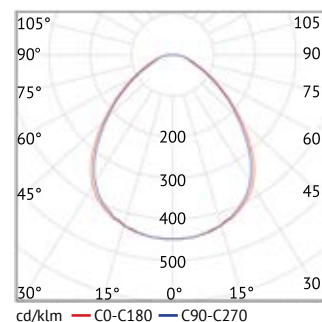
- administration and office areas
- shops and trading floors

Product details:

- voltage, V / frequency, Hz 230 / 50
- power factor > 0.9
- wire section, mm² 2x0.75
- color rendering index, CRI > 80
- luminous flux flickering index < 5%
- ambient temperature, °C +1 ... +45
- ingress protection IP 30
- electrical safety class II
- operational life (L70), hours > 50,000



Light distribution diagram
95°, 120° "D" (Lambertian), cd/1,000 lm (normalized diagram)



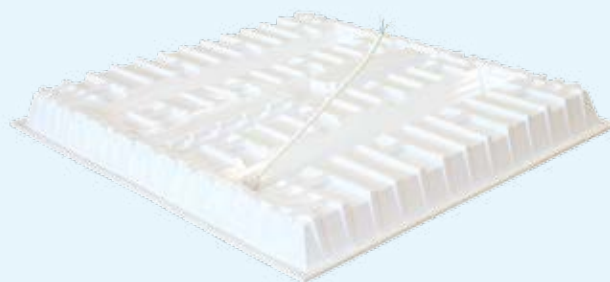
Please refer to page 10 for luminaire product naming convention.

Product	Power max, W	CCT, K**	Luminous flux, lm	Diffuser
OFFICE 20-P600x300				
Dimensions, AxBxH, mm - 595x295x50, net weight, kg - 1.4				
	20	4,000	2,300	Opal
	20	4,000	2,350	Microprismatic
	20	5,000	2,400	Opal
	20	5,000	2,450	Microprismatic
OFFICE 40-P600x600				
Dimensions, AxBxH, mm - 595x595x50, net weight, kg - 2.5				
	40*	4,000	4,000	Opal
	40*	4,000	4,050	Microprismatic
	40*	5,000	4,200	Opal
	40*	5,000	4,250	Microprismatic

* - option: the power can be set from 30 to 40 W

** - 4,000 K - main product, other color temperatures are available by request

OFFICE P (plastic housing)



Electricity safety class II

General information:

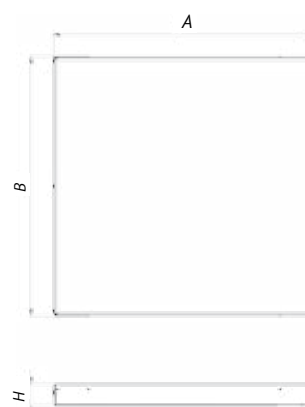
The luminaires in recessed plastic housing are specifically designed for high humidity and dust level premises.

Areas of application:

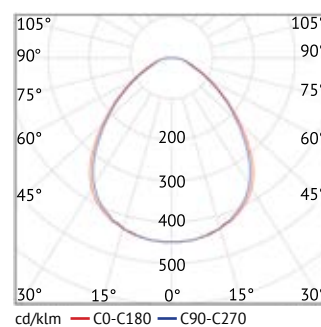
- administration and office areas
- shops and trading floors
- warehouses

Product details:

- voltage, V/ frequency, Hz 230 / 50
- power factor > 0.9
- wire section, mm² 2x0.75
- color rendering index, CRI > 80
- luminous flux flickering index < 5%
- ambient temperature, °C +1 ...+45
- ingress protection IP 65
- electrical safety class II
- operational life (L70), hours > 50,000



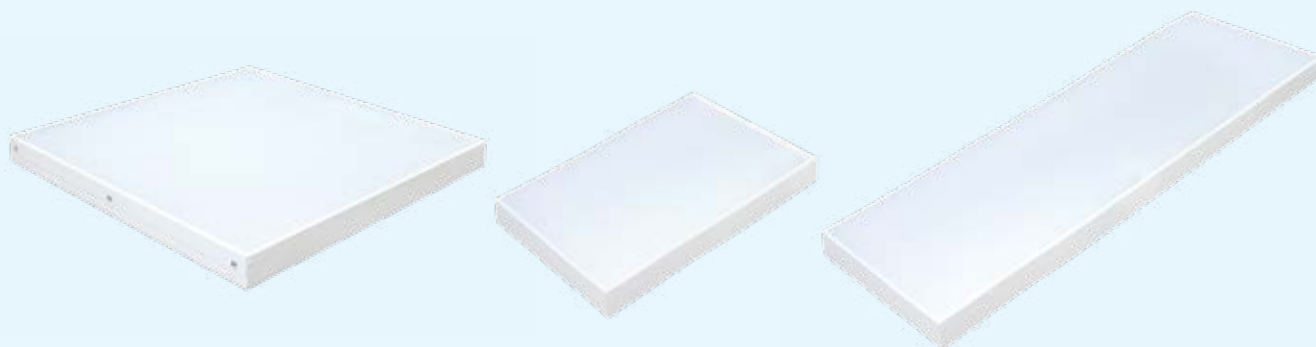
Light distribution diagram
120° "D" (Lambertian), cd/1,000 lm
(normalized diagram)



Please refer to page 10 for luminaire product naming convention.

Product	Power max, W	CCT, K	Luminous flux, lm	Diffuser
OFFICE 28-P600x600	Dimensions, AxBxH, mm - 595x595x58, net weight, kg - 1.4			
	28	4,000	2,800	Opal
	28	5,000	2,850	Opal

OFFICE M (universal metal housing)



General information:

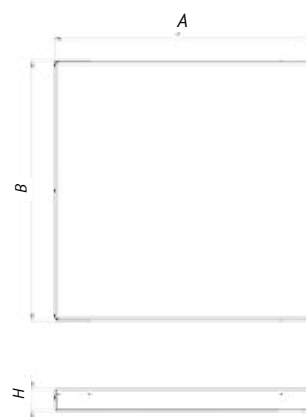
Office LED luminaires are energy efficient alternative to fluorescent lamps. Flexible construction of such luminaires makes it possible to recess them into "Armstrong" and "Open-Grid" type ceilings or to surface mount them on different types of ceilings. High efficacy LEDs are used as a source of light. In-house manufactured power suppliers are used in the luminaires.

Areas of application:

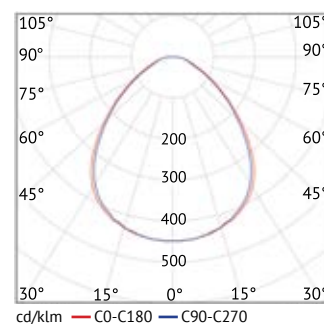
- administration and office areas
- shops and trading floors

Product details:

• voltage, V / frequency, Hz	230 / 50
• power factor	> 0.9
• wire section, mm ²	3x0.75
• color rendering index, CRI	> 80
• luminous flux flickering index	< 5%
• ambient temperature, °C	+1 ... +50
• ingress protection	IP 40
• electrical safety class	I
• operational life (L90), hours	> 50,000



Light distribution diagram
95°, 120° "D" (Lambertian), cd/1,000 lm
(normalized diagram)



LUMINAIRE PRODUCT NAMING CONVENTION

OFFICE 28 - P600x600 (840. T. 02. 0. 20)

1 2 3 4 5 6 7 8 9

- 1 – product family name (OFFICE)
- 2 – power, W
- 3 – type of housing (M- metal, P – plastic)
- 4 – mounting dimensions, mm
- 5 - the first digit of the CRI and two digits of the color temperature 30-3000K, 40-4000K, 50-5000K
- 6 - type of light distribution, O-reflection, T-transmission

- 7 - diffuser type: microprism rhombus (02- microprism comb), opal
- 8 - emergency lighting function
 - no additional functions
 - 1 hour emergency lighting
 - 1-10 v control
- 9 - ingress protection: 20-IP 20, 30-IP 30, 40-IP 40, 65-IP65

OFFICE LUMINAIRES

Product	Power max, W	CCT, K*	Luminous flux, lm	Diffuser
OFFICE 20-M600x300	Dimensions, AxBxH, mm - 595x295x50, net weight, kg - 2.2			
	20	4,000	2,300	Opal
	20	4,000	2,350	Microprismatic
	20	5,000	2,400	Opal
	20	5,000	2,450	Microprismatic
OFFICE 25-M600x600	Dimensions, AxBxH, mm - 595x595x50, net weight, kg - 3.4			
	25	4,000	2,600	Opal
	25	4,000	2,650	Microprismatic
	25	5,000	2,800	Opal
	25	5,000	2,850	Microprismatic
OFFICE 33-M600x600	Dimensions, AxBxH, mm - 595x595x50, net weight, kg - 3.4			
	33	4,000	3,300	Opal
	33	4,000	3,350	Microprismatic
	33	5,000	3,500	Opal
	33	5,000	3,550	Microprismatic
OFFICE 41-M600x600	Dimensions, AxBxH, mm - 595x595x50, net weight, kg - 3.4			
	41	4,000	4,000	Opal
	41	4,000	4,050	Microprismatic
	41	5,000	4,200	Opal
	41	5,000	4,250	Microprismatic
OFFICE 41-M1200x300	Dimensions, AxBxH, mm - 1,195x295x50, net weight, kg - 4.2			
	41	4,000	4,000	Opal
	41	4,000	4,050	Microprismatic
	41	5,000	4,200	Opal
	41	5,000	4,250	Microprismatic
OFFICE 82-M1200x600	Dimensions, AxBxH, mm - 1,195x595x50, net weight, kg - 7.0			
	82	4,000	8,000	Opal
	82	4,000	8,100	Microprismatic
	82	5,000	8,400	Opal
	82	5,000	8,500	Microprismatic

* - 4,000 K - main product, other color temperatures are available by request



PERFECTION

Patented luminaire's construction design



NEW

NO EQUIVALENTS

EDGE-LIT LED PANEL

General information:

Unique construction of the luminaires is perfect for implementing any designer's solutions and will match any room's interior. They will smoothly integrate into interior of any restaurant, cafeteria or night club, attractively placing light accents, while their soft comfortable light will create cozy atmosphere. The luminaires are manufactured in recessed and suspended versions. Luminaires' unique construction is designed in such a way that the light can be emitted upward, as well as upward and downward.

Areas of application:

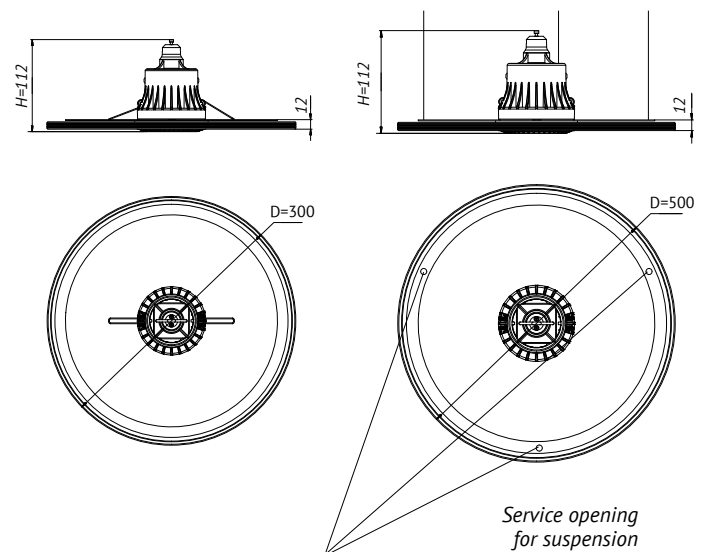
- restaurants and trading floors
- hotels and at home
- administration premises and office rooms
- utility light
- decorative light

Advantages:

- round thin disc shaped diffuser, providing soft illumination of the bottom and upper semi areas
- round plastic housing with integrated power supplier in the center of the lamp
- high energy efficiency (up to 110 lm/W)
- no specific recommendations for disposal
- efficient replacement of SPOT type lamps

Product details:

- | | |
|----------------------------------|------------|
| • voltage, V / frequency, Hz | 230 / 50 |
| • power factor | > 0.95 |
| • color rendering index, CRI | > 80 |
| • luminous flux flickering index | < 5% |
| • ambient temperature, °C | +1 ... +25 |
| • ingress protection | IP 20 |
| • electrical safety class | II |
| • operational life (L70), hours | > 50,000 |
| • socket | GU10, E 27 |
| • installation hole diameter | 50/80 mm |



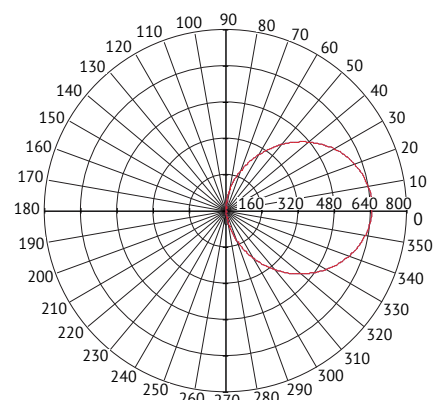
Types of diffusers:

- opal

Optionally:

- RF control

Light distribution diagram
120° "D" (Lambertian), cd/ 1,000 lm
(normalized diagram)



OFFICE LUMINAIRES

Product	Power max, W	CCT, K*	Luminous flux, lm	Direction of light
SLIMDISC.1-50-D250-10 (Integrated)		Dimensions, DxH, mm- 305x112, net weight, kg - 0.4		
	10	3,000	900	down
	10	4,000	1,000	down
	10	5,000	1,000	down
SLIMDISC.1-80-D300-25 (Integrated)		Dimensions, DxH, mm- 305x112, net weight, kg - 0.5		
	25	3,000	2,200	down
	25	4,000	2,700	down
	25	5,000	2,700	down
SLIMDISC.2-80-D500-25 (Suspended)		Dimensions, DxH, mm - 505x112, net weight, kg- 0.6		
	25	3,000	2,300	down
	25	4,000	2,800	down
	25	5,000	2,800	down
	25	3,000	2,300	up and down
	25	4,000	2,800	up and down
	25	5,000	2,800	up and down

* - 4,000 K - main product, other color temperatures are available by request
Suspension system is provided separately

LUMINAIRE PRODUCT NAMING CONVENTION

SLIMDISC. 1- 80 - D300 - 25 (840. 1. 50. 00)

1
2
3
4
5
6
7
8
9

- 1 – product family name (SLIMDISC)
- 2 – housing type (1 – integrated, 2 – suspended)
- 3 – housing diameter, mm
- 4 – disc diameter, mm
- 5 – power of the lamp, W
- 6 – the first figure of CRI, and two figures of color temperature:
30 – 3,000 K, 40 – 4,000 K, 50 – 5,000 K

- 7 – light distribution class (1 – direct light, 2 – mainly direct light, 3 – diffused light)
- 8 – types of bottom and upper diffusers (4 – transparent, 5 – “Opal” 75% of light transmission, 6 – “Opal” 92% of light transmission, 0 – no diffuser)
- 9 – modification No, or with control system (ASTRO)

DESIGNER SOLUTIONS



The luminaires will smoothly integrate in any restaurant, cafeteria and club's design. Perfect solution for rooms with stretched ceilings. Recessed into a ceiling the “Perfection” luminaire represents an efficient alternative to SPOT lamps. The luminaires produce **perfect soft and uniform light**.



General information:

Unique construction of the luminaires is perfect for implementing any designer's solutions and will match any room's interior. They will smoothly integrate into interior of any restaurant, cafeteria or night club, attractively placing light accents, while their soft comfortable light will create cozy atmosphere. The luminaires are produced in suspended modification. Innovative construction design of the luminaires has been developed in such a way that the light can be directed only downwards or in two directions upwards and downwards.

Areas of application:

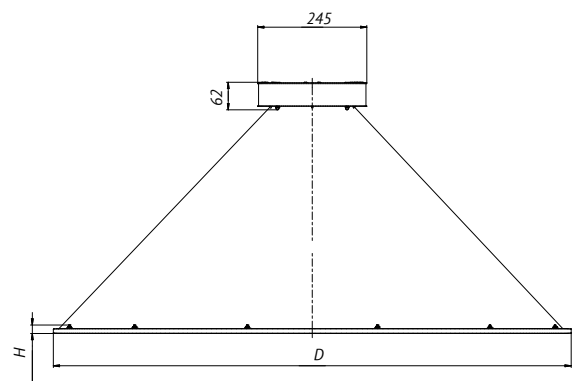
- restaurants and trading floors
- hotels and at home
- administration premises and office rooms
- utility light

Advantages:

- round thin disc shaped diffuser, providing soft illumination of the bottom and upper semi areas
- round plastic housing with integrated power supplier in the center of the lamp
- high energy efficiency (over 110 lm/W)
- an option to customize luminaires of any shapes at Customer's request

Product details:

• voltage, V / frequency, Hz	230/50
• power factor	> 0.95
• wire section, mm ²	2x0.75
• color rendering index, CRI	> 80
• luminous flux flickering index	< 5%
• ambient temperature, °C	+1 ... +45
• ingress protection	IP20
• electrical safety class	I
• operational life (L70), hours	> 50,000
• direction of light	downwards, downwards and upwards



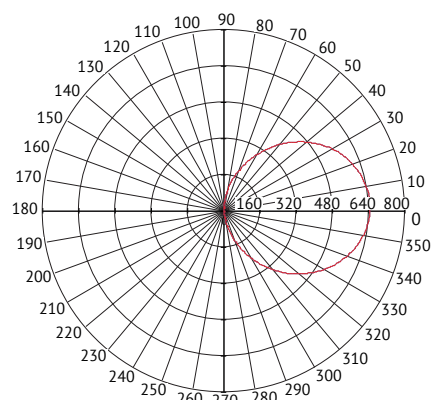
Types of diffusers:

- opal
- prism
- microprism

Optionally:

- DALI control

Light distribution diagram
120° "D" (Lambertian), cd / 1,000 lm
(normalized diagram)



OFFICE LUMINAIRES

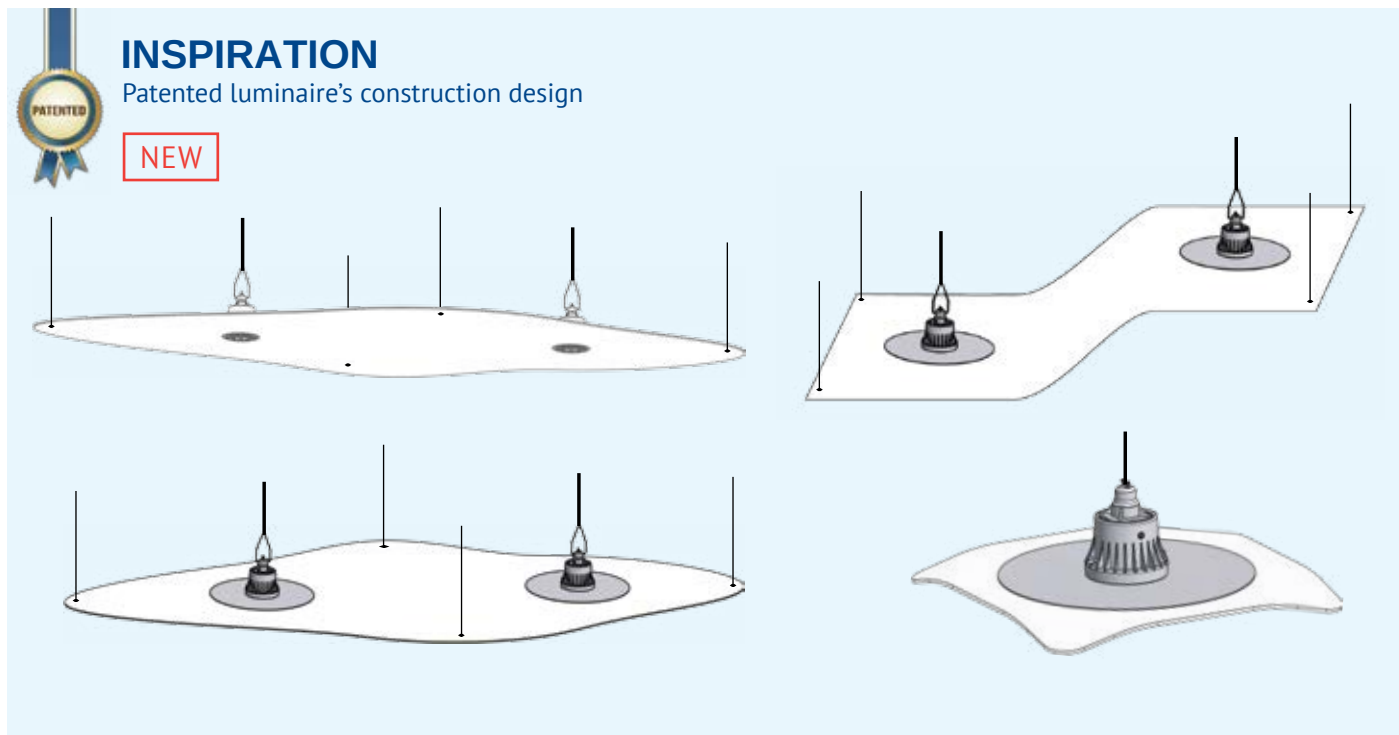
Product	Power max, W	Luminous flux, lm at 4000K, CRI 80	Number of brackets
SLIMDISC.2-D600-30		Dimensions, DxH, mm - 612x15, net weight, kg - 3.5	
	30	3,300	3
SLIMDISC.2-D800-40		Dimensions, DxH, mm - 798x15, net weight, kg - 5.0	
	40	4,400	4
SLIMDISC.2-D1000-50		Dimensions, DxH, mm - 980x15, net weight, kg - 8.0	
	50	5,500	5
SLIMDISC.2-D1100-60		Dimensions, DxH, mm - 1,165x15, net weight, kg- 11.0	
	60	6,600	6

LUMINAIRE PRODUCT NAMING CONVENTION

SLIMDISC. 2 - D1000-50 (840. 1. 50. DALI)

1 2 3 4 5 6 7 8

- | | |
|--|--|
| <ul style="list-style-type: none"> 1 – product family name (SLIMDISC) 2 – housing type (2 – suspended) 3 – disc diameter, mm 4 – power, W 5 – the first figure of CRI, and two figures of color temperature: 30 – 3,000 K, 40 – 4,000 K, 50 – 5,000 K | <ul style="list-style-type: none"> 6 – light distribution class (1 – direct light, 2 – mainly direct light, 3 – diffused light) 7 – types of bottom and upper diffusers in order: <ul style="list-style-type: none"> 4 – transparent, 5 – “Opal” 75% of light transmission, 6 – “Opal” 92% of light transmission, 0 – no diffuser 8 – control method (DALI or 0) |
|--|--|

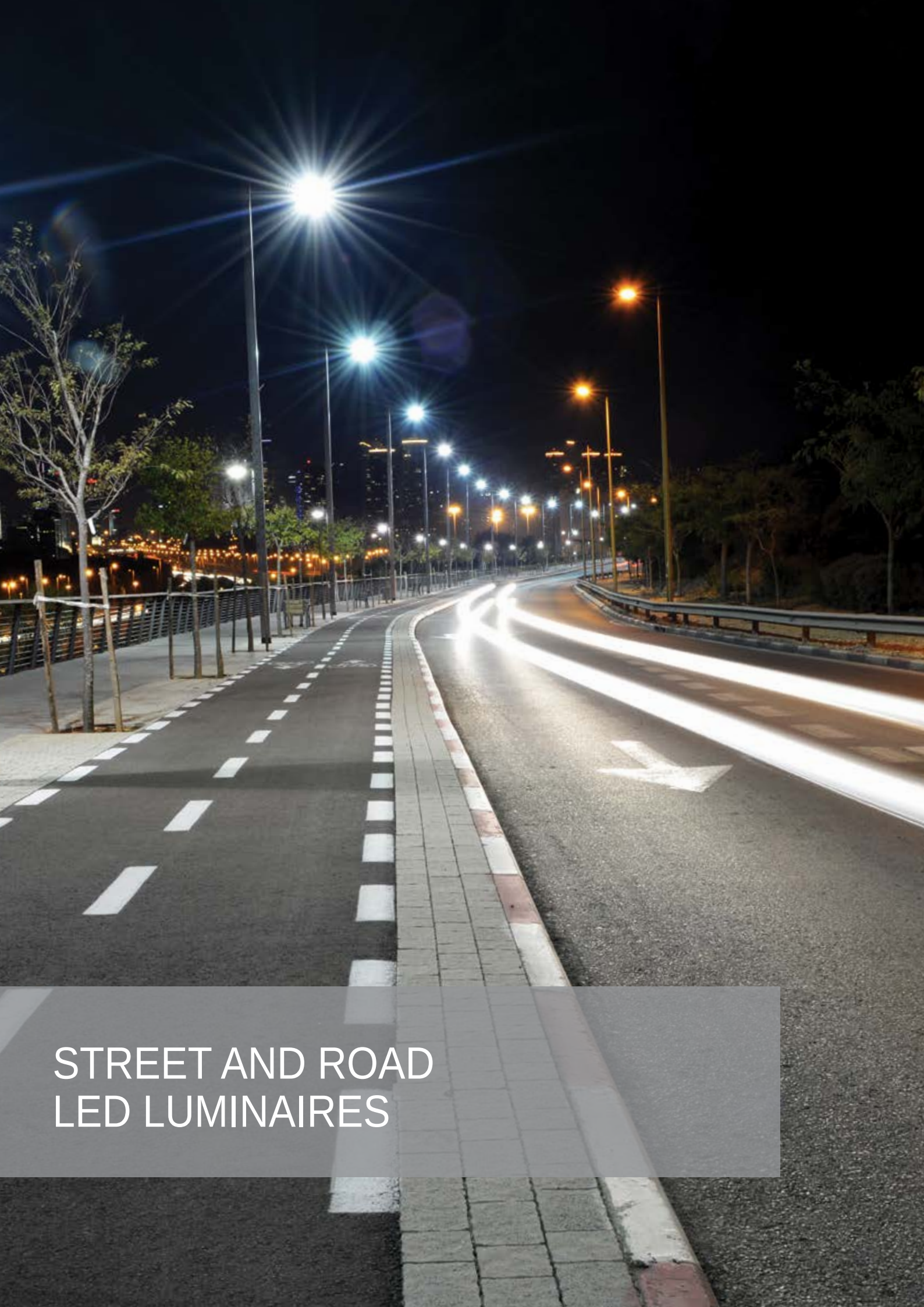


CREATIVE SOLUTIONS FOR LARGE AREAS AND HALLS

Customizable product

- Different 2D, 3D shapes of the lamps based on Customer's requirements
- Any dimensions up to (1.3x2.5) m
- Power of one LED module up to 25 W
- Surface area of the lamp with one light source up to 1.5 m²





STREET AND ROAD LED LUMINAIRES

STREET AND ROAD LED LUMINAIRES



MAG3 – MAG6

Patented luminaire's construction design

General information:

Street and road LED luminaires are energy efficient replacement of sodium and mercury lamps. All types of the luminaires meet the illumination requirements to roads of any category.

Housing of the luminaires is made of aluminum profile protected from ambient effect with powder coating. Innovative heat sink design ensures efficient heat dissipation. High efficacy LEDs from world's leading manufacturers Osram OS, CREE and Seoul S are integrated as a light source.

Areas of application:

- roads of the ME1-ME6 categories
- industrial areas and warehouses
- tunnels
- railway platforms and tracks

Product details:

• voltage, V / frequency, Hz	230 / 50
• power factor	> 0.97
• wire section, mm ²	3x0.75
• color rendering index, CRI	70, 80, 90
• ambient temperature, °C	-45 ... +50
• ingress protection	IP 67
• electrical safety class	I, II
• operational life (L90), hours	> 50,000
• impact resistance	IK 08/10

Optionally:

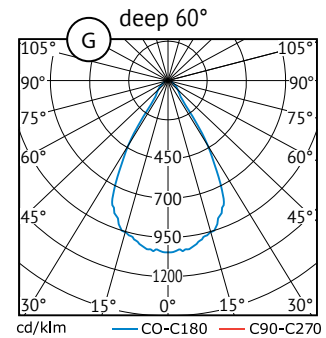
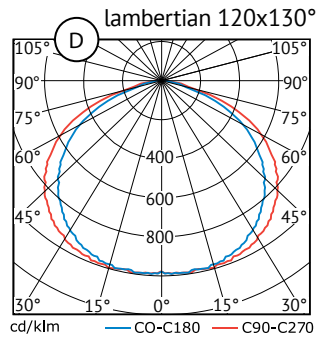
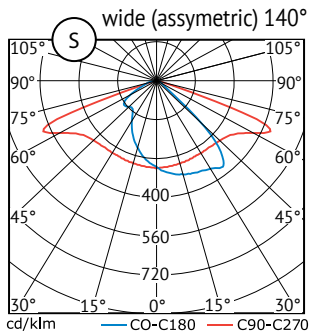
- color temperature 3,000 K, 4,000 K, 5,000 K, 5,700 K
- CRI 70, 80, 90
- light distribution diagram – S – wide (asymmetric), D - lambertian, G - deep
- adjustable and fixed fastening unit for 48 mm and 60 mm bracket
- any power from 14 up to 500 W
- efficacy up to 150 lm/W (on the request)

Advantages:

- 1.5 – 3 times more energy efficient compared to sodium and mercury lamps with similar luminous flux
- innovative lenses construction design ensures necessary illumination at maximum area (Asymmetric light distribution diagram, "S" type)
- no eye-damaging luminous flux flickering
- no specific conditions for disposal
- double protection of LEDs: with Zener diodes (located inside the LEDs) and PLED elements for high performance of a luminaire
- the luminaires remain operative at input voltage up to 300 V
- surge protection 4 kV (optionally 10 kV)
- innovative construction of the housing made of extruded aluminum with smooth top lid allows avoiding contamination of the housing during operation (foliage, birds) and thus maintaining due thermal environment
- airproof light module allows excluding decrease of luminous flux caused by dust pollution of the luminaire's inner cavity
- patented "floating" construction of the luminaire without screws makes it possible to even off the thermal expansion ratios of a housing, LED boards and lenses
- high efficacy of the luminaire
- customization of the power of the luminaire
- LEDs operational life - more than 100,000 hours
- perfect price/quality correlation

STREET AND ROAD LED LUMINAIRES

Light distribution diagrams "S", "D", "G", cd/ 1,000 lm (normalized diagrams)



LUMINAIRE PRODUCT NAMING CONVENTION

MAG 5.1 - 160- 2 36 (7 40. S. 48R. AS)

1 2 3 4 5 6 7 8 9 10

- | | |
|--|---|
| <p>1 – product family name (MAG)
 2 – series No
 3 – nominal power (or power), W
 4 – number of LED clusters
 5 – number of LEDs in a cluster
 6 – CRI, 7 (CRI 70), 8 (CRI 80), 9 (CRI 90)
 7 – color temperature 30 (3,000 K), 40 (4,000 K),
 50 (5,000 K), 57 (5,700 K)
 8 – type of light distribution diagram:
 S – asymmetric, D - lambertian, G - deep, K - focus
 9 – type of mounting:
 48 – on the bracket with 48 mm rim diameter
 48R – on the bracket with 48 mm rim diameter,
 and a swivel power block</p> | <p>60 – on the bracket with 60 mm rim diameter
 60R – on the bracket with 60 mm rim diameter
 and a swivel power block
 10 – control of the luminous flux:
 N – without control
 ND – with control option
 (power supplier with the dimming function)
 AS – with integrated ASTRO control module
 AP – with integrated ASTRO control module with
 an extra power measuring function,
 NN – with NEMA connector for ASTRO3N control module,
 NS – with 7-pin NEMA connector (ANSI C136.41-2013).</p> |
|--|---|

STREET AND ROAD LED LUMINAIRES

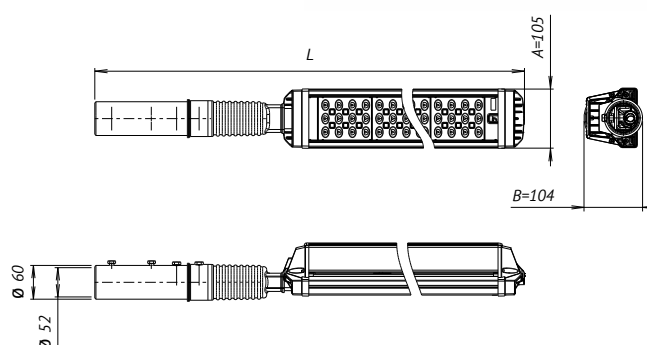
MAG3

Patented luminaire's construction design



Extra advantage:

- In the MAG3 series the driver unit is thermally isolated by metal from the LED module.



Product	Power max, W	CCT, K*	Luminous flux, lm, for CRI 70	Light distribution diagram	Mounting type
MAG3-018-112			Dimensions, LxAxB, mm - 555x105x104, net weight, kg - 2.8		
	14	4,000	1,800	140° (S)	60
	14	5,000	1,800	140° (S)	60
MAG3-030-112			Dimensions, LxAxB, mm - 555x105x104, net weight, kg - 2.9		
	27	4,000	3,400	140° (S)	60
	27	5,000	3,400	140° (S)	60
MAG3-045-112			Dimensions, LxAxB, mm - 555x105x104, net weight, kg - 2.9		
	40	4,000	5,000	140° (S)	60
	40	5,000	5,000	140° (S)	60
MAG3-060-124			Dimensions, LxAxB, mm - 645x105x104, net weight, kg - 3.8		
	54	4,000	7,000	140° (S)	60
	54	5,000	7,000	140° (S)	60
MAG3-085-136			Dimensions, LxAxB, mm - 745x105x104, net weight, kg - 4.7		
	80	4,000	10,400	140° (S)	60
	80	5,000	10,400	140° (S)	60
MAG3-105-148			Dimensions, LxAxB, mm - 840x105x104, net weight, kg - 5.3		
	105	4,000	13,600	140° (S)	60
	105	5,000	13,600	140° (S)	60
MAG3-135-160			Dimensions, LxAxB, mm - 940x105x104, net weight, kg - 5.8		
	130	4,000	17,500	140° (S)	60
	130	5,000	17,500	140° (S)	60

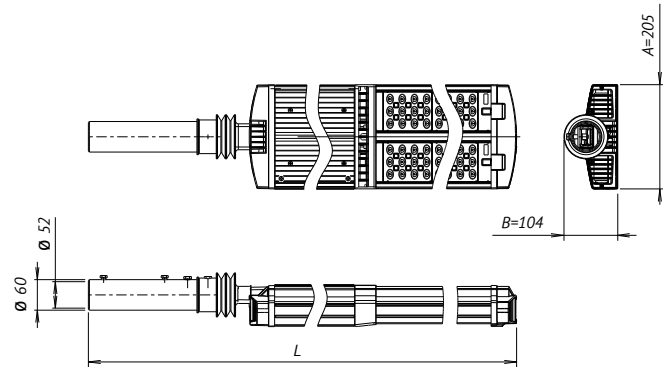
* - 4,000 K – main product, other color temperatures are available by request

STREET AND ROAD LED LUMINAIRES



Extra advantage:

- In MAG4 series the driver is placed into a separate compartment, which is thermally isolated from the major source of heat – the LED module. This increases the operational life of the driver and the whole luminaire. Moreover the driver is installed on the bottom part of compartment, ensuring lower operation temperature of the luminaires when deployed in countries with tropical climate, where the parts of the luminaire can be heated up to 80°C even in non-operating mode



Product	Power max, W	CCT, K*	Luminous flux, lm, for CRI 70	Light distribution diagram	Mounting type
MAG4-160-236	Dimensions, LxAxB, mm - 944x205x101, net weight, kg - 8.0				
	155	4,000	20,700	140° (S)	60
	155	5,000	20,700	140° (S)	60
MAG4-215-248	Dimensions, LxAxB, mm - 1,100x205x101, net weight, kg - 9.1				
	205	4,000	27,500	140° (S)	60
	205	5,000	27,500	140° (S)	60
MAG4-270-260	Dimensions, LxAxB, mm - 1,200x205x101, net weight, kg - 10.0				
	255	4,000	34,500	140° (S)	60
	255	5,000	34,500	140° (S)	60

* - 4,000 K – main product, other color temperatures are available by request

STREET AND ROAD LED LUMINAIRES



Core advantages:

- increased wattage range from 15 W to 250 W
- easy mounting of a luminaire on the bracket
- fast replacement of a driver directly on the pole without a need to remove a luminaire
- MAG5.3 modifications are equipped with borosilicate or silicone lenses which allows using them in environments with high risk of sand storm
- an option to install a dimming controller with NEMA type connector or customer's luminaire controller
- an option to adjust the tilt of the luminaire by ± 20 degrees

Product	Power range, W	Efficiency lm/W	CCT, K	CRI	Light distribution diagram	Mounting type
MAG5.1	15-135	125-150	3,000-6,500	70, 80, 90	140° (S), 120x130° (D), 60° (G)	48, 48R, 60, 60R
MAG5.2	160-250	125-150	3,000-6,500	70, 80, 90	140° (S), 120x130° (D), 60° (G)	48, 48R, 60, 60R
MAG5.3	50-200	125-150	3,000-6,500	70, 80, 90	140° (S), 120x130° (D), 60° (G)	48, 48R, 60, 60R

Mass production is expected in the II half of 2020

STREET AND ROAD LED LUMINAIRES



MAG6 (High power luminaires for operation in extreme climate)

Patented luminaire's construction design

NEW

MAG6.2

MAG6.3

Construction design:

The luminaire consists of separate units: a LED module compartment and a driver compartment. The compartments are thermally isolated which allows increasing the operation life of the driver and the whole luminaire. There is an option to install two power supply units (drivers).

Functionality of this luminaire covers all major tender requirements of the countries of South America, the UAE, Saudi Arabia, as well as complies with requirements of the Russian Railways.

Core advantages:

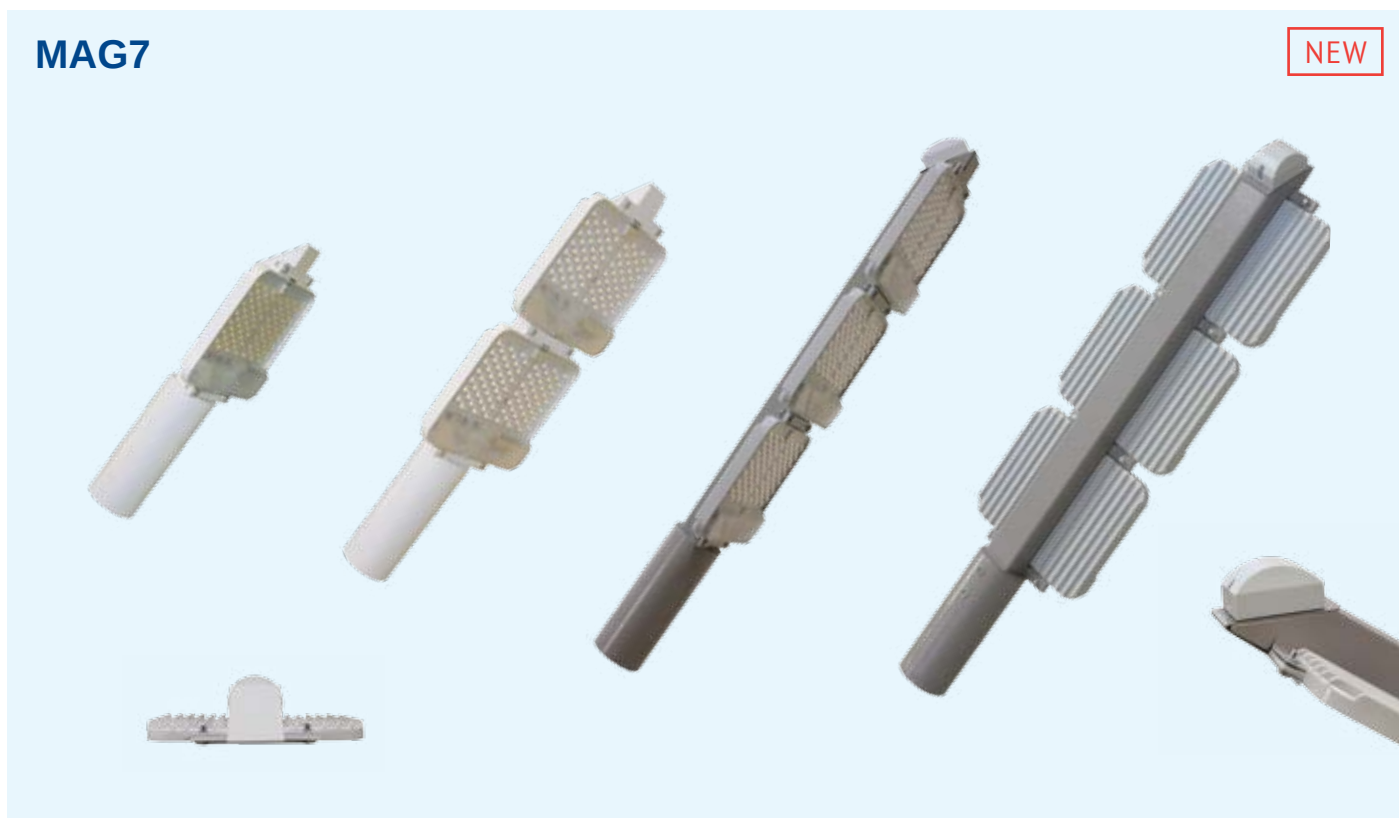
- $\pm 20^\circ$ adjustment of luminaire's tilt angle
- simple procedure of disassembly of the driver, an option to replace the driver directly on the pole without removing it
- an option to integrate a light controlling device with NEMA type connector, or any customer's light control device
- the material of the plastic parts is a special purpose thermally resistant plastic with 130 ... 150°C softening point and UV protection
- for luminaires of MAG6.3 line big size glass or silicone lenses (up to 90 mm in diameter) are applied, which allows increasing luminaires' operation life in environments with high risk of sand storms
- ambient temperature from -60 to +60°C
- IP65 for drivers unit

Product	Power range, W	Efficiency lm/W	CCT, K	CRI	Light distribution diagram	Mounting type
MAG6.2	240-540	125-150	3,000-6,500	70, 80, 90	140° (S), 120x130° (D), 60° (G)	48, 48R, 60, 60R
MAG6.3	150-250	125-150	3,000-6,500	70, 80, 90	140° (S), 120x130° (D), 60° (G)	48, 48R, 60, 60R

Mass production is expected in the II half of 2020

MAG7

NEW



Core advantages:

- the lowest lumen cost on the outdoor illumination market
- extremely light weight
- no conventional driver
- patented LEDs drive topology
- high reliability
- no high-power electrolytic capacitors
- consumed power stabilization in case of any changes in the mains voltage
- LED clusters thermal stabilization
- 380 V protection
- surge protection
- modular construction
- fast replacement of a module without demounting the luminaire
- low luminous flux flicker index
- electrical safety class II

Optionally:

- Astro2 control module

Product details:

- voltage, V / frequency, Hz 230 / 50
- power factor > 0.97
- color rendering index, CRI 70, 80
- luminous flux flickering index < 10%
- ambient temperature, °C -50 ... +45
- ingress protection IP 65
- operational life (L70), hours > 50,000

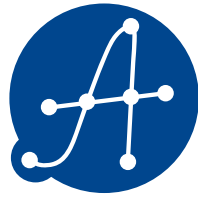
Product	Power, W	CCT, K	Luminous flux, lm, for CRI 70	Light distribution diagram	Mounting type
MAG7-040	40	4,000	4,400	S	48, 48R
MAG7-080	80	4,000	8,800	S	48, 48R
MAG7-120	120	4,000	13,200	S	48, 48R
MAG7-160	160	4,000	17,600	S	48, 48R

Mass production is expected in the II half of 2020

STREET LIGHTING MANAGEMENT SYSTEM



PATENTED
SYSTEM



ASTRO

INNOVATIVE SMART STREET LIGHT RF MANAGEMENT SYSTEM

ASTRO - the innovative lighting management software and hardware platform (ASUO) which will help you to create a modern, efficient, safe and favorable atmosphere for life in a city, town or the country.

ASTRO allows LED luminaires to become truly intelligent and in some modifications provides an opportunity to monitor status of each luminaire, set switching on and off schedules, adjust light levels for different time of day. ASTRO system allows reducing costs on electric power up to 80% due to optimization of the operation schedule and regulation of luminaires.

ASTRO system is built on unique unprecedented patented protocol which ensures reliable communication among luminaires in the network at minimum costs.

The software supplied with the system will allow You receiving not only explicit luminaires status report but will also make it possible to manage technical maintenance works, instantly receiving information on failure events by each luminaire thus significantly reducing the costs related to the visual inspection.

ASTRO provides for control of individual and group luminaires powered from one or different power lines, as well as power consumption data collection from electricity meters. Applicable for building an AMR/AMI system.

ASTRO system is designed in accordance with the most stringent security standards, including the use of data encryption, access control and two-factor user authentication.

ASTRO is built on the open system principals and will allow you easily integrating it with other intelligent platforms and the IoT devices which guarantees you ample opportunities for system enhancement in the future.

Depending on the task complexity level for lighting control you can choose one of the three ASTRO modifications.

ASUO ASTRO allows performing control not only over the outdoor luminaires. ASTRO indoor modification allows applying IEEE 802.15.4, Wi-Fi, Bluetooth, Ethernet communication standards to control literally any type of LeaderLight luminaires.

Differences between ASTRO and other solutions on the market:

- **Specially designed network**

ASTRO is a unique solution built on the basis of proprietary network which ensures accessibility of luminaires irrespective of the urban topography and making it possible to integrate the management systems in tunnels, underground park lots and other facilities without the need to install basic stations all over the place. Please see the Comparative table in the section “Technical Specifications”.

- **Best characteristics**

Minimum energy consumption, unlimited working range, no traffic fees*, minimum number of controllers or modems for the system control ** make ASTRO the leader on the ASUO market.

- **Optimal solution for everyone**

Due to the individual approach to resolving the tasks of our partners we have developed three ASTRO modifications with an optimum set of functionalities, defined by a necessary system complexity level which provides for maximum flexible approach to pricing.

*- for ASTRO-1 modification.

**- for ASTRO-2 and ASTRO-3 modifications

TERMS AND WORDING

SLMS – Street Lighting Management System representing a set of software and hardware means ensuring lighting fixtures switching on and off as well as dimming of their luminous flux according to a preset schedule.

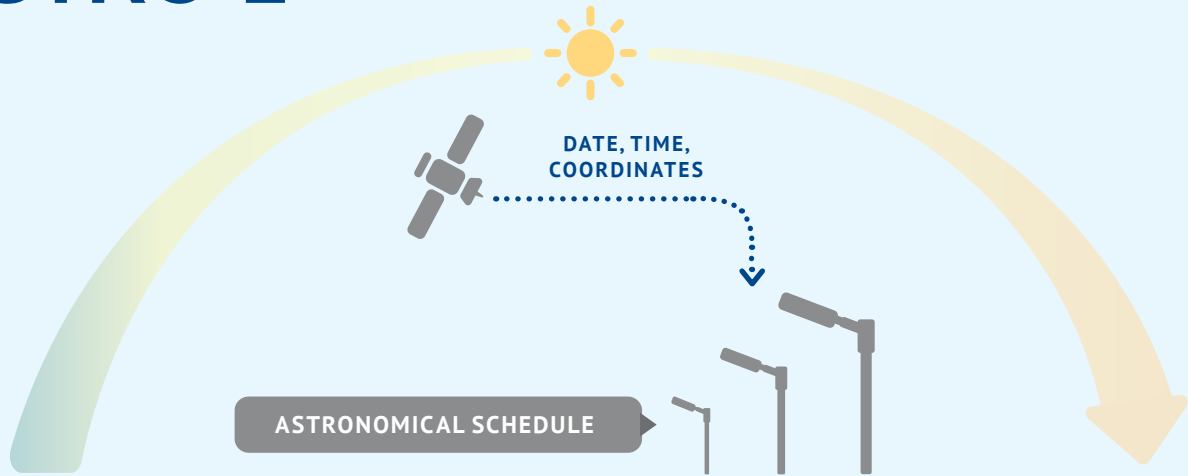
Remote controller - a device designed to control light flux of a LED luminaire including signal transmission by a radio channel. The module is installed directly inside the luminaire housing or in a special connector on the luminaire housing. The control module includes radio modems.

Modem - a device for data receiving and transmission over the radio channel standard IEEE 802.15.4 (868 MHz) and ensuring communication of a LED luminaire with controller, personal computer or smartphone.

SLCC – Street Lighting Control Cabinet is an outdoor lighting control cabinet used for lighting fixtures electric power supply circuits switching and protection and containing a controller for data receiving and transmission between the control center and luminaires providing remote control of power supply to separate groups of luminaires as well as data collection and processing from electricity meters and ensuring complex algorithms for system operation.

Control unit – a control device controlling operation of a network segment formed by luminaire control modules. The controller functionality includes data collection, processing, storage and transmission from LED luminaires and devices enclosed in an Street Lighting Control Cabinet (SLCC) as well as control signals transmission from a control center to all specified devices.

ASTRO-1



Designation:

The modification is designed for autonomous operation of luminaires.

System composition:

ASTRO-1 basically consists only of a remote controller which can have a built-in or external modification.

Field of application:

- cottage estates, small urban settlements
- separate infrastructure facilities (kindergartens, schools, territories of private or municipal enterprises, roads) which do not require the use of operational control and complex operation algorithms

System element

Designation and functionality

Embeddable **ASTRO** control module

or

ASTRO control module in the NEMA housing



Designed for mounting inside or outside the luminaire housing, provides for automatic switching on/off control, as well as dimming of 20 to 100% of capacity by a pre-set schedule.

STREET LIGHTING MANAGEMENT SYSTEM

How does ASTRO-1 operate:

When power is supplied to the luminaire, the control module determines the current date and time, geographical coordinates of its location. In accordance with received data the sunrise and sunset time is calculated for the current date and further periods of time.

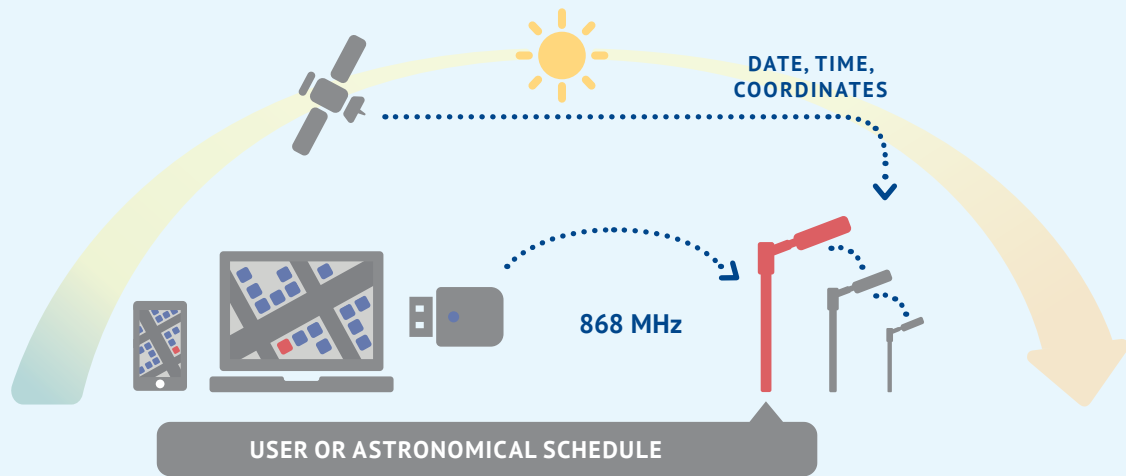
If necessary, the luminaire operating schedule can be adjusted according to user requirements at the stage of presale preparation.

When the illuminating device is connected to a network it shall set itself to 100% brightness and will operate for one hour. Further the device will operate according to a set schedule. Such operation mode is provided for mounting of the luminaire and to ensure forced witch-on in extraordinary circumstances.

Advantages:

- **Completely autonomous**
The user needs not do any settings! The luminaire will itself set the current date and time, location and operation schedule.
- **Maximum simplicity**
ASTRO-1 needs only power supply to the luminaire to operate according to the astronomic schedule.
- **Minimum cost**
ASTRO-1 is the most cost effective solution on the market which meets its primary task to save energy by switching on/off the luminaires, and with dimming.
- **Opportunities for functional enhancement** to ASTRO-2, ASTRO-3 without replacement of the luminaires and the modules.
- **Unlimited number of luminaires**
- **Doesn't need user adjustment**, operates in any part of the world.
- **Universal dimming profile** pre-programmed at the stage of control module production.

ASTRO-2



Designation:

The system is designed to manage luminaires with a possibility to integrate them into groups and to perform instant control over the operation schedule. A single radio segment is formed by integration of up to 150 luminaires.

System composition:

To create a lighting fixtures network it is necessary, additionally to control modules, to have an ASTRO USB radio modem. The luminaires are controlled by the free of charge software included in the standard delivery package.

Adjustment and control is performed in direct proximity to any luminaire.

Field of application:

- cities, small urban settlements;
- regional and local roads;
- separate infrastructure facilities (railway stations, freight terminals, industrial areas, workshops etc.) where operating control and complex algorithms must be used.

Scope:

- grouping
- individual/ group brightness control
- displaying luminaires on the map
- dimming profile correction

System element

Designation and functionality

ASTRO control module



Designed for installation inside or outside luminaire housing. Provides automatic control of switching on/off as well as luminaire power dimming from 20% to 100% in operating mode or according to a preprogrammed schedule.

ASTRO USB Modem



Designed for connection to a personal computer or Android operated smartphone via USB. Ensures luminaires control via the 868 MHz frequency radio channel at the range up to 50 m.

ASTRO Manager Software



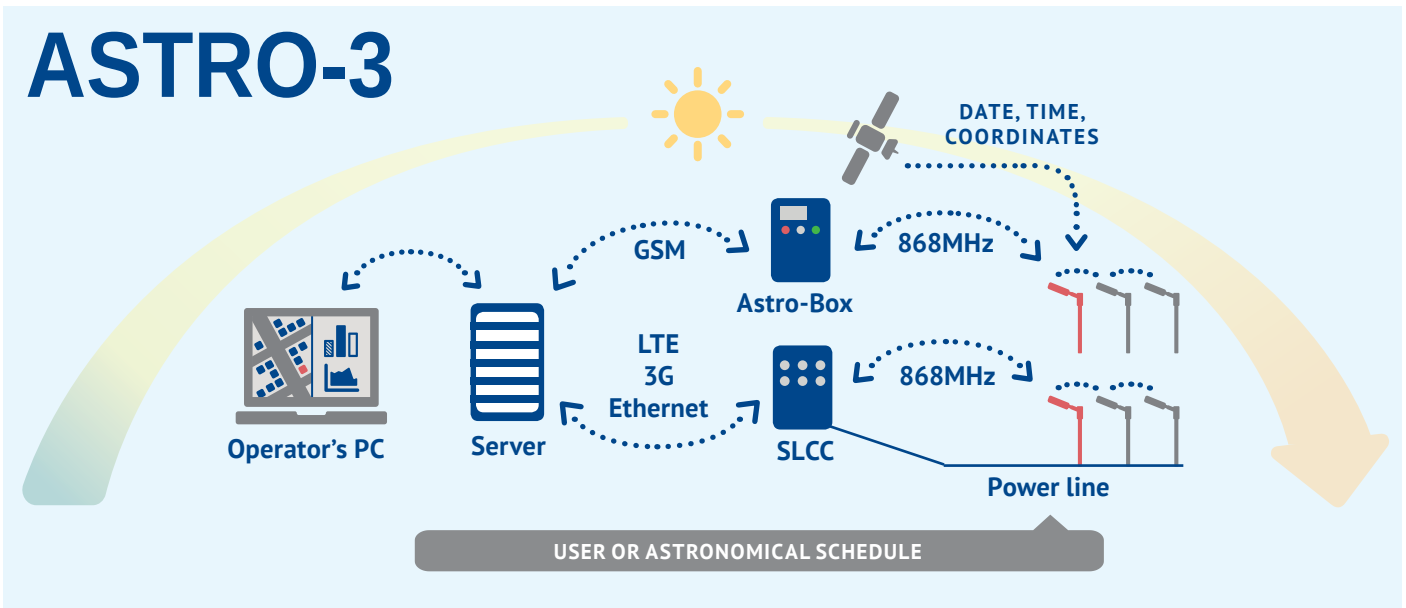
Designed for installation on an Android operated smartphone. Serves to manage luminaires' operating schedule. Available free of charge on the Google Play. See description in the "Software" section.

How does ASTRO-2 operate:

The radio network which does not require any professional settings is generated when power is supplied to luminaires. In this way the user has a possibility to manage operation of individual luminaires (or some independently created luminaire groups). The control is directly carried out via the USB modem connected to a mobile device.

Advantages:

- **Optimal price**
ASTRO-2 – perfect correlation of functionality which ensures extensive user opportunities for control and low implementation costs.
- **Advantageous operation**
 - unlicensed 868 MHz radio frequency for data transmission
 - no operator's traffic fees during operation
- **High reliability**
Automatic radio network ensures reliable signal transmission upon failure of up to 5 pillars (150v) in the chain. Control via secured data transmission channels. In case of disconnection the system switches to the autonomous mode.
- **Opportunities for functional expansion** to ASTRO-3 without replacement of the luminaires and control modules.
- **Does not require subscriber's fee, no SIM-cards**
- **Does not require RF projecting.**



Designation:

The modification is designed to control an extensive network of luminaires and makes it possible to implement operating schedule control. Unlimited number of radio segments are integrated into a integral management system.

Field of application:

- megalopolises, big cities, districts;
- federal motorways and motorway networks;
- separate infrastructure facilities which require professional management and parameter metering.

System composition :

The control modules used in this modification, as a rule, have enhanced functionality which allows receiving data on electricity consumption separately for each luminaire.

Additionally the control modules can have temperature, light and ecological monitoring sensors etc. The modules can have not only embedded but also external modification types.

Additional functionality is provided by the use of outdoor lighting management cabinets (SLCC) and/or ASTRO BOX controllers.



Professional software is used to control ASUNO which provides organization of multi-level management for device networks, the maximum level of automation for technological processes, such as notification of emergency situations, preparation of various analytical reports on system operation, generation of applications requesting arrival of a maintenance team etc.

Programming and adjustment of the system's elements are performed by manufacturing plant's specialists.

Management and control are performed via the Web-interface to the workstation operator.

System element	Designation and functionality
<p>Embedded ASTRO control module</p> 	<p>Designed for installation inside or outside a luminaire housing, provides automatic control of switching on/off as well as luminaire power dimming in operating mode or according to a preprogrammed schedule. Can have a power meter.</p>
<p>ASTRO control module in NEMA</p> 	<p>Designed for installation into a NEMA type specialized connector on the luminaire housing, provides automatic control of switching on/off as well as luminaire dimming according to a preprogrammed schedule, can have a power meter, light, temperature sensor.</p>

STREET LIGHTING MANAGEMENT SYSTEM

System element	Designation and functionality
 SLCC ASTRO Box	Designed to manage a luminaires network segment. Ensures data reception and transmission from the operator's automated workplace (AWP) to a luminaire. Consists of the controller, magnetic starters, input and output breakers, manual controls etc. The detailed SLCC specifications are determined by functional requirements for a particular project. It is installed at a remote (up to 150m) distance from the nearest luminaire.
 GSM controller ASTRO BOX	The ASTRO BOX GSM controller is designed to manage over the luminaires within one radio segment and transmission of information to the operator's AWP.
Software ASTRO Manager	Designed for installation on the operator's personal computer (AWP) for luminaires operating management and requires professional installation and setting.

How ASTRO-3 operates:

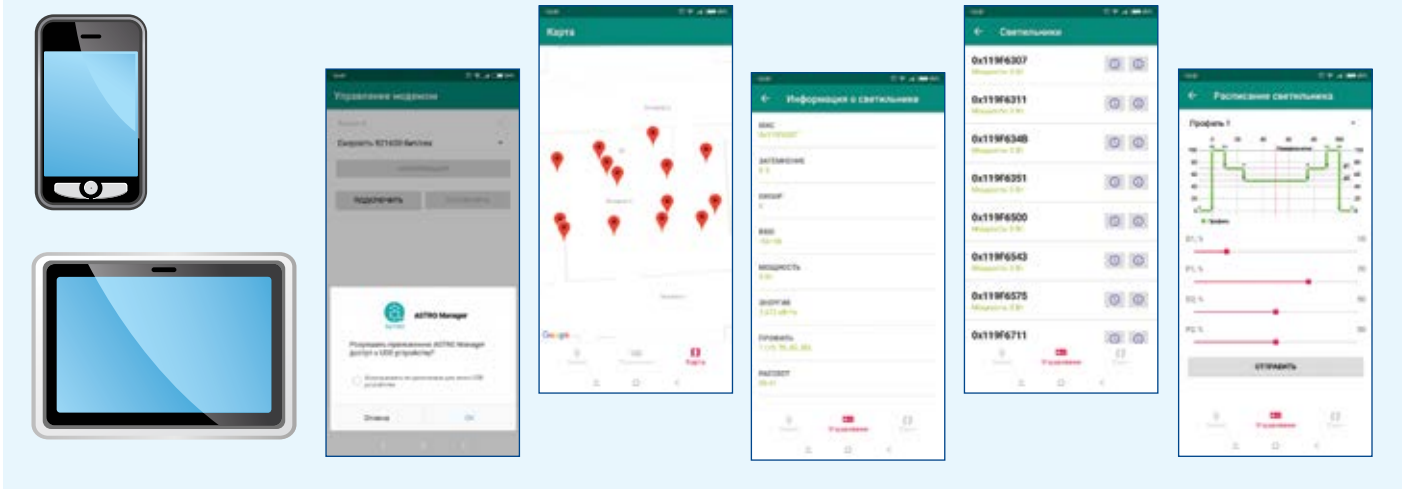
The radio network is automatically generated when power is supplied to luminaires, however it requires some professional settings. As a result of the system commissioning, the user gets the possibility to quickly control individual luminaires or some groups of luminaires he can create, and ample opportunities of automatization of all technological processes (see section "Software").

The luminaires in the ASTRO-3 system can operate in an autonomous mode similar to the ASTRO-2 system.

Advantages:

- **Maximum functionality**
Comprehensive data on each element of the system as well as extensive analytical capabilities allow achieving maximum economic effect.
- **Individual approach**
ASTRO-3 allows having a flexible approach to the selection and configuration of hardware and software systems, providing the optimal solution to each specific task of a project.
- **Openness for integration**
SLMS can be integrated with almost any other data collection and processing system as a part of the IoT concept which is widely developing today.
- **Cost saving operation**
 - the use of unlicensed radio frequency 868 MHz for data transmission,
 - no need of any transmission fees for data traffic during the system operation.
- **High reliability**
The automatically generated radio network ensures a steady signal transmission even in case when up to 5 poles (150 m) fail in the chain. The control is carried out via secure data channels. In case of loss of communication, the system goes to autonomous mode.
- **Mapping** the luminaires and the infrastructure elements (pillars, power lines and centers)
- **Monitoring and control** over the status of the system's elements, reports generation
- **Setting** illumination management individual schedules
- **Generation of reports** on the illumination system's energy consumption

ASTRO MANAGER SOFTWARE



Designation:

Designed for operator control of luminaires and operation schedule management in the operation mode.

Features:

ASTRO Manager application allows managing every luminaire independently or in groups. With this application the user may monitor and set any luminaire just in several clicks.

The program provides for convenient management, which includes:

- **Luminaires control in operation mode**

The system operator can instantly respond to the changing needs in illumination by switching off or altering brightness of the luminaires.

- **Grouping the luminaires**

- **Setting and adjustment of the autonomous operation schedule** (on/off time, transfer to other dimming levels) for each luminaire.

- **Tracking luminaires' energy consumption**

- **Monitoring and managing the luminaires** via the geo-referencing map.

Advantages:

- **User friendly**

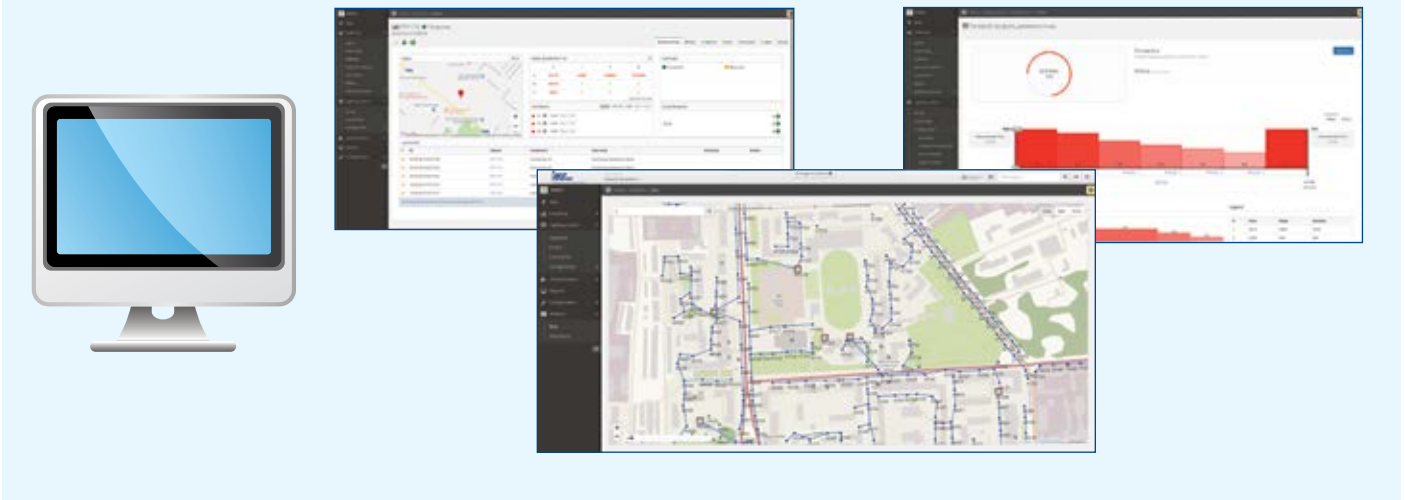
Simple and intuitively clear interface allows instantly managing the system without any training.

- **Optimal functionality**

Being simple, the program nevertheless allows managing all major parameters necessary to achieve high energy efficiency of an illuminating device.

- **Free of charge application is available at the Google Play**

ASTRO PROFESSIONAL SOFTWARE



Designation:

Designed for operator control of the ASTRO-3 system, including complex automatization of illumination related technological processes.

Features:

• Ensures the processes of technical recording

The program ensures technical recording of the street illumination elements and of the equipment operation cycle (pillars, luminaires, SLCC, controllers, electric power meters).

• Ensures the processes of illumination management

ASTRO Professional maintains operation of the system in both automated and manual modes, making it possible to perform:

- setting of typical operation schedules and illumination templates;
- grouping and classifying the luminaires;
- binding the operation schedules and illumination templates to the luminaires;
- generating analytic reports and energy consumption schedules;
- failures monitoring and diagnostics;
- system components status control and recording (luminaires, control boxes, GSM controllers).

• Failures monitoring and diagnostics

The program allows for monitoring operation of all the system's devices, immediately reporting on any failures to the operator workstation and generating tasks for the maintenance team.

• Analytic reports and graphs generation

ASTRO Professional allows for receiving all possible reports on the management system operation inclusive the failures statistics, individual and group luminaires energy consumption, data graphs with the data from all types of sensors etc.

• Ensures the budget control processes

The program may optionally maintain the integrated billing, which is close to the real time, for conversion of the consumed energy data to the money equivalent allowing for the utility company's tariff plans, as well as notifying the responsible person of over budget.

Advantages:

• Professional solution

Wide spectrum of ASTRO Professional functionalities allows ensuring fully functional centralized management of the most complicated illumination systems admitting both cloud and local deployment.

• Flexibility

The software product has been developed so as to ensure individual approach to demands of every project as well as to integrate with any other system functioning within the "Smart city" concept.

• Vast opportunities for enhancement

ASTRO Professional is based on the out-of-the-box web technologies and considers latest IoT information systems tendencies guaranteeing the user constant enhancement of functionality and convenience of work.

STREET LIGHTING MANAGEMENT SYSTEM

Technical specifications of ASTRO modifications

SLMS modification	ASTRO-1	ASTRO-2	ASTRO-3
Operation 24 / 7	✓	✓	✓
Luminaire autonomous operation	✓	✓	✓
Operation according to astronomical schedule or other factory settings	✓	✓	✓
Operation according to user settings	-	✓	✓
Remote control via the Internet	-	✓	✓
Application for mobile devices	-	✓	✓
Professional software	-	-	✓
Two-way communication with the luminaire	-	✓	✓
Metering data collection	-	-	✓
Controller (as a part of SLCC)	-	-	✓
Modem	-	✓	-
Upgrade to the next modification	✓	✓	-

STREET LIGHTING MANAGEMENT SYSTEM

Control modules



Characteristics	Value	
Modification	Embedded	NEMA ANSI C136.41
Supply voltage	+12 VDC	
Maximum consumed current	100 mA	
Maximum transmitter power	25 mW	
Encryption	AES	
Type of connection	Radio, 868 MHz	
Maximum data transmission speed, bit/s	50 000	
Maximum communication range, m	300 under direct line of sight	
Ambient protection	IP 65	IP 65
Operational environment	Ambient temperature -40 +45 °C Relative humidity not more than 80% at the temperature +25 °C	
Power meter	Optionally	
Illumination sensor	-	Optionally
Noise resistance in the mains	According to GOST CISRP 24-2013	
EMC noise resistance	According to GOST P 50628-2000, EN 301 489	

ASTRO USB Modem



Characteristics	ASTRO USB
Interface	
Type of connection	Radio, 868 MHz
Connector type	USB-A
Maximum consumed current	50 mA
Ingress protection for the modification in a housing	IP 22
Operational environment	
Ambient temperature, °C	0 ... +45
Relative humidity (before condensation) at the temperature 20 °C, not more than, %	80

ASTRO BOX GSM-controller



Characteristics	Value
Material of the housing	ABS plastic
Dimensions (LxWxH), mm	120x120x60
Weight, kg	0.5
Mounting type	on the wall/ on the pole
Housing ingress protection	IP 65
Connection type	GSM+radio, 868 MHz
Maximum communication distance via 868 MHz radio channel, m	300 under direct line of sight
Maximum communication distance via GSM channel, m	Is defined by communication provider's coverage area
Data transmission protocol	JSON
Ambient temperature, °C	-40 ... +85
Relative humidity (before condensation) at the temperature 20 °C, not more than, %	85

STREET LIGHTING MANAGEMENT SYSTEM



ASTRO CU Controller

Characteristics	Value
Material of the housing	Aluminum
Dimensions (LxWxH), mm	120x95x95
Weight, kg	0.22
Mounting type	On a DIN-rail
Housing ingress protection	IP 22
Interface	2xRS-485
Data transmission speed, baud	1,200 – 115,200
Number of discreet inputs type “connection to an exterior power supply 12-24V”	4
Supply voltage, V	12-24 VDC
Consumed power, W	10
Maximum consumed current, not more than, A	1
Ambient class	NF
Ambient temperature, °C	-40 ... +45
Relative humidity, not more than, %	80
Data transmission channel	Ethernet, USB, GSM, 3G, LTE
Compatibility with metering devices	Mercury
Noise resistance in the mains	According to GOST CISRP 24-2013
Resistance to electromagnetic noise	According to GOST P 50628-2000, EN 301 489



INDUSTRIAL LED LUMINAIRES

INDUSTRY.3

Patented luminaire's construction design



General information:

Industrial LED luminaires are energy efficient alternative to luminaires with sodium and mercury bulbs, as well as floodlights with metal-halide bulbs.

Housing of the luminaires is performed of aluminum profile. Unique construction design of the heat sink ensures efficient heat dissipation. High efficacy white LEDs from world's leaders Osram OS, CREE and Seoul S are mounted as a light source.

Areas of application:

- industrial areas and workshops
- railway stations and platforms
- transport tunnels
- loading and unloading ramps
- courtyards and parks
- parking and petrol stations

Product details:

• voltage, V / frequency, Hz	230 / 50
• power factor	> 0.95
• wire section, mm ²	3x0.75
• color rendering index, CRI	70, 80, 90
• ambient temperature, °C	-45 ... +50
• ingress protection	IP 67
• electricity safety classification	I, II
• operation life (L90), hours	> 50,000

Optionally:

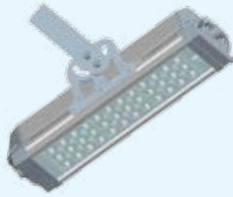
- CCT 3,000 K, 4,000 K, 5,000 K, 5,700 K
- CRI 70, 80, 90
- light distribution diagram – S (wide (asymmetric)), D (Lambertian), G (deep)
- harp for axial or transverse rotation, brackets to fix the luminaire on wire cables
- any power range from 14 to 450 W
- efficacy up to 150 lm/W (on the request)

Advantages:

- 1,5-3 times more energy efficient as compared to luminaires with mercury or sodium bulbs, or floodlights with metal-halide bulbs with similar luminous flux (depending on the type of the luminaire)
- no eye-damaging flickering effect
- no specific recommendations for disposal
- LEDs double protection: with Zener diodes (inside the LEDs) and PLED elements for high performance of a luminaire
- the luminaires remain operative at input voltage up to 300 V. Built in 4 kV surge protection (optionally 10 kV)
- innovative construction of the housing from extruded aluminum makes it possible to easily build a luminaire of any power with basic modules
- airtight light module allows excluding decrease of luminous flux caused by dust pollution of the luminaire's inner cavity
- patented "floating" construction of the LED module without screws makes it possible to even off the thermal expansion ratios of the housing, LED boards and lenses
- two versions of swinging bracket are available (axial "BL", and transverse "BR"), and a bracket for a cable wire "SC"
- high efficacy of the luminaires
- option to customize luminaire's power
- LEDs operational life – more than 100,000 hours
- perfect price/quality correlation

TYPES OF BRACKETS

BR



B2



BL



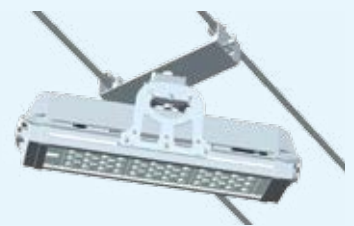
SC



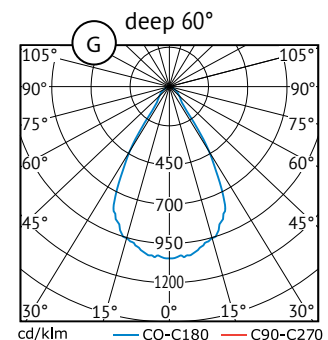
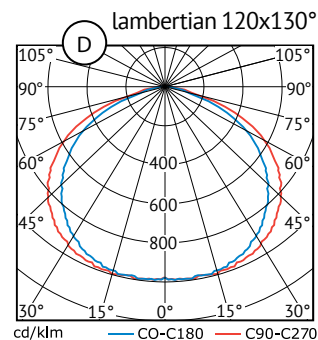
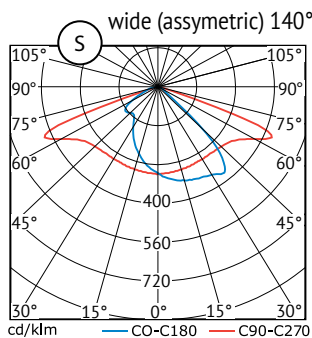
SC1



SC2



Light distribution diagrams "S", "D", "G", cd/ 1,000 lm (normalized diagrams)



LUMINAIRE PRODUCT NAMING CONVENTION

INDUSTRY. 3 - 160- 2 36 (7 40. G. BR. AS)
1 2 3 4 5 6 7 8 9 10

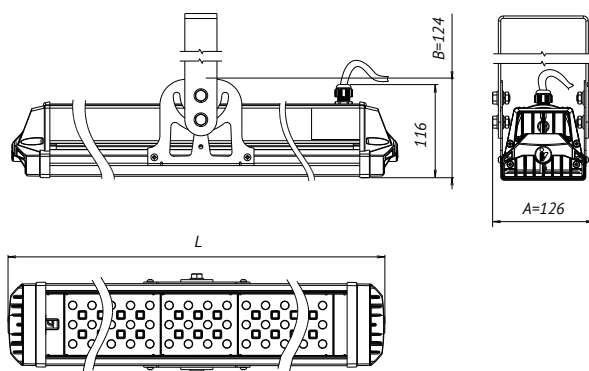
- 1 – product family name (INDUSTRY)
- 2 – series No
- 3 – nominal power (or power), W
- 4 – number of LED clusters
- 5 – number of LEDs in a cluster
- 6 – CRI, 7 (CRI 70), 8 (CRI 80), 9 (CRI 90)
- 7 – color temperature
30 (3,000 K), 40 (4,000 K), 50 (5,000 K), 57 (5,700 K)
- 8 – type of light distribution diagram:
S – wide (asymmetric), D – lambertian, G – deep, K – focused
- 9 – type of mounting:
BR – on a wall or a ceiling with transverse swivel bracket
BL – on a wall or a ceiling with axial swivel bracket
B2 – on a wall or a ceiling with two dismountable brackets

- SC – with a vertical cable wire
- SC1 – with horizontal cable wires
- SC2 – with 2 horizontal cable wires
- 10 – luminous flux control:
N – without control,
ND – with control (driver with dimming)
AS – with integrated ASTRO control module
AP – with integrated ASTRO control module with additional power metering function
NN – with NEMA connector for ASTRO 3N control module
NS – with 7-pin NEMA connector (ANSI C136.41 -2013).

INDUSTRIAL LUMINAIRES

INDUSTRY.3 (with a staple)

Patented luminaire's construction design



Product	Power max, W	CCT, K*	Luminous flux, lm, for CRI 70	Light distribution diagram	Mounting type
INDUSTRY.3-018-112 Dimensions, LxAxB, mm - 243x126x124, net weight, kg - 1.5					
	14	4,000	1,800	120x130° (D)	BR
	14	5,000	1,800	120x130° (D)	BR
	14	4,000	1,800	60° (G)	BR
	14	5,000	1,800	60° (G)	BR
INDUSTRY.3-030-112 Dimensions, LxAxB, mm - 243x126x124, net weight, kg - 1.6					
	27	4,000	3,400	120x130° (D)	BR
	27	5,000	3,400	120x130° (D)	BR
	27	4,000	3,400	60° (G)	BR
	27	5,000	3,400	60° (G)	BR
INDUSTRY.3-045-112 Dimensions, LxAxB, mm - 243x126x124, net weight, kg - 1.6					
	40	4,000	5,000	120x130° (D)	BR
	40	5,000	5,000	120x130° (D)	BR
	40	4,000	5,000	60° (G)	BR
	40	5,000	5,000	60° (G)	BR
INDUSTRY.3-060-124 Dimensions, LxAxB, mm - 328x127x137, net weight, kg - 2.6					
	54	4,000	7,000	120x130° (D)	BR
	54	5,000	7,000	120x130° (D)	BR
	54	4,000	7,000	60° (G)	BR
	54	5,000	7,000	60° (G)	BR

* - 4,000 K – main product, other color temperatures are available by request

INDUSTRIAL LUMINAIRES

INDUSTRY.3 (with a staple)

Patented luminaire's construction design



Product	Power max, W	CCT, K*	Luminous flux, lm, for CRI 70	Light distribution diagram	Mounting type
INDUSTRY.3-085-136		Dimensions, LxAxB, mm - 422x126x137, net weight, kg - 3.7			
	80	4,000	10,400	120x130° (D)	BR
	80	5,000	10,400	120x130° (D)	BR
	80	4,000	10,400	60° (G)	BR
	80	5,000	10,400	60° (G)	BR
INDUSTRY.3-105-148		Dimensions, LxAxB, mm - 518x126x137, net weight, kg - 4.3			
	105	4,000	13,600	120x130° (D)	BR
	105	5,000	13,600	120x130° (D)	BR
	105	4,000	13,600	60° (G)	BR
	105	5,000	13,600	60° (G)	BR
INDUSTRY.3-135-160		Dimensions, LxAxB, mm - 614x126x137, net weight, kg - 4.9			
	130	4,000	17,500	120x130° (D)	BR
	130	5,000	17,500	120x130° (D)	BR
	130	4,000	17,500	60° (G)	BR
	130	5,000	17,500	60° (G)	BR
INDUSTRY.3-160-236		Dimensions, LxAxB, mm - 422x240x138, net weight, kg - 7.6			
	155	4,000	20,700	120x130° (D)	BR
	155	5,000	20,700	120x130° (D)	BR
	155	4,000	20,700	60° (G)	BR
	155	5,000	20,700	60° (G)	BR
INDUSTRY.3-215-248		Dimensions, LxAxB, mm - 518x241x138, net weight, kg - 9.0			
	205	4,000	27,500	120x130° (D)	BR
	205	5,000	27,500	120x130° (D)	BR
	205	4,000	27,500	60° (G)	BR
	205	5,000	27,500	60° (G)	BR

* - 4,000 K – main product, other color temperatures are available by request

INDUSTRIAL LUMINAIRES

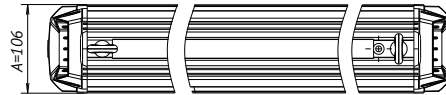
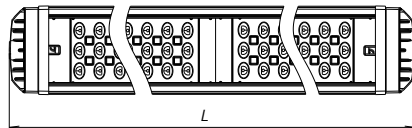
Product	Power max, W	CCT, K*	Luminous flux, lm, for CRI 70	Light distribution diagram	Mounting type
INDUSTRY.3-240-336		Dimensions, LxAxB, mm - 422x347x137, net weight, kg - 11.2			
	240	4,000	32,100	120x130° (D)	BR
	240	5,000	32,100	120x130° (D)	BR
	240	4,000	32,100	60° (G)	BR
	240	5,000	32,100	60° (G)	BR
INDUSTRY.3-430-448		Dimensions, LxAxB, mm - 522x455x138, net weight, kg - 17.5			
	420	4,000	54,400	120x130° (D)	BR
	420	5,000	54,400	120x130° (D)	BR
	420	4,000	54,400	60° (G)	BR
	420	5,000	54,400	60° (G)	BR

* - 4,000 K – main product, other color temperatures are available by request

INDUSTRIAL LUMINAIRES

INDUSTRY.3 (suspended mounting)

Patented luminaire's construction design



Product	Power max, W	CCT, K*	Luminous flux, lm, for CRI 70	Light distribution diagram	Mounting type
INDUSTRY.3-160-136/136		Dimensions, LxAxB, mm - 762x106x128, net weight, kg - 5.3			
	155	4,000	20,700	120x130° (D)	SC
	155	5,000	20,700	120x130° (D)	SC
	155	4,000	20,700	60° (G)	SC
	155	5,000	20,700	60° (G)	SC
INDUSTRY.3-215-148/148		Dimensions, LxAxB, mm - 954x106x128, net weight, kg - 6.2			
	205	4,000	27,500	120x130° (D)	SC
	205	5,000	27,500	120x130° (D)	SC
	205	4,000	27,500	60° (G)	SC
	205	5,000	27,500	60° (G)	SC
INDUSTRY.3-270-160/160		Dimensions, LxAxB, mm - 1,146x106x128, net weight, kg - 7.0			
	255	4,000	34,500	120x130° (D)	SC
	255	5,000	34,500	120x130° (D)	SC
	255	4,000	34,500	60° (G)	SC
	255	5,000	34,500	60° (G)	SC

* - 4,000 K – main product, other color temperatures are available by request

INDUSTRIAL LUMINAIRES

INDUSTRY.3 (suspended mounting)

Patented luminaire's construction design



Product	Power max, W	CCT, K*	Luminous flux, lm, for CRI 70	Light distribution diagram	Mounting type
INDUSTRY.3-430-248/248		Dimensions, LxAxB, mm - 970x265x100, net weight, kg - 12.4			
	420	4,000	54,400	120x130° (D)	SC
	420	5,000	54,400	120x130° (D)	SC
	420	4,000	54,400	60° (G)	SC
	420	5,000	54400	60° (G)	SC
INDUSTRY.3-540-260/260		Dimensions, LxAxB, mm - 1,160x265x100, net weight, kg - 14			
	510	4,000	69,000	120x130° (D)	SC
	510	5,000	69,000	120x130° (D)	SC
	510	4,000	69,000	60° (G)	SC
	510	5,000	69,000	60° (G)	SC

* - 4,000 K – main product, other color temperatures are available by request

INDUSTRY.47



General information:

Suspended LED luminaire with 15-45 degrees adjustable shielding angle to exclude lateral glare.

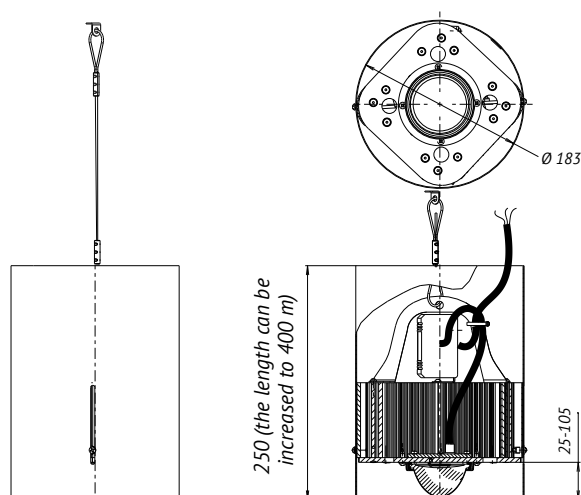
Material of the heat sink is aluminum profile. The reflector's material is powder coated galvanized steel.

Areas of application:

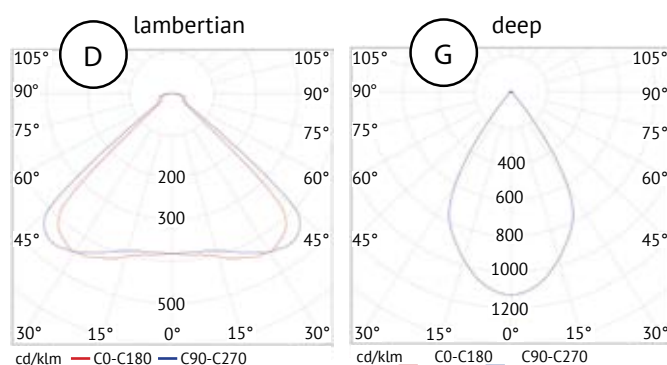
- industrial areas and workshops
- loading and unloading ramps
- warehouses

Product details:

• voltage, V / frequency, Hz	230 / 50
• power factor	> 0.95
• wire section, mm ²	3x0.75
• color rendering index, CRI	70, 80, 90
• ambient temperature, °C	-45 ... +50
• ingress protection	IP 67
• electrical safety class	I
• operational life, hours	> 50,000



Light distribution diagrams 90° "D", 60° "G", cd/ 1,000 lm (normalized diagrams)



Advantages:

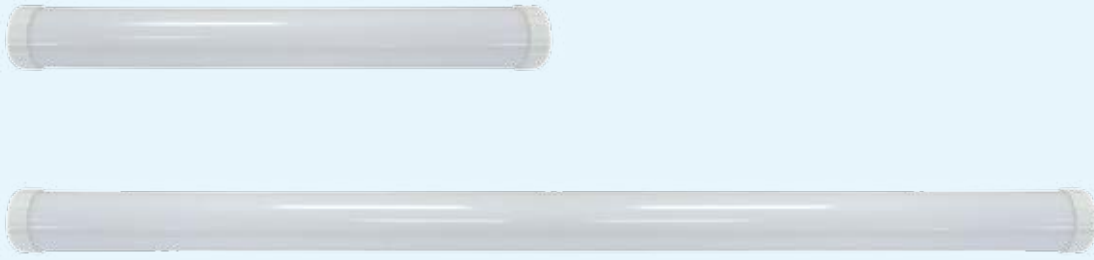
- easy mounting, power adjustability
- fixation with one suspension point
- small weight and dimensions

Optionally:

- color rendering index 3,000 K, 4,000 K, 5,000 K, 5,700 K
- CRI 70, 80, 90
- light distribution diagram "D" (lambertian), "G" (deep)
- any power within the range from 50 to 80 W

Product	Power max, W	CCT, K	Luminous flux, lm, for CRI 70	Light distribution diagram	Mounting type
INDUSTRY.47-1x25			Dimensions, ØxH, mm - 183x220, net weight, kg - 3.3		
	80	4,000	9,000	90° (D)	SC

INDUSTRY.T

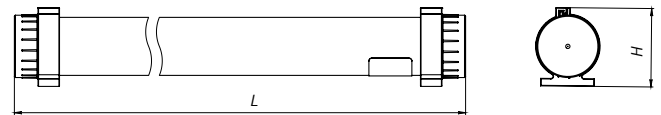


General information:

LED luminaires are designed for indoor and outdoor operation in extreme surrounding with increased levels of dust and humidity.

The luminaires consist of modules where the length of one module is divisible by 0.6 m. With up-to-date high efficacy semiconductor light sources (high power LEDs), the luminaires show significantly lower power consumption in different application areas.

The material of protective light transmitting coating is UV, acid and alkaline fumes resistant polymer. Luminaire's construction design ensures ingress protection level IP66. Low weight of the luminaire provides for easy mounting with cable wire suspension, bracing wire, trays etc. The luminaires can be cleaned with water, inclusive under tension.



Types of diffusers:

- opal

Optionally:

- color temperature 3,000 K, 5,000 K

Areas of application:

- industrial premises
- parking and garages
- warehouses and hangars
- carwashes

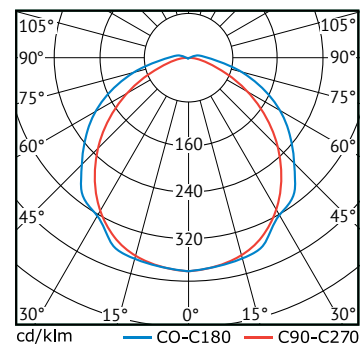
Advantages:

- small weight and diameter
- easy mounting
- indoor and outdoor installation
- cleaning with a jet of pressure water
- perfect price/quality correlation

Product details:

• voltage, V / frequency, Hz	230 / 50
• power factor	> 0.92
• wire section, mm ²	2x0.75
• color rendering index, CRI	70, 80, 90
• ambient temperature, °C	-40 ... +40
• ingress protection	IP 66
• electrical safety class	II
• operational life (L70), hours	> 50,000

Light distribution diagram
90x110° "D" (Lambertian), cd/ 1,000 lm
(normalized diagram)



INDUSTRIAL LUMINAIRES

Product	Power max, W	Dimensions, ØxL, mm	CCT, K	Luminous flux, lm	Net weight, kg
INDUSTRY.T-060-101	15	58x600	4,000	1,600	0.6
INDUSTRY.T-120-101	30	58x1,200	4,000	3,200	1.1

LUMINAIRE PRODUCT NAMING CONVENTION

INDUSTRY.T- 060 – 101

1 2 3

- 1 – product family name (INDUSTRY.T)
- 2 – length, sm
- 3 – modification code

MOUNTING ACCESSORIES

01-ring with zip tie



02-ring with a latch

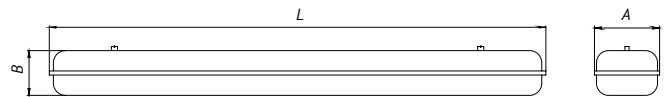


INDUSTRY.P



General information:

The material of the housing is ABS plastic; the material of the diffuser is impact resistant polycarbonate. You may integrate the luminaires into one open transit line. Designed for application in premises with 2.5 – 4 meters ceiling height. For surface mounting.



Areas of application:

- administration premises and office rooms
- shops, trading floors and warehouses
- parking
- catering kitchens

Advantages:

- connection to the 220/230V mains, with no need to open housing (in special purpose compartments)
- easy maintenance
- perfect price/quality correlation

Product details:

• voltage, V / frequency, Hz	230 / 50
• power factor	> 0.92
• wire section, mm ²	2x0.75
• color rendering index, CRI	> 80
• ambient temperature, °C	-30 ... +45
• ingress protection	IP 65
• electrical safety class	II
• operational life (L70), hours	> 50,000

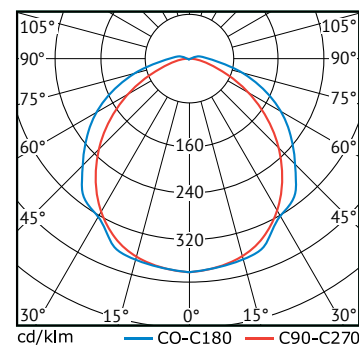
Types of diffusers:

- opal

Optionally:

- version with emergency power unit

Light distribution diagram
95x120° "D" (Lambertian), cd/ 1,000 lm
(normalized diagram)



LUMINAIRE PRODUCT NAMING CONVENTION

INDUSTRY.P 32
1 2

- 1 – product family name (INDUSTRY.P)
2 – power, W

INDUSTRIAL LUMINAIRES

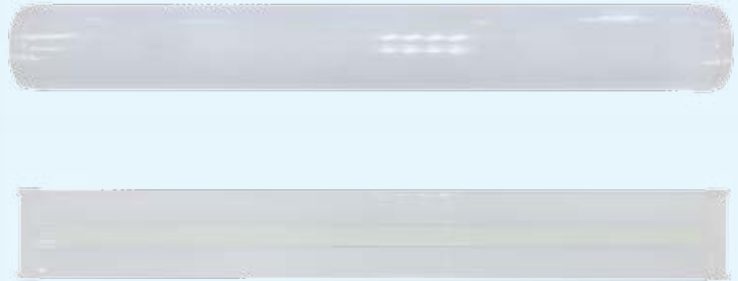
Product	Power max, W	CCT, K*	Luminous flux, lm
INDUSTRY.P32	Dimensions, LxAxB, mm - 1,180x88x68, net weight, kg - 1.7		
	32	4,000	3,000
	32	5,000	3,050
INDUSTRY.P44	Dimensions, LxAxB, mm - 1,180x88x68, net weight, kg - 1.7		
	44	4,000	4,200
	44	5,000	4,250
INDUSTRY.P52	Dimensions, LxAxB, mm - 1,180x88x68, net weight, kg - 1.7		
	52	4,000	4,700
	52	5,000	4,750

* - 4,000 K – main product, other color temperatures are available by request

LINE.PROM (extruded housing)



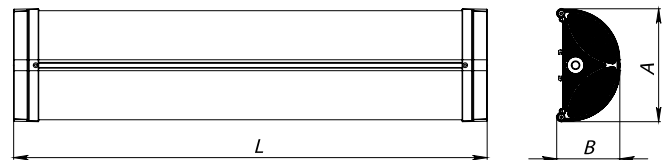
NEW



General information:

Housing based on white extrusive polycarbonate impact proof profile

Two variations of housing protection indexes:
IP65 and IP67



Areas of application:

- manufacturing areas
- warehouses
- utilities premises
- car washes
- entrance halls
- staircase landings
- elevator landings

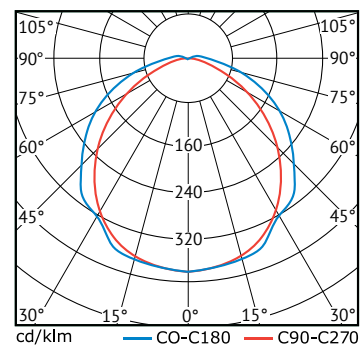
Advantages:

- high efficacy luminaires with uniform light
- vandal-proof
- surface mount with 35 mm DIN-rod
- connectable into a line
- emergency modification with battery

Product details:

• voltage, V / frequency, Hz	230 / 50
• power factor	> 0.92
• wire section, mm ²	0.75
• color rendering index, CRI	> 80
• ambient temperature, °C	-30 ... +45
• ingress protection	IP 65/ IP 67
• electrical safety class	II
• operational life, hours	> 50,000

Light distribution diagram
“D” (Lambertian), cd/ 1,000 lm
(normalized diagram)

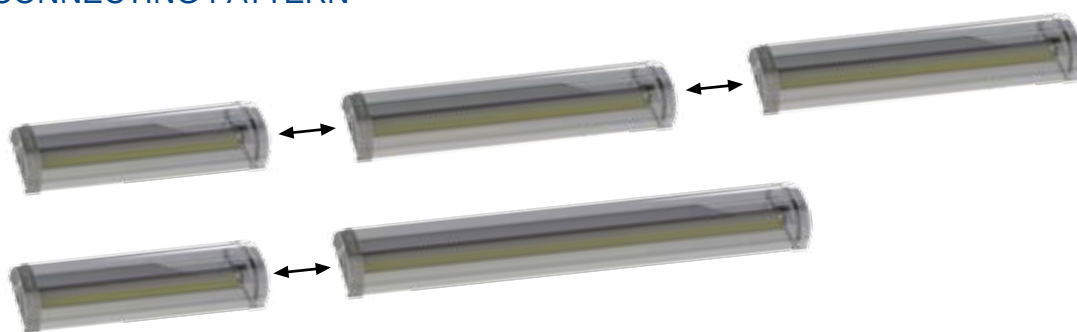


INDUSTRIAL LUMINAIRES

Product	Power, W	Dimensions, mm	CCT, K	Luminous Flux, lm	Weight, kg
Line.Prom30-060-65 B/D					
	30	625x155x90	4,000	3,300	0.8
	30	625x155x90	5,000	3,300	0.8
Line.Prom50-120-65 B/D					
	50	1,190x155x90	4,000	5,500	1.5
	50	1,190x155x90	5,000	5,500	1.5

* - Manufacture of a one-piece 2.5m luminaire without connection node is available by request.

CONNECTING PATTERN



LUMINAIRE PRODUCT NAMING CONVENTION

LINE.PROM 30 - 060 - 65 B

1 2 3 4 5

- 1 – product family name (Line.Prom)
- 2 – power, W
- 3 – length, sm
- 4 – ingress protection IP65, IP67

- 5 – color temperature:
D - daylight, cold 5000 K
B – neutral white 4000 K





EXPLOSION PROOF LED LUMINAIRES

LL-DS



General information:

Explosion proof LED luminaires are designed for operation in potentially explosive gas and dust environment, in accordance with the marking on them.

Explosion protection is ensured with the following protection types:

- “m” for encapsulation according to MEC 60079-18-2012
- “d” for flameproof protection according to IEC 60079-1-2013
- “e” for enhanced protection according to 3161.7 – 2012
- “t” for dust inflammation protection according to MEC 60079.31-2010
- Construction design of the luminaires complies with IEC 60079-0

Moreover the following measures are applied to ensure enhanced luminaire’s construction design security.

- luminaire’s electronic components and LEDs are potted from explosive environment with a compound
- the compound is protected from mechanic impact with metal and non-metal coatings
- the luminaire’s design provides for efficient dissipation of heat generated by electronic components (mainly by LED arrays) when dust is accumulated on the luminaire
- the connection of installation cable to the mains is placed into a “e” or “d” type explosion proof junction box
- limited area of dielectric surfaces surrounded by grounded metal elements

Areas of application:

- petrol, gas, chemical industries
- special purpose machinery and tool engineering
- metallurgy, woodworking and textile industries

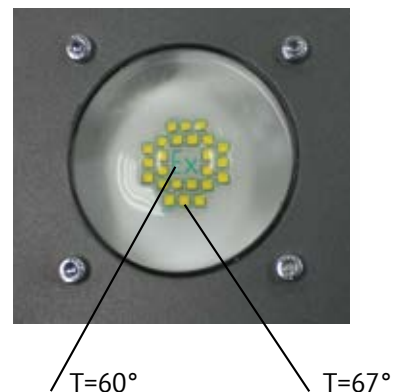
Advantages:

- all metal housing
- antistatic polymer coating
- tempered glass optics
- 7 mm thick clusters board armor
- even distribution of heat in the clusters
- flickering of the luminous flux under 5%

Product details:

- | | |
|-------------------------------------|-------------|
| • voltage, V / frequency, Hz | 230 / 50 |
| • power factor | > 0.92 |
| • color rendering index, CRI | 70, 80 |
| • ambient temperature, °C | -40 ... +45 |
| • ingress protection | IP 66 |
| • electricity safety classification | I |
| • operation life (L90), hours | > 50,000 |

Temperature distribution in a cluster with ambient $T=25^{\circ}\text{C}$



EXPLOSION PROOF LUMINAIRES

Marking in gas environment

1 Ex d mb IIC T4 Gb/ 1 Ex e mb IIC T4 Gb

- 1 – explosive gas
- Ex – indicates that the electric equipment complies with one or several types of explosion protection
- d – “d” type flameproof protection
- e – enhanced “e” type protection
- mb – “m” type encapsulation (explosion protection level – “Db”)
- IIC – electric equipment Group II, subgroup IIC – for hydrogen (also applicable for the areas with requirement for IIA or IIB subgroup equipment)
- T4 – maximum surface temperature for electric equipment Group II (135°C),
- Gb – high explosion protection level

Marking in dust environment

Ex tb IIIC T135°C Db IP66

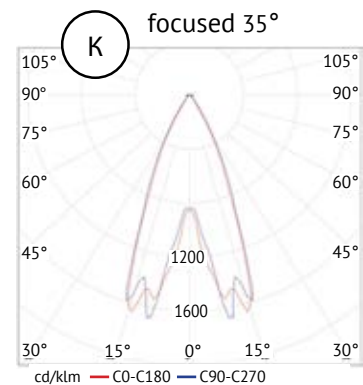
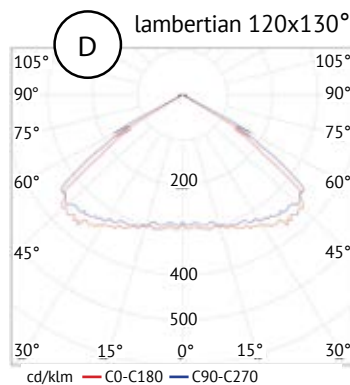
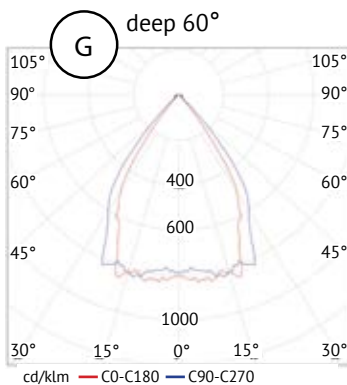
- Ex – indicates that the electric equipment complies with one or several types of explosion protection
- tb – “t” type dust inflammation protection (explosion protection level – “Db”)
- IIIC – for the ambient with conductive dust (also applicable for the areas with requirement for IIIA or IIIB subgroup equipment)
- T135°C – limitation of the maximum surface temperature
- Db – level of explosion protection “high”

LUMINAIRE PRODUCT NAMING CONVENTION

LL - DS - 110 G 40 - 1 2 01 - BR - d - Ex
1 2 3 4 5 6 7 8 9 10 11

- 1 – “LeaderLight” trading mark
- 2 – product family name (LL-DS)
- 3 – power, W
- 4 – type of light distribution diagram:
D - lambertian, G - deep, K - focused
- 5 – color temperature, K. For example: 40 for 4,000 K
- 6 – number of modules (1 or 2)
- 7 – number of LED light sources (arrays) in a module (1 or 2)
- 8 – luminaire’s modification No
- 9 – fixing type:
BR - on a wall or a ceiling with a swivel bracket
SC - with a cable wire
- 10 – junction box: d or e
- 11 – explosion protected

Light distribution diagrams “G”, “D”, “K”, cd/ 1,000 lm (normalized diagrams)

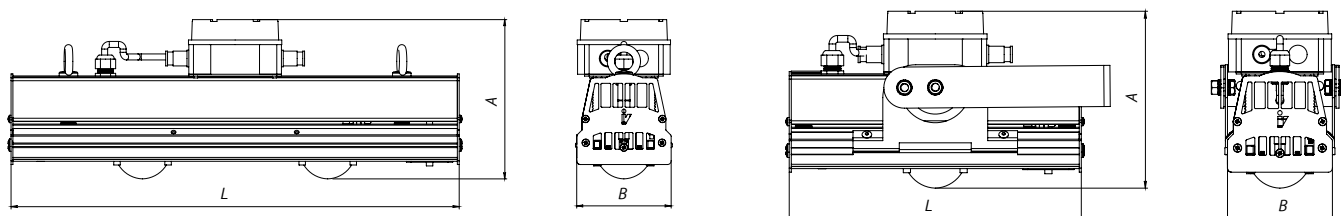


EXPLOSION PROOF LUMINAIRES

LL-DS



Protecting grid (optionally)



Product	Power max, W	CCT, K*	Luminous flux, lm, for CRI 70
LL-DS-040	Dimensions, LxAxB, mm - 285x180x110, net weight, kg - 2.8		
LL-DS-040-D40-1101-BR-d-Ex	40	4,000	5,200
LL-DS-040-D40-1101-BR-e-Ex	40	4,000	5,200
LL-DS-040-D50-1101-BR-d-Ex	40	5,000	5,200
LL-DS-040-D50-1101-BR-e-Ex	40	5,000	5,200
LL-DS-050	Dimensions, LxAxB, mm - 285x180x110, net weight, kg - 2.8		
LL-DS-050-D40-1101-BR-d-Ex	50	4,000	6,000
LL-DS-050-D40-1101-BR-e-Ex	50	4,000	6,000
LL-DS-050-D50-1101-BR-d-Ex	50	5,000	6,000
LL-DS-050-D50-1101-BR-e-Ex	50	5,000	6,000
LL-DS-085	Dimensions, LxAxB, mm - 485x180x110, net weight, kg - 5.3		
LL-DS-085-D40-1201-BR-d-Ex	85	4,000	10,600
LL-DS-085-D40-1201-BR-e-Ex	85	4,000	10,600
LL-DS-085-D50-1201-BR-d-Ex	85	5,000	10,600
LL-DS-085-D50-1201-BR-e-Ex	85	5,000	10,600
LL-DS-085-D40-1201-SC-d-Ex	85	4,000	10,600
LL-DS-085-D40-1201-SC-e-Ex	85	4,000	10,600
LL-DS-085-D50-1201-SC-d-Ex	85	5,000	10,600
LL-DS-085-D50-1201-SC-e-Ex	85	5,000	10,600

* - 4,000 K – main product, other color temperatures are available by request

EXPLOSION PROOF LUMINAIRES

Product	Power max, W	CCT, K*	Luminous flux, lm, for CRI 70
LL-DS-110	Dimensions, LxAxB, mm - 485x180x110, net weight, kg - 5.3		
LL-DS-110-D40-1201-BR-d-Ex	100	4,000	12,000
LL-DS-110-D40-1201-BR-e-Ex	100	4,000	12,000
LL-DS-110-D50-1201-BR-d-Ex	100	5,000	12,000
LL-DS-110-D50-1201-BR-e-Ex	100	5,000	12,000
LL-DS-110-D40-1201-SC-d-Ex	100	4,000	12,000
LL-DS-110-D40-1201-SC-e-Ex	100	4,000	12,000
LL-DS-110-D50-1201-SC-d-Ex	100	5,000	12,000
LL-DS-110-D50-1201-SC-e-Ex	100	5,000	12,000
LL-DS-110-G40-1201-BR-d-Ex	100	4,000	12,000
LL-DS-110-G40-1201-BR-e-Ex	100	4,000	12,000
LL-DS-110-G50-1201-BR-d-Ex	100	5,000	12,000
LL-DS-110-G50-1201-BR-e-Ex	100	5,000	12,000
LL-DS-110-G40-1201-SC-d-Ex	100	4,000	12,000
LL-DS-110-G40-1201-SC-e-Ex	100	4,000	12,000
LL-DS-110-G50-1201-SC-d-Ex	100	5,000	12,000
LL-DS-110-G50-1201-SC-e-Ex	100	5,000	12,000
LL-DS-170	Dimensions, LxAxB, mm - 485x230x180, net weight, kg - 10.1		
LL-DS-170-D40-2201-BR-d-Ex	170	4,000	21,200
LL-DS-170-D40-2201-BR-e-Ex	170	4,000	21,200
LL-DS-170-D50-2201-BR-d-Ex	170	5,000	21,200
LL-DS-170-D50-2201-BR-e-Ex	170	5,000	21,200
LL-DS-170-D40-2201-SC-d-Ex	170	4,000	21,200
LL-DS-170-D40-2201-SC-e-Ex	170	4,000	21,200
LL-DS-170-D50-2201-SC-d-Ex	170	5,000	21,200
LL-DS-170-D50-2201-SC-e-Ex	170	5,000	21,200
LL-DS-170-G40-2201-BR-d-Ex	170	4,000	21,200
LL-DS-170-G40-2201-BR-e-Ex	170	4,000	21,200
LL-DS-170-G50-2201-BR-d-Ex	170	5,000	21,200
LL-DS-170-G50-2201-BR-e-Ex	170	5,000	21,200
LL-DS-170-G40-2201-SC-d-Ex	170	4,000	21,200
LL-DS-170-G40-2201-SC-e-Ex	170	4,000	21,200
LL-DS-170-G50-2201-SC-d-Ex	170	5,000	21,200
LL-DS-170-G50-2201-SC-e-Ex	170	5,000	21,200
LL-DS-170-K40-2201-BR-d-Ex	170	4,000	21,200
LL-DS-170-K40-2201-BR-e-Ex	170	4,000	21,200
LL-DS-170-K50-2201-BR-d-Ex	170	5,000	21,200
LL-DS-170-K50-2201-BR-e-Ex	170	5,000	21,200
LL-DS-170-K40-2201-SC-d-Ex	170	4,000	21,200
LL-DS-170-K40-2201-SC-e-Ex	170	4,000	21,200
LL-DS-170-K50-2201-SC-d-Ex	170	5,000	21,200
LL-DS-170-K50-2201-SC-e-Ex	170	5,000	21,200

* - 4,000 K – main product, other color temperatures are available by request

EXPLOSION PROOF LUMINAIRES

Product	Power max, W	CCT, K*	Luminous flux, lm, for CRI 70
LL-DS-220	Dimensions, LxAxB, mm - 485x230x180, net weight, kg - 10.1		
LL-DS-220-D40-2201-BR-d-Ex	200	4,000	24,000
LL-DS-220-D40-2201-BR-e-Ex	200	4,000	24,000
LL-DS-220-D50-2201-BR-d-Ex	200	5,000	24,000
LL-DS-220-D50-2201-BR-e-Ex	200	5,000	24,000
LL-DS-220-D40-2201-SC-d-Ex	200	4,000	24,000
LL-DS-220-D40-2201-SC-e-Ex	200	4,000	24,000
LL-DS-220-D50-2201-SC-d-Ex	200	5,000	24,000
LL-DS-220-D50-2201-SC-e-Ex	200	5,000	24,000
LL-DS-220-G40-2201-BR-d-Ex	200	4,000	24,000
LL-DS-220-G40-2201-BR-e-Ex	200	4,000	24,000
LL-DS-220-G50-2201-BR-d-Ex	200	5,000	24,000
LL-DS-220-G50-2201-BR-e-Ex	200	5,000	24,000
LL-DS-220-G40-2201-SC-d-Ex	200	4,000	24,000
LL-DS-220-G40-2201-SC-e-Ex	200	4,000	24,000
LL-DS-220-G50-2201-SC-d-Ex	200	5,000	24,000
LL-DS-220-G50-2201-SC-e-Ex	200	5,000	24,000
LL-DS-220-K40-2201-BR-d-Ex	200	4,000	24,000
LL-DS-220-K40-2201-BR-e-Ex	200	4,000	24,000
LL-DS-220-K50-2201-BR-d-Ex	200	5,000	24,000
LL-DS-220-K50-2201-BR-e-Ex	200	5,000	24,000
LL-DS-220-K40-2201-SC-d-Ex	200	4,000	24,000
LL-DS-220-K40-2201-SC-e-Ex	200	4,000	24,000
LL-DS-220-K50-2201-SC-d-Ex	200	5,000	24,000
LL-DS-220-K50-2201-SC-e-Ex	200	5,000	24,000

* - 4,000 K – main product, other color temperatures are available by request

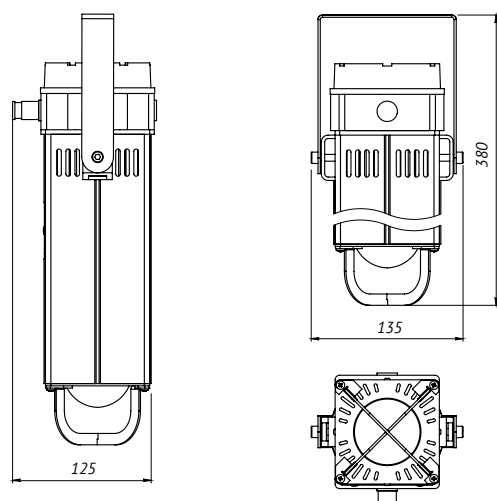
EXPLOSION PROOF LUMINAIRES

LL-DS



General information:

The modification "1104" is an efficient alternative to the predecessor incandescent/ mercury/ sodium suspended types of luminaires. Equipped with a protective grid, securing the lens from damage from fall or impact.



Product	Power max, W	CCT, K*	Luminous flux, lm, for CRI 70
LL-DS-040	Dimensions, mm - 380x135x125, net weight, kg - 3.3		
LL-DS-040-D40-1104-BR-e-Ex	40	4,000	5,000
LL-DS-040-D50-1104-BR-e-Ex	40	5,000	5,000
LL-DS-050-D40-1104-BR-e-Ex	50	4,000	5,800
LL-DS-050-D50-1104-BR-e-Ex	50	5,000	5,800

* - 4,000 K – main product, other color temperatures are available by request

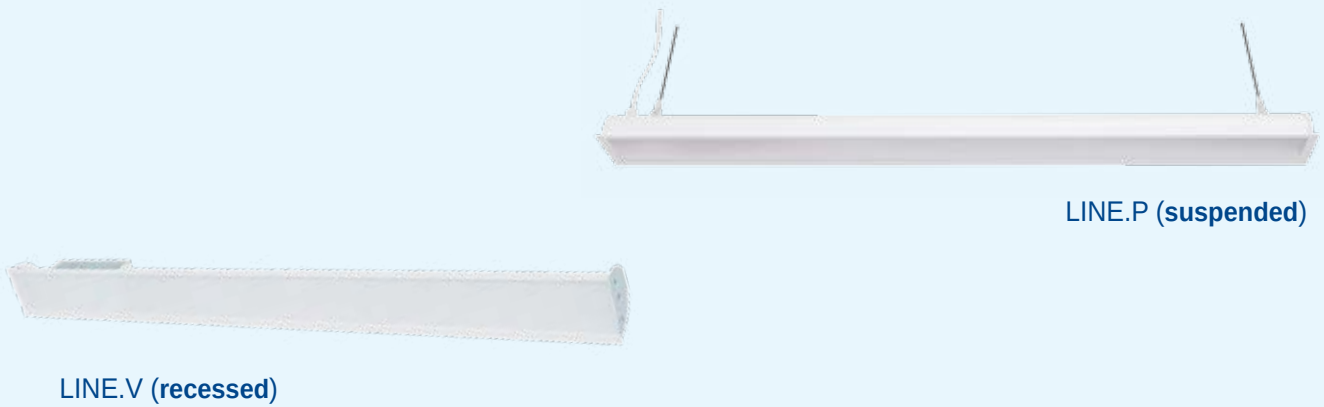




LINEAR
LED LUMINAIRES

LINEAR LUMINAIRES

LINE.P and LINE.V



General information:

Linear recessed luminaires are applied for recessing into drywall and Armstrong type ceilings. The suspended linear luminaires are applied for cable wires mounting. The housing of the luminaires is made of powder coated aluminum profile. White high efficacy LEDs are applied as a power source.

Areas of application:

- administration premises and office rooms
- shops and trading floors
- schools and hospitals
- public institutions and other

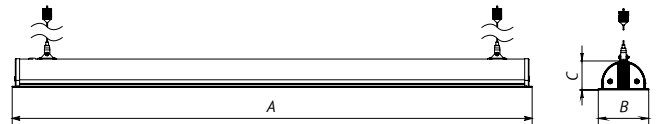
Advantages:

- 2 – 2.5 times more energy efficient as compared to fluorescent lamps
- < 5% flicker
- no specific recommendations for disposal
- safe when damaged, unlike energy-efficient mercury lamps
- infinite length and various configurations of the recessed and suspended luminaires due to innovative modular design
- perfect price/quality correlation

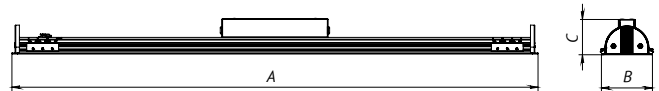
Types of diffusers:

- opal (mat)
- microprismatic

Suspended



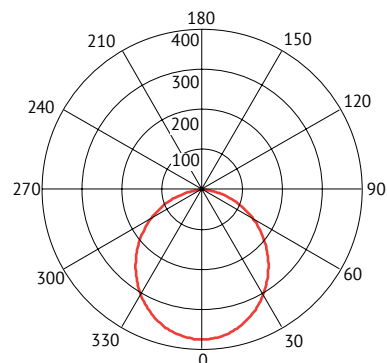
Recessed



Product details:

• voltage, V / frequency, Hz	230 / 50
• power factor	> 0.92
• wire section, mm ²	3x0.75
• color rendering index, CRI	80
• ambient temperature, °C	+1 ... +45
• ingress protection	IP 30
• electricity safety classification	I
• operation life (L90), hours	> 50,000

Light distribution diagram
100° "D" (Lambertian), cd/ 1,000 lm (normalized diagram)



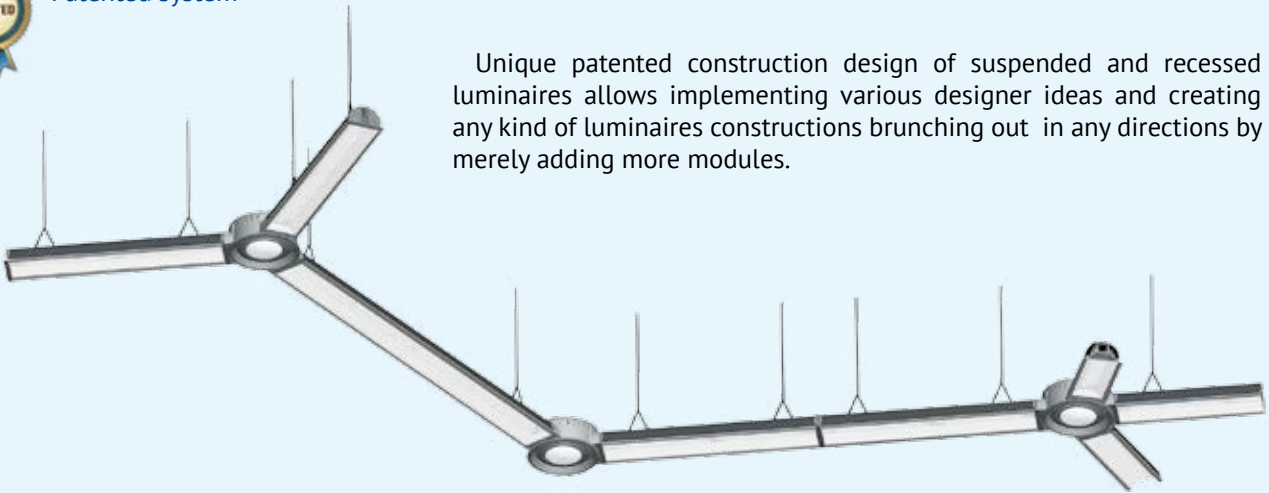
LINEAR LUMINAIRES

DESIGNER SOLUTIONS FOR HALLS, CAFES AND RESTAURANTS



Patented system

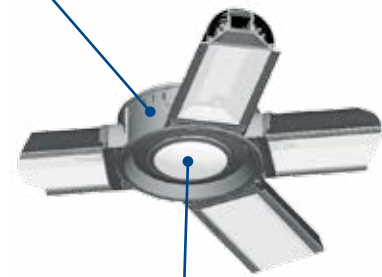
Unique patented construction design of suspended and recessed luminaires allows implementing various designer ideas and creating any kind of luminaires constructions branching out in any directions by merely adding more modules.



Connection unit for linear luminaires:

- allows connecting two to five luminaires
- 70° to 180° angle between two luminaires
- step of the angle variation – 10°
- making all electric connections inside it with only one mains cable going out
- connection of both suspended and recessed luminaires

Connection unit



Plug 0/154

Modification with side cap allows connecting the luminaires into long lines.



Name	UNIVERSAL CONNECTION UNIT FOR DSO	PLUG 0/154 FOR CONNECTION UNIT DSO
Dimensions, ØxH, mm	195x100	154x44
Weight net / gross, kg	0.7 / 0.8	0.18 / 0.22

LINEAR LUMINAIRES

Product	Power max, W	CCT, K*	Luminous flux, lm	Diffuser
Integrated				
LINE.V 33	Dimensions AxBxC, mm - 1,155x112x63, net weight, kg - 3.0			
	33	4,000	3,450	Opal
	33	4,000	3,500	Microprismatic
	33	5,000	3,500	Opal
	33	5,000	3,550	Microprismatic
Suspended				
LINE.P 33	Dimensions AxBxC, mm - 1,155x112x63, net weight, kg - 3.0			
	33	4,000	3,450	Opal
	33	4,000	3,500	Microprismatic
	33	5,000	3,500	Opal
	33	5,000	3,550	Microprismatic

* - 4,000 K – main product, other color temperatures are available by request

LUMINAIRE PRODUCT NAMING CONVENTION

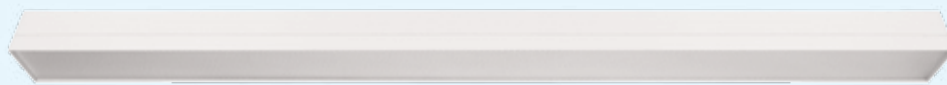
LINE. V 33
1 2 3

- 1 – product family name (LINE)
- 2 – type of mounting:
 V – recessed,
 P – suspended,
 N – surface mounted
- 3 – power, W

LINEAR LUMINAIRES

LineLux

Surface mounted



Suspended



General information:

The LineLux luminaires are designed for indoor operation. The luminaires may operate as separate modules or may be built into light lines of any length.

Due to their unique design the luminaire modules can be joined together into a line with their top profile section which also functions as a duct.

The luminaires design allows for the simplest possible assembly and almost invisible mating area.

The luminaires are available both in suspended (LineLux.P) and surface mounted (LineLux.N) modifications.

Areas of application:

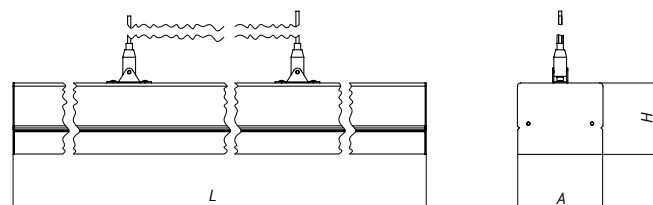
- administration premises and office rooms
- shops and trading floors
- schools and hospitals
- public institutions and other

Advantages:

- infinite length of the light lines
- simple assembly and mounting
- the top profile section can also function as a duct
- small weight
- high efficacy and quality of light

Types of diffusers:

- opal



Product details:

• voltage, V / frequency, Hz	230 / 50
• power factor	> 0.92
• wire section, mm ²	3x0.75
• color rendering index, CRI	80
• ambient temperature, °C	+1 ... +45
• ingress protection	IP 30
• electricity safety classification	I
• operation life (L70), hours	> 50,000

Optionally:

- luminaire's length can be up to 3,000 mm (divisible by 600 mm)
- CCT 3,000 K, 5,000 K
- microprismatic diffuser
- luminaires can be supplied with 5-wire line with connectors



LINEAR LUMINAIRES

Product	Power max, W	Dimensions, LxAxH, mm	CCT, K	Luminous flux, lm	Net weight, kg
Surface mounted					
LineLux.N-030	30	600x80x70	4,000	3,300	1.2
LineLux.N-040	40	1,200x80x70	4,000	4,400	2.4
LineLux.N-050	50	1,200x80x70	4,000	5,500	2.4
LineLux.N-060	60	1,800x80x70	4,000	6,400	3.6
LineLux.N-080	80	2,400x80x70	4,000	8,400	4.8
Suspended					
LineLux.P-030	30	600x80x70	4,000	3,300	1.2
LineLux.P-040	40	1,200x80x70	4,000	4,400	2.4
LineLux.P-050	50	1,200x80x70	4,000	5,500	2.4
LineLux.P-060	60	1,800x80x70	4,000	6,400	3.6
LineLux.P-080	80	2,400x80x70	4,000	8,400	4.8

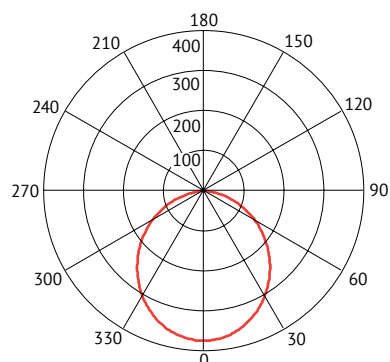
LUMINAIRE PRODUCT NAMING CONVENTION

LINELUX. P 40

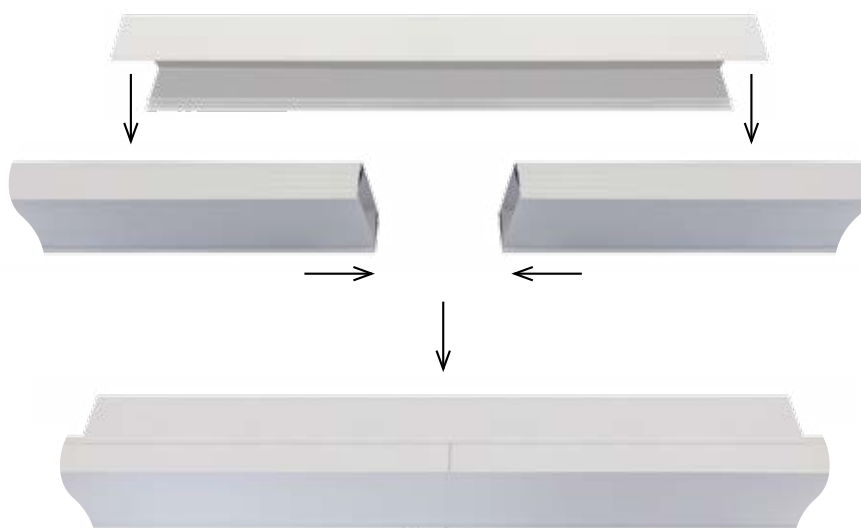
1 2 3

- 1 – product family name (LINENUX)
- 2 – mounting type:
P – suspended
N – surface mounted
- 3 – nominal power, W

Light distribution diagram
100° “D” (Lambertian), cd/ 1,000 lm (normalized diagram)



LUMINAIRE ASSEMBLY DIAGRAM



LINEAR LUMINAIRES

LINE.N



General information:

Surface mounted linear luminaires are designed for operation inside premises. Housing of this luminaire is made of powder coated aluminum alloy, while the diffuser is made of polycarbonate. The luminaires can be easily mounted with any convenient mount system.

Areas of application:

- administration premises and office rooms
- fitting rooms
- staircases

Product details:

- | | |
|-------------------------------------|------------|
| • voltage, V / frequency, Hz | 230 / 50 |
| • power factor | > 0.92 |
| • wire section, mm ² | 3x0.75 |
| • color rendering index, CRI | 80 |
| • ambient temperature, °C | -1 ... +45 |
| • ingress protection | IP 67 |
| • electricity safety classification | I |
| • operation life (L70), hours | > 50,000 |



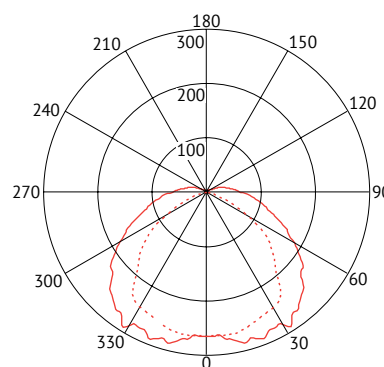
Types of diffusers:

- opal

Optionally:

- CCT 3,000 K

Light distribution diagram
100x125° "D" (Lambertian), cd/ 1,000 lm (normalized diagram)



Please refer to page 67 for luminaire product code explanation.

Product	Power max, W	CCT, K*	Luminous flux, lm
LINE.N16	Dimensions AxBxC, mm - 647x90x73, net weight, kg - 1.0		
	16	4,000	1,230
	16	5,000	1,300
LINE.N20	Dimensions AxBxC, mm - 960x90x73, net weight, kg - 1.6		
	20	4,000	1,750
	20	5,000	1,890
LINE.N32	Dimensions AxBxC, mm - 1,221x90x73, net weight, kg - 1.8		
	32	4,000	2,450
	32	5,000	2,600

* - 4,000 K – main product, other color temperatures are available by request





UTILITIES
LED LUMINAIRES

UTILITY LUMINAIRES

DELTA (with SHF motion sensor)



DELTA 2



DELTA 3



DELTA 4



Description:

Highly reliable and efficient DELTA MD luminaires are equipped with Doppler effect -based SHF motion sensors.

Material of the housing is white impact resistant polycarbonate. The central element may be white, or of any other color, may also contain a logo (by request).

Areas of application:

- hotels, offices, cinemas, restaurants
- residential and utilities areas
- entranceways and landings
- corridors, halls and lavatories

Advantages:

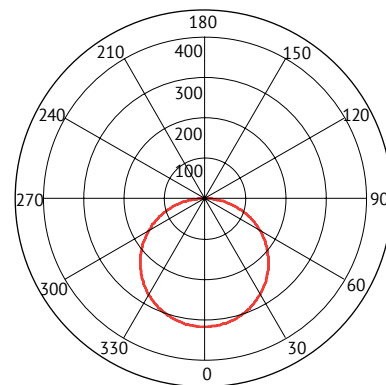
- simple maintenance and no specific recommendations for disposal
- mechanic impact resistant
- unlike luminaires with pyrosensors (PIR) and optoacoustic sensors, DELTA MD luminaires switch on not only if someone is present within detection range, but also if the entry door or elevator doors open. You can always be sure that you will enter an illuminated room and will not need to clap, cough or move in the dark to be detected
- unlike PIR sensors, DELTA MD will switch on irrespective of the ambient temperature or how many layers of clothes one is wearing, and will keep on operating at -40°C. The luminaire will not activate with the sun light
- the luminaires are equipped with anti-tempering fixation so the delivery includes a tool for demounting
- perfect price/quality correlation

Product details:

- voltage, V / frequency, Hz 230 / 50
- power factor > 0.93
- wire section, mm² 2x0.75
- color rendering index, CRI > 80
- ambient temperature, °C -40 ... +50
- ingress protection IP 40
- electricity safety classification II
- sensor operation frequency, GHz 3.5
- operational life (L70), hours > 50,000

Light distribution diagram

105° "D" (Lambertian), cd/ 1,000 lm (normalized diagram)



LUMINAIRE PRODUCT NAMING CONVENTION

DELTA 3 MD
1 2 3

- 1 – product family name (DELTA)
- 2 – number of the line
- 3 – motion sensor: MD

Product	Power max, W	CCT, K	Luminous flux, lm,	Dimensions, mm	Net weight, kg
DELTA 2 MD	13	4,000	1,500	181x181x38	0.25
DELTA 3 MD	23	4,000	2,500	236x250x42	0.45
DELTA 4 MD	30	4,000	3,500	265x265x37	0.50



LED TRACK
FLOODLIGHTS

RETAIL and HOME

NEW



Description:

The housing of the LED track floodlights DS-LFL is made of black or white aluminum profile. The floodlights are applied in the track lighting systems, which unite several fixtures of the same type on a bus wire or otherwise a track. Due to high CRI and minor flickering the floodlights are efficiently applied to comfortably place accents in various types of premises.

Product details:

• voltage, V / frequency, Hz	AC 230 / 50-60
• power factor	$\cos \varphi > 0.93$
• flickering	< 5%
• color rendering index, CRI	80-95
for RETAIL	75-80
for HOME	0 ... +45 °C
• ambient temperature	optic PMMA
• lens material	> 50,000
• operation life, hours	3 years
• warranty period	CREE, OSRAM
• LEDs	

Mounting:

The floodlights are mounted with track adapters, which form a part of floodlight's design.

Construction design of the system ensures easy positioning of the fixture along the wire providing for adjustment of the light spot and angle, as well as the light intensity at particular areas and objects.

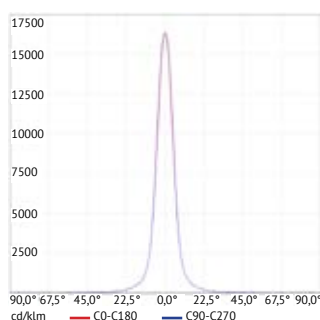
The track floodlights are installed with a bus wire and installation components which can be purchased at our company.

Switching between the phases can be done by turning a special handwheel on the track adapter (for the 3-phase bus wire).

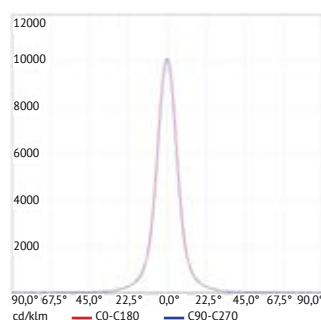
The housing of the floodlight can be positioned in vertical (by 360°) and horizontal (by 90°) axis against the adapter.

Light distribution diagrams, cd/ 1,000 lm
(normalized diagrams)

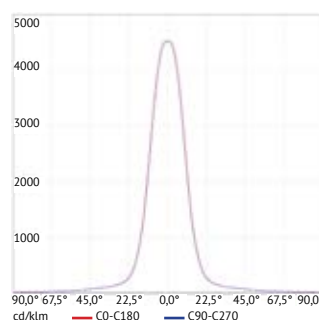
For diffusion angle 9°



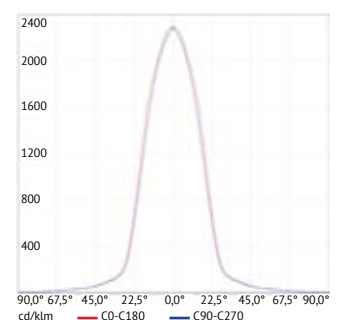
For diffusion angle 12°



For diffusion angle 25°



For diffusion angle 40°



TRACK FLOODLIGHTS

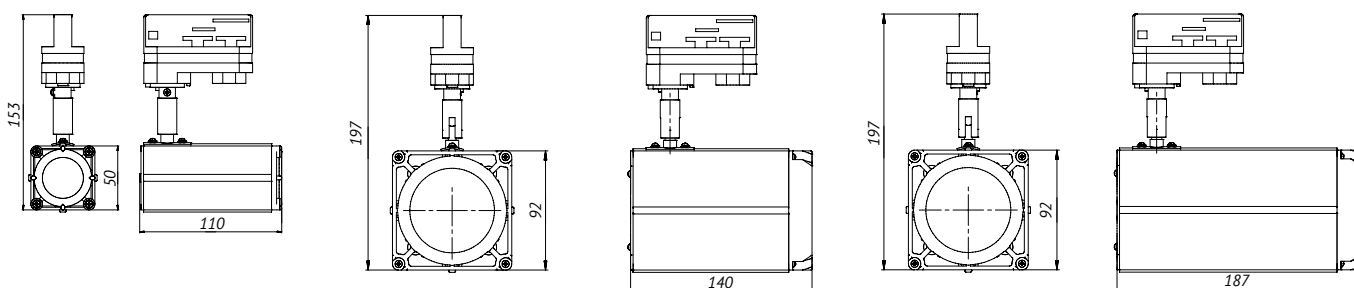
RETAIL

(for the 3-phase bus wire)



Areas of application:

- grocery stores
- trading and exhibition halls, car showrooms
- homes, hotels etc.



Product	Dimensions, mm	Weight, kg	IP	Track adapter (L-N-E)
DS-LFL-8	110x153x50	0.4	40	3-phase 3x230 V
DS-LFL-15	130x153x50	0.6	40	3-phase 3x230 V
DS-LFL-24	140x197x92	1.3	40	3-phase 3x230 V
DS-LFL-45	187x197x92	1.5	40	3-phase 3x230 V

«GENERAL PURPOSE»

General purpose illumination at trading halls, exhibitions or apartments. CRI 80-85.

Product	Power, W	CCT	Diffusion angle	Luminous flux, lm
DS-LFL-8-3	10	4,000	25, 40	1,000 - 1,100
DS-LFL-15-1	15	4,000	25, 40	1,600 - 1,700
DS-LFL-24-12	24	4,000	25, 40	2,300 - 2,400
DS-LFL-45-6	40	4,000	25, 40	3,700 - 3,900

«BOUTIQUE»

Illumination of shops, boutiques, industrial items, clothes and footwear showrooms. CRI 80-85.

Product	Power, W	CCT*	Diffusion angle	Luminous flux, lm
DS-LFL-8-1	10	2,700	9, 12	900 - 1,000
DS-LFL-8-1	10	3,000	9, 12	900 - 1,000
DS-LFL-8-1	10	4,000	9, 12	1,000 - 1,100
DS-LFL-8-1	10	5,000	9, 12	1,000 - 1,100

* - 4,000 K – main product, other color temperatures are available by request

TRACK FLOODLIGHTS

«JEWELRY»

Illumination of bijouterie and jewelry. CRI 90-95.

Product	Power, W	CCT*	Diffusion angle	Luminous flux, lm
DS-LFL-15-1	15	2,700	25, 40	1,100 - 1,200
DS-LFL-15-1	15	3,100	25, 40	1,100 - 1,200
DS-LFL-15-1	15	3,500	25, 40	1,100 - 1,200
DS-LFL-15-1	15	4,000	25, 40	1,200 - 1,300

* - 4,000 K – main product, other color temperatures are available by request

«FOOD»

Illumination of food lay-outs and shelves in groceries.

MEAT

«Meat» – the luminaires with record-low CRI (<2200K) and more intense red (R9>50) will attractively emphasize freshness of the livestock farming and poultry products. CRI 85-90, R9>50.

Product	Power, W	CCT	Diffusion angle	Luminous flux, lm
DS-LFL-24-12	24	2,100	25, 40	1,800 - 1,900

FISH

«Fish» - with higher CRI (>90) and neutral white the “Fish” series will evoke at the buyers a desire to buy high quality fish products. CRI 90-95.

Product	Power, W	CCT	Diffusion angle	Luminous flux, lm
DS-LFL-24-12	24	4,000	25, 40	2,200 - 2,300
DS-LFL-45-6	40	4,000	25, 40	3,500 - 3,700

BAKERY

«Bakery» - the luminaires with very warm white color and high CRI (>90) will make your bakery even more attractive. CRI 90-95.

Product	Power, W	CCT*	Diffusion angle	Luminous flux, lm
DS-LFL-24-12	24	2,700	25, 40	2,000 - 2,200
DS-LFL-45-6	40	2,700	25, 40	3,400 - 3,600

FRUIT AND VEGETABLES

«Fruit and vegetables» - the luminaires with warm white color, high CRI (>90) and increased red (R9>50), will highlight freshness and bright colors of fruit and vegetables within the whole color spectrum: from blue to bright red. CRI 90-95, R9>50.

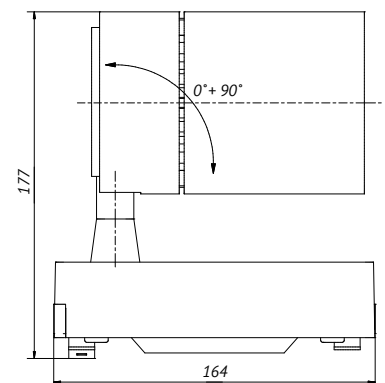
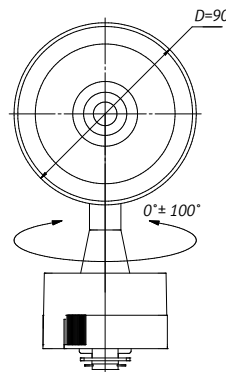
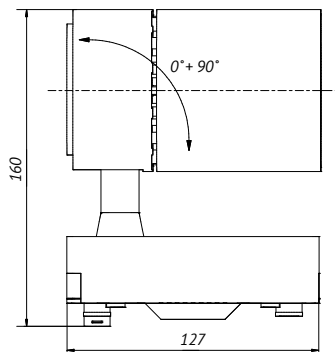
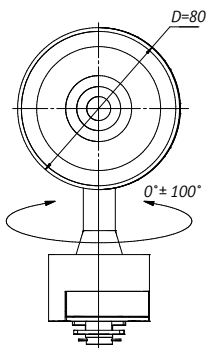
Product	Power, W	CCT*	Diffusion angle	Luminous flux, lm
DS-LFL-24-12	24	3,000	25, 40	2,000 - 2,200
DS-LFL-45-6	40	3,000	25, 40	3,400 - 3,600

* - 4,000 K – main product, other color temperatures are available by request

TRACK FLOODLIGHTS

HOME

(for 1-phase bus wire)



Applied to illuminate:

- furniture and objects of interior
- working surfaces and designer objects in the kitchen
- living and hotel areas, etc.

Product	Dimensions, mm	Weight, kg	IP	Track adapter (L-N)
DS-LFL-24	127x160x80	0.7	20	1 phase 230 V
DS-LFL-45	164x177x90	1.0	20	1 phase 230 V

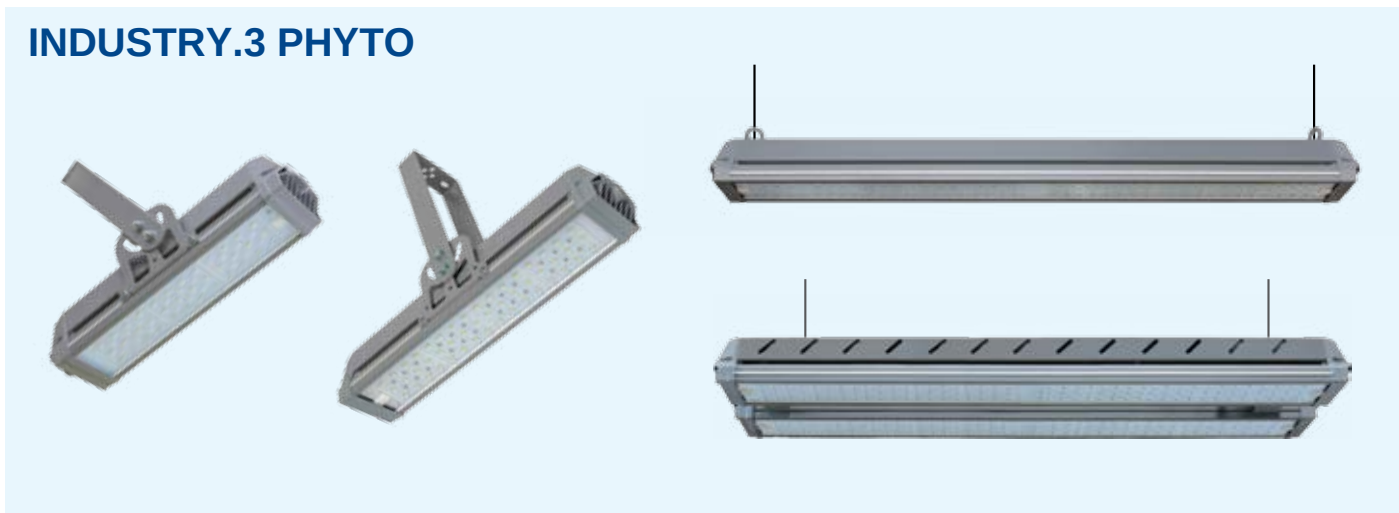
Product	Power, W	CCT	Diffusion angle	Luminous flux, lm
DS-LFL-24-1	16	4,000	25	2,000
DS-LFL-45-1	35	4,000	25	4,700





HORTICULTURAL LED LUMINAIRES

INDUSTRY.3 PHYTO



General information:

PHYTO luminaires are efficient substitutes of high pressure sodium lamps (tube/reflector) that are traditionally used in horticulture.

Material of the housing is aluminum profile. Innovative heat-sink design for efficient heat dissipation. Light source: high-efficacy red, white and blue LEDs from Osram.

Areas of application:

- greenhouses for vegetable and flower crops under lack of natural light
- additional light for house plants and seedlings

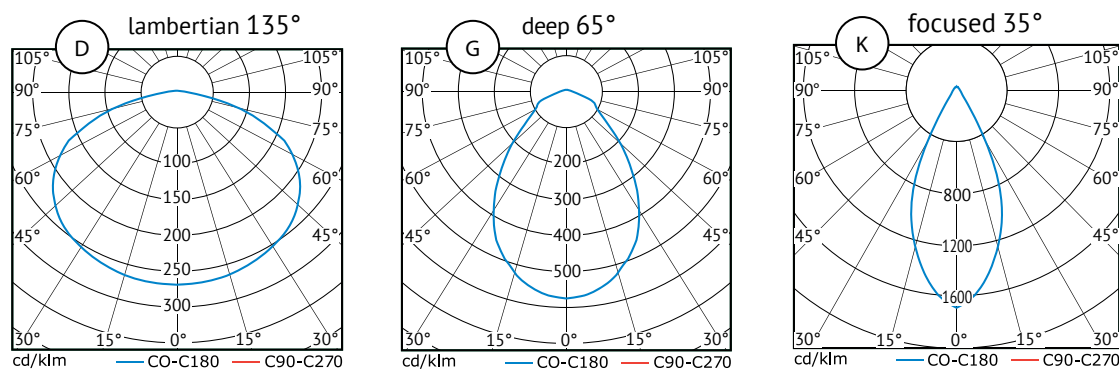
Product details:

• voltage, V / frequency, Hz	230 / 50
• power factor	> 0.95
• wire section, mm ²	3x0.75
• ambient temperature, °C	-45 ... +50
• ingress protection	IP 65
• electricity safety classification	I
• operation life, hours	> 50,000

Advantages:

- energy consumption is 2–2.5 times lower compared to HPS lamps, with similar vegetation effect
- relative radiation spectrum is tuned to the PPF curve. Two wavelength peaks in the blue (445 nm) and red (660 nm) spectra show maximum absorption of light energy by chlorophyll
- blue and red radiation components provide for operation of the luminaire at all vegetation stages. The emission spectrum of HPS lamps is mainly concentrated in the yellow-green range but is fairly low in the blue range. With such light, plants stretch up high and become more brittle lacking green mass
- no special requirements for disposal
- no powerful thermal emission
- no light degradation characteristic compared to HPS lamps; no need to replace them every 1–1.5 years

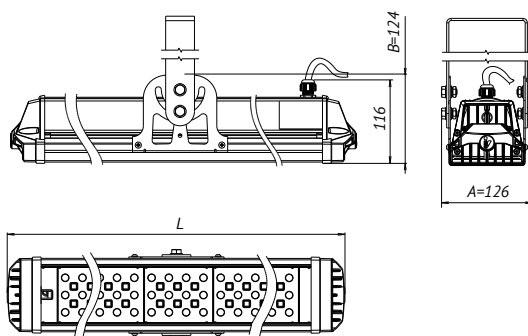
Light distribution diagrams "D", "G", "K", cd / 1,000 lm (normalized diagrams)



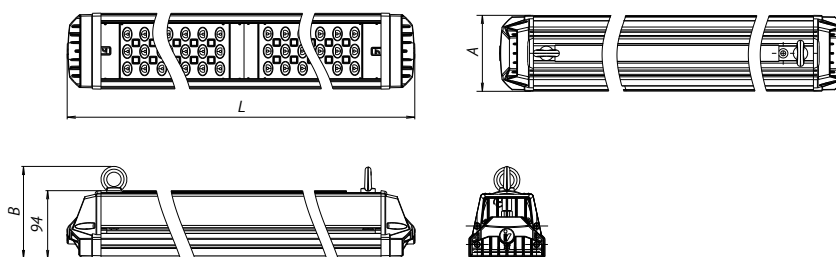
HORTICULTURAL LUMINAIRES

Product	Power max, W	Dimensions, LxAxB, mm	PPF, $\mu\text{mol/s}$	Spectrum definition	Net weight, kg																	
With a bracket																						
INDUSTRY.3-085-136 (Phyto)	70	422x126x124	130	11,12,13,14,15	3.7																	
INDUSTRY.3-105-148 (Phyto)	93	518x126x124	170	11,12,13,14,15	4.3																	
INDUSTRY.3-135-160 (Phyto)	118	614x126x124	215	11,12,13,14,15	4.9																	
Suspended																						
INDUSTRY.3-160-136/136 (Phyto)	140	762x106x128	260	11,12,13,14,15	5.5																	
INDUSTRY.3-215-148/148 (Phyto)	186	954x106x128	340	11,12,13,14,15	6.2																	
INDUSTRY.3-270-160/160 (Phyto)	235	1,146x106x128	430	7.0	INDUSTRY.3-320-236/236 (Phyto)	280	780x265x100	520	11,12,13,14,15	12.0	INDUSTRY.3-430-248/248 (Phyto)	370	970x265x100	680	11,12,13,14,15	14.0	INDUSTRY.3-540-260/260 (Phyto)	470	1,160x265x100	860	11,12,13,14,15	16.0
INDUSTRY.3-320-236/236 (Phyto)	280	780x265x100	520	11,12,13,14,15	12.0																	
INDUSTRY.3-430-248/248 (Phyto)	370	970x265x100	680	11,12,13,14,15	14.0																	
INDUSTRY.3-540-260/260 (Phyto)	470	1,160x265x100	860	11,12,13,14,15	16.0																	

With a bracket



Suspended



LUMINAIRE PRODUCT NAMING CONVENTION

INDUSTRY. 3 - 135 - 1 60 (PHYTO)

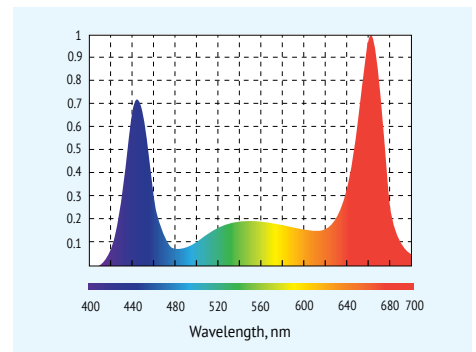
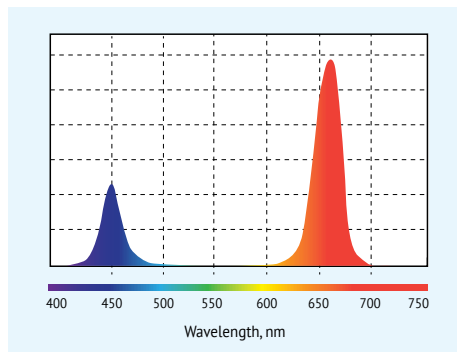
1 2 3 4 5 6

- 1 – product family name (INDUSTRY)
- 2 – number of series
- 3 – nominal power, W

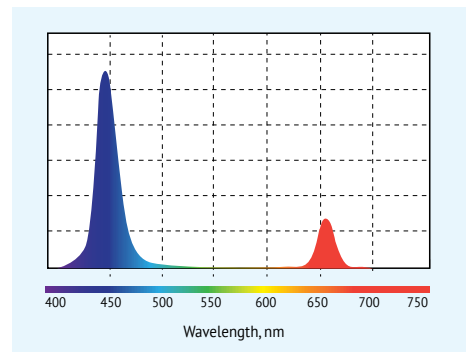
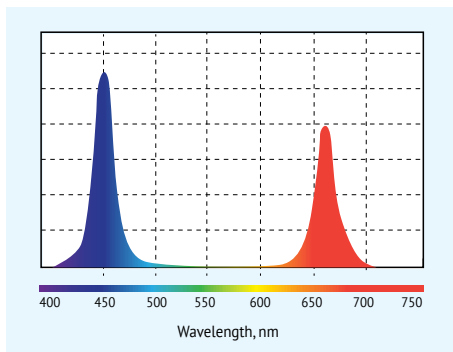
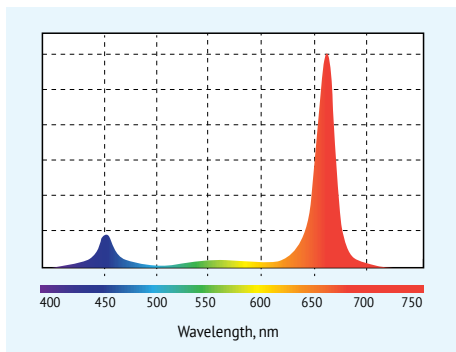
- 4 – number of LED clusters
- 5 – number of LEDs in a cluster
- 6 – application type: horticultural

HORTICULTURAL LUMINAIRES

SPECTRA

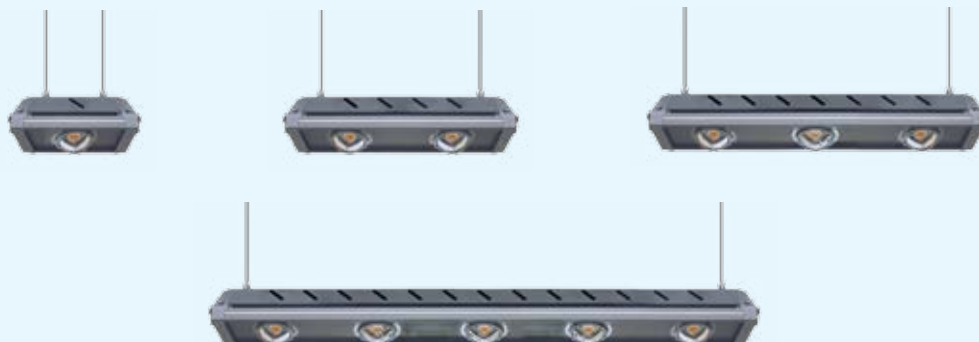


Type of spectrum	General purpose	For cropping under no sunlight
PPF distribution in spectra areas	440-460 nm – 30% 650-670 nm – 70%	440-500 nm – 24% 500-600 nm – 20% 600-670 nm – 56%
Spectrum definition	11	12



Germination and flowering	Enhanced vegetative growth	Planting stock
440-460 nm – 20% 650-670 nm – 80%	440-460 nm – 57% 650-670 nm – 43%	440-460 nm – 80% 650-670 nm – 20%
13	14	15

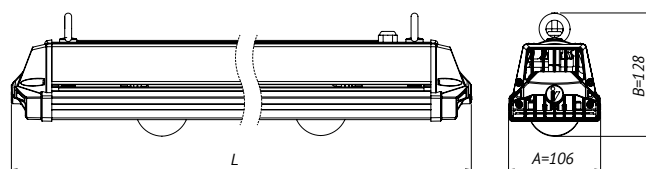
PLANTALUX-HP FULL SPECTRUM



General information:

The line of PLANTALUX-HP high power LED luminaires is an efficient multi-purpose solution for wide range of photoculture. Unlike monospectral luminaires this solution covers majority of vegetative needs for any spectral preferences, and allows adjusting luminaires' spectrum for particular application thus resolving several tasks: reduction of energy consumption, improvement of product quality, increase of crop yield, or acceleration of ripening cycle.

5 years warranty on stability of spectral characteristics.



Areas of application:

- horticultural wide spectrum upper supplementary lighting

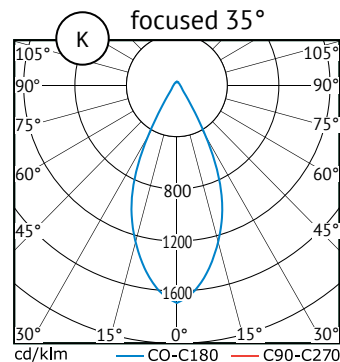
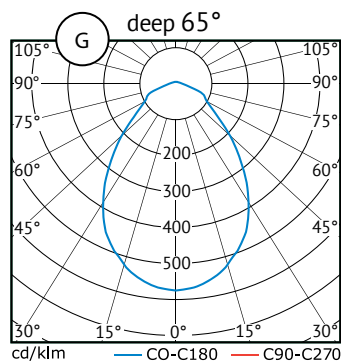
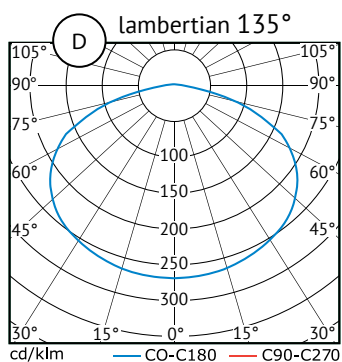
Advantages:

- wide range of spectrum application for various crop species
- high PPF efficacy
- perfect uniform distribution of PPF all over the plant's surface
- stable spectral characteristics

Product details:

• voltage, V / frequency, Hz	230 / 50
• power factor	> 0.95
• wire section, mm ²	3x0.75
• ambient temperature, °C	-45 ... +50
• ingress protection	IP 65
• electricity safety classification	I
• operation life, hours	> 50,000

Light distribution diagrams "D", "G", "K", cd/ 1,000 lm (normalized diagrams)

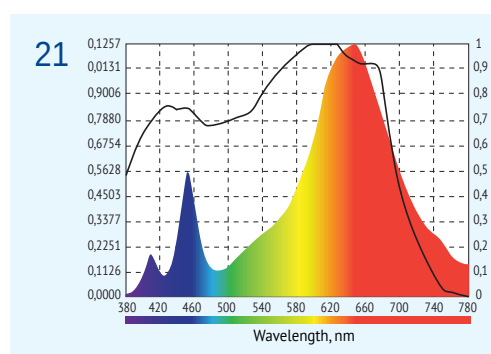
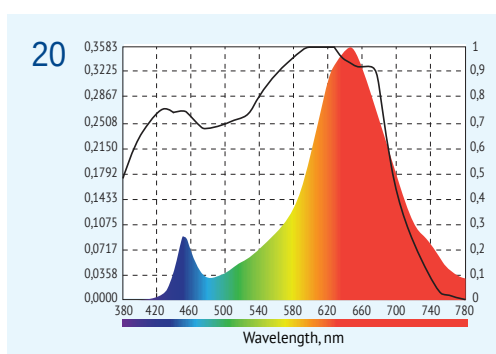
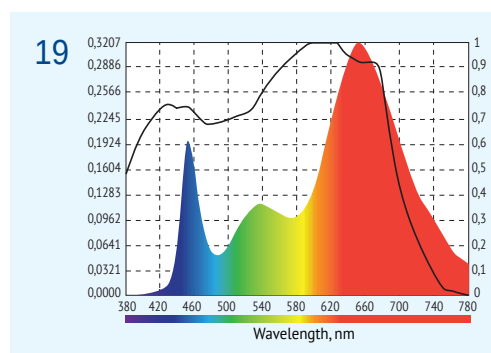
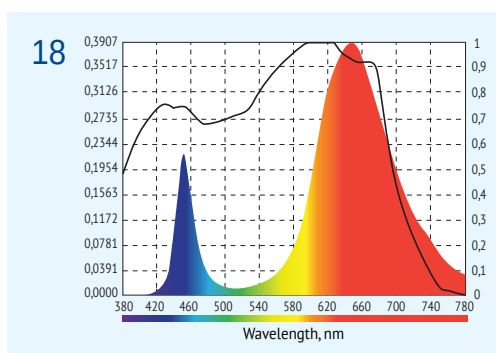


HORTICULTURAL LUMINAIRES

Product	Power max, W	Dimensions, LxAxB, mm	PPF, $\mu\text{mol/s}$	Spectrum definition	Net weight, kg
PlantaLux-HP-100	100	460x106x128	160	18, 19, 20, 21	2.9
PlantaLux-HP-150	150	690x106x128	240	18, 19, 20, 21	4.2
PlantaLux-HP-200	200	950x106x128	320	18, 19, 20, 21	5.8
PlantaLux-HP-250	250	1,120x106x128	400	18, 19, 20, 21	6.6

Please indicate the type of light distribution diagram and spectrum type in the order.

SPECTRA



LUMINAIRE PRODUCT NAMING CONVENTION

PLANTALUX-HP - 100 - D 019 - SC

1
2
3
4
5

- 1 – product family name (PLANTALUX-HP)
- 2 – nominal power, W
- 3 – light distribution diagram:
D - lambertian, G - deep, K - focused

- 4 – spectrum type
- 5 – type of mounting:
SC – suspended by wire ropes
Sc1 – suspended by horizontal wire

PlantaLux INTER/UPPER



General information:

The luminaires are designed for inter-row (INTER) and shelf (UPPER) supplementary lighting.

The luminaires are manufactured in two modifications depending on formation mode of a necessary spectrum: with discreet 445 nm, 660 nm LEDs, with additional full spectrum components and a remoted phosphor (with a polycarbonate tape).

The 80 mm diameter tube-shape luminaire can be mounted with standard fastening elements.

Smooth shape and enhanced humidity protection facilitates luminaire's operational maintenance. The plastic housing with low heat conductivity features prevents the plant from problems caused by contact of the luminaire with plants.

Product details:

• voltage, V / frequency, Hz	230 / 50
• power factor	> 0.95
• wire section, mm ²	3x0.75
• ambient temperature, °C	+1 ... +50
• ingress protection	IP 65
• electricity safety classification	I
• operation life, hours	> 50,000



Areas of application:

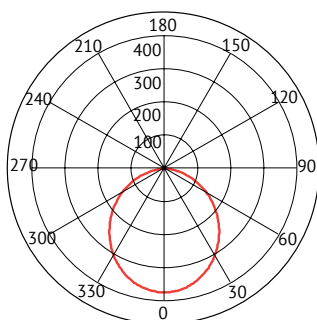
- inter-row supplementary lighting for tomatoes and cucumbers
- shelf supplementary lighting for salads, greens, seedlings

Advantages:

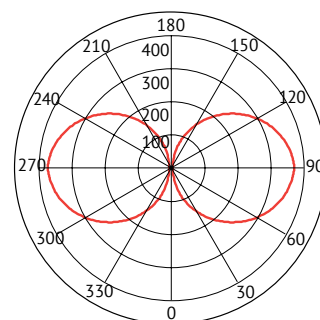
- low weight: reduction of additional load on warehouses' construction design
- mounting simplicity and flexibility - with suspensions, trays, pegs etc.
- highly efficient in-house patented phosphors

Light distribution diagrams 120x135°, "D" (lambertian), cd/ 1,000 lm (normalized diagrams)

Shelf supplementary light PlantaLux-xx-UPPER



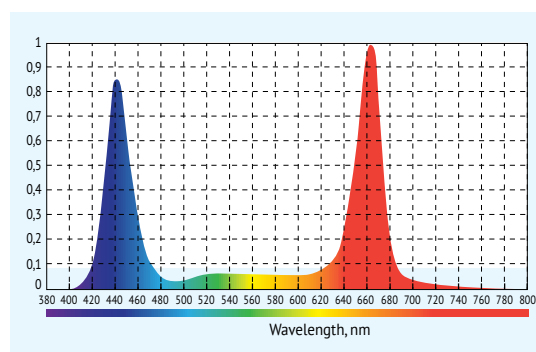
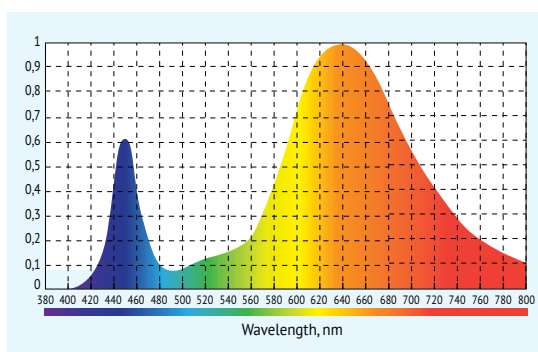
Inter-row supplementary light PlantaLux-xx-INNER



HORTICULTURAL LUMINAIRES

Product	Power max, W	Dimensions, ØxL, mm	PPF, µmol/s	Spectrum definition	Net weight, kg
PlantaLux-35 INTER	35	80x850	65	16	1.4
PlantaLux-35 UPPER	35	80x850	65	16	1.4
PlantaLux-45 INTER	45	80x980	65	16,17	1.55
PlantaLux-45 UPPER	45	80x980	65	16,17	1.55

SPECTRA



Types of spectrum	Supplementary light for seedlings	Supplementary light for flowers and other home plants
PPF distribution in different spectrum areas	400 – 500 nm – 15% 500 – 600 nm – 19% 600 – 700 nm – 66%	400 – 500 nm – 40% 500 – 600 nm – 9% 600 – 700 nm – 51%
Spectrum type	16	17

LUMINAIRE PRODUCT NAMING CONVENTION

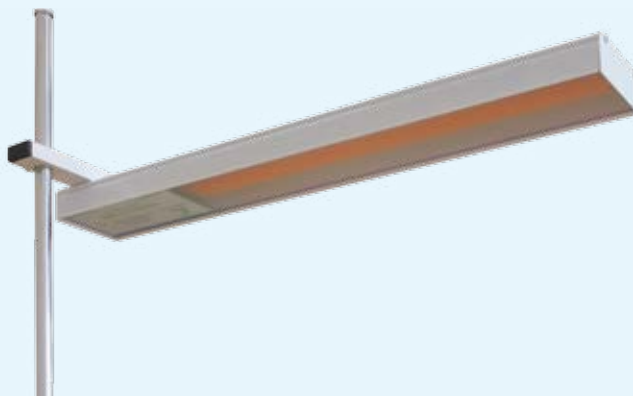
PLANTALUX - 35 INTER

1 2 3

1 – product family name (PLANTALUX)
2 – nominal power, W

3 – application:
INTER – shelf supplementary light
UPPER – Inter-row supplementary light

PlantaLux HOME



General information:

Plantalux-50-HOME LED luminaire is designed for additional lighting of home plants.

The luminaire is manufactured based on a unique Russian remote phosphor patented technology which has no analogues in the world.

Undifferentiated full spectrum provides efficient additional light for the plant at all vegetation stages – from germination to flowering.

The spectrum of the luminaire can be adjusted:

- 01 for seedlings
- 02 for vegetation, budding and flowering stages, as well as for supplementary light support in winter.

You can easily adjust the height of supplementary light through vegetation by moving the luminaire along the pole.

Recommended distance from the top of a plant to the luminaire is 15-20 sm.

Areas of application:

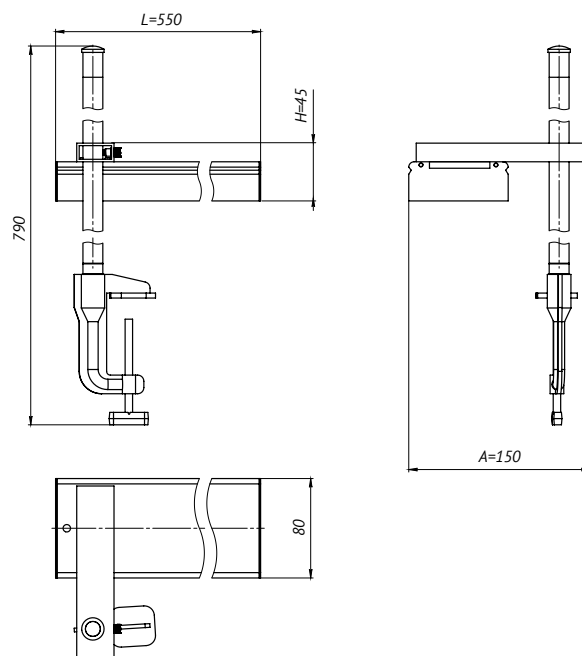
- supplementary light for seedlings
- home horticulture

Advantages:

- highly efficient adjustable undifferentiated full spectrum suitable for majority of plants
- simple assembly and operation
- does not require maintenance

Product details:

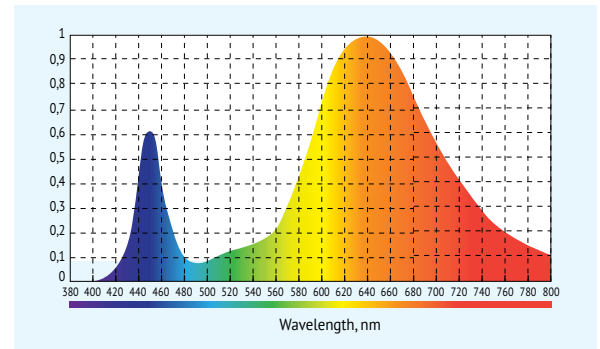
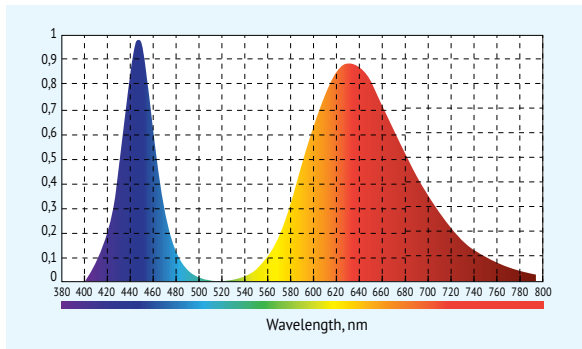
- voltage, V / frequency, Hz 230 / 50
- wire section, mm² 3x0.75
- ambient temperature, °C +1 ... +50
- ingress protection IP 30
- electricity safety classification I
- operational life, hours > 50,000



Product	Power max, W	Dimensions, LxAxH, mm	PPF, μmol/s	Net weight, kg
PlantaLux-50 HOME	40/50	550x150x45	270	0.7

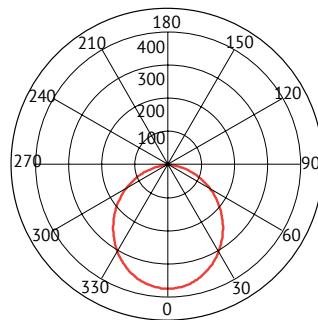
HORTICULTURAL LUMINAIRES

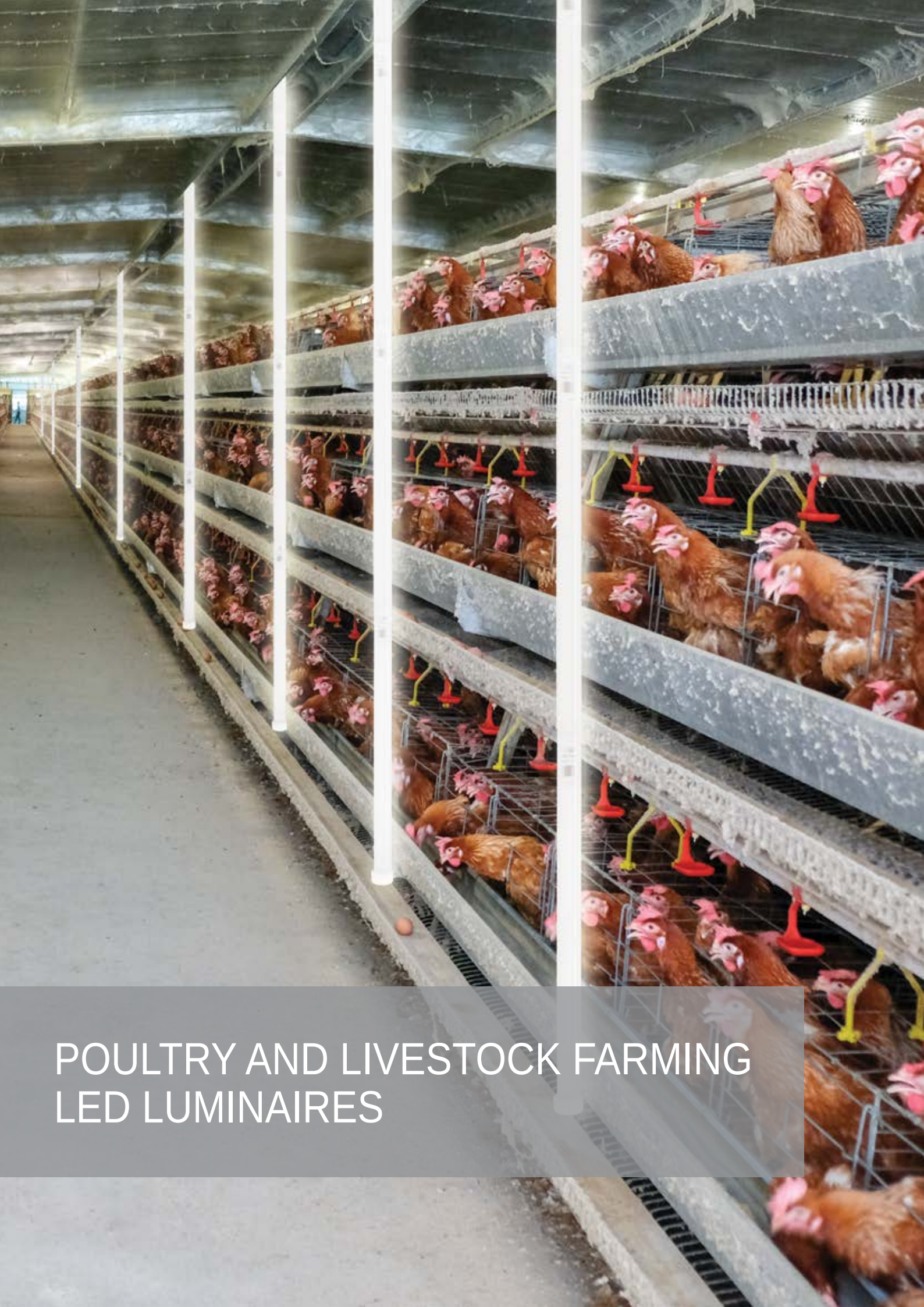
SPECTRA



Types of spectrum	Supplementary light for seedlings	Supplementary light for flowers and other home plants
PPF distribution in different spectrum areas	400 – 500 nm – 30% 500 – 600 nm – 11% 600 – 700 nm – 59%	400 – 500 nm – 15% 500 – 600 nm – 19% 600 – 700 nm – 66%
Spectrum type	22	16

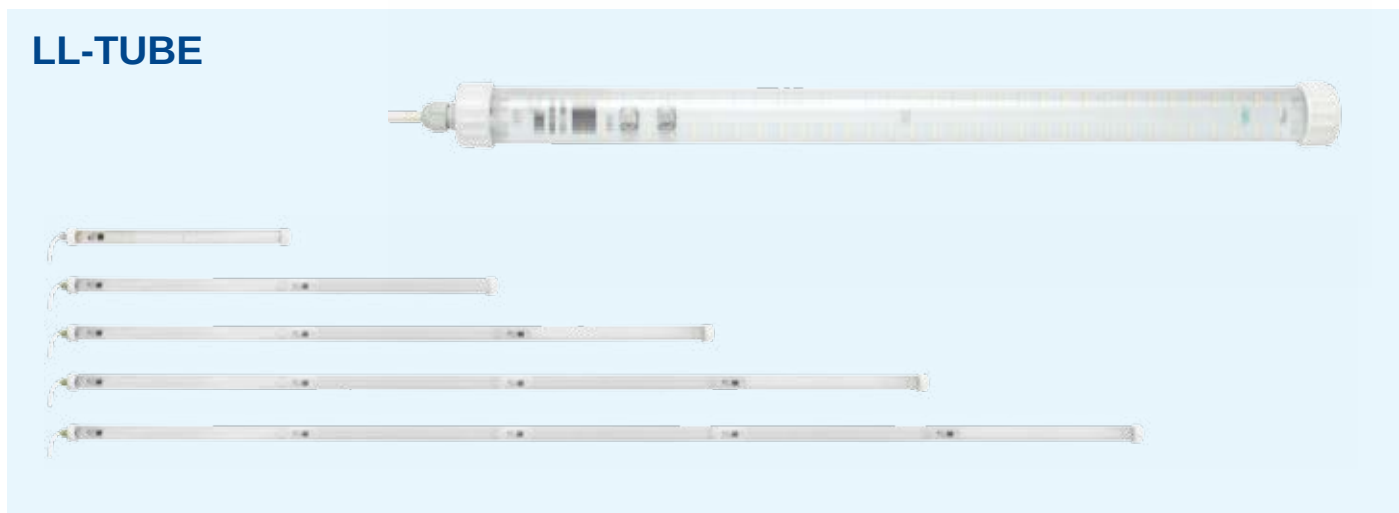
Light distribution diagram 120x135°, "D" (Lambertian), cd/ 1,000 lm (normalized diagram)





POULTRY AND LIVESTOCK FARMING
LED LUMINAIRES

LL-TUBE



General information:

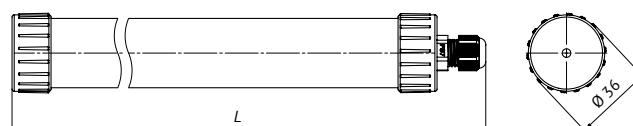
The luminaires stand out with their high resistance to aggressive ambient. The housing is made of coextruded protected polycarbonate. Modular construction with one module's length divisible by 0.5 m allows manufacturing such luminaires up to 3 m in length. Each module is absolutely autonomous and contains all necessary elements to power from AC mains, as well as dimming and surge protection. Modular concept of the luminaires significantly increases their reliability and service life, since the modules do not contain high power drivers. The luminaires can be easily mounted with cable wires, guywires, trays etc. The luminaires are washable with water, inclusive under pressure, with disinfecting solutions and detergents.

Areas of application:

- poultry and livestock farming
- car washes

Advantages:

- resistant to ammonium, alkaline and acid fumes
- high light efficacy up to 130 lm/W
- less than 5% flicker
- dimming with a standard light regulator, without any extra expenses on light control
- small weight
- secure when damaged, since does not contain mercury
- does not require any extra expenses on disposal



Product details:

• voltage, V / frequency, Hz	230 / 50
• power factor	≥ 0.92
• color rendering index, CRI	> 80
• wire section, mm ²	2x0.75
• ambient temperature, °C	-40 ... +40
• ingress protection	IP 66
• electricity safety classification	II
• operational life (L70), hours	> 50,000

Optionally:

- CCT 3,000 K, 4,000 K, 5,000 K
- color: white (by default), red (for laying birds), green (for broilers)

Control:

You may control brightness with a standard phase dimmer through electricity network. This allows avoiding control networks, which significantly reduces the modernization price of already existing poultry houses. Simple real-time clock controller performs 2 "day-night" cycles in 24 hours, simulating smooth transfer from night time to daytime, thus reducing the light day to 12 hours. This provides for fast growth of livestock and poultry, kept in enclosed premises.

POULTRY AND LIVESTOCK FARMING LUMINAIRES

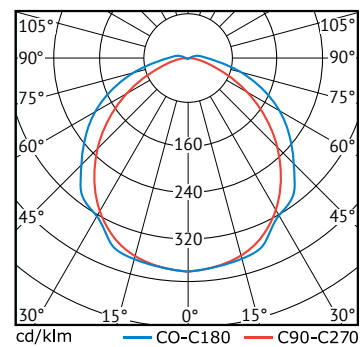
Product	Power max, W	Dimensions, ØxL, mm	Luminous flux, lm, 4,000 K	Net weight, kg
LL-TUBE-050-111	10	36x500	1,100	0.2
LL-TUBE-100-111	20	36x1,000	2,200	0.4
LL-TUBE-150-111	30	36x1,500	3,300	0.6
LL-TUBE-200-111	40	36x2,000	4,400	0.8
LL-TUBE-250-111	50	36x2,500	5,500	1.0

LUMINAIRE PRODUCT NAMING CONVENTION

LL-TUBE - 050 - 111
1 2 3

- 1 – product family name (LL-TUBE)
- 2 – length, sm
- 3 – modification code

Light distribution diagram
 90x110° "D" (Lambertian), cd/ 1,000 lm
 (normalized diagram)

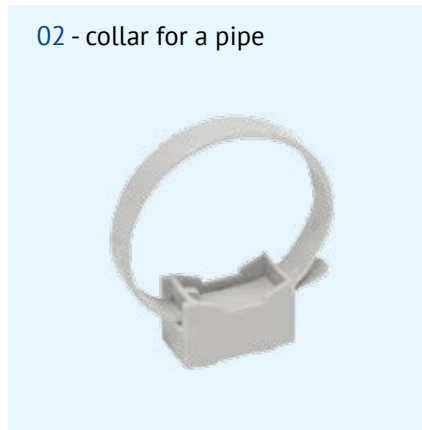


MOUNTING ACCESSORIES

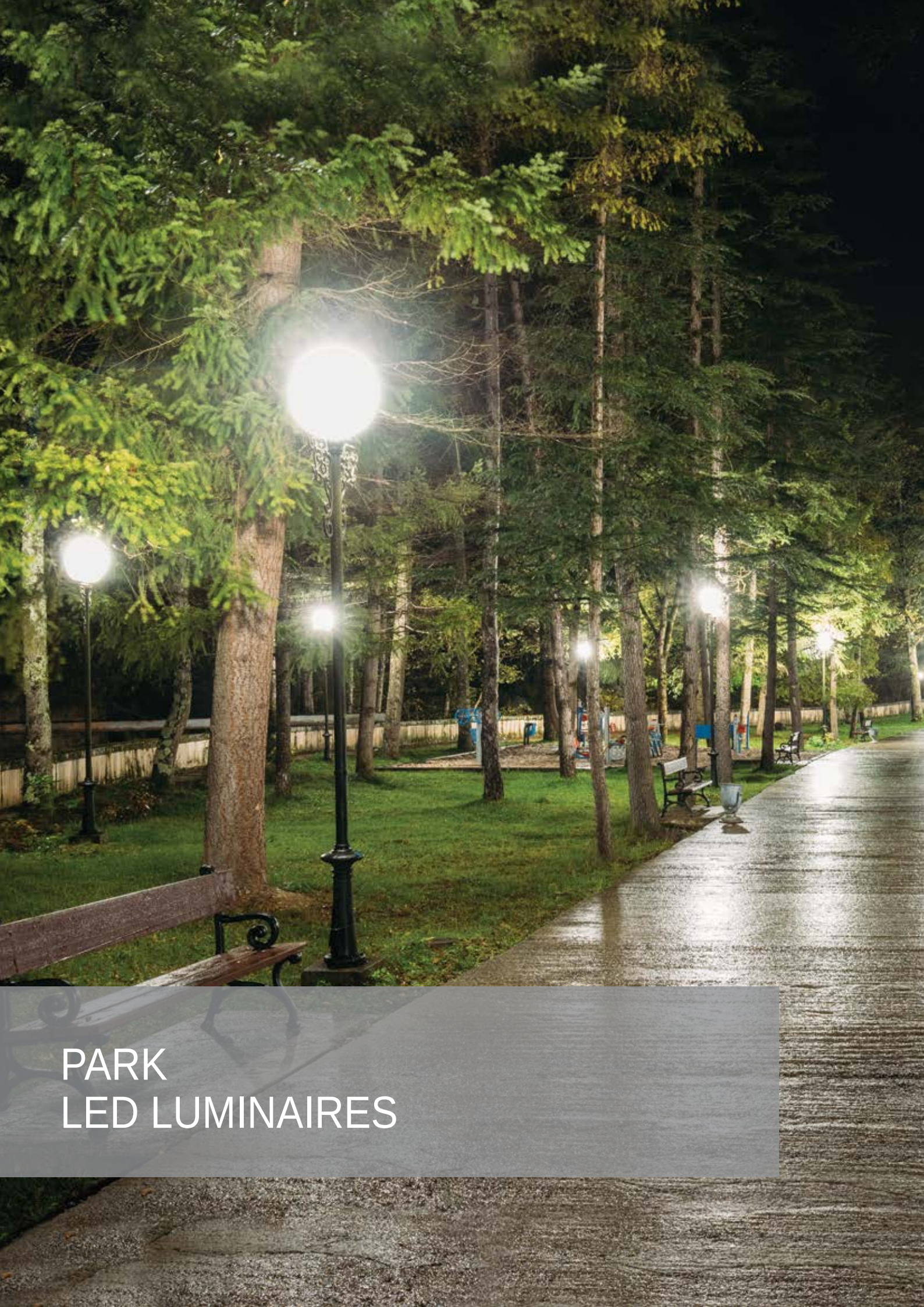
01 - clip for a pipe



02 - collar for a pipe







PARK
LED LUMINAIRES

STREET AND LEDPARK



STREET 18-055



STREET 27-055



STREET 56-055



LedPark 01-075



LedPark 01-075



LedPark 02-028

General information:

Housing of the luminaires is made of aluminum alloy, while material of diffusers is acrylic glass and polycarbonate.

STREET 18-055, STREET 27-055

1 class of electricity safety, materials: housing - aluminum alloy, diffuser – acrylic glass

STREET 56-055, LedPark 01-075

1 class of electricity safety, materials: housing – aluminum alloy, diffuser – polycarbonate

LedPark 02-028

2 class of electricity safety, material: housing and diffuser – polycarbonate

Advantages:

- 2 times more energy efficient compared to mercury or sodium lamps with similar luminous flux
- bright modern and classic design
- soft comfortable light
- less than 5% flickering
- perfect for parks light distribution diagram
- wide range of diffusers
- LedPark-02-028 model belongs to second class of electricity safety
- perfect price/quality correlation

Areas of application:

- decorative light for parks and gardens

Product details:

• voltage, V / frequency, Hz	230 / 50
• power factor	> 0.92
• wire section, mm ²	3x0.75
• color rendering index, CRI	70
• ambient temperature, °C	-45 ... +40
• electrical safety class	I, II
• operational life (L70), hours	> 50,000

LUMINAIRE PRODUCT NAMING CONVENTION

STREET 56 - 055 (7 40. D. 60. N)

1
2
3
4
5
6
7

- 1 – model
- 2 – nominal power (or power), W
- 3 – CRI, 7 (CRI 70), 8 (CRI 80), 9 (CRI 90)
- 4 – color temperature 30 (3,000 K), 40 (4,000 K), 50 (5,000 K), 57 (5,700 K)
- 5 – type of light distribution diagram:
D - lambertian, S2 – wide, L- half-wide
- 6 – type of mounting: 60 – on the bracket with 60 mm rim diameter, 76 – on the bracket with 76 mm rim diameter
- 7 – control of the luminous flux: N – without control, AS – with integrated ASTRO control module, AP – with integrated ASTRO control module with an extra power measuring function

Product	Power max, W	Dimensions, LxWxH, mm	Net weight, kg	CCT, K	IP	Mounting type
Efficacy up to 115 lm/W						
STREET 18-055	55	600x600x690	6.3	4,000	65	76
STREET 27-055	55	600x600x640	5.3	4,000	54	76
STREET 56-055	55	540x540x720	8.0	4,000	65	60
LedPark 01-075	75	440x440x770	7.8	4,000	54	76
LedPark 02-028	28	370x370x670	5.0	4,000	54	60

BALL



General information:

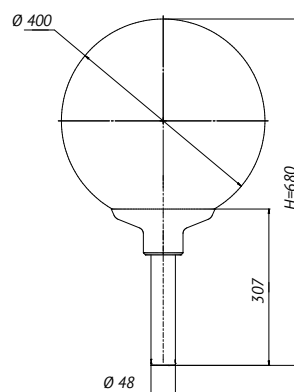
Material of the housing is impact resistant polycarbonate. The light is provided by high efficacy LEDs.

Areas of application:

- decorative light for parks and gardens

Advantages:

- plastic UV protected frost-proof housing
- tamper-proof
- integrated driver
- less than 10% flickering which guarantees absence of stroboscopic effect
- simple maintenance and no specific recommendations for disposal
- high lm/W ratio
- DALI control upon request
- RF control upon request



Product details:

• voltage, V / frequency, Hz	230 / 50
• power factor	> 0.95
• wire section, mm ²	3x0.75
• color rendering index, CRI	> 70
• ambient temperature, °C	-40 ... +40
• ingress protection	IP 65
• electrical safety class	I
• operational life (L70), hours	> 50,000

LUMINAIRE PRODUCT NAMING CONVENTION

BALL 400 - 060 (840. N)

1
2
3
4
5

- 1 – type of diffuser (ball)
- 2 – diameter of diffuser, mm
- 3 – power, W
- 4 – the first digit CRI and two digits of the color temperature: 30 – 3,000 K, 40 – 4,000 K, 50 – 5,000 K
- 5 – control (N – no control, D – DALI, ASTRO-RF)

Product	Power max, W	CCT, K*	Luminous flux, lm
BALL 400-60	Dimensions, ØxH, mm - 400x680, net weight, kg - 4.5		
	60	3,000	4,000
	60	4,000	4,500
	60	5,000	4,800

* - 4,000 K – main product, other color temperatures are available by request

LAMP FOR PARK LUMINAIRES



Description:

Unique LED lamp Venezia is designed for installation into park, garden and street luminaires with a requirement for extremely high luminous flux without upward light emission.

Concentration of the whole light emission around the pole ensures 25 ... 40% increase of luminous flux efficiency.

Areas of application:

- decorative light for parks and gardens

Advantages:

- plastic UV protected heat- and frost-proof housing
- soft comfortable light (absolutely spots-free)
- uniform diffuser lighting
- integrated over-heat protection
- less than 10% flickering, ensuring absence of stroboscopic effect
- simple maintenance and no specific requirements for disposal
- high energy efficiency (110-125 lm/W)
- installation into park luminaires with transparent protective glass

LUMINAIRE PRODUCT NAMING CONVENTION

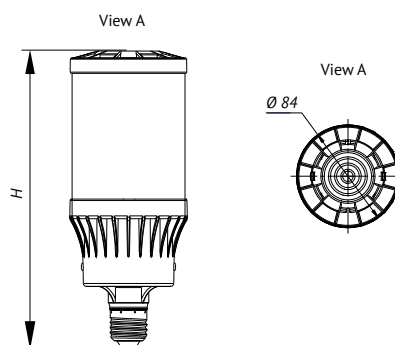
VEN - 24 - 1 - S - E27 (840 . IP65)

1 2 3 4 5 6 7

Product details:

- voltage, V / frequency, Hz 230 / 50
- power factor > 0.95
- color rendering index, CRI 80
- ambient temperature, °C -40 ... +45
- ingress protection of optical part IP 40, IP 65
- operational life (L70), hours > 30,000
- socket E27

- 1 – name of lamp (Venezia)
- 2 – power, W
- 3 – power of equivalent incandescent lamp, W
- 4 – driver type:
C – traditional
S – sequential
- 5 – socket
- 6 – first digit CRI and two digits of CCT:
30 – 3,000 K,
40 – 4,000 K,
50 – 5,000 K
- 7 – IP of optical part



Product	Power max, W	CCT, K**	Luminous flux, lm
VEN-24-1-S-E27	Dimensions (DxH), mm - 84x204, net weight, kg - 0.6		
	24	3,000	2,700
	24	4,000	2,900
	24	5,000	3,000

* - luminous flux is given for the ambient temperature +25°C

** - 4,000 K - main product, other color temperatures are available by request



LED FLOODLIGHTS FOR ARCHITECTURAL LIGHTING

DS-LFL

Patented floodlights construction design



General information:

The floodlights are designed for illumination of outdoor and indoor objects.

Modular construction and different variants of optics allow building floodlights of almost any modification and application with 8 W and 25 W basic elements.

The floodlights are supplied in two modifications: with an integrated or a stand-alone group power supplier (total capacity depends on the number of elements).

Areas of application:

- facades, monuments and cultural objects
- accent lighting in shops

Advantages:

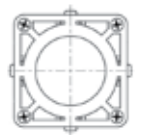
- aluminum housing with high heat dissipation characteristics
- LEGO-type construction
- easy maintenance and no specific recommendations for disposal
- two-direction adjustment of mounting angle

Product details:

- voltage, V / frequency, Hz 230 / 50
- power factor > 0.9
- wire section, mm² 3x0.75
- color rendering index, CRI > 70
- luminous flux flickering index < 5%
- ambient temperature, °C -40 ... +50
- ingress protection IP 40, IP 67
- electrical safety class I, II
- operational life (L70), hours > 50,000

Optionally:

- CCT 3,000, 5,000 K



Type 1. Based on modules (50x50) mm

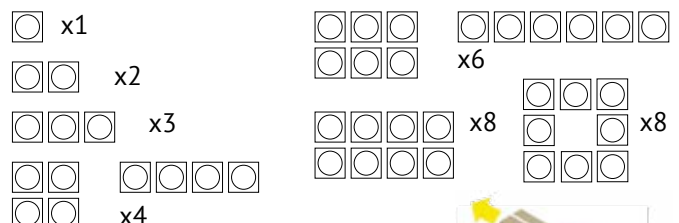
Product	Power, W	Luminous flux, not less than, lm	Diffusion angle
DS-LFL-008-1x3	8	760	15, 25, 40
DS-LFL-016-2x3	16	1,520	
DS-LFL-024-3x3	24	2,200	
DS-LFL-032-4x3	32	3,000	
DS-LFL-048-6x3	48	4,500	
DS-LFL-064-8x3	64	6,000	



Type 2. Based on modules (92x92) mm

Product	Power, W	Luminous flux, not less than, lm	Diffusion angle
DS-LFL-025-1x12	25	2,400	15, 25, 40
DS-LFL-050-2x12	50	4,800	
DS-LFL-075-3x12	75	7,200	
DS-LFL-100-4x12	100	9,600	
DS-LFL-150-6x12	150	14,400	
DS-LFL-200-8x12	200	19,200	
DS-LFL-200-8x12 RGBW	200	10,000	

Variants of module combinations in assembly.



Two-direction light

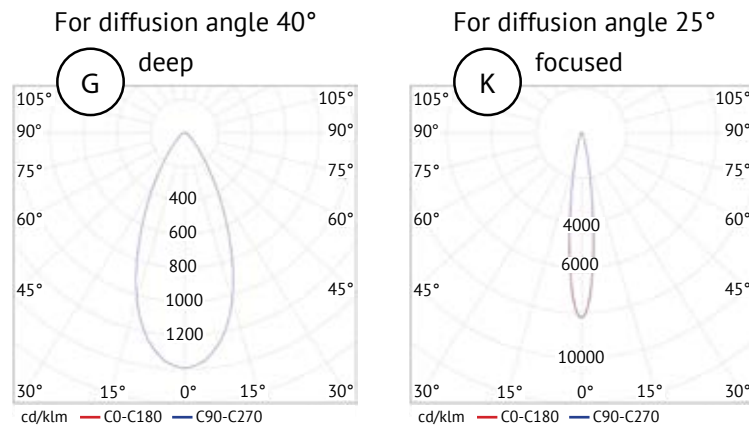
FLOODLIGHTS FOR ARCHITECTURAL LIGHTING

LUMINAIRE PRODUCT NAMING CONVENTION

DS-LFL - 032 - 4x3 1. 1. I. IP67 (840. G40. 2. 0)
1 2 3 4 5 6 7 8 9 10 11

- 1 – product family name (DS-LFL)
DS – manufacturer “Display Systems” Ltd.
LFL – LED Floodlights
- 2 – power, W
- 3 – number of basic elements (BE) in one floodlight x number of LEDs in one basic element
- 4 – type and dimensions of the housing (type 1 – 50x50 mm, type 2 – 92x92 mm)
- 5 – mounting and driver connection type (1 – recessed, 3 – standalone)
- 6 – electricity safety classification (I, II)
- 7 – IP
- 8 – first digit - CRI,
further two digits – color temperature:
30 – 3,000 K, 40 – 4,000 K, 50 – 5,000 K
- 9 – light distribution diagram:
K – focused
G – deep
two digits – diffusion angle 2 γ at the level of 50%
- 10 – construction design:
1 – 1 row of basic elements,
2 – 2 rows of basic elements,
3 – rows of basic elements,
4 – coaxial bidirectional position of basic elements
- 11 – luminous flux control:
0 – without control
2 – luminous flux control 0-10 W and PWM,
3 – luminous flux control DMX512

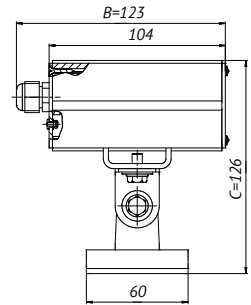
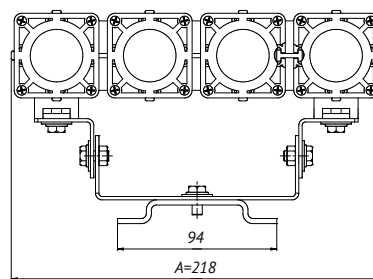
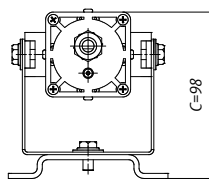
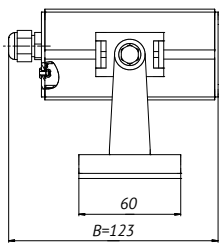
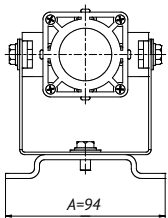
Light distribution diagrams “G”, “K”, cd/ 1,000 lm
(normalized diagrams)



FLOODLIGHTS FOR ARCHITECTURAL LIGHTING

DS-LFL

Patented floodlights construction design



Product	Power max, W	Dimensions, AxBxC, mm	Luminous flux, lm with CCT 4,000 K and CRI 70	Diffusion angle	Weight, kg
DS-LFL-008-1x3 □ x1	8	94x123x98	750	40	0.8
DS-LFL-016-2x3 □□ x2	16	145x123x98	1,500	40	1.4
DS-LFL-024-3x3 □□□ x3	24	196x123x98	2,250	40	1.7
DS-LFL-032-4x3 □□□□ x4	32	218x123x126	3,000	40	1.8
DS-LFL-032-4x3 □□ □□ x4	32	145x123x150	3,000	40	1.8
DS-LFL-048-6x3 □□□□□□ x6	48	320x123x126	4,500	40	3.0
DS-LFL-048-6x3 □□□□ □□□□ x6	48	196x123x150	4,500	40	3.0
DS-LFL-064-8x3 □□□□□□□□ x8	64	475x123x126	6,000	40	3.8

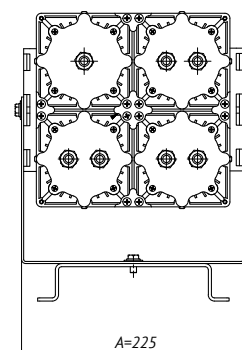
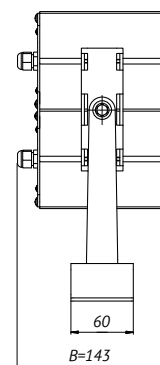
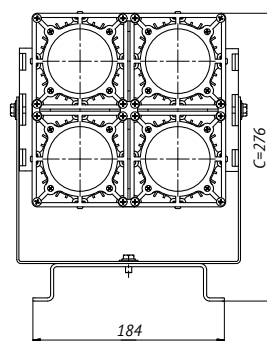
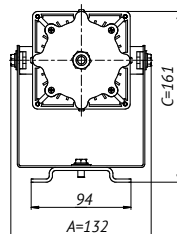
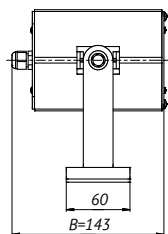
FLOODLIGHTS FOR ARCHITECTURAL LIGHTING

DS-LFL

Patented floodlights construction design



(RGBW DMX)



Product	Power max, W	Dimensions, AxBxC, mm	Luminous flux, lm with CCT 4,000 K and CRI 70	Diffusion angle	Weight, kg
DS-LFL-025-1x12 □ x1	25	132x143x161	2,300	40	2.2
DS-LFL-050-2x12 □□ x2	50	225x143x161	4,600	40	3.2
DS-LFL-075-3x12 □□□ x3	75	318x143x161	6,900	40	4.2
DS-LFL-100-4x12 □□□□ x4	100	411x143x161	9,200	40	5.8
DS-LFL-100-4x12 □□ □□ x4	100	225x143x276	9,200	40	5.8
DS-LFL-150-6x12 □□□□□□ x6	150	597x143x161	13,800	40	8.2
DS-LFL-150-6x12 □□□ □□□ x6	150	318x143x276	13,800	40	8.2
DS-LFL-200-8x12 □□□□□□□□ x8	200	785x143x161	18,400	40	10.6
DS-LFL-200-8x12 (RGBW DMX) □□□□ □□ □□□□ x8	200	450x350x500	10,000	40	17

FACADE



NEW



Accent downlight



Wall-washing light



General information:

The luminaires are designed to create various intensity eye-catching wall-washer light. Made of polycarbonate body housings these luminaires ensure maximum level of ingress protection IP67.

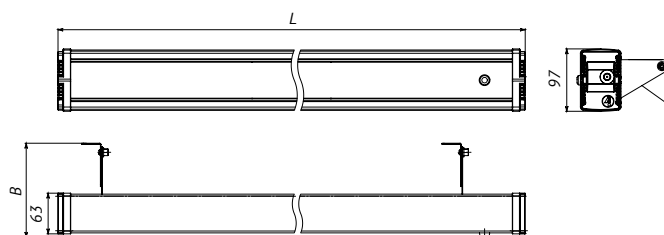
Due to special purpose secondary optics the luminaires create optimal light distribution. Hermetic housing and high reliability of components ensure maximum service life without replacement and maintenance.

Areas of application:

- facades of buildings
- niches
- cornices etc.

Advantages:

- lightweight
- an option of bi-directional light (upward or upward and downward)
- plastic housing prevents from build-up of ice and icicles
- any color of the housing including transparent
- installation into a single line with through-wiring



Product details:

- | | |
|---------------------------------|---------------------|
| • voltage, V / frequency, Hz | 190-230 / 50 |
| • power factor | ≥ 0.92 |
| • color rendering index, CRI | > 70 |
| • flickering index, % | ≤ 10 |
| • ambient temperature, °C | -45 ... +45 |
| • electrical safety class | II |
| • correlated CCT, K | 2,700, 3,000, 4,000 |
| • operational life (L70), hours | > 50,000 |

Optionally:

- dimming PWM
- "Astro-2" control
- an option to install different secondary optics on each side, for two-sided modification
- length 300 mm, 900 mm, 1,500 mm

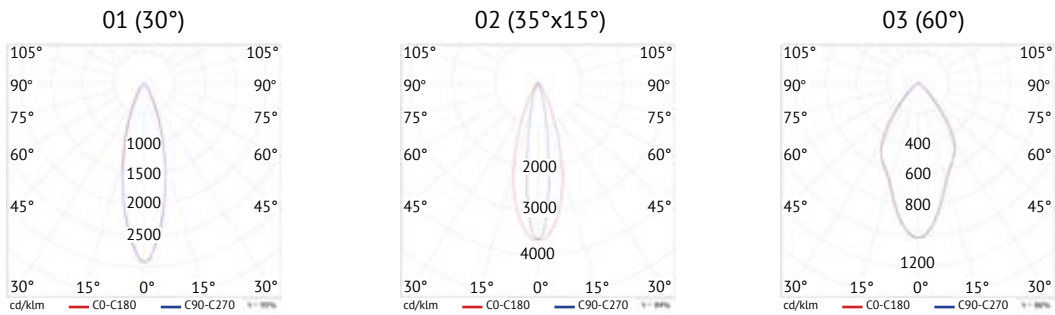
ARCHITECTURAL DOWNLIGHT

Product	Power*, W	Dimensions, mm	Luminous flux*, lm with CCT 4,000 K	Weight*, kg
Facade-500-016 (02.840.01.1.K.N)	16	600x97x63	1,450	0.75
Facade-500-016 (02.840.02.1.K.N)	16	600x97x63	1,450	0.75
Facade-500-016 (02.840.03.1.K.N)	16	600x97x63	1,450	0.75
Facade-500-016 (02.840.04.1.K.N)	16	600x97x63	1,450	0.75
Facade-500-016 (02.840.05.1.K.N)	16	600x97x63	1,450	0.75
Facade-500-016 (02.840.06.1.K.N)	16	600x97x63	1,450	0.75
Facade-1000-032 (03.840.01.1.K.N)	32	1,200x97x63	2,850	1.4
Facade-1000-032 (03.840.02.1.K.N)	32	1,200x97x63	2,850	1.4
Facade-1000-032 (03.840.03.1.K.N)	32	1,200x97x63	2,850	1.4
Facade-1000-032 (03.840.04.1.K.N)	32	1,200x97x63	2,850	1.4
Facade-1000-032 (03.840.05.1.K.N)	32	1,200x97x63	2,850	1.4
Facade-1000-032 (03.840.06.1.K.N)	32	1,200x97x63	2,850	1.4

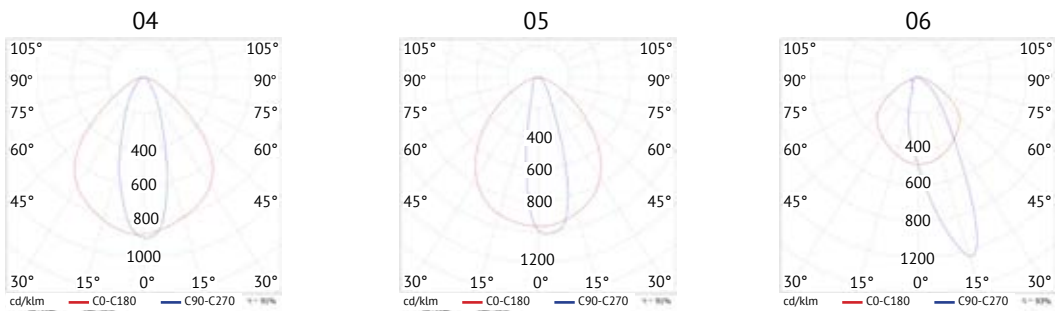
* - For one-directional
Efficiency over 130 lm/W with color temperature 4,000 K is available by request.

Light Distribution Diagram "D", cd/ 1,000 lm (normalized diagram)

Accent downlight



Wall-washer light



ARCHITECTURAL DOWNLIGHT

CONNECTING PATTERN



LUMINAIRE PRODUCT NAMING CONVENTION

FACADE – 1000 – 032 (03. 840. 01. 1. K. N)
1 2 3 4 5 6 7 8 9

- 1 – product family name (FACADE)
- 2 – relative luminaire overall length, mm
- 3 – power, W
- 4 – luminaire modification number
- 5 – the first figure of CRI, and two figures of color temperature:
30 – 3,000 K, 40 – 4,000 K, 50 – 5,000 K
- 6 – type of light distribution diagram

- 7 – direction of light: (1-1 direction, 2- 2 bi-directional)
- 8 – type of mounting: K-bracket, C-staple
- 9 – luminous flux control:
 - N – no control
 - A – with Astro-2 control
 - D – with DMX control



SPORTS
VENUE FLOODLIGHTS

SPORTS VENUE FLOODLIGHTS

DS-LFL-SPORT

Patented floodlights construction design



Sports venue floodlights fully meet the needs of sports TV companies.

General information:

Material of the housing is aluminum alloy. LEDs from CREE and Osram. The construction design incorporates a 3-phase proprietary driver based on SY-Lighting patented technology.

Power from 1-phase network from separate suppliers on a conventional scheme as an option.

Areas of application:

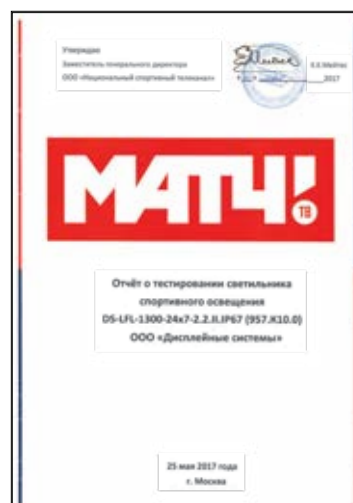
- stadiums and various sports venues
- concert halls, theater and filming grounds
- high buildings
- construction grounds
- transport infrastructure (railways, airports, connecting nodes, road junctions)
- large spaces mounted on poles and crossbeams along the perimeter (warehouses, hubs and other infrastructure)

Product details:

- voltage, V / frequency, Hz 230 / 50 (1 phase)
- voltage, V / frequency, Hz 380-410/50 (3 phases)
- power factor > 0.95
- luminous flux flickering index < 1%
- color rendering index, CRI 70, 80, 90
- ambient temperature, °C -40 ... +50
- ingress protection IP 65
- electrical safety classification I
- operational life (L70), hours > 50,000

Advantages:

- high quality light perfect for high resolution TV shooting (stable color temperature, no flickering, uniform spectral characteristic, reproduced color minimal deviation from the reference)
- high efficacy of the luminaires (115 lm/W at CRI 70)
- function of dynamic light control and reproduction of light sequences from production desk based on DMX512 and DALI protocols
- precise positioning: 2.5 degrees in vertical, 1 degree in horizontal
- protection from overheat and balancing of LEDs degradation



MATCH-TV test results:

The floodlights provide perfect color rendering preciseness in terms of television, high shooting quality with a 1,000 c/sec high-rate camera. We recommend them for stadiums and sports venues.

SPORTS VENUE FLOODLIGHTS

Type 2. With plastic lens and CREE/ Osram LED:



Product	Power, W	Luminous flux, not less than*, lm	Diffusion angle
DS-LFL-450-8x7	450	50,000	10, 15
DS-LFL-500-9x7	500	56000	
DS-LFL-900-16x7	900	100,000	
DS-LFL-1300-24x7	1,300	150,000	

Type 2. With borosilicate lens, on the basis of COB

Product	Power, W	Luminous flux, not less than*, lm	Diffusion angle
DS-LFL-450-8x1	450	49,000	30, 60, 70, 120
DS-LFL-500-9x1	500	55000	
DS-LFL-900-16x1	900	99,000	
DS-LFL-1300-24x1	1,300	145,000	

* - for $\tau=25^{\circ}\text{C}$, CRI 70 and color temperature 5,000 K

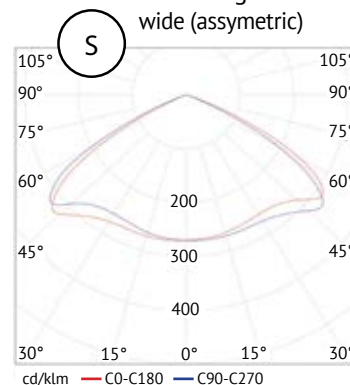
LUMINAIRE PRODUCT NAMING CONVENTION

DS-LFL - 1300-24x7 2. 3. I. IP65 (740. K10. 2. 0)
 1 2 3 4 5 6 7 8 9 10 11

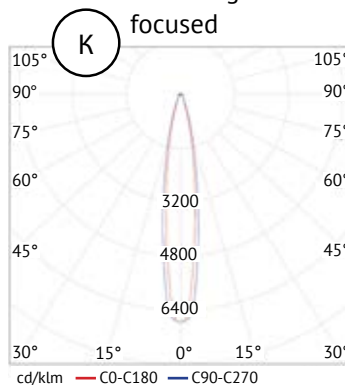
- 1 – product family name (DS-LFL)
 DS – manufacturer “Display Systems” Ltd.
 LFL – LED Floodlights
- 2 – floodlight power, W
- 3 – number of basic elements (BE) in a floodlight x number of LEDs in one basic element
- 4 – type and dimensions of the housing (type 2 – 92x92 mm)
- 5 – position and driver connection type
 (2 – remoted, 3 – standalone)
- 6 – electric safety classification (I)
- 7 – IP
- 8 – first digit – CRI
 further two digits – color temperature:
 40 – 4,000 K, 50 – 5,000 K, 57 – 5,700 K
- 9 – light distribution diagram:
 K – focused
 G – deep
 D – lambertian
 S - wide (asymmetric)
 two digits – diffusion angle 2γ at the level of 50%
- 10 – mounting type:
 1 – for sports venues, 2- general purpose
- 11 – luminous flux control:
 0 – without control
 1 – luminous flux control with LEDs degradation balancing and protection from over-heat
 2 – luminous flux control 0-10 W and PWM
 3 – luminous flux control DMX512
 4 – luminous flux control DALI

Light distribution diagrams “S”, “D”, “G”, “K”, cd/ 1,000 lm (normalized diagrams)

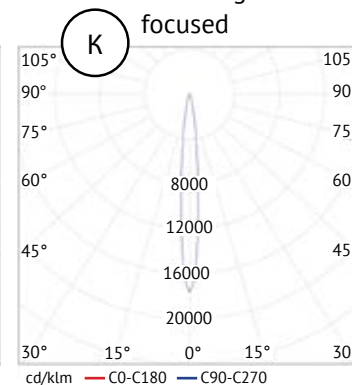
For diffusion angle 120° wide (assymetric)



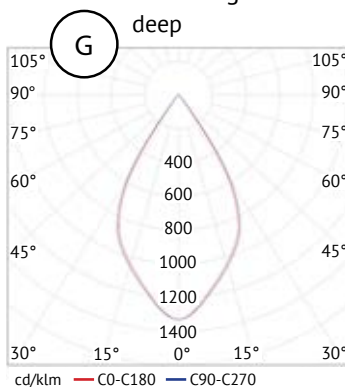
For diffusion angle 15° focused



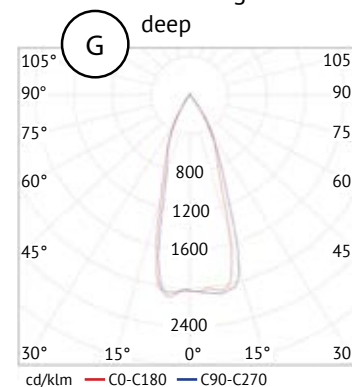
For diffusion angle 10° focused



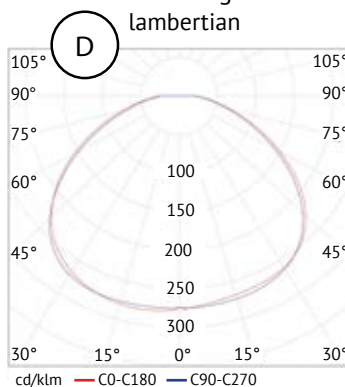
For diffusion angle 60° deep



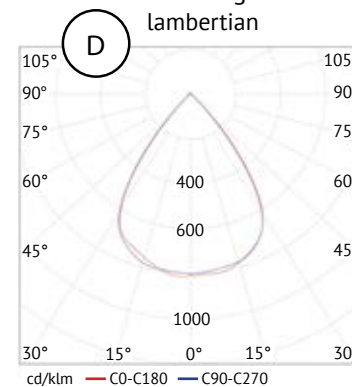
For diffusion angle 30° deep



For diffusion angle 120° lambertian



For diffusion angle 70° lambertian



SPORTS VENUE FLOODLIGHTS

DS-LFL-SPORT

Patented floodlights construction design



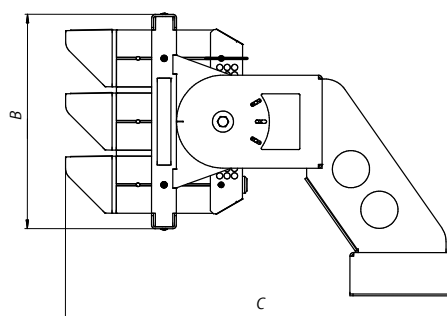
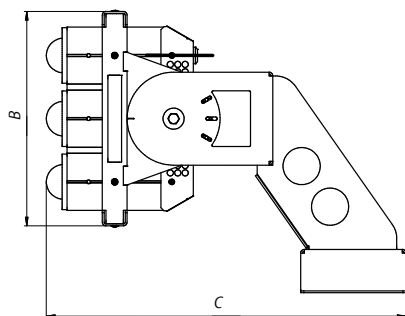
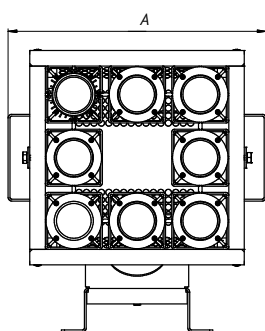
DS-LFL-450



DS-LFL-900



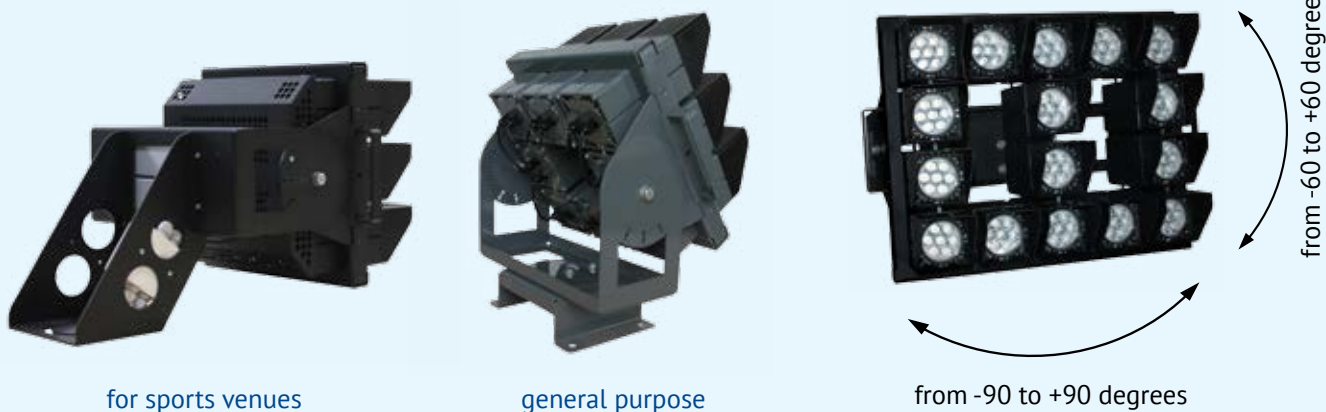
DS-LFL-1300



Product	Power max, W	CCT, K*	CRI	Luminous flux, lm	Diffusion angle
DS-LFL-450	Dimensions, AxBxC, mm - 415x350x485, net weight, kg - 15				
	440	4,000	70	51,000	10
	470	5,700	90	47,000	10
	440	4,000	70	51,000	30
	470	5,700	90	47,000	30
DS-LFL-500	Dimensions, AxBxC, mm - 415x350x485, net weight, kg - 16.5				
	500	4000	70	56000	10
	525	5700	90	52000	10
	500	4000	70	56000	30
	525	5700	90	52000	30
DS-LFL-900	Dimensions, AxBxC, mm - 620x450x500, net weight, kg - 25				
	880	4,000	70	102,000	10
	940	5,700	90	94,000	10
	880	4,000	70	102,000	30
	940	5,700	90	94,000	30
DS-LFL-1300	Dimensions, AxBxC, mm - 720x450x550, net weight, kg - 35				
	1,320	4,000	70	153,000	10
	1,400	5,700	90	140,000	10
	1,320	4,000	70	153,000	30
	1,400	5,700	90	140,000	30

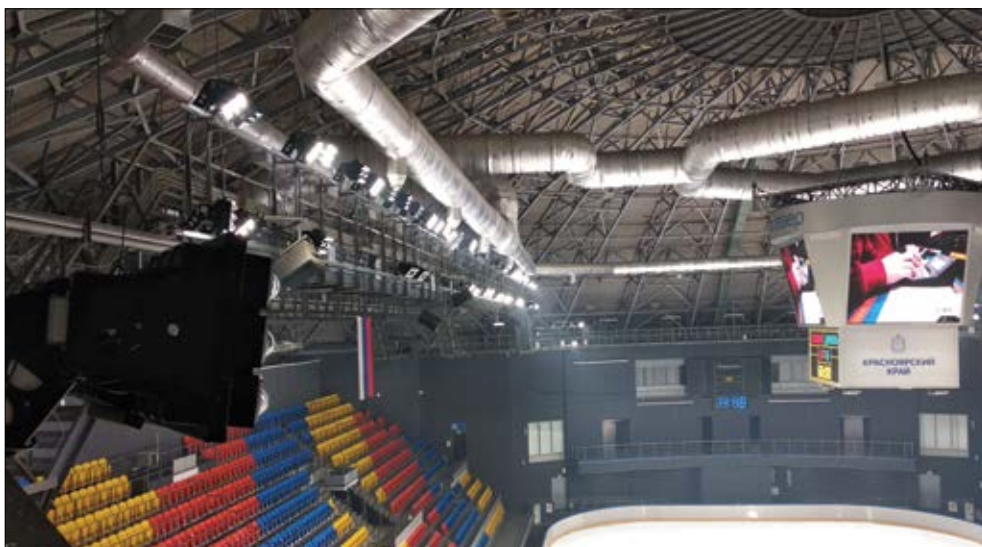
These parameters are given for = 25°C
Customized product

TYPES OF MOUNTING



Attachment fitting provides for adjustment of floodlight position from -90 to +90 degrees in horizontal, and from -60 to +60 degrees in vertical.

Multifunctional venue “Arena.North” – venue for XXIX 2019 International winter universiade in Krasnoyarsk.



Hockey field

Basketball ground







LED LAMPS



LAMP STELLA
Patented lamps construction design

NO EQUIVALENTS



NEW

18 W

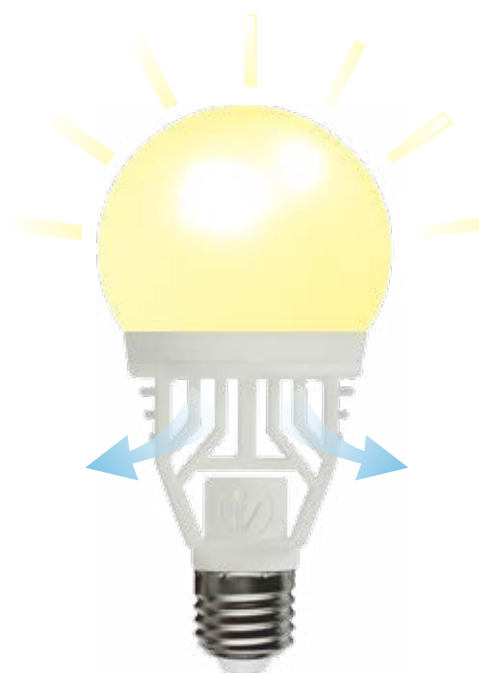
2,500 lm

Advantages:

- **luminous flux over 2,500 lm at the power only 18 W**
- 140 lm/W output which is more than that of a “luxe” class office luminaire.
- up to 14 times more energy efficient
- unique patented heat sink construction for efficient heat dissipation
- wide range of application from utility sector and up to industrial enterprises
- advanced thermal stabilization system prevents the LEDs and components from overheat

Product details:

- | | |
|--------------------------------------|--------------|
| • voltage, V / frequency, Hz | 230 / 50 |
| • color rendering index, CRI | >80 |
| • luminous flux flickering index | < 10% |
| • CCT, K | 4,000 |
| • operation temperatures, °C | - 20 ... +40 |
| • ingress protection of optical part | IP 40 |
| • electric safety classification | II |
| • operational life (L70), hours | > 50,000 |



Heat sink specifics

The heat sink is made of heat conducting plastic and possesses a sophisticated form with a metal construction of complex configuration potting its interior

The heat sink provides for unique heat dissipating area which is significantly bigger than that of conventional LED lamps

Due to optimal operational conditions of the LEDs such solution allowed achieving exclusively high efficiency of the lamp

A complicated technical task of potting a branched metal construction with minimal plastic thickness has been resolved

Product code	STELLA-18-E27
Power, W	18
Adequate alternative of incandescent lamp	250 W
Energy efficiency	14 times more
Dimensions, Ø x L, mm	80x150 / 60x120
Luminous flux, lm	over 2,500
Beam angle	240° / 160°
Color of housing	white
Socket	E27
Material of housing	plastic / aluminum



POWER SUPPLY

SY-lighting



SY-lighting series

Power 1,200 W and more.

A unique patent. The first in the world!

- efficiency 99%
- there are no electrolytic capacitors
- small overall enclosure dimensions allowing it to be placed in a convenient location
- low losses (650 W power supply loses about 6.2 W), as a result, neither an additional heat-sink is required nor there are any special requirements for natural ventilation and convection to be complied with in a place of power supply installation
- even load on the phases
- low components overheating, as a result, high reliability and long service life (MTBF)
- high energy density of power supply
- low cost of power supply with high energy parameters
- luminous flux flicker of a powered floodlight is at 1% level with 300 Hz frequency which makes the flicker visible neither for human eyes nor video cameras

Power 465 – 800 W, 950 – 1,200 W
Ultrahigh coefficient of efficiency 99%
Operating mode – current stabilization

10 year warranty

Long Life



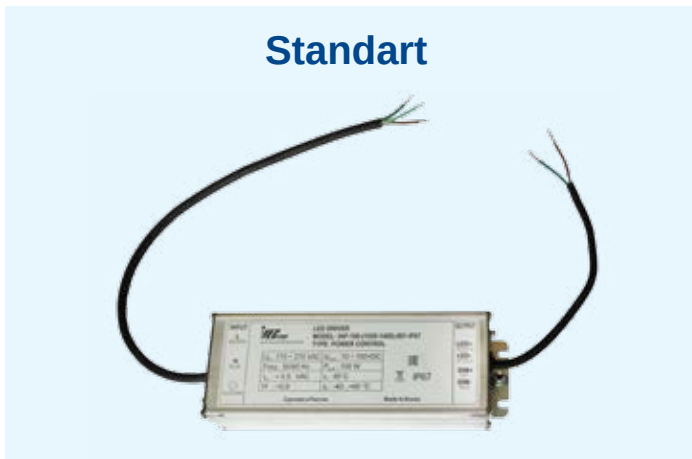
Long Life series

- there are no electrolytic capacitors
- increased operating temperature (+85 degrees)
- long service life, about 250,000 hours

Power 50 – 290 W
Standard coefficient of efficiency 90%
Possibility to program and change stabilization modes of output parameters
intellectual operating mode

10 year warranty

Standart



Standart series

There are no electrolytic capacitors

Power 35 – 150 W
Standard coefficient of efficiency 90%
Operating modes – current or power stabilization
5 year warranty

PACKAGING

OFFICE LUMINAIRES

COMFORT / COMFORT UNIQUE

Product	Individual Package Dimensions, mm	Gross weight, kg	Group Package Dimensions, mm	Luminaires in a Group Package
SLIMPANEL.1-P600x600-25	608x608x30	3.0	650x650x210	6 (8)
SLIMPANEL.2-P300x300-8	308x308x30	1.2	650x650x210	24 (32)
SLIMPANEL.2-P150x600-8	158x608x30	1.7	650x650x210	24 (32)
SLIMPANEL.2-P300x600-15	308x608x30	1.8	650x650x210	12 (16)
SLIMPANEL.2-P150x1200-15	158x1,208x30	2.6	650x1,250x210	24 (32)
SLIMPANEL.2-P600x600-25	608x608x30	2.9	650x650x210	6 (8)
SLIMPANEL.2-P625x625-25	630x630x30	3.0	675x675x210	6 (8)
SLIMPANEL.2-P300x1200-25	308x1,208x30	3.1	650x1,250x210	12 (16)
SLIMPANEL.2-P600x1200-50	608x1,208x30	4.8	650x1,250x210	6 (8)

* - in brackets – number of items without individual packaging in a multipack

OFFICE P / OFFICE M

Product	Individual Package Dimensions, mm	Gross weight, kg	Group Package Dimensions, mm	Luminaires in a Group Package
OFFICE 20-P600x300	–	4.2 (2 pcs)	630x615x75	2
OFFICE 40-P600x600	630x615x75	3.1	620x370x635	5
OFFICE 28-P600x600	642x620x70	2.0	–	–
OFFICE 20-M600x300	–	4.5 (2 pcs)	630x615x75	2
OFFICE 25-M600x600	630x615x75	4.0	620x370x635	5
OFFICE 33-M600x600	630x615x75	4.0	620x370x635	5
OFFICE 41-M600x600	630x615x75	4.0	620x370x635	5
OFFICE 41-M1200x300	1,230x315x70	4.8	–	–
OFFICE 82-M1200x600	1,230x615x70	7.6	–	–

STREET AND ROAD LUMINAIRES

MAG3

Product	Individual Package Dimensions, mm	Gross weight, kg	Group Package Dimensions, mm	Luminaires in a Group Package
MAG3-018-112	592x120x111	3.1	606x256x352	6
MAG3-030-112	592x120x111	3.1	606x256x352	6
MAG3-045-112	592x120x111	3.1	606x256x352	6
MAG3-060-124	659x149x115	4.0	–	–
MAG3-085-136	820x149x115	4.9	–	–
MAG3-105-148	918x149x115	5.5	–	–
MAG3-135-160	1,032x120x111	6.2	–	–

MAG4

Product	Individual Package Dimensions, mm	Gross weight, kg	Group Package Dimensions, mm	Luminaires in a Group Package
MAG4-160-236	1,102x226x116	8.6	–	–
MAG4-215-248	1,197x226x116	9.5	–	–
MAG4-270-260	1,292x226x116	10.4	–	–

PACKAGING

INDUSTRIAL LUMINAIRES

INDUSTRY.3

Product	Individual Package Dimensions, mm	Gross weight, kg
INDUSTRY.3-018-112	250x135x133	1.9
INDUSTRY.3-030-112	250x135x133	1.9
INDUSTRY.3-045-112	250x135x133	1.9
INDUSTRY.3-060-124	340x135x144	2.9
INDUSTRY.3-085-136	450x135x144	4.0
INDUSTRY.3-105-148	545x135x144	4.6
INDUSTRY.3-135-160	630x135x144	5.2
INDUSTRY.3-160-236	535x250x150	8.3
INDUSTRY.3-215-248	535x250x150	9.8
INDUSTRY.3-240-336	455x355x150	12.2
INDUSTRY.3-430-448	535x480x150	19.1
INDUSTRY.3-160-136/136	814x120x130	5.8
INDUSTRY.3-215-148/148	1,032x120x130	6.8
INDUSTRY.3-270-160/160	1,170x120x130	7.6
INDUSTRY.3-430-248/248	984x273x139	13.5
INDUSTRY.3-540-260/260	1,176x273x139	15.2

EXPLOSION PROOF LUMINAIRES

Product	Individual Package Dimensions, mm	Gross weight, kg
LL-DS-040	145x221x382	3.1
LL-DS-050	145x221x382	3.1
LL-DS-085	145x221x582	5.7
LL-DS-110	145x221x582	5.7
LL-DS-170	270x221x582	11.0
LL-DS-220	270x221x582	11.0
LL-DS-040 (with protecting grid)	145x221x382	3.6

UTILITY LUMINAIRES

Product	Individual Package Dimensions, mm	Gross weight, kg
DELTA 2 MD	190x190x45	0.3
DELTA 3 MD	275x275x50	0.5
DELTA 4 MD	275x275x50	0.65

INDUSTRY.47

Product	Individual Package Dimensions, mm	Gross weight, kg
INDUSTRY.47-1x25	205x205x240	3.6

INDUSTRY.T

Product	Individual Package Dimensions, mm	Gross weight, kg
INDUSTRY.T-060-101	67x67x620	0.9
INDUSTRY.T-120-101	67x67x1,220	1.4

INDUSTRY.P

Product	Individual Package Dimensions, mm	Gross weight, kg
INDUSTRY.P 32	1,290x175x120	2.0
INDUSTRY.P 44	1,290x175x120	2.0
INDUSTRY.P 52	1,290x175x120	2.0

LINEAR LUMINAIRES

LINE.V, LINE.P и LINE.N

Product	Individual Package Dimensions, mm	Gross weight, kg
LINE.V 33, LINE.V 40	1,172x120x80	3.3
LINE.P 33, LINE.P 40	1,172x120x80	3.3
LINE.N 16	665x100x85	1.2
LINE.N 20	1,240x100x85	1.9
LINE.N 32	1,240x100x85	2.1

LineLux

Product	Individual Package Dimensions, mm	Gross weight, kg
LineLux.N-030	665x100x85	1.4
LineLux.N-040	1,240x100x85	2.7
LineLux.N-050	1,240x100x85	2.7
LineLux.N-060	1,840x100x85	4.0
LineLux.N-080	2,440x100x85	5.2
LineLux.P-030	665x100x85	1.4
LineLux.P-040	1,240x100x85	2.7
LineLux.P-050	1,240x100x85	2.7
LineLux.P-060	1,840x100x85	4.0
LineLux.P-080	2,440x100x85	5.2

PACKAGING

HORTICULTURAL LUMINAIRES

INDUSTRY.3 (PHYTO)

Product	Individual Package Dimensions, mm	Gross weight, kg
INDUSTRY.3-085-136 (Phyto)	450x135x144	4.0
INDUSTRY.3-105-148 (Phyto)	545x135x144	4.6
INDUSTRY.3-135-160 (Phyto)	630x135x144	5.2
INDUSTRY.3-160-136/136 (Phyto)	814x120x130	5.7
INDUSTRY.3-215-148/148 (Phyto)	1,032x120x130	6.5
INDUSTRY.3-270-160/160 (Phyto)	1,170x120x130	7.3
INDUSTRY.3-320-236/236 (Phyto)	820x280x120	12.6
INDUSTRY.3-430-248/248 (Phyto)	1,030x280x120	14.7
INDUSTRY.3-540-260/260 (Phyto)	1,200x280x120	16.8

PLANTALUX-HP

Product	Individual Package Dimensions, mm	Gross weight, kg
PlantaLux-HP-100	545x135x144	3.3
PlantaLux-HP-150	814x120x130	4.8
PlantaLux-HP-200	1,032x120x130	6.5
PlantaLux-HP-250	1,170x120x130	7.4

PLANTALUX INTER / UPPER

Product	Individual Package Dimensions, mm	Gross weight, kg
PlantaLux-35 INTER,	880x85x85	1.5
PlantaLux-35 UPPER	880x85x85	1.5
PlantaLux-45 INTER	1,000x85x85	1.7
PlantaLux-45 UPPER	1,000x85x85	1.7

PLANTALUX HOME

Product	Individual Package Dimensions, mm	Gross weight, kg
PlantaLux-50 HOME	592x179x64	0.9

POULTRY AND LIVESTOCK FARMING LUMINAIRES

Product	Individual Package Dimensions, mm	Gross weight, kg
LL-TUBE-050-111	700x48x44	0.3
LL-TUBE-100-111	1,200x48x44	0.55
LL-TUBE-150-111	1,650x48x44	0.8
LL-TUBE-200-111	2,150x48x44	1.0
LL-TUBE-250-111	2,600x48x44	1.3

PARK

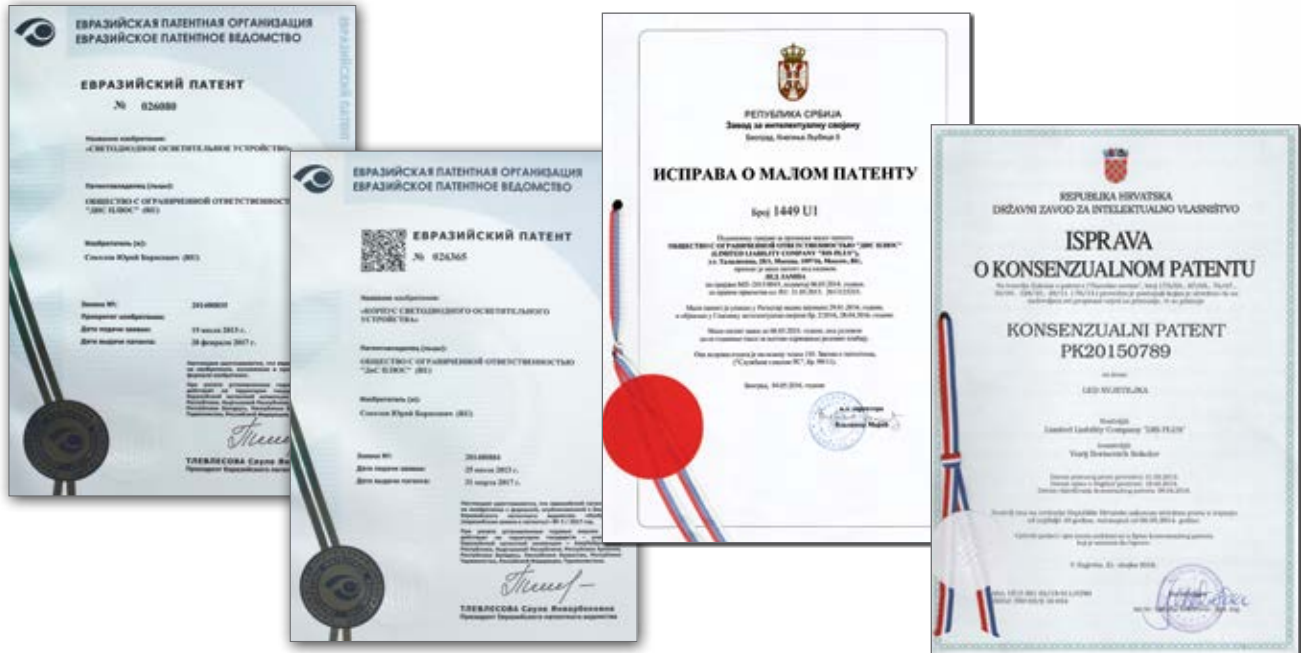
Product	Individual Package Dimensions, mm	Gross weight, kg
STREET 18-055	760x640x640	9.3
STREET 27-055	760x640x640	8.3
STREET 56-055	760x640x640	11.0
LedPark 01-075	760x640x640 (2 pcs.)	19.0 (2 pcs.)
LedPark 02-028	720x420x420	6.6
BALL 400-60*	420x480x420	5.5

* - Transportation dimensions include the pipe stand-out, e.t. packaging dimensions + pipe length (without packaging)

FLOODLIGHTS FOR ARCHITECTURAL DOWNLIGHT

Product	Individual Package Dimensions, mm	Gross weight, kg
DS-LFL-008-1x3	156x118x106	1.0
DS-LFL-032-4x3	231x123x151	2.0
DS-LFL-025-1x12	231x123x151	2.4
DS-LFL-100-4x12	246x258x176	6.1

OVER 100 PATENTS FOR LUMINAIRES



INCOTEX ELECTRONICS GROUP

RUSSIA

DS Trade Ltd.
26, 16-th Parkovaya st., Moscow
Russian Federation, 105484
Tel.: +7 (495) 468-57-74
E-mail: pdp@incotex.ru

Dubai, UAE

LeaderLight Electronics
261624, Office LB16 406
Jebel Ali, Dubai, UAE
Tel.: +971-4-881-15-88
info-uae@incotex.com

BULGARIA

INCOTEX GROUP
Sofia, BG-1528
2A Nedelcho Bonchev St.
Tel: +359 2 902 5880
Fax: +359 2 968 6034
E-mail: sales@incotex.bg

www.incotex.com