

ROSA[®]



OUTDOOR LIGHTING
LED COLLECTION

INDEX

CORE LED	8
CUT LED	10
STICK LED	12
DROP LED	14
DROP I LED	16
DROP II LED	17
FLEXI LED	18
MIRA LED	20
MIZAR LED	22
OS-1 LED	24
VEGA LED	26
ATLANTIS LED	28
CORONA LED	30
COSMO DELTA LED	32
GEMINI LED	34
MAGNOLIA LED	36
COSMO LED	38
ANDROMEDA LED	40
URSA I LED	42
URSA II LED	44
ARTEMIS LED	46
KARIN LED	48
KARIN DECOR LED	50
SAL DECO 3 LED	51
LIBRA LED	52
TAURUS LED	54

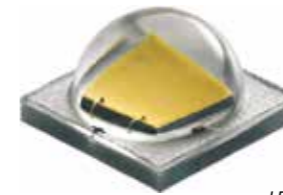


ROSA LED collection includes models of street and park lighting luminaires, decorative columns, lighting sets and industrial luminaires. The combination of aluminium anodized technology with an innovative LED light source makes these products not only economical, ecological and durable, but also very aesthetic. LED collection is the perfect fusion of innovative technology and modern design.

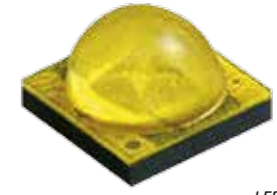
CHARACTERISTICS

LIGHT SOURCE

The light source in ROSA LED products is the CREE XT-E and CREE XM-L2 LED, one of the most efficient LEDs on the market. It is characterized by a very low thermal resistance of 2,5°C/W. This allows an optimum output to the radiator by the LEDs. A colour rendering index CRI is over 77. LEDs in ROSA LED products are supplied by 1A to ensure the most favorable working conditions while maintaining the economic aspects.



LED CREE XM-L2



LED CREE XT-E

COLOUR TEMPERATURE OF LIGHT

The ROSA LED series allows selection of one of two variants of light colour temperature. Each luminaire accepts LEDs with colour temperature of 5000 K – a neutral white light or 3500 K – a warm light. These variants are marked in the product with code number „3” for the temperature 3500 K and code number „6” for the 5000 K. The choice of one of these options makes no difference to the luminaire cost but depends on customer preference.

OPTICAL MODULE

The optical module consists of a printed circuit board MCPCB on which LEDs are placed together with protection elements. It is integrated with a specially designed lens to hold the LED. The asymmetric lens is made of PMMA with increased temperature properties. The whole optical system is assembled on the radiator surface.



Optical module construction used in the ROSA LED

LUMINAIRES CONSTRUCTION

Luminaires construction consists of profiles and sheets of aluminium alloy with excellent thermal properties and thermal conductivity (> 200W/mK) – except OS-1 LED, MAGNOLIA LED, ATLANTIS LED. The luminaire body is anodized, which further increases the discharge of heat by radiation. In case of street lighting luminaires the angle of inclination can be adjusted from +15° to -15°. Regarding MAGNOLIA LED the regulation is from +20° to -5° every 2,5°.

ANODIZING COLOURS

Luminaires made of aluminium alloy are subject to colouring process by anodizing technology. We offer a wide range of anodizing colours containing: natural C-0, gold C-23, champagne C-32, olive C-33, brown C-34, black C-35, inox C-45, grey CI-63, graphite CI-65, green CI-75, anthracite CI-78 and claret CI-85.

DURABILITY

The durability of LED luminaires results from the long life of LEDs (minimum 50,000 hours) and the highest quality of used materials. The application of anodized aluminium ensures high aesthetic value as well as additional heat dissipation, resulting in the highest luminaire effectiveness in a long time.

BUILDING AND CONSTRUCTION OF DRIVER

The LED driver used in ROSA luminaires can be easily removed without tools. The driver is equipped with necessary protection elements: over-voltage and LED overheating protection as well as short circuit protection. The permanence of driver's work is ensured by a stable and durable control system and high quality radiators. This combination guarantees that the lighting parameters will not change during many hours of the luminaire's work. Additionally, the construction of the driver ensures the possibility of individual illuminance level programming. Configuration changes of luminous flux in time (temporal profile) is realized with help of dedicated software for the adapter. It allows setting of up to five levels of light intensity during one cycle of light fixtures, which directly affects the lower operating costs. Moreover it is possible to program two independent temporal profiles in one luminaire.

DRIVER REPLACING IN MAGNOLIA LED LUMINAIRE



Opening of the luminaire's cover



Mounting nuts unscrewing of the driver and disconnecting the power plug without any tools



Removing the driver

RESEARCH LABORATORY

ROSA company has its own laboratory, which plays a crucial role in the active research and development of the company. It enables to conduct very precise corrosion and aging tests, IP rating examinations, photometrical and climatic researches. Every ROSA LED product has been universally and very precisely tested on each level of its creation. This fact ensures that the products are properly constructed, improved and made of the best quality materials. Moreover the behavior of the product under the influence of ambient conditions has already been analyzed. However, the current process controls implemented at every stage of production ensures high quality of delivered products and guarantee their sustainability. Thanks to research being carried out you can be sure that products from the LED collection retain their functionality and aesthetics for a long time.



The most modern device for photometric testing in ROSA laboratory

LED COLLECTION TECHNICAL DATA

Protection degree	IP66
Insulation class	II
Frequency voltage	50/60Hz
Power factor	>0,96
Colour rendering index CRI	>75
Lifetime of L70 LEDs	>50 000 h
Colour temperature	3 500 K (warm light) or 5 000 K (neutral white light)
Driver	programmable, with possibility to set power consumption reduction; possibility of using non-programmable driver (reduction of luminaire's cost)
Mounting	on column or extension arm with spigot ending Ø 60 mm (only DROP LED for mounting on extension arm with spigot ending Ø 42 mm)
Colour	inox / graphite (except MAGNOLIA LED, OS-1 LED, KARIN 6000 LED, ATLANTIS LED, LIBRA LED, TAURUS LED) other colours available on request

ECONOMY

HIGH INVESTMENT COSTS?

ROSA LED LUMINAIRES WILL CHANGE IT!

We give the example that the lighting of a square with dimensions 20 m x 132 m using LED luminaires is **23,2% cheaper** compared to the traditional sodium luminaires.

Our main assumption was to compare the luminous efficiency of two luminaires – LED and sodium one, in the situation when they need to achieve the parameters required by S3 class for the Norm EN 13201 and the total lighting time of luminaire at 4126,3 h in a year.

OPA-1 S-70W Son luminaire



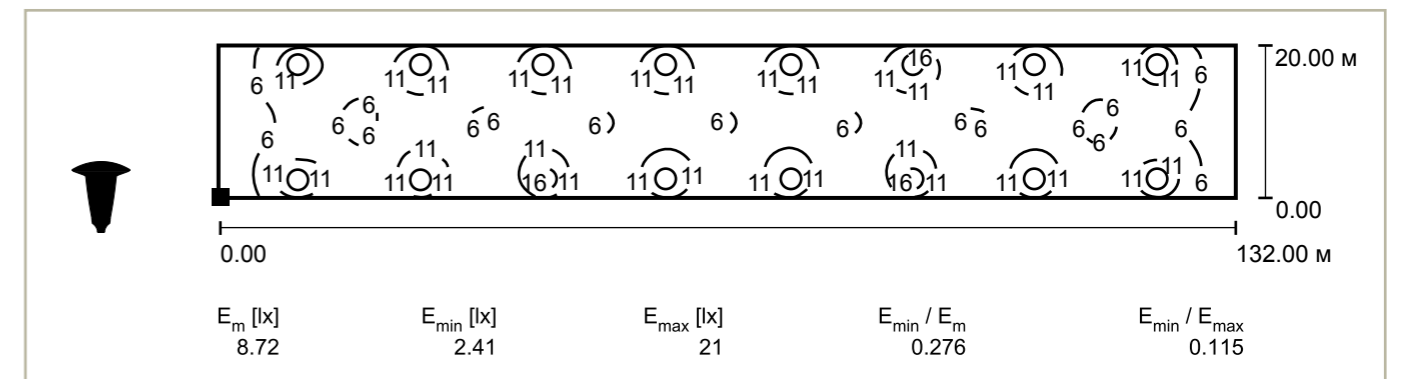
OPA-1 S-70W Son is a sodium luminaire with a power of 70W. To the analysis we chose the luminaire with Atlantis Frozen lamp-diffuser.

MIRA LED 36 luminaire

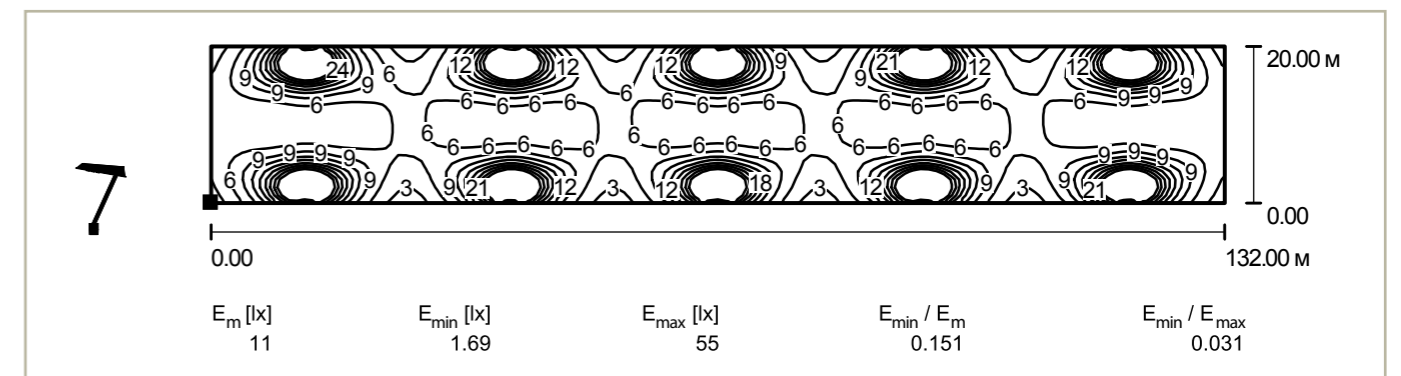


MIRA LED 36 is a LED luminaire with a power of 36W in anodized aluminium body with CREE XM-L2 LEDs. In standard version the luminaire is equipped with a programmable driver that enables power reduction in scheduled night hours.

The chosen luminaires were mounted on the 4,5 m high columns.





In order to achieve the parameters mentioned above, we need to install 16 lighting sets with OPA-1 S-70W luminaires.



We need only 10 lighting sets to illuminate the same area using MIRA LED 36 luminaires.

I. LED luminaires = savings in electrical energy consumptions



Here are the results of our analysis:

	OPA-1 S-70W 	MIRA LED 36 
Total power consumption of luminaire	79 W	42 W
Annual total power consumption of luminaire	326 kWh	173 kWh

CONCLUSION: The annual savings of electricity consumption using MIRA LED 36 is **47%**.

II. LED luminaires = savings through the reduction of lighting sets number

Here are the results of our analysis:

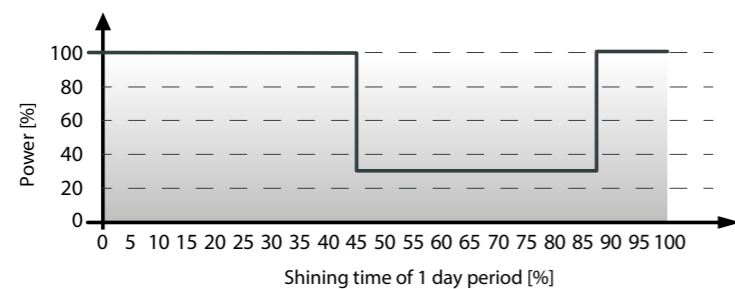
	OPA-1 S-70W 	MIRA LED 36 
Number of lighting sets	16	10
Annual total power consumption of lighting sets	5216 kWh (16 lighting sets x 326 kWh)	1739 kWh (10 lighting sets x 173 kWh)

CONCLUSION: Using MIRA LED 36 luminaires the total annual savings of electricity consumption of whole investment is **66,8%**.



III. Additional savings through the power reduction in LED luminaires

ROSA LED luminaires are equipped with programmable driver that enables reducing the luminous flux at certain hours of the night. Therefore we can assume that in a daily cycle MIRA LED luminaire for the first 45% and last 13% of illumination time will be using 100% of its power and between those periods of time it will be using only 30% of its power. That will cause 30% reduction of overall power.

The below diagram shows the savings which are the result of application of the power reduction in ROSA LED luminaires:



Electricity consumption savings are the best seen in comparison:

	Annual total power consumption of 16 lighting sets with OPA-1 S-70W luminaire without possibility of power reduction	5216 kWh
	Annual total power consumption of 10 lighting sets with MIRA LED 36 luminaire using power reduction in specified hours (-30% power use)	1211 kWh

CONCLUSION: The total annual power savings of the whole investment using MIRA LED 36 and power reduction is **76,8%**.

According to prices on the Polish market total cost of purchase and installation of 10 lighting sets with MIRA LED 36 luminaires is **23,2%** lower than total cost of purchase and installation of 16 lighting sets with OPA-1 S-70W Son luminaires.

GENERAL CONCLUSION: USING ROSA LED LUMINAIRES MEANS TRIPPLE SAVINGS THAT CAUSE THE INVESTMENT NOT ONLY MORE EFFICIENT AND ENERGY-SAVING BUT CHEAPER AT THE START AS WELL.



ECOLOGY

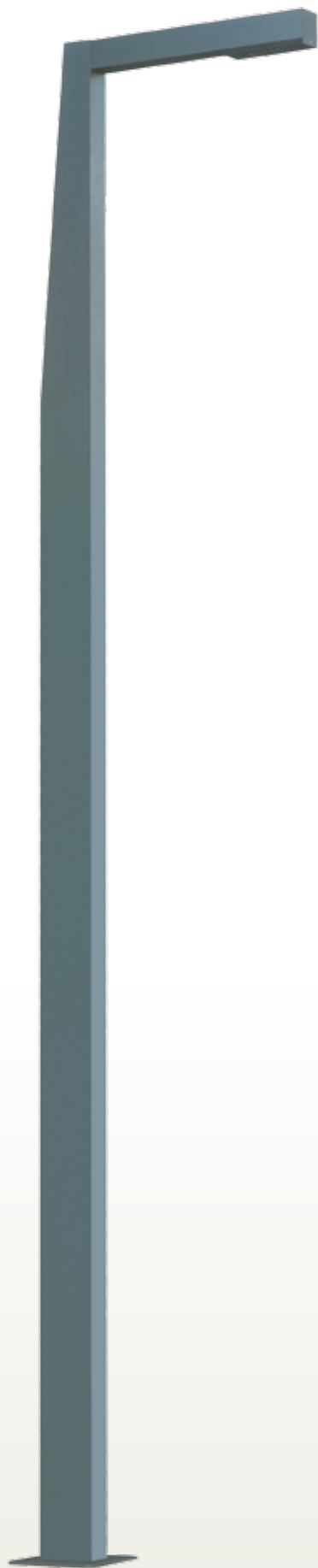
ROSA LED products = ecological lighting:

- LEDs do not emit UV or infrared radiation.
- ROSA LED products use less energy, causing reduction of carbon dioxide emissions in electricity production.
- All luminaires comply with the Standard PN-EN 62471 "Photo biological safety of lamps and lamp systems" and do not cause damage to eyes in normal use.
- Luminaires are made of renewable materials, mainly aluminium, that can easily be 100% recycled again and again.
- Long life of LED luminaires cause less replacements and waste.
- ROSA LED products are compatible with the RoHS Directive, which places restrictions on the production stage in use of dangerous substances in electronics. Therefore ROSA LED products are environmentally friendly.
- In accordance with the "Dark Sky" anti light pollution policy, light from the ROSA LED luminaires is directed only downward.

ROSA LED PRODUCTS ARE COMPATIBLE WITH THE FOLLOWING DIRECTIVES:

- Directive LVD 2006/95/WE on the harmonization of the laws of the Member States relating to electrical equipment designed for use within certain voltage limits;
- Directive EMC 2004/108/WE the laws of the Member States relating to electromagnetic compatibility;
- Directive RoHS 2002/95/WE on reducing the use of certain dangerous substances in electrical and electronic equipment.

ROSA LED PRODUCTS CARRY A 5 YEAR GUARANTEE WHICH CAN BE EXTENDED UP TO 10 YEARS.

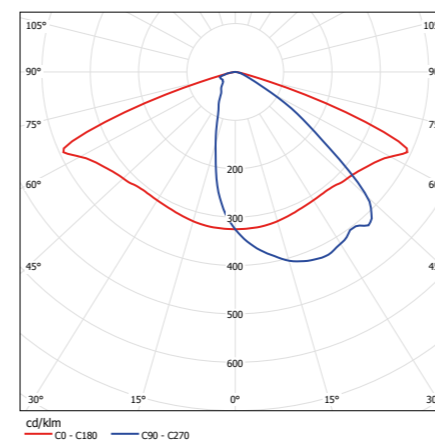
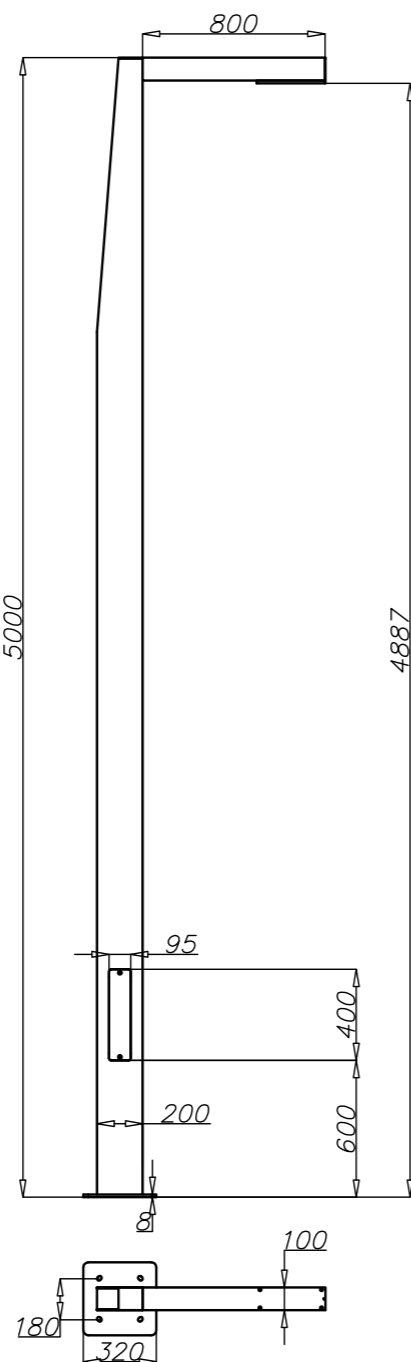


CHARACTERISTICS

CORE LED lighting set is designed to illuminate parks, squares and communication routes. It is made of aluminum profiles anodized grey in standard with wooden decorative element in alder colour. The light source is CREE XT-E LED. The lighting set is adapted to work in temperatures between -40°C and +55°C.

The advantages of using CORE LED:

- reduction of annual electricity consumption,
- maintenance costs savings,
- decorative character.

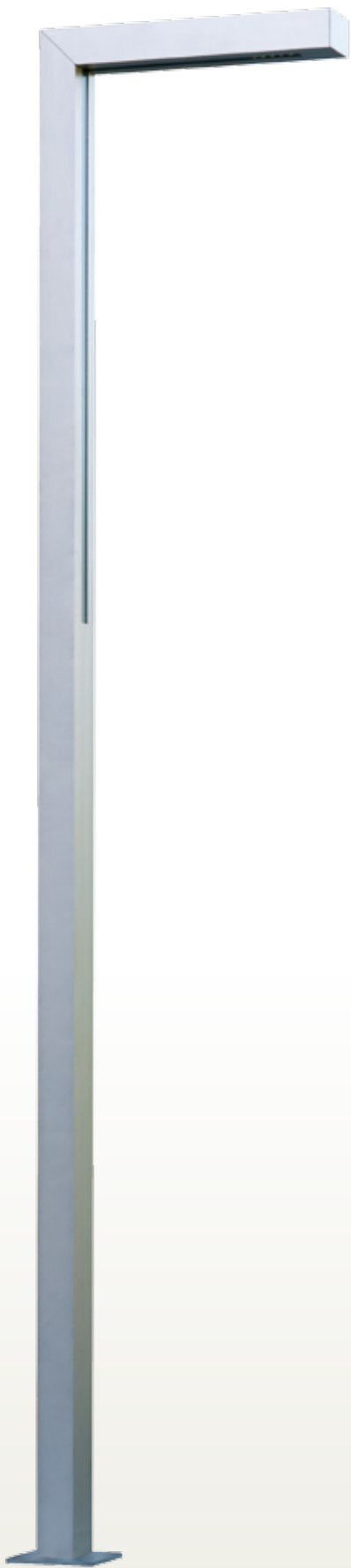


Distribution curve for CORE LED 24

TECHNICAL DATA

Type	CORE LED 24	CORE LED 48
Code	215330/6	215333/6
Colour temperature [K]	5 000	
LEDs power [W]	24	48
Total power [W]	31	55
Luminous efficiency [lm/W]	71	80
Luminous flux [lm]*	2 200	4 400
LEDs amount	12	24
Net weight [kg]	42	
Height [m]	5	
Unit volume [m³]	1,75	
Voltage [V]	120-277 AC 50/60 Hz	

* Due to the precision class of diodes tolerance is +/- 3%

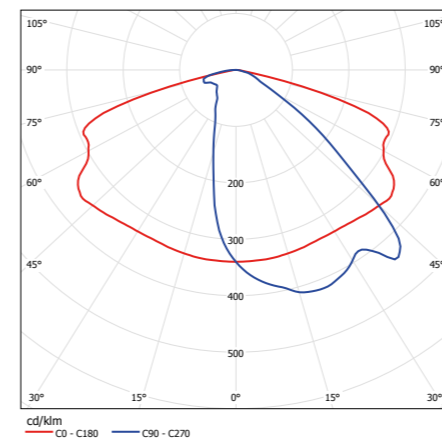
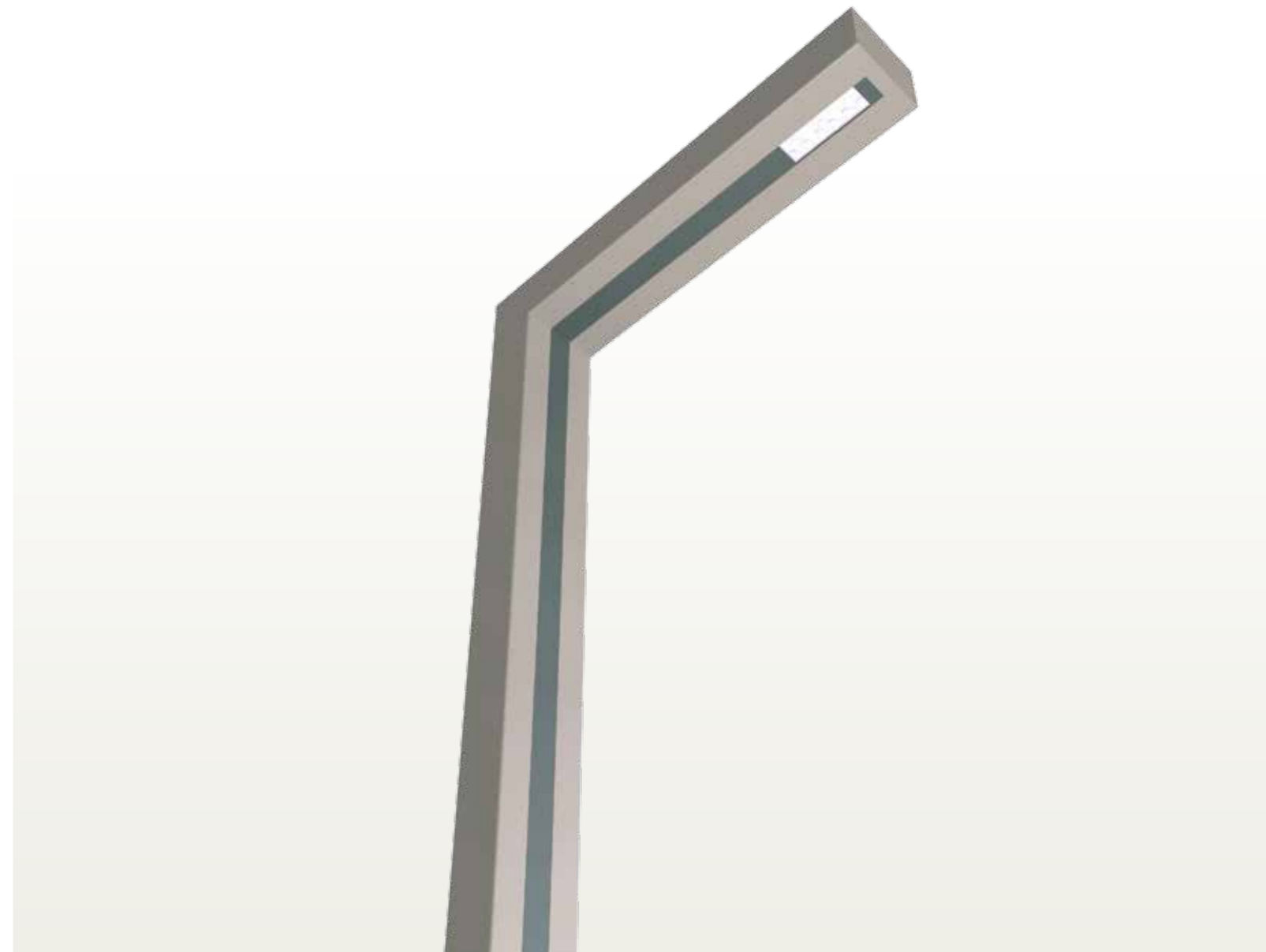
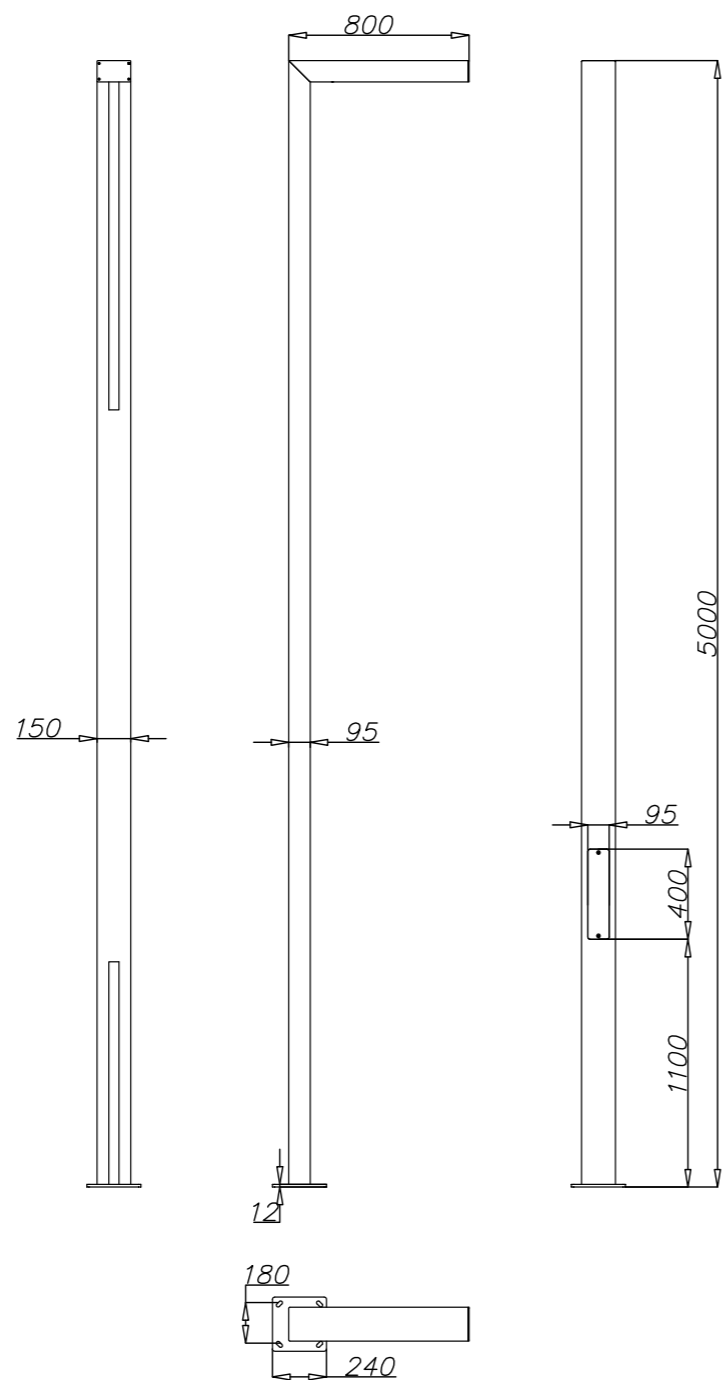


CHARACTERISTICS

CUT LED lighting set is designed to illuminate parks, squares and communication routes. It is made of aluminum profiles anodized inox in standard with decorative elements made of aluminium anodized grey or PMMA (there is a possibility to use decorative lighting in these places). The light source is CREE XT-E LED. The lighting set is adapted to work in temperatures between -40°C and +55°C.

The advantages of using CORE LED:

- reduction of annual electricity consumption,
- maintenance costs savings,
- decorative character.



Distribution curve for CUT LED 24

TECHNICAL DATA

Type	CUT LED 24	CUT LED 48
Code	215430/6	215433/6
Colour temperature [K]	5 000	
LEDs power [W]	24	48
Total power [W]	31	55
Luminous efficiency [lm/W]	71	80
Luminous flux [lm]*	2 200	4 400
LEDs amount	12	24
Net weight [kg]	42	
Height [m]	5	
Unit volume [m ³]	1,00	
Voltage [V]	120-277 AC 50/60 Hz	

* Due to the precision class of diodes tolerance is +/- 3%

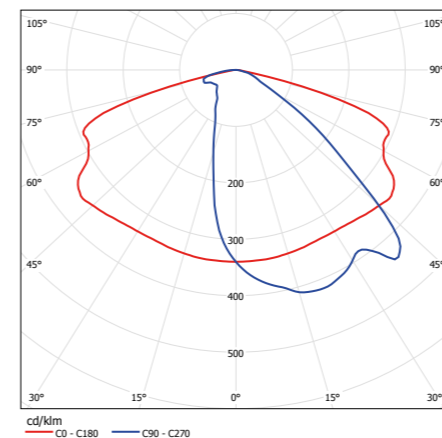
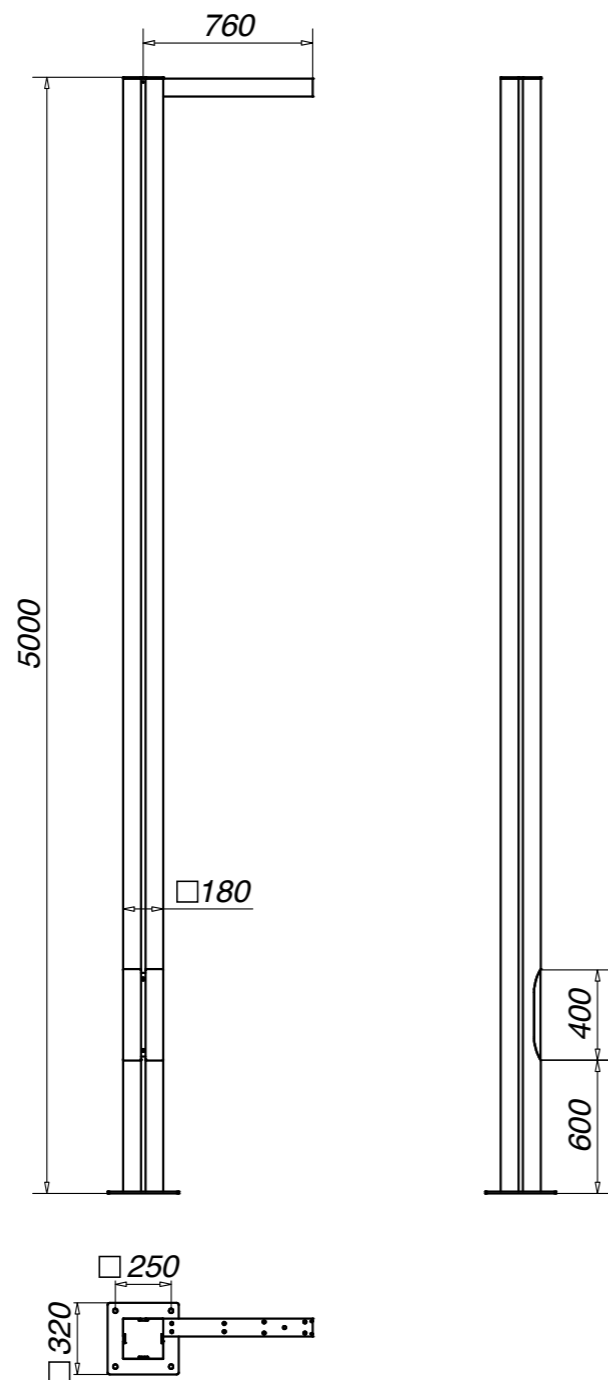


CHARACTERISTICS

STICK LED lighting set is designed to illuminate parks, squares and communication routes. It is constructed of aluminum profiles anodized grey and inox in standard with the possibility to configure from 1 to 4 arms, 24 or 48 W each one. The light source is CREE XT-E LED. The lighting set is adapted to work in temperatures between -40°C and +55°C.

The advantages of using STICK LED:

- reduction of annual electricity consumption,
- maintenance costs savings,
- decorative character.



TECHNICAL DATA

Type	STICK LED 24	STICK LED 48
Code	215530/6	215533/6
Colour temperature [K]	5 000	
LEDs power [W]	24	48
Total power [W]	31	55
Luminous efficiency [lm/W]	71	80
Luminous flux [lm]*	2 200	4 400
LEDs amount	12	24
Net weight [kg]	56,5	
Height [m]	5	
Unit volume [m ³]	1,75	
Voltage [V]	120-277 AC 50/60 Hz	

* Due to the precision class of diodes tolerance is +/- 3%

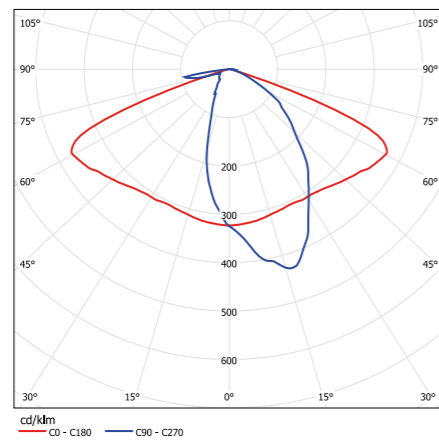


CHARACTERISTICS

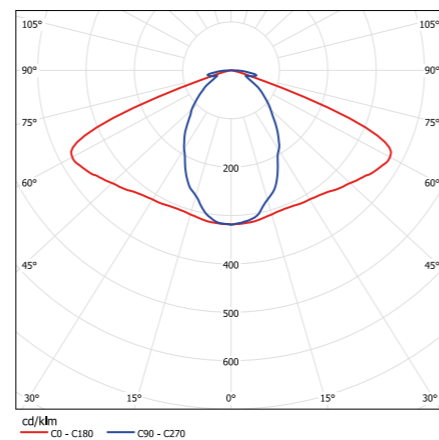
DROP LED park luminaire is designed to illuminate parks, squares and communication routes. The light source is CREE XM-L2 LED. The luminaire is adapted to work in temperatures between -40°C and +40°C. It is designed to be mounted on 5 to 6 m columns. It is adapted to mount on the extension arms with spigot ending Ø 42 mm. Available with symmetric and asymmetric optics configuration.

The advantages of using DROP LED 48 compared to OW S-70W Son luminaire with lamp diffuser Cone white:

- 30.38% reduction of luminaire energy consumption,
- up to 51.2% reduction of luminaire energy consumption in case of using power reduction,
- the possibility of reducing the amount of lighting sets and therefore – reduction of energy consumption and costs of the investment,
- maintenance costs savings.



Distribution curve for DROP 48, asymmetric optics

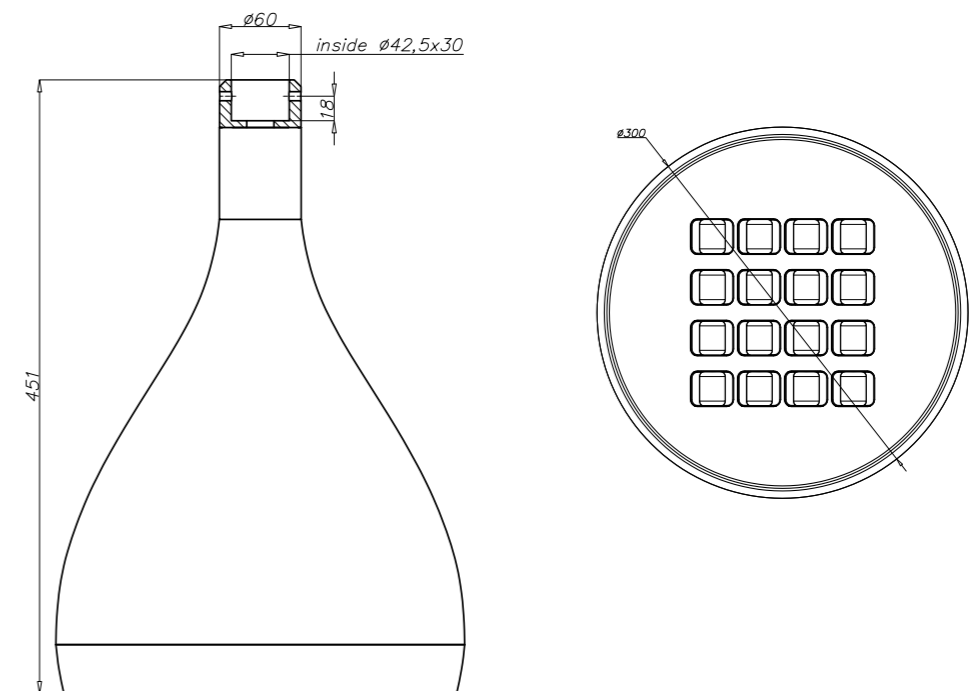


Distribution curve for DROP 48, symmetric optics

TECHNICAL DATA

Type	DROP LED 48	
	215033/6/A**	215033/3/A**
Code	215033/6/S***	215033/3/S***
Colour temperature [K]	5 000	3 500
LEDs power [W]	48	
Total luminaire power [W]	55	
Luminous efficiency [lm/W]	113	88
Luminous flux* [lm]	6 200	4 850
LEDs amount	16	
Net weight [kg]	6,5	
Unit volume [m³]	0,041	
Windage [m²]	0,075	
Voltage [V]	90-300 AC 50/60 Hz	

* Due to the precision class of diodes tolerance is +/- 3% ** A - asymmetric optics *** S - symmetric optics



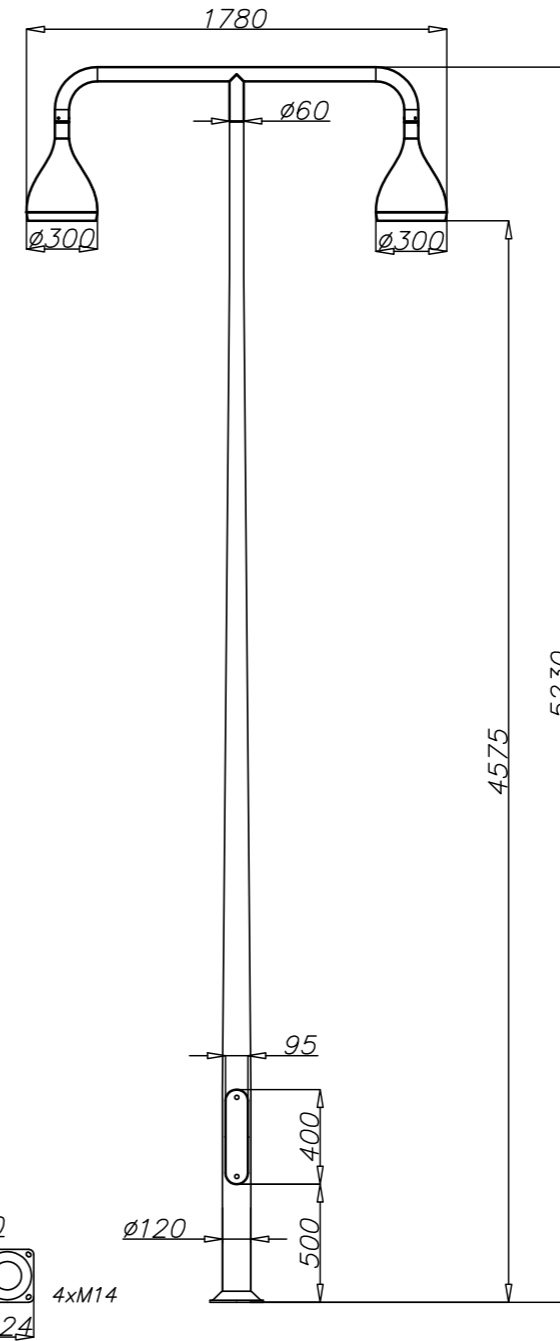
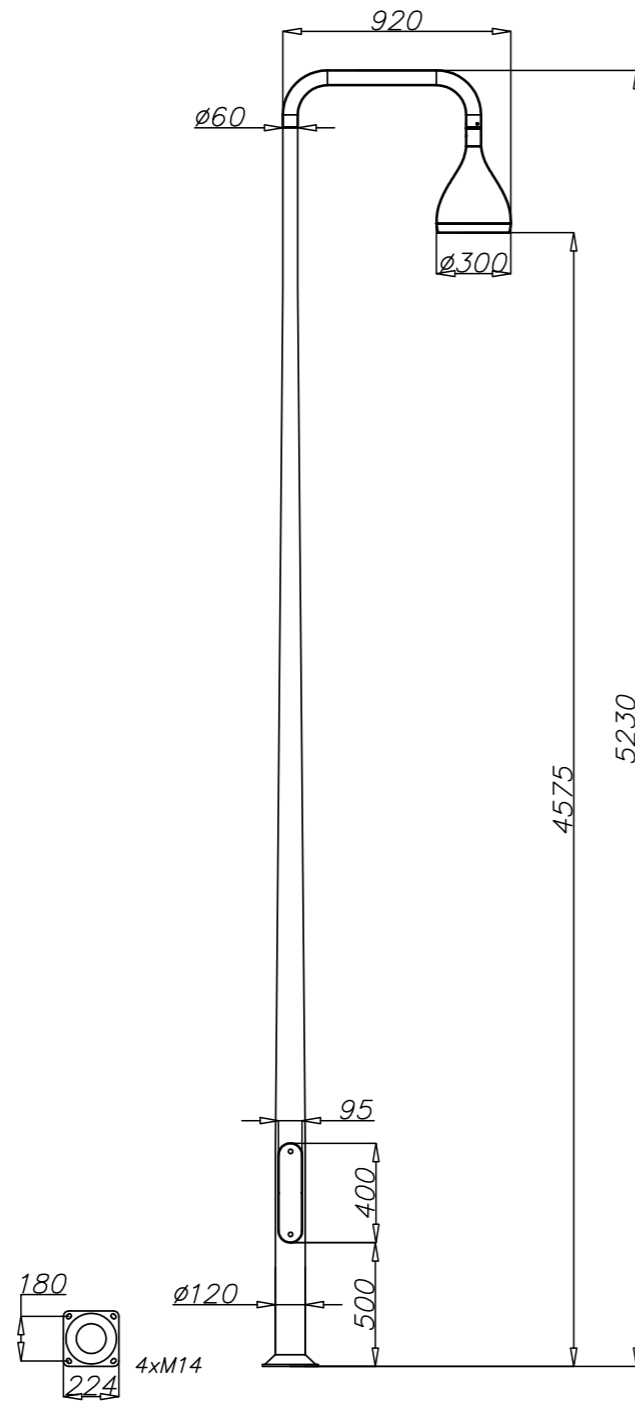


CHARACTERISTICS

DROP LED luminaire is also available in the following lighting sets:

- DROP I LED – consisting of DROP LED luminaire, a single aluminium extension arm and aluminium column,
- DROP II LED – consisting of two DROP LED luminaires, double aluminium extension arm and aluminium column.

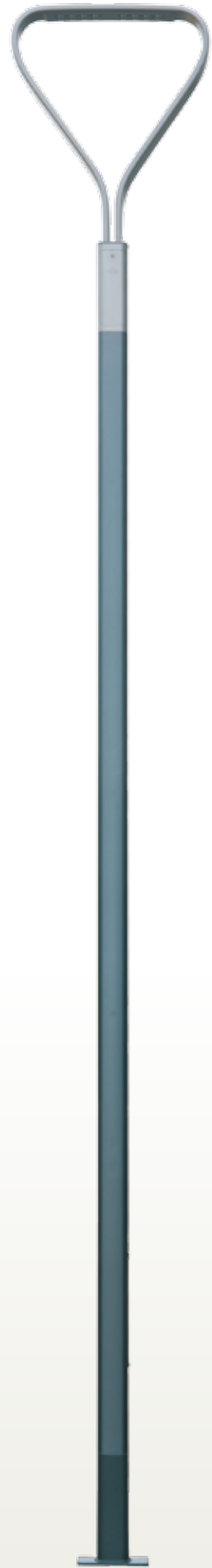
Both lighting sets are designed to illuminate parks, squares and communication routes. The light source is CREE XM-L2 LED. Both sets are adapted to work in temperatures between -40°C and +40°C. Available with symmetric and asymmetric optics configuration.



TECHNICAL DATA

Type	DROP I LED 48		DROP II LED 2 x 48	
	215133/6/A**	215133/3/A**	215233/6/A**	215233/3/A**
Code	215133/6/S***	215133/3/S***	215233/6/S***	215233/3/S***
Colour temperature [K]	5 000	3 500	5 000	3 500
LEDs power [W]	48		2 x 48	
Total luminaire power [W]	55		2 x 55	
Luminous efficiency [lm/W]	113	88	113	88
Luminous flux* [lm]	6 200	4 850	2 x 6 200	2 x 4 850
LEDs amount	16		2 x 16	
Net weight [kg]	25,9		34,9	
Unit volume [m ³]	1,78		3,01	
Voltage [V]	90-300 AC 50/60 Hz			

* Due to the precision class of diodes tolerance is +/- 3% ** A - asymmetric optics *** S - symmetric optics

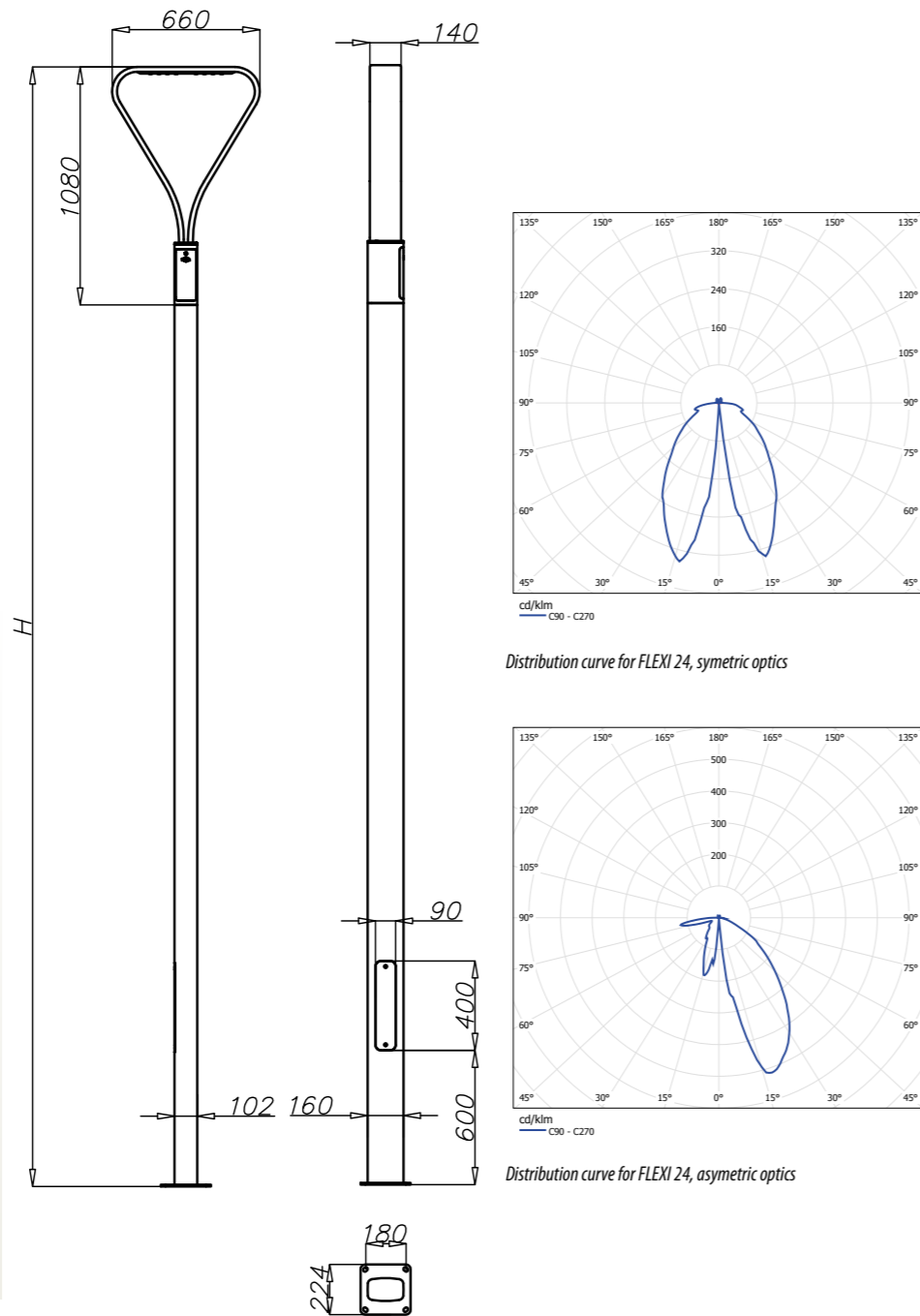


CHARACTERISTICS

FLEXI LED lighting set is designed to illuminate parks, squares and communication routes. The light source is CREE XM-L2 LED. It is adapted to work in temperatures between -40°C and +55°C. It is available in two options of power and height. Available with symetric and asymetric optics configuration.

The advantages of using FLEXI LED:

- reduction of annual electricity consumption,
- maintenance costs savings,
- decorative character.



TECHNICAL DATA

Type	FLEXI LED 24				FLEXI LED 48			
	214930/6/S***	214930/6/A**	214930/3/S***	214930/3/A**	214933/6/S***	214933/6/A**	214933/3/S***	214933/3/A**
Code								
Optics type	Symetric	Asymetric	Symetric	Asymetric	Symetric	Asymetric	Symetric	Asymetric
Colour temperature [K]	5 000	5 000	3 500	3 500	5 000	5 000	3 500	3 500
LEDs power [W]	24				48			
Total luminaire power [W]	28				55			
Luminous efficiency [lm/W]	86	80	67	63	86	80	67	63
Luminous flux* [lm]	2 375	2 200	1 850	1 725	4 750	4 400	3 700	3 450
LEDs amount	8				16			
Height [m]	4				5			
Net weight [kg]	29				32,5			
Unit volume [m ³]	0,6				0,75			
Windage [m ²]	0,38				0,49			
Voltage [V]	90-300 AC 50/60 Hz							

* Due to the diodes tolerance is +/- 3% ** A - asymetric optics *** S - symetric optics



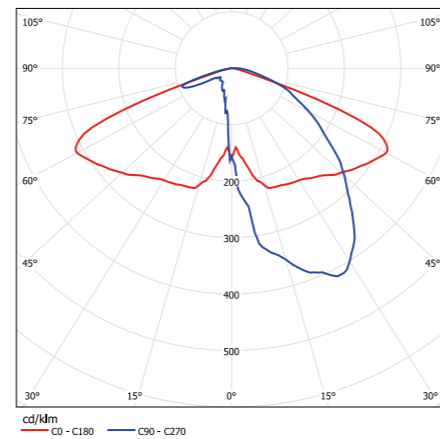
MIRA LED on the column SAL-4/B60 (4 m high)

CHARACTERISTICS

MIRA LED is designed to illuminate parks, squares and communication routes. The light source is CREE XM-L2 LED. The luminaire is adapted to work in temperatures between -40°C and +40°C. It is designed to be mounted on 4 to 5 m columns.

The advantages of using MIRA LED 36 compared to OPA-1 S-70W Son luminaire with lamp diffuser Atlantis frozen:

- 46,84% reduction of luminaire energy consumption,
- up to 62,9% reduction of luminaire energy consumption in case of using power reduction,
- the possibility of reducing the amount of lighting sets and therefore – reduction of energy consumption and costs of the investment,
- maintenance costs savings.

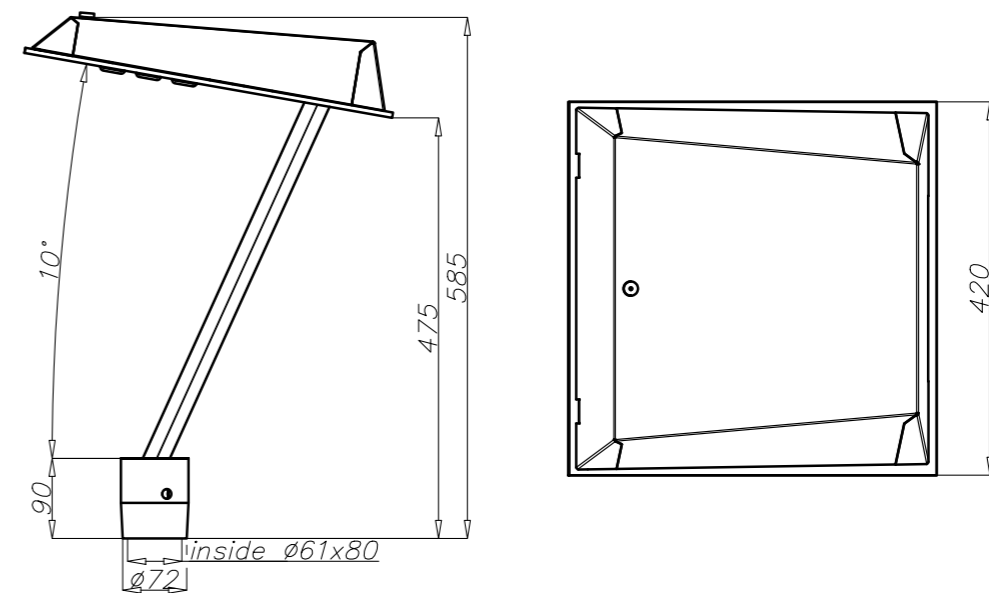


Distribution curve for MIRA LED 36

TECHNICAL DATA

Type	MIRA LED 36	
	Code	214532/6
Colour temperature [K]	5 000	3 500
LEDs power [W]	36	
Total luminaire power [W]	42	
Luminous efficiency [lm/W]	111	86
Luminous flux* [lm]	4 650	3 600
LEDs amount	12	
Net weight [kg]	6,1	
Unit volume [m ³]	0,115	
Windage [m ²]	0,029	
Voltage [V]	90-300 AC 50/60 Hz	

* Due to the precision class of diodes tolerance is +/- 3%





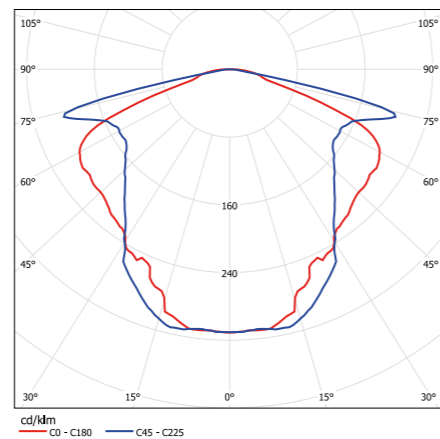
MIZAR LED on the column SAL-4/B60 (4 m high)

CHARACTERISTICS

MIZAR LED is designed to illuminate parks, squares and communication routes. The light source is CREE XM-L2 LED. The luminaire is adapted to work in temperatures between -40°C and +55°C. It is designed to be mounted on 5 to 6 m columns.

The advantages of using MIZAR LED 48 compared to OPA-1 S-100W Son luminaire with lamp diffuser Auris Maxi I:

- 50,89% reduction of luminaire energy consumption,
- up to 65,6% reduction of luminaire energy consumption in case of using power reduction,
- the possibility of reducing the amount of lighting sets and therefore – reduction of energy consumption and costs of the investment,
- maintenance costs savings.

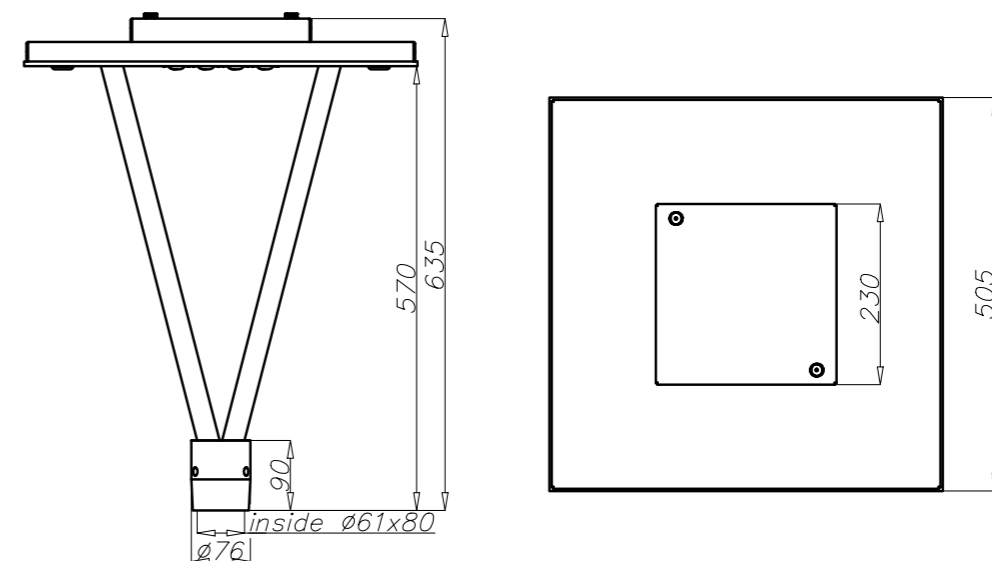


Distribution curve for MIZAR LED 48

TECHNICAL DATA

Type	MIZAR LED 48	
	Code	214433/6
Colour temperature [K]	5 000	3 500
LEDs power [W]	48	
Total luminaire power [W]	55	
Luminous efficiency [lm/W]	113	88
Luminous flux* [lm]	6 200	4 850
LEDs amount	16	
Net weight [kg]	9,2	
Unit volume [m³]	0,172	
Windage [m²]	0,057	
Voltage [V]	90-300 AC 50/60 Hz	

* Due to the precision class of diodes tolerance is +/- 3%





OS-1 LED on the column S-31W (3,32 m high)

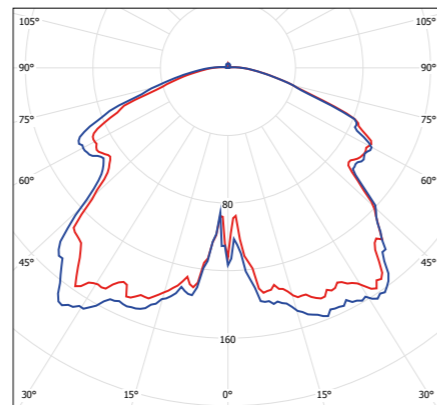
CHARACTERISTICS

OS-1 LED is designed to illuminate parks, squares and communication routes. It is made of mixture of black polypropylene with glass fibre resistant for UV radiation. The light source is CREE LED XM-L2 LED. The luminaire is adapted to work in temperatures between -40°C and +40°C. It is designed to be mounted on 5 to 6 m columns.

There was made a reduction in the supply current to 700 mA in OS-1 LED luminaire in order to achieve maximum energy-savings, heat reducing and extending the life of diodes.

The advantages of using OS-1 LED 32 compared to OS-1 S-70W Son luminaire:

- 50,63% reduction of luminaire energy consumption,
- up to 65,3% reduction of luminaire energy consumption in case of using power reduction,
- the possibility of reducing the amount of lighting sets and therefore – reduction of energy consumption and costs of the investment,
- maintenance costs savings.

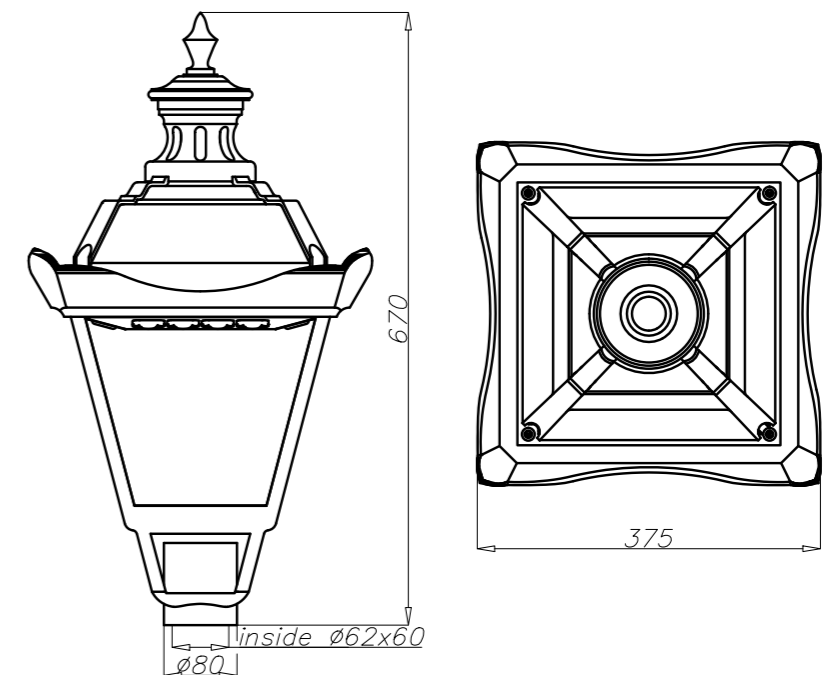


Distribution curve for OS-1 LED 32

TECHNICAL DATA

Type	OS-1 LED 32	
	Code	211331/6
Colour temperature [K]	5 000	3 500
LEDs power [W]	32	
Total luminaire power [W]	39	
Luminous efficiency [lm/W]	97	72
Luminous flux* [lm]	3 800	2 800
LEDs amount	16	
Net weight [kg]	5,2	
Unit volume [m ³]	0,1	
Windage [m ²]	0,1	
Voltage [V]	90-300 AC 50/60 Hz	

* Due to the precision class of diodes tolerance is +/- 3%





1) VEGA LED on the column SAL DL-2 (5,5 m high)
2) VEGA LED BETA on the column SAL DL-5 (4,5 m high)

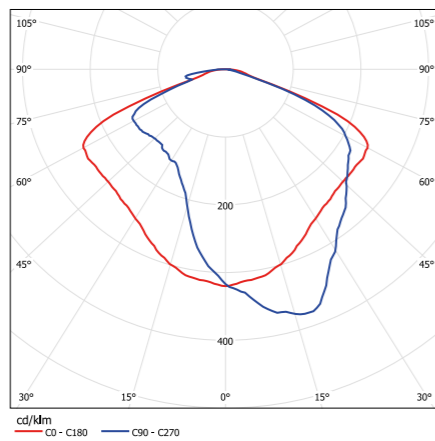
CHARACTERISTICS

VEGA LED is designed to illuminate parks, squares and communication routes. The light source is CREE XM-L2 LED. The luminaire is adapted to work in temperatures between -40°C and +55°C. It is designed to be mounted on 5,5 to 8 m columns. The luminaire is available in three options:

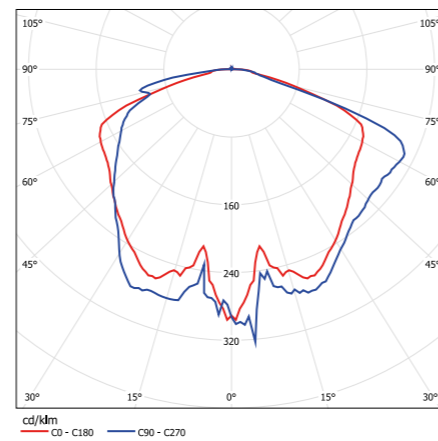
- VEGA LED – designed for mounting on extension arm,
- VEGA LED ALFA – pole top mounted,
- VEGA LED BETA – pole top mounted in a centric way.

The advantages of using VEGA LED 60 compared to OPA-1 S-100 W Son:

- 39,2% reduction of luminaire energy consumption,
- up to 57,4% reduction of luminaire energy consumption in case of using power reduction,
- the possibility of reducing the amount of lighting sets and therefore – reduction of energy consumption and costs of the investment,
- maintenance costs savings.



Distribution curve for VEGA LED ALFA 60



Distribution curve for VEGA LED BETA 60

TECHNICAL DATA

Type	VEGA LED 60 VEGA LED ALFA 60		VEGA LED BETA 60	
	214134/6 214234/6	214134/3 214234/3	214034/6	214034/3
colour temperature [K]	5 000	3 500	5 000	3 500
LEDs power [W]	60		60	
Total luminaire power [W]	68		68	
Luminous efficiency [lm/W]	114	89	114	89
Luminous flux* [lm]	7 750	6 050	7 750	6 050
LEDs amount	20		20	
Net weight [kg]	10,5		9,5	
Unit volume [m³]	0,068 0,099		0,068	
Windage [m²]	0,042		0,04	
Voltage [V]	90-300 AC 50/60 Hz			

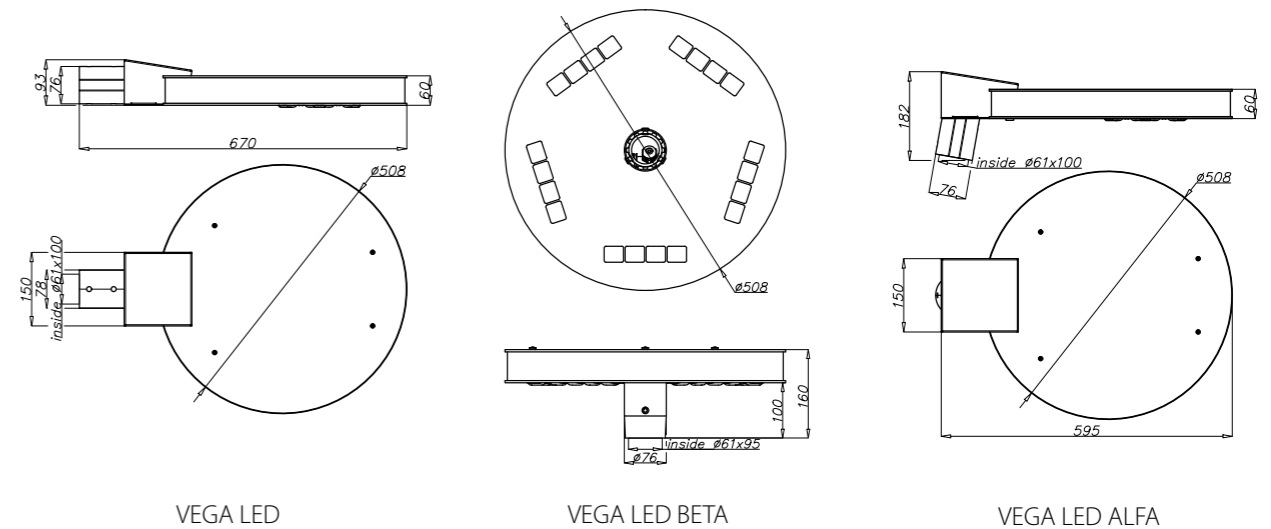
* Due to the precision class of diodes tolerance is +/- 3%



VEGA LED BETA



VEGA LED



VEGA LED

VEGA LED BETA

VEGA LED ALFA



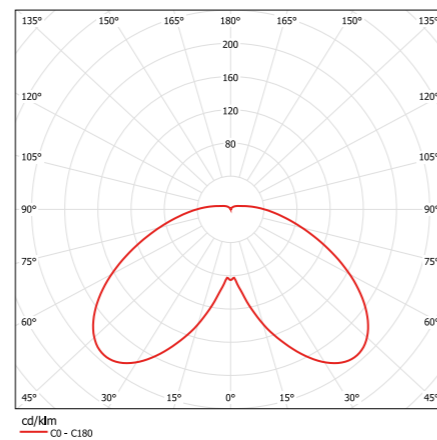
ATLANTIS LED on the column SAL-5 (5 m high)

CHARACTERISTICS

ATLANTIS LED is designed to illuminate parks, squares and communication routes. Luminaire's cap is made of aluminum with a high-performance thermal conductivity, frozen lamp diffuser – PMMA and luminaire's base – aluminium cast. The light source is CREE XT-E LED. The luminaire is adapted to work in temperatures between -40°C and +55°C. It is designed to be mounted on 4 to 6 m columns.

The advantages of using ATLANTIS LED 35 compared to OPA-1 S-70W luminaire with lamp diffuser Atlantis white:

- 49,4% reduction of luminaire energy consumption,
- up to 64,4% reduction of luminaire energy consumption in case of using power reduction,
- the possibility of reducing the amount of lighting sets and therefore – reduction of energy consumption and costs of the investment,
- maintenance costs savings.

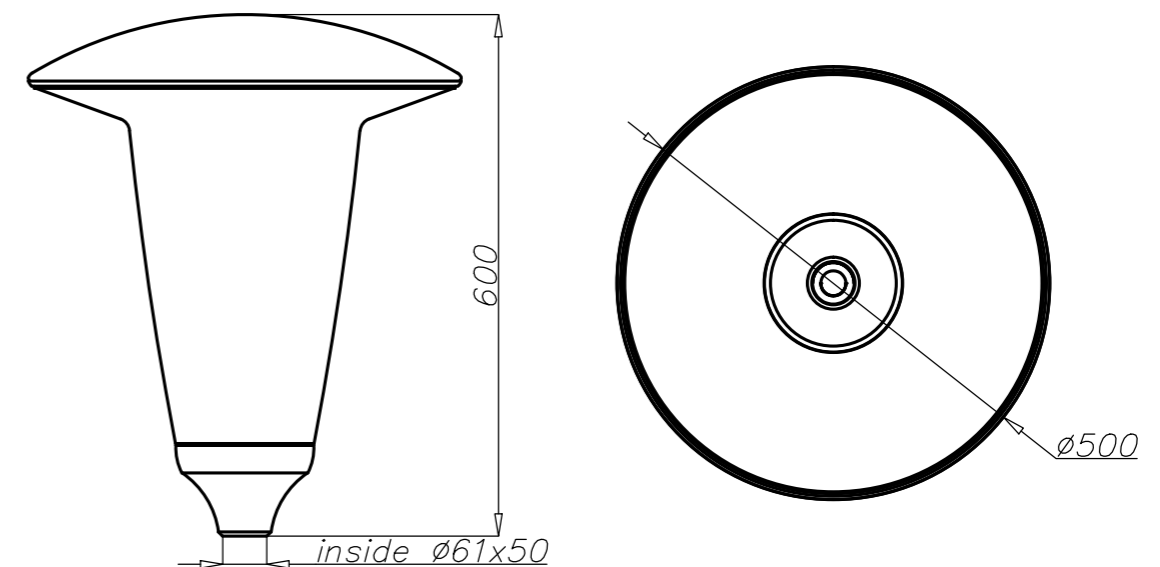


Distribution curve for ATLANTIS LED 35

TECHNICAL DATA

Type	ATLANTIS LED 35
Code	214631/6
Colour temperature [K]	5 000
LEDs power [W]	35
Total luminaire power [W]	40
Luminous efficiency [lm/W]	75
Luminous flux* [lm]	3 000
LEDs amount	16
Net weight [kg]	10
Unit volume [m ³]	0,164
Windage [m ²]	0,135
Voltage [V]	120-277 AC 50/60 Hz

* Due to the precision class of diodes tolerance is +/- 3%





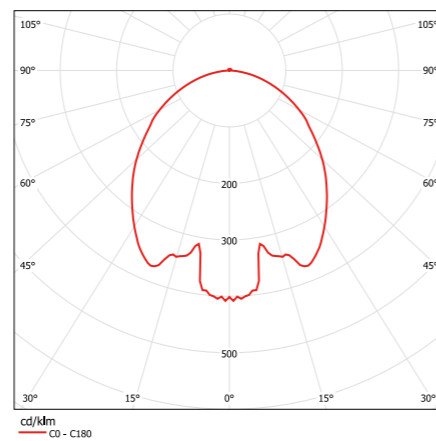
CORONA LED on the column SAL DL-3 (6 m high)

CHARACTERISTICS

CORONA LED is designed to illuminate parks, squares and communication routes. The light source is CREE XT-E LED. The luminaire is adapted to work in temperatures between -40°C and +55°C. It is designed to be mounted on 5 to 7 m columns. For CORONA LED luminaire we recommend using aluminium column SAL DL-3.

The advantages of using CORONA LED:

- reduction of electricity consumption,
- maintenance costs savings,
- decorative character.

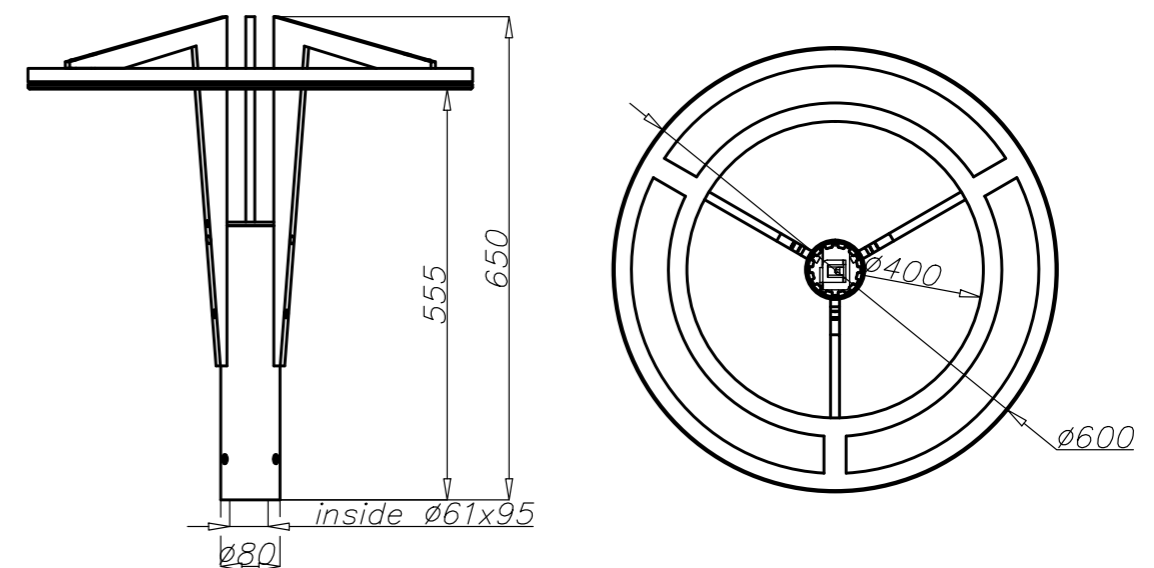


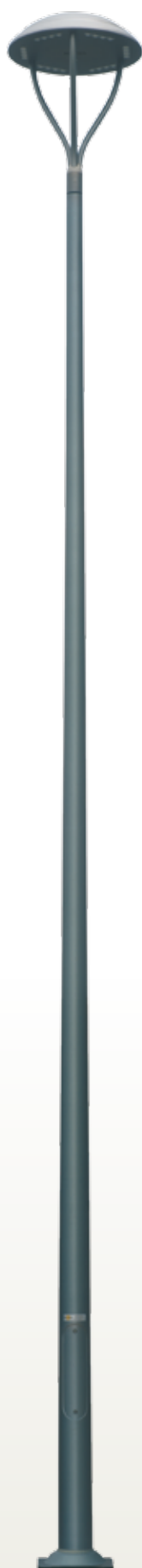
Distribution curve for CORONA LED 75

TECHNICAL DATA

Type	CORONA LED 75
Code	214735/6
Colour temperature [K]	5 000
LEDs power [W]	75
Total luminaire power [W]	88
Luminous efficiency [lm/W]	55
Luminous flux* [lm]	4 900
LEDs amount	36
Net weight [kg]	13
Unit volume [m ³]	0,25
Windage [m ²]	0,095
Voltage [V]	120-277 AC 50/60 Hz

* Due to the precision class of diodes tolerance is +/- 3%





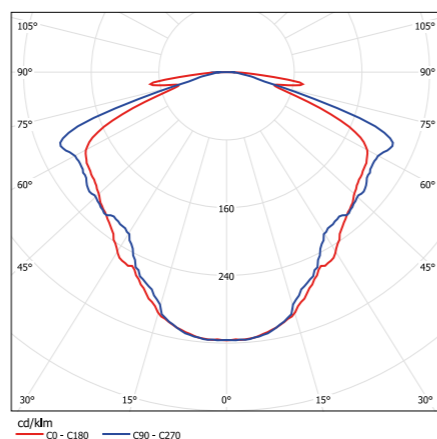
COSMO DELTA LED on the column SAL DL-4 (5,9 m high)

CHARACTERISTICS

COSMO DELTA LED is designed to illuminate parks, squares and communication routes. The light source is CREE XM-L2 LED. The luminaire is adapted to work in temperatures between -40°C and +55°C. It is designed to be mounted on 6 to 8 m columns. For COSMO DELTA LED luminaire we recommend using aluminium column SAL DL-4.

The advantages of using COSMO DELTA LED compared to OPA-1 S-100W Son luminaire with lamp diffuser Auris Maxi with a cap:

- 28,57% reduction of luminaire energy consumption,
- up to 50% reduction of luminaire energy consumption in case of using power reduction,
- the possibility of reducing the amount of lighting sets and therefore – reduction of energy consumption and costs of the investment,
- maintenance costs savings.

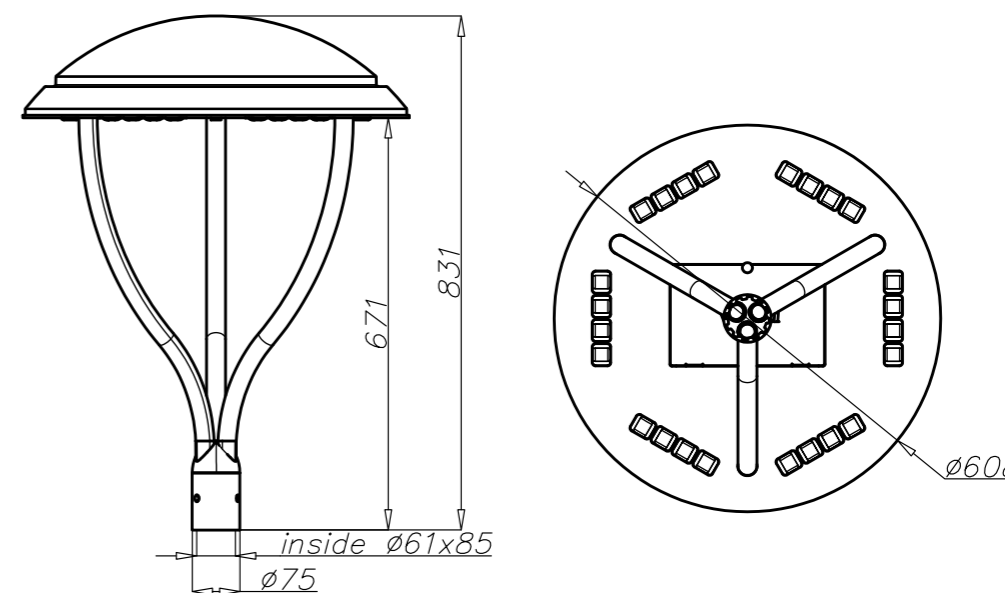


Distribution curve for COSMO DELTA LED 72

TECHNICAL DATA

Type	COSMO DELTA LED 72	
	Code	214835/6
Colour temperature [K]	5 000	3 500
LEDs power [W]	72	
Total luminaire power [W]	80	
Luminous efficiency [lm/W]	117	91
Luminous flux* [lm]	9 350	7 250
LEDs amount	24	
Net weight [kg]	11	
Unit volume [m ³]	0,32	
Windage [m ²]	0,13	
Voltage [V]	90-300 AC 50/60 Hz	

* Due to the precision class of diodes tolerance is +/- 3%



CHARACTERISTICS

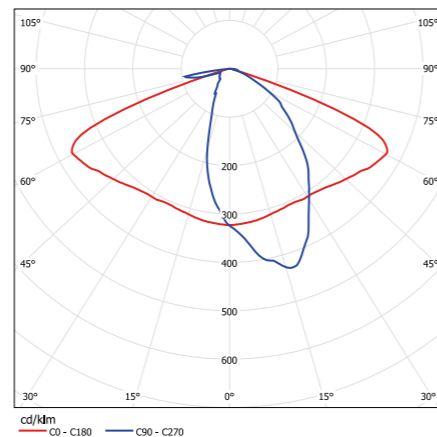
GEMINI LED is designed to illuminate streets and communication routes. The light source is CREE XM-L2 LED. The luminaire is adapted to work in temperatures between -40°C and +40°C. It is designed to be mounted on 5 to 6 m columns.

The advantages of using GEMINI LED 48 compared to MAGNOLIA S-70W Son:

- 30,38 % reduction of luminaire energy consumption,
- up to 51,2 % reduction of luminaire energy consumption in case of using power reduction,
- the possibility of reducing the amount of lighting sets and therefore – reduction of energy consumption and costs of the investment,
- maintenance costs savings.



GEMINI LED on the column SAL DS-52 (5,5 m high)

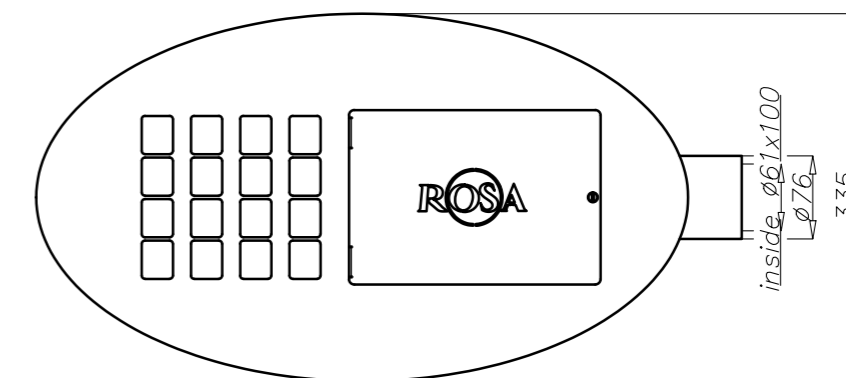
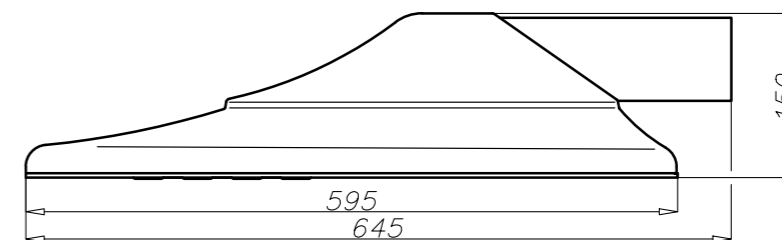


Distribution curve for GEMINI LED 36

TECHNICAL DATA

Type	GEMINI LED 36		GEMINI LED 48	
	214332/6	214332/3	214333/6	214333/3
Colour temperature [K]	5 000	3 500	5 000	3 500
LEDs power [W]	36		48	
Total luminaire power [W]	42		55	
Luminous efficiency [lm/W]	111	86	113	88
Luminous flux* [lm]	4 650	3 600	6 200	4 850
LEDs amount	12		16	
Net weight [kg]	8		8	
Unit volume [m ³]	0,035		0,035	
Windage [m ²]	0,065		0,065	
Voltage [V]	90-300 AC 50/60 Hz			

* Due to the precision class of diodes tolerance is +/- 3%



CHARACTERISTICS

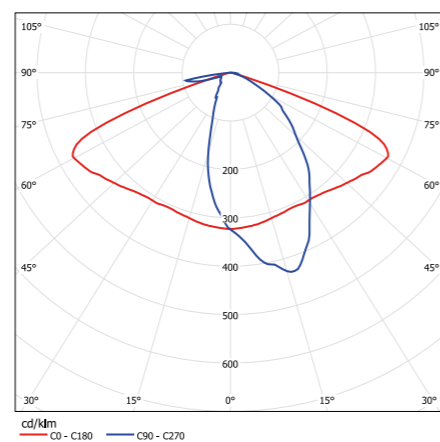
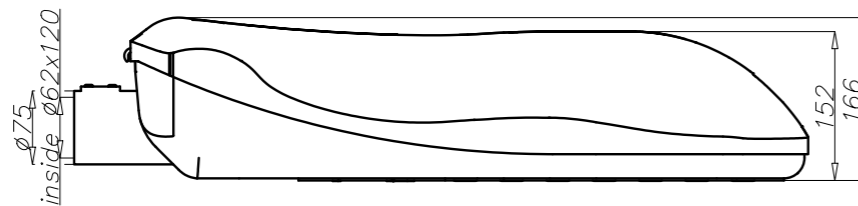
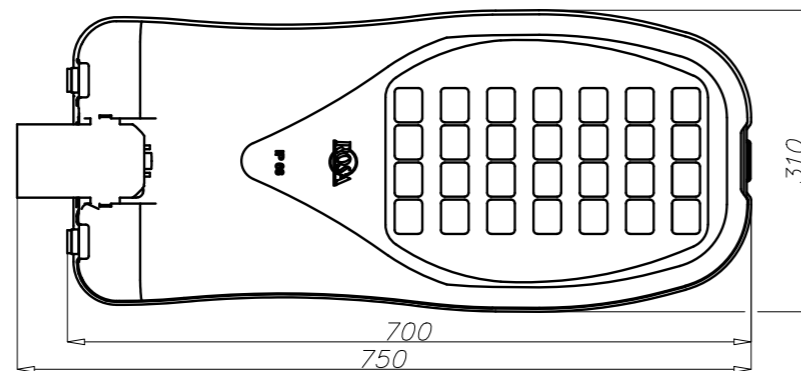
MAGNOLIA LED is designed to illuminate streets category ME3a and lower. It is made of aluminium cast. The luminaire is painted by polyester powder paints: body – RAL 9006 grey, cover – Silver Renoir. The light source is CREE XM-L2 LED. The luminaire is adapted to work in temperatures between -40°C and +40°C. It is designed to be mounted on 8 to 10 m columns. The luminaire is available in four power options.

The advantages of using MAGNOLIA LED 84 compared to luminaire MAGNOLIA S-150W Son:

- 45,24% reduction of luminaire energy consumption,
- up to 61,8% reduction of luminaire energy consumption in case of using power reduction,
- the possibility of reducing the amount of lighting sets and therefore – reduction of energy consumption and costs of the investment,
- maintenance costs savings.



MAGNOLIA LED on the column SAL DS-84 (8,4 m high)



Distribution curve for MAGNOLIA LED 84



TECHNICAL DATA

Type	MAGNOLIA LED 60		MAGNOLIA LED 72		MAGNOLIA LED 84		MAGNOLIA LED 96	
Code	220534/6	220534/3	220535/6	220535/3	220536/6	220536/3	220537/6	220537/3
Colour temperature [K]	5 000	3 500	5 000	3 500	5 000	3 500	5 000	3 500
LEDs power [W]	60		72		84		96	
Total luminaire power [W]	68		80		93		105	
Luminous efficiency [lm/W]	114	89	117	91	117	91	119	92
Luminous flux* [lm]	7 750	6 050	9 350	7 250	10 850	8 450	12 450	9 700
LEDs amount	20		24		28		32	
Net weight [kg]	11		11		11		11	
Unit volume [m ³]	0,050		0,050		0,050		0,050	
Windage [m ²]	0,1		0,1		0,1		0,1	
Voltage [V]	90-300 AC 50/60 Hz							

* Due to the precision class of diodes tolerance is +/- 3%



COSMO LED on the column SAL DS-85 (8,16 m high)

CHARACTERISTICS

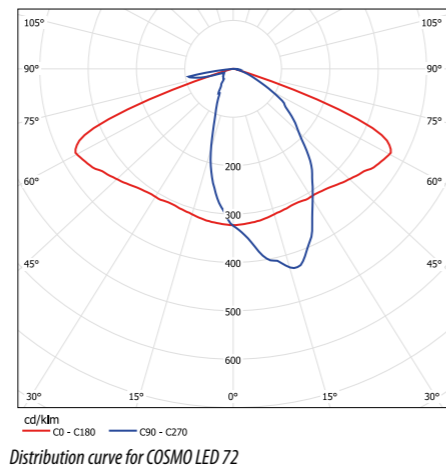
COSMO LED is designed to illuminate streets category ME3a and lower. The light source is CREE XM-L2 LED. It is designed to be mounted on 8 to 10 m columns. The luminaire is available in two power options and two mounting options:

- COSMO LED – designed for mounting on extension arm,
- COSMO LED ALFA – pole top mounted.

COSMO LED 72 is adapted to work in temperatures between -40°C and +55°C, and COSMO LED 96 between -40°C and +40°C.

The advantages of using COSMO LED 96 compared to luminaire MAGNOLIA S-150 W Son:

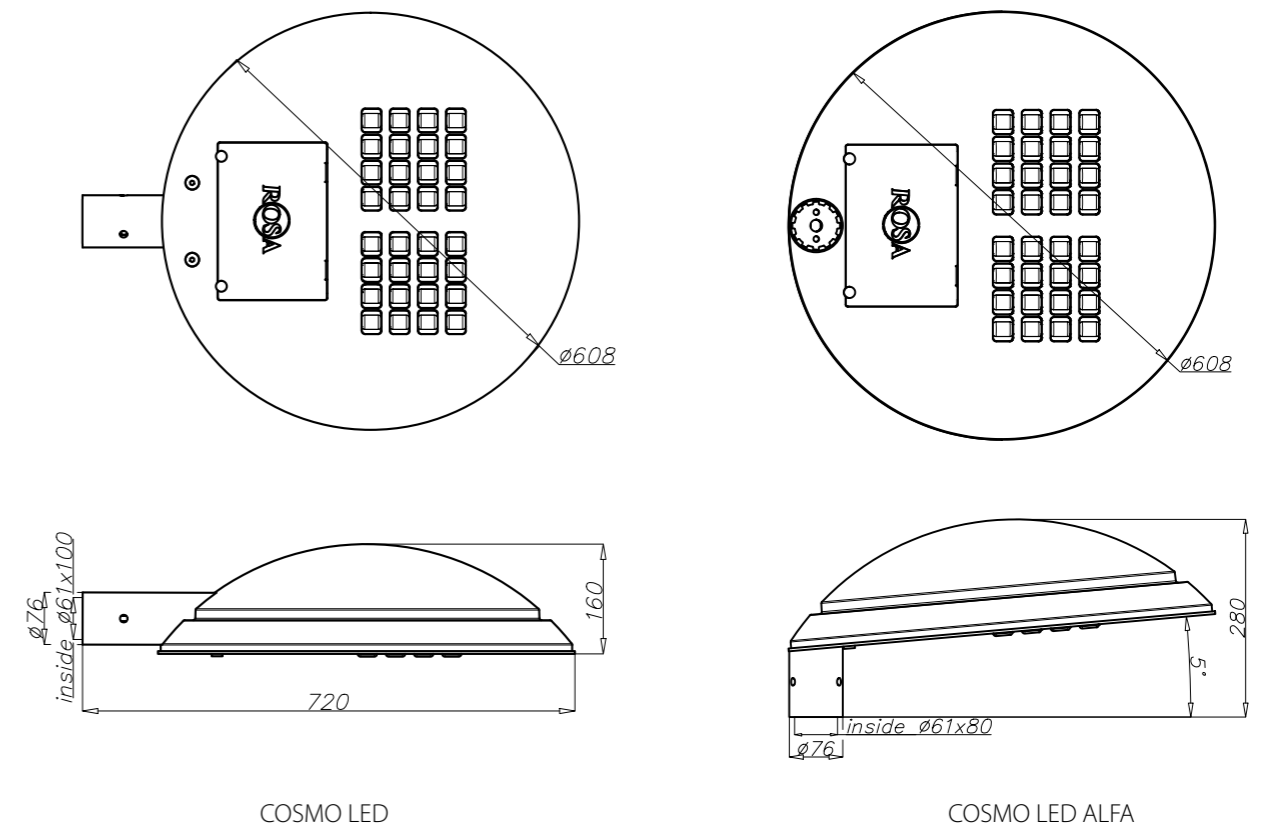
- 37,5% reduction of luminaire energy consumption,
- up to 56,3% reduction of luminaire energy consumption in case of using power reduction,
- the possibility of reducing the amount of lighting sets and therefore – reduction of energy consumption and costs of the investment,
- maintenance costs savings.



TECHNICAL DATA

Type	COSMO LED 72 COSMO LED ALFA 72		COSMO LED 96 COSMO LED ALFA 96	
	Code	221035/6 221235/6	221035/3 221235/3	221037/6 221237/6
Colour temperature [K]	5 000	3 500	5 000	3 500
LEDs power [W]	72		96	
Total luminaire power [W]	80		105	
Luminous efficiency [lm/W]	117	91	119	92
Luminous flux* [lm]	9 350	7 250	12 450	9 700
LEDs amount	24		32	
Net weight [kg]	11,5		11,5	
Unit volume [m³]	0,073		0,073	
Windage [m²]	0,085		0,085	
Voltage [V]	90-300 AC 50/60 Hz			

* due to the precision class of diodes tolerance is +/- 3%



COSMO LED

COSMO LED ALFA



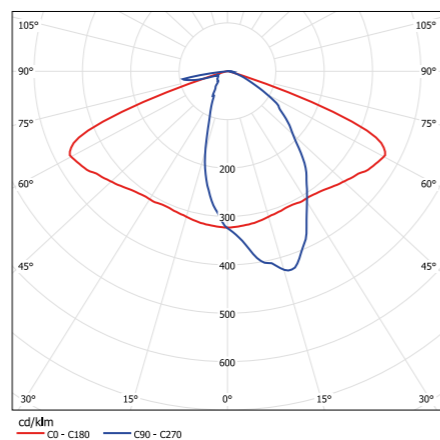
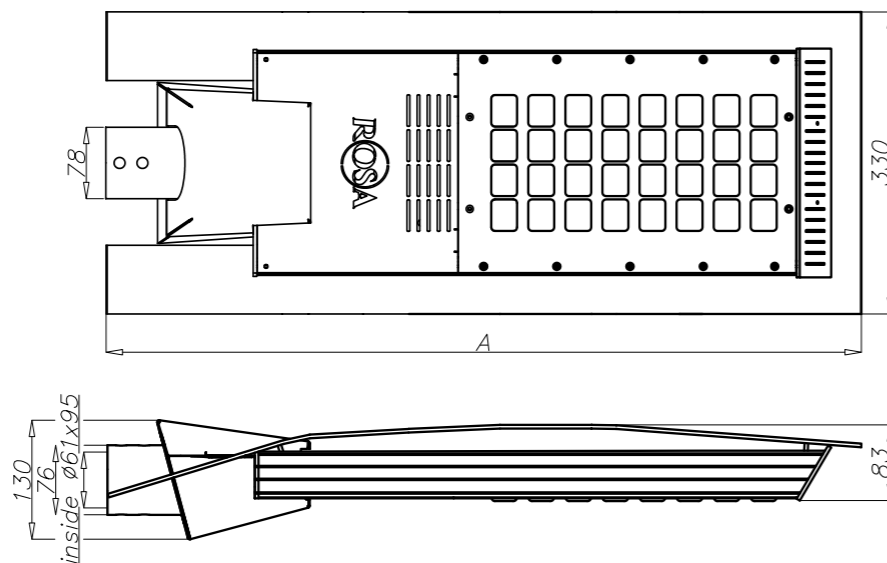
CHARACTERISTICS

ANDROMEDA LED is designed to illuminate streets category ME3a and lower. The light source is CREE XM-L2 LED. It is designed to be mounted on 8 to 11 m columns. The luminaire is available in four power options. ANDROMEDA LED 72 and 96 are adapted to work in temperatures between -40°C and +55°C, ANDROMEDA LED 120 and 144 between -40°C and +40°C.

The advantages of using ANDROMEDA LED 144 compared to luminaire MAGNOLIA S-250W Son:

- 43,64% reduction of luminaire energy consumption,
- up to 60,5% reduction of luminaire energy consumption in case of using power reduction,
- the possibility of reducing the amount of lighting sets and therefore – reduction of energy consumption and costs of the investment,
- maintenance costs savings.

Depending on the distribution of columns ANDROMEDA LED 144 achieves the lighting parameters specified by the standard for Class ME2. It can also be used for installations where increasing of spacing between columns is required to meet the requirements of Class ME3a by using 11 columns on a 7 m wide road at 40 m spacings.



Distribution curve for ANDROMEDA LED 72

ANDROMEDA LED on the column SAL P-81 (10 m high)



TECHNICAL DATA

Type	ANDROMEDA LED 72		ANDROMEDA LED 96		ANDROMEDA LED 120		ANDROMEDA LED 144	
Code	222235/6	222235/3	222237/6	222237/3	222239/6	222239/3	222241/6	222241/3
Colour temperature [K]	5 000	3 500	5 000	3 500	5 000	3 500	5 000	3 500
LEDs power [W]	72		96		120		144	
Total luminaire power [W]	80		105		130		155	
Luminous efficiency [lm/W]	117	91	119	92	120	93	120	94
Luminous flux* [lm]	9 350	7 250	12 450	9 700	15 550	12 100	18 650	14 500
LEDs amount	24		32		40		48	
Net weight [kg]	9		10		11		12	
A – length [mm]	770		901		982		1063	
Unit volume [m ³]	0,034		0,034		0,052		0,052	
Windage [m ²]	0,05		0,056		0,062		0,068	
Voltage [V]	90-300 AC 50/60 Hz							

* Due to the precision class of diodes tolerance is +/- 3%

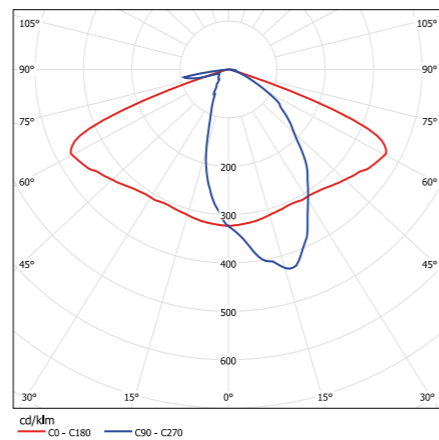
CHARACTERISTICS

URSA I LED is designed to illuminate streets category ME3a and lower. The light source is CREE XM-L2 LED. The luminaire is adapted to work in temperatures between -40°C and +55°C. It is designed to be mounted on 6 to 8 m columns. The luminaire is available in three power options and two mounting options:

- URSA I LED – designed for mounting on extension arm,
- URSA I LED ALFA – pole top mounted.

The advantages of using URSA I LED 48 compared to luminaire MAGNOLIA S-100W Son:

- 39,29% reduction of luminaire energy consumption,
- up to 57,4% reduction of luminaire energy consumption in case of using power reduction,
- the possibility of reducing the amount of lighting sets and therefore – reduction of energy consumption and costs of the investment,
- maintenance costs savings.

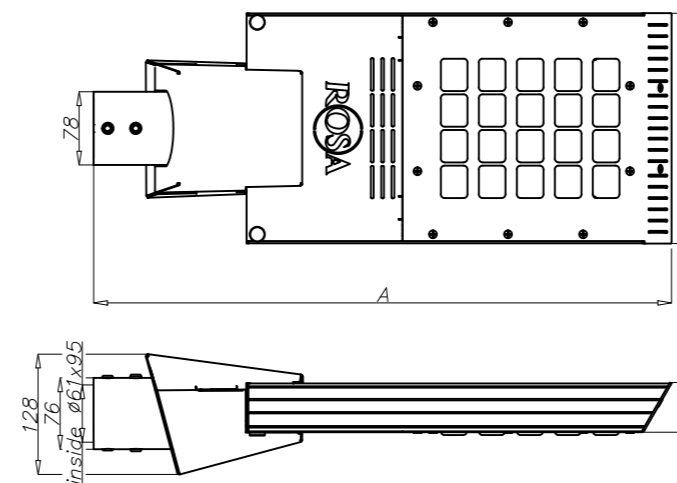


Distribution curve for URSA I LED 60

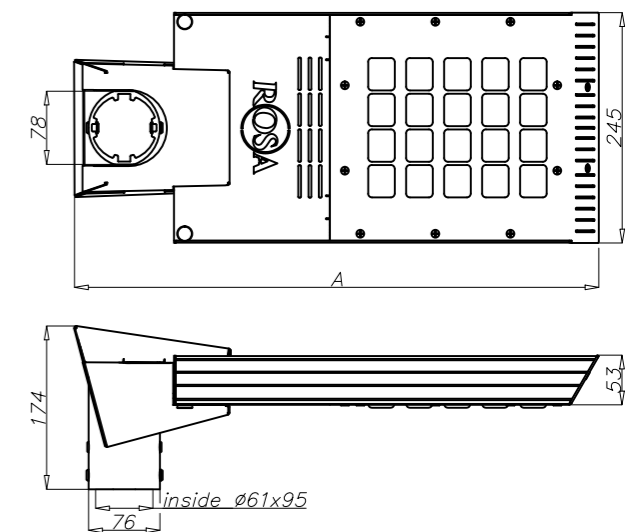
TECHNICAL DATA

Type	URSA I LED 48 URSA I LED ALFA 48		URSA I LED 60 URSA I LED ALFA 60		URSA I LED 72 URSA I LED ALFA 72	
	221833/6 221933/6	221833/3 221933/3	221834/6 221934/6	221834/3 221934/3	221835/6 221935/6	221835/3 221935/3
Colour temperature [K]	5 000	3 500	5 000	3 500	5 000	3 500
LEDs power [W]	48		60		72	
Total luminaire power [W]	55		68		80	
Luminous efficiency [lm/W]	113	88	114	89	117	91
Luminous flux* [lm]	6 200	4 850	7 750	6 050	9 350	7 250
LEDs amount	16		20		24	
Net weight [kg]	6		7		8	
A – lenght [mm]	558		639		720	
Unit volume [m ³]	0,035		0,035		0,035	
Windage [m ²]	0,04		0,043		0,045	
Voltage [V]	90-300 AC 50/60 Hz					

* Due to the precision class of diodes tolerance is +/- 3%



URSA I LED



URSA I LED ALFA

URSA I LED on the column SAL DL-1 (7 m high)



CHARACTERISTICS

URSA II LED is designed to illuminate streets category ME3a and lower. The light source is CREE XM-L2 LED. It is designed to be mounted on 8 to 11 m columns. The luminaire is available in four power options and two mounting options:

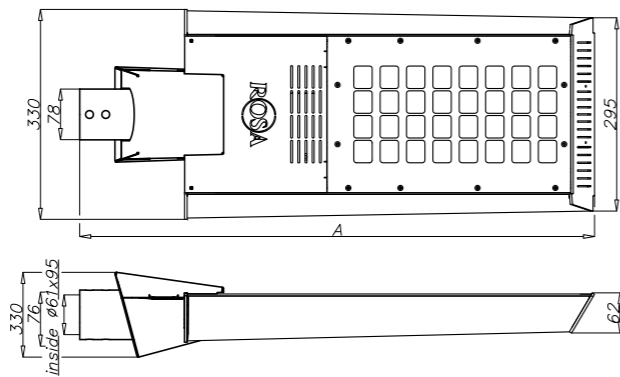
- URSA II LED – designed for mounting on extension arm,
- URSA II LED ALFA – pole top mounted

URSA II LED 84 and 96 are adapted to work in temperatures between -40°C and +55°C, URSA II LED 120 and 144 between -40°C and +40°C.

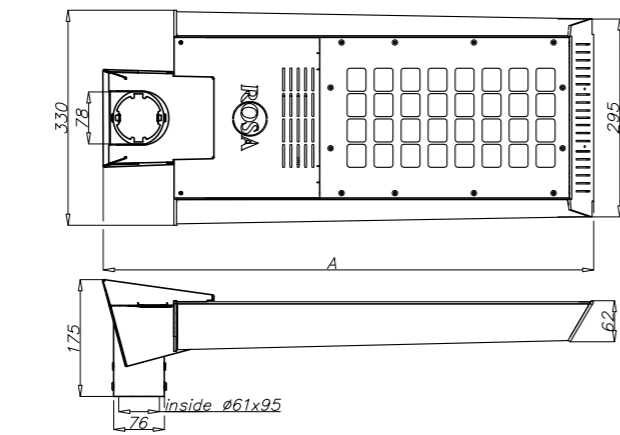
The advantages of using URSA II LED 120 compared to MAGNOLIA S-250W Son:

- 52,73% reduction of luminaire energy consumption,
- up to 67% reduction of luminaire energy consumption in case of using power reduction,
- the possibility of reducing the amount of lighting sets and therefore – reduction of energy consumption and costs of the investment,
- maintenance costs savings.

Depending on the distribution of columns URSA II LED 144 achieves the lighting parameters specified by the standard for Class ME2. It can also be used for installations where increasing of spacing between columns is required to meet the requirements of Class ME3a by using 11 columns on a 7 m wide road at 40 m spacings.

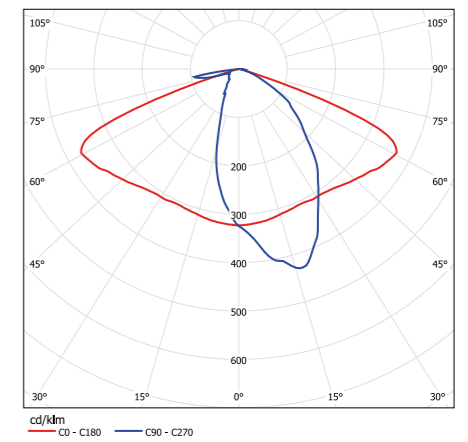


URSA II LED



URSA II LED ALFA

URSA II LED on the column SAL P85 (10,8 m high)



Distribution curve for URSA II LED 84

TECHNICAL DATA

Type	URSA II LED 84 URSA II LED ALFA 84		URSA II LED 96 URSA II LED ALFA 96		URSA II LED 120 URSA II LED ALFA 120		URSA II LED 144 URSA II LED ALFA 144	
	Code	Code	Code	Code	Code	Code	Code	Code
Code	222036/6 222136/6	222036/3 222136/3	222037/6 222137/6	222037/3 222137/3	222039/6 222139/6	222039/3 222139/3	222041/6 222141/6	222041/3 222141/3
Colour temperature [K]	5 000	3 500	5 000	3 500	5 000	3 500	5 000	3 500
LEDs power [W]	84		96		120		144	
Total luminaire power [W]	92		105		130		155	
Luminous efficiency [lm/W]	117	91	119	92	120	93	120	94
Luminous flux* [lm]	10 850	8 450	12 450	9 700	15 550	12 100	18 650	14 500
LEDs amount	28		32		40		48	
Net weight [kg]	8,5		9,0		10,0		11,0	
A – length [mm]	760		801		882		967	
Unit volume [m ³]	0,048		0,048		0,058		0,058	
Windage [m ²]	0,047		0,05		0,055		0,06	
Voltage [V]	90-300 AC 50/60 Hz							

* Due to the precision class of diodes tolerance is +/- 3%



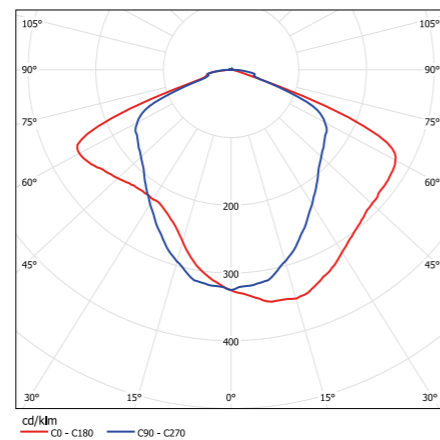
ARTEMIS LED on the column SAL-80 (8m high)

CHARACTERISTICS

ARTEMIS LED is designed to illuminate architectural elements, sport facilities and big spaces. The light source is CREE XM-L2 LED. It is adapted to work in temperatures between -40°C and +40°C. The floodlight has also the possibility to adjust the inclination angle in the range from 0° to 180°.

Savings from use of ARTEMIS LED floodlight:

- reduction of energy consumption,
- low maintenance costs – long LED lifetime and floodlight durability,
- the possibility of night time dimming process – energy savings of approximately 30%.

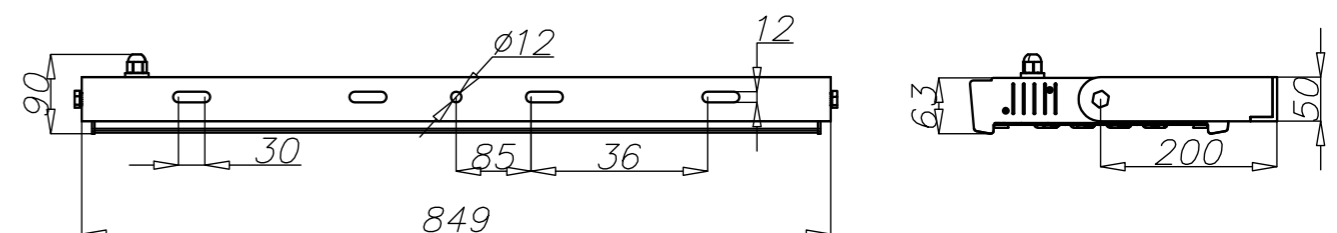
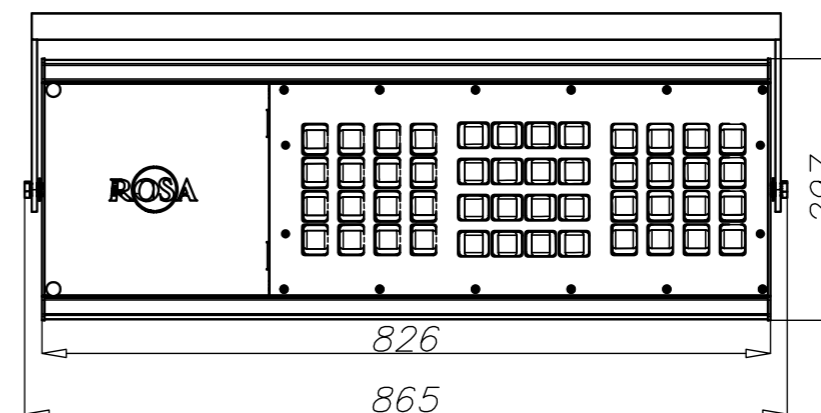


Distribution curve for ARTEMIS LED 144

TECHNICAL DATA

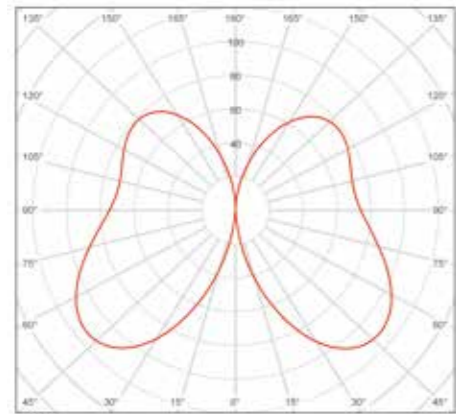
Type	ARTEMIS LED 144	
Code	229041/6	229041/3
Colour temperature [K]	5 000	3 500
LEDs power [W]	144	
Total luminaire power [W]	155	
Luminous efficiency [lm/W]	120	94
Luminous flux* [lm]	18 650	14 500
LEDs amount	48	
Net weight [kg]	11	
Unit volume [m³]	0,022	
Windage [m²]	depends on angular setting (0°-0,08 m²; 30°-0,12 m²)	
Voltage [V]	90-300 AC 50/60 Hz	

* Due to the precision class of diodes tolerance is +/- 3%

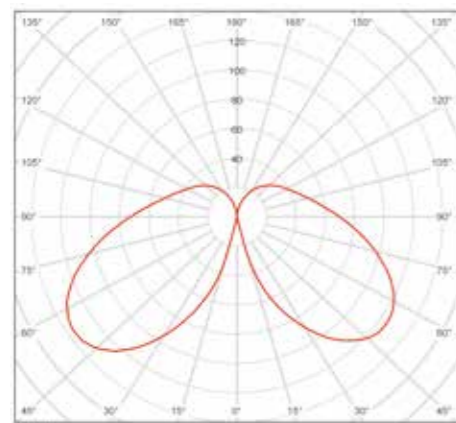


CHARACTERISTICS

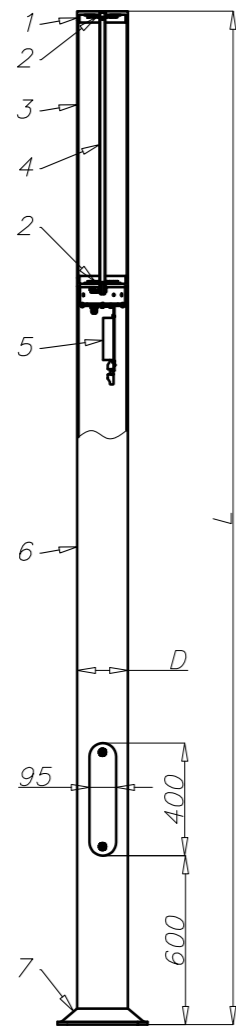
Columns and bollards KARIN LED are designed to illuminate communication routes, squares and parks. They are made of anodized aluminium cylindrical pipe with high thermal conductivity. The lamp diffuser is made of polymethacrylate (PMMA) and it is frozen. The light source is CREE XT-E LED. They are available in eight options of height and power.



Distribution curve for KARIN 4800 LED

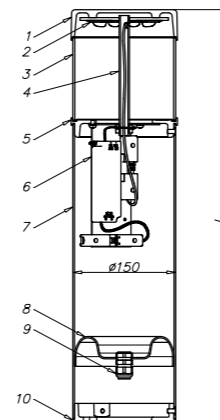


Distribution curve for KARIN 450-1200 LED



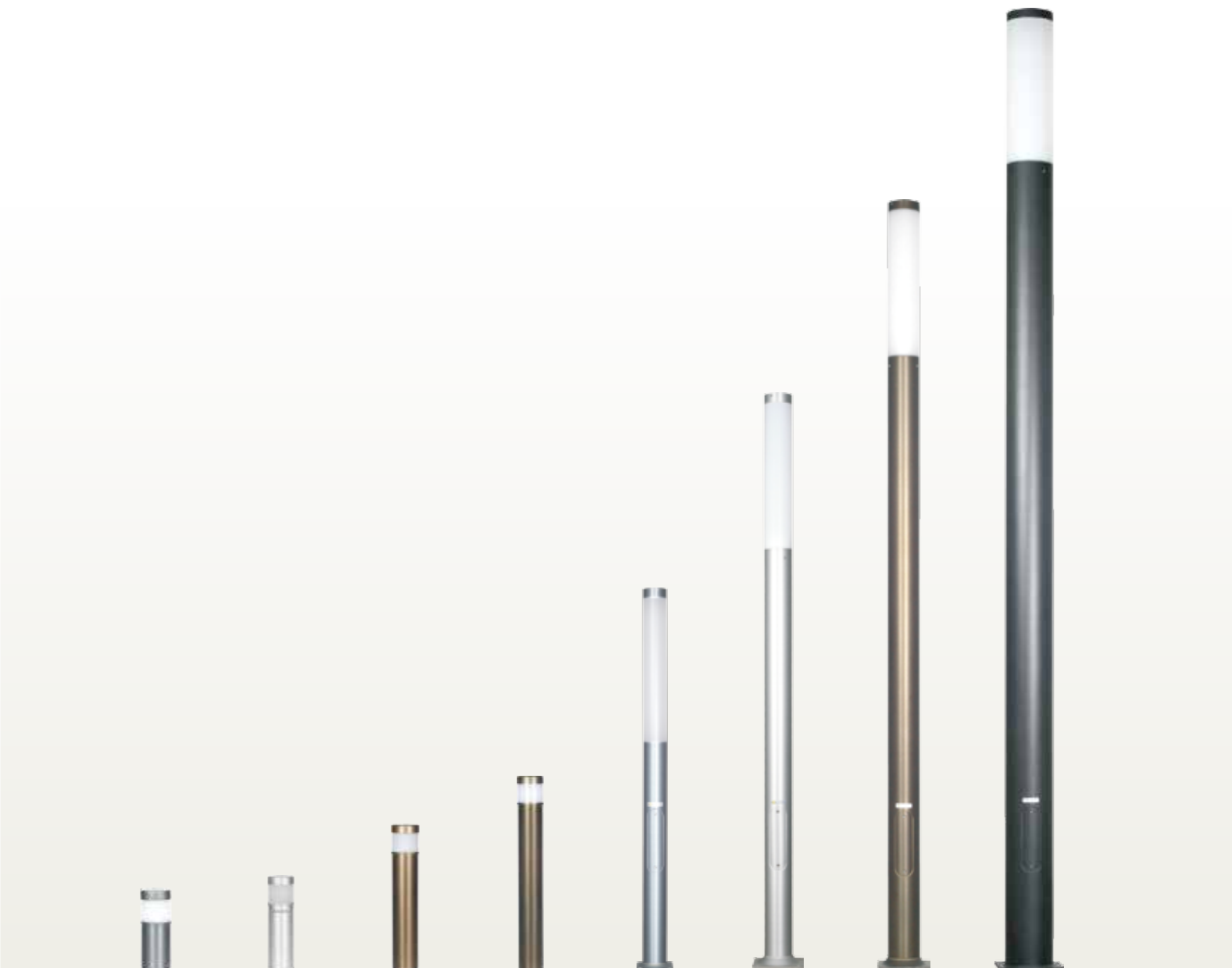
KARIN LED 3600-6000

1. Cover
2. LED module
3. Lamp-diffuser
4. Frame
5. Driver
6. Aluminium body
7. Base plate



KARIN LED 450-1200

1. Cover
2. LED module
3. Lamp-diffuser
4. Frame
5. Intermediate ring
6. Driver
7. Aluminium body
8. Insulation insert
9. Cable gland
10. Base plate



KARIN 450 LED KARIN 600 LED KARIN 900 LED KARIN 1200 LED KARIN 2400 LED KARIN 3600 LED KARIN 4800 LED KARIN 6000 LED

TECHNICAL DATA

Type	KARIN 450 LED		KARIN 600 LED		KARIN 900 LED		KARIN 1200 LED	
	45200/6/C...	45200/3/C...	45210/6/C...	45210/3/C...	45220/6/C...	45220/3/C...	45230/6/C...	45230/3/C...
Colour temperature [K]	5 000	3 500	5 000	3 500	5 000	3 500	5 000	3 500
Insulation class	II	II	II	II	II	II	II	II
LEDs power [W]	16		16		16		16	
LEDs amount	8		8		8		8	
Voltage [V]	100 - 240 AC 50/60 Hz		100 - 240 AC 50/60 Hz		100 - 240 AC 50/60 Hz		100 - 240 AC 50/60 Hz	
Luminous efficiency [lm/W]	50	48	50	48	50	48	50	48
Total power [W]	21		21		21		21	
Luminous flux* [lm]	1 050	1 000	1 050	1 000	1 050	1 000	1 050	1 000
Supply current [mA]	700		700		700		700	
Height [mm]	450		600		900		1200	
Diameter D [mm]	150							
Foundation type	B-0 / Z-0		B-0 / Z-0		B-0 / Z-0		B-0 A / Z-0 A	
Colour	anodized in 12 colours							

* Due to the precision class of diodes tolerance is +/- 3%
"C." - the number of chosen anodizing colour

TECHNICAL DATA

Type	KARIN 2400 LED	KARIN 3600 LED	KARIN 4800 LED	KARIN 6000 LED
Code	45240/6/C...	45250/6/C...	45260/6/C...	45270/6/M...
Colour temperature [K]	5 000	5 000	5 000	5 000
Insulation class	II	II	II	II
LEDs power [W]	32	48	88	116
LEDs amount	16	24	44	58
Voltage [V]	120 - 277 AC 50/60 Hz	220 - 240 AC 50/60 Hz	220 - 240 AC 50/60 Hz	220 - 240 AC 50/60 Hz
Luminous efficiency [lm/W]	55	78	71	68
Total power [W]	39	58	100	134
Luminous flux* [lm]	2 150	4 550	7 100	9 150
Supply current [mA]	700	700	700	700
Height [mm]	2 400	3 600	4 800	6 000
Diameter D [mm]	150	180	200	300
Base plate dimensions [mm]	224 x 224	320 x 320	320 x 320	400 x 400
Foundation type	B-50 / Z-50	B-60 / Z-60	B-60 / Z-60	B-71 / Z-71
Colour	anodized in 12 colours			powder painted in RAL colours

* Due to the precision class of diodes tolerance is +/- 3%
"C." - the number of chosen anodizing colour



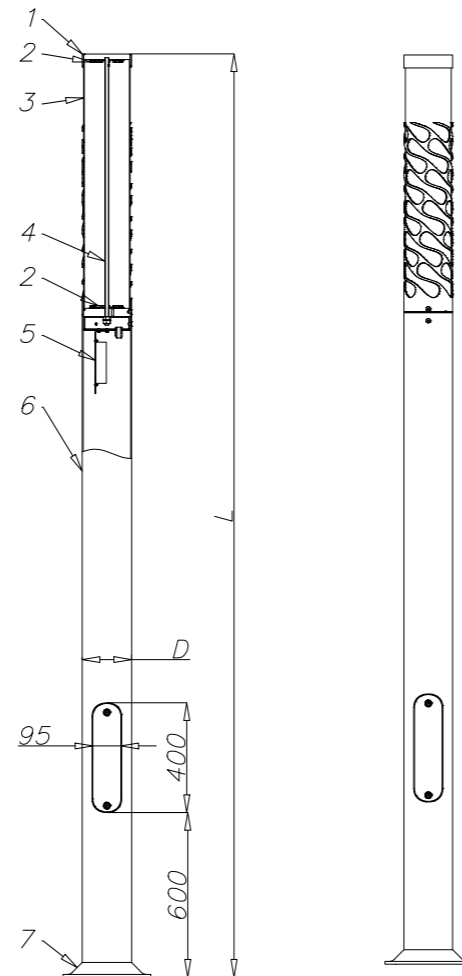
CHARACTERISTICS

Decorative columns KARIN DECOR LED are designed to illuminate communication routes, squares and parks. They are made of anodized aluminium cylindrical pipe with high thermal conductivity. The lamp diffuser is made of polymethacrylate (PMMA) and it is frozen. The light source is CREE XT-E LED. They are available in three options of height and power.



KARIN DECOR LED

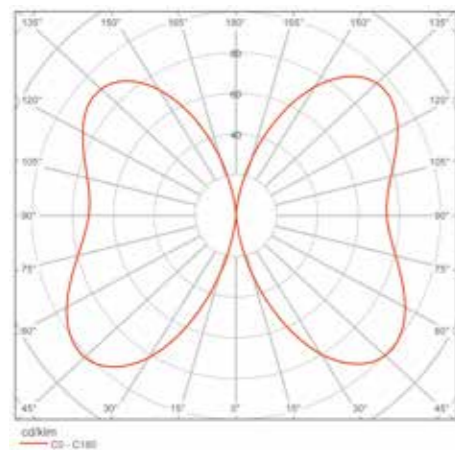
1. Cover
2. LED module
3. Lamp-diffuser
4. Frame
5. Driver
6. Aluminium body
7. Base plate



TECHNICAL DATA

Type	KARIN DECOR 2400 LED	KARIN DECOR 3600 LED	KARIN DECOR 4800 LED
Code	45241/6C...	45251/6 /C...	45261/6 /C...
Colour temperature [K]	5 000	5 000	5 000
Insulation class	II	II	II
LEDs power [W]	32	48	88
LEDs amount	16	24	44
Voltage [V]	120 - 277 AC 50/60 Hz	220 - 240 AC 50/60 Hz	220 - 240 AC 50/60 Hz
Luminous efficiency [lm/W]	41	59	54
Total power [W]	39	58	100
Luminous flux* [lm]	1 600	3 400	5 350
Supply current [mA]	700	700	700
Height [mm]	2 400	3 600	4 800
Diameter D [mm]	150	180	200
Base plate dimensions [mm]	224 x 224	320 x 320	320 x 320
Foundation type	B-50 / Z-50	B-60 / Z-60	B-60 / Z-60
Colour	anodized in 12 colours		

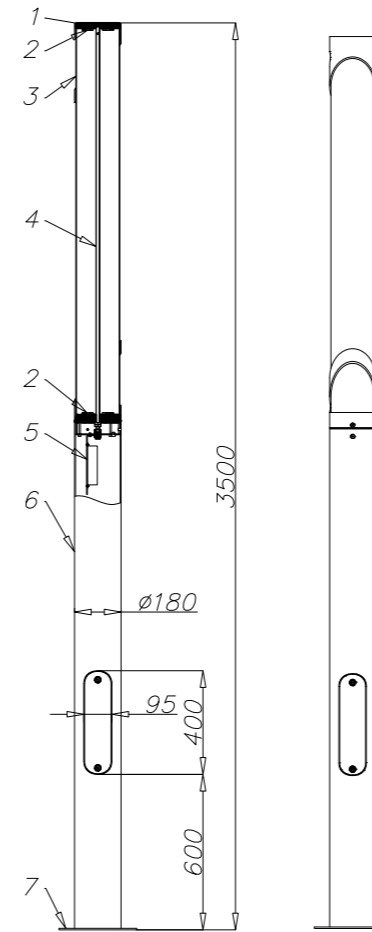
* Due to the precision class of diodes tolerance is +/- 3%
"C." - the number of chosen anodizing colour



Distribution curve for KARIN DECOR 3600 LED

CHARACTERISTICS

Decorative column SAL DECO 3 LED is designed to illuminate communication routes, squares and parks. It is made of anodized aluminium cylindrical pipe with high thermal conductivity. The lamp diffuser is made of UV resistant polycarbonate with aluminium decorative elements. The light source is CREE XT-E LED.



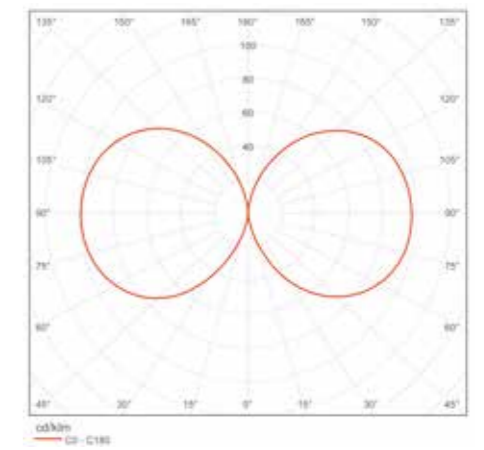
SAL DECO 3 LED

1. Cover
2. LED module
3. Lamp-diffuser
4. Frame
5. Driver
6. Aluminium body
7. Base plate

TECHNICAL DATA

Type	SAL DECO 3 LED
Code	42923/6/C...
Colour temperature [K]	5000
Insulation class	II
LEDs power [W]	48
LEDs amount	24
Voltage [V]	220-240 AC 50/60 Hz
Luminous efficiency [lm/W]	44
Total power [W]	56
Luminous flux* [lm]	2500
Supply current [mA]	700
Height [mm]	3 500
Diameter D [mm]	180
Base dimensions [mm]	Ø 300
Foundation type	B-31 / Z-31
Colour	anodized in 12 colours

* Due to the precision class of diodes tolerance is +/- 3%
"C." - the number of chosen anodizing colour



Distribution curve for SAL DECO 3 LED

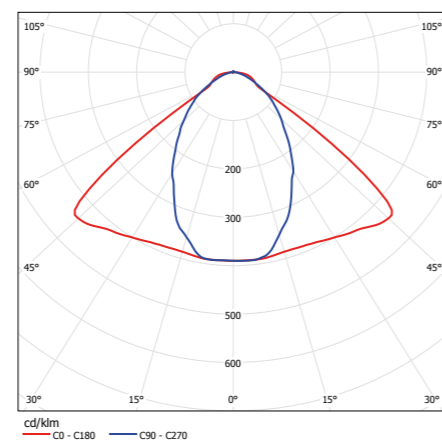


CHARACTERISTICS

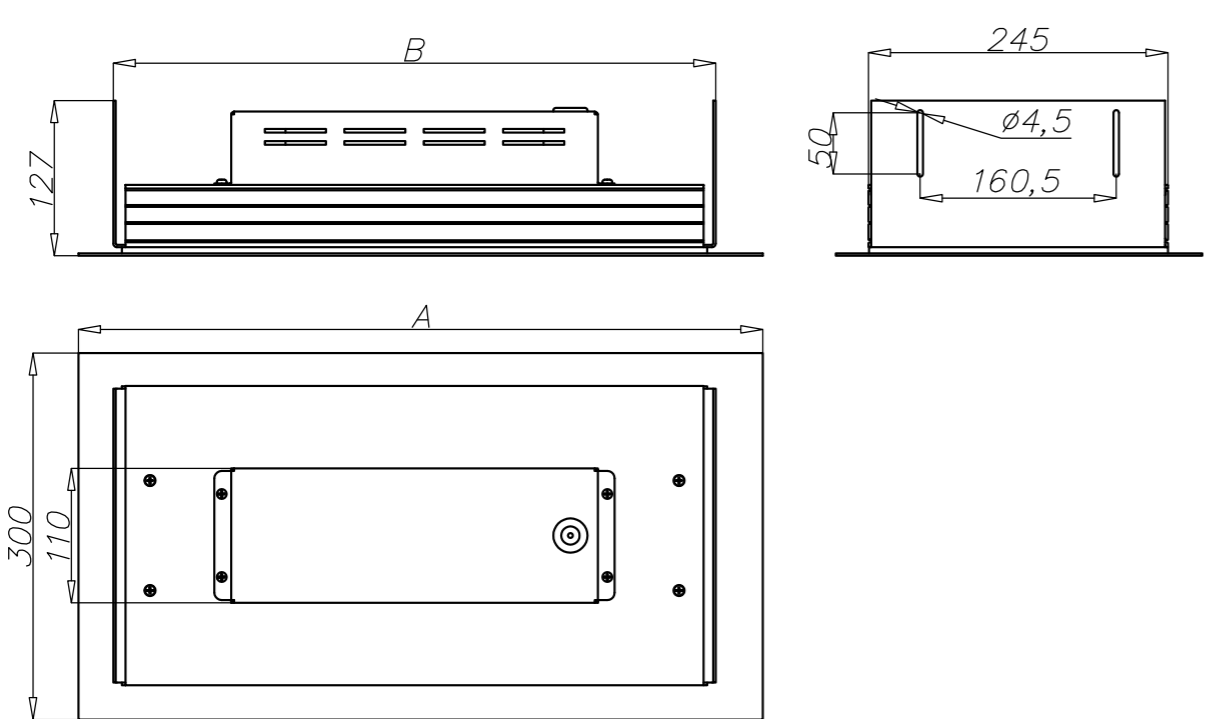
LIBRA LED industrial luminaire is designed to illuminate production halls, warehouses and utility rooms. In standard the luminaire is anodized natural (other colours available on request). The light source is CREE XM-L2 LED. The luminaire is adapted to work in temperatures between -40°C and +40°C.

The advantages of LIBRA LED:

- reduction of annual energy consumption,
- reduction of amount of lighting sets,
- maintenance costs savings.



Distribution curve for LIBRA LED 120



TECHNICAL DATA

Type	LIBRA LED 72		LIBRA LED 96		LIBRA LED 120		LIBRA LED 144	
	240135/6	240135/3	240137/6	240137/3	240139/6	240139/3	240141/6	240141/3
Code	240135/6	240135/3	240137/6	240137/3	240139/6	240139/3	240141/6	240141/3
Colour temperature [K]	5 000	3 500	5 000	3 500	5 000	3 500	5 000	3 500
LEDs power [W]	72		96		120		144	
Total luminaire power [W]	80		105		130		155	
Luminous efficiency [lm/W]	95	74	97	75	98	76	98	76
Luminous flux* [lm]	7 650	5 950	10 200	7 950	12 750	9 900	15 300	11 900
LEDs amount	24		32		40		48	
Net weight [kg]	7,7		9,3		10		11,2	
A – lenght [mm]	427		519		560		642	
B – lenght of whole in the ceiling [mm]	360		452		493		572	
Unit volume [m ³]	0,016		0,02		0,021		0,025	
Voltage [V]	220-240 AC 50/60 Hz							

* Due to the precision class of diodes tolerance is +/- 3%

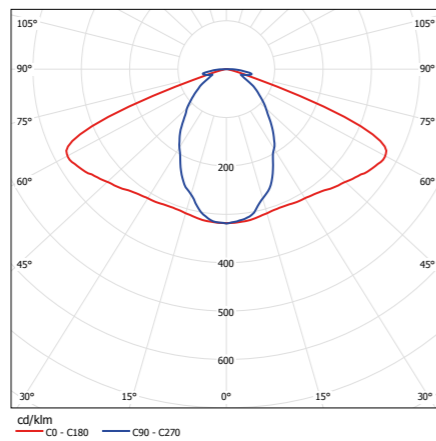


CHARACTERISTICS

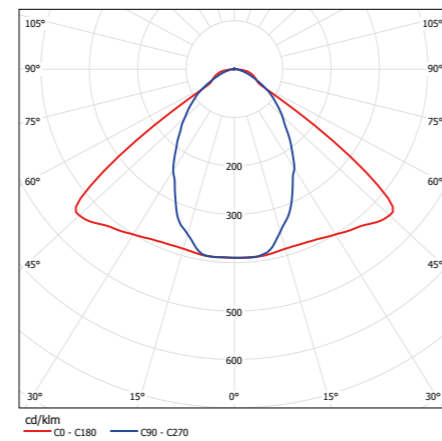
TAURUS LED industrial luminaire is designed to illuminate production halls, warehouses and utility rooms. In standard luminaire is anodized natural (other colours available on request). The light source is CREE XM-L2 LED. The luminaire is adapted to work in temperatures between -40°C and +40°C.

The advantages of INDUSTRIAL LED LUMINAIRE:

- reduction of annual energy consumption,
- reduction of amount of lighting sets,
- maintenance costs savings.

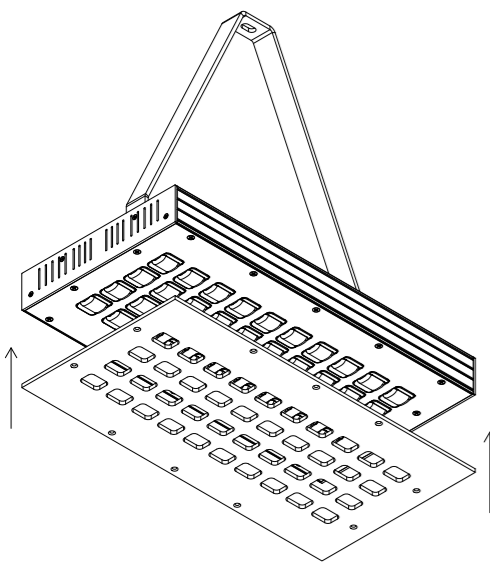


Distribution curve for Taurus LED 120

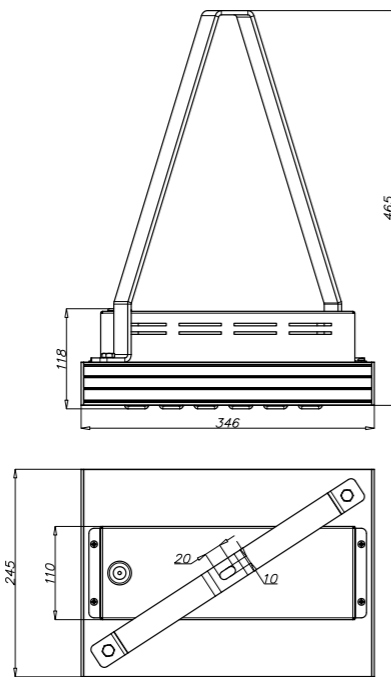


Distribution curve for Taurus LED 120 with diaphragm

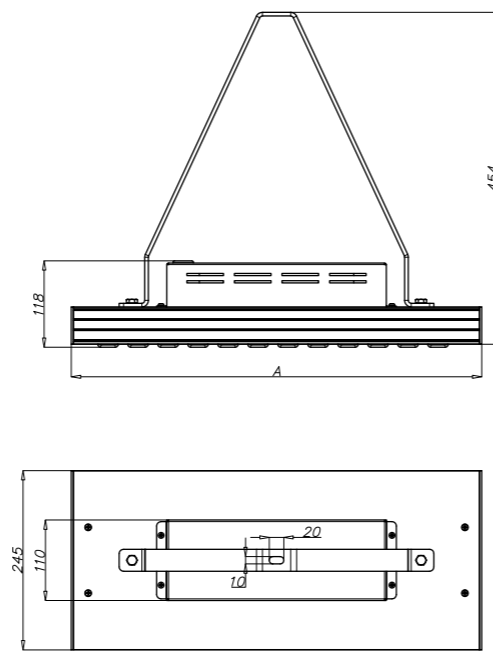
The additional element for Taurus LED is diaphragm made of anodized aluminium sheet which reduces glare and directs light. Way of diaphragm assembly



Way of diaphragm assembly



TAURUS LED 72



TAURUS LED 96-144



TECHNICAL DATA

Type	TAURUS LED 72		TAURUS LED 96		TAURUS LED 120		TAURUS LED 144	
	Code	Code	Code	Code	Code	Code	Code	Code
Code	230135/6	230135/3	230137/6	230137/3	230139/6	230139/3	230141/6	230141/3
Colour temperature [K]	5 000	3 500	5 000	3 500	5 000	3 500	5 000	3 500
LEDs power [W]	72		96		120		144	
Total luminaire power [W]	80		105		130		155	
Luminous efficiency [lm/W]	117	91	119	92	120	93	120	94
Luminous flux* [lm]	9 350	7 250	12 450	9 700	15 550	12 100	18 650	14 500
LEDs amount	24		32		40		48	
Net weight [kg]	6,3		7,5		8,3		9,2	
A – length [mm]	346		438		479		561	
Unit volume [m ³]	0,040		0,040		0,040		0,040	
Windage [m ²]	0,05		0,056		0,062		0,068	
Additional element – diaphragm	230235		230237		230239		230241	
Voltage [V]	220-240 AC 50/60 Hz							

* Due to the precision class of diodes tolerance is +/- 3%



Zakład Produkcji Sprzętu Oświetleniowego ROSA

Stanisław Rosa

1 Strefowa Street, PL43109 Tychy

+48 32 738 89 01

Commercial Director: +48 32 738 89 10 dyrekcja@rosa.pl

Sales Department: +48 32 738 89 11 sprzedaz@rosa.pl

www.rosa.pl