

The space in which man lives needs light. This is what provides comfort and safety every day. It also lets you enjoy the beauty and aesthetics of the world around us. Our offer is a wide variety of solutions, thanks to which cities, streets and buildings will benefit from the unique appearance.



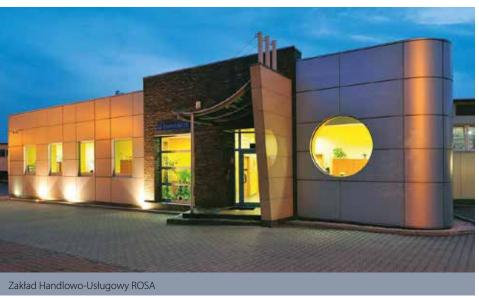
ROSA Group is a Polish company specializing in the design and production of outdoor lighting complete sets. Founded in 1992 by Stanisław Rosa, the company employed at that time just a few people, today it is thriving business and respected leader in the industry. The three plants with a total area of 24 000 m² located in Tychy together with two foreign partnerships, ROSA employs around 300 people.

The success of the company consists of many factors but the most important of them are people who work in it. Tradition, experience, reliability, individual approach to each client, supported by innovative, creative and ecological solutions are the advantages recognized not only in Poland but also in almost 60 countries on all continents, to which we export our products. By cooperating with ROSA company the client receives support, assistance and advisory service from the best polish experts in the industry. Highly specialized team of engineers and our own technical know-how are the guarantee of a professional and efficient implementation of even the most difficult tasks.

ROSA group consists of:

- ZPSO ROSA Stanislaw Rosa producing aluminium columns, luminaires and connection boxes,
- ZHU ROSA Ltd. producing poles with external plastic coating, concrete footings and reinforcement baskets,
- **ZU ROSA Ltd.** the biggest and most modern anodising plant in Central and Eastern Europe using interference colouring technology of profiles up to 10 m long,
- ROSA Vostok Ltd. handling the market in Russia (except the Kaliningrad district), Kazakhstan and Belarus.
- ROSA SAH Ltd. handling the market in Slovakia, Austria and Hungary.







O MODERNITY POWER

We develop Polish technical thought. Our engineering staff and research teams are constantly developing innovative manufacturing methods. New automatic production line of aluminum columns operating from 2015 is the only such investment in the world. Complete automation of production process allows us to produce 1 meter of column in record time of 1 minute. ROSA anodising plant is one of the most modern facilities of its kind in Europe. The anodising process is fully automated. Implemented solutions allow for interference or electrochemical colouring of aluminum elements up to 10m long and also of complicated shapes into 10 different colours with possibility of brightened version



O CONFIRMED QUALITY

The technologies and methods of our production are protected by patents. Everyday business is run basing on the Quality Management System ISO 9001:2008. We have all certificates applicable in EU, among others Qualanod, which is awarded to the highest quality of anodic layers and confirms the compliance with European standards and also the Passive Safety Certificate for aluminum columns in class 100NE2.

O ORIGINAL DESIGN

We are open to new ideas and we are constantly looking for innovative solutions. Our creative approach to lighting has beed repeatedly awared by both Polish as well as foreign specialists. An example is lighting set DROP I LED, which won Red Dot Award in international competition in 2014 and also won national competition Good Design.

O LABORATORY OF THE FUTURE

Our laboratories allow for rapid and flexible response to market needs as well as for creating innovative lighting solutions. Chemical laboratory is equipped with modern equipment for measuring the quality of anodic layers. Spectrometer allows us to specify the quality and exact quantity of the alloy admixtures, which is a key factor in qualifying the suitability of aluminium alloys for anodizing. Measuring the quality of oxide coatings coloring splited into spectral bands and measuring the intensity and level of dulling the layer is made by means of high-class spectrophotometer.

R&D laboratory can conduct research and analysis of materials used in various aggressive environments. It is equipped with a climate and aging effects chamber, salt chambers, gonio-photometer, resistance testing machine and the stand for testing the columns. We do analyze in detials the components of our products in terms of thermal conductivity, corrosion resistance, UV resistance, light distribution and photometric properties of used LEDs. As a result, we have complete control of the manufacturing processes staring from raw materials till final products. This allows us to provide high quality and reliability of products.

ECO REVOLUTION

ROSA products are aesthetic, easy to install and guarantee long-term operation.

They are produced in the proces, which is safe for environment and is intended to be used without damage to the environment. For the sake of our environment, every day we undertake actions, which are common investment for the future. ROSA LED luminaires significantly reduce energy consumption, ensuring savings class A++, while the LEDs are friendly to the environment, because they do not emit UV rays and infrared radiation. We offer aluminium products fully recyclable.



ROSA – and everything is clear!

- we exists nearly 25 years in the lighting industry,
- we offer complete commercial and engineering service,
- we specialize in the production of complete lighting sets,
- we present a wide range of energy-saving LED luminaires,
- our products made of anodised aluminum are offered in 10 different colours, with possibility of brightened version.
- we do unusual and unique product solutions of column, masts and luminiares,
- we do have copyright protected technological solutions,
- we offer added value as comfort, safety, quality and aesthetics,
- we illuminate and decorate the surroundinggs in which we live.



ALUMINIUM COLUMNS PRODUCTION

O MATERIAL

Conical columns are rolled from EN AW-6060 aluminium alloy tube. Aluminium column base-plates are pressed from EN AW 5754 aluminium alloy sheet. Used aluminium alloys guarantee correct atomatic process of welding, polishing and creation of anodised oxide layers on produced items.

O TECHNOLOGY OF STANDARD COLUMNS' PRODUCTION

New, automatic production line consists of six highly technologically advanced stations, which, depending on requirements, can work simultaneously or as separate ones. Complete automation of aluminum columns' production process significantly increases productivity.

Just one minute is needed to produce 1 meter of aluminum column. As a result, production of 10 column takes only 10 minutes. Innovative aluminum columns' ROSA production line is the only such investment in the world and solution used in it are protected by patent. Each stage of the production process is monitored and controlled in every detail, what ensures high quality of the final product.









O CUSTOM COLUMNS' PRODUCTION TECHNOLOGY

In addition to the catalog projects we realize individual orders in accordance with individual projects. We have almost unlimited production capacity, which allows to produce any custom column or extension-arm. We offer small modifications based on standard products listed in the catalogue as well as completely new projects, totally different from our standard offer. Experienced engineers in Design Department and can create technical design and calculation for any customer inquiry. We do have strongly expanded and modern machinery park. Devices such as water cutting machine, laser cutting station, CNC machines, benders for columns, aluminum sheets and pipes allow us to make different details of complicated shapes and to cut different decorative elements for columns and brackets and finally to bend column and brackets at a given angle.





O WIRING CHAMMBER

Each aluminum lighting column has wiring chamber, where the connection-box is installed. Cover of the chamber is being cut by laser (streight columns), or by specially designed saw (in case of columns produced outside the technological line) and screwed in by two bolts. The chamber closing is equipped with catch (locks) welded into the cover and chamber. Thanks to that the cover additionally transfers the load resulting from the column's operating conditions.



The wiring chamber in aluminum columns

O EARTHING SYSTEM

A slot is provided in the lower locking bar for a supplied M8 earthing bolt to which the earthing cable is attached. This location allows easy access to earthing bolt, thus allows for quick maintenance and assembly.

As an alternative to earthing used in then wiring chamber, there is additional earthing made in standard: in column's base-plate. It can be helpful especially in case of using earthing bending steel. In such case there is earthing in base-plate used. The cooperage is being screwed into column's base-plate by bolt M8 taken from wiring chamber (OPTION 1) and secondly screwed into hole made in the base-plate. When using OPTION 1 the hole will stay closed by platic plug.

SCREWS FOR WIRING CHAMBER COVER

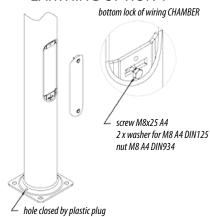
The cover is screwed by stainless steel bolts M8 of a special, untypical socket shape, which prevents from opening by unauthorised persons. There are o-ring washers fitted on each screw, which protects from falling out when loosening. The column can be equipped with triangular screws/keys at customer request.



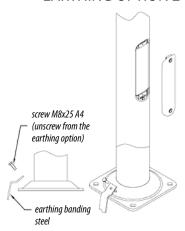
Triangle key and bolt

Allen key and bolt

EARTHING OPTION 1



EARTHING OPTION 2





COLUMN REINFORCEMENT

Columns marked with index "wzm" are reinforced. Reinforcement of the column within the base and wiring chamber by an additional tube or a thicker wall allows the use of a number of luminaires or extension arms, or their installations in areas exposed to high wind speeds.

O CONNECTION OF TWO-PIECE ALUMINIUM COLUMNS

Permanent connection of twin-element columns is assured by using specially designed stainless steel coronet connection clamp.

Connecting element is secured by using:

- 3 screws M10 for two-piece SAL columns,
- 4 screws M10 for two-piece MAL masts.





Connecting clamp for two-piece column type SAL



Connecting clamp for two-piece column type MAL

RESISTANCE CALCULATIONS

Column resistance calculations are made in resistance program in accordance with standards EN 40 and EN 1991-1-4. Column resistance is calculated for columns with detached wiring chamber door.

Permissible column loads

Designing of lighting columns is based on the group of standards EN 40.

- 1. EN 40-1 Lighting columns Terms and definitions.
- 2. EN 40-2 Lighting columns General requirements and dimensions.
- 3. EN 40-3-1 Lighting columns Designing and verification Specification of characteristic loading and recalled EN 1991-1-4. Designing bases and influencing on construction. 2-4 Wind loads.
- 4. EN 40-3-2 Lighting columns Designing and verification Verification by testing.
- 5. EN 40-3-3 Lighting columns Designing and verification Verification by calculations.
- 6. EN 40-6 Aluminium lighting columns Requirements.
- 7. EN 40-5 Steel lighting columns Requirements.

The above listed standards also specify methods of determining the permissible load in column construction. When determining permissible column loads, the following characteristic specific parameters were taken into consideration: average wind speed, location category, analytical load, horizontal deviation, shape factor.





PASSIVE SAFETY

Aware of the safety requirements expected from the producers of lighting columns in minimizing the danger resulting from road accidents we have carried out passive safety tests on its products according to standard EN 12767 "Passive safety of support structures of road equipment. Requirements and test methods."

As a result of conducting the tests we have obtained the certificate for aluminium rooted columns of height from 2 up to 12 m with diameter Ø225 mm and flanged columns with diameter up to Ø180 mm and height from 2 up to 12 m in the passive safety category:

100NE2

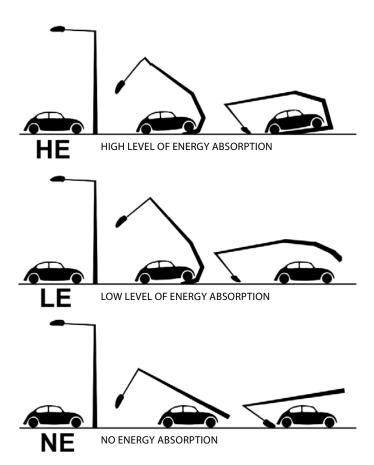
100 – test impact speed

NE – non-energy absorption construction

2 – vehicle passenger safety degree

Aluminium lighting columns with the passive safety class 100NE2 may be used in a road infrastructure, where the non-energy absorption factor is required for road constructions, e.g. motor ways, express ways, country roads. In this case, the vehicle, having crashed against the column, will continue driving at a reduced speed, protecting the passengers of vehicle against the effects of collision.





Levels of energy absorption according to EN 12767

Categories and parameters

- 1. Construction categories in respect of the energy absorption degree:
- HE high level of energy absorption
- LE low level of energy absorption
- NE no energy absorption
- Class "0" passive safety requirements are not met
- 2. The degrees of passenger safety:
- 1, 2, 3 supporting structures to provide increased security
- 4 harmless supporting constructions



ANODISING PROCESS

O ROSA ANODISING PLANT

Anodising plant of aluminium products is part of ROSA GROUP. It has been operating since 2009 and it is today the largest of this kind facility in Europe. ROSA anodising plant specializes in services such as anodising electrochemical or interference colouring of aluminum materials (including sheet metal, pipes, profiles or other structural elements). Modern interference technology of colouring provides richer from the traditional colour palette, resistant to external factors, including UV radiation. ROSA anodising plant anodise the elements up to 10 m, simple or complex shapes, in 10 unique anodising colours, each with the possibility of brightening.

O ANODISING PROCESS

Raw and unsecured aluminium is susceptible to dirt, and it corrodes in the polluted and aggressive environment. We offer to our clients the highest quality products, that's why all of our aluminium columns are anodised.

Anodising is a surface treatment of aluminium and its alloys consisting of a controlled electrolytic formation of a protective layer of aluminium oxide. Depending on product destination and terms of use anodised coatings are made in several thickness classes. The thickness of the anodic coating lighting columns is 20 μ m. This ensures safe use in moderate to harsh conditions. For exceptionally harsh conditions a coat of 25 microns is recommended. There is the possibility to anodise products of up to 10 m length. The porous structure of the oxide coating allows to permanent colouring of metal by electrochemical or interference method. In these technologies, metallic fraction is permanently associated with the structure of an anode layer and the corresponding geometry and orientation of the pores determines the perceived colour.

Anodising is used for the following purposes:

- the anti-corrosion and mechanical protection of the metal surface, with particular emphasis on atmospheric corrosion, especially against aggressive environmental factors such as sea water, acid rain, etc...,
- decorative anodised surfaces achieve a smooth, satin finish, and additional colouring provides exceptional aesthetic surface finish.

O OUALITY GUARANTEE!

We conducted in our R & D laboratory test of resistance of anodic oxide coatings to UV rays. The test was performed in accordance with the recommendation of EN ISO 6581 "Anodising of aluminum and its alloys - Determination of relative resistance to ultraviolet light and heat of coloured anodic oxide coatings."

During 14600h of the samples exposure in Q-Sun Xe-3 device, there was no colour change of the oxide layers observed. Such exposure period is an equivalent to 20 years of operation in Polish climatic conditions.

In order to determine corrosion resistance, the samples of anodized aluminum lighting columns were tested in salt chamber in salt concentration of 5% (for comparison Baltic Sea salt concentration is 0.8% and in the North Sea it is 3%).

Exposure of samples in the chamber took total 20 000 h and despite such a long period of research there were no corrosion marks observed. The survey was carried out according to DIN EN ISO 9227 in comparison to the NSS method.

The company received technical approval of the European Association of Surface Treatment Aluminium QUALANOD with the right to use the Quality Label QUALANOD of Anode Coatings, which confirms the highest quality of services provided by ROSA anodising plant.



VALUE OF ANODISED ALUMINIUM

- anodised coatings are integrally connected with the ground, so there is no possibility of peeling, spalling or delamination,
- long service life, with the possibility of receiving the guarantee up to 20 years,
- high aesthetics of the column for a long time of use,
- high resistance to UV radiation,
- high resistance to abrasion due to the greater hardness of the coating,
- corrosion free,
- the availability of a wide range of colours,
- decorative surface.

	BLACK STEEL	GALVANIZED STEEL	HOT GALVANIZED Steel	RAW ALUMINIUM	ANODISED ALUMINIUM
MODEL SAMPLE				-	
TEST IN SALT CHAMMBER NORM PN-EN ISO 9227— NSS METHOD TEST IN NEUTRAL SALT FOG				331	
TEST IN SALT CHAMMBER NORM PN-EN ISO 9227 — CASS METHOD TEST IN ACID SALT FOG WITH ADDITION OF COPPER					

Results of the comparative test for aluminum material quality with and without corrosion protection.



O ANODISING PROCESS

The process of anodising is carried out on an automated technological line equipped with 27 tanks. This process can be divided into three stages. Between the different essential processes the operations of washing the product are carried out.

Anodising process stages:

1. Surface preparation:

- surface pre-treatment phase removal of grease and other contaminants of various origin from the surface of the aluminium,
- alkaline bath phase removal of thin oxide layer from the surface of the product and creating an uniform matt and decorative appearance, and removal possible defects,
- pickling (lightening) phase removal residual alloy impurities and thin oxide layers and sediments that may remain after the etching process, their removal is necessary to create the optimal adherence of the oxide coating to the matrix.

2. Anodising and colouring:

• anodising is controlled formation of aluminium oxide layer on the aluminium surface during electrochemical process. Anodised coating is formed by electrolysis, in sulfuric acid solution with the participation of a certain current density. The anodic film grows with 2/3 of its thickness below the original metal surface and 1/3 above it. It is considerably thicker than the natural oxide layer so that it effectively protects the aluminium surface from further oxidation, that is corrosion. Its porous structure allows for durable colouring of the product by chemical, electrochemical and interference method.



- electrochemical colouring is treating an anodised product in the electrolyte containing tin ions. Reduced metal in cycle cathode is deposited on the bottom of the pores of the oxide coating and can durable colouring the aluminum surface. This method produces a range of colours from pale to dark brown and black.
- interference colouring operation is preceded by shapes modification of the pores of the anodic layer. Tin is then deposited in such modified pores and provides durable colouring of aluminum surface, expanding the palette of colours obtainable in electrochemical colouring of new colours. This method uses the interference phenomena of the reflected light waves which increases or decreases the amplitude of the resultant wavelengths. Modifying the amplitude by controlled changing the shape of the pores of the anode layer allows to create new colours.

3. Sealing

Sealing aim to seal the closure of the porous oxide layer, which ensures proper corrosion resistance. This is the last process of anodising, run in a dematerialized hot water containing accelerating additives, which comes to fill the pores in the oxide coating with boehmite and aluminium hydroxide. After sealing the anodised aluminium surface is hard, smooth, resistant to dirt and corrosion.

BRIGHTENING

Brightening is accomplished by chemical etching of glossy surface structure prior to anodising of the aluminium. The process is based on smoothing the chemical structure of the surface, which results in a reduction in fogging and lightens the metal surface, which in turn can effect the final gloss.

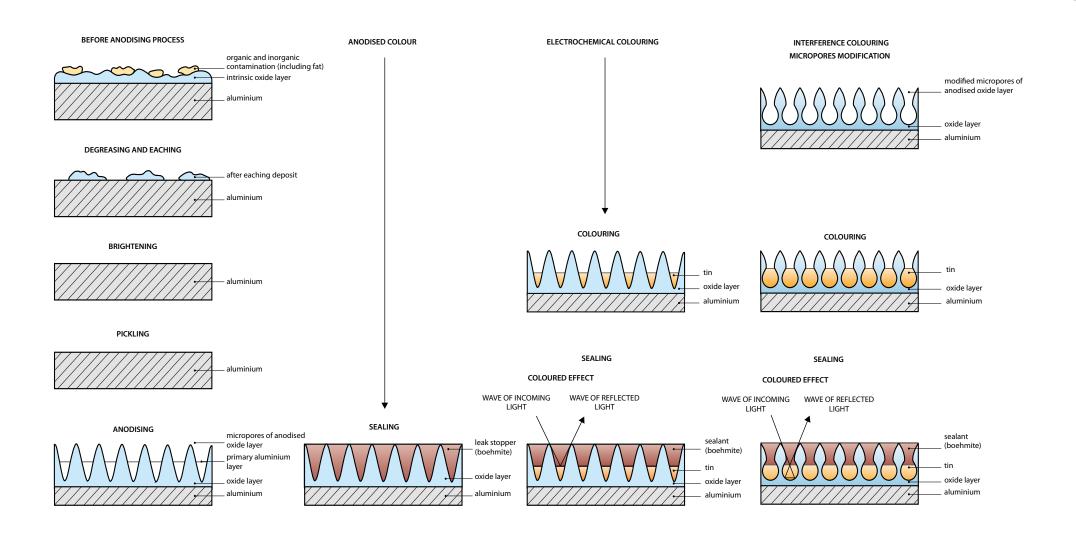
O ANODISED ALUMINIUM - CLEANING AND MAINTENANCE

Proper maintenance and regular cleaning of anodised aluminum products allow to keep its aesthetic and decorative appearance for longer.

- cleaning has to be done by a neutral, synthetic cleaning fluid and by cloth, sponge, leather cloth or soft brush. Then it has to be rinsed with clean water and wiped dry from the top to the bottom with soft, dry cloth.
- you can remove stubborn dirt slightly abrasive cleaners or fabric covered fine polishing powder.
- maintenance means for anodised aluminum elements must be attested and approved for being used on nodised aluminium surface.
- do not use soda solutions, alkalis and acids. Also do not use the abrasive materials, metallic fiber cloths, hard wire brushes, sharp abrasives, etc.

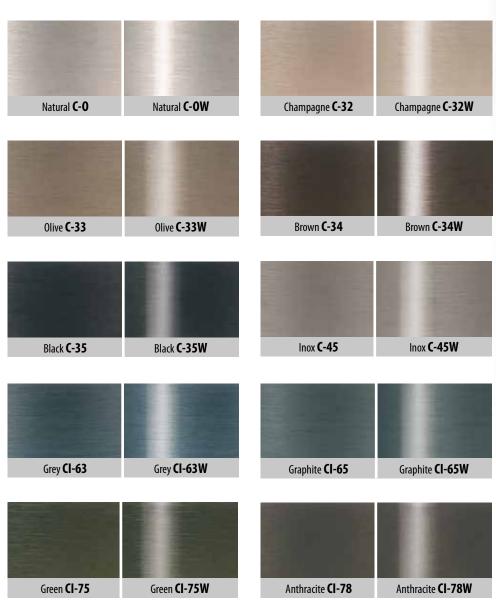


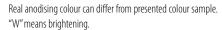
ANODISING PROCESS OF ALUMINIUM PRODUCTS

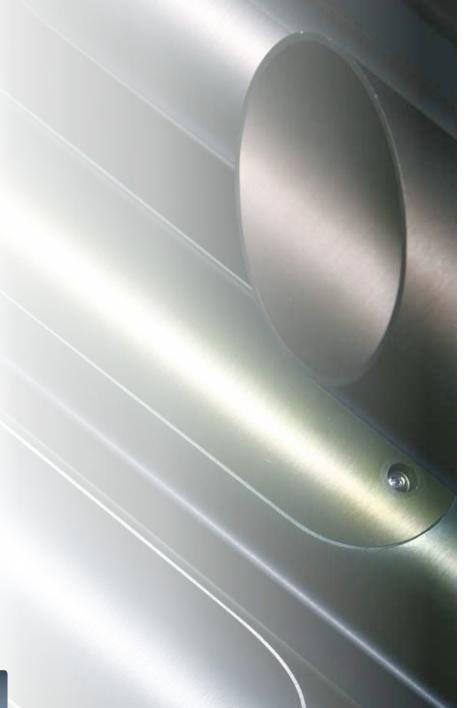




ANODISING COLOUR PALETTE









O ELASTOMER

Column's base-plate and the underground part in case of rooted columns are exposed to adverse influence of salt and ammonia compounds and to mechanical damage. In order to protect the bottom part of column against corrosion, we offer additionally the possibility to cover the base-plate, screw holes and rolled part up to height of 350 mm by polyurethane elastomer. Thickness of protective coating is in the range of 0.7mm up to 1mm with a hardness of about 90°sh.

The elastomer surface is covered with paint resistant to UV rays in colour close to the one of anodized column. The elastomer protection is compatible with the EN-40 standards, which is the European requirements for aluminum lighting columns.

All rooted columns type SAL dz have elastomer protection instandard. Both the material and the production technology is environmentally friendly.



COLUMN'S ELASTOMER PROTECTION





PRODUCTION OF PLASTIC COATED POLES

Stylish plastic coated poles are elements of small architecture and are designed to illuminate parks, squares, green spaces and urban markets. Variety of shapes and heights of poles allows you to adjust the lighting to the surrounding. Plastic coated poles are characterized by high aesthetics, easy transport and assembly, resistance to adverse external factors, high mechanical and dynamic resistance.

POLE CONSTRUCTION

Plastic coated poles consist of three interconnected materials:

- supporting structure made of steel tubes of hybrid construction welded to the steel base which is reinforced with angle braces,
- external components made of special composition of plastics by thermoforming and injection molding method,
- self-extinguishing, rigid polyurethane foam that fills the space between the structure and the plastic coating of the pole.

The pole steel construction was specially designed to absorb the load created mostly by wind pressure.

Plastic coating is made in two versions:

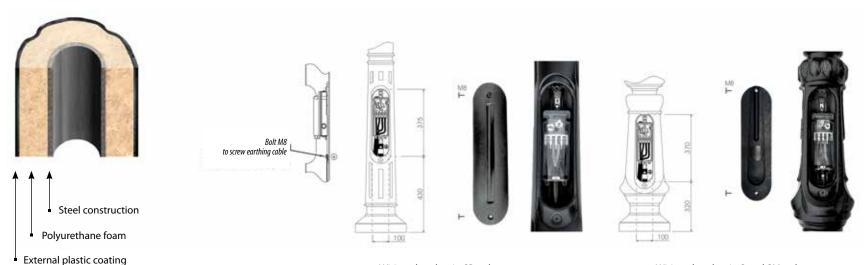
- standard thermal resistance poles used in countries where air temperature varies between -30°C to $+40^{\circ}\text{C}$,
- high thermal resistance poles used in countries where air temperature is less than -30°C and exceeds +40°C. It concerns poles in black colours. This type of pole is additionally marked with letter "F".

WIRING CHAMBER

Poles with wiring chamber are additionally marked with letter "W". The wiring chamber is located in the first, lower section of the lighting pole. It is designed to connection box mounting on the aluminium rail located on the back of the steel structure of the pole. The rail fixing clamp can be used as a protective one. The wiring chamber is protected by decorative plastic cover in identical colour and texture to the pole.

Plastic coated poles are characterized by:

- · corrosion resistance,
- light weight facilitates transport and mounting,
- aesthetic appearance,
- adverse weather conditions resistance,
- resistant to salt, ammonia and other caustic substance,
- UV resistant,
- high mechanical qualities,
- suitable for every climatic zone,
- low cost of maintenance.



Wiring chamber in SP poles

Wiring chamber in S and SM poles

R<mark>OS</mark>A



O TYPES OF PLASTIC COATED POLES

Plastic coated poles are produced in three versions:

S – traditional,

SP - straight,

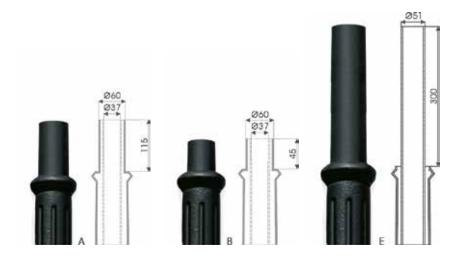
SM – composite.

O TYPES OF SPIGOT ENDING

Three types of spigot ending are used depending on type of plastic coated pole:

- typ "A" designed for mounting arm systems in poles type S and SP and extension arms WT in poles type SP,
- type "B" designed for using luminaires with spigot ending Ø60 mm (OP, OPA-1, OS-1, OS-1 LED, OS-11 LED),
- type "E" designed for mounting extension arms WTM.

Spigot ending is integral and non-modified part of the pole.



An example of the construction of a pole S-40W

Construction example of the pole SM-1W

Cross-section of endings in plastic coated poles



LIGHTING LUMINAIRES

LED LUMINAIRES

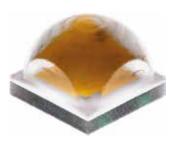
ROSA LED luminaires feature a unique design, innovative LED source and anodising technology. In the production we particularly emphasize the quality, durability and aesthetics. In the ROSA LED offer there are park luminaires designed for illuminating urban areas (parks, traffic routes, squares); street luminiares dedicated to highways, roads, streets and industrial areas; floodlights used to illuminate architectural elements, sports facilities, car parks and large areas and also industrial luminaires used for warehouses, gas, stations and industrial buildings. petrol.

ROSA LED luminaires - real benefits:

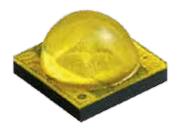
- reduction of electricity consumption up to 75%
- lower operating costs and lower maintenance costs
- possibility of power reduction
- reduction in number of ligting sets used
- aesthetic and decorative appearance

LIGHT SOURCES

ROSA products equipped with LED use light sources of CREE company, which is leader in the industry.







LED CREE XT-E

- **XP-L** one of the most efficient single-structure diodes on the market which assures unprecedented savings in energy consumption:
- high efficiency allows to achieve up to 120lm/W of entire luminaire efficiency,
- low thermal resistance 2,5°C/W which translates into low diode working temperatures with consequently longer luminaire lifespan.

XT-E – a diode characterized by good ratio of price to performance:

- uniformity of light colour in the whole angle of the lighting beam (columns KARIN LED, CORONA LED)
- **LMH2** eplaceable LED module used in traditional luminaires retrofitted with LED source (ATLAN-TIS LED, ELBA LED, OS-11 LED),
- pleasant warm colour temperature (3500 K) and very high CRI>90

Current LEDs' parameters available in technical sheets at www.rosa.pl

O COLOUR TEMPERATURE OF LIGHT, COLOUR RENDERING INDEX

Light sources in ROSA luminaires and lighting sets are available in the variants of the colour temperature of light: $3500 \, \text{K}$ or $5000 \, \text{K}$.

Light colour	Colour temperature of light (CCT)	Colour rendering index (CRI)
Warm white	3500 K	80
	3500 K	>90*
Neutral white	5000 K	75

^{*} ATLANTIS LED, ELBA LED, OS-11 LED

White warm colour of 3500K is preferred in lighting urban spaces, parks (marked with number "3" in product's code), while white neutral white color of 5000 K due to higher light efficiency is used in street lighting (marked with number "6" in product's code). Selecting one of these options depends only on the customer's preference. With custom solutions there is possibility of ordering luminaires with different color temperature in the range of 2700-5000 K.







O OPTICS

ROSA LED luminaires use only optics made of PMMA (polymethacrylate with increased resistance to temperature. It is used in collective lens and lamp diffusers/light diffusing plates (ELBA LED, ATLANTIS LED, CORONA LED, KARIN LED, OS-11 LED).



Standard module LED – used in most of the park luminaires, also in lighting sets DROP LED and FLEXI LED

O REPLACEABLE LED MODULE

Removable LED module contains 12 LEDs XM-L or XT-E and it is available with five unique optical systems. The module and its connections are waterproof - IP66. The module has heat sensor and increased resistance to electrical discharges. At the bottom there is graphite foil installed, what improves heat transfer to the luminiare's radiator. Assembly and disassembly of the module is done using standard tools.



LUMINAIRE CONSTRUCTION

Housings of ROSA LED luminaires and lighting sets are made of profiles and sheets of high-quality aluminum alloy* subjected to the anodising process. Aluminum alloy has excellent thermal properties including high thermal conductivity (>200W/mK). Maintaining low temperature of diodes is critical to ensure its durability for years. Anodised aluminum protects the luminaire body against corrosion and aggressive external factors such as acid rain, sea water,

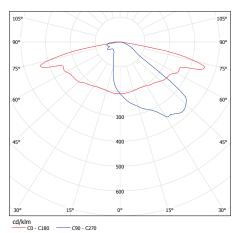
UV radiation, salt while giving them decorative character. In addition to aesthetic, it provides proper heat distribution, enabling high light efficiency and warranting 20 years lifetime.

*exceptions are luminiares OS-1 LED, LED ELBA, ATLANTIS LED MAGNOLIA LED and LED LUNOIDA.



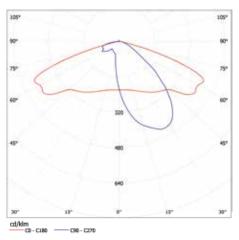
AVAILABLE OPTICS FOR REPLACEABLE LED MODULE

ME



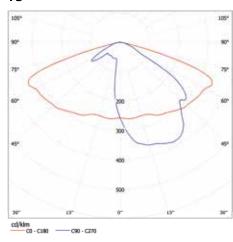
- E lighting classes
- high rate of surrounding lighting SR>0.6

T2



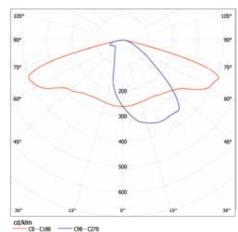
- ME2 lighting classes
- particularly effective in double row configurations (opposing arrangement or on median)

T3



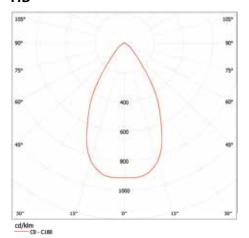
- ME3 lighting classes
- installation of up to 10m
- high longitudinal uniformity of the luminance UI

DW



- ME Road classes, pedestrian ways
- installation height up to 8m
- very high longitudinal uniformity of the luminance UI

HB



- illumination of warehouses
- illumination of buildings



O DRIVER

In LED luminaires we use highly efficient and programmable DC power drivers Philips Xitanium and Osram 4IDM. These drivers offer considerable flexibility due to the large number of programmable options that can be set according to different requirements. For the customer there is available number of function such as the ability to regulate the output current, DALI interface, optional 1-10 V, time profiles. In addition, the driver has an option to control the temperature of LED modules, which reduces power when it detects temperatur higher than programmed. This allows you to protect the LEDs from overheating, and hence from faster consuming.

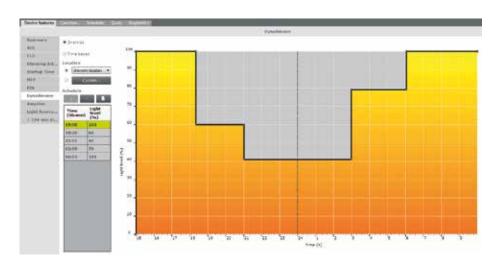
The driver is closed in housing with a quick-connectors which makes the replacement possible using simple tools.



Parameters used in Philips Xitanium drivers

Model	Output power range [W]	Output voltage range [Vdc]	Current output range [mA]	Voltage [Vac]	Insulation class	Ingress protection IP
Xi FP 75W 0.3-1.0A SNLDAE 230V S240 sXt	3-75	35-108	- 300-1050	220-240 V	Ш	IP66
Xi FP 150W 0.3-1.0A SNLDAE 230V S240 sXt	5-150	70-214				

Programmable time profiles allow you to increase your savings resulting from using lighting based on LED technology. Our clients has a choice of maximum 5 power levels in the range of 10 to 100% of rated power, at any time interval of luminaire operation. The user indicates in the day frame the exact power level, which is expected at certain times; then the power supply performs given profile. Using such solution can reduce the power consumption of luminaires, which gives economic savings.



O EXTERNAL CONTROL SYSTEM

ROSA LED luminaires are equipped with * DALI interface or 1-10V. This enables connection of ROSA LED luminaires to independent controller or entire control system.

An external control system in LED luminaires is equivalent to reduction of power consumption. With appropriate luminaire power control depending on the traffic on selected road section, you can provide additional savings of even up to 40-50%. To facilitate control of luminaires, most of the control systems has the ability to add luminaires to certain groups (eg. pedestrian crossings or main streets) and control parameters of all luminairesplaced in this group.

Another advantage of using control systems is reporting the errors occurring in the luminaires. In case when for example the luminaire stopped working, that kind of error may be signaled through the message system or via e-mail/SMS.

OVERVOLTAGE PROTECTION

Outdoor lighting using LED technology is exposed to overvoltage caused by a disorder of the electrical network or due to atmospheric effects such as lightning. All ROSA LED luminaires are equipped with overvoltage protectors 10 kV. Its task is to reduce the power overvoltage to the level, which is safe for electronics used in the luminaire. Such protection significantly increases the resistance of the luminaire to electrical discharge (up to 15 impulses of 10kV voltage). In addition, in the case of more number of impulses or one impulse with higher energy the protection device is being destroyed and it cuts off the luminaire from the mains.

^{*} in standard or as an option depending on the housing



O ECONOMY

ROSA LED luminaires provide high class savings and are among the most efficient on the market. In comparison with other luminaires ROSA LED products achieve much greater light efficiency up to 130 lm/W. This allows for lower energy consumption even by 75% (as in case of Mira LED 36 compared with standard S-70W) and ensures life-time of at least 50 000 hours (L90F10).

O ECOLOGY

ROSA LED luminaires are produced without harming the environment.

- LEDs do not emit UV or infrared radiation,
- LEDs consume less energy than high-pressure light sources causing carbon dioxide emission decrease by electricity producers,
- light sources used in the luminaires meet the requirements in terms of the standard EN 62471 "Photobiological safety of lamps and lamp systems", which means that it does not cause eye damage in normal operating conditions,
- luminaires are made of renewable materials, mainly aluminium, which can be recycled.
- ROSA LED products are compliant with RoHS Directive, which limits the use of hazardous materials in electronics,
- according with policy of limiting the ligh pollution of the sky the light from LED luminaires is directed only downwards.









PARK LIGHTING

Park aluminium straight columns (height: 3-6 m)	24
Park aluminium decorative columns (height: 3-6 m)	28
Extension arms for park aluminium columns	32
Park aluminium columns with welded extension arms (height: 4-6 m)	34
Aluminium wall brackets	40
Plastic coated poles	42
Arms systems for plastic coated poles	52
Extension arms for plastic coated poles	54
Wall brackets for plastic coated poles	58

PARK LIGHTING

Outdoor lighting as part of the landscaping, gives a unique character of urban space. What matters is aesthetics, quality, durability and economy of operating. A wide range of decorative columns, extension-arms, wall-brackets and ROSA luminaires allows to choose perfect lighting of urban green spaces, squares and neighborhoods. We present modern solutions based on LED technology or high-pressure light sources made of anodised aluminum as well as durable plastic.



STRAIGHT COLUMNS Ø 114

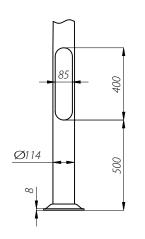
Columns with base plate

| SAL-2,5/B60 code: 42126/C... SAL-3/B60 code: 42120/C... SAL-3,5/B60 code: 42101/C... SAL-4/B60 code: 42102/C... SAL-4,5/B60 code: 42103/C...

| SAL-3/D60 code: 42122/C... SAL-3,5/D60 code: 42114/C... SAL-4/D60 code: 42115/C... SAL-4,5/D60 code: 42116/C...

Rooted columns

SAL-3/B60 dz code: 42124/C... SAL-3,5/B60 dz code: 42108/C... SAL-4/B60 dz code: 42111/C... SAL-4,5/B60 dz code: 42107/C...





SAL-.../B60 B-50/Z-50

200 260 SAL-../D60 B-51/Z-51















STRAIGHT COLUMNS Ø120

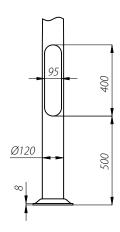
Columns with base plate

SAL-4	code: 42201/C
SAL-4,5	code: 42202/C
SAL-5	code: 42203/C
SAL-5,5	code: 42205/C
SAL-6	code: 42207/C

SAL-4E	code: 42217/C
SAL-4,5E	code: 42218/C
SAL-5E	code: 42219/C
SAL-6E	code: 42223/C

Rooted columns

SAL-4 dz code: 42231/C... SAL-4,5 dz code: 42232/C... SAL-5 dz code: 42233/C...





SAL-... B-50/Z-50

200

SAL-...E B-51/Z-51

Rooted columns



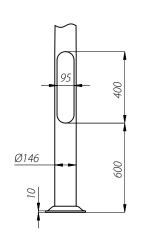
STRAIGHT COLUMNS Ø 146

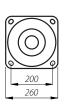
Columns with base plate

SAL-60 code: 42313/C... SAL-50G code: 42341/C... SAL-60G code: 42343/C...

Rooted columns

SAL-55 dz code: 42322/C... **SAL-60 dz** code: 42323/C...





SAL-...G B-51/Z-51

SAL-60 B-60/Z-60

250 320



Column with base plate





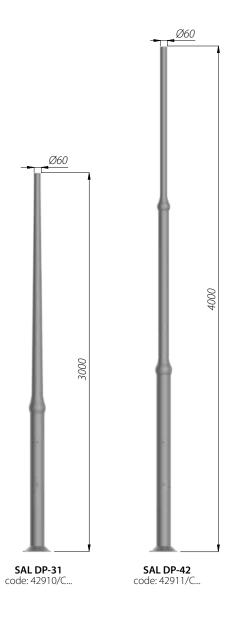


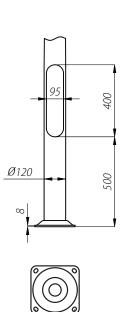






DECORATIVE COLUMNS







B-50/Z-50



DECORATIVE COLUMNS

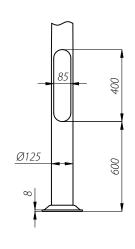
Ø60

Column with base plate

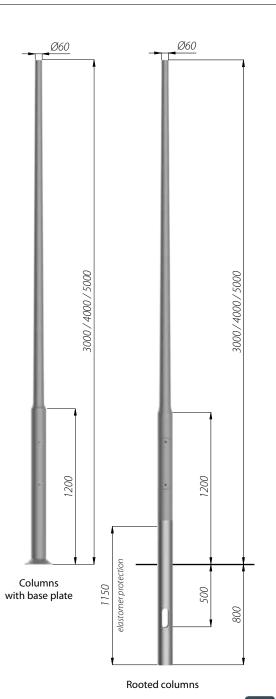
SAL DP-38 code: 42945/C... SAL DP-48 code: 42946/C... SAL DP-58 code: 42947/C...

Rooted column

SAL DP-38 dz code: 42965/C... SAL DP-48 dz code: 42966/C... SAL DP-58 dz code: 42967/C...



B-51/Z-51



Ø140 ∞

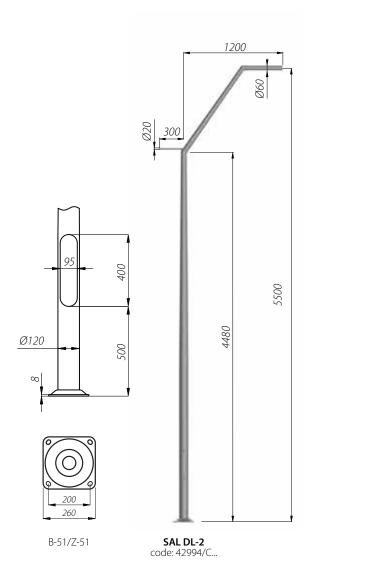
B-50/Z-50

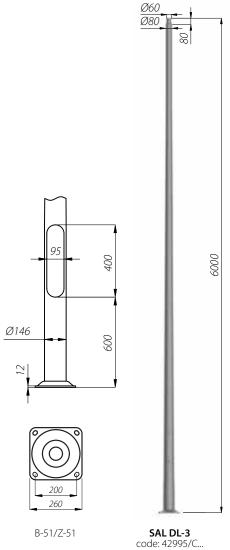


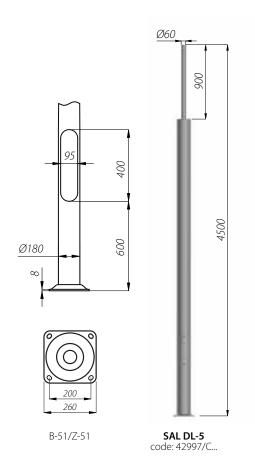




DECORATIVE COLUMNS

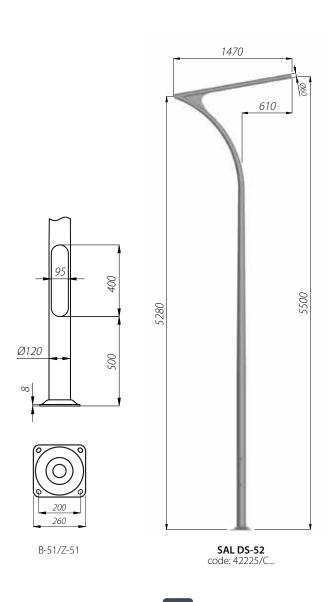


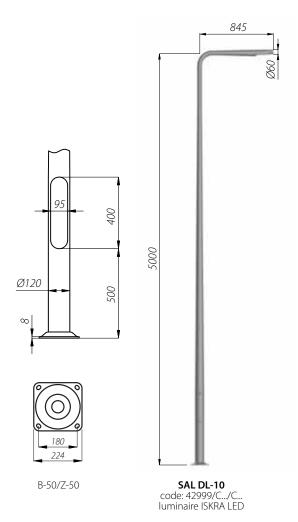






DECORATIVE COLUMNS





Mysłowice / Poland



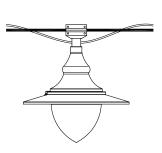
PARK LIGHTING / ALUMINIUM COLUMNS / EXTENSION ARMS FOR ALUMINIUM COLUMNS

EXTENSION ARMS WA

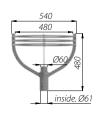
Application: columns SAL with spigot ending Ø60 mm (WA-0 is mounted on load-bearing catenary wires)



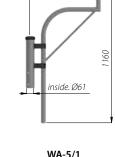
WA-0 code: 40270/C.. luminaires: OW LED, OW



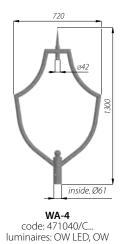
Mounting example of WA-0 with OW luminaire, Cone lamp diffuser

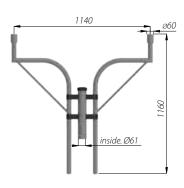


WA-1 code: 471011/C... luminaire OP 400



WA-5/1 code: 471051/C... luminaires: OPA-1, OP





WA-5/2 code: 471052/C... luminaires: OPA-1, OP





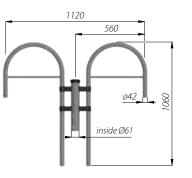


PARK LIGHTING / ALUMINIUM COLUMNS / EXTENSION ARMS FOR ALUMINIUM COLUMNS

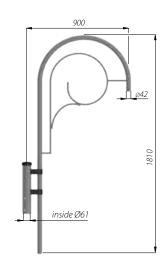
EXTENSION ARMS WA



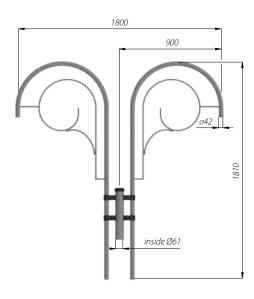
WA-14/1 code: 471141/C... luminaires: OW LED, DROP LED, OW



WA-14/2 code: 471142/C... luminaires: OW LED, DROP LED, OW



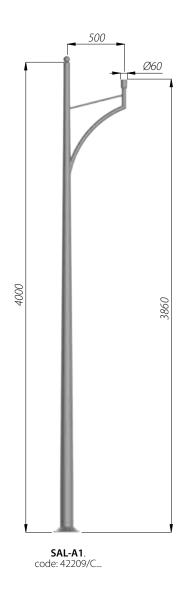
WA-20/1 code: 471201/C... luminaires: OW LED, DROP LED, OW

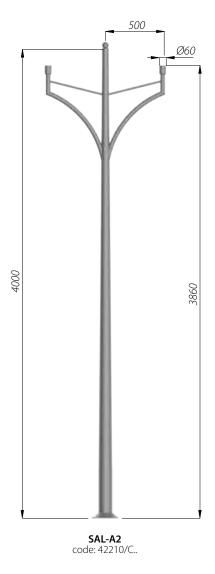


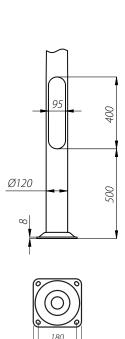
WA-20/2 code: 471202/C... luminaires: OW LED, DROP LED, OW



COLUMNS WITH WELDED EXTENSION ARMS





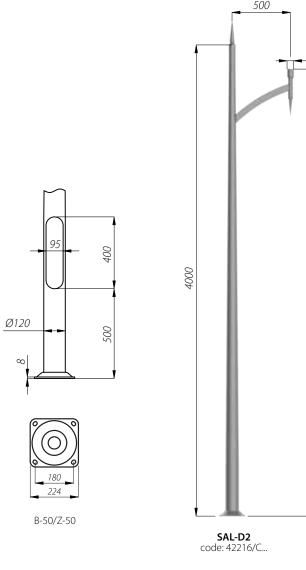


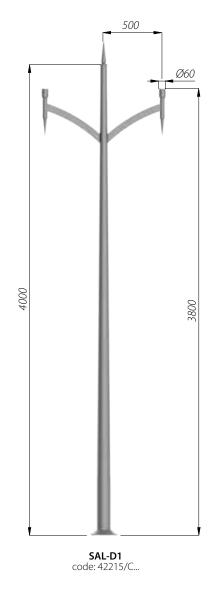
B-50/Z-50





COLUMNS WITH WELDED EXTENSION ARMS

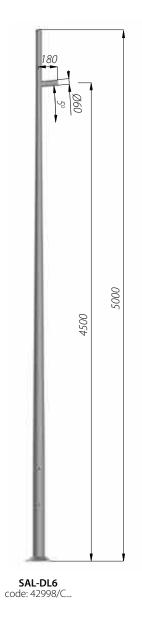


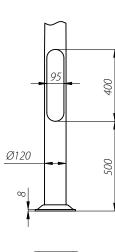


Kaliningrad / Russia



COLUMNS WITH WELDED EXTENSION ARMS





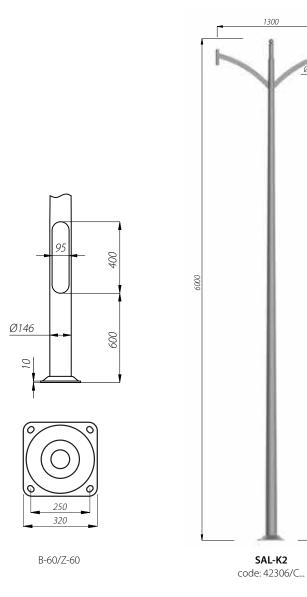


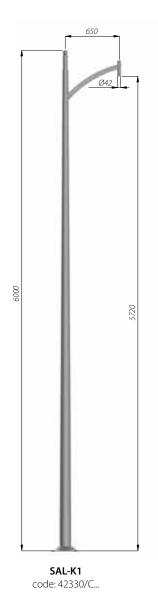
B-50/Z-50





COLUMNS WITH WELDED EXTENSION ARMS

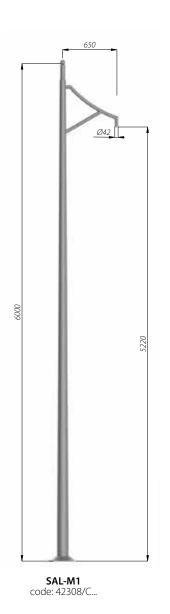


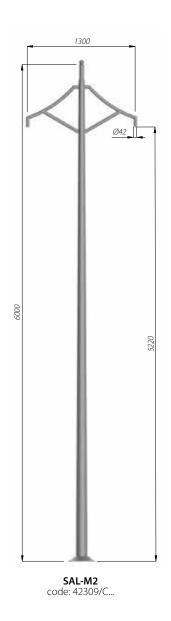


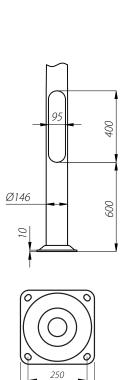
Czech Republic



COLUMNS WITH WELDED EXTENSION ARMS







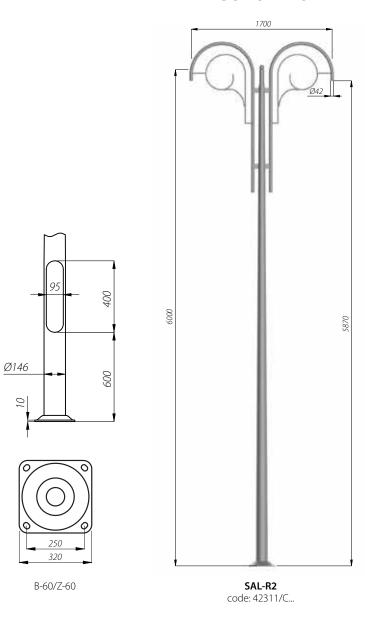
320

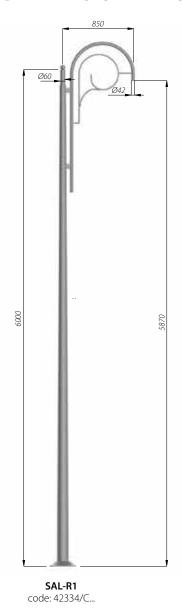
B-60/Z-60





COLUMNS WITH WELDED EXTENSION ARMS





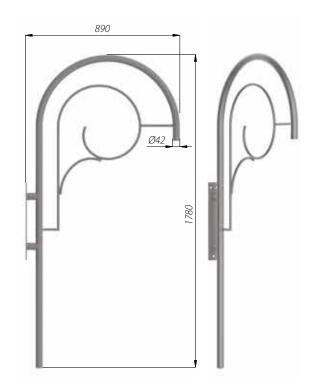
Suwałki / Poland



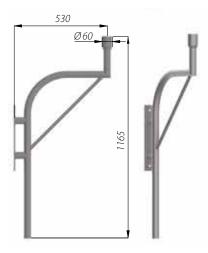
PARK LIGHTING / ALUMINIUM COLUMNS / ALUMINIUM WALL BRACKETS

WALL BRACKETS KA

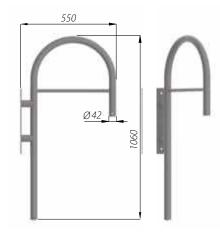
• application: aluminium wall brackets for wall mounting



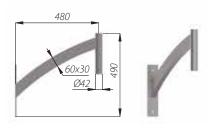
KA-20 code: 478200/C... luminaires: OW LED, DROP LED, OW



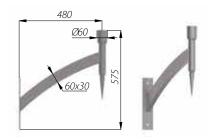
KA-5 code: 478050/C... luminaires: OP, OPA-1



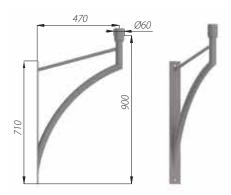
KA-14 code : 478140/C... luminaires: OW LED, DROP LED, OW



KA-C1 code: 478102/C... luminaires: OW LED, DROP LED, OW



KA-D1 code: 478103/C... luminaires: OP, OPA-1, OS-1, OS-1 LED, OS-11 LED



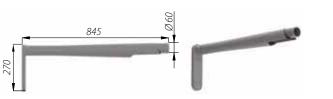
KA-A1 code: 478100/C... luminaires: OP, OPA-1, OS-1, OS-1 LED, OS-11 LED



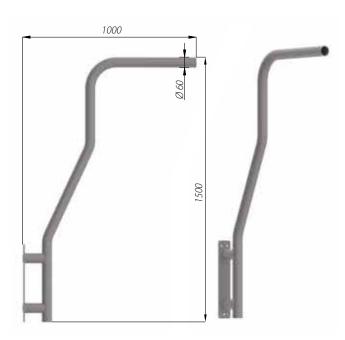


PARK LIGHTING / ALUMINIUM COLUMNS / ALUMINIUM WALL BRACKETS

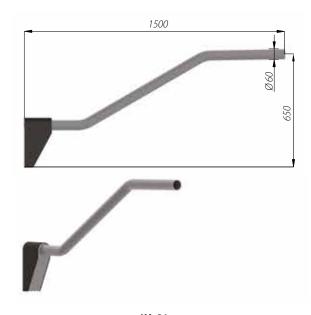
WALL BRACKETS KA



KA-10 code: 478220/C.../C... luminaire ISKRA LED



KA-19 code: 478190/C... park and street luminaires for mounting on extenstions arms with ending Ø60



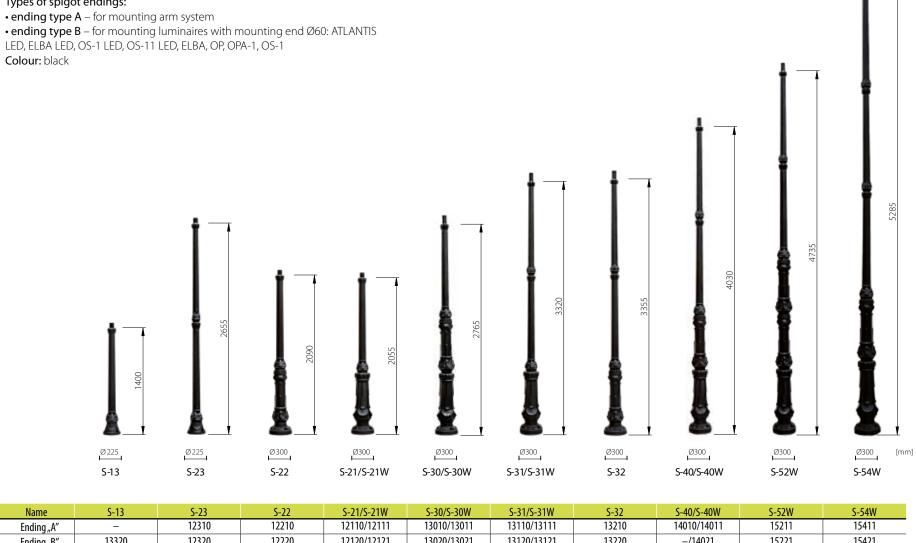
KA-21code: 478210/C.../C...
park and street luminaires for mounting on extenstions arms with ending Ø60

Poznań / Poland



TRADITIONAL POLES TYPE S

Types of spigot endings:



Name	S-13	S-23	S-22	S-21/S-21W	S-30/S-30W	S-31/S-31W	S-32	S-40/S-40W	S-52W	S-54W
Ending,	A" –	12310	12210	12110/12111	13010/13011	13110/13111	13210	14010/14011	15211	15411
Ending,	B" 13320	12320	12220	12120/12121	13020/13021	13120/13121	13220	-/14021	15221	15421

At ordering poles with increased thermal resistance the mark "F" must be added in the product code.

W – pole with niche chamber



TRADITIONAL POLES TYPE S



Example of the pole construction S-40W

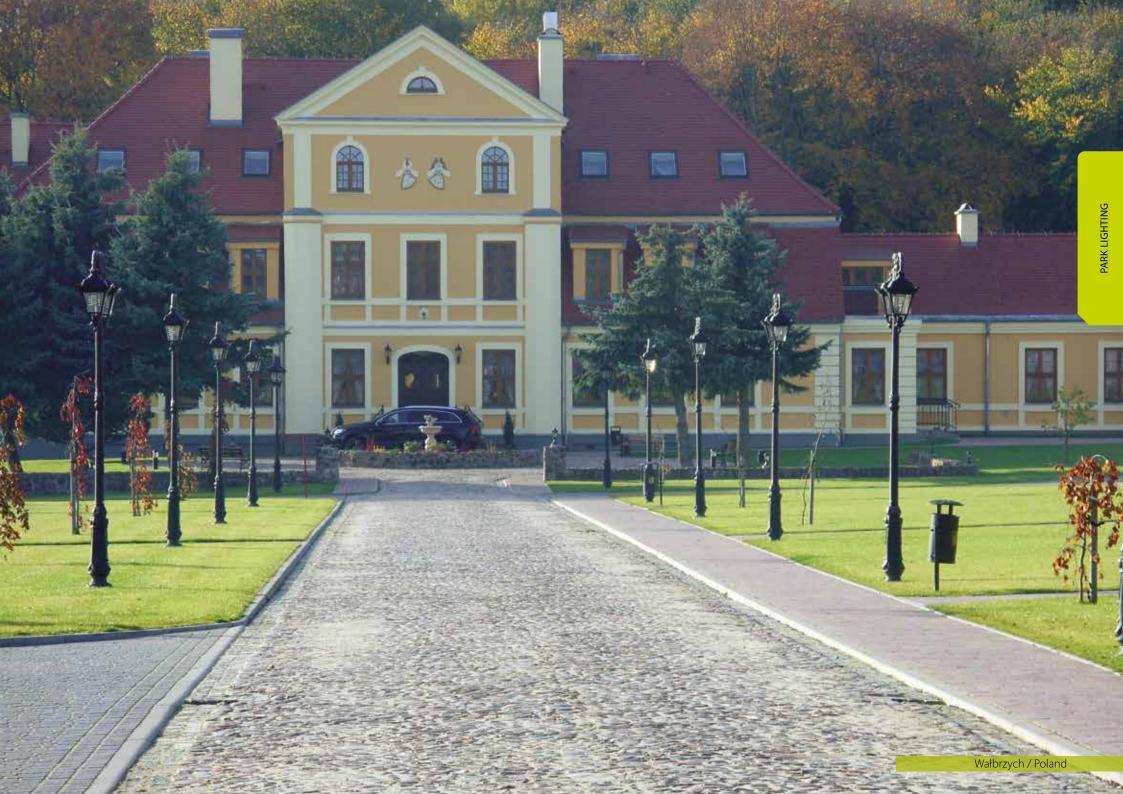






TRADITIONAL POLES TYPE S



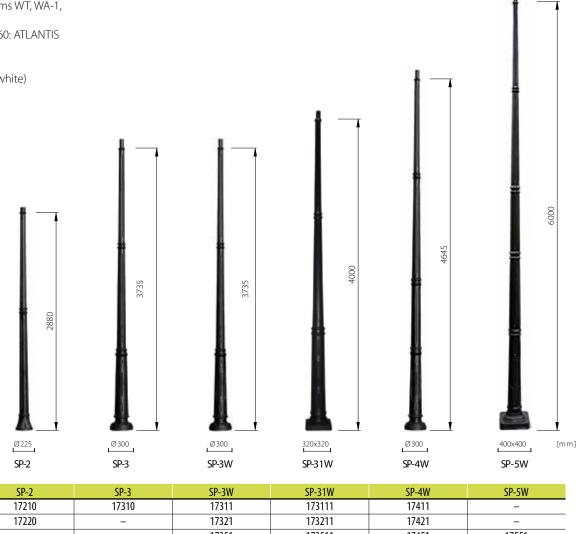




TRADITONAL POLES TYPE SP

Types of spigot endings:

- ending type "A" for mounting arm system type P, extension arms WT, WA-1, WA-01, WA-4
- ending type B for mounting luminaires with mounting end Ø60: ATLANTIS LED, ELBA LED, OS-1 LED, OS-11 LED, ELBA, OP, OPA-1, OS-1
- ending type E for mounting extension arms WTM Colour: black (there is also the possibility to make the column in white)



Name	SP-2	SP-3	SP-3W	SP-31W	SP-4W	SP-5W
Ending "A"	17210	17310	17311	173111	17411	-
Ending "B"	17220	-	17321	173211	17421	-
Ending "E"	-	-	17351	173511	17451	17551

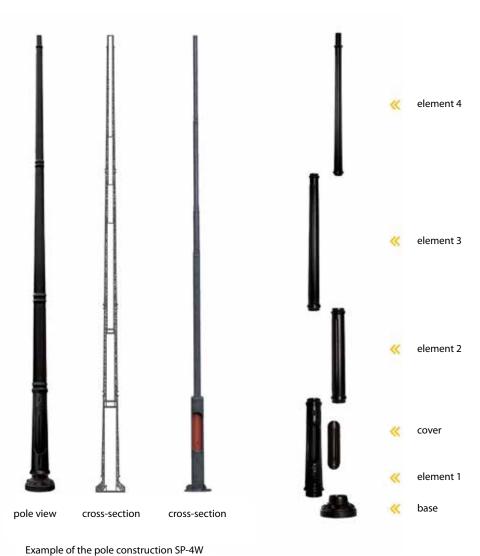
At ordering poles with increased thermal resistance the mark "F" must be added in the product code.

W – pole with niche chamber





TRADITONAL POLES TYPE SP





TRADITONAL POLES TYPE SP





Pole SP-3W/A Extension arm WT-5/2 Luminaires ELBA LED

Pole SP-4W/E
Extension arm WTM-11/2
Luminaires OP
lamp diffusers Sphere
transparent Ø400

stainless steel louvre reflectors

Pole SP-5W/E
Extension arm WTM-20/2
Luminaires OW LED
transparent lamp diffuser







COMPOSITE POLES TYPE SM

Types of spigot endings:

• ending type "E" – for mounting extension arms WTM Colour: black

Name

Ending "E"



At ordering poles with increased thermal resistance the designation "F" must be added in the product code. W – pole with niche chamber







COMPOSITE POLES TYPE SM





PARK LIGHTING / PLASTIC COATED POLES / ARM SYSTEMS

ARM SYSTEMS

- application: for mounting on traditional plastic coated poles type S with spigot ending A
- material: arm polypropylene reinforced with steel tube, head and extension of the head polyamide
- construction: arm connected to head by a connecting socket
- optional arm configuration: upwards or downwards
- luminaires: OS-1 LED, OS-11 LED, OP, OS-1-max. weight 7 kg
- colour: black



arm system 1 – downwards code: 331000



arm system 3 – upwards code: 333000



arm system 2 – upwards and downwards code: 332000



arm system 3+1 – upwards code: 333100



arm system 2+1 – upwards code: 332100



arm system 2 – downwards code: 332000



the way of assembling an arm system in head



spigot ending of the arm





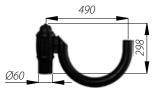




PARK LIGHTING / PLASTIC COATED POLES / ARM SYSTEMS

ARM SYSTEMS P

- application: for mounting on traditional plastic coated poles type SP with spigot ending A
- material: arm polypropylene reinforced with steel tube, head and extension of the head polyamide
- construction: arm connected to head by a connecting socket
- optional arm configuration: upwards or downwards
- luminaires: ATLANTIS LED, ELBA LED, OS-1 LED, OS 11- LED, ELBA, OP, OPA-1, OS-1, max. weight 7 kg
- colour: black



<u>Ø60</u>

arm system P 1 – upwards code: 341000

arm system P 2 – upwards code: 342000



arm system P 2 – upwards and downwards code: 342000





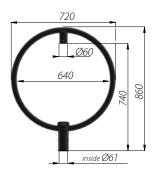
the way of assembling an arm system in head

spigot ending of the arm

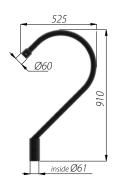


EXTENSION ARMS WT

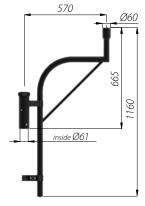
- application: for mounting on poles type S and SP with spigot ending A
- material: aluminium alloy anodised in black, there is also the possibility of anodising in other colours



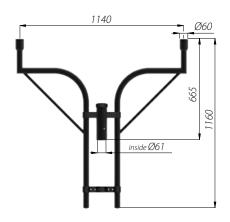
WT-2 code: 477020/C35 luminaire OP 400



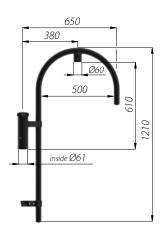
WT-3 code: 477030/C35 luminaires : OP 400, OP 450



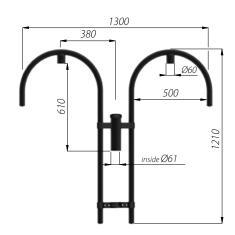
WT-5/1 code: 477051/C35 luminaire OPA-1



WT-5/2 code: 477052/C35 luminaire OPA-1



WT-8/1 code: 477081/C35 luminaire OP 400



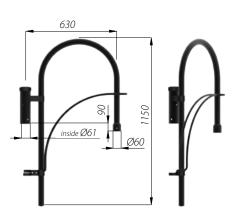
WT-8/2 code: 477082/C35 luminaire OP 400



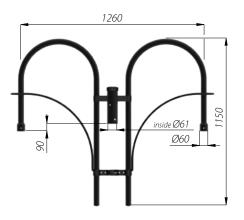




EXTENSION ARMS WT



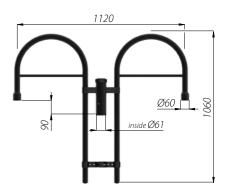
WT-11/1 code: 477111/C35 luminaires: OP 400, OP 450



WT-11/2 code: 477112/C35 luminaires: OP 400, OP 450



WT-14/1 code: 477141/C35 luminaires: OP 400, OP 450



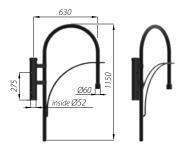
WT-14/2 code: 477142/C35 luminaires: OP 400, OP 450

Tychy / Poland

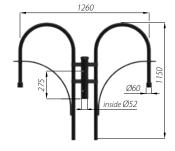


EXTENSION ARMS WTM

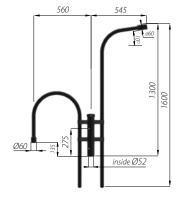
- application: for mounting on poles type SM and SP with spigot ending E
- material: aluminium alloy anodised in black, there is also the possibility of anodising in other colours



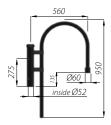
WTM-11/1 code: 476111/C35 luminaires: OP 400, OP 450



WTM-11/2 code: 476112/C35 luminaires: OP 400, OP 450



WTM-15/2 code: 476152/C35 luminaires: OP 400, OP 450, street luminaires



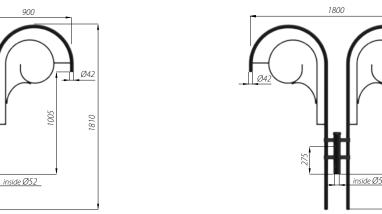
WTM-15/1P code: 476151/C35 luminaires: OP 400, OP 450



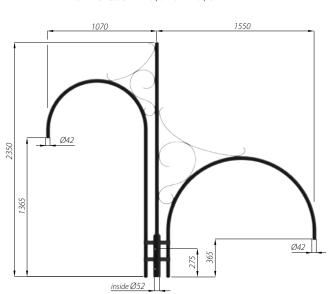




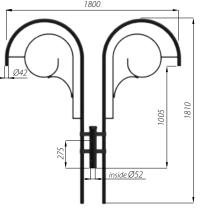
EXTENSION ARMS WTM



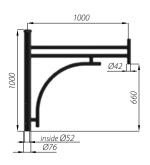
WTM-20/1 code: 476201/C35 luminaires: OW LED, DROP LED, OW



WTM-16/2 code: 476162/C35 luminaires: OW LED, DROP LED, OW



WTM-20/2 code: 476202/C35 luminaires: OW LED, DROP LED, OW



WTM-31 code: 476301/C35 luminaires: OW LED, DROP LED, OW





PARK LIGHTING / PLASTIC WALL BRACKETS

WALL BRACKETS KR

- application: wall mounting
- mounting: upwards or downwards
- material: arm polypropylene reinforced with steel tube, holder polyamide
- \bullet diameter of the mounting luminaire: Ø60 mm
- luminaires: OS-1 LED, OS-11 LED, OP, OS-1 max. weight 7 kg







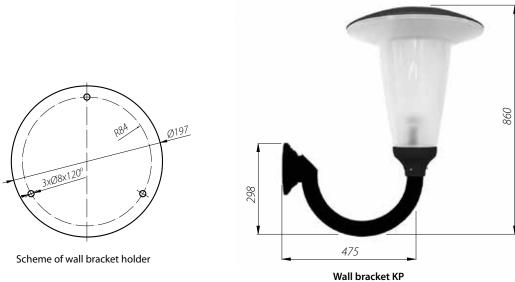




PARK LIGHTING / PLASTIC COATED POLES / PLASTIC WALL BRACKETS

WALL BRACKETS KP

- application: wall mounting
- mounting: upwards or downwards
- material: arm polypropylene reinforced with steel tube, holder polyamide
- diameter of the mounting luminaire: Ø60 mm
- luminaires: ATLANTIS LED (only upwards), OS-1 LED, OS-11 LED, OP, OPA-1 (only upwards)OS-1 max. weight 7 kg



code: 340200 luminaire ATLANTIS LED



Wall bracket KP code: 340200

ROSA PARK LUMINIARES

Park luminaires	6.
Stainless steel louvre reflectors for park luminaires	7
LED park luminaires	8
LED lighting sets	10
Lighting columns	11

O ROSA PARK LUMINIARES

- wide range of luminaires, sets and lighting columns
- made from anodised aluminium or durable plastic
- LED technology or high pressure light source
- easy installation
- aesthetics and durability
- decorative character



OS-1

- protection degree: IP54
- insulation class: |
- material: UV resistant polypropylene with glass fibre,
- colour: black
- mounting: upwards or downwards
- assembly: on poles type S, SP with spigot ending B, on arm systems, wall brackets KR, columns, extension arms, aluminium wall brackets with spigot ending Ø60 mm and length 60 mm







Assembling on pole or arm system



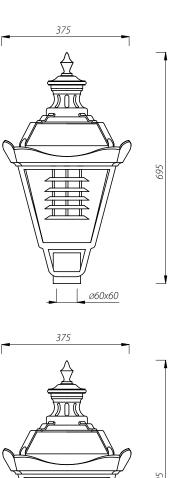
Luminaire OS-1, frosted lamp diffuser

	Со	de/lamp diffus	er			W - L	
Name	Frozen	Transparent		Light source	Power [W]	Weight [kg]	
	PMMA	PC	PMMA		[VV]	[kg]	
0S-1 S-70W	2110002	211302	211202	Sodium E-27	70	5,2	
0S-1 MH-70W	2110007	211307	211207	Metal halide E-27	70	5,2	
OS-1 MH-100W	-	211308	-	Metal halide E-27	100	5,4	
0S-1 E/Z	2110015	211315	211215	Energy-efficient source E-27	23	3,9	



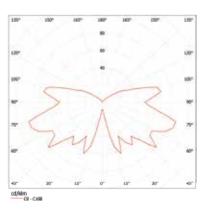




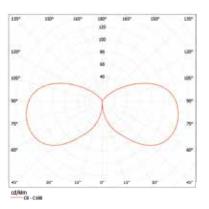




Luminaire OS-1



Distribution curve for luminaire OS-1 MH-100W transparent lamp diffuser with stainless steel louvre reflector



Distribution curve for luminaire OS-1 70W Frozen lamp diffuser



LUMINAIRE OP

• protection degree: IP65

ullet insulation class: \parallel

• material: base – polyamide, electrical gear cover - polycarbonate

• colour: black

• mounting: upwards or downwards

• assembly: on columns, aluminium and steel extension arms and arms system with spigot ending Ø60 mm and length 45 mm and on poles type S and SP with ending type B.

• type of luminaire:

OP 400 – diameter of lamp diffuser neck Ø180 mm OP 450 – diameter of lamp diffuser neck Ø200 mm



Luminaire OP



Luminaire OP, lamp diffuser Sphere transparent Ø400 small stainless steel louvre reflector upwards

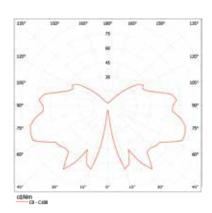
Name	Code/lamp diffuser		Light course	Power	Weight [kg]		Type of lamp diffuser	
Name	OP 400	OP 450	Light source	[W]	OP 400	OP 450	OP 400	OP 450
OP S-70W	210102	210202	Sodium E-27	70	2,4	2,7	Atlanta Ø400, Sphere Ø400, Klio Ø400	
OP S-100W	210103	210203	Sodium E-40	100	2,6	2,9	Sphere Ø400	
OP MH-70W	210107	210207	Metal halide	70	2,4	2,7	Atlanta Ø400, Sphere Ø400, Klio Ø400	Sphere Ø450
OP MH-100W	210108	210208	E-27	100	2,6	2,8	Sphere Ø400	
OP E/Z	210115	210215	Energy-efficient source E-27	23	1,0	1,3	Atlanta Ø400, Sphere Ø400, Klio Ø400	





LUMINAIRE OP





Distribution curve for luminaire OP S-70W/400 lamp diffuser Sphere transparent with small stainless steel louvre reflector downwards

Czechowice-Dziecice / Poland



LUMINAIRE OZ

- protection degree: IP44
- ullet insulation class: \parallel
- material: polyamide with glass fibre
- colour: black
- mounting: only upwards
- assembly: on columns, extension arms, aluminium and steel wall brackets with spigot ending Ø60 mm and length 70 mm (OZ 400) and on poles type S and SP with ending specially adapted for OZ luminaire.
- diameter of luminaire neck Ø180 mm

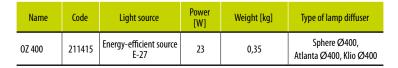


Luminaire OZ 400



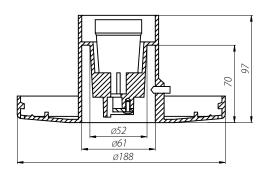
ceramic lamp E-27







Luminaire OZ 400, lamp diffuser Klio white Ø400



Luminaire OZ-400



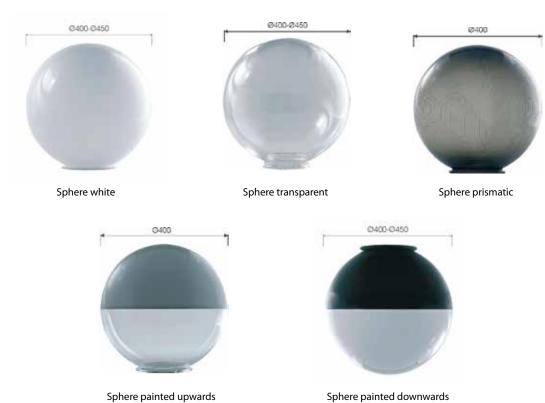
Luminaire OZ 400, lamp diffuser Sphere white Ø400



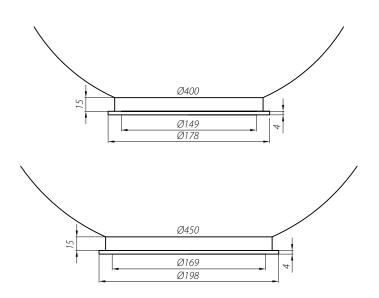


LAMP DIFFUSERS Ø180 AND Ø200

- available in many various sizes, colours and material
- diameter of lamp diffuser neck Ø180 mm and Ø200 mm



Name	Туре		Type			
Name	of material	ial White Transp		Smoked	of luminaire	
	PC-UV	651168	-	-		
Sphere 400 k-180	PC	651170	651172	651174	<u></u>	
	PMMA	651171	651173	651175	OP 400, OZ 400 (only upwards)	
Sphere 400 k-180	PC	669170	669172	669174	(only upwards)	
painted upwards	PMMA	669171	669173	669175		
Sphere 400 k-180	PC	670170	670172	670174	OD 400	
painted downwards	PMMA	670171	670173	670175	OP 400	
Sphere 400 k-180 prismatic	PMMA	_	652173	652175	OP 400, OZ 400 (only upwards)	



Nama	Туре		Type			
Name	of material	White	Transparent	Smoked	of luminaire	
Sphere 450 k-200	PC-UV	651268	-			
Spriere 450 k-200	PMMA	651281	651283	651285	OP 450	
Sphere 450 k-200 painted upwards	PMMA	669281	669283	669285	(only upwards)	
Sphere 450 k-200 painted downwards	PMMA	670281	670283	670285	OP 450	





LAMP DIFFUSERS Ø180 AND Ø200

ATLANTA

• diameter of lamp diffuser neck Ø180 mm







Atlanta painted

Atlanta prismatic painted

	Type	C	Type		
Name	of material	White	Transparent	of luminaire	
Atlanta painted 400	PMMA	676181	-	OP 400	
Atlanta prismatic painted 400	PMMA	_	677181	0Z 400	

KLIO

• diameter of luminaire neck Ø180 mm • additional element – cap





Klio

Klio with cap

Name	Туре	Со	de	Туре	Cap of polyamide with glass fiber in black colour	
	of material	White	Smoked	of luminaire		
Klio 400	PMMA	675171	675175	OP 400 OZ 400	923710	





LUMINAIRE OPA-1

- protection degree: IP65
- ullet insulation class: \parallel
- material: base die cast aluminum-alloy, electrical gear cover polycarbonate,
- colour: black (possibility to paint in other colours polyester powder paint)
- mounting: only upwards
- assembly: on columns, extension arms, aluminium and steel wall brackets with spigot ending Ø60 mm, length 50mm
- diameter of lamp diffuser neck: Ø150mm



Luminaire OPA-1



Luminaire OPA-1 lamp diffuser ATLANTIS

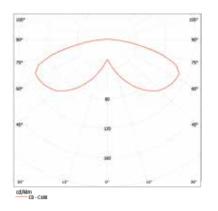
Name	Code	Light source	Power [W]	Weight [kg]	Type of lamp diffuser
OPA-1 S-70W	211802	Sodium E-27	70	2,9	Auris, Auris Maxi, Auris I,
OPA-1 S-100W	211803	Sodium E-40	100	3,1	Auris Maxi I, Atlantis Ø500, Sphere Ø400-500
OPA-1 MH-70W	211807	Metal halide	70	2,9	Auris, Auris Maxi, Auris I,
OPA-1 MH-100W	211808	E-27	100	3,1	Auris Maxi I, Atlantis Ø500, Sphere Ø400-500
OPA-1 E/Z	211815	Energy-efficient source E-27	23	1,3	Auris, Auris Maxi, Auris I, Auris Maxi I, Atlantis Ø500, Sphere Ø400-500



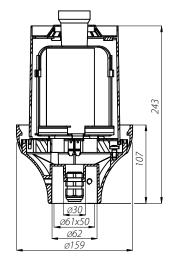


LUMINAIRE OPA-1





Light distribution curve for luminaire OPA-1 S-70W lamp diffuser Sphere painted Ø 400

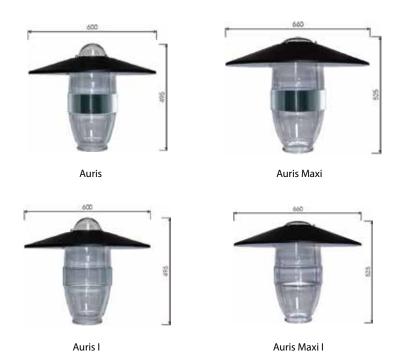


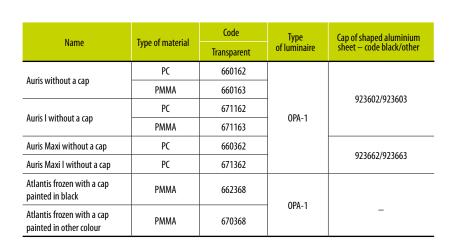
Luminaire OPA-1

Voderady / Slovakia



LAMP DIFFUSERS WITH NECK Ø150













LAMP DIFFUSERS WITH NECK Ø150







Transparent Sphere 400-500

Sphere painted upwards

Nama	Time of metanial	Code	Town of Louisianian
Name	Type of material	Transparent	Type of luminaire
Cone 400 k-150	PC-UV	655168	
Cone 400 K-150	PC	655162	0W
Com. 400 ls 150 maintaid	PC-UV	685168	OW
Cone 400 k-150 painted	PC	685162	
Colores 400 ls 150	PC	651162	004 1 (
Sphere 400 k-150	PMMA	651163	OPA-1 (only upwards), OW
5 1 4001 450	PC	669162	004.47 1)
Sphere 400 k-150 painted upwards	PMMA	669163	OPA-1 (only upwards)
Sphere 450 k-150	PC	651262	OPA-1 (only upwards), OW
Sphere 450 K-150 painted upwards	PC	669262	OPA-1 (only upwards)



LUMINAIRE OW

- protection degree: IP 65,
- ullet insulation class: \parallel
- material: base high-pressure die-cast aluminum, casing polyamide, cap shaped aluminium sheet, electrical gear cover polycarbonate
- colour: black (possibility to paint in other colours polyester powder paints)
- mounting: only downwards
- assembly: on columns, extension arms, aluminium and steel wall brackets with spigot ending Ø42 mm, length 40 mm
- diameter of lamp diffuser neck: Ø150 mm



Luminaire OW



Luminaire OW lamp diffuser Cone white Ø400

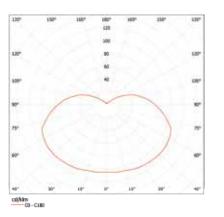
Name	Code	Light source	Power [W]	Weight [kg]	Type of lamp diffuser
OW S-70W	210902	Sodium E-27	70	4,6	Sphere Ø400-450, Cone Ø400
OW S-100W	210903	Sodium E-40	100	4,9	Sphere Ø400-450, Cone Ø400
OW MH-70W	210907	Metal halide E-27	70	4,6	Sphere Ø400-450,
OW MH-100W	210908	Metal halide E-27	100	4,8	Cone Ø400
OW E/Z	210915	Energy-efficient source E-27	23	3,2	Sphere Ø400-450, Cone Ø400



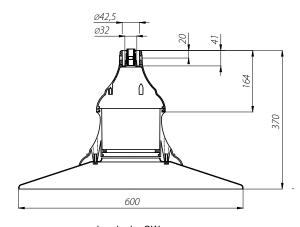


LUMINAIRE OW





Light distribution curve for luminaire OW S-100W lamp diffuser Cone white \emptyset 400



Luminaire OW

Kętrzyn / Poland



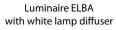
LUMINAIRE ELBA

- protection degree: IP65
- insulation class: Ⅱ
- · material:

base – high-pressure die-cast aluminum, electrical gear cover - polycarbonate diffuser – methacrylate PMMA frozen and transparent version, cylindrical Ø200 mm, cap – shaped aluminium sheet

- colour: black (possibility to paint in other colours polyester powder paints)
- mounting: only upwards
- assembly: on columns, extension arms, aluminium and steel wall brackets with spigot ending Ø60 length 50 mm







Luminaire ELBA with transparent lamp

Name	Lamp diffuser	Code	Light source	Power [W]	Weight [kg]
ELBA S-70W	frosted	2134002	Sodium E-27	70	6,3
ELDA 3-70W	transparent	213602	Soululli E-27	/0	6,5
ELBA S-100W	frosted	2134003	Sodium E-40	100	6,7
FTRY 2-100M	transparent	213603	30010111 E-40	100	6,9
FLDA MIL 70W	frosted	2134007		70	6,3
ELBA MH-70W	transparent	213607	Metal halide E-27	/0	6,5
FLDA MIL 100W	frosted	2134008	Metal nalide E-27	100	6,7
ELBA MH-100W	transparent	213608		100	6,9
ELBA E/Z	frosted	2134015	Energy-efficient source	22	5
	transparent	213615	57 E-27	23	5,2







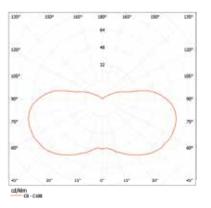
Gorzów Wielkopolski / Poland



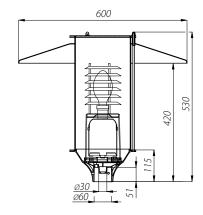
PARK LIGHTING/PARK LUMINAIRES

LUMINAIRE ELBA





Light distribution curve for luminaire ELBA S-100W frosted lamp diffuser



Luminaire ELBA



STAINLESS STEEL LOUVRE REFLECTORS

- application: for installation in park luminiares
- material: stainless steel
- assembly: by screwing into the luminaire casing with no tools needed, in case of luminaire OS-1 it is assembled directly to the luminaires' mounting plate
- functions: control of light distribution, glare reduction, decoration



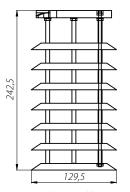
Big stainless steel louvre reflector mounted upwards



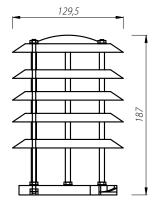
Small stainless steel louvre reflector mounted downwards



Small stainless steel louvre reflector for luminaire OS-1



Big stainless steel louvre reflector mounted downwards



Small stainless steel louvre reflector mounted upwards

Name	Code	Luminaire type	Luminaire type	
Big louvre reflector upwards	911116	OP, OPA-1	E-40	
Big louvre reflector downwards	911117	OP, OW	E- 4 0	
Small louvre reflector mounted upwards	911126	OP, OPA-1		
Small louvre reflector mounted downwards	911127	OP, OW	E-27	
Stainless reflector for luminaire OS-1	911307	0S-1		





OS-1 LED / OS-1 LED LITE

• protection degree: IP66 for the optical part and driver

insulation class: □

supply voltage:

220-240 V AC, 50/60 Hz (OS-1 LED) 100-240 V AC, 50/60 Hz (OS-1 LED LITE)

• light source: CREE XT-E

• material: polypropylene with UV resistant glass fiber

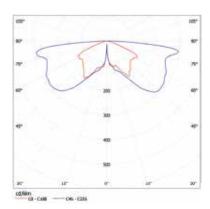
• colour: black

• mounting: upwards or downwards

• installation: on poles type S, SP with spigot ending B, on arms system, wall brackets KR, KP, extension arms, aluminium and steel wall brackets with spigot Ø60 and length 60 mm

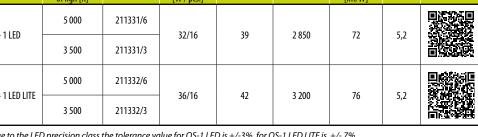
• recommended mounting height: 4-5 m

• luminaire is adapter to work in temperatures between -40 C and +40 C



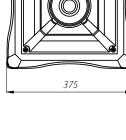
Light distribution curve for luminaire OS-1 LED

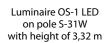
Name	The colour temperature of ligh [K]	Code	Power / Number of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Lighting efficiency [lm/W]	Weight [kg]	Current product card
OS- 1 LED	5 000	211331/6	32/16	39	2 850	72	5,2	
OS- I LED	3 500	211331/3	32/10	37	2 030	12	3,2	
OS-1 LED LITE	5 000	211332/6	36/16	42	3 200	76	5,2	
	3 500	211332/3	30/10					



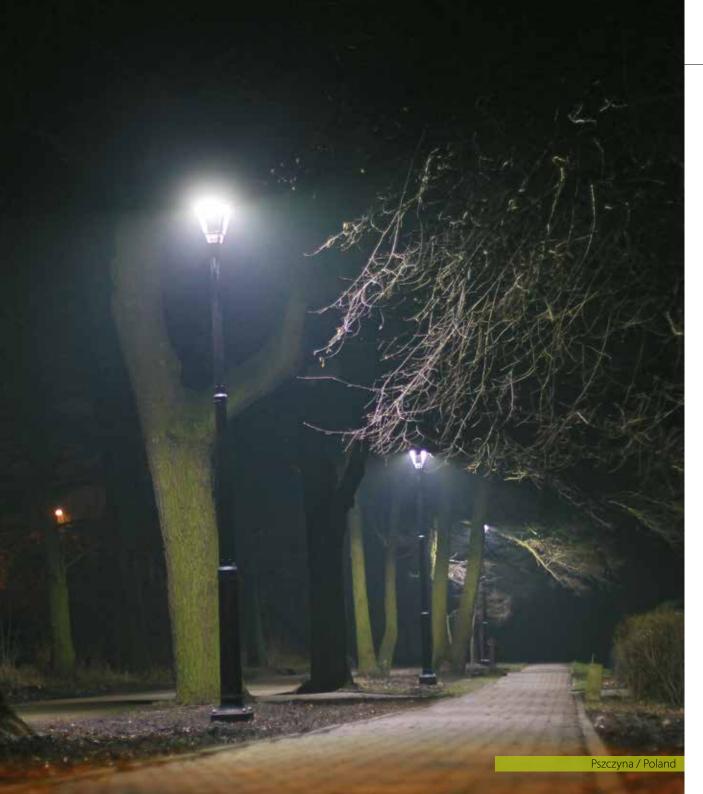


inside Ø60x60 Ø80





^{*} due to the LED precision class the tolerance value for OS-1 LED is \pm 7-3%, for OS-1 LED LITE is \pm 7-7%



OS-1 LED / OS-1 LED LITE





OS-11 LED

 $\bullet\, protection\, degree: IP54$

 \cdot insulation class: \parallel

• supply voltage: 120-277V AC, 50/60 Hz

• light source: CREE LMH-2

material:

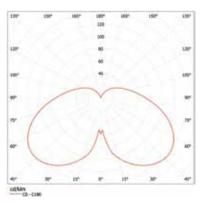
body - polypropylene with UV resistant glass fiber diffuser - polymethyl methacrylate PMMA frozen

• colour: black

• mounting: upwards or downwards

• installation: on poles type S with spigot ending B, on arms system, wall brackets KR, KP, extension arms, aluminium and steel wall brackets with spigot Ø60

• recommended mounting height: 4-5 m



Light distribution curve for luminaire OS-11 LED

Name	The colour temperature of ligh [K]	Code	Power / Number of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Lighting efficiency [lm/W]	Weight [kg]	Current product card
OS-11 LED	3 500	2110050/3	38/1	43	3 300	77	5,3	



Luminaire OS-1 LED on pole S-31W with height of 3,32 m

^{*} due to the LED precision class the tolerance value is +/- 3%



OS-11 LED





OW LED

• protection degree: IP65

 \bullet insulation class: \parallel

• supply voltage: 220-240 V AC, 50/60 Hz • light source: CREE XT-E lub CREE XP-L

material:

cap and casing – shaped aluminium sheet diffuser – frosted cone Ø200 mm (PMMA)

• colour: black (possibility to anodising in other colours)

• mounting: only downwards

• assembly: on columns, extension arms, aluminium and steel wall brackets with spigot ending Ø42 mm, length 40 mn

• recommended mounting height: 5-7 m

• luminaire is adapter to work in temperatures between -40°C and +40°C

• optics: available optics for removable modules – see page 18 of this catalog

Name	The colour temperature of ligh [K]	Code	Power / Number of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Lighting efficiency [lm/W]	Weight [kg]	Current product card
OW LED 48	5 000	2109133/3	40/24		4.350	70		
with transparent light diffuser	3 500	2109133/6	48/24	55	4 250	78		
OW LED 60	5 000	2109134/3	(0/24	68	6 850	101	7	
with transparent light diffuser	3 500	2109134/6	60/24	00	6 350	94] ′	
OW LED 72	5 000	2109135/3	72/24	80	8 250	103		M&9960
with transparent light diffuser	3 500	2109135/6	/2/24	00	7 600	95		
OW LED 48	5 000	2109033/3	48/24	55	5 000	91		
UW LED 40	3 500	2109033/6	40/24	33	3 000	91		
OW LED 60	5 000	2109034/3	60/24	60	8 100	119		
OW LED 60	3 500	2109034/6	60/24	68	7 500	110	6,3	
OW LED 72	5 000	2109035/3	72/24	80	9 750	122		
UW LED /Z	3 500	2109035/6	12/24	00	8 950	112]	



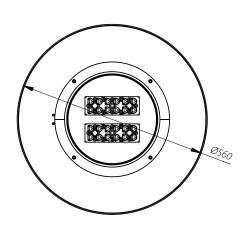


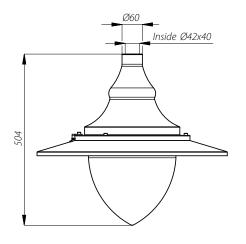
^{*} due to the LED precision class the tolerance value is +/- 3%

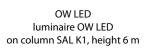




OW LED











ELBA LED

• protection degree: IP 65

• insulation class: Ⅱ

• supply voltage: 120-277 V AC, 50/60 Hz

• light source: CREE LMH-2

material:

casing - high-pressure die-cast aluminum, diffuser – frozen cylindrical Ø200 mm (PMMA)

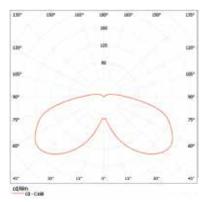
cap – shaped aluminium sheet

• colour: black (possibility to paint in other colours – polyester powder paints)

• mounting: only upwards

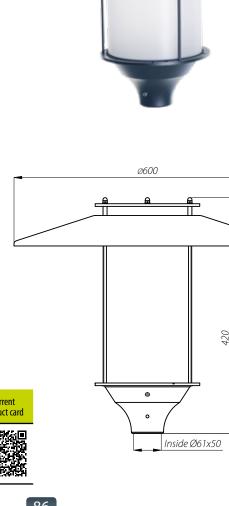
• assembly: on columns, extension arms, aluminium and steel wall brackets with spigot ending Ø60 length 50 mm

• recommended mounting height: 3-5 m



Light distribution curve for luminaire ELBA LED

Name	The colour temperature of ligh [K]	Code	Power / Number of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Lighting efficiency [lm/W]	Weight [kg]	Current product card
ELBA LED	3 500	213050/3 213150/3	38/1	43	3 200	74	5	





on column SAL-4, height 4 m

^{*} due to the LED precision class the tolerance value is \pm 7%



ELBA LED





GEMINI LED

• protection degree: IP 66 for the optical part

 $\bullet \ insulation \ class: \|$

• supply voltage: 220-240 V AC, 50/60 Hz

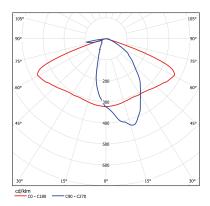
• light source: CREE XP-L

• material: anodised aluminum alloy

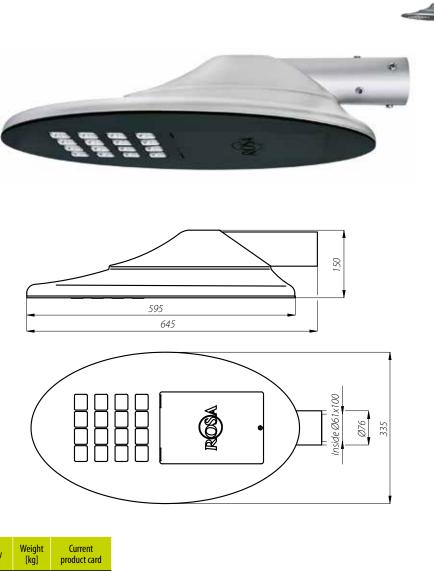
• colour: inox / black

• installation: on extension arms with spigot ending Ø60 length 100 mm

• recommended mounting height: 5-6 m



Light distribution curve for luminaire GEMINI LED 36



Name	The colour temperature of ligh [K]	Code	Power / Number of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Lighting efficiency [lm/W]	Weight [kg]	Current product card
GEMINI LED 36	5 000	214332/6	36/12	42	4 850	115		
	3 500	214332/3			4 500	107	0.5	
CEMINILLED 40	5 000	214333/6	40/16		6 500	118	9,5	
GEMINI LED 48	3 500	214333/3	48/16	55	6 000	109]	



Luminaire GEMINI LED on column SAL DS-52 with height of 5,5 m





ISKRA LED

• protection degree: IP 66 for the optical part and driver

• insulation class: Ⅱ

• supply voltage: 100-240 V AC, 50/60 Hz

· light source:

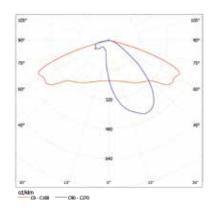
ISKRA LED ALFA 24 – CREE XT-E ISKRA LED 24 – CREE XT-E ISKRA LED ALFA 36 – CREE XP-L ISKRA LED 36 – CREE XP-L

• material: anodised aluminum alloy

• colour: inox / black

• installation: ISKRA LED ALFA – directly on the column with spigot ending Ø60 mm length 80 mm ISKRA LED – on extension arm with spigot ending Ø60 mm length 90 mm

• recommended mounting height: 4-5 m



Light distribution curve for a luminaire ISKRA LED

Name	The colour temperature of ligh [K]	Code	Power / Number of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Lighting efficiency [lm/W]	Weight [kg]	Current product card
ISKRA LED ALFA 24	5 000	213330/6	24/12	31	2 950	95		
ISKKA LED ALFA 24	3 500	213330/3	24/12	31	2 930	93	26	
ISKRA LED ALFA 36	5 000	213332/6	36/12	39	4 700	121	2,6	
IDNKA LED ALFA 30	3 500	213332/3			4 300	110		in recount.
ICADY I ED 34	5 000	213230/6	24/12	31	2 950	95		
ISKRA LED 24	3 500	213230/3	24/12	ונ	2 950	73	2,2	1000
ICVDA LED 26	5 000	213232/6	36/12	39	4 700	121		
ISKRA LED 36	3 500	213232/3	30/12	39	4 300	110		

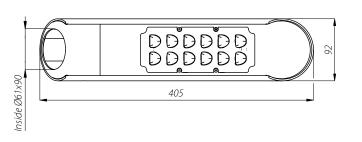
ISKRA LED ISKRA LED ALFA

Luminaire ISKRA LED ALFA on column SAL DL – 10 height of 5 m

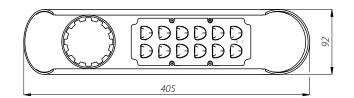
^{*} due to the LED precision class the tolerance value is \pm 7%

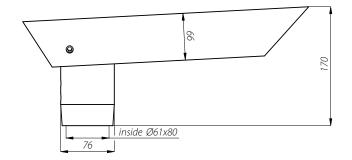


ISKRA LED









ISKRA LED ALFA



ISKRA LED FOR PEDESTRIAN CROSSING

• protection degree: IP 66 for the optical part and driver

insulation class: □

• supply voltage: 100-240 V AC, 50/60 Hz

· light source:

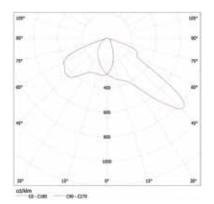
ISKRA LED ALFA 36 – CREE XP-L ISKRA LED 36 – CREE XP-L

• material: anodised aluminum alloy

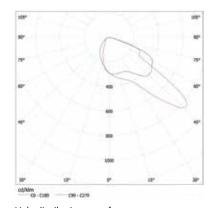
• colour: inox / black

• installation: ISKRA LED ALFA – directly on the column with spigot ending Ø60 mm length 80 mm ISKRA LED – on extension arm with spigot ending Ø60 mm length 90 mm

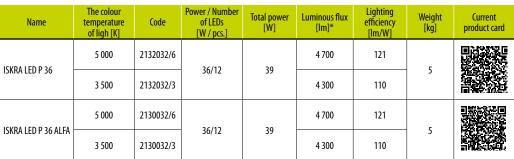
• recommended mounting height: 4-5 m



Light distribution curve for a luminaire ISKRA LED for pedestrian crossings with left-hand traffic



Light distribution curve for a luminaire ISKRA LED for pedestrian crossings with right-hand traffic



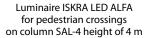
^{*} due to the LEDs precision class the tolerance value is \pm 7%

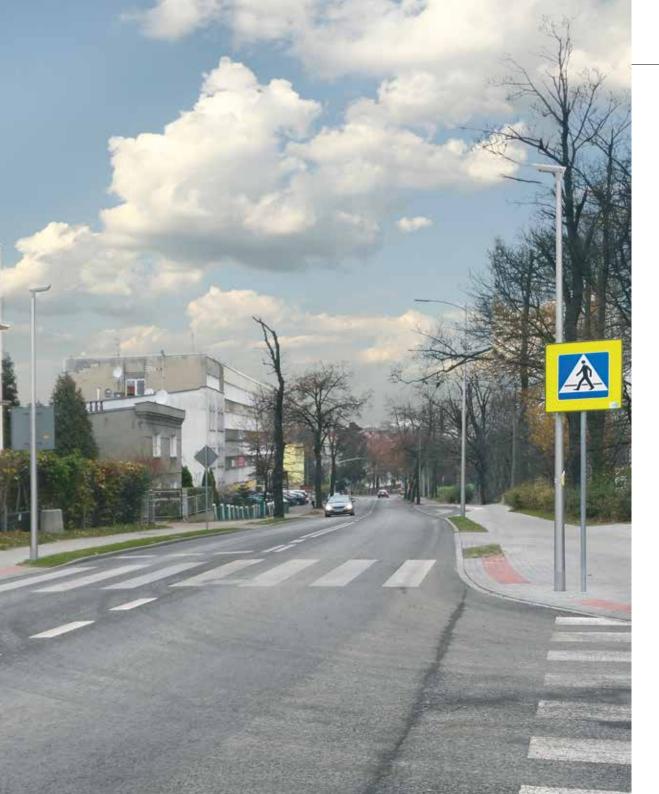


ISKRA LED FOR PEDESTRIAN CROSSINGS

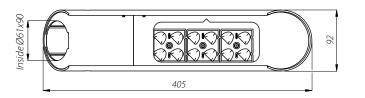


ISKRA LED ALFA FOR PEDESTRIAN CROSSINGS



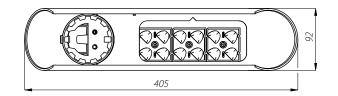


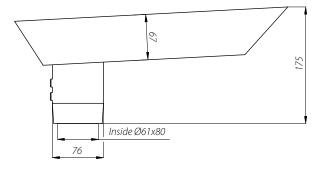
ISKRA LED FOR PEDESTRIAN CROSSING





ISKRA LED FOR PEDESTRIAN CROSSINGS





ISKRA LED ALFA FOR PEDESTRIAN CROSSINGS



ATLANTIS LED

• protection degree: IP 66

ullet insulation class: \parallel

• supply voltage: 120-277 V AC, 50/60 Hz

• light sources: CREE LM-H2

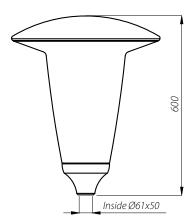
material:

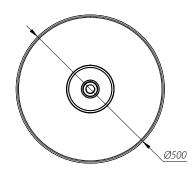
cap – aluminum alloy, diffuser frozen – PMMA, base – die-cast aluminum

• colour: inox

- mounting: on columns with spigot ending \varnothing 60 mm length 50 mm

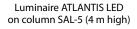
• recommended assembly height: 4-6 m





Name	The colour temperature of ligh [K]	Code	Power / Number of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Lighting efficiency [lm/W]	Weight [kg]	Current product card
ATLANTIS LED	3 500	214650/3	38/1	43	3 400	79	4,6	

Light distribution curve for ATLANTIS LED luminaire



^{*} due to LED precision class, the value tolerance is +/-7%





MIRA LED

• protection degree: IP 66, for the optical part and driver

 $\bullet \ insulation \ class: \|$

• supply voltage: 220-240 V AC, 50/60 Hz

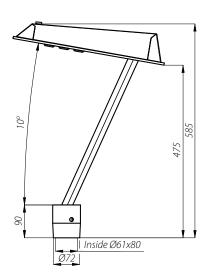
• light sources: CREE XP-L

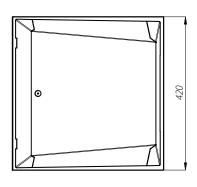
• material: anodized aluminum alloy

• colour: inox/graphite

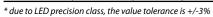
• mounting: on columns with spigot ending Ø60 mm length 50 mm

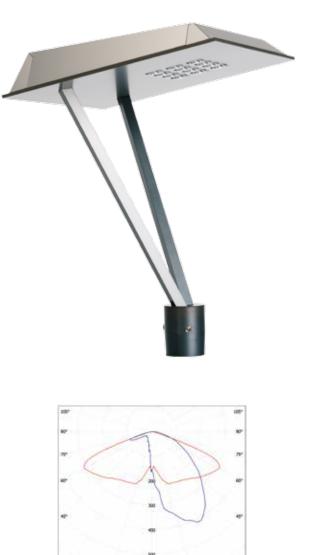
• recommended assembly height: 4-5 m





Name	The colour temperature of ligh [K]	Code	Power / Number of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Lighting efficiency [lm/W]	Weight [kg]	Current product card
MIRA LED	5 000	214532/6	26/12	42	4 850	115	- 6,1	
	3 500	214532/3	36/12	42	4 500	107		





Light distribution curve for MIRA LED luminaire







MIZAR LED

• protection degree: IP 66, for the optical part and driver

• insulation class: II,

• supply voltage: 220-240 V AC, 50/60 Hz

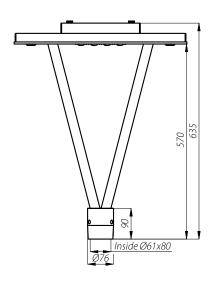
• light sources: CREE XP-L

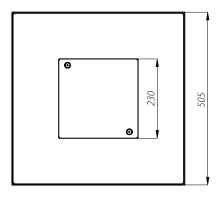
• material: anodized aluminum alloy

• colour: inox/graphite

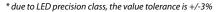
• mounting: on columns with spigot ending Ø60 mm length 80 mm

• recommended assembly height: 5-6 m

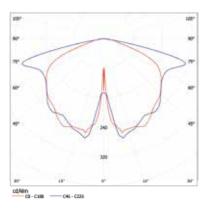




Name	The colour temperature of ligh [K]	Code	Power / Number of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Lighting efficiency [lm/W]	Weight [kg]	Current product card
MIZAR LED	5 000	214433/6	- 48/16	55	6 500	118	9,2	
	3 500	214433/3			6 000	109		







Light distribution curve for MIZAR LED luminaire



Luminaire MIZAR LED on column SAL4/B60 (4m high)





CORONA LED

• protection degree: IP 66, for optical part and driver

ullet insulation class: \parallel

• supply voltage: 220-240 V AC, 50/60 Hz

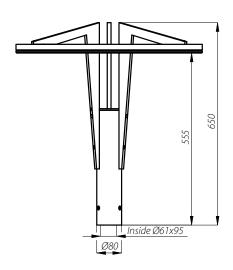
• light sources: SAMSUNG LM561C

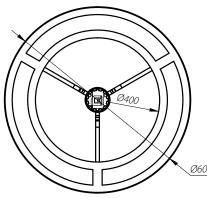
• material: anodized aluminum alloy

• colour: inox/graphite

• mounting: on columns with spigot ending Ø60 mm length 95 mm

• recommended assembly height: 5-7 m





Name	The colour temperature of ligh [K]	Code	Power / Number of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Lighting efficiency [lm/W]	Weight [kg]	Current product card
CORONA LED	5 000	214735/6	72/216	80	7 050	88	13	



luminaire

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

^{*} due to LEDs precision class, the value tolerance is +/-3%





COSMO DELTA LED

• protection degree: IP 66, for optical part and driver

• insulation class: Ⅱ

• power supply voltage: 220-240 V AC, 50/60 Hz

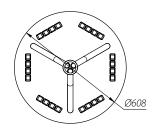
• light sources: CREE XP-L

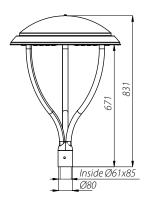
• material: anodized aluminum alloy

• colour: inox/graphite

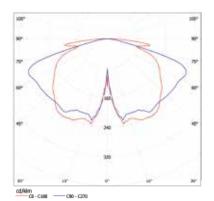
• mounting: on columns with spigot ending Ø60 mm length 85 mm

• recommended assembly height: 6-8m

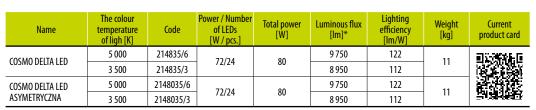


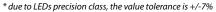


COSMO DELTA LED



Light distribution curve for COSMO DELTA LED luminaire









COSMO DELTA LED ASYMMETRIC

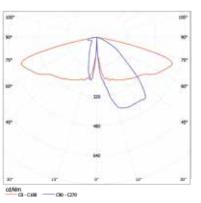


Luminaire COSMO DELTA LED on column SAL DL-3 height of 6 m

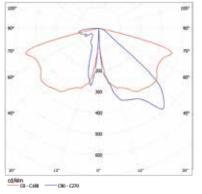




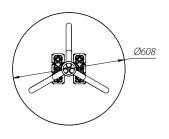
COSMO DELTA LED

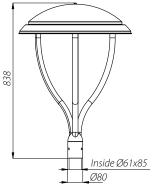


Light distribution curve for COSMO DELTA LED ASYMMETRIC luminaire DW

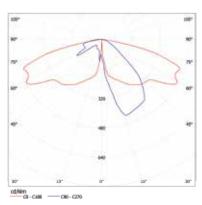


Light distribution curve for COSMO DELTA LED ASYMMETRIC luminaire ME

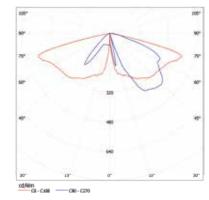




COSMO DELTA LED ASYMMETRIC



Light distribution curve for COSMO DELTA LED ASYMMETRIC luminaire T2



Light distribution curve for COSMO DELTA LED ASYMMETRIC luminaire T3



VEGA LED

• protection degree: IP 66, for optical part and driver

• insulation class: ||

• power supply voltage: 220-240 V AC, 50/60 Hz

• light sources: CREE XP-L

• material: anodized aluminum alloy

• colour: inox/graphite

• mounting:

VEGA LED – on columns or extension arms with spigot ending Ø60 mm length 100 mm

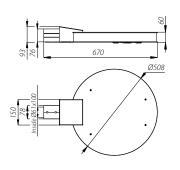
VEGA LED ALFA – on columns with spigot ending Ø60 mm length 100 mm

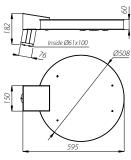
VEGA LED BETA – centered on columns with spigot ending Ø60 mm length 95 mm

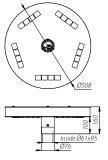
• recommended assembly height: 4,5-7 m

• luminaire is adapter to work in temperatures between -40°C and +55°C

Optics: VEGA LED and VEGA LED ALFA – available optics for removable modules – see page 18 of this catalog





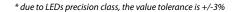


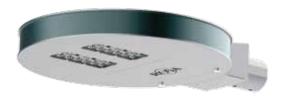
VEGA LED

VEGA LED ALFA

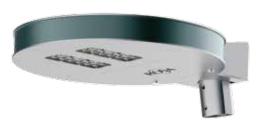
VEGA LED BETA

Name	The colour temperature of ligh [K]	Code	Power / Number of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Lighting efficiency [lm/W]	Weight [kg]	Current product card
VEGA LED 60	5 000	2141034/6	- 60/24	68	8 100	119	- 10,5	
	3 500	2141034/3			7 500	110		
VEGA LED ALFA 60	5 000	2142034/6	- 60/24		8 100	119		
	3 500	2142034/3			7 500	110		
VEGA LED BETA 60	5 000	214034/6	60/20		8 100	119	9,5	
	3 500	214034/3			7 500	110		





VEGA LED



VEGA LED ALFA

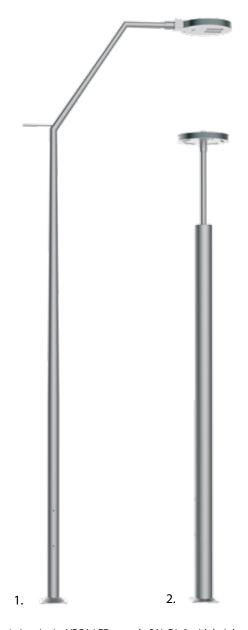


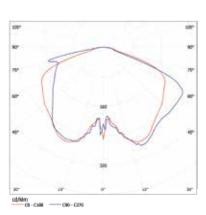
VEGA LED BETA





VEGA LED





Light distribution curve for luminaire VEGA LED BETA

- Luminaire VEGA LED on pole SAL DL-2 with height of 5,5 m
 Luminaire VEGA LED BETA on pole SAL DL-5 with height of 4,5 m

Tiumeń / Russia



DROP LED

• protection degree: IP 66, for the optical part and driver

• insulation class: ||

• supply voltage: 220-240 V AC, 50/60 Hz

• light sources: CREE XP-L

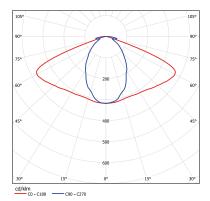
• material: anodized aluminum alloy

• colour: inox/graphite

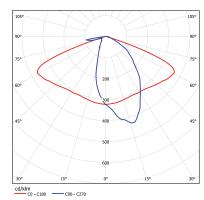
• mounting: on extension arm or wall bracket with spigot ending Ø60 mm length 30 mm

• recommended assembly height: 5-6 m

• luminaire is adapter to work in temperatures between -40°C and +55°C



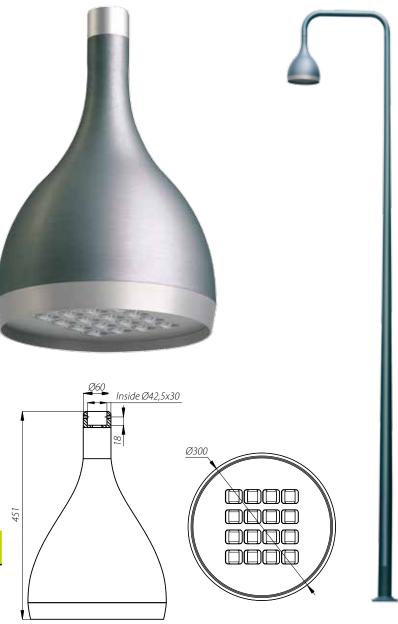
Light distribution curve for symmetric luminaire DROP LED



Light distribution curve for asymmetric luminaire DROP LED

Name	The colour temperature of ligh [K]	Code	Power / Number of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Lighting efficiency [lm/W]	Weight [kg]	Current product card
DROP LED 48	5 000	214933/6/A 214933/6/S	48/16	55	6 500	118	- 6,5	
	3 500	214933/3/A 214933/3/S			6 000	109		

^{*} due to the LEDs precision class the tolerance value is \pm 4.



Luminaire DROP LED on column 5 m high with extension arm (set DROP LED)

A – asymmetric optical system

S – symmetric optical system



CORE LED

• protection degree: IP66 for the optical part and driver

 $\bullet \ insulation \ class: \\ \parallel$

• supply voltage: 220-240 V AC, 50/60 Hz

• light source: CREE XT-E

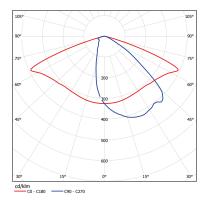
• material: anodised aluminium alloy

• standard colour: graphite/black

• decorative element made of exotic wood

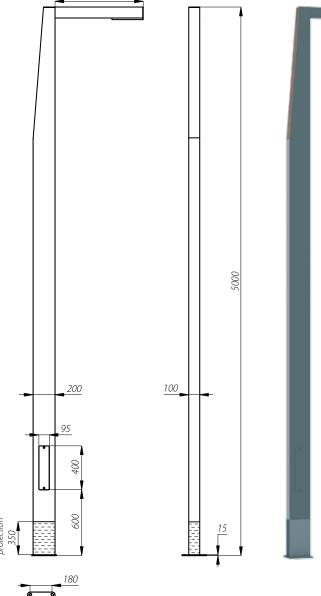
 \bullet luminaire is adapted to work in temperatures between -40°C

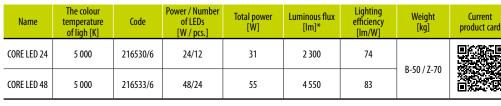
and +55°C



Light distribution curve for CORE LED







^{*} due to the LED precision class the tolerance value is +/- 3%





CUT LED

• protection degree: IP66 for the optical part and driver

ullet insulation class: \parallel

• supply voltage: 220-240 V AC, 50/60 Hz

• light source: CREE XT-E

• material: anodised aluminium alloy

• standard colour: inox

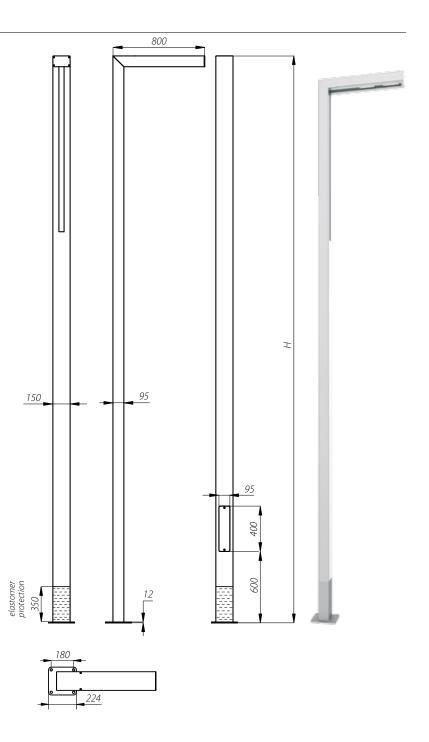
• decorative element made of aluminium in grey colour

• luminaire is adapted to work in temperatures between -40°C and +55°C

• optics: optics available for the removable module can be found on page 18 of the catalogue



Name	The colour temperature of ligh [K]	Code	Power / Number of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Lighting efficiency [lm/W]	Weight [kg]	Current product card	Aktualna karta techniczna
CUT-3 LED 24		216230/6	2	24/12	31	2950	95		
CUT-3 LED 36		216232/6)	36/12	42	4850	115		
CUT-4 LED 24		216330/6		24/12	31	2950	95		国洲郊郊 国
CUT-4 LED 36	E 000	216332/6	4	36/12	42	4850	115	D EO / 7 EO	
CUT-4 LED 48	5 000	216333/6		48/24	55	5000	91	B-50 / Z-50	
CUT-5 LED 24		216030/6		24/12	31	2950	95		E1940987JC
CUT-5 LED 36		216032/6	5	36/12	42	4850	115		
CUT-5 LED 48		216033/6		48/24	55	5000	91		







STICK LED

• protection degree: IP66 for the optical part and driver

• insulation class: Ⅱ

• supply voltage: 220-240 V AC, 50/60 Hz

• light source: CREE XT-E

• material: anodised aluminium alloy

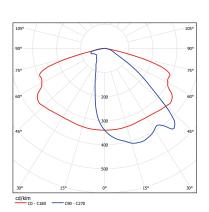
• standard colour: inox/gray

• possible to produce any configuration of the lighting arms

from 1 to 4

 \bullet luminaire is adapted to work in temperatures between -40 $^{\circ}\text{C}$

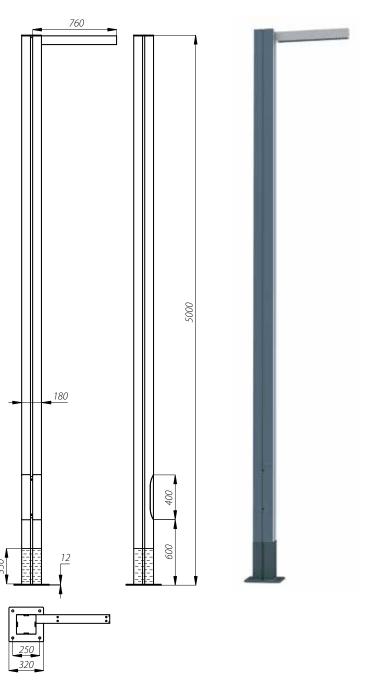
and +55°C



Light distribution curve for STICK LED



The colour Power / Number Lighting efficiency Total power [W] Luminous flux [lm]* Weight [kg] Current of LEDs [W / pcs.] temperature of ligh [K] Name Code product card [lm/W] STICK LED 24 217030/6 24/12 31 2300 74 217033/6 STICK LED 48 48/24 55 4550 83 STICK II LED 24 74 217130/6 2 x 24/2 x 12 2 x 31 2 x 2300 STICK II LED 48 217133/6 2 x 48/2 x 24 2 x 55 2 x 4550 83 5 000 B-60/Z-60 STICK III LED 24 217430/6 3 x 24/3 x 12 74 3 x 31 3 x 2300 STICK III LED 48 217433/6 3 x 48/3 x 24 3 x 55 3 x 4550 83 STICK IV LED 24 217630/6 4 x 24/4 x 12 4 x 31 4 x 2300 74 83 STICK IV LED 48 217633/6 4 x 48/4 x 24 4 x 55 4 x 4550



^{*} due to the LED precision class the tolerance value is +/- 3%





DROP I LED/DROP II LED

• protection degree: IP66 for the optical part and driver

ullet insulation class: \parallel

• supply voltage: 220-240 V AC, 50/60 Hz

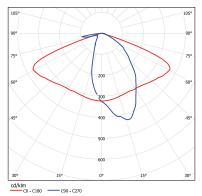
• light source: CREE XP-L

• material: anodised aluminium alloy

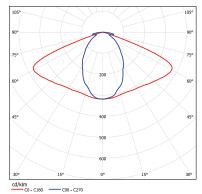
• standard colour: inox/graphite

 \bullet luminaire is adapted to work in temperatures between -40 $^{\circ}\text{C}$

and +55°C



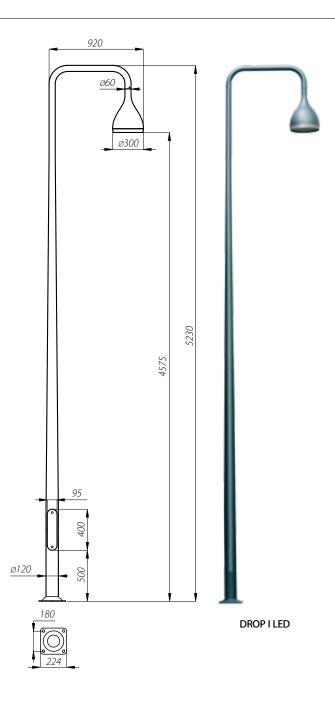
Light distribution curve for DROP I LED/DROP II LED, asymmetric



Light distribution curve for DROP I LED/DROP II LED, symmetric

Name	The colour temperature of ligh [K]	Code	Power / Number of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Lighting efficiency [lm/W]	Weight [kg]	Current product card
DROP I LED 48	5 000	215033/6/A 215033/6/S	48/16	55	6 500	118		
DRUP I LED 46	3 500	215033/3/A 215033/3/S	40/10))) 	6 000	109	D 50 / 7 50	
DDOD II I FD 40	5 000	215133/6/A 215133/6/S	2 40/2 16	255	2 x 6 500	118	B-50 / Z- 50	
DROP II LED 48	3 500	215133/3/A 215133/3/S	2 x 48/2 x 16	2 x 55	2 x 6 000	109		

^{*} due to the LED precision class the tolerance value is +/- 3%

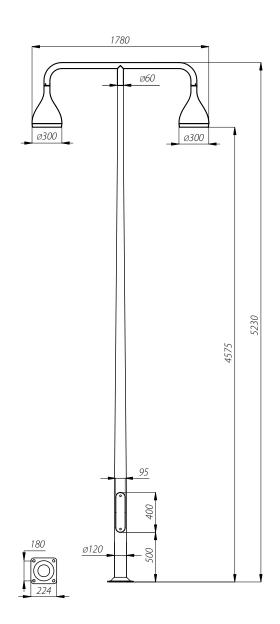


S – symmetric optical system

A – asymmetric optical system



DROP I LED/DROP II LED





Karpniki / Poland



FLEXILED

• protection degree: IP66 for the optical part and driver

ullet insulation class: \parallel

• supply voltage: 220-240 V AC, 50/60 Hz

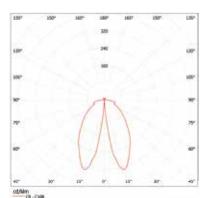
• light source: CREE XP-L

• material: anodised aluminium alloy

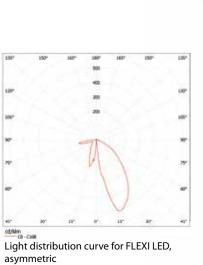
• standard colour: inox/graphite

 \bullet luminaire is adapted to work in temperatures between -40 $^{\circ}\text{C}$

and +55°C

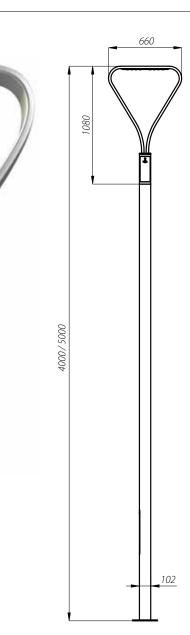


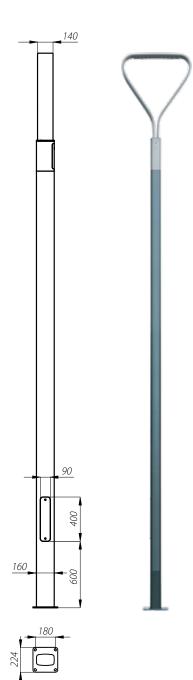
Light distribution curve for FLEXI LED, symmetric



·			•					
Name	The colour temperature of ligh [K]	Code	Power / Number of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Lighting efficiency [lm/W]	Weight [kg]	Current product card
	F 000	215530/6/S			3 250	112		
FLEXI LED 24	5 000	215530/6/A	24/8	28	3 250	112	-	
FLEXI LED 24	3 500	215530/3/S			3 000	103		
	3 500	215530/3/A			3 000	103	B-50 / Z- 50	
	5 000	215533/6/S			6 500	118	D-30 / L- 30	
FLEXI LED 48	3 000	215533/6/A	48/16	55	6 500	118	7	INCOME.
	2 500	215533/3/S	40/10	55	6 000	109		
	3 500	215533/3/A			6 000	109		

^{*} due to the LED precision class the tolerance value is \pm -3%





S – symmetric optical system

A – asymmetric optical system





SA BOLLARDS

SAM bollards – white cylindrical diffuser PMMA SAP bollards – transparent cylindrical diffuser PMMA with stainless steel louvre reflector

Types of bollards:

on concrete footing and rooted (marked "dz" in the name) with round and flat cap (marked .../P in the product code)

Types of light sources:

S – sodium: 50W, 70W MH – metal halide 70W, 100W E/Z – energy-efficient source E-27

Technical data:

protection degree: IP65insulation class: II

• supply voltage: 230 V AC, 50 Hz



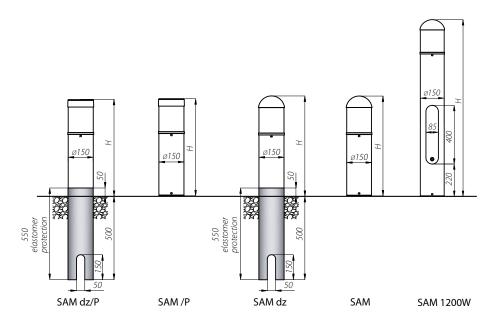
	Light			Со	de				
Name	source Cap	S-50W E-27	S-70W E-27	MH-70W E-27	MH-70W Electronic E-27	MH-100W E-27	Fluoroscent lam 23W E-27	High H [mm]	Concrete footing
SAM 600	round	45001/C	45002/C	45002/C	45003E/C	45004/C	45006/C	645	B-0, B-0A
JAIVI 000	flat	45001/C/P	45002/C/P	45002/C/P	45003E/C/P	45004/C/P	45006/C/P	615	Z-0, Z-0A
SAM 600 dz	round	45060/C	45061/C	45062/C	45062E/C	45063/C	45066/C	645	
SAM 600 UZ	flat	45060/C/P	45061/C/P	45062/C/P	45062E/C/P	45063/C/P	45066/C/P	615	-
CAMAGOO	round	45008/C	45009/C	45010/C	45010/C	45011/C	45014/C	945	B-0, B-0A
SAM 900	flat	45008/C/P	45009/C/P	45010/C/P	45010/C/P	45011/C/P	45014/C/P	915	Z-0, Z-0A
SAM 900 dz	round	45067/C	45068/C	45069/C	45069E/C	45070/C	45073/C	945	
3AW 900 02	flat	45067/C/P	45068/C/P	45069/C/P	45069E/C/P	45070/C/P	45073/C/P	915	-
SAM 1200	round	45015/C	45016/C	45017/C	45017E/C	45018/C	45021/C	1 245	P 04 /7 04
3AW 1200	flat	45015/C/P	45016/C/P	45017/C/P	45017E/C/P	45018/C/P	45021/C/P	1 215	B-0A / Z-0A
SAM 1200 dz	round	45074/C	45075/C	45076/C	45076E/C	45077/C	45080/C	1 245	
3AW 1200 UZ	flat	45074/C/P	45075/C/P	45076/C/P	45076E/C/P	45077/C/P	45080/C/P	1 215	-
CAM 1200W	round	45022/C	45023/C	45024/C	45024E/C	45025/C	45028/C	1 245	P.OA / 7.0A
SAM 1200 W	flat	45022/C/P	45023/C/P	45024/C/P	45024E/C/P	45025/C/P	45028/C/P	1 215	B-0A / Z-0A
CAM 1200 W d-	round	45081/C	45082/C	45083/C	45083E/C	45084/C	45087/C	1 245	
SAM 1200 W dz	flat	45081/C/P	45082/C/P	45083/C/P	45083E/C/P	45084/C/P	45087/C/P	1 215	







SA BOLLARDS



	Light			Со	de				
Name	source	S-50W E-27	S-70W E-27	MH-70W E-27	MH-70W Electronic E-27	MH-100W E-27	Fluoroscent lam 23W E-27	High H [mm]	Concrete footing
SAP 600	round	45030/C	45031/C	45032/C	45032E/C	45033/C	45036/C	645	B-0, B-0A
3AP 000	flat	45030/C/P	45031/C/P	45032/C/P	45032E/C/P	45033/C/P	45036/C/P	615	Z-0, Z-0A
SAP 600 dz	round	45088/C	45089/C	45090/C	45090E/C	45091/C	45094/C	645	
3AP 000 UZ	flat	45088/C/P	45089/C/P	45090/C/P	45090E/C/P	45091/C/P	45094/C/P	615	-
CADOOO	round	45037/C	45038/C	45039/C	45039E/C	45040/C	45043/C	945	B-0, B-0A
SAP 900	flat	45037/C/P	45038/C/P	45039/C/P	45039E/C/P	45040/C/P	45043/C/P	915	Z-0, Z-0A
SAP 900 dz	round	45095/C	45096/C	45097/C	45097E/C	45098/C	45101/C	945	
SAP 900 dZ	flat	45095/C/P	45096/C/P	45097/C/P	45097E/C/P	45098/C/P	45101/C/P	915	_
CAD 1200	round	45044/C	45045/C	45046/C	45046E/C	45047/C	45050/C	1 245	D 04 /7 04
SAP 1200	flat	45044/C/P	45045/C/P	45046/C/P	45046E/C/P	45047/C/P	45050/C/P	1 215	B-0A / Z-0A
CAD 1200 d-	round	45102/C	45103/C	45104/C	45104E/C	45105/C	45108/C	1 245	
SAP 1200 dz	flat	45102/C/P	45103/C/P	45104/C/P	45104E/C/P	45105/C/P	45108/C/P	1 215	_
CAD 1200 W	round	45051/C	45052/C	45053/C	45053E/C	45054/C	45056/C	1 245	D 04 /7 04
SAP 1200 W	flat	45051/C/P	45052/C/P	45053/C/P	45053E/C/P	45054/C/P	45056/C/P	1 215	B-0A / Z-0A
CAD 1200 W 4-	round	45109/C	45110/C	45111/C	45111E/C	45112/C	45115/C	1 245	
SAP 1200 W dz	flat	45109/C/P	45110/C/P	45111/C/P	4511E/C/P	45112/C/P	45115/C/P	1 215	_

Mielec / Poland



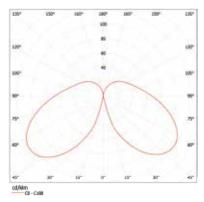
KARIN LED

• protection degree: IP65

ullet insulation class: \parallel

• supply voltage: 100-240 V AC, 50/60 Hz

• light source: CREE XT-E • lamp-diffuser: frosted PMMA • material: anodised aluminium alloy



Light distribution curve for columns KARIN LED 450-1200



KARIN 450 LED



KARIN 600 LED

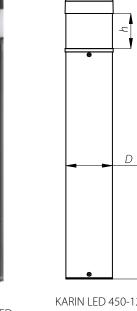


900 LED



KARIN 1200 LED





KARIN	KARIN LED 450-1200
1200 W LED	

Name	The colour temperature of light [K]	Code	Power / Num- ber of LEDs [W/pcs.]	Total power [W]	Luminous flux [lm]*	lighting efficiency [lm/W]	Height H [mm]	Lamp-diffuser height h [mm]	Diameter D [mm]	Concrete footing	Current product card
KARIN 450 LED	5 000	45200/6/C					455				
MANIN 430 LED	3 500	45200/3/C					433				
KARIN 600 LED	5 000	45210/6/C					575			B-0 / Z-0	
KAKIN OUU LED	3 500	45210/3/C	16/8	21	1 050	50	3/3	113	150	D-U / Z-U	in waaca in
KARIN 900 LED	5 000	45220/6/C					875				
KAKIN 900 LED	3 500	45220/3/C	10/6	21			673] 113			
VADIN 1200 LED	5 000	45230/6/C									回及網络電
KARIN 1200 LED KARIN 1200W LED	3 500	45230/3/C					1 175			B-0A / Z-0A	
	5 000	45232/6/C					1 175			D-UA / Z-UA	
	3 500	45232/3/C									

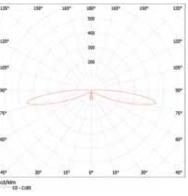
C... – choice of anodising colour.
* due to the LED precision class the tolerance value is+/-7%



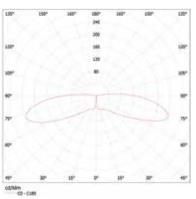


DAMA LED

- protection degree: IP65
- insulation class: ||
- supply voltage: 100-240 V AC, 50/60 Hz
- light source: CREE XP-L
- lamp-diffuser: frosted/transparent PMMA
- material: anodised aluminium alloy



Light distribution curve for column DAMA LED lamp-diffuser: transparent



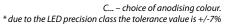
Light distribution curve for column DAMA LED, lamp-diffuser: frosted

Żywiec / Poland



Name	The colour temperature of light [K]	Code	Power / Num- ber of LEDs [W/pcs.]	Total power [W]	Luminous flux [lm]*	lighting efficiency [lm/W]	Height [kg]	Current product card
DAMA LED	5000	45320/6	0/4	12	600	50	4 27	
	3500	45320/3	8/4	12	720	60	4,37	







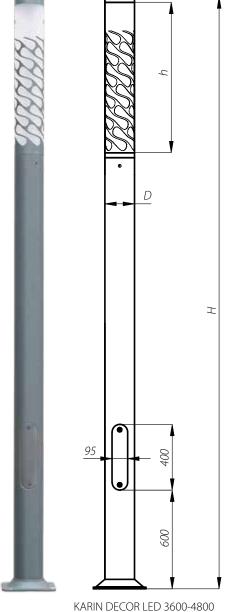
2400 LED

3600 LED



6000 LED

4800 LED

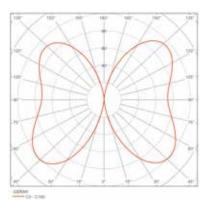


KARIN LED 3600-6000

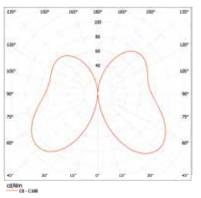




KARIN LED / KARIN DECOR LED



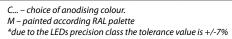
Light distribution curve for columns KARIN DECOR LED



Light distribution curve for columns KARIN LED 4800

Name	The colour temperature of light [K]	Code	Power / Num- ber of LEDs [W/pcs.]	Total power [W]	Luminous flux [lm] *	Lighting efficiency [lm/W]	Height [mm]	Lamp-diffuser height h [mm]	Diameter D [mm]	Concrete footing/ Reinforcement basket	Current product card
KARIN 2400 LED	5 000	45240/6/C	32 / 16	39	2 150	55	2 400	908	150	B-50 / Z-50	विश्वकारकाव
KARIN 3600 LED	5 000	45250/6/C	48 /24	58	4 550	78	3 600	915	180	B-60 / Z-60	
KARIN 4800 LED	5 000	45260/6/C	88 / 44	100	7 100	71	4 800	915	200	B-60 / Z-60	
KARIN 6000 LED	5 000	45270/6/M	116 / 58	134	9 150	68	6 000	915	300	B-71 / Z-71	

Name	The colour temperature of light [K]	Code	Power / Num- ber of LEDs [W/pcs.]	Total power [W]	Luminous flux [lm] *	Lighting efficiency [lm/W]	Height [mm]	Lamp-diffuser height h [mm]	Diameter D [mm]	Concrete footing/ Reinforcement basket	Current product card
KARIN DECOR 2400 LED	5 000	45241/6/C	32/16	39	1 600	41	2 400	908	150	B-50 / Z-50	
KARIN DECOR 3600 LED	5 000	45251/6/C	48/24	58	3 400	59	3 600	915	180	B-60 / Z-60	
KARIN DECOR 4800 LED	5 000	45261/6/C	88/44	100	5 350	54	4 800	915	180	B-60 / Z-60	





SAL DECO-1 LED

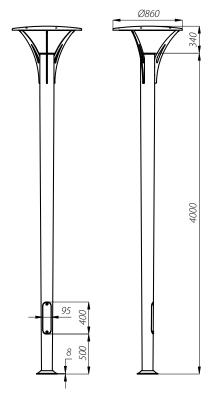
• protection degree: IP65

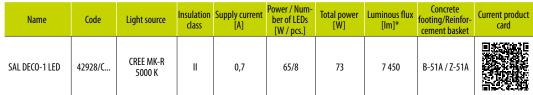
• supply voltage: 220-240 V AC, 50/60 Hz

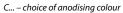
• construction: electrical equipment built in the upper part of the column and closed by refractory glass; cap with external reflector in the form of convex mirrored squares;

3 arms connect column with round roof

• material: anodised aluminium alloy







^{*} due to the LEDs precision class the tolerance value is +/-7%





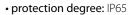








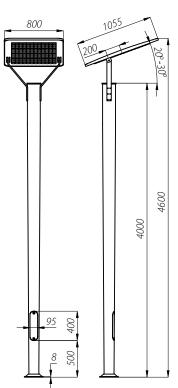
SAL DECO-2 LED



• supply voltage: 220-240 V AC, 50/60 Hz

• construction: electrical equipment built in the upper part of the column and closed by refractory glass; cap with external reflector in the form of convex mirrored squares; 2 arms connect column with rectangular roof

• material: anodised aluminium alloy



Name	Code	Light source	Insulation class	Supply current [A]	Power / Num- ber of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Concrete footing/Reinfor- cement basket	Current product card
SAL DECO-2 LED	42929/C	CREE MK-R 5000 K	=	0,7	65/8	73	7 450	B-51A / Z-51A	

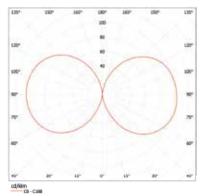
C... – choice of anodising colour

^{*} due to the LEDs precision class the tolerance value is +/-7%

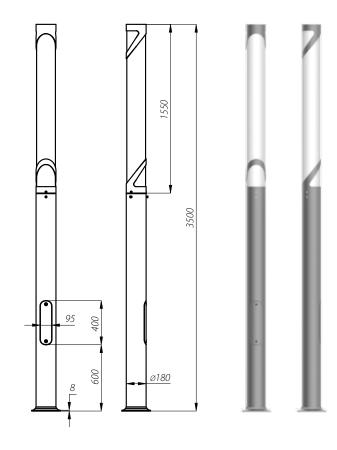


SAL DECO-3 / SAL DECO-3 LED

- protection degree: IP65
- supply voltage:
- 220-240 V AC, 50/60 Hz (SAL DECO-3 LED) 230 V AC, 50/60 Hz (SAL DECO-3)
- cylindrical white lamp-diffuser PC-UV, aluminium decorative elements
- material: anodised aluminium alloy



Distribution curve for SAL DECO-3 LED



Name	Code	Light source	Insulation class	Supply current [A]	Power / Number of LEDs [W/pcs]	Total power [W]	Luminous flux [lm]*	Concrete footing/Reinforce- ment basket	Current product card
SAL DECO-3	42922/C	MH-150W Iamp cap G12	I	0,85	150/–	167	4 030	B -51/ Z-51	-
SAL DECO-3 LED	42923/C	CREE XT-E 5000 K	II	0,7	48/24	56	2 500	B -51/ Z-51	



C... – choice of anodising colour
* due to the precision class of diodes tolerance is +/-7%





ROSA EDGE TECHNOLOGY

ROSA EDGE are the products of street and park lighting, which are featured by modern system of edge illumination edge



EDGE LIGHT PRODUCTS

ROSA EDGE TECHNOLOGY

ROSA EDGE series features modern edge lighting system. Introduced edge lighting technology is widely used in the displays' construction such as monitors, televisions, i-pod screens etc. Edge lighting in this series is the introduction of light stream to the edge of the light elements, which scatter light outside. With the light source turned off these elements are crystal clear, and during operation the light is uniformly diffused over the entire surface. Light diffusing effect is achieved by unique combination of PMMA produced by a reputable company EVONIK, which provides durability and high light transmission rate.

Used in ROSA EDGE series lighting elements in the form of LEDs are not directly visible and relatively large (several hundred times larger than the light source) light emitting surface minimize the glare. As a light source in these structures are high-performance LED modules with LEDs of warm white colour 3500K and neutral white – 5000 K. There is also possibility of other colour variations - blue, red or green.

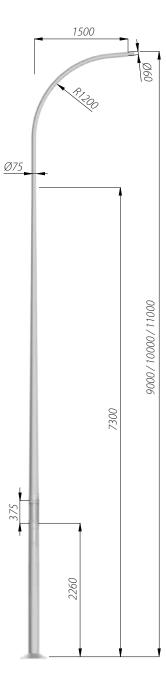
Application of this technology in street lighting:

Elements using edge-lit technology may be used in the street columns of this series equipped with necking of cross-sectional constriction adapted to their assembly. As a result, light elements harmonize with the column providing aesthetic appearance. The construction of columns is unitary and durable because there are no other weakness of the column section beyond the power cords insertion holes. The application of such elements is solution patented by ROSA.





Name	Colour temperature [K]	Code	Hight [m]	Power / Number of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Lighting efficiency [lm/W]	Concrete footing/ Reinforcement basket
CAL O.W.LN 1/1 E/1 7/E EDCE 1	5 000	4273027/6	9	10/80	14	1 150	82	- В-70/Z-70
SAL 9 WŁN 1/1,5/1,7/5 EDGE-1	3 500	4273027/3						
CAL 10 WILN 1/1 E/2 7/E EDCE 1	5 000	4273127/6	10					
SAL 10 WŁN 1/1,5/2,7/5 EDGE-1	3 500	4273127/3						
CAL 11 WILN 1/1 E/2 7/E EDCE 1	5 000	4273227/6	- 11					
SAL 11 WŁN 1/1,5/3,7/5 EDGE-1	3 500	4273227/3						
SAL 9 WŁN 1/1,5/1,7/5 EDGE-2	5 000	4273029/6	9	20/160	26	2 350	90	
	3 500	4273029/3						
SAL 10 WŁN 1/1,5/2,7/5 EDGE-2	5 000	4273129/6	10					
	3 500	4273129/3						
SAL 11 WŁN 1/1,5/3,7/5 EDGE-2	5 000	4273229/6	11					
	3 500	4273229/3						





EDGE LIGHT PRODUCTS.

ROSA EDGE TECHNOLOGY

Application of this technology in park lighting:

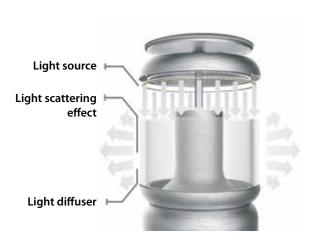
The edge-light technology elements are used in FLARE LED and LED SLICE bollards. The FLARE LED bollard can have 1 or 2 lighting elements - cylindrically-conical diffusers. In the version with two diffusers there is optional configuration possible of elements in different colours (warm white, cool white, red, green, blue).

The SLICE LED bollard is equipped with a single light element – the cylinder available in 2 length versions: 100 and 300 mm.

Advantages and possibilities of ROSA EDGE™ in street lighting:

- · additional illumination of walkways,
- decorative functions, colored LEDs distinguishing the surroundings,
- informative functions lighting elements may represent areas of urban infrastructure, eg.: columns with light elements with a blue LED modules can signal parking spaces,
- optical drivers' guiding basing on the edge-lit elements the driver can see how the road runs and turns. Lighting luminaires in its design limit glare and therefore there are just few light sources visible to the driver. ROSA EDGE elements are of low power, but because of their large surface they are visible from afar and do not cause glare.







EDGE LIGHT PRODUCTS

SLICE LED

• protection degree: IP65

• insulation class: ||

• supply voltage: 100-240 V AC, 50/60 Hz

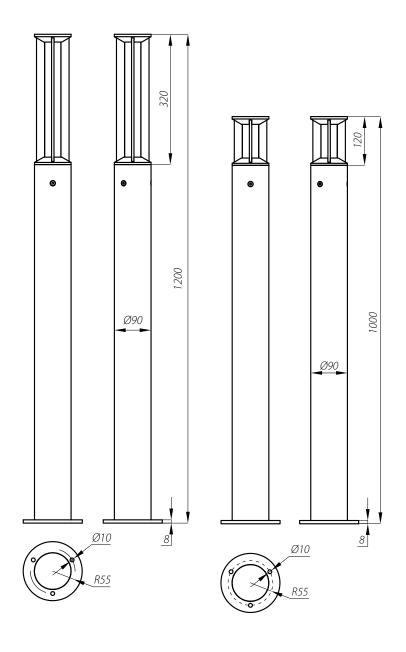
• material: anodized aluminum alloy

• colour: inox (there is a possibility of anodising into

other colors)



	Name	Colour temperature [K]	Code	Height [m]	Power / Num- ber of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Lighting efficiency [lm/W]	Concrete footing/ Reinforcement basket	Weight [kg]	Current product card
	SLICE LED 1000	5 000	45290/6	1	7/1	9	350	40	B-0A / Z-0A	4,6	
		3 500	45290/3				300	33			
SLICE LED 1200	5 000	45291/6	1.2	13/1	15	650	43	D-UA / Z-UA	5,2		
	3 500	45291/3	1,2			550	37			回绕统治战略	

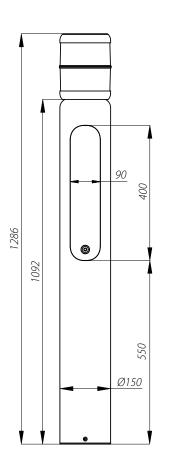


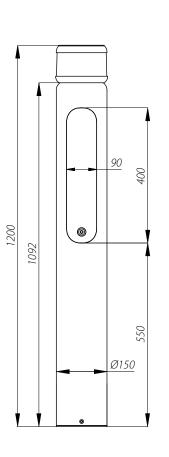
^{*}due to the precision class of diodes tolerance is \pm /-3%



EDGE LIGHT PRODUCTS

FLARE LED







- protection degree: IP65
- insulation class: ||
- \bullet supply voltage: 100-240 V AC, 50/60 Hz
- material: anodized aluminum alloy
- colour: inox (there is a possibility of anodising into other colors)

Name	Colour temperature [K]	Code	Power / Num- ber of LEDs [W / pcs.]	Total power [W]	Luminous flux [lm]*	Lighting efficiency [lm/W]	Concrete footing/ Reinforcement basket	Weight [kg]	Current product card
FLARE LED 1	5 000	45280/6	9/60	12	650	54	B-0A / Z-0A		
	3 500	45280/3						0	
FLARE LED 2	5 000	45281/6	18/120	19	1350	71		0.7	
	3 500	45281/3						8,7	

STREET LIGHTING

Straight aluminium street columns (height: 5-12,8 m)	136
Extension arms for aluminium street columns	141
Aluminium street columns with welded extension arms (height: 7-11 m)	150
Two-piece aluminium columns with curved extension arms (height: 8,5-12 m)	156
Decorative aluminium street columns (height: 6,6-9,4 m)	160
Aluminium lowering and raising columns (height: 4,5-10 m)	164
Straight aluminium light masts (height: 12,5-16 m)	168
Extension arms for aluminium light masts	169
Aluminium light mast with curved extension arms (height: 12-14 m)	171

STREET LIGHTING

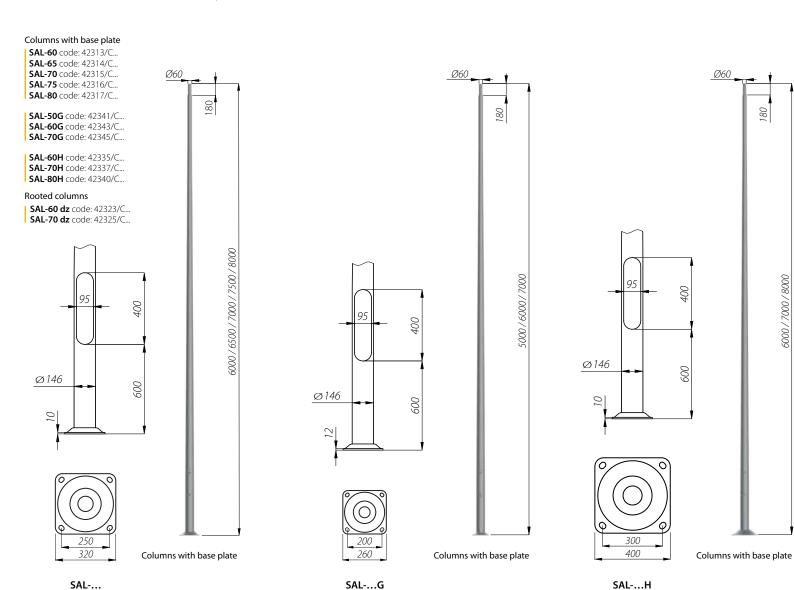
Our lighting gives the unique nature of each street. We specialize in products made of anodised aluminlum, which not only protects the products against corrosion, but also gives them decorative nature. Wide choice of street columns, extension arms, masts and luminaires will adjust the lighting to the nature of the street.

Combination of anodised aluminium technology and innovative LED light source makes that ROSA lighting is durable, economical, ecological, and at the same time aesthetic. We offer the possibility of making a complete street lighting tailored to our customer needs.



STREET LIGHTING/ALUMINIUM COLUMNS/STRAIGHT COLUMNS

STRAIGHT COLUMNS Ø146



B-51A/Z-51A



6000 / 7000 / 8000

B-60/Z-60

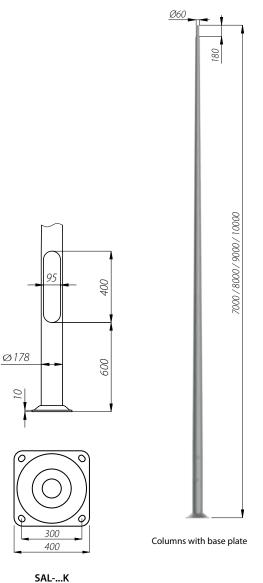
B-71/Z-71

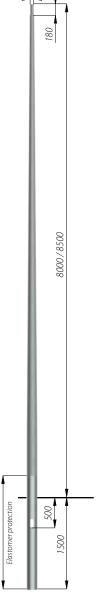




STREET LIGHTING/ALUMINIUM COLUMNS/STRAIGHT COLUMNS

STRAIGHT COLUMNS Ø178





Rooted column

Columns with base plate

SAL-70K code: 42628/C... **SAL-80K** code: 42630/C... SAL-90K code: 42632/C... SAL-100K code: 42634/C...

Rooted columns

SAL-80K dz code: 42606/C... SAL-85K dz code: 42607/C...

SAL-...K B-70/Z-70 B-71/Z-71

Czechowice Dziedzice / Poland



STREET LIGHTING/ALUMINIUM COLUMNS/STRAIGHT COLUMNS

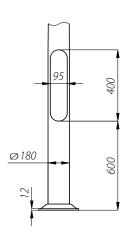
STRAIGHT COLUMNS Ø180

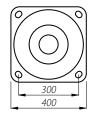
Columns with base plate

SAL-80M code: 42755/C... SAL-90M code: 42757/C... SAL-100M code: 42759/C...

Rooted columns

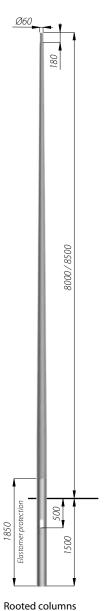
SAL-80M dz code: 42706/C... SAL-85M dz code: 42707/C...

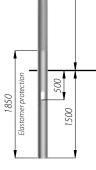




SAL-...M B-70/Z-70 B-71/Z-71







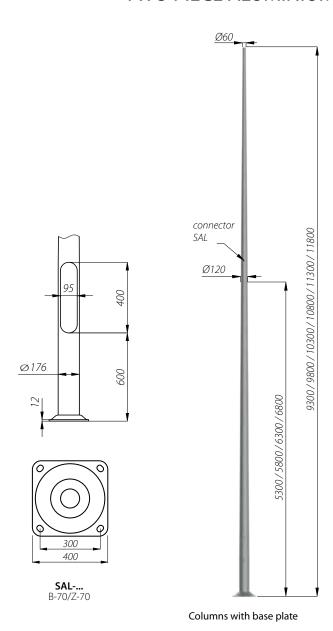








TWO PIECE ALUMINIUM COLUMNS Ø176



Columns with base plate

SAL-9,3 code: 42456/C... SAL-9,8 code: 42457/C... SAL-10,3 code: 42458/C... SAL-10,8 code: 42459/C... SAL-11,3 code: 42460/C... SAL-11,8 code: 42461/C...

Sochi / Russia



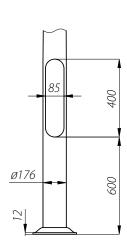
STREET LIGHTING/ALUMINIUM COLUMNS

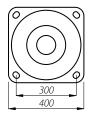
TWO PIECE ALUMINIUM REINFORCED COLUMNS Ø176

SAL-9,3 wzm code: 42476/C... SAL-10,3 wzm code: 42478/C... SAL-10,8 wzm code: 42479/C... SAL-11,3 wzm code: 42470/C... SAL-11,8 wzm code: 42471/C... SAL-12,3 wzm code: 42472/C...

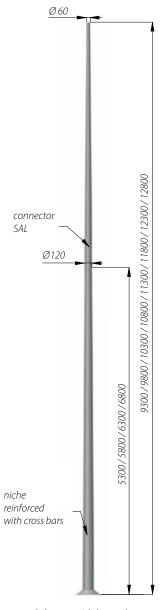
SAL-12,8 wzm code: 42473/C...

Columns with base plate





SAL-... wzm B-70/Z-70



Columns with base plate

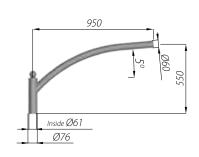




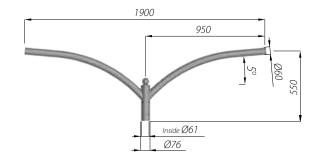
STREET LIGHTING/EXTENSION ARMS FOR ALUMINIUM COLUMNS

EXTENSION ARMS WR

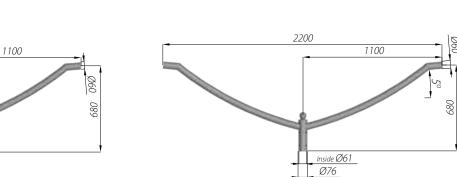
- application: columns SAL with spigot ending Ø60 mm
- material: anodised aluminum alloy
- luminaires: street luminaires with spigot ending Ø60 mm



WR-2/1 code: 472021/C...



WR-2/2 code: 472022/C...

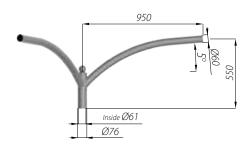


WR-3/1/5 code: 47203111/C...

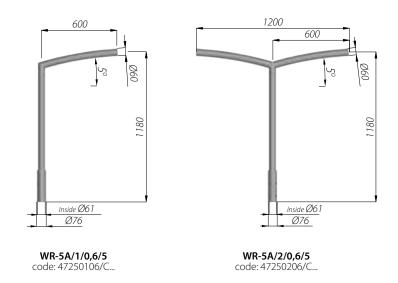
Inside Ø61

Ø76





WR-2/3 code: 472023/C...

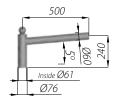


The use of extension arms must always be verified with the permissible load for the wind (technical data available in technical cards at www.rosa.pl)

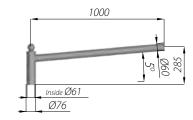


STREET LIGHTING/EXTENSION ARMS FOR ALUMINIUM COLUMNS

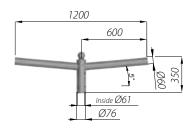
EXTENSION ARMS WR



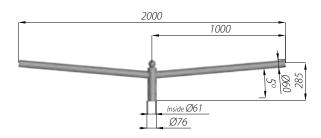
WR-4/1/0,5/5 code: 47204105/C...



WR-4/1/1/5 code: 47204110/C...



WR-4/2/0,5/5 code: 47204205/C...



WR-4/2/1/5 code: 47204210/C...



The use of extension arms must always be verified with the permissible load for the wind (technical data available in technical cards at www.rosa.pl)



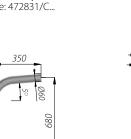


STREET LIGHTING/EXTENSION ARMS FOR ALUMINIUM COLUMNS

EXTENSION ARMS WR



WR-8B/1/0,35/0 code: 472831/C...



WR-8B/1/0,35/5 code: 472841/C...

Inside Ø61 Ø76

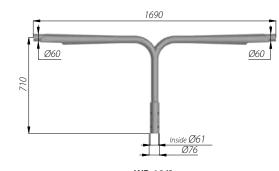


WR-8B/1/0,35/10 code: 472851/C...

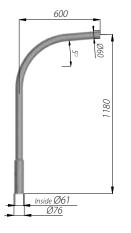
Tychy / Poland



WR-10/1 code: 472221/C.../C... luminaire ISKRA LED



WR-10/2 code: 472222/C.../C... luminaire ISKRA LED



WR-8A/1/06/5 code: 47280106/C...



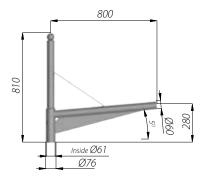
WR-8A/1/1/5 code: 47280110/C...

The use of extension arms must always be verified with the permissible load for the wind (technical data available in technical cards at www.rosa.pl)

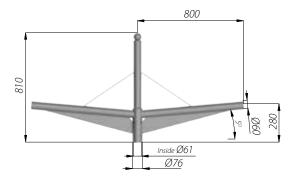


STREET LIGHTING/EXTENSION ARMS FOR ALUMINIUM COLUMNS

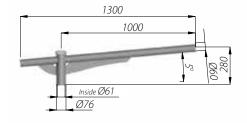
EXTENSION ARMS WR



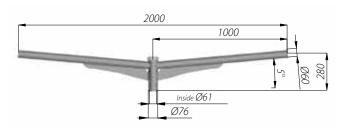
WR-13/1/0,8/5 code: 47213108/C...







WR-15/1 code: 472151/C...



WR-15/2 code: 472152/C...

The use of extension arms must always be verified with the permissible load for the wind (technical data available in technical cards at www.rosa.pl)





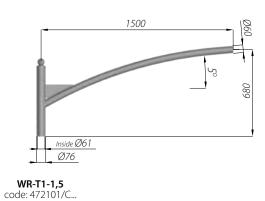


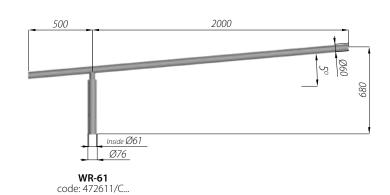


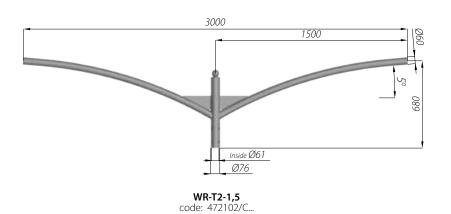


EXTENSION ARMS WR

STREET LIGHTING/EXTENSION ARMS FOR ALUMINIUM COLUMNS







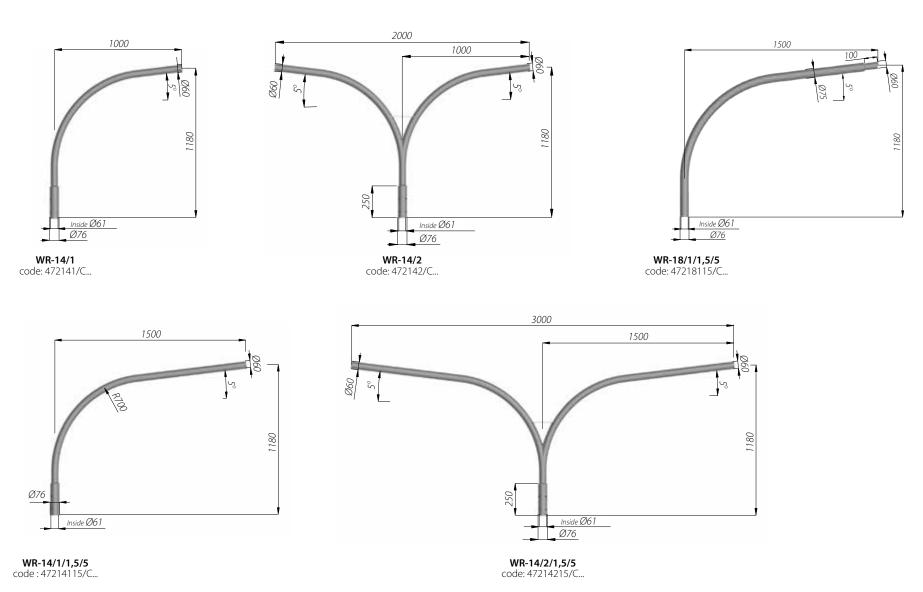
The use of extension arms must always be verified with the permissible load for the wind (technical data available in technical cards at www.rosa.pl)

Zielona Góra / Poland



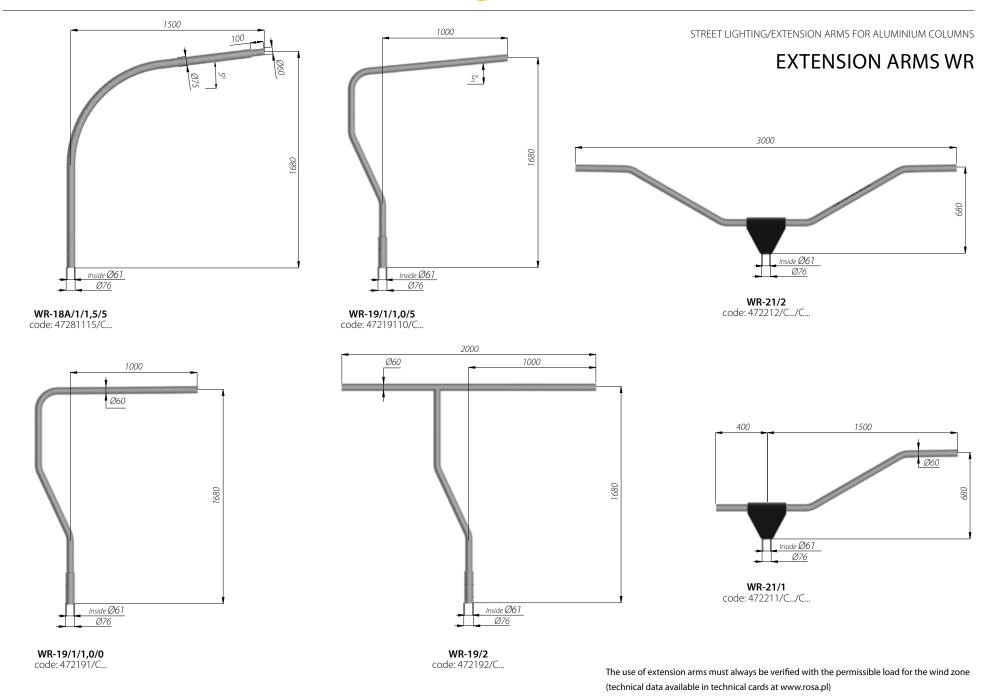
STREET LIGHTING/EXTENSION ARMS FOR ALUMINIUM COLUMNS

EXTENSION ARMS WR



The use of extension arms must always be verified with the permissible load for the wind zone (technical data available in technical cards at www.rosa.pl)







STREET LIGHTING/EXTENSION ARMS FOR ALUMINIUM COLUMNS

EXTENSION ARMS WRP

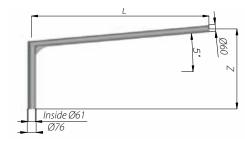
- application: olumns SAL with spigot ending Ø60 mm
- material: anodized aluminum alloy
- luminaires: street luminaires

Extension arms WRP

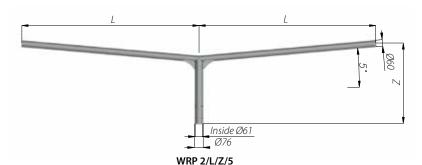
WRP 1/1,0/0,7/5 code: 47219111/C...
WRP 1/1,0/1,2/5 code: 47219112/C...
WRP 1/1,5/0,7/5 code: 47219121/C...
WRP 1/1,5/1,2/5 code: 47219212/C...
WRP 2/1,0/0,7/5 code: 47219211/C...
WRP 2/1,5/0,7/5 code: 47219212/C...
WRP 2/1,5/1,2/5 code: 47219221/C...
WRP 3/1,0/0,7/5 code: 47219221/C...
WRP 3/1,0/0,7/5 code: 47219311/C...
WRP 3/1,0/1,2/5 code: 47219311/C...

WRP 3/1,5/0,7/5 code: 47219321/C... WRP 3/1,5/1,2/5 code: 47219322/C...

L – height of extension arm Z – outreach length 5° – the angle of the arm 1/2/3 – number of arms



WRP 1/L/Z/5





The use of extension arms must always be verified with the permissible load for the (technical data available in technical cards at www.rosa.pl)



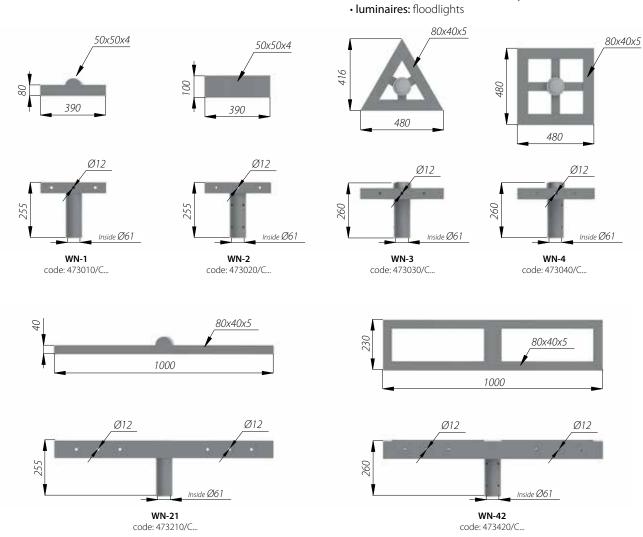






EXTENSION ARMS WN

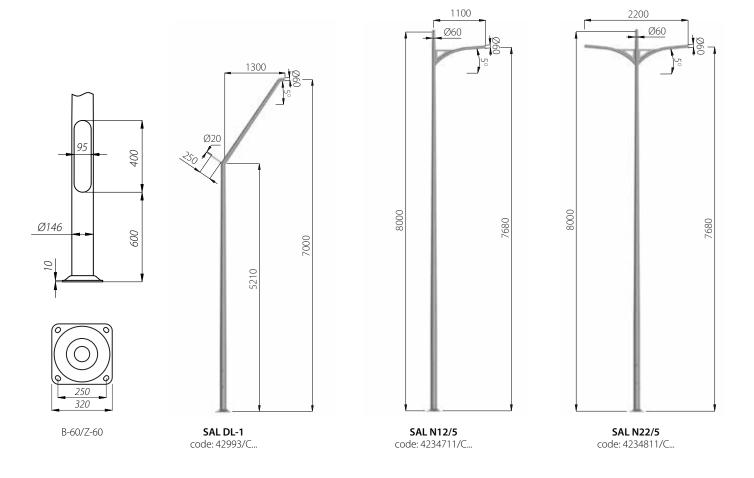
- application: columns SAL with spigot ending Ø60 mm
- material: anodized aluminum alloy



The use of extension arms must always be verified with the permissible load for the wind zone (technical data available in technical cards at www.rosa.pl)

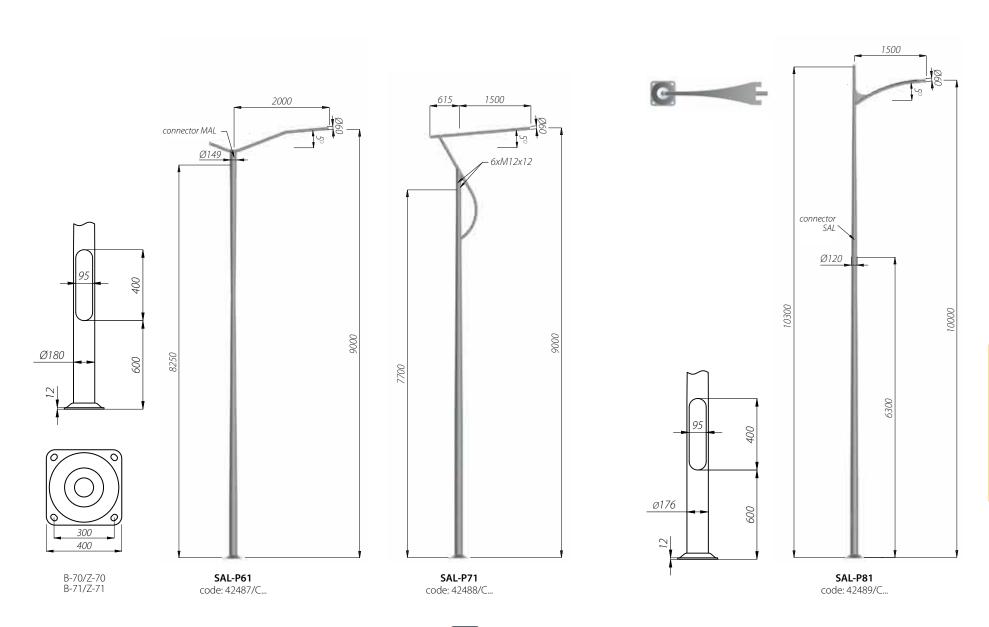
Ukraine



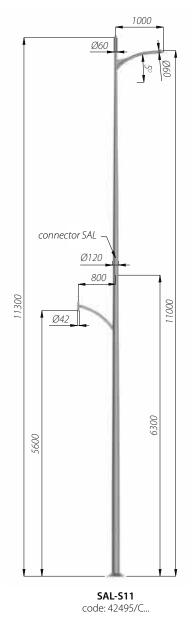


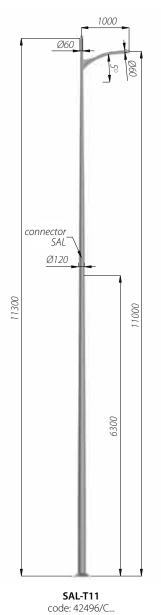


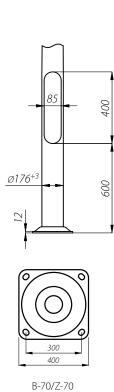






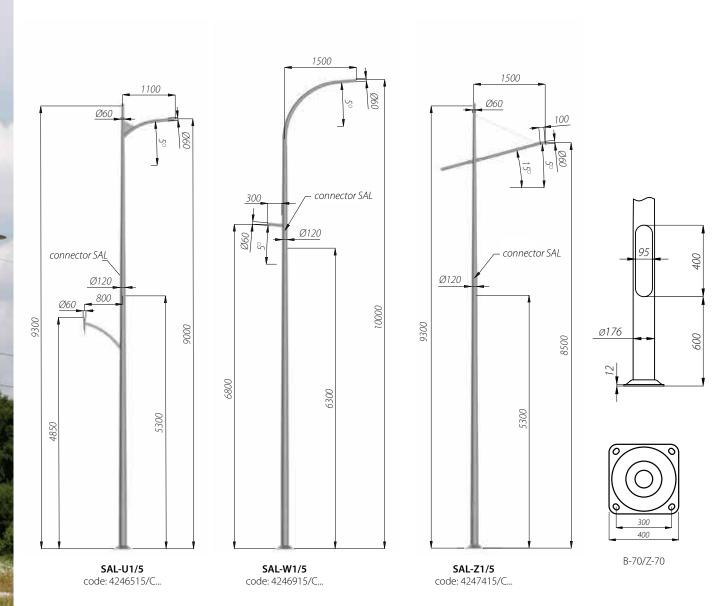




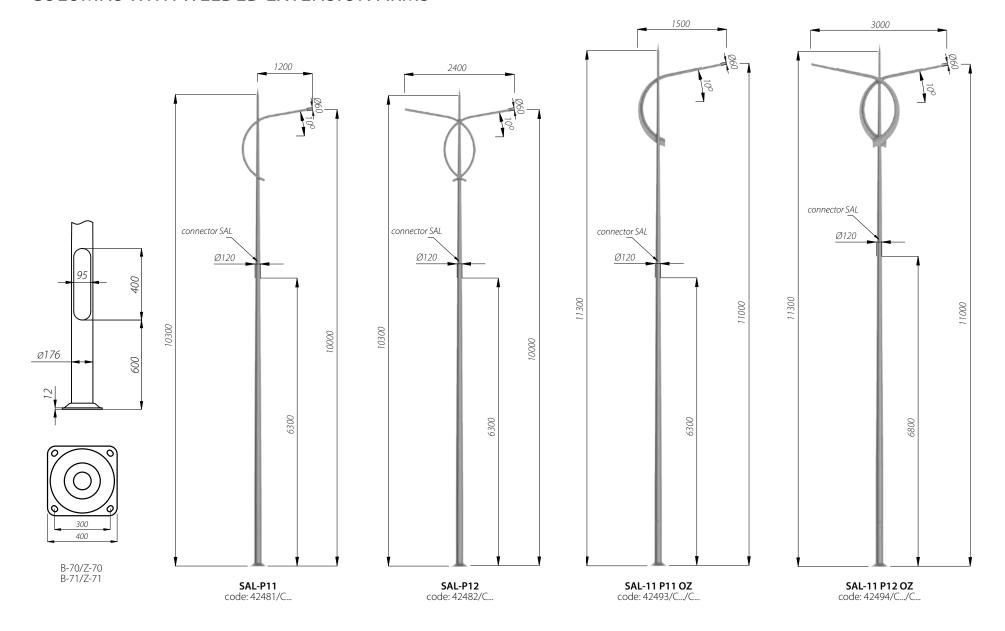










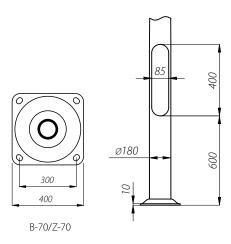




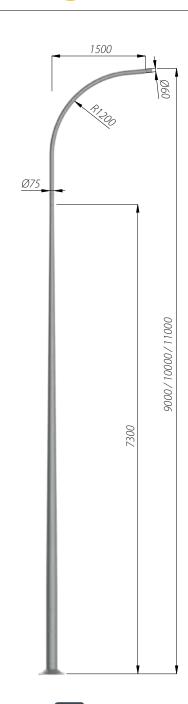


STREET LIGHTING/TWO PIECE ALUMINIUM COLUMNS

TWO PIECE COLUMNS Ø180



Name	Code	Length of the arm [m]	Number of arms	Height [m]	Height of lower part of the column [m]	Concrete footing/ reinforcement basket	
SAL-9 WŁN	42720	1,5	1	9	7,3	B-70/Z-70	
SAL-10 WŁN	42721	1,5	1	10	7,3	B-70/Z-70	
SAL-11 WŁN	42722	1,5	1	11	7,3	B-70/Z-70	









STREET LIGHTING/TWO PIECE ALUMINIUM COLUMNS

TWO PIECE COLUMNS WITH CURVED EXTENSION ARMS Ø176

Ø120 <u></u>	connector SAL
	2800
Caluman wish	
Column with	single extension arm

Column with single extension arm SAL- 9 WŁ 1/2/3,2/5

	Length of the arm [m]		Code		Height of	Height of upper	Height of lower part of	Concrete footing/ re-
Name		N	umber of arm	ns	the column	part of the	the column	inforcement
		1	2	3	[m]	column [m]	[m]	basket
	1,5	42419/C	42420/C	42421/C		3,2	5,8+0,35	B-70 / Z-70
SAL-9 WŁ	2,0	42422/C	42423/C	42424/C	9			B-71 / Z-71
	2,5	42425/C	42426/C	42427/C				_
	1,5	42428/C	42429/C	42430/C		3,7	5,8+0,35	B-70 / Z-70
SAL-9,5 WŁ	2,0	42431/C	42432/C	42433/C	9,5			B-71 / Z-71
	2,5	42434/C	42435/C	42436/C				_
	1,5	42437/C	42438/C	42439/C	10	3,7	6,3+0,35	B-70 / Z-70
SAL-10 WŁ	2,0	42440/C	42441/C	42442/C				B-71 / Z-71
	2,5	42443/C	42444/C	42445/C				_
CAL 10 FWIL	1,5	42446/C	42447/C	42448/C	10.5	4.2	62.025	B-70 / Z-70
SAL-10,5 WŁ	2,0	42449/C	42450/C	42480/C	10,5	4,2	6,3+0,35	B-71 / Z-71
CAL 11 WIL	1,5	42451/C	42452/C	_	11	4,7	6,3+0,35	B-70 / Z-70
SAL-11 WŁ	2,0	42453/C	-	_	11			B-71 / Z-71
SAL-11,5 WŁ	1,5	42454/C	_	_	11,5	4,7	60.035	B-71 / Z-71
SAL-12 WŁ	1,5	42455/C	-	_	12	5,2	6,8+0,35	B-71 / Z-71

C... - choice of anodising colour

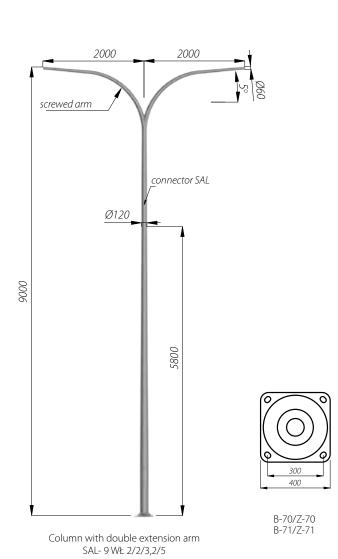


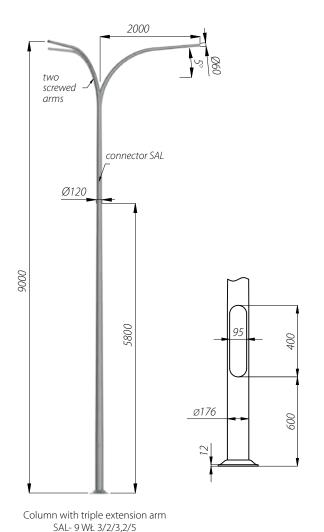




STREET LIGHTING/TWO PIECE ALUMINIUM COLUMNS

TWO PIECE COLUMNS WITH CURVED EXTENSION ARMS



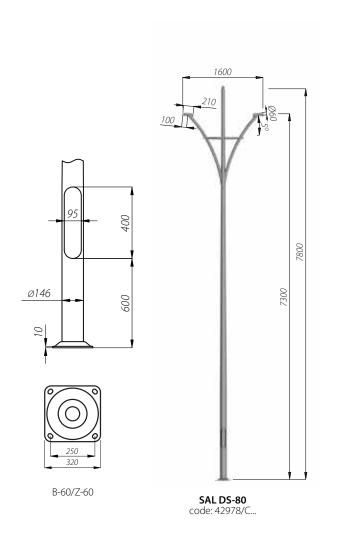


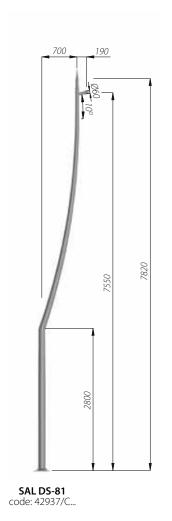
Małogoszcz / Poland



STREET LIGHTING / DECORATIVE COLUMNS

DECORATIVE COLUMNS



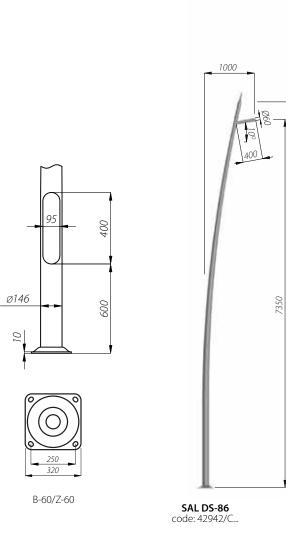


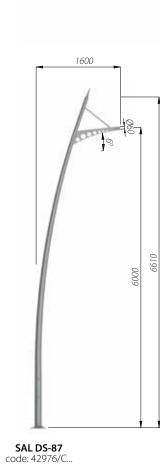




STREET LIGHTING / DECORATIVE COLUMNS

DECORATIVE COLUMNS



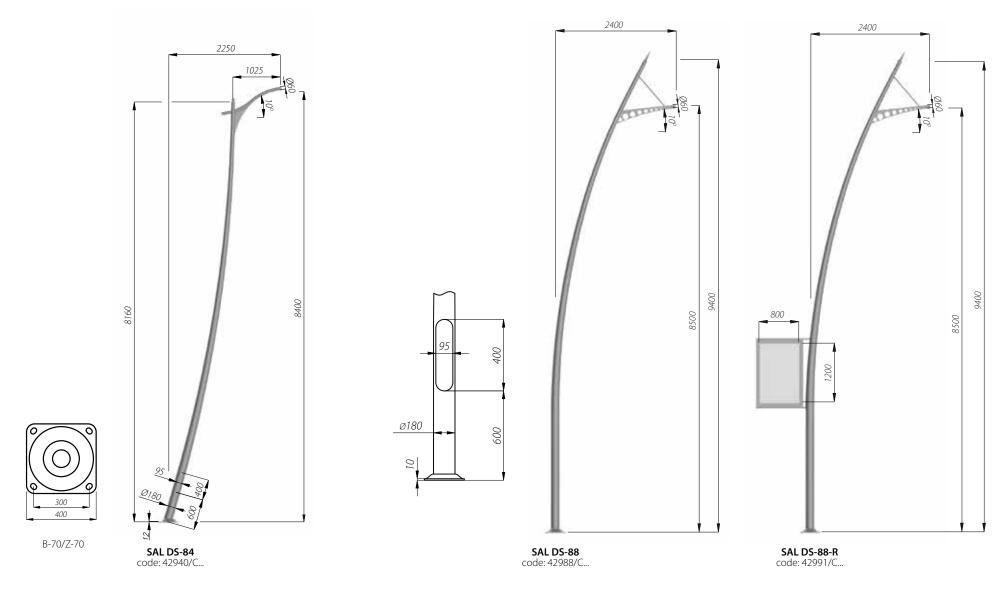


Sucha Beskidzka / Poland



STREET LIGHTING/DECORATIVE COLUMNS

DECORATIVE COLUMNS

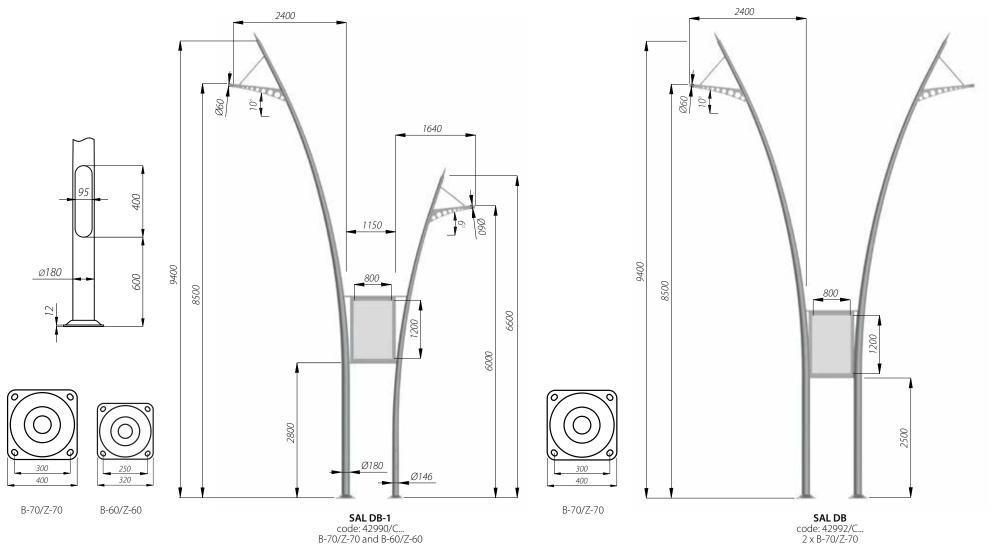


STREET LIGHTING



STREET LIGHTING/DECORATIVE COLUMNS

DECORATIVE COLUMNS





LOWERING AND RAISING COLUMNS MP

- column can be laid on two flat surface perpendicular to the column wiring chamber,
- lowering and raising the column using a special mechanism,
- two types of mechanisms for lowering and raising the columns: manual mechanism (consisting of two clamps located on column separation point) and articulated mechanism (with an additional transmission enabling operation using an electric drill),
- purchase of one mechanism (manual or articulated) is sufficient to handle all types of columns.

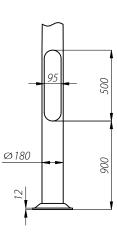


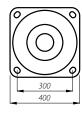
Column double clamp device SAL-...M/P



Columns with base plate

SAL-85M/P code: 42930/C... SAL-90M/P code: 42931/C... SAL-95M/P code: 42932/C... SAL-100M/P code: 42933/C... SAL-115M/P code: 42949/C...

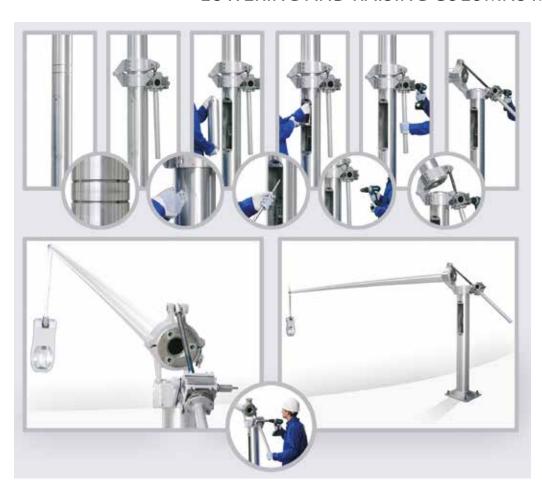




B-70/Z-70



LOWERING AND RAISING COLUMNS M/P



Column diagram SAL-...M/P:

- 1. Mount mechanism (manual or articulated) on the column and double lock
- 2. Remove door of wiring chamber
- 3. Release 3 column securing bolts
- 4. Mount the drilling machine in mechanism
- 5. Lower of the column
- 6. Install/ maintain luminaire
- 7. Raise the column
- 8. Refit 3 column securing bolts
- 9. Refit column door
- 10. Remove double collar accessory





LOWERING AND RAISING COLUMNS P

Designed for mounting on tennis courts, ski areas, car parks, gardens, residences, roadway junctions, airports, platforms, bridges and for difficult access areas.

Advantages:

- possibility of safe changing/maintenance of luminaire, camera, floodlight from ground level,
- low cost of maintenance accessories mounted on the top of the column,
- easy and safe way of lowering and raising column which can be made by one person only,
- słup kładziony prostopadle do wnęki, w jej stronę.

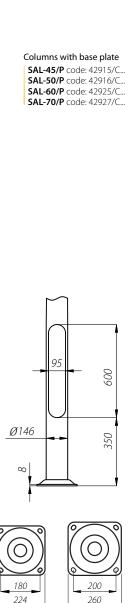
Technical information for lowering and raising columns SAL-.../P:

- inclination angle of column: from 0° to 90°,
- manual lowering and raising of column.









B-50/Z-50

B-51/Z-51







LOWERING AND RAISING COLUMNS P



Column diagram of column SAL-../P:1. Remove door

- 2. Remove hinge securing bolt
 3. Hold column and pull out hinge safety pin
 4. Manually lower column

 A manually lower rolumn

- 5. Install/ maintain the luminaire6. Manually raise the column7. Replace hinge safety pin and securing bolt8. Refit column door



STREET LIGHTING/LIGHT MASTS

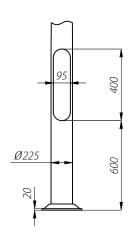
STRAIGHT LIGHT MASTS Ø225 MM

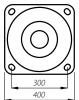
Columns with base plate

MAL-12,5 code: 42501/C... MAL-13 code: 42502/C... MAL-14 code: 42504/C... MAL-15 code: 42506/C... MAL-16 code: 42508/C...

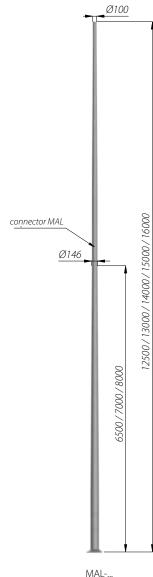
Reinforced columns

MAL-12,5 wzm code: 42551/C... MAL-13 wzm code: 42552/C... MAL-14 wzm code: 42554/C... MAL-15 wzm code: 42556/C... MAL-16 wzm code: 42558/C...





B-80/Z-80



MAL-... MAL-... wzm*





^{*} Reinforcement of the tube with a thickness of 5 mm, up to height of 1150 mm.

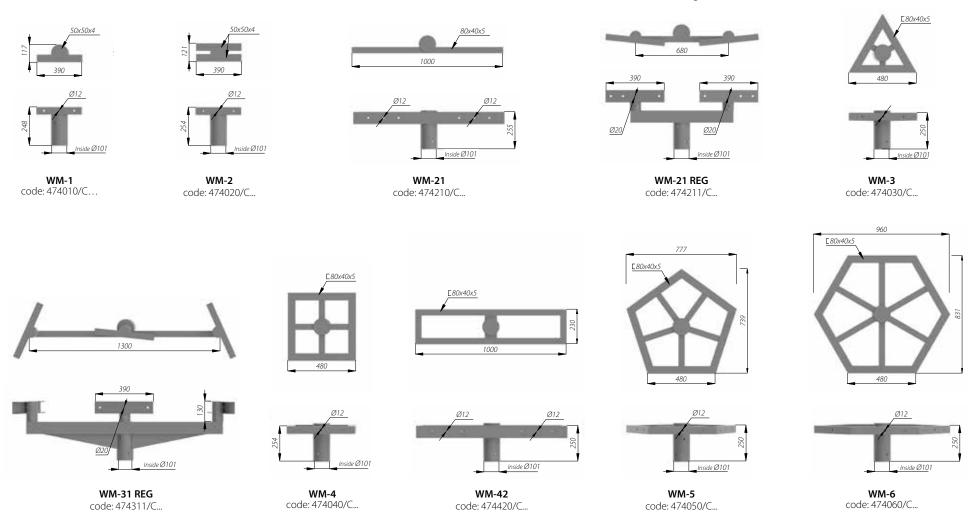
C.. - choice of anodising colour



STREET LIGHTING/EXTENSION ARMS FOR MASTS

EXTENSION ARMS FOR MASTS WM

- application: masts MAL with spigot ending Ø100 mm
- material: anodised aluminum alloy
- luminaires: floodlights

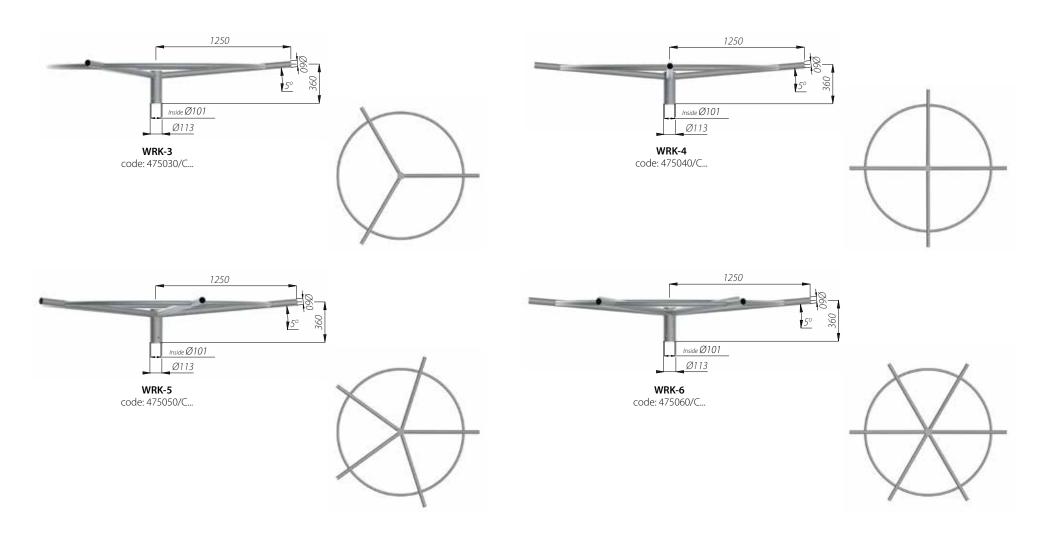




STREET LIGHTING/EXTENSION ARMS FOR MASTS

EXTENSION ARMS FOR MASTS WRK

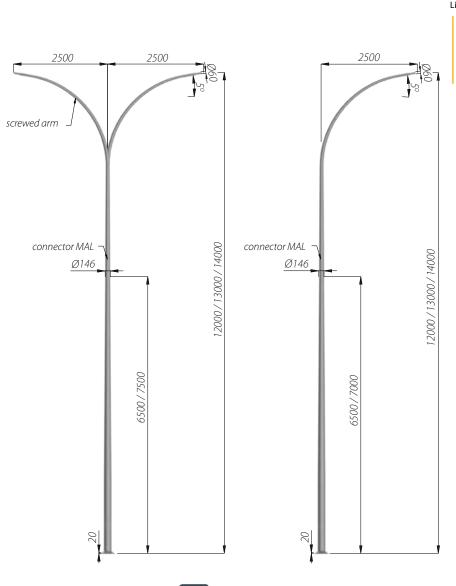
- application: masts MAL with spigot ending Ø100 mm
- material: anodised aluminum alloy
 luminaires: floodlights, street luminaires





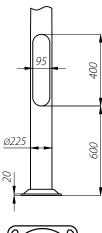
STREET LIGHTING/LIGHT MASTS

LIGHT MASTS WITH CURVED EXTENSION ARMS



Light masts

MAL 12 WŁ 1/2,5/5,5/5 single
MAL 12 WŁ 2/2,5/5,5/5 double
MAL 13 WŁ 1/2,5/5,5/5 single
MAL 13 WŁ 2/2,5/5,5/5 double
MAL 14 WŁ 1/2,5/6,5/5 single
MAL 14 WŁ 2/2,5/6,5/5 double
MAL 14 WŁ 2/2,5/6,5/5 double





B-80/Z-80

171

STREET LIGHTING

Lighting sets	174
Street luminaires	178
Industrial luminaires	198
Aluminium columns for traffic signal lights (height: 3-6,5 m)	204
Aluminium flag poles (height: 6-16 m)	207
Individual projects	208

O ROSA STREET LUMINAIRES

- variety of forms and shapes
- energy-saving LED lighting
- high quality workmanship
- durability and aesthetics
- easy installation
- inclination angle adjustment (selected models)
- high light efficiency



STREET LIGHTING/ LIGHTING SETS

CUT-8 LED

• protection degree: IP66 for the optical part and driver

• insulation class: Ⅱ

• voltage: 120-277 V AC, 50/60 Hz • light source: CREE X-TE or CREE XP-L

• material: anodised aluminum alloy

• colour: inox (possibility of anodising in other colours)

• decorative element made of aluminium in grey colour

 \bullet luminaire is adapted to work in temperatures between -40 $^{\circ}$ C and +55 $^{\circ}$ C

• optics: optics available for the removable module can be found on page 18 of the catalogue



Name	Colour temperature [K]	Code	Power/LEDs amount [W/pcs]	Total power [W]	Luminous flux [lm]*	Luminous efficiency [lm/W]	Concrete footing/ Reinforcement basket	Current product card
CUT LED 8 48	5 000	216433/6	48/24	55	4 550	83	D 70	
CUT LED 8 72	5 000	216435/6	72/24	80	8 850	111	B-70	回旋線形

¹⁵⁰ 150

^{*} due to the precision class of diodes tolerance is \pm -3%





STREET LIGHTING/ LIGHTING SETS

GULLWING LED

• protection degree: IP66 for the optical part and driver

• insulation class: Ⅱ

• voltage: 220-240 V AC, 50/60 Hz

• light source: CREE XP-L

• material: anodised aluminum alloy

• colour: graphite/inox (possibility of anodising in other colours)

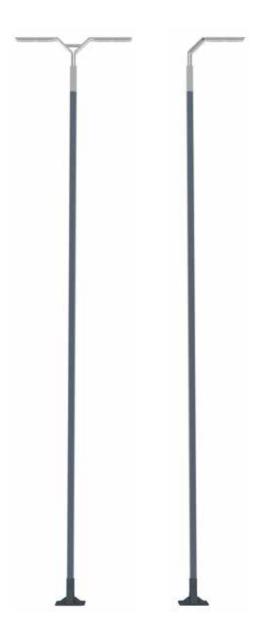
• recommended mounting height: from 8 to 10 m in configuration on median (dividing roadway), depending on the optics

• luminaire is adapted to work in temperatures between -40°C and +55°C

• optics: optics available for the removable module can be found on page 18 of the catalogue



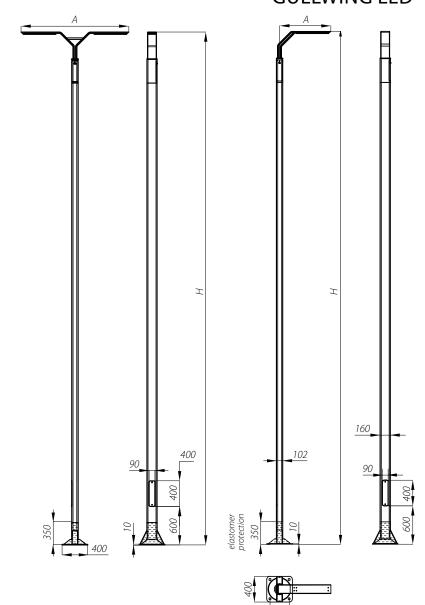
Name	Colour temperature [K]	Code	Power/LEDs amount [W/pcs]	Total power [W]	Luminous flux [lm]*	Luminous efficiency [lm/W]	Height H [m]	Length A [m]	Weight [kg]	Current product card
GULLWING LED 1 x 72	5 000	218135/6	72/24	80	9 750	122	8	0,8	50	
GULLWING LED 1 X /2	3 500	218135/3	72/24	00	8 950	112				
GULLWING LED 1 x 108	5 000	218138/6	108/36	110	14 600	124	9	1,15	64	
GULLWING LED 1 X 108	3 500	218138/3	108/30	118	13 450	114	9			
GULLWING LED 1 x 144	5 000	218141/6	144/48	154	19 500	127	10	1,36	72	
GULLWING LED 1 X 144	3 500	218141/3			17 950	117				
CHILINAINIC LED 2 72	5 000	218035/6	272/24	2 x 80	2 x 9 750	122	8	1,68	53	
GULLWING LED 2 x 72	3 500	218035/3	2 x 72/24		2 x 8 950	112				
CILLIWING LED 3 100	5 000	218038/6	2 100/26	2 440	2 x 14 600	124	9	2,37	68	
GULLWING LED 2 x 108	3 500	218038/6	2 x 108/36	2 x 118	2 x 13 450	114				
CILLIWING LED 2 144	5 000	218041/6	2 144/40	2 x 154	2 x 19 500	127	10	2.00	77	
GULLWING LED 2 x 144	3 500	218041/3	2 x 144/48		2 x 17 950	117	10	2,88		

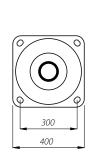






STREET LIGHTING/ LIGHTING SETS GULLWING LED





B-70/Z-70



Goczałkowice-Zdrój / Poland



STREET LIGHTING / STREET LUMINAIRES

CUDDLE LED

• protection degree: IP66 for the optical part and driver

• insulation class: Ⅱ

• voltage: 220-240 V AC, 50/60 Hz • light source: CREE XT-E or CREE XP-L • material: anodised aluminum alloy

• colour: inox/black (possibility of anodising in other colours)

• assembly: on extension arm

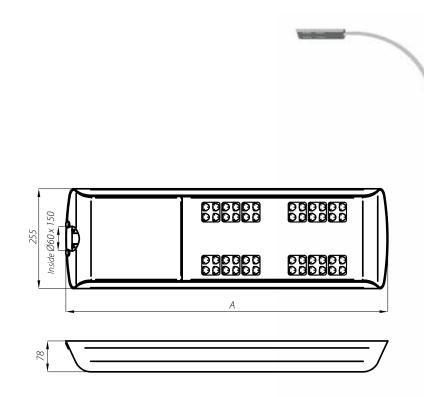
• recommended mounting height: from 6 to 12 m depending on the optics

• luminaire is adapted to work in temperatures between -40°C and +40°C

• optics: optics available for the removable module can be found on page

18 of the catalogue





Name	Colour temperature [K]	Code	Power/LEDs amount [W/pcs]	Total power [W]	Luminous flux [lm]*	Luminous efficiency [lm/W]	Length A [m]	Weight [kg]	Current product card
CUDDLE LED 48	5 000	222333/6	48/24	55	5 000	91		8	
CUDDLE LED 46	3 500	222333/3	40/24		3 000				
CUDDLE LED 60	5 000	222334/6	60/24	68	8 100	119	600		
CODDLE LED 60	3 500	222334/3	00/24		7 500	110	000		
CUDDLE LED 72	5 000	222335/6	72/24	80	9 750	122			
CODDLE LED 72	3 500	222335/3			8 950	112			
CUDDLE LED 96	5 000	222337/6	96/48	105	10 000	95		9	
CODDLE LED 90	3 500	222337/3	90/40		10 000				
CUDDLE LED 130	5 000	222339/6	120/48	129	16 250	126	020		
CUDDLE LED 120	3 500	222339/3	120/40		14 950	116	820		
CUDDLE LED 144	5 000	222341/6	144/48	155	19 500	127			
CUDDLE LED 144	3 500	222341/3	144/48		17 950	117			

Luminaire CUDDLE LED on column SAL-10 WŁN 1/1,5/2,7/5 in the height of 10 m





CUDDLE LED LITE

• protection degree: IP66 for the optical part and driver

• insulation class: Ⅱ

voltage: 100-240 V AC, 50/60 Hz
light source: CREE XT-E or CREE XP-L
material: anodised aluminum alloy

• colour: inox/black (possibility of anodising in other colours)

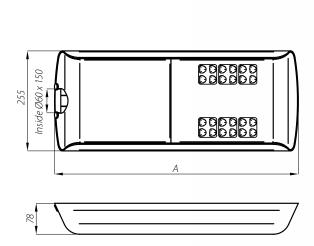
• assembly: on extension arm

• recommended mounting height: from 6 to 10 m depending on the optics

• luminaire is adapted to work in temperatures between -40°C and +40°C

• optics: optics available for the removable module can be found on page 18 of the catalogue





Name	Colour temperature [K]	Code	Power/LEDs amount [W/pcs]	Total power [W]	Luminous flux [lm]*	Luminous efficiency [lm/W]	Length A [m]	Weight [kg]	Current product card
CUDDLE LED 52 LITE	5 000	222351/6	52/24	59	4 850	82	600	8	可坐翻卷
	3 500	222351/3	32/24		4 030				
CUDDIFIED ON LITE	5 000	222352/6	02/24	06	10 500	122	000	8	
CUDDLE LED 80 LITE	3 500	222352/3	82/24	86	9 650	112			





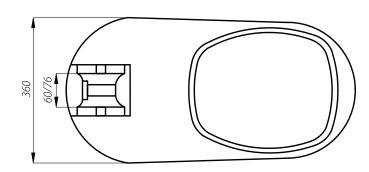


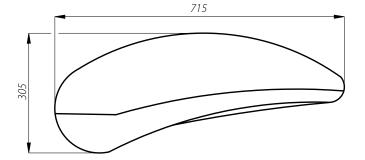
LUNOIDA

- protection degree: IP67 for optic, IP45 wiring chamber
- insulation class: I, II• voltage: 240 V AC
- material:
 - body die cast aluminum-alloy
 - cover UV resistant technical polymer
 - diffuser flat tempered glass
 - reflector pressed aluminium sheet
- colour: body RAL 7038 structure, cover plastic in RAL 7035
- assembly: pole top Ø60 mm \div 76 mm and length 100 mm or on extension arm
- luminaire regulation: 0° to 110° every 4,5°
- reposition the light source for luminaire with light source up to 150 W

Name	Co	ode	Power [W]	Light course	Weigh	nt [kg]
Name	I insulation class	II insulation class	Power [w]	Light source	I insulation class	II insulation class
LUNOIDA S-70	220102	220202	70	Sodium E-27	8,9	9,0
LUNOIDA S-100	220103	220203	100		9,3	9,4
LUNOIDA S-150	220104	220204	150	Sodium-F-40	9,9	10
LUNOIDA S-250	220105	220205	250	3001UM-E-40	11,2	11,3
LUNOIDA S-400	220106	220206	400		12,4	12,5
LUNOIDA MH-70	220107	220207	70		8,9	9,0
LUNOIDA MH-100	220108	220208	100	Metal halide E-27	9,2	9,3
LUNOIDA MH-150	220109	220209	150		9,8	9,9
LUNOIDA MH-250	220110	220210	250	Matal halida F 40	11,2	11,3
LUNOIDA MH-400	220111	220211	400	Metal halide E-40	12,4	12,5

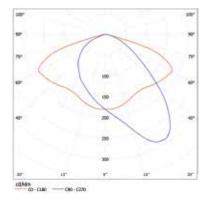




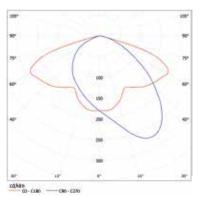




LUNOIDA



Distribution curve for luminaire LUNOIDA S-150W



Distribution curve for luminaire LUNOIDA S-250W



LUNOIDA LED

• protection degree: IP66 for the optical part and driver

• insulation class: □

• voltage: 220-240 V AC, 50/60 Hz • light source: CREE XT-E or CREE XP-L

material:

body and cover – die cast aluminium-alloy,

• colour: body and a cover – RAL 7038

- assembly: pole top Ø60 mm \div 76 mm and length 100 mm or on extension arm, height of mounting: 6-10 m

• luminaire regulation: 0° to 110° every 4,5°

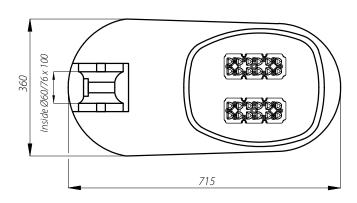
• luminaire is adapted to work in temperatures between -40 $^{\circ}$ C and +40 $^{\circ}$ C

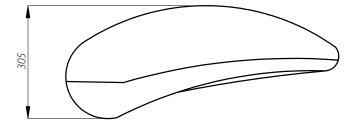
• optics: optics available for the removable module can be found on page 18 of the catalogue

	Name	Colour temperature [K]	Code	Power/LEDs amount [W/pcs]	Total power [W]	Luminous flux [lm]*	Luminous efficiency [lm/W]	Weight [kg]	Current product card
	LUNOIDA LED 40	5 000	2202033/6	48/24	55	5 000	91		
	LUNOIDA LED 48	3 500	2202033/3	40/24)))	3 000	91		
	LUNOIDA LED CO	5 000	2202034/6	60/24	68	8 100	119	12	
	LUNOIDA LED 60	3 500	2202034/3	00/24	00	7 500	110	12	35.00
	LUNOIDA LED 72	5 000	2202035/6	72/24	00	9 750	122		国際経験を
		3 500	2202035/3	72/24	80	8 950	112		

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





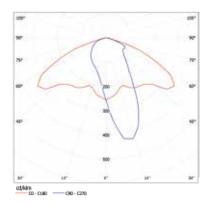






MAGNOLIA

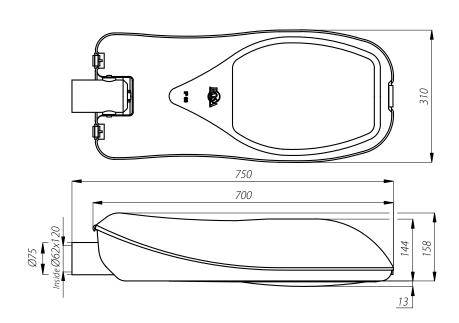
- protection degree: IP66 for optics and wiring chamber,
- insulation class: ||,
- voltage: 230 V AC
- material: body and cover die cast aluminium-alloy, diffuser – slightly convex tempered glass, reflector: pressed aluminium sheet,
- colour: body RAL 9006 structure, cover SILVER RENOIR (polyester powder paint),
- assembly: pole top with spigot ending Ø60 mm and length 120 mm or on extension arm,
- luminaire regulation: from -5° to 20° every 2,5°
- reposition of the light source for the luminaire with light source up to 150 W,
- low windage factor 0,5.



Distribution curve for luminaire MAGNOLIA

Name	Code Power [W]		Light source	Weight [kg]
MAGNOLIA S-70	220502	70	Sodium E-27	8,3
MAGNOLIA S-100	220503	100		8,6
MAGNOLIA S-150	220504	150	Sodium E-40	9,3
MAGNOLIA S-250	220505	250		10,4
MAGNOLIA MH-70	220507	70		8,3
MAGNOLIA MH-100	220508	100	Metal halide E-27	8,5
MAGNOLIA MH-150	220509	150		9,2
MAGNOLIA MH-250	220510	250	Metal halide E-40	10,3















MAGNOLIA LED

• protection degree: IP66

• insulation class: Ⅱ

• voltage: 220-240 V AC, 50/60 Hz

• light source: CREE XT-E or CREE XP-L

material:

body and cover – die cast aluminium-alloy,

• colour: body – RAL 9006 structure, cover – SILVER RENOIR (polyester powder paint),

• assembly: pole top Ø60 mm and length 120 mm or on extension arm

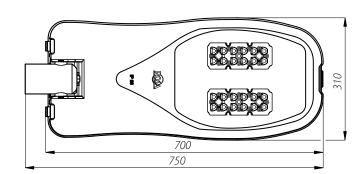
• recommended mounting height: from 6 to 12 m depending on the optics

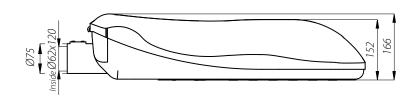
• luminaire regulation: -5° to 20° every 2,5°

• luminaire is adapted to work in temperatures between -40°C and +40°C

• optics: optics available for the removable module can be found on page 18 of the catalogue







Name	Colour temperature [K]	Code	Power/LEDs amount [W/pcs]	Total power [W]	Luminous flux [lm]*	Luminous efficiency [lm/W]	Weight [kg]	Current product card
MACNOLIA LED 40	5 000	220933/6	48/24	55	5 000	91		
MAGNOLIA LED 48	3 500	220933/3	40/24)))	3 000	91		1325566回
MACNOLIA LED 60	5 000	220934/6	60/24	68	8 100	119	11	
MAGNOLIA LED 60	3 500	220934/3	00/24	00	7 500	110	''	
MACNOLIA LED 70	5 000	220935/6	72/24	00	9 750	122		17762R947
MAGNOLIA LED 72	3 500	220035/3	72/24	80	8 950	117		

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



MAGNOLIA LED



Luminaire MAGNOLIA LED on column SAL DS-84 in the height of 8,4 m



COSMO LED

• protection degree: IP66 for the optical part and driver

insulation class: □

voltage: 220-240 V AC, 50/60 Hz
light source: CREE XT-E or CREE XP-L

· material:

body and handle – anodised aluminium alloy cover – formed anodised aluminium sheet

• colour: inox/black (possibility of anodising in other colours)

assembly:

COSMO LED ALFA – pole top mounted with spigot ending Ø60, on the column 8-10 m high COSMO LED – for mounting on extension arm with spigot ending Ø60

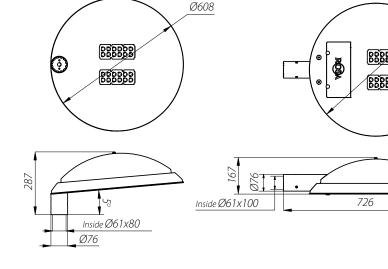
- recommended mounting height: from 6 to 12 m depending on the optics
- luminaire is adapted to work in temperatures between -40°C and +40°C
- optics: optics available for the removable module can be found on page 18 of the catalogue



COSMO LED



Ø608

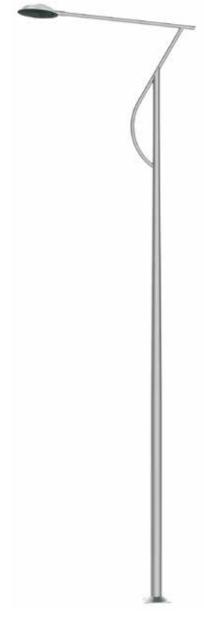


Colour Power/LEDs Luminous Luminous Total power Weight **Current product** Name temperature Code amount flux efficiency [kg] [W] card [K] [W/pcs] [lm]* [lm/W] 5 000 2210035/6 9 750 122 COSMO LED 72 72/24 80 3 500 2210035/3 8 950 112 11,5 5 000 2212035/6 9 750 122 COSMO LED ALFA 72 72/24 80 3 500 2212035/3 8 950 112

^{*} due to the precision class of diodes tolerance is \pm -3%



COSMO LED



Luminaire COSMO LED on the column SAL DS-85 in the height of 8,16m



URSA LED

• protection degree: IP66 for the optical part and driver

• insulation class: Ⅱ

voltage: 220-240 V AC, 50/60 Hz
light source: CREE XT-E or CREE XP-L
material: anodised aluminum alloy

• colour: inox/black (possibility of anodising in other colours)

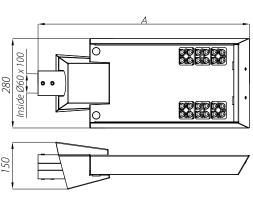
assembly:

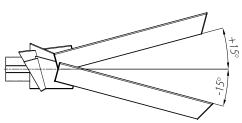
URSA II LED – designed for mounting on extension arm Ø60 URSA II LED ALFA – pole top mounted Ø60 mm

• recommended mounting height: from 6 to 12 m depending on the optics

 \bullet luminaire is adapted to work in temperatures between -40 $^{\circ}$ C and +55 $^{\circ}$ C

• optics: optics available for the removable module can be found on page 18 of the catalogue







Name	Colour temperature [K]	Code	Power/LEDs amount [W/pcs]	Total power [W]	Luminous flux [lm]*	Luminous efficiency [lm/W]	Weight [kg]	Length A [mm]	Current product card
URSA LED 48	5 000	2220033/6							
UNDA LED 40	3 500	2220033/3	48/24	55	5 000	91			
URSA LED ALFA 48	5 000	2221033/6	40/24)))	3 000	91			
UNDA LED ALFA 40	3 500	2221033/3							
URSA LED 60	5 000	2220034/6			8 100	119			
UKSA LED 00	3500	2220034/3	60/24	68	7 500	110	8	665	
URSA LED ALFA 60	5000	2221034/6	00/24	00	8 100	119] °	000	
UKSA LED ALFA 60	3 500	2221034/3			7 500	110			
URSA LED 72	5 000	2220035/6			9 750	122			
UKSA LED /2	3 500	2220035/3	72/24	80	8 950	112			
URSA LED ALFA 72	5 000	2221035/6			9 750	122			
UKSA LED ALFA /2	3 500	2221035/3			8 950	112			**************************************
URSA LED 96	5 000	2220037/6				95			
UKSA LED 90	3 500	2220037/3	96/48	105	10 000				回逻辑系统
URSA LED ALFA 96	5 000	2221037/6	90/40	105	10 000	95			
UKSA LED ALFA 90	3 500	2221037/3							
URSA LED 120	5 000	2220039/6			16 250	126			
UKSA LED 120	3 500	2220039/3	120/48	129	14 950	116	10,5	890	
LIDCA LED ALEA 120	5 000	2221039/6	120/40	129	16 250	126	10,5	090	
URSA LED ALFA 120	3 500	2221039/3	-		14 950	116			
UDCA LED 144	5 000	2220041/6			19 500	127			
URSA LFD 144	3 500	2220041/3	144/40	154	17 950	117			
HDCA LED ALEA 144	5 000	2221041/6	144/48	154	19 500	127]		
URSA LED ALFA 144	3 500	2221041/3			17 950	117			

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



URSA LED



Luminaire URSA LED on the column SAL-M12/5 in the height of 8 m



OŚWIETLENIE ULICZNE/ OPRAWY ULICZNE

ANDROMEDA LED

• protection degree: IP66 for the optical part and driver

• insulation class: Ⅱ

voltage: 220-240 V AC, 50/60 Hz
light source: CREE XT-E or CREE XP-L
material: anodised aluminum alloy

colour: inox/black (possibility of anodising in other colours)
assembly: designed for mounting on extension arm Ø60

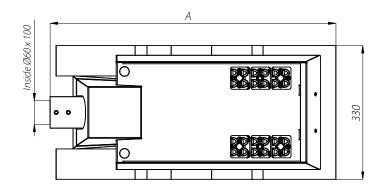
• recommended mounting height: from 6 to 12 m depending on the optics

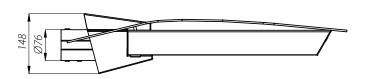
• luminaire is adapted to work in temperatures between -40 $^{\circ}$ C and +55 $^{\circ}$ C

• optics: optics available for the removable module can be found on page 18 of the catalogue



Name	Colour temperature [K]	Code	Power/LEDs amount [W/pcs]	Total power [W]	Luminous flux [lm]*	Luminous efficiency [lm/W]	Weight [kg]	Length A [mm]	Current product card	
ANDROMEDA LED 60	5 000	2222034/6	72/24	80	8 100	119				
ANDROMEDA LED 60	3 500	2222034/3	72/24	00	7 500	110	10	705		
ANDROMEDA LED 73	5 000	2222035/6	96/32	105	9 750	122	10	/03		
ANDROMEDA LED 72	3 500	2222035/3	90/32	103	8 950	112				
ANDROMEDA LED 96	5 000	2222037/6	120/48	130	10 000	10,000	95			300
ANDROMEDA LED 90	3 500	2222035/3	120/40			95				
ANDDOMEDA LED 120	5 000	2222039/6	144/40	155	1 6250	126	12.5	930		
ANDROMEDA LED 120	3 500	2222039/3	144/48	155	1 4950	116	13,5	930		
ANDROMEDA LED 144	5 000	2222041/6	144/48	155	1 9500	127				
ANDROMEDA LED 144	3 500	2222041/3	144/48	133	1 7950	117				





^{*}due to the precision class of diodes tolerance is $\pm/-3\%$



ANDROMEDA LED

Luminaire ANDROMEDA LED on the column SAL P-81 in the height of 10 m



INDUSTRIAL UMINAIRES

- used in industrial halls, warehouses, gas stations
- energy-saving LED lighting
- high production quality
- durability and aesthetics
- inclination angle adjustment (selected models)
- high light efficiency



STREET LIGHTING / INDUSTRIAL LUMINAIRES

ARTEMIS LED

• protection degree: IP66 for the optical part and driver

insulation class: □

• voltage: 220-240 V AC, 50/60 Hz

• light source: CREE XP-L

• material: anodised aluminum alloy

• colour: inox/black (possibility of anodising in other colours)

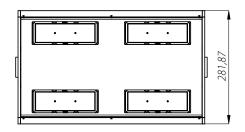
• assembly: screwed to extension arm

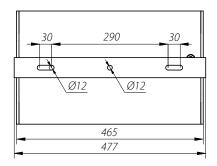
• possibility to adjust the inclination angle from 0° to 180°

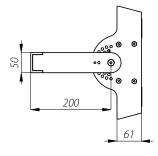
• recommended mounting height: from 8 to 10 m depending on the optics

 \bullet luminaire is adapted to work in temperatures between -40 $^{\circ}\text{C}$ and +40 $^{\circ}\text{C}$

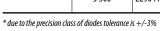
• optics: optics available for the removable module can be found on page 18 of the catalogue







Name	Colour temperature [K]	Code	Power/LEDs amount [W/pcs]	Total power [W]	Luminous flux [lm]*	Luminous efficiency [lm/W]	Weight [kg]	Current product card
ARTEMIS LED -	5 000	229041/6	144/40	155	19 500	127		
	3 500	229041/3	144/48		17 950	117	8	









ARTEMIS LED





STREET LIGHTING / INDUSTRIAL LUMINAIRES

ISKRA LED LB

• protection degree: IP66 for the optical part and driver

• insulation class: Ⅱ

• voltage: 100-240 V AC, 50/60 Hz

• light source: CREE XP-L

• material: anodised aluminum alloy

• colour: inox/black (possibility of anodising in other colours)

• assembly: hanged into supporting structure

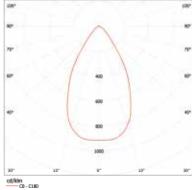
• possibility to adjust the inclination angle from 0° to 180°

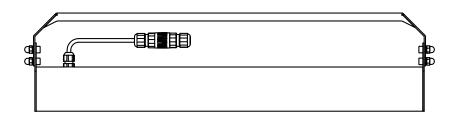
• recommended mounting height: from 8 to 10 m depending on the optics

• luminaire is adapted to work in temperatures between -40 $^{\circ}$ C and +55 $^{\circ}$ C

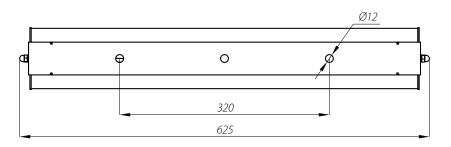








So.



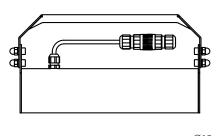
	Name	Colour temperature [K]	Code	Power/LEDs amount [W/pcs]	Total power [W]	Luminous flux [lm]*	Luminous efficiency [lm/W]	Weight [kg]	Current product card
	ISKRA LED LB 36 -	5 000	230632/6	36/12	36	4 700	121	_	messer.
		3 500	230632/3			4 300	110)	毛管禁犯
		5 000	230752/6	00/24		10 500	122	_	
		3 500	230752/3	80/24	86	9 650	112	/	高熱級群

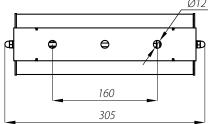
^{*} due to the precision class of diodes tolerance is \pm 7-7%

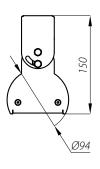
ISKRA LED LB



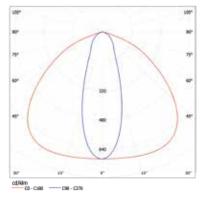




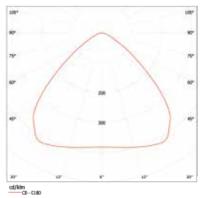




HB-O



HB-WWW





STREET LIGHTING / INDUSTRIAL LUMINAIRES

ISKRA LED HB

• protection degree: IP66 for the optical part and driver

• insulation class: Ⅱ

• voltage: 100-240 V AC, 50/60 Hz

• light source: CREE XP-L

• material: anodised aluminum alloy

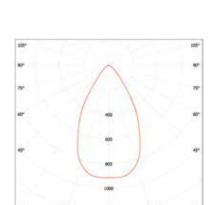
• colour: inox/black (possibility of anodising in other colours)

• assembly: hanged into supporting structure

• possibility to adjust the inclination angle from 0° to 180°

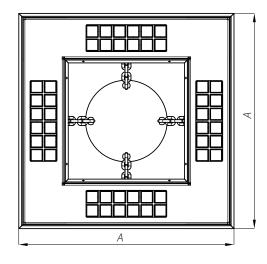
• recommended mounting height: from 8 to 10 m depending on the optics

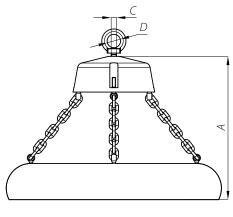
• luminaire is adapted to work in temperatures between -40 $^{\circ}$ C and +55 $^{\circ}$ C



Light distribution curve for luminaire ISKRA LED HB





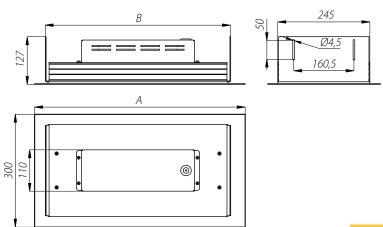


	Name	Colour temperature [K]	Code	Power/LEDs amount [W/pcs]	Total power [W]	Luminous flux [lm]*	Luminous efficiency [lm/W]	Length A [mm]	Height B [mm]	Weight [kg]	Current product card
_	ISKRA LED HB 120	5 000	231039/6	120/48	135	17 000	126	400	260	10	同路器公司
		3 500	231039/3			13 800	102	400			
_	ISKRA LED HB 180	5 000	231144/6	100/10	100	23 600	118	600	200	15	
		3 500	231144/3	180/48	180	19 150	96	600	300	15	同級發表發

^{*} due to the precision class of diodes tolerance is \pm 7-7%



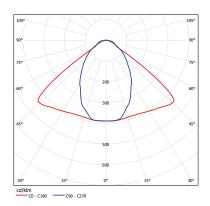




LIBRA LED

Industrial luminaire LIBRA LED is designed to illuminate the production halls, warehouses, petrol stations, etc.. The luminaire is mounted in the ceiling after the preparation of the appropriate hole.

- protection degree: IP66 for the optical part
- insulation class: ||
- voltage: 220-240 V AC, 50/60 Hz
- light source: CREE XP-L
- material: anodised aluminum alloy
- colour: natural (possibility of anodising in other colours)



Light distribution curve for luminaire LIBRA LED

Name	Colour temperature [K]	Code	Power/LEDs amount [W/pcs]	Total power [W]	Luminous flux [lm]*	Luminous efficiency [lm/W]	Weight [kg]	Length A [mm]	Length B [mm]	Current product card
LIBRA LED 72	5 000	230535/6	72/24	80	7 500	94	77	427	360	
LIDKA LED /2	3 500	230535/3	72/24	ου	6 900	86	7,7	427	300	
LIDDALEDOC	5 000	230537/6	96/32	105	10 000	95		519	452	
LIBRA LED 96	3 500	230537/3	90/32		9 200	88	9,3			
LIDDA LED 130	5 000	230539/6	120/40	129	12 500	97	10	560	493	
LIBRA LED 120	3 500	230539/3	120/40	129	11 500	89	10	300	493	国数数数:
LIBRA LED 144	5 000	230541/6	144/40	154	15 000	97	11,2	642	<i>[</i> 72	
	3 500	230541/3	144/48		13 800	90			572	



OTHER PRODUCTS/ALUMINIUM COLUMNS FOR TRAFFIC SIGNAL LIGHTS

STRAIGHT COLUMNS

Columns for traffic signal lights

Columns for traffic signal lights are designed for installing traffic lights on crossroads, pedestrian crossings etc.

Types of columns for traffic signal lights:

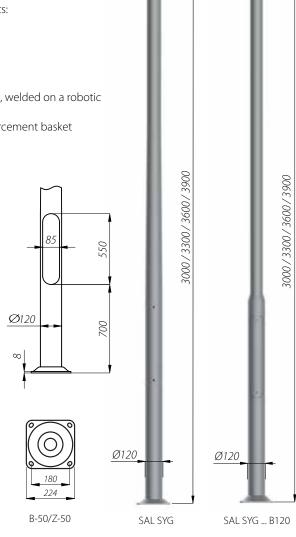
- straight columns
- columns with outreach
- gates
- material: anodised aluminium
- base plate: made of sheet aluminum, welded on a robotic position
- assembly: concrete footing or reinforcement basket

Columns with base plate

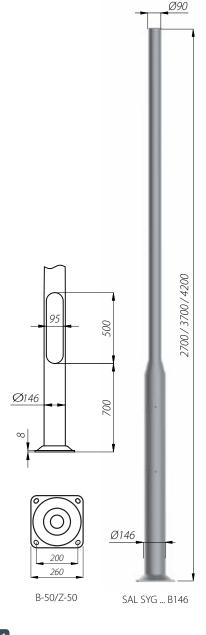
SAL SYG 3,0 code: 42801/C... SAL SYG 3,3 code: 42802/C... SAL SYG 3,6 code: 42803/C... SAL SYG 3,9 kcode: 42804/C...

SAL SYG 3,0-B120 code: 42824/C... SAL SYG 3,3-B120 code: 42825/C... SAL SYG 3,6-B120 code: 42826/C... SAL SYG 3,9-B120 code: 42827/C...

SAL SYG 2,7-B146 code: 42820/C... SAL SYG 3,7-B146 code: 42822/C... SAL SYG 4,2-B146 code: 42823/C...



Ø100



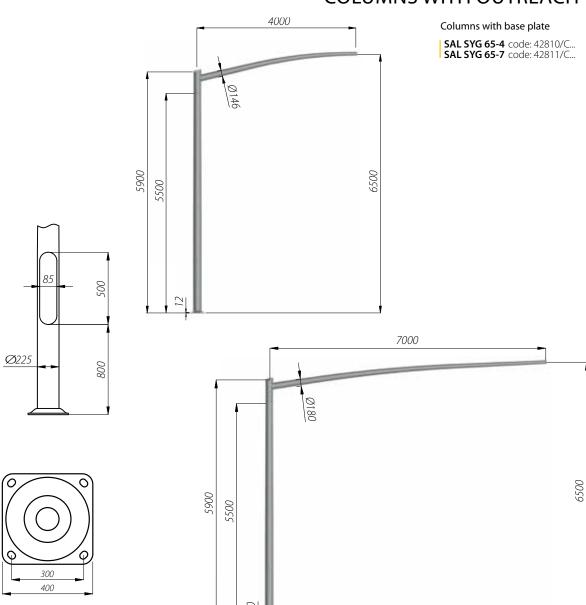






COLUMNS WITH OUTREACH

OTHER PRODUCTS/ALUMINIUM COLUMNS FOR TRAFFIC SIGNAL LIGHTS







B-70/Z-70

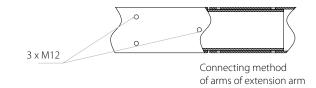


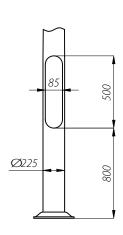
OTHER PRODUCTS/ALUMINIUM COLUMNS FOR TRAFFIC SIGNAL LIGHTS

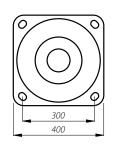
GATE

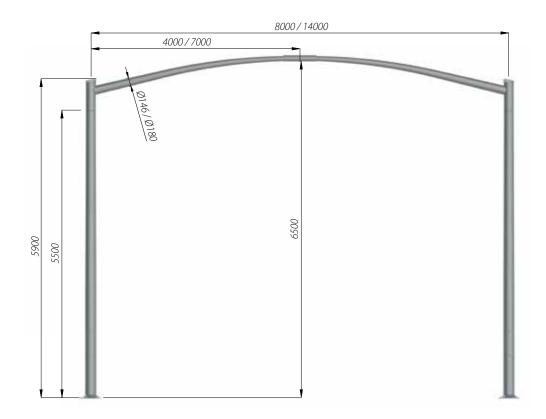
Columns with base plate

SAL SYG 8 code: 42830/C... SAL SYG 14 code: 42831/C...









B-70/Z-70





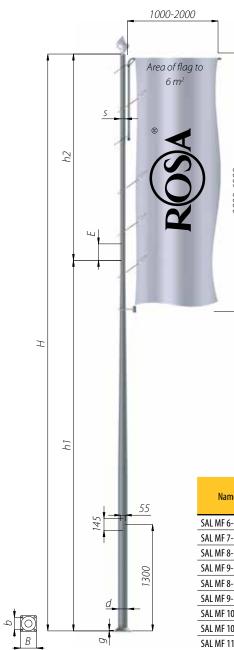
FLAG POLES

Flagpoles flags are used to mounting flags with area to 6 m²

- material: anodised aluminium alloy
- construction: consists of two sections, bottom part conical, upper part cylindrical
- routing head: made of plastic, together with cord placed inside the pole which allows the flag free movement according to wind direction
- cord: braided spiral, resistant, 4 mm diameter, white colour
- flag bob: grey plasticized metal
- clamping rings for fixing flag: 7 pieces as standard
- niche chamber: equipped in locks cord

Additional accessories for flag poles:

- cross-bar for flag of the following lengths: 1 m, 1,5 m, 2 m
- top: gold or silver decorative bal



Name	Code		Heigh [m]		Diameter	Thickness	Concrete footing/
name	Code	Н	h1+E	h2	at base plate [mm]	of the base [mm]	reinforcement basket
SAL MF 6-114	42950/C	6	4,5+0,2	1,5	Ø114	8	B-50 / Z-50
SAL MF 7-114-2	42952/C	7	4,5+0,2	2,5	Ø114	12	B-51 / Z-51
SAL MF 8-114	42953/C	8	4,5+0,2	3,5	Ø114	12	B-51 / Z-51
SAL MF 9-114	42954/C	9	4,5+0,2	4,5	Ø114	12	B-51 / Z-51
SAL MF 8-120	42955/C	8	6,0+0,2	2	Ø120	12	B-51 / Z-51
SAL MF 9-120	42956/C	9	6,0+0,2	3	Ø120	12	B-51 / Z-51
SAL MF 10-120	42957/C	10	6,0+0,2	4	Ø120	12	B-51 / Z-51
SAL MF 10-146	42958/C	10	6,82+0,2	3,18	Ø146	10	B-71 / Z-71
SAL MF 11-146	42959/C	11	6,82+0,2	4,18	Ø146	10	B-71 / Z-71
SAL MF 12-146	42960/C	12	6,82+0,2	5,18	Ø146	10	B-71 / Z-71

Mińsk / Belarus



STREET LIGHTING / INDIVIDUAL PROJECTS

INDIVIDUAL PROJECTS

We fulfill the dreams of architects and create entirely new solutions, which go beyond the standard offer of catalogue.
With us, even the most original ideas become reality.









OTHER PRODUCTS

Concrete footings and reinforcement baskets	214
Connection boxes	216
Decorative elements	218

OTHER PRODUCTS

ROSA outdoor lighting stands on solid foundations. We know how important is the basis that's why we provide to our customers complete solutions, which include the concrete foundations and reinforcement baskets. We also aware of the fact how important is the detail so we enriched the offer of decorative elements, beside which no one passes indifferently.



OTHER PRODUCTS / CONCRETE FOUNDATIONS AND REINFORCEMENT BASKETS

CONCRETE FOUNDATIONS

Application:

• buried concrete footings are used as foundations for lighting columns

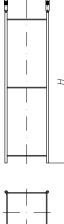
Technical information:

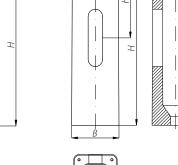
- concrete class C25/30 according standard EN 206-1,
- steel reinforcement basket,
- screws spigot endings hot galvanized,
- concrete footings for aluminium columns and masts are supplied with thermo-shrinkable sleeves installed on the screws endings, what protects against corrosion on screw,
- side holes and vertical hole to provide power cables,
- surface is covered with an impregnate agent (certified asphalted anion emulsion),
- square section (aluminium columns and masts as well pole SP-5W and SP-31W) or round (plastic coated poles).

Advantages:

- single-element construction makes easy foundation of products in the ground,
- fast and easy assembly with no seasoning required,
- high quality due to the semi-automatic computer-controlled production line using the method of vibropressing.

All concrete footings comply with standard EN 14991:2007 and have Certificate of Factory Production Control 1488-CPD-0208/Z.









Type of concrete footing	B-60	B-70	B-71	B-80			
Code	311160	311170	311171	311180			
Shape		9	square				
Size A x B x H [mm]	320 x 330 x 1000	400 x 410 x 1200	400 x 410 x 1000	400 x 430 x 1500			
Bolts spacing E [mm]	250	300	300	300			
Height of pin [mm]	35	45	45	50			
Connection elements	4008/40009	4012/1013	4012/4013	4012			
Type of reinforcement basket	Z-60	Z-70	Z-71	Z-80			
Code	311206	311207	311271	311208			

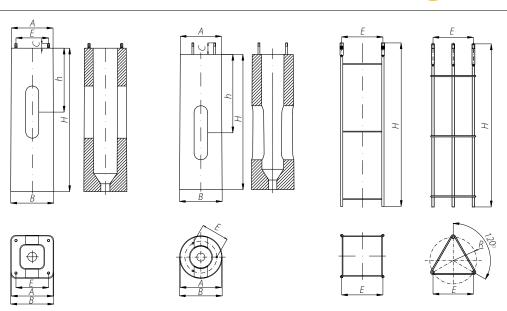
Type of reinforcement basket	Z-60	Z-70	<u> </u>	Z-80		
Code	311206	311207	311271	311208		
Shape	square					
Height H [mm]	985	1190	965	1500		
Connection elements	4008/4009	4012/4013	4012/4013	4012		

Application	SALØ146	SALØ176, SAL Ø178K, SALØ180M	SALØ146H, SALØ176, SAL Ø178K, SALØ180M	MALØ225









ADDITIONAL ELEMENTS

- stainless washer, hot galvanized nut or hot galvanized ripable nut are the connection elements sets available for columns SAL, MAL.
- stainless washer, hot galvanized nut, rubber cover plate for poles type S, SP, SM.

OTHER PRODUCTS / CONCRETE FOUNDATIONS AND REINFORCEMENT BASKETS

ADDITIONAL ELEMENTS

Application:

• buried concrete filled reinforcement baskets are used as foundations for lighting columns

Technical information:

- steel reinforcement basket,
- oxide paint as a protection against corrosion resistant,
- screws spigot endings hot galvanized,
- in reinforcement baskets for aluminium columns and masts are used thermo--shrinkable sleeves put on the screws endings in place of base plate deposition, what protects against corrosion on screw,
- square section (aluminium columns and masts as well pole SP-5W and SP-31W) or triangle (plastic coated poles).

Advantages:

- light weight facilitates transport
- for installation on customer footings

The manufacturer recommends using original concrete footings, reinforcement baskets and connection elements guarantee stability and safety of whole construction.

Concrete footings and reinforcement baskets in park lighting.

	_								г	
Type of concrete footing	B-20	B-30	B-40	B-40B	B-50	B-51A	B-51	B-60	B-60T	B-71T
Code	311120	311130	311140	311140B	311150	311151A	311151	311160	311160T	311171T
Shape		roi	und				squ	are		
Size A x B x H [mm]	Ø250 x Ø255 x 700	Ø305 x Ø315 x 800	Ø305 x Ø315 x 1000	Ø305 x Ø315 x 800	240 x 255 x 900	260 x 275 x 1200	260 x 275 x 1000	320 x 330 x 1000	320 x 330 x 1000	400 x 410 x 1000
Bolt spacing E [mm]	190	236	236	236	180	200	200	250	250	300
Height of pin [mm]	50	85	85	85	30	35	35	35	90	110
Connection elements	311002	311003	311003	311003	4006 / 4007	4008 / 4009	4008 / 4009	4008 / 4009	4008 / 4009	4008 / 4009
Type of reinforcement basket	Z-20	Z-30	Z-40	Z-40B	Z-50	Z-51A	Z-51	Z-60	Z-60T	Z-71T
Code	311202	311203	311204	311204B	311205	311251A	311251	311206	311260T	311271T
Shape		tria	ngle			square				
Height H [mm]	700	825	1025	935	870	1180	975	985	1060	1055
Connection elements	311002	311003	311003	311003	4006 / 4007	4008 / 4009	4008 / 4009	4008 / 4009	4008 / 4009	4008 / 4009
	S-13, S-23, SP-2	S-21, S-21W, S-22, S-30, S-30W, S-31,	S-52W, S-54W, SP-4, SP-4W,	S-40, S-40W, SP-3, SP-3W	SALØ114/B60, SALØ120	SALØ114/ D60, SALØ114/	SALØ114/D60, SALØ114/D75,	SALØ146	SP-31W	SP-5W
Application		S-31W, S-32	SM-1W, SM-2W,			D75, SALØ120E,	SALØ120E			
			SM-3W			SALØ146G, SAL				
						DECO-1, SAL DECO-2				



OTHER PRODUCTS / CONNECTION BOXES

CONNECTION BOXES

Connection box is an integral part of almost any lighting construction. It is used to connect power cables and electrical protection of luminaires mounted on columns and poles. It can be used in all columns and poles, where internal diameter is greater than 95 mm. The priority in the design of connection boxes is the safety of use, therefore they are made from high quality materials, excellent insulation properties and high mechanical strength.

protection degree: IP54
insulation class: II

rated voltage: 500Vrated current: 80A

• fuse: D01/E14, 2-16 A, 400 V, AC

• casing dimensions: 1. TB, NTB: 273 mm x 90 mm x 76 mm (for TB-11, TB-12: 273 mm x 90 mm x 64 mm)

· material:

integrated terminal strip – made of PTB material (butylene polyterephtalate),
 with high insulation parameters and high mechanical resistance

– connection cover and clamp/cable protection – made of transparent polycarbonate,

 connection box base – made of polycarbonate reinforced by fibre glass, cable opening/outlets are protected with gaskets

• assembly: installed on the aluminium rail on the back wall of the column using two screws M6

Advantages:

· small dimensions,

• quick, easy mounting due to the construction,

• all connection boxes are for 2-3 cables,

• construction of terminal strip (open from the top) enables cable installation.



Fuses

Type of fuse	Weight [kg]
D01/E14 6A	0,01
D01/E14 10A	0,01
D01/E14 16A	0,01



Connection box installed in aluminium column



Connection box installed in plastic coated pole





CONNECTION BOXES NTB

- 5 tracks connection boxes for feeder cables with cross-section from 5 x 6 mm^2 up 5 x 16 mm^2
- max. 3 cables
- the possibility of splitting load into particular phases
- the possibility of moving the fuse-sockets



The possibility of moving the fuse-sockets in the connection box NTB-1

Name	Code		Number of fuse-sockets [pcs]			
NTB-1	324110	1	fuse-socket mounted on L1 phase, there is a possibility of moving the fuse-socket on phase L2 or L3 by screwing-out two bolts	0,71		
NTB-2	324120	2	fuse-socket mounted on L1 and L2 phase, there is a possibility of moving the fuse-socket into phase L3 by screwing-out two bolts	0,73		
NTB-3	324130	3	fuse-sockets on three phases L1, L2, L3.	0,76		

CONNECTION BOXES TB

Connection boxes TB-1 and TB-2

- connection box with 4 tracks for feeder cables with cross-section from 4 x 10 mm² up 4 x 35 mm²
- max. 3 cables
- the possibility of moving the fuse-sockets







Name	Code		Weight [kg]	
TB-1	324010	1	fuse-socket mounted on L1 phase, there is a possibility of moving the fuse-socket on phase L3 by screwing-out two bolts	0,71
TB-2	324020	2	fuse-socket mounted on two phases L1 and L2	0,74

Connection boxes TB-11 and TB-12

- connection box with 4 tracks for feeder cables with cross-section from 4 x 10 mm² up 4 x 35 mm²
- max. 2 cables
- simplified installation of cables ensure easier and more ergonomic operation
- smaller size provides more opportunities of applications
- the possibility of moving the fuse-sockets







Name	Code		Weight [kg]	
TB-11	324011	1	fuse-socket mounted on L1 phase, there is a possibility of moving the fuse-socket on phase L2 by screwing-out two bolts	0,71
TB-12	324012	2	fuse-socket mounted on two phases L1 and L2	0,74

OTHER PRODUCTS / DECORATIVE ELEMENTS

DECORATIVE ELEMENTS

• application: aluminium columns with spigot endings Ø60 mm and Ø76 mm

• protection degree: IP20

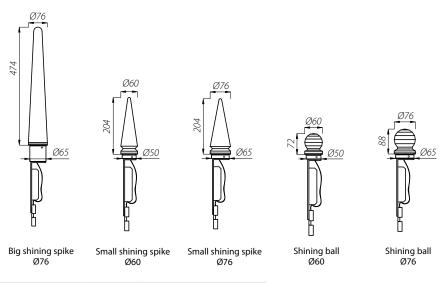
• insulation class: ||

• voltage: 220-240 V, AC, 50/60 Hz

• material: PMMA

• colours: blue, green, red, white • LED module: LED CREE XP-E

• LED power: 1 W – small shining spike and shining ball, 9 W – big shining spike • assembly: with 3 screws M5, after mounting holes in the column



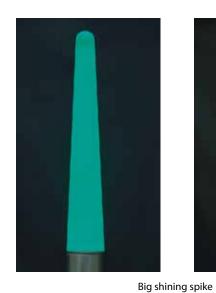
Name	Colour	Code/mounting	diameter [mm]
Name	Coloui	Ø76	Ø60
	Blue	4 038	-
Dia chinina cniko	Green	4 039	_
Big shining spike	Red	4 040	_
	White	4 041	-
	Blue	4 050	4 034
Cmall chining cnike	Green	4 051	4 035
Small shining spike	Red	4 052	4 036
	White	4 053	4 037
	Blue	4 046	4 030
Chining hall	Green	4 047	4 031
Shining ball	Red	4 048	4 032
	White	4 049	4 033





DECORATIVE ELEMENTS

















Shining ball









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