

**OUTDOOR
LIGHTING**



**ECOLOGY
FIRST**



Ecology, economy, safety, aesthetics

This, in a few words, is how you can describe ROSA Company's mission, which we have been implementing for over 31 years.

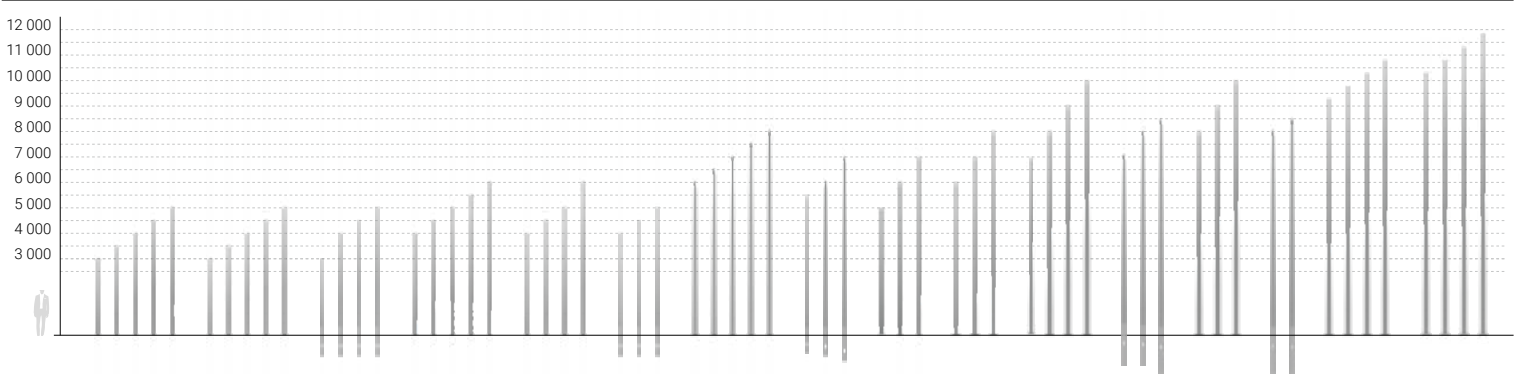
We fight about our planet by choosing eco-friendly materials with a low carbon footprint.
We understand the economical approach, which is why we have confirmation for 50-year service life of our aluminium anodised products.

We care about safety by verifying that our lighting columns meet passive safety standards.
We focus on aesthetics offering a wide range of design possibilities for our products and an option to choose from 10 anodising colours.

See how we do it.

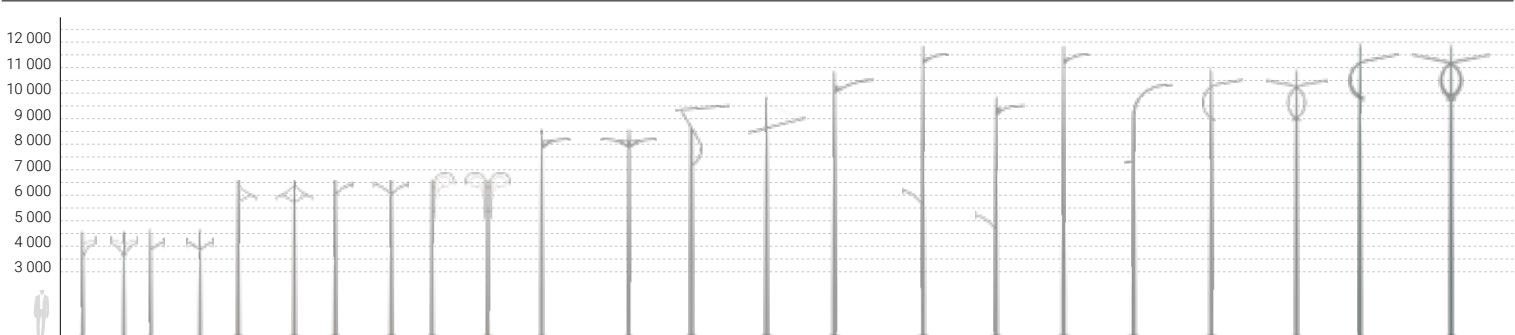
Straight aluminium columns

48-75



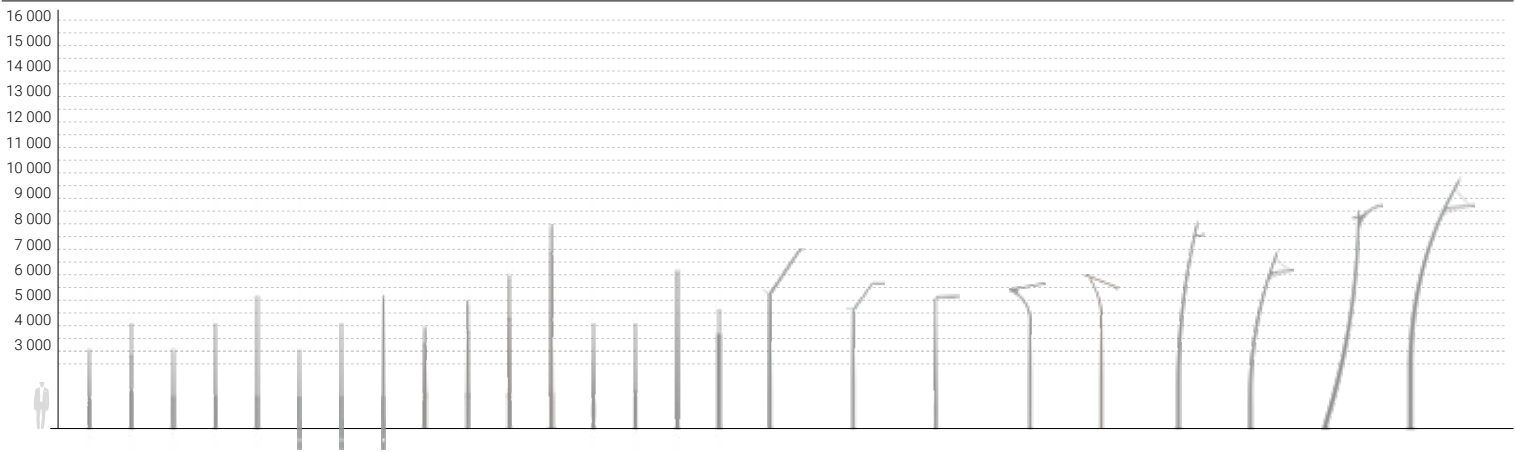
Aluminium columns with welded extension arms

76-87



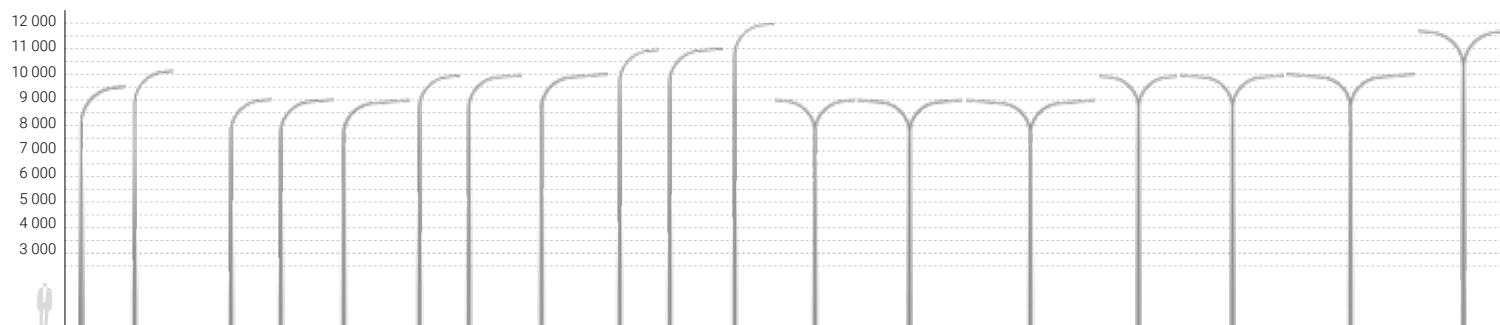
Decorative aluminium columns

88-101



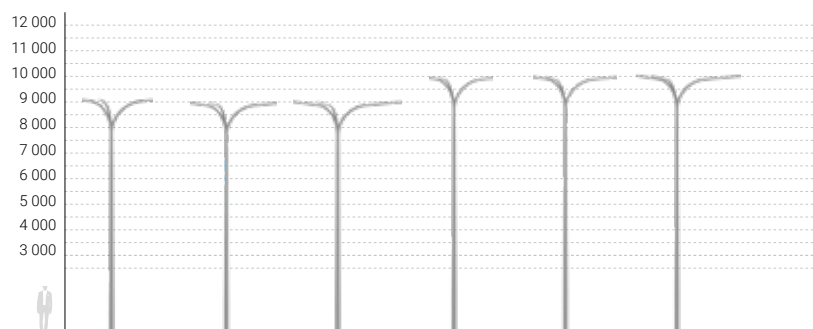
Two-piece aluminium columns with curved extension arms

102-107



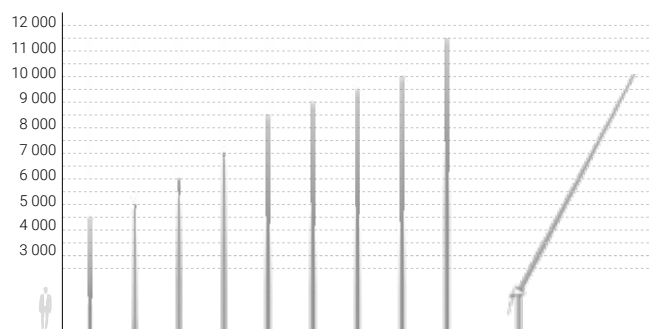
Two-piece aluminium columns with curved extension arms

108-109



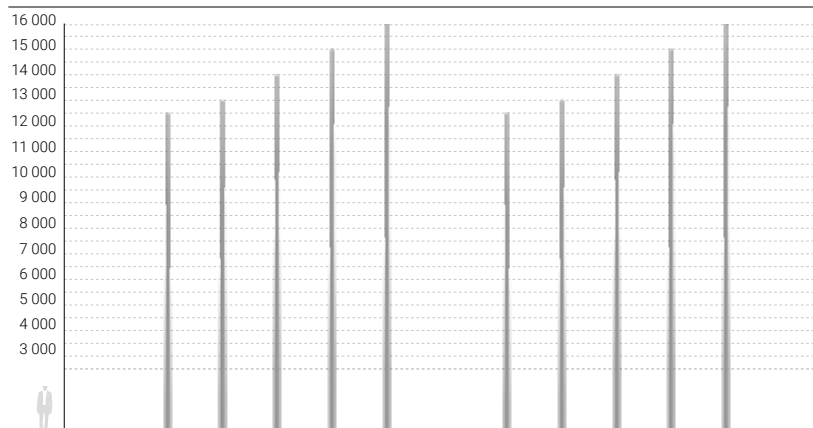
Lowering-and-raising columns

110-113



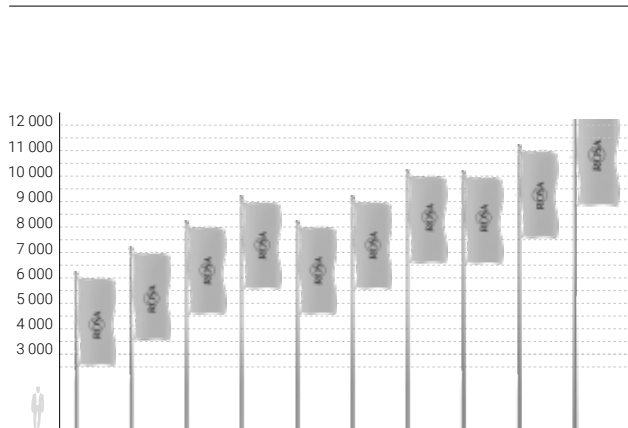
Aluminium light masts

114-115



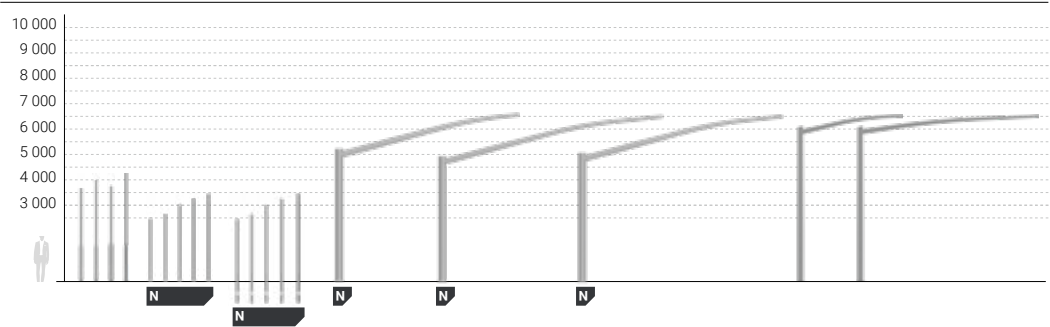
Aluminium flag poles

126-127

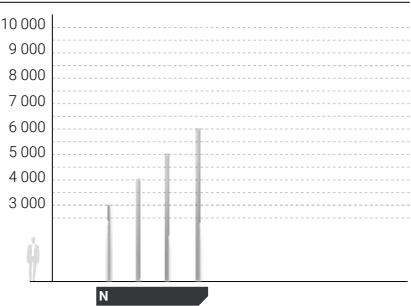


Aluminium columns with photovoltaic panels

116-125



Aluminium columns for CCTV 128-129



Aluminium extension arms WA

132-133

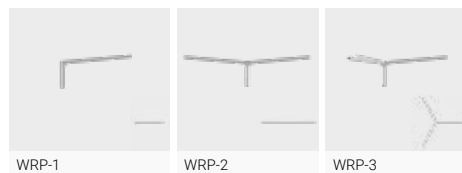


Aluminium extension arms WR

134-143



Aluminium extension arms WRP 144-145



Aluminium extension arms WN

146-147



Aluminium extension arms WM

148-149



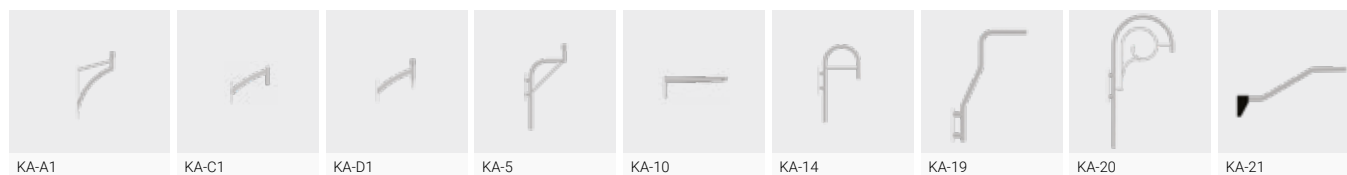
Aluminium extension arms WRK

150-151



Aluminium wall brackets KA

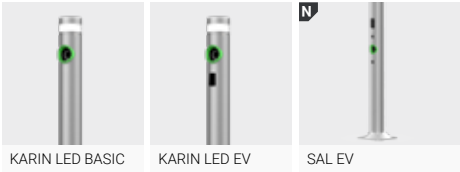
152-153



Aluminium column with photovoltaic panels 156-159



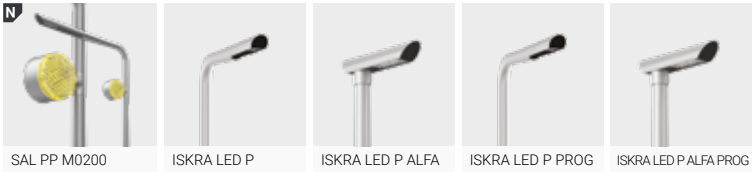
Charging stations 164-169



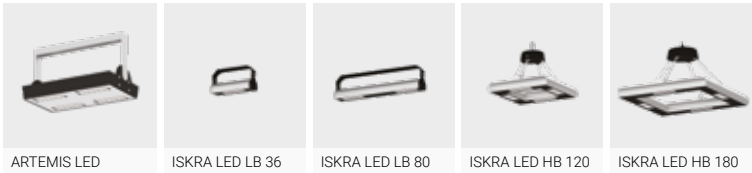
LED luminaires 186-231



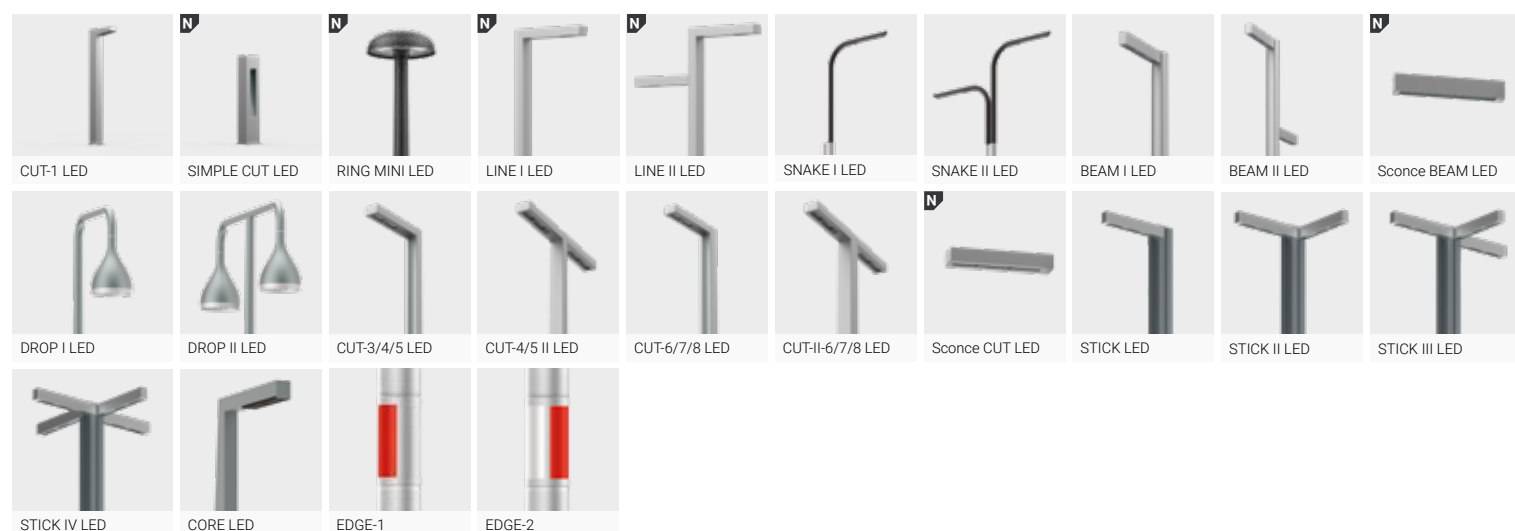
LED luminaires for pedestrian crossings 236-245



Industrial LED luminaires 246-251

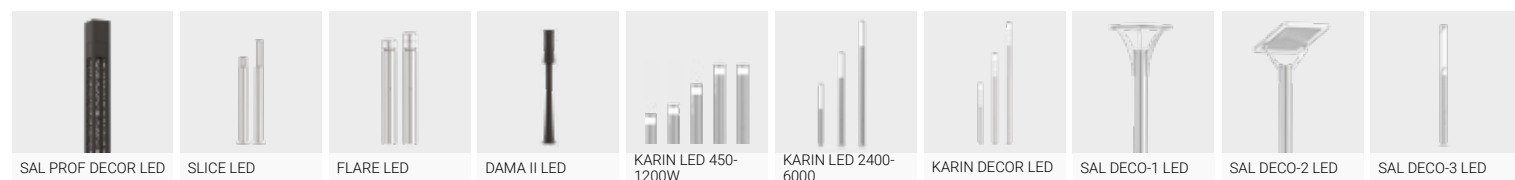


LED lighting sets



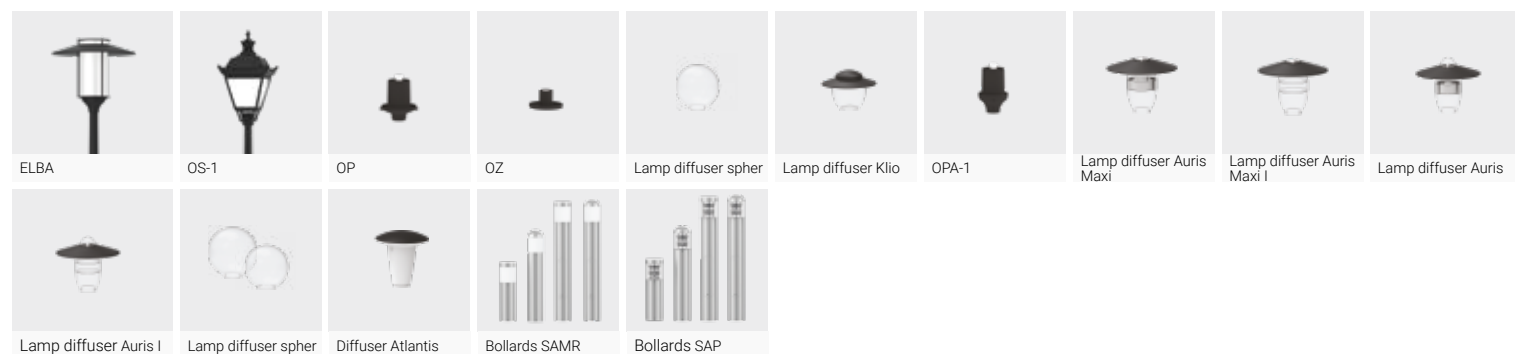
LED lighting columns

314-333



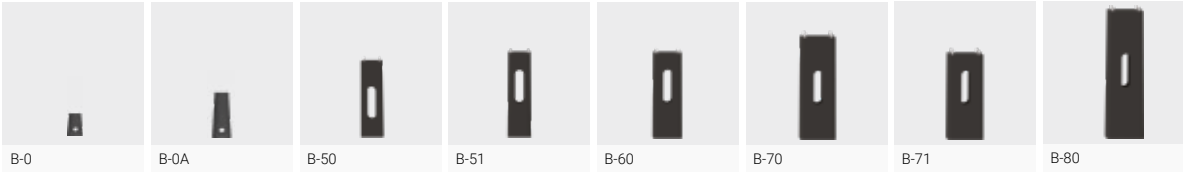
High-intensity discharge luminaires

336-347



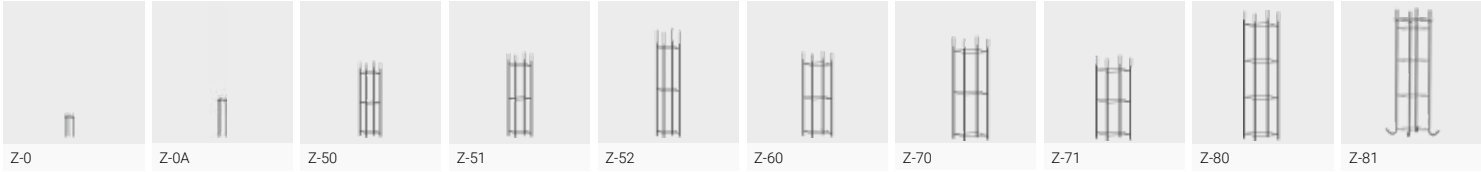
Concrete footings

350-351



Reinforcement baskets

352-353



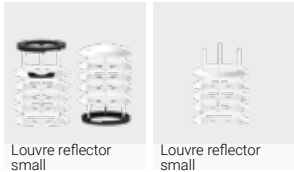
Connection boxes

354-358



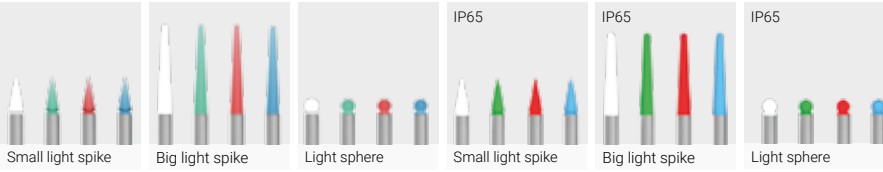
Louvre reflectors

359



Decorative elements

360



Symbols

	New
	ENEC certified
	Symbol CE
	Insulation class I
	Insulation class II
	Ingress protection IP65
	Ingress protection IP66
	Input voltage 230 V AC
	Input voltage 220-240 V AC
	Possibility to connect to an external control system via DALI
	Surge protection device 10 kV
	Operating temperature range from -40° to +55°
	Operating temperature range from -40° to +40°
	Material aluminium
	Symbol CE, Standard EN 40
	100-NE-C-S-SE-MD-0 – energy absorption levels according to standard EN 12767:2019
	The option of anodising in 10 colours

ROSA

Today, ROSA is one of the leading manufacturers of outdoor lighting, and our products are located in more than 70 countries around the world. We have now entered the fourth decade of our activity, constantly developing, and employing over 300 employees people working on 38,000 m² of space. But it wasn't always this way.

Beginnings

In 1992, the company founded by Stanisław Rosa employed only a few people. A lot has changed since then, and today, ROSA is one of the leaders in the lighting industry and a thriving company

However, the company grows thanks to the people who work in it. ROSA is a specialised team of engineers, a reliable group of conscientious production and anodising plant employees and the best specialists in the industry in Poland, characterised by an individualised approach to each client.



Polish production

We are a Polish company that cares about the development of Polish economy. That is why the entire production process – from design, through production, anodising, to research – takes place in Poland, specifically in Tychy (Silesian Province) in the Tychy Subzone of the Katowice Special Economic Zone in 4 production plants:

- at 1 Strefowa Street
- at 16 Cielmicka Street
- at 13 Towarowa Street
- at 54 Towarowa Street

Location of all ROSA branches is a guarantee of supervision at every stage of production, which also affects the high quality of our services and products that we offer. Locating all plants close to each other also allows for a significant improvement and acceleration of work, which means faster delivery time for the customer.



Innovation is us

We develop our own technical thought – our engineering staff and project teams are constantly developing innovative methods of product manufacturing.

Our own ROSA anodising plant guarantees supervision over the entire anodising process and accelerates the execution of the order. The anodising process is fully automated, which allows interference or electrochemical colouring of aluminium elements up to 10 m long including complex shapes and in 10 colours.

In 2019, we completed the construction and commissioned another ZPSO III plant at Towarowa Street. Since then, on more than 10,000 m², thanks to the use of innovative machines, robots, and the creation of a machining centre, we have led to full automation of the production process.

Thanks to this, today it takes us 5 minutes to produce a 5-meter column.

In 2021, in the newly built ROSA office building with a usable area of over 3,000 m², the modern design and development centre and research laboratory were created. Designers constantly test and improve production technology so that our product is unrivalled.



Research centre of the future

It is a laboratory equipped with modern devices for measuring the quality of anodic coatings. Thanks to the spark spectrometer, we can determine the quantitative composition of alloying additives, based on which, it is possible to qualify aluminium alloys for anodising. The high-class spectrophotometer enables the measurement of the coatings' colour quality, broken down into spectral bands, as well as the intensity of colour and the level of their tarnishing. Both devices guarantee the highest quality of anodising, which affects the unrivalled performance of our products.

Research & Development Laboratory

In the research and development laboratory, we conduct research and analyse the impact of different environments on the strength and quality of the materials we use. We do this using:

- climatic chamber, dust chamber, thermal chamber, NSS and CASS salt chambers, aging chambers (xenontest)
- Tensile Testing machine
- test benches: fatigue, glowing wire, photobiological safety, IP

The laboratory is also equipped with:

- Ulbricht integrating sphere for advanced lighting research
- goniophotometer to examine the distribution of light intensity

In the laboratory, we personally analyse the components of our products in terms of heat conduction, corrosion resistance, resistance to UV rays, determination of light distribution and photometric properties of the diodes used.

Thanks to this, we have full control over the production processes – starting from raw materials and ending with final products. Only this guarantees us the high

quality and reliability of the finished product, the service life of which reaches 50 years.

Design with awards

We know how important it is to stand out, which is why we are open to new ideas and are constantly looking for innovative solutions, that simply look beautiful in the chosen place. Thanks to this, our creative approach to lighting has been repeatedly distinguished by both Polish and foreign specialists:

- DROP LED lighting set, which was awarded in the international Red Dot Award
- SNAKE LED lighting set was honoured with a prestigious award in the national Good Design competition

ROSA – and it's all (b)right now!

Cooperation with ROSA is a guarantee of support and advice of experts, who care about the client. We are guided by a combination of tradition and experience supported by innovative, creative ecological solutions and our own technological thought. These advantages make us recognizable in Poland and in over 70 countries around the world, to which we export our products.



Anodised aluminium columns production

Material

Cooperation with ROSA is a guarantee of support and advice of experts, who care about the client. We are guided by a combination of tradition and experience supported by innovative, creative ecological solutions and our own technological thought. These advantages make us recognizable in Poland and in over 70 countries around the world, to which we export our products.

Standard columns production technology

Two automatic production lines have six technologically advanced stations each, which, depending on the needs, can work simultaneously or separately. Full automation of the production process of anodised aluminium columns significantly increases efficiency. It allows us to produce 1 meter of aluminium column within 1 minute. As a result, the production of a five-meter ROSA column takes only 5 minutes.

The production lines of ROSA anodised aluminium columns are the only such investments in the world, and the innovative solutions used in them are protected by patents and every stage of the production process is subject to strict control.

Non-standard columns production technology

Innovative production lines open many possibilities. Therefore, in addition to catalogue projects, we also carry out individual orders, in accordance with original projects.

We offer both minor modifications, based on typical products included in the catalogue, as well as brand new projects, completely different from our standard offer. Experienced engineering staff in the design and technical department performs the design and valuation for every customer inquiry.

Everything is possible when you have an extensive and modern machine park with such devices as a waterjet cutting machine, laser cutting station, CNC machine tools or bending machines for columns, sheets and pipes. These devices allow us to make various details with complex shapes, cut decorative elements for columns and extension arms and bend columns and extension arms to a given radius.



Column construction – wiring chamber and screws

It is worth knowing that each aluminium lighting column has a wiring chamber, in which connection boxes are installed. At ROSA, the wiring chamber cover is cut with a laser (straight columns) or on a specially designed saw (in the case of columns manufactured outside the technological line) and fixed by bolts. The wiring chambers of aluminium columns, which are laser cut on the technological line, have an ingress protection IP54. The closure of the chamber is equipped with a catch (lock) welded into the cover and chamber, so that the cover additionally transfers the load resulting from the column's operating conditions.



Wiring chamber in anodised aluminium columns

Bolts for wiring chamber cover

Safety of use is a priority. That is why the wiring chamber door is secured with M8 stainless steel bolts with a special, unusual socket shape, which prevents unwanted persons from opening the chamber. O-ring washers are fitted to each bolt to prevent them falling out during unscrewing. At the customer's request, the column can be equipped with triangular head bolts.

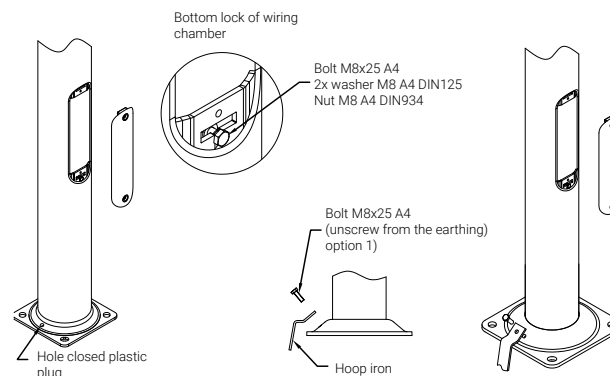


Triangular key and bolt

Hexagonal key and bolt

Column construction – earthing

Of course, we ensure the earthing of our columns. Therefore, in the hole of the lower wiring chamber lock there is a M8 bolt for screwing the earthing wire. This location allows easy access to the bolt and thus for quick assembly and maintenance. But this is not the only solution. An alternative to the earthing used in the wiring chamber is an additional earthing in the column's base-plate made as standard. This solution can be used especially when earthing columns with a hoop iron. In this case, earthing is carried out on the base of the column. The earthing hoop iron is being screwed to the base-plate of the column using M8 bolt taken from the wiring chamber (option 1) and screwed into the hole made in the base-plate. When using option 1, the hole will remain closed with a plastic plug.



Earthing option 1

Earthing option 2

Column reinforcement

Column reinforcement

Our offer includes columns marked with the „wzm“ index. This means that they have a reinforcement. Reinforcing the column within the base and wiring chamber with an additional tubes or thicker wall allows the use of more luminaires or extension arms, as well as their installation in places exposed to large wind speed.

Connection of two-element columns

We provide a permanent connection of two-element anodised aluminium columns thanks to the use of a specially constructed connector made of stainless steel.

The connecting element is secured by using:

- 3 M10 bolts – for two-element SAL type columns,
- 4 M10 bolts – for two-element MAL type masts



Connecting element for two-element SAL type column



Connecting element for two-element MAL type column

Acceptable column loads

Designing of lighting columns is based on the EN 40 group of standards. Thanks to the company's control system, we have obtained the Certificate of Constancy of Performance, which confirms that the manufacturer meets all the requirements contained in the following standards of the EN 40 group and ensures that they are maintained in continuity.

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 – Design and verification – Specification of characteristic loads and referenced EN 1991-1-4. Design basics and impacts on structures.
- 2-4. Wind loads.
4. EN 40-3-2 – Lighting columns – Design and verification – Verification by means of research.
5. EN 40-3-3 – Lighting columns – Design and verification – Verification by means of calculations.
6. EN 40-6 – Aluminium lighting columns – requirements
7. EN 40-5 – Steel lighting columns – Requirements

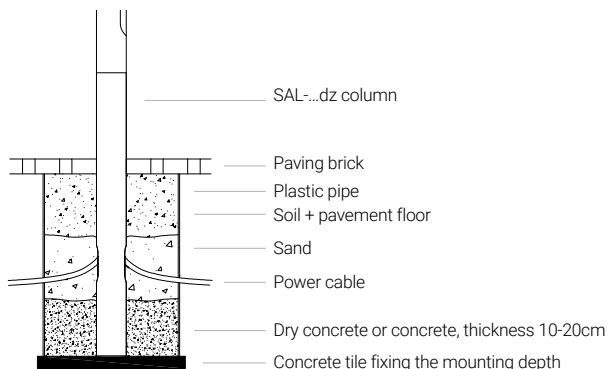
These standards are not just a series of recommendations. They also specify the

method of determining the permissible load of the column structure. When calculating the permissible load of columns, many characteristic parameters are considered, such as: average wind speed, terrain category, horizontal deviation, or shape factor.

Resistance calculations

Calculations of column's resistance are performed in an original calculation program in accordance with the applicable requirements contained in EN 40 and EN 1991-1-4. Resistance is calculated for columns without a wiring chamber cover.

Recommendations for SAL-...dz column installation method



1. Dig a hole in the ground at the installation site.
2. At the bottom of the hole, place a concrete tile to fix the depth of installation.
3. Insert a plastic pipe of suitable diameter (at least twice the diameter size of the column) into the hole with the holes prepared on the sides to feed the power cable. The length of the pipe should be long enough so that its edge does not interfere with the subsequent installation of paving bricks.
4. Cover the outside of the pipe with soil, so that the groundworks can be completed with laying paving bricks.
5. Unscrew the wiring chamber cover.
6. Place the column in the hole manually while inserting the power cables to the holes in the underground part of the column, so that their ends appear in the open wiring chamber of the column.
7. Place the column vertically and/or block the column in this position, if possible, with the help of wedges.
8. Pour dry concrete or concrete into the hole to a depth of approx. 10-20cm. This constitutes the basic stabilisation of the column.
9. Then pour sand into the hole in the amount to cover the power cables along with holes in the column. Sand protects against damage to the cables.
10. Cover the rest of the hole with soil and compress. Fill in the missing part of the pavement around the column.
11. After completing these steps, proceed to the operation of mounting luminaires, extension arms and connection boxes.

Warning! On the columns up to 5m, where luminaires with mounting directly at the end of the column are used, it is possible to put them on before starting the mounting to the ground, eliminating the need to rent a car with a lift.

Passive safety

Aware of the safety requirements expected from the producers of lighting columns, to minimise the danger resulting from road accidents we have carried out passive safety tests on our products according to standard EN 12767:2019 "Passive safety of support structures for road equipment. Requirements and test methods."

As a result of the tests, we identified class of passive safety for aluminium columns in heights from 2 to 12 m:

- SAL and MAL from $\varnothing 114$ to $\varnothing 225$ mm rooted, which have been classified:

100-NE-C-S-SE-MD-0; 70-NE-C-S-SE-MD-0; 50-NE-C-S-SE-MD-0

- SAL from $\varnothing 114$ to $\varnothing 180$ mm with base-plate, which have been classified:

100-NE-B-S-SE-MD-0; 70-NE-B-S-SE-MD-0; 50-NE-B-S-SE-MD-0

Where:

50, 70, 100 – tested impact speed

NE – non-energy-absorbing construction

B, C – Occupant safety class

S – Backfill type: standard.

SE – Collapse mode: Separation from the foundation

MD – Direction class: multidirectional

0 – Risk of roof deformation: low risk < 102mm

Categories and parameters

Construction categories in respect of the energy absorption degree:

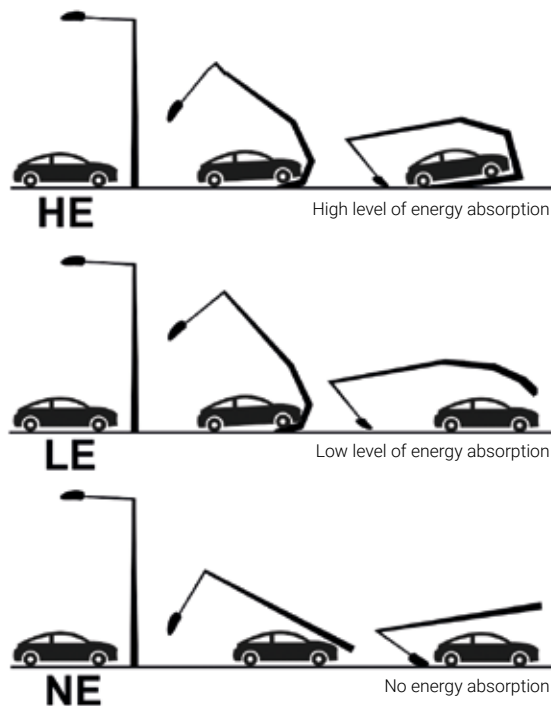
HE – high level of energy absorption

LE – low level of energy absorption

NE – no energy absorption

Class „0“ – passive safety requirements are not met

Levels of energy absorption according to EN 12767



Anodising process

ROSA Anodising plant

Since 2009, the anodising plant of aluminium products has been part of ROSA, which today is one of the largest plants of this type in Central and Eastern Europe. Anodising is performed here with electrochemical and interference colouring of aluminium materials, among others: sheets, pipes, profiles, or other structural elements.

Modern interference colouring technology enables the use of a richer than traditional colour palette resistant to external factors, including UV radiation. We anodise products up to 10 m long in 10 unique colours. Because we also carry out individual orders in the anodising plant, we can adapt the shape of the product precisely to the customer's needs.

Anodising process

Anodising is one of many ways to protect aluminium from dirt and aggressive corrosion and it is second to none, because in addition to protection against adverse weather conditions, it is characterised by high aesthetic values.

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, salt etc.,
- decorative – anodised surfaces achieve a smooth, satin finish and additional colouring guarantees exceptional aesthetics of surface finish.

Quality guaranteed!

In our R&D laboratory we have conducted resistance tests of anodic oxide coatings to UV radiation. Tests were performed in accordance with the recommendation of the standard EN ISO 6581 „Anodising of aluminium and its alloys – Determination of the comparative fastness to ultraviolet light and heat of coloured anodic oxidation coatings“. During 14600 h of the sample's exposure in Q-Sun Xe-3 device, there was no colour change of observed oxide layers. Such exposure

period is equivalent to 20 years of operation in Polish climatic conditions. In order to determine corrosion resistance, the samples of anodised aluminium lighting columns were tested in a salt chamber at a salt concentration of 5% (for comparison, salt concentration in the Baltic Sea is 0.8% and in the North Sea it is 3%).

Exposure of samples in the chamber lasted in total 20 000 h. Despite such long period of test, no corrosion was detected. The test was carried out in accordance with the standard DIN EN ISO 9227, according to the NSS method.

The company received technical approval of The European Association for Surface Treatment on 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.



Aluminium Anodising – why is it worth it?

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

	Black steel	Galvanised steel	Hot dip galvanised steel	Raw aluminium	Anodised aluminium
Model sample					
Test in salt chamber Standard DIN EN ISO 9227– NSS method Test in neutral salt fog					
Test in salt chamber Standard DIN EN ISO 9227– CASS method Test in acid salt fog with addition of copper					

Anodising process

The process of anodising is carried out on an automated technological line equipped with 28 tanks. This process can be divided into three stages. Between the essential processes the rinsing operation of the product is performed.



Stages of the anodising process:

1. Surface preparation

The first step is degreasing, consisting of removing oils, their derivatives, and any impurities from the mechanical processing of details from the aluminium surface.

The second step is alkaline etching (satin finishing), which aims to remove the self-created oxide layer from the surface of the product and give the surface a uniformly matt (or, on the contrary – shiny) look.

The third step is brightening (pickling), the purpose of which is the final removal of thin oxide layers and deposits that may have remained after satin etching or brightening processes, and the removal of which is necessary to achieve a structurally uniform oxide coating.

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 a sulfuric acid solution involving direct current of a certain density. The anodic coating grows in 2/3 of its thickness into the metal surface and grows 1/3 above it. It becomes much thicker than the natural one, so it effectively protects

the aluminium surface from further oxidation i.e., corrosion. Its structure allows permanent colouring of the product by chemical, electrochemical or interference method. Colouring can be:

- **Electrochemical** – based on the treatment of the anodised product in the electrolyte containing tin salt ions. Metal, reduced in a cathode cycle, is deposited on the bottom of the pores of the oxide coating and gives a permanent colouring to the aluminium surface. This results in a range of colours from bright to dark shades of brown and black.

- **Interferential** – preceded by anodic layer's pore shape modification. Then, the surface of the aluminium is permanently coloured in baths based on tin salts, widening the palette of colours obtained in electrochemical colouring with new shades of grey and green. This method uses the phenomenon of interference, that is, the overlapping of reflected light waves, leading to the increase or decrease of the resultant wave amplitude. Modifying this amplitude through the appropriate controlled variation of the pore shape in the anode layer allows to obtain the appropriate optical effect (colour).

3. Sealing

This is the process by which a porous structure is closed. We use two-stage cold-hot sealing, consisting in immersing the product in a solution of a cold sealing bath. Its purpose is to deposit nickel salt on the inner part of the pores. Then, after proper rinsing of the surface, there is a hot sealing stage, in which the process of accelerated closure of the anode pores takes place. This process makes the surface of the anodised element tight and smooth, thanks to which the oxide coating is resistant to atmospheric corrosion factors and reduces the tendency to settle contaminants on the product's surface.

ROSA anodising plant can perform 2 types of finish of anodised surfaces:

• Brightened

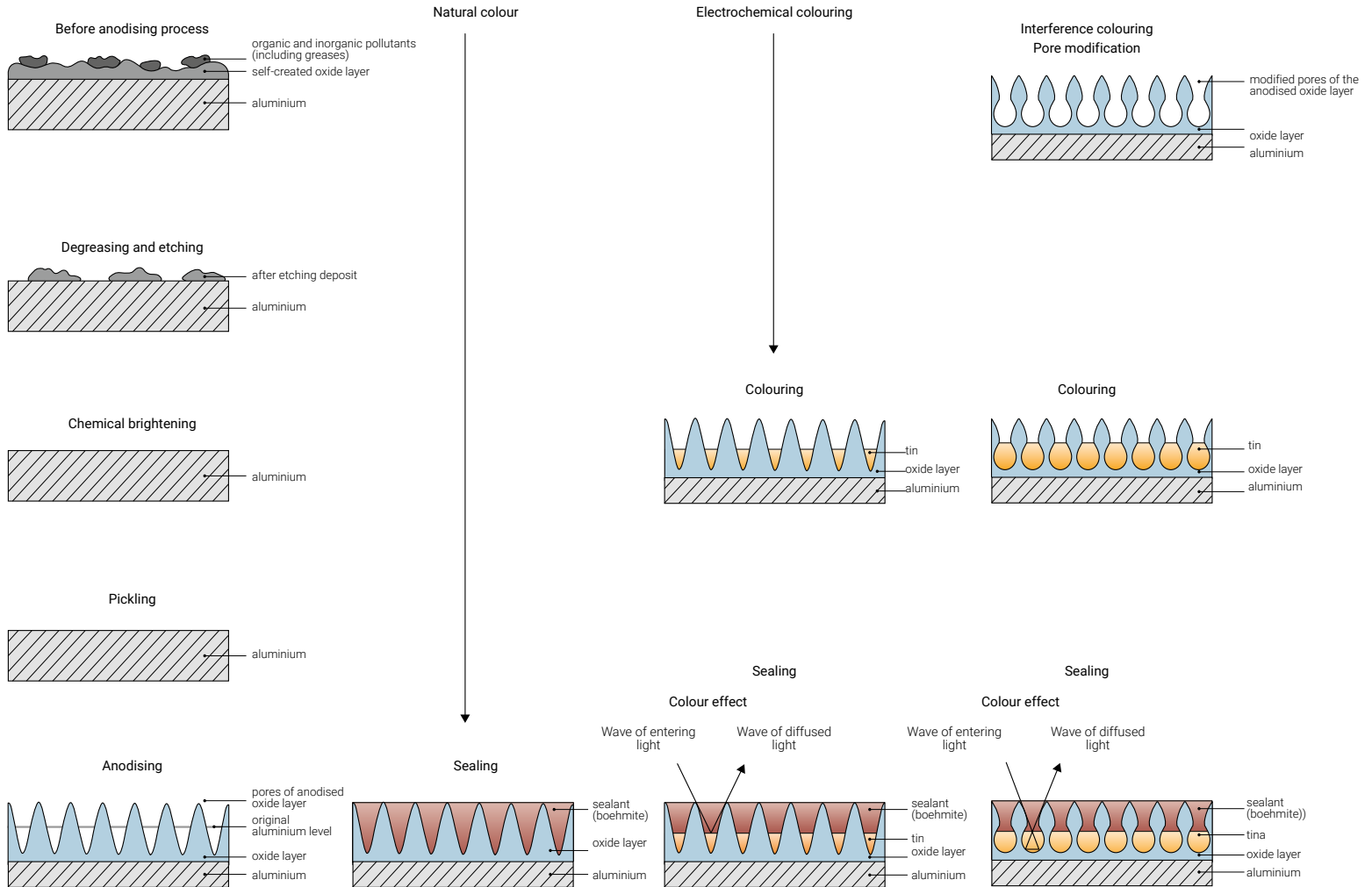
Getting glossy aluminium surface is obtained by the chemical etching before anodising process. The process is based on chemical smoothing of the surface structure, this results in a reduction of matt effect and lightens the metal surface, which gives the gloss finish.

• Satin

Obtaining a surface with a delicate satin finish is possible thanks to the so-called dry etching technology. It involves surface treatment by shot blasting using a modern machine for tarnishing the surface. The workpieces are blasted using shot with a diameter of about 0.1 mm, thanks to which a final satin effect is obtained. Importantly, this type of technology allows to significantly eliminate all kinds of surface defects arising in extrusion or rolling processes, such as streaks, thermal stripes, etc., as well as minor mechanical damage in the form of scratches or abrasions. The surfaces obtained this way are characterised by much better quality compared to traditional chemical etching. The applied technical solutions allow to shot blast elements made of 1 mm thick metal sheets without the risk of damage to the surface.



Anodising process of aluminium products



Anodising colour palette



Natural **C-0**



Champagne **C-32**



Olive **C-33**



Brown **C-34**



Black **C-35**



Inox **C-45**



Grey **CI-63**



Graphite **CI-65**



Green **CI-75**



Anthracite **CI-78**

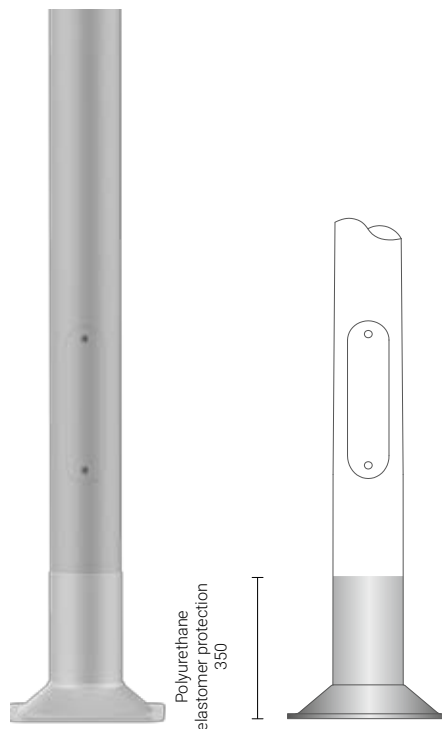
Real anodising colour can differ from presented colour sample.

Elastomer protection

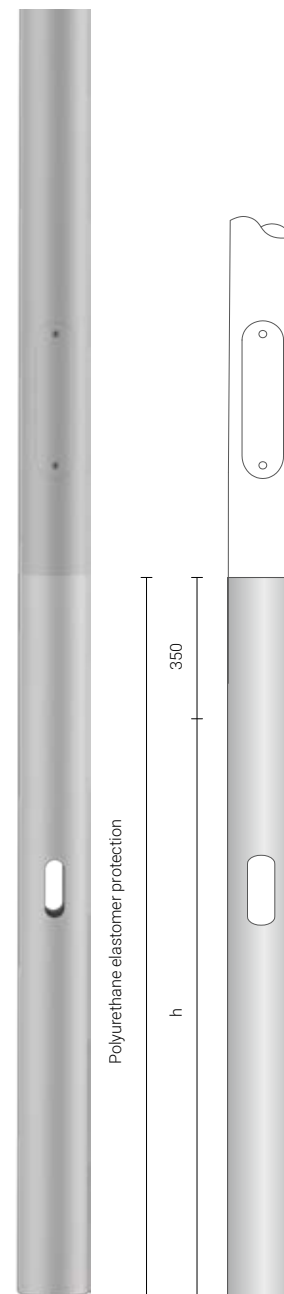
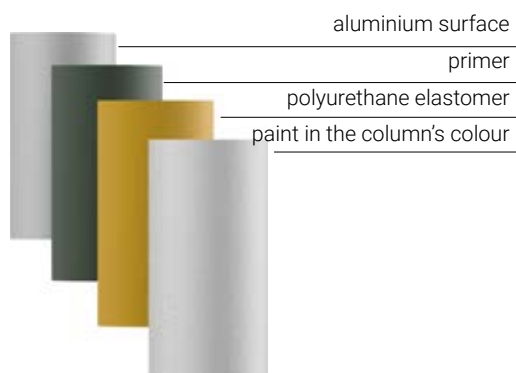
In very unfavourable (environmental) conditions, the base-plates and parts of the rooted column are exposed to the adverse effects of salt compounds and mechanical damage. For additional corrosion protection at the bottom of the column, we offer the option of covering the base-plate (including holes for mounting bolts) and a part of column (up to 350 mm) with polyurethane elastomer.

The thickness of the protective coating is from 0.7 mm to 1 mm with a hardness of about 90°sh. The surface of the elastomer is painted with a UV-resistant paint, similar to the colour of the anodic coating of the column. Elastomer protection is in accordance with the EN-40 standards, i.e., the European requirements for aluminium lighting columns.

All rooted columns type SAL DZ are protected with a polyurethane elastomer as standard. Both material and production technology are environmentally friendly.



Polyurethane elastomer protection of columns with base-plate



Polyurethane elastomer protection of rooted columns

Ecology, economy, and quality of our products

Ecology – we act for the climate.

We have always been focused on keeping up with the changes that affect us. Climate change is one of them. That is why, we have focused on ensuring that our products guarantee long-term operation – 50 years of lighting sets' service life is an absolute record on the market.

All our products are manufactured in a process, that protects the natural environment and are intended to be used without harming it. For the sake of our surroundings, every day we take actions, that are a joint investment in the future.

For us and our loved ones.

'Green metal'

ROSA columns are mainly made of a material that is called "green metal" for a reason. It is aluminium. Why „green metal“?

Effective aluminium recycling allows to save up 95% of energy needed to produce new material, without losing original value. In relation to environmental protection, this process allows a 100% reduction in the amount of solid waste, multiple reduction of CO2 emissions to the atmosphere and to minimise water consumption to 97%.

The pro-ecological choice of raw material is a wise decision, which benefits not only current but also future generations.

Economic modernisation

Thanks to the fact, that ROSA columns are anodised aluminium, the surface renewal (even after a very long period of use), does not require any special technological processes, that involve additional environmental pollution. Removing an anodic layer from the columns and the application of new ones take place during the same technological process. The anodic layer can be freely modified for both corrosion resistance and the colour style of the finish.

Environment friendly production

In addition, our ROSA products are manufactured in environmentally friendly conditions. They are created in production plants that are efficient in energy management. The energy is obtained, among others, from company's own photovoltaic farms. We also produce energy in cogeneration, where the fuel used for energy production is natural gas, the combustion of which is less harmful to the environment, and its use contributes to the active fight for healthier air.

The generated waste heat is used in the process of anodising aluminium, as well as for heating and cooling rooms and production halls or heating utility water.

Energy efficiency

ROSA LED luminaires significantly reduce energy consumption, providing A ++ savings class. Moreover, LEDs are environmentally friendly because they do not emit UV rays or infrared radiation.

Photobiological safety

Photobiological safety is one of the basic requirements of European directive included in PN-EN 62471:2010 standards, that must be met by a light-emitting product.

Threats resulting from the use of artificial lighting:

- eye hazard of UV radiation
- burn to eye's cornea
- cataract
- retinal injury - from staring at strong light source

At ROSA, we strive for a high level of health, safety, and environment protection.

We own specialised research equipment, that allows us to outline photometric parameters based on which, the risk group (RG0, RG1, RG2, RG3) is determined, to which the LED luminaire will be included. By choosing our products, you can be sure that the equipment is tested and safe.

Quality is a priority

We know how ground-breaking the technologies and ways of manufacturing our products are. They cost us many years of trials, that led the development of production to where it is now. Therefore, that's why we protect them with patents.

We take quality seriously. Therefore, we conduct our daily activities in accordance with the Quality Management System ISO 9001:2015.

We also have all certificates in force in the EU, including Qualanod, which is awarded to the highest quality anode coatings and confirms compliance with European standards, as well as a passive safety certificate of anodised aluminium columns in the class 100-NE-C-S-SE-MD-0 according to EN 12767: 2019 (100 NE2 according to EN 12767:2007).

ENEC Certificate

The high quality of our products has been confirmed by granting the Certificate of Electrical Products – ENEC to luminaires' series CUDDLE II LED, CUDDLE II LED REG, ISKRA LED and ISKRA LED ALFA, ISKRA LED PROG, as well as ISKRA LED PROG ALFA for selected optics.

ENEC is a European mark that guarantees compliance with European EN standards, safety, reliability and confirms the highest quality. The certification process includes inspections at the production plant and product testing. Awarded by an independent certification and testing body, it is recognised throughout the EU. ROSA, as a brand with many years of experience, performs regular inspections to make sure that products meet all the requirements of standards.



Anodised aluminium – cleaning and maintenance

Proper maintenance and regular cleaning of anodised aluminium products allows to keep their aesthetic and decorative appearance for longer.

Below we have defined the division of contaminations and indicate the recommended cleaning products

I Category

industrial atmosphere pollution, road salt residues, permanent precipitation from car exhausts, etc.,



Recommended cleaning products

- HENKEL LOCTITE SF 7840
- HG – Super Cleaner;

Contamination removing process:

1. Apply the cleaner to the column, then wait until it reacts with dirt.
2. Wash column with a sponge or brush (soft bristle).
3. Rinse thoroughly with clean water



If necessary, repeat the process until effect is achieved

Recommendations before maintenance

1. It is not recommended to clean aluminium with:
 - corrosive potassium (potassium hydroxide),
 - technical soda (sodium carbonate),
 - caustic soda,
 - acid products,
 - polishing products,
 - products that can damage the anode surface.

II Category

graffiti, paint, markers



- HG – Graffiti Remover
- HENKEL BODERITE S-ST 1302
- AGS 5SR;

1. Wash column according to first category cleaning procedure.
2. Apply graffiti and paint remover. Leave for the time specified in the product card. Wash with sponge and cleaning detergent.
3. Rinse thoroughly with clean water.



III Category

stickers, tape, glues



- HG - Sticker Remover
- HENKEL BODERITE C-MC 400
- AGS GLUE REMOVER;

1. Wash column according to first category cleaning procedure.
2. Use a plastic spatula to remove stickers and tapes. Apply a sticker remover. Leave for the time specified in the product card. Wash with sponge and cleaning detergent.
3. Rinse thoroughly with clean water.



2. Health and safety information:

- Use protective clothing as recommended by the cleaning product producer.
- It is recommended to use biodegradable preparations and liquids with a neutral pH. Before cleaning the surface, it is necessary to check the effect of the cleaning agents used for this purpose. You can do test in a less visible place. In case of undesirable effects, the use of the tested cleaner should be stopped.

Luminaires

LED Luminaires

ROSA LED luminaires feature a unique design, innovative LED light sources and anodising technology. In our products we focus on quality, durability, and aesthetics. In the ROSA LED offer, you can find:

- park luminaires designed for illuminating urban areas (parks, traffic routes, and squares),
- street luminaires dedicated to highways, roads, avenues, and industrial areas,
- floodlights used to illuminate architectural elements, sports facilities, car parks, and other outdoor areas,
- industrial luminaires available for industrial halls, warehouses, petrol stations.

ROSA LED luminaires – real benefits:

- reduction of electricity consumption up to 75%
- lowering operating and maintenance costs
- the power reduction option
- lighting points quantity reduction
- aesthetic and decorative appearance

Light sources

ROSA LED products are equipped with high-efficiency light sources, capable of reaching luminous efficacy up to 150lm/W for the whole luminaire.

Light colour temperature, colour rendering index

ROSA LED luminaires are available as standard with four colour temperatures: 2700K, 3500 K, 4000 K or 5000 K.

Light colour	Correlated colour temperature (CCT)	Colour rendering index (CRI)
Warm white	2 700 K	>70
	3 500 K	>70
Neutral white	4 000 K	>70
Cold white	5 000 K	>70

Warm white light colours of 2700K, 3500 K and neutral white light of 4000 K is preferred in lighting of urban spaces and parks (marked with number “1”, “3” and “4” in the product code). While cold white light colour of 5000 K, due to higher luminous efficacy, is commonly used in street lighting (marked with number “6” in product code). Selecting one of these options depends only on the customer’s preference. It is also possible to order luminaires with different colour temperature: 2200 K, 3000 K, 4500 K as a custom-made variant.

Optics

ROSA LED luminaires mostly use optical system made of PMMA (polymethyl methacrylate) with increased temperature resistance. It is used both in lenses

and lamp diffusers/light diffusing plates (ELBA LED, ATLANTIS LED, CORONA LED, KARIN LED, OS-11 LED, AURIS LED).

Standard LED module – used in park luminaires and lighting sets: DROP LED and FLEXI LED



Replaceable led module

Interchangeable module contains 12 LEDs. It is available with nine unique optical systems. Module has a thermal protection sensor, increased resistance to electrical discharges and IP66 ingress protection. Assembly and disassembly of the module can be done using standard tools.



Tempered glass

In our luminaires from the LOCO LED and RING LED series, and RING MINI LED lighting sets, we use tempered glass protection. This gives modern design, but above all it has a high protective function. Tempered glass provides an impact resistance grade of IK08 - this corresponds to the impact of a 1.7 kg hammer from a height of 29.5 cm.

In the future, we plan to introduce tempered glass to more ROSA luminaires and lighting sets.

Luminaire construction

Housings of ROSA LED luminaires and lighting sets are made of profiles and sheets of high-quality aluminium alloy* subjected to anodising process. They are characterised by high thermal properties (conductivity >200 W/mK). Anodising process protects luminaire body from corrosion and aggressive external factors such as acid rain, sea water, UV radiation, salt, while giving it a decorative character. In addition to aesthetics, it improves heat dissipation via thermal radiation, maintaining low operating temperatures of LED is the key for its longevity

* Exceptions are luminaires ELBA LED, ATLANTIS LED, OS-11 LED, AURIS LED.

Smart lighting - step towards Smart City

Smart City

Nowadays, the idea of a smart city equals idea of better life, aimed at improving quality of joint capital, the environment and technology. Implementation of smart solutions and digitisation of cities are processes of urban infrastructure modernisation, thanks to which currently transformed resources can be basis for future improvements and innovations. This, in turn, will reduce costs and time necessary for further investments or coping with new challenges.

Smart Lighting

The concepts of modern cities assume the introduction of solutions enabling intelligent lighting control. This is what ROSA LED luminaires offer.

Innovative programming of luminaires with LED light source allows to reduce energy consumption, while increasing light efficiency. Modernisation and investment in the latest generation luminaires is the right step, not only because of savings - luminaires equipped with appropriate system sensors create a lot of new possibilities, including:

- during night hours, when power reduction is on, lamps can brighten up to the route of emergency vehicles like ambulances or fire trucks,
- illumination intensity can be correlated with data from meteorological stations and react to changing weather conditions e.g., by increasing its intensity unfavourable weather conditions,
- when pedestrians cross street, luminaires around the intersection can switch to brighter light (underlit pedestrian crossings),
- when a bus arrives at the bus stop, streetlights around the bus stop can be automatically set up brighter than those further away.

IoT solutions

The next stage towards the digitisation of cities is the option of implementing pioneering IoT solutions (Internet of Things). Modern lighting infrastructure, due to dense distribution, is a great place to locate a huge network of receivers. This allows to get all kinds of city data using sensors, which collect data from the environment and traffic recording cameras e.g. searching for free parking spaces or microphones that respond to specific sounds. Thanks to this, the society work in a safer and more sustainable way.

Vehicle charging stations

Electric cars are now chosen by consumers looking for modern solutions. Moreover, due to EU requirements of air quality improvement, there will be more and more electric cars on the roads. In response to these changes, we have created Karin LED EV – a lighting column fully integrated into an electric vehicle charging station. Thanks to the fact, that we are the manufacturer of complete lighting sets, we have the opportunity to assemble and create the most innovative technologies today.

Zhaga (D4i) and Nema sockets

Our offer includes products equipped with D4i sockets (in accordance with Zhaga Book 18 standards) and NEMA sockets – ANSI C136.41. Lighting controllers are connected to them which enable efficient wireless control of LED luminaires via the DALI bus. It is used for two-way light control (controller – luminaire, luminaire – controller), and its most important function, however, is to reduce the power of the luminaire. In ROSA luminaires we use a universal housing, that allows for the installation of the interface and sensors of any manufacturer, whose product will comply with specific standards. Each ROSA luminaire is equipped with a socket cap.

This standardization is in line with the goal of the Zhaga Consortium, which is to unify the specifications for LED luminaire components commonly used in the global lighting market.

The socket choice depends entirely on the needs and preferences of the investor. The decision on the type of socket should be made at the stage of ordering, because there are differences in the number of inputs between D4i and NEMA sockets (4 and 5-7 inputs respectively).



Optics for LED interchangeable module

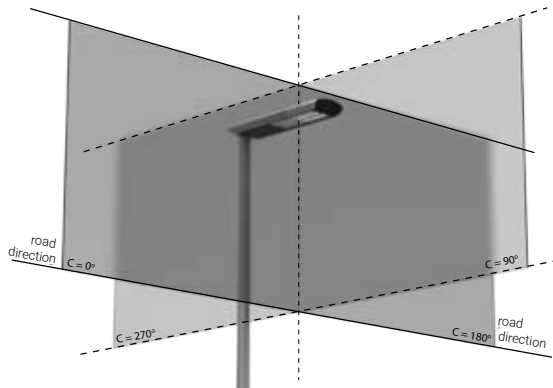
Optics controls where light distribution is directed. Its proper selection ensures sustainable energy consumption and reduces investment costs.

Light Distribution Curve

Light distribution curves define the amount of light coming out of the luminaire in a given direction. The photometric body, together with electrical and photometric parameters such as luminous flux, active power, PF, etc., is determined on the goniophotometer. The distribution of light depends mainly on the optics used, but also on the construction of the luminaire and the diodes used on the module. The diagram gives the luminaire distribution in planes:

- C0-C180 planes perpendicular to the housing axis.
- vertical plane C90-C270 passing through the longitudinal axis of the housing

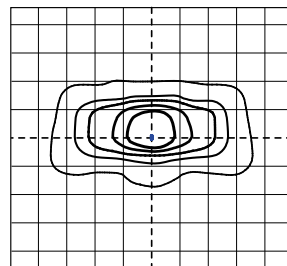
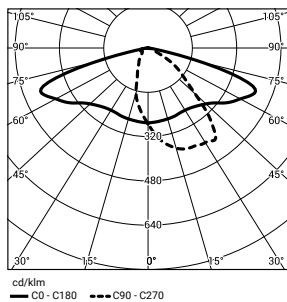
Diagram of planes



Street lighting

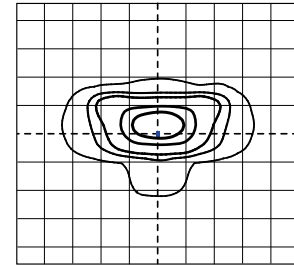
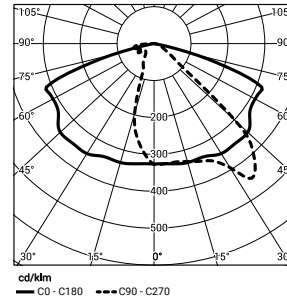
DW optics

It is universal optic used in traffic with even combination of lighting parameters.



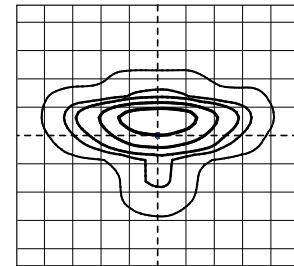
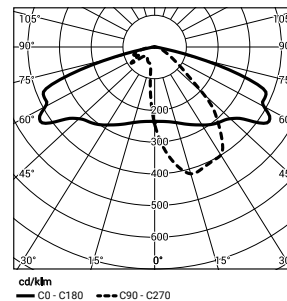
ME optics

It is recommended for wider roads to illuminate even three lanes with sidewalks on both sides of the road with luminaires only on the one side of the road.



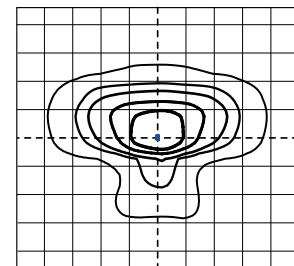
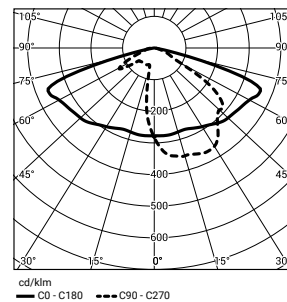
T2 optics

It works well in lighting narrower roads with two lanes, and when installing luminaires on the central lane separating the roadways in a dual carriageway configuration (road classes P and M).



T3 optics

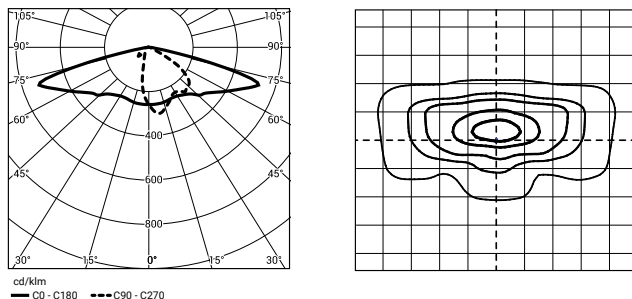
It allows for wider light distribution forward than the T2 optics, it works similarly in lighting roads with two lanes and sidewalks.



Illumination of pedestrian routes / residential roads

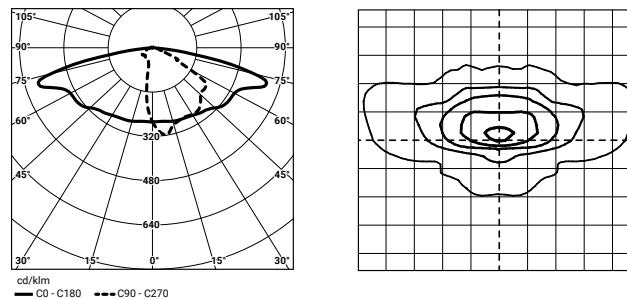
SP optics

It emits light very widely, so distance between the luminaires can be up to eight times greater, than the height of the column on which they are installed.



3L optics

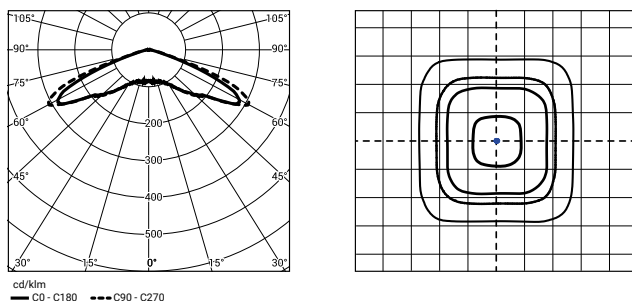
Designed for bicycle paths, it is characterised by a wide light distribution. Long distances from low columns.



Park / Area Lighting

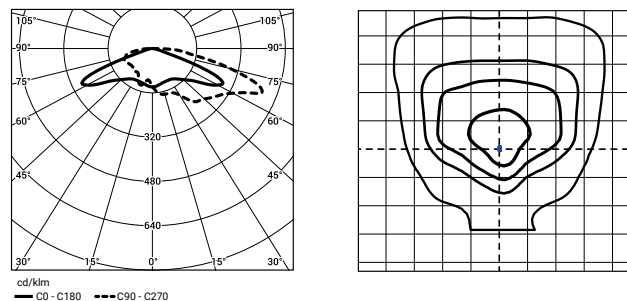
VS optics

It is characterised by uniformly symmetrical light distribution around the luminaire (square beam).



T4 optics

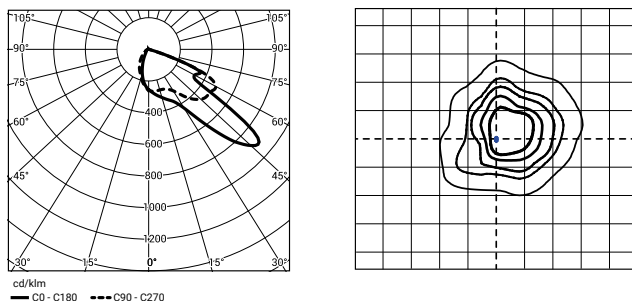
It is recommended for low-height luminaires located at short distances from each other. It is characterised by light emission far forward.



Pedestrian crossings

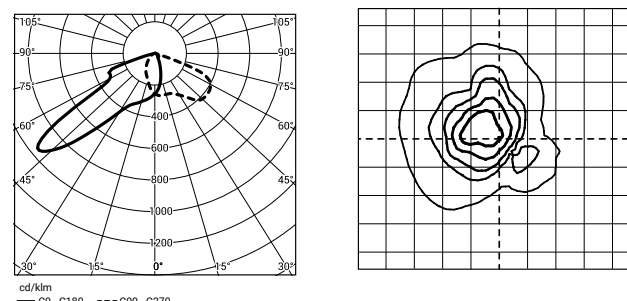
At pedestrian crossings, to avoid glare, it is recommended to use optics with an asymmetrical distribution of luminous flux on the right and left respectively.

PP optics



PL optics

Important! The optics for left-hand traffic also works well for pedestrian crossings in the right-hand traffic configuration when installing columns on the traffic island.



Power supply

ROSA LED luminaires are equipped with high-performance, constant current and programmable power supplies from the renowned Philips Xitanium and Osram 4DIM series. They offer reliability and high flexibility thanks to the large number of programmable options according to different customer requirements.

The user can implement functions such as the ability to adjust the output current, DALI interface, optional 1-10 V or programmable time profiles. In addition, the power supply has an option to control the temperature of the LED modules, which allows the user to lower the power if a temperature higher than recommended is detected. Thanks to this, the diode is protected against overheating, and thus – against faster wear.

Thanks to the housing with introduced quick connectors, the possible replacement of the power supply requires only basic tools.

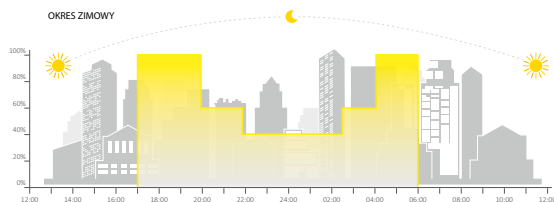


For the CUDDLE LED II luminaire, we have created the special power driver body with built-in Zhaga or Nema sockets, to which sensors for intelligent lighting control can be connected.



LED driver parameters, used in selected street luminaries

Programmable time profiles guarantee increased savings in the use of lighting based on LED technology. Our clients can set up to five power levels, ranging from 10 to 100% of rated power, in any operation time interval of the luminaire. The power supply implements selected time profile – variable luminaire power level, on daily basis, according to investor needs. This solution reduces overall luminaire power consumption, which translates into economic savings.



External control system

ROSA LED luminaires are equipped with DALI interface or 1-10V (as standard or as an option, depending on the luminaire type), which enables them to be connected to an independent controller or a connected control system that limits energy consumption.

Appropriate control of luminaires output power can for example bring 40-70% savings in situations such as traffic volume on a selected road section. The ability to join luminaires to specific groups (e.g., a group of pedestrian crossings or a group of major city roads) facilitates simultaneous control of classified luminaires.

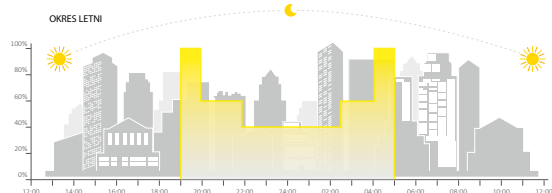
In addition, the lighting control system allows to report faults (e.g., when a luminaire stops working – it can signal an error via in-system notification, e-mail, or text message).

Advantages:

- reducing energy consumption and running costs,
- monitoring and remote control of urban lighting,
- real-time light intensity control,
- programming switching times and illumination intensity for selected times of day, year.

Surge protection

Outdoor lighting using LED technology is particularly vulnerable to overvoltage caused by disturbances in the operation of the electrical network and caused by atmospheric phenomena, e.g., lightning. All ROSA LED luminaires are equipped with 10 kV surge protectors, which reduce the overvoltage energy to a level safe for the electronics used in LED luminaires. This protection significantly increases the luminaire's resistance to electrical discharges (up to 15 pulses with 10 kV voltage). In addition, in the case of a larger number of pulses or a pulse with higher energy – it is destroyed by cutting off the luminaire from the power supply.



ROSA Designer

The application is available in the App Store and on the www.rosa.pl

The electronic products' catalogue

The electronic products' catalogue ROSA DESIGNER contains a complete range of products: columns, extension arms, luminaires and whole lighting sets. Wide range of products allows to easily use the catalogue and select the elements, so that the final effect not only meets the visual, but also technical expectations. Check all the possibilities!

Complete panel

Composing the lighting set has never been so easy.

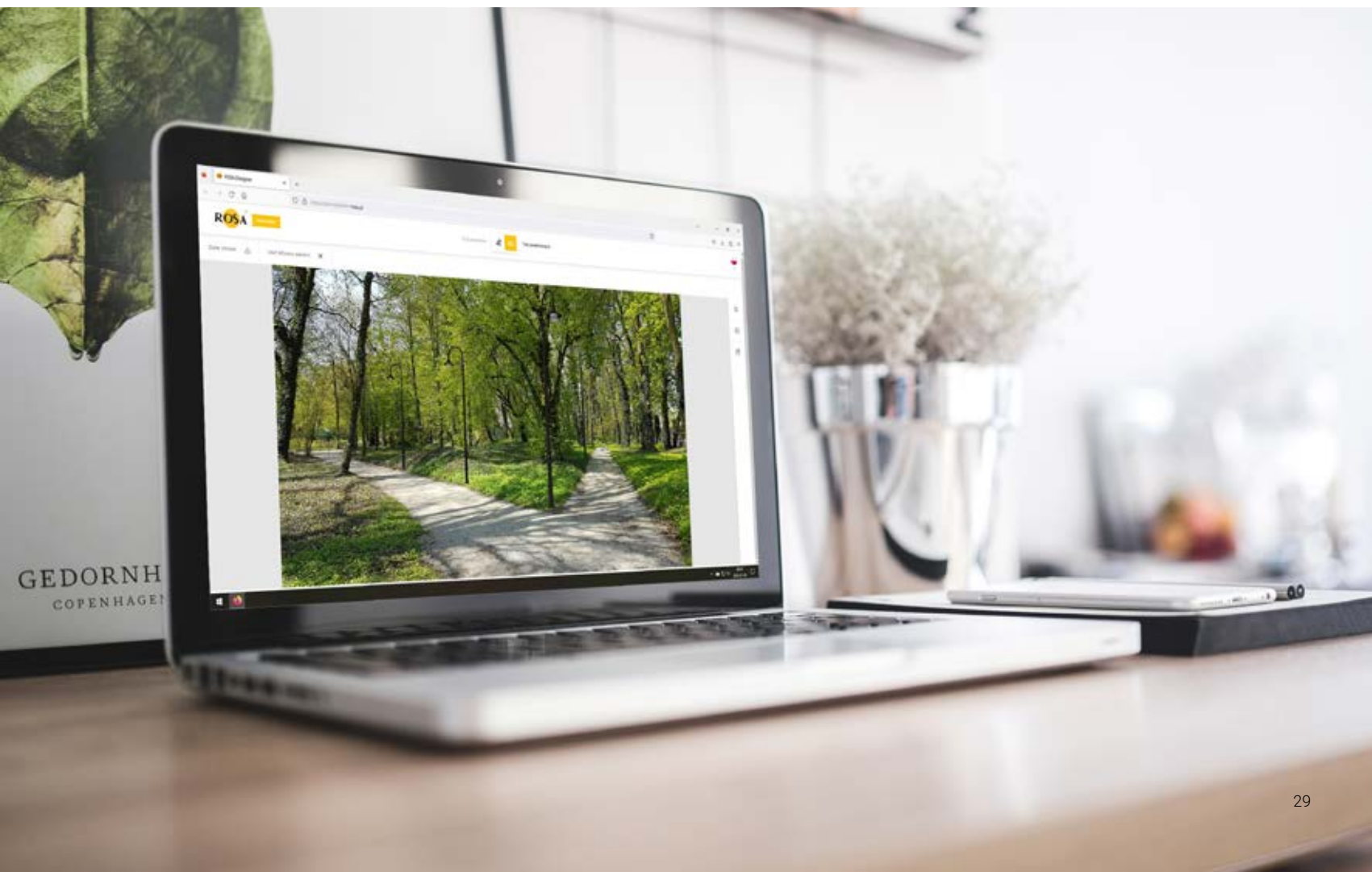
Effortless in use panel allows for quick and accurate adjustment of the selected products.

Just a few clicks are needed to connect all the necessary elements and determine their colour from the anodising colour palette.

Spatial visualization

You do not need imagination – simply go to the visualiser to see how the composed lighting set would be presented in a specific location. Take a picture of the street or square and place the selected lighting in it.

And everything lights up...



Aluminium columns

Residential Promenady Wrocławskie
Wrocław, Poland









MoonOffice
Cracow, Poland

Nothern bypass of Jaworzno
Jaworzno, Poland



Rybaczówka Park
Strzelce Opolskie, Poland









Municipality of Darłowo
Bobolin, Poland





Integrated Transit Node
Cieszyn, Poland

Water barrage
Malczyce, Poland









Municipal Stadium
Tychy, Poland



PE Academy
Gorzów Wielkopolski, Poland

Lubimorskiego Street
Cracow, Poland



Polish National Radio Symphony Orchestra
Katowice, Poland





Straight aluminium columns

ø114 mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Diameter of the column ending: ø60 mm

Protection class: IP 54 for the wiring chamber

Luminaire mounting: directly on the column or via an extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



Column type	SAL-3/B60	SAL-3,5/B60	SAL-4/B60	SAL-4,5/B60	SAL-5/B60
Height of the column H [mm]	3 000	3 500	4 000	4 500	5 000
Code	42120/C...	42101/C...	42102/C...	42103/C...	42127/C...
Net weight [kg]	8,7	10	11,3	12,7	14,2
Approximate unit volume [m ³]*	0,067	0,078	0,09	0,1	0,11
Recommended luminaires for column top mounting	ISKRA LED ALFA, ISKRA LED ALFA PROG, RING 1 LED, RING 2 LED, CUDDLE MINI LED REG, ELBA LED, AURIS LED, ATLANTIS LED, MIRA LED, ELBA, OPA-1, OP, OZ				
Recommended extension arms and luminaires	WA-14/1, WA-41 fi42 - OW LED				
Concrete footing / reinforcement basket type	B-50 / Z-50				
Threaded anchor ending	4xM14				
Concrete footing / reinforcement basket code	311150 / 311205				
Fasteners	4006				
Dimension of the base plate (side / bolt spacing / thickness) [mm]	224 / 180 / 8				

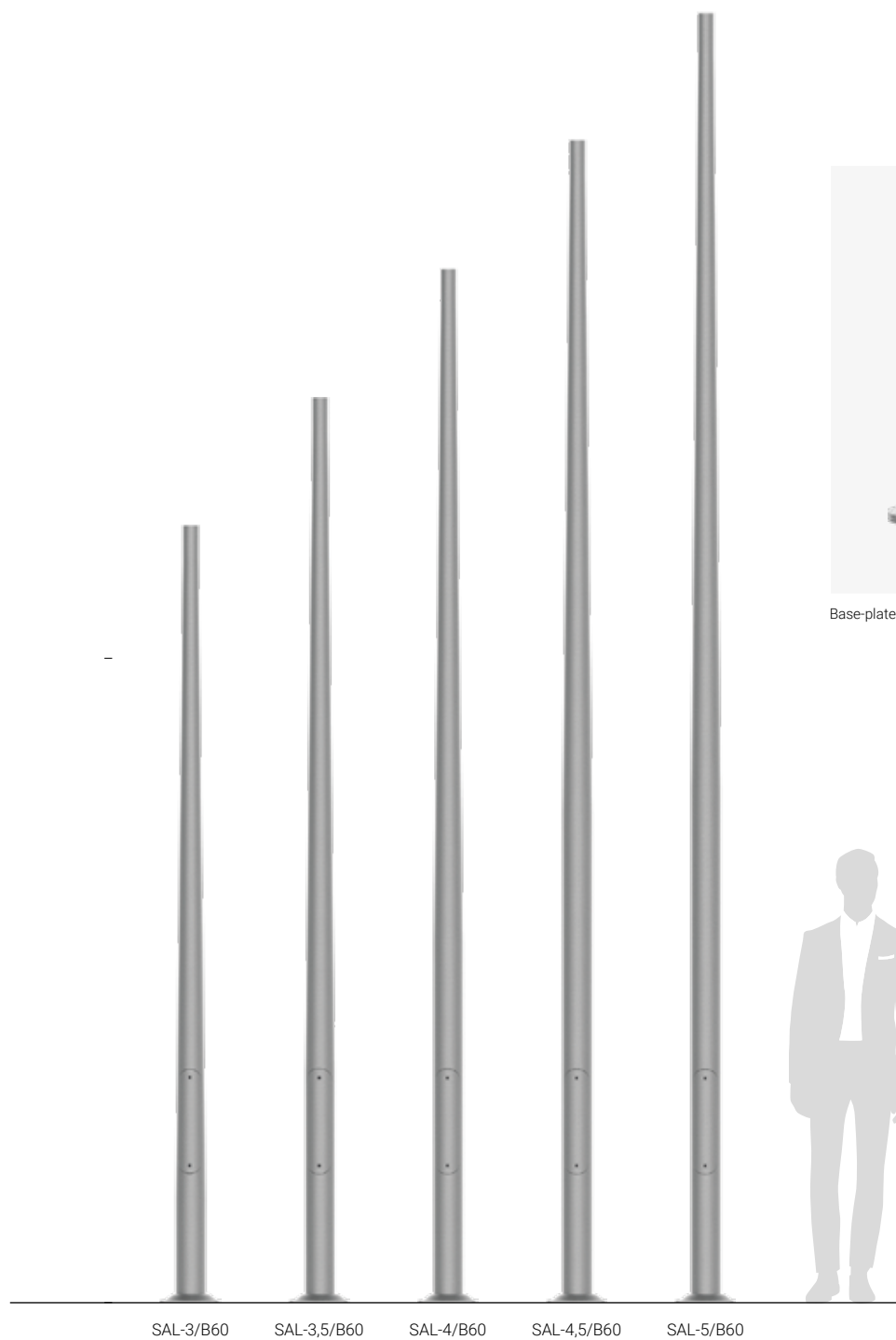
* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

Cracow, Poland

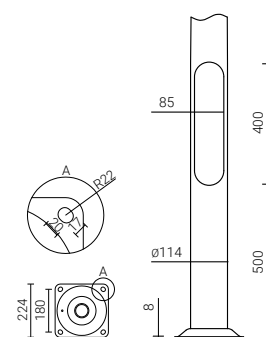


Luminaire: ISKRA LED ALFA
Column: SAL-4/B60





Base-plate of aluminium column 224x180x8



Straight aluminium columns

ø114 mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Diameter of the column ending: ø60 mm

Protection class: IP 54 for the wiring chamber

Luminaire mounting: directly on the column or via an extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



Column type	SAL-3/D60	SAL-3,5/D60	SAL-4/D60	SAL-4,5/D60	SAL-5/D60
Height of the column H [mm]	3 000	3 500	4 000	4 500	5 000
Code	42122/C...	42114/C...	42115/C...	42116/C...	42128/C...
Net weight [kg]	9,1	10,4	11,7	13,1	14,6
Approximate unit volume [m ³]*	0,087	0,101	0,115	0,13	0,145
Recommended luminaires for column top mounting	ISKRA LED ALFA, ISKRA LED ALFA PROG, RING 1 LED, RING 2 LED, CUDDLE MINI LED REG, ELBA LED, AURIS LED, ATLANTIS LED, MIRA LED, ELBA, OPA-1, OP, OZ				
Recommended extension arms and luminaires	WA-14/1, WA-41 fi42 - OW LED				
Concrete footing / reinforcement basket type	B-51 / Z-51				
Threaded anchor ending	4xM18				
Concrete footing / reinforcement basket code	311151 / 311251				
Fasteners	4008				
Dimension of the base plate (side / bolt spacing / thickness) [mm]	260 / 200 / 8				

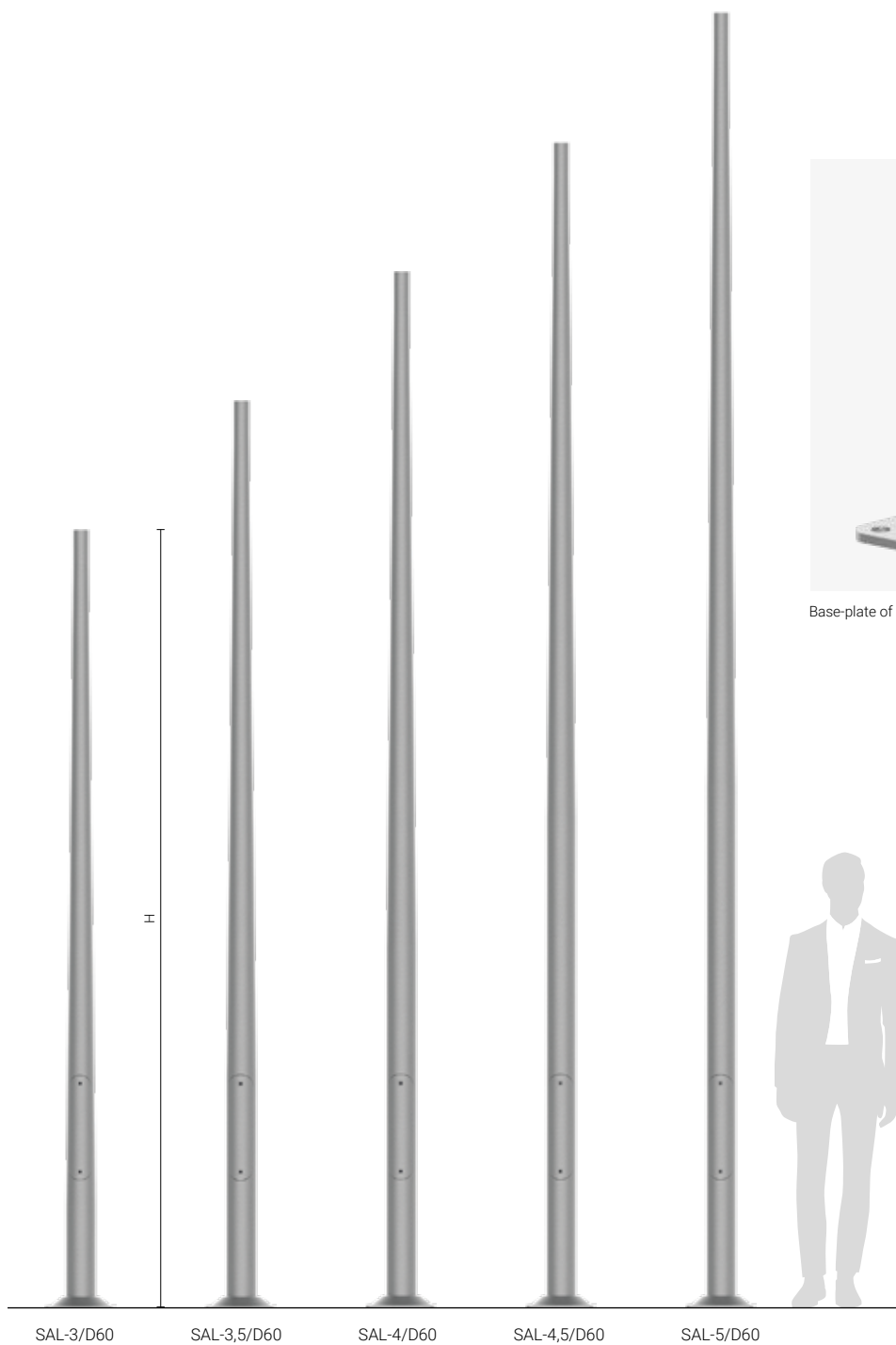
* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

Tymbark, Poland

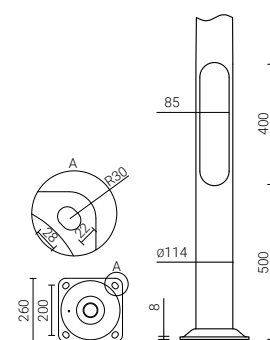


Luminaire: ATLANTIS LED
Column: SAL-4/D60





Base-plate of aluminium column 260x200x8



Straight aluminium columns

ø114 mm at ground level

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Diameter of the column ending: ø60 mm

Protection class: IP 54 for the wiring chamber

Luminaire mounting: directly on the column or via an extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



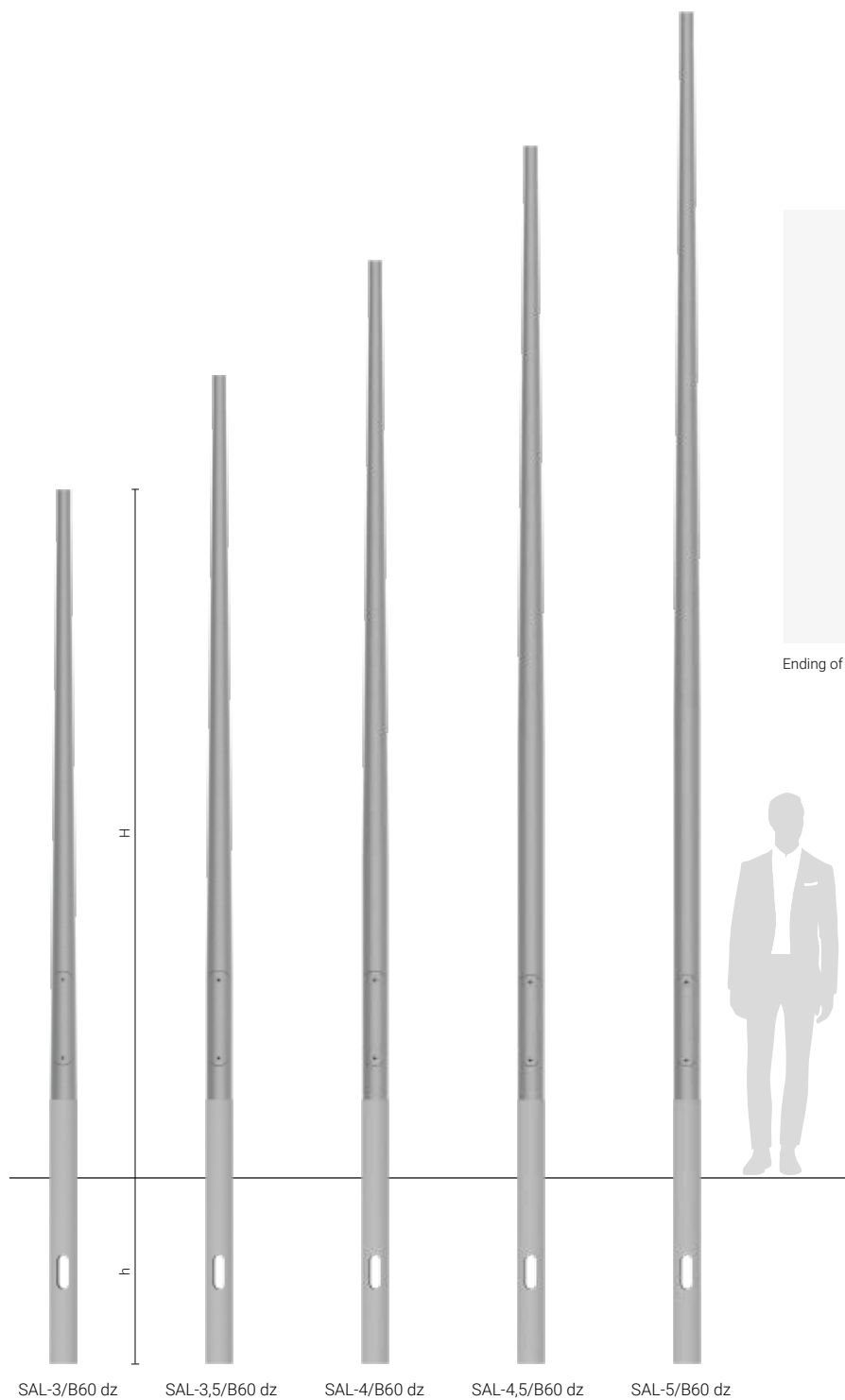
Column type	SAL-3/B60 dz	SAL-4/B60 dz	SAL-4,5/B60 dz	SAL-5/B60 dz
Height of the column at ground level H [mm]	3 000	4 000	4 500	5 000
Code	42124/C...	42111/C...	42107/C...	42113/C...
Net weight [kg]	10,6	13,2	14,5	16
Approximate unit volume [m³]*	0,024	0,03	0,033	0,036
Recommended luminaires for column top mounting	ISKRA LED ALFA, ISKRA LED ALFA PROG, RING 1 LED, RING 2 LED, CUDDLE MINI LED REG, ELBA LED, AURIS LED, ATLANTIS LED, MIRA LED, ELBA, OPA-1, OP, OZ			
Recommended extension arms and luminaires	WA-14/1, WA-41 f42 - OW LED			
Rooted section h [mm]	800			

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

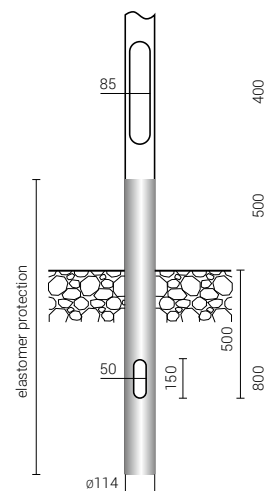
Duszniki-Zdrój, Poland



Luminaire: ELBA LED
Column: SAL-4/B60 dz



Ending of aluminium column



Straight aluminium columns

ø120 mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Diameter of the column ending: ø60

Protection class: IP 54 for the wiring chamber

Luminaire mounting: directly on the column or via an extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



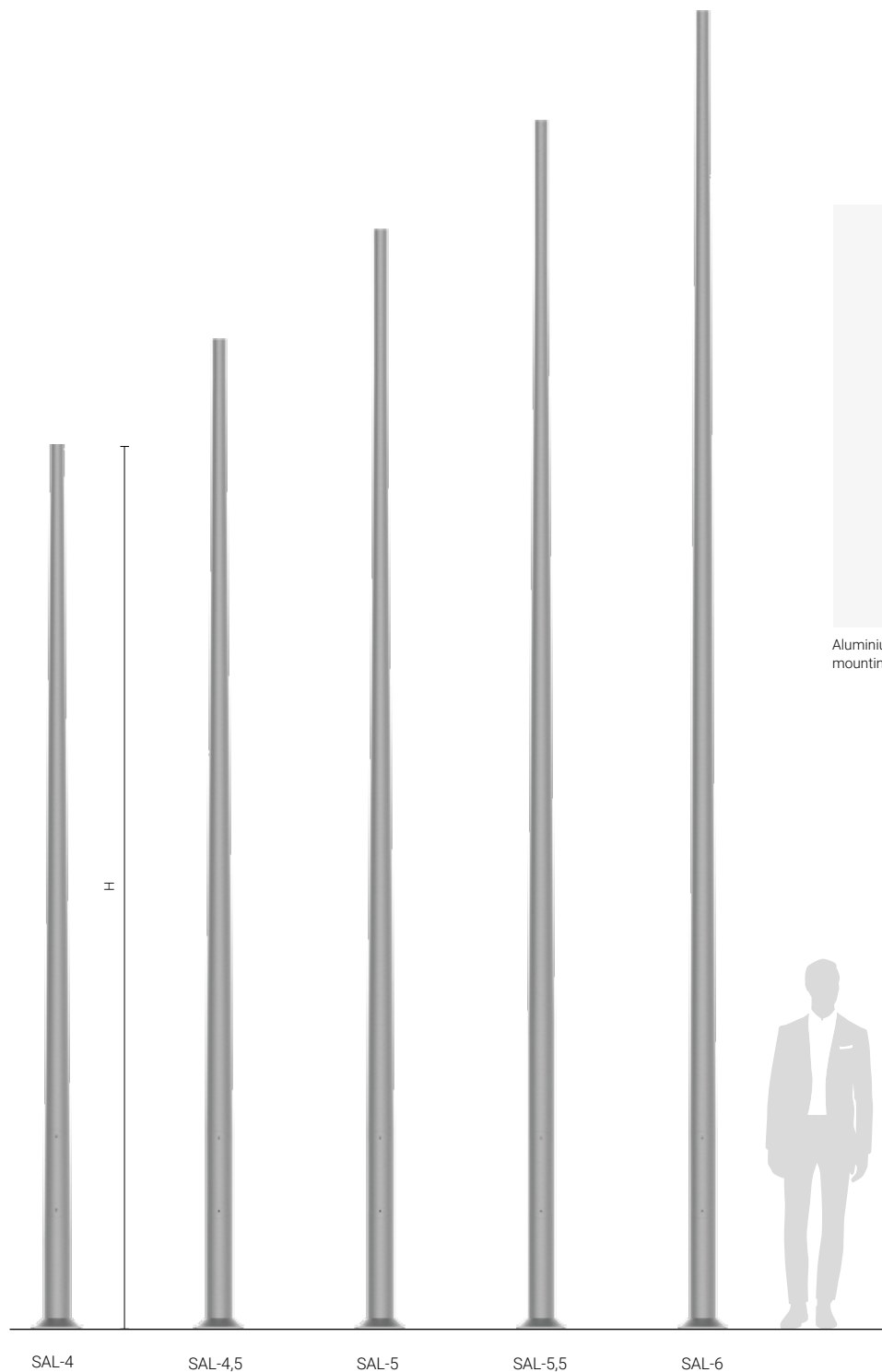
Column type	SAL-4	SAL-4,5	SAL-5	SAL-5,5	SAL-6
Height of the column H [mm]	4 000	4 500	5 000	5 500	6 000
Code	42201/C...	42202/C...	42203/C...	42205/C...	42207/C...
Net weight [kg]	14,8	16,4	17,6	19,6	20,6
Approximate unit volume [m³]*	0,09	0,101	0,112	0,123	0,134
Recommended luminaires for column top mounting	ISKRA LED ALFA, ISKRA LED P ALFA, ELBA LED, RING 1 LED, RING 2 LED, CUDDLE MINI LED REG, ATLANTIS LED, COSMO DELTA LED, MIRA LED, MIZAR LED, ELBA, OPA-1, OP, OZ				
Recommended extension arms and luminaires	WA-41 fi42 - luminaire OW LED; WA-5/1 - luminaire ELBA LED, ATLANTIS LED, OPA-1, OP, OZ; WA-14/1 - luminaire OW LED, DROP LED;				
	WA-14/2- luminaires OW LED, DROP LED;			-	
Concrete footing / reinforcement basket type	B-50 / Z-50				
Threaded anchor ending	4xM14				
Concrete footing / reinforcement basket code	311150 / 311205				
Fasteners	4006				
Dimension of the base plate (side / bolt spacing / thickness) [mm]	224 / 180 / 8				

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

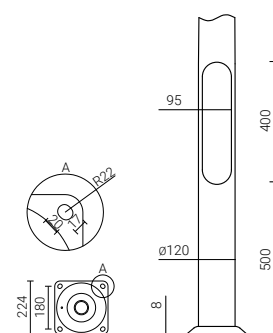
Radom, Poland



Luminaire: RING 1 LED
Column: SAL-5



Aluminium column wiring chamber with a mounting rail for a connection box



Straight aluminium columns

ø120 mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Diameter of the column ending: ø60 mm

Protection class: IP 54 for the wiring chamber

Luminaire mounting: directly on the column or via an extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



Column type	SAL-4E	SAL-4,5E	SAL-5E	SAL-6E
Height of the column H [mm]	4 000	4 500	5 000	6 000
Code	42217/C...	42218/C...	42219/C...	42223/C...
Net weight [kg]	15,2	16,8	18	21
Approximate unit volume [m³]*	0,116	0,13	0,145	0,174
Recommended luminaires for column top mounting	ISKRA LED ALFA, ISKRA LED ALFA PROG, ISKRA LED P ALFA, ISKRA LED P ALFA PROG, RING 1 LED, RING 2 LED, CUDDLE MINI LED REG, ELBA LED, AJURIS LED, ATLANTIS LED, COSMO DELTA LED, MIRA LED, MIZAR LED, ELBA, OPA-1, OP, OZ			
Recommended extension arms and luminaires	WA-41 f142 - luminaire OW LED; WA-5/1 - luminaire ELBA LED, ATLANTIS LED, OPA-1, OP, OZ; WA-14/1 - luminaire OW LED, DROP LED;			
	WA-14/2- luminaires OW LED, DROP LED;		-	
Concrete footing / reinforcement basket type	B-51 / Z-51			
Threaded anchor ending	4xM18			
Concrete footing / reinforcement basket code	311151 / 311251			
Fasteners	4008			
Dimension of the base plate (side / bolt spacing / thickness) [mm]	260 / 200 / 8			

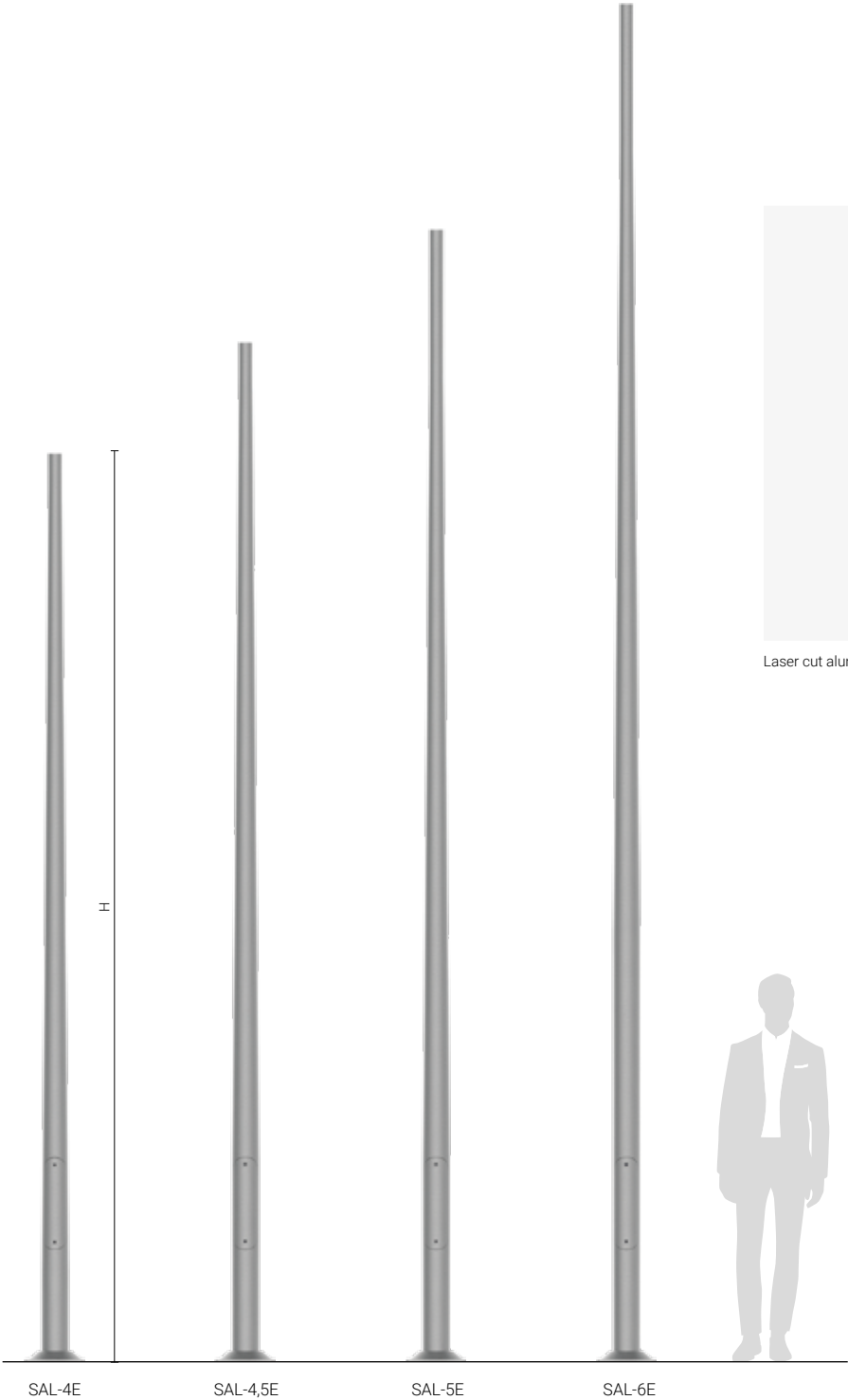
* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

Gorzów Wielkopolski, Poland

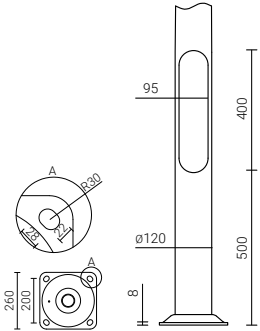


Luminaire: CUDDLE MINI LED REG
Column: SAL-5E





Laser cut aluminium column's wiring chamber



Straight aluminium columns

ø120 mm at ground level

- Anodising:** 10 colours
- Finish:** brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)
- Diameter of the column ending:** ø60 mm
- Protection class:** IP 54 for the wiring chamber
- Luminaire mounting:** directly on the column or via an extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



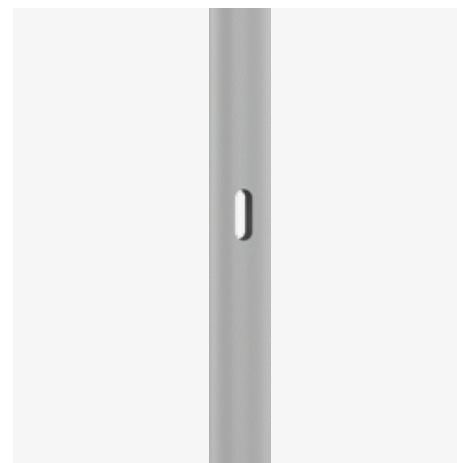
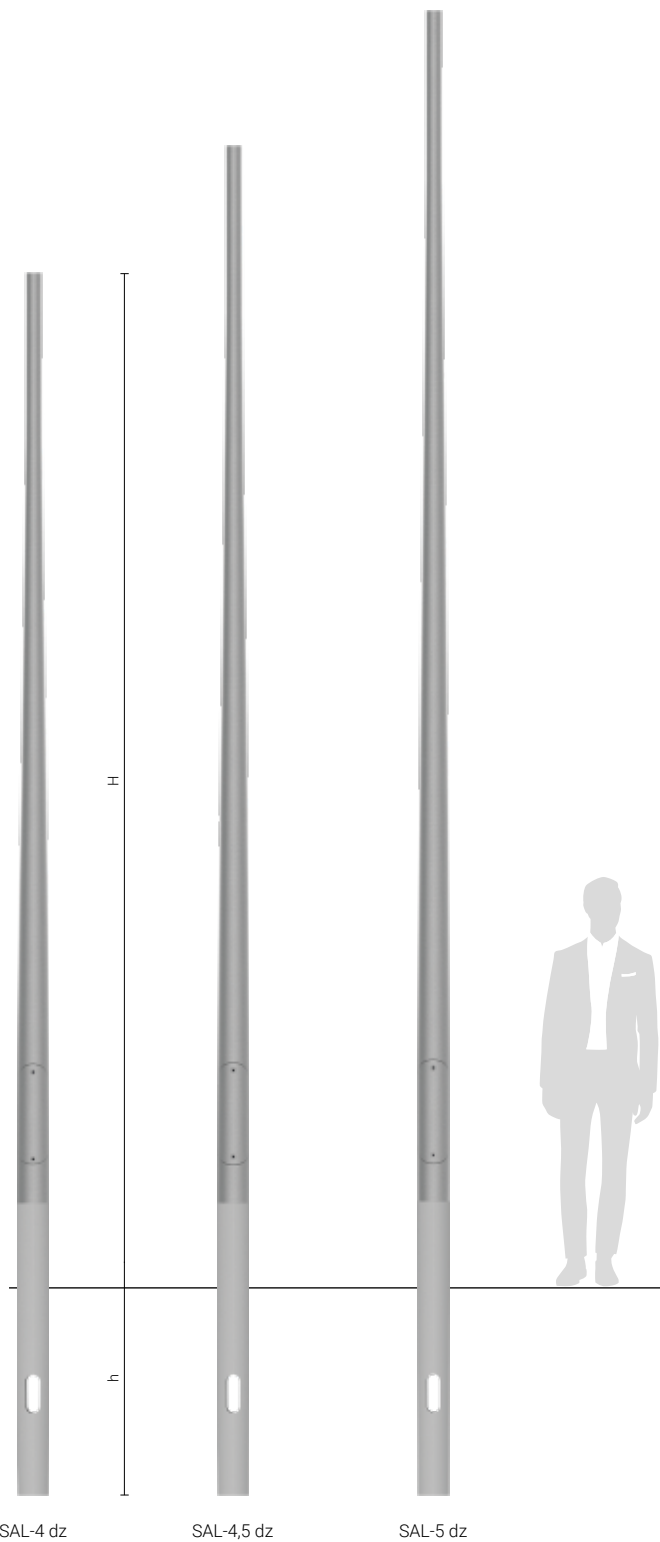
Column type	SAL-4 dz	SAL-4,5 dz	SAL-5 dz
Height of the column at ground level H [mm]	4 000	4 500	5 000
Code	42231/C...	42232/C...	42233/C...
Net weight [kg]	17,6	19,2	20,4
Approximate unit volume [m³]*	0,032	0,035	0,039
Recommended luminaires for column top mounting	ISKRA LED ALFA, ISKRA LED P ALFA, ISKRA LED ALFA PROG, ISKRA LED P ALFA PROG, RING 1 LED, RING 2 LED, CUDDLE MINI LED REG, ELBA LED, AURIS LED, ATLANTIS LED, COSMO DELTA LED, MIRA LED, MIZAR LED, ELBA, OPA-1, OP, OZ		
Recommended extension arms and luminaires	WA-41 fi42 - luminaire OW LED; WA-5/1 - luminaire ELBA LED, ATLANTIS LED, OPA-1, OP, OZ; WA-14/1 - luminaire OW LED, DROP LED;		
	WA-14/2- luminaires OW LED, DROP LED;		-
Rooted section h [mm]	800		

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

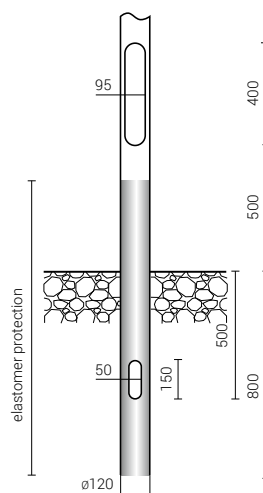
Wroclaw, Poland



Luminaire: MIZAR LED
Column: SAL-4 dz



Holes for power cables in an aluminium rooted column



Straight aluminium columns

ø146 mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Diameter of the column ending: ø60x180 mm

Protection class: IP 54 for the wiring chamber

Luminaire mounting: directly on the column or via an extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



Column type	SAL-60	SAL-65	SAL-70	SAL-75	SAL-80
Height of the column H [mm]	6 000	6 500	7 000	7 500	8 000
Code	42313/C...	42314/C...	42315/C...	42316/C...	42317/C...
Net weight [kg]	26,3	28,6	30,6	33,6	36,4
Approximate unit volume [m³]*	0,265	0,287	0,309	0,331	0,353
Recommended luminaires for column top mounting	RING 1 LED, RING 2 LED, CUDDLE MINI LED REG, CUDDLE II LED REG, COSMO DELTA LED, COSMO LED ALFA				
	ISKRA LED ALFA, ISKRA LED P ALFA, ISKRA LED ALFA PROG, ISKRA LED P ALFA PROG,		-		
Recommended extension arms and luminaires	WR-4/1/1,0/5 ZP, WR-10P/1/0,85/0 ZP, WR-10P/2/0,85/0 ZP - luminaire CUDDLE II LED, CUDDLE II LED REG, ISKRA LED, ISKRA LED PROG, COSMO LED; WN-1 - luminaire ARTEMIS LED				
	WR-2/1/0,95/5, WR-4/2/1,0/5 ZP, WR-4/1/1,5/5 ZP, WR-4/2/1,5/5 ZP, WR-8A/1/0,6/5, WR-5A/1/0,6/5, WR-13/1/0,8/5 ZP, WR-15/1/1,0/5 - luminaire CUDDLE II LED, CUDDLE II LED REG, ISKRA LED, ISKRA LED PROG, COSMO LED; WR-10/1/0,85/0, WR-10P/1/0,85/0 ZP - luminaire ISKRA LED, ISKRA LED PROG, WA-20/1 f60, WA-20/2 f60, WR-71/1/1,2, WR-71/2/1,2 - OW II LED; WN-2 - luminaire ARTEMIS LED			-	
Concrete footing / reinforcement basket type	B-60 / Z-60				
Threaded anchor ending	4xM18				
Concrete footing / reinforcement basket code	311160 / 311206				
Fasteners	4008				
Dimension of the base plate (side / bolt spacing / thickness) [mm]	320 / 250 / 10				

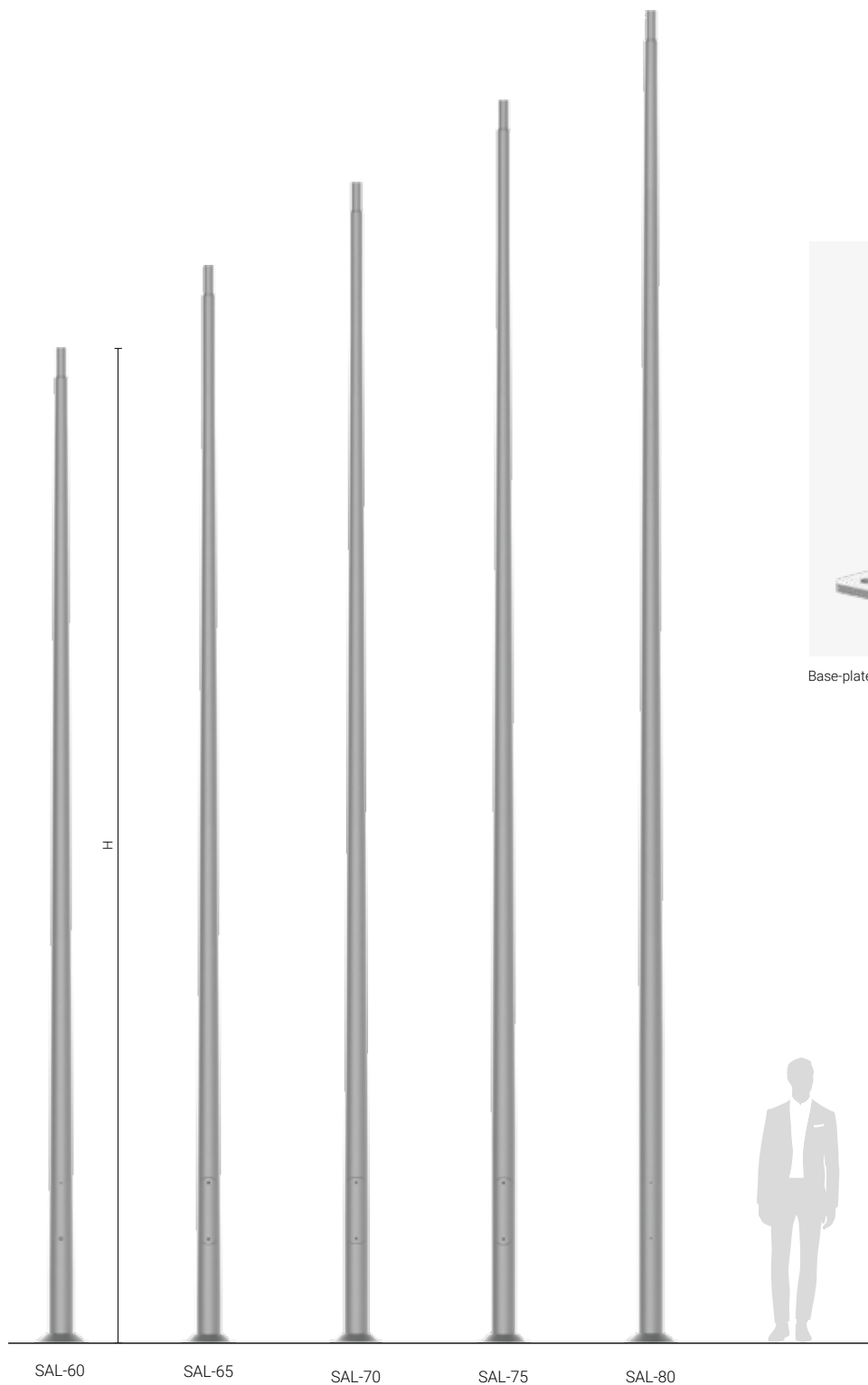
* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

Itawa, Poland

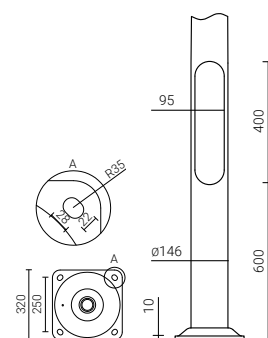


Luminaire: ISKRA LED
Arm: WR-10/1/0,85/0
Column: SAL-60





Base-plate of an aluminium column 320x250x10



Straight aluminium columns

ø146 mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Diameter of the column ending: ø60x180 mm

Protection class: IP 54 for the wiring chamber

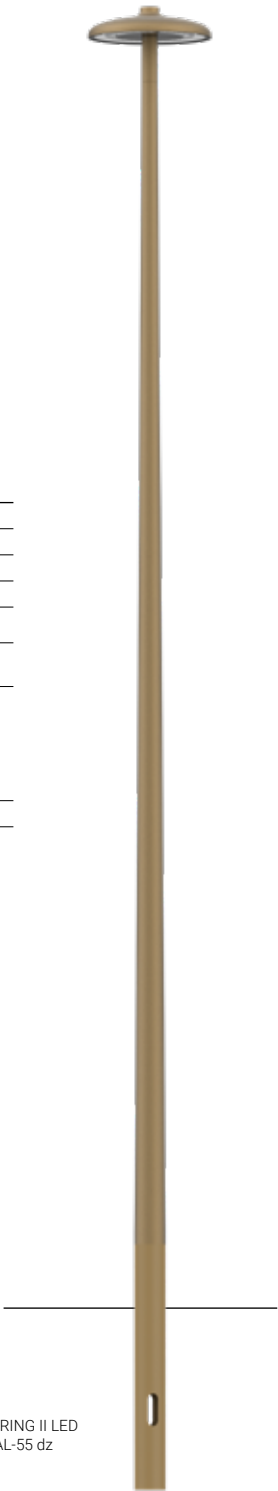
Luminaire mounting: directly on the column or via an extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



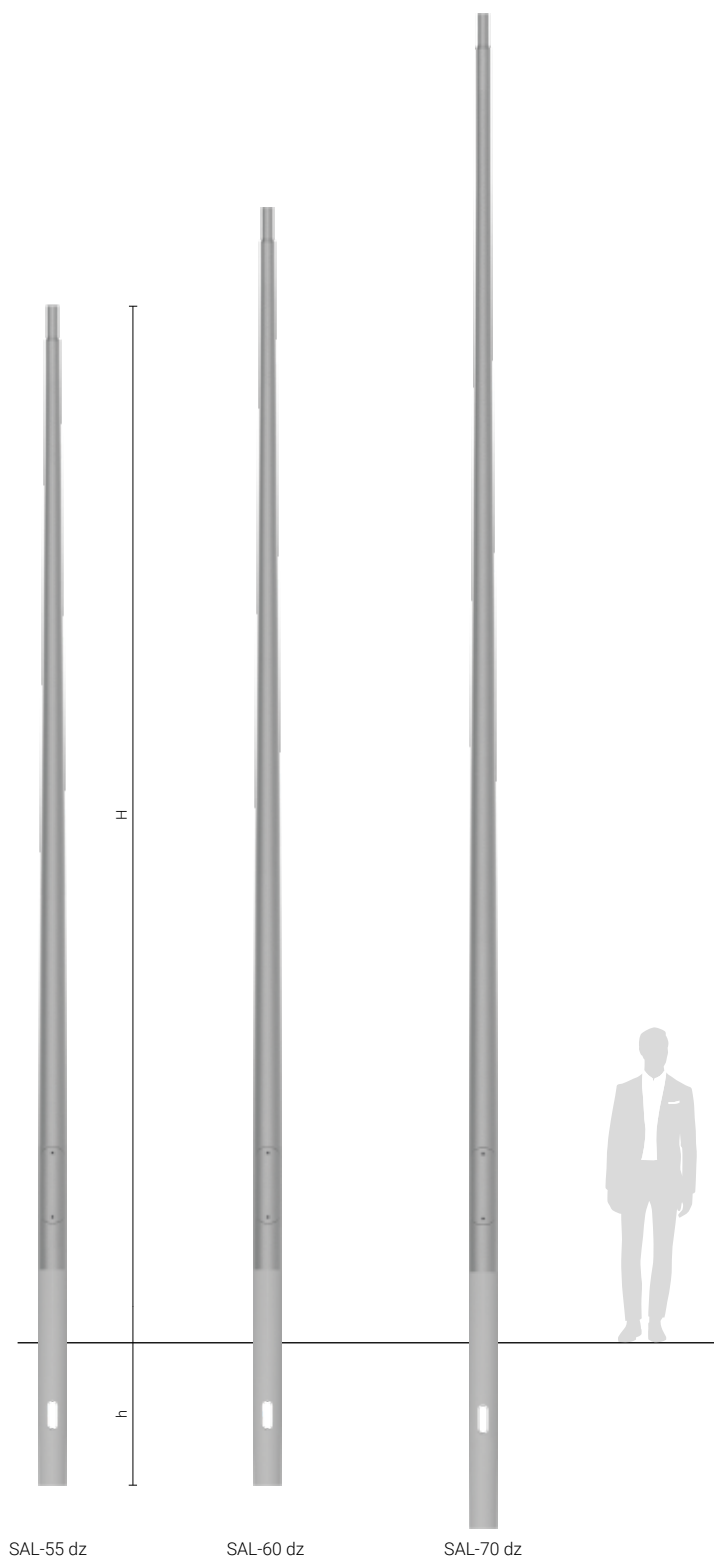
Column type	SAL-55 dz	SAL-60 dz	SAL-70 dz
Height of the column at ground level H [mm]	5 500	6 000	7 000
Code	42322/C...	42323/C...	42325/C...
Net weight [kg]	27	28,9	33,9
Approximate unit volume [m³]*	0,064	0,069	0,082
Recommended luminaires for column top mounting	RING 1 LED, RING 2 LED, CUDDLE MINI LED REG, CUDDLE II LED REG, COSMO DELTA LED, COSMO LED ALFA ISKRA LED ALFA, ISKRA LED P ALFA, ISKRA LED ALFA PROG, ISKRA LED P ALFA PROG		
Recommended extension arms and luminaires	WR-2/1/0,95/5, WR-4/2/1/0/5 ZP, WR-4/1/1,5/5 ZP, WR-4/2/1,5/5 ZP, WR-8A/1/0,6/5, WR-5A/1/0,6/5, WR-13/1/0,8/5 ZP, WR-15/1/1,0/5 - luminaire CUDDLE II LED, CUDDLE II LED REG, ISKRA LED, ISKRA LED PROG, COSMO LED; WR-10P/1/0,85/0 ZP - luminaire ISKRA LED, ISKRA LED PROG, WA-20/1 fi60, WA-20/2 fi60, WR-71/1/1,2, WR-71/2/1,2 - OW II LED; WN-2 - luminaire ARTEMIS LED		
Rooted section h [mm]	800	800	1000

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

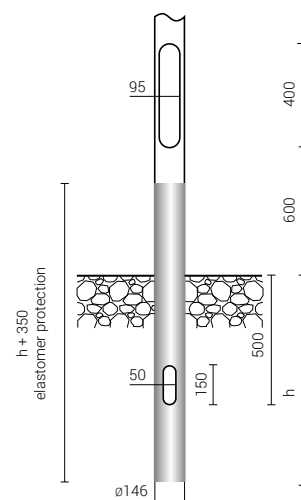
Elk, Poland



Luminaire: RING II LED
Column: SAL-55 dz



Ending of aluminium column



Straight aluminium columns

ø146 mm at the base

Anodising: 10 colours
Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)
Diameter of the column ending: ø60x180 mm
Protection class: IP 54 for the wiring chamber
Luminaire mounting: directly on the column or via an extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



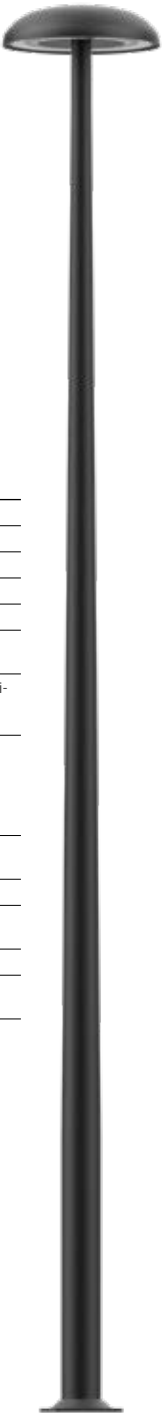
Column type	SAL-50G	SAL-60G	SAL-70G
Height of the column H [mm]	5 000	6 000	7 000
Code	42341/C...	42343/C...	42345/C...
Net weight [kg]	22,8	25,5	29,8
Approximate unit volume [m³]*	0,155	0,186	0,217
Recommended luminaires for column top mounting	RING 1 LED, RING 2 LED, CUDDLE MINI LED REG, CUDDLE II LED REG, COSMO DELTA LED, COSMO LED ALFA		
	ISKRA LED ALFA, ISKRA LED P ALFA, ISKRA LED ALFA PROG, ISKRA LED P ALFA PROG		RING 1 LED, RING 2LED, CUDDLE MINI LED REG
Recommended extension arms and luminaires	WR-2/1/0,95/5, WR-4/1/0,5/5 ZP, WR-4/2/0,5/5 ZP, WR-4/1/1,5/5 ZP, WR-4/2/1,5/5 ZP, W-8A/1/0,6/5, WR-13/1/0,8/5 ZP - luminaire CUDDLE II LED, CUDDLE II LED REG, ISKRA LED, ISKRA LED PROG, COSMO LED; WR-10P/1/0,85/0 ZP, WR-10P/2/0,85/0 ZP, WR-10P/1/1,5/0 ZP- ISKRA LED, ISKRA LED PROG;		
	WA-20/1 - luminaire OW LED, DROP LED, WR-5A/1/0,6/5, WR-8B/1/0,35/..., WR-14/1/1,0/5 - luminaire CUDDLE II LED, CUDDLE II LED REG, ISKRA LED, ISKRA LED PROG, COSMO LED; WN-2 - luminaire ARTEMIS LED	-	
Concrete footing / reinforcement basket type	B-51 / Z-51		
Threaded anchor ending	4xM18		
Concrete footing / reinforcement basket code	311151 / 311251		
Fasteners	4008		
Dimension of the base plate (side / bolt spacing / thickness) [mm]	260 / 200 / 12		

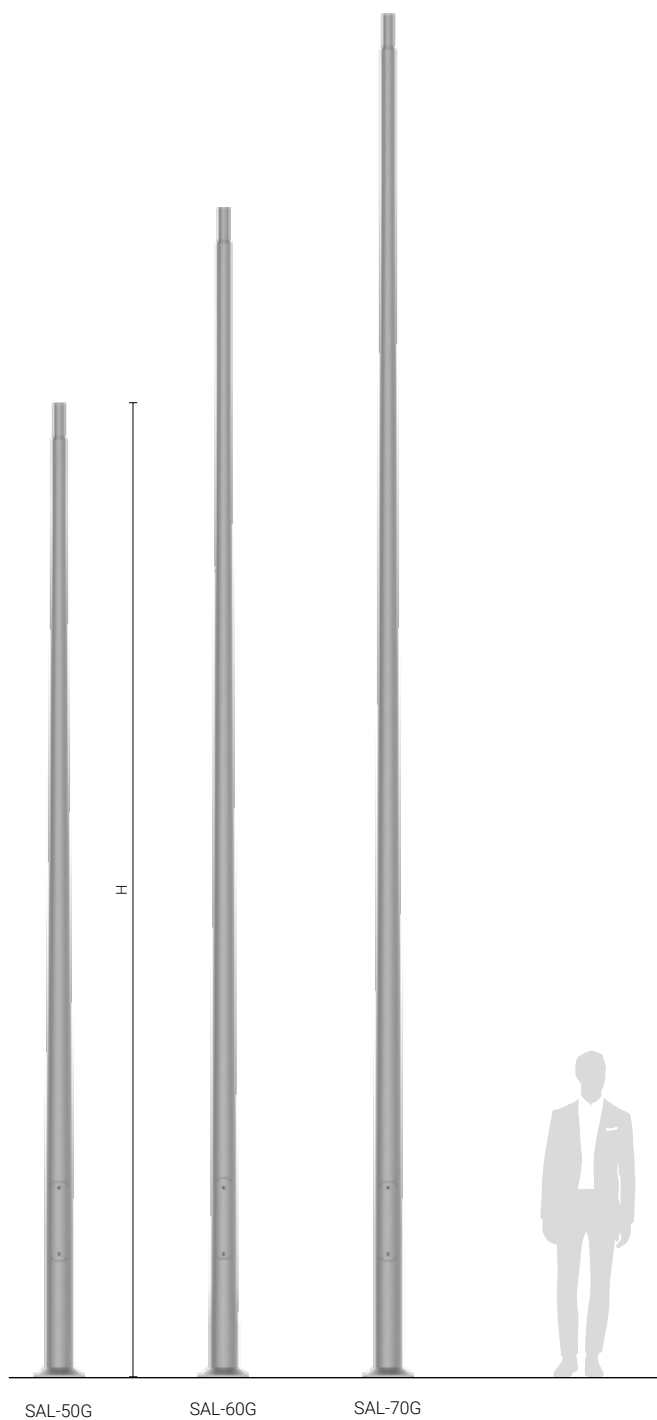
* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

Czechowice-Dziedzice, Poland

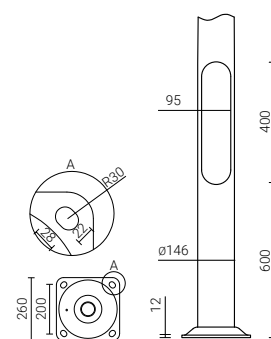


Luminaire: RING 1 LED
Column: SAL-50G





Aluminium column wiring chamber



Straight aluminium columns

ø146 mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Diameter of the column ending: ø60x180 mm

Protection class: IP 54 for the wiring chamber

Luminaire mounting: directly on the column or via an extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



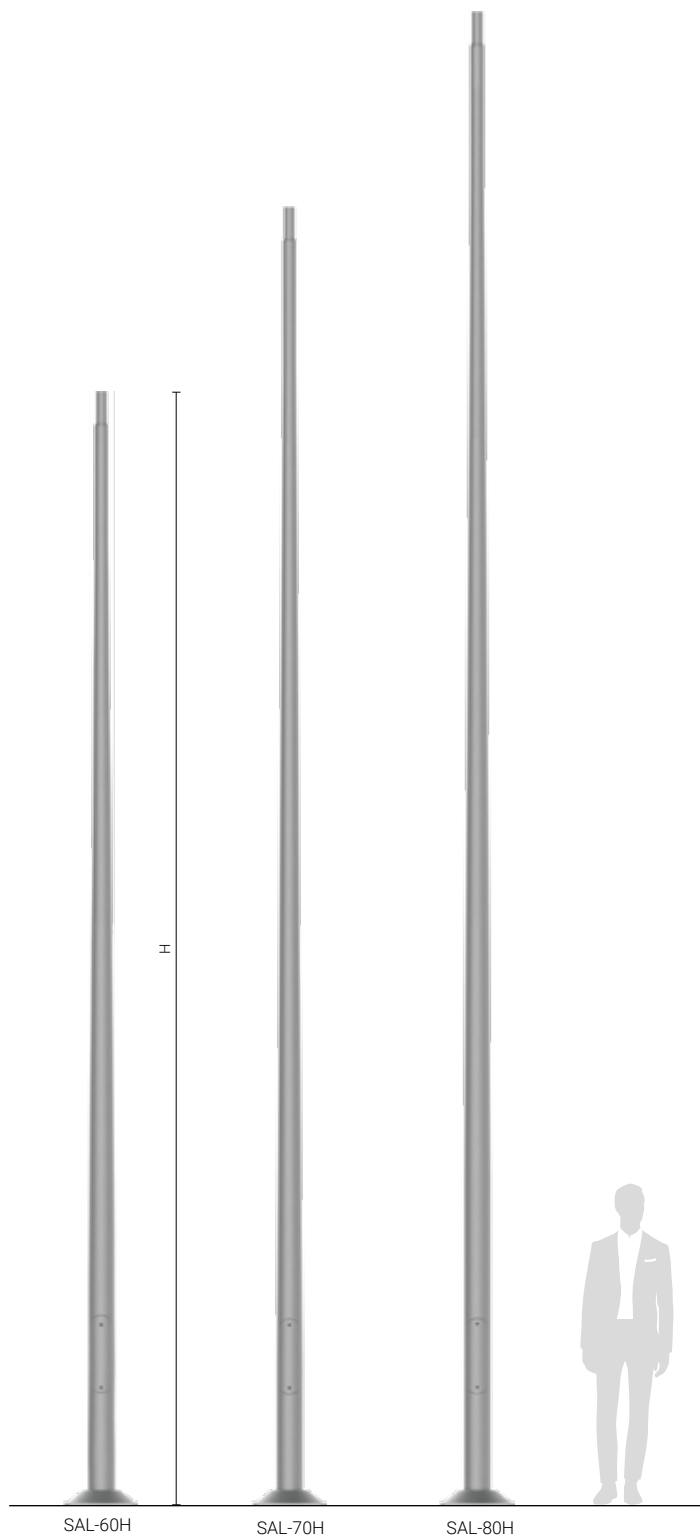
Column type	SAL-60H	SAL-70H	SAL-80H
Height of the column H [mm]	6 000	7 000	8 000
Code	42335/C...	42337/C...	42340/C...
Net weight [kg]	28	32,3	38,1
Approximate unit volume [m³]*	0,392	0,458	0,523
Recommended luminaires for column top mounting	RING 1 LED, RING 2 LED, CUDDLE MINI LED REG, CUDDLE II LED REG, COSMO DELTA LED, COSMO LED ALFA		
	ISKRA LED ALFA, ISKRA LED P ALFA, ISKRA LED ALFA PROG, ISKRA LED P ALFA PROG		-
Recommended extension arms and luminaires	WR-4/1/1,0/5 ZP, WR-10P/1/0,85/0 ZP, WR-10P/2/0,85/0 ZP - luminaire CUDDLE II LED, CUDDLE II LED REG, ISKRA LED, ISKRA LED PROG, COSMO LED; WN-1 - luminaire ARTEMIS LED		
	WR-2/1/0,95/5, WR-4/2/1,0/5 ZP, WR-4/1/1,5/5 ZP, WR-4/2/1,5/5 ZP, WR-8A/1/0,6/5, WR-5A/1/0,6/5, WR-13/1/0,8/5 ZP, WR-15/1/1,0/5 - luminaire CUDDLE II LED, CUDDLE II LED REG, ISKRA LED, ISKRA LED PROG, COSMO LED; WR-10P/1/0,85/0 ZP - luminaire ISKRA LED, ISKRA LED PROG, WA-20/1 f60, WA-20/2 f60, WR-71/1/1,2, WR-71/2/1,2 - OW II LED; WN-2 - luminaire ARTEMIS LED		-
Concrete footing / reinforcement basket type	B-71 / Z-71		
Threaded anchor ending	4xM24		
Concrete footing / reinforcement basket code	311171 / 311271		
Fasteners	4012		
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 10		

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

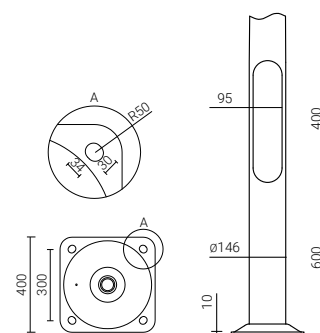
Tychy, Poland



Luminaire: CUDDLE II LED
Arm: WR-14/1/1,0/5
Column: SAL-60H



Base-plate of an aluminium column 400x300x10



Straight aluminium columns

ø178 mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Diameter of the column ending: ø60x180 mm

Protection class: IP 54 for the wiring chamber

Luminaire mounting: directly on the column or via an extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



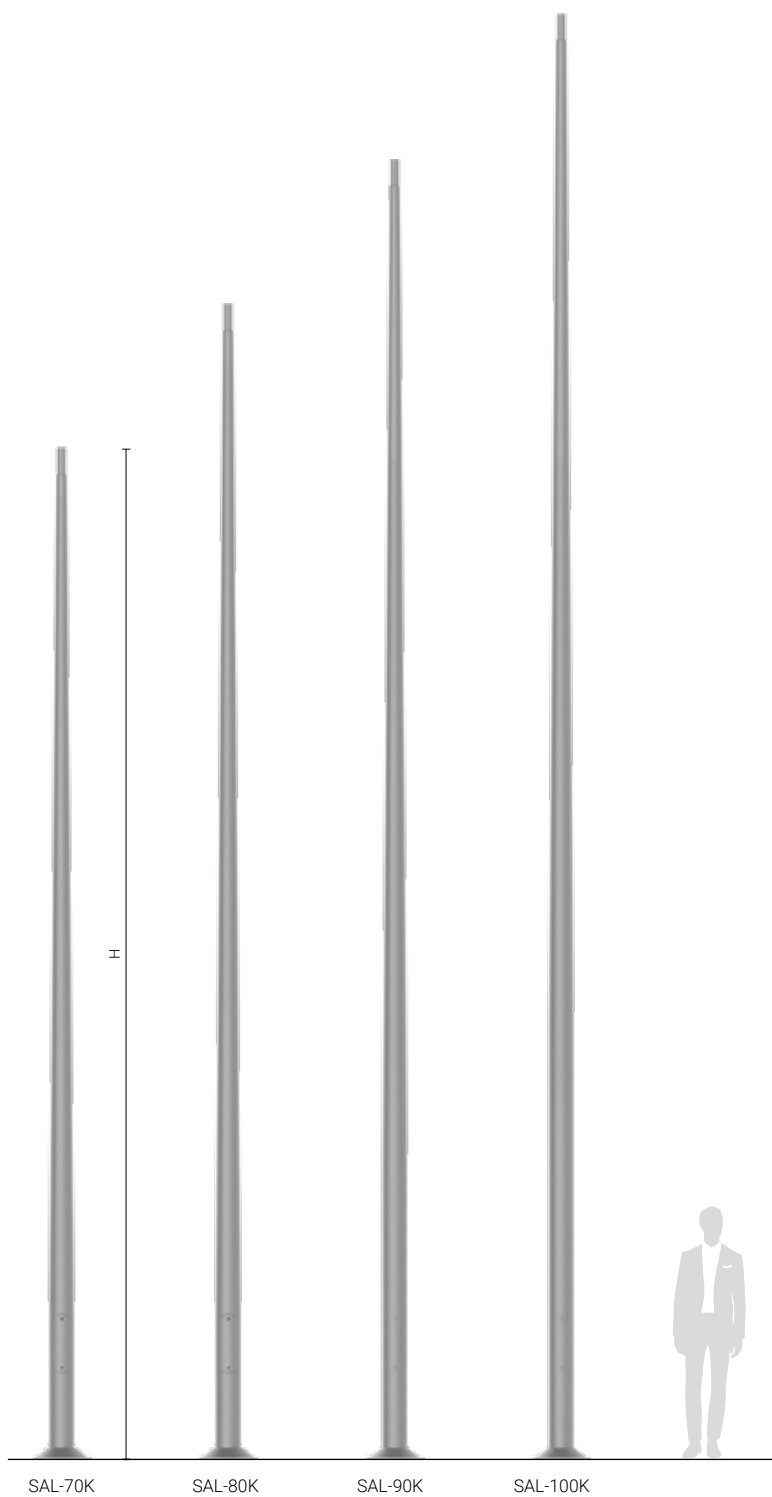
Column type	SAL-70K	SAL-80K	SAL-90K	SAL-100K
Height of the column H [mm]	7 000	8 000	9 000	10 000
Code	42628/C...	42630/C...	42632/C...	42634/C...
Net weight [kg]	34,7	37	42,8	46,5
Approximate unit volume [m³]*	0,458	0,525	0,589	0,654
Recommended luminaires for column top mounting	COSMO LED ALFA, CUDDLE II LED REG			
	RING 1 LED, RING 2 LED, CUDDLE MINI LED REG,		-	
Recommended extension arms and luminaires	WR-2/1/0,95/5, WR-4/1/1,0/5 ZP, WR-4/2/1,0/5 ZP, WR-4/1/1,5/5 ZP, WR-4/2/1,5/5 ZP, WR-15/1/1,0/5- luminaire CUDDLE II LED, CUDDLE II LED REG, COSMO LED			
	WR-2/2/0,95/5, WR-15/2/1,0/5- luminaire CUDDLE II LED, CUDDLE II LED REG, COSMO LED;		-	
	WR-8A/1/1/5, WR-14/1/1,0/5, WR-14/2/1,0/5 - luminaire CUDDLE II LED, CUDDLE II LED REG, COSMO LED; WA-20/1 f60, WA-20/2 f60, WR-71/1/1,2, WR-71/2/1,2 - luminaire OW II LED		-	
Concrete footing / reinforcement basket type	B-71 / Z-71		B-70, B-71 / Z-70, Z-71	
Threaded anchor ending	4xM24		4xM24	
Concrete footing / reinforcement basket code	311171 / 311271		311170, 311171 / 311207, 311271	
Fasteners	4012		4012	
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 10		400 / 300 / 10	

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

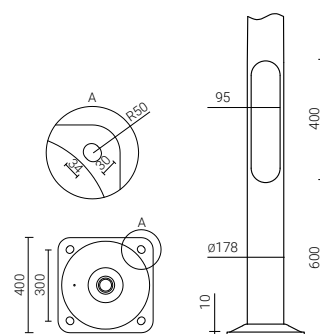
Rzeszów, Poland



Luminaire: CUDDLE II LED
Arm: WR-19/1/1,0/0
Column: SAL-80K



Laser cut aluminium column's wiring chamber



Straight aluminium columns

ø180 mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Diameter of the column ending: ø60x180 mm

Protection class: IP 54 for the wiring chamber

Luminaire mounting: directly on the column or via an extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



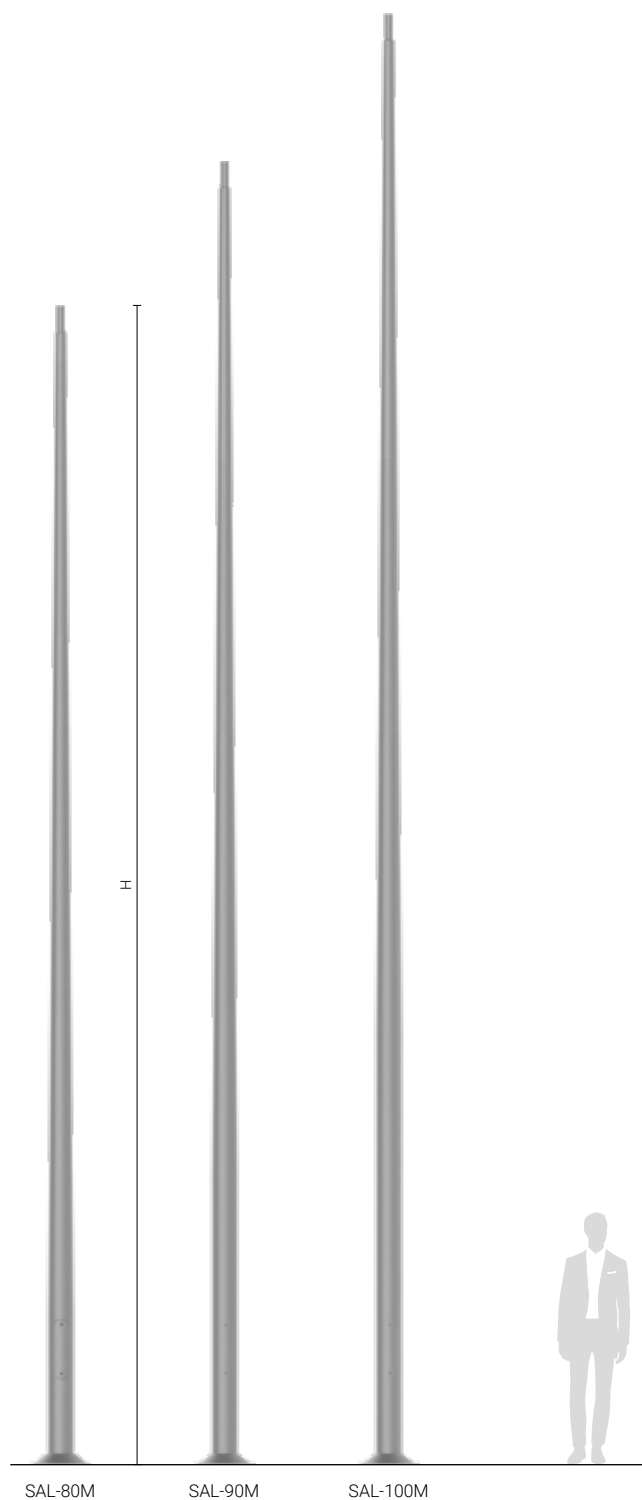
Column type	SAL-80M	SAL-90M	SAL-100M
Height of the column H [mm]	8 000	9 000	10 000
Code	42755/C...	42757/C...	42759/C...
Net weight [kg]	42,7	49,3	55,1
Approximate unit volume [m³]*	0,523	0,589	0,654
COSMO LED ALFA, CUDDLE II LED REG			
Recommended luminaires for column top mounting	RING 1 LED, RING 2 LED, CUDDLE MINI LED REG,		-
	WR-4/1/1,5/5 ZP, WR-4/2/1,5/5 ZP, WR-T1/1,5/5, WR-14/2/1,0/5, WR-21/1/1,5/0, WRP/1/L/Z/5 - luminaire CUDDLE II LED, CUDDLE II LED REG, COSMO LED		
Recommended extension arms and luminaires	WR-14/1/1,5/5, WR-18A/1/1,5/5, WR-19/1/1,0/0, WR-19/2/1,0/0, WR-21/2/1,5/0- luminaire CUDDLE II LED, CUDDLE II LED REG, COSMO LED, ARTERMIS LED; WA-20/1 f60, WA-20/2 f60, WR-71/1/1,2, WR-71/2/1,2 - luminaire OW II LED		-
Concrete footing / reinforcement basket type	B-70, B-71 / Z-70, Z-71		
Threaded anchor ending	4xM24		
Concrete footing / reinforcement basket code	311170, 311171 / 311207, 311271		
Fasteners	4012		
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 12		

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

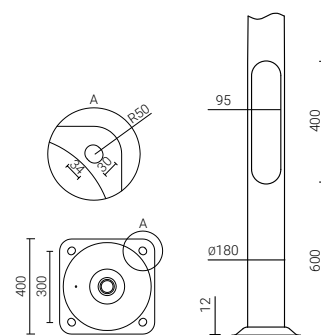
Tychy, Poland



Luminaire: CUDDLE II LED
Arm: WR-14/1/1,5/5
Column: SAL-80M



Assembly of aluminium column's cover



Straight aluminium columns

ø178 and ø180 mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Diameter of the column ending: ø60x180 mm

Protection class: IP 54 for the wiring chamber

Luminaire mounting: directly on the column or via an extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



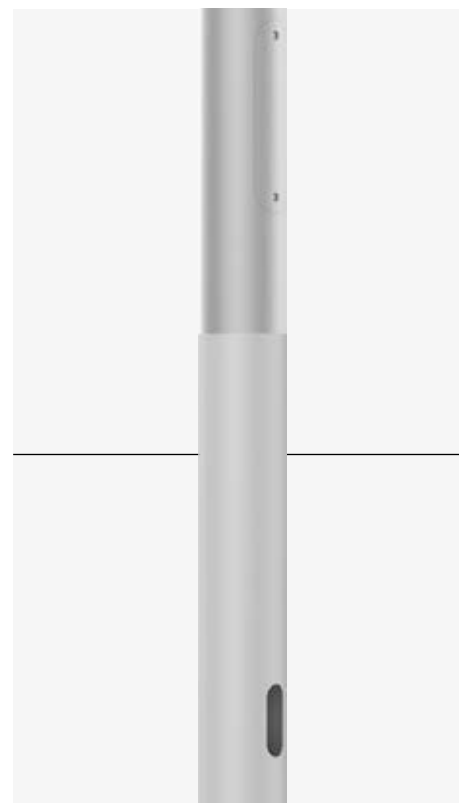
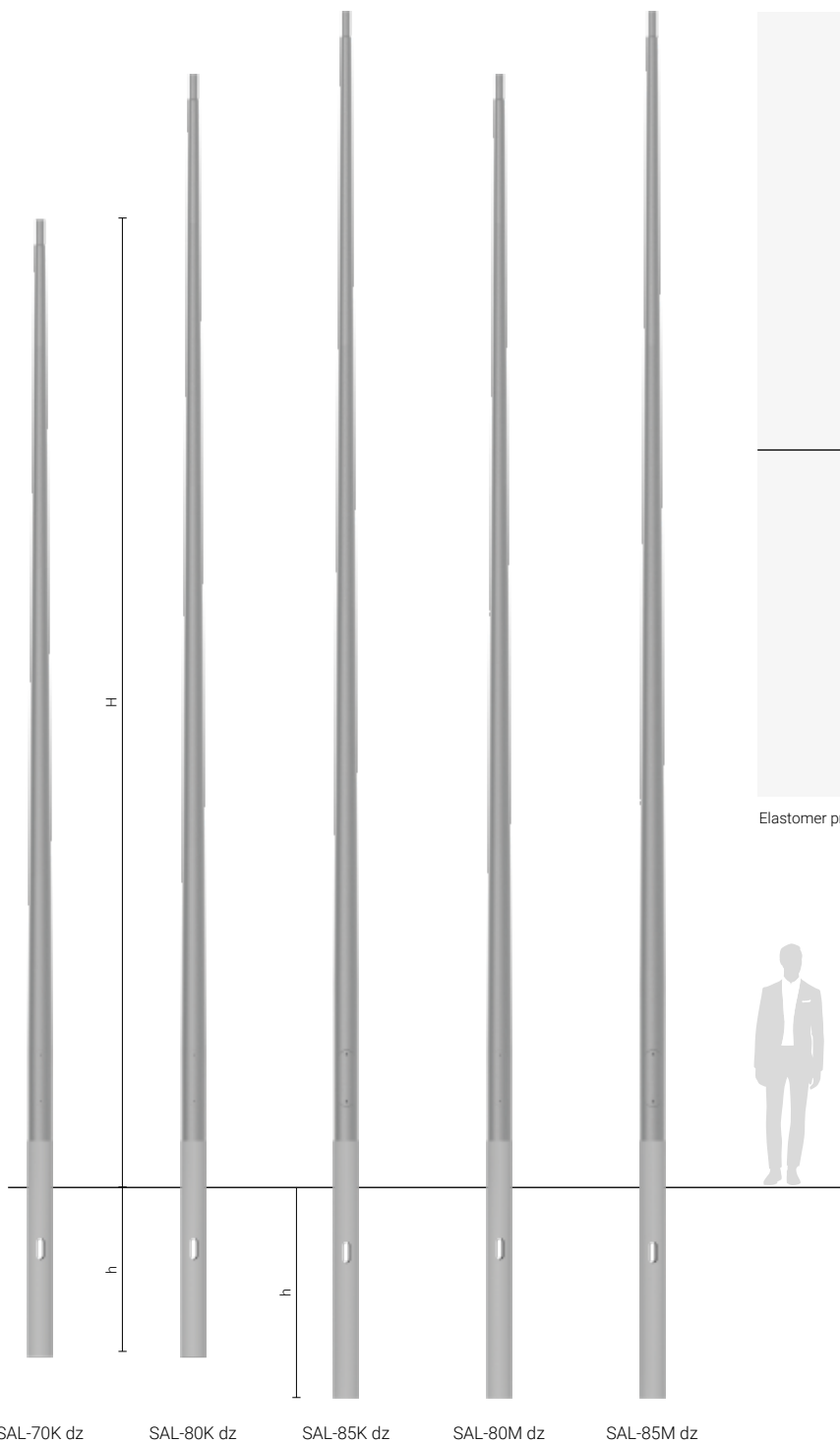
Column type	SAL-70K dz	SAL-80K dz	SAL-85K dz	SAL-80M dz	SAL-85M dz
Height of the column at ground level H [mm]	7 000	8 000	8 500	8 000	8 500
Code	42604/C...	42606/C...	42607/C...	42706/C...	42707/C...
Net weight [kg]	35,8	40,5	43,6	47,7	50,3
Approximate unit volume [m³]*	0,109	0,127	0,133	0,128	0,135
Recommended luminaires for column top mounting	COSMO LED ALFA, CUDDLE II LED REG				
	RING 1 LED, RING 2 LED, CUDDLE MINI LED REG,		-		
Recommended extension arms and luminaires	WA-20/1 fi60, WA-20/2 fi60, WR-71/1/1,2, WR-71/2/1,2 - luminaire OW II LED				
	WR-14/1/1,0/5, WR-14/2/1,0/5 - luminaire CUDDLE II LED, CUDDLE II LED REG, COSMO LED;				
	WR-2/2/0,95/5, WR-8A/1/1/5, WR-15/2/1,0/5- luminaire CUDDLE II LED, CUDDLE II LED REG, COSMO LED;			WR-4/1/1,5/5 ZP, WR-4/2/1,5/5 ZP, WR-T1/1/5/5, WR-14/1/1,5/5, WR-14/2/1,0/5, WR-18A/1/1,5/5, WR-19/1/1,0/0, WR-19/2/1,0/0, WR-21/1/1,5/0, WR-21/2/1,5/0, WRP/1/L/Z/5 - luminaire CUDDLE II LED, CUDDLE II LED REG, COSMO LED	
Rooted section h [mm]	1 200		1 500		

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

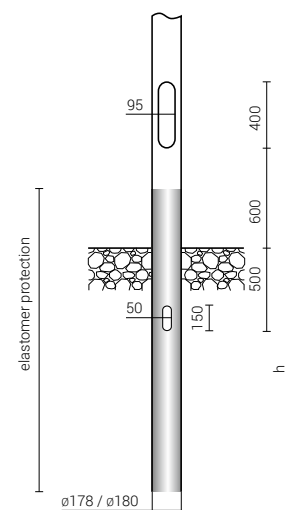
Nysa, Poland



Luminaire: CUDDLE II LED REG
Arm: WR-21/1
Column: SAL-80M dz



Elastomer protection for rooted anodised aluminium columns



Straight aluminium columns

two-piece / reinforced / $\varnothing 176$ mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Diameter of the column ending: $\varnothing 60$ mm

Protection class: IP 54 for the wiring chamber without reinforcement

Luminaire mounting: directly on the column or via an extension arm, luminaires with $\varnothing 60$ mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet

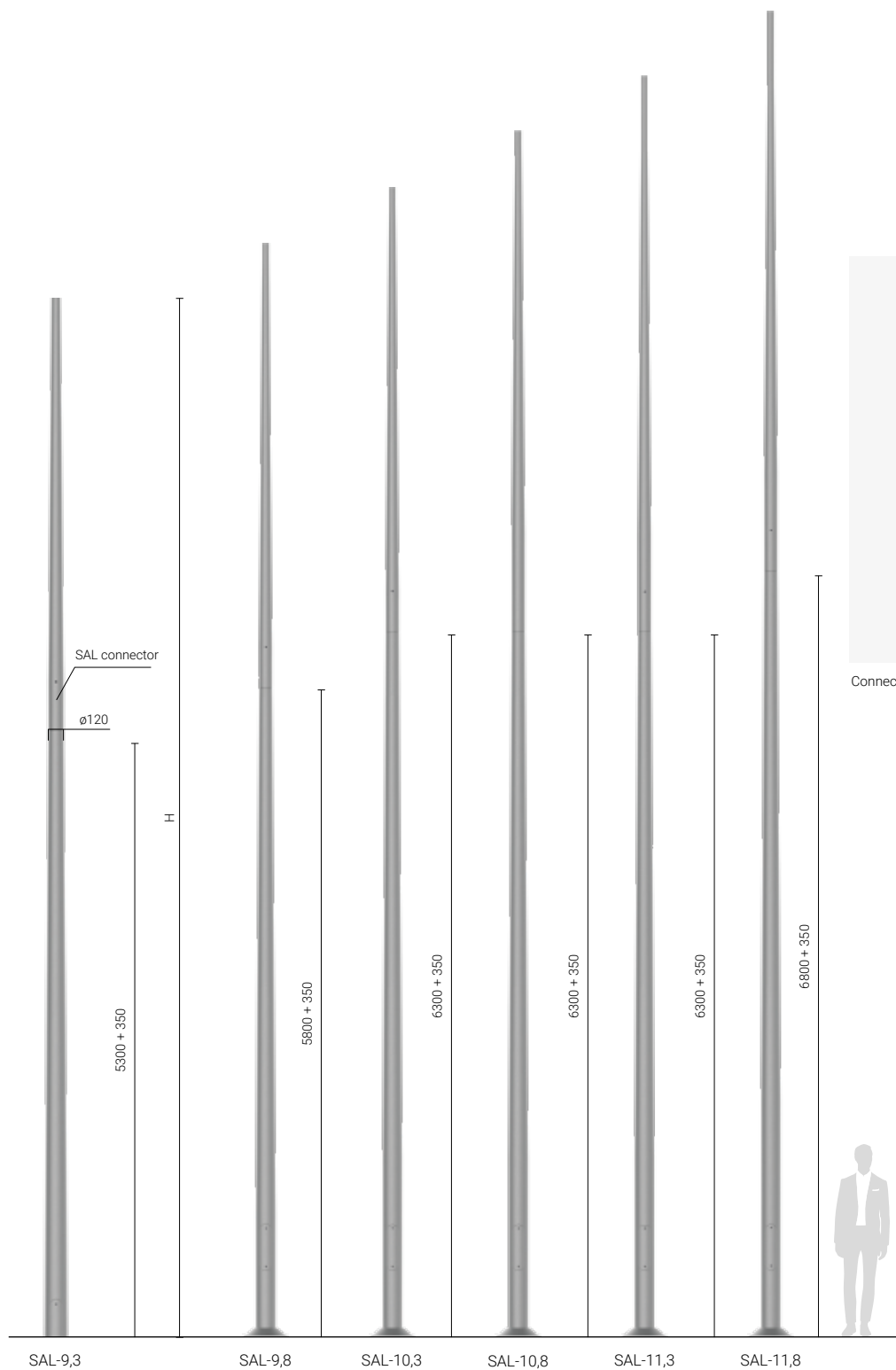


Column type	SAL-9,3	SAL-9,8	SAL-10,3	SAL-10,8
Height of the column H [mm]	9 300	9 800	10 300	10 800
Code	42456/C...	42457/C...	42458/C...	42459/C...
Net weight [kg]	47,6	50,8	53,9	56,0
Approximate unit volume [m ³]*	0,437	0,473	0,509	0,513
Recommended luminaires for column top mounting	COSMO LED ALFA, CUDDLE II LED REG			
Recommended extension arms and luminaires	WR-4/1/0,5/5 ZP; WR-4/1/1,0/5 ZP; WR-8B/1/0,35/0, – luminaire: CUDDLE II LED, CUDDLE II LED REG, COSMO LED ALFA; WN-1 – luminaire ARTEMIS LED			
Concrete footing / reinforcement basket type	B-70, B-71 / Z-70, Z-71			
Threaded anchor ending	4xM24			
Concrete footing / reinforcement basket code	311170, 311171 / 311207, 311271			
Fasteners	4012			
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 12			

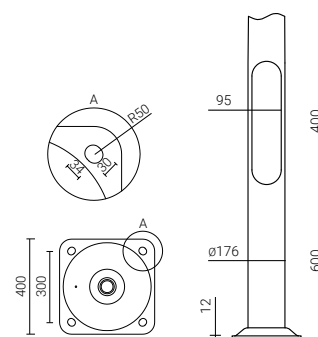
Column type	SAL-10,3 wzm	SAL-10,8 wzm	SAL-11,3 wzm	SAL-11,8 wzm
Height of the column H [mm]	10 300	10 800	11 300	11 800
Code	42478/C...	42479/C...	42470/C...	42471/C...
Net weight [kg]	61,1	63,2	64,2	67,8
Approximate unit volume [m ³]*	0,509	0,513	0,516	0,55
Recommended luminaires for column top mounting	COSMO LED ALFA, CUDDLE II LED REG			
Recommended extension arms and luminaires	WR-4/1/0,5/5 ZP; WR-4/1/1,0/5 ZP; WR-4/2/1,0/5 ZP; WR-8B/1/0,35/0, – luminaire: CUDDLE II LED, CUDDLE II LED REG, COSMO LED ALFA; WN-1 – luminaire ARTEMIS LED			
Concrete footing / reinforcement basket type	B-70 / Z-70			
Threaded anchor ending	4xM24			
Concrete footing / reinforcement basket code	311170 / 311207			
Fasteners	4012			
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 12			

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... – choice of anodising colour

Luminaire: ARTEMIS LED
Arm: WN-1
Column: SAL-11,3



Connection of two-piece aluminium column type SAL



Aluminium columns with welded extension arms

ø120 mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Protection class: IP 54 for the wiring chamber

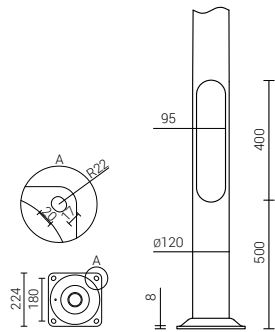
Luminaire mounting: directly on the extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



Column type	SAL-A1	SAL-A2	SAL-D1	SAL-D2
Height of the column [mm]	4 000	4 000	4 000	4 000
Code	42209/C...	42210/C...	42215/C...	42216/C...
Net weight [kg]	15,1	16,4	15,6	16,8
Approximate unit volume [m³]*	0,263	0,397	0,282	0,431
Recommended luminaires	ISKRA LED ALFA, ELBA LED, AURIS LED, ATLANTIS LED, MIRA LED, MIZAR LED, OS-1 LED, OS-11 LED			
Concrete footing / reinforcement basket type	B-50 / Z-50			
Threaded anchor ending	4xM14			
Concrete footing / reinforcement basket code	311150 / 311205			
Fasteners	4006			
Dimension of the base plate (side / bolt spacing / thickness) [mm]	224 / 180 / 8			

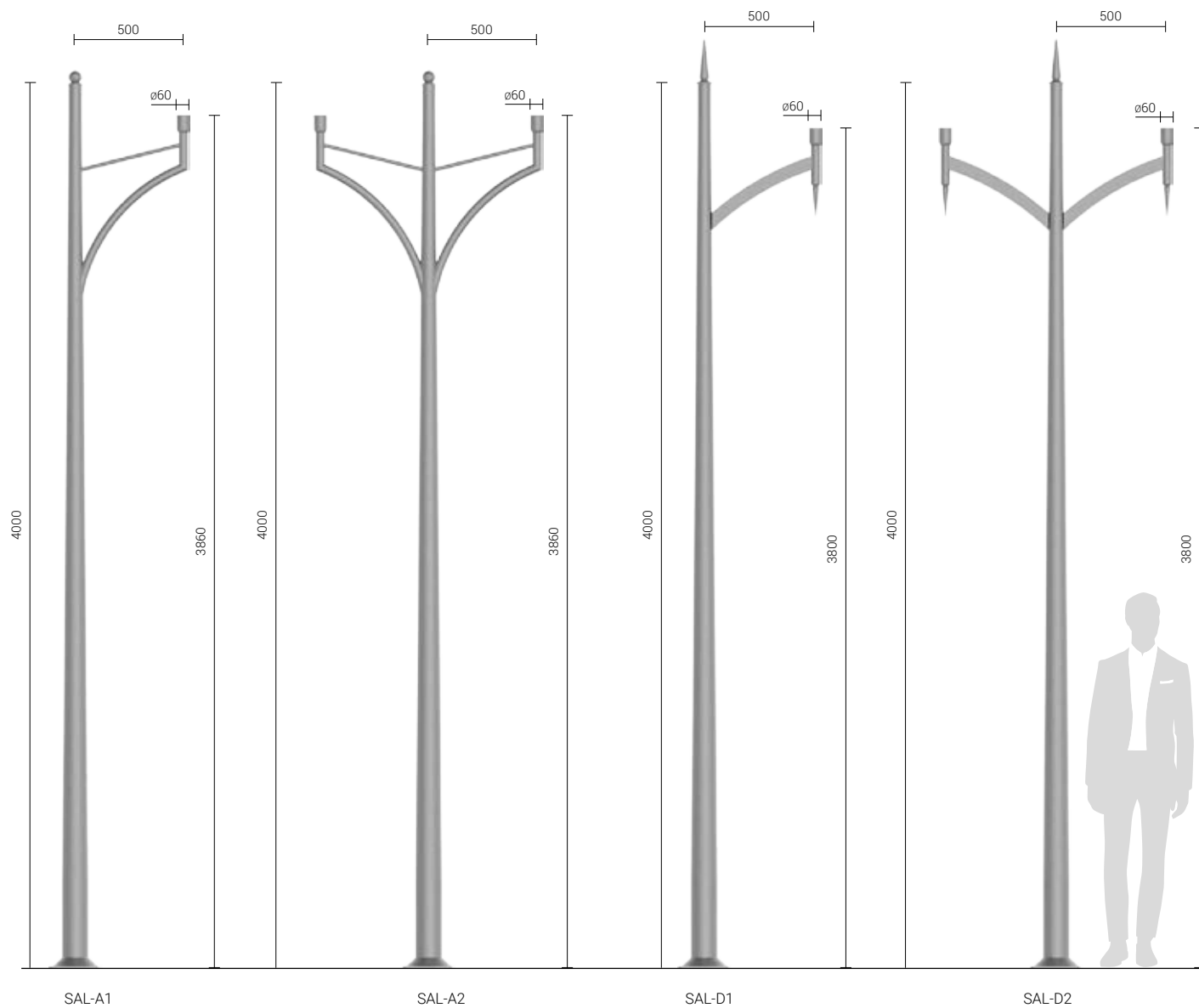
* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... – choice of anodising colour

Nowe Miasteczko, Poland



Luminaire: ATLANTIS LED
Column: SAL-A1





Aluminium columns with welded extension arms

ø146 mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Protection class: IP 54 for the wiring chamber

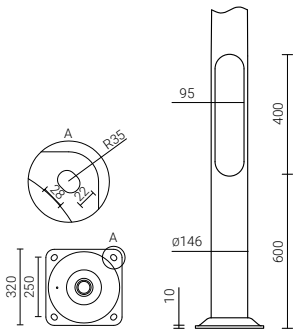
Luminaire mounting: directly on the extension arm, luminaires with ø42 or ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



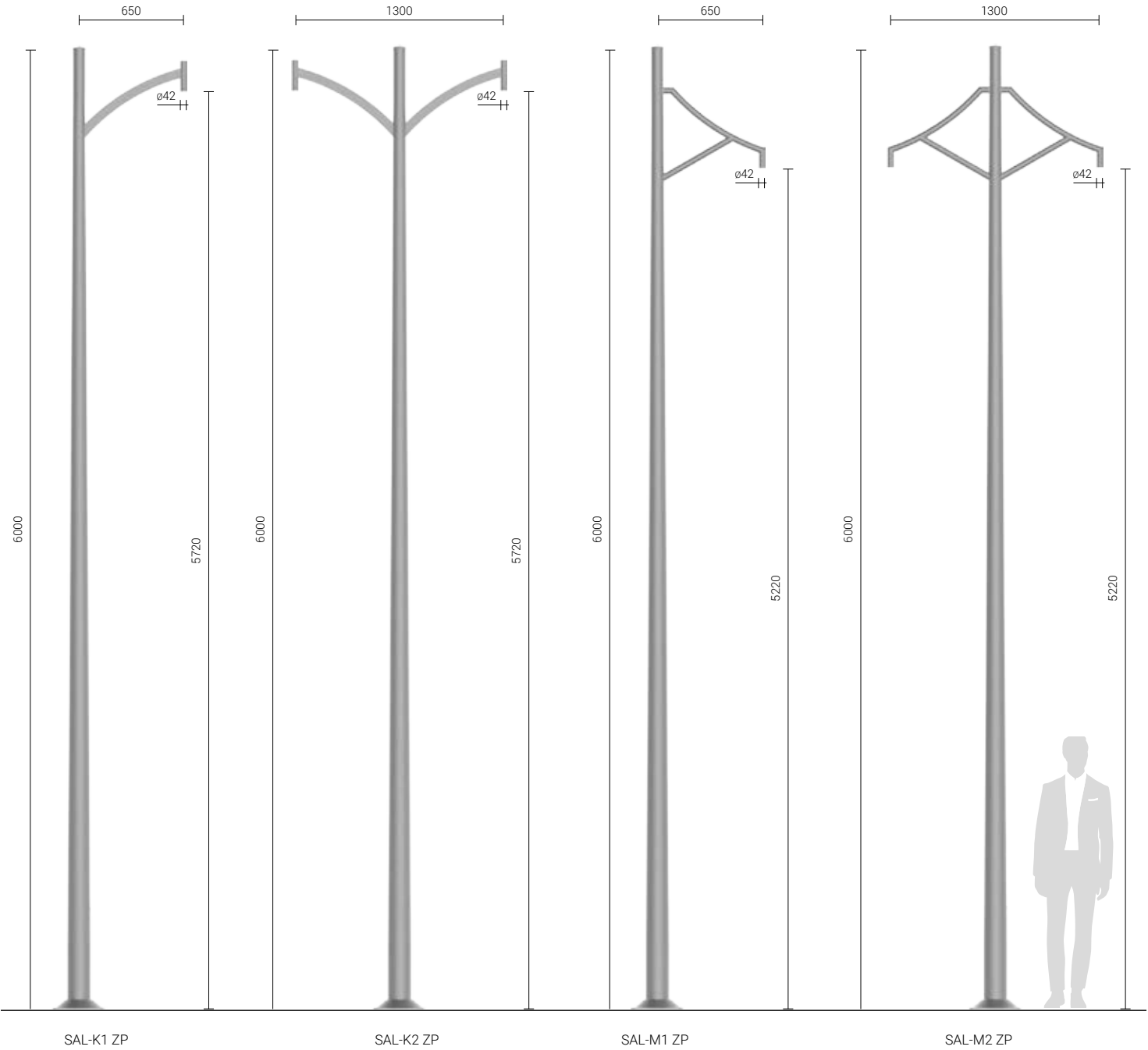
Column type	SAL-K1 ZP	SAL-K2 ZP	SAL-M1 ZP	SAL-M2 ZP
Height of the column [mm]	6 000	6 000	6 000	6 000
Code	423309/C...	423069/C...	423089/C...	423099/C...
Net weight [kg]	26,5	27,6	26,9	28,3
Approximate unit volume [m³]*	0,67	0,972	0,661	0,951
Recommended luminaires	OW LED, DROP LED			
Concrete footing / reinforcement basket type	B-60 / Z-60			
Threaded anchor ending	4xM18			
Concrete footing / reinforcement basket code	311160 / 311206			
Fasteners	4008			
Dimension of the base plate (side / bolt spacing / thickness) [mm]	320 / 250 / 10			

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... – choice of anodising colour

Sosnowiec, Poland



Luminaire: DROP LED
Column: SAL-K1 ZP



Aluminium columns with welded extension arms

ø146 mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Protection class: IP 54 for the wiring chamber

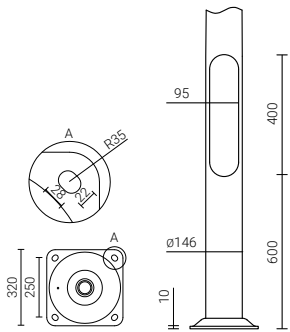
Luminaire mounting: directly on the extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



Column type	SAL-R1	SAL-R2	SAL-N12/5	SAL-N22/5	
Height of the column [mm]	6 000	6 000	8 000	8 000	
Code	42334/C...	42311/C...	4234711/C...	4234811/C...	
Net weight [kg]	29,0	32,6	37,7	40,2	
Approximate unit volume [m³]*	0,831	1,306	1,21	1,94	
Recommended luminaires	OW LED, DROP LED		CUDDLE MINI LED, CUDDLE MINI LED REG, CUDDLE II LED, CUDDLE II LED REG, COSMO LED		
Concrete footing / reinforcement basket type		B-60 / Z-60			
Threaded anchor ending		4xM18			
Concrete footing / reinforcement basket code		311160 / 311206			
Fasteners		4008			
Dimension of the base plate (side / bolt spacing / thickness) [mm]		320 / 250 /10			

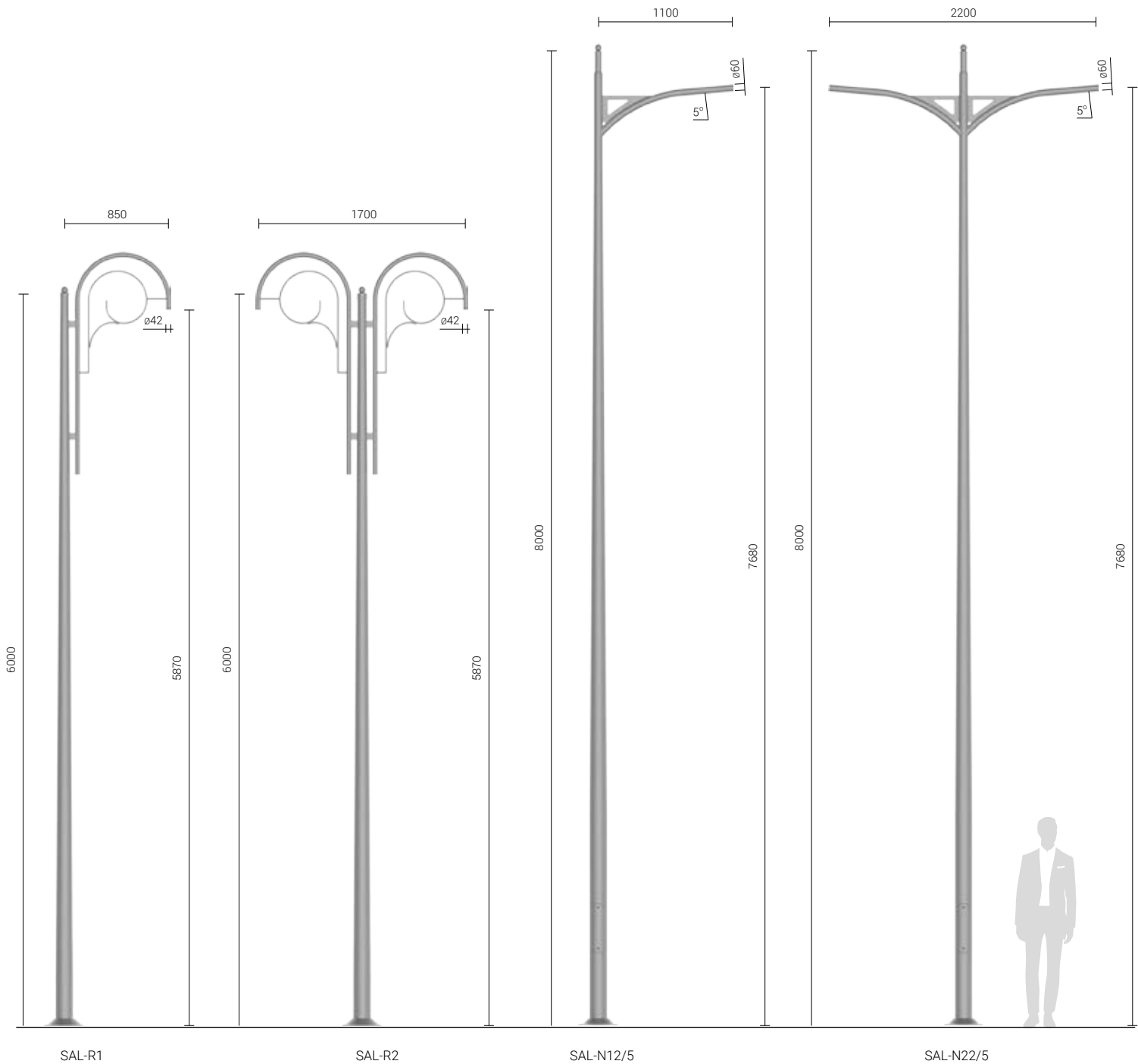
* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

Rzeszów, Poland



Luminaire: OW LED Diffuser
Column: SAL-R1





Aluminium columns with welded extension arms

ø176 and ø180 mm at the base

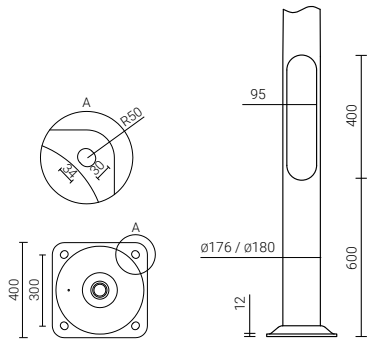
Anodising: 10 colours
Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)
Protection class: IP 54 for the wiring chamber (SAL-U1/5, SAL-Z1/5, SAL-W1/5)
Luminaire mounting: directly on the extension arm, luminaires with ø42 or ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



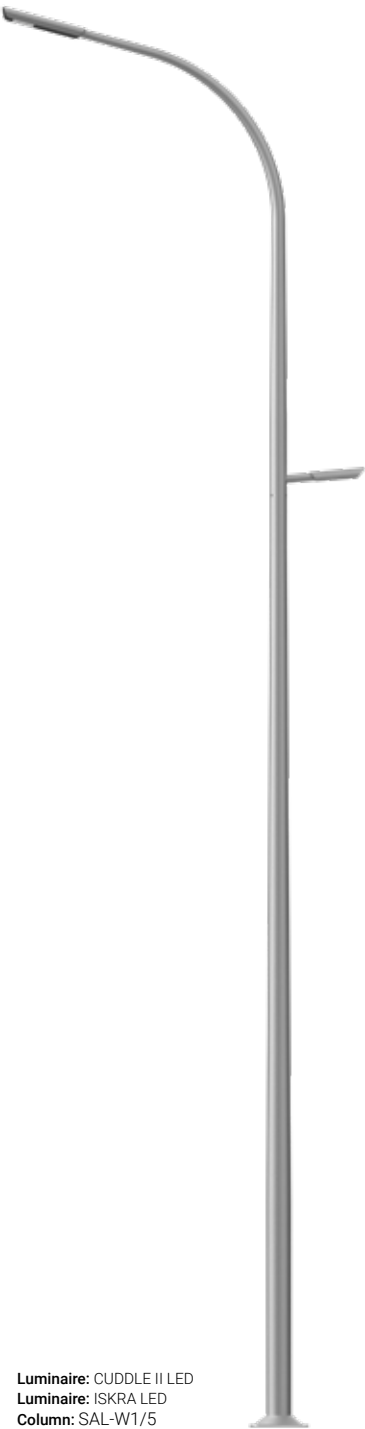
Column type	SAL-U1/5	SAL-Z1/5	SAL-W1/5
Height of the column [mm]	9 300	9 300	10 000
Code	4246515/C...	4247415/C...	4246915/C...
Net weight [kg]	51,0	53,0	56,5
Approximate unit volume [m³]*	1,79	0,98	0,916
Recommended luminaires	CUDDLE II LED, CUDDLE II LED REG, COSMO LED		
Concrete footing / reinforcement basket type	B-70 / Z-70		
Threaded anchor ending	4xM24		
Concrete footing / reinforcement basket code	311170 / 311207		
Fasteners	4012		
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 12		

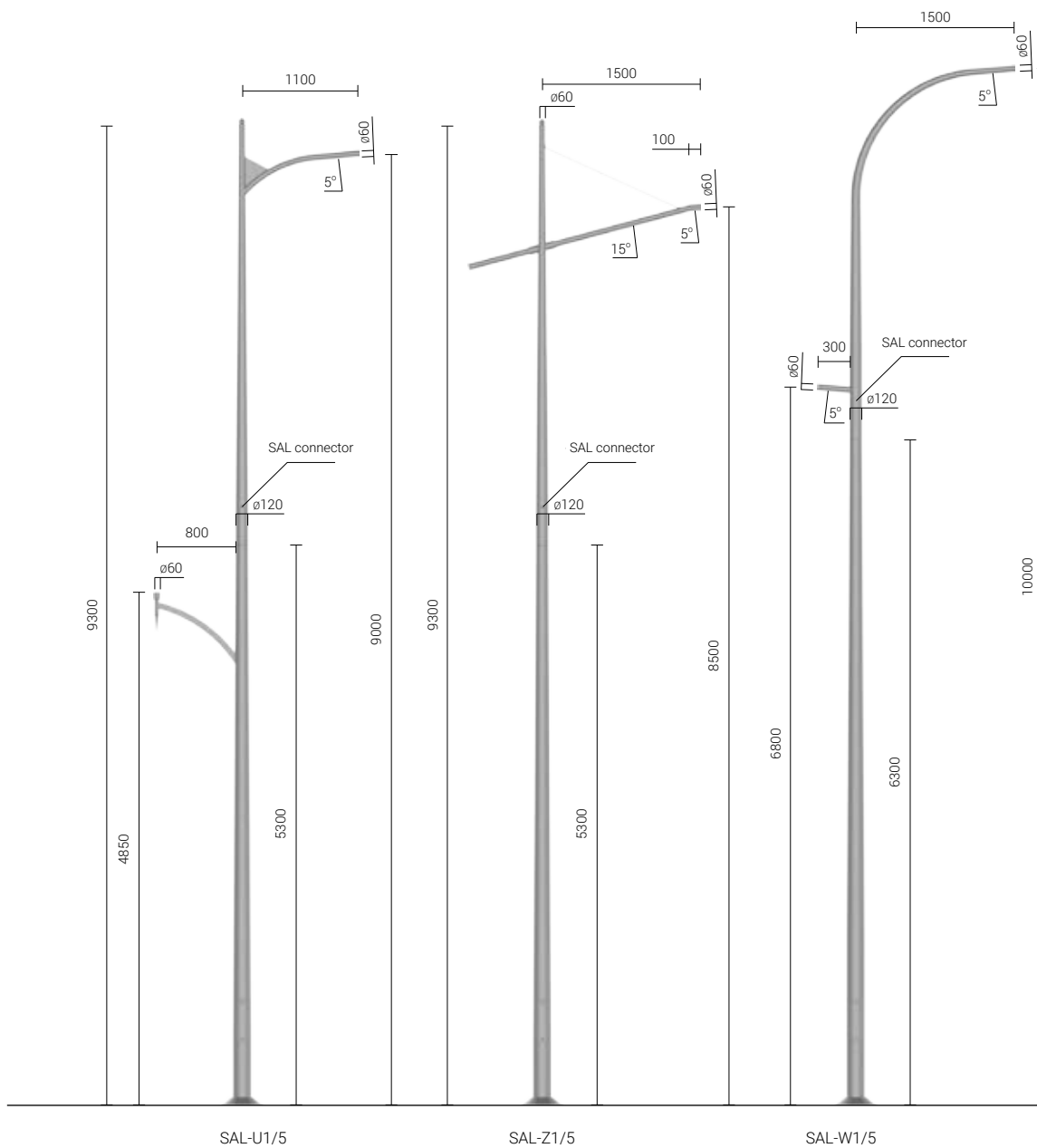
* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

Stary Sącz, Poland



Luminaire: CUDDLE II LED
Luminaire: ISKRA LED
Column: SAL-W1/5





Aluminium columns with welded extension arms

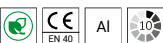
ø176 and ø180 mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Protection class: IP 54 for the wiring chamber (SAL-P81)

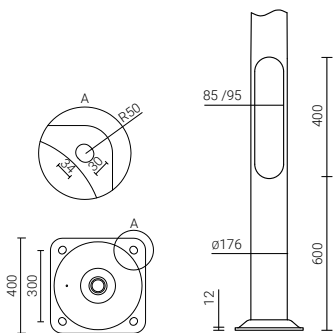
Luminaire mounting: directly on the extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



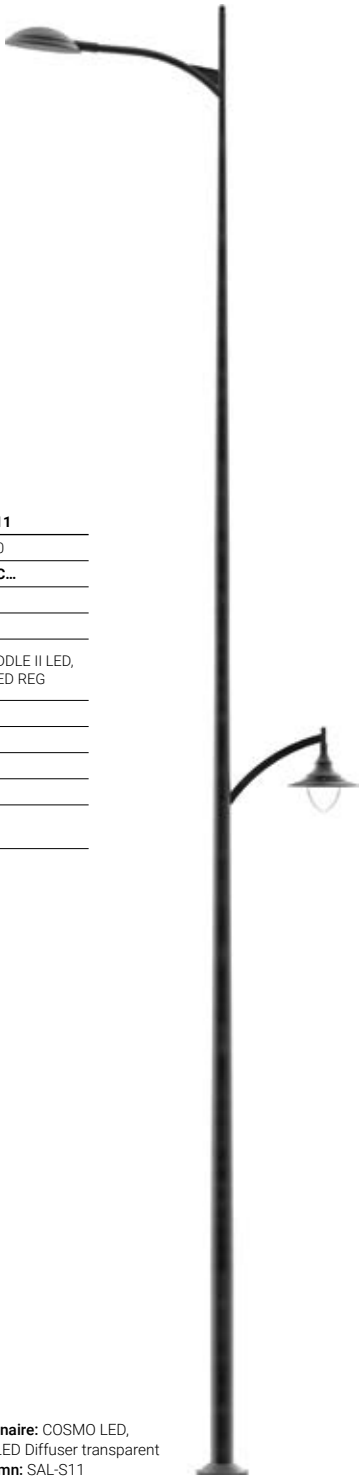
Column type	SAL-P71	SAL-P81	SAL-S11	SAL-T11
Height of the column [mm]	9 000	10 300	11 300	11 300
Code	42488/C...	42489/C...	42495/C...	42496/C...
Net weight [kg]	60,3	58,8	67,3	66,3
Approximate unit volume [m³]*	0,873	0,803	1,35	0,76
Recommended luminaires	COSMO LED, CUDDLE II LED, CUDDLE II LED REG		COSMO LED, CUDDLE II LED, CUDDLE II LED REG, OW LED, DROP LED	COSMO LED, CUDDLE II LED, CUDDLE II LED REG
Concrete footing / reinforcement basket type	B-71 / Z-71		B-70 / Z-70	
Threaded anchor ending	4xM24		4xM24	
Concrete footing / reinforcement basket code	311171 / 311271		311170 / 311207	
Fasteners	4012			
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 12			

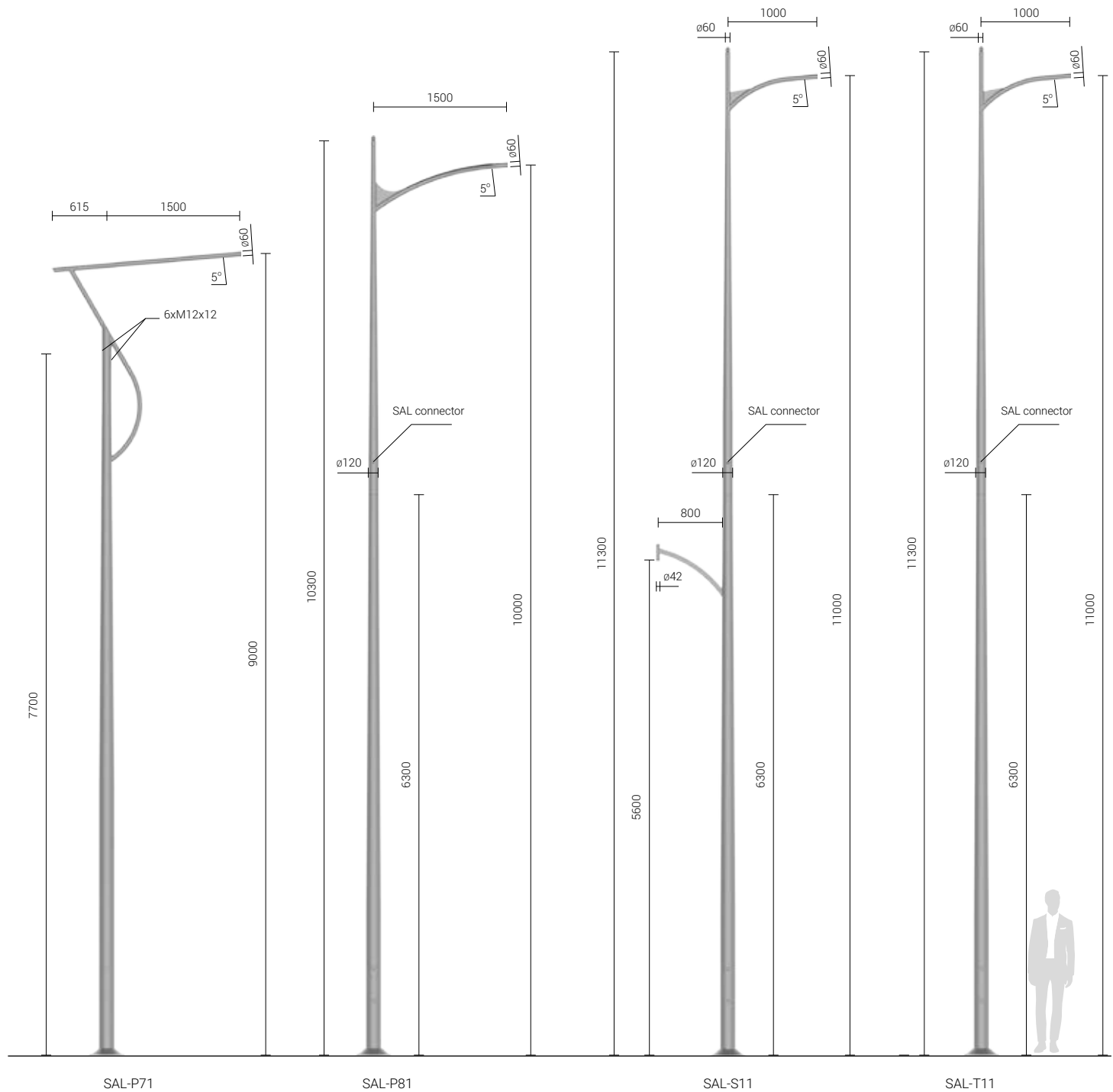
* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

Plock, Poland



Luminaire: COSMO LED,
OW LED Diffuser transparent
Column: SAL-S11





Aluminium columns with welded extension arms

ø176 mm at the base

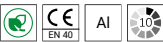
Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Diameter of the column ending: ø60 mm

Protection class: IP 54 for the wiring chamber (SAL-P11, SAL-P12)

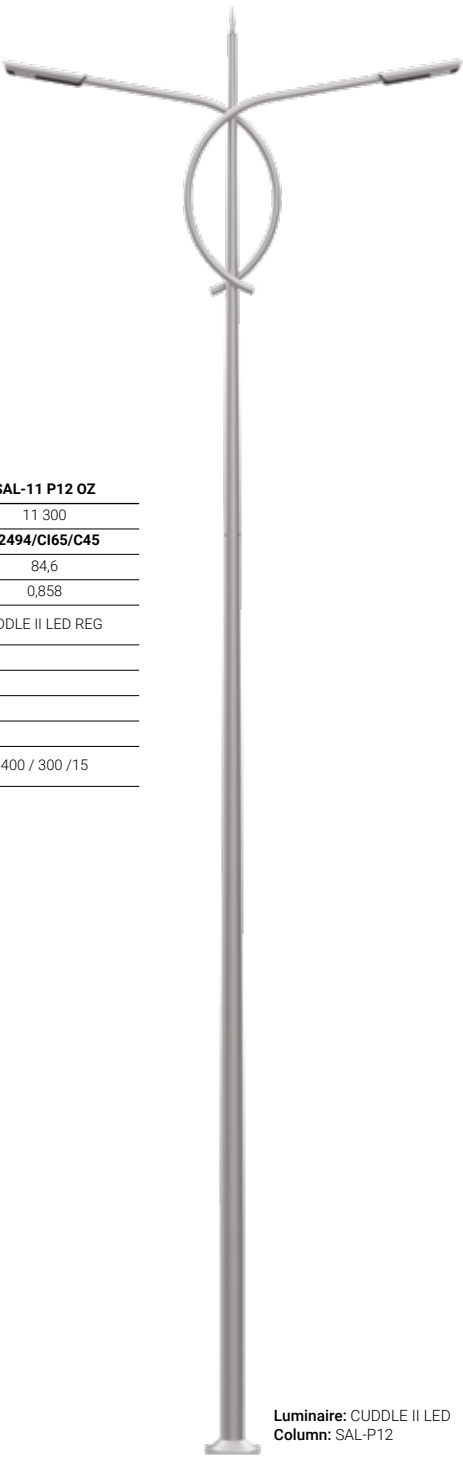
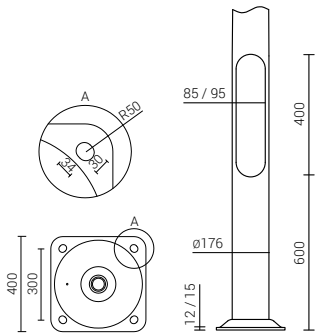
Luminaire mounting: directly on the extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



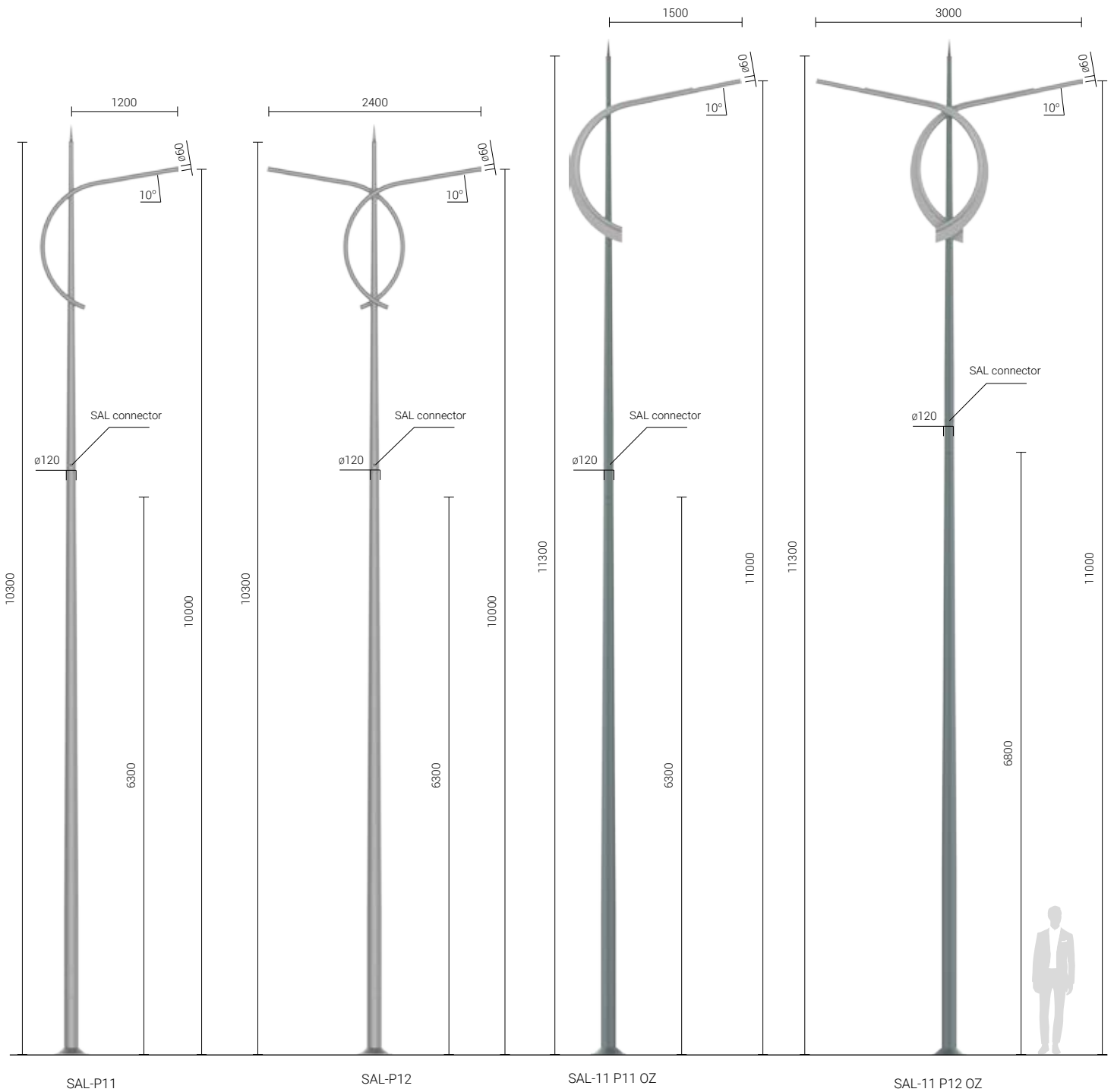
Column type	SAL-P11	SAL-P12	SAL-11 P11 OZ	SAL-11 P12 OZ
Height of the column [mm]	10 300	10 300	11 300	11 300
Code	42481/C...	42482/C...	42493/CI65/C45	42494/CI65/C45
Net weight [kg]	59,4	64,3	73,3	84,6
Approximate unit volume [m³]*	1,03	1,42	0,705	0,858
Recommended luminaires	COSMO LED, CUDDLE II LED, CUDDLE II LED REG		COSMO LED, CUDDLE II LED, CUDDLE II LED REG	
Concrete footing / reinforcement basket type	B-70 / Z-70			
Threaded anchor ending	4xM24			
Concrete footing / reinforcement basket code	311170 / 311207			
Fasteners	4012			
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 12	400 / 300 / 12	400 / 300 / 12	400 / 300 / 15

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

Stepnica, Poland



Luminaire: CUDDLE II LED
Column: SAL-P12



Decorative aluminium columns

Anodising: 10 colours

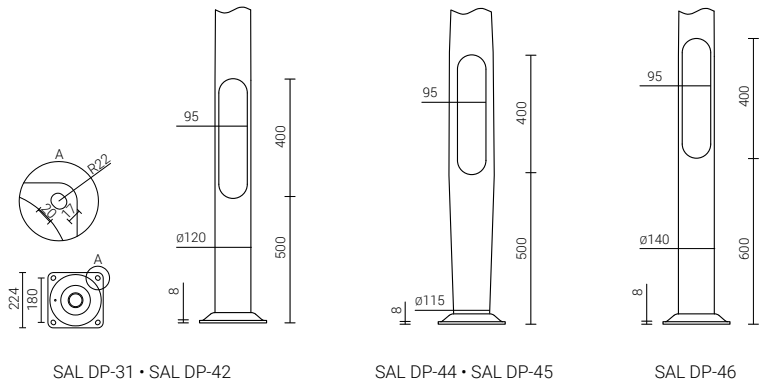
Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Luminaire mounting: directly on the column, luminaires with $\varnothing 60$ mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



Column type	SAL DP-31	SAL DP-42	SAL DP-44	SAL DP-46
Height of the column [mm]	3 000	4 000	4 000	4 000
Code	42910/C...	42911/C...	42913/C...	42943/C...
Net weight [kg]	12,6	16,2	16,8	16,8
Approximate unit volume [m ³]*	0,067	0,09	0,09	0,09
Recommended luminaires	ISKRA LED ALFA, ISKRA LED ALFA PROG, ELBA LED, AURIS LED, ATLANTIS LED, MIRA LED, MIZAR LED, OS-1 LED, OS-11 LED			
Concrete footing / reinforcement basket type	B-50 / Z-50			
Threaded anchor ending	4xM14			
Concrete footing / reinforcement basket code	311150 / 311205			
Fasteners	4006			
Dimension of the base plate (side / bolt spacing / thickness) [mm]	224 / 180 / 8			

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... – choice of anodising colour



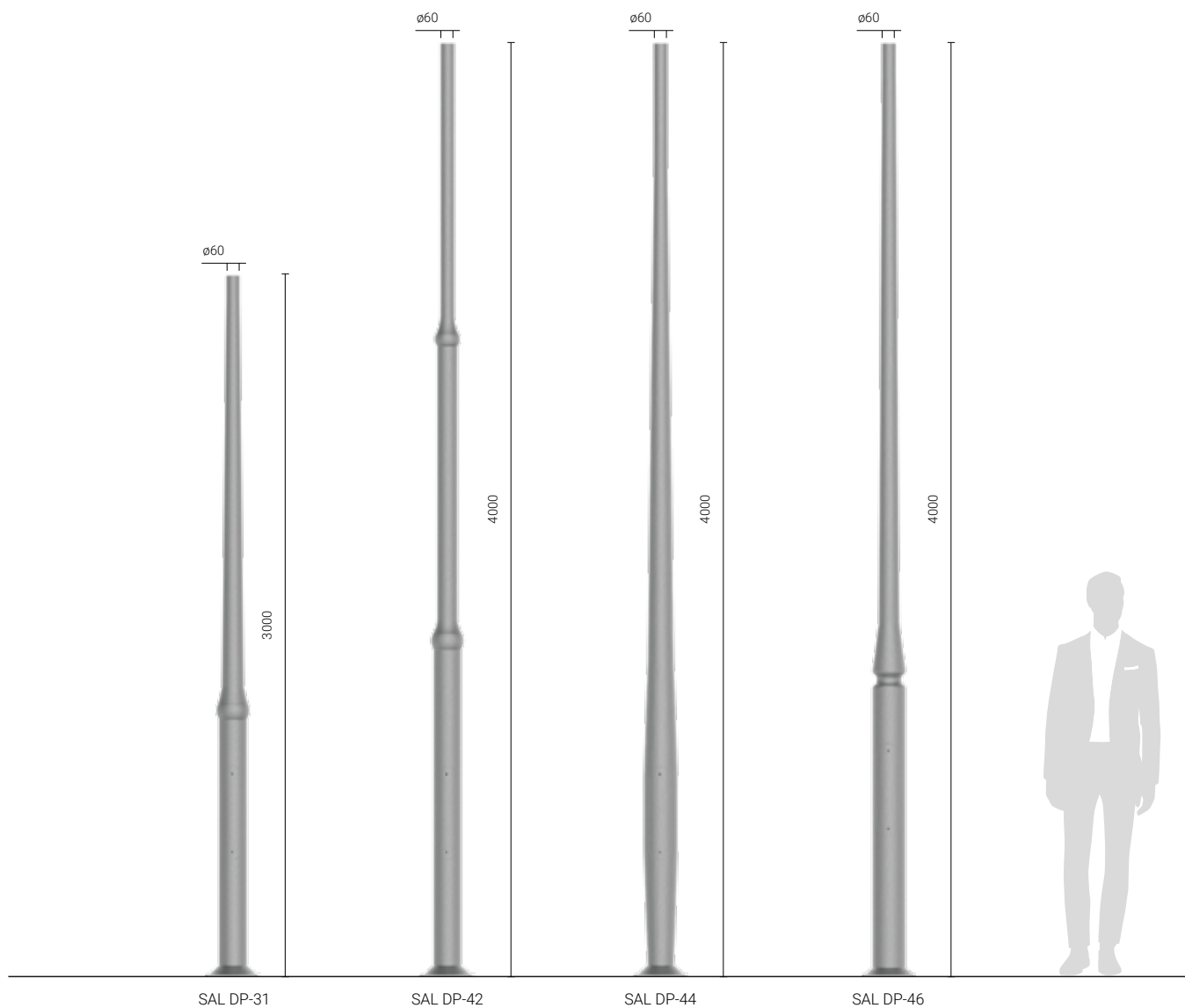
SAL DP-31 • SAL DP-42

SAL DP-44 • SAL DP-45

SAL DP-46

Luminaire: ATLANTIS LED
Column: SAL DP-44





Decorative aluminium columns

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request) for columns with a base-plate, grounded columns are protected with elastomer as standard

Diameter of the column ending: ø60 mm

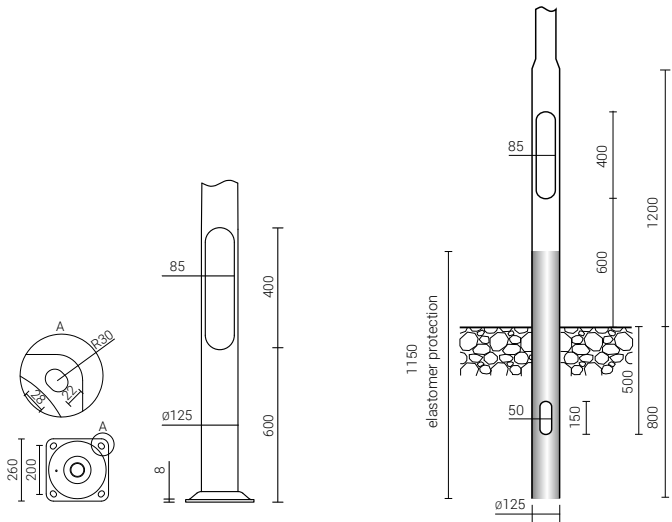
Protection class: IP 54 for the wiring chamber (SAL DP-38, SAL DP-48, SAL DP-58)

Luminaire mounting: directly on the column, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



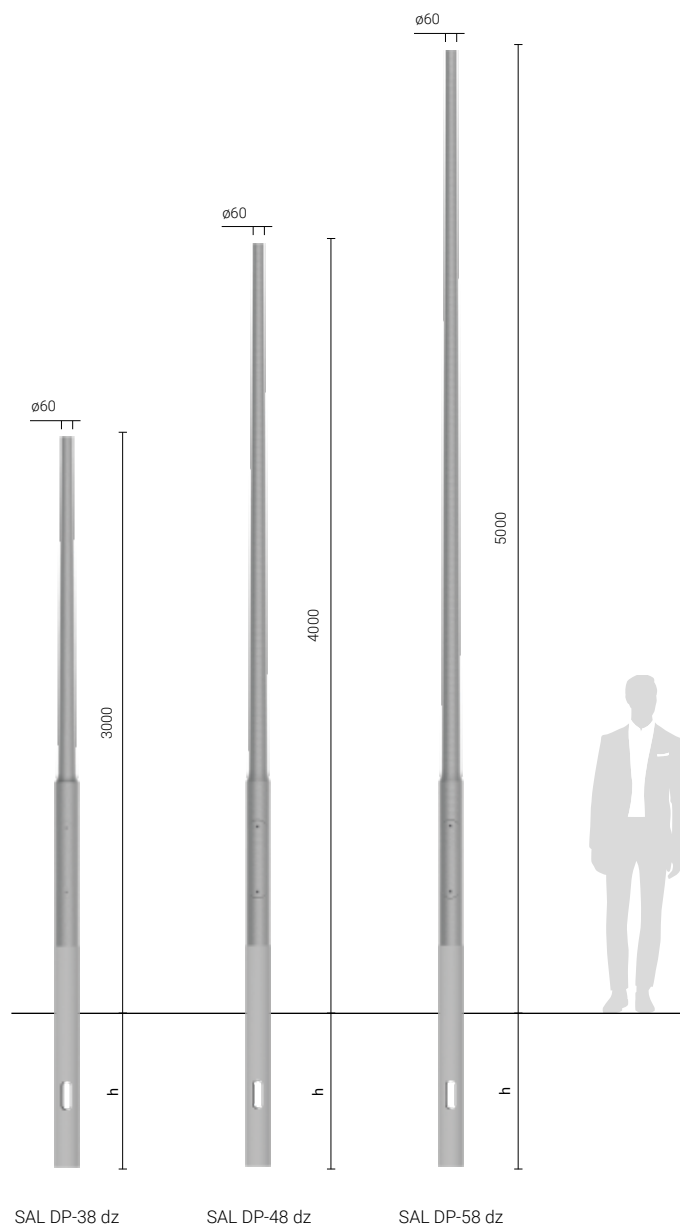
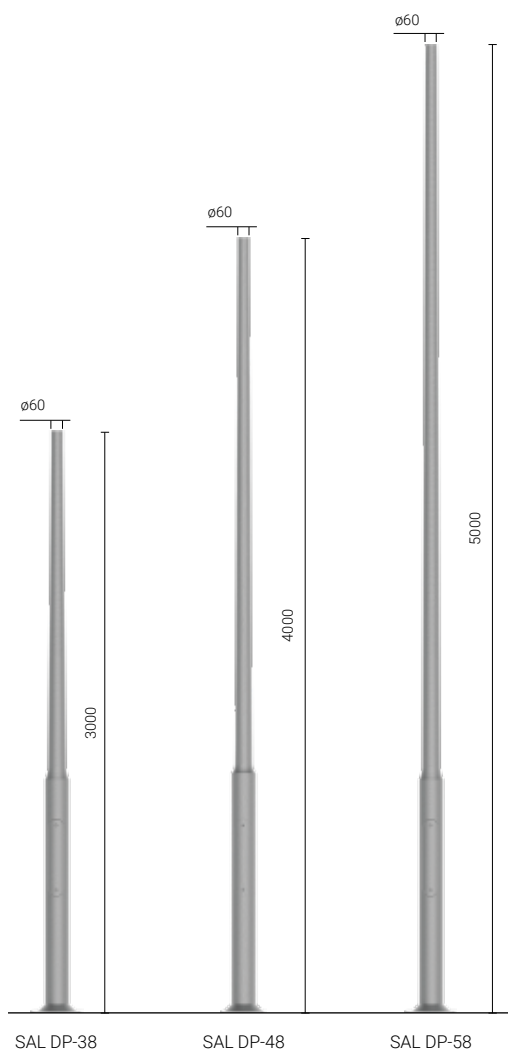
Column type	SAL DP-38	SAL DP-48	SAL DP-58	SAL DP-38 dz	SAL DP-48 dz	SAL DP-58 dz
Height of the column [mm]	3 000	4 000	5 000	3 000	4 000	5 000
Code	42945/C...	42946/C...	42947/C...	42965/C...	42966/C...	42967/C...
Net weight [kg]	9,5	11,7	13,4	10,8	13,0	14,7
Approximate unit volume [m ³]*	0,087	0,116	0,145	0,027	0,034	0,041
Recommended luminaires	ISKRA LED ALFA, ISKRA LED ALFA PROG, ELBA LED, AURIS LED, ATLANTIS LED, MIRA LED, MIZAR LED, OS-1 LED, OS-11 LED					
Concrete footing / reinforcement basket type	B-51 / Z-51			-		
Threaded anchor ending	4xM18			-		
Concrete footing / reinforcement basket code	311151 / 311251			-		
Fasteners	4008			-		
Dimension of the base plate (side / bolt spacing / thickness) [mm]	260 / 200 / 8			-		
Rooted section h [mm]	-			800		

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour



Luminaire: ELBA LED
Column: SAL DP-48





Decorative aluminium columns

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

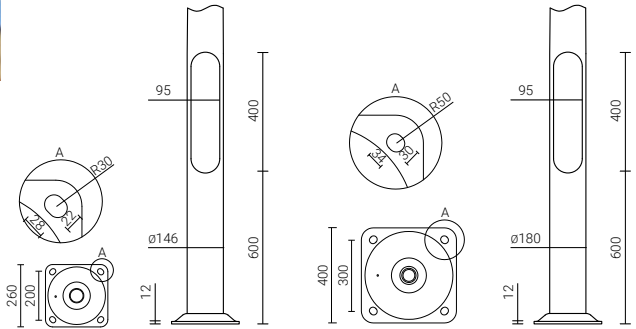
Diameter of the column ending: ø60 mm



Column type	SAL DP-407G	SAL DP-507G	SAL DP-607G	SAL DP-807M
Height of the column [mm]	4 000	5 000	6 000	8 000
Code	42970/C...	42971/C...	42972/C...	42974/C...
Net weight [kg]	20,8	24,6	28,5	44,2
Approximate unit volume [m ³]*	0,139	0,164	0,187	0,537
Recommended extension arms and luminaires	WR-7/1/0,5, WR-7/2/0,5 - luminaire OS-1 LED, OS-11 LED; WA-31 fi42, WA-20/1, WA-20/2 - luminaire OW LED		WR-23/1/0,76, WR-71/1/1,2, WR-71/2/1,2, WA-20/1 fi60, WA-20/2 fi60 - OW II LED	
Concrete footing / reinforcement basket type	B-51 / Z-51		B-70, B-71 / Z-70, Z-71	
Threaded anchor ending	4xM18		4xM24	
Concrete footing / reinforcement basket code	311151 / 311251		311170, 311171 / 311207, 311271	
Fasteners	4008		4012	
Dimension of the base plate (side / bolt spacing / thickness) [mm]	260 / 200 / 12		400 / 300 / 12	

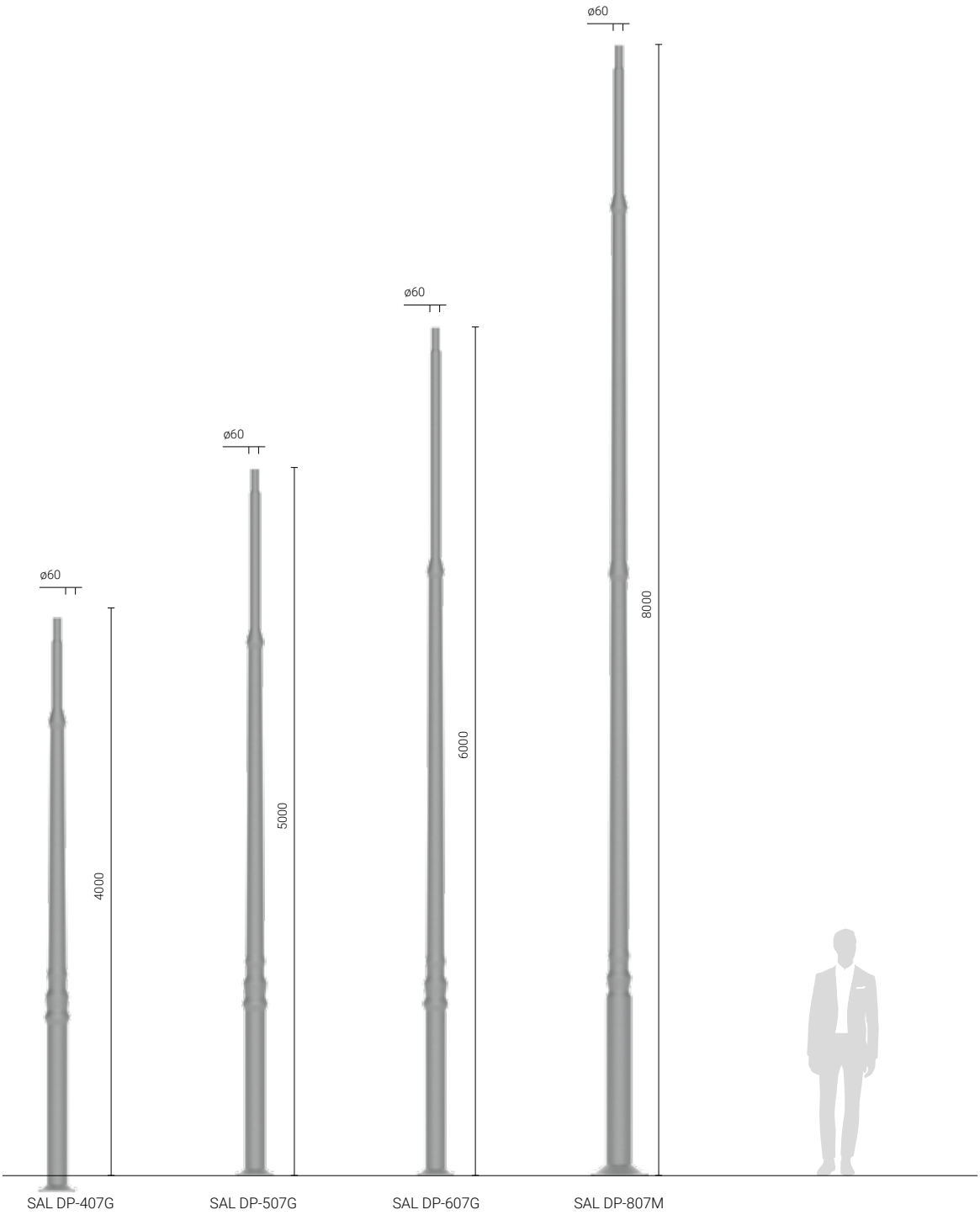
* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

Bochnia, Poland



Luminaire: OW II LED
Arm: WR-71/1/1,2
Column: SAL DP-807M





Decorative aluminium columns

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

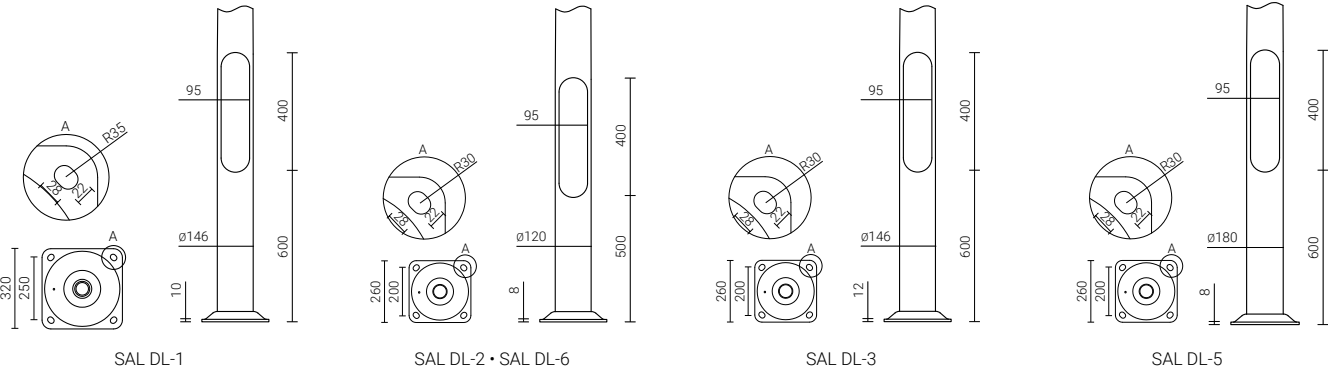
Protection class: IP 54 for the wiring chamber (SAL DL-1, SAL DL-2, SAL DL-6)

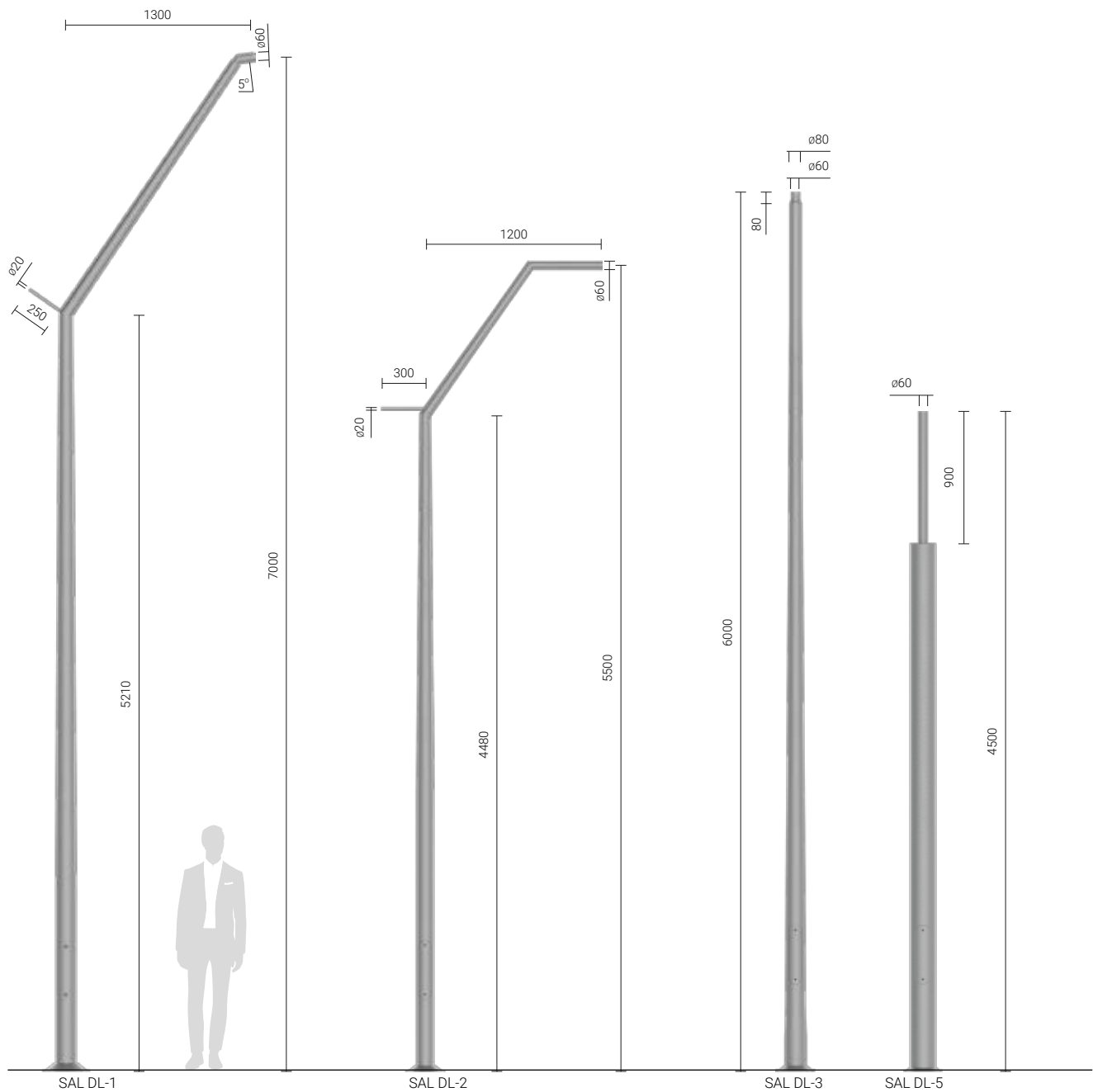
Luminaire mounting: directly on the extension arm or on the column, luminaires with $\varnothing 60$ mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



Column type	SAL DL-1	SAL DL-2	SAL DL-3	SAL DL -5
Height of the column [mm]	7 000	5 500	6 000	4 500
Code	42993/C...	42994/C...	42995/C...	42997/C...
Net weight [kg]	32,7	21,5	24,8	24,9
Approximate unit volume [m³]*	1,09	0,714	0,186	0,159
Recommended luminaires	ISKRA LED, ISKRA LED PROG, CUDDLE MINI LED, CUDDLE MINI LED REG, CUDDLE II LED, CUDDLE II LED REG, COSMO LED	ISKRA LED, ISKRA LED PROG, CUDDLE MINI LED, CUDDLE MINI LED REG,	CORONA LED, COSMO DELTA LED	RING 1 LED, RING 2 LED
Concrete footing / reinforcement basket type	B-60 / Z-60	B-51 / Z-51		
Threaded anchor ending	4xM18			
Concrete footing / reinforcement basket code	311160 / 311206	311151 / 311251		
Fasteners	4008	4008		
Dimension of the base plate (side / bolt spacing / thickness) [mm]	320 / 250 / 10	260 / 200 / 8	260 / 200 / 12	260 / 200 / 8

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour





Decorative aluminium columns

Anodising: 10 colours

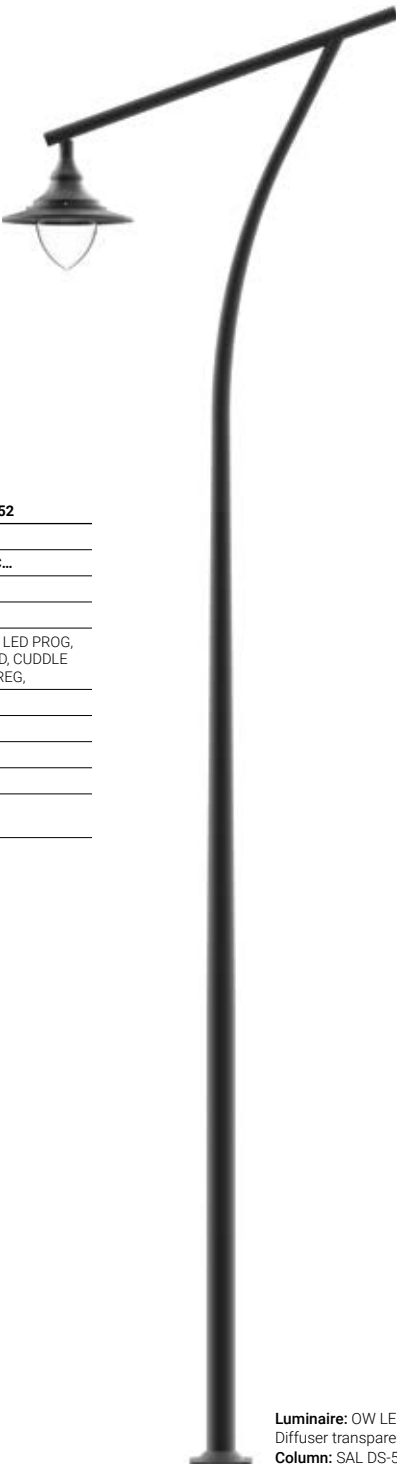
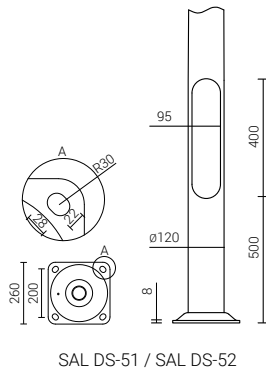
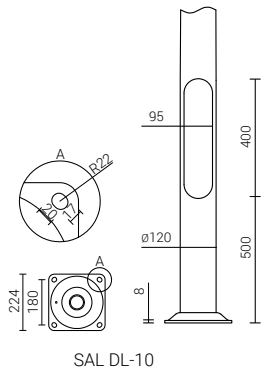
Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Luminaire mounting: directly on the extension arm, luminaires with $\varnothing 60$ mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet

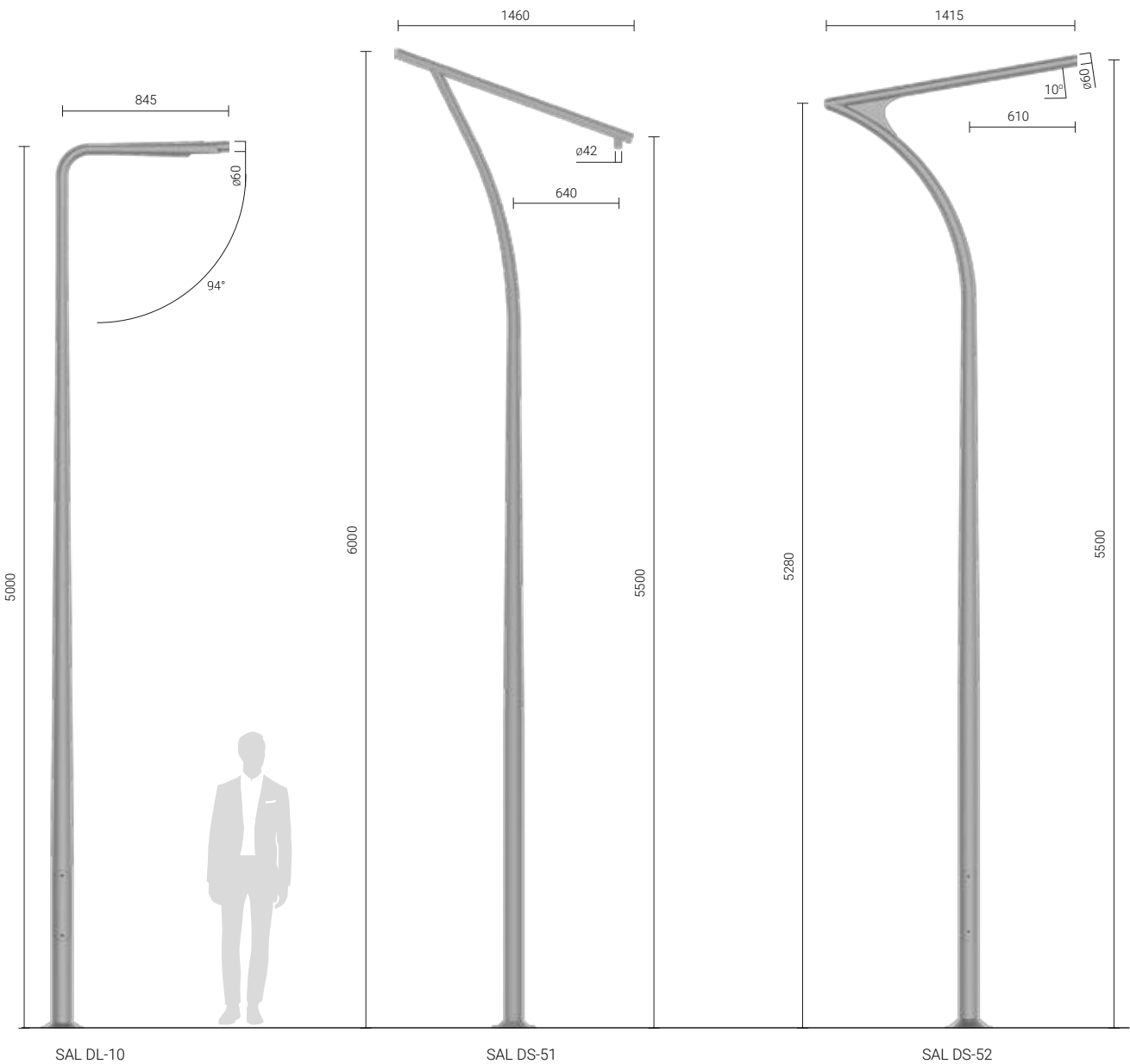


Column type	SAL DL-10	SAL DS-51	SAL DS-52
Height of the column [mm]	5 000	6 000	5 500
Code	42999/C45/C35	42224/C...	42225/C...
Net weight [kg]	23,0	24,2	23,4
Approximate unit volume [m ³]*	0,3	0,804	0,735
Recommended luminaires	ISKRA LED, ISKRA LED P ISKRA LED PROG, ISKRA LED P PROG		
Concrete footing / reinforcement basket type	B-50 / Z-50	B-51 / Z-51	
Threaded anchor ending	4xM14	4xM18	
Concrete footing / reinforcement basket code	311150 / 311205	311151 / 311251	
Fasteners	4006	4008	
Dimension of the base plate (side / bolt spacing / thickness) [mm]	224 / 180 / 8	260 / 200 / 8	

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour



Luminaire: OW LED
Diffuser transparent
Column: SAL DS-51



Decorative aluminium columns

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Protection class: IP 54 for the wiring chamber (SAL DS-81)

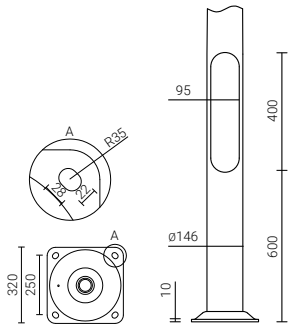
Luminaire mounting: directly on the extension arm, luminaires with $\varnothing 60$ mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



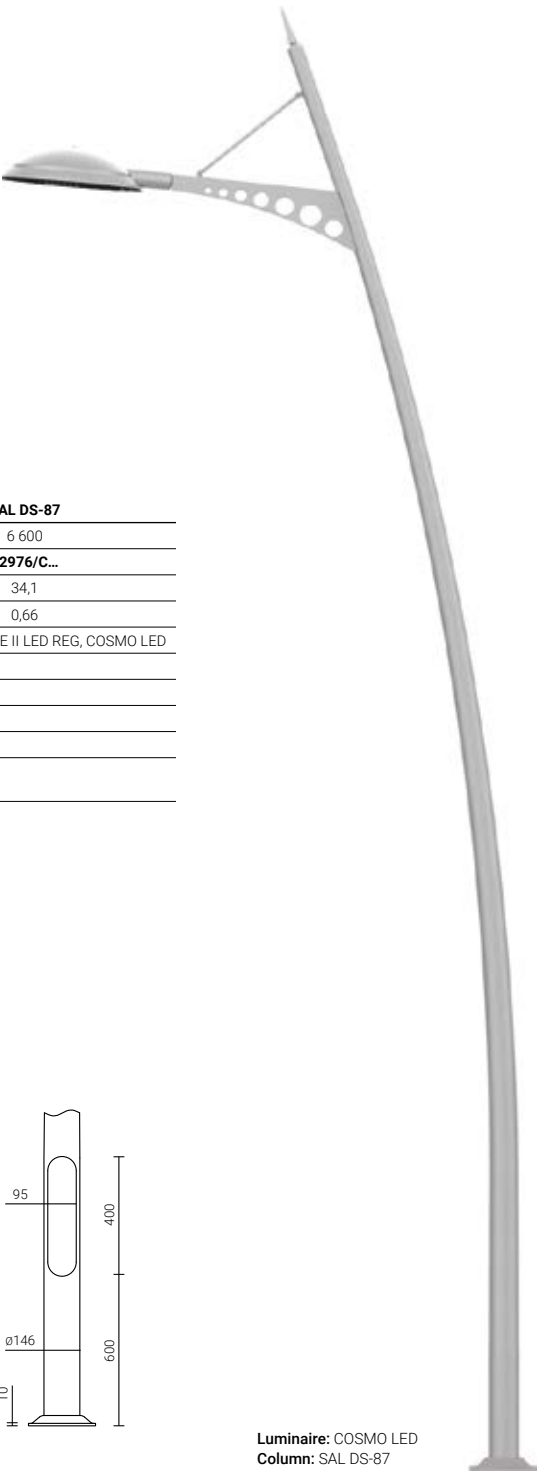
Column type	SAL DS-86	SAL DS-87
Height of the column [mm]	7 700	6 600
Code	42942/C...	42976/C...
Net weight [kg]	36,2	34,1
Approximate unit volume [m ³]*	0,79	0,66
Recommended luminaires	CUDDLE MINI LED, CUDDLE MINI LED REG, CUDDLE II LED, CUDDLE II LED REG, COSMO LED	
Concrete footing / reinforcement basket type	B-60 / Z-60	
Threaded anchor ending	4xM18	
Concrete footing / reinforcement basket code	311160 / 311206	
Fasteners	4008	
Dimension of the base plate (side / bolt spacing / thickness) [mm]	320 / 250 / 10	

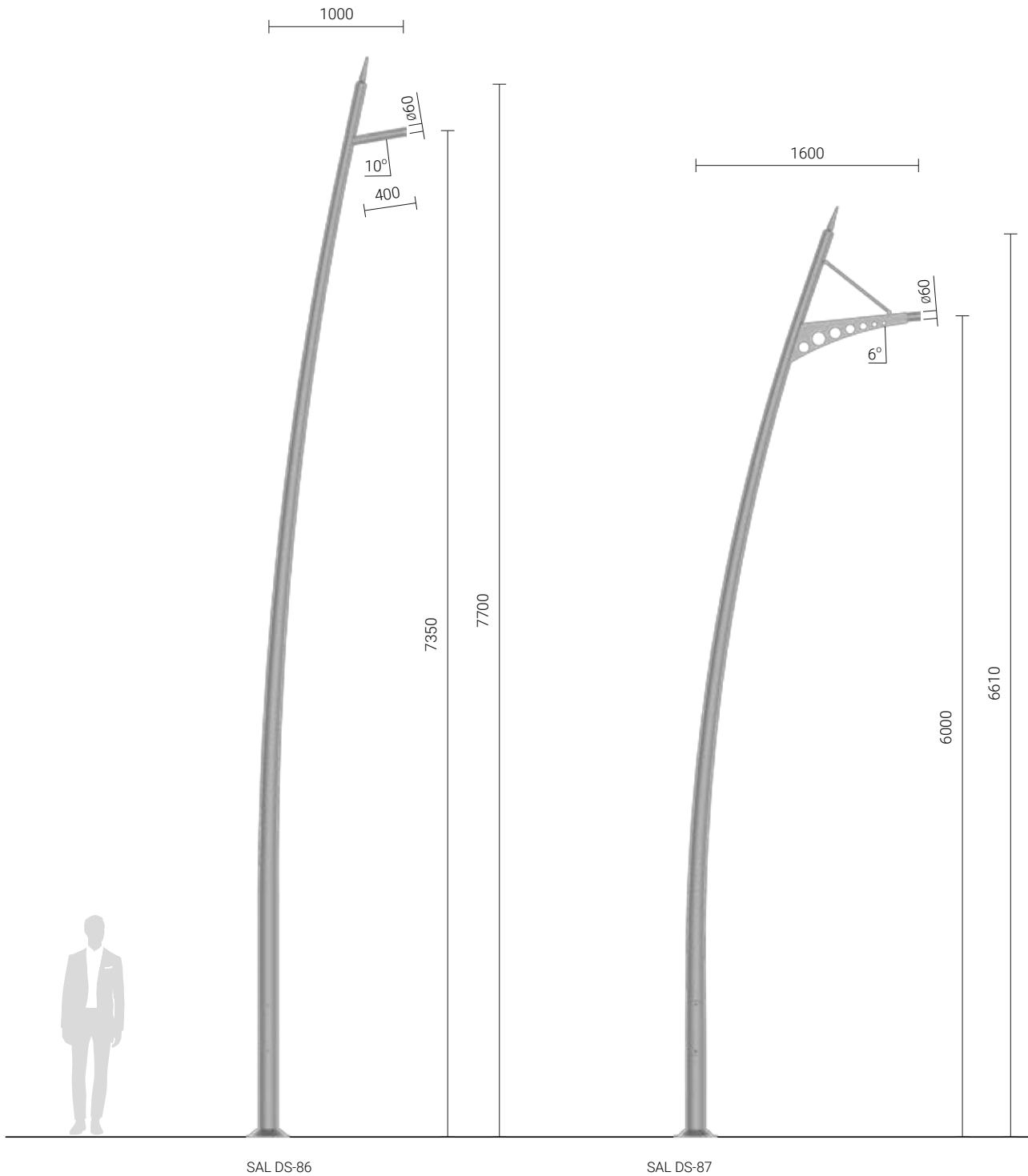
* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

Kielce, Poland



Luminaire: COSMO LED
Column: SAL DS-87





SAL DS-86

SAL DS-87

Decorative aluminium columns

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

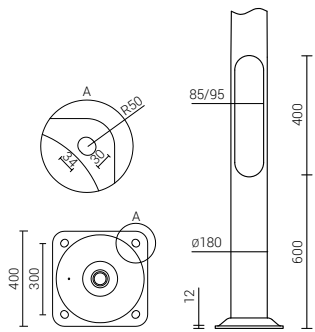
Luminaire mounting: directly on the extension arm, luminaires with $\varnothing 60$ mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



Column type	SAL DS-84	SAL DS-88
Height of the column [mm]	8 400	9 400
Code	42940/C...	42988/C...
Net weight [kg]	48,2	60,6
Approximate unit volume [m ³]*	1,57	1,895
Recommended luminaires	CUDDLE II LED, CUDDLE II LED REG, COSMO LED	
Concrete footing / reinforcement basket type	B-70 / Z-70	
Threaded anchor ending	4xM24	
Concrete footing / reinforcement basket code	311170 / 311207	
Fasteners	4012	
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 12	

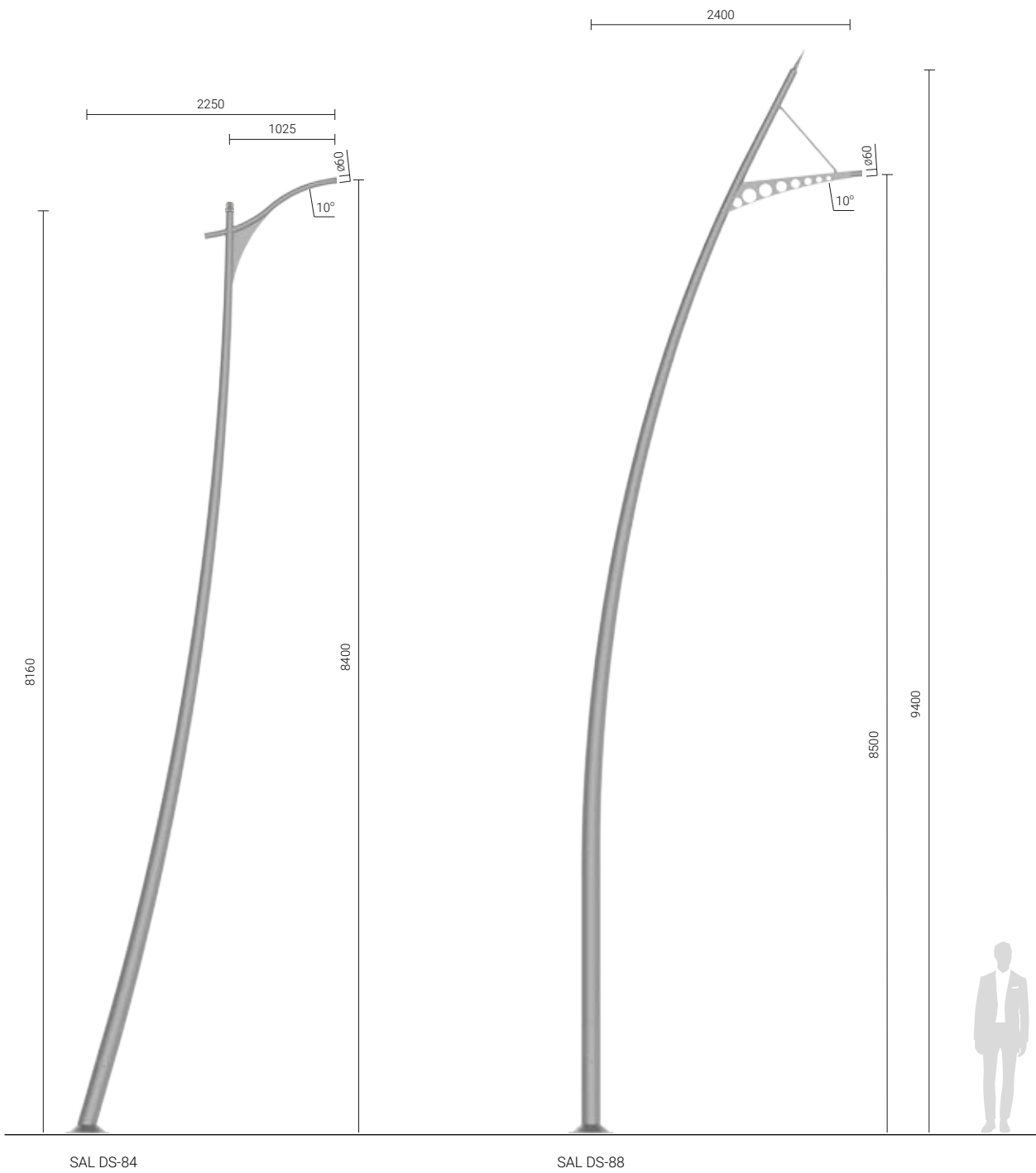
* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

Stronie Śląskie, Poland



Luminaire: COSMO LED
Column: SAL-84





Two-piece aluminium columns with curved extension arms

ø180 mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Protection class: IP 54 for the wiring chamber

Luminaire mounting: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)



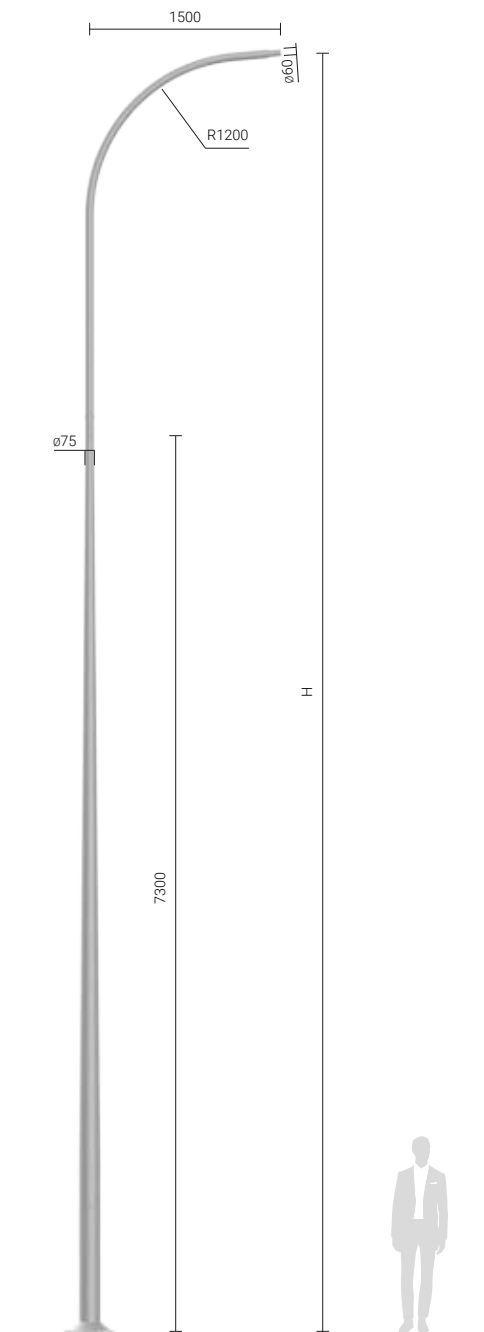
Column type	SAL-9 WLN 1/1,5/1,7/5	SAL-10 WLN 1/1,5/2,7/5
Height of the column H [mm]	9 000	10 000
Arm length [mm]	1 500	1 500
Code	42720/C...	42721/C...
Net weight [kg]	45,3	47,4
Approximate unit volume [m³]*	0,67	0,74
Recommended luminaires	CUDDLE II LED, CUDDLE II LED REG, COSMO LED	
Concrete footing / reinforcement basket type	B-71 / Z-71	
Threaded anchor ending	4xM24	
Concrete footing / reinforcement basket code	311171 / 311271	
Fasteners	4012	
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 10	

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

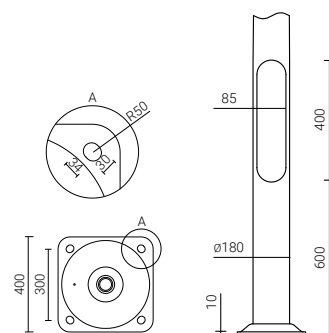
Wrocław, Poland



Luminaire: CUDDLE II LED
Column: SAL-9 WLN 1/1,5/1,7/5



Two – piece aluminium column joint with curved extension arm WŁN



Two-piece aluminium columns with curved extension arms

ø176 mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour
up to a height of 350 mm (other height on customer's request)

Protection class: IP 54 for the wiring chamber

Luminaire mounting: brushed anodised aluminium, option of elastomer protection in
column's colour up to a height of 350 mm (other height on customer's request)

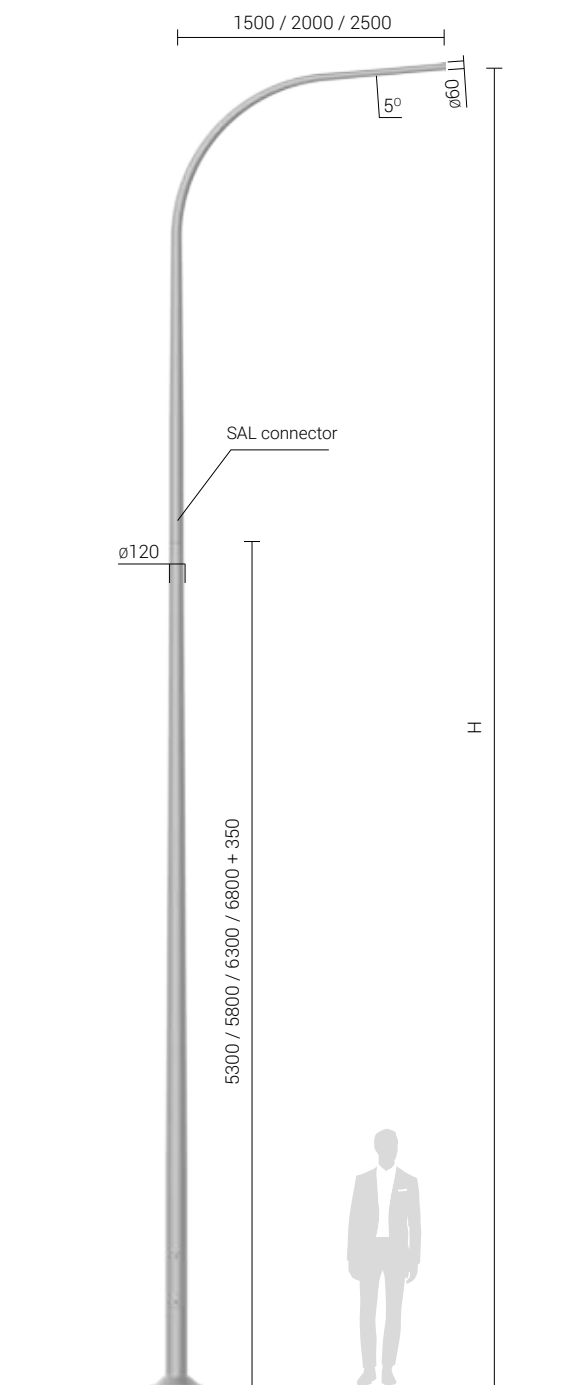


Column type	SAL 9 WL1/1,5/3,2/5	SAL 9 WL1/2,0/3,2/5	SAL 9 WL1/2,5/3,2/5	SAL 10 WL1/1,5/3,7/5	SAL 10 WL1/2,0/3,7/5
Height of the column H [mm]	9 000	9 000	9 000	10 000	10 000
Arm length [mm]	1 500	2 000	2 500	1 500	2 000
Code	42419/C...	42422/C...	42425/C...	42437/C...	42440/C...
Net weight [kg]	50,8	52,8	53,9	56	57
Approximate unit volume [m³]*	0,67	0,73	0,8	0,74	0,82
Recommended luminaire	CUDDLE II LED, CUDDLE II LED REG, COSMO LED				
Concrete footing / reinforcement basket type	B-71 / Z-71	B-70 / Z-70	B-70 / Z-70	B-71 / Z-71	B-70 / Z-70
Threaded anchor ending	4xM24	4xM24	4xM24	4xM24	4xM24
Concrete footing / reinforcement basket code	311171 / 311271	311207 / 311270	311207 / 311270	311171 / 311271	311207 / 311270
Fasteners	4012				
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 12				

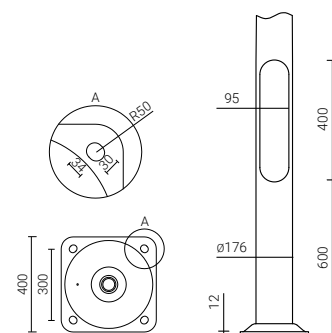
Column type	SAL 10 WL1/2,5/3,7/5	SAL 11 WL1/1,5/4,7/5	SAL 11 WL1/2,0/4,7/5	SAL 12 WL1/1,5/5,2/5
Height of the column H [mm]	10 000	11 000	11 000	12 000
Arm length [mm]	2 500	1 500	2 000	1 500
Code	42443/C...	42451/C...	42453/C...	42455/C...
Net weight [kg]	59,1	59,1	61,2	64,3
Approximate unit volume [m³]*	0,89	0,82	0,92	0,89
Recommended luminaire	CUDDLE II LED, CUDDLE II LED REG, COSMO LED			
Concrete footing / reinforcement basket type	B-70 / Z-70	B-71 / Z-71	B-70 / Z-70	B-71 / Z-71
Threaded anchor ending	4xM24	4xM24	4xM24	4xM24
Concrete footing / reinforcement basket code	311207 / 311270	311171 / 311271	311207 / 311270	311171 / 311271
Fasteners	4012			
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 12			

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... – choice of anodising colour

Luminaire: CUDDLE II LED
Column: SAL 9 WL1/1,5/3,2/5



Curved extension arm of two-piece aluminium column



Two-piece aluminium columns with curved extension arms

ø176 mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour
up to a height of 350 mm (other height on customer's request)

Protection class: IP 54 for the wiring chamber

Luminaire mounting: directly on the extension arm, luminaires with ø60 mm mounting
with weight and surface parameters not exceeding the data from the strength table
included in the technical data sheet

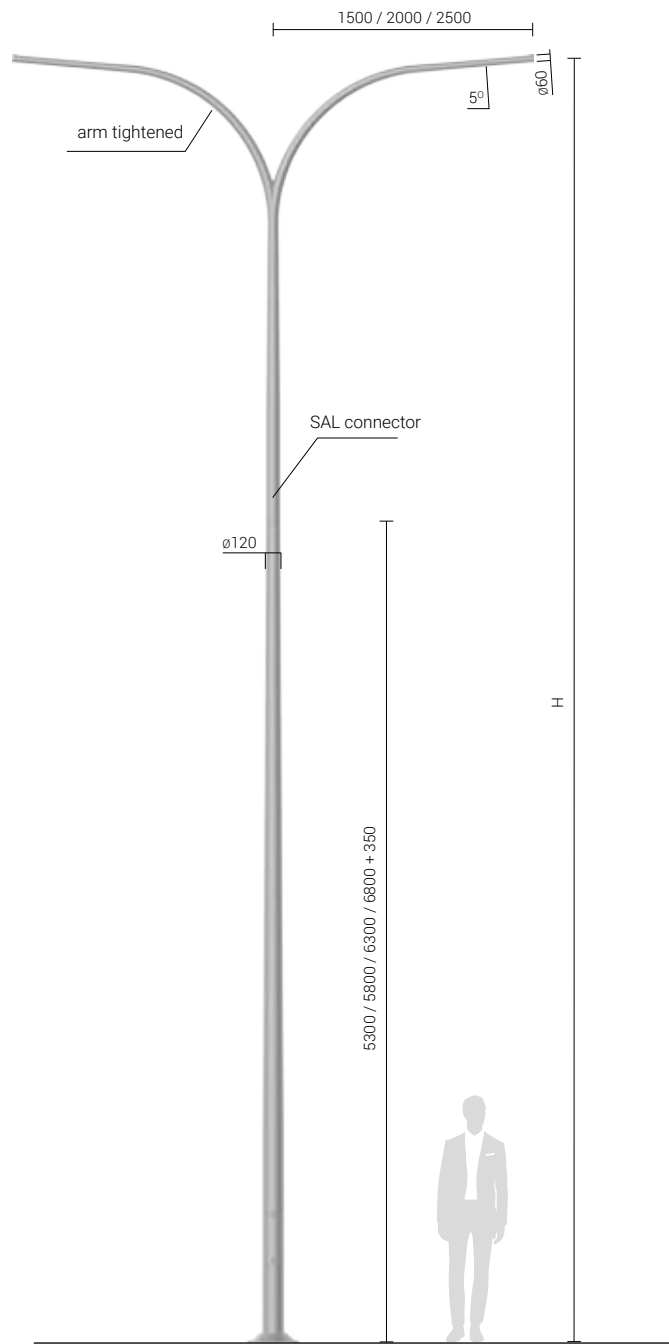


Column type	SAL 9 WL2/1,5/3,2/5	SAL 9 WL2/2,0/3,2/5	SAL 9 WL2/2,5/3,2/5	SAL 10 WL2/1,5/3,7/5	SAL 10 WL2/2,0/3,7/5	SAL 10 WL2/2,5/3,7/5	SAL 11 WL2/1,5/4,7/5
Height of the column H [mm]	9 000	9 000	9 000	10 000	10 000	10 000	11 000
Arm length [mm]	1 500	2 000	2 500	1 500	2 000	2 500	1 500
Code	42420/C...	42423/C...	42426/C...	42438/C...	42441/C...	42444/C...	42452/C...
Net weight [kg]	56,4	60,1	62,2	61,6	63,7	67,4	64,2
Approximate unit volume [m³]*	0,73	0,81	0,89	0,8	0,89	0,99	0,88
Recommended luminaires	CUDDLE II LED, CUDDLE II LED REG, COSMO LED						
Concrete footing / reinforcement basket type	B-71 / Z-71	B-70 / Z-70	B-70 / Z-70	B-71 / Z-71	B-70 / Z-70	B-70 / Z-70	B-71 / Z-71
Threaded anchor ending	4xM24	4xM24	4xM24	4xM24	4xM24	4xM24	4xM24
Concrete footing / reinforcement basket code	311171 / 311271	311207 / 311270	311207 / 311270	311171 / 311271	311207 / 311270	311207 / 311270	311171 / 311271
Fasteners	4012						
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 12						

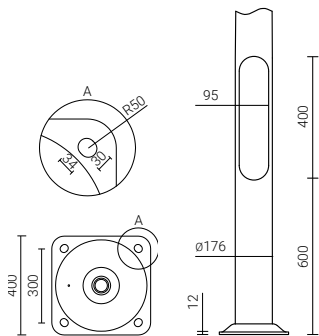
* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

Wrocław, Poland





Curved extension arms of two-piece aluminium column



Two-piece aluminium columns with curved extension arms

ø176 mm at the base

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Protection class: IP 54 for the wiring chamber

Luminaire mounting: directly on the extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet.t

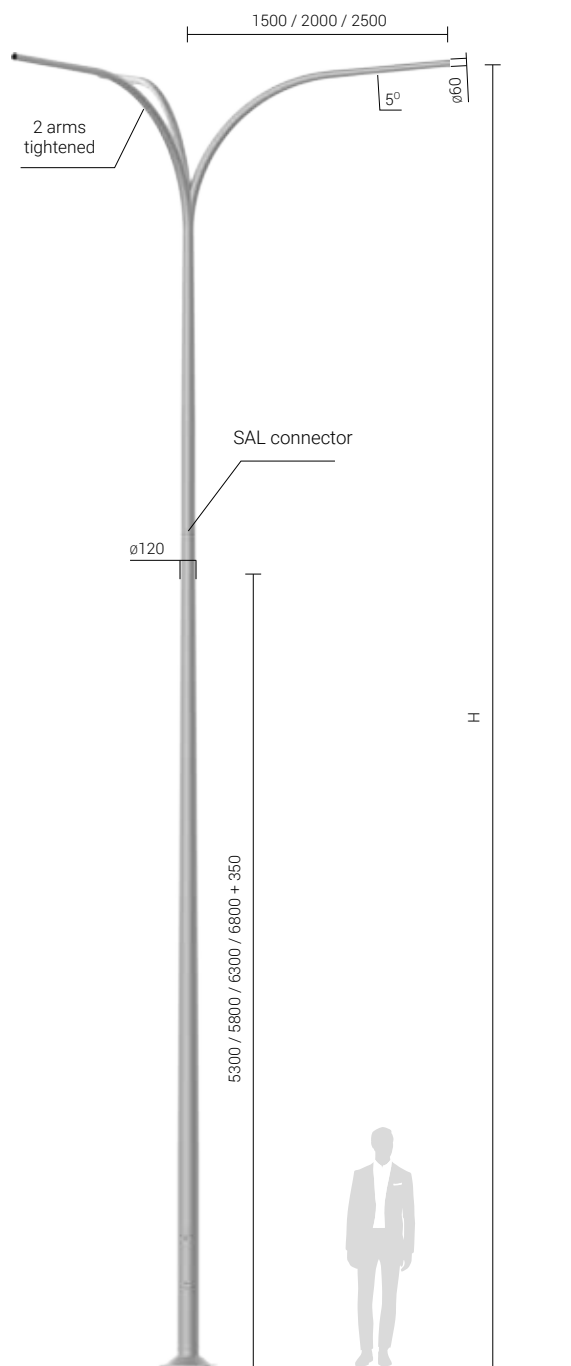


Column type	SAL 9 WL3/1,5/3,2/5	SAL 9 WL3/2,0/3,2/5	SAL 9 WL3/2,5/3,2/5	SAL 10 WL3/1,5/3,7/5	SAL 10 WL3/2,0/3,7/5	SAL 10 WL3/2,5/3,7/5
Height of the column H [mm]	9 000	9 000	9 000	10 000	10 000	10 000
Arm length [mm]	1 500	2 000	2 500	1 500	2 000	2 500
Code	42421/C...	42424/C...	42427/C...	42439/C...	42442/C...	42445/C...
Net weight [kg]	60,4	65,9	68,9	65,6	68,9	74,2
Approximate unit volume [m³]*	1,06	1,25	1,43	1,19	1,38	1,61
Recommended luminaires	CUDDLE II LED, CUDDLE II LED REG, COSMO LED					
Concrete footing / reinforcement basket type	B-70 / Z-70					
Threaded anchor ending	4xM24					
Concrete footing / reinforcement basket code	311207 / 311270					
Fasteners	4012					
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 12					

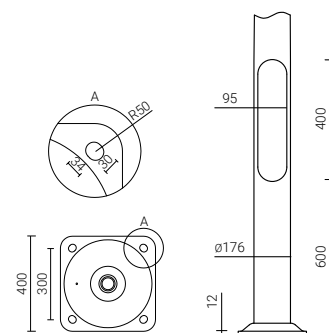
* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... – choice of anodising colour

Jaworzno, Poland





Curved extension arm of two-piece aluminium column



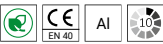
Lowering and raising columns

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Diameter of the column ending: ø60 mm

Luminaire mounting: directly on the column, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



Column type	SAL-45/P	SAL-50/P	SAL-60/P	SAL-70P
Height of the column H [mm]	4 500	5 000	6 000	7 000
Code	42915/C...	42916/C...	42925/C...	42927/C...
Net weight [kg]	21,6	23,8	29,7	33
Approximate unit volume [m³]*	0,13	0,145	0,174	0,203
Recommended luminaires for column top mounting	ISKRA LED ALFA, ISKRA LED ALFA PROG, ELBA LED, AURIS LED, ATLANTIS LED, MIRA LED, MIZAR LED, OS-1 LED, OS-11 LED		ISKRA LED ALFA, ISKRA LED ALFA PROG, CORONA LED, COSMO DELTA LED, COSMO ALFA LED	
Recommended extension arms and luminaires	WN-1 – luminaire ISKRA LED LB; WR-4/1/0,5/5 – luminaire: ISKRA LED, ISKRA LED PROG			
Concrete footing / reinforcement basket type	B-51 / Z-51			
Threaded anchor ending	4xM18			
Concrete footing / reinforcement basket code	311151 / 311251			
Fasteners	4008			
Dimension of the base plate (side / bolt spacing / thickness) [mm]	260 / 200 / 8		260 / 200 / 12	

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... – choice of anodising colour

France



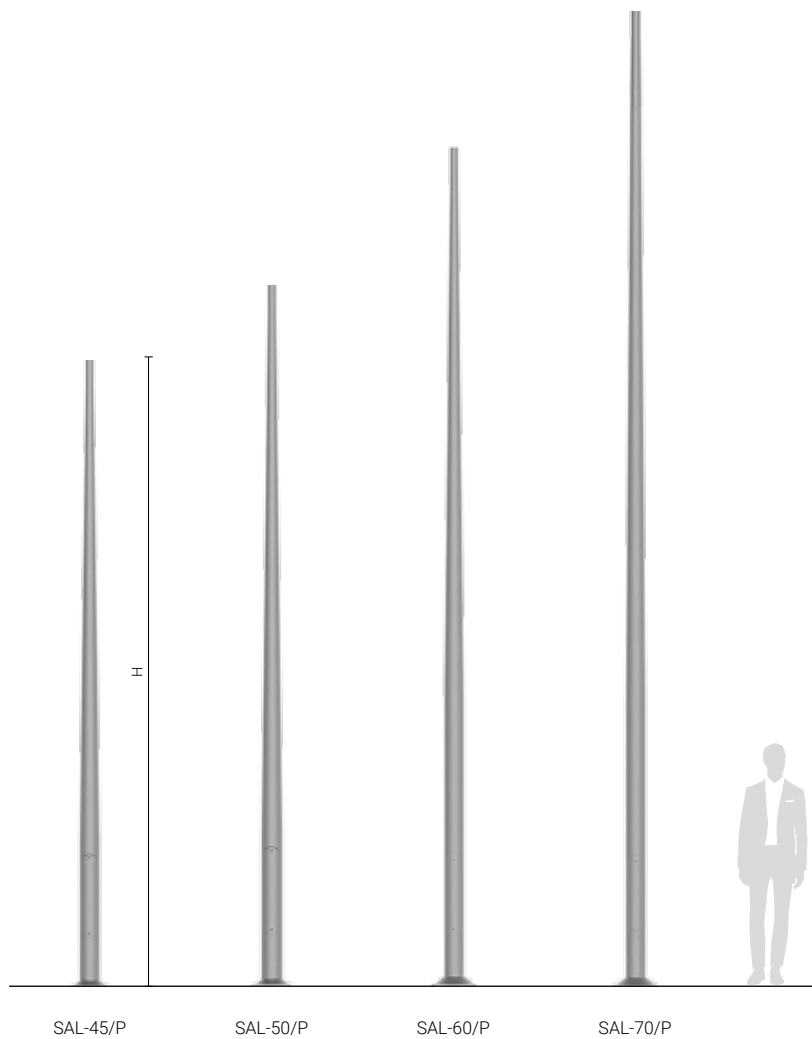
1. Removal of the wiring chamber cover



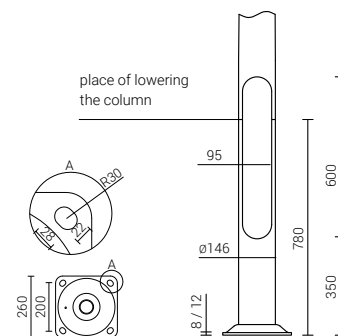
2. Unscrewing the hinge's bolts



3. Manually lowering the column



Easy and safe way of lowering the column



Lowering and raising columns

Anodising: 10 colours

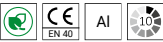
Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Diameter of the column ending: ø60 mm

Luminaire mounting: directly on the column, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet



Malczyce, Poland



Column type	SAL-85M/P	SAL-90M/P	SAL-95M/P	SAL-100M/P	SAL-115M/P
Height of the column H [mm]	8 500	9 000	9 500	10 000	11 500
Code	42930/C...	42931/C...	42932/C...	42933/C...	42949/C...
Net weight [kg]	51,1	54,4	57,6	60,2	71,6
Approximate unit volume [m³]*	0,556	0,589	0,621	0,654	0,752
Recommended luminaires for column top mounting	COSMO LED ALFA, CUDDLE II LED REG				
Recommended extension arms and luminaires	WR-4/1/1,0/5 ZP, WR-8B/1/0,35/0, WR-13/1/0,8/5 ZP, WR-13/2/0,8/5 ZP, WR-15/1/1,0/5, WR-15/2/1,0/5 – luminaire CUDDLE II LED, CUDDLE II LEG REG, COSMO LED; WN-21, WN-21 REG, WN-4 – floodlights				
Concrete footing / reinforcement basket type	B-70 / Z-70				
Threaded anchor ending	4xM24				
Concrete footing / reinforcement basket code	311170 / 311207				
Fasteners	4012				
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 12				

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... – choice of anodising colour



1. Assembly of column's mechanism (manual or articulated)



2. Removal of the wiring chamber cover



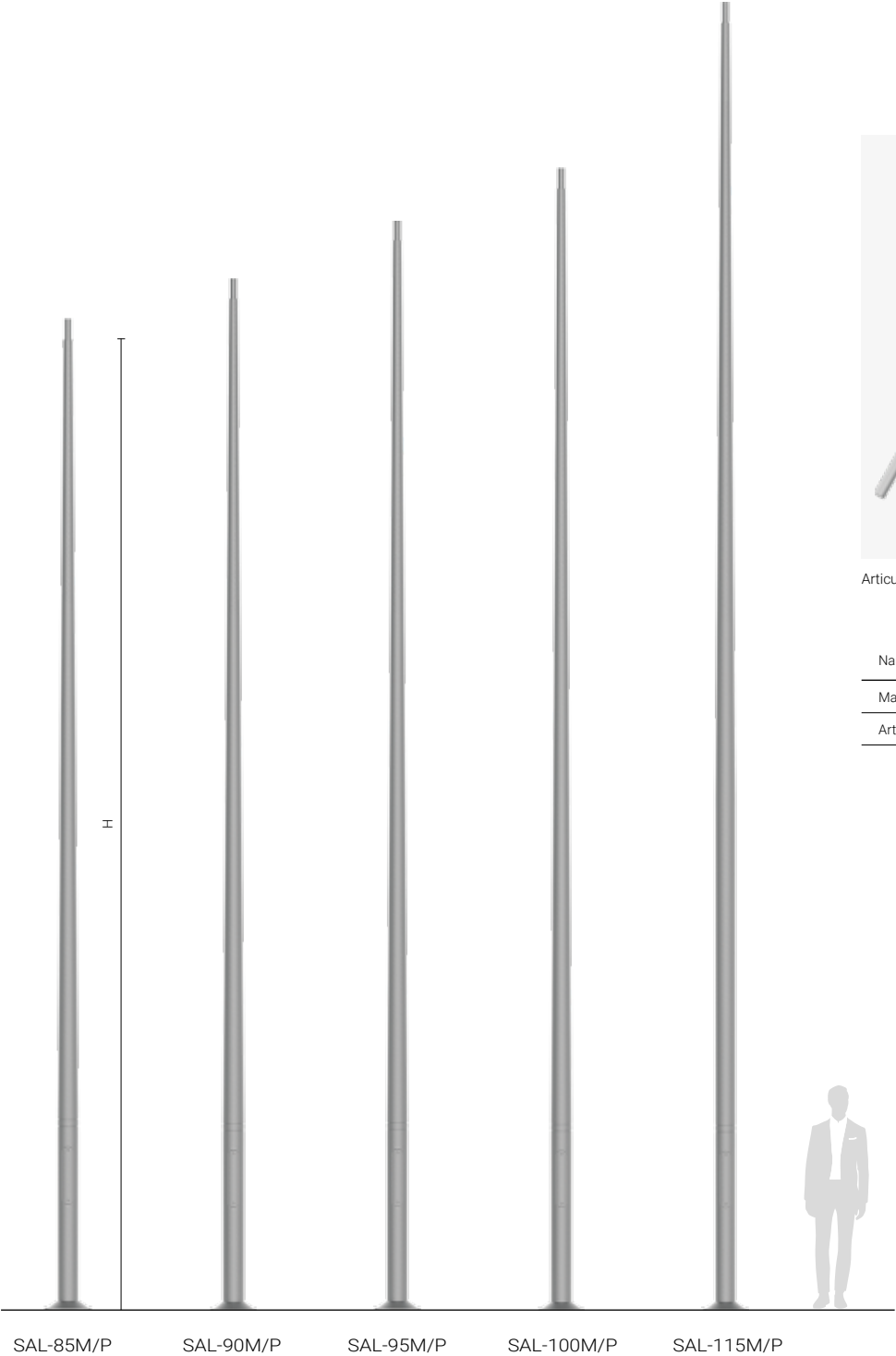
3. Unscrewing the three bolts securing the column at the breaking point



4. Mounting the drill in the mechanism

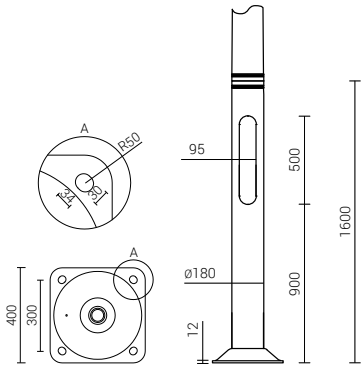


5. Lowering the column



Articulated mechanism for SAL...M/P column

Name	Code
Manual mechanism	4005
Articulated mechanism	4010

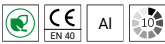


Aluminium lighting masts

Anodising: 10 colours

Finish: : brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm

Diameter of the mast ending: ø100 mm

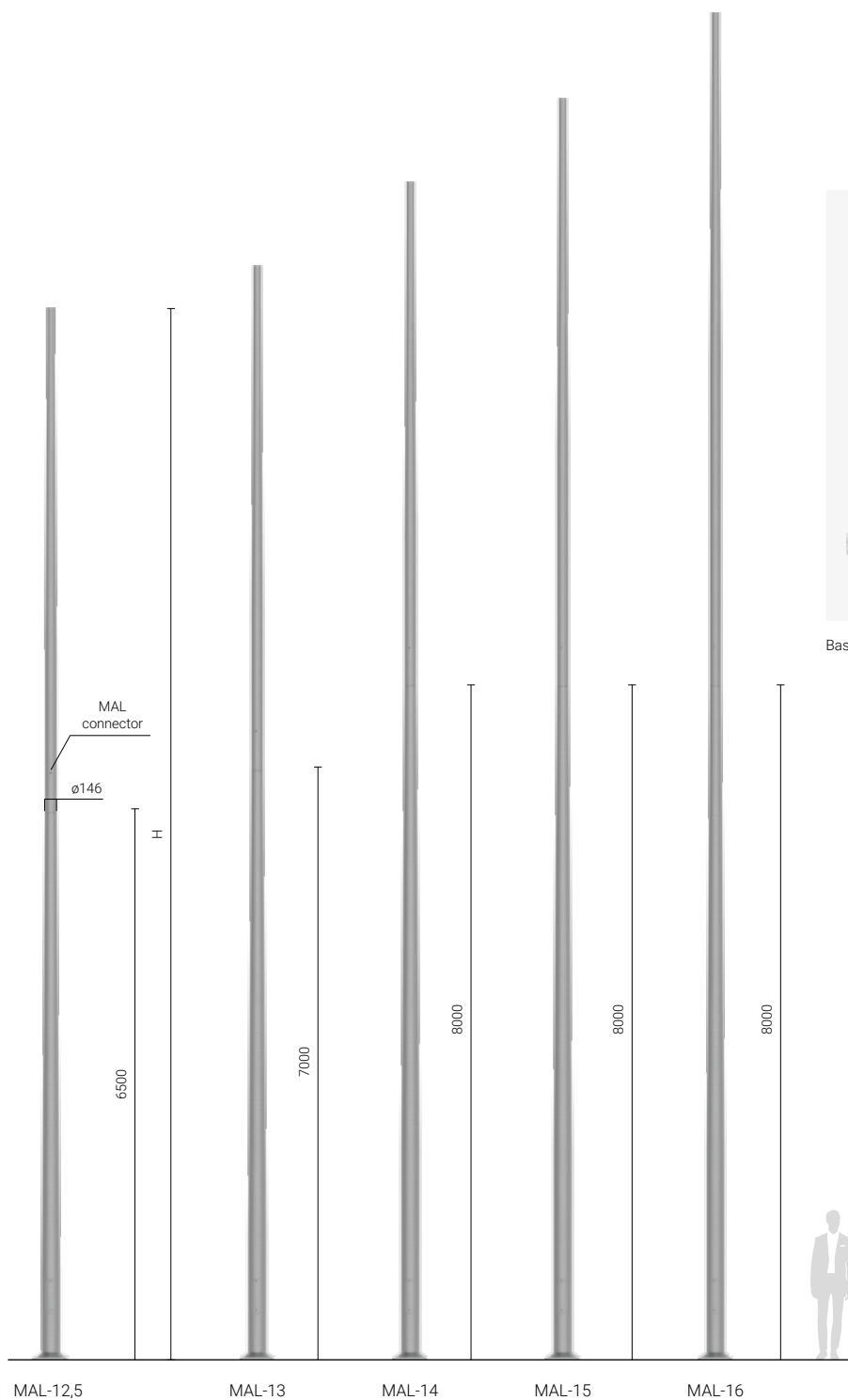


Column type	MAL-12,5	MAL-13	MAL-14	MAL-15	MAL-16
Height of the column H [mm]	12 500	13 000	140 00	15 000	16 000
Code	42501/C...	42502/C...	42504/C...	42506/C...	42508/C...
Net weight [kg]	93,8	98,7	107,6	111,1	115,2
Approximate unit volume [m³]*	0,64	0,68	0,76	0,77	0,78
Recommended extension arms for light masts	WM, WRK				
Concrete footing / reinforcement basket type	B-80 / Z-80				
Threaded anchor ending	4xM24				
Concrete footing / reinforcement basket code	311180 / 311208				
Fasteners	4012				
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 20				

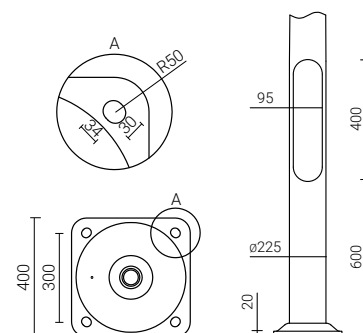
Column type	MAL-12,5 wzm	MAL-13 wzm	MAL-14 wzm	MAL-15 wzm	MAL-16 wzm
Height of the column H [mm]	12 500	13 000	14 000	15 000	16 000
Code	42551/C...	42552/C...	42554/C...	42556/C...	42558/C...
Net weight [kg]	101,2	106,2	114,9	118,4	122,5
Approximate unit volume [m³]*	0,64	0,68	0,76	0,77	0,78
Recommended extension arms for light masts	WM, WRK				
Concrete footing / reinforcement basket type	B-80 / Z-80				
Threaded anchor ending	4xM24				
Concrete footing / reinforcement basket code	311180 / 311208				
Fasteners	4012				
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 20				

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

Luminaire: CUDDLE II LED
Arm: WRK-3
Column: MAL-13



Base-plate of an aluminium column 400x300x20



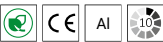
Columns for traffic signal lights

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

Protection class: IP 54 for the wiring chamber

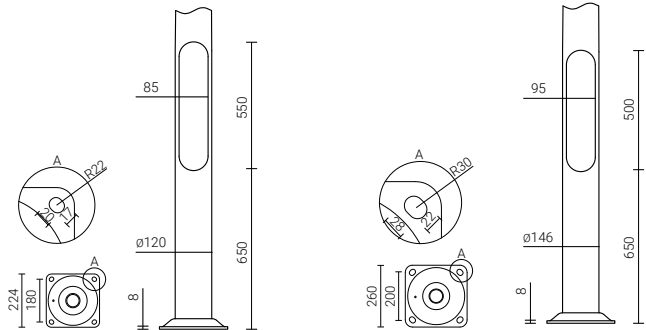
Purpose: designed for hanging traffic lights at road intersections, pedestrian crossings etc

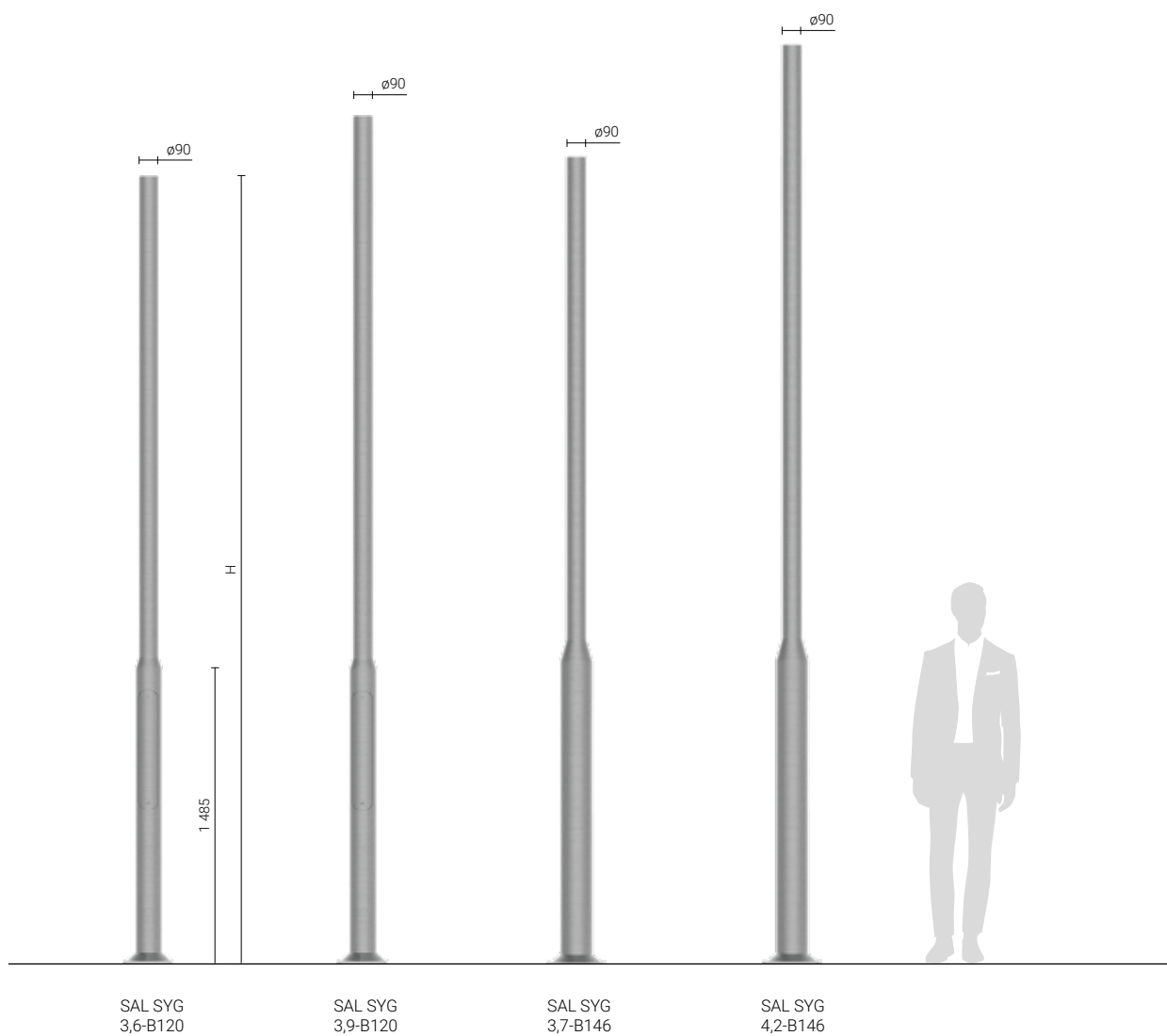


Column type	SAL SYG 3,6-B120	SAL SYG 3,9-B120	SAL SYG 3,7-B146	SAL SYG 4,2-B146
Height of the column H [mm]	3 600	3 900	3 700	4 200
Code	42826/C...	42827/C...	42822/C...	42823/C...
Net weight [kg]	14	15	16,5	18,1
Approximate unit volume [m³]*	0,094	0,102	0,122	0,139
Traffic signal lights and signs top column mounting	with Ø90 spigot entry with weight and windage not exceeding data in resistance calculations			
Concrete footing / reinforcement basket type	B-50 / Z-50		B-51 / Z-51	
Threaded anchor ending	4xM14		4xM18	
Concrete footing / reinforcement basket code	311150 / 311205		311151 / 311251	
Fasteners	4006		4008	
Dimension of the base plate (side / bolt spacing / thickness) [mm]	224 / 180 / 8		260 / 200 / 8	

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

Fontenay-sous-Bois, France





Columns for traffic signal lights

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

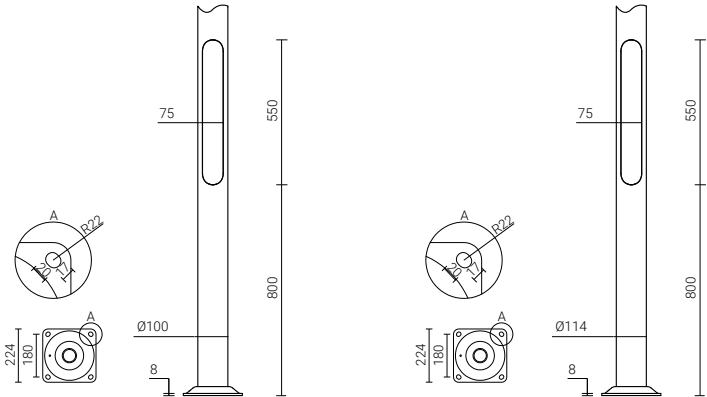
Protection class: IP 54 for the wiring chamber

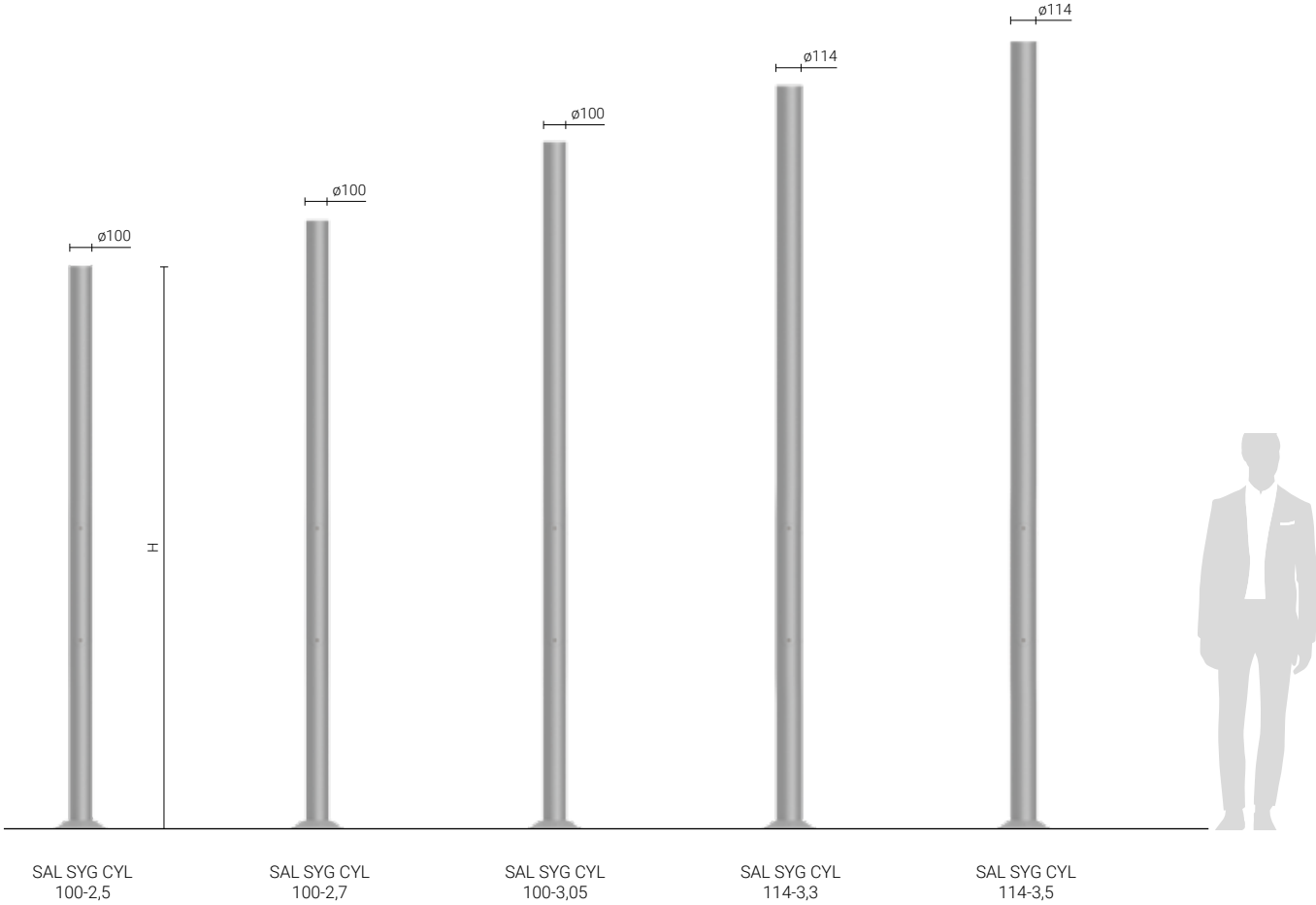
Purpose: designed for hanging traffic lights at road intersections, pedestrian crossings etc



Column type	SAL SYG CYL 100-2,5	SAL SYG CYL 100-2,7	SAL SYG CYL 100-3,05	SAL SYG CYL 114-3,3	SAL SYG CYL 114-3,5
Height of the column H [mm]	2 500	2 700	3 050	3 300	3 500
Code	42805/C...	42806/C...	42807/C...	42808/C...	42809/C...
Net weight [kg]	6,7	7,2	7,9	10,4	11
Approximate unit volume [m³]*	0,125	0,136	0,153	0,166	0,176
Traffic signal lights and signs top column mounting with ø100 or ø114 mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet					
Concrete footing / reinforcement basket type	B-50 / Z-50				
Threaded anchor ending	4xM14				
Concrete footing / reinforcement basket code	311150 / 311205				
Fasteners	4006				
Dimension of the base plate (side / bolt spacing / thickness) [mm]	224 / 180 / 8				

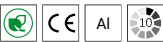
* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... – choice of anodising colour





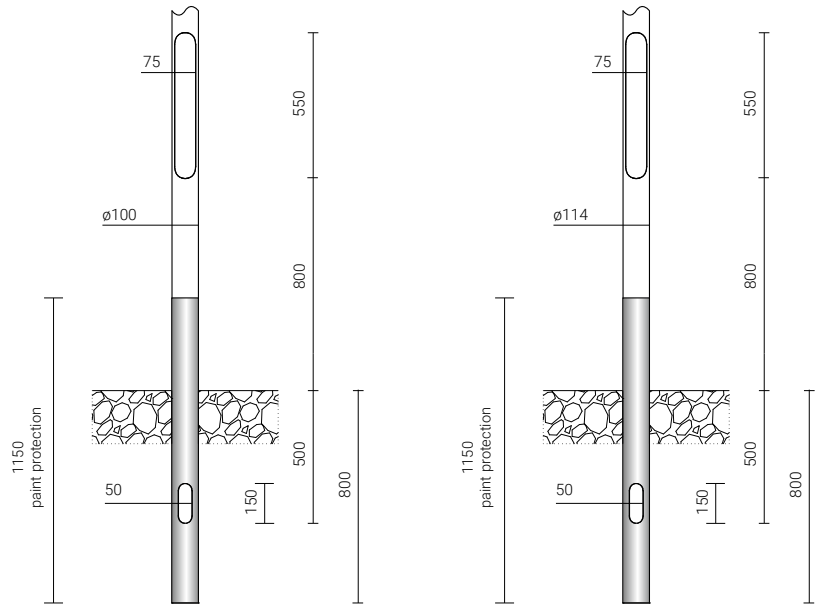
Columns for traffic signal lights

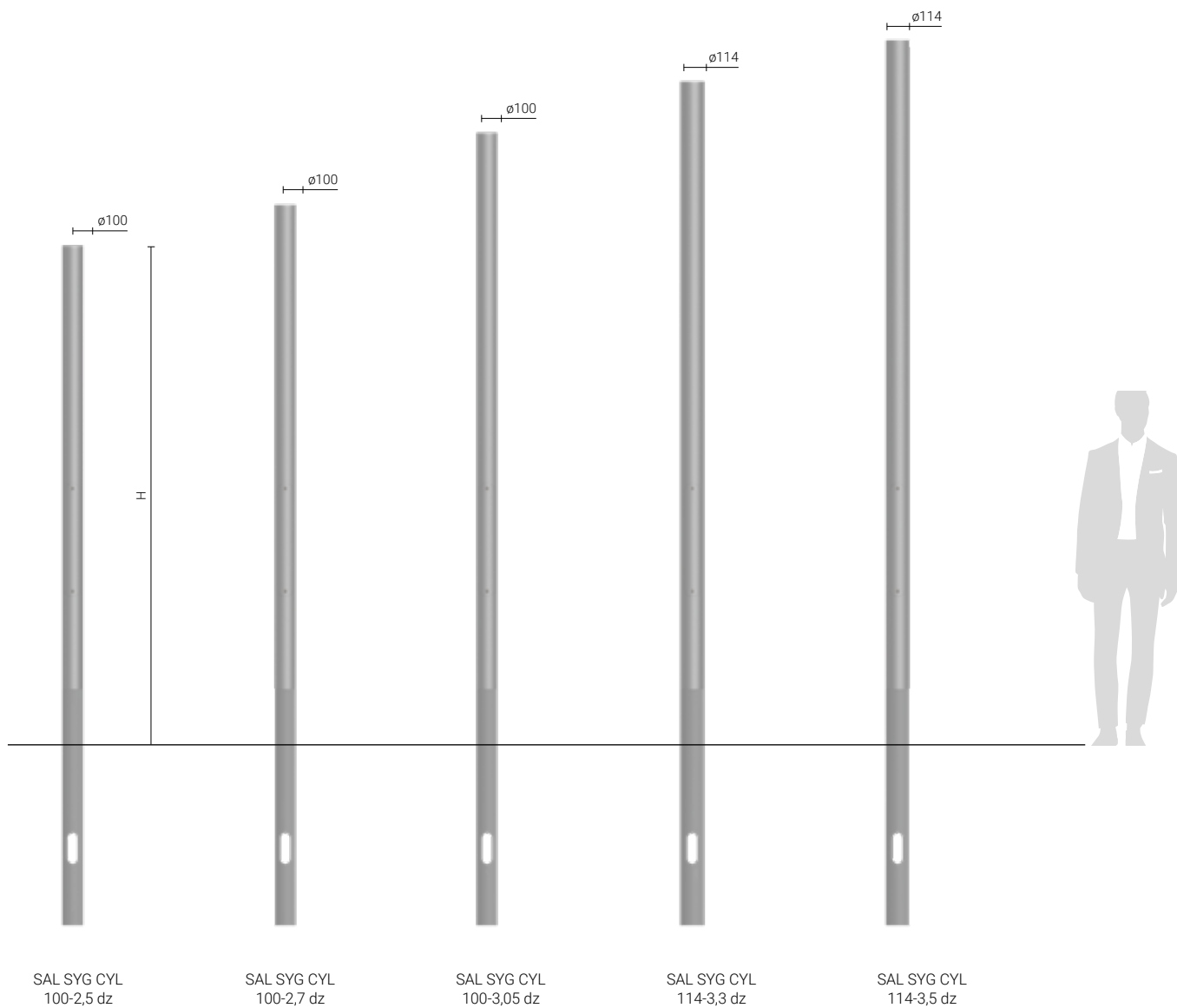
Anodising: 10 colours
Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)
Protection class: IP 54 for the wiring chamber
Purpose: designed for hanging traffic lights at road intersections, pedestrian crossings etc



Column type	SAL SYG CYL 100-2,5 dz	SAL SYG CYL 100-2,7 dz	SAL SYG CYL 100-3,05 dz	SAL SYG CYL 114-3,3 dz	SAL SYG CYL 114-3,5 dz
Height of the column H [mm]	2 500	2 700	3 050	3 300	3 500
Code	42875/C...	42876/C...	42877/C...	42878/C...	42879/C...
Net weight [kg]	7,5	7,9	8,7	11,9	12,5
Approximate unit volume [m³]*	0,033	0,035	0,039	0,053	0,056
Traffic signal lights and signs top column mounting with ø100 or ø114 mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet					
Rooted section h [mm]	800				

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour



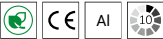


Columns for traffic signal lights

Anodising: 10 colours

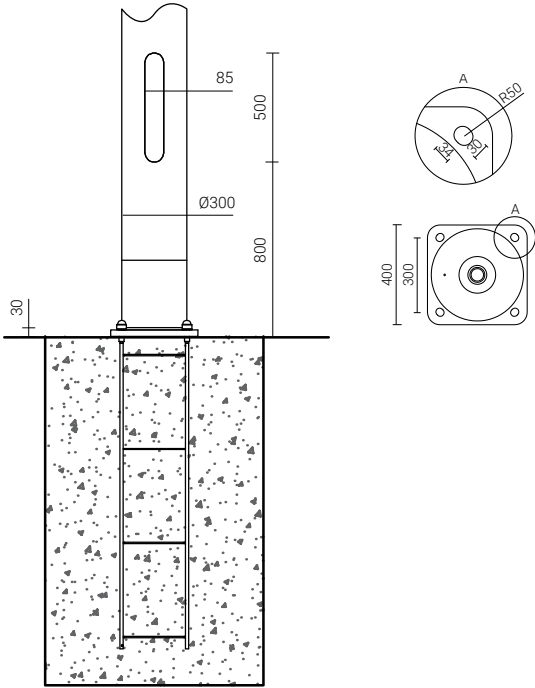
Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

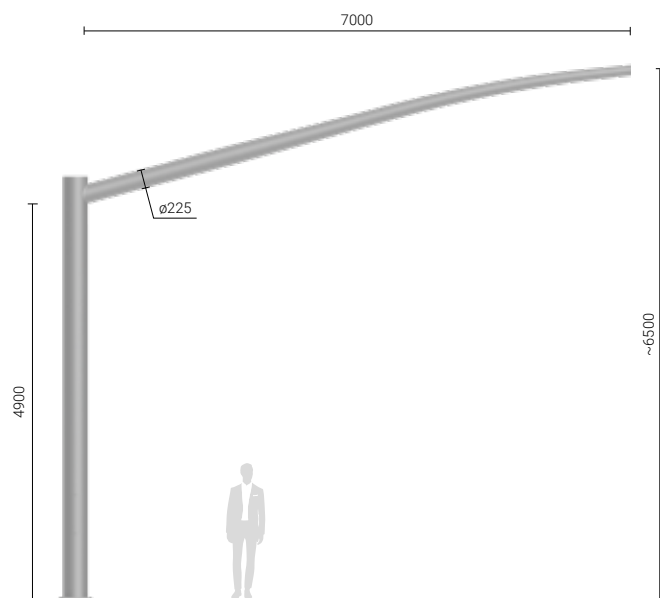
Purpose: designed for hanging traffic lights at road intersections, pedestrian crossings etc.



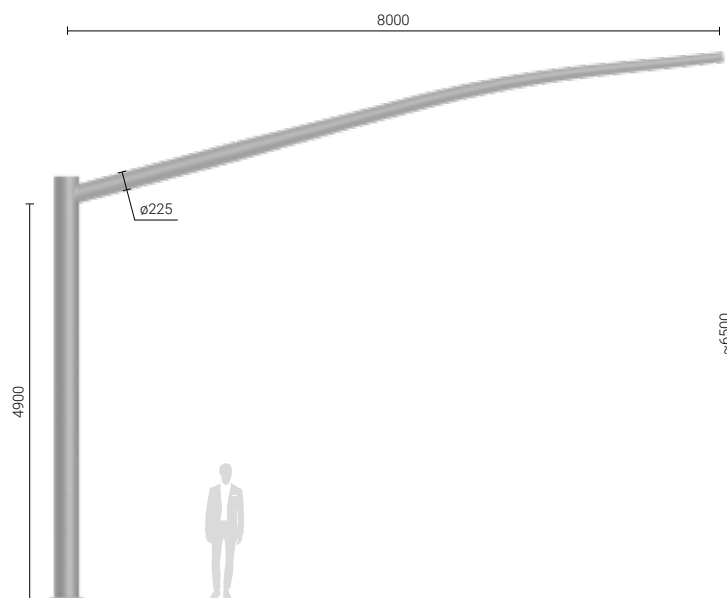
Column type	SAL SYG 300-6,5-7	SAL SYG 300-6,5-8	SAL SYG 300-6,5-9
Height of the column H [mm]	6 500	6 500	6 500
Code	42861/C...	42862/C...	42863/C...
Net weight [kg]	203	217	223
Approximate unit volume [m³]*	1.86	2.04	2.18
Traffic signal lights and signs top column mounting	with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet		
Reinforcement basket type	Z-81		
Threaded anchor ending	4xM24		
Reinforcement basket code	311281		
Fasteners	4012		
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 30		

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... – choice of anodising colour

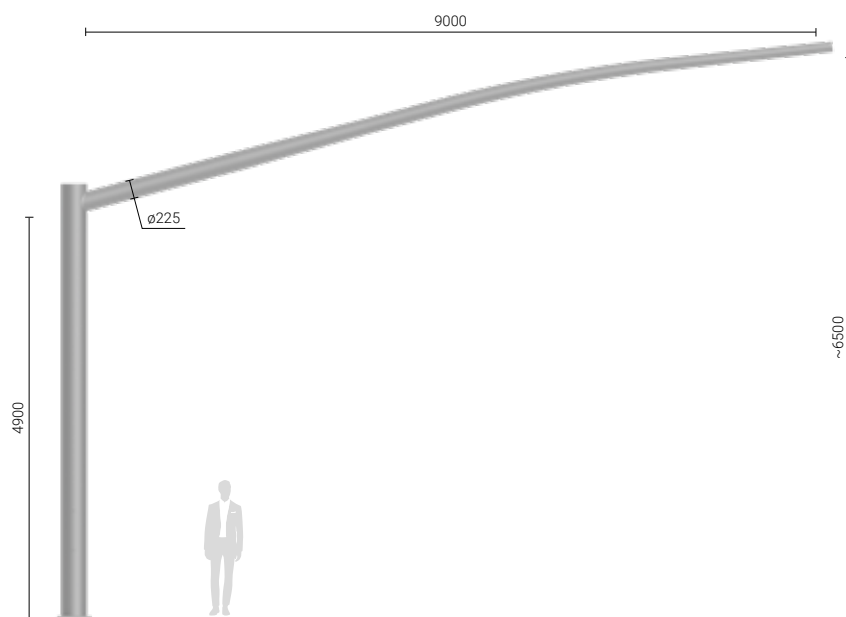




SAL SYG 300-6,5-7



SAL SYG 300-6,5-8



SAL SYG 300-6,5-9

Columns for traffic signal lights

Anodising: 10 colours

Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request)

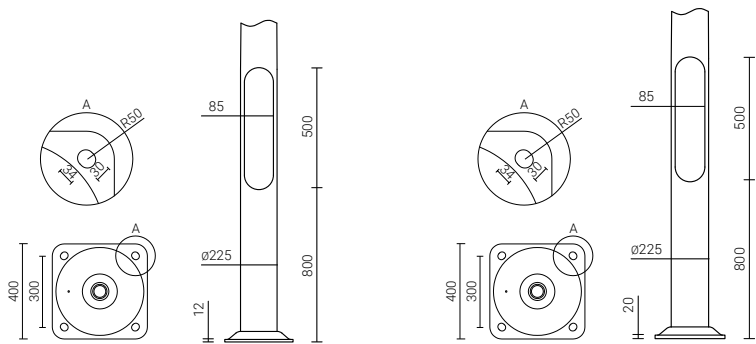
Purpose: designed for hanging traffic lights at road intersections, pedestrian crossings etc.

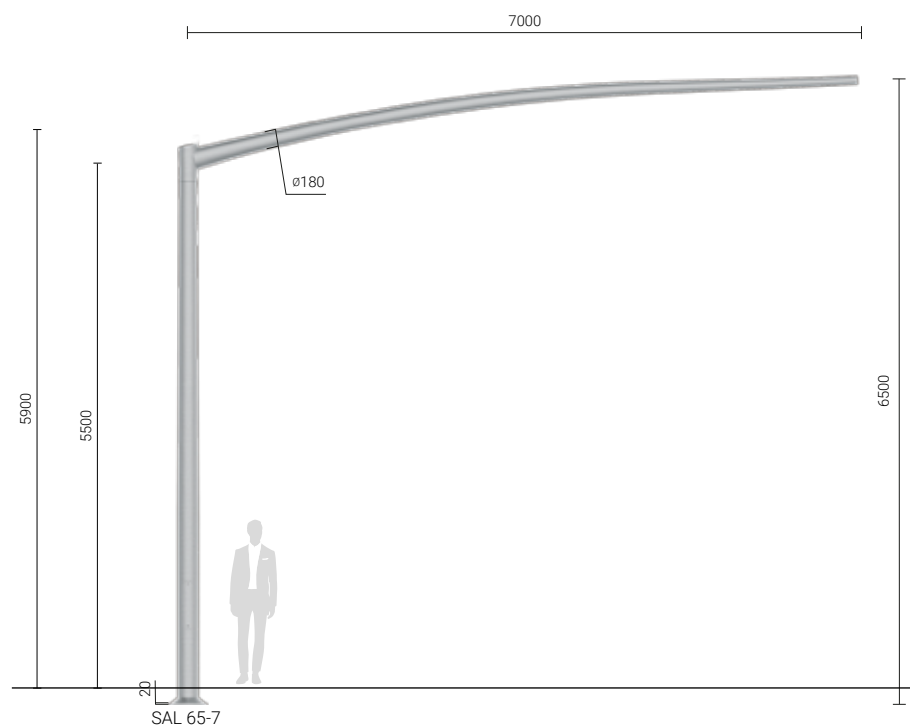
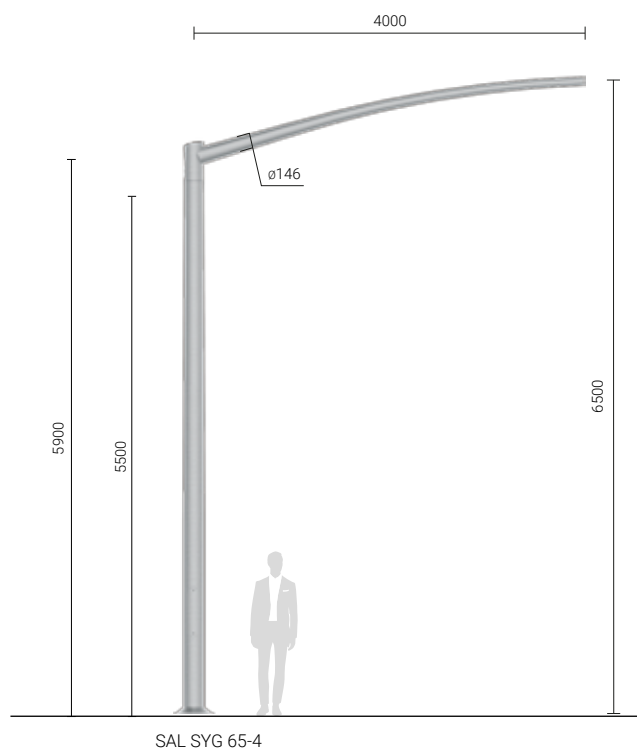


Column type	SAL SYG 65-4	SAL SYG 65-7
Height of the column H [mm]	6 500	6 500
Code	42810/C...	42811/C...
Net weight [kg]	90,2	119,4
Approximate unit volume [m³]*	0,84	1,04
Traffic signal lights and signs top column mounting	with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet	
Concrete footing / reinforcement basket type	B-80 / Z-80	
Threaded anchor ending	4xM24	
Concrete footing / reinforcement basket code	311180 / 311 208	
Fasteners	4012	
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 12	400 / 300 / 20

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour

Warsaw, Poland





Aluminium flag poles

Anodising: 10 colours

Finish: : brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm

Purpose: masts are designed for hanging flags of surface are^a up to 6 m² according to the technical data sheet

Cord: braided spiral, durable, diameter Ø4 mm, colour: white

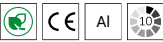
Weight: metal, coated with grey coloured plastic

Plastic mounting band: 8 pcs as standard (6 pcs + 1 pc on weight + 1 pc on cross-bar)

Wiring chamber: equipped in cord's lock.

Additional accessories:

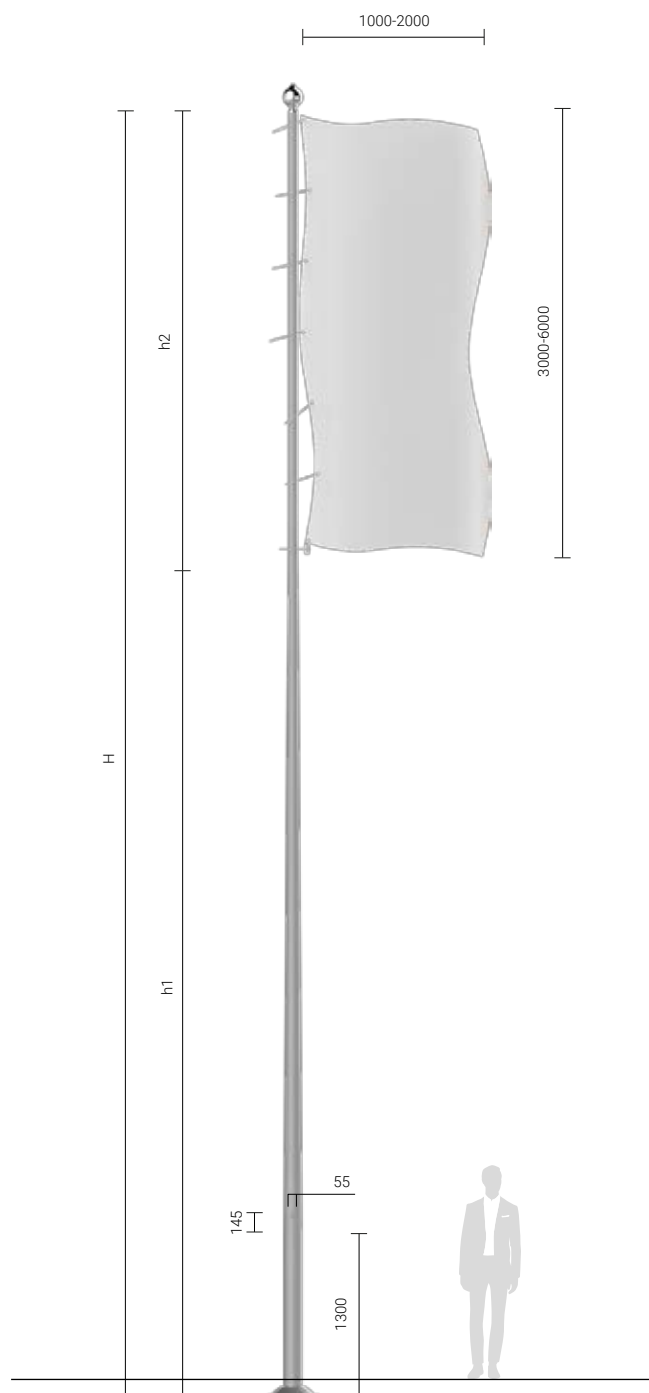
- cross-bar for flag - lengths: 1 m, 1,5 m, 2 m
- ending: gold or silver ball end



Column type	SAL MF 6-114	SAL MF 7-114-2	SAL MF 8-114	SAL MF 9-120	SAL MF 10-120
Height of the column H [mm]	6 000	7 000	8 000	9 000	10 000
Code	42950/C...	42952/C...	42953/C...	42956/C...	42957/C...
Net weight [kg]	18,1	20,7	22,5	29,5	31,2
Approximate unit volume [m³]*	0,108	0,142	0,144	0,186	0,189
Height of lower section h1 + tube [mm]	4 500 + 200	4 500 + 200	4 500 + 200	6 000 + 200	6 000 + 200
Height of upper section h2 [mm]	1 500	2 500	3 500	3 000	4 000
Concrete footing / reinforcement basket type	B-50 / Z-50	B-51 / Z-51			
Threaded anchor ending	4xM14	4xM18			
Concrete footing / reinforcement basket code	311150 / 311205	311151 / 311251			
Fasteners	4006	4008			
Dimension of the base plate (side / bolt spacing / thickness) [mm]	224 / 180 / 8	260 / 200 / 12			

Column type	SAL MF 10 -146	SAL MF 11-146	SAL MF 12-146
Height of the column H [mm]	10 000	11 000	12 000
Code	42958/C...	42959/C...	42960/C...
Net weight [kg]	45,1	48,1	51
Approximate unit volume [m³]*	0,472	0,476	0,481
Height of lower section h1 + tube [mm]	6 800 + 200	6 800 + 200	6 800 + 200
Height of upper section h2 [mm]	3 200	3 200	5 200
Concrete footing / reinforcement basket type	B-71 / Z-71		
Threaded anchor ending	4xM24		
Concrete footing / reinforcement basket code	311171 / 311271		
Fasteners	4012		
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 10		

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... – choice of anodising colour

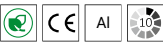


Tychy, Poland



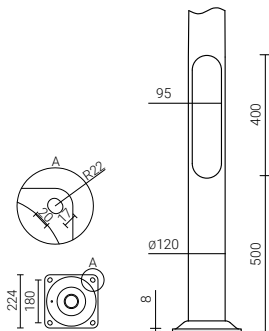
Aluminium columns for monitoring installation

Anodising: 10 colours
Finish: brushed anodised aluminium, option of elastomer protection in column's colour up to a height of 350 mm (other height on customer's request) for columns with a base-plate, grounded columns are protected with elastomer as standard
Purpose: for monitoring installation
Diameter of the column ending: $\varnothing 76$ mm
Protection class: IP 54 for the wiring chamber
Maximum permissible load: 30 kg
Ending: aluminium cap anodised in column's colour included as standard

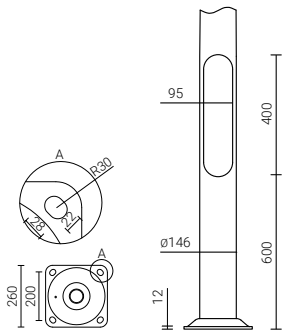


Column type	SAL-30CAM	SAL-40CAM	SAL-50CAM	SAL-60CAM
Height of the column [mm]	3 000	4 000	5 000	6 000
Code	42841/C...	42842/C...	42843/C...	42844/C...
Net weight [kg]	12,3	15,7	21,4	25,2
Approximate unit volume [m ³]*	0,093	0,124	0,155	0,186
Concrete footing / reinforcement basket type	B-51 / Z-51			
Threaded anchor ending	4xM18			
Concrete footing / reinforcement basket code	311151 / 311251			
Fasteners	4008			
Dimension of the base plate (side / bolt spacing / thickness) [mm]	260 / 200 / 12			

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
/C... - choice of anodising colour



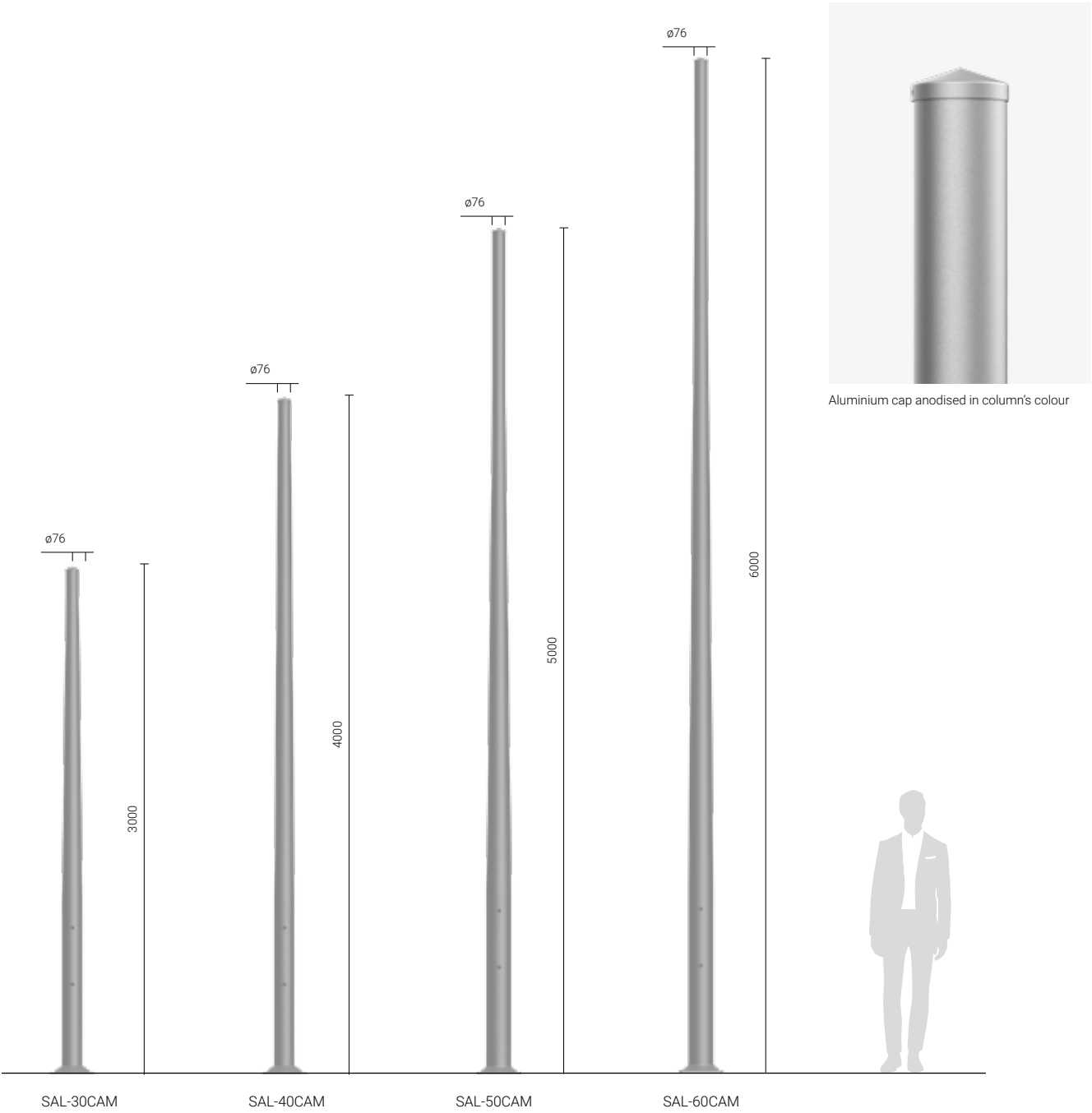
SAL-30CAM / SAL-40CAM



SAL-50CAM / SAL-60CAM



Column: SAL-60CAM



Extension arms for aluminium columns

Rzeszów, Poland

Investor: The Road Administration in Rzeszów



Municipal Stadium
Tychy, Poland

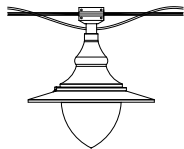


Extension arms WA

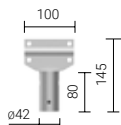
Application: for mounting on SAL aluminium columns with $\varnothing 60 \times 130$ / 180 mm spigot

Material: anodised aluminium alloy,

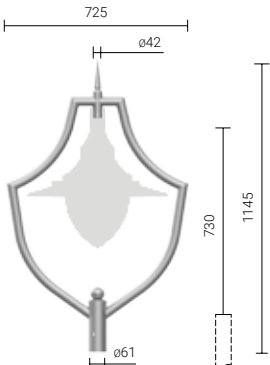
Anodising: 10 colours



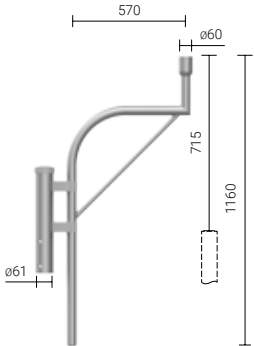
Mounting example of WA-0 with OW LED luminaire, cone lamp diffuser



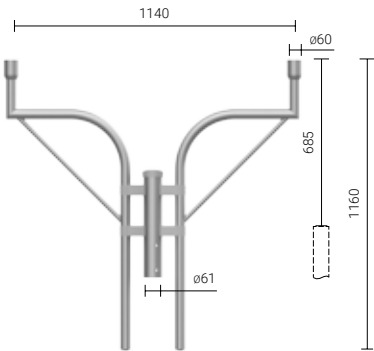
WA-0



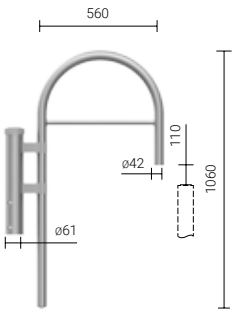
WA-41 fi42



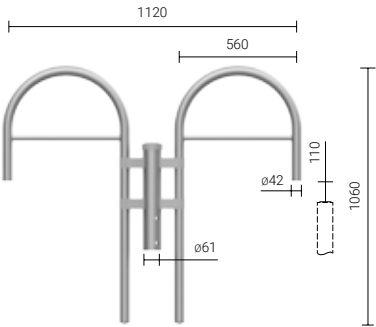
WA-5/1



WA-5/2



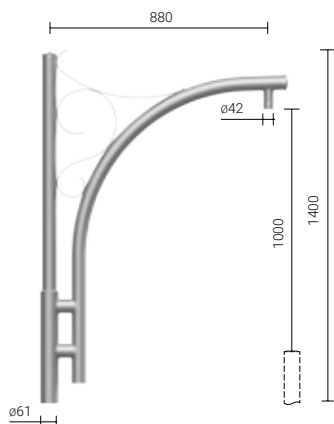
WA-14/1



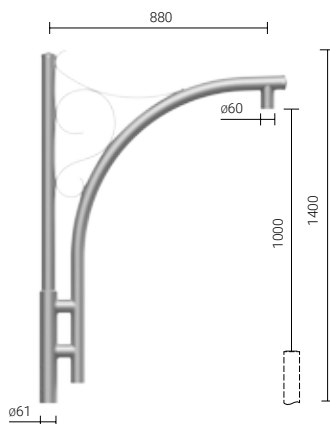
WA-14/2

Extension arm type	WA-0	WA-41 fi42	WA-5/1	WA-5/2	WA-14/1	WA-14/2
Number of arms	1	1	1	2	1	2
Code	40270/C...	471041/C...	471051/C...	471052/C...	471141/C...	471142/C...
Net weight [kg]	0,4	3,9	3,6	5,8	3,9	5,7
Extension arm effective projected area [m²]		0,13	0,116	0,197	0,12	0,206
Approximate unit volume [m³]	0,001	0,045	0,021	0,04	0,018	0,035
Luminaire mounting diameter [mm]	42	42	60	60	42	42

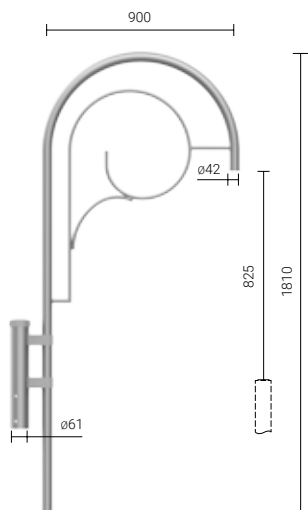
The use of extension arm should always be verified with a permissible loading for specified wind zone (technical cards available at www.rosa.pl)
/C... - choice of anodising colour



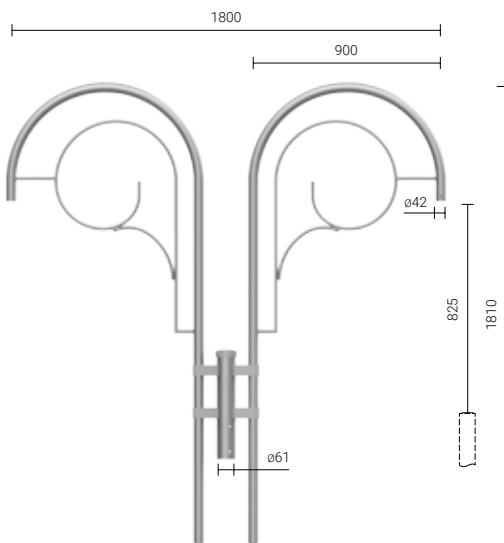
WA-17/1



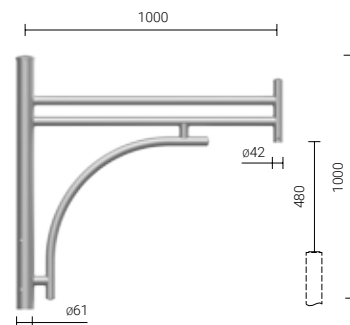
WA-17/1 fi60



WA-20/1



WA-20/2



WA-31 fi42

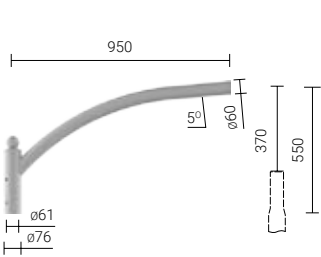
Extension arm type	WA-17/1	WA-17/1 fi60	WA-20/1	WA-20/2	WA-31 fi42
Number of arms	1	1	1	2	1
Code	471701/C...	471701/60/C...	471201/C...	471202/C...	471031/C...
Net weight [kg]	7,2	7,2	5,5	9,1	8,7
Extension arm effective projected area [m ²]	0,209	0,209	0,19	0,346	0,213
Approximate unit volume [m ³]	0,165	0,165	0,078	0,122	0,022
Luminaire mounting diameter [mm]	ø42	ø60	ø42	ø42	ø42

Extension arms WR

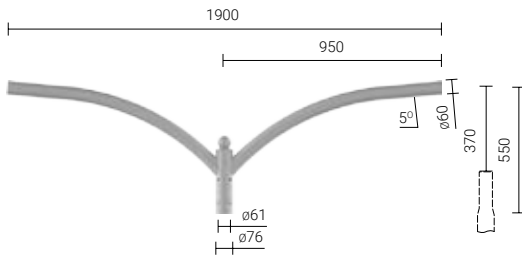
Application: for mounting on SAL aluminium columns with ending $\varnothing 60 \times 180$ mm spigot

Material: anodised aluminium alloy,

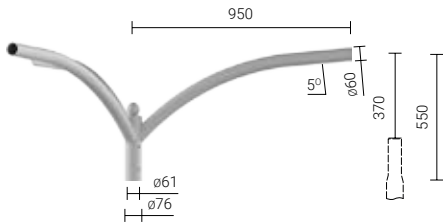
Anodising: 10 colours



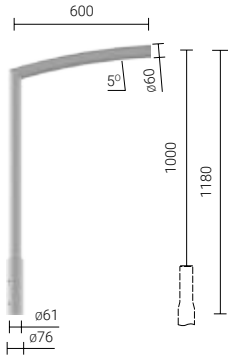
WR-2/1/0,95/5



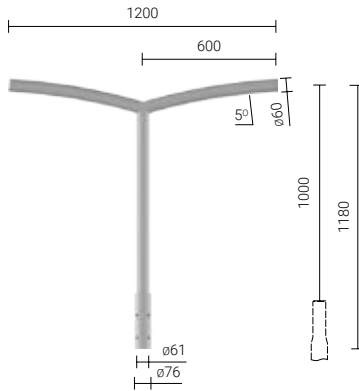
WR-2/2/0,95/5



WR-2/3/0,95/5



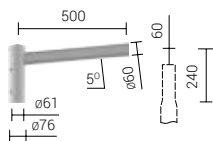
WR-5A/1/0,6/5



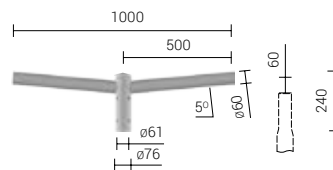
WR-5A/2/0,6/5

Extension arm type	WR-2/1/0,95/5	WR-2/2/0,95/5	WR-2/3/0,95/5	WR-5A/1/0,6/5	WR-5A/2/0,6/5
Number of arms	1	2	3	1	2
Code	472021/C...	472022/C...	472023/C...	47250106/C...	47250206/C...
Net weight [kg]	2,8	4,4	6,3	3,4	4,5
Extension arm effective projected area [m ²]	0,085	0,145	0,145	0,11	0,14
Approximate unit volume [m ³]	0,023	0,05	0,26	0,03	0,06
Luminaire mounting diameter [mm]	$\varnothing 60$	$\varnothing 60$	$\varnothing 60$	$\varnothing 60$	$\varnothing 60$

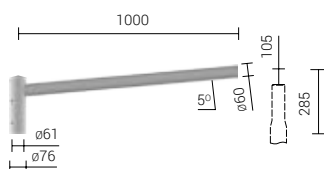
The use of extension arm should always be verified with a permissible loading for specified wind zone (technical cards available at www.rosa.pl)
/C... - choice of anodising colour



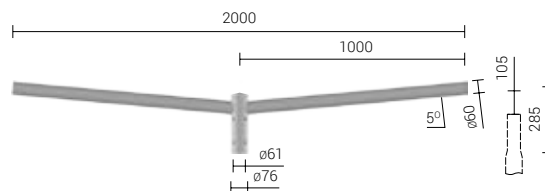
WR-4/1/0,5/5 ZP



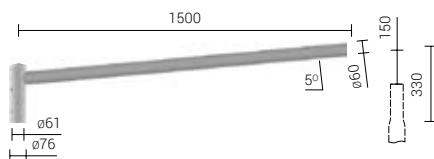
WR-4/2/0,5/5 ZP



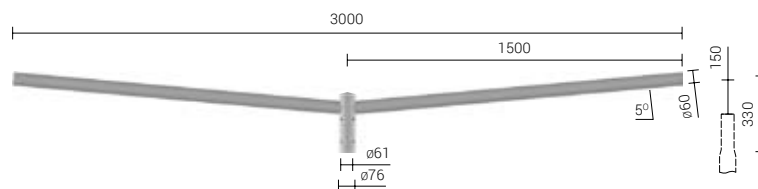
WR-4/1/1,0/5 ZP



WR-4/2/1,0/5 ZP



WR-4/1/1,5/5 ZP



WR-4/2/1,5/5 ZP

Extension arm type	WR-4/1/0,5/5 ZP	WR-4/1/1,0/5 ZP	WR-4/1/1,5/5 ZP	WR-4/2/0,5/5 ZP	WR-4/2/1,0/5 ZP	WR-4/2/1,5/5 ZP
Number of arms	1	1	1	2	2	2
Code	472041059/C...	472041109/C...	472041159/C...	472042059/C...	472042109/C...	472042159/C...
Net weight [kg]	1,7	2,5	3,4	2,5	4,2	5,9
Extension arm effective projected area [m ²]	0,05	0,08	0,108	0,08	0,14	0,196
Approximate unit volume [m ³]	0,01	0,02	0,02	0,03	0,03	0,48
Luminaire mounting diameter [mm]	ø60	ø60	ø60	ø60	ø60	ø60

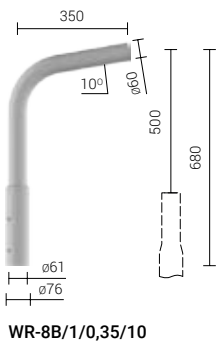
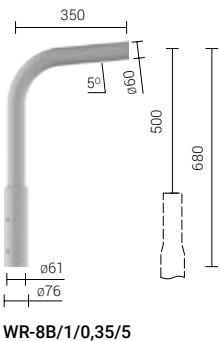
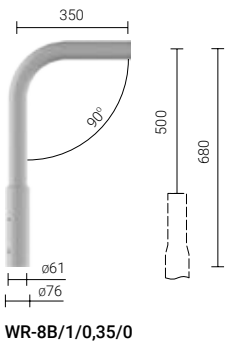
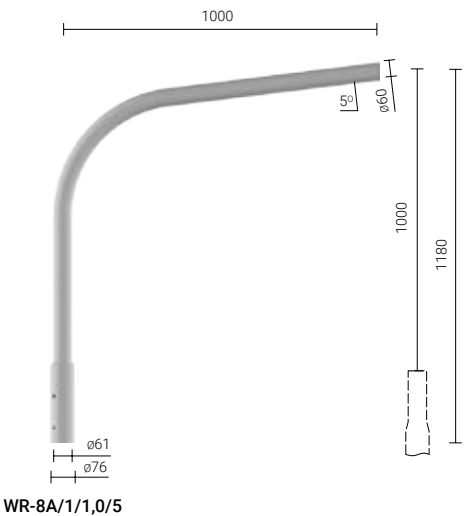
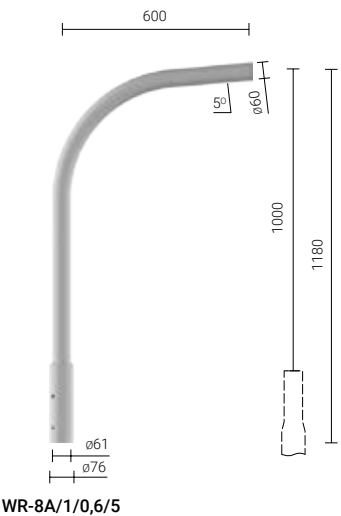
The use of extension arm should always be verified with a permissible loading for specified wind zone (technical cards available at www.rosa.pl)
/C... – choice of anodising colour

Extension arms WR

Application: for mounting on SAL aluminium columns with $\varnothing 60 \times 180$ mm spigot

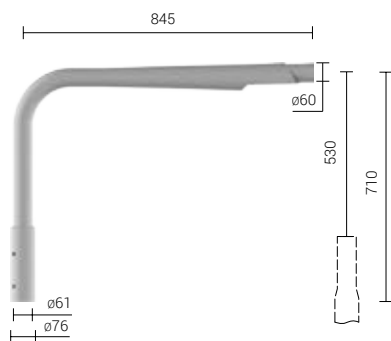
Material: anodised aluminium alloy,

Anodising: 10 colours

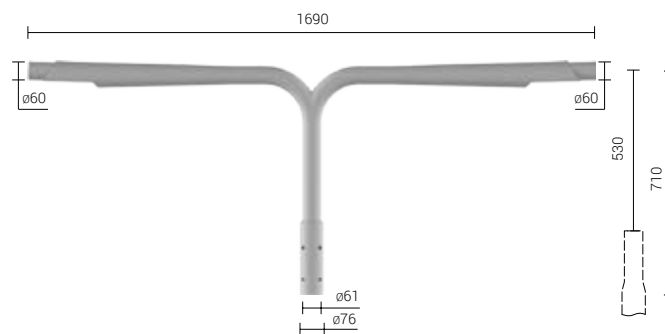


Extension arm type	WR-8A/1/0,6/5	WR-8A/1/1,0/5	WR-8B/1/0,35/0	WR-8B/1/0,35/5	WR-8B/1/0,35/10
Number of arms	1	1	1	1	1
Code	47280106/C...	47280110/C...	472831/C...	472841/C...	472851/C...
Net weight [kg]	3,2	3,8	2,1	2,1	2,1
Extension arm effective projected area [m ²]	0,1	0,12	0,05	0,05	0,05
Approximate unit volume [m ³]	0,03	0,05	0,015	0,015	0,015
Luminaire mounting diameter [mm]	$\varnothing 60$	$\varnothing 60$	$\varnothing 60$	$\varnothing 60$	$\varnothing 60$

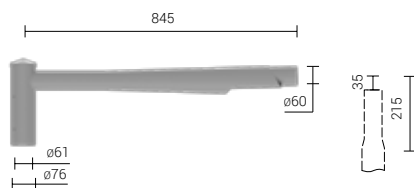
The use of extension arm should always be verified with a permissible loading for specified wind zone (technical cards available at www.rosa.pl)
/C... - choice of anodising colour



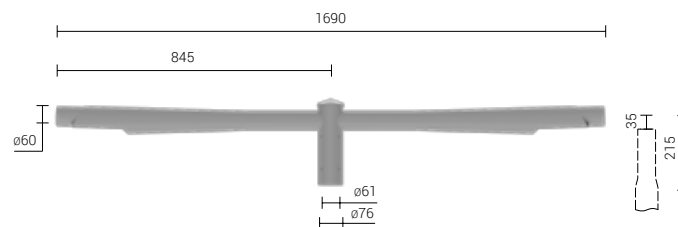
WR-10/1/0,85/0



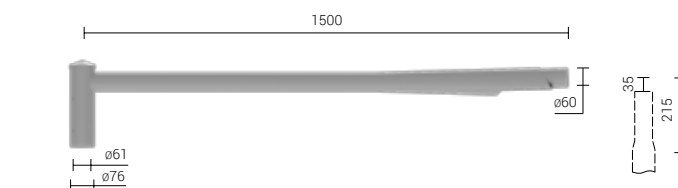
WR-10/2/0,85/0



WR-10P/1/0,85/0 ZP



WR-10P/2/0,85/0 ZP



WR-10P/1/1,5/0 ZP

Extension arm type	WR-10/1/0,85/0	WR-10/2/0,85/0	WR-10P/1/0,85/0 ZP	WR-10P/2/0,85/0 ZP	WR-10P/1/1,5/0 ZP
Number of arms	1	2	1	2	1
Code	472221/C45/C35	472222/C45/C35	4722419/C45/C35	4722429/C45/C35	4722519/C45/C35
Net weight [kg]	4	6,7	3,3	5,7	4,8
Extension arm effective projected area [m ²]	0,11	0,19	0,073	0,127	0,112
Approximate unit volume [m ³]	0,05	0,1	0,013	0,026	0,022
Luminaire	ISKRA LED, ISKRA LED PROG	ISKRA LED, ISKRA LED PROG	ISKRA LED, ISKRA LED PROG	ISKRA LED, ISKRA LED PROG	ISKRA LED, ISKRA LED PROG

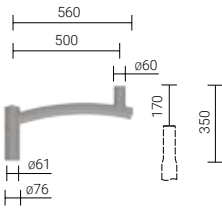
The use of extension arm should always be verified with a permissible loading for specified wind zone (technical cards available at www.rosa.pl)
/C... - choice of anodising colour

Extension arms WR

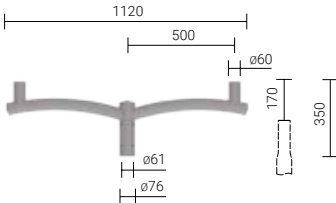
Application: for mounting on SAL aluminium columns with ending $\varnothing 60 \times 180$ mm spigot

Material: anodised aluminium alloy,

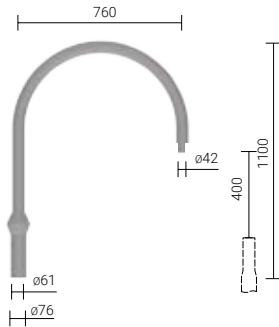
Anodising: 10 colours



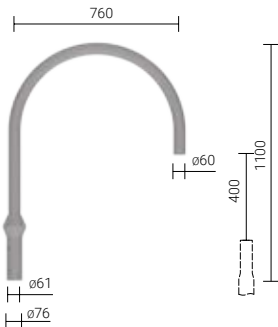
WR-7/1/0,5



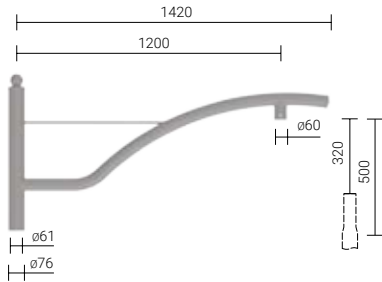
WR-7/2/0,5



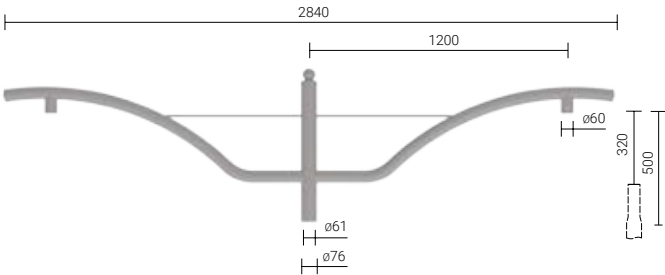
WR-23/1/0,76 fi42



WR-23/1/0,76



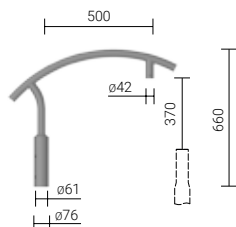
WR-71/1/1,2



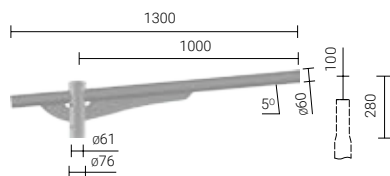
WR-71/2/1,2

Extension arm type	WR-7/1/0,5	WR-7/2/0,5	WR-23/1/0,76 fi42	WR-23/1/0,76	WR-71/1/1,2	WR-71/2/1,2
Number of arms	1	2	1	1	1	2
Code	472071/C...	472072/C...	472231/42/C...	472231/C...	472711/C...	472712/C...
Net weight [kg]	2	3,2	5,1	4,9	5	7,8
Extension arm effective projected area [m ²]	0,057	0,094	0,126	0,126	0,153	0,254
Approximate unit volume [m ³]	0,01	0,022	0,06	0,06	0,04	0,076
Luminaire mounting diameter [mm]	$\varnothing 60$	$\varnothing 60$	$\varnothing 42$	$\varnothing 60$	$\varnothing 60$	$\varnothing 60$

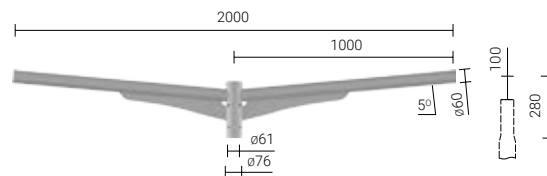
The use of extension arm should always be verified with a permissible loading for specified wind zone (technical cards available at www.rosa.pl)
/C... - choice of anodising colour



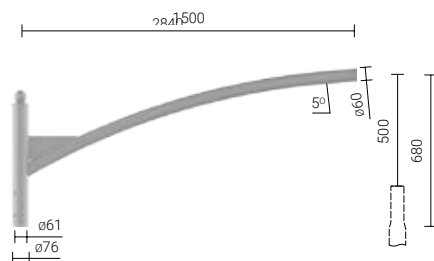
WR-73/1/0,5



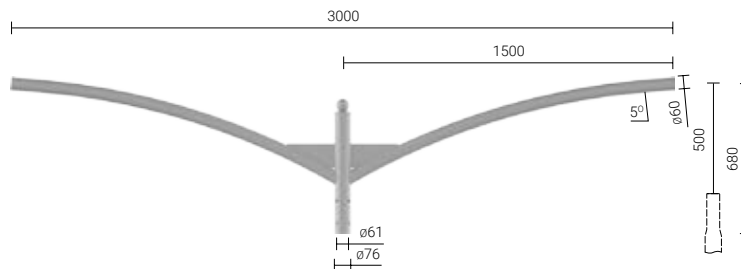
WR-15/1/1,0/5



WR-15/2/1,0/5



WR-T1/1,5/5



WR-T2/1,5/5

Extension arm type	WR-73/1/0,5	WR-15/1/1,0/5	WR-15/2/1,0/5	WR-T1/1,5/5	WR-T2/1,5/5
Number of arms	1	1	2	1	2
Code	472731/C...	472151/C...	472152/C...	472101/C...	472102/C...
Net weight [kg]	2,1	3,4	5	4,7	8,8
Extension arm effective projected area [m ²]	0,067	0,123	0,183	0,147	0,249
Approximate unit volume [m ³]	0,011	0,03	0,05	0,041	0,096
Luminaire mounting diameter [mm]	42	60	60	60	60

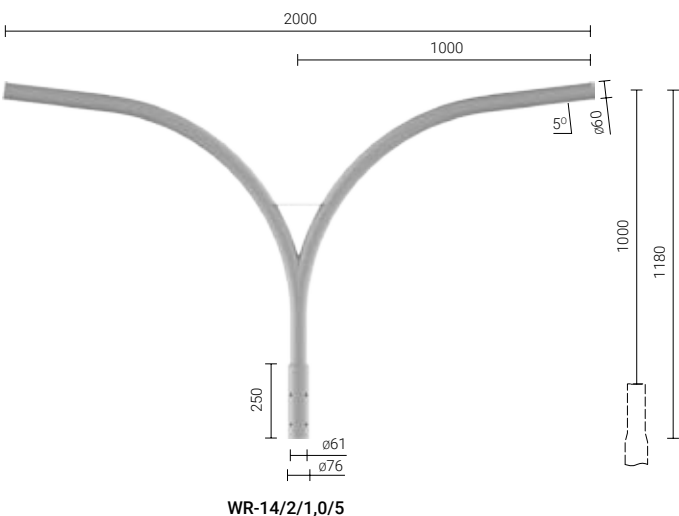
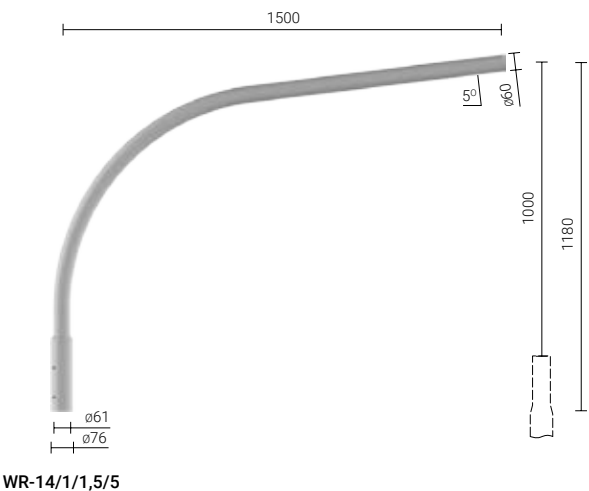
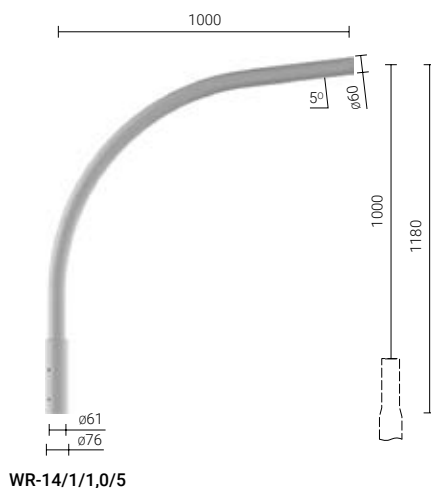
The use of extension arm should always be verified with a permissible loading for specified wind zone (technical cards available at www.rosa.pl)
/C... - choice of anodising colour

Extension arms WR

Application: for mounting on SAL aluminium columns with $\varnothing 60 \times 180$ mm spigot

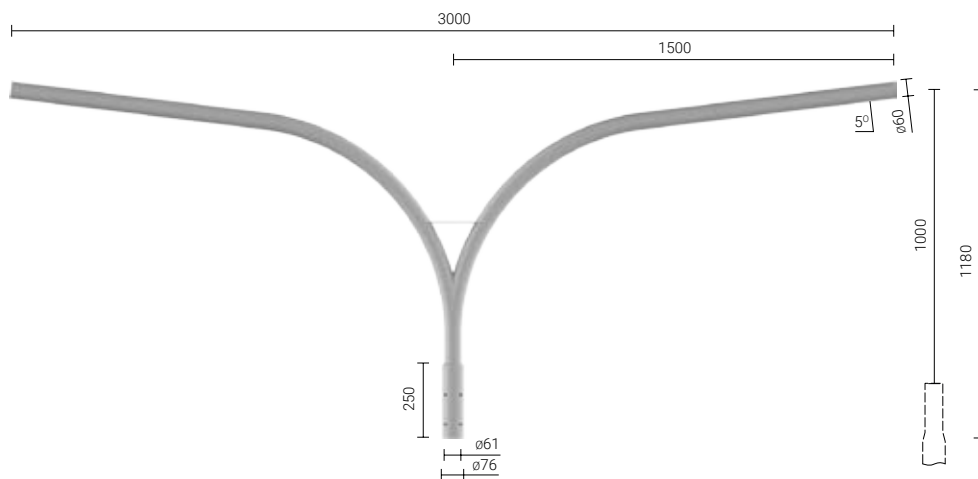
Material: anodised aluminium alloy,

Anodising: 10 colours

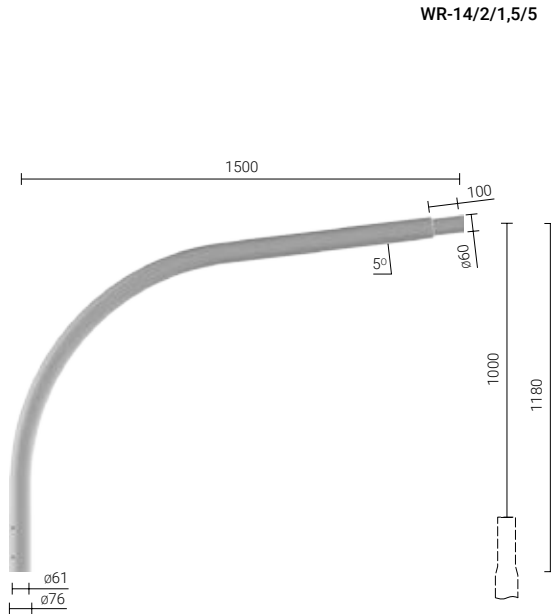


Extension arm type	WR-14/1/1,0/5	WR-14/1/1,5/5	WR-14/2/1,0/5
Number of arms	1	1	2
Code	472141/C...	47214115/C...	472142/C...
Net weight [kg]	3,7	4,4	5,7
Extension arm effective projected area [m ²]	0,114	0,14	0,191
Approximate unit volume [m ³]	0,06	0,066	0,1
Luminaire mounting diameter [mm]	$\varnothing 60$	$\varnothing 60$	$\varnothing 60$

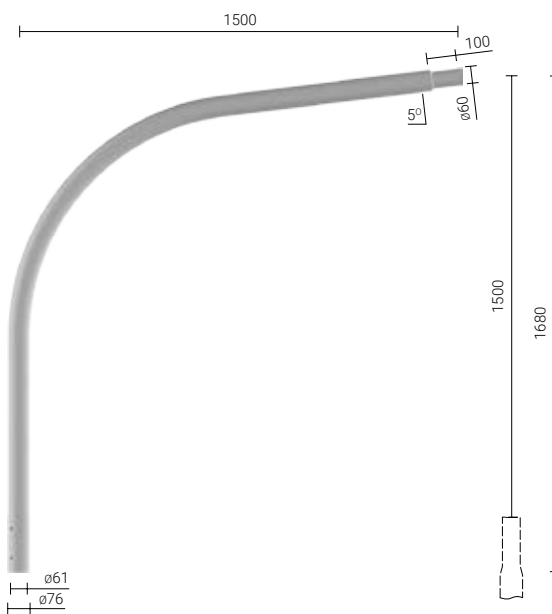
The use of extension arm should always be verified with a permissible loading for specified wind zone (technical cards available at www.rosa.pl)
/C... - choice of anodising colour



WR-14/2/1,5/5



WR-18/1/1,5/5



WR-18A/1/1,5/5

Extension arm type	WR-14/2/1,5/5	WR-18/1/1,5/5	WR-18A/1/1,5/5
Number of arms	2	1	1
Code	47214215/C...	47218115/C...	47281115/C...
Net weight [kg]	7,3	5,2	6,3
Extension arm effective projected area [m ²]	0,247	0,17	0,21
Approximate unit volume [m ³]	0,148	0,06	0,09
Luminaire mounting diameter [mm]	ø60	ø60x100	ø60x100

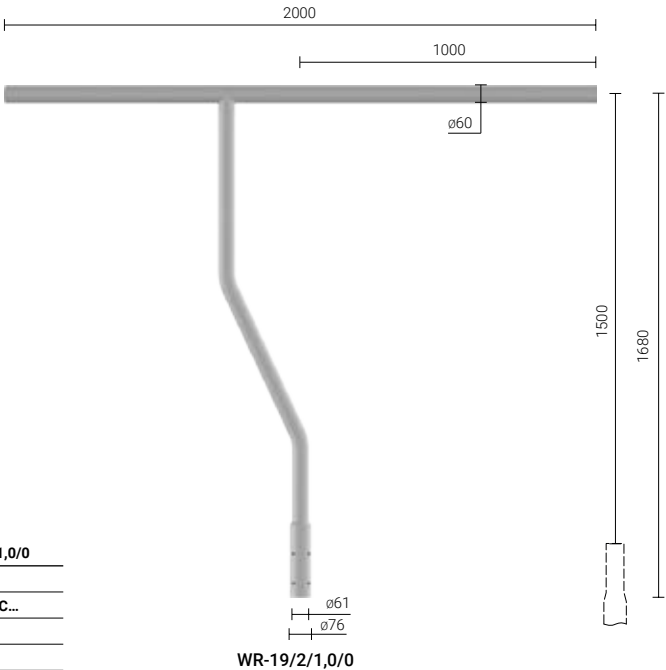
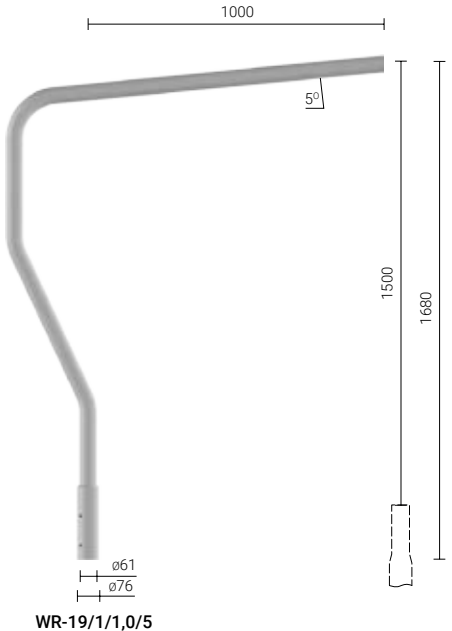
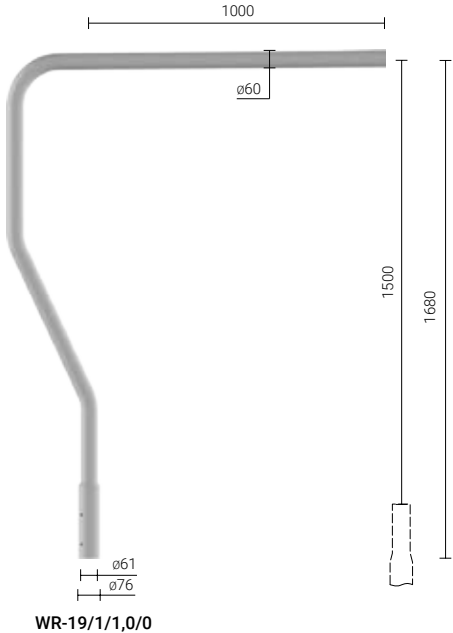
The use of extension arm should always be verified with a permissible loading for specified wind zone (technical cards available at www.rosa.pl)
/C... - choice of anodising colour

Extension arms WR

Application: for mounting on SAL aluminium columns with $\varnothing 60 \times 180$ mm spigot

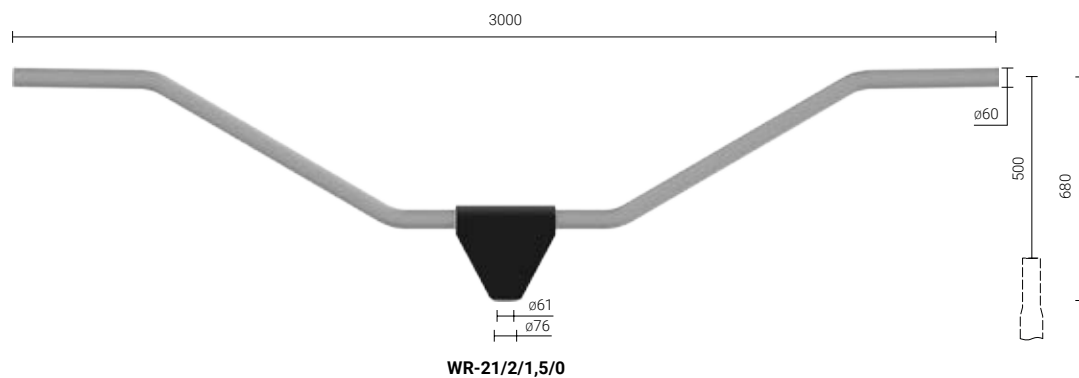
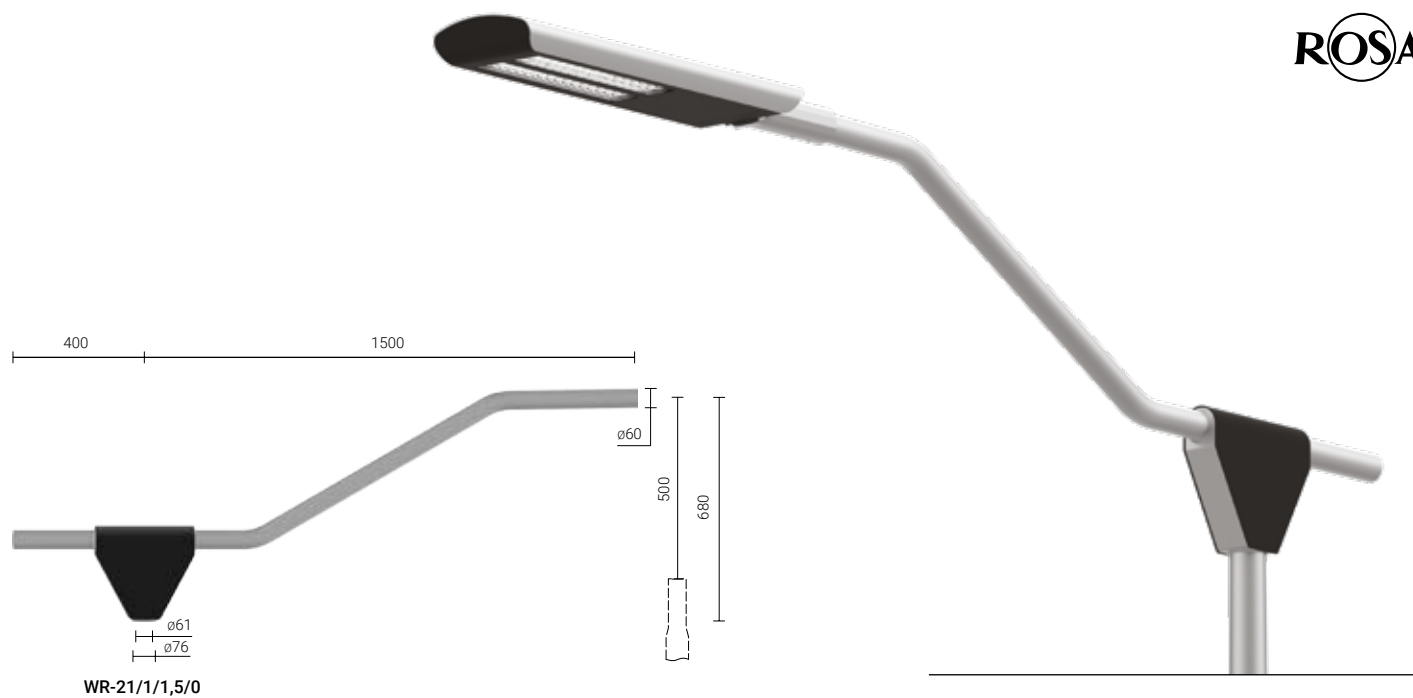
Material: anodised aluminium alloy,

Anodising: 10 colours



Extension arm type	WR-19/1/1,0/0	WR-19/1/1,0/5	WR-19/2/1,0/0
Number of arms	1	1	2
Code	472191/C...	47219110/C...	472192/C...
Net weight [kg]	7,2	7,2	7,7
Extension arm effective projected area [m²]	0,17	0,17	0,22
Approximate unit volume [m³]	0,08	0,08	0,1
Luminaire mounting diameter [mm]	$\varnothing 60$	$\varnothing 60$	$\varnothing 60$

The use of extension arm should always be verified with a permissible loading for specified wind zone (technical cards available at www.rosa.pl)
/C... - choice of anodising colour



Extension arm type	WR-21/1/1,5/0	WR-21/2/1,5/0
Number of arms	1	2
Code	472211/C...	472212/C...
Net weight [kg]	7,2	9,9
Extension arm effective projected area [m ²]	0,18	0,24
Approximate unit volume [m ³]	0,075	0,1
Luminaire mounting diameter [mm]	ø60	ø60

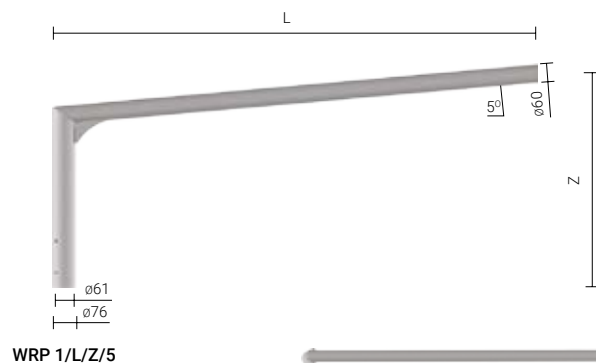
The use of extension arm should always be verified with a permissible loading for specified wind zone (technical cards available at www.rosa.pl)
/C... – choice of anodising colour

Extension arms WRP

Application: for mounting on SAL aluminium columns with ending $\varnothing 60 \times 180$ mm spigot

Material: anodised aluminium alloy,

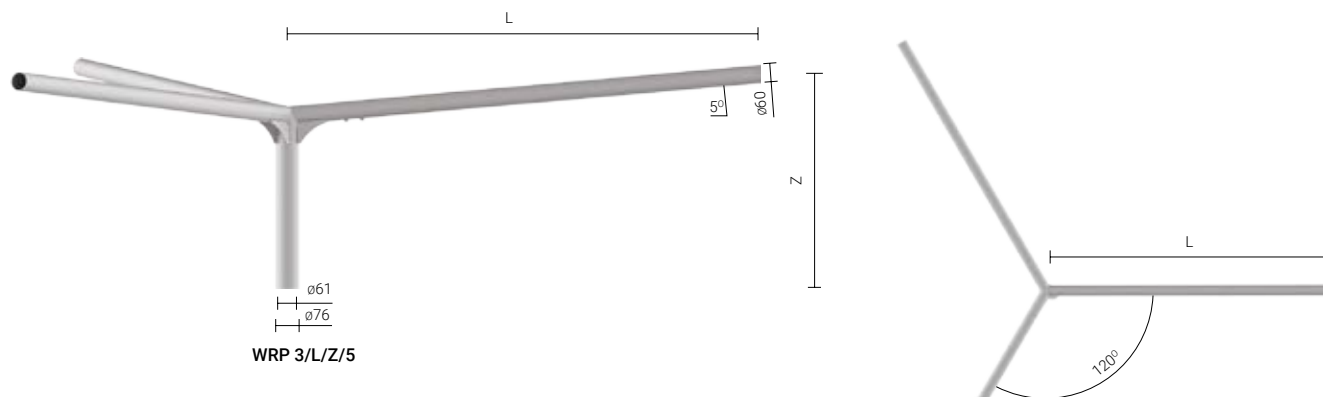
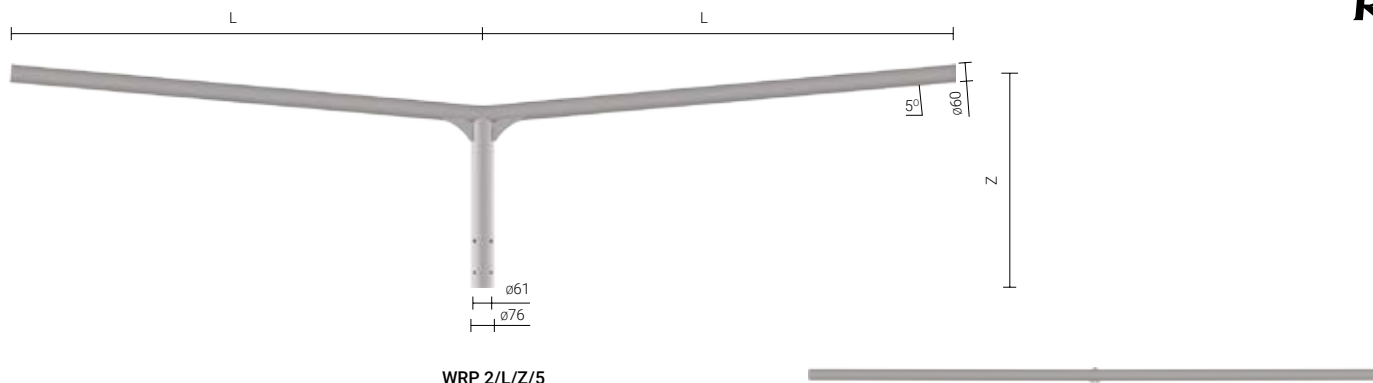
Anodising: 10 colours



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

Extension arm type	WRP-1/1,0/0,7/5	WRP-1/1,0/1,2/5	WRP-1/1,5/0,7/5	WRP-1/1,5/1,2/5	WRP-2/1,0/0,7/5	WRP-2/1,0/1,2/5
Number of arms	1	1	1	1	2	2
Code	47219111/C...	47219112/C...	47219121/C...	47219122/C...	47219211/C...	47219212/C...
Net weight [kg]	3,7	5,3	4,4	6	5,4	7
Extension arm effective projected area [m ²]	0,106	0,144	0,133	0,17	0,163	0,196
Approximate unit volume [m ³]	0,05	0,09	0,07	0,12	0,09	0,11
Luminaire mounting diameter [mm]	$\varnothing 60$	$\varnothing 60$	$\varnothing 60$	$\varnothing 60$	$\varnothing 60$	$\varnothing 60$

The use of extension arm should always be verified with a permissible loading for specified wind zone (technical cards available at www.rosa.pl)
/C... - choice of anodising colour



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

Extension arm type	WRP-2/1,5/0,7/5	WRP-2/1,5/1,2/5	WRP-3/1,0/0,7/5	WRP-3/1,0/1,2/5	WRP-3/1,5/0,7/5	WRP-3/1,5/1,2/5
Number of arms	2	2	3	3	3	3
Code	47219221/C...	47219222/C...	47219311/C...	47219312/C...	47219321/C...	47219322/C...
Net weight [kg]	6,9	8,5	8	9,6	10,4	12
Extension arm effective projected area [m ²]	0,221	0,259	0,132	0,17	0,176	0,214
Approximate unit volume [m ³]	0,11	0,17	0,09	0,16	0,13	0,21
Luminaire mounting diameter [mm]	ø60	ø60	ø60	ø60	ø60	ø60

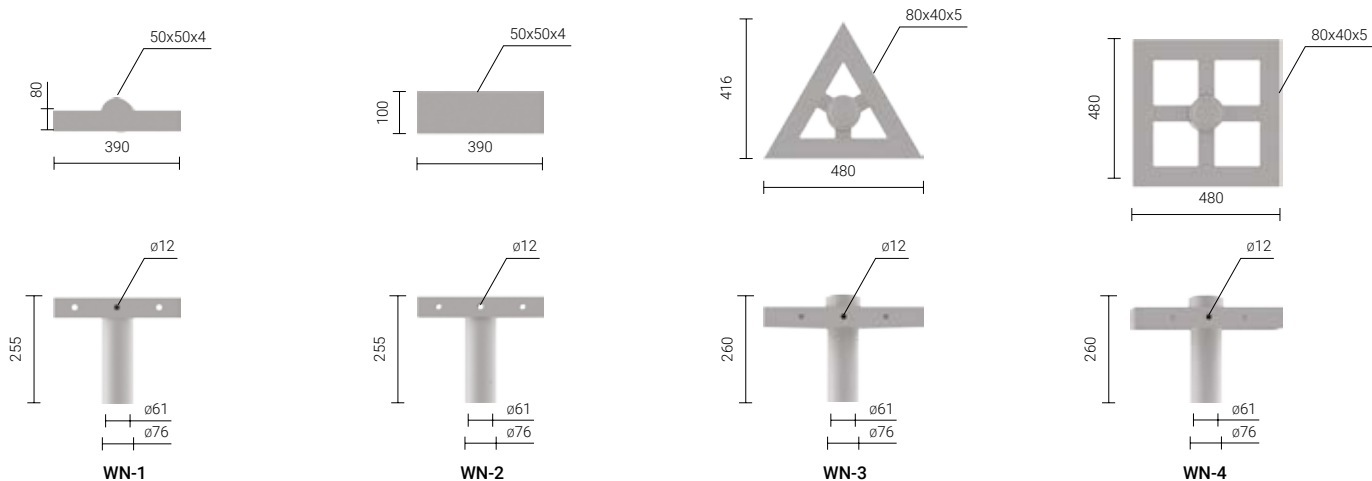
The use of extension arm should always be verified with a permissible loading for specified wind zone (technical cards available at www.rosa.pl)
/C... - choice of anodising colour

Extension arms WN

Application: for mounting on SAL aluminium columns with
ø60x180 mm spigot

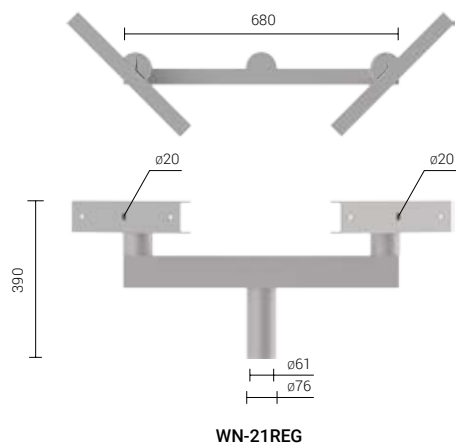
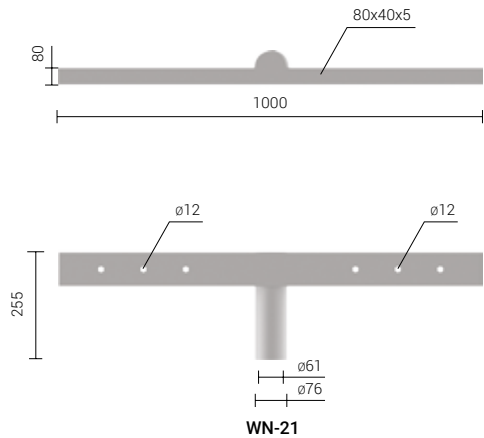
Material: anodised aluminium alloy,

Anodising: 10 colours



Extension arm type	WN-1	WN-2	WN-3	WN-4
Number of arms	1	2	3	4
Code	473010/C...	473020/C...	473030/C...	473040/C...
Net weight [kg]	1,2	1,6	2,7	3,8
Extension arm effective projected area [m²]	0,03	0,03	0,04	0,04
Approximate unit volume [m³]	0,01	0,01	0,02	0,03
Typ Luminaires	floodlights	floodlights	floodlights	floodlights

The use of extension arm should always be verified with a permissible loading for specified wind zone (technical cards available at www.rosa.pl)
/C... - choice of anodising colour



Kościełisko, Poland



Extension arm type	WN-21	WN-21 REG
Number of arms	2	2
Code	473210/C...	473211/C...
Net weight [kg]	3	5,5
Extension arm effective projected area [m²]	0,09	0,14
Approximate unit volume [m³]	0,02	0,05
Typ Luminaires	floodlights	floodlights

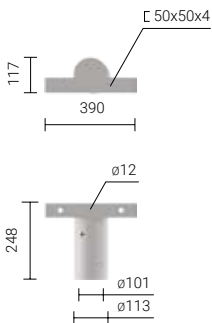
The use of extension arm should always be verified with a permissible loading for specified wind zone (technical cards available at www.rosa.pl)
/C... - choice of anodising colour

Extension arms WM

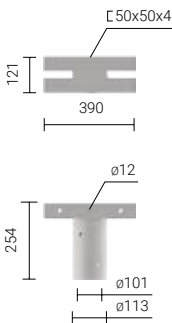
Application: for mounting on SAL aluminium columns with $\varnothing 100 \times 180$ mm spigot

Material: anodised aluminium alloy,

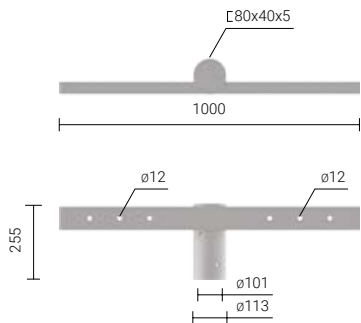
Anodising: 10 colours



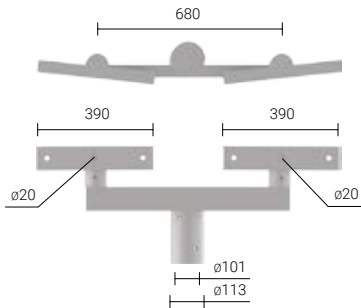
WM-1



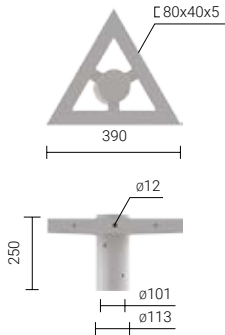
WM-2



WM-21



WM-21 REG

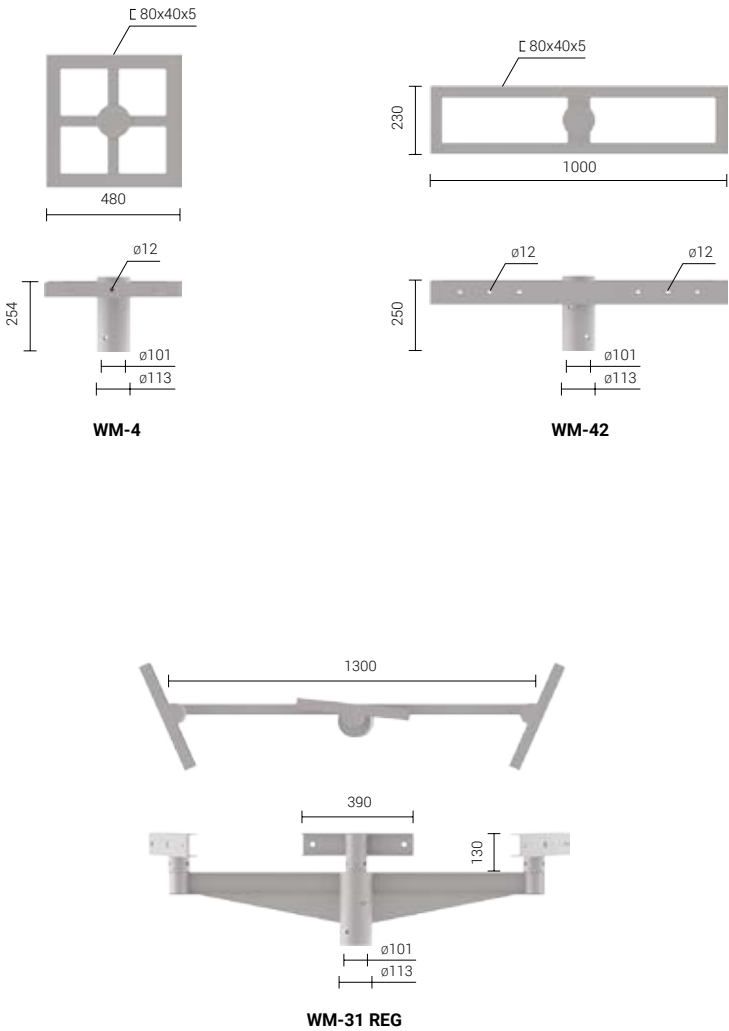


WM-3

Extension arm type	WM-1	WM-2	WM-21	WM-21 REG	WM-3
Number of arms	1	2	2	2	3
Code	474010/C...	474020/C...	474210/C...	474211/C...	474030/C...
Net weight [kg]	2	2,3	3,7	6,2	3,4
Extension arm effective projected area [m²]	0,04	0,04	0,1	0,145	0,05
Approximate unit volume [m³]	0,01	0,01	0,02	0,05	0,02
Typ Luminaires	floodlights	floodlights	floodlights	floodlights	floodlights

The use of extension arm should always be verified with a permissible loading for specified wind zone (technical cards available at www.rosa.pl)
 /C... - choice of anodising colour

Katowice Airport, Poland



Extension arm type	WM-31 REG	WM-4	WM-42
Number of arms	3	4	4
Code	474311/C...	474040/C...	474420/C...
Net weight [kg]	10	4,5	7,1
Extension arm effective projected area [m²]	0,281	0,05	0,1
Approximate unit volume [m³]	0,087	0,03	0,03
Typ Luminaires	floodlights	floodlights	floodlights

The use of extension arm should always be verified with a permissible loading for specified wind zone (technical cards available at www.rosa.pl)

/C... - choice of anodising colour

Extension arms WRK

Application: MAL anodised aluminium masts with
ø100 x 180 mm spigot

Material: anodised aluminium alloy

Anodising: 10 colours

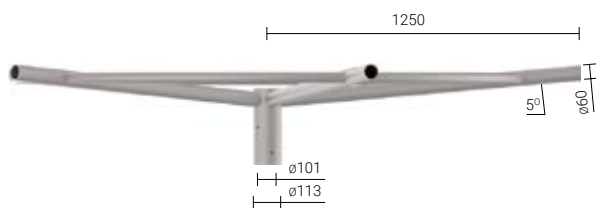


Extension arm type	WRK-3	WRK-4	WRK-5	WRK-6
Number of arms	3	4	5	6
Code	475030/C...	475040/C...	475050/C...	475060/C...
Net weight [kg]	16	18	20	22,1
Extension arm effective projected area [m²]	0,23	0,26	0,25	0,26
Approximate unit volume [m³]	0,81	0,81	0,81	0,81
Luminaire mounting diameter [mm]	ø60	ø60	ø60	ø60

The use of extension arm should always be verified with a permissible loading for specified wind zone (technical cards available at www.rosa.pl)
/C... - choice of anodising colour



WRK-4



WRK-5



WRK-6

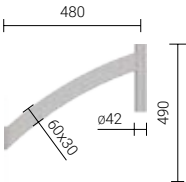


Wall brackets KA

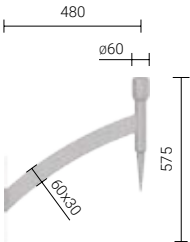
Application: Aluminium wall brackets for wall mounting

Material: anodised aluminium alloy

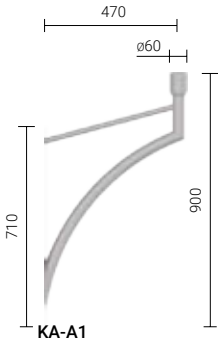
Anodising: 10 colours



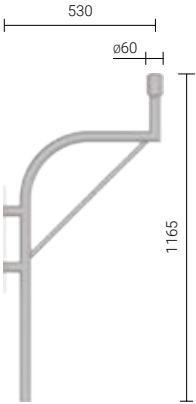
KA-C1



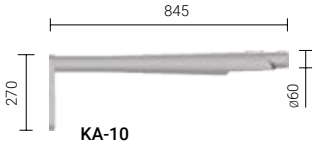
KA-D1



KA-A1



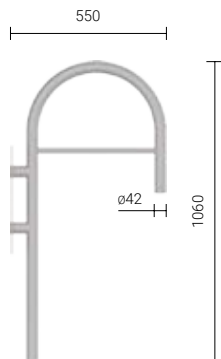
KA-5



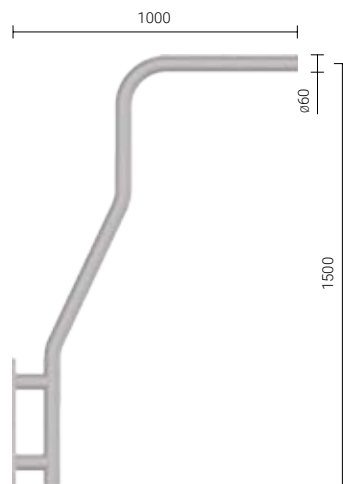
KA-10

Wall bracket type	KA-A1	KA-C1	KA-D1	KA-5	KA-10
Number of arms	1	1	1	1	1
Code	478100/C...	478102/C...	478103/C...	478050/C...	478220/C45/C35
Net weight [kg]	2,1	1,1	1,6	2,5	2,6
Approximate unit volume [m³]	0,17	0,009	0,008	0,02	0,021
Luminaire mounting diameter [mm]	ø60	ø42	ø60	ø60	ISKRA LED, ISKRA LED PROG

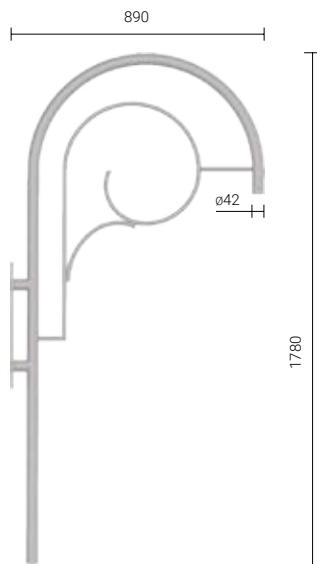
/C... - choice of anodising colour



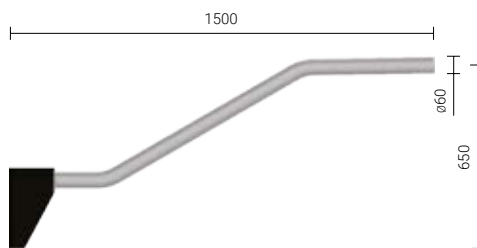
KA-14



KA-19



KA-20



KA-21

Poznań, Poland



Wall bracket type	KA-14	KA-19	KA-20	KA-21
Number of arms	1	1	1	1
Code	478140/C...	478190/C...	478200/C...	478210/C45/C35
Net weight [kg]	2,6	6	4,3	5,3
Approximate unit volume [m³]	0,04	0,021	0,09	0,03
Luminaire mounting diameter [mm]	ø42	ø60	ø42	ø60

/C... – choice of anodising colour

Aluminium column with photovoltaic panels



Solar-powered LED lighting

ROSA, for which pro-ecological activities are one of the key principles in the company's development strategy, constructed solar aluminium lighting columns with an innovative photovoltaic power supply system for use in outdoor lighting installations.

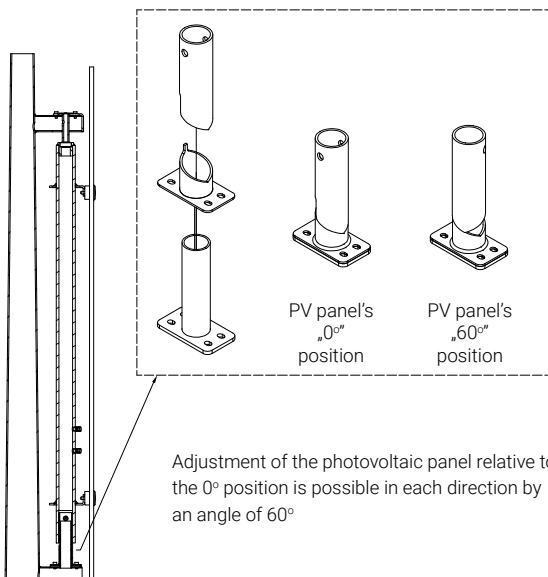
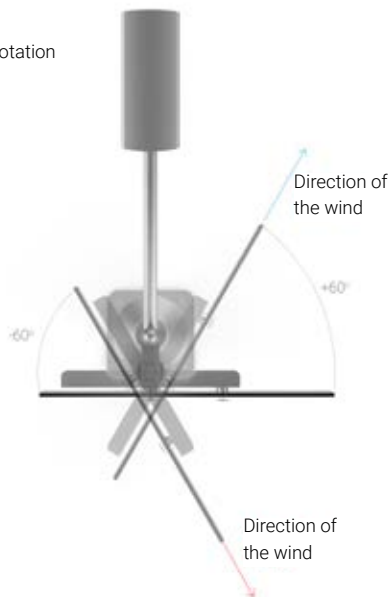
Constructors from ROSA designed and tested an aluminium conical column, in the construction of which a mechanism was used to change the orientation of the panel, thus minimising the impact of wind on the structure. Theoretical calculations and experimental tests have shown that the mechanism effectively protects the lighter construction used. This allows the panel to rotate by 60 degrees in the event of a strong gust of wind. After the wind stops, the panel returns to its base position. The proposed solution is fully scalable – it allows for the use of panels of various sizes and powers.

Dedicated photovoltaic panels were made especially for ROSA columns, with reduced sensitivity to shading, as a configuration of three independent sections. The operation of each section is independently regulated, by the MPPT controller tracking the maximum power point. In addition, the designed photovoltaic panels were made in glass-glass technology, thanks to which, the solution was highly aesthetic, and more efficient in converting solar energy into electricity.

Mechanism's operation principle

The column's protection mechanism sets the panels in the optimal position relative to the wind, in such a way that the whole can withstand strong gusts of wind.

Mechanism's rotation scheme

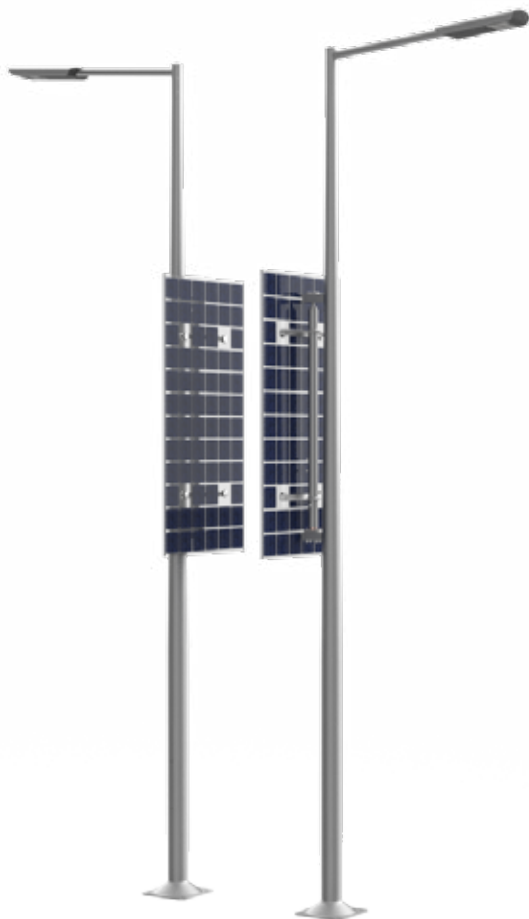


Dedicated system's components

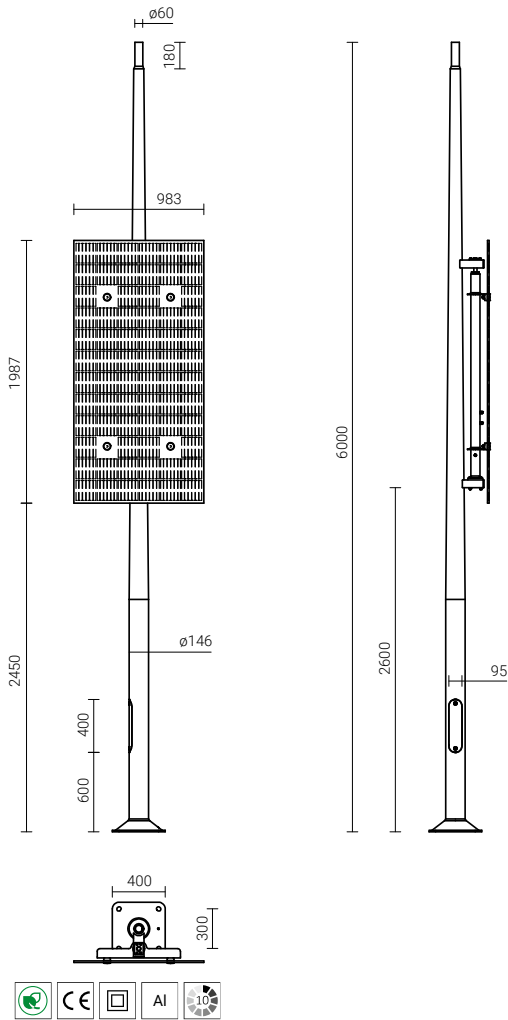
The panel design used has three independent sections regulated by dedicated MPPT systems characterised by energy conversion efficiency of up to 95%. The system is equipped with a monocrystalline double-sided photovoltaic panel with a power of 360Wp. The modules are made in a glass-to-glass system using PVB foil. The charge regulator (controller) has been specially developed to ensure optimal performance in industrial photovoltaic systems in demanding environments.

It provides convenient and advanced lighting control, that allows the user to choose one of the lighting power reduction scenarios.

To ensure failure-free and safe operation, batteries or battery packs (cell sets) are equipped with an electronic battery management system - BMS (Battery Management System).



Photovoltaic panel: monocrystalline double-sided power 360 Wp
Working conditions: from -20°C to +45°C
Charge controller : MPPT
Battery type: lithium-ion (Li-Ion)
Battery capacity: 400 Wh
Battery life: over 1500 full discharge cycles
Supply voltage: 12 V
Lamp operation regulator: timer



Technical parameters
SAL60 PV

Code	Symbol	Height	Unit volume	Concrete footing / reinforcement basket type	Concrete footing / reinforcement basket code	Fasteners	Net weight
45560/360/400/C...	SAL60 PV 360 Wp 400 Wh	6 m	0.49 m³	B-71, B-70 / Z-71, Z-70	311171, 311170 / 311271, 311207	4012	68,8 kg

/C... - choice of anodising colour

Charging stations





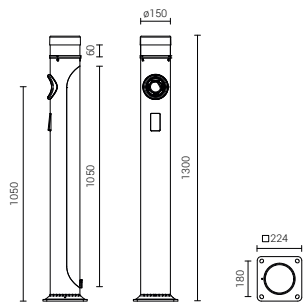
LED lighting columns
KARIN LED EV



Aluminum LED lighting columns



Electric vehicle charging point



Charger status indication - RGB module

green colour - charging point is available
 blue colour - charging point is occupied
 red colour - charging point is inactive



Safe and intuitive charging process



RFID reader ¹⁾

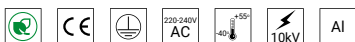
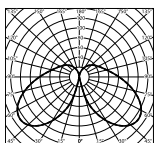


The wiring chamber is locked with a key



1) Not available for KARIN LED EV BASIC

Anodising: 10 colours
Material: anodised aluminium alloy
Application: office buildings' surroundings, car parks,
Protection class: IP 54
Diffuser: frosted
Number of LEDs: 8
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Input voltage frequency: 50/60 Hz
Charging socket: IEC62196 Type-2
Types of protection: Current circuit breaker and residual current circuit breaker type A (optional RCD type B or RCD type EV)
Communication: 2G/3G/4G, LAN
Electricity metering: Electricity meter according to the MID directive
Network layout: TT, TN-S, TNC-S
Possibility of integration with the operator system: OCPP v.1.6
Standard for charging stations: PN-EN IEC 61851-1:2019



Code	Symbol	Charging point rated powers	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Concrete footing / reinforcement basket
45400/1/03/B/C...	KARIN LED EV 3,7 BASIC	3,7 kW	16 W	20 W	700 mA	2 700 K	10,8 kg	B-50/Z-50
45400/3/03/B/C...	KARIN LED EV 3,7 BASIC	3,7 kW	16 W	20 W	700 mA	3 500 K	10,8 kg	B-50/Z-50
45400/4/03/B/C...	KARIN LED EV 3,7 BASIC	3,7 kW	16 W	20 W	700 mA	4 000 K	10,8 kg	B-50/Z-50
45400/6/03/B/C...	KARIN LED EV 3,7 BASIC	3,7 kW	16 W	20 W	700 mA	5 000 K	10,8 kg	B-50/Z-50
45400/1/07/B/C...	KARIN LED EV 7,4 BASIC	7,4 kW	16 W	20 W	700 mA	2 700 K	10,8 kg	B-50/Z-50
45400/3/07/B/C...	KARIN LED EV 7,4 BASIC	7,4 kW	16 W	20 W	700 mA	3 500 K	10,8 kg	B-50/Z-50
45400/4/07/B/C...	KARIN LED EV 7,4 BASIC	7,4 kW	16 W	20 W	700 mA	4 000 K	10,8 kg	B-50/Z-50
45400/6/07/B/C...	KARIN LED EV 7,4 BASIC	7,4 kW	16 W	20 W	700 mA	5 000 K	10,8 kg	B-50/Z-50
45400/1/03/C...	KARIN LED EV 3,7	3,7 kW	16 W	20 W	700mA	2 700 K	10,8 kg	B-50/Z-50
45400/3/03/C...	KARIN LED EV 3,7	3,7 kW	16 W	20 W	700mA	3 500 K	10,8 kg	B-50/Z-50
45400/4/03/C...	KARIN LED EV 3,7	3,7 kW	16 W	20 W	700mA	4 000 K	10,8 kg	B-50/Z-50
45400/6/03/C...	KARIN LED EV 3,7	3,7 kW	16 W	20 W	700mA	5 000 K	10,8 kg	B-50/Z-50
45400/1/07/C...	KARIN LED EV 7,4	7,4 kW	16 W	20 W	700mA	2 700 K	10,8 kg	B-50/Z-50
45400/3/07/C...	KARIN LED EV 7,4	7,4 kW	16 W	20 W	700mA	3 500 K	10,8 kg	B-50/Z-50
45400/4/07/C...	KARIN LED EV 7,4	7,4 kW	16 W	20 W	700mA	4 000 K	10,8 kg	B-50/Z-50
45400/6/07/C...	KARIN LED EV 7,4	7,4 kW	16 W	20 W	700mA	5 000 K	10,8 kg	B-50/Z-50
45400/1/11/C...	KARIN LED EV 11	11 kW	16 W	20 W	700mA	2 700 K	10,8 kg	B-50/Z-50
45400/3/11/C...	KARIN LED EV 11	11 kW	16 W	20 W	700mA	3 500 K	10,8 kg	B-50/Z-50
45400/4/11/C...	KARIN LED EV 11	11 kW	16 W	20 W	700mA	4 000 K	10,8 kg	B-50/Z-50
45400/6/11/C...	KARIN LED EV 11	11 kW	16 W	20 W	700mA	5 000 K	10,8 kg	B-50/Z-50
45400/1/22/C...	KARIN LED EV 22	22 kW	16 W	20 W	700mA	2 700 K	10,8 kg	B-50/Z-50
45400/3/22/C...	KARIN LED EV 22	22 kW	16 W	20 W	700mA	3 500 K	10,8 kg	B-50/Z-50
45400/4/22/C...	KARIN LED EV 22	22 kW	16 W	20 W	700mA	4 000 K	10,8 kg	B-50/Z-50
45400/6/22/C...	KARIN LED EV 22	22 kW	16 W	20 W	700mA	5 000 K	10,8 kg	B-50/Z-50

/B - Charging station intended for private use, without integration with the operator system
/C... - choice of anodising colour



Technical parameters
KARIN LED EV BASIC



Technical parameters
KARIN LED EV





Straight aluminium columns EV

ø180 mm at the base

- Anodising:** 10 colours
Finish: brushed, anodised aluminium, option of elastomer protection in the colour of the column up to the height 350 mm
Diameter of the column ending: ø60 mm
Protection class: IP 54
Luminaire mounting: directly on the column or via an extension arm, luminaires with ø60 mm mounting with weight and surface parameters not exceeding the data from the strength table included in the technical data sheet
Charging socket: IEC62196 Type-2
Types of protection: Current circuit breaker and residual current circuit breaker type A (optional RCD type B or RCD type EV)
Communication: 2G/3G/4G, LAN
Electricity metering: Electricity meter according to the MID directive
Network layout: TT, TN-S, TNC-S
Possibility of integration with the operator system: OCPP v.1.6
Standard for charging stations: PN-EN IEC 61851-1:2019

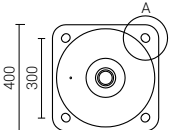
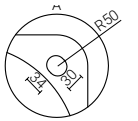
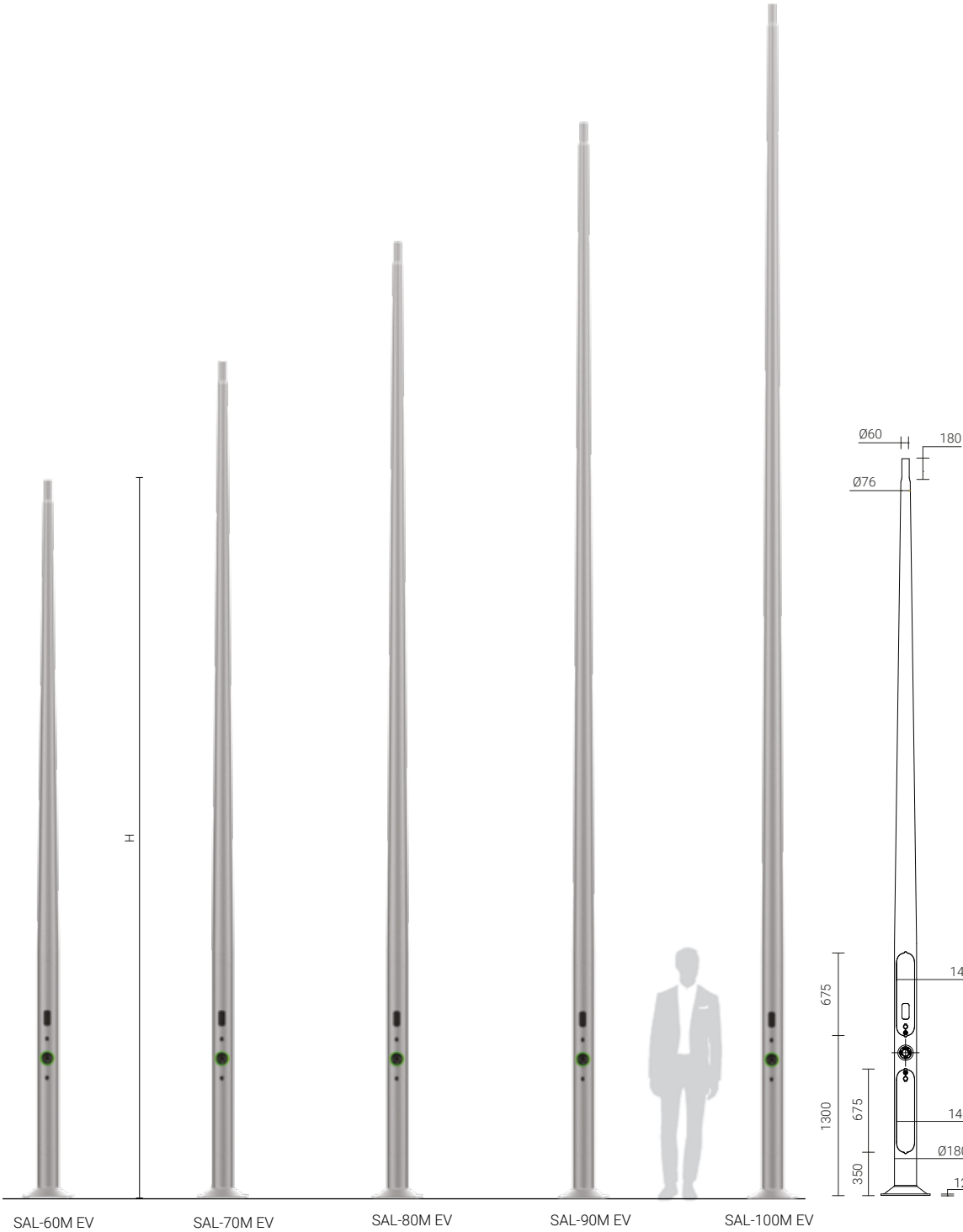


Column type	SAL-60M EV	SAL-70M EV	SAL-80M EV	SAL-90M EV	SAL-100M EV
Height of the column H [mm]	6 000	7 000	8 000	9 000	10 000
Code	42771/... ¹⁾ /C...	42773/... ¹⁾ /C...	42775/... ¹⁾ /C...	42777/... ¹⁾ /C...	42779/... ¹⁾ /C...
Net weight [kg]	45.6	49.4	53.2	57	60.7
Charging point rated powers [Code]	3.7 kW [03], 7.4 kW [07], 11 kW [11], 22 kW [22]				
Concrete footing / reinforcement basket type	B-71, B-70 / Z-71, Z-70				
Threaded anchor ending	4xM24				
Concrete footing / reinforcement basket code	311171, 311170 / 311271, 311207				
Fasteners	4012				
Dimension of the base plate (side / bolt spacing / thickness) [mm]	400 / 300 / 12				

* For orders of more than 10 pcs. the given volumes may change due to the method of packaging.
1) – Charging point rated powers /C... – choice of anodising colour
Code example: 42771/07/C45 - SAL-60M EV 7.4kW kolor inox



Luminaires: CUDDLE II LED
Arm: WR-19/2
Column: SAL-70M EV



LED luminaires

Włocławek, Poland
Henryk Sienkiewicz Park







Jagiellonian Square
Radom, Poland





Kaliska residential area
Opole, Poland



Kielce Technology Park
Kielce, Poland







Harmonia residential area
Cracow, Poland

Pedestrian and bike path
Bochnia, Poland





Rybaczówka Park
Strzelce Opolskie, Poland



Park at Blessed Carolina Street
Rzeszów, Poland
Investor: The Road Administration in Rzeszów



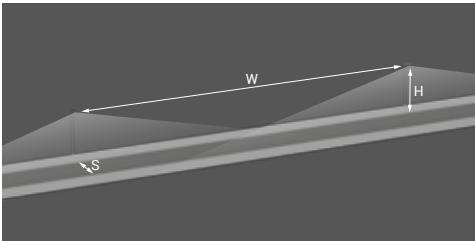


LED luminaires

ISKRA LED / ISKRA LED PROG



Lighting examples



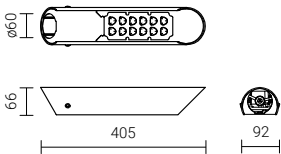
Bicycle and pedestrian path

ISKRA LED 24 W, SP optics

Parameters:

- H – luminaire mounting height: 6 m
- W – column spacing: 42 m
- S – road width: 5 m

Lighting class P3



Application: urban roads, residential streets, parks, pedestrian routes, cycle paths

Installation: on extension arms with ø60 x 90 mm ending

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: inox / black

Number of LEDs: 12

Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

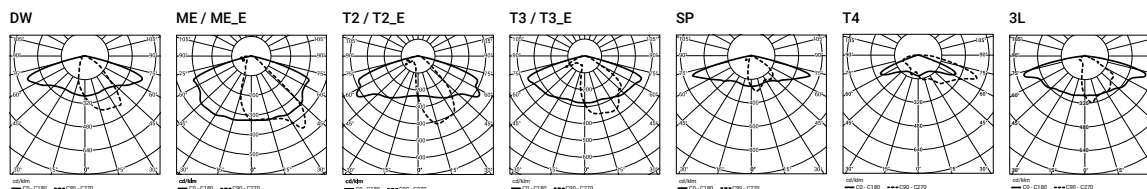
Unit volume: 0,005 m³

Input voltage frequency: 50/60 Hz

Power factor: ≥0.95

Luminaire ISKRA LED optionally has the possibility, to connect to an external control system via analogue 1-10 V signal.

Luminaire ISKRA LED PROG has the possibility to connect to an external control system via DALI interface (optionally via analogue 1-10V signal).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weigh
213230/1/...	ISKRA LED 24	27 W	30 W	760 mA	2 700 K	2,1 kg
213230/3/...	ISKRA LED 24	27 W	30 W	760 mA	3 500 K	2,1 kg
213230/4/...	ISKRA LED 24	27 W	30 W	760 mA	4 000 K	2,1 kg
213230/6/...	ISKRA LED 24	27 W	30 W	760 mA	5 000 K	2,1 kg
213232/1/...	ISKRA LED 36	36 W	39,5 W	960 mA	2 700 K	2,1 kg
213232/3/...	ISKRA LED 36	36 W	39,5 W	960 mA	3 500 K	2,1 kg
213232/4/...	ISKRA LED 36	36 W	39,5 W	960 mA	4 000 K	2,1 kg
213232/6/...	ISKRA LED 36	36 W	39,5 W	960 mA	5 000 K	2,1 kg
2132127/1/...	ISKRA LED 12 PROG	12 W	14 W	350 mA	2 700 K	2,1 kg
2132127/3/...	ISKRA LED 12 PROG	12 W	14 W	350 mA	3 500 K	2 kg
2132127/4/...	ISKRA LED 12 PROG	12 W	14 W	350 mA	4 000 K	2 kg
2132127/6/...	ISKRA LED 12 PROG	12 W	14 W	350 mA	5 000 K	2 kg
2132130/1/...	ISKRA LED 24 PROG	24 W	28 W	700 mA	2 700 K	2 kg
2132130/3/...	ISKRA LED 24 PROG	24 W	28 W	700 mA	3 500 K	2 kg
2132130/4/...	ISKRA LED 24 PROG	24 W	28 W	700 mA	4 000 K	2 kg
2132130/6/...	ISKRA LED 24 PROG	24 W	28 W	700 mA	5 000 K	2 kg
2132132/1/...	ISKRA LED 36 PROG	36 W	40 W	1 000 mA	2 700 K	2 kg
2132132/3/...	ISKRA LED 36 PROG	36 W	40 W	1 000 mA	3 500 K	2 kg
2132132/4/...	ISKRA LED 36 PROG	36 W	40 W	1 000 mA	4 000 K	2 kg
2132132/6/...	ISKRA LED 36 PROG	36 W	40 W	1 000 mA	5 000 K	2 kg

/... Symbol of selected optical system

ENEC certificate for ISKRA LED 24, 36, ISKRA LED 12, 24, 36 PROG with T2_E, T3_E and ME_E optics.

3L optics available for ISKRA LED 12W luminaire power only.



Technical parameters
ISKRA LED



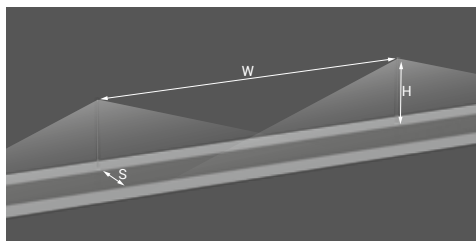
Technical parameters
ISKRA LED PROG

LED luminaires

ISKRA LED ALFA / ISKRA LED ALFA PROG



Lighting examples



Local road

ISKRA LED ALFA 24 W, T3 optics

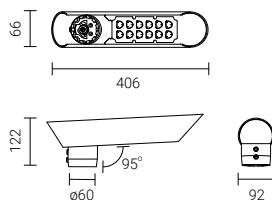
Parameters:

H – luminaire mounting height: 6,5 m

W – column spacing: 32 m

S – road width: 5,5 m

Lighting class M5



Application: urban roads, residential streets, parks, pedestrian routes, cycle paths

Installation: on extension arms with ø60x50 mm ending

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: inox / black

Number of LEDs: 12

Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

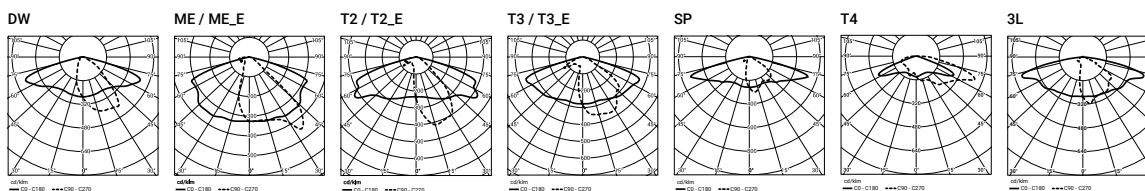
Unit volume: 0,01 m³

Input voltage frequency: 50/60 Hz

Power factor: ≥0.95

Luminaire ISKRA LED ALFA optionally has the possibility, to connect to an external control system via analogue 1-10 V signal.

Luminaire ISKRA LED ALFA PROG has the possibility to connect to an external control system via DALI interface (optionally via analogue 1-10V signal)



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
213330/1/...	ISKRA LED ALFA 24	27 W	30 W	760 mA	2 700 K	2,5 kg
213330/3/...	ISKRA LED ALFA 24	27 W	30 W	760 mA	3 500 K	2,5 kg
213330/4/...	ISKRA LED ALFA 24	27 W	30 W	760 mA	4 000 K	2,5 kg
213330/6/...	ISKRA LED ALFA 24	27 W	30 W	760 mA	5 000 K	2,5 kg
213332/1/...	ISKRA LED ALFA 36	36 W	39,5 W	960 mA	2 700 K	2,5 kg
213332/3/...	ISKRA LED ALFA 36	36 W	39,5 W	960 mA	3 500 K	2,5 kg
213332/4/...	ISKRA LED ALFA 36	36 W	39,5 W	960 mA	4 000 K	2,5 kg
213332/6/...	ISKRA LED ALFA 36	36 W	39,5 W	960 mA	5 000 K	2,5 kg
2133127/1/...	ISKRA LED ALFA 12 PROG	12 W	14 W	350 mA	2 700 K	2,2 kg
2133127/3/...	ISKRA LED ALFA 12 PROG	12 W	14 W	350 mA	3 500 K	2,2 kg
2133127/4/...	ISKRA LED ALFA 12 PROG	12 W	14 W	350 mA	4 000 K	2,2 kg
2133127/6/...	ISKRA LED ALFA 12 PROG	12 W	14 W	350 mA	5 000 K	2,2 kg
2133130/1/...	ISKRA LED ALFA 24 PROG	24 W	28 W	700 mA	2 700 K	2,2 kg
2133130/3/...	ISKRA LED ALFA 24 PROG	24 W	28 W	700 mA	3 500 K	2,2 kg
2133130/4/...	ISKRA LED ALFA 24 PROG	24 W	28 W	700 mA	4 000 K	2,2 kg
2133130/6/...	ISKRA LED ALFA 24 PROG	24 W	28 W	700 mA	5 000 K	2,2 kg
2133132/1/...	ISKRA LED ALFA 36 PROG	36 W	40 W	1 000 mA	2 700 K	2,2 kg
2133132/3/...	ISKRA LED ALFA 36 PROG	36 W	40 W	1 000 mA	3 500 K	2,2 kg
2133132/4/...	ISKRA LED ALFA 36 PROG	36 W	40 W	1 000 mA	4 000 K	2,2 kg
2133132/6/...	ISKRA LED ALFA 36 PROG	36 W	40 W	1 000 mA	5 000 K	2,2 kg

/... Symbol of selected optical system

ENEC certificate for ISKRA LED ALFA 24, 36, ISKRA LED ALFA 12, 24, 36 PROG with T2_E, T3_E and ME_E optics.

3L optics available for ISKRA LED 12 W luminaire power only.



Technical parameters
ISKRA LED ALFA



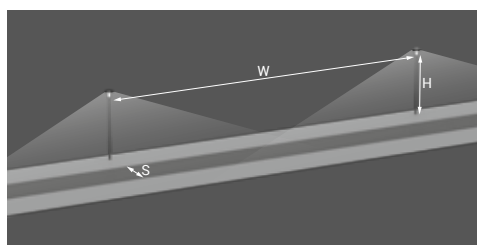
Technical parameters
ISKRA LED ALFA PROG



LED luminaires
ELBA LED



Lighting examples



Pavement

ELBA LED

Parameters:

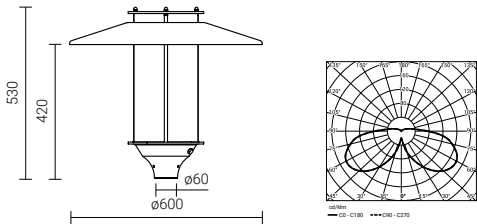
H – luminaire mounting height: 4 m

W – column spacing: 30 m

S – road width: 3 m

Lighting class P4

Application: parks, pedestrian routes, cycle paths
Installation: directly on the column or on extension arm with ø60x50 mm ending
Protection class: IP 65
Material: cap – formed aluminium sheet
diffuser – frosted cylindrical ø200 mm (PMMA)
base – high-pressure die-casted aluminium alloy
Number of LEDs: 1
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,06 m³
Input voltage frequency: 50/60 Hz
Power factor: ≥0.95
Luminaire ELBA LED has the possibility to connect to an external control system via DALI interface (optionally via analogue 1-10V signal).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
213050/1	ELBA LED black	33 W	36 W	940 mA	2 700 K	5 kg
2131050/1/C45	ELBA LED inox	33 W	36 W	940 mA	2 700 K	5 kg
213050/3	ELBA LED black	33 W	36 W	940 mA	3 500 K	5 kg
2131050/3/C45	ELBA LED inox	33 W	36 W	940 mA	3 500 K	5 kg
213050/4	ELBA LED black	33 W	36 W	940 mA	4 000 K	5 kg
2131050/4/C45	ELBA LED inox	33 W	36 W	940 mA	4 000 K	5 kg



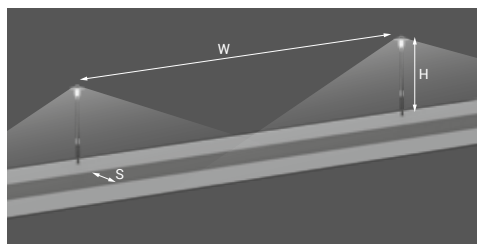
Technical parameters
ELBA LED



LED luminaires

AURIS LED

Lighting examples



Pavement

AURIS LED, A optics

Parameters:

H – luminaire mounting height: 4 m

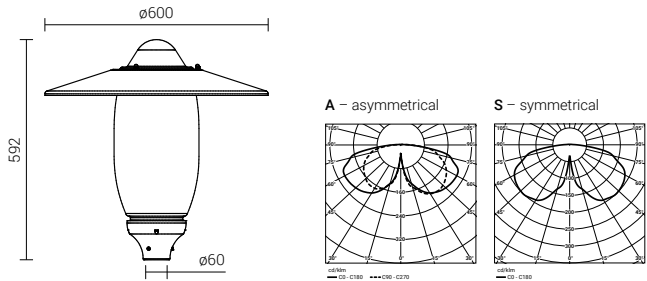
W – column spacing: 25 m

S – pavement width: 3 m

Lighting class P4



Application: parks, pedestrian routes, cycle paths
Installation: directly on the column or on extension arm with ø60x50 mm ending
Protection class: IP 66
Material: cap – formed aluminium sheet,
diffuser – transparent (PMMA)
base – high-pressure die-casted aluminium alloy
Number of LEDs: 74
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,06 m³
Input voltage frequency: 50/60 Hz
Power factor: ≥0.9



Code	Symbol	LED power	Luminaire power consumption	Colour temperature	Net weight
213563/1/...	AURIS LED black	18 W	20 W	2 700 K	5 kg
213563/1/.../C45	AURIS LED inox	18 W	20 W	2 700 K	5 kg
213563/3/...	AURIS LED black	18 W	20 W	3 500 K	5 kg
213563/3/.../C45	AURIS LED inox	18 W	20 W	3 500 K	5 kg
213563/4/...	AURIS LED black	18 W	20 W	4 000 K	5 kg
213563/4/.../C45	AURIS LED inox	18 W	20 W	4 000 K	5 kg

/... Symbol of selected optical system



Technical parameters
AURIS LED

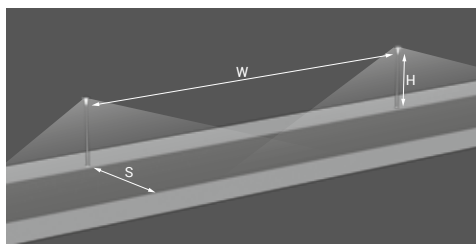


LED luminaires

ATLANTIS LED



Lighting examples



Sidewalk

ATLANTIS LED

Parameters:

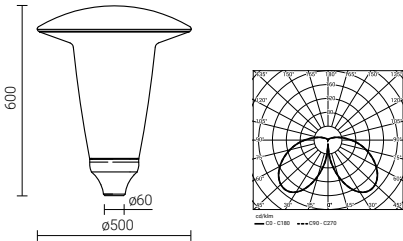
H – luminaire mounting height: 4 m

W – column spacing: 32 m

S – road width: 4 m

Lighting class P4

Application: parks, pedestrian routes, cycle paths
Installation: directly on the column or on extension arm with ø60x50 mm ending
Protection class: IP 66
Material: cap – formed aluminium sheet,
diffuser – frosted (PMMA),
base – high-pressure die-casted aluminium alloy
Colour: cap – inox, base – painted in RAL 9006
Number of LEDs: 16
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,22 m³
Input voltage frequency: 50/60 Hz
Power factor: ≥0.95
Luminaire ATLANTIS LED has the possibility to connect to an external control system via DALI interface (optionally via analogue 1-10V signal).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
214650/1	ATLANTIS LED	38 W	42 W	800 mA	2 700 K	4,1 kg
214650/3	ATLANTIS LED	38 W	42 W	800 mA	3 500 K	4,1 kg
214650/4	ATLANTIS LED	38 W	42 W	800 mA	4 000 K	4,1 kg
214650/6	ATLANTIS LED	38 W	42 W	800 mA	5 000 K	4,1 kg



Technical parameters
ATLANTIS LED

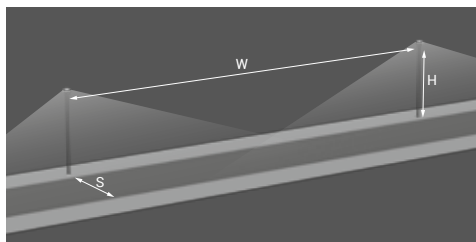


LED luminaires

COSMO DELTA LED



Lighting examples



Local road

COSMO DELTA LED 48 W, T2 optics

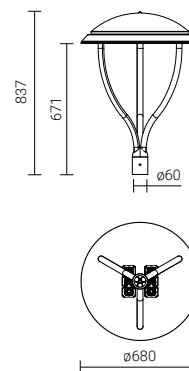
Parameters:

H – luminaire mounting height: 6 m

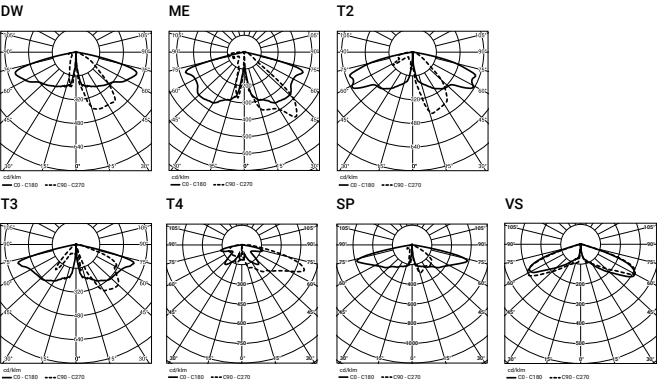
W – column spacing: 35 m

S – road width: 6 m

Lighting class C3



Application: parks, car parks,
Installation: on extension arms with ø60x80 mm ending
Ingress protection: IP 66 for the optical part and the power supply system
Protection class: IP 66 for the optical part and the power supply system
Material: anodised aluminium alloy
Colour: inox / black
Optical system: PMMA optics, interchangeable LED module
Number of LEDs: 24
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,32 m³
Input voltage frequency: 50/60 Hz
Power factor: ≥0.95
Luminaire COSMO DELTA LED has the possibility to connect to an external control system via DALI interface (optionally via analogue 1-10V signal)



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
2148032/1/...	COSMO DELTA LED 36	36 W	42 W	500 mA	2 700 K	13,1 kg
2148032/3/...	COSMO DELTA LED 36	36 W	42 W	500 mA	3 500 K	13,1 kg
2148032/4/...	COSMO DELTA LED 36	36 W	42 W	500 mA	4 000 K	13,1 kg
2148032/6/...	COSMO DELTA LED 36	36 W	42 W	500 mA	5 000 K	13,1 kg
2148033/1/...	COSMO DELTA LED 48	48 W	55 W	700 mA	2 700 K	13,1 kg
2148033/3/...	COSMO DELTA LED 48	48 W	55 W	700 mA	3 500 K	13,1 kg
2148033/4/...	COSMO DELTA LED 48	48 W	55 W	700 mA	4 000 K	13,1 kg
2148033/6/...	COSMO DELTA LED 48	48 W	55 W	700 mA	5 000 K	13,1 kg
2148035/1/...	COSMO DELTA LED 72	72 W	79 W	1 000 mA	2 700 K	13,1 kg
2148035/3/...	COSMO DELTA LED 72	72 W	79 W	1 000 mA	3 500 K	13,1 kg
2148035/4/...	COSMO DELTA LED 72	72 W	79 W	1 000 mA	4 000 K	13,1 kg
2148035/6/...	COSMO DELTA LED 72	72 W	79 W	1 000 mA	5 000 K	13,1 kg

/... Symbol of selected optical system

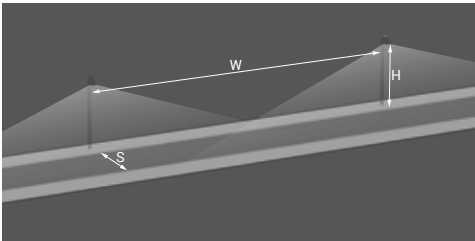


Technical parameters
COSMO DELTA LED

LED luminaires

OW LED

Lighting examples



Park avenue / promenade

OW LED 36, SP optics, transparent diffuser

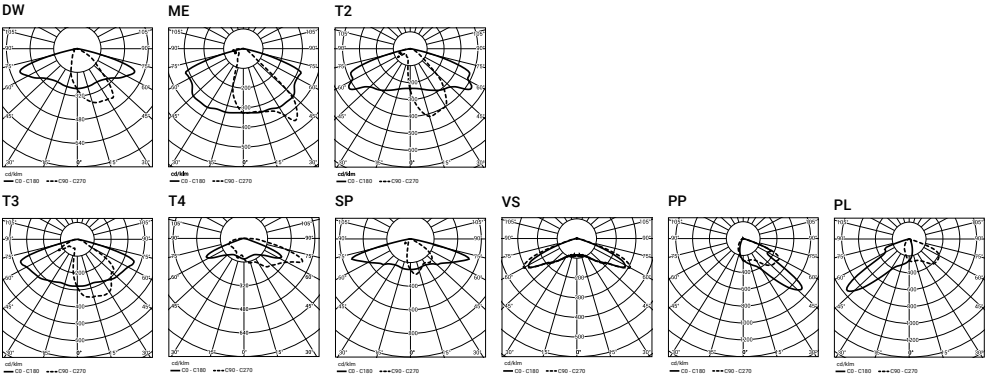
Parameters:

H – luminaire mounting height: 5,2 m

W – column spacing: 34 m

S – road width: 4 m

Lighting class P2



Application: urban roads, residential streets, parks, pedestrian routes, car parks, pedestrian crossing

Installation: on extension arms, wall brackets, columns with extension arms with ø42x40 mm ending

Protection class: IP 66

Material: body and cap – shaped anodised aluminium sheet

Colour: black

Optical system: PMMA optics, interchangeable LED module

Number of LEDs: 12 (for 24 W, 36 W); 24 (for 48 W, 60 W, 72 W)

Expected useful lifetime: L90B10 - 100 000 h

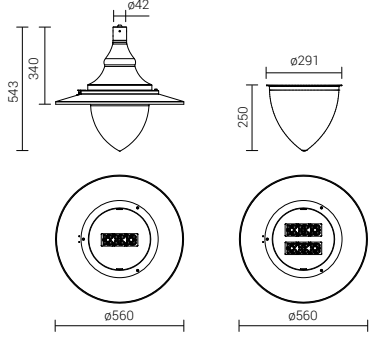
CRI: >70

Unit volume: 0,16 m³

Input voltage frequency: 50/60 Hz

Power factor: ≥0.95

Luminaire OW LED has the possibility to connect to an external control system via DALI interface (optionally via analogue 1-10V signal)



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
2109030/1/...	OW LED 24	24 W	28 W	700 mA	2 700 K	4,6 kg
2109030/3/...	OW LED 24	24 W	28 W	700 mA	3 500 K	4,6 kg
2109030/4/...	OW LED 24	24 W	28 W	700 mA	4 000 K	4,6 kg
2109030/6/...	OW LED 24	24 W	28 W	700 mA	5 000 K	4,6 kg
2109032/1/...	OW LED 36	36 W	40 W	1 000 mA	2 700 K	4,6 kg
2109032/3/...	OW LED 36	36 W	40 W	1 000 mA	3 500 K	4,6 kg
2109032/4/...	OW LED 36	36 W	40 W	1 000 mA	4 000 K	4,6 kg
2109032/6/...	OW LED 36	36 W	40 W	1 000 mA	5 000 K	4,6 kg
2109033/1/...	OW LED 48	48 W	55 W	700 mA	2 700 K	5,1 kg
2109033/3/...	OW LED 48	48 W	55 W	700 mA	3 500 K	5,1 kg
2109033/4/...	OW LED 48	48 W	55 W	700 mA	4 000 K	5,1 kg
2109033/6/...	OW LED 48	48 W	55 W	700 mA	5 000 K	5,1 kg
2109034/1/...	OW LED 60	60 W	67 W	830 mA	2 700 K	5,1 kg
2109034/3/...	OW LED 60	60 W	67 W	830 mA	3 500 K	5,1 kg
2109034/4/...	OW LED 60	60 W	67 W	830 mA	4 000 K	5,1 kg
2109034/6/...	OW LED 60	60 W	67 W	830 mA	5 000 K	5,1 kg
2109035/1/...	OW LED 72	72 W	79 W	1 000 mA	2 700 K	5,1 kg
2109035/3/...	OW LED 72	72 W	79 W	1 000 mA	3 500 K	5,1 kg
2109035/4/...	OW LED 72	72 W	79 W	1 000 mA	4 000 K	5,1 kg
2109035/6/...	OW LED 72	72 W	79 W	1 000 mA	5 000 K	5,1 kg

/... Symbol of selected optical system

Code	Symbol	Diffuser weight
690893	Diffuser PMMA transparent do OW LED	0,57 kg
690898	Diffuser PMMA frosted do OW LED	0,57 kg



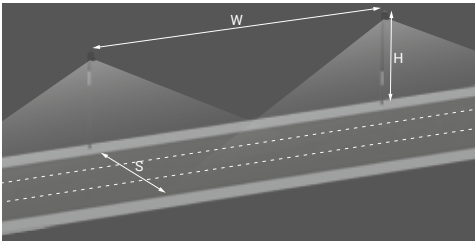
Technical parameters
OW LED



LED luminaires

OW II LED

Lighting examples



Single carriageway with three lanes

OW II LED 96 W, ME optics, transparent diffuser

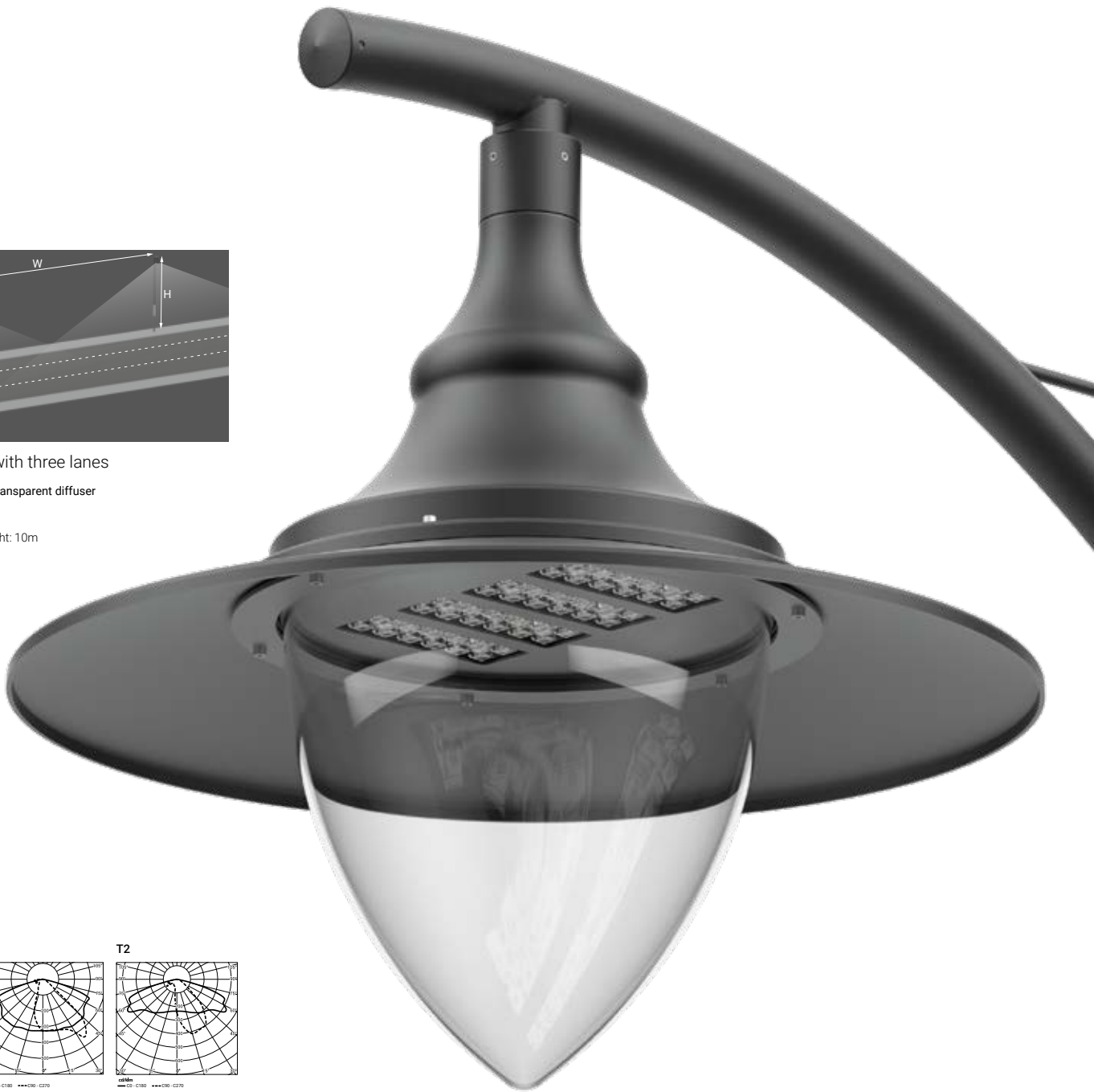
Parameters:

H – luminaire mounting height: 10m

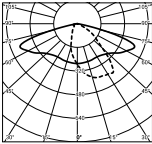
W – column spacing: 38 m

S – road width: 10,5 m

Lighting class M3

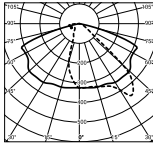


DW



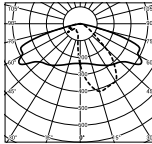
cd/klm
— C0 - C180 *** C90 - C270

ME



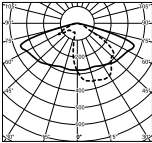
cd/klm
— C0 - C180 *** C90 - C270

T2



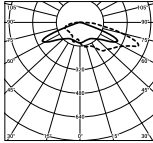
cd/klm
— C0 - C180 *** C90 - C270

T3



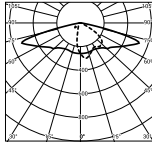
cd/klm
— C0 - C180 *** C90 - C270

T4



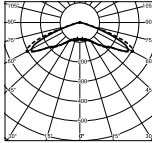
cd/klm
— C0 - C180 *** C90 - C270

SP



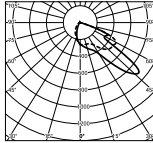
cd/klm
— C0 - C180 *** C90 - C270

VS



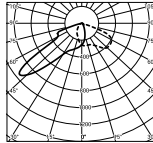
cd/klm
— C0 - C180 *** C90 - C270

PP



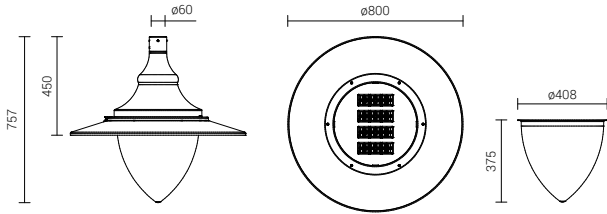
cd/klm
— C0 - C180 *** C90 - C270

PL



cd/klm
— C0 - C180 *** C90 - C270

Application: urban roads, residential streets, car parks, pedestrian crossing
Installation: on extension arms, wall brackets, columns with extension arms with ø60x50 mm ending
Protection class: IP 66
Material: body and cap – shaped anodised aluminium sheet
Colour: black
Optical system: PMMA optics, interchangeable LED module
Number of LEDs: 48
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,35 m³
Input voltage frequency: 50/60 Hz
Power factor: ≥0.95
Luminaire OW II LED has the possibility to connect to an external control system via DALI interface (optionally via analogue 1-10V signal).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
2109137/1/...	OW II LED 96	96 W	105 W	700 mA	2 700 K	14,5 kg
2109137/3/...	OW II LED 96	96 W	105 W	700 mA	3 500 K	14,5 kg
2109137/4/...	OW II LED 96	96 W	105 W	700 mA	4 000 K	14,5 kg
2109137/6/...	OW II LED 96	96 W	105 W	700 mA	5 000 K	14,5 kg
2109139/1/...	OW II LED 120	120 W	129 W	830 mA	2 700 K	14,5 kg
2109139/3/...	OW II LED 120	120 W	129 W	830 mA	3 500 K	14,5 kg
2109139/4/...	OW II LED 120	120 W	129 W	830 mA	4 000 K	14,5 kg
2109139/6/...	OW II LED 120	120 W	129 W	830 mA	5 000 K	14,5 kg
2109141/1/...	OW II LED 144	144 W	154 W	1 000 mA	2 700 K	14,5 kg
2109141/3/...	OW II LED 144	144 W	154 W	1 000 mA	3 500 K	14,5 kg
2109141/4/...	OW II LED 144	144 W	154 W	1 000 mA	4 000 K	14,5 kg
2109141/6/...	OW II LED 144	144 W	154 W	1 000 mA	5 000 K	14,5 kg

/... Symbol of selected optical system

Code	Symbol	Diffuser weight
691993	Diffuser PMMA transparent do OW II LED	1,5 kg

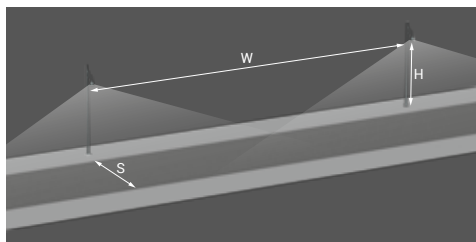


Technical parameters
OW II LED

LED luminaires

DROP LED

Lighting examples



Local road

DROP LED 36W asymmetric

Parameters:

H – luminaire mounting height: 5,2 m

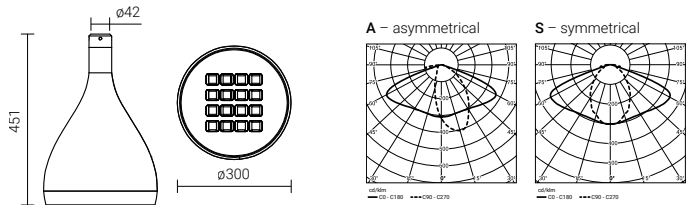
W – column spacing: 24 m

S – road width: 5,5 m

Lighting class C3



Application: residential streets, office buildings' surroundings, parks, pedestrian routes
Installation: on extension arms with ø42x30 mm ending
Protection class: IP 66
Material: anodised aluminium alloy
Colour: inox / graphite
Optical system: PMMA optics
Number of LEDs: 16
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,041 m³
Input voltage frequency: 50/60 Hz
Power factor: ≥0.95
 Luminaire DROP LED has the possibility to connect to an external control system via DALI interface (optionally via analogue 1-10V signal).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
214930/1/...	DROP LED 24	24 W	28 W	500 mA	2 700 K	4,9 kg
214930/3/...	DROP LED 24	24 W	28 W	500 mA	3 500 K	4,9 kg
214930/4/...	DROP LED 24	24 W	28 W	500 mA	4 000 K	4,9 kg
214930/6/...	DROP LED 24	24 W	28 W	500 mA	5 000 K	4,9 kg
214932/1/...	DROP LED 36	36 W	41 W	750 mA	2 700 K	4,9 kg
214932/3/...	DROP LED 36	36 W	41 W	750 mA	3 500 K	4,9 kg
214932/4/...	DROP LED 36	36 W	41 W	750 mA	4 000 K	4,9 kg
214932/6/...	DROP LED 36	36 W	41 W	750 mA	5 000 K	4,9 kg
214933/1/...	DROP LED 48	48 W	55 W	1 000 mA	2 700 K	5,2 kg
214933/3/...	DROP LED 48	48 W	55 W	1 000 mA	3 500 K	5,2 kg
214933/4/...	DROP LED 48	48 W	55 W	1 000 mA	4 000 K	5,2 kg
214933/6/...	DROP LED 48	48 W	55 W	1 000 mA	5 000 K	5,2 kg

/... Symbol of selected optical system

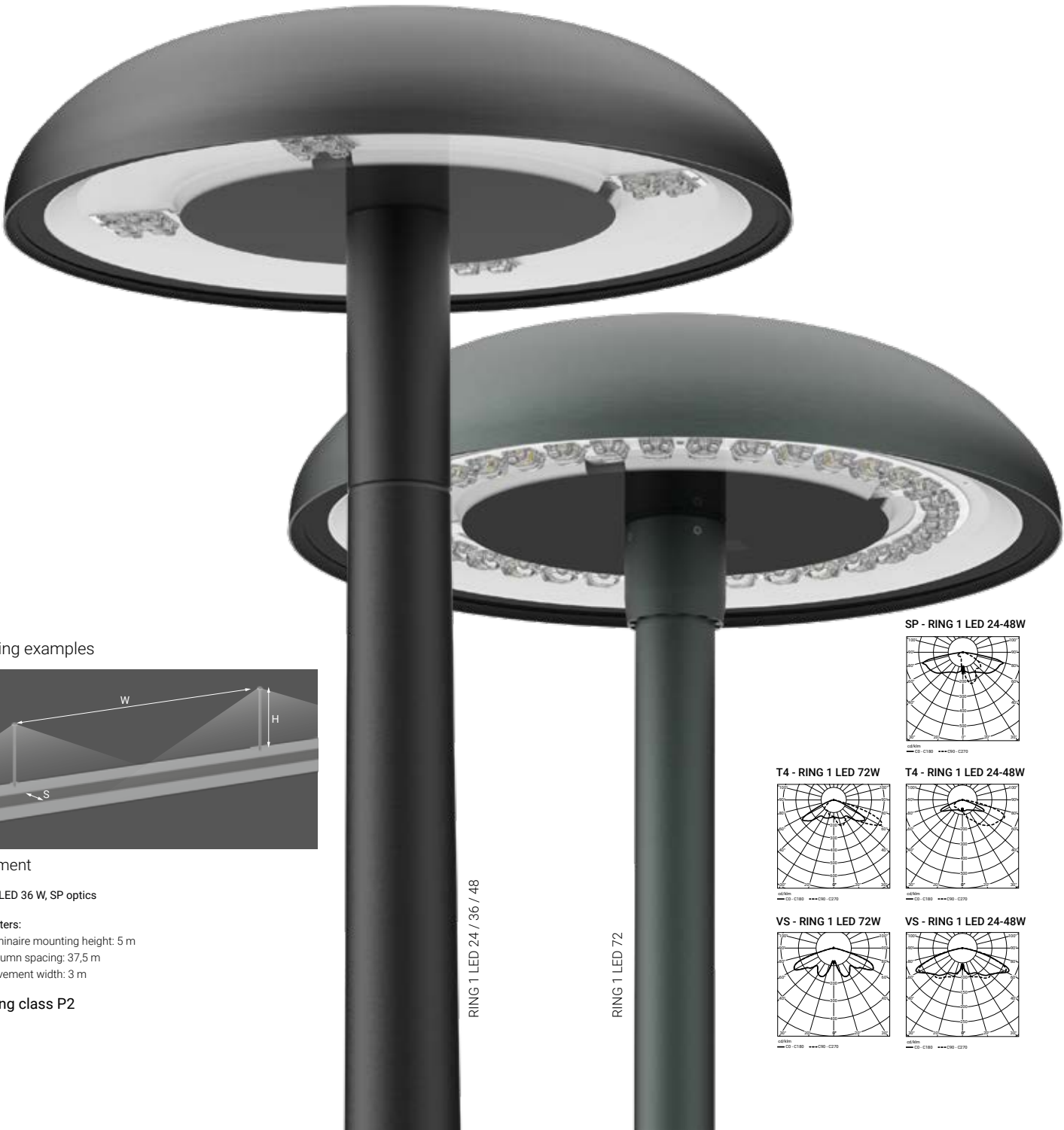


Technical parameters
 DROP LED

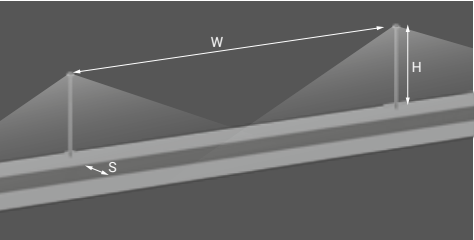


LED luminaires

RING 1 LED



Lighting examples



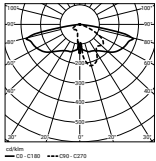
Pavement

RING 1 LED 36 W, SP optics

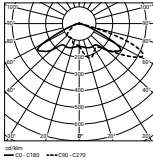
Parameters:
H – luminaire mounting height: 5 m
W – column spacing: 37,5 m
S – pavement width: 3 m

Lighting class P2

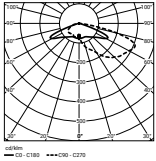
SP - RING 1 LED 24-48W



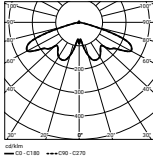
T4 - RING 1 LED 72W



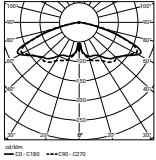
T4 - RING 1 LED 24-48W



VS - RING 1 LED 72W



VS - RING 1 LED 24-48W



RING 1 LED 24 / 36 / 48

RING 1 LED 72

Application: office buildings' surroundings, parks, pedestrian routes, car parks,

Installation: depending on the type of head: A - pole top mounted or on extension arms with $\varnothing 60 \times 50$ mm, B - pole top mounted with $\varnothing 60 \times 180$ mm

Protection class: IP 66

Material: cap – formed aluminium sheet, anodised
diffuser – tempered glass

base – anodised aluminium alloy

Optical system: PMMA optics, interchangeable LED module

Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

Unit volume: 0,08 m³

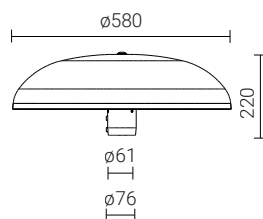
Input voltage frequency: 50/60 Hz

Power factor: $\geq 0,95$

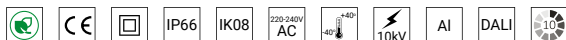
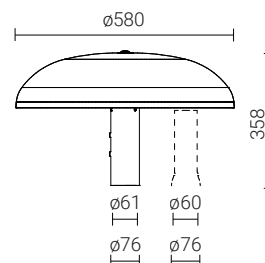
Luminaire RING 1 LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1- 10V).



Mounting head type 'A'



Mounting head type 'B'



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight with mounting head type 'A' / 'B'
212030/.../1/.../C...	RING 1 LED 24	24 W	28 W	500 mA	2 700 K	6,6 kg / 7,1 kg
212030/.../3/.../C...	RING 1 LED 24	24 W	28 W	500 mA	3 500 K	6,6 kg / 7,1 kg
212030/.../4/.../C...	RING 1 LED 24	24 W	28 W	500 mA	4 000 K	6,6 kg / 7,1 kg
212030/.../6/.../C...	RING 1 LED 24	24 W	28 W	500 mA	5 000 K	6,6 kg / 7,1 kg
212032/.../1/.../C...	RING 1 LED 36	36 W	40 W	750 mA	2 700 K	6,6 kg / 7,1 kg
212032/.../3/.../C...	RING 1 LED 36	36 W	40 W	750 mA	3 500 K	6,6 kg / 7,1 kg
212032/.../4/.../C...	RING 1 LED 36	36 W	40 W	750 mA	4 000 K	6,6 kg / 7,1 kg
212032/.../6/.../C...	RING 1 LED 36	36 W	40 W	750 mA	5 000 K	6,6 kg / 7,1 kg
212033/.../1/.../C...	RING 1 LED 48	48 W	55 W	1 000 mA	2 700 K	6,6 kg / 7,1 kg
212033/.../3/.../C...	RING 1 LED 48	48 W	55 W	1 000 mA	3 500 K	6,6 kg / 7,1 kg
212033/.../4/.../C...	RING 1 LED 48	48 W	55 W	1 000 mA	4 000 K	6,6 kg / 7,1 kg
212033/.../6/.../C...	RING 1 LED 48	48 W	55 W	1 000 mA	5 000 K	6,6 kg / 7,1 kg
212035/.../1/.../C...	RING 1 LED 72	72 W	79 W	750 mA	2 700 K	6,6 kg / 7,1 kg
212035/.../3/.../C...	RING 1 LED 72	72 W	79 W	750 mA	3 500 K	6,6 kg / 7,1 kg
212035/.../4/.../C...	RING 1 LED 72	72 W	79 W	750 mA	4 000 K	6,6 kg / 7,1 kg
212035/.../6/.../C...	RING 1 LED 72	72 W	79 W	750 mA	5 000 K	6,6 kg / 7,1 kg



Technical parameters
RING 1 LED

/...¹ – A or B head type

/...² – Symbol of selected optical system

/C... – choice of anodising colour

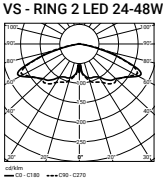
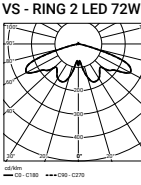
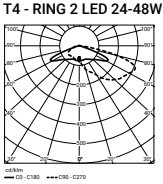
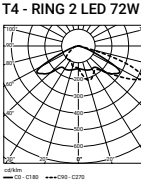
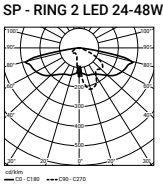


LED luminaires

RING 2 LED

RING 2 LED 24 / 36 / 48

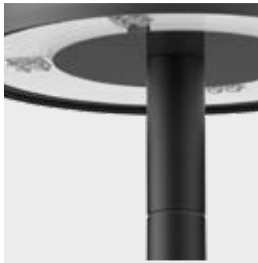
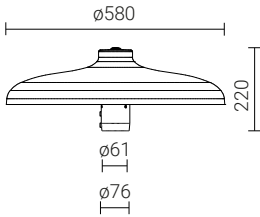
RING 2 LED 72



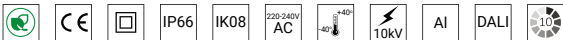
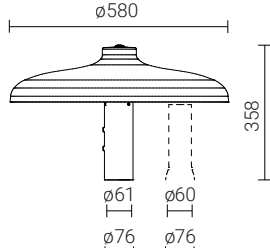
Application: office buildings' surroundings, parks, pedestrian routes, car parks,
Installation: depending on the type of head: A - pole top mounted or on extension arms with $\varnothing 60 \times 50$ mm,
 B - pole top mounted with $\varnothing 60 \times 180$ mm
Protection class: IP 66
Material: cap – formed aluminium sheet, anodised
 diffuser – tempered glass
 base – anodised aluminium alloy
Optical system: PMMA optics interchangeable LED module
Colour: inox / graphite
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,08 m³
Input voltage frequency: 50/60 Hz
Power factor: $\geq 0,95$
 Luminaire RING 2 LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1- 10V).



Mounting head type 'A'



Mounting head type 'B'



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight with mounting head type 'A' / 'B'
212130/.../1/.../C...	RING 2 LED 24	24 W	28 W	500 mA	2 700 K	6,6 kg / 7,1 kg
212130/.../3/.../C...	RING 2 LED 24	24 W	28 W	500 mA	3 500 K	6,6 kg / 7,1 kg
212130/.../4/.../C...	RING 2 LED 24	24 W	28 W	500 mA	4 000 K	6,6 kg / 7,1 kg
212130/.../6/.../C...	RING 2 LED 24	24 W	28 W	500 mA	5 000 K	6,6 kg / 7,1 kg
212132/.../1/.../C...	RING 2 LED 36	36 W	40 W	750 mA	2 700 K	6,6 kg / 7,1 kg
212132/.../3/.../C...	RING 2 LED 36	36 W	40 W	750 mA	3 500 K	6,6 kg / 7,1 kg
212132/.../4/.../C...	RING 2 LED 36	36 W	40 W	750 mA	4 000 K	6,6 kg / 7,1 kg
212132/.../6/.../C...	RING 2 LED 36	36 W	40 W	750 mA	5 000 K	6,6 kg / 7,1 kg
212133/.../1/.../C...	RING 2 LED 48	48 W	55 W	1 000 mA	2 700 K	6,6 kg / 7,1 kg
212133/.../3/.../C...	RING 2 LED 48	48 W	55 W	1 000 mA	3 500 K	6,6 kg / 7,1 kg
212133/.../4/.../C...	RING 2 LED 48	48 W	55 W	1 000 mA	4 000 K	6,6 kg / 7,1 kg
212133/.../6/.../C...	RING 2 LED 48	48 W	55 W	1 000 mA	5 000 K	6,6 kg / 7,1 kg
212135/.../1/.../C...	RING 2 LED 72	72 W	79 W	750 mA	2 700 K	6,6 kg / 7,1 kg
212135/.../3/.../C...	RING 2 LED 72	72 W	79 W	750 mA	3 500 K	6,6 kg / 7,1 kg
212135/.../4/.../C...	RING 2 LED 72	72 W	79 W	750 mA	4 000 K	6,6 kg / 7,1 kg
212135/.../6/.../C...	RING 2 LED 72	72 W	79 W	750 mA	5 000 K	6,6 kg / 7,1 kg

/...¹ – A or B head type /...² – Symbol of selected optical system /C... – choice of anodising colour

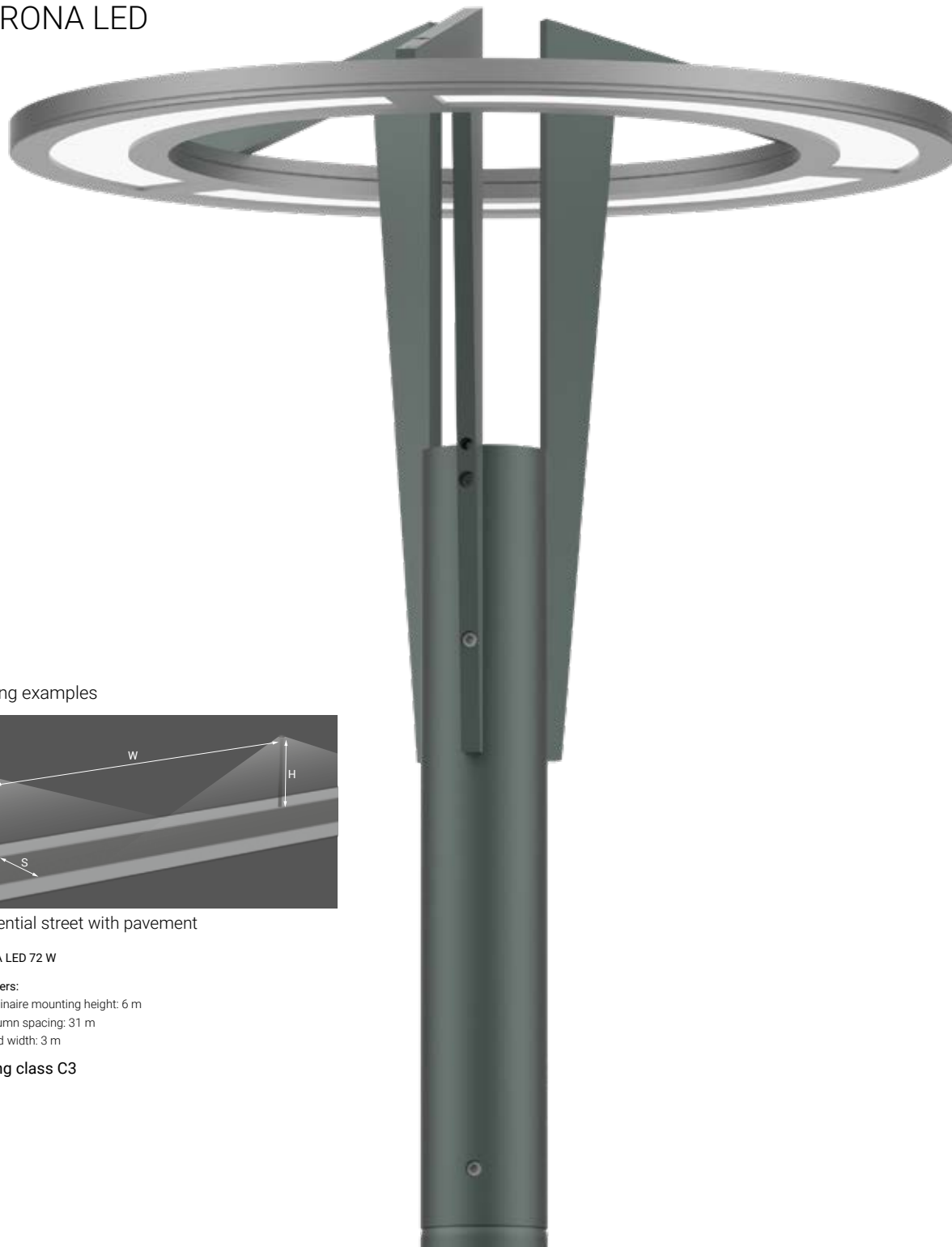


Technical parameters
RING 2 LED

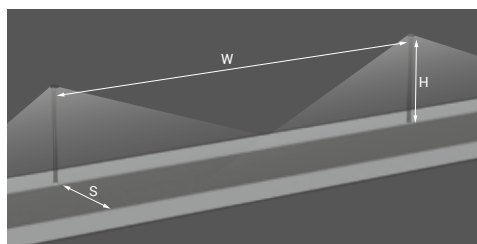


LED luminaires

CORONA LED



Lighting examples



Residential street with pavement

CORONA LED 72 W

Parameters:

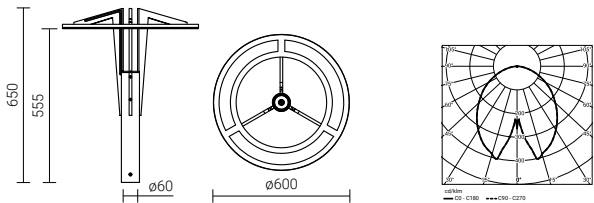
H – luminaire mounting height: 6 m

W – column spacing: 31 m

S – road width: 3 m

Lighting class C3

Application: office buildings' surroundings, parks, car parks,
Installation: directly on the column with ø60x80 mm ending
Protection class: IP 66
Material: body anodised aluminium alloy
 frosted diffuser (PMMA),
Colour: inox / graphite
Number of LEDs: 216
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,25 m³
Input voltage frequency: 50/60 Hz
Power factor: ≥ 0,95
Luminaire CORONA LED has the possibility to connect to an external control system via DALI
interface (optionally via analogue signal 1-10 V).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
214735/1	CORONA LED 72	72 W	80 W	1 000 mA	2 700 K	11,2 kg
214735/3	CORONA LED 72	72 W	80 W	1 000 mA	3 500 K	11,2 kg
214735/4	CORONA LED 72	72 W	80 W	1 000 mA	4 000 K	11,2 kg
214735/6	CORONA LED 72	72 W	80 W	1 000 mA	5 000 K	11,2 kg



Technical parameters
CORONA LED

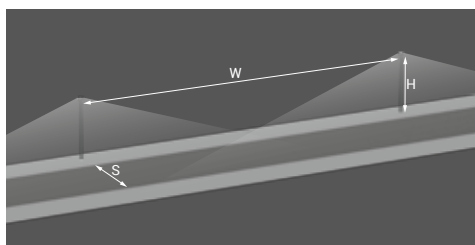


LED luminaires

MIRA LED



Lighting examples



Pedestrian walkway 5 m

MIRA LED 36 W

Parameters:

H – luminaire mounting height: 5,5 m

W – column spacing: 31 m

S – road width: 5 m

Lighting class P3

Application: residential streets, office buildings' surroundings, parks, pedestrian routes, cycle paths

Installation: directly on the column with $\varnothing 60 \times 80$ mm ending

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: inox / graphite

Optical system: PMMA optics

Number of LEDs: 12

Expected useful lifetime: L90B10 - 100 000 h

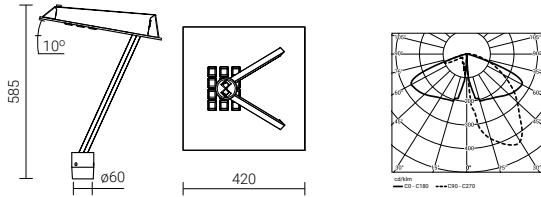
CRI: >70

Unit volume: 0,155 m³

Input voltage frequency: 50/60 Hz

Power factor: $\geq 0,95$

Luminaire MIRA LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10 V).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
214530/1	MIRA LED 24	24 W	28 W	700 mA	2 700 K	6,5 kg
214530/3	MIRA LED 24	24 W	28 W	700 mA	3 500 K	6,5 kg
214530/4	MIRA LED 24	24 W	28 W	700 mA	4 000 K	6,5 kg
214530/6	MIRA LED 24	24 W	28 W	700 mA	5 000 K	6,5 kg
214532/1	MIRA LED 36	36 W	40 W	1 000 mA	2 700 K	6,5 kg
214532/3	MIRA LED 36	36 W	40 W	1 000 mA	3 500 K	6,5 kg
214532/4	MIRA LED 36	36 W	40 W	1 000 mA	4 000 K	6,5 kg
214532/6	MIRA LED 36	36 W	40 W	1 000 mA	5 000 K	6,5 kg



Technical parameters
MIRA LED

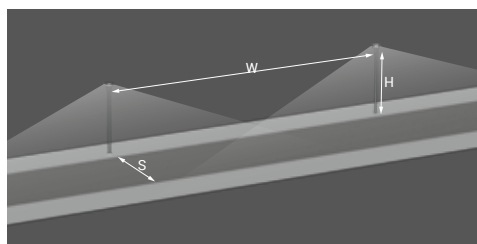


LED luminaires

MIZAR LED



Lighting examples



Bicycle and pedestrian path

MIZAR LED 36 W

Parameters:

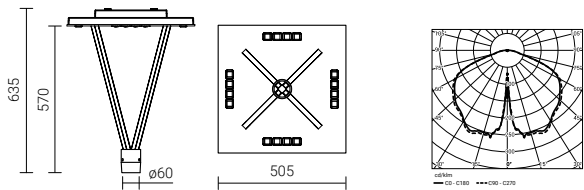
H – luminaire mounting height: 5 m

W – column spacing: 27 m

S – road width: 4 m

Lighting class P3

Application: office buildings' surroundings, parks, pedestrian routes, car parks,
Installation: directly on the column with ø60x80 mm ending
Protection class: IP 66 for the optical part and the power supply system
Material: anodised aluminium alloy
Colour: inox / graphite
Optical system: PMMA optics
Number of LEDs: 16
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,172 m³
Input voltage frequency: 50/60 Hz
Power factor: ≥ 0,95
Luminaire MIZAR LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10 V).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
214432/1	MIZAR LED 36	36 W	41 W	750 mA	2 700 K	9,6 kg
214432/3	MIZAR LED 36	36 W	41 W	750 mA	3 500 K	9,6 kg
214432/4	MIZAR LED 36	36 W	41 W	750 mA	4 000 K	9,6 kg
214432/6	MIZAR LED 36	36 W	41 W	750 mA	5 000 K	9,6 kg
214433/1	MIZAR LED 48	48 W	55 W	1 000 mA	2 700 K	9,6 kg
214433/3	MIZAR LED 48	48 W	55 W	1 000 mA	3 500 K	9,6 kg
214433/4	MIZAR LED 48	48 W	55 W	1 000 mA	4 000 K	9,6 kg
214433/6	MIZAR LED 48	48 W	55 W	1 000 mA	5 000 K	9,6 kg



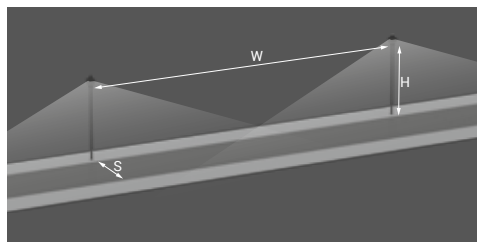
Technical parameters
MIZAR LED



LED luminaires
OS-1 LED



Lighting examples



Park avenue

OS-1 LED

Parameters:

H – luminaire mounting height: 4,5 m

W – column spacing: 28 m

S – road width: 4 m

Lighting class P3

Application: parks, pedestrian routes

Installation: on columns, extension arms, aluminium and steel wall brackets, arm systems with spigot ending ø60 x 60 mm deep and on plastic poles type S and SP with spigot ending type „B“

Protection class: IP 66 for the optical part and IP 54 for the power supply system

Material: body – UV resistant polypropylene with glass fibre

Colour: black / inox LED panel

Optical system: PMMA optics, interchangeable LED module

Number of LEDs: 16

Expected useful lifetime: L90B10 - 100 000 h

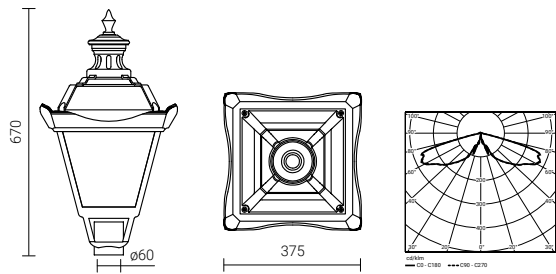
CRI: >70

Unit volume: 0,1 m³

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

Luminaire OS-1 LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10 V).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
211250/1	OS-1 LED	38 W	42 W	800 mA	2 700 K	5,2 kg
211250/3	OS-1 LED	38 W	42 W	800 mA	3 500 K	5,2 kg
211250/4	OS-1 LED	38 W	42 W	800 mA	4 000 K	5,2 kg
211250/6	OS-1 LED	38 W	42 W	800 mA	5 000 K	5,2 kg



Technical parameters
OS-1 LED

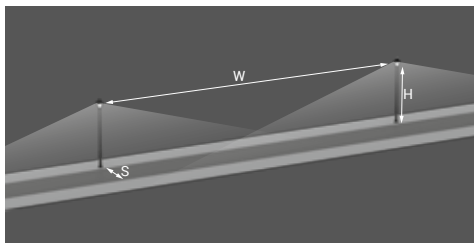


LED luminaires

OS-11 LED



Lighting examples



Pavement

OS-11 LED, frosted diffuser, T2 optics

Parameters:

H – luminaire mounting height: 4,5 m

W – column spacing: 35 m

S – pavement width: 4 m

Lighting class P3

Application: parks, pedestrian routes

Installation: on columns, extension arms, aluminium and steel wall brackets, arm systems with spigot ending 60 x 60 mm deep and on plastic poles type S and SP with spigot ending type „B“

Protection class: IP 66 for the optical part and IP 54 for the power supply system

Material: body – UV resistant polypropylene with glass fibre diffuser – frosted or transparent (PMMA)

Optical system: PMMA optics, interchangeable LED module

Colour: black

Number of LEDs: 16

Expected useful lifetime: L90B10 - 100 000 h

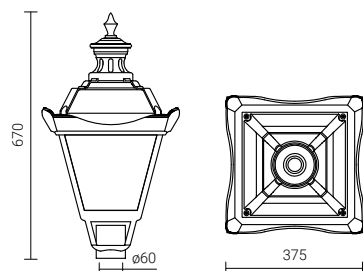
CRI: >70

Unit volume: 0,1 m³

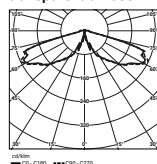
Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

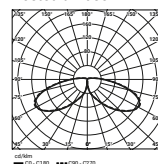
Luminaire OS-11 LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10 V).



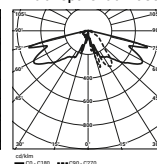
transparent diffuser



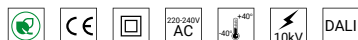
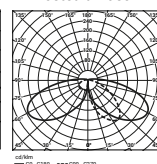
frosted diffuser



A - transparent diffuser



A - frosted diffuser



Code	Symbol	Diffuser	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
2110050/1	OS-11 LED	frosted	38 W	42 W	800 mA	2 700 K	4,6 kg
2110050/3	OS-11 LED	frosted	38 W	42 W	800 mA	3 500 K	4,6 kg
2110050/4	OS-11 LED	frosted	38 W	42 W	800 mA	4 000 K	4,6 kg
2110050/6	OS-11 LED	frosted	38 W	42 W	800 mA	5 000 K	4,6 kg
2112050/1	OS-11 LED	transparent	38 W	42 W	800 mA	2 700 K	4,8 kg
2112050/3	OS-11 LED	transparent	38 W	42 W	800 mA	3 500 K	4,8 kg
2112050/4	OS-11 LED	transparent	38 W	42 W	800 mA	4 000 K	4,8 kg
2112050/6	OS-11 LED	transparent	38 W	42 W	800 mA	5 000 K	4,8 kg
2110050/1/A	OS-11 LED	frosted	38 W	42 W	800 mA	2 700 K	4,6 kg
2110050/3/A	OS-11 LED	frosted	38 W	42 W	800 mA	3 500 K	4,6 kg
2110050/4/A	OS-11 LED	frosted	38 W	42 W	800 mA	4 000 K	4,6 kg
2110050/6/A	OS-11 LED	frosted	38 W	42 W	800 mA	5 000 K	4,6 kg
2112050/1/A	OS-11 LED	transparent	38 W	42 W	800 mA	2 700 K	4,8 kg
2112050/3/A	OS-11 LED	transparent	38 W	42 W	800 mA	3 500 K	4,8 kg
2112050/4/A	OS-11 LED	transparent	38 W	42 W	800 mA	4 000 K	4,8 kg
2112050/6/A	OS-11 LED	transparent	38 W	42 W	800 mA	5 000 K	4,8 kg



Technical parameters
OS-11 LED

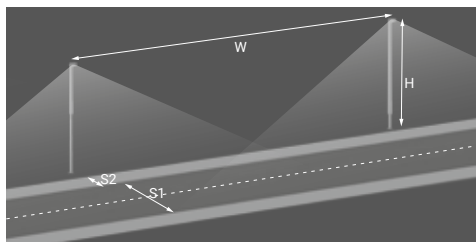


LED luminaires

CUDDLE MINI LED



Lighting examples



Single carriageway with two lanes + pavement

CUDDLE MINI LED 48 W, LN optics

Parameters:

H – luminaire mounting height: 8 m

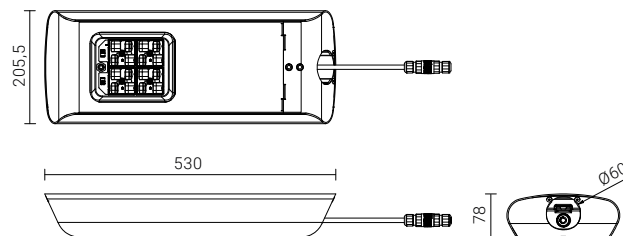
W – column spacing: 42 m

S1 – road width: 7 m

S2 – pavement width: 2 m

Lighting class

M5 - Carriageway | P4 - Pavement



Application: motorways and expressways, urban roads, (internal) residential roads, pedestrian routes, car parks,
Installation: directly on extension arm with ø60x100 mm ending

Protection class: IP 66

Material: anodised aluminium alloy

Colour: inox / black

Optical system: PMMA optics, interchangeable LED module, tempered glass diffuser

Number of LEDs: 16

Expected useful lifetime: L90B10 - 100 000 h

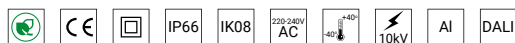
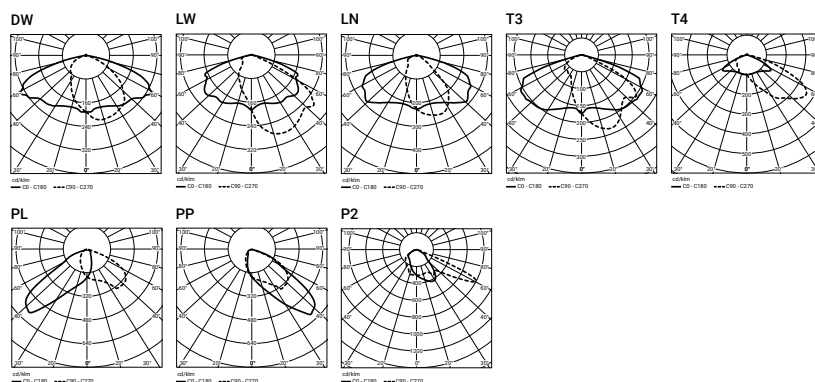
CRI: >70

Unit volume: 0,01 m³

Input voltage frequency: 50/60 Hz

Power factor: ≥0.95

Luminaire CUDDLE MINI LED optionally has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10 V).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight Luminaires netto
222730/1/...	CUDDLE MINI LED 24	24 W	26 W	500 mA	2 700 K	3,7kg
222730/3/...	CUDDLE MINI LED 24	24 W	26 W	500 mA	3 500 K	3,7kg
222730/4/...	CUDDLE MINI LED 24	24 W	26 W	500 mA	4 000 K	3,7kg
222730/6/...	CUDDLE MINI LED 24	24 W	26 W	500 mA	5 000 K	3,7kg
222732/1/...	CUDDLE MINI LED 36	36 W	39 W	750 mA	2 700 K	3,7kg
222732/3/...	CUDDLE MINI LED 36	36 W	39 W	750 mA	3 500 K	3,7kg
222732/4/...	CUDDLE MINI LED 36	36 W	39 W	750 mA	4 000 K	3,7kg
222732/6/...	CUDDLE MINI LED 36	36 W	39 W	750 mA	5 000 K	3,7kg
222733/1/...	CUDDLE MINI LED 48	48 W	54 W	1 000 mA	2 700 K	3,7kg
222733/3/...	CUDDLE MINI LED 48	48 W	54 W	1 000 mA	3 500 K	3,7kg
222733/4/...	CUDDLE MINI LED 48	48 W	54 W	1 000 mA	4 000 K	3,7kg
222733/6/...	CUDDLE MINI LED 48	48 W	54 W	1 000 mA	5 000 K	3,7kg

/... - Symbol of selected optical system



Technical parameters
CUDDLE MINI LED

LED luminaires

CUDDLE MINI LED REG



Application: motorways and expressways, urban roads, (internal) residential roads, pedestrian routes, car parks,

Installation: directly on column with ø60x180 mm ending or on extension arm with ø60x100 mm ending

Protection class: IP 66

Material: anodised aluminium alloy

Colour: inox / black

Optical system: PMMA optics, interchangeable LED module, tempered glass diffuser

Number of LEDs: 16

Expected useful lifetime: L90B10 - 100 000 h

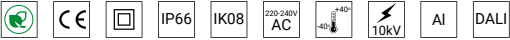
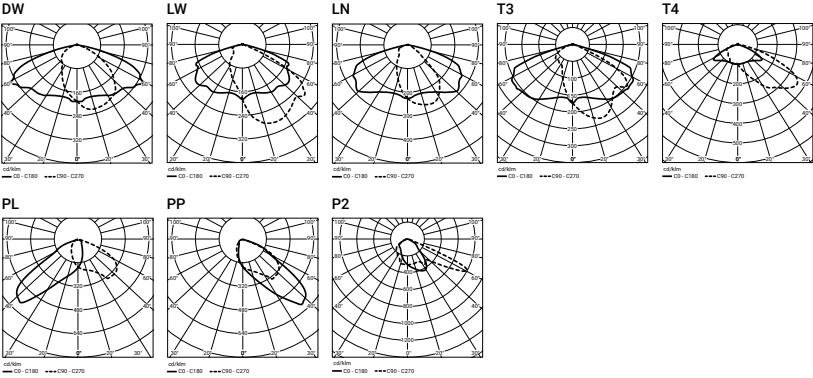
CRI: >70

Unit volume: 0,013 m³

Input voltage frequency: 50/60 Hz

Power factor: ≥0.95

Luminaire CUDDLE MINI LED REG optionally has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10 V).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight Luminaires netto
222830/1/...	CUDDLE MINI LED REG 24	24 W	26 W	500 mA	2 700 K	5,0kg
222830/3/...	CUDDLE MINI LED REG 24	24 W	26 W	500 mA	3 500 K	5,0kg
222830/4/...	CUDDLE MINI LED REG 24	24 W	26 W	500 mA	4 000 K	5,0kg
222830/6/...	CUDDLE MINI LED REG 24	24 W	26 W	500 mA	5 000 K	5,0kg
222832/1/...	CUDDLE MINI LED REG 36	36 W	39 W	750 mA	2 700 K	5,0kg
222832/3/...	CUDDLE MINI LED REG 36	36 W	39 W	750 mA	3 500 K	5,0kg
222832/4/...	CUDDLE MINI LED REG 36	36 W	39 W	750 mA	4 000 K	5,0kg
222832/6/...	CUDDLE MINI LED REG 36	36 W	39 W	750 mA	5 000 K	5,0kg
222833/1/...	CUDDLE MINI LED REG 48	48 W	54 W	1 000 mA	2 700 K	5,0kg
222833/3/...	CUDDLE MINI LED REG 48	48 W	54 W	1 000 mA	3 500 K	5,0kg
222833/4/...	CUDDLE MINI LED REG 48	48 W	54 W	1 000 mA	4 000 K	5,0kg
222833/6/...	CUDDLE MINI LED REG 48	48 W	54 W	1 000 mA	5 000 K	5,0kg

/... - Symbol of selected optical system



Technical parameters
CUDDLE MINI LED

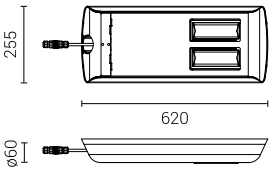


LED luminaires

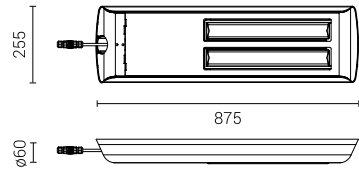
CUDDLE II LED



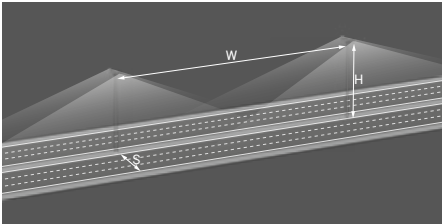
CUDDLE II LED 48W, 60W, 72W



CUDDLE II LED 96W, 120W, 144W, 192W



Lighting examples

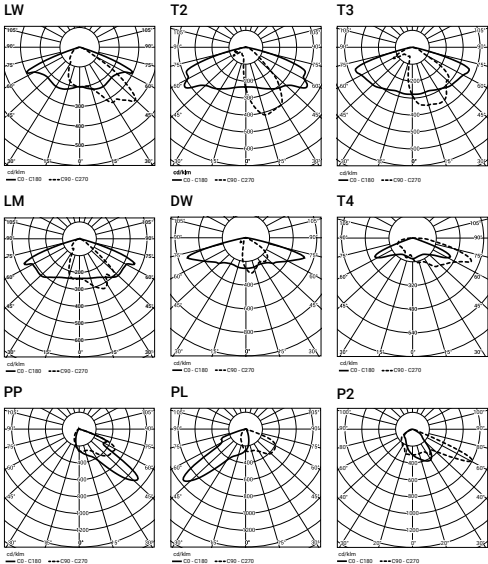
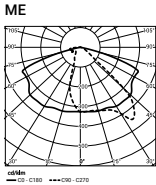


Six-lane road with median strip

CUDDLE II LED 96 W, T3 optics

Parameters:
H – luminaire mounting height: 12 m
W – column spacing: 35 m
S – road width: 7 m

Lighting class M2



Application: highways and expressways, urban roads, (internal) residential streets, pedestrian routes, car parks,

Installation: on extension arms with ø60x100 mm ending

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: inox / black

Optical system: PMMA optics, interchangeable LED module, tempered glass diffuser

Number of LEDs: 24 (for 48 W, 60 W, 72 W); 64 (for 96 W, 120 W, 144 W, 192 W)

Operating temperature range: from -40°C to +40°C

Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

Unit volume: 0,024 m³ (for 48 W, 60 W, 72 W), 0,033 m³ (for 96 W, 120 W, 144 W, 192 W)

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

Luminaire CUDDLE II LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
2223033/1/...	CUDDLE II LED 48	48 W	55 W	700 mA	2 700 K	5,2 kg
2223033/3/...	CUDDLE II LED 48	48 W	55 W	700 mA	3 500 K	5,2 kg
2223033/4/...	CUDDLE II LED 48	48 W	55 W	700 mA	4 000 K	5,2 kg
2223033/6/...	CUDDLE II LED 48	48 W	55 W	700 mA	5 000 K	5,2 kg
2223034/1/...	CUDDLE II LED 60	60 W	67 W	830 mA	2 700 K	5,2 kg
2223034/3/...	CUDDLE II LED 60	60 W	67 W	830 mA	3 500 K	5,2 kg
2223034/4/...	CUDDLE II LED 60	60 W	67 W	830 mA	4 000 K	5,2 kg
2223034/6/...	CUDDLE II LED 60	60 W	67 W	830 mA	5 000 K	5,2 kg
2223035/1/...	CUDDLE II LED 72	72 W	79 W	1 000 mA	2 700 K	5,2 kg
2223035/3/...	CUDDLE II LED 72	72 W	79 W	1 000 mA	3 500 K	5,2 kg
2223035/4/...	CUDDLE II LED 72	72 W	79 W	1 000 mA	4 000 K	5,2 kg
2223035/6/...	CUDDLE II LED 72	72 W	79 W	1 000 mA	5 000 K	5,2 kg
2223037/1/...	CUDDLE II LED 96	96 W	105 W	500 mA	2 700 K	8,3 kg
2223037/3/...	CUDDLE II LED 96	96 W	105 W	500 mA	3 500 K	8,3 kg
2223037/4/...	CUDDLE II LED 96	96 W	105 W	500 mA	4 000 K	8,3 kg
2223037/6/...	CUDDLE II LED 96	96 W	105 W	500 mA	5 000 K	8,3 kg
2223039/1/...	CUDDLE II LED 120	120 W	129 W	625 mA	2 700 K	8,3 kg
2223039/3/...	CUDDLE II LED 120	120 W	129 W	625 mA	3 500 K	8,3 kg
2223039/4/...	CUDDLE II LED 120	120 W	129 W	625 mA	4 000 K	8,3 kg
2223039/6/...	CUDDLE II LED 120	120 W	129 W	625 mA	5 000 K	8,3 kg
2223041/1/...	CUDDLE II LED 144	144 W	154 W	750 mA	2 700 K	8,3 kg
2223041/3/...	CUDDLE II LED 144	144 W	154 W	750 mA	3 500 K	8,3 kg
2223041/4/...	CUDDLE II LED 144	144 W	154 W	750 mA	4 000 K	8,3 kg
2223041/6/...	CUDDLE II LED 144	144 W	154 W	750 mA	5 000 K	8,3 kg
2223046/1/...	CUDDLE II LED 192	192 W	205 W	1 000 mA	2 700 K	8,5 kg
2223046/3/...	CUDDLE II LED 192	192 W	205 W	1 000 mA	3 500 K	8,5 kg
2223046/4/...	CUDDLE II LED 192	192 W	205 W	1 000 mA	4 000 K	8,5 kg
2223046/6/...	CUDDLE II LED 192	192 W	205 W	1 000 mA	5 000 K	8,5 kg

/... Symbol of selected optical system



Technical parameters
CUDDLE II LED

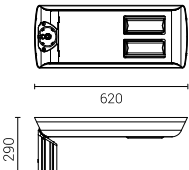
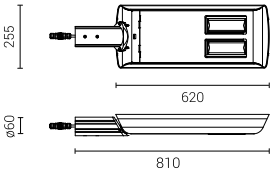


LED luminaires

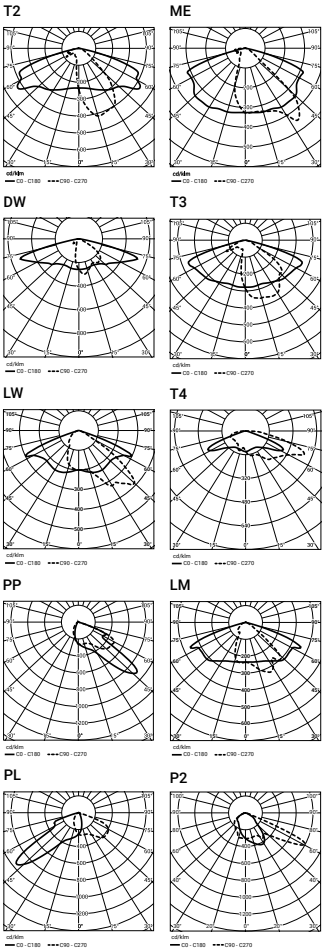
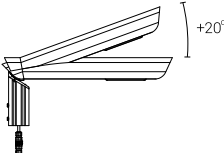
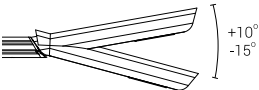
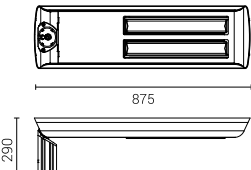
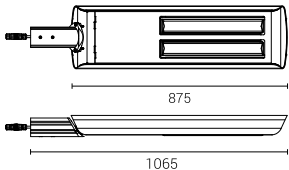
CUDDLE II LED REG



CUDDLE II LED REG 48W, 60W, 72W



CUDDLE II LED REG 96W, 120W, 144W, 192W



Application: highways and expressways, urban roads, residential streets, pedestrian routes, car parks,

Installation: on column or on extension arm with ø60x100 mm ending

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: inox / black

Optical system: PMMA optics, interchangeable LED module, diffuser z PC-UV

Number of LEDs: 24 (for 48 W, 60 W, 72 W); 64 (for 96 W, 120 W, 144 W, 192 W)

Operating temperature range: from -40°C to +40°C

Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

Unit volume: 0,024 m³ (for 48 W, 60 W, 72 W), 0,033 m³ (for 96 W, 120 W, 144 W, 192 W)

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

Luminaire CUDDLE II LED REG has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
2223133/1/...	CUDDLE II LED REG 48	48 W	55 W	700 mA	2 700 K	6 kg
2223133/3/...	CUDDLE II LED REG 48	48 W	55 W	700 mA	3 500 K	6 kg
2223133/4/...	CUDDLE II LED REG 48	48 W	55 W	700 mA	4 000 K	6 kg
2223133/6/...	CUDDLE II LED REG 48	48 W	55 W	700 mA	5 000 K	6 kg
2223134/1/...	CUDDLE II LED REG 60	60 W	67 W	830 mA	2 700 K	6 kg
2223134/3/...	CUDDLE II LED REG 60	60 W	67 W	830 mA	3 500 K	6 kg
2223134/4/...	CUDDLE II LED REG 60	60 W	67 W	830 mA	4 000 K	6 kg
2223134/6/...	CUDDLE II LED REG 60	60 W	67 W	830 mA	5 000 K	6 kg
2223135/1/...	CUDDLE II LED REG 72	72 W	79 W	1 000 mA	2 700 K	6 kg
2223135/3/...	CUDDLE II LED REG 72	72 W	79 W	1 000 mA	3 500 K	6 kg
2223135/4/...	CUDDLE II LED REG 72	72 W	79 W	1 000 mA	4 000 K	6 kg
2223135/6/...	CUDDLE II LED REG 72	72 W	79 W	1 000 mA	5 000 K	6 kg
2223137/1/...	CUDDLE II LED REG 96	96 W	105 W	500 mA	2 700 K	9,1 kg
2223137/3/...	CUDDLE II LED REG 96	96 W	105 W	500 mA	3 500 K	9,1 kg
2223137/4/...	CUDDLE II LED REG 96	96 W	105 W	500 mA	4 000 K	9,1 kg
2223137/6/...	CUDDLE II LED REG 96	96 W	105 W	500 mA	5 000 K	9,1 kg
2223139/1/...	CUDDLE II LED REG 120	120 W	129 W	625 mA	2 700 K	9,1 kg
2223139/3/...	CUDDLE II LED REG 120	120 W	129 W	625 mA	3 500 K	9,1 kg
2223139/4/...	CUDDLE II LED REG 120	120 W	129 W	625 mA	4 000 K	9,1 kg
2223139/6/...	CUDDLE II LED REG 120	120 W	129 W	625 mA	5 000 K	9,1 kg
2223141/1/...	CUDDLE II LED REG 144	144 W	154 W	750 mA	2 700 K	9,1 kg
2223141/3/...	CUDDLE II LED REG 144	144 W	154 W	750 mA	3 500 K	9,1 kg
2223141/4/...	CUDDLE II LED REG 144	144 W	154 W	750 mA	4 000 K	9,1 kg
2223141/6/...	CUDDLE II LED REG 144	144 W	154 W	750 mA	5 000 K	9,1 kg
2223146/1/...	CUDDLE II LED REG 192	192 W	205 W	1 000 mA	2 700 K	9,3 kg
2223146/3/...	CUDDLE II LED REG 192	192 W	205 W	1 000 mA	3 500 K	9,3 kg
2223146/4/...	CUDDLE II LED REG 192	192 W	205 W	1 000 mA	4 000 K	9,3 kg
2223146/6/...	CUDDLE II LED REG 192	192 W	205 W	1 000 mA	5 000 K	9,3 kg

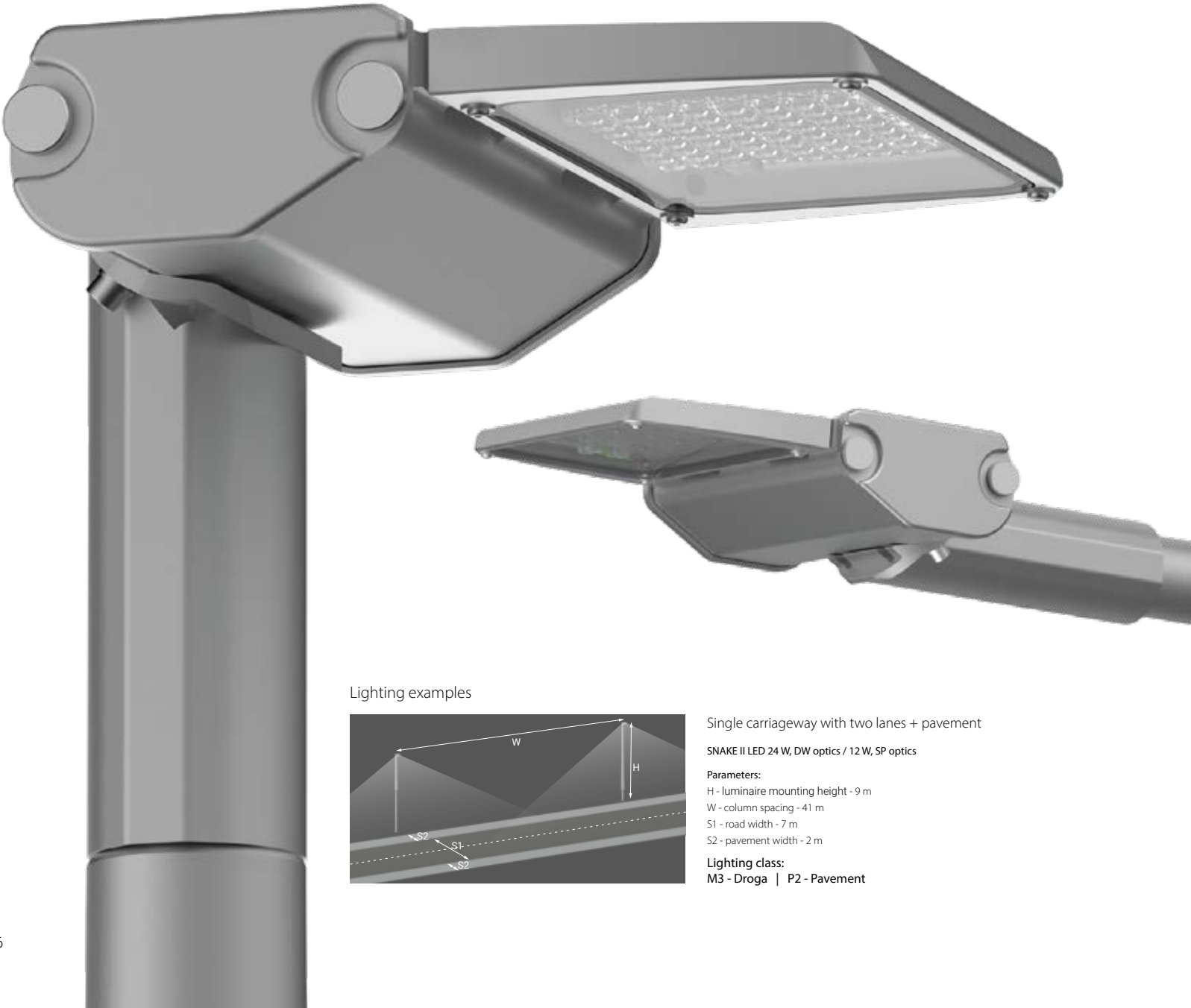
/... Symbol of selected optical system



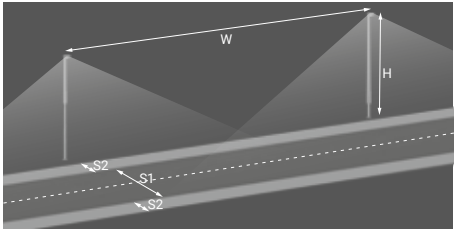
Technical parameters
CUDDLE II LED REG

LED luminaires

LOCO LED



Lighting examples



Single carriageway with two lanes + pavement

SNAKE II LED 24 W, DW optics / 12 W, SP optics

Parameters:
H - luminaire mounting height - 9 m
W - column spacing - 41 m
S1 - road width - 7 m
S2 - pavement width - 2 m

Lighting class:
M3 - Droga | P2 - Pavement

Application: motorways and expressways, urban roads, (internal) residential roads, pedestrian routes, car parks,

Installation: directly on the column or on extension arm with $\varnothing 42 - \varnothing 60 \times 100$ mm ending

Protection class: IP 66

Material: anodised aluminium alloy

diffuser – tempered glass

Colour: inox

Optical system: PMMA optics interchangeable LED module

Number of LEDs: 64 (for 48 W), 96 (for 72 W), 128 (for 96 W)

Expected useful lifetime: L90B10 - 100 000 h

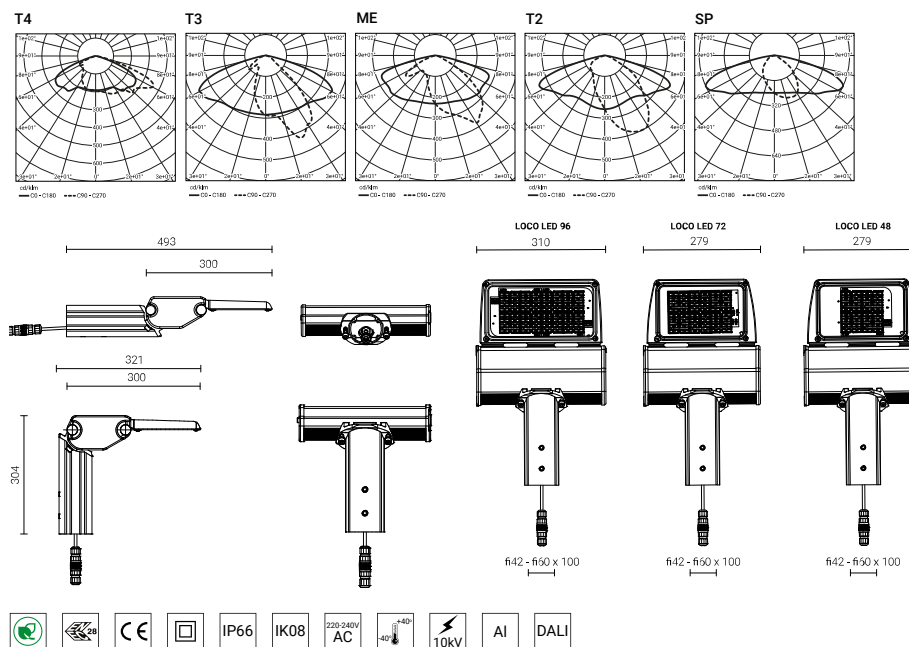
CRI: >70

Unit volume: 0,027 m³

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0.95

Luminaire LOCO LED optionally has the possibility, to connect to an external control system via analogue 1-10 V signal.



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
2226033/1/... ²	LOCO LED 48	48 W	55 W	500 mA	2 700 K	5.3 kg
2226033/3/... ²	LOCO LED 48	48 W	55 W	500 mA	3 500 K	5.3 kg
2226033/4/... ²	LOCO LED 48	48 W	55 W	500 mA	4 000 K	5.3 kg
2226035/1/... ²	LOCO LED 72	72 W	80 W	1 000 mA	2 700 K	5.3 kg
2226035/3/... ²	LOCO LED 72	72 W	80 W	1 000 mA	3 500 K	5.3 kg
2226035/4/... ²	LOCO LED 72	72 W	80 W	1 000 mA	4 000 K	5.3 kg
2226037/1/... ²	LOCO LED 96	96 W	104 W	500 mA	2 700 K	5.7 kg
2226037/3/... ²	LOCO LED 96	96 W	104 W	500 mA	3 500 K	5.7 kg
2226037/4/... ²	LOCO LED 96	96 W	104 W	500 mA	4 000 K	5.7 kg

/... Symbol of selected optical system



Technical parameters
LOCO LED



COSMO LED



COSMO LED 72 W, T3 optics

S – road width: 6 m

Figure 10 displays eight polar plots arranged in a 2x4 grid, showing the distribution of wind direction and speed for four stations (DW, ME, T2, T3) and four parameters (C1, C2, C3, C4). The plots are organized as follows:

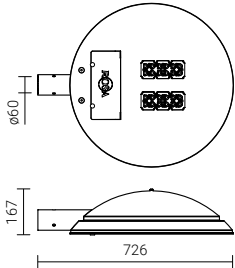
- Top Row:** DW, ME, T2
- Bottom Row:** T3, T4, PP, PL

Each plot is a polar coordinate system with wind direction on the radial axis (0 to 360 degrees) and wind speed on the concentric circles (0 to 10 m/s). The plots show the distribution of wind direction and speed for each parameter, with the legend indicating the color and line style for each parameter:

- Legend:**
 - C1
 - C2
 - C3
 - C4

The plots illustrate the wind direction and speed distribution for each parameter across the different stations. The distribution is generally concentrated in the 0 to 90 degree range, with varying degrees of spread and peak values depending on the station and parameter.

Application: urban roads, residential streets, pedestrian routes, car parks,
Installation: on extension arm with ø60x100 mm ending
Protection class: IP 66 for the optical part and the power supply system
Material: anodised aluminium alloy
Colour: inox / black
Optical system: PMMA optics, interchangeable LED module
Number of LEDs: 24
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,073 m³
Input voltage frequency: 50/60 Hz
Power factor: ≥ 0,95
 Luminaire COSMO LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
2210033/1/...	COSMO LED 48	48 W	55 W	700 mA	2 700 K	10,2 kg
2210033/3/...	COSMO LED 48	48 W	55 W	700 mA	3 500 K	10,2 kg
2210033/4/...	COSMO LED 48	48 W	55 W	700 mA	4 000 K	10,2 kg
2210033/6/...	COSMO LED 48	48 W	55 W	700 mA	5 000 K	10,2 kg
2210034/1/...	COSMO LED 60	60 W	67 W	830 mA	2 700 K	10,2 kg
2210034/3/...	COSMO LED 60	60 W	67 W	830 mA	3 500 K	10,2 kg
2210034/4/...	COSMO LED 60	60 W	67 W	830 mA	4 000 K	10,2 kg
2210034/6/...	COSMO LED 60	60 W	67 W	830 mA	5 000 K	10,2 kg
2210035/1/...	COSMO LED 72	72 W	79 W	1 000 mA	2 700 K	10,2 kg
2210035/3/...	COSMO LED 72	72 W	79 W	1 000 mA	3 500 K	10,2 kg
2210035/4/...	COSMO LED 72	72 W	79 W	1 000 mA	4 000 K	10,2 kg
2210035/6/...	COSMO LED 72	72 W	79 W	1 000 mA	5 000 K	10,2 kg

/... Symbol of selected optical system



Technical parameters
 COSMO LED

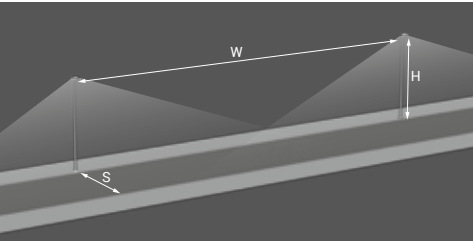


LED luminaires

COSMO LED ALFA



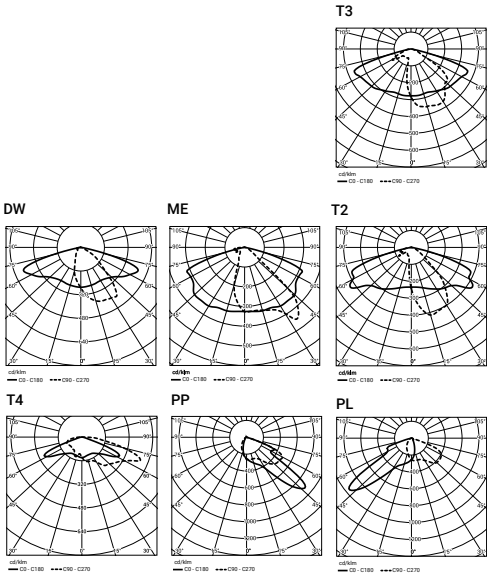
Lighting examples



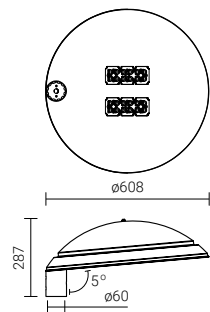
Urban road
COSMO LED ALFA 72 W, DW optics

Parameters:
H – luminaire mounting height: 7 m
W – column spacing: 31 m
S – road width: 7 m

Lighting class M3



Application: urban roads, residential streets, pedestrian routes, car parks,
Installation: directly on column with ø60x80 mm ending
Protection class: IP 66 for the optical part and the power supply system
Material: anodised aluminium alloy
Colour: inox / black
Optical system: PMMA optics, interchangeable LED module
Number of LEDs: 24
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,073 m³
Input voltage frequency: 50/60 Hz
Power factor: ≥ 0,95
 Luminaire COSMO LED ALFA has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
2212033/1/...	COSMO LED ALFA 48	48 W	55 W	700 mA	2 700 K	11,5 kg
2212033/3/...	COSMO LED ALFA 48	48 W	55 W	700 mA	3 500 K	11,5 kg
2212033/4/...	COSMO LED ALFA 48	48 W	55 W	700 mA	4 000 K	11,5 kg
2212033/6/...	COSMO LED ALFA 48	48 W	55 W	700 mA	5 000 K	11,5 kg
2212034/1/...	COSMO LED ALFA 60	60 W	67 W	830 mA	2 700 K	11,5 kg
2212034/3/...	COSMO LED ALFA 60	60 W	67 W	830 mA	3 500 K	11,5 kg
2212034/4/...	COSMO LED ALFA 60	60 W	67 W	830 mA	4 000 K	11,5 kg
2212034/6/...	COSMO LED ALFA 60	60 W	67 W	830 mA	5 000 K	11,5 kg
2212035/1/...	COSMO LED ALFA 72	72 W	79 W	1 000 mA	2 700 K	11,5 kg
2212035/3/...	COSMO LED ALFA 72	72 W	79 W	1 000 mA	3 500 K	11,5 kg
2212035/4/...	COSMO LED ALFA 72	72 W	79 W	1 000 mA	4 000 K	11,5 kg
2212035/6/...	COSMO LED ALFA 72	72 W	79 W	1 000 mA	5 000 K	11,5 kg

/... Symbol of selected optical system



Technical parameters
 COSMO LED ALFA





Łędziny, Poland



Tychy, Poland





Safe pedestrian crossing

The issue of safety is particularly important for all road users, be they drivers or pedestrians. Unfortunately, places particularly exposed to various types of accidents, both in cities and on the outskirts, include primarily pedestrian crossings.

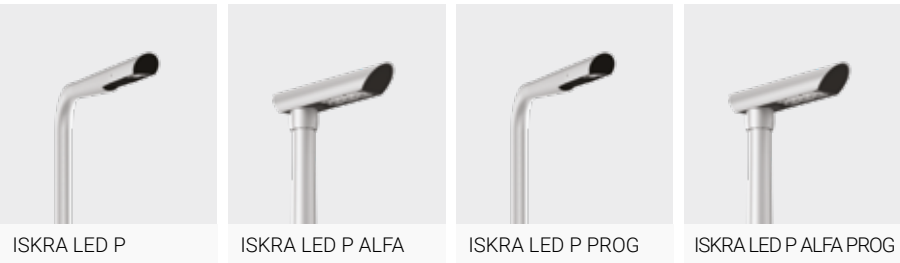
One of the important factors affecting the number of accidents on pedestrian lanes is the quality of lighting in these places. Ensuring adequate visibility of road users reduces the number of many uncontrolled situations and behaviours on and within the road.

Most often, however, it happens that designated pedestrian crossing areas need to be modernized to ensure the greatest possible safety for the passer-by himself.

As a company producing lighting, we constantly modernize and test our products dedicated to such places.

We offer columns and luminaires specially designed for installation on pedestrian crossings to ensure proper visibility of pedestrians

Group of luminaires with interchangeable optics dedicated to illuminate pedestrian crossings



Group of luminaires with interchangeable optics dedicated to illuminate pedestrian crossings



Lighting examples



Luminaire: CUDDLE II LED 144 W
Code: 2223141/.../PP
Arm: WR-4/1/1,5/5 ZP
Code: 472041159/C...
Column: SAL-75
Code: 42316/C...
Road sign D-6



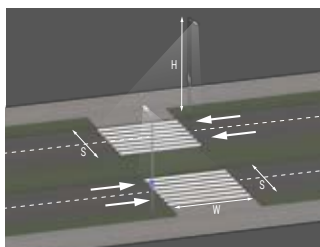
Luminaire: OW LED 60 W
Code: 2109034/.../PP
Arm: WA-31 fi42
Code: 471031/C...
Column: SAL DP-607G
Code: 42972/C...
Road sign D-6



LED lighting sets: CUT-6 LED 48 W
Code: 216633/.../PP
Road sign D-6

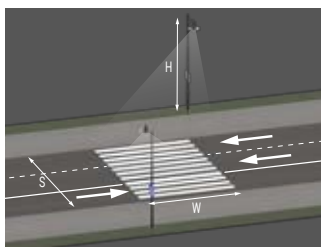


Luminaire: COSMO LED 60 W
Code: 2210034/.../PP
Arm: WR-4/1/1,0/5 ZP
Code: 472041109/C...
Column: SAL-65
Code: 42314/C...
Road sign D-6



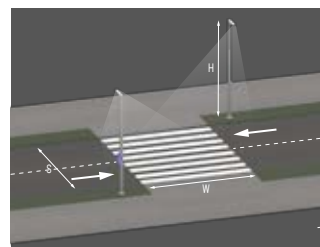
Dual carriageway with two lanes

Parameters:
H - height: 7,5 m
W - walkway width: 4 m
S - road width: 7m



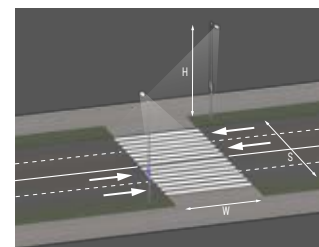
Single carriageway with three lanes

Parameters:
H - height: 6 m
W - walkway width: 4 m
S - road width: 10,5m



Single carriageway with two lanes

Parameters:
H - height: 5m
W - walkway width: 4 m
S - road width: 7m



Single carriageway with four lanes

Parameters:
H - height: 6,5m
W - walkway width: 4 m
S - road width: 14m

Surge Protection

Increases the luminaire's resistance to electrical discharges up to 15 pulses with 10kV voltage

Signalling set

warning lamps which, when activated, signal to drivers the presence of a pedestrian at the crossing; the lamps are equipped with a buffer power supply system, thanks to which the system works 24 hours, even in circuits where the power supply system is turned off during the day.



Pedestrian signal button

button activates a signal lamp and temporarily increases the power of the luminaire at the pedestrian crossings



Anodised aluminium housing:

Inox/black colour, corrosion resistance and decorative features

Optical system

Luminaire equipped with LED module available in two optical systems, intended for roads with right and left-hand traffic. The solution for left-hand traffic can also help illuminate wide pedestrian crossings and works well in installations on the refuge island between the road lanes. Luminous efficacy up to 140 lm/W at the luminaire level.

A place for an information sign

Features



Lighting examples



Luminaire: ISKRA LED P ALFA 36 W
Code: 2133032/.../L
Column: SAL-5 B60
Code: 42127/C...

Road sign D-6



Luminaire: ISKRA LED P 36 W
Code: 2132032/.../P, 2132032/.../L
Column: SAL-50G
Code: 42341/C...

Arm: WR-10P/1/1,5/0 ZP
Code: 4722519/C45/C35
Road sign D-6

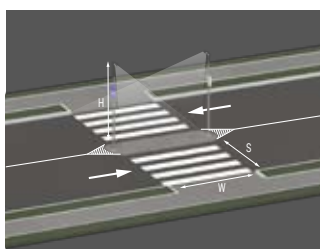


Luminaire: ISKRA LED P 36 W
Code: 2132032/.../P, 2132032/.../L
Column: SAL DL-10
Code: 42999/C45/C35

Road sign D-6

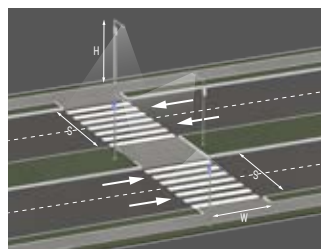


Luminaire: ISKRA LED PROG (LineSwitch)
Code: 2132130/.../P/LS, 2132130/.../L/LS
Column: SAL DL-10
Code: 42999/C45/C35
Signalling set: SAL 2xPP M0200
Code: 219902/A
Pedestrian signal button
Code: 219700
Road sign D-6



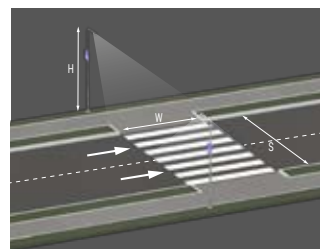
Single carriageway with two lanes

Parameters:
H - height: 5m
W - walkway width: 4 m
S - road width: 3m



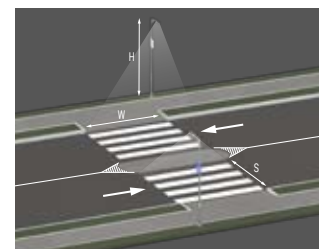
Dual carriageway with two lanes

Parameters:
H - height: 5m
W - walkway width: 4 m
S - road width: 7m



Single carriageway with two lanes

Parameters:
H - height: 5m
W - walkway width: 4 m
S - road width: 7m

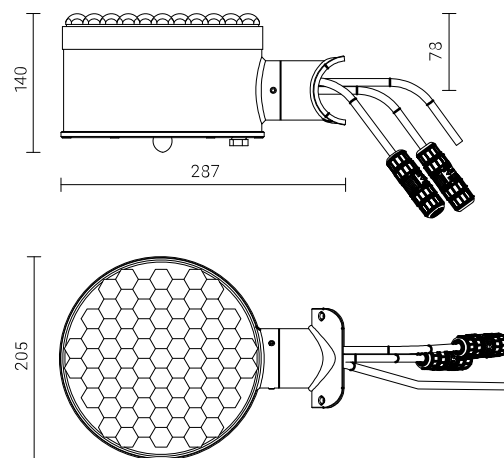


Single carriageway with two lanes

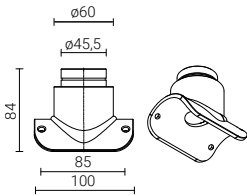
Parameters:
H - height: 5m
W - walkway width: 4 m
S - road width: 3m

Signalling set

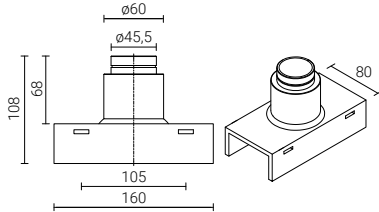
SAL PP M0200



Material: anodised aluminium alloy
Power supply: 230 VAC, 50 Hz
Operating temperature range: -30°C to +55°C
Protection class: IP 65
Battery energy storage: LiFePO4 cells, 12,8V 2,5Ah 32Wh
Maximum electric power: 30 W
Built-in battery charging power: 15 W
Communication: 2.4 GHz, range up to 300 m
Programmable warning lamp switching time:
10, 13, 16, 19, 22, 25, 28, 31, 34, 37s



Mounting A
bracket provided for mounting on a column
with a diameter of $\varnothing 60$ using ST6.3x19 screws
(recommended for mounting on a SAL DL-10
column).

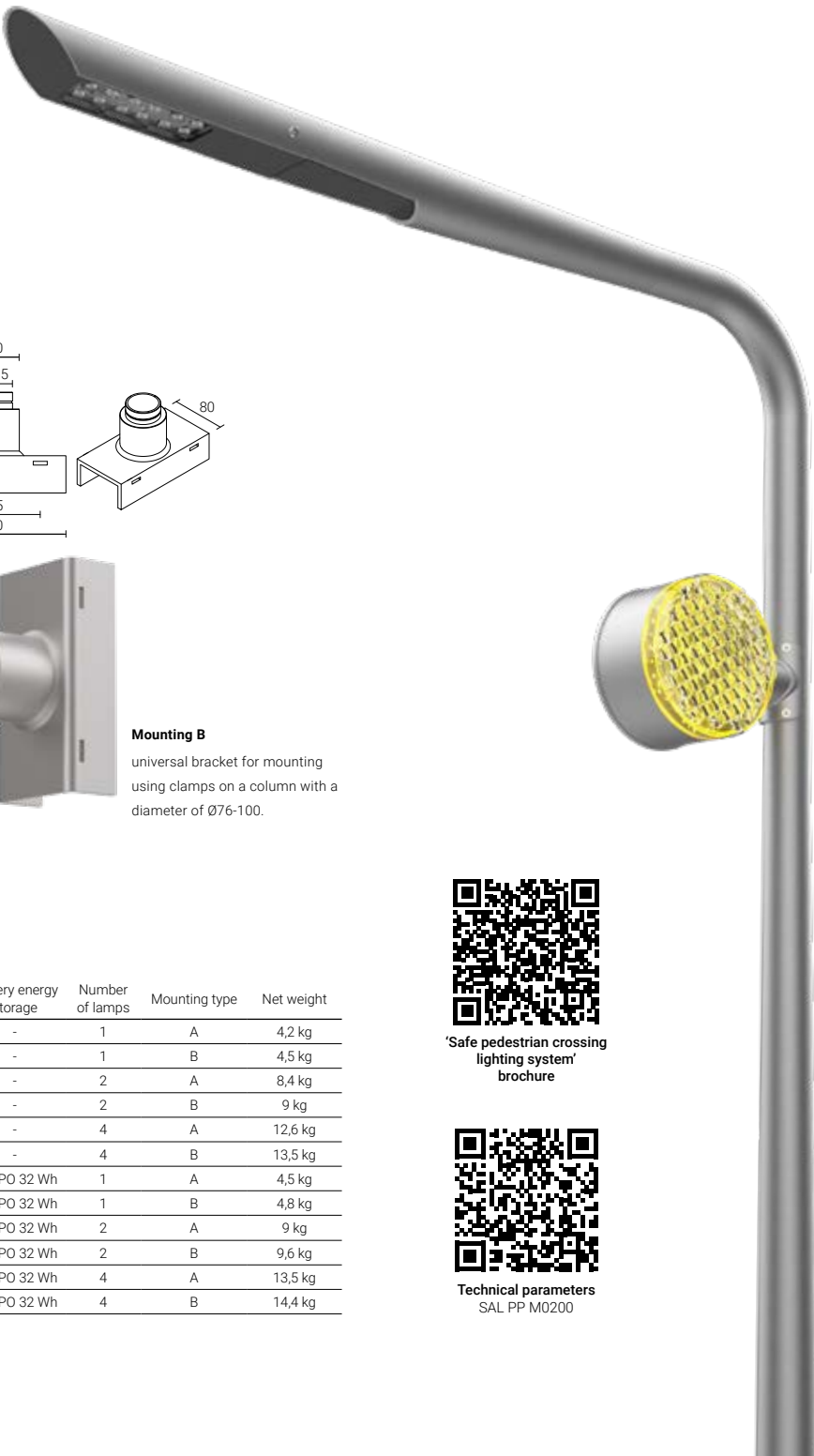


Mounting B
universal bracket for mounting
using clamps on a column with a
diameter of $\varnothing 76-100$.



Code	Symbol	Battery energy storage	Number of lamps	Mounting type	Net weight
219901/A/C...	Signalling set SAL PP M0200	-	1	A	4,2 kg
219901/B/C...	Signalling set SAL PP M0200	-	1	B	4,5 kg
219902/A/C...	Signalling set SAL 2xPP M0200	-	2	A	8,4 kg
219902/B/C...	Signalling set SAL 2xPP M0200	-	2	B	9 kg
219904/A/C...	Signalling set SAL 4xPP M0200	-	4	A	12,6 kg
219904/B/C...	Signalling set SAL 4xPP M0200	-	4	B	13,5 kg
219801/A/C...	Signalling set SAL PP M0200 AKU	LiFePO 32 Wh	1	A	4,5 kg
219801/B/C...	Signalling set SAL PP M0200 AKU	LiFePO 32 Wh	1	B	4,8 kg
219802/A/C...	Signalling set SAL 2xPP M0200 AKU	LiFePO 32 Wh	2	A	9 kg
219802/B/C...	Signalling set SAL 2xPP M0200 AKU	LiFePO 32 Wh	2	B	9,6 kg
219804/A/C...	Signalling set SAL 4xPP M0200 AKU	LiFePO 32 Wh	4	A	13,5 kg
219804/B/C...	Signalling set SAL 4xPP M0200 AKU	LiFePO 32 Wh	4	B	14,4 kg

/C... – choice of anodising colour



'Safe pedestrian crossing
lighting system'
brochure



Technical parameters
SAL PP M0200

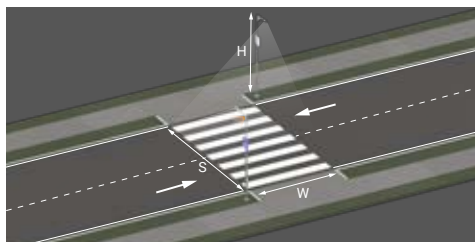
LED luminaires

ISKRA LED P / ISKRA LED P PROG

For pedestrian crossings



Lighting examples



Single carriageway
two-way traffic

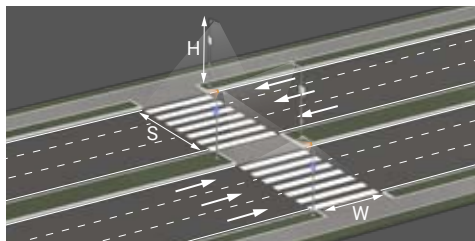
ISKRA LED P + SAL DL10

Parameters:

H - height: 5m

W - walkway width: 4 m

S - road width: 7m



Dual carriageway
with three lanes

ISKRA LED P + SAL DL10

Parameters:

H - height: 6m

W - walkway width: 4m

S - road width: 10,5m

Application: pedestrian crossing

Installation: on extension arms with 60x90 mm ending

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: inox / black

Optical system: PMMA optics

Number of LEDs: 12

Operating temperature range: from -40°C to +55°C (for 36 W), from -40°C to +40°C (for 45 W)

Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

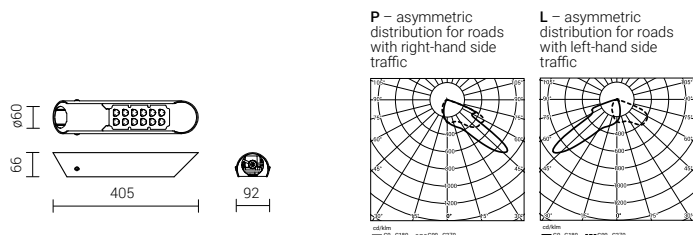
Unit volume: 0,005 m³

Input voltage frequency: 50/60 Hz

Power factor: $\geq 0,95$

Luminaire ISKRA LED P optionally has the possibility, to connect to an external control system via analogue signal 1 10 V.

Luminaire ISKRA LED P PROG has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
2132032/1/...	ISKRA LED P 36	36 W	39,5 W	960 mA	2 700 K	2,1 kg
2132032/3/...	ISKRA LED P 36	36 W	39,5 W	960 mA	3 500 K	2,1 kg
2132032/4/...	ISKRA LED P 36	36 W	39,5 W	960 mA	4 000 K	2,1 kg
2132032/6/...	ISKRA LED P 36	36 W	39,5 W	960 mA	5 000 K	2,1 kg
2132045/1/...	ISKRA LED P 45	45 W	52 W	1250 mA	2 700 K	2,1 kg
2132045/3/...	ISKRA LED P 45	45 W	52 W	1250 mA	3 500 K	2,1 kg
2132045/4/...	ISKRA LED P 45	45 W	52 W	1250 mA	4 000 K	2,1 kg
2132045/6/...	ISKRA LED P 45	45 W	52 W	1250 mA	5 000 K	2,1 kg
21320132/1/...	ISKRA LED P 36 PROG	36 W	40 W	1 000 mA	2 700 K	2 kg
21320132/3/...	ISKRA LED P 36 PROG	36 W	40 W	1 000 mA	3 500 K	2 kg
21320132/4/...	ISKRA LED P 36 PROG	36 W	40 W	1 000 mA	4 000 K	2 kg
21320132/6/...	ISKRA LED P 36 PROG	36 W	40 W	1 000 mA	5 000 K	2 kg

/... Symbol of selected optical system



Technical parameters



Technical parameters

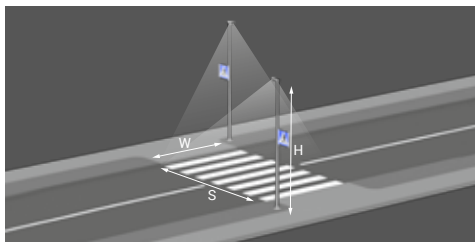
LED luminaires

ISKRA LED P ALFA / ISKRA LED P ALFA PROG

For pedestrian crossings



Lighting examples



Lighting for pedestrian crossings 7x4 m
– single carriageway two-way traffic

ISKRA LED P 36 W ALFA

Parameters:

H – luminaire mounting height: 5 m

W – walkway width – 4 m

S – road width – 7 m

Application: pedestrian crossing

Installation: on extension arms with ø60x50 mm ending

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: inox / black

Optical system: PMMA optics

Number of LEDs: 12

Operating temperature range: from -40°C to +55°C (for 36 W), from -40°C to +40°C (for 45 W)

Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

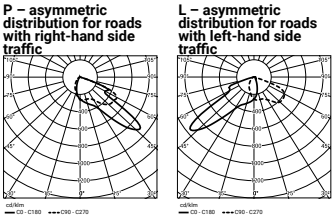
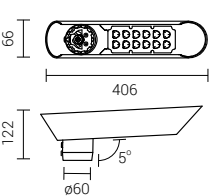
Unit volume: 0,01 m³

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

Luminaire ISKRA LED P ALFA optionally has the possibility, to connect to an external control system via analogue signal 1 10 V.

Luminaire ISKRA LED P PROG ALFA has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
2133032/1/...	ISKRA LED P 36 ALFA	36 W	39,5 W	960 mA	2 700 K	2,5 kg
2133032/3/...	ISKRA LED P 36 ALFA	36 W	39,5 W	960 mA	3 500 K	2,5 kg
2133032/4/...	ISKRA LED P 36 ALFA	36 W	39,5 W	960 mA	4 000 K	2,5 kg
2133032/6/...	ISKRA LED P 36 ALFA	36 W	39,5 W	960 mA	5 000 K	2,5 kg
2133045/1/...	ISKRA LED P 45 ALFA	45 W	52 W	1250 mA	2 700 K	2,5 kg
2133045/3/...	ISKRA LED P 45 ALFA	45 W	52 W	1250 mA	3 500 K	2,5 kg
2133045/4/...	ISKRA LED P 45 ALFA	45 W	52 W	1250 mA	4 000 K	2,5 kg
2133045/6/...	ISKRA LED P 45 ALFA	45 W	52 W	1250 mA	5 000 K	2,5 kg
21330132/1/...	ISKRA LED P 36 ALFA PROG	36 W	40 W	1 000 mA	2 700 K	2,2 kg
21330132/3/...	ISKRA LED P 36 ALFA PROG	36 W	40 W	1 000 mA	3 500 K	2,2 kg
21330132/4/...	ISKRA LED P 36 ALFA PROG	36 W	40 W	1 000 mA	4 000 K	2,2 kg
21330132/6/...	ISKRA LED P 36 ALFA PROG	36 W	40 W	1 000 mA	5 000 K	2,2 kg

/... Symbol of selected optical system



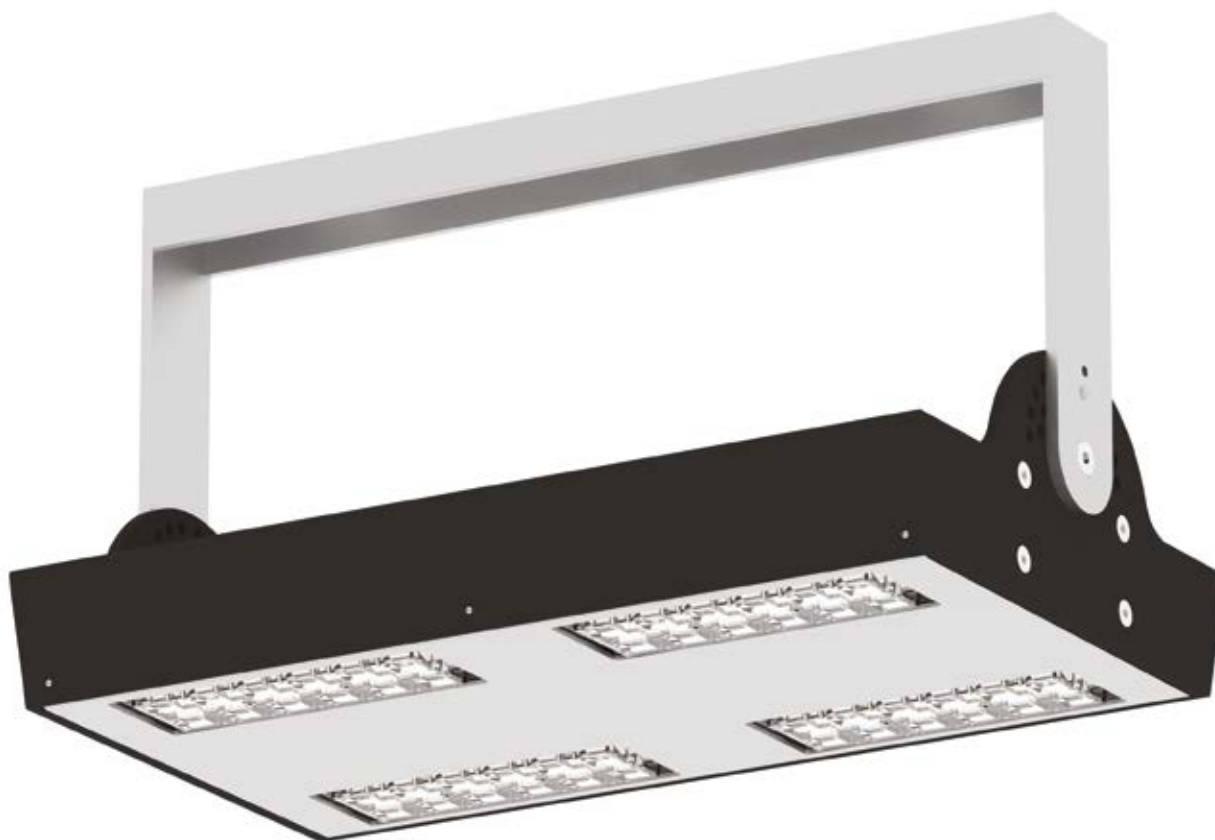
Technical parameters
ISKRA LED P ALFA



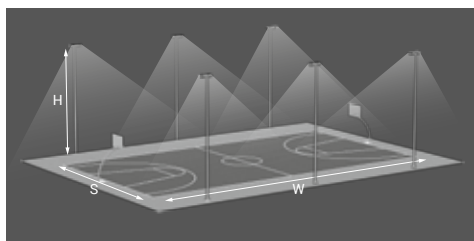
Technical parameters
ISKRA LED P ALFA PROG

LED luminaires

ARTEMIS LED



Lighting examples



Sports field

ARTEMIS LED 144 W

Parameters:

H – luminaire mounting height: 12 m

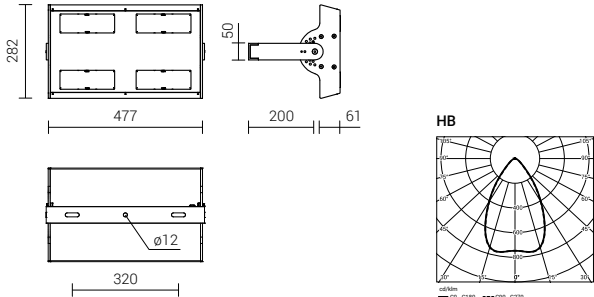
W – court length: – 28 m

S – court width: 15 m

Number of luminaires – 12

Average illuminance: Eav – 200 lx

Application: industrial halls, sport facilities, car parks,
Installation: suspended or on WN type extension arms
Protection class: IP 66 for the optical part and the power supply system
Material: anodised aluminium alloy
Colour: inox / black
Optical system: PMMA optics, interchangeable LED module
Number of LEDs: 48
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,022 m³
Input voltage frequency: 50/60 Hz
Power factor: ≥ 0,95
 Luminaire ARTEMIS LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
229041/1	ARTEMIS LED 144	144 W	154 W	1 000 mA	2 700 K	8,7 kg
229041/3	ARTEMIS LED 144	144 W	154 W	1 000 mA	3 500 K	8,7 kg
229041/4	ARTEMIS LED 144	144 W	154 W	1 000 mA	4 000 K	8,7 kg
229041/6	ARTEMIS LED 144	144 W	154 W	1 000 mA	5 000 K	8,7 kg



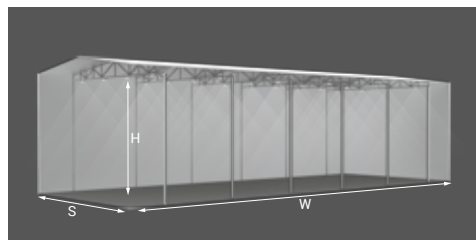
Technical parameters
ARTEMIS LED



LED luminaires

ISKRA LED LB

Lighting examples



Industrial hall

ISKRA LED LB 80 W

Parameters:

H – luminaire mounting height: 10 m

W – hall length: 40 m

S – hall width: 15 m

Number of luminaires: 24

Average illuminance: Eav – 300 lx



Application: industrial halls, tunnels, and underground passages

Installation: suspended or on WN-1, WN-2 extension arms, adjustable mounting in the range of 0-45°, smooth regulation

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: inox / black

Optical system: PMMA optics

Number of LEDs: 12 (for 36 W) 24 (for 80 W)

Expected useful lifetime: L90B10 - 100 000 h

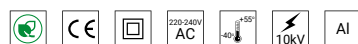
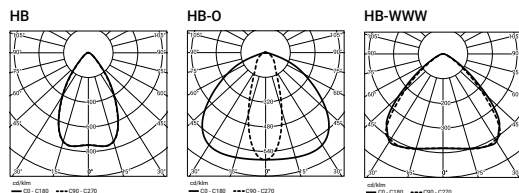
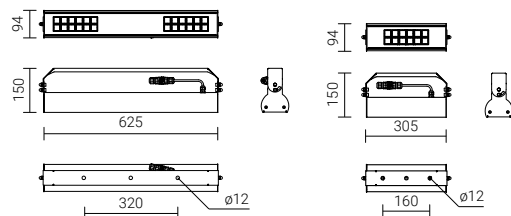
CRI: >70

Unit volume: 0,01 m³ (for 36 W), 0,02 m³ (for 80 W)

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

Luminaire ISKRA LED LB optionally has the possibility, to connect to an external control system via analogue signal 1 10 V.



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
230632/1/...	ISKRA LED LB 36	36 W	39,5 W	960 mA	2 700 K	2,5 kg
230632/3/...	ISKRA LED LB 36	36 W	39,5 W	960 mA	3 500 K	2,5 kg
230632/4/...	ISKRA LED LB 36	36 W	39,5 W	960 mA	4 000 K	2,5 kg
230632/6/...	ISKRA LED LB 36	36 W	39,5 W	960 mA	5 000 K	2,5 kg
230752/1/...	ISKRA LED LB 80	80 W	86 W	1075 mA	2 700 K	3,8 kg
230752/3/...	ISKRA LED LB 80	80 W	86 W	1075 mA	3 500 K	3,8 kg
230752/4/...	ISKRA LED LB 80	80 W	86 W	1075 mA	4 000 K	3,8 kg
230752/6/...	ISKRA LED LB 80	80 W	86 W	1075 mA	5 000 K	3,8 kg

/... Symbol of selected optical system



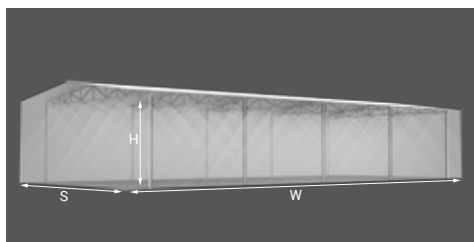
Technical parameters
ISKRA LED LB

LED luminaires

ISKRA LED HB



Lighting examples



Industrial hall

ISKRA LED LB 180 W

Parameters:

H – luminaire mounting height: 12 m

W – hall length: 80 m

S – hall width: 30 m

number of luminaires: 60

Average illuminance: Eav – 500 lx

Application: Industrial halls

Installation: suspended

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: inox / black

Optical system: PMMA optics

Number of LEDs: 48

Expected useful lifetime: L90B10 - 100 000 h

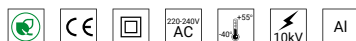
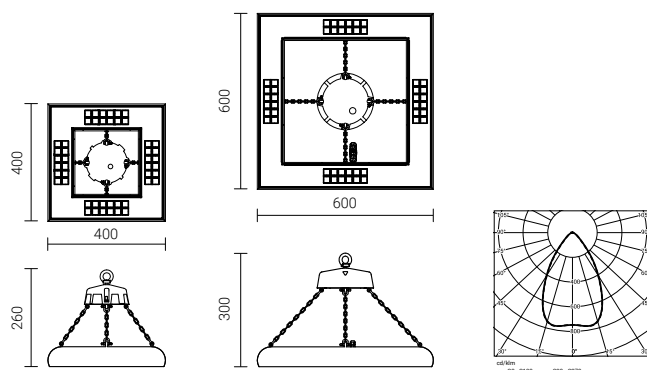
CRI: >70

Unit volume: 0,02 m³ (for 120 W); 0,03 m³ (for 180 W)

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

Luminaire ISKRA LED HB optionally has the possibility, to connect to an external control system via analogue signal 1 10 V.

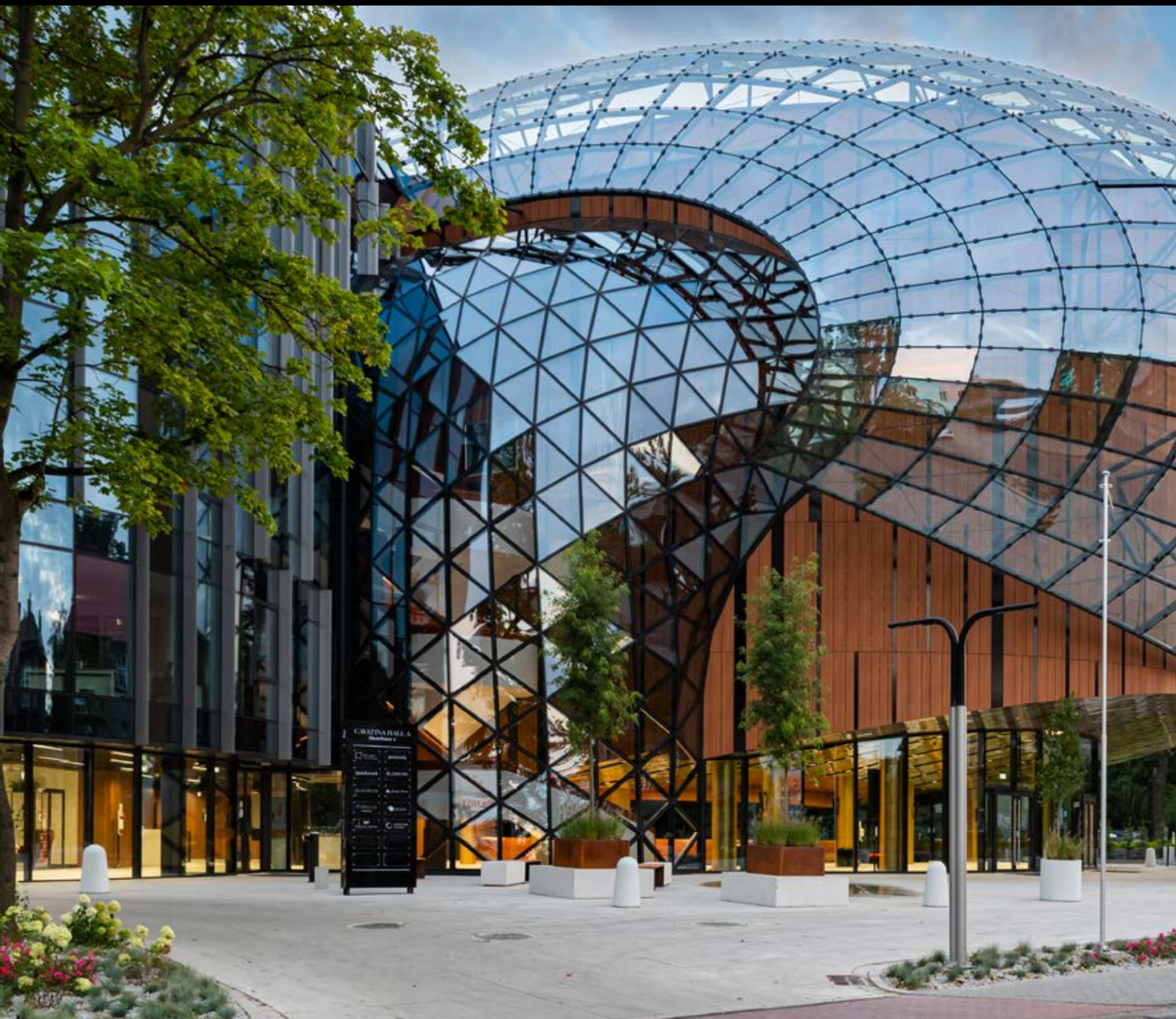


Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
231039/1	ISKRA LED HB 120	120 W	135 W	825 mA	2 700 K	7,7 kg
231039/3	ISKRA LED HB 120	120 W	135 W	825 mA	3 500 K	7,7 kg
231039/4	ISKRA LED HB 120	120 W	135 W	825 mA	4 000 K	7,7 kg
231039/6	ISKRA LED HB 120	120 W	135 W	825 mA	5 000 K	7,7 kg
231144/1	ISKRA LED HB 180	180 W	200 W	1250 mA	2 700 K	15 kg
231144/3	ISKRA LED HB 180	180 W	200 W	1250 mA	3 500 K	15 kg
231144/4	ISKRA LED HB 180	180 W	200 W	1250 mA	4 000 K	15 kg
231144/6	ISKRA LED HB 180	180 W	200 W	1250 mA	5 000 K	15 kg



Technical parameters
ISKRA LED HB

/... Symbol of selected optical system



Cavatina Hall
Bielsko-Biala, Poland



First District
Katowice, Poland







Nadmotławie Apartments
Gdańsk, Poland





Energetic Garden of Experiences
Kielce, Poland







High5vie Office Complex
Cracow, Poland



Dorzecze Legnickiej residential area
Wrocław, Poland





DOT Office
Cracow, Poland



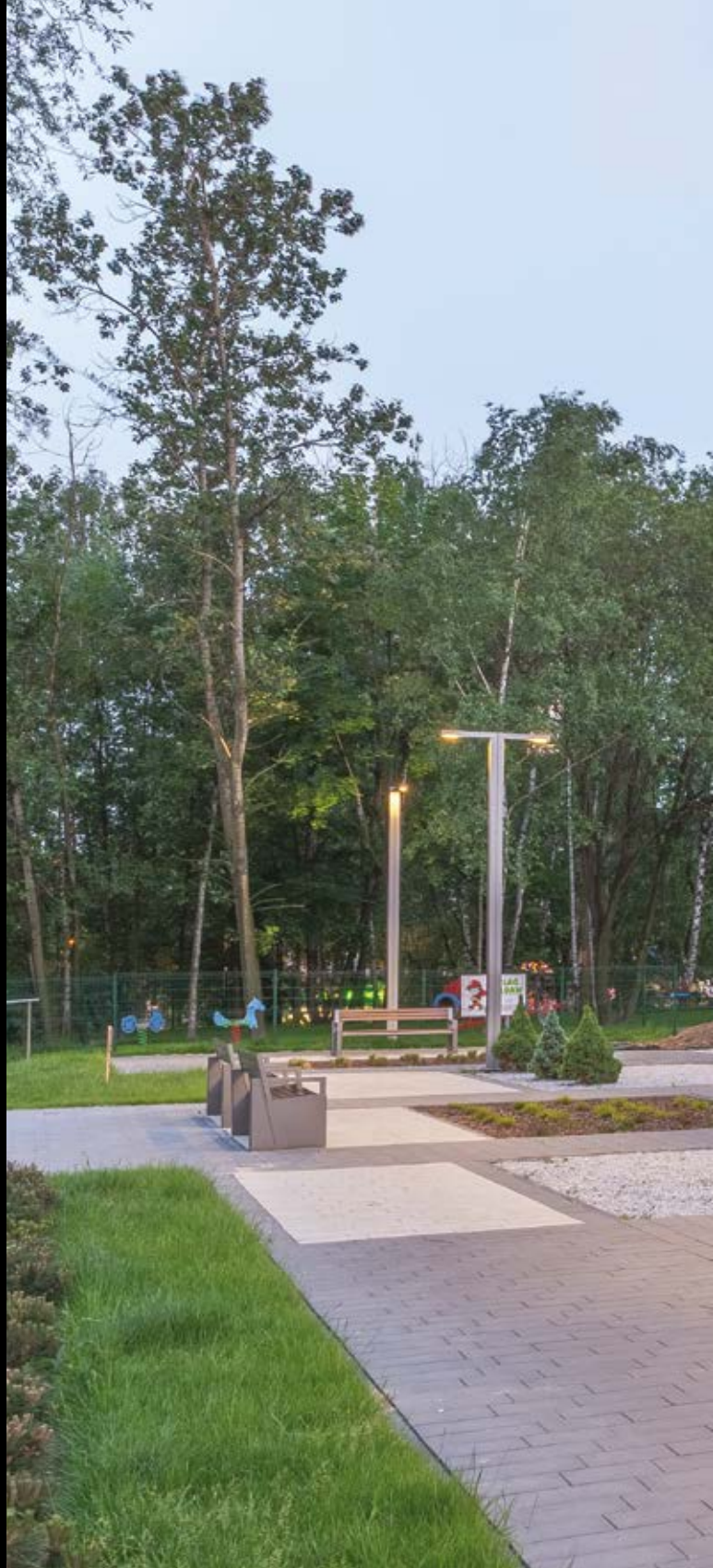
Orlen Arena
Plock, Poland



Museum of the Masovian Countryside
Sierpc, Poland



Zawisza Czarny Square
Katowice, Poland

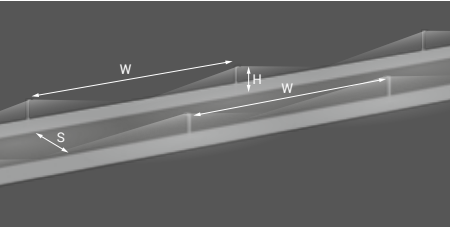




LED lighting sets and columns

CUT-1 LED

Lighting examples



Pavement

CUT-1

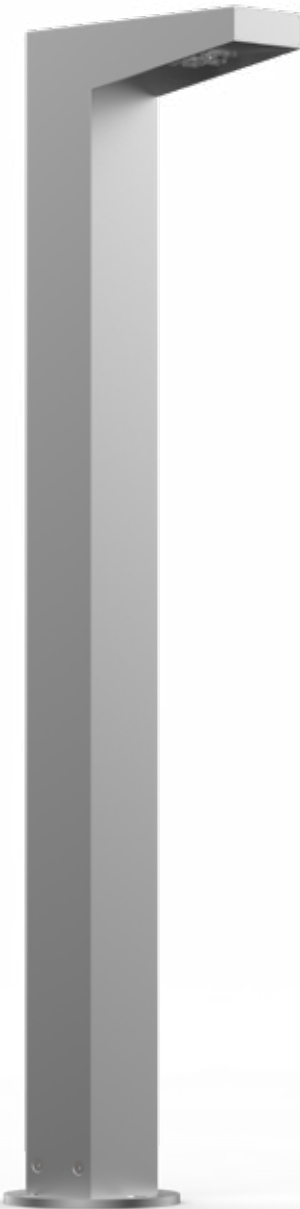
Parameters:

H – lighting sets height: 1 m

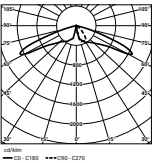
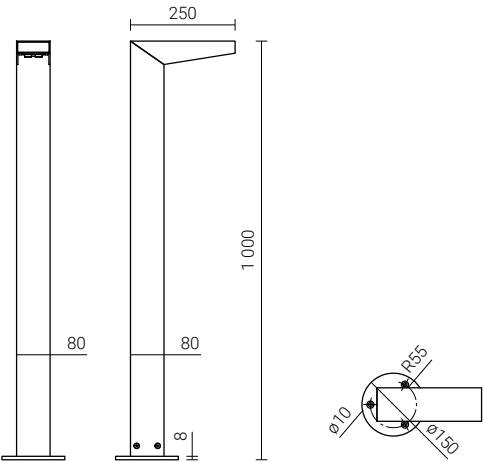
W – column spacing: 12 m

S – pavement width: 3 m

Tychy, Poland



Application: office buildings' surroundings, parks, pedestrian routes,
Protection class: IP 66 for the optical part and the power supply system
Material: anodised aluminium alloy
Anodising: 10 colours
Number of LEDs: 4
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,0225 m³
Input voltage frequency: 50/60 Hz



Code	Symbol	Height	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Concrete footing / reinforcement basket
45340/1/C...	CUT-1 LED	1 000 mm	8 W	12 W	700 mA	2 700 K	5,2 kg	B-0A / Z-0A
45340/3/C...	CUT-1 LED	1 000 mm	8 W	12 W	700 mA	3 500 K	5,2 kg	B-0A / Z-0A
45340/4/C...	CUT-1 LED	1 000 mm	8 W	12 W	700 mA	4 000 K	5,2 kg	B-0A / Z-0A
45340/6/C...	CUT-1 LED	1 000 mm	8 W	12 W	700 mA	5 000 K	5,2 kg	B-0A / Z-0A

/C... - choice of anodising colour



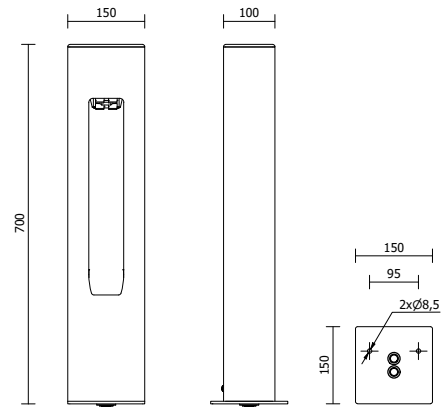
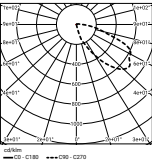
Technical parameters
CUT-1 LED

LED lighting sets and columns

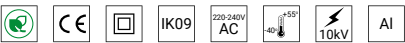
SIMPLE CUT LED



Application: office buildings' surroundings, parks, pedestrian routes,
Protection class: IP 66 for the optical part and the power supply system
Material: anodised aluminium alloy
Number of LEDs: 4
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,022 m³
Input voltage frequency: 50/60 Hz



Technical parameters
SIMPLE CUT LED



Code	Symbol	Height	LED power	Luminaire power consumption	Colour temperature	Net weight	Concrete footing / reinforcement basket
215908/1	SIMPLE CUT LED 8	700 mm	8 W	12 W	2 700 K	5,6 kg	B-0A / Z-0A
215908/3	SIMPLE CUT LED 8	700 mm	8 W	12 W	3 500 K	5,6 kg	B-0A / Z-0A
215908/4	SIMPLE CUT LED 8	700 mm	8 W	12 W	4 000 K	5,6 kg	B-0A / Z-0A
215908/6	SIMPLE CUT LED 8	700 mm	8 W	12 W	5 000 K	5,6 kg	B-0A / Z-0A

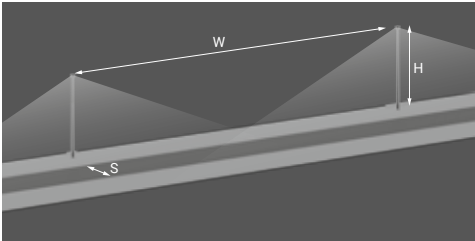


LED lighting sets and columns

RING MINI LED



Lighting examples



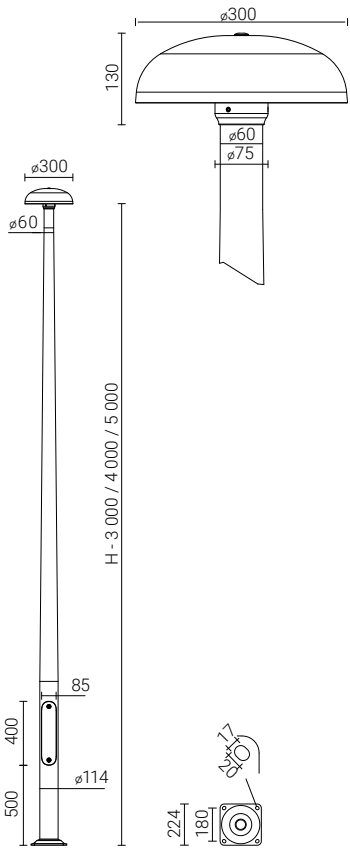
Pavement

RING MINI 5 LED 24W, SP optics

Parameters:

- H – height: 5 m
- W – column spacing: 31,5 m
- S – pavement width: 3 m

Lighting class P3



Application: office buildings' surroundings, parks, pedestrian routes, car parks,

Protection class: IP 66

Anodising: 10 colours

Material: cap – formed aluminium sheet, anodised;

diffuser – tempered glass;

base – anodised aluminium alloy;

column – anodised aluminium alloy;

Number of LEDs: 64

Expected useful lifetime: L90B10 - 100 000 h

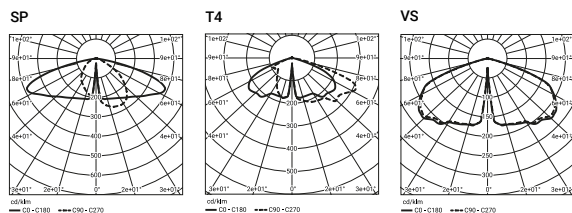
CRI: >70

Unit volume: 0,068 m³

Input voltage frequency: 50/60 Hz

Power factor: ≥0.95

Lighting set RING MINI LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	Height H	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
21173027/1/.../C...	RING MINI 3 LED 12	3 m	12 W	14 W	540 mA	2 700 K	12.3 kg
21173027/3/.../C...	RING MINI 3 LED 12	3 m	12 W	14 W	540 mA	3 500 K	12.3 kg
21173027/4/.../C...	RING MINI 3 LED 12	3 m	12 W	14 W	540 mA	4 000 K	12.3 kg
21173030/1/.../C...	RING MINI 3 LED 24	3 m	24 W	28 W	1025 mA	2 700 K	12.3 kg
21173030/3/.../C...	RING MINI 3 LED 24	3 m	24 W	28 W	1025 mA	3 500 K	12.3 kg
21173030/4/.../C...	RING MINI 3 LED 24	3 m	24 W	28 W	1025 mA	4 000 K	12.3 kg
21174027/1/.../C...	RING MINI 4 LED 12	4 m	12 W	14 W	540 mA	2 700 K	14.5 kg
21174027/3/.../C...	RING MINI 4 LED 12	4 m	12 W	14 W	540 mA	3 500 K	14.5 kg
21174027/4/.../C...	RING MINI 4 LED 12	4 m	12 W	14 W	540 mA	4 000 K	14.5 kg
21174030/1/.../C...	RING MINI 4 LED 24	4 m	24 W	28 W	1025 mA	2 700 K	14.5 kg
21174030/3/.../C...	RING MINI 4 LED 24	4 m	24 W	28 W	1025 mA	3 500 K	14.5 kg
21174030/4/.../C...	RING MINI 4 LED 24	4 m	24 W	28 W	1025 mA	4 000 K	14.5 kg
21175027/1/.../C...	RING MINI 5 LED 12	5 m	12 W	14 W	540 mA	2 700 K	16.7 kg
21175027/3/.../C...	RING MINI 5 LED 12	5 m	12 W	14 W	540 mA	3 500 K	16.7 kg
21175027/4/.../C...	RING MINI 5 LED 12	5 m	12 W	14 W	540 mA	4 000 K	16.7 kg
21175030/1/.../C...	RING MINI 5 LED 24	5 m	24 W	28 W	1025 mA	2 700 K	16.7 kg
21175030/3/.../C...	RING MINI 5 LED 24	5 m	24 W	28 W	1025 mA	3 500 K	16.7 kg
21175030/4/.../C...	RING MINI 5 LED 24	5 m	24 W	28 W	1025 mA	4 000 K	16.7 kg

/.../ – Symbol of selected optical system /C... – choice of anodising colour



Technical parameters
RING MINI LED



LINE I LED

A 3D perspective diagram of a cable-stayed bridge. Two vertical pylars support a bridge deck. A cable of length W connects the two pylars. The height of the right pillar is H . The horizontal distance from the left pillar to the point where the cable meets the deck is S_2 . The horizontal distance from the right pillar to the point where the cable meets the deck is S_1 . The bridge deck is shown with a dashed line indicating its centerline.

LINE I LED 36 W, LW optics

H – lighting sets height: 6 m
W – column spacing: 30 m
S1 – pavement width: 2 m
S2 – road width: 7 m

LINE I-4 LED
LINE I-5 LED

LINE I-6 LED
LINE I-7 LED
LINE I-8 LED



Application: residential streets, office buildings' surroundings, parks, pedestrian routes, car parks, urban roads

Protection class: IP 66 for the optical part and the power supply system

Anodising: 10 colours

Material: anodised aluminium alloy
diffuser – tempered glass

Optical system: PMMA optics, interchangeable LED module,
tempered glass diffuser

Number of LEDs: 16

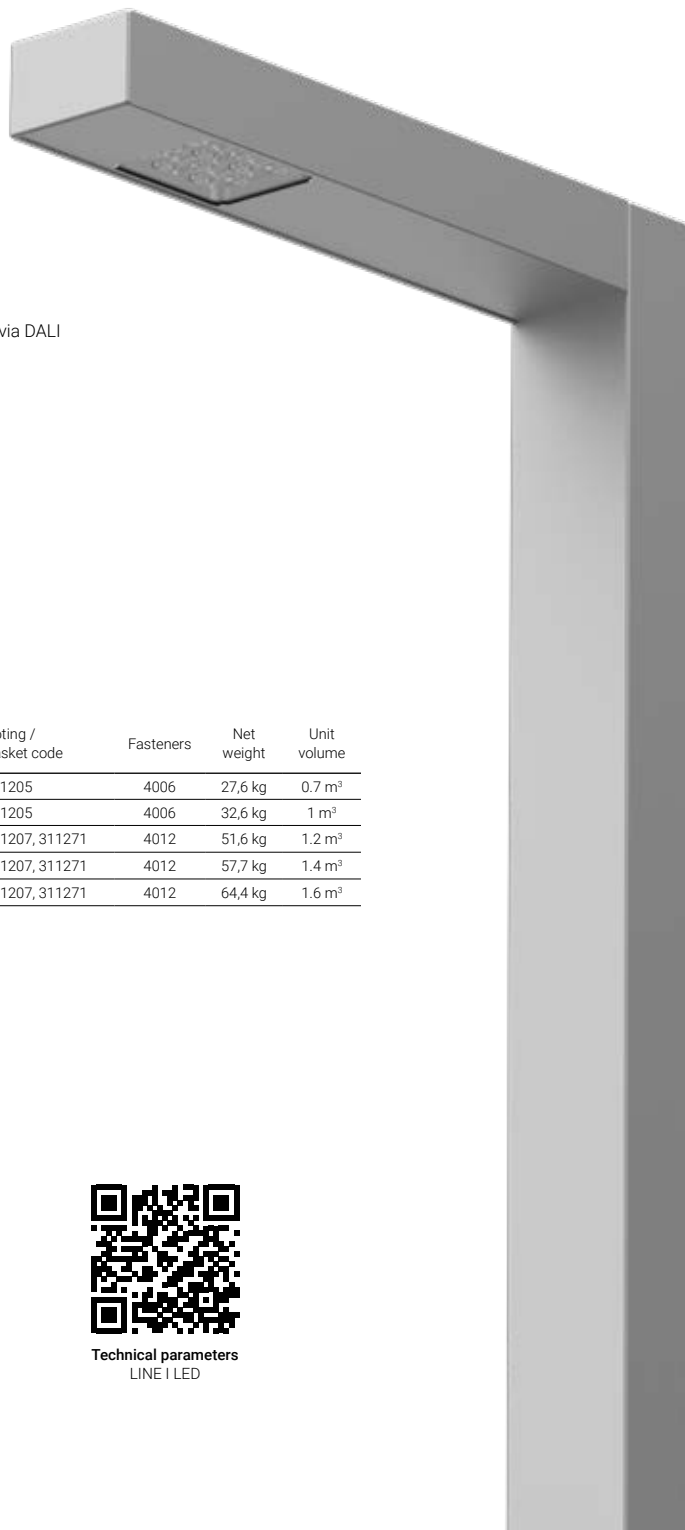
Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

Input voltage frequency: 50/60 Hz

Power factor: ≥0.95

Lighting set LINE I LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code example

2140400/30/1/DW/C45/10kV

Arm
height
#1 - H

Power of
the arm #1

Choice of anodising
colour

TABLE OF VARIANTS - HEIGHTS

Symbol	Height H	Base dimension	Concrete footing / reinforcement basket	Concrete footing / reinforcement basket code	Fasteners	Net weight	Unit volume
LINE I LED	4 m	224 / 180 / 8	B-50 / Z-50	311150 / 311205	4006	27,6 kg	0.7 m³
LINE I LED	5 m	224 / 180 / 8	B-50 / Z-50	311150 / 311205	4006	32,6 kg	1 m³
LINE I LED	6 m	400 / 300 / 12	B-70, B-71 / Z-70, Z-71	311170, 311171 / 311207, 311271	4012	51,6 kg	1.2 m³
LINE I LED	7 m	400 / 300 / 12	B-70, B-71 / Z-70, Z-71	311170, 311171 / 311207, 311271	4012	57,7 kg	1.4 m³
LINE I LED	8 m	400 / 300 / 12	B-70, B-71 / Z-70, Z-71	311170, 311171 / 311207, 311271	4012	64,4 kg	1.6 m³

TABLE OF VARIANTS - HEIGHTS

Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature
30/1/...	LINE I LED 24W	24 W	26 W	500 mA	2 700 K
30/3/...	LINE I LED 24W	24 W	26 W	500 mA	3 500 K
30/4/...	LINE I LED 24W	24 W	26 W	500 mA	4 000 K
30/6/...	LINE I LED 24W	24 W	26 W	500 mA	5 000 K
32/1/...	LINE I LED 36W	36 W	39 W	750 mA	2 700 K
32/3/...	LINE I LED 36W	36 W	39 W	750 mA	3 500 K
32/4/...	LINE I LED 36W	36 W	39 W	750 mA	4 000 K
32/6/...	LINE I LED 36W	36 W	39 W	750 mA	5 000 K
33/1/...	LINE I LED 48W	48 W	54 W	1 000 mA	2 700 K
33/3/...	LINE I LED 48W	48 W	54 W	1 000 mA	3 500 K
33/4/...	LINE I LED 48W	48 W	54 W	1 000 mA	4 000 K
33/6/...	LINE I LED 48W	48 W	54 W	1 000 mA	5 000 K

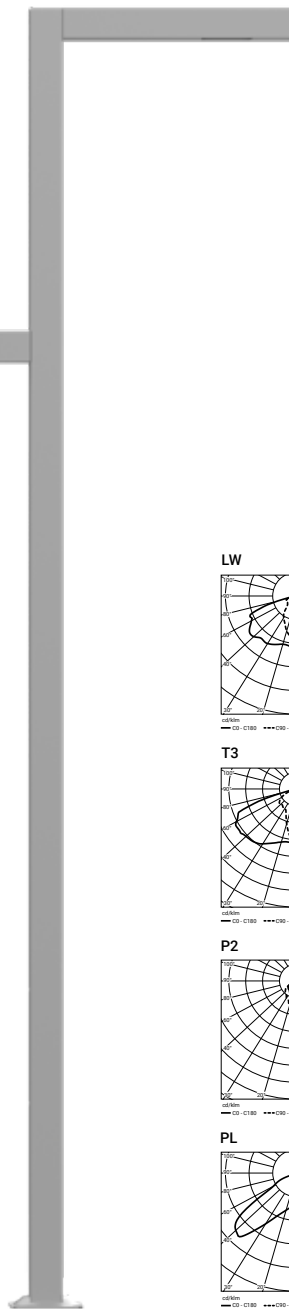


Technical parameters
LINE I LED

/... Symbol of selected optical system

LINE II LED

Lighting class P1



Application: (internal) residential roads, office building surroundings, parks, pedestrian routes, car parks, urban roads

Protection class: IP 66 for the optical part and the power supply system

Anodising: 10 colours

Material: anodised aluminium alloy
diffuser – tempered glass

Optical system: PMMA optics, interchangeable LED module,
tempered glass diffuser

Number of LEDs: 16

Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

Input voltage frequency: 50/60 Hz

Power factor: ≥0.95

Lighting set LINE II LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code example

2140440/30/1/DW/30/1/T3/C45/10kV

Arm height #1 - H	Power of the arm #1	Power of the arm #2	Choice of anodising colour
Arm height #2 - h			

TABLE OF VARIANTS - HEIGHTS

Symbol	Height H	Base dimension	Concrete footing / reinforcement basket	Concrete footing / reinforcement basket code	Fasteners	Net weight	Unit volume
LINE II LED	4 m	224 / 180 / 8	B-50 / Z-50	311150 / 311205	4006	33,4 kg	0.7 m³
LINE II LED	5 m	224 / 180 / 8	B-50 / Z-50	311150 / 311205	4006	38,5 kg	1 m³
LINE II LED	6 m	400 / 300 / 12	B-70, B-71 / Z-70, Z-71	311170, 311171 / 311207, 311271	4012	57,3 kg	1.2 m³
LINE II LED	7 m	400 / 300 / 12	B-70, B-71 / Z-70, Z-71	311170, 311171 / 311207, 311271	4012	63,9 kg	1.4 m³
LINE II LED	8 m	400 / 300 / 12	B-70, B-71 / Z-70, Z-71	311170, 311171 / 311207, 311271	4012	70,5 kg	1.6 m³

TABLE OF VARIANTS - HEIGHTS

Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature
30/1/...	LINE II LED 24W	24 W	26 W	500 mA	2 700 K
30/3/...	LINE II LED 24W	24 W	26 W	500 mA	3 500 K
30/4/...	LINE II LED 24W	24 W	26 W	500 mA	4 000 K
30/6/...	LINE II LED 24W	24 W	26 W	500 mA	5 000 K
32/1/...	LINE II LED 36W	36 W	39 W	750 mA	2 700 K
32/3/...	LINE II LED 36W	36 W	39 W	750 mA	3 500 K
32/4/...	LINE II LED 36W	36 W	39 W	750 mA	4 000 K
32/6/...	LINE II LED 36W	36 W	39 W	750 mA	5 000 K
33/1/...	LINE II LED 48W	48 W	54 W	1 000 mA	2 700 K
33/3/...	LINE II LED 48W	48 W	54 W	1 000 mA	3 500 K
33/4/...	LINE II LED 48W	48 W	54 W	1 000 mA	4 000 K
33/6/...	LINE II LED 48W	48 W	54 W	1 000 mA	5 000 K

/... Symbol of selected optical system

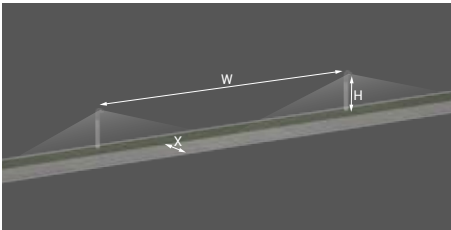


Technical parameters
LINE II LED

LED lighting sets and columns

SNAKE I LED

Lighting examples



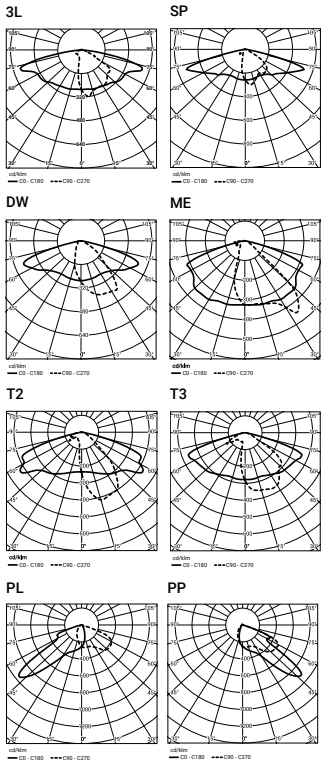
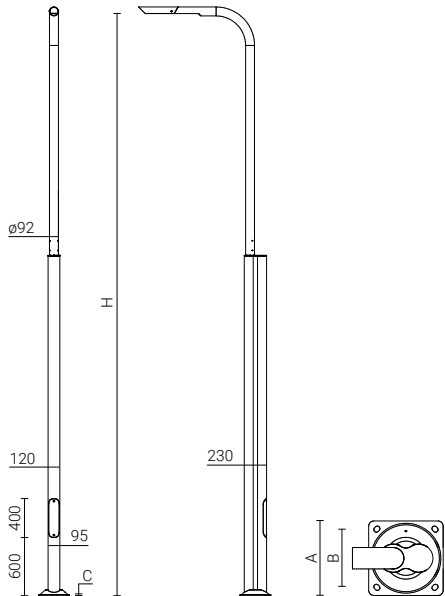
Pavement

SNAKE I LED 12 W, 3L optics

Parameters:

- H - height - 4 m
- W - column spacing - 36 m
- X - pavement width - 4 m

Lighting class: P5



Application: pedestrian routes, urban roads, residential streets, parks, office buildings' surroundings, car parks,

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: inox / black

Optical system: PMMA optics

Number of LEDs: 12

Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

Input voltage frequency: 50/60 Hz

Power factor: ≥0.95

Lighting set SNAKE I LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code example

2160100/32/3/T3

Arm
height - H

Power of
the arm

TABLE OF VARIANTS - HEIGHTS

Symbol	Height H	Base dimension A / B / C	Concrete footing / reinforcement basket	Concrete footing / reinforcement basket code	Fasteners	Net weight	Unit volume
SNAKE I LED	4,0m - 40	320 / 250 / 10	B-60 / Z-60	311160 / 311206	4008	39kg	0,55m³
SNAKE I LED	4,5m - 45	320 / 250 / 10	B-60 / Z-60	311160 / 311206	4008	45kg	0,60m³
SNAKE I LED	5,0m - 50	320 / 250 / 10	B-60 / Z-60	311160 / 311206	4008	47kg	0,67m³
SNAKE I LED	5,5m - 55	320 / 250 / 10	B-60 / Z-60	311160 / 311206	4008	52kg	0,73m³
SNAKE I LED	6,0m - 60	320 / 250 / 10	B-60 / Z-60	311160 / 311206	4008	56kg	0,79m³
SNAKE I LED	6,5m - 65	400 / 300 / 10	B-70, B-71 / Z-70, Z71	311170, 311171 / 311207, 311271	4012	59kg	0,81m³
SNAKE I LED	7,0m - 70	400 / 300 / 10	B-70, B-71 / Z-70, Z71	311170, 311171 / 311207, 311271	4012	64kg	0,90m³
SNAKE I LED	7,5m - 75	400 / 300 / 12	B-70, B-71 / Z-70, Z71	311170, 311171 / 311207, 311271	4012	68kg	0,96m³
SNAKE I LED	8,0m - 80	400 / 300 / 12	B-70, B-71 / Z-70, Z71	311170, 311171 / 311207, 311271	4012	70kg	1,02m³

TABLE OF VARIANTS - HEIGHTS

Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature
27/1/...	SNAKE I LED 12	12 W	14 W	350 mA	2 700 K
27/3/...	SNAKE I LED 12	12 W	14 W	350 mA	3 500 K
27/4/...	SNAKE I LED 12	12 W	14 W	350 mA	4 000 K
27/6/...	SNAKE I LED 12	12 W	14 W	350 mA	5 000 K
30/1/...	SNAKE I LED 24	24 W	28 W	700 mA	2 700 K
30/3/...	SNAKE I LED 24	24 W	28 W	700 mA	3 500 K
30/4/...	SNAKE I LED 24	24 W	28 W	700 mA	4 000 K
30/6/...	SNAKE I LED 24	24 W	28 W	700 mA	5 000 K
32/1/...	SNAKE I LED 36	36 W	40 W	1 000 mA	2 700 K
32/3/...	SNAKE I LED 36	36 W	40 W	1 000 mA	3 500 K
32/4/...	SNAKE I LED 36	36 W	40 W	1 000 mA	4 000 K
32/6/...	SNAKE I LED 36	36 W	40 W	1 000 mA	5 000 K

/... Symbol of selected optical system

3L optics available for ISKRA LED 12 W luminaire power only.

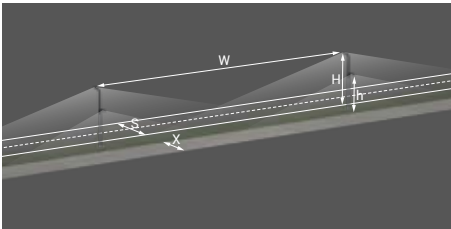


Technical parameters
SNAKE I LED

LED lighting sets and columns

SNAKE II LED

Lighting examples



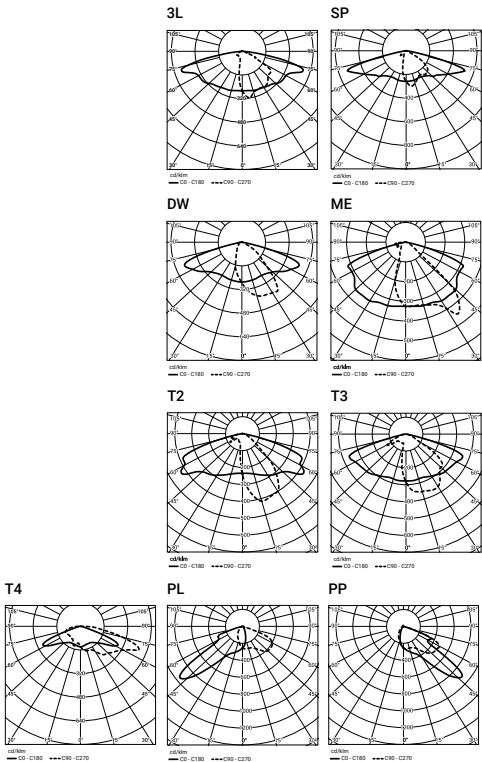
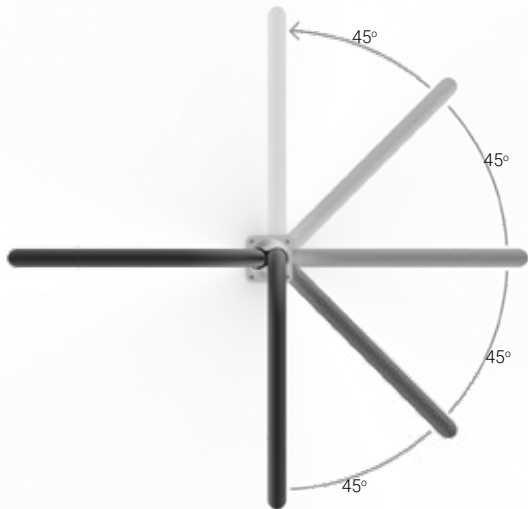
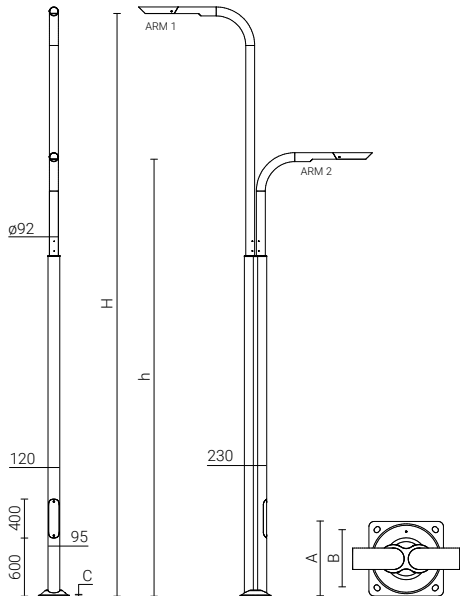
Single carriageway with two lanes + pavement

SNAKE II LED 24 W, DW optics / 12 W, SP optics

Parameters:

- H - height, ARM #1: 7 m
- h - height, ARM #2: 5 m
- W - column spacing - 30 m
- X - pavement width - 4 m
- S - road width - 6 m

Lighting class:
C4 - Single carriageway
P2 - Pavement



Application: pedestrian routes, urban roads, residential streets, parks, office buildings' surroundings, car parks,

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: inox / black

Optical system: PMMA optics

Number of LEDs: 2x12

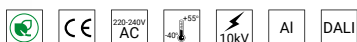
Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

Input voltage frequency: 50/60 Hz

Power factor: ≥0.95

Lighting set SNAKE II LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code example

2160140/32/3/T3/30/4/T2

Arm height #1 - H	Arm height #2 - h	Power of the arm #1	Power of the arm #2
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TABLE OF VARIANTS - HEIGHTS

Symbol	Height H	Base dimension A / B / C	Concrete footing / reinforcement basket	Concrete footing / reinforcement basket code	Fasteners	Net weight	Unit volume
SNAKE II LED	4,0m - 40	320 / 250 / 10	B-60 / Z-60	311160 / 311206	4008	42kg	0,70m³
SNAKE II LED	4,5m - 45	320 / 250 / 10	B-60 / Z-60	311160 / 311206	4008	47kg	0,76m³
SNAKE II LED	5,0m - 50	320 / 250 / 10	B-60 / Z-60	311160 / 311206	4008	52kg	0,81m³
SNAKE II LED	5,5m - 55	320 / 250 / 10	B-60 / Z-60	311160 / 311206	4008	57kg	0,87m³
SNAKE II LED	6,0m - 60	320 / 250 / 10	B-60 / Z-60	311160 / 311206	4008	63kg	0,94m³
SNAKE II LED	6,5m - 65	400 / 300 / 10	B-70, B-71 / Z-70, Z71	311170, 311171 / 311207, 311271	4012	67kg	1,01m³
SNAKE II LED	7,0m - 70	400 / 300 / 10	B-70, B-71 / Z-70, Z71	311170, 311171 / 311207, 311271	4012	72kg	1,06m³
SNAKE II LED	7,5m - 75	400 / 300 / 12	B-70, B-71 / Z-70, Z71	311170, 311171 / 311207, 311271	4012	77kg	1,12m³
SNAKE II LED	8,0m - 80	400 / 300 / 12	B-70, B-71 / Z-70, Z71	311170, 311171 / 311207, 311271	4012	82kg	1,20m³

TABLE OF VARIANTS - HEIGHTS

Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature
27/1/...	SNAKE II LED 12	12 W	14 W	350 mA	2 700 K
27/3/...	SNAKE II LED 12	12 W	14 W	350 mA	3 500 K
27/4/...	SNAKE II LED 12	12 W	14 W	350 mA	4 000 K
27/6/...	SNAKE II LED 12	12 W	14 W	350 mA	5 000 K
30/1/...	SNAKE II LED 24	24 W	28 W	700 mA	2 700 K
30/3/...	SNAKE II LED 24	24 W	28 W	700 mA	3 500 K
30/4/...	SNAKE II LED 24	24 W	28 W	700 mA	4 000 K
30/6/...	SNAKE II LED 24	24 W	28 W	700 mA	5 000 K
32/1/...	SNAKE II LED 36	36 W	40 W	1 000 mA	2 700 K
32/3/...	SNAKE II LED 36	36 W	40 W	1 000 mA	3 500 K
32/4/...	SNAKE II LED 36	36 W	40 W	1 000 mA	4 000 K
32/6/...	SNAKE II LED 36	36 W	40 W	1 000 mA	5 000 K

/... Symbol of selected optical system
3L optics available for ISKRA LED 12 W luminaire power only.

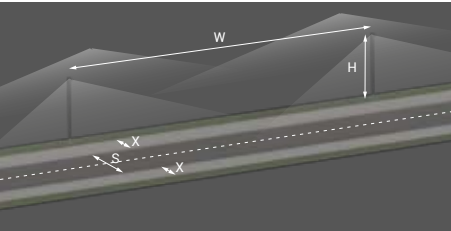


Technical parameters
SNAKE II LED

LED lighting sets and columns

BEAM I LED

Lighting examples



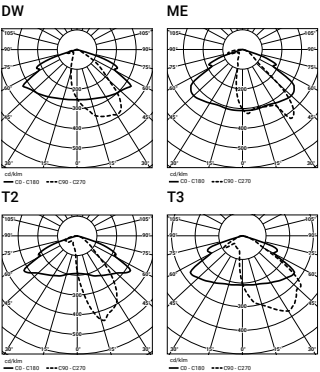
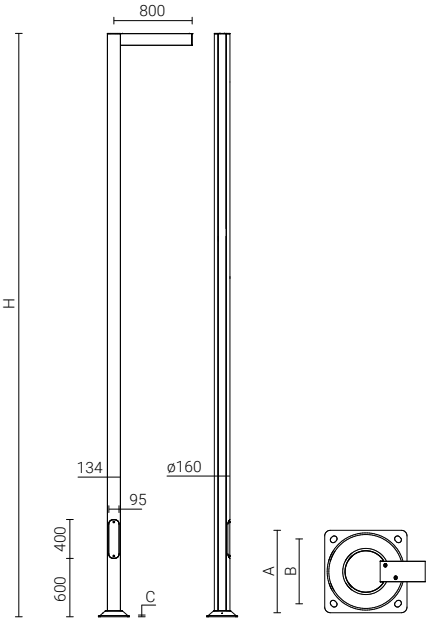
Single carriageway with two lanes + pavimenti

BEAM I LED 48 W, T3 optics

Parameters:

- H - lighting sets height: 7 m
- W - column spacing - 30 m
- X - pavement width - 3 m
- S - road width - 7 m

Lighting class:
M5 - Single carriageway
P3 - Pavementi



Application: residential streets, office buildings' surroundings, parks, pedestrian routes, car parks, urban roads

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: inox / grey

Optical system: PMMA optics, interchangeable LED module

Number of LEDs: 12 (for 24 W, 36 W); 24 (for 48 W, 60 W, 72 W)

Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

Input voltage frequency: 50/60 Hz

Power factor: ≥0.95

Lighting set BEAM I LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code example

2160000/32/3/T3

Arm
height - H

Power of
the arm

TABLE OF VARIANTS - HEIGHTS

Symbol	Height H	Base dimension A / B / C	Concrete footing / reinforcement basket	Concrete footing / reinforcement basket code	Fasteners	Net weight	Unit volume
BEAM I LED	4,0m - 40	224 / 180 / 8	B-50 / Z-50	311150 / 311205	4006	28,0kg	0,50m³
BEAM I LED	5,0m - 50	320 / 250 / 10	B-60 / Z-60	311160 / 311206	4008	35,5kg	0,60m³
BEAM I LED	6,0m - 60	320 / 250 / 10	B-60 / Z-60	311160 / 311206	4008	41,0kg	0,80m³
BEAM I LED	7,0m - 70	400 / 300 / 10	B-70, B-71 / Z-70, Z-71	311170, 311171 / 311207, 311271	4012	49,0kg	1,10m³
BEAM I LED	8,0m - 80	400 / 300 / 12	B-70, B-71 / Z-70, Z-71	311170, 311171 / 311207, 311271	4012	54,5kg	1,30m³

TABLE OF VARIANTS - HEIGHTS

Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature
30/1/...	BEAM I LED 24	24 W	28 W	700 mA	2 700 K
30/3/...	BEAM I LED 24	24 W	28 W	700 mA	3 500 K
30/4/...	BEAM I LED 24	24 W	28 W	700 mA	4 000 K
30/6/...	BEAM I LED 24	24 W	28 W	700 mA	5 000 K
32/1/...	BEAM I LED 36	36 W	40 W	1 000 mA	2 700 K
32/3/...	BEAM I LED 36	36 W	40 W	1 000 mA	3 500 K
32/4/...	BEAM I LED 36	36 W	40 W	1 000 mA	4 000 K
32/6/...	BEAM I LED 36	36 W	40 W	1 000 mA	5 000 K
33/1/...	BEAM I LED 48	48 W	55 W	700 mA	2 700 K
33/3/...	BEAM I LED 48	48 W	55 W	700 mA	3 500 K
33/4/...	BEAM I LED 48	48 W	55 W	700 mA	4 000 K
33/6/...	BEAM I LED 48	48 W	55 W	700 mA	5 000 K
34/1/...	BEAM I LED 60	60 W	67 W	830 mA	2 700 K
34/3/...	BEAM I LED 60	60 W	67 W	830 mA	3 500 K
34/4/...	BEAM I LED 60	60 W	67 W	830 mA	4 000 K
34/6/...	BEAM I LED 60	60 W	67 W	830 mA	5 000 K
35/1/...	BEAM I LED 72	72 W	79 W	1 000 mA	2 700 K
35/3/...	BEAM I LED 72	72 W	79 W	1 000 mA	3 500 K
35/4/...	BEAM I LED 72	72 W	79 W	1 000 mA	4 000 K
35/6/...	BEAM I LED 72	72 W	79 W	1 000 mA	5 000 K

/... Symbol of selected optical system

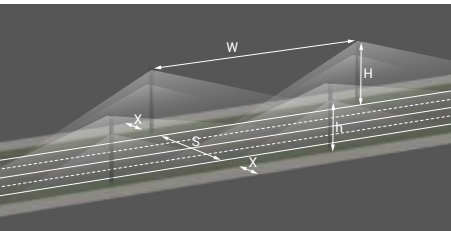


Technical parameters
BEAM I LED

LED lighting sets and columns

BEAM II LED

Lighting examples



Single carriageway with four lanes + pavement

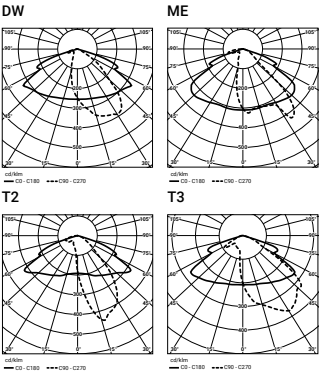
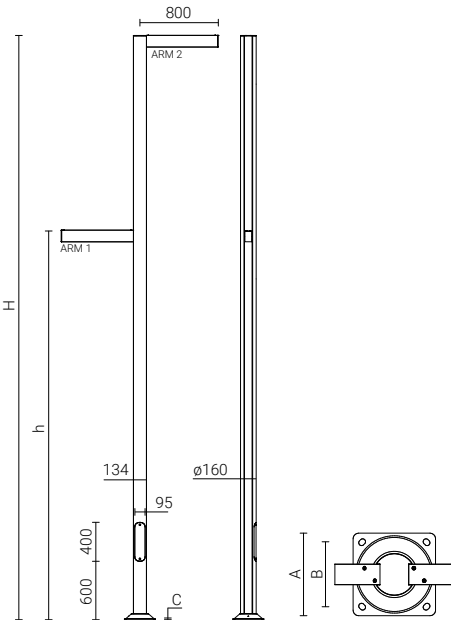
BEAM II LED 36 W, T3 optics / 24 W, DW optics

Parameters:

- H - lighting sets height, arm #1: 6 m
- h - arm height #2: 5 m
- W - pole spacing - 30 m
- X - sidewalk width - 3 m
- S - road width - 14 m

Lighting class:

- M4 - Single carriageway
- P2 - Pavement



Application: residential streets, office buildings' surroundings, parks, pedestrian routes, car parks, urban roads

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: inox / grey

Optical system: PMMA optics, interchangeable LED module

Number of LEDs: 2x12 (for 24 W, 36 W); 2x24 (for 48 W, 60 W, 72 W)

Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

Input voltage frequency: 50/60 Hz

Power factor: ≥0.95

Lighting set BEAM II LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code example

2160040/32/3/T3/30/4/T2

Arm height #1 - H	Arm height #2 - h	Power of the arm #1	Power of the arm #2
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TABLE OF VARIANTS - HEIGHTS

Symbol	Height H	Base dimension A / B / C	Concrete footing / reinforcement basket	Concrete footing / reinforcement basket code	Fasteners	Net weight	Unit volume
BEAM II LED	4,0m - 40	224 / 180 / 8	B-50 / Z-50	311150 / 311205	4006	33,5kg	0,50m³
BEAM II LED	5,0m - 50	320 / 250 / 10	B-60 / Z-60	311160 / 311206	4008	41,0kg	0,60m³
BEAM II LED	6,0m - 60	320 / 250 / 10	B-60 / Z-60	311160 / 311206	4008	46,5kg	0,80m³
BEAM II LED	7,0m - 70	400 / 300 / 10	B-70, B-71 / Z-70, Z-71	311170, 311171 / 311207, 311271	4012	54,5kg	1,10m³
BEAM II LED	8,0m - 80	400 / 300 / 12	B-70, B-71 / Z-70, Z-71	311170, 311171 / 311207, 311271	4012	60,0kg	1,30m³

TABLE OF VARIANTS - HEIGHTS

Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temper- ature
30/1/...	BEAM II LED 24	24 W	28 W	700 mA	2 700 K
30/3/...	BEAM II LED 24	24 W	28 W	700 mA	3 500 K
30/4/...	BEAM II LED 24	24 W	28 W	700 mA	4 000 K
30/6/...	BEAM II LED 24	24 W	28 W	700 mA	5 000 K
32/1/...	BEAM II LED 36	36 W	40 W	1 000 mA	2 700 K
32/3/...	BEAM II LED 36	36 W	40 W	1 000 mA	3 500 K
32/4/...	BEAM II LED 36	36 W	40 W	1 000 mA	4 000 K
32/6/...	BEAM II LED 36	36 W	40 W	1 000 mA	5 000 K
33/1/...	BEAM II LED 48	48 W	55 W	700 mA	2 700 K
33/3/...	BEAM II LED 48	48 W	55 W	700 mA	3 500 K
33/4/...	BEAM II LED 48	48 W	55 W	700 mA	4 000 K
33/6/...	BEAM II LED 48	48 W	55 W	700 mA	5 000 K
34/1/...	BEAM II LED 60	60 W	67 W	830 mA	2 700 K
34/3/...	BEAM II LED 60	60 W	67 W	830 mA	3 500 K
34/4/...	BEAM II LED 60	60 W	67 W	830 mA	4 000 K
34/6/...	BEAM II LED 60	60 W	67 W	830 mA	5 000 K
35/1/...	BEAM II LED 72	72 W	79 W	1 000 mA	2 700 K
35/3/...	BEAM II LED 72	72 W	79 W	1 000 mA	3 500 K
35/4/...	BEAM II LED 72	72 W	79 W	1 000 mA	4 000 K
35/6/...	BEAM II LED 72	72 W	79 W	1 000 mA	5 000 K

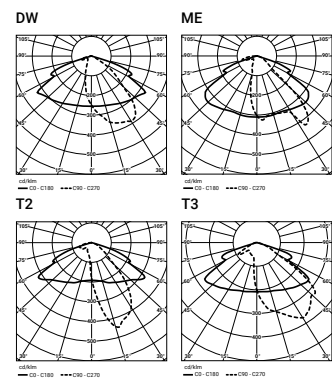
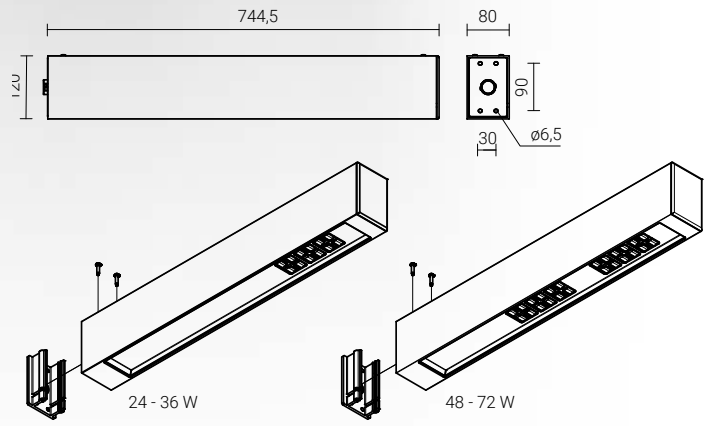
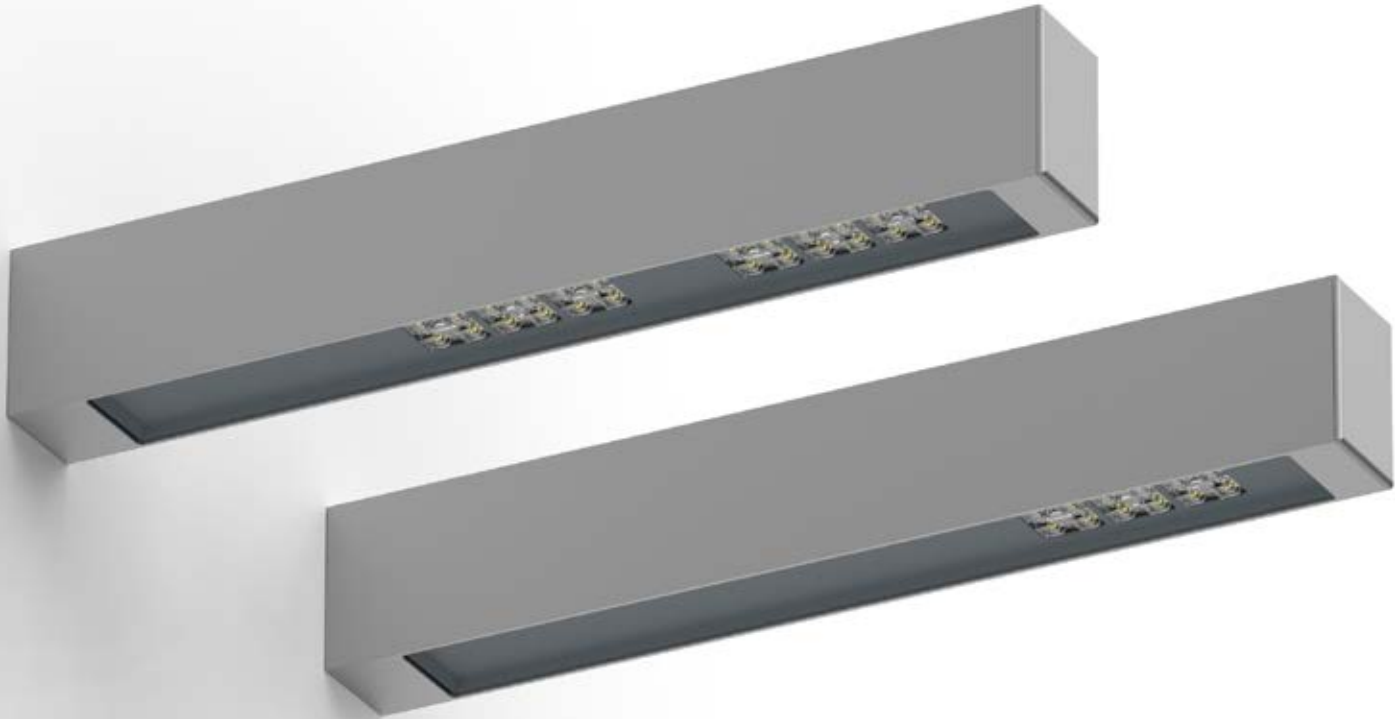


Technical parameters
BEAM II LED

/... Symbol of selected optical system

LED lighting sconces

BEAM LED SCONCE



Application: office buildings' surroundings, car parks,
Protection class: IP 66 for the optical part and the power supply system
Material: anodised aluminium alloy
Colour: inox / grey
Optical system: PMMA optics, interchangeable LED module
Number of LEDs: 12 (for 24 W, 36 W); 24 (for 48 W, 72 W)
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,008 m³
Input voltage frequency: 50/60 Hz
Power factor: ≥0.95
 BEAM LED sconce has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight netto
210030/1/...	Sconce BEAM LED 24	24 W	28 W	700 mA	2 700 K	5,0 kg
210030/3/...	Sconce BEAM LED 24	24 W	28 W	700 mA	3 500 K	5,0 kg
210030/4/...	Sconce BEAM LED 24	24 W	28 W	700 mA	4 000 K	5,0 kg
210030/6/...	Sconce BEAM LED 24	24 W	28 W	700 mA	5 000 K	5,0 kg
210032/1/...	Sconce BEAM LED 36	36 W	40 W	1 000 mA	2 700 K	5,0 kg
210032/3/...	Sconce BEAM LED 36	36 W	40 W	1 000 mA	3 500 K	5,0 kg
210032/4/...	Sconce BEAM LED 36	36 W	40 W	1 000 mA	4 000 K	5,0 kg
210032/6/...	Sconce BEAM LED 36	36 W	40 W	1 000 mA	5 000 K	5,0 kg
210033/1/...	Sconce BEAM LED 48	48 W	55 W	700 mA	2 700 K	5,5 kg
210033/3/...	Sconce BEAM LED 48	48 W	55 W	700 mA	3 500 K	5,5 kg
210033/4/...	Sconce BEAM LED 48	48 W	55 W	700 mA	4 000 K	5,5 kg
210033/6/...	Sconce BEAM LED 48	48 W	55 W	700 mA	5 000 K	5,5 kg
210035/1/...	Sconce BEAM LED 72	72 W	79 W	1 000 mA	2 700 K	5,5 kg
210035/3/...	Sconce BEAM LED 72	72 W	79 W	1 000 mA	3 500 K	5,5 kg
210035/4/...	Sconce BEAM LED 72	72 W	79 W	1 000 mA	4 000 K	5,5 kg
210035/6/...	Sconce BEAM LED 72	72 W	79 W	1 000 mA	5 000 K	5,5 kg

/... Symbol of selected optical system



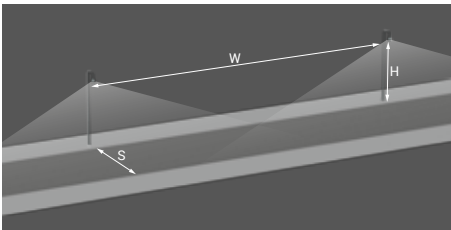
Technical parameters
 Sconce BEAM LED

LED lighting sets and columns

DROP I LED

DROP II LED

Lighting examples



Bicycle and pedestrian path

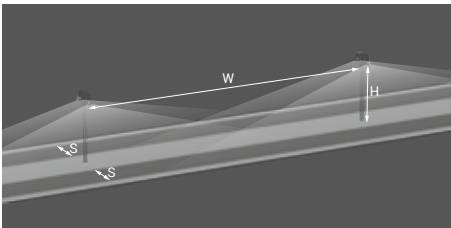
DROP I LED 48 W asymmetrical

Parameters:

- H – lighting sets height: 6 m
- W – column spacing: 25 m
- S – pavement width: 5 m

Lighting class C2

Lighting examples



Bicycle and pedestrian path

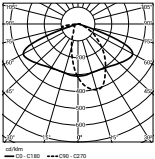
DROP II LED 2x36 W asymmetrical

Parameters:

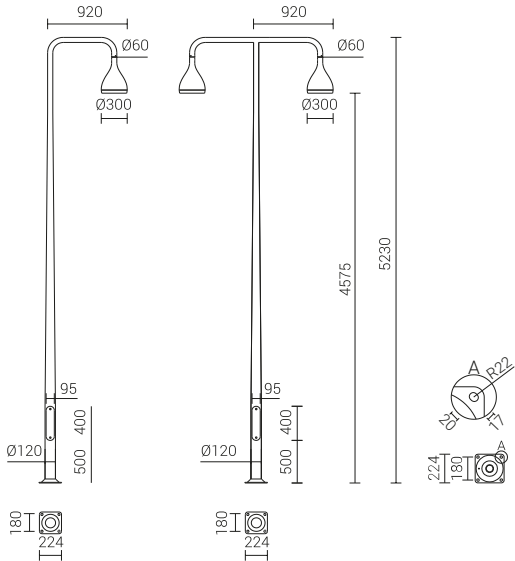
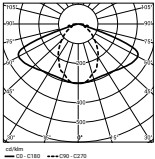
- H – lighting sets height: 6 m
- W – column spacing: 26 m
- S – pavement width: 5x3x5 m

Lighting class C2

A – asymmetrical



S – symmetrical



Application: residential streets, parks, pedestrian routes

Protection class: IP 66

Material: anodised aluminium alloy

Colour: inox / graphite

Optical system: PMMA optics

Number of LEDs: 16 (DROP I), 2x16 (DROP II)

Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

Unit volume: 1m³ (DROP I), 1,7 m³ (DROP II)

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

Lighting sets DROP I LED and DROP II LED have the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	Height	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Concrete footing / reinforcement basket
215030/1/...	DROP I LED 24	5,2 m	24 W	28 W	500 mA	2 700 K	25,9 kg	B-50 / Z-50
215030/3/...	DROP I LED 24	5,2 m	24 W	28 W	500 mA	3 500 K	25,9 kg	B-50 / Z-50
215030/4/...	DROP I LED 24	5,2 m	24 W	28 W	500 mA	4 000 K	25,9 kg	B-50 / Z-50
215030/6/...	DROP I LED 24	5,2 m	24 W	28 W	500 mA	5 000 K	25,9 kg	B-50 / Z-50
215032/1/...	DROP I LED 36	5,2 m	36 W	41 W	750 mA	2 700 K	25,9 kg	B-50 / Z-50
215032/3/...	DROP I LED 36	5,2 m	36 W	41 W	750 mA	3 500 K	25,9 kg	B-50 / Z-50
215032/4/...	DROP I LED 36	5,2 m	36 W	41 W	750 mA	4 000 K	25,9 kg	B-50 / Z-50
215032/6/...	DROP I LED 36	5,2 m	36 W	41 W	750 mA	5 000 K	25,9 kg	B-50 / Z-50
215033/1/...	DROP I LED 48	5,2 m	48 W	55 W	1 000 mA	2 700 K	25,9 kg	B-50 / Z-50
215033/3/...	DROP I LED 48	5,2 m	48 W	55 W	1 000 mA	3 500 K	25,9 kg	B-50 / Z-50
215033/4/...	DROP I LED 48	5,2 m	48 W	55 W	1 000 mA	4 000 K	25,9 kg	B-50 / Z-50
215033/6/...	DROP I LED 48	5,2 m	48 W	55 W	1 000 mA	5 000 K	25,9 kg	B-50 / Z-50
215130/1/...	DROP II LED 24	5,2 m	2x24 W	2x28 W	500 mA	2 700 K	34,9 kg	B-50 / Z-50
215130/3/...	DROP II LED 24	5,2 m	2x24 W	2x28 W	500 mA	3 500 K	34,9 kg	B-50 / Z-50
215130/4/...	DROP II LED 24	5,2 m	2x24 W	2x28 W	500 mA	4 000 K	34,9 kg	B-50 / Z-50
215130/6/...	DROP II LED 24	5,2 m	2x24 W	2x28 W	500 mA	5 000 K	34,9 kg	B-50 / Z-50
215132/1/...	DROP II LED 36	5,2 m	2x36 W	2x41 W	750 mA	2 700 K	34,9 kg	B-50 / Z-50
215132/3/...	DROP II LED 36	5,2 m	2x36 W	2x41 W	750 mA	3 500 K	34,9 kg	B-50 / Z-50
215132/4/...	DROP II LED 36	5,2 m	2x36 W	2x41 W	750 mA	4 000 K	34,9 kg	B-50 / Z-50
215132/6/...	DROP II LED 36	5,2 m	2x36 W	2x41 W	750 mA	5 000 K	34,9 kg	B-50 / Z-50
215133/1/...	DROP II LED 48	5,2 m	2x48 W	2x55 W	1 000 mA	2 700 K	34,9 kg	B-50 / Z-50
215133/3/...	DROP II LED 48	5,2 m	2x48 W	2x55 W	1 000 mA	3 500 K	34,9 kg	B-50 / Z-50
215133/4/...	DROP II LED 48	5,2 m	2x48 W	2x55 W	1 000 mA	4 000 K	34,9 kg	B-50 / Z-50
215133/6/...	DROP II LED 48	5,2 m	2x48 W	2x55 W	1 000 mA	5 000 K	34,9 kg	B-50 / Z-50

/... Symbol of selected optical system



Technical parameters
DROP I LED

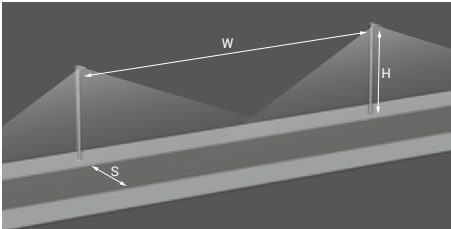


Technical parameters
DROP II LED

LED lighting sets and columns

CUT-3/4/5 LED

Lighting examples



Pavement

CUT-5 LED 36 W, T3 optics

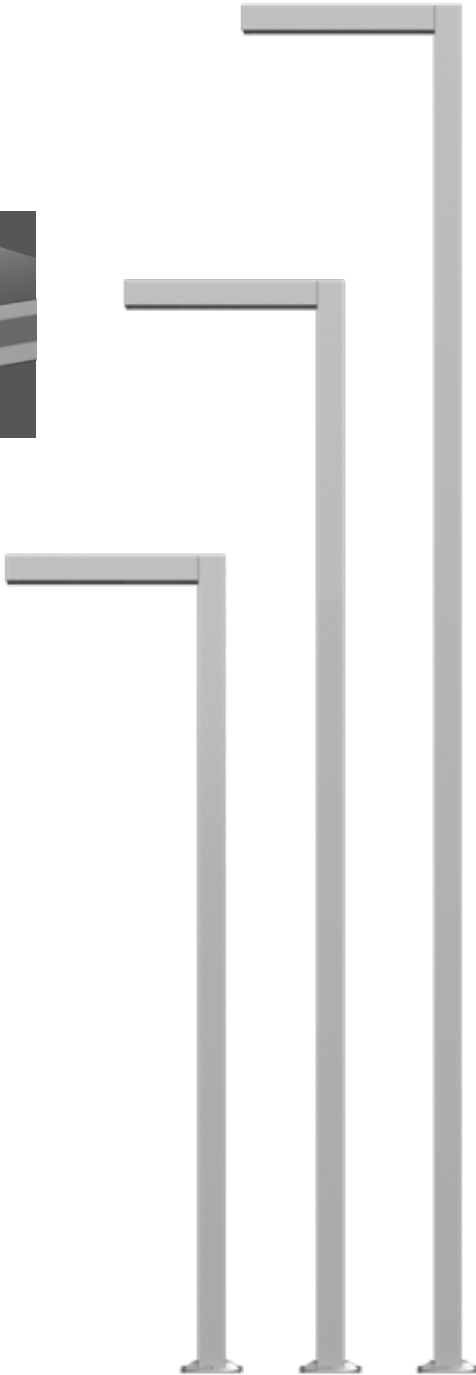
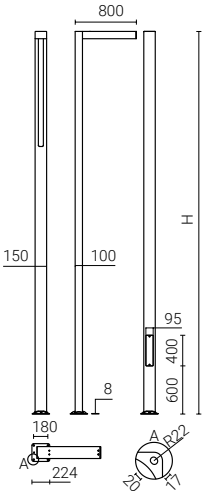
Parameters:

H – lighting sets height: 5 m

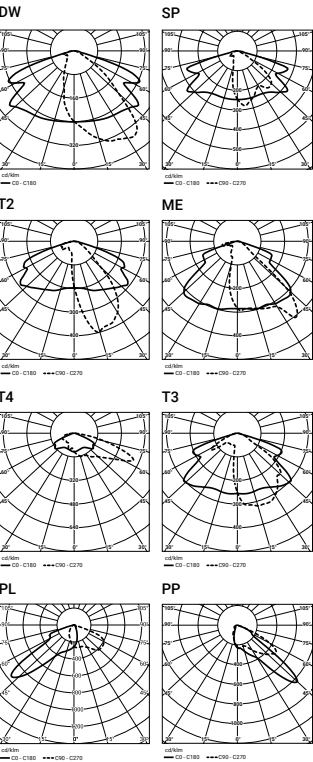
W – column spacing: 29 m

S – pavement width: 5 m

Lighting class P2



Wrocław, Poland



Application: residential streets, parks, pedestrian routes, office buildings' surroundings

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: inox / grey

Optical system: PMMA optics, interchangeable LED module

Number of LEDs: 12 (for 24 W, 36 W), 24 (for 48 W)

Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

Unit volume: 0,5 m³ (for CUT-3),
0,7 m³ (for CUT-4),
1,0 m³ (for CUT-5)

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

Lighting set CUT LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).

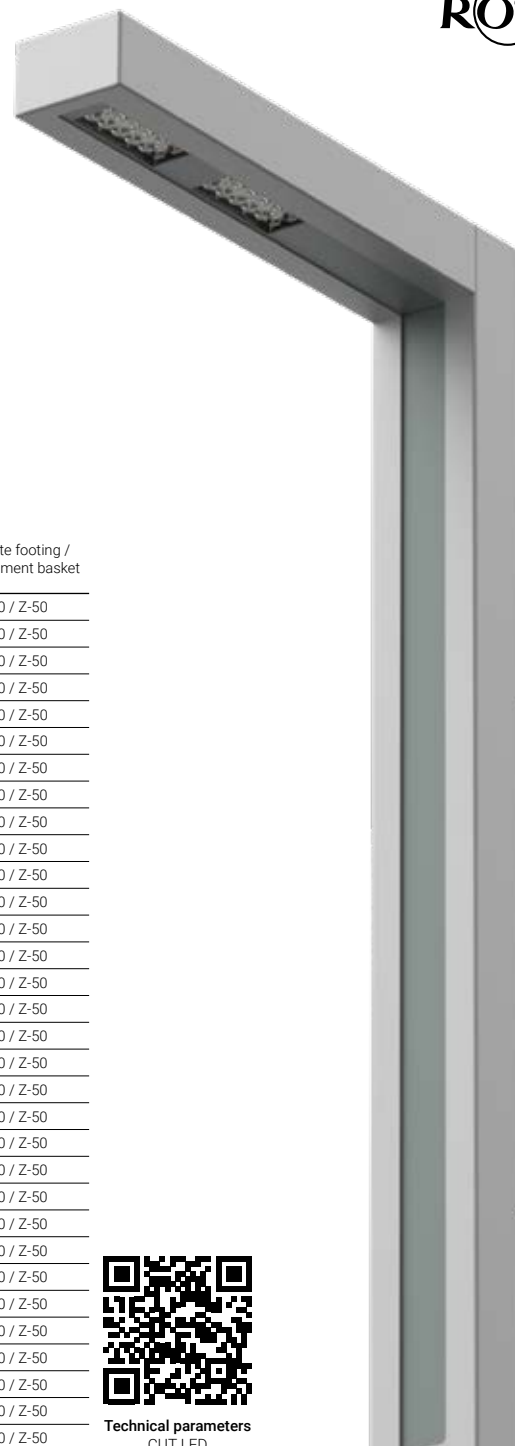


Code	Symbol	Height H	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Concrete footing / reinforcement basket
216230/1/...	CUT-3 LED 24	3 m	24 W	28 W	700 mA	2 700 K	31 kg	B-50 / Z-50
216230/3/...	CUT-3 LED 24	3 m	24 W	28 W	700 mA	3 500 K	31 kg	B-50 / Z-50
216230/4/...	CUT-3 LED 24	3 m	24 W	28 W	700 mA	4 000 K	31 kg	B-50 / Z-50
216230/6/...	CUT-3 LED 24	3 m	24 W	28 W	700 mA	5 000 K	31 kg	B-50 / Z-50
216232/1/...	CUT-3 LED 36	3 m	36 W	40 W	1 000 mA	2 700 K	31 kg	B-50 / Z-50
216232/3/...	CUT-3 LED 36	3 m	36 W	40 W	1 000 mA	3 500 K	31 kg	B-50 / Z-50
216232/4/...	CUT-3 LED 36	3 m	36 W	40 W	1 000 mA	4 000 K	31 kg	B-50 / Z-50
216232/6/...	CUT-3 LED 36	3 m	36 W	40 W	1 000 mA	5 000 K	31 kg	B-50 / Z-50
216330/1/...	CUT-4 LED 24	4 m	24 W	28 W	700 mA	2 700 K	37,5 kg	B-50 / Z-50
216330/3/...	CUT-4 LED 24	4 m	24 W	28 W	700 mA	3 500 K	37,5 kg	B-50 / Z-50
216330/4/...	CUT-4 LED 24	4 m	24 W	28 W	700 mA	4 000 K	37,5 kg	B-50 / Z-50
216330/6/...	CUT-4 LED 24	4 m	24 W	28 W	700 mA	5 000 K	37,5 kg	B-50 / Z-50
216332/1/...	CUT-4 LED 36	4 m	36 W	40 W	1 000 mA	2 700 K	37,5 kg	B-50 / Z-50
216332/3/...	CUT-4 LED 36	4 m	36 W	40 W	1 000 mA	3 500 K	37,5 kg	B-50 / Z-50
216332/4/...	CUT-4 LED 36	4 m	36 W	40 W	1 000 mA	4 000 K	37,5 kg	B-50 / Z-50
216332/6/...	CUT-4 LED 36	4 m	36 W	40 W	1 000 mA	5 000 K	37,5 kg	B-50 / Z-50
216333/1/...	CUT-4 LED 48	4 m	48 W	55 W	700 mA	2 700 K	37,5 kg	B-50 / Z-50
216333/3/...	CUT-4 LED 48	4 m	48 W	55 W	700 mA	3 500 K	37,5 kg	B-50 / Z-50
216333/4/...	CUT-4 LED 48	4 m	48 W	55 W	700 mA	4 000 K	37,5 kg	B-50 / Z-50
216333/6/...	CUT-4 LED 48	4 m	48 W	55 W	700 mA	5 000 K	37,5 kg	B-50 / Z-50
216030/1/...	CUT-5 LED 24	5 m	24 W	28 W	700 mA	2 700 K	42,5 kg	B-50 / Z-50
216030/3/...	CUT-5 LED 24	5 m	24 W	28 W	700 mA	3 500 K	42,5 kg	B-50 / Z-50
216030/4/...	CUT-5 LED 24	5 m	24 W	28 W	700 mA	4 000 K	42,5 kg	B-50 / Z-50
216030/6/...	CUT-5 LED 24	5 m	24 W	28 W	700 mA	5 000 K	42,5 kg	B-50 / Z-50
216032/1/...	CUT-5 LED 36	5 m	36 W	40 W	1 000 mA	2 700 K	42,5 kg	B-50 / Z-50
216032/3/...	CUT-5 LED 36	5 m	36 W	40 W	1 000 mA	3 500 K	42,5 kg	B-50 / Z-50
216032/4/...	CUT-5 LED 36	5 m	36 W	40 W	1 000 mA	4 000 K	42,5 kg	B-50 / Z-50
216032/6/...	CUT-5 LED 36	5 m	36 W	40 W	1 000 mA	5 000 K	42,5 kg	B-50 / Z-50
216033/1/...	CUT-5 LED 48	5 m	48 W	55 W	700 mA	2 700 K	42,5 kg	B-50 / Z-50
216033/3/...	CUT-5 LED 48	5 m	48 W	55 W	700 mA	3 500 K	42,5 kg	B-50 / Z-50
216033/4/...	CUT-5 LED 48	5 m	48 W	55 W	700 mA	4 000 K	42,5 kg	B-50 / Z-50
216033/6/...	CUT-5 LED 48	5 m	48 W	55 W	700 mA	5 000 K	42,5 kg	B-50 / Z-50

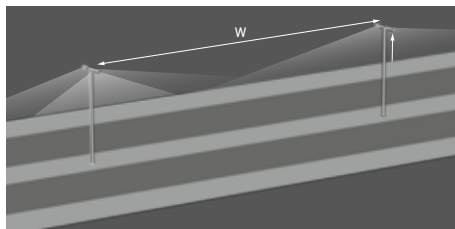
/... Symbol of selected optical system



Technical parameters
CUT LED



Lighting examples

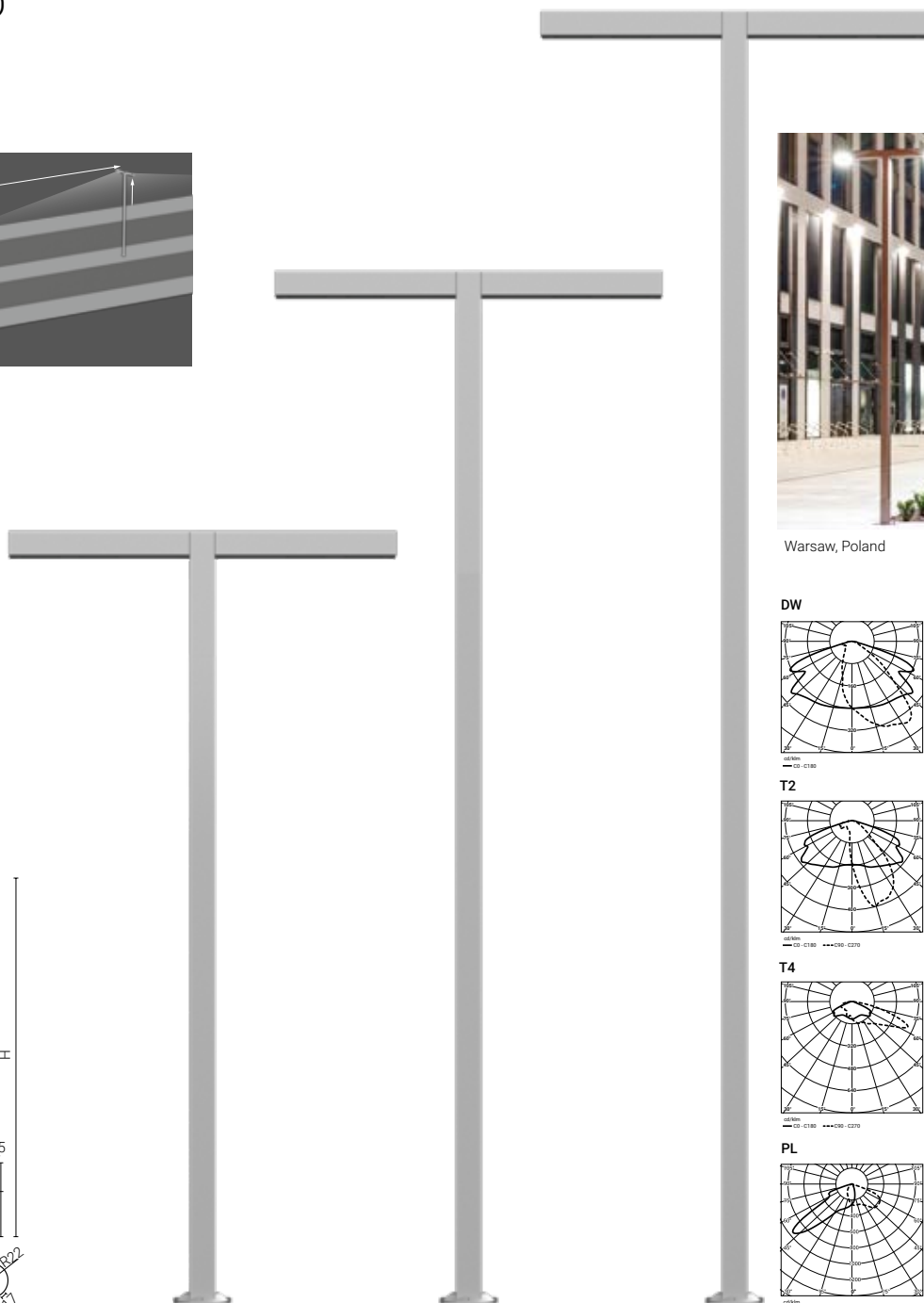
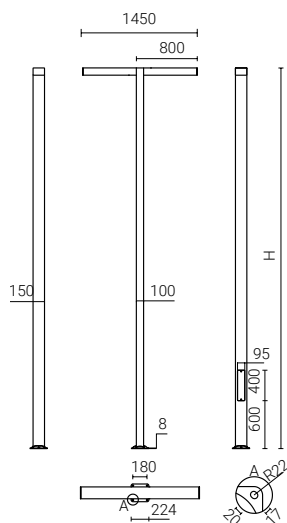


CUT-II-5 LED 24 W, SP optics

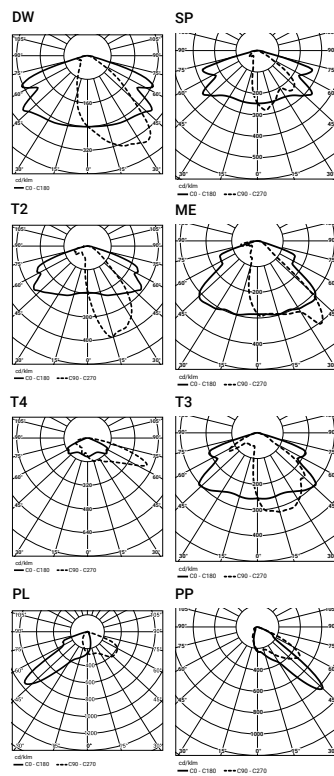
Parameters:

S – pavement width: 5 m

Lighting class P2



Warsaw, Poland



Application: residential streets, parks, pedestrian routes, office buildings' surroundings

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: inox / grey

Optical system: PMMA optics, interchangeable LED module

Number of LEDs: 2x12 (for 24 W, 36 W), 2x24 (for 48 W)

Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

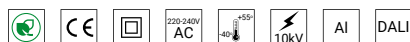
Unit volume: 0,7m³ (for CUT-II-4),

1,m³ (for CUT-II-5)

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

Lighting set CUT II LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	Height H	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Concrete footing / reinforcement basket
2106330/1/...	CUT-II-4 LED 24	4 m	2x24 W	2x28 W	700 mA	2 700 K	44,5 kg	B-50 / Z-50
2106330/3/...	CUT-II-4 LED 24	4 m	2x24 W	2x28 W	700 mA	3 500 K	44,5 kg	B-50 / Z-50
2106330/4/...	CUT-II-4 LED 24	4 m	2x24 W	2x28 W	700 mA	4 000 K	44,5 kg	B-50 / Z-50
2106330/6/...	CUT-II-4 LED 24	4 m	2x24 W	2x28 W	700 mA	5 000 K	44,5 kg	B-50 / Z-50
2106332/1/...	CUT-II-4 LED 36	4 m	2x36 W	2x40 W	1 000 mA	2 700 K	44,5 kg	B-50 / Z-50
2106332/3/...	CUT-II-4 LED 36	4 m	2x36 W	2x40 W	1 000 mA	3 500 K	44,5 kg	B-50 / Z-50
2106332/4/...	CUT-II-4 LED 36	4 m	2x36 W	2x40 W	1 000 mA	4 000 K	44,5 kg	B-50 / Z-50
2106332/6/...	CUT-II-4 LED 36	4 m	2x36 W	2x40 W	1 000 mA	5 000 K	44,5 kg	B-50 / Z-50
2106333/1/...	CUT-II-4 LED 48	4 m	2x48 W	2x55 W	700 mA	2 700 K	44,5 kg	B-50 / Z-50
2106333/3/...	CUT-II-4 LED 48	4 m	2x48 W	2x55 W	700 mA	3 500 K	44,5 kg	B-50 / Z-50
2106333/4/...	CUT-II-4 LED 48	4 m	2x48 W	2x55 W	700 mA	4 000 K	44,5 kg	B-50 / Z-50
2106333/6/...	CUT-II-4 LED 48	4 m	2x48 W	2x55 W	700 mA	5 000 K	44,5 kg	B-50 / Z-50
2106030/1/...	CUT-II-5 LED 24	5 m	2x24 W	2x28 W	700 mA	2 700 K	50,5 kg	B-50 / Z-50
2106030/3/...	CUT-II-5 LED 24	5 m	2x24 W	2x28 W	700 mA	3 500 K	50,5 kg	B-50 / Z-50
2106030/4/...	CUT-II-5 LED 24	5 m	2x24 W	2x28 W	700 mA	4 000 K	50,5 kg	B-50 / Z-50
2106030/6/...	CUT-II-5 LED 24	5 m	2x24 W	2x28 W	700 mA	5 000 K	50,5 kg	B-50 / Z-50
2106032/1/...	CUT-II-5 LED 36	5 m	2x36 W	2x40 W	1 000 mA	2 700 K	50,5 kg	B-50 / Z-50
2106032/3/...	CUT-II-5 LED 36	5 m	2x36 W	2x40 W	1 000 mA	3 500 K	50,5 kg	B-50 / Z-50
2106032/4/...	CUT-II-5 LED 36	5 m	2x36 W	2x40 W	1 000 mA	4 000 K	50,5 kg	B-50 / Z-50
2106032/6/...	CUT-II-5 LED 36	5 m	2x36 W	2x40 W	1 000 mA	5 000 K	50,5 kg	B-50 / Z-50
2106033/1/...	CUT-II-5 LED 48	5 m	2x48 W	2x55 W	700 mA	2 700 K	50,5 kg	B-50 / Z-50
2106033/3/...	CUT-II-5 LED 48	5 m	2x48 W	2x55 W	700 mA	3 500 K	50,5 kg	B-50 / Z-50
2106033/4/...	CUT-II-5 LED 48	5 m	2x48 W	2x55 W	700 mA	4 000 K	50,5 kg	B-50 / Z-50
2106033/6/...	CUT-II-5 LED 48	5 m	2x48 W	2x55 W	700 mA	5 000 K	50,5 kg	B-50 / Z-50

/... Symbol of selected optical system

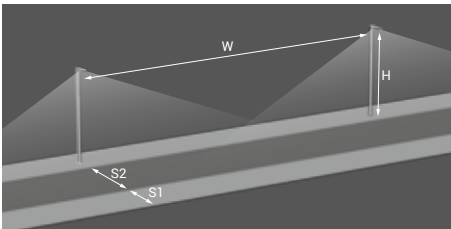


Technical parameters
CUT II LED

LED lighting sets and columns

CUT-6/7/8 LED

Lighting examples



Road with parking spaces and pavement

CUT-8 LED 72 W, T3 optics

Parameters:

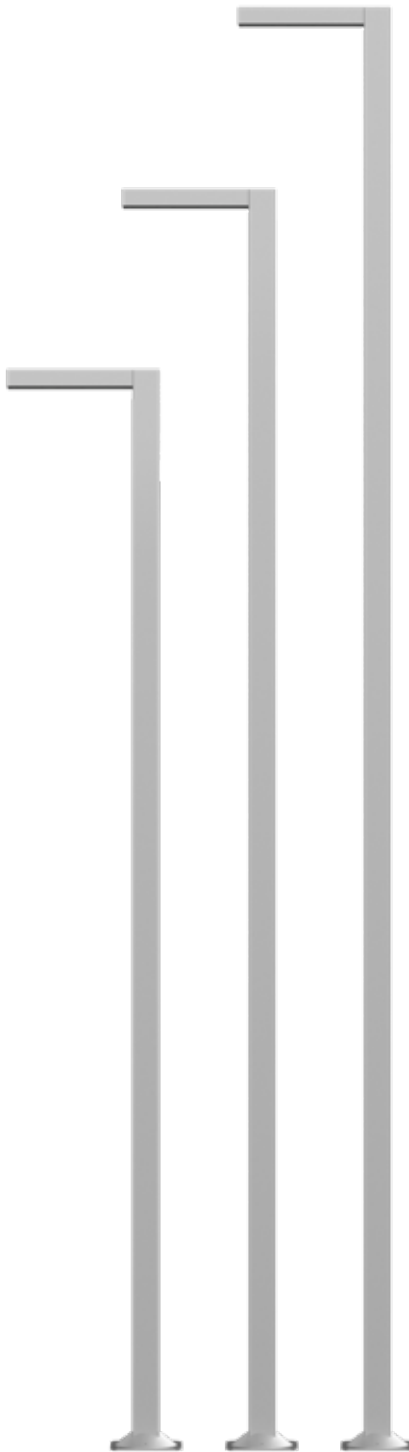
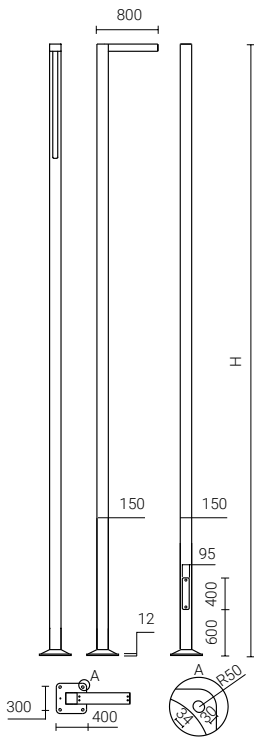
H – lighting sets height: 8 m

W – column spacing: 30 m

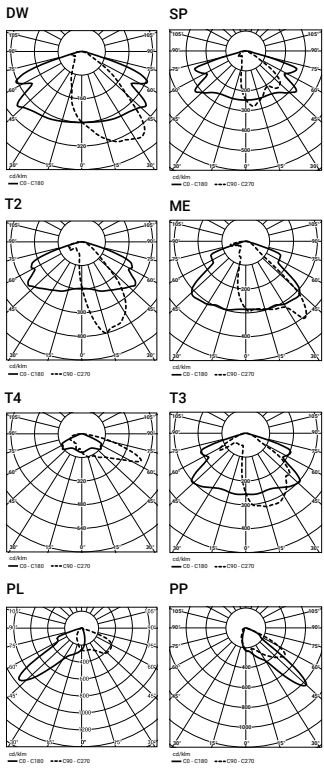
S1 – pavement width: 3 m

S2 – road width: 7 m

Lighting class M3 and P1



Cracow, Poland



Application: urban roads, residential streets, office buildings' surroundings, parks, pedestrian routes

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: inox / grey

Optical system: PMMA optics, interchangeable LED module

Number of LEDs: 24

Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

Unit volume: 1,2 m³ (for CUT-6),

1,4 m³ (for CUT-7),

1,6 m³ (for CUT-8)

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

Lighting set CUT LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	Height H	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Concrete footing / reinforcement basket
216633/1/...	CUT-6 LED 48	6 m	48 W	55 W	700 mA	2 700 K	62,5 kg	B-71, B-70 / Z-71, Z-70
216633/3/...	CUT-6 LED 48	6 m	48 W	55 W	700 mA	3 500 K	62,5 kg	B-71, B-70 / Z-71, Z-70
216633/4/...	CUT-6 LED 48	6 m	48 W	55 W	700 mA	4 000 K	62,5 kg	B-71, B-70 / Z-71, Z-70
216633/6/...	CUT-6 LED 48	6 m	48 W	55 W	700 mA	5 000 K	62,5 kg	B-71, B-70 / Z-71, Z-70
216635/1/...	CUT-6 LED 72	6 m	72 W	79 W	1 000 mA	2 700 K	62,5 kg	B-71, B-70 / Z-71, Z-70
216635/3/...	CUT-6 LED 72	6 m	72 W	79 W	1 000 mA	3 500 K	62,5 kg	B-71, B-70 / Z-71, Z-70
216635/4/...	CUT-6 LED 72	6 m	72 W	79 W	1 000 mA	4 000 K	62,5 kg	B-71, B-70 / Z-71, Z-70
216635/6/...	CUT-6 LED 72	6 m	72 W	79 W	1 000 mA	5 000 K	62,5 kg	B-71, B-70 / Z-71, Z-70
216733/1/...	CUT-7 LED 48	7 m	48 W	55 W	700 mA	2 700 K	69,5 kg	B-71, B-70 / Z-71, Z-70
216733/3/...	CUT-7 LED 48	7 m	48 W	55 W	700 mA	3 500 K	69,5 kg	B-71, B-70 / Z-71, Z-70
216733/4/...	CUT-7 LED 48	7 m	48 W	55 W	700 mA	4 000 K	69,5 kg	B-71, B-70 / Z-71, Z-70
216733/6/...	CUT-7 LED 48	7 m	48 W	55 W	700 mA	5 000 K	69,5 kg	B-71, B-70 / Z-71, Z-70
216735/1/...	CUT-7 LED 72	7 m	72 W	79 W	1 000 mA	2 700 K	69,5 kg	B-71, B-70 / Z-71, Z-70
216735/3/...	CUT-7 LED 72	7 m	72 W	79 W	1 000 mA	3 500 K	69,5 kg	B-71, B-70 / Z-71, Z-70
216735/4/...	CUT-7 LED 72	7 m	72 W	79 W	1 000 mA	4 000 K	69,5 kg	B-71, B-70 / Z-71, Z-70
216735/6/...	CUT-7 LED 72	7 m	72 W	79 W	1 000 mA	5 000 K	69,5 kg	B-71, B-70 / Z-71, Z-70
216433/1/...	CUT-8 LED 48	8 m	48 W	55 W	700 mA	2 700 K	76 kg	B-71, B-70 / Z-71, Z-70
216433/3/...	CUT-8 LED 48	8 m	48 W	55 W	700 mA	3 500 K	76 kg	B-71, B-70 / Z-71, Z-70
216433/4/...	CUT-8 LED 48	8 m	48 W	55 W	700 mA	4 000 K	76 kg	B-71, B-70 / Z-71, Z-70
216433/6/...	CUT-8 LED 48	8 m	48 W	55 W	700 mA	5 000 K	76 kg	B-71, B-70 / Z-71, Z-70
216435/1/...	CUT-8 LED 72	8 m	72 W	79 W	1 000 mA	2 700 K	76 kg	B-71, B-70 / Z-71, Z-70
216435/3/...	CUT-8 LED 72	8 m	72 W	79 W	1 000 mA	3 500 K	76 kg	B-71, B-70 / Z-71, Z-70
216435/4/...	CUT-8 LED 72	8 m	72 W	79 W	1 000 mA	4 000 K	76 kg	B-71, B-70 / Z-71, Z-70
216435/6/...	CUT-8 LED 72	8 m	72 W	79 W	1 000 mA	5 000 K	76 kg	B-71, B-70 / Z-71, Z-70

/... Symbol of selected optical system

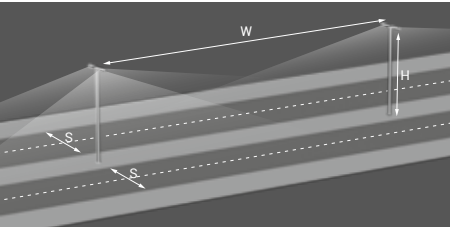


Technical parameters
CUT LED

LED lighting sets and columns

CUT-II-6/7/8 LED

Lighting examples

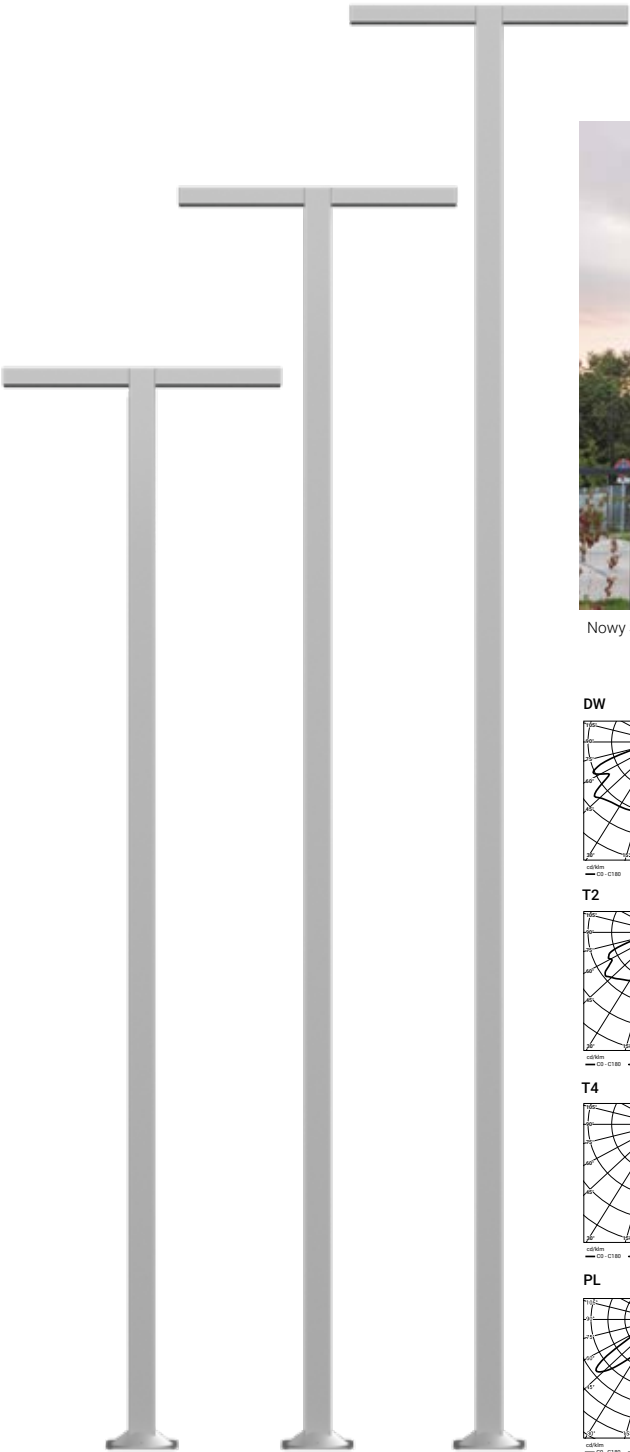
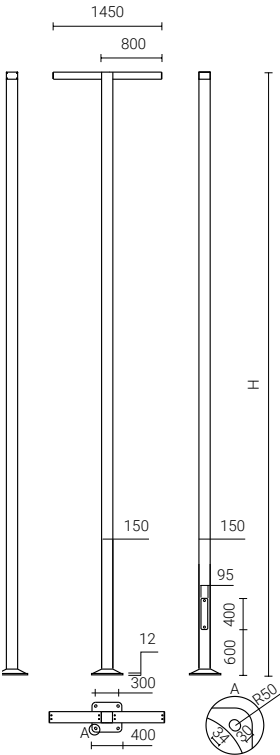


Dual carriageway with two lanes

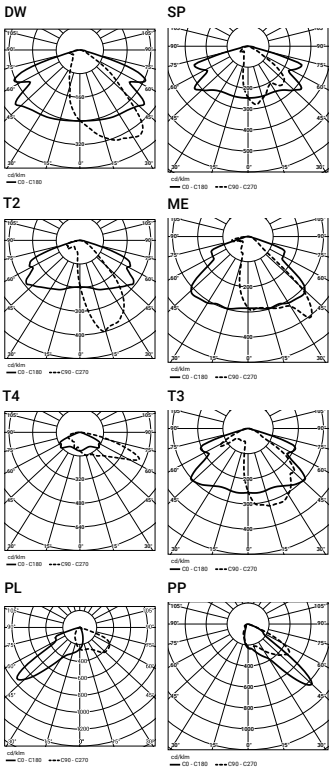
CUT-II-8 LED 72 W, T3 optics

Parameters:
H – lighting sets height: 8 m
W – column spacing: 32 m
S – road width: 7 m

Lighting class M3



Nowy Sącz, Poland



Application: urban roads, residential streets, office buildings' surroundings, parks, pedestrian routes

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: inox / grey

Optical system: PMMA optics, interchangeable LED module

Number of LEDs: 2x24

Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

Unit volume: 1,2 m³ (for CUT-II-6),
1,4 m³ (for CUT-II-7),
1,6 m³ (for CUT-II-8)

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

Lighting set CUT II LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



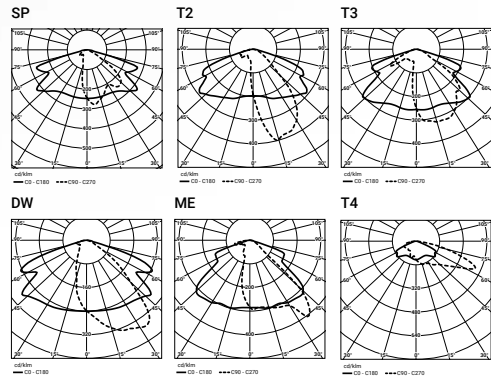
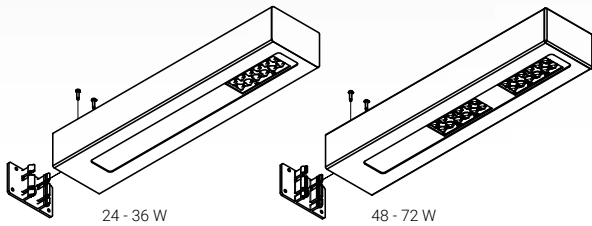
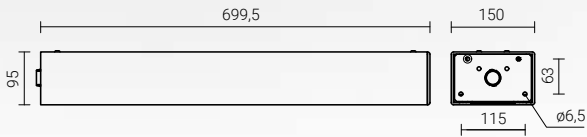
Code	Symbol	Height H	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Concrete footing / reinforcement basket
2106633/1/...	CUT-II-6 LED 48	6 m	2x48 W	2x55 W	700 mA	2 700 K	70 kg	B-71, B-70 / Z-71, Z-70
2106633/3/...	CUT-II-6 LED 48	6 m	2x48 W	2x55 W	700 mA	3 500 K	70 kg	B-71, B-70 / Z-71, Z-70
2106633/4/...	CUT-II-6 LED 48	6 m	2x48 W	2x55 W	700 mA	4 000 K	70 kg	B-71, B-70 / Z-71, Z-70
2106633/6/...	CUT-II-6 LED 48	6 m	2x48 W	2x55 W	700 mA	5 000 K	70 kg	B-71, B-70 / Z-71, Z-70
2106635/1/...	CUT-II-6 LED 72	6 m	2x72 W	2x79 W	1 000 mA	2 700 K	70 kg	B-71, B-70 / Z-71, Z-70
2106635/3/...	CUT-II-6 LED 72	6 m	2x72 W	2x79 W	1 000 mA	3 500 K	70 kg	B-71, B-70 / Z-71, Z-70
2106635/4/...	CUT-II-6 LED 72	6 m	2x72 W	2x79 W	1 000 mA	4 000 K	70 kg	B-71, B-70 / Z-71, Z-70
2106635/6/...	CUT-II-6 LED 72	6 m	2x72 W	2x79 W	1 000 mA	5 000 K	70 kg	B-71, B-70 / Z-71, Z-70
2106733/1/...	CUT-II-7 LED 48	7 m	2x48 W	2x55 W	700 mA	2 700 K	77 kg	B-71, B-70 / Z-71, Z-70
2106733/3/...	CUT-II-7 LED 48	7 m	2x48 W	2x55 W	700 mA	3 500 K	77 kg	B-71, B-70 / Z-71, Z-70
2106733/4/...	CUT-II-7 LED 48	7 m	2x48 W	2x55 W	700 mA	4 000 K	77 kg	B-71, B-70 / Z-71, Z-70
2106733/6/...	CUT-II-7 LED 48	7 m	2x48 W	2x55 W	700 mA	5 000 K	77 kg	B-71, B-70 / Z-71, Z-70
2106735/1/...	CUT-II-7 LED 72	7 m	2x72 W	2x79 W	1 000 mA	2 700 K	77 kg	B-71, B-70 / Z-71, Z-70
2106735/3/...	CUT-II-7 LED 72	7 m	2x72 W	2x79 W	1 000 mA	3 500 K	77 kg	B-71, B-70 / Z-71, Z-70
2106735/4/...	CUT-II-7 LED 72	7 m	2x72 W	2x79 W	1 000 mA	4 000 K	77 kg	B-71, B-70 / Z-71, Z-70
2106735/6/...	CUT-II-7 LED 72	7 m	2x72 W	2x79 W	1 000 mA	5 000 K	77 kg	B-71, B-70 / Z-71, Z-70
2106433/1/...	CUT-II-8 LED 48	8 m	2x48 W	2x55 W	700 mA	2 700 K	83,5 kg	B-71, B-70 / Z-71, Z-70
2106433/3/...	CUT-II-8 LED 48	8 m	2x48 W	2x55 W	700 mA	3 500 K	83,5 kg	B-71, B-70 / Z-71, Z-70
2106433/4/...	CUT-II-8 LED 48	8 m	2x48 W	2x55 W	700 mA	4 000 K	83,5 kg	B-71, B-70 / Z-71, Z-70
2106433/6/...	CUT-II-8 LED 48	8 m	2x48 W	2x55 W	700 mA	5 000 K	83,5 kg	B-71, B-70 / Z-71, Z-70
2106435/1/...	CUT-II-8 LED 72	8 m	2x72 W	2x79 W	1 000 mA	2 700 K	83,5 kg	B-71, B-70 / Z-71, Z-70
2106435/3/...	CUT-II-8 LED 72	8 m	2x72 W	2x79 W	1 000 mA	3 500 K	83,5 kg	B-71, B-70 / Z-71, Z-70
2106435/4/...	CUT-II-8 LED 72	8 m	2x72 W	2x79 W	1 000 mA	4 000 K	83,5 kg	B-71, B-70 / Z-71, Z-70
2106435/6/...	CUT-II-8 LED 72	8 m	2x72 W	2x79 W	1 000 mA	5 000 K	83,5 kg	B-71, B-70 / Z-71, Z-70



Technical parameters
CUT II LED

LED lighting sconces

CUT LED SCONCE



Application: office buildings' surroundings

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: inox / grey

Optical system: PMMA optics, interchangeable LED module

Number of LEDs: 12 (for 24 W, 36 W), 24 (for 48 W, 72 W)

Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

Unit volume: 0,01 m³

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

CUT LED sconce has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight
210630/1/...	Sconce CUT LED 24	24 W	28 W	700 mA	2 700 K	6,5 kg
210630/3/...	Sconce CUT LED 24	24 W	28 W	700 mA	3 500 K	6,5 kg
210630/4/...	Sconce CUT LED 24	24 W	28 W	700 mA	4 000 K	6,5 kg
210630/6/...	Sconce CUT LED 24	24 W	28 W	700 mA	5 000 K	6,5 kg
210632/1/...	Sconce CUT LED 36	36 W	40 W	1 000 mA	2 700 K	6,5 kg
210632/3/...	Sconce CUT LED 36	36 W	40 W	1 000 mA	3 500 K	6,5 kg
210632/4/...	Sconce CUT LED 36	36 W	40 W	1 000 mA	4 000 K	6,5 kg
210632/6/...	Sconce CUT LED 36	36 W	40 W	1 000 mA	5 000 K	6,5 kg
210633/1/...	Sconce CUT LED 48	48 W	55 W	700 mA	2 700 K	7,0 kg
210633/3/...	Sconce CUT LED 48	48 W	55 W	700 mA	3 500 K	7,0 kg
210633/4/...	Sconce CUT LED 48	48 W	55 W	700 mA	4 000 K	7,0 kg
210633/6/...	Sconce CUT LED 48	48 W	55 W	700 mA	5 000 K	7,0 kg
210635/1/...	Sconce CUT LED 72	72 W	79 W	1 000 mA	2 700 K	7,0 kg
210635/3/...	Sconce CUT LED 72	72 W	79 W	1 000 mA	3 500 K	7,0 kg
210635/4/...	Sconce CUT LED 72	72 W	79 W	1 000 mA	4 000 K	7,0 kg
210635/6/...	Sconce CUT LED 72	72 W	79 W	1 000 mA	5 000 K	7,0 kg

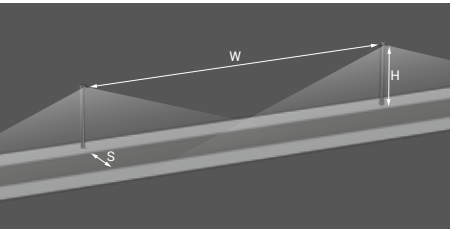
/... Symbol of selected optical system



Technical parameters
Sconce CUT LED

STICK I LED / STICK II LED

Lighting examples



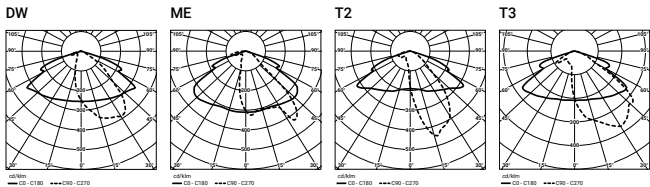
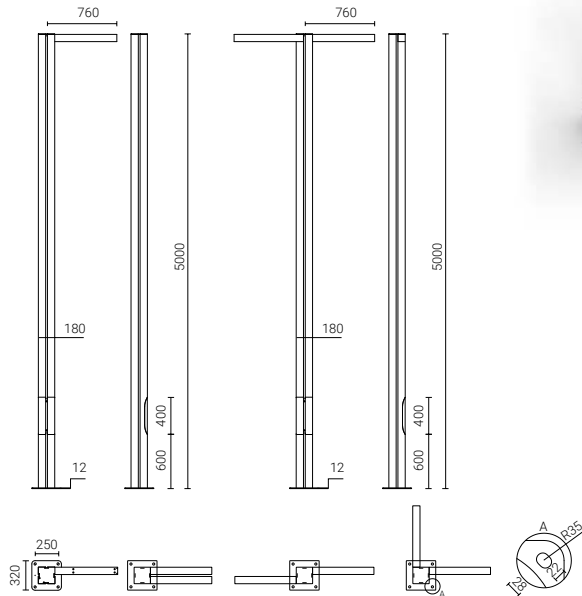
Promenade

STICK LED 24 W, DW optics

Parameters:

H – lighting sets height: 5 m
W – column spacing: 27 m
S – road width: 5 m

Lighting class P2



Application: residential streets, office buildings' surroundings, parks, pedestrian routes

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: grey / inox

Optical system: PMMA optics, interchangeable LED module

Number of LEDs: 12 (for STICK LED 24 W), 24 (for STICK LED 48 W), 2x12 (for STICK II LED 24 W), 2x24 (for STICK II LED 48 W)

Expected useful lifetime: L90B10 - 100 000 h

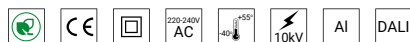
CRI: >70

Unit volume: 1,1 m³

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

Lighting sets STICK I LED and STICK II LED have the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	Height	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Concrete footing / reinforcement basket
217030/1/...	STICK LED 24	5 m	24 W	28 W	700 mA	2 700 K	61 kg	B-60 / Z-60
217030/3/...	STICK LED 24	5 m	24 W	28 W	700 mA	3 500 K	61 kg	B-60 / Z-60
217030/4/...	STICK LED 24	5 m	24 W	28 W	700 mA	4 000 K	61 kg	B-60 / Z-60
217030/6/...	STICK LED 24	5 m	24 W	28 W	700 mA	5 000 K	61 kg	B-60 / Z-60
217033/1/...	STICK LED 48	5 m	48 W	55 W	700 mA	2 700 K	61 kg	B-60 / Z-60
217033/3/...	STICK LED 48	5 m	48 W	55 W	700 mA	3 500 K	61 kg	B-60 / Z-60
217033/4/...	STICK LED 48	5 m	48 W	55 W	700 mA	4 000 K	61 kg	B-60 / Z-60
217033/6/...	STICK LED 48	5 m	48 W	55 W	700 mA	5 000 K	61 kg	B-60 / Z-60
217130/1/...	STICK II LED 2x24	5 m	2x24 W	2x28 W	700 mA	2 700 K	67 kg	B-60 / Z-60
217130/3/...	STICK II LED 2x24	5 m	2x24 W	2x28 W	700 mA	3 500 K	67 kg	B-60 / Z-60
217130/4/...	STICK II LED 2x24	5 m	2x24 W	3x28 W	700 mA	4 000 K	67 kg	B-60 / Z-60
217130/6/...	STICK II LED 2x24	5 m	2x24 W	4x28 W	700 mA	5 000 K	67 kg	B-60 / Z-60
217133/1/...	STICK II LED 2x48	5 m	2x48 W	2x55 W	700 mA	2 700 K	67 kg	B-60 / Z-60
217133/3/...	STICK II LED 2x48	5 m	2x48 W	2x55 W	700 mA	3 500 K	67 kg	B-60 / Z-60
217133/4/...	STICK II LED 2x48	5 m	2x48 W	2x55 W	700 mA	4 000 K	67 kg	B-60 / Z-60
217133/6/...	STICK II LED 2x48	5 m	2x48 W	2x55 W	700 mA	5 000 K	67 kg	B-60 / Z-60
217230/1/...	STICK II LED 90° 2x24	5 m	2x24 W	2x28 W	700 mA	2 700 K	67 kg	B-60 / Z-60
217230/3/...	STICK II LED 90° 2x24	5 m	2x24 W	2x28 W	700 mA	3 500 K	67 kg	B-60 / Z-60
217230/4/...	STICK II LED 90° 2x24	5 m	2x24 W	2x28 W	700 mA	4 000 K	67 kg	B-60 / Z-60
217230/6/...	STICK II LED 90° 2x24	5 m	2x24 W	2x28 W	700 mA	5 000 K	67 kg	B-60 / Z-60
217233/1/...	STICK II LED 90° 2x48	5 m	2x48 W	2x55 W	700 mA	2 700 K	67 kg	B-60 / Z-60
217233/3/...	STICK II LED 90° 2x48	5 m	2x48 W	2x55 W	700 mA	3 500 K	67 kg	B-60 / Z-60
217233/4/...	STICK II LED 90° 2x48	5 m	2x48 W	2x55 W	700 mA	4 000 K	67 kg	B-60 / Z-60
217233/6/...	STICK II LED 90° 2x48	5 m	2x48 W	2x55 W	700 mA	5 000 K	67 kg	B-60 / Z-60
217330/1/...	STICK II LED 180° 2x24	5 m	2x24 W	2x28 W	700 mA	2 700 K	67 kg	B-60 / Z-60
217330/3/...	STICK II LED 180° 2x24	5 m	2x24 W	2x28 W	700 mA	3 500 K	67 kg	B-60 / Z-60
217330/4/...	STICK II LED 180° 2x24	5 m	2x24 W	2x28 W	700 mA	4 000 K	67 kg	B-60 / Z-60
217330/6/...	STICK II LED 180° 2x24	5 m	2x24 W	2x28 W	700 mA	5 000 K	67 kg	B-60 / Z-60
217333/1/...	STICK II LED 180° 2x48	5 m	2x48 W	2x55 W	700 mA	2 700 K	67 kg	B-60 / Z-60
217333/3/...	STICK II LED 180° 2x48	5 m	2x48 W	2x55 W	700 mA	3 500 K	67 kg	B-60 / Z-60
217333/4/...	STICK II LED 180° 2x48	5 m	2x48 W	2x55 W	700 mA	4 000 K	67 kg	B-60 / Z-60
217333/6/...	STICK II LED 180° 2x48	5 m	2x48 W	2x55 W	700 mA	5 000 K	67 kg	B-60 / Z-60

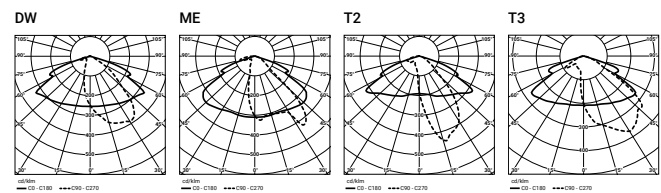
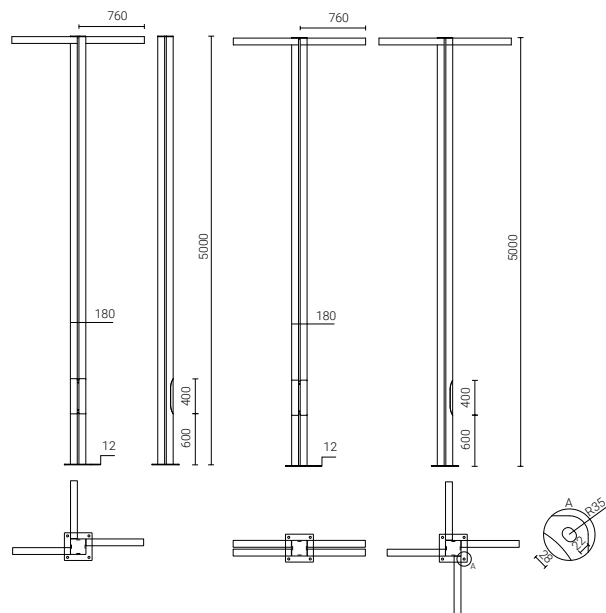
/... Symbol of selected optical system



Technical parameters
STICK LED

LED lighting sets and columns

STICK III LED / STICK IV LED



Application: residential streets, office buildings' surroundings, parks, pedestrian routes, car parks,

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: grey / inox

Optical system: PMMA optics, interchangeable LED module

Number of LEDs: 3x12 (for 24 W), 3x24 (for 48 W), 4x12 (for 24 W), 4x24 (for 48 W),

Expected useful lifetime: L90B10 - 100 000 h

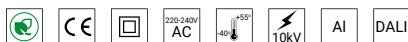
CRI: >70

Unit volume: 1,1 m³

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

Lighting sets STICK I LED and STICK II LED have the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	Height	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Concrete footing / reinforcement basket
217430/1/...	STICK III LED 3x24	5 m	3x24 W	3x28 W	700 mA	2 700 K	73 kg	B-60 / Z-60
217430/3/...	STICK III LED 3x24	5 m	3x24 W	3x28 W	700 mA	3 500 K	73 kg	B-60 / Z-60
217430/4/...	STICK III LED 3x24	5 m	3x24 W	3x28 W	700 mA	4 000 K	73 kg	B-60 / Z-60
217430/6/...	STICK III LED 3x24	5 m	3x24 W	3x28 W	700 mA	5 000 K	73 kg	B-60 / Z-60
217433/1/...	STICK III LED 3x48	5 m	3x48 W	3x55 W	700 mA	2 700 K	73 kg	B-60 / Z-60
217433/3/...	STICK III LED 3x48	5 m	3x48 W	3x55 W	700 mA	3 500 K	73 kg	B-60 / Z-60
217433/4/...	STICK III LED 3x48	5 m	3x48 W	3x55 W	700 mA	4 000 K	73 kg	B-60 / Z-60
217433/6/...	STICK III LED 3x48	5 m	3x48 W	3x55 W	700 mA	5 000 K	73 kg	B-60 / Z-60
217630/1/...	STICK IV LED 4x24	5 m	4x24 W	4x28 W	700 mA	2 700 K	79 kg	B-60 / Z-60
217630/3/...	STICK IV LED 4x24	5 m	4x24 W	4x28 W	700 mA	3 500 K	79 kg	B-60 / Z-60
217630/4/...	STICK IV LED 4x24	5 m	4x24 W	4x28 W	700 mA	4 000 K	79 kg	B-60 / Z-60
217630/6/...	STICK IV LED 4x24	5 m	4x24 W	4x28 W	700 mA	5 000 K	79 kg	B-60 / Z-60
217633/1/...	STICK IV LED 4x48	5 m	4x48 W	4x55 W	700 mA	2 700 K	79 kg	B-60 / Z-60
217633/3/...	STICK IV LED 4x48	5 m	4x48 W	4x55 W	700 mA	3 500 K	79 kg	B-60 / Z-60
217633/4/...	STICK IV LED 4x48	5 m	4x48 W	4x55 W	700 mA	4 000 K	79 kg	B-60 / Z-60
217633/6/...	STICK IV LED 4x48	5 m	4x48 W	4x55 W	700 mA	5 000 K	79 kg	B-60 / Z-60
217730/1/...	STICK IV LED 90° 4x24	5 m	4x24 W	4x28 W	700 mA	2 700 K	79 kg	B-60 / Z-60
217730/3/...	STICK IV LED 90° 4x24	5 m	4x24 W	4x28 W	700 mA	3 500 K	79 kg	B-60 / Z-60
217730/4/...	STICK IV LED 90° 4x24	5 m	4x24 W	4x28 W	700 mA	4 000 K	79 kg	B-60 / Z-60
217730/6/...	STICK IV LED 90° 4x24	5 m	4x24 W	4x28 W	700 mA	5 000 K	79 kg	B-60 / Z-60
217733/1/...	STICK IV LED 90° 4x48	5 m	4x48 W	4x55 W	700 mA	2 700 K	79 kg	B-60 / Z-60
217733/3/...	STICK IV LED 90° 4x48	5 m	4x48 W	4x55 W	700 mA	3 500 K	79 kg	B-60 / Z-60
217733/4/...	STICK IV LED 90° 4x48	5 m	4x48 W	4x55 W	700 mA	4 000 K	79 kg	B-60 / Z-60
217733/6/...	STICK IV LED 90° 4x48	5 m	4x48 W	4x55 W	700 mA	5 000 K	79 kg	B-60 / Z-60

/... Symbol of selected optical system

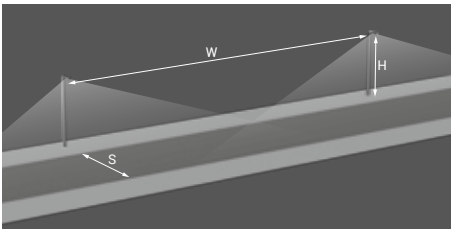


Technical parameters
STICK LED

LED lighting sets and columns

CORE LED

Lighting examples



Residential street

CORE LED 48 W, DW optics

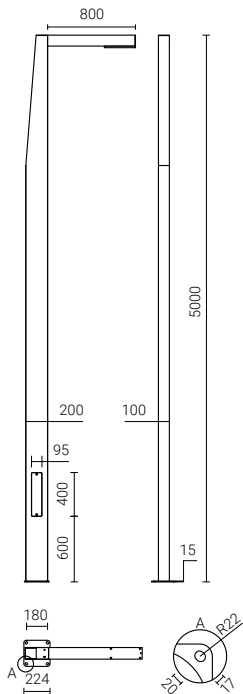
Parameters:

H – lighting sets height: 5 m

W – column spacing: 27 m

S – road width: 6 m

Lighting class P2



Application: residential streets, office buildings' surroundings, parks, pedestrian routes

Protection class: IP 66 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: graphite / black

Optical system: PMMA optics, interchangeable LED module

Decorative elements: strip of exotic wood

Number of LEDs: 12 (for 24 W), 24 (for 48 W)

Expected useful lifetime: L90B10 - 100 000 h

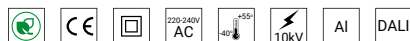
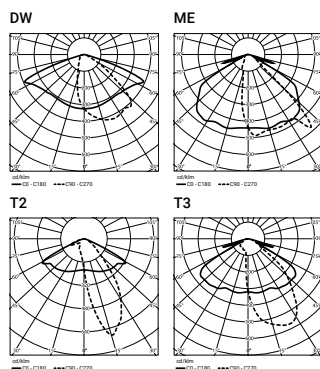
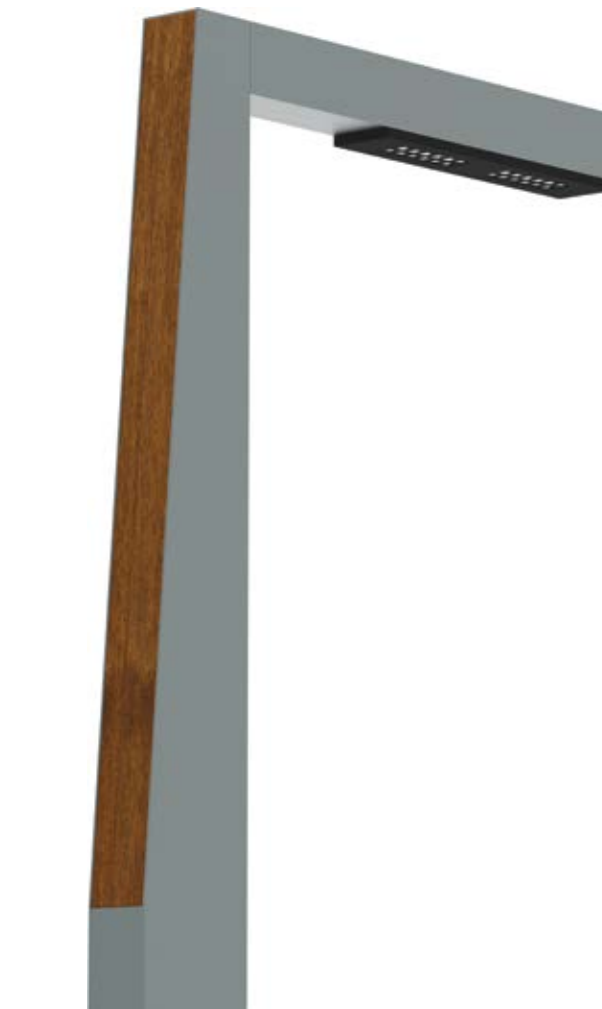
CRI: >70

Unit volume: 1,25 m³

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

Lighting set CORE LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	Height H	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Concrete footing / reinforcement basket
216530/1/...	CORE LED 24	5 m	24 W	28 W	700 mA	2 700 K	42 kg	B-50 / Z-50
216530/3/...	CORE LED 24	5 m	24 W	28 W	700 mA	3 500 K	42 kg	B-50 / Z-50
216530/4/...	CORE LED 24	5 m	24 W	28 W	700 mA	4 000 K	42 kg	B-50 / Z-50
216530/6/...	CORE LED 24	5 m	24 W	28 W	700 mA	5 000 K	42 kg	B-50 / Z-50
216533/1/...	CORE LED 48	5 m	48 W	55 W	700 mA	2 700 K	42 kg	B-50 / Z-50
216533/3/...	CORE LED 48	5 m	48 W	55 W	700 mA	3 500 K	42 kg	B-50 / Z-50
216533/4/...	CORE LED 48	5 m	48 W	55 W	700 mA	4 000 K	42 kg	B-50 / Z-50
216533/6/...	CORE LED 48	5 m	48 W	55 W	700 mA	5 000 K	42 kg	B-50 / Z-50

/... Symbol of selected optical system



Technical parameters
CORE LED

LED lighting sets and columns

EDGE LED

ROSA EDGE is a series of lighting products distinguished by modern edge illumination system. The edge lighting technology introduced by us for outdoor lighting is commonly used in the construction of displays, e.g., monitors, TVs, tablet screens, etc. Edge illumination in ROSA EDGE products introduces a stream of light to the edges of light elements that disperses light outside. With the light source switched off, these elements are crystal clear, while during operation, the light is evenly dispersed over the entire surface of the light parts.

The light dispersing effect is realized by the unique composition of PMMA material from the renowned Evonik company, which ensures durability and high light transmission index of our products.

The LED light elements used in the ROSA EDGE series are not directly visible, and the relatively large light-emitting surface, several hundred times larger than light sources, contributes to minimising the glare effect. The light source in these constructions is provided by high-performance LED modules with warm white LEDs of 3,500 K and neutral white of 5,000 K. Optionally, we can also offer colour variants: blue, red or green.

Elements using edge illumination can be used in street columns of the EDGE series, equipped with cross-section narrowing adapted to their assembly. Thanks to this, the lighting elements are flush with the column, ensuring an aesthetic appearance. The construction of the columns is uniform and durable because, apart from the openings for power cables, there is no other weakening of the column's cross-section. The use of this type of elements is a solution patented by us.

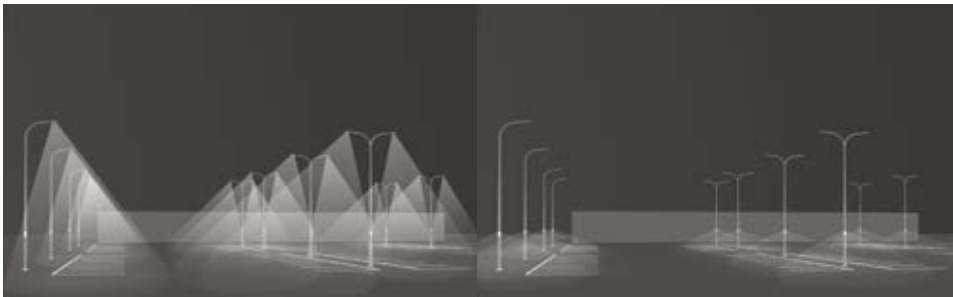
Additional illumination of pavements and bicycle paths



Optical spatial navigation



Energy savings thanks to EDGE technology



Standard lighting

EDGE lighting



LED light source

High-performance LED modules installed in the half-ring shapes with 3,500 K warm white LEDs and 5,000 K neutral white LEDs, and an optional range of colours (blue, red, green)

Seamless design

Installation in the outline of the columns provides an aesthetic appearance and durable construction

Philips Xitanium power supply

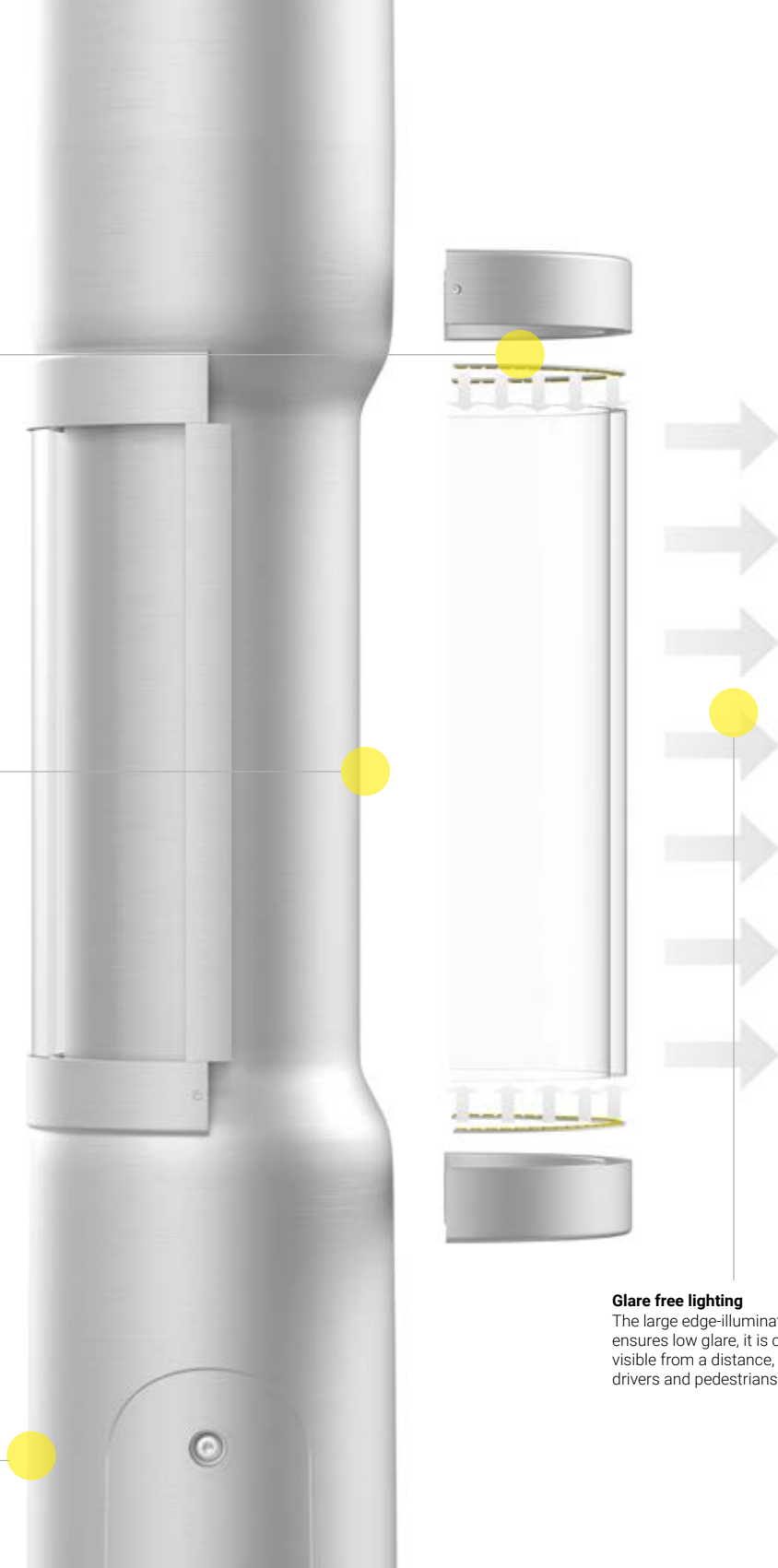
High-performance DC power supply with 7 programmable functions according to customer requirements

Programmable time profiles

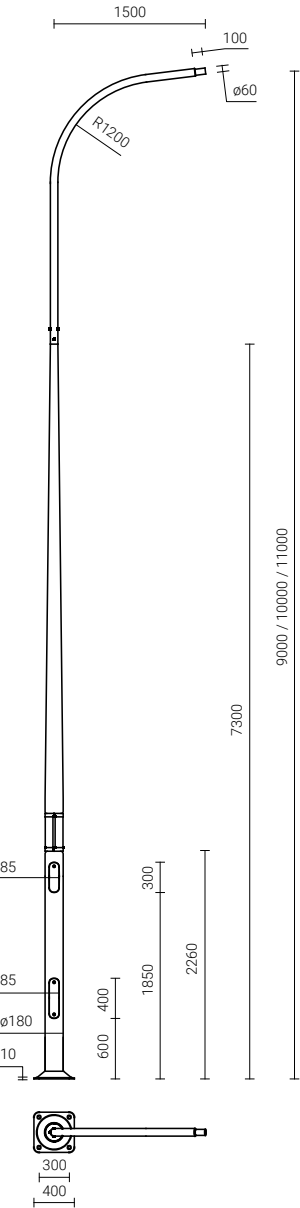
Power supply function with up to 5 power levels ranging from 10 to 100% of rated power, within the selected luminaire operating time interval

Glare free lighting

The large edge-illuminated surface ensures low glare, it is clearly visible from a distance, both for drivers and pedestrians



EDGE LED



Colour 1
Colour 2

Available colours:
R – red
G – green
B – blue
6 – white 5 000 K
3 – white 3 500 K

SAL 10 WLN 1/1,5,2,7/5 EDGE-1
Code: **4273127**/colour 1
SAL 10 WLN 1/1,5,2,7/5 EDGE-2
Code: **4273129**/colour 1/colour 2

EDGE-1 LED



Colour: green
Code: **4273127/G**



Colour: blue
Code: **4273127/B**



Colour: red
Code: **4273127/R**

EDGE-2 LED



Colour: green
Code: **4273129/G/G**



Colour: blue
Code: **4273129/B/B**



Colour: red
Code: **4273129/R/R**



Colour: green/red
Code: **4273129/G/R**



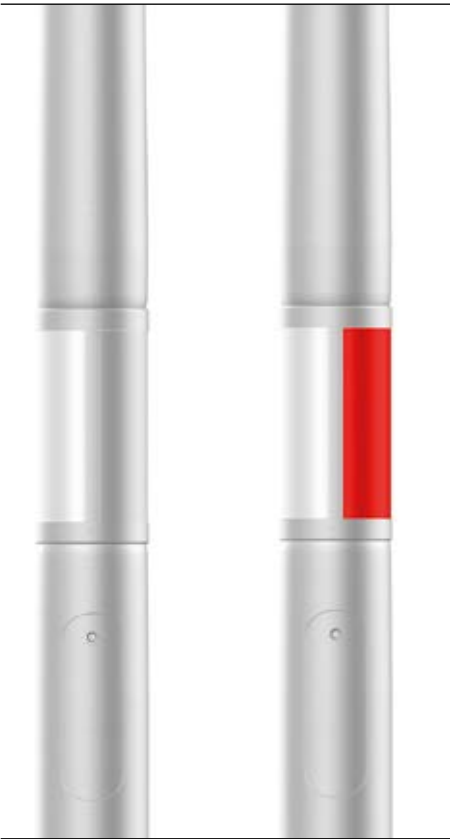
Colour: blue/red
Code: **4273129/B/R**



Colour: white/red
Code: **4273129/6/R**

Application: highways and expressways, urban roads, car parks,
Protection class: IP 66 for the optical part and the power supply system
Material: anodised aluminium alloy
Number of LEDs: 80 (EDGE LED 1), 160 (EDGE LED 2)
Diffuser: made of polymethyl methacrylate (PMMA)
Unit volume: 0,67 m³ (for SAL 9),
0,74 m³ (for SAL 10),
0,82 m³ (for SAL 11)
Input voltage frequency: 50/60 Hz
Power factor: ≥ 0,95

Rymanów Zdrój, Poland



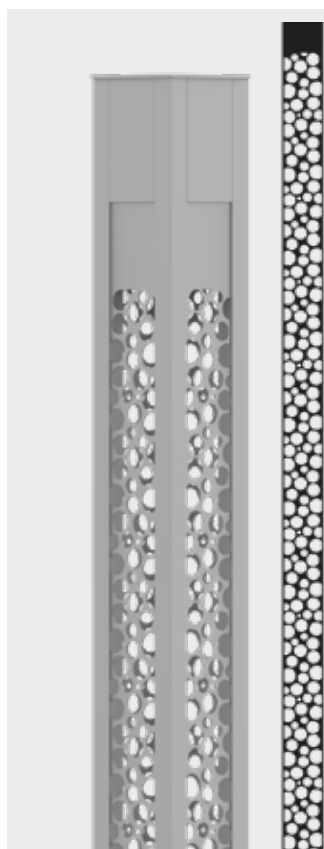
Code	Symbol	Height H	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Concrete footing / reinforcement basket
4273027/3/...	SAL 9 WLN 1/1,5/1,7/5 EDGE-1	9 m	10 W	14 W	420 mA	3 500 K	45,3 kg	B-71 / Z-71
4273027/6/...	SAL 9 WLN 1/1,5/1,7/5 EDGE-1	9 m	10 W	14 W	420 mA	5 000 K	45,3 kg	B-71 / Z-71
4273127/3/...	SAL 10 WLN 1/1,5/2,7/5 EDGE-1	10 m	10 W	14 W	420 mA	3 500 K	47,4 kg	B-71 / Z-71
4273127/6/...	SAL 10 WLN 1/1,5/2,7/5 EDGE-1	10 m	10 W	14 W	420 mA	5 000 K	47,4 kg	B-71 / Z-71
4273227/3/...	SAL 11 WLN 1/1,5/3,7/5 EDGE-1	11 m	10 W	14 W	420 mA	3 500 K	49,5 kg	B-71 / Z-71
4273227/6/...	SAL 11 WLN 1/1,5/3,7/5 EDGE-1	11 m	10 W	14 W	420 mA	5 000 K	49,5 kg	B-71 / Z-71
4273029/3/...	SAL 9 WLN 1/1,5/1,7/5 EDGE-2	9 m	20 W	26 W	420 mA	3 500 K	45,3 kg	B-71 / Z-71
4273029/6/...	SAL 9 WLN 1/1,5/1,7/5 EDGE-2	9 m	20 W	26 W	420 mA	5 000 K	45,3 kg	B-71 / Z-71
4273129/3/...	SAL 10 WLN 1/1,5/2,7/5 EDGE-2	10 m	20 W	26 W	420 mA	3 500 K	47,4 kg	B-71 / Z-71
4273129/6/...	SAL 10 WLN 1/1,5/2,7/5 EDGE-2	10 m	20 W	26 W	420 mA	5 000 K	47,4 kg	B-71 / Z-71
4273229/3/...	SAL 11 WLN 1/1,5/3,7/5 EDGE-2	11 m	20 W	26 W	420 mA	3 500 K	49,5 kg	B-71 / Z-71
4273229/6/...	SAL 11 WLN 1/1,5/3,7/5 EDGE-2	11 m	20 W	26 W	420mA	5 000 K	49,5 kg	B-71 / Z-71



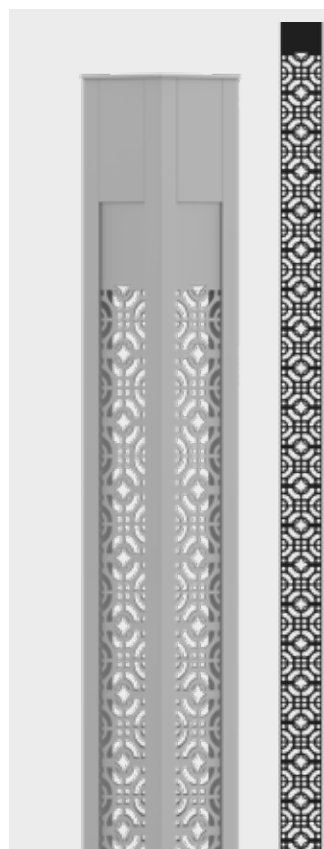
Technical parameters
EDGE LED

LED lighting columns

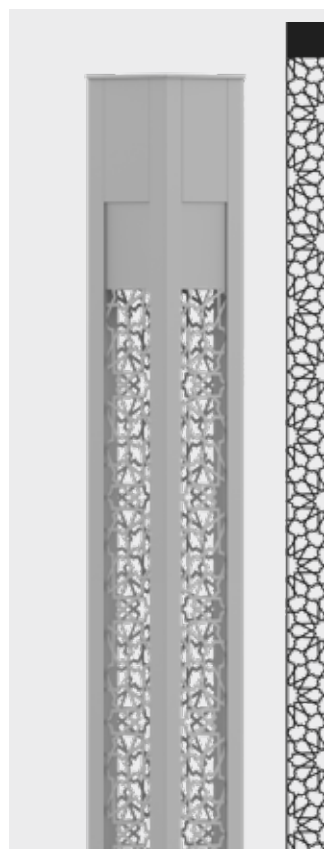
SAL PROF DECOR LED



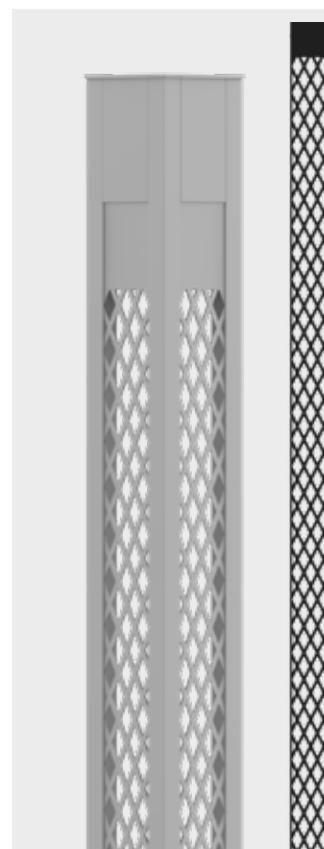
Decorative element A



Decorative element B

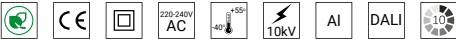
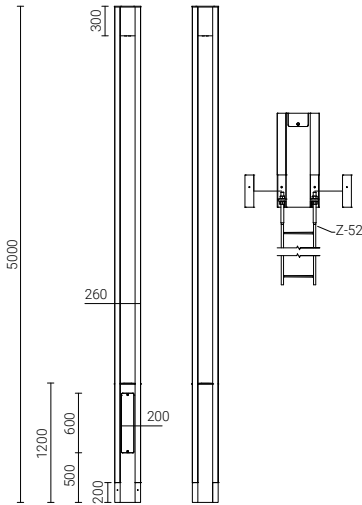


Decorative element C



Decorative element D

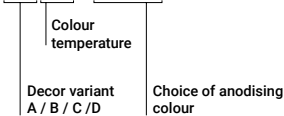
Application: office buildings' surroundings, parks, pedestrian routes
Protection class: IP 66 for the optical part and the power supply system
Material: anodised aluminium alloy
Anodising: 10 colours
Number of LEDs: 16
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,35 m³
Input voltage frequency: 50/60 Hz
Power factor: ≥ 0,95
Lighting set SLA PROF DECOR LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).
Technical data of the decorative elements available in the technical data sheet at www.rosa.pl



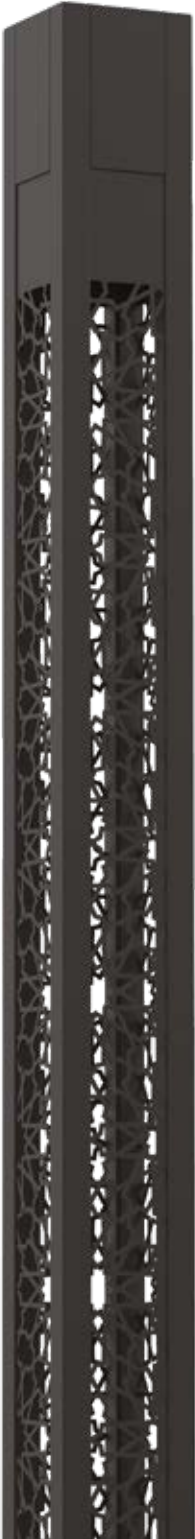
Code	Symbol	Height	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Reinforcement basket
219532/.../1/C...	SAL PROF DECOR LED	5 000 mm	36 W	40 W	750 mA	2 700 K	72 kg	Z-52
219532/.../3/C...	SAL PROF DECOR LED	5 000 mm	36 W	40 W	750 mA	3 500 K	72 kg	Z-52
219532/.../4/C...	SAL PROF DECOR LED	5 000 mm	36 W	40 W	750 mA	4 000 K	72 kg	Z-52
219532/.../6/C...	SAL PROF DECOR LED	5 000 mm	36 W	40 W	750 mA	5 000 K	72 kg	Z-52

/C... – choice of anodising colour

Code example
219532/A/1/C45



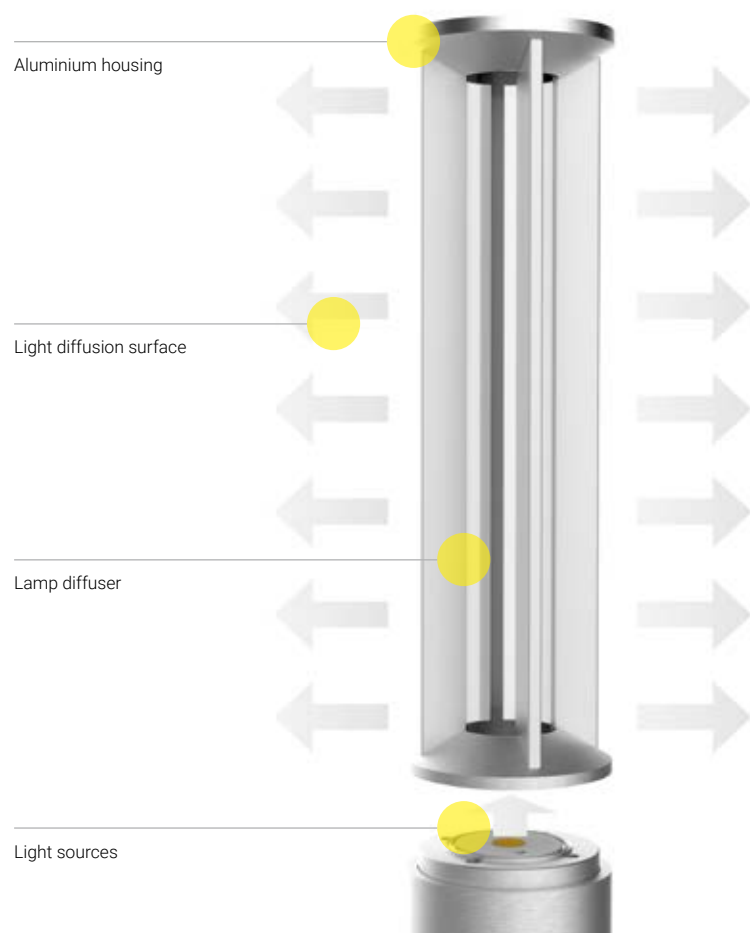
Technical parameters
SAL PROF DECOR LED



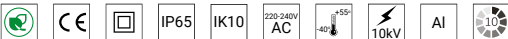
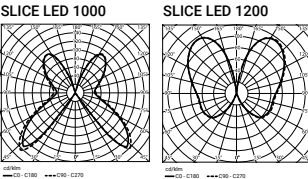
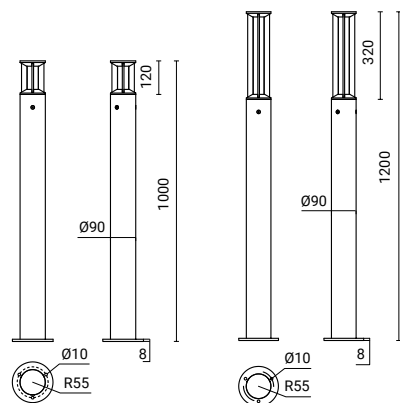
LED lighting columns

SLICE LED

The SLICE LED column is made of anodised aluminium with a height of 1000 and 1200 mm, equipped with a single rod-shaped light diffuser (ø40 mm) 100 or 300 mm long.



Application: office buildings' surroundings, parks, pedestrian routes
Protection class: IP 65
Material: anodised aluminium alloy
Anodising: 10 colours
Diffuser: transparent
Number of LEDs: 1
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,021 m³ (SLICE LED 1 000),
0,025 m³ (SLICE LED 1200),
Input voltage frequency: 50/60 Hz



Code	Symbol	Height H	LED power	Luminaire power con- sumption	LED forward current	Colour tem- perature	Net weight	Concrete footing / reinforcement basket
45290/1/C...	SLICE LED 1 000	1 000 mm	12 W	14 W	700 mA	2 700 K	4,6 kg	B-0A / Z-0A
45290/3/C...	SLICE LED 1 000	1 000 mm	12 W	14 W	700 mA	3 500 K	4,6 kg	B-0A / Z-0A
45290/4/C...	SLICE LED 1 000	1 000 mm	12 W	14 W	700 mA	4 000 K	4,6 kg	B-0A / Z-0A
45290/6/C...	SLICE LED 1 000	1 000 mm	12 W	14 W	700 mA	5 000 K	4,6 kg	B-0A / Z-0A
45291/1/C...	SLICE LED 1200	1 200 mm	12 W	14 W	700 mA	2 700 K	5,3 kg	B-0A / Z-0A
45291/3/C...	SLICE LED 1200	1 200 mm	12 W	14 W	700 mA	3 500 K	5,3 kg	B-0A / Z-0A
45291/4/C...	SLICE LED 1200	1 200 mm	12 W	14 W	700 mA	4 000 K	5,3 kg	B-0A / Z-0A
45291/6/C...	SLICE LED 1200	1 200 mm	12 W	14 W	700 mA	5 000 K	5,3 kg	B-0A / Z-0A



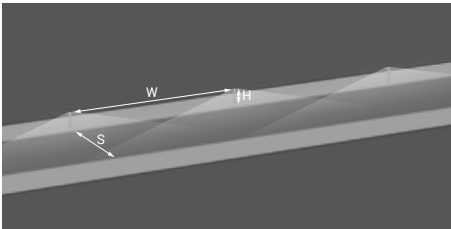
Technical parameters
SLICE LED

/C... - choice of anodising colour

LED lighting columns

FLARE LED

Lighting examples



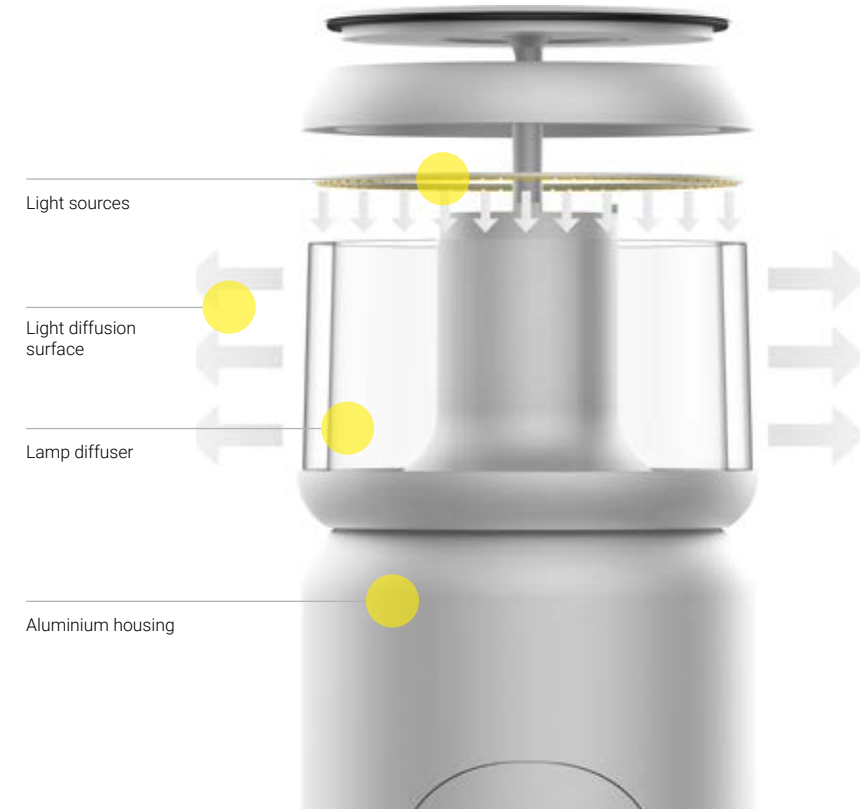
Pavement

FLARE LED 1

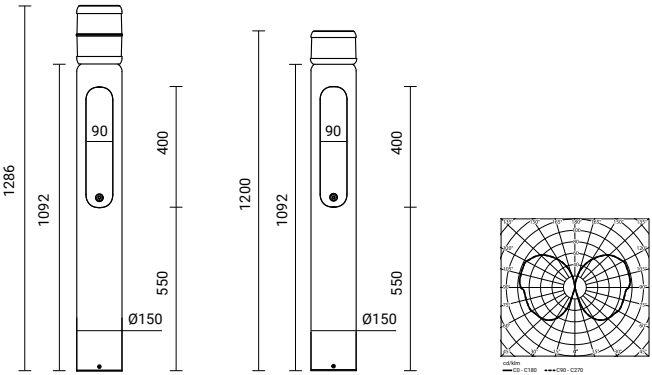
Parameters:

H – lighting bollard height: 1,2 m
W – lighting bollard spacing: 12 m
S – sidewalk width: 4 m

Lighting class P5



Application: office buildings' surroundings, parks, pedestrian routes
Protection class: IP 65 for the optical part and the power supply system
Material: anodised aluminium alloy
Anodising: 10 colours
Diffuser: transparent
Number of LEDs: 64 (FLARE LED 1), 128 (FLARE LED 2)
Expected useful lifetime: L80B20 – 50 000 h
CRI: >70
Unit volume: 0,027 m³ (FLARE LED 1), 0,029 m³ (FLARE LED 2)
Input voltage frequency: 50/60 Hz
Power factor: ≥ 0,95



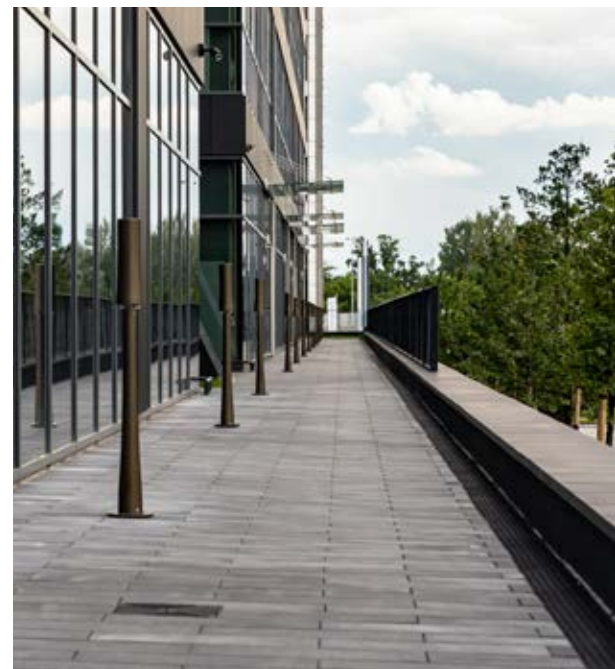
Code	Symbol	Height H	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net wight	Concrete footing / reinforcement basket
45280/3/C...	FLARE LED 1	1200 mm	14 W	16 W	580 mA	3 500 K	8,5 kg	B-0A / Z-0A
45280/6/C...	FLARE LED 1	1200 mm	14 W	16 W	580 mA	5 000 K	8,5 kg	B-0A / Z-0A
45281/3/C...	FLARE LED 2	1286 mm	20 W	22 W	420 mA	3 500 K	9,0 kg	B-0A / Z-0A
45281/6/C...	FLARE LED 2	1286 mm	20 W	22 W	420 mA	5 000 K	9,0 kg	B-0A / Z-0A

/C... – choice of anodising colour



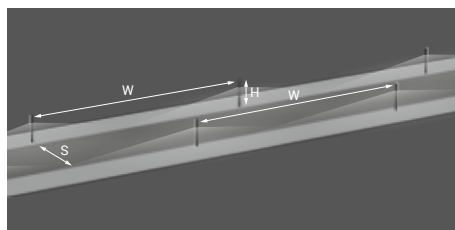
Technical parameters
FLARE LED

LED lighting columns
DAMA II LED



Cracow, Poland

Lighting examples



Pavement

DAMA II LED

Parameters:

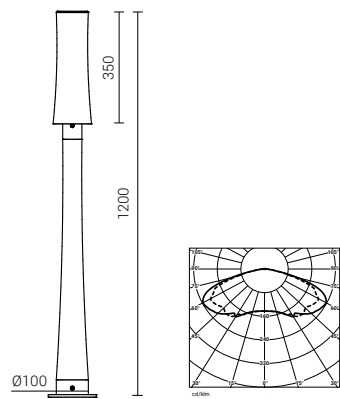
H – height bollard: 1,2 m

W – rozstaw bollard: 11 m

S – pavement width: 4 m

Lighting class P4

Application: office buildings' surroundings, parks, pedestrian routes,
Protection class: IP 65 for the optical part and the power supply system
Material: anodised aluminium alloy
Anodising: 10 colours
Number of LEDs: 6
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,03 m³
Input voltage frequency: 50/60 Hz



Code	Symbol	Height H	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Concrete footing / reinforcement basket
45330/1/C...	DAMA II LED	1 200 mm	6 W	10 W	350 mA	2 700 K	4,4 kg	B-0A / Z-0A
45330/3/C...	DAMA II LED	1 200 mm	6 W	10 W	350 mA	3 500 K	4,4 kg	B-0A / Z-0A
45330/4/C...	DAMA II LED	1 200 mm	6 W	10 W	350 mA	4 000 K	4,4 kg	B-0A / Z-0A
45330/6/C...	DAMA II LED	1 200 mm	6 W	10 W	350 mA	5 000 K	4,4 kg	B-0A / Z-0A

/C... - choice of anodising colour

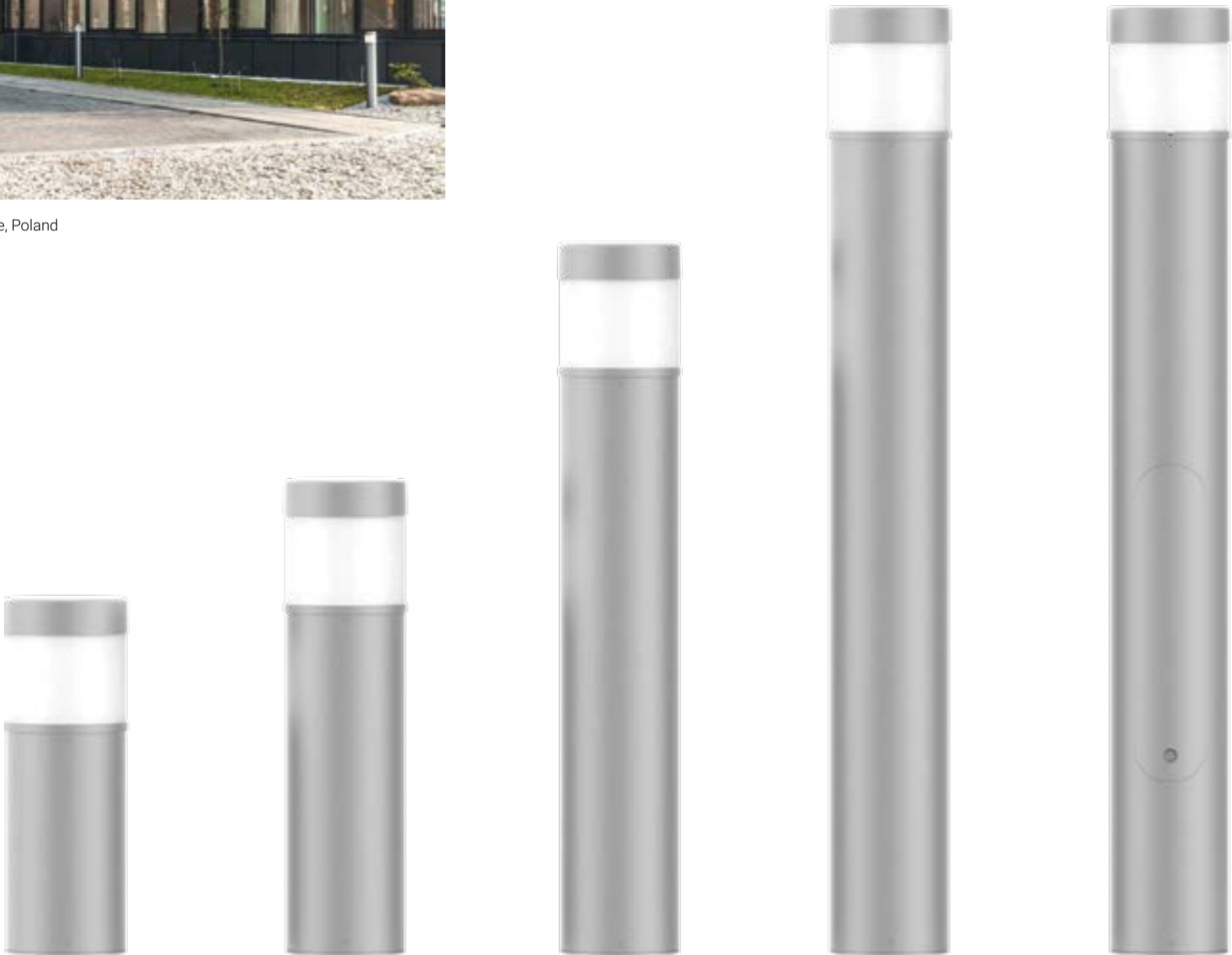
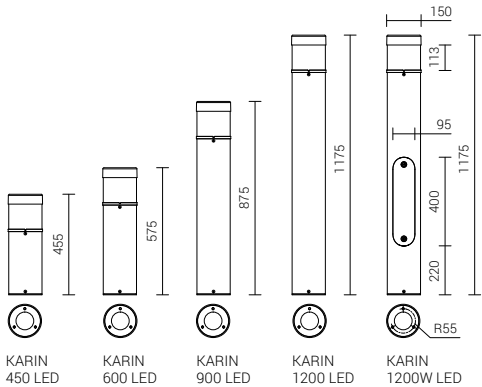


Technical parameters
DAMA II LED

LED lighting columns
KARIN LED



Katowice, Poland



Application: office buildings' surroundings, parks, pedestrian routes
Protection class: IP 65 for the optical part and the power supply system
Material: anodised aluminium alloy
Anodising: 10 colours
Diffuser: frosted (PMMA)

Number of LEDs: 8
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Input voltage frequency: 50/60 Hz



Code	Symbol	Height H	Diffuser height h	Diameter D	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Concrete footing / reinforcement basket
452008/1/C...	KARIN 450 LED 8	455 mm	113 mm	150 mm	8 W	12 W	350 mA	2 700 K	3 kg	B-0 / Z-0
452008/3/C...	KARIN 450 LED 8	455 mm	113 mm	150 mm	8 W	12 W	350 mA	3 500 K	3 kg	B-0 / Z-0
452008/4/C...	KARIN 450 LED 8	455 mm	113 mm	150 mm	8 W	12 W	350 mA	4 000 K	3 kg	B-0 / Z-0
452008/6/C...	KARIN 450 LED 8	455 mm	113 mm	150 mm	8 W	12 W	350 mA	5 000 K	3 kg	B-0 / Z-0
45200/1/C...	KARIN 450 LED 16	455 mm	113 mm	150 mm	16 W	20 W	700 mA	2 700 K	3 kg	B-0 / Z-0
45200/3/C...	KARIN 450 LED 16	455 mm	113 mm	150 mm	16 W	20 W	700 mA	3 500 K	3 kg	B-0 / Z-0
45200/4/C...	KARIN 450 LED 16	455 mm	113 mm	150 mm	16 W	20 W	700 mA	4 000 K	3 kg	B-0 / Z-0
45200/6/C...	KARIN 450 LED 16	455 mm	113 mm	150 mm	16 W	20 W	700 mA	5 000 K	3 kg	B-0 / Z-0
452108/1/C...	KARIN 600 LED 8	575 mm	113 mm	150 mm	8 W	12 W	350 mA	2 700 K	3,5 kg	B-0 / Z-0
452108/3/C...	KARIN 600 LED 8	575 mm	113 mm	150 mm	8 W	12 W	350 mA	3 500 K	3,5 kg	B-0 / Z-0
452108/4/C...	KARIN 600 LED 8	575 mm	113 mm	150 mm	8 W	12 W	350 mA	4 000 K	3,5 kg	B-0 / Z-0
452108/6/C...	KARIN 600 LED 8	575 mm	113 mm	150 mm	8 W	12 W	350 mA	5 000 K	3,5 kg	B-0 / Z-0
45210/1/C...	KARIN 600 LED 16	575 mm	113 mm	150 mm	16 W	20 W	700 mA	2 700 K	3,5 kg	B-0 / Z-0
45210/3/C...	KARIN 600 LED 16	575 mm	113 mm	150 mm	16 W	20 W	700 mA	3 500 K	3,5 kg	B-0 / Z-0
45210/4/C...	KARIN 600 LED 16	575 mm	113 mm	150 mm	16 W	20 W	700 mA	4 000 K	3,5 kg	B-0 / Z-0
45210/6/C...	KARIN 600 LED 16	575 mm	113 mm	150 mm	16 W	20 W	700 mA	5 000 K	3,5 kg	B-0 / Z-0
452208/1/C...	KARIN 900 LED 8	875 mm	113 mm	150 mm	8 W	12 W	350 mA	2 700 K	4,2 kg	B-0 / Z-0
452208/3/C...	KARIN 900 LED 8	875 mm	113 mm	150 mm	8 W	12 W	350 mA	3 500 K	4,2 kg	B-0 / Z-0
452208/4/C...	KARIN 900 LED 8	875 mm	113 mm	150 mm	8 W	12 W	350 mA	4 000 K	4,2 kg	B-0 / Z-0
452208/6/C...	KARIN 900 LED 8	875 mm	113 mm	150 mm	8 W	12 W	350 mA	5 000 K	4,2 kg	B-0 / Z-0
45220/1/C...	KARIN 900 LED 16	875 mm	113 mm	150 mm	16 W	20 W	700 mA	2 700 K	4,2 kg	B-0 / Z-0
45220/3/C...	KARIN 900 LED 16	875 mm	113 mm	150 mm	16 W	20 W	700 mA	3 500 K	4,2 kg	B-0 / Z-0
45220/4/C...	KARIN 900 LED 16	875 mm	113 mm	150 mm	16 W	20 W	700 mA	4 000 K	4,2 kg	B-0 / Z-0
45220/6/C...	KARIN 900 LED 16	875 mm	113 mm	150 mm	16 W	20 W	700 mA	5 000 K	4,2 kg	B-0 / Z-0
452308/1/C...	KARIN 1200 LED 8	1 175 mm	113 mm	150 mm	8 W	12 W	350 mA	2 700 K	5,5 kg	B-0A / Z-0A
452308/3/C...	KARIN 1200 LED 8	1 175 mm	113 mm	150 mm	8 W	12 W	350 mA	3 500 K	5,5 kg	B-0A / Z-0A
452308/4/C...	KARIN 1200 LED 8	1 175 mm	113 mm	150 mm	8 W	12 W	350 mA	4 000 K	5,5 kg	B-0A / Z-0A
452308/6/C...	KARIN 1200 LED 8	1 175 mm	113 mm	150 mm	8 W	12 W	350 mA	5 000 K	5,5 kg	B-0A / Z-0A
45230/1/C...	KARIN 1200 LED 16	1 175 mm	113 mm	150 mm	16 W	20 W	700 mA	2 700 K	5,5 kg	B-0A / Z-0A
45230/3/C...	KARIN 1200 LED 16	1 175 mm	113 mm	150 mm	16 W	20 W	700 mA	3 500 K	5,5 kg	B-0A / Z-0A
45230/4/C...	KARIN 1200 LED 16	1 175 mm	113 mm	150 mm	16 W	20 W	700 mA	4 000 K	5,5 kg	B-0A / Z-0A
45230/6/C...	KARIN 1200 LED 16	1 175 mm	113 mm	150 mm	16 W	20 W	700 mA	5 000 K	5,5 kg	B-0A / Z-0A
452328/1/C...	KARIN 1200W LED 8	1 175 mm	113 mm	150 mm	8 W	12 W	350 mA	2 700 K	6,8 kg	B-0A / Z-0A
452328/3/C...	KARIN 1200W LED 8	1 175 mm	113 mm	150 mm	8 W	12 W	350 mA	3 500 K	6,8 kg	B-0A / Z-0A
452328/4/C...	KARIN 1200W LED 8	1 175 mm	113 mm	150 mm	8 W	12 W	350 mA	4 000 K	6,8 kg	B-0A / Z-0A
452328/6/C...	KARIN 1200W LED 8	1 175 mm	113 mm	150 mm	8 W	12 W	350 mA	5 000 K	6,8 kg	B-0A / Z-0A
45232/1/C...	KARIN 1200W LED 16	1 175 mm	113 mm	150 mm	16 W	20 W	700 mA	2 700 K	6,8 kg	B-0A / Z-0A
45232/3/C...	KARIN 1200W LED 16	1 175 mm	113 mm	150 mm	16 W	20 W	700 mA	3 500 K	6,8 kg	B-0A / Z-0A
45232/4/C...	KARIN 1200W LED 16	1 175 mm	113 mm	150 mm	16 W	20 W	700 mA	4 000 K	6,8 kg	B-0A / Z-0A
45232/6/C...	KARIN 1200W LED 16	1 175 mm	113 mm	150 mm	16 W	20 W	700 mA	5 000 K	6,8 kg	B-0A / Z-0A

/C... - choice of anodising colour

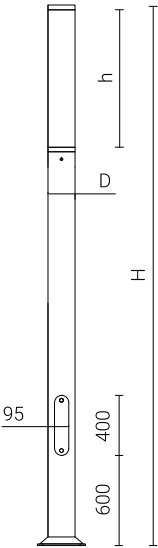


Technical parameters
KARIN LED 450-1200

LED lighting columns
KARIN LED



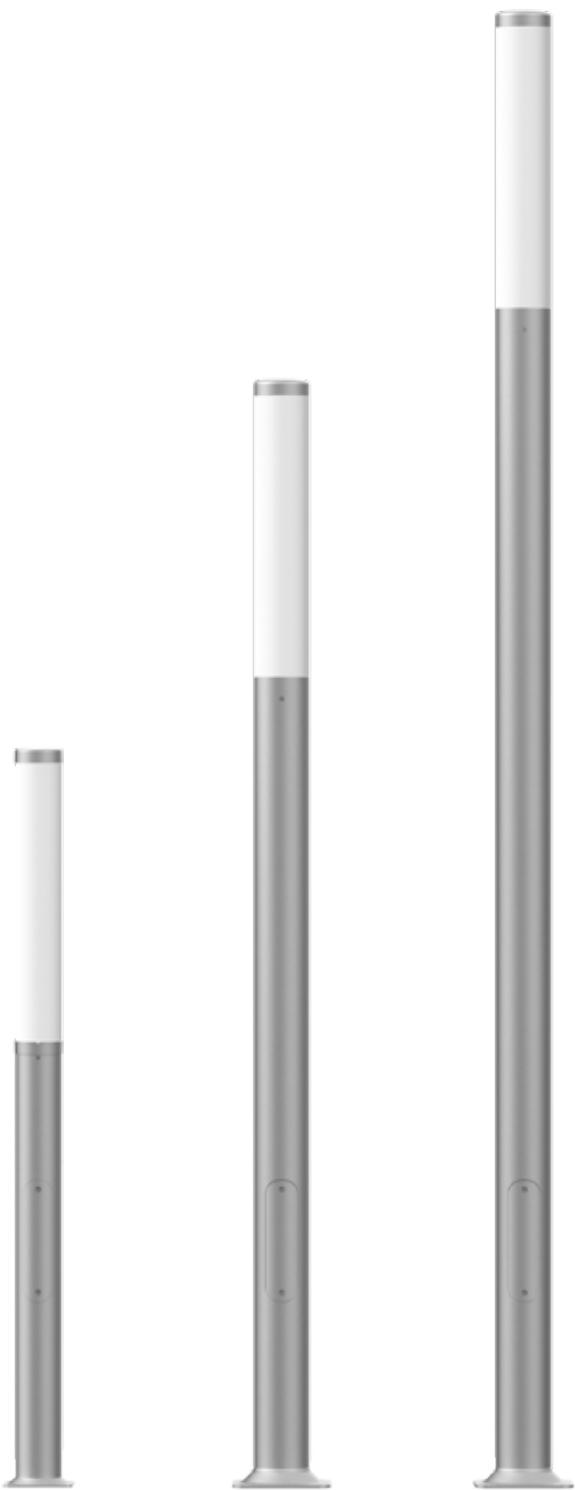
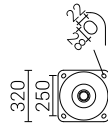
Żywiec, Poland



KARIN 2400 LED



KARIN 3600-4800 LED



Application: office buildings' surroundings, parks, pedestrian routes

Protection class: IP 65 for the optical part and the power supply system

Material: anodised aluminium alloy

Anodising: 10 colours

Diffuser: frosted (PMMA)

Number of LEDs: 16 (KARIN 2400 LED)

24 (KARIN 3600 LED, KARIN 4800 LED)

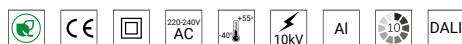
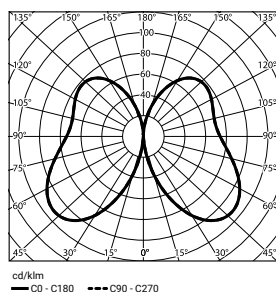
Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

Lighting column KARIN LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	Height H	Diffuser height h	Diameter D	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Concrete footing / reinforcement basket
45240/1/C...	KARIN 2400 LED 32	2 400 mm	915 mm	150 mm	32 W	38 W	700 mA	2 700 K	12 kg	B-50 / Z-50
45240/3/C...	KARIN 2400 LED 32	2 400 mm	915 mm	150 mm	32 W	38 W	700 mA	3 500 K	12 kg	B-50 / Z-50
45240/4/C...	KARIN 2400 LED 32	2 400 mm	915 mm	150 mm	32 W	38 W	700 mA	4 000 K	12 kg	B-50 / Z-50
45240/6/C...	KARIN 2400 LED 32	2 400 mm	915 mm	150 mm	32 W	38 W	700 mA	5 000 K	12 kg	B-50 / Z-50
45250/1/C...	KARIN 3600 LED 48	3 600 mm	915 mm	180 mm	48 W	55 W	700 mA	2 700 K	26 kg	B-60 / Z-60
45250/3/C...	KARIN 3600 LED 48	3 600 mm	915 mm	180 mm	48 W	55 W	700 mA	3 500 K	26 kg	B-60 / Z-60
45250/4/C...	KARIN 3600 LED 48	3 600 mm	915 mm	180 mm	48 W	55 W	700 mA	4 000 K	26 kg	B-60 / Z-60
45250/6/C...	KARIN 3600 LED 48	3 600 mm	915 mm	180 mm	48 W	55 W	700 mA	5 000 K	26 kg	B-60 / Z-60
45254/1/C...	KARIN 4800 LED 48	4 800 mm	915 mm	180 mm	48 W	55 W	700 mA	2 700 K	32 kg	B-60 / Z-60
45254/3/C...	KARIN 4800 LED 48	4 800 mm	915 mm	180 mm	48 W	55 W	700 mA	3 500 K	32 kg	B-60 / Z-60
45254/4/C...	KARIN 4800 LED 48	4 800 mm	915 mm	180 mm	48 W	55 W	700 mA	4 000 K	32 kg	B-60 / Z-60
45254/6/C...	KARIN 4800 LED 48	4 800 mm	915 mm	180 mm	48 W	55 W	700 mA	5 000 K	32 kg	B-60 / Z-60

/C... – choice of anodising colour

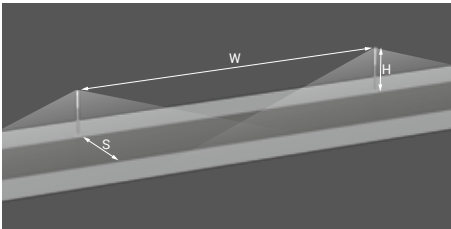


Technical parameters
KARIN LED 2400-4800

LED lighting columns

KARIN DECOR LED

Lighting examples



Pedestrian routes

KARIN DECOR 2400 LED

Parameters:

- H – lighting column height: 2,4 m
- W – lighting column spacing: 18 m
- S – pavement width: 5 m

Lighting class P4



Tychy, Poland



Application: office buildings' surroundings, parks, pedestrian routes

Protection class: IP 65 for the optical part and the power supply system

Material: anodised aluminium alloy

Anodising: 10 colours

Diffuser: frosted (PMMA)

Number of LEDs: 16 (KARIN DECOR 2400 LED)

24 (KARIN DECOR 3600 LED, KARIN DECOR 4800 LED)

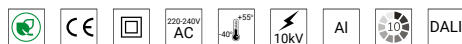
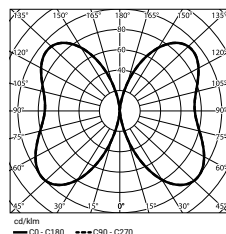
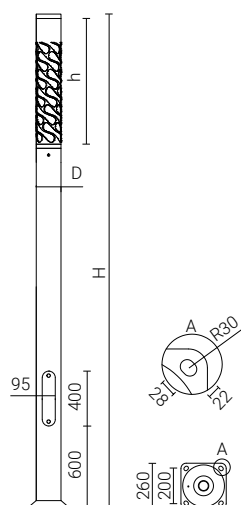
Expected useful lifetime: L90B10 - 100 000 h

CRI: >70

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

Lighting column KARIN DECOR LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	Height H	Diffuser height h	Diameter D	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Concrete footing / reinforcement basket
45241/1/C...	KARIN DECOR 2400 LED	2 400 mm	915 mm	150 mm	32 W	38 W	700 mA	2 700 K	13 kg	B-50 / Z-50
45241/3/C...	KARIN DECOR 2400 LED	2 400 mm	915 mm	150 mm	32 W	38 W	700 mA	3 500 K	13 kg	B-50 / Z-50
45241/4/C...	KARIN DECOR 2400 LED	2 400 mm	915 mm	150 mm	32 W	38 W	700 mA	4 000 K	13 kg	B-50 / Z-50
45241/6/C...	KARIN DECOR 2400 LED	2 400 mm	915 mm	150 mm	32 W	38 W	700 mA	5 000 K	13 kg	B-50 / Z-50
45251/1/C...	KARIN DECOR 3600 LED	3 600 mm	915 mm	180 mm	48 W	55 W	700 mA	2 700 K	27 kg	B-60 / Z-60
45251/3/C...	KARIN DECOR 3600 LED	3 600 mm	915 mm	180 mm	48 W	55 W	700 mA	3 500 K	27 kg	B-60 / Z-60
45251/4/C...	KARIN DECOR 3600 LED	3 600 mm	915 mm	180 mm	48 W	55 W	700 mA	4 000 K	27 kg	B-60 / Z-60
45251/6/C...	KARIN DECOR 3600 LED	3 600 mm	915 mm	180 mm	48 W	55 W	700 mA	5 000 K	27 kg	B-60 / Z-60
45261/1/C...	KARIN DECOR 4800 LED	4 800 mm	915 mm	180 mm	48 W	55 W	700 mA	2 700 K	33 kg	B-60 / Z-60
45261/3/C...	KARIN DECOR 4800 LED	4 800 mm	915 mm	180 mm	48 W	55 W	700 mA	3 500 K	33 kg	B-60 / Z-60
45261/4/C...	KARIN DECOR 4800 LED	4 800 mm	915 mm	180 mm	48 W	55 W	700 mA	4 000 K	33 kg	B-60 / Z-60
45261/6/C...	KARIN DECOR 4800 LED	4 800 mm	915 mm	180 mm	48 W	55 W	700 mA	5 000 K	33 kg	B-60 / Z-60

/C... - choice of anodising colour



Technical parameters
KARIN DECOR LED

LED lighting columns

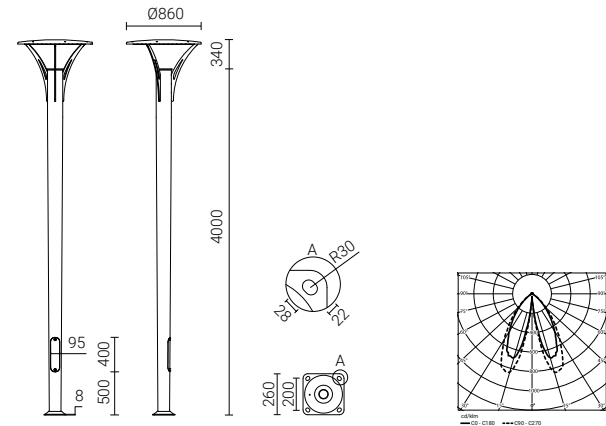
SAL DECO-1 LED



Racibórz, Poland



Application: parks, pedestrian routes, office buildings' surroundings
Protection class: IP 65 for the optical part and the power supply system
Material: anodised aluminium alloy
Colour: column and arms – 10 anodising colours
cap RAL 7047 laminate
aluminium plate around reflector – painted in RAL 9016
Optical system: closed with heat-resistant glass, cap with external reflector in the form of convex, mirrored squares
Number of LEDs: 32
Expected useful lifetime: L90B10 - 100 000 h
CRI: >70
Unit volume: 0,35 m³
Input voltage frequency: 50/60 Hz
Power factor: ≥ 0,95
Lighting column SAL DECO-1 LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	Height H	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Concrete footing / reinforcement basket
42928/1/C...	SAL DECO-1 LED	4 000 mm	65 W	73 W	700 mA	2 700 K	43 kg	B-51 / Z-51
42928/3/C...	SAL DECO-1 LED	4 000 mm	65 W	73 W	700 mA	3 500 K	43 kg	B-51 / Z-51
42928/4/C...	SAL DECO-1 LED	4 000 mm	65 W	73 W	700 mA	4 000 K	43 kg	B-51 / Z-51
42928/6/C...	SAL DECO-1 LED	4 000 mm	65 W	73 W	700 mA	5 000 K	43 kg	B-51 / Z-51

/C... – choice of anodising colour



Technical parameters
SAL DECO-1 LED

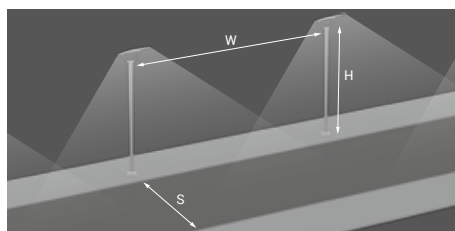


LED lighting columns

SAL DECO-2 LED



Lighting examples



Promenade

SAL DECO-2 LED 65 W

Parameters:

H – lighting column height: 4,6 m

W – lighting column spacing: 9 m

S – promenade width: 6 m

Lighting class C2

Łódź, Poland



Application: residential streets, parks, pedestrian routes,
office buildings' surroundings

Protection class: IP 65 for the optical part and the power supply system

Material: anodised aluminium alloy

Colour: column and arms – 10 anodising colours

cap RAL 7047 laminate

aluminium plate around reflector – painted in RAL 9016

Optical system: closed with heat-resistant glass, cap with external reflector in the form of convex,
mirrored squares

Number of LEDs: 32

Expected useful lifetime: L90B10 - 100 000 h

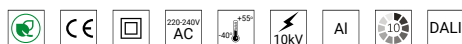
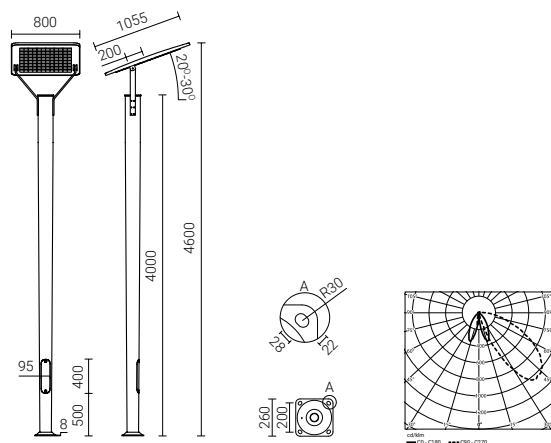
CRI: >70

Unit volume: 0,35 m³

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

Lighting column SAL DECO-2 LED has the possibility to connect to an external control system via
DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	Height H	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Concrete footing / reinforcement basket
42929/1/C...	SAL DECO-2 LED	4 600 mm	65 W	73 W	700 mA	2 700 K	47 kg	B-51 / Z-51
42929/3/C...	SAL DECO-2 LED	4 600 mm	65 W	73 W	700 mA	3 500 K	47 kg	B-51 / Z-51
42929/4/C...	SAL DECO-2 LED	4 600 mm	65 W	73 W	700 mA	4 000 K	47 kg	B-51 / Z-51
42929/6/C...	SAL DECO-2 LED	4 600 mm	65 W	73 W	700 mA	5 000 K	47 kg	B-51 / Z-51

/C... – choice of anodising colour

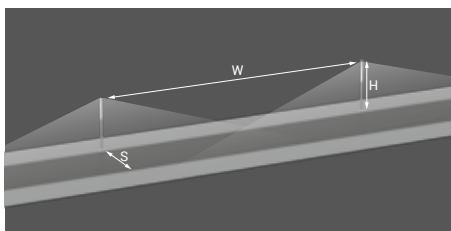


Technical parameters
SAL DECO-2 LED

LED lighting columns

SAL DECO-3 LED

Lighting examples



Pavement/promenade

SAL DECO-3 LED 48 W

Parameters:

H – lighting column height: 3,5 m

W – lighting column spacing: 20 m

S – promenade width: 5 m

Lighting class P4

France



Application: residential streets, parks, pedestrian routes, office buildings' surroundings

Protection class: IP 65 for the optical part and the power supply system

Material: anodised aluminium alloy

Anodising: 10 colours

Optical system: white diffuser made of UV-resistant PC; aluminium decorative elements

Number of LEDs: 24

Expected useful lifetime: L90B10 - 100 000 h

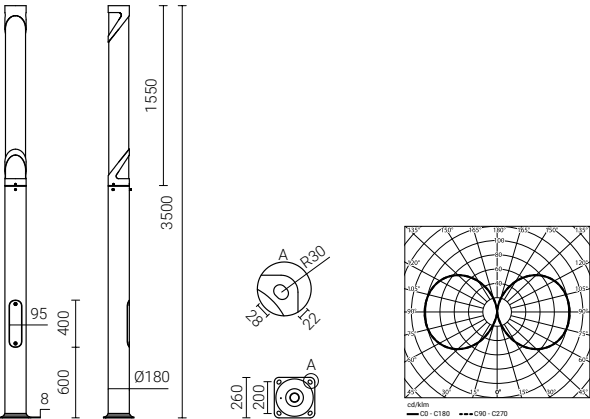
CRI: >70

Unit volume: 0,12 m³

Input voltage frequency: 50/60 Hz

Power factor: ≥ 0,95

Lighting column SAL DECO-3 LED has the possibility to connect to an external control system via DALI interface (optionally via analogue signal 1-10V).



Code	Symbol	Height H	LED power	Luminaire power consumption	LED forward current	Colour temperature	Net weight	Concrete footing / reinforcement basket
42923/1/C...	SAL DECO-3 LED	3 500 mm	48 W	55 W	700 mA	2 700 K	28 kg	B-51 / Z-51
42923/3/C...	SAL DECO-3 LED	3 500 mm	48 W	55 W	700 mA	3 500 K	28 kg	B-51 / Z-51
42923/4/C...	SAL DECO-3 LED	3 500 mm	48 W	55 W	700 mA	4 000 K	28 kg	B-51 / Z-51
42923/6/C...	SAL DECO-3 LED	3 500 mm	48 W	55 W	700 mA	5 000 K	28 kg	B-51 / Z-51

/C... - choice of anodising colour



Technical parameters
SAL DECO-3 LED

High-intensity discharge luminaires

High-intensity discharge luminaires

ELBA



Application: parks, pedestrian routes, cycle paths

Installation: directly on the column or on extension arm with ø60x50 mm ending

Protection class: IP 65

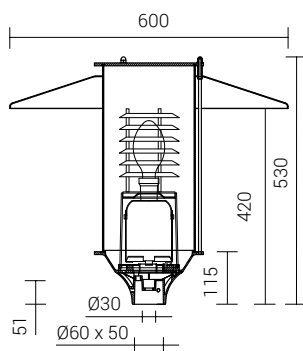
Material: cap – formed aluminium sheet
diffuser – frosted cylindrical $\varnothing 200$ mm (PMMA)
base – high-pressure die-casted aluminium alloy
electrical equipment cover – polycarbonate (PC)

Colour: black or painted

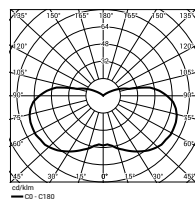
Mounting method: upwards only

Unit volume: $0,06 \text{ m}^3$

Input voltage frequency: 50 Hz



ELBA S-70 W frosted diffuser



Code	Symbol	Power	Luminaire power consumption	Light source	Net weight
2134002	ELBA S-70W, frosted diffuser PMMA	70 W	92 W	Sodium E-27	6,3 kg
2134007	ELBA MH-70W, frosted diffuser PMMA	70 W	92 W	Metal halide E-27	6,3 kg
2134015	ELBA E/Z, frosted diffuser PMMA	23 W	23 W	LED E-27	5,0 kg
213602	ELBA S-70W, transparent diffuser PMMA	70 W	92 W	Sodium E-27	6,5 kg
213607	ELBA MH-70W, transparent diffuser PMMA	70 W	92 W	Metal halide E-27	6,5 kg
213615	ELBA E/Z, transparent diffuser PMMA	23 W	23 W	LED E-27	5,2 kg

Lublin, Poland



High-intensity discharge luminaires

OS-1



– ending



– cap



– universal mounting frame with
electromagnetic

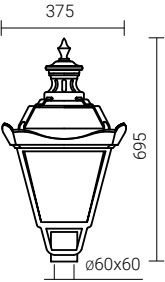
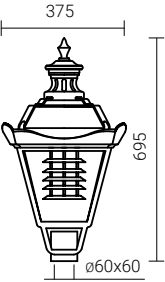


– frosted diffuser

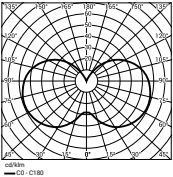


– base

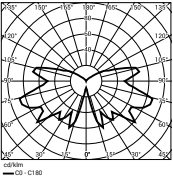
Application: parks, pedestrian routes
Installation: on columns, extension arms, wall brackets, anodised aluminium brackets with ø60x60 mm ending
Protection class: IP 54
Material: body – UV-resistant polypropylene with glass fibre
diffuser – PMMA or PC
transparent
Colour: black
Mounting method: upwards or downwards
Unit volume: 0,1 m³
Input voltage frequency: 50 Hz



OS-1 S-70 W
frosted diffuser



OS-1 MH-70 W
transparent diffuser with louvre reflector



Code	Symbol	Power	Luminaire power consumption	Light source	Net weight
211202	OS-1 S-70W transparent diffuser PMMA	70 W	92 W	Sodium E-27	5,2 kg
211302	OS-1 S-70W transparent diffuser PC	70 W	92 W	Sodium E-27	5,2 kg
2110002	OS-1 S-70W frosted diffuser PMMA	70 W	92 W	Sodium E-27	5,2 kg
211307	OS-1 MH-70W transparent diffuser PC	70 W	92 W	Metal halide E-27	5,2 kg
2110007	OS-1 MH-70W frosted diffuser PMMA	70 W	92 W	Metal halide E-27	5,2 kg
211215	OS-1 E/Z transparent diffuser PMMA	23 W	23 W	LED E-27	3,9 kg
211315	OS-1 E/Z transparent diffuser PC	23 W	23 W	LED E-27	3,9 kg
2110015	OS-1 E/Z frosted diffuser PMMA	23 W	23 W	LED E-27	3,9 kg

Estonia



High-intensity discharge luminaires

OP

Application: parks, pedestrian routes

Installation: on columns, extension arms, wall brackets, anodised aluminium brackets with ø60x60 mm ending

Protection class: IP 65 for luminaire with diffuser

Material: base – polyamide, electrical equipment cover - polycarbonate

Colour: black

Mounting method: upwards or downwards

Rodzaje Luminaires:

OP 400 - lamp's diffuser collar diameter ø180 mm

OP 450 - lamp's diffuser collar diameter ø200 mm

Unit volume: 0,1 m³

Input voltage frequency: 50 Hz

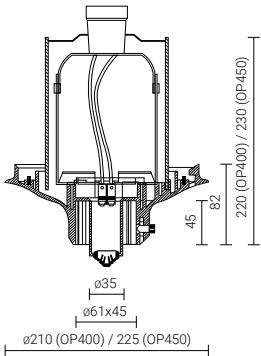
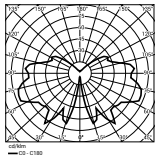


Luminaire OP



Luminaire OP S-70 W/400
Lamp diffuser sphere transparent with small stainless steel louvre reflector mounted upwards

Luminaire OP S-70 W/400
Lamp diffuser Sphere transparent with small stainless steel louvre reflector mounted downwards



Code	Symbol	Power	Luminaire power consumption	Light source	Net weigh	Diffuser types
210102	OP S-70W/400	70 W	92 W	Sodium E-27	2,4 kg	Sphere Ø400, Klio Ø400
210107	OP MH-70W/400	70 W	92 W	Metal halide E-27	2,4 kg	Sphere Ø400, Klio Ø400
210115	OP E/Z/400	23 W	23 W	LED E-27	1,0 kg	Sphere Ø400, Klio Ø400
210202	OP S-70W/450	70 W	92 W	Sodium E-27	2,7 kg	Sphere Ø450
210215	OP E/Z/450	23 W	23 W	LED E-27	1,3 kg	Sphere Ø450

High-intensity discharge luminaires

OZ

Application: parks, pedestrian routes
Installation: on columns, extension arms, wall brackets, anodised aluminium brackets with $\varnothing 60 \times 60$ mm ending
Protection class: IP 44 for luminaire with diffuser
Material: polyamide with glass fibre
Colour: black
Mounting method: upwards only
Rodzaj Luminaires: OZ 400 - lamp's diffuser collar diameter $\varnothing 180$ mm
Unit volume: 0,0037 m³
Input voltage frequency: 50 Hz



luminaire OZ 400, diffuser Klio white $\varnothing 400$



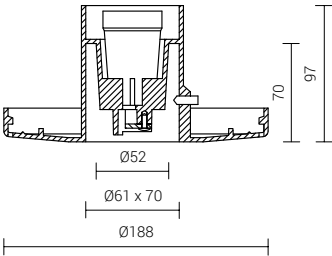
luminaire OZ 400



Locking handle feeder cable



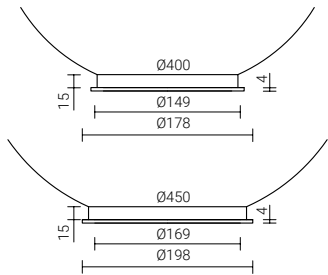
Luminaire OZ 400,
lamp diffuser sphere white $\varnothing 400$



Code	Symbol	Light source	Net weight	Diffuser types
211415	OZ 400	LED E-27	0,35 kg	Sphere $\varnothing 400$, Klio $\varnothing 400$

High-intensity discharge luminaires

Lamp diffusers with collar diameter ø180 / ø200



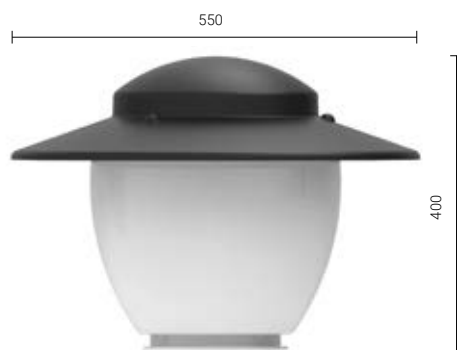
Symbol	Material type	Code			Luminaire types
		White	Transparent	Smoked	
Sphere 400 k-180	PC-UV	651168	–	–	OP 400, OZ 400 (upwards mounted only)
	PC	651170	651172	651174	
	PMMA	651171	651173	651175	
Sphere 450 k-200	PC-UV	651268	–	–	OP 450
	PMMA	651281	651283	–	
Klio 400	PMMA	675171	–	675175	OP 400, OZ 400 (upwards mounted only)



Klio white



Klio smoked



Klio white with cap

Tychy, Poland



High-intensity discharge luminaires

OPA-1

Application: parks, pedestrian routes
Installation: on columns, extension arms, anodised aluminium brackets with ø60x50 mm ending
Protection class: IP 65 for luminaire with diffuser
Material: base – die-cast aluminium alloy, painted, electrical equipment cover – polycarbonate (PC)
Colour: black (possibility to paint in other colours – polyester powder paints)
Mounting method: upwards only
Rodzaj Luminaires: OPA-1 - lamp's diffuser collar diameter ø150 mm
Unit volume: 0,01 m³
Input voltage frequency: 50 Hz

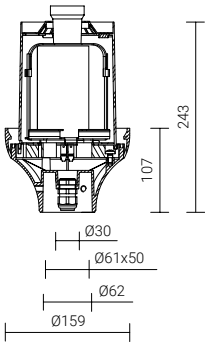
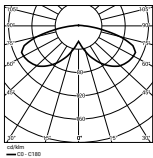


Luminaire OPA-1



Luminaire OPA-1, diffuser Atlantis

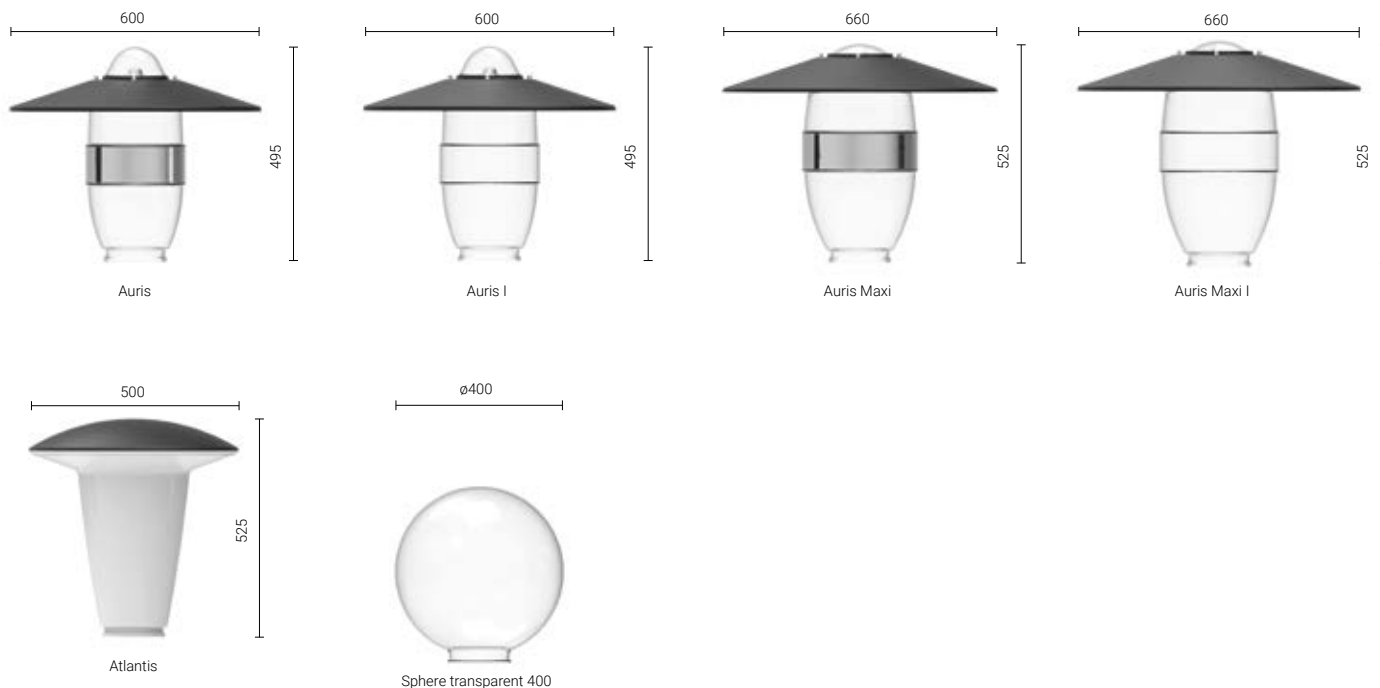
OPA-1 S-70 W
Diffuser sphere painted
ø400



Code	Symbol	Power	Luminaire power consumption	Light source	Net weight Luminaires netto	Diffuser types
211802	OPA-1 S-70W	70 W	92 W	Sodium E-27	2,9 kg	Auris, Auris Maxi, Auris I, Auris Maxi I, Atlantis, Sphere Ø400-500
211807	OPA-1 MH-70W	70 W	92 W	Metal halide E-27	2,9 kg	Auris, Auris Maxi, Auris I, Auris Maxi I, Atlantis, Sphere Ø400-500
211815	OPA-1 E/Z	23 W	23 W	LED E-27	1,3 kg	Auris, Auris Maxi, Auris I, Auris Maxi I, Atlantis, Sphere Ø400-500

High-intensity discharge luminaires

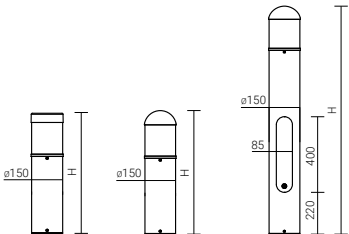
Lamp diffusers with collar diameter ø150



Symbol	Material type	Code		Luminaire types	Cap of shaped aluminium sheet code black / other colour
		White	Transparent		
Auris without cap	PC-UV	–	660169	OPA-1	923602 / 923603
	PC	–	660162		
	PMMA	–	660163		
Auris I without cap	PC-UV	–	671169	OPA-1	923602 / 923603
	PMMA	–	671163		
Auris Maxi without cap	PC	–	660362	OPA-1	923662 / 923663
Auris Maxi I without cap	PC	–	671362	OPA-1	923662 / 923663
Atlantis frozen with cap painted black	PMMA	–	662368	OPA-1	–
Atlantis frozen cap painted other colour	PMMA	–	670368	OPA-1	–
Sphere 400 k-150	PC	–	651162	OPA-1 (upwards mounted only)	–

SAMR bollards

Application: parks, pedestrian routes, ogrody
Protection class: IP65
Material: aluminium alloy tube, frozen cylindrical PMMA diffuser
Mounting method: on concrete footing or rooted (marked "dz" in the name)
Types of bollards: with round and flat cap (marked ".../P" in the product code)
Types of light sources:
S – Sodium 70 W
MH – metal halide 70 W
E/Z – LED E-27
Input voltage frequency: 50 Hz

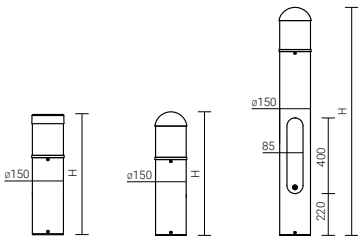
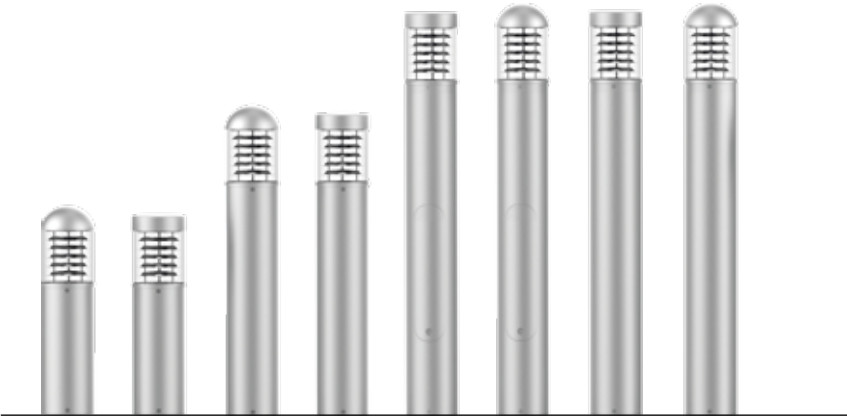


Symbol	Cap	S-70 W	MH-70 W	LED	Height [H]	Concrete footing / reinforcement basket
		92 W	92 W	23 W		
		E-27	E-27	E-27		
SAMR 600	round	450002/C...	450003/C...	450006/C...	645	B-0, B-0A / Z-0, Z-0A
	flat	450002/C.../P	450003/C.../P	450006/C.../P	615	
SAMR 900	round	450009/C...	450010/C...	450014/C...	945	B-0, B-0A / Z-0, Z-0A
	flat	450009/C.../P	450010/C.../P	450014/C.../P	915	
SAMR 1200	round	450016/C...	450017/C...	450021/C...	1245	B-0A / Z-0A
	flat	450016/C.../P	450017/C.../P	450021/C.../P	1215	
SAMR 1200 W	round	450023/C...	450024/C...	450028/C...	1245	B-0A / Z-0A
	flat	450023/C.../P	450024/C.../P	450028/C.../P	1215	

/C... – choice of anodising colour

SAP bollards

Application: parks, pedestrian routes, ogrody
Protection class: IP65
Material: aluminium alloy tube, transparent cylindrical PMMA diffuser
Mounting method: on concrete footing or rooted (marked "dz" in the name)
Types of bollards: with round and flat cap (marked ".../P" in the product code)
Types of light sources:
 S – Sodium 70 W
 MH – metal halide 70 W
 E/Z – LED E-27
Input voltage frequency: 50 Hz



Symbol	Cap	S-70 W	MH-70 W	LED	Height [H]	Concrete footing / rein- forcement basket
		92 W	92 W	23 W		
		E-27	E-27	E-27		
SAP 600	round	45031/C...	45032/C...	45036/C...	645	B-0, B-0A / Z-0, Z-0A
	flat	45031/C.../P	45032/C.../P	45036/C.../P	615	
SAP 900	round	45038/C...	45039/C...	45043/C...	945	B-0, B-0A / Z-0, Z-0A
	flat	45038/C.../P	45039/C.../P	45043/C.../P	915	
SAP 1200	round	45045/C...	45046/C...	45050/C...	1245	B-0A / Z-0A
	flat	45045/C.../P	45046/C.../P	45050/C.../P	1215	
SAP 1200 W	round	45052/C...	45053/C...	45056/C...	1245	B-0A / Z-0A
	flat	45052/C.../P	45053/C.../P	45056/C.../P	1215	

/C... – choice of anodising colour

Accessories

Concrete footings

Purpose:

- concrete footings are used as foundations for lighting columns after digging them into the ground,

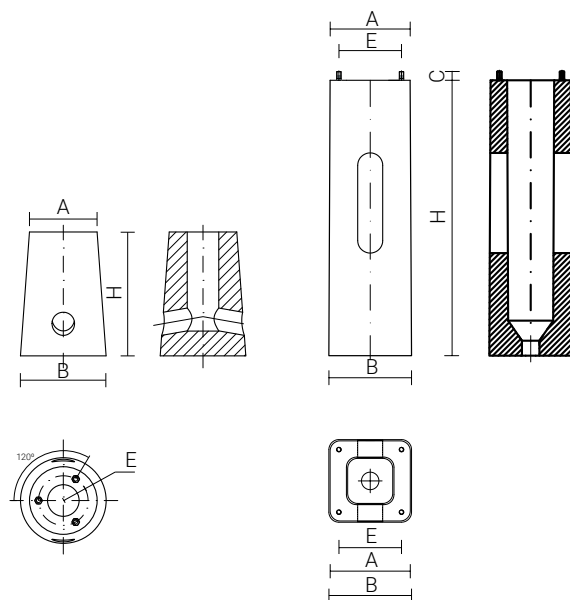
Technical information:

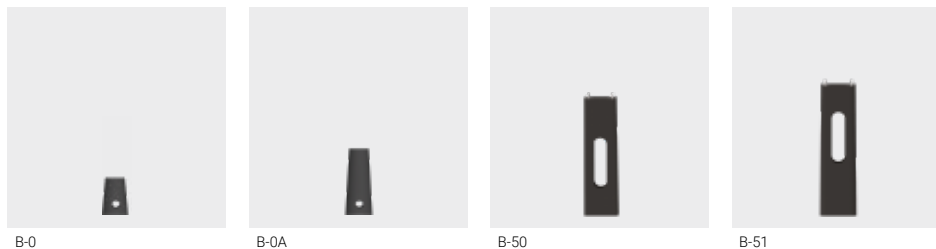
- concrete class C30/37 according to EN 206,
- reinforcement basket made of B500 steel
- hot-dip galvanized screw ends,
- concrete footings for anodised aluminium columns and masts are supplied with thermo-shrinkable sleeves installed on the threaded anchor endings, which is an additional protection against corrosion,
- side holes and vertical hole for inserting power cables,
- external surface covered with impregnating agent (waterproofing bitumen emulsion),
- square or round cross-section.

Advantages:

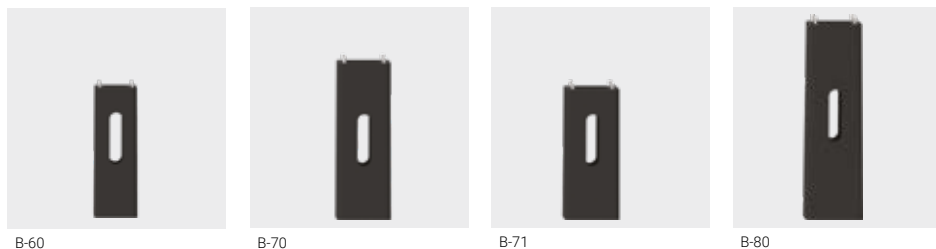
- single-element construction makes easy foundation for products in the ground,
- fast and easy installation with no seasoning required,
- high quality due to the semi-automatic computer-controlled production line using the method of vibropressing.

All concrete footings comply with EN 14991:2007 standard and have certificate of factory production control 1488-CPR-0208/Z.





Concrete footing type	B-0	B-0A	B-50	B-51
Code	311100	311100A	311150	311151
Shape	round		square	
Dimension AxBxH [mm]	ø150xø190x275	ø150xø190x490	240x255x900	260x275x1 000
Bolt spacing E [mm]	120	120	180	200
Height of threaded anchor ending C [mm]	-	-	30	35
Net weight [kg]	12	22	96	124
Fasteners	M8x20 A2 DIN 6921	M8x20 A2 DIN 6921	4006	4008
Purpose	SAP and SAMR 600-900, KARIN 450-900 LED	SAP and SAMR 1200 KARIN 1200 LED	SAL ø114/B60, SAL ø120	SAL ø114/D60, SAL ø114/D75, SAL ø120E
Thread length C [mm]	-	-	24	28



Concrete footing type	B-60	B-70	B-71	B-80
Code	311160	311170	311171	311180
Shape	square			
Dimension AxBxH [mm]	320x330x1 000	400x410x1200	400x410x1 000	400x430x1500
Bolt spacing E [mm]	250	300	300	300
Height of threaded anchor ending C [mm]	35	45	45	50
Net weight [kg]	176	296	255	392
Fasteners	4008	4012	4012	4012
Purpose	SAL ø146	SAL ø176, SAL ø178K, SAL ø180M	SAL ø146H, SAL ø176, SAL ø178K, SAL ø180M	MAL ø225
Thread length C [mm]	28	38	38	38

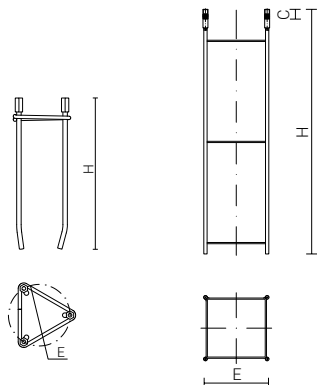
Reinforcement baskets

Purpose:

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

Technical information:

- made of B500 steel
- Oxide paint as a protection against corrosion,
- hot-dip galvanized screw ends,
- reinforcement baskets for anodised aluminium columns and masts are supplied with thermo-shrinkable sleeves installed on the threaded anchor endings, which is an additional protection against corrosion,
- square section (aluminium columns and aluminium flag masts as well as SP-5W and SP-31W columns) or triangle (plastic coated poles).



Advantages:

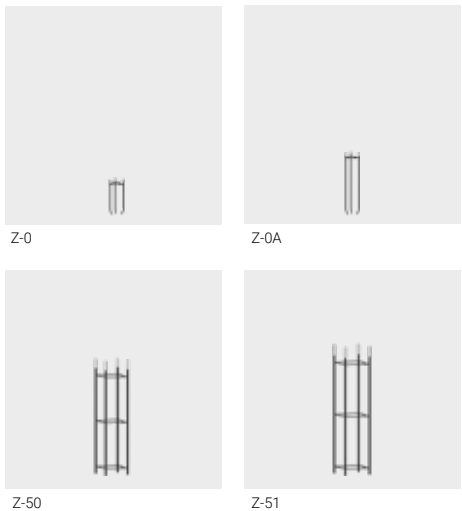
- light weight facilitates transport,
- for use with foundations individually made by the customer at the place of column's installation

Additional elements:

- stainless steel washer, hot-dip galvanized nut, rubber cap – are sets of fasteners for SAL and MAL columns.
- hot-dip galvanized washer, hot-dip galvanized nut, rubber cap for S, SP, SM columns.

The manufacturer recommends the use of original concrete foundations and reinforcing baskets as well as original fasteners that guarantee the stability and safety of the entire structure.

The manufacturer recommends using original concrete foundations, reinforcement baskets and fasteners guarantee stability and safety of whole construction.



Reinforcement basket type	Z-0	Z-0A	Z-50	Z-51
Code	311200	311200A	311205	311251
Shape	triangle		square	
Height H [mm]	270	470	870	975
Bolt spacing E [mm]	120	120	180	200
Net weight [kg]	0,5	0,7	5,24	5,54
Fasteners	M8x20 A2 DIN 6921	M8x20 A2 DIN 6921	4006	4008
Purpose	SAP and SAMR 600-900, KARIN 450-900 LED	SAP and SAMR 1200 KARIN 1200 LED	SAL ø114/B60 SAL ø120	SAL ø114/D60, SAL ø114/D75, SAL ø120E
Thread length C [mm]	-	-	24	28



Z-51A



Z-52



Z-60



Z-70

Reinforcement basket type	Z-51A	Z-52	Z-60	Z-60T
Code	311251A	311252	311206	311260T
Shape	square			
Height H [mm]	1180	1250	985	1060
Bolt spacing E [mm]	200	200	250	250
Net weight [kg]	6,53	7,5	5,7	6,31
Fasteners	4008	4008	4008	4008
Purpose	SAL ø114/D60, SAL ø114/D75, SAL ø120E, SAL ø146G, SAL DECO-1, SAL DECO-2	SAL PROF DECOR LED for SAL PROF LED column assembly two sets of fasteners are needed	SAL ø146	SP-31W
Thread length C [mm]	28	110	28	33



Z-70



Z-71



Z-80



Z-81

Reinforcement basket type	Z-70	Z-71	Z-80	Z-81
Code	311207	311271	311208	311281
Shape	square			
Height H [mm]	1190	965	1500	1600
Bolt spacing E [mm]	300	300	300	300
Net weight [kg]	9,2	7,76	11,42	17,2
Fasteners	4012	4012	4012	4012
Purpose	SAL ø176, SAL ø178K, SAL ø180M	SAL ø146H, SAL ø176, SAL ø178K, SAL ø180M	MAL ø225	SAL SYG 300-6,5
Thread length C [mm]	38	38	38	150

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 street and park columns. It is ideal to use in all columns 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 class:** IP54
- **rated voltage:** 500V
- **rated current:** 80A
- **fuse:** D01/E14, 2-16A, 400V, AC
- **casing dimensions:**

TB-1, TB-2, NTB-1, NTB-2, NTB-3:	273 mm x 90 mm x 76 mm;
TB-11, TB-12:	273 mm x 90 mm x 64 mm;
NTB-11, NTB-12:	307 mm x 90 mm x 60 mm;
- **Material:**
 - integrated terminal strip – made of PTB material (butylene polyterephthalate) with high insulation parameters and high mechanical strength
 - connection box 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 M6 bolts

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.

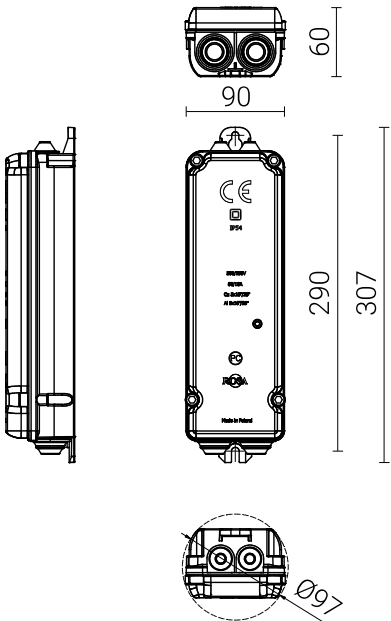


Connection box installed
in aluminium column

NTB-11, NTB-12 connection boxes

NTB-11, NTB-12 connection boxes

- five-way connectors for power cables with cross-section: from 5 x 10mm² to 5 x 25 mm² for Cu and from 5 x 16 mm² to 5 x 35 mm² for Al
- up to 2 cables
- possibility of splitting loads into individual phases
- possibility of moving the fuse sockets



Size - longer box than NTB-1 and NTB-2, more space for wires



Simplified installation of cables



Maximum cross section of the input wire 5 x 35 mm²



Reliable connections - brass presses and steel screws for robustness and durability



Code	Symbol	Number of fuse-sockets [pcs]	Net weight
324111	NTB-11	One fuse-socket mounted on L1 phase, there is a the option of moving the fuse-socket on phase L2 or L3 by screwing-out two bolts	0,9 kg
324112	NTB-12	Two fuse-socket mounted on L1 and L2 phase, there is a the option of moving the fuse-socket into phase L3 by screwing-out two bolts	0,9 kg

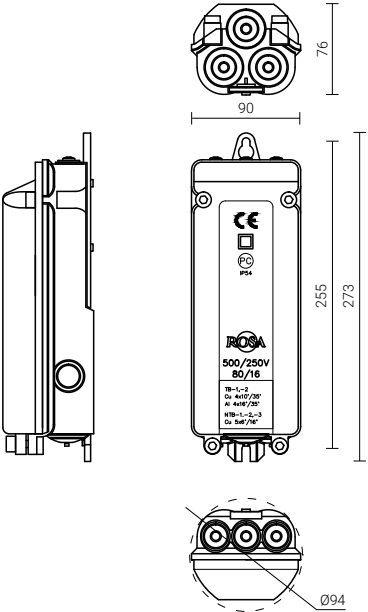
Fuses

Code	Symbol	Net weight
322006	D01/E14 6A	0,01 kg
322010	D01/E14 10A	0,01 kg
322016	D01/E14 16A	0,01 kg

NTB connection boxes

NTB-1, NTB-2, NTB-3 connection boxes

- five-way connectors for power cables with cross-section: from 5 x 6mm² to 5 x 16 mm²
- up to 3 cables
- possibility of splitting loads into individual phases
- possibility of moving the fuse sockets

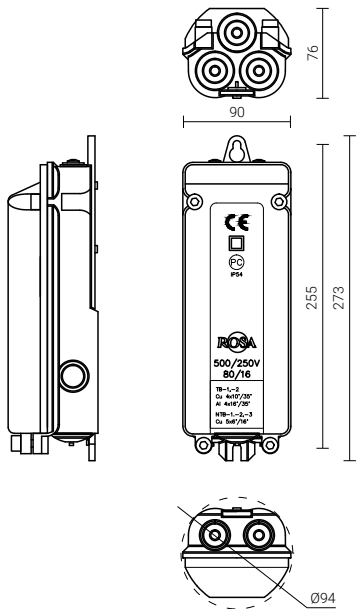


				Fuses		
Code	Symbol	Number of fuse-sockets [pcs]	Net weight	Code	Symbol	Net weight
324110	NTB-1	One fuse-socket mounted on L1 phase, there is a the option of moving the fuse-socket on phase L2 or L3 by screwing-out two bolts	0,71 kg	322006	D01/E14 6A	0,01 kg
324120	NTB-2	Two fuse-socket mounted on L1 and L2 phase, there is a the option of moving the fuse-socket into phase L3 by screwing-out two bolts	0,73 kg	322010	D01/E14 10A	0,01 kg
324130	NTB-3	Three fuse-sockets on three phases L1, L2, L3	0,76 kg	322016	D01/E14 16A	0,01 kg

TB-1 / TB-2 connection boxes

TB-1 / TB-2 connection boxes

- four-way connectors for power cables with cross-section:
from 4 x 10 mm² up 4 x 35 mm²
- up to 3 cables
- the option of moving the fuse-sockets



Code	Symbol	Number of fuse-sockets [pcs]	Net weight
324010	TB-1	One fuse-socket mounted on L1 phase, there is a the option of moving the fuse-socket on phase L3 by screwing-out two bolts	0,71 kg
324020	TB-2	Three fuse-sockets on two phases L1 and L3	0,74 kg

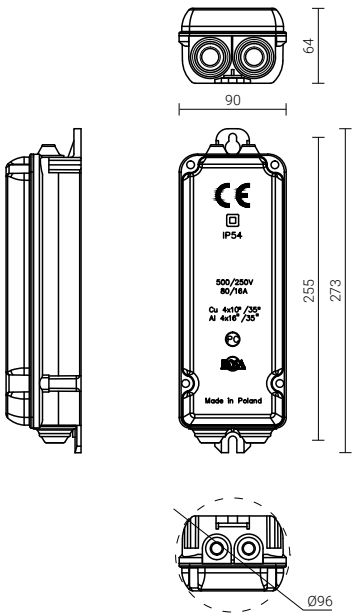
Fuses

Code	Symbol	Net weight
322006	D01/E14 6A	0,01 kg
322010	D01/E14 10A	0,01 kg
322016	D01/E14 16A	0,01 kg

TB-11 / TB-12 connection boxes

TB-11 / TB-12 connection boxes

- four-way connectors for power cables with cross-section: from 4 x 10 mm² up 4 x 35 mm²
- up to 2 cables
- simplified installation of cables ensures easier and more ergonomic operation
- smaller size provides more opportunities of applications
- the option of moving the fuse-sockets



Code	Symbol	Number of fuse-sockets [pcs]	Net weight
324011	TB-11	One fuse-socket mounted on L1 phase, there is a the option of moving the fuse-socket on phase L2 or L3 by screwing-out two bolts	0,71 kg
324012	TB-12	Two fuse-socket mounted on two phases L1 and L2	0,74 kg

Fuses

Code	Symbol	Net weight
322006	D01/E14 6A	0,01 kg
322010	D01/E14 10A	0,01 kg
322016	D01/E14 16A	0,01 kg

Louvre reflector

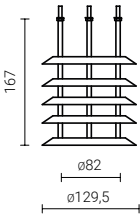
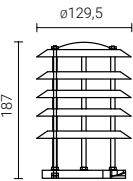
Application: installation in park luminaires
Material: stainless steel
Mounting: without tools, by screwing into the luminaire's housing, in the case of OS-1 mounted directly to the luminaire's mounting plate
Functions: directing light distribution, limiting the glare, decoration



Louvre reflector small stainless steel



Louvre reflector small stainless steel for OS-1 luminaire



Code	Symbol	Typ Luminaires	Lamp holder type	Unit volume	Net weight
911126	Small louvre reflector mounted upwards	OP, OPA-1	E-27	0,004 m³	0,30 kg
911127	Small louvre reflector mounted downwards	OP, OW	E-27	0,004 m³	0,30 kg
911307	OS-1 louvre reflector	OS-1	E-27	0,004 m³	0,25 kg

Decorative elements

Application: aluminium columns with spigot endings $\varnothing 60$ mm and $\varnothing 76$ mm

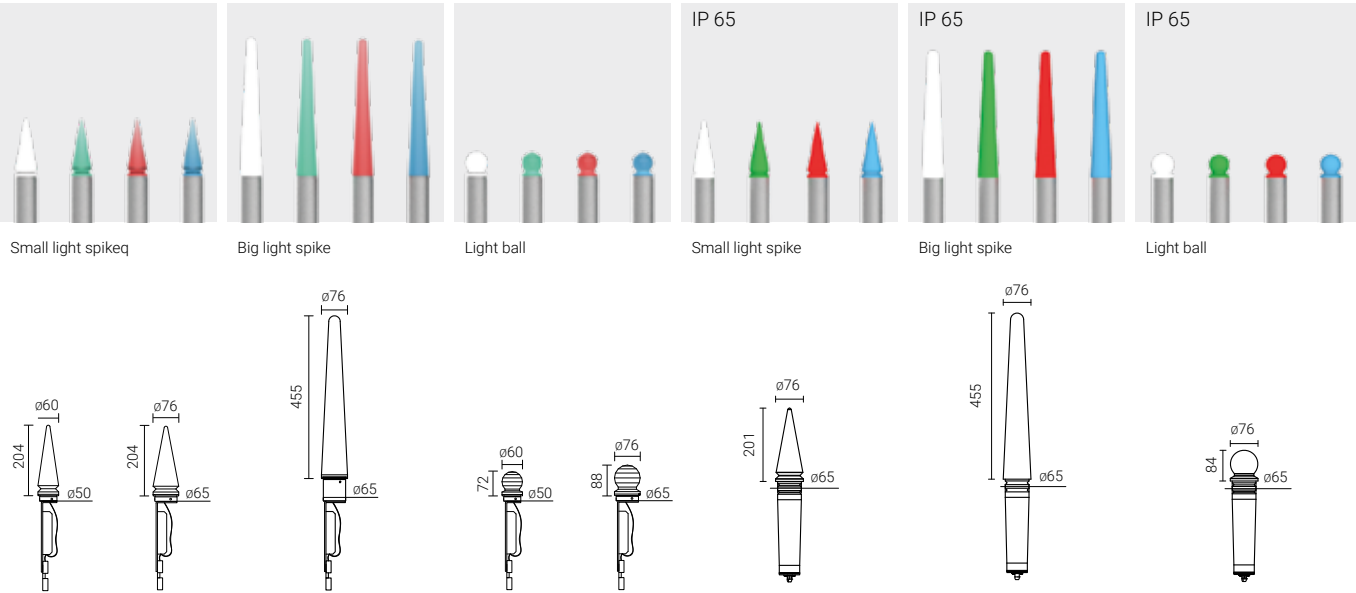
Protection class: IP 65 or IP 44 (after mounting on the column)

Material: PMMA (IP 44), HDPE (IP 65)

Colour: blue, green, red, white

Installation: with 3 M5 screws, after preparing mounting holes in the column

Input voltage frequency: 50/60 Hz



Symbol	Colour	Code								
		IP 44						IP 65		
		mounting diameter [mm] $\varnothing 76$	LED power	Luminaire power consumption	mounting diameter [mm] $\varnothing 60$	LED power	Luminaire power consumption	mounting diameter [mm] $\varnothing 76$	LED power	Luminaire power consumption
Big light spike	Blue	4038	6 W	7 W	–	–	–	40380	6 W	7 W
	Green	4039	6 W	7 W	–	–	–	40390	6 W	7 W
	Red	4040	6 W	7 W	–	–	–	40400	6 W	7 W
	White	4041	6 W	7 W	–	–	–	40410	6 W	7 W
Small light spike	Blue	4050	1 W	1,2 W	4034	1 W	1,2 W	40500	6 W	7 W
	Green	4051	1 W	1,2 W	4035	1 W	1,2 W	40510	6 W	7 W
	Red	4052	1 W	1,2 W	4036	1 W	1,2 W	40520	6 W	7 W
	White	4053	1 W	1,2 W	4037	1 W	1,2 W	40530	6 W	7 W
Light ball	Blue	4046	1 W	1,2 W	4030	1 W	1,2 W	40460	6 W	7 W
	Green	4047	1 W	1,2 W	4031	1 W	1,2 W	40470	6 W	7 W
	Red	4048	1 W	1,2 W	4032	1 W	1,2 W	40480	6 W	7 W
	White	4049	1 W	1,2 W	4033	1 W	1,2 W	40490	6 W	7 W

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