



Aba-Szer Fémbútor Kft.



OUTDOOR LIGHTING



Aba-Szer Féműtor Kft.

I. ALUMINIUM COLUMNS



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General aluminium column and flag pole characteristics

Technology of production aluminium cones



Aba-Szer Fémbútor Kft.

Products produced in aluminium:

- cylindrical-conical lighting columns,
- cylindrical-conical light masts,
- cylindrical-conical poles for traffic signal lights,
- cylindrical-conical flag poles,
- lowering and raising aluminium columns,
- cylindrical-conical bollards type SA
- cylindrical-conical aluminium decorative columns.

Range of columns requiring sub assembly:

Columns with base plate:

- one-piece with diameter at the base: 114 mm, 120 mm, 146 mm, 178 mm, 180 mm,
- two-piece with diameter at the base: 176 mm, 225 mm.

Rooted columns:

- one-piece with diameter at the ground: 114 mm, 120 mm, 146 mm, 178 mm, 180 mm.

Material

Aluminium conical columns are made from aluminium alloy EN AW 6060 (in accordance with standard PN EN 485-3).

Aluminium column base plates are pressed from ENAW 5754 aluminium alloy sheet Alloy is used in the welding process, mechanical and chemical polishing and easily creates the oxide coating in anodisation.



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General aluminium column and flag pole characteristics

Technology of production aluminium cones

Seamless aluminium column production technology

Cone

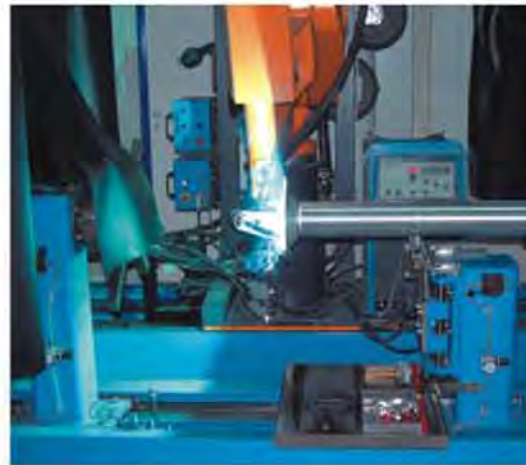
Extruded aluminium alloy tube is mechanically rolled on a specially designed digitally controlled machine. This machine forms conical aluminium columns with a greater durability than cylindrical tubes by using a rotational squeezing method. Following that columns are belt sanded/polished. This technology and forming system are protected by patent registration, patent no PAT-194795.



⌘ Machine for rolling aluminium cones

Base plate welding

The aluminium base plate and conical column section are welded by automatic robot. With this process high quality weld consistency within required parameters is assured.



⌘ Robot for welding base plates



⌘ Weld of base plate to aluminium column cone





General aluminium column and flag pole characteristics

Wiring chamber in aluminium columns

Wiring chamber in aluminium columns

Location and building

Every aluminium lighting column has a wiring chamber where the connection box is mounted. The wiring chamber is usually situated 500 mm from ground level.

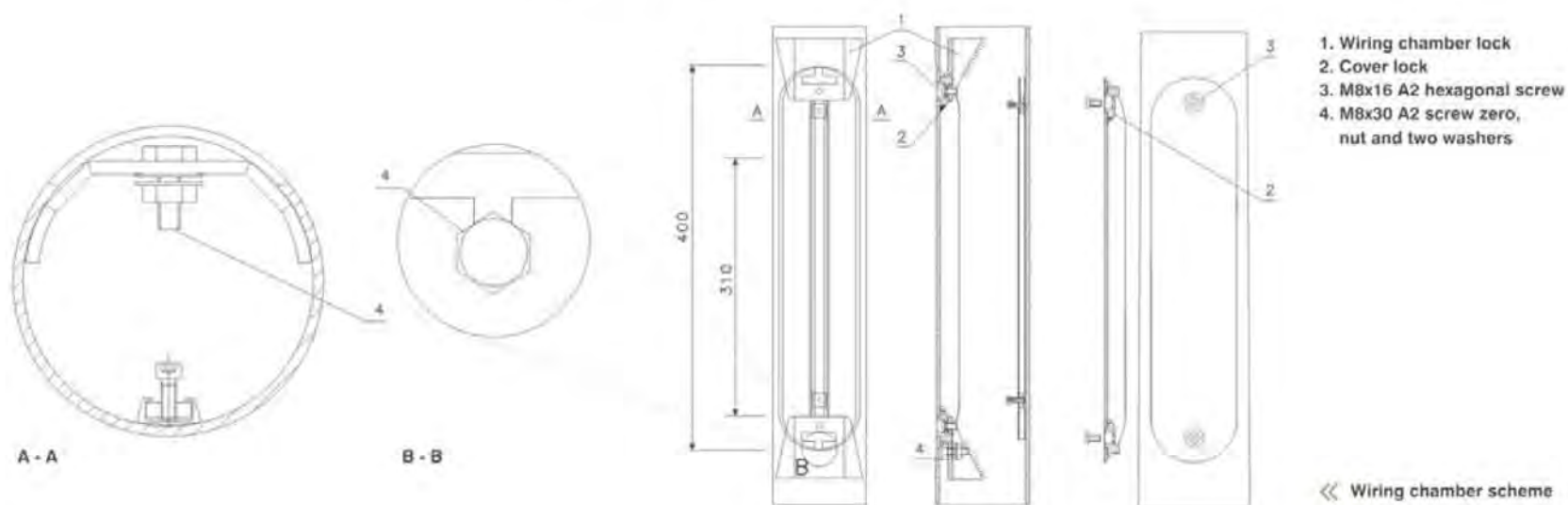
The above wiring chamber door is cut on automatic 0.6 mm - diamond saw - special cutting machines.

As standard an aluminium mounting rail is installed to which connection box TB or NTB using two screws M6 is mounted. (in accordance with standard DIN 49778).

The wiring chamber entry has two fitted locking bars fitted top and bottom. The wiring chamber door is fitted with two which locate in the locking bars. This locking system is especially effective because the cover becomes an integral part of the column adding to its intrinsic strength.

This closing system is reserved by design (no 63453) and patent application (no W-115251 EP-05460004.4) Patent Office UE.

The system complies with the standard PN-EN 60529 and following resistance tests for dust penetration, solid and water body ingress to the wiring chamber and received IP 34.





General aluminium column and flag pole characteristics

Wiring chamber in aluminium columns

Earthing system

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



Wiring chamber in aluminium columns >>

Wiring chamber door screws

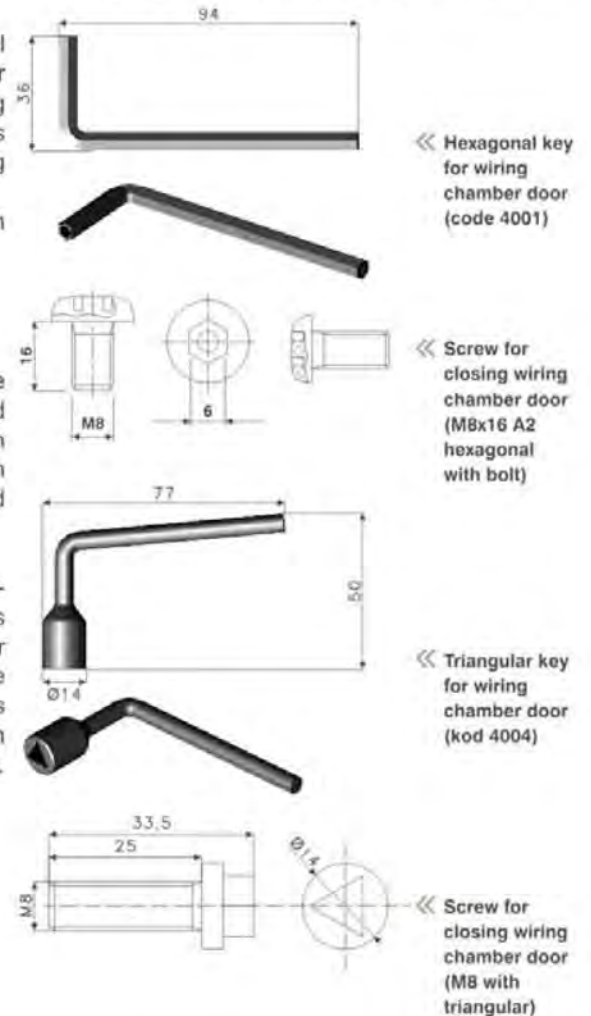
Doors are secured by two stainless steel M8 screws in a special irregular hexagonal socket shape and using matching antivandal locking keys (available to order). Retaining O ring washers are fitted to each screw. Triangular screws/keys are available on request.

Column reinforcement

Columns marked in the index „wzm” are reinforced. Reinforcement is required when the column load specification requires a wall thickness of 5.2 mm which is greater than the standard column.

The second type of column reinforcement is when a second aluminium tube is welded to the inside of the column lower section up to a few centimetres above the wiring chamber. This solution gives additional reinforcement of the column lower section around the wiring chamber.

Keys for wiring chamber of aluminium columns





General aluminium column and flag pole characteristics

Two-piece column connection

Two-piece column connection

With special connection clamp permanent connection of two-element columns is assured.

Connecting member is locked by using:

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

Standard in columns used screw 10x45 with spherical head with hexagonal socket DIN ISO7380.

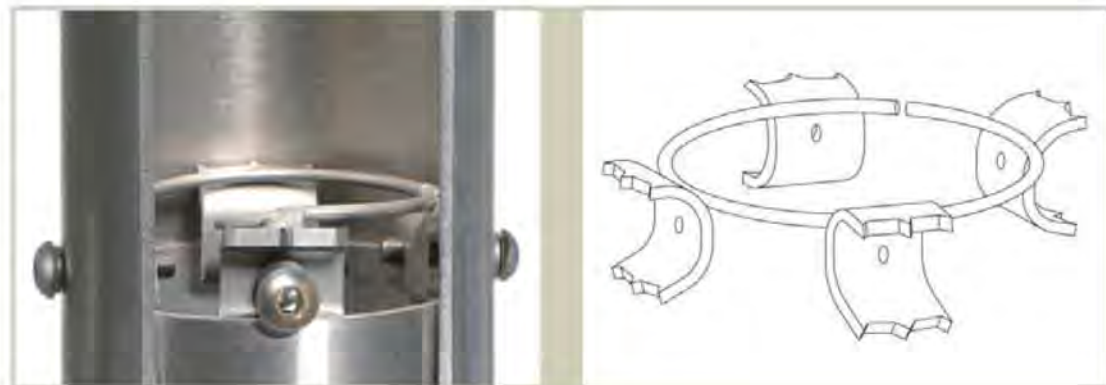


⤴ Connecting clamp for two piece column type SAL

Columns resistance calculations

Column resistance calculations are made in resistance program SM09 in accordance with valid requirements contained in standards PN-EN 40 and PN-EN 1991-1-4:2008.

Column resistance is calculated for columns without the wiring chamber door fitted.



⤴ Connecting clamp for two piece column type MAL





General aluminium column and flag pole characteristics

Permissible column loads

1. Average wind speed. Each country Has its maps of wind zones.
In Poland they are as follows:

Basic wind speed values in wind zones				
Wind zone	Height above sea level - A (m)			
	A≤300 m		A>300 m	
	Wind speed - $V_{b,0}$			
	(m/s)	(km/h)	(m/s)	(km/h)
I	22	79,2	$22 [1+0,0006(A-300)]$	$22 [1+0,0006(A-300)] \times 3,6$
II	26	93,6	26	26
III	22	79,2	$22 [1+0,0006(A-300)]$	$22 [1+0,0006(A-300)] \times 3,6$

Wind Speed in zone I and III depends on height above ground level (for height above 300 m).

2. Ground category. Standard PN – EN 40-3-1:2004 lists four ground categories.

Ground category	Description
0	Open sea, open sea coast
1	Lakes or open terrain with scarce vegetation cover and with no obstructions.
2	Open terrain with low plants, such as grass, and individual obstructions (trees, buildings) situated at a distance greater than 20 times their height to one another.
3	Areas regularly covered with plants or buildings or with individual obstructions situated at a distance less than 20 times their height to one another (such as villages, suburban areas,
4	Urban areas where at least 15% of their surface is covered with buildings having average height exceeding 15 m.

Selection of ground category is important for determining the exposure factor which takes into consideration the variation of wind pressure regarding the height above ground level. Calculations are made for the ground category II as standard.





General aluminium column and flag pole characteristics

Permissible column loads

3. Analytical load. The calculated analytical load is the product of a multiplication of characteristic load and partial load factors. Column construction classes are specified as under listed.

Class	A	B
Wind load factor	1,4	1,2
Static load factor	1,2	1,2

In resistance charts there are permissible loads for class B.

4. Horizontal deviation. Horizontal deviation of columns spigot ending (in place of mounting luminaire) in accordance with standard PN – EN 40-3-3:2003 is always included in one out of three deviation classes to the following determining method:

Class 1 Maximum horizontal deviation
 $0,04 (h+w)$

Class 2 Maximum horizontal deviation
 $0,06 (h+w)$

Class 3 Maximum horizontal deviation
 $0,1 (h+w)$

where:

h – column height

w – extension arm reach

5. Shape factor (C) for luminaires. Standard PN-EN 40-3-1:2004 states that shape factor is normally

determined by aerodynamic wind tunnel tests in.

In case of lack of research value $C=1$ is considered. In resistance charts, in groups of columns from 10 m to 12 m height there is also luminaire Magnolia. It has a low aerodynamic factor ($C=0,5$) and can be used in higher wind zones, where other luminaires can not be used because of their high wind resistance shape. Also passively safe columns are additionally marked with letter O.



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General aluminium column and flag pole characteristics

Anticorrosive column protection

Anticorrosive base protection and column root section protection

In compliance with EN-40 European requirements concerning aluminium columns it is recommended to protect the lower part of the column against aggressive salts and ammonia compounds and to prevent mechanical damage.

The material used and the method of production are both environmentally friendly.

We cover the column base together with fixing holes and the lower part of the column up to 350 mm in height with polyurethane Elastomer.

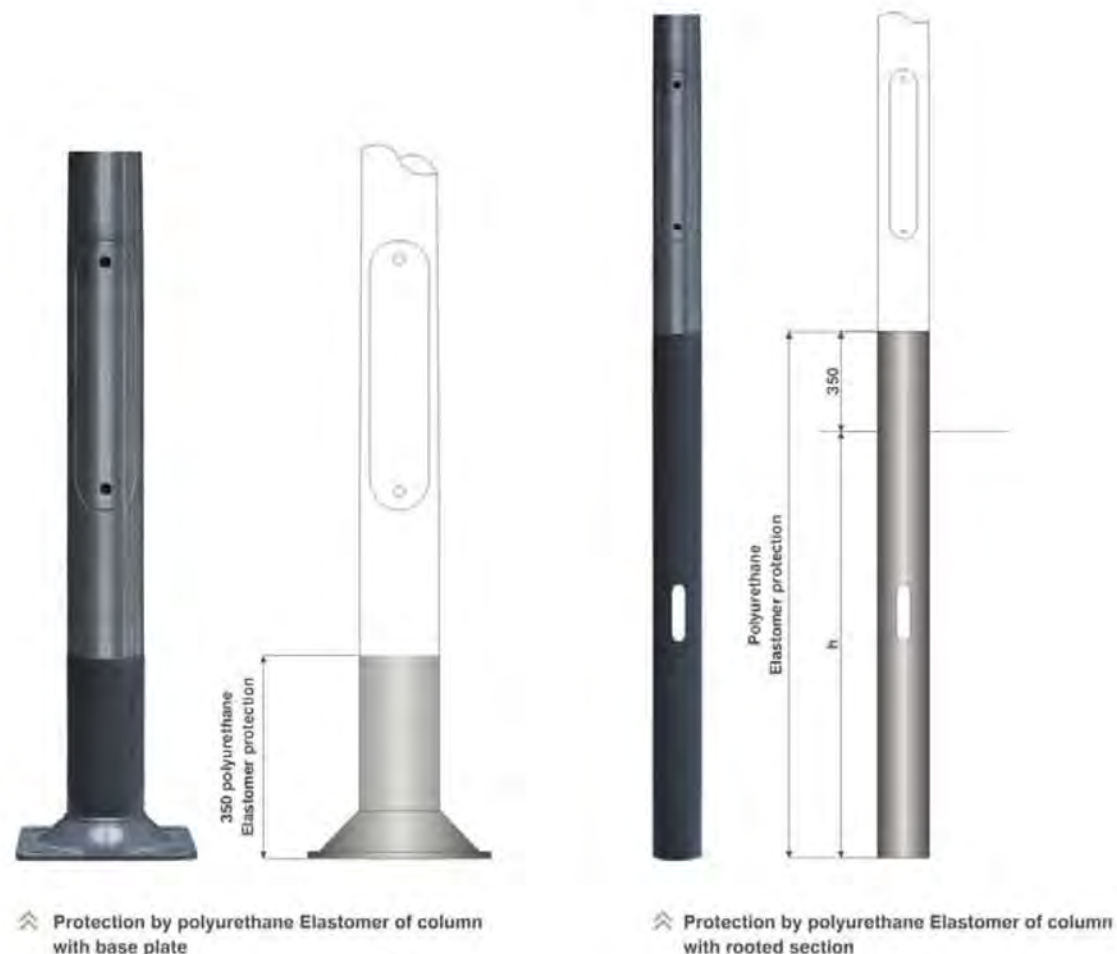
Rooted columns type SAL dz are protected by polyurethane Elastomer as standard.

The thickness protection layer is from 0,7 mm to 1 mm, and its hardness is 90°sh.

Elastomer surface is painted by UV resistant paint. Standard colour for aluminium anodized natural columns is grey - RAL 9006. For column anodized into other colours Elastomer surface is painted to colour match the pole.

Environmentally Friendly Product

Material - aluminium - columns are manufactured from 95% recycled aluminium which is fully recyclable at end of life





General aluminium column and flag pole characteristics

Column surface finish

Column surface finish

Anodizing

We offer anodized finish as standard because it provides the best quality product. Brushed aluminium columns cannot offer the same level of protection and easily discolour (blackens). In polluted aggressive environments such as coastal corrosion areas, traffic intersections and salted roads are susceptible to corrosion.

Anodizing is used to protect the aluminium surface of columns, extension arms and ornamental motifs from corrosion.

Anodizing is an electrochemical method which creates an oxide layer on the surface of the metal. Anodized coatings are supplied in several thickness of coating appropriate to the installation location and local conditions.

The standard anodized coating is 20 microns and this ensures safe use in moderate to harsh conditions.

For exceptionally harsh conditions such as

exposed sea side areas a coat of 25 microns is recommended.

There is the facility to anodize products of up to 10.5 metres in length.

Anodized column characteristics

- anodized coatings are an integral part of the metal surface and does not peel, crack or delaminate,
- the anodized surface is guaranteed for up to 20 years,
- the aesthetic look of the column is maintained over long use,
- excellent high UV resistance,
- corrosion free,
- wide range of colours,
- light construction,
- fully recyclable,
- surface decoration.



Anodizing plant – technological tanks to bath



Columns on jig after anodizing process

Anodizing colour	natural	gold	champagne	olive	brown	black
Code of colour	C-0	C-23	C-32	C-33	C-34	C-35
Sample <small>(real anodizing colour can differ from presented colour sample)</small>						
Anodizing colour	blue	grey	graphite	green	anthracite	claret
Code of colour	CI-55	CI-63	CI-65	CI-75	CI-78	CI-85
Sample <small>(real anodizing colour can differ from presented colour sample)</small>						

Anodizing colours pallet





General aluminium column and flag pole characteristics

Column surface finish

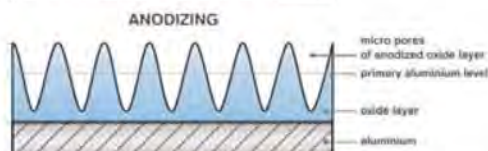
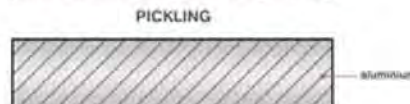
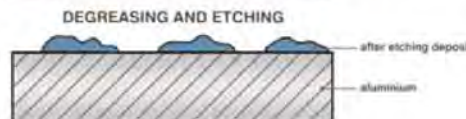
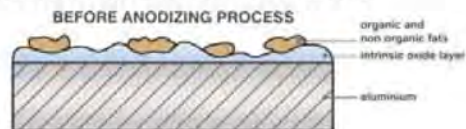
Anodizing process description

The Anodizing process may be divided into the following stages: surface pre-treatment (degreasing, etching, desmutting), actual anodising, optional colouring and sealing.

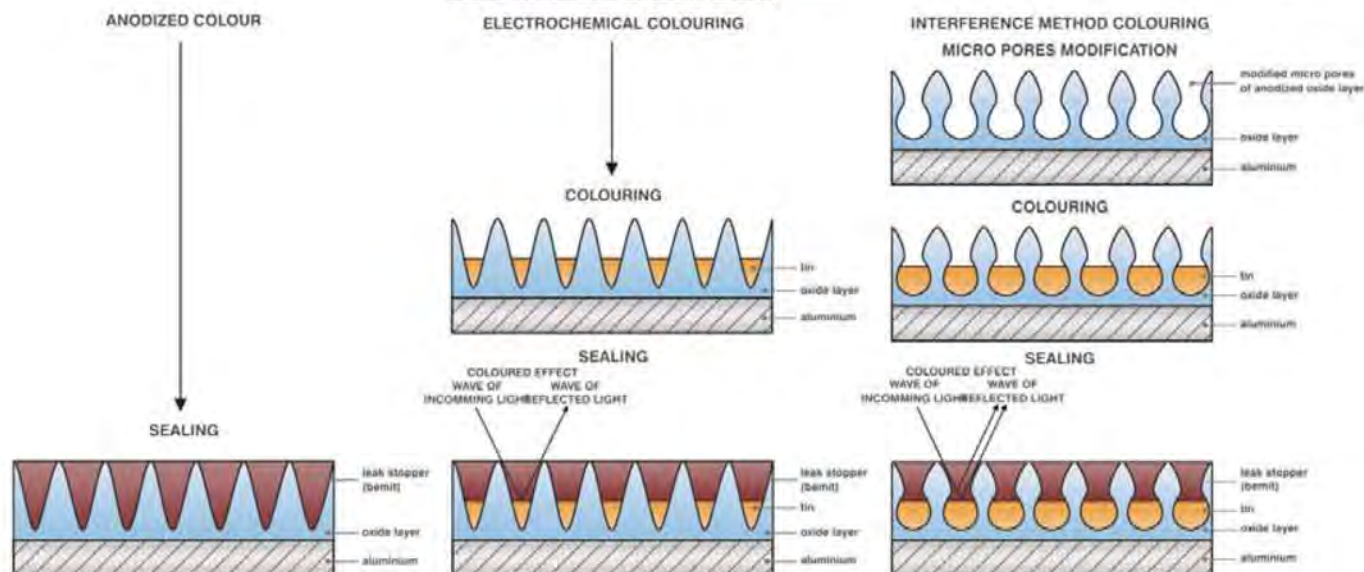
These operations are carried out in the special technological tanks which contain solutions appropriate to each process.

Each operation requires a separate tank. There are also intermediate tanks where products are rinsed between the particular principal operations.

PROCESS OF ANODIZING ALUMINIUM PRODUCTS



The first step of the surface pre-treatment stage is degreasing, aimed at removing surface grease, oils and their derivatives as well as dirt. The cleaned surface is then etched in an alkaline bath. Etching removes a natural oxide layer from the product surface, eliminating minor imperfections as well as creating a uniform matt and decorative appearance. The next step in this stage is desmutting (brightening) carried out in order to finally remove a thin oxide layer and any other deposits remaining after the etching process. This operation is necessary to create the optimal adherence of the oxide coating to the matrix. The product surface is then ready for the next stage.





General aluminium column and flag pole characteristics

Column surface finish

The actual anodising stage follows. Anodizing is an electrolytic passivation process which forms an oxide layer on the aluminium surface under controlled conditions. The layer is grown by passing electric current through a sulphuric acid solution as the electrolyte. The aluminium object being anodized serves as the anode. During electrolysis, having provided 12-20 V direct current to electrodes, oxygen is released and, reacting with the metal, it forms a transparent aluminium oxide coating on its surface. The anodic film grows with 2/3 of its thickness below the original metal surface and 1/3 above it. It is considerably thicker than the natural oxide layer, due to which it effectively protects the aluminium surface from further oxidation, that is corrosion. Moreover, its porous texture allows durable colouration of the product through chemical, electrochemical or interference methods.

Electrochemical colouring is treating an anodised product in the electrolyte containing ions of tin. The reduction in the cathodic cycle allows metal deposits to settle at the bottom of the pores of the oxide coating and provides the integral durable colour to the aluminium surface. This method

produces a range of colour shades from pale to dark brown to black.

Interference colouring is preceded by the modification of the shapes of the pores of the anodic layer. Tin is then deposited in the modified pores and provides colours to the aluminium surface, broadening the colour range provided in the traditional galvanic colouring with new colours. The method uses the interference phenomena of the reflected light waves which increases or decreases the amplitude of the resultant wavelengths. Modification of this amplitude by the appropriate controlled change of the shapes of the pores of the anodic layer allows creation of new colours.

The final stage in anodizing technology is sealing. The process closes the micro pores in the oxide film. Middle - temperature sealing (89°-90°C) depends on immersing products in demineralised high temperature water containing accelerating additives. During the operation, the micro pores of the anodic layer are filled with boehmite. Having been sealed, the surface of the anodized product becomes smooth and as hard as glass, which

prevents dirt from depositing on it and makes it permanently corrosion resistant.

Powder painting

Powder painting requires the application of suitably prepared elements using an electrostatic spraying method or electro kinetics, powder paint in chosen colour, structure, kind and next polymerization of paint by soaking. That painted elements are very resistant to corrosion as well as effectively maintaining appearance for a long time. In case of installation in harsh conditions –
– requiring heavy insulation or in sea side areas –
– a special type of paint is required subject to individual special quotation. Painting to any colour according RAL pallet.





I. ALUMINIUM COLUMNS

Flanged columns Ø114 mm base diameter

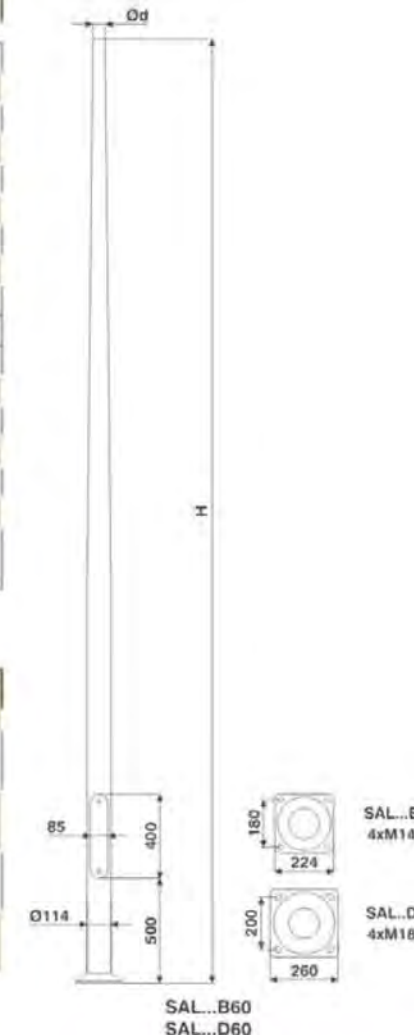
Aluminium column		SAL-3/B60	SAL-3,5/B60	SAL-4/B60	SAL-4,5/B60	SAL-3/D60	SAL-3,5/D60	SAL-4/D60	SAL-4,5/D60
Height H [m]		3,0	3,5	4,0	4,5	3,0	3,5	4,0	4,5
Spigot ending diameter Ød [mm]		60	60	60	60	60	60	60	60
Colour - anodizing method	C0 - natural colour	42120/C0	42101/C0	42102/C0	42103/C0	42122/C0	42114/C0	42115/C0	42116/C0
	C - electrochemical colouring	42120/C..	42101/C..	42102/C..	42103/C..	42122/C..	42114/C..	42115/C..	42116/C..
	CI - interference colouring	42120/CI..	42101/CI..	42102/CI..	42103/CI	42122/CI..	42114/CI..	42115/CI..	42116/CI..
Painting - polyester powder paints according to RAL pallet		43120	43101	43102	43103	43122	43114	43115	43116
Net weight [kg]		8,0	9,5	10,9	12,4	7,8	9,7	11,3	13,0
Approximate unit volume [m ³]*		0,07	0,08	0,09	0,10	0,07	0,10	0,11	0,13
Pole top mounted		OPC-1 Ø60 (p. 146), OP (p. 144), OPA-1 (p. 148), OS-1 (p. 140), OZ (p. 142), ELBA (p. 160), SENJA (p. 158)							
Extension arms usage		WA-01, WA-1, WA-2, WA-3, WA-4 (p. 85)							
Concrete footing type		B-50				B-51			
Concrete footing code		311150				311151			
Reinforcement basket type		Z-50				Z-51			
Reinforcement basket code		311205				311251			
Hot galvanized nut set		4006				4008			
Hot galvanized ripable nut set		4007				4009			
Base dimensions (side length/fixing hole spacing/thickness) [mm]		224 / 180/8				260 / 200/8			

* For orders more than 10 pcs stated volume may change according to packing

Acceptable columns load

Acceptable luminaires and extension arms mass		20							
Acceptable windage of luminaires and extension arms [m ²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,90	0,69	0,51	0,37	0,90	0,69	0,51	0,37
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,78	0,59	0,43	0,31	0,78	0,59	0,43	0,31
	II strefa, II ground category 26 m/s, (93,6 km/h)	0,61	0,46	0,32	0,22	0,61	0,46	0,32	0,22
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,57	0,42	0,29	0,20	0,57	0,42	0,29	0,20

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Flanged columns Ø114 mm base diameter

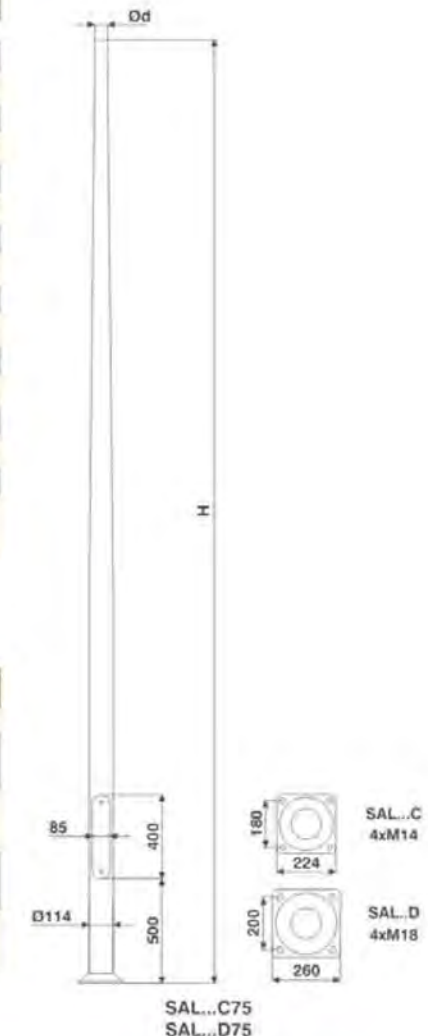
Aluminium column		SAL-3/C75	SAL-3,5/C75	SAL-4/C75	SAL-4,5/C75	SAL-3/D75	SAL-3,5/D75	SAL-4/D75	SAL-4,5/D75
Height H [m]		3,0	3,5	4,0	4,5	3,0	3,5	4,0	4,5
Spigot ending diameter Ød [mm]		75	75	75	75	75	75	75	75
Colour -anodizing method	C0 - natural colour	42121/C0	42104/C0	42105/C0	42106/C0	42123/C0	42117/C0	42118/C0	42119/C0
	C - electrochemical colouring	42121/C..	42104/C..	42105/C..	42106/C..	42123/C..	42117/C..	42118/C..	42119/C..
	CI - interference colouring	42121/CI..	42104/CI..	42105/CI..	42106/CI..	42123/CI..	42117/CI..	42118/CI..	42119/CI..
Code									
Painting - polyester powder paints according to RAL		43121	43104	43105	43106	43123	43117	43118	43119
pallet		7,8	9,4	11,0	12,4	7,8	10,1	11,8	13,0
Net weight [kg]		0,07	0,09	0,10	0,11	0,07	0,11	0,12	0,14
Aproximate unit volume [m3]*		OPC-1 Ø76 (p. 146)							
Pole top mounted		B-50				B-51			
Concrete footing type		311150				311151			
Concrete footing code		Z-50				Z-51			
Reinforcement basket type		311205				311251			
Reinforcement basket code		4006				4008			
Hot galvanized nut set		4007				4009			
Hot galvanized ripable nut set		224/180/8				260 / 200/ 8			
Base dimensions (side length/fixing hole spacing/thickness) [mm]									

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable single luminaire mass		20							
Acceptable single luminaire windage [m²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,90	0,68	0,50	0,35	0,90	0,68	0,50	0,35
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,77	0,58	0,42	0,29	0,77	0,58	0,42	0,29
	II zone, II ground category 26 m/s, (93,6 km/h)	0,60	0,45	0,31	0,21	0,60	0,45	0,31	0,21
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,56	0,41	0,28	0,18	0,56	0,41	0,28	0,18

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Rooted columns Ø114 mm at ground level

Aluminium column	SAL-3/B60 dz	SAL-3,5/B60 dz	SAL-4/B60 dz	SAL-4,5/B60 dz	SAL-3/C75 dz	SAL-3,5/C75 dz	SAL-4/C75 dz	SAL-4,5/C75 dz	
Height of column above the ground level H [m]	3,0	3,5	4,0	4,5	3,0	3,5	4,0	4,5	
Total H + h [m]	3,8	4,3	4,8	5,3	3,8	4,3	4,8	5,3	
Spigot ending diameter Ød [mm]	60	60	60	60	75	75	75	75	
Colour -anodizing method	C0 - natural colour	42124/C0	42108/C0	42111/C0	42107/C0	42125/C0	42109/C0	42110/C0	42112/C0
	C - electrochemical colouring	42124/C..	42108/C..	42111/C..	42107/C..	42125/C..	42109/C..	42110/C..	42112/C..
	CI - interference colouring	42124/CI..	42108/CI..	42111/CI..	42107/CI..	42125/CI..	42109/CI..	42110/CI..	42112/CI..
Code									
Painting - polyester powder paints according to RAL pallet	43124	43108	43111	43107	43125	43109	43110	43112	
Net weight [kg]	9,1	11,0	12,4	13,8	9,3	10,8	12,4	13,8	
Approximate unit volume [m ³]*	0,02	0,03	0,04	0,04	0,03	0,04	0,04	0,04	
Pole top mounted	OPC-1 Ø60 (p. 146), OP (p. 144), OPA-1 (p. 148), OS-1 (p. 140), OZ (p. 142), ELBA (p. 160), SENJA (p. 158)				OPC-1 Ø76 (p. 146)				
Extension arms usage	WA-01, WA-1, WA-2, WA-3, WA-4 (p. 85)								

* For orders more than 10 pcs stated volume may change according to packing

Acceptable columns load

Acceptable luminaires and extension arms mass	20								
Acceptable windage of luminaires and extension arms [m ²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,90	0,69	0,51	0,37	0,90	0,68	0,50	0,35
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,78	0,59	0,43	0,31	0,77	0,58	0,42	0,29
	II strefa, II ground category 26 m/s, (93,6 km/h)	0,61	0,46	0,32	0,22	0,60	0,45	0,31	0,21
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,57	0,42	0,29	0,20	0,56	0,41	0,28	0,18

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Flanged columns Ø114 mm base diameter





I. ALUMINIUM COLUMNS

Flanged columns Ø120 mm base diameter

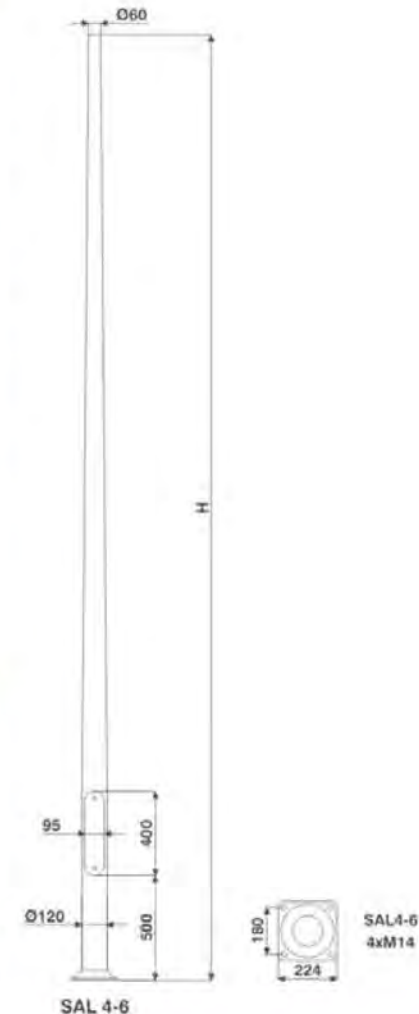
Aluminium column		SAL-4	SAL-4,5	SAL-5	SAL-5wzm	SAL-5,5	SAL-6
Height H [m]		4,0	4,5	5,0	5,0	5,5	6,0
Colour - anodizing method	C0 - natural colour	42201/C0	42202/C0	42203/C0	42204/C0	42205/C0	42207/C0
	C - electrochemical colouring	42201/C..	42202/C..	42203/C..	42204/C..	42205/C..	42207/C..
	CI - interference colouring	42201/CI..	42202/CI..	42203/CI..	42204/CI..	42205/CI..	42207/CI..
Code							
Painting - polyester powder paints according to RAL pallet		43201	43202	43203	43204	43205	43207
Net weight [kg]		13,2	15,2	17,2	19,2	19,2	21,4
Approximate unit volume [m ³]*		0,09	0,10	0,11	0,11	0,12	0,13
Pole top mounted		OPC-1 Ø60 (p. 146), OP (p. 144), OPA-1 (p. 148), OS-1 (p. 140), OZ (p. 142), ELBA (p. 160), SENJA (p. 158)					
Extension arms usage		WA-01, WA-1, WA-2, WA-3, WA-4, WA-5, WA-8, WA-11, WA-14 (p. 86), WR-4 (str.), WN-1, WN-2 (p. 98)					
Concrete footing type		B-50					
Concrete footing code		311150					
Reinforcement basket type		Z-50					
Reinforcement basket code		311205					
Hot galvanized nut set		4006					
Hot galvanized ripable nut set		4007					
Base dimensions (side length/fixing hole spacing/thickness) [mm]		224 / 180 / 8					

* For orders more than 10 pcs stated volume may change according to packing

Acceptable columns load

Acceptable luminaires and extension arms mass		20	30	20			
Acceptable windage of luminaires and extension arms [m ²] for Cx=1	I zone II ground category 22 m/s, (79,2 km/h)	0,88	0,70	0,56	0,87	0,43	0,32
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,76	0,60	0,47	0,74	0,35	0,26
	II zone, II ground category 26 m/s, (93,6 km/h)	0,59	0,46	0,35	0,60	0,25	0,17
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,54	0,42	0,31	0,52	0,23	0,15

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Flanged columns Ø120 mm base diameter

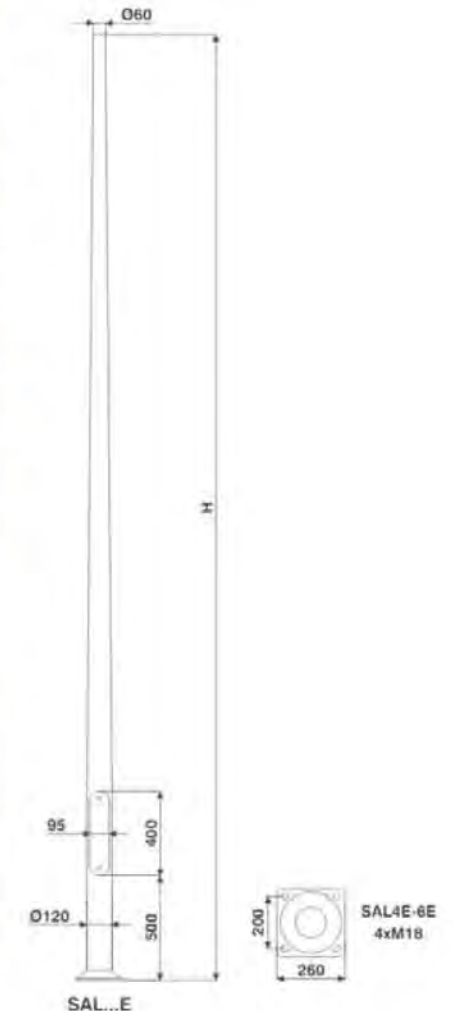
Aluminium column		SAL-4E	SAL-4,5E	SAL-5E	SAL-5Ewzm	SAL-6E
Height H [m]		4,0	4,5	5,0	5,0	6,0
Colour - anodizing method	C0 - natural colour	42217/C0	42218/C0	42219/C0	42220/C0	42223/C0
	C - electrochemical colouring	42217/C..	42218/C..	42219/C..	42220/C..	42223/C..
	CI - interference colouring	42217/CI..	42218/CI..	42219/CI..	42220/CI..	42223/CI..
Code						
Painting - polyester powder paints according to RAL		43217	43218	43219	43220	43223
pallet		13,6	15,6	17,6	21,6	21,8
Net weight [kg]		0,12	0,14	0,16	0,17	0,19
Approximate unit volume [m ³]*		OPC-1 Ø60 (p. 146), OP (p. 144), OPA-1 (p. 148), OS-1 (p. 140), OZ (p. 142), ELBA (p. 160), SENJA (p. 158)				
Pole top mounted		WA-01, WA-1, WA-2, WA-3, WA-4, WA-5, WA-8, WA-11, WA-14 (p. 85), WR-4 (p. 90), WN-1, WN-2 (p. 98))				
Extension arms usage						
Concrete footing type		B-51				
Concrete footing code		311151				
Reinforcement basket type		Z-51				
Reinforcement basket code		311251				
Hot galvanized nut set		4008				
Hot galvanized ripable nut set		4009				
Base dimensions (side length/fixing hole spacing/thickness) [mm]		260 / 200 / 8				

* For orders more than 10 pcs stated volume may change according to packing

Acceptable columns load

Acceptable luminaires and extension arms mass		20	30	20
Acceptable windage of luminaires and extension arms [m ²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,88	0,70	0,32
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,76	0,60	0,26
	II zone, II ground category 26 m/s, (93,6 km/h)	0,59	0,46	0,17
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,54	0,42	0,15

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Rooted columns Ø120 mm base diameter

Aluminium column		SAL-4 dz	SAL-4,5 dz	SAL-5 dz
Height of column above the ground level H [m]		4,0	4,5	5,0
Total H + h [m]		4,8	5,3	5,8
Colour - anodizing method	C0 - natural colour	42231/C0	42232/C0	42233/C0
	C - electrochemical colouring	42231/C..	42232/C..	42233/C..
	CI - interference colouring	42231/CI..	42232/CI..	42233/CI..
Code				
Painting - polyester powder paints according to RAL		43231	43232	43233
pallet		16,8	18,8	20,9
Net weight [kg]		0,04	0,04	0,05
Approximate unit volume [m ³]*		OPC-1 Ø60 (p. 146), OP (p. 144), OPA-1 (p. 148), OS-1 (p. 140), OZ (p. 142), ELBA (p. 160), SENJA (p. 158)		
Pole top mounted		WA-01, WA-1, WA-2, WA-3, WA-4, WA-5, WA-8, WA-11, WA-14 (p. 85), WR-4 (p. 90), WN-1, WN-2 (p. 98)		
Extension arms usage				

* For orders more than 10 pcs stated volume may change according to packing

Acceptable columns load

Acceptable luminaires and extension arms mass		20		
Acceptable windage of luminaires and extension arms [m ²] for C _x =1	I zone, II ground category 22 m/s, (79,2 km/h)	0,88	0,70	0,56
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,76	0,60	0,47
	II zone, II ground category 26 m/s, (93,6 km/h)	0,59	0,46	0,35
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,54	0,42	0,31

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Flanged columns Ø120 mm base diameter





I. ALUMINIUM COLUMNS

Flanged columns Ø120 mm base diameter with welded extension arms

Aluminium column		SAL-A1	SAL-A2	SAL-B1	SAL-B2
Height H [m]		4,0		4,5	
Colour - anodizing method	C0 - natural colour	42209/C0	42210/C0	42211/C0	42212/C0
	C - electrochemical colouring	42209/C..	42210/C..	42211/C..	42212/C..
	CI - interference colouring	42209/CI..	42210/CI..	42211/CI..	42212/CI..
Code					
Painting - polyester powder paints according to RAL pallet		43209	43210	43211	43212
Net weight [kg]		15,0	16,4	18,3	19,3
Approximate unit volume [m ³]*		0,25	0,32	0,31	0,38
Pole top mounted		OPC-1 Ø60 (p. 146), OP (p. 144), OPA-1 (p. 148), OS-1 (p. 140), OZ (p. 142), ELBA (p. 160), SENJA (p. 158)		OPA (p. 150), OW (p. 152)	
Concrete footing type				B-50	
Concrete footing code				311150	
Reinforcement basket type				Z-50	
Reinforcement basket code				311205	
Hot galvanized nut set				4006	
Hot galvanized ripable nut set				4007	
Base dimensions (side length/fixing hole spacing/thickness) [mm]				224/180/8	

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable single luminaire mass [kg]		10			
Acceptable single luminaire windage [m ²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,48	0,34	0,45	0,29
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,41	0,28	0,37	0,22
	II zone, II ground category 26 m/s, (93,6 km/h)	0,31	0,21	0,27	0,16
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,28	0,19	0,25	0,14

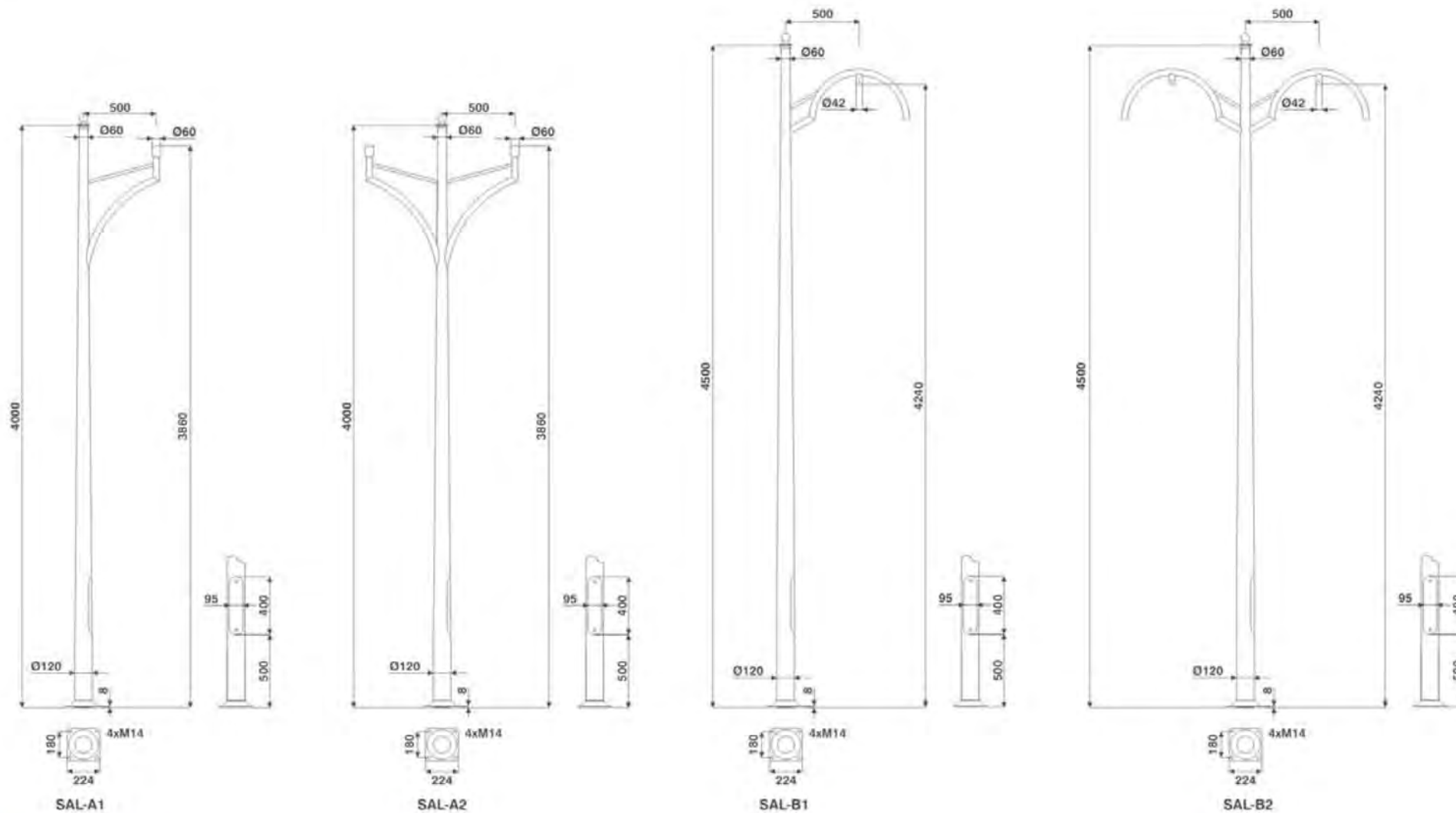
Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Flanged columns $\text{Ø}120$ mm base diameter with welded extension arms





I. ALUMINIUM COLUMNS

Flanged columns Ø120 mm base diameter with welded extension arms

Aluminium column	SAL-C1	SAL-C2	SAL-D1	SAL-D2	
Height H [m]	4,5		4,0		
Colour - anodizing method	C0 - natural colour	42213/C0	42214/C0	42215/C0	42216/C0
	C - electrochemical colouring	42213/C..	42214/C..	42215/C..	42216/C..
	CI - interference colouring	42213/CI..	42214/CI..	42215/CI..	42216/CI..
Code					
Painting - polyester powder paints according to RAL pallet	43213	43214	43215	43216	
Net weight [kg]	16,3	17,4	14,9	16,2	
Approximate unit volume [m ³]*	0,33	0,40	0,29	0,35	
Pole top mounted	OPA (p. 150), OW (p. 152)		OPC-1 Ø60 (p. 146), OP (p. 144), OPA-1 (p. 148), OS-1 (p. 140), OZ (p. 142), ELBA (p. 160), SENJA (p. 158)		
Concrete footing type	B-50				
Concrete footing code	311150				
Reinforcement basket type	Z-50				
Reinforcement basket code	311205				
Hot galvanized nut set	4006				
Hot galvanized ripable nut set	4007				
Base dimensions (side length/fixing hole spacing/thickness) [mm]	224/180/8				

* For orders more than 10 pcs stated volume may change according to packing

Acceptable columns load

Acceptable single luminaire mass [kg]	10				
Acceptable single luminaire windage [m ²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,42	0,31	0,48	0,34
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,35	0,25	0,41	0,28
	II zone, II ground category 26 m/s, (93,6 km/h)	0,25	0,17	0,31	0,21
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,22	0,15	0,28	0,19

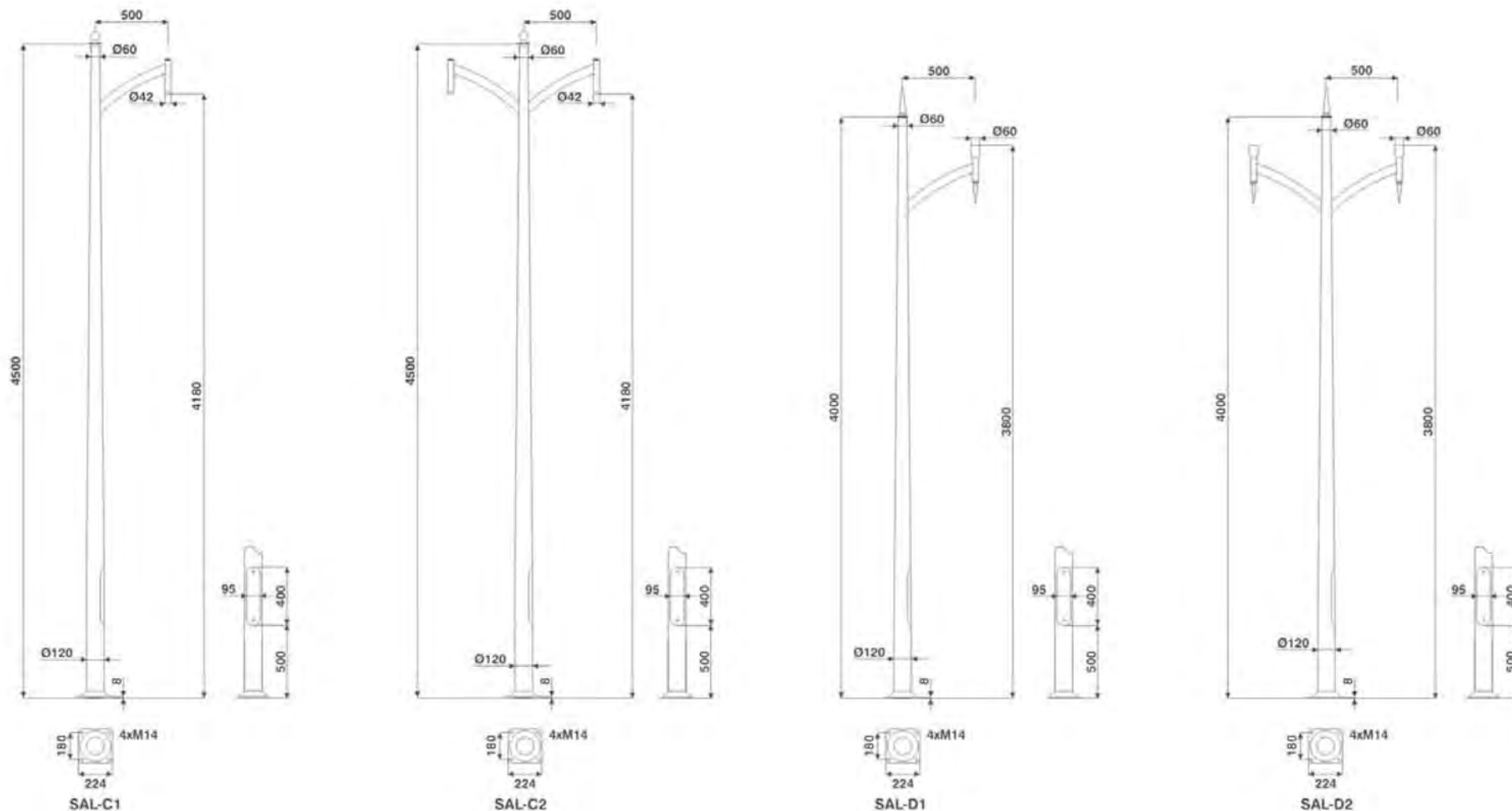
Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Flanged columns Ø120 mm base diameter with welded extension arms





I. ALUMINIUM COLUMNS

Flanged columns Ø146 mm base diameter

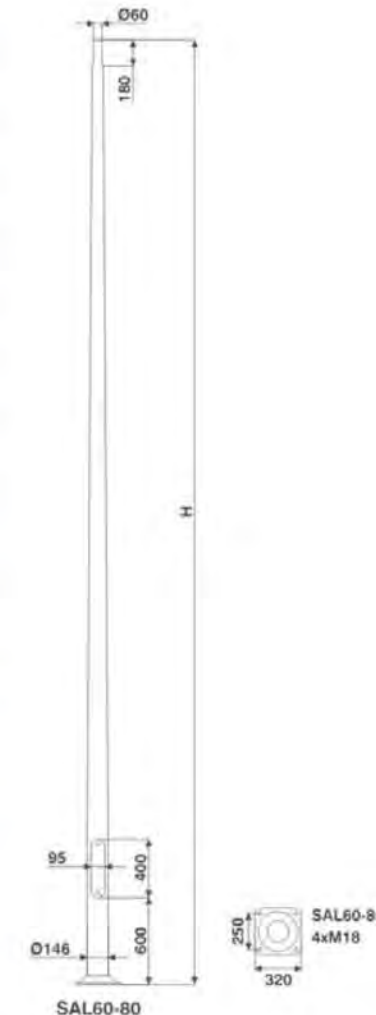
Aluminium column	SAL-60	SAL-65	SAL-70	SAL-75	SAL-80	
Height H [m]	6,0	6,5	7,0	7,5	8,0	
Colour -anodizing method	C0 - natural colour	42313/C0	42314/C0	42315/C0	42316/C0	42317/C0
	C - electrochemical colouring	42313/C..	42314/C..	42315/C..	42316/C..	42317/C..
	CI - interference colouring	42313/CI..	42314/CI..	42315/CI..	42316/CI..	42317/CI..
Code						
Painting - polyester powder paints according to RAL pallet	43313	43314	43315	43316	43317	
Net weight [kg]	26,2	28,0	29,2	30,3	31,5	
Approximate unit volume [m ³]*	0,23	0,26	0,28	0,30	0,32	
Pole top mounted	OPC-1 Ø60 (p. 146), OP (p. 144), OPA-1 (p. 148), ELBA (p. 160), SENJA (p. 158), street lighting luminaires (p. 172)					
Extension arms usage	WA-5, WA-8, WA-11, WA-12, WA-14, WA-15, WA-16, WA-20 (p. 86), WR (p. 89), WN (p. 98)					
Concrete footing type	B-60					
Concrete footing code	311160					
Reinforcement basket type	Z-60					
Reinforcement basket code	311206					
Hot galvanized nut set	4008					
Hot galvanized ripable nut set	4009					
Base dimensions (side length/fixing hole spacing/thickness) [mm]	320/250/10					

* For orders more than 10 pcs stated volume may change according to packing

Acceptable columns load

Acceptable luminaires and extension arms mass	30					
Acceptable windage of luminaires and extension arms [m ²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,80	0,66	0,53	0,43	0,34
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,68	0,56	0,44	0,35	0,26
	II zone, II ground category 26 m/s, (93,6 km/h)	0,51	0,41	0,31	0,23	0,16
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,47	0,36	0,28	0,20	0,14

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Flanged columns Ø146 mm base diameter

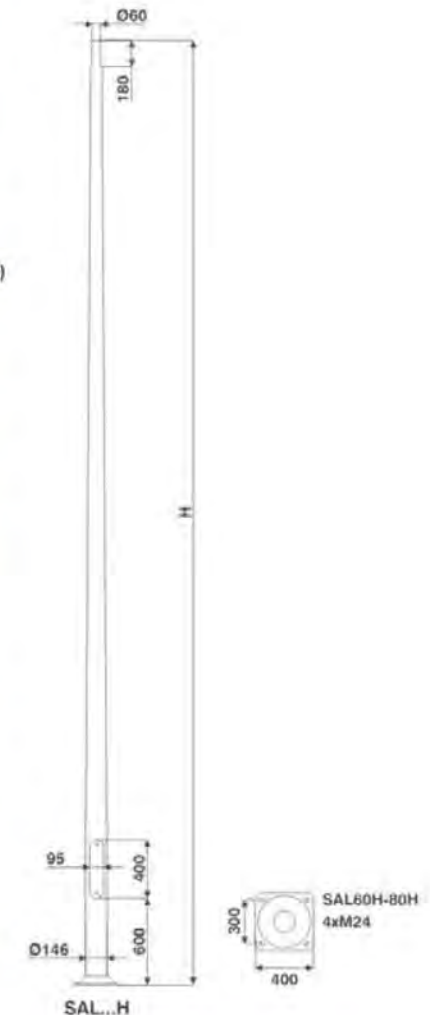
Aluminium column		SAL-60H	SAL-65H	SAL-70H	SAL-75H	SAL-80H
Height H [m]		6,0	6,5	7,0	7,5	8,0
Colour - anodizing method	C0 - natural colour	42335/C0	42336/C0	42337/C0	42338/C0	42340/C0
	C - electrochemical colouring	42335/C..	42336/C..	42337/C..	42338/C..	42340/C..
	CI - interference colouring	42335/CI..	42336/CI..	42337/CI..	42338/CI..	42340/CI..
Code						
Painting - polyester powder paints according to RAL pallet		43335	43336	43337	43338	43340
Net weight [kg]		28,5	30,3	32,7	34,1	35,7
Approximate unit volume [m ³]*		0,39	0,42	0,46	0,49	0,62
Pole top mounted		OPC-1 Ø60 (p. 146), OP (p. 144), OPA-1 (p. 148), ELBA (p. 160), SENJA (p. 158), street lighting luminaires (p. 172)				
Extension arms usage		WA-5, WA-8, WA-11, WA-12, WA-14, WA-15, WA-16, WA-20 (p. 87), WR (p. 89), WN (p. 98)				
Concrete footing type		B-71				
Concrete footing code		311171				
Reinforcement basket type		Z-71				
Reinforcement basket code		311271				
Hot galvanized nut set		4012				
Hot galvanized ripable nut set		4013				
Base dimensions (side length/fixing hole spacing/thickness) [mm]		400/300/10				

* For orders more than 10 pcs stated volume may change according to packing

Acceptable columns load

Acceptable luminaires and extension arms mass		30				
Acceptable windage of luminaires and extension arms [m ²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,80	0,73	0,58	0,48	0,38
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,68	0,62	0,49	0,40	0,31
	II zone, II ground category 26 m/s, (93,6 km/h)	0,51	0,46	0,36	0,28	0,20
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,47	0,42	0,32	0,24	0,18

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Flanged columns Ø146 mm base diameter

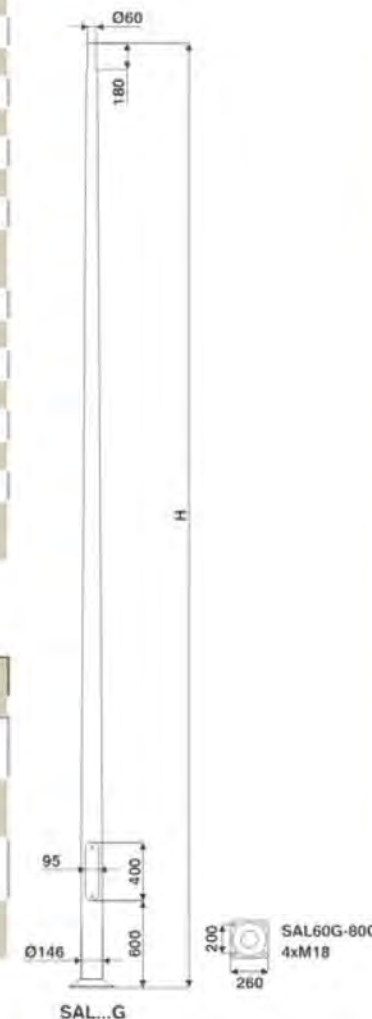
Aluminium column		SAL-60G	SAL-65G	SAL-70G
Height H [m]		6,0	6,5	7,0
Colour - anodizing method	C0 - natural colour	42343/C0	42344/C0	42345/C0
	C - electrochemical colouring	42343/C..	42344/C..	42345/C..
	CI - interference colouring	42343/CI..	42344/CI..	42345/CI..
Code				
Painting - polyester powder paints according to RAL pallet		43343	43344	43345
Net weight [kg]		26,9	27,8	28,8
Approximate unit volume [m ³]*		0,19	0,21	0,22
Pole top mounted		OPC-1 Ø60 (p. 146), OP (p. 144), OPA-1 (p. 148), ELBA (p. 160), SENJA (p. 158), street lighting luminaires (p. 172)		
Extension arms usage		WA-5, WA-8, WA-11, WA-12, WA-14, WA-15, WA-16, WA-20 (p. 86), WR (p. 89), WN (p. 98)		
Concrete footing type		B-61		
Concrete footing code		311161		
Reinforcement basket type		Z-61		
Reinforcement basket code		311261		
Hot galvanized nut set		4008		
Hot galvanized ripable nut set		4009		
Base dimensions (side length/fixing hole spacing/thickness) [mm]		260/200/12		

* For orders more than 10 pcs stated volume may change according to packing

Acceptable columns load

Acceptable luminaires and extension arms mass		30		
Acceptable windage of luminaires and extension arms [m ²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,80	0,73	0,58
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,68	0,62	0,49
	II zone, II ground category 26 m/s, (93,6 km/h)	0,51	0,46	0,36
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,47	0,42	0,32

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Rooted columns Ø146 mm at the ground level

Aluminium column		SAL-55 dz	SAL-60 dz	SAL-65 dz	SAL-70 dz	
Height of column above the ground level H [m]		5,5	6,0	6,5	7,0	
Total H + h [m]		6,3	6,8	7,5	8,0	
Colour - anodizing method	C0 - natural colour	Code	42322/C0	42323/C0	42324/C0	42325/C0
	C - electrochemical colouring		42322/C..	42323/C..	42324/C..	42325/C..
	CI - interference colouring		42322/CI..	42323/CI..	42324/CI..	42325/CI..
Painting - polyester powder paints according to RAL		43322	43323	43324	43325	
pallet		27,2	29,6	30,9	32,5	
Net weight [kg]		0,07	0,08	0,09	0,09	
Approximate unit volume [m ³]*		OPC-1 Ø60 (p. 146), OP (p. 144), OPA-1 (p. 148), ELBA (p. 160), SENJA (p. 158), street lighting luminaires (p. 172)				
Pole top mounted		WA-5, WA-8, WA-11, WA-12, WA-14, WA-15, WA-16, WA-20 (p. 86), WR (p. 89), WN (p. 98)				
Extension arms usage						

* For orders more than 10 pcs stated volume may change according to packing

Acceptable columns load

Acceptable luminaires and extension arms mass		30			
Acceptable windage of luminaires and extension arms [m ²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,87	0,80	0,73	0,58
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,73	0,68	0,62	0,49
	II zone, II ground category 26 m/s, (93,6 km/h)	0,54	0,51	0,46	0,36
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,50	0,47	0,42	0,32

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories



SAL55dz-70dz





I. ALUMINIUM COLUMNS

Flanged columns Ø146 mm base diameter with welded extension arms

Aluminium column		SAL-M1	SAL-M2	SAL-N1	SAL-N2	SAL-N12	SAL-N22	
Height H [m]		6,0		8,0		8,0		
Colour - anodizing method	C0 - natural colour	42308/C0	42309/C0	42310/C0	42332/C0	42347/C0	42348/C0	
	C - electrochemical colouring	42308/C..	42309/C..	42310/C..	42332/C..	42347/C..	42348/C..	
	CI - interference colouring	42308/CI..	42309/CI..	42310/CI..	42332/CI..	42347/CI..	42348/CI..	
Code								
Painting - polyester powder paints according to RAL pallet		43308	43309	43310	43332	43347	43348	
Net weight [kg]		27,9	29,6	35,4	36,9	36,6	38,1	
Approximate unit volume [m ³]*		0,59	0,68	0,85	0,98	0,85	0,98	
Pole top mounted		OPA (p. 150), OW (p. 152), OW-2 (p. 154), OW-21 (p. 156)			street lighting luminaires (p. 172)			
Concrete footing type							B-60	
Concrete footing code							311160	
Reinforcement basket type							Z-60	
Reinforcement basket code							311260	
Hot galvanized nut set							4008	
Hot galvanized ripable nut set							4009	
Base dimensions (side length/fixing hole spacing/thickness) [mm]							320/250/10	

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable single luminaire mass [kg]		10		15			
Acceptable single luminaire windage [m ²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,65	0,40	0,21	0,12	0,21	0,12
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,54	0,32	0,16	x	0,16	x
	II zone, II ground category 26 m/s, (93,6 km/h)	0,40	0,23	0,09	x	0,09	x
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,37	0,19	Magnolia	x	Magnolia	x

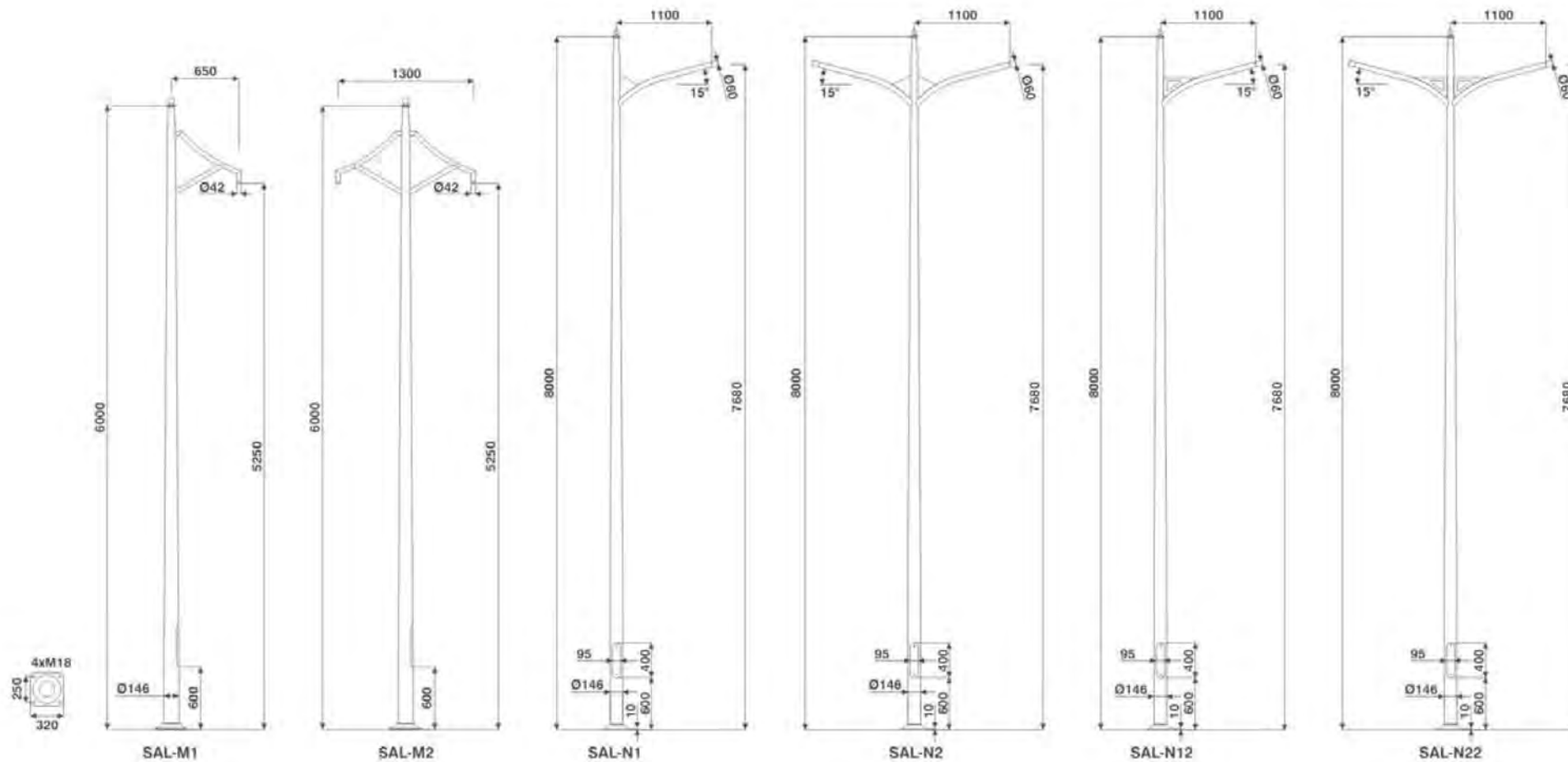
Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Flanged columns Ø146 mm base diameter with welded extension arms





I. ALUMINIUM COLUMNS

Flanged columns Ø146 mm base diameter with welded extension arms

Aluminium column	SAL-L1	SAL-L2	SAL-O1	SAL-O2	
Height H [m]	6,0		6,3		
Colour - anodizing method	C0 - natural colour	42331/C0	42307/C0	42333/C0	42312/C0
	C - electrochemical colouring	42331/C..	42307/C..	42333/C..	42312/C..
	CI - interference colouring	42331/CI..	42307/CI..	42333/CI..	42312/CI..
Code					
Painting - polyester powder paints according to RAL pallet	43331	43307	43333	43312	
Net weight [kg]	28,3	30,4	29,7	31,4	
Approximate unit volume [m ³]*	0,69	0,83	0,68	0,81	
Pole top mounted	OPA (p. 150), OW (p. 152), OW-2 (p. 154), OW-21 (p. 156)				
Concrete footing type	B-60				
Concrete footing code	311160				
Reinforcement basket type	Z-60				
Reinforcement basket code	311260				
Hot galvanized nut set	4008				
Hot galvanized ripable nut set	4009				
Base dimensions (side length/fixing hole spacing/thickness) [mm]	320/250/10				

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable single luminaire mass [kg]	10				
Acceptable single luminaire windage [m ²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,52	0,32	0,43	0,25
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,43	0,26	0,35	0,19
	II zone, II ground category 26 m/s, (93,6 km/h)	0,31	0,17	0,24	0,11
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,27	0,15	0,21	0,09

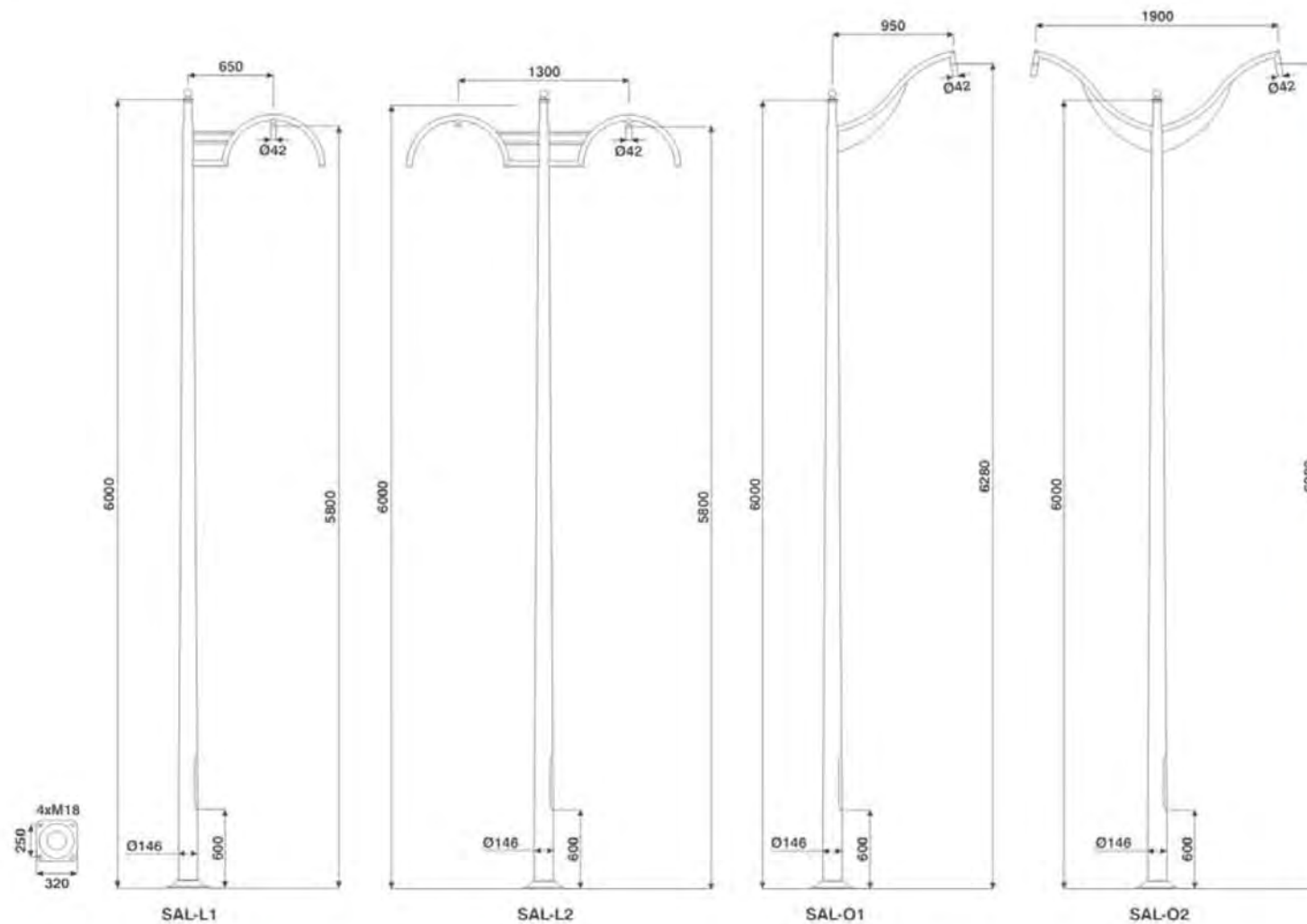
Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Flanged columns $\text{Ø}146$ mm base diameter with welded extension arms





I. ALUMINIUM COLUMNS

Flanged columns Ø146 mm base diameter with welded extension arms

Aluminium column		SAL-K1	SAL-K2	SAL-R1	SAL-R2
Height H [m]		6,0		6,3	
Colour - anodizing method	C0 - natural colour	42330/C0	42306/C0	42334/C0	42311/C0
	C - electrochemical colouring	42330/C..	42306/C..	42334/C..	42311/C..
	Code	42330/CI	42306/CI..	42334/CI..	42311/CI..
Painting - polyester powder paints according to RAL pallet		43300	43306	43334	43311
Net weight [kg]		27,4	28,6	29,9	36,1
Approximate unit volume [m ³]*		0,59	0,97	0,70	0,92
Pole top mounted		OPA (p. 150), OW (p. 152), OW-2 (p. 154), OW-21 (p. 156)			
Concrete footing type		B-60			
Concrete footing code		311160			
Reinforcement basket type		Z-60			
Reinforcement basket code		311260			
Hot galvanized nut set		4008			
Hot galvanized ripable nut set		4009			
Base dimensions (side length/fixing hole spacing/thickness) [mm]		320/250/10			

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable single luminaire mass mass [kg]		10			
Acceptable single luminaire windage [m ²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,62	0,38	0,48	0,26
	I and III zone II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,52	0,31	0,39	0,20
	II zone, II ground category 26 m/s, (93,6 km/h)	0,38	0,21	0,27	0,11
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,34	0,19	0,23	0,09

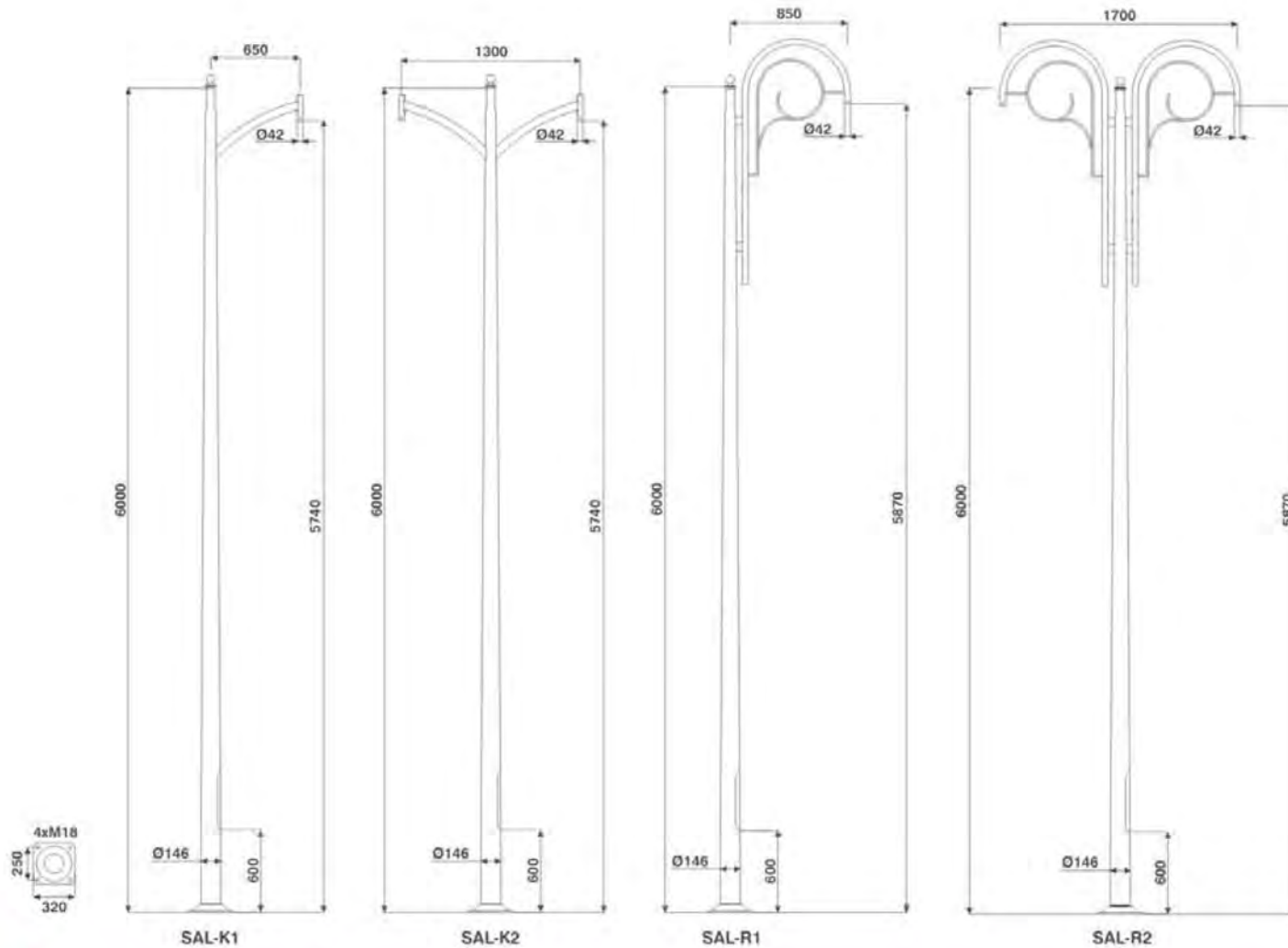
Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Flanged columns Ø146 mm base diameter





I. ALUMINIUM COLUMNS

Flanged columns Ø146 mm base diameter





I. ALUMINIUM COLUMNS

Flanged columns Ø178 mm and Ø180 mm base diameter

Aluminium column		SAL-80K	SAL-85K	SAL-90K	SAL-95K	SAL-100K
Height H [m]		8,0	8,5	9,0	9,5	10,0
Colour - anodizing method	C0 - natural colour	42630/C0	42631/C0	42632/C0	42633/C0	42634/C0
	C - electrochemical colouring	42630/C...	42631/C..	42632/C...	42633/C...	42634/C...
	CI - interference colouring	42630/CI...	42631/CI	42632/CI	42633/CI...	42634/CI...
Code						
Painting - polyester powder paints according to RAL pallet		43630	43631	43632	43633	43634
Net weight [kg]		37,2	39,5	41,4	42,8	44,2
Unit volume [m ³]*		0,52	0,56	0,59	0,62	0,65
Pole top mounted		street lighting luminaires (p. 172)				
Extension arms usage		WR-1, WR-2, WR-3, WR-4 (p. 89), WN (p. 98), WRP (p. 95)**				
Concrete footing type		B-71 or B-70				
Concrete footing code		311171, 311170				
Reinforcement basket type		Z-71 or Z-70				
Reinforcement basket code		311271, 311207				
Hot galvanized nut set		4012				
Hot galvanized ripable nut set		4013				
Base dimensions (side length/fixing hole spacing/thickness) [mm]		400/300/10				

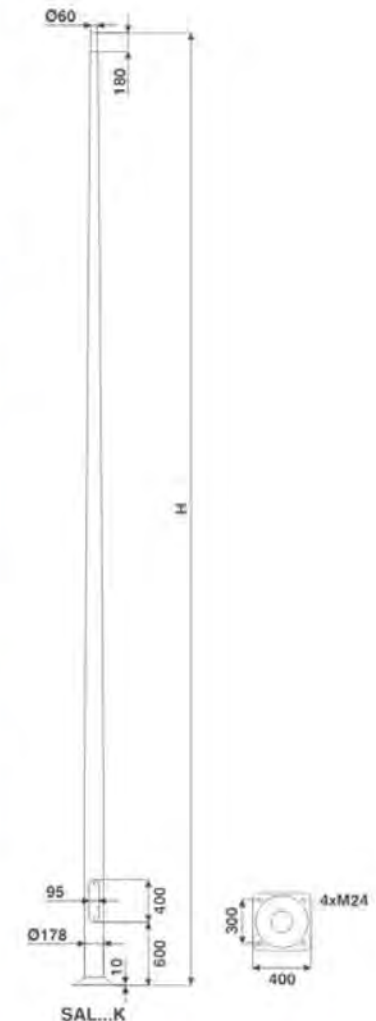
*For orders more than 10 pcs stated volume may change according to packing

**Use extension arms type WRP required column resistant calculations

Acceptable columns load

Acceptable luminaires and extension arms mass		30				
Acceptable windage of luminaires and extension arms [m ²] dla Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,60	0,49	0,39	0,31	0,22
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,50	0,40	0,31	0,23	0,16
	II zone, II ground category 26 m/s, (93,6 km/h)	0,37	0,29	0,22	0,15	0,10
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,33	0,26	0,19	0,12	Magnolia

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Flanged columns Ø178 mm and Ø180 mm base diameter

Aluminium column type	SAL-80M	SAL-85M	SAL-90M	SAL-95M	SAL-100M	SAL-100M/W	
Height H [m]	8,0	8,5	9,0	9,5	10,0	9,8	
Colour - anodizing method	C0 - natural colour	42755/C0	42756/C0	42757/C0	42758/C0	42759/C0	42765/C0
	C - electrochemical colouring Code	42755/C...	42756/C...	42757/C...	42758/C...	42759/C...	42765/C...
	CI - interference colouring	42755/CI...	42756/CI...	42757/CI...	42758/CI...	42759/CI...	42765/CI...
Painting - polyester powder paints according to RAL pallet	43755	43756	43757	43758	43759	43765	
Net weight [kg]	42,3	45,4	48,7	51,9	56,1	61,6	
Unit volume [m ³]*	0,52	0,56	0,59	0,62	0,65	1,40	
Pole top mounted	street lighting luminaires (p. 172)						
Extension arms usage	WR (p. 89), WRP (p. 95), WN (p. 98)						
Concrete footing type	B-71 or B-70						
Concrete footing code	311171, 311170						
Reinforcement basket type	Z-71 or Z-70						
Reinforcement basket code	311271, 311207						
Hot galvanized nut set	4012						
Hot galvanized ripable nut set	4013						
Base dimensions (side length/fixing hole spacing/thickness) [mm]	400/300/12						

* For orders more than 10 pcs stated volume may change according to packing

Acceptable columns load

Acceptable luminaires and extension arms mass		50	30	15 (Cx=0,7)			
Acceptable windage of luminaires and extension arms [m ²] for C _s =1	I zone, II ground category 22 m/s, (79,2 km/h)	0,97	0,76	0,64	0,64	0,49	0,41
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,82	0,64	0,53	0,53	0,40	0,29
	II zone, II ground category 26 m/s, (93,6 km/h)	0,63	0,48	0,40	0,39	0,29	0,13
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,57	0,44	0,36	0,35	0,26	0,10

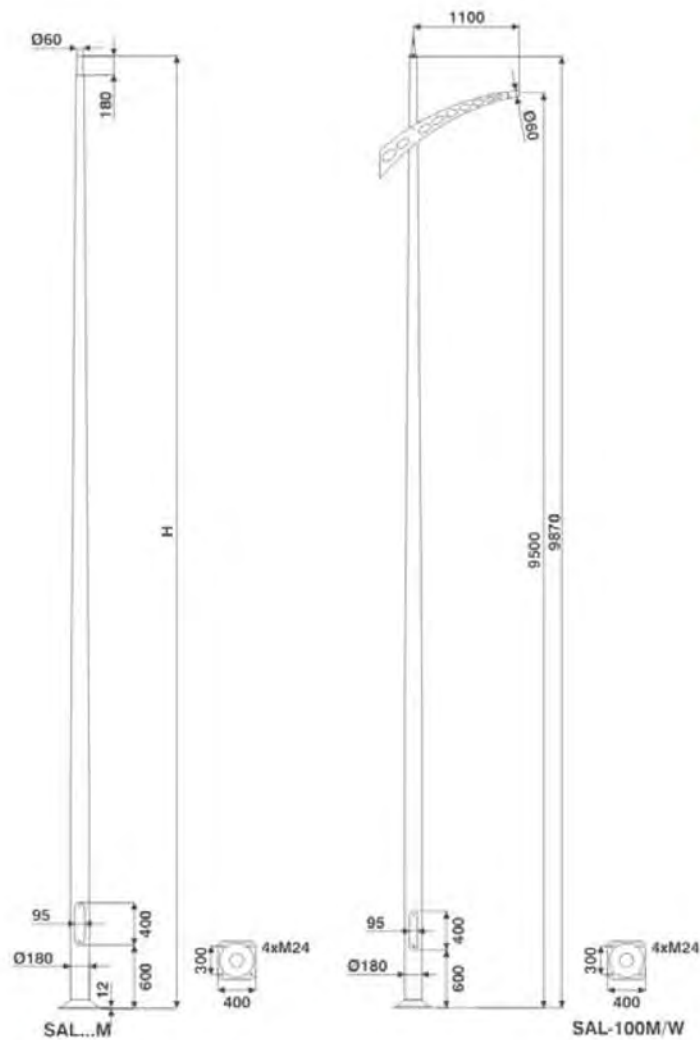
Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Flanged columns Ø178 mm and Ø180 mm base diameter





I. ALUMINIUM COLUMNS

Rooted columns Ø178 mm and Ø180 mm at ground level

Aluminium column	SAL-80K dz	SAL-85K dz	SAL-80M dz	SAL-85M dz
Height of column above the ground level H [m]	8,0	8,5	8,0	8,5
Total H + h [m]	9,5	10,0	9,5	10,0
Colour -anodizing method	C0 - natural colour	42606/C0	42607/C0	42706/C0
	C - electrochemical colouring	42606/C...	42607/C...	42706/C...
	Code	42606/Ci...	42607/Ci...	42706/Ci...
CI - interference colouring	42606/Ci...	42607/Ci...	42706/Ci...	42707/Ci...
Painting - polyester powder paints according to RAL	43606	43607	43706	43707
Net weight [kg]	40,8	43,2	48,2	51,3
Unit volume [m ³]*	0,11	0,11	0,11	0,12
Pole top mounted	street lighting luminaires (p. 172)			
Extension arms usage	WR-1, WR-2, WR-3, WR-4 (p. 89), WN (p. 98), WRP (p. 95)**		WR (p. 89), WN (p. 98), WRP (p. 95)	

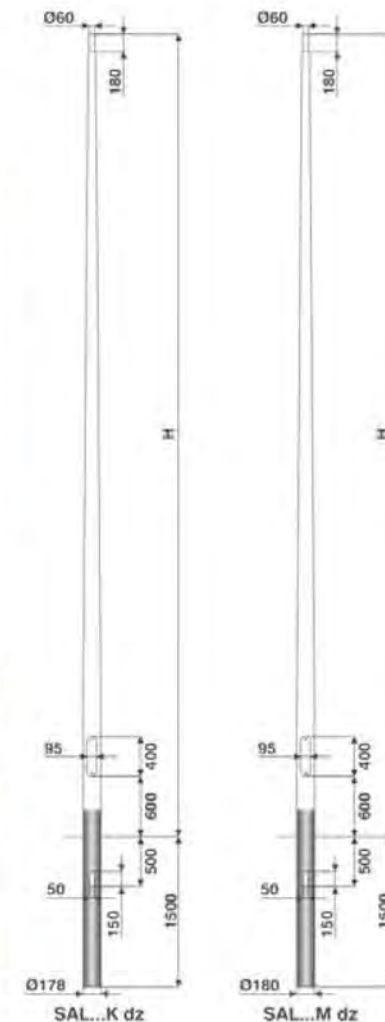
* For orders more than 10 pcs stated volume may change according to packing

** Use extension arms type WRP on columns K required column resistant calculations

Acceptable columns load

Acceptable luminaires and extension arms mass	30	50	
Acceptable windage of luminaires and extension arms [m ²] dia Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,60	0,49
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,50	0,40
	II zone, II ground category 26 m/s, (93,6 km/h)	0,37	0,29
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,33	0,26
		0,97	0,82
		0,63	0,57

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Flanged columns Ø178 mm and Ø180 mm base diameter





I. ALUMINIUM COLUMNS

Two piece flanged columns with Ø176 mm base diameter

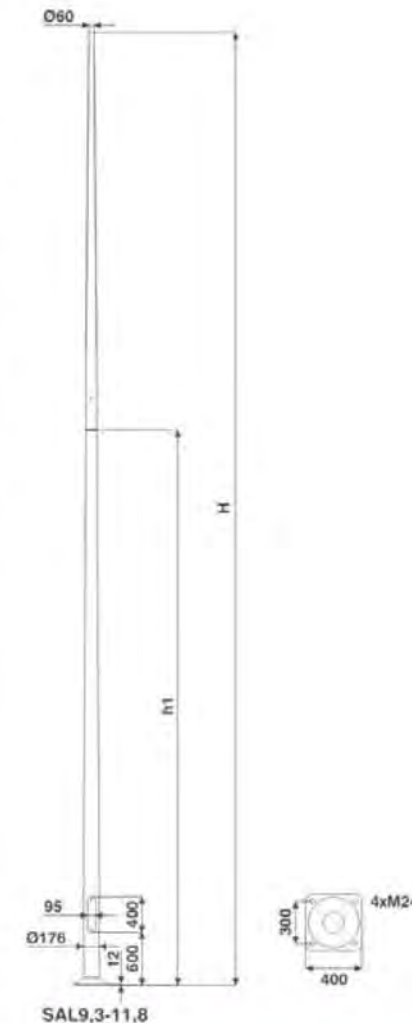
Aluminium column		SAL-9,3	SAL-9,8	SAL-10,3	SAL-10,8	SAL-11,3	SAL-11,8
Height	total H [m]	9,3	9,8	10,3	10,8	11,3	11,8
	bottom part h ₁ + E [m]	5,3 + 0,35	5,8 + 0,35	6,3 + 0,35	6,3 + 0,35	6,3 + 0,35	6,8 + 0,35
	upper part h ₂ [m]	4,0	4,0	4,0	4,5	5,0	5,0
Colour -anodizing method	C0 - natural colour	42456/C0	42457/C0	42458/C0	42459/C0	42460/C0	42461/C0
	C - electrochemical colouring	42456/C...	42457/C...	42458/C...	42459/C...	42460/C...	42461/C...
	CI - interference colouring	42456/CI...	42457/CI...	42458/CI...	42459/CI...	42460/CI...	42461/CI...
Code							
Painting - polyester powder paints according to RAL pallet		43456	43457	43458	43459	43460	43461
Net weight [kg]		46,0	48,8	51,5	54,0	55,3	59,0
Unit volume [m ³]*		0,44	0,48	0,52	0,52	0,52	0,56
Pole top mounted		street lighting luminaires (p. 172)					
Extension arms usage		WR-1, WR-2, WR-3, WR-4, WR-13, WR-15 (p. 89), WN (p. 98)					
Concrete footing type		B-70					
Concrete footing code		311170					
Reinforcement basket type		Z-70					
Reinforcement basket code		311207					
Hot galvanized nut set		4012					
Hot galvanized ripable nut set		4013					
Base dimensions (side length/fixing hole spacing/thickness) [mm]		400/300/12					

* For orders more than 10 pcs stated volume may change according to packing

Acceptable columns load

Acceptable luminaires and extension arms mass [kg]		30					
Acceptable windage of luminaires and extension arms [m ²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,52	0,46	0,37	0,27	0,21	0,14
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,43	0,37	0,29	0,20	0,14	Magnolia
	II zone, II ground category 26 m/s, (93,6 km/h)	0,31	0,25	0,19	0,12	Magnolia	x
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,28	0,22	0,16	0,10	x	x

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Two piece rooted reinforced columns with Ø176 mm at the ground level

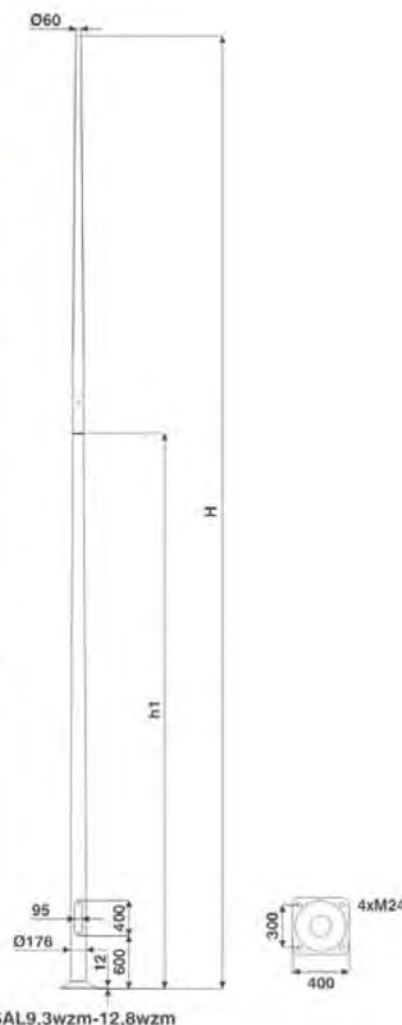
Aluminium column		SAL-9,3 wzm	SAL-9,8 wzm	SAL-10,3 wzm	SAL-10,8 wzm	SAL-11,3 wzm	SAL-11,8 wzm	SAL-12,3 wzm	SAL-12,8 wzm
Height	total H [m]	9,3	9,8	10,3	10,8	11,3	11,8	12,3	12,8
	bottom part h ₁ +E [m]	5,3 ± 0,35	5,8 ± 0,35	6,3 ± 0,35	6,3 ± 0,35	6,3 ± 0,35	6,8 ± 0,35	6,8 ± 0,35	6,8 ± 0,35
	upper part h ₂ [m]	4,0	4,0	4,0	4,5	5,0	5,0	5,5	6,0
Colour anodizing method	C0 - natural colour	42476/C0	42477/C0	42478/C0	42479/C0	42470/C0	42471/C0	42472/C0	42473/C0
	C - electrochemical colouring	42476/C...	42477/C...	42478/C...	42479/C...	42470/C...	42471/C...	42472/C...	42473/C...
	CI - interference colouring	42476/CI...	42477/CI...	42478/CI...	42479/CI...	42470/CI...	42471/CI...	42472/CI...	42473/CI...
Painting - polyester powder paints according to RAL pallet	Code	43476	43477	43478	43479	43470	43471	43472	43473
Net weight [kg]		53,5	57,5	61,5	63,5	65,5	69,0	71,0	73,5
Unit volume [m ³]*		0,64	0,68	0,72	0,76	0,77	0,77	0,78	0,78
Pole top mounted		street lighting luminaires (p. 172)							
Extension arms usage		WR-1, WR-2, WR-3, WR-4, WR-13, WR-15 (p. 89), WN (p. 98)							
Concrete footing type		B-70							
Concrete footing code		311170							
Reinforcement basket type		Z-70							
Reinforcement basket code		311207							
Hot galvanized nut set		4012							
Hot galvanized ripable nut set		4013							
Base dimensions (side length/fixing hole spacing/thickness) [mm]		400/300/12							

* For orders more than 10 pcs statd volume may change according to packing

Acceptable columns load

Acceptable luminaires and extension arms mass		30							
Acceptable windage of luminaires and extension arms [m ²] dia Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	1,30	1,19	1,02	0,88	0,77	0,66	0,56	0,46
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	1,04	0,98	0,87	0,74	0,64	0,54	0,44	0,36
	II zone, II ground category 26 m/s, (93,6 km/h)	0,85	0,76	0,66	0,56	0,47	0,39	0,31	0,24
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,78	0,70	0,60	0,51	0,42	0,35	0,28	0,20

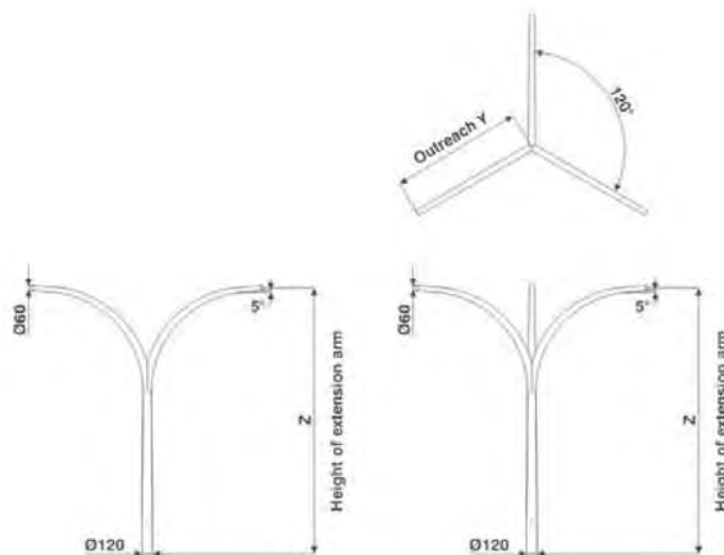
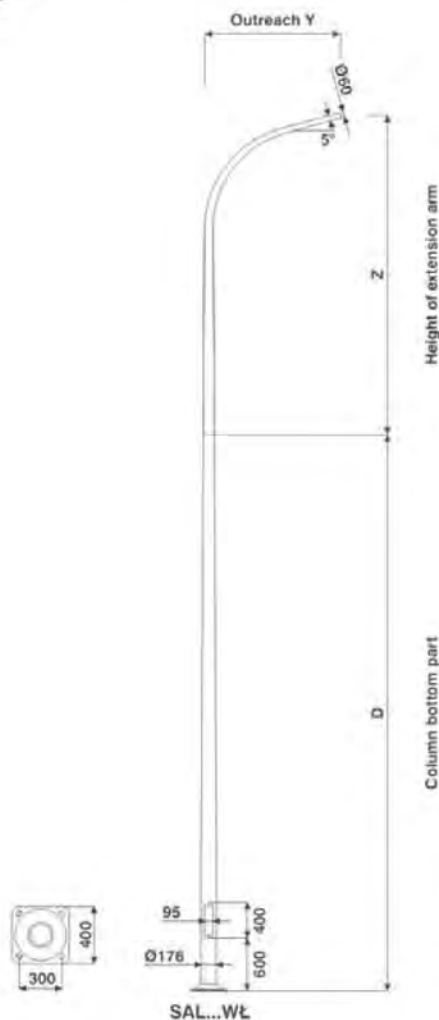
Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Two-piece columns with $\varnothing 176$ mm base diameter with curved extension arms



Denotation of extension arms for columns type SAL WL x/y/z/ α :
 x - number of arms
 y - reach length [m]
 z - extension arm height [m]
 α - inclination angle of extension arm - standard are performed 5 degree (any other inclination angle on customer request)

Aluminium columns SAL 7,5 to 12 with arched extension arms

Pole top mounted	street lighting luminaires (p. 172)
Concrete footing type	B-70
Concrete footing code	311170
Reinforcement basket type	Z-70
Reinforcement basket code	311207
Hot galvanized nuts set	4012
Hot galvanized ripable nuts set	4013
Base dimensions(side length/fixing hole spacing/thickness) [mm]	400/300/12





I. ALUMINIUM COLUMNS

Two-piece columns with Ø176 mm base diameter with curved extension arms

Aluminium column		SAL-7,5					SAL-8				
Extension arm type Wt/x/y/z/□		1/2,5/2,2/5	2/2,5/2,2/5	3/2,5/2,2/5	1/2,0/2,7/5	2/2,0/2,7/5	3/2,0/2,7/5	1/2,5/2,7/5	2/2,5/2,7/5	3/2,5/2,7/5	
Height	total H [m]	7,5					8,0				
	bottom part h ₁ + E [m]	5,3+0,35	5,3+0,35	5,3+0,35	5,3+0,35	5,3+0,35	5,3+0,35	5,3+0,35	5,3+0,35	5,3+0,35	
	upper part h ₂ [m]	2,2	2,2	2,2	2,7	2,7	2,7	2,7	2,7	2,7	
Colour -anodizing method	C0 - natural colour	42401/C0	42402/C0	42403/C0	42404/C0	42405/C0	42406/C0	42407/C0	42408/C0	42409/C0	
	C - electrochemical colouring	42401/C..	42402/C..	42403/C..	42404/C..	42405/C..	42406/C..	42407/C..	42408/C..	42409/C..	
	CI - interference colouring	42401/CI..	42402/CI..	42403/CI..	42404/CI..	42405/CI..	42406/CI..	42407/CI..	42408/CI..	42409/CI..	
Painted		43401	43402	43403	43404	43405	43406	43407	43408	43409	
Net weight [kg]		50,0	59,8	69,3	50,0	58,3	66,3	52,5	62,3	71,8	
Unit volume [m ³]*		0,65	0,67	1,02	0,65	0,68	1,04	0,70	0,73	1,15	

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable single luminaire mass [kg]		15								
Acceptable single luminaire windage [m ²] for C _x =0,7	I zone, II ground category 22 m/s, (79,2 km/h)	0,55	0,39	0,29	0,57	0,35	0,26	0,46	0,28	0,21
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,44	0,29	0,21	0,46	0,26	0,19	0,36	0,19	0,14
	II zone, II ground category 26 m/s, (93,6 km/h)	0,30	0,15	0,11	0,31	0,14	0,10	0,23	Magnolia	x
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,26	0,12	Magnolia	0,27	0,11	Magnolia	0,19	x	x

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Two-piece columns with Ø176 mm base diameter with curved extension arms

Aluminium column		SAL-8,5									
Extension arm type Wt./x/y/z/α		1/1,5/3,2/5	2/1,5/3,2/5	3/1,5/3,2/5	1/2,0/3,2/5	2/2,0/3,2/5	3/2,0/3,2/5	1/2,5/3,2/5	2/2,5/3,2/5	3/2,5/3,2/5	
Height	total H [m]	8,5									
	bottom part h ₁ +E [m]	5,3+0,35	5,3+0,35	5,3+0,35	5,3+0,35	5,3+0,35	5,3+0,35	5,3+0,35	5,3+0,35	5,3+0,35	
	upper part h ₂ [m]	3,2	3,2	3,2	3,2	3,2	3,2	3,2	3,2	3,2	
Colour - anodizing method	C0 - natural colour	Code	42410/C0	42411/C0	42412/C0	42413/C0	42414/C0	42415/C0	42416/C0	42417/C0	42418/C0
	C - electrochemical colouring		42410/C..	42411/C..	42412/C...	42413/C..	42414/C..	42415/C..	42416/C..	42417/C..	42418/C..
	CI - interference colouring		42410/CI..	42411/CI..	42412/CI..	42413/CI..	42414/CI	42415/CI..	42416/C..	42417/CI..	42418/CI..
Painted			43410	43411	43412	43413	43414	43415	43416	43417	43418
Net weight [kg]			50,0	56,8	63,3	52,5	60,8	68,8	54,0	62,1	71,6
Unit volume [m ³]*			0,63	0,81	1,02	0,69	0,73	1,16	0,76	0,79	1,29

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable single luminaire mass		15								
Acceptable single luminaire windage [m ²] for Cx=0,7	I zone, II ground category 22 m/s, (79,2 km/h)	0,59	0,32	0,24	0,47	0,26	0,19	0,37	0,20	0,14
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,48	0,24	0,18	0,37	0,18	0,12	0,28	0,12	0,10
	II zone, II ground category 26 m/s, (93,6 km/h)	0,33	0,14	0,14	0,24	Magnolia	x	0,16	x	x
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,29	0,11	Magnolia	0,20	x	x	0,12	x	x

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Two-piece columns with Ø176 mm base diameter with curved extension arms

Aluminium column		SAL-9									
Extension arm type Wt/x/y/z/a		1/1,5/3,2/5	2/1,5/3,2/5	3/1,5/3,2/5	1/2,0/3,2/5	2/2,0/3,2/5	3/2,0/3,2/5	1/2,5/3,2/5	2/2,5/3,2/5	3/2,5/3,2/5	
Height	total H [m]	9,0									
	bottom part h ₁ +E [m]	5,8+0,35	5,8+0,35	5,8+0,35	5,8+0,35	5,8+0,35	5,8+0,35	5,8+0,35	5,8+0,35	5,8+0,35	
	upper part h ₂ [m]	3,2	3,2	3,2	3,2	3,2	3,2	3,2	3,2	3,2	
Colour - anodizing method	C0 - natural colourcode	42419/C0	42420/C0	42421/C0	42422/C0	42423/C0	42424/C0	42425/C0	42426/C0	42427/C0	
	C - electrochemical colouring	42419/C..	42420/C..	42421/C..	42422/C..	42423/C..	42424/C..	42425/C..	42426/C..	42427/C..	
	Code	42419/Ci..	42420/Ci..	42421/Ci..	42422/Ci..	42423/Ci..	42424/Ci..	42425/Ci..	42426/Ci..	42427/Ci..	
Painted		43419	43420	43421	43422	43423	43424	43425	43426	43427	
Net weight [kg]		53,4	60,2	66,7	55,9	64,2	72,2	57,4	65,5	75,0	
Unit volume [m ³]*		0,67	0,85	1,06	0,73	0,76	1,19	0,79	0,83	1,33	

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable single luminaire mass [kg]		15									
Acceptable single luminaire windage [m ²] for Cx=0,7	I zone, II ground category 22 m/s, (79,2 km/h)	0,49	0,24	0,17	0,38	0,18	0,12	0,29	0,17	Magnolia	
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,38	0,17	0,11	0,29	0,10	Magnolia	0,20	Magnolia	x	
	II zone, II ground category 26 m/s, (93,6 km/h)	0,25	Magnolia	x	0,17	x	x	0,10	x	x	
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,21	x	x	0,13	x	x	Magnolia	x	x	

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Two-piece columns with Ø176 mm base diameter with curved extension arms

Aluminium column		SAL-9,5									
Extension arm type Wt/x/y/z/a		1/1,5/3,7/5	2/1,5/3,7/5	3/1,5/3,7/5	1/2,0/3,7/5	2/2,0/3,7/5	3/2,0/3,7/5	1/2,5/3,7/5	2/2,5/3,7/5	3/2,5/3,7/5	
Height	total H [m]	9,5									
	bottom part h ₁ + E [m]	5,8+0,35	5,8+0,35	5,8+0,35	5,8+0,35	5,8+0,35	5,8+0,35	5,8+0,35	5,8+0,35	5,8+0,35	
	upper part h ₂ [m]	3,7	3,7	3,7	3,7	3,7	3,7	3,7	3,7	3,7	
Colour - anodizing method	C0 - natural colour	Code	42428/C0	42429/C0	42430/C0	42431/C0	42432/C0	42433/C0	42434/C0	42435/C0	42436/C0
	C - electrochemical colouring		42428/C..	42429/C..	42430/C..	42431/C..	42432/C..	42433/C..	42434/C..	42435/C..	42436/C..
	CI - interference colouring		42428/CI..	42429/CI..	42430/CI..	42431/CI..	42432/CI..	42433/CI..	42434/CI..	42435/CI..	42436/CI..
Painted			43428	43429	43430	43431	43432	43433	43434	43435	43436
Net weight [kg]			55,9	62,7	69,2	57,4	65,5	73,5	59,3	69,0	78,5
Unit volume [m ³]*			0,70	0,91	1,16	0,77	0,81	1,31	0,85	0,89	1,46

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable single luminaire mass [kg]		15								
Acceptable single luminaire windage [m ²] for Cx=0,7	I zone, III ground category 22 m/s, (79,2 km/h)	0,58	0,30	0,22	0,47	0,24	0,17	0,37	0,16	Magnolia
	I and III zone, III ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,46	0,22	0,15	0,36	0,15	0,10	0,27	Magnolia	x
	II zone, III ground category 26 m/s, (93,6 km/h)	0,30	0,11	Magnolia	0,22	Magnolia	x	0,14	x	x
	III zone, III ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,26	Magnolia	x	0,18	x	x	0,10	x	x

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Two-piece columns with Ø176 mm base diameter with curved extension arms

Aluminium column		SAL-10									
Extension arm type W/L/x/y/z/a		1/1,5/3,7/5	2/1,5/3,7/5	3/1,5/3,7/5	1/2,0/3,7/5	2/2,0/3,7/5	3/2,0/3,7/5	1/2,5/3,7/5	2/2,5/3,7/5	3/2,5/3,7/5	
Height	total H [m]	10,0									
	bottom part h ₁ +E [m]	6,3+0,35	6,3+0,35	6,3+0,35	6,3+0,35	6,3+0,35	6,3+0,35	6,3+0,35	6,3+0,35	6,3+0,35	
	upper part h ₂ [m]	3,7	3,7	3,7	3,7	3,7	3,7	3,7	3,7	3,7	
Colour - anodizing method	C0 - natural colourcode	42437/C0	42438/C0	42439/C0	42440/C0	42441/C0	42442/C0	42443/C0	42444/C0	42445/C0	
	C - electrochemical colouring	42437/C..	42438/C..	42439/C..	42440/C..	42441/C..	42442/C..	42443/C..	42444/C..	42445/C..	
	CI - interference colouring	42437/CI..	42438/CI..	42439/CI..	42440/CI..	42441/CI..	42442/CI..	42443/CI..	42444/CI..	42445/CI..	
Painted		43437	43438	43439	43440	43441	43442	43443	43444	43445	
Net weight [kg]		59,2	66,0	72,5	60,7	68,8	76,8	62,8	72,3	81,8	
Unit volume [m ³]*		0,74	0,95	1,19	0,81	0,85	1,35	0,88	0,92	1,50	

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable single luminaire mass [kg]		15									
Acceptable single luminaire windage [m ²] for C _x =0,7	I zone, III ground category 22 m/s, (79,2 km/h)	0,48	0,22	0,16	0,38	0,16	0,10	0,29	0,10	Magnolia	
	I and III zone, III ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,37	0,15	0,10	0,28	Magnolia	x	0,20	x	x	
	II zone, III ground category 26 m/s, (93,6 km/h)	0,22	Magnolia	x	0,15	x	x	Magnolia	x	x	
	III zone, III ground category For 750 m n.p.m. 27,9 m/s, (100,8 km/h)	0,18	x	x	0,11	x	x	x	x	x	

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Two-piece columns with Ø176 mm base diameter with curved extension arms

Aluminium column		SAL-10,5					SAL-11			SAL-11,5	SAL-12		
Extension arm type Wł/x/y/z/α		1/1,5/4,2/5	2/1,5/4,2/5	3/1,5/4,2/5	1/2,0/4,2/5	2/2,0/4,2/5	1/2,5/4,2/5	1/1,5/4,7/5	2/1,5/4,7/5	1/2,0/4,7/5	1/1,5/4,7/5	1/1,5/5,2/5	
Height	całkowita H [m]	10,5											
	człoc dołna h ₂ +E[m]	6,3+0,35	6,3+0,35	6,3+0,35	6,3+0,35	6,3+0,35	6,3+0,35	6,3+4,7	6,3+4,7	6,3+4,7	6,8+4,7	6,8+5,2	
	człoc górna h ₂ [m]	4,2	4,2	4,2	4,2	4,2	4,2	4,7	4,7	4,7	4,7	5,2	
Colour - anodizing method	C0 - natural colour	Code	42446/C0	42447/C0	42448/C0	42449/C0	42450/C0	42480/C0	42451/C0	42452/C0	42453/C0	42454/C0	42455/C0
	C - electrochemical colouring		42446/C..	42447/C..	42448/C..	42449/C..	42450/C..	42480/C..	42451/C..	42452/C..	42453/C..	42454/C..	42455/C..
	CI - interference colouring		42446/CI..	42447/CI..	42448/CI..	42449/CI..	42450/CI..	42480/CI..	42451/CI..	42452/CI..	42453/CI..	42454/CI..	42455/CI..
Painted			43446	43447	43448	43449	43450	43480	43451	43452	43453	43454	43455
Net weight [kg]			60,7	67,3	73,8	62,6	70,8	70,8	62,6	69,3	64,8	65,9	68,1
Unit volume [m ³]*			0,77	1,01	1,30	0,85	0,89	0,90	0,80	1,07	0,90	1,11	0,87

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable single luminaire mass [kg]		15										
Acceptable single luminaire windage [m ²] for Cx=0,7	I zone, III ground category 22 m/s, (79,2 km/h)	0,39	0,15	0,10	0,30	0,12	0,21	0,29	Magnolia	0,21	0,20	0,12
	I and III zone, III ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,29	Magnolia	x	0,20	x	0,13	0,20	x	0,12	0,12	x
	II zone, III ground category 26 m/s, (93,6 km/h)	0,15	x	x	0,12	x	Magnolia	Magnolia	x	x	x	x
	III zone, III ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,12	x	x	x	x	x	x	x	x	x	x

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Two-piece columns with $\varnothing 176$ mm base diameter with curved extension arms





I. ALUMINIUM COLUMNS

Two-piece columns with Ø176 mm base diameter with welded extension arms

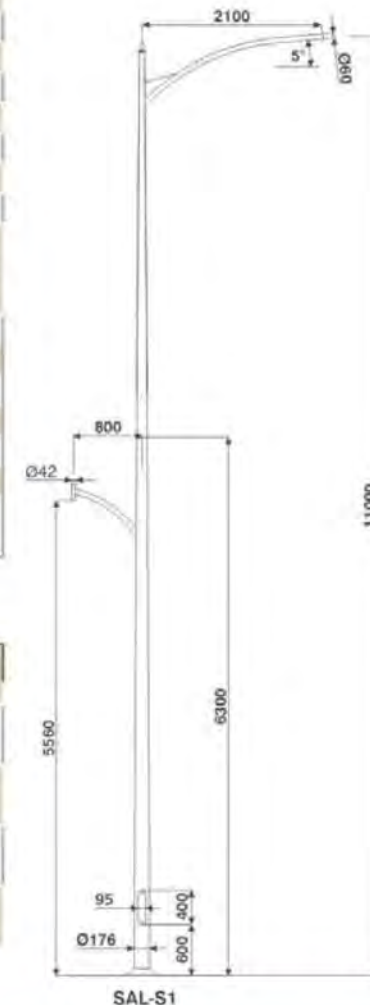
Aluminium column		SAL-S1	SAL-T1	SAL-T2	SAL-T3	SAL-U1	SAL-W1	SAL-Z1	
Height	total H [m]	11,0	11,0	11,0	11,0	9,3	10,0	9,3	
	bottom part h ₁ +E [m]	6,3 + 0,35	6,3 + 0,35	6,3 + 0,35	6,3 + 0,35	5,3 + 0,35	6,3 + 0,35	5,3 + 0,35	
	upper part h ₂ [m]	4,7	4,7	4,7	4,7	4,0	3,7	4,0	
Colour - anodizing method	Code	C0 - natural colourcode	42464/C0	42466/CO	42467/CO	42468/CO	42465/C0	42469/C0	42474/C0
		C - electrochemical colouring	42464/C...	42466/C...	42467/C...	42468/C...	42465/C...	42469/C...	42474/C...
		CI - interference colouring	42464/CI...	42466/CI...	42467/CI...	42468/CI...	42465/CI...	42469/CI...	42474/CI...
Painting - polyester powder paints according to RAL pallet		43464	43466	43467	43468	43465	43469	43474	
Net weight [kg]		60,4	58,6	62,8	67	48,8	55,8	50,1	
Unit volume [m ³]*		1,25	1,08	1,18	1,88	1,17	0,87	0,48	
Pole top mounted		street lighting luminaire (p. 172), OPA (p. 150), OW (p. 152), OW-2 (p. 154)		street lighting luminaires (p. 172)		street lighting luminaire (p. 172) OPC-1O60 (p. 146), street lighting luminaires (p. 172) OPA-1 (p. 148), OP (p. 144)			
Concrete footing type								B-70	
Concrete footing code								311170	
Reinforcement basket type								Z-70	
Reinforcement basket code								311207	
Hot galvanized nut set								4012	
Hot galvanized ripable nut set								4013	
Base dimensions (side length/fixing hole spacing/thickness) [mm]								400/300/12	

* For orders more than 10 pcs stated volume may change according to packing

Acceptable columns load

Acceptable luminaires mass [kg]		15						
Acceptable luminaire windage [m ²] for Cx=1	I zone, III ground category 22 m/s, (79,2 km/h)	0,17	0,20	0,11	Magnolia	0,44	0,35	0,49
	I and III zone, III ground category for 450 m n.p.m. 24 m/s, (86,4 km/h)	0,10	0,11	x	x	0,32	0,26	0,36
	II zone, III ground category 26 m/s, (93,6 km/h)	x	x	x	x	0,21	0,16	0,19
	III zone, III ground category for 750 m n.p.m. 27,9 m/s, (100,6 km/h)	x	x	x	x	0,18	0,13	0,15

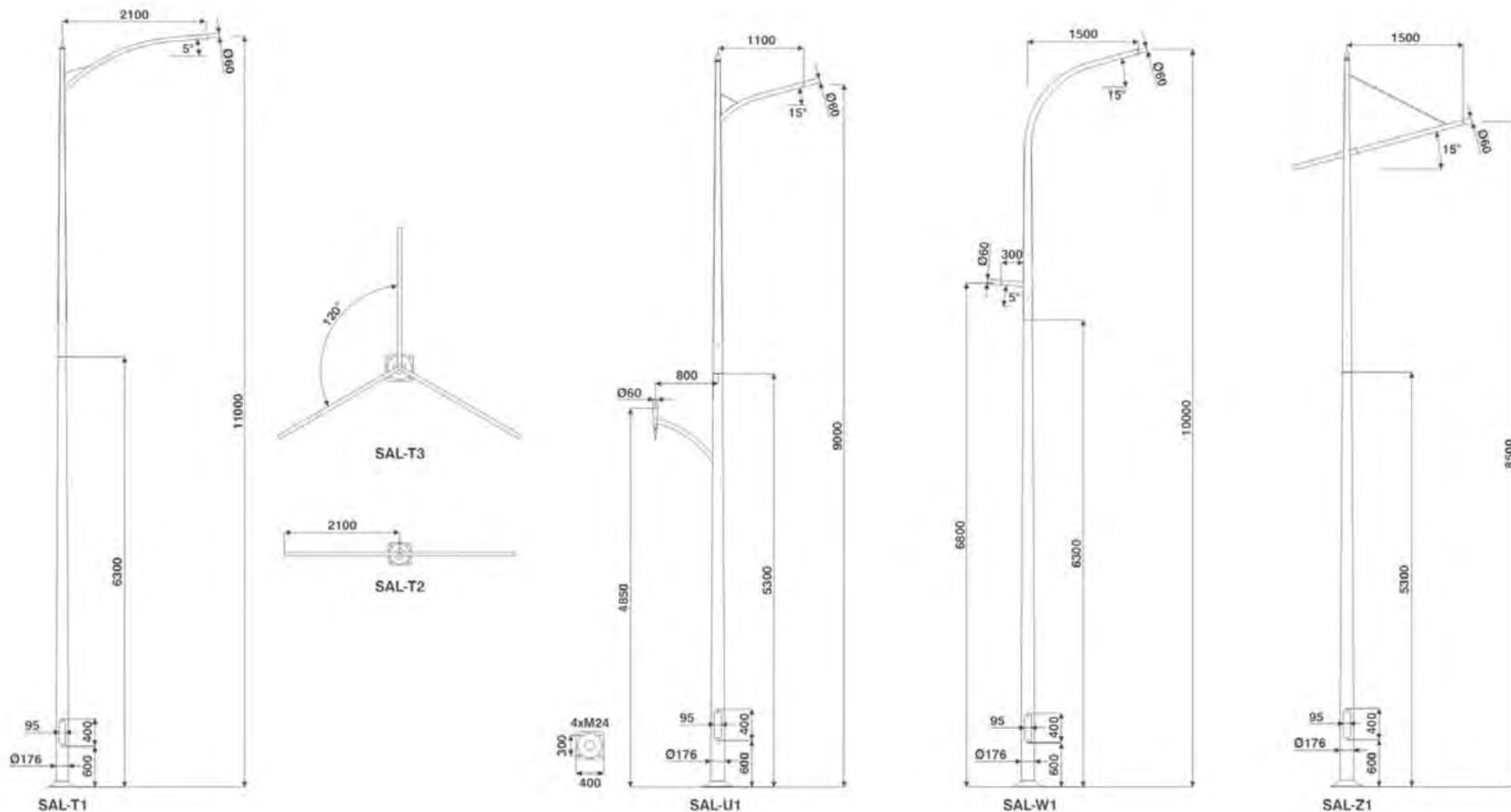
Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Two-piece columns with $\text{Ø}176$ mm base diameter with welded extension arms





I. ALUMINIUM COLUMNS

Two-piece columns with Ø176 mm base diameter with welded extension arms

Aluminium column type		SAL-P11	SAL-P12	SAL-P21	SAL-P31	SAL-P41	SAL-P51
Height	total H [m]	10,3	10,3	10,3	10,3	10,3	10,3
	bottom part h ₁ + E [m]	6,3 + 0,35	6,3 + 0,35	6,3 + 0,35	6,3 + 0,35	6,3 + 0,35	6,3 + 0,35
	upper part h ₂ [m]	4,0	4,0	4,0	4,0	4,0	4,0
Colour -anodizing method	C0 - natural colour	42481/C0	42482/C0	42483/C0	42484/C0	42485/C0	42486/C0
	C - electrochemical colouring	42481/C..	42482/C..	42483/C..	42484/C..	42485/C..	42486/C..
	CI - interference colouring	42481/CI..	42482/CI..	42483/CI..	42484/CI..	42485/CI..	42486/CI..
Painting - polyester powder paints according to RAL pallet		43481	43482	43483	43484	43485	43486
Net weight [kg]		62	66,8	59,7	63,1	62,7	63,8
Approximate volume (m ³)*		1,77	2,72	1,30	1,30	1,30	1,26
Pole top mounted		street lighting luminaires (p. 172)					
Concrete footing type		B-70					
Concrete footing code		311170					
Reinforcement basket type		Z-70					
Reinforcement basket code		311207					
Hot galvanized nuts set		4012					
Hot galvanized ripable nuts set		4013					
Base dimensions (side length/fixing hole spacing/thickness) [mm]		400/300/12					

* For orders more than 10 pcs state volume may change according to packing

Acceptable columns load

Acceptable luminaires mass [kg]		15					
Acceptable luminaire windage [m ²] for Cx=0,7	I zone, III ground category 22 m/s, (79,2 km/h)	0,40	0,12	0,42	0,40	0,40	0,38
	I and III zone, III ground category for 450 m n.p.m. 24 m/s, (86,4 km/h)	0,28	Magnolia	0,30	0,28	0,28	0,27
	II zone, III ground category 26 m/s, (93,6 km/h)	0,14	x	0,16	0,14	0,14	0,13
	III zone, III ground category for 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,10	x	0,12	0,10	0,10	0,10

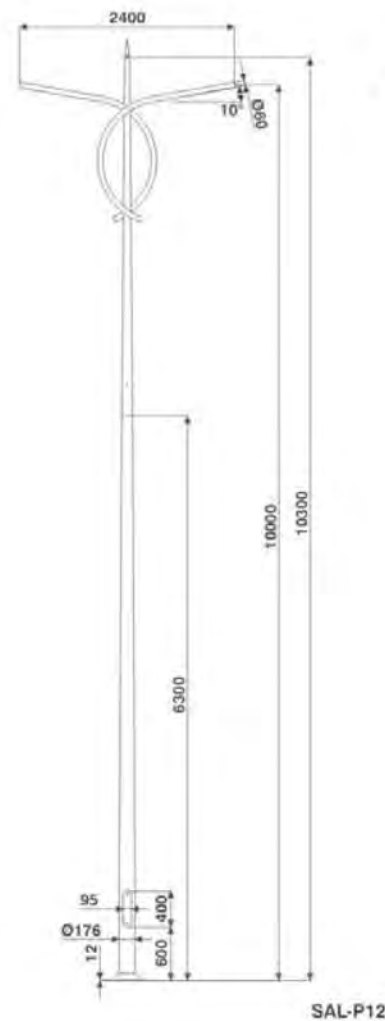
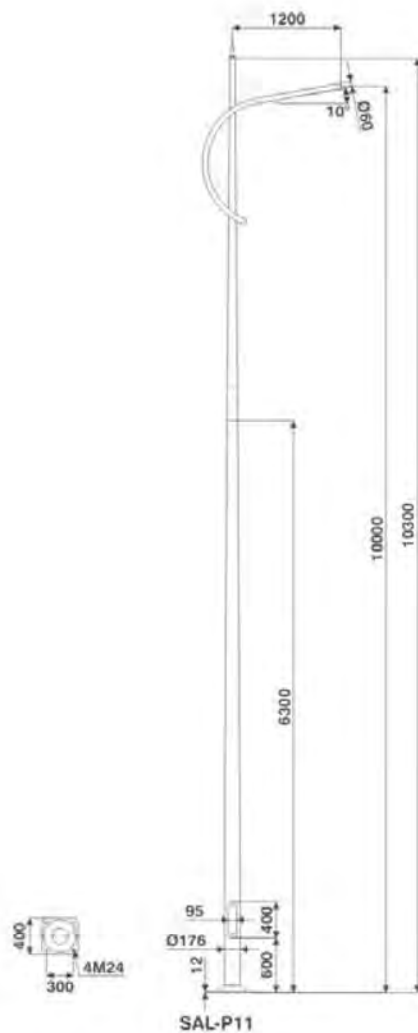
Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

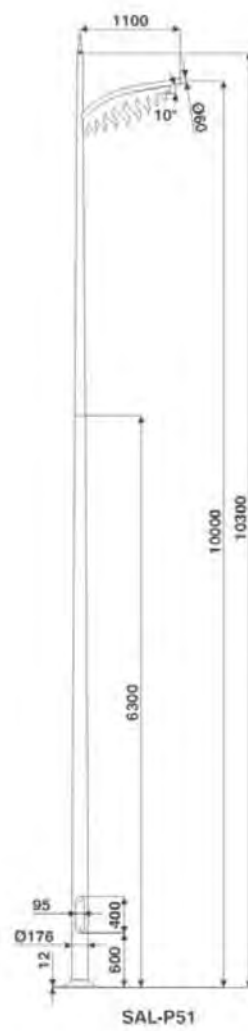
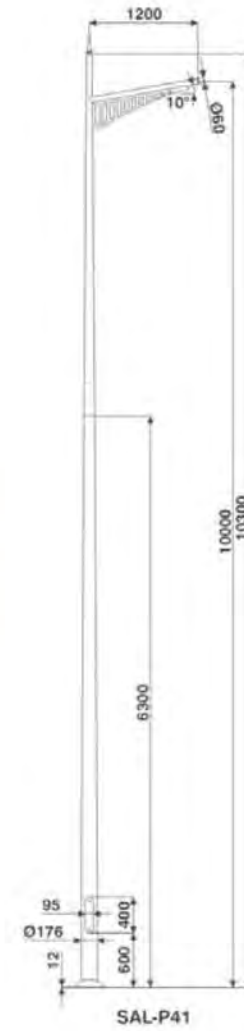
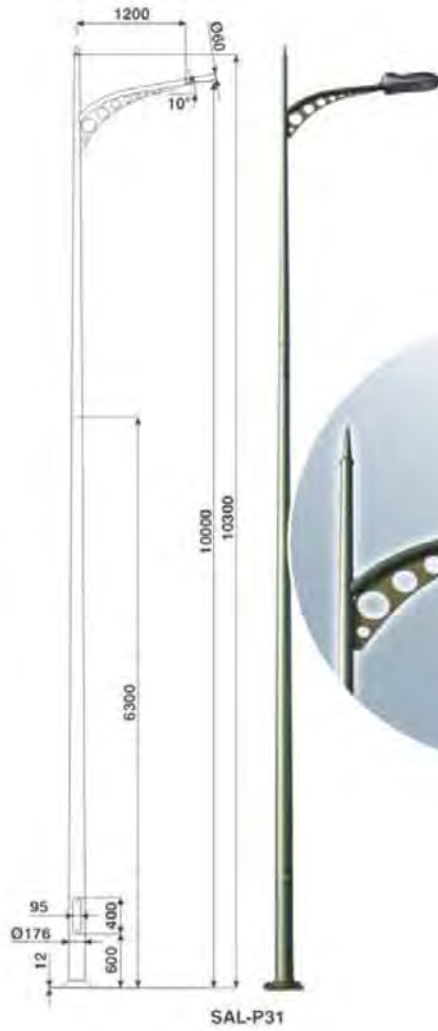
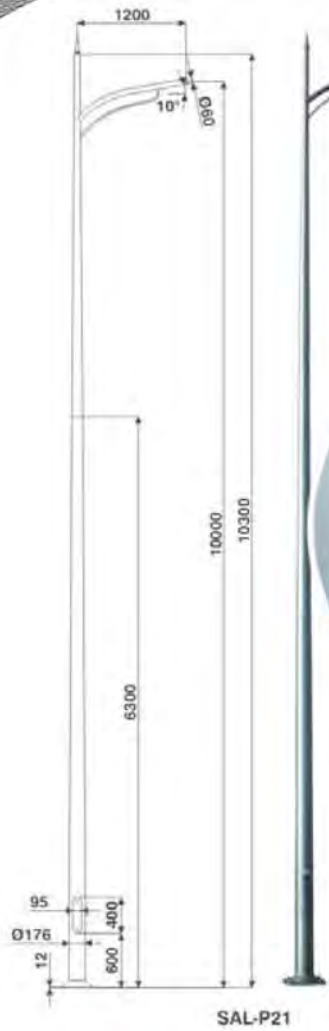
Two-piece columns with $\text{Ø}176$ mm base diameter with welded extension arms





I. ALUMINIUM COLUMNS

Two-piece columns with $\text{Ø}176$ mm base diameter with welded extension arms





I. ALUMINIUM COLUMNS

Aluminium lowering and raising columns

APPLICATION:

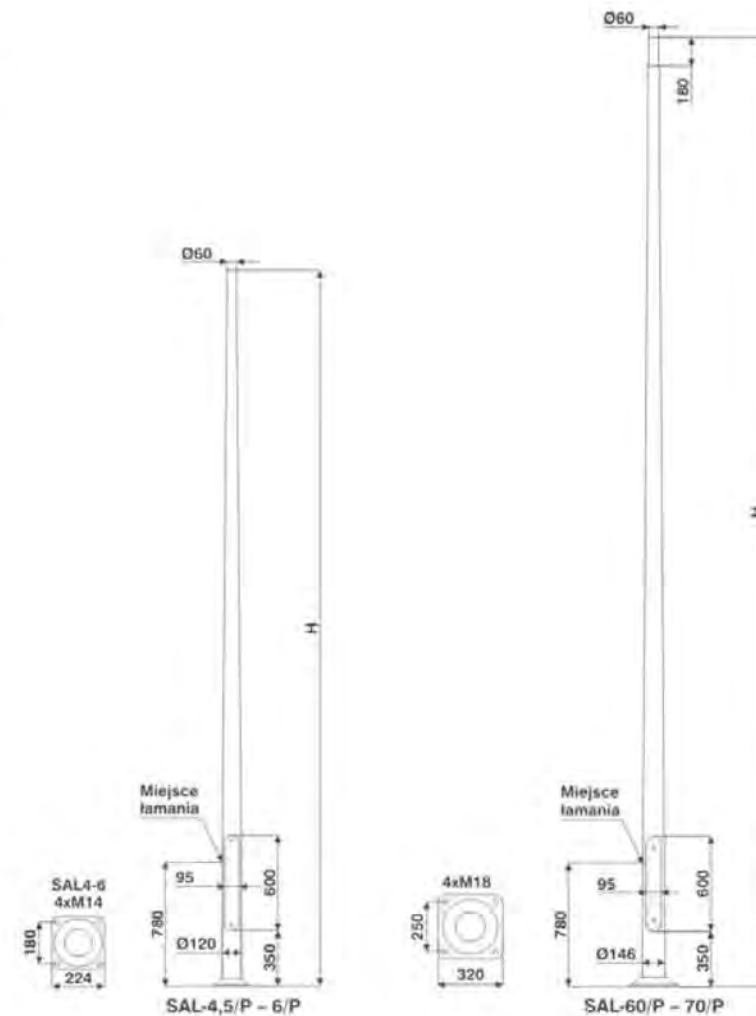
tennis courts, ski areas, gardens, residences, roadway junctions, airports, platforms and difficult access areas.

TECHNICAL INFORMATION:

- height from 4,5 to 10 m,
- column angle inclination: from 0° to 90°,
- sheet base,
- Aluminium lowering and raising columns SAL-.../P (4,5 to 7 m) manual lower and raise SAL-...M/P (8,5 to 10 m) two types of mechanism:
 1. hinged, hand cranked double collar accessory fixes above and below break in column,
 2. as above complete with transmission gear allowing operation using electric drill.

ADVANTAGES:

- possibility of safe changing/maintenance of luminaire, camera, floodlight from ground level,
- low maintenance cost of luminaire,
- easy and safe way of lowering and raising column,
- lowering and raising can be made by one person only,
- column can lowered in two perpendicular surfaces to the niche chamber,
- purchase of one mechanism (helical or articulated) is enough to service all columns type SAL...M/P,
- low service costs – no need for high lift access equipment or above head height trained staff.





I. ALUMINIUM COLUMNS

Lowering and raising columns SAL-.../P with Ø120 mm and Ø146 mm base diameter

Aluminium column		SAL-4,5/P	SAL-5/P	SAL-5,5/P	SAL-6/P	SAL-60/P	SAL-65/P	SAL-70/P
Height H [m]		4,5	5,0	5,5	6,0	6,0	6,5	7,0
Colour -anodizing method	C0 - natural colour	42915/C0	42916/C0	42917/C0	42918/C0	42925/C0	42926/C0	42927/C0
	C - electrochemical colouring	42915/C...	42916/C...	42917/C...	42918/C...	42925/C...	42926/C...	42927/C...
	CI - interference colouring	42915/CI...	42916/CI...	42917/CI...	42918/CI	42925/CI...	42926/CI...	42927/CI...
Code								
Painting - polyester powder paints according to RAL pallet		43915	43916	43917	43918	43925	43926	43927
Net weight [kg]		21,8	23,4	25,3	27,5	37,5	39,5	41,9
Unit volume [m ³]*		0,08	0,09	0,10	0,11	0,18	0,19	0,20
Pole top mounted		street lighting luminaires (p. 172)						
Concrete footing type		B-50				B-60		
Concrete footing code		311150				311160		
Reinforcement basket type		Z-50				Z-60		
Reinforcement basket code		311205				311206		
Hot galvanized nut set		4006				4008		
Hot galvanized ripable nut set		4007				4009		
Base dimensions (side length/fixing hole spacing/thickness) [mm]		224/180/8				320/250/10		

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable luminaires and extension arms mass		20	18	16	15	14	13	12
Acceptable windage of luminaires and extension arms [m ²] for Cx=0,7	I zone, II ground category 22 m/s, (79,2 km/h)	0,48	0,36	0,32	0,20	0,72	0,62	0,50
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,31	0,28	0,25	0,15	0,60	0,50	0,38
	II zone, II ground category 26 m/s, (93,6 km/h)	0,25	0,23	0,16	Magnolia	0,45	0,36	0,26
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,23	0,21	0,13	x	0,39	0,32	0,22

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Lowering and raising columns SAL-.../P with Ø120 mm and Ø146 mm base diameter



Column diagram SAL-.../P:

1. Remove door
2. Remove hinge securing bolt
3. Hold column and pull out hinge safety pin
4. Walk column down
5. Assemble/maintain luminaire
6. Manually raise column
7. Replace hinge safety pin and hinge securing bolt
8. Refit column door.





I. ALUMINIUM COLUMNNS

Lowering and raising columns SAL-...M/P with Ø180 mm base diameter

Aluminium column		SAL-85M/P	SAL-90M/P	SAL-95M/P	SAL-100M/P
Height H [m]		8,5	9,0	9,5	10,0
Colour-anodizing method	C0 - natural colour	42930/C0	42931/C0	42932/C0	42933/C0
	C - electrochemical colouring	42930/C..	42931/C..	42932/C..	42933/C..
	CI - interference colouring	42930/CI..	42931/CI..	42932/CI..	42933/CI..
Code					
Painting - polyester powder paints according to RAL pallet		43930	43931	43932	43933
Net weight [kg]		50,7	53,9	57,1	60,3
Unit volume [m ³]*		0,42	0,44	0,45	0,49
Pole top mounted		street lighting luminaires (p. 172)			
Concrete footing type				B-70	
Concrete footing code				311170	
Reinforcement basket type				Z-70	
Reinforcement basket code				311207	
Hot galvanized nut set				4012	
Hot galvanized ripable nut set				4013	
Base dimensions (side length/fixing hole spacing/thickness) [mm]				400/300/12	

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable luminaires and extension arms mass		38	36	34	32
Acceptable windage of luminaires and extension arms [m ²] for Cx=0,7	I zone, II ground category 22 m/s, (79,2 km/h)	0,90	0,76	0,63	0,50
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,75	0,62	0,51	0,40
	II zone, II ground category 26 m/s, (93,6 km/h)	0,56	0,46	0,36	0,27
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,50	0,41	0,32	0,24

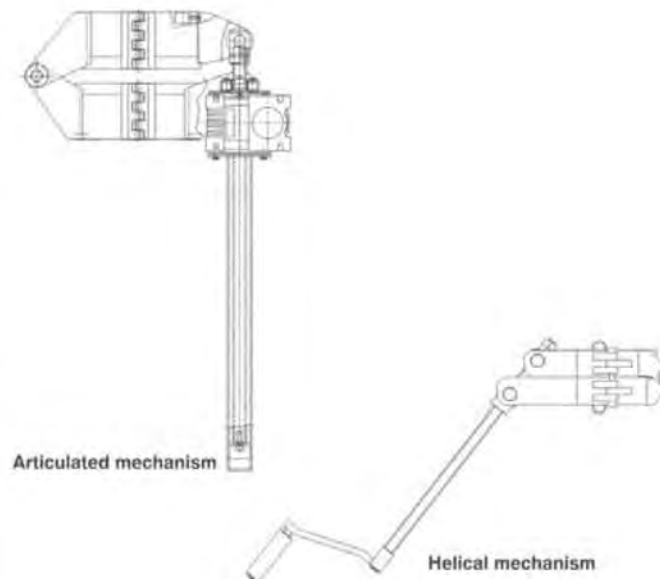
Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Lowering and raising columns SAL-...M/P with Ø180 mm base diameter



Double clamp device	Helical	Articulated (without drilling machine)
Code	4005	4010

Column diagram SAL-...M/P:

1. Fit double collar accessory
2. Remove door
3. Release 3 column securing bolts
4. Mount the drilling machine in mechanism,
5. Lower column
6. Assemble/ maintain luminaire
7. Raise column
8. Re fit 3 column securing bolts,
9. Refit column door,
10. Disassemble double collar accessory.





I. ALUMINIUM COLUMNNS

Decorative columns DP

Aluminium column		SAL DP-31	SAL DP-42	SAL DP-44	SAL DP-45	SAL DP-46	SAL DP-47	
Height [m]		3,0	4,0	4,0	4,0	4,0	4,0	
Spigot ending type		Ø60						
Colour -anodizing method	C0 - natural colour	42910/C0	42911/C0	42913/C0	42914/C0	42943/C0	42944/C0	
	C - electrochemical colouring	42910/C...	42911/C...	42913/C...	42914/C...	42943/C..	42944/C..	
	CI - interference colouring	42910/CI...	42911/CI...	42913/CI...	42914/CI...	42943/CI..	42944/CI..	
Code								
Painting - polyester powder paints according to RAL pallet		43910	43911	43913	43914	43943	43944	
Net weight [kg]		15,8	20,9	20,5	21,5	23,1	22,7	
Approximate unit volume [m ³]*		0,06	0,07	0,07	0,07	0,07	0,07	
Pole top mounted		OPC-1 Ø60 (p. 146), OP (p. 144), OPA-1 (p. 148), ELBA (p. 160), SENJA (p. 158)			OPA-1 (p. 148)	OPC-1 Ø60 (p. 146), OP (p. 144), OPA-1 (p. 148), ELBA (p. 160), SENJA (p. 158)		METIS (p. 162)
Concrete footing type		B-50						
Concrete footing code		311150						
Reinforcement basket type		Z-50						
Reinforcement basket code		311205						
Hot galvanized nut set		4006						
Hot galvanized ripable nut set		4007						
Base dimensions (side length/fixing hole spacing/thickness) [mm]		224/180/8						

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable single luminaire mass [kg]		20					
Acceptable single luminaire windage [m ²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,90	0,51	0,61	0,59	0,48	0,58
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,78	0,43	0,52	0,50	0,41	0,49
	II zone, II ground category 26 m/s, (93,6 km/h)	0,61	0,32	0,40	0,38	0,30	0,37
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,57	0,29	0,34	0,31	0,27	0,30

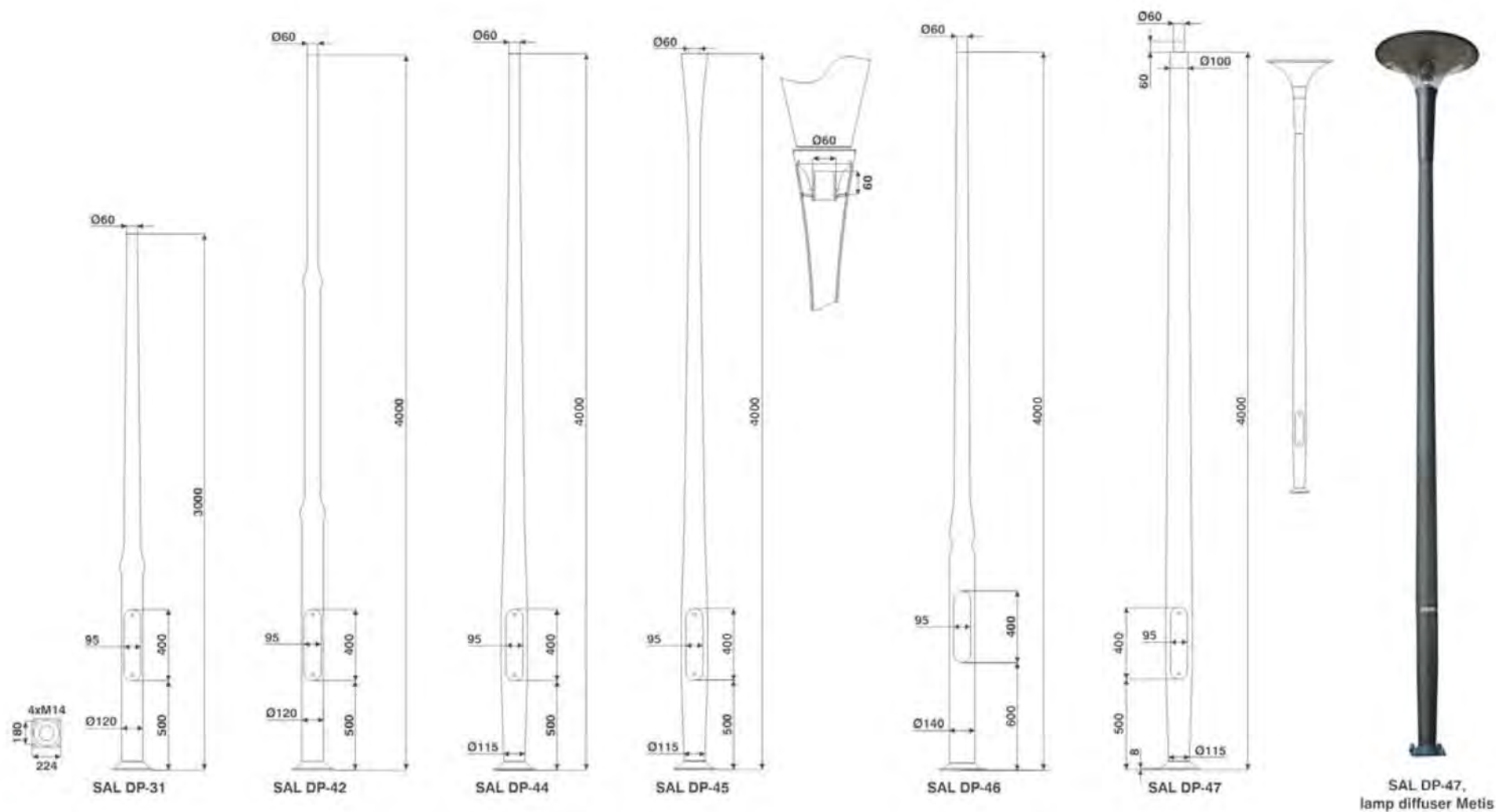
Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Decorative columns DP





I. ALUMINIUM COLUMNS

Decorative columns DP

Aluminium column	SAL DP-38	SAL DP-48	SAL DP-58	SAL DP-68	
Height [m]	3,0	4,0	5,0	6,0	
Spigot ending type	Ø60				
Colour -anodizing method	C0 - natural colourcode	42945/C0	42946/C0	42947/C0	42948/C0
	C - electrochemical colouring	42945/C..	42946/C..	42947/C..	42948/C..
	CI - interference colouring	42945/CI..	42946/CI..	42947/CI..	42948/CI..
Code					
Painting - polyester powder paints according to RAL pallet	43945	43946	43947	43948	
Net weight [kg]	10,9	13,4	16,0	18,7	
Approximate unit volume [m ³]*	0,07	0,09	0,11	0,14	
Pole top mounted	OPC-1 Ø60 (p. 146), OP (p. 144), OPA-1 (p. 148), ELBA (p. 160), SENJA (p. 158)				
Concrete footing type	B-51				
Concrete footing code	311151				
Reinforcement basket type	Z-51				
Reinforcement basket code	311251				
Hot galvanized nut set	4008				
Hot galvanized ripable nut set	4009				
Base dimensions (side length/fixing hole spacing/thickness) [mm]	260/200/8				

* For orders more than 10 pcs stated volume may change according to packing

Acceptable columns load

Acceptable single luminaire mass	20				
Acceptable single luminaire windage [m ²] for Cx=1	I zone, III ground category 22 m/s, (79,2 km/h)	0,96	0,56	0,31	0,14
	I and III zone, III ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,84	0,47	0,25	0,10
	II zone, III ground category 26 m/s, (93,6 km/h)	0,66	0,37	0,16	X
	III zone, III ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,50	0,32	0,14	X

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories



SAL DP38-68
4xM18

SAL DP38-DP68





I. ALUMINIUM COLUMNS

Decorative columns DP

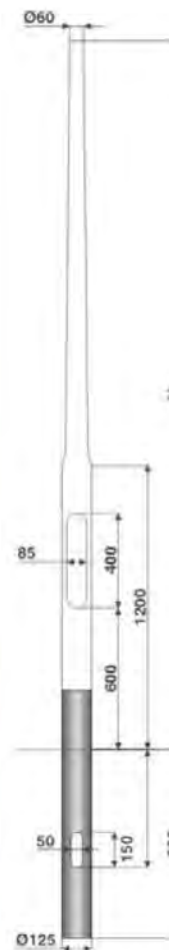
Aluminium column		SAL DP-38 dz	SAL DP-48 dz	SAL DP-58 dz	SAL DP-68 dz
Height of column above the ground level H [m]		3,0	4,0	5,0	6,0
Total H + h [m]		3,8	4,8	5,8	6,8
Colour -anodizing method	C0 - natural colour	42965/C0	42966/C0	42967/C0	42968/C0
	C - electrochemical colouring	42965/C..	42966/C..	42967/C..	42968/C..
	CI - interference colouring	42965/CI..	42966/CI..	42967/CI..	42968/CI..
Painting - polyester powder paints according to RAL		43965	43966	43967	43968
pallet		12,7	15,2	17,8	20,5
Net weight [kg]		0,03	0,04	0,05	0,05
Approximate unit volume [m ³]*		OPC-1 Ø60 (p. 146), OP (p. 144), OPA-1 (p. 148), ELBA (p. 160), SENJA (p. 158)			
Pole top-mounted					

* For orders more than 10 pcs stated volume may change according to packing

Acceptable columns load

Acceptable luminaires and extension arms mass		20			
Acceptable windage of luminaires and extension arms [m ²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	1,02	0,58	0,32	0,15
	I and III zone, II ground category For 450 m n.p.m, 24 m/s, (86,4 km/h)	0,90	0,48	0,26	0,11
	II zone, II ground category 26 m/s, (93,6 km/h)	0,70	0,36	0,18	X
	III zone, II ground category For 750 m n.p.m, 27,9 m/s, (100,6 km/h)	0,65	0,34	0,16	X

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories



SAL DP38dz-DP68dz





I. ALUMINIUM COLUMNS

Decorative columns DS

Aluminium column	SAL DS-42	SAL DS-43	
Height [m]	4,0	4,0	
Colour -anodizing method	C0 - natural colour	42935/C0	42936/C0
	C - electrochemical colouring	42935/C...	42936/C...
	Cl - interference colouring	42935/Cl...	42936/Cl...
Code			
Painting - polyester powder paints according to RAL pallet	43935	43936	
Net weight [kg]	20,5	21,6	
Approximate unit volume [m ³]*	0,07	0,07	
Pole top mounted	OPC-1 Ø60 (p. 146) , OP (p. 144), OPA-1 (p. 148),		
Concrete footing type	ELBA (p. 160), SENJA (p. 158)		
Concrete footing code	B-50		
Reinforcement basket type	311150		
Reinforcement basket code	Z-50		
Hot galvanized nut set	311205		
Hot galvanized ripable nut set	4006		
Base dimensions (side length/fixing hole spacing/thickness) [mm]	4007 224/180/8		

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable single luminaire mass [kg]	12	20	
Acceptable single luminaire windage [m ²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,36	0,89
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,3	0,77
	II zone, II ground category 26 m/s, (93,6 km/h)	0,23	0,61
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,21	0,56

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Decorative columns DS

Aluminium column		SAL DS-81	SAL DS-82	SAL DS-83	SAL DS-84	SAL DS-85	SAL DS-86
Height [m]		7,8	7,8	7,7	8,6	8,4	7,8
Colour -anodizing method	C0 - natural colour	42937/C0	42938/C0	42939/C0	42940/C0	42941/C0	42942/C0
	C - electrochemical colouring	42937/C...	42938/C...	42939/C...	42940/C...	42941/C...	42942/C...
	CI - interference colouring	42937/CI...	42938/CI...	42939/CI...	42940/CI...	42941/CI...	42942/CI...
Code							
Painting - polyester powder paints according to RAL pallet		43937	43938	43939	43940	43941	43942
Net weight [kg]		35,8	74,0	37,1	48,7	53,2	36,2
Approximate unit volume [m ³]*		0,35	0,95	0,43	0,48	0,59	0,28
Pole top mounted		Street lighting luminaires (p. 172)					
Concrete footing type		B-60	B-70	B-60	B-70	B-70	B-60
Concrete footing code		311160	311170	311160	311170	311170	311160
Reinforcement basket type		Z-60	Z-70	Z-60	Z-70	Z-70	Z-60
Reinforcement basket code		311206	311207	311206	311207	311207	311206
Hot galvanized nut set		4008	4012	4008	4012	4012	4008
Hot galvanized ripable nut set		4009	4013	4009	4013	4013	4009
Base dimensions (side length/fixing hole spacing/thickness) [mm]		320/250/10	400/300/12	320/250/10	400/300/12	400/300/12	320/250/10

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable single luminaire mass [kg]		20					
Acceptable single luminaire windage [m ²] dla Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,18	0,39	0,1	0,32	0,34	0,21
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,12	0,28	x	0,25	0,25	0,16
	II zone, II ground category 26 m/s, (93,6 km/h)	x	0,17	x	0,16	0,16	0,12 (Cx=0,7)
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	x	0,14	x	0,14	0,13	Magnolia

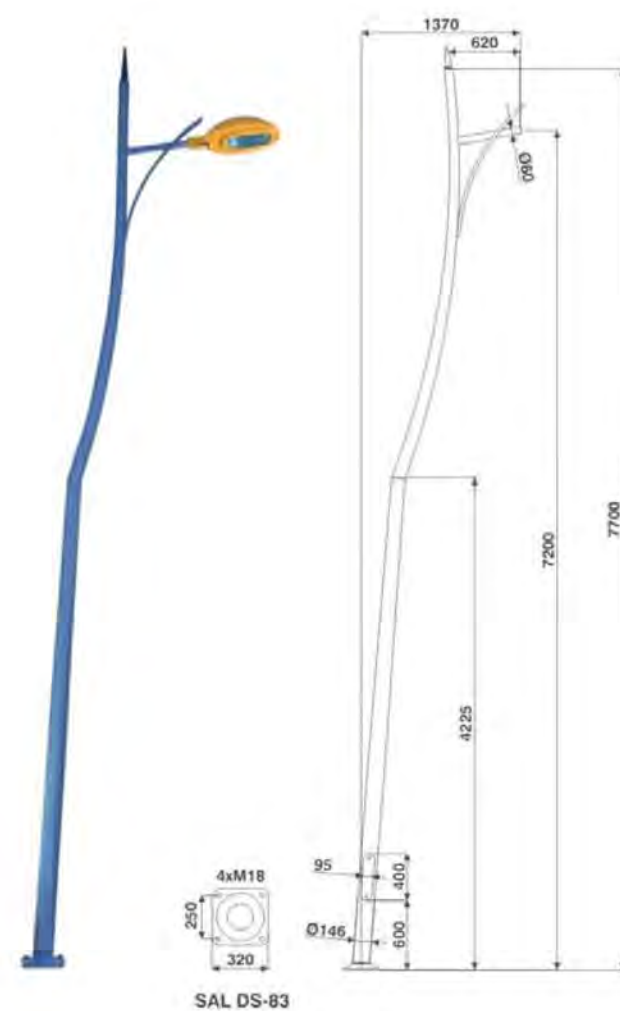
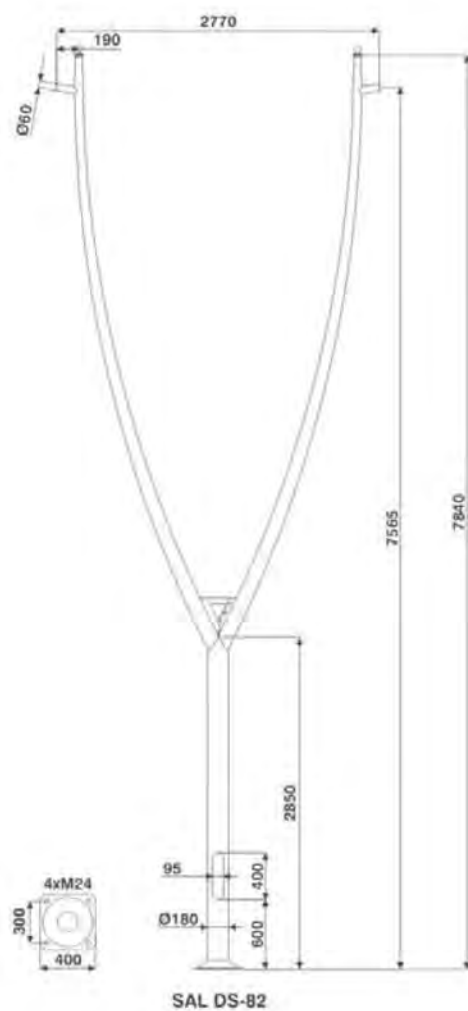
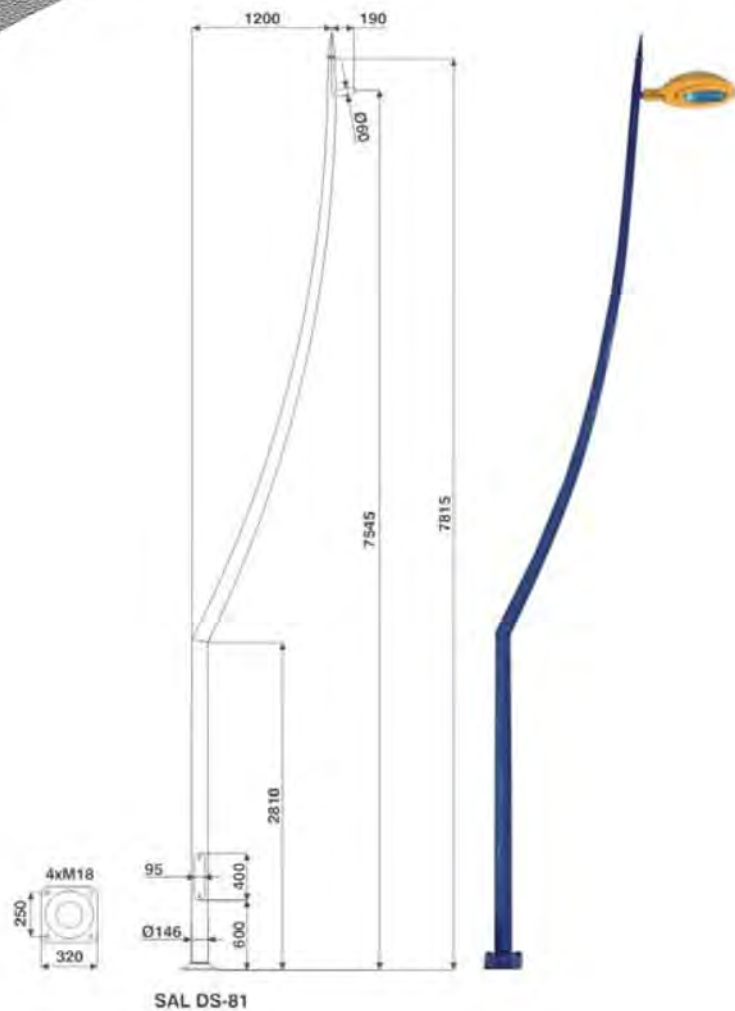
Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

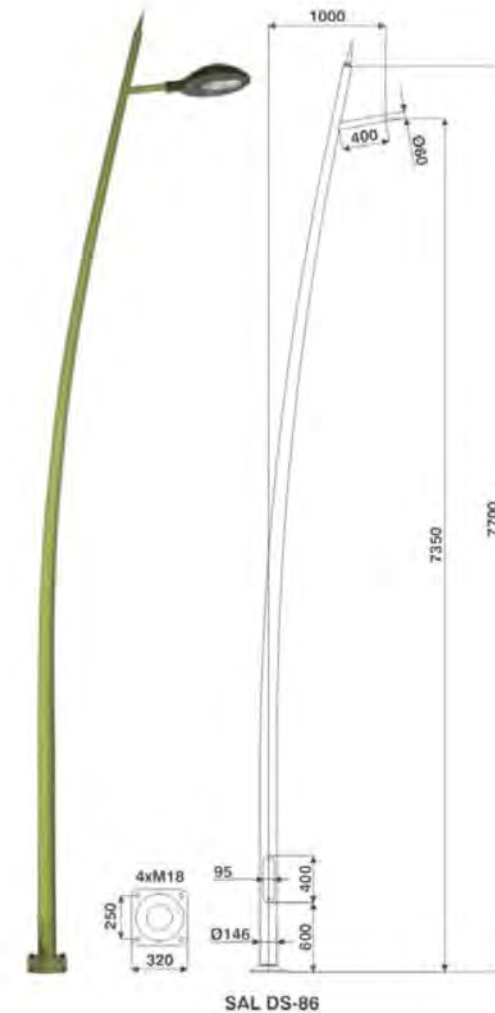
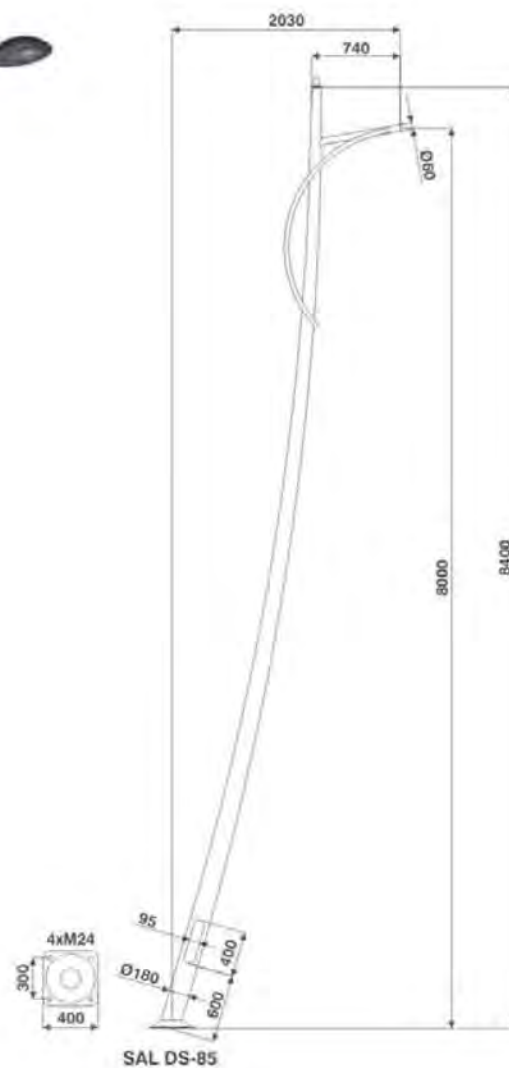
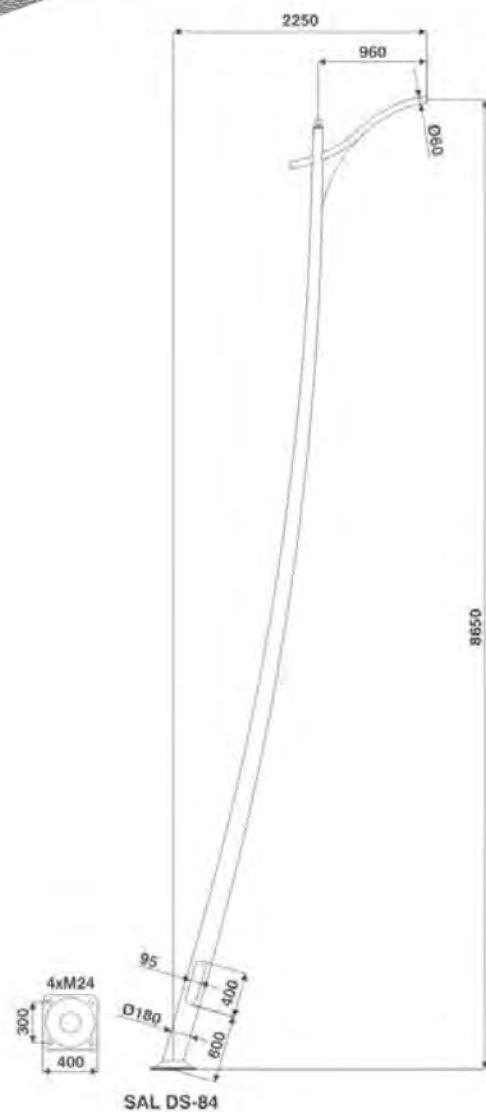
Decorative columns DS





I. ALUMINIUM COLUMNS

Decorative columns DS





I. ALUMINIUM COLUMNS

Decorative columns DS and DB

Aluminium column		SAL DS-87	SAL DS-88	SAL DS-88-R	SAL DB	SAL DB-1
Height [m]		6,6	9,4	9,4	9,4	9,4 i 6,6
Colour - anodizing method	C0 - natural colour	42976/C0	42988/C0	42991/C0	42992/C0	42990/C0
	C - electrochemical colouring	42976/C..	42988/C..	42991/C..	42992/C..	42990/C..
	CI - interference colouring	42976/CI..	42988/CI..	42991/CI..	42992/CI..	42990/CI..
Code						
Painting - polyester powder paints according to RAL pallet		43976	43988	43991	43992	43990
Net weight [kg]		47,0	71,0	92,4	159,0	134,0
Approximate unit volume [m ³]*		0,59	1,40	1,47	2,87	2,06
Pole top mounted		Street lighting luminaires (p. 172)				
Concrete footing type		B-60	B-70	B-70	B-70 x 2	B-70 i B60
Concrete footing code		311160	311170	311170	311170	311170 i 311160
Reinforcement basket type		Z-60	Z-70	Z-70	Z-70 x 2	Z-70 i Z-60
Reinforcement basket code		311206	311207	311207	311207	311207 i 311206
Hot galvanized nut set		4008	4012	4012	4012	4012 i 4008
Hot galvanized ripable nut set		4009	4013	4013	4013	4013 i 4009
Base dimensions (side length/fixing hole spacing/thickness) [mm]		320/250/10	400/300/12	400/300/12	400/300/12	400/300/12 i 320/250/10

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable single luminaire mass [kg]		15				
Acceptable single luminaire windage [m ²] for Cx=0,7	I zone, III ground category 22 m/s, (79,2 km/h)	0,38	0,18	0,18	0,18	0,16
	I and III zone, III ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,28	0,10	0,10	0,10	Magnolia
	II zone, III ground category 26 m/s, (93,6 km/h)	0,16	x	x	x	x
	III zone,, III ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,12	x	x	x	x

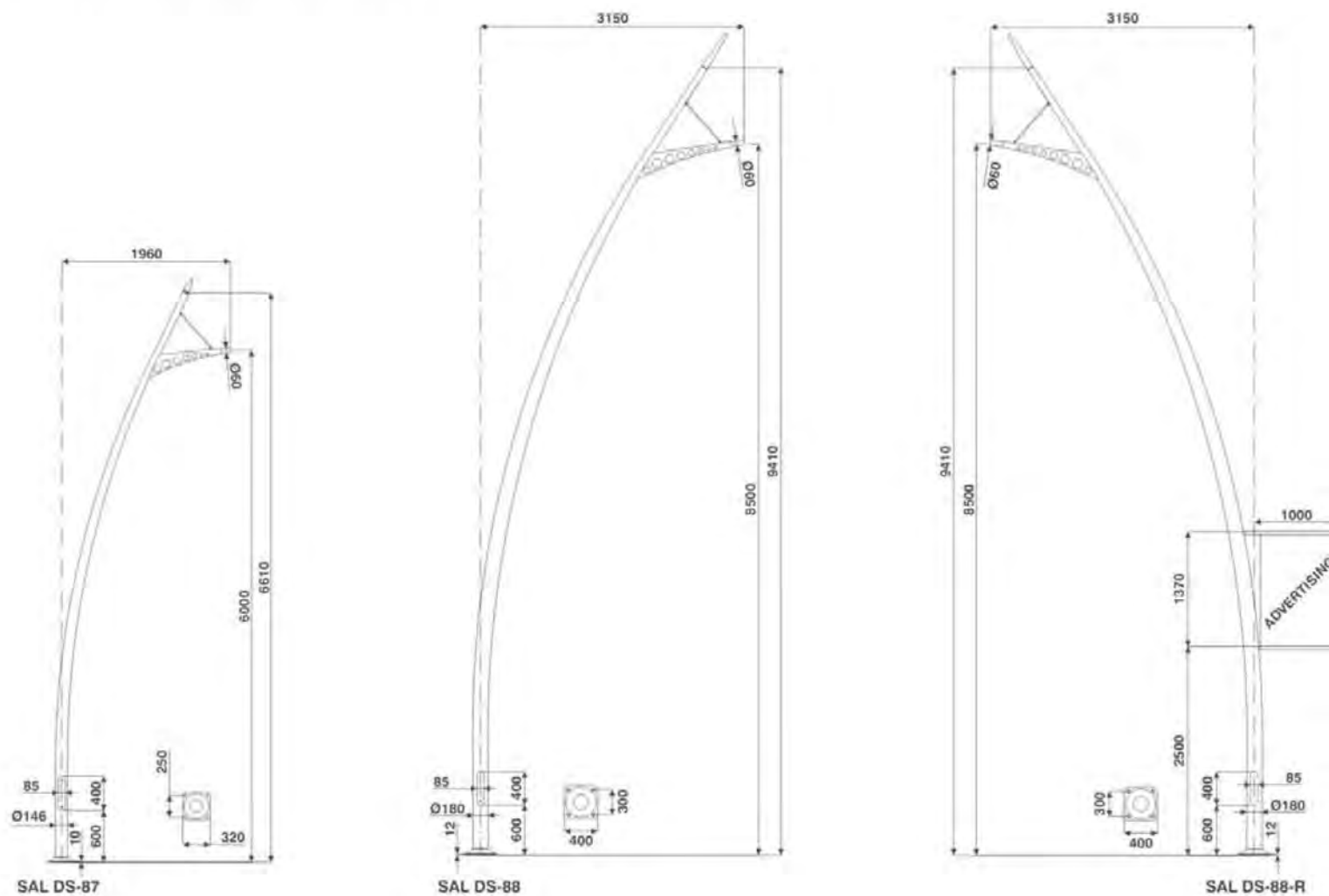
Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

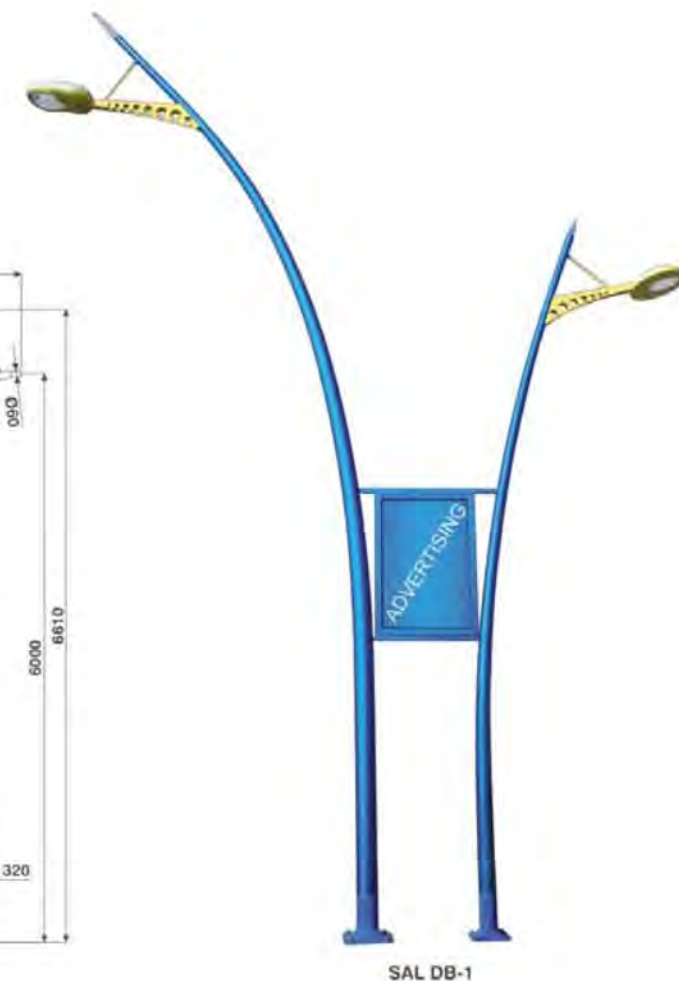
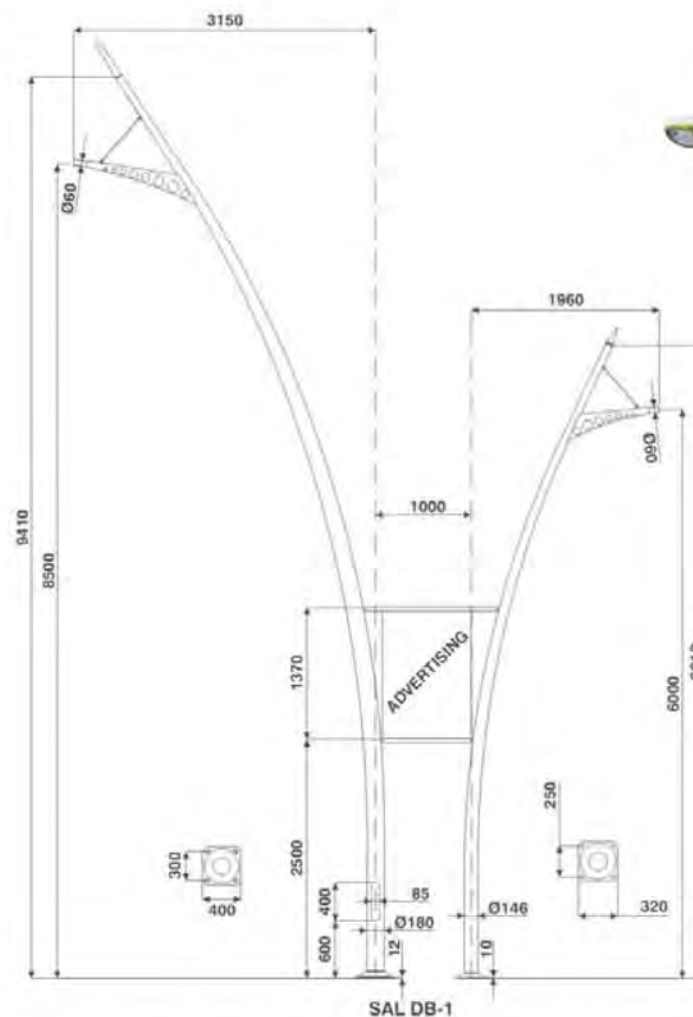
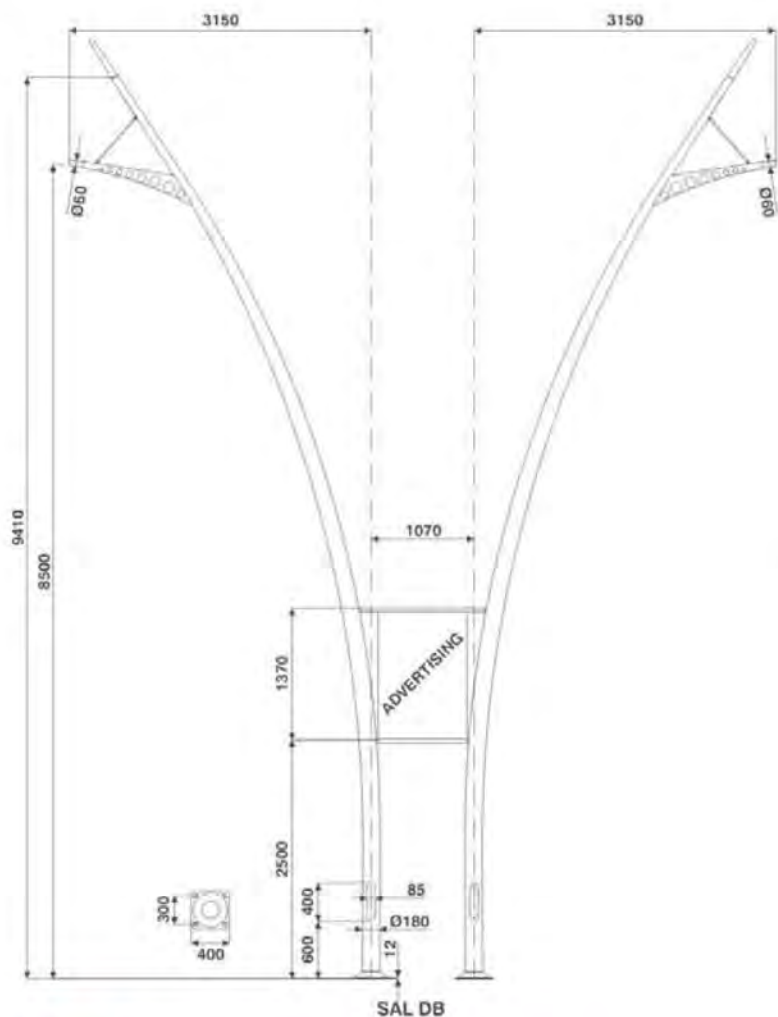
Decorative columns DS and DB





I. ALUMINIUM COLUMNS

Decorative columns DS and DB





I. ALUMINIUM COLUMNS

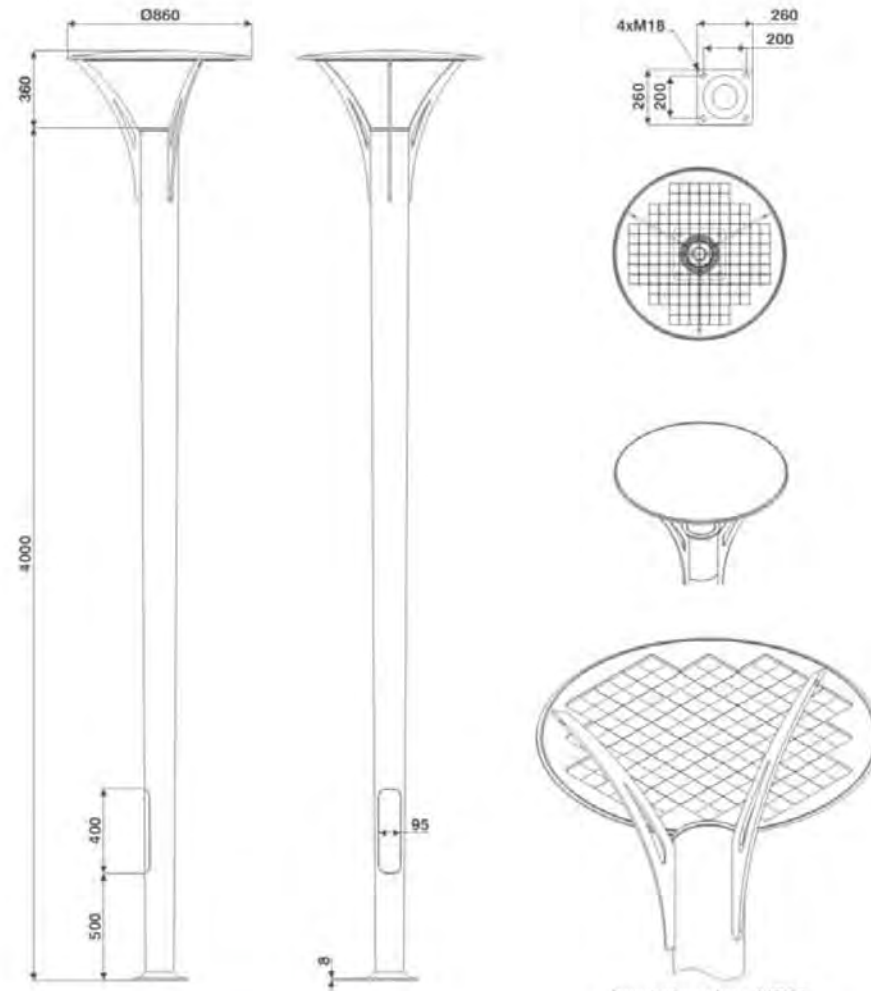
Decorative columns DS and DB





I. ALUMINIUM COLUMNS
SAL DECO-1

Aluminium column type		SAL DECO-1
Height H [m]		4,36
Light source		MH-150W thread G12
Colour - anodizing method	C0 - natural colour	42920/C0
	C - electrochemical colouring	42920/C...
	CI - interference colouring	42920/CI...
Code		
Painting - polyester powder paints according to RAL pallet		43920
Net weight [kg]		32,5
Approximate unit volume [m ³]		0,35
Concrete footing type		B-61
Concrete footing code		311161
Reinforcement basket type		Z-61
Reinforcement basket code		311261
Hot galvanized nut set		4008
Hot galvanized ripable nut set		4009
Base dimensions (side length/fixing hole spacing/thickness) [mm]		260/200/8



Insulation class I IP65

SAL DECO-1





I. ALUMINIUM COLUMNS

SAL DECO-2

Aluminium column type		SAL DECO-2
Height H [m]		4,5
Light source		MH-150W thread G12
Colour - anodizing method	C0 - natural colour	42921/C0
	C - electrochemical colouring	42921/C...
	CI - interference colouring	42921/CI...
Code		
Painting - polyester powder paints according to RAL pallet		43921
Net weight [kg]		32
Approximate unit volume [m ³]		0,35
Concrete footing type		B-61
Concrete footing code		311161
Reinforcement basket type		Z-61
Reinforcement basket code		311261
Hot galvanized nut set		4008
Hot galvanized ripable nut set		4009
Base dimensions (side length/fixing hole spacing/thickness) [mm]		260/200/8



Reflector angle inclination 20° or 30° insulation class I IP65

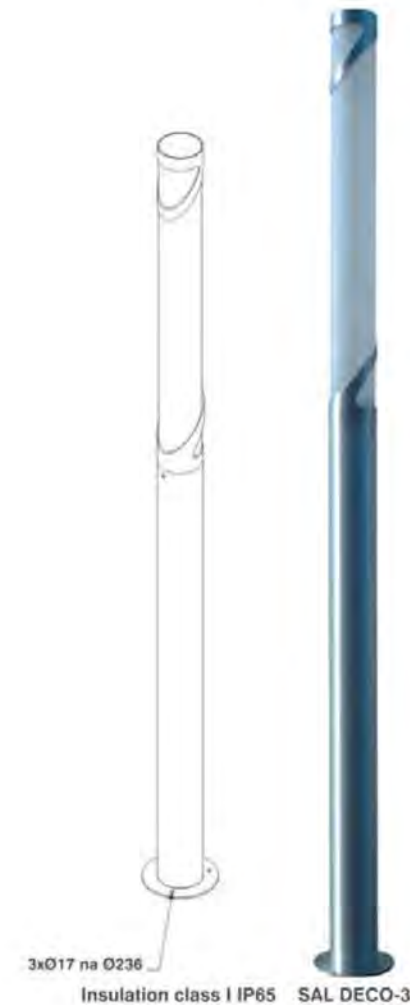
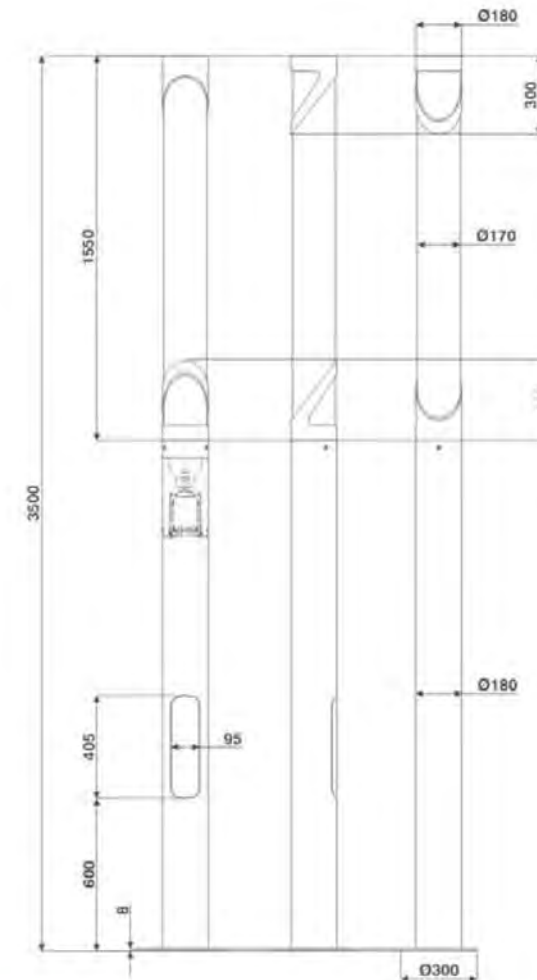
SAL DECO-2





I. ALUMINIUM COLUMNS SAL DECO-3

Aluminium column type	SAL DECO-3		
Height H [m]	3,5		
Light source	MH-150W thread G12		
Colour - anodizing method	C0 - natural colour	Code	42922/C0
	C - electrochemical colouring		42922/C...
	CI - interference colouring		42922/CI...
Painting - polyester powder paints according to RAL pallet	43922		
Net weight [kg]	25		
Approximate unit volume [m ³]	0,12		
Concrete footing type	B-31		
Concrete footing code	311131		
Reinforcement basket type	Z-31		
Reinforcement basket code	311231		
Hot galvanized nut set	311003		
Base dimensions (side length/fixing hole spacing/thickness) [mm]	300/8		





I. ALUMINIUM COLUMNS SAL DECO-3 LED

TECHNICAL PARAMETERS:

- 36 LED diodes XLamp XP-E feed by 2,5 W power,
- light source with diode temperature 6500 K (white cool),
- exit luminous flux from LED module: 4800 lm
- voltage: 230 V, 50 Hz (feeder),
- total power consumption (diodes + feeder) - 100 W,
- feed current LED diodes: 700 mA,
- temperature range work: -40°C do +30°C,
- lifetime of light source on level 50 thousand hours with middle environment temperature 15°C or lower.

Additional LED diode module may be mounted in the base creating an aesthetic decorative effect. It can be made in following colours: blue, green, red, orange and for special order RGB. Module contains 9 LED diodes XLamp XR feed by Power 1,2W or 2,5 W.

ADVANTAGES:

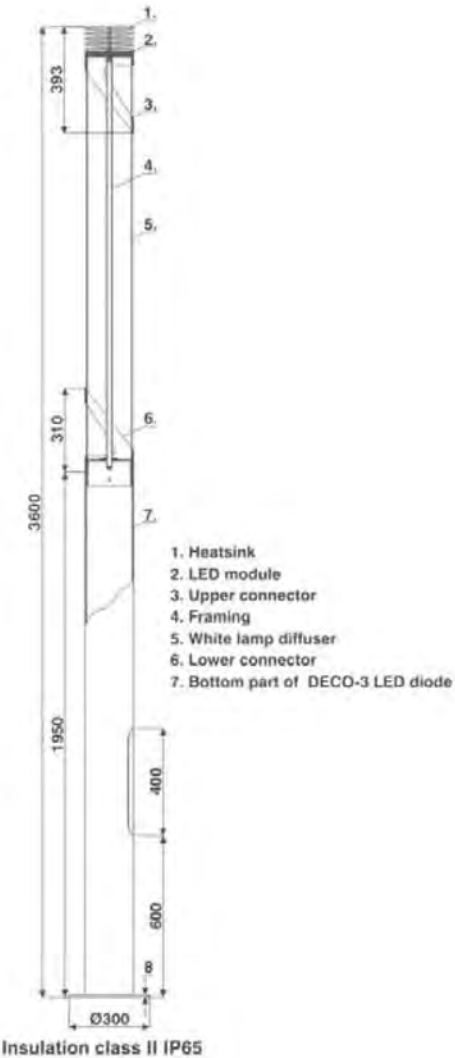
- high light effectiveness LED diodes as light source,
- good lighting uniformity and light distribution,
- good colour results,
- high luminaire effect due to installation of light source in spigot,
- energy-saving – lower than discharge lamp power consumption with comparable light output,
- LED diodes high durability results in low maintenance and service costs,
- low defects, due to high mechanical endurances, resistance from shocks, surges and vibrations,
- eliminates ultraviolet radiation and infrared radiation,
- efficient, modern safe light source for natural environment (without toxic chemical mercuric compounds).





I. ALUMINIUM COLUMNS SAL DECO-3 LED

Aluminium column type		SAL DECO-3 LED	
Height H [m]		3,6	
Light source		36 LED diode Xlamp XR-E 95W	
Colour - anodizing method	C0 - natural colour	Code	42923/C0
	C - electrochemical colouring		42923/C...
	CI - interference colouring		42923/CI...
Painting - polyester powder paints according to RAL pallet		43923	
Net weight [kg]		25	
Approximate unit volume [m ³]		0,12	
Concrete footing type		B-31	
Concrete footing code		311131	
Reinforcement basket type		Z-31	
Reinforcement basket code		311231	
Hot galvanized nut set		311003	
Base dimensions (side length/fixing hole spacing/thickness) [mm]		300/8	





I. ALUMINIUM COLUMNS

Aluminium cylindrical bollards SA

APPLICATION:

to illuminate avenues by shopping centers, car parks, entrances of buildings and they can be also used inside buildings in decorative illuminated passages and shopping galleries.

TECHNICAL INFORMATION:

- voltage: 230V, AC, 50 Hz,
- material: aluminium alloy – Aluminium pipe with external diameter Ø150,
- protection degree: IP44 (Insulation class I) or IP65 (Insulation class II),
- cylindrical diffuser: white PC-UV (SAM), transparent PC-UV with stainless steel louvre reflector (SAP),
- height: 600 mm, 900 mm and 1200 mm,
- for height 1200mm can be made in version with niche chamber for connection box – marked with additional letter W,
- mounting: on concrete footing B-0 or reinforcement basket Z-0, using three stretcher pegs Ø8 or directly to the ground (rooted bollards marked dz),
- available in version with flat top version – in code marked with additional letter P.

ADVANTAGES:

- fast, easy access to control gear due to gear frame mounting. Assembling and dis-assembling without the use of tools,
- eliminate light emissions due to use white diffuser in bollards SAM or stainless steel louvre reflector in bollards SAP,
- may be supplied in any RAL colour or wooden effect apple or pine tree (thermo print)

SAM LED 11W – bollards with white diffuser in insulation class II (IP65) in which LED diodes were used as light source.

TECHNICAL INFORMATION:

- 9 LED diodes XLamp XR-E feed by power 1,2 W
- light source with dyed temperature 6500 K (white cool),
- exit luminous flux from LED module: 1400lm
- voltage: 230 V, 50 Hz (feeder),
- total power consumption (diodes + feeder) - 11 W
- temperature range work: -40°C to +30°C
- lifetime of light source on level 50 thousand hours with middle environment temperature 15°C or lower.

ADVANTAGES:

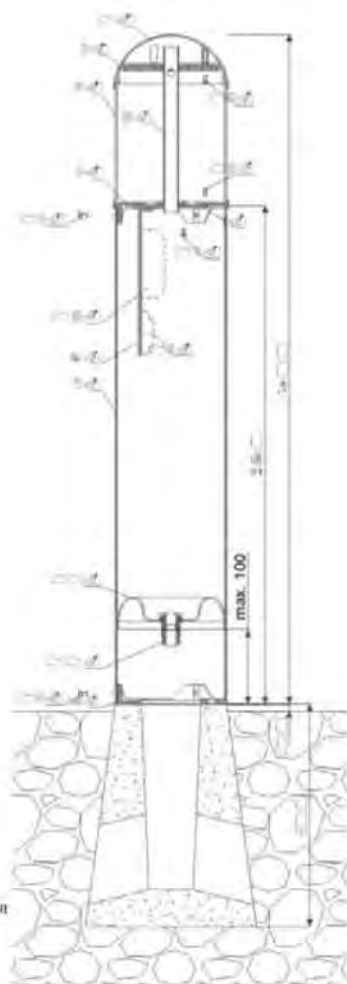
- high light effectiveness LED diodes as light source,
- good lighting uniformity and light distribution,
- energy-saving – lower from discharge lamps power consumption by the comparable visual sensation,
- LED diodes high durability allows reduce costs by maintenance and service,
- lack of ultraviolet radiation and infrared radiation,
- efficient, modern save light source for natural environment (without toxic chemical mercuric compounds).





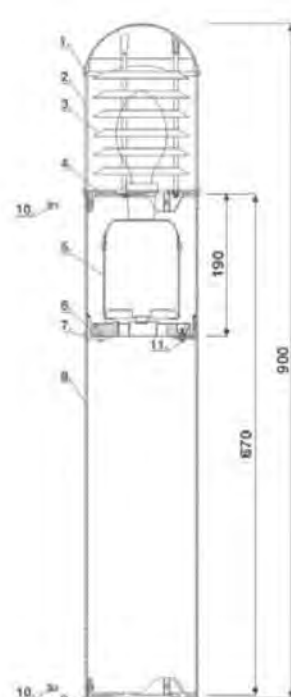
I. ALUMINIUM COLUMNS

Aluminium cylindrical bollards SA



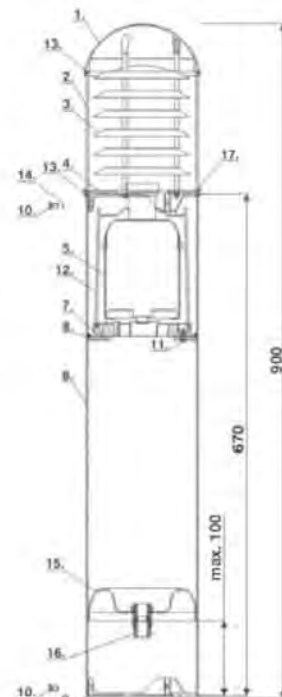
SAM 900 LED II cl. IP 65

1. Cap
2. LED module
3. White diffuser
4. Framing
5. Indirect ring
6. Flaming mounting
7. Control gear mounting
8. Aluminium pipe $\text{O}150 \times 2,5$
9. Holder
10. Bottom stuffing-box
11. Cable stuffing-box
12. Screw M6x12 A2 DIN7991 hexagonal socket with screw-bolt
13. Screw M6x8 A2 DIN7500
14. Feeder
15. Plug-in socket connection



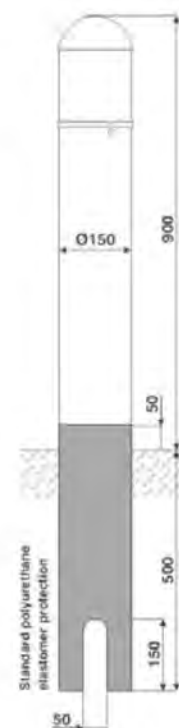
SAP 900 I cl. IP 44

1. Cap
2. Transparent diffuser PC-UV
3. Stainless steel louvre reflector
4. Indirect ring
5. Gear frame with accessories
6. Insulating insert with ring for mounting luminaire
7. Insert fixing console
8. Pipe $\text{O}150 \times 2,5$
9. Base
10. Screw M6x12 A2 hexagonal socket with screw-bolt
11. Screw M6x12 A2

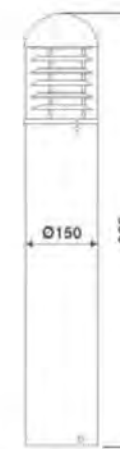


SAP 900 II kl. IP 65

1. Cap
2. Transparent diffuser PC-UV
3. Stainless steel louvre reflector
4. Indirect ring
5. Gear frame with accessories
6. Insulating insert with ring for mounting luminaire
7. Insert fixing console
8. Pipe $\text{O}150 \times 2,5$
9. Base
10. Screw M6x12 A2 hexagonal socket with screw-bolt
11. Screw M6x12 A2
12. Electrical gear cover
13. Flat gasket
14. Round gasket $\text{O}5 \times 2$
15. Bottom stuffing-box
16. Cable stuffing-box
17. Silicone gasket



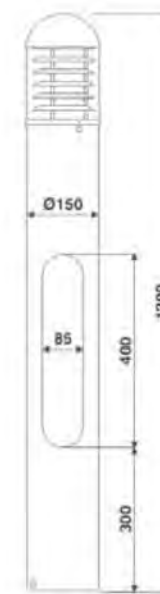
SAM 900 dz



SAP 900



SAM 900/P



SAP 1200 W





I. ALUMINIUM COLUMNS

Aluminium cylindrical bollards SA

ALUMINIUM CYLINDRICAL BOLLARDS SA MOUNTED ON FOOTING CONCRETE OR REINFORCEMENT BASKET

Light source type	Type	SAM600		SAP600		SAM900		SAP900		SAM1200		SAP1200		SAM1200W		SAP1200W	
		Insulation class I	Insulation class II	Insulation class I	Insulation class II	Insulation class I	Insulation class II	Insulation class I	Insulation class II	Insulation class I	Insulation class II	Insulation class I	Insulation class II	Insulation class I	Insulation class II	Insulation class I	Insulation class II
Sodium S-50W	STANDARD	44001	45001	44030	45030	44008	45008	44037	45037	44015	45015	44044	45044	44022	45022	44051	45051
	PAINTED	44001M	45001M	44030M	45030M	44008M	45008M	44037M	45037M	44015M	45015M	44044M	45044M	44022M	45022M	44051M	45051M
	E-27	WEIGHT [kg]	3,5	3,8	3,6	4,0	4,5	4,8	4,6	5,0	5,5	5,7	5,5	6,0	5,7	5,9	5,7
Sodium S-70W	STANDARD	44002	45002	44031	45031	44009	45009	44038	45038	44016	45016	44045	45045	44023	45023	44052	45052
	PAINTED	44002M	45002M	44031M	45031M	44009M	45009M	44038M	45038M	44016M	45016M	44045M	45045M	44023M	45023M	44052M	45052M
	E-27	WEIGHT [kg]	3,8	4,0	3,8	4,3	4,7	5,0	4,8	5,3	5,7	6,0	5,7	6,2	5,9	6,2	6,0
Metal halide MH-70W	STANDARD	44003	45003	44032	45032	44010	45010	44039	45039	44017	45017	44046	45046	44024	45024	44053	45053
	PAINTED	44003M	45003M	44032M	45032M	44010M	45010M	44039M	45039M	44017M	45017M	44046M	45046M	44024M	45024M	44053M	45053M
	E-27	WEIGHT [kg]	3,8	4,1	3,8	4,3	4,8	5,1	4,8	5,3	5,8	6,0	5,8	6,2	6,0	6,2	6,0
Metal halide MH-70W ELECTRONIC	STANDARD	44003E	45003E	44032E	45032E	44010E	45010E	44039E	45039E	44017E	45017E	44046E	45046E	44024E	45024E	44053E	45053E
	PAINTED	44003ME	45003ME	44032ME	45032ME	44010ME	45010ME	44039ME	45039ME	44017ME	45017ME	44046ME	45046ME	44024ME	45024ME	44053ME	45053ME
	E-27	WEIGHT [kg]	2,6	2,9	2,7	3,1	3,6	3,9	3,7	4,1	4,6	4,8	4,6	5,1	4,8	5,0	4,8
Metal halide MH-100W	STANDARD	44004	45004	44033	45033	44011	45011	44040	45040	44018	45018	44047	45047	44025	45025	44054	45054
	PAINTED	44004M	45004M	44033M	45033M	44011M	45011M	44040M	45040M	44018M	45018M	44047M	45047M	44025M	45025M	44054M	45054M
	E-27	WEIGHT [kg]	4,0	4,2	4,0	4,6	5,0	5,2	5,0	5,5	6,0	6,2	6,0	6,4	6,1	6,4	6,2
LED 11W	STANDARD	x	45005	x	x	x	45012	x	x	x	45019	x	x	x	45026	x	x
	PAINTED	x	45005M	x	x	x	45012M	x	x	x	45019M	x	x	x	45026M	x	x
	E-27	WEIGHT [kg]	x	2,5	x	x	x	3,5	x	x	x	4,4	x	x	x	4,6	x
CFL compact E-27 23W	STANDARD	44006	45006	44036	45036	44014	45014	44043	45043	44021	45021	44050	45050	44028	45028	44056	45056
	PAINTED	44006M	45006M	44036M	45036M	44014M	45014M	44043M	45043M	44021M	45021M	44050M	45050M	44028M	45028M	44056M	45056M
	E-27	WEIGHT [kg]	2,4	2,7	2,5	2,9	3,4	3,7	3,5	3,9	4,4	4,6	4,4	4,9	4,6	4,8	4,6
Unit volume	[m³]	0,015				0,023				0,031							





I. ALUMINIUM COLUMNS

Aluminium cylindrical bollards SA

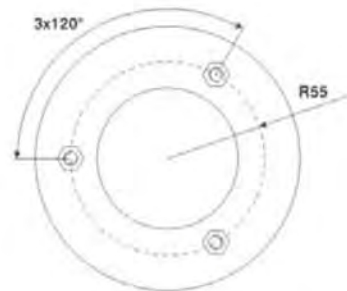
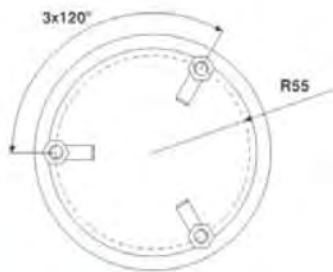
Mounting	Type	Code	Weight [kg]	Volume [m ³]
Concrete footing	B-0	311100	18,0	0,010
Reinforcement basket	Z-0	311200	0,5	0,004



Reinforcement basket
Z-0



Concrete footing
B-0





I. ALUMINIUM COLUMNS

Aluminium cylindrical bollards SA

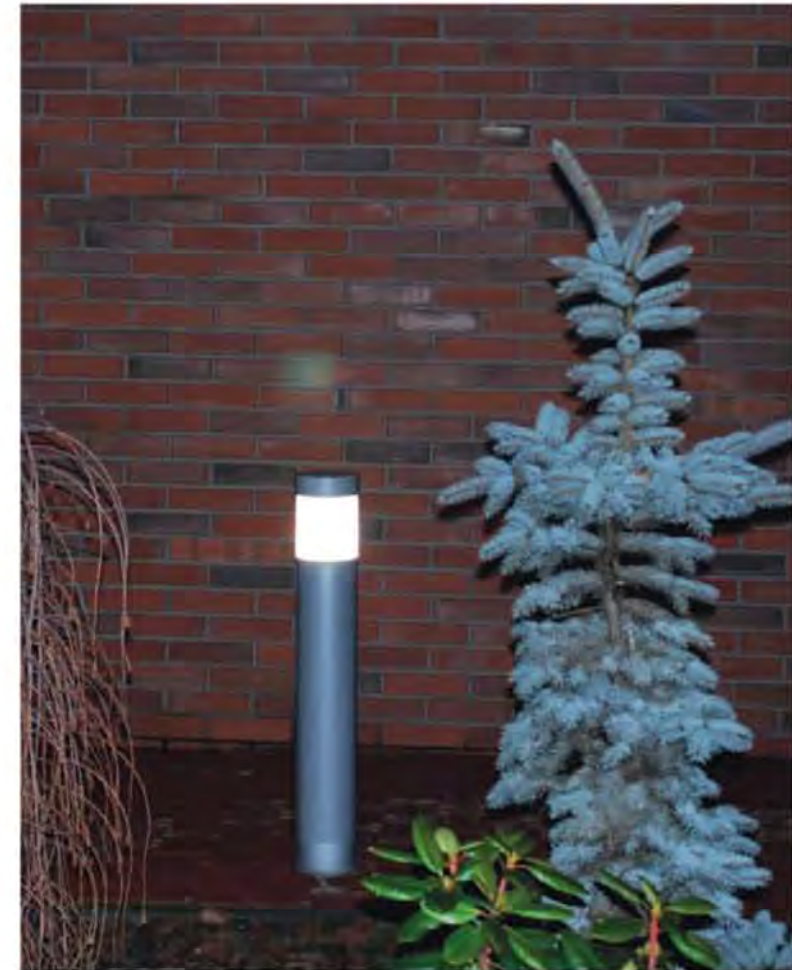
		ROOTED ALUMINIUM CYLINDRICAL BOLLARDS SA															
Light source type	Type	SAM600 dz		SAP600 dz		SAM900 dz		SAP900 dz		SAM1200 dz		SAP1200 dz		SAM1200W dz		SAP1200W dz	
		Insulation class I	Insulation class II	Insulation class I	Insulation class II	Insulation class I	Insulation class II	Insulation class I	Insulation class II	Insulation class I	Insulation class II	Insulation class I	Insulation class II	Insulation class I	Insulation class II	Insulation class I	Insulation class II
Sodium S-50W	STANDARD	44060	45060	44088	45088	44067	45067	44095	45095	44074	45074	44102	45102	44081	45081	44109	45109
	PAINTED	44060M	45060M	44088M	45088M	44067M	45067M	44095M	45095M	44074M	45074M	44102M	45102M	44081M	45081M	44109M	45109M
	E-27	WEIGHT [kg]	4,7	4,9	5,8	5,2	5,8	6,1	5,8	6,3	6,8	7,1	6,8	7,3	7,2	7,4	7,2
Sodium S-70W	STANDARD	44061	45061	44089	45089	44068	45068	44096	45096	44075	45075	44103	45103	44082	45082	44110	45110
	PAINTED	44061M	45061M	44089M	45089M	44068M	45068M	44096M	45096M	44075M	45075M	44103M	45103M	44082M	45082M	44110M	45110M
	E-27	WEIGHT [kg]	4,9	5,2	6,1	5,4	6,0	6,3	6,1	6,5	7,0	7,3	7,1	7,5	7,4	7,7	7,4
Metal halide MH-70W	STANDARD	44062	45062	44090	45090	44069	45069	44097	45097	44076	45076	44104	45104	44083	45083	44111	45111
	PAINTED	44062M	45062M	44090M	45090M	44069M	45069M	44097M	45097M	44076M	45076M	44104M	45104M	44083M	45083M	44111M	45111M
	E-27	WEIGHT [kg]	4,9	5,2	6,1	5,5	6,1	6,3	6,1	6,6	7,1	7,3	7,1	7,6	7,4	7,7	7,5
Metal halide MH-70W ELECTRONIC	STANDARD	44062E	45062E	44090E	45090E	44069E	45069E	44097E	45097E	44076E	45076E	44104E	45104E	44083E	45083E	44111E	45111E
	PAINTED	44062ME	45062ME	44090ME	45090ME	44069ME	45069ME	44097ME	45097ME	44076ME	45076ME	44104ME	45104ME	44083ME	45083ME	44111ME	45111ME
	E-27	WEIGHT [kg]	3,8	4,0	3,8	4,3	4,9	5,1	4,9	5,4	5,9	6,2	5,9	6,5	6,2	6,5	6,3
Metal halide MH-100W	STANDARD	44063	45063	44091	45091	44070	45070	44098	45098	44077	45077	44105	45105	44084	45084	44112	45112
	PAINTED	44063M	45063M	44091M	45091M	44070M	45070M	44098M	45098M	44077M	45077M	44105M	45105M	44084M	45084M	44112M	45112M
	E-27	WEIGHT [kg]	5,1	5,4	6,2	5,6	6,2	6,5	6,3	6,7	7,2	7,5	7,3	7,7	7,6	7,9	7,6
LED 11W	STANDARD	x	45064	x	x	x	45071	x	x	x	45078	x	x	x	45085	x	x
	PAINTED	x	45064M	x	x	x	45071M	x	x	x	45078M	x	x	x	45085M	x	x
	E-27	WEIGHT [kg]	x	3,6	x	x	x	4,7	x	x	x	5,8	x	x	x	6,1	x
CFL compact E-27 23W	STANDARD	44066	45066	44094	45094	44073	45073	44101	45101	44080	45080	44108	45108	44087	45087	44115	45115
	PAINTED	44066M	45066M	44094M	45094M	44073M	45073M	44101M	45101M	44080M	45080M	44108M	45108M	44087M	45087M	44115M	45115M
	E-27	WEIGHT [kg]	3,6	3,8	4,6	4,1	4,7	4,9	4,7	5,2	5,7	6,0	5,7	6,2	6,0	6,3	6,1
Unit volume	[m ³]																
				0,028				0,036						0,043			





I. ALUMINIUM COLUMNS

Aluminium cylindrical bollards SA



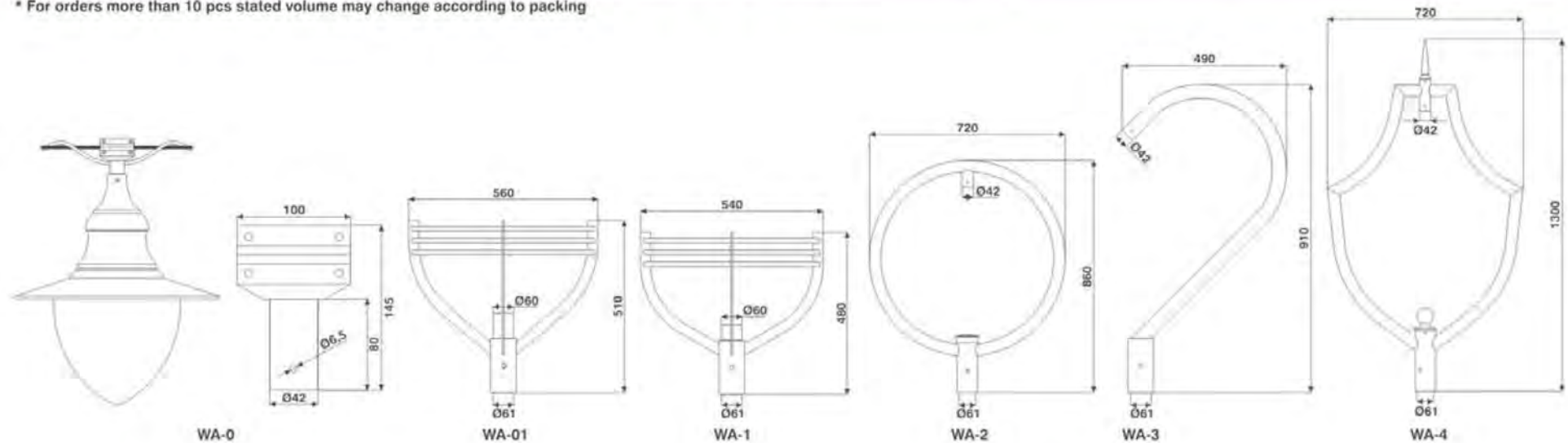


I. ALUMINIUM COLUMNS

Extension arms WA

Extension arm	WA-0	WA-01	WA-1	WA-2	WA-3	WA-4
Arm quantity	1					
Colour	C0 - natural colour	471010/C0	471011/C0	471020/C0	471030/C0	471040/C0
-anodizing method	C - electrochemical colouring	471010/C..	471011/C..	471020/C..	471030/C..	471040/C..
	CI - interference colouring	471010/CI..	471011/CI..	471020/CI..	471030/CI..	471040/CI..
Code	-	-	-	-	-	-
Painting - polyester powder paints according to RAL pallet	40270M	481010	481011	481020	481030	481040
Unpainted	40270	-	-	-	-	-
Net weight [kg]	0,50	2,10	2,30	3,50	2,10	5,50
Extension arm windage [m ²]	0,01	0,07	0,06	0,10	0,07	0,13
Approximate unit volume[m ³]*	0,003	0,06	0,06	0,03	0,01	0,07
Spigot ending column diameter Ø [mm]	assembling on carrying lines.					
Spigot ending extension arm diameter Ø [mm]	42	60		60	42	
Luminaire usage	OW (p. 152)	OPC-1 (p. 146), OPA-1 (p. 148)	OP 400 (p. 144)	OPA (p. 150)		OW (p. 152)

* For orders more than 10 pcs stated volume may change according to packing

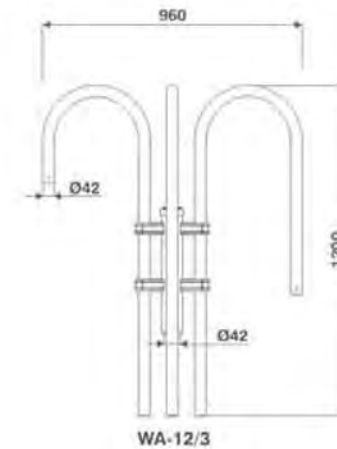
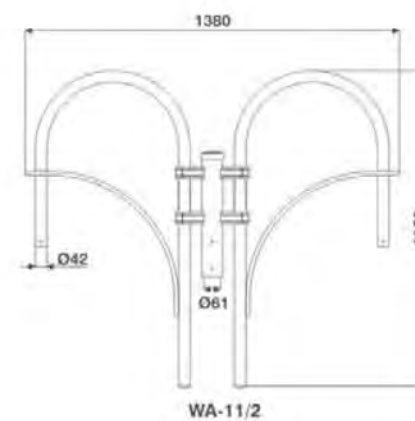
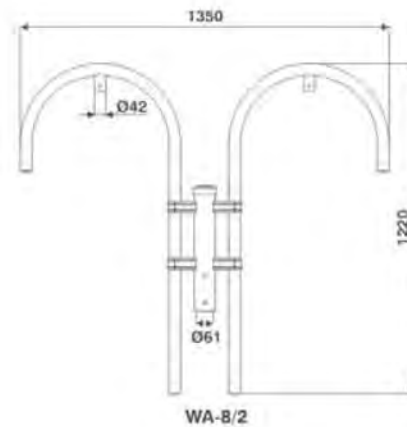
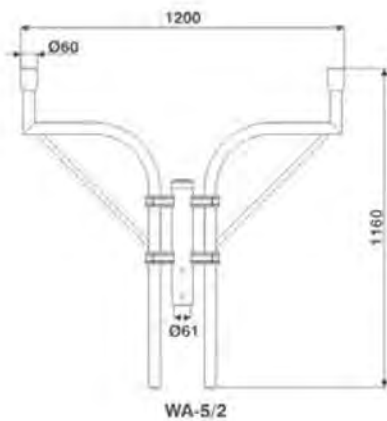




I. ALUMINIUM COLUMNS
Extension arms WA

Extension arm		WA-5/1	WA-5/2	WA-5/3	WA-8/1	WA-8/2	WA-8/3	WA-11/1	WA-11/2	WA-12/3
Arm quantity		1	2	3	1	2	3	1	2	3
Colour anodizing method	C0 - natural colour	471051/C0	471052/C0	471053/C0	471081/C0	471082/C0	471083/C0	471111/C0	471112/C0	471123/C0
	C - electrochemical colouring	471051/C..	471052/C..	471053/C..	471081/C..	471082/C..	471083/C..	471111/C..	471112/C..	471123/C..
	CI - interference colouring	471051/CI..	471052/CI..	471053/CI..	471081/CI..	471082/CI..	471083/CI..	471111/CI..	471112/CI..	471123/CI..
Painted		481051	481052	481053	481081	481082	481083	481111	481112	481123
Net weight [kg]		3,9	5,9	7,9	4,1	6,4	8,7	4,4	7,0	9,2
Extension arm windage [m ²]		0,11	0,21	0,24	0,11	0,2	0,23	0,13	0,23	0,23
Approximate unit volume [m ³]*		0,02	0,04	0,05	0,02	0,03	0,05	0,02	0,04	0,07
Spigot ending column diameter Ø (mm)					60					
Luminaire diameter Ø (mm)		60			42					
Luminaire usage		OPC-1 Ø60 (p. 146), OP (p. 144), OPA-1 (p. 148)			OW (p. 152), OPA (p. 150)			OPA (p. 150)		

* For orders more than 10 pcs stated volume may change according to packing



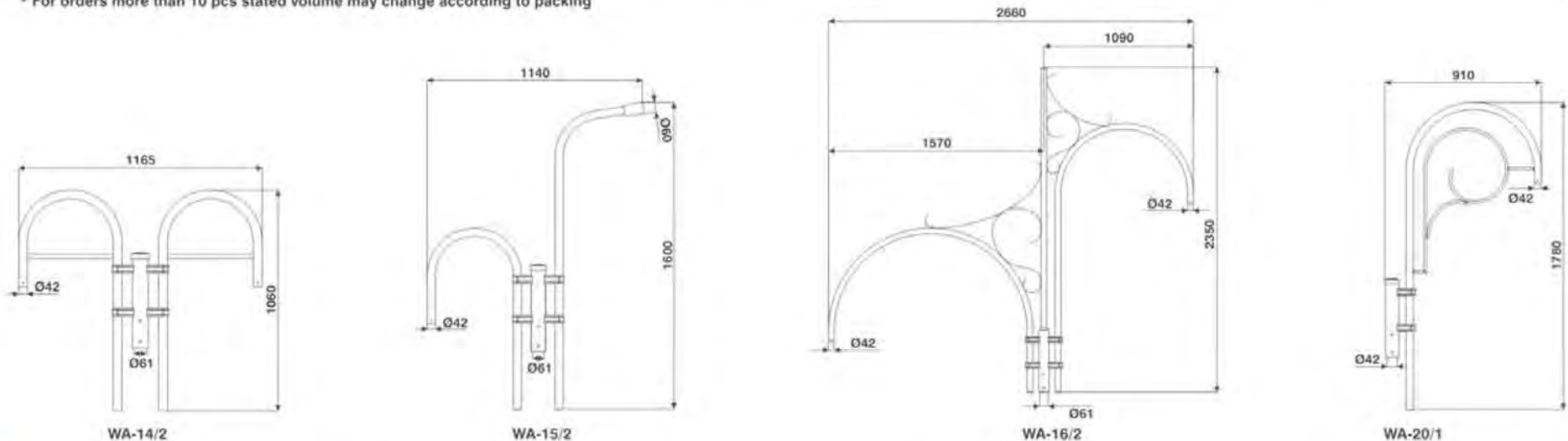


I. ALUMINIUM COLUMNS

Extension arms WA

Extension arm	WA-14/1	WA-14/2	WA-14/3	WA-15/2	WA-16/2	WA-20/1	WA-20/2	WA-20/3										
Arm quantity	1	2	3	2	2	1	2	3										
Colour	C0 - natural colour		471141/C0		471142/C0		471143/C0		471152/C0		471162/C0		471201/C0		471202/C0		471203/C0	
-anodizing	C - electrochemical colouring		471141/C..		471142/C..		471143/C..		471152/C..		471162/C..		471201/C..		471202/C..		471203/C..	
method	Cl - interference colouring		471141/Cl..		471142/Cl..		471143/Cl..		471152/Cl..		471162/Cl..		471201/Cl..		471202/Cl..		471203/Cl..	
Painted	481141	481142	481143	481152	481162	481201	481202	481203										
Net weight [kg]	4,0	6,1	8,2	6,5	12,5	5,3	8,7	12,1										
Extension arm windage [m ²]	0,10	0,21	0,23	0,19	0,36	0,11	0,18	0,30										
Approximate unit volume [m ³]*	0,01	0,02	0,04	0,03	0,10	0,03	0,07	0,10										
Spigot ending column diameter Ø [mm]	60																	
Luminaire diameter Ø [mm]	42				42/60		42											
Luminaire usage	OW (p. 152), OPA (p. 150)			OW (p. 152), OW-2 (p. 154), OPA (p. 150)/ street lighting luminaires (p. 172)		OW (p. 152), OW-2 (p. 154), OPA (p. 150)												

* For orders more than 10 pcs stated volume may change according to packing





I. ALUMINIUM COLUMNS

Extension arms WA



WA-1



WA-2



WA-4



WA-5/2



WA-20/1





I. ALUMINIUM COLUMNS

Extension arms WR

Extension arm		WR-1/1	WR-1/2	WR-2/1	WR-2/2	WR-2/3	WR-3/1	WR-3/2	WR-3/3
Arm quantity		1	2	1	2	3	1	2	3
Colour	C0 - natural colour	472011/C0	472012/C0	472021/C0	472022/C0	472023/C0	472031/C0	472032/C0	-
-anodizing method	C - electrochemical colouring	472011/C..	472012/C..	472021/C..	472022/C..	472023/C..	472031/C..	472032/Ci..	-
	Cl - interference colouring	472011/Cl..	472012/Cl..	472021/Cl..	472022/Cl..	472023/Cl..	472031/Cl..	472032/C..	-
Painted		482011	482012	482021	482022	482023	482031	482032	482033
Net weight [kg]		2,3	3,7	3,1	5,0	6,9	3,5	5,8	8,1
Extension arm windage [m ²]		0,05	0,08	0,08	0,13	0,16	0,09	0,15	0,18
Approximate unit volume [m ³]*		0,01	0,02	0,02	0,05	0,08	0,03	0,06	0,39
Spigot ending column diameter Ø [mm]		60							
Luminaire diameter Ø [mm]		60							
Luminaire usage		street lighting luminaires (p. 172)							

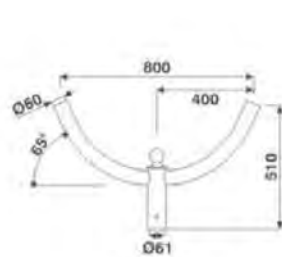
* For orders more than 10 pcs stated volume may change according to packing



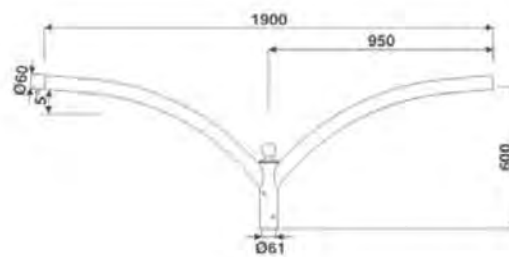
WR-1/1



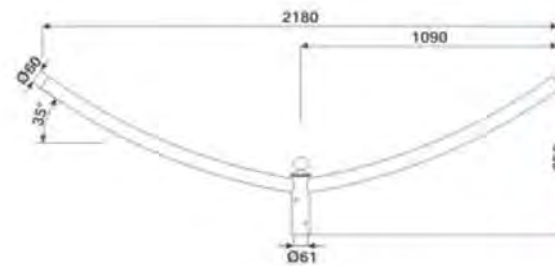
WR-3/2



WR-1/2



WR-2/2



WR-3/2



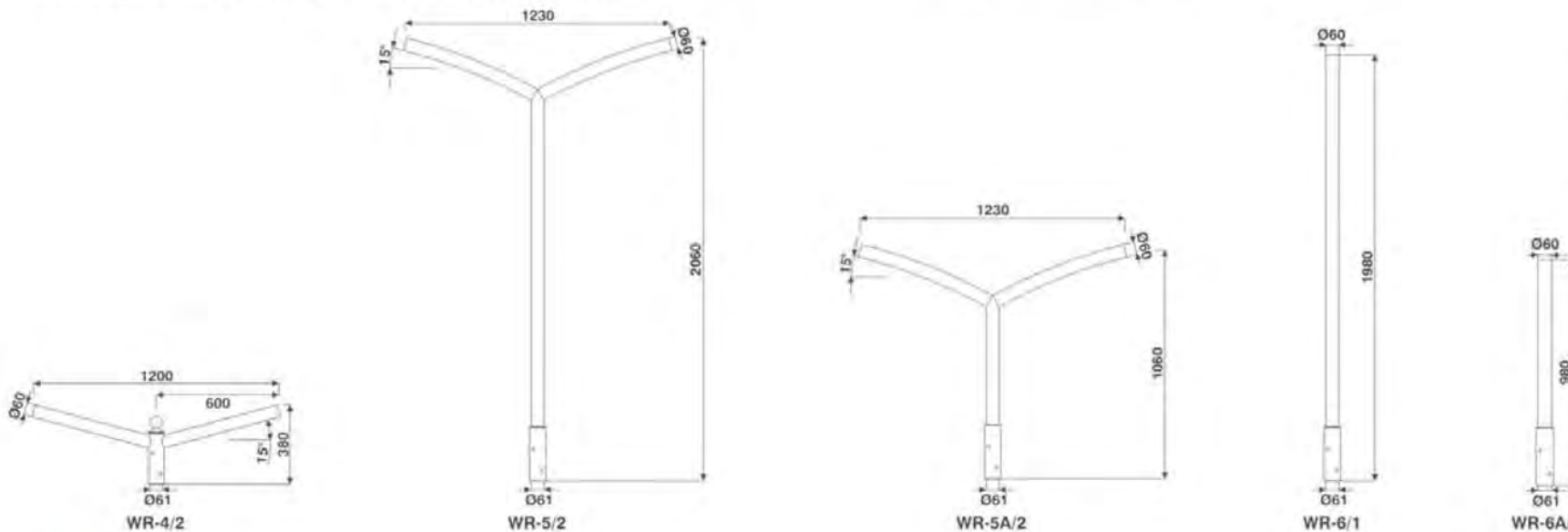


I. ALUMINIUM COLUMNS

Extension arms WR

Extension arm		WR-4/1	WR-4/2	WR-5/1	WR-5/2	WR-5A/1	WR-5A/2	WR-6/1	WR-6A/1
Arm quantity		1	2	1	2	1	2	1	1
Colour	C0 - natural colour	472041/C0	472042/C0	472051/C0	472052/C0	472501/C0	472502/C0	472060/C0	472600/C0
-anodizing	C - electrochemical colouring	472041/C..	472042/C..	472051/C..	472052/C..	472501/C..	472502/C..	472060/C..	472600/C..
method	CI - interference colouring	472041/CI..	472042/CI..	472051/CI..	472052/CI..	472501/CI..	472502/CI..	472060/CI..	472600/CI..
Painted		482041	482042	482051	482052	482501	482502	482060	482600
Net weight [kg]		2,3	3,7	5,0	6,0	3,3	4,3	4,0	2,3
Extension arm windage [m ²]		0,06	0,09	0,15	0,19	0,09	0,13	0,12	0,03
Approximate unit volume [m ³]*		0,01	0,02	0,05	0,10	0,03	0,05	0,01	0,01
Spigot ending column diameter Ø [mm]		60							
Luminaire diameter Ø [mm]		60							
Luminaire usage		street lighting luminaires (p. 172)							

* For orders more than 10 pcs stated volume may change according to packing



WR-4/1



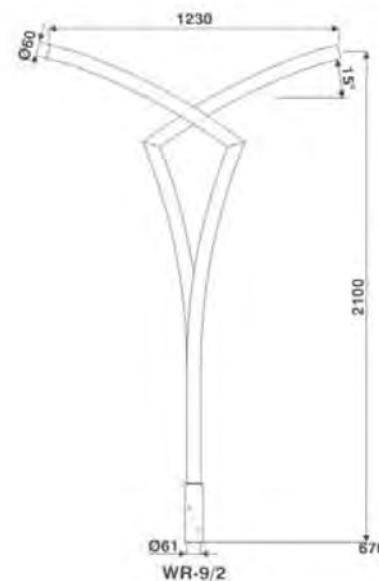


I. ALUMINIUM COLUMNS

Extension arms WR

Extension arm		WR-8/1	WR-8A/1	WR-9/1	WR-9/2	WR-12/1
Arm quantity		1	1	1	2	1
Colour -anodizing method	C0 - natural colour	472081/C0	472801/C0	472091/C0	472092/C0	472121/C0
	C - electrochemical colouring	472081/C..	472801/C..	472091/C..	472092/C..	472121/C..
	CI - interference colouring	472081/CI..	472801/CI..	472091/CI..	472092/CI..	472121/CI..
Code						
Painted		482081	482801	482091	482092	482121
Net weight [kg]		4,9	3,2	5,0	9,2	4,8
Extension arm windage [m ²]		0,15	0,09	0,15	0,24	0,14
Approximate unit volume [m ³]*		0,05	0,03	0,06	0,11	0,05
Spigot ending column diameter Ø [mm]						60
Luminaire diameter Ø [mm]						60
Luminaire usage						street lighting luminaires (p. 172)

* For orders more than 10 pcs state volume may change according to packing



WR-9/2





I. ALUMINIUM COLUMNS

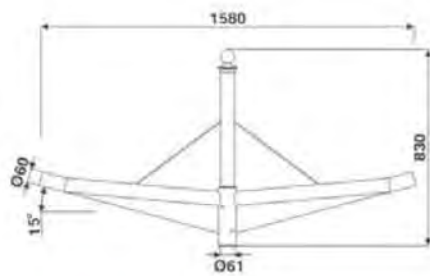
Extension arms WR

Extension arm	WR-13/1	WR-13/2	WR-13/3	WR-14/1	WR-15/1	WR-15/2	WR-15/3	
Arm quantity	1	2	3	1	1	2	3	
Colour -anodizing method	C0 - natural colour	472131/C0	472132/C0	-	472141/C0	472151/C0	472152/C0	472153/C0
	C - electrochemical colouring	472131/C..	472132/C..	-	472141/C..	472151/C..	472152/C..	472153/C..
	CI - interference colouring	472131/CI..	472132/CI..	-	472141/CI..	472151/CI..	472152/CI..	472153/CI..
Painted	482131	482132	482133	482141	482151	482152	482153	
Net weight [kg]	4,0	6,0	8,0	4,2	3,9	5,3	6,7	
Extension arm windage [m ²]	0,13	0,22	0,20	0,10	0,10	0,18	0,19	
Approximate unit volume [m ³]*	0,06	0,11	0,33	0,06	0,03	0,05	0,26	
Spigot ending column diameter Ø [mm]	60							
Luminaire diameter Ø [mm]	60							
Luminaire usage	street lighting luminaires (p. 172)							

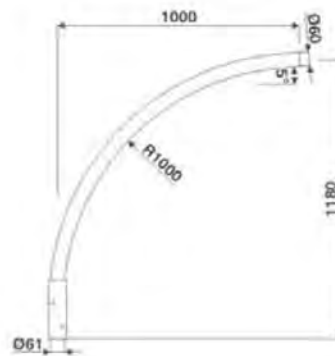
* For orders more than 10 pcs stated volume may change according to packing



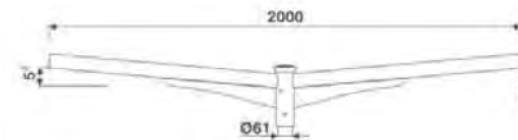
WR-13/3 (90°)



WR-13/2



WR-14/1



WR-15/2



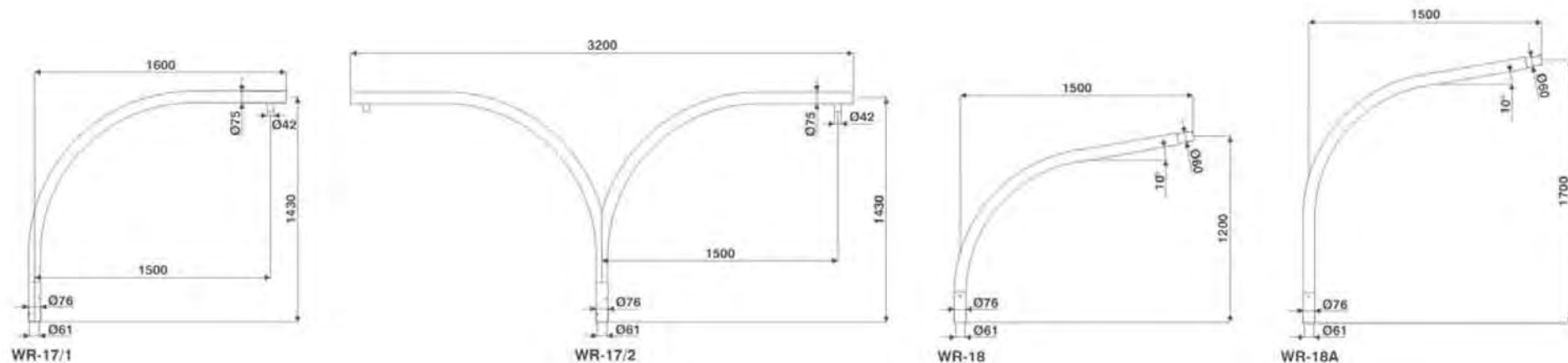


I. ALUMINIUM COLUMNS

Extension arms WR

Extension arm		WR-17/1	WR-17/2	WR-18	WR-18A
Arm quantity		1	2	1	1
Colour	C0 - natural colour	472171/C0	472172/C0	472181/C0	472811/C0
-anodizing method	C - electrochemical colouring	472171/C..	472172/C..	472181/C..	472811/C..
method	CI - interference colouring	472171/CI..	472172/CI..	472181/CI..	472811/CI..
Code					
Painted		482171	482172	482181	482811
Net weight [kg]		8,1	15,1	11,0	14,2
Extension arm windage [m ²]		0,20	0,35	0,16	0,20
Approximate unit volume [m ³]*		0,12	0,36	0,08	0,09
Spigot ending column diameter Ø [mm]		60	60	60	60
Luminaire diameter Ø [mm]		42	42	60	60
Luminaire usage		OW (p. 152), OW-2 (p. 154), OW-21 (p. 156), OPA (p. 150)		street lighting luminaires (p. 172)	

* For orders more than 10 pcs state volume may change according to packing





I. ALUMINIUM COLUMNS

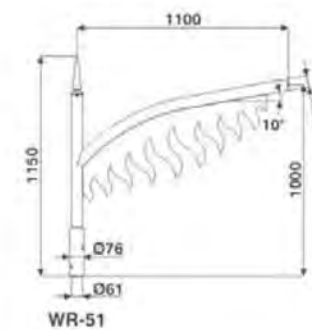
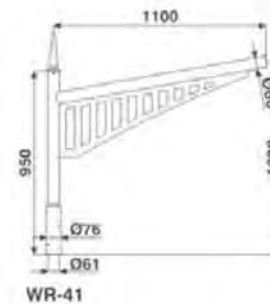
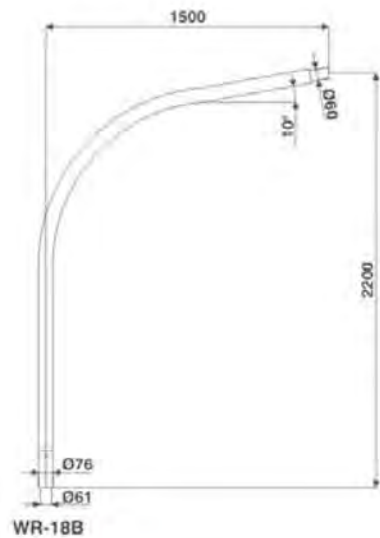
Extension arms WR

Extension arm		WR-18B	WR-31	WR-41	WR-51
Arm quantity		1	1	1	1
Colour - anodizing method	C0 - natural colour	472821/C0	472311/C0	472411/C0	472511/C0
	C - electrochemical colouring	472821/C..	472311/C..	472411/C..	472511/C..
	CI - interference colouring	472821/CI..	472311/CI..	472411/CI..	472511/CI..
Code					
Painted		482821	482311	482411	482511
Net weight [kg]		12,0	5,3	5,1	5,8
Extension arm windage [m ²]		0,23	0,26	0,28	0,32
Approximate unit volume [m ³]*		0,08	0,09	0,09	0,09
Spigot ending column diameter Ø [mm]		60	60	60	60
Luminaire diameter Ø [mm]		60	60	60	60
Luminaire usage		street lighting luminaires (p. 172)			



WR-51

* For orders more than 10 pcs state volume may change according to packing



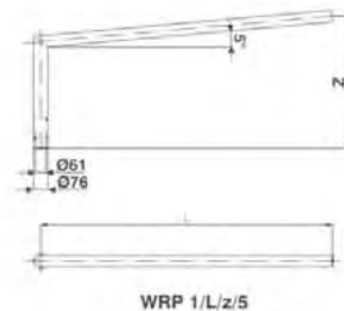


I. ALUMINIUM COLUMNS

Extension arms WRP

Extension arm		WRP 1/1,0/0,7/5	WRP 1/1,0/1,2/5	WRP 1/1,0/1,7/5	WRP 1/1,0/2,2/5	WRP 1/1,5/0,7/5	WRP 1/1,5/1,2/5	WRP 1/1,5/1,7/5	WRP 1/1,5/2,2/5
Arm quantity		1							
Arm reach L [m]		1,0				1,5			
Height of extension arm z [m]		0,68	1,18	1,68	2,18	0,68	1,18	1,68	2,18
Increase of height column [m]		0,5	1,0	1,5	2,0	0,5	1,0	1,5	2,0
Colour - anodizing method	C0 - natural colour	47219111/C0	47219112/C0	47219113/C0	47219114/C0	47219121/C0	47219122/C0	47219123/C0	47219124/C0
	C - electrochemical colouring	47219111/C..	47219112/C..	47219113/C..	47219114/C..	47219121/C..	47219122/C..	47219123/C..	47219124/C..
	CI - interference colouring	47219111/CI..	47219112/CI..	47219113/CI..	47219114/CI..	47219121/CI..	47219122/CI..	47219123/CI..	47219124/CI..
Painted		48219111	48219112	48219113	48219114	48219121	48219122	48219123	48219124
Net weight [kg]		3,7	5,3	6,9	8,5	4,4	6,0	7,6	9,2
Extension arm windage included in calculations [m ²]		0,10	0,13	0,17	0,21	0,13	0,16	0,20	0,24
Approximate unit volume [m ³]*		0,05	0,09	0,12	0,14	0,07	0,12	0,18	0,19
Column type		SAL-...M or SAL-...K (after making resistance calculation) with spigot ending Ø60							
Luminaire diameter Ø [mm]		Ø60							
Luminaire usage		street lighting luminaires (p. 172)							

* For orders more than 10 pcs state volume may change according to packing



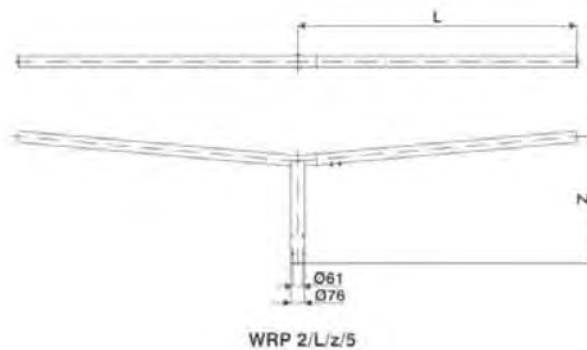


I. ALUMINIUM COLUMNS

Extension arms WRP

Extension arm		WRP 2/1,0/0,7/5	WRP 2/1,0/1,2/5	WRP 2/1,0/1,7/5	WRP 2/1,0/2,2/5	WRP 2/1,5/0,7/5	WRP 2/1,5/1,2/5	WRP 2/1,5/1,7/5	WRP 2/1,5/2,2/5
Arm quantity		2 (second arm unscrew)							
Arm reach L [m]		1,0				1,5			
Height of extension arm z [m]		0,68	1,18	1,68	2,18	0,68	1,18	1,68	2,18
Increase of height column [m]		0,5	1,0	1,5	2,0	0,5	1,0	1,5	2,0
Colour - anodizing method	C0 - natural colour	47219211/C0	47219212/C0	47219213/C0	47219214/C0	47219221/C0	47219222/C0	47219223/C0	47219224/C0
	C - electrochemical colouring	47219211/C..	47219212/C..	47219213/C..	47219214/C..	47219221/C..	47219222/C..	47219223/C..	47219224/C..
	CI - interference colouring	47219211/CI..	47219212/CI..	47219213/CI..	47219214/CI..	47219221/CI..	47219222/CI..	47219223/CI..	47219224/CI..
Painted		48219211	48219212	48219213	48219214	48219221	48219222	48219223	48219224
Net weight [kg]		5,4	7,0	8,6	10,2	6,9	8,5	10,1	11,7
Extension arm windage included n calculations [m ²]		0,22	0,25	0,29	0,33	0,28	0,31	0,35	0,39
Approximate unit volume (m ³)*		0,06	0,11	0,15	0,20	0,07	0,15	0,22	0,23
Column type		SAL-...M lub SAL-...K (after making resistance calculation) with spigot ending Ø60							
Luminaire diameter Ø [mm]		Ø60							
Luminaire usage		street lighting luminaires (p. 172)							

* For orders more than 10 pcs stated volume may change according to packing



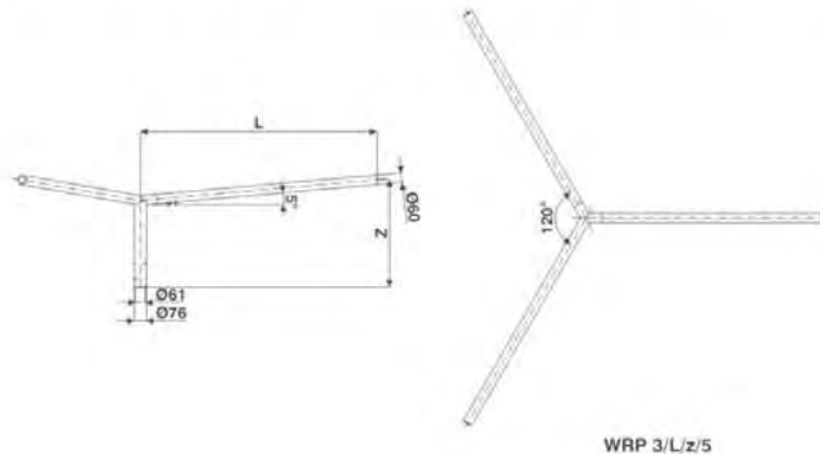


I. ALUMINIUM COLUMNS

Extension arms WRP

Extension arm		WRP 3/1,0/0,7/5	WRP 3/1,0/1,2/5	WRP 3/1,0/1,7/5	WRP 3/1,0/2,2/5	WRP 3/1,5/0,7/5	WRP 3/1,5/1,2/5	WRP 3/1,5/1,7/5	WRP 3/1,5/2,2/5	
Arm quantity		3 (second and third arm unscrew)								
Arm reach L [m]		1,0				1,5				
Height of extension arm z [m]		0,68	1,18	1,68	2,18	0,68	1,18	1,68	2,18	
Increase of height column [m]		0,5	1,0	1,5	2,0	0,5	1,0	1,5	2,0	
Colour - anodizing method	C0 - natural colour	Code	47219311/C0	47219312/C0	47219313/C0	47219314/C0	47219321/C0	47219322/C0	47219323/C0	47219324/C0
	C - electrochemical colouring		47219311/C..	47219312/C..	47219313/C..	47219314/C..	47219321/C..	47219322/C..	47219323/C..	47219324/C..
	Cl - interference colouring		47219311/Cl..	47219312/Cl..	47219313/Cl..	47219314/Cl..	47219321/Cl..	47219322/Cl..	47219323/Cl..	47219324/Cl..
Painted		48219311	48219312	48219313	48219314	48219321	48219322	48219323	48219324	
Net weight [kg]		8,0	9,6	11,2	12,8	10,4	12,0	13,6	15,2	
Extension arm windage included in calculations [m ²]		0,15	0,18	0,22	0,26	0,20	0,23	0,27	0,31	
Approximate unit volume [m ³]*		0,09	0,16	0,21	0,29	0,10	0,21	0,31	0,33	
Column type		SAL...M lub SAL...K (after making resistance calculation) with spigot ending Ø60								
Luminaire diameter Ø [mm]		Ø60								
Luminaire usage		street lighting luminaires (p. 172)								

* For orders more than 10 pcs stated volume may change according to packing





I. ALUMINIUM COLUMNS

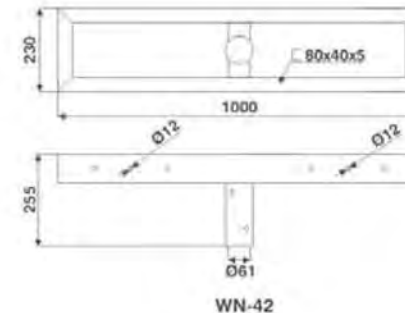
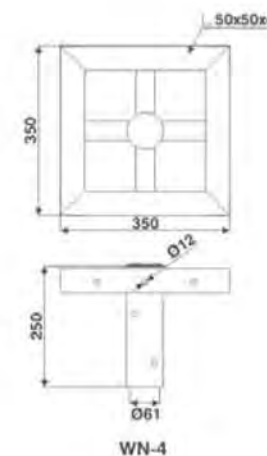
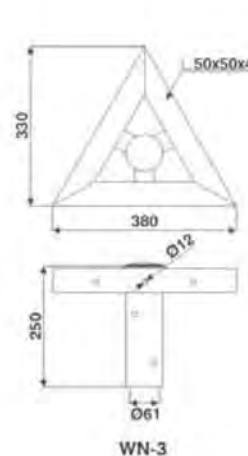
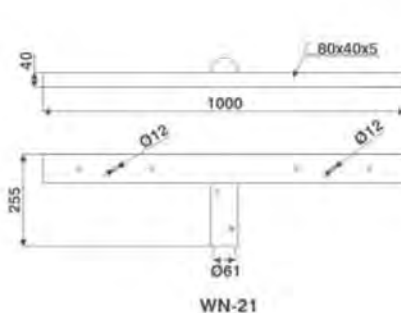
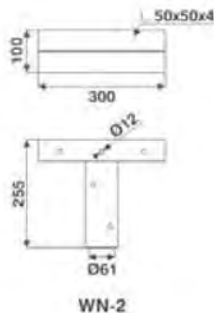
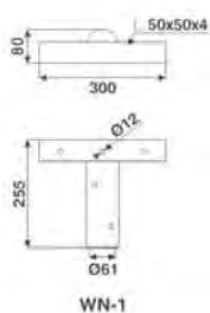
Extension arms WN

Extension arm		WN-1	WN-2	WN-21	WN-3	WN-4	WN-42
Projectors quantity		1	2	2	3	4	4
Colour - anodizing method	C0 - natural colour	473010/C0	473020/C0	473210/C0	473030/C0	473040/C0	473420/C0
	C - electrochemical colouring	473010/C..	473020/C..	473210/C..	473030/C..	473040/C..	473420/C..
	Cl - interference colouring	473010/Cl..	473020/Cl..	473210/Cl..	473030/Cl..	473040/Cl..	473420/Cl..
Code							
Painting - polyester powder paints according to RAL pallet		483010	483020	483210	483030	483040	483420
Net weight [kg]		1,2	1,5	3,2	2,5	3,1	6,3
Extension arm windage [m ²]		0,03	0,03	0,06	0,03	0,03	0,06
Approximate unit volume [m ³]*		0,01	0,01	0,01	0,02	0,02	0,03
Spigot ending column diameter Ø [mm]		60					
Luminaire usage		Projectors (p. 180)					

* For orders more than 10 pcs stated volume may change according to packing



WN-4



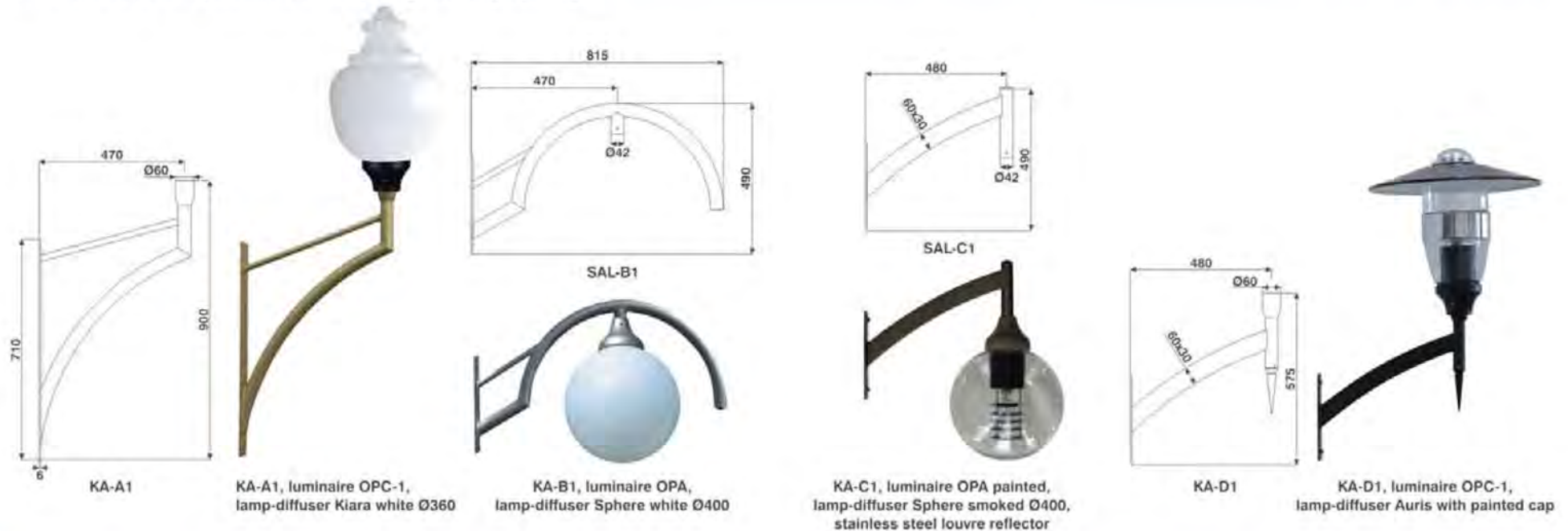


I. ALUMINIUM COLUMNS

Wall brackets KA-A1, KA-B1, KA-C1, KA-D

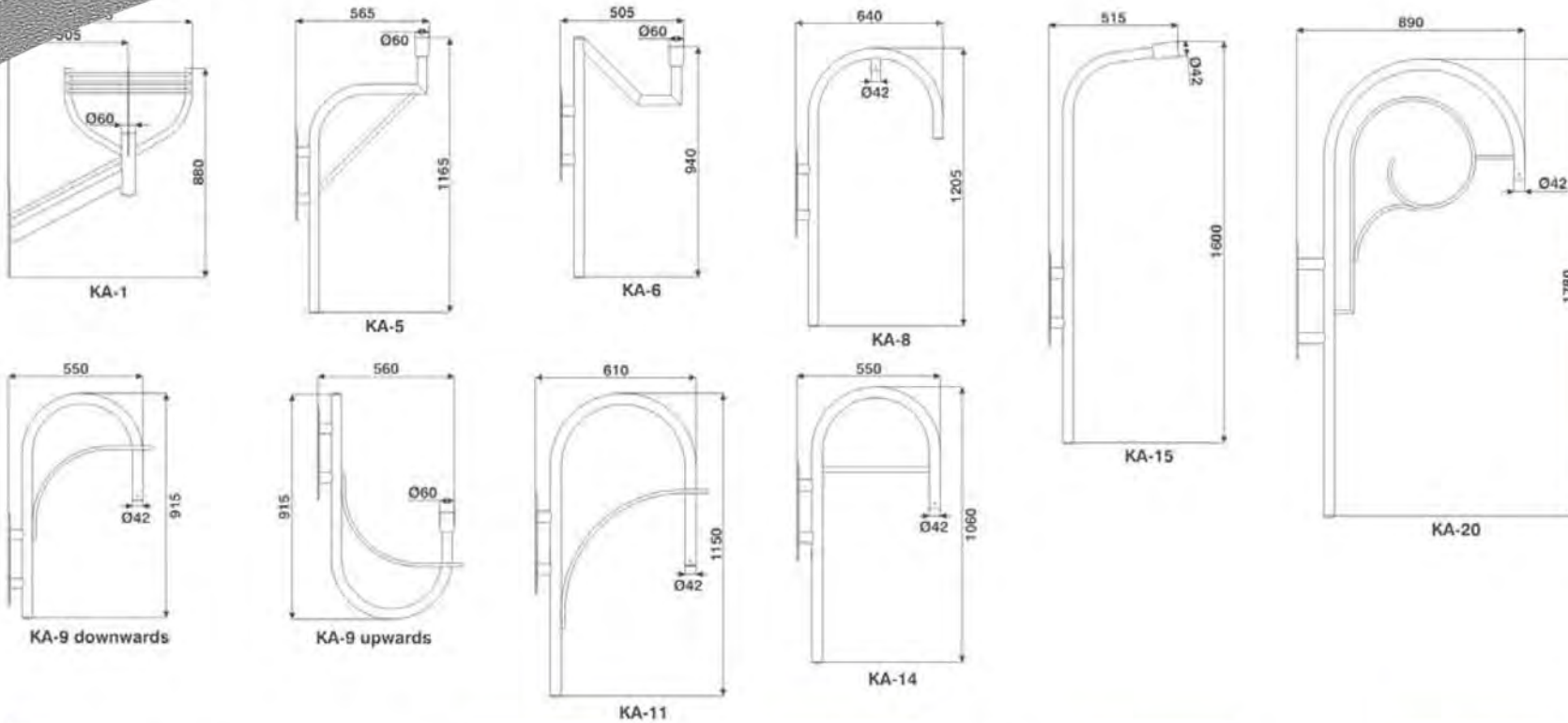
Aluminium wall bracket type		KA-A1	KA-B1	KA-C1	KA-D1
Colour - anodizing method	C0 - natural colour	478100/C0	478101/C0	478102/C0	478103/C0
	C - electrochemical colouring Code	478100/C..	478101/C..	478102/C..	478103/C..
	Cl - interference colouring	478100/Cl..	478101/Cl..	478102/Cl..	478103/Cl..
Painting - polyester powder paints according to RAL pallet		488100	488101	488102	488103
Net weight [kg]		2,4	1,9	1,1	1,6
Approximate unit volume [m ³]*		0,02	0,02	0,01	0,01
Wall bracket spigot diameter Ø [mm]		60			60
Wall bracket top mounted		OPC-1 Ø60 (p. 146), OP (p. 144), OPA-1 (p. 148), OS-1 (p. 140)		OPA (p. 150), OW (p. 152)	OPC-1 Ø60 (p. 146), OP (p. 144), OPA-1 (p. 148), OS-1 (p. 140)

* For orders more than 10 pcs stated volume may change according to packing





I. ALUMINIUM COLUMNS
Wall brackets KA



Aluminium wall bracket type		KA-1	KA-5	KA-6	KA-8	KA-9 (downwards)	KA-9 (upwards)	KA-11	KA-14	KA-15	KA-20
Colour - anodizing method	C0 - natural colour	478010/C0	478050/C0	478060/C0	478080/C0	478090/C0	478091/C0	478110/C0	478140/C0	478150/C0	478200/C0
	C - electrochemical colouring Code	478010/C..	478050/C..	478060/C..	478080/C..	478090/C..	478091/C..	478110/C..	478140/C..	478150/C..	478200/C..
	CI - interference colouring	478010/CI..	478050/CI..	478060/CI..	478080/CI..	478090/CI..	478091/CI..	478110/CI..	478140/CI..	478150/CI..	478200/CI..
Painting - polyester powder paints according to RAL pallet		488010	488050	488060	488080	488090	488091	488110	488140	488150	488200
Net weight [kg]		2,6	2,9	2,3	3,1	3,4	3,4	3,4	3,0	2,8	4,3
Approximate unit volume [m ³]*		0,42	0,02	0,03	0,02	0,03	0,03	0,02	0,04	0,02	0,09
Wall bracket spigot diameter Ø [mm]		60			42			60		42	
Wall bracket top mounted		OP (p. 144)	OPC-1 Ø60 (p. 146), OPA-1 (p. 148), OP (p. 144)		OPA (p. 150)		OPC-1 (p. 146), OPA-1 (p. 148), OP (p. 144)		OPA (p. 150)		street lighting luminaires (p. 172) OW (p. 152)

* For orders more than 10 pcs stated volume may change according to packing





I. ALUMINIUM COLUMNS

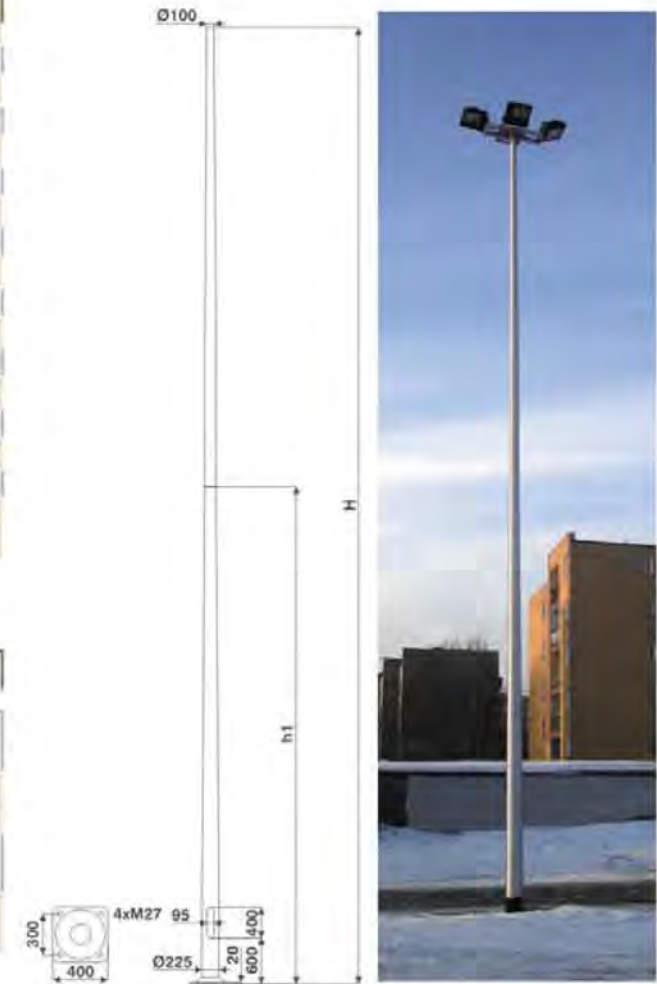
Masts with Ø225 mm base diameter

Aluminium light mast type		MAL-12,5	MAL-13	MAL-14	MAL-15	MAL-16	
Height	total H [m]	12,5	13,0	14,0	15,0	16,0	
	bottom part h ₁ +E [m]	6,5 + 0,45	7,0 + 0,45	8,0 + 0,45			
	upper part h ₂ [m]	6,0	6,0	6,0	7,0	8,0	
Colour - anodizing method	C0 - natural colour	Code	42501/C0	42502/C0	42504/C0	42506/C0	42508/C0
	C - electrochemical colouring		42501/C...	42502/C...	42504/C...	42506/C...	42508/C...
	CI - interference colouring		42501/CI...	42502/CI...	42504/CI...	42506/CI...	42508/CI...
Painting - polyester powder paints according to RAL pallet		43501	43502	43504	43506	43508	
Net weight [kg]		97,2	100,0	107,5	111,2	114,1	
Unit volume [m ³]*		0,64	0,68	0,76	0,77	0,78	
Extension arms usage		WM (p. 106), WRK (p. 105)					
Concrete footing type		B-80					
Concrete footing code		311180					
Reinforcement basket type		Z-80					
Reinforcement basket code		311208					
Hot galvanized nut set		4014					
Base dimensions (side length/fixing hole spacing/thickness) [mm]		400/300/20					

* For orders more than 10 pcs stated volume may change according to packing

Acceptable luminaires and extension arms mass		40	90	40	90	40	90	40	90	40	90
Acceptable windage of luminaires and extension arms [m ²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	0,88	0,74	0,76	0,63	0,58	0,46	0,41	0,28	0,24	0,14
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,74	0,63	0,65	0,53	0,48	0,38	0,32	0,22	0,18	Magnolia
	II zone, II ground category 26 m/s, (93,6 km/h)	0,58	0,49	0,50	0,40	0,36	0,27	0,22	0,14	0,11	x
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,54	0,44	0,46	0,36	0,32	0,24	0,20	0,12	x	x

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories



MAL12.5-16





I. ALUMINIUM COLUMNS

Mast with reinforcement with Ø225 mm base diameter

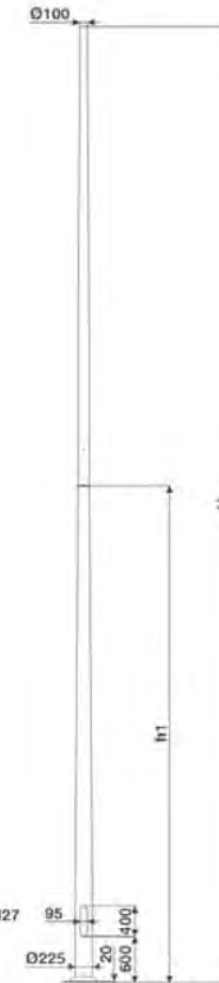
Aluminium light mast type		MAL-12,5 wzm	MAL-13 wzm	MAL-14 wzm	MAL-15 wzm	MAL-16 wzm
Height	total H [m]	12,5	13,0	14,0	15,0	16,0
	bottom part h ₁ + E [m]	6,5 + 0,45	7,0 + 0,45		8,0 + 0,45	
	upper part h ₂ [m]	6,0	6,0	6,0	7,0	8,0
Colour - anodizing method	C0 - natural colour	42551/C0	42552/C0	42554/C0	42556/C0	42558/C0
	C - electrochemical colouring	42551/C...	42552/C...	42554/C...	42556/C...	42558/C...
	CI - interference colouring	42551/CI...	42552/CI...	42554/CI...	42556/CI...	42558/CI...
Painting - polyester powder paints according to RAL pallet		43551	43552	43554	43556	43558
Net weight [kg]		97,2	110,9	118,5	122,2	125,1
Unit volume [m ³]*		0,64	0,68	0,76	0,77	0,78
Extension arms - usage		WM (p. 106), WRK (p. 105)				
Concrete footing type		B-80				
Concrete footing code		311180				
Reinforcement basket type				Z-80		
Reinforcement basket code				311208		
Hot galvanized nut set				4014		
Base dimensions (side length/fixing hole spacing/thickness) [mm]				400/300/20		

* For orders more than 10 pcs stated volume may change according to packing

Acceptable columns load

Acceptable luminaires and extension arms mass		100			90	
Acceptable windage of luminaires and extension arms [m ²] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	1,01	0,88	0,68	0,51	0,33
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,87	0,75	0,49	0,41	0,22
	II zone, II ground category 26 m/s, (93,6 km/h)	0,68	0,58	0,43	0,29	0,16
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,62	0,53	0,39	0,26	0,14

Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories



MAL12,5wzm-16wzm





I. ALUMINIUM COLUMNS

Masts with Ø225 mm base diameter with curved extension arms

Aluminium light mast type		MAL-12.5		MAL-13		MAL-14	
Extension arm type WŁ/x/y/z/a**		1/2,5/5,5/5	2/2,5/5,5/5	1/2,5/5,5/5	2/2,5/5,5/5	1/2,5/6,5/5	2/2,5/6,5/5
Height	total H [m]	12,0		13,0		14,0	
	bottom part h ₁ +E [m]	6,5+0,45		7,5+0,45		7,5+0,45	
	upper part h ₂ [m]	5,5		5,5		6,5	
Colour - anodizing method	C0 - natural colour	42509/C0	42510/C0	42511/C0	42512/C0	42513/C0	42514/C0
	C - electrochemical colouring	42509/C..	42510/C..	42511/C..	42512/C..	42513/C..	42514/C..
	CI - interference colouring	42509/CI..	42510/CI..	42511/CI..	42512/CI..	42513/CI..	42514/CI..
Painting - polyester powder paints according to RAL pallet		43509	43510	43511	43512	43513	43514
Net weight [kg]		99,8	113,5	105,5	119,5	109,0	123,5
Unit volume [m ³]*		0,84	0,94	0,85	0,98	0,96	1,16
Reinforcement basket type		Z-80					
Reinforcement basket code		311208					
Hot galvanized nut set		4014					
Base dimensions (side length/fixing hole spacing/thickness) [mm]		400/300/20					

* For orders more than 10 pcs stated volume may change according to packing

Acceptable columns load

Acceptable single luminaire mass [kg]		20		15		15	
Ground category		II				III	
Acceptable single luminaire windage [m ²] for C _z =1	I zone, 22 m/s, (79,2 km/h)	0,74	0,22	0,56	0,11	0,54	0,18
	I and III zone, For 450 m n.p.m. 24 m/s, (86,4 km/h)	0,61	0,16	0,44	Magnolia	0,42	0,11
	II zone, 26 m/s, (93,6 km/h)	0,45	Magnolia	0,32	x	0,28	x
	III zone, For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,40	x	0,28	x	0,24	x

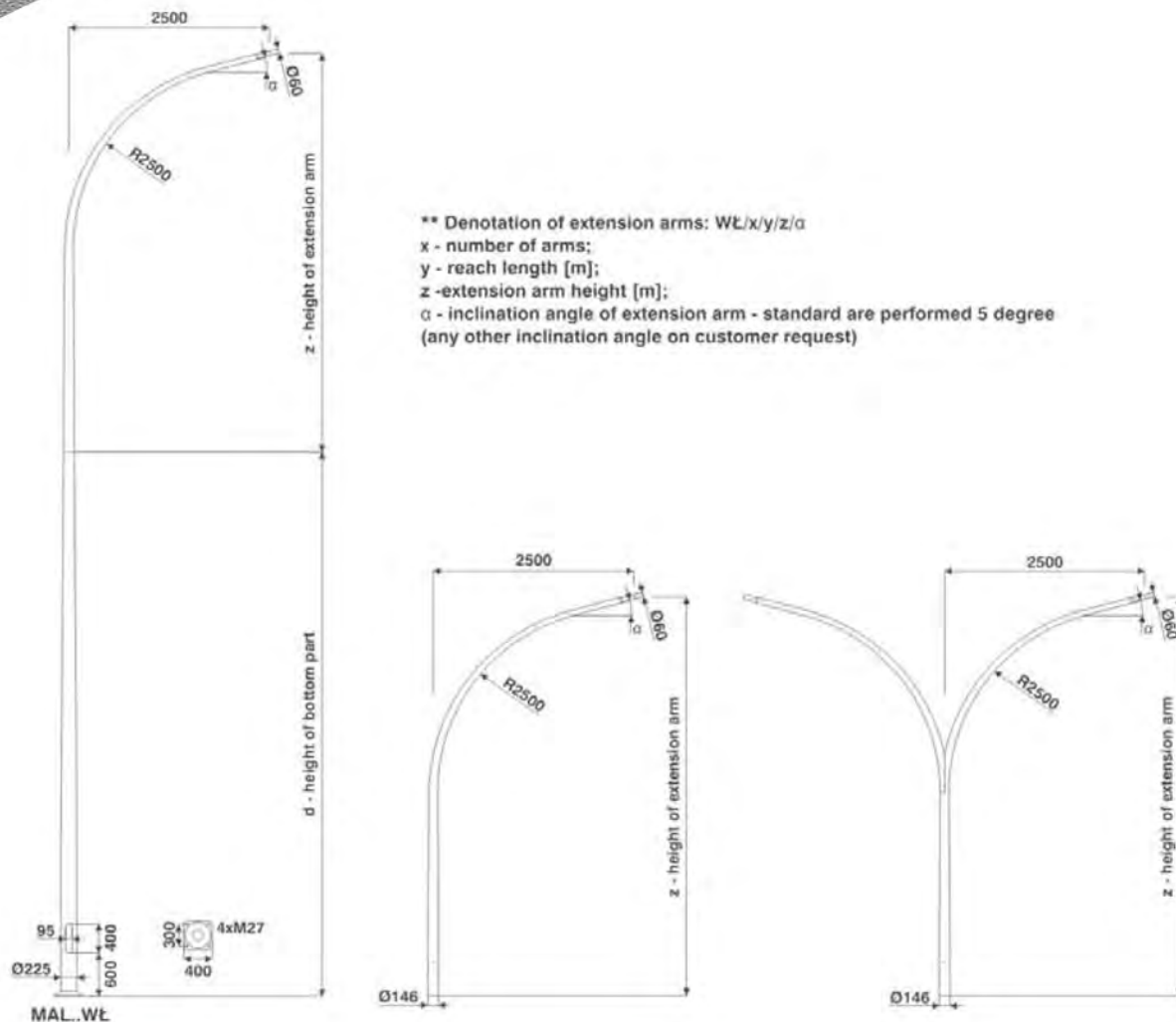
Specified arms and luminaires must always be checked against published column wind zone loadings and ground/location categories





I. ALUMINIUM COLUMNS

Masts with $\varnothing 225$ mm base diameter with curved extension arms





I. ALUMINIUM COLUMNS

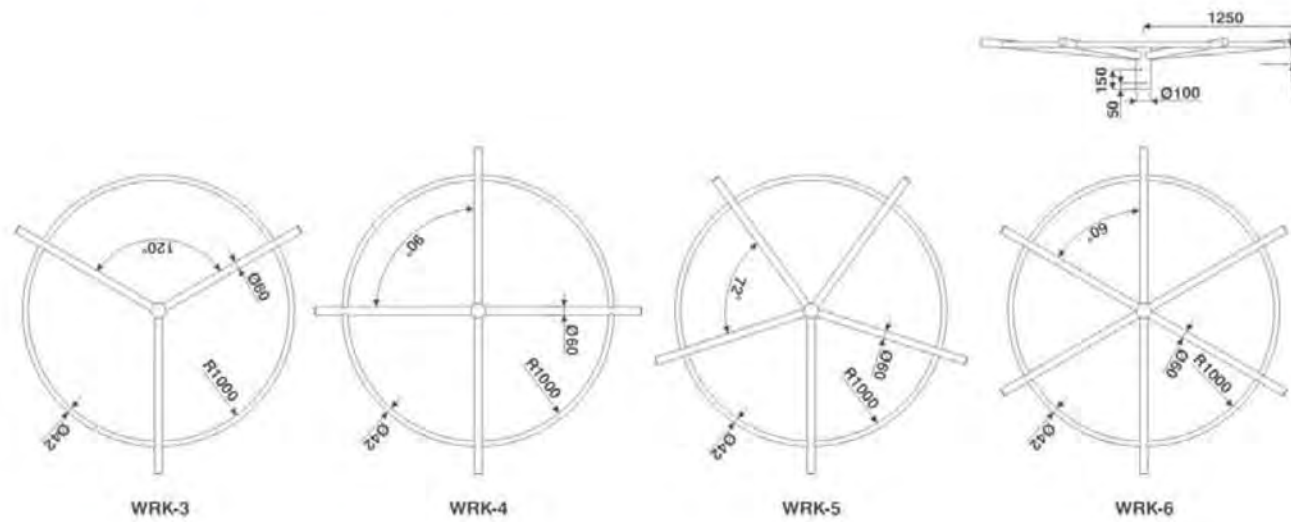
Extension arms WRK

Extension arm		WRK-3	WRK-4	WRK-5	WRK-6
Arm quantity		3	4	5	6
Colour - anodizing method	C0 - natural colour	475030/C0	475040/C0	475050/C0	475060/C0
	C - electrochemical colouring	475030/C..	475040/C..	475050/C..	475060/C..
	CI - interference colouring	475030/CI..	475040/CI..	475050/CI..	475060/CI..
Painted		485030	485040	485050	485060
Net weight [kg]		21,0	23,2	25,9	28,4
Extension arm windage [m ²]		0,23	0,26	0,25	0,27
Approximate unit volume [m ³]*		0,81	0,81	0,81	0,81
Extension arms assembling / Spigot ending column diameter		Ø100 (Masts type MAL)			
Luminaire usage		street lighting luminaires (p. 172)			

* For orders more than 10 pcs stated volume may change according to packing



WRK-5



WRK-3

WRK-4

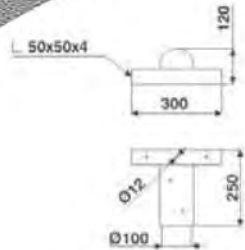
WRK-5

WRK-6

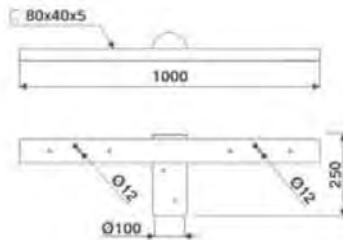




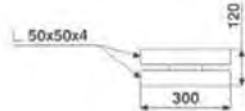
I. ALUMINIUM COLUMNS
Extension arms WM



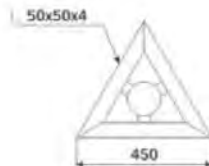
WM-1



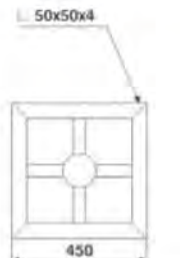
WM-21



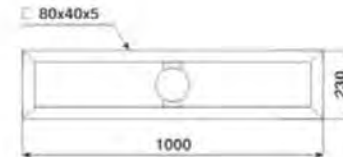
WM-2



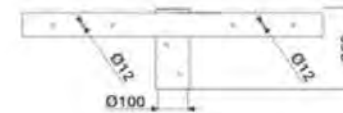
WM-3



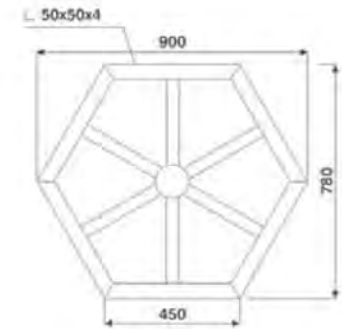
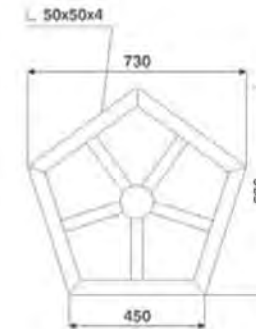
WM-4



WM-42



WM-5



WM-6

Extension arm		WM-1	WM-2	WM-21	WM-3	WM-4	WM-42	WM-5	WM-6
Projectors quantity		1	2	2	3	4	4	5	6
Colour -anodizing method	C0 - natural colour	474010/C0	474020/C0	474210/C0	474030/C0	474040/C0	474420/C0	474050/C0	474060/C0
	C - electrochemical colouring	474010/C..	474020/C..	474210/C..	474030/C..	474040/C..	474420/C..	474050/C..	474060/C..
	CI - interference colouring	474010/CI..	474020/CI..	474210/CI..	474030/CI..	474040/CI..	474420/CI..	474050/CI..	474060/CI..
Code									
Painting - polyester powder paints according to RAL pallet		484010	484020	484210	484030	484040	484420	484050	484060
Net weight [kg]		2,0	2,3	3,7	3,4	4,5	8,0	5,8	7,1
Extension arm windage [m ²]		0,03	0,03	0,06	0,03	0,03	0,06	0,05	0,06
Approximate unit volume [m ³]*		0,01	0,01	0,01	0,01	0,01	0,03	0,04	0,05
Extension arms assembling / Spigot ending column diameter		Ø100 (Masts MAL)							
Luminaire usage		Projectors (p. 180)							

* For orders more than 10 pcs stated volume may change according to packing





I. ALUMINIUM COLUMNS

LED Decorative finials

APPLICATION:

for aluminium columns with spigot endings Ø60 i Ø76.

TECHNICAL INFORMATION:

- protection degree: IP20,
- insulation class: II,
- voltage: 230 V AC,
- frequency: 50 Hz,
- material: polymethacrylate PMMA,
- lighted by LEDs available in four colours: blue, green, red and white,
- big shining spikes Ø76 contain system of three LEDs together with converging lens, small shining spikes and balls



LED Decorative finials		Big shining spike	Small shining spike		Shining ball	
Mounting diameter [mm]		Ø76	Ø60	Ø76	Ø60	Ø76
Code	Blue	4038	4034	4050	4030	4046
	Green	4039	4035	4051	4031	4047
	Red	4040	4036	4052	4032	4048
	White	4041	4037	4053	4033	4049
Net weight [kg]		2,0	0,5	0,5	0,4	0,4
Volume [m ³]		0,004	0,001	0,001	0,001	0,001





I. ALUMINIUM COLUMNS
LED Decorative finials



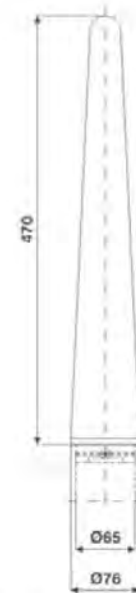
Big shining spike



Small shining spike



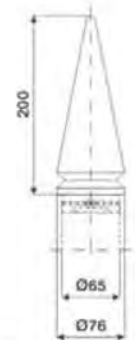
Shining ball



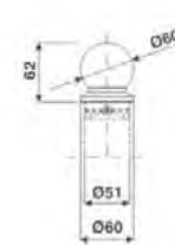
Big shining spike Ø76



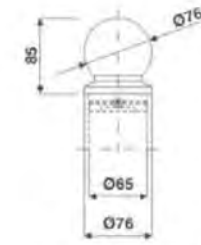
Small shining spike Ø60



Small shining spike Ø76



Shining ball Ø60



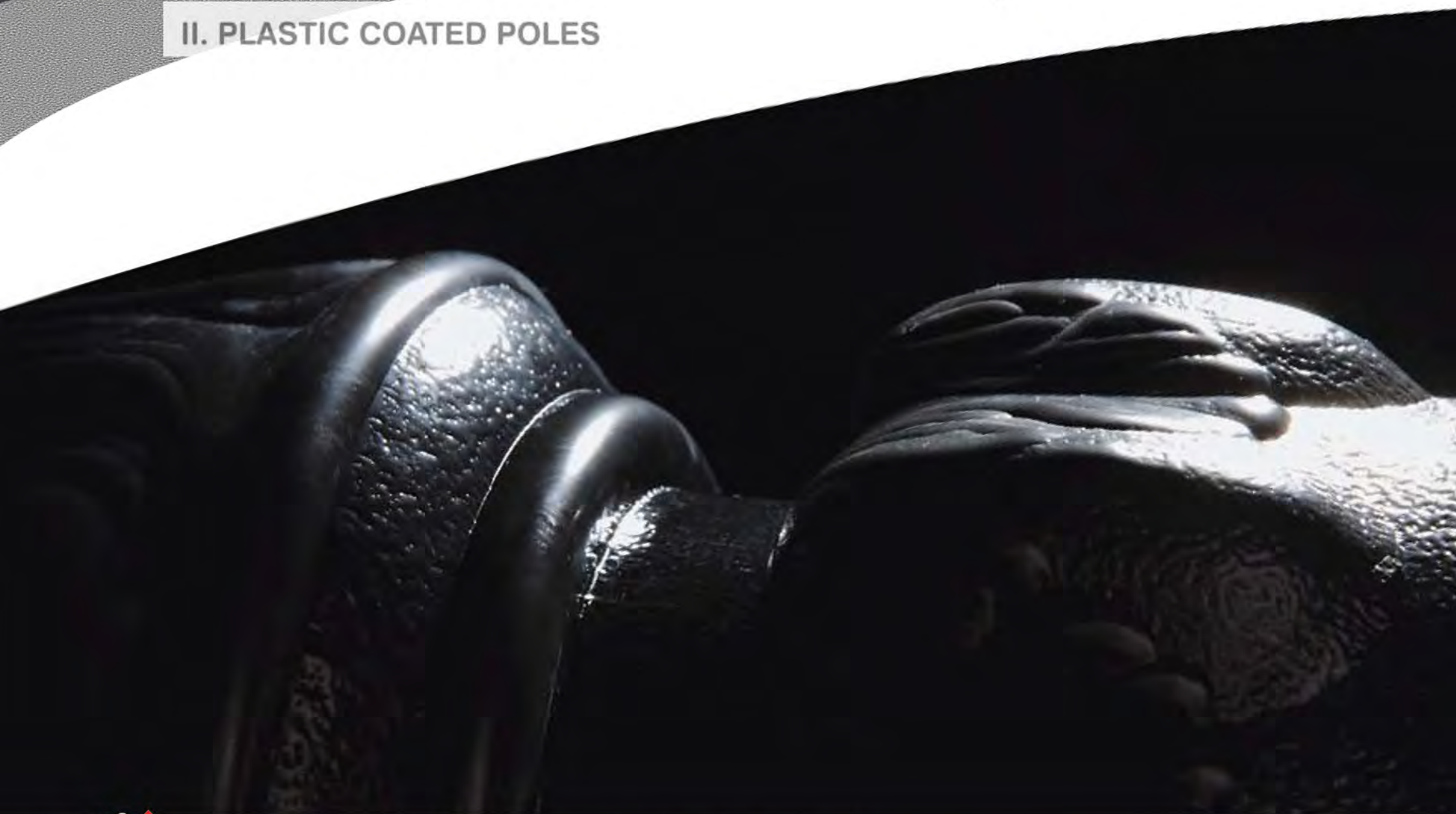
Shining ball Ø76





Aba-Szer Fémbútor Kft.

II. PLASTIC COATED POLES



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II. PLASTIC COATED POLES

2.1. General information

Pole construction

Plastic coated poles are constructed by combining steel, setting polyurethane foam and plastic. The stepped steel central core of the pole is welded to a reinforced steel plate. Plastic sections are placed on this steel construction. The base section is in injected copolymer PE, PP. Selected special plastic thermoformed decorative sections are interlocked along the steel core. Space between steel construction and external coating is filled with the self-extinguishing, setting polyurethane foam. The pole construction is specially designed to absorb the load created mostly by wind pressure.

Plastic coated poles are produced in three Basic versions:

- S – traditional,
- SP – classic,
- SM – composite.

Plastic coating is made in two versions:

- standard thermal resistance – poles can be used in countries where air temperature varies between -30°C to $+40^{\circ}\text{C}$,
- high thermal resistance - poles can be used in countries where air temperature is less than -30°C and exceeds $+40^{\circ}\text{C}$. specific care should be taken over black poles. The colour black directly absorbs heat and when being considered for use in hot climates manufacturers advise should be sought.

Higher thermal resistance poles are additionally marked with letter F.

S, SP poles as well SM are offered in two versions:

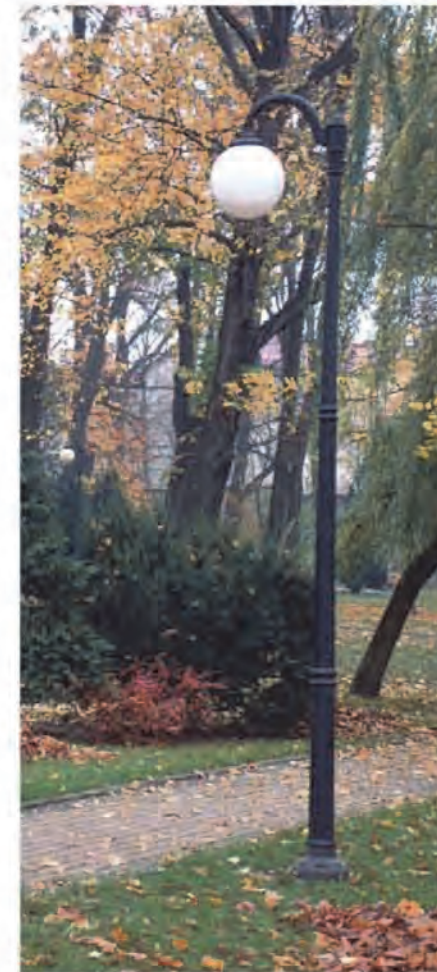
- with niche chamber for connection box additionally marked with letter W,
- without niche chamber.

Production technology allows the creation of products with the following features:

- corrosion resistance,
- light weight facilitates transport and mounting,
- aesthetic appearance,

- adverse weather conditions resistance,
- salt, ammonia and other caustic substance resistant,
- UV resistant,
- high mechanical qualities,
- suitable for every climatic zone, subject to above,
- low cost of maintenance.

Pole cross-section





II. PLASTIC COATED POLES

2.2. Niche chamber

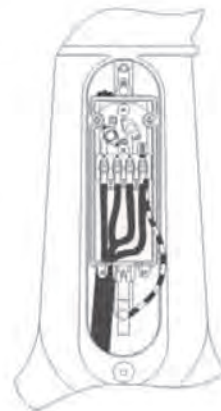
APPLICATION:
connection box installation.

TECHNICAL INFORMATION:

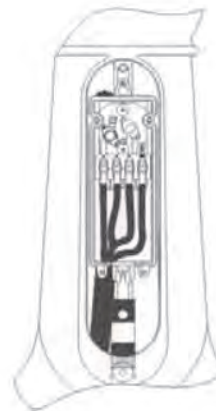
- pole with door: poles S, SP, SM marked with additional letter W,
- door location: lower pole section,
- connection box mounting: installed on rear wall mounted aluminium rail earth protection clamp can be mounted on rail, decorative plastic door in identical colour and surface quality,
- electrical connection:
 - TN lighting system (diagram 1) is complete with protective lead PE to every connection or neutral-protective lead PEN, and a galvanized M8 earthing bolt in lower section of wiring chamber,
 - for TT lighting system (diagram 2) the earth cable supplied through footing (according to network system) and connected with pole earthing clamp.

Assembly of lighting control gear (connection box,

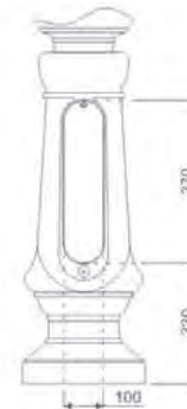
luminaires) should be installed in accordance with current fire protection regulations in electromagnetic equipment (voltage up 1 kV) and with manufacturers mounting instructions.



Draw 1. wiring chamber with connection box TB-1 (lighting system TN-C)



Draw 2. wiring chamber with connection box TB-1 (lighting system TT)



wiring chamber in poles S and SM



wiring chamber in pole SP





II. PLASTIC COATED POLES

2.3. POLES

2.3.1. Traditional poles type S

APPLICATION:

for illuminating old style streets, monuments, parks etc.

TECHNICAL INFORMATION:

- height: from 1,40 m to 5,28 m,
- spigot ending:
 - type „A” – arm system mounted,
 - type „B” – pole top mounted Ø60: OS-1, OP 400, OP 450,
 - type „D” – pole top mounted Ø76: OPC-1 Ø76,Attention: spigot ending is integral part of the pole
- pole base and footing:
 - Ø225 – footing B-20, reinforcement basket Z-20,
 - Ø300 – footing B-30, reinforcement basket Z-30 or footing B-40, reinforcement basket Z-40,
- kind:
 - without niche chamber or with niche chamber – marked with additional letter „W”,
- colour: black,
- material:
 - plastic coating in standard version,
 - plastic coating with high thermal resistance marked with letter „F” in code.





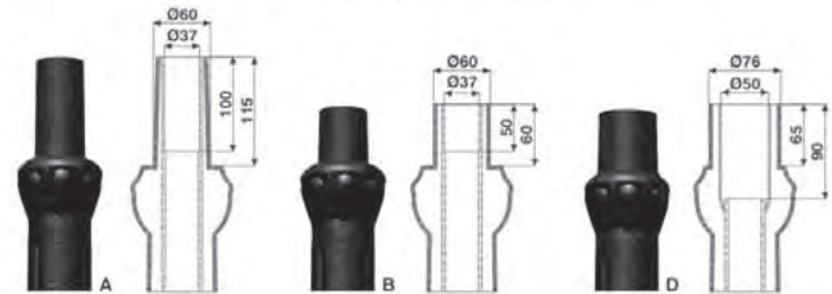
II. PLASTIC COATED POLES

2.3. POLES

2.3.1. Traditional poles type S



Variety of spigots allow top mounting of different kinds of luminaires and arm systems.



S type pole spigot intersections

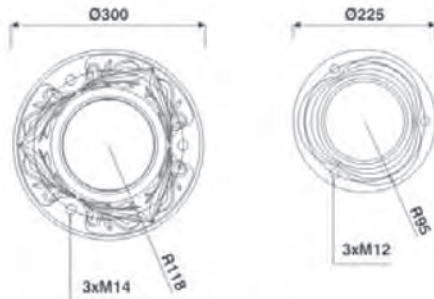




II. PLASTIC COATED POLES

2.3. POLES

2.3.1. Traditional poles type S



Pole base scheme

Pole		S-13	S-23	S-22	S-21W	S-21	S-30W	S-30	S-31W	S-31	S-32	S-40W	S-40	S-52W	S-52	S-54W	S-54
Height H [m]		1,40	2,65	2,09	2,05	2,05	2,76	2,76	3,32	3,32	3,35	4,03	4,03	4,73	4,73	5,28	5,28
Colour		black															
Spigot ending	A	Standard pole (code)															
	B	11310	12310	12210	12111	12110	13011	13010	13111	13110	13210	14011	14010	15211	15210	15411	15410
	D	11320	12320	12220	12121	12120	13021	13020	13121	13120	13220	14021	14020	15221	-	15421	-
Spigot ending	A	High thermal resistant pole (code)															
	B	11340	12340	12240	12141	12140	13041	13040	13141	13140	13240	14041	14040	15241	-	15441	-
	D	11310F	12310F	12210F	12111F	12110F	13011F	13010F	13111F	13110F	13210F	14011F	14010F	15211F	15210F	15411F	15410F
Net weight [kg]		11320F	12320F	12220F	12121F	12120F	13021F	13020F	13121F	13120F	13220F	14021F	14020F	15221F	-	15421F	-
Volume [m ³]*		11340F	12340F	12240F	12141F	12140F	13041F	13040F	13141F	13140F	13240F	14041F	14040F	15241F	-	15441F	-
Pole top mounted		"Pole spigot „B” – Ø60 – OS-1 (p. 140), OP 400 (p. 144), OP 450 (p. 144) Pole spigot „D” – Ø76 – OPC-1 Ø76 (p. 146)"															
Arm system mounted		Pole spigot „A” – Ø60 – arm system (p. 131) (for poles S-23, S-54, S-54W – max. allowed arm system „2")															
Footing		B-20 (p. 194)				B-30 (p. 194)				B-40 (p. 194)							
Footing code		311120				311130				311140							
Reinforcement basket		Z-20 (p. 194)				Z-30 (p. 194)				Z-40 (p. 194)							
Reinforcement basket code		311202				311203				311204							
Nut set code		311002								311003							

*For orders of more than 10 pcs stated volume may change according to packing

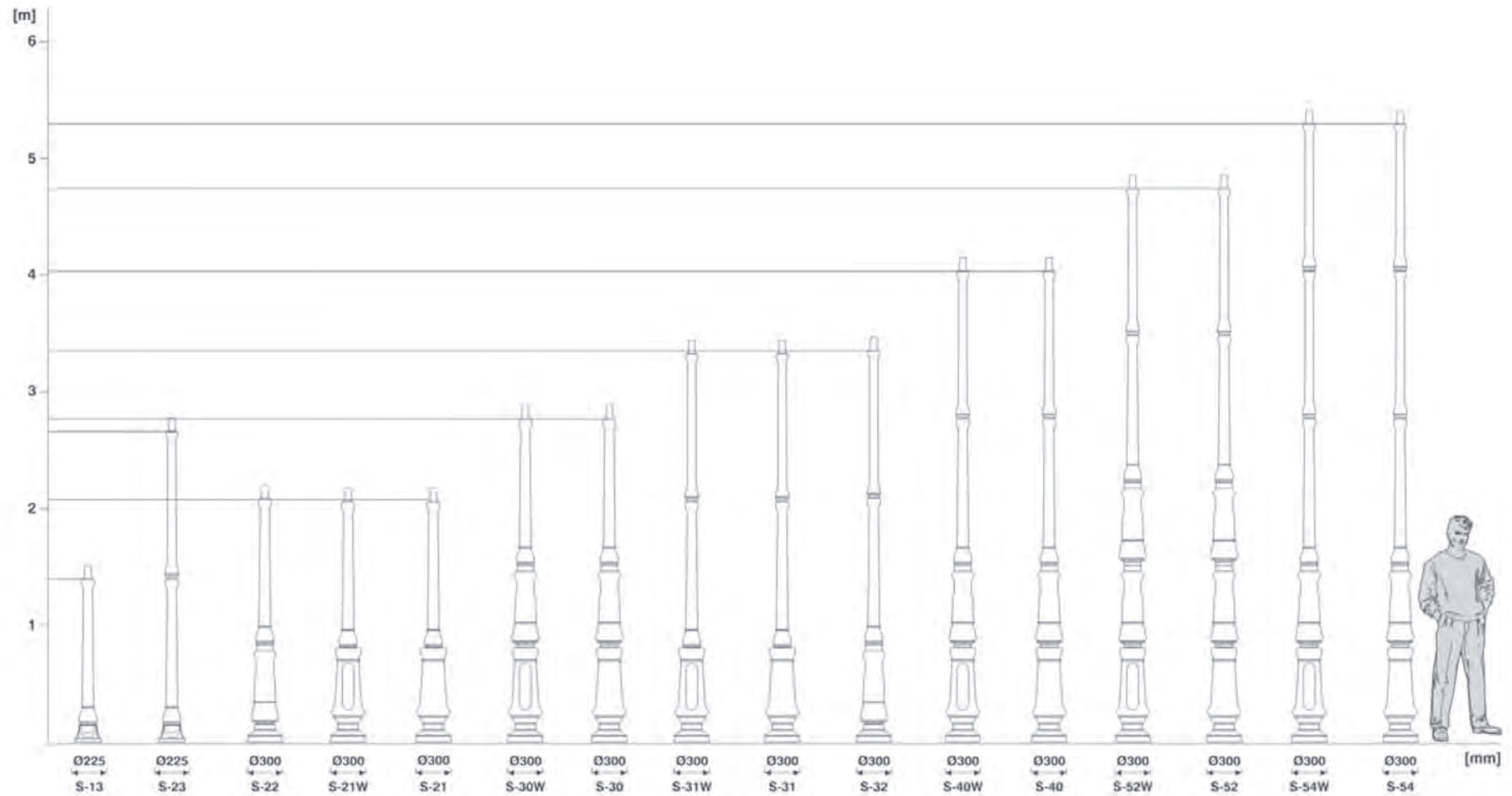




II. PLASTIC COATED POLES

2.3. POLES

2.3.1. Traditional poles type S





II. PLASTIC COATED POLES

2.3. POLES

2.3.1. Traditional poles type S



Pole adapted to assembly maximum two park luminaires

Pole S-54W/A, arm system 2 downwards, luminaire OP, diffusers Sphere transparent Ø450, stainless steel louvre reflector



5285

Pole S-52W/A, arm system 3 downwards, luminaire OP, diffusers Sphere smoked Ø450, stainless steel louvre reflector



4735

Pole S-40W/A, arm system 3+1 downwards, luminaire OP, diffusers Sphere white Ø400



4030

Pole S-32/A, arm system 2 downwards, luminaire OS-1, diffusers white



3355





II. PLASTIC COATED POLES

2.3. POLES

2.3.1. Traditional poles type S



Pole S-31W/A, arm system
3 upwards, luminaire OS-1,
diffusers transparent, stainless
steel
louvre reflector



Pole S-30/A, arm system
2+1 downwards, luminaire OP,
diffusers Sphere transparent
Ø400, stainless steel
louvre reflector



Pole S-23/B,
luminaire OS-1,
diffusers white

Because of small
size of footing
– maximum two
luminaires can
be mounted





II. PLASTIC COATED POLES

2.3. POLES

2.3.1. Traditional poles type S



Pole S-22/B, luminaire OP,
diffuser Amphore white
Ø400 with cap



2090



Pole S-21W/B,
luminaire OS-1,
diffusers white



2055



Pole S-13/B, luminaire OP,
diffusers Amphore
white Ø400



1400





II. PLASTIC COATED POLES

2.3. POLES

2.3.2 Classic poles type SP

APPLICATION:

for illuminating housing estates, streets, green areas, communications routes, modern business centres, etc.

TECHNICAL INFORMATION:

- height: from 2,88 m to 6 m
- spigot ending:
 - type „A” – in connection with extension arms WT, arm system type P,
 - type „B” – pole top mounted Ø60; OP 400, OP 450,
 - type „D” – pole top mounted Ø76; OPC-1 Ø76,
 - type „E” – in connection with extension arms WTM,

Attention: spigot ending is integral part of the pole

- pole base and footing:
 - Ø225 – footing B-20, reinforcement basket Z-20,
 - Ø300 – footing B-30, reinforcement basket Z-30 or footing B-40, reinforcement basket Z-40,
 - 400 mm x 400 mm – footing B-42, reinforcement basket Z-42,
- model:
 - without niche chamber or with niche chamber – marked with additional letter „W”,
- colour: white or black,
- black colour:
 - plastic coating in standard version,
 - plastic coating with high thermal resistance marked with letter „F” in code.





II. PLASTIC COATED POLES

2.3. POLES

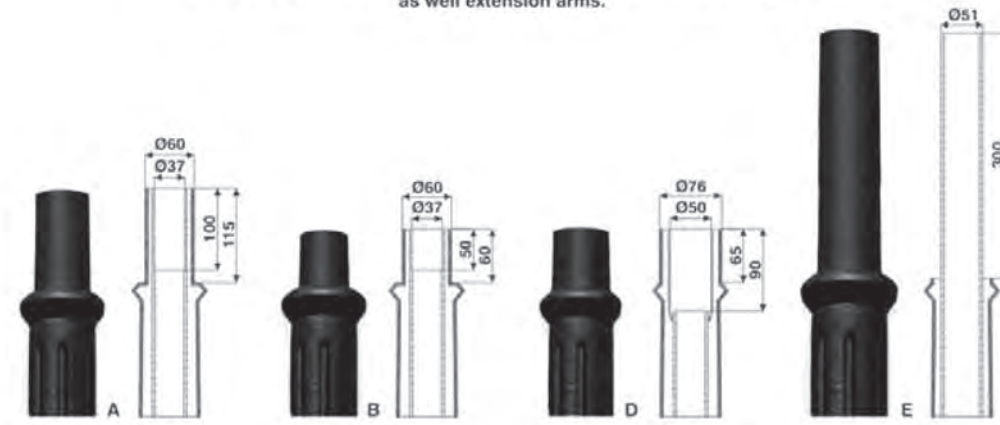
2.3.2 Classic poles type SP



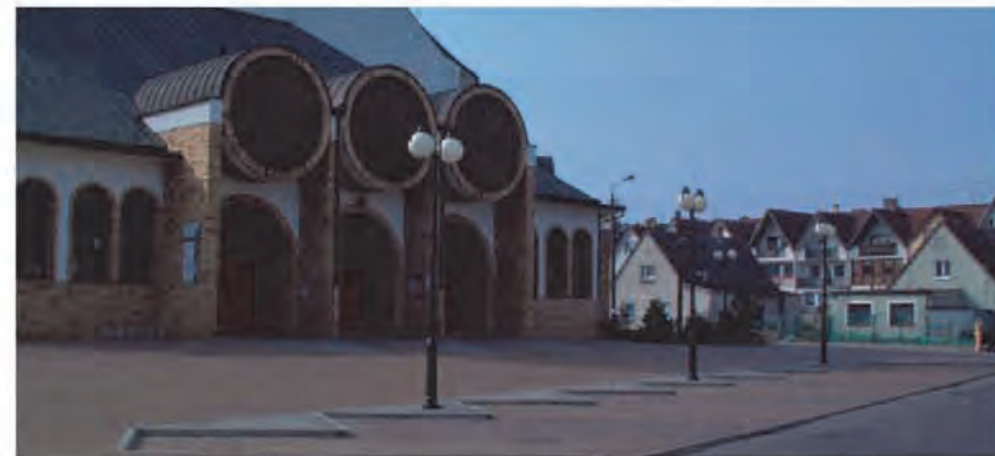
Pole view Cross-section Steel construction
Example of pole construction type SP-4W



Variety of spigots allow top mounting of different luminaires, arm system, as well extension arms.



SP type pole spigots intersections

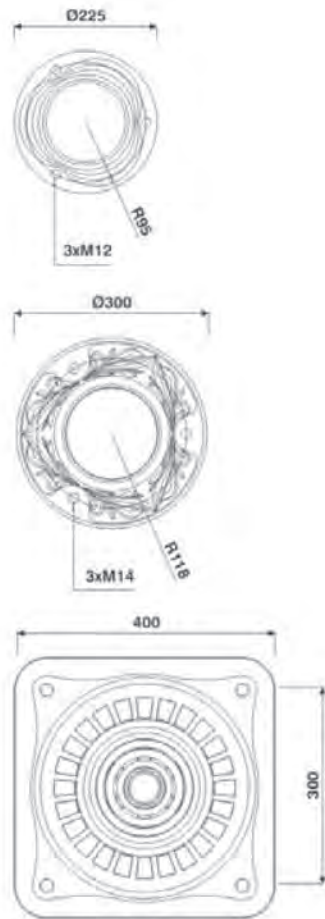




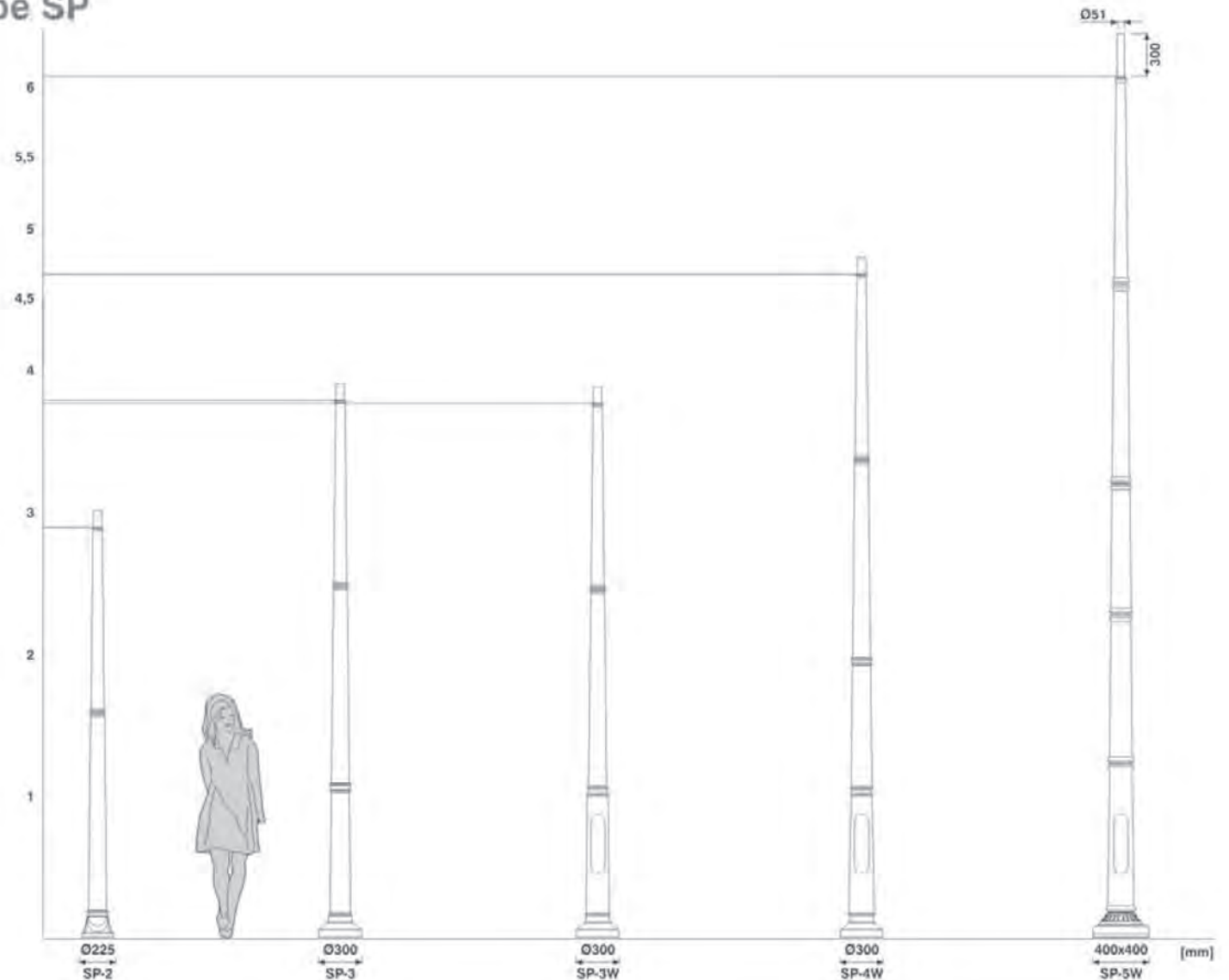
II. PLASTIC COATED POLES

2.3. POLES

2.3.2 Classic poles type SP



4xM18
Pole base scheme





II. PLASTIC COATED POLES

2.3. POLES

2.3.2 Classic poles type SP

Pole		SP-2		SP-3		SP-3W		SP-4W		SP-5W			
Height H [m]		2,88		3,77		3,74		4,65		6,00			
Colour		black	white	black	white	black	white	black	white	black	white		
Spigot ending	A	Standard pole (code)	17210	19210	17310	19310	17311	19311	17411	19411	-	-	
	B		17220	19220	17320	19320	17321	19321	17421	19421	-	-	
	D		17240	19240	17340	19340	17341	19341	17441	19441	-	-	
	E		-	-	17350	19350	17351	19351	17451	19451	17551	19551	
Spigot ending	A	High thermal resistant pole (code)	17210F	-	17310F	-	17311F	-	17411F	-	-	-	
	B		17220F	-	17320F	-	17321F	-	17421F	-	-	-	
	D		17240F	-	17340F	-	17341F	-	17441F	-	-	-	
	E		-	-	17350F	-	17351F	-	17451F	-	17551F	-	
Net weight [kg]	A, B, D	18,5		31,0		37,0		44,0		-			
	E	-		37,4		41,4		46,2		80,0			
Volume [m3]*	A, B, D	0,06		0,13		0,13		0,16		-			
	E	-		0,14		0,14		0,17		0,35			
Pole top mounted		Pole spigot "B" – Ø60 – OP 400 (p. 144), OP 450 (p. 144) Pole spigot "D" – Ø76 – OPC-1 Ø76 (p. 146)									-		
Arm system mounted		Pole spigot "A" – Ø60 – WT (p. 127) Pole spigot "E" – Ø51 – WTM (p. 129) except WTM-16									"E" – WTM (p. 129)		
Footing		Pole spigot "A" – Ø60 – arm system "P" (p. 132)											
Footing code		B-20 (p. 194)				B-40 (p. 194)				B-42 (p. 193)			
Reinforcement basket		311120				311140				311142			
Reinforcement basket code		Z-20 (p. 194)				Z-40 (p. 194)				Z-42 (p. 193)			
Reinforcement basket code		311202				311204				311242			
Nut set code		311002				311003				311004			

*For orders of more than 10 pcs stated volume may change according to packing





II. PLASTIC COATED POLES

2.3. POLES

2.3.2 Classic poles type SP



Pole SP-5W/E black,
extension arm
WTM-20/2, luminaires
OW, diffusers
Cone white Ø400



6000

Pole SP-4W/E black, extension arm
WTM-11/2, luminaires OP, diffusers
Sphere transparent Ø400, stainless
steel
louvre reflector



4645



Pole SP-3W/A black,
extension arm WT-5/2,
luminaires OPC-1, diffuser
Auris with painted cap



3735



Pole SP-2/A black, extension arm
WT-2, luminaires OP, diffuser
Sphere smoked Ø400, stainless
steel louvre reflector



2880





II. PLASTIC COATED POLES

2.3. POLES

2.3.3. Composite poles type SM

APPLICATION:

for illuminating old style streets, road with light traffic, parks and squares, etc.

TECHNICAL INFORMATION:

- height: from 4,44 m to 5,86 m,
- spigot ending: type „E” – in connection with extension arms WTM,
Attention: spigot ending is integral part of the pole.
- pole base and footing: Ø300 – footing B-40, reinforcement basket Z-40,
- kind: without niche chamber or with niche chamber – marked with additional letter „W”,
- colour: black,
- material:
 - plastic coating in standard version,
 - plastic coating with high thermal resistance marked with letter „F” in code.

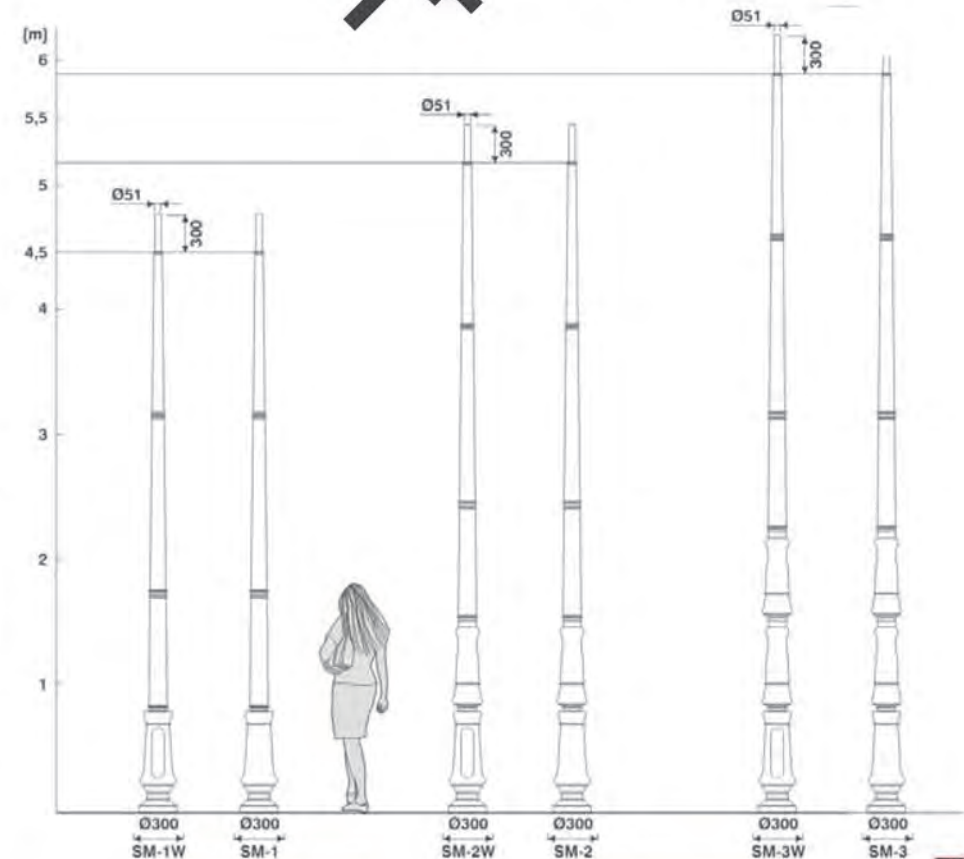




II. PLASTIC COATED POLES

2.3. POLES

2.3.3. Composite poles type SM



Pole	SM-1	SM-1W	SM-2	SM-2W	SM-3	SM-3W
Height H [m]	4,44	4,44	5,15	5,15	5,86	5,86
Colour	black					
Pole ending	E	Standard pole (code)				
		15550	15551	15650	15651	15750
Pole ending	E	High thermal resistance pole (code)				
		15550F	15551F	15650F	15651F	15750F
Net weight [kg]	53	52	68	67	75	74
Approximate volume [m ³]*	0,16	0,16	0,19	0,19	0,21	0,21
Arm usage	WTM-11, WTM-14, WTM-15, WTM-16, WTM-20 (p. 129)					
Footing	B-40 (p. 194)					
Footing code	311140					
Reinforcement basket	Z-40 (p. 194)					
Reinforcement basket code	311204					
Nut set code	311003					

*For orders of more than 10 pcs stated volume may change according to packing





II. PLASTIC COATED POLES

2.3. POLES

2.3.3. Composite poles type SM



Pole SM-3W/E, extension arm
WTM-15/2, street lighting luminaire
Magnolia, luminaire OP,
diffuser Sphere gold Ø400



5855



Pole SM-2W/E, extension arm WTM-16/2, luminaires
OW, diffusers Cone white Ø400



5150



Pole SM-1W/E, extension arm WTM-
20/1, luminaire OW,
diffuser Sphere white Ø450



4440





II. PLASTIC COATED POLES

2.4. Extension arms

2.4.1. Extension arms type WT

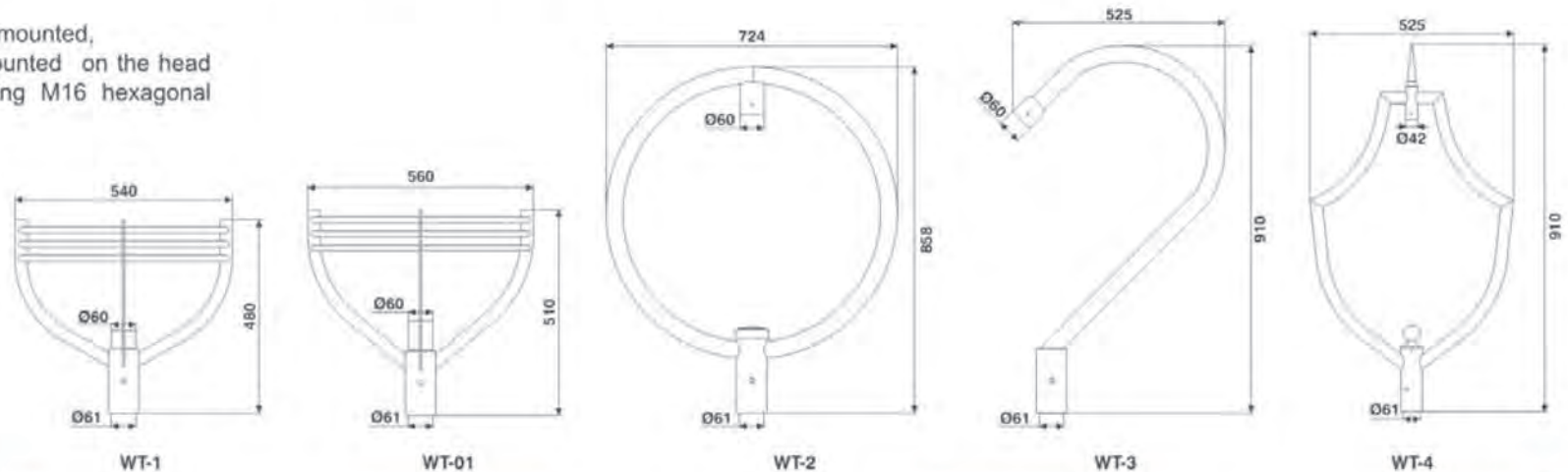
APPLICATION:

for mounted on poles type SP with spigot ending „A”.

TECHNICAL INFORMATION:

- number of brackets: 1 - 3,
- material: aluminium alloy,
- construction:
 - single-section – pole top mounted,
 - multi-section – arms mounted on the head through a connector using M16 hexagonal screw,

- painting: polyester powder paints,
- colour: black as standard, other RAL colours on request,
- spigot diameter: Ø60, except extension arm WT-4 spigot ending Ø42,
- assembling head diameter: internal 61 mm.



Arm/ bracket	WT-1	WT-01	WT-2	WT-3	WT-4
Standard colour-black	487011	487010	487020	487030	487040
Net weight [kg]	2,10	2,10	3,50	2,10	5,50
Pole spigot	0,06	0,06	0,03	0,01	0,07
Approximate volume [m ³]*	OP 400 (p. 144)	OPC-1 Ø60 diffuser max Ø450 (p. 146) OPA-1 diffuser max Ø450 (p. 148)	OP 400 (p. 144)	OP 400, OP 450 (p. 144)	OW diffuser max Ø400 (p. 152)

*For orders of more than 10 pcs stated volume may change according to packing

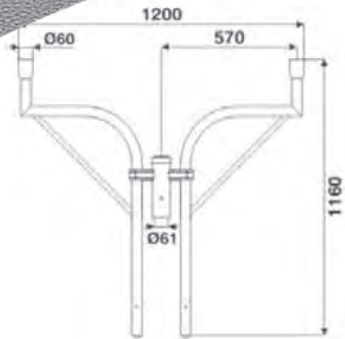




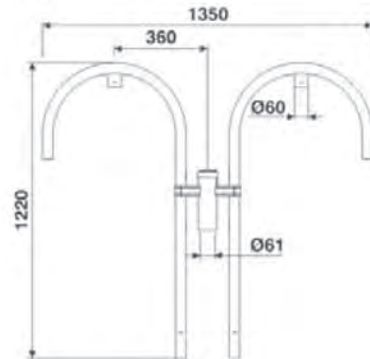
II. PLASTIC COATED POLES

2.4. Extension arms

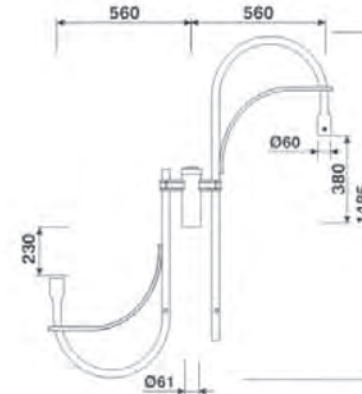
2.4.1. Extension arms type WT



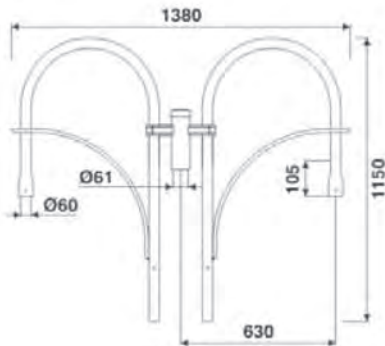
WT-5/2



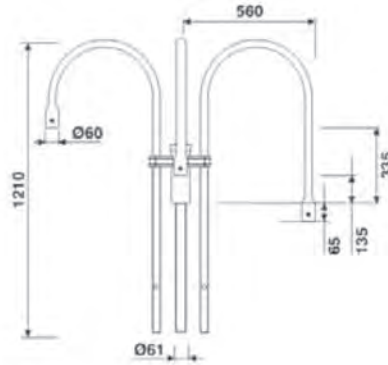
WT-8/2



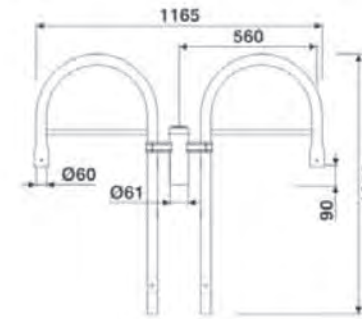
WT-9/2



WT-11/2



WT-12/3



WT-14/2



Arm	WT-5/1	WT-5/2	WT-5/3	WT-8/1	WT-8/2	WT-8/3	WT-9/2	WT-11/1	WT-11/2	WT-11/3	WT-12/3	WT-14/1	WT-14/2
Number of arms	I	II	III	I	II	III	II	I	II	III	III	I	II
Standard colour - black	487051	487052	487053	487081	487082	487083	487092	487111	487112	487113	487123	487141	487142
Net weight [kg]	3,90	5,90	7,90	4,10	6,40	8,70	4,80	4,40	7,00	9,60	9,20	4,00	6,10
Pole spigot	A												
Approximate volume [m ³]*	0,02	0,04	0,05	0,02	0,03	0,05	0,05	0,02	0,04	0,06	0,07	0,01	0,02
Luminaire	OPC-1 Ø60 (p. 146), OPA-1 (p. 148)			OP 400 (p. 144)				OP 400, OP 450 (p. 144)					

*For orders more than 10 pcs state volume may change according to packing

Attention: Due to the large dimensions multi-section arms are shipped disassembled packed in sets.





II. PLASTIC COATED POLES

2.4. Extension arms

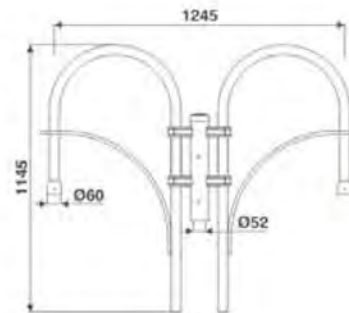
2.4.2. Extension arms type WTM

APPLICATION:

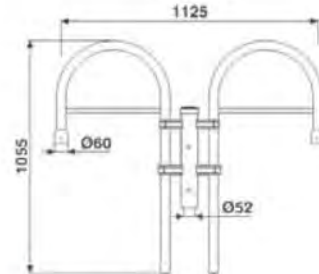
mounted on poles SM and SP with spigot ending „E”.

TECHNICAL INFORMATION:

- number of brackets: 1-3,
- material: aluminium alloy,
- construction:
 - multi-section – arms mounted on the head through a connector using M16 hexagonal screw,
- painting: polyester powder paints,
- colour: black as standard, other RAL colours on request,
- spigot diameter: Ø60 except extension arm WTM-16 and WTM-20 spigot ending Ø42,
- assembling head diameter: internal 52 mm.



WTM-11/2



WTM-14/2



Arm/bracket	WTM-11/1	WTM-11/2	WTM-14/1	WTM-14/2	WTM-14/3
Number of arms	I	II	I	II	III
Standard colour - black	486111	486112	486141	486142	486143
Net weight [kg]	6,55	10,35	6,05	9,35	12,65
Pole spigot	E				
Approximate volume [m ³]*	0,05	0,1	0,42	0,84	1,26
Luminaire	OP 400, OP 450 (p. 144)				

*For orders of more than 10 pcs stated volume may change according to packing

Attention: Due to the large dimensions multi-section arms are shipped disassembled packed in sets.

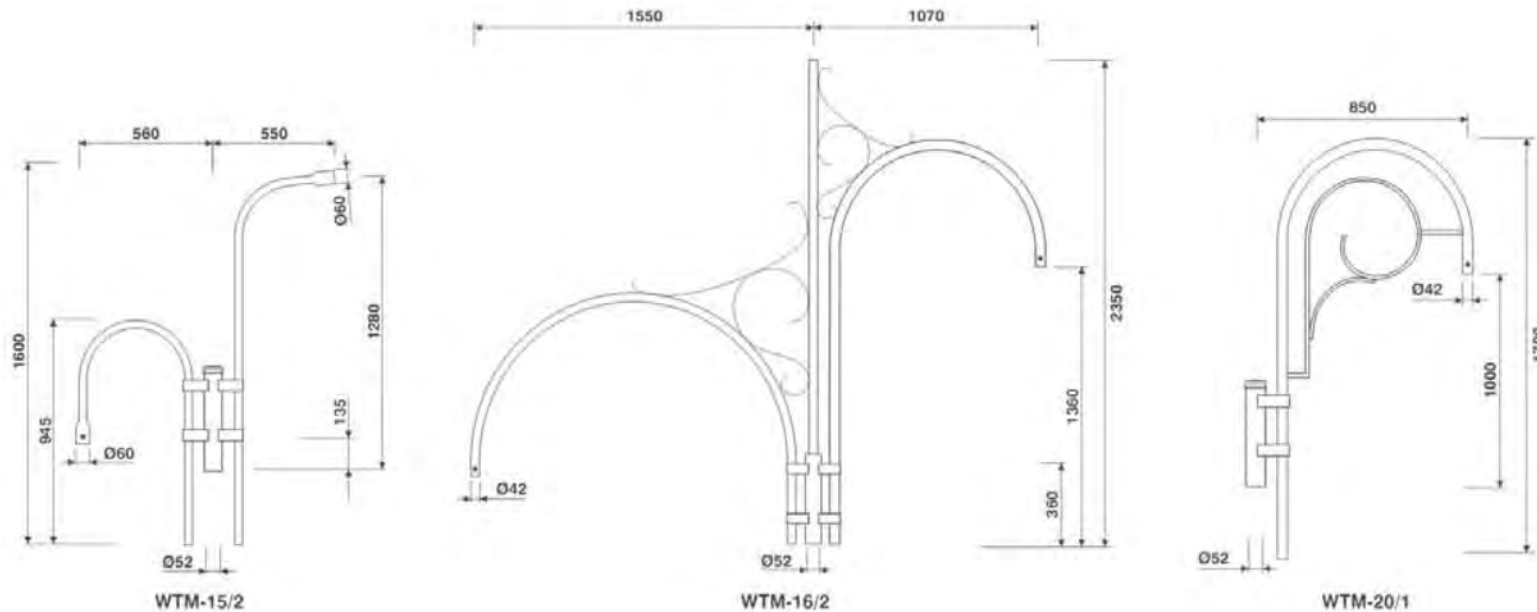




II. PLASTIC COATED POLES

2.4. Extension arms

2.4.2. Extension arms type WTM



Arm/bracket	WTM-15/2	WTM-16/2	WTM-20/1	WTM-20/2	WTM-20/3
Number of arms	II	II	I	II	III
Standard colour - black	486152	486162	486201	486202	486203
Net weight [kg]	8,05	11,7	6,55	10,35	14,15
Pole spigot	0,07	0,30	0,11	0,22	0,33
Approximate volume [m ³]*	OP 400, OP 450 (p. 144), Street lighting luminaires (p. 172)		OW (p. 152), OW-2 (p. 154), OPA (p. 150)		

Luminaire

*For orders of more than 10 pcs stated volume may change according to packing

Attention: Due to the large dimensions multi-section arms are shipped disassembled packed in sets.





II. PLASTIC COATED POLES

2.5. Arm systems

2.5.1. Arm system

APPLICATION:

Arms for mounting on S type poles with spigot ending „A”.

TECHNICAL INFORMATION:

- number of arms: 1 – 3, an additional luminaire may be mounted in the centre of arm system „2+1” i „3+1”.
- mounting: upwards or downwards.
- material: arm – steel tube reinforced plastic head (polypropylene), extended in plastic (polyamide).
- construction: arm connected to head by connecting socket.

- arm spigot: cylindrical sleeve Ø60 and 60 mm deep.
- luminaire: OS-1, OP 400, OP 450, OPC-1 Ø60 upwards only (max. luminaire weight 7 kg).
- colour: black.

ADVANTAGES:

- disassembled arm system allows for any arm configuration – arms set-up upwards or downwards.



spigot ending extension arm



Arm system 1 downwards



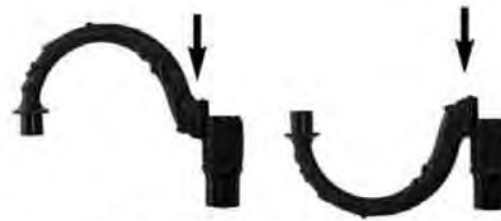
Arm system 2 downwards



Arm system 2 upwards and downwards



Arm system 2+1 upwards



Way of assembling arm system in head



Arm system 3 upwards



Arm system 3+1 upwards

Arm system	„1”	„2”	„2+1”	„3”	„3+1”
Code	331000	332000	332100	333000	333100
Net weight [kg]	3,14	5,34	5,90	7,90	8,30
Pole spigot SP	„A”				
Volume [m ³]	0,024	0,024	0,024	0,032	0,032
Luminaire usage	OS-1 (p. 140), OP 400, OP 450 (p. 144), OPC-1 Ø60 only upward mounting (p. 146)				





II. PLASTIC COATED POLES

2.5. Arm systems

2.5.2. Arm system P

APPLICATION:

for mounting on pole type SP with spigot ending „A”.

TECHNICAL INFORMATION:

- number of arms: 1 – 3, an additional luminaire may be mounted in the centre of arm system „2+1” i „3+1”.
- mounting: upwards or downwards,
- material: arm - plastic (polypropylene) reinforced by steel pipe, head, lengthening of head – plastic (polyamide),
- construction: arm connected with head with the help of socket to seat arms,
- arm spigot: cylindrical sleeve Ø60 and 65 mm deep,
- luminaire: OS-1, OP 400, OP 450, OPC-1 Ø60 upwards only (max. luminaire weight 7 kg),
- colour: black.

ADVANTAGES:

- purchase of disassembled arm system allows for any arm configuration – arms set-up up-wards or downwards



Arm system P1 upwards



Arm system P2 upwards



Arm system P2+1 upwards



Arm system P2 upwards and downwards



Arm system P3 upwards



Arm system P3+1 upwards



spigot ending extension arm



Way of assembling arm system P in head

Arm system "P"	P „1"	P „2"	P „2+1"	P „3"	P „3+1"
Code	341000	342000	342100	343000	343100
Net weight [kg]	3,26	5,56	5,70	7,60	8,00
Pole spigot SP	"A"				
Volume [m³]	0,024	0,024	0,024	0,032	0,032
Luminaire usage	OP 400, OP 450 (p. 144), OPC-1 Ø60 only upward mounting (p. 146)				





II. PLASTIC COATED POLES

2.6. Wall brackets KR and KP

Wall bracket KR

APPLICATION:

styled wall mounting bracket.

TECHNICAL INFORMATION:

- number of arms: 1,
- mounting: upwards or downwards,
- material: arm - steel tube reinforced plastic (polypropylene), holder - plastic (polyamide),
- construction: two sections – arm and holder mounted using three Ø8 fixings,
- arm spigot: cylindrical sleeve Ø60 and 60 mm deep,
- luminaire: OS-1, OP 400, OP 450 and luminaire OPC-1 Ø60 upwards only.



Wall bracket KR, luminaire OS-1

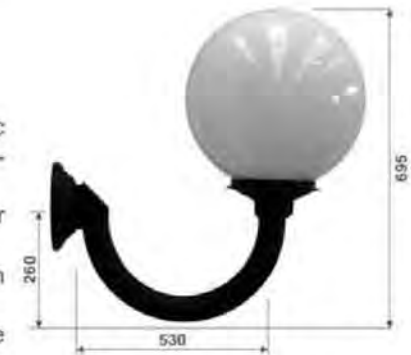
Wall bracket KP

DESTINATION:

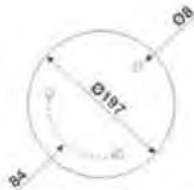
wall bracket with classic shape for mounting directly on the wall

TECHNICAL INFORMATION:

- number of arms: 1,
- mounting: upwards or downwards,
- material: arm – steel tube reinforced plastic (polypropylene), holder - plastic (polyamide),
- construction: two Section – arm and holder mounted using three Ø8 fixings,
- arm spigot: cylindrical sleeve Ø60 and 65 mm deep,
- luminaire: OS-1, OP 400, OP 450 and luminaire OPC-1 Ø60 upwards only.



Wall bracket KP, luminaire OP, lamp diffuser Sphere white Ø400



Scheme of wall bracket KR and KP holder



Wall bracket KR



Wall bracket KP

Wall bracket	KR	KP
Code	330100	340200
Weight [kg]	2,58	2,69
Volume [m ³]	0,032	
Luminaire	OP 400, OP 450 (p. 144); OPC-1 Ø60 only upward mounting (p. 146)	





II. PLASTIC COATED POLES





Aba-Szer Fémbútor Kft.

III. CONNECTION BOXES



Aba-Szer Fémbútor Kft. E-mail: aba.szer@gmail.com Web: <http://www.acekft.hu>

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III. CONNECTION BOXES

Connection box TB, NTB

APPLICATION:

To connect mains cables and electrical protection of street lighting luminaires mounted on columns and poles.

Can be used in all columns and poles, where internal diameter is greater than 95 mm.

TECHNICAL INFORMATION:

- protection degree: IP 54,
- insulation class II,
- voltage: 500V,
- current: 80A,
- fuse: D01/E14, 2-16A, 400V, AC
- material:
 - integrated terminal strip – made of PTB material (butylene polyterephthalate), with high insulation parameters and high mechanical resistance,
 - connection cover and clamp/cable protection – made of transparent poly-carbonate,
 - connection box base – made of poly-carbonate reinforced by fiberglass, cable opening/outlets are protected with gaskets,
- mounting: installed on the aluminium rail on the back wall of the column using two screws M6,
- casing dimensions: 267 mm x 90 mm x 74 mm.

ADVANTAGES:

- small dimensions,
- fast, easy mounting due to construction,
- all connection boxes can accept 3 cables,
- construction of terminal strip (open from the top) enables cable installation.



Connection box
Installed in
aluminium column



Connection box installed
In plastic coated pole





III. CONNECTION BOXES

Connection box TB

CHARACTERISTIC:

- connection box with 4 tracks for feeding cables with cross-section from 4 x 6 mm² up 4 x 35mm² (max. 3 cables),
- TB-1 – one fuse,
- TB-2 – two fuses.

In connection box TB-1 with fuse-socket installed on L1 phase, fuse-socket can be changed into L3 phase removing two bolts. This allows splitting of load into particular phases.



Connection box TB-1



Connection box TB-1
(view without upper cover)



fuse-sockets can be changed in
connection box TB-1



Type of fuse socket	Code	Weight [kg]
Fuse socket D01/E14 6A	322006	0,01
Fuse socket D01/E14 10A	322010	0,01
Fuse socket D01/E14 16A	322016	0,01

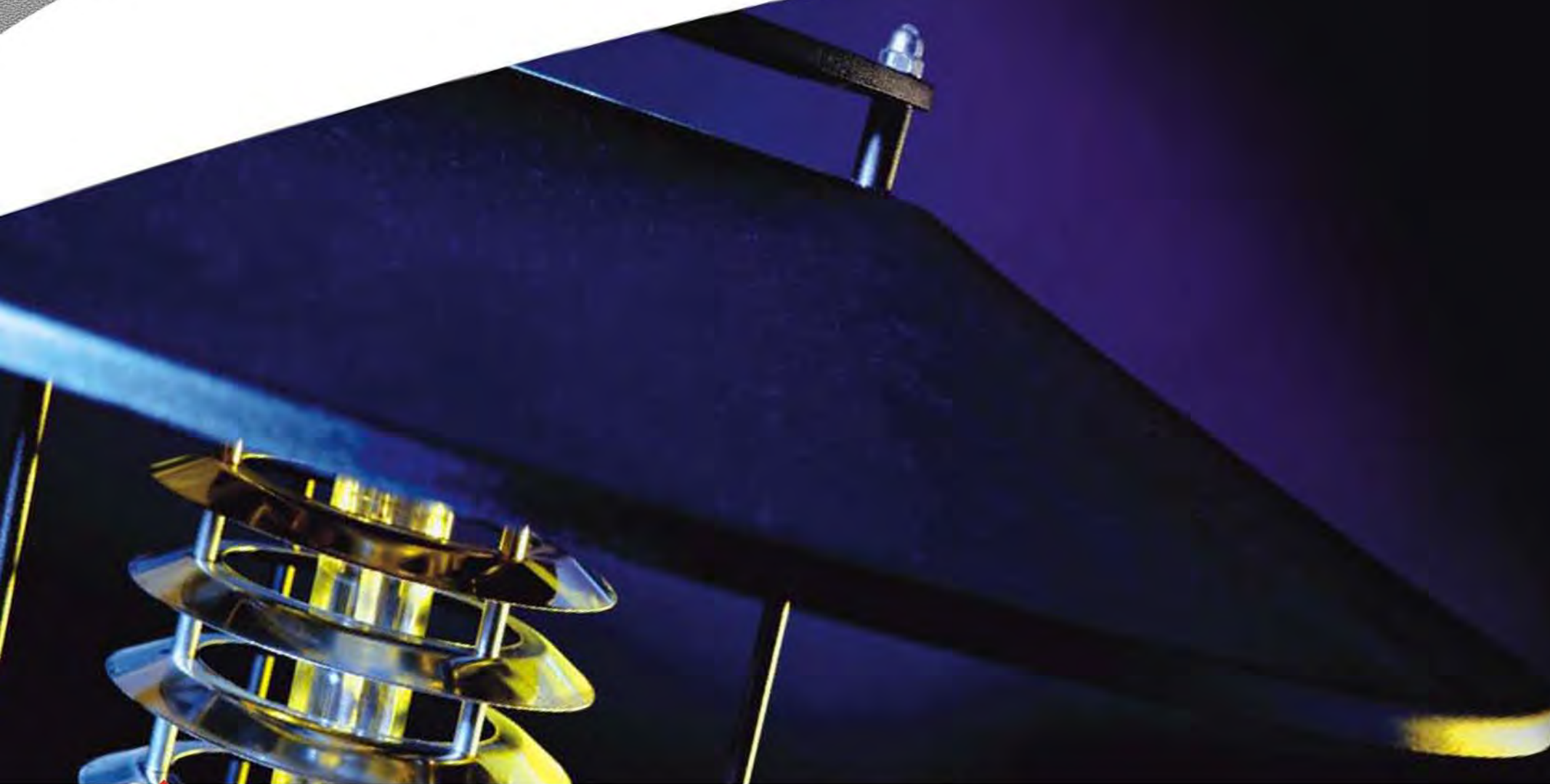
Type of connection box	Code	Weight [kg]
TB-1 with one fuse socket	324010	0,71
TB-2 with two fuse sockets	324020	0,74





Aba-Szer Fémbútor Kft.

IV. LIGHTING LUMINAIRES



Aba-Szer Fémbútor Kft. E-mail: aba.szer@gmail.com Web: <http://www.acekft.hu>

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IV. LIGHTING LUMINAIRES

OS-1 park luminaire C€

APPLICATION:

stylized, decorative and aesthetic outdoor lighting luminaire for parks, squares, avenues, communications routes, housing estates and heritage urban locations.

TECHNICAL INFORMATION:

- protection degree: IP 54,
- insulation class: I,
- voltage: 230 V, AC,
- frequency: 50 Hz,
- material: body – UV resistant polypropylene fibre glass, diffuser – polymethacrylate PMMA or polycarbonate PC in white or transparent,
- colour: black,
- mounting: pole top luminaire for upwards and downwards installation on pole type S with spigot B, on arms-systems, wall brackets type KR, lanterns, arm-systems and aluminum and steel wall brackets with spigot 60 mm deep, Ø60 mm,

- lamp holder: ceramic E-27,
- control gear: - mounted on plastic gear tray, magnetic ballast with thermal protection for luminaires 50 W+150 W, metal halide lamps 70 W(EL) optionally available with electronic ballast,
- lamps: high-pressure sodium, metal halide, mercury or compact fluorescent,
- accessory: stainless steel louvre reflector recommended for use in transparent.

ADVANTAGES:

- luminaire design reduces upward light emissions,
- possibility to install stainless steel louvre reflector for control of glare and upward light emissions,
- styled to be compatible with buildings in heritage locations.



OS-1 luminaire



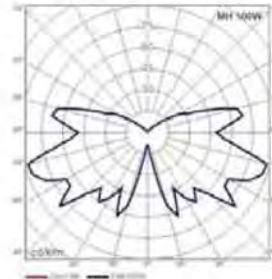


IV. LIGHTING LUMINAIRES

OS-1 park luminaire C€



OS-1 S-70W, white diffuser - photometric distribution curve



OS-1 MH-100 W, transparent diffuser with stainless steel louvre reflector - photometric distribution curve



Mounting on pole or arm-systems



Mounting on arm-systems

Mounting OS-1 luminaire



Ending

Cap

Gear frame with electromagnetic or electronic gear

Diffuser

Luminaire body

Luminaire type	Lamp diffuser white		Lamp diffuser transparent		Power [W]	Light source type / holder	Luminaire net weight [kg]	Unit volume [m ³]	Windage [m ²]	Diameter of fixing
	PC	PMMA	PC	PMMA						
	code									
OS-1 S-50W	211101	211001	211301	211201	50	Sodium E-27	5,2	0,10	0,15	ø60
OS-1 S-70W	211102	211002	211302	211202	70	Sodium E-27	5,4			
OS-1 MH-70W	211107	211007	211307	211207	70	Metal halide E-27	5,4			
OS-1 MH-70W EL	211120	211020	211320	211220	70	Metal halide E-27	4,2			
OS-1 MH-100W	211108	-	211308	-	100	Metal halide E-27	5,7			
OS-1 MH-150W	211109	-	211309	-	150	Metal halide E-27	6,3			
OS-1 R-125W	211113	211013	211313	211213	125	Mercury E-27	5,3			
OS-1 E/Z	211115	211015	211315	211215	23	Compact fluorescent lamp E-27	4,1			





IV. LIGHTING LUMINAIRES

OZ park luminaire CE

APPLICATION:

outdoor lighting luminaire for squares, precincts, gardens.

TECHNICAL INFORMATION:

- protection degree: IP 44,
- insulation class: II,
- voltage: 230 V, AC,
- frequency: 50 Hz,
- material: base - OZ400, OZ450 polyamide with glass fibre,
- colour: black,
- mounting: top entry mounting, upwards only,
- mounting: luminaire OZ-400 - pole top mounting upwards only on poles type S and SP with spigot B (special adaptation for this luminaire), bracket/extension arm mounting upwards – aluminium and steel wall brackets and aluminium extension arms with Ø60 mm diameter, spigot 55 mm deep luminaire OZ-450 - pole top mounting upwards only on poles type S and SP with spigot B (special adaptation for this luminaire), bracket/extension arm mounting upwards – aluminium and steel wall brackets and aluminium extension arms with Ø60 mm diameter, spigot 50 mm deep,

- diffuser: for luminaire OZ 400 diffusers, diameter 400 mm with 3 way Ø180 mm bayonet neck, for luminaire OZ 450 diffusers, diameter 450 mm with 3 way Ø200 mm bayonet neck,
- diffuser material: polymethacrylate PMMA in various colours, polycarbonate PC in various colours,
- lamp holder: ceramic E-27,
- lamps: compact fluorescent.

ADVANTAGES:

- fast and easy lamp change without the use of tools due to bayonet neck diffusers,
- possibility of using diffusers to eliminate upward light emissions,
- wide range of diffusers available in different shapes, colour, material and size,
- accepts compact lamps - economic option.



OZ 400 park luminaire with white Amphore 400



OZ 400 park luminaire with white Dalia 400





IV. LIGHTING LUMINAIRES

OZ park luminaire CE



Grip handle blocking feeder cable



Ceramic lamp holder E27

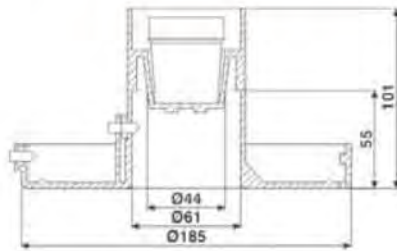
Clamping screw luminaire



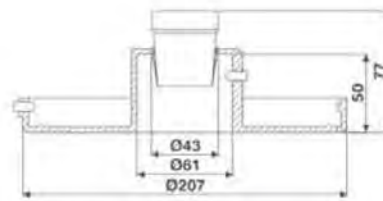
Ceramic lamp holder E27



OZ 400 park luminaire with white Klio 400



OZ 400 park luminaire



OZ 450 park luminaire

Luminaire type	Code	Power [W]	Light source type/holder	Luminaire net weight [kg]	Unit volume [m³]	Windage [m²]	Dimater of diffuser neck [mm]	Used diffuser type
OZ 400	211415	23	Compact fluorescent lamp E-27	0,35	0,0037	0,13	Ø180	Sphere Ø400, Amphore Ø400, Klio Ø400, Dalia Ø400
OZ 450	211515		Compact fluorescent lamp E-27	0,33	0,0034	0,16	Ø200	Sphere Ø450, Acorns Ø450





IV. LIGHTING LUMINAIRES

OP park luminaire CE

APPLICATION:

modern, decorative and aesthetic outdoor lighting luminaire for communications routes, parks, avenues, squares, car parks and housing estates.

TECHNICAL INFORMATION:

- protection degree: IP 65,
- insulation class: II,
- voltage: 230V, AC,
- frequency: 50 Hz,
- material: base - polyamide, control gear cover - polycarbonate,
- colour: black,
- mounting: pole top mounting upwards on poles type S and SP with spigot B, bracket/extension arm mounting upwards and downwards, aluminium and steel wall brackets and aluminium extension arms with spigot $\text{Ø}60$ mm and 45 mm deep,
- diffuser: for luminaire OP 400 diffusers with different shapes, diameter 400 mm with 3 way $\text{Ø}180$ mm bayonet neck, for luminaire OP 450 diffusers with different shapes, diameter 450 mm with 3 way $\text{Ø}200$ mm bayonet neck,
- diffuser material: polymethacrylate PMMA in various colours, polycarbonate PC in various colours,

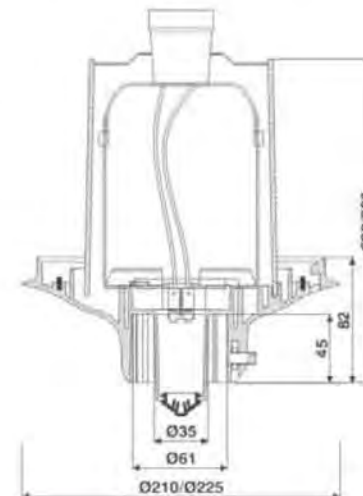
- lamp holder: ceramic E-27, E-40,
- control gear: mounted on universal gear frame, magnetic ballast with thermal protection for luminaire 50 W + 150 W, metal halide lamps 70 W(EL) optionally available with electronic ballast,
- lamps: high-pressure sodium, metal halide, mercury or compact fluorescent,
- accessory: stainless steel louvre reflector recommended for use in transparent, smoked and gold diffusers.

ADVANTAGES:

- fast, easy access to control gear due to gear frame mounting. Assembling and disassembling without the use of tools,
- fast and easy lamp change without the use of tools due to bayonet neck diffusers,
- possibility of using half painted bowl diffuser to eliminate upward light emissions,
- possibility to install stainless steel louvre reflector for glare elimination and upward light emissions,
- wide range of diffusers available in different shapes, colour, material and size.



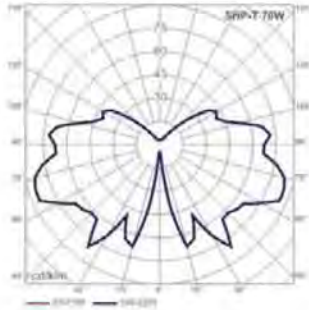
OP park luminaire



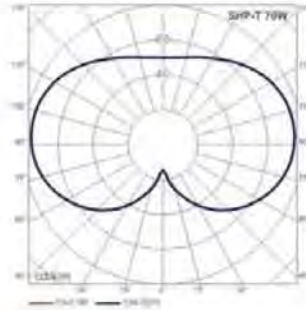


IV. LIGHTING LUMINAIRES

OP park luminaire CE



OP S-70W/400 with transparent sphere and small stainless steel louvre reflector - photometric distribution curve



OP S-70W/400 with white Amphore diffuser photometric distribution curve



OP park luminaire with transparent diffuser and small stainless steel louvre reflector



OP park luminaire with white Amphore diffuser



« Small stainless steel louvre reflector



« Lamp



« Cover (PC)



« Universal gear frame with electromagnetic or electronic gear



« Luminaire base (PA)

Luminaire type	Code		Power [W]	Light source type/holder	Luminaire net weight [kg]		Unit volume [m ³]	Windage [m ²] 400/450	Diameter of diffuser neck 400/450	Used diffuser type	
	Lamp diffuser diameter				Lamp diffuser diameter					Diffuser diameter	
	400	450			400	450				400	450
OP S-50W	210101	-	50	Sodium E-27	2,12	-	0,01	0,14/0,17	Ø180/Ø200	Sphere Ø400, Amphore Ø400, Klio Ø400, Dalia Ø400	Sphere Ø450, Acorns Ø450
OP S-70W	210102	210202	70	Sodium E-27	2,40	2,68					
OP S-100W	210103	210203	100	Sodium E-40	2,60	2,88					
OP S-150W	-	210204	150	Sodium E-40	-	3,55					
OP MH-70W	210107	210207	70	Metal halide E-27	2,39	2,66					
OP MH-70W EL	210120	210220	70	Metal halide E-27	1,10	1,40					
OP MH-100W	210108	210208	100	Metal halide E-27	2,57	2,84					
OP MH-150W	-	210209	150	Metal halide E-27	-	3,53					
OP R-80W	210112	-	80	Mercury E-27	1,92	-					
OP R-125W	210113	210213	125	Mercury E-27	2,10	2,38					
OP E/Z	210115	210215	23	Compact fluorescent lamp E-27	1,00	1,28					





IV. LIGHTING LUMINAIRES

OPC-1 park luminaire CE

APPLICATION:

modern, decorative and aesthetic outdoor lighting luminaire for communications routes, parks, avenues, squares, car parks and housing estates.

TECHNICAL INFORMATION:

- protection degree: IP 65,
- insulation class: II,
- voltage: 230 V, AC,
- frequency: 50 Hz,
- material: base – polycarbonate, control gear cover-polycarbonate,
- colour: black,
- mounting: top entry mounting, upwards only,
- mounting: luminaire OPC-1 Ø60 for mounting on aluminium column, arm-systems, aluminium and steel wall brackets with Ø60 mm diameter and 75 mm deep, luminaire OPC-1 Ø76 for mounting on poles type S and SP with ending D, on the aluminium column with Ø76 mm diameter and 75 mm deep,
- diffuser: diffusers with different shapes and diameters from 300 mm to 500 mm with Ø150 mm 4 way bayonet neck,
- diffuser material: polymethacryle PMMA in various colours, polycarbonate PC in various colours, polycarbonate PC-UV resistance on UV in various colours,

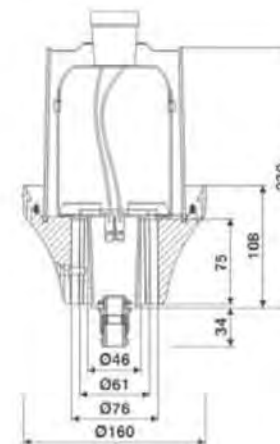
- lamp holder: ceramic E-27, E-40,
- control gear: mounted on universal gear frame, magnetic ballast with thermal protection for luminaires 50 W + 150 W, metal halide lamps 70W(EL) optionally available with electronic ballast,
- lamps: high-pressure sodium, metal halide, mercury or compact fluorescent,
- accessory: stainless steel louvre reflector recommended for use in transparent, smoked and gold diffusers.

ADVANTAGES:

- fast, easy access to control gear due to gear frame mounting. Assembling and disassembling without the use of tools,
- fast and easy lamp change without the use of tools due to bayonet neck diffusers,
- possibility of using half painted bowl diffuser to eliminate upward light emissions,
- possibility to install stainless steel louvre reflector for control of glare and upward light emissions,
- wide range of diffusers available in different shapes, colour, material and size.



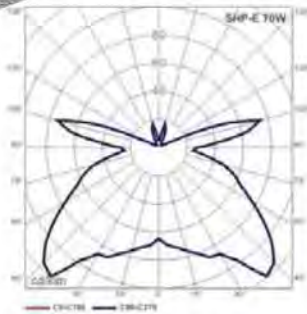
OPC-1 park luminaire





IV. LIGHTING LUMINAIRES

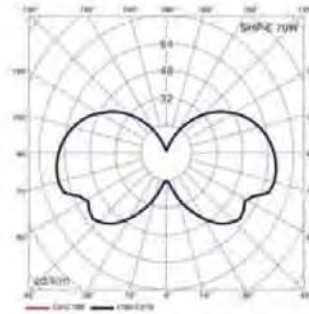
OPC-1 park luminaire €€



OPC-1 S-70W, Auris with painted cap - photometric distribution curve



OPC-1 luminaire with Auris and painted cap



OPC-1 S-70W, white Balloon with painted top - photometric distribution curve



OPC-1 luminaire, white Balloon with painted top



Small stainless steel louvre reflector



Lamp



Cover (PC)



Universal gear frame with electromagnetic or electronic gear



Aluminium body of luminaire

Luminaire type	Luminaire diameter Ø60	Luminaire diameter Ø76	Power [W]	Light source type/holder	Luminaire Ø60 net weight [kg]	Luminaire Ø76 net weight [kg]	Unit Volume [m³]	Windage [m²]	Diameter of diffuser neck [mm]	Used diffuser type
	Code									
OPC-1 S-50W	210301	210401	50	Sodium E-27	2,24	2,22	0,01	0,21	Ø150	Auris Normal and Maxi, Atlantis, Balloon Ø300, Tulip Ø400, Sphere Ø400-500, Kiara Ø360
OPC-1 S-70W	210302	210402	70	Sodium E-27	2,52	2,5				
OPC-1 S-100W	210303	210403	100	Sodium E-40	2,72	2,7				
OPC-1 S-150W	210304	210404	150	Sodium E-40	3,39	3,37				
OPC-1 MH-70W	210307	210407	70	Metal halide E-27	2,5	2,48				Auris Normal and Maxi, Atlantis, Balloon Ø300, Tulip Ø400, Sphere Ø400-500, Kiara Ø360
OPC-1 MH 70W	210320	210420	70	Metal halide E-27	1,2	1,2				
OPC-1 MH-100W	210308	210408	100	Metal halide E-27	2,69	2,66				
OPC-1 MH-150W	210309	210409	150	Metal halide E-27	3,37	3,35				
OPC-1 R-80W	210213	210413	125	Mercury E-27	2,22	2,2				Auris Normal and Maxi, Atlantis, Balloon Ø300, Tulip Ø400, Sphere Ø400-500, Kiara Ø360
OPC-1 R-125W	210215	210415	23	Compact fluorescent lamp E-27	1,12	1,1				
OPC-1 E/Z										





IV. LIGHTING LUMINAIRES

OPA-1 park luminaire CE

APPLICATION:

outdoor lighting luminaire for parks, squares, avenues, communications routes, car parks and housing estates.

TECHNICAL INFORMATION:

- protection degree: IP 65,
- insulation class: II,
- voltage: 230 V, AC,
- frequency: 50 Hz,
- material: base – die cast aluminum-alloy, control gear cover- polycarbonate,
- painting: polyester powder paints,
- colour: black as standard, other RAL colours on request,
- mounting: top entry mounting, upwards only, on arms and aluminium and steel wall brackets with Ø60 diameter mm and 50 mm deep,
- diffuser: diffusers with different shapes and diameters from 300 mm to 500 mm with Ø150 mm 4 way bayonet neck,
- diffuser material: polymethacryle PMMA in various colours, polycarbonate PC in various colours, polycarbonate PC-UV resistance on UV in various colours,
- lamp holder: ceramic E-27, E-40,

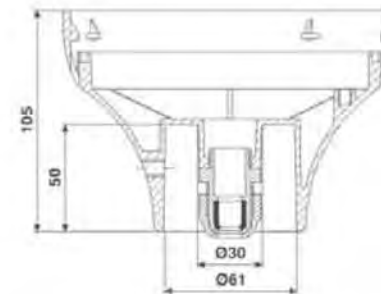
- control gear: mounted on universal gear frame, magnetic ballast with thermal protection for luminaires 50 W + 150 W, metal halide lamps 70 W(EL) optionally available with electronic ballast,
- lamps: high-pressure sodium, metal halide, mercury or compact fluorescent,
- accessory: stainless steel louvre reflector recommended for use in transparent, smoked and gold diffusers.

ADVANTAGES:

- fast, easy access to control gear due to gear frame mounting. Assembling and disassembling without the use of tools,
- fast and easy lamp change without the use of tools due to bayonet neck diffusers,
- possibility of using half painted bowl diffuser to eliminate upward light emissions,
- possibility to install stainless steel louvre reflector for control of glare and upward light emissions,
- wide range of diffusers available in different shapes, colour, material and size,
- possibility to paint in any RAL colour matching pole.



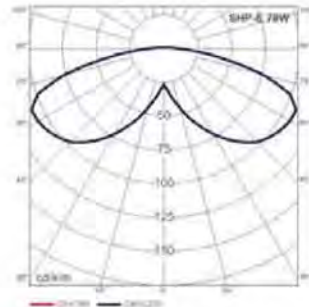
OPA-1 park luminaire



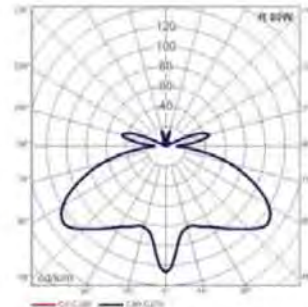


IV. LIGHTING LUMINAIRES

OPA-1 park luminaire CE



OPA-1 S-70W with painted sphere 400 - photometric distribution curve



OPA-1 R-80W with Auris Maxi and painted cap - photometric distribution curve



OPA-1 luminaire with painted sphere 400



OPA-1 luminaire with Auris Maxi and painted cap



Small stainless steel louvre reflector



Lamp



Cover (PC)



Universal gear frame with electromagnetic or electronic gear



Luminaire base (PA)

Luminaire type	Unpainted	Painted - black	Painted - other colour	Power [W]	Light source type/holder	Luminaire net weight [kg]	Unit Volume [m ³]	Windage [m ²]	Diameter of diffuser neck [mm]	Type / diameter of diffuser
	Code									
OPA-1 S-70W	211702	211802	212702	70	Sodium E-27	2,85	0,01	0,21	Ø150	Auris Normal and Maxi, Atlantis, Balloon Ø300, Tulip Ø400, Sphere Ø400-500, Kiara Ø360
OPA-1 S-100W	211703	211803	212703	100	Sodium E-40	3,05				
OPA-1 S-150W	211704	211804	212704	150	Sodium E-40	3,71				Auris Maxi, Atlantis, Sphere Ø450-500
OPA-1 MH-70W	211707	211807	212707	70	Metal halide E-27	2,83				
OPA-1 MH-70W	211720	211820	212720	70	Metal halide E-27	1,30				Auris Normal and Maxi, Atlantis, Balloon Ø300, Tulip Ø400, Sphere Ø400-500, Kiara Ø360
OPA-1 MH-100W	211708	211808	212708	100	Metal halide E-27	3,01				
OPA-1 MH-100W	211709	211809	212709	150	Metal halide E-27	3,70				Auris Maxi, Atlantis, Sphere Ø450-500
OPA-1 MH-150W	211713	211813	212713	125	Mercury E-27	2,55				
OPA-1 R-125W	211715	211815	212715	23	Compact fluorescent lamp E-27	1,10				Auris Normal and Maxi, Atlantis, Balloon Ø300, Tulip Ø400, Sphere Ø400-500, Kiara Ø360
OPA-1 E/Z										





IV. LIGHTING LUMINAIRES

OPA park luminaire CE

APPLICATION:

outdoor lighting luminaire for parks, squares, avenues, communications routes, car parks and housing estates.

TECHNICAL INFORMATION:

- protection degree: IP 65,
- insulation class: II,
- voltage: 230 V, AC,
- frequency: 50 Hz,
- material: base – die cast aluminum-alloy, control gear cover- polycarbonate,
- painting: polyester powder paints,
- colour: black as standard, other RAL colours on request,
- mounting: top entry mounting, downwards only, from arms and aluminium and steel wall brackets with $\text{Ø}42$ mm diameter and 50 mm deep,
- diffuser: diffusers with different shapes and diameters from 300 mm to 500 mm with $\text{Ø}150$ mm 4 way bayonet neck,
- diffuser material: polymethacryle PMMA in various colours, polycarbonate PC in various colours, polycarbonate PC-UV resistance on UV in various colours,

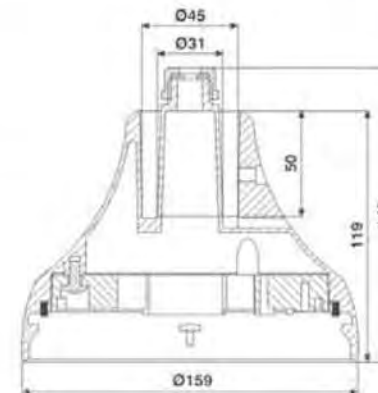
- lamp holder: ceramic E-27, E-40,
- control gear: mounted on universal gear frame, magnetic ballast with thermal protection for luminaires 50 W + 150 W, metal halide lamps 70 W(EL) optionally available with electronic ballast,
- lamps: high-pressure sodium, metal halide, mercury or compact fluorescent,
- accessory: stainless steel louvre reflector recommended for use in transparent, smoked and gold diffusers.

ADVANTAGES:

- fast, easy access to control gear due to gear frame mounting. Assembling and disassembling without the use of tools,
- fast and easy lamp change without the use of tools due to bayonet neck diffusers,
- possibility of using half painted bowl diffuser to eliminate upward light emissions,
- possibility to install stainless steel louvre reflector for control of glare and upward light emissions,
- wide range of diffusers available in different shapes, colour, material and size,
- possibility to paint in any RAL colour matching pole.



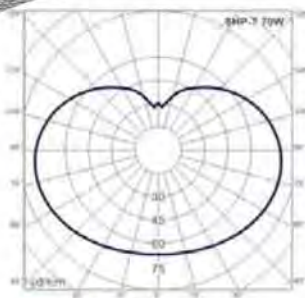
OPA park luminaire





IV. LIGHTING LUMINAIRES

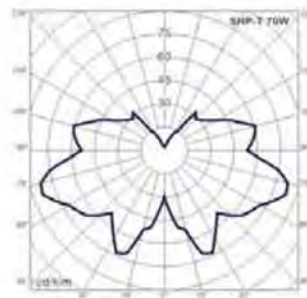
OPA park luminaire $\text{C}\epsilon$



OPA S-70W with white sphere 450 - photometric distribution curve



OPA luminaire with white sphere 450



OPA S-70W with transparent sphere 400 and small stainless steel downward louvre reflector



OPA luminaire with transparent sphere 400 and small stainless steel downward louvre reflector



Aluminium body of luminaire



Universal gear frame with electromagnetic or electronic gear



Cover (PC)



Lamp



Small stainless steel louvre reflector

Luminaire type	Unpainted	Painted - black	Painted - other colour	Power [W]	Light source type/holder	Luminaire net weight [kg]	Unit Volume [m ³]	Windage [m ²]	Diameter of diffuser neck [mm]	Type / diameter of diffuser
	Code									
OPA S-50W	210501	210601	212601	50	Sodium E-27	2,57	0,01	0,21	Ø150	Sphere Ø400-500, Cone Ø300-400
OPA S-70W	210502	210602	212602	70	Sodium E-27	2,85				Sphere Ø400-500, Cone Ø400
OPA S-100W	210503	210603	212603	100	Sodium E-40	3,05				Sphere Ø450-500, Cone Ø400
OPA S-150W	210504	210604	212604	150	Sodium E-40	3,71				Sphere Ø400-500, Cone Ø300-400
OPA MH-70W	210507	210607	212607	70	Metal halide E-27	2,83				Sphere Ø400-500, Cone Ø400
OPA MH-70W EL	210520	210620	212620	70	Metal halide E-27	1,30				Sphere Ø450-500, Cone Ø400
OPA MH-100W	210508	210608	212608	100	Metal halide E-27	3,01				Sphere Ø400-500, Cone Ø400
OPA MH-150W	210509	210609	212609	150	Metal halide E-27	3,70				Sphere Ø450-500, Cone Ø400
OPA R-125W	210513	210613	212613	125	Mercury E-27	2,55				Sphere Ø400-500, Cone Ø400
OPA E/Z	210515	210615	212615	23	Compact fluorescent lamp E-27	1,10				Sphere Ø400-500, Cone Ø300-400





IV. LIGHTING LUMINAIRES

OW park luminaire CE

APPLICATION:

modern, decorative and aesthetic outdoor lighting luminaire for parks, squares, walkways, communication routes, housing areas and heritage urban locations.

TECHNICAL INFORMATION:

- protection degree: IP 65,
- insulation class: II,
- voltage: 230 V, AC,
- frequency: 50 Hz,
- material: base - die cast aluminium alloy, cover - polyamide, cap - formed aluminium sheet,
- painting: polyester powder paint,
- colour: black as standard, other RAL colours on request,
- mounting: top entry mounting, downwards only on aluminium extension arms, wall brackets and steel brackets with spigot $\text{Ø}42$ mm, 40 mm deep, and on a special connection WA-0, designed to mount luminaires on catenary wires above roads, cross roads, tramways etc.
- diffuser: Cones 300 mm and 400 mm, Spheres 400 mm and 450 mm, diffuser with 4 way 150 mm bayonet neck,
- diffuser material: polymethacryle PMMA in various colours, polycarbonate PC in various colours, polycarbonate PC-UV resistance on UV in various colours,

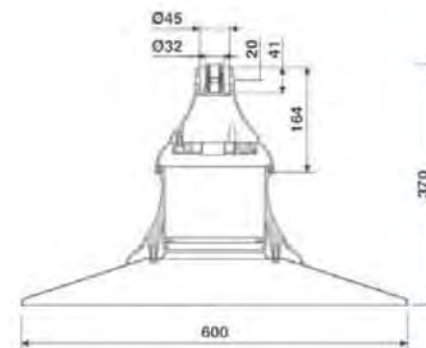
- lamp holder: ceramic E-27, E-40 in plastic,
- control gear: mounted on universal gear frame, magnetic ballast with thermal protection for luminaires 50 W + 150 W, metal halide lamps 70 W(EL) optionally available with electronic ballast,
- lamps: high-pressure sodium, metal halide, mercury or compact fluorescent,
- accessory: stainless steel louvre reflector recommended for use in transparent, smoked and gold diffusers.

ADVANTAGES:

- fast, easy access to control gear due to gear frame mounting. Assembling and disassembling without the use of tools,
- possibility to install stainless steel louvre reflector for control of glare and upward light emissions,
- wide range of diffusers available in different shapes, colour, material and size,
- possibility to paint in any RAL colour matching pole.



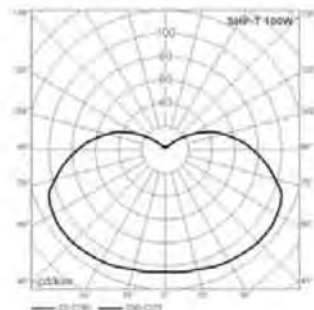
OW park luminaire





IV. LIGHTING LUMINAIRES

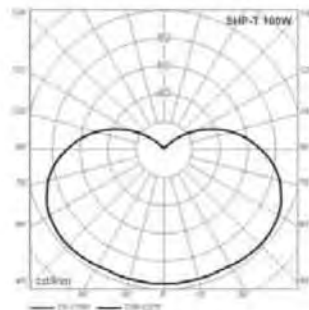
OW park luminaire CE



OW S-100W with white cone
- photometric distribution curve



OW park luminaire
with white cone



OW S-100W with white sphere
- photometric distribution curve



OW park luminaire
with white sphere



Luminaire type	Painted black	Painted other colour	Power [W]	Light source type/holder	Luminaire net weight [kg]	Unit volume [m ³]	Windage [m ²]	Diameter of diffuser neck [mm]	Diffuser diameter
	Code								
OW S-50W	210901	212101	50	Sodium E-27	4,3	0,06	0,21	Ø150	Sphere Ø400-450, Cone Ø300-400
OW S-70W	210902	212102	70	Sodium E-27	4,6				
OW S-100W	210903	212103	100	Sodium E-40	4,9				Sphere Ø400-450, Cone Ø400
OW S-150W	210904	212104	150	Sodium E-40	5,5				
OW MH-70W	210907	212107	70	Metal halide E-27	4,6				Sphere Ø400-450, Cone Ø300-400
OW MH-70W EL	210920	212120	70	Metal halide E-27	3,1				
OW MH-100W	210908	212108	100	Metal halide E-27	4,8				Sphere Ø400-450, Cone Ø400
OW MH-150W	210909	212109	150	Metal halide E-27	5,4				
OW R-125W	210913	212113	125	Mercury E-27	4,4				Sphere Ø400-450, Cone Ø400
OW E/Z	210915	212115	23	Compact fluorescent lamp E-27	3,2				Sphere Ø400-450, Cone Ø300-400





IV. LIGHTING LUMINAIRES

OW-2 park luminaire CE

APPLICATION:

modern, decorative and aesthetic outdoor lighting luminaire for parks, squares, walkways, communication routes, housing areas and heritage urban locations.

TECHNICAL INFORMATION:

- protection degree: IP 65,
- insulation class: II,
- voltage: 230 V, AC,
- frequency: 50 Hz,
- material: base – pressed aluminium sheet, control gear cover - polycarbonate,
- painting: polyester powder paint,
- colour: black as standard, other RAL colours on request,
- mounting: top entry mounting, downwards only on aluminium extension arms, wall brackets and steel brackets with spigot $\text{Ø}42$ mm, 30 mm deep, and on a special connection WA-0, designed to mount luminaires on catenary wires above roads, cross roads, tramways etc.
- diffuser: Cones 300 mm and 400 mm, Spheres diffuser with 4 way 150 mm bayonet neck,

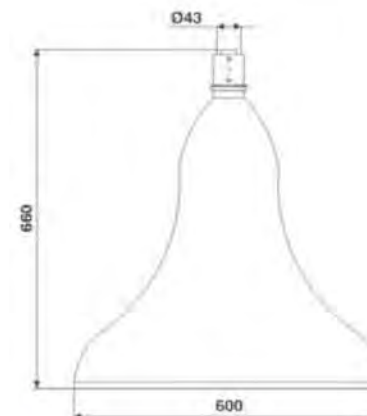
- diffuser material: polymethacryle PMMA in various colours, polycarbonate PC in various colours,
- lamp holder: ceramic E-27, E-40,
- control gear: mounted on universal gear frame, magnetic ballast with thermal protection for luminaires 50 W + 150 W, metal halide lamps 70 W(EL) optionally available with electronic ballast,
- lamps: high-pressure sodium, metal halide, mercury or compact fluorescent,
- accessory: stainless steel louvre reflector recommended for use in transparent, smoked and gold diffusers.

ADVANTAGES:

- fast, easy access to control gear due to gear frame mounting. Assembling and disassembling without the use of tools,
- fast and easy lamp change without the use of tools due to bayonet neck diffusers,
- possibility to install stainless steel louvre reflector for control of glare and upward light emissions,
- possibility to paint in any RAL colour matching pole.



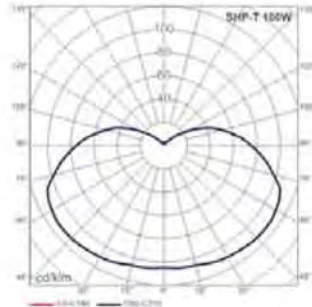
OW-2 park luminaire





IV. LIGHTING LUMINAIRES

OW-2 park luminaire €€



OW-2 S-100W with white cone - photometric distribution curve



OW-2 park luminaire white cone 400



Aluminium body of luminaire



Universal gear frame with electromagnetic or electronic gear



Cover (PC)



Lamp



Cone diffuser

Luminaire type	Painted black	Painted other colour	Power [W]	Light source type/holder	Luminaire net weight [kg]	Unit volume [m ³]	Windage [m ²]	Diameter of diffuser neck [mm]	Diffuser diameter
	Code								
OW-2 S-70W	211602	212202	70	Sodium E-27	5,7	0,25	0,24	Ø150	Cone Ø300-400
OW-2 S-100W	211603	212203	100	Sodium E-40	6				Cone Ø400
OW-2 S-150W	211604	212204	150	Sodium E-40	6,6				Cone Ø300-400
OW-2 MH-70W	211607	212207	70	Metal halide E-27	5,7				Cone Ø400
OW-2 MH-70W EL	211620	212220	70	Metal halide E-27	4,2				Cone Ø300-400
OW-2 MH-100W	211608	212208	100	Metal halide E-27	5,9				Cone Ø400
OW-2 MH-150W	211609	212209	150	Metal halide E-27	6,5				Cone Ø300-400
OW-2 R-125W	211613	212213	125	Mercury E-27	5,5				Cone Ø400
OW-2 E/Z	211615	212215	23	Compact fluorescent lamp E-27	4,3				Cone Ø300-400





IV. LIGHTING LUMINAIRES

OW-21 park luminaire CE

APPLICATION:

modern, outdoor lighting luminaire for ways, squares, car parks, open areas.

TECHNICAL INFORMATION:

- protection degree: IP66 Optic, IP44 wiring chamber
- insulation class: I,
- voltage: 230 V, AC,
- frequency: 50 Hz,
- material: base – pressed aluminium sheet, reflector plate - high pressure die cast aluminium-alloy, diffuser - flat hardened glass, reflector: pressed from aluminium sheet,
- painting: polyester powder paint,
- colour: black as standard, other RAL colours on request,
- mounting: top entry mounting, downwards only on aluminium extension arms, wall brackets and steel brackets with spigot $\text{Ø}42$ mm, 30 mm deep, and on a special connection WA-0, designed to mount luminaires on catenary wires above roads, cross roads, tramways etc.

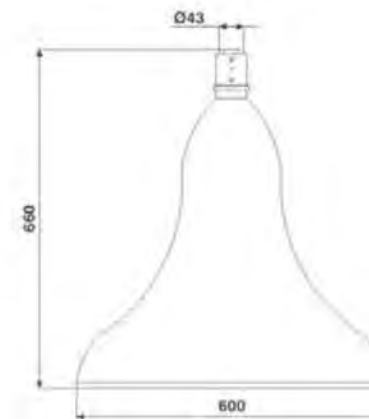
- lamp holder: ceramic E-27, E-40,
- control gear: mounted on universal gear frame, magnetic ballast with thermal protection for luminaires 70 W + 250 W, metal halide lamps 70 W + 150 W (EL) optionally available with electronic ballast,
- lamps: high-pressure sodium, metal halide, mercury,
- accessory: stainless steel louvre reflector recommended for use in transparent, smoked or gold diffusers,
- power supply: integral plug and socket for easy connection.

ADVANTAGES:

- environmentally friendly use of materials: aluminium, glass,
- high durability of luminaire,
- fast, easy access to power feed and light source,
- flat hardened glass gives good glare control,
- high quality optical system produces high light parameters and good lighting uniformity.



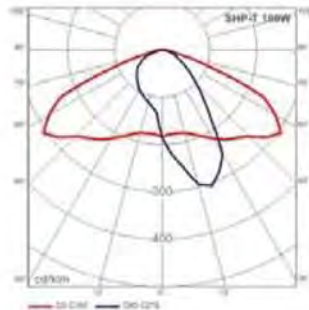
OW-21 park lantern





IV. LIGHTING LUMINAIRES

OW-21 park luminaire CE



OW-21 S-100W
- photometric distribution curve



Opening and closing system ↗



Luminaire interior ↗



Lamp change ↗

Luminaire type	Painted black	Painted other colour	Power [W]	Light source type/holder	Luminaire net weight [kg]	Unit volume [m ³]	Windage [m ²]
	Code						
OW-21 S-70W	212802	212902	70	Sodium E-27	7,4	0,25	0,24
OW-21 S-100W	212803	212903	100	Sodium E-40	7,7		
OW-21 S-150W	212804	212904	150	Sodium E-40	8,3		
OW-21 S-250W	212805	212905	250	Sodium E-40	9,4		
OW-21 MH-70W	212807	212907	70	Metal halide E-27	7,4		
OW-21 MH-70W EL	212820	212920	70	Metal halide E-27	6,2		
OW-21 MH-100W	212808	212908	100	Metal halide E-27	7,6		
OW-21 MH-100W EL	212821	212921	100	Metal halide E-27	6,4		
OW-21 MH-150W	212809	212909	150	Metal halide E-27	8,2		
OW-21 MH-150W EL	212822	212922	150	Metal halide E-27	7		
OW-21 MH-250W	212810	212910	250	Metal halide E-40	9,3		
OW-21 R-125W	212813	212913	125	Mercury E-27	7,2		





IV. LIGHTING LUMINAIRES

SENJA park luminaire

APPLICATION:

modern, decorative and aesthetic outdoor lighting luminaire for illuminating communications routes, parks, avenues, squares, car parks and housing estates.

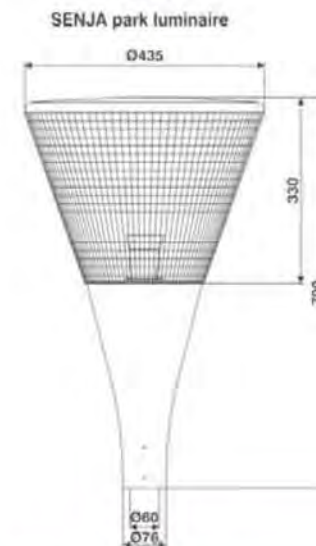
TECHNICAL INFORMATION:

- protection degree: IP 54,
- insulation class: I,
- voltage: 230V, AC,
- frequency: 50 Hz,
- material body - die cast aluminum-alloy, diffuser - polymethacrylate PMMA in transparent version, with prismatic surface outside and inside,
- cap - galvanized steel,
- painting: polyester powder paint,
- colour: black as standard, other RAL colours on request,

- mounting: upwards only, pole top mounting on aluminium and steel columns, on aluminium and steel extension arms and wall bracket with ending $\varnothing 60$ mm, 100 mm deep,
- lamp holder: ceramic E-27, E-40,
- control gear: mounted on the steel, galvanized tray, magnetic ballast with thermal protection for luminaires 50 W-150 W, metal halide lamps optionally available with electronic ballast (EL),
- lamps: high-pressure sodium, metal halide, mercury or compact fluorescent.

ADVANTAGES:

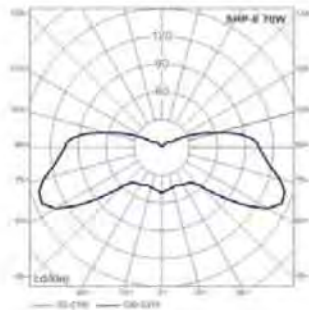
- luminaire design reduces upward light emissions,
- modern style luminaire,
- possibility to paint in any RAL colour matching pole.



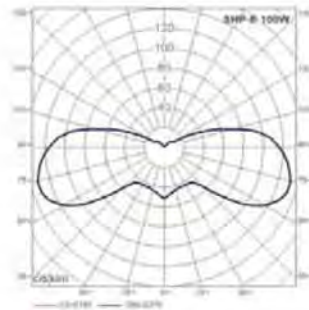


IV. LIGHTING LUMINAIRES

SENJA park luminaire €



SENJA S-70W
- photometric distribution curve



SENJA S-100W
- photometric distribution curve



Control gear on gear frame



Cap



Diffuser



Aluminium body
with control gear

Luminaire type	Painted - black	Painted other colour	Power [W]	Light source type/holder	Luminaire net weight [kg]	Unit volume [m ³]	Windage [m ²]
	Code						
SENJA S-50W	213201	213301	50	Sodium E-27	5,6	0,13	0,135
SENJA S-70W	213202	213302	70	Sodium E-27	5,9		
SENJA S-100W	213203	213303	100	Sodium E-40	6,2		
SENJA S-150W	213204	213304	150	Sodium E-40	6,8		
SENJA MH-70W	213207	213307	70	Metal halide E-27	5,9		
SENJA MH-70W EL	213220	213320	70	Metal halide E-27	4,4		
SENJA MH-100W	213208	213308	100	Metal halide E-27	6,1		
SENJA MH-100W EL	213221	213321	100	Metal halide E-27	4,5		
SENJA MH-150W	213209	213309	150	Metal halide E-27	6,8		
SENJA MH-150W EL	213222	213322	150	Metal halide E-27	4,5		
SENJA R-125W	213213	213313	125	Mercury E-27	5,8		
SENJA E/Z	213215	213315	23	Compact fluorescent lamp E-27	4,5		





IV. LIGHTING LUMINAIRES

ELBA park luminaire

APPLICATION:

modern, design, decorative and esthetic luminaire of outdoor lighting for illuminating communications routes, parks, avenues, squares, car parks, housing provinces and market centers.

TECHNICAL INFORMATION:

- protection degree: IP 65,
- insulation class: II,
- voltage: 230 V, AC,
- frequency 50 Hz,
- material: body - die cast aluminum-alloy, polycarbonate gear cover, lamp-diffuser - Ø200 mm, UV stabilized polycarbonate in white or transparent cap - formed aluminium sheet,
- painting: polyester powder paint,
- colour: black as standard, other RAL colours on request,
- mounting: pole top mounting, on extension arms, 50 mm aluminium or steel wall brackets with Ø60 mm diameter,

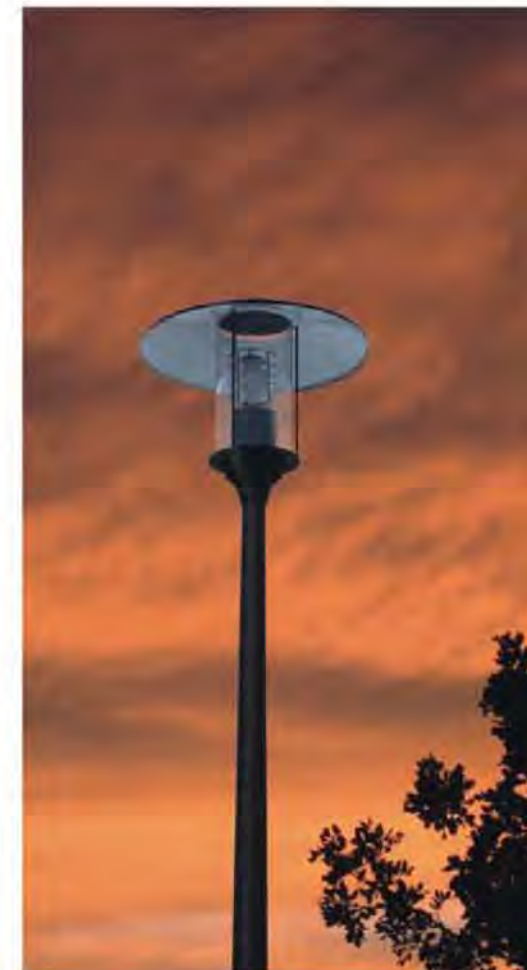
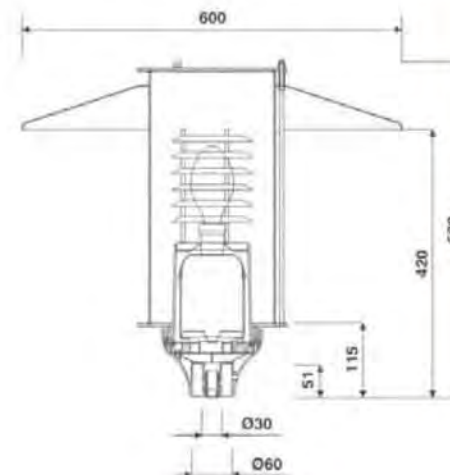
- lamp holder: ceramic E-27, E-40,
- control gear: mounted on gear frame, magnetic ballast with thermal protection for luminaire 50 W ÷ 150 W, metal halide lamps 70 W(EL) optionally available with electronic ballast,
- lamps: high-pressure sodium, metal halide or compact fluorescent,
- accessory: stainless steel louvre reflector for use in transparent diffuser.

ADVANTAGES:

- fast, easy access to rotary locking frame mounted control gear. Assembling and disassembling without the use of tools,
- luminaire design reduces upward light emissions,
- stainless steel louvre reflector with transparent diffuser reduces glare and helps control upward light distribution,
- modern style luminaire,
- available in any RAL colours on request.



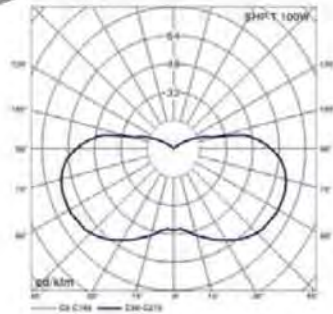
ELBA park luminaire with transparent diffuser



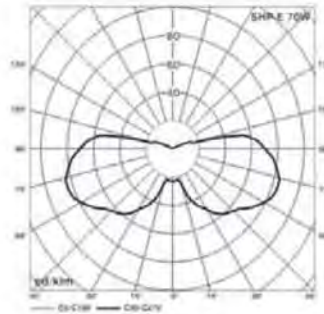


IV. LIGHTING LUMINAIRES

ELBA park luminaire €€



ELBA S-100W with white diffuser
- photometric distribution curve



ELBA S-70W with transparent diffuser
and stainless steel louvre reflector
- photometric distribution curve



ELBA park luminaire with white diffuser ⤴



ELBA park luminaire with transparent diffuser ⤴



⤴ Luminaire with cap



⤴ Lamp



⤴ (PC) cover



⤴ Universal assembling frame
with electromagnetic
or electronic gear



⤴ Luminaire base (aluminium)

Luminaire type	Painted - black	Painted - other colour	Painted - black	Painted - other colour	Power [W]	Light source type	Luminaire net weight [kg]	Unit volume [m ³]	Windage [m ²]	Cylindric diameter of lamp-diffuser
	Lamp diffuser white (code)		Lamp diffuser transparent (code)							
ELBA S-50W	213401	213501	213601	213701	50	Sodium E-27	7,7	0,06	0,115	ø200
ELBA S-70W	213402	213502	213602	213702	70	Sodium E-27	7,9			
ELBA S-100W	213403	213503	213603	213703	100	Sodium E-40	8,1			
ELBA MH-70W	213407	213507	213607	213707	70	Metal halide E-27	7,9			
ELBA MH-70W EL	213420	213520	213620	213720	70	Metal halide E-27	6,7			
ELBA E/Z	213415	213515	213615	213715	23	Compact fluorescent lamp E-27	6,5			





IV. LIGHTING LUMINAIRES

METIS park luminaire CE

APPLICATION:

Outdoor lighting luminaire for illuminating parks, squares, avenues.

TECHNICAL INFORMATION:

- protection degree: IP 65,
- insulation class: II,
- voltage: 230V, AC,
- frequency 50 Hz,
- material: body - die cast aluminum-alloy, cover with control gear – plastic, diffuser – transparent high impact acrylic, reflector – aluminium painted white, louvre – aluminium, cap – thermophormed plastic,
- colour anthracite,
- mounting: upwards only, pole top, Ø60 mm diameter and spigot 65 mm deep,
- lamp holder: ceramic E-27, E-40,

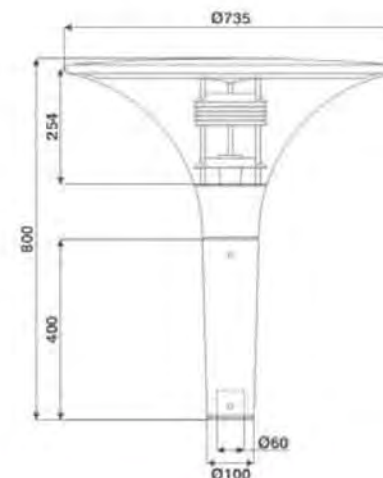
- control gear: mounted on wiring chamber door plate in lower part of luminaire, magnetic ballast with thermal protection for lamp 70 W + 150 W,
- lamp: high-pressure sodium or metal halide.

ADVANTAGES:

- louvre assists in glare reduction,
- fast and easy spigot location and mounting,
- built in automatic power disconnect on door removal,
- easy access to control gear,
- high resistance to aggressive weather conditions.



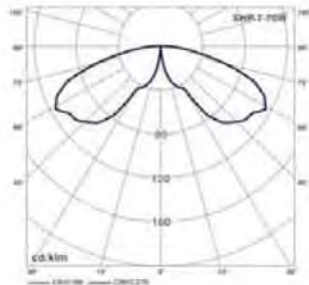
Metis park luminaire



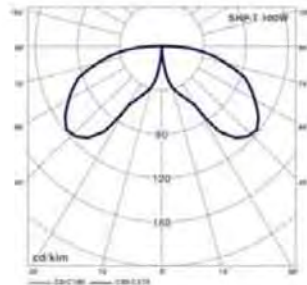


IV. LIGHTING LUMINAIRES

METIS park luminaire CE



Metis S-70W photometric distribution curve



Metis S-100W photometric distribution curve



Luminaire type	Code	Power [W]	Light source type / holder	Luminaire net weight [kg]	Unit volume [m ³]	Windage [m ²]
METIS S-70	213802	70	Sodium E-27	12,9	0,197	0,16
METIS S-100	213803	100	Sodium E-40	13,2		
METIS S-150	213804	150	Sodium E-40	13,8		
METIS MH-70	213807	70	Metal halide E-27	12,9		
METIS MH-100	213808	100	Metal halide E-27	13,1		
METIS MH-150	213809	150	Metal halide E-27	13,7		





IV. LIGHTING LUMINAIRES

Diffusers for luminaire OZ, OP



Dalia painted mounted upwards



Dalia painted Ø400 (mounted downwards)



Amphore



Amphore with cap



Sphere white



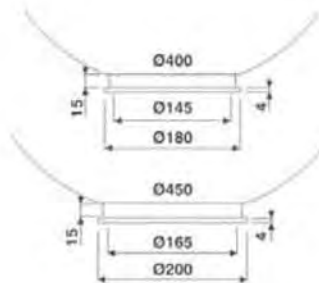
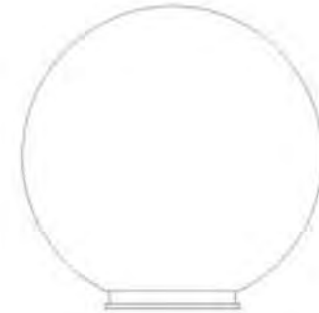
Sphere transparent



Sphere painted mounted downwards



Sphere painted mounted upwards





IV. LIGHTING LUMINAIRES

Diffusers for luminaire OZ, OP



Sphere prismatic



Klio smoked



Klio smoked with cap



Acorns

Lamp-diffuser type	Material type	White	Transparent	Smoked	Used luminaires type	Lamp-diffuser neck [mm]
		Code				
Sphere Ø400	PC	651170	651172	651174	OP 400 OZ 400	Ø180
	PMMA	651171	651173	651175		
Sphere painted Ø400 (assembling upwards)	PC	669170	669172	669174	OP 400	
	PMMA	669171	669173	669175		
Sphere painted Ø400 (assembling downwards)	PC	670170	670172	670174	OP 400	
	PMMA	670171	670173	670175		
Sphere prismatic Ø400	PMMA	-	652173	652175	OP 400 OZ 400	
Amphore Ø400	PMMA	653171	653173	653175		
Klio Ø400	PMMA	675171	-	675175	OP 400	
Dalia painted Ø400 (assembling upwards)	PMMA	676171	676173	676175		
Dalia painted Ø400 (assembling downwards)	PMMA	677171	677173	677175	OP 400	
Sphere Ø450	PMMA	651281	651283	651285	OP 450 OZ 450	Ø200
Sphere painted Ø450 (assembling upwards)	PMMA	669281	669283	669285		
Sphere painted Ø450 (assembling downwards)	PMMA	670281	670283	670285	OP 450	
	NPE	654281	-	-	OP 450, OZ 450	
Acorns Ø450						

Additional elements	Code	Material	Colour		External diameter
			top of cap	down of cap	
Cap for Amphore	923400	PCV formed on heat	black	silver	540
Cap for Klio	923710	thermoplastic	black	white	550





IV. LIGHTING LUMINAIRES

Diffusers for luminaire OPC-1, OPA-1, OPA, OW, OW-2



Auris



Auris Maxi



Auris I



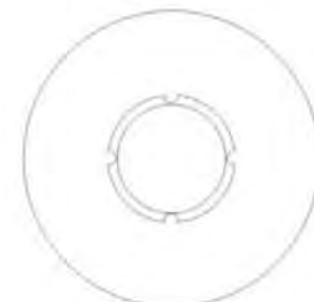
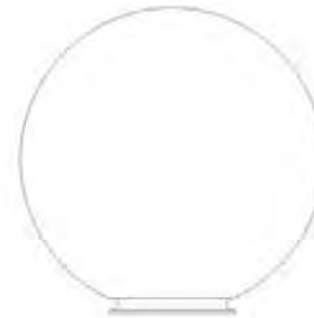
Auris Maxi I



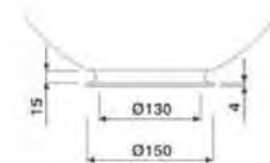
Atlantis



Balloon



Ø300-Ø500





IV. LIGHTING LUMINAIRES

Diffusers for luminaire OPC-1, OPA-1, OPA, OW, OW-2



Balloon painted



Cone



Sphere white



Sphere transparent



Tulip transparent



Tulip painted





IV. LIGHTING LUMINAIRES

Diffusers for luminaire OPC-1, OPA-1, OPA, OW, OW-2



Sphere prismatic



Sphere painted mounted upwards



Sphere painted mounted downwards



Sphere metalized upwards



Kiara white



Kiara metalized





IV. LIGHTING LUMINAIRES

Diffusers for luminaire OPC-1, OPA-1, OPA, OW, OW-2

Lamp-diffuser type	Material type	Colour (code)				Used luminaires type	Lamp-diffuser type	Material type	Colour (code)				Used luminaires type
		White	Transparent	Smoked	Gold				White	Transparent	Smoked	Gold	
Cone Ø300	PMMA	655661	655663	-	-	OW, OW-2, OPA	Sphere metalized Ø450 (as. upwards)	PC	-	672262	-	-	OPC, OPA-1
	PC-UV	655668	655669	-	-		Sphere metalized Ø450 (as. downwards)	PC	-	673262	-	-	OPA
Kiara Ø360	PMMA	653761	653763	-	-	OPC-1, OPA-1	Sphere Ø500	PC-UV	651369	-	-	-	OPC-1, OPA, OPA-1
Kiara metalized Ø360	PMMA	-	674763	-	-			PC	651360	651362	-	651366	
Cone Ø400	PC-UV	655169	655163	-	-	OW, OW-2, OPA	PMMA	651361	-	-	651367		
	PC	655160	655162	-	655166		Sphere metalized Ø500 (as. upwards)	PC	-	672362	-	-	OPC-1, OPA-1
Sphere Ø400	PC-UV	651169	-	-	-	OPC-1, OPA, OPA-1, OW	Sphere metalized Ø500 (as. downwards)	PC	-	673362	-	-	OPA
	PC	651160	651162	-	651166		Balloon	PMMA	680661	680663	-	-	OPC-1, OPA-1
Sphere painted Ø400 (assembling upwards)	PMMA	651161	651163	651165	651167	Balloon painted	PMMA	681661	681663	-	-		
	Sphere painted Ø400 (assembling downwards)	PC-UV	669169	-	-	-	Tulip	PMMA	667161	667163	-	-	
PC		669160	669162	-	669166	OPC-1, OPA-1	Tulip painted	PMMA	682161	682163	-	-	
Sphere metalized Ø400 (as. upwards)	PMMA	669161	669163	669165	669167		OPA	Auris without a cap	PC-UV	-	660169	-	
	PC-UV	670169	-	-	-	PC			-	660162	-	-	
Sphere metalized Ø400 (as. downwards)	PC	670160	670162	-	670166	OPC-1, OPA-1	Auris I without a cap	PMMA	-	660163	-	-	
	PMMA	670161	670163	670165	670167			PC-UV	-	671169	-	-	
Sphere prismatic Ø400	PC	-	672162	-	-	OPA	Auris Maxi without a cap	PC	-	671162	-	-	
	PC	-	673162	-	-			PMMA	-	671163	-	-	
Sphere prismatic Ø450	PC	-	652162	-	652166	OPC-1, OPA, OPA-1, OW	Auris Maxi I without a cap	PC	-	660362	-	-	
	PC	-	652262	-	652266			PMMA	-	660363	-	-	
Sphere painted Ø450 (assembling upwards)	PMMA	-	-	652165	652167	OPC-1, OPA-1	Atlantis with unpainted cap	PC	-	671362	-	-	
	PC-UV	669269	-	-	-			PMMA	-	671363	-	-	
Sphere painted Ø450 (assembling downwards)	PC	669260	669262	-	669266	OPA	Atlantis with painted cap*	PMMA	-	661363	-	-	
	PMMA	669261	669263	-	669267			PMMA	-	662363	-	-	
Sphere Ø450	PC-UV	670269	-	-	-	OPC-1, OPA, OPA-1, OW							
	PC	670260	670262	-	670266								
	PMMA	670261	670263	-	670267								
	PC-UV	651269	-	-	-								
	PC	651260	651262	-	651266								
	PMMA	651261	651263	-	651267								

* for Client's request cap may be painted into any color according to RAL pallet (code 670363)

Additional elements	Cap code			Material	External diameter
	Unpainted	Black	Painted		
Aluminium cap Auris	923601	923602	923603	Aluminium sheet	600
Aluminium cap Auris Maxi	923661	923662	923663	Aluminium sheet	660

For painted caps, down part is white





IV. LIGHTING LUMINAIRES

Stainless steel louvre reflector for park and decorative luminaires

APPLICATION:

installation in park luminaires.

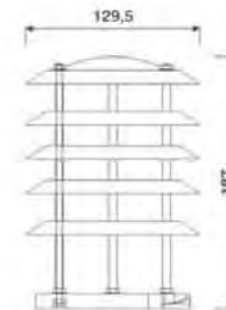
TECHNICAL INFORMATION:

- small louvre – for park luminaires (E-27), complete with five blades, available in two versions: for upwards mounting (the final blade of louvre is full) and for downwards mounting (the final blade of louvre is open),
- large louvre – for park luminaires (E-40), complete with seven blades available in two versions: for upwards mounting the last roller of louvre is full) and for downwards mounting (the last roller of louvre is open),
- OS-1 louvre – complete with five blades, for downwards mounting, the last roller of louvre is open, without bayonet mounting.

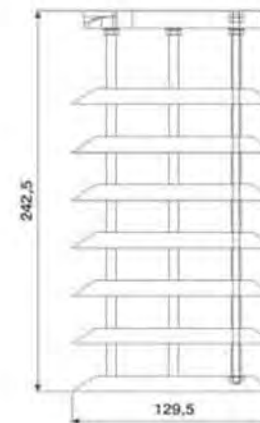
- material: stainless steel,
- application: for luminaires OP, OPC-1, OPA, OPA-1, OW, OW-2 with transparent, smoked and gold diffusers and OS-1 luminaire,
- mounting: without the use of tools through rotating - in the luminaire cover, in case of OS-1 louvre mounting directly to gear tray,
- size:
 - small louvre:
diameter 129,5 mm, height 187 mm,
 - big louvre:
diameter 129,5 mm, height 242,5 mm,
 - OS-1 louvre:
diameter 129,5 mm, height 187 mm.

ADVANTAGES:

- control of light distribution,
- glare control,
- decorative section.



Small stainless steel louvre reflector mounted upwards



Large stainless steel louvre reflector mounted downwards





IV. LIGHTING LUMINAIRES

Stainless steel louvre reflector for park and decorative luminaires



Large stainless steel louvre reflector mounted upwards



Large stainless steel louvre reflector mounted downwards



OS-1 stainless steel louvre reflector



Small stainless steel louvre reflector mounted upwards



Small stainless steel louvre reflector mounted downwards



Reflector type	Code	Luminaire type	Lamp holder type	Weight [kg]	Unit volume [m ³]
Small louvre reflector made of stainless steel upwards	911126	OP, OPC-1, OPA-1	E-27	0,29	0,004
Small louvre reflector made of stainless steel downwards	911127	OP, OPA, OW, OW-2	E-27	0,30	
Big louvre reflector made of stainless steel upwards	911116	OP, OPC-1, OPA-1	E-40	0,40	
Big louvre reflector made of stainless steel downwards	911117	OP, OPA, OW, OW-2	E-40	0,38	
Louvre reflector OS-1 made of stainless steel	911307	OS-1	E-27	0,25	





IV. LIGHTING LUMINAIRES

MAGNOLIA street lighting luminaire C€

APPLICATION:

Modern, design street lighting luminaire for illuminating highways, roads, squares, car parks, urban regions and manufacturing areas.

TECHNICAL INFORMATION:

- protection degree: IP66 optic and wiring chamber,
- insulation class: II,
- voltage: 230 V, AC,
- frequency: 50 Hz,
- material: body - die cast aluminum-alloy, cover - die cast aluminum-alloy,
- painting: polyester powder paints,
- colour: body - RAL 9006 grey, cover - Silver Renoar,
- mounting: pole top, spigot 120 mm deep with Ø60 mm diameter or on extension arm,
- luminaire regulation: from -5° to 20° every 2,5°, possibility of fully smooth regulation from 0° to 90° by adding extra position holes,
- diffuser: slightly convex hardened glass,
- reflector: pressed aluminium sheet,
- lamp holder: ceramic E-27, E-40,
- control gear: mounted on plastic gear tray, magnetic ballast with thermal protection for lamp 70 W ÷ 250 W, metal halide lamps 100 W and 150 W (EL) optionally available with electronic ballast,

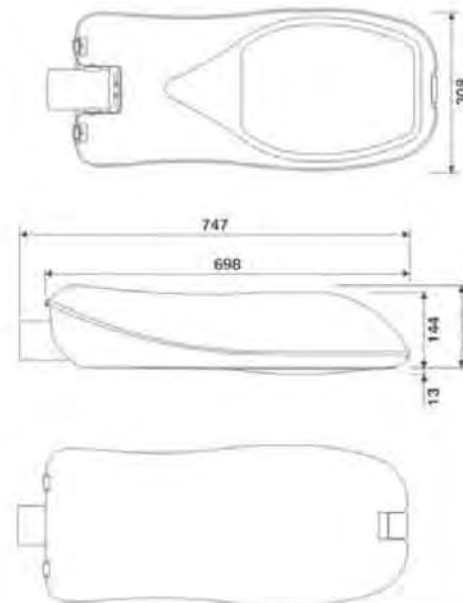
- lamp high-pressure, tubular sodium or metal halide,
- power feed: integral plug and socket for easy connection.

ADVANTAGES:

- environmentally friendly use of materials: aluminium, glass,
- hinged upper cover allows easy access to lamp and control gear without use of tools,
- high durability of luminaire due to die cast aluminium alloy cover,
- variable lamp positions - up to 150 W,
- low windage factor 0,5,
- slightly convex hardened glass gives good glare control,
- high quality optical system produces high light parameters and good lighting uniformity,
- automatic voltage disconnection after opening cover assures servicing safety while changing lamp (class II),
- IP 66 assures suitable safety and long life durability of luminaire components.



Magnolia street lighting luminaire



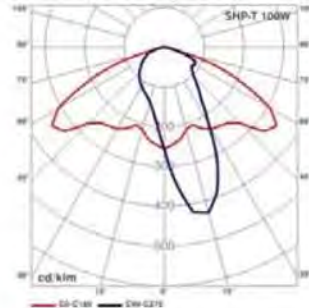
Windage 0,1 m² ↗



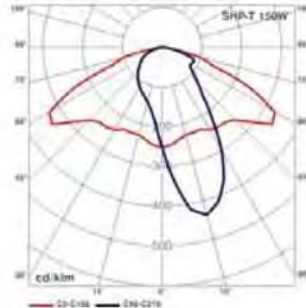


IV. LIGHTING LUMINAIRES

MAGNOLIA street lighting luminaire $\text{C}\epsilon$



Magnolia S-100W photometric distribution curve



Magnolia S-150W photometric distribution curve



Opening and closing system \uparrow



Luminaire interior \uparrow



Removal of control gear \uparrow



Luminaire inclination angle scale \uparrow

Luminaire type	II insulation class (code)	Power [W]	Light source type / holder	Luminaire net weight [kg]	Unit volume [m ³]	Windage [m ²]
MAGNOLIA S-70	220502	70	Sodium E-27	8,3	0,04	0,1
MAGNOLIA S-100	220503	100	Sodium E-40	8,6		
MAGNOLIA S-150	220504	150	Sodium E-40	9,3		
MAGNOLIA S-250	220505	250	Sodium E-40	10,4		
MAGNOLIA MH-70	220507	70	Metal halide E-27	8,3		
MAGNOLIA MH-100	220508	100	Metal halide E-27	8,5		
MAGNOLIA MH-100 EL	220521	100	Metal halide E-27	7,3		
MAGNOLIA MH-150	220509	150	Metal halide E-27	9,2		
MAGNOLIA MH-150 EL	220522	150	Metal halide E-27	8		
MAGNOLIA MH-250	220510	250	Metal halide E-40	10,3		





IV. LIGHTING LUMINAIRES

LUNOIDA street lighting luminaire $\text{C}\text{€}$

APPLICATION:

modern design street lighting luminaire for illuminating motorways, roads, car parks.

TECHNICAL INFORMATION:

- protection degree: IP67 Optic, IP45 wiring chamber,
- insulation class: I, II,
- voltage: 230 V, AC,
- frequency: 50 Hz,
- material: body - die cast aluminum-alloy, cover - UV resistant technical polymer,
- painting: body - polyester powder paints,
- colour: body - RAL 7038, cover - RAL 7035
- mounting: pole top $\text{Ø}60 \times 70$ mm or on extension arm with spigot 100 mm deep,
- luminaire regulation: 0° to 110° every $4,5^\circ$,
- diffuser: flat hardened glass,
- reflector: pressed aluminium sheet,
- lamp holder: ceramic E-27, E-40,

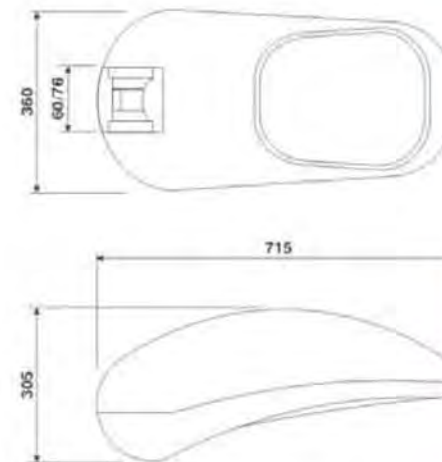
- control gear: mounted on plastic gear tray, easily removed without use of tools, magnetic ballast with thermal protection for lamp 70 W+400 W, metal halide lamps 100 W and 150 W (EL) optionally available with electronic ballast,
- lamp: high-pressure sodium or metal halide,
- power feed: integral plug and socket for easy connection.


ADVANTAGES:

- environmentally friendly use of materials: aluminium, glass,
- hinged upper cover allows easy access to lamp and control gear without use of tools,
- variable lamp positions - up to 150 W,
- flat hardened glass gives good glare control,
- high quality optical system produces high light parameters and good lighting uniformity,
- automatic voltage disconnection after opening cover assures servicing safety while changing lamp (class II),
- IP 66 assures suitable safety and also long life durability of the luminaire components.



Lunoida street lighting luminaire



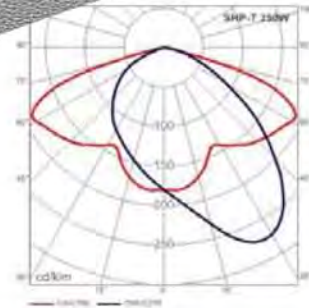
Windage $0,13 \text{ m}^2$ 



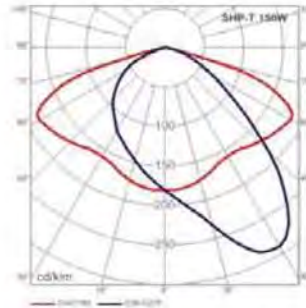


IV. LIGHTING LUMINAIRES

LUNOIDA street lighting luminaire CE



Lunoida S-250W photometric distribution curve



Lunoida S-150W photometric distribution curve



Opening and closing system ⤴



Luminaire interior ⤴



Removal of control gear to facilitate lamp change without moving optic ⤴



Luminaire inclination angle scale ⤴

Luminaire type	Insulation class		Power [W]	Light source type / holder	Luminaire net weight [kg]		Unit volume [m ³]	Windage [m ²]
	I class (code)	II class (code)			I insulation class	II insulation class		
LUNOIDA S-70	220102	220202	70	Sodium E-27	8,9	9,0	0,07	0,13
LUNOIDA S-100	220103	220203	100	Sodium E-40	9,3	9,4		
LUNOIDA S-150	220104	220204	150	Sodium E-40	9,9	10,0		
LUNOIDA S-250	220105	220205	250	Sodium E-40	11,2	11,3		
LUNOIDA S-400	220106	220206	400	Sodium E-40	12,4	12,5		
LUNOIDA MH-70	220107	220207	70	Metal halide E-27	9,0	9,1		
LUNOIDA MH-100	220108	220208	100	Metal halide E-27	9,2	9,3		
LUNOIDA MH-100 EL	220121	220221	100	Metal halide E-27	7,3	7,3		
LUNOIDA MH-150	220109	220209	150	Metal halide E-27	9,8	9,9		
LUNOIDA MH-150 EL	220122	220222	150	Metal halide E-27	8,4	8,4		
LUNOIDA MH-250	220110	220210	250	Metal halide E-40	11,2	11,3		
LUNOIDA MH-400	220111	220211	400	Metal halide E-40	12,2	12,2		





IV. LIGHTING LUMINAIRES

COSMO street lighting luminaire CE

APPLICATION:

modern design street lighting luminaire for illuminating roads, communication routes, car parks.

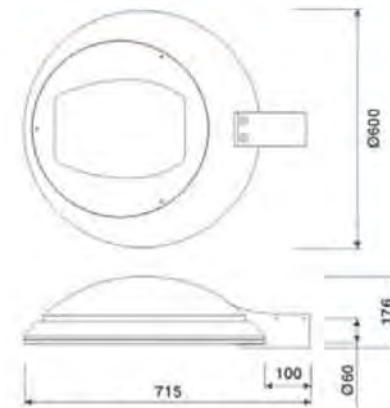
TECHNICAL INFORMATION:

- protection degree: IP66 Optic, IP44 wiring chamber,
- insulation class I,
- voltage: 230 V, AC,
- frequency: 50 Hz,
- material: body – die cast aluminum-alloy, cover – shaped aluminium sheet, pole entry – COSMO: die cast aluminum-alloy, COSMO ALFA: aluminium alloy,
- painting: polyester powder paint in available RAL colours,
- mounting: COSMO – pole or side entry mounting on 110 mm arm with $\text{Ø}60$ mm diameter, COSMO ALFA – pole top mounting on 100 mm arm $\text{Ø}60$ spigot,

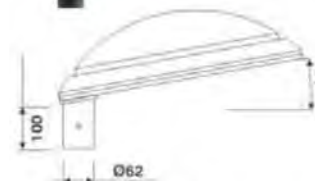
- diffuser: flat hardened glass,
- reflector: pressed from polished aluminium sheet,
- lamp holder: E-27, E-40, ceramic,
- control gear: mounted on galvanized steel gear tray, magnetic ballast with thermal protection for luminaires 70 W + 250 W, metal halide lamps 100 W and 150 W (EL) optionally available with electronic ballast,
- lamps: high-pressure sodium, metal halide or mercury.

ADVANTAGES:

- luminaire may be supplied in any RAL colour,
- high quality optical system produces high light parameters and good lighting uniformity,
- variable lamp positions – up to 150 W,
- flat hardened glass gives good glare control,
- ecological manufacturing process for optimum recyclability.



COSMO street lighting luminaire



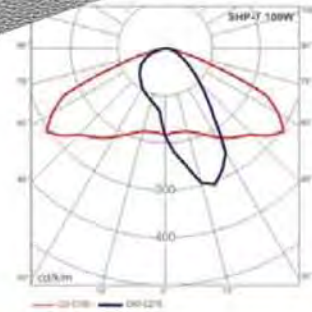
COSMO Alfa street lighting luminaire
Windage 0,085 m²



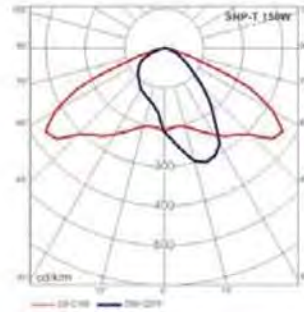


IV. LIGHTING LUMINAIRES

COSMO street lighting luminaire €€



COSMO S-100W photometric distribution curve



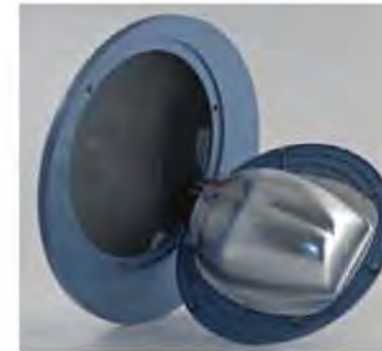
COSMO S-150W photometric distribution curve



COSMO arm mounted ⤴



Opening and closing system ⤴



Luminaire interior ⤴



Lamp change ⤴

Luminaire type	Luminaire painted	Luminaire unpainted	Power [W]	Light source type / holder	Luminaire net weight [kg]	Unit volume [m³]	Windage [m²]	Luminaire type	Luminaire painted	Luminaire unpainted	Power [W]	Light source type / holder	Luminaire net weight [kg]	Unit volume [m³]	Windage [m²]
	kod								kod						
COSMO S-70	221002	220902	70	Sodium E-27	9,1	0,07	0,085	COSMO ALFA S-70	221202	221102	70	Sodium E-27	9,1	0,07	0,085
COSMO S-100	221003	220903	100	Sodium E-40	9,3			COSMO ALFA S-100	221203	221103	100	Sodium E-40	9,3		
COSMO S-150	221004	220904	150	Sodium E-40	9,8			COSMO ALFA S-150	221204	221104	150	Sodium E-40	9,8		
COSMO S-250	221005	220905	250	Sodium E-40	11,0			COSMO ALFA S-250	221205	221105	250	Sodium E-40	11,0		
COSMO MH-70	221007	220907	70	Metal halide E-27	9,1			COSMO ALFA MH-70	221207	221107	70	Metal halide E-27	9,1		
COSMO MH-100	221008	220908	100	Metal halide E-27	9,1			COSMO ALFA MH-100	221208	221108	100	Metal halide E-27	9,1		
COSMO MH-100	221021	220921	100	Metal halide E-27	7,5			COSMO ALFA MH-100	221221	221121	100	Metal halide E-27	7,5		
EL COSMO MH-150	221009	220909	150	Metal halide E-27	9,7			EL COSMO ALFA MH-150	221209	221109	150	Metal halide E-27	9,7		
COSMO MH-150	221022	220922	150	Metal halide E-27	8,1			COSMO ALFA MH-150	221222	221122	150	Metal halide E-27	8,1		
COSMO MH-150	221010	220910	250	Metal halide E-40	10,8			COSMO ALFA MH-150	221210	221110	250	Metal halide E-40	10,8		
EL COSMO MH-250	221013	220913	125	Mercury E27	8,8			EL COSMO ALFA MH-250	221213	221113	125	Mercury E-27	8,8		





IV. LIGHTING LUMINAIRES

Q5 PRO ST street lighting luminaire

APPLICATION:

modern outdoor lighting luminaire for illuminating roads, car parks, communication routes.

TECHNICAL INFORMATION:

- protection degree: IP66 Optic and wiring chamber,
- insulation class: II,
- voltage: 230 V, AC,
- frequency: 50 Hz,
- material: die cast aluminum-alloy,
- colour: satin effect graphite,
- mounting: on the extension arm type WN or other arms on request,
- diffuser: flat hardened glass,
- reflector: pressed from aluminium sheet,
- lamp holder: ceramic E-40,
- control gear: mounted on galvanized steel gear tray, magnetic ballast with thermal protection for luminaires 100 W + 400 W,

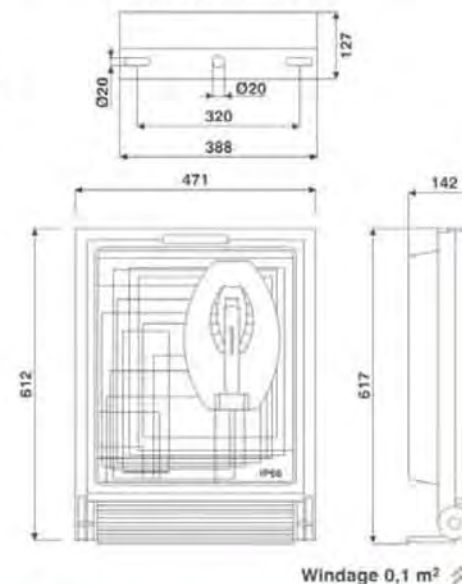
- power supply: integral plug and socket for easy connection,
- lamp: high-pressure, tubular sodium or metal halide.

ADVANTAGES:

- luminaire design adapted to floodlights series Q5PRO thanks to that it is possible illuminate area with products in the same style,
- optical system produces high light parameters and good lighting uniformity,
- variable lamp positions – up to 150 W,
- hinged upper cover allows easy access to lamp and control gear,
- good glare control,
- automatic voltage disconnection after opening cover assures servicing safety while changing lamp.



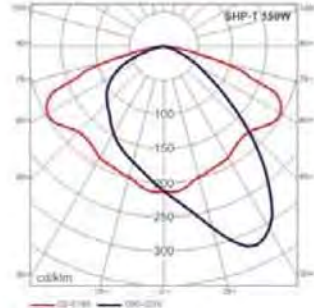
Q5 PRO ST Luminaire





IV. LIGHTING LUMINAIRES

Q5 PRO ST street lighting luminaire €



Q5 PRO ST S-150W - photometric distribution curve



Luminaire surface structure



Luminaire side



Luminaire interior



Range mounting regulation about 180°



Mounting on extension arm

Luminaire type	II insulation class (code)	Power (W)	Light source type/holder	Luminaire net weight [kg]	Unit volume [m ³]	Windage [m ²]
ST S-100	221703	100	Sodium E-40	15,4	0,06	0,1
ST S-150	221704	150	Sodium E-40	16,1		
ST S-250	221705	250	Sodium E-40	17,2		
ST S-400	221706	400	Sodium E-40	17,9		
ST MH-250	221710	250	Metal halide E-40	17,2		
ST MH-400	221711	400	Metal halide E-40	17,9		





IV. LIGHTING LUMINAIRES

Q5 PRO AS floodlight

Floodlight Q5 PRO AS45
- maximum light angle 45°
Floodlight Q5 PRO AS65
- maximum light angle 65°

APPLICATION:

modern floodlights for architectural lighting and large areas.

TECHNICAL INFORMATION:

- protection degree: IP66 Optic and wiring chamber,
- insulation class: II,
- voltage: 230 V, AC,
- frequency: 50 Hz,
- material: die cast aluminum-alloy,
- colour: satin effect graphite,
- diffuser: flat hardened glass,
- reflector: asymmetrical from hammering aluminium,
- lamp holder: ceramic E-40,

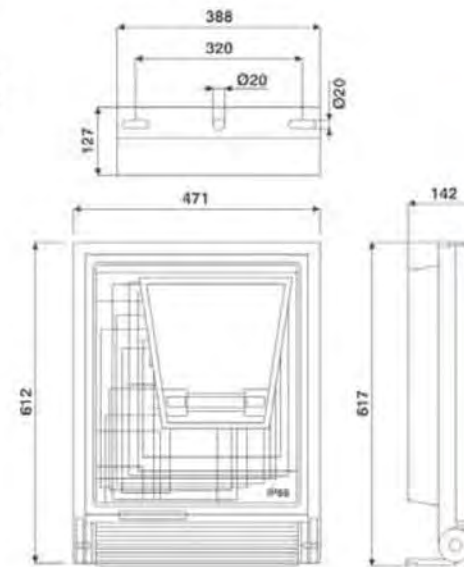
- control gear: mounted on galvanized steel gear tray, magnetic ballast with thermal protection for luminaires 100 W - 400 W,
- power supply: integral plug and socket for easy connection,
- lamp: high-pressure, tubular sodium or metal halide,

ADVANTAGES:

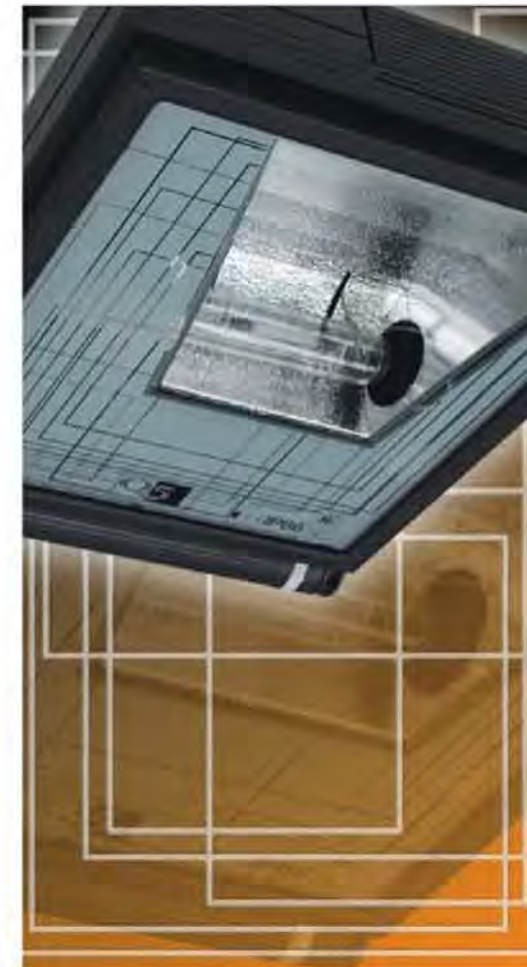
- modern and attractive design,
- optical system produces high light parameters and good lighting uniformity,
- hinged upper cover allows easy access to lamp and control gear,
- good glare control,
- automatic voltage disconnection after opening cover assures servicing safety while changing lamp.



Q5 PRO AS45 Floodlight



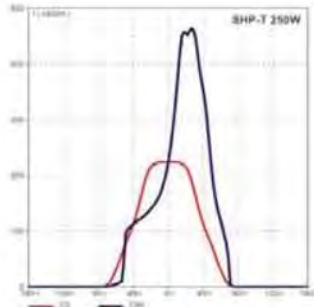
Windage 0,1 m² ↗



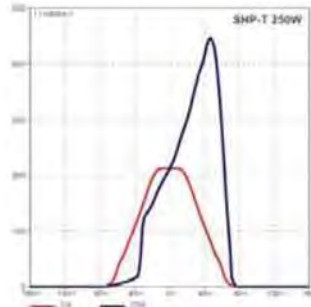


IV. LIGHTING LUMINAIRES

Q5 PRO AS floodlight



Q5 PRO AS45 S-250W - photometric distribution curve



Q5 PRO AS65 S-250W - photometric distribution curve



Floodlight surface structure



Floodlight side



Q5 PRO AS45 Floodlight



Q5 PRO AS65 Floodlight



Range mounting regulation about 180°



Mounting on extension arm

Luminaire type	II insulation class (code)	Power [W]	Light source type/holder	Luminaire net weight [kg]	Unit volume [m³]
AS45 S-100	221503	100	Sodium E-40	15,3	0,06
AS45 S-150	221504	150	Sodium E-40	16,0	
AS45 S-250	221505	250	Sodium E-40	17,1	
AS45 S-400	221506	400	Sodium E-40	17,8	
AS45 MH-250	221510	250	Metal halide E-40	17,1	
AS45MH-400	221511	400	Metal halide E-40	17,8	

Luminaire type	II insulation class (code)	Power [W]	Light source type/holder	Luminaire net weight [kg]	Unit volume [m³]
AS65 S-100	221603	100	Sodium E-40	15,3	0,06
AS65 S-150	221604	150	Sodium E-40	16,0	
AS65 S-250	221605	250	Sodium E-40	17,1	
AS65 S-400	221606	400	Sodium E-40	17,8	
AS65 MH-250	221610	250	Metal halide E-40	17,1	
AS65 MH-400	221611	400	Metal halide E-40	17,8	





IV. LIGHTING LUMINAIRES





Aba-Szer Fémbútor Kft.

V. ALUMINIUM COLUMNS FOR TRAFFIC SIGNAL LIGHTS



Aba-Szer Fémbútor Kft. E-mail: aba.szer@gmail.com Web: <http://www.acekft.hu>

Cím: H-3753 Abod, Tóth u. 10. Telefon: +36 / 46 509.090, 509.091 Fax: +36 / 46 509.091 Mobil: +36 / 30 303.11.12 vagy +36 / 30 935.42.55



V. ALUMINIUM COLUMNS FOR TRAFFIC SIGNAL LIGHTS

Aluminium, straight columns for traffic signal lights

APPLICATION:
designed for installing traffic lights on crossroads, pedestrian crossings etc.

TECHNICAL INFORMATION:

- height 3 - 3,55 m for straight columns and 6,5 m for columns with outreach,
- column diameter at the base Ø120 for straight ones and Ø225 for columns with outreach,
- sheet base,
- outreach length 4 or 7 m, gate width 8 or 14 m.

Column type	SAL SYG 3	SAL SYG 3,25	SAL SYG 3,55	
Height H [m]	3,00	3,25	3,55	
Colour-anodizing method	C0 - natural colour	42801/C0	42802/C0	42803/C0
	C - electrochemical colouring	42801/C..	42802/C..	42803/C..
	CI - interference colouring	42801/CI..	42802/CI..	42803/CI..
Code				
Painting - polyester powder paints according to RAL pallet	43801	43802	43803	
Net weight [kg]	13,2	13,8	14,6	
Approximate unit volume [m³]*	0,04	0,05	0,05	
Concrete footing type		B-50		
Concrete footing code		311150		
Reinforcement basket type		Z-50		
Reinforcement basket code		311205		
Hot galvanized nut set		4006		
Hot galvanized ripable nut set		4007		
Base dimensions (side length/fixing hole spacing/thickness) [mm]		224 / 180 / 8		

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable luminaires and signs	30			
Acceptable windage of luminaires and signs [m] for Cx=1	I zone, II ground category 22 m/s, (79,2 km/h)	1,45	1,26	1,11
	I and III zone, II ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	1,26	1,10	0,97
	II zone, II ground category 26 m/s, (93,6 km/h)	1,00	0,88	0,77
	III zone, II ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	0,94	0,81	0,72

Specified luminaires must always be checked against published column wind zone loadings and ground/location categories





V. ALUMINIUM COLUMNS FOR TRAFFIC SIGNAL LIGHTS

Aluminium columns for traffic signal lights with outreach



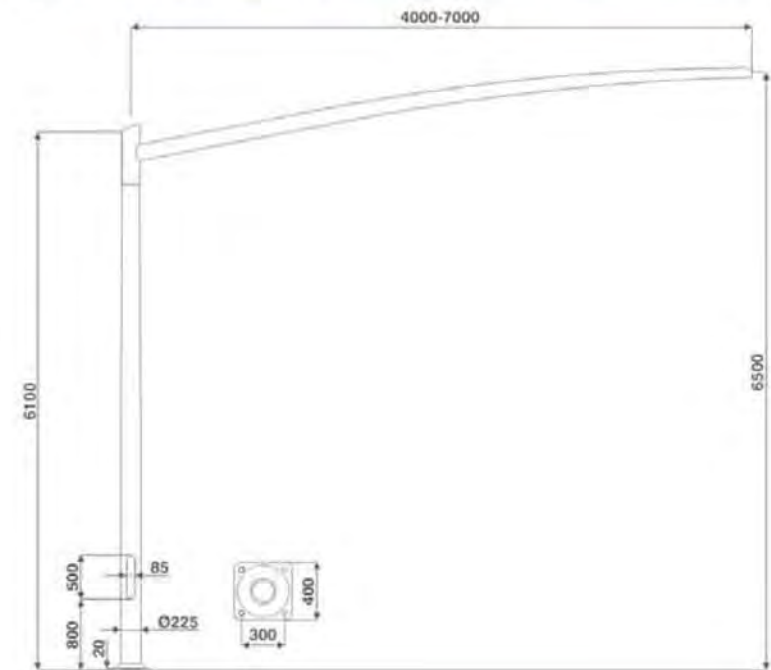
Column type	SAL SYG 65-4	SAL SYG 65-7	
Height H [m]	6,5		
Reach [m]	4,0	7,0	
Colour - - anodizing method	C0 - natural colour	42810/C0	42811/C0
	C - electrochemical colouring	42810/C..	42811/C..
	CI - interference colouring	42810/CI..	42811/CI..
Code			
Painting - polyester powder paints according to RAL pallet	43810	43811	
Net weight [kg]	109,3	124,1	
Approximate unit volume [m]*	0,55	0,70	
Concrete footing type	B-80		
Concrete footing code	311180		
Reinforcement basket type	Z-80		
Reinforcement basket code	311208		
Hot galvanized nut set	4014		
Base dimensions (side length/fixing hole spacing/thickness) [mm]	400 / 300 / 20		

* For orders more than 10 pcs stated volume may change according to packing

Acceptable column load

Acceptable luminaires and signs mass [kg]	50		
Middle distance luminaires center of gravity and signs from column axis [m]	3,5	3,3	
Acceptable windage of luminaires and signs [m] for Cx=1,2	I zone, III ground category 22 m/s, (79,2 km/h)	1,60	2,30
	I and III zone, III ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	1,40	2,00
	II zone, III ground category 26 m/s, (93,6 km/h)	1,10	1,56
	III zone, III ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	1,05	1,50

Specified luminaires must always be checked against published column wind zone loadings and ground/location categories



SAL SYG 65-4 - 65-7





V. ALUMINIUM COLUMNS FOR TRAFFIC SIGNAL LIGHTS

Aluminium columns for traffic signal lights – gates

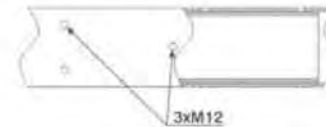
Column type	SAL SYG 8	SAL SYG 14	
Height H [m]	6,5		
Reach [m]	8,0	14,0	
Colour - - anodizing method	C0 - natural colour	42830/C0	42831/C0
	C - electrochemical colouring	42830/C..	42831/C..
	CI - interference colouring	42830/CI..	42831/CI..
Code			
Painting - polyester powder paints according to RAL pallet	43830	43831	
Net weight [kg]	232,0	270,6	
Approximate unit volume [m³]*	1,10	3,00	
Concrete footing type	B-80		
Concrete footing code	311180		
Reinforcement basket type	Z-80		
Reinforcement basket code	311208		
Hot galvanized nut set	4014		
Base dimensions (side length/fixing hole spacing/thickness) [mm]	400 / 300 / 20		

* For orders more than 10 pcs stated volume may change according to packing

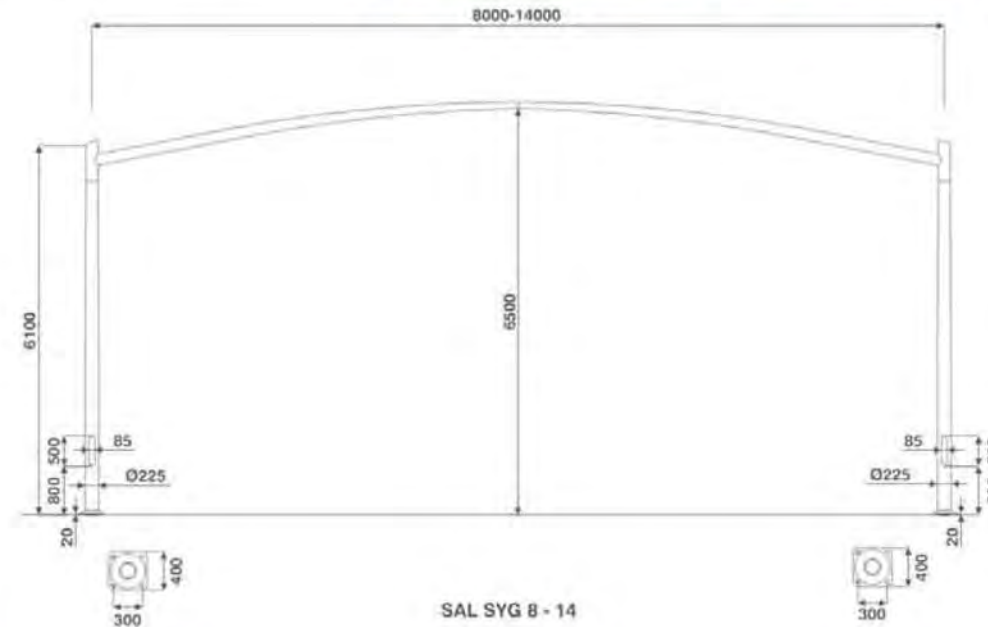
Acceptable column load

Acceptable luminaires and signs mass [kg]	100		
Acceptable windage of luminaires and signs [m] for Cx=1,2	I zone III ground category 22 m/s, (79,2 km/h)	5,60	4,40
	I and III zone, III ground category For 450 m n.p.m. 24 m/s, (86,4 km/h)	5,20	3,80
	II zone, III ground category 26 m/s, (93,6 km/h)	4,00	2,90
	III zone, III ground category For 750 m n.p.m. 27,9 m/s, (100,6 km/h)	3,80	2,80

Specified luminaires must always be checked against published column wind zone loadings and ground/location categories



Extension arms method
of connection





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VI. FLAG POLES
Flag poles



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VI. FLAG POLES

Flag poles

DESTINATION:

for mounting flags with surface from 3 m² up to 6 m².

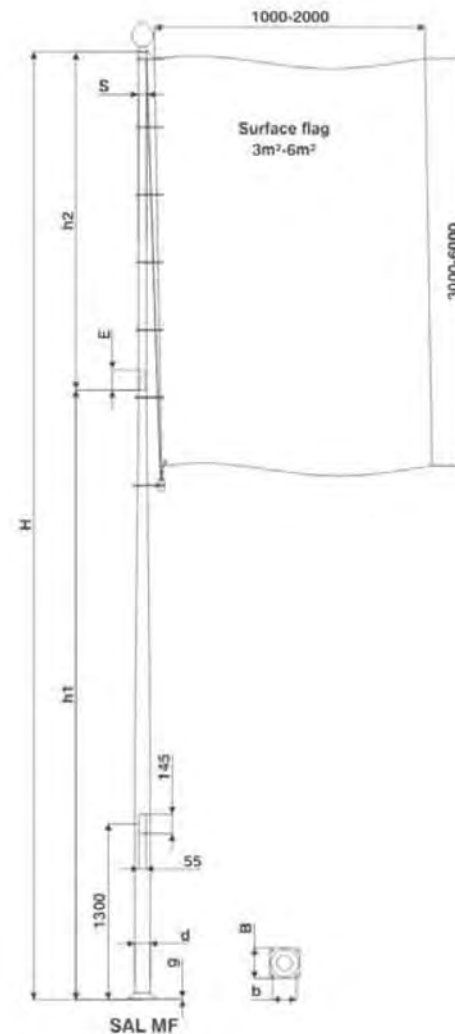
TECHNICAL INFORMATION:

- Material: aluminium alloy EN AW 6060,
- Construction: consists of two sections, bottom part – conical, upper part – cylindrical,
- Wall thickness: according to flag pole type $g = 3 + 4,3 \text{ mm}$,
- Routing head: made of plastic, together with cord placed inside the pole allows the flag free movement according to wind direction,
- Cord: made of polypropylene, diameter $\varnothing 4 \text{ mm}$ (plait spiral) white colour,
- Flag bob: plasticized metal,
- Clamping ring for fixing flag: from 7 to 13 pieces depends on flag height,
- Cable chamber: with end clamp.

ADDITIONAL ACCESSORIES:

Cross-bar for flag poles with length: 1 m; 1,5 m; 2 m.

Top: decorative ball gold or silver.





VI. FLAG POLES

Flag poles

Flag pole type (H-d)		SAL MF 6-114	SAL MF 7-114-1	SAL MF 7-114-2	SAL MF 8-114	SAL MF 9-114	SAL MF 8-120	SAL MF 9-120	SAL MF 10-120	SAL MF 10-146	SAL MF 11-146	SAL MF 12-146	SAL MF 13-180	SAL MF 14-180	SAL MF 15-180	SAL MF 16-180	
Height	total H [m]	6,0	7,0	7,0	8,0	9,0	8,0	9,0	10,0	10,0	11,0	12,0	13,0	14,0	15,0	16,0	
	bottom part h ₁ +E [m]	4,5 + 0,15			6,0 + 0,15			6,82 + 0,18			10,0 + 0,2						
	upper part h ₂ [m]	1,5	2,5	2,5	3,5	4,5	2,0	3,0	4,0	3,18	4,18	5,18	3,0	4,0	5,0	6,0	
Spigot ending [mm]		Ø60									Ø75						
Colour - anodizing method	C0 - natural colour	42950/C0	42951/C0	42952/C0	42953/C0	42954/C0	42955/C0	42956/C0	42957/C0	42958/C0	42959/C0	42960/C0	42961/C0	42962/C0	42963/C0	42964/C0	
	C - electrochemical colouring	42950/C...	42951/C...	42952/C...	42953/C...	42954/C...	42955/C...	42956/C...	42957/C...	42958/C...	42959/C...	42960/C...	42961/C...	42962/C...	42963/C...	42964/C...	
	CI - interference colouring	42950/CI...	42951/CI...	42952/CI...	42953/CI...	42954/CI...	42955/CI...	42956/CI...	42957/CI...	42958/CI...	42959/CI...	42960/CI...	42961/CI...	42962/CI...	42963/CI...	42964/CI...	
Painting - polyester powder paints according RAL pallet																	
Net weight [kg]		43950	43951	43952	43953	43954	43955	43956	43957	43958	43959	43960	43961	43962	43963	43964	
Approximate volume [m ³]*		15,3	17,0	18,3	20,0	21,7	25,8	27,4	29,1	39,9	42,9	45,9	65,2	68,2	71,3	74,3	
Concrete footing type		B-50					B-51					B-70					
Concrete footing code		311150					311151					311170					
Reinforcement basket type		Z-50					Z-51					Z-70					
Reinforcement basket code		311205					311251					311270					
Hot galvanized nut set		4006					4008					4012					
Hot galvanized ripable nut set		4007					4009					4013					
Base dimensions (side/screws spacing/thickness) [mm]		224/180/8					260/200/12					400/300/10			400/300/12		

Additional information: for acceptable calculation of surface flag assumed, that 1m² of flag = 0,16 kg

*For orders more than 10 pcs stated volume may change according to packing

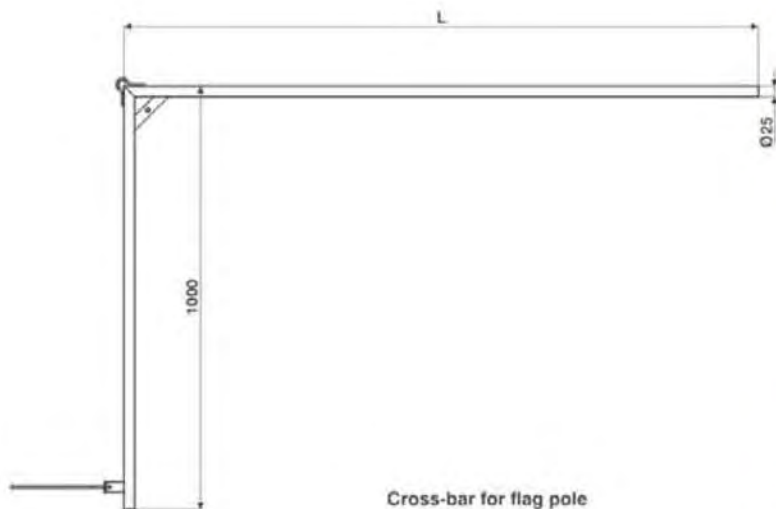
Flag	Wind zone	Acceptable loads															
		Ground category															
Surface flag	3 m ²	I zone	1	2	1	1	3	1	1	2	1	2	3	1	1	2	3
		I and III zone for 450 m n.p.m.	1	3	1	2	3	1	1	3	1	3	4	1	2	3	4
		II zone	2	4	1	2	-	0	2	4	2	4	-	2	3	4	-
		III zone for 750 m n.p.m.	2	-	2	3	-	1	3	-	3	-	-	2	3	4	-
	6 m ²	I zone	2	3	1	2	4	1	2	3	2	3	4	2	3	3	4
		I and III zone for 450 m n.p.m.	2	4	2	3	-	1	3	4	2	4	-	2	3	4	-
II zone		3	-	2	4	-	2	4	-	4	-	-	3	4	-	-	
	III zone for 750 m n.p.m.	4	-	3	-	-	3	-	-	4	-	-	4	-	-	-	

Flag must always be checked against acceptable load of pole for given wind zone.





VII. CONCRETE FOOTINGS AND REINFORCEMENT BASKETS



Cross-bar for flag pole



Cross-bar for flag pole		1,0 m	1,5 m	2,0 m	
outreach of cross-bar L [m]		1,0	1,5	2,0	
Colour - anodizing method	C0 - natural colour	Code	4000/C0	4003/C0	4011/C0
	C - electrochemical colouring		4000/C..	4003/C..	4011/C..
	CI - interference colouring		4000/CI..	4003/CI..	4011/CI..
Painting - polyester powder paints according RAL pallet		4000M	4003M	4011M	
Net weight [kg]		1,8	2,0	2,2	
Approximate volume [m ³]*		0,01	0,01	0,01	

* For orders more than 10 pcs stated volume may change according to packing





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VII. CONCRETE FOOTINGS AND REINFORCEMENT BASKETS



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VII. CONCRETE FOOTINGS AND REINFORCEMENT BASKETS

General information

APPLICATION:

Buried concrete footings are used as foundations for lighting columns. Buried concrete filled reinforcement baskets are used as foundations for lighting columns and poles.

CONCRETE FOOTINGS

TECHNICAL INFORMATION:

- concrete class B20,
- steel reinforcement basket,
- screws spigot endings hot galvanized,
- in concrete footings for columns and flag poles we use thermo-shrinkable sleeves put on the screws endings in place of base plate deposition, what protects against corrosion on screw,
- side holes and vertical hole to provide power cables,
- surface is covered with an impregnate coating(certified asphalted anion emulsion),
- square section (columns and flag poles as well pole SP-5W) or round (poles with external plastic coating and column SALDECO-3).

ADVANTAGES:

- single-element construction makes it easy to place products in the ground,
- fast and easy assembly with no seasoning required,
- high quality due to used automated controlled process and equipped with a biaxial vibrator (which produces high density concrete mixture).

REINFORCEMENT BASKETS

TECHNICAL INFORMATION:

- steel reinforcement basket,
- protected corrosion resistant oxide paint,
- screws spigot endings hot galvanized,
- in reinforcements baskets for columns and flag poles used thermo-shrinkable sleeves placed on the screws spigot endings in place of base plate deposition, what protects before corrosion bell on screw,
- square section (columns and flag poles as well pole SP-5W) or round (poles with external plastic coating and column SALDECO-3).

ADVANTAGES:

- light weight facilitates easy transport,
- for installation on customer footings.

Additional elements:

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

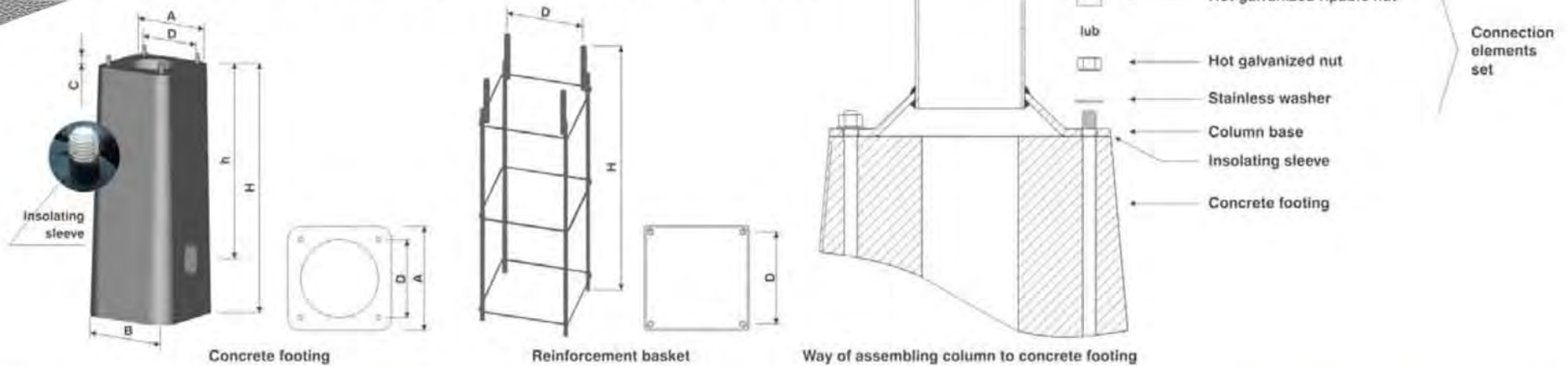
The manufacturer recommends using original footings and reinforcement baskets as well connection elements to a guarantee of stability and safety of whole construction.





VII. CONCRETE FOOTINGS AND REINFORCEMENT BASKETS

Concrete Footings and Reinforcement Baskets



Footing type	B-42	B-50	B-51	B-60	B-61	B-70	B-71	B-80
Code	311142	311150	311151	311160	311161	311170	311171	311180
Dimensions A x B x H [mm]	400 X 450 X 1000	225 x 330 x 900	260 x 330 x 900	320 x 360 x 1000	300 x 340 x 1000	400 x 450 x 1200	400 x 450 x 1000	400 x 400 x 1500
Depth of cable hole h [mm]	650	620	580	650	650	650	650	800
Screw spacing D [mm]	300	180	200	250	200	300	300	300
Screws quantity x size x length C [mm]	4 x M18 X 110	4 x M14 x 25	4 x M18 x 30	4 x M18 x 35	4 x M18 x 30	4 x M24 x 45	4 x M24 x 45	4 x M27 x 60
Weight [kg]	230	145	160	215	195	330	230	475
Unit volume [m ³]	0,23	0,08	0,10	0,12	0,12	0,24	0,20	0,26

Reinforcement basket type	Z-42	Z-50	Z-51	Z-60	Z-61	Z-70	Z-71	Z-80
Code	311242	311205	311251	311206	311261	311207	311271	311208
Height H [mm]	1000	900	900	1000	1000	1200	1000	1500
Screw spacing D [mm]	300	180	200	250	200	300	300	300
Screws quantity x size x length C [mm]	4 x M18 X 110	4 x M14 x 25	4 x M18 x 30	4 x M18 x 35	4 x M18 x 30	4 x M24 x 45	4 x M24 x 45	4 x M27 x 60
Weight [kg]	8	4,2	4,5	7,0	5,1	11,0	8,0	25,0
Unit volume [m ³]	0,09	0,03	0,04	0,05	0,04	0,11	0,09	0,14
Hot galvanized nut set code NOO*	311004	4006		4008			4012	4014
Hot galvanized ripable nut set code NZOO*	-	4007		4009			4013	-

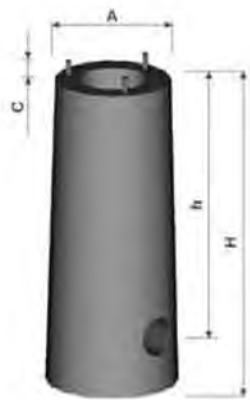
* NOO - hot galvanized nut set, NZOO - hot galvanized ripable nut set



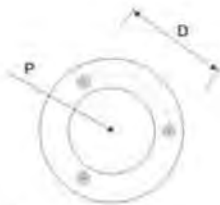


VII. CONCRETE FOOTINGS AND REINFORCEMENT BASKETS

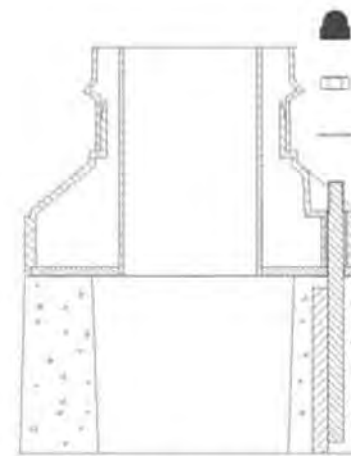
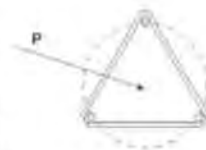
Concrete Footings and Reinforcement Baskets



Concrete footing



Reinforcement basket



Way of assembling column to concrete footing

- ← Rubber cover plate
 - ← Hot galvanized nut
 - ← Washer
 - ← Footing pin
 - ← Pole
 - ← Concrete footing
- Connection elements set

Footing type	B-20	B-30	B-31	B-40
Code	311120	311130	311131	311140
Dimensions A x H [mm]	Ø225 x 500	Ø300 x 800	Ø300 x 800	Ø300 x 1100
Depth of cable hole h [mm]	420	590	590	735
Screws ray spacing P [mm]	95	118	118	118
Screw spacing D [mm]	164,7	204,6	204,6	204,6
Screws quantity x size x length C [mm]	3 x M12 x 50	3 x M14 x 80	3 x M14 x 30	3 x M14 x 80
Weight [kg]	39	115	115	167
Unit volume [m ³]	0,03	0,07	0,07	0,10

Reinforcement basket type	Z-20	Z-30	Z-31	Z-40
Code	311202	311203	311231	311204
Height H [mm]	500	800	800	1100
Screws ray spacing P [mm]	95	118	118	118
Screw spacing D [mm]	164,7	204,6	204,6	204,6
Screws quantity x size x length C [mm]	3 x M12 x 50	3 x M14 x 80	3 x M14 x 30	3 x M14 x 80
Weight [kg]	1,5	3,0	3,0	4,0
Unit volume [m ³]	0,01	0,03	0,03	0,04
Hot galvanized nut set code*	311002		311003	

* Hot galvanized nut set





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OUTDOOR LIGHTING