

LAMP POSTS AND MASTS



Elektromontaż
Rzeszów SA

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ELEKTROMONTAŻ RZESZÓW S.A. is pleased to give you the 16th edition of the **LAMP POSTS AND MASTS** catalogue, your quick and clear reference guide to the lighting system products and other structures.

The **LAMP POSTS AND MASTS** showcases four main product lines divided into two material groups, steel and aluminium alloys:

PARK LAMPS
STREET LAMPS
LAMP MASTS
SPECIAL STRUCTURES

Our product range will facilitate your choice of the technically and aesthetically best lighting system.

The products in our offer are most often used in lighting systems for streets and roads, yards and plazas, as well as railway and sports facilities. Our products shed the light on historical and modern city centres, parks, gardens, residential districts, commercial areas and industrial premises. Our other structures are designed as road crossing infrastructure components, telecommunication system substructures, as well as load-bearing structures for renewable energy source installation.

All products of **ELEKTROMONTAŻ RZESZÓW S.A.** come with high quality and durability to last even in the most demanding environment. The quality of our manufacture is proved by the PN-EN ISO 9001, PN-EN ISO 14001 and PN-N 18001 Integrated Management System certification.

ELEKTROMONTAŻ RZESZÓW S.A. is one of the first in the industry to have passed the product certification for compliance with the PN-EN 40 standard.

The compliance certification covers the entire process of design engineering, manufacturing and control of steel and aluminium lamp posts and masts.

Our compliance with the European Community directives and harmonised standards has been certified and proven by the right to use the CE mark.

ELEKTROMONTAŻ RZESZÓW S.A. is one of the first in the industry to have passed the certification for the passive collision safety of lamp posts according to the PN-EN 12767 standard.

The Building Research Institute of Warsaw has examined the process of design engineering, manufacturing and control of steel lamp post types S-100C-PS, S-110C-PS, S-120C-PS, S-100CN-3PS, S-110CN-3PS and S-120CN-3PS with the F150/200-PS foundation block and steel lamp post types S-100/8-PS, S-110-PS and S-120-PS with the F150/200-PS foundation block, and thus confirmed that their passive safety characteristics comply with the PN-EN 12767 standard.

ELEKTROMONTAŻ RZESZÓW S.A. has met the requirements of EU standards and regulations for class EXC3 welded steel and aluminium construction and engineering components and received the PN-EN 1090-1 certificate of compliance from a third-party notified body, allowing the company to apply the CE mark on its products.

Since July 2005 all lamp posts and masts by ELEKTROMONTAŻ RZESZÓW S.A. are certified for compliance with EN 40 and bear the following mark:

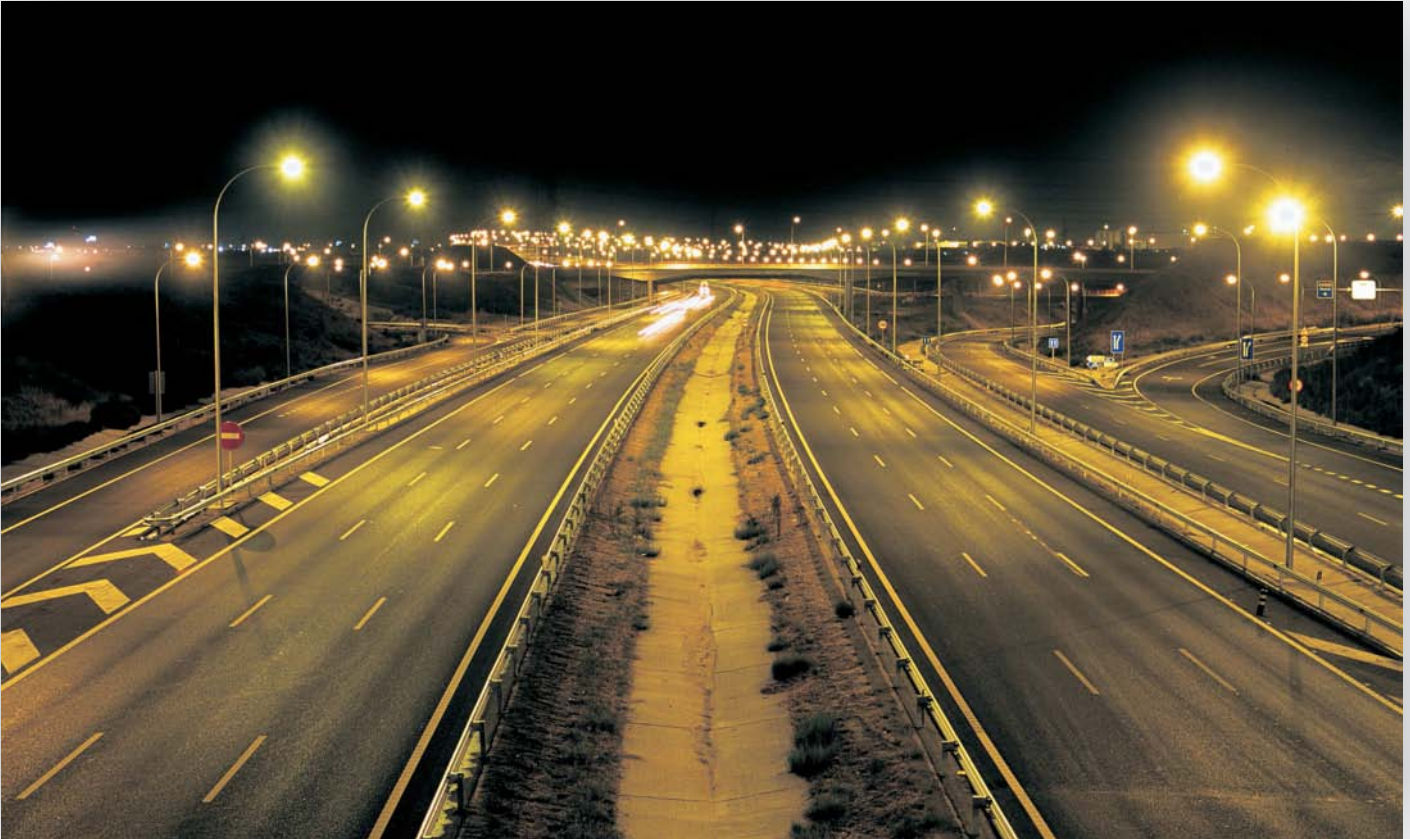


Tallinn, Rotermann Centre



The Netherlands, Denekamp





BASIC ADVANTAGES OF OUR LAMP POSTS AND MASTS:

CORROSION RESISTANCE: hot-dip galvanising of steel posts and well-chosen alloys for aluminium posts result in long life of the posts, while prefabricated concrete foundation blocks provide perfect anti-corrosion protection at the point of post contact with the soil.

HIGH DYNAMIC AND MECHANICAL STRENGTH: the unique spatial design of posts assures good durability and excellent vibration dampening which reduce failure frequency of fixtures and lamps.

FLEXIBLE AND LIGHTWEIGHT DESIGN: unlike in concrete lamp posts, the deformation performance of our posts results in less severe collision damage of vehicles.

EXTRA LOW WEIGHT: this facilitates handling and transport – one truck can carry a large number of lamp posts.

MODERN DESIGN, MANY APPLICATIONS: our posts are most often used in lighting systems for streets and roads, yards and plazas, as well as railway and sports facilities. Our products shed the light on historical and modern city centres, parks, gardens, residential districts, commercial areas and industrial premises.

THE PRODUCTS CAN BE PAINT COATED IN A WIDE RANGE OF COLOURS. COST-EFFECTIVE OPERATION.

**THE ADVANTAGES ARE PROVEN BY NEARLY HALF OF A MILLION
INSTALLED POSTS**

CERTIFICATES & APPROVALS

**BUILDING RESEARCH INSTITUTE
CERTIFICATION DEPARTMENT**
ul. FILTROWA 1, 00-611 WARSZAWA
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IAF **PCA**
AC 020

EC CERTIFICATE OF CONFORMITY
1488-CPD-0006

In compliance the Directive 89/106/EEC of the Council of European Communities of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products, amended by the Directive 93/68/EEC of the Council of European Communities of 22 July 1993, it has been stated that the construction product

STEEL LIGHTNING COLUMNS
made of polygonal and circular profiles, with or without brackets, up to 20 metres high and passive safety of class '0'

placed on the market by
ELEKTROMONTAŻ RZESZÓW SA
ul. Słowackiego 20
35-060 Rzeszów

and produced in the factory
Elektromontaż Rzeszów S.A. - Zakład Produkcji Urządzeń
ul. Przemysłowa 8
35-105 Rzeszów

is submitted by the manufacturer to a factory production control and to the further testing of samples taken at the factory in accordance with a prescribed test plan and that the notified body - Building Research Institute - has performed the initial type-testing for the relevant characteristics of the product, the initial inspection of the factory and of the factory production control and performs the continuous surveillance, assessment and approval of the factory production control.

This certificate attests that all provisions concerning the attestation of conformity and the performances described in Annex ZA of the standard

EN 40-5:2002

were applied and that the product fulfils all the prescribed requirements.

This certificate was first issued on 07.07.2005 (updated on 04.10.2011) and remains valid as long as the conditions laid down in the harmonised technical specification in reference or the manufacturing conditions in the factory or the FPC itself are not modified significantly.

DEPUTY HEAD of the Certification Department
Piotr Maciejak

DIRECTOR of the Building Research Institute
Marek Kaproń

Warsaw, 04.10.2011

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AC 020

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1488-CPD-0007

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ALUMINIUM LIGHTNING COLUMNS
made of polygonal and circular profiles, with or without brackets, up to 20 metres high and passive safety of class '0'

placed on the market by
ELEKTROMONTAŻ RZESZÓW SA
ul. Słowackiego 20
35-060 Rzeszów

and produced in the factory
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35-105 Rzeszów

is submitted by the manufacturer to a factory production control and to the further testing of samples taken at the factory in accordance with a prescribed test plan and that the notified body - Building Research Institute - has performed the initial type-testing for the relevant characteristics of the product, the initial inspection of the factory and of the factory production control and performs the continuous surveillance, assessment and approval of the factory production control.

This certificate attests that all provisions concerning the attestation of conformity and the performances described in Annex ZA of the standard

EN 40-6:2004

were applied and that the product fulfils all the prescribed requirements.

This certificate was first issued on 12.07.2005 (updated on 04.10.2011) and remains valid as long as the conditions laid down in the harmonised technical specification in reference or the manufacturing conditions in the factory or the FPC itself are not modified significantly.

DEPUTY HEAD of the Certification Department
Piotr Maciejak

DIRECTOR of the Building Research Institute
Marek Kaproń

Warsaw, 04.10.2011

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IAF **PCA**
AC 020

EC CERTIFICATE OF CONFORMITY
CPD-1488-0121/W

In compliance the Directive 89/106/EEC of the Council of European Communities of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products, amended by the Directive 93/68/EEC of the Council of European Communities of 22 July 1993, it has been stated that the construction product

Lighting poles S-100C-PS (S-110C-PS, S-120C-PS) + foundation F150/200-PS
Lighting poles S-100B-PS (S-110B-PS, S-120B-PS) + foundation F150/200-PS

Impact performance (passive safety) - tests and classification according EN 12767

Poles S-100C-PS: class 100, HE, 3
Poles S-100B-PS: class 100, HE, 1

placed on the market by
ELEKTROMONTAŻ RZESZÓW SA
ul. Słowackiego 20
35-060 Rzeszów

and produced in the factory
Elektromontaż Rzeszów S.A. - Zakład Produkcji Urządzeń
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35-105 Rzeszów

is submitted by the manufacturer to a factory production control and to the further testing of samples taken at the factory in accordance with a prescribed test plan and that the notified body - Building Research Institute - has performed the initial type-testing for the relevant characteristics of the product, the initial inspection of the factory and of the factory production control and performs the continuous surveillance, assessment and approval of the factory production control.

This certificate attests that all provisions concerning the attestation of conformity and the performances described in Annex ZA of the standard

PN-EN 40-5:2004

were applied and that the product fulfils all the prescribed requirements.

This certificate was first issued on 01.09.2009 and remains valid as long as the conditions laid down in the harmonised technical specification in reference or the manufacturing conditions in the factory or the FPC itself are not modified significantly.

HEAD of the Certification Department
Barbara Dobosz

DEPUTY DIRECTOR of the Building Research Institute
Jan Bobrowicz

Warsaw, 01.09.2009

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IAF **PCA**
AC 020

EC CERTIFICATE OF CONFORMITY
1488-CPD-0319/W

In compliance with Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products (the Construction Products Directive or CPD), as later amended, it has been stated that the construction product

Steel lighting poles
S-100CN-3PS, S-110CN-3PS, S-120CN-3PS

Impact performance (passive safety) - tests and classification according to EN 12767:2007, class 100, LE 1

placed on the market by
ELEKTROMONTAŻ RZESZÓW SA
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and produced in the factory
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35-105 Rzeszów

is submitted by the manufacturer to a factory production control and to the further testing of samples taken at the factory in accordance with a prescribed test plan and that the notified body No. 1488 - Building Research Institute - has performed the initial type-testing for the relevant characteristics of the product, the initial inspection of the factory and of the factory production control and performs the continuous surveillance, assessment and approval of the factory production control.

This certificate attests that all provisions concerning the attestation of conformity and the performances described in Annex ZA of the standard

EN 40-5:2002

were applied and that the product fulfils all the prescribed requirements.

This certificate was first issued on 17.12.2012 and remains valid as long as the conditions laid down in the harmonised technical specification in reference or the manufacturing conditions in the factory or the FPC itself are not modified significantly.

HEAD of the Certification Department
Barbara Dobosz

DEPUTY DIRECTOR of the Building Research Institute
Jan Bobrowicz

Warsaw, 17.12.2012

TERMS AND DEFINITIONS

1. STANDARD ISOMENCLATURE OF LAMP POSTS AND MASTS ACC. TO PN-EN 402. DESIGNATIONS IN THIS CATALOGUE

1.1. Lighting column [post or mast].

A support intended to hold one or more lanterns [lamp fixtures], consisting of one or more parts: a post, possibly and extension piece, and, if necessary, a bracket.

1.2. Nominal height (H).

The distance between the centre line of the point of entry of the lantern [lamp fixture] and the bottom of the flange plate.

1.3. Post top column [straight post].

A straight column without without a bracket to support the lantern, which is a post top lantern [lamp fixture] directly.

1.4. Column with bracket [bracket post].

A column to support a lantern or lanterns [lamp fixture(s)] (side entry lanterns) by means of one or more brackets which are integral with, or demountable from, the column.

1.5. Bracket.

A component used to support a lantern [lamp fixture] at a definite distance from the axis of the lower straight portion of the column, of single, double or multiple form and integral with, or demountable from, the column.

1.6. Bracket projection (W).

The horizontal distance from the point of entry to the lantern [lamp fixture] to a vertical line passing through the centre of the cross-section of the column at the ground level.

1.7. Bracket fixing.

The connecting part on a column for securing a separate bracket. It may be of the same size or a different cross-section from the column.

1.8. Lantern [lamp fixture] fixing.

The connecting part on the end of a post top column or of a bracket for securing a lantern. It may be integral with, or demountable from, the column or bracket.

1.9. Lantern [lamp fixture] fixing angle.

The angle between the axis of the lantern fixing and the horizontal.

1.10. Post access door.

A cover which closes the opening [hand hole] in the lower portion of the column, providing access to the column [post] recess in which the electrical equipment of the column can be installed.

1.11. Cable entry slot.

The opening in the column (or its foundation) below the ground for the cable entry.

1.12. Planting depth.

The length of the foundation (or the column) below the designed ground level.

1.13. Base plate.

The plate below the ground level fixed to a column planted directly (i.e. without the foundation structure) in the soil.

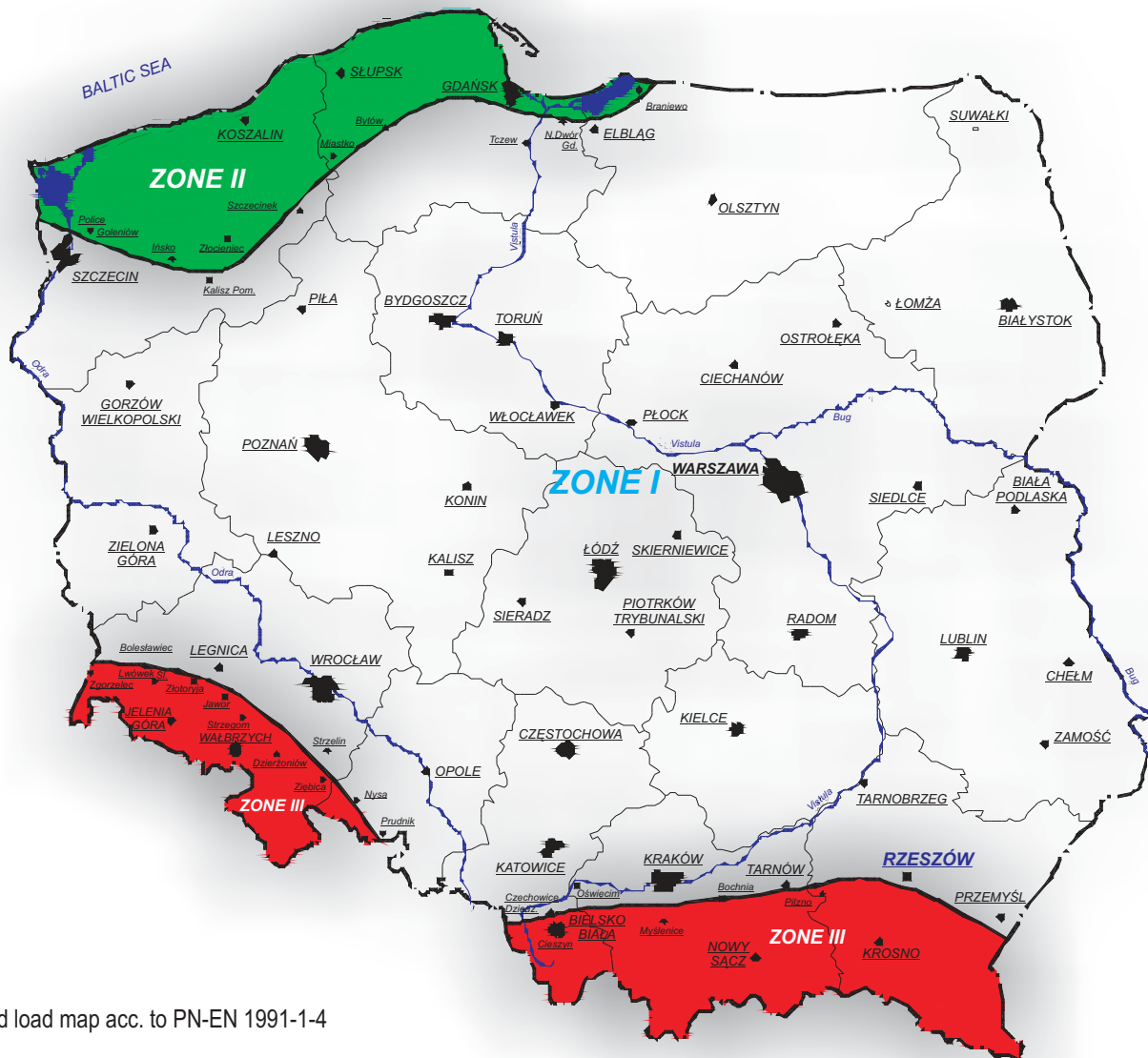
1.14. Flange plate.

A plate with an opening for cable entry, welded to a surface-mounted column to allow the column to be secured to a foundation block or other substructure.

α	- lamp fixture fixing angle,
β	- articulated post arm rotation angle,
$\varnothing M$	- spacing diameter of mast anchor bolts,
$\varnothing s$	- anchor bolt diameter,
a	- foundation block side size,
AxB	- spacing of foundation anchor bolts,
$\varnothing d$	- lamp fixture fixing (stub) diameter,
D_A	- post/mast top diameter, A,
D_E	- post/mast foot diameter, E,
D_{GN}	- floodlight installation diameter for the GN horizontal system (applies to type GN heads),
D_{GNm}	- floodlight installation diameter for the GNm horizontal system (applies to type GN heads),
H	- structure nominal height,
h	- length (depth) of the foundation or post section in the soil,
H_1	- extension piece height for the P series post, 1,
H_2	- extension piece height, 2,
H_{2s}	- wall-mounted bracket height, 2s,
H_A	- antenna installation height, A,
H_L	- antenna spire length, L,
H_M	- height of the drive gear recess bottom, M,
H_t	- terrain elevation above the sea level, t,
H_n	- height values of individual mast segments, n,
H_p	- service platform installation height, P,
H_{WK}	- height of the cable recess hole bottom, WK,
i	- number of bracket arms, r,
L	- lamp fixture fixing length,
L_M	- drive gear recess length, M,
L_{WK}	- cable recess length, WK,
M	- post weight with accessories (bracket) ,
M_F	- strength-critical moment at base, F,
M_{Fr}	- restraining moment for soil group II, see Table Fr on p. 8,
Mg	- foundation stability moment,
M_w	- toppling moment, w,
N_C	- total load on soil, C (mast + accessories + foundation),
n	- number of foundation anchor bolts,
q_g	- soil limit resistance, g,
R	- bracket bending radius,
T	- shearing force at the post (mast) base level,
t	- spacing of beams in the vertical system (type 2T beams and type H heads),
t_{bl}	- post (mast) wall thickness, bl,
W	- bracket projection,
W_H	- beam length for the type H head, measured from the post (mast) axis H to the beam end,
W_{Hd}	- bottom beam spacing for the type H or Hd head,
W_{Hg}	- top beam spacing for the type H or Hg head,
W_s	- traffic light arm length, s,
W_T	- type T beam length measured from the post (mas)t axis T, to the beam end,
Z	- taper of post (mast) sides.

GENERAL

CHARACTERISTICS OF WIND ZONES



Wind load map acc. to PN-EN 1991-1-4

There are three wind load zones classified in Poland:

ZONE I: the majority of the country.

ZONE II: this zone includes a strip of land from the ridge portion of the rises in the Pomerania Lakeland to the Baltic Sea coast, and a narrow strip of land along the Gdańsk Bay and the Łysogóry range.

ZONE III: this zone covers the area which stretches from the Sudety Foreland and the Carpathian Highlands to the mountain summits inclusive. Each Zone border is a strip approximately 10 km wide, with the mean q_k values at the border from either of the neighbouring Zones, depending on the land relief and wind exposure of structures.

Zone	H_t m. a.s.l.	V_k m/s	q_k Pa
I (III ≤ 300m a.s.l.)	≤ 300	22	300
I (III ≤ 550m a.s.l.)	≤ 500	25	375
II (III ≤ 600m a.s.l.)	≤ 600	26	420
III	≤ 950	30	527

V_k - Specific wind speed (which is the 10-minute average wind speed at 10 m above the ground in open area).

q_k - Specific wind speed pressure, calculated for the Wind Zone and the height H acc. to PN-EN 1991-1-4.

STATIC LOADS

STATIC LOADS

Two types of impact are considered in the design of posts and masts:

- static impact, which depends on the structure's weight and the lamp fixture weight atop of the column.
- variable impact, which depends on the weather conditions, i.e. the wind load as defined in PN-77/B-02011 and PN-EN 1991-1-4 and the snow load as defined in PN-EN 1991-1-3.

The tables specify the maximum post (mast) load, i.e. the maximum weight and side surface area of installed lamp fixtures and support structures, depending on the post (mast) location for the Land Category III acc. to PN-EN 40-3-1. The maximum MF value of the bending moment is also listed as counterpart of the permissible loads acting on the post/mast (as applicable to the maximum weight and side surface area of installed lamp fixtures and support structures). When installing posts in Wind Zone III, consider the permissible elevation a.s.l., listed under each table, of the column installation with the specific configuration plus brackets and lamp fixtures.

GENERAL SOIL ENGINEERING PARAMETERS

This catalogue assigns the specific foundation type to the maximum bending moment for the soil engineering parameters of Group II according to the table below. The type F pre-cast foundation blocks meet the requirements of PN-80/B-03322 for the soil substrate limit resistance. The posts and masts shall be installed on pre-cast foundation structures according to best construction practices and the principles of soil mechanics and foundation engineering. The foundation structures must be suitably larger if the soils at the planting bottom level feature very poor parameters.

SOIL TYPE AND CONDITION		GENERAL SOIL ENGINEERING PARAMETERS					
		ψ	c [kN/m ²]	γ [kN/m ³]	C [kN/m ³]	μ	q_g
GROUP I	Dumps, rubble, gravel, all-ins, coarse and moderate grain sand – also compacted or moderately compacted, finely compacted sand.	37	0	18,5	40000	0,55	0,3
GOOD QUALITY SOIL	Dust, clay, heavy clay, silt, clay gravel, all-ins and sand.	20	25	20,0	40000	0,25	
GROUP II	Dumps, rubble, gravel, all-ins, coarse grain and loose sands, fine grain and dusty sands with moderate compaction.	32	0	17,5	25000	0,45	0,25
MODERATE QUALITY SOIL	Dust, clay, thick clay, silt, clay gravel, all-ins and sand.	15	20	19,0	25000	0,30	
GROUP III	Fine grain and dust sands, loose sands, moderately compacted humus sands.	25	0	15,0	10000	0,35	0,2
VERY POOR SOIL	Dust, clay, thick clay, clay gravel, all-ins and clay sand.	10	5	18,0	5000	0,10	

Legend:

ψ - internal friction angle, degrees,
 c - cohesion,
 γ - volumetric weight,

C - substrate modulus of elasticity,
 μ - coefficient of friction between soil and concrete foundation,
 q_g - soil limit resistance

CALCULATING THE FOUNDATIONS

Elektromontaż Rzeszów S.A. offers a range of pre-cast foundation blocks of park and street lighting systems. These products meet the strength requirements (as listed in the permissible column load tables) of the column and lamp fixture system and can be used in all Polish Wind Zones.

The column foundation blocks listed in the tables facilitate planting the columns in soils with moderate soil engineering parameters (Group II). The foundation sizes for masts and other structures not erected on cast-in-place foundations are calculated for the soil with the total permissible moment M_F load of the structure. The foundation construction details shall meet the relevant construction standards and soil conditions at the mast planting site.

CALCULATING THE FOUNDATIONS OF MASTS AND SUPPORT STRUCTURES

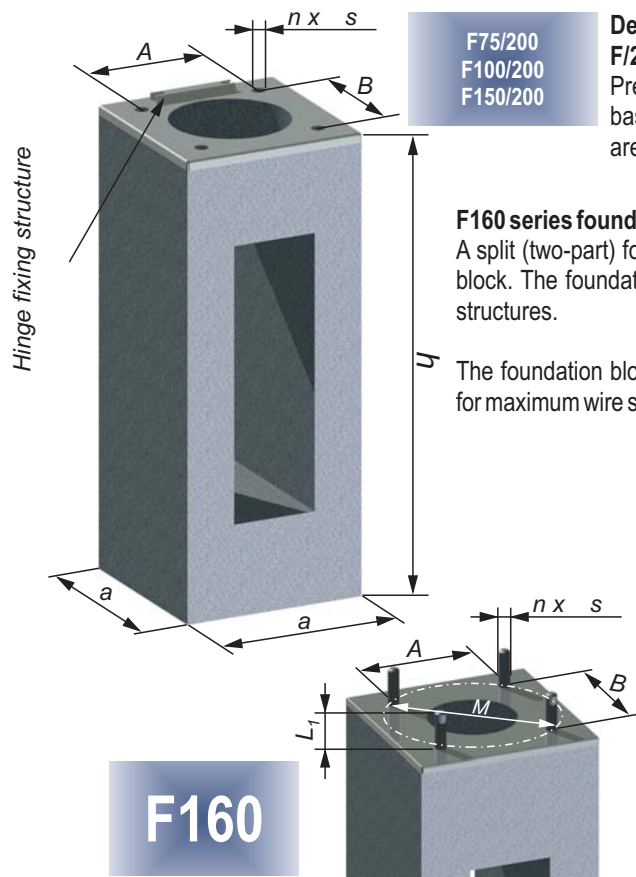
The planting shall be designed by suitably authorised personnel and according to relevant geoenvironmental design and reinforced concrete structure standards.

GENERAL

PRE-CAST REINFORCED CONCRETE FOUNDATION BLOCKS FOR $H \leq 14m$ POSTS AND MASTS

Intended use:

The foundation blocks are intended for installation of type S lamp posts and other structures with the restraining moment equal to or less than M_g and planted in Group II soils with moderate soil engineering parameters.



Design:

F/200 series foundation blocks:

Pre-cast reinforced concrete foundation block topped with a steel fastening plate with the post base fixing system and hinge fixing parts. Foundation blocks without the hinge system are available on custom order.

F160 series foundation blocks:

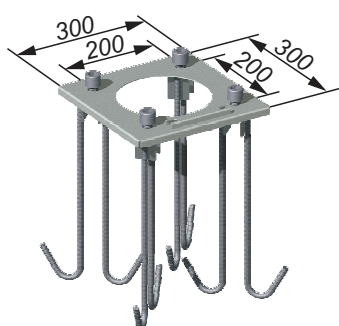
A split (two-part) foundation block which facilitates transport, handling and installation, or a solid foundation block. The foundation block features four (4) M4 anchors for fixing the flange plate base of masts or other structures.

The foundation blocks are made of class C16/20 (B20) reinforced concrete with matching cable entry slots for maximum wire size of $4 \times 95 \text{ mm}^2$. Foundation steel parts: anchors, bolts, and fasteners are galvanized.

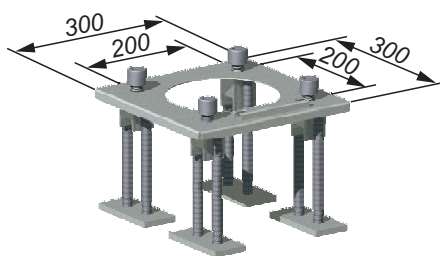
TYPE	h	a	AxB/ØM	L_1	$n \times \text{Øs}$	m	M_g
	m	m	mm	mm	mm	kg	kNm
*F75/200	0,75					92	3,9
F100/200	1,0	0,3	200 x200	-	4xM20	126	9,3
F150/200	1,5					188	25
F160	1,6	0,4	250x250	80 ^{±5}	4xM24	356	40

* - The foundation block is designed for park lamp posts at $H \leq 4m$, 4m with the post load equal or less than the permissible foundation load $M_f \leq M_g$.

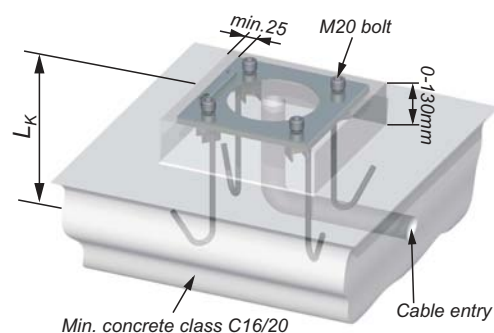
ANCHORING OF LAMP POSTS ON BRIDGES AND MONOLITHIC BODIES



HOOK



PLATE



Item.	TYPE	ANCHOR TYPE	MINIMUM R/C PART THICKNESS [L_k]	PERMISSIBLE MOMENT TRANSFERRED BY ANCHOR [M_e]
1.	BF/200/440	FAJKOWE	440mm	18kNm
2.	BF/200/190	PLYTKOWE	190mm	15kNm
3.	BF/200/210	PLYTKOWE	210mm	8kNm
4.	BF/200/240	PLYTKOWE	240mm	13kNm
5.	BF/200/250	PLYTKOWE	250mm	18kNm

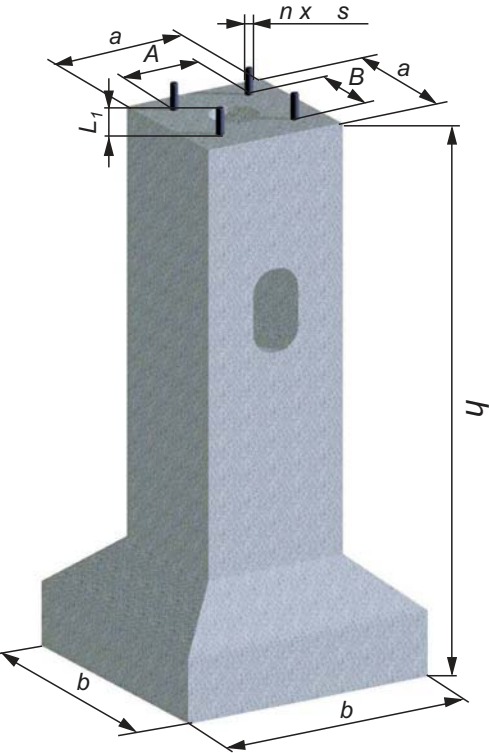
Note: Cast the concrete with the bolts tightened. Once the concrete has initially set, remove the bolts, lubricate the threads and replace the bolts in the holes.

GENERAL

PRE-CAST REINFORCED CONCRETE FOUNDATION BLOCKS FOR MASTS

INTENDED USE:

The foundation blocks are intended for installation of type M lamp masts and other structures with the restraining moment equal to or less than M_g and planted in Group II soils with moderate soil engineering parameters.



F165/250

DESIGN

F165/250 FOUNDATION BLOCKS

Wide base r/c foundation block. The foundation block features four (4) M4 anchors for fixing the flange plate base of masts.

F200/450 AND F200/550 FOUNDATION BLOCKS:

Flared to bottom r/c foundation block. The foundation block features eight (8) M24 anchors.

The foundation blocks are made of class C16/20 (B20) reinforced concrete with matching cable entry slots for maximum wire size of 4 x 95 mm². Foundation steel parts: anchors, bolts, and fasteners are protected with anti-corrosion coating.

TYP	H	A	B	AXB/ØM	L ₁	nxØs	m	M _g
	m	m	m	mm	mm	mm	kg	kNm
F165/250	1,65	0,45	0,80	250x250	85	4xM24	1110	50
F200/450	2,0	0,60	0,90	Ø450	85	8xM24	2100	76*
F200/550	2,0	0,60	0,90	Ø550	85	8xM24	2100	76*

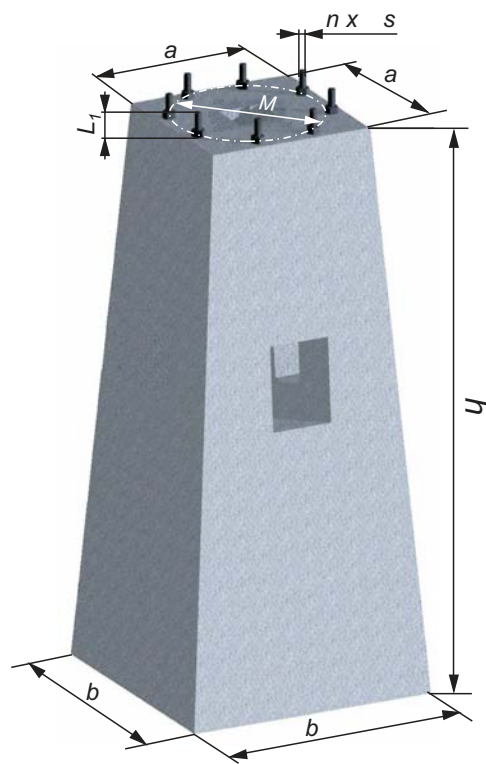
*- See the description below for specific values.

F200/450
F200/550

OTHER INFORMATION:

Estimated values of the moment M_g for F200 foundation blocks with anchor ring calculated per PN-EN 1993-1-8 Eurocode 3:

- non-cohesive soil with design internal friction angle $\Phi(r)u=30^\circ$ and design volumetric weight $\gamma(r)D=17kN/m^3$ - $M_g=76kNm$;
- non-cohesive soil with $\Phi(r)u=35^\circ$ and $\gamma(r)D=18kN/m^3$ - $M_g=118kNm$;
- cohesive soil with design cohesion $c(r)u=25kPa$, $\Phi(r)u=15^\circ$ and $\gamma(r)D=19kN/m^3$ - $M_g=87kNm$.



GENERAL

FLANGE PLATE FOR LAMP POSTS INSTALLED ON F/200 SERIES FOUNDATION BLOCKS



INTENDED USE:

The flange plates are applied in the manufacturing process of all park and street lamp posts up to 12 high, as well as other structures designed for fixing on the F/200 series pre-cast foundation blocks.

View of a flange plate fixing assembly and the installation method with the hinge.



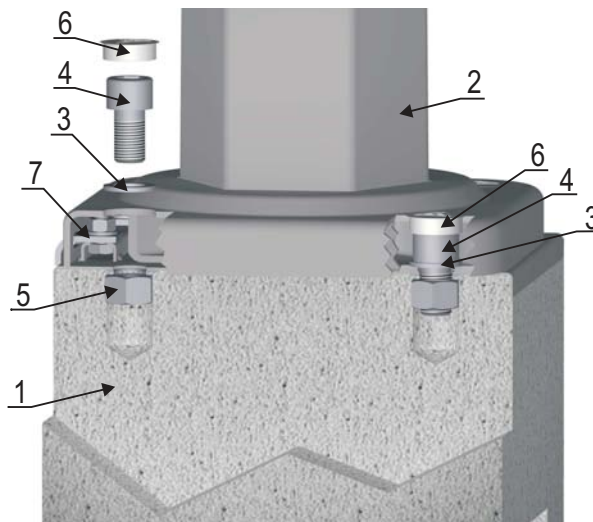
Lifting the post on the hinge.

DESIGN:

The flange plate is pressed from a rectangular plate which forms a truncated cylinder. The flange plate features hinge holders which facilitate setting the post on its foundation without any crane. The fixing assembly between the post and the foundation block is completely concealed with its fastening screws and the hinge in the pressed plate.



Detail S



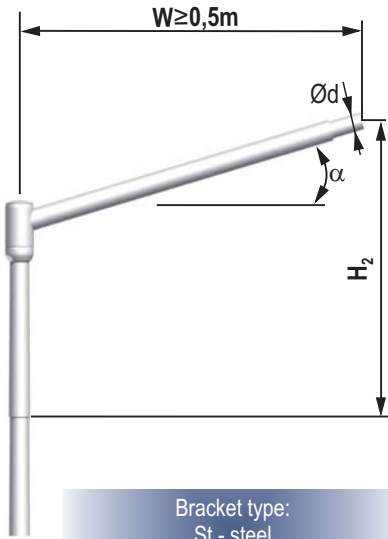
1. Foundation block
2. Post
3. Washer
4. Bolt
5. Nut, cast in foundation
6. Blind plug
7. Hinge

ADVANTAGES:

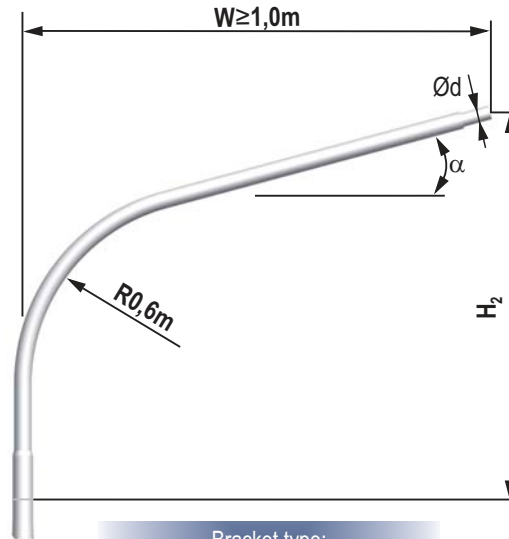
- Enhanced protection of bolted joints against corrosion and mechanical damage.
- Standardised hinge assembly for $H \leq 12\text{m}$ lamp posts and other structures fixed on the F/200 series foundation blocks.
- Enhanced protection of fastening screws against unauthorised access.
- Standardised fastening plate size and fastening bolt spacing for park and street posts.
- Aesthetic design.

GENERAL

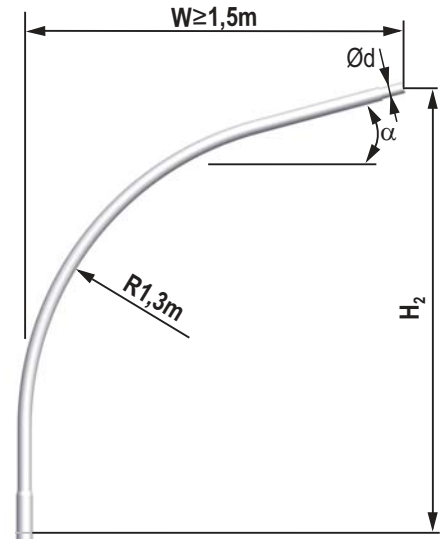
STREET LAMP POST BRACKETS



Bracket type:
St - steel
AL - aluminium



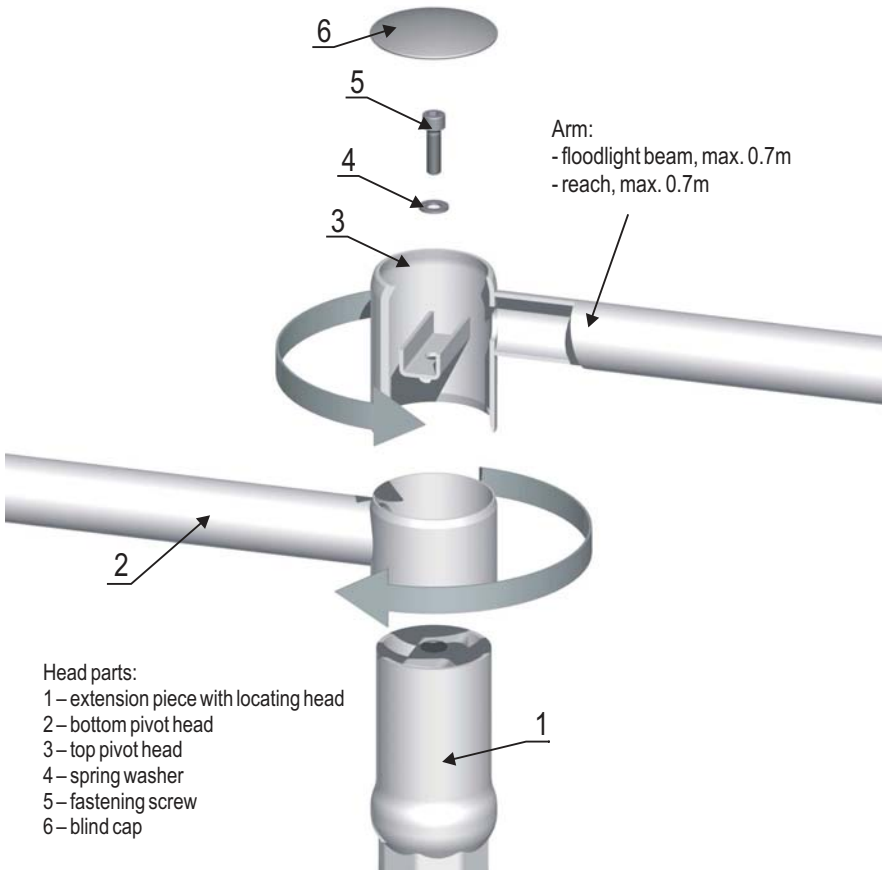
Bracket type:
St-Y - steel
AL-Y - aluminium



Bracket type:
St-X - steel
AL-X - aluminium

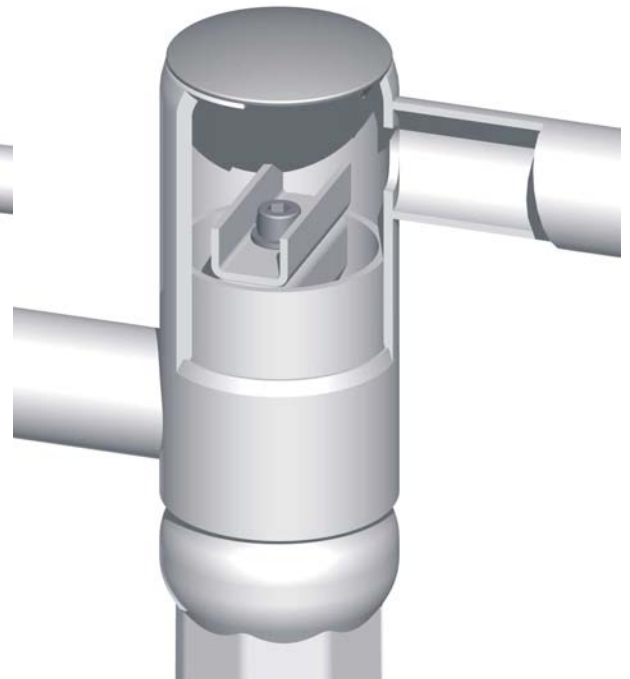
Note:
The type St bracket for steel posts comes with a pivot head which allows orientation setting within the full rotation angle range.

PIVOT HEAD WITH T-BEAM FOR LAMP POSTS



Head parts:
1 - extension piece with locating head
2 - bottom pivot head
3 - top pivot head
4 - spring washer
5 - fastening screw
6 - blind cap

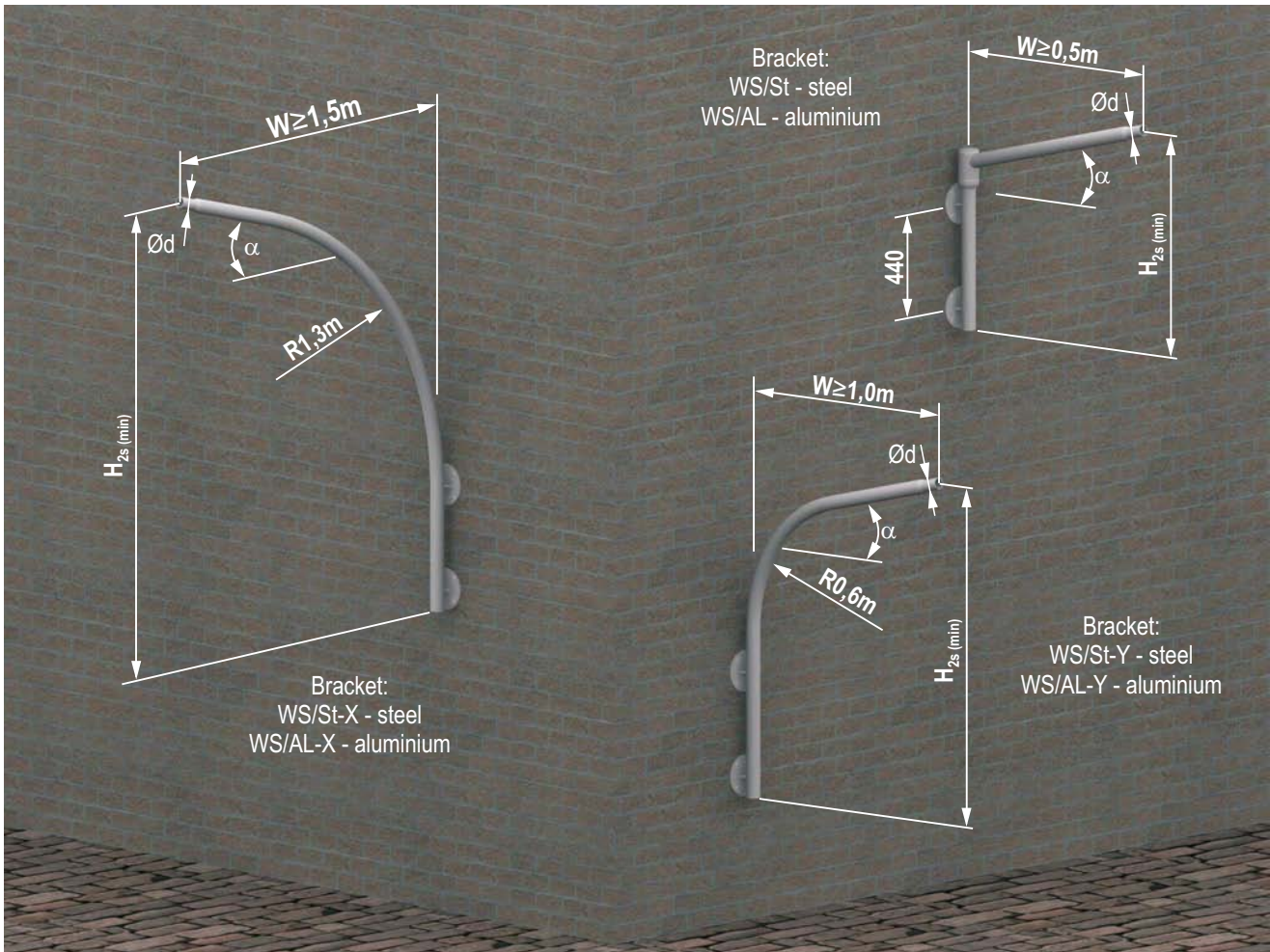
Installed head details



The head is available in two versions: the single pivot head with one beam (arm) and the double pivot head with two beams (arms), as shown above. The head can be installed on all types of lamp posts with one or two arm brackets (and the maximum arm length of 0.7m) or the single or double floodlight beam. The head facilitates setting the arms (beams) at any angle relative one to the other and the post axis (for the double pivot head), or setting the arm (beam) at any angle relative to the post axis (for the single pivot head).

GENERAL

WALL-MOUNTED BRACKETS



The table applies to the figure above

BRACKET TYPE		α deg	H _{2S(min)} m	Ød mm	W m	R m	Weight [kg]			
steel	aluminium						steel	aluminium		
WS/St	WS/AL	5°;10°;15°	0,75	48;60	-	0,6	7,5	2,6		
							9,2	3,2		
							10,7	3,8		
							12,6	4,4		
WS/St-Y	WS/AL-Y		1,50		2,0		11,0	4,2	13,8	5,1
							16,1	6,1		
							15,5	6,5		
WS/St-X	WS/AL-X		2,0		2,5		17,8	7,3	20,1	8,2

Each bracket features eight (8) fixing holes for M12 bolts.

If longer reaches are required, the bracket fixing shall be investigated according to the lamp fixture type (i.e. weight and wind loaded surface) and the Wind Zone acc. to PN-EN 1991-1-4.

Systems of asymmetric brackets or systems with parameters not listed here shall be agreed on an individual basis.

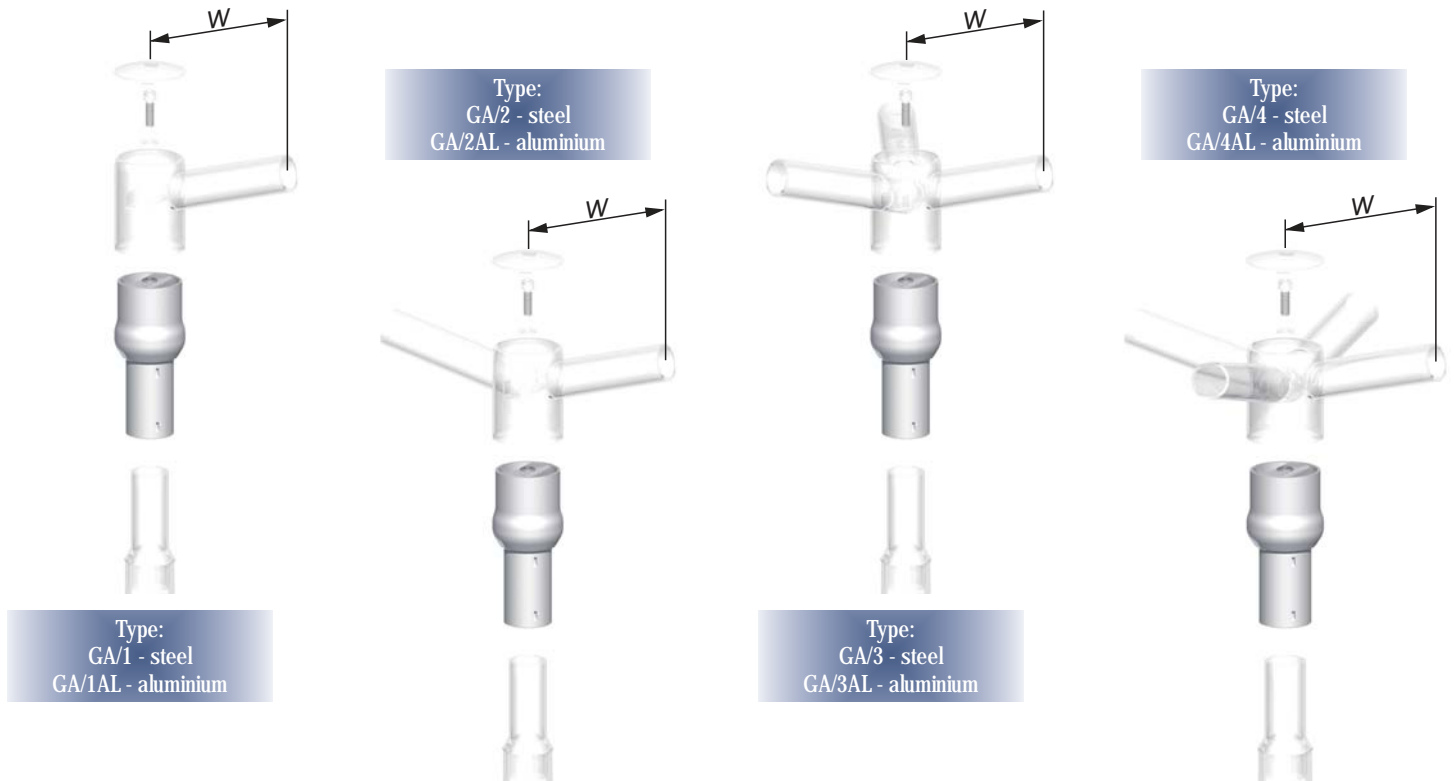
Ordering the brackets:

Example 1: WS/AL/W1,5/5°/Ø60 (type AL wall-mounted bracket, arm reach W=1,5m, lamp fixture elevation angle 5°, lamp fixture holder stub size Ø60mm).

Example 2: WS/St-X/W2,5/15°/Ø48 (type St-X wall-mounted bracket, arm reach W=2,5m, lamp fixture elevation angle 15°, lamp fixture holder stub size Ø48mm).

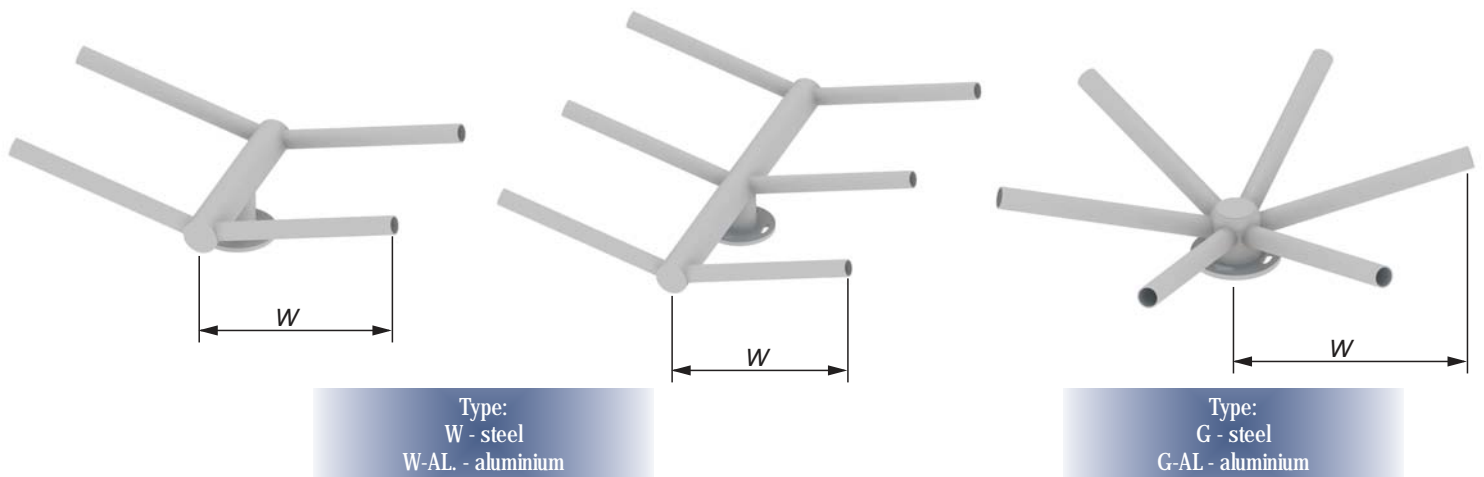
GENERAL

ADAPTER HEADS FOR STRAIGHT POSTS



The adapter heads are designed to adapt the lamp fixture installation on straight posts not designed for vertical fixing installation, or when a larger number of lamp fixtures is needed near the post axis. The adapter heads are made with the fastening part for type ST single, double, triple or quadruple arms with the reach W180-1000mm (the maximum reach for triple and quadruple arms is 500mm). Lamp fixture elevation angle: 5°, 10° or 15°. The lamp fixture holder stub size is Ø48 or Ø60.

LAMP FIXTURE HEADS

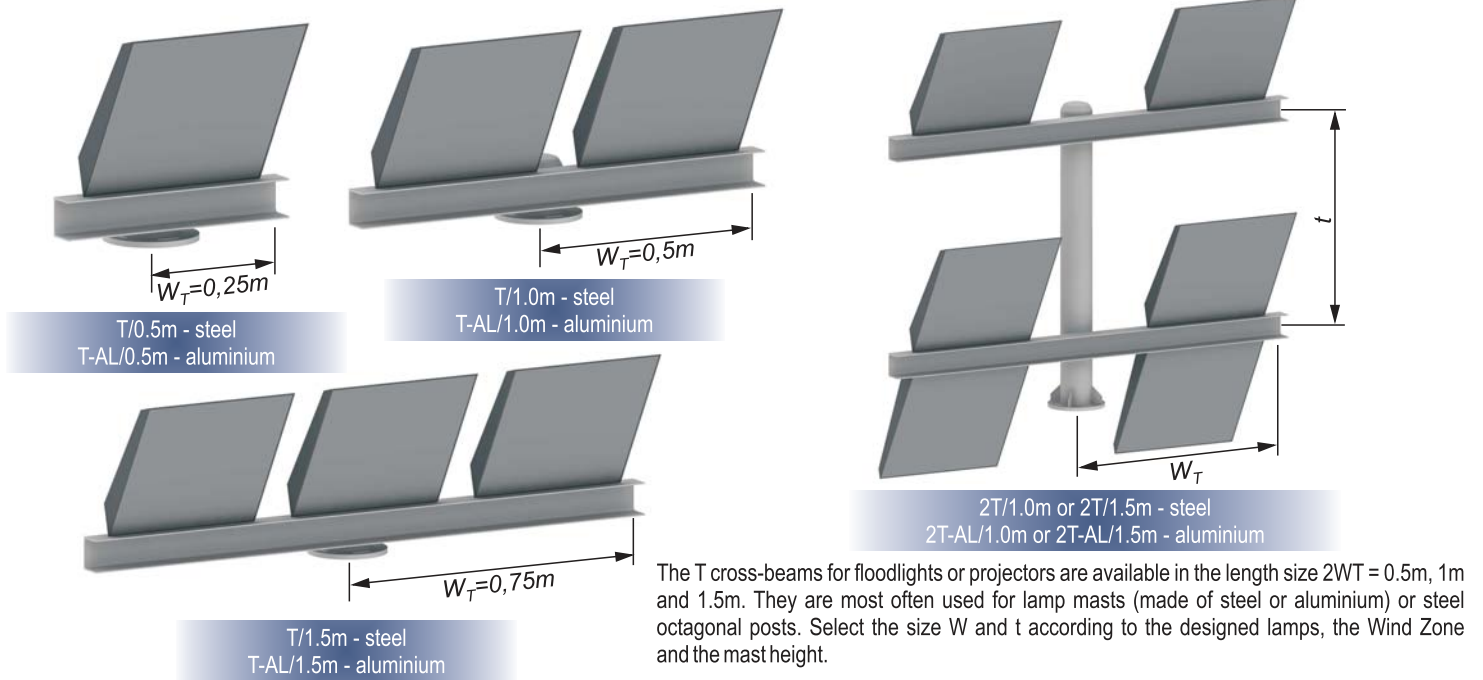


The type W heads are available with four and six symmetrical arms, designated e.g. W4/S, or with two and three asymmetrical arms (single-sided system), designated e.g. W2/N. These products are designed for lamp masts (made of steel or aluminium). The lamp fixture holder stub size is Ø48 x 100 mm or Ø60 x 100mm. Lamp fixture elevation angle: 5°, 10° or 15°. The most popular size is W = 0.5 m or 1.0 m.

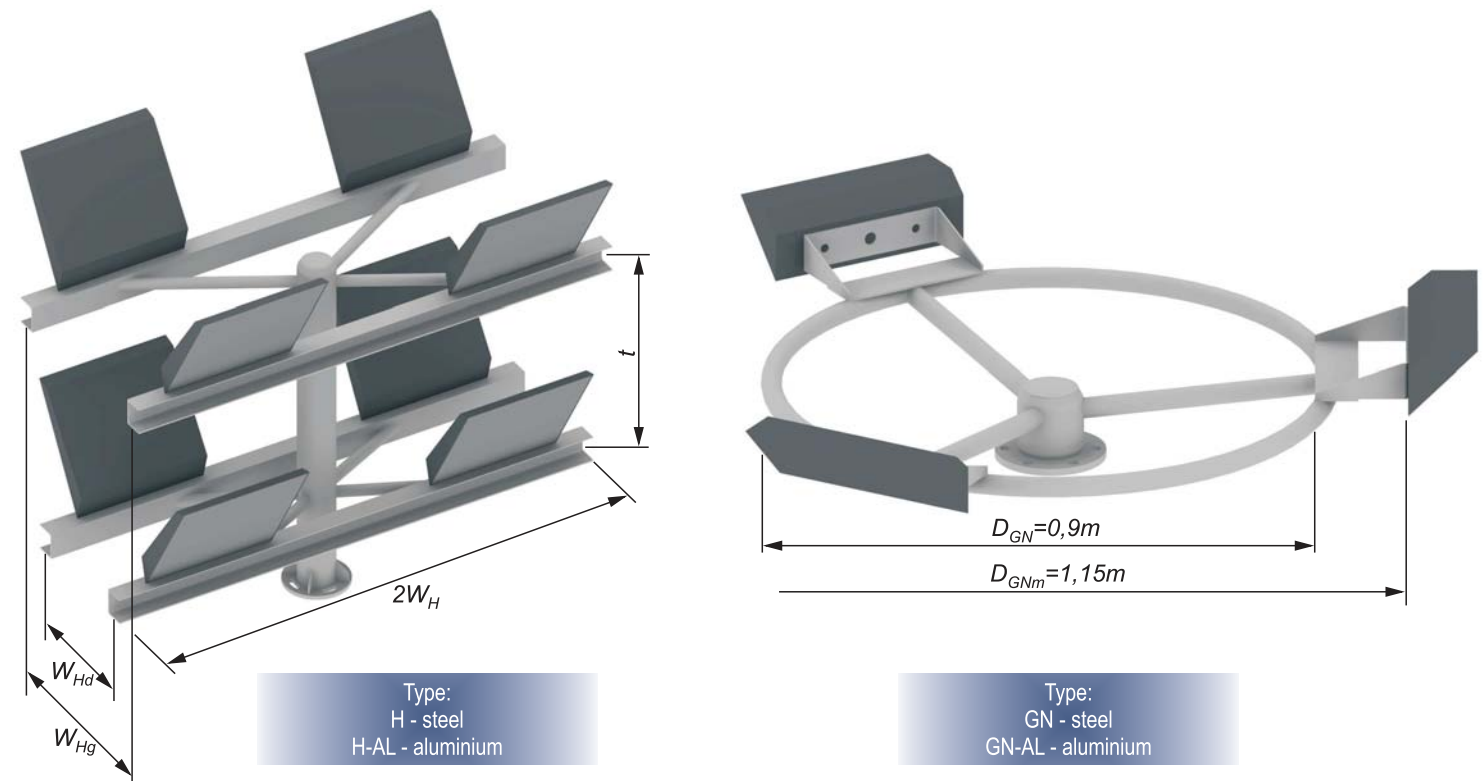
The type G heads are radial multiple arm heads with 3 to 6 arms. These products are designed for lamp masts (made of steel or aluminium) or steel octagonal posts. The most popular size is W = 0.5 m.

GENERAL

SUPPORT COMPONENTS



FLOODLIGHT SUPPORT COMPONENTS



Type 2H head for eight floodlights (see fig. above) installed on lamp masts. The most popular size is $WH = 0.6m$. The head is custom-designed according to the agreed specification of the floodlight type and the lighting type.

Type GN head for circumferentially spaces floodlights installed on lamp masts. The most popular diameter:

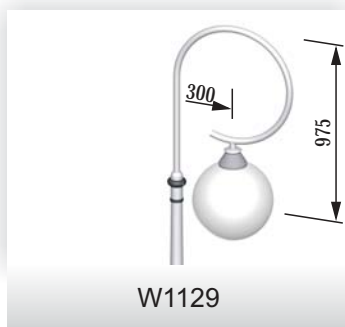
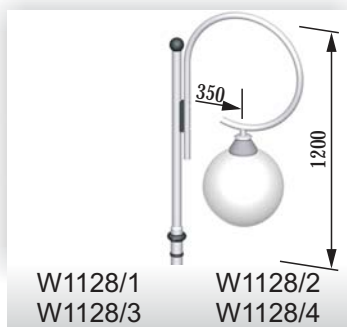
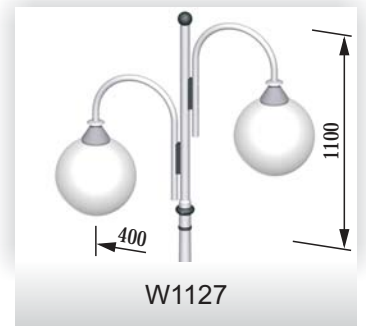
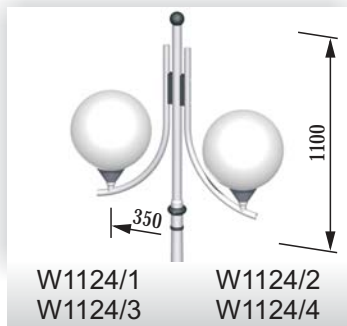
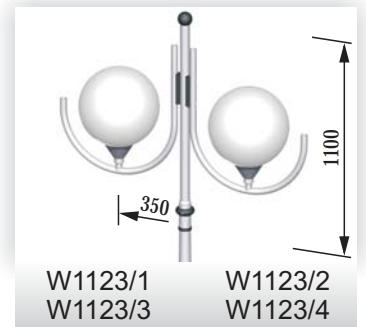
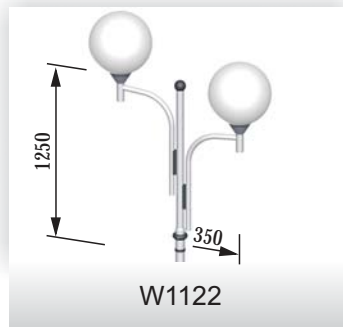
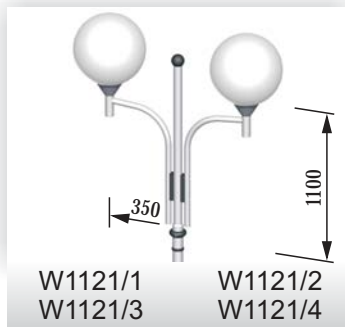
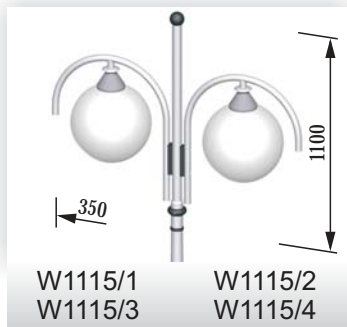
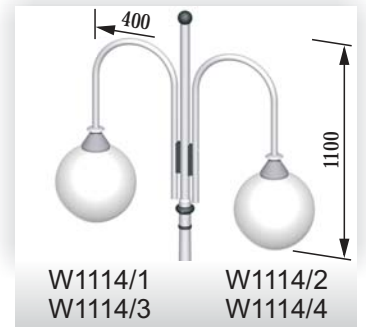
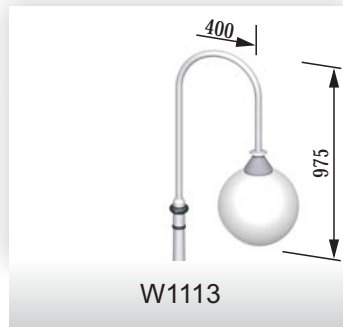
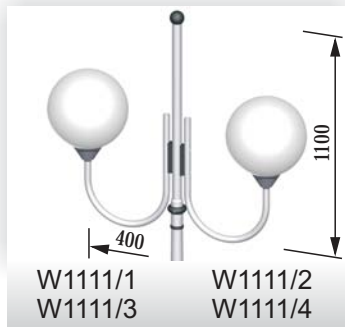
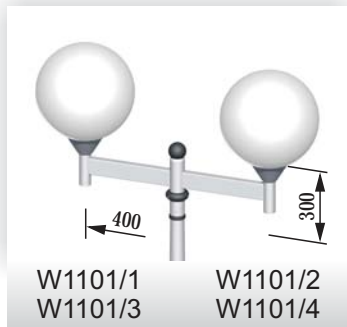
- $D_{GNm} = \text{Ø}1,15m$ (vertical floodlight installation plane),
- $D_{GN} = \text{Ø}0,9m$ (horizontal floodlight installation plane)

Notes:

1. Select the lamp fixture and floodlight types and number with consideration of the permissible load on the post/mast, i.e. the maximum side surface area and weight of the lamp fixtures and support components.
2. The T cross-beams and type H heads are made of size $\text{Ø}60$ tubes or size 60 channels.
3. We can also manufacture heads and crowns to custom design.

GENERAL

W1000 SERIES PARK LAMP POST CROWNS



The W1000 series crowns are the accessories for hex, round and tubular park lamp posts made of steel or aluminium alloy. The crowns are available in several versions, i.e. as single, double, triple or quadruple arm crowns, also with an extra lantern in the crown axis. The crowns are manufactured of aluminium or steel pipes or closed sections. Steel crowns are hot-dip galvanized. The crown parts can also be paint coated on request. The lamp fixtures are optional accessories for the crowns. Other crown designs are available on custom order. The standard lamp fixture fixing stub is Ø48mm. Size Ø42 and Ø60mm are available on special order.



GALVANIZED STEEL POSTS



STEEL POSTS

POST SPECIFICATIONS

1. ELEKTROMONTAŻ RZESZÓW S.A. manufactures EN 40 compliant galvanised lamp posts and masts in the height range of 2.5m to 20m. The products are manufactured to Polish and international standards. The Company has proprietary patents and utility designs for the engineering solutions featured in its lamp posts and masts.

2a. Manufacturing of metal sheet posts and masts.

The posts and masts are made of steel bands or sheet metal in class S235, S275 or S355 and in the thickness range from 2mm to 6mm (as required by structural strength). The bands and sheets are bent in polygonal or round sections with a constant taper. The posts are designed for installation on pre-cast concrete foundations or planting in cast-in-place foundations. Most posts with the wall thickness of up to 4mm is made by longitudinal laser welding, which results in nearly invisible weld seams.

2b. Manufacturing of tubular posts.

Tubular posts are made of steel pipes of suitable diameter with the wall thickness between 3mm-6mm (as required by structural strength). The posts are monolithic thanks to pipe redrawing (with pitching tube diameter). This eliminates any need for longitudinal or circumferential welding, which results in improved aesthetic finish and continuous strength over the entire product length. The posts are designed for installation on pre-cast concrete foundations or planting in cast-in-place foundations. Our production program also features tubular posts for direct planting in the soil.

3. Manufacturing of post and mast flange plates.

The flange plates for posts and masts installed on pre-cast foundation blocks are made of stamped sheet with suitable ribbing and the fixing point completely concealed in the plate bottom. The flange plate fastening bolts and the hinge are also hidden in the plate bottom, which protects the bolt fasteners from ambient conditions. The bolt inspection holes are sealed with blind caps once the post (mast) has been bolted to the foundation structure. The flange plate design assures high aesthetic finish and compliance with the EN 12767 standard for passive safety of lighting columns. Our solution is protected by the Polish Patent Office. The flange plates for masts installed on monolithic foundations are made of 18mm to 40mm thick sheets with reinforcing ribbing of the mast to foundation interface.

4. Protective coating.

The outer and inner surfaces are protected against corrosion by hot-dip galvanising, resulting in the galvanic coating thickness as shown in the table. The durability of anti-corrosion protection guarantees maintenance-free operation of our posts and masts from dozen to several dozen years, depending on the ambient air (industrial, urban, coastal or rural). Posts and masts should be paint coated for use in highly aggressive air (i.e. sulphur dioxide, nitrogen oxides, and salt). We can coat our posts and masts with paints in any colours on order, including special paint coats: dirt resistant coats, fluorescent coats, photo luminescent coats, chameleon effect coats, and many more. Special coats may extend the life of the products.

Tubular posts for in-soil installation should have the soil contact portion coated with a bituminous compound up to 0.25m minimum above the ground level, according to PN-EN 40-5.

Galvanic coating thickness on non-centrifuged parts (EN ISO 1461 Table 2)

Steel thickness, mm	Galvanic coating (on one side)	
	Local coating thickness (minimum)	Mean coating thickness (minimum)
≥1,5 to <3	45µm (315g/m ²)	55µm (385g/m ²)
≥3 to <6	55µm (385g/m ²)	70µm (485g/m ²)
≥6	70µm (485g/m ²)	85µm (585g/m ²)

5. Hand hole recess.

Each column comes with hand hole doors which conceal and protect the internal electrical equipment. The door is a lid fastened to the post with a bolt lock operated with an Allen hex key. The door provides IP43 rating for the hand hole recess.

The hand hole recess can accommodate a circuit breaker panel with the maximum dimensions of (width x depth x height):

Park and street lamp posts, H≤7m	85 x 85 x 300mm
Street lamp posts, H>7m	95 x 110 x 400mm
Tubular park lamp posts	85 x 100 x 500mm
Tubular street lamp posts, H≤7m	85 x 100 x 500mm
Tubular street lamp posts, H>7m	100 x 120 x 500mm
Octagonal street lamp posts	100 x 115 x 400mm
Lamp masts	115 x 115 x 400mm

Lamp masts have two hand hole recesses for easy installation of electrical equipment. Each hand hole recess features a PE terminal with an M10 bolt hole.

6. Fixing of posts and masts.

Lamp posts and masts feature a permanently fixed flange plate, which facilitates quick installation on concrete foundation structures or other sufficiently stable substrates. The product is fastened with regular bolts or anchor bolts. Street lamp posts with the height between 3 m and 12 m feature a hinged catch which facilitates erection.

The bolts and nuts for fastening the structures on monolithic foundations are protected against loosening and corrosion by protective caps which resist weather and mechanical damage.

7. Brackets.

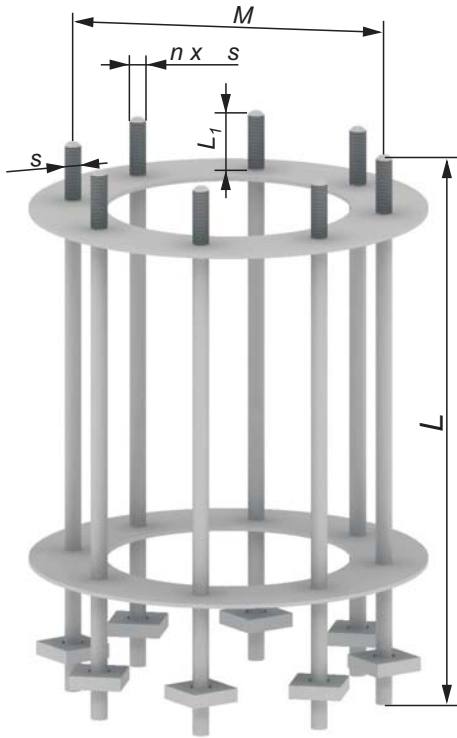
Our production program features many types of brackets (heads) and other support parts for lamp fixture installation. The brackets for steel columns are available with the length of 0.5m, 1.0m, 1.5m, 2.0m, 2.5m and 3.0m.

See examples on the preceding pages herein.

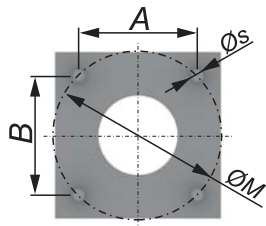
Other design concepts of brackets can be manufactured on custom order.

STEEL POSTS

FOUNDATION RING



View of a group ring 1



Intended use: The foundation ring (an assembly of plate anchors) is used to anchor lamp masts or other structures in monolithic (cast-in-place) foundations.

All monolithic foundations with rings shall be designed according to the Notes on p. 8. The ring is intended for foundations made of concrete class C16/20 minimum. Note that cable entry ductwork must be embedded with the foundation.

Design: The foundation ring is made of structural steel. The ring features an assembly of plate anchors which meet the relevant standards for anchoring and stabilising rings for positioning of individual anchors.

TYPE	Intended use	ØM (AxB)	n x Øs	L	L ₁	m
		mm	mm	mm	mm	kg
FOUNDATION BLOCK F160	M-100SE, M-110SE, M-120SE, M-120E, M-140E	F160 foundation block, 4xM24/250x250				
WF354/4xM24	1 M-140SRw, M-160SRw	354 (250x250)	4 x M24	810	140	33
WF450/8xM24	M-120, M-140, M-160E, M-180E	450	8 x M24	700	135	38
WF550/8xM24	M-160, M-180, M-200E	550	8 x M24	700	135	41
WF600/12xM30	M-200, M-160K, M-180K, M-200K	600	12 x M30	800	150	80

ORDERING COMPLETE LAMP POSTS

Specify the following information when ordering:

- post / mast type and height in m;
- bracket / head type (specify the number of arms, reach, arm spacing angle and lamp fixture elevation angle);
- lamp fixture fixing stub diameter or lamp fixture type; floodlight installation dimensions; type of lamp fixture installed on decorative crowns;
- foundation type (for posts) or foundation ring type (for masts);
- number of individual parts;
- other order requirements, e.g. colours or number of paint coating layers.

Ordering example:

a) S-100PC-3 post - 10 pcs.
S-100PC-3 post bracket (St-Y/2 arms/1m/Ø60/15°) - 10 pcs.
IZK post cable connector /2 breakers/ - 10 pcs.
F150/200 foundation - 10 pcs.
Bolt parts without hinges (for F150/200) - 10 sets

b) M-140 mast - 5 pcs.
WF450/8xM24 ring - 5 pcs.
ELMONT post CB panel /4 breakers/ - 5 pcs.
GN/6 head - 5 pcs.

c) S-40/6-3 post - 30 pcs.
W1101 crown /3 arms/Ø48/ - 30 pcs.
ELMONT post CB panel /3 breakers/ - 30 pcs.
F100/200 foundation - 30 pcs.
Bolt parts with hinges (for F100/200) - 30 sets

Note: If you want to order posts or masts with the dimensions and technical characteristics not listed herein, contact us:

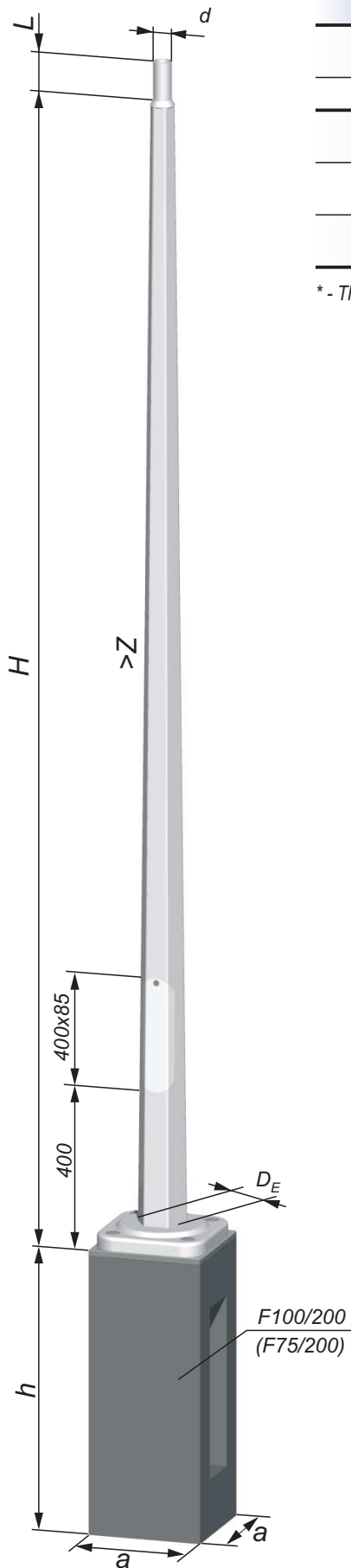
Zakład Produkcji Urządzeń
ELEKTROMONTAŻ Rzeszów S.A.
ul. Przemysłowa 8,
tel. +48 17 85-33-755, +48 17 86-42-925, fax +48 17 86-42-926
e-mail: market.zpu@elektromontaz.com.pl

We reserve the right to modify the engineering solutions with prior notice to the users and buyers of our products.

STEEL PARK LAMPS

HEX TAPERED PARK LAMP POSTS

PARK
HEX



TECHNICAL DATA

TYPE	H	D/D _E	Z	L	M	A X A X H TYPE
	m	mm	mm/m	mm	kg	m
S-30P/6-3	3,0		26,67		29	0,3 x 0,3 x 0,75 F75/200
S-40P/6-3	4,0	48; 60/143	20	100	37	0,3 x 0,3 x 1,0 (0,75)* F100/200 (F75/200)*
S-50P/6-3	5,0		16		45	0,3 x 0,3 x 1,0 F100/200

* - The foundation type depends on the post load



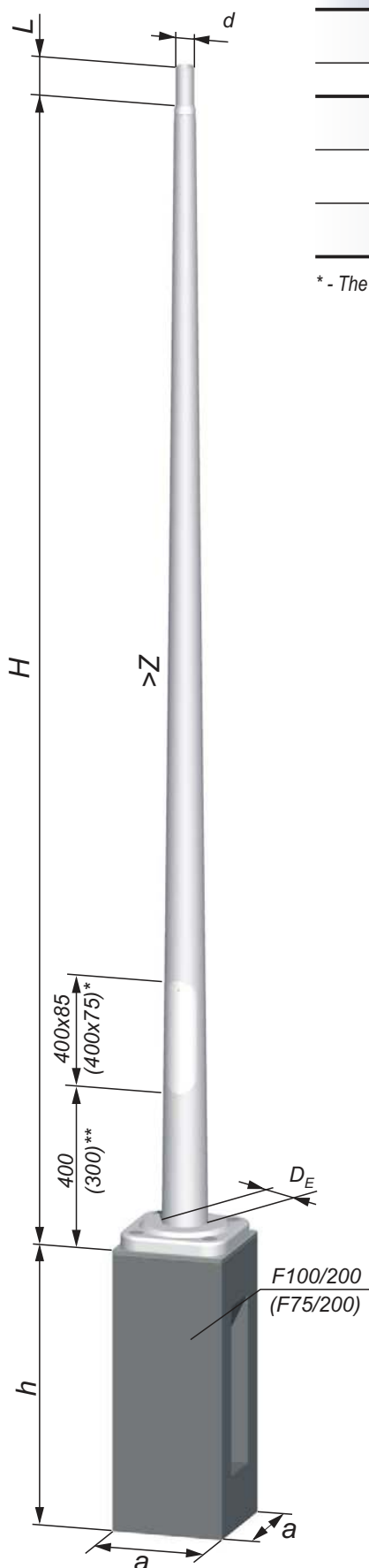
STRENGTH DATA

TYPE	LAMP FIXTURE WEIGHT kg	WIND ZONE, PN EN 1991-1-4				M _F kNm
		PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
		I ≤300m a.s.l.	I ≤500m a.s.l.	II ≤300m a.s.l.	III ≤950m a.s.l.	
S-30P/6-3	50	2,904	2,222	2,045	1,507	6,1
S-40P/6-3	50	1,990	1,500	1,374	0,988	6,1
S-50P/6-3	50	1,322	0,973	0,883	0,608	6,1

STEEL PARK LAMPS

ROUND TAPERED PARK LAMP POSTS

PARK
ROUND



TECHNICAL DATA						
TYPE	H	D/D _E	Z	L	M	A X A X H TYPE
	m	mm	mm/m	mm	kg	m
S-30PC-3	3,0	48; 60/99	12,5		23	0,3 x 0,3 x 0,75 F75/200
S-40PC-3	4,0	48; 60/109	12,5	100	31	0,3 x 0,3 x 1,0 (0,75)* F100/200 (F75/200)*
S-50PC-3	5,0	48; 60/121	12,5		39	0,3 x 0,3 x 1,0 F100/200

* - The foundation type depends on the post load



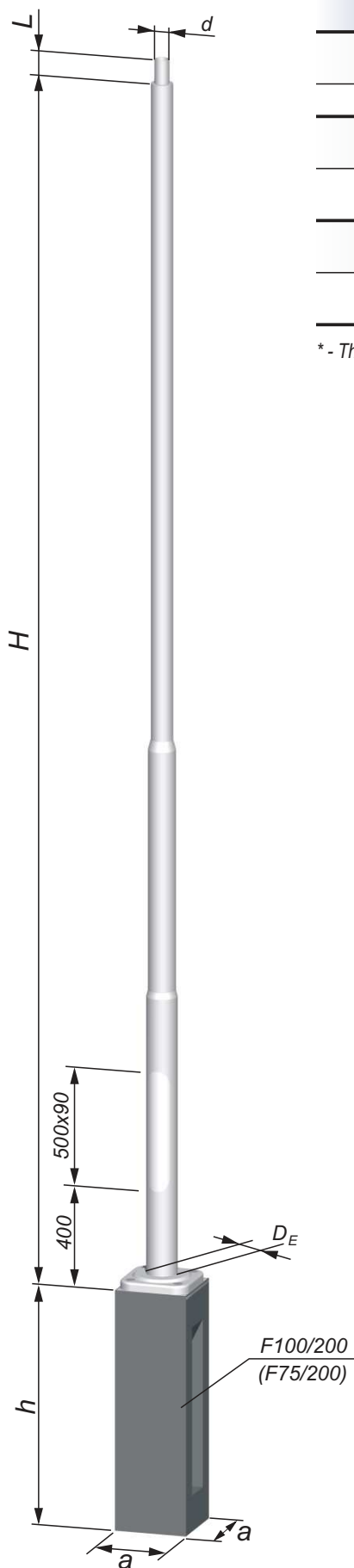
STRENGTH DATA						
TYPE	LAMP FIXTURE WEIGHT	WIND ZONE, PN EN 1991-1-4				M _F
		PERMISSIBLE LAMP FIXTURE SURFACE [M]				
	kg	I ≤300m a.s.l.	I ≤500m a.s.l.	II ≤300m a.s.l.	III ≤950m a.s.l.	kNm
S-30PC-3	50	0,940	0,707	0,647	0,464	2,2
S-40PC-3	50	1,018	0,757	0,690	0,487	3,5
S-50PC-3	50	0,816	0,592	0,535	0,364	4,2

* - Sizes listed for H≤4m posts

** - Sizes listed for H=3m posts

STEEL PARK LAMPS

TUBULAR PARK LAMP POSTS



TECHNICAL DATA						
TYPE	H	T _{BL}	D/D _E	L	M	A X A X H TYPE
	m	mm	mm	mm	kg	m
S-40SRW/3	4,0	3	48; 60/127	100	41,0	0,3 x 0,3 x 1,0 (0,75)* F100/200 (F75/200)*
S-50SRW/3	5,0				51,0	0,3 x 0,3 x 1,0 F100/200
S-40SRW/4	4,0	4	48; 60/140		55,0	0,3 x 0,3 x 1,0 (0,75)* F100/200 (F75/200)*
S-50SRW/4	5,0				67,5	0,3 x 0,3 x 1,0 F100/200

* - The foundation type depends on the post load

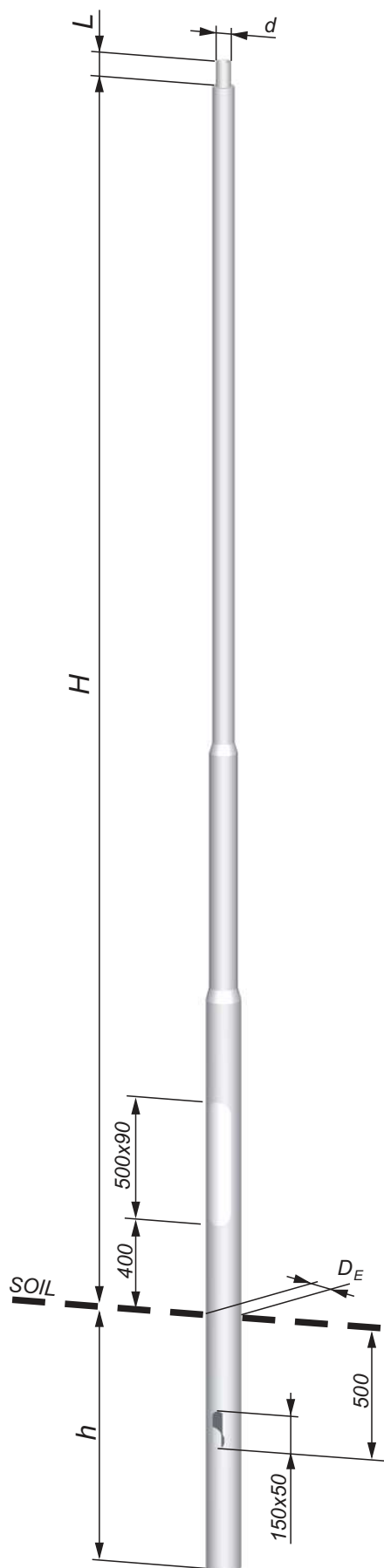


Note: The number of diameter reductions depends on the post type.

TYPE	LAMP FIXTURE WEIGHT kg	WIND ZONE, PN EN 1991-1-4				M _F kNm
		PERMISSIBLE LAMP FIXTURE SURFACE [M]				
		I ≤300m a.s.l.	I ≤500m a.s.l.	II ≤300m a.s.l.	III ≤950m a.s.l.	
S-40SRW/3	50	1,515	1,130	1,034	0,748	4,9
S-50SRW/3	50	0,969	0,701	0,636	0,444	4,9
S-40SRW/4	50	2,974	2,267	2,087	1,543	9,0
S-50SRW/4	50	2,106	1,582	1,451	1,057	9,0

STEEL PARK LAMPS

TUBULAR PARK LAMP POSTS FOR IN-SOIL INSTALLATION



TECHNICAL DATA						
TYPE	H	T _{BL}	D/D _E	L	M	H
	m	mm	mm	mm	kg	m
S-40SRWG/3	4,0	3	48; 60/127	100	48,5	1,0
S-50SRWG/3	5,0				57,8	
S-40SRWG/4	4,0	4	48; 60/140		64,5	
S-50SRWG/4	5,0				76,8	

- The depth *h* of planting is calculated for virgin soil (i.e. of undisturbed structure) and soil engineering parameters of Group II acc. to the table on p. 7.



Note: The number of diameter reductions depends on the post type.

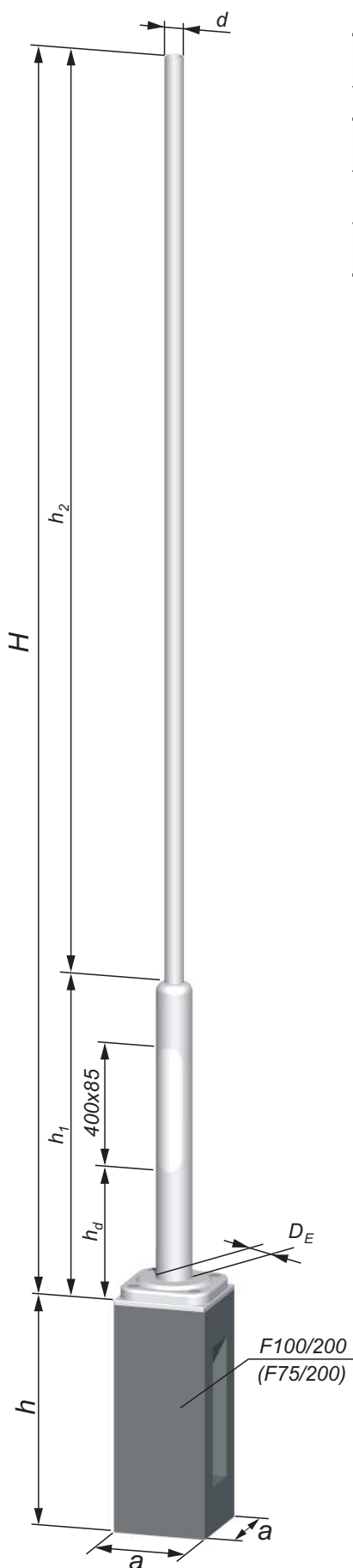
STRENGTH DATA						
TYPE	LAMP FIXTURE WEIGHT	WIND ZONE, PN EN 1991-1-4				M _{FR}
		PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
		I	I	II	III	
	kg	≤300m a.s.l.	≤500m a.s.l.	≤300m a.s.l.	≤950m a.s.l.	kNm
S-40SRWG/3	50	1,515	1,130	1,034	0,748	4,9
S-50SRWG/3	50	0,969	0,701	0,636	0,444	4,9
S-40SRWG/4	50	2,974	2,267	2,087	1,543	9,0
S-50SRWG/4	50	2,106	1,582	1,451	1,057	9,0

PARK
TUBULAR PLANTED IN SOIL

STEEL PARK LAMPS

WELDED TUBULAR PARK LAMP POSTS

PARK
WELDED TUBULAR



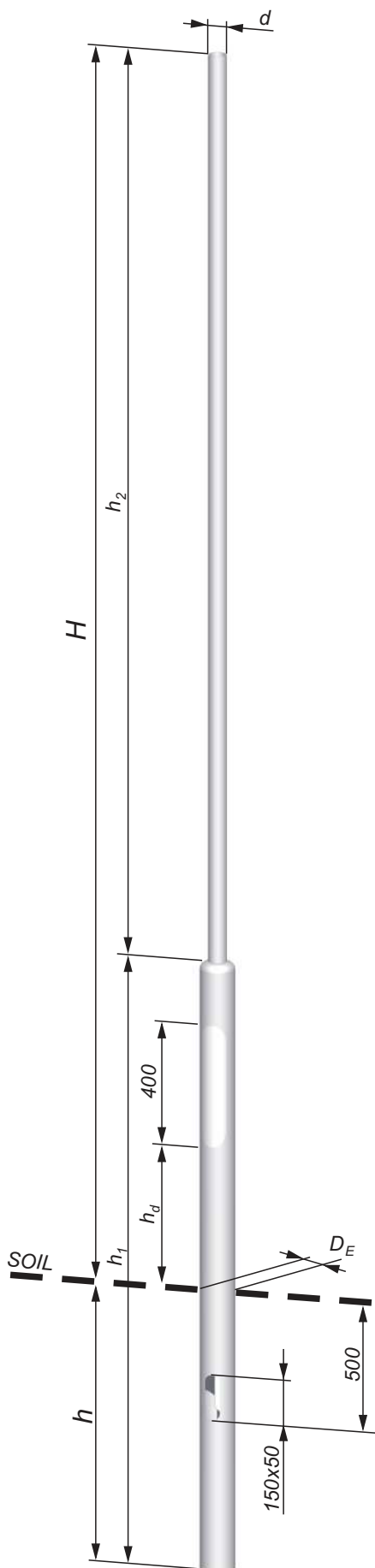
TECHNICAL DATA							
TYPE	H	H _b	D/D _E	H ₁	H ₂	M	A X A X H TYPE
	m	mm	mm	m	m	kg	m
S-30SRS	3,0	300		0,9	2,1	23,3	0,3 x 0,3 x 0,75 F75/200
S-40SRS	4,0	400	48;60/114	1,0	3,0	28,4	0,3 x 0,3 x 1,0 (0,75)* F100/200 (F75/200)*
S-50SRS	5,0			1,0	4,0	32,9	0,3 x 0,3 x 1,0 F100/200

* - The foundation type depends on the post load

STRENGTH DATA						
TYPE	LAMP FIXTURE WEIGHT	WIND ZONE, PN EN 1991-1-4				M _F
		PERMISSIBLE LAMP FIXTURE SURFACE [M]				
	kg	I ≤300m a.s.l.	I ≤500m a.s.l.	II ≤300m a.s.l.	III ≤950m a.s.l.	kNm
S-30SRS	40	1,487	1,135	1,044	0,765	3,1
S-40SRS	40	0,902	0,674	0,615	0,435	3,1
S-50SRS	40	0,514	0,367	0,329	0,213	3,1

STEEL PARK LAMPS

WELDED TUBULAR PARK LAMP POSTS FOR IN-SOIL INSTALLATION



TECHNICAL DATA

TYPE	H	H _b	D/D _E	H ₁	H ₂	M	H
	m	mm	mm	m	m	kg	m
S-30SRSG	3,0	300		1,7	2,1	26,2	0,8
S-40SRSG	4,0	400	48;60/114	2,0	3,0	33,2	1,0
S-50SRSG	5,0			2,0	4,0		

- The depth h of planting is calculated for virgin soil (i.e. of undisturbed structure) and soil engineering parameters of Group II acc. to the table on p. 7.

WELDED TUBULAR, PLANTED IN SOIL
PARK

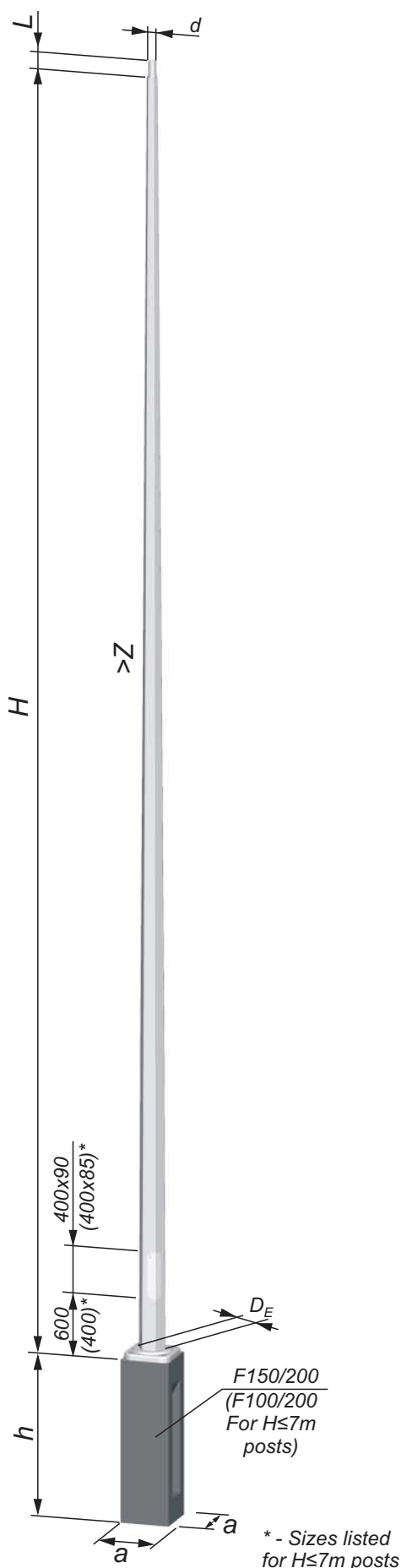
STRENGTH DATA

TYPE	LAMP FIXTUR WEIGHT kg	WIND ZONE, PN EN 1991-1-4				M _{FR} kNm
		PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
		I	I	II	III	
		≤300m a.s.l.	≤500m a.s.l.	≤300m a.s.l.	≤950m a.s.l.	
S-30SRSG	40	1,487	1,135	1,044	0,765	3,1
S-40SRSG	40	0,902	0,674	0,615	0,435	3,1
S-50SRSG	40	0,514	0,367	0,329	0,213	3,1

STEEL STREET LAMPS

HEX TAPERED STREET LAMP POSTS

STREET
STRAIGHT HEX



TECHNICAL DATA

TYPE	H m	D/D _E mm	Z mm/m	L mm	M kg	AXAXH TYPE
						m
S-60P/6-3	6,0	48; 60/143	13,33	100	52	0,3 x 0,3 x 1,0 F100/200
S-70P/6-3	7,0		11,43		60	
S-80P/6-3	8,0	48; 60/160	12,5		74	0,3 x 0,3 x 1,5 F150/200
S-90P/6-3	9,0		11,11		83	
S-100P/6-3	10,0	12,6	102			
S-110P/6-3	11,0	48; 60/186	11,45		111	
S-120P/6-3	12,0	10,5	121			



STRENGTH DATA

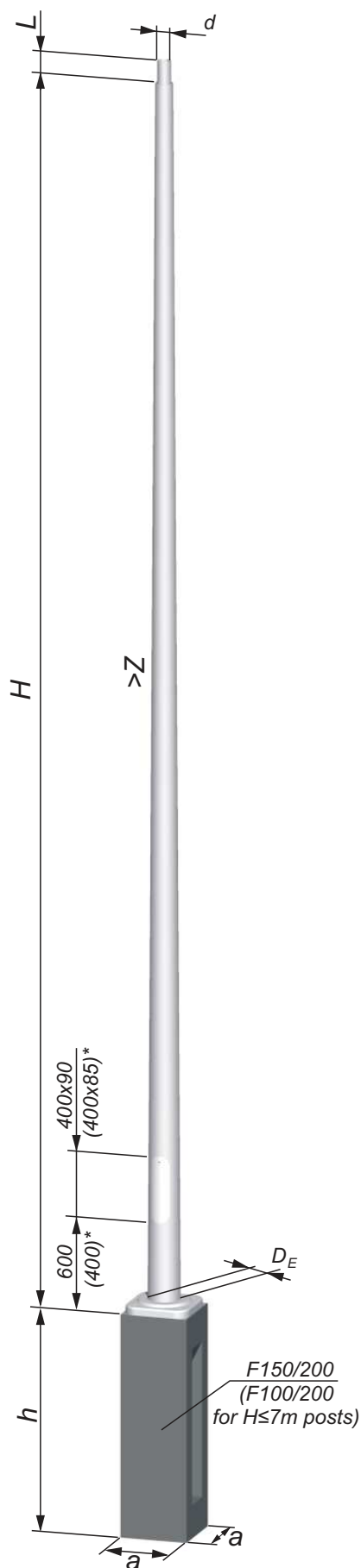
TYPE	LAMP FIXTURE WEIGHT kg	WIND ZONE, PN EN 1991-1-4				M _F kNm
		PERMISSIBLE LAMP FIXTURE SURFACE ² [M]				
		I ≤300m a.s.l	I ≤500m a.s.l	II ≤300m a.s.l	III ≤950m a.s.l	
S-60P/6-3	50	0,894	0,631	0,563	0,357	6,1
S-70P/6-3	50	0,594	0,388	0,335	0,174	6,1
S-80P/6-3	50	0,828	0,556	0,486	0,273	9,9
S-90P/6-3	50	0,576	0,350	0,291	0,114	9,9
S-100P/6-3	50	0,703	0,428	0,357	0,143	13,8
S-110P/6-3	50	0,472	0,236	0,176	-	13,8
S-120P/6-3	50	0,277	0,072	0,020	-	13,8

* - Sizes listed
for H≤7m posts

STEEL STREET LAMPS

ROUND TAPERED STREET LAMP POSTS

STREET
STRAIGHT ROUND



TECHNICAL DATA						
TYPE	H	D/D _E	Z	L	M	A X A X H TYPE
	m	mm	mm/m	mm	kg	m
S-60PC-3	6,0	48; 60/136			48	0,3 x 0,3 x 1,0
S-70PC-3	7,0	48; 60/148,5			58	F100/200
S-80PC-3	8,0	48; 60/161			69	
S-90PC-3	9,0	48; 60/173,5	12,5	100	81	0,3 x 0,3 x 1,5
S-100PC-3	10,0	48; 60/186			94	F150/200
S-110PC-3	11,0	48; 60/198,5			107	
S-120PC-3	12,0	48; 60/210			122	



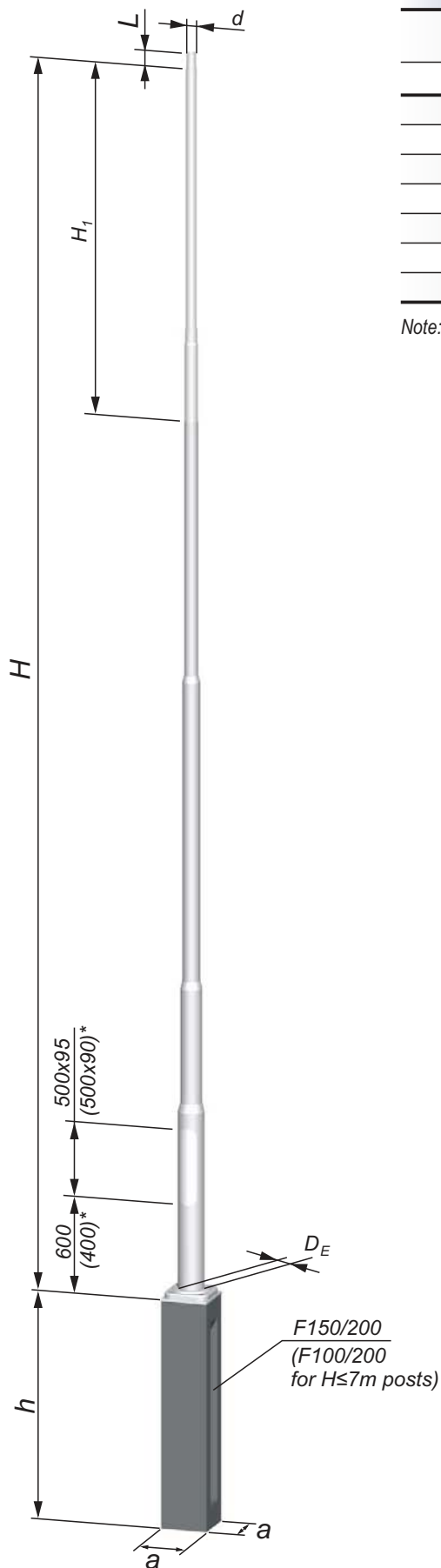
STRENGTH DATA						
TYPE	LAMP FIXTURE WEIGHT	WIND ZONE, PN EN 1991-1-4				M _F
		PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
	kg	I	I	II	III	kNm
		≤300m a.s.l.	≤500m a.s.l.	≤300m a.s.l.	≤950m a.s.l.	
S-60PC-3	50	0,801	0,573	0,515	0,343	5,7
S-70PC-3	50	0,773	0,544	0,486	0,318	7,2
S-80PC-3	50	0,697	0,481	0,427	0,271	8,5
S-90PC-3	50	0,671	0,456	0,403	0,252	10,2
S-100PC-3	50	0,644	0,431	0,379	0,234	12,1
S-110PC-3	50	0,618	0,409	0,358	0,216	14,1
S-120PC-3	50	0,592	0,389	0,339	0,199	16,1

* - Sizes listed for H≤7m posts

STEEL STREET LAMPS

STRAIGHT TUBULAR STREET LAMP POSTS

STREET
STRAIGHT TUBULAR



* - Sizes listed for $H \leq 7$ m posts

TECHNICAL DATA

TYPE	H m	T_{BL} mm	H_1 m	D/ D_E mm	L mm	M kg	A X A X H TYPE m
S-60SRWP/4	6,0		2,0	48; 60/140	100	68,0	0,3 x 0,3 x 1,0 F100/200
S-70SRWP/4	7,0		2,0			79,0	
S-80SRWP/4	8,0		2,2	48; 60/170	100	96,0	0,3 x 0,3 x 1,5 F150/200
S-90SRWP/4	9,0	4	2,5			104,0	
S-100SRWP/4	10,0		3,5	110,0			
S-110SRWP/4	11,0		2,2	128,0			
S-120SRWP/4	12,0		3,2		135,0		

Note: H_1 - straight post extension piece, ordered separately



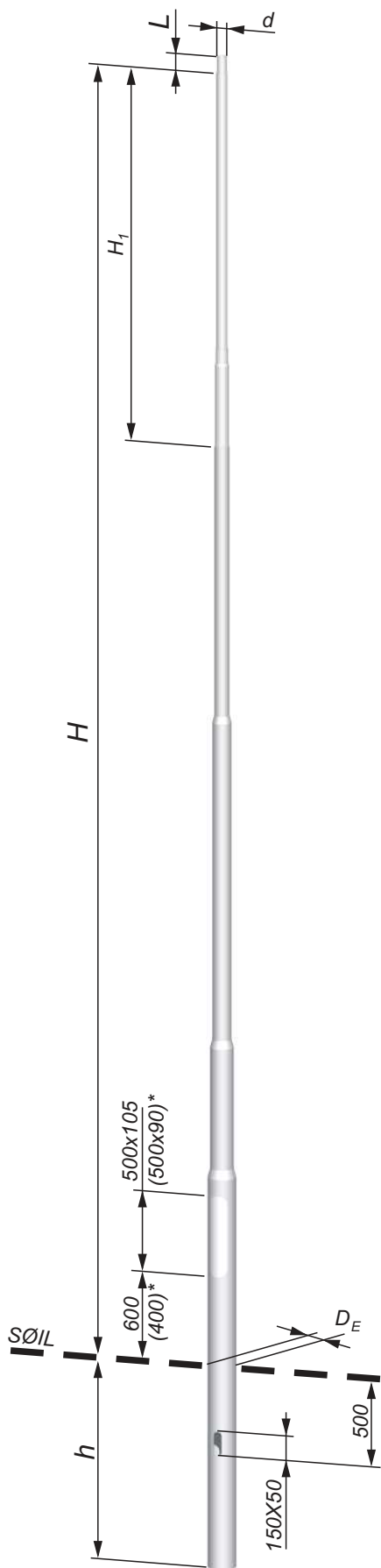
Note: The number of diameter reductions depends on the post type.

STRENGTH DATA

TYPE	LAMP FIXTURE WEIGHT kg	WIND ZONE, PN EN 1991-1-4				M_F kNm
		PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
		I ≤300m a.s.l.	I ≤500m a.s.l.	II ≤300m a.s.l.	III ≤950m a.s.l.	
S-60SRWP/4	50	1,479	1,093	0,995	0,702	9,0
S-70SRWP/4	50	1,042	0,745	0,671	0,453	9,0
S-80SRWP/4	50	1,518	1,128	1,024	0,716	14,2
S-90SRWP/4	50	1,163	0,830	0,746	0,503	14,2
S-100SRWP/4	50	0,818	0,589	0,520	0,326	14,2
S-110SRWP/4	50	0,614	0,394	0,339	0,189	14,2
S-120SRWP/4	50	0,424	0,241	0,194	0,073	14,2

STEEL STREET LAMPS

STRAIGHT TUBULAR STREET LAMP POSTS FOR IN-SOIL INSTALLATION



TECHNICAL DATA

TYPE	H	T _{BL}	H ₁	D/D _E	L	M	H
	m	mm	m	mm	mm	kg	m
S-60SRWPG/4	6,0		2,0	48; 60/140	100	68,7	1,2
S-70SRWPG/4	7,0		2,0			75,2	
S-80SRWPG/4	8,0		2,2			106,6	
S-90SRWPG/4	9,0	4	2,5	48; 60/170	100	132,8	1,5
S-100SRWPG/4	10,0		3,5			140,3	
S-110SRWPG/4	11,0		2,2			148,8	
S-120SRWPG/4	12,0		3,2			157,4	1,7

- The depth "h" of planting is calculated for virgin soil (i.e. of undisturbed structure) and soil engineering parameters of Group II acc. to the table on p. 7.

Note: H₁ - straight post extension piece, ordered separately

Note: The number of diameter reductions depends on the post type.

STRENGTH DATA

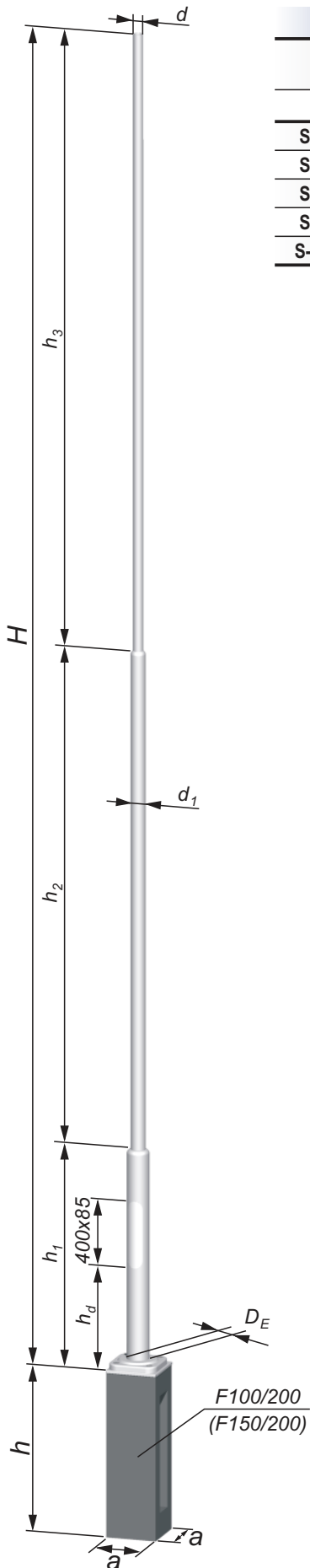
TYPE	LAMP FIXTURE WEIGHT	WIND ZONE, PN EN 1991-1-4				M _{FR}
		PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
	kg	I	I	II	III	kNm
		≤300m a.s.l.	≤500m a.s.l.	≤300m a.s.l.	≤950m a.s.l.	
S-60SRWPG/4	50	1,479	1,093	0,995	0,702	9,0
S-70SRWPG/4	50	1,042	0,745	0,671	0,453	9,0
S-80SRWPG/4	50	1,518	1,128	1,024	0,716	14,2
S-90SRWPG/4	50	1,163	0,830	0,746	0,503	14,2
S-100SRWPG/4	50	0,818	0,589	0,520	0,326	14,2
S-110SRWPG/4	50	0,614	0,394	0,339	0,189	14,2
S-120SRWPG/4	50	0,424	0,241	0,194	0,073	14,2

* - Sizes listed for H≤7m posts

STEEL STREET LAMPS

STRAIGHT WELDED TUBULAR STREET LAMP POSTS

STREET
WELDED STRAIGHT TUBULAR



Technical data

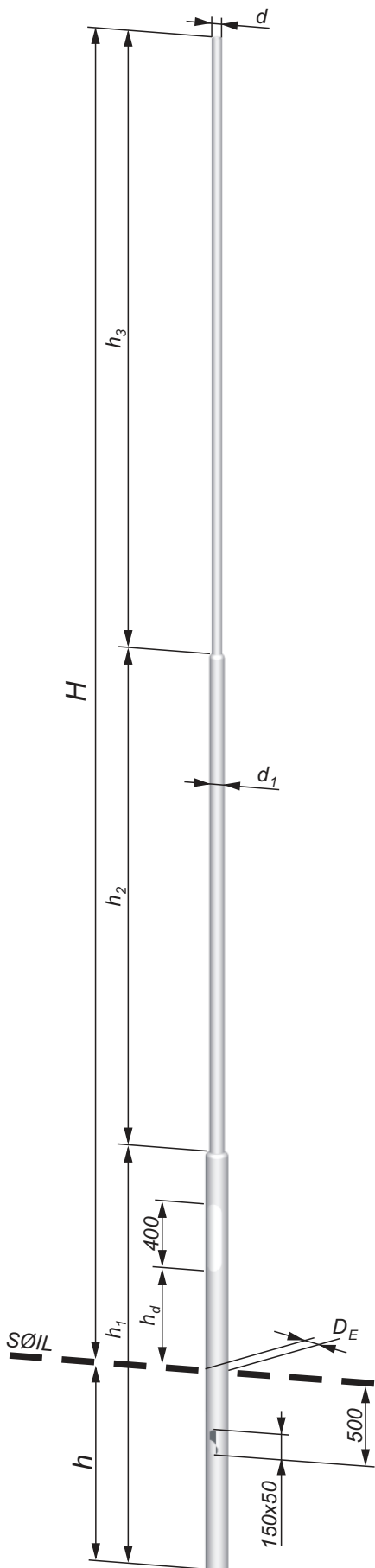
TYPE	H	h _d	d/D _E	d ₁	h ₁	h ₂	h ₃	m	a x a x h TYPE
	m	mm	mm	mm	m	m	m	kg	m
S-60SRsP	6,0	400	60/114	89	1,0	2,0	3,0	43,5	0,3 x 0,3 x 1,0 F100/200
S-70SRsP	7,0				1,0	2,0	4,0	48,1	
S-80SRsP	8,0	600	60/133	89	1,3	3,0	3,7	61,0	0,3 x 0,3 x 1,5 F150/200
S-90SRsP	9,0		60/140		1,5	4,0	3,5	71,2	
S-100SRsP	10,0		60/159		2,0	4,0	4,0	84,0	

Strength data

TYPE	Lamp fixture weight kg	Wind Zone, PN EN 1991-1-4				M _F kNm
		Permissible lamp fixture surface [m ²]				
		I ≤300m a.s.l.	I ≤500m a.s.l.	II ≤300m a.s.l.	III ≤950m a.s.l.	
S-60SRsP	40	0,629	0,441	0,393	0,250	4,7
S-70SRsP	40	0,400	0,258	0,221	0,113	4,7
S-80SRsP	40	0,448	0,318	0,285	0,182	6,4
S-90SRsP	40	0,410	0,255	0,217	0,104	7,7
S-100SRsP	35	0,329	0,190	0,156	0,053	8,3

STEEL STREET LAMPS

STRAIGHT WELDED TUBULAR STREET LAMP POSTS FOR IN-SOIL INSTALLATION



TECHNICAL DATA

TYPE	H	H _b	D/D _E	D ₁	H ₁	H ₂	H ₃	M	H
	m	mm	mm	mm	m	m	m	kg	m
S-60SRSPG	6,0	400	60/114	89	2,2	2,0	3,0	50,4	1,2
S-70SRSPG	7,0				2,2	2,0	4,0	54,9	
S-80SRSPG	8,0	600	60/133		2,5	3,0	3,7	71,3	1,5
S-90SRSPG	9,0		60/140		3,0	4,0	3,5	86,3	
S-100SRSPG	10,0		60/159		3,5	4,0	4,0	102,0	

- The depth h of planting is calculated for virgin soil (i.e. of undisturbed structure) and soil engineering parameters of Group II acc. to the table on p. 7.

WELDED STRAIGHT TUBULAR, PLANTED IN STREET

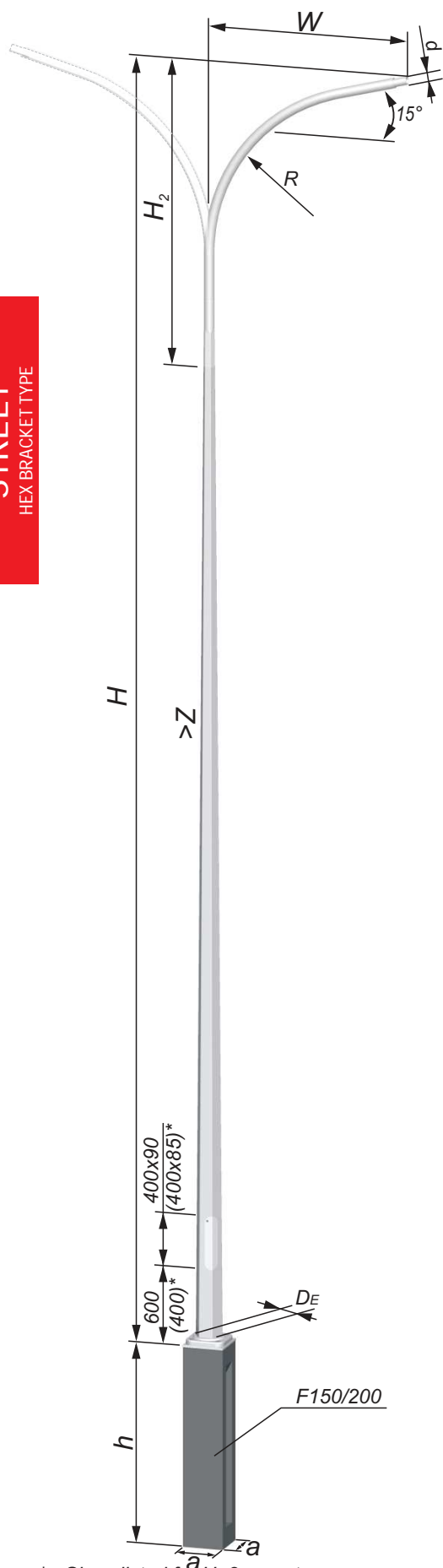
STRENGTH DATA

TYPE	LAMP FIXTURE WEIGHT	WIND ZONE, PN EN 1991-1-4				M _{FR}
		PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
	kg	I	I	II	III	kNm
		≤300m a.s.l.	≤500m a.s.l.	≤300m a.s.l.	≤950m a.s.l.	
S-60SRSPG	40	0,629	0,441	0,393	0,250	4,7
S-70SRSPG	40	0,400	0,258	0,221	0,113	4,7
S-80SRSPG	40	0,448	0,318	0,285	0,182	6,4
S-90SRSPG	40	0,410	0,255	0,217	0,104	7,7
S-100SRSPG	35	0,329	0,190	0,156	0,053	8,3

STEEL STREET LAMPS

HEX TAPERED STREET LAMP BRACKET POSTS – ST-Y & ST BRACKETS

STREET
HEX BRACKET TYPE



TECHNICAL DATA

TYPE	SHANK TYPE	W	H	H ₂	R _(MAX)	D/D _E	Z	M**	A X A X H TYPE
S-60/6-3	S-50/6-3	1,0	6			48; 60/143	16,0	54	0,3 x 0,3 x 1,0 F100/200
		1,5						56	
		2,0						58	
		2,5						60	
S-70/6-3	S-60P/6-3	1,0	7			48; 60/143	13,33	62	
		1,5						64	
		2,0						66	
		2,5						68	
S-80/6-3	S-70P/6-3	1,0	8			48; 60/143	11,43	69	
		1,5						71	
		2,0						73	
		2,5						75	
S-90/6-3	S-80P/6-3	1,0	9	1,0	0,65	48; 60/160	12,5	83	
		1,5						85	
		2,0						87	
		2,5						89	
S-100/6-3	S-90P/6-3	1,0	10			48; 60/160	11,11	92	
		1,5						94	
		2,0						96	
		2,5						98	
S-110/6-3	S-100P/6-3	1,0	11			48; 60/186	12,6	111	
		1,5						113	
		2,0						115	
		2,5						117	
S-120/6-3	S-110P/6-3	1,0	12			48; 60/186	11,45	121	
		1,5						123	
		2,0						125	
		2,5						127	

NOTE: THE BRACKET IS 1 M ABOVE THE POST. POST WITH TYPE ST-Y BRACKET SHOWN. TYPE ST BR IS COMPATIBLE WITH THIS POST TYPE.

STRENGTH DATA

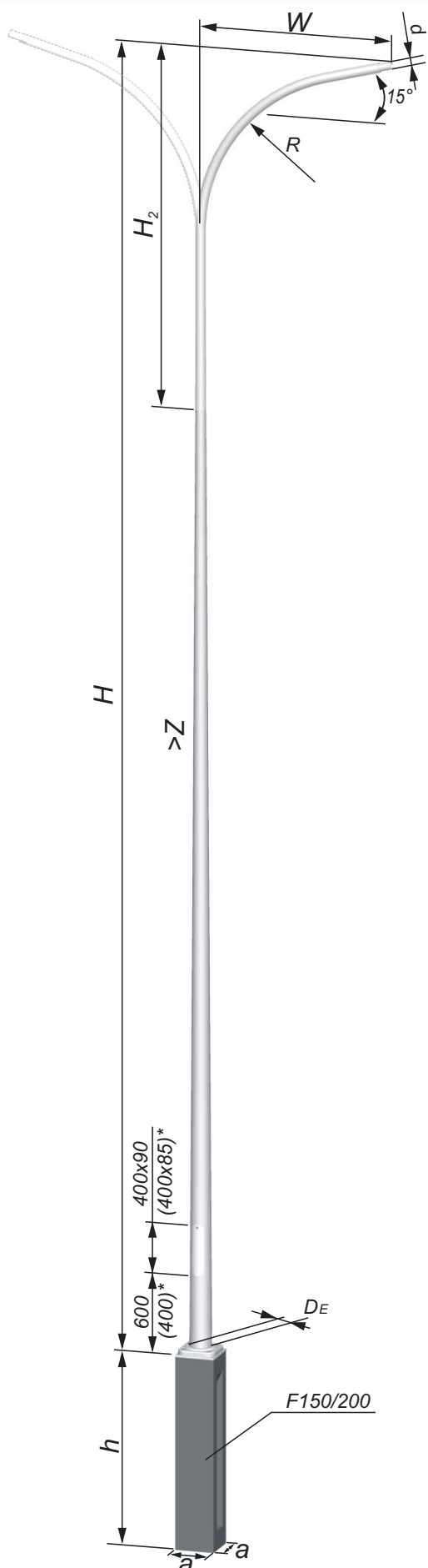
TYPE	W	LAMP FIXTUR WEIGHT / BRACKET	WIND ZONE, PN EN 1991-1-4				M _F
			PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
			I	I	II	III	
	m	kg	≤300m a.s.l.	≤500m a.s.l.	≤300m a.s.l.	≤950m a.s.l.	kNm
SINGLE ARM BRACKET							
S-60/6-3	1,5	14	0,333	0,221	0,192	0,103	6,1
S-70/6-3	1,5	14	0,245	0,144	0,118	0,039	6,1
S-80/6-3	1,5	14	0,157	0,067	0,044	-	6,1
S-90/6-3	1,5	14	0,281	0,156	0,123	0,025	9,9
S-100/6-3	1,5	14	0,186	0,072	0,043	-	9,9
S-110/6-3	1,5	14	0,304	0,143	0,101	-	13,8
S-120/6-3	1,5	14	0,182	0,036	-	-	13,8
DOUBLE ARM BRACKET							
S-60/6-3	1,5	14	0,646	0,426	0,368	0,196	6,1
S-70/6-3	1,5	14	0,446	0,234	0,180	-	6,1
S-80/6-3	1,5	14	0,224	0,050	-	-	6,1
S-90/6-3	1,5	14	0,436	0,204	0,142	-	9,9
S-100/6-3	1,5	14	0,234	0,034	-	-	9,9
S-110/6-3	1,5	14	0,356	0,110	0,046	-	13,8
S-120/6-3	1,5	14	0,158	-	-	-	13,8

* - Sizes listed for H≤8m posts

** - Data for single arm brackets

STEEL STREET LAMPS

ROUND TAPERED STREET LAMP BRACKET POSTS – ST-Y & ST BRACKETS



TECHNICAL DATA

TYPE	SHANK TYPE	W	H	H ₂	R _(MAX)	D/D _E	Z	M ^{**}	A X A X H TYPE
S-60C-3	S-50C-3	1,0	6			48; 60/121		47	0,3 x 0,3 x 1,0 F100/200
		1,5						49	
		2,0						51	
		2,5						53	
S-70C-3	S-60PC-3	1,0	7			48; 60/136		57	
		1,5						59	
		2,0						61	
		2,5						63	
S-80C-3	S-70PC-3	1,0	8			48; 60/148,5		67	
		1,5						69	
		2,0						71	
		2,5						73	
S-90C-3	S-80PC-3	1,0	9	1,0	0,65	48; 60/161	12,5	78	
		1,5						80	
		2,0						82	
		2,5						84	
S-100C-3	S-90PC-3	1,0	10			48; 60/173,5		90	
		1,5						92	
		2,0						94	
		2,5						96	
S-110C-3	S-100PC-3	1,0	11			48; 60/186		103	
		1,5						105	
		2,0						107	
		2,5						109	
S-120C-3	S-110PC-3	1,0	12			48; 60/198,5		116	
		1,5						118	
		2,0						120	
		2,5						122	

NOTE: THE BRACKET IS 1 M ABOVE THE POST. POST WITH TYPE ST-Y BRACKET SHOWN. TYPE ST IS COMPATIBLE WITH THIS POST TYPE.

STRENGTH DATA

TYPE	W	LAMP FIXTURE WEIGHT / BRACKET	WIND ZONE, PN EN 1991-1-4				M _F
			PERMISSIBLE LAMP FIXTURE SURFACE [N]				
			I	I	II	III	
	m	kg	≤300m a.s.l.	≤500m a.s.l.	≤300m a.s.l.	≤950m a.s.l.	kNm
SINGLE ARM BRACKET							
S-60C-3	1,5	14	0,131	0,071	0,056	0,011	4,2
S-70C-3	1,5	14	0,190	0,109	0,088	0,028	5,7
S-80C-3	1,5	14	0,236	0,136	0,110	0,037	7,2
S-90C-3	1,5	14	0,235	0,129	0,103	0,027	8,5
S-100C-3	1,5	14	0,261	0,142	0,112	0,029	10,2
S-110C-3	1,5	14	0,277	0,148	0,117	0,028	12,1
S-120C-3	1,5	14	0,288	0,151	0,118	0,025	14,1
DOUBLE ARM BRACKET							
S-60C-3	1,5	14	0,248	0,132	0,104	0,006	4,2
S-70C-3	1,5	14	0,362	0,186	0,140	-	5,7
S-80C-3	1,5	14	0,372	0,180	0,132	-	7,2
S-90C-3	1,5	14	0,322	0,136	0,090	-	8,5
S-100C-3	1,5	14	0,314	0,124	0,078	-	10,2
S-110C-3	1,5	14	0,302	0,110	0,064	-	12,1
S-120C-3	1,5	14	0,286	0,096	0,050	-	14,1

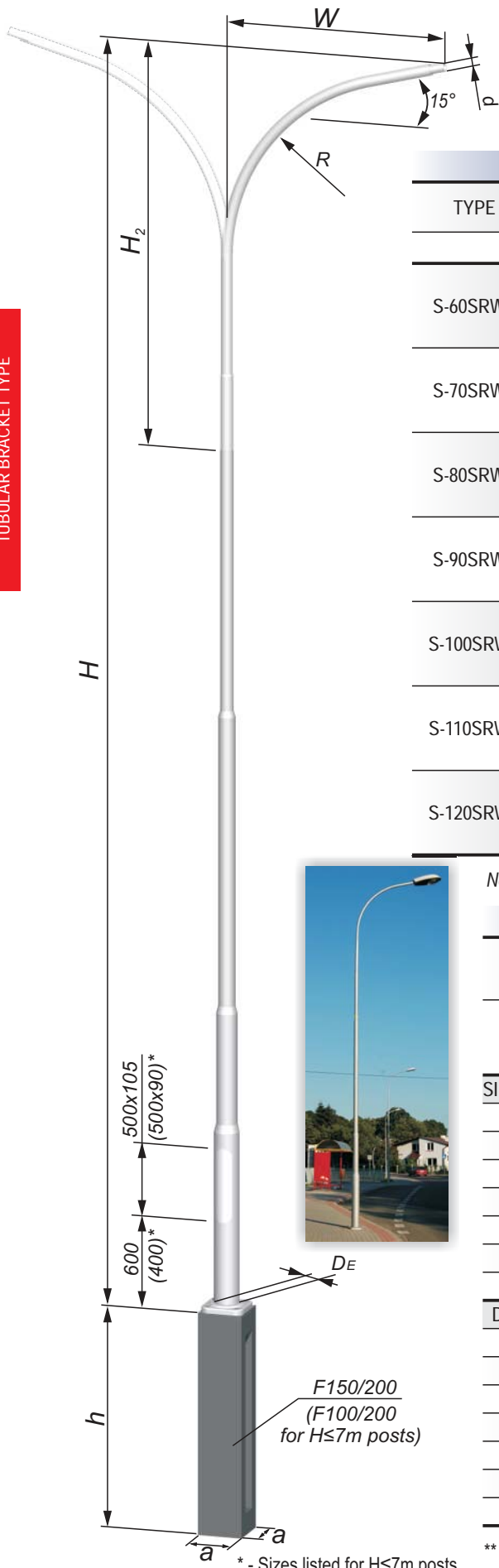
* - Sizes listed for H≤8m posts

** - Data for single arm brackets

STEEL STREET LAMPS

TUBULAR STREET LAMP BRACKET POSTS - $t_{bl}=4\text{mm}$ - ST, ST-X & ST-Y BRACKETS

STREET
TUBULAR BRACKET TYPE



TECHNICAL DATA

TYPE	W	T _{BL}	H	H ₂	R _(MAX)	D/D _E	M**	A X A X H TYPE
	m	mm	m	m	m	mm	kg	m
S-60SRW/4	1,0	6	2,0	0,6	48; 60/140		67	0,3 x 0,3 x 1,0 F100/200
	1,5			1,3			72	
	2,0			1,3			77	
S-70SRW/4	1,0	7	2,0	0,6	48; 60/140		79	0,3 x 0,3 x 1,0 F100/200
	1,5			1,3			84	
	2,0			1,3			89	
S-80SRW/4	1,0	8	2,2	0,6	48; 60/170		95	0,3 x 0,3 x 1,5 F150/200
	1,5			1,3			100	
	2,0			1,3			105	
S-90SRW/4	1,0	4	9	0,6	48; 60/170		103	0,3 x 0,3 x 1,5 F150/200
	1,5			1,3			108	
	2,0			1,3			113	
S-100SRW/4	1,0	10	3,5	0,6	48; 60/170		110	0,3 x 0,3 x 1,5 F150/200
	1,5			1,3			115	
	2,0			1,3			120	
S-110SRW/4	1,0	11	2,2	0,6			127	
	1,5			1,3			132	
	2,0			1,3			137	
S-120SRW/4	1,0	12	3,2	0,6			134	
	1,5			1,3			139	
	2,0			1,3			144	

Note: The number of diameter reductions depends on the post type.

STRENGTH DATA

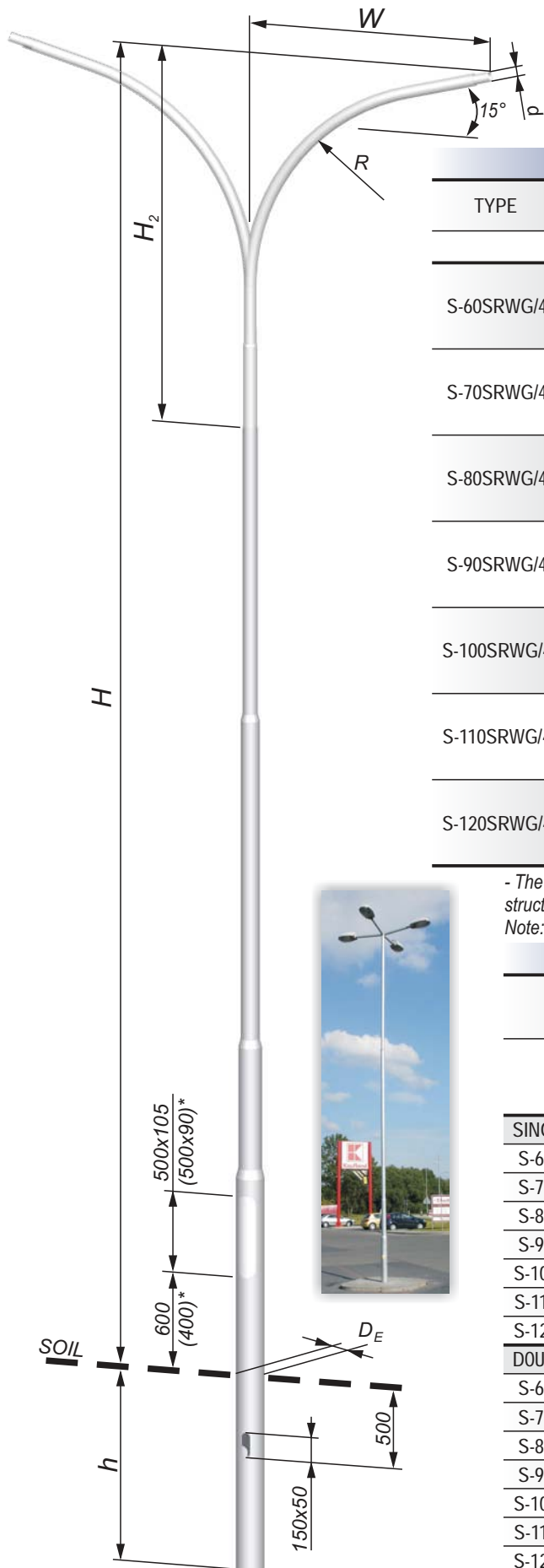
TYPE	W	LAMP FIXTURE WEIGHT / BRACKET	WIND ZONE, PN EN 1991-1-4				M _F
			PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
			I	I	II	III	
	m	kg	≤300m a.s.l.	≤500m a.s.l.	≤300m a.s.l.	≤950m a.s.l.	kNm
SINGLE ARM BRACKET							
S-60SRW/4	1,5	15	0,575	0,413	0,372	0,247	9,0
S-70SRW/4	1,5	15	0,440	0,302	0,268	0,165	9,0
S-80SRW/4	1,5	15	0,549	0,406	0,369	0,257	14,2
S-90SRW/4	1,5	15	0,527	0,390	0,355	0,247	14,2
S-100SRW/4	1,5	15	0,484	0,342	0,298	0,169	14,2
S-110SRW/4	1,5	15	0,380	0,229	0,192	0,087	14,2
S-120SRW/4	1,5	15	0,318	0,185	0,152	0,063	14,2
DOUBLE ARM BRACKET							
S-60SRW/4	1,5	15	1,118	0,800	0,720	0,478	9,0
S-70SRW/4	1,5	15	0,848	0,580	0,512	0,296	9,0
S-80SRW/4	1,5	15	1,066	0,788	0,716	0,498	14,2
S-90SRW/4	1,5	15	1,022	0,702	0,612	0,348	14,2
S-100SRW/4	1,5	15	0,724	0,448	0,374	0,160	14,2
S-110SRW/4	1,5	15	0,476	0,240	0,182	0,014	14,2
S-120SRW/4	1,5	15	0,324	0,128	0,064	-	14,2

** - Data for single arm brackets

* - Sizes listed for H≤7m posts.

STEEL STREET LAMPS

TUBULAR STREET LAMP BRACKET POSTS FOR IN-SOIL INSTALLATION - $t_{bl}=4\text{mm}$ - ST, ST-X & ST-Y BRACKETS



TECHNICAL DATA

TYPE	W	T _{BL}	H	H ₂	R _(MAX)	D/D _E	M**	H
	m	mm	m	m	m	mm	kg	m
S-60SRWG/4	1,0	6	2,0	0,6	48; 60/140		70,2	1,2
	1,5			1,3			72,5	
	2,0			1,3			74,2	
S-70SRWG/4	1,0	7	2,0	0,6	48; 60/140		76,7	1,2
	1,5			1,3			79,0	
	2,0			1,3			70,7	
S-80SRWG/4	1,0	8	2,2	0,6	48; 60/170		108,3	1,5
	1,5			1,3			110,5	
	2,0			1,3			112,2	
S-90SRWG/4	1,0	4	9	0,6	48; 60/170		132,4	1,5
	1,5			1,3			134,7	
	2,0			1,3			136,4	
S-100SRWG/4	1,0	10	3,5	0,6	48; 60/170		138,9	1,5
	1,5			1,3			141,1	
	2,0			1,3			142,8	
S-110SRWG/4	1,0	11	2,2	0,6	48; 60/170		145,4	1,7
	1,5			1,3			147,7	
	2,0			1,3			149,4	
S-120SRWG/4	1,0	12	3,2	0,6	48; 60/170		154	1,7
	1,5			1,3			156,2	
	2,0			1,3			157,9	

- The depth "h" of planting is calculated for virgin soil (i.e. of undisturbed structure) and soil engineering parameters of Group II acc. to the table on p. 7.
Note: The number of diameter reductions depends on the post type.

STRENGTH DATA

TYPE	W	LAMP FIXTURE WEIGHT / BRACKET	WIND ZONE, PN EN 1991-1-4				M _{FR}
			PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
	m	kg	I	I	II	III	kNm
			≤300m a.s.l.	≤500m a.s.l.	≤300m a.s.l.	≤950m a.s.l.	
SINGLE ARM BRACKET							
S-60SRWG/4	1,5	15	0,575	0,413	0,372	0,247	9,0
S-70SRWG/4	1,5	15	0,440	0,302	0,268	0,165	9,0
S-80SRWG/4	1,5	15	0,549	0,406	0,369	0,257	14,2
S-90SRWG/4	1,5	15	0,527	0,390	0,355	0,247	14,2
S-100SRWG/4	1,5	15	0,484	0,342	0,298	0,169	14,2
S-110SRWG/4	1,5	15	0,380	0,229	0,192	0,087	14,2
S-120SRWG/4	1,5	15	0,318	0,185	0,152	0,063	14,2
DOUBLE ARM BRACKET							
S-60SRWG/4	1,5	15	1,118	0,800	0,720	0,478	9,0
S-70SRWG/4	1,5	15	0,848	0,580	0,512	0,296	9,0
S-80SRWG/4	1,5	15	1,066	0,788	0,716	0,498	14,2
S-90SRWG/4	1,5	15	1,022	0,702	0,612	0,348	14,2
S-100SRWG/4	1,5	15	0,724	0,448	0,374	0,160	14,2
S-110SRWG/4	1,5	15	0,476	0,240	0,182	0,014	14,2
S-120SRWG/4	1,5	15	0,324	0,128	0,064	-	14,2

* - Sizes listed for H≤7m posts.

** - Data for single arm brackets

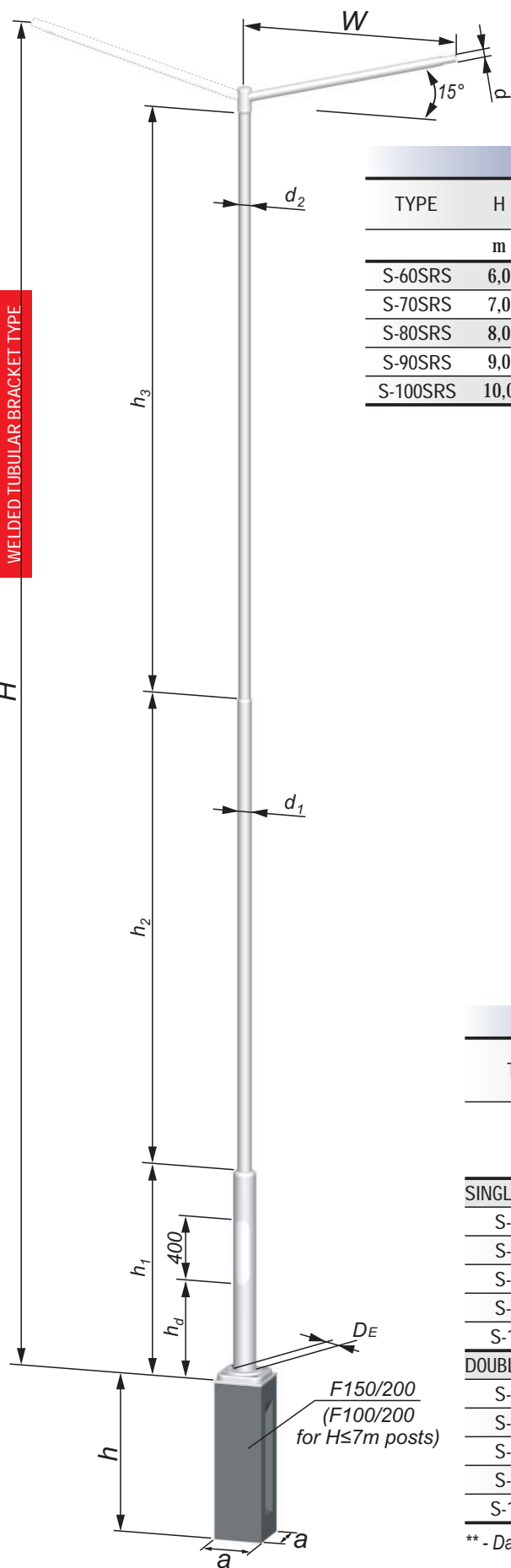
TUBULAR BRACKET TYPE, PLANTED IN SOIL

STREET

STEEL STREET LAMPS

WELDED TUBULAR STREET LAMP BRACKET POSTS - ST BRACKETS

STREET
WELDED TUBULAR BRACKET TYPE



TECHNICAL DATA

TYPE	H	H _b	D/D _E	D ₁	D ₂	H ₁	H ₂	H ₃	M**	A X A X H TYPE
	m	mm	mm	mm	mm	m	m	m	kg	m
S-60SRS	6,0	400	48:60/127	89	76	1,0	2,0	3,0	55,2	0,3 x 0,3 x 1,0 F100/200
S-70SRS	7,0		48:60/127		76	1,0	2,0	4,0	60,9	
S-80SRS	8,0	600	48:60/140	114	76	1,3	3,0	3,7	73,3	0,3 x 0,3 x 1,5 F150/200
S-90SRS	9,0		48:60/159		89	1,5	4,0	3,5	100,6	
S-100SRS	10,0		48:60/168		89	2,0	4,0	4,0	113,9	

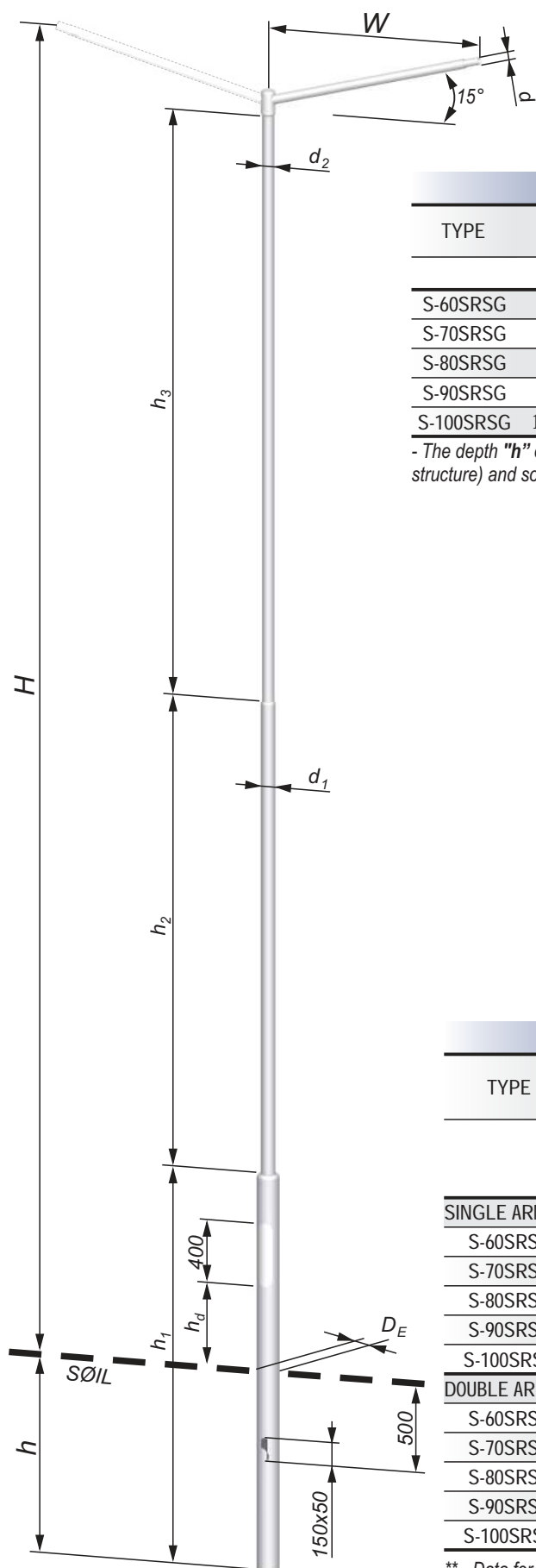
STRENGTH DATA

TYPE	W	LAMP FIXTURE WEIGHT / BRACKET	WIND ZONE, PN EN 1991-1-4				M _F
			PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
	m	kg	I ≤300m a.s.l.	I ≤500m a.s.l.	II ≤300m a.s.l.	III ≤950m a.s.l.	kNm
SINGLE ARM BRACKET							
S-60SRS	1,5	15	0,251	0,156	0,132	0,060	5,0
S-70SRS	1,5	15	0,155	0,075	0,055	-	5,0
S-80SRS	1,5	15	0,365	0,217	0,179	0,072	7,5
S-90SRS	1,5	15	0,574	0,387	0,341	0,206	12,5
S-100SRS	1,5	15	0,530	0,341	0,295	0,163	13,3
DOUBLE ARM BRACKET							
S-60SRS	1,5	15	0,484	0,298	0,250	0,108	5,0
S-70SRS	1,5	15	0,290	0,118	0,072	-	5,0
S-80SRS	1,5	15	0,374	0,180	0,132	-	7,5
S-90SRS	1,5	15	0,724	0,452	0,386	0,192	12,5
S-100SRS	1,5	15	0,560	0,322	0,266	0,100	13,3

** - Data for single arm brackets.

STEEL STREET LAMPS

WELDED TUBULAR STREET LAMP BRACKET POSTS FOR IN-SOIL INSTALLATION – ST BRACKETS



TECHNICAL DATA

TYPE	H	H _b	D/D _E	D ₁	D ₂	H ₁	H ₂	H ₃	M**	H
	m	mm	mm	mm	mm	m	m	m	kg	m
S-60SRSG	6,0	400	48:60/127	89	76	2,2	2,0	3,0	63,3	1,2
S-70SRSG	7,0		48:60/127		76	2,2	2,0	4,0	69,1	
S-80SRSG	8,0		48:60/140		76	2,5	3,0	3,7	84,3	
S-90SRSG	9,0	600	48:60/159	114	89	3,0	4,0	3,5	118,6	1,5
S-100SRSG	10,0		48:60/168		89	3,5	4,0	4,0	133,3	

- The depth "h" of planting is calculated for virgin soil (i.e. of undisturbed structure) and soil engineering parameters of Group II acc. to the table on p. 7.

STRENGTH DATA

TYPE	W	LAMP FIXTURE WEIGHT / BRACKET	WIND ZONE, PN EN 1991-1-4				M _{FR}
			PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
			I	I	II	III	
	m	kg	≤300m a.s.l.	≤500m a.s.l.	≤300m a.s.l.	≤950m a.s.l.	kNm
SINGLE ARM BRACKET							
S-60SRSG	1,5	15	0,251	0,156	0,132	0,060	5,0
S-70SRSG	1,5	15	0,155	0,075	0,055	-	5,0
S-80SRSG	1,5	15	0,365	0,217	0,179	0,072	7,5
S-90SRSG	1,5	15	0,574	0,387	0,341	0,206	12,5
S-100SRSG	1,5	15	0,530	0,341	0,295	0,163	13,3
DOUBLE ARM BRACKET							
S-60SRSG	1,5	15	0,484	0,298	0,250	0,108	5,0
S-70SRSG	1,5	15	0,290	0,118	0,072	-	5,0
S-80SRSG	1,5	15	0,374	0,180	0,132	-	7,5
S-90SRSG	1,5	15	0,726	0,452	0,386	0,192	12,5
S-100SRSG	1,5	15	0,560	0,322	0,266	0,100	13,3

** - Data for single arm brackets.

WELDED TUBULAR BRACKET TYPE, PLANTED IN SOIL

STREET

STEEL STREET LAMP POSTS WITH PN-EN 12767 PASSIVE SAFETY FEATURES

GENERAL – PN-EN 12767 STANDARD

One of the latest challenges for the manufacturers of road lighting columns is compliance with the PN-EN 12767 standard on the passive safety of road structures. Elektromontaż-Rzeszów S.A. has been investigating this challenge for several years.

In practical terms, verification of product compliance with the standard and assignment of the manufactured structure to suitable categories requires crash testing. The tests aim to prove that only specially designed structures can significantly reduce the overloads generated during impact below life hazard levels.

PN-EN 12767 classifies three energy absorption ranges of support structures as follows:

- high-efficiency energy absorbing structures (HE);
- low-efficiency energy absorbing structures (HE);
- non energy absorbing structures (NE).

The passive safety of structures is defined in reference to three speed levels upon impact, i.e. 50, 70 and 100 km/h.

The end result which determines the structural safety level largely depends on two threshold parameters calculated from experimental tests:

- acceleration severity index (ASI);
- theoretical head impact velocity (THIV).

Our Company has already done several dozen impact tests of our columns. We test those structures which are generally designed for lighting of high vehicular traffic areas (i.e. street lighting systems, road lighting systems, highway interchanges, etc.), specifically 10-12 m high posts. In order to satisfy the aesthetic side of customer demands, we have also developed safe octagonal and tapered posts.

Our tests have been completed with the EN 12767 compliance reports for:

- type S-100/8-PS (S-110-PS, S-120-PS) octagonal posts with type F150/200-PS foundation blocks,
- type S-100C-PS (S-110C-PS, S-120C-PS) tapered posts with type F150/200-PS foundation blocks.
- type S-100CN-3PS, S-110CN-3PS and S-120CN-3PS laser-welded tapered posts with type F150/200-PS foundation blocks.

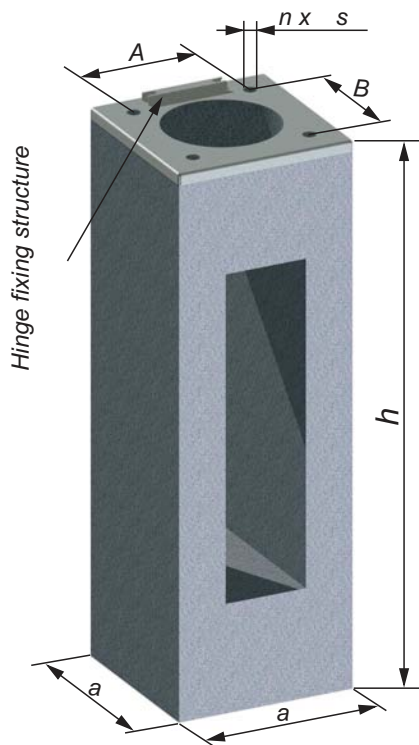
These posts and foundation systems are protected by the Polish Patent Office.

TYPE F150/200-PS PRE-CAST REINFORCED CONCRETE BLOCK

Intended use:

The foundation block intended for installation of type S-100/8-PS (S-110-PS, S-120-PS), S-100C-PS (S-110C-PS, S-120C-PS), S-100CN-3PS, S-110CN-3PS and S-120CN-3PS lamp posts.

TYPE	h	a	AxB	nxØs	m	Mg
	m	m	mm	mm	kg	kNm
F150/200-PS	1,5	0,3	200x200	4xM20	225	31,5



F150/200-PS



STEEL STREET LAMP POSTS WITH PN-EN 12767 PASSIVE SAFETY FEATURES ROUND TAPERED STREET LAMP BRACKET POSTS WITH PASSIVE SAFETY FEATURES – ST BRACKETS



STREET
SAFE, ROUND

TECHNICAL DATA

TYPE	W	H	H ₂	D/D _E	Z	M**	AXAXH
							TYPE
	m	m	m	mm	mm/m	kg	m
S-100C-PS	1,0	10	0,75				86
	1,5						87
	2,0						89
	2,5						91
S-110C-PS	1,0	11	1,75	48; 60/196	12		92
	1,5						93
	2,0						94
	2,5						95
S-120C-PS	1,0	12	2,75				98
	1,5						99
	2,0						100
	2,5						101

Passive safety classification: 100HE3

STRENGTH DATA

TYPE	W	LAMP FIXTURE WEIGHT / BRACKET	WIND ZONE, PN EN 1991-1-4				M _F
			PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
			I ≤300m a.s.l.	I ≤500m a.s.l.	II ≤300m a.s.l.	III ≤950m a.s.l.	
SINGLE ARM BRACKET							
S-100C-PS	1,5	15	0,653	0,471	0,427	0,297	12,3
S-110C-PS	1,5	15	0,485	0,334	0,297	0,190	12,3
S-120C-PS	1,5	15	0,355	0,226	0,194	0,090	12,3
DOUBLE ARM BRACKET							
S-100C-PS	1,5	15	0,652	0,426	0,370	0,214	12,3
S-110C-PS	1,5	15	0,456	0,268	0,222	0,100	12,3
S-120C-PS	1,5	15	0,300	0,140	0,100	-	12,3

** - Data for single arm brackets

STEEL STREET LAMP POSTS WITH PN-EN 12767 PASSIVE SAFETY FEATURES OCTAGONAL STREET LAMP BRACKET POSTS WITH PASSIVE SAFETY FEATURES – ST BRACKETS

STREET
SAFE, OCTAGONAL



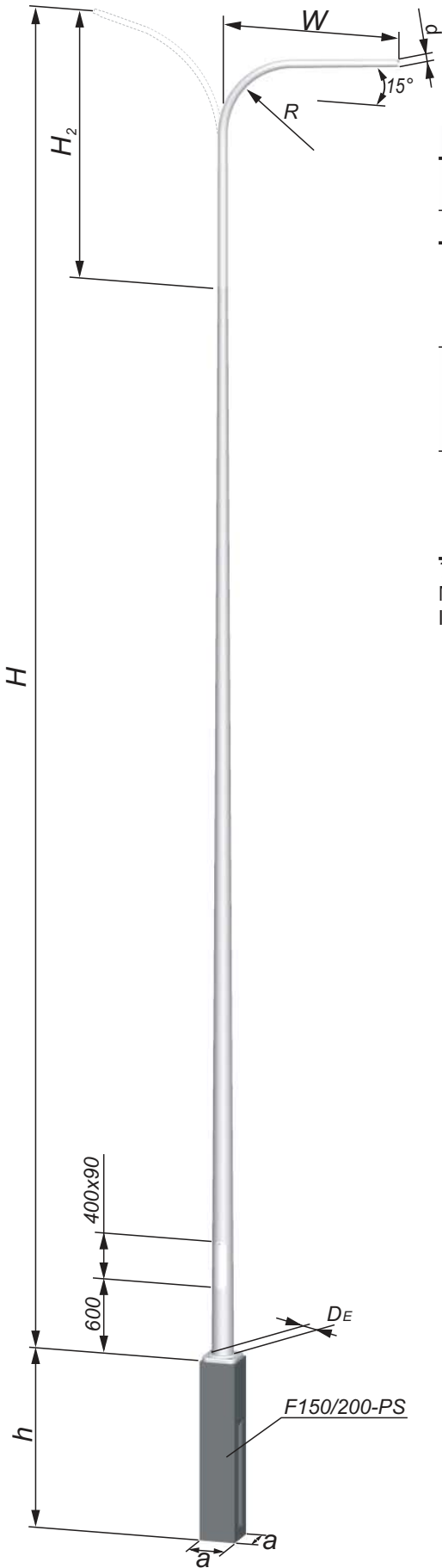
TECHNICAL DATA							
TYPE	W	H	H ₂	D/D _E	Z	M**	A X A X H TYPE
	m	m	m	mm	mm/m	kg	m
S-100/8-PS	1,0	10	0,75			105	
	1,5					106	
	2,0					107	
	2,5					108	
S-110-PS	1,0	11	1,75	48; 60/195	12	109	0,3 x 0,3 x 1,5 F150/200-PS
	1,5					111	
	2,0					112	
S-120-PS	2,5	12	2,75			113	
	1,0					113	
	1,5					115	
	2,0					116	
	2,5					117	

Passive safety classification: 100HE1

STRENGTH DATA							
TYPE	W	LAMP FIXTURE WEIGHT / BRACKET	WIND ZONE, PN EN 1991-1-4				M _F
			PERMISSIBLE LAMP FIXTURE SURFACE ² [M				
			I	I	II	III	
	m	kg	≤300m a.s.l.	≤500m a.s.l.	≤300m a.s.l.	≤950m a.s.l.	kNm
SINGLE ARM BRACKET							
S-100/8-PS	2,0	15	0,845	0,534	0,452	0,212	14,7
S-110-PS	2,0	15	0,650	0,380	0,311	0,087	14,7
S-120-PS	2,0	15	0,487	0,253	0,183	-	14,7
DOUBLE ARM BRACKET							
S-100/8-PS	2,0	15	0,866	0,492	0,384	0,099	14,7
S-110-PS	2,0	15	0,612	0,296	0,214	-	14,7
S-120-PS	2,0	15	0,414	0,160	0,082	-	14,7

** - Data for single arm brackets

STEEL STREET LAMP POSTS WITH PN-EN 12767 PASSIVE SAFETY FEATURES LASER- WELDED ROUND TAPERED STREET LAMP BRACKET POSTS WITH PASSIVE SAFETY FEATURES



TECHNICAL DATA

TYPE (SHANK TYPE)	W	T _{BL}	H	H ₂	R _(MAX)	D/D _E	M**	A X A X H TYPE	PASSIVE SAFE CLASS
	m	mm	m	m	m	mm	kg	m	
S-100CN-3PS	1,0	3	10	1,0	0,65	48; 60/ 198	109	0,3 x 0,3 x 1,5 F150/200PS	100LE1
	1,5						111		
	2,0						113		
	2,5						115		
S-110CN-3PS	1,0	3	11	1,0	0,65	48; 60/ 198	114	0,3 x 0,3 x 1,5 F150/200PS	100LE1
	1,5						116		
	2,0						118		
	2,5						121		
S-120CN-3PS	1,0	3	12	1,0	0,65	48; 60/ 198	119	0,3 x 0,3 x 1,5 F150/200PS	100LE1
	1,5						121		
	2,0						123		
	2,5						126		

The technical data is listed for single-arm bracket posts.

NOTE: THE BRACKET IS 1 M ABOVE THE POST. POST WITH TYPE ST-Y BRACKET SHOWN. TYPE ST-B IS COMPATIBLE WITH THIS POST TYPE.

STRENGTH DATA

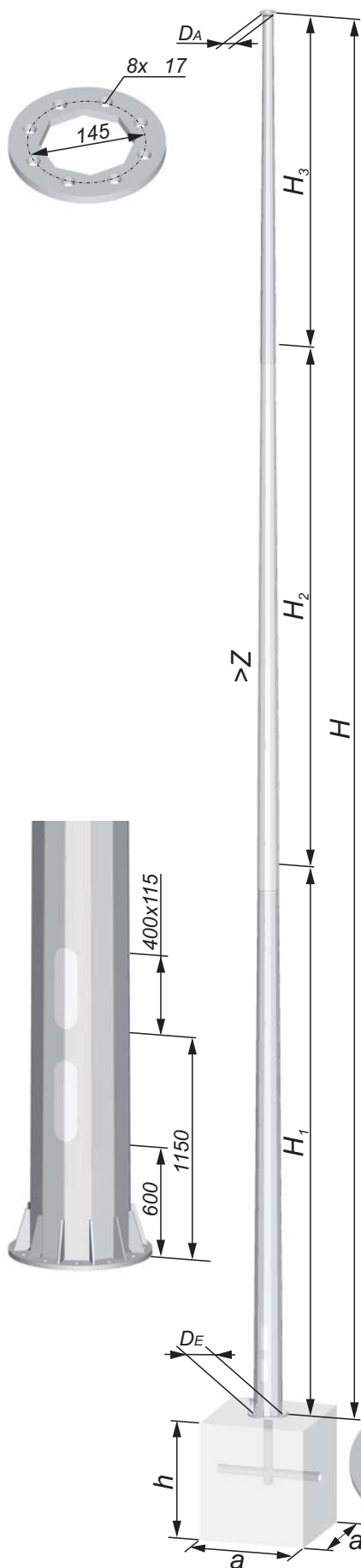
TYPE	W	LAMP FIXTUR WEIGHT / BRACKET	WIND ZONE, PN EN 1991-1-4				M _F
			PERMISSIBLE LAMP FIXTURE SURFACE [IV]				
			I	I	II	III	
	m	kg	≤300m a.s.l.	≤500m a.s.l.	≤300m a.s.l.	≤950m a.s.l.	kNm
SINGLE ARM BRACKET							
S-100CN-3PS	1,5	14	0,565	0,383	0,337	0,205	14,0
S-110CN-3PS	1,5	14	0,416	0,257	0,217	0,108	14,0
S-120CN-3PS	1,5	14	0,288	0,151	0,118	0,025	14,0
DOUBLE ARM BRACKET							
S-100CN-3PS	1,5	14	0,730	0,458	0,392	0,196	14,0
S-110CN-3PS	1,5	14	0,484	0,256	0,200	0,044	14,0
S-120CN-3PS	1,5	14	0,286	0,096	0,050	-	14,0

** - Data for single arm brackets.

STREET
SAFE, ROUND

STEEL MASTS

POLYGONAL LAMP MASTS



Technical data

H	H1	H2	H3	Z	m	n x s/ M	Crown type a x a x h
m	m	m	m	mm/m	kg	mm	m
M-120	• $D_A/D_E = 94/360$						WF450/8xM24
12	9,5	3,0	-	22,83	345	8 x M24/450	1,6 x 1,6 x 1,6
M-140	• $D_A/D_E = 94/360$						WF450/8xM24
14	9,5	5,0	-	19,57	356	8 x M24/450	1,6 x 1,6 x 1,8
M-160	• $D_A/D_E = 94/380$						WF550/8xM24
16	9,5	7,0	-	18,37	449	8 x M24/550	1,6 x 1,6 x 1,8
M-180	• $D_A/D_E = 94/420$						WF550/8xM24
18	9,5	9,0	-	18,55	515	8 x M24/550	1,6 x 1,6 x 1,8
M-200	• $D_A/D_E = 94/470$						WF600/12xM30
20	9,5	9,5	2,0	19,6	625	12 x M30/600	1,7 x 1,7 x 2,0

Note: The foundation sizes are preliminary for Group II soils acc. to the table on p. 8.
Higher masts are made acc. to PN-EN 1090 on custom order

The foundation structure and the mast installation conditions shall be designed according to the construction design for the installation site.

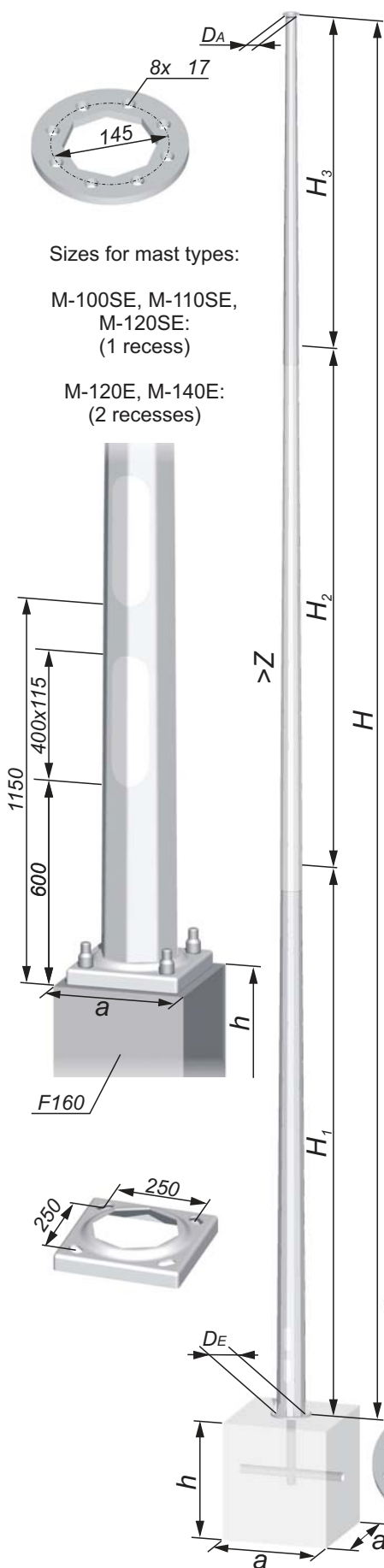


Strength data

TYPE	Lamp fixture weight kg	Wind Zone, PN EN 1991-1-4				M_F kNm
		Permissible lamp fixture surface [m ²]				
		I ≤300m a.s.l.	I ≤500m a.s.l.	II ≤300m a.s.l.	III ≤950m a.s.l.	
M-120	250	5,570	4,095	3,715	2,555	87
M-140	250	3,962	2,810	2,516	1,612	87
M-160	250	3,195	2,165	1,900	1,094	94
M-180	250	2,804	1,795	1,535	0,744	106
M-200	250	2,708	1,683	1,420	0,615	122

STEEL MASTS

BUDGET POLYGONAL LAMP MASTS



Sizes for mast types:

M-100SE, M-110SE,
M-120SE:
(1 recess)

M-120E, M-140E:
(2 recesses)

Technical data

H	H1	H2	H3	Z	m	n x s/ M	Crown type a x a x h
m	m	m	m	mm/m	kg	mm	m
M-100SE • $D_A/D_E = 98/218$							F160
10	9,5	0,75	-	13,2	103	4 x M24/□250	0,4 x 0,4 x 1,6
M-110SE • $D_A/D_E = 84/218$							F160
11	9,5	1,75	-	13,2	112	4 x M24/□250	0,4 x 0,4 x 1,6
M-120SE • $D_A/D_E = 72/218$							F160
12	9,5	2,75	-	13,2	120	4 x M24/□250	0,4 x 0,4 x 1,6
M-120E • $D_A/D_E = 106/218$							F160
12	9,5	3,0	-	9,83	287	4 x M24/□250	0,4 x 0,4 x 1,6
M-140E • $D_A/D_E = 86,5/218$							F160
14	9,5	5,0	-	9,82	302	4 x M24/□250	0,4 x 0,4 x 1,6
M-160E • $D_A/D_E = 94/360$							WF450/8xM24
16	9,5	7,0	-	17,12	428	8 x M24/450	0,85x0,85x1,7
M-180E • $D_A/D_E = 94/360$							WF450/8xM24
18	9,5	9,0	-	15,22	471	8 x M24/450	0,85x0,85x1,7
M-200E • $D_A/D_E = 94/420$							WF550/8xM24
20	9,5	9,5	2,0	17,1	563	8 x M24/550	1,4 x 1,4 x 1,8

Note: The foundation sizes are preliminary for Group II soils acc. to the table on p. 8.
Higher masts are made acc. to PN-EN 1090 on custom order

The foundation structure and the mast installation conditions shall be designed according to the construction design for the installation site. The pre-cast foundation block dimensions are defined for moderate soil engineering parameters. The pre-cast foundation planting conditions shall be designed according to the construction design and the lamp mast assembly instructions for the actual site.

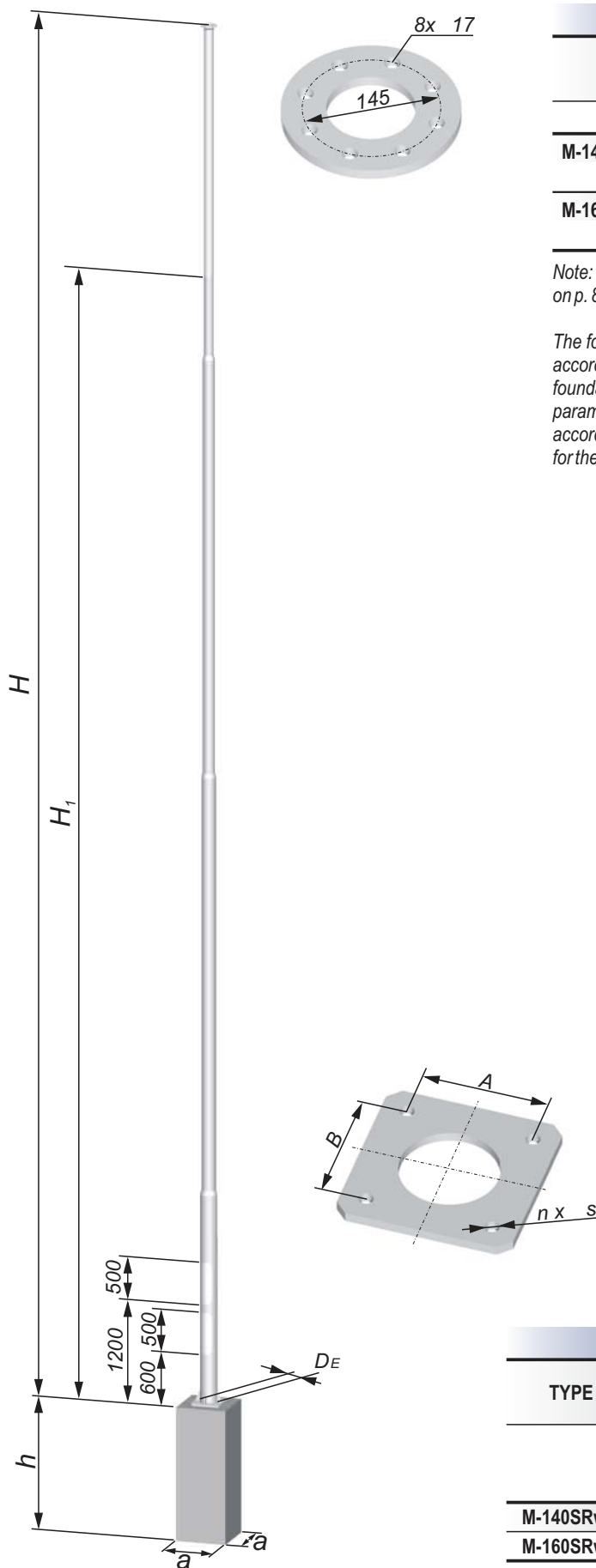


Strength data

TYPE	Lamp fixture weight kg	Wind Zone, PN EN 1991-1-4				M_F kNm
		Permissible lamp fixture surface [m ²]				
		I ≤300m a.s.l.	I ≤500m a.s.l.	II ≤300m a.s.l.	III ≤950m a.s.l.	
M-100SE	80	0,856	0,564	0,489	0,293	25
M-110SE	80	0,627	0,382	0,319	0,199	25
M-120SE	80	0,449	0,240	0,180	0,101	25
M-120E	120	1,767	1,187	1,037	0,585	37
M-140E	120	1,103	0,659	0,545	0,200	37
M-160E	200	2,910	1,955	1,708	0,965	86
M-180E	200	1,999	1,210	1,008	0,394	86
M-200E	200	2,005	1,128	0,904	0,222	106

STEEL MASTS

TUBULAR LAMP MASTS



Technical data

H	H1	m	n x s/A x B	Crown type a x a x h
m	m	kg	mm	m
M-140SRw/4	$D_A/D_E = 114/205$			WF354/4xM24
14	9,0	230	4 x M24/250x250	0,6 x 0,6 x 1,6
M-160SRw/4	$D_A/D_E = 114/205$			WF354/4xM24
16	9,0	250	4 x M24/250x250	0,6 x 0,6 x 1,7

Note: The foundation sizes are preliminary for Group II soils acc. to the table on p. 8.

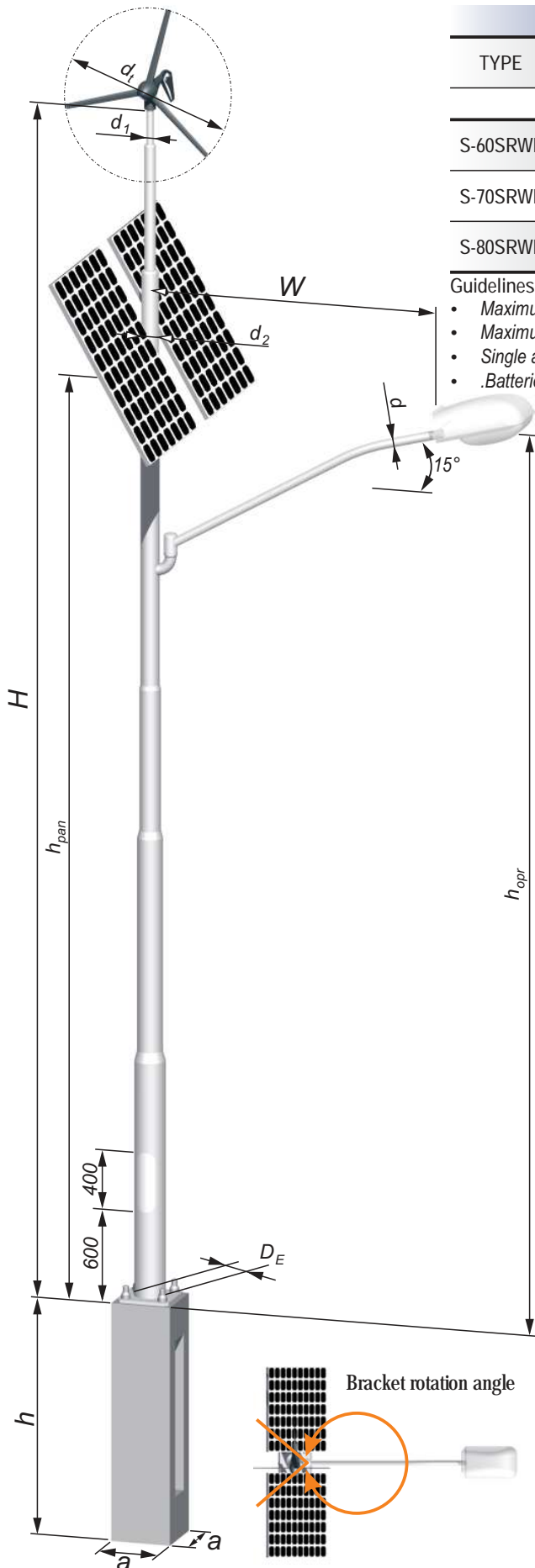
The foundation structure and the mast installation conditions shall be designed according to the construction design for the installation site. The pre-cast foundation block dimensions are defined for moderate soil engineering parameters. The pre-cast foundation planting conditions shall be designed according to the construction design and the lamp mast assembly instructions for the actual site.

Strength data

TYPE	Lamp fixture weight kg	Wind Zone, PN EN 1991-1-4				M_F kNm
		Permissible lamp fixture surface [m ²]				
		I ≤300m a.s.l.	I ≤500m a.s.l.	II ≤300m a.s.l.	III ≤950m a.s.l.	
M-140SRw/4	100	1,035	0,623	0,456	0,346	27,5
M-160SRw/4	100	0,600	0,306	0,200	0,140	27,5

STEEL STREET LAMPS

RES-POWERED STREET LAMP POSTS



TECHNICAL DATA

TYPE	H	H _{OPR}	H _{PAN}	D/D _E	D ₁	D ₂	D _T	W	M	A X A X H TYPE
	m	m	m	mm	mm	mm	m	m	kg	m
S-60SRWH	6,0	4,0	4,5	48;60/170		83			72,0	0,3 x 0,3 x 1,5 F150/200
S-70SRWH	7,0	5,0	5,5	48;60/196	48		1,2	2,0	91,0	
S-80SRWH	8,0	6,0	6,5	48;60/205		114			142,0	0,4 x 0,4 x 1,6 F160

Guidelines:

- Maximum lamp fixture weight 15kg,
- Maximum lamp fixture surface $A_{lamp} = 0,15m^2$,
- Single arm bracket $W_{max} = 2,5m$,
- Batteries installed outside of the column.

Consult all major deviations from these guidelines with the manufacturer before ordering.

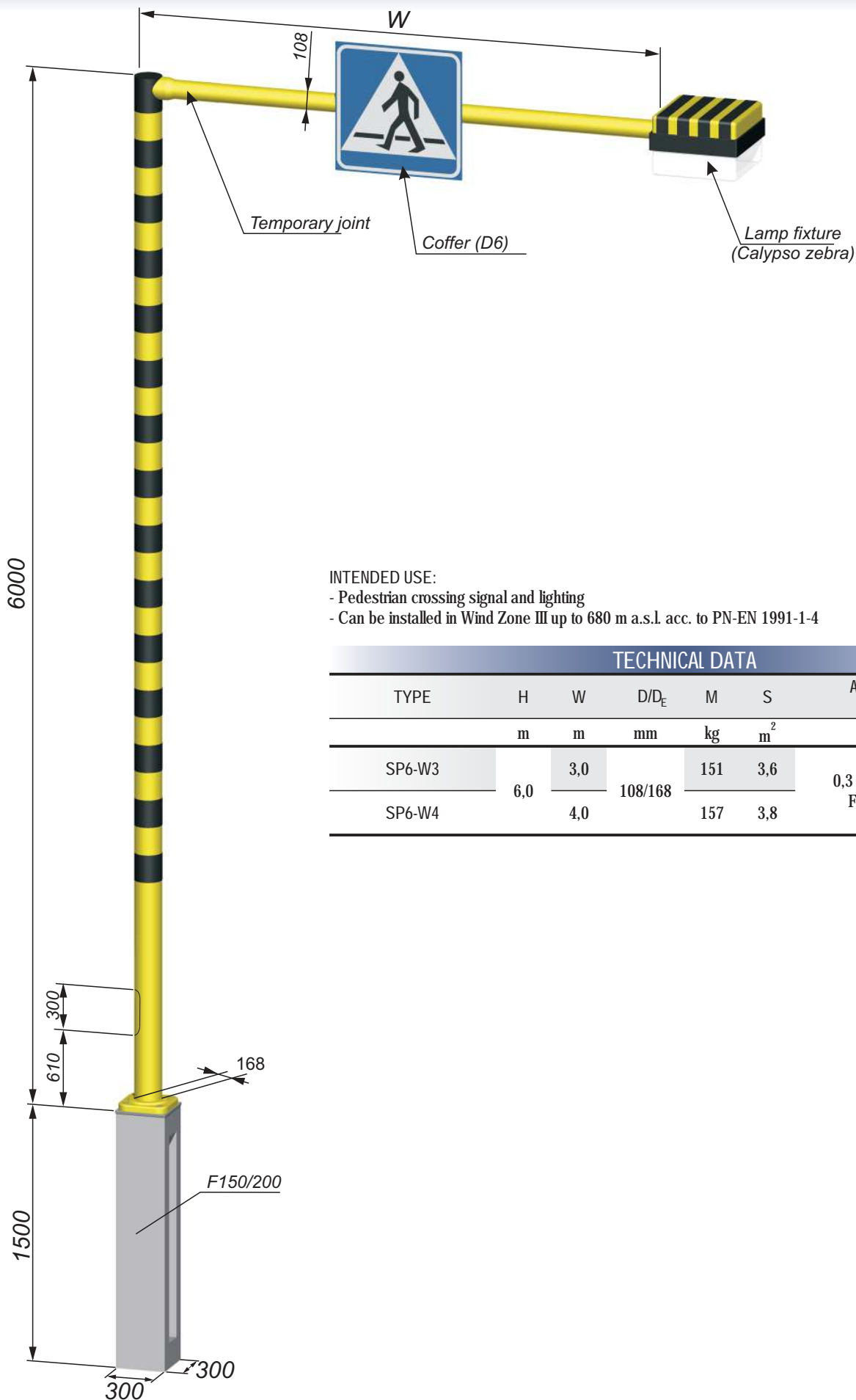


STRENGTH DATA

TYPE	PANELS WEIGHT kg	WIND ZONE, PN EN 1991-1-4				M _F kNm
		PERMISSIBLE LAMP FIXTURE SURFACE [M]				
		I ≤300m a.s.l.	I ≤500m a.s.l.	II ≤300m a.s.l.	III ≤950m a.s.l.	
S-60SRWH	90	2,377	1,741	1,613	1,149	20,0
S-70SRWH	90	2,549	1,895	1,723	1,276	25,0
S-80SRWH	90	2,308	1,806	1,591	1,178	35,0

SPECIAL STEEL STRUCTURES

Sp6 PEDESTRIAN CROSSING LAMP POST



INTENDED USE:

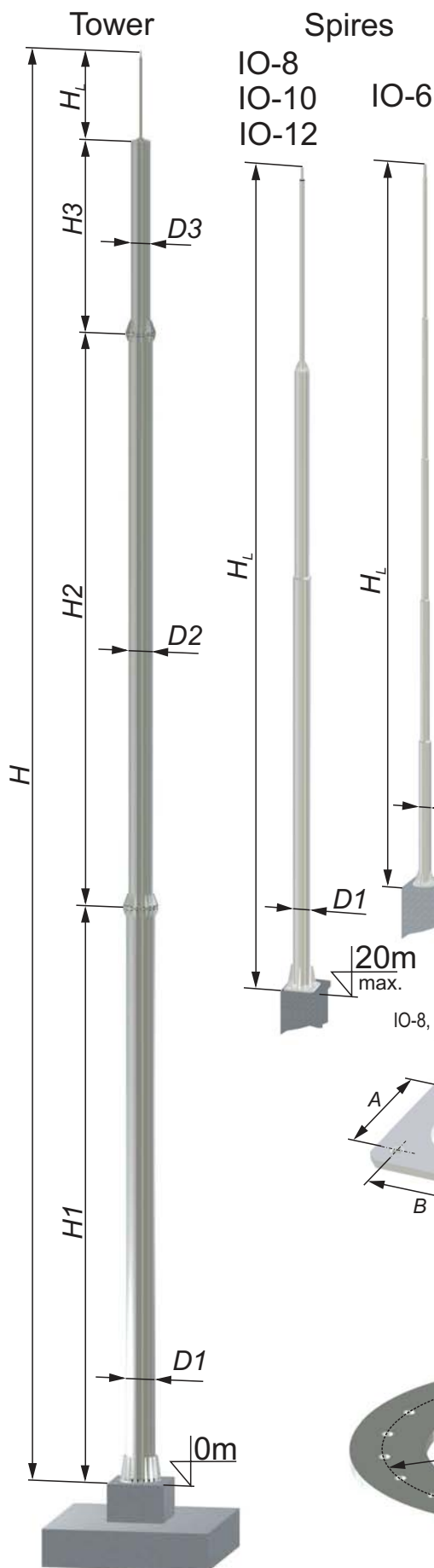
- Pedestrian crossing signal and lighting
- Can be installed in Wind Zone III up to 680 m a.s.l. acc. to PN-EN 1991-1-4

TECHNICAL DATA

TYPE	H	W	D/D _E	M	S	A X A X H TYPE	M _F
	m	m	mm	kg	m ²	m	kNm
SP6-W3	6,0	3,0	108/168	151	3,6	0,3 x 0,3 x 1,5 F150/200	16,0
SP6-W4		4,0		157	3,8		

STEEL TOWERS

LIGHTNING ARRESTOR SPIRES AND MASTS



TECHNICAL DATA										
TYPE	H	H1	H2	H3	D1*	D2*	D3*	H _L	n x S/ M N X S/A X B	
	m	m	m	m	mm	mm	mm	m	mm	
IO-6	6	-	-	-	102	-	-	6,0	8 x M16/Ø145	
IO-8	8	-	-	-	168	-	-	8,0	4 x M20/200 x 200	
IO-10	10	-	-	-	168	-	-	10,0	4 x M20/200 x 200	
IO-12	12	-	-	-	168	-	-	12,0	4 x M20/200 x 200	
WO-13	13	12,0	-	-	194	-	-	1,0	10 x M20/Ø290	
WO-17	17	12,0	4,0	-	324	244	-	1,0	12 x M20/ 410	
WO-22	22	12,0	8,0	-	324	244	-	2,0	12 x M20/ 410	
WO-25	25	12,0	12,0	-	406	324	-	1,0	12 x M24/ 500	
WO-28	28	12,0	12,0	3,0	508	355	244	1,0	12 x M24/ 600	
WO-30	30	12,0	12,0	4,0	610	508	406	2,0	18 x M24/ 700	
WO-36	36	12,0	12,0	11,0	610	508	406	1,0	18 x M24/ 700	

* - The pipe diameters given for structures intended for use in Wind Zone I acc. to PN-EN 1991-1-4 may change if other Wind Zones are foreseen.

Type WO lightning arrestor tower: intended for installation on the ground level as support towers in lightning protection systems..

Type IO lightning arrestor spire: intended for installation on buildings, line gates, overhead power line support structures, etc.

See the Product Data Sheets available from our Sales & Contract Department for detailed technical parameters.

The founding of type WO towers and anchoring of type IO spires shall be designed according to the respective Product Data Sheets.

The structures have been certified for compliance with PN-EN 1090 and meet the load bearing and operation requirements of PN-EN 1993.

Non-listed structure heights are available on custom order.

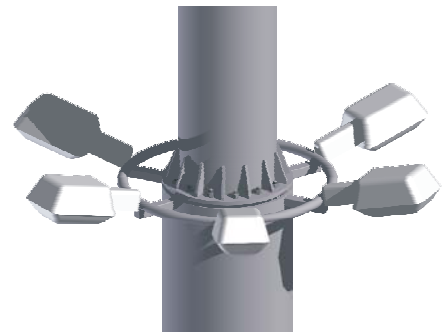
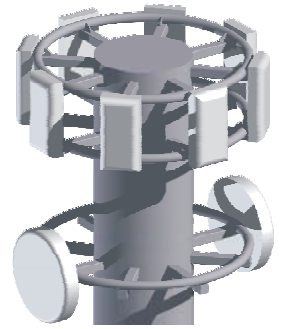
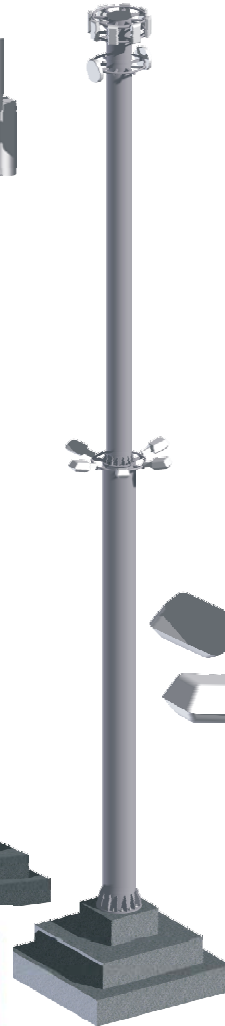
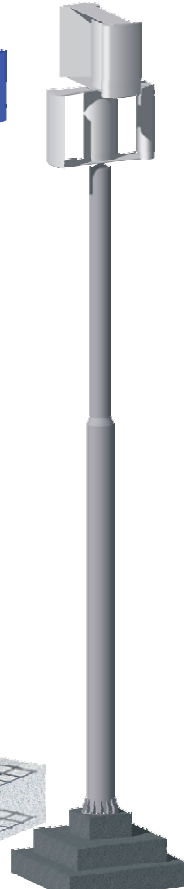
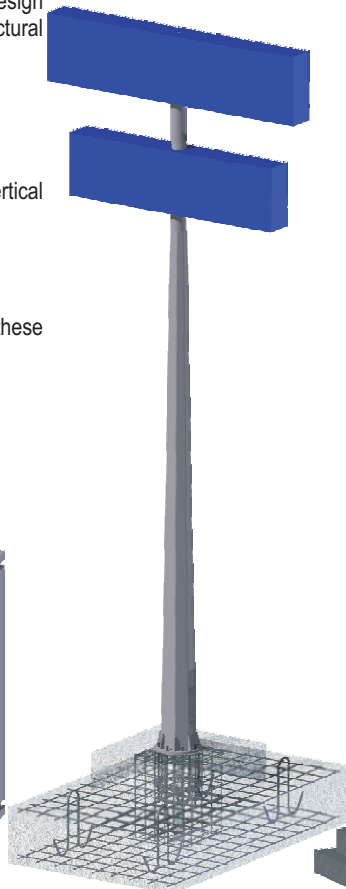
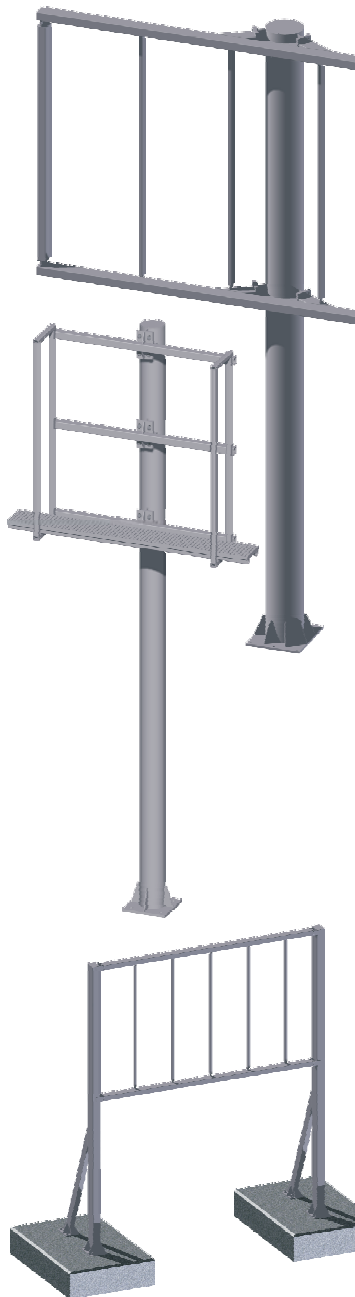
SPECIAL STEEL STRUCTURES


OTHER STEEL STRUCTURES

ELEKTROMONTAŻ RZESZÓW S.A. designs and manufactures other structures made of steel and aluminium. Our Design Engineering Office has many years of experience in structural engineering. We offer end-to-end structural solutions, e.g.:

- LED panel support structures,
- Billboard support structures,
- Sports score board support structures,
- Wind turbine support structures (for horizontal and vertical turbine axis),
- Support structures of sector antennas and RF networks,
- Other custom structures.


We also provide design engineering of foundations for these structures.





**BUILDING RESEARCH INSTITUTE
CERTIFICATION DEPARTMENT**

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e-mail: certyfikacja@itb.pl, www.itb.pl



PCA
AC 020

EC CERTIFICATE OF FACTORY PRODUCTION CONTROL
1488-CPD-0314/Z

In compliance with Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products (the Construction Products Directive or CPD), as later amended, it has been stated that the construction product

Steel and aluminium components of the building and engineering structures - class EXC3
(methods of declaration of product properties according to the paragraphs ZA.3.3, ZA.3.4 of the standard EN 1090-2:2009+A1:2011)

placed on the market by
ELEKTROMONTAŻ RZESZÓW SA
ul. Słowackiego 20
35-060 Rzeszów

and produced in the factory
Elektromontaż Rzeszów S.A. - Zakład Produkcji Urządzeń
ul. Przemysłowa 8
35-105 Rzeszów

is submitted by the manufacturer to the initial type-testing of the product, a factory production control and to the further testing of samples taken at the factory in accordance with a prescribed test plan and that the notified body No. 1488 - Building Research Institute - has performed the initial inspection of the factory and of the factory production control and performs the continuous surveillance, assessment and approval of the factory production control.


This certificate attests that all provisions concerning the attestation of factory production control described in Annex ZA of the standard

EN 1090-1:2009+A1:2011


were applied.

This certificate was first issued on 20.05.2013 and remains valid as long as the conditions laid down in the harmonised technical specification in reference of the manufacturing conditions in the factory or the FPC itself are not modified significantly.

HEAD
of the Certification Department




Barbara Dobosz

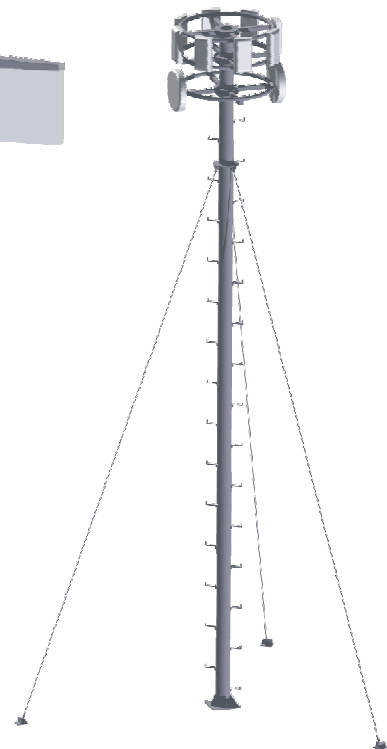


Warsaw, 20.05.2013

DEPUTY DIRECTOR
of the Building Research Institute



Marek Kaproń



ALUMINIUM ALLOY COLUMNS



ALUMINIUM COLUMNS

CHARACTERISTICS OF POSTS

1. MATERIAL PROPERTIES

Our input materials for aluminium alloy columns include AlMg3 and AlMgSI alloys.

Physical and chemical properties:

- low specific gravity: 2.66 kg/dm³,
- resistant to increased corrosion attack,
- especially in marine/offshore environment,
- polishable and extremely good for formation of anodic oxide coatings,
- good for hot and cold working weldable,
- high fatigue strength at high flexibility.

2. STRENGTH PROPERTIES OF POSTS

The plastic forming of aluminium for tubular posts gives the strength properties approximate to those of steel posts. Note that the aluminium post weighs approximately 30% of its steel counterpart.

3. ADVANTAGES OF ALUMINIUM POSTS AND MASTS

- Anti-corrosive properties provide long operating life in all weather conditions and under increased ambient corrosion attack
- Low post weight facilitates installation and erection safety of tall posts
- Long life of aesthetic appearance
- Flexibility of the product significantly improves the safety of collision to vehicle occupants
- Unlimited recyclability at the end of life with the recycling energy consumption being far lower than manufacturing the raw material. This assures sustainable use of natural resources and environmental protection
- The manufacturing process of aluminium alloy posts and masts at Elektromontaż Rzeszów enables nearly 100% input material consumption without any undue waste

4. MANUFACTURING OF TUBULAR POSTS AND MASTS

Tubular posts are made of aluminium pipes of suitable diameter with the wall thickness between 3mm and 10mm (as required by structural strength). The posts are monolithic thanks to pipe redrawing (with pitching tube diameter) or rolling (with continuous taper along the entire post). This eliminates the need for longitudinal or circumferential welding which results in improved aesthetic finish and removes structural weak points on cross welds. The posts are designed for installation on pre-cast concrete foundations or planting in cast-in-place foundations.

5. MANUFACTURING OF POST AND MAST FLANGE PLATES

The flange plates for posts and masts installed on pre-cast foundation blocks are made by casting or from stamped sheet with suitable ribbing and the fixing point completely concealed in the plate bottom. The flange plate fastening bolts and the hinge are also hidden in the plate bottom, which protects the bolt fasteners from ambient conditions. The bolt inspection holes are sealed with blind caps once the post (mast) has been bolted to the foundation structure.

The flange plate design assures high aesthetic finish and compliance with the EN 12767 standard for passive safety of lighting columns. Our solution is protected by the Polish Patent Office.

The high mast flange plates are made as casts with reinforced design of the fixing points.

6. ENHANCED PROTECTION

Aluminium alloy columns are highly resistant to weather by chemical preservation of polished surfaces or painting with polyurethane coatings in any RAL colour. Note that we cooperate directly with paint and varnish manufacturers. Hence we can coat our products with special paints on custom order, e.g. dirt resistant coats, fluorescent coats, photo luminescent coats, chameleon effect coats, and many more. Moreover, we can anodize our tubular posts.

7. CABLE RECESS

Each column comes with hand hole doors which conceal and protect the internal electrical equipment. The door is a lid fastened to the post with a bolt lock operated with an Allen hex key or socket wrenches. The door provides IP43 rating for the hand hole recess. The hand hole recess can accommodate a circuit breaker panel with the maximum dimensions of (W x D x H):

AL tubular park lamp posts	85 x 100 x 500 mm
AL tubular street lamp posts, H ≤ 7m	85 x 100 x 500 mm
AL tubular street lamp posts, H > 7m	100 x 120 x 500 mm
AL tubular masts	100 x 120 x 500 mm

Flag masts have no cable recess.

8. FIXING OF ALUMINIUM POSTS AND MASTS

Lamp posts and masts feature a permanently fixed flange plate, which facilitates quick installation on concrete foundation structures or other sufficiently stable substrates. The product is fastened with regular bolts or anchor bolts. Street lamp posts with the height between 4 m and 12 m feature a hinged catch which facilitates erection.

The bolts and nuts for fastening the structures on cast-in-place foundations are protected against loosening and corrosion by protective caps which resist weather and mechanical damage.

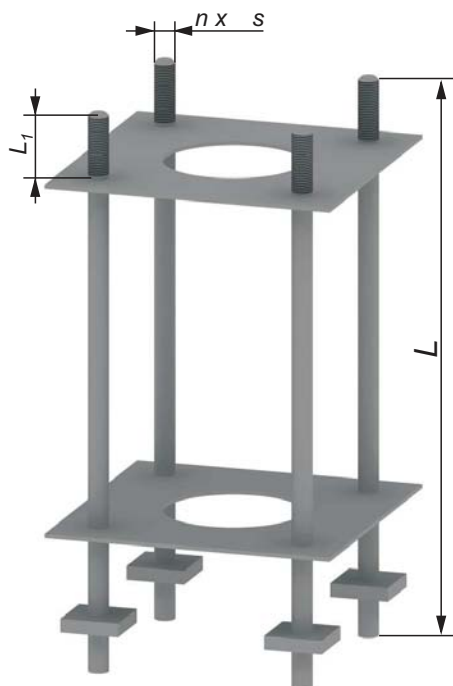
9. BRACKETS

The brackets for aluminium street lamp posts are available with the length of 0.5m, 1.0m, 1.5m, 2.0m, 2.5m and 3.0m, symmetrical arrangement and up to 4 arms.

The types of brackets and other support structures installed on aluminium alloy posts and masts are detailed in Section "General".

ALUMINIUM COLUMNS

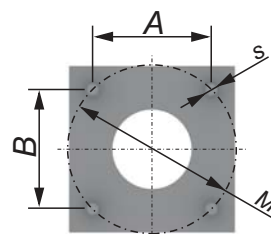
FOUNDATION RING



Intended use: The foundation ring (an assembly of plate anchors) is used to anchor lamp masts or other structures in monolithic (cast-in-place) foundations. All monolithic foundations with rings shall be designed according to the Notes on p. 8. The ring is intended for foundations made of concrete class C16/20 minimum. Note that cable entry ductwork must be embedded with the foundation.

Design: The foundation ring is made of structural steel. The ring features an assembly of plate anchors which meet the relevant standards for anchoring and stabilising rings for positioning of individual anchors.

TYPE	Intended use	ØM (AxB)	n x Øs	L	L ₁	m
		mm	mm	mm	mm	kg
WF424/4xM30	M-160SwAL	424 (300 x 300)	4 x M30	810	135	38
	M-180SwAL					



ORDERING COMPLETE LAMP COLUMNS

Specify the following information when ordering:

- post / mast type and height in m;
- bracket / head type (specify the number of arms, reach, arm spacing angle and lamp fixture elevation angle);
- lamp fixture fixing stub diameter or lamp fixture type; floodlight installation dimensions; type of lamp fixture installed on decorative crowns;
- foundation type (for posts) or foundation ring type (for masts);
- number of individual parts;
- other order requirements, e.g. colours or number of paint coating layers.

Ordering example:

<p>a) S-120SRwAL post – 10 pcs. Bracket (AL-X/SRw/2 arms/2m/Ø48/15°) - 10 pcs. IZK post cable connector /2 breakers/ - 10 pcs. F150/200 foundation - 10 pcs. Bolt parts (for F150/200) - 10 sets</p>	<p>c) S-40SwAL post - 30 pcs. W1101 crown /3 arms/Ø48/ - 30 pcs. ELMONT post CB panel /3 breakers/ - 30 pcs. F100/200 foundation - 30 pcs. Bolt parts (for F100/200) - 30 sets</p>
<p>b) S-70SRwPAL post - 5 pcs. ELMONT post CB panel /1 breakers/ - 5 pcs. F100/200 foundation - 5 pcs. Bolt parts with hinges (for F100/200) - 5 sets</p>	<p>d) M-180SwAL mast - 8 pcs. W4AL/S head (0.5m/Ø48/15°) - for street lamp fixtures) - 8 pcs. Foundation ring for M-180SwAL - 8 pcs. ELMONT mast CB panel /4 breakers/ - 8 pcs.</p>

Note: If you want to order posts or masts with the dimensions and technical characteristics not listed herein, contact us:

Zakład Produkcji Urządzeń
ELEKTROMONTAŻ Rzeszów S.A.
ul. Przemysłowa 8, Poland

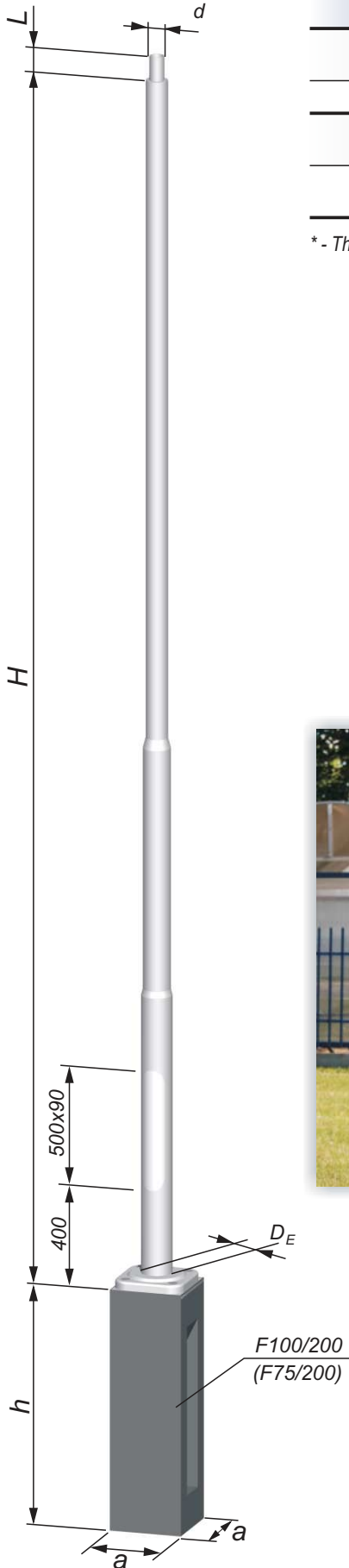
Phone: +48 17 85-33-755, +48 17 86-42-925, Fax +48 17 86-42-926

e-mail: market.zpu@elektromontaz.com.pl

We reserve the right to modify the engineering solutions with prior notice to the users and buyers of our products.

ALUMINIUM PARK LAMPS TUBULAR PARK LAMP POSTS

PARK
TUBULAR



TECHNICAL DATA						
TYPE	H	T _{BL}	D/D _E	L	M	A X A X H TYPE
	m	mm	mm	mm	kg	m
S-40SRWAL	4,0	4	48; 60/145	100	16,5	0,3 x 0,3 x 1,0 (0,75)* F100/200 (F75/200)*
S-50SRWAL	5,0				19,0	0,3 x 0,3 x 1,0 F100/200

* - The foundation type depends on the post load



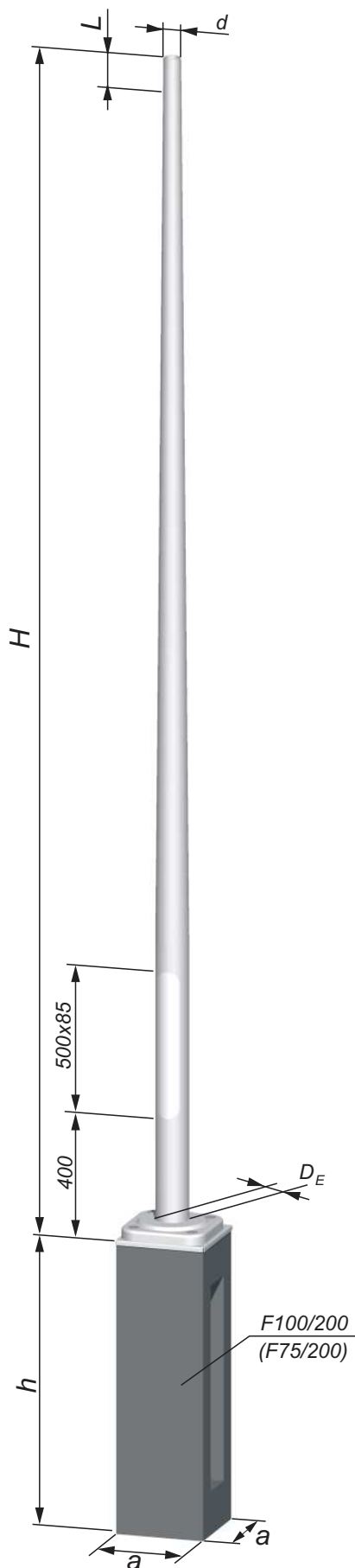
Note: The number of diameter reductions depends on the post type.

TYPE	LAMP FIXTURE WEIGHT kg	WIND ZONE, PN EN 1991-1-4				M _F kNm
		PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
		I ≤300m a.s.l.	I ≤500m a.s.l.	II ≤300m a.s.l.	III ≤950m a.s.l.	
S-40SRWAL	40	1,665	1,246	1,142	0,830	5,5
S-50SRWAL	40	1,075	0,783	0,712	0,502	5,5

ALUMINIUM PARK LAMPS

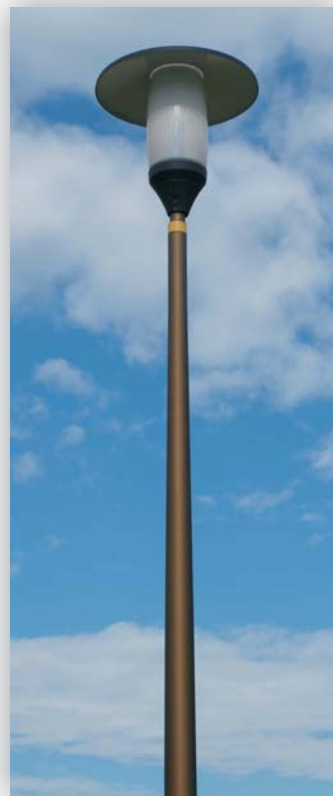
ROLLED TUBULAR PARK LAMP POSTS

PARK
ROLLED TUBULAR



TECHNICAL DATA						
TYPE	H	T _{BL}	D/D _E	L	M	A X A X H TYPE
	m	mm	mm	mm	kg	m
S-30SWAL-3	3,0		48; 60/120	100	9,5	0,3 x 0,3 x 0,75 F75/200
S-40SWAL-3	4,0	3			12,0	0,3 x 0,3 x 1,0 (0,75)* F100/200 (F75/200)
S-50SWAL-3	5,0				14,1	0,3 x 0,3 x 1,0 F100/200
S-30SWAL	3,0				12	0,3 x 0,3 x 0,75 F75/200
S-40SWAL	4,0	4			15	0,3 x 0,3 x 1,0 (0,75)* F100/200 (F75/200)*
S-50SWAL	5,0		18	0,3 x 0,3 x 1,0 F100/200		

* - The foundation type depends on the post load

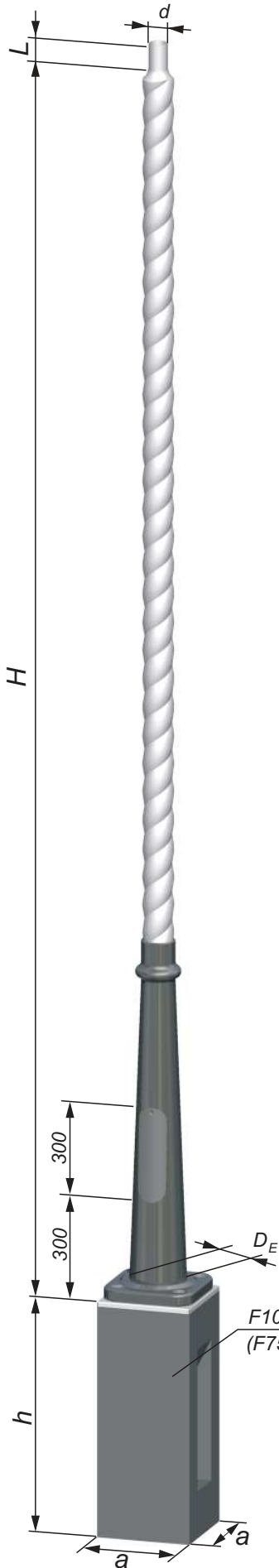


STRENGTH DATA						
TYPE	LAMP FIXTURE WEIGHT	WIND ZONE, PN EN 1991-1-4				M _F
		PERMISSIBLE LAMP FIXTURE SURFACE ² [M]				
	kg	I ≤300m a.s.l.	I ≤500m a.s.l.	II ≤300m a.s.l.	III ≤950m a.s.l.	kNm
S-30SWAL-3	50	1,033	0,774	0,708	0,510	2,5
S-40SWAL-3	50	0,590	0,420	0,378	0,253	2,5
S-50SWAL-3	50	0,301	0,188	0,160	0,084	2,5
S-30SWAL	50	1,592	1,207	1,108	0,811	3,5
S-40SWAL	50	0,969	0,713	0,648	0,457	3,5
S-50SWAL	50	0,566	0,389	0,346	0,224	3,5

ALUMINIUM PARK LAMPS

BOLT TYPE DECORATIVE PARK LAMP POSTS

PARK
BOLT TYPE DECORATIVE



TECHNICAL DATA						
TYPE	H	T _{BL}	D/D _E	L	M	A X A X H TYPE
	m	mm	mm	mm	kg	m
BOLT-30	3,0				16,5	0,3 x 0,3 x 0,75 F75/200
BOLT-40	4,0	4	48; 60/180	70	20,0	0,3 x 0,3 x 1,0 (0,75)* F100/200 (F75/200)*
BOLT-50	5,0				23,5	0,3 x 0,3 x 1,0 F100/200

* - The foundation type depends on the post load

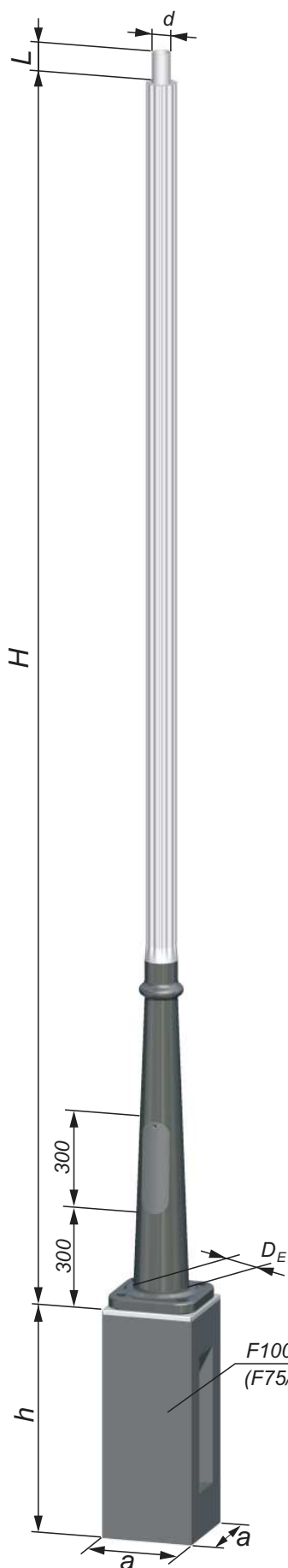


Note: Post colours acc. to RAL palette

STRENGTH DATA						
TYPE	LAMP FIXTURE WEIGHT	WIND ZONE, PN EN 1991-1-4				M _F
		PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
	kg	I	I	II	III	kNm
		≤300m a.s.l.	≤500m a.s.l.	≤300m a.s.l.	≤950m a.s.l.	
BOLT-30	40	1,765	1,342	1,233	0,900	3,6
BOLT-40	40	1,004	0,748	0,681	0,478	3,6
BOLT-50	40	0,564	0,398	0,356	0,225	3,6

ALUMINIUM PARK LAMPS

FLUTE TYPE DECORATIVE PARK LAMP POSTS



TECHNICAL DATA						
TYPE	H	T _{BL}	D/D _E	L	M	A X A X H TYPE
	m	mm	mm	mm	kg	m
FLUTE-30	3,0				15,0	0,3 x 0,3 x 0,75 F75/200
FLUTE-40	4,0	4	48; 60/180	70	18,5	0,3 x 0,3 x 1,0 (0,75)* F100/200 (F75/200)*
FLUTE-50	5,0				22,0	0,3 x 0,3 x 1,0 F100/200

* - The foundation type depends on the post load



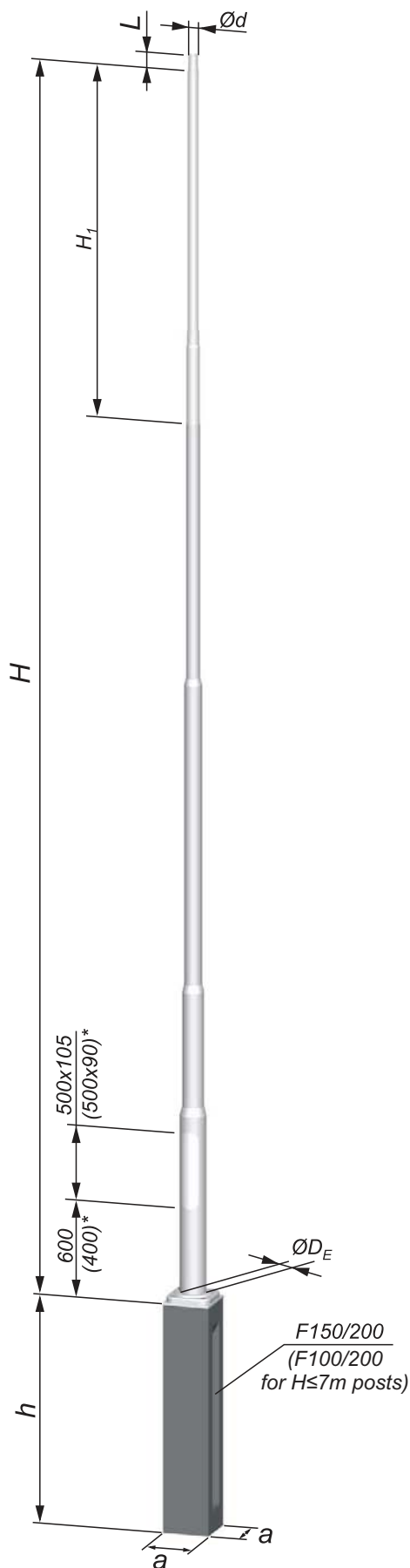
Note: Post colours acc. to RAL palette

TYPE	LAMP FIXTURE WEIGHT kg	WIND ZONE, PN EN 1991-1-4				M _F kNm
		PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
		I ≤300m a.s.l.	I ≤500m a.s.l.	II ≤300m a.s.l.	III ≤950m a.s.l.	
FLUTE-30	40	1,765	1,342	1,233	0,900	3,6
FLUTE-40	40	1,004	0,748	0,681	0,478	3,6
FLUTE-50	40	0,564	0,398	0,356	0,225	3,6

ALUMINIUM STREET LAMPS

STRAIGHT TUBULAR STREET LAMP POSTS

STREET
STRAIGHT TUBULAR



* - Sizes listed for $H \leq 7m$ posts

TECHNICAL DATA

TYPE	H	T_{BL}	H_1	D/D _E	L	M	A X A X H
							TYPE
	m	mm	m	mm/m	mm	kg	m
S-60SRWPAL	6,0	4	2,0	48;60/145	100	20,0	0,3 x 0,3 x 1,0 F100/200
S-70SRWPAL	7,0		3,0			22,0	
S-80SRWPAL	8,0		2,0	24,0			
S-90SRWPAL	9,0		3,0	32,3			
S-100SRWPAL	10,0	6	2,0	48;60/180		40,0	0,3 x 0,3 x 1,5 F150/200
S-110SRWPAL	11,0		3,0			42,0	
S-120SRWPAL	12,0		4,0	46,0			

Note: H_1 - straight post extension piece, ordered separately



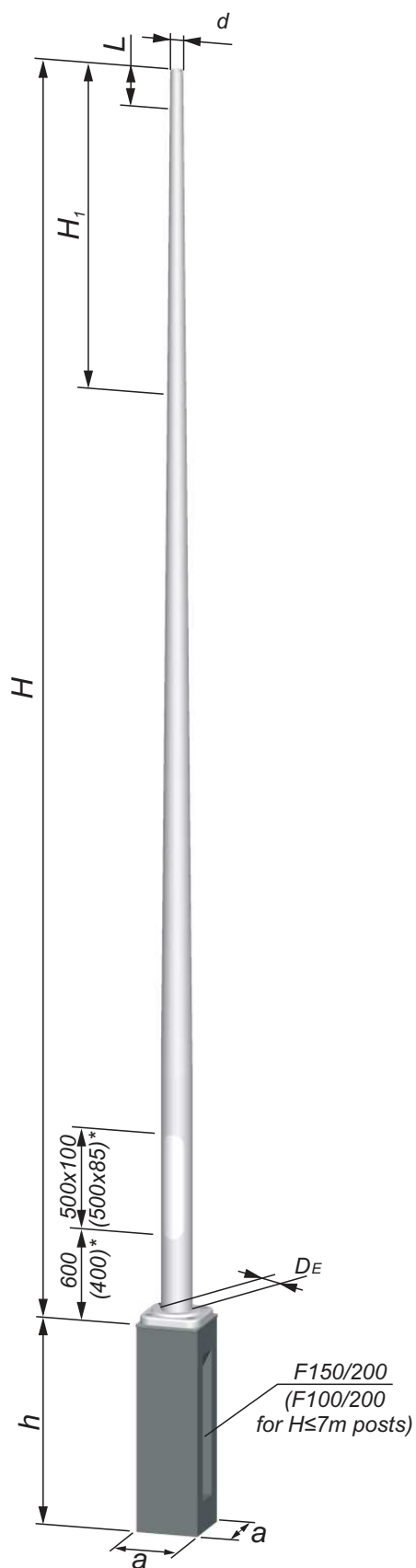
Note: The number of diameter reductions depends on the post type.

STRENGTH DATA

TYPE	LAMP FIXTURE WEIGHT	WIND ZONE, PN EN 1991-1-4				M_F
		PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
		I	I	II	III	
	kg	≤300m a.s.l.	≤500m a.s.l.	≤300m a.s.l.	≤950m a.s.l.	kNm
S-60SRWPAL	40	0,690	0,478	0,425	0,276	5,4
S-70SRWPAL	40	0,423	0,261	0,222	0,120	5,4
S-80SRWPAL	40	0,673	0,454	0,401	0,255	8,7
S-90SRWPAL	40	0,435	0,261	0,221	0,115	8,7
S-100SRWPAL	40	0,241	0,110	0,080	-	8,7
S-110SRWPAL	40	0,490	0,322	0,284	0,174	12,6
S-120SRWPAL	40	0,246	0,130	0,105	0,037	12,6

ALUMINIUM STREET LAMPS

STRAIGHT ROLLED TUBULAR LAMP POSTS



TECHNICAL DATA

TYPE	H	T _{BL}	H ₁	D/D _E	L	M	A X A X H TYPE
	m	mm	m	mm/m	mm	kg	m
S-60SWPAL-3	6,0	3				16,5	0,3 x 0,3 x 1,0 F100/200
S-60SWPAL	6,0		-	48;60/120		21	
S-70SWPAL	7,0	4				24,0	
S-80SWPAL	8,0		3,2	48;60/145	100	35,0	0,3 x 0,3 x 1,5 F150/200
S-90SWPAL	9,0		3,2	48;60/150		39,0	
S-100SWPAL	10,0	5	3,6			43,0	
S-110SWPAL	11,0		4,6	48;60/180		69,0	
S-120SWPAL	12,0		5,6			75,0	

Note: H₁ - straight post extension piece, ordered separately

STRENGTH DATA

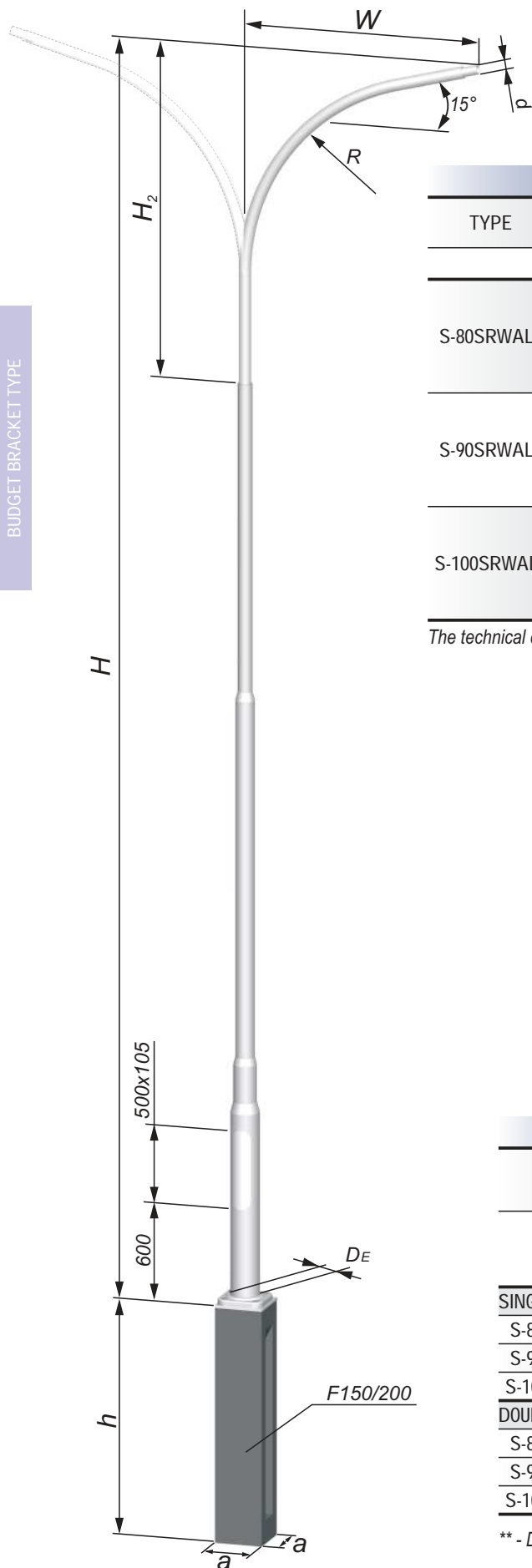
TYPE	LAMP FIXTURE WEIGHT kg	WIND ZONE, PN EN 1991-1-4				M _F kNm
		PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
		I ≤300m a.s.l.	I ≤500m a.s.l.	II ≤300m a.s.l.	III ≤950m a.s.l.	
S-60SWPAL-3	40	0,127	0,045	0,025	-	2,5
S-60SWPAL	40	0,320	0,194	0,164	0,082	3,5
S-70SWPAL	40	0,140	0,046	0,025	-	3,5
S-80SWPAL	40	0,221	0,103	0,077	0,010	5,3
S-90SWPAL	40	0,315	0,167	0,133	0,046	7,6
S-100SWPAL	40	0,579	0,390	0,346	0,223	12,1
S-110SWPAL	40	0,373	0,224	0,190	0,100	12,1
S-120SWPAL	40	0,204	0,086	0,060	-	12,1

* - Sizes listed for H≤7m posts.

ALUMINIUM STREET LAMPS

BUDGET TUBULAR STREET LAMP BRACKET POSTS – AL, AL-X & AL-Y BRACKETS

STREET
BUDGET BRACKET TYPE



TECHNICAL DATA

TYPE	W	T _{BL}	H	H ₂	R _(MAX)	D/D _E	M**	A X A X H TYPE
	m	mm	m	m	m	mm	kg	m
S-80SRWALE	0,5	8			-		29,7	0,3 x 0,3 x 1,5 F150/200
	1,0				0,6		31,2	
	1,5				1,3		31,7	
	2,0						32,3	
S-90SRWALE	0,5	4	9	2,0	-	48; 60/180	34,7	
	1,0				0,6		36,2	
	1,5				1,3		36,7	
	2,0						37,3	
S-100SRWALE	0,5	10			-		39,7	
	1,0				0,6		41,2	
	1,5				1,3		41,7	
	2,0						42,3	

The technical data is listed for single-arm bracket posts:

- W=0.5m type AL bracket
- W=1.0m type AL-Y bracket
- W≥1.5m type AL-X bracket

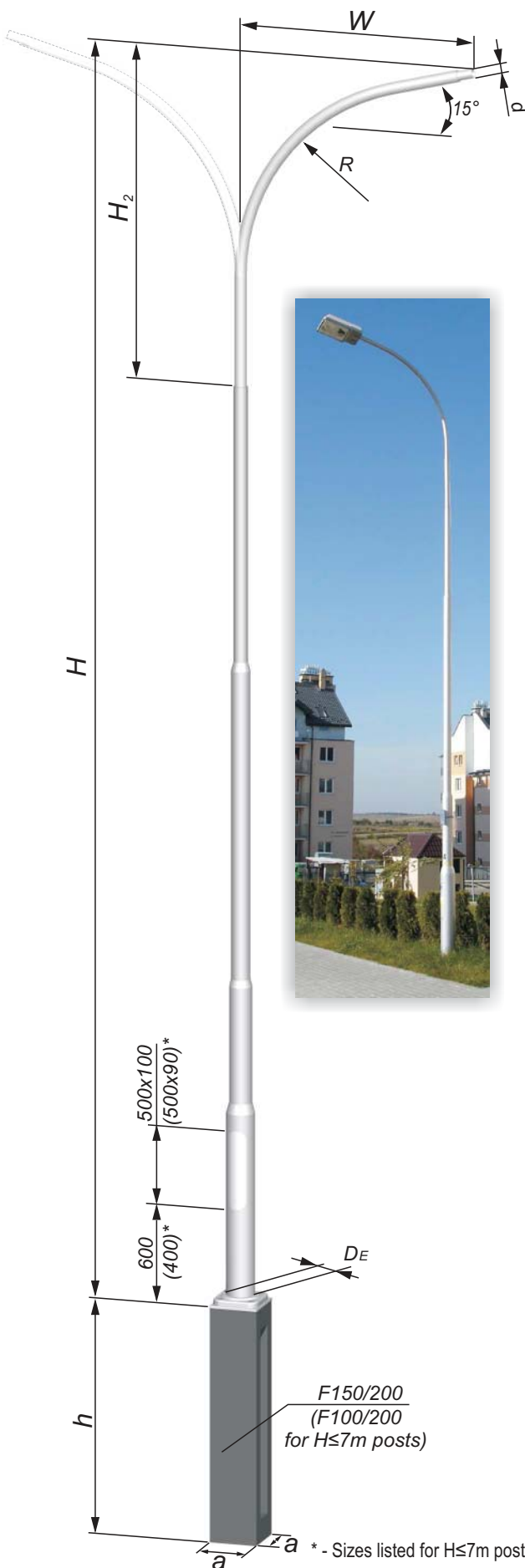
STRENGTH DATA

TYPE	W	LAMP FIXTURE WEIGHT	WIND ZONE, PN EN 1991-1-4				M _F
			PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
			I	I	II	III	
	m	kg	≤300m a.s.l.	≤500m a.s.l.	≤300m a.s.l.	≤950m a.s.l.	kNm
SINGLE ARM BRACKET							
S-80SRWALE	1,5	15	0,455	0,271	0,219	0,155	8,9
S-90SRWALE	1,5	15	0,373	0,163	0,104	0,40	8,9
S-100SRWALE	1,5	15	0,320	0,110	0,050	-	8,9
DOUBLE ARM BRACKET							
S-80SRWALE	1,5	15	0,502	0,294	0,258	0,112	8,9
S-90SRWALE	1,5	15	0,346	0,110	0,70	-	8,9
S-100SRWALE	1,5	15	0,270	0,070	-	-	8,9

** - Data given for type AL-X and AL-Y two arm brackets.

ALUMINIUM STREET LAMPS

TUBULAR STREET LAMP BRACKET POSTS – AL, AL-X & AL-Y BRACKETS



TECHNICAL DATA

TYPE	W	T _{BL}	H	H ₂	R _(MAX)	D/D _E	M ^{**}	A X A X H TYPE
	m	mm	m	m	m	mm	kg	m
S-60SRWAL	0,5	4	6		-	48; 60/145	20	0,3 x 0,3 x 1,0 F100/200
	1,0				0,6		21	
	1,5				1,3		21,3	
S-70SRWAL	0,5	7			-	48; 60/145	22,5	
	1,0				0,6		23,5	
	1,5				1,3		24,8	
S-80SRWAL	1,5		8				45,1	
	2,0						45,9	
	2,5						46,7	
S-90SRWAL	1,5		9	2,0			48,6	
	2,0						49,4	
	2,5						50,3	
S-100SRWAL	1,5	6	10		1,3	48; 60/180	52,1	0,3 x 0,3 x 1,5 F150/200
	2,0						52,9	
	2,5						53,8	
S-110SRWAL	1,5		11				65,5	
	2,0						66,3	
	2,5						67,1	
S-120SRWAL	1,5		12				69,1	
	2,0						69,9	
	2,5						70,7	

The technical data is listed for single-arm bracket posts:

- W=0.5m type AL bracket
- W=1.0m type AL-Y bracket
- W≥1.5m type AL-X bracket.

The maximum reach of AL-X brackets is W=3.5m.

Note: The number of diameter reductions depends on the post type.

STRENGTH DATA

TYPE	W	LAMP FIXTURE WEIGHT	WIND ZONE, PN EN 1991-1-4				M _F
			PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
			I ≤300m a.s.l.	I ≤500m a.s.l.	II ≤300m a.s.l.	III ≤950m a.s.l.	
SINGLE ARM BRACKET							
S-60SRWAL	1,5	15	0,444	0,348	0,324	0,261	5,4
S-70SRWAL	1,5	15	0,392	0,312	0,262	0,160	5,4
S-80SRWAL	1,5	15	0,504	0,364	0,329	0,229	12,3
S-90SRWAL	1,5	15	0,460	0,329	0,298	0,206	12,3
S-100SRWAL	1,5	15	0,440	0,303	0,256	0,173	12,3
S-110SRWAL	1,5	15	0,370	0,266	0,233	0,143	12,3
S-120SRWAL	1,5	15	0,279	0,158	0,133	0,060	12,3
DOUBLE ARM BRACKET							
S-60SRWAL	1,5	15	0,575	0,370	0,312	0,238	5,4
S-70SRWAL	1,5	15	0,308	0,182	0,153	0,080	5,4
S-80SRWAL	1,5	15	0,980	0,682	0,608	0,404	12,3
S-90SRWAL	1,5	15	0,756	0,480	0,416	0,232	12,3
S-100SRWAL	1,5	15	0,588	0,340	0,300	0,185	12,3
S-110SRWAL	1,5	15	0,364	0,214	0,216	0,128	12,3
S-120SRWAL	1,5	15	0,260	0,142	0,121	0,031	12,3

** - Data given for type AL-X and AL-Y two arm brackets.

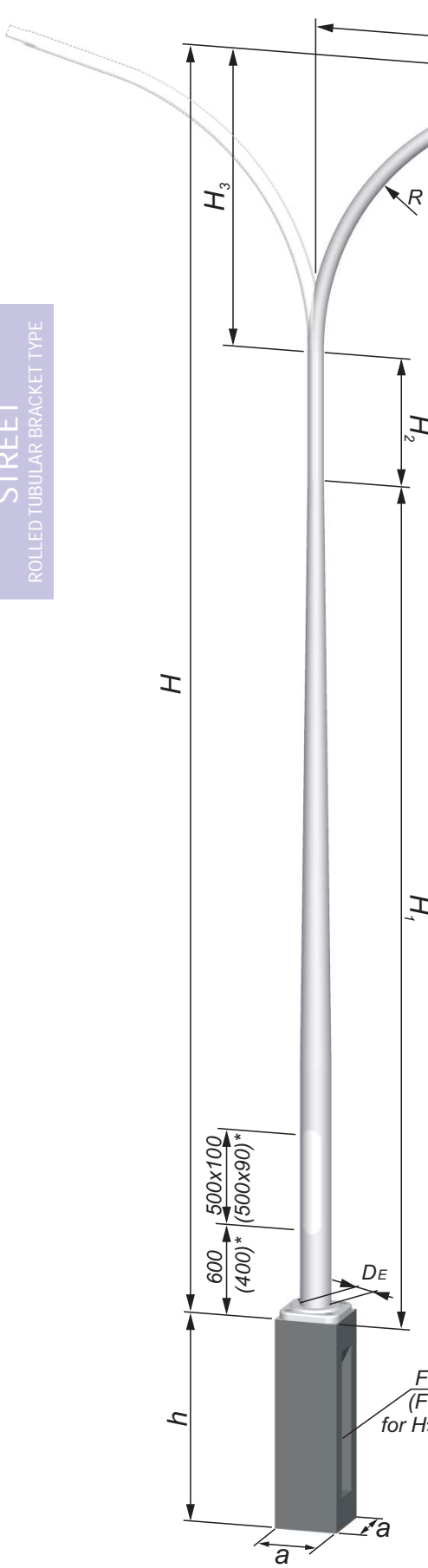


STREET
TUBULAR BRACKET TYPE

ALUMINIUM STREET LAMPS

ROLLED TUBULAR STREET LAMP BRACKET POSTS – AL, AL-X & AL-Y BRACKETS

STREET
ROLLED TUBULAR BRACKET TYPE



TECHNICAL DATA												
TYPE	W	T _{BL}	H	H ₁	H ₂ AL	H ₂ AL-X, AL-Y	H ₃ AL	H ₃ AL-X, AL-Y	R _(MAX)	D/D _E	M ^{**}	A X A X H TYPE
	m	mm	m	m	m	m	m	m	m	mm	kg	m
S-60SWAL	0,5	4	6	4,0	1,95	-				-	20	0,3 x 0,3 x 1,0 F100/200
	1,0										21	
	1,5										21,3	
S-70SWAL	0,5	4	7	5,0	1,95	-				48; 60/145	22,5	0,3 x 0,3 x 1,0 F100/200
	1,0										23,5	
	1,5										24,8	
S-80SWAL	1,5	4	8	6,0	1,95	-				48; 60/150	31,7	0,3 x 0,3 x 1,5 F150/200
	2,0										32,3	
	2,5										32,8	
S-90SWAL	1,5	4	9	4,7	4,35	2,6	0,35	2,2			36,7	0,3 x 0,3 x 1,5 F150/200
	2,0										37,3	
	2,5										37,8	
S-100SWAL	1,5	5	10	4,7	5,35	3,6				48; 60/180	41,7	0,3 x 0,3 x 1,5 F150/200
	2,0										42,3	
	2,5										42,8	
S-110SWAL	1,5	5	11	6,7	4,35	2,6				48; 60/180	65,5	0,3 x 0,3 x 1,5 F150/200
	2,0										66,3	
	2,5										67,1	
S-120SWAL	1,5	5	12	6,7	5,35	3,6					69,1	0,3 x 0,3 x 1,5 F150/200
	2,0										69,9	
	2,5										70,7	

The technical data is listed for single-arm bracket posts:

- W=0.5m type AL bracket
- W=1.0m type AL-Y bracket
- W≥1.5m type AL-X bracket.

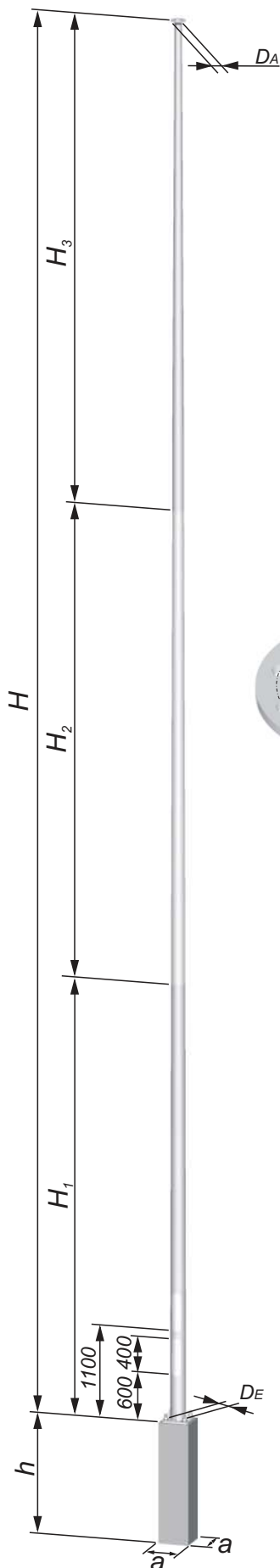
STRENGTH DATA							
TYPE	W	LAMP FIXTURE WEIGHT	WIND ZONE, PN EN 1991-1-4				M _F
			PERMISSIBLE LAMP FIXTURE SURFACE [M ²]				
	m	kg	I	I	II	III	kNm
			≤300m	≤500m	≤300m	≤950m	
			a.s.l.	a.s.l.	a.s.l.	a.s.l.	
SINGLE ARM BRACKET							
S-60SWAL	1,5	15	0,350	0,191	0,119	0,076	5,3
S-70SWAL	1,5	15	0,239	0,106	0,048	0,017	5,3
S-80SWAL	1,5	15	0,525	0,332	0,243	0,185	12,0
S-90SWAL	1,5	15	0,487	0,306	0,224	0,169	15,0
S-100SWAL	1,5	15	0,454	0,282	0,206	0,155	15,0
S-110SWAL	1,5	15	0,425	0,262	0,165	0,103	15,0
S-120SWAL	1,5	15	0,382	0,162	0,079	0,032	15,0
DOUBLE ARM BRACKET							
S-60SWAL	1,5	15	0,630	0,310	0,146	0,056	5,3
S-70SWAL	1,5	15	0,350	0,072	-	-	5,3
S-80SWAL	1,5	15	0,962	0,572	0,396	0,284	12,0
S-90SWAL	1,5	15	0,882	0,516	0,356	0,252	15,0
S-100SWAL	1,5	15	0,814	0,402	0,218	0,110	15,0
S-110SWAL	1,5	15	0,574	0,192	0,026	-	15,0
S-120SWAL	1,5	15	0,336	0,018	-	-	15,0

* - Sizes listed for H≤7m posts.

** - Data given for type AL-X and AL-Y two arm brackets.

ALUMINIUM MASTS

TUBULAR LAMP MASTS



Technical data

H	H ₁	H ₂	H ₃	m**	n x	s/A x B	Crown type a x a x h
m	m	m	m	kg	mm	mm	m
M-160SwAL	• D _A /D _E = 95/220						WF424/4xM30
16	6	6,5	4,5	196	4 x M30/424		0,6 x 0,6 x 1,7
M-180SwAL	• D _A /D _E = 95/220						WF424/4xM30
18	6	6,5	6,5	208	4 x M30/424		0,6 x 0,6 x 1,7

Note: The foundation sizes are preliminary for Group II soils acc. to the table on p. 7.

The foundation structure and the mast installation conditions shall be designed according to the construction design for the installation site. The pre-cast foundation block dimensions are defined for moderate soil engineering parameters. The pre-cast foundation planting conditions shall be designed according to the construction design and the lamp mast assembly instructions for the actual site.

Specify the type, style and assembly method (welded/bolted) of the mast head in your order. The SwAL mast structure is designed per order and depends on the applicable loads; hence the appearance may depart from that in the product catalogue.

Note: The number of diameter reductions depends on the post type.

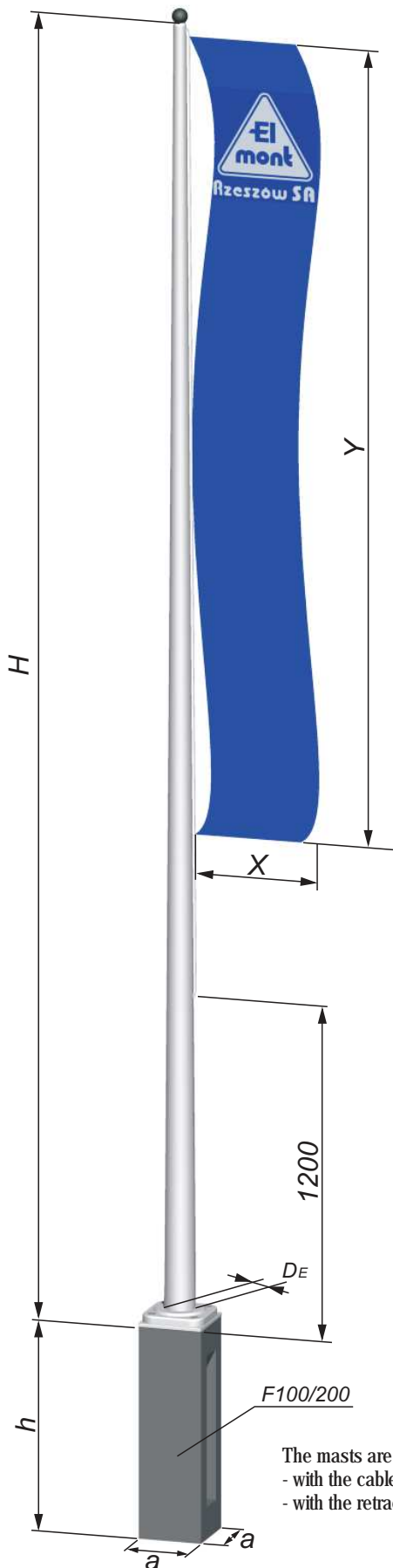
Strength data

TYPE	Lamp fixture weight kg	Wind Zone, PN EN 1991-1-4				M _F kNm
		Permissible lamp fixture surface [m ²]				
		I ≤300m a.s.l.	I ≤500m a.s.l.	II ≤300m a.s.l.	III ≤950m a.s.l.	
M-160SwAL	100	0,615	0,411	0,356	0,184	25
M-180SwAL	100	0,203	0,098	0,061	-	25

** - Data given for the mast without the lamp crown.

SPECIAL ALUMINIUM STRUCTURES

FLAG MASTS



TECHNICAL DATA						
TYPE	H	D_E	M	X x Y	M_F	A X A X H TYPE
	m	mm	kg	m^2	kNm	m
MF-50AL	5,0	120	12,28	1,0 x 2,0	3,4	0,3 x 0,3 x 1,0 F100/200
MF-60AL	6,0		13,27	1,3 x 2,5		
MF-70AL	7,0		14,26	1,5 x 1,8		
MF-80AL	8,0		15,25	2,5 x 1,3	5,3	
MF-90AL	9,0		16,5	3,0 x 1,0		

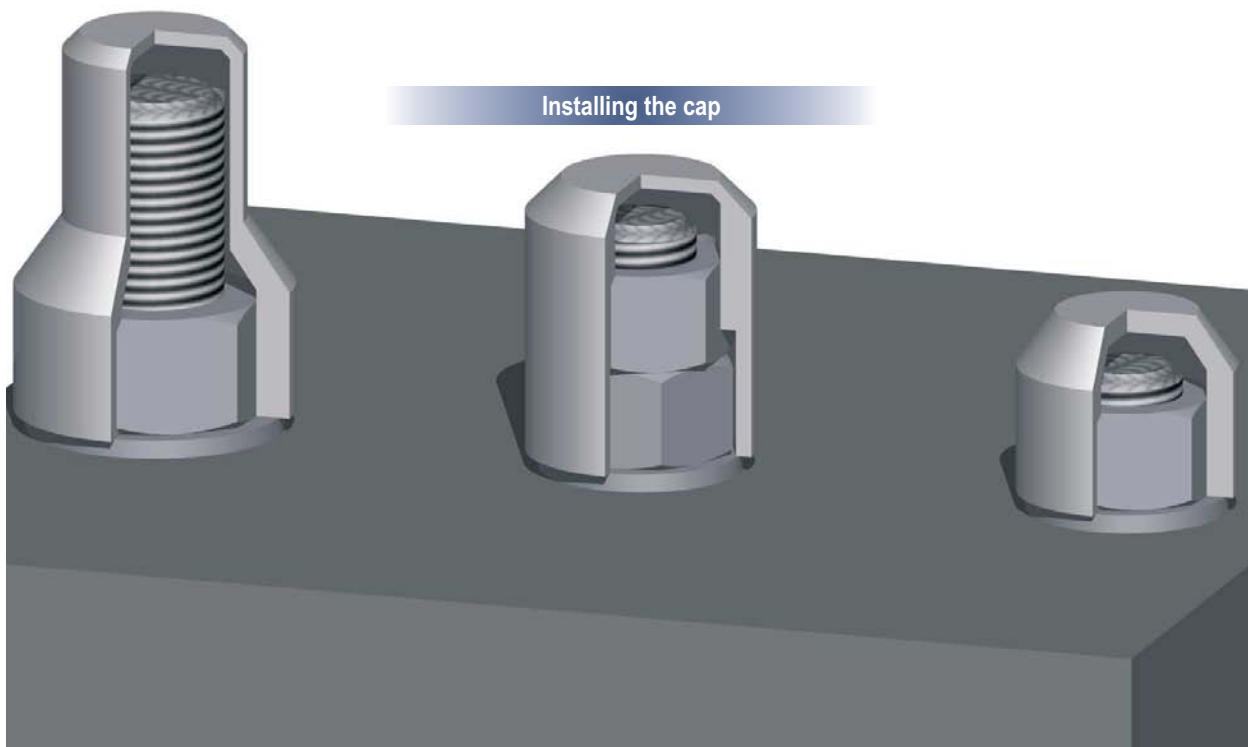
Note: The values X x Y are given for Wind Zone I and II loads and not absolute for the designer; consider the PN-EN 1991-1-4 standard requirements in the design.



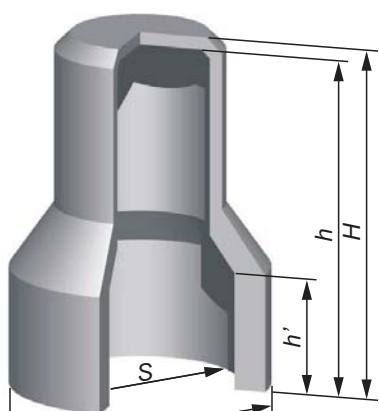
The masts are manufactured in two versions:
 - with the cable along the mast without the arm
 - with the retractable and lowered pivot arm

ACCESSORIES

PROTECTIVE CAPS

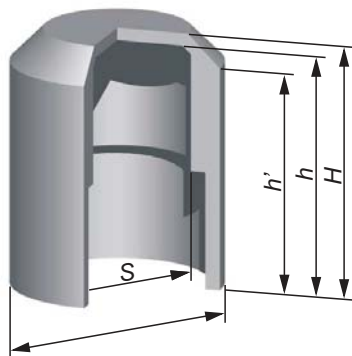


CAP TYPES

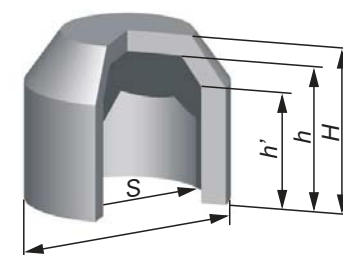


K-1xM30-P (K0'),
K-1xM24-P (K1')

K-2xM24 (K1'')



K-1xM24 (K1),
K-1xM20 (K2),
K-1xM16 (K3)



Basic dimensions

TYPE	Bolt type	S	H	h (max. bolt shank height)	h' (number of nuts)	
					pcs.	mm
K - 1xM30 - P	(K0') M30	46	84	80	1	61
K - 1xM24	(K1) M24	36	40	35	1	48
K - 1xM24 - P	(K1') M24	36	69	65	1	50
K - 2xM24	(K1'') M24	36	61	57	2	50
K - 1xM20	(K2) M20	30	33	27	1	40
K - 1xM16	(K3) M16	24	29	25	1	34

Note: Due to the inconsistent manufacturing tolerances of nuts from various manufacturers the seating of caps might be too loose. Increase the dimensions S of the nut as long as the anti-corrosion coating will remain undamaged.

ACCESSORIES

ELMONT POST CB PANEL



Intended use: For all types of park and street lamps and masts.

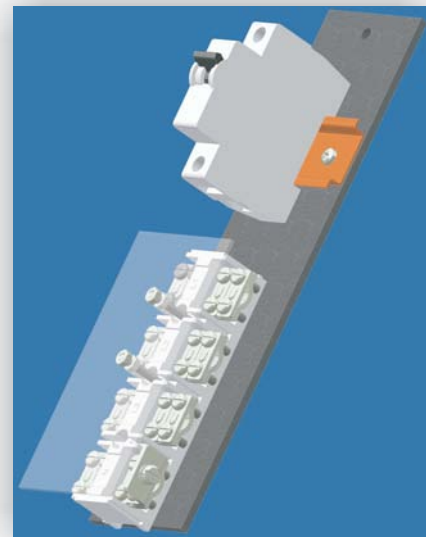
TYPES

- ZG4-35,
- ZG5-35,
- ZG4-95,
- ZG5-95.

TECHNICAL DATA:

Voltage rating: -500V,
 Lamp fixture protection:
 - up to three circuit breakers
 - up to two E 27 fuses
 - up to three E 14 fuses

Cable core size: - 16÷90mm²,
 No. of cables: - 1÷4,
 Max. cable core size of lamp fixture: - 10mm²,
 Protection class: - IP 20.



IZK CABLE CONNECTOR FOR LAMP POSTS



Intended use: For all types of park and street lamps and masts.

TYPES:

- IZK-4-01 insulated breaker connector,
- IZK-4-02 insulated phase line connector,
- IZK-4-03 insulated neutral line connector,
- ZK-4-03 neutral line connector.

TECHNICAL DATA:

Voltage rating: -500V,
 Connection current rating: -100A,
 Permissible fuse insert current capacity: -16A,
 Cable core size: -16÷50mm²,
 No. of cables: - 1÷4,
 Max. cable core size of lamp fixture: -4mm²,
 Protection class: -IP 54,
 Max. operating temperature: -100°C,

WEIGHT:

Neutral line connector: 0.09kg
 Insulated neutral line connector: 0.13kg
 Insulated phase line connector: 0.14kg
 Insulated breaker connector: 0.18kg



ABOUT THE COMPANY

Aside from manufacturing lighting poles and masts and other custom designs on special order, Elektromontaż Rzeszów S.A. provides services in design engineering, manufacturing, installation and servicing of electrical systems and equipment, power lines and telecommunication lines.

The manufacturing range includes, among others:

- LV and MV switching equipment
- control and indication cabinets and consoles
- sheet metal and plastic switchgear enclosures
- electrical panels for general and communal buildings

ORDERING, SALES AND CONSULTATION:

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