

rasvjetni i reflektorski stupovi
lighting and reflector poles



KS 6

DALEKOVOD



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u v o d / i n t r o d u c t i o n

Urbanizacija čovjekove okoline uvjetovala je brzi razvoj u području rasvjetne tehnike.

Izgradnja novih turističkih i stambenih građevina, industrijskih postrojenja, sportskih borilišta, kao i većih prometnica, zahtjeva suvremena rješenja rasvjete i ugradnje stupova koja će odgovarati tehničkim i ekonomskim zahtjevima i estetski se uklapati u specifičnu arhitektonsku sredinu.

Za potrebe tržišta poduzeće Dalekovod je razvilo proizvodnju rasvjetnih stupova tipa SRS, KORS i CRS kao i reflektorskih stupova tipa SUN i DARESTI. Na osnovi dugogodišnjeg iskustva potrebnih tehničkih uvjeta, izvršili smo tipizaciju stupova prema njihovim tehničkim karakteristikama i njihovoj namjeni. Prikazani asortiman nije konačan i on će se nadopunjavati uporedo s razvojem novih tipova stupova, kao i specifičnim tehničkim, klimatskim i arhitektonskim zahtjevima pojedinih građevina.

Kod projektiranja javne rasvjete, posebno kada se radi o rasvjeti većih građevina, naši djelatnici su spremni da Vam pomognu i odrede tip stupova koji će najbolje odgovarati za Vaše namjene. Ako se iz prikazanog asortimana u ovom katalogu, ne mogu dati potrebna rješenja, u mogućnosti smo Vam ponuditi i izraditi nove odgovarajuće tipove stupova.

Osim proizvodnje rasvjetnih i reflektorskih stupova, poduzeće Dalekovod nudi Vam svoje usluge na projektiranju javne rasvjete, isporuci opreme, izvedbi cjelokupnih radova, odnosno inženjering za rasvjetu svih građevina.

Urbanization of man's environment has brought about fast development in the area of lighting technology. Construction of new tourist and housing buildings, industrial facilities, sports grounds and major roads has brought about demand in sophisticated lighting and pole installation solutions that shall comply with technical and economic requirements and shall fit in the specific architectural environment from the aesthetic point of view.

For the market needs, "Dalekovod" has developed production of lighting poles of SRS, KORS and CRS types and floodlighting poles of SUN and DARESTI type as well. Based on long-time experience and necessary technical requirements, we have carried out standardization of poles according to their technical characteristics and their application. The presented range is not final and it shall be supplemented side by side with development of new pole types, as well as specific technical, climatic and architectural requirements of particular buildings and facilities.

At designing public lighting, especially lighting of larger buildings and structures, our experts are ready to offer you help and determine which pole type shall suit your needs most. If the required solutions cannot be given on the basis of the range presented in this catalogue, we can offer and manufacture new pole types according to your requirements.

Besides production of lighting and floodlighting poles, "Dalekovod" offers its services in design of public lighting, delivery of equipment, performance of entire works, namely engineering for lighting of all buildings and facilities.

**Certifikat
ISO-9001
Certificate
ISO-9001**



**Certifikat
ISO-14001
Certificate
ISO-14001**



**Eksploatacija
proizvoda
Product
exploitation**



Stožasti stupovi su predviđeni za rasvjetu šetališta, parkova, parkirališta, manjih trgova, manjih mostova i sporednih prometnica. Postavljaju se na betonske temelje. Na vrhu stupa može se postaviti jedna ili dvije svjetiljke. Predlažemo rješenje rasvjete stožastim stupovima u kombinaciji s kuglastim svjetiljkama, kao rješenje skladnog vanjskog izgleda, koje se uklapa u urbani ambijent.

OZNAKA ZA NARUDŽBU

Uz narudžbu treba navesti slijedeće podatke

- katalošku oznaku stupa,
- tip svjetiljke, sa nazivom proizvođača, koja se ugrađuje na stup,
- tip razvodne kutije, sa imenom proizvođača, koja se ugrađuje u stup,
- vrstu antikorozivne zaštite.

Tapered poles are designed for lighting of promenades, parks, car parks, small squares, small bridges and minor roads. The poles shall be laid down on concrete foundations. One or two luminaires can be placed on the pole top. As the lighting solution we suggest tapered poles in combination with ball-shaped luminaires, because of their harmonious exterior appearance and the fact that they fit well in the urban environment.

ORDER CODE

The following data shall be furnished with the order:

- Pole catalogue order code,
- Type of luminaire to be mounted on the pole and name of the manufacturer,
- Type of junction box to be installed in the pole and name of the manufacturer,
- Type of corrosion protection.

SRS A

Stožasti rasvjetni stupovi tipa SRS A namijenjeni su za ugradnju u betonske temelje. Prema klimatskim uvjetima, zagađenju i agresivnosti tla, moguća je izvedba stupova iz slijedećih materijala:

- čelični lim
- nehrđajući čelični lim
- aluminijski lim

SRS A tapered lighting poles are designed for installation in concrete foundations. According to climatic conditions, pollution and soil aggressiveness, poles can be made of the following materials:

- Steel sheet
- Stainless steel sheet
- Aluminium sheet

| Kataloški broj <i>Catalogue number</i> | Dimenzije - <i>Dimensions</i> | | | | | | Površina stupa <i>Surface</i> m ² | Masa <i>Mass</i> kg |
|---|-------------------------------|---|---|---|---|---|--|---------------------------|
| | H | h | d | D | A | B | | |

| | | | | | | | | |
|----------|-----|-----|----|-----|----|----|------|----|
| 84 37 71 | 3,0 | 0,5 | 76 | 139 | 75 | 75 | 1,15 | 29 |
| 84 42 71 | 3,5 | 0,5 | 76 | 148 | 75 | 75 | 1,37 | 34 |
| 84 48 61 | 4,0 | 0,5 | 60 | 141 | 75 | 75 | 1,39 | 34 |
| 84 48 71 | 4,0 | 0,5 | 76 | 157 | 75 | 75 | 1,61 | 39 |
| 84 54 61 | 4,5 | 0,5 | 60 | 150 | 75 | 75 | 1,58 | 39 |
| 84 54 71 | 4,5 | 0,5 | 76 | 166 | 75 | 75 | 1,86 | 45 |
| 84 60 61 | 5,0 | 0,6 | 60 | 161 | 75 | 75 | 1,90 | 46 |
| 84 60 71 | 5,0 | 0,6 | 76 | 177 | 80 | 80 | 2,14 | 52 |
| 84 65 61 | 5,5 | 0,6 | 60 | 170 | 80 | 80 | 2,15 | 52 |
| 84 65 71 | 5,5 | 0,6 | 76 | 186 | 80 | 80 | 1,45 | 59 |
| 84 70 61 | 6,0 | 0,6 | 60 | 179 | 80 | 80 | 1,42 | 59 |
| 84 70 71 | 6,0 | 0,6 | 76 | 195 | 80 | 80 | 2,75 | 66 |

Stupovi od čeličnog lima - bojani
Pole from sheet steel - painted

| | | | | | | | | |
|----------|-----|-----|----|-----|----|----|------|----|
| 84 37 72 | 3,0 | 0,5 | 76 | 139 | 75 | 75 | 1,15 | 29 |
| 84 42 72 | 3,5 | 0,5 | 76 | 148 | 75 | 75 | 1,37 | 34 |
| 84 48 62 | 4,0 | 0,5 | 60 | 141 | 75 | 75 | 1,39 | 34 |
| 84 48 72 | 4,0 | 0,5 | 76 | 157 | 75 | 75 | 1,61 | 39 |
| 84 54 62 | 4,5 | 0,5 | 60 | 150 | 75 | 75 | 1,58 | 39 |
| 84 54 72 | 4,5 | 0,5 | 76 | 166 | 75 | 75 | 1,86 | 45 |
| 84 60 62 | 5,0 | 0,6 | 60 | 161 | 75 | 75 | 1,90 | 46 |
| 84 60 72 | 5,0 | 0,6 | 76 | 177 | 80 | 80 | 2,14 | 52 |
| 84 65 62 | 5,5 | 0,6 | 60 | 170 | 80 | 80 | 2,15 | 52 |
| 84 65 72 | 5,5 | 0,6 | 76 | 186 | 80 | 80 | 2,45 | 59 |
| 84 70 62 | 6,0 | 0,6 | 60 | 179 | 80 | 80 | 2,42 | 59 |
| 84 70 72 | 6,0 | 0,6 | 76 | 195 | 80 | 80 | 2,75 | 66 |

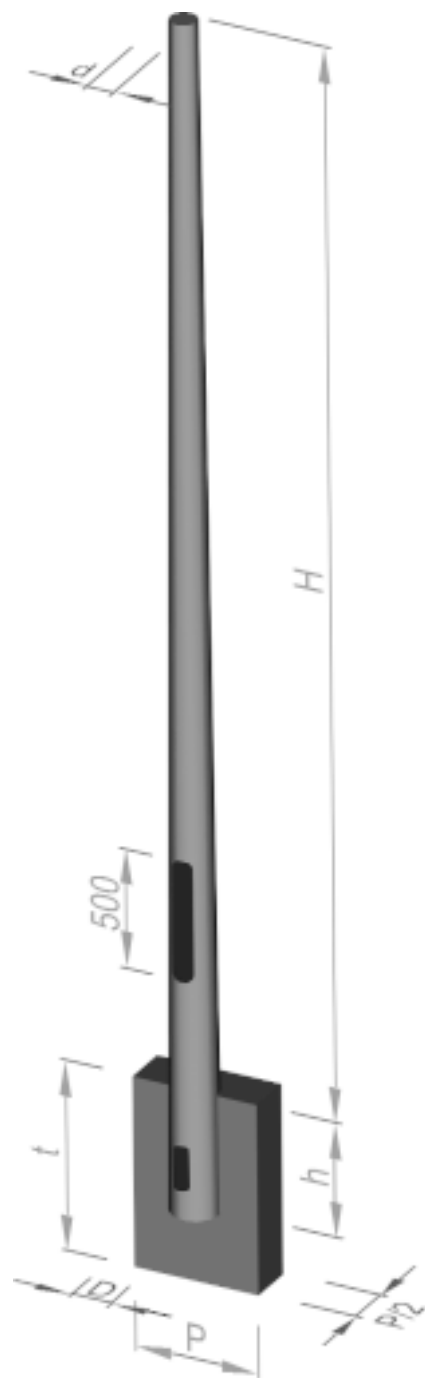
Stupovi od čeličnog lima - vruće pocinčani
Pole from sheet steel - hot dip galvanized

| | | | | | | | | |
|----------|-----|-----|----|-----|----|----|------|----|
| 84 37 73 | 3,0 | 0,5 | 76 | 139 | 75 | 75 | 1,15 | 24 |
| 84 42 73 | 3,5 | 0,5 | 76 | 148 | 75 | 75 | 1,37 | 29 |
| 84 48 63 | 4,0 | 0,5 | 60 | 141 | 75 | 75 | 1,39 | 29 |
| 84 48 73 | 4,0 | 0,5 | 76 | 157 | 75 | 75 | 1,61 | 33 |
| 84 54 63 | 4,5 | 0,5 | 60 | 150 | 75 | 75 | 1,58 | 33 |
| 84 54 73 | 4,5 | 0,5 | 76 | 166 | 75 | 75 | 1,86 | 38 |
| 84 60 63 | 5,0 | 0,6 | 60 | 161 | 75 | 75 | 1,90 | 38 |
| 84 60 73 | 5,0 | 0,6 | 76 | 177 | 80 | 80 | 2,14 | 44 |
| 84 65 63 | 5,5 | 0,6 | 60 | 170 | 80 | 80 | 2,15 | 44 |
| 84 65 73 | 5,5 | 0,6 | 76 | 186 | 80 | 80 | 2,45 | 50 |
| 84 70 63 | 6,0 | 0,6 | 60 | 179 | 80 | 80 | 2,42 | 50 |
| 84 70 73 | 6,0 | 0,6 | 76 | 195 | 80 | 80 | 2,75 | 56 |

Stupovi od nehrđajućeg čeličnog lima
Pole from stainless steel

| | | | | | | | | |
|----------|-----|-----|----|-----|----|----|------|------|
| 84 20 74 | 3,0 | 0,5 | 76 | 139 | 75 | 75 | 1,15 | 10,0 |
| 84 42 74 | 3,5 | 0,5 | 76 | 148 | 75 | 75 | 1,37 | 12,0 |
| 84 48 64 | 4,0 | 0,5 | 60 | 141 | 75 | 75 | 1,39 | 12,0 |
| 84 48 74 | 4,0 | 0,5 | 76 | 157 | 75 | 75 | 1,61 | 13,5 |
| 84 54 64 | 4,5 | 0,5 | 60 | 150 | 75 | 75 | 1,58 | 13,5 |
| 84 54 74 | 4,5 | 0,5 | 76 | 166 | 75 | 75 | 1,86 | 16,0 |
| 84 60 64 | 5,0 | 0,6 | 60 | 161 | 75 | 75 | 1,90 | 16,0 |
| 84 60 74 | 5,0 | 0,6 | 76 | 177 | 80 | 80 | 2,14 | 18,5 |
| 84 65 64 | 5,5 | 0,6 | 60 | 170 | 80 | 80 | 2,15 | 18,5 |
| 84 65 74 | 5,5 | 0,6 | 76 | 186 | 80 | 80 | 2,45 | 20,5 |
| 84 70 64 | 6,0 | 0,6 | 60 | 179 | 80 | 80 | 2,42 | 20,5 |
| 84 70 74 | 6,0 | 0,6 | 76 | 195 | 80 | 80 | 2,75 | 23,0 |

Stupovi od aluminijskog lima
Pole from aluminium sheet



Stožasti rasvjetni stupovi tipa SRS B namijenjeni su za ugradnju na betonske temelje pomoću odgovarajućih sidrenih vijaka. Prema klimatskim uvjetima, zagađenju i agresivnosti tla, moguća je izvedba stupova iz čeličnog lima, nehrđajućeg čeličnog lima, te iz aluminijskog lima. Temeljni vijci se posebno naručuju.

SRS B Tapered lighting poles are designed for installation on concrete foundations by means of corresponding anchor bolts. According to climatic conditions, pollution and soil aggressiveness, poles can be made of the following materials: steel sheet, stainless steel sheet and aluminium sheet.

Anchor bolts shall be ordered separately.



| Kataloški broj <i>Catalogue number</i> | Dimenzije - <i>Dimesions</i> | | | | | | Površina stupa <i>Surface</i> m ² | Masa <i>Mass</i> kg |
|---|------------------------------|---|---|---|---|---|--|---------------------------|
| | H | h | d | D | A | B | | |

Stupovi od čeličnog lima - bojani
Pole from sheet steel - painted

| | | | | | | | | |
|----------|-----|-----|----|-----|----|----|------|----|
| 84 20 71 | 3,0 | 0,5 | 76 | 130 | 75 | 75 | 1,05 | 29 |
| 84 35 71 | 3,5 | 0,5 | 76 | 139 | 75 | 75 | 1,26 | 34 |
| 84 40 61 | 4,0 | 0,5 | 60 | 132 | 75 | 75 | 1,29 | 35 |
| 84 40 71 | 4,0 | 0,5 | 76 | 148 | 75 | 75 | 1,49 | 40 |
| 84 45 61 | 4,5 | 0,5 | 60 | 141 | 75 | 75 | 1,50 | 40 |
| 84 45 71 | 4,5 | 0,5 | 76 | 157 | 75 | 75 | 1,73 | 45 |
| 84 50 61 | 5,0 | 0,6 | 60 | 150 | 75 | 75 | 1,73 | 45 |
| 84 50 71 | 5,0 | 0,6 | 76 | 166 | 80 | 80 | 1,98 | 51 |
| 84 55 61 | 5,5 | 0,6 | 60 | 159 | 80 | 80 | 1,97 | 51 |
| 84 55 71 | 5,5 | 0,6 | 76 | 175 | 80 | 80 | 2,25 | 57 |
| 84 60 61 | 6,0 | 0,6 | 60 | 168 | 80 | 80 | 2,23 | 57 |
| 84 60 71 | 6,0 | 0,6 | 76 | 184 | 80 | 80 | 2,53 | 64 |

Stupovi od čeličnog lima - vruće pocinčani
Pole from sheet steel - hot dip galvanized

| | | | | | | | | |
|----------|-----|-----|----|-----|----|----|------|----|
| 84 20 72 | 3,0 | 0,5 | 76 | 130 | 75 | 75 | 1,05 | 29 |
| 84 35 72 | 3,5 | 0,5 | 76 | 139 | 75 | 75 | 1,26 | 34 |
| 84 40 62 | 4,0 | 0,5 | 60 | 132 | 75 | 75 | 1,29 | 35 |
| 84 40 72 | 4,0 | 0,5 | 76 | 148 | 75 | 75 | 1,49 | 40 |
| 84 45 62 | 4,5 | 0,5 | 60 | 141 | 75 | 75 | 1,50 | 40 |
| 84 45 72 | 4,5 | 0,5 | 76 | 157 | 75 | 75 | 1,73 | 45 |
| 84 50 62 | 5,0 | 0,6 | 60 | 150 | 75 | 75 | 1,73 | 45 |
| 84 50 72 | 5,0 | 0,6 | 76 | 166 | 80 | 80 | 1,98 | 51 |
| 84 55 62 | 5,5 | 0,6 | 60 | 159 | 80 | 80 | 1,97 | 51 |
| 84 55 72 | 5,5 | 0,6 | 76 | 175 | 80 | 80 | 2,25 | 57 |
| 84 60 62 | 6,0 | 0,6 | 60 | 168 | 80 | 80 | 2,23 | 57 |
| 84 60 72 | 6,0 | 0,6 | 76 | 184 | 80 | 80 | 2,53 | 64 |

Stupovi od nehrđajućeg čeličnog lima
Pole from stainless steel

| | | | | | | | | |
|----------|-----|-----|----|-----|----|----|------|----|
| 84 20 73 | 3,0 | 0,5 | 76 | 130 | 75 | 75 | 1,05 | 22 |
| 84 35 73 | 3,5 | 0,5 | 76 | 139 | 75 | 75 | 1,26 | 25 |
| 84 40 63 | 4,0 | 0,5 | 60 | 132 | 75 | 75 | 1,29 | 26 |
| 84 40 73 | 4,0 | 0,5 | 76 | 148 | 75 | 75 | 1,49 | 29 |
| 84 45 63 | 4,5 | 0,5 | 60 | 141 | 75 | 75 | 1,50 | 29 |
| 84 45 73 | 4,5 | 0,5 | 76 | 157 | 75 | 75 | 1,73 | 32 |
| 84 50 63 | 5,0 | 0,6 | 60 | 150 | 75 | 75 | 1,73 | 32 |
| 84 50 73 | 5,0 | 0,6 | 76 | 166 | 80 | 80 | 1,98 | 36 |
| 84 55 63 | 5,5 | 0,6 | 60 | 159 | 80 | 80 | 1,97 | 36 |
| 84 55 73 | 5,5 | 0,6 | 76 | 175 | 80 | 80 | 2,25 | 40 |
| 84 60 63 | 6,0 | 0,6 | 60 | 168 | 80 | 80 | 2,23 | 40 |
| 84 60 73 | 6,0 | 0,6 | 76 | 184 | 80 | 80 | 2,53 | 45 |

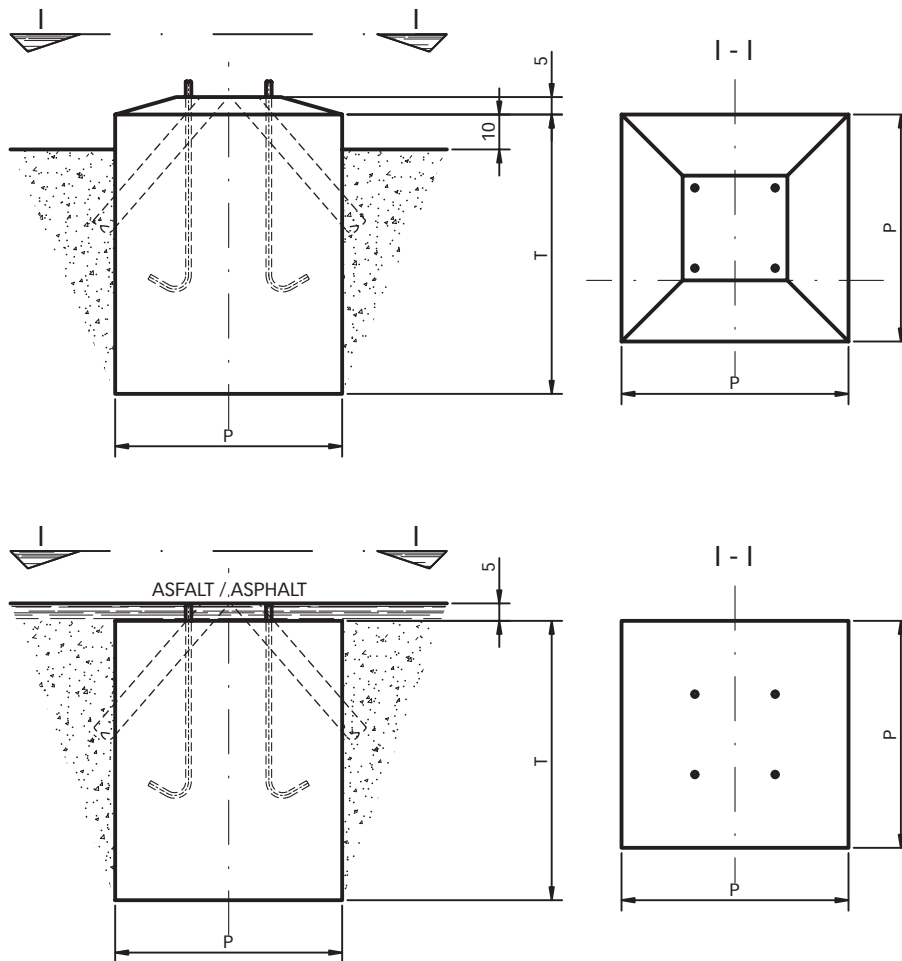
Stupovi od aluminijskog lima
Pole from aluminium sheet

| | | | | | | | | |
|----------|-----|-----|----|-----|----|----|------|------|
| 84 20 74 | 3,0 | 0,5 | 76 | 130 | 75 | 75 | 1,05 | 10,0 |
| 84 35 74 | 3,5 | 0,5 | 76 | 139 | 75 | 75 | 1,26 | 12,0 |
| 84 40 64 | 4,0 | 0,5 | 60 | 132 | 75 | 75 | 1,29 | 12,0 |
| 84 40 74 | 4,0 | 0,5 | 76 | 148 | 75 | 75 | 1,49 | 14,0 |
| 84 45 64 | 4,5 | 0,5 | 60 | 141 | 75 | 75 | 1,50 | 14,0 |
| 84 45 74 | 4,5 | 0,5 | 76 | 157 | 75 | 75 | 1,73 | 15,5 |
| 84 50 64 | 5,0 | 0,6 | 60 | 150 | 75 | 75 | 1,73 | 15,5 |
| 84 50 74 | 5,0 | 0,6 | 76 | 166 | 80 | 80 | 1,98 | 17,5 |
| 84 55 64 | 5,5 | 0,6 | 60 | 159 | 80 | 80 | 1,97 | 17,5 |
| 84 55 74 | 5,5 | 0,6 | 76 | 175 | 80 | 80 | 2,25 | 20,0 |
| 84 60 64 | 6,0 | 0,6 | 60 | 168 | 80 | 80 | 2,23 | 20,0 |
| 84 60 74 | 6,0 | 0,6 | 76 | 184 | 80 | 80 | 2,53 | 22,0 |

TEMELJENJE / FOUNDATIONS

Temelji rasvjetnih stupova tipa SRS A i SRS B projektirani su kao betonski blok temelji, za tla čija je nosivost $\sigma_{dop, tla} \leq 20 \text{ N/cm}^2$, a temelji se izrađuju od betona kvalitete MB-15. U koliko se stupovi temelje na zelenim površinama potrebno je gornji dio temelja izdignuti cca 10 cm.

Foundations of lighting poles of SRS A and SRS B type are designed as concrete block foundations, with soil bearing capacity of $\sigma_{dop, tla} \leq 20 \text{ N/cm}^2$. They are made of MB-15 concrete. If poles shall be founded in green areas, then the upper foundation section should be raised by ca 10 cm.



| Dimenzije - Dimensions | | | | |
|------------------------|-----------|-----------|------------------------|---------------------------------------|
| Stup Pole (m) | P (cm) | T (cm) | V (m ³) | Temeljni vijci Anchor bolts n×M |
| 3,0 | | | | |
| 3,5 | 65 | 80 | 0,34 | 4×M16 |
| 4,0 | | | | |
| 4,5 | | | | |
| 5,0 | | | | |
| 5,5 | 70 | 85 | 0,42 | 4×M16 |
| 6,0 | | | | |

Na osnovi dugogodišnjeg iskustva u izradi elemenata javne rasvjete i na osnovi mnogobrojnih kontakata i suradnje sa našim dugogodišnjim klijentima, zaključili smo da se pojavio interes tržišta za stožaste rasvjetne stupove visina većih od 6,0 m, pa smo stoga počeli razvijati stožaste rasvjetne stupove tipa SRS 2, visina 7,0 m do 12,0 m.

Prema našim saznanjima stožasti rasvjetni stupovi spomenutih visina izrađivali bi se u verzij SRS 2A za ugradnju u betonske temelje, te u verziji SRS 2B za ugradnju na betonske temelje pomoću sidrenih vijaka, ovisno o zahtjevima investitora i različitim karakteristikama tla.

Stožasti rasvjetni stupovi tipa SRS 2A i SRS 2B imali bi najširu primjenu kod rasvjete gradskih ulica, aleja, parkova, gradskih i izvangradskih prometnica, križanja ulica, trgova, pristaništa, autobusnih i željezničkih kolodvora, te industrijskih objekata. Ovako široku primjenu ovih stupova osigurava njihova ekonomičnost i njihov izgled, koji se lako uklapa u gotovo svaku okolinu koju bi trebali osvjetljavati.

Stupovi bi se izrađivali od kvalitetnog čeličnog lima koji se strojno oblikuje, a zatim se zavaruje pomoću stroja za automatsko zavarivanje. Zaštita stupova od atmosferskih utjecaja (korozije), predviđena je, kao i za sve ostale proizvode Dalekovod - a, za normalne i tropske klimatske uvjete, kao i za objekte uz morsku obalu i industrijska područja s jako zagađenom atmosferom. Prije serijske proizvodnje ovih proizvoda, provelo bi se ispitivanje stupova probnim opterećenjima na ispitnom poligonu, uz prisustvo ovlaštenog poduzeća za takve koje je ovlašteno za provedbu ispitivanja, kako bi dobili ateste proizvoda, koji bi se isporučivali uz pojedine tipove stupova.

U kataloškoj oznaci stupova, zadnja znamenka (1, 3) određuje područje za koje se mogu primjenjivati rasvjetni stupovi:

- ZONA 1 zona umjerenih i jakih vjetrova,
- ZONA 3 zona jake bure.

Stožasti rasvjetni stupovi tipa SRS 2A i SRS 2B uvršteni su u ovaj katalog radi toga da prezentiramo eventualnim kupcima ovaj naš proizvod koji će biti uvršten u naš proizvodni program u vrlo kratkom roku, u koliko tržište pokaže interes.

OZNAKA ZA NARUDŽBU

U slučaju narudžbe treba navesti slijedeće podatke

- katalošku oznaku stupa,
- tip svjetiljke, sa nazivom proizvođača, koja se ugrađuje na stup,
- tip razvodne kutije, sa imenom proizvođača, koja se ugrađuje u stup,
- vrstu antikorozivne zaštite.

On the basis of our long-time experience in production of public lighting segments and numerous contacts and extensive co-operation with our longstanding customers, we have become aware of large interest of the market in tapered lighting poles higher than 6.0 m; therefore we have started to develop SRS-2 tapered lighting poles in heights from 7.0 m to 12.0 m.

We have anticipated manufacturing of tapered lighting poles of the mentioned heights in two versions: SRS 2A for embedment in concrete foundations, and SRS 2B for installation on concrete foundations by means of anchor bolts, depending on the investor's requirements and different soil characteristics.

Tapered lighting poles of SRS 2A and SRS 2B type shall be widely applicable in illumination of streets, alleys, parks, roads, road crossings, squares, piers, bus and railway stations, and industrial facilities. Such a wide application of these poles is a result of their cost-effectiveness and their appearance that easily fits in each area that needs to be illuminated.

The poles shall be made from high-quality steel sheet, processed and welded by automatic welding set. Protection of poles against atmospheric influences (corrosion) shall be anticipated in the same way as for all other products of "Dalekovod", namely for normal and tropical climatic conditions as well as for facilities on the seashore and in highly-polluted industrial areas. Before mass production of these products starts, we intend to subject these poles to trial load tests at the testing site, in the presence of the company that is authorized to perform these tests. In this way, we would obtain test certificates that would later accompany the delivery of particular pole types.

In pole catalogue order number, the last figure (1,3) refers to the area where lighting poles may be used:

- ZONE 1 Moderate and violent wind zone
- ZONE 3 North-Eastern wind zone

The tapered lighting poles of SRS 2A and SRS 2B type are incorporated in this catalogue as we intend to present these products to our potential customers. In case there should be any interest on the market, we shall incorporate these products in our production range.

ORDER CODE

The following data shall be furnished with the order:

- Pole catalogue order code
- Type of luminaire to be mounted on the pole and name of the manufacturer,
- Type of junction box to be installed in the pole and name of the manufacturer,
- Type of corrosion protection

RASVJETNI STUPOVI SRS 2 LIGHTING POLES SRS 2

SRS 2A

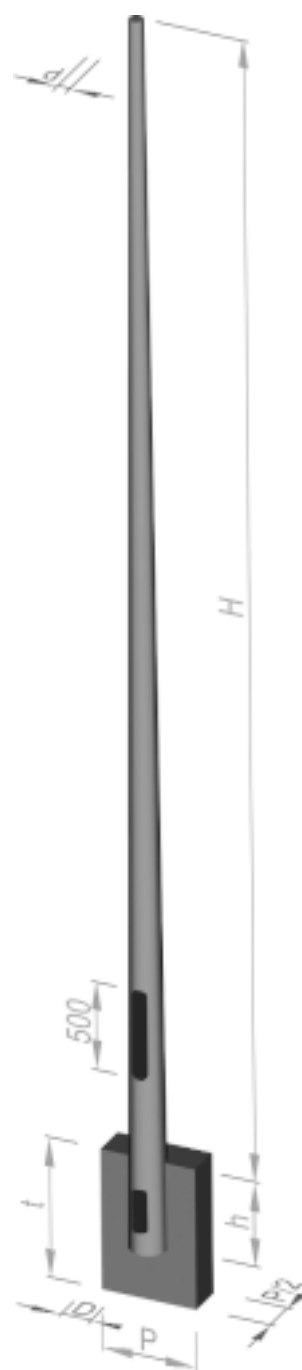
Stožasti rasvjetni stupovi tipa SRS 2A namijenjeni su za ugradnju u betonske temelje. Tip stupa se određuje prema klimatskim uvjetima, zagađenju i agresivnosti tla. Detalj vrha stupa izrađuje se prema tipu svjetiljke, a maksimalna površina izložena djelovanju vjetra na vrhu stupa iznosi 0,30 m²

SRS 2A tapered lighting poles are designed for embedment in concrete foundations. The pole type shall be determined according to climatic conditions, pollution and soil aggressiveness. The pole top segment is manufactured according to the luminaire type, and the maximum area exposed to wind on the pole top is 0.500 m².

Napomena: Izrada stupova SRS 2A predviđa se za 2003. godinu.

Notice: We are going to start production of SRS 2A poles in 2003.

| Kataloški broj <i>Catalogue number</i> | Dimenzije - <i>Dimesions</i> | | | | | | Površina stupa <i>Surface</i> m ² | Masa <i>Mass</i> kg |
|---|------------------------------|-----|----|-----|-----|-----|--|---------------------------|
| | H | h | d | D | A | B | | |
| | m | m | mm | mm | mm | mm | | |
| SRS 2A - 7 - 1 | 7,0 | 0,7 | 76 | 153 | 85 | 90 | 3,16 | 68,5 |
| SRS 2A - 7 - 3 | 7,0 | 0,7 | 76 | 153 | 85 | 90 | 3,16 | 81,5 |
| SRS 2A - 8 - 1 | 8,0 | 0,7 | 76 | 163 | 90 | 100 | 3,66 | 80,5 |
| SRS 2A - 8 - 3 | 8,0 | 0,7 | 76 | 163 | 90 | 100 | 3,66 | 104,5 |
| SRS 2A - 9 - 1 | 9,0 | 0,8 | 76 | 174 | 90 | 100 | 4,25 | 94,5 |
| SRS 2A - 9 - 3 | 9,0 | 0,9 | 76 | 175 | 90 | 100 | 4,30 | 137,5 |
| SRS 2A - 10 - 1 | 10,0 | 0,8 | 76 | 184 | 95 | 110 | 4,81 | 107,5 |
| SRS 2A - 10 - 3 | 10,0 | 0,9 | 76 | 185 | 95 | 110 | 4,86 | 159,0 |
| SRS 2A - 11 - 1 | 11,0 | 1,0 | 76 | 196 | 100 | 120 | 5,53 | 124,5 |
| SRS 2A - 11 - 3 | 11,0 | 1,0 | 76 | 196 | 100 | 120 | 5,53 | 203,0 |
| SRS 2A - 12 - 1 | 12,0 | 1,0 | 76 | 206 | 100 | 130 | 6,37 | 139,5 |
| SRS 2A - 12 - 3 | 12,0 | 1,0 | 76 | 206 | 100 | 130 | 6,37 | 228,0 |



SRS 2B

Stožasti rasvjetni stupovi tipa SRS 2B namijenjeni su za ugradnju na betonske temelje pomoću sidrenih vijaka. Tip stupa se određuje prema klimatskim uvjetima, zagađenju i agresivnosti tla. Detalj vrha stupa izrađuje se prema tipu svjetiljke, a maksimalna površina izložena djelovanju vjetra na vrhu stupa iznosi 0,30 m². Temeljni vijci se posebno naručuju.

SRS 2B tapered lighting poles are designed for installation on concrete foundations by means of anchor bolts. The pole type shall be determined according to climatic conditions, pollution and soil aggressiveness. The pole top segment shall be manufactured according to the luminaire type, and maximum area exposed to wind on the pole top shall be 0.500 m². Anchor bolts shall be ordered separately.



Napomena: Izrada stupova SRS 2B predviđa se za 2003. godinu.

Notice: We are going to start production of SRS 2B poles in 2003.

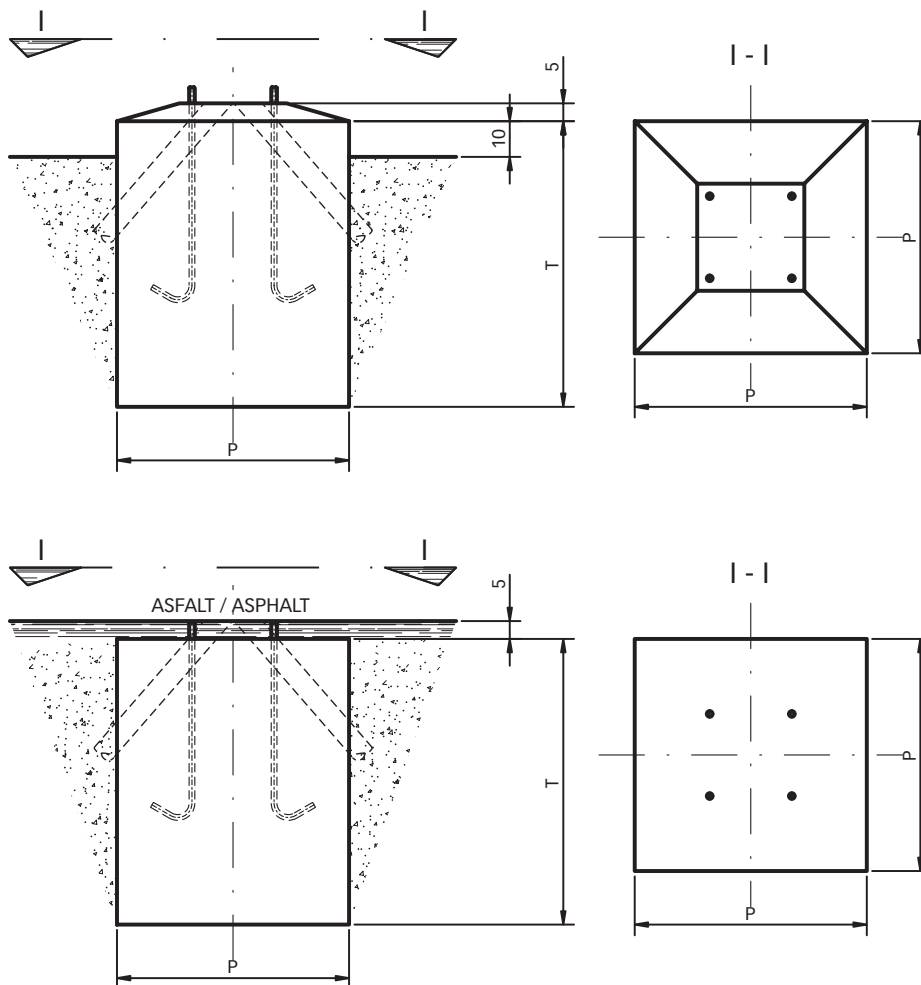
| Kataloški broj <i>Catalogue number</i> | Dimenzije - <i>Dimesions</i> | | | | | Površina stupa <i>Surface</i> m ² | Masa <i>Mass</i> kg |
|---|------------------------------|----|----|----|----|--|---------------------------|
| | H | d | D | A | B | | |
| | m | mm | mm | mm | mm | | |

| | | | | | | | |
|-------------------|------|----|-----|-----|-----|------|-------|
| SRS 2B – 700 – 1 | 7,0 | 76 | 146 | 85 | 90 | 2,67 | 72,5 |
| SRS 2B – 700 – 3 | 7,0 | 76 | 146 | 85 | 90 | 2,67 | 83,0 |
| SRS 2B – 800 – 1 | 8,0 | 76 | 156 | 90 | 100 | 3,15 | 84,0 |
| SRS 2B – 800 – 3 | 8,0 | 76 | 156 | 90 | 100 | 3,15 | 105,5 |
| SRS 2B – 900 – 1 | 9,0 | 76 | 166 | 90 | 100 | 3,86 | 105,0 |
| SRS 2B – 900 – 3 | 9,0 | 76 | 166 | 90 | 100 | 3,86 | 140,0 |
| SRS 2B – 1000 – 1 | 10,0 | 76 | 176 | 95 | 110 | 4,40 | 117,0 |
| SRS 2B – 1000 – 3 | 10,0 | 76 | 176 | 95 | 110 | 4,40 | 160,5 |
| SRS 2B – 1100 – 1 | 11,0 | 76 | 186 | 100 | 120 | 4,97 | 130,5 |
| SRS 2B – 1100 – 3 | 11,0 | 76 | 186 | 100 | 120 | 4,97 | 200,5 |
| SRS 2B – 1200 – 1 | 12,0 | 76 | 196 | 100 | 130 | 5,56 | 145,0 |
| SRS 2B – 1200 – 3 | 12,0 | 76 | 196 | 100 | 130 | 5,56 | 224,5 |

TEMELJENJE / FOUNDATIONS

Temelji rasvjetnih stupova tipa SRS 2A i SRS 2B projektirani su kao betonski blok temelji, za tla čija je nosivost $\sigma_{\text{dop,tla}} \leq 20 \text{ N/cm}^2$, a temelji se izrađuju od betona kvalitete MB-20. U koliko se stupovi temelje na zelenim površinama potrebno je gornji dio temelja izdignuti cca 10 cm.

SRS 2A and SRS 2B lighting pole foundations are designed as concrete block foundations, for soil bearing capacity of $\sigma_{\text{dop,tla}} \leq 20 \text{ N/cm}^2$. Foundations are constructed from MB-20 concrete. If the pole foundations are placed in green areas, then the upper foundation segment should be raised by ca 10 cm.



| Stup Pole (m) | Dimenzije - Dimensions | | | Temeljni vijci Anchor bolts n×M |
|---------------------|------------------------|-----------|------------------------|---------------------------------------|
| | P (cm) | T (cm) | V (m ³) | |
| SRS 2A/2B - 7 - 1 | 80 | 80 | 0,53 | 4xM16 |
| SRS 2A/2B - 8 - 1 | | | | 4xM16 |
| SRS 2A/2B - 9 - 1 | | | | 4xM20 |
| SRS 2A/2B - 10 - 1 | 90 | 100 | 0,83 | 4xM20 |
| SRS 2A/2B - 11 - 1 | | | | 4xM20 |
| SRS 2A/2B - 12 - 1 | | | | 4xM20 |
| SRS 2A/2B - 7 - 3 | 100 | 100 | 1,03 | 4xM24 |
| SRS 2A/2B - 8 - 3 | | | | 4xM24 |
| SRS 2A/2B - 9 - 3 | | | | 4xM24 |
| SRS 2A/2B - 10 - 3 | 110 | 110 | 1,37 | 4xM24 |
| SRS 2A/2B - 11 - 3 | | | | 4xM27 |
| SRS2A/ 2B - 12 - 3 | | | | 4xM27 |

Rasvjetni stupovi tipa KORS 1, visina 3,0 do 6,0 metara, su konične osmerokutne konstrukcije, koje se proizvode kao stupovi KORS 1A i KORS 1B. Prema svojoj namjeni oni su identični, a razlikuju se po načinu temeljenja. Rasvjetni stupovi tipa KORS 1A postavljaju se u betonske temelje, a rasvjetni stupovi tipa KORS 1B postavljaju se na betonske temelje pomoću sidrenih vijaka.

Rasvjetni stupovi tipa KORS 1A i KORS 1B namijenjeni su za rasvjetu urbanih površina: parkova, šetališta, aleja, naselja, prostora za parkiranje, manjih trgova, mostova, ulica, sporednih prometnica, naselja i objekata kod kojih se traži kvaliteta rasvjete u klasi B1.

Rasvjetni stupovi tipa KORS 1A pogodni su, osim za ugradnju u betonske temelje, za ukapanje direktno u tlo, s time da se dubina ukapanja povećava na 700 mm, za visinustupa 3,0 m, do 1200 mm, za visinu stupa 6,0 m. Rasvjetni stupovi KORS 1A vrlo su lagani i za njih su potrebna najmanja investicijska ulaganja.

Rasvjetni stupovi tipa KORS 1B se prema potrebi ili u slučaju oštećenja od udara, mogu lako zamijeniti jednostavnom demontažom sa betonskih temelja i zamjenom novimstupovima. Stupovi se isporučuju zajedno sa sidrenim vijcima i šablonom za centriranje sidrenih vijaka prilikom izvođenja radova na betoniranju temelja. Da bi ubrzali građevinske radove na terenu, naša tvrtka, odmah nakon fiksne narudžbe, dostavlja naručiocu sidrene vijke i šablone.

Stupovi se izrađuju iz kvalitetnog čeličnog lima, koji se strojno oblikuje u određene segmente, a zatim se zavaruje pomoću stroja za automatsko zavarivanje. Na ovaj način proizvedeni stupovi imaju dobre mehaničke karakteristike, vrlo su lagani i svojim estetskim oblikom udovoljavaju zahtjevima suvremene javne rasvjete. Zaštita stupova od atmosferskih utjecaja rješenja je tropseke i normalne uvjete rada, kao i za objekte uz morsk obalu i industrijska područja s jako zagađenom atmosferom.

Naša standardna zaštita od korozije izvodi se vrućim pocinčavanjem ili osnovnim zaštitnim premazima. Za objekte uz morsk obalu i u industrijskim područjima s jako zagađenom atmosferom, preporučujemo zaštitu od korozije vrućim pocinčavanjem.

Sidreni vijci i matice se također zaštićuju od korozije vrućim pocinčavanjem.

KORS 1 lighting poles are 3.0 to 6.0 m high tapered octagonal structures, that are constructed as KORS 1A and KORS 2 poles. They are identical with regard to their application while they differ in the foundation method. KORS 1A lighting poles shall be embedded in concrete foundations, while KORS 1B shall be placed on concrete foundations by means of anchor bolts.

Lighting poles of KORS 1A and KORS 1B type are designed for lighting of urban areas: parks, promenades, alleys, housing settlements, parking lots, small squares, bridges, streets, roads of secondary importance, settlements, facilities and structures that require lighting quality of B1 class.

Besides being embedded in concrete foundations, KORS 1A lighting poles can be also dug directly into the soil, provided that the digging depth increases to 700 mm for the 3.0 m high pole, and to 1,200 mm for the 6.0 m high pole. KORS 1A lighting poles are very light and the investment costs are very low.

Where necessary and in case of damage by impact, KORS 1B lighting poles can be easily replaced by simply demounting the pole from the concrete foundation and by replacing it with the new one. The poles are delivered together with anchor bolts and templates for alignment of anchor bolts during performance of foundation concreting works. In order to speed up the civil-engineering works on the spot, we deliver, immediately upon receiving a fixed order, anchor bolts and templates to the end user.

The poles are constructed from high-grade steel sheet, and they are machined and welded by automatic welding set. The mechanical properties of poles that are manufactured in this way are excellent, the poles are very light and with regard to their aesthetical form they fully comply with sophisticated public lighting requirements. Protection of poles against atmospheric influences is provided for both normal and tropical conditions, as well as for facilities and structures located by the seashore and in highly polluted industrial areas.

Our standard corrosion protection is carried out by hot dip galvanizing or by prime painting. For facilities and structures along the seashore and in highly polluted industrial areas, corrosion protection by hot dip galvanizing is recommended.

Anchor bolts and nuts shall be also protected against corrosion by hot dip galvanizing.

RASVJETNI STUPOVI KORS 1 LIGHTING POLES KORS 1

KORS 1A

OZNAKA ZA NARUDŽBU

U slučaju narudžbe treba navesti slijedeće podatke

- katalošku oznaku stupa,
- tip svjetiljke, sa nazivom proizvođača, koja se ugrađuje na stup,
- tip razvodne kutije, sa imenom proizvođača, koja se ugrađuje u stup,
- vrstu antikorozivne zaštite.

Detalj vrha stupa izrađuje se prema tipu svjetiljke, a maksimalna površina izložena djelovanju vjetra na vrhu stupa iznosi 0,50 m².

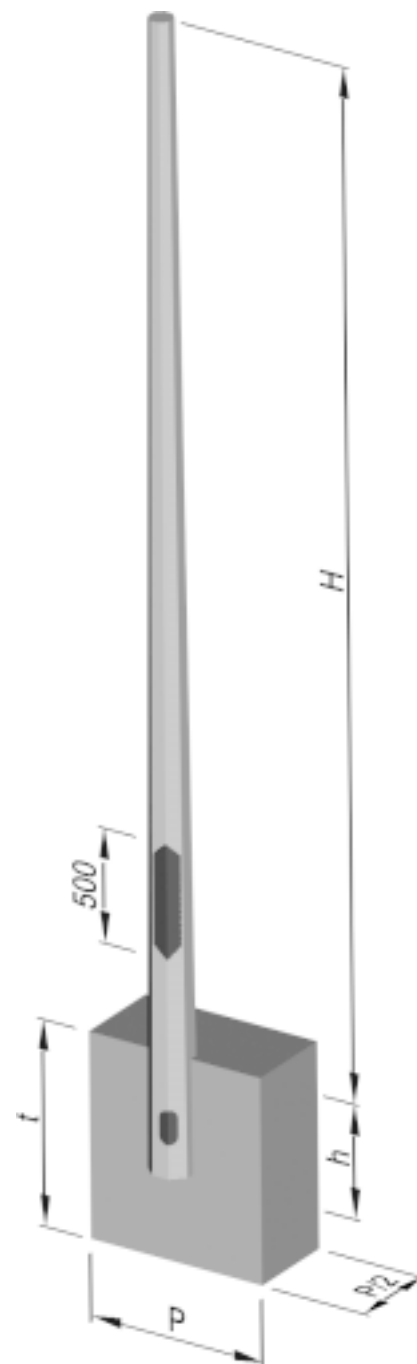
ORDER CODE

The following data shall be furnished with the order:

- Pole catalogue order code
- Type of luminaire to be mounted on the pole and name of the manufacturer,
- Type of junction box to be installed in the pole and name of the manufacturer,
- Type of corrosion protection

The pole top segment shall be manufactured according to the luminaire type, and maximum area exposed to wind on the pole top shall be 0.500 m². Anchor bolts shall be ordered separately.

| Kataloški broj <i>Catalogue number</i> | Dimenzije - <i>Dimesions</i> | | | | Površina stupa <i>Surface</i> m ² | Masa <i>Mass</i> kg |
|---|------------------------------|-----|----|-----|--|---------------------------|
| | H | h | d | D | | |
| | m | m | mm | mm | | |
| KORS 1A – 300 | 3,0 | 0,5 | 90 | 205 | 1,74 | 43,5 |
| KORS 1A – 400 | 4,0 | 0,5 | 90 | 201 | 2,17 | 54,0 |
| KORS 1A – 500 | 5,0 | 0,5 | 90 | 199 | 2,62 | 64,5 |
| KORS 1A – 600 | 6,0 | 0,5 | 90 | 197 | 3,05 | 73,0 |



KORS 1B

OZNAKA ZA NARUDŽBU

U slučaju narudžbe treba navesti slijedeće podatke

- katalošku oznaku stupa,
- tip svjetiljke, sa nazivom proizvođača, koja se ugrađuje na stup,
- tip razvodne kutije, sa imenom proizvođača, koja se ugrađuje u stup,
- vrstu antikorozivne zaštite.

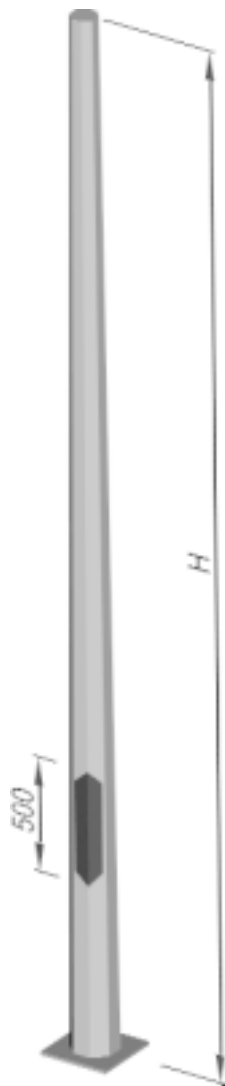
Detalj vrha stupa izrađuje se prema tipu svjetiljke, a maksimalna površina izložena djelovanju vjetra na vrhu stupa iznosi 0,50 m². Temeljni vijci se posebno naručuju.

ORDER CODE

The following data shall be furnished with the order:

- Pole catalogue order code
- Type of luminaire to be mounted on the pole and name of the manufacturer,
- Type of junction box to be installed in the pole and name of the manufacturer,
- Type of corrosion protection

The pole top segment shall be manufactured according to the luminaire type, and maximum area exposed to wind on the pole top shall be 0.500 m². Anchor bolts shall be ordered separately.

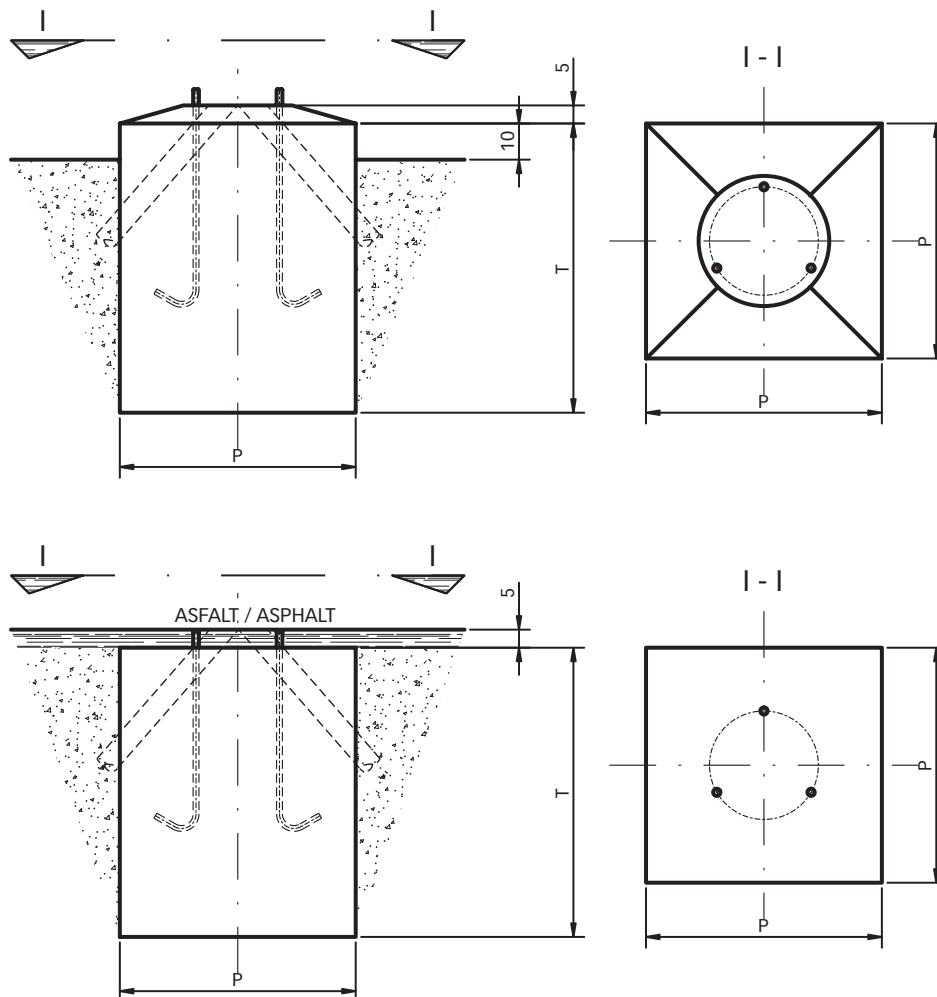


| Kataloški broj Catalogue number | Dimenzije - Dimesions | | | Površina stupa Surface m ² | Masa Mass kg |
|---|---------------------------------|--------|---------|--|---------------------------|
| | H m | h m | d mm | | |
| KORS 1B – 300 | 3,0 | 90 | 189 | 1,74 | 41,5 |
| KORS 1B – 400 | 4,0 | 90 | 189 | 2,17 | 51,5 |
| KORS 1B – 500 | 5,0 | 90 | 189 | 2,62 | 62,5 |
| KORS 1B – 600 | 6,0 | 90 | 189 | 3,05 | 75,5 |

TEMELJENJE / FOUNDATIONS

Temelji rasvjetnih stupova tipa KORS 1A i KORS 1B projektirani su kao betonski blok temelji, za tla čija je nosivost $\sigma_{\text{dop,tla}} \leq 20 \text{ N/cm}^2$, a temelji se izrađuju od betona kvalitete MB15. U koliko se stupovi temelje na zelenim površinama potrebno je gornji dio temelja izdignuti cca 10 cm.

KORS 1A and KORS 1B lighting pole foundations are designed as concrete block foundations, for soil bearing capacity of $\sigma_{\text{dop,tla}} \leq 20 \text{ N/cm}^2$. Foundations are constructed from MB-15 concrete. If the foundations of the poles are placed in green areas, then the upper foundation segment should be raised by ca 10 cm.



| Stup Pole (m) | Dimenzije - Dimensions | | | Temeljni vijci Anchor bolts n×M |
|---------------------|------------------------|-----------|------------------------|---------------------------------------|
| | P (cm) | T (cm) | V (m ³) | |
| KORS 1A/1B – 300 | 60 | 80 | 0,53 | 3×M20 |
| KORS 1A/1B – 400 | 60 | 80 | 0,53 | 3×M20 |
| KORS 1A/1B – 500 | 70 | 90 | 0,83 | 3×M20 |
| KORS 1A/1B – 600 | 70 | 90 | 0,83 | 3×M20 |

Konične osmerokutne stupove tipa KORS 2 proizvodimo kao stupove KORS 2A i KORS 2B. Prema svojoj namjeni oni su identični, a razlikuju se po načinu temeljenja. Rasvjetni stupovi tipa KORS 2A ugrađuju se u betonske temelje, a stupovi tipa KORS 2B ugrađuju se na betonske temelje pomoću sidrenih vijaka.

Rasvjetni stupovi tipa KORS 2A i KORS 2B imaju najširu primjenu kod rasvjete gradskih ulica, aleja, parkova, gradskih i izvangradskih prometnica, križanja ulica, trgova, pristaništa, autobusnih i željezničkih kolodvora, te industrijskih objekata.

U kataloškoj oznaci stupova, zadnja znamenka 1(2) ili 3 određuje područje za koje se mogu primjenjivati rasvjetni stupovi:

- ZONA 1 zona umjerenih i jakih vjetrova,
- ZONA 3 zona jake bure.

Stupovi se izrađuju iz kvalitetnog čeličnog lima, koji se strojno oblikuje u određene segmente, a zatim se zavaruje pomoću stroja za automatsko zavarivanje. Na ovaj način proizvedeni stupovi imaju dobre mehaničke karakteristike, vrlo su lagani i svojim estetskim oblikom udovoljavaju zahtjevima suvremene javne rasvjete. Zaštita stupova od atmosferskih utjecaja rješenja je tropseke i normalne uvjete rada, kao i za objekte uz morsku obalu i industrijska područja s jako zagađenom atmosferom. Za sve rasvjetne stupove posjedujemo ateste koji su dobiveni od ovlaštenog poduzeća, na osnovi ispitivanja stupova probnim opterećenjem.

Naša standardna zaštita od korozije izvodi se vrućim pocinčavanjem ili osnovnim zaštitnim premazima. Za objekte uz morsku obalu i u industrijskim područjima s jako zagađenom atmosferom, preporučujemo zaštitu od korozije vrućim pocinčavanjem.

Sidreni vijci i matice se također zaštićuju od korozije vrućim pocinčavanjem.

KORS 2 tapered octagonal structures are constructed as KORS 2A and KORS 2B poles. They are identical with regard to their application while they differ in the foundation method. KORS 2A lighting poles are embedded in concrete foundations, while KORS 2 B are installed on concrete foundations by means of anchor bolts.

Lighting poles of KORS 2A and KORS 2B type are widely applied for lighting of streets, alleys, parks, roads and motorways, road crossings, squares, piers, bus and railway stations, and industrial facilities as well.

In pole catalogue order code, the last figure 1 (2) or 3 refers to the area where lighting poles may be used:

- ZONE 1 Moderate and violent wind zone
- ZONE 3 North-eastern wind zone

The poles are constructed from high-grade steel sheet, and they are machined and welded by automatic welding set. The mechanical properties of poles manufactured in this way are excellent, the poles are very light and with regard to their aesthetical form they fully comply with sophisticated public lighting requirements. Protection of poles against atmospheric influences is provided for both normal and tropical conditions, as well as for facilities and structures located by the seashore and in highly polluted industrial areas. All lighting poles have been certificated by authorized companies, after having successfully passed the trial load tests.

Our standard corrosion protection is carried out by hot dip galvanizing or by prime painting. For facilities and structures along the seashore and in highly polluted industrial areas, corrosion protection by hot dip galvanizing is recommended.

Anchor bolts and nuts shall be also protected against corrosion by hot dip galvanizing.

RASVJETNI STUPOVI KORS 2

LIGHTING POLES KORS 2

KORS 2A

OZNAKA ZA NARUDŽBU

U slučaju narudžbe treba navesti slijedeće podatke

- katalošku oznaku stupa,
- tip svjetiljke, sa nazivom proizvođača, koja se ugrađuje na stup,
- tip razvodne kutije, sa imenom proizvođača, koja se ugrađuje u stup
- vrstu antikorozivne zaštite.

Detalj vrha stupa izrađuje se prema tipu svjetiljke, a maksimalna površina izložena djelovanju vjetra na vrhu stupa iznosi 0,40 m².

ORDER CODE

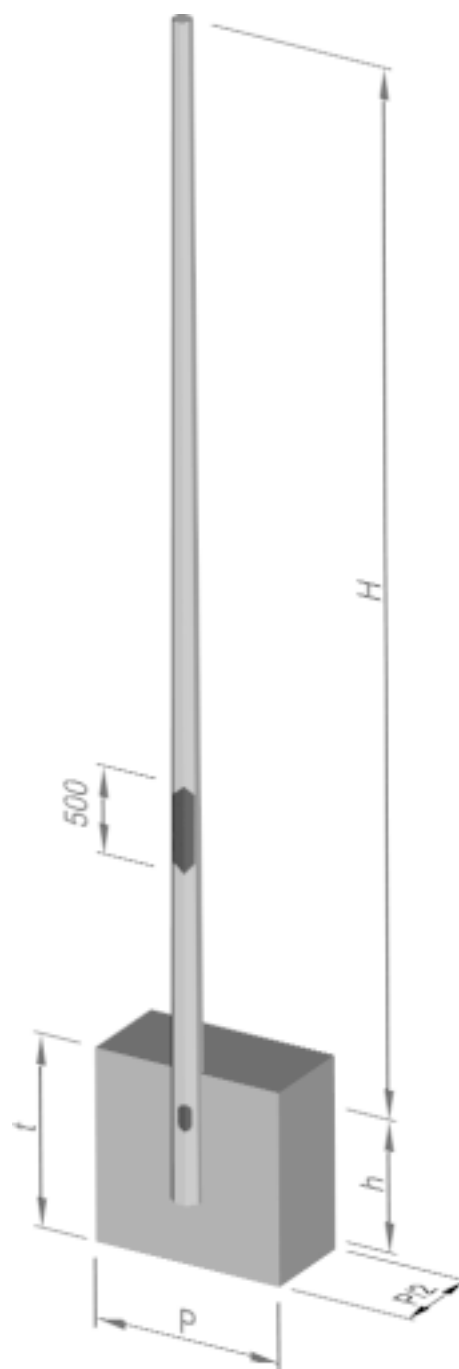
The following data shall be furnished with the order:

- Pole catalogue order code
- Type of luminaire to be mounted on the pole and name of the manufacturer,
- Type of junction box to be installed in the pole and name of the manufacturer,
- Type of corrosion protection

The pole top segment shall be manufactured according to the luminaire type, and maximum area exposed to wind on the pole top shall be 0.400 m².

| Kataloški broj <i>Catalogue number</i> | Dimenzije - <i>Dimesions</i> | | | | Površina stupa <i>Surface</i> m ² | Masa <i>Mass</i> kg |
|---|------------------------------|---|----|----|--|---------------------------|
| | H | h | d | D | | |
| | m | m | mm | mm | | |

| | | | | | | |
|-----------------------|------|-----|----|-----|------|-------|
| KORS 2A – 700 – 1(2) | 7,0 | 0,7 | 90 | 182 | 3,27 | 83,5 |
| KORS 2A – 700 – 3 | 7,0 | 0,7 | 90 | 182 | 3,27 | 83,5 |
| KORS 2A – 800 – 1(2) | 8,0 | 0,7 | 90 | 181 | 3,55 | 93,5 |
| KORS 2A – 800 – 3 | 8,0 | 0,7 | 90 | 181 | 3,55 | 104,5 |
| KORS 2A – 900 – 1(2) | 9,0 | 0,9 | 90 | 195 | 4,37 | 110,5 |
| KORS 2A – 900 – 3 | 9,0 | 0,9 | 90 | 195 | 4,37 | 127,5 |
| KORS 2A – 1000 – 1(2) | 10,0 | 0,9 | 90 | 205 | 5,01 | 126,5 |
| KORS 2A – 1000 – 3 | 10,0 | 0,9 | 90 | 205 | 5,01 | 165,5 |
| KORS 2A – 1100 – 1(2) | 11,0 | 1,0 | 85 | 205 | 5,40 | 139,5 |
| KORS 2A – 1100 – 3 | 11,0 | 1,0 | 90 | 215 | 5,49 | 189,0 |
| KORS 2A – 1200 – 1(2) | 12,0 | 1,0 | 85 | 215 | 6,08 | 184,5 |
| KORS 2A – 1200 – 3 | 12,0 | 1,0 | 85 | 215 | 6,08 | 197,5 |



KORS 2B

OZNAKA ZA NARUDŽBU

U slučaju narudžbe treba navesti slijedeće podatke

- katalošku oznaku stupa,
- tip svjetiljke, sa nazivom proizvođača, koja se ugrađuje na stup,
- tip razvodne kutije, sa imenom proizvođača, koja se ugrađuje u stup,
- vrstu antikorozivne zaštite.

Detalj vrha stupa izrađuje se prema tipu svjetiljke, a maksimalna površina izložena djelovanju vjetra na vrhu stupa iznosi 0,40 m². Temeljni vijci se posebno naručuju.

ORDER CODE

The following data shall be furnished with the order:

- Pole catalogue order code
- Type of luminaire to be mounted on the pole and name of the manufacturer,
- Type of junction box to be installed in the pole and name of the manufacturer,
- Type of corrosion protection

The pole top segment shall be manufactured according to the luminaire type, and maximum area exposed to wind on the pole top shall be 0.500 m². Anchor bolts shall be ordered separately.



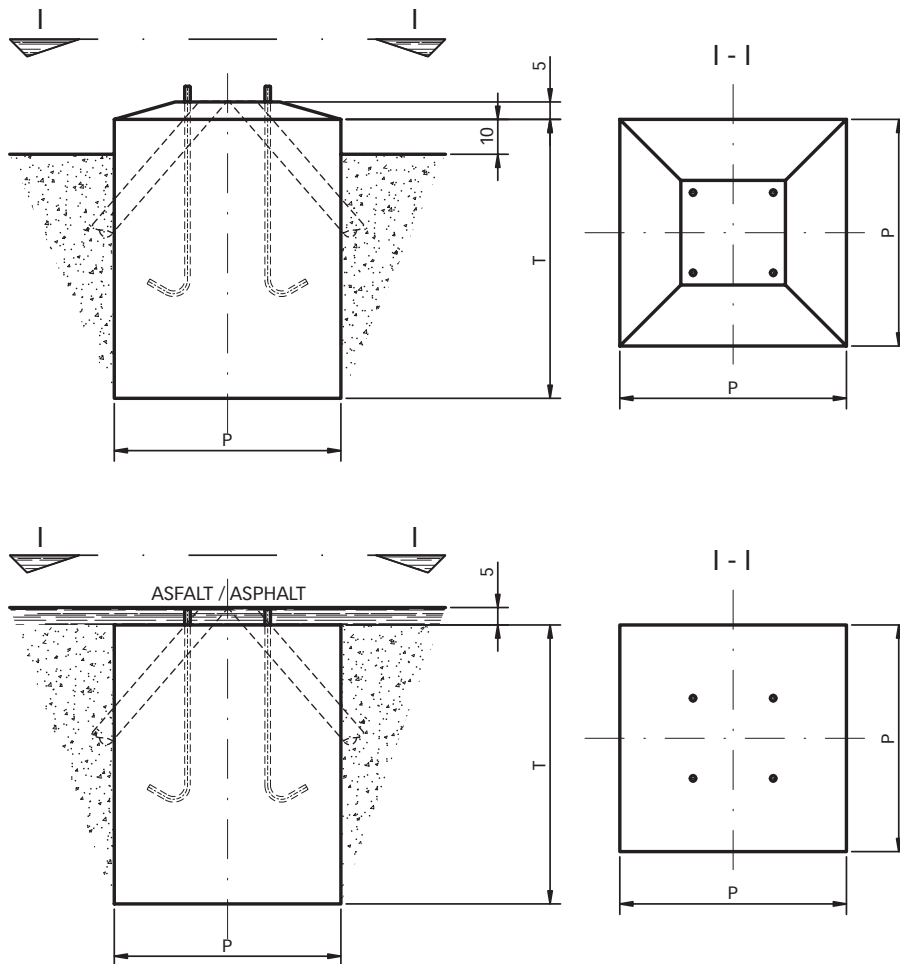
| Kataloški broj <i>Catalogue number</i> | Dimenzije - <i>Dimensions</i> | | | Površina stupa <i>Surface</i> m ² | Masa <i>Mass</i> kg |
|---|----------------------------------|--------|---------|--|---------------------------|
| | H m | h m | d mm | | |

| | | | | | |
|-----------------------|------|----|-----|------|-------|
| KORS 2B – 700 – 1(2) | 7,0 | 90 | 174 | 3,53 | 92,5 |
| KORS 2B – 700 – 3 | 7,0 | 90 | 174 | 3,53 | 92,5 |
| KORS 2B – 800 – 1(2) | 8,0 | 90 | 174 | 3,96 | 103,0 |
| KORS 2B – 800 – 3 | 8,0 | 90 | 174 | 3,96 | 110,5 |
| KORS 2B – 900 – 1(2) | 9,0 | 90 | 185 | 4,57 | 116,0 |
| KORS 2B – 900 – 3 | 9,0 | 90 | 185 | 4,57 | 125,5 |
| KORS 2B – 1000 – 1(2) | 10,0 | 90 | 195 | 5,37 | 154,0 |
| KORS 2B – 1000 – 3 | 10,0 | 90 | 195 | 5,37 | 159,0 |
| KORS 2B – 1100 – 1(2) | 11,0 | 85 | 195 | 5,75 | 189,5 |
| KORS 2B – 1100 – 3 | 11,0 | 90 | 205 | 6,03 | 195,0 |
| KORS 2B – 1200 – 1(2) | 12,0 | 85 | 205 | 6,41 | 190,5 |
| KORS 2B – 1200 – 3 | 12,0 | 85 | 205 | 6,41 | 209,0 |

TEMELJENJE / FOUNDATIONS

Temelji rasvjetnih stupova tipa KORS 2A i KORS 2B projektirani su kao betonski blok temelji, za tla čija je nosivost $\sigma_{\text{dop,tla}} \leq 20 \text{ N/cm}^2$, a temelji se izrađuju od betona kvalitete MB-20. U koliko se stupovi temelje na zelenim površinama potrebno je gornji dio temelja izdignuti cca 10 cm.

KORS 2A and KORS 2B lighting pole foundations are designed as concrete block foundations, for soil bearing capacity of $\sigma_{\text{dop,tla}} \leq 20 \text{ N/cm}^2$. Foundations are constructed from MB-20 concrete. If the pole foundations are placed in green areas, then the upper foundation segment should be raised by ca 10 cm.



| Stup Pole (m) | Dimenzije - Dimensions | | | Temeljni vijci Anchor bolts n×M |
|-----------------------|------------------------|-----------|------------------------|---------------------------------------|
| | P (cm) | T (cm) | V (m ³) | |
| KORS 2A/2B – 700 – 1 | 90 | 110 | 0,91 | 4xM20 |
| KORS 2A/2B – 800 – 1 | | | | |
| KORS 2A/2B – 900 – 1 | | | | |
| KORS 2A/2B – 1000 – 1 | 100 | 110 | 1,30 | 4xM24 |
| KORS 2A/2B – 1100 – 1 | | | | 4xM24 |
| KORS 2A/2B – 1200 – 1 | | | | 4xM27 |
| KORS 2A/2B – 700 – 3 | 100 | 110 | 1,30 | 4xM24 |
| KORS 2A/2B – 800 – 3 | | | | |
| KORS 2A/2B – 900 – 3 | | | | |
| KORS 2A/2B – 1000 – 3 | 110 | 120 | 1,48 | 4xM27 |
| KORS 2A/2B – 1100 – 3 | | | | |
| KORS2A/ 2B – 1200 – 3 | | | | |

Cijevni rasvjetni stupovi tipa CRS 1, visina 3,0 do 6,0 metara, proizvodimo kao segmentne zavarene stupove CRS 1A i CRS 1B. Prema svojoj namjeni oni su identični, a razlikuju se po načinu temeljenja. Rasvjetni stupovi tipa CRS 1A postavljaju se u betonske temelje, a rasvjetni stupovi tipa CRS 1B postavljaju se na betonske temelje pomoću sidrenih vijaka.

Rasvjetni stupovi tipa CRS 1A i CRS 1B namijenejni su za rasvjetu urbanih površina: parkova, šetališta, aleja, naselja, prostora za parkiranje, manjih trgova, mostova, ulica, sporednih prometnica, naselja i objekata kod kojih se traži kvaliteta rasvjete u klasi B1. Rasvjetni stupovi tipa CRS 1A pogodni su, osim za ugradnju u betonske temelje, za ukapanje direktno u tlo, s time da se dubina ukapanja povećava na 700 mm, za visinustupa 3,0 m, do 1200 mm, za visinu stupa 6,0 m.

Rasvjetni stupovi tipa CRS 1B se prema potrebi ili u slučaju oštećenja od udara, mogu lako zamijeniti jednostavnom demontažom sa betonskih temelja i zamjenom novimstupovima. Stupovi se isporučuju zajedno sa sidrenim vijcima i šablonom za centriranje sidrenih vijaka prilikom izvođenja radova na betoniranju temelja. Da bi ubrzali građevinske radove na terenu, naša tvrtka, odmah nakon fiksne narudžbe, dostavlja naručiocu sidrene vijke i šablone.

Stupovi se izrađuju iz kvalitetnih bešavnih cijevi, koje se spajaju elektrozavarivanjem. Zaštita stupova od atmosferskih utjecaja riješena je tropseke i normalne uvjete rada, kao i za objekte uz morsku obalu i industrijska područja s jako zagađenom atmosferom.

Naša standardna zaštita od korozije izvodi se vrućim pocinčavanjem ili osnovnim zaštitnim premazima. Za objekte uz morsku obalu i u industrijskim područjima s jako zagađenom atmosferom, preporučujemo zaštitu od korozije vrućim pocinčavanjem.

Sidreni vijci i matice se također zaštićuju od korozije vrućim pocinčavanjem.

CRS 1 tubular lighting poles are 3.0 to 6.0 m high, they are constructed as shafts welded together into CRS 1A and CRS 2 poles. They are identical with regard to their application while they differ in the founding method. CRS 1A lighting poles are embedded in concrete foundations, while CRS 1B are installed on concrete foundations by means of anchor bolts.

Lighting poles of CRS 1A and CRS 1B type are designed for lighting of urban areas: parks, promenades, alleys, residential areas, parking lots, small squares, bridges, streets, roads of minor importance and facilities that require lighting quality of B1 class.

CRS 1A lighting poles can be embedded in concrete foundations but can also be dug directly into the ground, provided that the digging depth increases to 700 mm for the 3.0 m high pole, and to 1,200 mm for the 6.0 m high pole.

Where necessary and in case of damage by impact, CRS 1B lighting poles can be easily replaced by simply demounting the pole from the concrete foundation and by replacing it with the new one. The poles shall be delivered together with anchor bolts and templates for alignment of anchor bolts during performance of foundation concreting works. In order to speed up the civil-engineering works on the spot, we deliver, immediately upon receiving a fixed order, anchor bolts and templates to the end user.

The poles are constructed from high-grade seamless tubes that are connected by electric welding. Protection of poles against atmospheric influences is provided for both normal and tropical conditions, as well as for facilities and structures located by the seashore and in highly polluted industrial areas.

Our standard corrosion protection is carried out by hot dip galvanizing or by prime painting. For facilities and structures along the seashore and in highly polluted industrial areas, corrosion protection by hot dip galvanizing is recommended.

Anchor bolts and nuts shall be also protected against corrosion by hot dip galvanizing.

RASVJETNI STUPOVI CRS 1 LIGHTING POLES CRS 1

CRS 1A

OZNAKA ZA NARUDŽBU

U slučaju narudžbe treba navesti slijedeće podatke

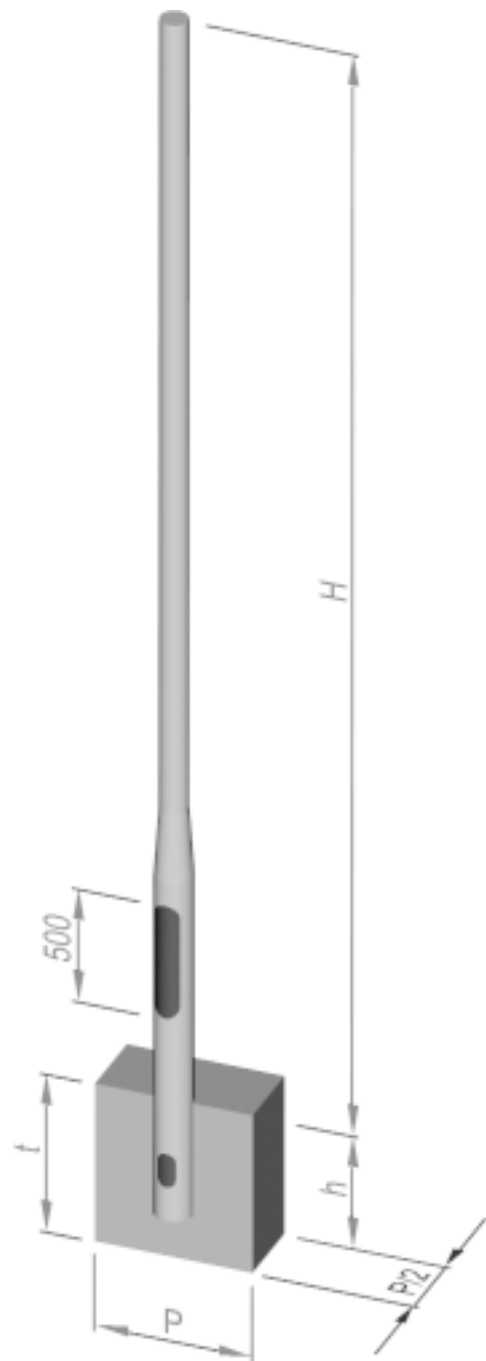
- katalošku oznaku stupa,
- tip svjetiljke, sa nazivom proizvođača, koja se ugrađuje na stup,
- tip razvodne kutije, sa imenom proizvođača, koja se ugrađuje u stup,
- vrstu antikorozivne zaštite.

Detalj vrha stupa izrađuje se prema tipu svjetiljke, a maksimalna površina izložena djelovanju vjetra na vrhu stupa iznosi 0,50 m².

ORDER CODE

The following data shall be furnished with the order:

- Pole catalogue order code
- Type of luminaire to be mounted on the pole and name of the manufacturer,
- Type of junction box to be installed in the pole and name of the manufacturer,
- Type of corrosion protection



| Kataloški broj <i>Catalogue number</i> | Dimenzije - <i>Dimensions</i> | | | Površina stupa <i>Surface</i> m ² | Masa <i>Mass</i> kg |
|---|----------------------------------|--------|---------|--|---------------------------|
| | H m | h m | d mm | | |
| CRS 1A – 300 | 3,0 | 76,1 | 159 | 1,55 | 44 |
| CRS 1A – 350 | 3,5 | 76,1 | 159 | 1,65 | 46 |
| CRS 1A – 400 | 4,0 | 76,1 | 159 | 1,80 | 49 |
| CRS 1A – 450 | 4,5 | 76,1 | 159 | 1,90 | 52 |
| CRS 1A – 500 | 5,0 | 76,1 | 159 | 2,00 | 54 |
| CRS 1A – 550 | 5,5 | 76,1 | 159 | 2,15 | 57 |
| CRS 1A – 600 | 6,0 | 76,1 | 159 | 2,25 | 60 |

CRS 1B

OZNAKA ZA NARUDŽBU

U slučaju narudžbe treba navesti slijedeće podatke

- katalošku oznaku stupa,
- tip svjetiljke, sa nazivom proizvođača, koja se ugrađuje na stup,
- tip razvodne kutije, sa imenom proizvođača, koja se ugrađuje u stup,
- vrstu antikorozivne zaštite.

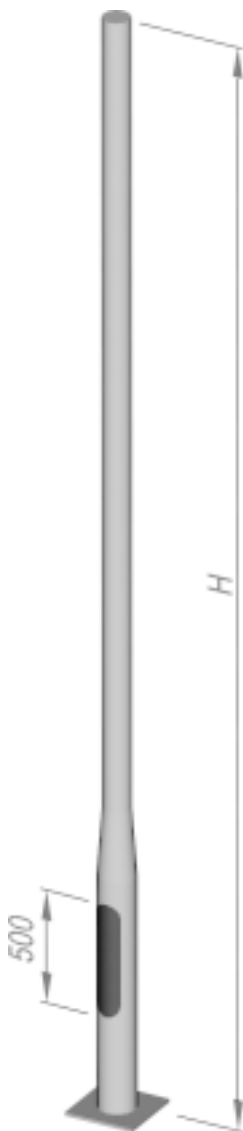
Detalj vrha stupa izrađuje se prema tipu svjetiljke, a maksimalna površina izložena djelovanju vjetra na vrhu stupa iznosi 0,50 m². Temeljni vijci se posebno naručuju.

ORDER CODE

The following data shall be furnished with the order:

- Pole catalogue order code
- Type of luminaire to be mounted on the pole and name of the manufacturer,
- Type of junction box to be installed in the pole and name of the manufacturer,
- Type of corrosion protection

The pole top segment shall be manufactured according to the luminaire type, and maximum area exposed to wind on the pole top shall be 0.500 m². Anchor bolts shall be ordered separately.

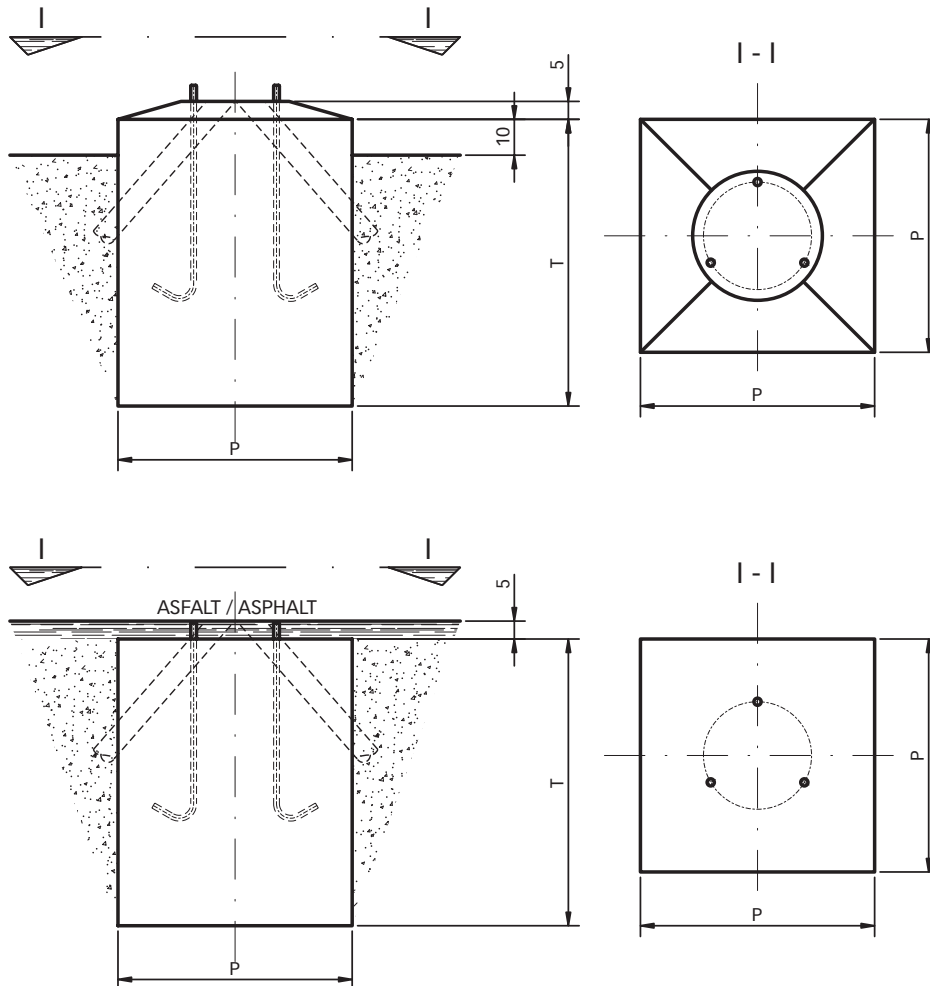


| Kataloški broj <i>Catalogue number</i> | Dimenzije - <i>Dimesions</i> | | | Površina stupa <i>Surface</i> m ² | Masa <i>Mass</i> kg |
|---|---------------------------------|--------|---------|--|---------------------------|
| | H m | h m | d mm | | |
| CRS 1B - 300 | 3,0 | 76,1 | 159 | 1,40 | 51 |
| CRS 1B - 350 | 3,5 | 76,1 | 159 | 1,50 | 54 |
| CRS 1B - 400 | 4,0 | 76,1 | 159 | 1,60 | 57 |
| CRS 1B - 450 | 4,5 | 76,1 | 159 | 1,75 | 59 |
| CRS 1B - 500 | 5,0 | 76,1 | 159 | 1,85 | 62 |
| CRS 1B - 550 | 5,5 | 76,1 | 159 | 1,95 | 64 |
| CRS 1B - 600 | 6,0 | 76,1 | 159 | 2,10 | 67 |

TEMELJENJE / FOUNDATIONS

Temelji rasvjetnih stupova tipa CRS 1A i CRS 1B projektirani su kao betonski blok temelji, za tla čija je nosivost $\sigma_{\text{dop,tla}} \leq 20 \text{ N/cm}^2$, a temelji se izrađuju od betona kvalitete MB15. U koliko se stupovi temelje na zelenim površinama potrebno je gornji dio temelja izdignuti cca 10 cm.

CRS 1A and CRS 1B lighting pole foundations are designed as concrete block foundations, for soil bearing capacity of $\sigma_{\text{dop,tla}} \leq 20 \text{ N/cm}^2$. Foundations are constructed from MB-15 concrete. If pole foundations are placed in green areas, then the upper foundation segment should be raised by ca 10 cm.



| Stup Pole (m) | Dimenzije - Dimensions | | | Temeljni vijci Anchor bolts n×M |
|--|------------------------|-----------|------------------------|---------------------------------------|
| | P (cm) | T (cm) | V (m ³) | |
| CRS 1A/1B - 300 CRS 1A/1B - 350 CRS 1A/1B - 400 CRS 1A/1B - 450 | 60 | 70 | 0,53 | 3×M20 |
| CRS 1A/1B - 500 CRS 1A/1B - 550 CRS 1A/1B - 600 | 70 | 80 | 0,83 | 3×M20 |

Cijevne rasvjetne stupove tipa CRS 2 proizvodimo kao stupove CRS 2A i CRS 2B. Prema svojoj namjeni oni su identični, a razlikuju se po načinu temeljenja. Rasvjetni stupovi tipa CRS 2A ugrađuju se u betonske temelje, a stupovi tipa CRS 2B ugrađuju se na betonske temelje pomoću sidrenih vijaka.

Rasvjetni stupovi tipa CRS 2A i CRS 2B imaju najširu primjenu kod rasvjete gradskih ulica, aleja, parkova, gradskih i izvangradskih prometnica, križanja ulica, trgova, pristaništa, autobusnih i željezničkih kolodvora, te industrijskih objekata.

U kataloškoj oznaci stupova, zadnja znamenka 1(2) ili 3 određuje područje za koje se mogu primjenjivati rasvjetni stupovi:

- ZONA 1 zona umjerenih i jakih vjetrova,
- ZONA 3 zona jake bure.

Stupovi se izrađuju iz kvalitetnih bešavnih cijevi, koje se spajaju elektrozavarivanjem. Zaštita stupova od atmosferskih utjecaja rješena je tropseke i normalne uvjete rada, kao i za objekte uz morsku obalu i industrijska područja s jako zagađenom atmosferom. Za sve rasvjetne stupove posjedujemo ateste koji su dobiveni od ovlaštenog poduzeća, na osnovi ispitivanja stupova probnim opterećenjem.

Naša standardna zaštita od korozije izvodi se vrućim pocinčavanjem ili osnovnim zaštitnim premazima. Za objekte uz morsku obalu i u industrijskim područjima s jako zagađenom atmosferom, preporučujemo zaštitu od korozije vrućim pocinčavanjem.

Sidreni vijci i matice se također zaštićuju od korozije vrućim pocinčavanjem.

CRS 2 tubular lighting poles are constructed as CRS 2A and CRS 2B poles. They are identical with regard to their application while they differ in the foundation method. CRS 2A lighting poles are embedded in concrete foundations, while CRS 2B are installed on concrete foundations by means of anchor bolts.

Lighting poles of CRS 2A and CRS 2B type are widely applied for lighting of streets, alleys, parks, roads and motorways, road crossings, squares, piers, bus and railway stations, and industrial facilities as well.

In pole catalogue order code, the last figure 1 (2) or 3 refers to the area where lighting poles may be used:

- ZONE 1 Moderate and violent wind zone
- ZONE 3 North-eastern wind zone

The poles are constructed from high-grade seamless tubes that are connected by electric welding.

Protection of poles against atmospheric influences is provided for both normal and tropical conditions, as well as for facilities and structures located by the seashore and in highly polluted industrial areas. All lighting poles have been certificated by authorized companies, after having successfully passed the trial load tests.

Our standard corrosion protection is carried out by hot dip galvanizing or by prime painting. For facilities and structures along the seashore and in highly polluted industrial areas, corrosion protection by hot dip galvanizing is recommended.

Anchor bolts and nuts shall be also protected against corrosion by hot dip galvanizing.

RASVJETNI STUPOVI CRS 2 LIGHTING POLES CRS 2

CRS 2A

OZNAKA ZA NARUDŽBU

U slučaju narudžbe treba navesti slijedeće podatke

- katalošku oznaku stupa,
- tip svjetiljke, sa nazivom proizvođača, koja se ugrađuje na stup,
- tip razvodne kutije, sa imenom proizvođača, koja se ugrađuje u stup,
- vrstu antikorozivne zaštite.

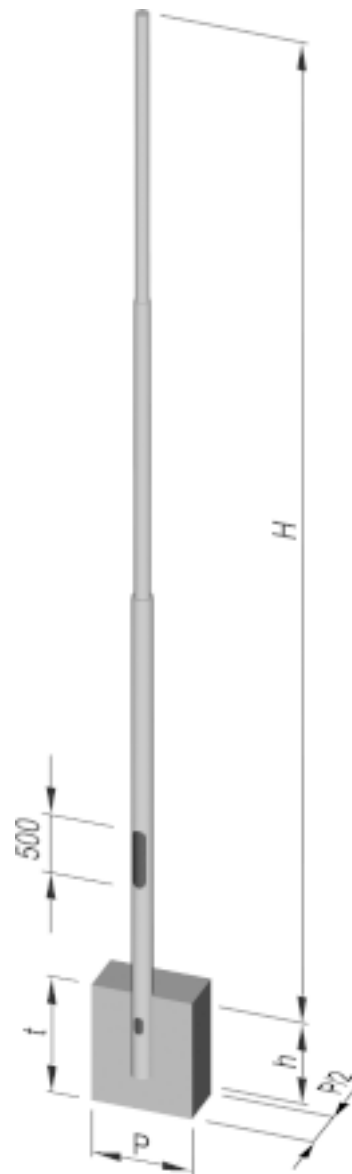
Detalj vrha stupa izrađuje se prema tipu svjetiljke, a maksimalna površina izložena djelovanju vjetra na vrhu stupa iznosi 0,40 m².

ORDER CODE

The following data shall be furnished with the order:

- Pole catalogue order code
- Type of luminaire to be mounted on the pole and name of the manufacturer,
- Type of junction box to be installed in the pole and name of the manufacturer,
- Type of corrosion protection

| Kataloški broj <i>Catalogue number</i> | Dimenzije - <i>Dimesions</i> | | | | Površina stupa <i>Surface</i> m ² | Masa <i>Mass</i> kg |
|---|------------------------------|-----|-------|-------|--|---------------------------|
| | H | h | d | D | | |
| | m | m | mm | mm | | |
| CRS 2A - 7 - 1 | 7,0 | 0,7 | 76,1 | 133,0 | 2,63 | 79,5 |
| CRS 2A - 7 - 3 | 7,0 | 0,7 | 108,0 | 159,0 | 3,35 | 116,0 |
| CRS 2A - 8 - 1 | 8,0 | 0,7 | 76,1 | 133,0 | 2,87 | 85,0 |
| CRS 2A - 8 - 3 | 8,0 | 0,7 | 108,0 | 159,0 | 3,68 | 130,5 |
| CRS 2A - 9 - 1 | 9,0 | 0,9 | 76,1 | 133,0 | 3,44 | 105,0 |
| CRS 2A - 9 - 3 | 9,0 | 0,9 | 108,0 | 159,0 | 4,12 | 139,0 |
| CRS 2A - 10 - 1 | 10,0 | 0,9 | 76,1 | 133,0 | 3,85 | 118,5 |
| CRS 2A - 10 - 3 | 10,0 | 0,9 | 108,0 | 159,0 | 4,62 | 157,5 |



CRS 2A

OZNAKA ZA NARUDŽBU

U slučaju narudžbe treba navesti slijedeće podatke

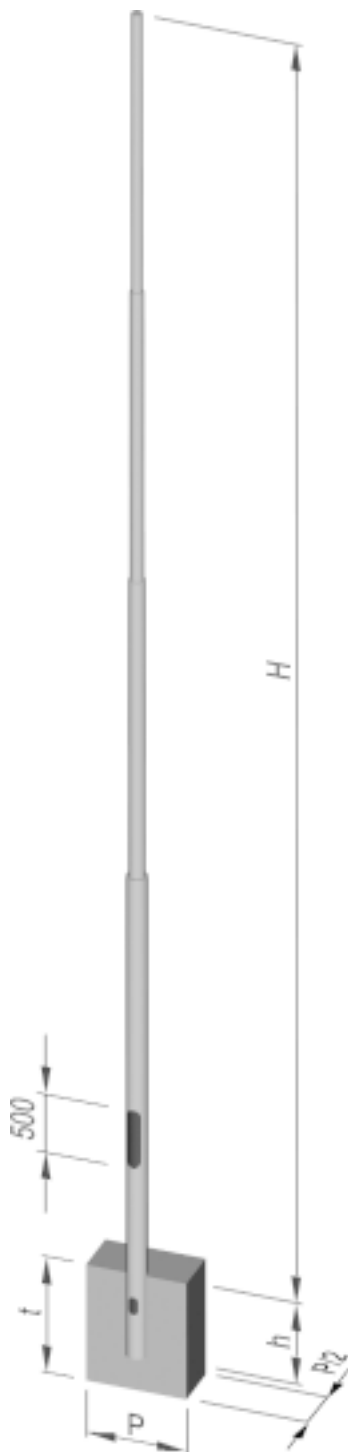
- katalošku oznaku stupa,
- tip svjetiljke, sa nazivom proizvođača, koja se ugrađuje na stup,
- tip razvodne kutije, sa imenom proizvođača, koja se ugrađuje u stup,
- vrstu antikorozivne zaštite.

Detalj vrha stupa izrađuje se prema tipu svjetiljke, a maksimalna površina izložena djelovanju vjetra na vrhu stupa iznosi 0,30 m².

ORDER CODE

The following data shall be furnished with the order:

- Pole catalogue order code
- Type of luminaire to be mounted on the pole and name of the manufacturer,
- Type of junction box to be installed in the pole and name of the manufacturer,
- Type of corrosion protection



| Kataloški broj <i>Catalogue number</i> | Dimenzije - <i>Dimesions</i> | | | | Površina stupa <i>Surface</i> m ² | Masa <i>Mass</i> kg |
|---|------------------------------|-----|-------|-------|--|---------------------------|
| | H | h | d | D | | |
| | m | m | mm | mm | | |
| CRS 2A – 11 – 1 | 11,0 | 1,0 | 76,1 | 159,0 | 4,45 | 152,5 |
| CRS 2A – 11 – 3 | 11,0 | 1,0 | 108,0 | 177,8 | 5,48 | 202,0 |
| CRS 2A – 12 – 1 | 12,0 | 1,0 | 76,1 | 159,0 | 4,96 | 169,0 |
| CRS 2A – 12 – 3 | 12,0 | 1,0 | 108,0 | 177,8 | 6,04 | 223,0 |

CRS 2B

OZNAKA ZA NARUDŽBU

U slučaju narudžbe treba navesti slijedeće podatke

- katalošku oznaku stupa,
- tip svjetiljke, sa nazivom proizvođača, koja se ugrađuje na stup,
- tip razvodne kutije, sa imenom proizvođača, koja se ugrađuje u stup,
- vrstu antikorozivne zaštite.

Detalj vrha stupa izrađuje se prema tipu svjetiljke, a maksimalna površina izložena djelovanju vjetrova na vrhu stupa iznosi 0,40 m². Temeljni vijci se posebno naručuju.

ORDER CODE

The following data shall be furnished with the order:

- Pole catalogue order code
- Type of luminaire to be mounted on the pole and name of the manufacturer,
- Type of junction box to be installed in the pole and name of the manufacturer,
- Type of corrosion protection

The pole top segment shall be manufactured according to the luminaire type, and maximum area exposed to wind on the pole top shall be 0.500 m². Anchor bolts shall be ordered separately.

| Kataloški broj <i>Catalogue number</i> | Dimenzije - <i>Dimesions</i> | | | Površina stupa <i>Surface</i> m ² | Masa <i>Mass</i> kg |
|---|---------------------------------|--------|---------|--|---------------------------|
| | H m | h m | d mm | | |
| CRS 2B - 7 - 1 | 7,0 | 76,1 | 133,0 | 2,48 | 80,5 |
| CRS 2B - 7 - 3 | 7,0 | 108,0 | 159,0 | 3,28 | 114,0 |
| CRS 2B - 8 - 1 | 8,0 | 76,1 | 133,0 | 2,72 | 86,0 |
| CRS 2B - 8 - 3 | 8,0 | 108,0 | 159,0 | 3,48 | 128,5 |
| CRS 2B - 9 - 1 | 9,0 | 76,1 | 133,0 | 3,21 | 103,5 |
| CRS 2B - 9 - 3 | 9,0 | 108,0 | 159,0 | 4,06 | 141,5 |
| CRS 2B - 10 - 1 | 10,0 | 76,1 | 133,0 | 3,62 | 116,5 |
| CRS 2B - 10 - 3 | 10,0 | 108,0 | 159,0 | 4,56 | 160,5 |



CRS 2B

OZNAKA ZA NARUDŽBU

U slučaju narudžbe treba navesti slijedeće podatke

- katalošku oznaku stupa,
- tip svjetiljke, sa nazivom proizvođača, koja se ugrađuje na stup,
- tip razvodne kutije, sa imenom proizvođača, koja se ugrađuje u stup,
- vrstu antikorozivne zaštite.

Detalj vrha stupa izrađuje se prema tipu svjetiljke, a maksimalna površina izložena djelovanju vjetra na vrhu stupa iznosi 0,30 m². Temeljni vijci se posebno naručuju.

ORDER CODE

The following data shall be furnished with the order:

- Pole catalogue order code
- Type of luminaire to be mounted on the pole and name of the manufacturer,
- Type of junction box to be installed in the pole and name of the manufacturer,
- Type of corrosion protection

The pole top segment shall be manufactured according to the luminaire type, and maximum area exposed to wind on the pole top shall be 0.500 m². Anchor bolts shall be ordered separately.

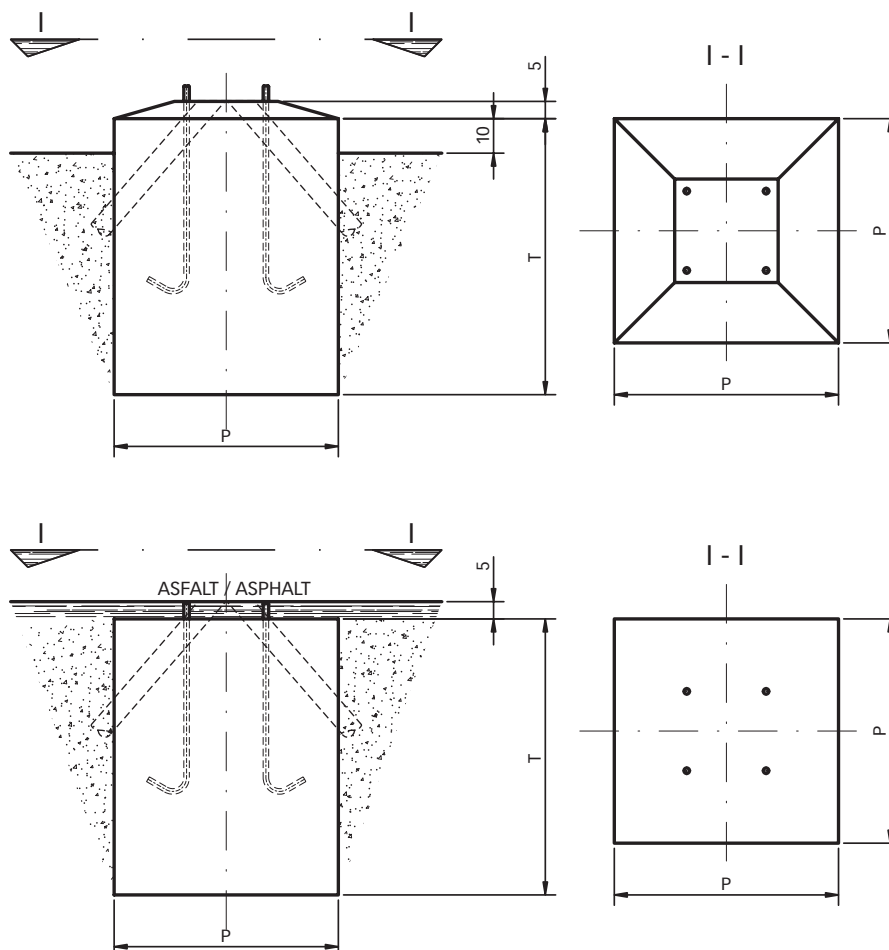


| Kataloški broj <i>Catalogue number</i> | Dimenzije - <i>Dimesions</i> | | | Površina stupa <i>Surface</i> m ² | Masa <i>Mass</i> kg |
|---|---------------------------------|--------|---------|--|---------------------------|
| | H m | h m | d mm | | |
| CRS 2B - 11 - 1 | 11,0 | 76,1 | 159,0 | 4,40 | 153,5 |
| CRS 2B - 11 - 3 | 11,0 | 108,0 | 177,8 | 5,37 | 204,5 |
| CRS 2B - 12 - 1 | 12,0 | 76,1 | 159,0 | 4,90 | 170,0 |
| CRS 2B - 12 - 3 | 12,0 | 108,0 | 177,8 | 5,93 | 226,0 |

TEMELJENJE / FOUNDATIONS

Temelji rasvjetnih stupova tipa KORS 2A i KORS 2B projektirani su kao betonski blok temelji, za tla čija je nosivost $\sigma_{dop,tla} \leq 20 \text{ N/cm}^2$, a temelji se izrađuju od betona kvalitete MBD20. U koliko se stupovi temelje na zelenim površinama potrebno je gornji dio temelja izdignuti cca 10 cm.

KORS 2A and KORS 2B lighting pole foundations are designed as concrete block foundations, for soil bearing capacity of $\sigma_{dop,tla} \leq 20 \text{ N/cm}^2$. Foundations are constructed from MB-20 concrete. If the pole foundations are placed in green areas, then the upper foundation segment should be raised by ca 10 cm.



| Stup Pole (m) | Dimenzije - Dimensions | | | Temeljni vijci Anchor bolts n x M |
|--|------------------------|-----------|------------------------|---|
| | P (cm) | T (cm) | V (m ³) | |
| CRS 2A/2B - 7 - 1 CRS 2A/2B - 8 - 1 | 70 | 80 | 0,39 | 4xM16 |
| CRS 2A/2B - 9 - 1 CRS 2A/2B - 10 - 1 | 80 | 100 | 0,64 | 4xM20 |
| CRS 2A/2B - 11 - 1 CRS 2A/2B - 12 - 1 | 80 | 100 | 0,64 | 4xM20 |
| CRS 2A/2B - 7 - 3 CRS 2A/2B - 8 - 3 | 80 | 100 | 0,66 | 4xM20 |
| CRS 2A/2B - 9 - 3 CRS 2A/2B - 10 - 3 | 90 | 100 | 0,81 | 4xM20 |
| CRS 2A/2B - 11 - 3 CRS 2A/2B - 12 - 3 | 100 | 110 | 1,10 | 4xM24 |

Na osnovi dugogodišnjeg iskustva pri izradi poligonalnih limenih limenih stupova razvijena je serija uzdužno usadnih stupova tipa SUN. Osnovno obilježje SUN stupova je usadno nastavljanje segmenata navlačenjem gornjeg segmenta na donji. Sigurnost ovakvog nastavka je provjerena ispitivanjem protoripa, što je dokumentirano atestom Građevinskog fakulteta Sveučilišta u Zagrebu.

Serija SUN stupova obuhvaća stupove visine 14, 16, 18 i 20 metara. Za svaku visinu imamo više tipova stupova (N, P, Z, W), zbog različitog opterećenja koje stupovi mogu nositi.

Namjena stupova je mnogostruka: rasvjeta prometnica, industrijskih pogona, luka i skladišta, gromobranska zaštita, nošenje antena, i slično.

Segmenti stupova se izrađuju iz kvalitetnog čeličnog lima, koji se strojno oblikuje u određene segmente, a zatim se zavaruje pomoću stroja za automatsko zavarivanje. Zaštita stupova od atmosferskih utjecaja rješen je tropseke i normalne uvjete rada, kao i za objekte uz morsku obalu i industrijska područja s jako zagađenom atmosferom.

Oprema stupa ovisi o namjeni stupa i u narudžbi je treba specificirati.

Uz SUN stupove isporučujemo i rasvjetne košare, nasadnike za svjetiljke, gromobranske hvataljke, ljestve sa lednom zaštitom.

Za veća vršna opterećenja od onih navedenih u ovom katalogu izrađujemo stupove prema dogovoru i posebnim rješenjima. Sidreni vijci nisu uključeni u masu stupova.

Based on our long-time experience in construction of polygonal sheet metal poles, a new series of SUN-type telescopic poles has been developed. In general, The SUN poles are characterized by the slip joint method, in other words by slipping the upper segment over the lower one. The slip joint undergoes a prototype test, which is documented by the test certificate of the Civil Engineering Institute in Zagreb.

The SUN pole series comprises poles in heights of 14, 16, 18 and 20 meters. There are several types of poles (N, P, Z, W) that can be offered for each height, depending on the different load they can accept.

The SUN poles are widely applied for lighting of roads, industrial facilities, piers and warehouses, lightning protection accessories, antenna portals, etc.

The pole segments are constructed from high-grade steel sheet, they are machined and welded by automatic welding set. Protection of poles against atmospheric influences is provided for both normal and tropical conditions, as well as for facilities and structures located by the seashore and in highly polluted industrial areas. The pole accessories depend on the pole application to be specified in the order.

Along with SUN poles we also deliver floodlight platforms, luminaire brackets, lightning protection accessories, safety ladders with climber assembly.

For top loads greater than those mentioned in this catalogue, we manufacture poles in accordance with agreements and special solutions. Anchor bolts are not included in the pole mass.

RASVJETNI STUPOVI SUN SUN LIGHTING POLES

KARAKTERISTIKE STUPOVA /POLES FEATURES

| TIP STUPA POLE TYPE | L (m) | d (mm) | D (mm) | B (n) | V _o (N) | H _o (N) Q (N/m ²) | | | H _o * (N) Q (N/m ²) | | | MASA MASS (kg) |
|---------------------------|----------|-----------|-----------|----------|-----------------------|---|------|------|---|------|------|----------------------|
| | | | | | | 600 | 900 | 1300 | 600 | 900 | 1300 | |
| SUN-14 N | 14 | 120 | 284 | 4 | 1200 | 970 | 650 | 210 | 630 | 125 | 0 | 300 |
| SUN-14 P | | 144 | 312 | 4 | 2000 | 1920 | 1550 | 1050 | 1570 | 1020 | 30 | 352 |
| SUN-14 Z | | 166 | 327 | 8 | 2500 | 2850 | 2450 | 1900 | 2500 | 1950 | 120 | 445 |
| SUN-14 W | | 194 | 376 | 8 | 3000 | 5050 | 4600 | 3950 | 4750 | 4100 | 3250 | 670 |
| SUN-15 N | 15 | 124 | 296 | 4 | 1500 | 1450 | 1100 | 600 | 1100 | 550 | 0 | 352 |
| SUN-15 P | | 144 | 324 | 4 | 2000 | 1880 | 1470 | 930 | 1500 | 900 | 110 | 406 |
| SUN-15 Z | | 166 | 339 | 8 | 3000 | 2830 | 2380 | 1780 | 2450 | 1820 | 100 | 511 |
| SUN-15 W | | 194 | 389 | 8 | 3500 | 5000 | 4500 | 3800 | 4650 | 3950 | 3000 | 720 |
| SUN-16 N | 16 | 144 | 336 | 4 | 2000 | 1840 | 1400 | 800 | 1450 | 800 | 0 | 446 |
| SUN-16 P | | 166 | 350 | 8 | 3000 | 2560 | 2070 | 1410 | 2350 | 1700 | 750 | 555 |
| SUN-16 Z | | 194 | 402 | 8 | 3500 | 3950 | 3400 | 2650 | 3550 | 2800 | 1750 | 636 |
| SUN-16 W | | 194 | 402 | 8 | 3500 | 4950 | 4400 | 3600 | 4550 | 3800 | 2750 | 794 |
| SUN-18 N | 18 | 144 | 360 | 8 | 1500 | 1750 | 1250 | 550 | 1300 | 550 | 0 | 549 |
| SUN-18 P | | 166 | 373 | 8 | 2500 | 2650 | 2100 | 1300 | 2200 | 1400 | 350 | 625 |
| SUN-18 Z | | 180 | 396 | 8 | 3000 | 3950 | 3350 | 2500 | 3500 | 2650 | 1550 | 801 |
| SUN-18 W | | 224 | 458 | 8 | 3500 | 6900 | 6150 | 5150 | 6400 | 5500 | 4200 | 1169 |
| SUN-20 N | 20 | 166 | 396 | 8 | 2000 | 2550 | 1900 | 1000 | 2100 | 1150 | 0 | 811 |
| SUN-20 P | | 180 | 420 | 8 | 3000 | 3900 | 3150 | 2200 | 3400 | 2450 | 1150 | 948 |
| SUN-20 Z | | 194 | 454 | 8 | 3500 | 5800 | 5000 | 4000 | 5300 | 4300 | 2900 | 1253 |
| SUN-20 W | | 224 | 484 | 8 | 4000 | 7950 | 7100 | 5950 | 7400 | 6300 | 4850 | 1535 |

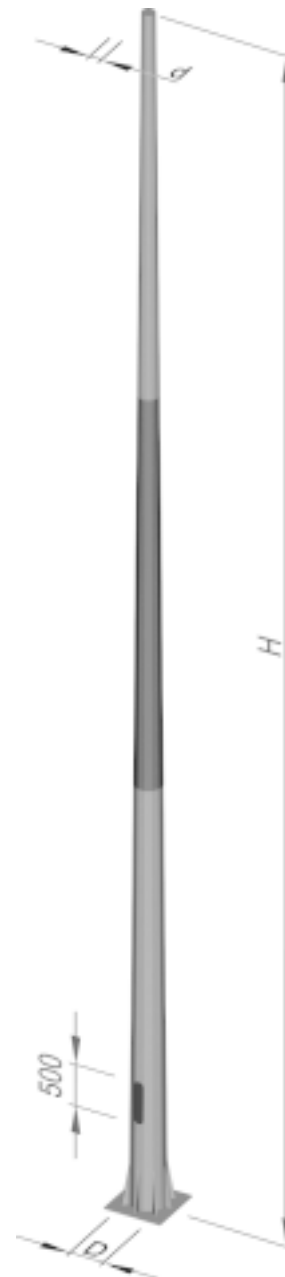
Vodoravna vršna sila za slučaj ugradnje ljestava i leđobrana.
Horizontal top load in case of safety ladder mounting.

NAPOMENA :

Za veća vršna opterećenja izrađujemo stupove prema dogovoru i posebnom rješenju. Sidreni vijci nisu uključeni u navedene mase.

NOTES :

For greater peak loads we manufacture poles on request according to special technical solutions. Anchor bolts are not included in the mass given above.



ISPORUKA I MONTAŽA STUPA /DELIVERY AND POLE MOUNTING

Stupove SUN i opremu (košare za reflektore, nasadnike za svjetiljke, ljestve s leđobranom, gromobranske hvataljke i slično) isporučujemo u dijelovima. Pakiranje dijelova ovisi o daljini prijevoza. Sastavni dio dokumentacije stupa su montažni nacrti i upute za montažu.

Montaža stupa je predviđena u dva dijela:

1. sastavljanje dijelova na tlu,
2. podizanje sastavljenog stupa s opremom.

Uz seriju naručenih stupova kupac dobija i alat za sastavljanje elemenata stupa. Rad na sastavljanju i podizanju stupa treba obaviti prema uputama za montažu uz pridržavanja svih mjera zaštite na radu propisanih zakonskim propisima.

SUN poles and accessories (floodlight platforms, luminaire brackets, safety ladders with climber assembly, lightning protection accessories and similar) shall be delivered in segments. Packing of segments shall depend on the length of transport. Assembly drawings and instructions shall be included in the pole documentation.

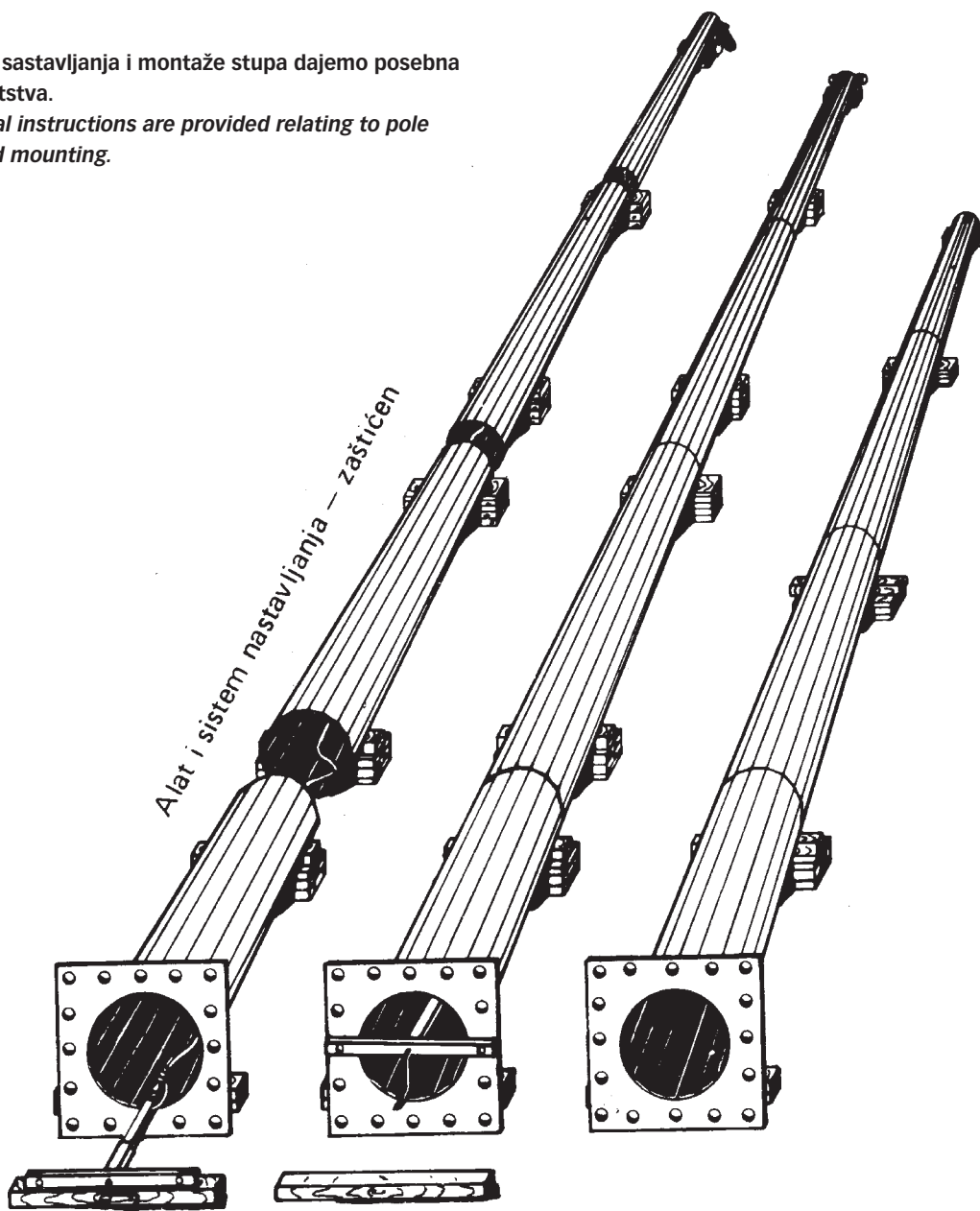
Installation of poles is anticipated in two parts:

1. *Assembly of segments on the ground,*
2. *Erection of the assembled pole together with the accessories.*

Along with the ordered poles, tools for assembly of pole segments shall be also delivered to the customer. Assembly and erection of poles should be carried out pursuant to the instructions and occupational safety and health measures prescribed by the legal regulations

Za postupak sastavljanja i montaže stupa dajemo posebna tehnička uputstva.

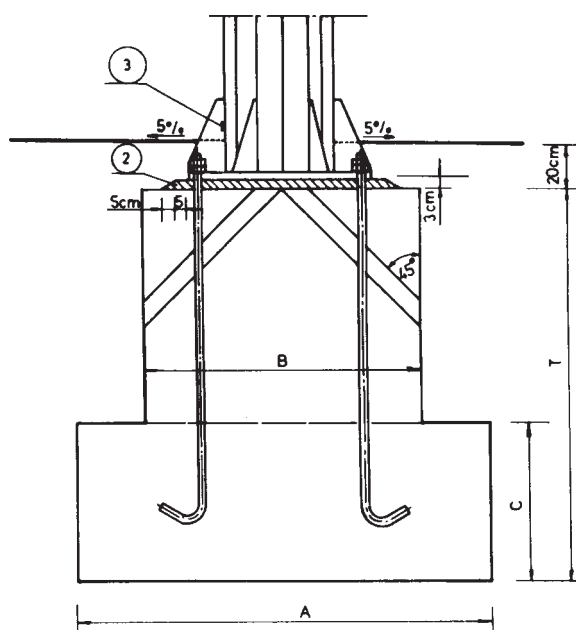
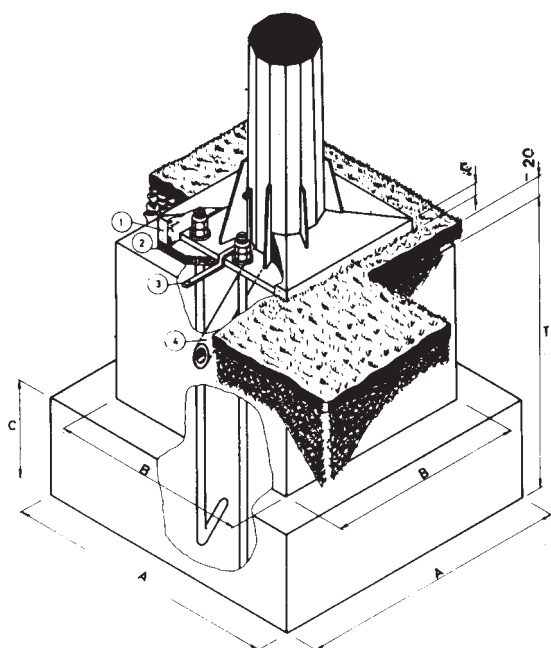
Detail technical instructions are provided relating to pole assembly and mounting.



TEMELJA/FOUNDATIONS

Temeljenje SUN stupova predviđeno je gravitacionim temeljima koji imaju proširenu temeljnu stopu kvadratnog tlocrtnog oblika. Dimenzije temelja u tablici određene su za nosivosti tla 10, 20 i 30 N/cm². Koeficijent sigurnosti protiv prevrtanja je $k_s = 1,50$.

The anticipated SUN pole founding shall be carried out by gravitational foundations with a widened foundation pad of square top view shape. Foundation dimensions in the table are designed for soil bearing capacity of 10, 20 and 30 N/cm². The safety overturning coefficient is $k_s = 1.50$.



| | $\sigma_{dop}(\sigma_{all})$ 10 N/cm ² | | | | $\sigma_{dop}(\sigma_{all})$ 20 N/cm ² | | | | $\sigma_{dop}(\sigma_{all})$ 30 N/cm ² | | | |
|----------|---|-----|-----|-----|---|-----|----|-----|---|-----|----|-----|
| | A | B | C | T | A | B | C | T | A | B | C | T |
| SUN-14 N | 105 | 105 | - | 120 | 100 | 100 | - | 110 | 90 | 90 | - | 100 |
| SUN-14 P | 185 | 130 | 40 | 155 | 170 | 130 | 30 | 145 | 170 | 130 | 30 | 135 |
| SUN-14 Z | 215 | 145 | 50 | 175 | 190 | 140 | 35 | 160 | 185 | 145 | 30 | 150 |
| SUN-14 W | 235 | 145 | 65 | 175 | 205 | 145 | 45 | 160 | 200 | 145 | 40 | 150 |
| SUN-15 N | 185 | 130 | 40 | 155 | 170 | 130 | 30 | 145 | 125 | 125 | - | 130 |
| SUN-15 P | 190 | 130 | 45 | 155 | 175 | 130 | 35 | 145 | 175 | 130 | 30 | 135 |
| SUN-15 Z | 215 | 145 | 50 | 175 | 195 | 145 | 40 | 160 | 190 | 145 | 35 | 150 |
| SUN-15 W | 245 | 145 | 75 | 175 | 230 | 145 | 60 | 165 | 220 | 145 | 55 | 155 |
| SUN-16 N | 200 | 130 | 50 | 160 | 185 | 130 | 40 | 145 | 180 | 130 | 35 | 135 |
| SUN-16 P | 210 | 130 | 60 | 160 | 205 | 130 | 55 | 150 | 200 | 135 | 50 | 140 |
| SUN-16 Z | 235 | 145 | 65 | 175 | 205 | 145 | 45 | 160 | 200 | 145 | 40 | 150 |
| SUN-16 W | 245 | 145 | 75 | 175 | 230 | 145 | 60 | 165 | 220 | 145 | 55 | 155 |
| SUN-18 N | 200 | 130 | 50 | 160 | 185 | 130 | 40 | 145 | 190 | 130 | 45 | 135 |
| SUN-18 P | 220 | 135 | 65 | 160 | 215 | 135 | 60 | 150 | 210 | 135 | 55 | 140 |
| SUN-18 Z | 245 | 140 | 70 | 175 | 230 | 145 | 60 | 165 | 220 | 145 | 55 | 155 |
| SUN-18 W | 245 | 190 | 40 | 180 | 240 | 190 | 40 | 170 | 240 | 190 | 40 | 160 |
| SUN-20 N | 230 | 135 | 70 | 160 | 225 | 135 | 65 | 150 | 220 | 135 | 60 | 140 |
| SUN-20 P | 245 | 145 | 75 | 175 | 230 | 145 | 60 | 165 | 220 | 145 | 55 | 155 |
| SUN-20 Z | 245 | 145 | 40 | 180 | 240 | 195 | 40 | 170 | 235 | 185 | 40 | 160 |
| SUN-20 W | 260 | 140 | 150 | 210 | 250 | 190 | 40 | 195 | 250 | 190 | 40 | 180 |

NASADNICI I KOŠARE / LAMP AND REFLECTORS SUPPORTS

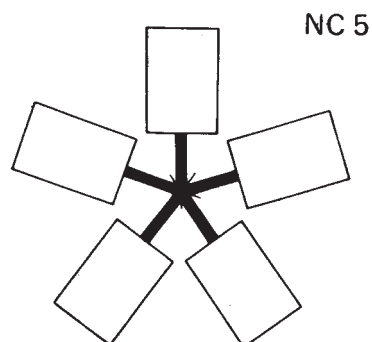
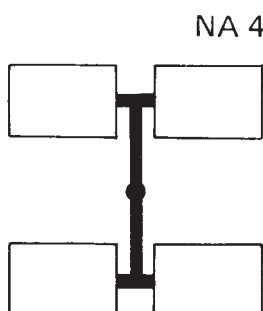
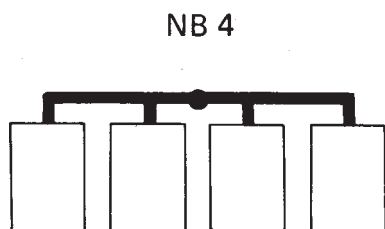
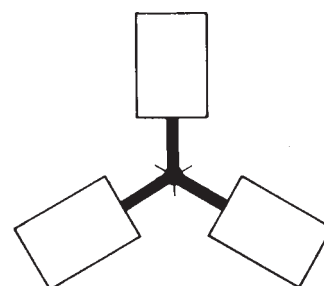
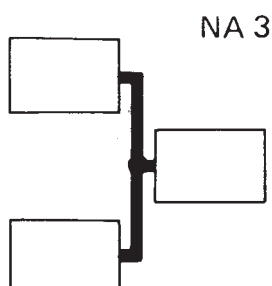
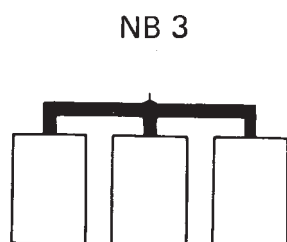
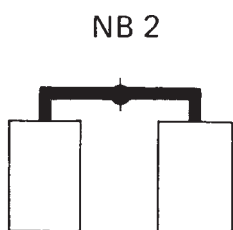
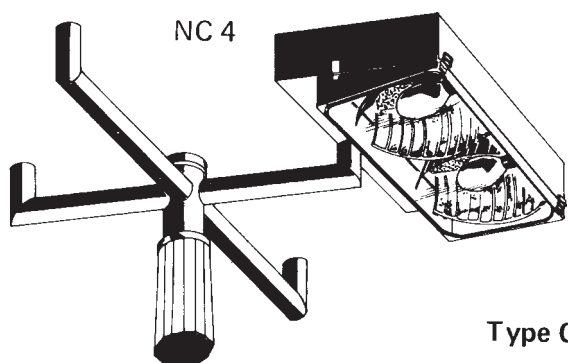
Standardna oprema za SUN stupove je: košara za smještaj reflektora, nasadnici za svjetiljke, gromobranska hvataljka za gromobranske stupove, ljestve s leđobranom.

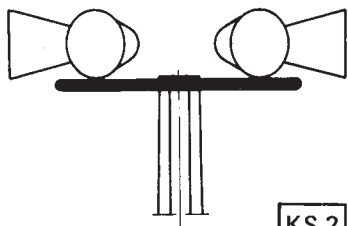
Standard accessories for SUN poles are: floodlight and luminaire brackets, lightning protection accessories and safety ladders with climber assembly.

Kod narudžbe stupova potrebno je specificirati sve što se naručuje uz stup, te obavezno naznačiti tip i broj elektryuređaja (svjetiljke, reflektori, prigušnice, i slično), koji se ugrađuju na stup ili u stup.

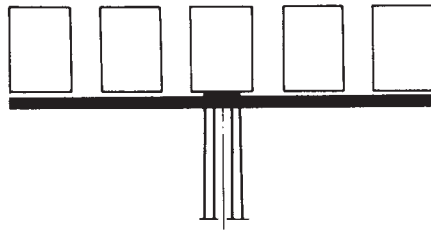
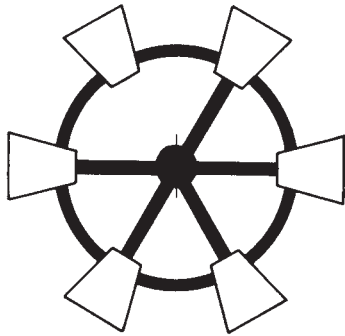
When ordering poles, the entire accessories should be ordered together with the pole, and type and number of electrical devices should be determined as well (luminaires, floodlights, damper coils and similar) that shall be installed on or in the pole.

Vrste nasadnika Types of lamp's supports

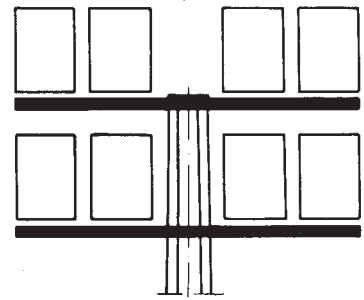




KS 2



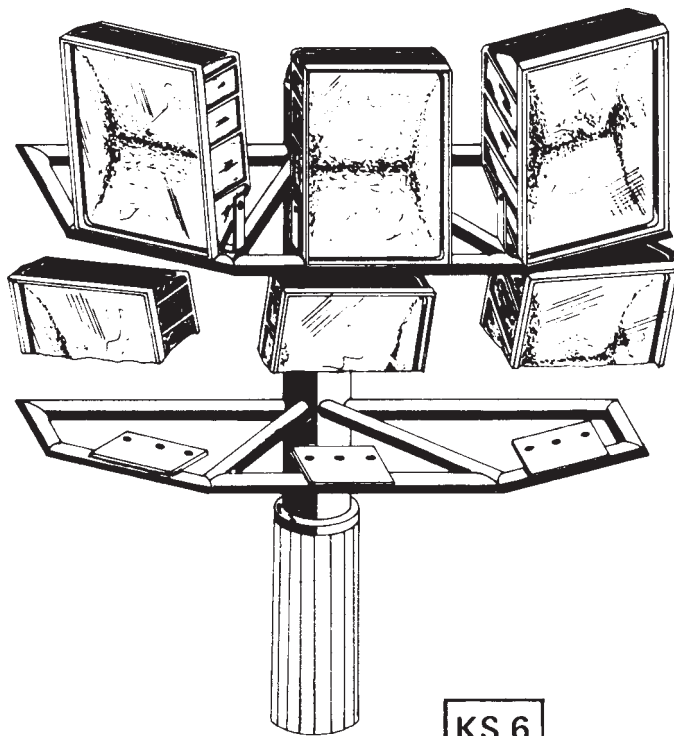
KS 3



KS 4



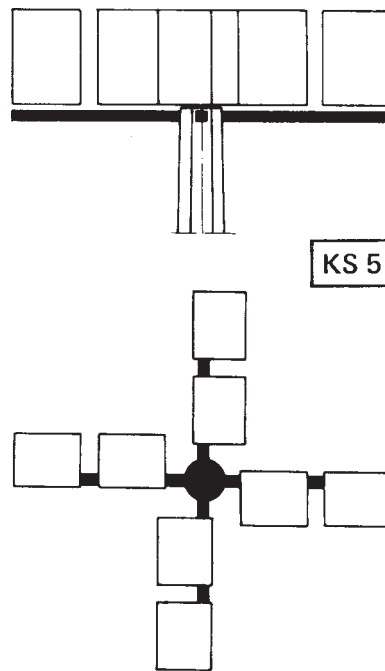
VRSTE KOŠARA
TYPES OF LANTERN SUPPORTS



KS 6

Tip košare određuje se prema tipu i broju reflektora

The type of lantern support is determined according to the type and number of reflectors.

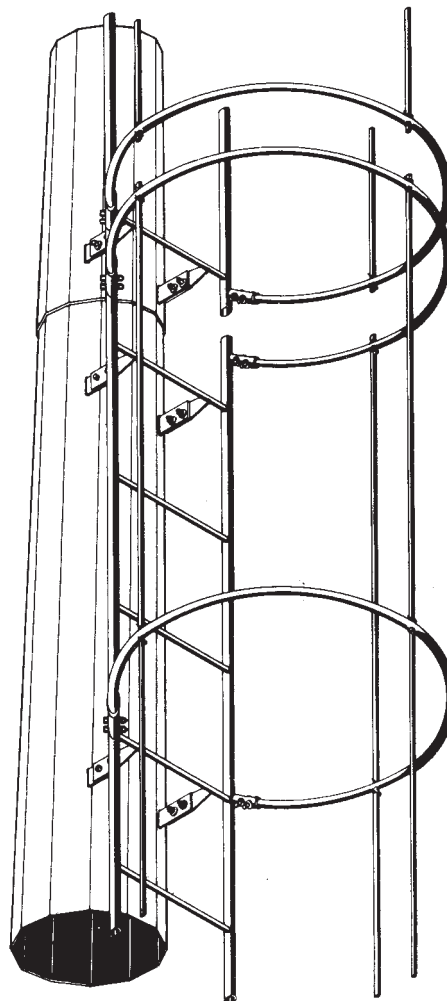


Ljestve s leđobranom

Ljestve s leđobranom su dio opreme koji se posebno naručuju.

Ladder with protective device

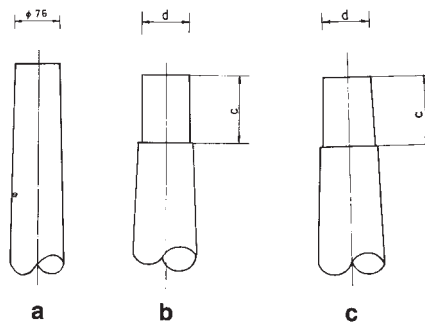
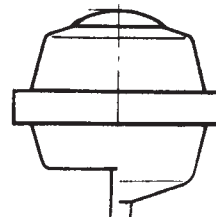
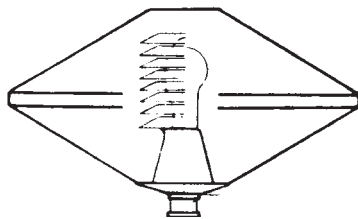
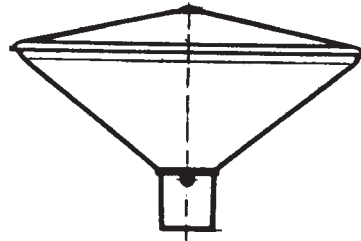
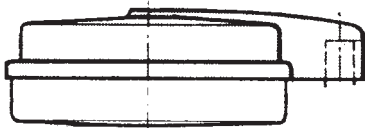
Ladders with protective climbing device are supplied separately on request.



NOSAČI SVJETILJKI / LAMP SUPPORTS

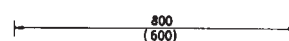
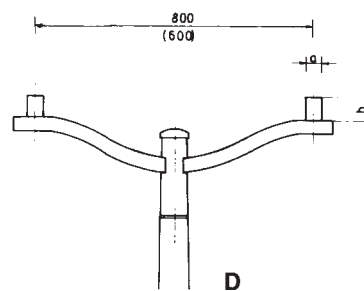
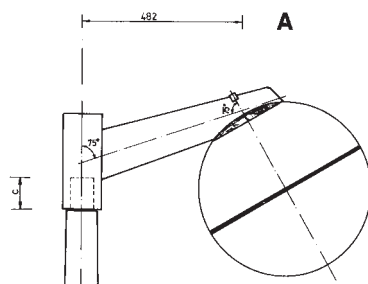
Prema vrsti svjetiljke i njenim montažnim dimenzijama odaberite tip i vrstu nosača. Pod vrstom nosača podrazumjeva se njegov broj krakova (jednoluk, dvoluk itd.) Prema zahtjevu možemo ponuditi i drugo rješenje nosača. Nosači se izrađuju iz istog materijala kao i stupovi, a isto tako i zaštićuju od korozije.

According to type of lamp and its mounting dimensions choose the type of support. Support type implies the number of arms (single-bracket, double bracket etc.). At buyer's request we can offer other support solutions as well. Supports are made of the same material as poles, and they are also protected from corrosion.



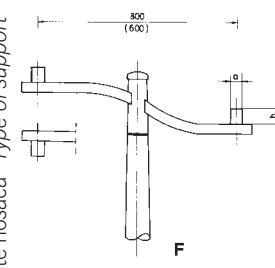
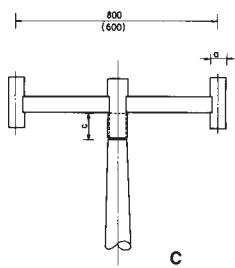
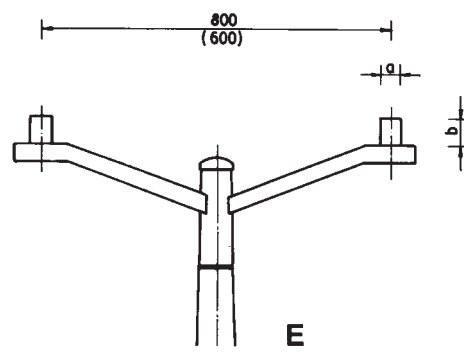
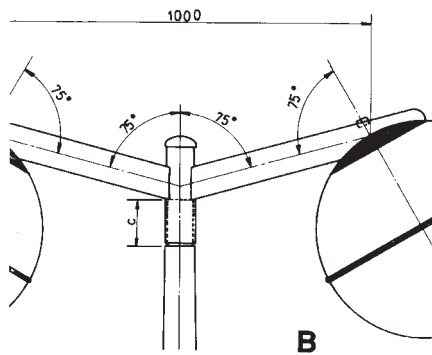
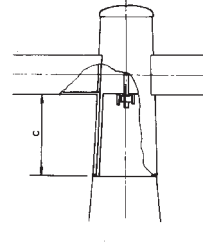
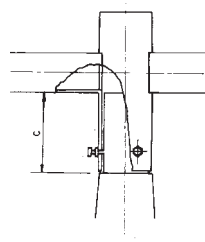
Detalji vrha stupa

Details of pole top



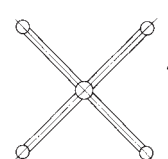
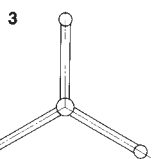
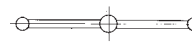
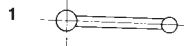
Detalji vrha stupa

Details of pole top



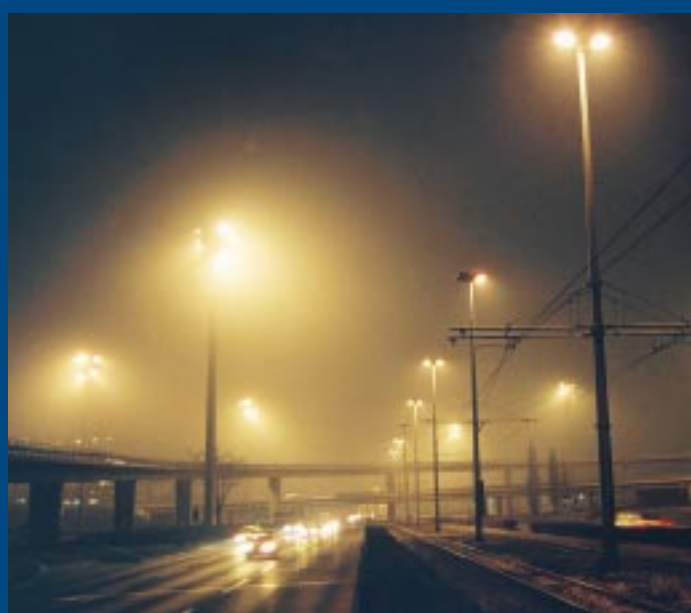
Tip i vrsta nosača svjetiljki

Type and sort of support lights



Vrste nosača
Type of support
Broj krakova
Number of arms

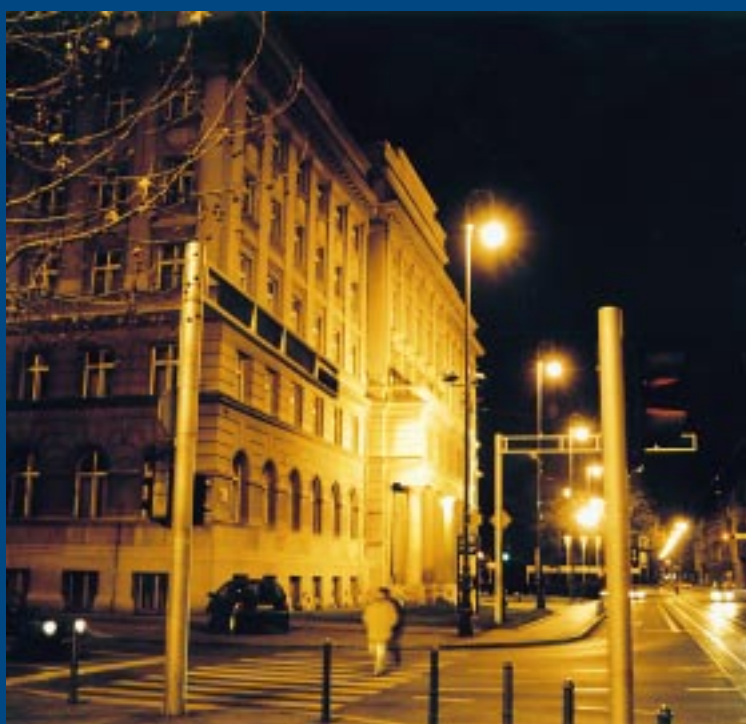
**Eksploatacija
proizvoda**
*Product
exploitation*



SRS A Rasvjetni stupovi
SRS A Lighting poles



KORS 2B Rasvjetni stupovi
KORS 2B Lighting poles



KORS 1 Rasvjetni stupovi
KORS 1 Lighting poles



struktura poslovnih područja

U sklopu svoje djelatnosti DALEKOVOD d. d. projektira, gradi i proizvodi:

- distribucijske mreže i vodove napona 0,4 – 500 kV,
- trafostanice i rasklopna postrojenja napona 0,4 – 500 kV,
- kontaktne mreže za elektrovođu,
- polaganje podzemnih i podmorskih energetskih i komunikacijskih kabela,
- rasvjetu prometnica, športskih i drugih objekata,
- portale i nosače aparata za energetske i prometne objekte,
- zaštitne i sigurnosne ograde, portale – nosače za prometnu signalizaciju i putokaze na svim prometnicama i autocestama,
- čelične rešetkaste i limene stupove za mreže i vodove napona 0,4 – 500 kV, PTT vodove i kontaktnu mrežu,
- ovjesnu i spojnu opremu za mreže, vodove, trafostanice i kontaktnu mrežu,
- rasvjetne, reflektorske, antenske i televizijske stupove,
- specijalna rješenja za elektroprijenosne i prometne objekte.

Za sve te djelatnosti, DALEKOVOD d. d. ima poznate i priznate dugogodišnje referencije o brzoi i kvalitetnoj gradnji kao i kvaliteti isporučene opreme. DALEKOVOD d. d. vrlo uspješno rješava i udovoljava svim zahtjevima projektne, odnosno tenderske dokumentacije na domaćem i inozemnom tržištu.



SUN Rasvjetni stupovi
SUN Lighting poles

CRS Rasvjetni stupovi
CRS Lighting poles



SUN Rasvjetni stupovi
SUN Lighting poles



main business activities

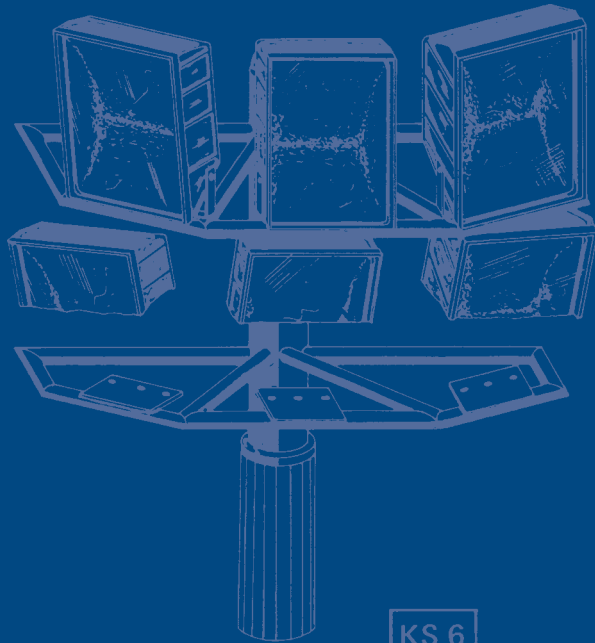
Within the framework of its activities, "Dalekovod" designs, manufactures, constructs and erects:

- 0.4-500 kV Power distribution networks and lines,
- 0.4-500 kV Substations and switchgears,
- Contact networks for electric traction,
- Laying of underground and submarine power and telecommunication cables,
- Lighting of roads, sports grounds and other facilities,
- Portals and apparatus supports for power and traffic facilities,
- Guard-rails, portals for traffic signs and signposts on all roads and motorways,

- Steel lattice and sheet metal poles for 0.4 – 500 kV networks and lines, telecommunication lines and contact network,
- Line hardware for networks, lines, substations and contact network,
- Lighting and floodlighting poles, antenna masts
- Special solutions for power transmission projects and traffic facilities.

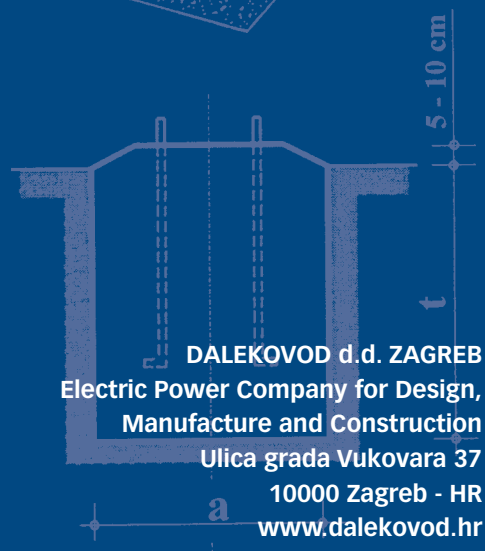
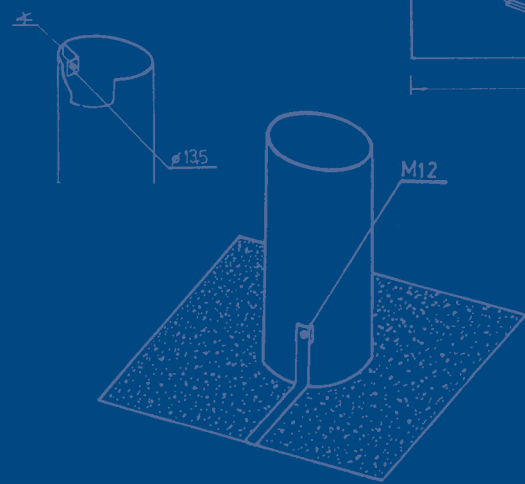
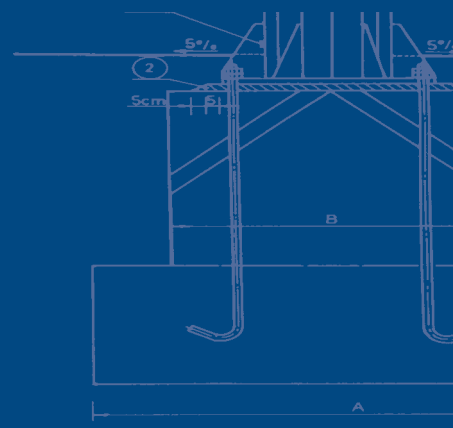
For all above-mentioned activities, "Dalekovod" boasts over renowned long-time references for prompt and high-quality construction and delivered equipment as well. "Dalekovod" d.d. is very successful in solving and fulfilling all design and tender document requirements both on the domestic and international market.





KS 6

H
s = 3 mm



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