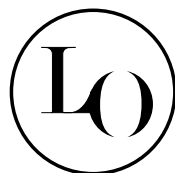


CLOCHE

design ALESSANDRO STABILE



LORELUX

LORELUX - CLOCHE DATASHEET



LORELUX - CLOCHE DATASHEET

Concept	Distinctly gentle design for a sustainable and resistant urban lighting with an easy maintenance.
Description	Cloche is a LED urban luminaire suitable for illuminating parks, squares and city roads. Its lighting body is made from innovative polymeric materials that respect urban ecology and resist corrosion, extreme temperatures (from - 60°C to + 80°C) and UV discolouration thanks to the innovative Rotoskin® patented system, the self-cleaning covering providing a protective shield on all exposed surfaces of the luminaire. Cloche includes not only wall-mounting, but also pole side and post top mounting and offers a wide range of finishes and photometries, as well as remote-control devices located inside the luminaire that do not alter its design while guaranteeing further savings and road safety.
Materials	Mono-material (Vxxx finishes): 100% recyclable and PSV (Plastic Second Life) certified polyethylene (from 50 to 98% of post-consumer plastic content), anti-discolouration, UV stabilised and batch-dyed.

Product's preview



Pluses

- Lighting body's useful service life of over 50 years
- Immunity to corrosion by atmospheric agents and pollutants
- Resistance to impacts and vandalism
- No flaking or significant discolouration over time
- Interchangeable LED engine for upgrades and/or repairs
- Wide range of finishes from recycled polyethylene (PSV -Plastic Second Life- certified)
- Wide range of photometries in order to meet all lighting needs
- Devices for Smart cities that can be integrated without any external antenna

Product's certifications



Material's certifications



Application areas



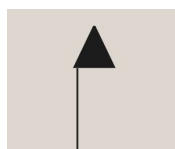
Mountings

Pole side
Code KM-CLOCHE-L

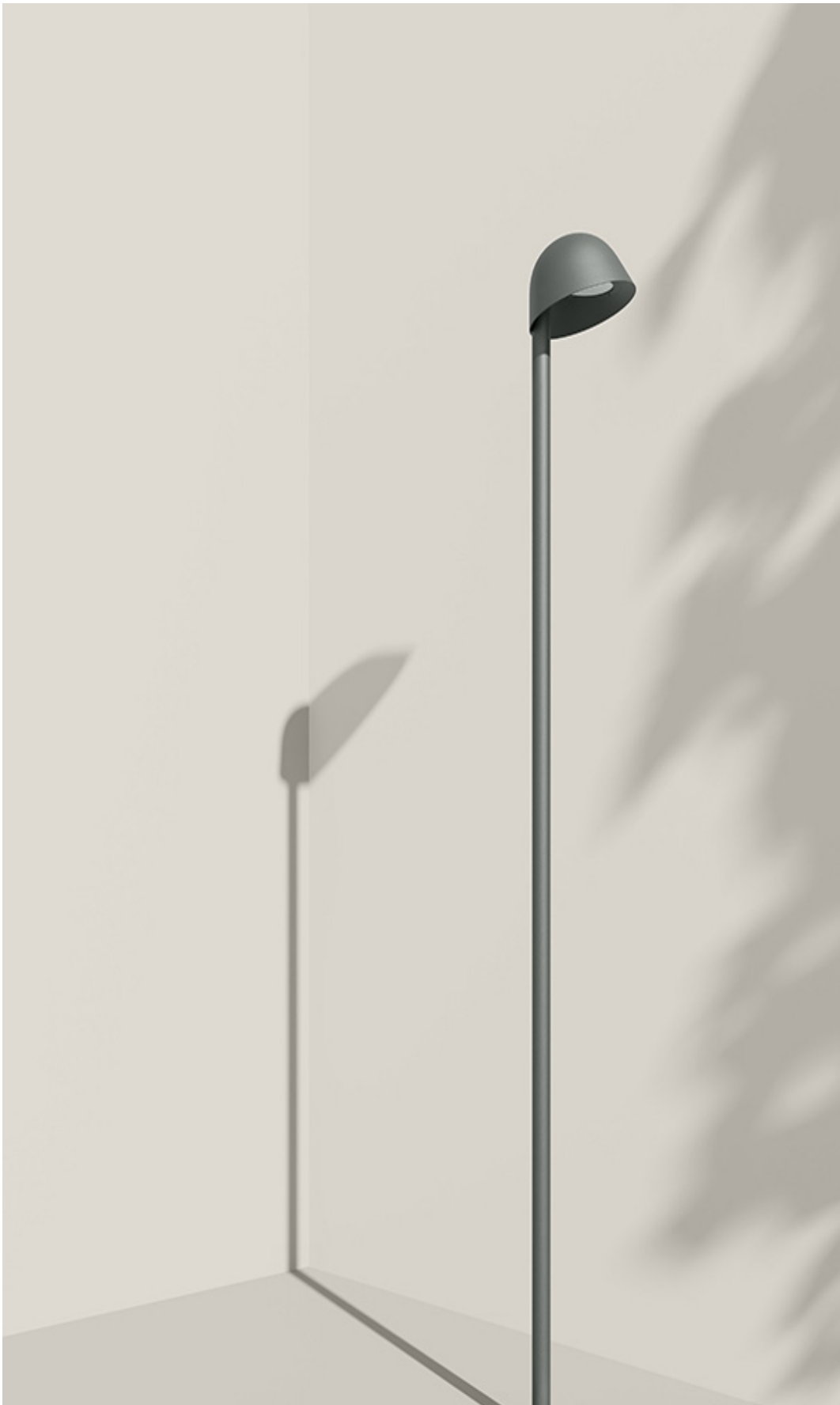
Wall-mounting
Code KM-CLOCHE-L



Post top
Code KM-CLOCHE-P

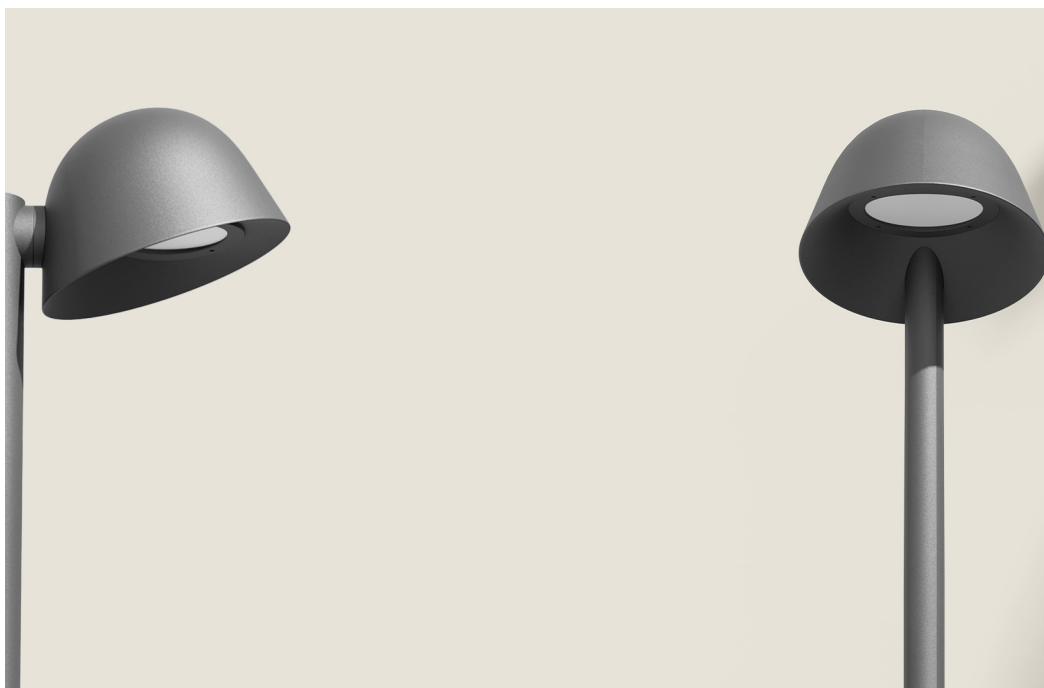
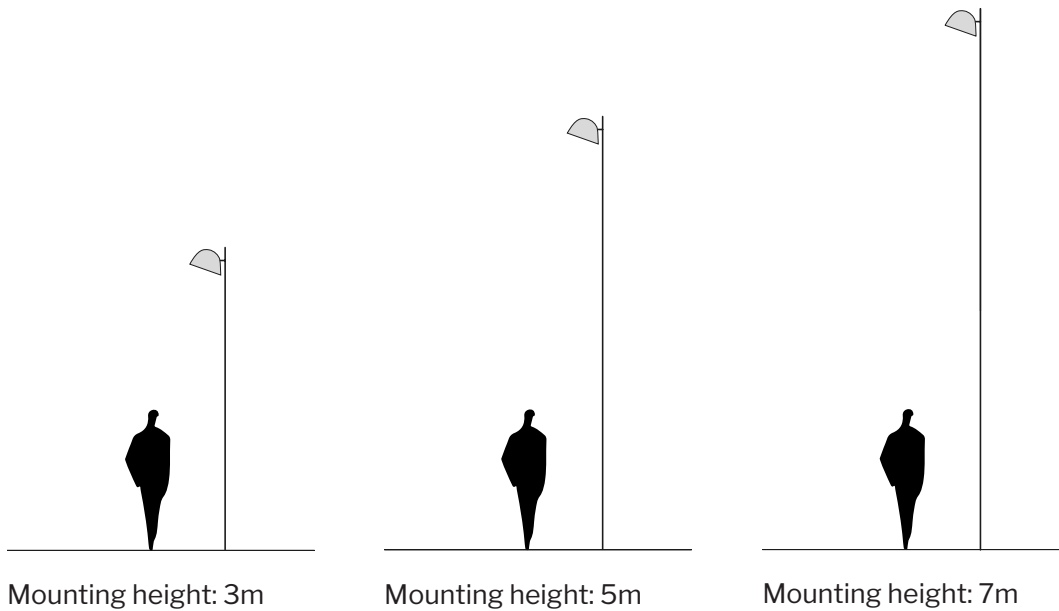


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LORELUX - CLOCHE DATASHEET

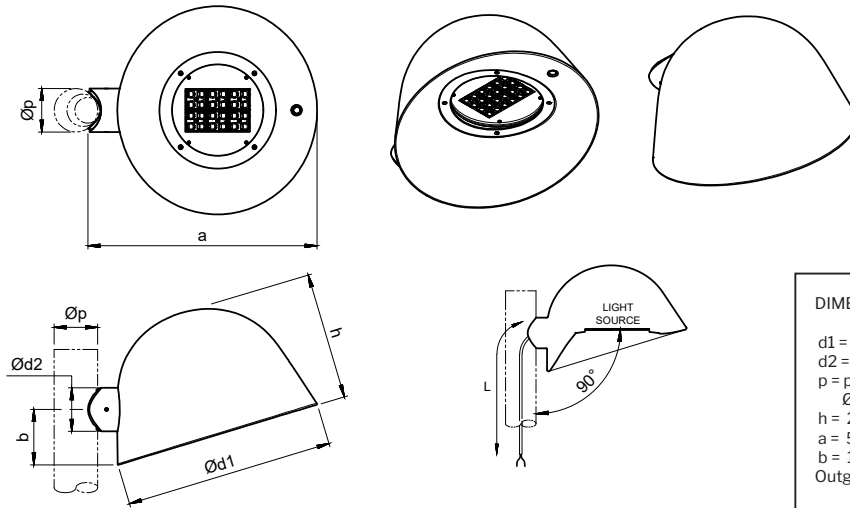
Installation examples



LORE LUX - CLOCHE DATASHEET

Technical drawing standard model
CLOCHE L

Pole side mounting: CLOCHE luminaire
+ KM-CLOCHE-L mounting kit



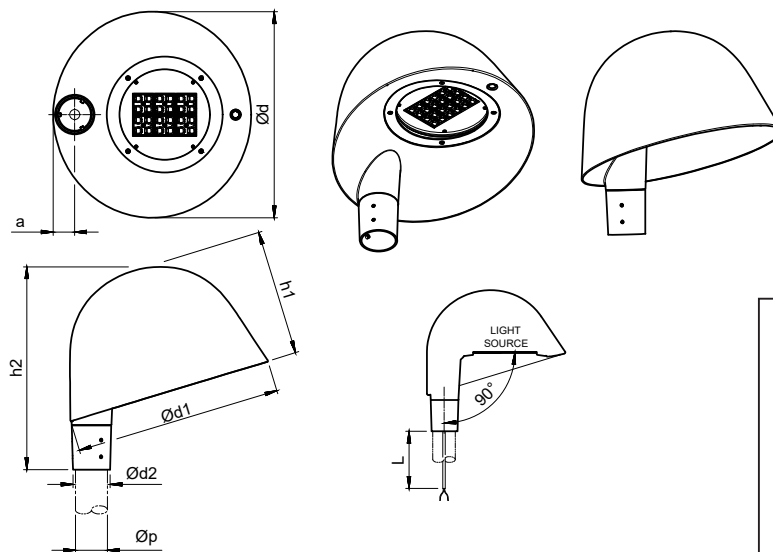
DIMENSION TABLE

d1 = $\varnothing 490$ mm
d2 = $\varnothing 102$ mm
p = pole diameters allowed
 $\varnothing 102 - \varnothing 76 - \varnothing 60$
h = 298 mm
a = 538 mm
b = 130 mm
Outgoing cable length L = 1.000 mm

Weight = 9,0 kg
Exposure to the wind:
Scx = 0,178 m² base
= 0,112 m² lateral

Technical drawing standard model
CLOCHE P

Post top mounting: CLOCHE luminaire
+ KM-CLOCHE-P mounting kit



DIMENSION TABLE

d1 = $\varnothing 490$ mm
d2 = $\varnothing 89$ mm
p = $\varnothing 76$ mm pole x 80 standard
 $\varnothing 60$ mm pole x 80 with adapter
 $\varnothing 89 \times 102$ mm pole x 80 optional
h1 = 298 mm
h2 = 480 mm
a = 50 mm
Outgoing cable length: L = 1.000 mm

Weight = 9,0 kg
Exposure to the wind:
Scx = 0,188 m² base
= 0,112 m² lateral

LORELUX - CLOCHE DATASHEET

MAIN FEATURES

Manufacturer	NITEKO S.R.L.
Brand	LORELUX [®]
Series	CLOCHE
Device type	LED urban luminaire
Application areas	Street, urban and residential lighting Historic centres, squares, car parks and green areas Pedestrian areas and cycle lanes
Mounting	Pole side CLOCHE L Post top CLOCHE P
Mounting accessories	Side standard: KM-CLOCHE-L-UNIV (for Ø60, Ø76, Ø102 mm poles) Post top standard: · KM-CLOCHE-P-HUB76 (hub for Ø76 mm poles) · KM-CLOCHE-P-RID60 (reduction accessory for Ø60 mm poles) · KM-CLOCHE-P-IN60 (male accessory for Ø60 mm poles) · KM-CLOCHE-P-IN76 (male accessory for Ø76 mm poles) · KM-CLOCHE-P-IN89 (male accessory for Ø89 mm poles)
Product's protection rating	External agents: IP66 Mechanical impacts: IK10 Chemical: VOC Free Electrical: EOS Free SPD: MC ≤ 12 kV ; MD ≤ 12kV ; I ≤ 10kA Photobiological: RG1 (D > 1,97m)
Material's protection rating	UV: 15 (15.000 h) Flame: HB Discolouration: max CMC 3 colour deviation for 3.000 h according to ISO 4892-2 B1 cycle
Temperature	Operating: -40°C ÷ +45°C (Control via N.T.C.) Storage: -40°C ÷ +80°C
Energy rating	>A++
Warranty	Body: 20 years Light source: 10 years
Certifications	Product: CE; ENEC; RoHS; EOS free; VOC free; EPD Italy (Pending); IEC/EN 62262 Material: UL94; ISO 4892-2; PSV (Plastic Second Life)
Optical compartment / Electric compartment	Separated Opening of the compartments after removal of the anti-fall fixing screws Optional Tool Less Opening

LORELUX - CLOCHE DATASHEET

OPTICAL FEATURES

Light source	HI Power LED
LED modules	PCB, independent and replaceable
Optics	Independent and replaceable
Nominal luminous flux	2.173 ÷ 12.998 lm
Light source efficiency	<ul style="list-style-type: none">· $\eta_{LED} > 180$ lm/W (CCT > 4.000 K / CRI > 70)· $\eta_{LED} > 170$ lm/W (CCT > 3.000 K / CRI > 70)· $\eta_{LED} > 160$ lm/W (CCT > 2.700 K / CRI > 70)· $\eta_{LED} > 150$ lm/W (CCT > 2.200 K / CRI > 70)



LORELUX - CLOCHE DATASHEET

Colour temperature	Standard CCT: 3.000K Optional CCT: 2.200K; 2.700K; 4.000K; 5.000K; 5.700K Colour stability: 3 Step MacAdam
Colour rendering index	Standard CRI: 70 Optional CRI: 80; 90
Photometries	Asymmetric; elliptic
Optical performance	Standard: η_{OPT} : 71 ÷ 89 %
Lighting fixture efficiency	$\eta_{FIX} > 130$ lm/W (CCT > 4.000 K / CRI > 70) $\eta_{FIX} > 125$ lm/W (CCT > 3.000 K / CRI > 70) $\eta_{FIX} > 115$ lm/W (CCT > 2.700 K / CRI > 70) $\eta_{FIX} > 105$ lm/W (CCT > 2.200 K / CRI > 70)
Light intensity class	$\geq G^*2$
Glare index	$\geq D.4$
ULR / ULOR	0,00%
Service life	L98 B10: > 100.000 h (TJ = 85 ° C IF \leq 500mA) L90 B10: > 120.000 h (TJ = 85 ° C IF \leq 500mA) L80 B10: > 270.000 h (TJ = 85 ° C IF \leq 500mA) L70 B10: > 450.000 h (TJ = 85 ° C IF \leq 500mA)

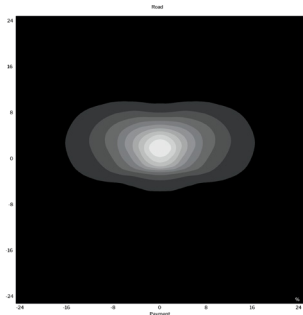
LORE LUX - CLOCHE DATASHEET

CONFIGURATIONS

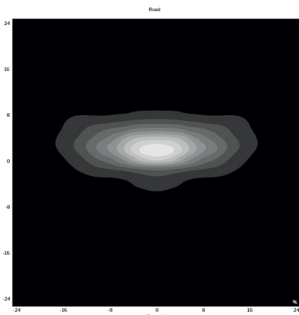
Model	Power [W]	Nominal luminous flux [lm]			
		4.000 K CRI 70 5.000 K CRI 70 5.700 K CRI 70	3.000 K CRI 70	2.700 K CRI 70 4.000 K CRI 80	2.200 K CRI 70 2.700 K CRI 80 3.000 K CRI 80 5.700 K CRI 90
CLOCHE 15 W	15,7	2.823	2.694	2.440	2.173
CLOCHE 20 W	20,8	3.860	3.672	3.333	2.961
CLOCHE 30 W	24,6	4.533	4.314	3.913	3.470
	30,9	5.582	5.298	4.816	4.260
CLOCHE 40 W	34,6	6.172	5.852	5.323	4.692
	39,2	6.882	6.519	5.930	5.209
CLOCHE 50 W	36,4	6.896	6.564	5.957	5.299
	40,7	7.721	7.343	6.667	5.923
	46,5	8.798	8.370	7.595	6.739
	51,3	9.591	9.120	8.279	7.341
CLOCHE 60 W	54,6	10.115	9.611	8.730	7.738
	62,0	11.426	10.842	9.858	8.713
CLOCHE 70 W	64,0	11.819	11.211	10.196	9.002
	71,4	12.998	12.319	11.209	9.857
CLOCHE 75 W	75,0	13.648	12.935	11.770	10.350

PHOTOMETRIES

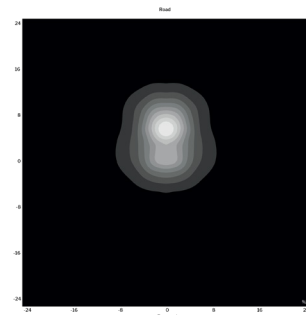
Asymmetric



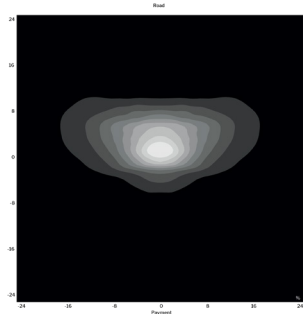
Code A1 ($\eta = 83\%$)



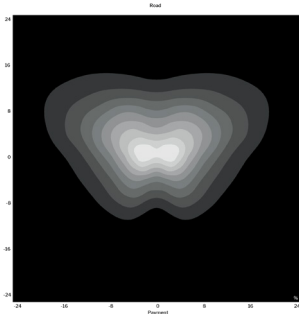
Code A2 ($\eta = 84\%$)



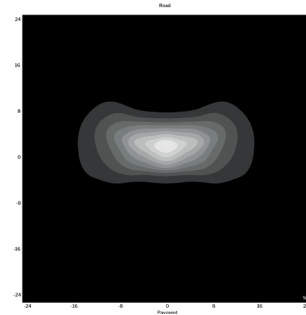
Code A3 ($\eta = 88\%$)



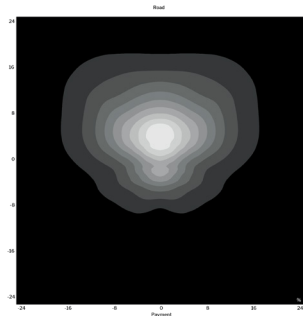
Code A4 ($\eta = 84\%$)



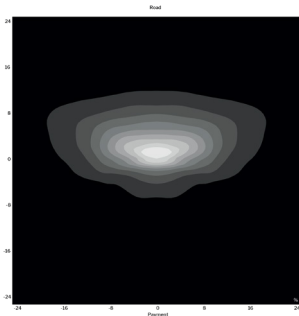
Code A5 ($\eta = 79\%$)



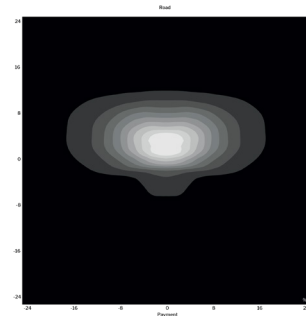
Code A6 ($\eta = 89\%$)



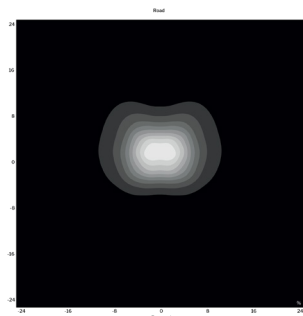
Code A7 ($\eta = 79\%$)



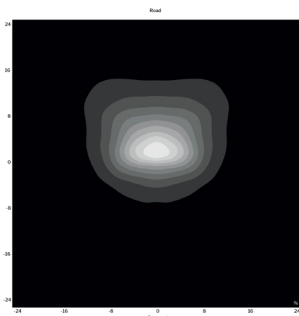
Code A8 ($\eta = 76\%$)



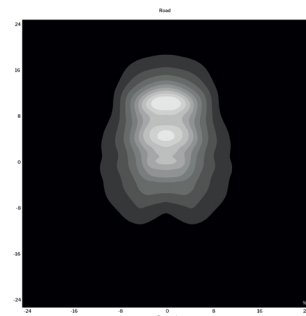
Code A9 ($\eta = 85\%$)



Code A11 ($\eta = 89\%$)

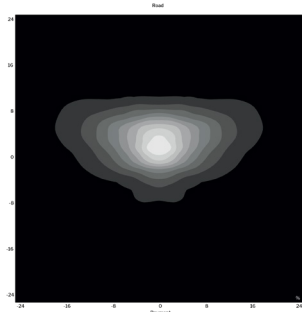


Code A12 ($\eta = 84\%$)

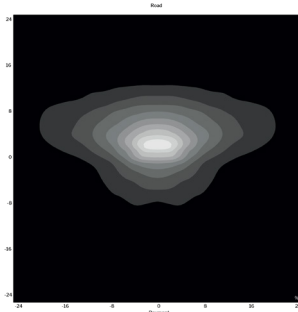


Code A13 ($\eta = 79\%$)

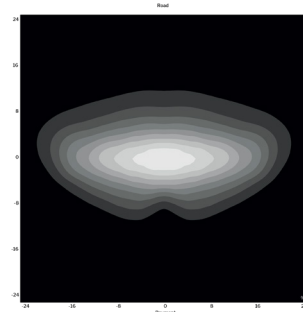
LORELUX - CLOCHE DATASHEET



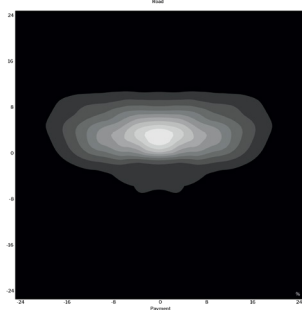
Code A15 ($\eta = 84\%$)



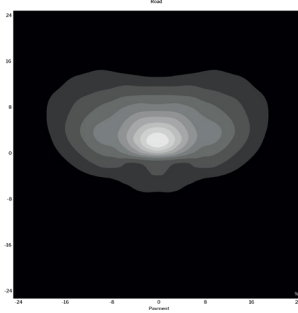
Code A80 ($\eta = 71\%$)



Code A99 ($\eta = 85\%$)

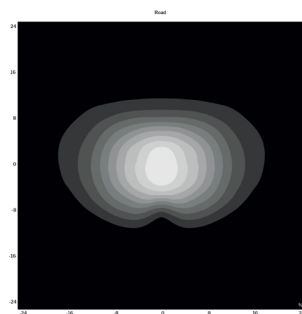


Code AB2 ($\eta = 83\%$)



Code AB4 ($\eta = 81\%$)

Elliptic



Code E3 ($\eta = 83\%$)

Optional

Other photometries available on request.

LORELUX - CLOCHE DATASHEET

ELECTRICAL FEATURES

Power supply	Standard 240V AC : 175 ÷ 264 V AC; 50 / 60 Hz Optional 240V AC: 120 ÷ 277 V AC; 50 / 60 Hz Optional 12V DC: 9 ÷ 18 V DC Optional 24V DC: 18 ÷ 32 V DC
LED power current	$I_f \leq 500 \text{ mA}$
Insulation class	Standard: class II Optional: class I
Power	15 ÷ 70W
Power factor	PF > 0,97 (Active PFC)
Electrical efficiency	$\eta_{EL} : 83 \div 92 \%$
Electrical connection	External power cable (IP66 protected electrical connector). Standard length: 1,0 m Standard Cable (Class II): H07RN-F 2x1,5mmq; Optional Cable (Class I):H07RN-F 3x1,5mmq; Optional Cable (DALI): H07RN-F 5x1,5mmq;
Electrical protection	Built-in SPD: C.M. $\leq 12 \text{ kV}$; D.M. $\leq 12 \text{ kV}$; I $\leq 10\text{kA}$



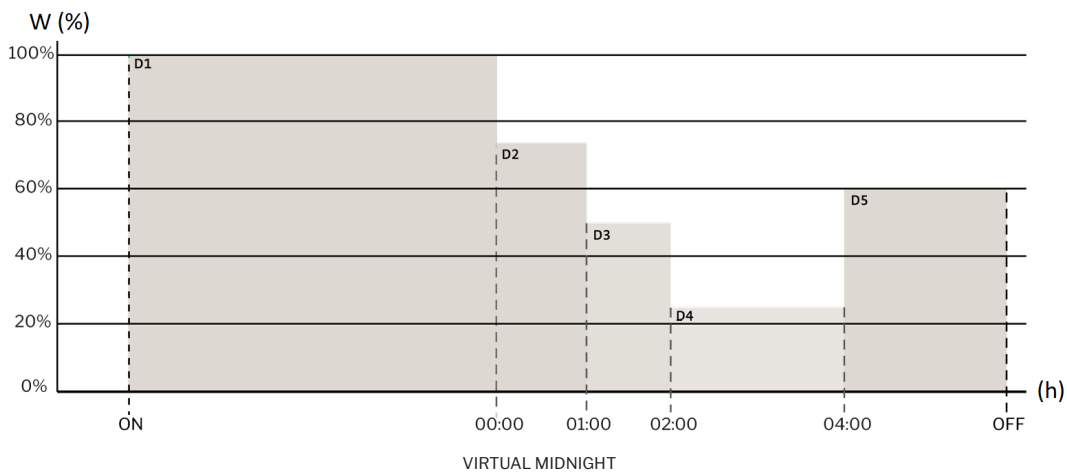
LORELUX - CLOCHE DATASHEET

CONTROL FEATURES

Autonomous dimming	K-CLOCHE-PRG5: automatic control up to 5 daily profiles
	K-CLOCHE-CLO.LITE: constant lighting control during the lifetime with a single profile
	K-CLOCHE-CLO.FULL: constant lighting control during the lifetime up to 20 profiles
Control cable dimming	K-CLOCHE-DIM: 1-10V analogue control
	K-CLOCHE-DALI: DALI digital control
	K-CLOCHE-D4i: DALI 2.0 / AUX 24 V DC digital control
Power Line control dimming	K-CLOCHE-PLV: Power Line Voltage control
Radio wave control	K-CLOCHE-NEMASCK: control with NEMA device
	K-CLOCHE-ZAGHASCK: control with ZHAGA device

CONTROL FUNCTIONS

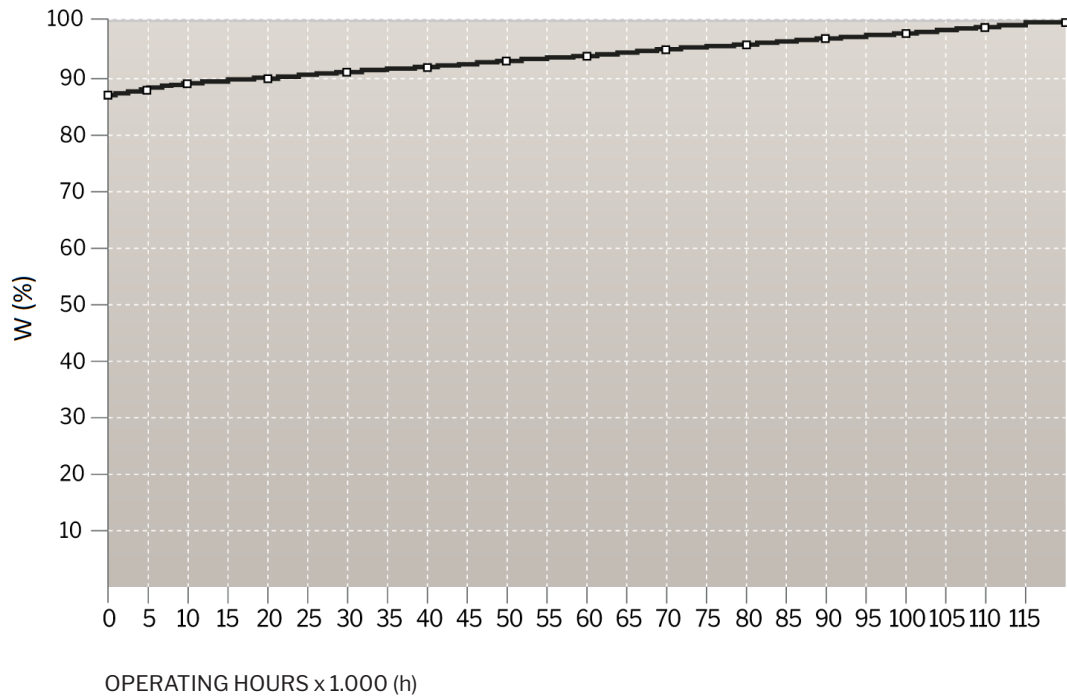
PRG5 module



The PRG module allows to control and reduce the luminous flux of the lighting fixture from 10% to 100% of the maximum value, without the use of dedicated cables

- D1: time slot ON - 23:59 → power 100%
- D2: time slot 00:00 - 00:59 → power 75%
- D3: time slot 01:00 - 01:59 → power 50%
- D4: time slot 02:00 - 03:59 → power 25%
- D5: time slot 04:00 - OFF → power 60%

CLO module



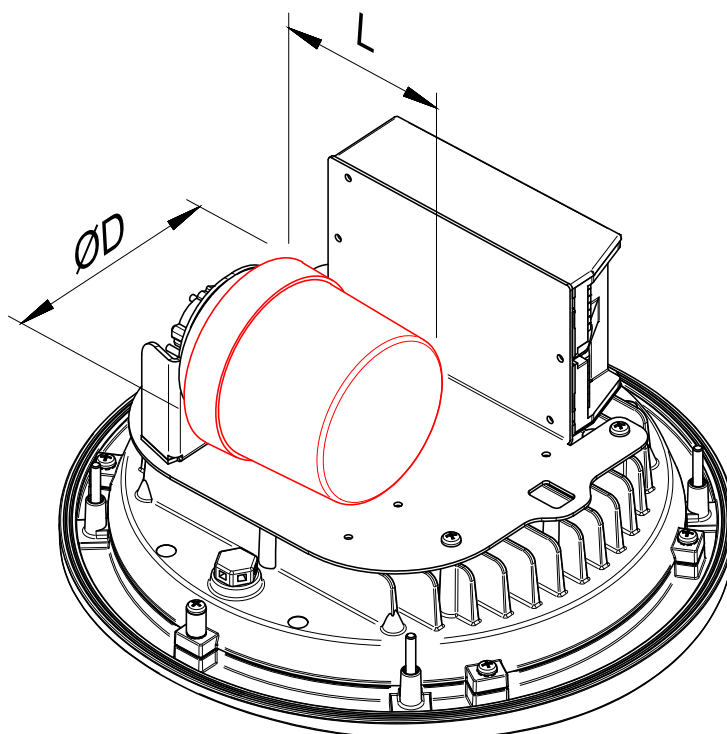
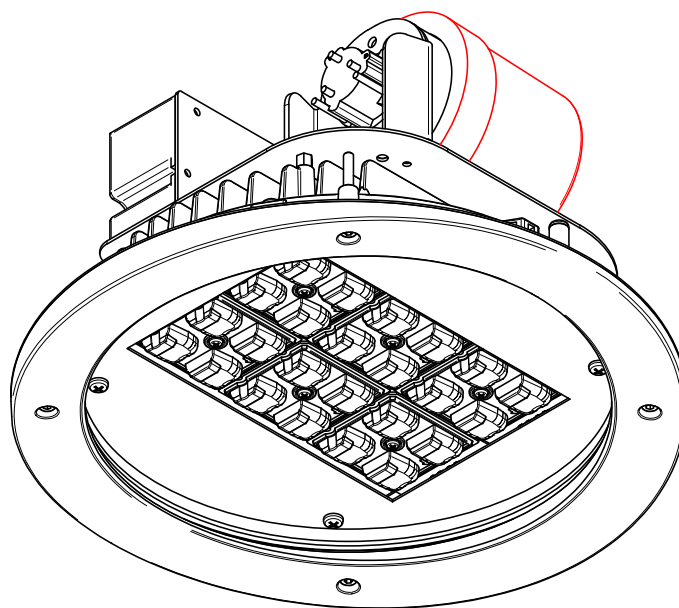
The CLO function allows to gradually increase the level of light output over time from a lower initial luminous flux up to 100%, thus compensating the luminous flux degradation of the LED module during the lighting fixture entire lifetime. It can also serve as a means to reduce energy consumption.

LORELUX - CLOCHE DATASHEET

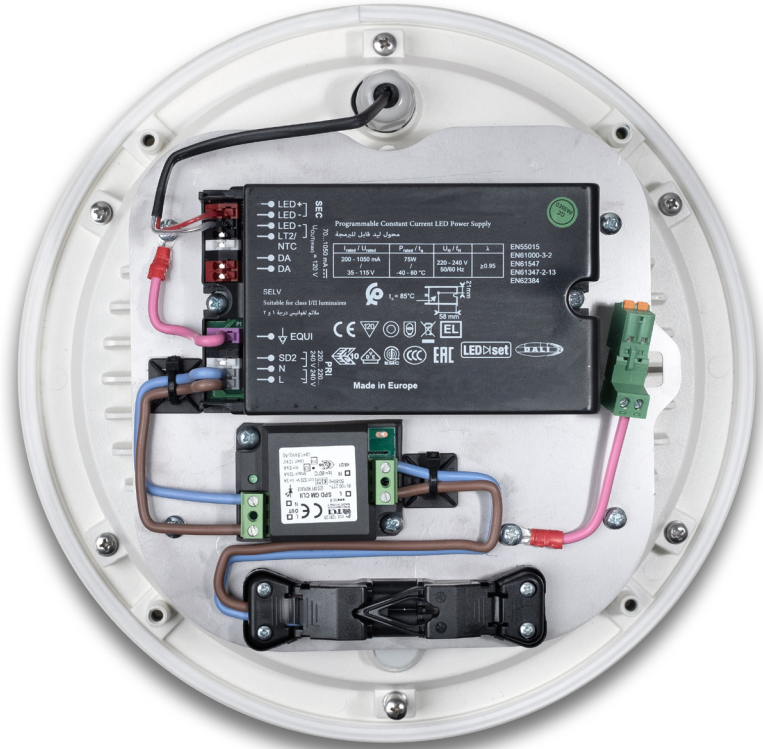
ELECTRIC COMPARTMENT

Maximum possible dimensions [mm] for remote-control devices:

$\text{ØD} \times \text{L} = 84 \times 74$



LORELUX - CLOCHE DATASHEET



LORELUX - CLOCHE DATASHEET

MECHANICAL FEATURES

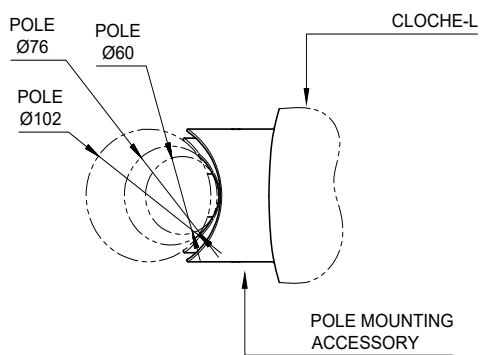
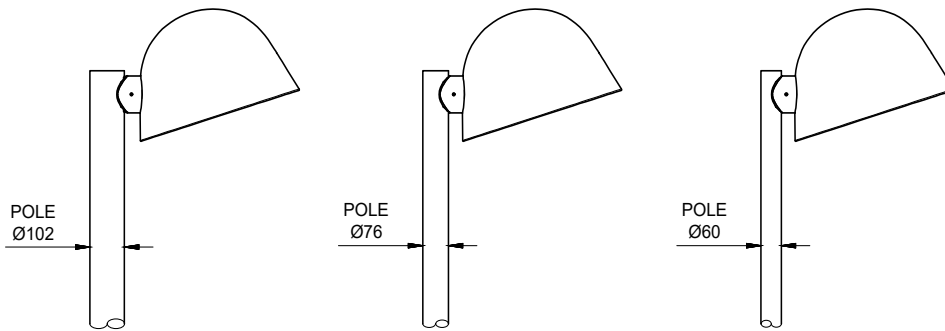
Materials	<p>Body: UV stabilised, self-cleaning, anti-discolouration and PSV (Plastic Second Life)-certified polyethylene, minimum thickness 5 mm</p> <p>Heat sink: die-cast aluminium</p> <p>LED modules: aluminium</p> <p>Optics: PMMA, PC</p> <p>Screen: tempered flat glass, 5 mm thickness</p> <p>Gaskets: closed-cell silicone</p> <p>Anti-condensation valves: PA (polyamide)</p> <p>Accessories: stainless steel</p> <p>Screws: stainless steel</p> <p>Packaging: FSC cardboard</p>
Recycled plastic content	<p>Black: 98%</p> <p>Coloured: 50%</p>
Service life	<p>Body: >50 years</p> <p>Components: >10 years</p>
Dimensions and weight	<p>Pole side model: Ø 490 x h298mm 9,0 kg</p> <p>Post top model: Ø 490 x h480 mm 9,0 kg</p>
Wind exposure	<p>Base: 0,178 mq</p> <p>Lateral: 0,112 mq</p>
Packaging free from both polystyrene and internal cardboard inserts	<p>Primary (suspended and on catenary): W500 x L500 x H550 mm 11,4 kg 1 pcs / box (eco-friendly packaging)</p> <p>Tertiary (suspended on catenary): W1.000 x L1.200 x H1.780mm 166,0 kg 12 pcs / pallet (eco-friendly packaging)</p>

Tolerance: luminous flux +/-5%; power consumption +/- 5%; dimensions +/-1%; weight +/-3%

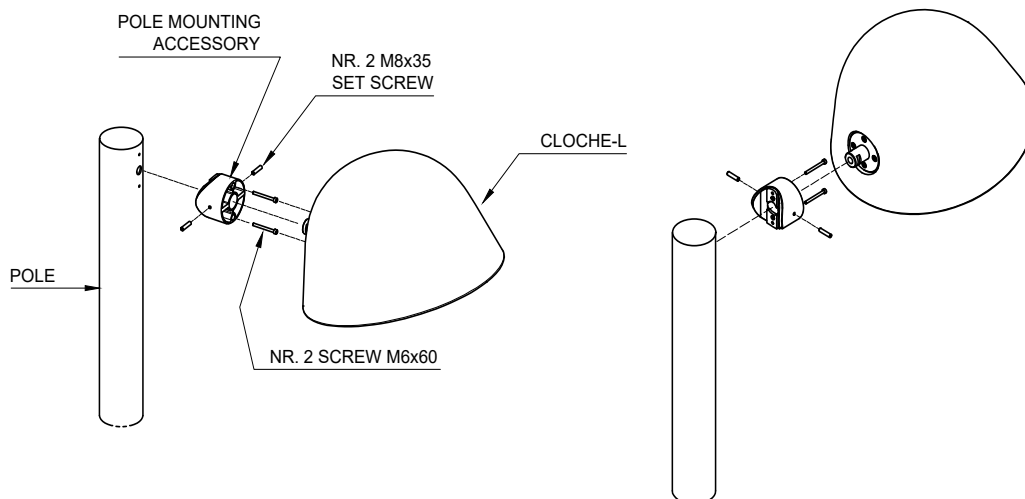
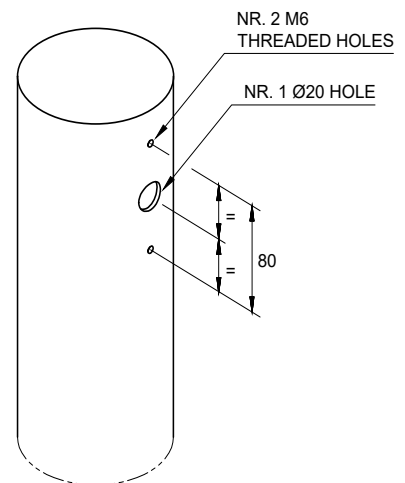
LORELUX - CLOCHE DATASHEET

MOUNTING DIAGRAMS AND ACCESSORIES

Model: CLOCHE L
 Code: KM-CLOCHE-L-UNIV
 (for Ø60, Ø76, Ø102 mm poles)

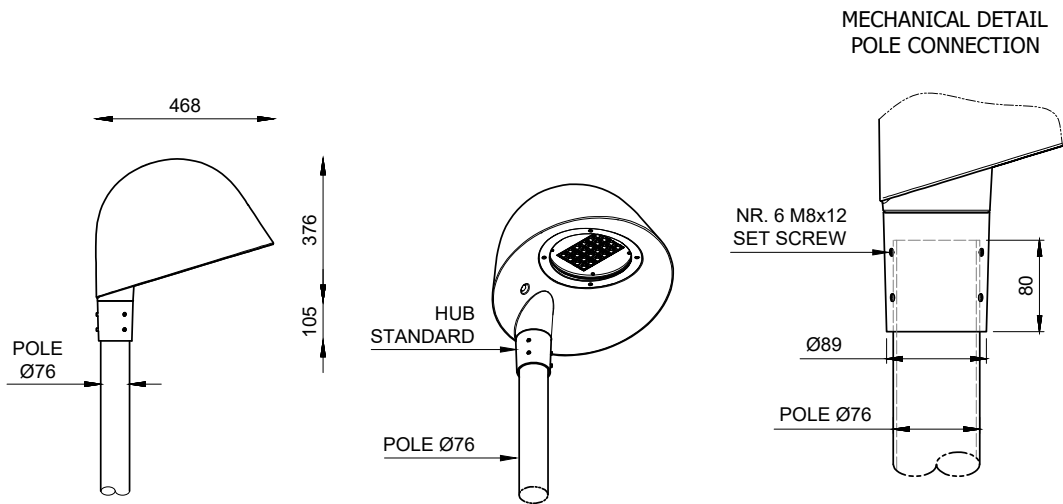


POLE DRILLING DIAGRAM

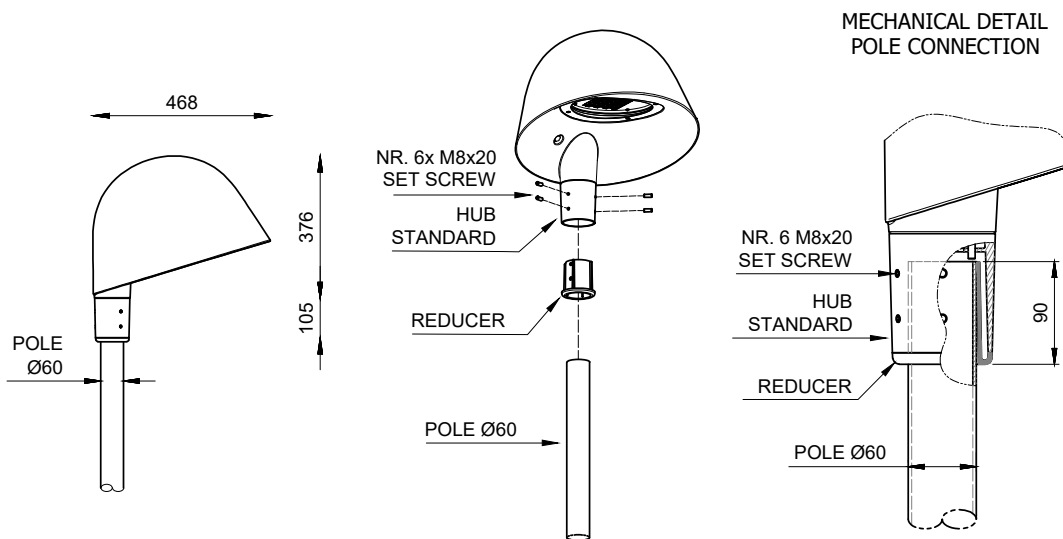


LORELUX - CLOCHE DATASHEET

Model: CLOCHE P
 Code: KM-CLOCHE-P-HUB76
 (for Ø76 mm poles)



Model: CLOCHE P
 Code: KM-CLOCHE-P-RID60
 (Reducer for Ø60 mm pole)



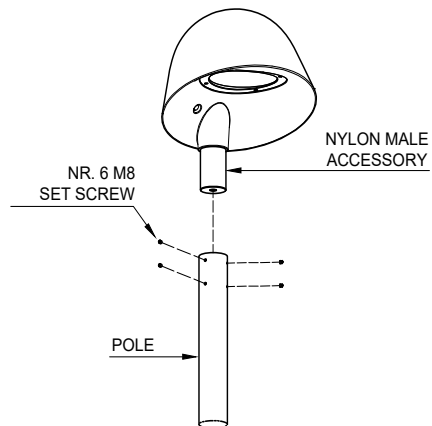
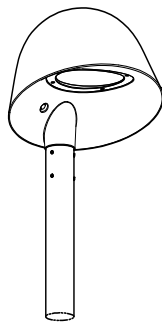
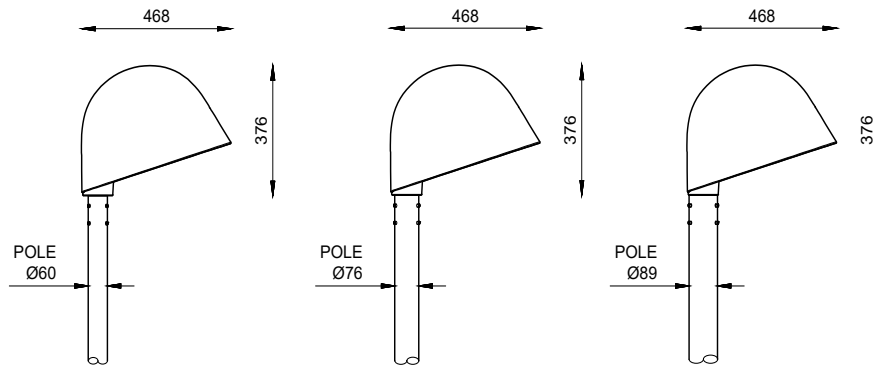
LORELUX - CLOCHE DATASHEET

Model: CLOCHE P

Code: KM-CLOCHE-P-IN60 (male accessory for Ø60 mm poles)

Code: KM-CLOCHE-P-IN76 (male accessory for Ø76 mm poles)

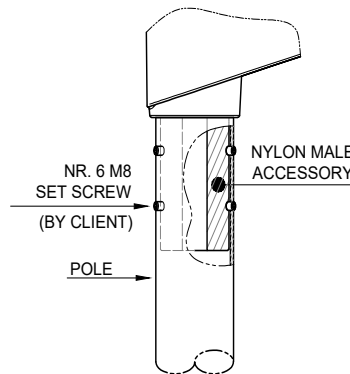
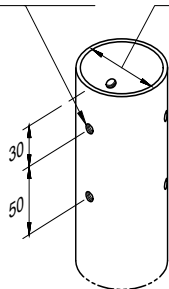
Code: KM-CLOCHE-P-IN89 (male accessory for Ø89 mm poles)



POLE END DETAIL
M8 THREADED HOLES
BY CUSTOMER

NR. 6x M8 THREADED HOLES
ON THE POLE AT 120°

ØPOLE	ØINTERNAL MIN + MAX	Ø NYLON MALE ACC.
Ø60	Ø52 + Ø54	Ø50
Ø76	Ø68 + Ø70	Ø66
Ø89	Ø82 + Ø84	Ø80



FINISHES

Batch-dyed colours



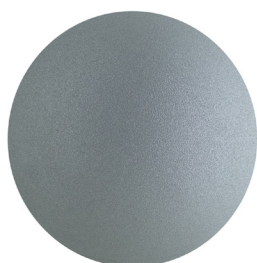
VBLK (graphite black)



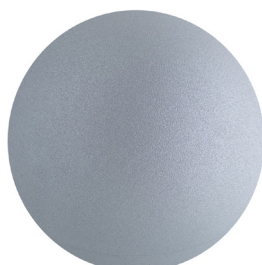
VNTH (anthracite)



VBZM (metallic bronze)



VGRM (metallic grey)



VGY1 (grey)



VWH1 (white)



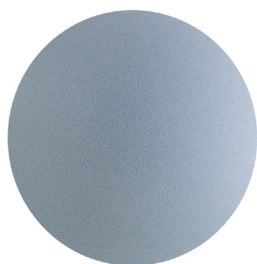
VCRT (marte)



VCR1 (venere)



VGRN (green)



VTQ1 (urano)