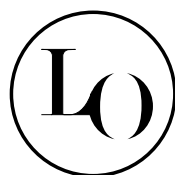


MORAVIA

design LORELUX®



LORELUX



Concept	A historic design revised in a modern key, for a sustainable and resistant urban lighting with an easy maintenance.
Description	Moravia 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. Moravia includes both suspended and on catenary 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. In addition, the optical compartment featuring LED modules with the Zhaga Book 15 standard can be removed using captive screws.
Materials	Polyethylene containing PSV-certified plastic (Plastic Second Life) as specified below: Black: 90% Floral: 50% Coloured: 50%
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 with captive screws for upgrades and/or repairs, with a separate IP66 optical compartment, fitted with a dedicated anti-condensation valve
- Wide range of colours in 100% recyclable polyethylene
- 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

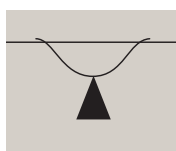
Mast arm
Code **KM-MORAVIA-S**



Wall suspended on arm
Code **KM-MORAVIA-S**



Suspended on catenary
Code **KM-MORAVIA-T**



Ceiling suspension
Code **KM-MORAVIA-S**



LORELUX - MORAVIA DATASHEET

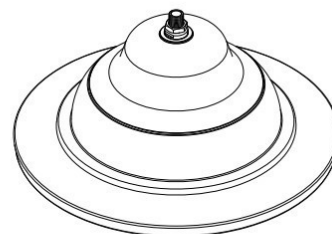
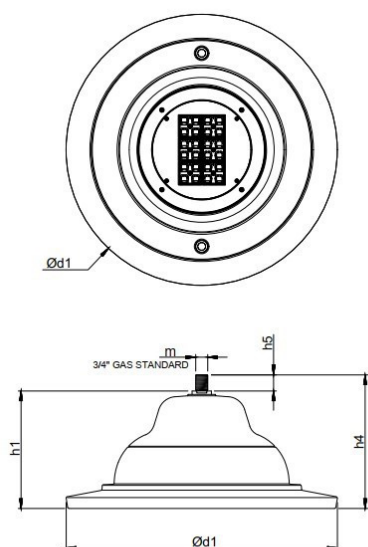


Installation examples



Technical drawing standard model

Suspended mounting: Moravia luminaire + KM-MORAVIA-S mounting kit



DIMENSION TABLE

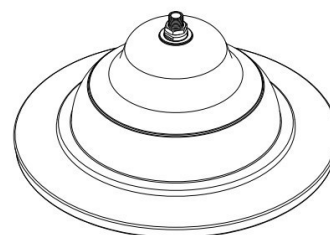
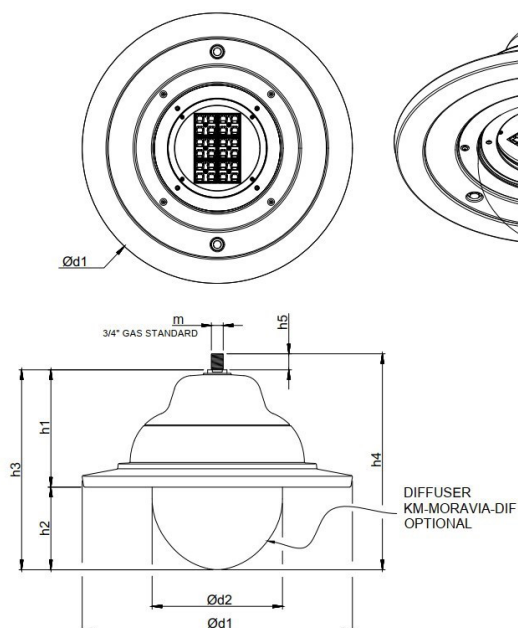
d1 = $\varnothing 590$ mm
d2 = $\varnothing 284$ mm
h1 = 255 mm
h4 = 290 mm
h5 = 35 mm
m = Male Thread Standard
3/4" GAS DIN ISO 228
m2 = Optional 1" GAS

Weight = 8,2 kg

Wind exposure: $Scx = 0,273 \text{ m}^2$ base
= $0,081 \text{ m}^2$

Technical drawing optional model

Suspended mounting with diffuser:
Moravia luminaire + KM-MORAVIA-S mounting kit +
KM-MORAVIA-DIF optical accessory



DIMENSION TABLE

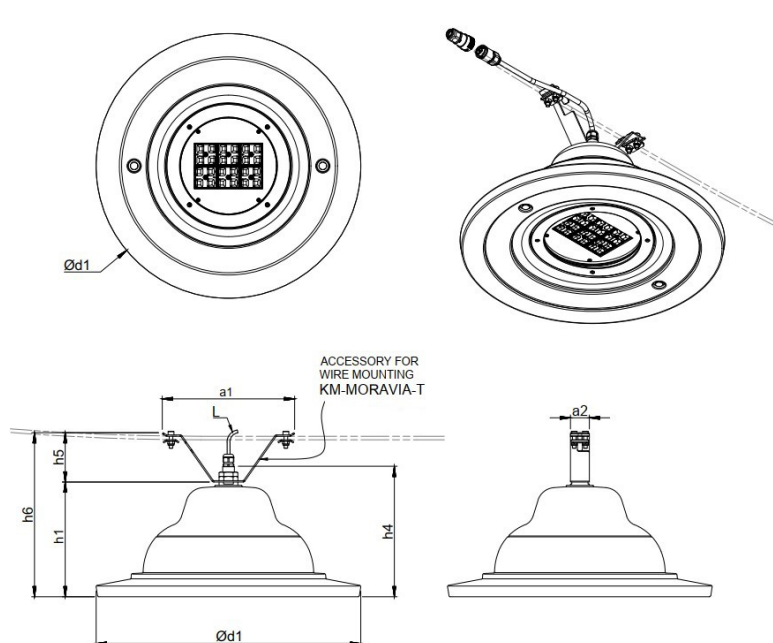
d1 = $\varnothing 590$ mm
d2 = $\varnothing 284$ mm
h1 = 255 mm
h2 = 180 mm
h3 = 435 mm
h4 = 470 mm
h5 = 35 mm
m = Male Thread Standard
3/4" GAS DIN ISO 228
m2 = Optional 1" GAS

Weight = 9,0 kg

Wind exposure: $Scx = 0,273 \text{ m}^2$ base
= $0,122 \text{ m}^2$ lateral

Technical drawing standard model

Suspended on catenary: Moravia luminaire + KM-MORAVIA-T mounting kit



DIMENSION TABLE

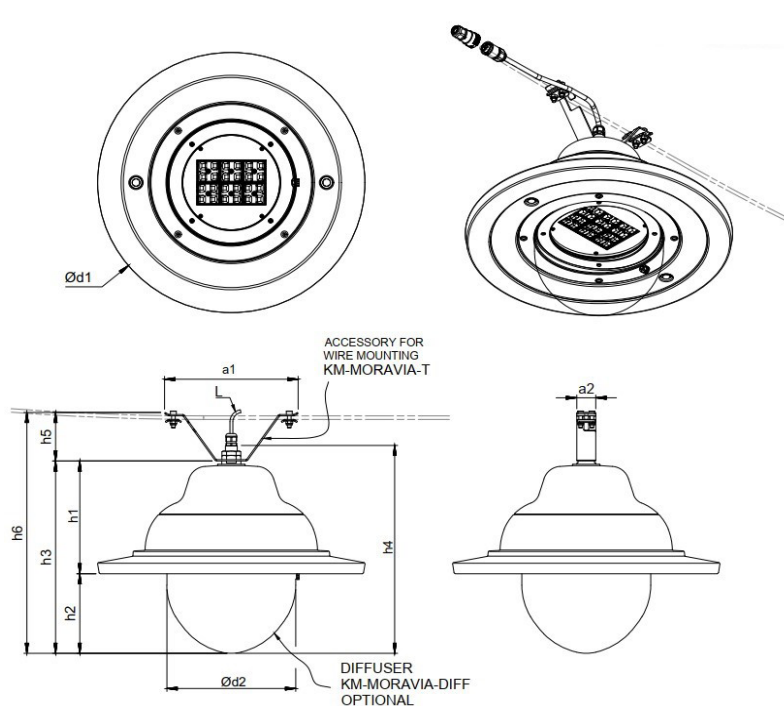
d1 = Ø590 mm
d2 = Ø284 mm
h1 = 255 mm
h4 = 290 mm
h5 = 110 mm
h6 = 365 mm
a1 = 295 mm
a2 = 40 mm
Outgoing cable length:
L = 500 mm

Weight = 8,1 kg

Wind exposure: Scx = 0,273 m² base
= 0,081 m² lateral

Technical drawing optional model

Suspended mounting with diffuser:
Moravia luminaire + KM-MORAVIA-T mounting kit +
KM-MORAVIA-DIF optical accessory



DIMENSION TABLE

d1 = Ø590 mm
d2 = Ø284 mm
h1 = 255 mm
h2 = 180 mm
h3 = 435 mm
h4 = 470 mm
h5 = 110 mm
h6 = 545 mm
a1 = 295 mm
a2 = 40 mm
Outgoing cable length:
L = 500 mm

Weight = 8,8 kg

Wind exposure: Scx = 0,273 m² base
= 0,122 m² lateral

LORELUX - MORAVIA DATASHEET

MAIN FEATURES

Manufacturer	NITEKO S.R.L.
Brand	LORELUX ®
Series	Moravia
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	Mast arm, wall suspended on arm, suspended on catenary, ceiling suspension
Mounting accessories	Standard Suspended: KM-MORAVIA-S (¾" GAS connection) Optional Suspended: · KM-MORAVIA-1/2-INCH (½" GAS connection) · KM-MORAVIA-1-INCH (1" GAS connection) · KM-S-60MM-3/4-INCH (60mm adapter - ¾" GAS) Optional on catenary: KM-MORAVIA-T (Mounting kit for suspension on catenary)
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; ENEC+ (Pending); RoHS; EOS free; VOC free; EPD Italy; IEC/EN 62262; LCA; Zhaga D4i; Vibration&Shock test 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

OPTICAL FEATURES

Light source	HI Power LED
LED modules	PCB, independent and replaceable
Optics	Independent and replaceable
Nominal luminous flux	1.421 ÷ 12.657 lm
Light source efficiency	· $\eta_{LED} > 180 \text{ lm/W}$ (CCT > 4.000 K / CRI > 70) · $\eta_{LED} > 170 \text{ lm/W}$ (CCT > 3.000 K / CRI > 70) · $\eta_{LED} > 160 \text{ lm/W}$ (CCT > 2.700 K / CRI > 70) · $\eta_{LED} > 150 \text{ lm/W}$ (CCT > 2.200 K / CRI > 70)



LORELUX - MORAVIA DATASHEET

Colour temperature	Standard CCT: 3.000K Optional CCT: 1.800K; 2.200K; 2.700K; 4.000K; 5.000K; 5.700K
Colour rendering index	Colour stability: 3 Step MacAdam
Photometries	Standard CRI: 70 Optional CRI: 80; 90
Optical accessories	Asymmetric; elliptic; roto-symmetric; symmetric; pedestrian
Optical performance	B.L.S. (Back Light Stop) Code: KM - MORAVIA - BLS Transparent PC diffuser Code KM-MORAVIA-DIF
Lighting fixture efficiency	Standard: η_{OPT} : 79 ÷ 87 % Optional with KM - MORAVIA - BLS accessory: η_{OPT} : 69 ÷ 81 % Optional with KM-MORAVIA-DIF accessory: η_{OPT} : 69 ÷ 79 %
Light intensity class	η_{FIX} > 130 lm/W (CCT > 4.000 K / CRI > 70) η_{FIX} > 125 lm/W (CCT > 3.000 K / CRI > 70) η_{FIX} > 115 lm/W (CCT > 2.700 K / CRI > 70) η_{FIX} > 105 lm/W (CCT > 2.200 K / CRI > 70)
Glare index	$\geq G^*2$
ULR / ULOR	$\geq D.4$
Service life	0,00%
	L95 B10: > 100.000 h ($T_A = 25^\circ C$ IF $\leq 500mA$)
	L90 B10: > 120.000 h ($T_A = 25^\circ C$ IF $\leq 500mA$)
	L80 B10: > 270.000 h ($T_A = 25^\circ C$ IF $\leq 500mA$)
	L70 B10: > 450.000 h ($T_A = 25^\circ C$ IF $\leq 500mA$)

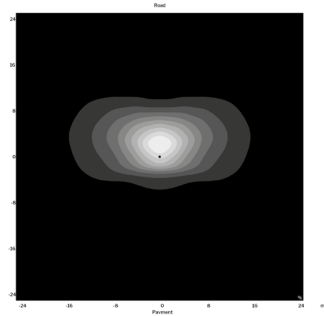
LORELUX - MORAVIA DATASHEET

CONFIGURATIONS

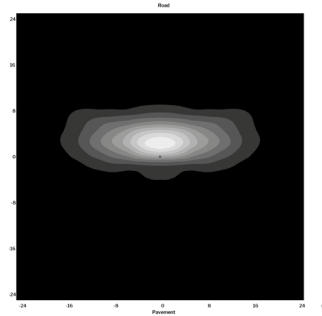
Model	Power [W]	Nominal luminous flux [lm]						
		4.000 K CRI 70 5.000 K CRI 70	5.700 K CRI 70	3.000 K CRI 70	2.700 K CRI 70 4.000 K CRI 80 5.000 K CRI 80 5.700 K CRI 80	3.000 K CRI 80	2.200 K CRI 70 2.700 K CRI 80	1.800 K CRI 70 2.700 K CRI 90
MORAVIA 15 W	10,8	2.019	1.941	1.908	1.867	1.739	1.687	1.421
	15,7	2.873	2.766	2.718	2.657	2.477	2.403	2.025
MORAVIA 20 W	20,7	3.710	3.577	3.512	3.431	3.201	3.105	2.618
MORAVIA 30 W	25,7	4.667	4.506	4.421	4.317	4.030	3.909	3.295
	30,4	5.607	5.419	5.313	5.186	4.842	4.697	3.960
MORAVIA 40 W	35,3	6.399	6.189	6.064	5.918	6.066	5.884	4.520
	38,7	6.920	6.697	6.559	6.401	5.979	5.800	4.889
MORAVIA 50 W	20,9	4.273	4.099	4.036	3.952	3.678	3.568	3.007
	25,3	5.117	4.913	4.836	4.733	4.408	4.276	3.604
	30,4	6.091	5.854	5.760	5.634	5.521	5.093	4.293
	35,6	7.055	6.785	6.674	6.525	6.084	5.901	4.974
	40,1	7.872	7.575	7.449	7.281	6.790	6.586	5.552
	45,4	8.817	8.490	8.345	8.155	7.607	7.379	6.220
	50,8	9.752	9.396	9.232	9.020	8.415	8.163	6.881
MORAVIA 60 W	55,1	10.253	9.835	9.689	9.483	8.832	8.567	7.223
	60,5	11.145	10.574	10.414	10.191	9.915	9.618	7.763
MORAVIA 70 W	65,2	11.904	11.429	11.253	11.011	10.257	9.949	8.388
	70,0	12.657	12.157	11.996	11.707	10.907	10.580	8.920

PHOTOMETRIES

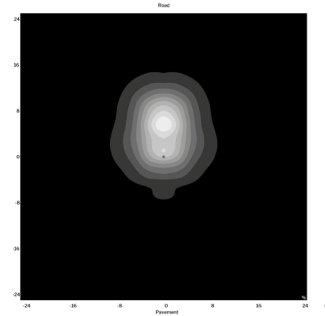
Asymmetric



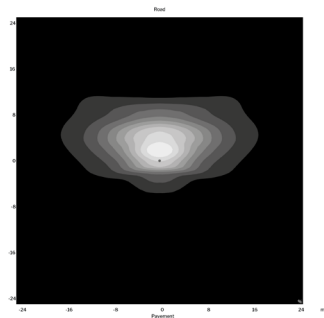
Code A1 ($\eta = 84\% \mid G^*6$)



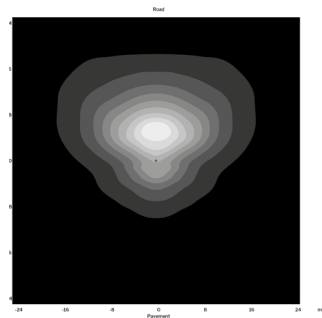
Code A2 ($\eta = 84\% \mid G^*4$)



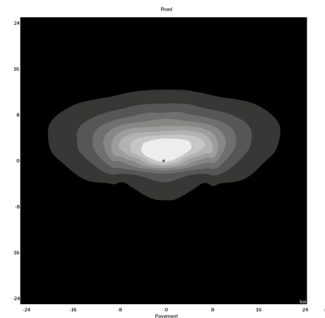
Code A3 ($\eta = 87\% \mid G^*6$)



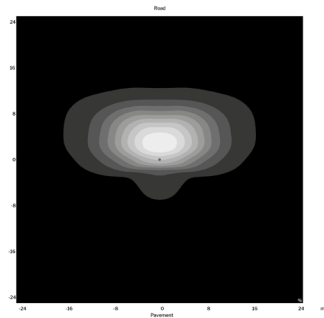
Code A4 ($\eta = 83\% \mid G^*6$)



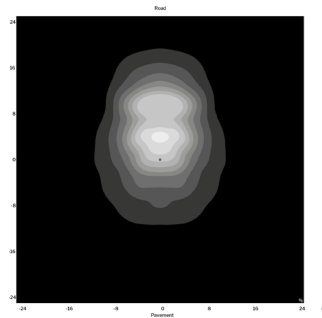
Code A7 ($\eta = 79\% \mid G^*2$)



Code A8 ($\eta = 82\% \mid G^*1$)



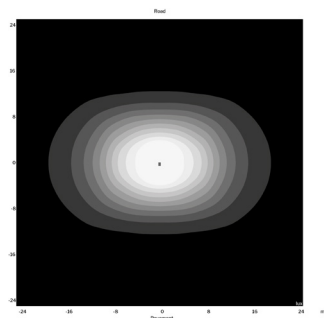
Code A9 ($\eta = 85\% \mid G^*4$)



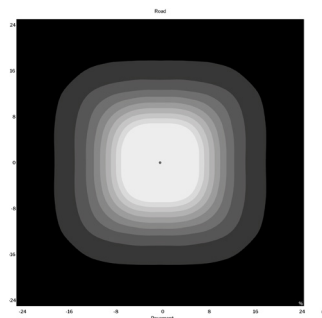
Code A13 ($\eta = 81\% \mid G^*6$)

Elliptic

Rotosymmetric

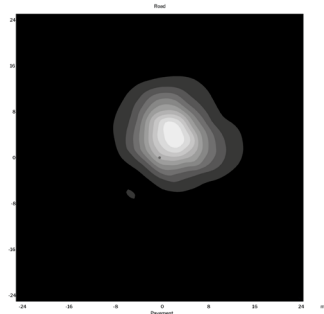


Code E3 ($\eta = 87\% \mid G^*6$)

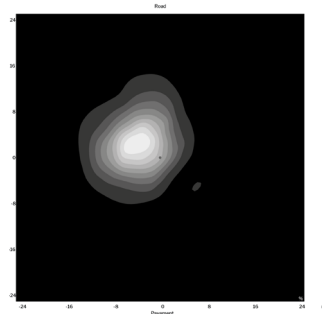


Code R1 ($\eta = 82\% \mid G^*6$)

Pedestrian

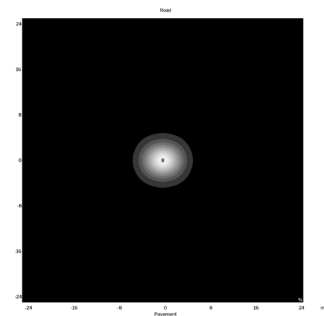


Codice **PCDX** ($\eta = 85\% \mid G^*6$)

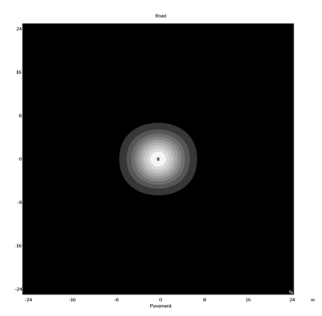


Codice **PCSX** ($\eta = 85\% \mid G^*6$)

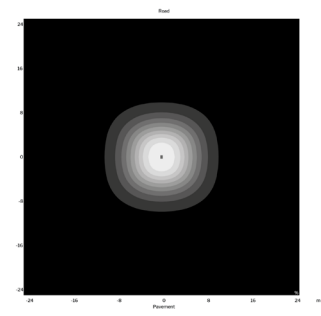
Symmetric



Code **25** ($\eta = 90\% \mid G^*6$)



Code **50** ($\eta = 90\% \mid G^*6$)



Code **100** ($\eta = 86\% \mid G^*6$)

Optional

Other photometries available on request.

OPTICAL ACCESSORIES

Code **KM-MORAVIA-BLS**

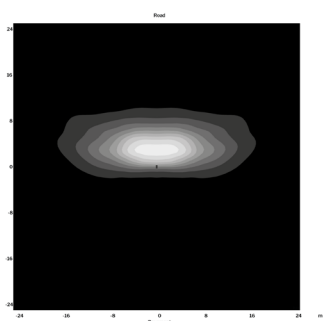


Code **KM-MORAVIA-DIF**

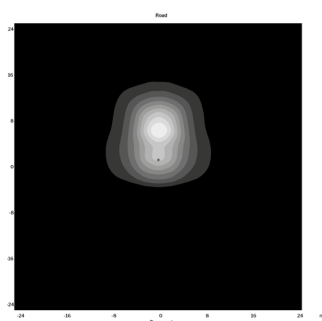


PHOTOMETRIES WITH **KM-MORAVIA-BLS** OPTICAL ACCESSORY

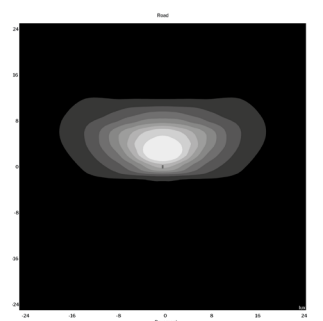
Asymmetric



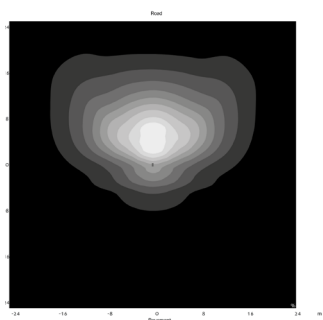
Code **BA2** ($\eta = 79\%$ | G^*6)



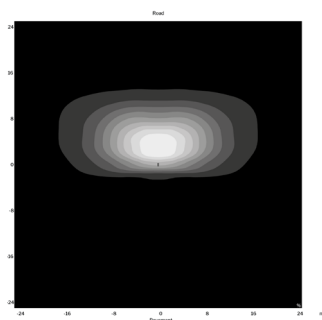
Code **BA3** ($\eta = 81\%$ | G^*4)



Code **BA4** ($\eta = 77\%$ | G^*6)



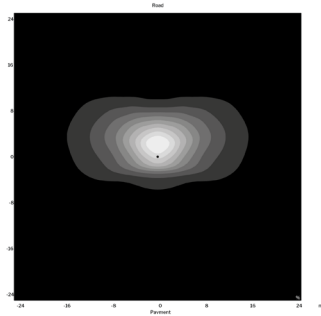
Code **BA7** ($\eta = 69\%$ | G^*6)



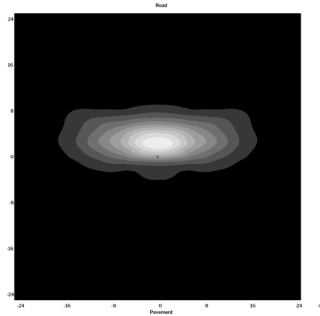
Code **BA9** ($\eta = 81\%$ | G^*2)

PHOTOMETRIES WITH **KM-MORAVIA-DIF** OPTICAL ACCESSORY

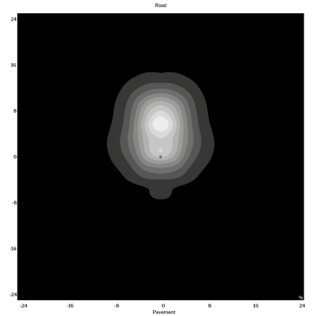
Asymmetric



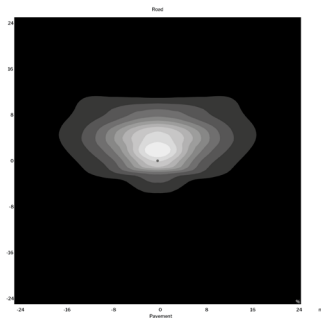
Code DA1 ($\eta = 75\% \mid G^*6$)



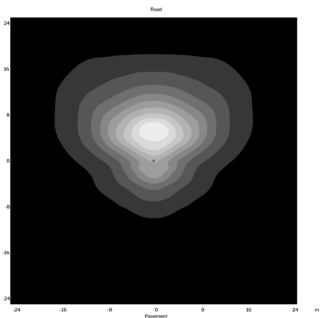
Code DA2 ($\eta = 76\% \mid G^*4$)



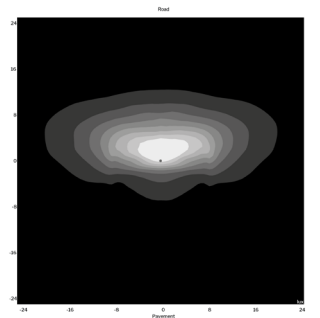
Code DA3 ($\eta = 79\% \mid G^*6$)



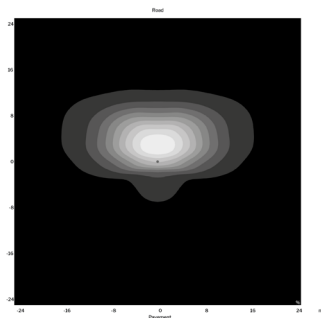
Code DA4 ($\eta = 75\% \mid G^*6$)



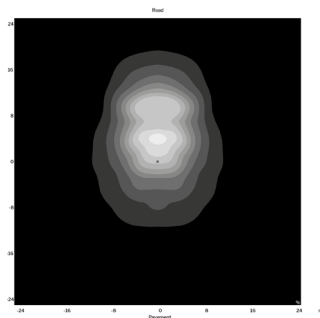
Code DA7 ($\eta = 70\% \mid G^*2$)



Code DA8 ($\eta = 69\% \mid G^*1$)

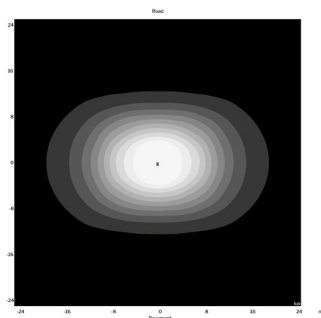


Code DA9 ($\eta = 77\% \mid G^*4$)



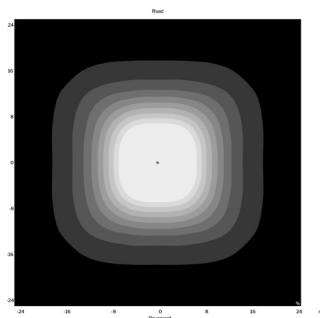
Code DA13 ($\eta = 71\% \mid G^*6$)

Elliptic



Code DE3 ($\eta = 79\% \mid G^*6$)

Rotosymmetric



Code DR1 ($\eta = 73\% \mid G^*6$)

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 $\leq 10 \text{ kA}$

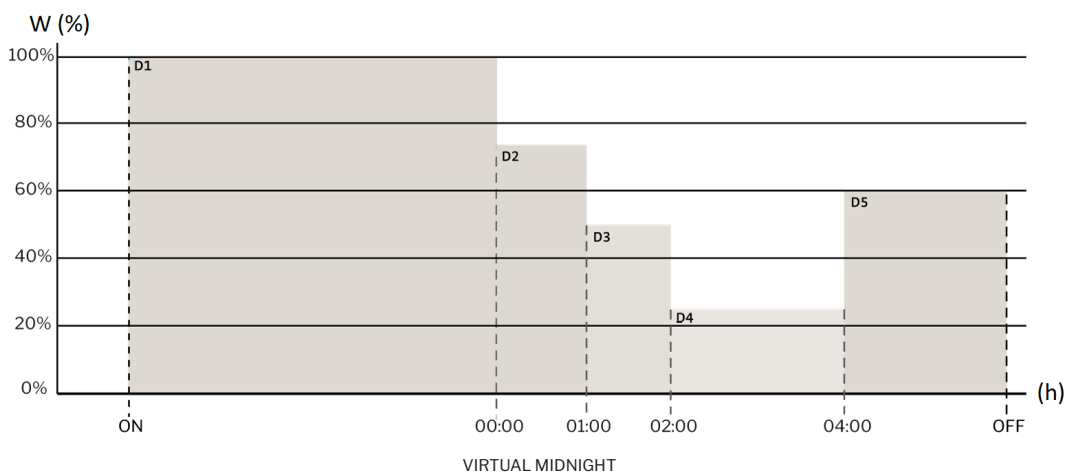


CONTROL FEATURES

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

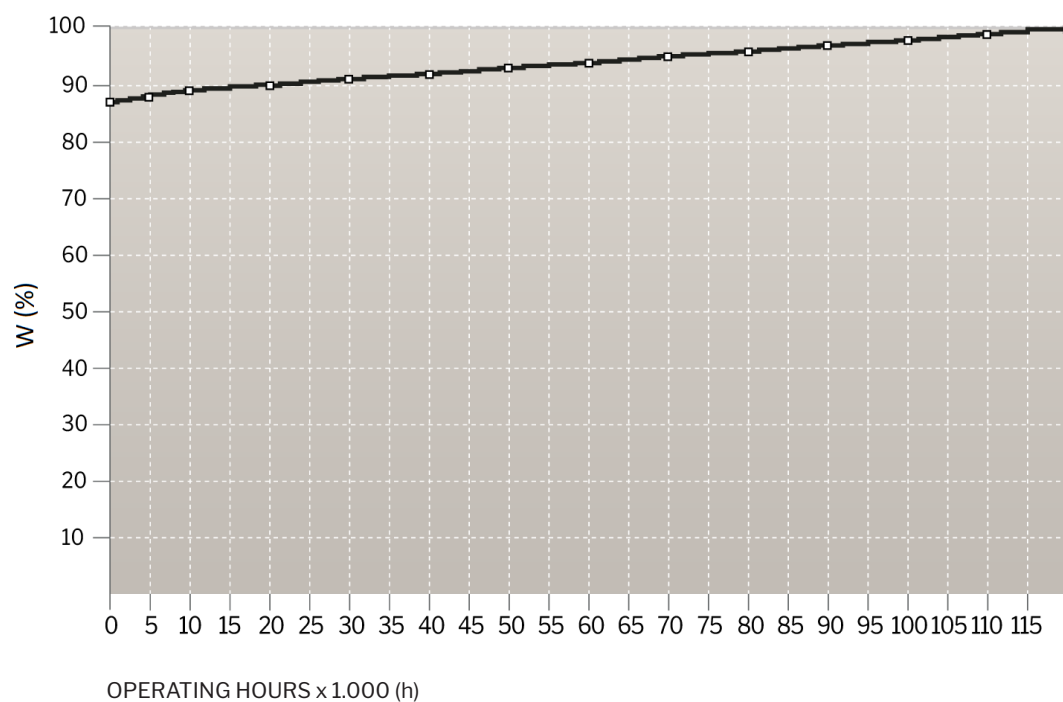
CONTROL FUNCTIONS

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%

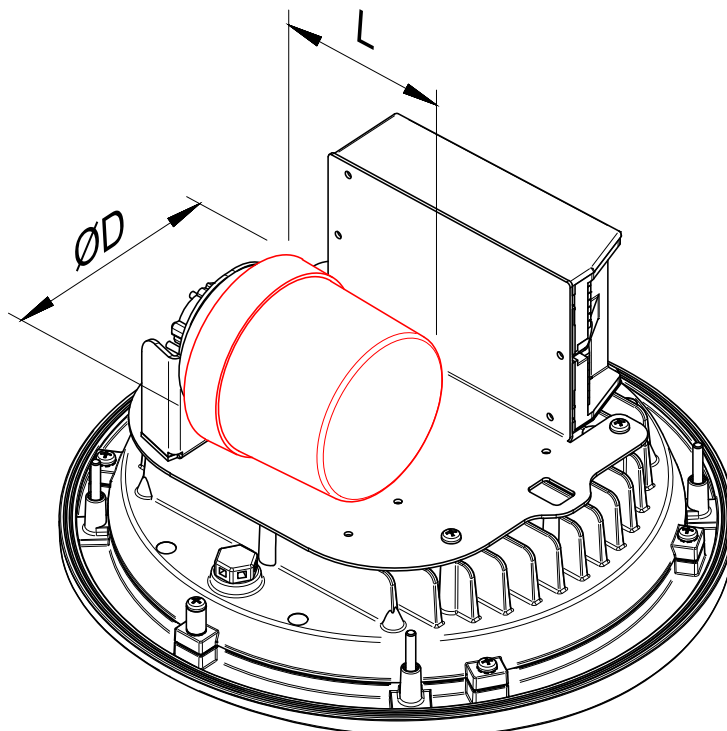
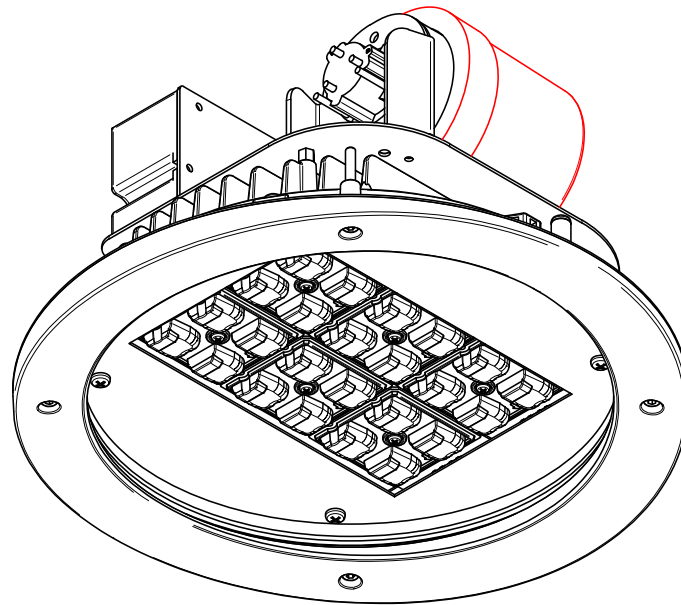
CLO module

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.

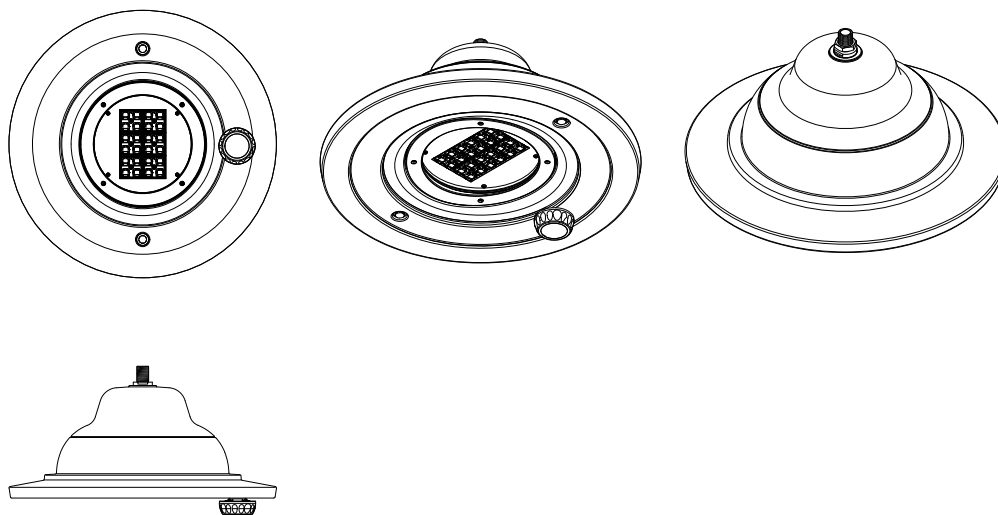
INTERNAL ZHAGA SOCKET

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

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



ZHAGA SOCKET ON THE BOTTOM



MECHANICAL FEATURES

Materials	Body: UV stabilised, self-cleaning, anti-discolouration and PSV (Plastic Second Life)-certified polyethylene, 5 mm minimum thickness
	Heat sink: die-cast aluminium
	LED modules: aluminium
	Optics: PMMA, PC
	Screen: tempered flat glass, 5 mm thickness
	Diffuser (optional): PC
	Gaskets: silicone
	Anti-condensation valves: PA (polyamide)
	Accessories: stainless steel
	Screws: stainless steel
	Packaging: FSC cardboard
Recycled plastic content	Black: 90% Coloured: 50% Floral: 50%
Service life	Body: >50 years Components: >10 years
Dimensions and weight	Standard suspended: Ø 590 x h290 mm 8,20 kg
	Suspended with diffuser: Ø 590 x h470 mm 9,00 kg
	Suspended on catenary: Ø 590 x h365 mm 8,10 kg
	On catenary with diffuser: Ø 590 x h545 mm 8,80 kg
Wind exposure	Base: 0,273 mq Standard lateral: 0,081 mq Lateral with diffuser: 0,122 mq

Packaging free from both
polystyrene and internal
cardboard inserts

Primary (standard suspended):
W610 x L610 x H380 mm | 11,0 kg
1 pcs / box (eco-friendly packaging)

Tertiary (standard suspended):
W1.250 x L1.250 x H1.670 mm | 205,0 kg
16 pcs / pallet (eco-friendly packaging)

Primary (suspended with diffuser):
W610 x L610 x H380 mm | 11,8 kg
1 pcs / box (eco-friendly packaging)

Tertiary (suspended with diffuser):
W1.250 x L1.250 x H1.670 mm | 218,0 kg
16 pcs / pallet (eco-friendly packaging)

Primary (on catenary):
W610 x L610 x H380 mm | 11,6 kg
1 pcs / box (eco-friendly packaging)

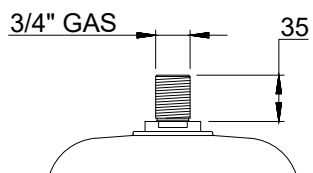
Tertiary (on catenary):
W1.250 x L1.250 x H1.670 mm | 215,0 kg
16 pcs / pallet (eco-friendly packaging)

Primary (on catenary with diffuser):
W610 x L610 x H380 mm | 12,4 kg
1 pcs / box (eco-friendly packaging)

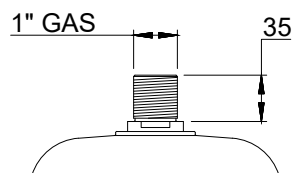
Tertiary (on catenary with diffuser):
W1.250 x L1.250 x H1.670 mm | 227,0 kg
16 pcs / pallet (eco-friendly packaging)

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

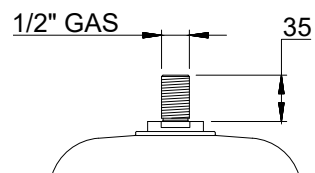
MOUNTING ACCESSORIES



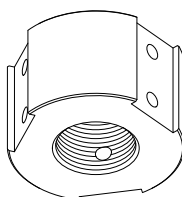
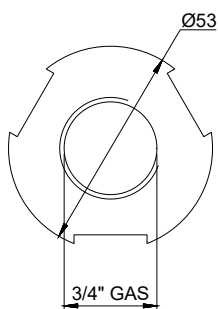
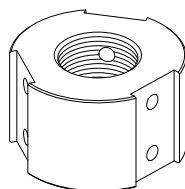
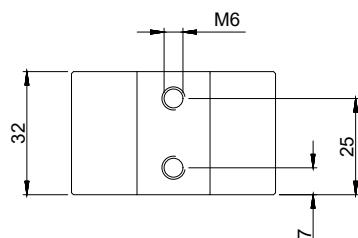
Standard:
Code KM-MORAVIA-S



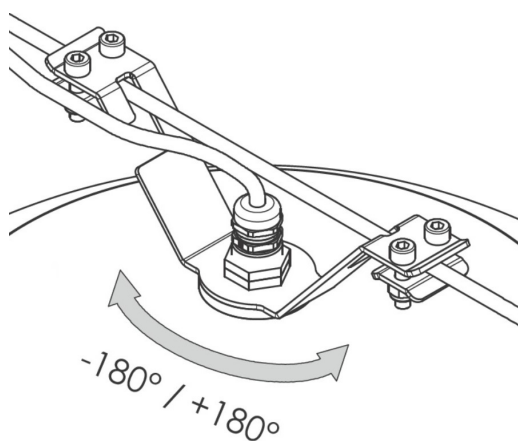
Optional:
Code KM-MORAVIA-1-INCH



Optional:
Code KM-MORAVIA-1/2-INCH



Optional:
3/4" GAS adapter for Ø60mm poles
Code KM-S-60MM-3/4-INCH



Optional:
Code KM-MORAVIA-T

FINISHES

Batch-dyed colours



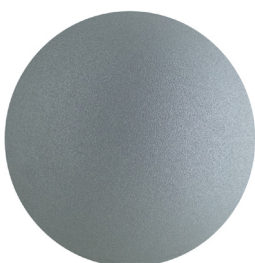
VBLK (graphite black)



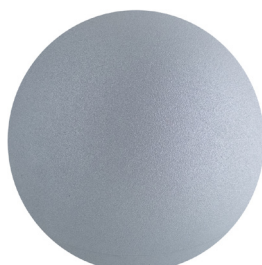
VNTH (anthracite)



VBZM (metallic bronze)



VGRM (metallic grey)



VGY1 (grey)



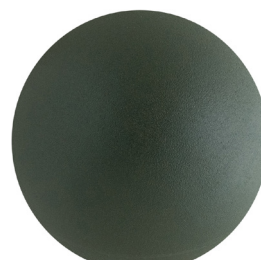
VWH1 (white)



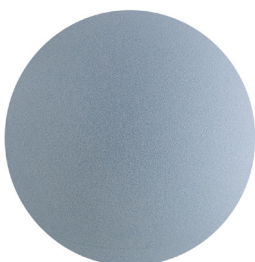
VCRT (marte)



VCR1 (venere)



VGRN (green)



VTQ1 (urano)

Floral



RTTN (antares)



RBLK (callisto)

Projects

