Line Sheet
Rev. 25.03.22

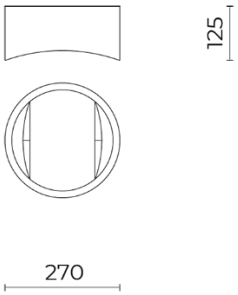
Kosmos

Options:	small, medium
Colour temperature:	4000K / 3000K / 2200K
Type of optics:	asymmetrical street ST-01, ME-01, LA-01
	symmetrical street SO-01
	rotosymmetric RS-01
	wet surface MB-01
	pedestrian crossings AP-01_SX
	pedestrian crossings AP-01_DX
	asymmetrical LT-06

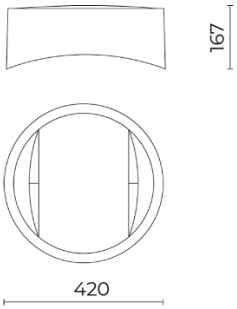
06KS_____

Colour: Sablé 100 Noir

Small



Medium



General features
Description: LED device for the lighting of pathways and urban areas
Insulation class: class II (class I on request)
Nominal voltage: 220-240 V / 50-
60 Hz Protection level: IP66
Protection against impact: IK09
Surge protection device: integrated 10kV-10kA, Class III, equipped with LED signalling and thermal fuse for disconnection at product end of life; impulse resistance CL II 10kV CM/DM
Power factor: > 0.9
Ambient temperature Ta: -30°C +50°C
Weight: small 3.50 kg; medium 7.50 kg
Maximum exposed surface: small 0.06 m^2; medium 0.030 m^2
Exposed lateral surface: small 0.140 m^2; medium 0.063 m^2
Common mode surge protection: 10 kV
Differential mode surge protection: 10 kV
Driver: included
Marks and Certifications: ENEC / CE
Classification: CUT OFF

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Cariboni group

Line Sheet
Rev. 25.03.22

Kosmos

Options:	small, medium
Colour temperature:	4000K / 3000K / 2200K
Type of optics:	asymmetrical street ST-01, ME-01, LA-01 symmetrical street SO-01 rotosymmetric RS-01 wet surface MB-01 pedestrian crossings AP-01_SX pedestrian crossings AP-01_DX asymmetrical LT-06

06KS_____

Colour: Sablé 100 Noir

Materials

Body, component compartment cover and mounting system: die-cast aluminium alloy UNI EN AB 47100 (copper content < 1%) of suitable thickness and with structural reinforcement to avoid tension which may lead to damage or cracks during standard use.

Screen: flat tempered glass

Optical unit: High-transparency PMMA lenses

Seal: anti-age expanded silicone

External screws and metal components: AISI 304 stainless steel

Internal screws: chrome-plated steel

Wiring plate: galvanised steel

Finish: phosphochromatisation-treated and polyester powder-coated in 16 phases for optimal weather resistance

Colours

Sablé 100 Noir

Installation and maintenance

Installation: pole-top / pole-side / arm / wall / portico /string suspension

Pole diameter: Ø 60 - 76 - 102 mm

Inclination: infinitely-adjustable -10° +190° (in 5° steps); horizontal ± 15°, vertical 0° ÷ 360°

Pole-top fitting: single arm in die-cast aluminium alloy UNI EN AB 47100 (copper content < 1%), polyester powder-coated Sablé 100 Noir for 76 mm Ø posts with post top reduction 60 mm Ø H. 90 mm.

Pole-side fitting: upwards installation on pole arm (for 60-76-102 mm Ø poles) with adjustable joint made of die-cast aluminium alloy UNI EN AB 47100 (copper content < 1%), polyester powder-coated Sablé 100 Noir; L-shaped joint made of die-cast aluminium alloy UNI EN AB 47100 (copper content < 1%), polyester powder-coated Sablé 100 Noir for 76 mm Ø pole, with post-top reduction 60 mm Ø H. 90 mm Ø.

Wall and false ceiling fitting: with joint made of die-cast aluminium alloy UNI EN AB 47100 (copper content < 1%), tubular iron (60 mm Ø) and fixing plate in hot-dip galvanised iron and polyester powder-coated Sablé 100 Noir.

Cable suspension fitting: for street units (6 ÷ 12 mm Ø cable), made of die-cast aluminium alloy UNI EN AB 47100 (copper content < 1%), polyester powder-coated Sablé 100 Noir and bracket in 304 stainless steel.

Wiring: pre-wired product with 600 mm L. wire and two-way connector

Ø power cable: 10 ÷ 14 mm

1 x 0.75 mm^2 double-insulated silicone rubber flexible cables

Cable gland: PG16

Optical unit substitutability: substitution of the LED disc

Wiring plate substitutability: removable plate

Power supply compartment: independent from the optical unit

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Kosmos
Options: small, medium
Colour temperature: 4000K / 3000K / 2200K
Type of optics: asymmetrical street ST-01, ME-01, LA-01
symmetrical street SO-01
rotosymmetric RS-01
wet surface MB-01
pedestrian crossings AP-01_SX
pedestrian crossings AP-01_DX
asymmetrical LT-06

06KS_____

Colour: Sablé 100 Noir

Optical system

Provided with 4000K, 3000K and 2200K (KOSMOS MEDIUM only) white emitters fitted via a “pick and place” system to a heat sinking metal core printed circuit board (MCPCB). Optical system composed of high-transparency poly-methyl-methacrylate lenses developed in order that each light source provides full photometry. This solution guarantees that the malfunctioning of an individual LED will not lead to less-illuminated areas, but at most will cause an overall decrease in the percentage of light over the entire area covered.

Colour rendering index (CRI): ≥ 70 (≥ 80 on request); SDCM=4

Optical unit life expectancy: > 160,000 h @ 700 mA @ Ta 25°C TM21 L80B10 L80B20

Driver life expectancy: > 100,000 h @ 700 mA @ Ta

25°C Photobiological safety class: EXEMPT GROUP

ULOR: 0 % - DLOR: 100 %

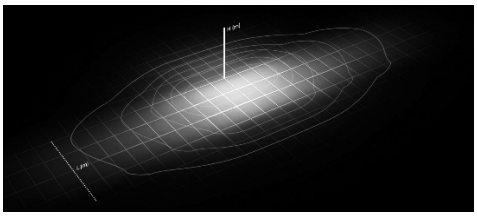
Light intensity category: G*3 asymmetrical street ST-01, ME-01, LA-01; G*3 wet surface and symmetrical street; G*6 asymmetrical LT-06; G*6 pedestrian crossing and rotosymmetric

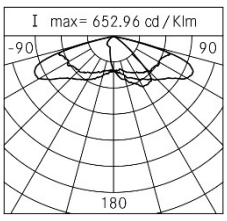
Normative framework

EN60598-1 / EN60598-2-3 / EN62471 / EN61547

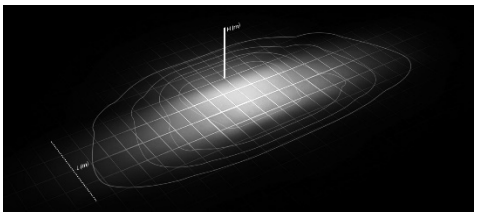
Asymmetrical street optics

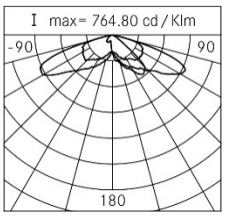
ST-01 L/H = 0.75 (L = Street width, H = Pole height)



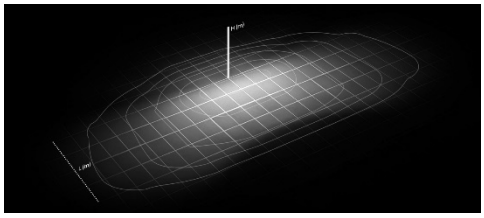


ME-01 L/H = 1 (L = Street width, H = Pole height)





LA-01 L/H = 1.25 (L = Street width, H = Pole height)



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Line Sheet
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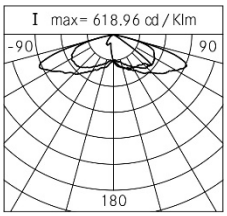
Kosmos
Options: small, medium
Colour temperature: 4000K / 3000K / 2200K
Type of optics: asymmetrical street ST-01, ME-01, LA-01
symmetrical street SO-01
rotosymmetric RS-01
wet surface MB-01
pedestrian crossings AP-01_SX
pedestrian crossings AP-01_DX
asymmetrical LT-06

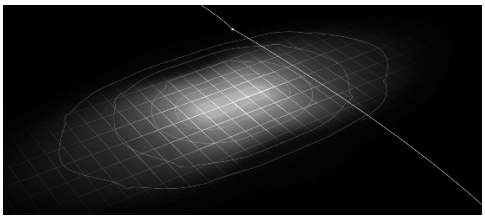
06KS_____

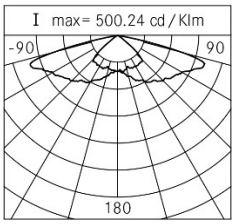
Colour: Sablé 100 Noir



Symmetrical street optics

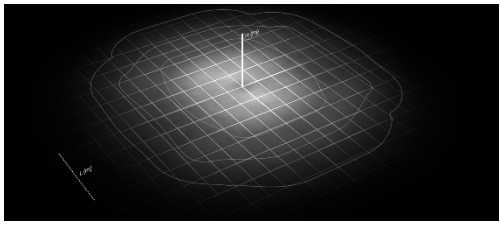
SO-01

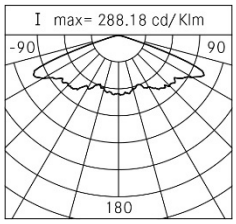




Rotosymmetric optics

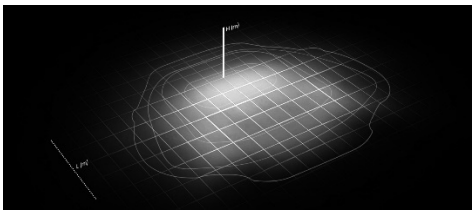
RS-01

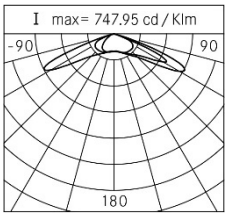




Asymmetrical optics

LT-06 L/H = 2 (L = Street width, H = Pole height)





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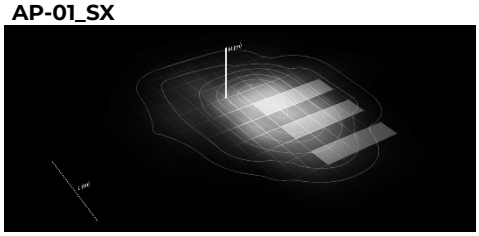
Kosmos
Options: small, medium
Colour temperature: 4000K / 3000K / 2200K
Type of optics: asymmetrical street ST-01, ME-01, LA-01
symmetrical street SO-01
rotosymmetric RS-01
wet surface MB-01
pedestrian crossings AP-01_SX
pedestrian crossings AP-01_DX
asymmetrical LT-06

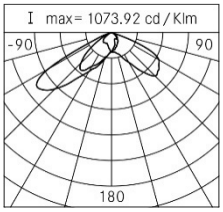
06KS_____

Colour: Sablé 100 Noir

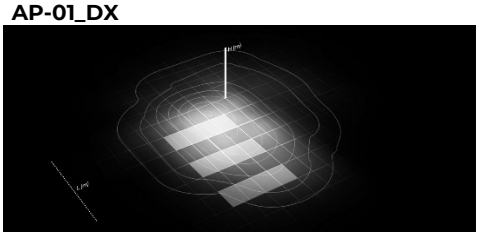
Optics for pedestrian crossings

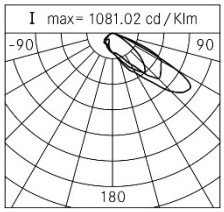
AP-01_SX





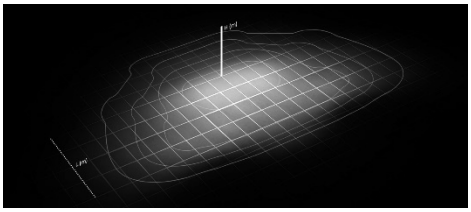
AP-01_DX

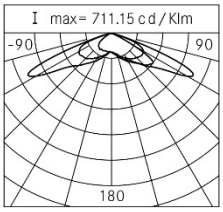




Optics for wet surfaces

MB-01





Performance data

ASYMMETRICAL STREET OPTICS ST-01 / ME-01 / LA-01 SYMMETRICAL STREET OPTICS SO-01 ROTOSYMMETRIC OPTICS RS-01 ASYMMETRICAL OPTICS LT-06									
Options	**Sources**	**mA**	**K**	**φ mod [lm]**	**P mod [W]**	**η mod [lm/W]**	**φ app [lm]**	**P app [W]**	**η app [lm/W]**
small	R1	350	4000	2330	12	203	2005	13,5	149
small	R1	525	4000	3300	17,5	189	2840	20	142
small	R1	700	4000	4170	24	174	3585	27	133
medium	R1	350	4000	2355	11,5	205	2025	13,5	150
medium	R1	525	4000	3350	17,5	191	2885	20	144
medium	R1	700	4000	4260	24	178	3665	27	136
medium	R2	350	4000	4680	23	203	4025	26,5	152
medium	R2	525	4000	6645	35,5	187	5715	39,5	145
medium	R2	700	4000	8415	48	175	7235	52,5	138
medium	R3	350	4000	6980	34,5	202	6005	39	154
medium	R3	525	4000	9875	53	186	8490	58,5	145
medium	R3	700	4000	12465	72	173	10720	78	137

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Line Sheet
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Kosmos
Options: small, medium
Colour temperature: 4000K / 3000K / 2200K
Type of optics: asymmetrical street ST-01, ME-01, LA-01
symmetrical street SO-01
rotosymmetric RS-01
wet surface MB-01
pedestrian crossings AP-01_SX
pedestrian crossings AP-01_DX
asymmetrical LT-06

06KS_____

Colour: Sablé 100 Noir

ASYMMETRICAL STREET OPTICS ST-01 / ME-01 / LA-01
SYMMETRICAL STREET OPTICS SO-01
ROTOSYMMETRIC OPTICS RS-01
ASYMMETRICAL OPTICS LT-06

Options	Sources	mA	K	φ mod [lm]	P mod [W]	η mod [lm/W]	φ app [lm]	P app [W]	η app [lm/W]
small	R1	350	3000	2175	12	189	1875	13,5	139
small	R1	525	3000	3080	17,5	176	2650	20	133
small	R1	700	3000	3890	24	162	3345	27	124
medium	R1	350	3000	2200	11,5	191	1890	13,5	140
medium	R1	525	3000	3130	17,5	179	2690	20	135
medium	R1	700	3000	3975	24	166	3420	27	127
medium	R2	350	3000	4370	23	190	3760	26,5	142
medium	R2	525	3000	6200	35,5	175	5335	39,5	135
medium	R2	700	3000	7855	48	164	6755	52,5	129
medium	R3	350	3000	6515	34,5	189	5605	39	144
medium	R3	525	3000	9215	53	174	7925	58,5	135
medium	R3	700	3000	11635	72	162	10005	78	128

OPTICS FOR WET SURFACES MB-01
OPTICS FOR PEDESTRIAN CROSSINGS AP-01_SX / AP-01_DX

Options	Sources	mA	K	φ mod [lm]	P mod [W]	η mod [lm/W]	φ app [lm]	P app [W]	η app [lm/W]
medium	R2	350	4000	4680	23	203	4025	26,5	152
medium	R2	525	4000	6645	35,5	187	5715	39,5	145
medium	R2	700	4000	8415	48	175	7235	52,5	138
medium	R3	350	4000	6980	34,5	202	6005	39	154
medium	R3	525	4000	9875	53	186	8490	58,5	145
medium	R3	700	4000	12465	72	173	10720	78	137

OPTICS FOR WET SURFACES MB-01
OPTICS FOR PEDESTRIAN CROSSINGS AP-01_SX / AP-01_DX

Options	Sources	mA	K	φ mod [lm]	P mod [W]	η mod [lm/W]	φ app [lm]	P app [W]	η app [lm/W]
medium	R2	350	3000	4370	23	190	3760	26,5	142
medium	R2	525	3000	6200	35,5	175	5335	39,5	135
medium	R2	700	3000	7855	48	164	6755	52,5	129
medium	R3	350	3000	6515	34,5	189	5605	39	144
medium	R3	525	3000	9215	53	174	7925	58,5	135
medium	R3	700	3000	11635	72	162	10005	78	128

ASYMMETRICAL STREET OPTICS ME-01 / LA-01
ASYMMETRICAL OPTICS LT-06
SYMMETRICAL STREET OPTICS SO-01

Options	Sources	mA	K	φ mod [lm]	P mod [W]	η mod [lm/W]	φ app [lm]	P app [W]	η app [lm/W]
medium	R2	350	2200	3615	23	157	3110	26,5	117
medium	R2	525	2200	5130	35,5	145	4415	39,5	112
medium	R2	700	2200	6500	48	135	5590	52,5	106
medium	R3	350	2200	5395	35	156	4640	39	119
medium	R3	525	2200	7625	53	144	6560	59	112
medium	R3	700	2200	9630	72	134	8280	78	106

Data of the lighting source flux and efficiency refer to the LED module, without lenses. In case you need data of the LED module complete with lenses, please multiply the mentioned data by 0.9 factor.
Values indicated in this technical sheet are to be considered nominal values with a tolerance of +/-7%.

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Legend

mA = Power supply

K = Colour temperature

φ mod [lm] = Source flux

P mod [W] = Source power

η mod [lm/W] = Source efficiency

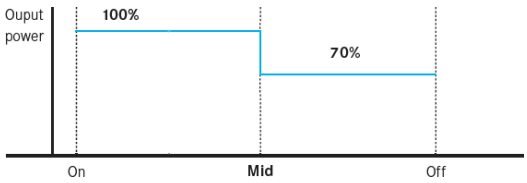
φ app [lm] = Unit flux

P app [W] = Unit power

η app [lm/W] = Unit efficiency

Flux regulation

Custom programmable virtual midnight self-learning (code ending in _HM4)



Profile standard

700 mA 525 mA 350 mA

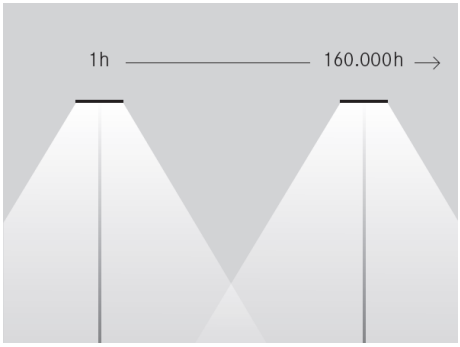
Mid (mezzanotte virtuale - *virtual midnight* - virtuellen mitternacht)

Ex. code: 01KI.....**HM4**

Custom programmable versions available on request; via the virtual midnight algorithm it is possible to obtain a precise percentage reduction of the luminous flux and therefore of the power consumption of the unit. The system can be programmed to function with DALI protocol.

Constant Lumen Output CLO (standard)

The aim of the CLO is to compensate the natural deterioration of the luminous flux of the LEDs. Through a gradual pre-programmed increase in current, the luminous flux is maintained over time and in any case never drops below pre-set limits.



Group Management: flux adjustment of 1-10V (on request) and DALI (on request)

1-10V — This is an analogical control system based on the distribution of a voltage signal of between 1 and 10 Volts, where 1V corresponds to the minimum light intensity value and 10V corresponds to the maximum value.

DALI — This is a digital control system where every device is assigned a unique address that allows individual light points to be controlled and control groups to be created.

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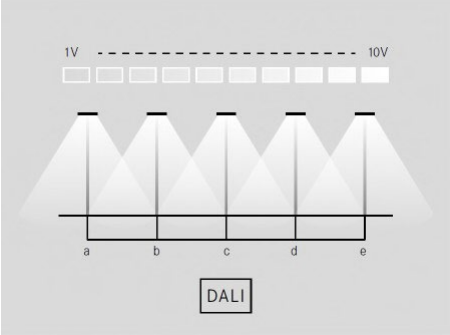
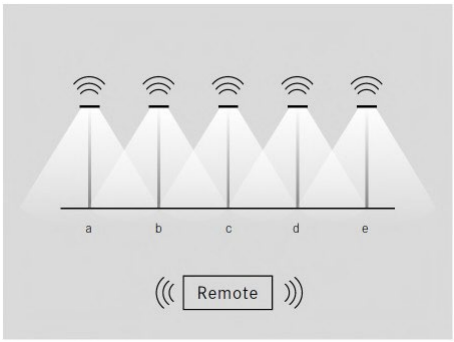


Remote Management (on request)

PLC (Power Line Communication) and wireless remote control systems allow remote luminous flux dimming managing, system monitoring and the display of consumption statistics and faults. In addition to reducing consumption and running costs, remote management systems provide an infrastructure that can be used to host other local systems or services that are compatible with the latest smart lighting projects.

PLC — Via PLC, without additional wiring in the system, it is possible to communicate with every single light point. The system allows each individual unit to be monitored remotely and consumption profiles to be modified.

Wireless — The wireless remote management system allows simple remote management of units, without any constraint due to the pre-existing system. Wireless technology allows each individual unit to be monitored and consumption profiles to be modified.



Sensors (on request)

Motion and presence sensors — The use of motion sensors allows for the detection of passing pedestrians or vehicles and the regulation of the flux, thus guaranteeing an appropriate level of safety. If no moving pedestrians or vehicles are detected, flux is reduced, thus allowing significant reductions in consumption and cost. The type of sensor and the method of installation must be defined according to the application context and the size and shape of the space in question. The system control can be centralised through communication with the 1-10V, DALI or Wireless systems. Sensors must be mounted on the exterior of the product.

Light sensor — Cariboni products with DALI, 1-10V or Wireless adjustment are compatible with light sensors that adjust light emission based on the level of environmental light. This solution avoids unnecessary waste and guarantees rapid return on investment.

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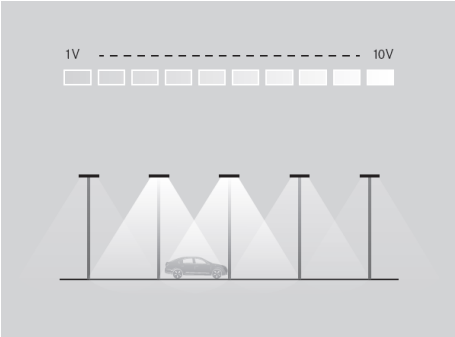
Options:	small, medium
Colour temperature:	4000K / 3000K / 2200K
Type of optics:	asymmetrical street ST-01, ME-01, LA-01
	symmetrical street SO-01
	rotosymmetric RS-01
	wet surface MB-01
	pedestrian crossings AP-01_SX
	pedestrian crossings AP-01_DX
	asymmetrical LT-06

06KS_____

Colour: Sablé 100 Noir



The features of the product listed above may be subjected to change without notice. They will have to be confirmed in case of order.
In order to facilitate a constant updating of their products, Cariboni Group reserves the right to make changes without prior notice.

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