

PIANO



Schröder





Design: Michel Tortel

CHARACTERISTICS – LUMINAIRES

Optical compartment tightness level:	IP 66
	LED Safe®
Control gear tightness level:	IP 66 (*)
Impact resistance (glass):	IK 08 (**)
Aerodynamic resistance (CxS):	Mini 0.040m²
	Midi 0.057m²
	Maxi 0.070m²
Nominal voltage:	230V - 50Hz
Electrical class:	I or II (*)
Weight (total):	Mini 7kg
	Midi 8.7kg
	Maxi 14.5kg
Installation height:	Mini 3.5 - 6m
	Midi 4 - 8m
	Maxi 8 - 12m

(*) according to IEC - EN 60598

(**) according to IEC - EN 62262

KEY ADVANTAGES

- Range of luminaires for various urban applications
- LensoFlex®2 with neutral white (4250K) LEDs: high performance photometry, comfort and safety
- Maximised savings in energy and maintenance costs
- FutureProof: photometric engine and electronic assembly are easy to replace on-site
- ThermiX® and LED Safe®: maintain performance over time
- Aesthetic design
- High-quality finishing
- Dimming and remote management systems (optional)
- Durable and recyclable materials
- Surge protection (10kV)

THE IDEAL INSTRUMENT FOR URBAN ENVIRONMENTS

The Piano range of luminaires is now equipped with second generation LensoFlex®2 photometric engines. They offer a high-performance photometry specifically adapted to lighting urban applications.

Furthermore, the high-quality finishing and aesthetic design of the Piano compliments and enhances any landscape.

This range was developed to incorporate 3 different sizes of luminaire, a wall bracket and a rear bracket version so that streets, side-streets and large pavements can be lit using the same luminaire design.

The Piano Mini also offers excellent photometric solutions for low-level areas, such as under foliage and does not generate intrusive light for people living in apartments.

This winning combination of performance, design and flexibility make it the ideal tool for lighting streets, pedestrian areas, parks and bike paths.

In short, the Piano family offers towns and cities the ideal tool to improve lighting levels, generate energy savings and reduce their ecological footprint.

Colours: AKZO black 200 sanded

OPTIONS

- Dismountable IP 66 optical unit (Piano Mini only)
- Warm white 3000K
- Autonomous dimming system with five levels
- OWLET remote management system
- Compact photoelectric cell
- Motion detection
- All RAL or AKZO colours

PIANO LED LIGHTING

LENSOFLEX®2

The Piano range of luminaires is equipped with second generation LensoFlex®2 photometric engines that have been specifically developed for lighting spaces where the well-being and safety of people using the environments are essential. This system is based upon the addition principle of photometric distribution. Each LED is associated with a specific lens that generates the complete photometric distribution of the luminaire.

The Lensoflex®2 concept enables LEDs to be placed horizontally and offers a lighting distribution that is specially adapted to the needs of each application.

FUTUREPROOF

Using state-of-the-art technology, Piano luminaires have been designed to fulfil the FutureProof concept.

Both the photometric engine and the electrical power supply can be replaced on-site to take advantage of any future technological developments.

This easy and rapid procedure reduces maintenance costs and contributes to reducing the total cost of ownership.

The photometric engine is IP 66 LEDSafe® to protect the LEDs and lenses from coming into contact with the outside environment and so maintain photometric performance over time.

A dismountable optical unit which is IP 66 sealed is available as an option for the Piano Mini.

PERFORMANCE AND FLEXIBILITY

The Piano luminaires are equipped with photometric engines composed of modular quantities of LEDs so that they can offer a wide range of lumen packages. They can also be equipped with a variety of drivers and dimming options.

It is the number of LEDs in combination with the driving current that determines the intensity level of the light distribution.

This flexibility ensures that the light distributions are specifically adapted to the real needs of the area to be lit.

ENERGY SAVINGS

The Piano range is equipped with LEDs and various dimming and remote management options for a substantial reduction in energy consumption. It offers a competitive alternative to luminaires equipped with traditional light sources.



PHOTOMETRY

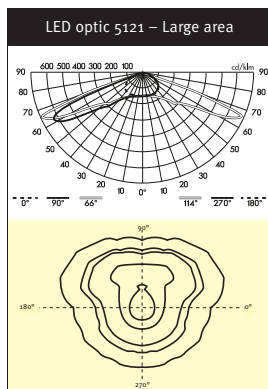
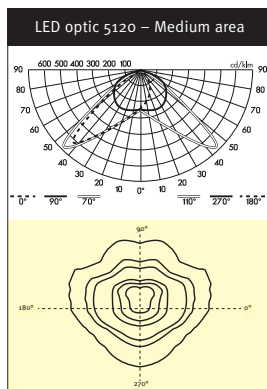
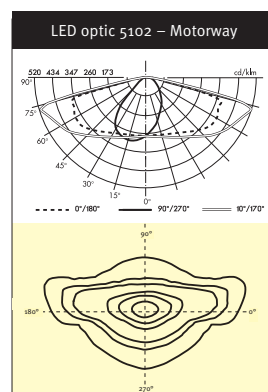
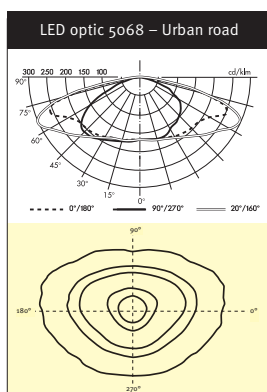
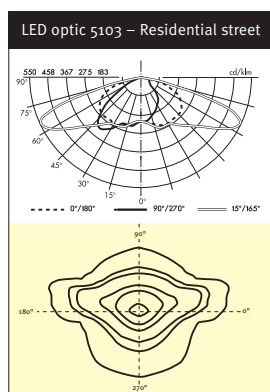
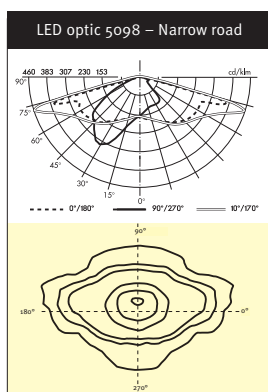
LENSOFLEX®2											Lifetime residual flux @t _a 25°C ^(*)
Power consumption & nominal flux		Mini		Midi			Maxi				
Number of LEDs	Neutral white (4000K)	16 LEDs	24 LEDs	32 LEDs	48 LEDs	56 LEDs	72 LEDs	88 LEDs	96 LEDs	104 LEDs	@100.000h
Current: 350mA	Nominal flux (lm)*	2400	3600	4800	7200	8400	10800	13200	14400	15600	90%
	Power consumption (W)	19	28	36	55	63	80	94	109	118	
Current: 500mA	Nominal flux (lm)*	3100	4700	6300	9500	11000	14200	17400	19000	20500	90%
	Power consumption (W)	26	39	52	77	89	111	134	154	166	
Current: 700mA	Nominal flux (lm)*	4000	6100	8100	12200	14200	18300	22400	-	-	80%
	Power consumption (W)	38	55	73	107	123	154	196	-	-	

^(*) The nominal flux is an indicative LED flux @ t_j 25°C based on LED manufacturer's data. The real flux output of the luminaire depends on environmental conditions (e.g. temperature and pollution) and the optical efficiency of luminaire.

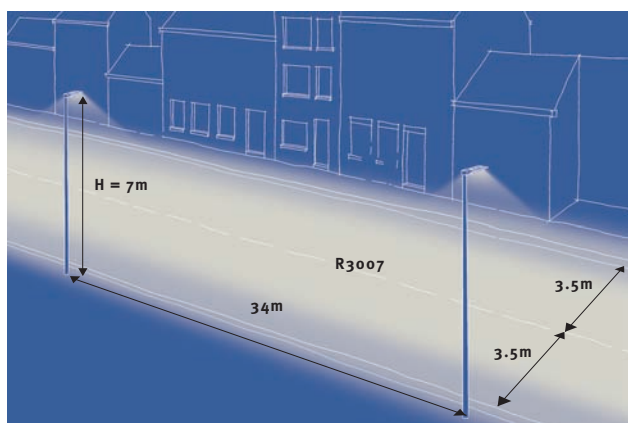
Nominal flux depends on the type of LED in use and is likely to change in accordance with the continuous and rapid developments in LED technology. To follow the progress of the luminous efficiency of the LEDs used, please visit our website.

^(**) In accordance with IES LM-80 - TM -21

LIGHT DISTRIBUTIONS



CASE STUDY



Piano Midi

LensoFlex®2 56 LEDs @500mA

4000K neutral white

MF = 0.8

91W

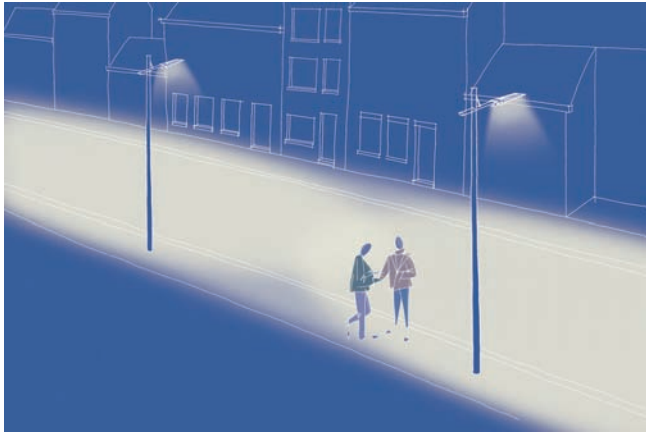
M4a - classified roadway according to CIE 115

L_{ave} = 0.75cd/m²

For 4,000 hours of use per year, for 100m of roadway, the Piano Midi luminaires equipped with 56 LEDs will have an annual power consumption of 1070kWh while maintaining the average luminance of 0.75cd/m² required.

SLEEC-L = 0.51W/(m².cd/m²) following Rev. EN 13201 draft. This corresponds to a consumption of less than 3kWh/day and emissions lower than 1.35kg eq CO₂ according to the average European equivalent of 0.46kg eq CO₂/kWh.

APPLICATIONS



- Optic LensoFlex®2 “Residential street” 5103
- For M4 classification according to CIE 115



- Optic LensoFlex®2 “Motorway” 5102
- For M3 classification according to CIE 115



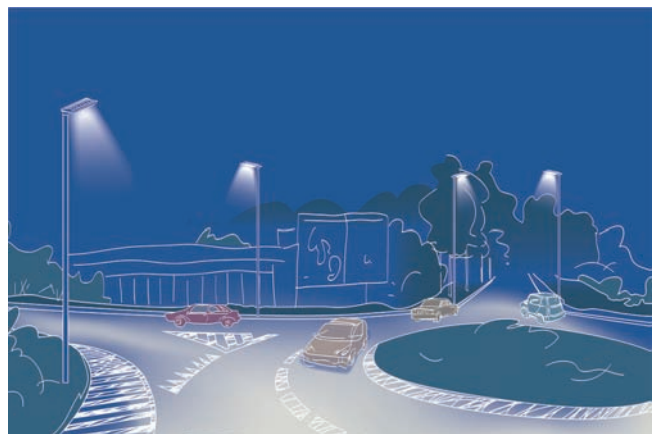
- Optic LensoFlex®2 “Narrow road” 5098
- For S classification according to CIE 115



- Optic LensoFlex®2 “Urban road” 5068
- For M3 classification according to CIE 115



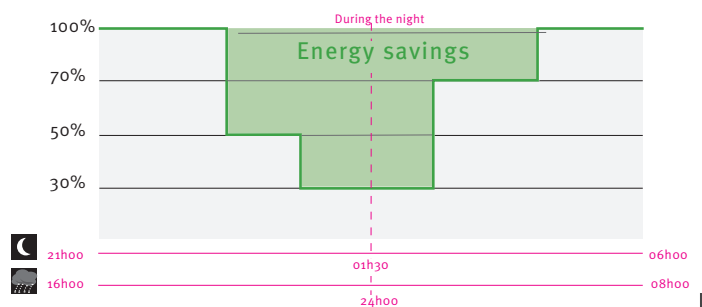
- Optic LensoFlex®2 “Large area” 5121

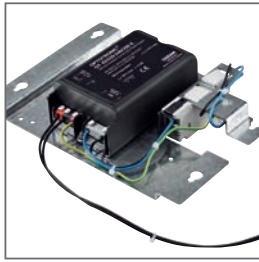


- Optic LensoFlex®2 “Medium area” 5120

VARIABLE INTENSITY (DIMMING) FOR EFFICIENT AND COMFORTABLE LIGHTING

Throughout the day, the lighting needs vary according to daylight and more importantly activity in the area. The right lighting is also adapting precisely the quantity of light according to the real needs at a specific time. Dimming systems can generate substantial energy savings. The Piano luminaires can be equipped with different dimming and remote management systems.





The power supply (as well as the optional dimming or remote management system) is mounted on a removable gear tray (FutureProof).

Surge protection up to 10kV



Sustainable and recyclable materials: painted aluminium and an extra-clear glass protector

ThermiX®: a short and direct thermal path for the best possible heat extraction

Optical compartment IP 66 LEDSafe® completely sealed by an extra-clear glass protector for optimal transmission of luminous flux

LensoFlex® 2: a photometric engine specifically dedicated to offering photometric flexibility and performance. LEDs in neutral white 4250K (warm white and cold white are optional) equipped with Schröder developed lenses

FutureProof photometric engine, easily removed and replaced on-site to take advantage of future technological developments

Side-entry or post-top mounting.



Dismountable IP 66 optical unit (Piano Mini only)

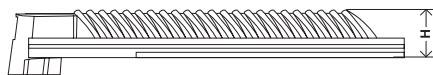
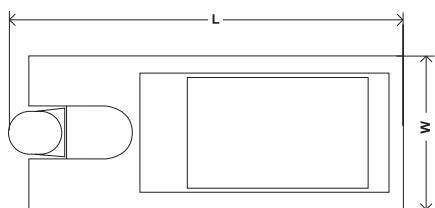


VERSIONS AND OPTIONS

			Mini	Midi	Maxi
OPTICS					
LensoFlex®2	No. LEDs	16-24	●	X	X
		32-48-56	X	●	X
		72-88-96-104	X	X	●
	Photometrical distributions	4 types	●	●	●
	CCT LED	Neutral White (4000 k)	●	●	●
		Warm White (3000 k)	○	○	○
		Cold White	○	○	○
FutureProof	LEDSafe®	●	●	●	
	Gasket sealed	○	X	X	
Protector	Glass	Extra-clear	●	●	●
Embellishment plate			●	●	●
ELECTRICAL					
Power range	Driving current	350mA	○	○	○
		500mA	●	●	●
		700mA	○	○	○
Constant Light Output			○	○	○
Dimming/switching control	1-10V		○	○	○
	Bi-Power	50%	○	○	○
	Profile	custom	○	○	○
	Photo cell		○	○	○
	OWLET remote mgt.	LuCo	○	○	○
Electrical class	Class II		●	●	●
	Class I		○	○	○
Surge protection		10kV	●	●	●
MECHANICS					
Side-entry mounting	Ø 48 - 60mm at 0°	2 M8 screws	○	○	○
Post-top mounting	Ø 60mm at 5°	2 M8 screws	○	○	○
	Ø 76mm at 5°	2 M8 screws	○	○	○
Adjustable inclination bracket	Ø 48 - 60mm: 0° - 90°	2 M8 screws	○	○	○
OTHERS					
Gear plate			●	●	●
Pre-cabled		custom length	○	○	○
Colour	Black	AKZO 200	●	●	●
	All RAL and AKZO		○	○	○

- included
- optional
- X not available

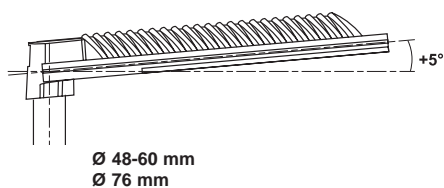
DIMENSIONS



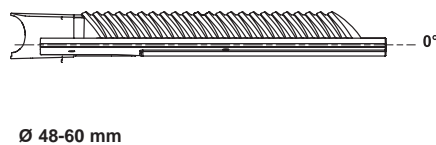
	Mini	Midi	Maxi
L	585mm	677mm	989mm
W	276mm	276mm	295mm
H	87mm	87mm	92mm

MOUNTING

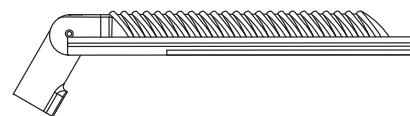
POST-TOP POSITION



SIDE-ENTRY POSITION



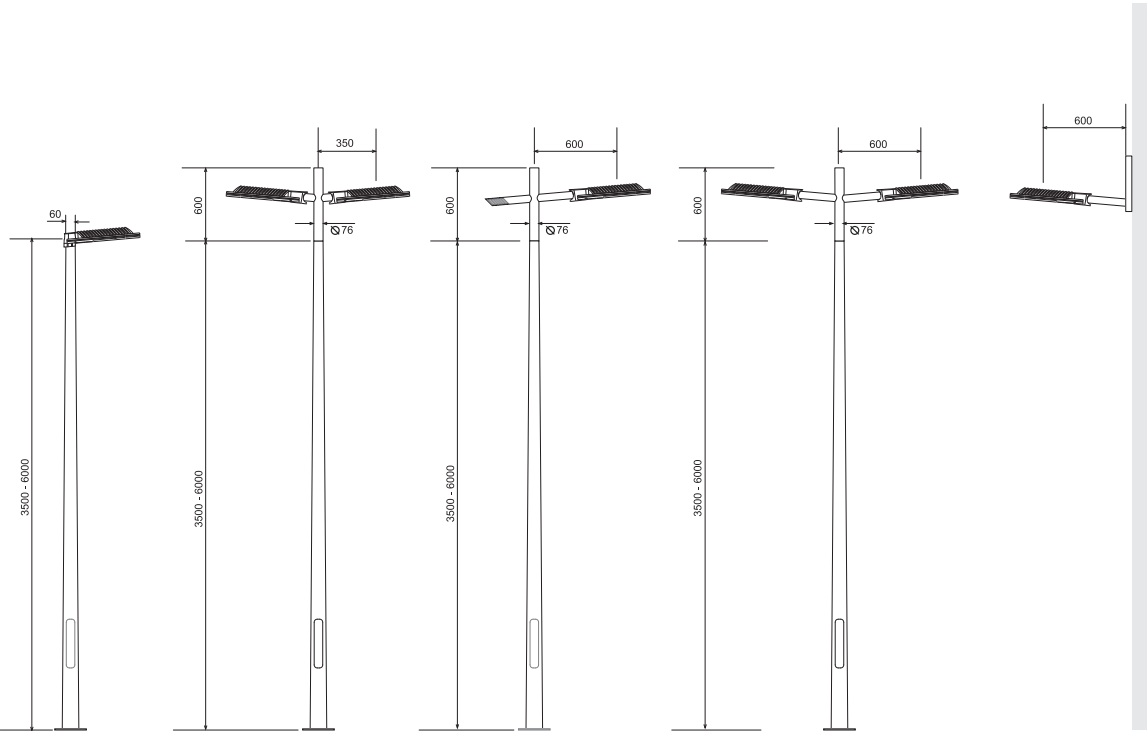
ADJUSTABLE INCLINATION BRACKET



KORDA FAMILY OF BRACKETS AND COLUMNS



KORDA SMALL MODEL



KORDA LARGE MODEL

