



PIANO MINI

THE GREEN LIGHT



Schröder Group GfE



Design: Michel Tortel



CHARACTERISTICS – LUMINAIRE

Optical compartment tightness level:	IP 66 (*)
Electronic compartment tightness level:	IP 66 (*)
Impact resistance (glass):	IK 08 (**)
Aerodynamic resistance (CxS):	0.04m ²
Nominal voltage:	230V - 50Hz
Electrical class:	I or II (*)
Weight (total):	7kg
Installation height:	3.5 - 6m

(*) according to IEC - EN 60598

(**) according to IEC - EN 62262

KEY ADVANTAGES

- LensoFlex2®: numerous high-performing light distributions, comfort and safety
- Modules of 16 or 24 LEDs
- Multiple driving currents (350 - 500 - 700 mA)
- Maximised savings in energy and maintenance costs
- FutureProof: photometric engine and electronic assembly are easy to replace on-site
- LEDSafe® (optional) and ThermiX®: maintain performance over time
- Autonomous multi-level dimming system (optional)
- OWLET remote management system (optional)
- Durable and recyclable materials
- Surge protection 10kV

THE IDEAL INSTRUMENT FOR URBAN ENVIRONMENTS

The Piano Mini luminaire is the new addition to the Piano range of luminaires.

It is the smallest model and is ideally suited to lighting residential streets, pedestrian areas, parks and bike paths. It offers towns and cities the ideal tool to improve lighting levels, generate energy savings and reduce their ecological footprint.

It can be fitted with a module of either 16 or 24 LEDs. It is equipped with the second generation LensoFlex2® photometric engine which offers a high-performance photometry specifically adapted to lighting urban and rural applications and optimises the creation of ambiance to provide a secure and safe environment.

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.

A rear bracket version of the Piano Mini luminaire is available so that streets, side-streets and large pavements can be lit using the same luminaire design.

The wall bracket allows for the lighting of narrow streets as well as poorly lit areas.

Colours: AKZO black 200 sanded

OPTIONS

- LEDSafe® optical unit
- Warm white LEDs
- Autonomous dimming system with five levels
- OWLET remote management system
- Compact photoelectric cell
- All RAL or AKZO colours

PIANO THE GREEN LIGHT



For more details and to follow the progress of the product configurations, please visit our website.

LENSOFLEX2®

The Piano Mini is equipped with second generation LensoFlex2® 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. It is the number of LEDs in combination with the driving current that determines the intensity level of the light distribution.

FUTUREPROOF

The Piano Mini is designed to meet our FutureProof concept. Both the photometric engine and the electrical power supply can be replaced on-site to take advantage of any future technological developments.

The Piano Mini can be fitted with a LEDSafe® or non-LEDSafe® optical unit. Both versions are IP 66 sealed.

The LEDSafe® version has a completely sealed photometric engine which can be completely removed and replaced by a new one on-site.

Access to the LED modules of the non-LEDSafe® version is gained by simply loosening 4 screws and the gasket in order to remove the glass protector.

The protector of the Piano Mini luminaire is in extra-clear glass, which optimises the transmission of luminous flux.

THERMIX®: THERMAL MANAGEMENT

The Thermix® concept maintains 90% of the initial luminous flux for a minimum of 60,000 hours, at an annual average night temperature of 25°C. This concept is based on optimising several parameters that are involved in the thermal management of LEDs:

- The thermal compartmentalisation between LEDs and electronic control gear;
- Direct conduction: the heat escapes via the shortest path from the source to the exterior;
- The optimised design of the thermal exchange surface with the exterior.

HIGHLY EFFICIENT POWER SUPPLY

The Piano Mini is equipped with power supplies that ensure 90% efficiency on average and fulfil Safety Extra Low Voltage (SELV) requirements.

Three supply currents are available (350 – 500 – 700 mA) to optimise the efficacy of the LEDs for its application.

The luminaire is equipped with an increased protection against power surges up to 10kV.

Input of 1-10V, allows a user to integrate a dimming system to optimise energy used.



PHOTOMETRY

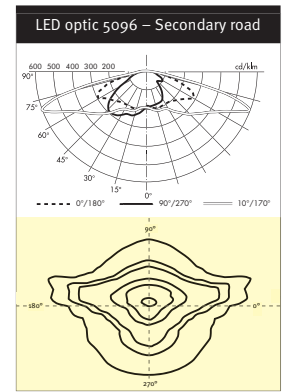
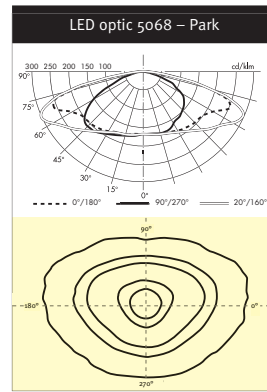
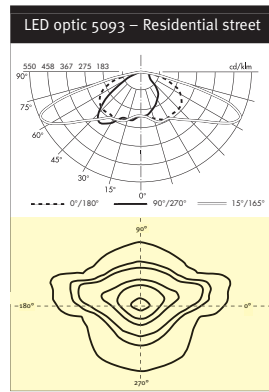
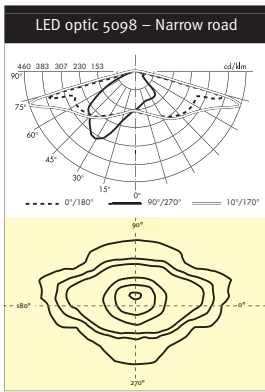
PIANO MINI

LENSOFLEX2®				Lifetime residual flux @ t _a 25°C	
Number of LEDs	Neutral white (4100K)	16 LEDs	24 LEDs	@60.000h	@100.000h
Current: 350mA	Nominal flux	2000 lm*	3000 lm*	90%	70%
	Power consumption	19 W	28 W		
Current: 500mA	Nominal flux	2700 lm*	4100 lm*		
	Power consumption	27 W	41 W		
Current: 700mA	Nominal flux	3600 lm*	-		
	Power consumption	40 W	-		

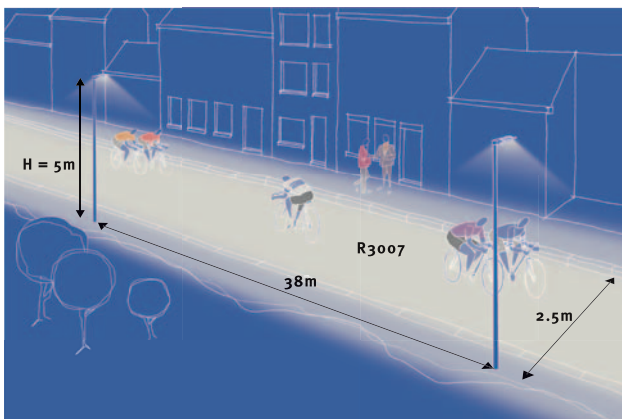
* The nominal flux is an indicative LED flux @ t_a 25°C based on LED manufacturer's data. The real flux output of the luminaire depends on environmental conditions (e.g. temperature and pollution) and the optical efficiency of luminaire.

Nominal flux depends on the type of LED in use and 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.

LIGHT DISTRIBUTIONS



CASE STUDY



Piano Mini

LensoFlex2® 16 LEDs @350mA

4100K neutral white

19W

MF = 0.8

S5 - classified roadway according to CIE 115

E_{ave} = 3 lux

For 4,000 hours of use per year, for 100m of roadway, the Piano Mini luminaires equipped with 16 LEDs will have an annual power consumption of 200kWh while maintaining the average illuminance of 3 lux required.

SLEEC-E = 0.04 << 0.07W/lux/m² following Rev. EN 13201 draft.

This corresponds to a consumption of less than 0.55kWh/day and emissions lower than 0.25kg eq CO₂ according to the average European equivalent of 0.46kg eq CO₂/kWh.

APPLICATIONS



- Optic LensoFlex2® "Residential street" 5093
- For M4 classification according to CIE 115
- SR > 50% included



- Optic LensoFlex2® "Secondary road" 5096
- For M3 classification according to CIE 115
- SR > 50% included



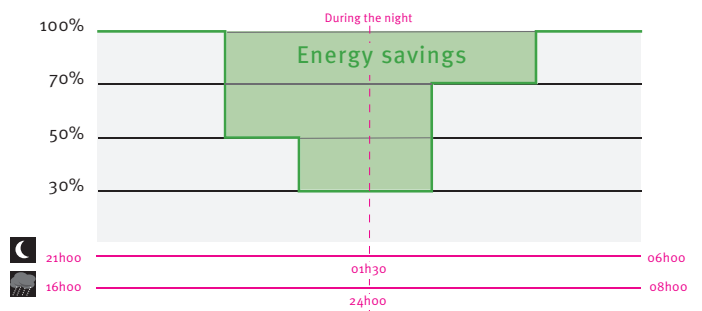
- Optique LensoFlex2® "Narrow road" 5098
- For S classification according to CIE 115



- Optic LensoFlex2® "Park" 5068
- For S classification according to CIE 115

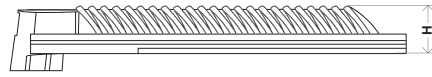
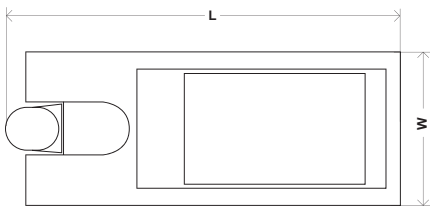
VARIABLE INTENSITY (DIMMING) FOR EFFICIENT AND COMFORTABLE LIGHTING

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 Mini can be equipped with different dimming and remote management systems.



PIANO MINI

DIMENSIONS

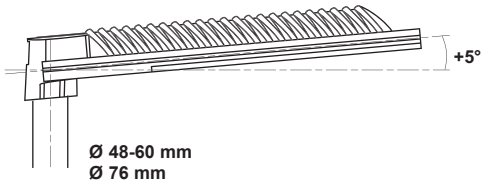


Piano Mini	
L	585 mm
W	276 mm
H	87 mm

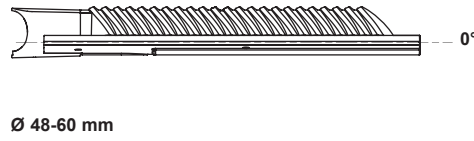
MOUNTING



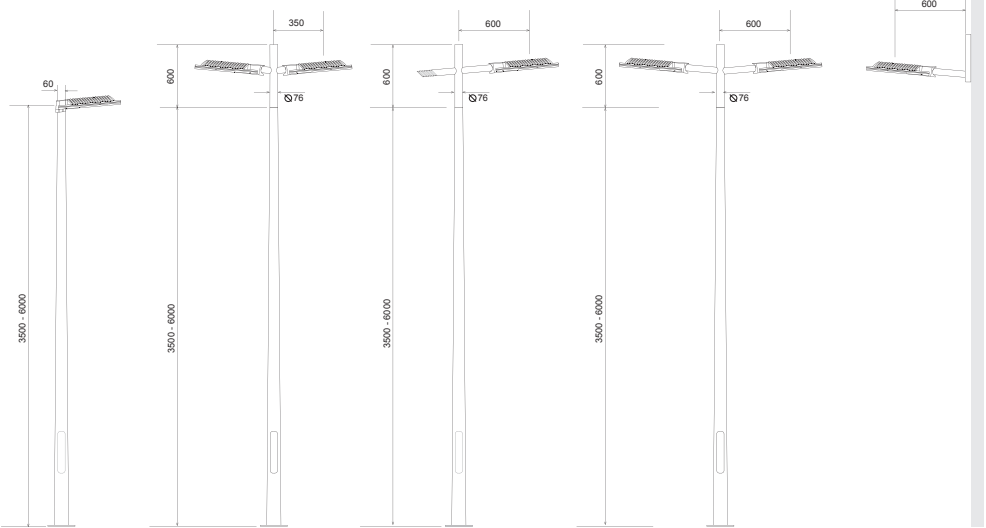
VERTICAL POSITION



SIDE-ENTRY POSITION



KORDA FAMILY OF BRACKETS AND COLUMNS











LED GENERATION

Schröder