

Piano



Designer : Michel Tortel



The ideal instrument for urban environments

Designed by Michel Tortel to enhance urban environments both by day and by night, the Piano range has an refined design and a high-quality finish. It complements any landscape where aesthetics and performance are important.

Taking advantage of state-of-the-art LED technology and control solutions, Piano provides the right light, anywhere, anytime in the urban environment.

This range includes 3 different sizes as well as a side-entry and a post-top fixation so that streets, passages and large pavements can be lit using the same luminaire design.

This winning combination of performance, design and flexibility makes it perfect for lighting streets, pedestrian areas, parks and bike paths. In short, the Piano range offers towns and cities the ideal tool to improve lighting levels, generate energy savings and reduce their ecological footprint.



IP 66 LEDSafe	IP 66	IK 08



Concept

Piano is composed of a high-pressure, die-cast aluminium body and a glass protector.

The Piano range incorporates 3 sizes, all equipped with second-generation LensoFlex®2 photometric engines. They offer high-performance photometry specifically developed to provide safety and comfort in urban environments.

Designed for post-top (Ø48-60 or Ø76mm) or side-entry (Ø48-60mm) mounting at a height of 4 to 12 metres, Piano is the ideal tool for lighting streets, pedestrian areas, parks and bike paths. Piano also offers excellent photometric solutions for low-level areas, such as under foliage and does not generate intrusive light for people living in apartments.

The luminaire can be supplied with a mains cable. After installation, the luminaire can be opened for servicing or maintenance. To access the inside of the luminaire, the lower section can be opened.



The photometric engine includes a flux enhancer to provide maximised performance without compromising on comfort



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

Types of application

- URBAN & RESIDENTIAL STREETS
- BRIDGES
- BIKE & PEDESTRIAN PATHS
- RAILWAY STATIONS & METROS
- CAR PARKS
- LARGE AREAS
- SQUARES & PEDESTRIAN AREAS
- ROADS & MOTORWAYS

Key advantages

- Range of luminaires for various urban applications
- LensoFlex®2: high-performance photometry
- FutureProof : smart upgradability
- Maximised savings in energy and maintenance costs
- Aesthetic design and high-quality finishing



Side-entry or post-top mounting.



For maintenance, the Piano can be opened to access internal components.



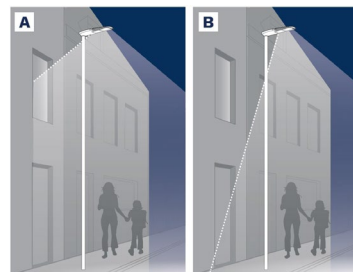
LensoFlex®2

LensoFlex®2 is based upon the addition principle of photometric distribution. Each LED is associated with a specific PMMA lens that generates the complete photometric distribution of the luminaire. The number of LEDs in combination with the driving current determines the intensity level of the light distribution. The proven LensoFlex®2 concept includes a glass protector to seal the LEDs and lenses into the luminaire body.



Back Light control

As an option, the LensoFlex®2 modules can be equipped with a Back Light control system. This additional feature minimises light spill from the back of the luminaire to avoid intrusive light towards buildings.

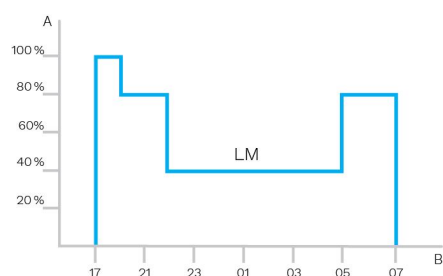


A. Without Back Light control | B. With Back Light control



Custom dimming profile

Intelligent luminaire drivers can be programmed with complex dimming profiles. Up to five combinations of time intervals and light levels are possible. This feature does not require any extra wiring. The period between switching on and switching off is used to activate the preset dimming profile. The customised dimming system generates maximum energy savings while respecting the required lighting levels and uniformity throughout the night.

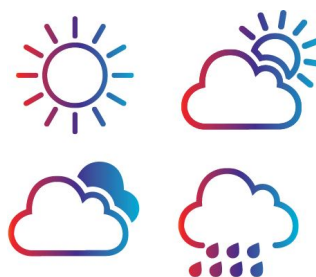


A. Performance | B. Time



Daylight sensor / photocell

Photocell or daylight sensors switch the luminaire on as soon natural light falls to a certain level. It can be programmed to switch on during a storm, on a cloudy day (in critical areas) or only at night fall so as to provide safety and comfort in public spaces.



PIR sensor: motion detection

In places with little nocturnal activity, lighting can be dimmed to a minimum most of the time. By using passive infrared (PIR) sensors, the level of light can be raised as soon as a pedestrian or a slow vehicle is detected in the area. Each luminaire level can be configured individually with several parameters such as minimum and maximum light output, delay period and ON/OFF duration time. PIR sensors can be used in an autonomous or interoperable network.



Owlet IoT

Owlet IoT remotely controls luminaires in a lighting network, creating opportunities for improved efficiency, accurate real-time data and energy savings of up to 85%.



ALL-IN-ONE

The LUCO P7 CM controller includes the most advanced features for optimised asset management. It also provides an integrated photocell and operates with an astronomical clock for seasonal dimming profile adaptations.

EASY TO DEPLOY

Thanks to wireless communication, no cabling is needed. The network is not subject to physical constraints or limitations. From a single control unit to an unlimited network, you can expand your lighting scheme at any time.

With real-time geolocation and automatic detection of luminaire features, commissioning is quick and easy.

USER-FRIENDLY

Once a controller is installed on a luminaire, the luminaire automatically appears with its GPS coordinates on a web-based map.

An easy-to-use dashboard enables each user to organise and customise screens, statistics and reports. Users can gain relevant, real-time insights.

The Owlet IoT web application can be accessed at all times from anywhere in the world with a device connected to the Internet. The application adapts to the device to offer an intuitive and user-friendly experience.

Real-time notifications can be pre-programmed to monitor the most important elements of the lighting scheme.



Plugging the LUCO P7 CM controller onto the 7-pin NEMA socket.

SECURE

The Owlet IoT system uses a local wireless mesh communication networks to control the on-site luminaires combined with a remote control system utilising the cloud to ensure smooth data transfers to and from the central management system.

The system uses encrypted IP V6 communication to protect data transmission in both directions. Using a secure APN, Owlet IoT ensures a high level of protection.

In the exceptional case of a communication failure, the built-in astronomical clock and photocell will take over to switch the luminaires on and off, thus avoiding a complete blackout at night.

EFFICIENT

Thanks to sensors and/or pre-programmed settings, lighting scenarios can be easily adapted to cope with live events, providing the right lighting levels at the right time and in the right place.

The integrated utility grade meter offers the highest accuracy available on the market today, enabling decisions based on real figures.

Accurate real-time feedback and clear reporting ensures that the network operates efficiently and maintenance is optimised.

When LED luminaires are switched on, the inrush current can create problems for the electricity grid. Owlet IoT incorporates an algorithm to preserve the grid at all times.

OPEN

The LUCO P7 CM controller can be plugged onto the standard 7 pin NEMA socket and operates through either a DALI or 1-10V interface to control the luminaire.

Owlet IoT is based on the IPv6 protocol. This method for addressing devices can generate an almost unlimited number of unique combinations to connect non-traditional components to the Internet or computer network.

Through open APIs, Owlet IoT can be integrated into existing or future global management systems.

GENERAL INFORMATION

Recommended installation height	4m to 12m 13' to 39'
FutureProof	Easy replacement of the photometric engine and electronic assembly on-site
Driver included	Yes
CE Mark	Yes
ENEC+ certified	Yes
ETL/UL certified	Yes
ROHS compliant	Yes
Testing standard	LM 79-08 (all measurements in ISO17025 accredited laboratory)

HOUSING AND FINISH

Housing	Aluminium
Optic	PMMA
Protector	Tempered glass
Housing finish	Polyester powder coating
Standard colour(s)	AKZO grey 900 sanded
Tightness level	IP 66, IP 66 LEDSafe
Impact resistance	IK 08
Access for maintenance	By loosening screws on the bottom cover

· Any other RAL or AKZO colour upon request

OPERATING CONDITIONS

Operating temperature range (Ta)	-30 °C up to +45 °C / -22 °F up to 113 °F
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· Depending on the luminaire configuration. For more details, please contact us.

ELECTRICAL INFORMATION

Electrical class	Class 1US, Class I EU, Class II EU
Nominal voltage	120-277V – 50-60Hz 220-240V – 50-60Hz 347-480V – 50-60Hz
Power factor (at full load)	0.9
Surge protection options (kV)	4 10 20
Electromagnetic compatibility (EMC)	EN 55015 / EN 61000-3-2 / EN 61000-4-5 / EN 61547
Control protocol(s)	1-10V, DALI
Control options	AmpDim, Bi-power, Custom dimming profile, Photocell, Remote management
Socket option(s)	NEMA 7-pin (optional)
Associated control system(s)	Owlet Nightshift Owlet IoT
Sensor	PIR (optional)

OPTICAL INFORMATION

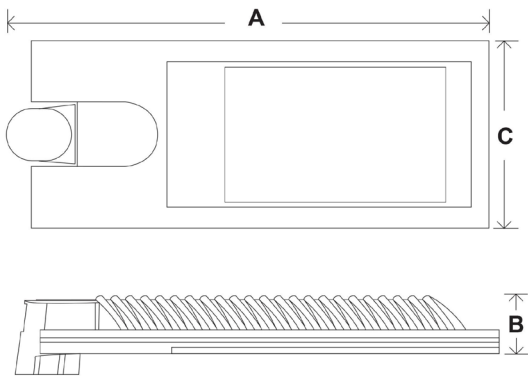
LED colour temperature	2700K (Warm White) 3000K (Warm White) 4000K (Neutral White)
Colour rendering index (CRI)	>70 (Warm White) >80 (Warm White) >70 (Neutral White)
Upward Light Output Ratio (ULOR)	0%

LIFETIME OF THE LEDS @ TQ 25°C

All configurations	100,000h - L90
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DIMENSIONS AND MOUNTING

AxBxC (mm inch)	PIANO MINI - 584x87x277 23.0x3.4x10.9 PIANO MIDI - 717x87x277 28.2x3.4x10.9 PIANO MAXI - 1029x87x297 40.5x3.4x11.7
Weight (kg lbs)	PIANO MINI - 7 15.4 PIANO MIDI - 10 22.0 PIANO MAXI - 13.4 29.5
Aerodynamic resistance (CxS)	PIANO MINI - 0.04 PIANO MIDI - 0.06 PIANO MAXI - 0.11
Mounting possibilities	Side-entry slip-over – Ø42mm Side-entry slip-over – Ø48mm Side-entry slip-over – Ø60mm Post-top slip-over – Ø60mm Post-top slip-over – Ø76mm





			Luminaire output flux (lm) Neutral White 740		Luminaire output flux (lm) Warm White 730		Luminaire output flux (lm) Warm White 830		Luminaire output flux (lm) Warm White 727		Power consumption (W)		Luminaire efficacy (lm/W)	
	Number of LEDs	Current (mA)	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Up to	Photometry
PIANO MINI	16	350	2000	2400	2000	2400	1700	2000	1800	2100	18.2	18.2	137	
	16	500	2700	3300	2700	3300	2300	2800	2400	2900	25.7	25.7	132	
	16	700	3600	4400	3600	4400	3100	3700	3200	3900	36.2	36.2	127	
	24	350	3000	3600	3000	3600	2500	3000	2700	3200	26.2	26.2	145	
	24	500	4100	5000	4100	5000	3500	4200	3700	4400	37.6	37.6	138	
	24	700	5400	6600	5400	6600	4600	5600	4900	5900	53.5	53.5	129	

Tolerance on LED flux is $\pm 7\%$ and on total luminaire power $\pm 5\%$



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	Number of LEDs	Current (mA)	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Up to	Photometry
PIANO MIDI	32	350	3900	4800	3900	4800	3300	4100	3500	4300	34.5	34.5	148	
	32	500	5400	6600	5400	6600	4500	5600	4800	5900	49	49	141	
	32	700	7100	8700	7100	8700	6000	7300	6300	7800	70	70	130	
	48	350	5900	7300	5900	7300	5000	6200	5300	6500	50	50	152	
	48	500	8100	9900	8100	9900	6800	8400	7200	8900	73	73	142	
	48	700	10600	13000	10600	13000	9000	11000	9500	11700	106	106	128	
	56	350	6900	8500	6900	8500	5800	7200	6200	7600	60	60	148	
	56	500	9400	11600	9400	11600	8000	9800	8400	10400	86	86	141	
	56	700	12400	15200	12400	15200	10500	12900	11100	13700	125	125	127	

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	Number of LEDs	Current (mA)	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Up to	Photometry
PIANO MAXI	72	350	11300	11600	10800	11100	9100	9400	9700	10000	76	76	153	
	72	500	15000	15500	14400	14800	12200	12500	12900	13300	109	109	142	
	72	700	18900	19500	18000	18600	15300	15800	16200	16700	154	154	127	
	88	350	13800	14200	13200	13600	11200	11500	11800	12200	92	92	154	
	88	500	18400	18900	17600	18100	14900	15300	15800	16300	133	133	142	
	88	700	23100	23800	22100	22800	18700	19300	19800	20400	187	187	127	
	96	350	15000	15500	14400	14800	12200	12600	12900	13300	100	104	155	
	96	500	20000	20700	19200	19800	16200	16700	17200	17700	144	148	144	
	104	350	16300	16800	15600	16100	13200	13600	14000	14400	113	113	149	
	104	500	21700	22400	20800	21400	17600	18100	18600	19200	160	160	140	

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