

Ampera



Designer : Thomas Coulbeaut



LED solution for an optimised return on investment

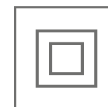
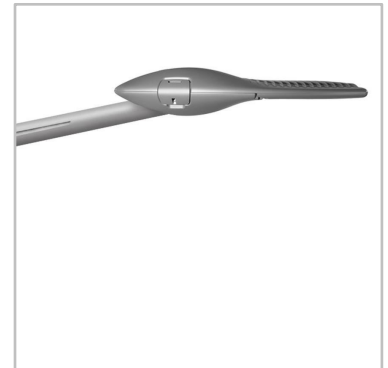
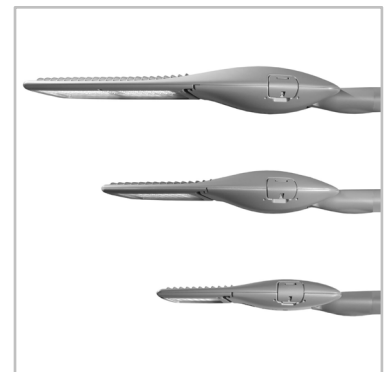
Designing the most efficient and cost-effective LED range was the driving force behind the development of the Ampera family.

The Ampera range sets a new benchmark in LED lighting with performing and flexible solutions that lead to the shortest payback time. With its long lifespan and limited maintenance requirements, the Ampera range enables you to maximise your return on investment.

Available in 3 sizes - with a lumen package scalable up to over 35,000lm - and with numerous lighting distributions, the Ampera range can meet all your road and urban lighting needs.

This range is the perfect solution for replacing luminaires fitted with mercury vapour, high-pressure sodium, metal halide and other HID lamps.

The Ampera Mini is a strategic alternative to fittings with 70W traditional light sources while the Ampera Midi and the Ampera Maxi provide significant energy savings for replacing luminaires with 150W and 250W lamps.



Concept

The Ampera luminaire comes in two separate high-pressure die cast aluminium parts for an easy installation. Fixed on a pole with an universal mounting piece, the inclination angle - in the lower part - can be adjusted before installing the upper part which incorporates the gear and optical unit.

Both parts are connected by two tool free side latches. The electrical connection is automatically triggered on closing by a knife-type connector.

The Ampera range is available in 3 different sizes to offer maximum flexibility and aesthetic coherence for town and city centres. They incorporate LensoFlex®2 and LensoFlex®3 photometric engines protected by a tempered glass.

The complete range is available with three different universal fixation parts adapted for post-top and side-entry mountings on various spigot diameters (Ø32mm with adapter, Ø42-48mm, Ø60mm and Ø76mm). The inclination angle can be adjusted on-site by 15° for both post-top and side-entry configurations.

The Ampera is FutureProof. Both the LED engine and the electronic assembly can be replaced, without any tools, to take advantage of future technological developments.



ThermiX®: withstands high temperatures.



Mounting with two separated parts for easy installation.



On-site adjustable tilting angle for an optimised result.



Easy access to internal components (tool free opening).

Types of application

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

Key advantages

- Cost-effective and efficient lighting solution for a fast return on investment
- 3 sizes for flexibility
- IP 66 tightness level
- ThermiX®: withstands high temperatures (Ta 50°C)
- Mounting with two separated parts for easy installation and set-up (inclination angle)
- FutureProof: easy replacement of photometric engine and power supply on-site
- IoT ready: optional 7-pin NEMA socket



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.



LensoFlex®3

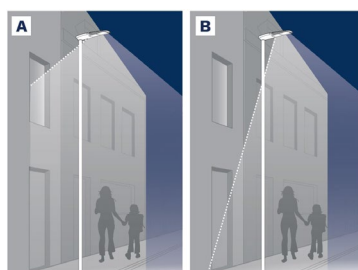
LensoFlex®3 uses lenses made of mouldable and optical-grade silicon offering superior transparency and excellent photothermal stability. This withstands high driving currents and delivers maximised lumen output over time. As silicon offers a higher thermal resistance compared to PMMA, temperature is not as critical for LensoFlex®3 engines. This offers two distinct advantages; LensoFlex®3 ensures enhanced performance in warm climates and enables a high driving current to be used to increase the lumen output and a higher lm/kg ratio. It also does not suffer from yellowing over time.



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.



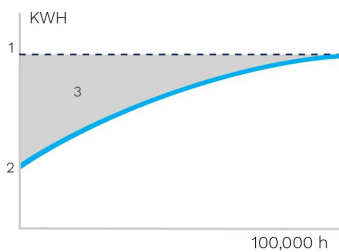
A. Without Back Light control | B. With Back Light control



Constant Light Output (CLO)

This system compensates for the depreciation of luminous flux to avoid excess lighting at the beginning of the installation's service life. Luminous depreciation over time must be taken into account to ensure a predefined lighting level during the luminaire's useful life.

Without a CLO feature, this simply means increasing the initial power upon installation in order to make up for luminous depreciation. By precisely controlling the luminous flux, the energy needed to reach the required level can be maintained throughout the luminaire's life.



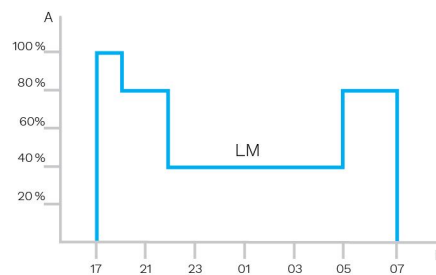
1. Standard lighting level | 2. LED lighting consumption with CLO | 3. Energy savings



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.

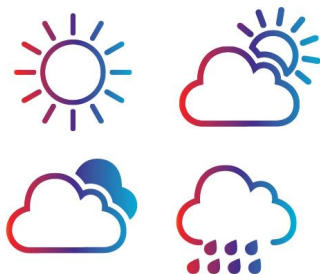


A. Performance | B. Time



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 nightfall 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.



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.

The Schröder Bluetooth solution consists of 3 main components:

- A Bluetooth dongle plugged into the modular driver of the luminaire (BLE transceiver)
- A Bluetooth antenna fitted on the luminaire
- A smartphone application called Sirius BLE



Easy to use

The Schröder Bluetooth solution is ideal for the on-site configuration of individual outdoor luminaires using Bluetooth. From the ground, the user is able to switch the luminaire on or off, adapt the dimming curve, read diagnostic data and much more. A user-friendly application called Sirius BLE provides an easy and secure access to the control and configuration functions.

Whether you are managing a lighting network in an urban or a residential area, this solution will make it easy to control your outdoor luminaires while simply standing by the pole.

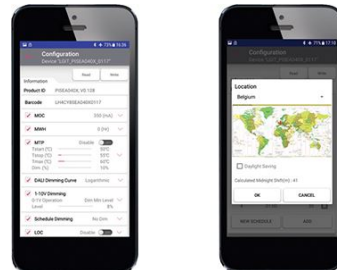
Quick and easy pairing

Get the Sirius App from Schröder. Go to the menu. Press the “SCAN DEVICE (START)” button, to search for the surrounding BLE modules. They will be displayed with a bar graphic (signal intensity) to indicate the closest and the most distant one you can reach. Click on the device you want to connect to and enter your personal access key to control the luminaire.



Defining the settings

Once you are connected to a luminaire, you can set various parameters such as the maximum output current, minimum dimming level and custom dimming profile.



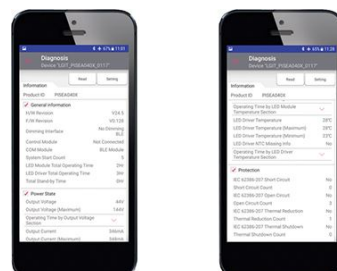
Manual dimming control

The App enables you to do a manual override to adapt the dimming levels instantly. Simply tap on the “Dimming” button in the main menu and adjust the dimming using the wheel and button. Predefined dimming levels can be applied immediately. The corresponding value is displayed on the wheel. This enables you to test the ON / OFF and dimming features of the luminaire paired to the smartphone.



On-site diagnostic

When a luminaire is paired, you can access various diagnostic information: total number of power up events, operation time of LED module and driver, total energy consumption of LED driver... etc. You can also track operating events (short circuits, thermal shutdowns...). The diagnostic values may be the current state or values accumulated to date.



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
ROHS compliant	Yes
Testing standard	LM 79-08 (all measurements in ISO17025 accredited laboratory)

HOUSING AND FINISH

Housing	Aluminium
Optic	PMMA Silicon
Protector	Tempered glass
Housing finish	Polyester powder coating
Standard colour(s)	AKZO grey 900 sanded
Tightness level	IP 66
Impact resistance	IK 09
Vibration test	Compliant with modified IEC 68-2-6 (0.5G)
Access for maintenance	Toolless access to gear compartment

· Any other RAL or AKZO colour upon request

OPERATING CONDITIONS

Operating temperature range (Ta)	-40 °C up to +55 °C / -40 ° F up to 131 °F
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· Depending on the luminaire configuration. For more details, please contact us.

ELECTRICAL INFORMATION

Electrical class	Class I EU, Class II EU
Nominal voltage	220-240V – 50-60Hz
Power factor (at full load)	0.9
Surge protection options (kV)	10
Electromagnetic compatibility (EMC)	EN 55015 / EN 61000-3-2 / EN 61000-3-3 / EN 61000-4-3 / EN 61000-4-4 / EN 61000-4-5 / EN 61000-4-6 / EN 61000-4-11 / EN 61547
Control protocol(s)	Bluetooth, 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)	Sirius BLE Owlet Nightshift Owlet IoT
Sensor	PIR (optional)

OPTICAL INFORMATION

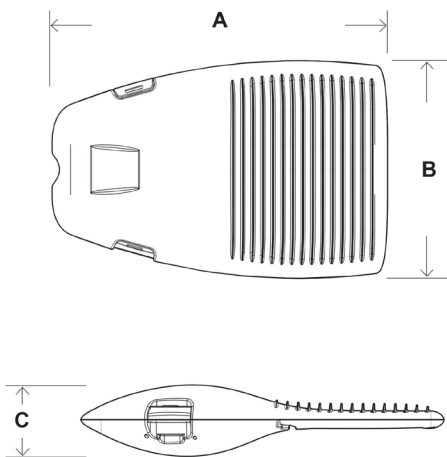
LED colour temperature	2700K (Warm White 727) 3000K (Warm White 830) 4000K (Neutral White 740)
Colour rendering index (CRI)	>70 (Warm White 727) >80 (Warm White 830) >70 (Neutral White 740)
Upward Light Output Ratio (ULOR)	0%

LIFETIME OF THE LEDS @ TQ 25°C

All configurations	100,000h - L90
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DIMENSIONS AND MOUNTING

AxBxC (mm inch)	AMPERA MINI - 583x90x340 23.0x3.5x13.4 AMPERA MIDI - 674x132x436 26.5x5.2x17.2 AMPERA MAXI - 900x135x438 35.4x5.3x17.2
Weight (kg lbs)	AMPERA MINI - 7.8 17.2 AMPERA MIDI - 11.5 25.3 AMPERA MAXI - 18.2 40.0
Aerodynamic resistance (CxS)	AMPERA MINI - 0.09 AMPERA MIDI - 0.12 AMPERA MAXI - 0.18
Mounting possibilities	Side-entry slip-over – Ø32mm Side-entry slip-over – Ø42mm Side-entry slip-over – Ø48mm Side-entry slip-over – Ø60mm Side-entry penetrating – Ø60mm Post-top slip-over – Ø32mm Post-top slip-over – Ø42mm Post-top slip-over – Ø48mm Post-top slip-over – Ø60mm Post-top slip-over – Ø76mm





Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Warm White 727		Luminaire output flux (lm) Warm White 830		Luminaire output flux (lm) Neutral White 740		Power consumption (W)	Luminaire efficacy (lm/W)	Photometry
			Min	Max	Min	Max	Min	Max			
AMPERA MINI	8	350	800	1100	800	1000	900	1200	10.3	117	
	8	400	1000	1200	900	1100	1100	1400	11.6	121	
	8	500	1200	1500	1100	1400	1300	1700	14.2	120	
	8	600	1400	1800	1300	1600	1600	2000	17	118	
	8	700	1600	2000	1500	1800	1800	2300	19.7	117	
	8	800	1800	2300	1600	2100	2000	2500	22.6	111	
	8	900	2000	2500	1800	2300	2200	2800	25.4	110	
	16	300	1400	1800	1300	1600	1600	2000	15.9	126	
	16	350	1700	2200	1600	2000	1900	2400	18.2	132	
	16	400	2000	2500	1800	2300	2200	2800	20.6	136	
	16	500	2400	3100	2200	2800	2700	3400	26.1	130	
	16	600	2900	3600	2600	3300	3200	4000	31	129	
	16	700	3200	4000	2900	3700	3600	4500	36.1	125	
	16	850	3500	4400	3200	4000	3900	4900	44	111	
	24	200	1600	2000	1400	1800	1700	2200	15.3	144	
	24	350	2600	3300	2400	3000	2900	3700	26	142	
	24	400	3000	3700	2700	3400	3300	4200	29.7	141	
	24	500	3600	4600	3300	4200	4100	5100	37.2	137	
	24	550	3900	5000	3600	4500	4400	5500	41	134	
	24	600	4300	5300	3900	4900	4800	6000	45.5	132	
	24	700	4800	6100	4400	5600	5400	6800	53	128	
	24	850	5700	7200	5200	6500	6400	8000	65	123	
	24	900	5900	7500	5400	6800	6600	8300	69	120	
	24	1000	6400	8100	5900	7400	7200	9000	77	117	
24	1000	-	-	-	-	8600	8900	78	114		

Tolerance on LED flux is ± 7% and on total luminaire power ± 5 %



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			Min	Max	Min	Max	Min	Max			
AMPERA MIDI	32	200	1900	2300	1700	2100	2100	2600	19.8	131	
	32	300	3100	3700	2800	3400	3400	4200	29.5	142	
	32	450	4600	5600	4200	5100	5200	6300	45.5	138	
	32	500	5100	6200	4600	5600	5700	6900	49.5	139	
	32	650	6300	7600	5700	7000	7000	8500	64.5	132	
	32	700	6600	8100	6100	7400	7400	9100	69.5	131	
	32	800	7200	8800	6600	8000	8100	9800	79	124	
	48	200	2900	3500	2600	3200	3200	3900	28.6	136	
	48	350	5500	6700	5000	6100	6100	7500	50	150	
	48	400	6200	7600	5700	6900	6900	8500	57	149	
	48	550	8300	10100	7600	9200	9200	11300	79	143	
	48	600	8900	10800	8100	9900	9900	12100	86	141	
	48	700	10000	12200	9100	11200	11200	13600	100	136	
	48	800	10800	13200	9900	12100	12100	14800	115	129	
	48	900	11600	14100	10600	12900	12900	15800	132	120	
	64	200	3900	4700	3500	4300	4300	5300	37.7	141	
	64	300	6200	7600	5700	6900	6900	8400	56.5	149	
	64	400	8300	10100	7600	9200	9300	11300	76	149	
	64	500	10000	12300	9200	11200	11200	13700	94	146	
	64	600	11800	14400	10800	13200	13200	16100	113	142	
	64	700	13400	16300	12200	14900	14900	18200	135	135	
	64	700	-	-	14600	15200	17000	17700	1	17700	
	64	800	14500	17600	13200	16100	16200	19700	155	127	
	64	900	15400	18800	14100	17200	17200	21000	174	121	
64	1000	-	-	19200	20000	22400	23300	201	116		

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			Min	Max	Min	Max	Min	Max			
AMPERA MAXI	80	350	9600	11500	8800	10500	10700	12800	81	158	
	80	400	10900	13000	9900	11900	12100	14500	93	156	
	80	500	13200	15800	12000	14400	14700	17600	117	150	
	80	600	15600	18700	14300	17100	17500	20900	141	148	
	80	700	17900	21400	16300	19600	20000	23900	172	145	
	96	200	6600	7900	6100	7300	7400	8900	56	159	
	96	350	11500	13800	10500	12600	12900	15400	97	159	
	96	400	13000	15600	11900	14300	14600	17500	111	158	
	96	500	16000	19200	14600	17500	17900	21400	140	153	
	96	600	18700	22400	17100	20500	20900	25000	169	148	
	96	700	21200	25400	19400	23200	23700	28300	200	142	
	96	800	23500	28200	21500	25700	26300	31500	230	137	
	112	200	7900	9500	7200	8700	8900	10600	66.5	159	
	112	350	13400	16100	12300	14700	15000	18000	115	157	
	112	450	16800	20200	15400	18400	18800	22500	154	146	
	112	500	18400	22100	16900	20200	20600	24700	166	149	
	112	680	23800	28500	21800	26100	26600	31800	226	141	
	112	700	24700	29200	22600	26700	27600	32600	236	138	
	112	800	27000	32300	24600	29500	30100	36100	272	133	
	128	200	9100	10900	8300	9900	10100	12100	75	161	
	128	350	15400	18400	14000	16800	17200	20600	132	156	
	128	420	18100	21700	16600	19800	20300	24300	158	154	
	128	500	21100	25200	19300	23100	23500	28200	188	150	
	128	600	24600	29500	22500	26900	27500	32900	226	146	
128	700	27900	33400	25500	30500	31100	37300	270	138		
128	800	30800	36900	28200	33700	34400	41200	310	133		

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