Ampera

Designer : Thomas Coulbeaut

owlet® LENSO**FLEX™ 2** LENSO**FLEX™ 3**

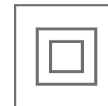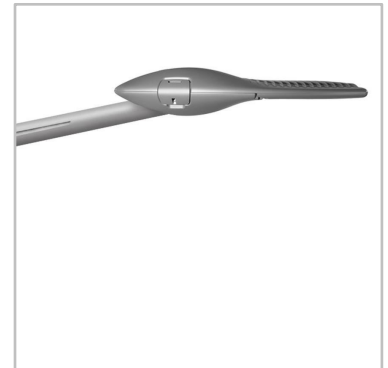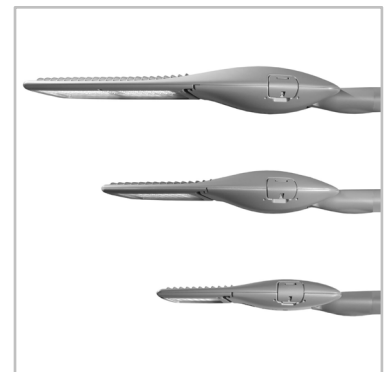## LED solution for an optimised return on investment

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.

IP 66   IK 09   PLUS ×2   RoHS   CE

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

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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.

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

On-site adjustable tilting angle for an optimised result.

Easy access to internal components (tool free opening).

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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.
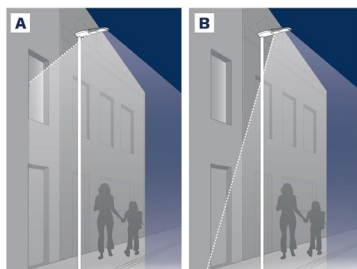

A. Without Back Light control | B. With Back Light control

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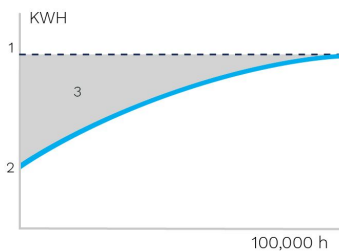
1. Standard lighting level | 2. LED lighting consumption with CLO | 3. Energy savings

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.
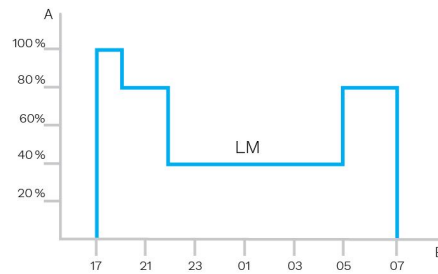
A. Performance | B. Time

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 night fall so as to provide safety and comfort in public spaces.
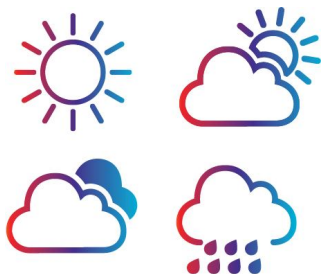
PIR sensor: motion detection

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 parametres 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.

ꓤowlet 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.

Ampera | Bluetooth solution

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The Schréder 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 Schréder 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 Schréder. 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.
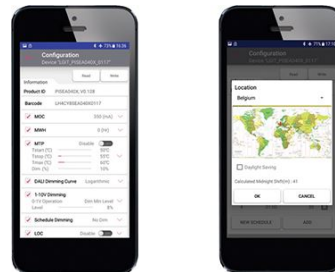
Manual dimming control

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.

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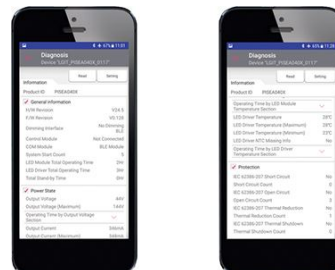
GENERAL INFORMATION

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

· 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) 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)	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

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Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Neutral White 740		Luminaire output flux (lm) Warm White 830		Power consumption (W)	Luminaire efficacy (lm/W)	Photometry
			Min	Max	Min	Max		Up to	
AMPERA MINI	8	350	900	1200	800	1000	10.3	117	LENSO FLEX 2
	8	400	1000	1300	900	1100	11.6	112	LENSO FLEX 2
	8	500	1300	1600	1100	1400	14.2	113	LENSO FLEX 2
	8	600	1500	1900	1300	1600	17	112	LENSO FLEX 2
	8	700	1700	2200	1500	1800	19.7	112	LENSO FLEX 2
	8	800	2000	2500	1600	2100	22.6	111	LENSO FLEX 2
	8	900	2200	2700	1800	2300	25.4	106	LENSO FLEX 2
	16	300	1600	2000	1300	1600	15.9	126	LENSO FLEX 2
	16	350	1900	2400	1600	2000	18.2	132	LENSO FLEX 2
	16	400	2200	2700	1800	2300	20.6	131	LENSO FLEX 2
	16	500	2700	3300	2200	2800	26.1	126	LENSO FLEX 2
	16	600	3100	3900	2600	3300	31	126	LENSO FLEX 2
	16	700	3500	4400	2900	3700	36.1	122	LENSO FLEX 2
	16	850	3800	4800	3200	4000	44	109	LENSO FLEX 2
	24	200	1700	2100	1400	1800	15.3	137	LENSO FLEX 2
	24	350	2900	3600	2400	3000	26	138	LENSO FLEX 2
	24	400	3200	4100	2700	3400	29.7	138	LENSO FLEX 2
	24	500	4000	5000	3300	4200	37.2	134	LENSO FLEX 2
	24	550	4300	5400	3600	4500	41	132	LENSO FLEX 2
	24	600	4600	5800	3900	4900	45.5	127	LENSO FLEX 2
	24	700	5300	6600	4400	5600	53	125	LENSO FLEX 2
	24	850	6200	7800	5200	6500	65	120	LENSO FLEX 2
	24	900	6500	8100	5400	6800	69	117	LENSO FLEX 2
	24	1000	7000	8800	5900	7400	77	114	LENSO FLEX 2
	24	1000	8600	8900	-	-	78	114	LENSO FLEX 3

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

Ampera | PERFORMANCE

Schréder

Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Neutral White 740		Luminaire output flux (lm) Warm White 830		Power consumption (W)	Luminaire efficacy (lm/W)	Photometry
			Min	Max	Min	Max		Up to	
AMPERA MIDI	32	200	2100	2500	1700	2100	19.8	126	LENSO FLEX 2
	32	300	3300	4100	2800	3400	29.5	139	LENSO FLEX 2
	32	450	5000	6100	4200	5100	45.5	134	LENSO FLEX 2
	32	500	5500	6700	4600	5600	49.5	135	LENSO FLEX 2
	32	650	6800	8300	5700	7000	64.5	129	LENSO FLEX 2
	32	700	7200	8800	6100	7400	69.5	127	LENSO FLEX 2
	32	800	7800	9600	6600	8000	79	122	LENSO FLEX 2
	48	200	3100	3800	2600	3200	28.6	133	LENSO FLEX 2
	48	350	6000	7300	5000	6100	50	146	LENSO FLEX 2
	48	400	6700	8200	5700	6900	57	144	LENSO FLEX 2
	48	550	9000	11000	7600	9200	79	139	LENSO FLEX 2
	48	600	9600	11700	8100	9900	86	136	LENSO FLEX 2
	48	700	10900	13300	9100	11200	100	133	LENSO FLEX 2
	48	800	11800	14400	9900	12100	115	125	LENSO FLEX 2
	48	900	12600	15300	10600	12900	132	116	LENSO FLEX 2
	64	200	4200	5100	3500	4300	37.7	135	LENSO FLEX 2
	64	300	6700	8200	5700	6900	56.5	145	LENSO FLEX 2
	64	400	9000	11000	7600	9200	76	145	LENSO FLEX 2
	64	500	10900	13300	9200	11200	94	141	LENSO FLEX 2
	64	600	12900	15700	10800	13200	113	139	LENSO FLEX 2
	64	700	14500	17700	12200	14900	135	131	LENSO FLEX 2
	64	700	17000	17700	14600	15200	139	127	LENSO FLEX 3
	64	800	15700	19200	13200	16100	155	124	LENSO FLEX 2
	64	900	16800	20400	14100	17200	174	117	LENSO FLEX 2
	64	1000	22400	23300	19200	20000	201	116	LENSO FLEX 3

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

Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Neutral White 740		Luminaire output flux (lm) Warm White 830		Power consumption (W)	Luminaire efficacy (lm/W)	Photometry
			Min	Max	Min	Max		Up to	
AMPERA MAXI	80	350	10400	12500	8800	10500	81	154	LENSO FLEX 2
	80	400	11800	14100	9900	11900	93	152	LENSO FLEX 2
	80	500	14300	17100	12000	14400	117	146	LENSO FLEX 2
	80	600	16800	20100	14100	16900	141	143	LENSO FLEX 2
	80	700	18900	22600	15900	19000	165	137	LENSO FLEX 2
	96	200	6600	7900	5600	6700	56	141	LENSO FLEX 2
	96	350	12500	15000	10500	12600	97	155	LENSO FLEX 2
	96	400	14200	17000	11900	14300	111	153	LENSO FLEX 2
	96	500	17200	20500	14400	17300	140	146	LENSO FLEX 2
	96	600	20100	24100	17000	20300	169	143	LENSO FLEX 2
	96	700	22700	27200	19100	22900	200	136	LENSO FLEX 2
	96	800	24600	29400	20700	24800	230	128	LENSO FLEX 2
	112	200	7700	9300	6500	7800	66.5	140	LENSO FLEX 2
	112	350	14600	17500	12300	14700	115	152	LENSO FLEX 2
	112	450	18400	22100	15500	18600	154	144	LENSO FLEX 2
	112	500	20000	24000	16900	20200	166	145	LENSO FLEX 2
	112	680	25800	30900	21700	26000	226	137	LENSO FLEX 2
	112	700	26800	31700	22600	26700	236	134	LENSO FLEX 2
	112	800	28700	34300	24100	28900	272	126	LENSO FLEX 2
	128	200	8900	10600	7500	8900	75	141	LENSO FLEX 2
	128	350	16700	20000	14000	16800	132	152	LENSO FLEX 2
	128	420	19800	23700	16700	19900	158	150	LENSO FLEX 2
	128	500	22900	27400	19300	23100	188	146	LENSO FLEX 2
	128	600	26900	32200	22600	27100	226	142	LENSO FLEX 2
	128	700	30300	36200	25500	30500	270	134	LENSO FLEX 2
	128	700	34700	35200	29800	30200	278	127	LENSO FLEX 3
	128	800	32800	39200	27600	33000	310	126	LENSO FLEX 2

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5068
LENSO FLEX™2

5096
LENSO FLEX™2

5098
LENSO FLEX™2

5112
LENSO FLEX™2

5112 - BL
LENSO FLEX™2

5117
LENSO FLEX™2

5117 - BL
LENSO FLEX™2

5119
LENSO FLEX™2

5119 - BL
LENSO FLEX™2

5120

5120 - BL

5121

5121 - BL

5139

5139 - BL

5140

5140 - BL

5141

Schréder

5141 - BL
LENSO FLEX™2

5144 Zebra left
LENSO FLEX™2

5144 Zebra left BL
LENSO FLEX™2

5145 Zebra right
LENSO FLEX™2

5145 Zebra right BL
LENSO FLEX™2

5147
LENSO FLEX™3

5162
LENSO FLEX™3

5163
LENSO FLEX™3

5164
LENSO FLEX™3

Ampera | AVAILABLE LIGHT DISTRIBUTIONS

Schréder

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