Ampera

Design: 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 35,200lm - 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 | 10kV | CE | PLUS | RoHS

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

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 on 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.

Mounting with two separate parts for easy installation.

ThermiX®: designed to withstand high temperatures.

On-site adjustable inclination angle for an optimised result.

Easy access to internal components (tool free opening).

Types of application

- Roads and motorways
- Urban and residential streets
- Bike and pedestrian paths
- Squares and pedestrian areas
- Car parks
- Bridges
- Large areas
- Railway stations and metros

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/122°F)
- Mounting with two separate parts for easy installation and set-up (inclination angle)
- FutureProof: easy replacement of the photometric engine and gear compartment
- Surge protection 10kV

LensoFlex®2

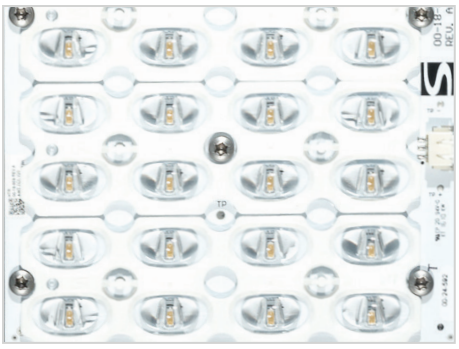
LensoFlex®2 is based upon the addition principle of photometric distribution. Each LED is associated with a specific PMMA lens that generates the complete photometric distribution of the luminaire. The number of LEDs in combination with the driving current determines the intensity level of the light 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.

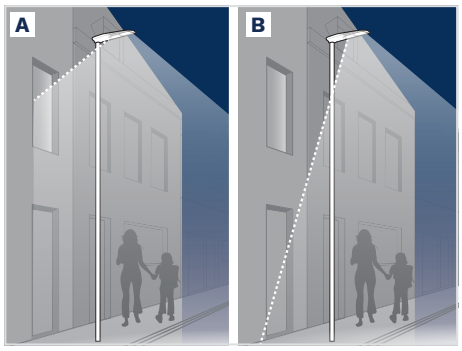
As silicon offers a higher thermal resistance compared to PMMA, temperature is not as critical for LensoFlex®3 engines. This offers two distinct advantages; LensoFlex®3 ensures enhanced performance in warm climates and enables a high driving current to be used to increase the lumen output and a higher 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.

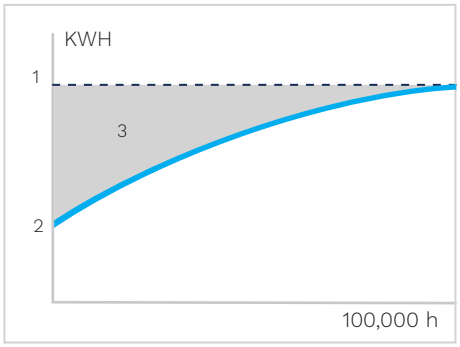
This additional feature minimises light spill from the back of the luminaire to avoid intrusive light towards buildings.



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

Constant Light Output (CLO)

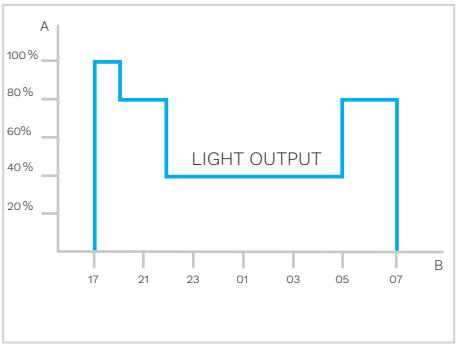
This system compensates for the depreciation of luminous flux to avoid excess lighting at the beginning of the installation's service life. Luminous depreciation over time must be taken into account to ensure a predefined lighting level during the luminaire's useful life. Without a CLO feature, this 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

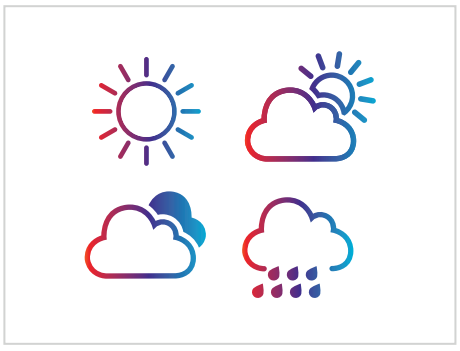
Intelligent luminaire drivers can be programmed with complex dimming profiles. Up to five combinations of time intervals and light levels are possible. This feature does not require any extra wiring. The period between switching on and switching off is used to activate the preset dimming profile. The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



A. Performance
B. Time

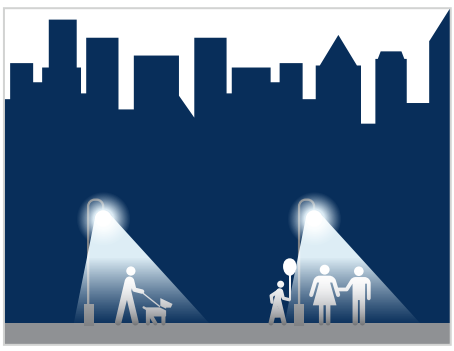
Daylight sensor / photocell

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 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.



Bluetooth solution

The Schréder Bluetooth solution consists of 3 main components:

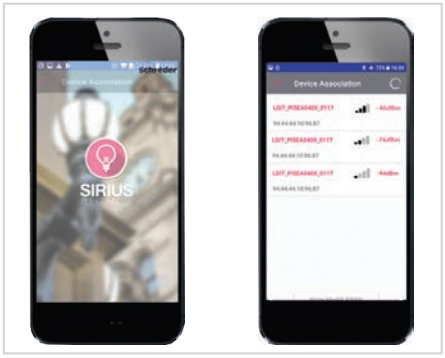
- A Bluetooth dongle plugged into the modular driver of the luminaire (BLE transceiver)
- A Bluetooth antenna fitted on the luminaire
- A smartphone application called Sirius BLE

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.

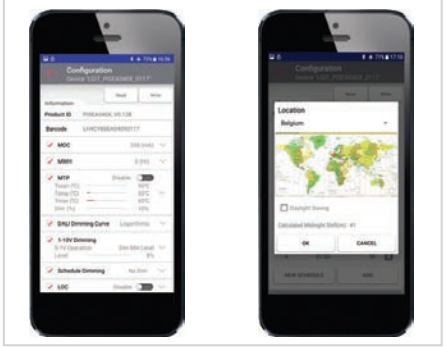
Quick and easy pairing

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.



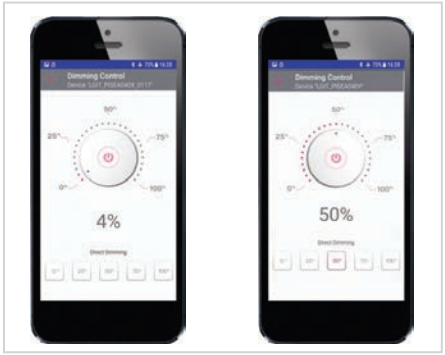
Defining the settings

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.

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%.

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

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.

GENERAL INFORMATION

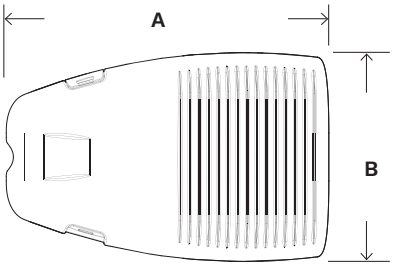
Recommended installation height	4m to 12m | 13' to 40'
FutureProof	Easy replacement of the photometric engine and electronic assembly on-site
Driver included	Yes
CE mark	Yes
ENEC Plus certified	Yes
ROHS compliant	Yes
Testing standard	LM 79-80 (all measurements in ISO17025 accredited laboratory)

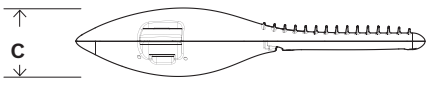
HOUSING AND FINISH

Housing	High-pressure die-cast aluminium
Optic	PMMA (LensoFlex®2) Silicon (LensoFlex®3)
Protector	Tempered glass
Housing finish	Polyester powder coating
Colour	AKZO grey 900 sanded Any other RAL or AKZO colour upon request
Tightness level	IP 66
Impact resistance	IK 09
Vibration standard	Compliant with modified IEC 68-2-6 (0.5G)
Access for maintenance	Tool-free access to the gear compartment

DIMENSIONS AND MOUNTING

AxBxC (mm | inch)	Ampera Mini – 583x340x90 | 23x13.4x3.5
	Ampera Midi – 674x436x132 | 26.5x17.1x5.2
	Ampera Maxi – 900x438x135 | 35.4x17.2x5.3
Weight (kg | lbs)	Ampera Mini – 7.8 | 17.2
	Ampera Midi – 11.5 | 25.3
	Ampera Maxi – 18.1 | 39.9
Aerodynamic resistance (CxS)	Ampera Mini – 0.087
	Ampera Midi – 0.115
	Ampera Maxi – 0.176
Standard mounting	Universal mounting piece (side-entry and post-top): Ø32 - 48mm (1.25") - Ø42 - 60mm (2") - Ø76mm (3")





ELECTRICAL INFORMATION

Electrical class	EU class I or II
Nominal voltage	220-240V – 50-60Hz
Power factor	> 90% at full load
Surge protection	10kV
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 options	No dimming, Bluetooth, AmpDim, Bi-Power, custom dimming, CLO, DALI or 1-10V
NEMA socket	7-pin (optional)
Sensor	PIR (optional)

OPTICAL INFORMATION

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

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.

LIFETIME OF THE LEDS @ TQ 25°C

For all versions	100,000h – L90

Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Warm White (3000K) - CRI 80		Luminaire output flux (lm) Neutral White (4000K) - CRI 70		Power consumption (W)	Luminaire efficacy (lm/W)	Photometry
			Min	Max	Min	Max		Up to	
Ampera Mini	8	350	800	1000	900	1200	10.3	118	LENSO FLEX° 2
	8	400	900	1100	1000	1300	11.6	118	LENSO FLEX° 2
	8	500	1100	1400	1300	1600	14.2	118	LENSO FLEX° 2
	8	600	1300	1600	1500	1900	17	116	LENSO FLEX° 2
	8	700	1500	1800	1700	2200	19.7	114	LENSO FLEX° 2
	8	800	1600	2100	2000	2500	22.6	112	LENSO FLEX° 2
	8	900	1800	2300	2200	2700	25.4	109	LENSO FLEX° 2
	16	300	1300	1600	1600	2000	15.9	127	LENSO FLEX° 2
	16	350	1600	2000	1900	2400	18.2	133	LENSO FLEX° 2
	16	400	1800	2300	2200	2700	20.6	134	LENSO FLEX° 2
	16	500	2200	2800	2700	3300	26.1	130	LENSO FLEX° 2
	16	600	2600	3300	3100	3900	31	128	LENSO FLEX° 2
	16	700	2900	3700	3500	4400	36.1	122	LENSO FLEX° 2
	16	850	3200	4000	3800	4800	44	110	LENSO FLEX° 2
	24	200	1400	1800	1700	2100	15.3	143	LENSO FLEX° 2
	24	350	2400	3000	2900	3600	26	140	LENSO FLEX° 2
	24	400	2700	3400	3200	4100	29.7	139	LENSO FLEX° 2
	24	500	3300	4200	4000	5000	37.2	135	LENSO FLEX° 2
	24	550	3600	4500	4300	5400	41	133	LENSO FLEX° 2
	24	600	3900	4900	4600	5800	45.5	129	LENSO FLEX° 2
	24	700	4400	5600	5300	6600	53	126	LENSO FLEX° 2
	24	850	5200	6500	6200	7800	64.5	121	LENSO FLEX° 2
	24	900	5400	6800	6500	8100	69	118	LENSO FLEX° 2
	24	1000	5900	7400	7000	8800	77	115	LENSO FLEX° 2
	24	1000	-	-	8600	8900	78	115	LENSO FLEX° 3

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

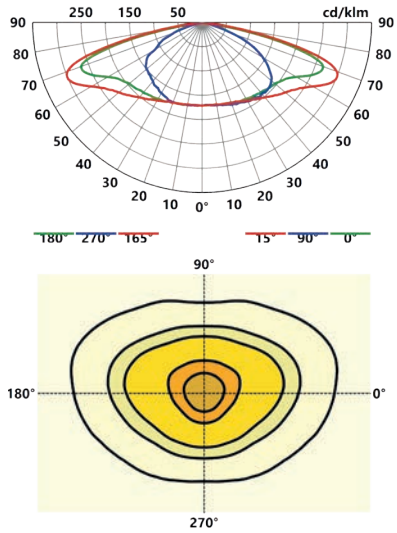
Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Warm White (3000K) - CRI 80 Min	Luminaire output flux (lm) Warm White (3000K) - CRI 80 Max	Luminaire output flux (lm) Neutral White (4000K) - CRI 70 Min	Luminaire output flux (lm) Neutral White (4000K) - CRI 70 Max	Power consumption (W)	Luminaire efficacy (lm/W) Up to	Photometry
Ampera Midi	32	200	1700	2100	2100	2500	19.8	131	LENSO FLEX° 2
	32	300	2800	3400	3300	4100	29.5	140	LENSO FLEX° 2
	32	450	4200	5100	5000	6100	45.5	135	LENSO FLEX° 2
	32	500	4600	5600	5500	6700	49.5	137	LENSO FLEX° 2
	32	650	5700	7000	6800	8300	64.5	130	LENSO FLEX° 2
	32	700	6100	7400	7200	8800	69.5	128	LENSO FLEX° 2
	32	800	6600	8000	7800	9600	79	122	LENSO FLEX° 2
	48	200	2600	3200	3100	3800	28.6	136	LENSO FLEX° 2
	48	350	5000	6100	6000	7300	50	146	LENSO FLEX° 2
	48	400	5700	6900	6700	8200	57	145	LENSO FLEX° 2
	48	550	7600	9200	9000	11000	79	139	LENSO FLEX° 2
	48	600	8100	9900	9600	11700	86	137	LENSO FLEX° 2
	48	700	9100	11200	11800	13300	100	133	LENSO FLEX° 2
	48	800	9900	12100	11800	14400	115	125	LENSO FLEX° 2
	48	900	10600	12900	12600	15300	132	117	LENSO FLEX° 2
	64	200	3500	4300	4200	5100	37.7	137	LENSO FLEX° 2
	64	300	5700	6900	6700	8200	56.5	146	LENSO FLEX° 2
	64	400	7600	9200	9000	11000	76	145	LENSO FLEX° 2
	64	500	9200	11200	10900	13300	94	142	LENSO FLEX° 2
	64	600	10800	13200	12900	15700	113	139	LENSO FLEX° 2
	64	700	12200	14900	14500	17700	135	132	LENSO FLEX° 2
	64	800	13200	16100	15700	19200	155	124	LENSO FLEX° 2
	64	900	14100	17200	16800	20400	174	118	LENSO FLEX° 2

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

Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Warm White (3000K) - CRI 80 Min	Luminaire output flux (lm) Warm White (3000K) - CRI 80 Max	Luminaire output flux (lm) Neutral White (4000K) - CRI 70 Min	Luminaire output flux (lm) Neutral White (4000K) - CRI 70 Max	Power consumption (W)	Luminaire efficacy (lm/W) Up to	Photometry
Ampera Maxi	80	350	8800	10300	10400	12200	81	152	LENSO FLEX° 2
	80	500	12100	14200	14400	16900	117	145	LENSO FLEX° 2
	80	700	16300	19200	19400	22800	165	138	LENSO FLEX° 2
	96	350	10500	12400	12500	14700	97	152	LENSO FLEX° 2
	96	500	14400	16900	17200	20100	140	144	LENSO FLEX° 2
	96	700	19100	23000	22700	27400	201	136	LENSO FLEX° 2
	112	350	12300	14400	14600	17100	115	149	LENSO FLEX° 2
	112	500	16900	19800	20000	23500	165	143	LENSO FLEX° 2
	112	700	22600	26100	26800	31100	237	131	LENSO FLEX° 2
	128	350	14000	16500	16700	19600	132	149	LENSO FLEX° 2
	128	500	19300	22600	22900	26900	188	143	LENSO FLEX° 2
	128	700	25500	29900	30300	35500	270	132	LENSO FLEX° 2

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

5068 ASY



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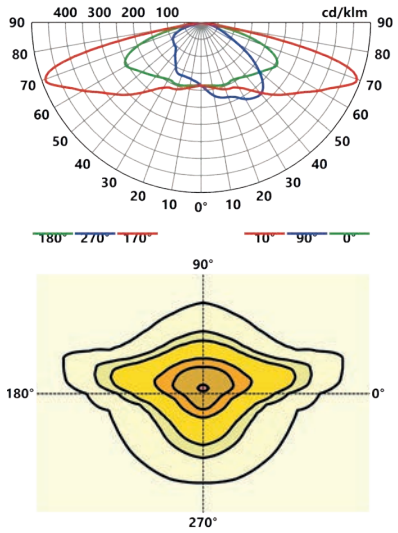

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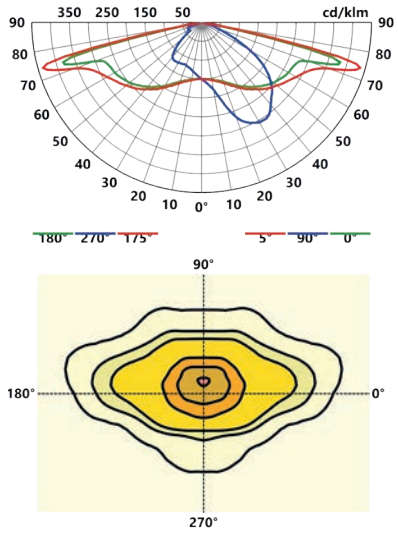

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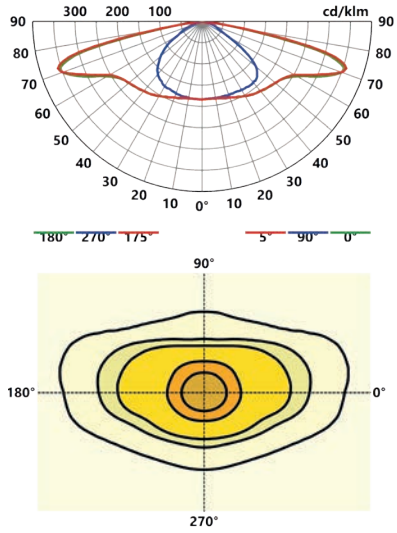

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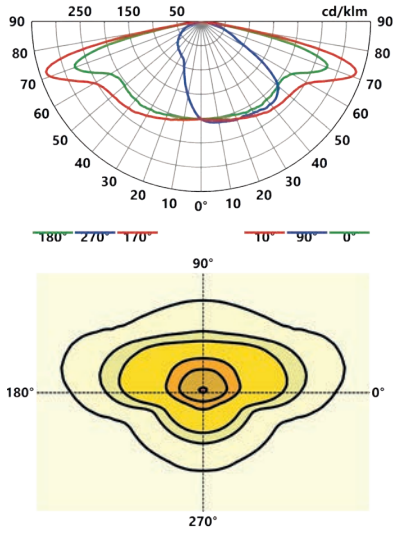

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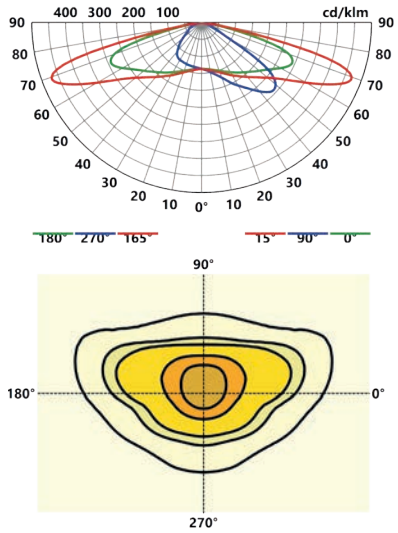

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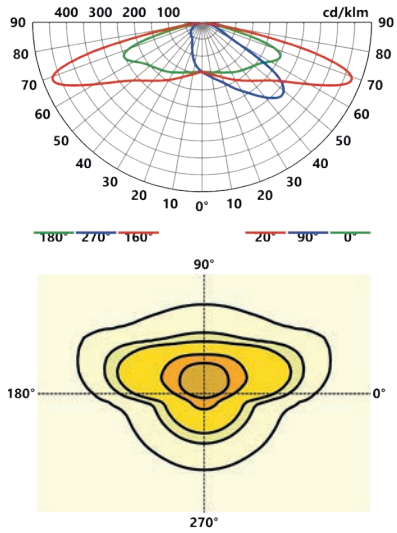

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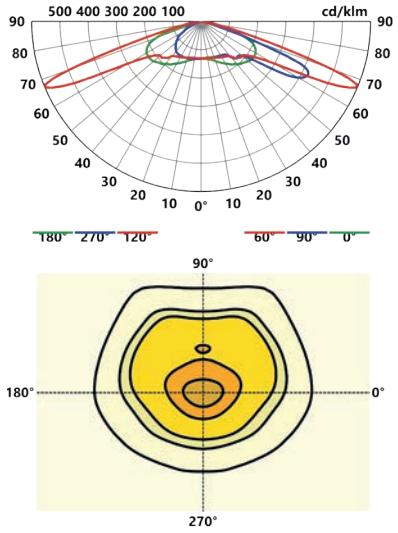
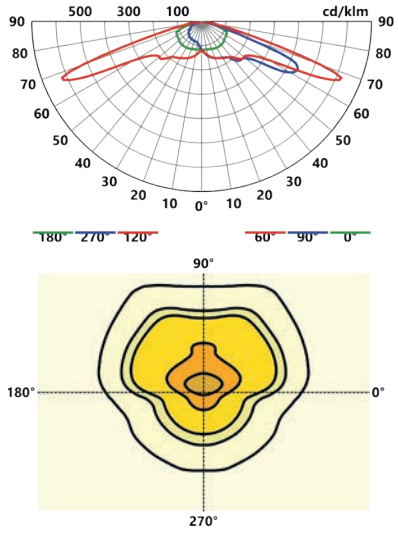


5119 ASY | BACKLIGHT



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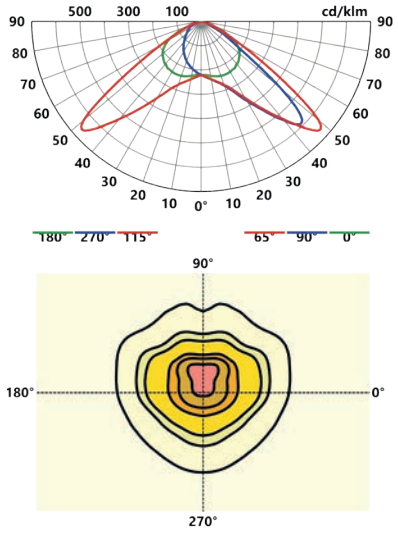

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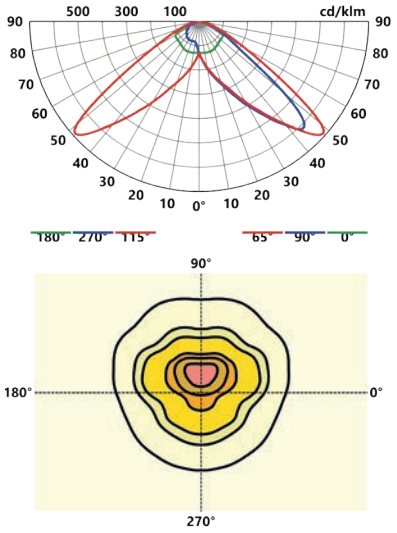

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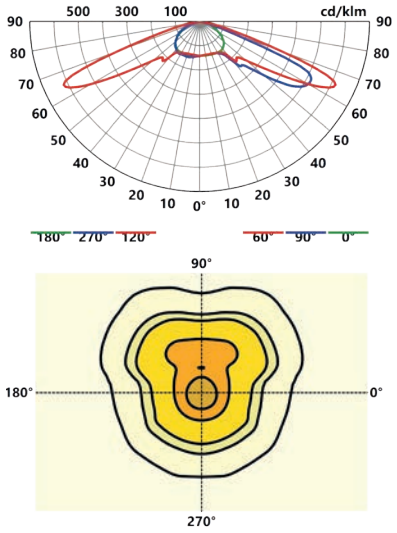

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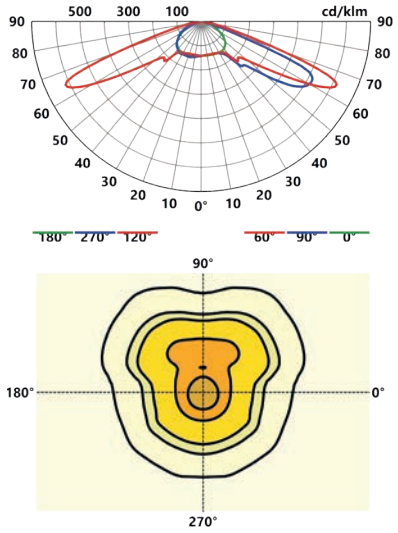

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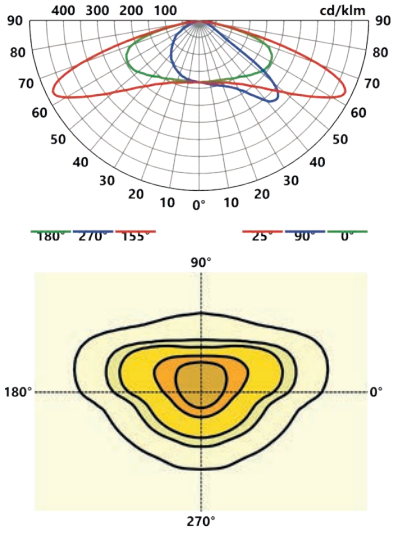

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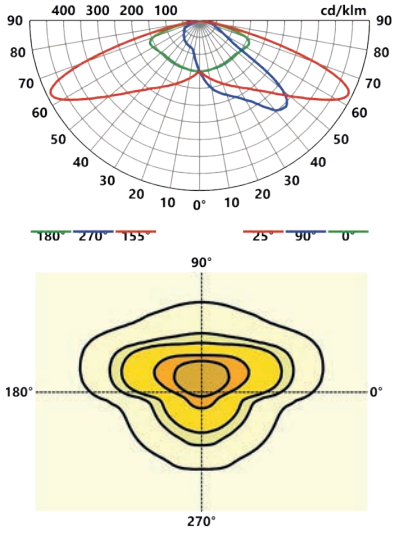

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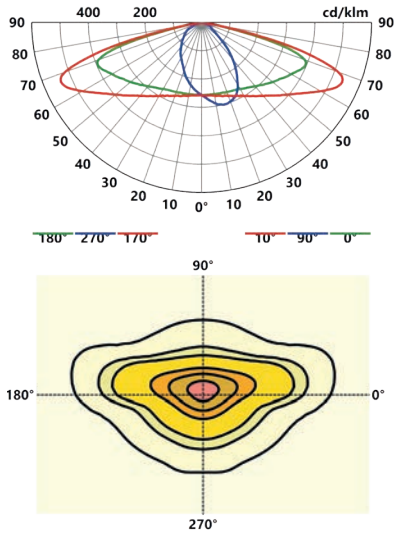

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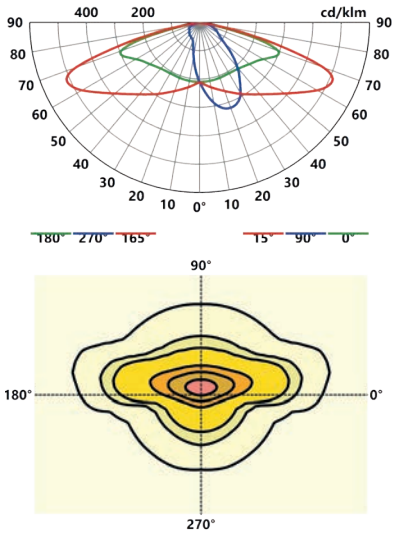

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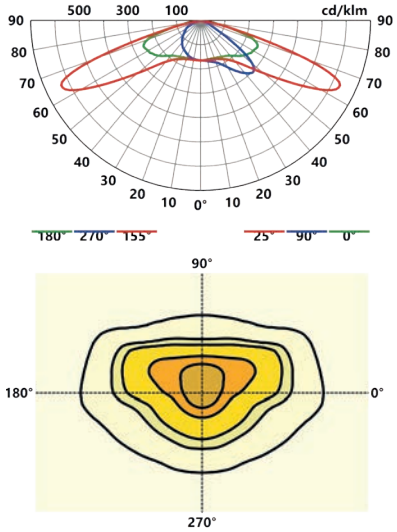

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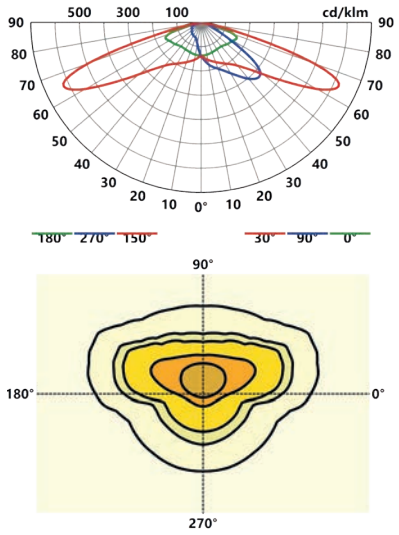

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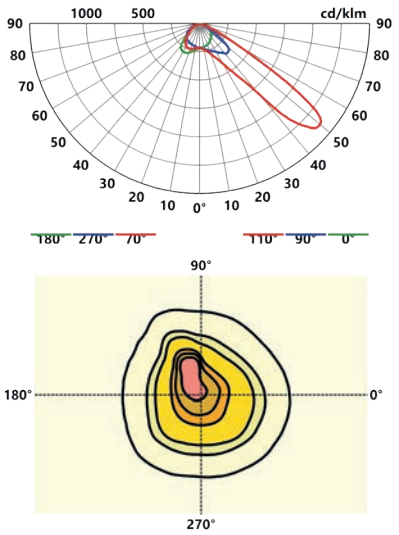

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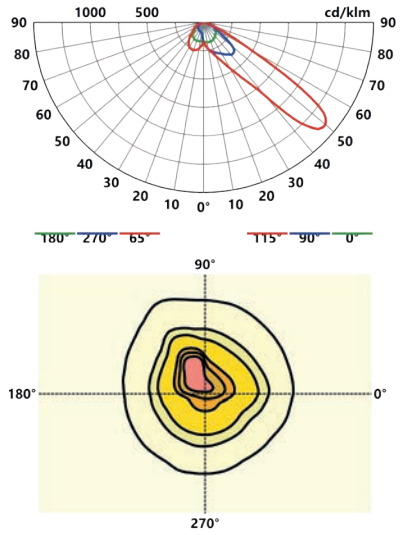

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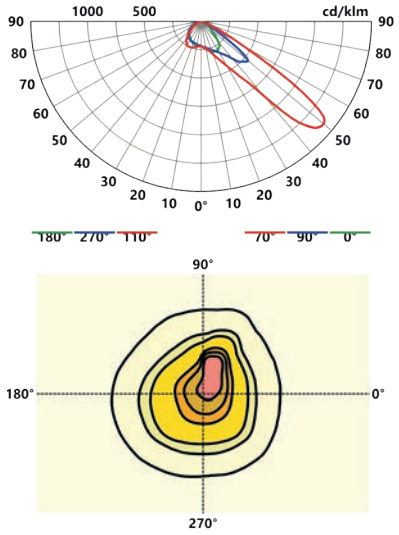

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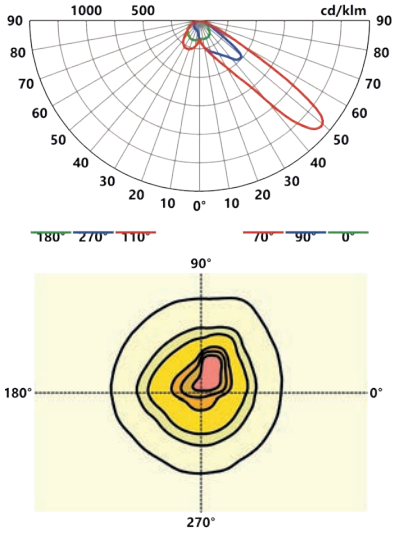

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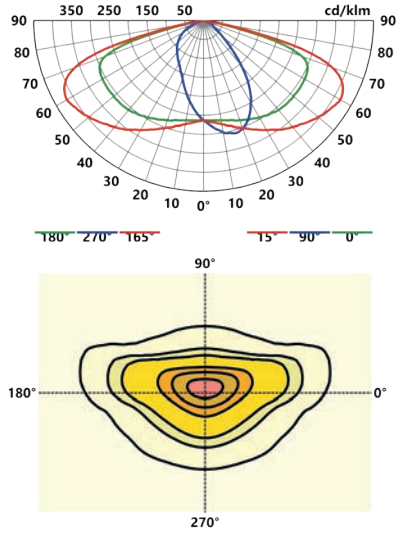

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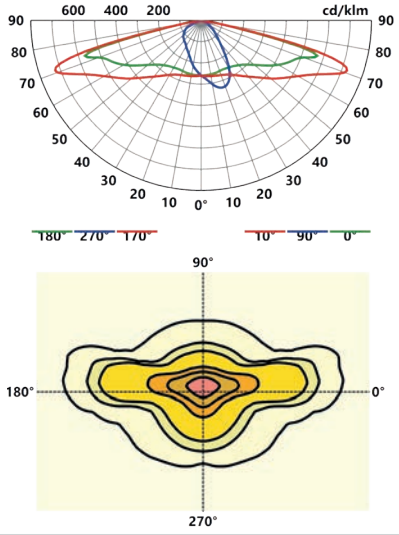

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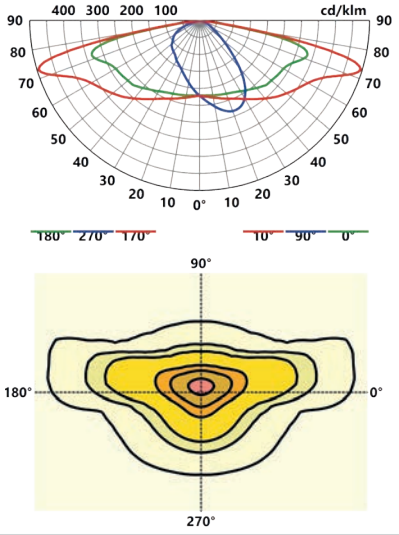

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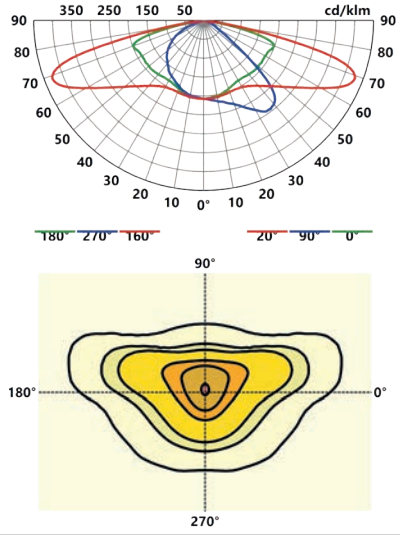

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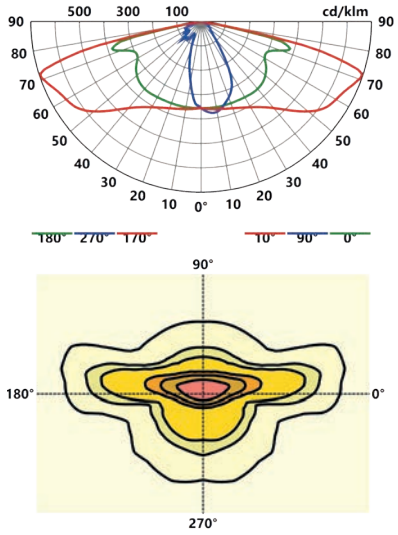

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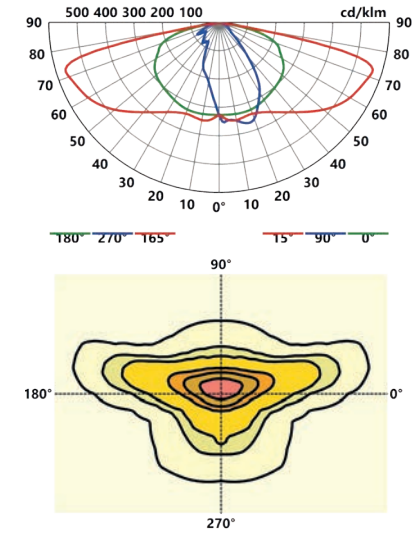

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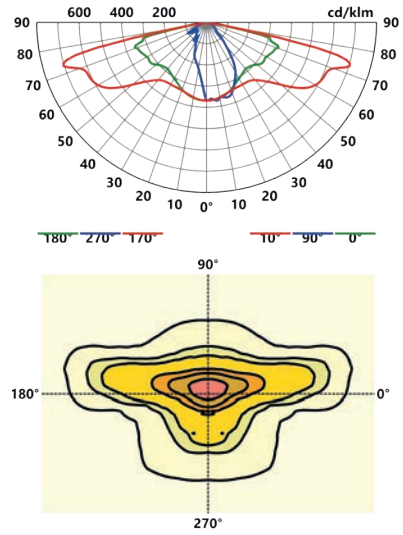

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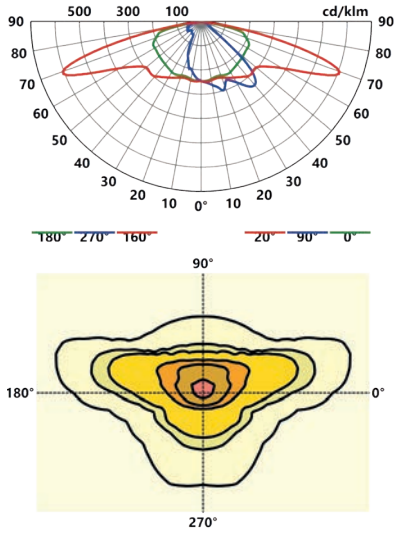

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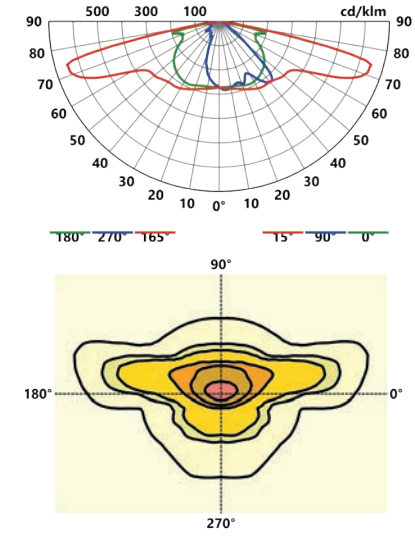

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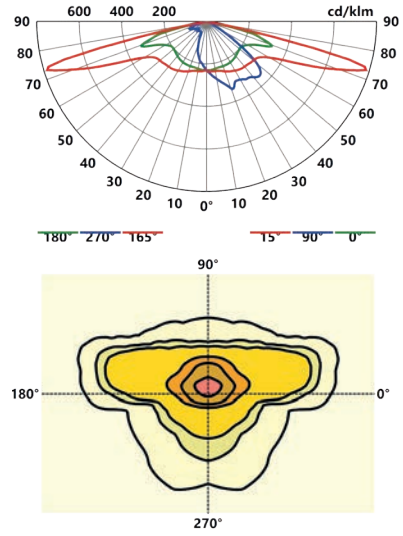

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