Schréder
Experts in lightability™

DECORATIVE

YOA

Designer : Michel Tortel

LENSO FLEX™ 2

Efficiency and style throughout the city

The YOA range offers a complete solution to light urban spaces with the same efficiency and the same astonishing elegance throughout the city.

From large avenues to narrow streets and squares, the various configurations (side-entry, post-top and catenary solutions) provide aesthetic ensembles to create a distinctive identity for the city landscape.

The YOA luminaire is equipped with the second generation LensoFlex®2 photometric engine, which offers a high-performance photometry optimised for each specific application with minimum energy consumption.

IP 66 | IK 08 | IK 10

UL 1598
CSA C22.2
No. 250.0

005 certification

RoHS

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

Concept

Built with recyclable materials - aluminium and glass - the YOA luminaire is available in two sizes: YOA Midi with up to 48 LEDs and YOA Maxi with up to 96 LEDs. YOA Midi is particularly suited to lighting residential areas, urban roads, parks, squares, pedestrian zones whereas YOA Maxi is ideal for large avenues and main roads.

The YOA range offers flexible combinations of LED modules, driving currents and dimming options to provide a cost-effective solution while improving comfort and safety for people.

This connected-ready luminaire offers a realistic platform for smart cities.

YOA also offers various mounting possibilities: side-entry for Ø48mm or Ø60mm spigots, post-top or side-entry with a double bracket or catenary (YOA Midi only).

To offer complete aesthetic solutions, YOA is available with three ranges of dedicated brackets (Tressa, Lucea and Lyre).

YOA offers numerous mounting options: post-top, side-entry and catenary.

YOA is available with TRESSA, LUCEA and LYRE brackets.

TYPES OF APPLICATION

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

KEY ADVANTAGES

- Maximised savings in energy and maintenance costs
- LensoFlex®2 offering high performance photometry, comfort and safety
- High-end aesthetic finish
- Flexible number of LED modules and photometry
- ThermiX® for long lasting performance
- Smart-city ready (NEMA) and ZD4i compliant (Zhaga)

YOA offers a high-quality finish.

YOA can be fitted with a Back Light Control system to prevent intrusive light.

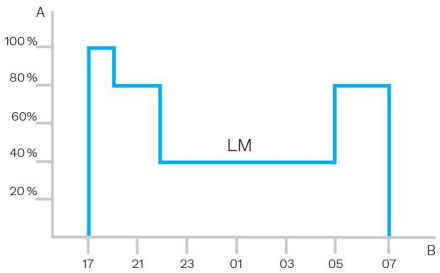
LensoFlex®2

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.

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.

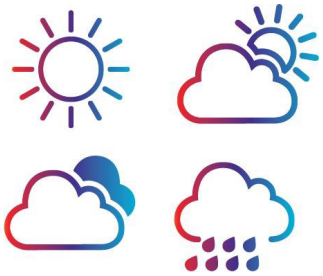
The period between switching on and switching off is used to activate the preset dimming profile. The customised dimming system generates maximum energy savings while respecting the required lighting levels and uniformity throughout the night.



A. Dimming level | 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 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.

Schréder EXEDRA is the most advanced lighting management system on the market for controlling, monitoring and analysing streetlights in a user-friendly way.

Standardisation for interoperable ecosystems

Schréder plays a key role in driving standardisation with alliances and partners such as uCIFI, TALQ or Zhaga. Our joint commitment is to provide solutions designed for vertical and horizontal IoT integration. From the body (hardware) to the language (data model) and the intelligence (algorithms), the complete Schréder EXEDRA system relies on shared and open technologies. Schréder EXEDRA also relies on Microsoft™ Azure for cloud services, provided with the highest levels of trust, transparency, standards conformance and regulatory compliance.

Breaking the silos

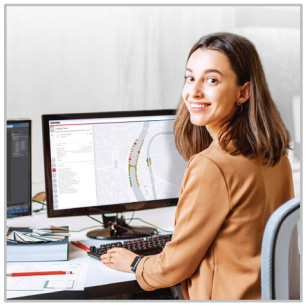
With EXEDRA, Schréder has taken a technology-agnostic approach: we rely on open standards and protocols to design an architecture able to interact seamlessly with third-party software and hardware solutions. Schréder EXEDRA is designed to unlock complete interoperability, as it offers the ability to:

- control devices (luminaires) from other brands
- manage controllers and to integrate sensors from other brands
- connect with third-party devices and platforms

A plug-and-play solution

As a gateway-less system using the cellular network, an intelligent automated commissioning process recognises, verifies and retrieves luminaire data into the user interface. The self-healing mesh between luminaire controllers enables real-time adaptive lighting to be configured directly via the user interface. OWLET IV luminaire controllers, optimised for Schréder EXEDRA, operate Schréder's luminaires and luminaires from third parties. They use both cellular and mesh radio networks, optimising geographical coverage and redundancy for continuous operation.

Tailored experience



Schréder EXEDRA includes all advanced features needed for smart device management, real-time and scheduled control, dynamic and automated lighting scenarios, maintenance and field operation planning, energy consumption management and third-party connected hardware integration. It is fully configurable and includes tools for user management and multi-tenant policy that enables contractors, utilities or big cities to segregate projects.

A powerful tool for efficiency, rationalisation and decision making

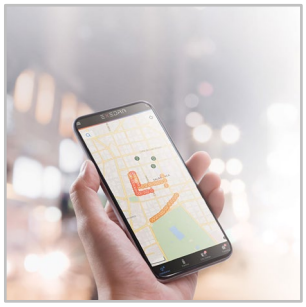
Data is gold. Schréder EXEDRA brings it with all the clarity managers need to drive decisions. The platform collects massive amounts of data from end devices and, aggregates, analyses and intuitively displays them to help end-users take the right actions.

Protected on every side

ISO 27001
BUREAU VERITAS
Certification

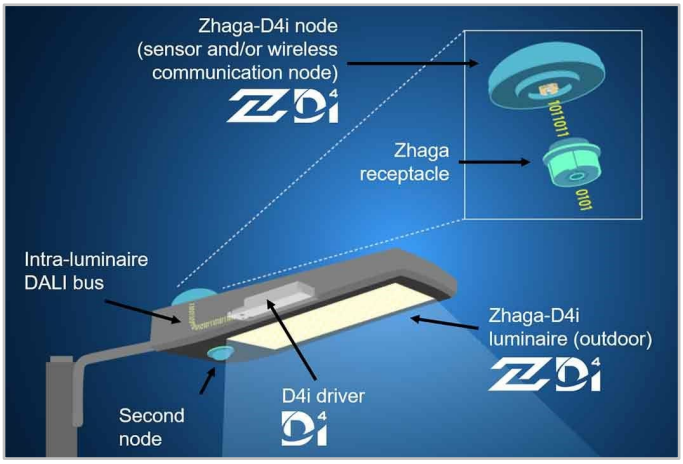
Schréder EXEDRA provides state-of-the-art data security with encryption, hashing, tokenisation, and key management practices that protect data across the whole system and its associated services. The whole platform is ISO 27001 certified. It demonstrates that Schréder EXEDRA meets the requirements for establishing, implementing, maintaining and continually improving security management.

Mobile App: any time, any place, connect to your street lighting



The Schréder EXEDRA mobile application offers the essential functionalities of the desktop platform, to accompany all types of operator on site in their daily effort to maximise the potential of connected lighting. It enables real-time control and settings, and contributes to effective maintenance.

The Zhaga consortium joined forces with the DiiA and produced a single Zhaga-D4i certification that combines the Zhaga Book 18 version 2 outdoor connectivity specifications with the DiiA's D4i specifications for intra-luminaire DALI.



Standardisation for interoperable ecosystems

Member of Zhaga

As a founding member of the Zhaga consortium, Schréder has participated in the creation of, and therefore supports, the Zhaga-D4i certification program and the initiative of this group to standardise an interoperable ecosystem. The D4i specifications take the best of the standard DALI2 protocol and adapt it to an intra-luminaire environment but it has certain limitations. Only luminaire mounted control devices can be combined with a Zhaga-D4i luminaire. According to the specification, control devices are limited respectively to 2W and 1W average power consumption.

Certification program

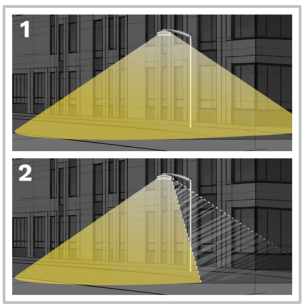
The Zhaga-D4i certification covers all the critical features including mechanical fit, digital communication, data reporting and power requirements within a single luminaire, ensuring plug-and-play interoperability of luminaires (drivers) and peripherals such as connectivity nodes.

Cost-effective solution

A Zhaga-D4i certified luminaire includes drivers offering features that had previously been in the control node, like energy metering, which has in turn simplified the control device therefore reducing the price of the control system.

With the PureNight concept, Schréder offers the ultimate solution for restoring the night sky without switching off cities, while maintaining safety and well-being for people and preserving wildlife. The PureNight concept guarantees that your Schréder lighting solution satisfies environmental laws and requirements. Well-designed LED lighting has the potential to improve the environment in all respects.

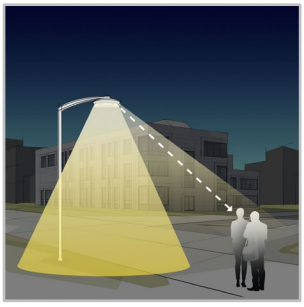
Direct the light only where it is wanted and needed



Schréder is renowned for its expertise in photometry. Our optics direct light only where it is wanted and needed. However, light trespass behind the luminaire might be a key concern when it comes to protecting a sensitive wildlife habitat or avoiding intrusive lighting towards buildings. Our fully integrated backlight solutions easily address this potential risk.

1. Without backlight
2. With backlight

Offer maximum visual comfort to people



Because of the lower installation height compared to road lighting, visual comfort is an essential aspect of urban lighting. Schréder designs lenses and accessories to minimise any type of glare (distracting, discomforting, disabling glare and blinding glare). Our design offices harness a range of possibilities to find the best solutions for each project and ensure that we provide a gentle light that delivers the best night-time experience.

Protect wildlife

If not well designed, artificial lighting can badly affect wildlife. Blue light and excessive intensity can have a damaging effect on all types of life. Blue light radiation has the ability to suppress the production of melatonin, the hormone that contributes to the regulation of the circadian rhythm. It can also alter the behavioural patterns of animals including bats and moths, as it can change their movements towards or away from light sources. Schréder favours warm white LEDs with minimal blue light, combined with advanced control systems including sensors. This enables permanent adaptation of the lighting to the real needs of the moment, minimising disturbance to the fauna and flora.

Choose a Dark Sky certified luminaire

The International Dark-Sky Association (IDA) is the recognised authority on light pollution. It provides leadership, tools and resources to industries and companies willing to reduce light pollution. The IDA's Fixture Seal of Approval programme certifies outdoor lighting fixtures as being Dark Sky Friendly. All products approved by this programme must comply with the following criteria:

- The light sources shall have a maximum correlated colour temperature of 3000K;
- Uplight allowance limited to 0.5% of total output, or 50 lumens, with no more than
  10 lumens in the 90-100 degree UL zone;
- The luminaires must have a dimming capability to 10% of full rating;
- The luminaires must be equipped with a fixed mounting option;
- The luminaires must have Safety Certification by an independent laboratory.

This approved Schréder range of luminaires complies with these requirements.

GENERAL INFORMATION

Recommended installation height	4m to 12m | 13' to 39'
Driver included	Yes
CE mark	Yes
ENEC certified	Yes
UL certified	Yes
ROHS compliant	Yes
Dark Sky friendly lighting (IDA certification)	Yes
Zhaga-D4i certified	Yes
French law of December 27th 2018 - Compliant with application type(s)	a, b, c, d, e, f, g
BE 005 certified	Yes
UKCA marking	Yes
Testing standard	LM 79-08 (all measurements in ISO17025 accredited laboratory)

HOUSING AND FINISH

Housing	Aluminium
Optic	PMMA
Protector	Tempered glass Polycarbonate
Housing finish	Polyester powder coating
Standard colour(s)	AKZO grey 900 sanded
Tightness level	IP 66
Impact resistance	IK 08, IK 10
Vibration test	Compliant with modified IEC 68-2-6 (0.5G)
Access for maintenance	Direct access to the gear compartment by loosening screws on the top cover

OPERATING CONDITIONS

Operating temperature range (Ta)	-30°C up to +40°C / -22°F up to 104°F

· Depending on the luminaire configuration. For more details, please contact us.

ELECTRICAL INFORMATION

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

OPTICAL INFORMATION

LED colour temperature	2200K (WW 822) 2700K (WW 727) 3000K (WW 730) 3000K (WW 830) 4000K (NW 740)
Colour rendering index (CRI)	>80 (WW 822) >70 (WW 727) >70 (WW 730) >80 (WW 830) >70 (NW 740)
ULOR	0%
ULR	0%

· Meets IDA Dark Sky requirements when fitted with LEDs of 3000K or less.
· ULOR may be different according to the configuration. Please consult us.
· ULR may be different according to the configuration. Please consult us.

LIFETIME OF THE LEDS @ TQ 25°C

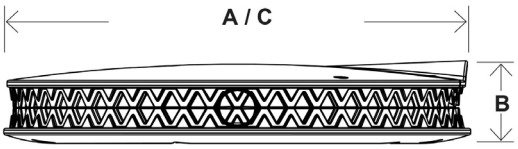
All configurations	100,000h - L90

· Lifetime may be different according to the size/configurations. Please consult us.

DIMENSIONS AND MOUNTING

AxBxC (mm | inch)	YOA MIDI : 500x92x500 | 19.7x3.6x19.7 YOA MAXI : 650x92x650 | 25.6x3.6x25.6
Weight (kg | lbs)	YOA MIDI : 13.0 | 28.6 YOA MAXI : 20.0 | 44.0
Aerodynamic resistance (CxS)	YOA MIDI : 0.02 YOA MAXI : 0.02
Mounting possibilities	Side-entry slip-over – Ø48mm Side-entry slip-over – Ø60mm Post-top slip-over – Ø76mm Catenary

· For more information about mounting possibilities, please consult the installation sheet.
· Only Yoa Midi is available for a catenary mounting



YOA MIDI

Photometry

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	Luminaire output flux (lm)										Power consumption (W)		Luminaire efficacy (lm/W)
	Warm White 822		Warm White 727		Warm White 730		Warm White 830		Neutral White 740				
Number of LEDs	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Up to
8	500	1800	700	2400	800	2700	700	2500	800	2800	10	26	134
16	800	3500	1000	4700	1100	5200	1000	4900	1200	5500	13	45	148
24	1000	5800	1300	7900	1400	8600	1300	8100	1500	9100	16	78	154
32	1300	6800	1700	9100	1900	10000	1700	9400	1900	10600	20	80	156
40	1700	8200	2200	11000	2400	12100	2200	11300	2500	12800	25	102	159
48	2000	9800	2500	13200	2800	14400	2500	13600	2900	15300	30	115	160

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

YOA MAXI

Photometry

LENSO FLEX™2

	Luminaire output flux (lm)										Power consumption (W)		Luminaire efficacy (lm/W)
	Warm White 822		Warm White 727		Warm White 730		Warm White 830		Neutral White 740				
Number of LEDs	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Up to
64	3300	11800	4200	15800	4700	17300	4200	16300	4800	18400	39	139	169
80	4100	15500	5200	20800	5800	22700	5200	21400	6000	24100	46	173	177
96	5000	16200	6300	21800	7000	23900	6300	22500	7300	25300	55	169	179

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

LENSO FLEX 2

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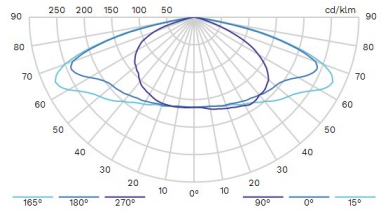

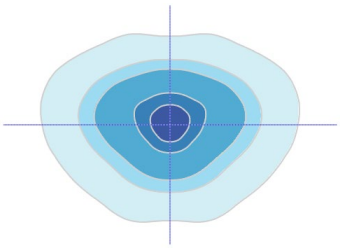

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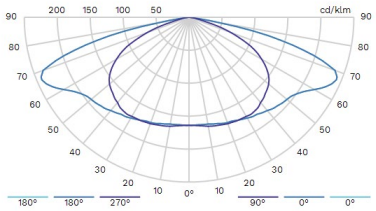

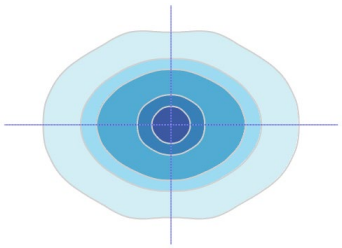

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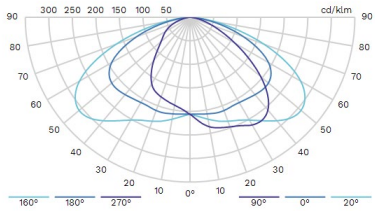

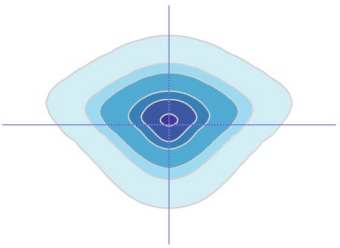

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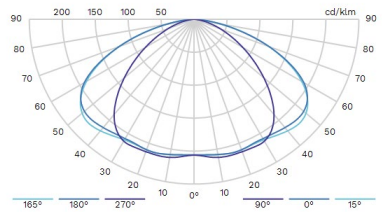

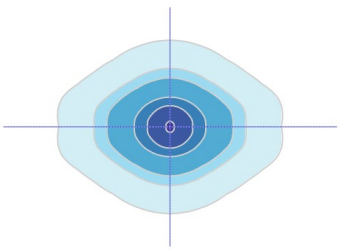

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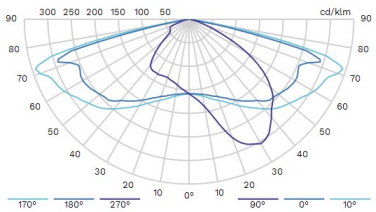

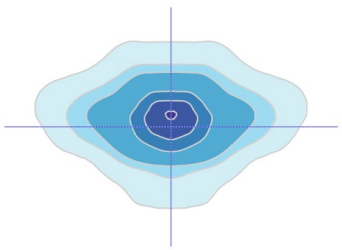

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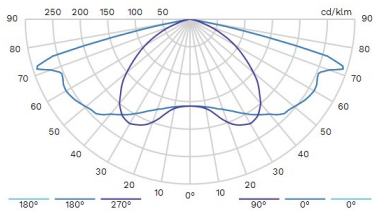

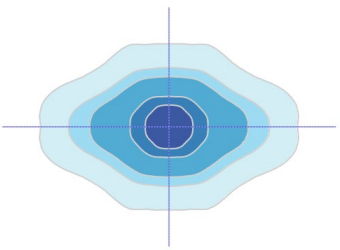

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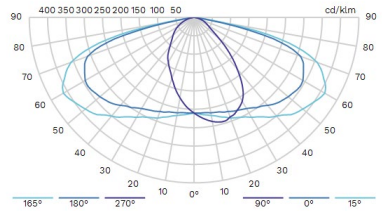

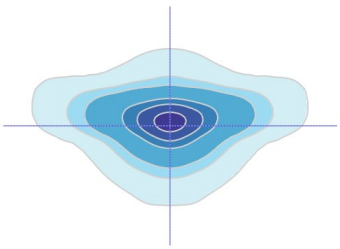

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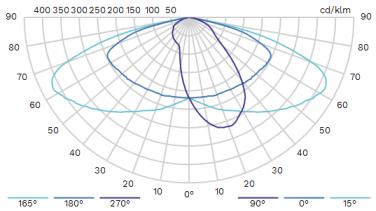

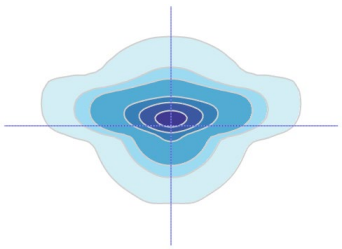

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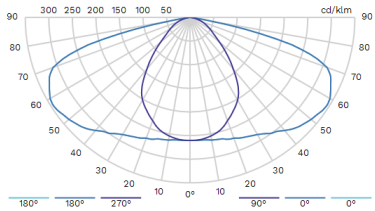

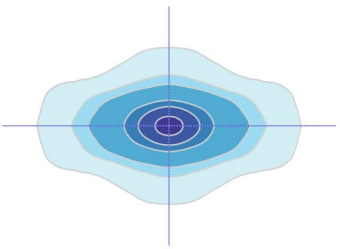

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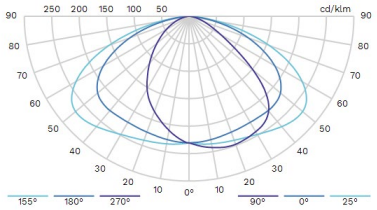

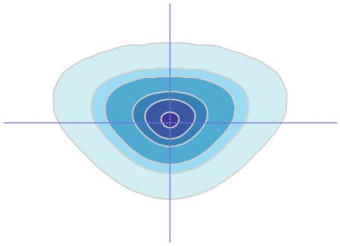

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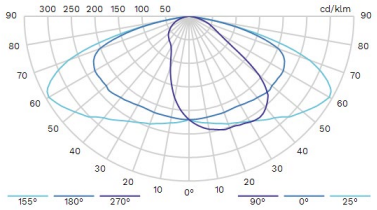
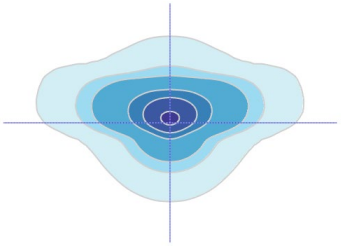
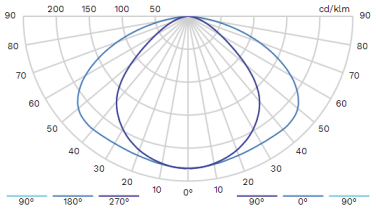
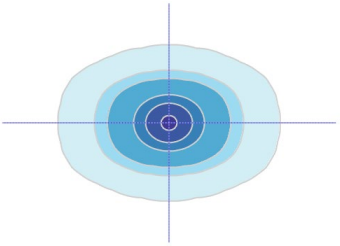




LENSO FLEX™2

5103 SY





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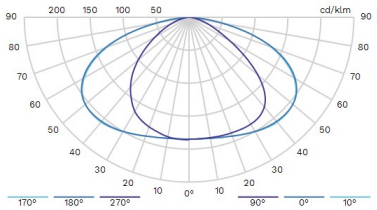

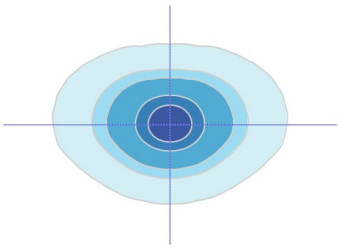

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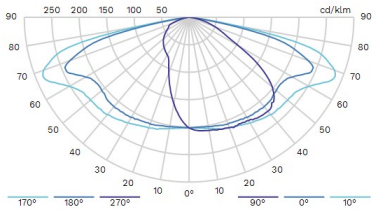

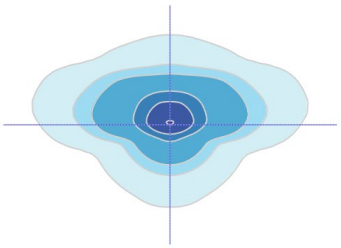

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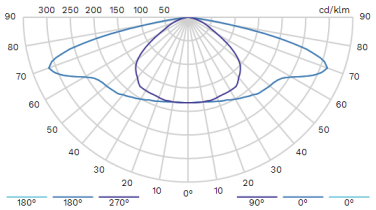

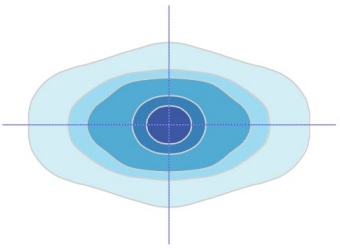

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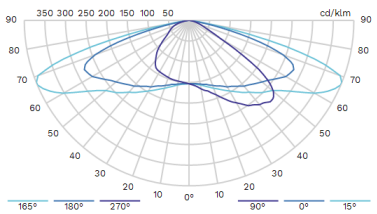

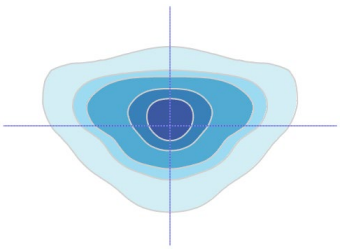

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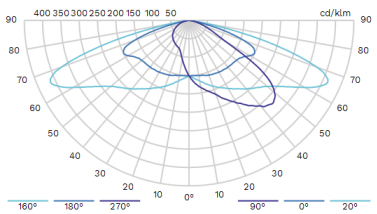

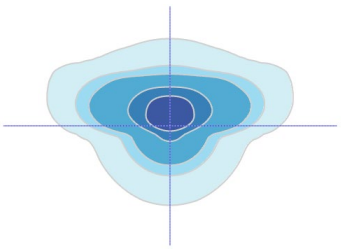

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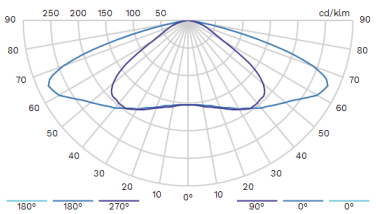

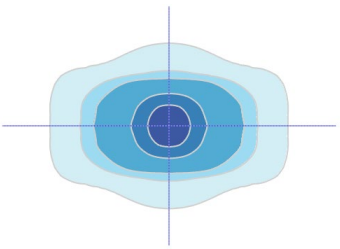

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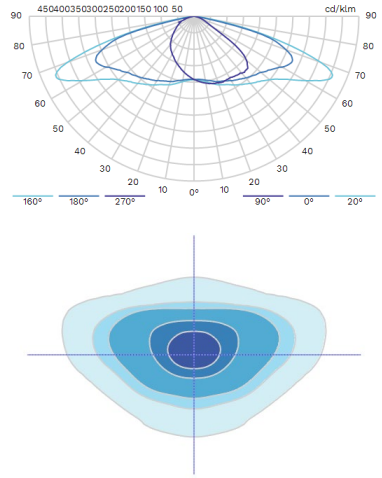

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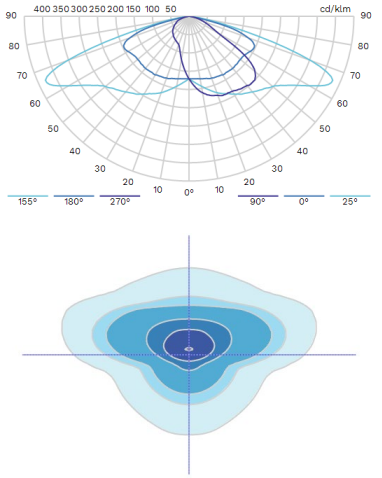

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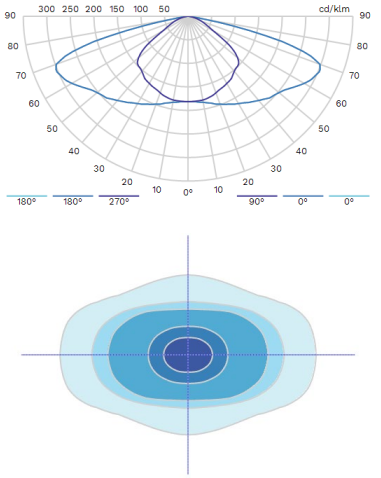

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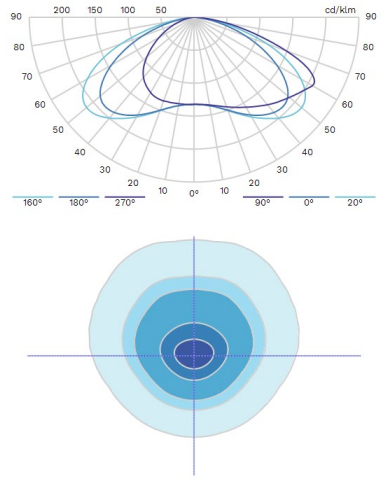

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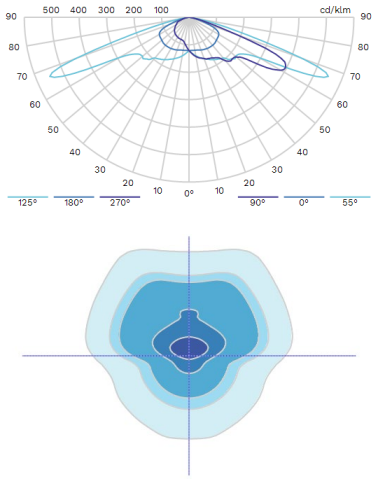

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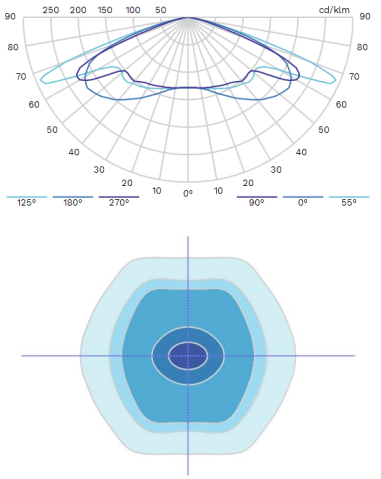

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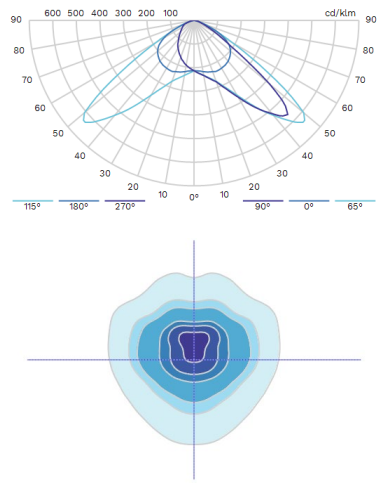

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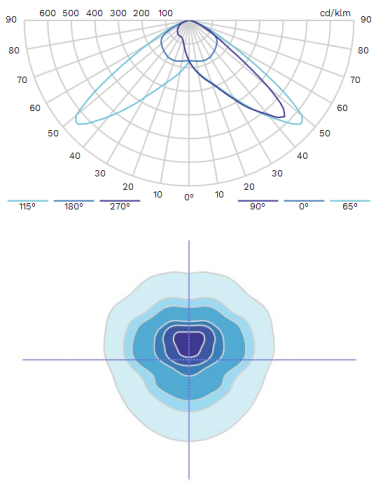

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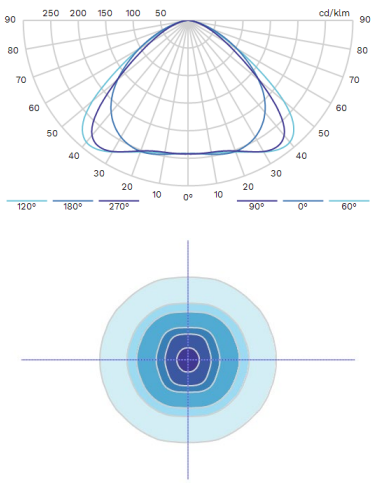

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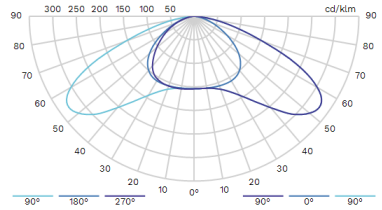

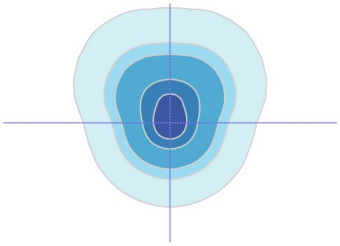

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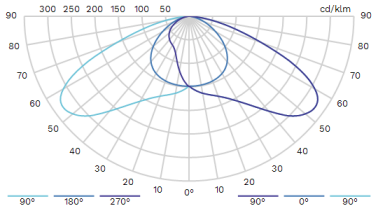

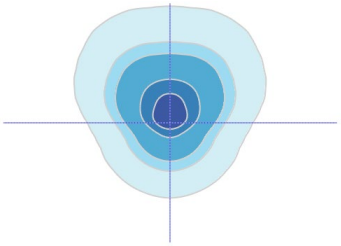

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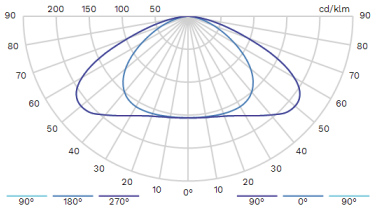

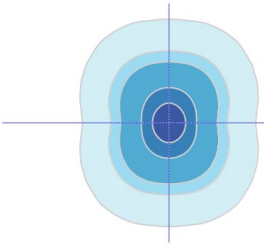

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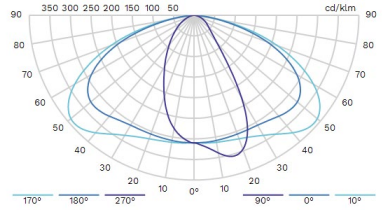

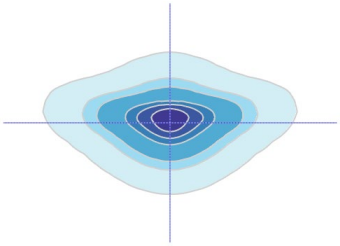

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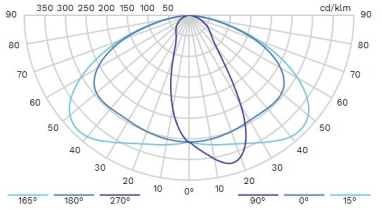

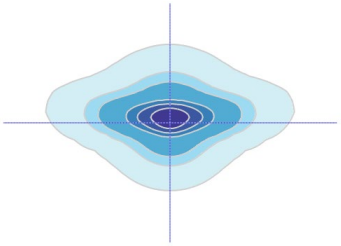

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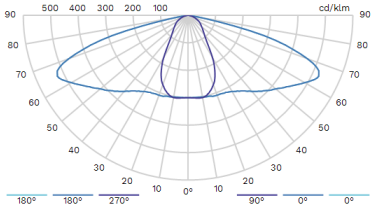

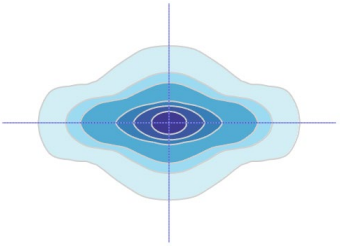

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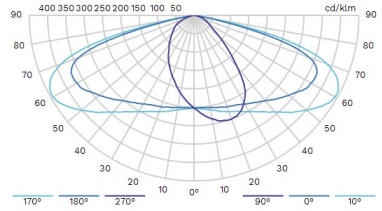

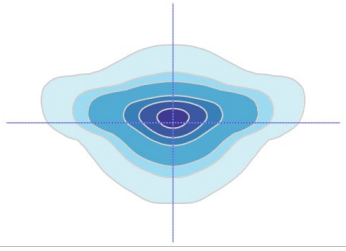

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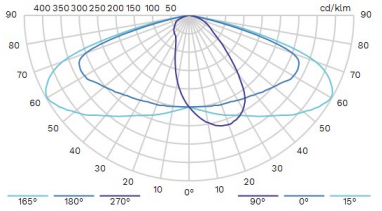

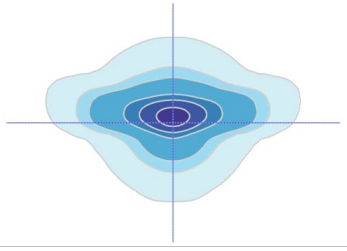

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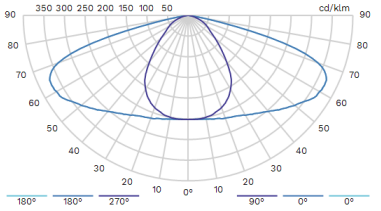

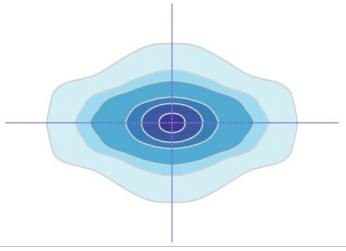

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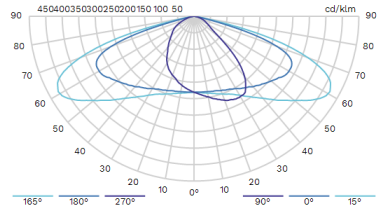

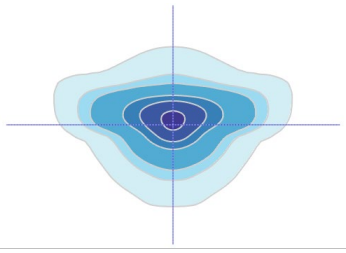

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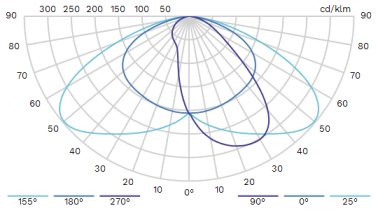

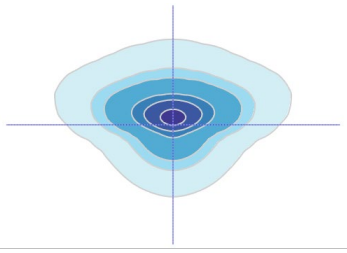

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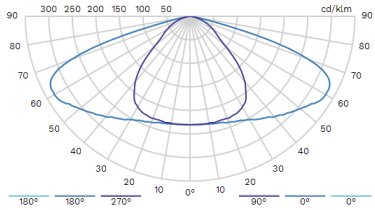

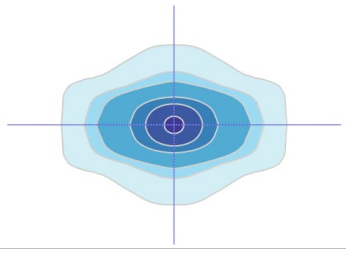

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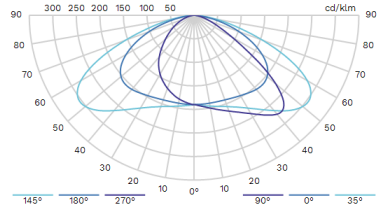

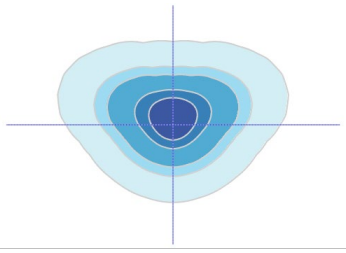

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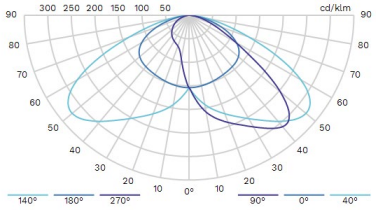

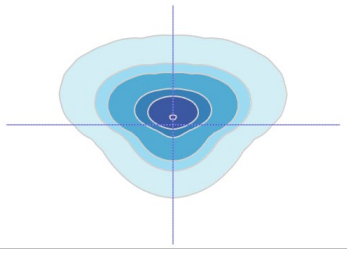

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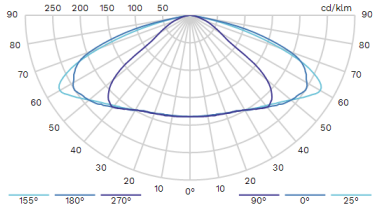

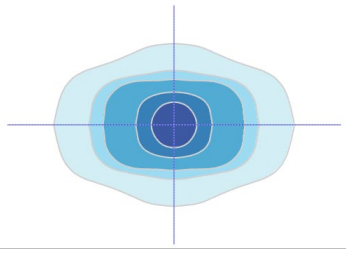

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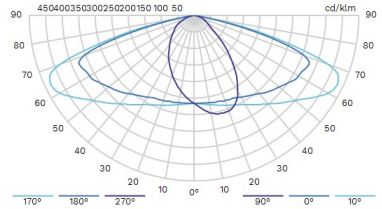

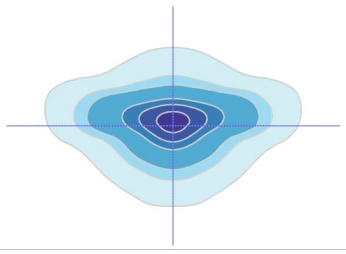

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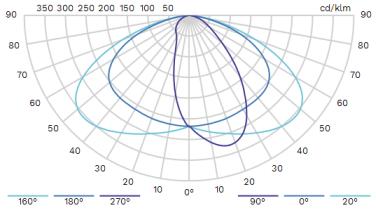

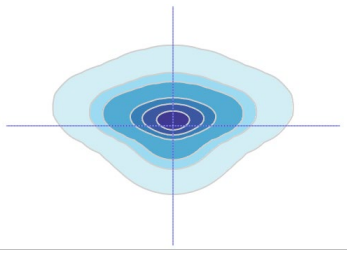

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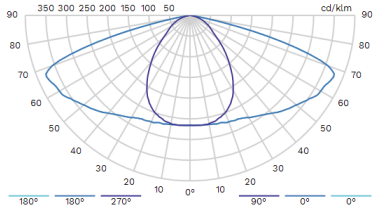

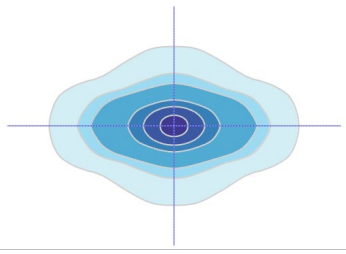

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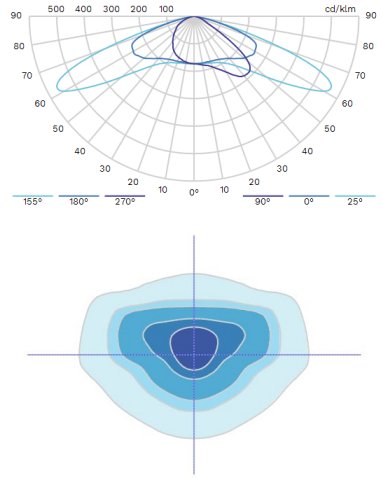

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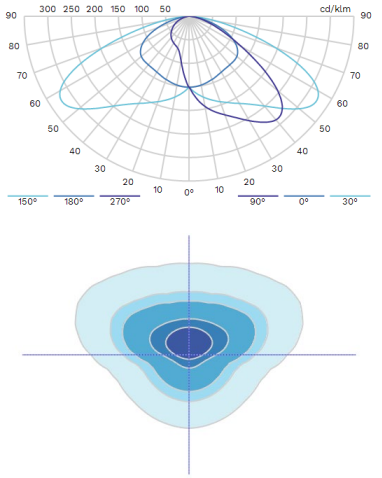

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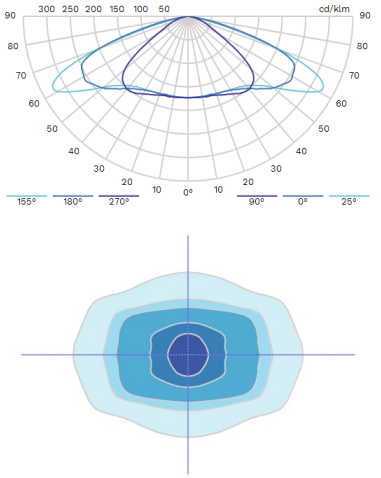
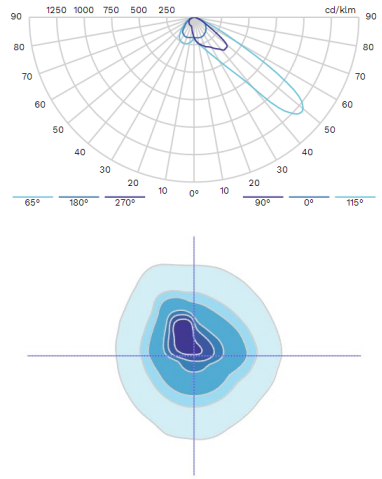


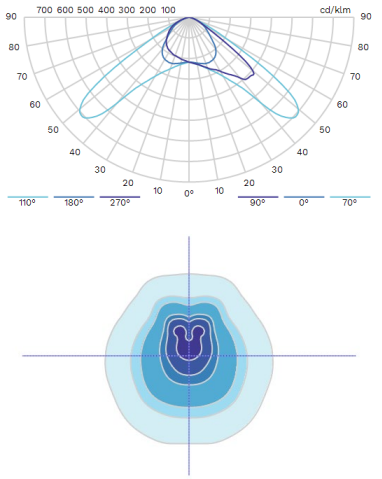
LENSO FLEX™2

5144 BL



LENSO FLEX™2

5144 ZL



LENSO FLEX™2

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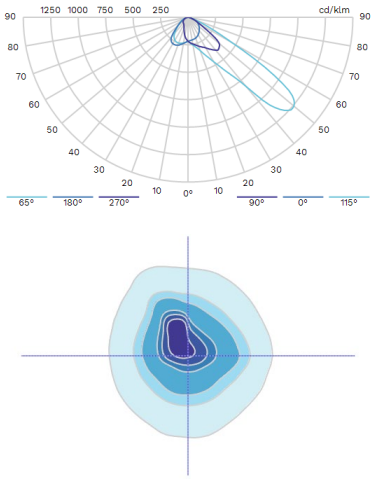

LENSO FLEX™2

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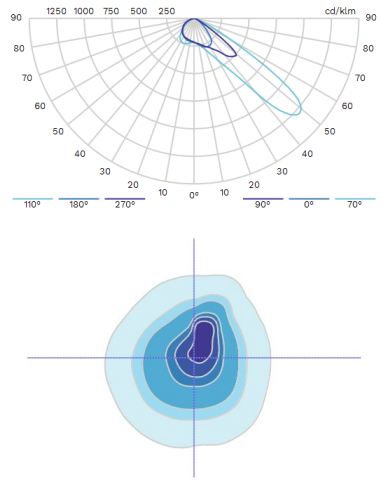
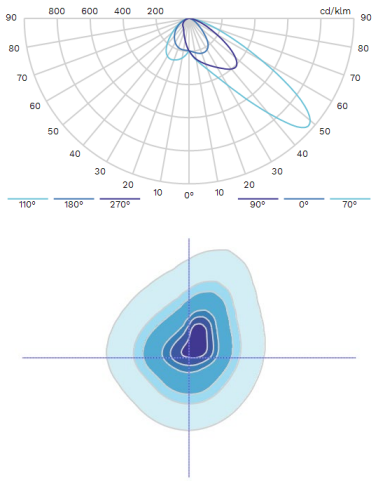


LENSO FLEX™2

5145 BL ZR



LENSO FLEX™2

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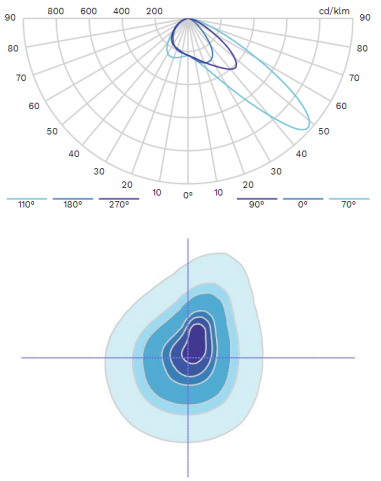

LENSO FLEX™2

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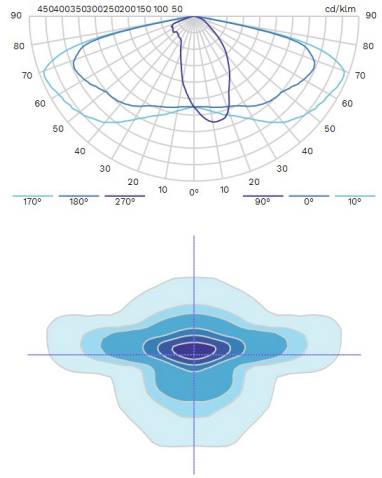

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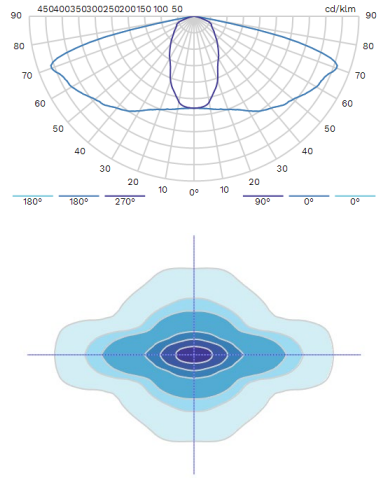

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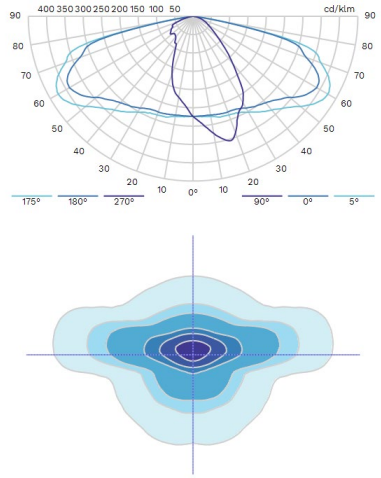

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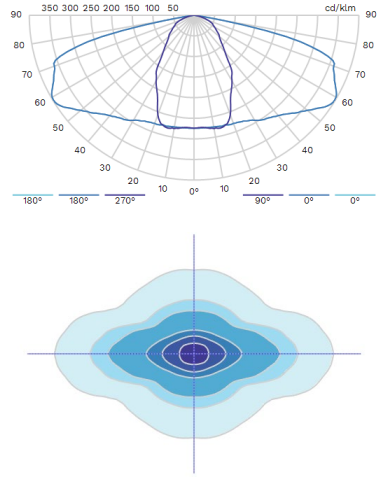

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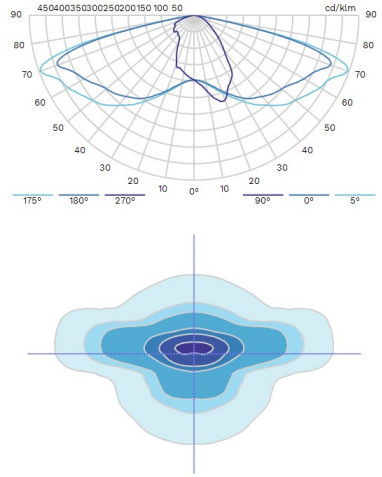

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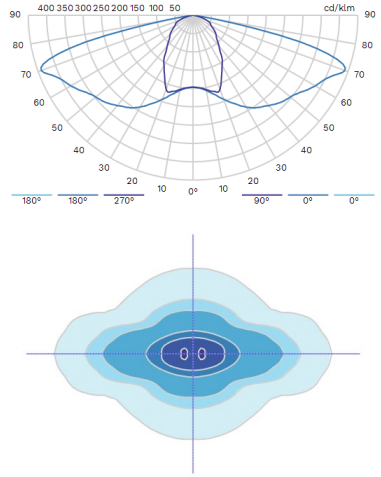

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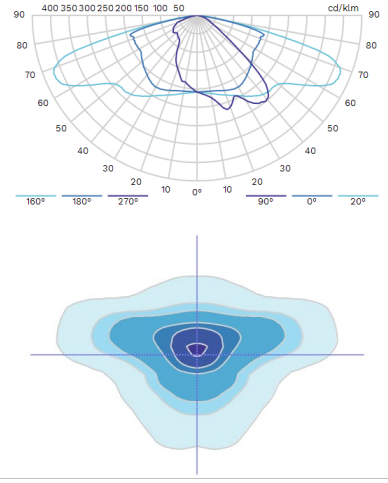

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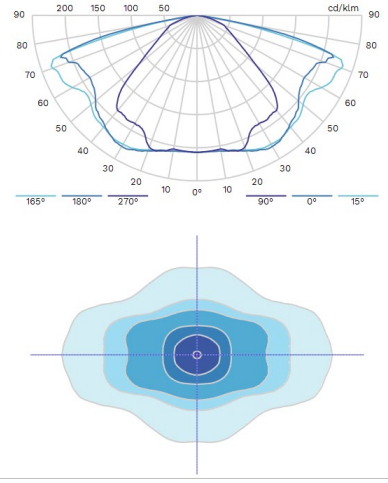

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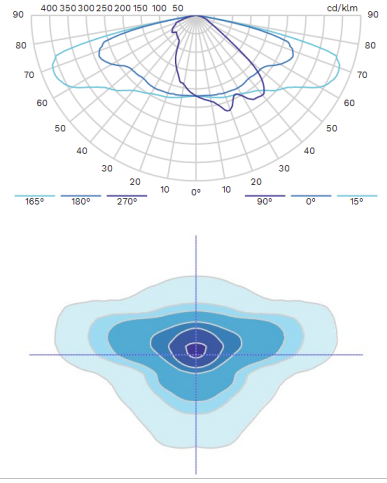
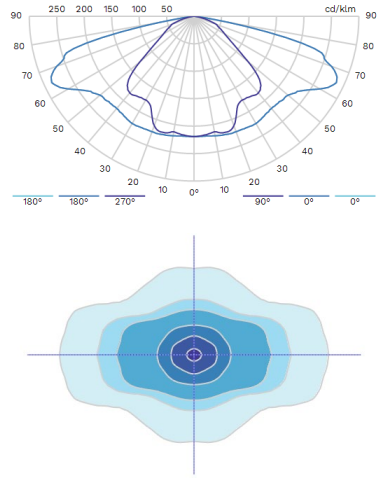


LENSO FLEX™2

5248 SY



LENSO FLEX™2

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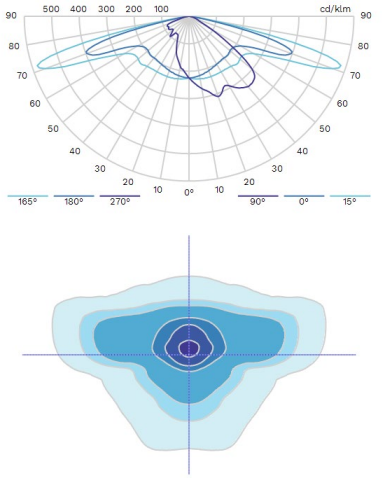

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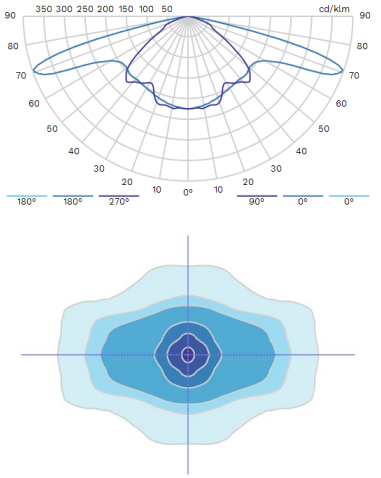

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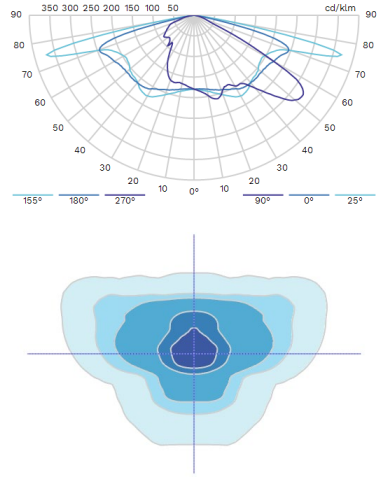

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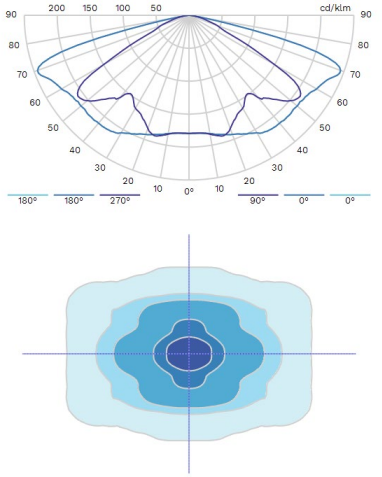

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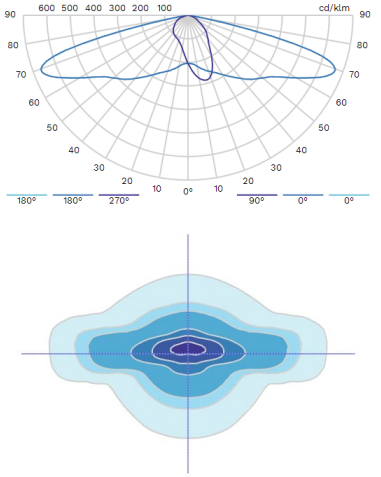
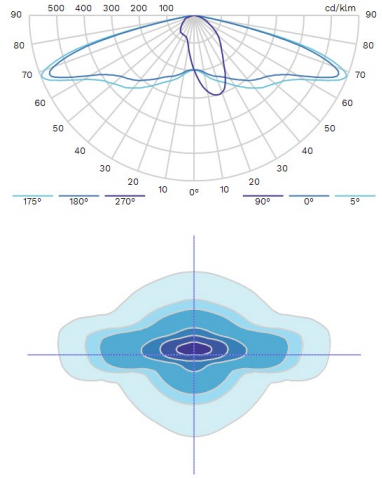


LENSO FLEX™2

5283 BL



LENSO FLEX™2

5283 SY