

Piano



Designer : Michel Tortel



The ideal instrument for urban environments

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

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

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

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



Concept

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

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

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

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



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



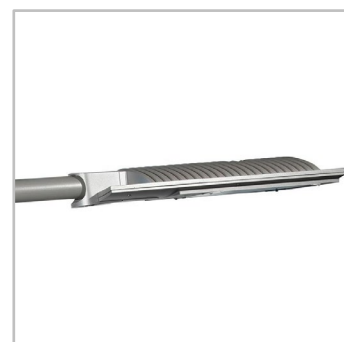
Sustainable and recyclable materials: painted aluminium and an extra-clear glass protector.

TYPES OF APPLICATION

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

KEY ADVANTAGES

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



Side-entry or post-top mounting.

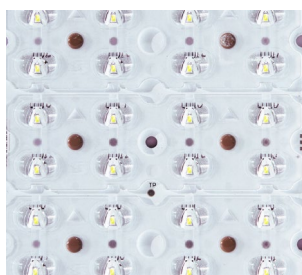


For maintenance, the Piano can be opened to access internal components.



LensoFlex®2

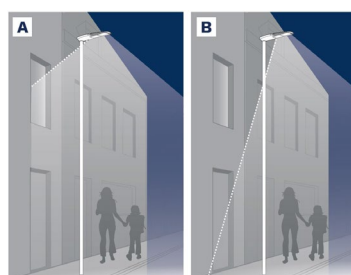
LensoFlex®2 is based upon the addition principle of photometric distribution. Each LED is associated with a specific PMMA lens that generates the complete photometric distribution of the luminaire. The number of LEDs in combination with the driving current determines the intensity level of the light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



Back Light control

As an option, the LensoFlex®2 modules can be equipped with a Back Light control system.

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



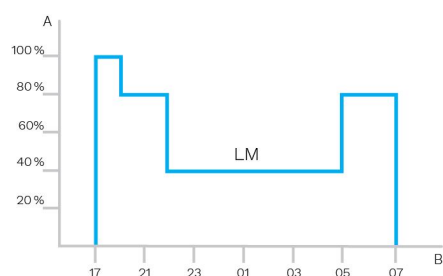
A. Without Back Light control | B. With Back Light control



Custom dimming profile

Intelligent luminaire drivers can be programmed with complex dimming profiles. Up to five combinations of time intervals and light levels are possible. This feature does not require any extra wiring.

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

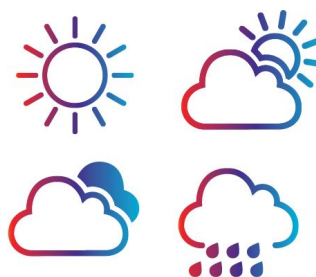


A. Dimming level | B. Time



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

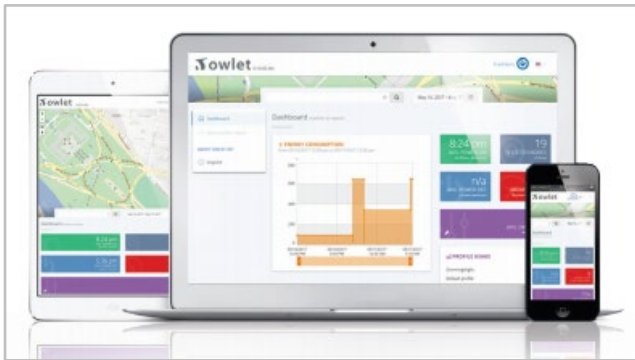
In places with little nocturnal activity, lighting can be dimmed to a minimum most of the time. By using passive infrared (PIR) sensors, the level of light can be raised as soon as a pedestrian or a slow vehicle is detected in the area.

Each luminaire level can be configured individually with several parameters such as minimum and maximum light output, delay period and ON/OFF duration time. PIR sensors can be used in an autonomous or interoperable network.



Owlet IoT

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



ALL-IN-ONE

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

EASY TO DEPLOY

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

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

USER-FRIENDLY

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

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

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

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



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

SECURE

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

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

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

EFFICIENT

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

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

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

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

OPEN

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

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

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

GENERAL INFORMATION

Recommended installation height	4m to 12m 13' to 39'
FutureProof	Easy replacement of the photometric engine and electronic assembly on-site
Driver included	Yes
CE Mark	Yes
ENEC+ certified	Yes
ETL/UL certified	Yes
ROHS compliant	Yes
French law of December 27th 2018 - Compliant with application type(s)	a, b, c, d, e, f, g
BE 005 certified	Yes
Testing standard	LM 79-08 (all measurements in ISO17025 accredited laboratory)

HOUSING AND FINISH

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

· Any other RAL or AKZO colour upon request

OPERATING CONDITIONS

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

ELECTRICAL INFORMATION

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

OPTICAL INFORMATION

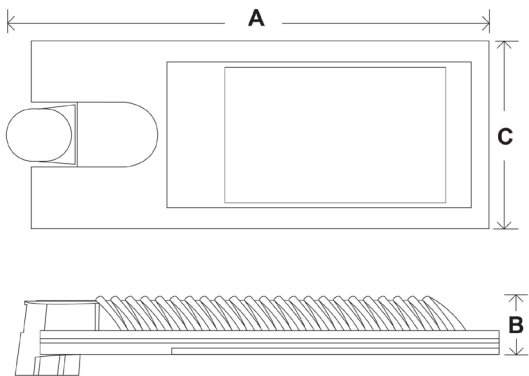
LED colour temperature	2200K (Warm White 822) 2700K (Warm White 727) 3000K (Warm White 730) 3000K (Warm White 830) 4000K (Neutral White 740)
Colour rendering index (CRI)	>80 (Warm White 822) >70 (Warm White 727) >70 (Warm White 730) >80 (Warm White 830) >70 (Neutral White 740)
Upward Light Output Ratio (ULOR)	0%


LIFETIME OF THE LEDS @ TQ 25°C
















All configurations	100,000h - L90
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DIMENSIONS AND MOUNTING

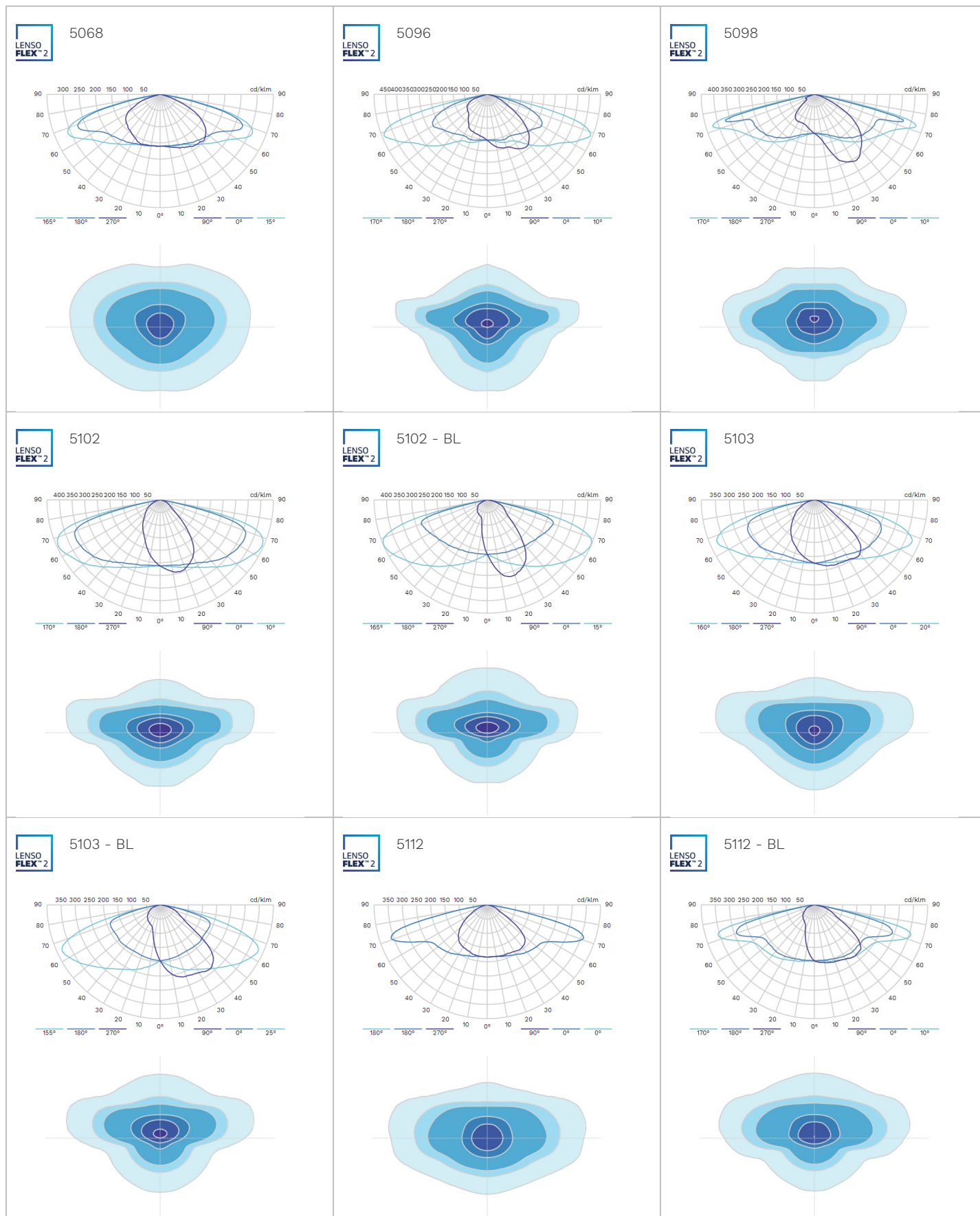
AxBxC (mm inch)	PIANO MINI - 584x87x277 23.0x3.4x10.9 PIANO MIDI - 717x87x277 28.2x3.4x10.9
Weight (kg lbs)	PIANO MINI - 7 15.4 PIANO MIDI - 10 22.0
Aerodynamic resistance (CxS)	PIANO MINI - 0.04 PIANO MIDI - 0.06
Mounting possibilities	Side-entry slip-over – Ø42mm Side-entry slip-over – Ø48mm Side-entry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





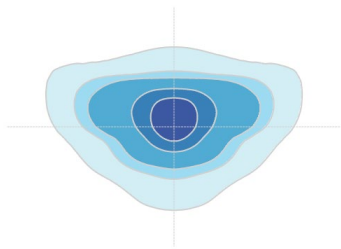
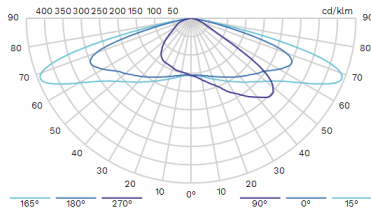
Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Warm White 727		Luminaire output flux (lm) Warm White 730		Luminaire output flux (lm) Warm White 822		Luminaire output flux (lm) Warm White 830		Luminaire output flux (lm) Neutral White 740		Power consumption (W)	Luminaire efficacy (lm/W)	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max		Up to	Photometry
PIANO MINI	16	350	1800	2100	2000	2400	1400	1700	1800	2100	2000	2500	18.3	138	
	16	500	2400	3000	2700	3300	1900	2300	2400	3000	2800	3400	26.3	132	
	16	700	3200	3900	3600	4400	2600	3100	3200	3900	3700	4500	36.4	124	
	24	350	2700	3200	3000	3600	2100	2600	2700	3200	3100	3700	26.7	141	
	24	500	3700	4400	4100	5000	2900	3500	3700	4400	4200	5100	38	136	
	24	700	4900	5900	5400	6500	3800	4600	4900	5900	5600	6800	53.5	127	
PIANO MIDI	32	350	3500	4300	3900	4800	2800	3400	3500	4300	4100	5000	34.9	145	
	32	500	4800	5900	5400	6600	3800	4700	4800	5900	5600	6900	49.5	139	
	32	700	6400	7900	7100	8800	5100	6200	6400	7900	7400	9100	70	130	
	48	350	5300	6500	5900	7300	4200	5200	5300	6500	6100	7500	51.5	147	
	48	500	7300	8900	8100	10000	5700	7100	7300	8900	8400	10300	74	141	
	48	700	9500	11700	10600	13100	7500	9300	9500	11700	11000	13500	106	129	
	56	350	6200	7600	6900	8500	4900	6000	6200	7600	7100	8800	60	148	
	56	500	8400	10400	9400	11600	6700	8200	8400	10400	9700	12000	86	141	
	56	700	11100	13600	12400	15200	8800	10800	11100	13600	12800	15700	125	126	

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



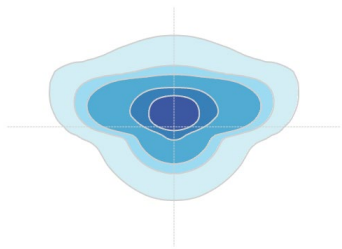
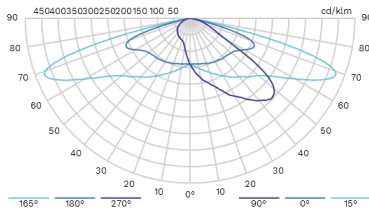
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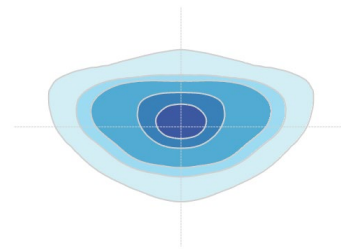
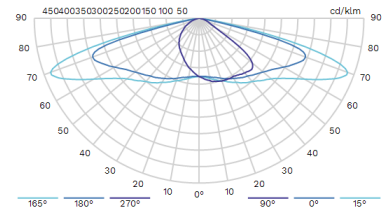
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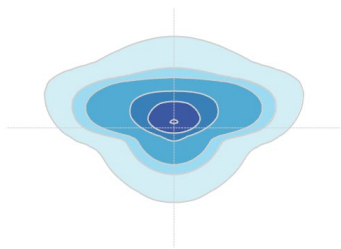
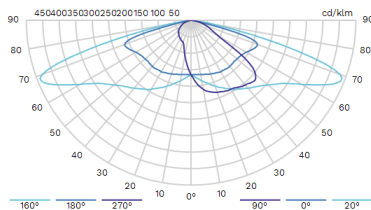
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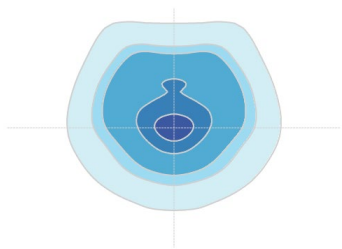
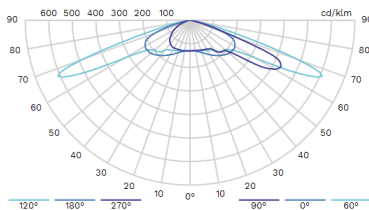
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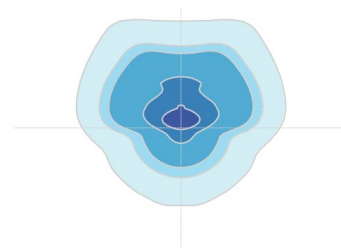
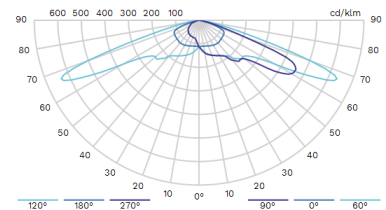
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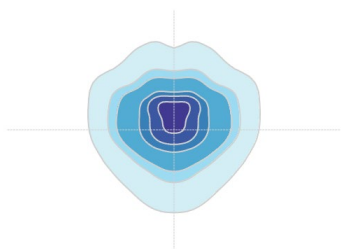
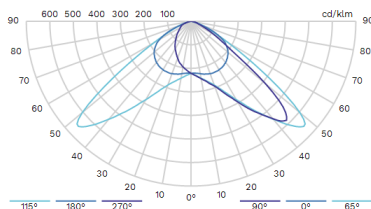
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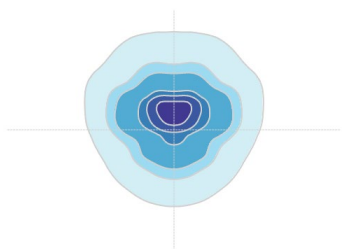
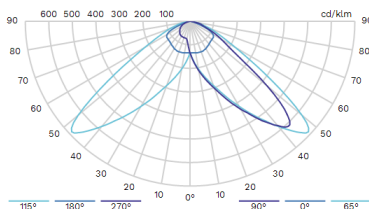
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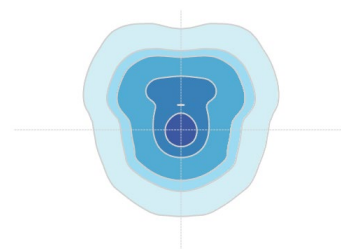
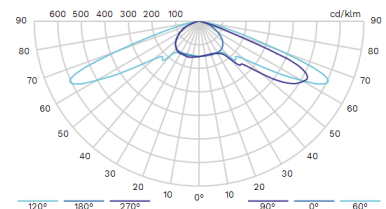
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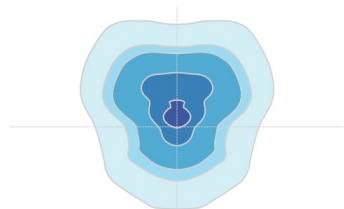
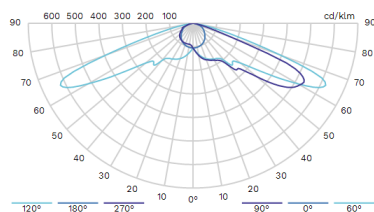
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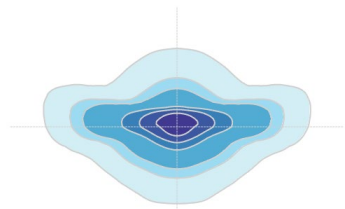
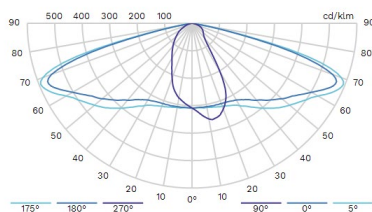
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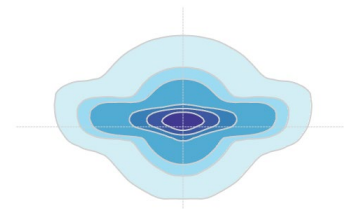
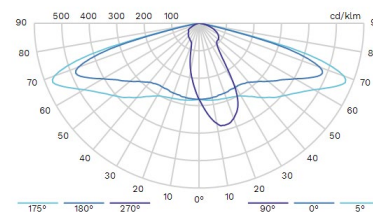
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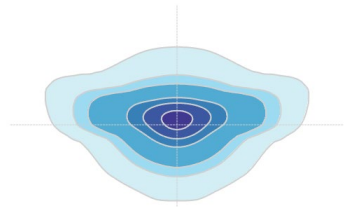
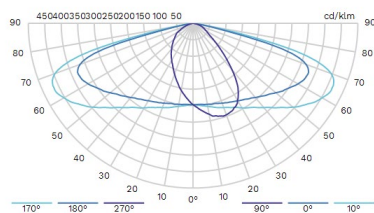
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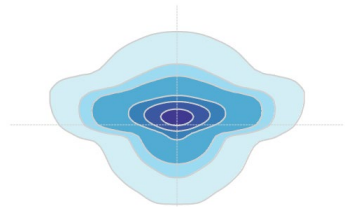
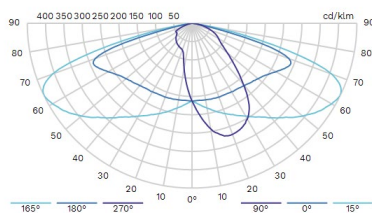
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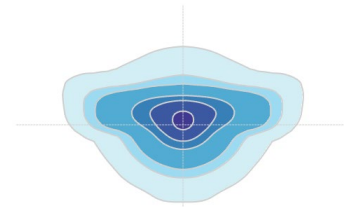
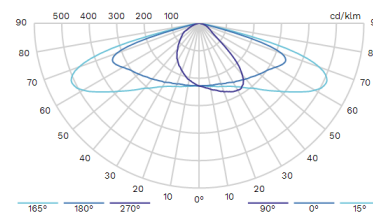
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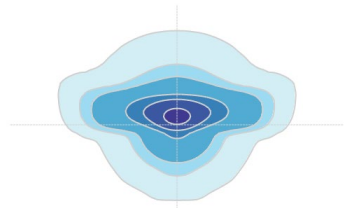
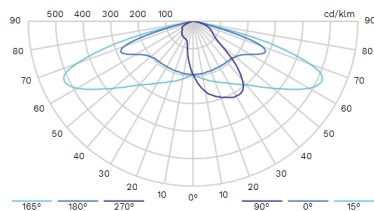
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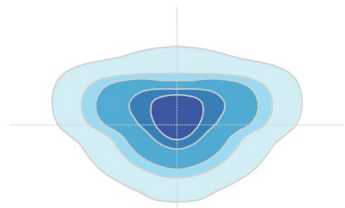
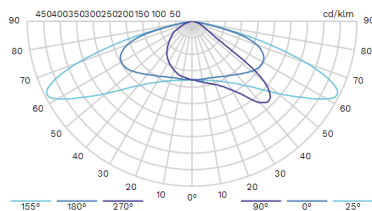
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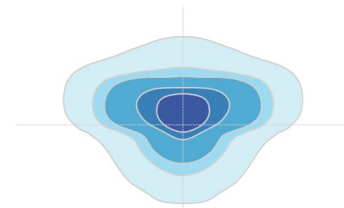
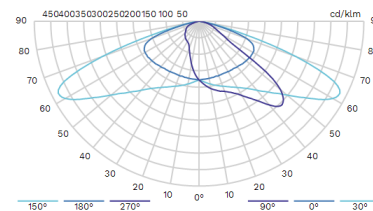
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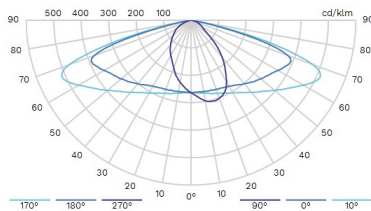
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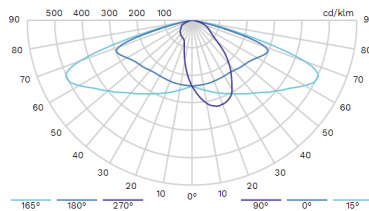
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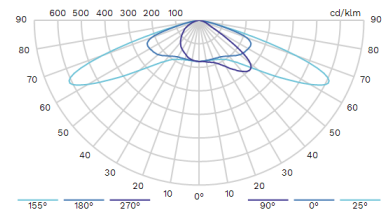
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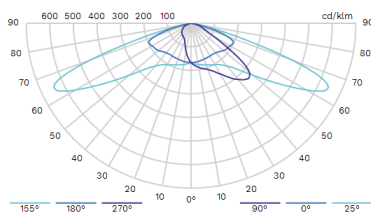
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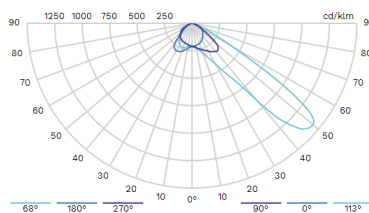
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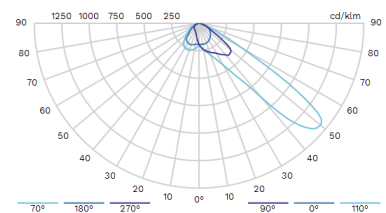
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5144 Zebra left



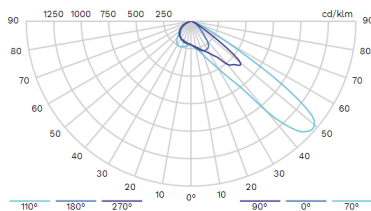
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5144 Zebra left BL



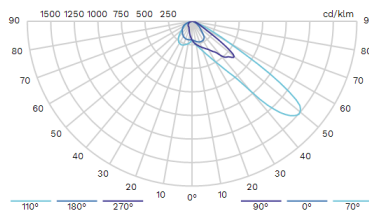
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5145 Zebra right



LENSO
FLEX²

5145 Zebra right BL



LENSO
FLEX²

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