

# AMPERA



Designer : Thomas Coulbeaut



## LED solution for an optimised return on investment

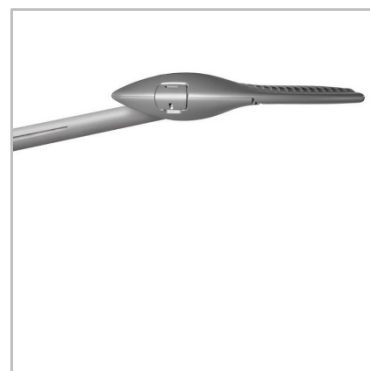
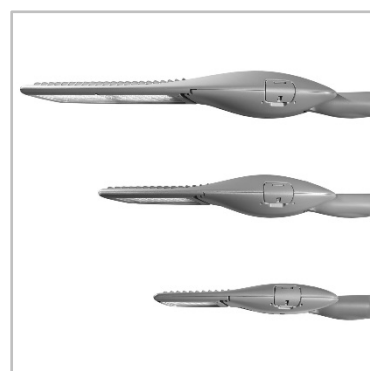
Designing the most efficient and cost-effective LED range was the driving force behind the development of the AMPERA family.

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

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

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

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



IP 66

IK 09



005  
certification



## Concept

The AMPERA luminaire comes in two separate high-pressure die-cast aluminium parts for an easy installation. Fixed on a pole with a 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 photometric engines protected by a tempered glass.

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

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



ThermiX®: withstands high temperatures.



Mounting with two separated parts for easy installation.

## TYPES OF APPLICATION

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

## KEY ADVANTAGES

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



On-site adjustable tilting angle for an optimised result.



Easy access to internal components (tool free opening).



## LensoFlex®2

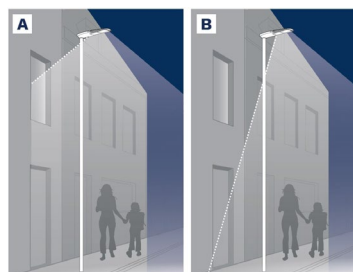
LensoFlex®2 is based upon the addition principle of photometric distribution. Each LED is associated with a specific PMMA lens that generates the complete photometric distribution of the luminaire. The number of LEDs in combination with the driving current determines the intensity level of the light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



## Back Light control

As an option, the LensoFlex®2 and LensoFlex®4 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.



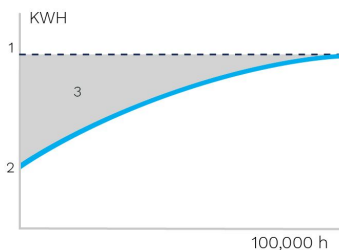
A. Without Back Light control | B. With Back Light control



## 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.



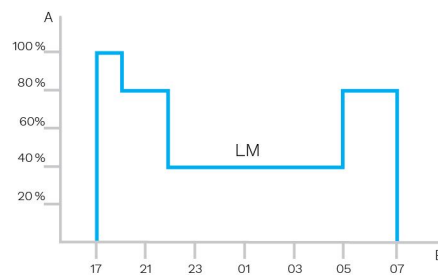
1. Standard lighting level | 2. LED lighting consumption with CLO | 3. Energy savings



## 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.

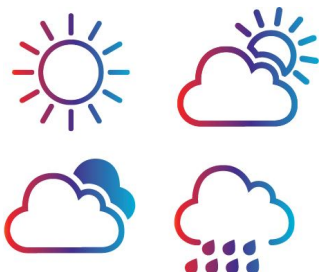


A. Dimming level | B. Time



## 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.



The Schröder Bluetooth solution consists of 3 main components:

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



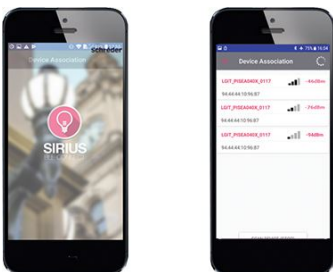
## Easy to use

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

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

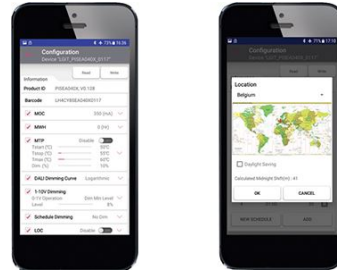
## Quick and easy pairing

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



## Defining the settings

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



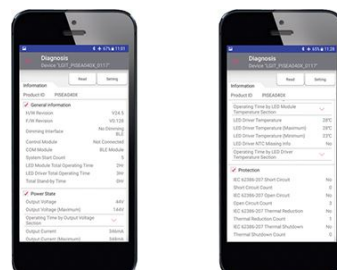
## Manual dimming control

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



## On-site diagnostic

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





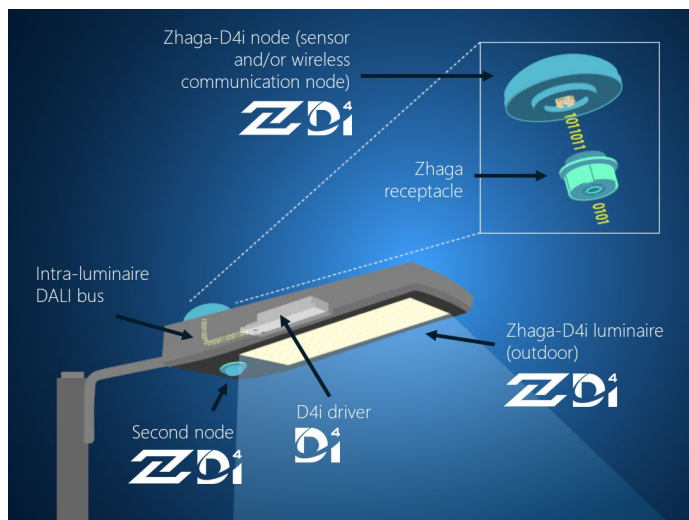
The Zhaga consortium joined forces with the DiiA and produced a single Zhaga-D4i certification that combines the Zhaga Book 18 version 2 outdoor connectivity specifications with the DiiA's D4i specifications for intra-luminaire DALI.

## Standardisation for interoperable ecosystems

As a founding member of the Zhaga consortium, Schröder 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.

## 2 sockets: top and bottom

The Zhaga socket is small and suited to applications where aesthetics is essential. The architecture of Zhaga-D4i also foresees the possibility of putting two sockets on one luminaire, allowing for instance, the combination of a detection sensor and a control node. This also has the added value of standardising certain detection sensor communications with the D4i protocol.





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



## Tailored experience

Schröder 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. Schröder 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

Schröder 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.

## Standardisation for interoperable ecosystems

Schröder 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 Schröder EXEDRA system relies on shared and open technologies.

Schröder 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, Schröder 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. Schröder 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.

## GENERAL INFORMATION

Recommended installation height	4m to 12m   13' to 39'
FutureProof	Easy replacement of the photometric engine and electronic assembly on-site
Driver included	Yes
CE mark	Yes
ENEC+ certified	Yes
ROHS compliant	Yes
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
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 09
Vibration test	Compliant with modified IEC 68-2-6 (0.5G)
Access for maintenance	Tool-less access to gear compartment

· Any other RAL or AKZO colour upon request

## OPERATING CONDITIONS

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

## ELECTRICAL INFORMATION

Electrical class	Class I EU, Class II EU
Nominal voltage	220-240V – 50-60Hz
Power factor (at full load)	0.9
Surge protection options (kV)	10
Electromagnetic compatibility (EMC)	EN 55015 / EN 61000-3-2 / EN 61000-3-3 / EN 61000-4-3 / EN 61000-4-4 / EN 61000-4-5 / EN 61000-4-6 / EN 61000-4-11 / EN 61547
Control protocol(s)	Bluetooth, 1-10V, DALI
Control options	AmpDim, Bi-power, Custom dimming profile, Photocell, Remote management
Socket	Zhaga (optional) NEMA 7-pin (optional)
Associated control system(s)	Owlet Nightshift Owlet IoT Schröder EXEDRA
Sensor	PIR (optional)

## OPTICAL INFORMATION

LED colour temperature	2700K (Warm White 727) 3000K (Warm White 730) 3000K (Warm White 830) 4000K (Neutral White 740) 5700K (Cool White 757)
Colour rendering index (CRI)	>70 (Warm White 727) >70 (Warm White 730) >80 (Warm White 830) >70 (Neutral White 740) >70 (Cool White 757)
Upward Light Output Ratio (ULOR)	0%

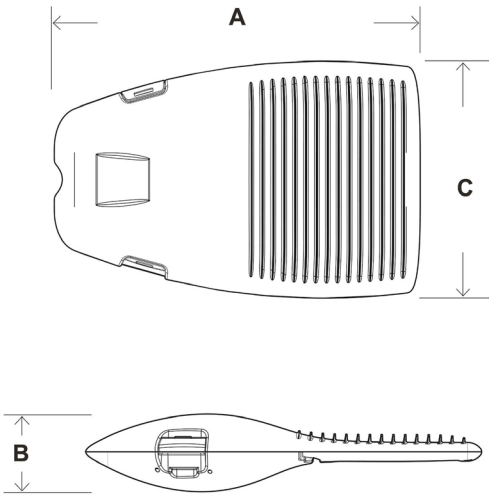
## LIFETIME OF THE LEDS @ TQ 25°C

All configurations	100,000h - L90
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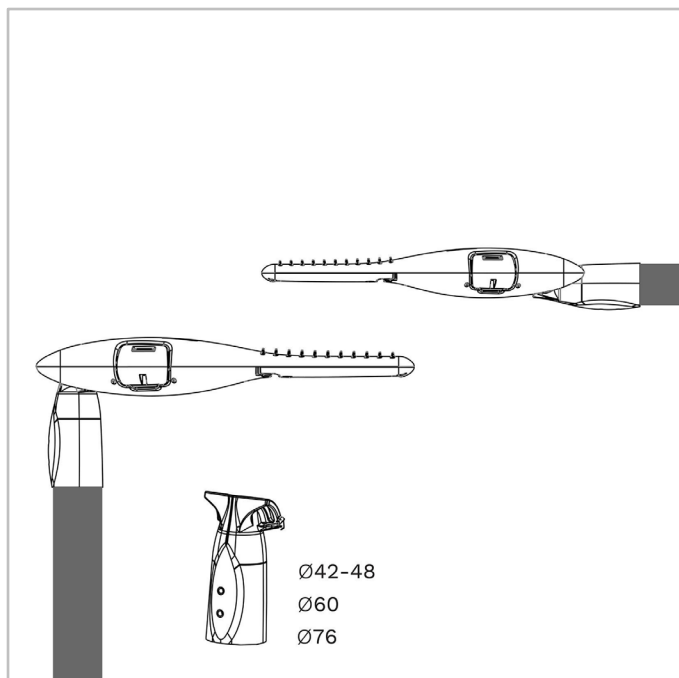


DIMENSIONS AND MOUNTING

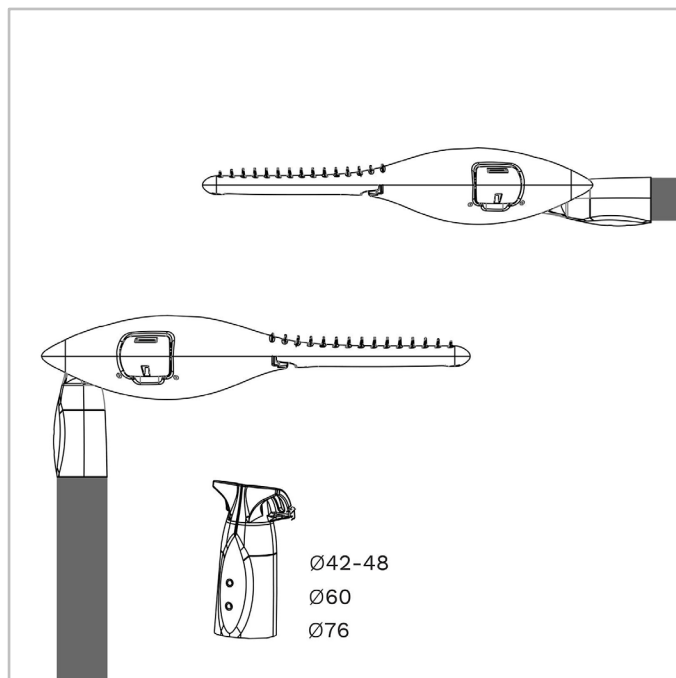
AxBxC (mm   inch)	AMPERA MINI - 583x90x340   23.0x3.5x13.4
	AMPERA MIDI - 674x132x436   26.5x5.2x17.2
	AMPERA MAXI - 900x135x438   35.4x5.3x17.2
Weight (kg   lbs)	AMPERA MINI - 7.8   17.2
	AMPERA MIDI - 11.5   25.3
	AMPERA MAXI - 18.2   40.0
Aerodynamic resistance (CxS)	AMPERA MINI - 0.09
	AMPERA MIDI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



AMPERA | Mini - Slip-over mountings for Ø42-48, Ø60 or Ø76mm spigots - 2xM8 screws



AMPERA | Midi and Maxi - Slip-over mountings for Ø42-48, Ø60 or Ø76mm spigots - 2xM10 screws





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 830		Luminaire output flux (lm) Neutral White 740		Luminaire output flux (lm) Cool White 757		Power consumption (W)		Luminaire efficacy (lm/W)	Photometry
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max		
AMPERA MINI	8	350	800	1100	900	1100	800	1000	900	1200	-	-	10.3	10.3	117	
	8	400	1000	1200	1000	1300	900	1100	1100	1400	-	-	11.6	11.6	121	
	8	500	1200	1500	1200	1500	1100	1400	1300	1700	-	-	14.2	14.2	120	
	8	600	1400	1800	1400	1800	1300	1700	1600	2000	-	-	17	17	118	
	8	700	1600	2000	1700	2100	1500	1900	1800	2300	-	-	19.7	19.7	117	
	8	800	1800	2300	1900	2300	1700	2100	2000	2500	-	-	22.6	22.6	111	
	8	900	2000	2500	2000	2600	1900	2300	2200	2800	-	-	25.4	25.4	110	
	16	300	1400	1800	1500	1900	1300	1700	1600	2000	-	-	15.9	15.9	126	
	16	350	1700	2200	1800	2300	1600	2000	1900	2400	-	-	18.2	18.2	132	
	16	400	2000	2500	2000	2600	1900	2300	2200	2800	-	-	20.6	20.6	136	
	16	500	2400	3100	2500	3200	2300	2900	2700	3400	-	-	26.1	26.1	130	
	16	600	2900	3600	2900	3700	2700	3400	3200	4000	-	-	31	31	129	
	16	700	3200	4000	3300	4100	3000	3800	3600	4500	-	-	36.1	36.1	125	
	16	850	3500	4400	3600	4600	3300	4100	3900	4900	-	-	44	44	111	
	24	200	1600	2000	1600	2000	1500	1800	1700	2200	-	-	15.3	15.3	144	
	24	350	2600	3300	2700	3400	2500	3100	2900	3700	-	-	26	26	142	
	24	400	3000	3700	3100	3900	2800	3500	3300	4200	-	-	29.7	29.7	141	
	24	500	3600	4600	3800	4700	3400	4300	4100	5100	-	-	37.2	37.2	137	
	24	550	3900	5000	4100	5100	3700	4600	4400	5500	-	-	41	41	134	
	24	600	4300	5300	4400	5500	4000	5000	4800	6000	-	-	45.5	45.5	132	
	24	700	4800	6100	5000	6300	4500	5700	5400	6800	-	-	53	53	128	
	24	850	5700	7200	5900	7400	5300	6700	6400	8000	-	-	65	65	123	
	24	900	5900	7500	6100	7700	5600	7000	6600	8300	-	-	69	69	120	
	24	1000	6400	8100	6600	8300	6000	7600	7200	9000	-	-	77	77	117	

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



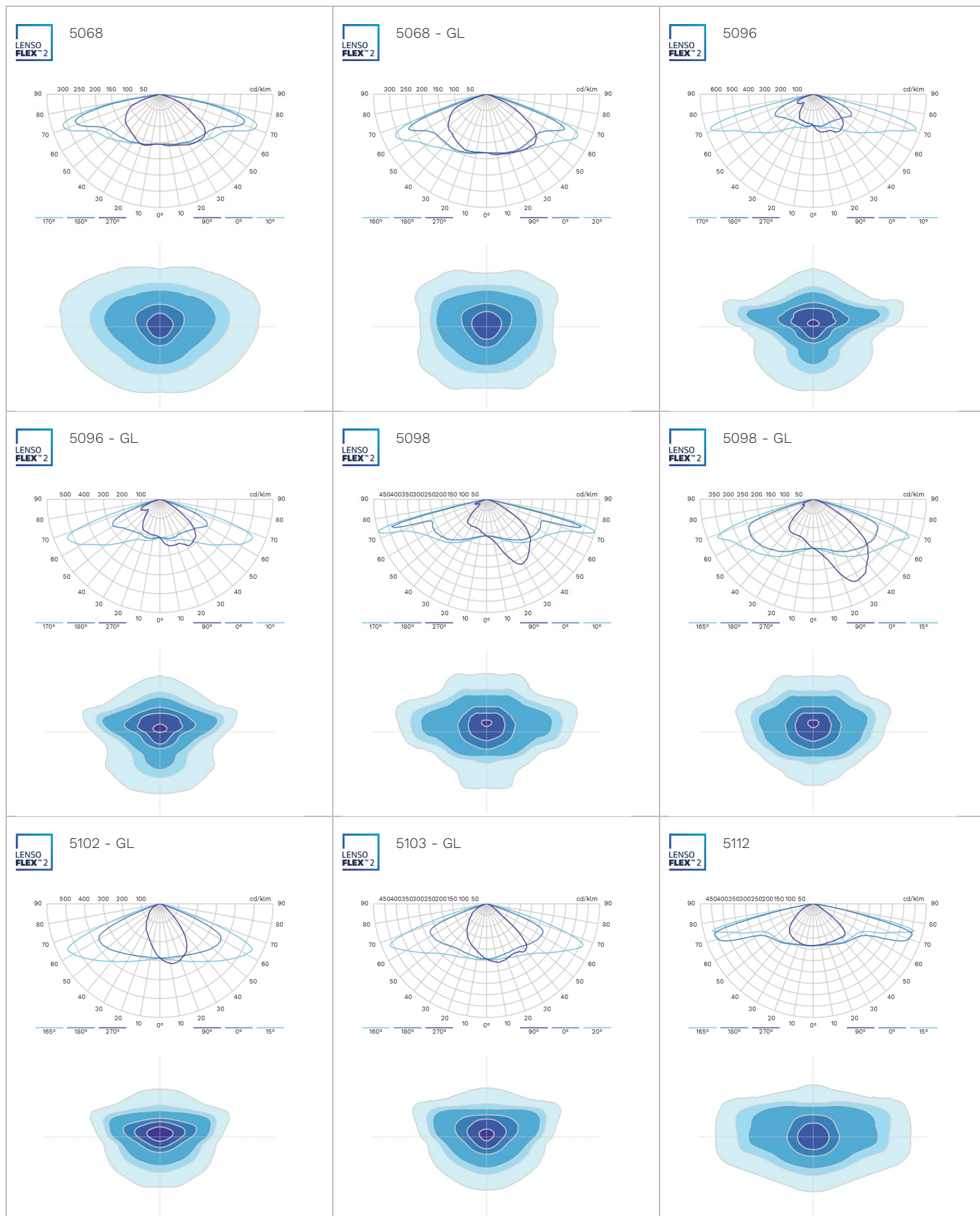
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Luminaire	Number of LEDs	Current (mA)	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Up to	Photometry
AMPERA MIDI	32	200	1900	2300	2000	2400	1700	2100	2100	2600	2100	2600	19.8	19.8	131	
	32	300	3100	3700	3200	3900	2800	3400	3400	4200	3400	4200	29.5	29.5	142	
	32	450	4600	5600	4800	5800	4200	5100	5200	6300	5200	6300	45.5	45.5	138	
	32	500	5100	6200	5200	6400	4600	5600	5700	6900	5700	6900	49.5	49.5	139	
	32	650	6300	7600	6500	7900	5700	7000	7000	8500	7000	8500	64.5	64.5	132	
	32	700	6600	8100	6900	8400	6100	7400	7400	9100	7400	9100	69	69	132	
	32	800	7200	8800	7400	9100	6600	8000	8100	9800	8100	9800	78	78	126	
	48	200	2900	3500	3000	3600	2600	3200	3200	3900	3200	3900	28.6	28.6	136	
	48	350	5500	6700	5600	6900	5000	6100	6100	7500	6100	7500	50	50	150	
	48	400	6200	7600	6400	7800	5700	6900	6900	8500	6900	8500	57	57	149	
	48	550	8300	10100	8500	10400	7600	9200	9200	11300	9200	11300	79	79	143	
	48	600	8900	10800	9100	11100	8100	9900	9900	12100	9900	12100	86	86	141	
	48	700	10000	12200	10300	12600	9100	11200	11200	13600	11200	13600	100	100	136	
	48	800	10800	13200	11200	13600	9900	12100	12100	14800	12100	14800	115	115	129	
	48	900	11600	14100	11900	14500	10600	12900	12900	15800	12900	15800	132	132	120	
	64	200	3900	4700	4000	4900	3500	4300	4300	5300	4300	5300	37.7	37.7	141	
	64	300	6200	7600	6400	7800	5700	6900	6900	8400	6900	8400	56.5	56.5	149	
	64	400	8300	10100	8500	10400	7600	9200	9300	11300	9300	11300	76	76	149	
	64	500	10000	12300	10400	12600	9200	11200	11200	13700	11200	13700	94	94	146	
	64	600	11800	14400	12200	14900	10800	13200	13200	16100	13200	16100	113	113	142	
	64	700	13400	16300	13800	16800	12200	14900	14900	18200	14900	18200	135	135	135	
	64	800	14500	17600	14900	18200	13200	16100	16200	19700	16200	19700	155	155	127	
	64	900	15400	18800	15900	19400	14100	17200	17200	21000	17200	21000	174	174	121	

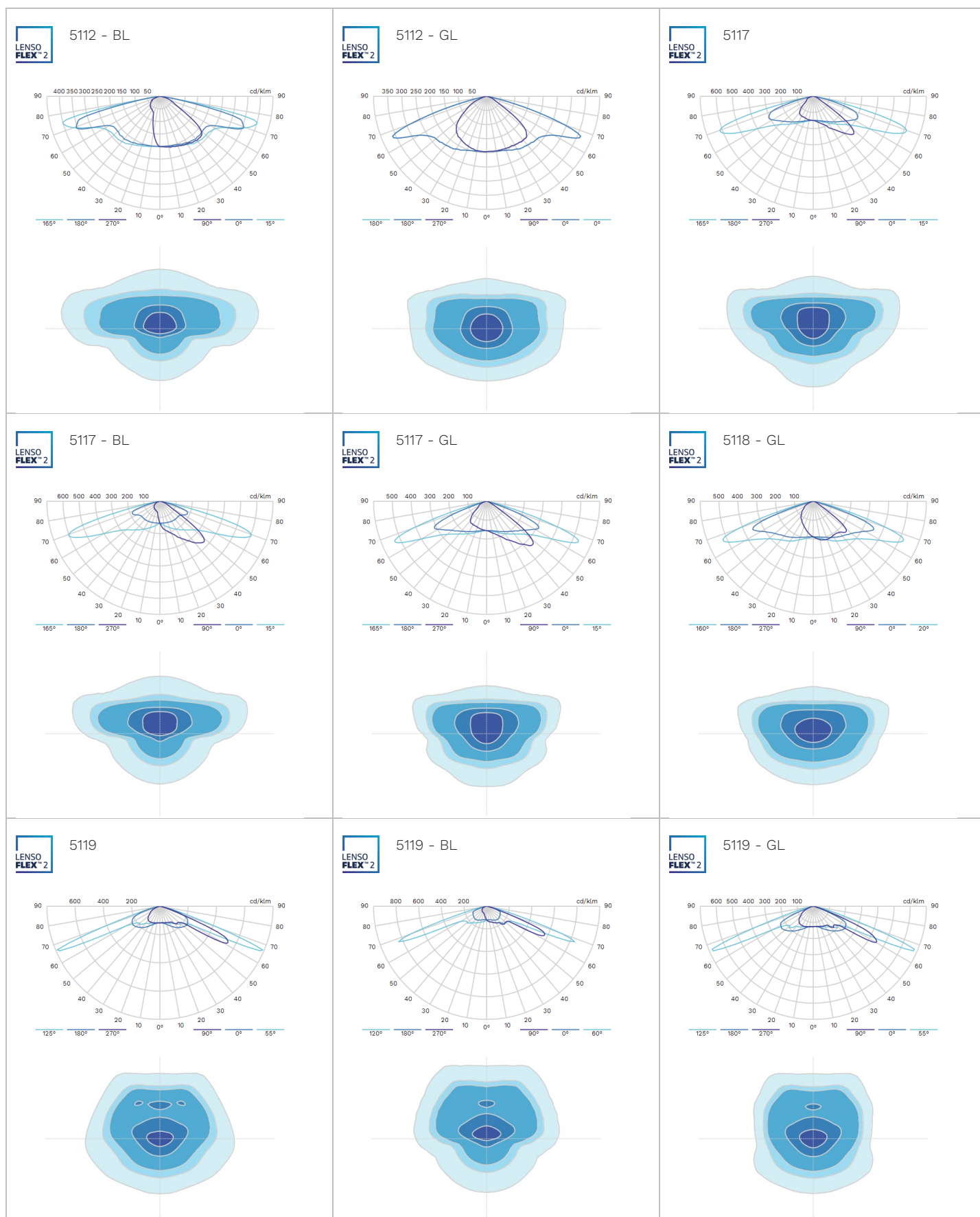
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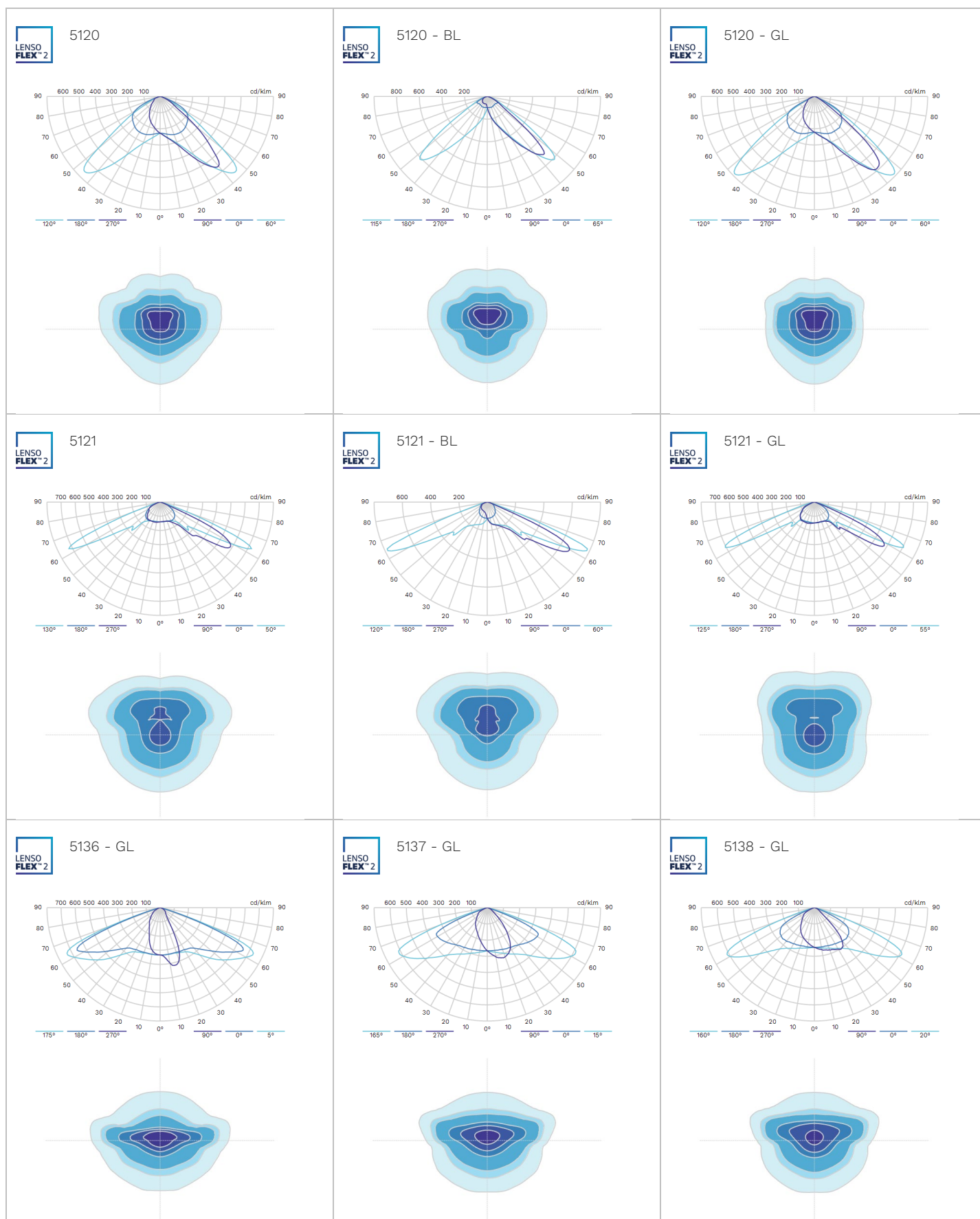
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Luminaire	Number of LEDs	Current (mA)	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Up to	Photometry
AMPERA MAXI	80	350	9300	11500	9600	11800	8500	10500	10400	12800	10400	12800	81	81	158	
	80	400	10600	13000	10900	13400	9600	11900	11800	14500	11800	14500	93	93	156	
	80	500	12800	15800	13200	16200	11700	14400	14300	17600	14300	17600	117	117	150	
	80	600	15200	18700	15700	19300	13900	17100	17000	20900	17000	20900	141	141	148	
	80	700	17400	21400	17900	22100	15900	19600	19400	23900	19400	23900	165	165	145	
	96	200	6400	7900	6600	8200	5900	7300	7200	8900	7200	8900	56	56	159	
	96	350	11200	13800	11500	14200	10200	12600	12500	15400	12500	15400	97	97	159	
	96	400	12700	15600	13100	16100	11600	14300	14200	17500	14200	17500	111	111	158	
	96	500	15600	19200	16100	19800	14200	17500	17400	21400	17400	21400	140	140	153	
	96	600	18200	22400	18800	23100	16600	20500	20300	25000	20300	25000	169	169	148	
	96	700	20600	25400	21200	26200	18800	23200	23000	28300	23000	28300	200	200	142	
	96	800	22900	28200	23600	29000	20900	25700	25500	31500	25500	31500	230	230	137	
	112	200	7700	9500	7900	9800	7000	8700	8600	10600	8600	10600	66.5	66.5	159	
	112	350	13100	16100	13500	16600	11900	14700	14600	18000	14600	18000	115	115	157	
	112	450	16400	20200	16900	20800	15000	18400	18300	22500	18300	22500	154	154	146	
	112	500	17900	22100	18500	22800	16400	20200	20000	24700	20000	24700	166	166	149	
	112	680	23100	28500	23900	29400	21200	26100	25800	31800	25800	31800	226	226	141	
	112	700	23700	29200	24400	30100	21700	26700	26500	32600	26500	32600	236	236	138	
	112	800	26200	32300	27000	33300	24000	29500	29300	36100	29300	36100	272	272	133	
	128	200	8800	10900	9100	11200	8100	9900	9800	12100	9800	12100	75	75	161	
	128	350	14900	18400	15400	19000	13700	16800	16700	20600	16700	20600	132	132	156	
	128	420	17600	21700	18200	22400	16100	19800	19700	24300	19700	24300	158	158	154	
	128	500	20500	25200	21100	26000	18700	23100	22900	28200	22900	28200	188	188	150	
	128	600	23900	29500	24700	30400	21900	26900	26700	32900	26700	32900	226	226	146	
	128	700	27100	33400	27900	34400	24800	30500	30300	37300	30300	37300	270	270	138	
	128	800	30000	36900	30900	38000	27400	33700	33500	41200	33500	41200	310	310	133	

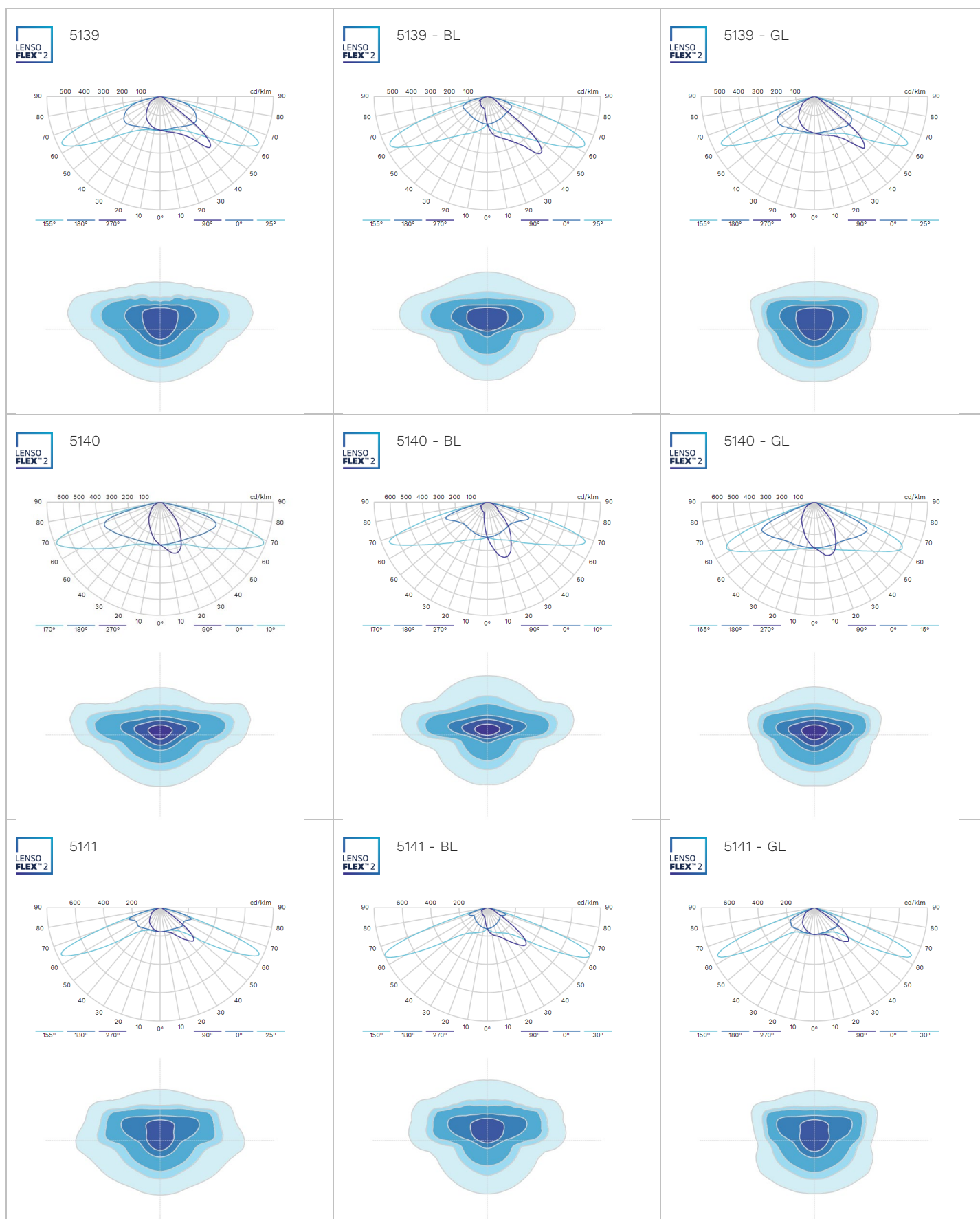
Tolerance on LED flux is  $\pm 7\%$  and on total luminaire power  $\pm 5\%$





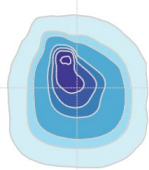
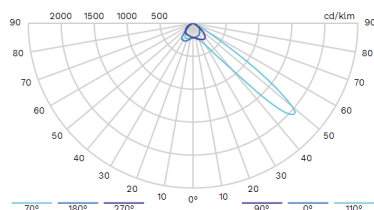






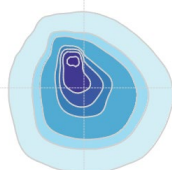
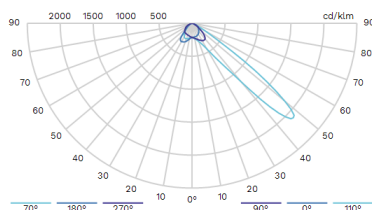
LENSO  
FLEX<sup>2</sup>

5144 - GL



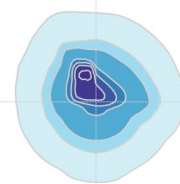
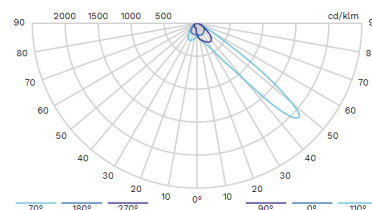
LENSO  
FLEX<sup>2</sup>

5144 Zebra left



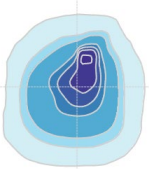
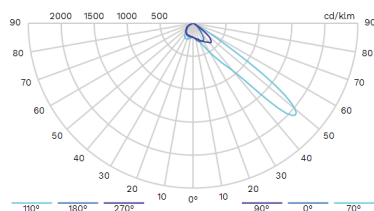
LENSO  
FLEX<sup>2</sup>

5144 Zebra left BL



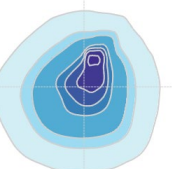
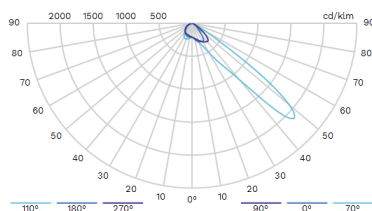
LENSO  
FLEX<sup>2</sup>

5145 - GL



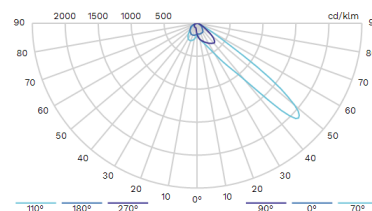
LENSO  
FLEX<sup>2</sup>

5145 Zebra right



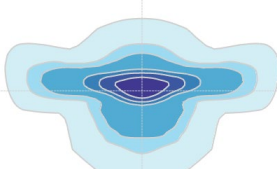
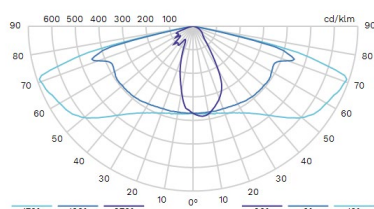
LENSO  
FLEX<sup>2</sup>

5145 Zebra right BL



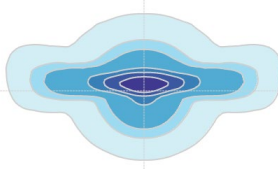
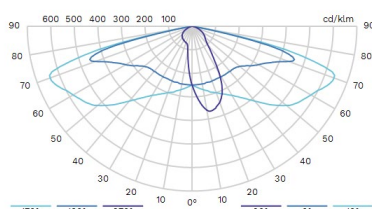
LENSO  
FLEX<sup>2</sup>

5234



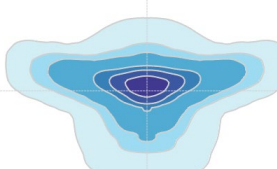
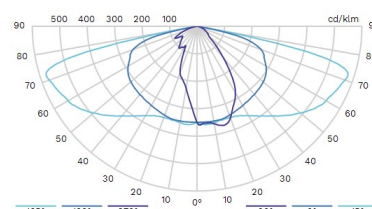
LENSO  
FLEX<sup>2</sup>

5234 - BL



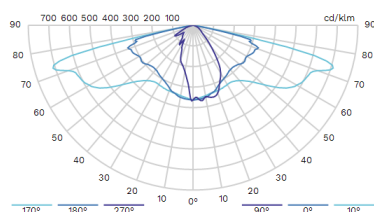
LENSO  
FLEX<sup>2</sup>

5235



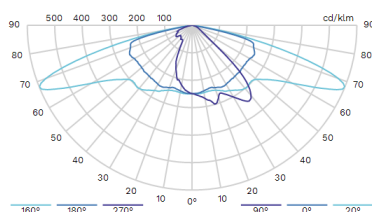
LENSO  
FLEX<sup>2</sup>

5236



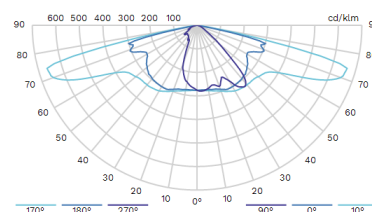
LENSO  
FLEX<sup>2</sup>

5237



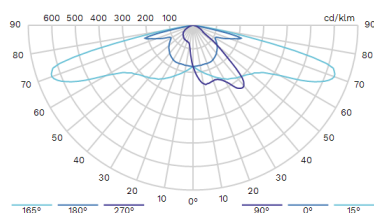
LENSO  
FLEX<sup>2</sup>

5238



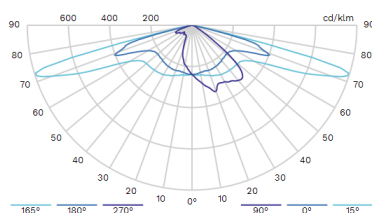
LENSO  
FLEX<sup>2</sup>

5238 - BL



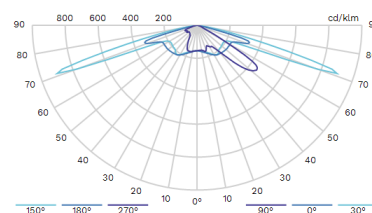
LENSO  
FLEX<sup>2</sup>

5239



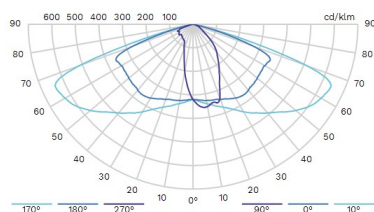
LENSO  
FLEX<sup>2</sup>

5240



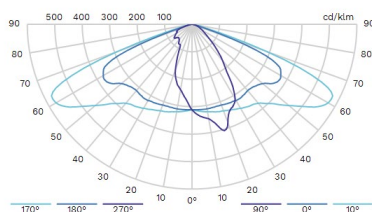
LENSO  
FLEX<sup>2</sup>

5244 - GL



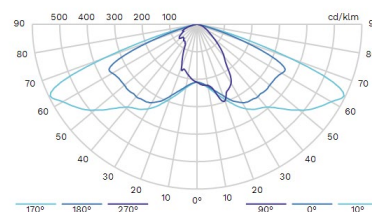
LENSO  
FLEX<sup>2</sup>

5245 - GL



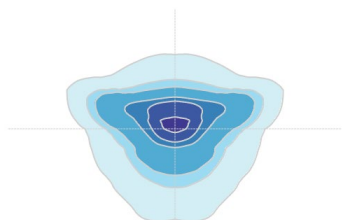
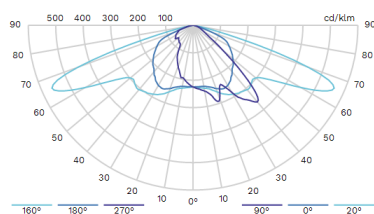
LENSO  
FLEX<sup>2</sup>

5246 - GL



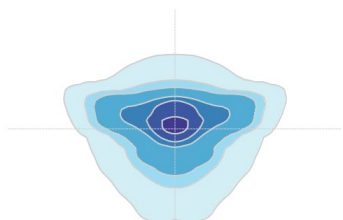
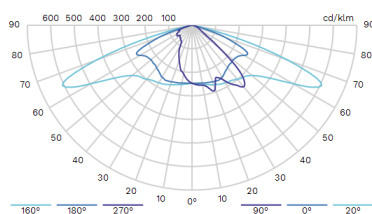
LENSO  
FLEX<sup>2</sup>

5247 - GL



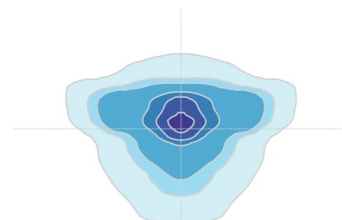
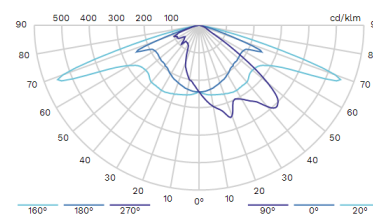
LENSO  
FLEX<sup>2</sup>

5248 - GL



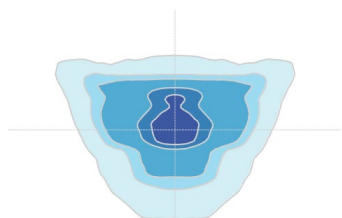
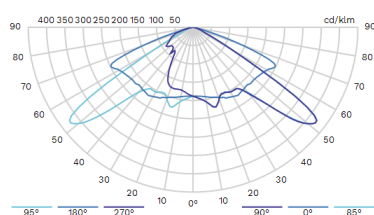
LENSO  
FLEX<sup>2</sup>

5249 - GL



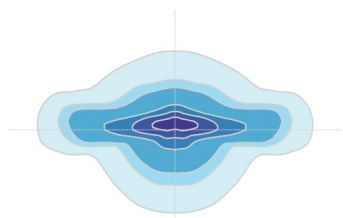
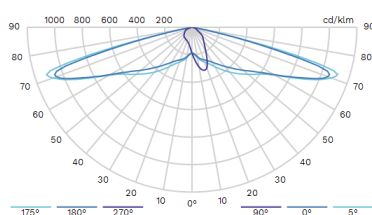
LENSO  
FLEX<sup>2</sup>

5250 - GL



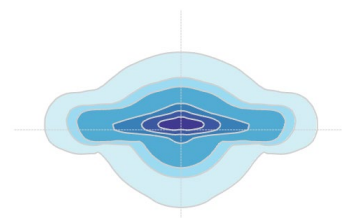
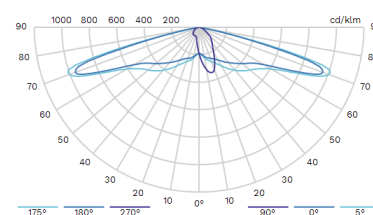
LENSO  
FLEX<sup>2</sup>

5283



LENSO  
FLEX<sup>2</sup>

5283 - BL



LENSO  
FLEX<sup>2</sup>

5283 - GL

