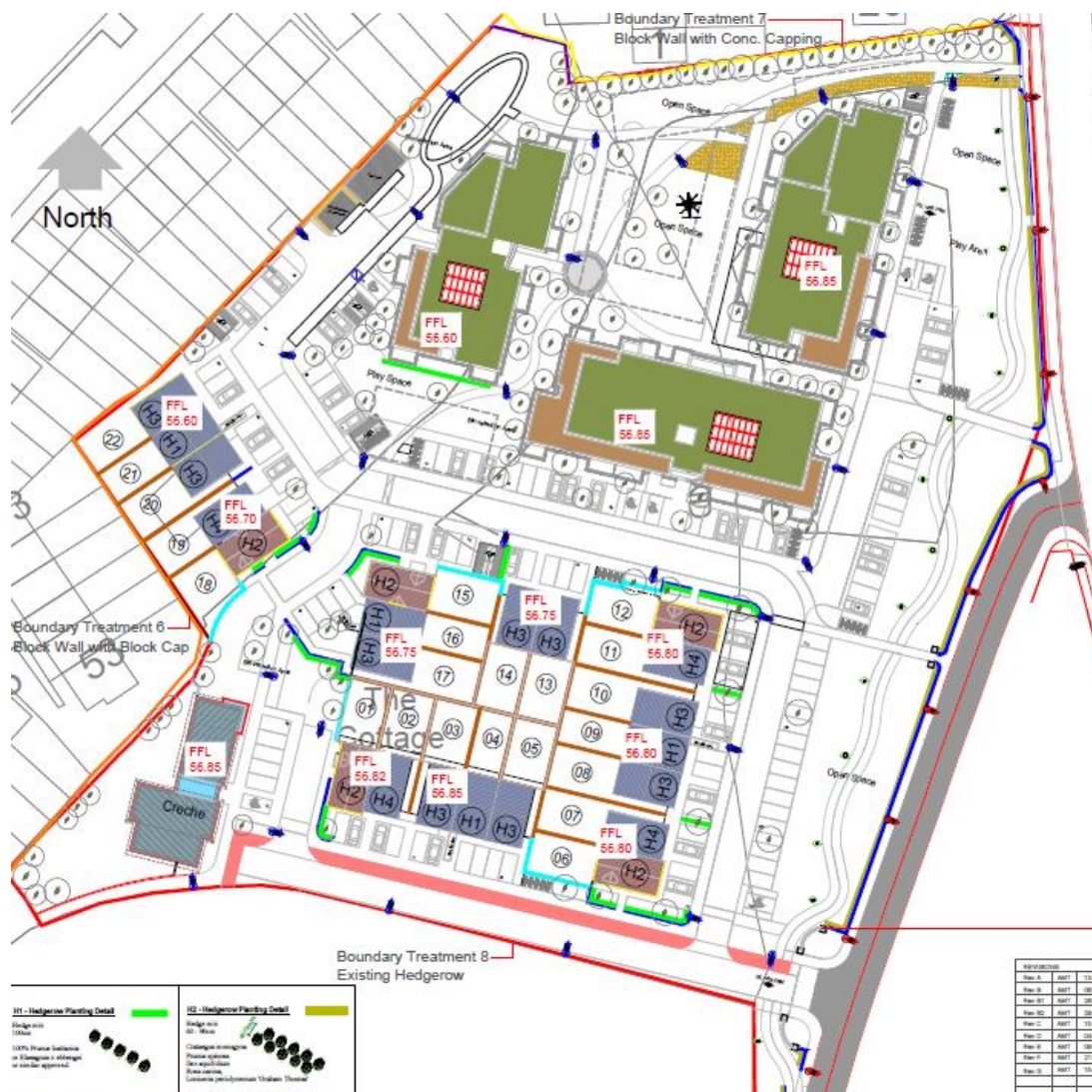


**PUBLIC LIGHTING DESIGN
PLANNING STAGE SUBMISSION
AT
GLENCARRIG, HAZELHATCH, CELBRIDGE, CO. KILDARE,**



Document No: HZLH-MAE-XX-XX-SP-E-6000

Issue: D

Date: 18th August 2022

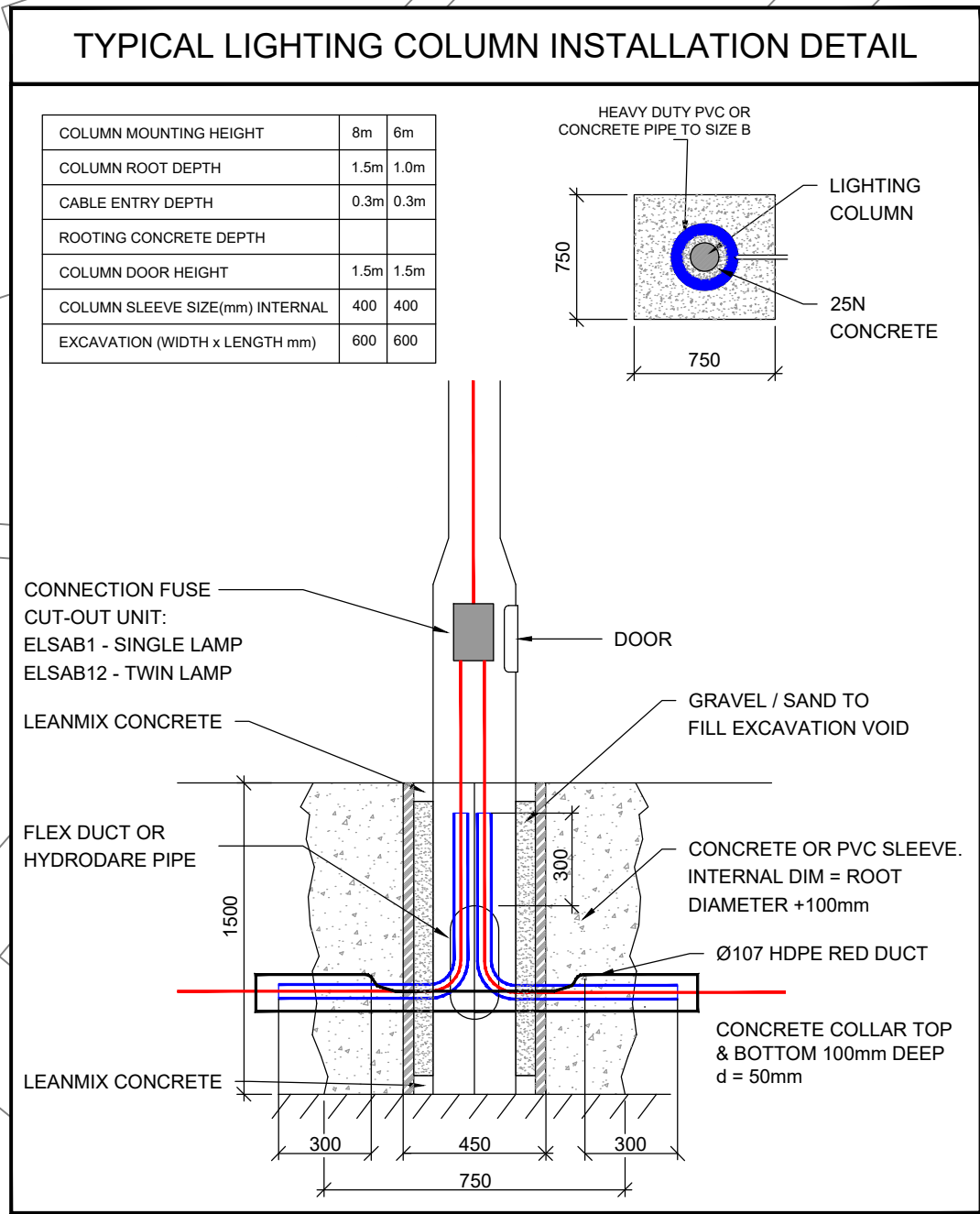
Prepared By: Keith Phelan

Email: keith@mande.ie

Tel: 01 4508485

Website: www.mande.ie

MandE Public Lighting Drawing



Public Lighting Calculation Report

DATE: 29 April 2022
DESIGNER: Jacek Maslowski
PROJECT No: OP177337LD17261
PROJECT NAME: Housing Development, Celbridge

Schröder
Experts in lightability™

The scheme has been designed to:

Roads and footpaths // BS 5489-1:2020, P4
3.90 - 5.85 lux average, 0.78 lux minimum

Maintenance factor calculated as per GN11:
0.81

Outdoor Lighting Report

This design has been prepared in accordance with the HEA/HEMSA Guidance Note - CDM2015 Regulations, Issue 1.1 dated 09/04/15 - Procedure 2 for an outline design. The information in this report does not account for installation considerations, site conditions or provide any form of risk assessment. Urbis' design service is advisory only and it is the responsibility of the recipient of this information to verify that the design is suitable for the intended application. No account is taken for the blocking effect caused by buildings, trees etc. The calculation shown assumes that the whole area considered is in the same plane.

PREPARED BY: Urbis Schreder Limited
Sapphire House
Lime Tree Way
Chineham
Basingstoke
RG23 8GG
Tel. 01256 354446
www.urbis-schreder.com

Layout Report

General Data

Dimensions in Metres Angles in Degrees

Calculation Grids

ID	Grid Name	X	Y	X' Length	Y' Length	X' Spacing	Y' Spacing
1	P4	4165.68	829.08	174.76	199.03	1.49	1.50

Luminaires



Luminaire C Data

Supplier	Schröder
Type	AXIA 2.1 5167 Integrated lenses Rear louvers 16 OSLON SQUARE
Lamp(s)	16 OSLON SQUARE GIANT@400mA WW 727 230V 1x00-36-648 - DRIVER
LampFlux(klm)/Colour	1.86 2700K/70
File Name	AXIA 2.1 5167 16 OSLON SQUARE GIANT 400mA WW 727 20.6W 434342 Integrated ...
Maintenance Factor	0.81
Imax70,80,90(cd/klm)	1431.3, 207.0, 3.1
Lamp S/P Ratio	0.00
No. in Project	20

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	C	4223.42	844.87	6.00	318.00	0.00	0.00	0.50			
2	C	4231.71	863.42	6.00	255.00	0.00	0.00	0.50			
3	C	4215.15	836.18	6.00	94.00	0.00	0.00	0.50			
4	C	4243.46	831.70	6.00	76.00	0.00	0.00	0.50			
5	C	4273.19	824.42	6.00	76.00	0.00	0.00	0.50			
6	C	4304.21	816.45	6.00	75.00	0.00	0.00	0.50			
7	C	4309.37	837.18	6.00	166.00	0.00	0.00	0.50			
8	C	4313.67	855.89	6.00	167.00	0.00	0.00	0.50			
9	C	4325.48	896.91	6.00	165.00	0.00	0.00	0.50			
10	C	4318.30	874.79	6.00	164.00	0.00	0.00	0.50			
11	C	4336.67	912.59	6.00	168.00	0.00	0.00	0.50			
12	C	4336.20	934.69	6.00	165.00	0.00	0.00	0.50			
13	C	4312.28	890.52	6.00	260.00	0.00	0.00	0.50			
14	C	4287.32	887.42	6.00	80.00	0.00	0.00	0.50			
15	C	4264.14	902.05	6.00	255.00	0.00	0.00	0.50			
16	C	4228.88	893.84	6.00	307.00	0.00	0.00	0.50			
17	C	4239.17	907.94	6.00	258.00	0.00	0.00	0.50			
18	C	4227.48	923.53	6.00	216.00	0.00	0.00	0.50			
19	C	4228.24	946.00	6.00	311.00	0.00	0.00	0.50			
20	C	4240.16	939.65	6.00	139.00	0.00	0.00	0.50			

Horizontal Illuminance (lux)

P4

P4



Results

Eav	4.43
Emin	1.54
Emax	12.12
Emin/Emax	0.13
Emin/Eav	0.35

Horizontal Illuminance (lux)

P4

P4



DATE: 11 August 2022
DESIGNER: Christopher Lins
PROJECT No: 21014
PROJECT NAME: Hazelhatch Residential Development

**LIGHTING
REALITY**

Public Lighting Calculation Report

Designed in accordance with BS5489-1
Lighting Class P4: average lux 5.00, minimum lux 1.00

PREPARED BY: MandE Consulting Engineers
Unit 4 Oak Close,
Western Business Park,
Dublin 12
tel: 01 450 8485
e-mail: info@mande.ie

Layout Report

General Data

Dimensions in Metres Angles in Degrees
Grid Origin 4175.7m x 782.8m
Area 191.1m x 204.1m
Sample Spacing 1.49m x 1.49m

Luminaires



Luminaire A Data

Supplier	Schröder
Type	AXIA 2.1 5167 Integrated lenses 8 OSLO SQUARE GIANT@700mA W
Lamp(s)	8 OSLO SQUARE GIANT@700mA WW 7 27 230V 00-36-648
LampFlux(klm)/Colour	2.38 WW 2700K/70
File Name	AXIA 2.1 5167 8 OSLO SQUARE GIANT 7 00mA WW 727 19.7W 434362 Integrated I...
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	1028.1, 179.4, 2.6
No. in Project	10



Luminaire B Data

Supplier	Thorn Lighting
Type	TR B S 10L35 BPSW 730 RGB ASY CL1 M GR
Lamp(s)	ADLB_S_10L35_ASY_3K 13W
LampFlux(klm)/Colour	1.00 3000/70
File Name	TR B S 10L35 BPSW 730 RGB ASY CL1 M GR (96273293)_(STD).LDT
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	755.9, 243.1, 53.8
No. in Project	16

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out- reach	Target X	Target Y	Target Z
1	A	4353.47	903.83	6.00	284.00	0.00	0.00	0.40			
2	A	4341.13	885.47	6.00	344.00	0.00	0.00	0.40			
3	A	4334.15	865.44	6.00	342.00	0.00	0.00	0.40			
4	A	4327.54	846.92	6.00	342.00	0.00	0.00	0.40			
5	A	4320.51	826.85	6.00	341.00	0.00	0.00	0.40			
6	A	4313.95	804.67	6.00	344.00	0.00	0.00	0.40			
7	A	4307.81	824.21	6.00	255.00	0.00	0.00	0.40			
8	B	4345.51	971.71	1.00	0.00	0.00	0.00	0.00			
46	B	4337.67	914.51	1.00	328.00	0.00	0.00	0.00			
47	B	4333.33	904.27	1.00	353.00	0.00	0.00	0.00			
48	B	4345.81	962.87	1.00	4.00	0.00	0.00	0.00			
50	B	4346.81	953.13	1.00	16.00	0.00	0.00	0.00			
51	B	4346.72	943.09	1.00	345.00	0.00	0.00	0.00			
52	B	4344.90	931.87	1.00	11.00	0.00	0.00	0.00			
53	B	4346.28	921.95	1.00	346.00	0.00	0.00	0.00			
54	B	4335.03	892.30	1.00	356.00	0.00	0.00	0.00			
55	B	4329.72	882.70	1.00	324.00	0.00	0.00	0.00			
56	B	4323.44	870.33	1.00	341.00	0.00	0.00	0.00			
57	B	4320.24	857.69	1.00	331.00	0.00	0.00	0.00			
58	B	4315.55	842.89	1.00	5.00	0.00	0.00	0.00			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
59	B	4314.73	833.33	1.00	301.00	0.00	0.00	0.00			
60	B	4305.58	809.70	1.00	12.00	0.00	0.00	0.00			
61	B	4309.22	797.17	1.00	9.00	0.00	0.00	0.00			
25	A	4353.63	921.97	6.00	5.00	0.00	0.00	0.40			
26	A	4352.24	946.18	6.00	3.00	0.00	0.00	0.40			
27	A	4350.87	968.59	6.00	0.00	0.00	0.00	0.40			

Horizontal Illuminance (lux)

Grid 1



Results

Eav	5.50
Emin	1.12
Emax	53.02
Emin/Emax	0.02
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 1

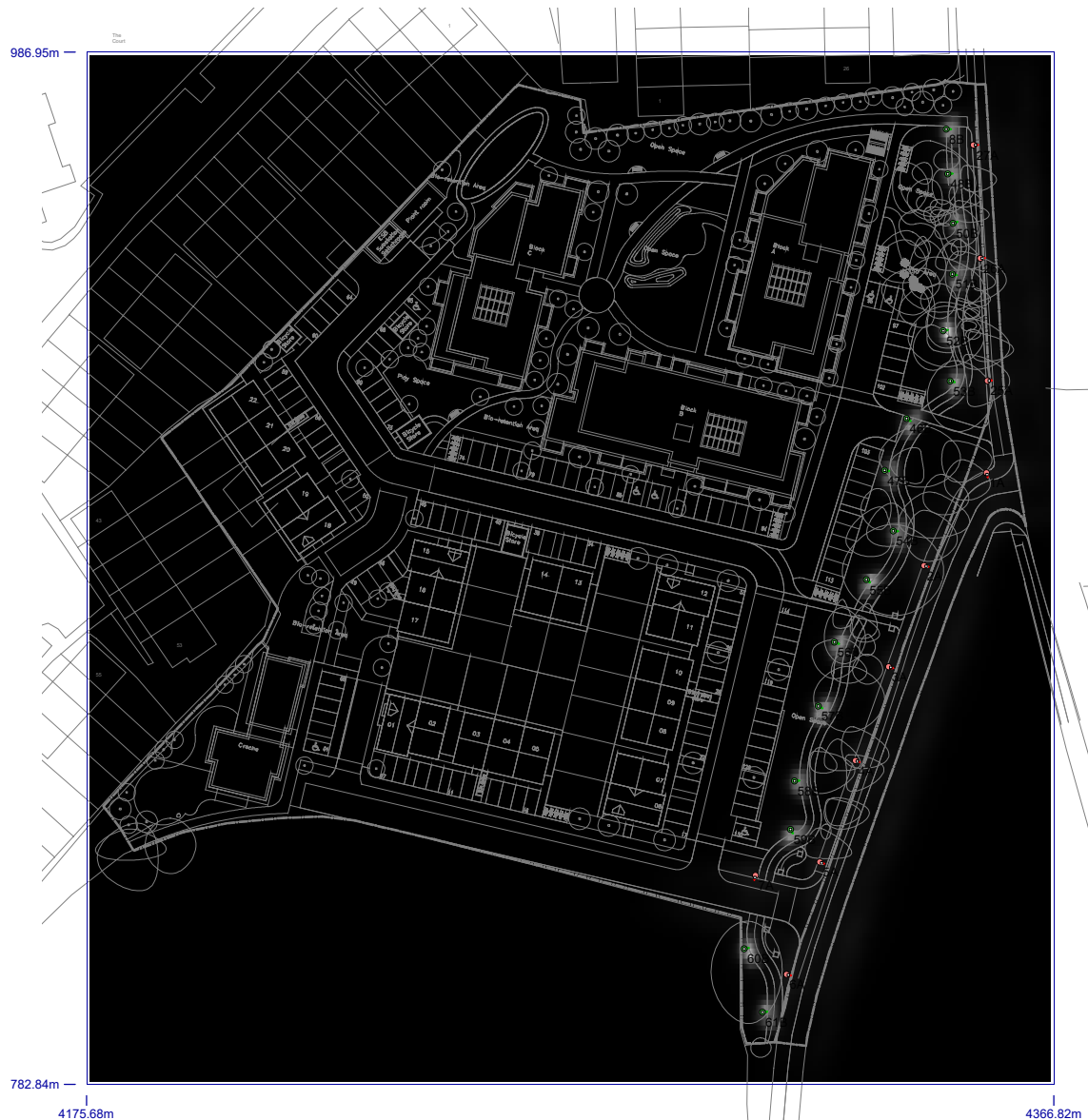


Results

Eav	5.50
Emin	1.12
Emax	53.02
Emin/Emax	0.02
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 1



Results

Eav	5.50
Emin	1.12
Emax	53.02
Emin/Emax	0.02
Emin/Eav	0.20

DATE: 18 August 2022
DESIGNER: Christopher Lins
PROJECT No: 21014
PROJECT NAME: Hazelhatch Residential Development - Walkway

**LIGHTING
REALITY**

Public Lighting Calculation Report

Designed in accordance with BS5489-1
Lighting Class P4: average lux 5.00, minimum lux 1.00

Maintenance factor calculated as per GN11:
0.81

PREPARED BY: MandE Consulting Engineers
Unit 4 Oak Close,
Western Business Park,
Dublin 12
tel: 01 450 8485
e-mail: info@mande.ie

Layout Report

General Data

Dimensions in Metres Angles in Degrees
Grid Origin 4236.5m x 901.8m
Area 120.9m x 81.7m
Sample Spacing 1.49m x 1.48m

Luminaires

Luminaire A Data

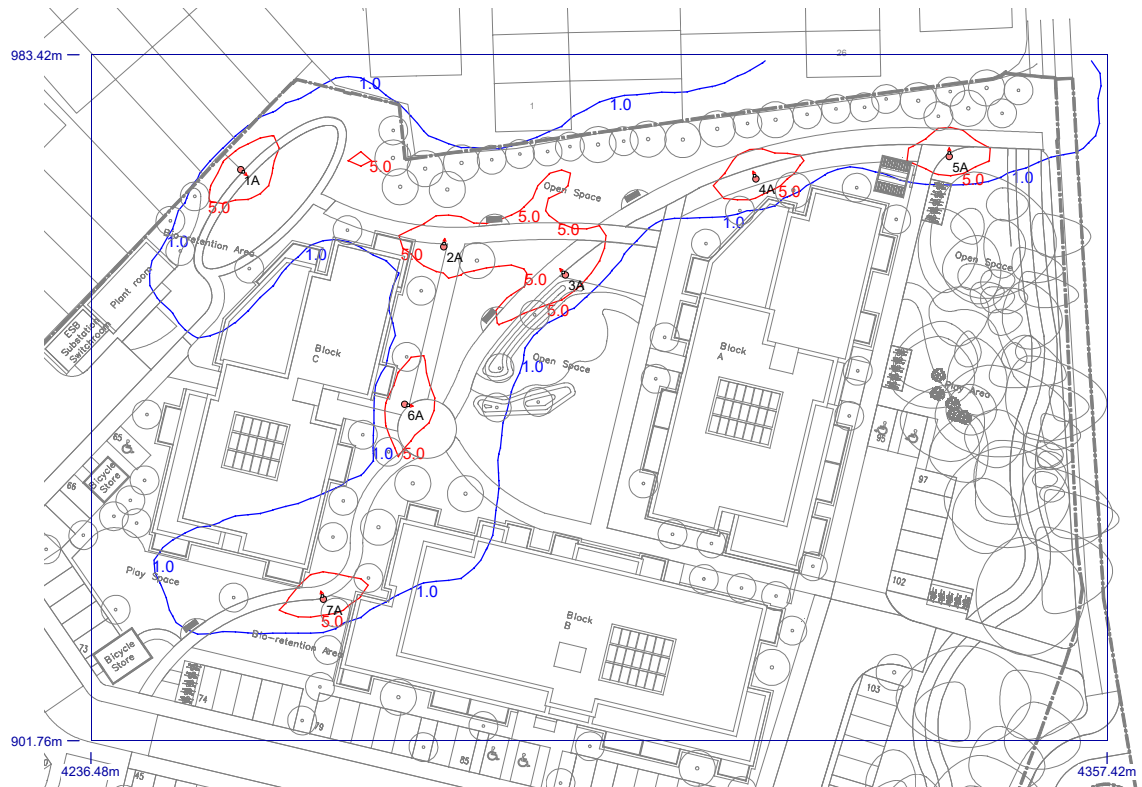
Supplier	
Type	AXIA 2.1 5167 Integrated lenses Rear louvers 16 OSLON SQUARE
Lamp(s)	16 OSLON SQUARE GIANT@400mA WW 727 230V 00-36-648
LampFlux(klm)/Colour	2.94 WW 2700K/70
File Name	AXIA 2.1 5167 16 OSLON SQUARE GIANT 400mA WW 727 20.6W 434342 Integrated ...
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	905.2, 130.9, 2.0
No. in Project	7

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	4254.32	969.75	6.00	315.00	0.00	0.00	0.40			
2	A	4278.46	960.56	6.00	83.00	0.00	0.00	0.40			
3	A	4292.94	957.20	6.00	131.00	0.00	0.00	0.40			
4	A	4315.59	968.63	6.00	109.00	0.00	0.00	0.40			
5	A	4338.61	971.32	6.00	91.00	0.00	0.00	0.40			
6	A	4273.83	941.81	6.00	348.00	0.00	0.00	0.40			
7	A	4264.14	918.63	6.00	107.00	0.00	0.00	0.40			

Horizontal Illuminance (lux)

Grid 1

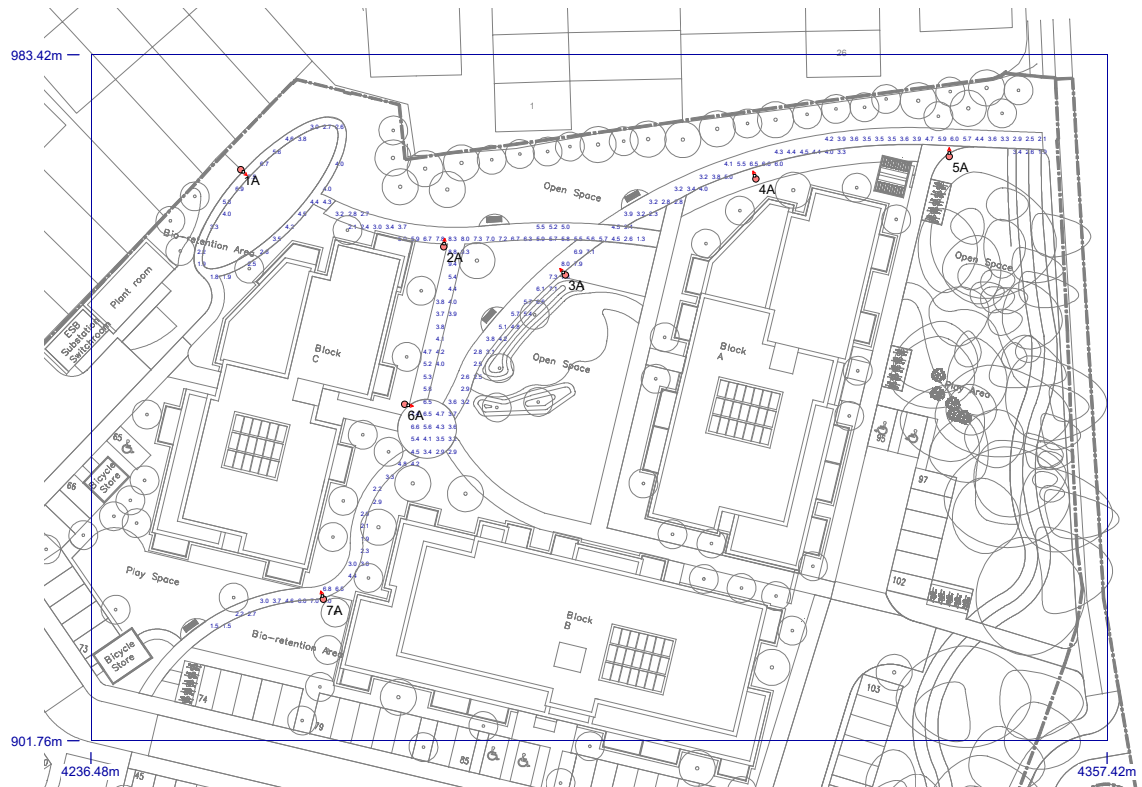


Results

Eav	4.44
Emin	1.26
Emax	9.39
Emin/Emax	0.13
Emin/Eav	0.28

Horizontal Illuminance (lux)

Grid 1

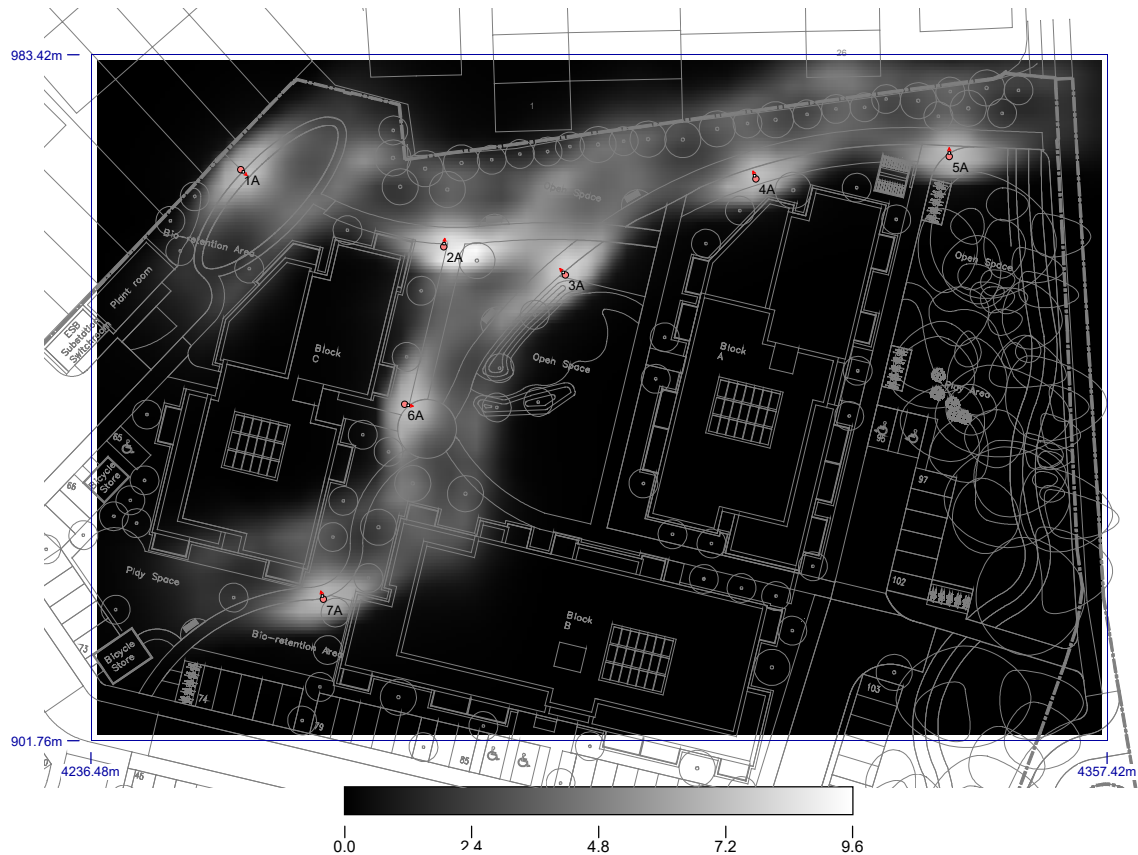


Results

Eav	4.44
Emin	1.26
Emax	9.39
Emin/Emax	0.13
Emin/Eav	0.28

Horizontal Illuminance (lux)

Grid 1



Results

Eav	4.44
Emin	1.26
Emax	9.39
Emin/Emax	0.13
Emin/Eav	0.28

Lighting Brochure

Axia 2

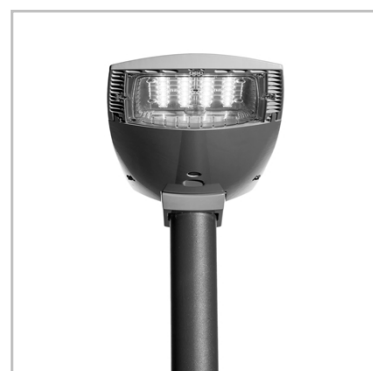
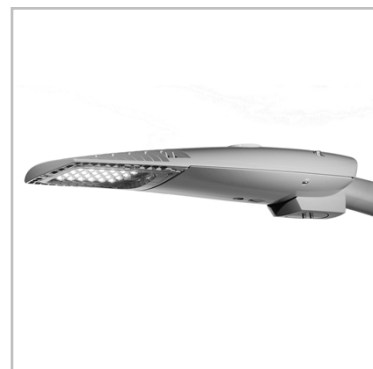


The most comprehensive and economical LED lighting solution

Axia 2 provides the most comprehensive and best value LED solution for lighting any road, street or pedestrian area. It offers all the advantages of LED lighting, without the high cost associated with LEDs.

With its photometric engine providing light distributions adapted to various applications, Axia 2 is one of the highest performing luminaires available on the market to offer a fast return on investment.

Building on the strengths of the ground breaking Axia, this second-generation luminaire, is designed to be the ultimate multi-purpose fixture, providing a cost-effective solution for those looking to reduce their energy costs.



IP 66	IK 10	IK 09
IK 08		
		CE



Concept

Axia 2 is composed of a high-pressure, die-cast aluminium body, universal fixation and a polycarbonate protector with integrated lenses.

For optimised heat dissipation, the electronical components and the LED engine are in separate compartments and juxtaposed in a horizontal section. The body integrates cooling fins to maintain performance in the long term.

Available in two sizes, Axia 2 is a very efficient LED lighting solution for streets, roads and any other outdoor environments where it is crucial to maximise energy savings.

The complete range is available with a universal fixation adapted for side-entry (Ø32, Ø42, Ø48 or Ø60mm) and post-top (Ø60 or Ø60mm) mounting. The inclination angle can be adjusted on-site in steps of 2.5°.

With its high ingress protection (IP 66) and strong resistance to impacts (IK 08 to IK 10), Axia 2 is built to withstand harsh conditions and to deliver a quality lighting with the minimum power consumption over decades.



Universal fixation for side-entry or post-top mounting with adjustable inclination in steps of 2.5°.



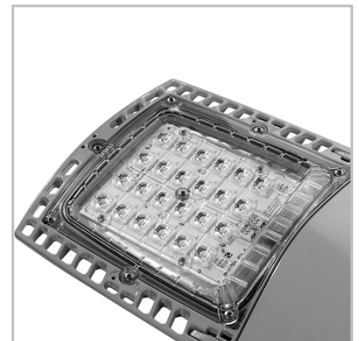
Easy access to the electronic compartment for maintenance.

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
- Smart City connectivity
- Photometric engine with light distributions adapted to various applications
- ThermiX® for long lasting performance
- FutureProof: follows the principles of circular economy
- Universal fixation adapted for side-entry and post-top mounting
- Adjustable inclination in steps of 2.5°



ProFlex™ photometric engine for precise light distributions with the highest efficiency.



Cooling fins for optimised thermal management and long lasting performance.



ProFlex™

The ProFlex™ photometric engine integrates the lenses into a polycarbonate protector. This integration increases the output and reduces the reflection inside the optical unit. The polycarbonate used for the ProFlex™ photometric engine offers essential characteristics such as high optical clarity for a superior light transmission, better impact resistance compared to glass and a long life span with UV-stabilisation treatment. The ProFlex™ concept enables a compact design with a thin optical compartment. It provides extensive light distributions so that the spacing between the luminaires can be increased.

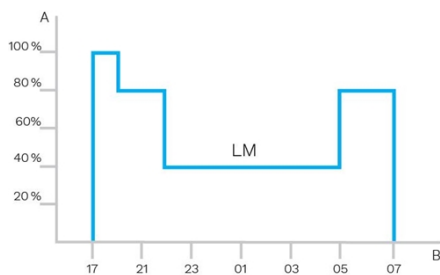




Custom dimming profile

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

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

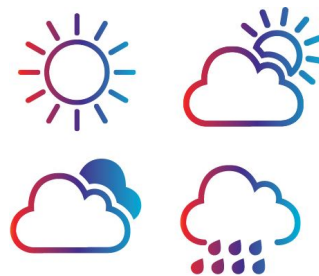


A. Performance | B. Time



Daylight sensor / photocell

Photocell or daylight sensors switch the luminaire on as soon natural light falls to a certain level. It can be programmed to switch on during a storm, on a cloudy day (in critical areas) or only at 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	5m to 10m 16' to 33'
Driver included	Yes
CE Mark	Yes
ENEC+ certified	Yes
ROHS compliant	Yes
Testing standard	LM 79-08 (all measurements in ISO17025 accredited laboratory)

HOUSING AND FINISH

Housing	Aluminium
Optic	Polycarbonate
Protector	Polycarbonate (with integrated lenses)
Housing finish	Polyester powder coating
Standard colour(s)	RAL 7040 window grey
Tightness level	IP 66
Impact resistance	IK 08, IK 09, IK 10
Vibration test	Compliant with modified IEC 68-2-6 (0.5G)
Access for maintenance	By loosening screws on the bottom cover

· Any other RAL or AKZO colour upon request
 · IK may be different according to the size/configurations. Please consult us.

OPERATING CONDITIONS

Operating temperature range (Ta)	-30 °C up to +50 °C / -22 °F up to 122 °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 61000-4-5 / EN 61547
Control protocol(s)	1-10V, DALI
Control options	AmpDim, Bi-power, Custom dimming profile, Photocell, Remote management
Socket	NEMA 3-pin (optional) NEMA 6-pin (optional) NEMA 7-pin (optional)
Associated control system(s)	Owlet Nightshift Owlet IoT
Sensor	PIR (optional)

OPTICAL INFORMATION

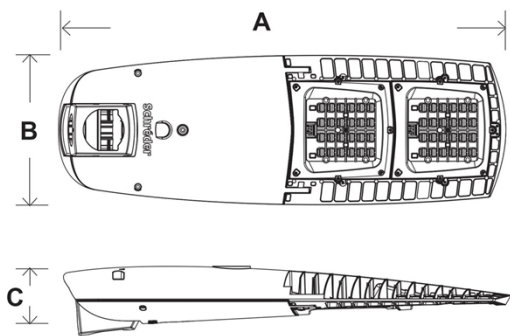
LED colour temperature	3000K (Warm White 830) 4000K (Neutral White 740)
Colour rendering index (CRI)	>80 (Warm White 830) >70 (Neutral White 740)
Upward Light Output Ratio (ULOR)	0%

LIFETIME OF THE LEDS @ TQ 25°C

All configurations	100,000h - L90
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DIMENSIONS AND MOUNTING

AxBxC (mm inch)	AXIA 2.1 - 650x132x250 25.6x5.2x9.8 AXIA 2.2 - 895x132x300 35.2x5.2x11.8
Weight (kg lbs)	AXIA 2.1 - 6.7 14.7 AXIA 2.2 - 9.5 20.9
Aerodynamic resistance (CxS)	AXIA 2.1 - 0.05 AXIA 2.2 - 0.07
Mounting possibilities	Side-entry slip-over - Ø32mm 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





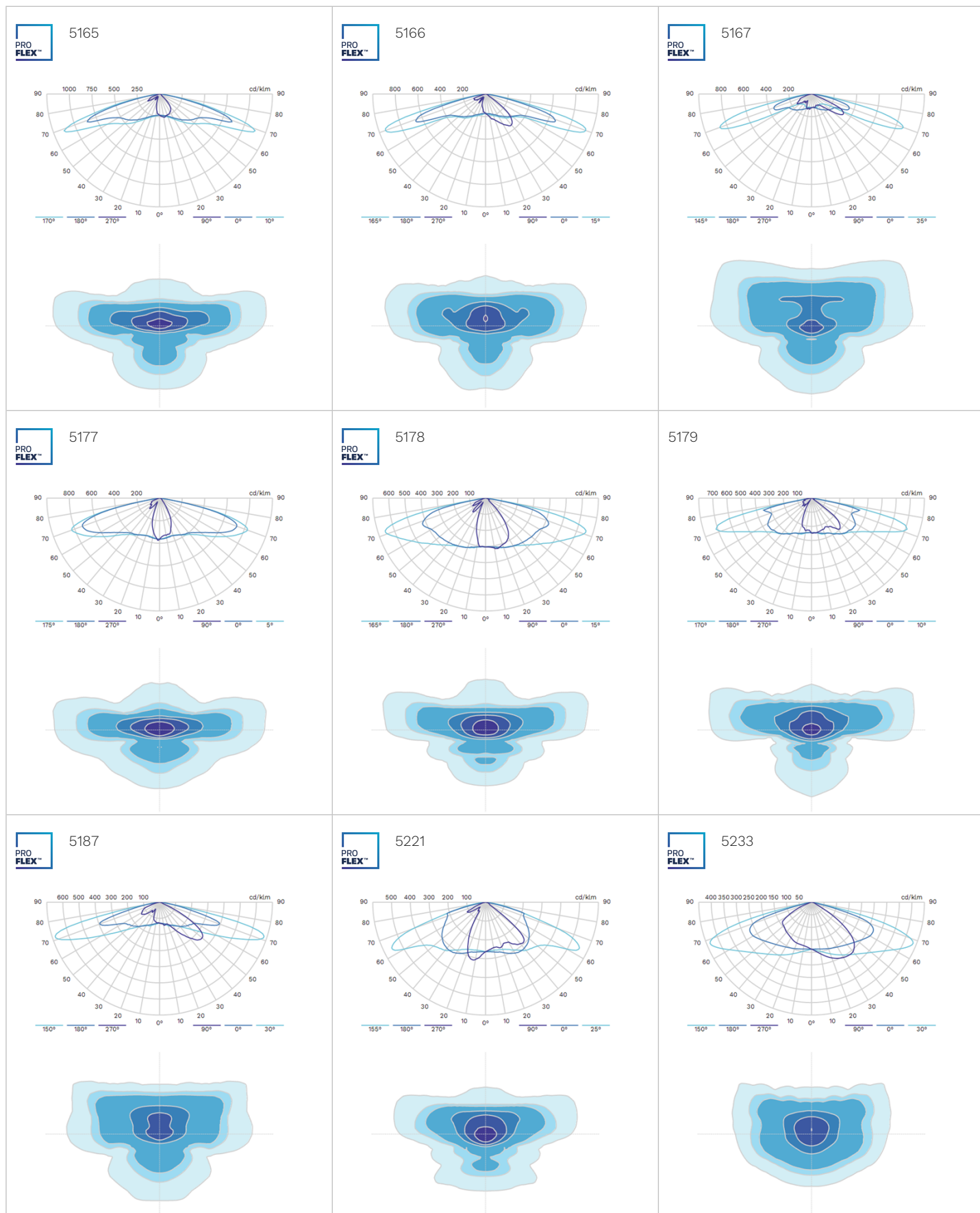
			Luminaire output flux (lm) Warm White 830		Luminaire output flux (lm) Neutral White 740		Power consumption (W)	Luminaire efficacy (lm/W)	
Luminaire	Number of LEDs	Current (mA)	Min	Max	Min	Max		Up to	Photometry
AXIA 2.1	4	680	300	900	400	1100	10.3	110	
	8	480	500	1400	600	1600	13.9	123	
	8	690	700	1900	800	2300	20	121	
	8	820	800	2200	1000	2600	23.7	118	
	16	390	900	2400	1000	2800	21.2	134	
	16	480	1100	2900	1300	3300	25.6	129	
	16	600	1300	3500	1500	4100	31.8	129	
	16	690	1500	3900	1700	4600	36.5	126	
	16	760	1600	4200	1900	4900	40	122	
	24	490	1700	4400	2000	5100	37.9	136	
	24	540	1800	4800	2200	5600	41.5	135	
	24	630	2100	5400	2500	6300	49	130	
	24	690	2300	5900	2700	6900	54	129	
	24	750	2400	6300	2800	7300	58.5	125	
	24	890	2800	7200	3300	8400	69.5	122	

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



			Luminaire output flux (lm) Warm White 830		Luminaire output flux (lm) Neutral White 740		Power consumption (W)	Luminaire efficacy (lm/W)	
Luminaire	Number of LEDs	Current (mA)	Min	Max	Min	Max		Up to	Photometry
AXIA 2.2	32	690	3100	7900	3600	9200	71	131	
	32	860	3700	9400	4300	11000	89	128	
	32	960	4000	10300	4700	12000	100	124	
	40	370	2200	5700	2600	6700	47.5	146	
	40	410	2500	6200	2900	7300	52	145	
	40	450	2700	6800	3100	7900	57	142	
	40	480	2800	7200	3300	8400	60.5	142	
	40	760	4200	10700	4900	12500	96	133	
	40	920	4900	12500	5800	14600	118	127	
	40	1000	5300	13300	6200	15600	129	122	
	48	460	3300	8300	3800	9700	69	144	
	48	530	3700	9400	4400	11000	80	143	
	48	590	4100	10300	4800	12100	89	141	
	48	660	4500	11400	5300	13300	100	137	
	48	730	4900	12400	5800	14500	110	134	
	48	800	5300	13400	6200	15600	121	130	
	48	890	5800	14600	6800	17100	136	127	
	48	960	6200	15500	7200	18100	147	124	
	48	1000	6400	16000	7400	18700	152	123	

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





Thor Bollard

THORN

96273293 TR B S 10L35 BPSW 730 RGB ASY CL1 MGR

LED 13W ADLB_S_10L35_ASY_3K	ISO 9223 C3	IP66	IK10		CE		EAC			Ta25	
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Thor Bollard

An elegant vandal resistant asymmetrical slim bollard with high performance optic. For Electronic, fixed output control gear. IP66 Electrical Class I. Column and Base: aluminium (EW AW 6060). Canopy: die-cast aluminium (EN AC 47100). Diffuser: Clear anti UV polycarbonate. Gear Box: polycarbonate. Canopy and Column colour: powder coated anthracite (close to RAL7043) (close to RAL7043). RGB decorative lit band at the base of the head to be easily set at installation. Equipped with 50% power reduction circuit, effective 3 hours before and 5 hours after a calculated midnight. It can be deactivated at installation with an easily accessible internal switch. Ready to install prewired luminaire. Connection box required, to be ordered separately. Complete with 3000K LED

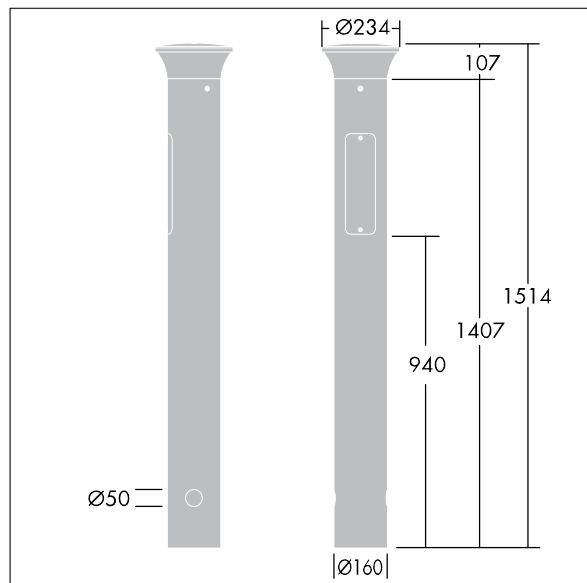
Dimensions: 160 x 160 x 1017 mm

Luminaire input power: 13 W

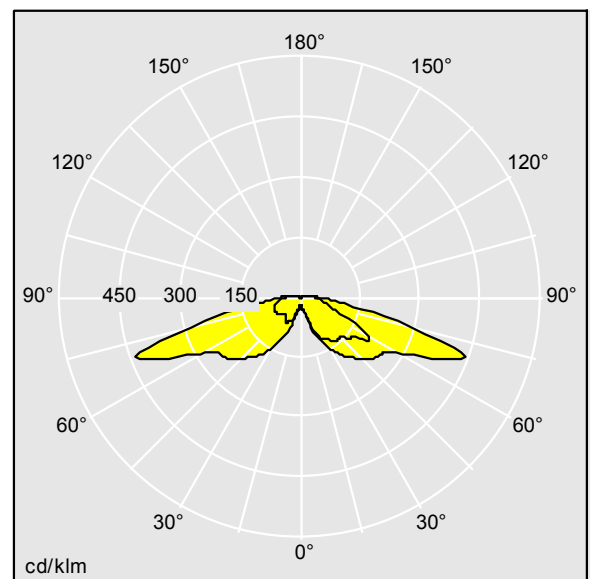
Weight: 9.3 kg



TLG_ADLB_F_SLIMPDB.jpg



TLG_ADLB_M_SLIM_MRG.wmf



TLLA_ADBS10L35ASY3KG32_DC.ltd

Lamp position: STD - standard

Light Source: LED

Luminaire luminous flux*: 996 lm

Luminaire efficacy*: 77 lm/W

Colour Rendering Index min.: 70

Ballast 1: 1 x 96265386 OPTOTRONIC OT 6/200-240/24 CE

LOR: 1,00 ULOR: 0,07 DLOR: 0,93

Ballast 2: 1 x 96271287 DRV OS OT 40W 1.05A 56V
D #1A0 4DIMLT2 E

Correlated colour temperature: 3000 Kelvin

Chromaticity tolerance (initial MacAdam): 5

Rated useful life (B10)*:

L90 100000h at 25°C

Luminaire input power*: 13 W

Dimming: FO

This product contains a light source of energy efficiency class D.

All values marked with an * are rated values. Thorn uses tried and tested components from leading suppliers, however there may be isolated instances of technology-related failures of individual LEDs during the rated product lifetime. International standards set the tolerance in initial flux and connected load at $\pm 10\%$. Unless stated otherwise, the values apply to an ambient temperature of 25°C.

Thorn Lighting is constantly developing and improving its products. The right is reserved to change specifications without prior notification or public announcement.
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Axia 2.1 OSRAM OSLON Integrated Lenses

AXIA 2.1

5167

Optic	5167
Protector	Integrated lenses
Source	16 Osram OSOLON SQUARE GIANT
Matrix	434342



Characteristics

650	250	132	6.7	IP 66	IK 09	I EU, II EU	0.054
Length (mm)	Width (mm)	Height (mm)	Weight (kg)	Tightness level*	Impact resistance*	Electrical class*	CxS (m²)

* According to IEC-EN60598 and IEC-EN62262

Features

The most comprehensive and economical LED lighting solution

- Cost-effective and efficient lighting solution for a fast return on investment
- Smart City connectivity
- Photometric engine with light distributions adapted to various applications
- ThermiX® for long lasting performance
- FutureProof: follows the principles of circular economy
- Universal fixation adapted for side-entry and post-top mounting
- Adjustable inclination in steps of 2.5°

Information for 1000 lm matrix

Efficacy (%)	63.2	G Class (EN 13201-2)	G2	I 70-80-90-95 (cd)	905 - 131 - 2 - 2
DLOR (%)	63.2	G* (EN 13201 2015)	Unclassified	CIE flux code N 1→5 (%)	26.1 - 53.9 - 94.5 - 99.9 - 63.2
ULOR (%)	0.1	Imax (cd)	905	Gradient 90°	47cd
ULR (%)	0.1	Aperture 0-180°	X - X	Gradient 270°	11cd
Incl ULR 4%	-45/25°	Aperture 90-270°	X - X		

Photometrical characteristics

LED count	Colour code	Current (mA)	Luminaire power (W)	Source flux (lm)	Luminaire output flux (lm)	Luminaire efficacy (lm/W)	Peak (cd)	BUG Rating	Voltage (V)
			Ambient temp = 25°						
16	WW 727	300	16	2266	1433	90	2052	B0 U1 G1	230
16	WW 727	350	18	2608	1650	92	2361	B1 U1 G1	230
16	WW 727	400	21	2942	1861	89	2663	B1 U1 G1	230
16	WW 727	500	26	3583	2266	87	3244	B1 U1 G1	230
16	WW 727	600	31	4191	2651	86	3794	B1 U1 G1	230
16	WW 727	700	36	4767	3015	84	4316	B1 U1 G1	230
16	WW 727	760	39	5099	3225	83	4616	B1 U1 G1	230
16	NW 740	300	16	2614	1653	103	2366	B1 U1 G1	230
16	NW 740	350	18	3008	1903	106	2723	B1 U1 G1	230
16	NW 740	400	21	3393	2146	102	3072	B1 U1 G1	230
16	NW 740	500	26	4133	2614	101	3741	B1 U1 G1	230
16	NW 740	600	31	4834	3057	99	4376	B1 U1 G1	230
16	NW 740	700	36	5499	3478	97	4978	B1 U1 G1	230
16	NW 740	760	39	5881	3719	95	5323	B1 U1 G1	230
16	WW 730	300	16	2405	1521	95	2177	B1 U1 G1	230
16	WW 730	350	18	2768	1751	97	2506	B1 U1 G1	230
16	WW 730	400	21	3122	1975	94	2826	B1 U1 G1	230
16	WW 730	500	26	3803	2405	93	3443	B1 U1 G1	230
16	WW 730	600	31	4448	2813	91	4027	B1 U1 G1	230
16	WW 730	700	36	5060	3200	89	4580	B1 U1 G1	230
16	WW 730	760	39	5411	3423	88	4899	B1 U1 G1	230
16	WW 830	300	16	2197	1389	87	1989	B0 U1 G1	230
16	WW 830	350	18	2528	1599	89	2288	B1 U1 G1	230
16	WW 830	400	21	2852	1804	86	2581	B1 U1 G1	230
16	WW 830	500	26	3473	2197	85	3144	B1 U1 G1	230
16	WW 830	600	31	4062	2569	83	3678	B1 U1 G1	230
16	WW 830	700	36	4621	2923	81	4183	B1 U1 G1	230
16	WW 830	760	39	4942	3126	80	4474	B1 U1 G1	230

Tolerance on flux +- 7% - Tolerance on power +- 5%

Summary

CONCEPT

Luminaire specifically designed for LEDs

Recommended installation height: between 5-8m for AXIA 2.1 and 6-10m for AXIA 2.2

For optimal heat dissipation, the driver and LED engine are in separate compartments and juxtaposed in a horizontal section

HOUSING & FINISH

- Housing in high-pressure, die-cast aluminium, polyester powder coated, with a flat area for a photoelectric cell.
- Housing is surrounded by lateral cooling fins for optimal heat extraction.
- Colour: RAL grey 7040 or black RAL 9005.

INSTALLATION

- Incorporated universal fixation with adjustable inclination in 2.5° steps
- Fixation with tiltable clamp and 2 Allen grub screws M8x45 in stainless steel
- Post-top 48-60mm and 76mm spigot at 5° inclination, allows tilt on a vertical pole from 0 to +10° by 2.5° steps
- Lateral mounting on 32 (with sleeve), 42, 48 or 60mm spigot at 0°, allows tilt on horizontal spigot from +5° to -10° by 2.5° steps
- Cover opens via 2 stainless screws positioned on the lower side of the housing to prevent dirt and corrosion build up

OPTICAL UNIT

- Flatbed PCB with polycarbonate lens overlay principle offering various photometric distributions from narrow, medium to wide road; the IP 66 level allows long lasting performance
- CRI > 70
- ULOR: 0%
- Lifetime residual flux @ Tq=25°C @ 100.000 hrs: 90%

ELECTRICAL

- Class I or Class II (size 2 only)
- Input voltage: 230V ± 10% - 50-60Hz
- Power factor > 85% at full load
- 10kV, 10kA surge protection

STANDARDS & CERTIFICATIONS

- CE
- ENEC
- LM79-80
- ROHS
- All measurements in ISO17025 accredited laboratory

OPTIONS

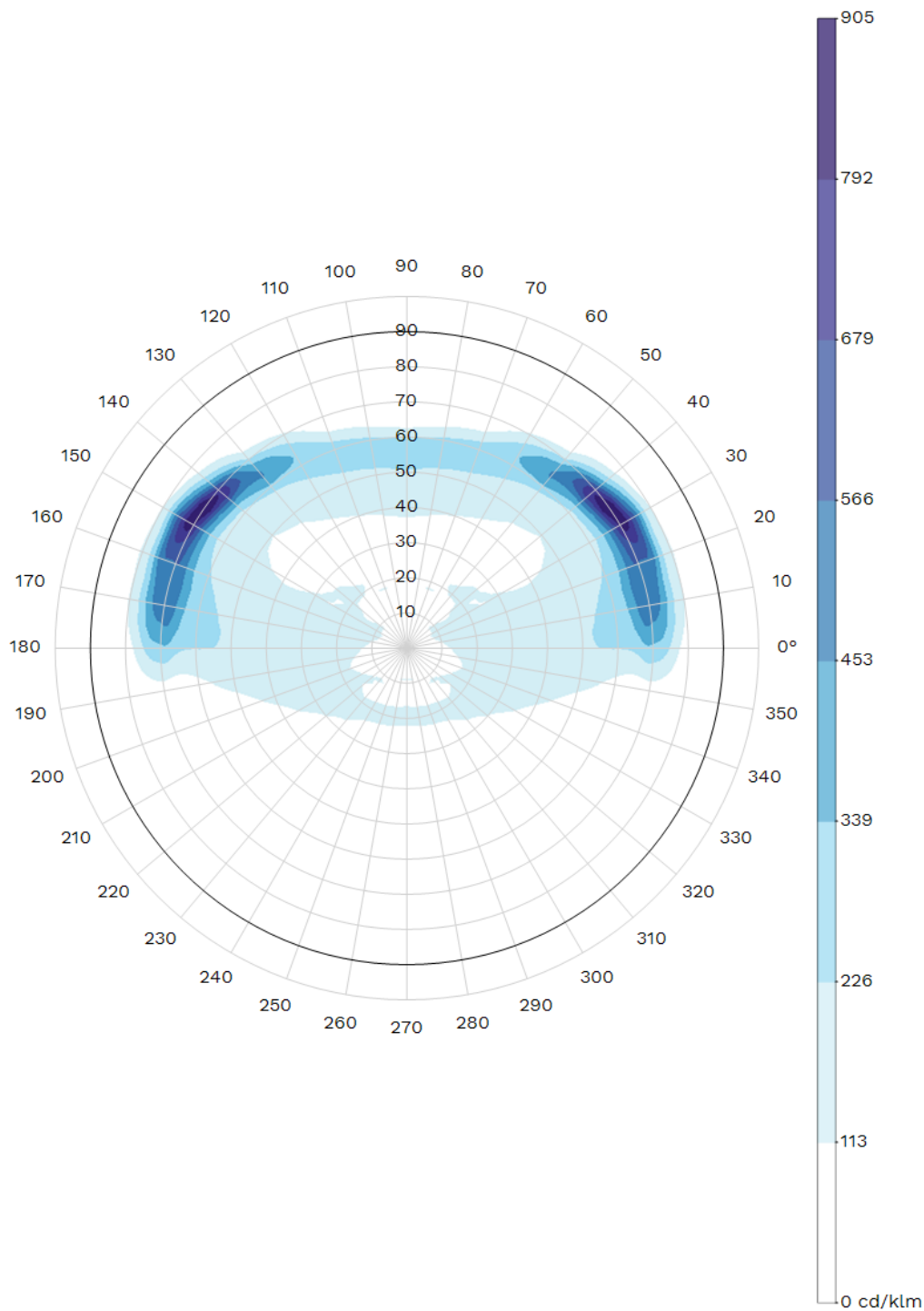
- Other RAL or AKZO colours
- Outlet remote management
- Custom dimming profile; Constant Light Output (CLO); Dali; 0-10V
- Photocell
- Presence detection

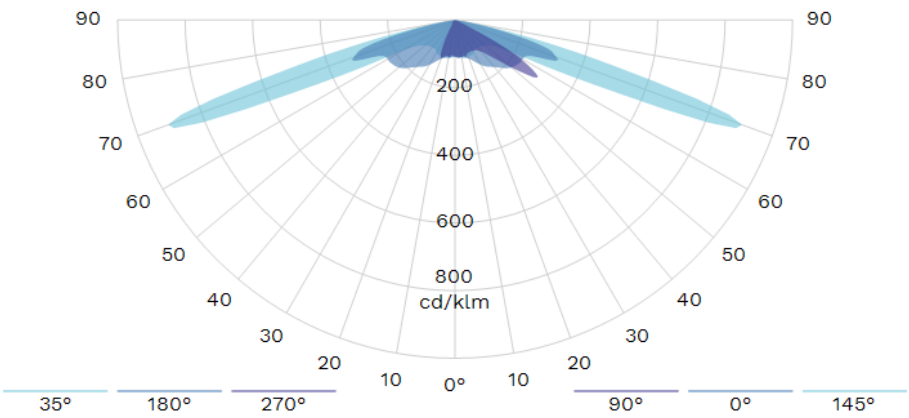
AXIA 2.1 - 5167 - 16 Osram OSOLON SQUARE GIANT - Integrated lenses - 434342

21/05/2021

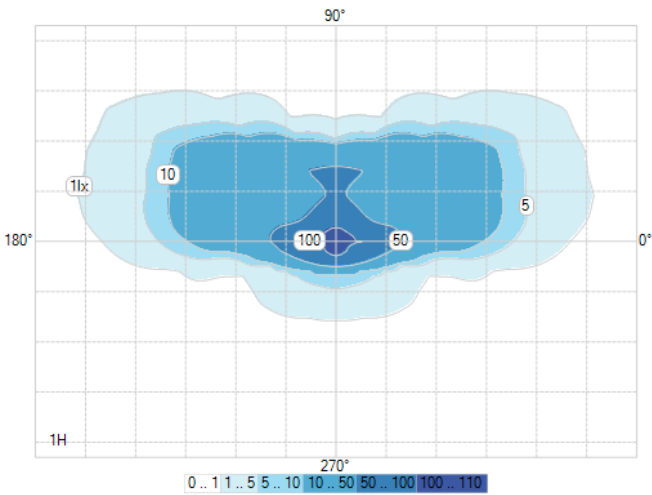
Schröder

- External light control louvres
- Supplied pre-cabled for easy installation

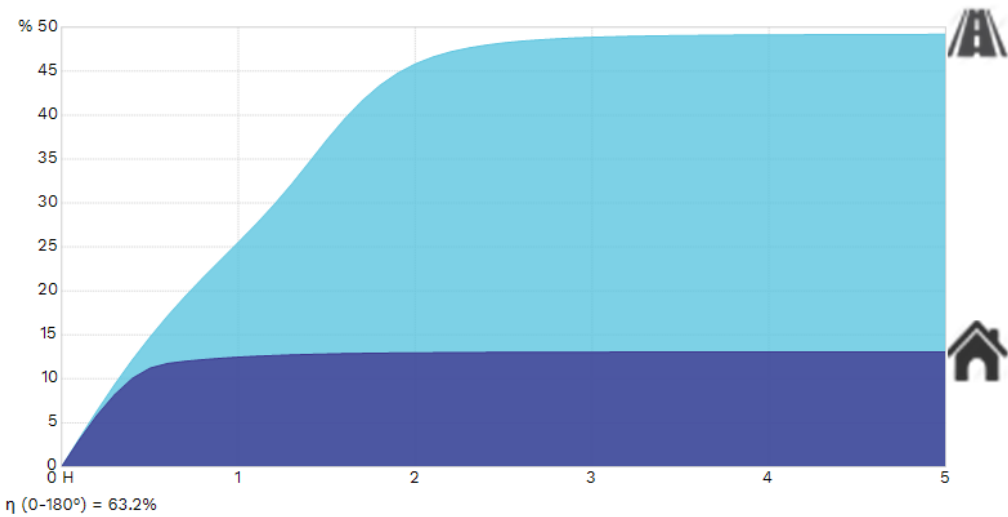




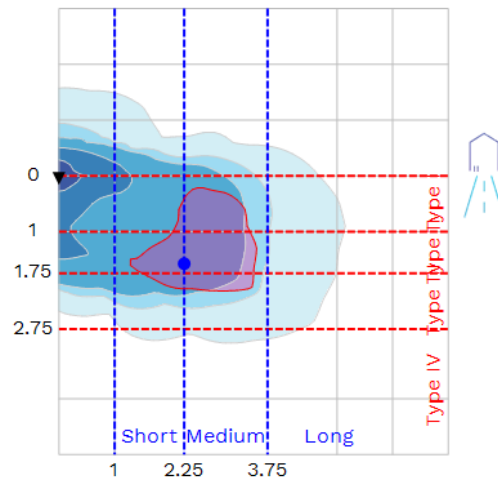
Isolux



K-Curve

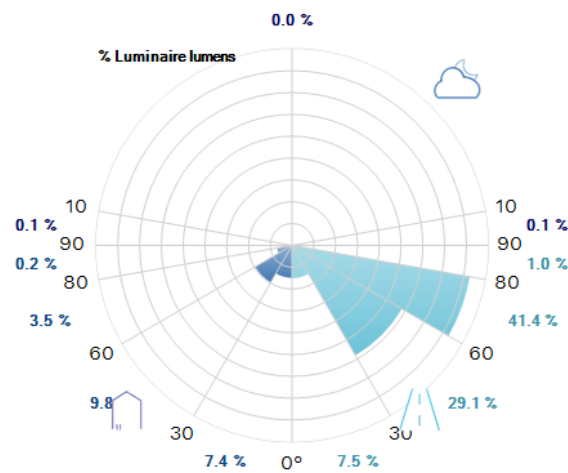


IES Roadway Classification / Nema Classification

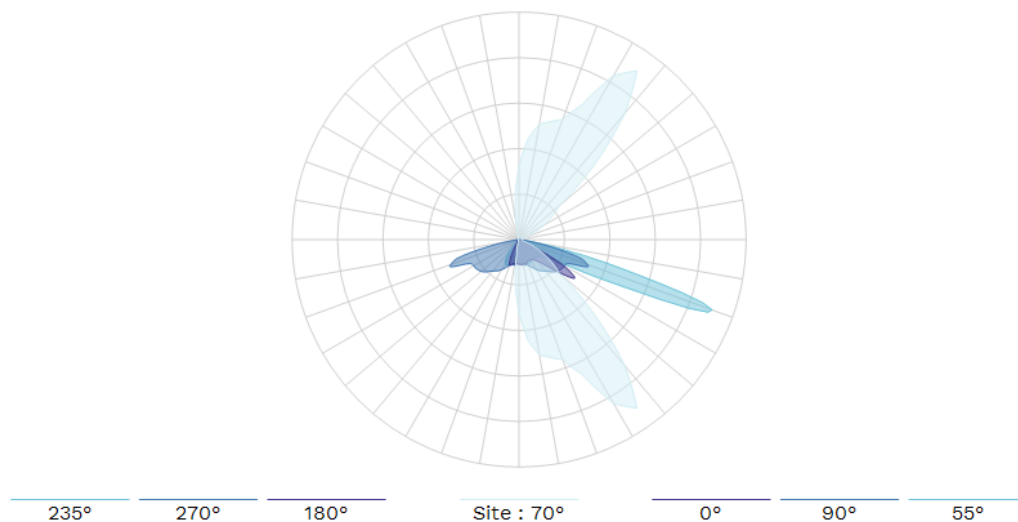


III - Medium

Luminaire classification system (LCS)



Intensity diagram in max Cone and in CPlane



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<http://www.schreder.com>

OLSON Square Maintenance Factor

Lumen maintenance report

LED information

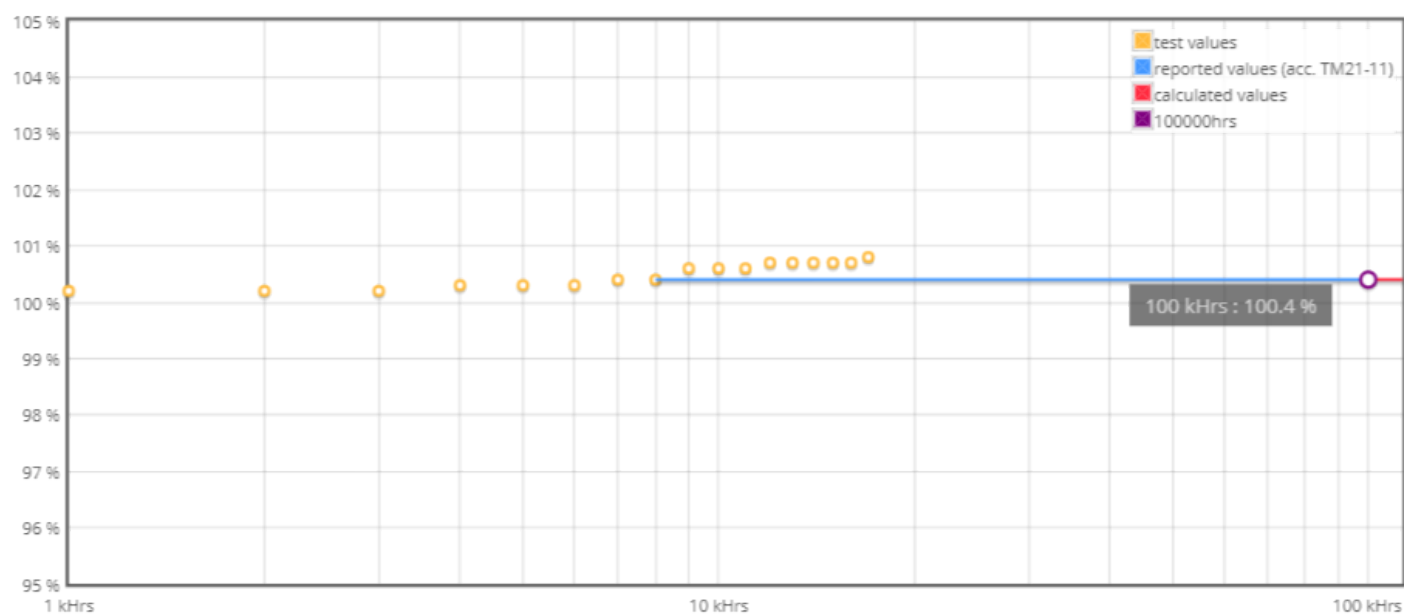
LED type	OSLON Square
LED current	700 mA
Ts	85°C
Description	190145W6 OSRM27-2-E2-220 14/02/2020

Projection data

Test duration	17000 hrs	α	-3.072E-007
Time used for projection	8000 to 17000hrs	β	1.003

L (%)	Time (kHrs)
100.4	100

Projection graphic



LxB50 results according to LM-80 and TM-21-11 procedures and norms.

LxBy results derived from LxB50 according to IEC 62717 Annex C.

Urbis Schreder LED Warranty

Warranty – ROAD, URBAN & STREET LIGHTING Schröder Group LED Luminaires

1. GENERAL TERMS

A. Scope

The warranty set forth below is provided by SCHREDER with respect to SCHREDER® branded LED luminaires designed for Road and Street Lighting purposes and sold by SCHREDER worldwide (hereinafter referred to as "Products") to its direct customers (hereinafter referred to as: "Customers").

This warranty is effective for purchases of Products on or after the effective date set forth below. SCHREDER reserves the right to change this warranty without prior notice. Any such change shall be effective for all orders placed with SCHREDER on or after the effective date of such change.

B. Warranty Coverage

SCHREDER warrants that each Product will be free from defects in materials and workmanship subject to all conditions and limitations contained in this warranty for a period of ten (10) years for the luminaires listed in the Appendix and for a period of five (5) years for all other Products (hereinafter referred to as: "Warranty Period"), from the date of invoice.

SCHREDER also warrants the luminous performances of its Products during the Warranty Period. During the Warranty Period and subject to all conditions and limitations contained in this warranty the luminous flux will be maintained at a level of at least 80% of the initial nominal flux¹ mentioned in the datasheet or SCHREDER application study with a supply at nominal current, provided that the average nighttime ambient temperature does not exceed the rated Tq performance temperature and taking into account a tolerance of 5% on the drivers' nominal current.

This warranty is granted only for Products switched on/off on a daily basis with an average annual utilization of 4.200hours and used in accordance with their technical specifications and installation instructions.

Official photometrical measurements can only be carried out by SCHREDER or by a mutually agreed accredited laboratory with a protocol defined by SCHREDER.

In case of defective Products determined as such by SCHREDER and determined by SCHREDER to be

covered by this warranty, SCHREDER shall at its sole

discretion repair or replace such Products. If a Product has been discontinued or is not available for any other reason, SCHREDER may propose an alternative product.

2. LIMITATIONS AND CONDITIONS

This warranty is strictly limited to the Products delivered by SCHREDER. All other costs (e.g. dismounting, freight for defective parts or Products, removal and reinstallation, transport time, tools for lifting and scaffolding or other costs coming from an installation breakdown, as well as all costs or damages that are consequential, special, incidental or pure financial damages such as loss of revenue/profits, damage to property, work stoppage, idle assets, loss of production, costs incurred by closed roads, road signs, traffic deviations etc.) are explicitly excluded and SCHREDER shall not be liable for injury to any person or damage to property.

The Customer must demonstrate that any default, defect or damage to a Product or part thereof does not result from or is not directly or indirectly caused by any error, default, neglect, abuse, misuse or abnormal use by the Customer including without limitation the Customer's failure to comply with any of the following conditions or requirements:

- In every case, the Customer has properly transported the Product using the original packaging;
- The Customer has consistently stored, installed, used and maintained the Product in compliance with SCHREDER specifications, guidelines, and instructions and, where applicable, IEC standards;
- The Customer has only used the Product for a purpose that was intended by SCHREDER;
- The Product has consistently been wired, installed and operated within the electrical values, operating range and environmental conditions in compliance with SCHREDER specifications, application guidelines, IEC standards or any other document accompanying the Product;
- The Product has not been subjected to mechanical loads which are inconsistent with its intended use;
- The Product has not been exposed to ambient temperatures in excess of the lower of $T_a = 45^{\circ}\text{C}$ (integrity, safety temperature) or the maximum value specifically rated by SCHREDER;
- Neither the Customer nor anyone other than SCHREDER has repaired, replaced, adjusted or altered any Product and/or any part thereof, without

¹ L80 B10 means that a minimum of 80% of the initial luminaire luminous flux will be maintained for a period that corresponds at least to the Warranty Period for the maximum ambient nighttime temperature.

The probability ratio B10 indicates that minimum 90 % of the luminaires in a given installation will meet the specified lumen maintenance level.

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SCHREDER's prior and written consent and authorization;

- The not accessible/sealed parts, e.g. optical compartments, of the Product have not been opened by the Customer without SCHREDER's prior and written authorization;
- The Product has not been improperly manipulated and/or put into contact with chemical products.

This warranty does not apply to:

- damage or failure to perform arising as a result of a force majeure or from any violation of any applicable standard or regulation, including without limitation those contained in the latest safety, industry and/or electrical standards and regulations applicable to the Customer;
- failure in performance, structural defect or functional deficient when SCHREDER has complied in full with the Customer's written briefs, drawings or specifications which subsequently are found to be inadequate, incomplete or defective;
- damage or failure to perform arising as a result of electrical supply conditions, including spikes, over-voltage/under-voltage and ripple current control systems that are beyond the specified limits of the Product and those defined by relevant suppliers or contrary to industry standards relating to acceptable input power;
- any acts of nature such as lightning damage or corrosion should the corrosion be the result of external causes or factors (e.g. chemical products);
- additional control gears e.g. telemanagement;
- parts, elements and/or accessories added to the Product after its delivery;
- normal wear and tear of the Product.

Should the Product be installed in a corrosive environment, notably seaside or chemical site, the Customer must inform SCHREDER, which shall prescribe necessary precautions like additional, specific treatment and painting that the Customer should comply with, including the regular respect of the prescribed maintenance actions during the course of operation.

3. NO IMPLIED OR OTHER WARRANTIES

The warranties explicitly granted in this warranty are the only warranties given by SCHREDER in connection with the Products supplied to its Customers and are given in lieu of all other warranties, whether express or implied, including without limitation warranties of merchantability, fitness for a particular purpose, or non-infringement of intellectual property rights, all of which are hereby disclaimed.

In no event shall the liability of SCHREDER for all claims made under this warranty with respect to a Product item exceed the total payments made by the Customer for that Product item. Moreover the Customer shall not be entitled

to request and/or claim any payment extensions, price reductions or the termination of the supply contract if any.

No agent, distributor or dealer is authorized to change, modify or extend the terms of this warranty on behalf of SCHREDER.

4. WARRANTY CLAIMS

The Customer must immediately notify SCHREDER of a possible claim in writing within thirty (30) calendar days from discovery of the defect or damage and, in any event within the Warranty Period, and give in such notification details of the defect or damage, including without limitation:

- Installation characteristics (location, street, number of Products affected, relevant installation details, etc.)
- Manner in which and environment circumstances under which the Products have been used
- Name, variant, model and serial numbers (if available) of the defective Products
- Copy of the invoice and delivery note
- Installation date
- Detailed problem description.

A Customer may only ship a defective Product back to SCHREDER if SCHREDER has issued an RMA (Return Material Authorization) for that Product.

SCHREDER representatives shall be granted the right to access the defective Product prior to its disassembly and/or power grid to which the Product was connected for verification. Any restriction to this right will release SCHREDER from its warranty obligations hereunder with respect to the affected Product. Damaged parts, debris etc. should not be disposed of until written authority is given by SCHREDER.

Non-conforming or defective Products or parts shall become SCHREDER's property as soon as they have been replaced.

If after issuance of an RMA, SCHREDER determines that the Customer has no warranty protection for the Product(s) shipped under the RMA, SCHREDER is entitled to charge the Customer the costs that it incurs in inspecting the Product(s) and determining whether it is eligible for warranty coverage.

The Warranty Period for replaced or repaired part or Product shall be the remainder, if any, of the initial Warranty Period for the repaired or replaced part or Product.

Effective Date: January 2021

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**APPENDIX of the Warranty
ROAD & STREET LIGHTING
Schröder Group LED Luminaires
List of luminaires to which applies
a ten (10) year warranty period**

AXIA
TECEO
PIANO
AMPERA
DEXO
YOA
OMNISTAR (Imax = 700mA)
PILZEO
STYLAGE
FRIZA
VALENTINO
RIVARA
HAPILED