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PUBLIC LIGHTING REPORT
FOR THE
KISHOGE PART 10 APPLICATION
AT
SITE 3, KISHOGE,
CLONBURRIS, LUCAN, CO. DUBLIN

Document No: KSG3-MAE-XX-XX-RPT-E-6000

Issue: PL1

Date: 8th May 2025

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1.0 INTRODUCTION

The following Public Lighting Report has been prepared to accompany a planning application, for a residential development, as detailed below.

The proposed development comprises 580no. residential units in a mix of house, apartment, duplex and triplex units comprising 1-bedroom, 2-bedroom and 3-bedroom typologies; 2-storey childcare facility; All associated and ancillary site development and infrastructural works including surface level car parking, bicycle parking, hard and soft landscaping and boundary treatment works, including public, communal and private open space, public lighting, bin stores and foul and water services. Vehicular access to the site will be from Adamstown Avenue and the Northern Link Street, proposed under permitted application Reg. Ref. SDZ24A/0033W.

Image.1.1 Site Location

2.0 PUBLIC LIGHTING DESIGN APPROACH

Public Lighting has been designed in accordance with the requirements of the Irish Standard for Road Lighting, I.S. EN 13201-2:2015 while observing NSAI National Rules for Electrical Installations and ESB Networks Distribution System interface requirements.

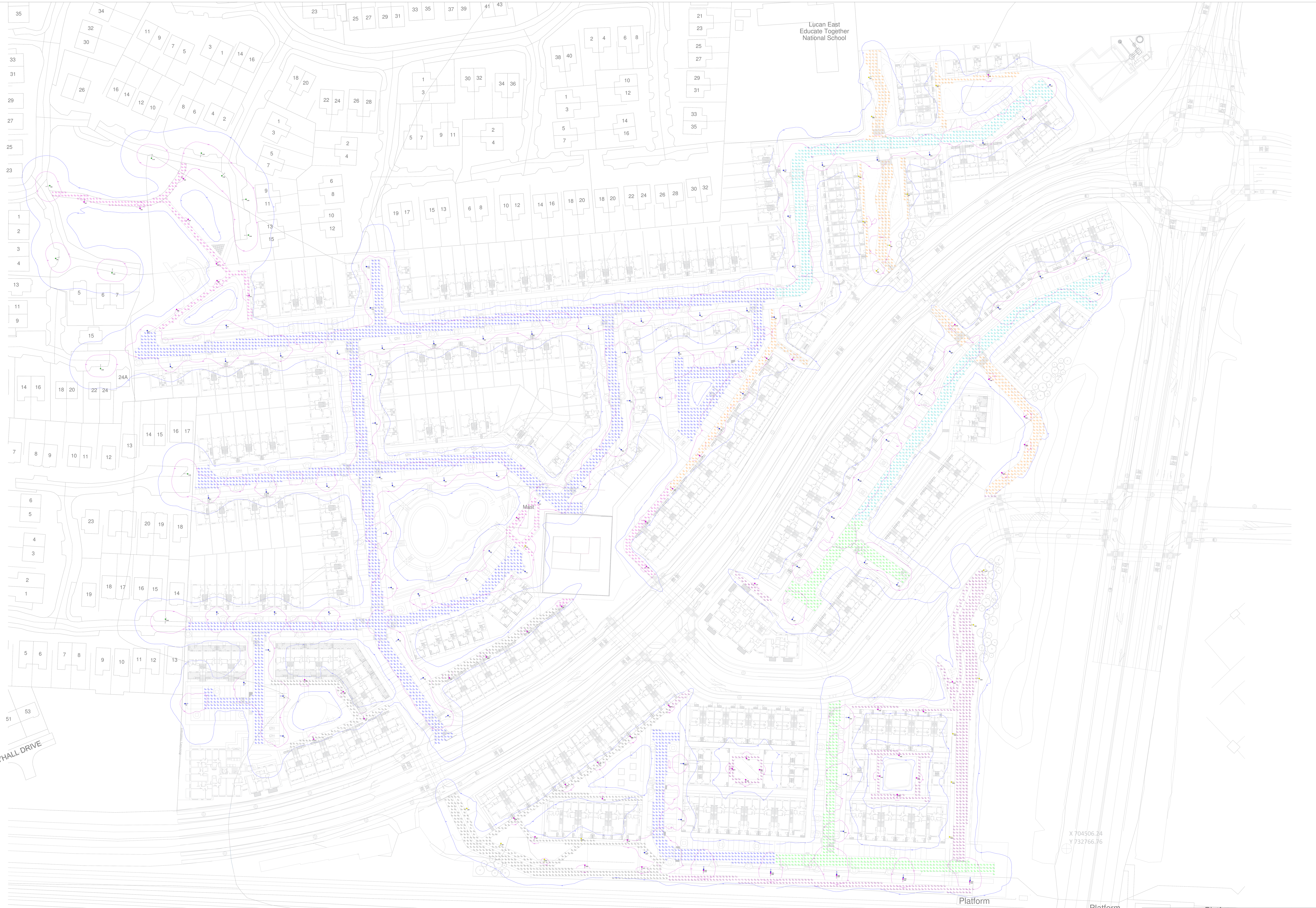
In addition, the general guidance offered in BS 5489-1 Code of Practise for the Design of Road Lighting, current edition and the council's public lighting specification has been observed.

The scheme has been designed to:

- Roads illumination level: BS 5489-1:2020, P4 - 5.00 - 7.50 lux average, 1.0 lux min.
- Footpaths illumination level: BS 5489-1:2020, P5 - 3.00 - 4.50 lux average, 0.60 lux min.
- Maintenance factor calculated as per GN11: 0.81.

Standard LED Street lighting has been designed to utilise 3000K colour temperature to protect the existing bio-diversity within and around the site

3.0 PUBLIC LIGHTING REALITY CALCULATION DRAWING



Schréder
Experts in lightability™

PROJECT NAME:
Housing Development, Kishoge, Lucan, Co Dublin

PROJECT No:
OP246132LD21131

SCALE: **1:500**

DATE: **2 April 2025**

CALCULATION:
Horizontal Illuminance (lux)

DESIGNER:
Jacek Maslowski

The scheme has been designed to:

Roads // BS 5489-1:2020, P4
5.00 - 7.50 lux average, 1.0 lux minimum

Footpaths // BS 5489-1:2020, P5
3.00 - 4.50 lux average, 0.60 lux minimum

Maintenance factor calculated as per GN11: 0.81

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:

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FILE NAME
C:\Users\jmaslowski\OneDrive - Schréder SA\GBU_Lighting Scheme Archive\OP0240000\OP000246132 Housing Development, Kishoge, Lucan, Co Dublin\LD21131\Design\OP246132LD21131 Housing Development, Kishoge, Lucan, Co Dublin.rtma

Results 5 LUX - P4 - ROADS	
Eav	5.63
Emin	1.31
Emax	12.30
Emin/Emax	0.11
Emin/Eav	0.23
Results 5 LUX - P4 - ROADS	
Eav	5.50
Emin	1.14
Emax	11.01
Emin/Emax	0.10
Emin/Eav	0.21
Results 3 LUX - P5 - FOOTPATHS	
Eav	4.01
Emin	1.12
Emax	10.88
Emin/Emax	0.10
Emin/Eav	0.28
Results 3 LUX - P5 - FOOTPATHS	
Eav	3.05
Emin	0.65
Emax	9.17
Emin/Emax	0.07
Emin/Eav	0.21
Results 5 LUX - P4 - ROADS	
Eav	5.12
Emin	1.66
Emax	10.79
Emin/Emax	0.15
Emin/Eav	0.32
Results 3 LUX - P5 - FOOTPATHS	
Eav	3.80
Emin	0.80
Emax	11.77
Emin/Emax	0.07
Emin/Eav	0.21
Results 3 LUX - P5 - FOOTPATH	
Eav	3.29
Emin	0.80
Emax	11.37
Emin/Emax	0.07
Emin/Eav	0.24

	Luminaire B	Luminaire C	Luminaire D	Luminaire E
Supplier	_Historic Lanterns	Schréder	Schréder	Schréder
Type	QB5B1035.4	AXIA 3.1 5267 Integrated lenses 16 OSLON SQUARE GIANT LE...	AXIA 3.1 5267 Integrated lenses 8 OSLON SQUARE GIANT LE...	AXIA 3.1 5296 Integrated lenses 8 OSLON SQUARE GIANT LE...
Lamp(s)	35W SOX	16 OSLON SQUARE GIANT@370mA WW 730 230V 1x01-11-802...	8 OSLON SQUARE GIANT@350mA WW 730 230V 1x01-11-802 -...	8 OSLON SQUARE GIANT@170mA WW 730 230V 1x01-11-802 -...
Lamp Flux (klm)	4.80	2.73	1.30	0.67
Maintenance Factor	0.81	0.81	0.81	0.81
No. in Project	11	87	19	56

4.0 PUBLIC LIGHTING REALITY REPORT

DATE:	**2 April 2025**
DESIGNER:	**Jacek Maslowski**
PROJECT No:	**OP246132LD21131**
PROJECT NAME:	**Housing Development, Kishoge, Lucan, Co Dublin**

Schréder
Experts in lightability™

The scheme has been designed to:

Roads // BS 5489-1:2020, P4
5.00 - 7.50 lux average, 1.0 lux minimum

Footpaths // BS 5489-1:2020, P5
3.00 - 4.50 lux average, 0.60 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:

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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	5 LUX - P4 - ROADS	704001.92	732747.55	365.71	371.32	1.50	1.50
2	5 LUX - P4 - ROADS	704367.89	732922.85	194.80	236.12	1.50	1.49
3	3 LUX - P5 - FOOTPATHS	704015.03	732881.52	302.28	224.82	1.50	1.50
4	3 LUX - P5 - FOOTPATHS	704316.89	732720.05	236.92	215.00	1.50	1.49
5	5 LUX - P4 - ROADS	704367.69	732734.63	200.00	188.22	1.49	1.49
6	3 LUX - P5 - FOOTPATHS	704317.46	732935.05	241.35	235.45	1.50	1.50
7	3 LUX - P5 - FOOTPATH	704020.03	732723.93	296.90	157.51	1.50	1.49

Luminaires

Luminaire B Data

Supplier	_Historic Lanterns
Type	QB5B1035.4
Lamp(s)	35W SOX
Lamp Flux (klm)	4.80
File Name	r0004958.cib
Maintenance Factor	0.81
Imax70,80,90(cd/klm)	157.8, 97.0, 51.0
No. in Project	11

Luminaire C Data

Supplier	Schréder
Type	AXIA 3.1 5267 Integrated lenses 16 OSLO N SQUARE GIANT LED@37
Lamp(s)	16 OSLON SQUARE GIANT@370mA WW 730 230V 1x01-11-802 - DRIVER_
LampFlux(klm)/Colour	2.73 3000K/70
File Name	AXIA 3.1 5267 16 OSLON SQUARE GIANT Drv 370mA WW 730 19W 614432 Integrat...
Maintenance Factor	0.81
Imax70,80,90(cd/klm)	993.0, 97.5, 0.0
No. in Project	87

Luminaire D Data

Supplier	Schréder
Type	AXIA 3.1 5267 Integrated lenses 8 OSLON SQUARE GIANT LED@350
Lamp(s)	8 OSLON SQUARE GIANT@350mA WW 730 230V 1x01-11-802 - DRIVER_S
LampFlux(klm)/Colour	1.30 3000K/70
File Name	AXIA 3.1 5267 8 OSLON SQUARE GIANT Drv 350mA WW 730 9W 614432 Integrate...
Maintenance Factor	0.81
Imax70,80,90(cd/klm)	993.0, 97.5, 0.0
No. in Project	19

Luminaire E Data

Supplier	Schréder
Type	AXIA 3.1 5296 Integrated lenses 8 OSLON SQUARE GIANT LED@170
Lamp(s)	8 OSLON SQUARE GIANT@170mA WW 730 230V 1x01-11-802 - DRIVER_S
LampFlux(klm)/Colour	0.67 3000K/70
File Name	AXIA 3.1 5296 8 OSLON SQUARE GIANT Drv 170mA WW 730 5W 436952 Integrate...
Maintenance Factor	0.81
Imax70,80,90(cd/klm)	1243.8, 38.3, 0.0
No. in Project	56

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	C	704102.77	732879.13	6.00	269.00	0.00	0.00	0.50			
2	C	704130.21	732879.15	6.00	269.00	0.00	0.00	0.50			
3	C	704127.28	732861.17	6.00	181.00	0.00	0.00	0.50			
4	C	704134.21	732839.25	6.00	179.00	5.00	0.00	0.50			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
5	C	704115.62	732845.70	6.00	269.00	0.00	0.00	0.50			
6	C	704087.70	732835.62	6.00	3.00	0.00	0.00	0.50			
7	C	704134.19	732820.26	6.00	176.00	5.00	0.00	0.50			
8	C	704155.97	732879.12	6.00	275.00	0.00	0.00	0.50			
9	C	704198.44	732887.76	6.00	293.00	5.00	0.00	0.50			
10	C	704221.04	732894.90	6.00	289.00	0.00	0.00	0.50			
11	C	704232.13	732908.18	6.00	317.00	0.00	0.00	0.50			
12	C	704188.96	732866.05	6.00	216.00	0.00	0.00	0.50			
13	C	704200.75	732847.91	6.00	209.00	0.00	0.00	0.50			
14	C	704212.54	732829.98	6.00	210.00	0.00	0.00	0.50			
15	C	704185.53	732890.80	6.00	185.00	0.00	0.00	0.50			
16	C	704183.15	732916.64	6.00	185.00	0.00	0.00	0.50			
17	C	704180.14	732943.09	6.00	183.00	0.00	0.00	0.50			
18	C	704155.10	732938.92	6.00	96.00	0.00	0.00	0.50			
19	C	704126.29	732936.17	6.00	96.00	0.00	0.00	0.50			
20	C	704098.85	732933.33	6.00	96.00	0.00	0.00	0.50			
21	C	704186.17	732939.23	6.00	96.00	0.00	0.00	0.50			
22	C	704210.73	732941.64	6.00	96.00	0.00	0.00	0.50			
23	C	704235.75	732944.00	6.00	96.00	0.00	0.00	0.50			
24	C	704255.48	732931.00	6.00	54.00	0.00	0.00	0.50			
25	C	704277.06	732938.73	6.00	145.00	0.00	0.00	0.50			
26	C	704294.80	732956.23	6.00	140.00	0.00	0.00	0.50			
27	C	704298.84	732979.53	6.00	181.00	0.00	0.00	0.50			
28	C	704177.97	732968.93	6.00	186.00	0.00	0.00	0.50			
29	C	704175.78	732992.00	6.00	186.00	0.00	0.00	0.50			
30	C	704080.77	732995.76	6.00	97.00	0.00	0.00	0.50			
31	C	704106.97	732998.28	6.00	97.00	0.00	0.00	0.50			
32	C	704133.14	733000.83	6.00	97.00	0.00	0.00	0.50			
33	C	704160.08	733002.17	6.00	97.00	0.00	0.00	0.50			
34	C	704181.38	733004.46	6.00	97.00	0.00	0.00	0.50			
35	C	704205.83	733006.64	6.00	97.00	0.00	0.00	0.50			
36	C	704229.28	733008.96	6.00	97.00	0.00	0.00	0.50			
37	C	704252.42	733011.19	6.00	97.00	0.00	0.00	0.50			
38	C	704279.36	733013.88	6.00	97.00	0.00	0.00	0.50			
39	C	704107.27	733015.29	6.00	276.00	0.00	0.00	0.50			
40	C	704069.78	733012.79	6.00	277.00	0.00	0.00	0.50			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
41	C	704296.59	733002.52	6.00	187.00	0.00	0.00	0.50			
42	C	704304.37	733017.35	6.00	97.00	0.00	0.00	0.50			
43	C	704332.19	733020.10	6.00	97.00	0.00	0.00	0.50			
44	C	704354.52	733022.31	6.00	97.00	0.00	0.00	0.50			
45	E	704363.85	732999.66	6.00	147.00	0.00	0.00	0.50			
46	C	704367.44	733019.22	6.00	187.00	0.00	0.00	0.50			
47	C	704352.58	732982.87	6.00	148.00	0.00	0.00	0.50			
48	C	704349.17	733005.02	6.00	273.00	0.00	0.00	0.50			
49	C	704322.14	733002.30	6.00	276.00	0.00	0.00	0.50			
50	C	704313.17	732981.05	6.00	7.00	5.00	0.00	0.50			
51	C	704379.71	733024.63	6.00	97.00	0.00	0.00	0.50			
52	C	704376.28	733043.35	6.00	5.00	0.00	0.00	0.50			
53	C	704374.00	733067.16	6.00	6.00	0.00	0.00	0.50			
54	C	704371.82	733088.93	6.00	6.00	0.00	0.00	0.50			
55	C	704390.33	733091.45	6.00	97.00	0.00	0.00	0.50			
56	C	704416.38	733093.91	6.00	97.00	0.00	0.00	0.50			
57	C	704441.25	733096.37	6.00	97.00	0.00	0.00	0.50			
58	C	704466.55	733101.98	6.00	97.00	0.00	0.00	0.50			
59	C	704486.19	733113.50	6.00	130.00	0.00	0.00	0.50			
60	C	704498.36	733129.55	6.00	221.00	0.00	0.00	0.50			
61	E	704148.75	732818.79	6.00	105.00	0.00	0.00	0.50			
62	E	704172.77	732828.51	6.00	111.00	0.00	0.00	0.50			
63	E	704162.80	732841.31	6.00	211.00	0.00	0.00	0.50			
64	E	704144.50	732846.99	6.00	269.00	0.00	0.00	0.50			
65	D	704221.50	732785.87	6.00	204.00	0.00	0.00	0.50			
66	D	704237.69	732769.23	6.00	247.00	0.00	0.00	0.50			
67	D	704258.34	732761.68	6.00	267.00	0.00	0.00	0.50			
68	E	704253.86	732772.39	6.00	252.00	0.00	0.00	0.50			
69	D	704275.81	732771.54	6.00	272.00	0.00	0.00	0.50			
70	E	704297.71	732770.83	6.00	266.00	0.00	0.00	0.50			
71	E	704213.26	732847.88	6.00	119.00	0.00	0.00	0.50			
72	E	704250.15	732869.92	6.00	134.00	0.00	0.00	0.50			
73	E	704266.52	732881.84	6.00	129.00	0.00	0.00	0.50			
74	C	704249.14	732898.40	6.00	141.00	0.00	0.00	0.50			
75	E	704245.15	732924.00	6.00	325.00	0.00	0.00	0.50			
76	E	704306.81	732900.81	6.00	222.00	0.00	0.00	0.50			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
77	C	704341.36	732966.23	6.00	148.00	0.00	0.00	0.50			
78	E	704306.42	732922.04	6.00	147.00	0.00	0.00	0.50			
79	E	704083.70	733022.87	6.00	308.00	0.00	0.00	0.50			
80	E	704102.91	733036.55	6.00	308.00	0.00	0.00	0.50			
81	E	704118.13	733029.58	6.00	184.00	0.00	0.00	0.50			
82	E	704102.63	733044.56	6.00	41.00	0.00	0.00	0.50			
83	E	704089.21	733065.70	6.00	221.00	0.00	0.00	0.50			
84	E	704039.79	733073.91	6.00	79.00	0.00	0.00	0.50			
85	E	704066.36	733070.86	6.00	96.00	0.00	0.00	0.50			
86	E	704086.93	733084.97	6.00	146.00	0.00	0.00	0.50			
87	E	704375.96	732999.04	6.00	61.00	0.00	0.00	0.50			
88	D	704415.97	733041.20	6.00	44.00	0.00	0.00	0.50			
89	D	704409.67	733064.64	6.00	4.00	0.00	0.00	0.50			
90	D	704422.26	733053.33	6.00	176.00	0.00	0.00	0.50			
91	D	704407.56	733086.09	6.00	6.00	0.00	0.00	0.50			
92	D	704430.62	733077.58	6.00	184.00	0.00	0.00	0.50			
93	D	704444.32	733129.28	6.00	2.00	0.00	0.00	0.50			
94	E	704469.06	733134.27	6.00	272.00	0.00	0.00	0.50			
95	D	704413.70	733114.51	6.00	341.00	0.00	0.00	0.50			
96	D	704412.34	733133.08	6.00	17.00	0.00	0.00	0.50			
97	D	704249.26	732910.51	6.00	230.00	0.00	0.00	0.50			
98	B	704023.49	733081.64	6.00	193.00	0.00	0.00	1.20			
99	B	704026.25	733047.11	6.00	20.00	0.00	0.00	1.20			
100	B	704053.02	733040.27	6.00	83.00	0.00	0.00	1.20			
101	B	704071.76	733094.68	6.00	79.00	0.00	0.00	1.20			
102	B	704095.45	733097.13	6.00	256.00	0.00	0.00	1.20			
103	B	704105.17	733086.34	6.00	43.00	0.00	0.00	1.20			
104	B	704116.64	733075.19	6.00	189.00	0.00	0.00	1.20			
105	B	704117.83	733058.20	6.00	184.00	0.00	0.00	1.20			
106	B	704047.57	732994.76	6.00	89.00	0.00	0.00	1.20			
107	B	704088.95	732944.76	6.00	175.00	0.00	0.00	1.20			
108	B	704078.42	732875.78	6.00	266.00	0.00	0.00	1.20			
109	E	704230.74	732857.82	6.00	119.00	0.00	0.00	0.50			
110	E	704319.16	732937.73	6.00	147.00	0.00	0.00	0.50			
111	E	704332.00	732953.46	6.00	147.00	0.00	0.00	0.50			
112	C	704175.69	733023.61	6.00	5.00	0.00	0.00	0.50			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
113	C	704173.84	733043.21	6.00	5.00	0.00	0.00	0.50			
114	E	704475.48	732945.31	6.00	316.00	0.00	0.00	0.50			
115	E	704243.82	732781.26	6.00	301.00	0.00	0.00	0.50			
116	E	704268.27	732797.23	6.00	301.00	0.00	0.00	0.50			
117	E	704283.69	732807.71	6.00	301.00	0.00	0.00	0.50			
118	E	704299.06	732820.05	6.00	310.00	0.00	0.00	0.50			
119	E	704317.36	732834.81	6.00	314.00	0.00	0.00	0.50			
120	C	704324.31	732807.14	6.00	178.00	5.00	0.00	0.50			
121	C	704323.23	732780.57	6.00	178.00	0.00	0.00	0.50			
122	C	704402.82	732829.05	6.00	178.00	0.00	0.00	0.50			
123	C	704401.55	732802.06	6.00	178.00	0.00	0.00	0.50			
124	C	704400.25	732775.02	6.00	178.00	0.00	0.00	0.50			
125	E	704417.56	732801.22	6.00	178.00	0.00	0.00	0.50			
126	E	704426.64	732811.09	6.00	84.00	0.00	0.00	0.50			
127	E	704435.00	732800.36	6.00	355.00	0.00	0.00	0.50			
128	E	704425.87	732792.48	6.00	269.00	0.00	0.00	0.50			
129	E	704416.66	732832.89	6.00	88.00	0.00	0.00	0.50			
130	E	704438.28	732831.88	6.00	88.00	0.00	0.00	0.50			
131	E	704347.47	732804.82	6.00	175.00	0.00	0.00	0.50			
132	E	704353.88	732799.49	6.00	266.00	0.00	0.00	0.50			
133	E	704354.30	732809.58	6.00	88.00	0.00	0.00	0.50			
134	E	704360.43	732804.25	6.00	359.00	0.00	0.00	0.50			
135	C	704375.99	732875.66	6.00	60.00	5.00	0.00	0.50			
136	C	704378.31	732900.83	6.00	329.00	5.00	0.00	0.50			
137	C	704410.31	732902.72	6.00	60.00	0.00	0.00	0.50			
138	C	704394.78	732924.33	6.00	328.00	5.00	0.00	0.50			
139	C	704425.68	732892.08	6.00	60.00	0.00	0.00	0.50			
140	C	704407.43	732941.94	6.00	328.00	0.00	0.00	0.50			
141	C	704420.73	732960.92	6.00	325.00	5.00	0.00	0.50			
142	C	704436.45	732983.01	6.00	321.00	5.00	0.00	0.50			
143	C	704450.82	733002.95	6.00	312.00	0.00	0.00	0.50			
144	C	704473.74	733023.77	6.00	310.00	0.00	0.00	0.50			
145	C	704493.76	733038.50	6.00	295.00	0.00	0.00	0.50			
146	C	704515.56	733047.31	6.00	289.00	0.00	0.00	0.50			
147	C	704520.83	733030.35	6.00	157.00	0.00	0.00	0.50			
148	C	704365.75	732755.74	6.00	88.00	0.00	0.00	0.50			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
149	C	704397.08	732754.60	6.00	88.00	0.00	0.00	0.50			
150	C	704428.69	732753.05	6.00	88.00	0.00	0.00	0.50			
151	C	704460.44	732751.74	6.00	88.00	0.00	0.00	0.50			
152	C	704333.92	732756.99	6.00	88.00	0.00	0.00	0.50			
153	C	704305.83	732764.86	6.00	33.00	0.00	0.00	0.50			
154	D	704450.71	732772.32	6.00	356.00	0.00	0.00	0.50			
155	D	704451.57	732798.40	6.00	356.00	0.00	0.00	0.50			
156	D	704452.27	732821.33	6.00	356.00	0.00	0.00	0.50			
157	D	704466.91	732899.06	6.00	210.00	0.00	0.00	0.50			
158	D	704462.02	732873.08	6.00	183.00	0.00	0.00	0.50			
159	E	704452.02	732845.99	6.00	199.00	0.00	0.00	0.50			
160	D	704464.77	732847.57	6.00	167.00	0.00	0.00	0.50			
161	E	704333.87	732756.41	6.00	267.00	0.00	0.00	0.50			
162	E	704365.73	732755.14	6.00	267.00	0.00	0.00	0.50			
163	E	704397.05	732754.04	6.00	267.00	0.00	0.00	0.50			
164	E	704428.55	732752.39	6.00	267.00	0.00	0.00	0.50			
165	E	704460.28	732751.07	6.00	267.00	0.00	0.00	0.50			
166	E	704277.53	732758.90	6.00	267.00	0.00	0.00	0.50			
167	E	704304.61	732758.08	6.00	267.00	0.00	0.00	0.50			
168	E	704486.28	732958.68	6.00	348.00	0.00	0.00	0.50			
169	E	704486.21	732971.93	6.00	38.00	0.00	0.00	0.50			
170	E	704469.37	732989.73	6.00	39.00	0.00	0.00	0.50			
171	E	704358.22	732892.73	6.00	233.00	0.00	0.00	0.50			
172	E	704453.20	733015.68	6.00	220.00	0.00	0.00	0.50			
173	E	704285.85	732790.48	6.00	89.00	0.00	0.00	0.50			

Horizontal Illuminance (lux)

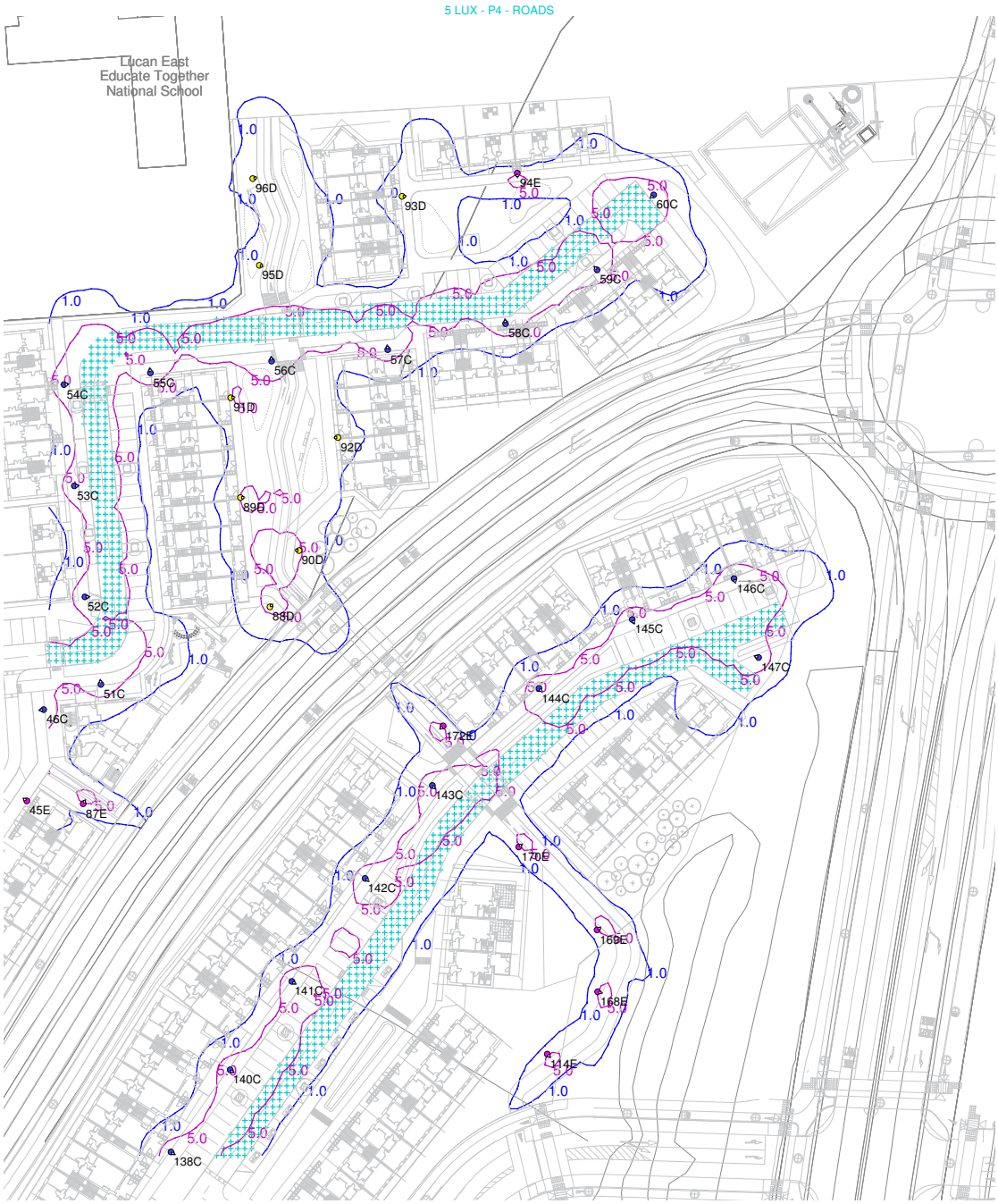
5 LUX - P4 - ROADS

Results

Eav	5.63
Emin	1.31
Emax	12.30
Emin/Emax	0.11
Emin/Eav	0.23

Horizontal Illuminance (lux)

5 LUX - P4 - ROADS



Results

Eav	5.50
Emin	1.14
Emax	11.01
Emin/Emax	0.10
Emin/Eav	0.21

9196963704

Horizontal Illuminance (lux)

3 LUX - P5 - FOOTPATHS

Results

Eav	4.01
Emin	1.12
Emax	10.88
Emin/Emax	0.10
Emin/Eav	0.28

Horizontal Illuminance (lux)

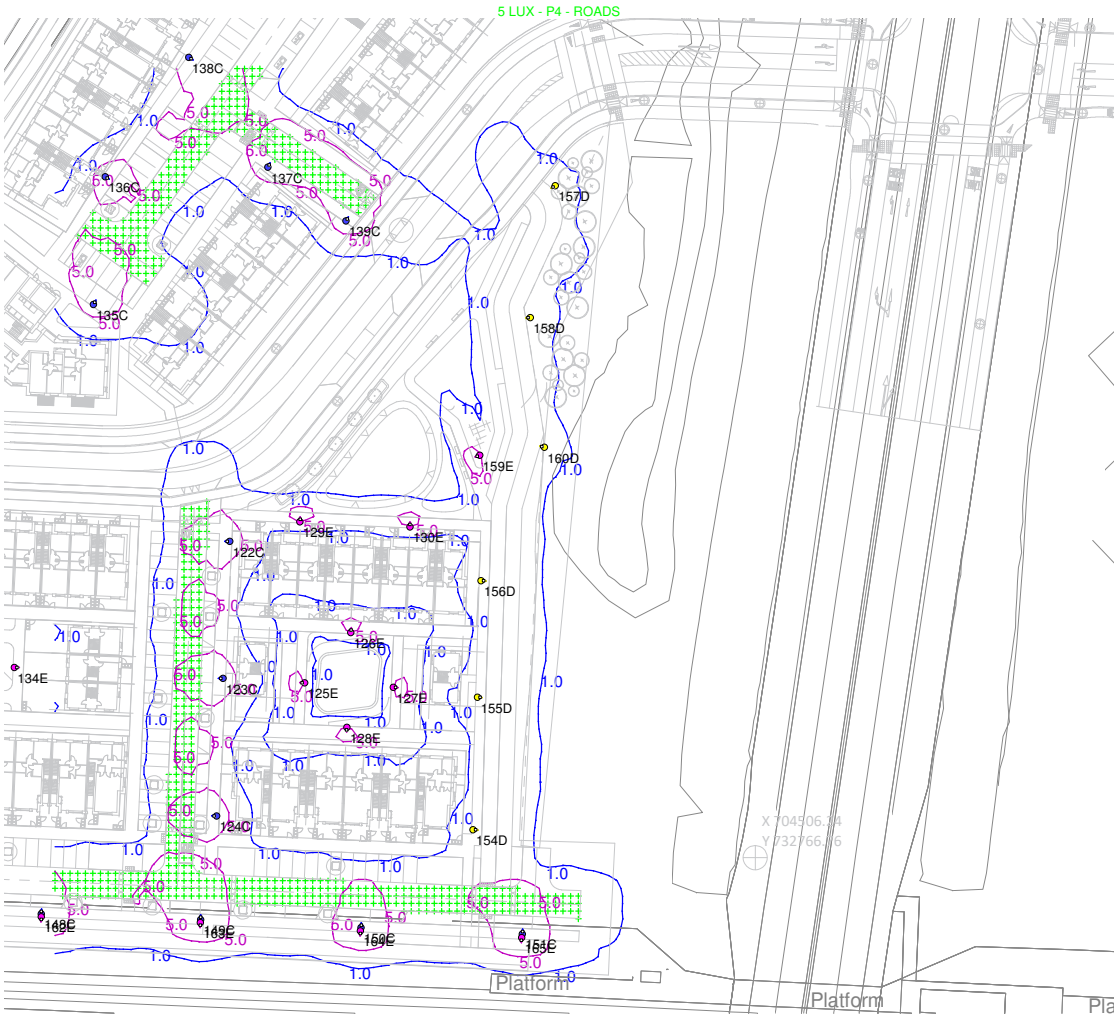
3 LUX - P5 - FOOTPATHS

Results

Eav	3.05
Emin	0.65
Emax	9.17
Emin/Emax	0.07
Emin/Eav	0.21

Horizontal Illuminance (lux)

5 LUX - P4 - ROADS



Results

Eav	5.12
Emin	1.66
Emax	10.79
Emin/Emax	0.15
Emin/Eav	0.32

Horizontal Illuminance (lux)

3 LUX - P5 - FOOTPATHS

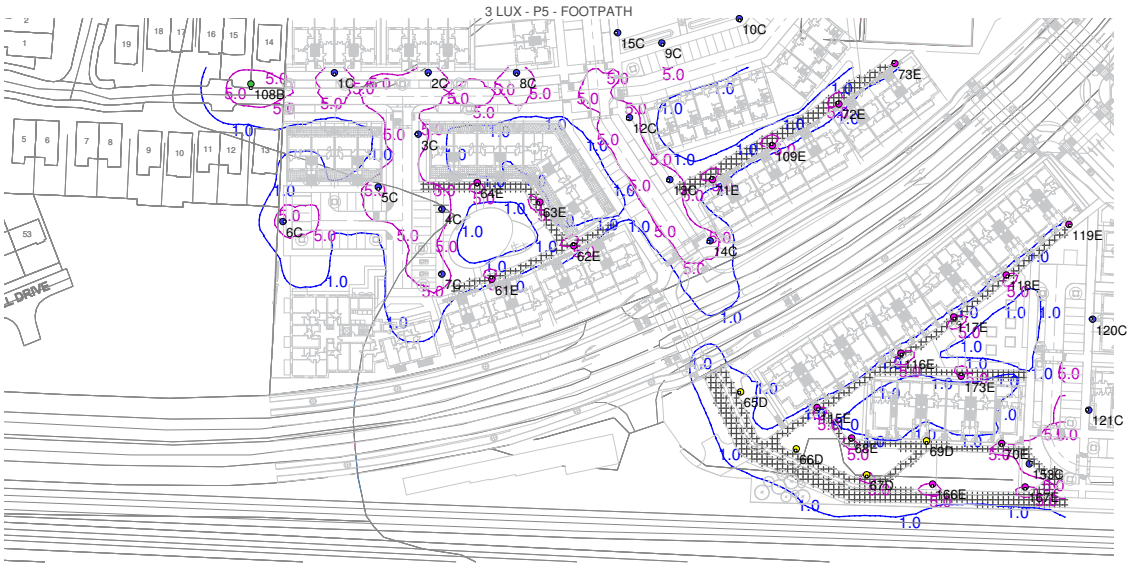
Results

Eav	3.80
Emin	0.80
Emax	11.77
Emin/Emax	0.07
Emin/Eav	0.21

9196963704

Horizontal Illuminance (lux)

3 LUX - P5 - FOOTPATH



Results

Eav	3.29
Emin	0.80
Emax	11.37
Emin/Emax	0.07
Emin/Eav	0.24

DATE: 2 April 2025 **DESIGNER:** **Jacek Maslowski**

PROJECT No: OP246132LD2113PROJECT NAME: Housing Development, Kishoge, Lucan, Co Dublin

Schréder
Experts in lightability™

Horizontal Illuminance (lux)

5 LUX - P4 - ROADS

9196963704

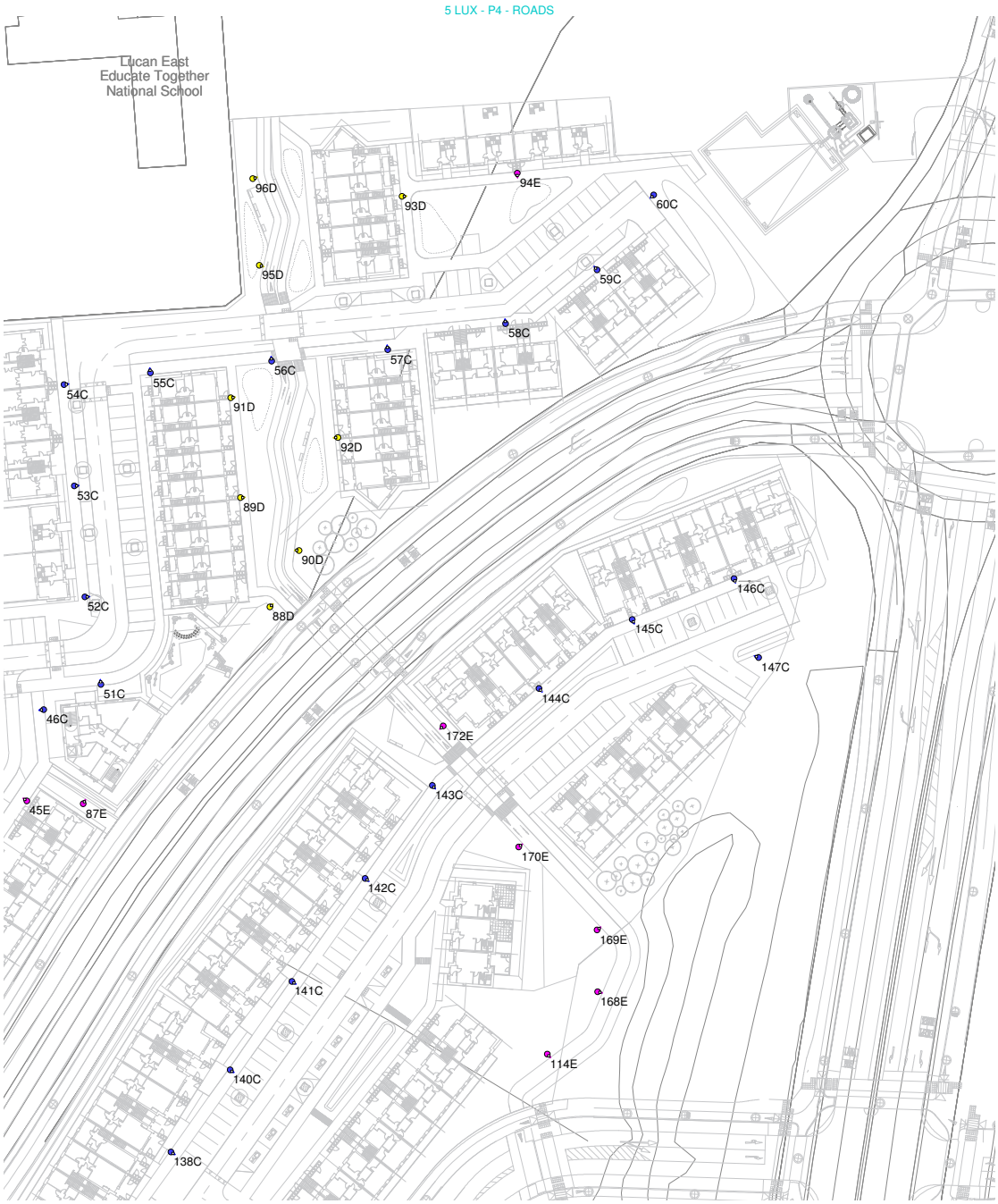
DATE: 2 April 2025 DESIGNER: Jacek Maslowski

PROJECT No: OP246132LD2113PROJECT NAME: Housing Development, Kishoge, Lucan, Co Dublin

Schréder
Experts in lightability™

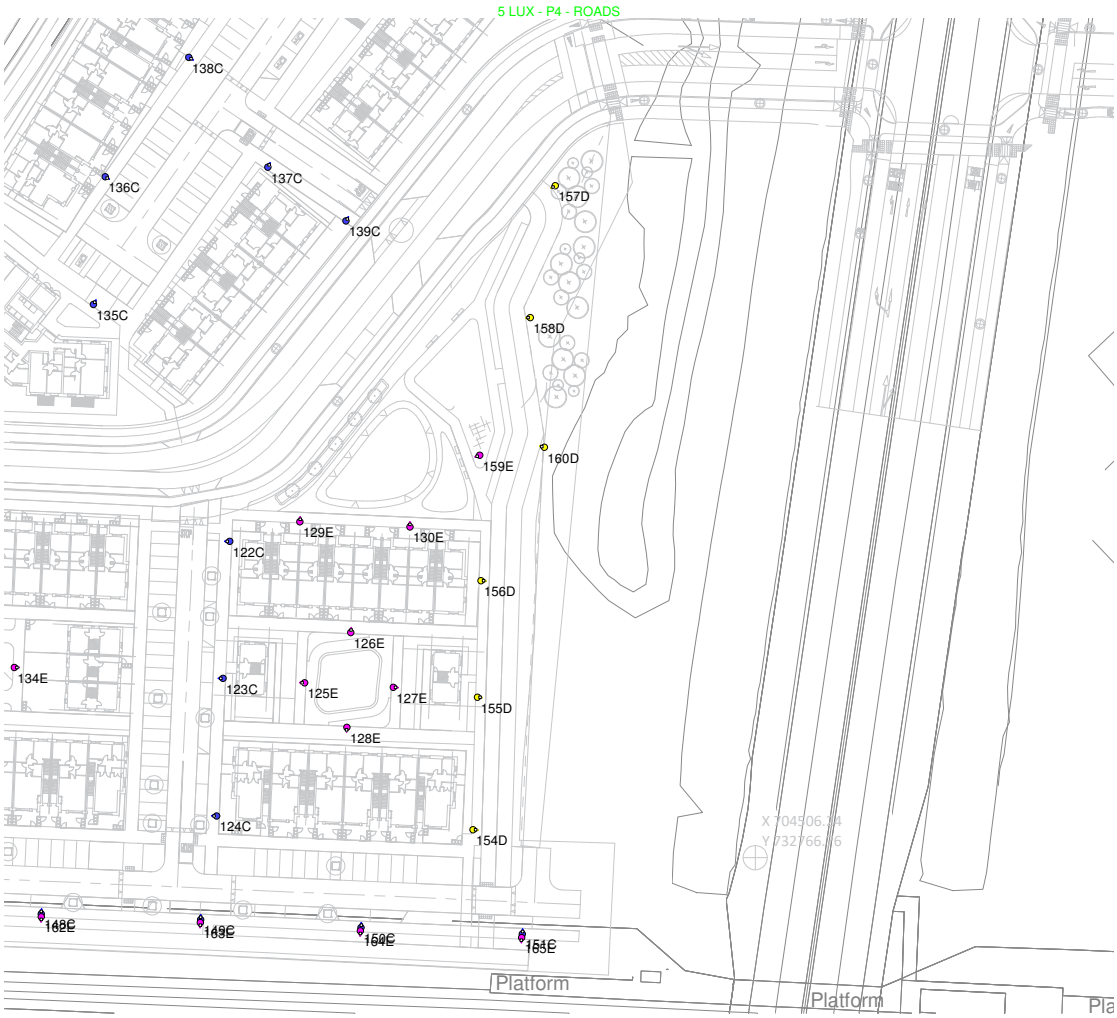
Horizontal Illuminance (lux)

5 LUX - P4 - ROADS



Horizontal Illuminance (lux)

5 LUX - P4 - ROADS



5.0 PUBLIC LIGHTING ELECTRICAL SITE LAYOUT DRAWING

TYPICAL LIGHTING COLUMN INSTALLATION DETAIL

COLUMN MOUNTING HEIGHT	8m	6m
COLUMN ROOT DEPTH	1.5m	1.0m
CABLE ENTRY DEPTH	0.3m	0.3m
ROOTING CONCRETE DEPTH		
COLUMN DOOR HEIGHT	1.5m	1.5m
COLUMN SLEEVE SIZE(mm) INTERNAL	400	400
EXCAVATION (WIDTH x LENGTH mm)	600	600

TYPICAL ARRANGEMENT FOR LOCAL DUCTING

NOTES

1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.
3. FINAL LOCATION OF MICI-PILLARS & DUCTS TO BE AGREED WITH COUNCIL & ESB SUPERVISOR PRIOR TO INSTALLATION.
4. PROVIDE FOR CONTINUOUS 10mm PP DRAW ROPE SECURED AT BOTH ENDS IN THE DUCT.
5. PROVIDE A COMPLETION CERTIFICATE FOR THE PUBLIC LIGHTING SYSTEM.
6. PROVIDE 2m SEPARATION BETWEEN ESB MINI-PILLAR & PL MICI-PILLAR or PL COLUMN, etc.
7. ALL LIGHTING COLUMNS TO BE POSITIONED AT REAR OF FOOTPATH OR SET BACK 800mm CLEAR OF ROAD EDGE KERB.
8. PUBLIC LIGHTING INSTALLATION TO BE DESIGNED AND INSTALLED IN ACCORDANCE WITH SOUTH DUBLIN COUNTY COUNCIL'S PUBLIC LIGHTING TECHNICAL SPECIFICATION & REQUIREMENTS DOCUMENT.
9. THE AREA SURROUNDING THE DEVELOPMENT ACTS AS AN IMPORTANT CORRIDOR FOR BATS & OTHER PROTECTED FAUNA. IT IS IMPORTANT THAT THIS AREA, AND THE ADJOINING UNDEVELOPED LANDS, ARE LEFT UNLIT TO ENSURE THAT WILDLIFE CAN CONTINUE TO FORAGE AND MOVE THROUGH THIS AREA AND ARE NOT DISTURBED BY ARTIFICIAL LIGHT.
10. IN ORDER TO BENEFIT BATS, AS WELL AS OTHER FAUNA ACTIVE/RESTING AT NIGHT, THE DESIGN OF THE PUBLIC LIGHTING SCHEME HAS BEEN CARRIED-OUT TO MINIMISE LIGHT SPILLAGE AND NUISANCE/GLARE BY USING SHIELDED, DOWNWARD DIRECTED LIGHTING, USING NARROW SPECTRUM LIGHTING TYPES WITH NO UV & LUMINAIRE ACCESSORIES AND PROVIDING THE FACILITY FOR SWITCHING OFF ALL NON-ESSENTIAL LIGHTING DURING THE HOURS OF DARKNESS. IN ADDITION TO THE ABOVE, WE HAVE ADJUSTED THE SP RATIO FROM 1.5 TO 1.3, CHANGED THE COLOUR TEMPERATURE FROM 4000K TO 3000K, COLUMNS HAVE BEEN MOVED AWAY FROM AREAS WHERE BATS ARE LIKELY TO BE ACTIVE AND LANTERNS HAVE BEEN FITTED WITH BACK SHIELDS.

PUBLIC LIGHTING LEGEND

▬ ▬ ▬	107mm HDPE RED DUCTING TO IS135 CLASS B STANDARD PUBLIC LIGHTING DUCT WITH WARNING TAPE OVER (600mm MIN COVER & 750mm COVER IN ROAD CROSSING).
▬ ▬ ▬	50mm DIAMETER FLEXIBLE DUCT OR HYDRODARE FROM PUBLIC LIGHTING COLUMN TO 107mm HDPE RED DUCTING WITHIN 1 METRE OF PL FITTING
LP	EXTERNAL LIGHTING/TRAFFIC LIGHT MIDIPILLAR
AC ◩	775x625mm INSPECTION CHAMBER. 'ej' MANUFACTURED FJ60/45 TO EN124
C	URBIS SCHREDER AXIA 3.1 5267 INTEGRATED LENSES 16 OSLON SQUARE GIANT @370mA 19W 614432 WW 730 230V 1x01-11-802 - DRIVER MF 0.81. CONTRACTOR TO PROVIDE FOR 6m HIGH FIXED COLUMN & BASE LOCATED AT REAR OF FOOTPATH.
D	URBIS SCHREDER AXIA 3.1 5267 INTEGRATED LENSES 8 OSLON SQUARE GIANT @350mA 9W 614432 WW 730 230V 1x01-11-802 - DRIVER MF 0.81. CONTRACTOR TO PROVIDE FOR 6m HIGH FIXED COLUMN & BASE LOCATED AT REAR OF FOOTPATH.
E	URBIS SCHREDER AXIA 3.1 5296 INTEGRATED LENSES 8 OSLON SQUARE GIANT @170mA 5W 436952 WW 730 230V 1x01-11-802 - DRIVER MF 0.81. CONTRACTOR TO PROVIDE FOR 6m HIGH FIXED COLUMN & BASE LOCATED AT REAR OF FOOTPATH.
*/H	"H" DENOTES CONTRACTOR TO PROVIDE FOR 6m HIGH HINGED COLUMN & BASE INSTEAD OF FIXED COLUMN.
B	TYPE B LANTERNS DENOTE EXISTING LANTERN INSTALLED AS PART OF NEIGHBOURING DEVELOPMENT. FOR THE SAKE OF THIS PUBLIC LIGHTING CALCULATION, A QB5B1035.4 LAMP 35W SOX LUMINAIRE HAS BEEN USED.

5 LUX - P4 - ROADS
Results - Horizontal Illuminance (lux)
Eav= 5.63
Emin= 1.31
Emax= 12.30
Emin/Emax= 0.11
Emin/Eav= 0.23
Emax/Eav= 2.18

5 LUX - P4 - ROADS
Results - Horizontal Illuminance (lux)
Eav= 5.50
Emin= 1.14
Emax= 11.01
Emin/Emax= 0.10
Emin/Eav= 0.21
Emax/Eav= 2.00

3 LUX - P5 - FOOTPATHS
Results - Horizontal Illuminance (lux)
Eav= 4.01
Emin= 1.12
Emax= 10.88
Emin/Emax= 0.10
Emin/Eav= 0.28
Emax/Eav= 2.71

3 LUX - P5 - FOOTPATHS
Results - Horizontal Illuminance (lux)
Eav= 3.05
Emin= 0.65
Emax= 9.17
Emin/Emax= 0.07
Emin/Eav= 0.21
Emax/Eav= 3.01

5 LUX - P4 - ROADS
Results - Horizontal Illuminance (lux)
Eav= 5.12
Emin= 1.66
Emax= 10.79
Emin/Emax= 0.15
Emin/Eav= 0.32
Emax/Eav= 2.11

3 LUX - P5 - FOOTPATHS
Results - Horizontal Illuminance (lux)
Eav= 3.80
Emin= 0.80
Emax= 11.77
Emin/Emax= 0.07
Emin/Eav= 0.21
Emax/Eav= 3.10

ISSUE	DESCRIPTION	DRN	ORIG	APP	DATE
PL1	ISSUED FOR PLANNING	KP	KP	DC	08/05/2025
F	ISSUED FOR DESIGN DEVELOPMENT	KP	KP	DC	21/03/2025
E	ISSUED FOR DESIGN DEVELOPMENT	KP	KP	DC	24/02/2025
D	ISSUED FOR DESIGN DEVELOPMENT	KP	KP	DC	05/12/2024
C	ISSUED FOR DESIGN DEVELOPMENT	KP	KP	DC	30/04/2024
B	DESIGN ISSUE	KP	KP	DC	26/02/2024

CLIENT SOUTH DUBLIN COUNTY COUNCIL

M AND E
CONSULTING ENGINEERS
Unit 4 Oak Close
Western Business Park
Dublin 12. D12 R8C6
T: (01) 4508485
W: www.mande.ie
E: info@mande.ie

PROJECT
KISHOGE PART 10 APPLICATION
SITE 3, CLONBURRIS, Co. DUBLIN

TITLE
SITE 3 PLAN
PUBLIC LIGHTING LAYOUT

PROJECT No. 20026
DATE: JANUARY 2024
A1
SCALE 1:800
DRG No. KSG3-MAE-00-XX-DR-E-6000

6.0 MATERIAL AND LUMINAIRE DATA SHEETS

Schréder
Experts in lightability™

ROAD

AXIA 3

PRO FLEX™

Engineered for performance, designed for the customer experience

With customer feedback playing a critical part in our innovative design process, we developed AXIA 3. More than a luminaire, it is a platform delivering sustainability, cost-effectiveness and customer experience all while supporting smart city frameworks. Based on experience from the hundreds of thousands AXIA luminaires installed worldwide, this third generation luminaire pushes the boundaries with photometric innovation, ease and speed of installation and FutureProof connectivity.

Available in three sizes, AXIA 3 enables towns and cities to maximise efficiency when lighting numerous environments, from bike paths, squares and car parks to residential streets, carriageways, urban roads and large boulevards. This lightweight and compact luminaire combines quality of light with a minimal carbon footprint. It excels in easy installation and carefree maintenance, reducing operating costs.

IP 66 | IK 10

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

Concept

AXIA 3 is a robust yet compact luminaire, designed with a focus on miniaturisation and superior efficiency. Composed of high-pressure die-cast aluminium, as well as composite materials, AXIA 3 is available in three sizes. Thanks to its reduced weight, this road luminaire is easy to handle during installation. The AXIA 3.1, which can be fitted with up to 16 LEDs, is perfectly suited to low-height applications, whereas AXIA 3.2 and 3.3, with up to 32 or 64 LEDs, are ideal for lighting urban and large roads, carriageways and avenues. The AXIA 3 range is equipped with ProFlex™ photometric engines, providing the highest efficiency thanks to their ability to maximise the lumen output and to provide very extensive light distributions.

AXIA 3 comes pre-cabled, hence there is no need to open the luminaire. The complete range is available with an integrated universal fixation part adapted for post-top and side-entry mounting on various spigots (Ø32mm with adapter, Ø42-48mm, Ø60mm and Ø76mm). The inclination angle can be adjusted on-site for both post-top (-5°/+15°) and side-entry (-10°/+10°) configurations to optimise lighting, reduce power consumption and control light pollution.

This highly efficient, cost-effective and connected-ready luminaire, offers towns and cities the ideal solution to improve lighting levels, increase safety, generate energy savings and reduce their ecological footprint. AXIA 3 is the ideal tool to provide another 25 years of efficiency, sustainability and safety.

The ProFlex™ photometric engine provides the highest efficiency.

The AXIA 3 range has a universal fixation part for spigots ranging from Ø32 to Ø76mm.

TYPES OF APPLICATION

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

KEY ADVANTAGES

- Maximised savings in energy and maintenance costs
- ProFlex™ photometric engines offering high efficiency lighting, comfort and safety
- 3 sizes to provide the most accurate solutions for numerous road and urban applications
- Easy installation: pre-cabled and equipped with universal fixation part adapted for side-entry and post-top mounting
- Adjustable inclination for optimised photometry and uniformity
- Connected-ready

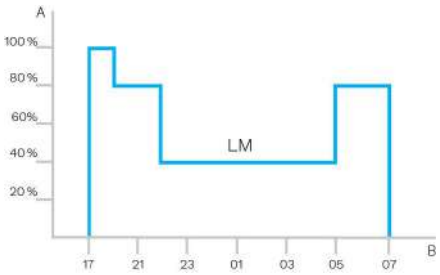
The inclination is adjustable on-site for optimised photometry and further energy savings.

AXIA 3 is connected-ready and can operate with various sensors and control systems.

Custom dimming profile

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

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



A. Dimming level | B. Time

Daylight sensor / photocell

Photocell or daylight sensors switch the luminaire on as soon natural light falls to a certain level. It can be programmed to switch on during a storm, on a cloudy day (in critical areas) or only at nightfall so as to provide safety and comfort in public spaces.

PIR sensor: motion detection

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

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

GENERAL INFORMATION

Recommended installation height	4m to 12m | 13' to 39'
Driver included	Yes
CE mark	Yes
ENEC certified	Yes
ENEC+ certified	Yes
ROHS compliant	Yes
Dark Sky friendly lighting (IDA certification)	Yes
Zhaga-D4i certified	Yes
Testing standard	LM 79-08 (all measurements in ISO17025 accredited laboratory)

HOUSING AND FINISH

Housing	Aluminium Composite materials
Optic	Polycarbonate
Protector	Polycarbonate (with integrated lenses)
Housing finish	Polyester powder coating
Standard colour(s)	RAL 7040 window grey RAL 9005 Jet black
Tightness level	IP 66
Impact resistance	IK 10
Vibration test	Compliant with modified IEC 68-2-6 (0.5G)

OPERATING CONDITIONS

Operating temperature range (Ta)	-30°C up to +45°C / -22°F up to 113°F

· 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	Bi-power, Custom dimming profile, Photocell, Remote management
Socket	Zhaga (optional) NEMA 3-pin (optional) NEMA 6-pin (optional) NEMA 7-pin (optional)
Associated control system(s)	Schréder EXEDRA
Sensor	PIR (optional)

OPTICAL INFORMATION

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

· Meets IDA Dark Sky requirements when fitted with LEDs of 3000K or less.

· ULOR may be different according to the configuration. Please consult us.

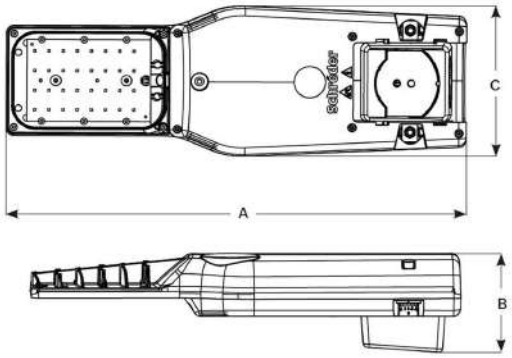
· ULR may be different according to the configuration. Please consult us.

LIFETIME OF THE LEDS @ TQ 25°C

All configurations	100,000h - L90

DIMENSIONS AND MOUNTING

AxBxC (mm | inch)	AXIA 3.1 : 513x130x191 | 20.2x5.1x7.5 AXIA 3.2 : 585x130x191 | 23.0x5.1x7.5 AXIA 3.3 : 550x130x277 | 21.7x5.1x10.9
Weight (kg | lbs)	AXIA 3.1 : 3.6 | 7.9 AXIA 3.2 : 4.8 | 10.6 AXIA 3.3 : 6.0 | 13.2
Aerodynamic resistance (CxS)	AXIA 3.1 : 0.03 AXIA 3.2 : 0.03 AXIA 3.3 : 0.04
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



AXIA 3.1

Photometry

PRO FLEX™

	Luminaire output flux (lm)						Power consumption (W)		Luminaire efficacy (lm/W)
	Warm White 727		Warm White 730		Neutral White 740				
Number of LEDs	Min	Max	Min	Max	Min	Max	Min	Max	Up to
8	600	2500	700	2600	800	3000	8	23	147
16	900	5100	900	5400	1100	6100	11	44	153

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

AXIA 3.2

Photometry

PRO FLEX™

	Luminaire output flux (lm)						Power consumption (W)		Luminaire efficacy (lm/W)
	Warm White 727		Warm White 730		Neutral White 740				
Number of LEDs	Min	Max	Min	Max	Min	Max	Min	Max	Up to
24	2000	8400	2100	8800	2400	9900	15	76	165
32	2700	9500	2800	9900	3200	11300	20	78	170

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

AXIA 3.3

Photometry

PRO FLEX™

	Luminaire output flux (lm)						Power consumption (W)		Luminaire efficacy (lm/W)
	Warm White 727		Warm White 730		Neutral White 740				
Number of LEDs	Min	Max	Min	Max	Min	Max	Min	Max	Up to
48	4000	14800	4200	15600	4800	17700	29	129	175
64	5300	19800	5600	20800	6400	23600	38	170	177

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

18/10/2022

Lumen maintenance report

LED information

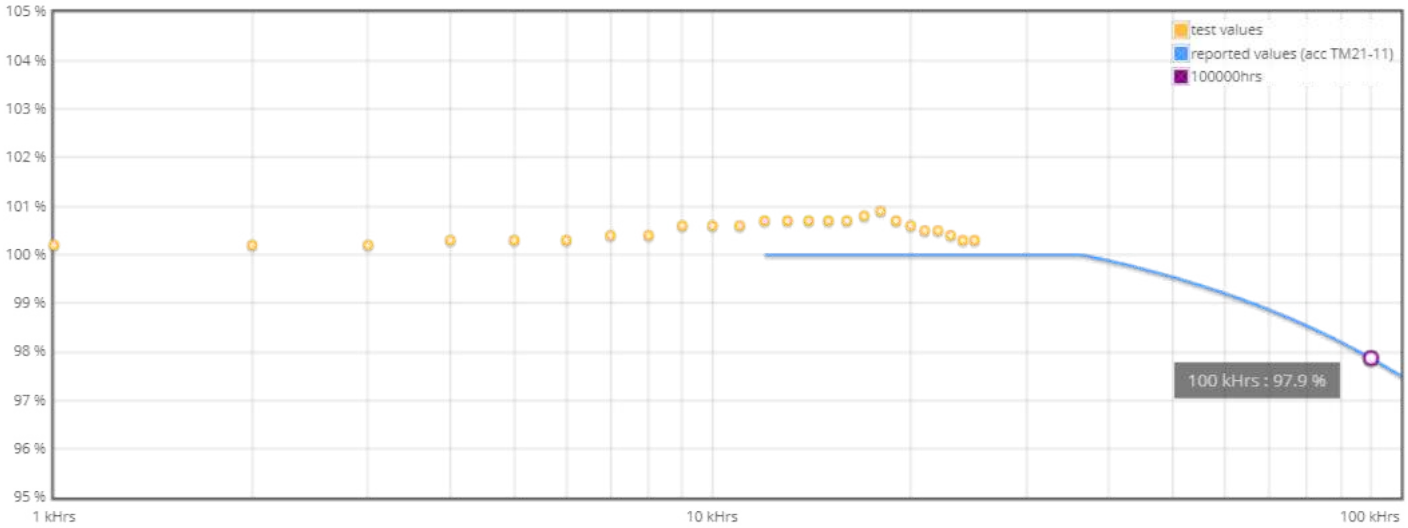
LED type	OSLON SQUARE GIANT
LED current	700 mA
Ts	85°C
Description	190145W10 5/05/2021 25kHrs

Projection data

Test duration	25000 hrs	**α**	3.388E-007
Time used for projection	12000 to 25000hrs	**β**	1.012

L (%)	Time (kHrs)
97.9	100

Projection graphic



LxB50 results according to LM-80 and TM21-11 procedures and norms.

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

Schréder
Experts in lightability™

Schréder Standard Product Warranty

1. GENERAL TERMS

A. Scope

The warranty set forth below ("Schréder Standard Product Warranty") in Sections 1-2 is provided by Schréder with respect to:

- SCHREDER® branded LED luminaires (hereinafter referred to as "LED Luminaires"), including the SCHREDER® branded LED luminaire named "SHUFFLE" (hereinafter referred to as "Shuffle");
- SCHREDER® branded retrofit kits (hereinafter referred to as "Retrofit Kits"), and
- SCHREDER® branded Poles & Brackets (hereinafter referred to as "Poles & Brackets");

sold by Schréder worldwide (hereinafter collectively referred to as "Products") to its direct customers (hereinafter referred to as: "Customers").

Warranties with respect to the OWLET® branded tele management hardware devices (the "Owlet Products") are governed by a separate document named 'Warranty – OWLET'.

Warranties with respect to the non-Schréder® and non-Owlet® branded products, materials or components (the "Beyond Lighting Products") that are integrated in Schréder® or Owlet® branded Products, including Shuffle, are governed by Section 3 named "Warranty – BEYOND LIGHTING".

With respect to non-Schréder® and non-Owlet® branded products, materials or components that are not produced nor manufactured by Schréder and are not Beyond Lighting Products ("Third Party Products"), in no event Schréder's liability towards customer shall exceed the warranties or indemnities that the manufacturer of these products or the third-party vendor/service provider shall have provided (see a non-exhaustive list of Third Party Products warranties on Schréder website). In this respect, it is Customer's obligation to request copies of any applicable manufacturer warranties and Customer shall be deemed to have accepted such warranties upon acceptance of the products and/or services.

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

B. Warranty Coverage

Schréder warrants that each Product will be free from defects in materials and workmanship subject to all conditions and limitations contained in this warranty. Unless otherwise agreed in writing, the warranty shall be granted for a period of five (5) years (hereinafter referred to as: "Warranty Period"), from the date of delivery.

For Poles and Brackets, the Warranty Coverage shall concern the mechanical aspects of the Product only. Aesthetic aspects of Poles and Brackets (eg. painting) are not covered by this Warranty and must be agreed upon per separate agreement with Schréder.

Schréder also warrants the luminous performances of its LED Luminaires 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 flux[1] mentioned in the datasheet or Schréder application study with a supply at nominal current, provided that the average ambient temperature[2] does not exceed the rated Tq performance temperature and taking into account a tolerance of 5% on the drivers' nominal current.

For the Retrofit Kits, the Warranty Coverage shall concern the Retrofit Kit itself as a product and not the fully retrofitted Schréder or non-Schréder luminaire.

This warranty is granted for all Products when used in accordance with their technical specifications and with Schréder's General Handling Instructions.

Official photometrical measurements of LED Luminaires can only be carried out by Schréder or by a mutually agreed accredited laboratory with a protocol defined by Schréder.

In case of defective Products determined as such by Schréder and determined by Schréder to be covered by this warranty, Schréder shall at its sole discretion repair or replace such Products. If a Product has been discontinued or is not available for any other reason, Schréder may propose an alternative product.

2. LIMITATIONS AND CONDITIONS

This warranty is strictly limited to the Products delivered by Schréder. All costs related to 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 Schréder 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

[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 temperature (the night-time temperature for LED Luminaires placed in an indoor environment). The probability ratio B10 indicates that minimum 90 % of the luminaires in a given installation will meet the specified lumen maintenance level.

[2] For LED luminaires placed in an outdoor environment, only the average night-time ambient temperature is to be considered.

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 best practices, with Schréder's specifications, guidelines and instructions[3], and, where applicable, with IEC standards or other regional or national standards;
- The Customer has only used the Product for a purpose that was intended by Schréder; With regards to LED Luminaires more particularly, the Customer must switch on/off the LED Luminaires every day, in accordance with the Schréder General Handling Instructions in appendix.
- The Product has consistently been wired, installed and operated within the electrical values, operating range and environmental conditions in compliance with Schréder specifications, application guidelines, (where applicable) 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 Ta = 45°C (integrity, safety temperature) or the maximum value specifically rated by Schréder;
- Neither the Customer nor anyone other than Schréder has repaired, replaced, adjusted or altered any Product and/or any part thereof, without Schréder'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 Schréder's prior and written authorization*;
- The Product has not been improperly manipulated and/or put into contact with chemical products.

* If Schréder gives its prior authorization in writing to open a sealed part of the Shuffle in order notably to integrate a Customer or third-party material/component, Schréder's instructions and installation sheets shall be strictly complied with. This warranty shall however not apply to the integrated material/component, nor to any damage or failure caused by the integrated material/component or by the integration operations, such as faulty wiring, defect in sealing, electric failure etc. To the extent the Shuffle is impacted by a material/component integrated by or on behalf of Customer, Schréder shall not be responsible for any legal obligation (i) related to any material/component integrated by or on behalf of Customer into the Shuffle (ii) nor related to the complete product resulting from the integration of the integrated material/component(s) within the Shuffle.

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 Schréder 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;
- 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.

3. WARRANTY - BEYOND LIGHTING

The warranty set forth in this chapter is provided to Customers with respect to Beyond Lighting Products that are integrated in Schréder® or Owlet® branded products ("Schréder Lighting & Control Products").

Beyond Lighting Products originate from one or more predefined preferred suppliers that are selected by Schréder as listed in the Appendix which is regularly updated ("Beyond Lighting Suppliers").

This specific warranty as provided by the corresponding Beyond Lighting Supplier applies to the Beyond Lighting Products.

The terms and conditions of a Beyond Lighting Warranty may differ from the Schréder Standard Product Warranty, in particular as regards its duration and coverage. The application of certain Beyond Lighting Warranties may be subject to the accomplishment of a registration formality for which the Customer is entirely responsible.

At the discretion of Beyond Lighting Suppliers and without prior notice, Beyond Lighting Warranties may change from time to time. Any such change shall be effective for all orders placed with Schréder on or after the effective date of such change.

In case of defective Products whereby the (alleged) defect is related to a Beyond Lighting Product, the following applies:

1) In the event the Customer purchases Beyond Lighting Products from Schréder, Schréder shall call upon the Beyond Lighting Warranty with the Beyond Lighting Supplier;
2) In the event the Customer directly purchases Beyond Lighting Products or parts of products from any supplier (Beyond Lighting Supplier or other) that are integrated in the Schréder Lighting & Control Products, the Customer shall handle the warranty claim related to the (alleged) defect without any intervention of Schréder, which shall not be responsible therefore.

The Customer must immediately notify Schréder of a possible claim regarding a Beyond Lighting Product in accordance with the

[3] See notably Schréder's General Handling Instructions.

procedure set forth in Section 4.

4. WARRANTY CLAIMS

The Customer must immediately notify Schréder 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 Schréder if Schréder has issued an RMA (Return Material Authorization) for that Product.

Schréder 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 Schréder 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 Schréder.

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

If after issuance of an RMA, Schréder determines that the Customer has no warranty protection for the Product(s) shipped under the RMA, Schréder 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.

5. NO IMPLIED OR OTHER WARRANTIES

The warranties explicitly granted herein are the only warranties given by Schréder in connection with the Products or parts of Products or with Beyond Lighting 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 Schréder for all claims made under Schréder Standard Product Warranty with respect to a Product item – or under the Beyond Lighting Warranty – 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 extension, price reduction 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 Schréder.

The terms and conditions set forth herein may vary from time to time.

In the event of a conflict between this Section and another Section of this document or the text of another Schréder Warranty, the present Section shall prevail.

Appendix: Beyond Lighting (BYL) Suppliers and Beyond Lighting (BYL) Products
Terms and Conditions of Sale | Schréder Corporate (schreder.com)
Schréder General Handling Instructions
Third Party Products