Countess Road, Killarney

Proposed Residential Development

EXTERNAL (PUBLIC) LIGHTING REPORT

Countess Road,
Dromhale (townlands),
Killarney,
Co. Kerry

Client
Dipharma Unlimited Company

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C	Concept
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1 Introduction

1.1 Report purpose

This report gives information on the external (public) lighting installation in connection with the new prosed project covering the site main entrance, estate roads, public parking spaces and foot & cycle path.

1.2 Instruction

DKPartnership (DKP) have been commissioned by Dipharma Unlimited Company to carry out the analysis and report for the proposed development at Countess Road, Dromhale (townlands), Killarney, Co. Kerry.

1.3 Development detail

Dipharma Unlimited Company intend to apply for a 10-Year Planning Permission for a Large-Scale Residential Development (LRD) at Countess Road, Dromhale (townland), Killarney, Co. Kerry. The development will consist of: The construction of a residential development of 259 no. residential units with ancillary single storey creche, landscaping and all associated site development works.

The proposed development includes the demolition of 2 no. existing two-storey semi-detached dwelling houses and an existing ruinous structure on the site and construction of 103 no. two storey houses (3-bed units), comprising of 27 no. terraced units, 62 no. end of terrace units, and 14 no. side entry units, 82 no. courtyard apartment units over 2 no. storeys (42 no. 1-bed units, 40 no. 2-bed units), and 74 no. apartment units (34 no. 1-bed units, 40 no. 2-bed units) in 2 no. part 3 storey and part 4 storey blocks.
Vehicular access to the proposed development will be via one entrance from Countess Road (L3904) to the north, with the entrance design including improvement works on the public road inclusive of a raised crossing point. The design includes pedestrian/cycle infrastructure to/from Countess Road and internally within the development site and to adjoining areas.

Ancillary site works include car parking, provision of bicycle parking and bin storage facilities serving the proposed apartment/courtyard apartment buildings and creche, 2 no. ESB substations, landscaping, water services and drainage infrastructure (including foul and storm network upgrades in Countess Grove), and all associated site development works. The proposed development also provides for the demolition of existing site boundary walls along Countess Road. A Natura Impact Statement (NIS) has been prepared and will be submitted to the Planning Authority with the application.

1.4 Policy and building regulation requirements

The project is subject to the following statutory and policy illumination target requirements:
a) 1 EN13201 European Standard for Road lighting
b) Cork County Council Public Lighting Manual and Product Specification 2023,

2 Executive summary

2.1 Analysis conducted

This report analyses the illumination calculation results of the proposed lighting design in respect of new project the site main entrance, internal circulation roads, public parking spaces, cycle & footpath.

2.2 EN132201 External lighting calculation design targets

The table below details the main targets to be achieved for the different lighting classes. The P class is generally for pedestrian traffic and cyclists for use on footways and cycleways, and drivers of motorised vehicles at low speed on residential roads, shoulder or parking lanes, and other road areas lying separately or along a carriageway of a traffic route or a residential road, etc.. The C lighting class is applied for use in conflict areas on traffic routes where the traffic composition is mainly motorised. Conflict areas occur wherever vehicle streams intersect each other or run into areas frequented by pedestrians, cyclists, or other road users. Areas showing a change in road geometry, such as a reduced number of lanes or a reduced lane or carriageway width, are also regarded as conflict areas. The M standard is mainly for motorways.

The table below indicates the P4 and C4 class minimum EN13201 illumination targets.

Illumination class	E avg lx	E min lx	Uniformity		Illumination class	E avg lx	E min lx	Luminance cd/m2	Uniformity
P1	15.0	3.0	0.2		M1/C1	30.0	12.0	2.0	0.4
P2	10.0	2.0	0.2		M2/C2	20.0	8.00	1.5	0.4
P3	7.50	1.5	0.2		M3/C3	15.0	6.00	1.0	0.4
P4	5.00	1.0	0.2		M4/C4	10.0	4.00	0.75	0.4
					M5/C5	7.50	1.50	0.50	0.3

Copy of Table 4.2 EN132201 lighting class P, C and M standards.

2.3 Design considerations

The external lighting design has been executed using the European design standard EN 1332201 category P3 for the development estate roads adjoining footpath and public parking spaces and the category C3 was applied for the site main entrance junction with Countess Road. Further design consideration was given to the light fitting colour temperature using 2700K in line with the bat mitigation recommendations of the National parks and Wildlife Service which is deemed to have less impact on fauna and in particular bats (see section 3.4) and by minimising the light spill into identified zones where bats may be active to ca 1.0lx or less.

2.4 Calculation data results

From the appendix representing the illumination calculations and the 1:500 DKP and Lighting Reality overall site public lighting drawings we note that the estate circulation roads and public parking area's average and minimum illuminance achieved is in excess of the P3 average and minimum illuminance standard of 7.5Lx and 1.5lx respectively and that the site's main access point junction average and minimum illuminance achieved is in excess of the C3 average and minimum illuminance standard of 15.0Lx and 6.0lx respectively. The foot path and cycle path are in excess of the minimum P4 standards. Uniformity for the P3, P4 and C3 classes are also in compliance.

Element	Standard	E avg lx	E min lx	Uniformity	Compliance
Estate roads & public parking – Grid 1	P3	8.44 (>=7.50)	1.71 (>=1.50)	0.20 (>=0.20)	√
Estate roads & public parking – Grid 2	P3	8.82 (>=7.50)	1.76 (>=1.50)	0.20 (>=0.20)	√
Junction with Countess Road – Grid 3	C3	20.39 (>=15.00)	11.33 (>=6.00)	0.56 (>=0.40)	√
Foot & cycle path	P4	5.69 (>=5.00)	1.23 (>=1.00)	0.24 (>=0.20)	√

Copy of Table 5.1 Achieved illumination levels.

The illuminance data was calculated using the following fittings/poles.

Fitting	Make	Model	Lamp / Colour	Load (W)	Flux (klm)	Pole
Luminaire C	Cree	TRSA-02-K10-8L-278_36W	403-QL22-S06	36	4.41	6
Luminaire D	Cree	TRLA-02-07519L30864	40L19L64W30 2700K	64	10.06	6
Luminaire H	Cree	TRSA-02-150-8L27854W	16Du8L54W22K 2700K	54	6.10	8

Copy of Table 5.1 Light fitting types applied.

Light fitting columns.
The following column notes represents to column specification to be applied;
General: All new lighting columns will be sided steel tapered, hot dipped galvanised coated finish to ISO EN 40.
In restricted locations: Where access for a hoist and other mechanically operated machine for the purpose of lamp/column maintenance is not possible the relevant column shall be of the foldable type.

2.5 Conclusion

The external (public) lighting design as per illumination calculation report appendix A and 1:500 DKP public lighting drawings appendix B & C meets the criteria set out in EN13201 for lighting class P3 covering the internal roads, and public parking area and lighting class C3 for the estate road junction with the Countess road. Separate foot and cycle path have been calculated using theP4 standard. Further consideration was given to the lighting design by using a light fitting colour temperature of 2700K in line with the bat mitigation recommendations of the National parks and Wildlife Service which is deemed to have less impact on fauna and in particular bats (see section 3.4) and by minimising the light spill into the identified possible bat activity zones to be to a minimum of ca 1.0lx and we, DKP therefore deem the external lighting design to be in compliance with the applied standards and recommendations.

2.6 Mitigation measures / actions

No mitigation measures required for compliance to lighting standards.

3 Geographical overview

3.1 Project overview

Image 3.1, the (google maps) site map below shows the approximate location of the site with proposed development approximately outlined in red.



Image 3.1 Proposed development with approximate site boundary in red.

4 Approach and methodology

4.1 Design targets

For the design of the public lighting we applied the P3 standard for the estate roads, adjacent footpath & public parking areas and applied the C3 standard for the estate access road junctions with the Countess road in line with the general requirement for as outlined in EN132201.

4.2 The extend of the external lighting sections

The illumination calculations are executed using 3 different calculations grids. The estate circulation roads, public parking spaces and adjacent footpath are executed using 2 calculation grids (Grid 1, the Southern half and Grid 2 the Northern half) and a separate grid (Grid 3) is applied on the estate main access point junction with the Countess road as this requires higher illumination category for road safety. Further calculations have been executed have been executed on the separate foot & cycle path using grid 1 and grid 2 area as listed above.

Grid 1 (estate circulation roads, public parking)

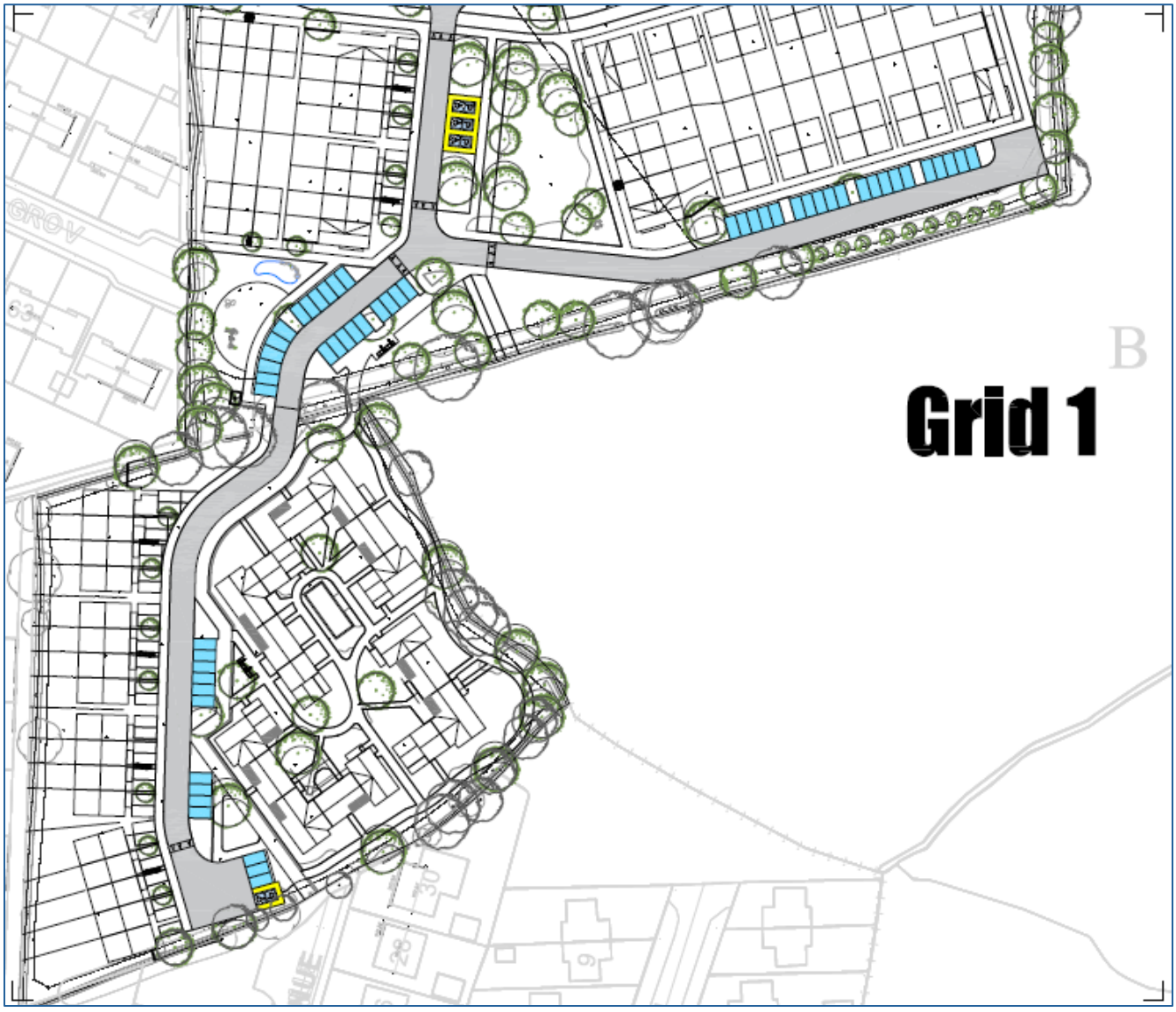


Image 4.1 Grid or Area 1 site layout.(Southern half) Roads Public parking DAC parking

Grid 2 (estate circulation roads, public parking)

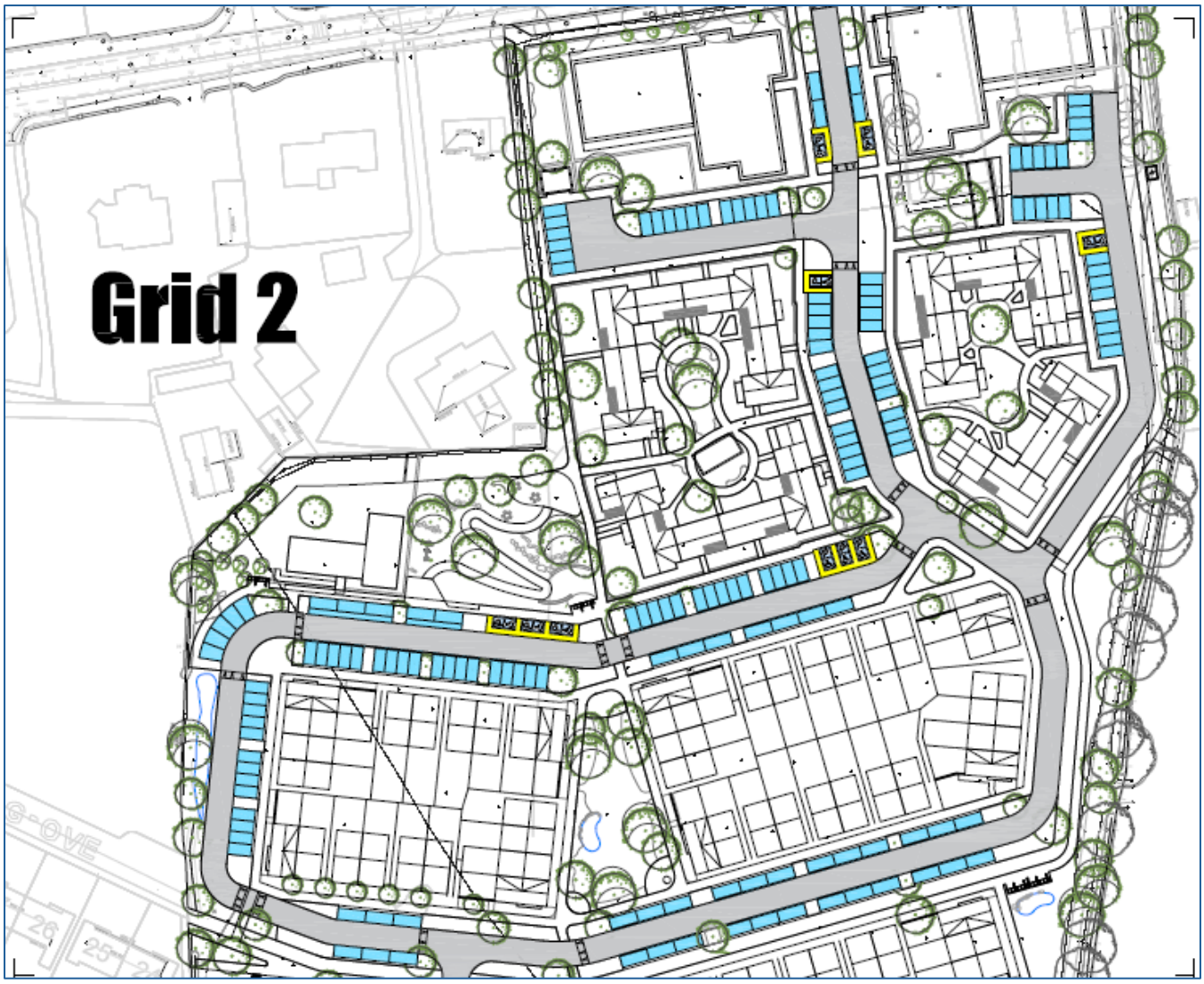


Image 4.2 Grid or Area 2 site layout.(Northern half) Roads Public parking DAC parking

Grid 3 (main access point / junction with Countess road)

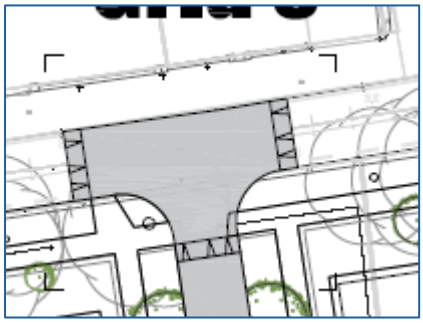


Image 4.3 Grid or Area 3, The estate access point / junction with the Countess road.

Grid 1 (foot & cycle path)

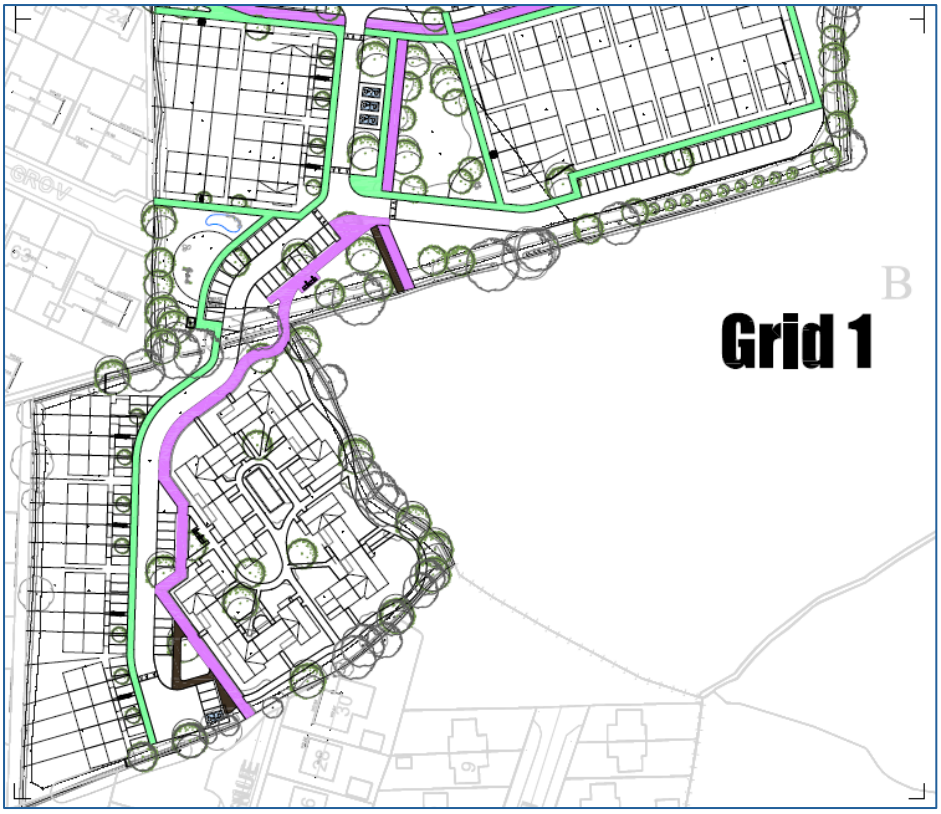


Image 4.4 Grid or Area 1 site layout.(Southern half) Foot path Cycle path

Grid 2 (foot & cycle path)

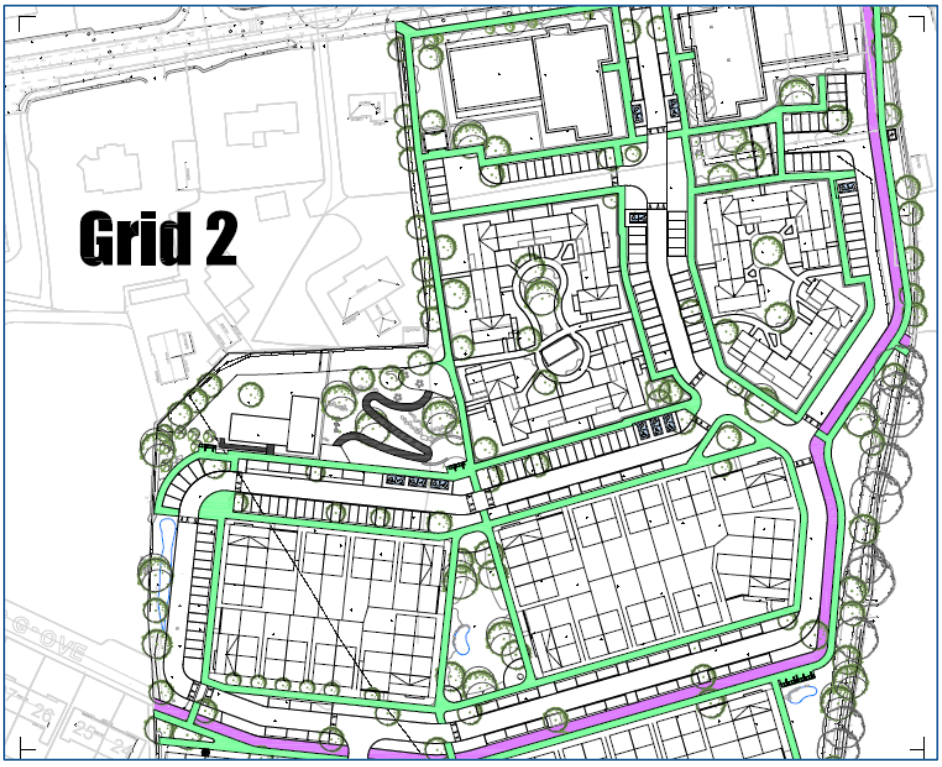


Image 4.5 Grid or Area 2 site layout.(Northern half) Foot path Cycle path

Grid lighting class categories applied.

Area/Section	Grid	Standard
Estate roads 1	1	P3
Estate roads 2	2	P3
Junction with Countess Road	3	C3
Separate Foot and Cycle path	1 / 2	P4

Table 4.1 Illumination areas applied for calculation.

4.3 EN132201 external lighting data and targets

The table below details the relevant P and C targeted as noted above. The P class is generally for pedestrian traffic and cyclists for use on footways and cycleways, and drivers of motorised vehicles at low speed on residential roads, shoulder or parking lanes, and other road areas lying separately or along a carriageway of a traffic route or a residential road, etc. The C lighting class is applied for use in conflict areas on traffic routes where the traffic composition is mainly motorised. Conflict areas occur wherever vehicle streams intersect each other or run into areas frequented by pedestrians, cyclists, or other road users. Areas showing a change in road geometry, such as a reduced number of lanes or a reduced lane or carriageway width, are also regarded as conflict areas. The M standard is mainly for motorways.

Illumination class	E avg lx	E min lx	Uniformity		Illumination class	E avg lx	E min lx	Luminance cd/m2	Uniformity
P1	15.0	3.0	0.2		M1/C1	30.0	12.0	2.0	0.4
P2	10.0	2.0	0.2		M2/C2	20.0	8.00	1.5	0.4
P3	7.50	1.5	0.2		M3/C3	15.0	6.00	1.0	0.4
P4	5.00	1.0	0.2		M4/C4	10.0	4.00	0.75	0.4
					M5/C5	7.50	1.50	0.50	0.3

Table 4.2 EN132201 lighting class P, C and M standards. Applied P3 and C4 standards highlighted.

4.4 The general design approach

Step 1: We in first instance use Lighting Reality Roadway linear road luminance calculations to establish the most energy and column-to-column distance efficient light fitting for the estate inner roads. We use Lighting Reality Outdoor to calculate the illuminance using the most efficient light fittings established in step 1 to target the P3 lighting category for the estate inner roads & public parking areas and C3 lighting category for the sites entrance junctions with the Countess road.

4.5 The design approach to cover any identified bat routs or roosting areas

Consideration to the fauna was applied in the lighting design by keeping the light colour temperature of all fittings at 2700K in line with the bat mitigation recommendations of the National parks and Wildlife Service which is deemed to have less impact on fauna and in particular bats and by minimising the light spill into the identified bat activity zones to a minimum of +/- 1.0Lux.

The image below highlights the possible bat roosting and/or bat activity corridor identified.



Image 4.4 Possible bat activity zone identified by the projects ecologists.

5 Calculation data and conclusion

5.1 Baseline fitting choice

To establish the most efficient fittings with regards to illuminance and energy usage we executed a linear horizontal illuminance calculation using a 2700K colour temperature covering the main road type with the selected fitting (Type H) Cree 54W led resulting in a low power density of ca 42mW/lx/m2 and usage factor of 1.3kWh/m2. The Cree fitting is available locally (Tralee) to enhance maintenance.

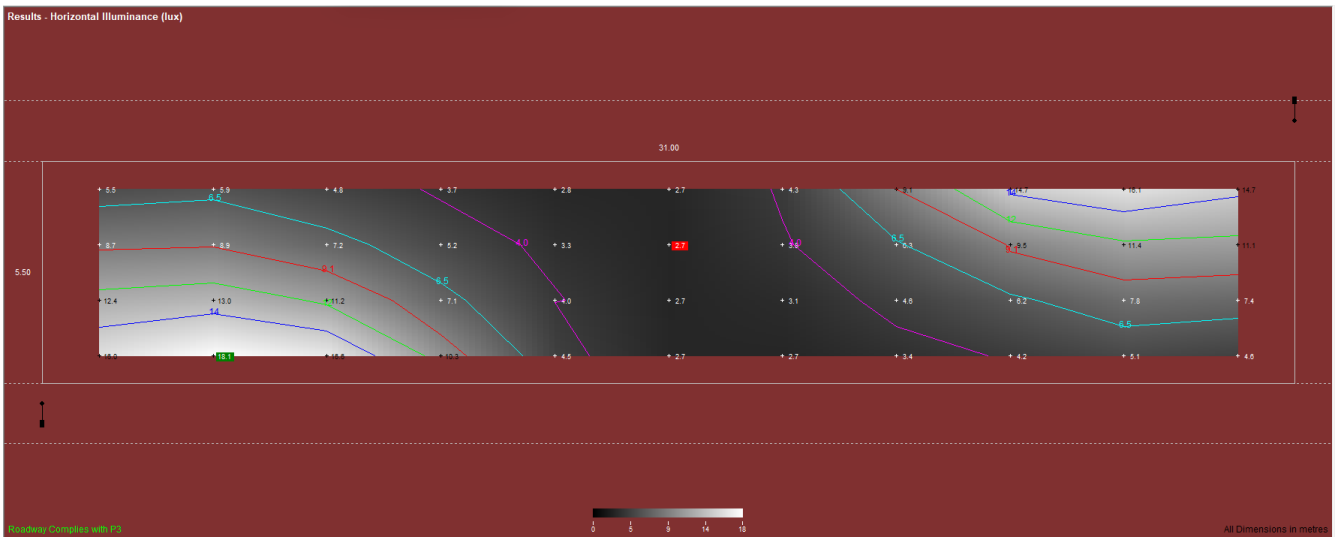


Image 5.1 Linear road illuminance calculation results.

5.2 Calculated achieved illuminance results

From the appendix representing the illumination calculations and the 1:500 DKP and Lighting Reality overall site public lighting drawings we note that the estate circulation roads and public parking area's average and minimum illuminance achieved is in excess of the P3 average and minimum illuminance standard of 7.5Lx and 1.5lx respectively and that the site's main access point junction average and minimum illuminance achieved is in excess of the C3 average and minimum illuminance standard of 15.0Lx and 6.0lx respectively. The foot path and cycle path are in excess of the minimum P4 standards. Uniformity for the P3, P4 and C3 classes are also in compliance.

Element	Standard	E avg lx	E min lx	Uniformity	Compliance
Estate roads & public parking – Grid 1	P3	8.44 (>=7.50)	1.71 (>=1.50)	0.20 (>=0.20)	√
Estate roads & public parking – Grid 2	P3	8.82 (>=7.50)	1.76 (>=1.50)	0.20 (>=0.20)	√
Junction with Countess Road – Grid 3	C3	20.39 (>=15.00)	11.33 (>=6.00)	0.56 (>=0.40)	√
Foot & cycle path	P4	5.69 (>=5.00)	1.23 (>=1.00)	0.24 (>=0.20)	√

Table 5.1 Achieved illumination levels.

5.3 Highlighted lighting column location site layout drawing

The 1:500 drawing(s) is/are that large that any copy or clip at A4 scale for this report would be illegible. Refer the separate attached/enclosed DKP drawings **2001** (appendix B) for 1:500 public lighting layout drawing(s) showing the highlighted column locations.

5.4 Illumination contours site layout drawing

The 1:500 drawing(s) is/are that large that any copy or clip at A4 scale for this report would be illegible. Refer the separate attached/enclosed DKP drawings **2003** (appendix C) for 1:500 public lighting layout drawing(s) showing the illumination contours.

5.5 Applied light fittings schedule

From appendix A and B representing the illumination calculations across the site and the 1:500 DKP site illumination contours and highlighted column location site drawings we note that the following lighting fittings have been applied as a result of the initial step 1 linear road luminance calculations to establish the most energy and column-to-column distance efficient light fittings.

Fitting	Make	Model	Lamp / Colour	Load (W)	Flux (klm)	Pole
Luminaire C	Cree	TRSA-02-K10-8L-278_36W	403-QL22-S06	36	4.41	6
Luminaire D	Cree	TRLA-02-07519L30864	40L19L64W30 2700K	64	10.06	6
Luminaire H	Cree	TRSA-02-150-8L27854W	16Du8L54W22K 2700K	54	6.10	8

Table 5.2 Light fitting types applied.



Luminaire C Data

Supplier	Cree Lighting
Type	TRSA-02-ARS-8L27854W
Lamp(s)	16lu8L54W27K
Lamp Flux (klm)	6.87
File Name	TRSA-02-ARS-8L-278 54W-203-QL21-S05 .IES
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	235.0, 18.4, 0.0
No. in Project	1



Luminaire D Data

Supplier	Cree Lighting
Type	TRLA-02-07519L30864
Lamp(s)	40L19L64W30
Lamp Flux (klm)	10.06
File Name	TRLA-02-075-19L-308 64W-1251-QL21-R1 1.IES
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	383.1, 25.9, 0.0
No. in Project	3



Luminaire H Data

Supplier	Cree Lighting
Type	TRSA-02-K12-8L-308_27W
Lamp(s)	403-QL22-S07
Lamp Flux (klm)	3.76
File Name	TRSA-02-K12-8L-308_27W.IES
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	525.9, 28.4, 0.1
No. in Project	53

Image 5.2 Applied light fitting data.

5.6 Light fitting columns

The following column notes represents to column specification to be applied;
General: All new lighting columns will be sided steel tapered, hot dipped galvanised coated finish to ISO EN 40.
In restricted locations: Where access for a hoist and other mechanically operated machine for the purpose of lamp/column maintenance is not possible the relevant column shall be of the foldable type.

5.7 Conclusion

The external (public) lighting design as per illumination calculation report appendix A and 1:500 DKP public lighting drawings appendix B & C meets the criteria set out in EN13201 for lighting class P3 covering the internal roads, and public parking area and lighting class C3 for the estate road junction with the Countess road. Separate foot and cycle path have been calculated using theP4 standard. Further consideration was given to the lighting design by using a light fitting colour temperature of 2700K in line with the bat mitigation recommendations of the National parks and Wildlife Service which is deemed to have less impact on fauna and in particular bats (see section 3.4) and by minimising the light spill into the identified possible bat activity zones to be to a minimum of ca 1.0lx and we, DKP therefore deem the external lighting design to be in compliance with the applied standards and recommendations.

5.8 Mitigation measures / actions

No mitigation measures required for compliance to lighting standards.

APPENDIX A

Site illuminance calculation report

DATE:	**11 March 2026**
DESIGNER:	**DKPartnership**
PROJECT No:	**P3500**
PROJECT NAME:	**Diapharma Housing Development**

Estate Roads conform to lighting illumination standard P3, Estate access junction to Countess Road conforms to C3.

Dipharma Public Lighting

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	Grid 1	-1944.33	107.71	242.14	216.91	1.49	1.36
2	Grid 2	-1997.59	324.61	306.98	205.60	1.50	1.30
3	Grid 3	-1784.66	529.46	25.10	20.33	1.00	0.81

Luminaires



Luminaire C Data

Supplier	Cree Lighting
Type	TRSA-02-ARS-8L27854W
Lamp(s)	16lu8L54W27K
Lamp Flux (klm)	6.87
File Name	TRSA-02-ARS-8L-278 54W-203-QL21-S05 .IES
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	235.0, 18.4, 0.0
No. in Project	1



Luminaire D Data

Supplier	Cree Lighting
Type	TRLA-02-07519L30864
Lamp(s)	40L19L64W30
Lamp Flux (klm)	10.06
File Name	TRLA-02-075-19L-308 64W-1251-QL21-R1 1.IES
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	383.1, 25.9, 0.0
No. in Project	3



Luminaire H Data

Supplier	Cree Lighting
Type	TRSA-02-K12-8L-308_27W
Lamp(s)	403-QL22-S07
Lamp Flux (klm)	3.76
File Name	TRSA-02-K12-8L-308_27W.IES
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	525.9, 28.4, 0.1
No. in Project	53

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	H	-1761.86	405.31	6.00	113.00	2.00	0.00	1.00			
2	H	-1790.18	393.60	6.00	107.00	0.00	0.00	1.00			
3	H	-1732.07	494.21	6.00	0.00	0.00	0.00	1.50			
4	H	-1717.77	433.30	6.00	328.00	5.00	0.00	1.00			
5	H	-1806.33	407.70	6.00	288.00	0.00	0.00	1.00			
6	H	-1837.21	384.56	6.00	87.00	5.00	0.00	1.00			
7	H	-1851.21	334.53	8.00	264.00	0.00	0.00	1.00			
8	H	-1796.19	340.40	6.00	287.00	5.00	0.00	1.00			

975083932B

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
9	H	-1772.76	338.23	6.00	109.00	5.00	0.00	1.00			
10	H	-1707.80	447.64	6.00	351.00	1.00	0.00	1.00			
11	H	-1890.98	373.86	6.00	172.00	0.00	0.00	1.00			
12	H	-1893.55	349.47	6.00	173.00	0.00	0.00	1.10			
14	H	-1881.32	408.27	6.00	268.00	0.00	0.00	1.00			
15	H	-1760.96	460.35	6.00	185.00	5.00	0.00	1.00			
16	H	-1747.93	437.71	6.00	196.00	0.00	0.00	1.00			
17	H	-1760.94	500.26	6.00	184.00	0.00	0.00	1.00			
18	H	-1813.91	474.93	6.00	103.00	0.00	0.00	1.00			
19	H	-1715.46	487.62	6.00	10.00	0.00	0.00	1.00			
20	H	-1826.39	492.55	6.00	281.00	2.00	0.00	1.00			
22	H	-1880.20	329.47	6.00	77.00	5.00	0.00	1.00			
24	H	-1720.47	509.60	6.00	0.00	5.00	0.00	1.00			
25	D	-1781.07	529.04	8.00	99.00	0.00	0.00	1.00			
26	D	-1759.76	532.25	8.00	102.00	0.00	0.00	1.00			
27	H	-1755.24	352.44	6.00	288.00	4.00	0.00	1.00			
28	H	-1857.40	302.27	6.00	350.00	0.00	0.00	1.00			
29	H	-1715.26	392.07	6.00	179.00	5.00	0.00	1.50			
28	C	-1893.85	141.65	6.00	287.00	0.00	0.00	1.00			
31	H	-1727.51	419.72	6.00	238.00	0.00	0.00	1.00			
34	H	-1823.81	267.09	6.00	85.00	0.00	0.00	1.00			
35	H	-1881.06	225.64	6.00	158.00	0.00	0.00	1.00			
36	H	-1898.98	209.47	6.00	146.00	0.00	0.00	1.00			
37	H	-1899.67	187.92	6.00	178.00	0.00	0.00	1.00			
38	H	-1913.27	164.80	6.00	1.00	0.00	0.00	1.50			
40	H	-1797.22	277.14	6.00	285.00	0.00	0.00	1.00			
41	H	-1745.60	291.66	6.00	288.00	0.00	0.00	1.00			
41	H	-1877.50	247.35	6.00	157.00	0.00	0.00	1.00			
43	H	-1776.59	520.91	6.00	13.00	0.00	0.00	1.00			
84	H	-1724.75	300.22	6.00	228.00	0.00	0.00	1.00			
86	H	-1815.42	325.76	6.00	111.00	0.00	0.00	1.00			
87	H	-1726.51	375.43	6.00	353.00	5.00	0.00	1.00			
88	H	-1771.23	443.38	6.00	15.00	5.00	0.00	1.00			
89	H	-1731.63	351.24	6.00	112.00	0.00	0.00	1.00			
90	H	-1870.17	388.00	6.00	86.00	0.00	0.00	1.00			
91	H	-1906.53	394.92	6.00	345.00	0.00	0.00	1.00			

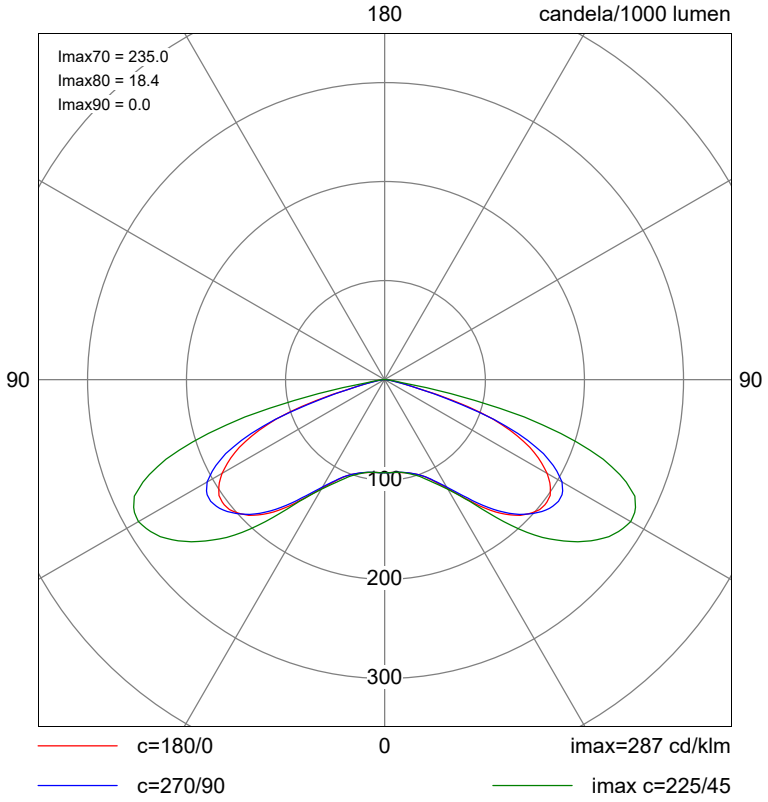
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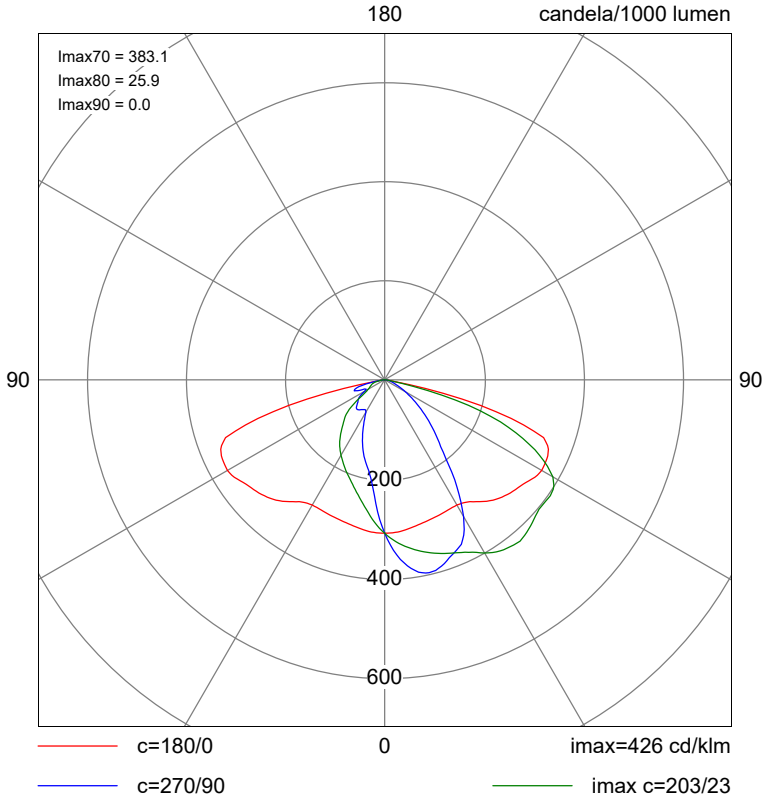
ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
92	H	-1794.10	490.93	6.00	282.00	0.00	0.00	1.10			
93	H	-1773.39	477.41	6.00	37.00	0.00	0.00	1.00			
93	H	-1712.75	468.17	6.00	7.00	0.00	0.00	1.00			
94	H	-1838.65	318.96	6.00	94.00	0.00	0.00	1.00			
95	H	-1847.13	279.88	6.00	220.00	0.00	0.00	1.00			
96	H	-1877.00	268.16	6.00	303.00	0.00	0.00	1.00			
97	H	-1911.39	136.63	6.00	21.00	0.00	0.00	1.00			
98	D	-1773.67	548.23	8.00	280.00	0.00	0.00	1.00			
73	H	-1850.90	405.49	6.00	265.00	0.00	0.00	1.00			
74	H	-1781.08	415.11	6.00	289.00	0.00	0.00	1.00			
75	H	-1827.09	402.85	6.00	262.00	0.00	0.00	1.00			
76	H	-1854.63	259.32	6.00	127.00	0.00	0.00	1.00			
77	H	-1774.41	283.49	6.00	292.00	0.00	0.00	1.00			

Polar Diagrams

Luminaire C TRSA-02-ARS-8L27854W

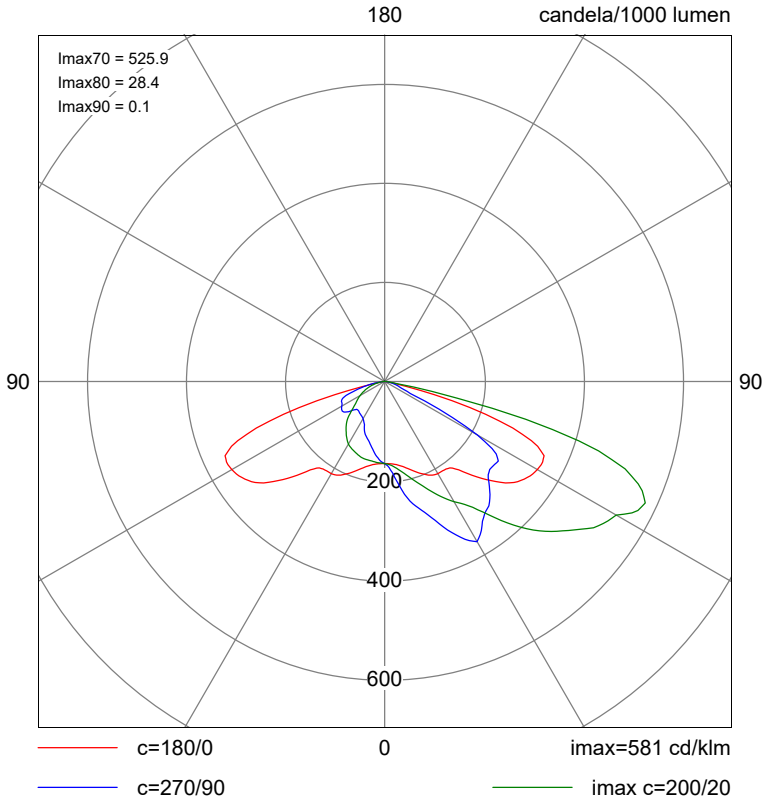


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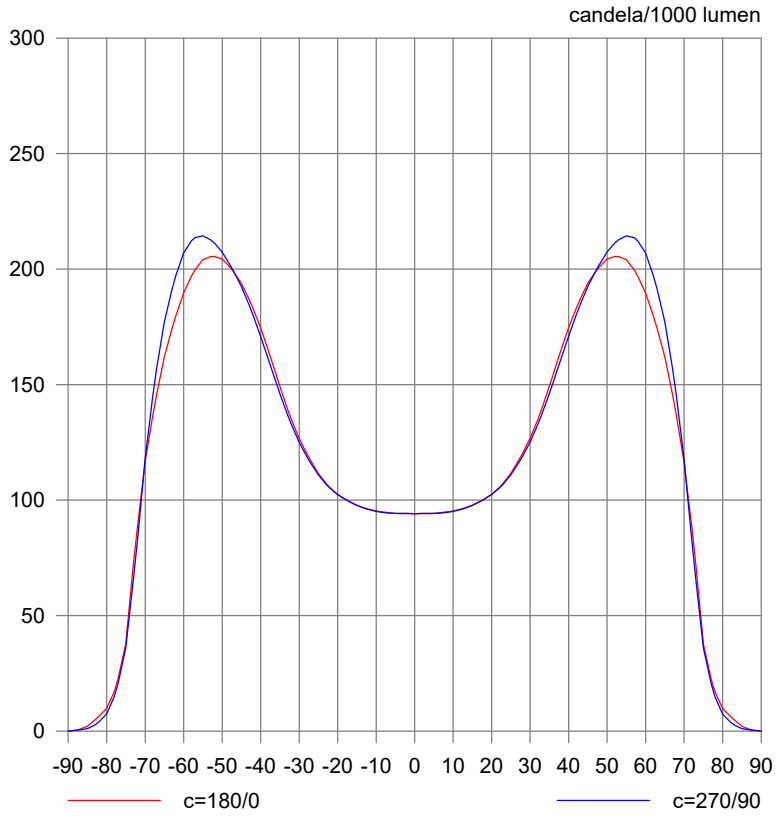
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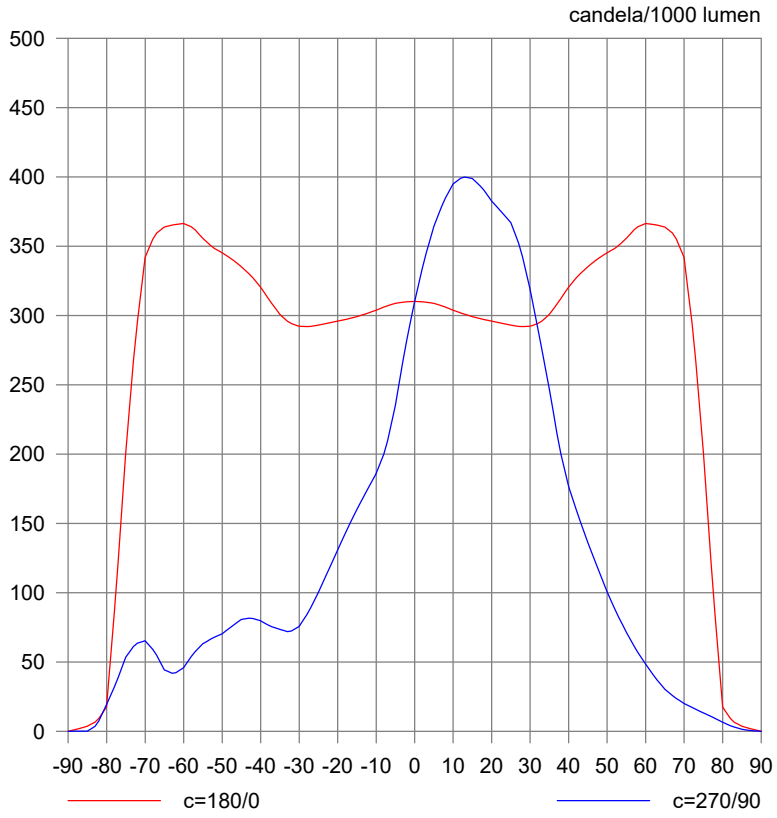


Cartesian Diagrams

Luminaire C TRSA-02-ARS-8L27854W



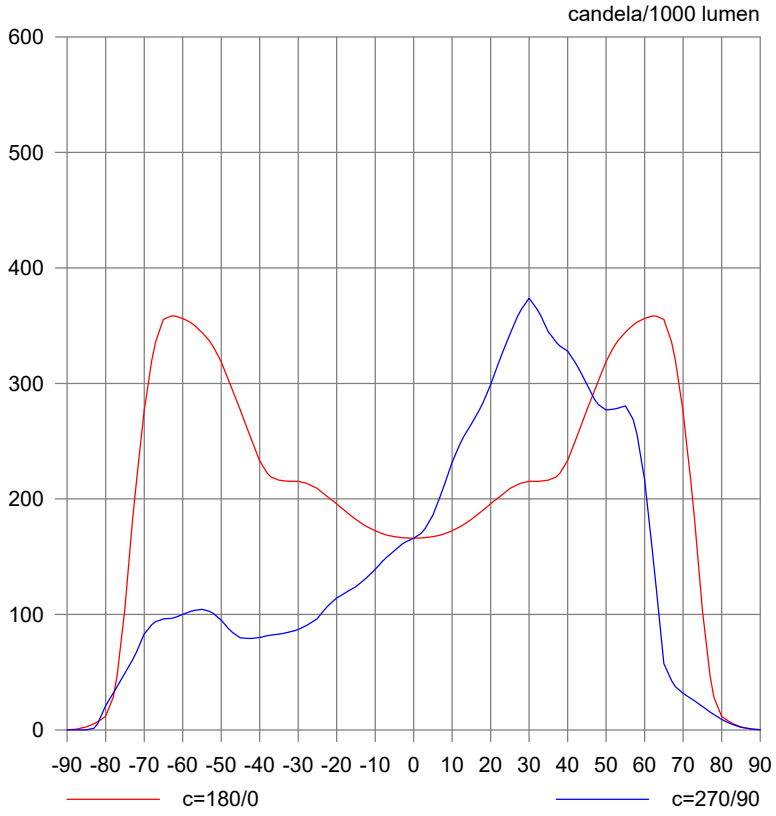
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Cartesian Diagrams Continued

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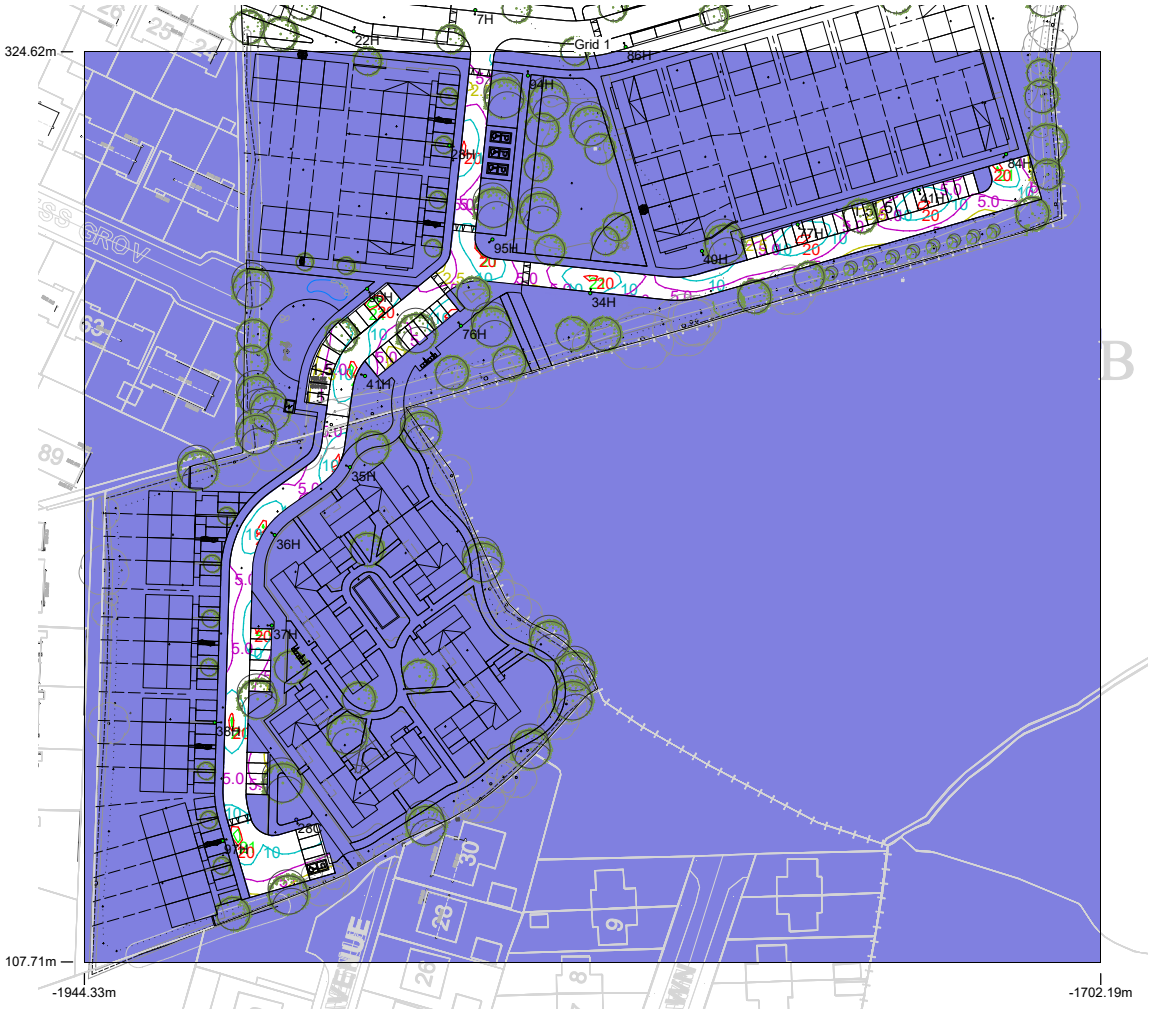


DATE: 11 March 2026 DESIGNER: DKPartnership

PROJECT No: P3500 PROJECT NAME: Diapharma Housing Development

Horizontal Illuminance (lux)

Grid 1

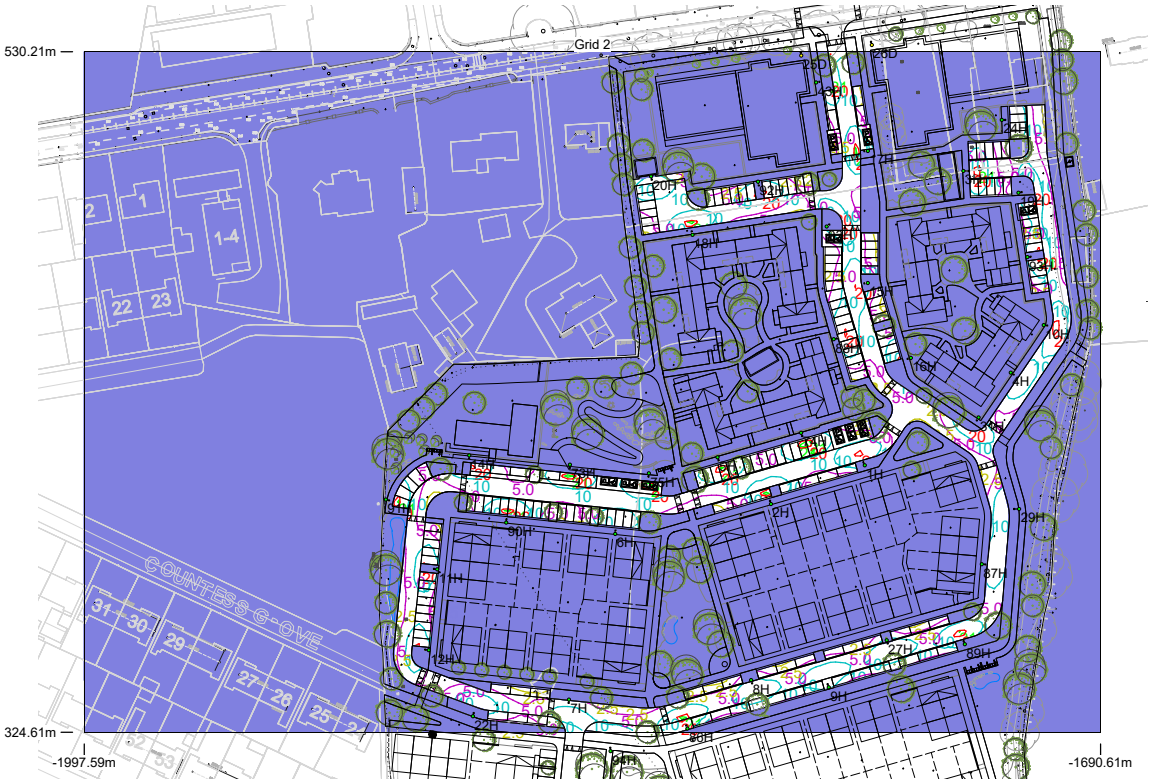


Results

Eav	8.44
Emin	1.71
Emax	22.53
Emin/Emax	0.08
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 2

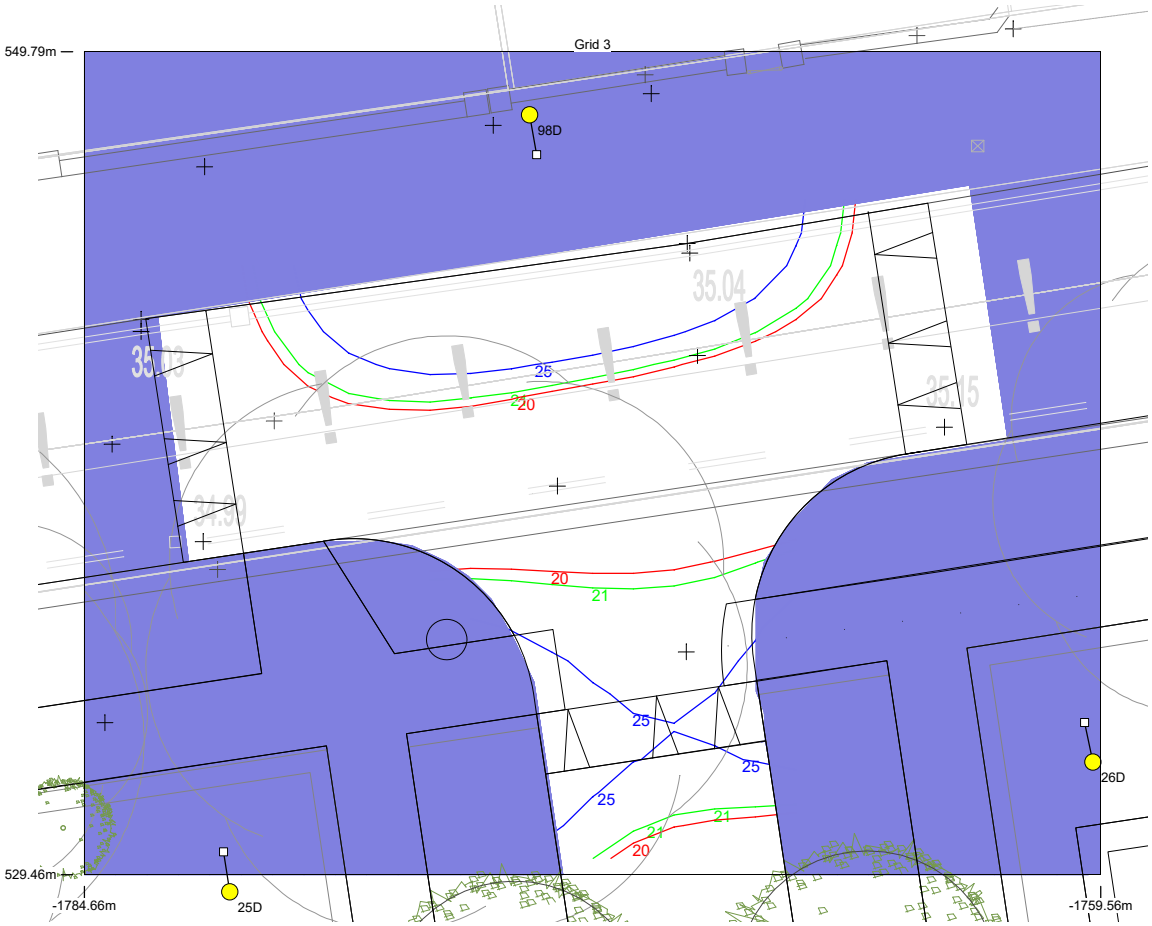


Results

Eav	8.82
Emin	1.76
Emax	22.16
Emin/Emax	0.08
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 3



Results

Eav	20.39
Emin	11.33
Emax	43.11
Emin/Emax	0.26
Emin/Eav	0.56