

PROPOSED LIDL FOOD STORE EAST GRINSTEAD

EXTERNAL LIGHTING STATEMENT

Client:

Lidl Great Britain Ltd



Issue/revision	Issue 1	Issue 2	Issue 3	Issue 4	Issue 5	Issue 6
Remarks	Issued for Planning Approval.	Lighting column moved.	Updated car park and landscaping layouts.	In-depth assessment of light spill to nearby properties.	Issued to discharge planning condition 9	Planning condition 19 - Updated Site Plan & one light column height changed to 5m (Refer to Fig 2)
Date	27-09-2024	15-12-2023	27-03-2024	22-10-2024	06-02-26	16-02-26
Prepared by	R. Perez	R. Perez	R. Perez	R. Perez	N. Ahmed	N. Ahmed
Signature						
Checked by	S. Ogden	S. Ogden	S. Ogden	S. Ogden	S. Ogden	S. Ogden
Signature						
Authorised by	S. Ogden	S. Ogden	S. Ogden	S. Ogden	S. Ogden	S. Ogden
Signature						
Project number	23/4432	23/4432	23/4432	23/4432	23/4432	23/4432

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1.00 INTRODUCTION

The purpose of this document is to detail the external lighting scheme for the proposed Lidl store at East Grinstead, specifically addressing the planning condition 19 raised by Mid Sussex District Council.

Condition 19 reads:

'19. Prior to the installation of any external lighting to this site details of light intensity, spread and any shielding and times of use together with a report to demonstrate its effect on nearby residential properties shall be submitted to and approved in writing by the Local Planning Authority. It is recommended that the information be provided in a format that demonstrates compliance with the ILP Guidance Notes for the Reduction of Obtrusive Light. Relevant information is available from the following site

Reason: To protect the amenity of neighbouring residents from light spill or reflection and to accord with policy DP29 of the Mid Sussex District Plan 2014 - 2031. '

The design of the scheme is based on drawing No. 5051-RPS-XX-EX-DR-L-9001, Revision P02 by rpsgroup and received by DDA Ltd on 03-02-26.

The external lighting statement shall be read in conjunction with the lighting plans within Appendix A to provide a clear overview of the proposal:

- 23/4432/E63/EX01 – Rev E: External Lighting Plan (Rear of store lights OFF)
- 23/4432/E63/EX02 – Rev E: External Lighting Plan (All lights ON)

2.00 SITE LOCATION

The site is a former Homebase store on London Road, East Grinstead. It is bounded by London Road to the south and a dismantled railway line to the north-west.

Residential properties located to the east and north-east, including those on Green Hedges Avenue and adjacent to the proposed Lidl car park, are considered sensitive receptors.

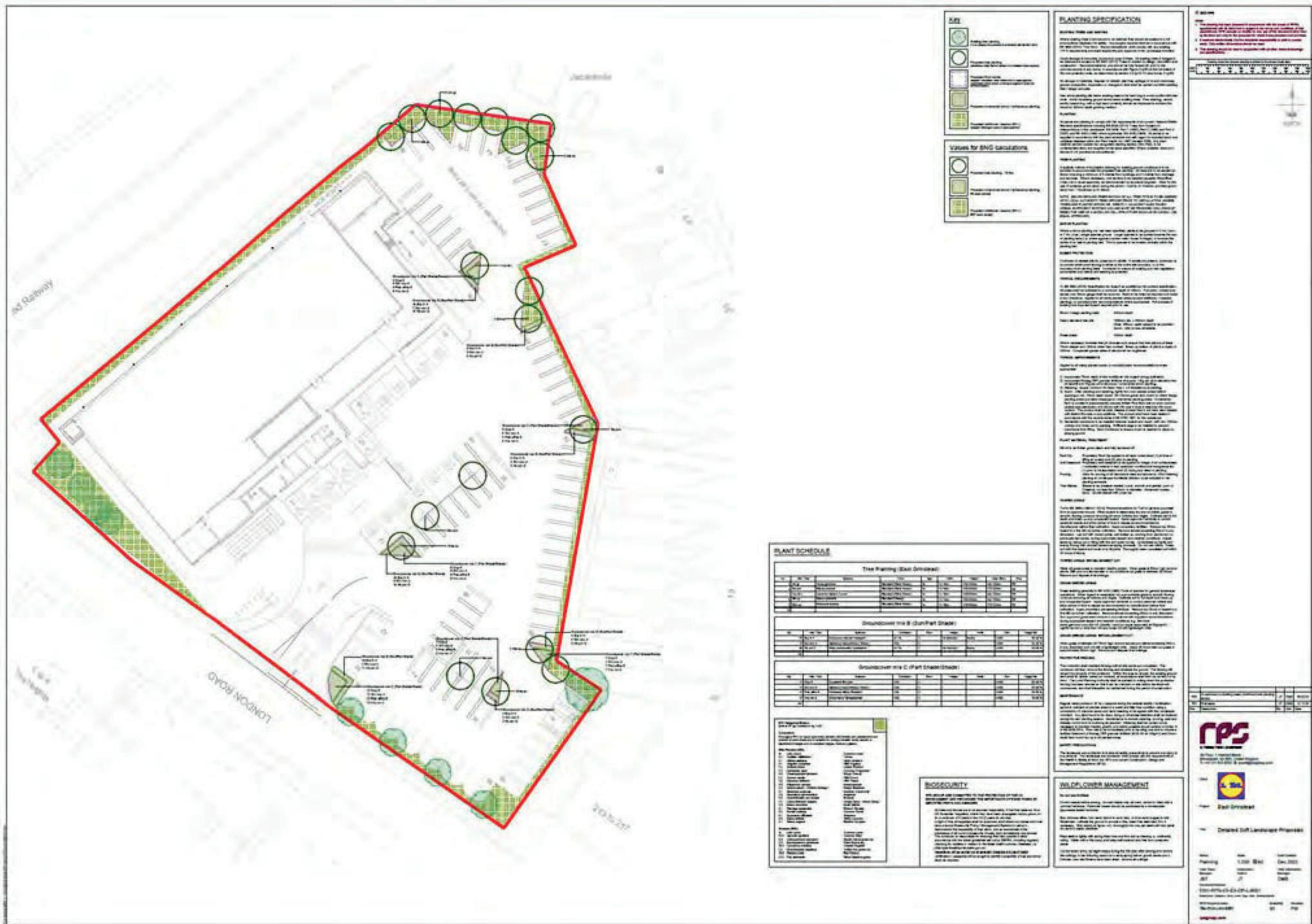


Figure 1 – Proposed Lidl Store at East Grinstead (Landscape Plan)

3.00 DESIGN CONSIDERATION

3.01 NATIONAL PLANNING POLICY FRAMEWORK (NPPF)

The NPPF was revised & published on the 12th of December 2024 and sets out the government's planning policies for England and how these are expected to be applied.

The NPPF includes a reference to the need to consider the effects of artificial lighting in Section 15 – Paragraph 198.

'15. Conserving and enhancing the natural environment'

198. Planning policies and decisions should also ensure that new development is appropriate for its location considering the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

3.02 LOCAL POLICY

3.02.1 Mid Sussex District Plan: 2014 - 2031.

The Mid Sussex District Plan adopted by the Council on March 2018 set the requirements for the external lighting scheme in Policy DP29:

'Policy DP29: Noise, Air and Light Pollution

Light pollution:

- The impact on local amenity, intrinsically dark landscapes and nature conservation areas of artificial lighting proposals (including floodlighting) is minimised, in terms of intensity and number of fittings.*
- The applicant can demonstrate good design including fittings to restrict emissions from proposed lighting schemes; '*

4.00 STANDARDS AND GUIDELINES

Several documents lay down the best practice and guidance on providing sufficient and appropriate lighting.

The external lighting scheme is provided in accordance with the following:

- BS5489-1:2020 - Design of road lighting
 - *Part 1: Lighting of roads and public amenity areas (Code of Practice)*
- BS EN 12464-2:2024 - Light and lighting - Lighting of workplaces
 - Part 2: Outdoor workplaces
- ILP Guidance Note 01/21 - The reduction of obtrusive Light
- ILP Guidance Note 8/23 - Bats & Artificial lighting at night
- BS5266-1:2016 Emergency lighting – Part 1: Code of practice for the emergency lighting of premises.

5.00 LIDL CORPORATE SPECIFICATION

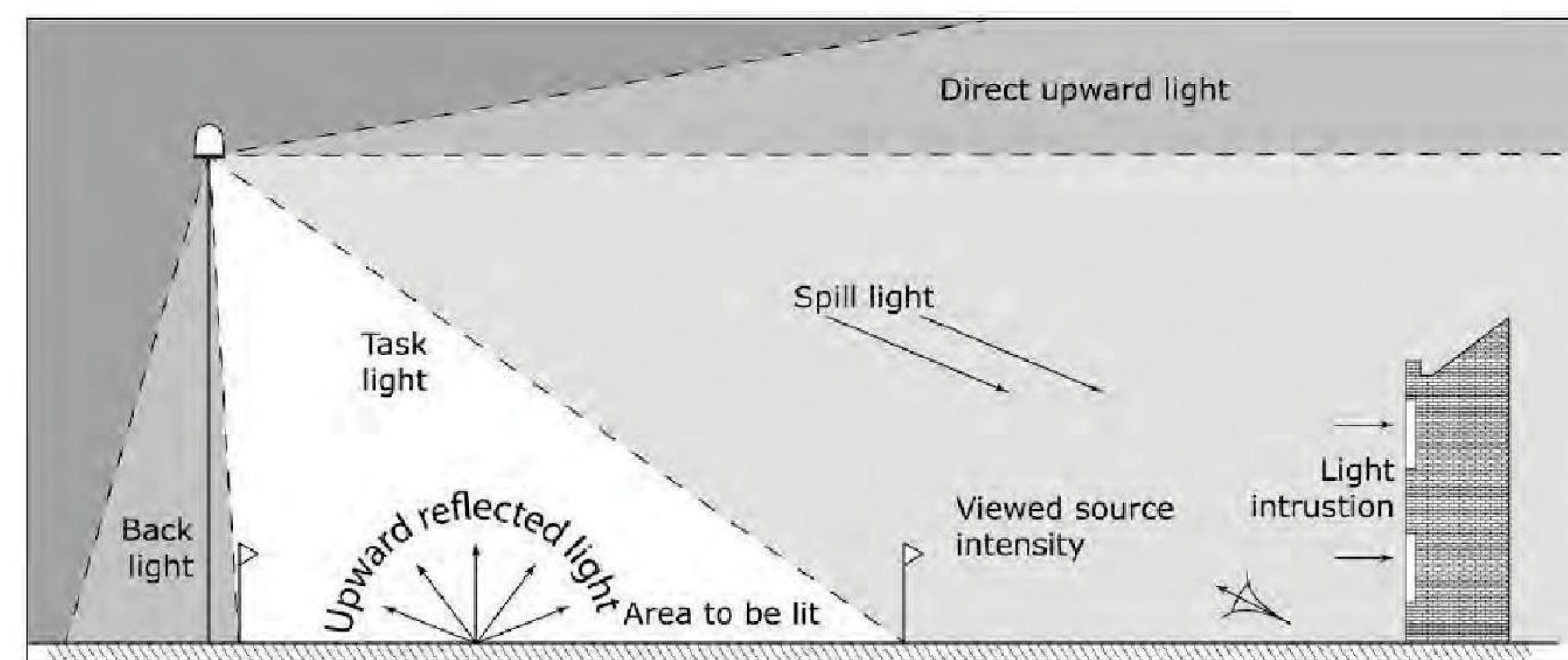
The store has been designed according to the requirements that Lidl wish to meet in constructing their car parks and includes the following principles:

- Common designs, materials, and branding for all stores
- Energy efficient with reduced carbon emissions
- Use of sustainable materials
- Repeatable design, simpler and cheaper to construct and operate
- Customer friendly
- Colleague friendly
- Accessibility friendly

6.00 EXTERNAL LIGHTING MITIGATION MEASURES

The following mitigation measures should be taken to reduce light pollution around the site:

- Use lower-wattage, energy-efficient LED luminaires
- Minimise light extending beyond the site boundary.
- Reduce light spill, especially toward nearby buildings and vegetation. Keep illumination close to or below the horizontal; flat cut-off fixtures are ideal.
- Reducing mounting heights where feasible.
- Accessories such as baffles, hoods, and shields can be used to reduce light spill and direct light where it is needed.
- Localising luminaire light distribution through targeted optical control.
- All external lighting will be controlled by a daylight sensor and a time switch, with the time switch set to prevent operation during daylight hours.
- Luminaires have been selected with no direct upward light, achieving 0% ULR.
- Luminaires have been carefully selected and positioned to avoid light spillage into surrounding areas, in line with ILP Guidance Notes for the Environmental Zone.



Types of obtrusive light

7.00 ENVIRONMENTAL ZONE

The ILP Guidance Note 1/21 for the reduction of obtrusive light describes 5 Environmental Zones according to their distinctive lighting environment:

Zone	Surrounding	Lighting environment	Examples
E0	Protected	Dark (SQM 20.5+)	Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places
E1	Natural	Dark (SQM 20 to 20.5)	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, IDA buffer zones etc.
E2	Rural	Low district brightness (SQM ~15 to 20)	Sparsely inhabited rural areas, village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small town centres of suburban locations
E4	Urban	High district brightness	Town / City centres with high levels of night-time activity

Due to the location and characteristics of the site, it is considered appropriate for the external lighting scheme to meet the limitations of an **Environmental Zone E3**.

7.01 LIGHT INTRUSION ON SURROUNDING PREMISES

A vertical reference plan is created in the lighting software to calculate vertical illuminance on the nearby buildings.

The ILP Guidance Note 1/21 for the reduction of obtrusive light sets out the permissible levels of light intrusion for surrounding premises. Refer to Table 3 below.

Table 3 (CIE 150 table 2): Maximum values of vertical illuminance on premises

Light technical parameter	Application conditions	Environmental zone				
		E0	E1	E2	E3	E4
Illuminance in the vertical plane (E_v)	Pre-curfew	n/a	2 lx	5 lx	10 lx	25 lx
	Post-curfew	n/a	<0.1 lx*	1 lx	2 lx	5 lx

* If the installation is for public (road) lighting then this may be up to 1 lx.

7.02 DIRECT SKYGLOW (ULR)

Luminaires have been selected that have no ULR. These have been strategically placed such that the design solution meets the criteria of **Environmental Zone E3**.

Table 6 (CIE 150 table 5): Maximum values of upward light ratio (ULR) of luminaires

Light technical parameter	Environmental zones				
	E0	E1	E2	E3	E4
Upward light ratio (ULR) / %	0	0	2.5	5	15

The lighting proposals section of this report details the luminaire selections and specifications to achieve the guidance requirements. The lighting plan within Appendix A details the results of the design and demonstrate compliance with ILP Guidance Note 1/21.

8.00 LIGHTING STRATEGY

The external lighting scheme outlined in this document has been developed to ensure the safety of both customers and staff while reducing light spill into adjacent areas.

The design of the car park lighting system complies to 'Dark Skies' criteria, effectively limiting any upward light component.

Luminaire selections have been made following the ILP guidance notes for **Environmental Zone E3**, with careful consideration of the surrounding areas.

The chosen luminaires are intended to have a reduced impact on nocturnal species and habitats, while also creating a secure environment that meets the needs of CCTV operators.

The average initial luminous efficacy of the external light fittings within the construction zone is no less than 60 luminaire lumens per circuit watt.

All areas of external lighting will be controlled automatically through the store building management system (BMS), using timer and photocell sensors to prevent operation during daylight hours while being appropriately zoned to optimise energy conservation.

The car park lighting will be operational during store functioning hours, from Monday to Saturday, 07:30 AM to 11:00 PM, and Sunday from 10:00 AM to 04:00 PM. In addition, sensors equipped with presence and light detection have been installed in the loading bay and rear walkway, ensuring that the lighting is only activated when activity occurs in these areas.

The target light levels for each area are as follows:

- Carpark – 15 Lux average, 0.25 Uo
- Canopy & Trolley Bay – 100 Lux average, 0.25 Uo

8.01 PHILIPS – LUMISTREET GEN 2

The lighting design uses Philips LumiStreet Gen2 lanterns with high-efficiency asymmetric optics, reducing rear light spill at the site boundary while maintaining required illumination levels within the site.

The light columns in the car park are 6m high. Where required, the lighting columns have been kept low at 5m. This is to reduce the ecological impact on the wildlife.

All lanterns are installed horizontally on a column, with a 5° tilt directed inward towards the site. The lanterns on columns located along the site boundary of the car park includes cut-off shield / back louvre to reduce the light spill to the adjacent residential properties. The light columns are complemented with building mounted luminaires Philips Pacific Gen 5 providing light to the zones adjacent to the store.

The UniStreet luminaire has a ULR of 0%, which effectively prevents upward light dispersion above the horizontal plane.

Product data sheet (Luminaire datasheet with no light shield installed)LumiStreet Gen2 (Single & Twin) (6m Column)

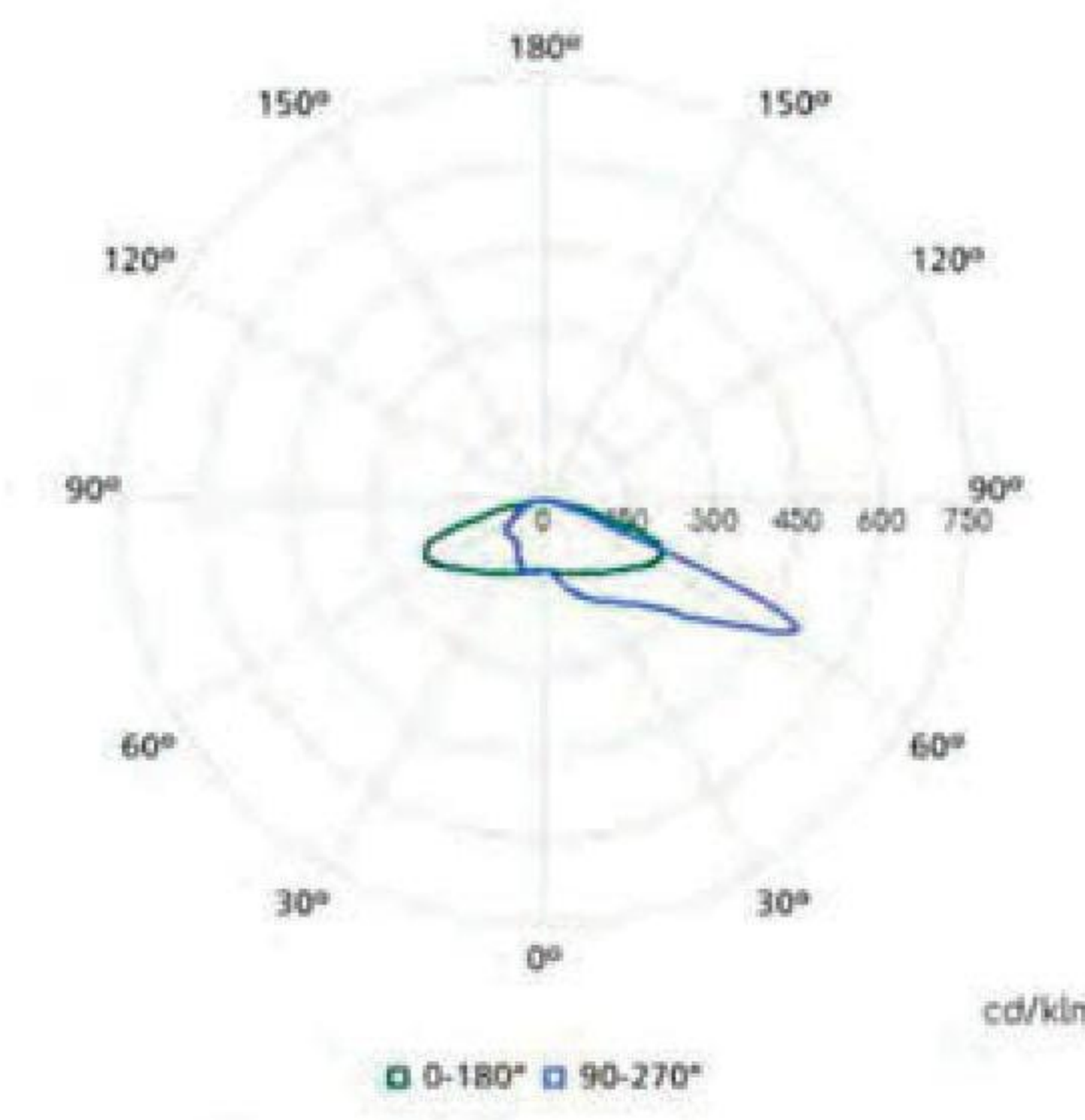
Input voltage = 220 – 240V
 Wattage = 51.8W
 Initial LED luminaire efficacy (system) = 146.19 lm/W
 LOR = 0.83
 Light source colour – Neutral white 4000K
 Initial luminous flux = 7500 lm



LumiStreet Gen2

LumiStreet Gen2 (Single) (5m Column)

Input voltage = 220 – 240V
 Wattage = 51.8W
 Initial LED luminaire efficacy (system) = 146.19 lm/W
 LOR = 0.83
 Light source colour – Neutral white 4000K
 Initial luminous flux = 7500 lm



LumiStreet Gen2 Photometry

8.02 PHILIPS – PACIFIC GEN 5

The building-mounted lighting comprises Philips Pacific Gen 5 LED luminaires fixed to the building at 3.25 m above finished floor level, providing general and emergency lighting. Luminaires at the front and side of the store will be tilted downwards at 5°, rear walkway at 0° and the loading bay tilted at 25° from the horizontal.

The rear walkway serves as a fire and emergency escape route, and the activity will be limited. The anticipated use of this area combined with local PIR sensor implies that lighting will generally stay “OFF” during normal operating hours.

The roof plant area is enclosed by an acoustic screen and illuminated by Philips Pacific Gen 5 LED luminaires mounted on the screen at approximately 2.5 m. Access to the plant area is limited to maintenance purposes only.

Product data sheetPACIFIC GEN 5

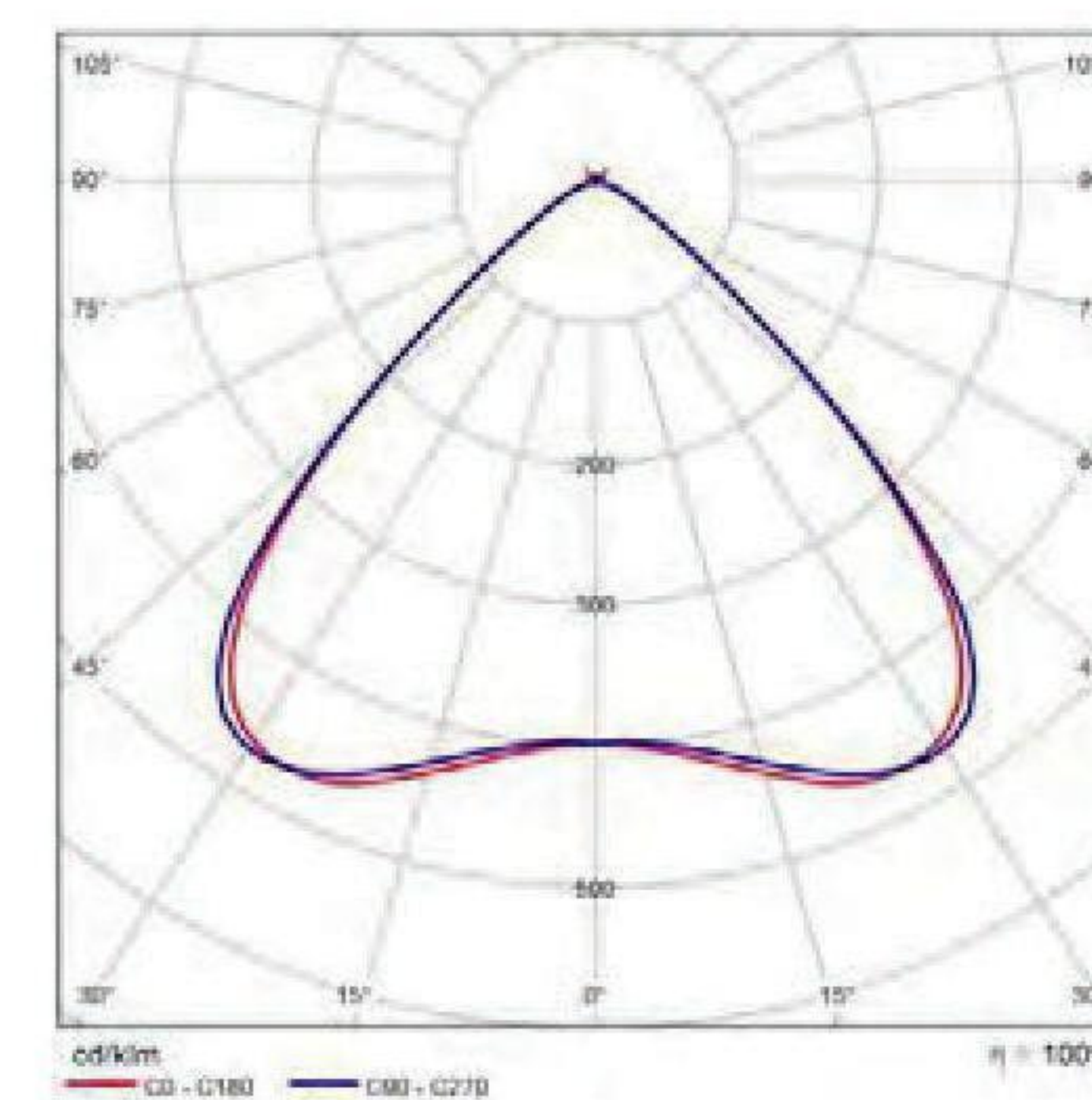
Input voltage = 220 – 240V
 Wattage = 25.5W
 Initial LED luminaire efficacy (system) = 157 lm/W
 LOR = 1
 Light source colour – Neutral white 4000K
 Initial luminous flux = 4200 lm

PACIFIC GEN 5 (Emergency version)

Input voltage = 220 – 240V
 Wattage = 25.50W
 Initial LED luminaire efficacy (system) = 157 lm/W
 LOR = 1
 Light source colour – Neutral white 4000K
 Initial luminous flux = 4200 lm
 Charging power = 4.5W
 Emergency Lighting Flux = 360 lm



Pacific Gen 5



Pacific Gen 5 Photometry

8.03 PHILIPS – LUXSPACE

The lighting under the store canopy is provided by Philips LuxSpace ceiling-recessed downlighter. The canopy lighting is operational in line with the car park hours.

Product data sheet

LUXSPACE (General & Emergency)

Input voltage = 220 – 240V

Wattage = 33.5W

Initial LED luminaire efficacy (system) = 67.4 lm/W

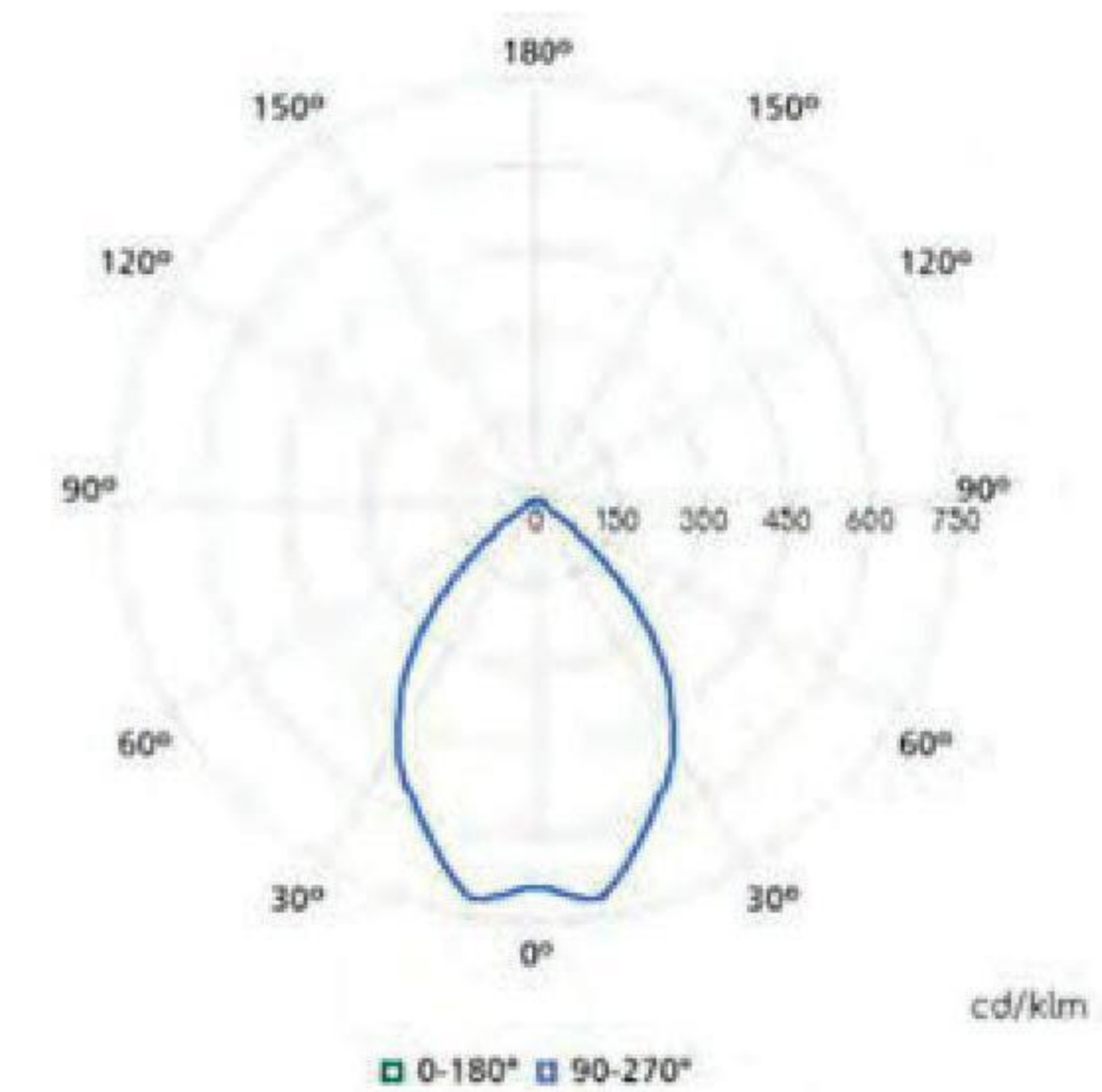
LOR = 1

Light source colour – Neutral white 4000K

Initial luminous flux = 2100 lm



LuxSpace



LuxSpace Photometry

9.00 CONTROLLING LIGHT SPILL

The primary objective of this report is to address the concerns raised by the Council under Planning Condition 19 and to assess the impact of the lighting scheme on the nearby residential properties.

The impact of the lighting scheme has been assessed in detail using a desktop study, with results presented in the appendix A lighting plans.

To produce the most accurate lighting simulation, both the store and the boundary treatment features shown in **drawing 23016_AD_114 Revision D: Proposed Boundary Treatments** have been included in the lighting model. These additional elements are:

- a) 2m close board fence to the east and north boundaries of the site.
- b) 3m acoustic fence to the loading bay.
- c) Existing 2m close board fence to the west boundary of the site.

9.01 RESIDENTIAL PROPERTIES IN GREEN HEDGES AVENUE

The East and North-East site boundaries are considered the light-sensitive, as residential properties are located in close proximity to the site.

Lighting from the car park, loading bay, and rear of the store could potentially affect nearby residences; however, the proposed lighting strategy addresses these concerns by:

1. Column-mounted lanterns are selected with forward light distribution and a 5° tilt toward the car park to reduce light spill beyond the site boundary.
2. Back shields installed on all light columns adjacent to the site boundary, combined with a 2 m close-boarded fence, further reduce light spill.
3. The wall-mounted luminaires at the rear of the store and loading bay are PIR-controlled and remain switched off during normal operating conditions.
4. The 3m high acoustic fence at the loading bay effectively prevents light spill from the wall-mounted luminaires in this area.

To demonstrate compliance with the light intrusion limits set out in ILP Guidance Note 1/21: Reduction of Obtrusive Light, vertical calculation planes have been modelled within the lighting software on the car park-facing façades of all residential properties along Green Hedges Avenue.

The full results of these calculations are provided in Appendix B.

The light spill from the car park along the eastern site boundary is largely mitigated by the combined effect of light shields and the fence. The intrusive light spill levels on the buildings are below the post-curfew limit for Environmental Zone E3 of 2 Lux (See Figure 2). Therefore, compliant with ILP Guidance Note 1/21.

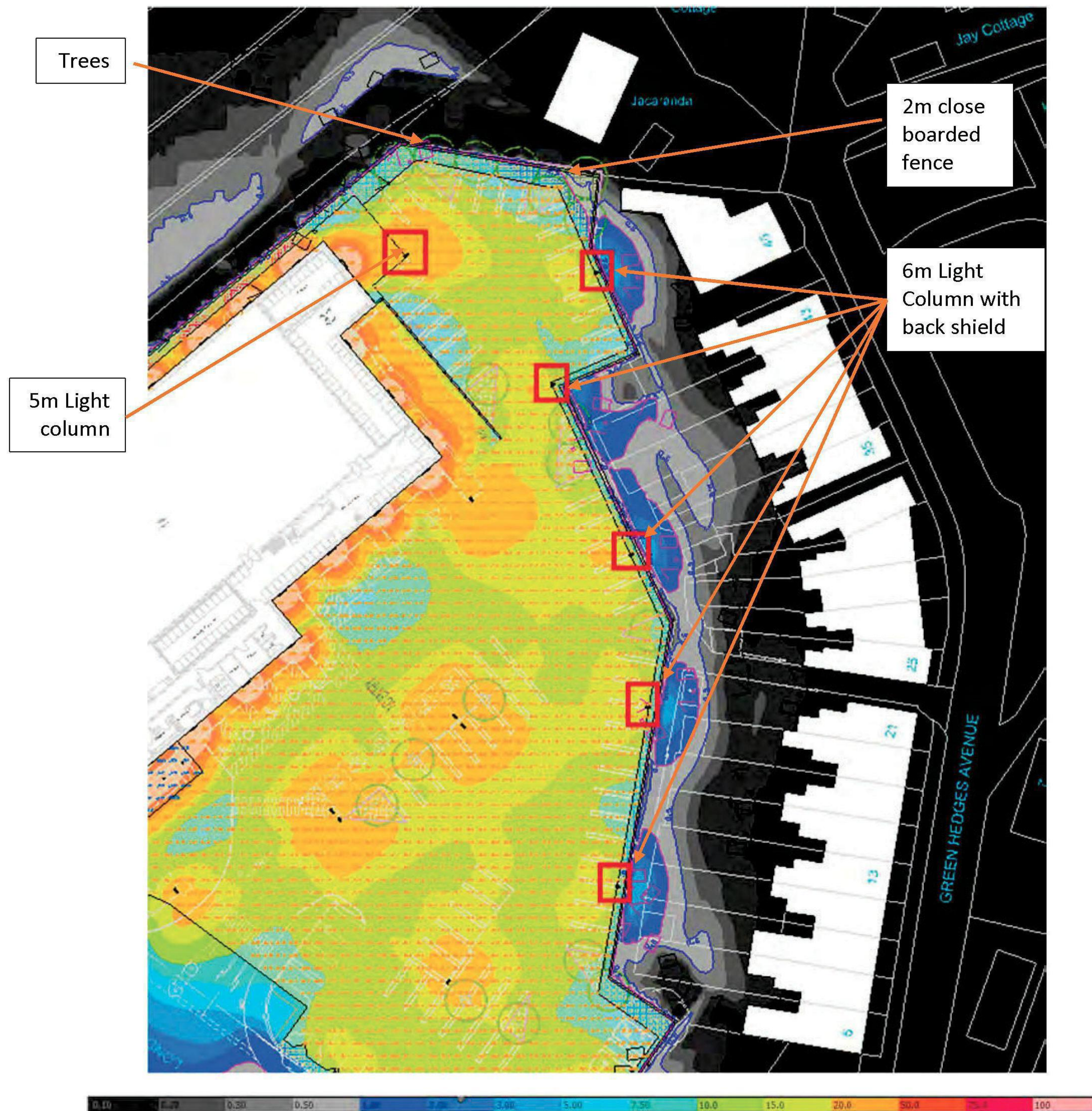


Figure 2 - Residential properties on Green Hedges Avenue in the lighting model. The light spill from the car park across the eastern site boundary is between 0.20 to 1 lux

10.00 CONCLUSION

The proposed Lidl store lighting scheme in East Grinstead meets ILP Guidelines 01/21.

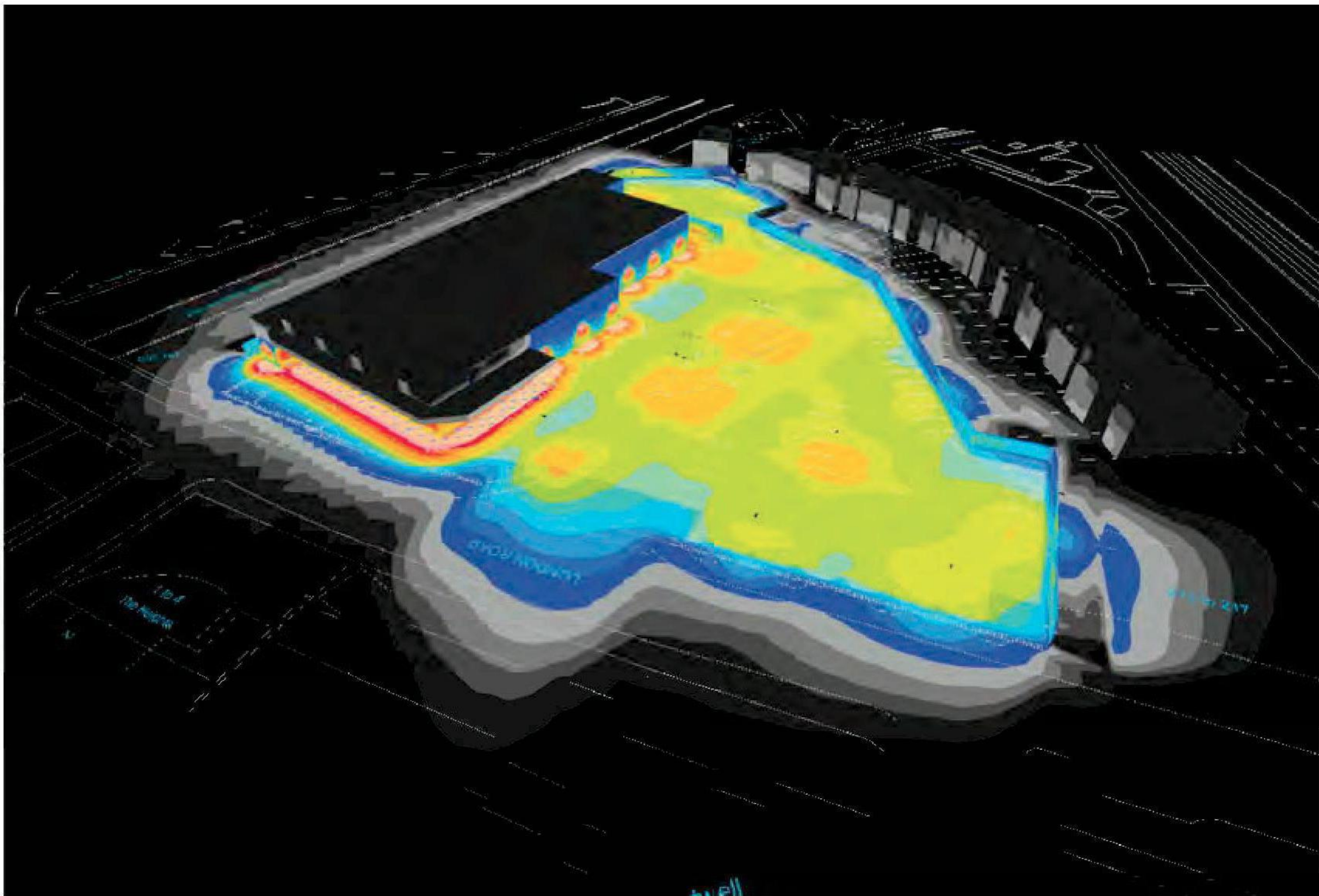
The above light assessment successfully addresses the planning condition 19 raised by the Council.

APPENDIX A: EXTERNAL LIGHTING PLANS

- 23/4432/E63/EX01 – Rev E: External Lighting Plan. Rear of store lights OFF.
- 23/4432/E63/EX02 – Rev E: External Lighting Plan. All lights ON.

APPENDIX B: LIGHTING SOFTWARE REPORT





Lidl East Grinstead

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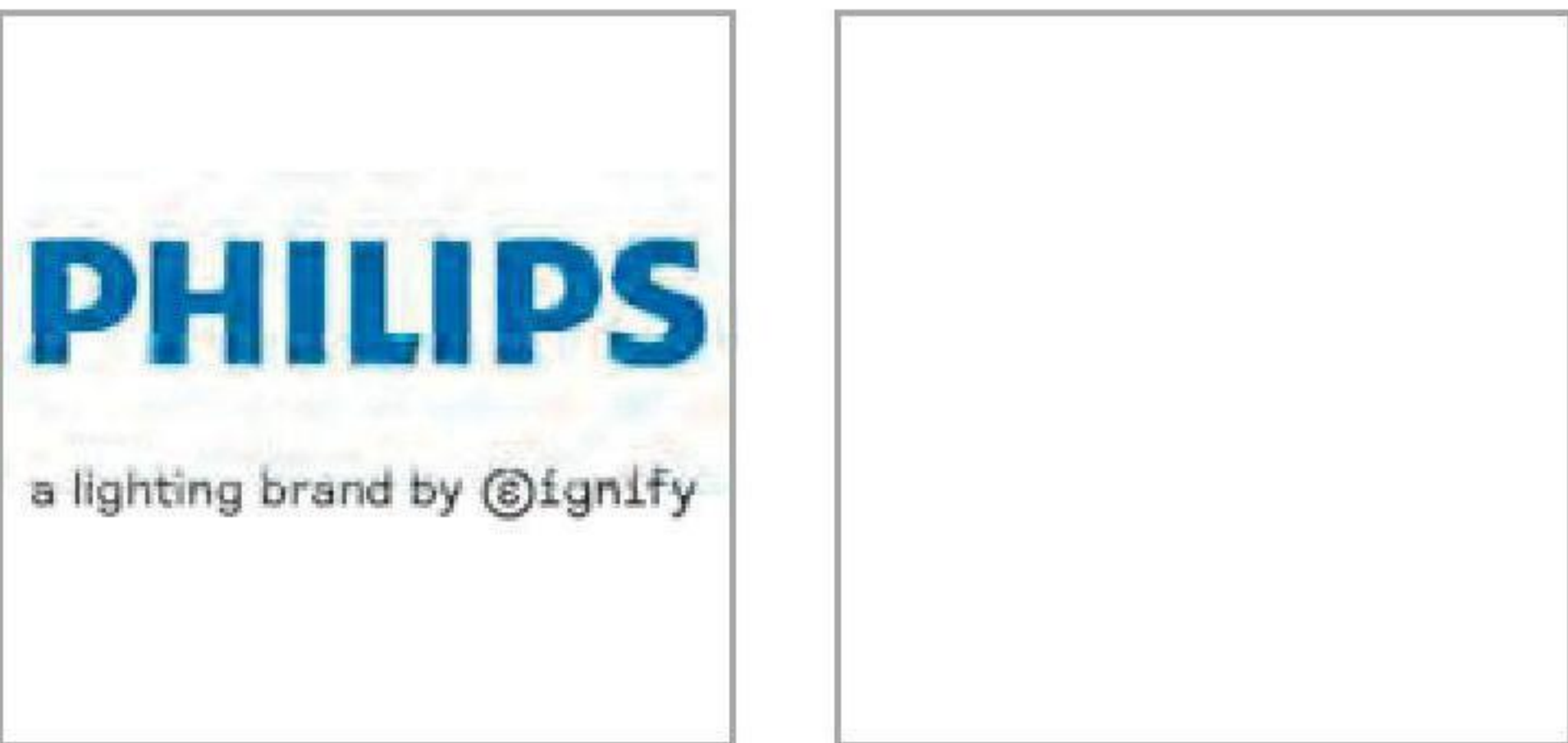
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Canopy (1m from floor) / Light scene 1 / Perpendicular illuminance 42

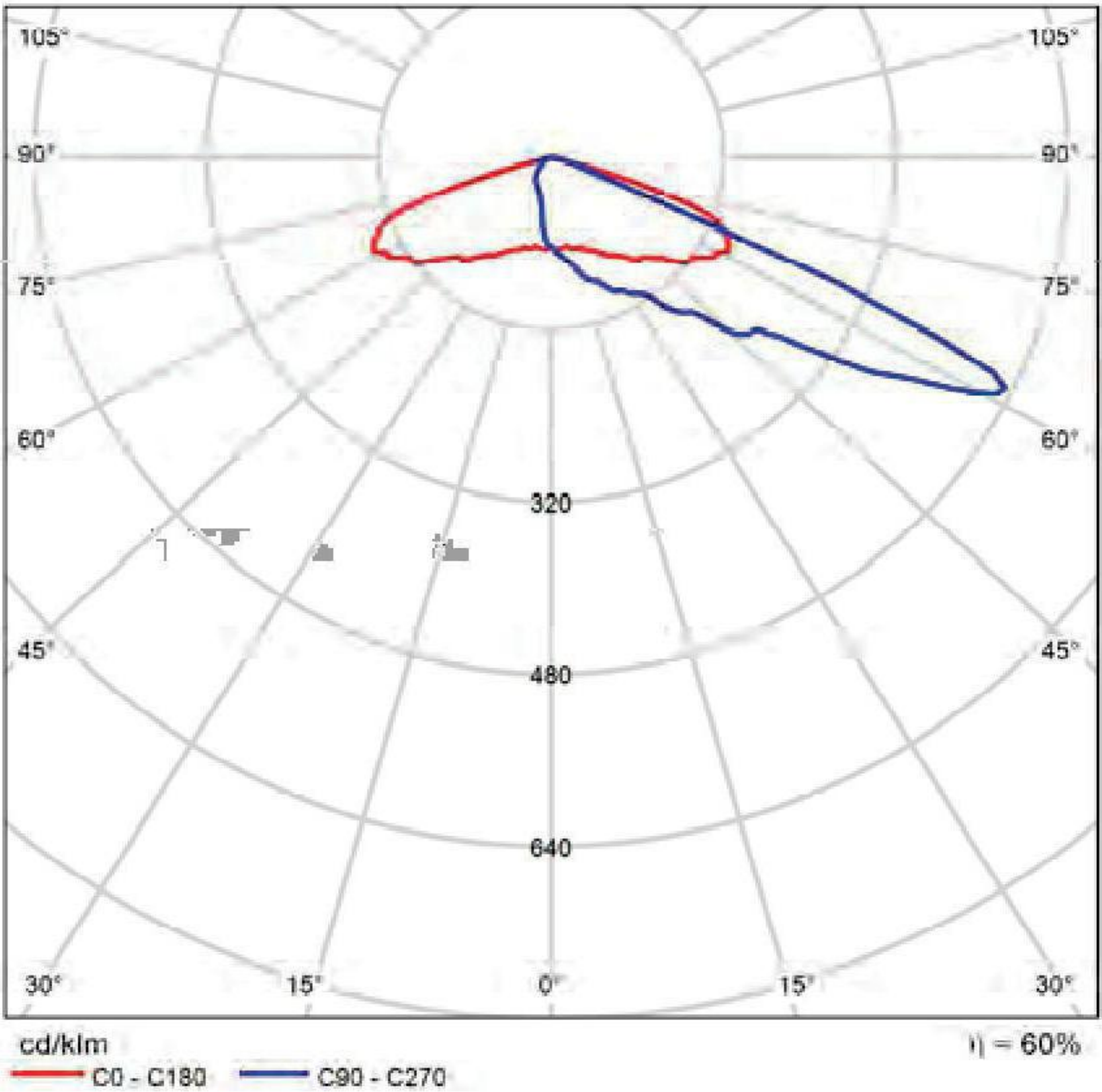
Rear Walkway / Light scene 1 / Perpendicular illuminance 43

Product data sheet

Philips - BGP292 T25 LED75-4S/740 PSU DX10 BL1 FG



Article No.	BGP282I-eae2993b-fe40-4b0f-a714-12617d5597c5
P	43.1 W
Φ _{Lamp}	7500 lm
Φ _{Luminaire}	4531 lm
η	60.41 %
Luminous efficacy	105.0 lm/W
CCT	4000 K
CRI	70

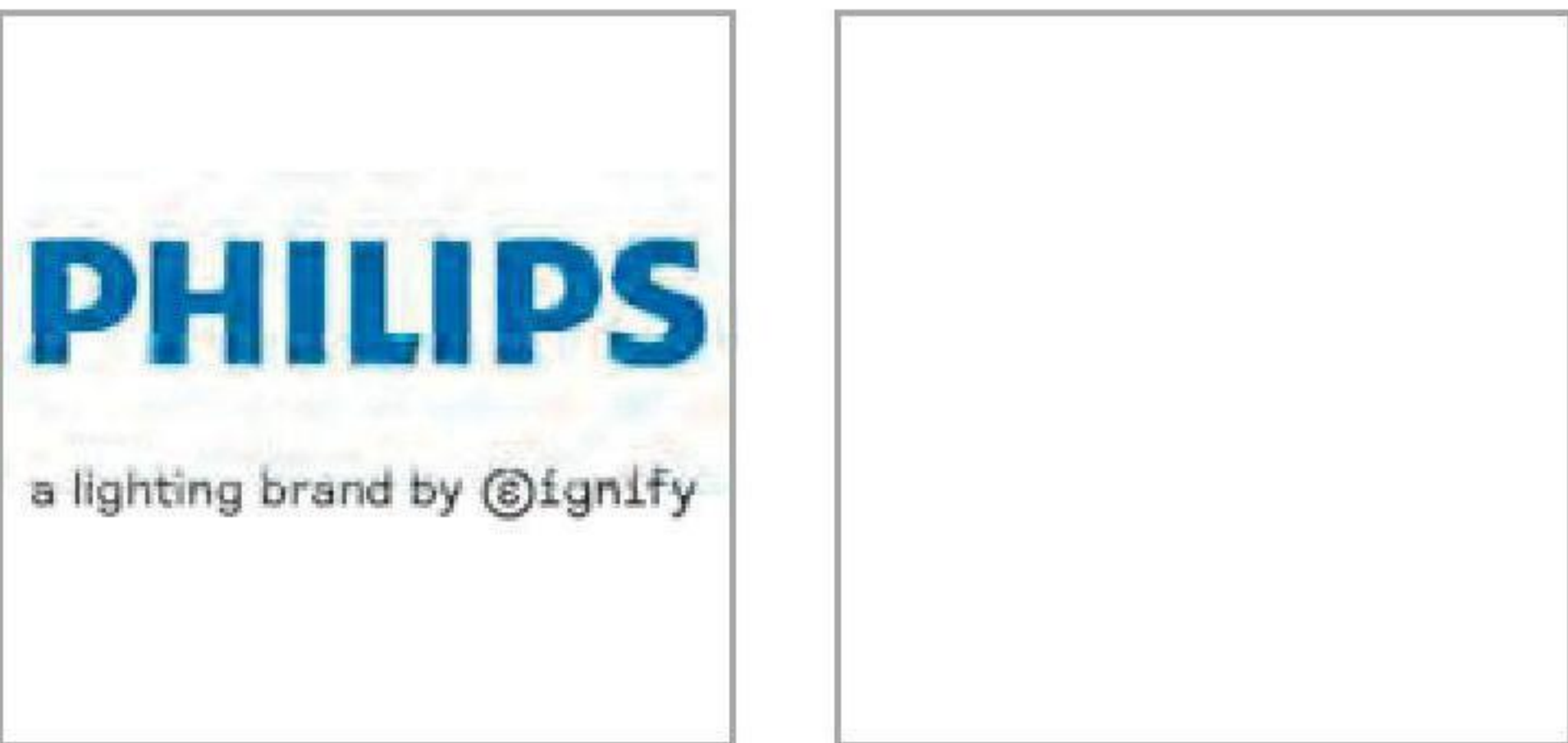


Polar LDC

Designed for large-scale ledification projects, the UniStreet gen2 is the ideal 1:1 luminaire replacement for municipalities. Thanks to its high efficiency and low initial cost, the UniStreet gen2 luminaire enables a fast payback and significant savings in terms of energy consumption within a short period of time. The ease of installation and maintenance is enabled by the Philips Service tag and the Philips SR (System Ready) socket makes it future-ready and you can pair this luminaire with lighting control and software applications such as Interact City. Available with a number of different optics and lumen packages that can even be tuned further to fit exact project requirements, UniStreet gen2 is a true point-to-point replacement solution for conventional light sources. The compact luminaire, using high-quality materials is also easy to dismantle and recycle at the end of its lifetime.

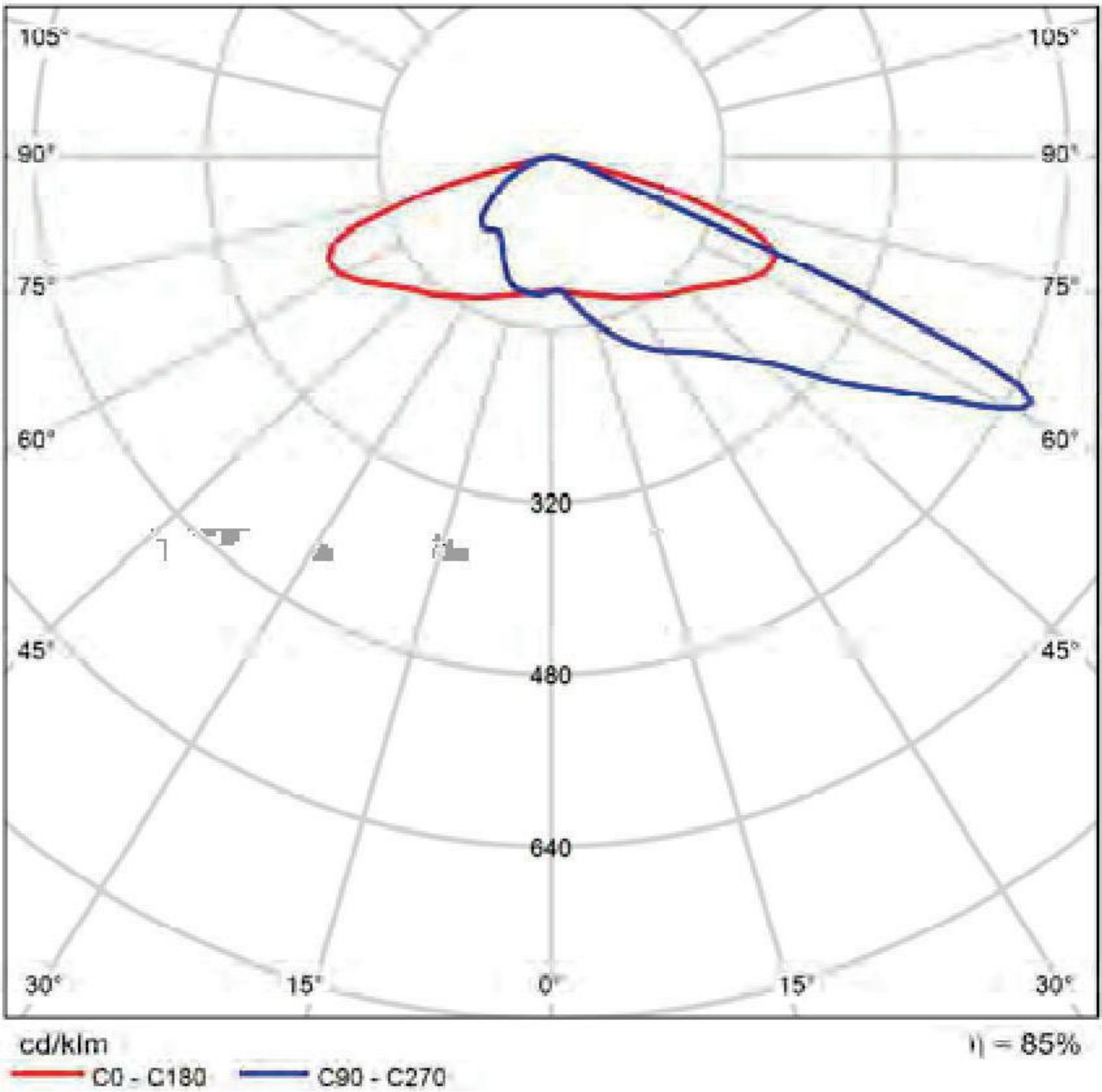
Product data sheet

Philips - BGP292 T25 LED75-4S/740 PSU DX10 FG



Article No.	BGP282I-3c62271e-b1e3-427a-840c-d1313914134c
P	43.1 W
Φ _{Lamp}	7500 lm
Φ _{Luminaire}	6370 lm
η	84.93 %
Luminous efficacy	147.7 lm/W
CCT	4000 K
CRI	70

Designed for large-scale ledification projects, the UniStreet gen2 is the ideal 1:1 luminaire replacement for municipalities. Thanks to its high efficiency and low initial cost, the UniStreet gen2 luminaire enables a fast payback and significant savings in terms of energy consumption within a short period of time. The ease of installation and maintenance is enabled by the Philips Service tag and the Philips SR (System Ready) socket makes it future-ready and you can pair this luminaire with lighting control and software applications such as Interact City. Available with a number of different optics and lumen packages that can even be tuned further to fit exact project requirements, UniStreet gen2 is a true point-to-point replacement solution for conventional light sources. The compact luminaire, using high-quality materials is also easy to dismantle and recycle at the end of its lifetime.



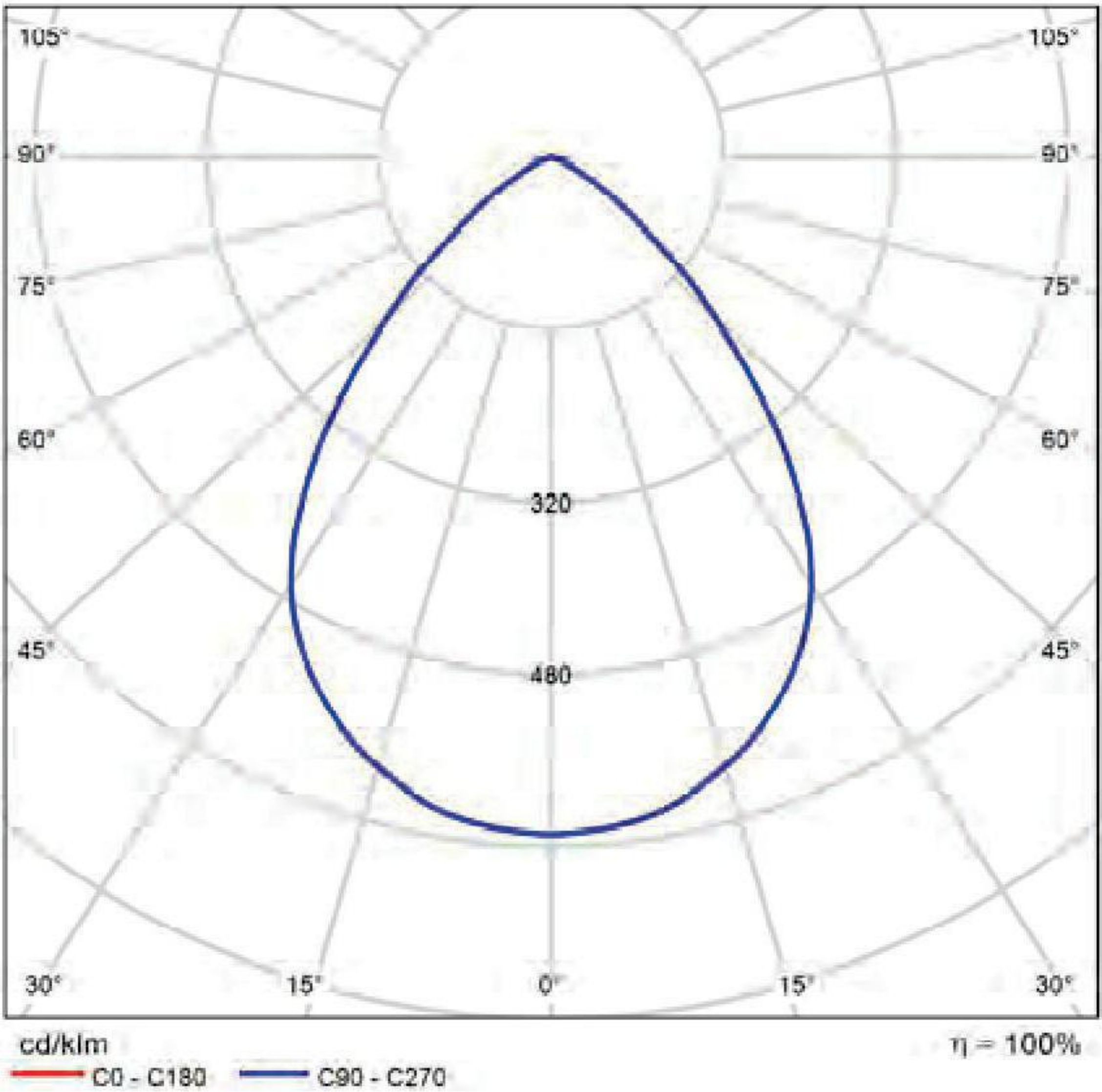
Polar LDC

Product data sheet

Philips - DN570B LED24S/840 PSU-E C



Article No.	DN570BI-134c40e5-fcf4-4ae7-a43b-afcebe84ab47
P	17.2 W
Φ_{Lamp}	2300 lm
$\Phi_{Luminaire}$	2301 lm
η	100.06 %
Luminous efficacy	133.8 lm/W
CCT	4000 K
CRI	80



Polar LDC

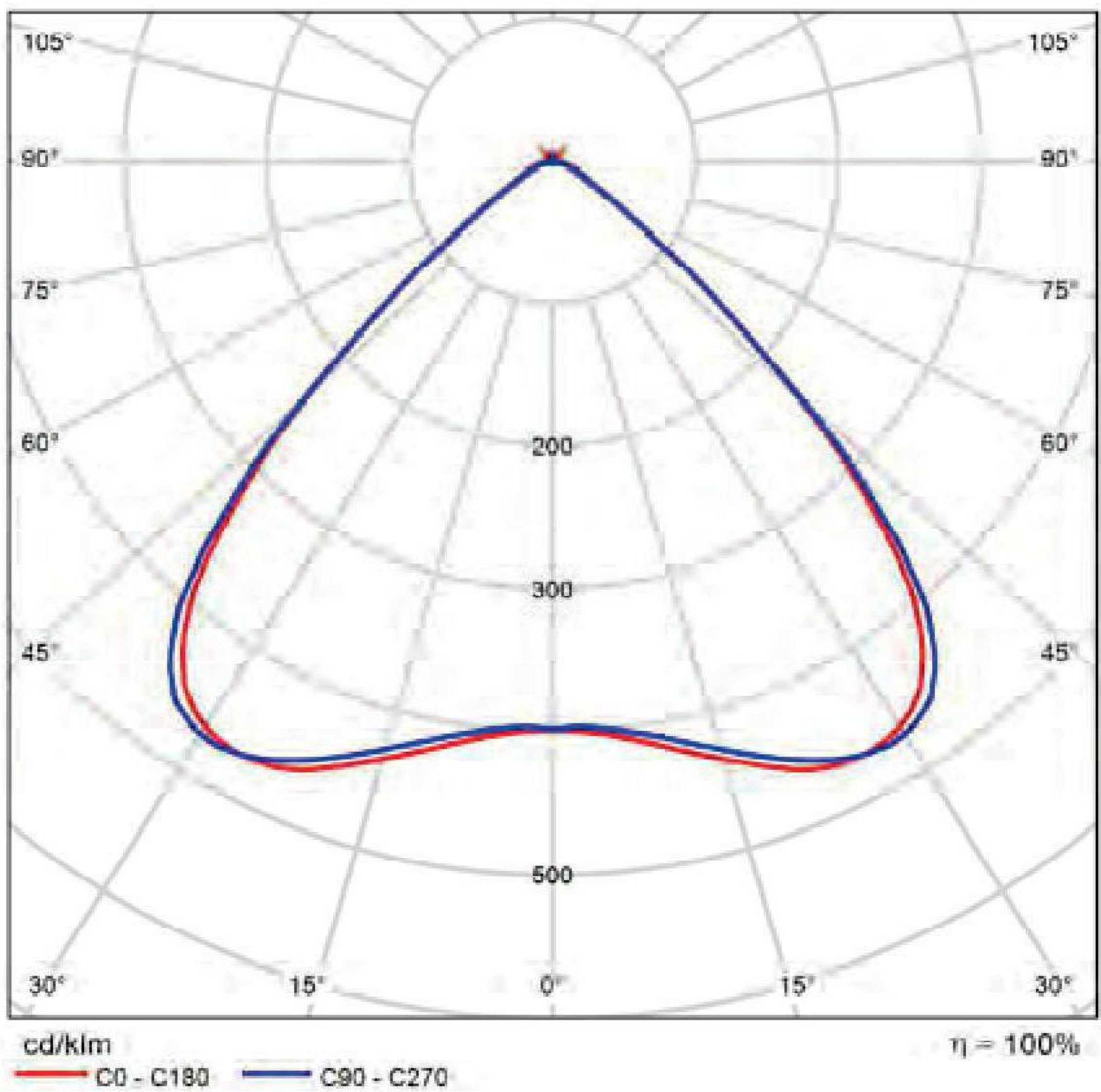
Customers are looking to optimize all their resources, and that means not just their running costs (energy, etc.) but also their human resources. Energy savings are therefore a priority, but they must not have an adverse effect on the well-being of employees, who need a pleasant environment in order to be more productive, or on customers, who want to enjoy their shopping experience. LuxSpace provides the perfect combination of efficiency, light comfort and design, without compromising on lighting performance (color rendering and color uniformity). It offers a wide choice of options for creating the desired ambience, no matter the application.

Product data sheet

Philips - Pacific LED Gen5 Value - WT475CI - WT475C T45 42S/840 PSU WB L1200



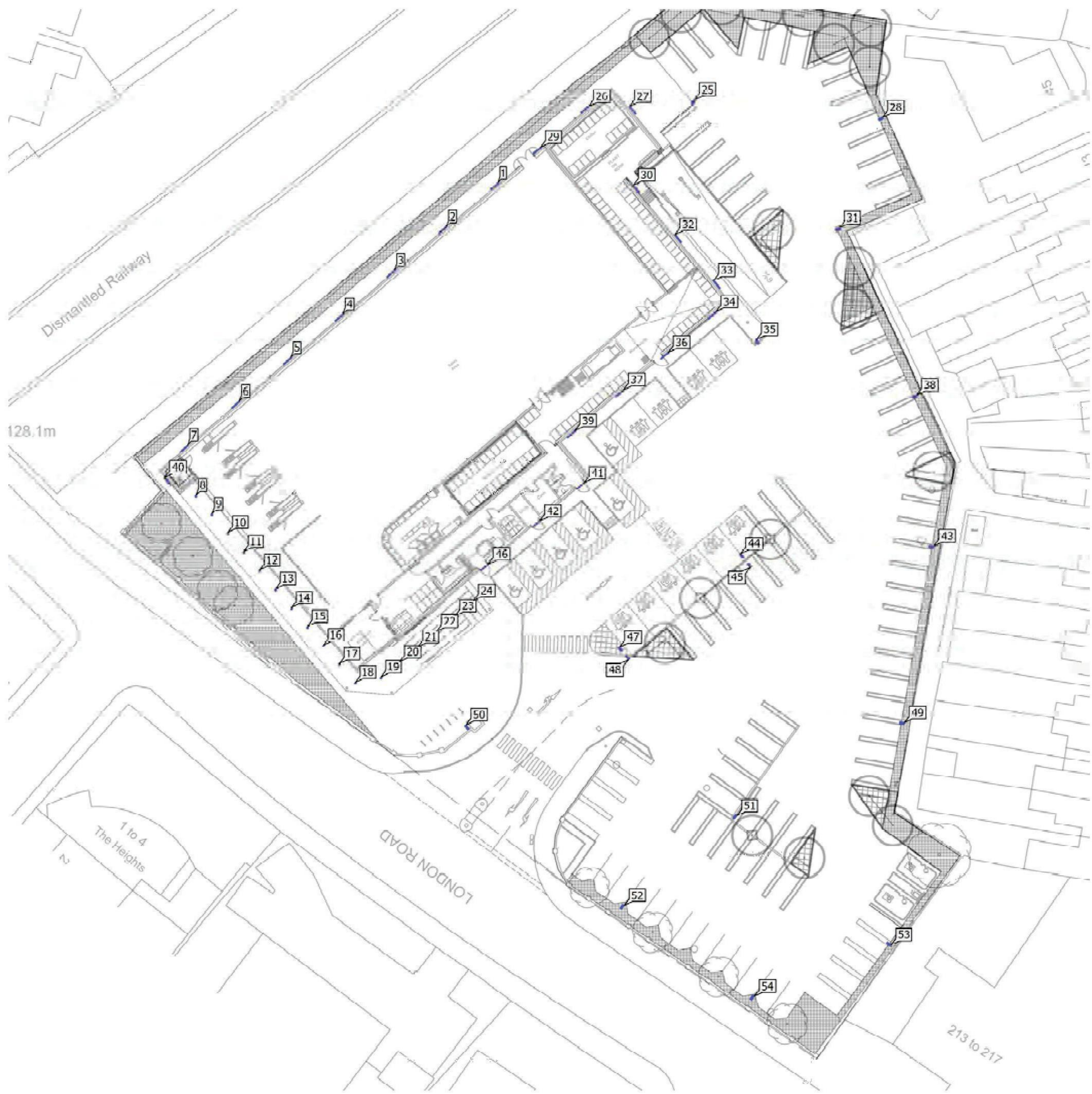
Article No.	001f9b36-c118-401b-b5f3-ba8e3c5ce209
P	30.0 W
Φ _{Lamp}	4200 lm
Φ _{Luminaire}	4199 lm
η	99.97 %
Luminous efficacy	140.0 lm/W
CCT	4000 K
CRI	80



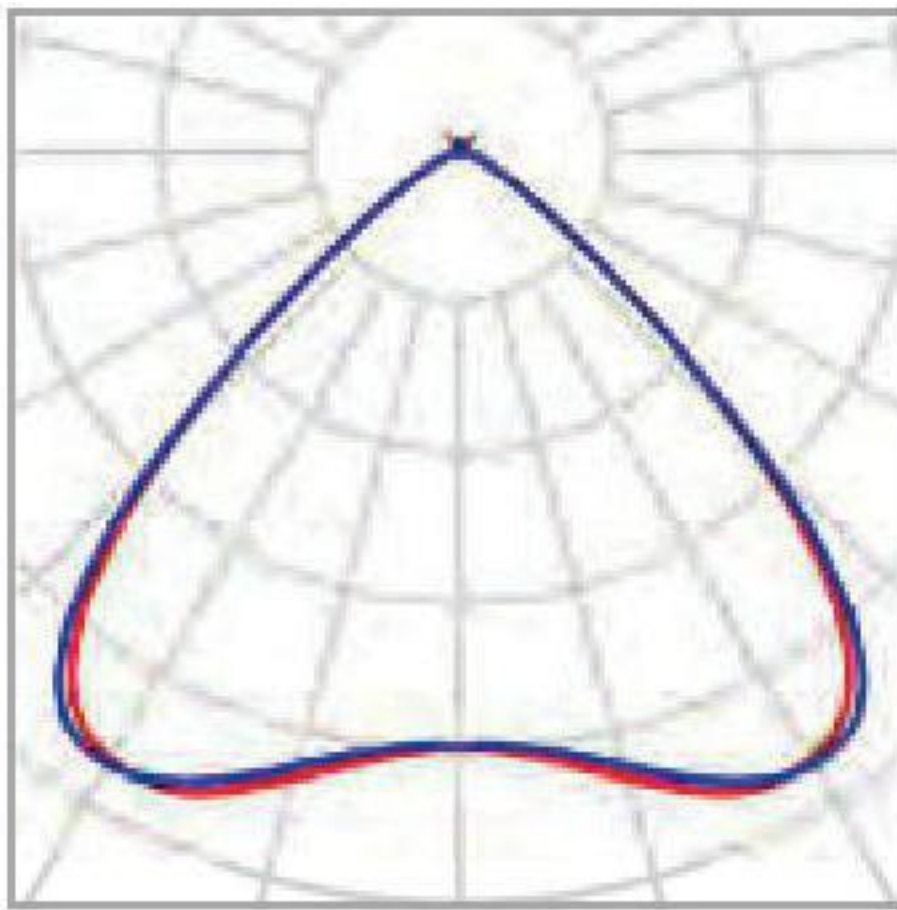
Polar LDC

Pacific LED Gen5 Value is an innovative and best-in-class LED waterproof luminaire that is praised for its optimal performance. It meets the demanding requirements of contemporary and harsh industries. It is a very robust, compact, and reliable luminaire, with excellent quality of light. With a high degree of mechanical (IK08), water and dust protection (IP66), combined with proven chemical resistance, the Pacific LED Gen5 Value can perfectly withstand the harsh conditions of automotive, food and heavy industries. But this waterproof lighting also performs well in parking garages and warehouses. With multiple optics and a broad range of light outputs. Pacific LED Gen5 Value luminaires provide superior, artefact-free light quality and homogeneous light. This ensures more flexibility in optimized light scheme planning. They are also designed with a circular approach, which means these fully-serviceable luminaires can be upgraded to extend their overall lifecycle. These luminaires stand out because of their quick and easy installation that facilitates through wiring and various connection and mounting options. But also due to their energy efficiency and ease of maintenance – with the minimum of disruption to operations in demanding applications. Discover Pacific LED Gen5 Value. Robust luminaires with optimal performance for waterproof lighting.

Luminaire layout plan



Luminaire layout plan



Manufacturer	Philips	P	30.0 W
Article No.	001f9b36-c118-401b-b5f3-ba8e3c5ce209	Φ _{Luminaire}	4199 lm
Article name	Pacific LED Gen5 Value - WT475CI - WT475C T45 42S/840 PSU WB L1200		
Fitting	1x 42S/840		

7 x Philips Pacific LED Gen5 Value - WT475CI - WT475C T45 42S/840 PSU WB L1200

Type	Line arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	114.647 m / 174.838 m / 3.318 m	114.647 m	174.838 m	3.318 m	1
X-direction	7 pcs., Centre - centre, Distances not equal	108.385 m	169.550 m	3.318 m	2
		102.123 m	164.262 m	3.318 m	3
		95.861 m	158.974 m	3.318 m	4
		89.599 m	153.686 m	3.318 m	5
		83.337 m	148.398 m	3.318 m	6
		77.075 m	143.109 m	3.318 m	7

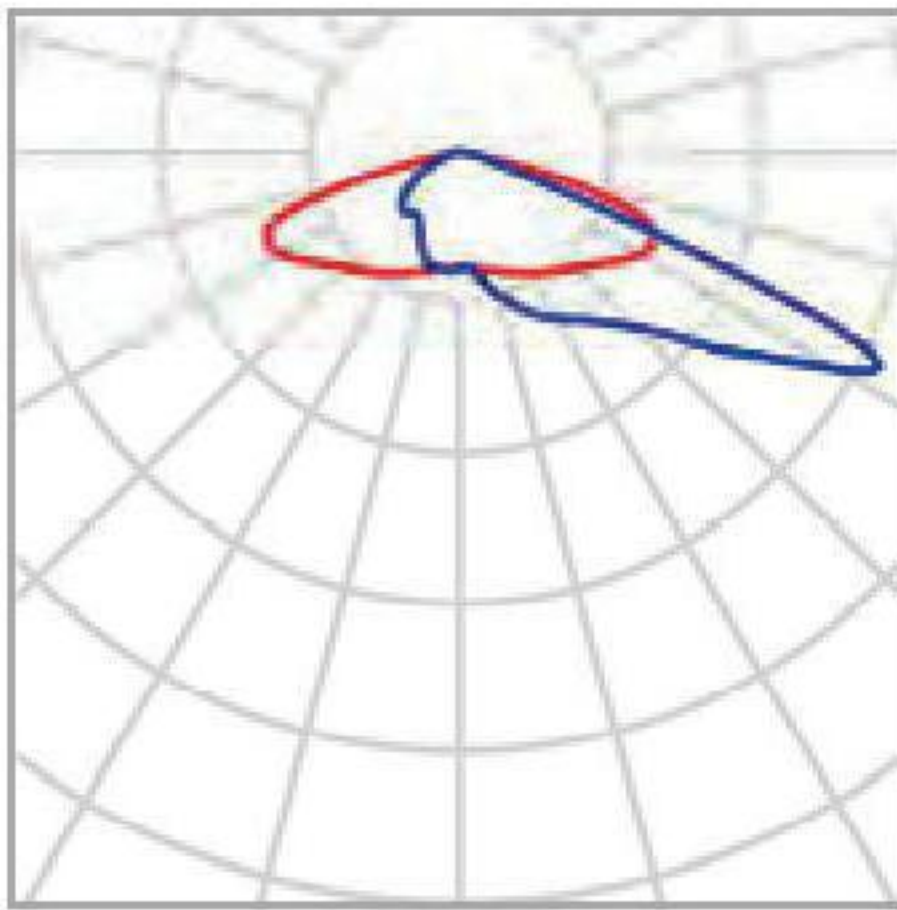
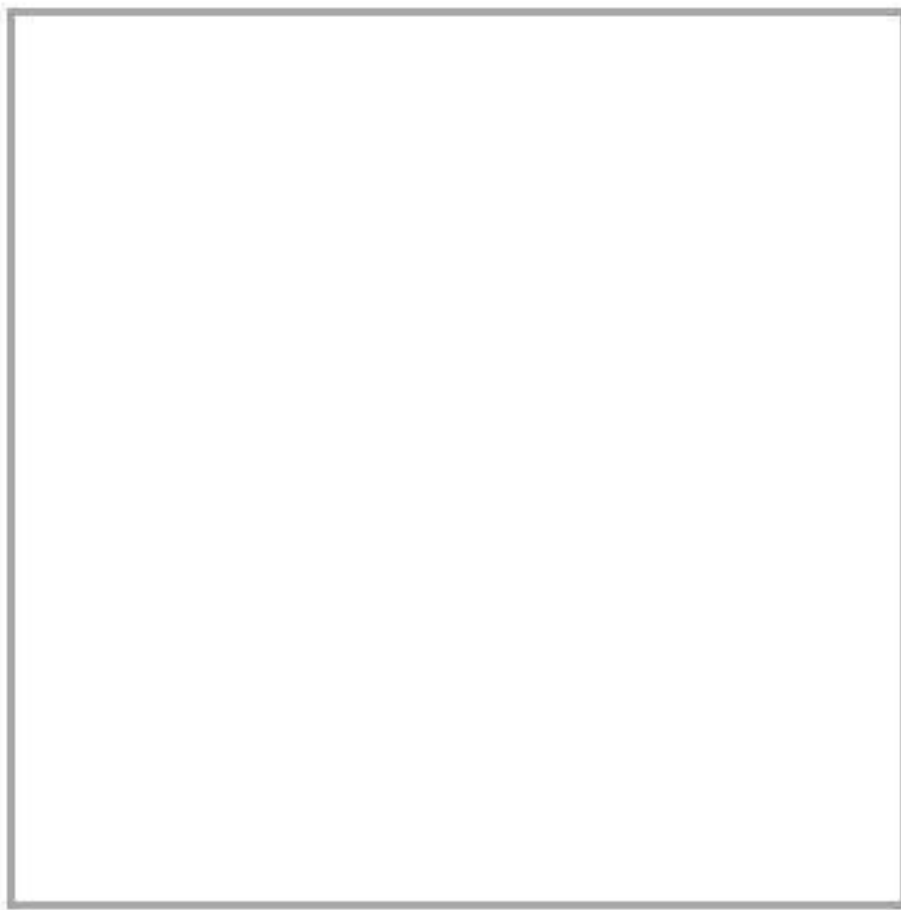
Individual luminaires

X	Y	Mounting height	Luminaire
125.660 m	184.137 m	3.318 m	26
131.405 m	184.082 m	3.318 m	27
119.796 m	179.197 m	3.318 m	29

Luminaire layout plan

X	Y	Mounting height	Luminaire
131.860 m	174.500 m	3.312 m	30
136.874 m	168.508 m	3.312 m	32
141.565 m	162.950 m	3.312 m	33
141.062 m	159.237 m	3.318 m	34
135.296 m	154.302 m	3.318 m	36
129.880 m	149.778 m	3.318 m	37
124.001 m	144.786 m	3.318 m	39
75.027 m	139.102 m	3.318 m	40
125.123 m	138.539 m	3.318 m	41
119.674 m	133.905 m	3.318 m	42
113.427 m	128.660 m	3.318 m	46

Luminaire layout plan

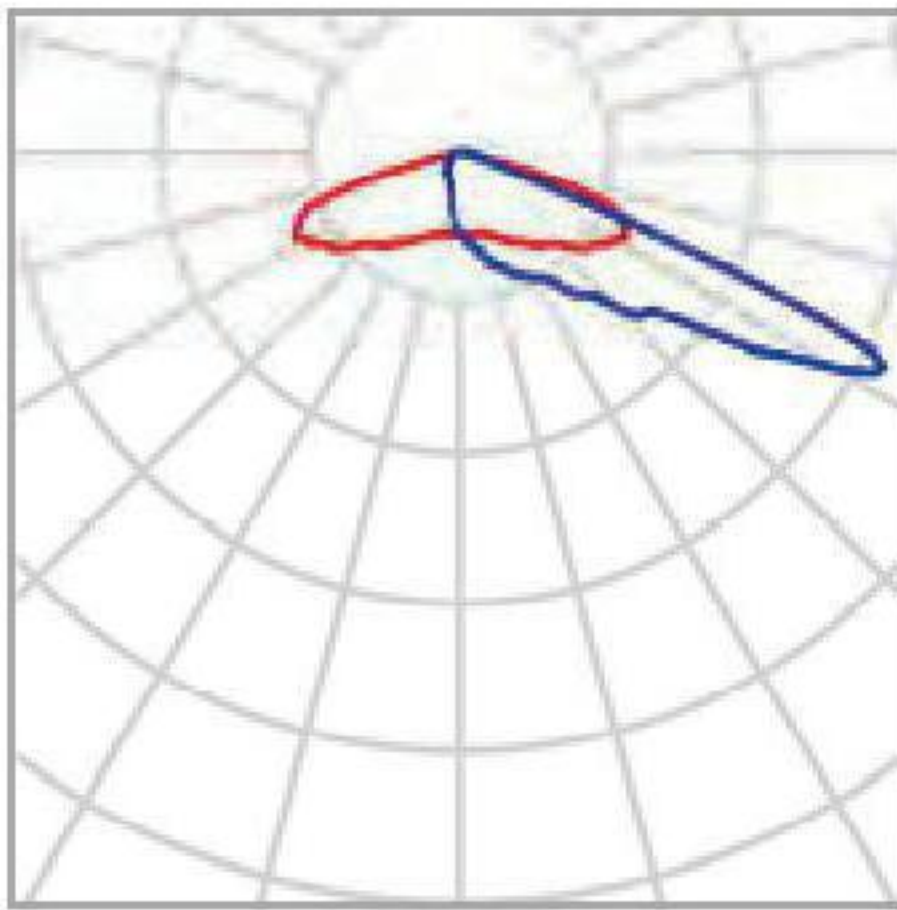
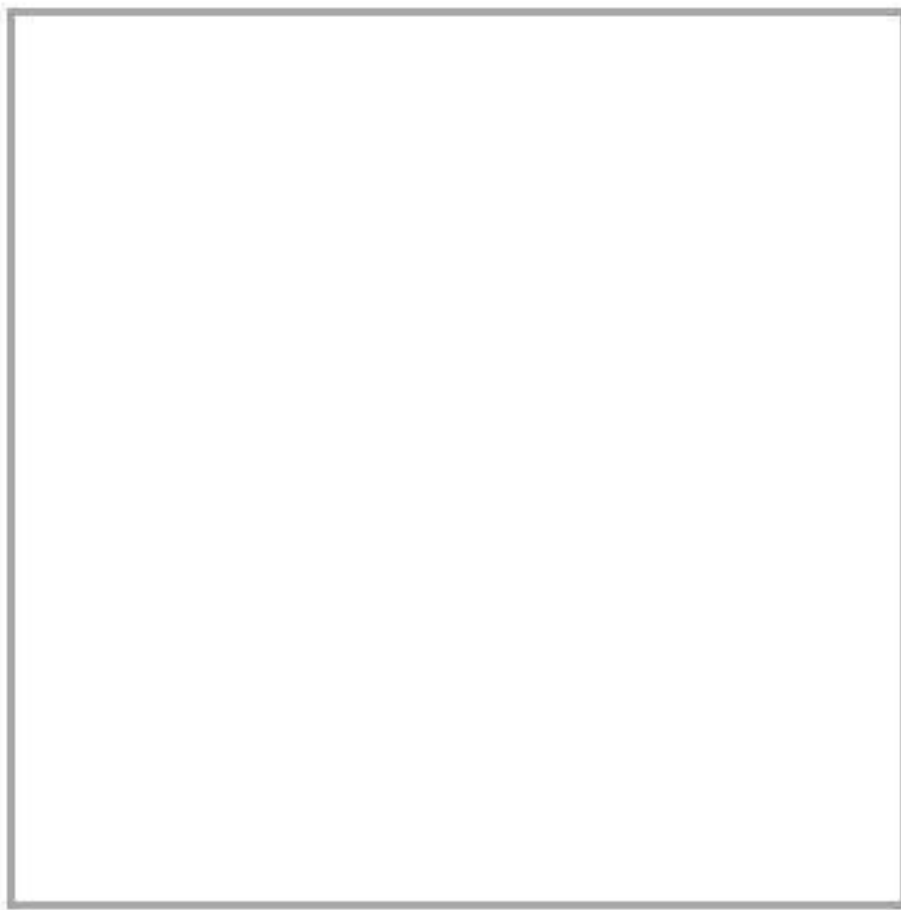


Manufacturer	Philips	P	43.1 W
Article No.	BGP282I-3c62271e-b1e3-427a-840c-d1313914134c	Φ _{Luminaire}	6370 lm
Article name	BGP292 T25 LED75-4S/740 PSU		
Fitting	1x LED75-4S/740		

Individual luminaires

X	Y	Mounting height	Luminaire
138.574 m	184.903 m	5.000 m	25
146.341 m	156.165 m	6.000 m	35
144.728 m	129.902 m	6.000 m	44
145.390 m	129.135 m	6.000 m	45
130.087 m	118.601 m	6.000 m	47
130.656 m	117.975 m	6.000 m	48
111.153 m	109.488 m	6.000 m	50
143.641 m	98.264 m	6.000 m	51

Luminaire layout plan

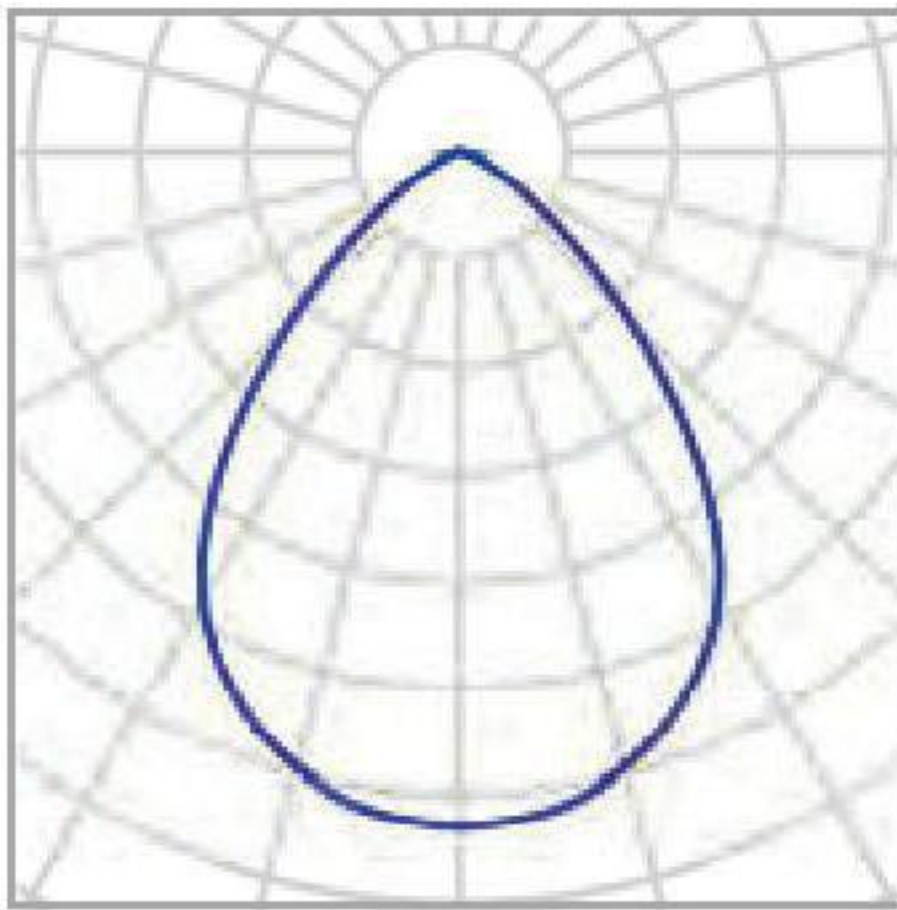


Manufacturer	Philips	P	43.1 W
Article No.	BGP282I-eae2993b-fe40-4b0f-a714-12617d5597c5	Φ _{Luminaire}	4531 lm
Article name	BGP292 T25 LED75-4S/740 PSU DX10 BL1 FG		
Fitting	1x LED75-4S/740		

Individual luminaires

X	Y	Mounting height	Luminaire
161.664 m	183.086 m	6.000 m	28
156.455 m	169.702 m	6.000 m	31
165.828 m	149.465 m	6.000 m	38
167.832 m	131.124 m	6.000 m	43
164.231 m	109.752 m	6.000 m	49
130.009 m	87.378 m	6.000 m	52
162.583 m	82.918 m	6.000 m	53
145.736 m	76.351 m	6.000 m	54

Luminaire layout plan



Manufacturer	Philips	P	17.2 W
Article No.	DN570BI-134c40e5-fcf4-4ae7-a43b-afcebe84ab47	Φ _{Luminaire}	2301 lm
Article name	DN570B LED24S/840 PSU-E C		
Fitting	1x LED24S/840		

6 x Philips DN570B LED24S/840 PSU-E C

Type	Line arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	100.928 m / 115.256 m / 4.000 m	100.928 m	115.256 m	4.000 m	19
X-direction	6 pcs., Centre - centre, 2.903 m	103.161 m	117.112 m	4.000 m	20
		105.394 m	118.968 m	4.000 m	21
		107.626 m	120.825 m	4.000 m	22
		109.859 m	122.681 m	4.000 m	23
		112.092 m	124.537 m	4.000 m	24

11 x Philips DN570B LED24S/840 PSU-E C

Type	Line arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	78.548 m / 137.292 m / 4.000 m	78.548 m	137.292 m	4.000 m	8
X-direction	11 pcs., Centre - centre, 2.976 m	80.476 m	135.025 m	4.000 m	9
		82.404 m	132.757 m	4.000 m	10
		84.332 m	130.489 m	4.000 m	11
		86.260 m	128.221 m	4.000 m	12

Luminaire layout plan

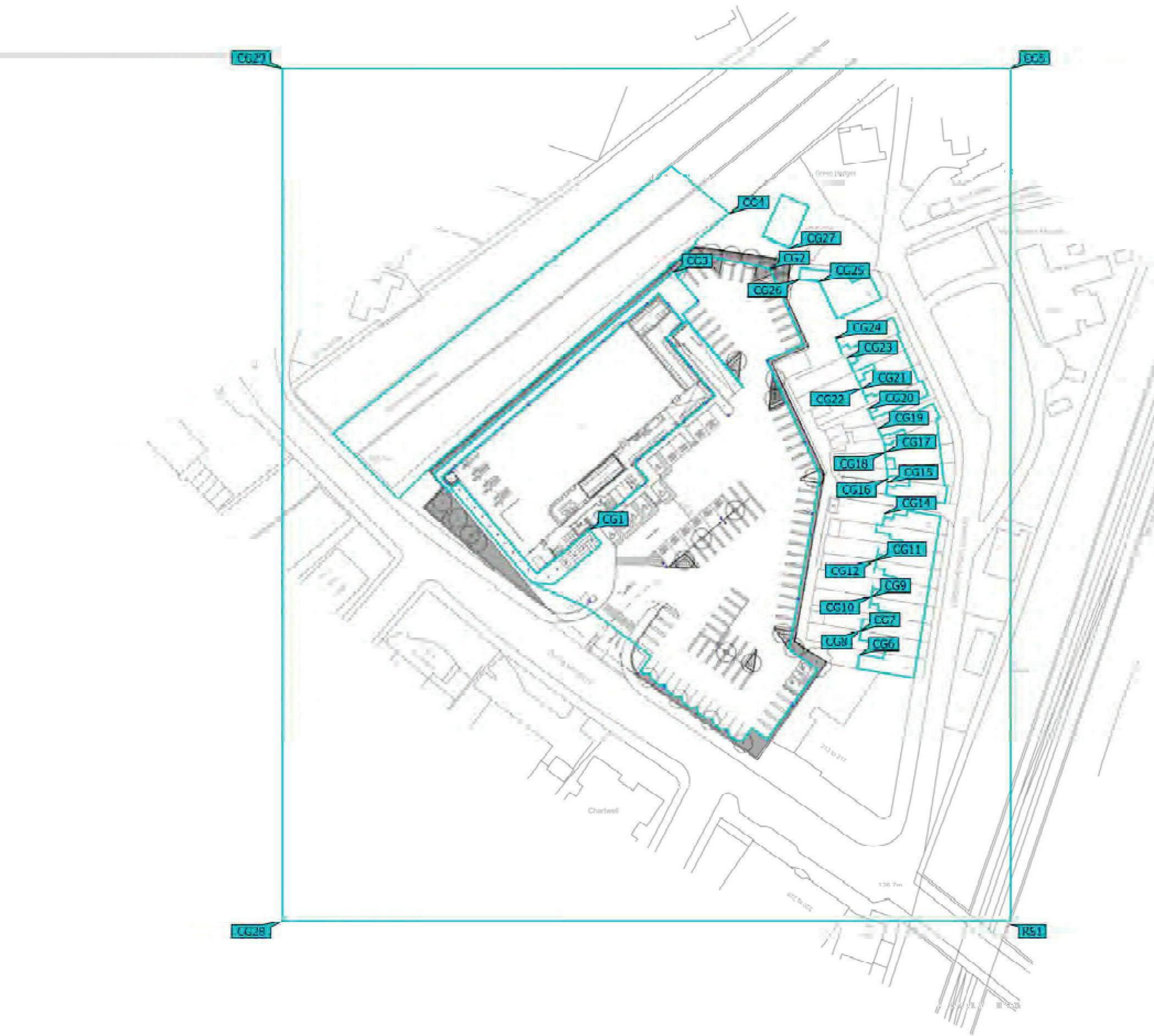
X	Y	Mounting height	Luminaire
88.188 m	125.953 m	4.000 m	13
90.115 m	123.686 m	4.000 m	14
92.043 m	121.418 m	4.000 m	15
93.971 m	119.150 m	4.000 m	16
95.899 m	116.882 m	4.000 m	17
97.827 m	114.614 m	4.000 m	18

Luminaire list

Φ_{total} 214504 lm	P_{total} 1612.0 W	Luminous efficacy 133.1 lm/W
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pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
21	Philips	001f9b36-c118-401b-b5f3-ba8e3c5ce209	Pacific LED Gen5 Value - WT475CI - WT475C T45 425/840 PSU WB L1200	30.0 W	4199 lm	140.0 lm/W
8	Philips	BGP282I-3c62271e-b1e3-427a-840c-d1313914134c	BGP292 T25 LED75-4S/740 PSU DX10 FG	43.1 W	6370 lm	147.7 lm/W
8	Philips	BGP282I-eae2993b-fe40-4b0f-a714-12617d5597c5	BGP292 T25 LED75-4S/740 PSU DX10 BL1 FG	43.1 W	4531 lm	105.0 lm/W
17	Philips	DN570BI-134c40e5-fcf4-4ae7-a43b-afcebe84ab47	DN570B LED24S/840 PSU-E C	17.2 W	2301 lm	133.8 lm/W

(Light scene 1)
Calculation objects



(Light scene 1)

Calculation objects

Surface result objects

Properties	Ø	min	max	U _o (g ₁)	g ₂	Index
Surface result object 2 Perpendicular illuminance (adaptive) Height: 0.000 m	3.70 lx	0.00 lx	155 lx	0.00	0.00	RS1
Surface result object 2 Luminance Height: 0.000 m	0.12 cd/m²	0.00 cd/m²	4.95 cd/m²	0.00	0.00	RS1

Calculation surfaces

Properties	Ē	E _{min}	E _{max}	U _o (g ₁)	g ₂	Index
11 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.38 lx	0.32 lx	0.49 lx	0.84	0.65	CG9
13 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.38 lx	0.30 lx	0.52 lx	0.79	0.58	CG10
15 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.43 lx	0.36 lx	0.56 lx	0.84	0.64	CG11
17 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.39 lx	0.33 lx	0.54 lx	0.85	0.61	CG12
21 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.41 lx	0.34 lx	0.59 lx	0.83	0.58	CG14
25 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.38 lx	0.33 lx	0.56 lx	0.87	0.59	CG15
27 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.32 lx	0.22 lx	0.43 lx	0.69	0.51	CG16
29 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.35 lx	0.21 lx	0.46 lx	0.60	0.46	CG17
31 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.35 lx	0.27 lx	0.42 lx	0.77	0.64	CG18

(Light scene 1)

Calculation objects

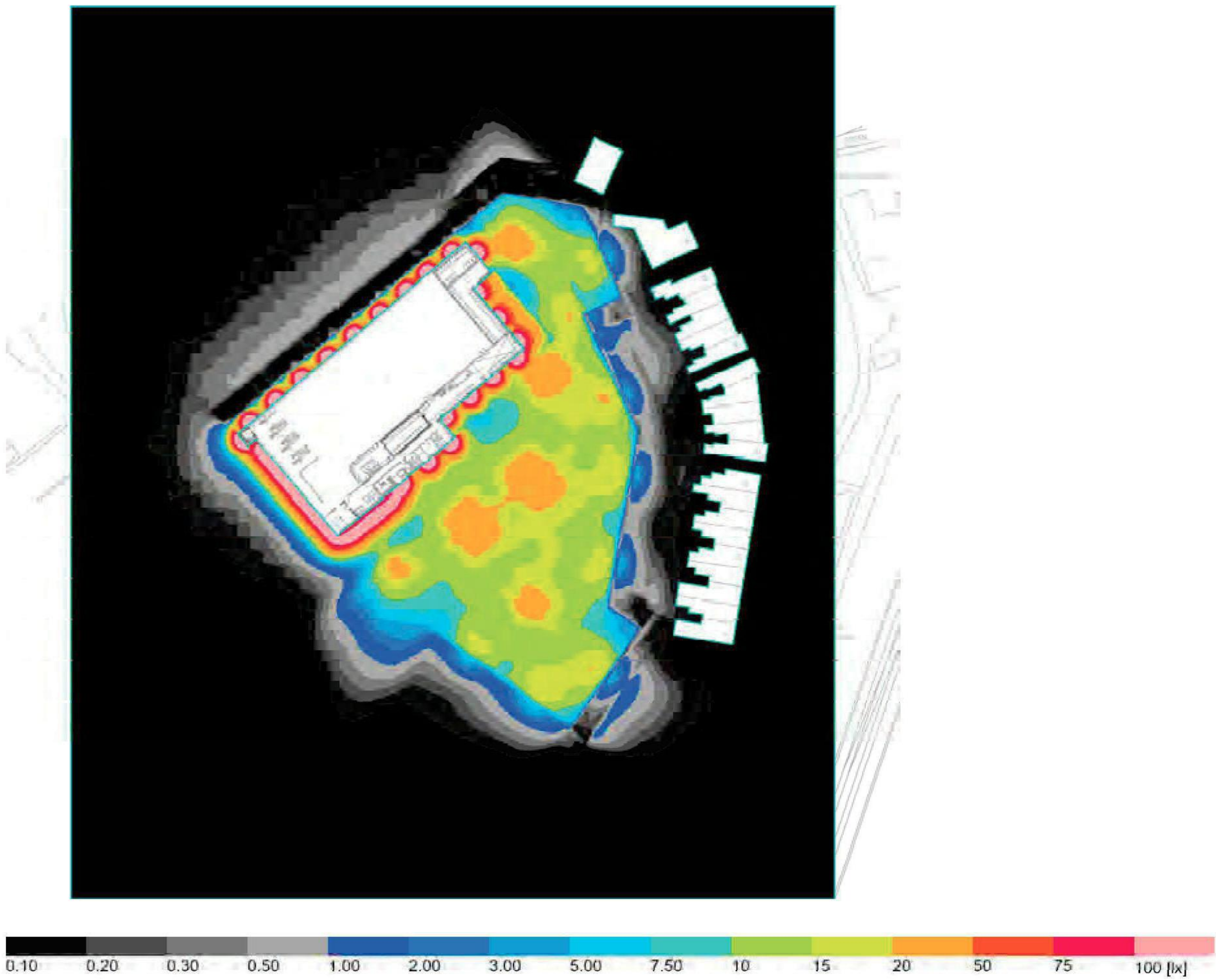
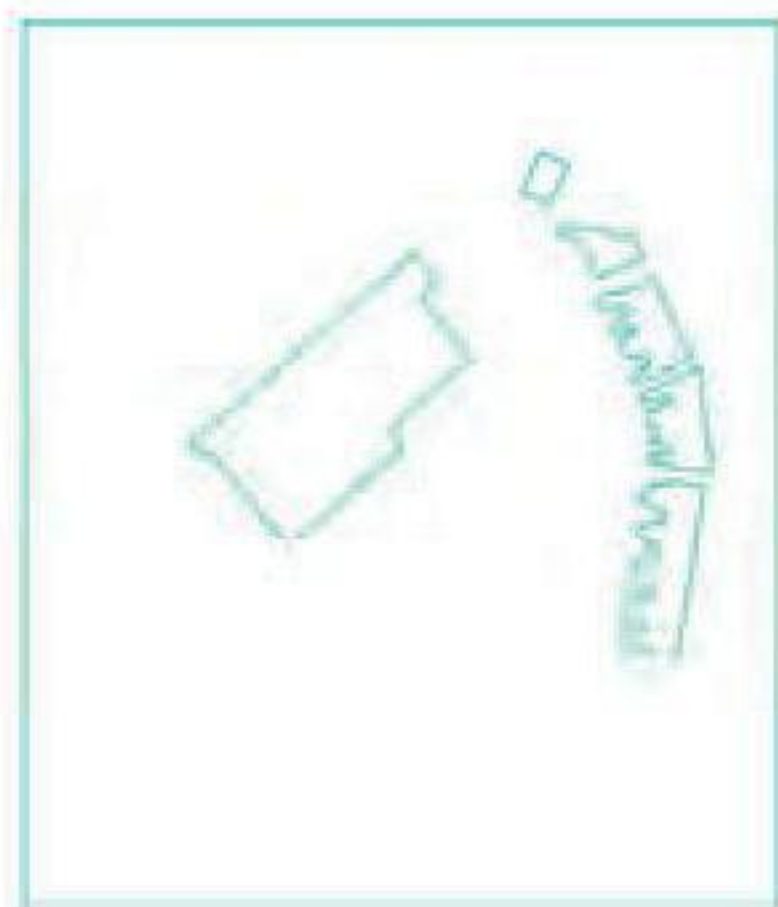
33 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.32 lx	0.26 lx	0.44 lx	0.81	0.59	CG19
35 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.46 lx	0.34 lx	0.95 lx	0.74	0.36	CG20
37 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.53 lx	0.35 lx	1.05 lx	0.66	0.33	CG21
39 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.47 lx	0.30 lx	1.04 lx	0.64	0.29	CG22
41 Green Hedges Av Perpendicular illuminance (adaptive) Height: 2.750 m	0.38 lx	0.31 lx	0.55 lx	0.82	0.56	CG23
43 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.42 lx	0.22 lx	0.51 lx	0.52	0.43	CG24
45 Green Hedges Av (1) Perpendicular illuminance (adaptive) Height: 3.000 m	0.46 lx	0.24 lx	0.62 lx	0.52	0.39	CG25
45 Green Hedges Av (2) Perpendicular illuminance (adaptive) Height: 3.000 m	0.46 lx	0.34 lx	0.69 lx	0.74	0.49	CG26
5 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.43 lx	0.28 lx	0.90 lx	0.65	0.31	CG6
7 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.49 lx	0.33 lx	0.87 lx	0.67	0.38	CG7
9 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.44 lx	0.34 lx	0.74 lx	0.77	0.46	CG8
Canopy (1m from floor) Perpendicular illuminance Height: 1.000 m	133 lx	49.7 lx	176 lx	0.37	0.28	CG1
Car Park Perpendicular illuminance Height: 0.000 m	19.1 lx	3.84 lx	146 lx	0.20	0.026	CG2

(Light scene 1)

Calculation objects

Dismantled Railway to the Rear Perpendicular illuminance (adaptive) Height: 0.000 m	0.27 lx	0.000 lx	1.90 lx	0.00	0.00	CG4
Jacaranda Perpendicular illuminance (adaptive) Height: 3.000 m	0.49 lx	0.11 lx	0.72 lx	0.22	0.15	CG27
Light Spill Perpendicular illuminance (adaptive) Height: 0.000 m	3.70 lx	0.00 lx	156 lx	0.00	0.00	CG5
Light Spill Perpendicular illuminance (adaptive) Height: 0.000 m	3.70 lx	0.00 lx	156 lx	0.00	0.00	CG28
Light Spill Perpendicular illuminance (adaptive) Height: 0.000 m	3.70 lx	0.00 lx	156 lx	0.00	0.00	CG29
Rear Walkway Perpendicular illuminance Height: 0.000 m	69.9 lx	4.41 lx	137 lx	0.063	0.032	CG3

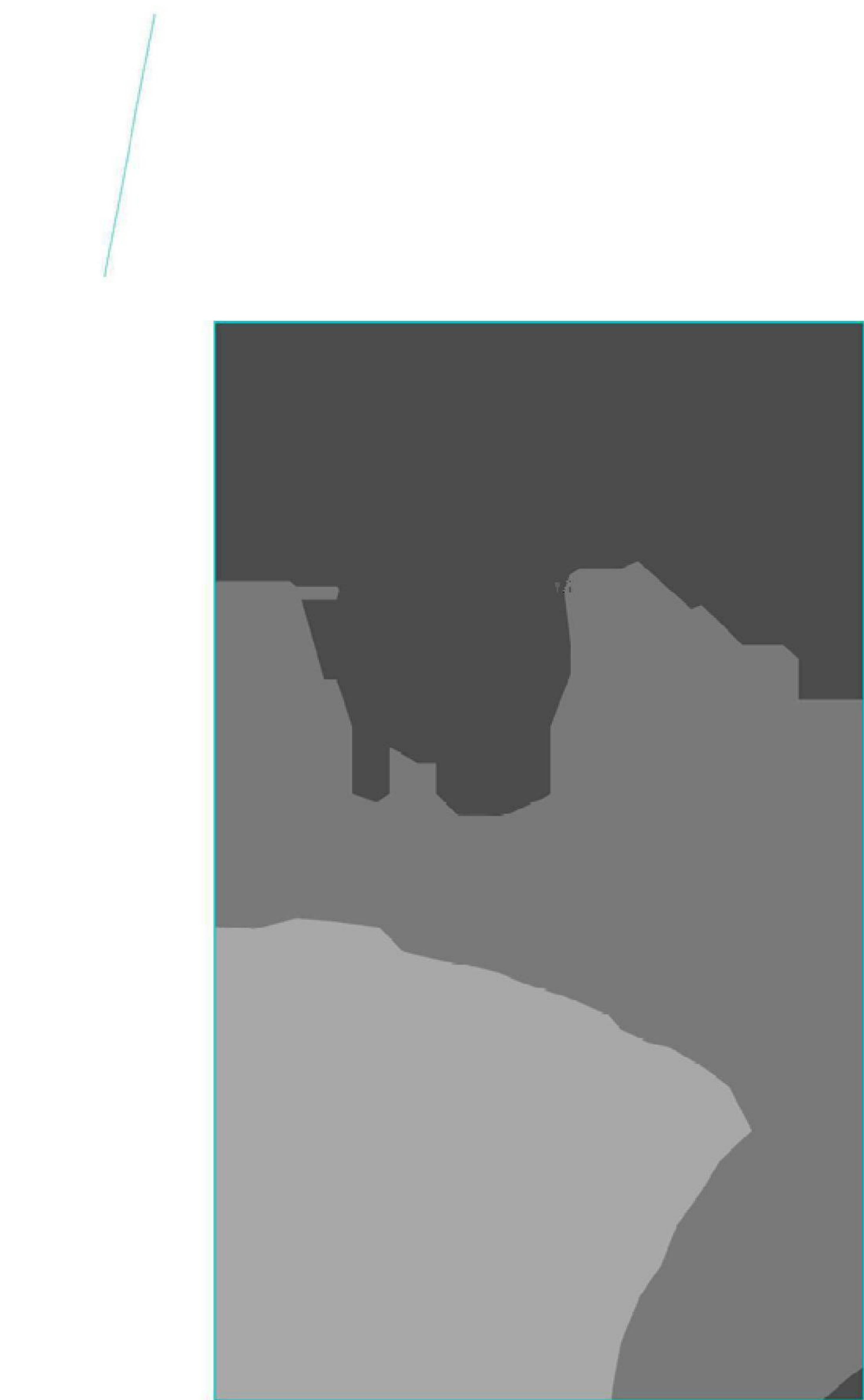
(Light scene 1)
Light Spill



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
Light Spill	3.70 lx	0.00 lx	156 lx	0.00	0.00
Perpendicular illuminance (adaptive)					
Height: 0.000 m					

(Light scene 1)

5 Green Hedges Av



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
5 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.43 lx	0.28 lx	0.90 lx	0.65	0.31

(Light scene 1)

7 Green Hedges Av



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
7 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.49 lx	0.33 lx	0.87 lx	0.67	0.38

(Light scene 1)

9 Green Hedges Av



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
9 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.44 lx	0.34 lx	0.74 lx	0.77	0.46

(Light scene 1)
11 Green Hedges Av



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
11 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.38 lx	0.32 lx	0.49 lx	0.84	0.65

(Light scene 1)
13 Green Hedges Av



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
13 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.38 lx	0.30 lx	0.52 lx	0.79	0.58

(Light scene 1)
15 Green Hedges Av



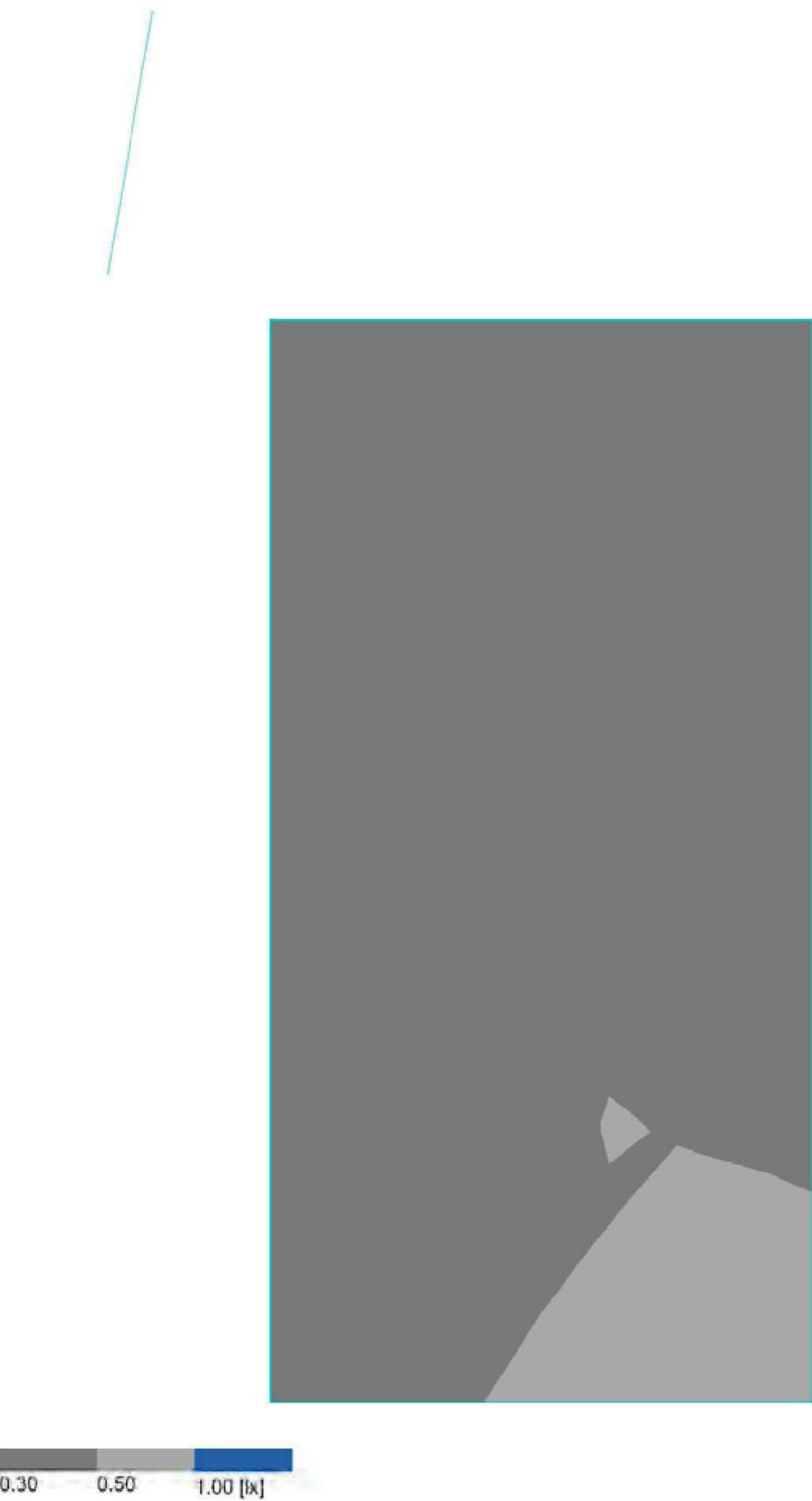
Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
15 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.43 lx	0.36 lx	0.56 lx	0.84	0.64

(Light scene 1)
17 Green Hedges Av



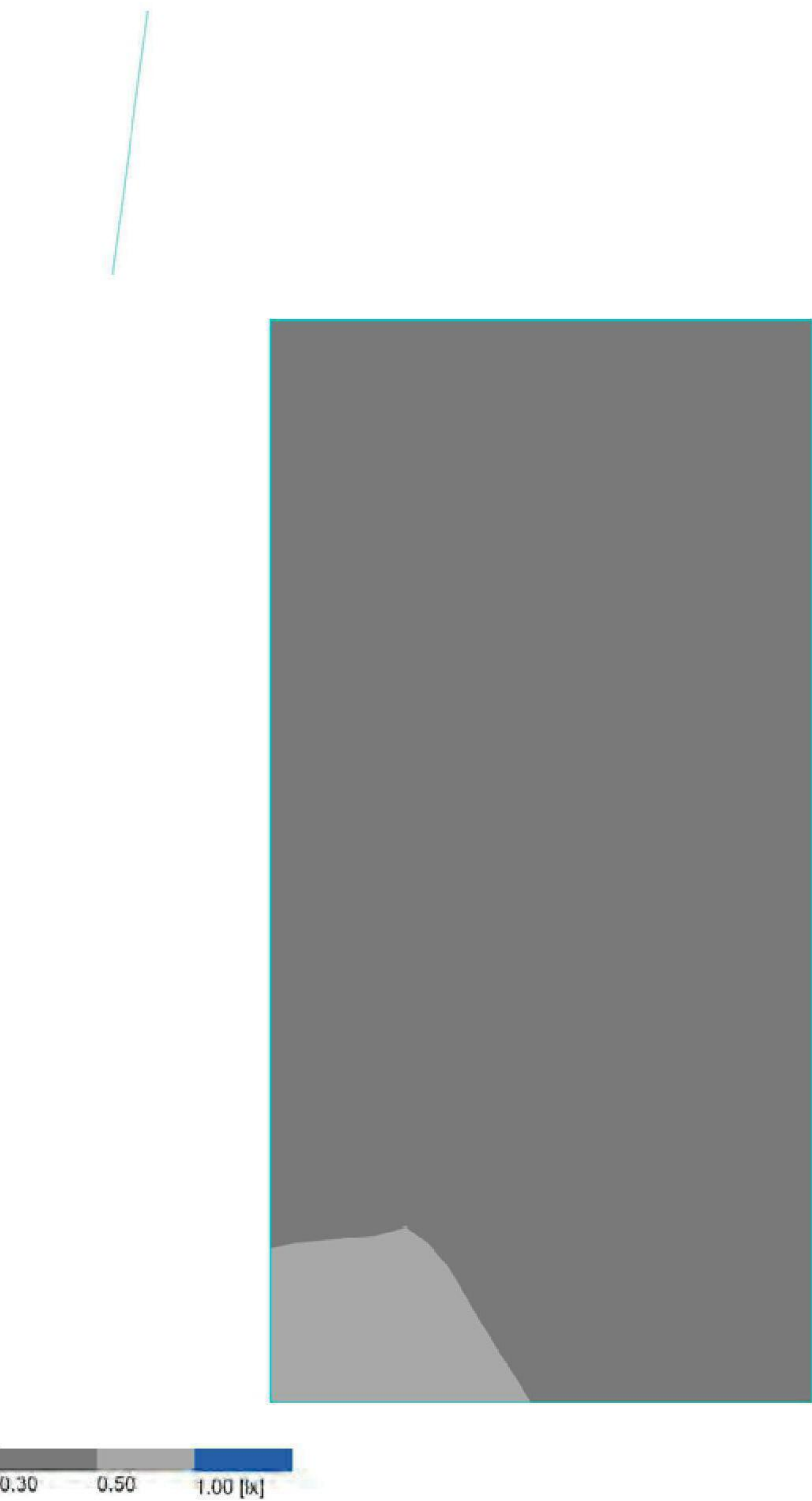
Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
17 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.39 lx	0.33 lx	0.54 lx	0.85	0.61

(Light scene 1)
21 Green Hedges Av



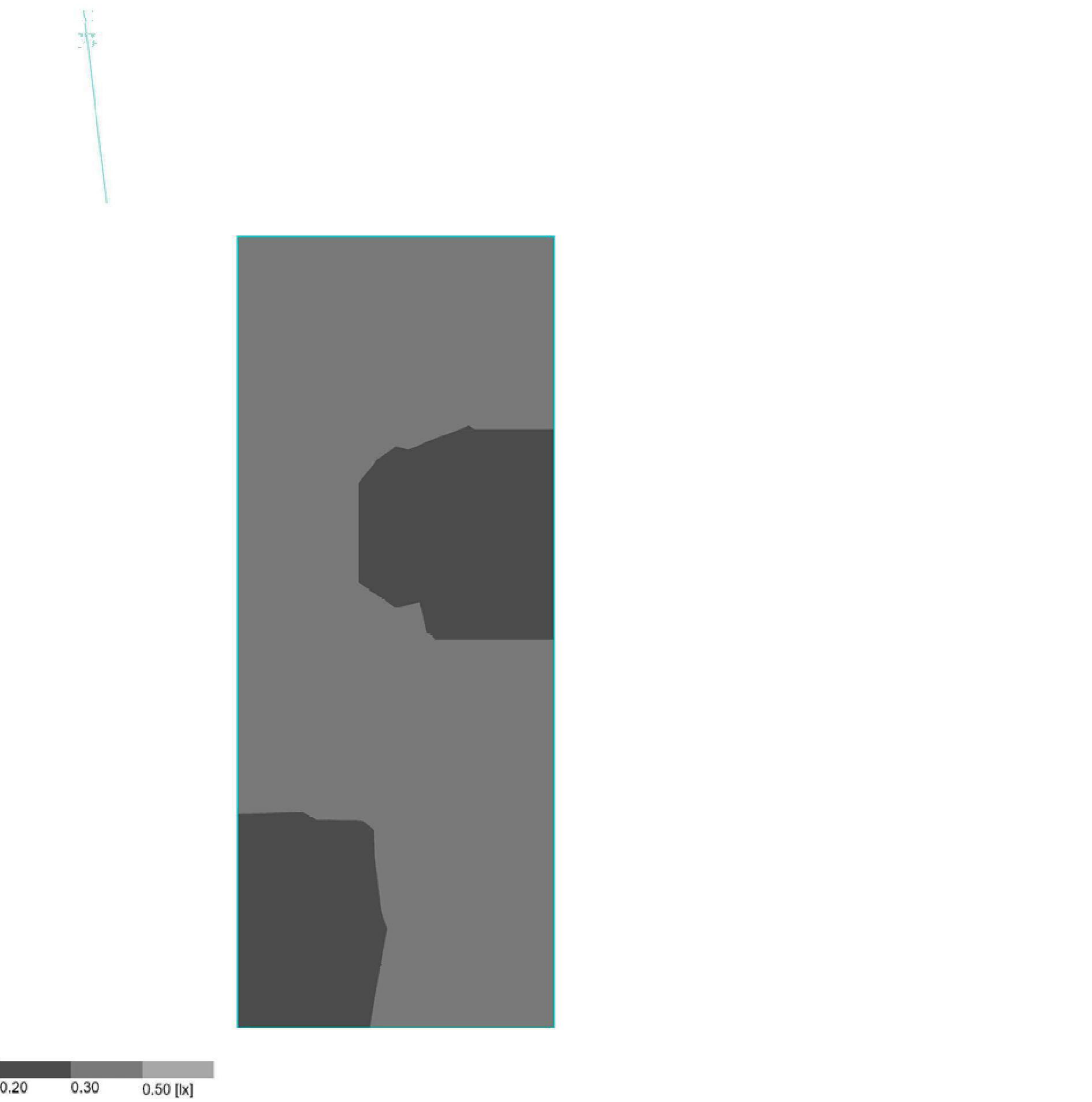
Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
21 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.41 lx	0.34 lx	0.59 lx	0.83	0.58

(Light scene 1)
25 Green Hedges Av



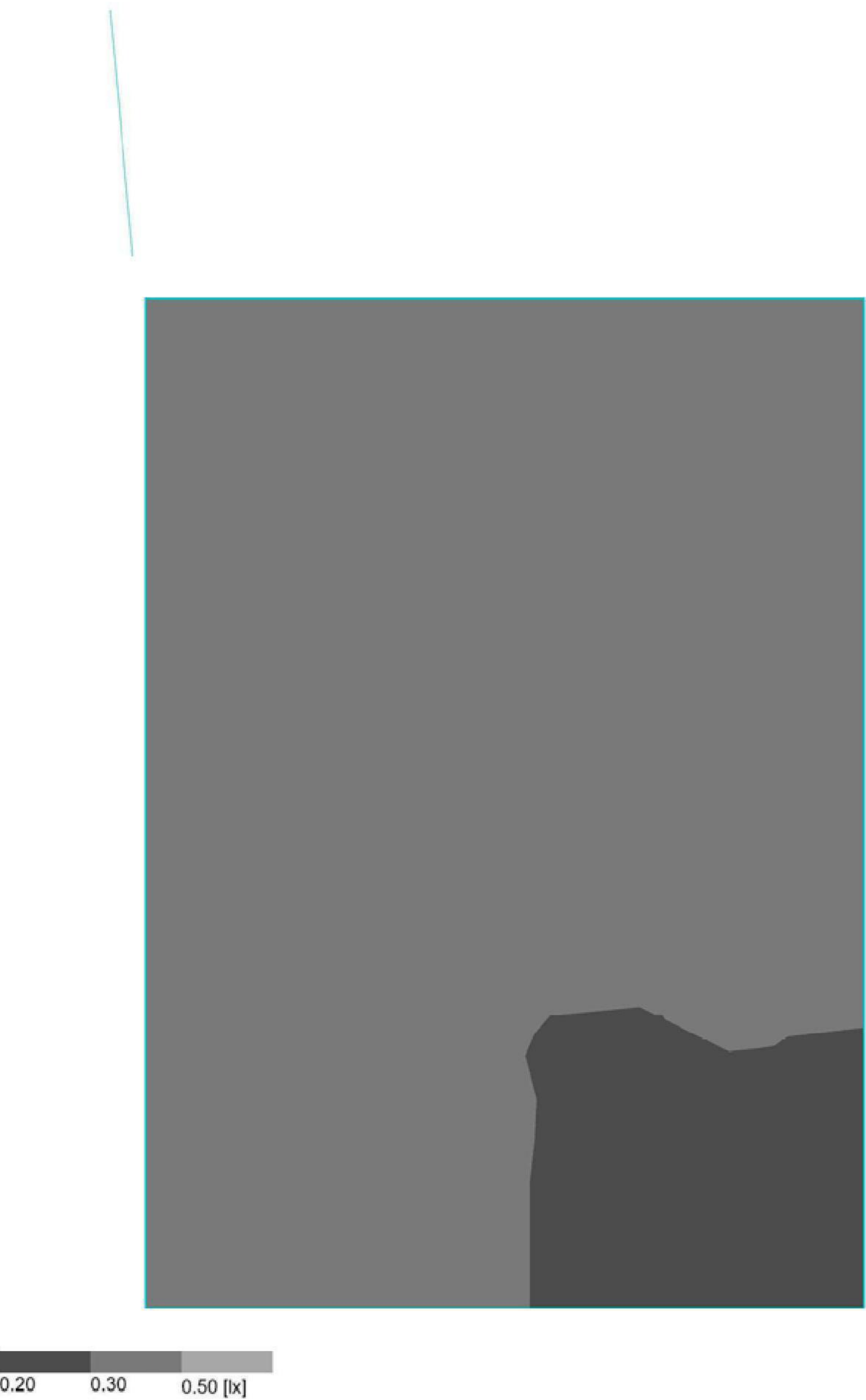
Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
25 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.38 lx	0.33 lx	0.56 lx	0.87	0.59

(Light scene 1)
27 Green Hedges Av



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
27 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.32 lx	0.22 lx	0.43 lx	0.69	0.51

(Light scene 1)
29 Green Hedges Av



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
29 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.35 lx	0.21 lx	0.46 lx	0.60	0.46

(Light scene 1)
31 Green Hedges Av



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
31 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.35 lx	0.27 lx	0.42 lx	0.77	0.64

(Light scene 1)
33 Green Hedges Av



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
33 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.32 lx	0.26 lx	0.44 lx	0.81	0.59

(Light scene 1)
35 Green Hedges Av



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
35 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.46 lx	0.34 lx	0.95 lx	0.74	0.36

(Light scene 1)
37 Green Hedges Av



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
37 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.53 lx	0.35 lx	1.05 lx	0.66	0.33

(Light scene 1)

39 Green Hedges Av



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
39 Green Hedges Av	0.47 lx	0.30 lx	1.04 lx	0.64	0.29
Perpendicular illuminance (adaptive)					
Height: 3.000 m					

(Light scene 1)
41 Green Hedges Av



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
41 Green Hedges Av Perpendicular illuminance (adaptive) Height: 2.750 m	0.38 lx	0.31 lx	0.55 lx	0.82	0.56

(Light scene 1)
43 Green Hedges Av



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
43 Green Hedges Av Perpendicular illuminance (adaptive) Height: 3.000 m	0.42 lx	0.22 lx	0.51 lx	0.52	0.43

(Light scene 1)
45 Green Hedges Av (1)



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
45 Green Hedges Av (1) Perpendicular illuminance (adaptive) Height: 3.000 m	0.46 lx	0.24 lx	0.62 lx	0.52	0.39

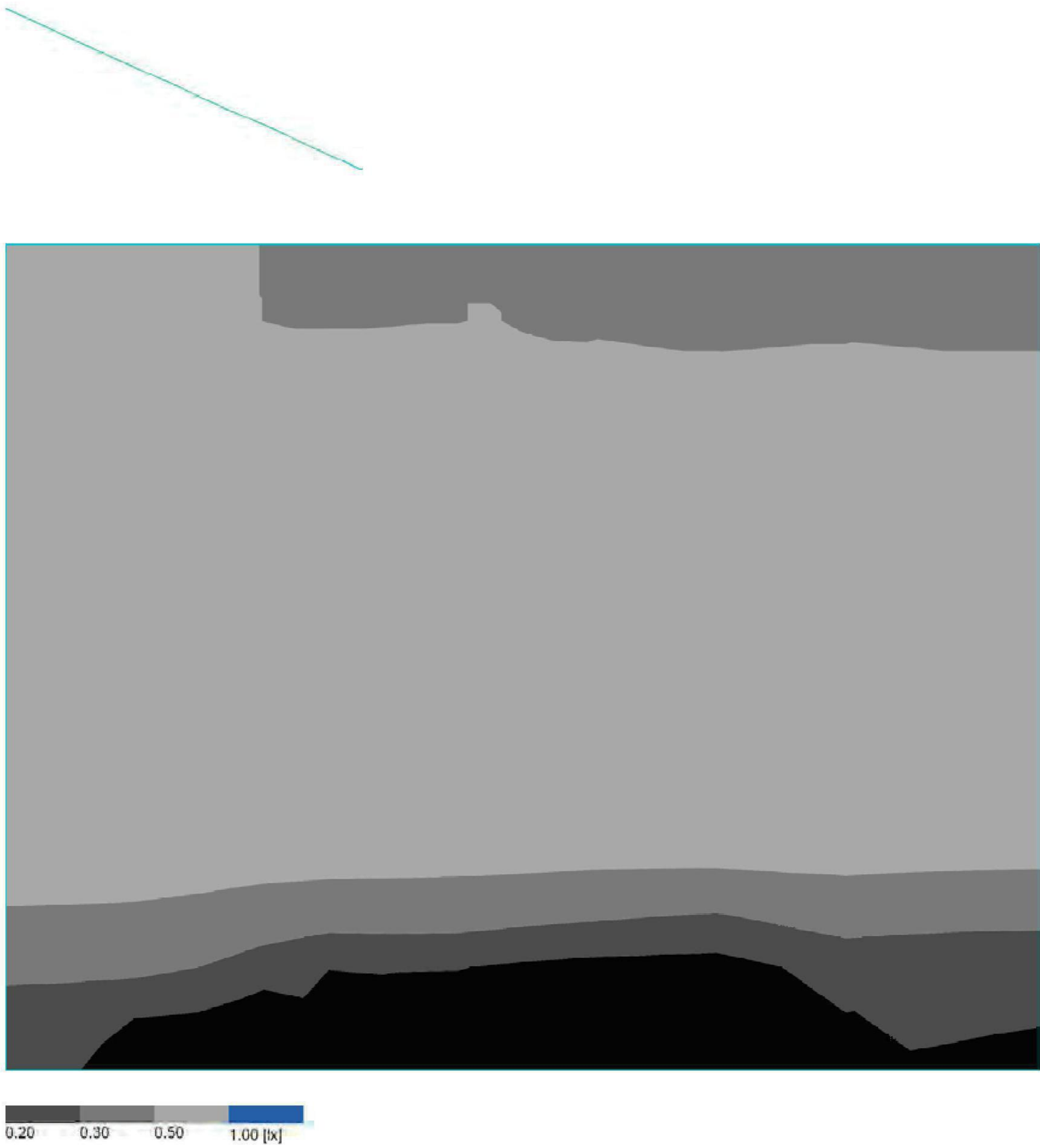
(Light scene 1)
45 Green Hedges Av (2)



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
45 Green Hedges Av (2) Perpendicular illuminance (adaptive) Height: 3.000 m	0.46 lx	0.34 lx	0.69 lx	0.74	0.49

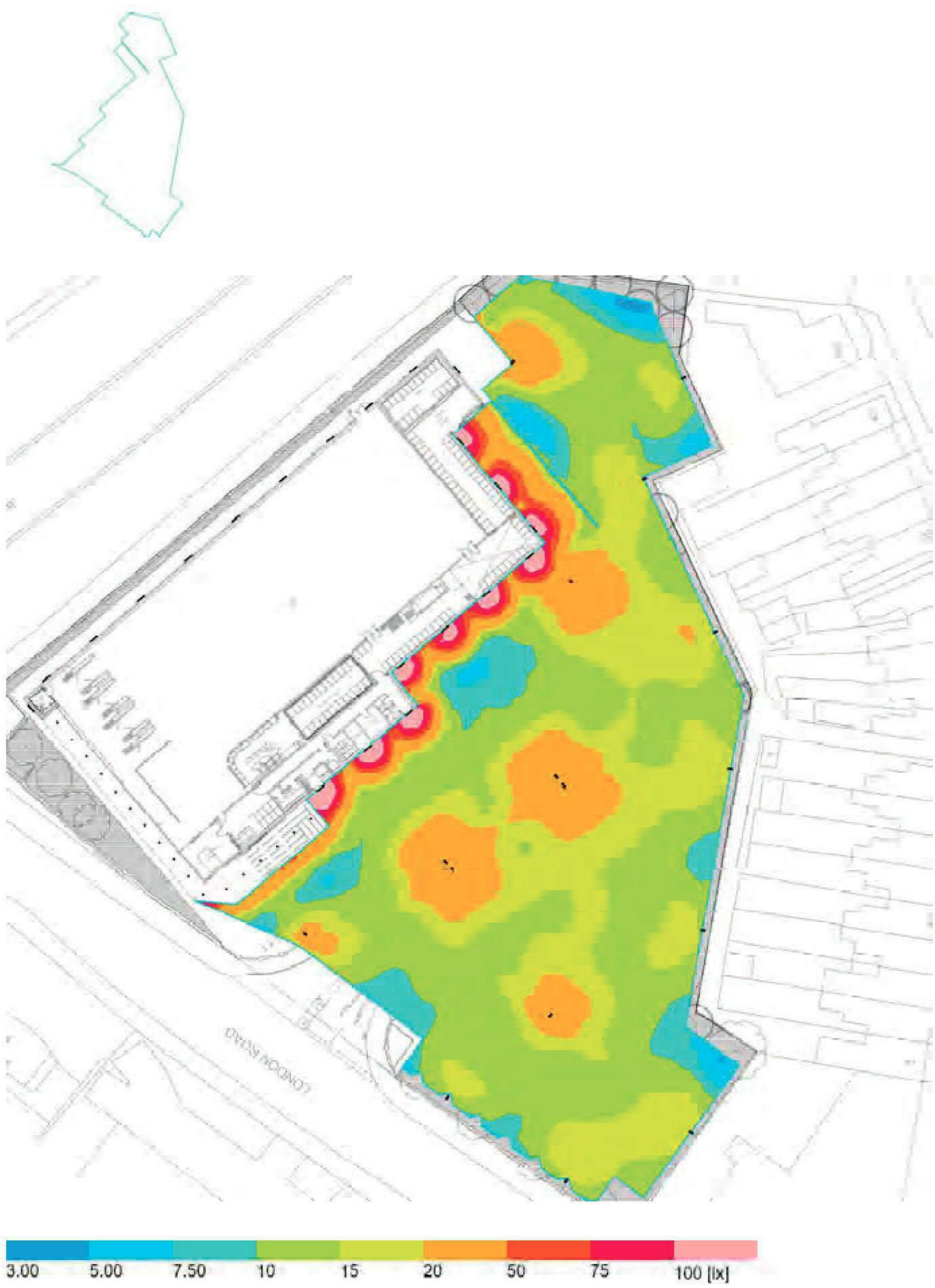
(Light scene 1)

Jacaranda



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
Jacaranda	0.49 lx	0.11 lx	0.72 lx	0.22	0.15
Perpendicular illuminance (adaptive)					
Height: 3.000 m					

(Light scene 1)
Car Park



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
Car Park Perpendicular illuminance Height: 0.000 m	19.1 lx	3.84 lx	146 lx	0.20	0.026

(Light scene 1)
Canopy (1m from floor)



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
Canopy (1m from floor) Perpendicular illuminance Height: 1.000 m	133 lx	49.7 lx	176 lx	0.37	0.28

(Light scene 1)
Rear Walkway



Properties	$\bar{E}$	E_{min}	E_{max}	$U_o (g_1)$	g_2
Rear Walkway Perpendicular illuminance Height: 0.000 m	69.9 lx	4.41 lx	137 lx	0.063	0.032