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Client

Less 2 Build It Ltd

Design report

Exterior lighting design at Leacroft, Hickstead

Rev

Date 18 December 2025

Background

Ellisdon Architectural Associates are working with their client, Less 2 Build It Ltd, to develop land south of Leacroft, London Road, Hickstead, RH17 5LZ. The site is accessed from the adjacent, unlit, A2300.

The intention is to build seven two-storey light industrial/office units in a “quadrangle” type arrangement. These buildings enclose a central car parking area of approximately 50 spaces.

As part of the planning application, Mid Sussex District Council asks for a lighting framework. This should give details of any exterior lighting and its possible impact nearby residential properties. MSDC also ask for details of the impact on driver safety on the A2300 and A23 trunk roads.

Alan Tulla Lighting is an independent lighting consultancy specialising in the exterior environment and has been asked to provide a suitable lighting design and lighting framework.

Alan Tulla, FSLL, FILP, is a Fellow and Past President of the Society of Light and Lighting and has been awarded the CIBSE/SLL Lighting Diploma. He is also a Fellow of the Institution of Lighting Professionals, ILP and, until recently, lectured for them on the topic of exterior and amenity lighting. He is author of the Society of Light and Lighting “Guide to the Exterior Environment”, LG06.

Calculations and visual impact

From the postcode and site maps, we estimate that the location would be in an E2 zone.

The lighting has been designed to meet the requirements of the ILP guidance on obtrusive light, GN01. This recommends that for an E2 Environmental Zone, there should be no more than 2.5% light emitted directly upwards.

The equipment used emits no upward light, has Warm 3000K LEDs and is Dark Sky approved.

A description of the various environmental zones is shown below.

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

Table taken from ILP Guidance Note, GN01/2021

Illustrations of the equipment are shown at the end of this report.

Calculated results

As well as conformance to the ILP guidance on Obtrusive Light, we have designed the functional areas to the outdoor workplace standard EN 12464-2 and BS5489.

Car parking and internal “quadrangle” area

The central car parking and circulation area is illuminated using one 50W streetlight on each of two 6m columns. There are also 13W streetlights wall mounted at 4m. These provide illumination to the perimeter parking bays and the entrances to the office units.

For Medium traffic use, BS 5489 recommends an average of 10 lux with 25% uniformity. This area achieves 18 lux and 28% uniformity.

Entrance area

We have used one wall mounted streetlight on the corner of Block A to illuminate the four car parking spaces. This also highlights the corner of the Block.

However, this minimal arrangement does mean that little illumination reaches the face of the bin store. To avoid installing a column specifically to illuminate the store, we

recommend a small, localised unit is mounted above the doorway. Note that mounting a streetlight on the end face of Block G would still leave the bin store entrance in shadow.

Optional external perimeter lighting

If it is decided to illuminate the rear of the offices for security or as separate entry points to the offices, we recommend using the same 13W units above, again wall mounted at 4m. Over a 3m wide border around the building with the luminaires spaced 15m - 20m apart (but no more), these achieve 13 lux with 20% uniformity. We recommend that these lights are dimmed by 50% - 70 % to blend better with the darker surroundings.

We also show spill for a further 6m. I.e. up to 9m from the building.

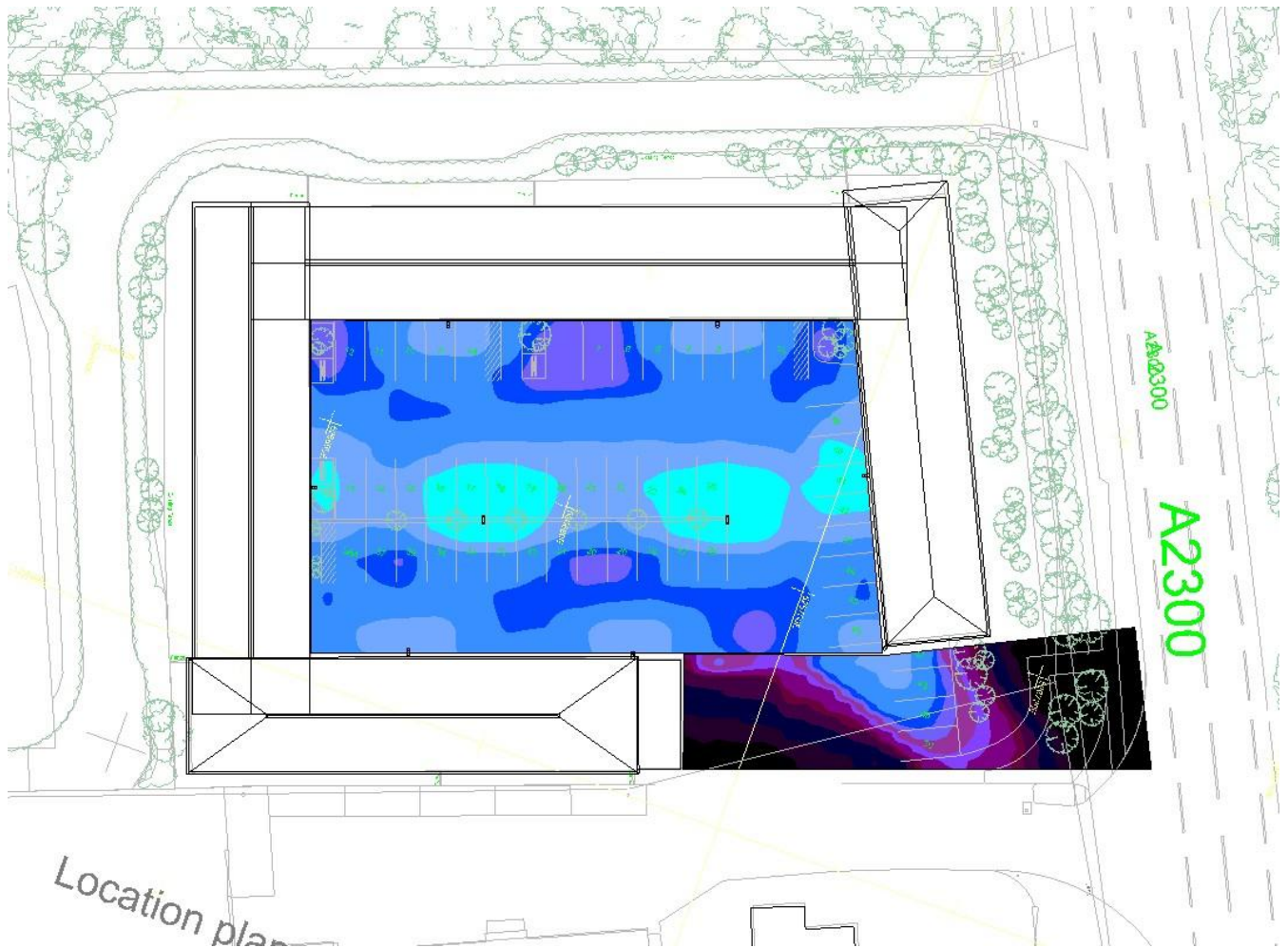
Spill towards A2300, visibility and dark sky issues.

It can be seen from the calculations that there is only a small amount of spill from the streetlight mounted on the corner of Block A. This streetlight is necessary to illuminate the four car parking spaces (Nos 47 – 50) to the south. This streetlight, as with all the others, can be fitted with side or rear visors to further reduce spill.

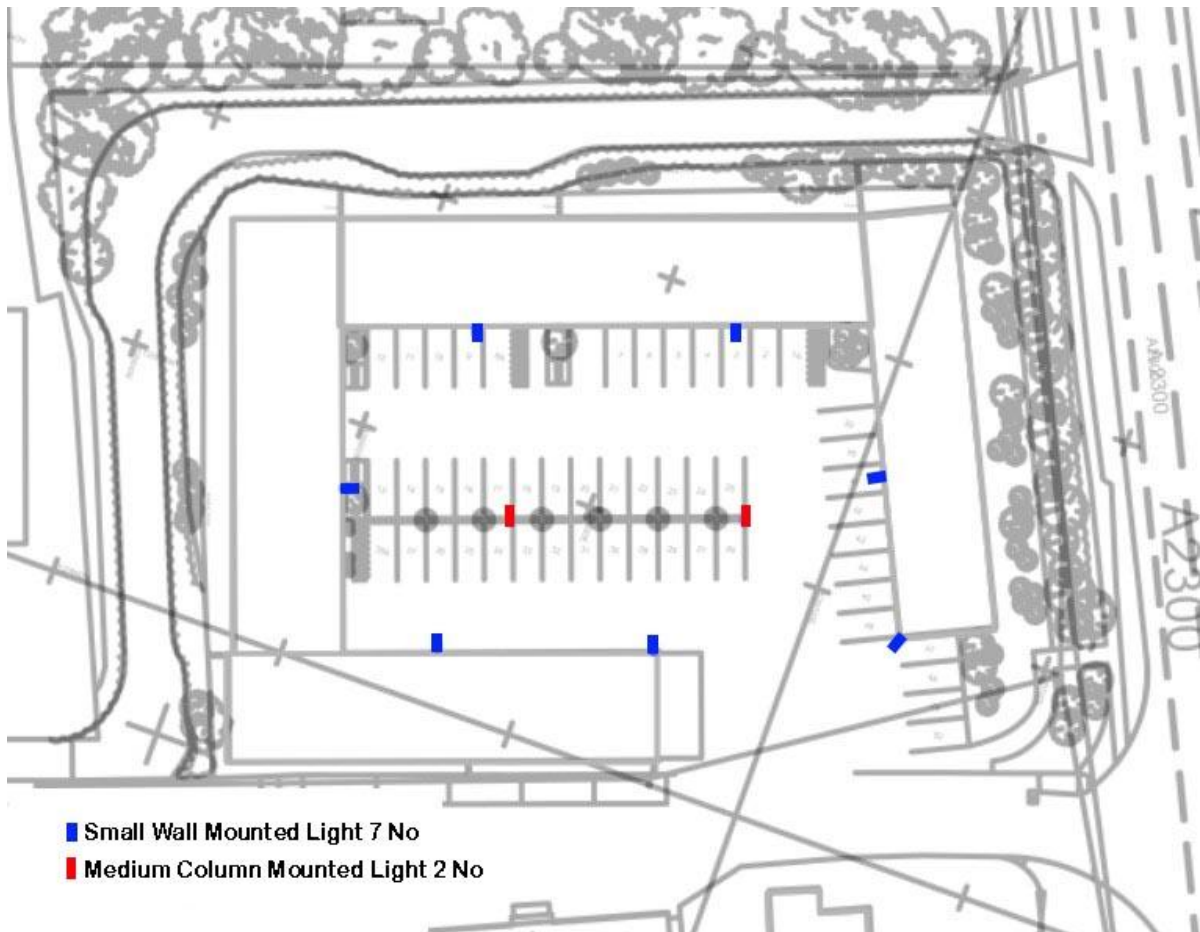
None of the streetlights are mounted higher than 6m, most are at 4m, and hence they will mainly be obscured from view by the 7m high buildings. The streetlights are Dark Sky approved and emit no upward light. They use Warm 3000K LEDs.

Calculations

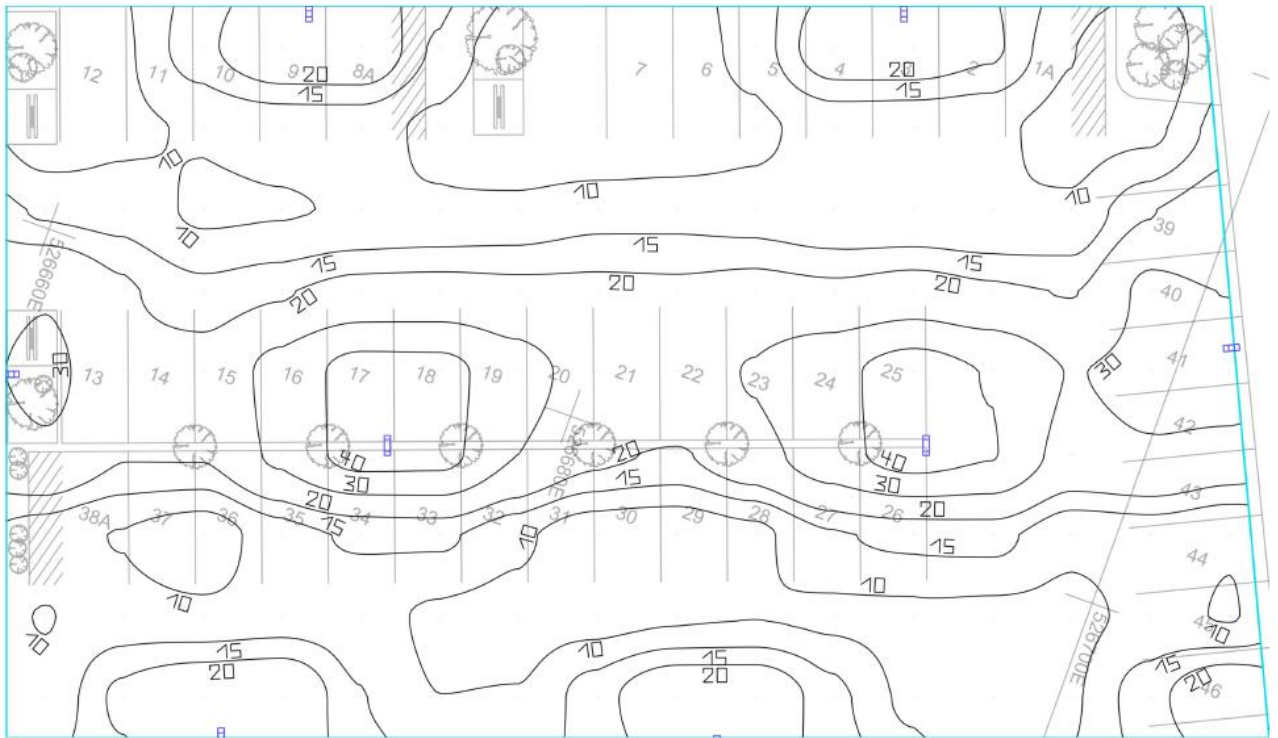
Overall calculation area



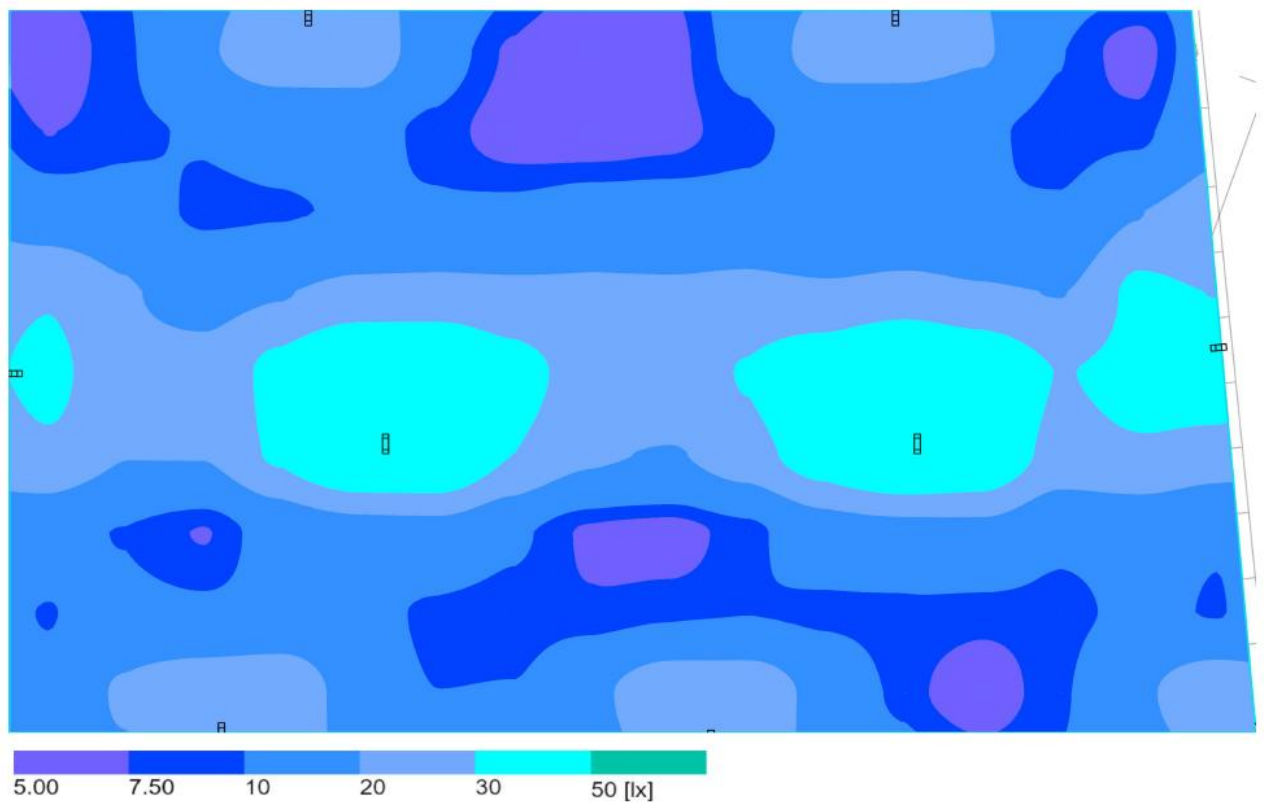
It can be seen that the illumination drops to zero lux well before the A2300. The luminaires can also be fitted with side or rear visors if required.



Central car parking area

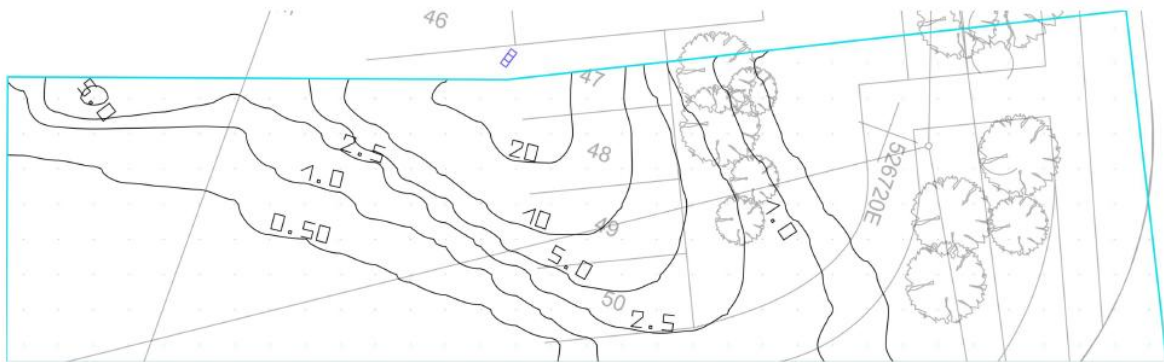


Central parking area. 18 lux, 28% uniformity.

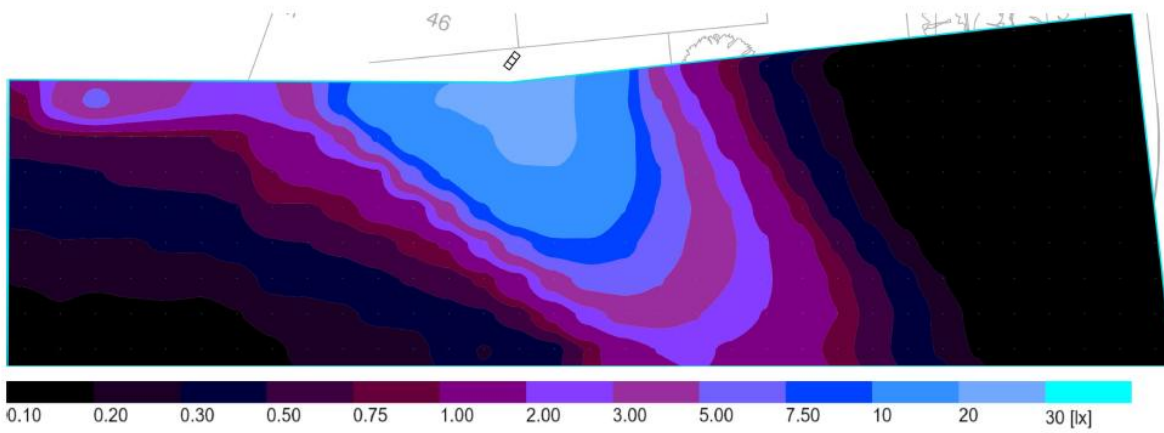


Central luminaires are on 6m columns, wall mounted units are at 4m.

Entrance area and car parks 47 – 50.

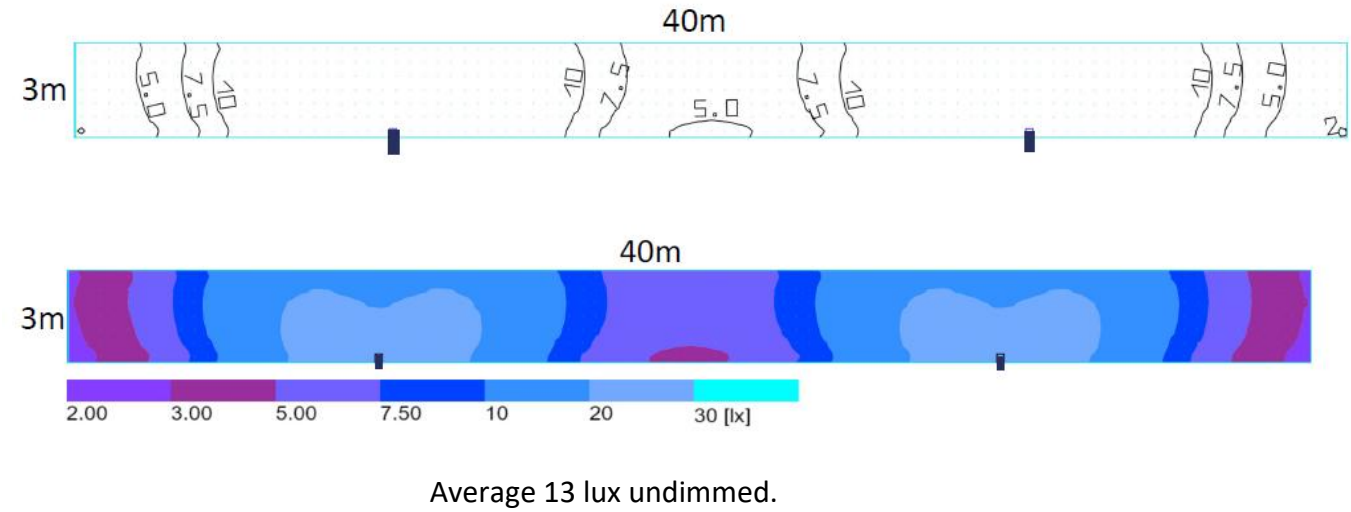


Block A is at the top of drawing adjacent to parking bay 46.

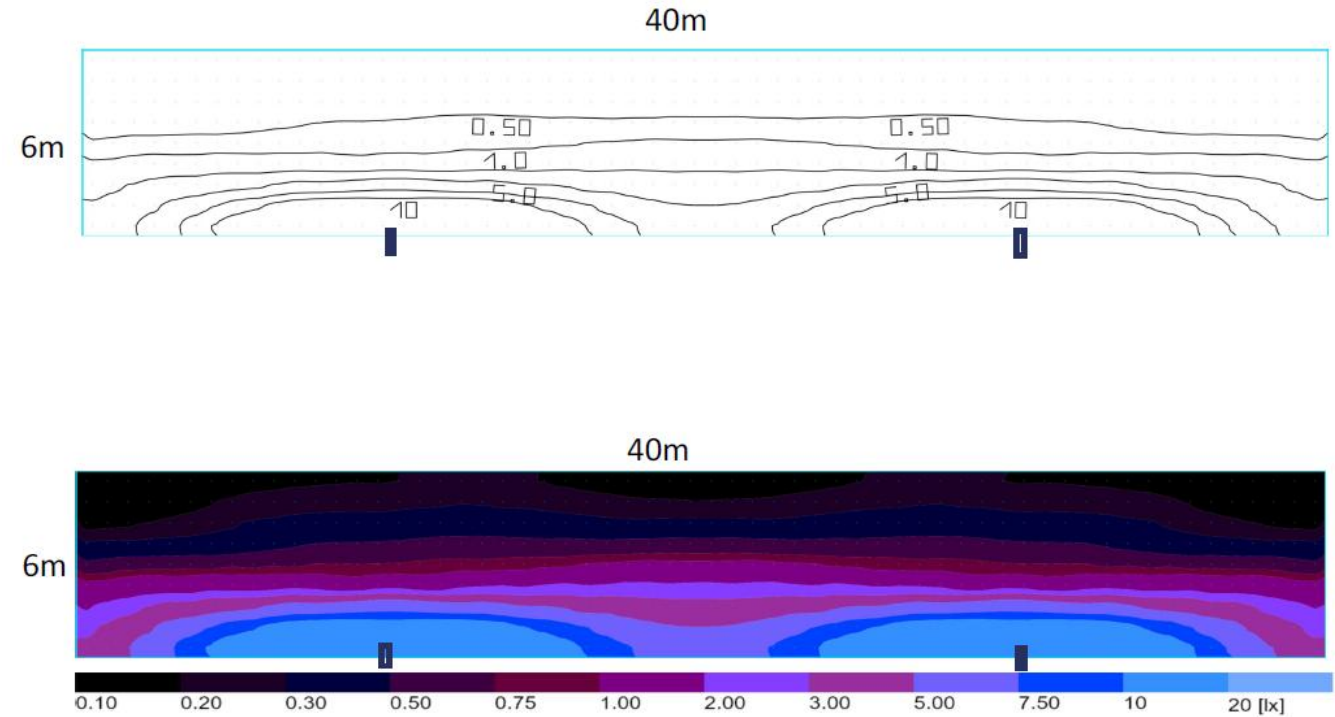


Optional external perimeter lighting

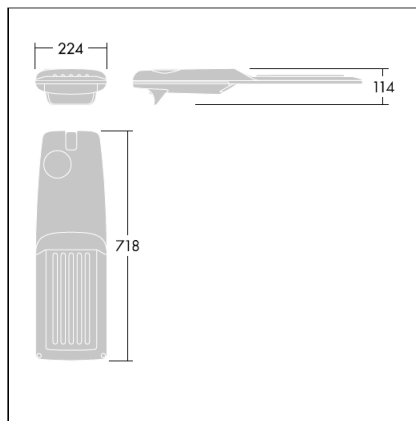
3m wide path adjacent to office blocks



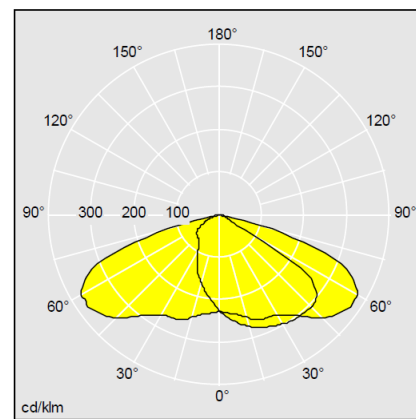
Spill 3m to 9m from building



Products used



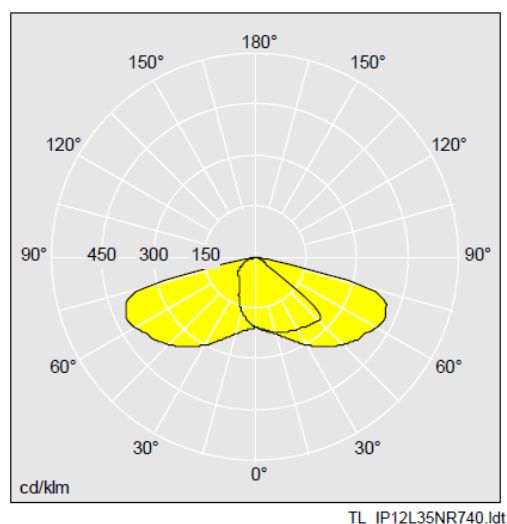
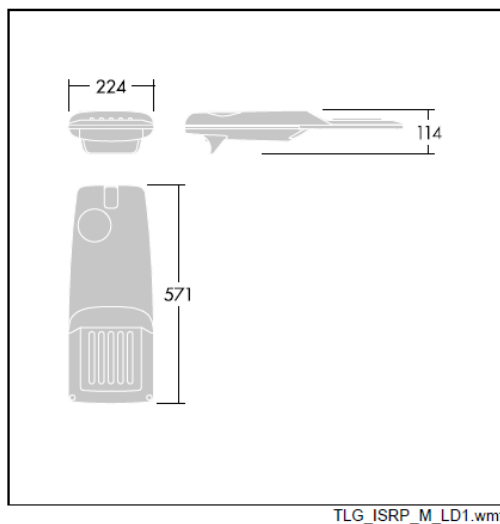
TLG_ISRP_M_LD2.wmf



TL_IP48L35WR740.idt

Thorn Isaro Pro Medium. 50W, 8,552 lm, 3000K, Wide Road optic. The floodlight is fully dimmable using DALI. Mounted on 6m columns (2 No) in central car park.





Thorn Isaro Pro Small. 13W, 2,129 lm, 3000K, Narrow Road optic. The floodlight is fully dimmable using DALI. Wall mounted at 4m. Used in central car park and, optionally, on rear perimeter of buildings.



Optional Front, Side and Rear visor kit.

Glossary of Lighting Terms

Illuminance: this is the SI term for what is normally referred to as Illumination level. It is measured in lux. It refers to the light falling on a surface. Normally this is a horizontal plane such as the ground or desktop. It can also refer to vertical surfaces such as windows and building facades. Illuminance is measured in lux.

Lumen: is the SI term for luminous flux or quantity of light. A typical 60w tungsten filament lamp emits 700 lumens; a 1.5m fluorescent lamp emits around 5,500 lm.

Lux: is defined as an illuminance of 1 lumen/m². A typical tennis court would measure 300 - 500 lux, a major traffic route 20 – 30 lux, a residential road 3 – 10 lux. Note that lux is normally taken to be the horizontal value but the vertical value is often relevant. E.g. vertical illuminance is important in recognising faces or light intrusion on windows.

Luminance: It is a measure of objective brightness and is a function of how much light is reflected off a surface. There are many factors involved but the major one is the reflectance of the surface. For a given level of illuminance, dark surfaces have lower luminance than light coloured surfaces. Its importance is that it is the metric used for classifying traffic routes, signs and advertising hoardings.

Luminaire: is the term for what is usually referred to as a light fitting. A fixture or lantern are other commonly used terms. These terms are used to distinguish them from the light source, usually LED, or lamp.