

Mardon Park, Baglan Energy Park, South Wales

Installation : Various

Project number : 69272

Customer : CEF Port Talbot

Processed by : Nick Cadman

Date : 16.09.2022

All calculations unless stated have been based upon an open plan area without any obstructions above the working plane. With regards to CIBSE/ BSEN12464-1:2011 we have shown illuminance levels and ratios for your ultimate approval. UGR and luminance values are available for your approval if necessary. It may be necessary in some instances to check UGR values even if the luminance values are below the compliant threshold.

In the case of office lighting we have defaulted to 300lux average unless advised otherwise by specification. Emergency lighting has been designed in accordance with BS5266-1:2016 but is an indicative layout only - additional lighting may be required. All emergency lighting is to be checked and confirmed with a local building/fire control officer and ultimately approved by the owner of the building. Any emergency lighting calculations that have been completed have been based on 0.5 lux for open areas and 1 lux for escape routes (where details of escape routes have been given).

Please be aware of L2 requirements and check that conformity has been met where required. In addition, ensuring that fire tents are used where needed to conform to current building regulations is vital; please contact our sales office for a quotation.

All luminaires used are subject to approval/certification of client/end user.

Common design parameters (shown below) have been used in order to carry out all calculations. If any part of this scheme or luminaire choice within this scheme is deemed not suitable for the application, please contact us for re-calculations to be carried out prior to an order being placed. All calculations have been based upon rated lumen outputs and may vary with ambient on site temperatures.

Please ensure that this lighting scheme complies with all requirements, and if further details/calculations are required please contact us via the below details.

Final quantities are to be confirmed prior to an order/installation and we will not be held responsible for any errors or omissions.

Nominal Values Used:

Maintenance Factor - 0.8

Reflectance Values (Office Type Interior): 70\50\20

Reflectance Values (Warehouse Type Interior): 50\30\20

The following values are based on precise calculations performed on calibrated lamps and luminaires, and their configurations, whereby gradual, unavoidable deviations can occur in practice. All guarantee claims are excluded for the specified data.

This exclusion of liability applies irrespective of the legal grounds for both damages and consequential damages suffered by users and third parties.

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1 Luminaire data

1.1 Tamlite Lighting, CITY WL (CWL160T2NWB)

1.1.1 Data sheet

Manufacturer: Tamlite Lighting



CWL160T2NWB Bulkhead - Exterior CITY WL

CITY WL - Exterior wall light - Road wide optic - 11W - 4000K - Fixed output

Luminaire data

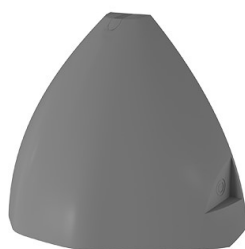
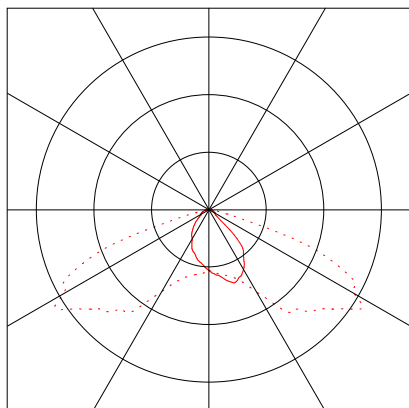
Absolute Photometry

Luminaire efficacy : 145.45 lm/W
Classification : A40 ↓99.4% ↑0.6%
CIE Flux Codes : 39 78 98 99 100
UGR 4H 8H : 19.2 / 30.0
Control gear : LED Driver
Power : 11 W
Luminous flux : 1600 lm

Equipped with

Quantity : 1
Designation :
Colour :
Socket : N/A

Dimensions : 319 mm x 165 mm x 244 mm



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1 Luminaire data

1.2 Tamlite Lighting, EXPLORER (EPR2800ANW)

1.2.1 Data sheet

Manufacturer: Tamlite Lighting



EPR2800ANW Floodlight EXPLORER
EXPLORER - Floodlight - 240W - 4000K - Fixed output

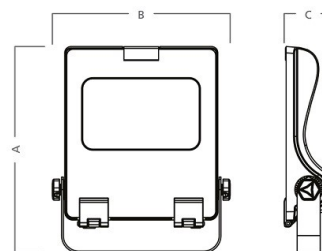
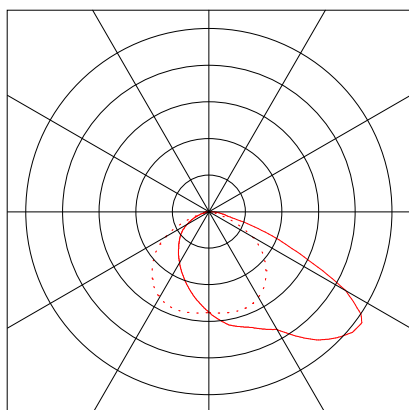
Luminaire data

Absolute Photometry
Luminaire efficacy : 116.67 lm/W
Classification : A40 ↓100.0% ↑0.0%
CIE Flux Codes : 43 80 98 100 100
UGR 4H 8H : 38.1 / 31.5
Control gear : LED Driver
Power : 240 W
Luminous flux : 28000 lm

Equipped with

Quantity : 1
Designation :
Colour :
Socket : N/A

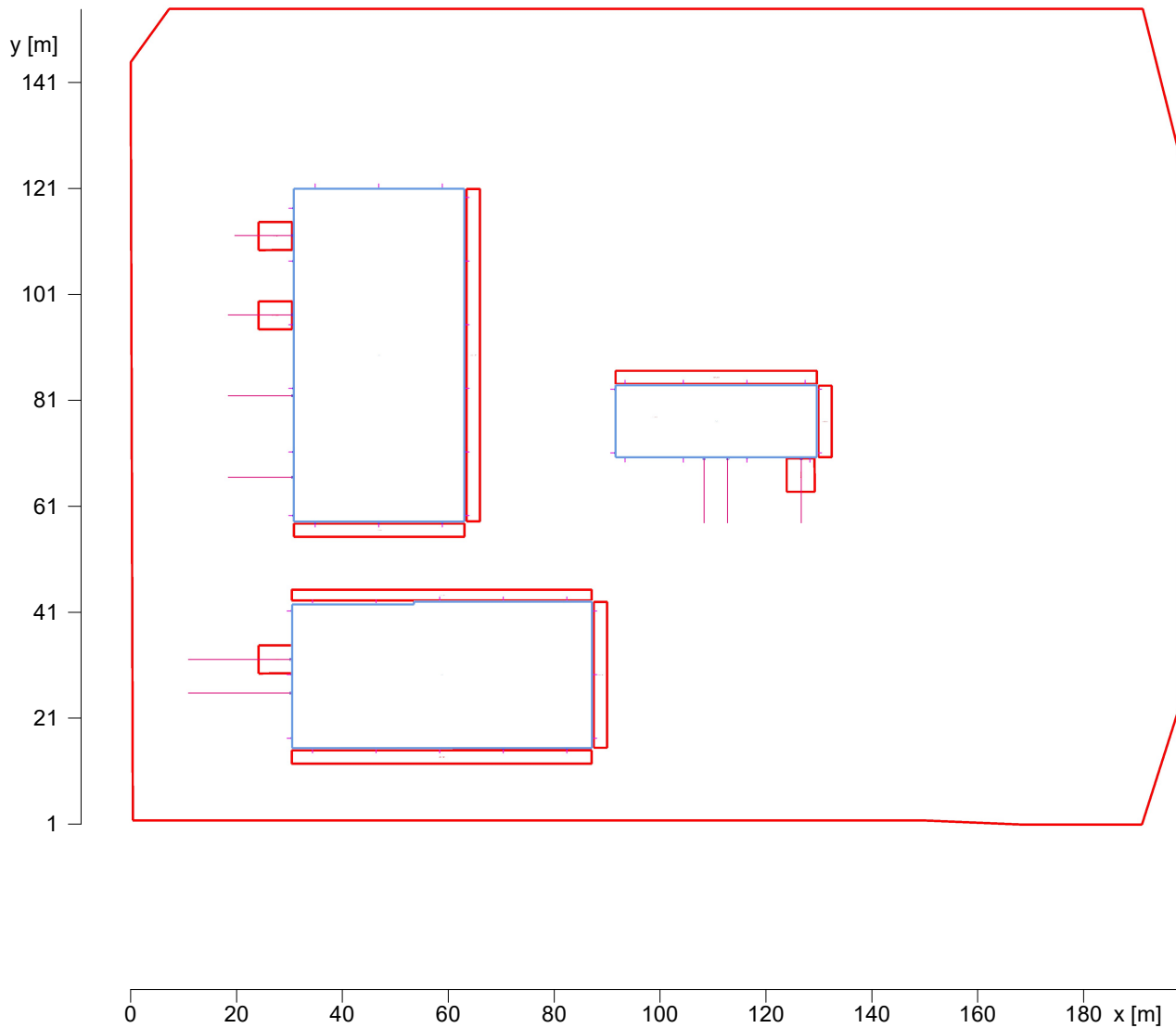
Dimensions : 462 mm x 452 mm x 87 mm



2 Site

2.1 Description, Site

2.1.1 Floor plan

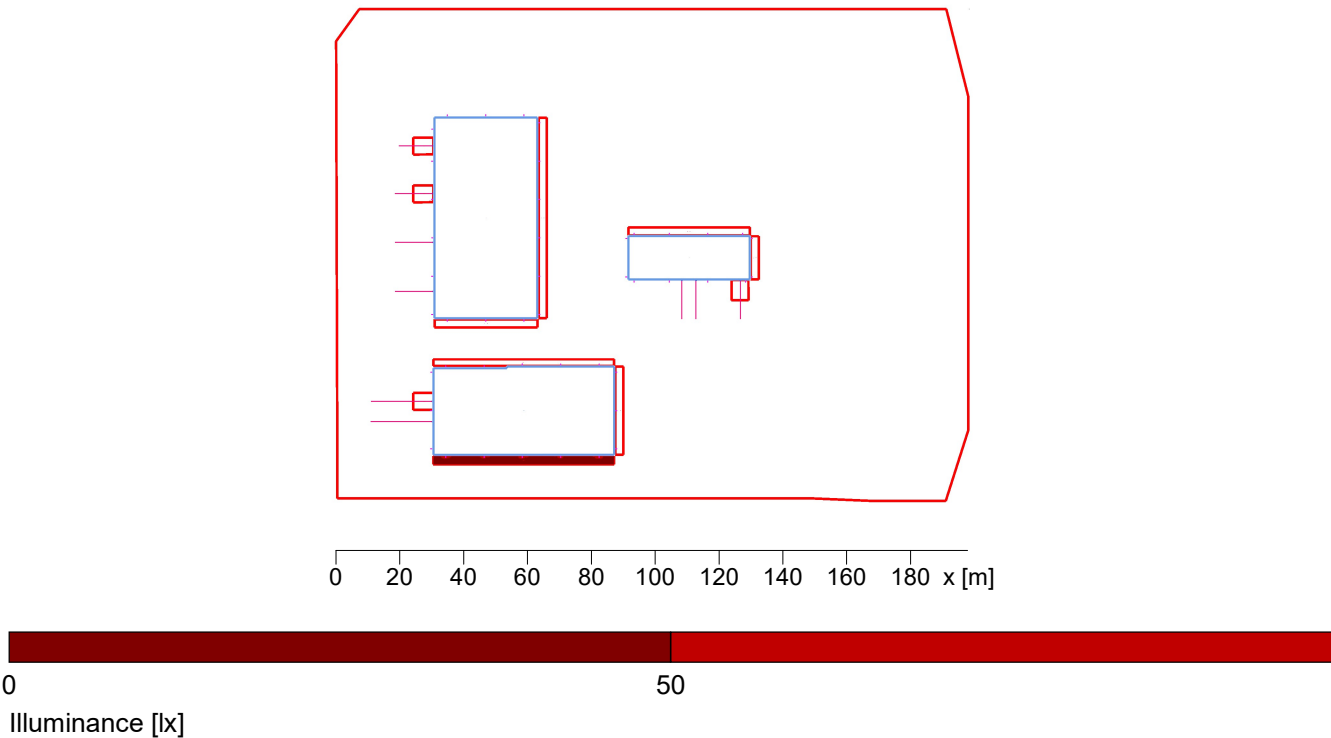




2 Site

2.2 Summary, Site

2.2.1 Result overview, Sample Perimeter



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux of all lamps	325600 lm
Total power	2666 W
Total power per area (30078.46 m²)	0.09 W/m²
Upward light ratio (ULR)	0.00

Illuminance

Average illuminance	Em	22.4 lx
Minimum illuminance	Emin	6.41 lx
Maximum illuminance	Emax	51.3 lx
Uniformity Uo	Emin/Em	1:3.5 (0.29)
Diversity Ud	Emin/Emax	1:8.01 (0.12)

Type No.\Make

Tamlite Lighting

The ULR value has been calculated without obstruction by other objects.

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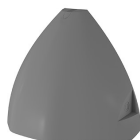


2 Site

2.2 Summary, Site

2.2.1 Result overview, Sample Perimeter

2 46 Order No. : CWL160T2NWB
 Luminaire name : CITY WL
Equipment : 1 x 11 W / 1600 lm



4 9 Order No. : EPR2800ANW
 Luminaire name : EXPLORER
Equipment : 1 x 240 W / 28000 lm

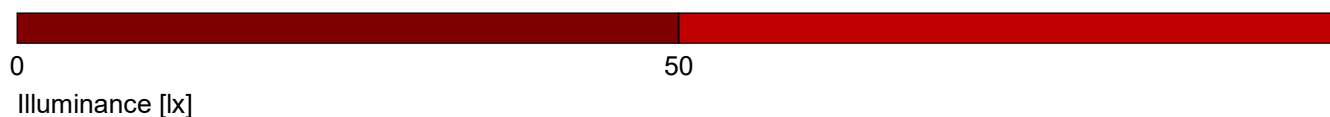
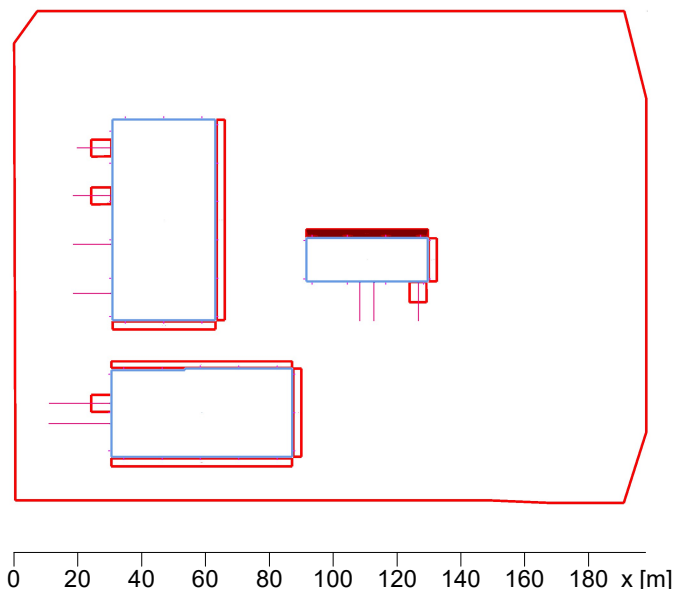


Object : Mardon Park, Baglan Energy Park, South Wales
 Installation : Various
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2.2 Summary, Site

2.2.2 Result overview, Sample Perimeter 2



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux of all lamps	325600 lm
Total power	2666 W
Total power per area (30078.46 m ²)	0.09 W/m ²
Upward light ratio (ULR)	0.00

Illuminance

Average illuminance	Em	26.9 lx
Minimum illuminance	Emin	7.75 lx
Maximum illuminance	Emax	53 lx
Uniformity Uo	Emin/Em	1:3.47 (0.29)
Diversity Ud	Emin/Emax	1:6.84 (0.15)

Type No.\Make

Tamlite Lighting

The ULR value has been calculated without obstruction by other objects.

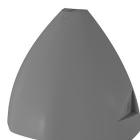
Object : Mardon Park, Baglan Energy Park, South Wales
Installation : Various
Project number : 69272
Date : 16.09.2022



2.2 Summary, Site

2.2.2 Result overview, Sample Perimeter 2

2 46 Order No. : CWL160T2NWB
 Luminaire name : CITY WL
Equipment : 1 x 11 W / 1600 lm



4 9 Order No. : EPR2800ANW
 Luminaire name : EXPLORER
Equipment : 1 x 240 W / 28000 lm

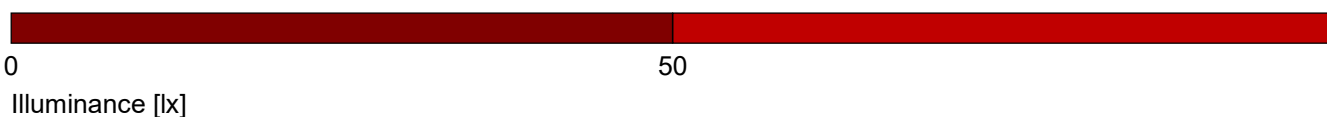
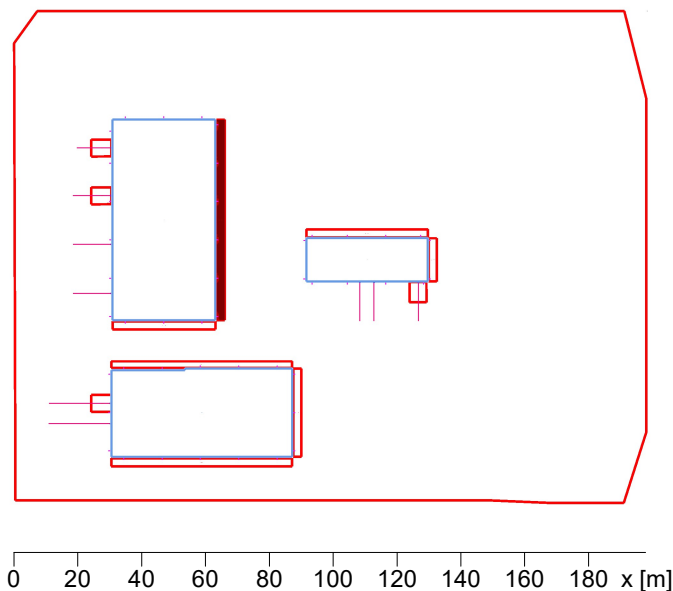


Object : Mardon Park, Baglan Energy Park, South Wales
 Installation : Various
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2.2 Summary, Site

2.2.3 Result overview, Sample Perimeter 3



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux of all lamps	325600 lm
Total power	2666 W
Total power per area (30078.46 m ²)	0.09 W/m ²
Upward light ratio (ULR)	0.00

Illuminance

Average illuminance	Em	22 lx
Minimum illuminance	Emin	6.28 lx
Maximum illuminance	Emax	49.6 lx
Uniformity Uo	Emin/Em	1:3.5 (0.29)
Diversity Ud	Emin/Emax	1:7.9 (0.13)

Type No.\Make

Tamlite Lighting

The ULR value has been calculated without obstruction by other objects.

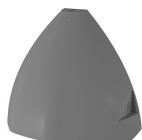
Object : Mardon Park, Baglan Energy Park, South Wales
Installation : Various
Project number : 69272
Date : 16.09.2022



2.2 Summary, Site

2.2.3 Result overview, Sample Perimeter 3

2 46 Order No. : CWL160T2NWB
 Luminaire name : CITY WL
Equipment : 1 x 11 W / 1600 lm

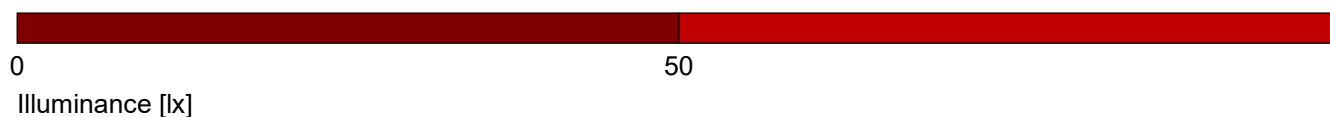
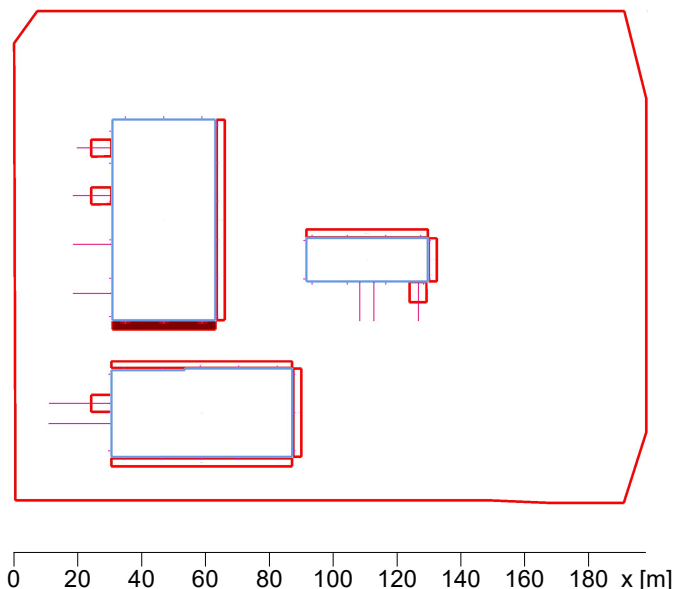


4 9 Order No. : EPR2800ANW
 Luminaire name : EXPLORER
Equipment : 1 x 240 W / 28000 lm



2.2 Summary, Site

2.2.4 Result overview, Sample Perimeter 4



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux of all lamps	325600 lm
Total power	2666 W
Total power per area (30078.46 m ²)	0.09 W/m ²
Upward light ratio (ULR)	0.00

Illuminance

Average illuminance	Em	25.3 lx
Minimum illuminance	Emin	7.72 lx
Maximum illuminance	Emax	52.4 lx
Uniformity Uo	Emin/Em	1:3.28 (0.3)
Diversity Ud	Emin/Emax	1:6.79 (0.15)

Type No.\Make

Tamlite Lighting

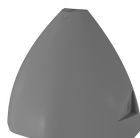
Object : Mardon Park, Baglan Energy Park, South Wales
Installation : Various
Project number : 69272
Date : 16.09.2022



2.2 Summary, Site

2.2.4 Result overview, Sample Perimeter 4

2 46 Order No. : CWL160T2NWB
 Luminaire name : CITY WL
Equipment : 1 x 11 W / 1600 lm



4 9 Order No. : EPR2800ANW
 Luminaire name : EXPLORER
Equipment : 1 x 240 W / 28000 lm

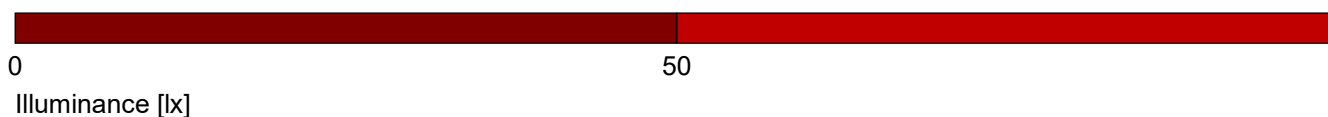
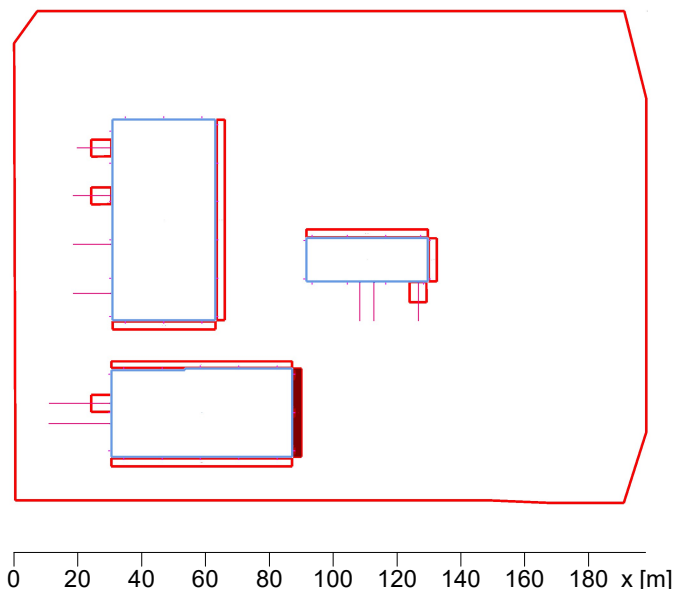


Object : Mardon Park, Baglan Energy Park, South Wales
 Installation : Various
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 Date : 16.09.2022



2.2 Summary, Site

2.2.5 Result overview, Sample Perimeter 5



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux of all lamps	325600 lm
Total power	2666 W
Total power per area (30078.46 m ²)	0.09 W/m ²
Upward light ratio (ULR)	0.00

Illuminance

Average illuminance	Em	24.7 lx
Minimum illuminance	Emin	7.29 lx
Maximum illuminance	Emax	51.5 lx
Uniformity Uo	Emin/Em	1:3.39 (0.29)
Diversity Ud	Emin/Emax	1:7.07 (0.14)

Type No.\Make

Tamlite Lighting

The ULR value has been calculated without obstruction by other objects.

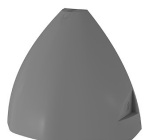
Object : Mardon Park, Baglan Energy Park, South Wales
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2.2 Summary, Site

2.2.5 Result overview, Sample Perimeter 5

2 46 Order No. : CWL160T2NWB
 Luminaire name : CITY WL
Equipment : 1 x 11 W / 1600 lm



4 9 Order No. : EPR2800ANW
 Luminaire name : EXPLORER
Equipment : 1 x 240 W / 28000 lm

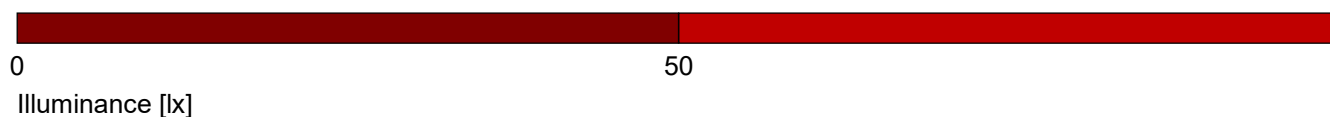
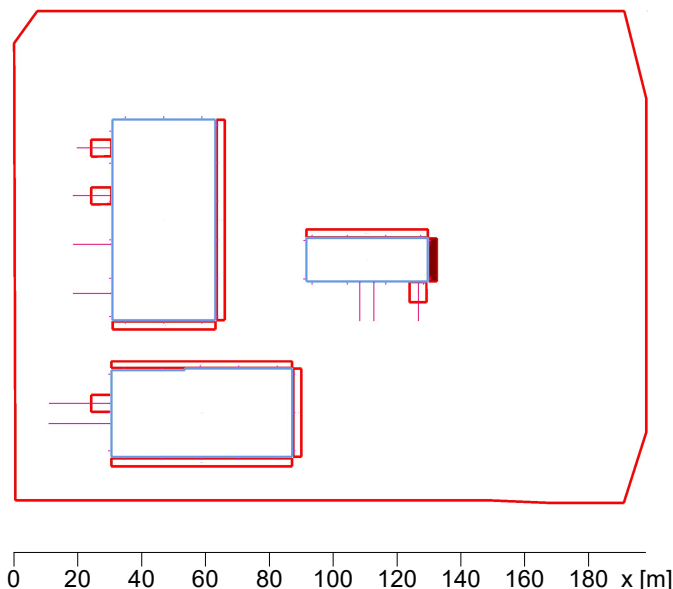


Object : Mardon Park, Baglan Energy Park, South Wales
 Installation : Various
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2.2 Summary, Site

2.2.6 Result overview, Sample Perimeter 6



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux of all lamps	325600 lm
Total power	2666 W
Total power per area (30078.46 m ²)	0.09 W/m ²
Upward light ratio (ULR)	0.00

Illuminance

Average illuminance	Em	23.9 lx
Minimum illuminance	Emin	6.83 lx
Maximum illuminance	Emax	50 lx
Uniformity Uo	Emin/Em	1:3.49 (0.29)
Diversity Ud	Emin/Emax	1:7.32 (0.14)

Type No.\Make

Tamlite Lighting

The ULR value has been calculated without obstruction by other objects.

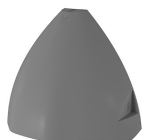
Object : Mardon Park, Baglan Energy Park, South Wales
Installation : Various
Project number : 69272
Date : 16.09.2022



2.2 Summary, Site

2.2.6 Result overview, Sample Perimeter 6

2 46
 Order No. : CWL160T2NWB
Luminaire name : CITY WL
Equipment : 1 x 11 W / 1600 lm



4 9
 Order No. : EPR2800ANW
Luminaire name : EXPLORER
Equipment : 1 x 240 W / 28000 lm

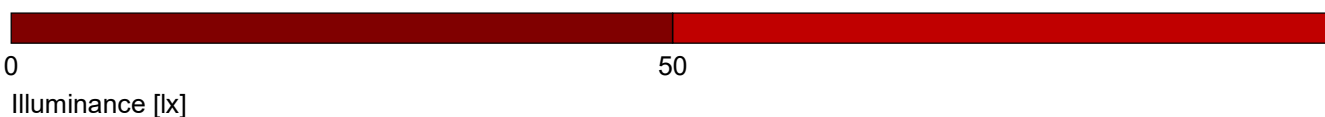
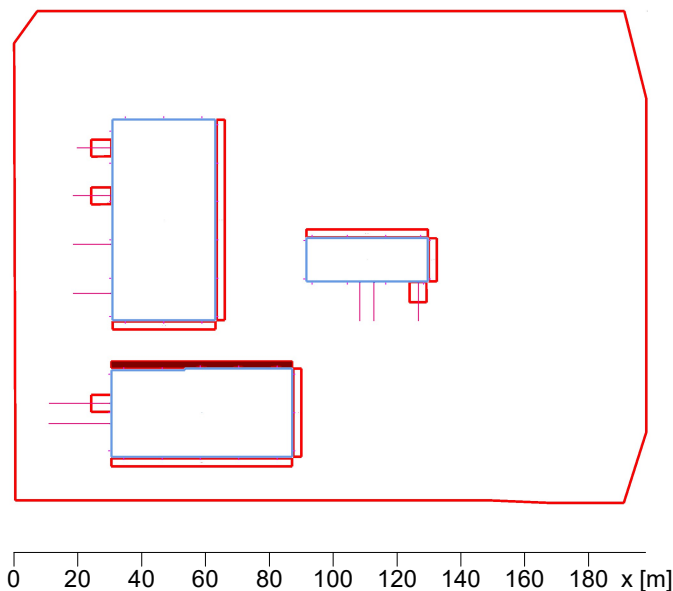


Object : Mardon Park, Baglan Energy Park, South Wales
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2.2 Summary, Site

2.2.7 Result overview, Sample Perimeter 7



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux of all lamps	325600 lm
Total power	2666 W
Total power per area (30078.46 m ²)	0.09 W/m ²
Upward light ratio (ULR)	0.00

Illuminance

Average illuminance	Em	24.4 lx
Minimum illuminance	Emin	6.58 lx
Maximum illuminance	Emax	50.7 lx
Uniformity Uo	Emin/Em	1:3.7 (0.27)
Diversity Ud	Emin/Emax	1:7.71 (0.13)

Type No.\Make

Tamlite Lighting

The ULR value has been calculated without obstruction by other objects.

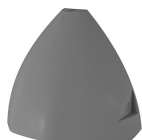
Object : Mardon Park, Baglan Energy Park, South Wales
Installation : Various
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Date : 16.09.2022



2.2 Summary, Site

2.2.7 Result overview, Sample Perimeter 7

2 46 Order No. : CWL160T2NWB
 Luminaire name : CITY WL
Equipment : 1 x 11 W / 1600 lm

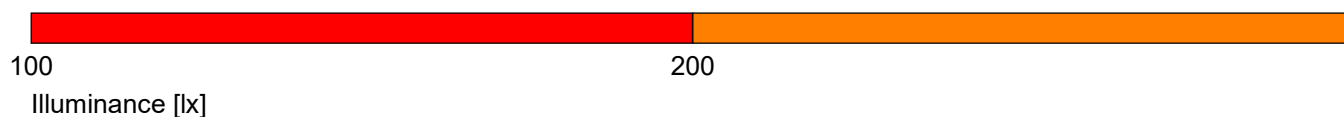
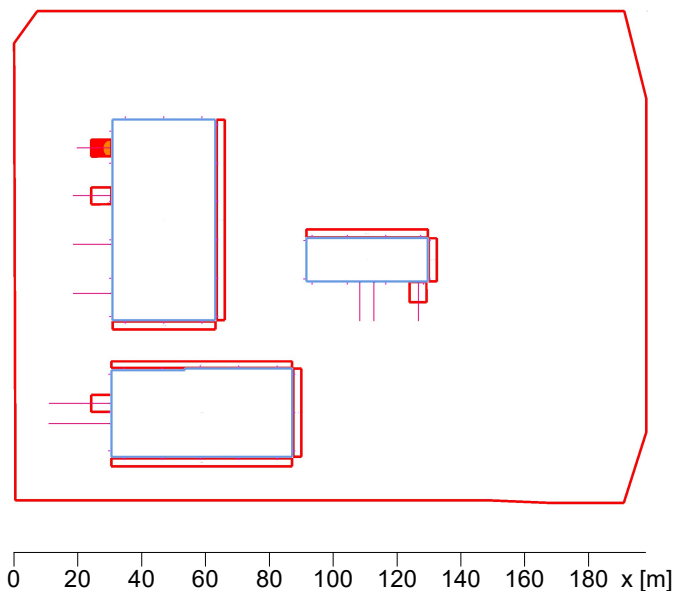


4 9 Order No. : EPR2800ANW
 Luminaire name : EXPLORER
Equipment : 1 x 240 W / 28000 lm



2.2 Summary, Site

2.2.8 Result overview, Sample Loading Bay



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux of all lamps	325600 lm
Total power	2666 W
Total power per area (30078.46 m ²)	0.09 W/m ²
Upward light ratio (ULR)	0.00

Illuminance

Average illuminance	Em	164 lx
Minimum illuminance	Emin	101 lx
Maximum illuminance	Emax	219 lx
Uniformity Uo	Emin/Em	1:1.64 (0.61)
Diversity Ud	Emin/Emax	1:2.18 (0.46)

Type No.\Make

Tamlite Lighting

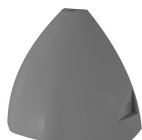
Object : Mardon Park, Baglan Energy Park, South Wales
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2.2 Summary, Site

2.2.8 Result overview, Sample Loading Bay

2 46 Order No. : CWL160T2NWB
 Luminaire name : CITY WL
Equipment : 1 x 11 W / 1600 lm

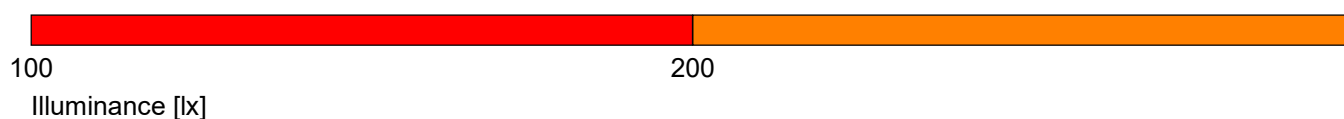
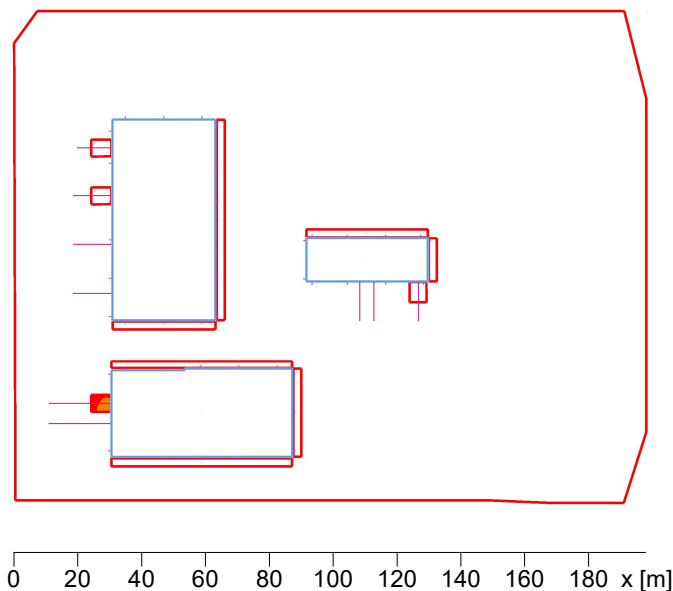


4 9 Order No. : EPR2800ANW
 Luminaire name : EXPLORER
Equipment : 1 x 240 W / 28000 lm



2.2 Summary, Site

2.2.9 Result overview, Sample Loading Bay



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux of all lamps	325600 lm
Total power	2666 W
Total power per area (30078.46 m ²)	0.09 W/m ²
Upward light ratio (ULR)	0.00

Illuminance

Average illuminance	Em	196 lx
Minimum illuminance	Emin	108 lx
Maximum illuminance	Emax	285 lx
Uniformity Uo	Emin/Em	1:1.81 (0.55)
Diversity Ud	Emin/Emax	1:2.63 (0.38)

Type No.\Make

Tamlite Lighting

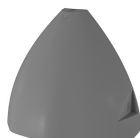
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2.2 Summary, Site

2.2.9 Result overview, Sample Loading Bay

2 46 Order No. : CWL160T2NWB
 Luminaire name : CITY WL
Equipment : 1 x 11 W / 1600 lm

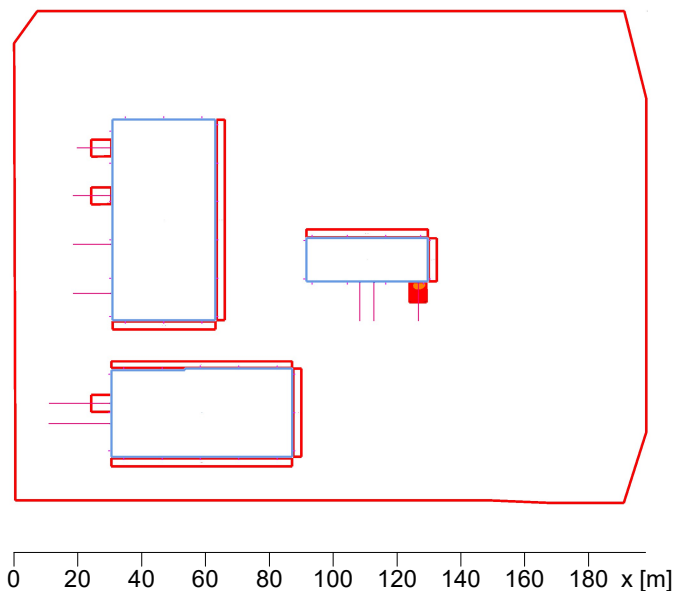


4 9 Order No. : EPR2800ANW
 Luminaire name : EXPLORER
Equipment : 1 x 240 W / 28000 lm



2.2 Summary, Site

2.2.10 Result overview, Sample Loading Bay



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	-0.00 m
Maintenance factor	0.80
Total luminous flux of all lamps	325600 lm
Total power	2666 W
Total power per area (30078.46 m ²)	0.09 W/m ²
Upward light ratio (ULR)	0.00

Illuminance

Average illuminance	Em	155 lx
Minimum illuminance	Emin	94.7 lx
Maximum illuminance	Emax	220 lx
Uniformity Uo	Emin/Em	1:1.63 (0.61)
Diversity Ud	Emin/Emax	1:2.33 (0.43)

Type No.\Make

Tamlite Lighting

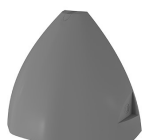
Object : Mardon Park, Baglan Energy Park, South Wales
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2.2 Summary, Site

2.2.10 Result overview, Sample Loading Bay

2 46 Order No. : CWL160T2NWB
 Luminaire name : CITY WL
Equipment : 1 x 11 W / 1600 lm

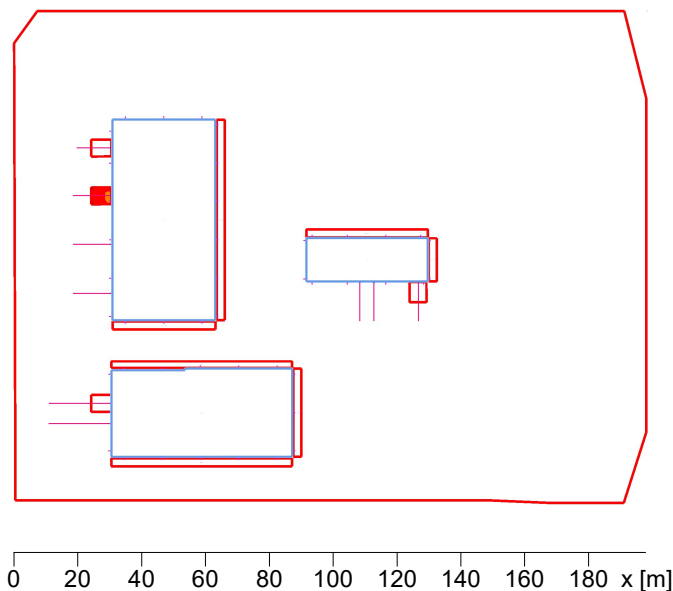


4 9 Order No. : EPR2800ANW
 Luminaire name : EXPLORER
Equipment : 1 x 240 W / 28000 lm



2.2 Summary, Site

2.2.11 Result overview, Sample Loading Bay



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux of all lamps	325600 lm
Total power	2666 W
Total power per area (30078.46 m ²)	0.09 W/m ²
Upward light ratio (ULR)	0.00

Illuminance

Average illuminance	Em	151 lx
Minimum illuminance	Emin	92.3 lx
Maximum illuminance	Emax	217 lx
Uniformity Uo	Emin/Em	1:1.64 (0.61)
Diversity Ud	Emin/Emax	1:2.35 (0.43)

Type No.\Make

Tamlite Lighting

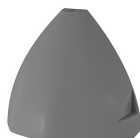
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2.2 Summary, Site

2.2.11 Result overview, Sample Loading Bay

2 46 Order No. : CWL160T2NWB
 Luminaire name : CITY WL
Equipment : 1 x 11 W / 1600 lm

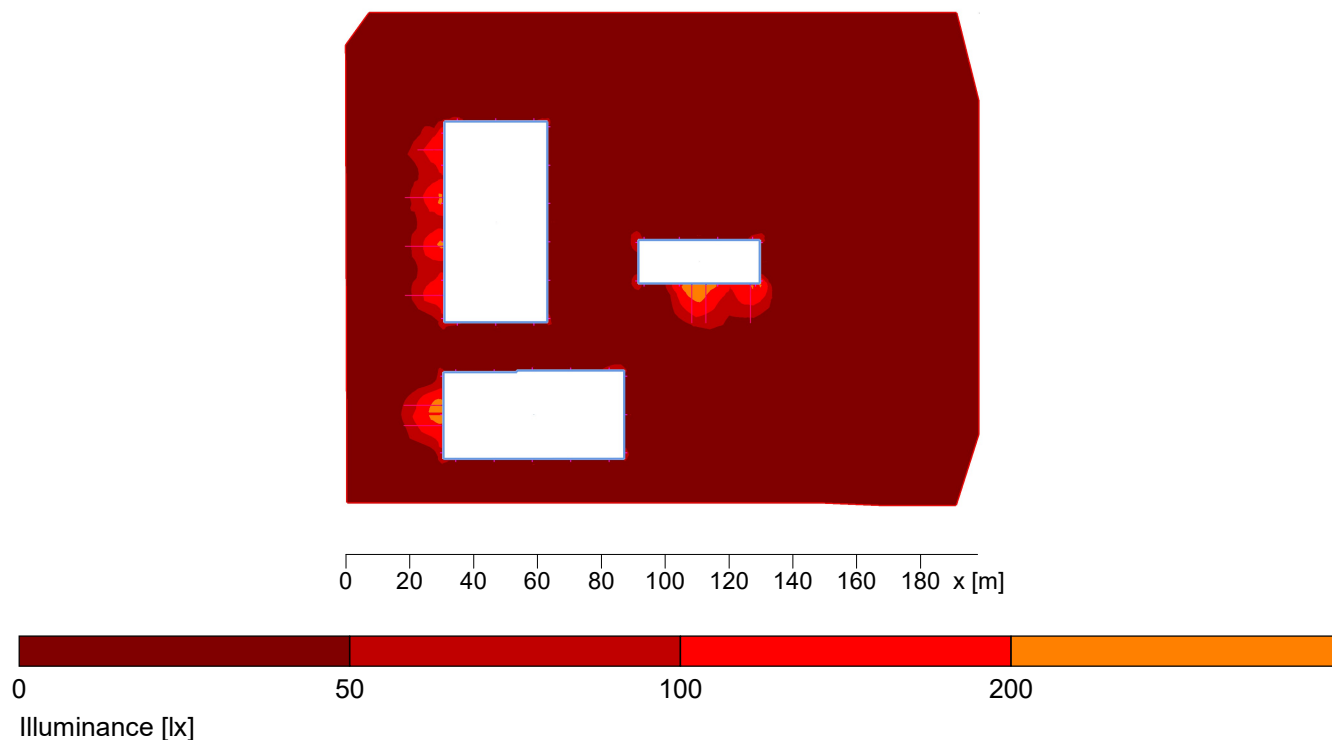


4 9 Order No. : EPR2800ANW
 Luminaire name : EXPLORER
Equipment : 1 x 240 W / 28000 lm



2.2 Summary, Site

2.2.12 Result overview, Evaluation area 1



General

Calculation algorithm used
 Maintenance factor

Average indirect fraction
 0.80

Total luminous flux of all lamps

325600.00 lm

Total power

2666.0 W

Total power per area (30078.46 m²)

0.09 W/m² (0.96 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

Horizontal
 Em 9.25 lx
 Emin 0 lx
 Emin/Em (Uo) 0.00
 Emin/Emax (Ud) 0.00
 Upward light ratio (ULR) 0.00
 Position 0.00 m

Type No.\Make

Tamlite Lighting

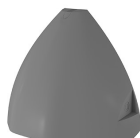
Object : Mardon Park, Baglan Energy Park, South Wales
Installation : Various
Project number : 69272
Date : 16.09.2022



2.2 Summary, Site

2.2.12 Result overview, Evaluation area 1

2 46 Order No. : CWL160T2NWB
 Luminaire name : CITY WL
Equipment : 1 x 11 W / 1600 lm



4 9 Order No. : EPR2800ANW
 Luminaire name : EXPLORER
Equipment : 1 x 240 W / 28000 lm

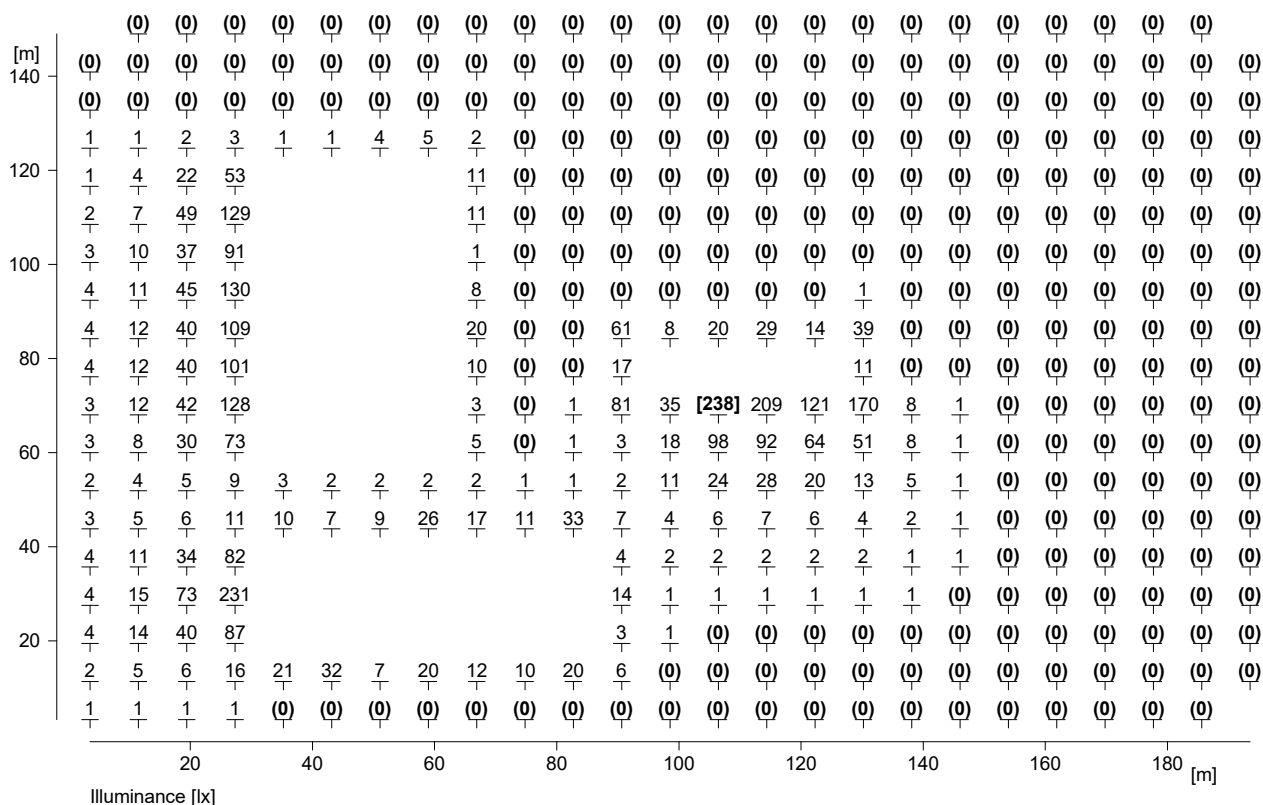




2 Site

2.3 Calculation results, Site

2.3.1 Table, Reference plane 1.1 (E)



Height reference plane	: 0.00 m
Average illuminance	Em : 9 lx
Minimum illuminance	Emin : 0 lx
Maximum illuminance	Emax : 238 lx
Uniformity Uo	Emin/Em : 1 : 8935.63 (0.00)
Diversity Ud	Emin/Emax : 1 : 229460.36 (0.00)