Land at Erbidtock

Installation :

Project number	:	20155
Customer	:	Wrexham
Processed by	:	B Archer
Date	:	08.08.2024

****
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.
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.

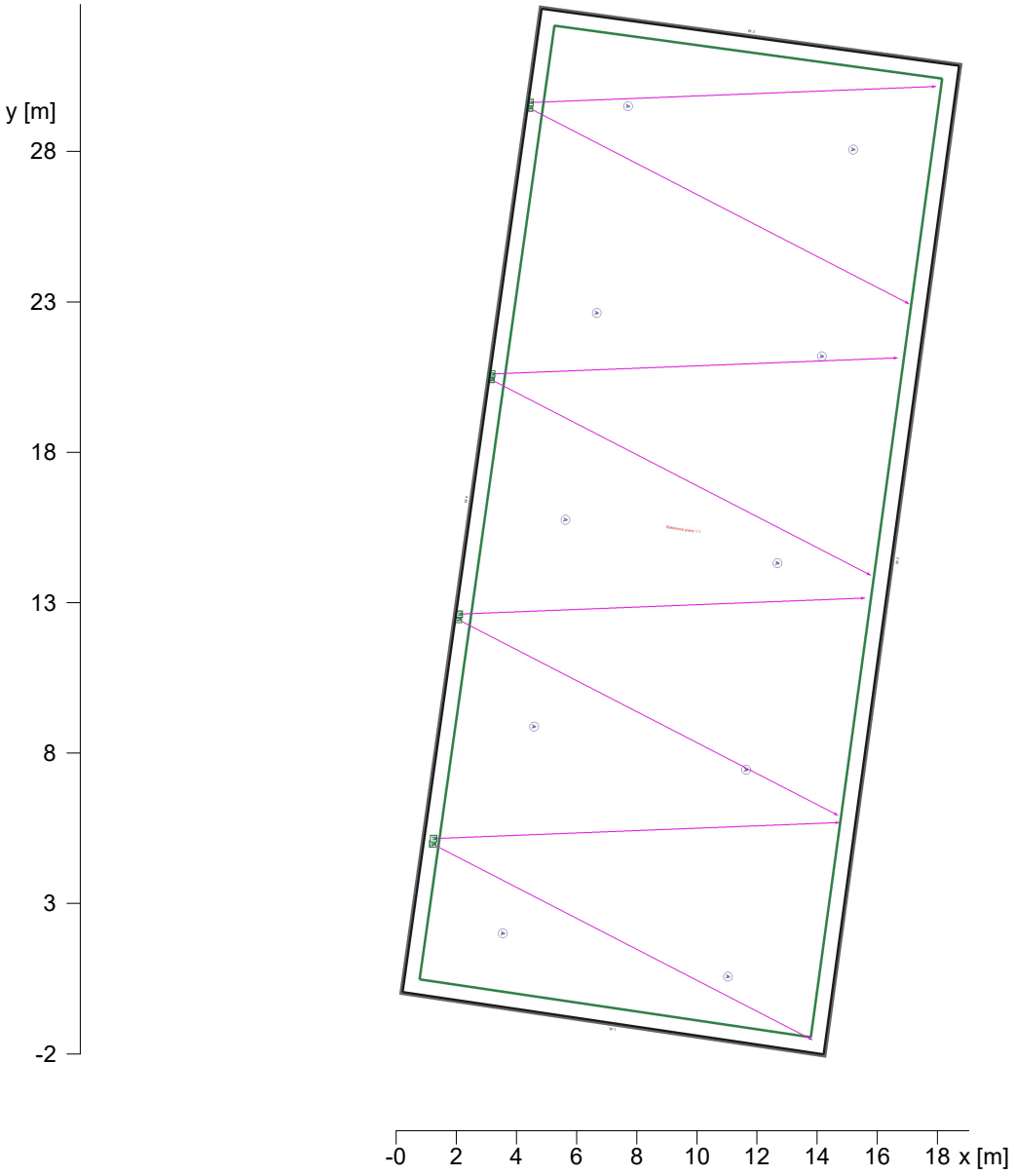
This exclusion of liability applies irrespective of the legal grounds for both damages and consequential damages suffered by users and third parties.

Object : Land at Erbidtock
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1 Storage

1.1 Description, Storage

1.1.1 Floor plan



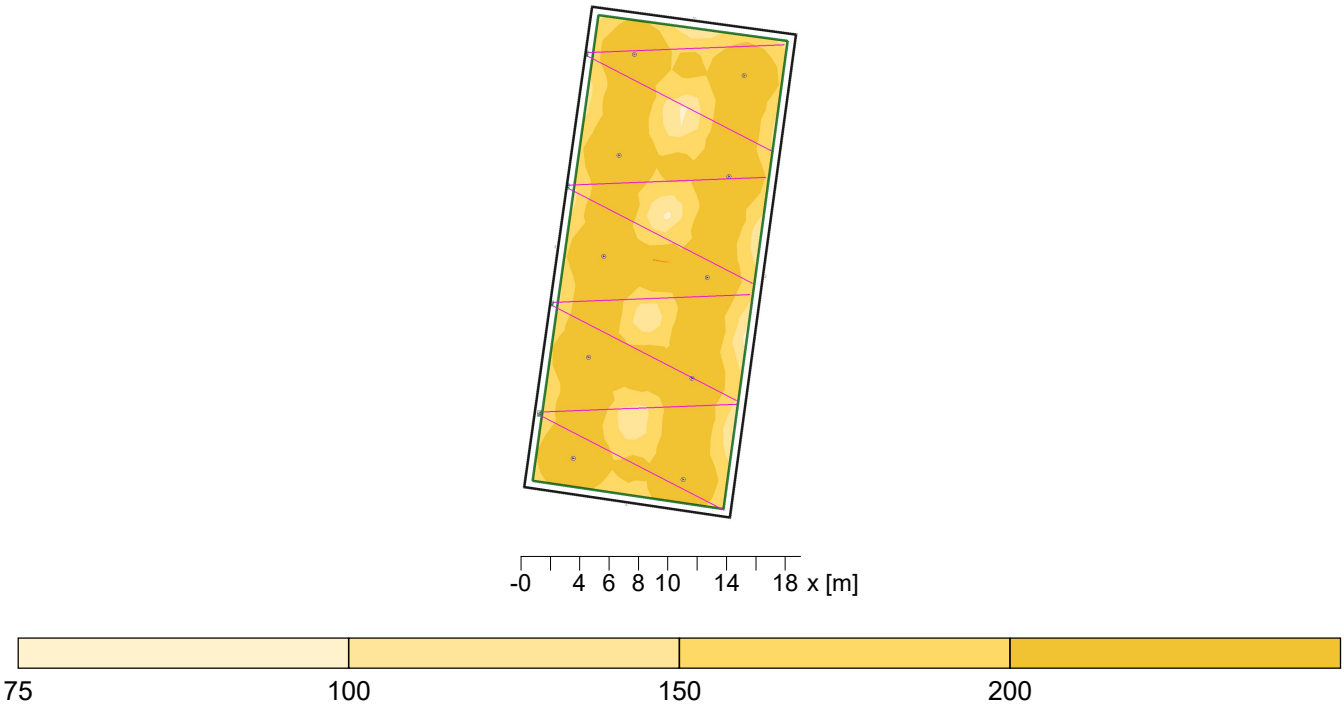
Wall	x	y	Length	Reflectance
1	13.99 m	-2.07 m	14.14 m	30.0 %
2	18.49 m	30.77 m	33.14 m	30.0 %
3	4.62 m	32.66 m	14.00 m	30.0 %
4	0.00 m	0.00 m	32.98 m	30.0 %
Floor				20.0 %
Ceiling				50.0 %
Room height		6.00 m		
Height of ref. plane		0.00 m		

Object : Land at Erbidtock
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1 Storage

1.2 Summary, Storage

1.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux	130000.00 lm
Total power	1000.0 W
Total power per area (465.23 m²)	2.15 W/m² (1.02 W/m²/100lx)

Evaluation area 1	**Reference plane 1.1**	
	Horizontal	cylindrical
$\bar{E}_m$	211 lx	62 lx
E_{min}	87 lx	33 lx
$E_{min}/\bar{E}_m$ (U_o)	0.41	0.53
E_{min}/E_{max} (U_d)	0.32	
E_z/E_h		0.28
Position	0.00 m	0.45 m
R_{UG} (4.2H 9.7H)	<=25.0	

Luminaire :
(XCITE HIGHBAY, XCHBA100NW)

Major surfaces	$\bar{E}_m$	U_o

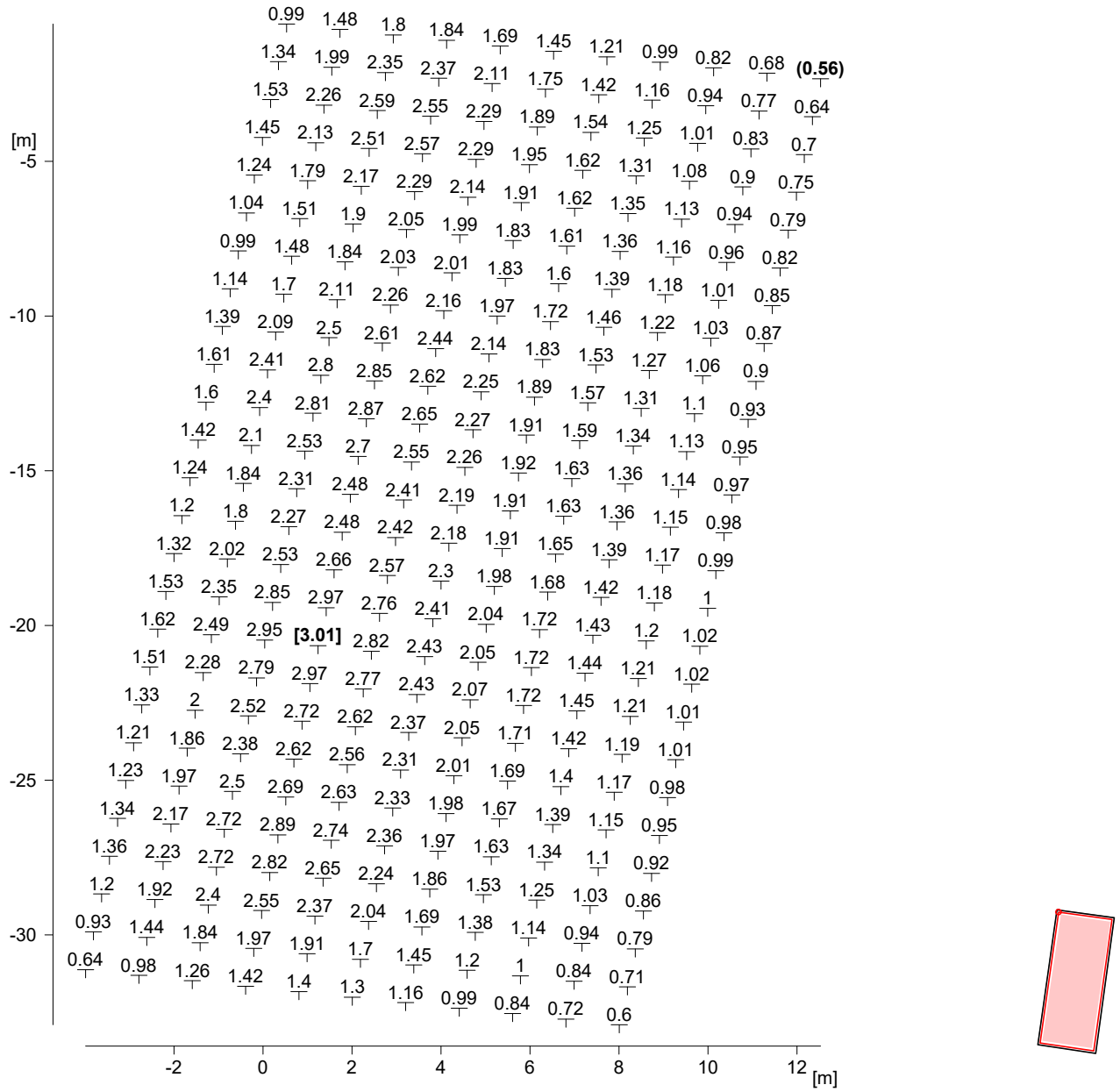
Type No.\Make

		Tamlite Lighting	
1	10 x	Order No.	: XCHBA100NW
		Luminaire name	: XCITE HIGHBAY
		Equipment	: 1 x 100 W / 13000 lm

1 Storage

1.3 Calculation results, Storage

1.3.1 Table, Anti panic area 1.1 (E)



Required minimum illuminance : 0.5 lx (lower values are highlighted in red)

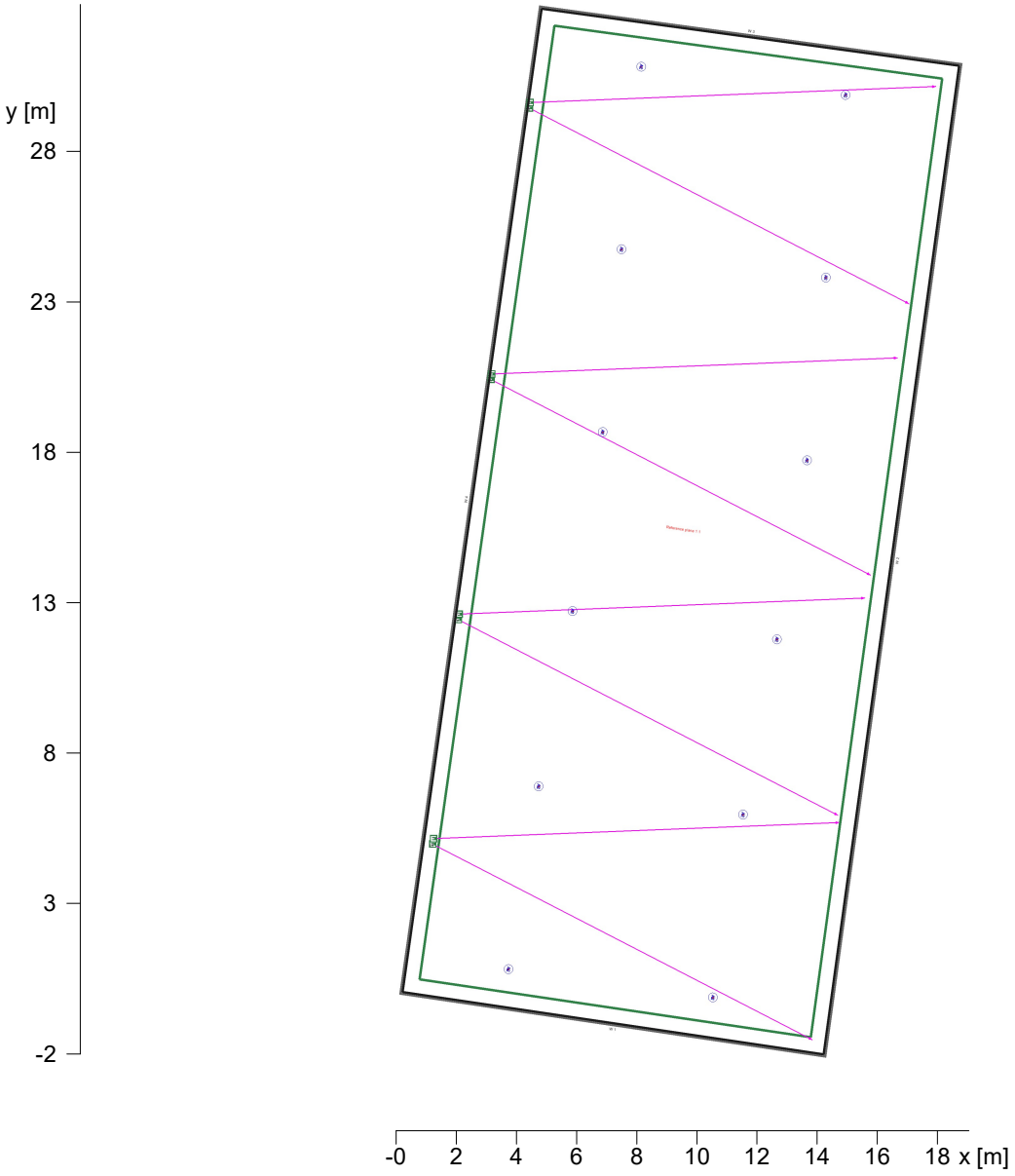
Minimum illuminance	Emin	: 0.56 lx (* 0.4 lx)
Maximum illuminance	Emax	: 3 lx (* 3 lx)
Diversity	Emin/Emax	: 1 : 5.35 (0.19) (Threshold value 1:40) (* 1:7.01)
Height		: 0 m
Calculation algorithm used		: Direct component
Maintenance factor		: 0.8

*: Values on fine measuing grid (0.1m - 0.5m)!

2 Storage op2

2.1 Description, Storage op2

2.1.1 Floor plan



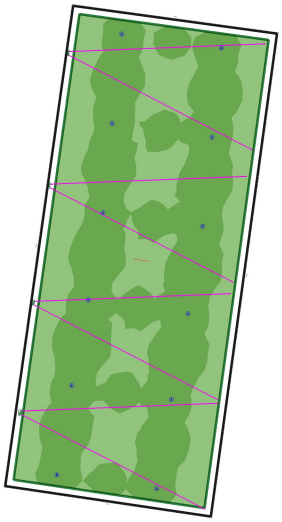
Wall	x	y	Length	Reflectance
1	13.99 m	-2.07 m	14.14 m	30.0 %
2	18.49 m	30.77 m	33.14 m	30.0 %
3	4.62 m	32.66 m	14.00 m	30.0 %
4	0.00 m	0.00 m	32.98 m	30.0 %
Floor				20.0 %
Ceiling				50.0 %
Room height		6.00 m		
Height of ref. plane		0.00 m		

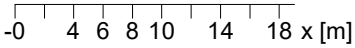
Object : Land at Erbidtock
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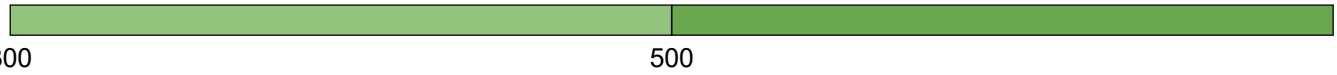
2 Storage op2

2.2 Summary, Storage op2

2.2.1 Result overview, Evaluation area 1







Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux	312000.00 lm
Total power	2400.0 W
Total power per area (465.23 m²)	5.16 W/m² (1.03 W/m²/100lx)

Evaluation area 1	**Reference plane 1.1**	
	Horizontal	cylindrical
$\bar{E}_m$	499 lx	146 lx
E_{min}	320 lx	68 lx
$E_{min}/\bar{E}_m$ (U_o)	0.64	0.47
E_{min}/E_{max} (U_d)	0.51	
E_z/E_h		0.29
Position	0.00 m	0.45 m
R_{UG} (4.2H 9.7H)	<=26.3	

Luminaire :
(XCITE HIGHBAY, XCHBA200NW)

Major surfaces	$\bar{E}_m$	U_o

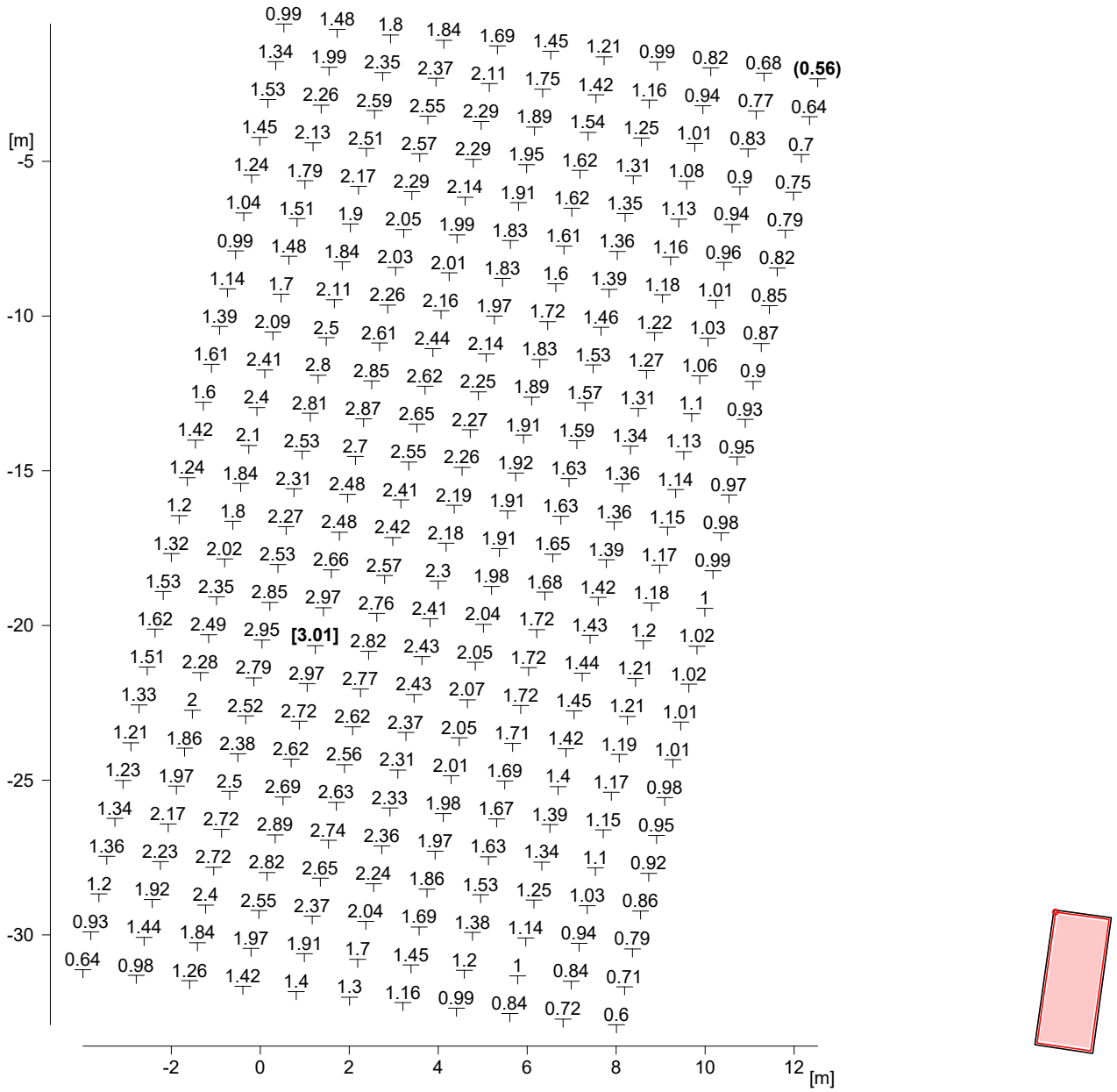
Type No.\Make

		Tamlite Lighting	
5	12 x	Order No.	: XCHBA200NW
A2		Luminaire name	: XCITE HIGHBAY
		Equipment	: 1 x 200 W / 26000 lm

2 Storage op2

2.3 Calculation results, Storage op2

2.3.2 Table, Anti panic area 1.1 (E)



Required minimum illuminance : 0.5 lx (lower values are highlighted in red)

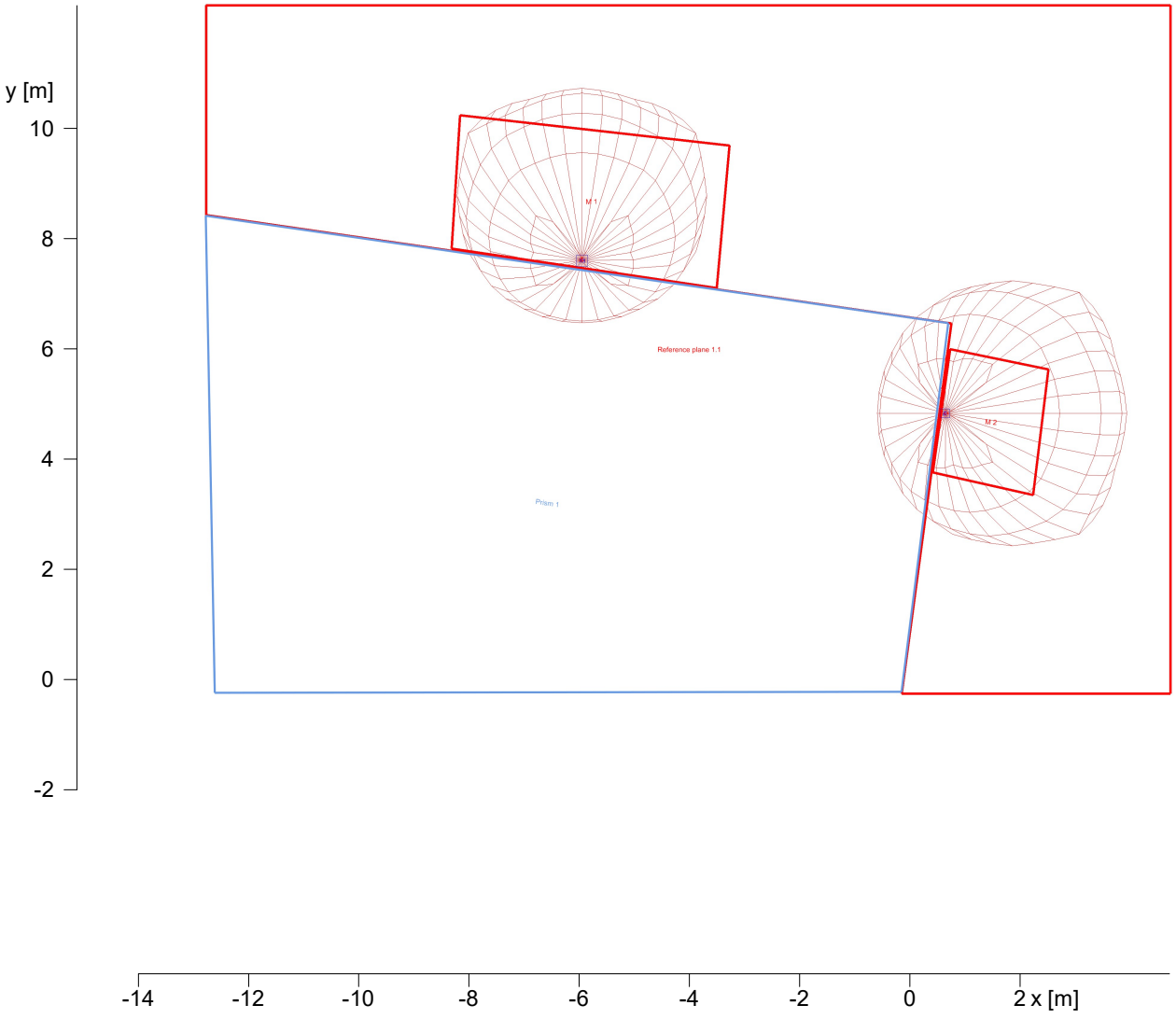
Minimum illuminance	Emin	: 0.56 lx (* 0.4 lx)
Maximum illuminance	Emax	: 3 lx (* 3 lx)
Diversity	Emin/Emax	: 1 : 5.35 (0.19) (Threshold value 1:40) (* 1:7.01)
Height		: 0 m
Calculation algorithm used		: Direct component
Maintenance factor		: 0.8

*: Values on fine measuing grid (0.1m - 0.5m)!

3 Room2

3.1 Description, Room2

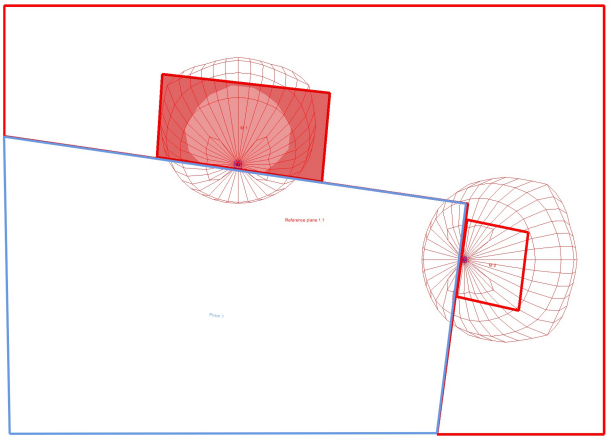
3.1.1 Floor plan

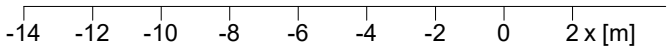


3 Room2

3.2 Summary, Room2

3.2.1 Result overview, Measuring area 1







Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux	3750 lm
Total power	30 W
Total power per area (117.26 m²)	0.26 W/m²

Illuminance

Average illuminance	$\bar{E}_m$	29.1 lx
Minimum illuminance	E_{min}	20.4 lx
Maximum illuminance	E_{max}	37 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:1.42 (0.7)
Diversity U_d	E_{min}/E_{max}	1:1.81 (0.55)

Type No.\Make

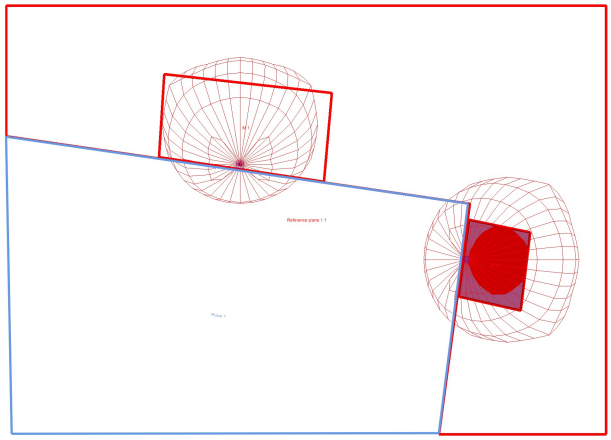
Tamlite Lighting

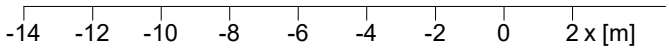
3 1 x X1
Order No. : XCFC20CTP
Luminaire name : XCITE FLOODLIGHT CC
Equipment : 1 x 20 W / 2500 lm

4 1 x X2
Order No. : XCFC10CTP
Luminaire name : XCITE FLOODLIGHT CC
Equipment : 1 x LED 10 W / 1250 lm

3.2 Summary, Room2

3.2.2 Result overview, Measuring area 2







Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux	3750 lm
Total power	30 W
Total power per area (117.26 m²)	0.26 W/m²

Illuminance

Average illuminance	$\bar{E}_m$	15.2 lx
Minimum illuminance	E_{min}	13.7 lx
Maximum illuminance	E_{max}	16.3 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:1.11 (0.9)
Diversity U_d	E_{min}/E_{max}	1:1.19 (0.84)

Type No.\Make

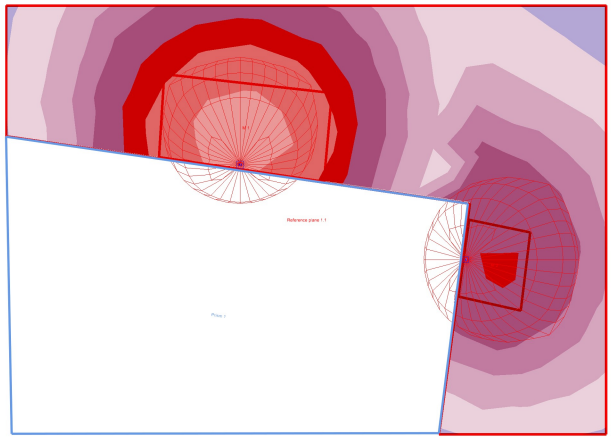
Tamlite Lighting

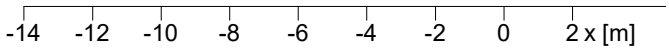
3 1 x X1
Order No. : XCFC20CTP
Luminaire name : XCITE FLOODLIGHT CC
Equipment : 1 x 20 W / 2500 lm

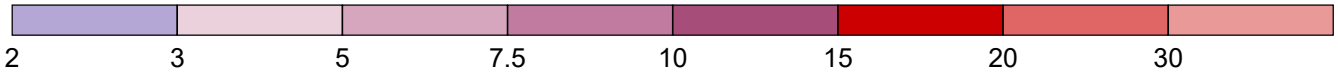
4 1 x X2
Order No. : XCFC10CTP
Luminaire name : XCITE FLOODLIGHT CC
Equipment : 1 x LED 10 W / 1250 lm

3.2 Summary, Room2

3.2.3 Result overview, Evaluation area 1







Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux	3750.00 lm
Total power	30.0 W
Total power per area (117.26 m²)	0.26 W/m² (2.21 W/m²/100lx)

Evaluation area 1	**Reference plane 1.1**
	Horizontal
$\bar{E}_m$	11.6 lx
E_{min}	2.7 lx
$E_{min}/\bar{E}_m$ (U_o)	0.23
E_{min}/E_{max} (U_d)	0.08
Position	0.00 m

Type No.\Make

Tamlite Lighting

3	1 x	Order No.	: XCFC20CTP
		Luminaire name	: XCITE FLOODLIGHT CC
		Equipment	: 1 x 20 W / 2500 lm
4	1 x	Order No.	: XCFC10CTP
		Luminaire name	: XCITE FLOODLIGHT CC
		Equipment	: 1 x LED 10 W / 1250 lm