

Barton & Redman

Installation : XCITE

Project number : 20180

Customer : CEF Nelson

Processed by : Charlie Andrews

Date : 11.09.2024

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.

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.



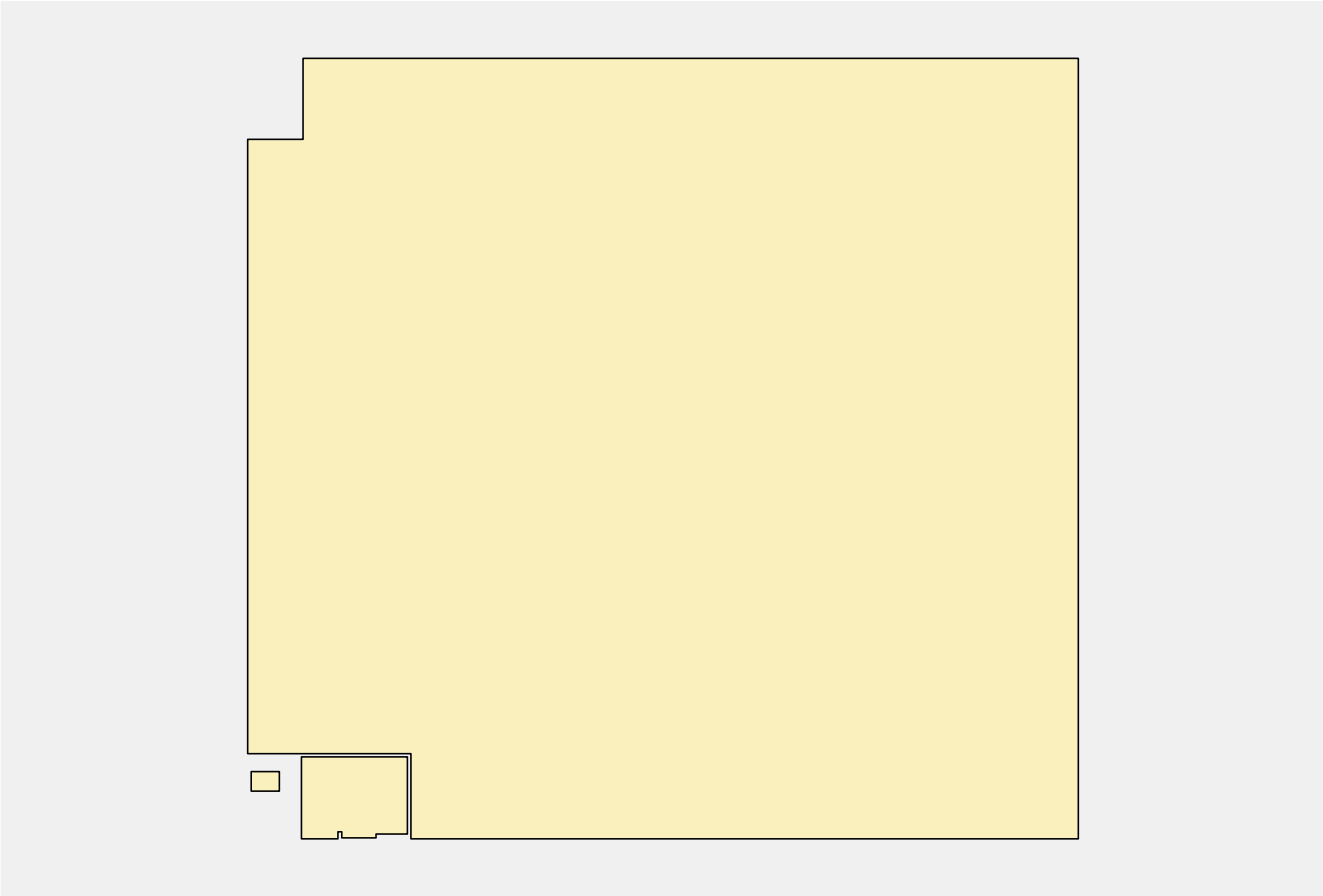
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Summary, Floor 1

.1 Floor overview



Number of rooms	3	
Total area	3472 m²	Calculated
Number of luminaires	52	
Total luminous flux	731500 lm	
Total power	5692 W	
Total power per area	1.64 W/m²	

Parts list

Type No.\Make

		Tamlite Lighting	
1	27 x	Order No.	: XCHBA200NW
		Luminaire name	: XCITE Highbay
		Equipment	: 1 x 200 W / 26000 lm
2	14E x	Order No.	: XCTPNM3 -- Emergency Lighting --
		Luminaire name	: XCITE TWINSPOt
		with	: 2 x XCTPNM3
		Equipment	: 1 x 2.25 W / 280 lm
		Emergency	: 280 lm (100.0 %)
3	5 x	Order No.	: XCLGP6630NW
		Luminaire name	: XCITE PANEL LG
		Equipment	: 1 x 30 W / 3000 lm

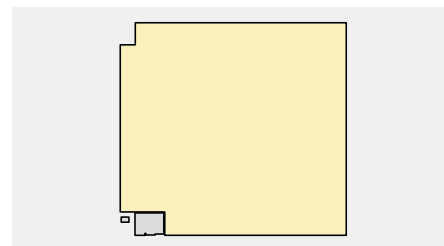
Summary, Floor 1

.1 Floor overview

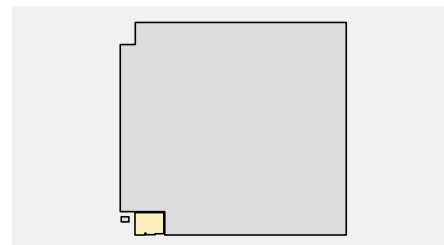
4	4E x	Order No.	: XCLGP6630NW + XC2RM3	-- Emergency Lighting --
		Luminaire name	: XCITE PANEL LG	
		Equipment	: 1 x 30 W / 3000 lm	
		Emergency	: 140 lm (4.7 %)	
6	1E x	Order No.	: XCBLC22CT + XC2RM3	-- Emergency Lighting --
		Luminaire name	: XCITE DOWNLIGHT BL CC	
		Equipment	: 1 x 22 W / 2500 lm	
		Emergency	: 100 lm (4.0 %)	
12	1 x	Order No.	: XCBLM3ST	
		Luminaire name	: XCITE BLADE	
		--	--	

Rooms

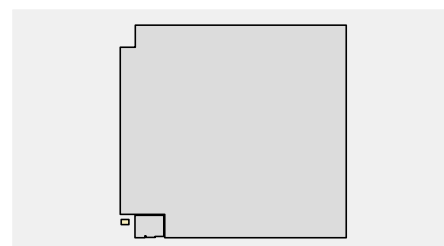
Warehouse	41 x Luminaires
Total luminous flux	702000 lm
Total power	5400 W
Total power per area (3423 m²)	1.58 W/m²
$\bar{E}_m$	320 lx
E_{min}	194 lx
$E_{min}/\bar{E}_m (U_o)$	0.61
RUG	<=26.2



Office	10 x Luminaires
Total luminous flux	27000 lm
Total power	270 W
Total power per area (46 m²)	5.88 W/m²
$\bar{E}_m$	429 lx
E_{min}	304 lx
$E_{min}/\bar{E}_m (U_o)$	0.71
RUG	---



Acc WC	1 x Luminaires
Total luminous flux	2500 lm
Total power	22 W
Total power per area (3 m²)	7.42 W/m²
$\bar{E}_m$	181 lx
E_{min}	173 lx
$E_{min}/\bar{E}_m (U_o)$	0.96
RUG	10.0

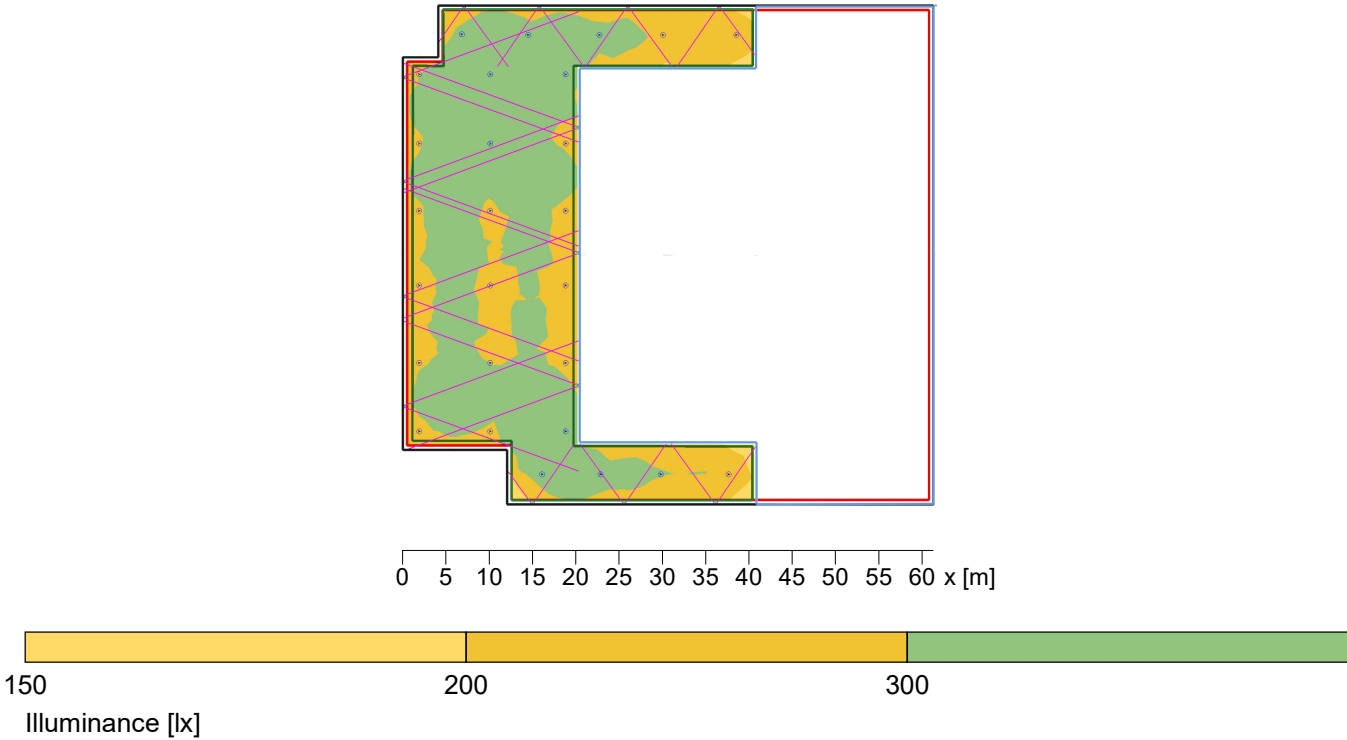




1 Warehouse

1.1 Summary, Warehouse

1.1.1 Result overview, Evaluation area 1



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux	702000.00 lm
Total power	5400.0 W
Total power per area (3422.72 m²)	1.58 W/m² (0.49 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

$\bar{E}_m$	Horizontal	cylindrical
E_{min}	320 lx	94 lx
$E_{min}/\bar{E}_m (U_o)$	194 lx	58 lx
$E_{min}/E_{max} (U_d)$	0.61	0.62
E_z/E_h	0.41	
Position	0.00 m	0.29
Rug (9.3H 9.9H)	≤ 26.2	0.45 m
Luminaire : (XCITE HIGHBAY, XCHBA200NW)		

Type No.Make

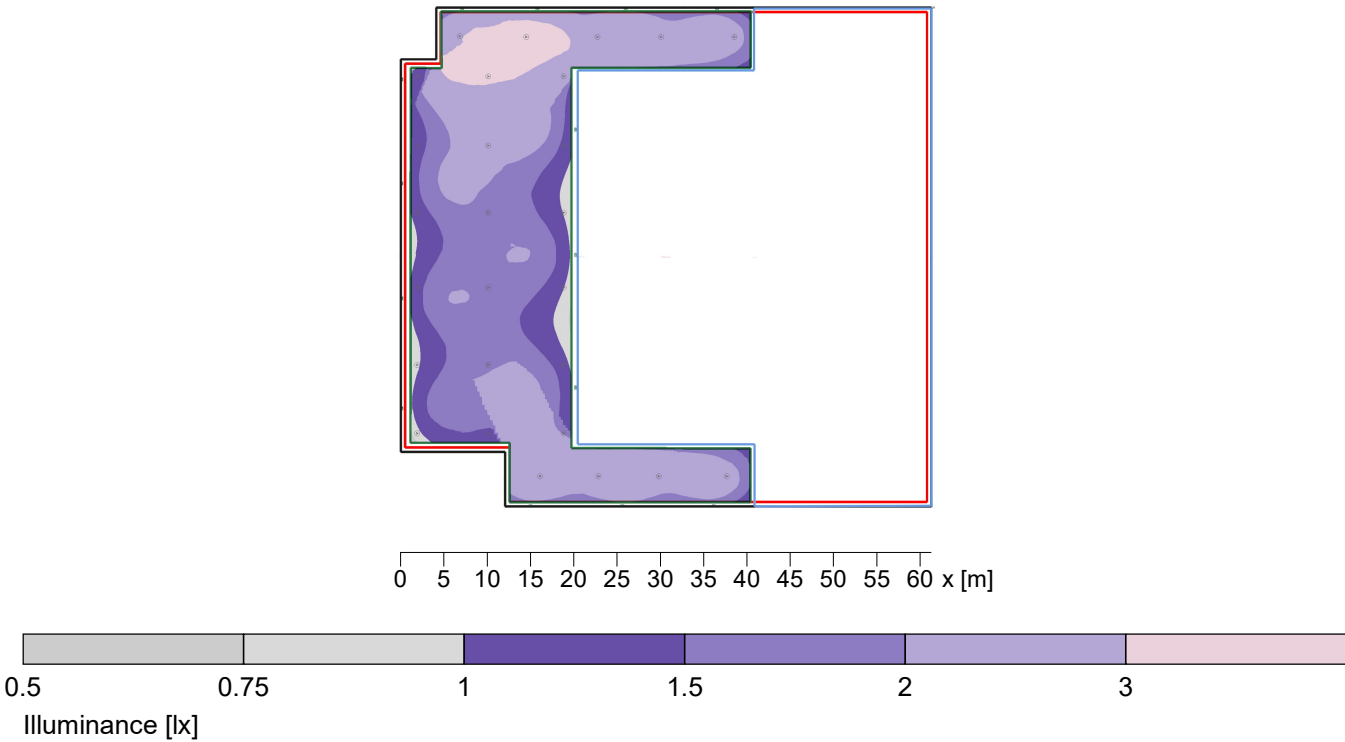
Tamlite Lighting		
1	27 x	Order No. : XCHBA200NW
		Luminaire name : XCITE HIGHBAY
		Equipment : 1 x 200 W / 26000 lm



1 Warehouse

1.2 Summary, Warehouse

1.2.1.1 Result overview (emergency lighting)

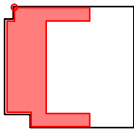


General

Calculation algorithm used : Direct component
Maintenance factor : 0.8
Height (phot centre) : 7.06 m
Maximum I : 190 cd <= 5000 cd

Anti panic area:

No.	Surface		Ud
	Emin [lx]	Emax [lx]	
Anti panic area 1			
Calculation field: 39.3m x 56.6m (12 x 17 pts), Height = 0.00m			
1	0.60 lx	3.85 lx	1: 6.36
	>= 0.5 lx		>= 1 : 40



Type No.\Make

Tamlite Lighting			
2	14E x	Order No. : XCTPNM3	-- Emergency Lighting --
		Luminaire name : XCITE TWINSPO	
		with : 2 x XCTPNM3	
		Equipment : 1 x 2.25 W / 280 lm	
		Emergency : 280 lm (100.0 %)	

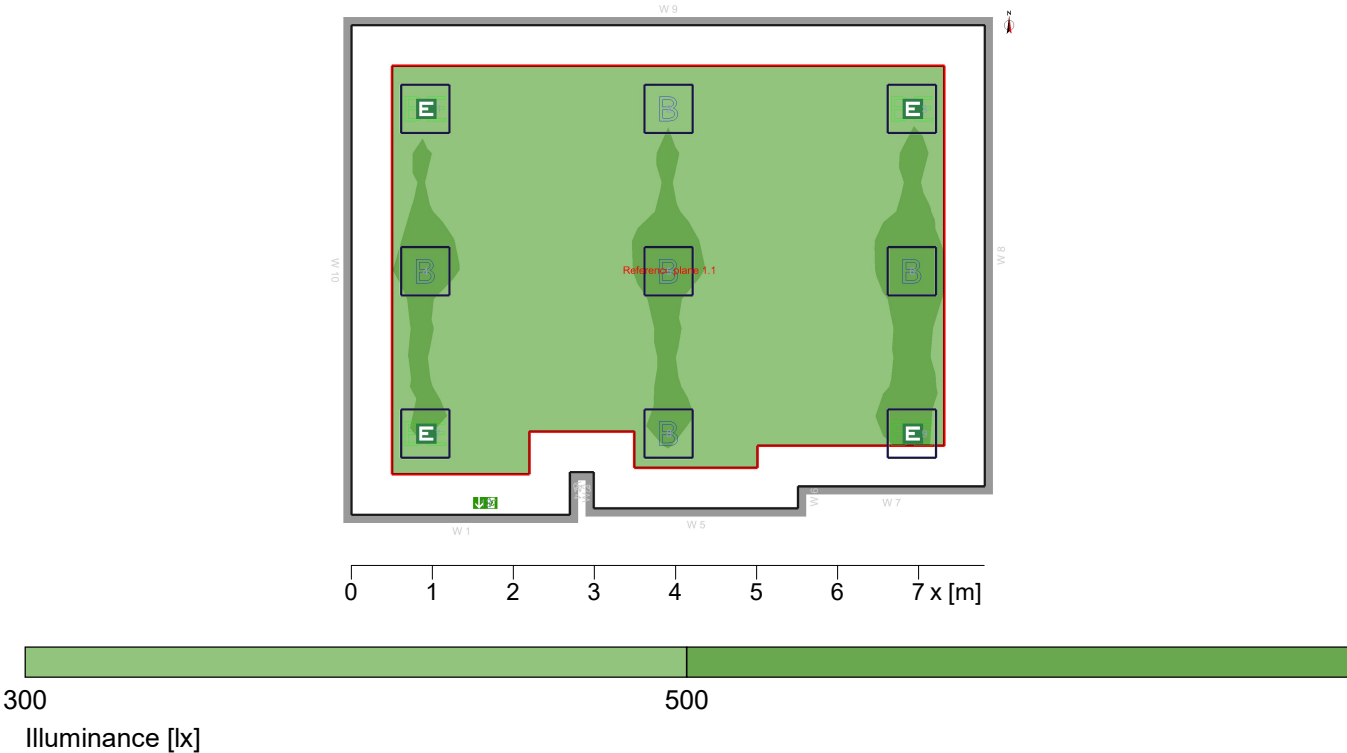




2 Office

2.1 Summary, Office

2.1.1 Result overview, Evaluation area 1



General

Calculation algorithm used	Average indirect fraction
Height of luminaire plane	2.40 m
Maintenance factor	0.80
Total luminous flux	27000.00 lm
Total power	270.0 W
Total power per area (45.94 m²)	5.88 W/m² (1.37 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

$\bar{E}_m$	Horizontal	cylindrical
E_{min}	429 lx	175 lx
$E_{min}/\bar{E}_m (U_o)$	304 lx	143 lx
$E_{min}/E_{max} (U_d)$	0.71	0.82
E_z/E_h	0.55	0.37
Position	0.75 m	1.20 m
RUG (--- ---)	---	

Hints:
- The scene contains luminaires that are unsuitable for the RUG tabular method.

Major surfaces

$\bar{E}_m$

U_o

Type No. Make

2 Office

2.1 Summary, Office

2.1.1 Result overview, Evaluation area 1

		Tamlite Lighting	
3	5 x	Order No.	: XCLGP6630NW
		Luminaire name	: XCITE PANEL LG
		Equipment	: 1 x 30 W / 3000 lm
4	4E x	Order No.	: XCLGP6630NW + XC2RM3
		Luminaire name	: XCITE PANEL LG
		Equipment	: 1 x 30 W / 3000 lm
		Emergency	: 140 lm (4.7 %)
12	1 x	Order No.	: XCBLM3ST
		Luminaire name	: XCITE BLADE
		--	--

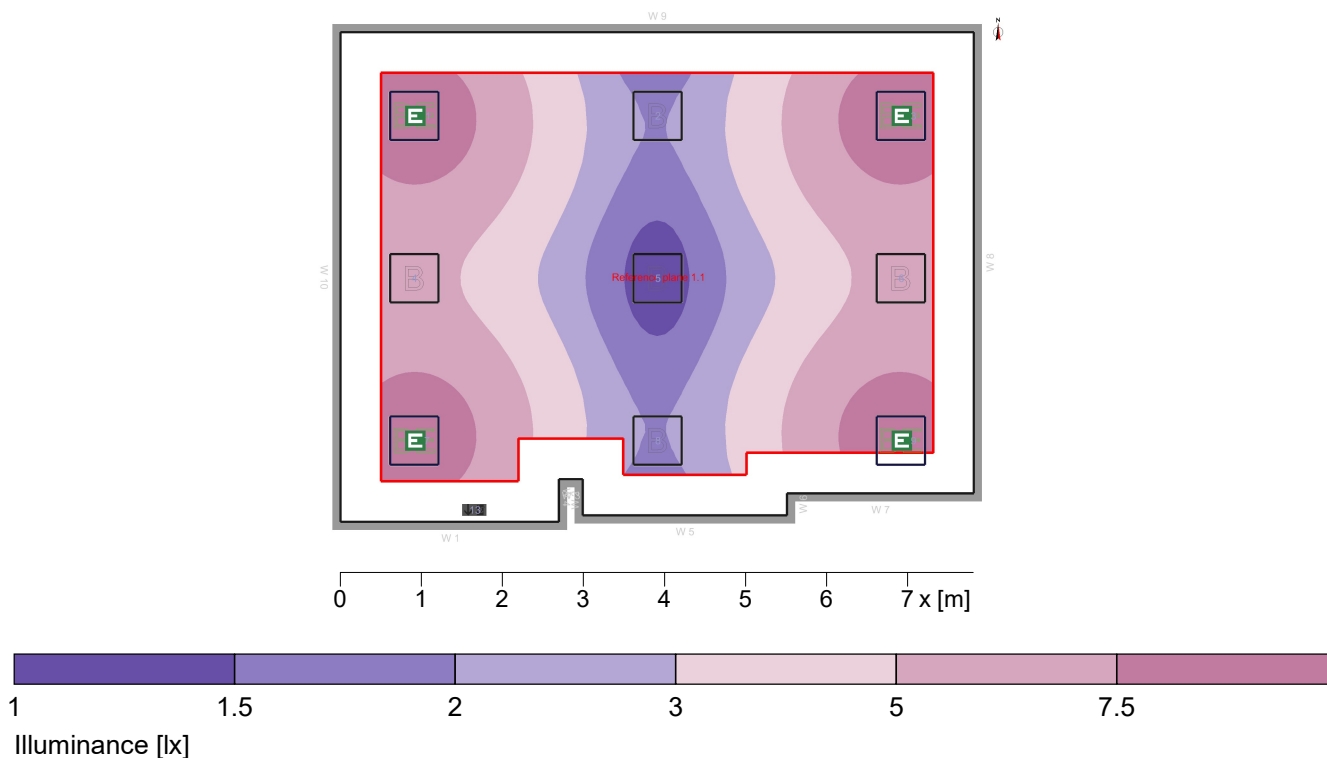
Object : Barton_Redman
 Installation : XCITE
 Project number : 20180
 Date : 11.09.2024



2 Office

2.2 Summary, Office

2.2.1.1 Result overview (emergency lighting)



General

Calculation algorithm used : Direct component
 Maintenance factor : 0.8
 Height (phot. centre) : 2.40 m
 Maximum I : 64 cd <= 500 cd

Anti panic area:

No.	Surface	Emin [lx]	Emax [lx]	Ud
1	Anti panic area 1.1	1.35 lx	8.99 lx	1: 6.67
		>= 0.5 lx		>= 1 : 40



Type No.\Make

4	4E x	Tamlite Lighting	
		Order No. : XCLGP6630NW + XC2RM3	-- Emergency Lighting --
		Luminaire name : XCITE PANEL LG	
		Equipment : 1 x 30 W / 3000 lm	
		Emergency : 140 lm (4.7 %)	

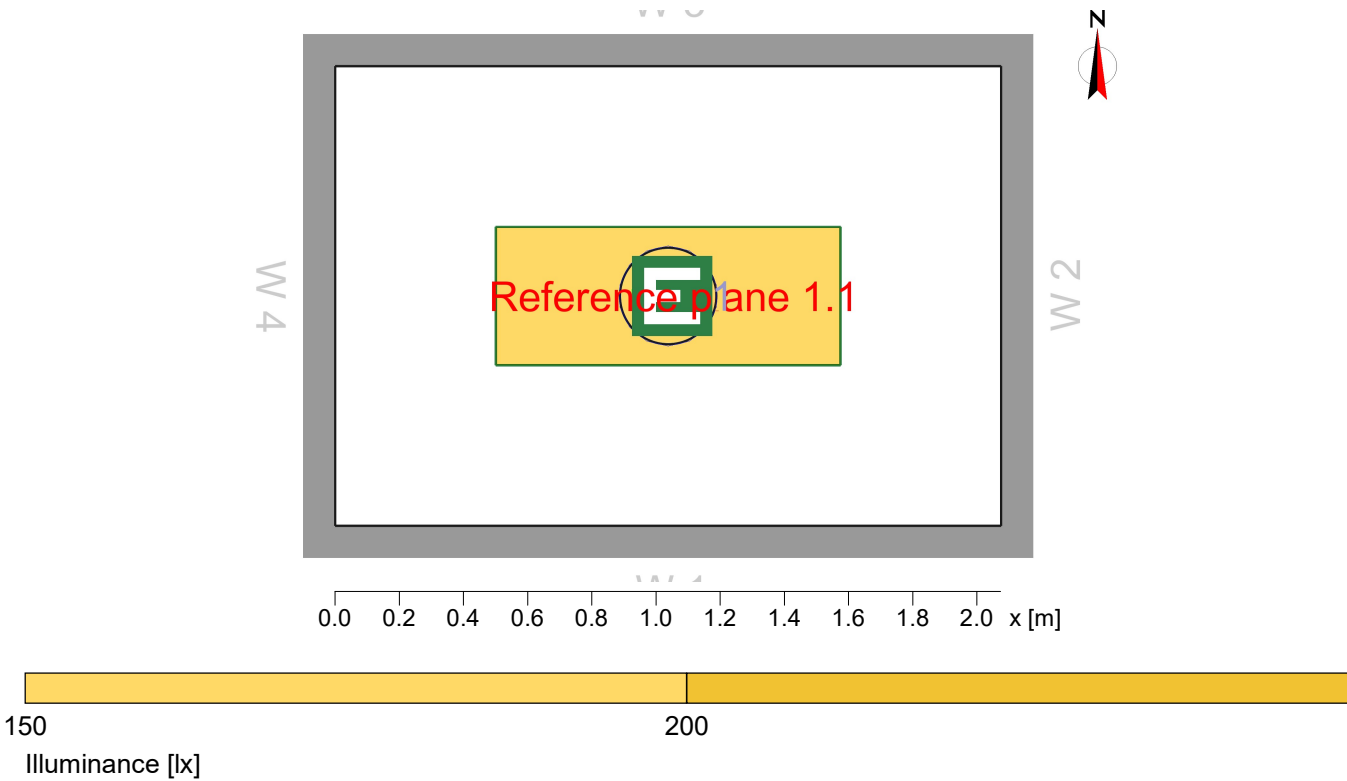




3 Acc WC

3.1 Summary, Acc WC

3.1.1 Result overview, Evaluation area 1



General

Calculation algorithm used	Average indirect fraction
Height of luminaire plane	2.40 m
Maintenance factor	0.80
Total luminous flux	2500.00 lm
Total power	22.0 W
Total power per area (2.97 m²)	7.42 W/m² (4.10 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

$\bar{E}_m$	Horizontal	cylindrical
E_{min}	181 lx	61 lx
$E_{min}/\bar{E}_m (U_o)$	0.96	0.92
$E_{min}/E_{max} (U_d)$	0.93	
E_z/E_h		0.24
Position	0.00 m	0.45 m
$R_{UG} (1.7H \ 1.2H)$	10.0	

Luminaire :
(XCITE DOWNLIGHT BL CC, XCBLC22CT + XC2RM3)

Hints:
- Encountered room dimensions less than 2H. RUG value has been set to 10 as lower limit.

Major surfaces

$\bar{E}_m$

U_o

Type No.Make

Object : Barton _Redman
Installation : XCITE
Project number : 20180
Date : 11.09.2024



3 Acc WC

3.1 Summary, Acc WC

3.1.1 Result overview, Evaluation area 1

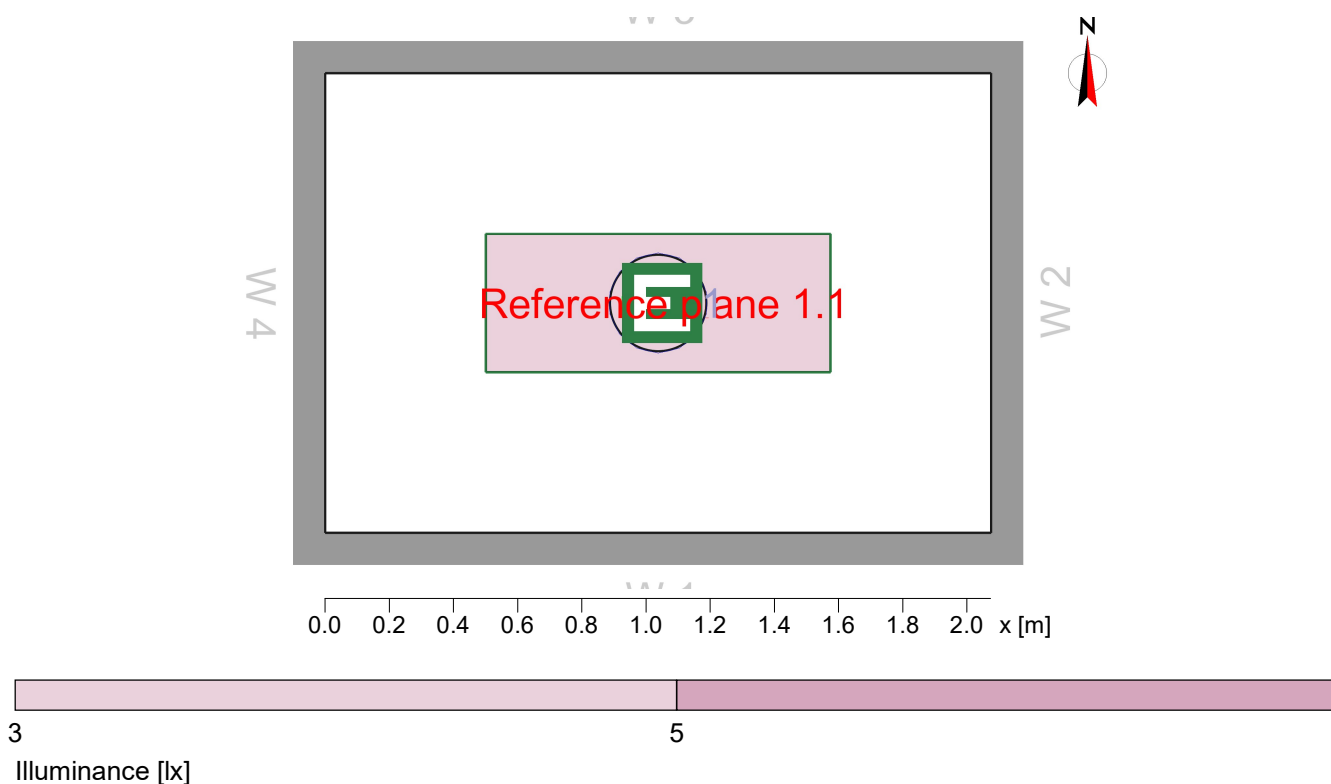
6	1E x	Tamlite Lighting		
		Order No.	: XCBLC22CT + XC2RM3	-- Emergency Lighting --
		Luminaire name	: XCITE DOWNLIGHT BL CC	
		Equipment	: 1 x 22 W / 2500 lm	
		Emergency	: 100 lm (4.0 %)	



3 Acc WC

3.2 Summary, Acc WC

3.2.1.1 Result overview (emergency lighting)

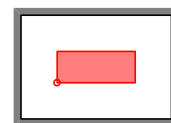


General

Calculation algorithm used : Direct component
 Maintenance factor : 0.8
 Height (phot centre) : 2.40 m
 Maximum I : 34 cd <= 500 cd

Anti panic area:

No.	Surface	Emin [lx]	Emax [lx]	Ud
1	Anti panic area 1.1	4.19 lx	4.72 lx	1: 1.13
		>= 0.5 lx		>= 1 : 40



Type No.\Make

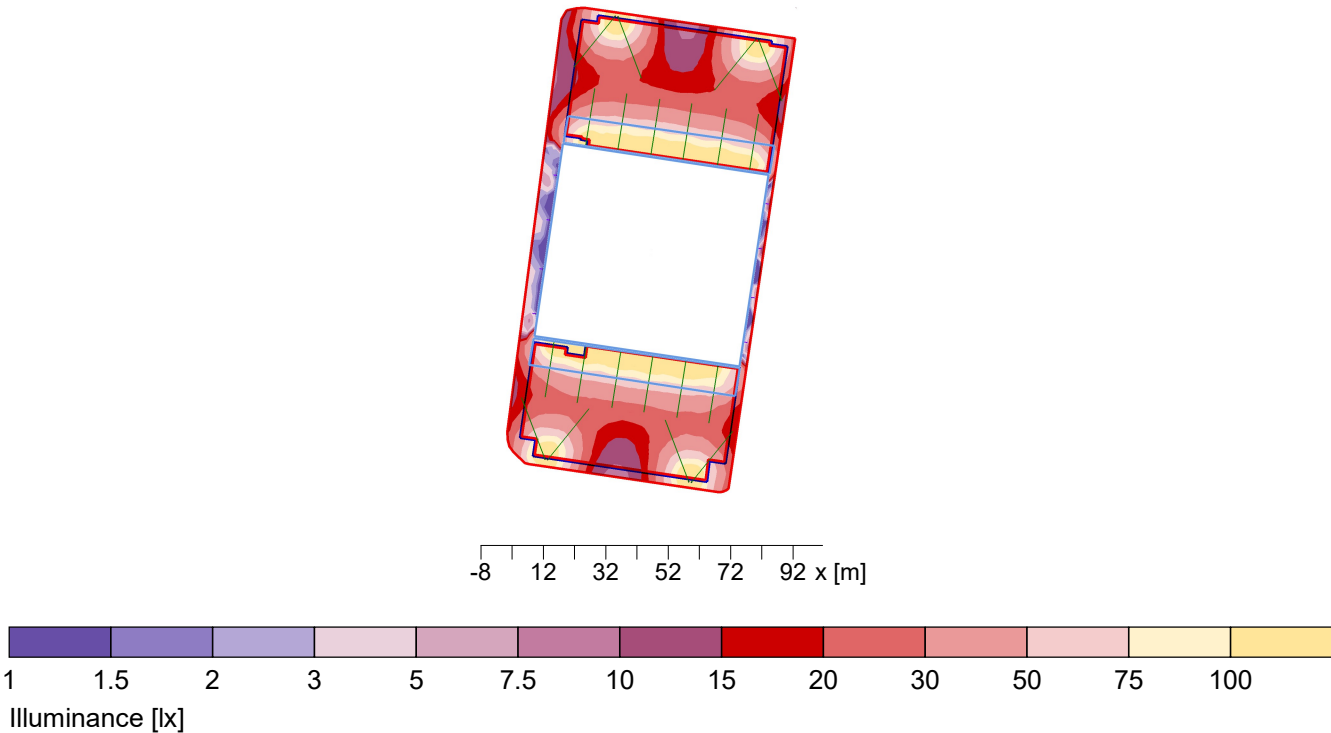
6	1E x	Tamlite Lighting	
	Order No.	: XCBLC22CT + XC2RM3	-- Emergency Lighting --
	Luminaire name	: XCITE DOWNLIGHT BL CC	
	Equipment	: 1 x 22 W / 2500 lm	
	Emergency	: 100 lm (4.0 %)	



1 External

1.1 Summary, External

1.1.1 Result overview, Overall



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux	552800.00 lm
Total power	4184.0 W
Total power per area (10825.26 m²)	0.39 W/m² (0.85 W/m²/100lx)

Overall

$\bar{E}_m$	45.5 lx
E_{min}	1.1 lx
$E_{min}/\bar{E}_m (U_o)$	0.02
$E_{min}/E_{max} (U_d)$	0.01
Position	0.00 m

Overall

Horizontal

Type No.\Make

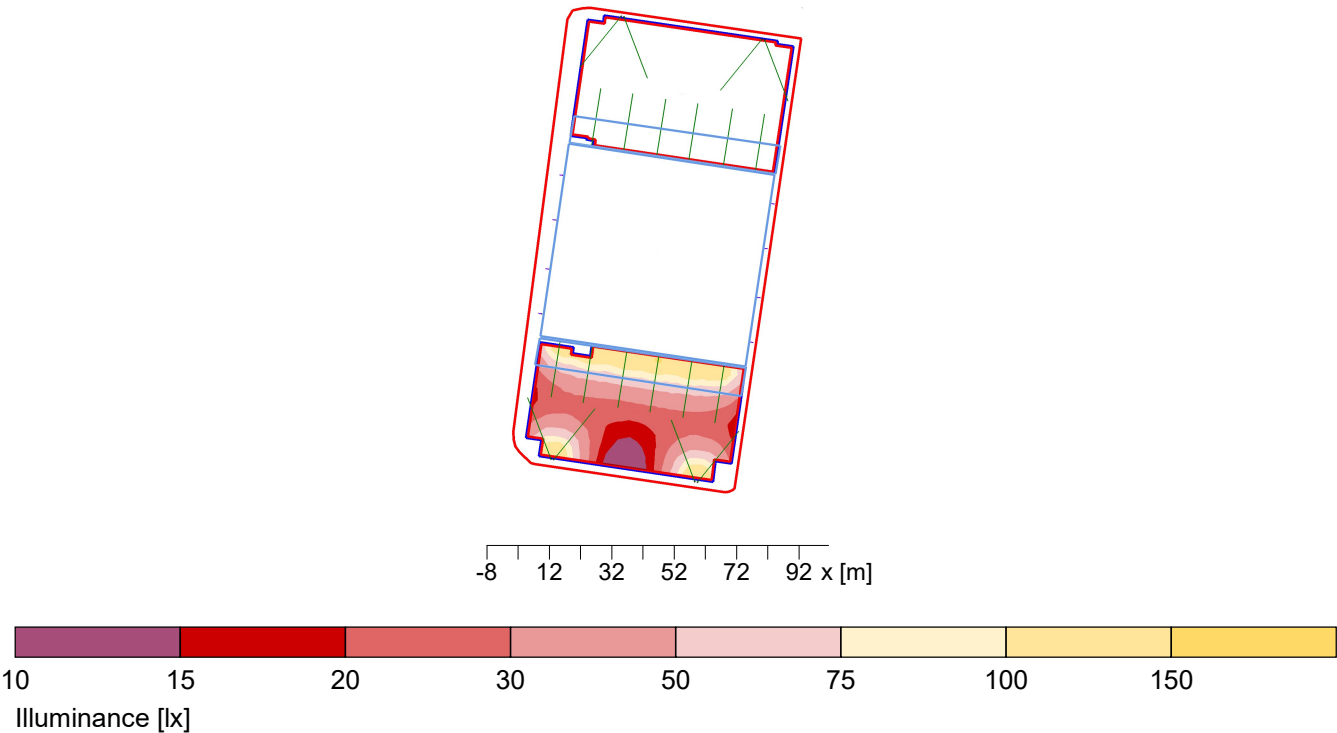
Tamlite Lighting

9 20 x	Order No.	: FRN2700T4NWG
	Luminaire name	: FRONTIER
	Equipment	: 1 x 200 W / 27000 lm
10 8 x	Order No.	: XCWL23NW
	Luminaire name	: XCITE WALL PACK
	Equipment	: 1 x 23 W / 1600 lm



1.1 Summary, External

1.1.2 Result overview, Service Yard / Car Park



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux	135000.00 lm
Total power	1000.0 W
Total power per area (2401.23 m²)	0.42 W/m² (0.79 W/m²/100lx)

Service Yard / Car Park	Service Yard / Car Park
	Horizontal
$\bar{E}_m$	52.7 lx
E_{min}	10.5 lx
$E_{min}/\bar{E}_m (U_o)$	0.20
$E_{min}/E_{max} (U_d)$	0.07
Position	0.00 m

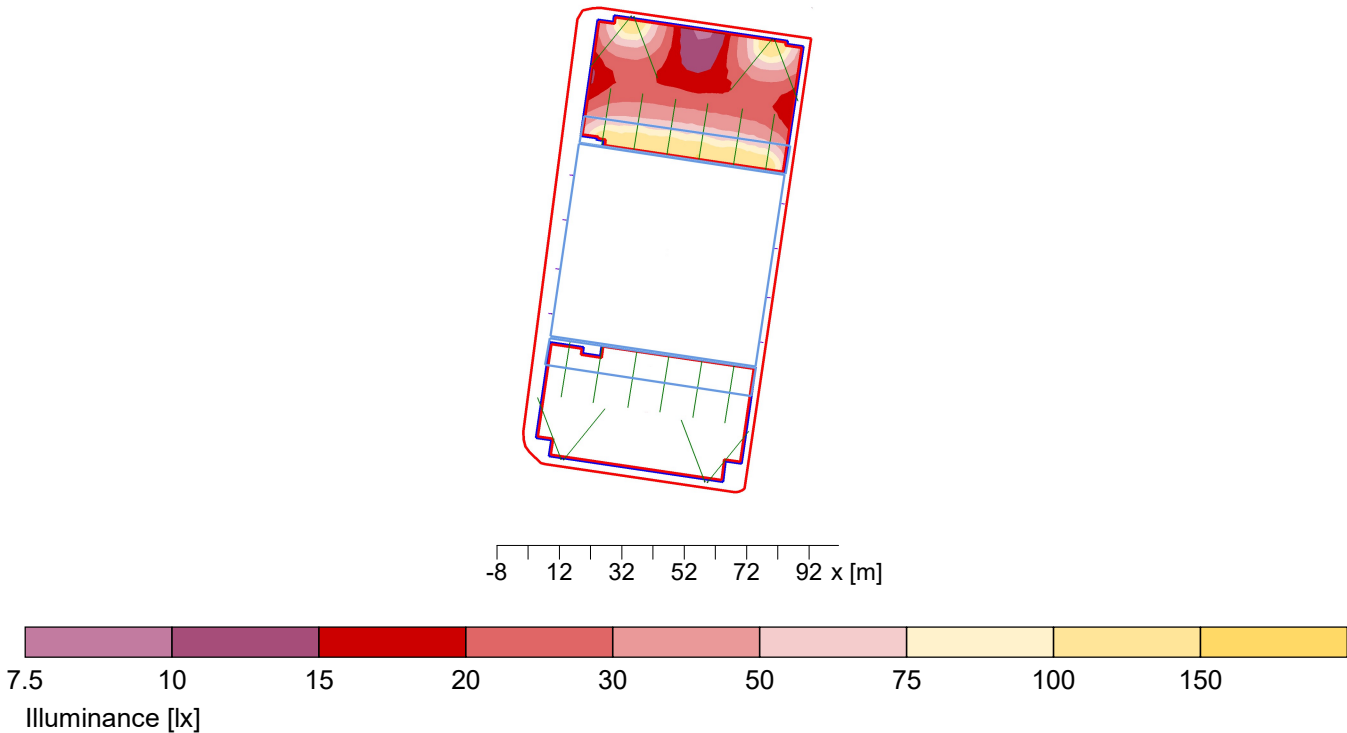
Type No.\Make

9	5 x	Tamlite Lighting
	Order No.	: FRN2700T4NWG
	Luminaire name	: FRONTIER
	Equipment	: 1 x 200 W / 27000 lm



1.1 Summary, External

1.1.3 Result overview, Service Yard / Car Park



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux	189000.00 lm
Total power	1400.0 W
Total power per area (2755.52 m²)	0.51 W/m² (1.07 W/m²/100lx)

Service Yard / Car Park	Service Yard / Car Park
	Horizontal
$\bar{E}_m$	47.7 lx
E_{min}	9.5 lx
$E_{min}/\bar{E}_m (U_o)$	0.20
$E_{min}/E_{max} (U_d)$	0.06
Position	0.00 m

Type No.\Make

9	7 x	Tamlite Lighting
	Order No.	: FRN2700T4NWG
	Luminaire name	: FRONTIER
	Equipment	: 1 x 200 W / 27000 lm