

Roby Road - Exterior Spill Light Calculations

Installation : Proposed Lighting Layout

Project number : LS04833

Customer :

Processed by : AE

Date : 10.09.2026

Project description:

- No elevations drawings received.
- 2m mounting height for circular luminaires
- Calculation does not include reflectance values of building

Lighting designs are carried out for estimation purposes; the Company does not warrant and shall not be liable for the accuracy of any designs.

Emergency escape signage will only be detailed in all areas on lighting schemes upon receiving a fire escape strategy drawing. Without this information we don't know the correct escape routes to exit the building.

For the avoidance of doubt, the Company is not qualified to determine the structural and electrical appropriateness of their designs and is not responsible and cannot be held liable for any improper engineering, construction, rigging or handling methods or for any improper use of structures or equipment that may be employed to realise the design.

It is the responsibility of the Purchaser and not the Company to ensure that the design complies with local fire, health and safety regulations. In the event that the design is found not to comply, the Company will adjust the design in consultation with the customer to ensure that it does comply with such regulations.

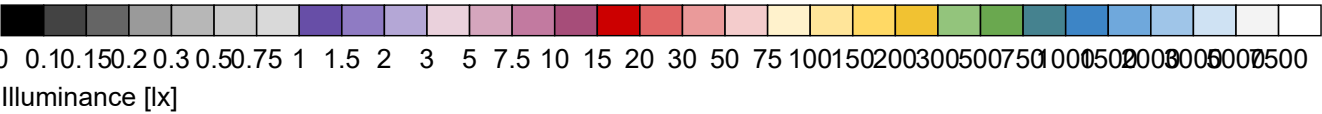
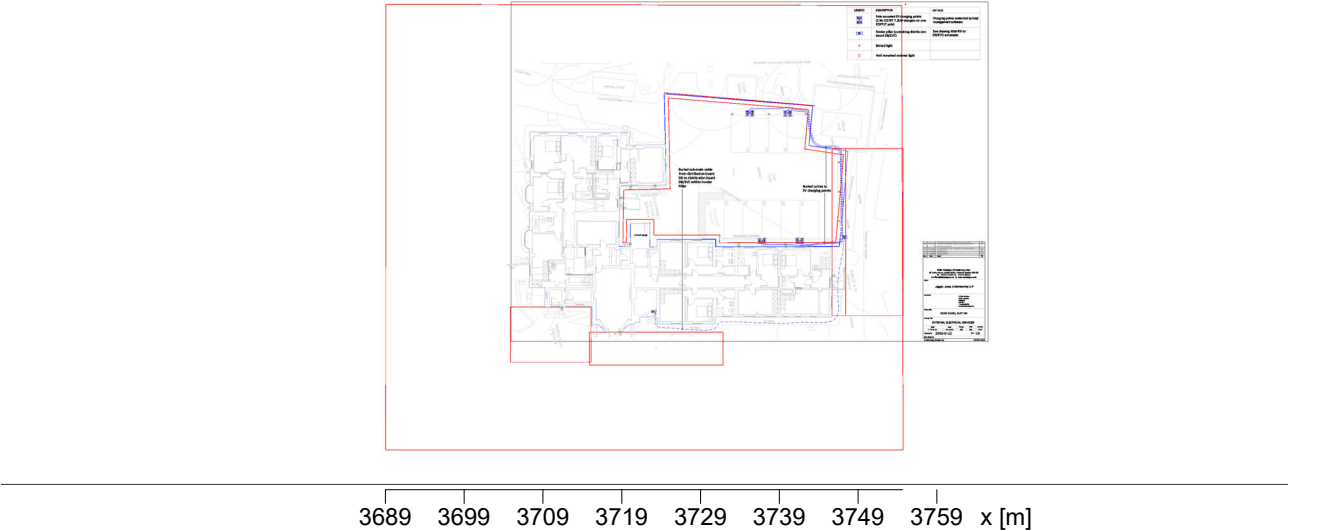
The following values are based on precise calculations performed on calibrated lamps and luminaires, and their configurations, whereby gradual, unavoidable deviations can occur in practice. All guarantee claims are excluded for the specified data.

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

1 Exterior 1 - Day 1

1.1 Summary, Exterior 1 - Day 1

1.1.1 Result overview, Vertical Reference Plane by Cycle Store



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	1.00
Total luminous flux	11487 lm
Total power	192 W
Total power per area (3696.65 m²)	0.05 W/m²
Upward light ratio (RUL)	29 %

Illuminance

Average illuminance	$\bar{E}_m$	11.6 lx
Minimum illuminance	E_{min}	1.02 lx
Maximum illuminance	E_{max}	101 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:11.3 (0.09)
Diversity U_d	E_{min}/E_{max}	1:98.8 (0.01)

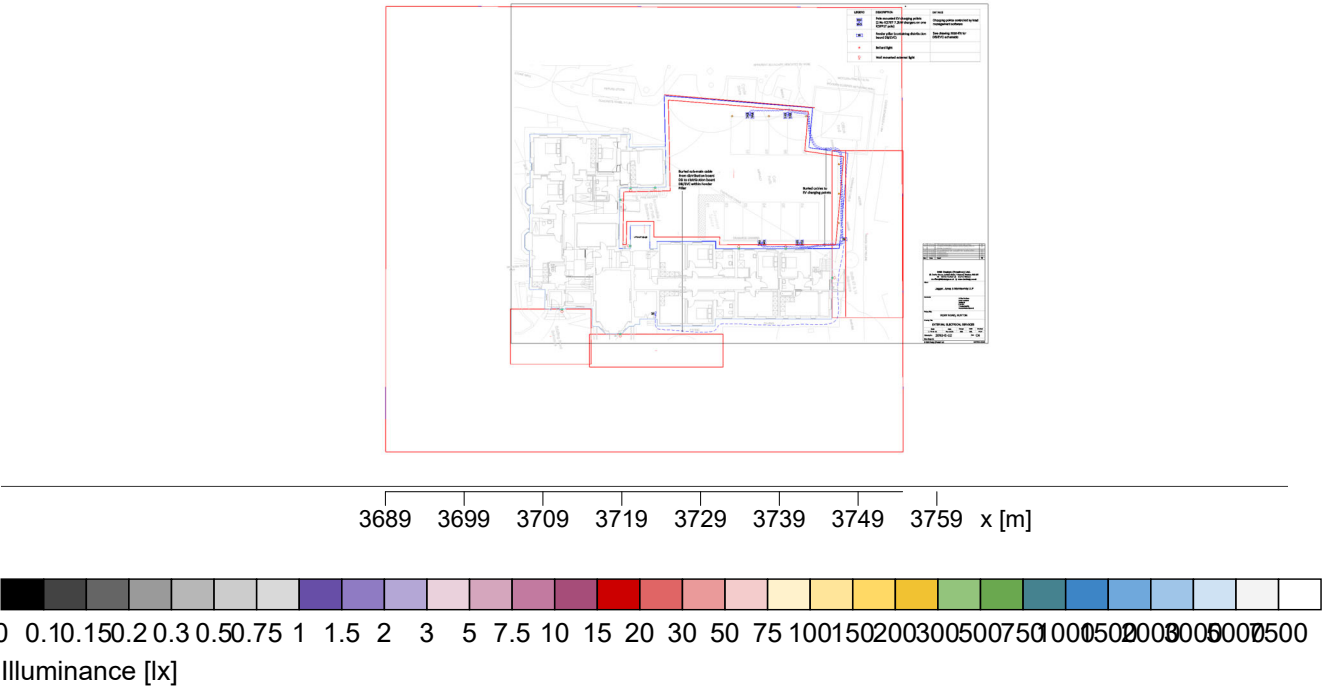
Type No. Make

Ovia			
1	9E x	Order No. : !OV9505WH93EM + OV9001WH	-- Emergency Lighting --
		Luminaire name : Inceptor Evo	
		Equipment : 1 x LED 12 W / 543 lm	
		Emergency : 141 lm (26.0 %)	
2	6 x	Order No. : OBDL24-B (14W 4000K)	
		Luminaire name : BEELO	
		Equipment : 1 x LED 14 W / 1100 lm	

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

1.1 Summary, Exterior 1 - Day 1

1.1.2 Result overview, Vertical Reference Plane alongside Units 7 and 16



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	1.00
Total luminous flux	11487 lm
Total power	192 W
Total power per area (3696.65 m²)	0.05 W/m²
Upward light ratio (RUL)	29 %

Illuminance

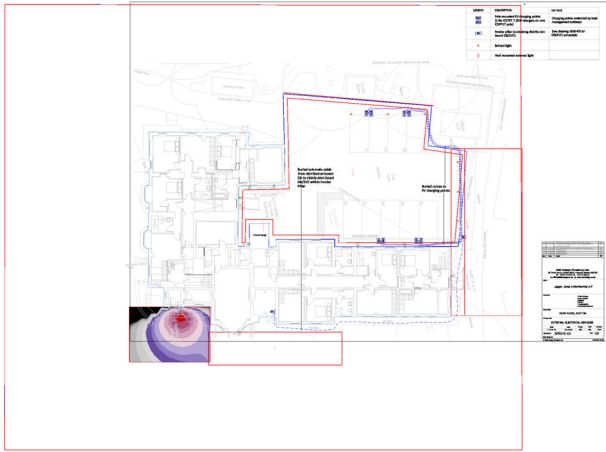
Average illuminance	$\bar{E}_m$	0.41 lx
Minimum illuminance	E_{min}	0.06 lx
Maximum illuminance	E_{max}	2.20 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:7.24 (0.14)
Diversity U_d	E_{min}/E_{max}	1:38.6 (0.03)

Type No. Make

Ovia			
1	9E x	Order No. : !OV9505WH93EM + OV9001WH	-- Emergency Lighting --
		Luminaire name : Inceptor Evo	
		Equipment : 1 x LED 12 W / 543 lm	
		Emergency : 141 lm (26.0 %)	
2	6 x	Order No. : OBDL24-B (14W 4000K)	
		Luminaire name : BEELO	
		Equipment : 1 x LED 14 W / 1100 lm	

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

1.1 Summary, Exterior 1 - Day 1
1.1.3 Result overview, Measuring area 3



3689 3699 3709 3719 3729 3739 3749 3759 x [m]



0 0.10.150.20.30.50.75 1 1.5 2 3 5 7.5 10 15 20 30 50 75 10015020030050075010001502003005007501000
Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	1.00
Total luminous flux	11487 lm
Total power	192 W
Total power per area (3696.65 m²)	0.05 W/m²
Upward light ratio (RUL)	29 %

Illuminance

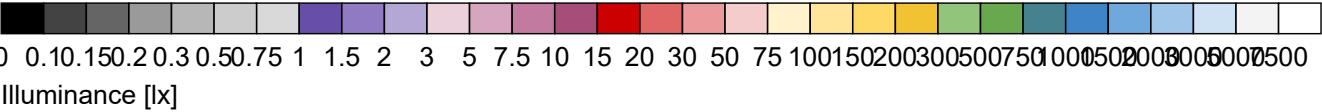
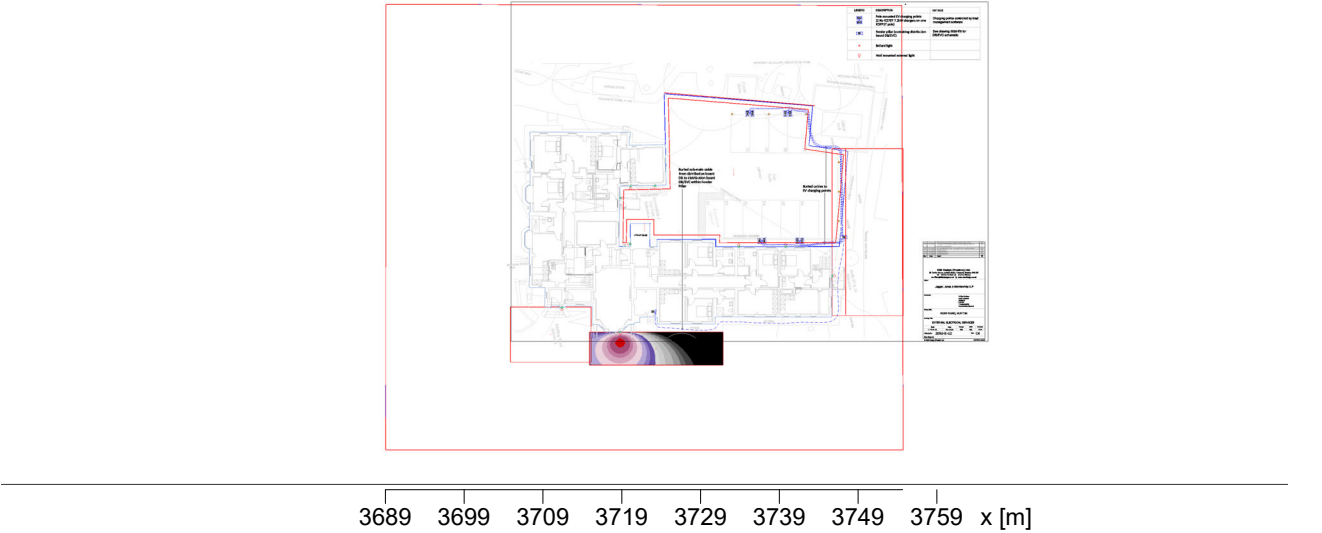
Average illuminance	$\bar{E}_m$	2.95 lx
Minimum illuminance	E_{min}	0.00 lx
Maximum illuminance	E_{max}	15.5 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:--- (---)
Diversity U_d	E_{min}/E_{max}	1:--- (---)

Type No. Make

- 1 9E x **Ovia**
 Order No. : !OV9505WH93EM + OV9001WH -- Emergency Lighting --
Luminaire name : Inceptor Evo
Equipment : 1 x LED 12 W / 543 lm
Emergency : 141 lm (26.0 %)
- 2 6 x
 Order No. : OBDL24-B (14W 4000K)
Luminaire name : BEELO
Equipment : 1 x LED 14 W / 1100 lm

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

1.1 Summary, Exterior 1 - Day 1
1.1.4 Result overview, Measuring area 4



General	
Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	1.00
Total luminous flux	
Total power	
Total power per area (3696.65 m²)	
Upward light ratio (RUL)	

Illuminance	
Average illuminance	$\bar{E}_m$ 2.55 lx
Minimum illuminance	E_{min} 0.00 lx
Maximum illuminance	E_{max} 18.1 lx
Uniformity U_o	$E_{min}/\bar{E}_m$ 1:853 (0)
Diversity U_d	E_{min}/E_{max} 1:6060 (0)

Type No. Make

Ovia	
1 9E x	Order No. : !OV9505WH93EM + OV9001WH -- Emergency Lighting --
	Luminaire name : Inceptor Evo
	Equipment : 1 x LED 12 W / 543 lm
	Emergency : 141 lm (26.0 %)
2 6 x	
	Order No. : OBDL24-B (14W 4000K)
	Luminaire name : BEELO
	Equipment : 1 x LED 14 W / 1100 lm

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

1.1 Summary, Exterior 1 - Day 1
1.1.5 Result overview, Measuring area 5



3689 3699 3709 3719 3729 3739 3749 3759 x [m]



0 0.10.150.20.30.50.75 1 1.5 2 3 5 7.5 10 15 20 30 50 75 10015020030050075010001502003005007500
Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	1.00
Total luminous flux	11487 lm
Total power	192 W
Total power per area (3696.65 m²)	0.05 W/m²
Upward light ratio (RUL)	29 %

Illuminance

Average illuminance	$\bar{E}_m$	8.16 lx
Minimum illuminance	E_{min}	0.27 lx
Maximum illuminance	E_{max}	51 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:30.7 (0.03)
Diversity U_d	E_{min}/E_{max}	1:192 (0.01)

Type No. Make

- 1

9E x

Ovia
Order No. : !OV9505WH93EM + OV9001WH
Luminaire name : Inceptor Evo
Equipment : 1 x LED 12 W / 543 lm
Emergency : 141 lm (26.0 %)

-- Emergency Lighting --
- 2

6 x

Order No. : OBDL24-B (14W 4000K)
Luminaire name : BEELO
Equipment : 1 x LED 14 W / 1100 lm

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

Object : Roby Road - Exterior Spill Light Calculations
Installation : Proposed Lighting Layout
Project number : LS04833
Date : 10.09.2026

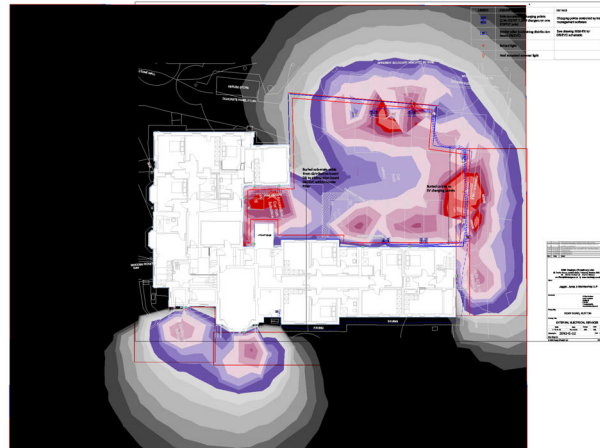
1.1 Summary, Exterior 1 - Day 1

1.1.6 Result overview, Car Park

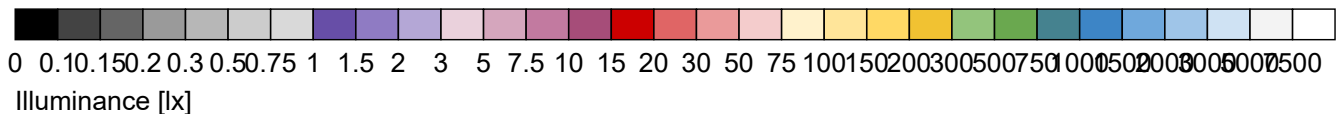
2 6 x Order No. : OBDL24-B (14W 4000K)
 Luminaire name : BEELO
Equipment : 1 x LED 14 W / 1100 lm

1.1 Summary, Exterior 1 - Day 1

1.1.7 Result overview, Evaluation area 2



3689 3699 3709 3719 3729 3739 3749 3759 x [m]



General

Calculation algorithm used
 Maintenance factor

Average indirect fraction
 1.00

Total lamp luminous flux
 Luminaire luminous flux
 Total power
 Total power per area (3696.66 m²)
 Upward light ratio (R_{UL})

11487.00 lm
 11481.95 lm
 192.0 W
 0.05 W/m² (3.79 W/m²/100lx)
 29 %

Evaluation area 2

Reference plane 2.1

Horizontal
 $\bar{E}_m$ 1.37 lx
 E_{min} 0.00 lx
 $E_{min}/\bar{E}_m (U_o)$ ---
 $E_{min}/E_{max} (U_d)$ ---
 Position 0.00 m

Type No. Make

1 9E x **Ovia**
 Order No. : !OV9505WH93EM + OV9001WH -- Emergency Lighting --
 Luminaire name : Inceptor Evo
 Equipment : 1 x LED 12 W / 543 lm
 Emergency : 141 lm (26.0 %)

Object : Roby Road - Exterior Spill Light Calculations
Installation : Proposed Lighting Layout
Project number : LS04833
Date : 10.09.2026

1.1 Summary, Exterior 1 - Day 1

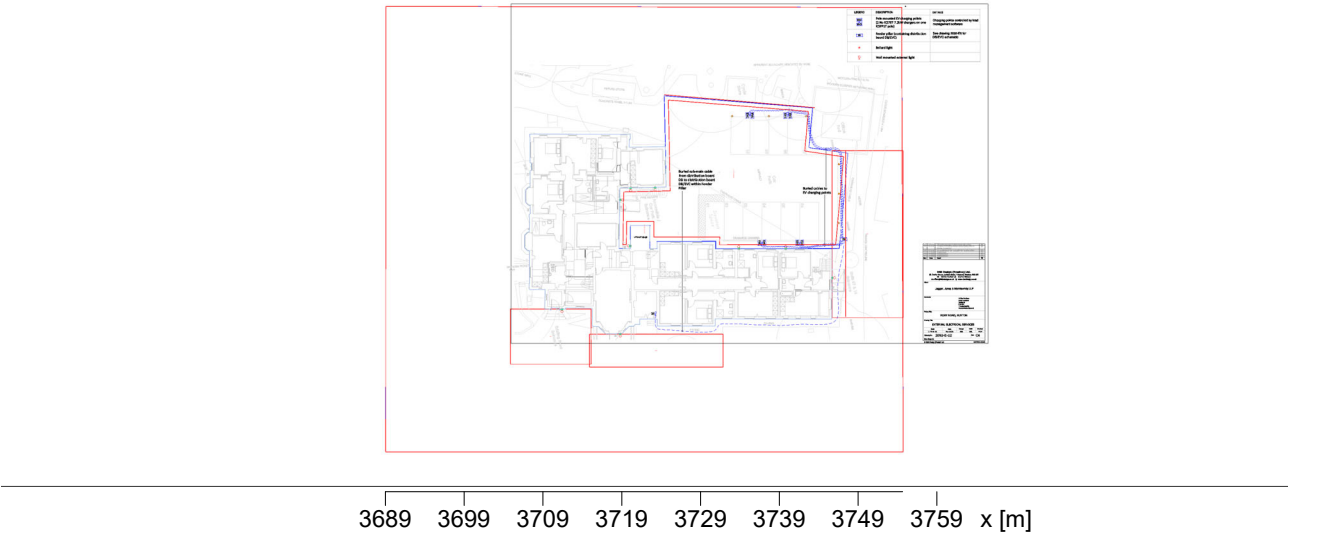
1.1.7 Result overview, Evaluation area 2

2 6 x Order No. : OBDL24-B (14W 4000K)
 Luminaire name : BEELO
Equipment : 1 x LED 14 W / 1100 lm

2 Exterior 1 - With Maintenance Factor

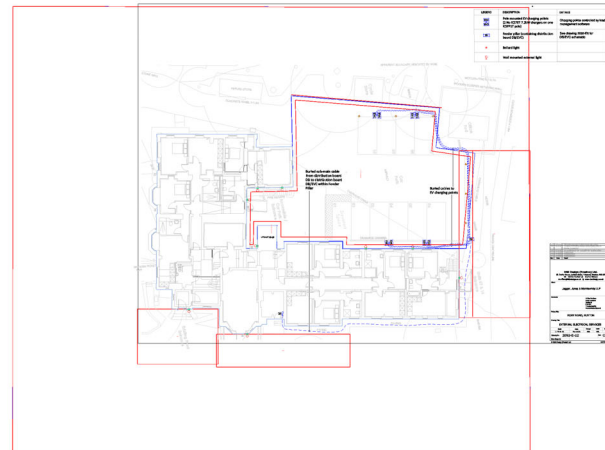
2.1 Summary, Exterior 1 - With Maintenance Factor

2.1.1 Result overview, Vertical Reference Plane by Cycle Store

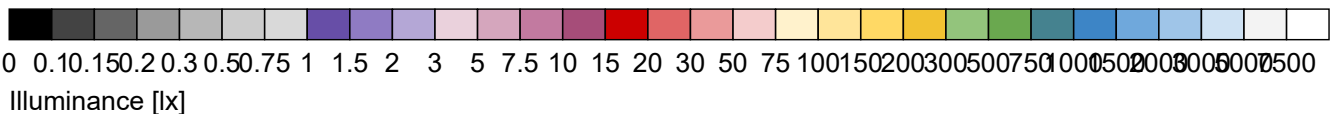


2.1 Summary, Exterior 1 - With Maintenance Factor

2.1.2 Result overview, Vertical Reference Plane alongside Units 7 and 16



3689 3699 3709 3719 3729 3739 3749 3759 x [m]



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux	11487 lm
Total power	192 W
Total power per area (3696.65 m ²)	0.05 W/m ²
Upward light ratio (RUL)	29 %

Illuminance

Average illuminance	$\bar{E}_m$	0.33 lx
Minimum illuminance	E_{min}	0.05 lx
Maximum illuminance	E_{max}	1.76 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:7.25 (0.14)
Diversity U_d	E_{min}/E_{max}	1:38.7 (0.03)

Type No. Make

Ovia			
1	9E x	Order No. : !OV9505WH93EM + OV9001WH	-- Emergency Lighting --
		Luminaire name : Inceptor Evo	
		Equipment : 1 x LED 12 W / 543 lm	
		Emergency : 141 lm (26.0 %)	
2	6 x	Order No. : OBDL24-B (14W 4000K)	
		Luminaire name : BEELO	
		Equipment : 1 x LED 14 W / 1100 lm	

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

2.1 Summary, Exterior 1 - With Maintenance Factor

2.1.3 Result overview, Measuring area 3



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux	11487 lm
Total power	192 W
Total power per area (3696.65 m²)	0.05 W/m²
Upward light ratio (RUL)	29 %

Illuminance

Average illuminance	$\bar{E}_m$	2.36 lx
Minimum illuminance	E_{min}	0.00 lx
Maximum illuminance	E_{max}	12.4 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:--- (---)
Diversity U_d	E_{min}/E_{max}	1:--- (---)

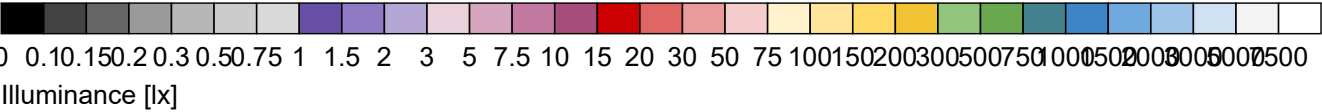
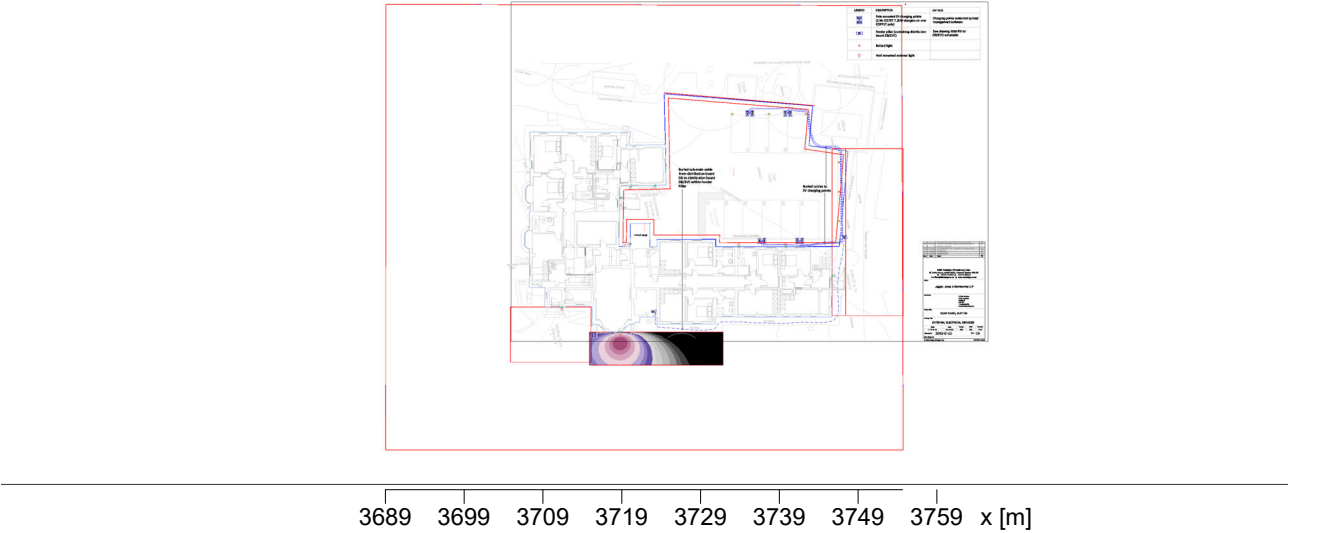
Type No. Make

Ovia			
1	9E x	Order No. : !OV9505WH93EM + OV9001WH	-- Emergency Lighting --
		Luminaire name : Inceptor Evo	
		Equipment : 1 x LED 12 W / 543 lm	
		Emergency : 141 lm (26.0 %)	
2	6 x	Order No. : OBDL24-B (14W 4000K)	
		Luminaire name : BEELO	
		Equipment : 1 x LED 14 W / 1100 lm	

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

2.1 Summary, Exterior 1 - With Maintenance Factor

2.1.4 Result overview, Measuring area 4



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux	11487 lm
Total power	192 W
Total power per area (3696.65 m²)	0.05 W/m²
Upward light ratio (RUL)	29 %

Illuminance

Average illuminance	$\bar{E}_m$	2.04 lx
Minimum illuminance	E_{min}	0.00 lx
Maximum illuminance	E_{max}	14.5 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:853 (0)
Diversity U_d	E_{min}/E_{max}	1:6060 (0)

Type No. Make

- 1

9E x



Ovia
Order No. : !OV9505WH93EM + OV9001WH
Luminaire name : Inceptor Evo
Equipment : 1 x LED 12 W / 543 lm
Emergency : 141 lm (26.0 %)

-- Emergency Lighting --
- 2

6 x

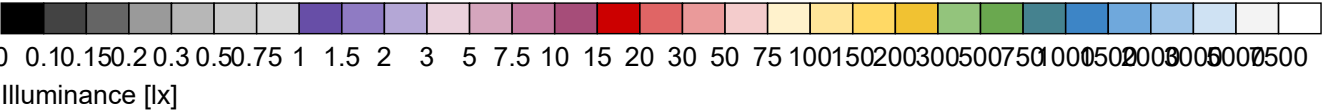
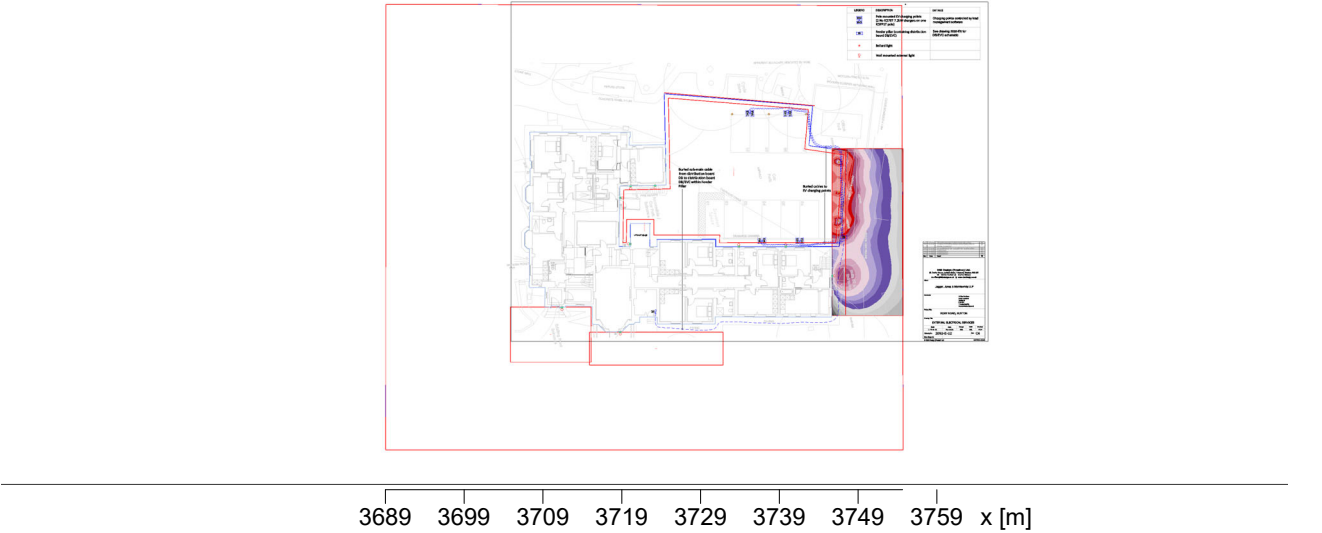


Order No. : OBDL24-B (14W 4000K)
Luminaire name : BEELO
Equipment : 1 x LED 14 W / 1100 lm

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

2.1 Summary, Exterior 1 - With Maintenance Factor

2.1.5 Result overview, Measuring area 5



General	
Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux	11487 lm
Total power	192 W
Total power per area (3696.65 m²)	0.05 W/m²
Upward light ratio (RUL)	29 %

Illuminance	
Average illuminance	$\bar{E}_m$ 6.53 lx
Minimum illuminance	E_{min} 0.21 lx
Maximum illuminance	E_{max} 41 lx
Uniformity U_o	$E_{min}/\bar{E}_m$ 1:30.7 (0.03)
Diversity U_d	E_{min}/E_{max} 1:192 (0.01)

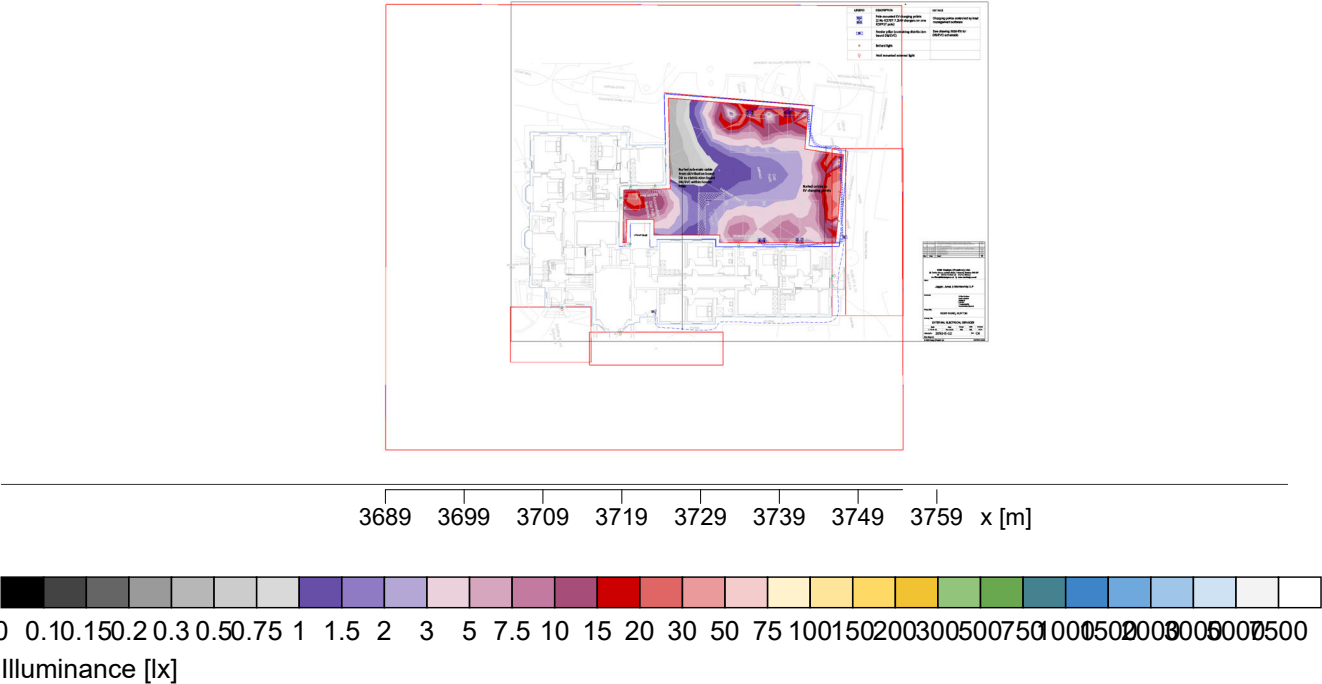
Type No. Make

Ovia	
1 9E x	Order No. : !OV9505WH93EM + OV9001WH -- Emergency Lighting --
	Luminaire name : Inceptor Evo
	Equipment : 1 x LED 12 W / 543 lm
	Emergency : 141 lm (26.0 %)
2 6 x	Order No. : OBDL24-B (14W 4000K)
	Luminaire name : BEELO
	Equipment : 1 x LED 14 W / 1100 lm

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

2.1 Summary, Exterior 1 - With Maintenance Factor

2.1.6 Result overview, Car Park



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Luminaire luminous flux	0.00 lm
Upward light ratio (R _{UL})	29 %

Car Park

Reference plane 1.1

	Horizontal
$\bar{E}_m$	6.55 lx
E_{min}	0.37 lx
$E_{min}/\bar{E}_m (U_o)$	0.06
$E_{min}/E_{max} (U_d)$	0.01
Position	0.00 m

Major surfaces

M 1.5 (Ceiling)	$\bar{E}_m$	U_o
	0.93 lx	0.03

Type No. Make

1	9E x	Ovia	
	Order No.	: !OV9505WH93EM + OV9001WH	-- Emergency Lighting --
	Luminaire name	: Inceptor Evo	
	Equipment	: 1 x LED 12 W / 543 lm	
	Emergency	: 141 lm (26.0 %)	

Object : Roby Road - Exterior Spill Light Calculations
Installation : Proposed Lighting Layout
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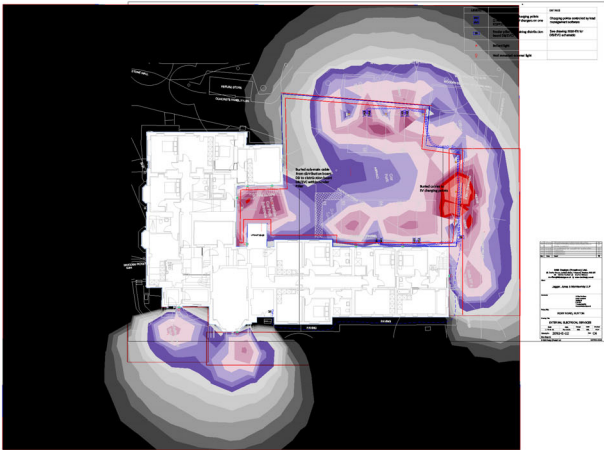
2.1 Summary, Exterior 1 - With Maintenance Factor

2.1.6 Result overview, Car Park

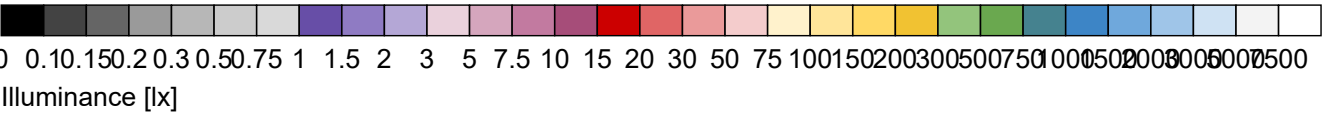
2 6 x  Order No. : OBDL24-B (14W 4000K)
Luminaire name : BEELO
Equipment : 1 x LED 14 W / 1100 lm

2.1 Summary, Exterior 1 - With Maintenance Factor

2.1.7 Result overview, Evaluation area 2



3689 3699 3709 3719 3729 3739 3749 3759 x [m]



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total lamp luminous flux	11487.00 lm
Luminaire luminous flux	11481.95 lm
Total power	192.0 W
Total power per area (3696.66 m²)	0.05 W/m² (4.94 W/m²/100lx)
Upward light ratio (R _{UL})	29 %

Evaluation area 2

Reference plane 2.1

	Horizontal
$\bar{E}_m$	1.05 lx
E_{min}	0.00 lx
$E_{min}/\bar{E}_m (U_o)$	---
$E_{min}/E_{max} (U_d)$	---
Position	0.00 m

Type No. Make

1 9E x	Ovia		
	Order No.	: !OV9505WH93EM + OV9001WH	-- Emergency Lighting --
	Luminaire name	: Inceptor Evo	
	Equipment	: 1 x LED 12 W / 543 lm	
	Emergency	: 141 lm (26.0 %)	

Object : Roby Road - Exterior Spill Light Calculations
Installation : Proposed Lighting Layout
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2.1 Summary, Exterior 1 - With Maintenance Factor

2.1.7 Result overview, Evaluation area 2

2 6 x Order No. : OBDL24-B (14W 4000K)
 Luminaire name : BEELO
Equipment : 1 x LED 14 W / 1100 lm