

WITHINGTON CDC

Installation : EXTERNAL

Project number : 34511

Customer : BAM SERVICES ENGINEERING

Processed by : BS

Date : 06.11.2025

Project description:

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 Whitecroft Lighting, KOLO IP65 (K6H4154KS)

1.1.1 Data sheet

Manufacturer: Whitecroft Lighting



K6H4154KS ceiling mounted luminaire **KOLO IP65**
KOLO IP65

Surface mounted circular IP65 LED vandal resistant luminaire in 400mm diameter. Polycarbonate opal diffuser with optional 3 hour emergency.

Emergency Output - 500lm

Luminaire data

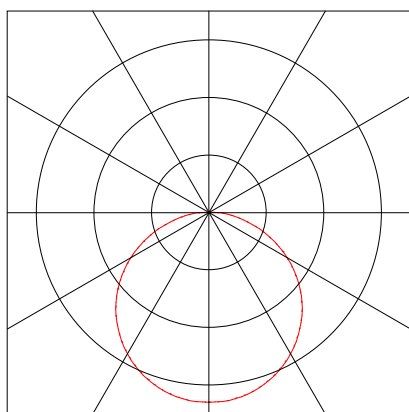
Absolute Photometry

Luminaire efficacy : 135 lm/W
Classification : A40 ↓98.9% ↑1.1%
CIE Flux Codes : 45 76 94 99 100
UGR 4H 8H : 21.5 / 21.4
Control gear : electronic ballast
Power : 13 W
Luminous flux : 1755 lm

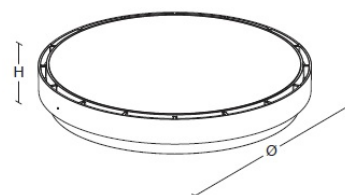
Equipped with

Quantity : 1
Designation : LED
Colour : 4000K
Colour reproduction : 80

Dimensions : Ø400 mm x 95 mm



Dimensions



Version	Ø	H	KG	KG
300mm surface	300	95	2.1	2.5
400mm surface	400	95	3.5	3.9

Emergency Lighting

Light source from normal operation with reduced flux

Luminous flux : 400 lm

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1 Luminaire data

1.2 Whitecroft Lighting, KOLO BOLLARD (BLY214KSRB)

1.2.1 Data sheet

Manufacturer: Whitecroft Lighting



BLY214KSRB bollard / pole mounted luminaires **KOLO BOLLARD**
KOLO BOLLARD

Black - Symmetric Distribution - 4000K

Emergency Output - 332lm

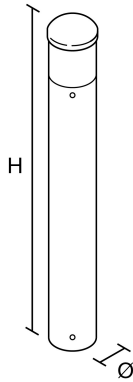
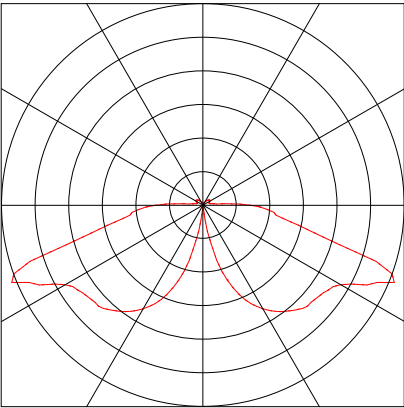
Luminaire data

Luminaire efficiency : 100%
Luminaire efficacy : 101 lm/W
Classification : A21 ↓93.4% ↑6.6%
CIE Flux Codes : 21 50 85 93 101
UGR 4H 8H : 22.9 / 22.9
Control gear : electronic ballast
Power : 4 W
Luminous flux : 409.4 lm

Equipped with

Quantity : 1
Designation : LED
Colour : 4000K
Luminous flux : 404 lm
Colour reproduction : 80

Dimensions : Ø150 mm x 150 mm



H - 998
Ø - 152

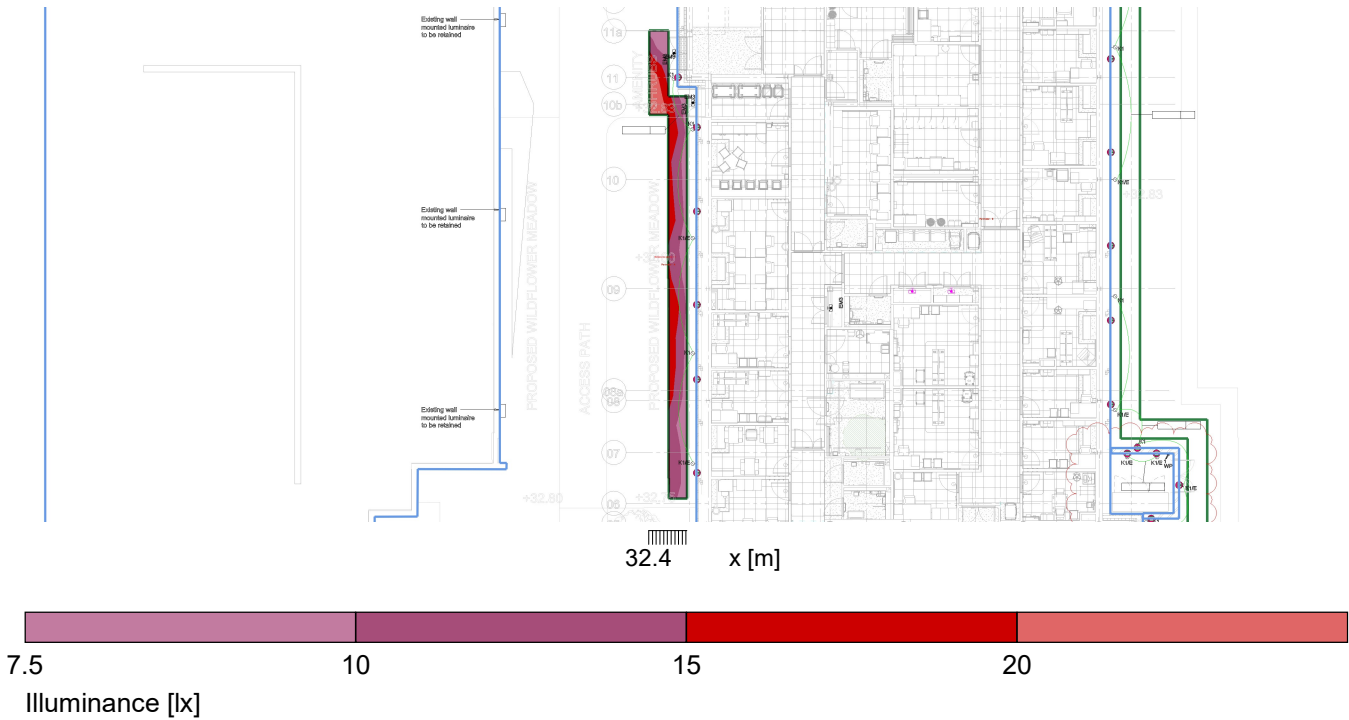


Whitecroft
lighting

2 External

2.2 Summary, External

2.2.1 Result overview, Perimeter - A



General

Calculation algorithm used
Height of evaluation surface
Maintenance factor

Average indirect fraction
0.00 m
see luminaires / maintenance plan

Total luminous flux
Total power
Total power per area (32112.50 m²)

46564 lm
356 W
0.01 W/m²

Illuminance

Average illuminance	$\bar{E}_m$	13.6 lx
Minimum illuminance	E_{min}	8.2 lx
Maximum illuminance	E_{max}	23.3 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:1.65 (0.61)
Diversity U_d	E_{min}/E_{max}	1:2.83 (0.35)

Type No. \ Make

1 24E x 	Whitecroft Lighting	
	Order No.	: K6H4154KS -- Emergency Lighting --
	Luminaire name	: KOLO IP65
	Equipment	: 1 x LED 13 W / 1755 lm
	Emergency	: 400 lm (22.8 %)
	Maintenance factor:	0.82

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2 External

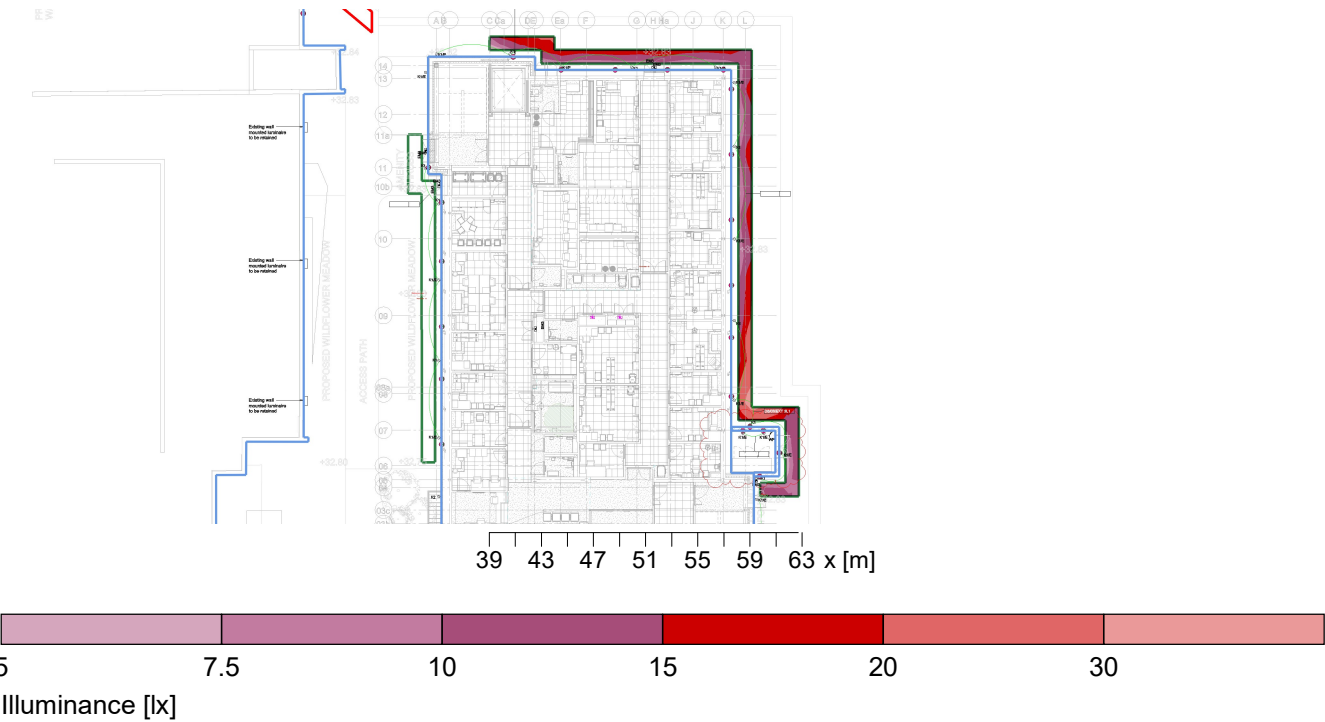
2.2 Summary, External

2.2.1 Result overview, Perimeter - A

2 11 x  Order No. : BLY214KSRB
Luminaire name : KOLO BOLLARD
Equipment : 1 x LED 4 W / 404 lm
Maintenance factor: 0.83

2.2 Summary, External

2.2.2 Result overview, Perimeter - B



General

Calculation algorithm used
Height of evaluation surface
Maintenance factor

Average indirect fraction
0.00 m
see luminaires / maintenance plan

Total luminous flux
Total power
Total power per area (32112.50 m²)

46564 lm
356 W
0.01 W/m²

Illuminance

Average illuminance $\bar{E}_m$ 15 lx
Minimum illuminance E_{min} 7 lx
Maximum illuminance E_{max} 32.7 lx
Uniformity U_o $E_{min}/\bar{E}_m$ 1:2.15 (0.46)
Diversity U_d E_{min}/E_{max} 1:4.7 (0.21)

Type No. Make

1 24E x **Whitecroft Lighting**
Order No. : K6H4154KS -- Emergency Lighting --
Luminaire name : KOLO IP65
Equipment : 1 x LED 13 W / 1755 lm
Emergency : 400 lm (22.8 %)
Maintenance factor: 0.82

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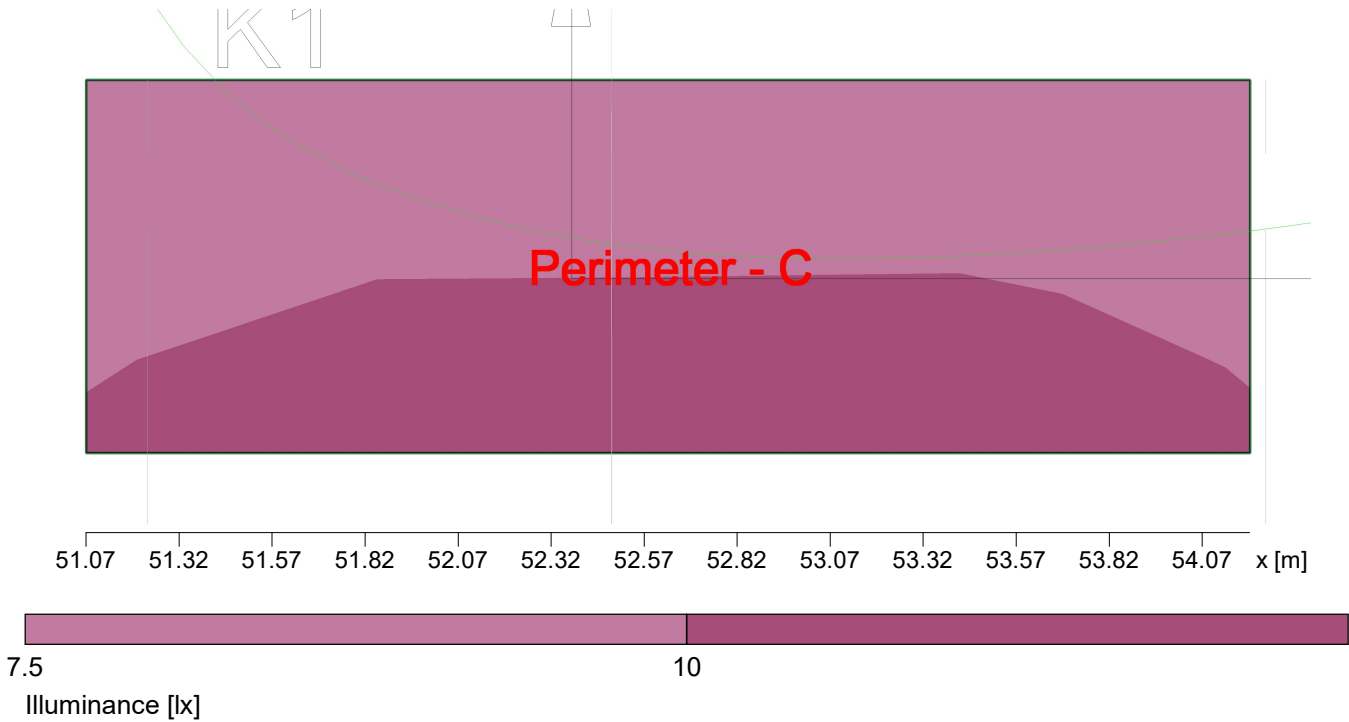
2.2 Summary, External

2.2.2 Result overview, Perimeter - B

2 11 x  Order No. : BLY214KSRB
Luminaire name : KOLO BOLLARD
Equipment : 1 x LED 4 W / 404 lm
Maintenance factor: 0.83

2.2 Summary, External

2.2.3 Result overview, Perimeter - C



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	see luminaires / maintenance plan
Total luminous flux	46564 lm
Total power	356 W
Total power per area (32112.50 m²)	0.01 W/m²

Illuminance

Average illuminance	$\bar{E}_m$	9.8 lx
Minimum illuminance	E_{min}	7.7 lx
Maximum illuminance	E_{max}	11.9 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:1.28 (0.78)
Diversity U_d	E_{min}/E_{max}	1:1.55 (0.64)

Type No.\Make

1	24E x	Whitecroft Lighting	
		Order No. : K6H4154KS	-- Emergency Lighting --
		Luminaire name : KOLO IP65	
		Equipment : 1 x LED 13 W / 1755 lm	
		Emergency : 400 lm (22.8 %)	
		Maintenance factor: 0.82	

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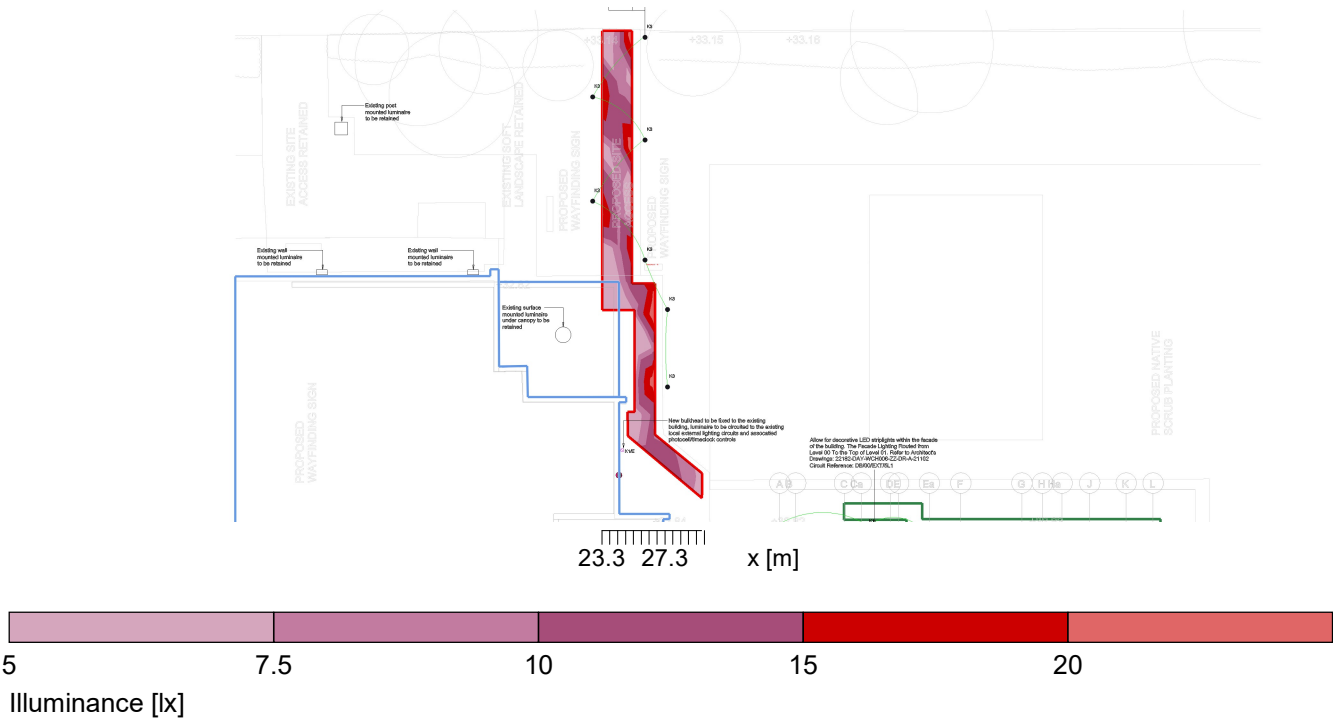
2.2 Summary, External

2.2.3 Result overview, Perimeter - C

2 11 x  Order No. : BLY214KSRB
Luminaire name : KOLO BOLLARD
Equipment : 1 x LED 4 W / 404 lm
Maintenance factor: 0.83

2.2 Summary, External

2.2.4 Result overview, Pavement - A



General

Calculation algorithm used
Maintenance factor

Average indirect fraction
see luminaires / maintenance plan

Total luminous flux
Total power
Total power per area (32112.50 m²)

46564 lm
356 W
0.01 W/m²

Illuminance

Average illuminance	$\bar{E}_m$	11.3 lx
Minimum illuminance	E_{min}	7.2 lx
Maximum illuminance	E_{max}	22.2 lx
Uniformity U_0	$E_{min}/\bar{E}_m$	1:1.57 (0.64)
Diversity U_d	E_{min}/E_{max}	1:3.1 (0.32)

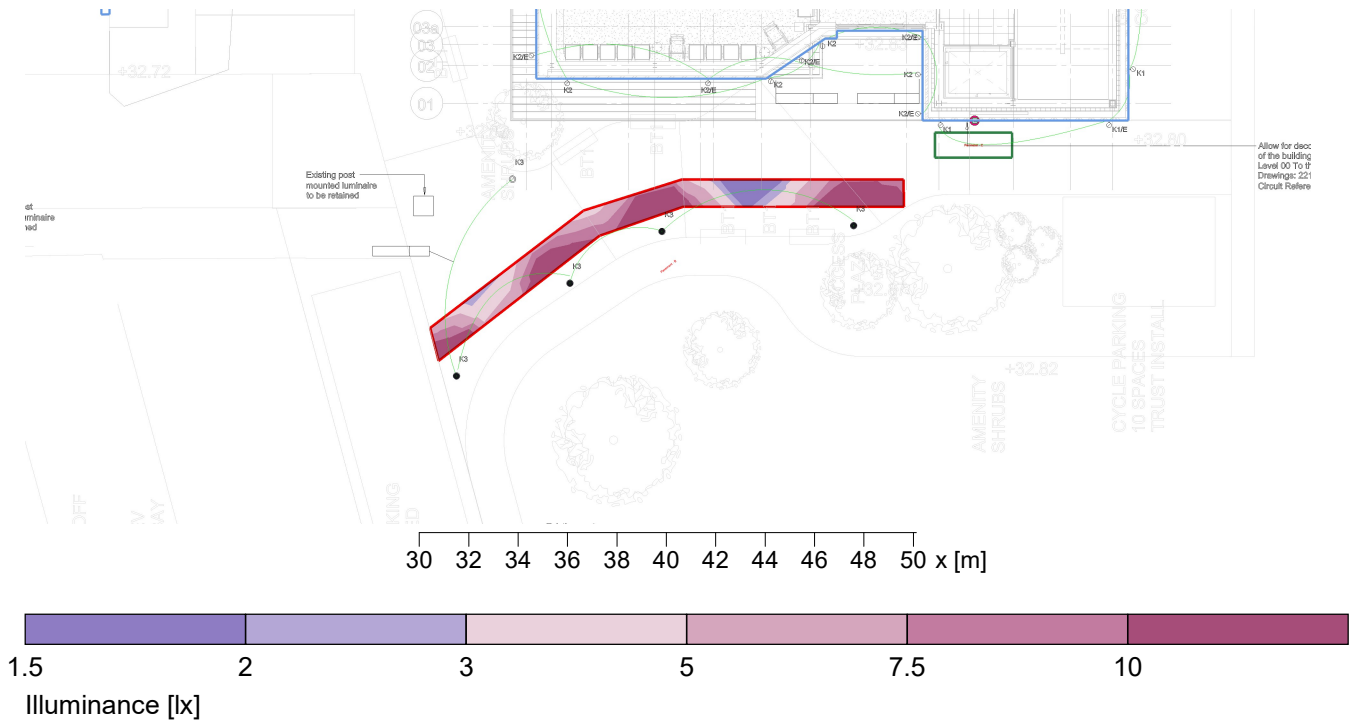
Type No. Make

Whitecroft Lighting

- | | | | |
|---|---|------------------------------------|--------------------------|
| 1 | 24E x | Order No. : K6H4154KS | -- Emergency Lighting -- |
| |  | Luminaire name : KOLO IP65 | |
| | | Equipment : 1 x LED 13 W / 1755 lm | |
| | | Emergency : 400 lm (22.8 %) | |
| | | Maintenance factor: 0.82 | |
| 2 | 11 x | Order No. : BLY214KSRB | |
| |  | Luminaire name : KOLO BOLLARD | |
| | | Equipment : 1 x LED 4 W / 404 lm | |
| | | Maintenance factor: 0.83 | |

2.2 Summary, External

2.2.5 Result overview, Pavement - B



General

Calculation algorithm used
Height of evaluation surface
Maintenance factor

Average indirect fraction
0.00 m
see luminaires / maintenance plan

Total luminous flux
Total power
Total power per area (32112.50 m²)

46564 lm
356 W
0.01 W/m²

Illuminance

Average illuminance	$\bar{E}_m$	7.4 lx
Minimum illuminance	E_{min}	1.6 lx
Maximum illuminance	E_{max}	13.4 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:4.5 (0.22)
Diversity U_d	E_{min}/E_{max}	1:8.12 (0.12)

Type No. Make

1 24E x **Whitecroft Lighting**
Order No. : K6H4154KS -- Emergency Lighting --
Luminaire name : KOLO IP65
Equipment : 1 x LED 13 W / 1755 lm
Emergency : 400 lm (22.8 %)
Maintenance factor: 0.82

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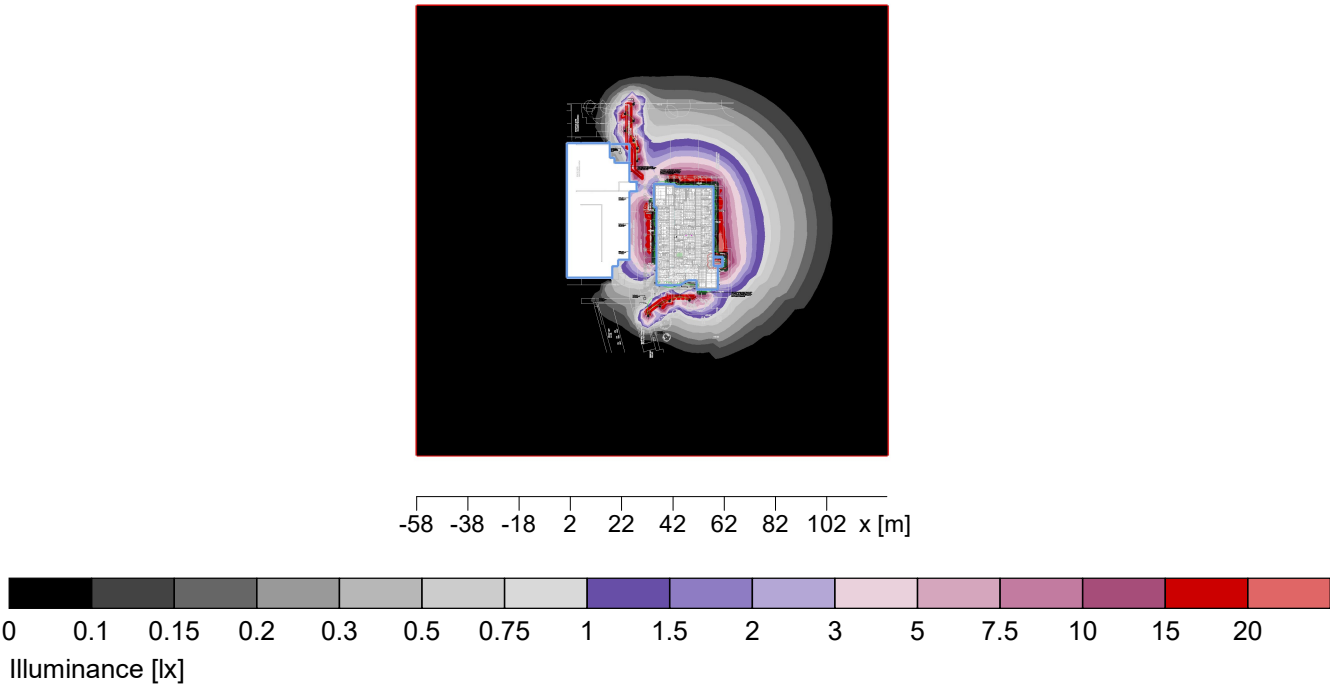
2.2 Summary, External

2.2.5 Result overview, Pavement - B

2 11 x  Order No. : BLY214KSRB
Luminaire name : KOLO BOLLARD
Equipment : 1 x LED 4 W / 404 lm
Maintenance factor: 0.83

2.2 Summary, External

2.2.6 Result overview, Evaluation area 1



General

Calculation algorithm used
Maintenance factor

Average indirect fraction
see luminaires / maintenance plan

Luminaire luminous flux
Total power
Total power per area (32112.50 m²)

46624 lm
356.0 W
0.01 W/m² (2.03 W/m²/100lx)

Evaluation area 1	Reference plane 1.1
	Horizontal
$\bar{E}_m$	0.55 lx
E_{min}	0 lx
$E_{min}/\bar{E}_m (U_o)$	---
$E_{min}/E_{max} (U_d)$	---
Position	0.00 m

Type No. \ Make

1	24E x 	Whitecroft Lighting	
		Order No.	: K6H4154KS -- Emergency Lighting --
		Luminaire name	: KOLO IP65
		Equipment	: 1 x LED 13 W / 1755 lm
		Emergency	: 400 lm (22.8 %)
		Maintenance factor:	0.82

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2.2 Summary, External

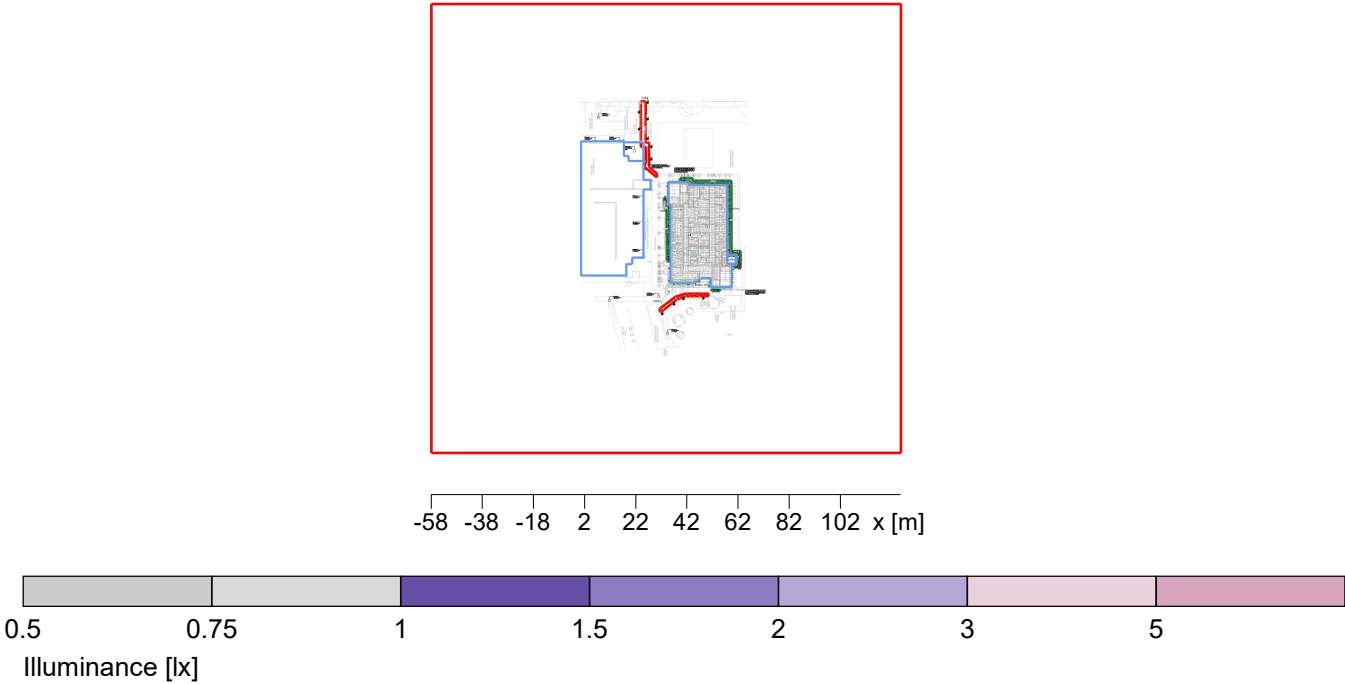
2.2.6 Result overview, Evaluation area 1

2 11 x  Order No. : BLY214KSRB
Luminaire name : KOLO BOLLARD
Equipment : 1 x LED 4 W / 404 lm
Maintenance factor: 0.83

2 External

2.3 Summary, External

2.3.1 Result overview (emergency lighting)

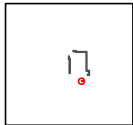
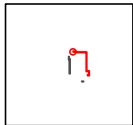
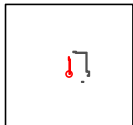


General

Calculation algorithm used : Direct component
Maintenance factor : 0.8
Height (phot centre) : 3.00 m
Maximum I : 130 cd <= 1600 cd

Anti panic area:

No.	Emin [lx]	Surface Emax [lx]	Ud
11 Perimeter - A			
Calculation field: 2.04m x 25.06m (2 x 16 pts), Height = 0.00m			
1	0.56 lx >= 0.5 lx	5.55 lx	1: 9.93 >= 1 : 40
12 Perimeter - B			
Calculation field: 23.71m x 35.14m (15 x 22 pts), Height = 0.00m			
2	0.88 lx >= 0.5 lx	7.48 lx	1: 8.49 >= 1 : 40
13 Perimeter - C			
Calculation field: 3.13m x 1m (2 x 2 pts), Height = 0.00m			
3	0.97 lx >= 0.5 lx	3.47 lx	1: 3.59 >= 1 : 40



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2 External

2.3 Summary, External

2.3.1 Result overview (emergency lighting)

Type No. Make

1

24E x



Whitecroft Lighting

Order No. : K6H4154KS -- Emergency Lighting --

Luminaire name : KOLO IP65

Equipment : 1 x LED 13 W / 1755 lm

Emergency : 400 lm (22.8 %)

Maintenance factor: 0.82