

Exterior Lighting

Installation : Reading Stadium Trade and Business Park

Project number :

Customer : HB Technical

Processed by : Tim Crosby

Date : 28.03.2022

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 Luminaire data

1.1 Whitecroft Lighting, SIROCCO MIDI - AREA OPTIC (SIMDH24KGA)

1.1.1 Data sheet

Manufacturer: Whitecroft Lighting



SIMDH24KGA Wall / pole mounted luminaire SIROCCO MIDI - AREA OPTIC

IP66 LED post top luminaire with lightweight die cast aluminium body. High efficacy performance with a choice of road and area lighting distribution patterns and zero upward light when mounted horizontally. Electronic control gear with voltage surge protection and isolating safety switch – as Whitecroft Lighting SIROCCO MIDI.

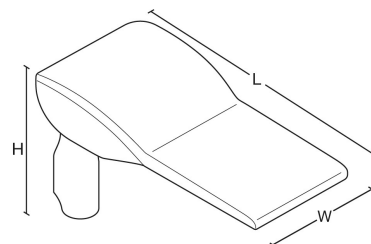
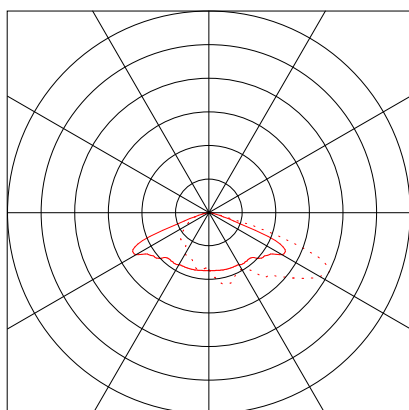
Luminaire data

Absolute Photometry
Luminaire efficacy : 136.43 lm/W
Classification : A30 ↓ 100.0% ↑ 0.0%
CIE Flux Codes : 29 64 97 100 100
Glare : G*3 / D4
Control gear : electronic ballast
Power : 67 W
Luminous flux : 9141 lm

Equipped with

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

Dimensions : 558 mm x 293 mm x 115 mm



1 Luminaire data

1.2 Whitecroft Lighting, SIROCCO MIDI - ROAD OPTIC (SIMDH34KG)

1.2.1 Data sheet

Manufacturer: Whitecroft Lighting



SIMDH34KG Wall / pole mounted luminaire SIROCCO MIDI - ROAD OPTIC

IP66 LED post top luminaire with lightweight die cast aluminium body. High efficacy performance with a choice of road and area lighting distribution patterns and zero upward light when mounted horizontally. Electronic control gear with voltage surge protection and isolating safety switch – as Whitecroft Lighting SIROCCO MIDI.

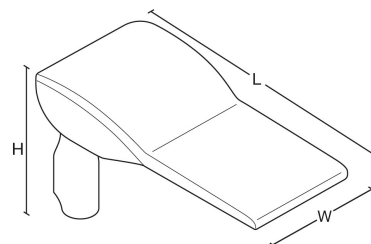
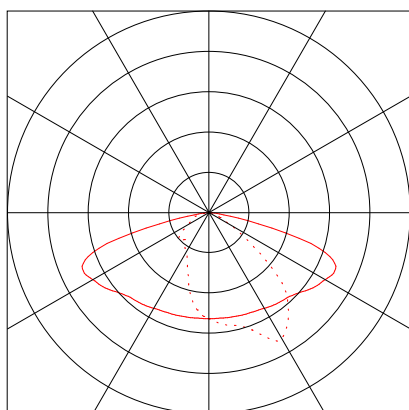
Luminaire data

Absolute Photometry
 Luminaire efficacy : 149.47 lm/W
 Classification : A30 ↓ 100.0% ↑ 0.0%
 CIE Flux Codes : 39 73 97 100 100
 Glare : G*4 / D3
 Control gear : electronic ballast
 Power : 102 W
 Luminous flux : 15246 lm

Equipped with

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

Dimensions : 558 mm x 293 mm x 115 mm



1 Luminaire data

1.3 Whitecroft Lighting, SPECTRE WX (SPXAH14K)

1.3.1 Data sheet

Manufacturer: Whitecroft Lighting



SPXAH14K wall-mounted luminaire **SPECTRE WX**
SPECTRE WX

IP65 wall mounted LED semi-conical luminaire with forward throw. Die cast aluminium body with thermal shock resistant clear tempered glass. Includes first fix wall mounting bracket.

Emergency Lumens:- 704lm

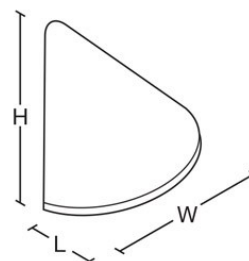
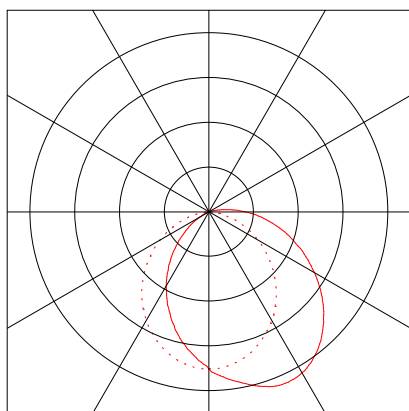
Luminaire data

Absolute Photometry
 Luminaire efficacy : 124.31 lm/W
 Classification : A40 ↓98.1% ↑1.9%
 CIE Flux Codes : 47 77 93 98 100
 UGR 4H 8H : 30.7 / 24.0
 Control gear : electronic ballast
 Power : 9 W
 Luminous flux : 1118.8 lm

Equipped with

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

Dimensions : 375 mm x 224 mm x 329 mm



Emergency Lighting

Light source from normal operation with reduced flux
 Luminous flux : 704 lm

Object : Exterior Lighting
 Installation : Reading Stadium Trade and Business Park
 Project number :
 Date : 28.03.2022

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1 Luminaire data

1.4 Whitecroft Lighting, SIROCCO MIDI AREA 6M COLUMN ()

1.4.1 Data sheet

SIROCCO MIDI AREA 6M COLUMN

Luminaire arrangement for:

	Position			Rotation		
	x[m]	y[m]	z[m]	Z[°]	C0[°]	C90[°]
SIROCCO MIDI - AREA OPTIC (SIMDH... :	0.000	0.000	6.000	0	0	0

Position is the LDC position of the luminaire.

SIMDH24KGA Wall / pole mounted luminaire SIROCCO MIDI - AREA OPTIC

IP66 LED post top luminaire with lightweight die cast aluminium body. High efficacy performance with a choice of road and area lighting distribution patterns and zero upward light when mounted horizontally. Electronic control gear with voltage surge protection and isolating safety switch – as Whitecroft Lighting SIROCCO MIDI.

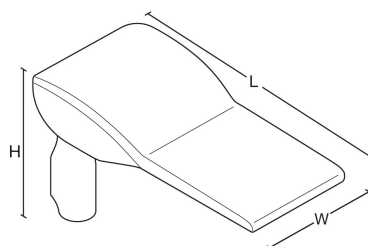
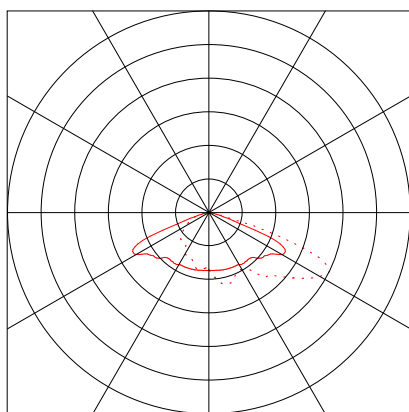
Luminaire data

Absolute Photometry	:	
Luminaire efficacy	:	136.43 lm/W
Classification	:	A30 ↓ 100.0% ↑ 0.0%
CIE Flux Codes	:	29 64 97 100 100
Glare	:	G*3 / D4
Control gear	:	electronic ballast
Power	:	67 W
Luminous flux	:	9141 lm

Equipped with

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

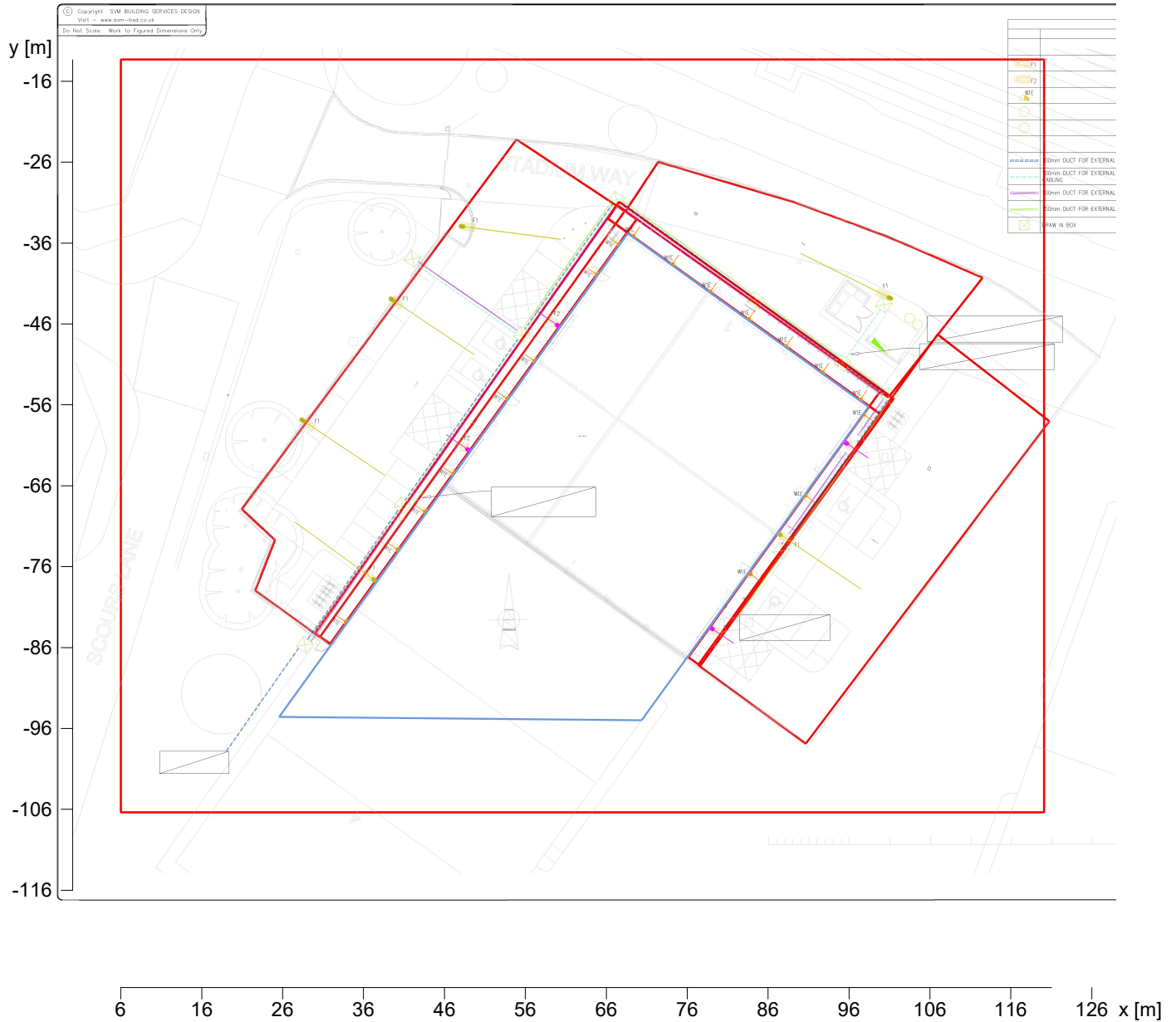
Dimensions : 558 mm x 293 mm x 115 mm



2 Exterior 1

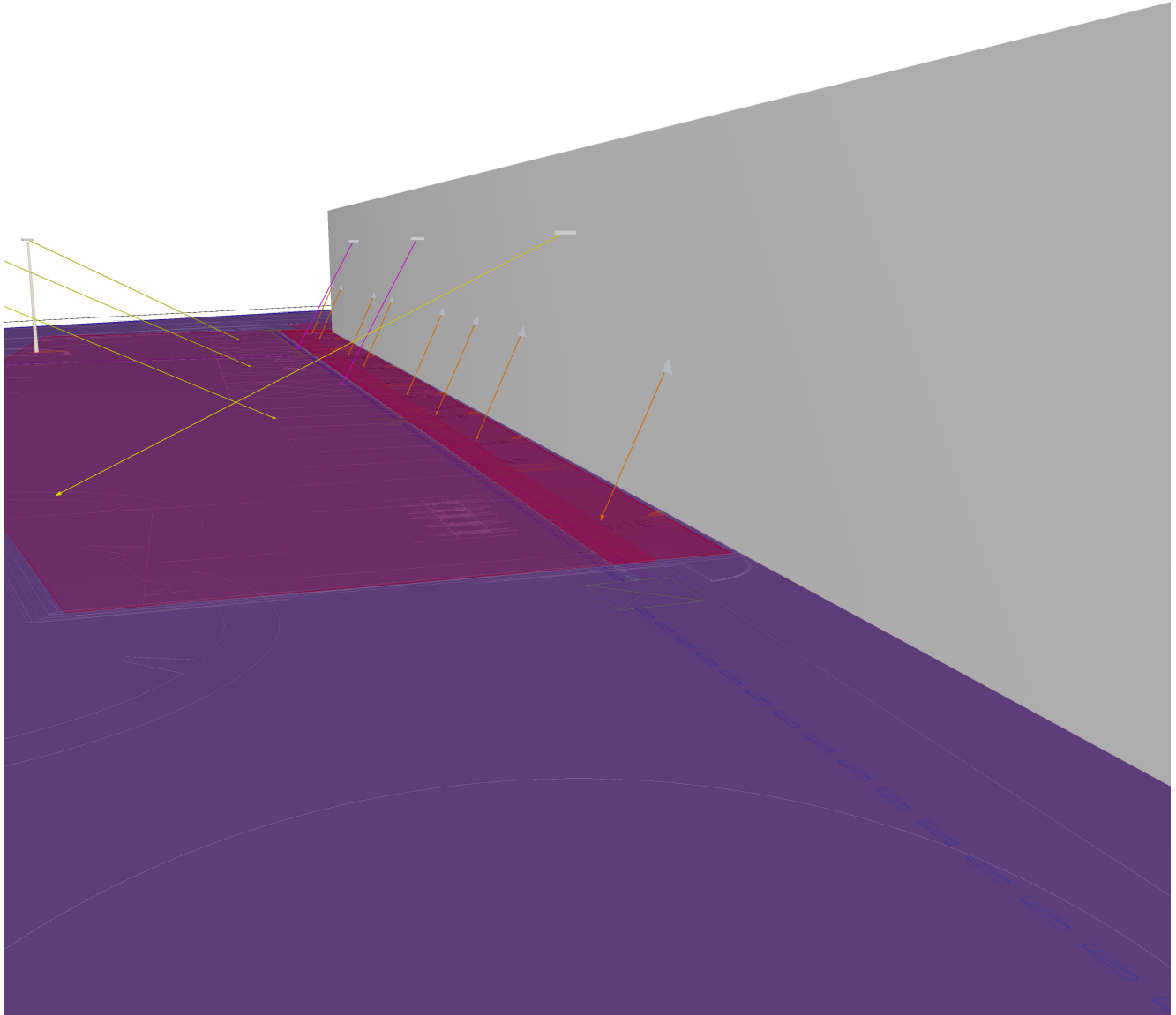
2.1 Description, Exterior 1

2.1.1 Floor plan



2.1 Description, Exterior 1

2.1.2 3D view, View 1

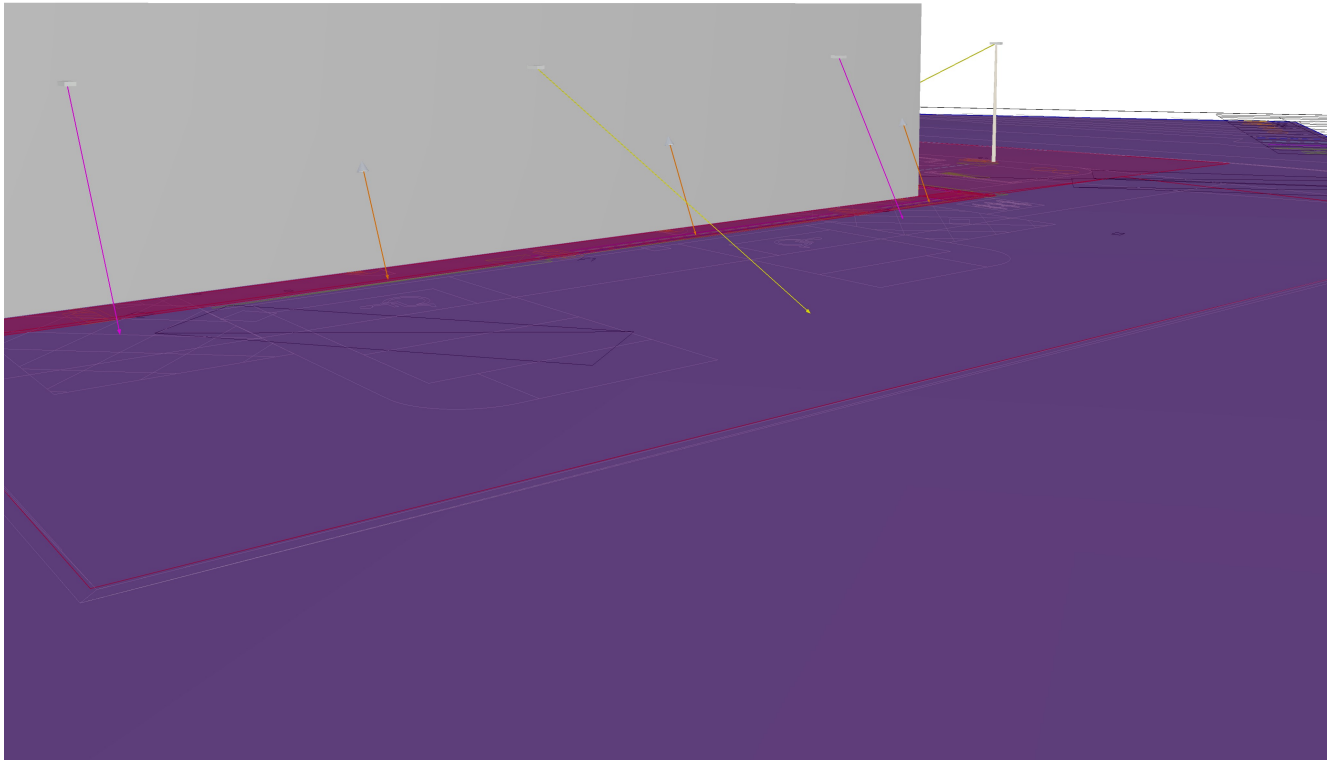


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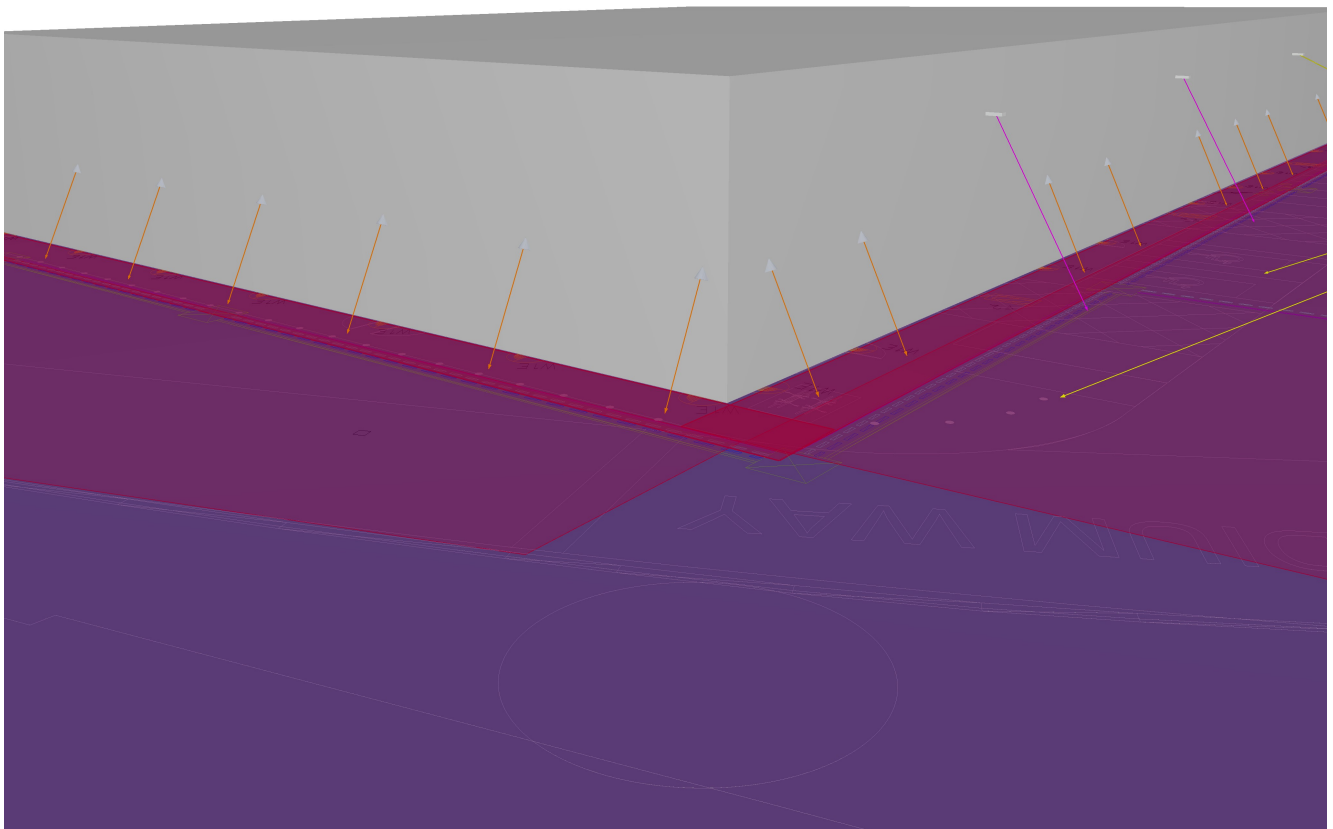
2.1 Description, Exterior 1

2.1.3 3D view, View 2



2.1 Description, Exterior 1

2.1.4 3D view, View 3



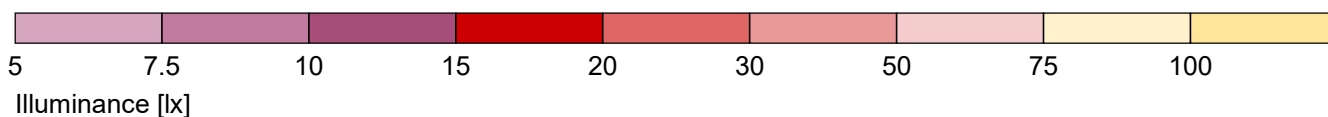
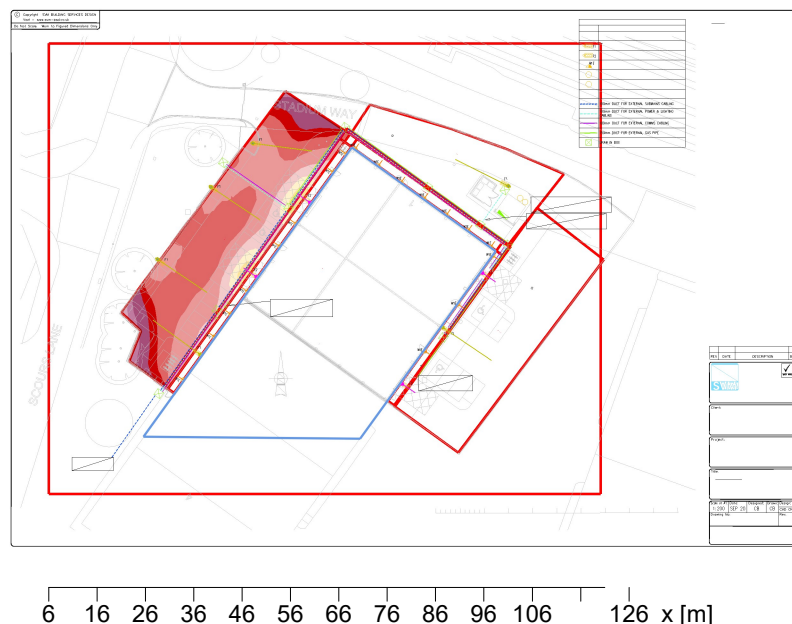
Object : Exterior Lighting
 Installation : Reading Stadium Trade and Business Park
 Project number :
 Date : 28.03.2022

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2 Exterior 1

2.2 Summary, Exterior 1

2.2.1 Result overview, Car Park area 1



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux of all lamps	135972 lm
Total power	972 W
Total power per area (10602.00 m²)	0.09 W/m²

Illuminance

Average illuminance	Em	34 lx
Minimum illuminance	Emin	6 lx
Maximum illuminance	Emax	111 lx
Uniformity Uo	Emin/Em	1:5.21 (0.19)
Diversity Ud	Emin/Emax	1:17.1 (0.06)

Type No.Make

Whitecroft Lighting

1	2	Order No.	: SIMDH24KGA
		Luminaire name	: SIROCCO MIDI - AREA OPTIC
		Equipment	: 1 x LED 67 W / 9141 lm
2	4	Order No.	: SIMDH34KG
		Luminaire name	: SIROCCO MIDI - ROAD OPTIC
		Equipment	: 1 x LED 102 W / 15246 lm

Object : Exterior Lighting
Installation : Reading Stadium Trade and Business Park
Project number :
Date : 28.03.2022



2 Exterior 1

2.2 Summary, Exterior 1

2.2.1 Result overview, Car Park area 1

3 18



Order No. : SPXAH14K
Luminaire name : SPECTRE WX
Equipment : 1 x LED 9 W / 1119 lm

4 4



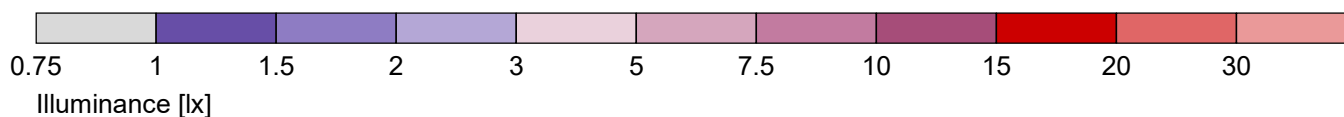
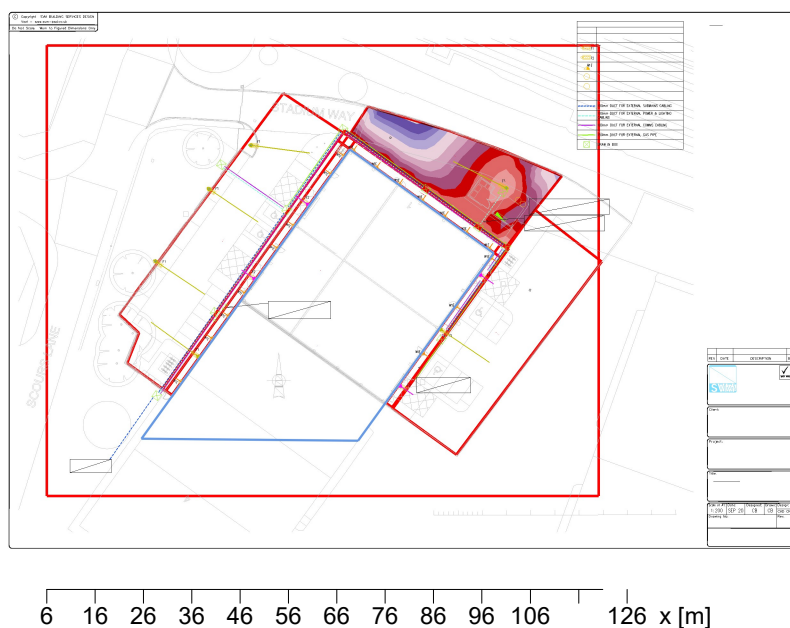
Order No. :
Luminaire name : SIROCCO MIDI AREA 6M COLUMN
with : 1 x SIMDH24KGA
Equipment : 1 x LED 67 W / 9141 lm

Object : Exterior Lighting
 Installation : Reading Stadium Trade and Business Park
 Project number :
 Date : 28.03.2022

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2.2 Summary, Exterior 1

2.2.2 Result overview, Roadway



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80

Total luminous flux of all lamps	135972 lm
Total power	972 W
Total power per area (10602.00 m²)	0.09 W/m²

Illuminance

Average illuminance	Em	13.2 lx
Minimum illuminance	Emin	0.9 lx
Maximum illuminance	Emax	41.3 lx
Uniformity Uo	Emin/Em	1:15.1 (0.07)
Diversity Ud	Emin/Emax	1:47.1 (0.02)

Type No. Make

Whitecroft Lighting

1	2	Order No.	: SIMDH24KGA
		Luminaire name	: SIROCCO MIDI - AREA OPTIC
		Equipment	: 1 x LED 67 W / 9141 lm
2	4	Order No.	: SIMDH34KG
		Luminaire name	: SIROCCO MIDI - ROAD OPTIC
		Equipment	: 1 x LED 102 W / 15246 lm

Object : Exterior Lighting
Installation : Reading Stadium Trade and Business Park
Project number :
Date : 28.03.2022



2.2 Summary, Exterior 1

2.2.2 Result overview, Roadway

3 18



Order No. : SPXAH14K
Luminaire name : SPECTRE WX
Equipment : 1 x LED 9 W / 1119 lm

4 4



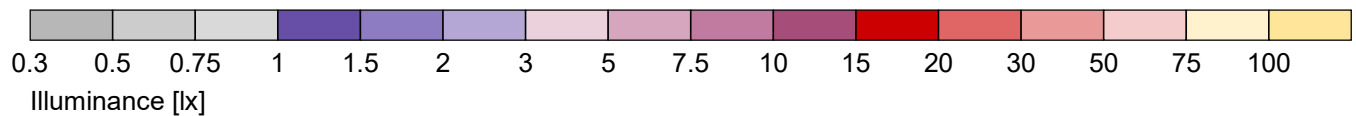
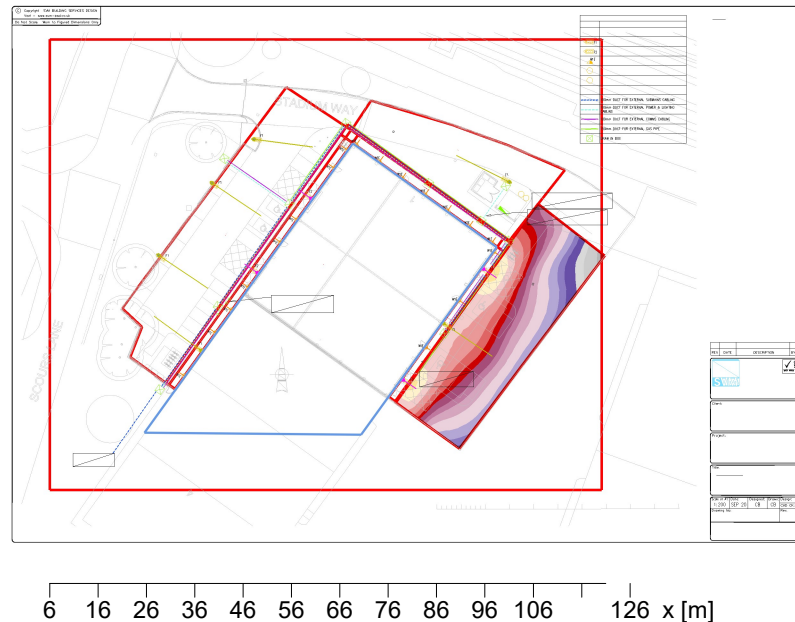
Order No. :
Luminaire name : SIROCCO MIDI AREA 6M COLUMN
with : 1 x SIMDH24KGA
Equipment : 1 x LED 67 W / 9141 lm

Object : Exterior Lighting
 Installation : Reading Stadium Trade and Business Park
 Project number :
 Date : 28.03.2022

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2.2 Summary, Exterior 1

2.2.3 Result overview, Rear Loading Area



General

Calculation algorithm used : Average indirect fraction
 Height of evaluation surface : 0.00 m
 Maintenance factor : 0.80

Total luminous flux of all lamps : 135972 lm
 Total power : 972 W
 Total power per area (10602.00 m²) : 0.09 W/m²

Illuminance

Average illuminance : E_m : 21 lx
 Minimum illuminance : E_{min} : 0 lx
 Maximum illuminance : E_{max} : 106 lx
 Uniformity U_0 : E_{min}/E_m : 1:51.1 (0.02)
 Diversity U_d : E_{min}/E_{max} : 1:252 (0)

Type No. Make

Whitecroft Lighting

1	2	Order No.	: SIMDH24KGA
		Luminaire name	: SIROCCO MIDI - AREA OPTIC
		Equipment	: 1 x LED 67 W / 9141 lm
2	4	Order No.	: SIMDH34KG
		Luminaire name	: SIROCCO MIDI - ROAD OPTIC
		Equipment	: 1 x LED 102 W / 15246 lm

-please put your own address here-

Object : Exterior Lighting
Installation : Reading Stadium Trade and Business Park
Project number :
Date : 28.03.2022



2.2 Summary, Exterior 1

2.2.3 Result overview, Rear Loading Area

3	18	Order No.	: SPXAH14K
		Luminaire name	: SPECTRE WX
		Equipment	: 1 x LED 9 W / 1119 lm

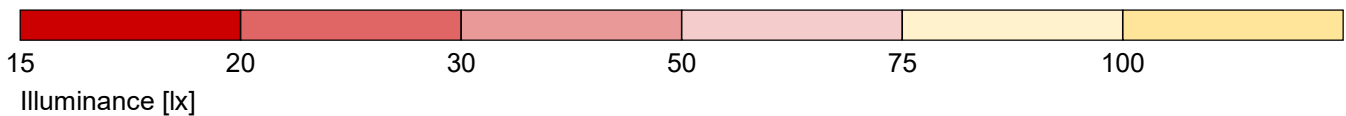
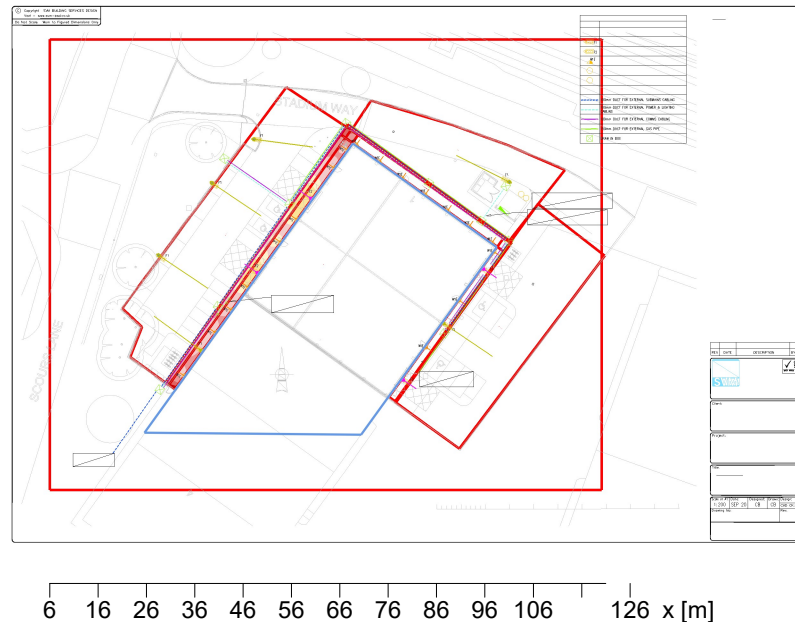
4	4	Order No.	:
		Luminaire name	: SIROCCO MIDI AREA 6M COLUMN
		with	: 1 x SIMDH24KGA
		Equipment	: 1 x LED 67 W / 9141 lm

Object : Exterior Lighting
 Installation : Reading Stadium Trade and Business Park
 Project number :
 Date : 28.03.2022



2.2 Summary, Exterior 1

2.2.4 Result overview, Perimeter Area 1



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux of all lamps	135972 lm
Total power	972 W
Total power per area (10602.00 m²)	0.09 W/m²

Illuminance

Average illuminance	Em	68 lx
Minimum illuminance	Emin	15 lx
Maximum illuminance	Emax	116 lx
Uniformity Uo	Emin/Em	1:4.42 (0.23)
Diversity Ud	Emin/Emax	1:7.54 (0.13)

Type No. Make

Whitecroft Lighting

1	2	Order No.	: SIMDH24KGA
		Luminaire name	: SIROCCO MIDI - AREA OPTIC
		Equipment	: 1 x LED 67 W / 9141 lm
2	4	Order No.	: SIMDH34KG
		Luminaire name	: SIROCCO MIDI - ROAD OPTIC
		Equipment	: 1 x LED 102 W / 15246 lm

-please put your own address here-

Object : Exterior Lighting
Installation : Reading Stadium Trade and Business Park
Project number :
Date : 28.03.2022



2.2 Summary, Exterior 1

2.2.4 Result overview, Perimeter Area 1

3 18



Order No. : SPXAH14K
Luminaire name : SPECTRE WX
Equipment : 1 x LED 9 W / 1119 lm

4 4



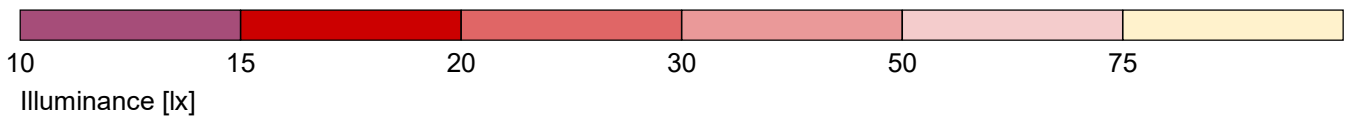
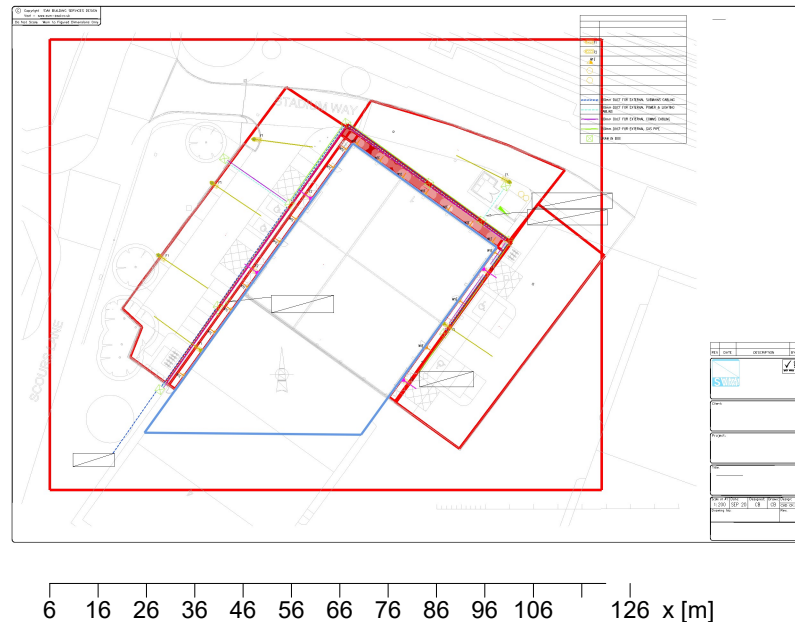
Order No. :
Luminaire name : SIROCCO MIDI AREA 6M COLUMN
with : 1 x SIMDH24KGA
Equipment : 1 x LED 67 W / 9141 lm

Object : Exterior Lighting
 Installation : Reading Stadium Trade and Business Park
 Project number :
 Date : 28.03.2022

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2.2 Summary, Exterior 1

2.2.5 Result overview, Perimeter Area 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	135972 lm
Total power	972 W
Total power per area (10602.00 m²)	0.09 W/m²

Illuminance

Average illuminance	Em	31.8 lx
Minimum illuminance	Emin	14.5 lx
Maximum illuminance	Emax	85.3 lx
Uniformity Uo	Emin/Em	1:2.19 (0.46)
Diversity Ud	Emin/Emax	1:5.89 (0.17)

Type No. Make

Whitecroft Lighting

1	2	Order No.	: SIMDH24KGA
		Luminaire name	: SIROCCO MIDI - AREA OPTIC
		Equipment	: 1 x LED 67 W / 9141 lm
2	4	Order No.	: SIMDH34KG
		Luminaire name	: SIROCCO MIDI - ROAD OPTIC
		Equipment	: 1 x LED 102 W / 15246 lm

-please put your own address here-

Object : Exterior Lighting
Installation : Reading Stadium Trade and Business Park
Project number :
Date : 28.03.2022



2.2 Summary, Exterior 1

2.2.5 Result overview, Perimeter Area 2

3 18



Order No. : SPXAH14K
Luminaire name : SPECTRE WX
Equipment : 1 x LED 9 W / 1119 lm

4 4



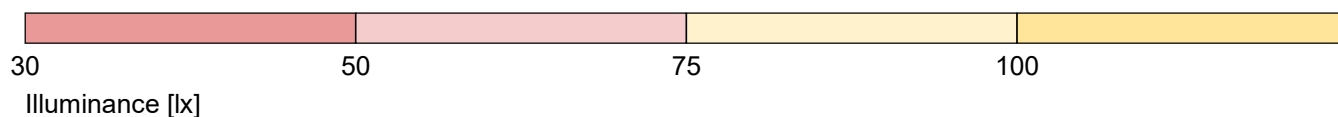
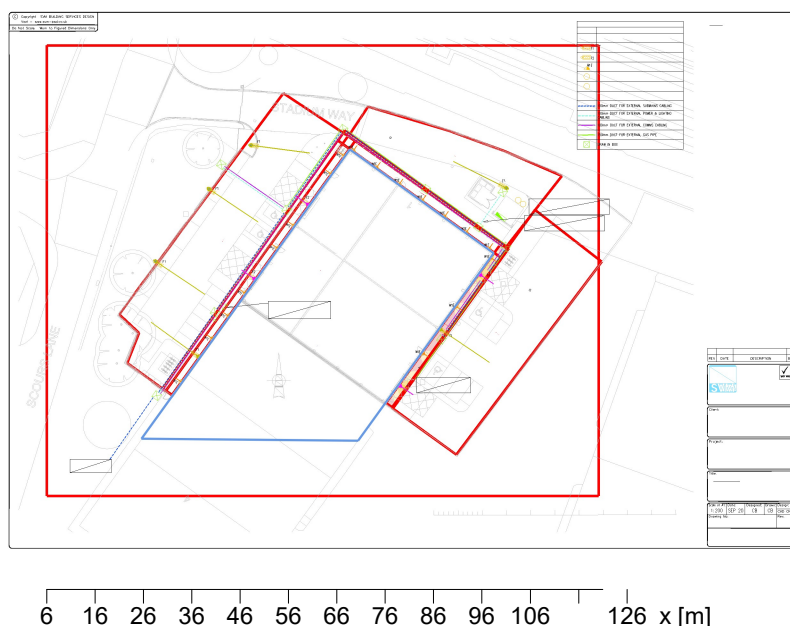
Order No. :
Luminaire name : SIROCCO MIDI AREA 6M COLUMN
with : 1 x SIMDH24KGA
Equipment : 1 x LED 67 W / 9141 lm

Object : Exterior Lighting
 Installation : Reading Stadium Trade and Business Park
 Project number :
 Date : 28.03.2022

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2.2 Summary, Exterior 1

2.2.6 Result overview, Perimeter Area 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	135972 lm
Total power	972 W
Total power per area (10602.00 m²)	0.09 W/m²

Illuminance

Average illuminance	Em	77 lx
Minimum illuminance	Emin	43 lx
Maximum illuminance	Emax	109 lx
Uniformity Uo	Emin/Em	1:1.8 (0.56)
Diversity Ud	Emin/Emax	1:2.53 (0.39)

Type No.Make

Whitecroft Lighting

1	2	Order No.	: SIMDH24KGA
		Luminaire name	: SIROCCO MIDI - AREA OPTIC
		Equipment	: 1 x LED 67 W / 9141 lm
2	4	Order No.	: SIMDH34KG
		Luminaire name	: SIROCCO MIDI - ROAD OPTIC
		Equipment	: 1 x LED 102 W / 15246 lm

Object : Exterior Lighting
Installation : Reading Stadium Trade and Business Park
Project number :
Date : 28.03.2022



2.2 Summary, Exterior 1

2.2.6 Result overview, Perimeter Area 3

3 18



Order No. : SPXAH14K
Luminaire name : SPECTRE WX
Equipment : 1 x LED 9 W / 1119 lm

4 4



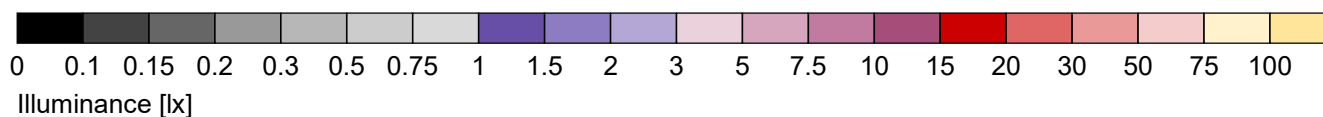
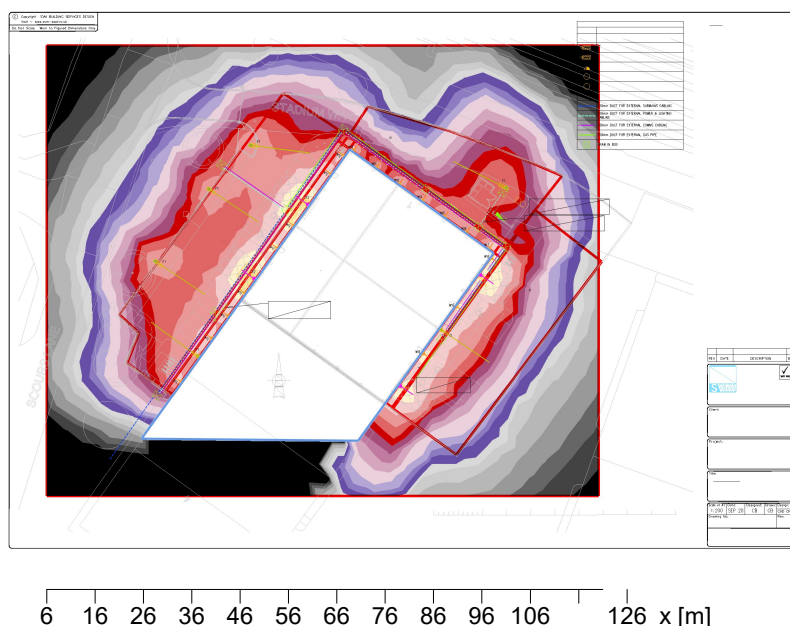
Order No. :
Luminaire name : SIROCCO MIDI AREA 6M COLUMN
with : 1 x SIMDH24KGA
Equipment : 1 x LED 67 W / 9141 lm

Object : Exterior Lighting
 Installation : Reading Stadium Trade and Business Park
 Project number :
 Date : 28.03.2022

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2.2 Summary, Exterior 1

2.2.7 Result overview, Evaluation area 1



General

Calculation algorithm used
 Maintenance factor

Average indirect fraction
 0.80

Total luminous flux of all lamps

135972.00 lm

Total power

972.0 W

Total power per area (10602.00 m²)

0.09 W/m² (0.91 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

Horizontal
 Em 10.1 lx
 Emin 0 lx
 Emin/Em (Uo) ---
 Emin/Emax (Ud) ---
 Position 0.00 m

Type No.\Make

Whitecroft Lighting

1 2
 Order No. : SIMDH24KGA
 Luminaire name : SIROCCO MIDI - AREA OPTIC
 Equipment : 1 x LED 67 W / 9141 lm

2 4
 Order No. : SIMDH34KG
 Luminaire name : SIROCCO MIDI - ROAD OPTIC
 Equipment : 1 x LED 102 W / 15246 lm

-please put your own address here-

Object : Exterior Lighting
Installation : Reading Stadium Trade and Business Park
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Date : 28.03.2022



2.2 Summary, Exterior 1

2.2.7 Result overview, Evaluation area 1

3 18



Order No. : SPXAH14K
Luminaire name : SPECTRE WX
Equipment : 1 x LED 9 W / 1119 lm

4 4

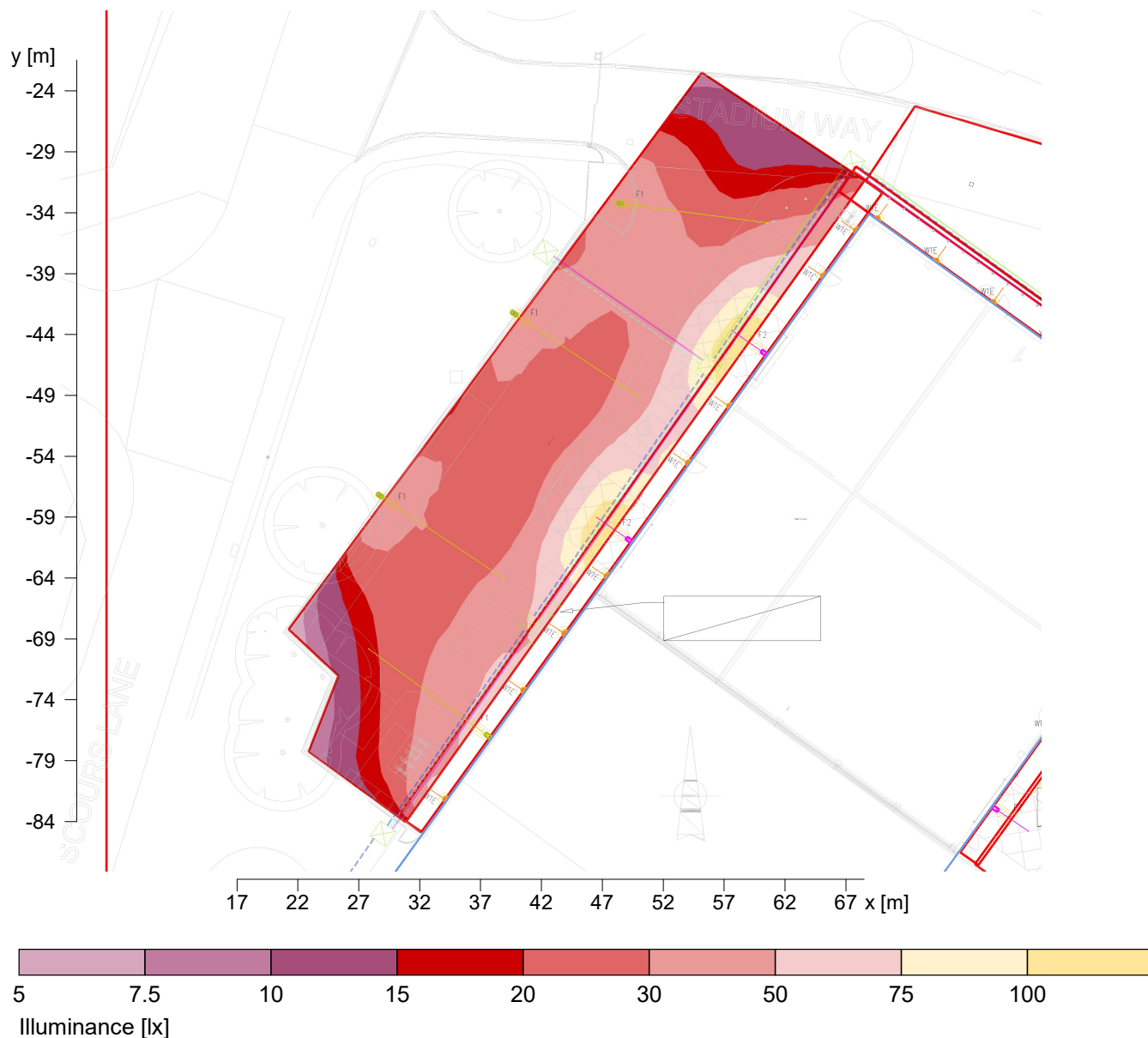


Order No. :
Luminaire name : SIROCCO MIDI AREA 6M COLUMN
with : 1 x SIMDH24KGA
Equipment : 1 x LED 67 W / 9141 lm

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2.3 Calculation results, Exterior 1

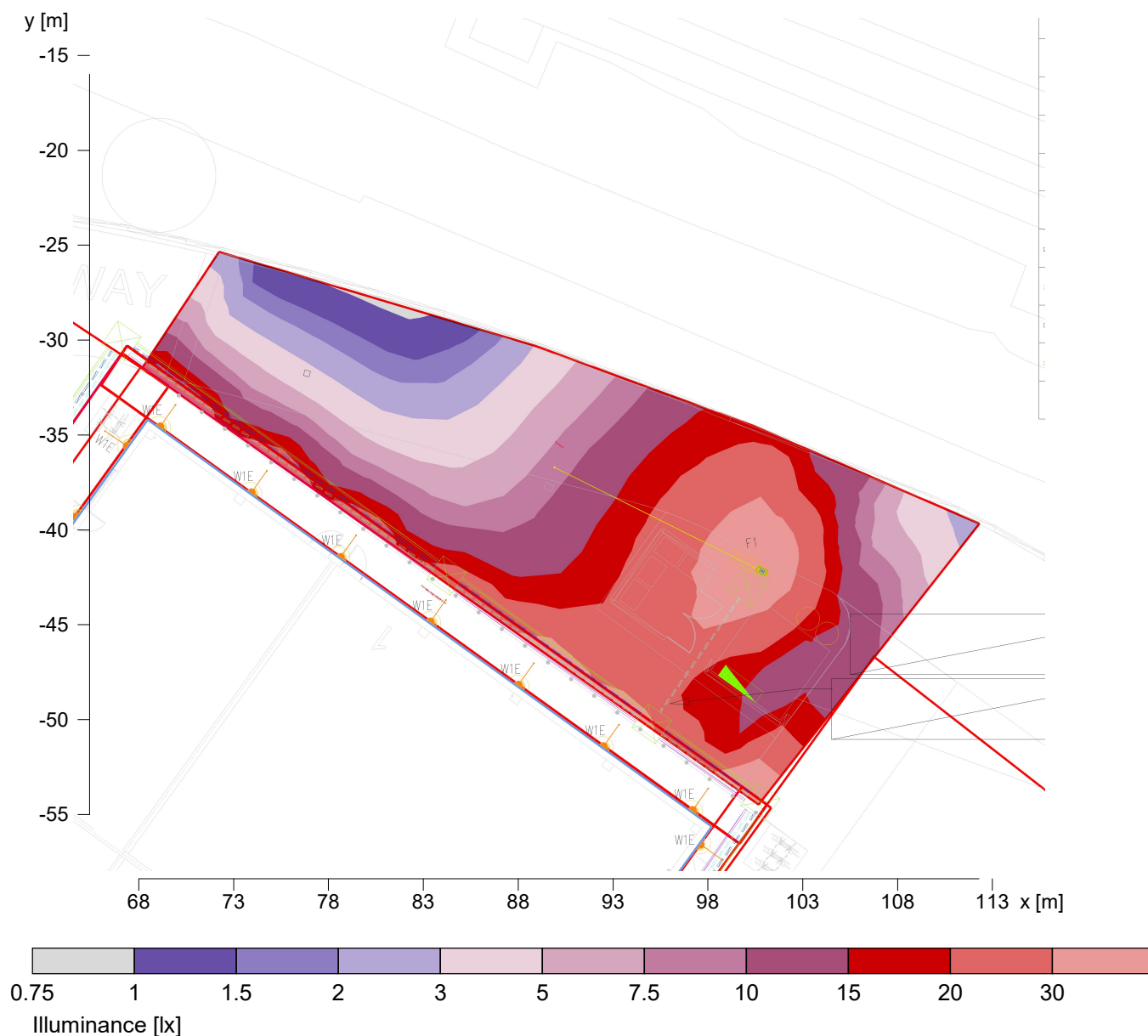
2.3.2 Pseudo colours, Car Park area 1 (E)



Height reference plane		: 0.00 m
Average illuminance	Em	: 34 lx
Minimum illuminance	Emin	: 6 lx
Maximum illuminance	Emax	: 111 lx
Uniformity Uo	Emin/Em	: 1 : 5.21 (0.19)
Diversity Ud	Emin/Emax	: 1 : 17.07 (0.06)

2.3 Calculation results, Exterior 1

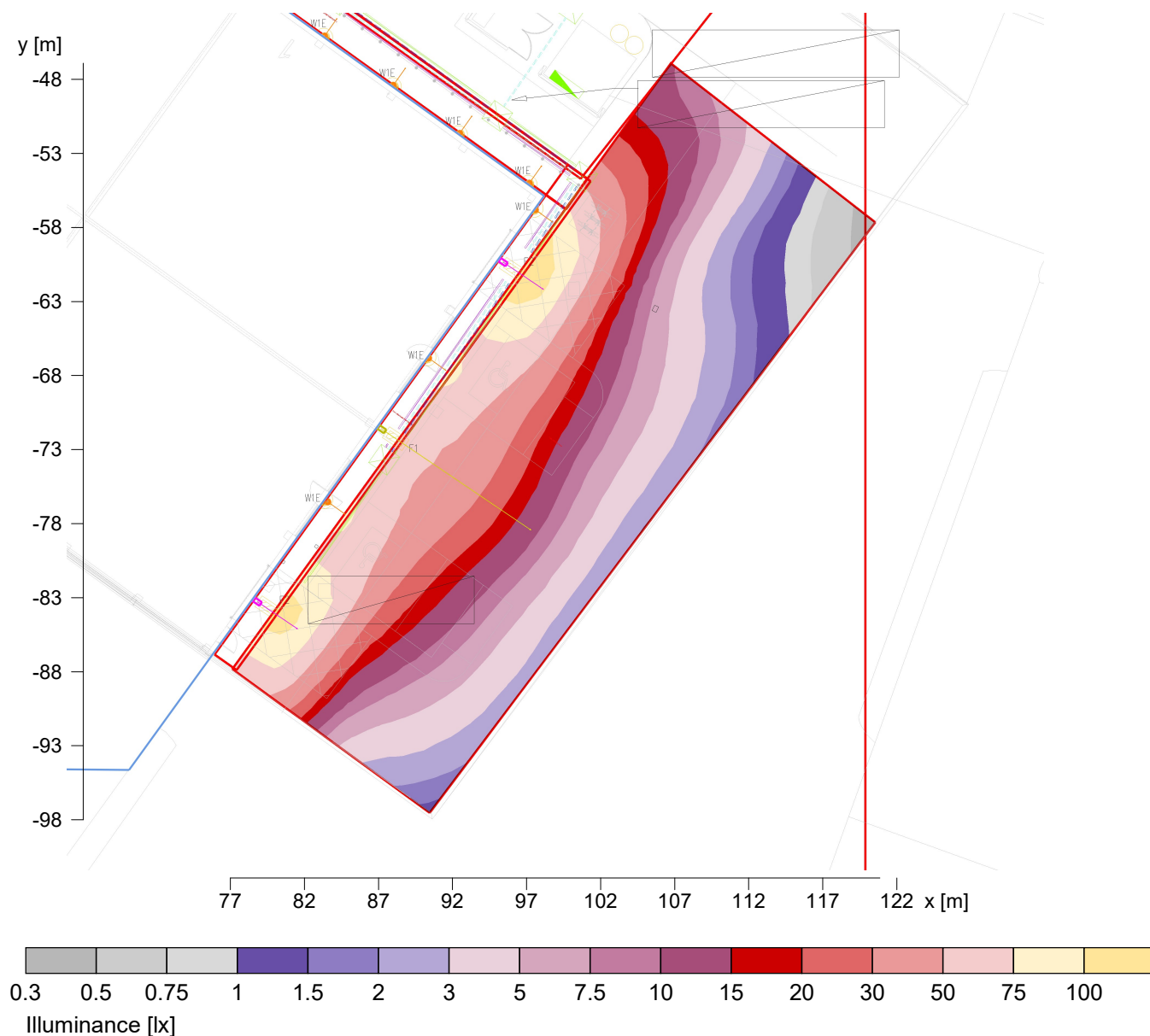
2.3.3 Pseudo colours, Roadway (E)



Height reference plane		: 0.00 m
Average illuminance	Em	: 13.2 lx
Minimum illuminance	Emin	: 0.9 lx
Maximum illuminance	Emax	: 41.3 lx
Uniformity Uo	Emin/Em	: 1 : 15.06 (0.07)
Diversity Ud	Emin/Emax	: 1 : 47.06 (0.02)

2.3 Calculation results, Exterior 1

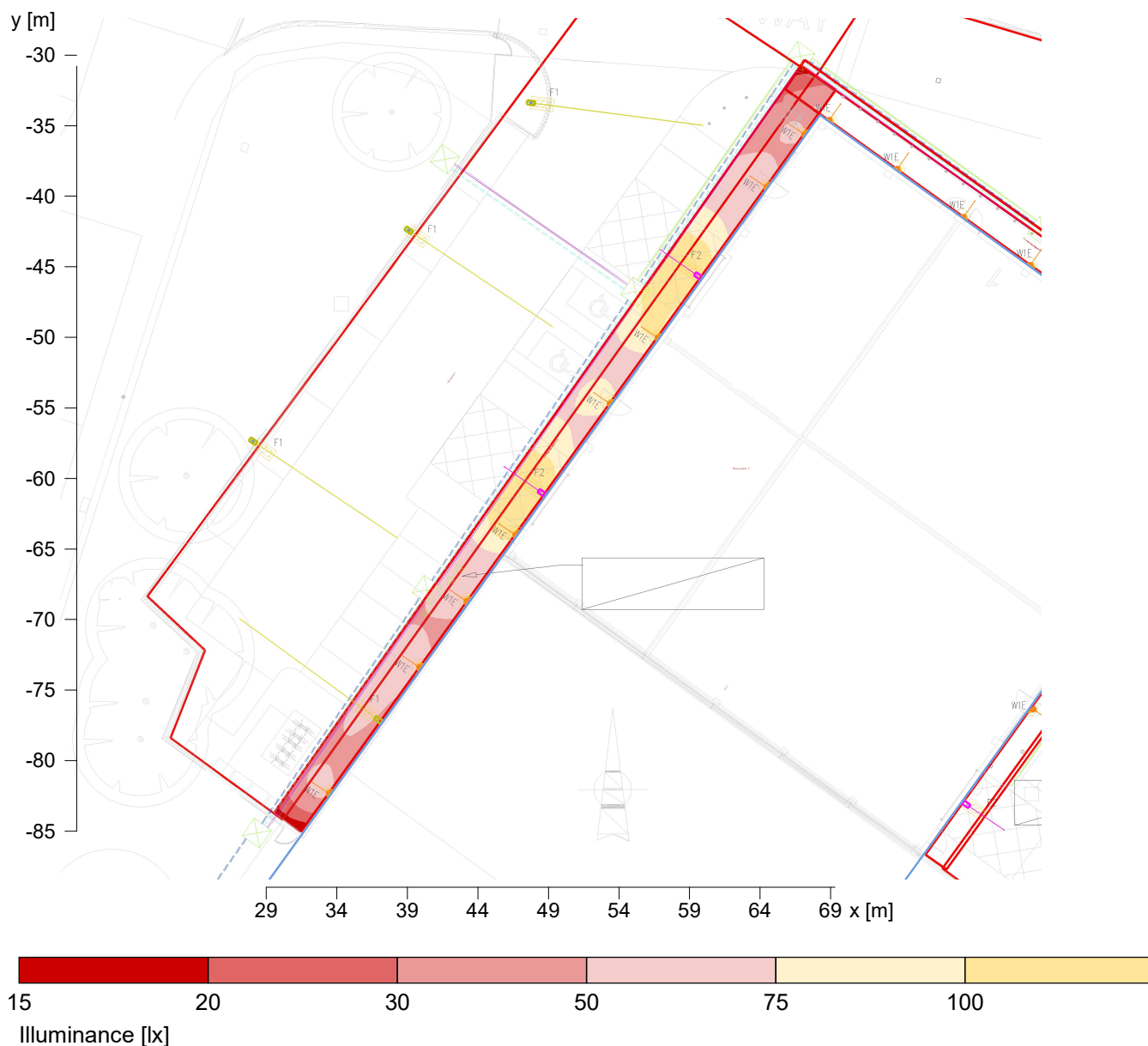
2.3.4 Pseudo colours, Rear Loading Area (E)



Height reference plane		: 0.00 m
Average illuminance	Em	: 21 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 106 lx
Uniformity Uo	Emin/Em	: 1 : 51.11 (0.02)
Diversity Ud	Emin/Emax	: 1 : 251.95 (0.00)

2.3 Calculation results, Exterior 1

2.3.5 Pseudo colours, Perimeter Area 1 (E)

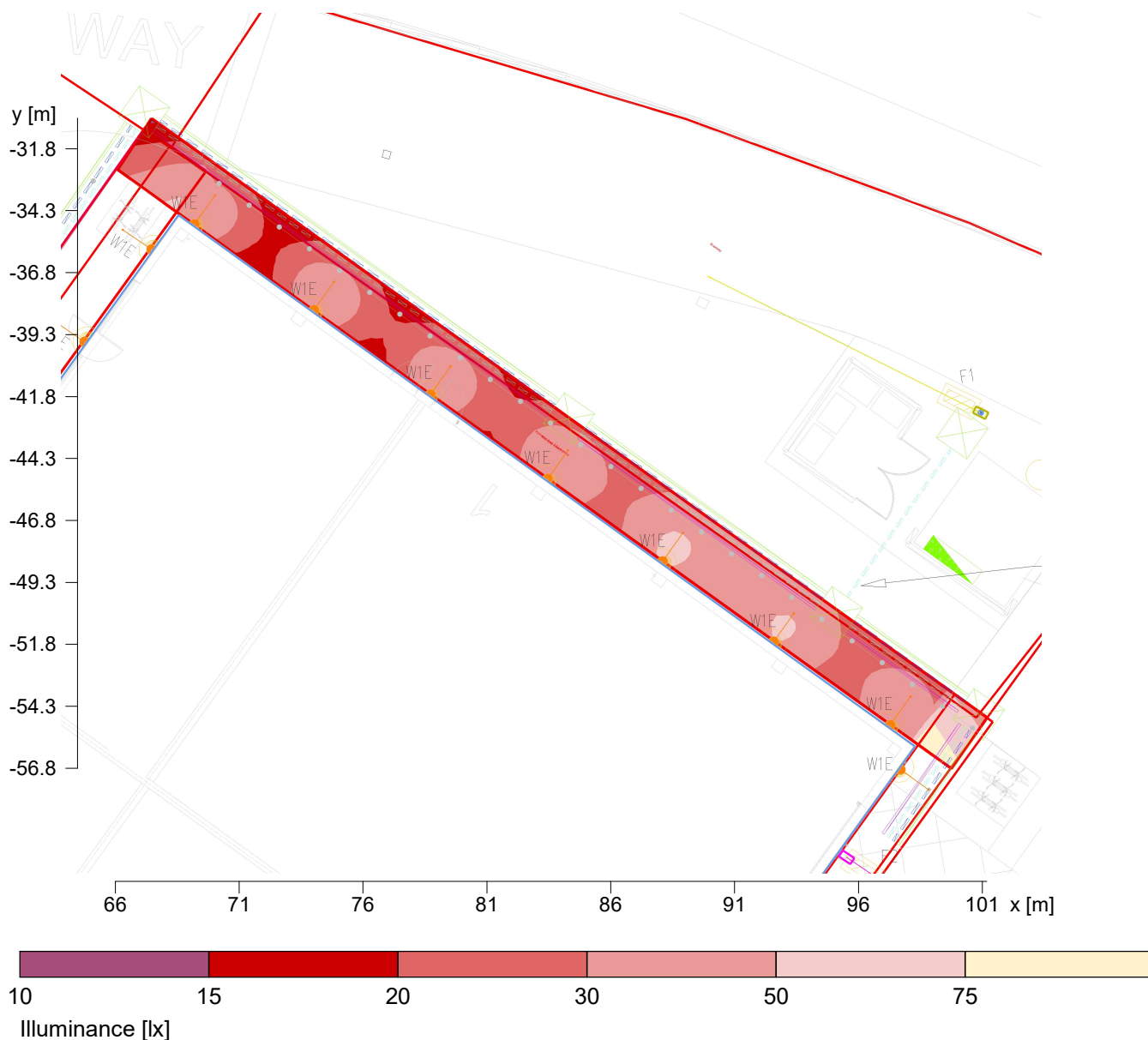


Height reference plane
 Average illuminance
 Minimum illuminance
 Maximum illuminance
 Uniformity U_0
 Diversity U_d

: 0.00 m
 : 68 lx
 : 15 lx
 : 116 lx
 : 1 : 4.42 (0.23)
 : 1 : 7.54 (0.13)

2.3 Calculation results, Exterior 1

2.3.6 Pseudo colours, Perimeter Area 2 (E)

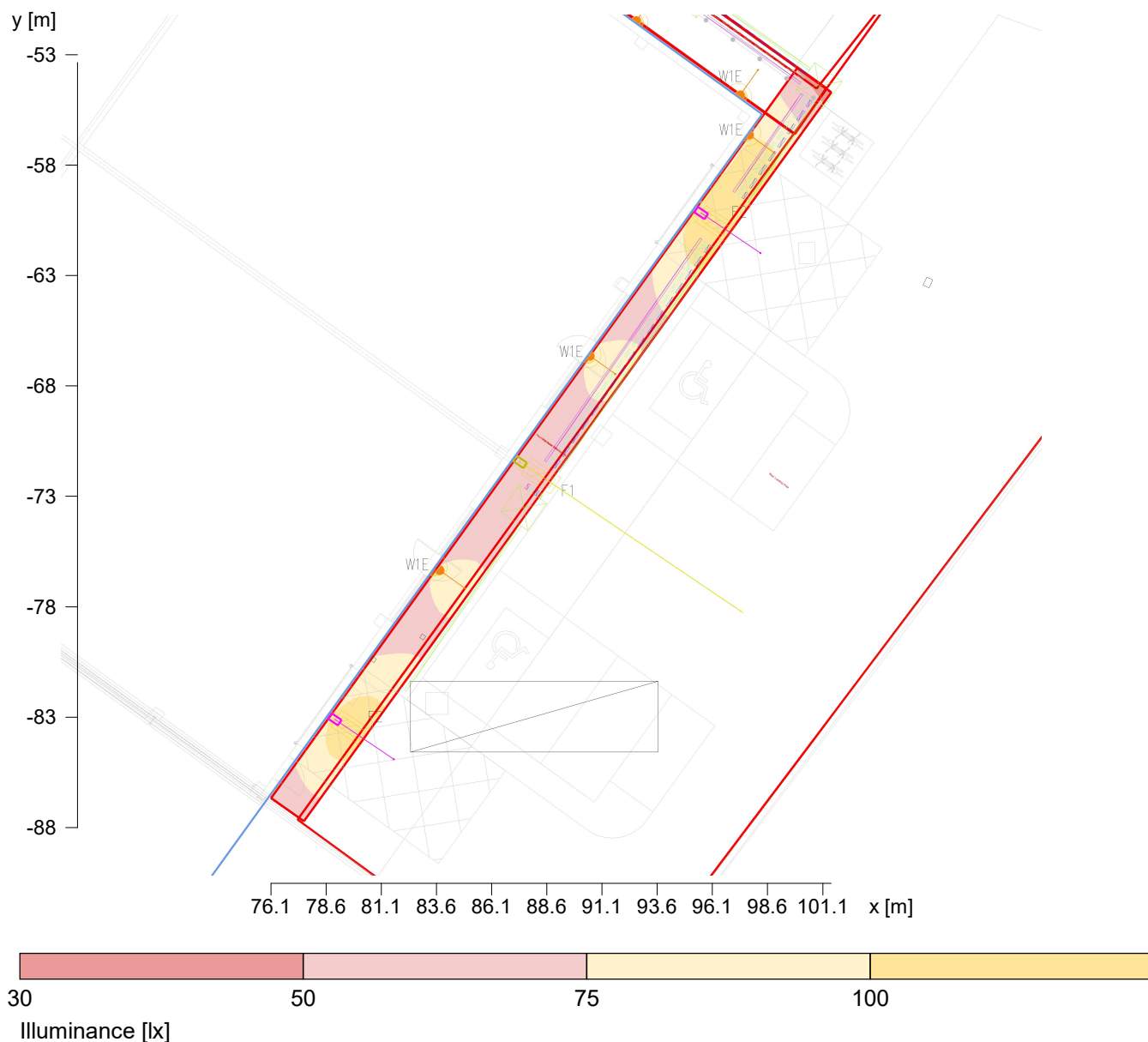


Height reference plane
 Average illuminance
 Minimum illuminance
 Maximum illuminance
 Uniformity U_0
 Diversity U_d

: 0.00 m
 E_m : 31.8 lx
 E_{min} : 14.5 lx
 E_{max} : 85.3 lx
 E_{min}/E_m : 1 : 2.19 (0.46)
 E_{min}/E_{max} : 1 : 5.89 (0.17)

2.3 Calculation results, Exterior 1

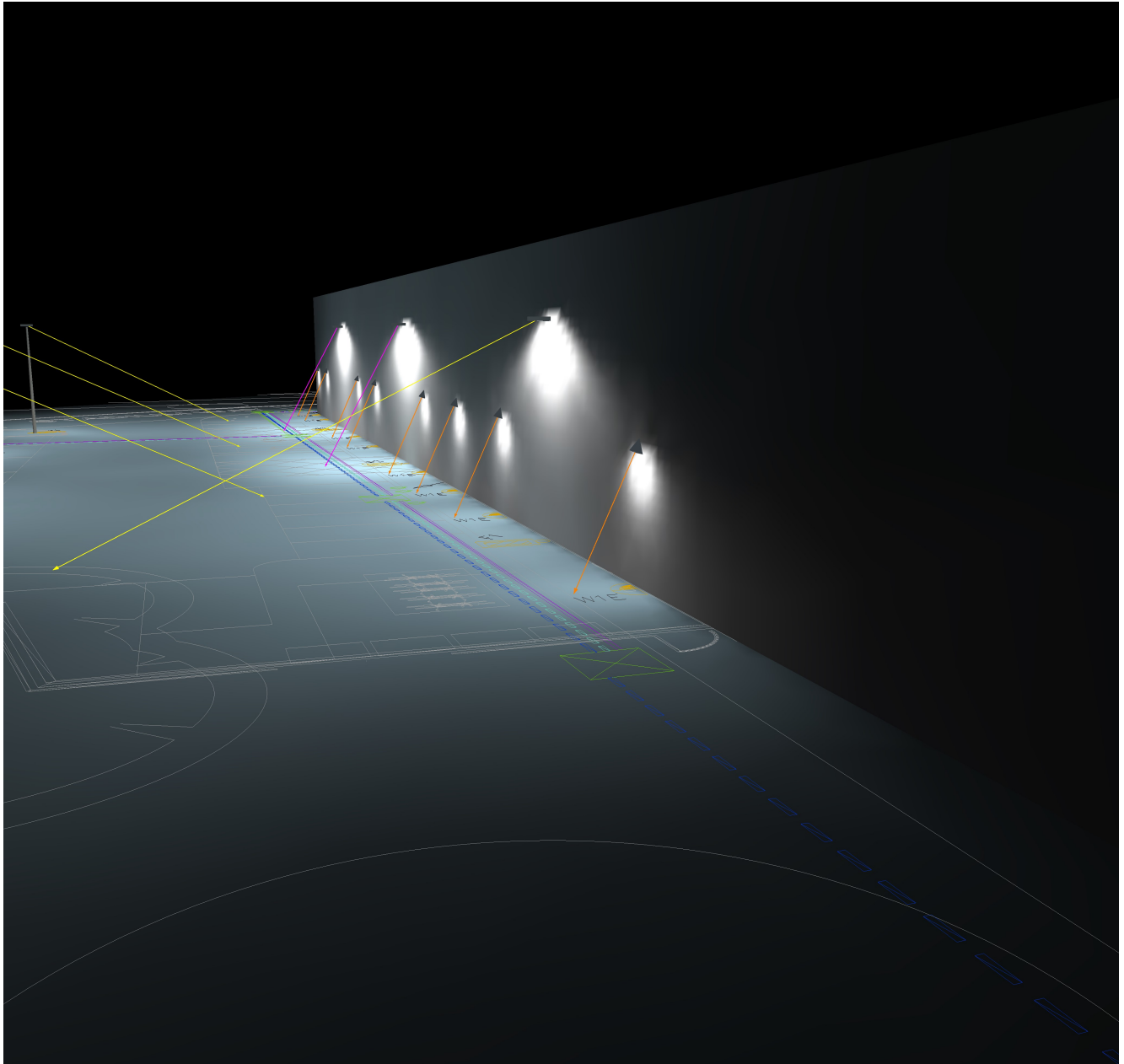
2.3.7 Pseudo colours, Perimeter Area 3 (E)



Height reference plane		: 0.00 m
Average illuminance	Em	: 77 lx
Minimum illuminance	Emin	: 43 lx
Maximum illuminance	Emax	: 109 lx
Uniformity Uo	Emin/Em	: 1 : 1.80 (0.56)
Diversity Ud	Emin/Emax	: 1 : 2.53 (0.39)

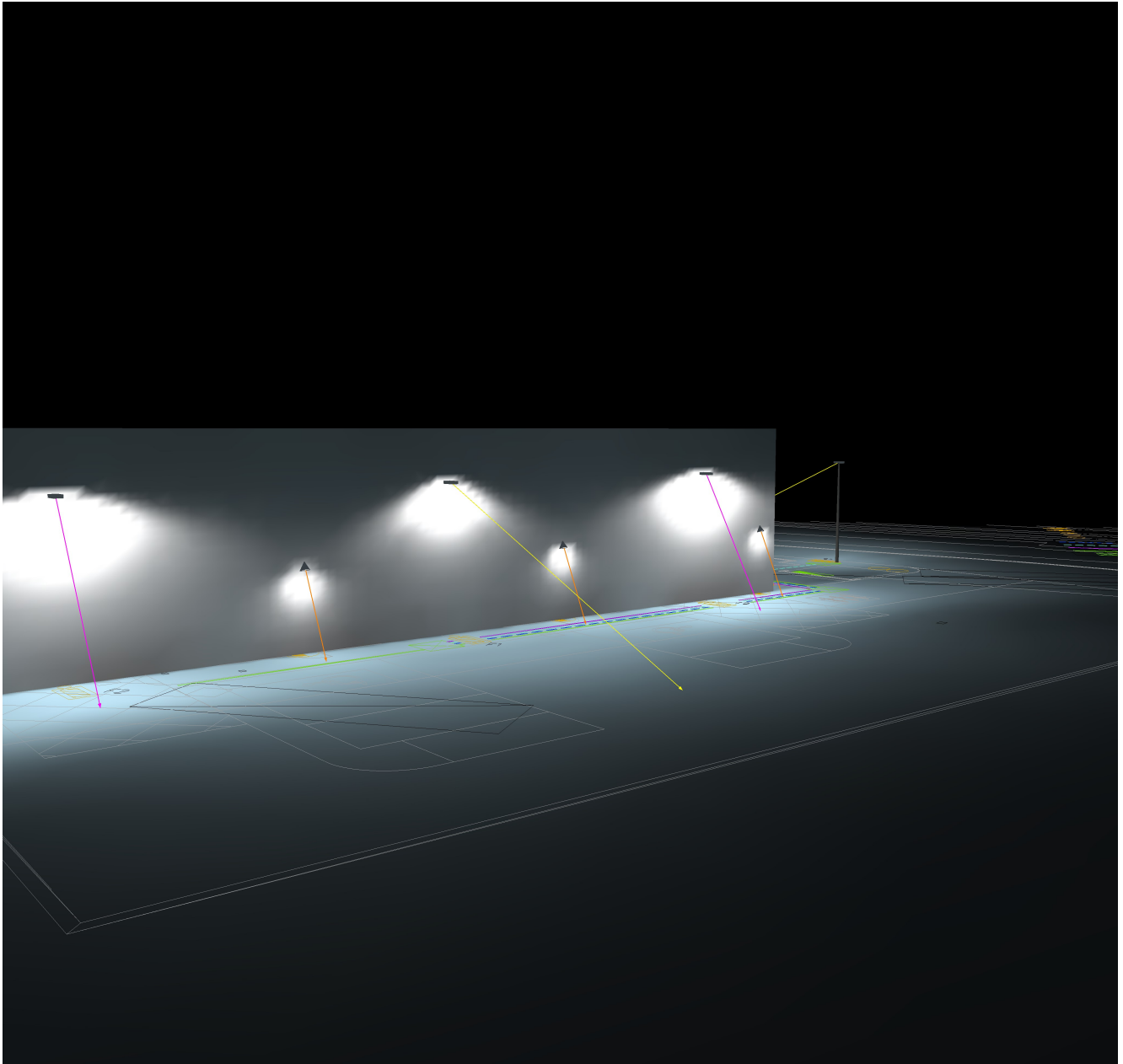
2.3 Calculation results, Exterior 1

2.3.8 3D luminance, View 1



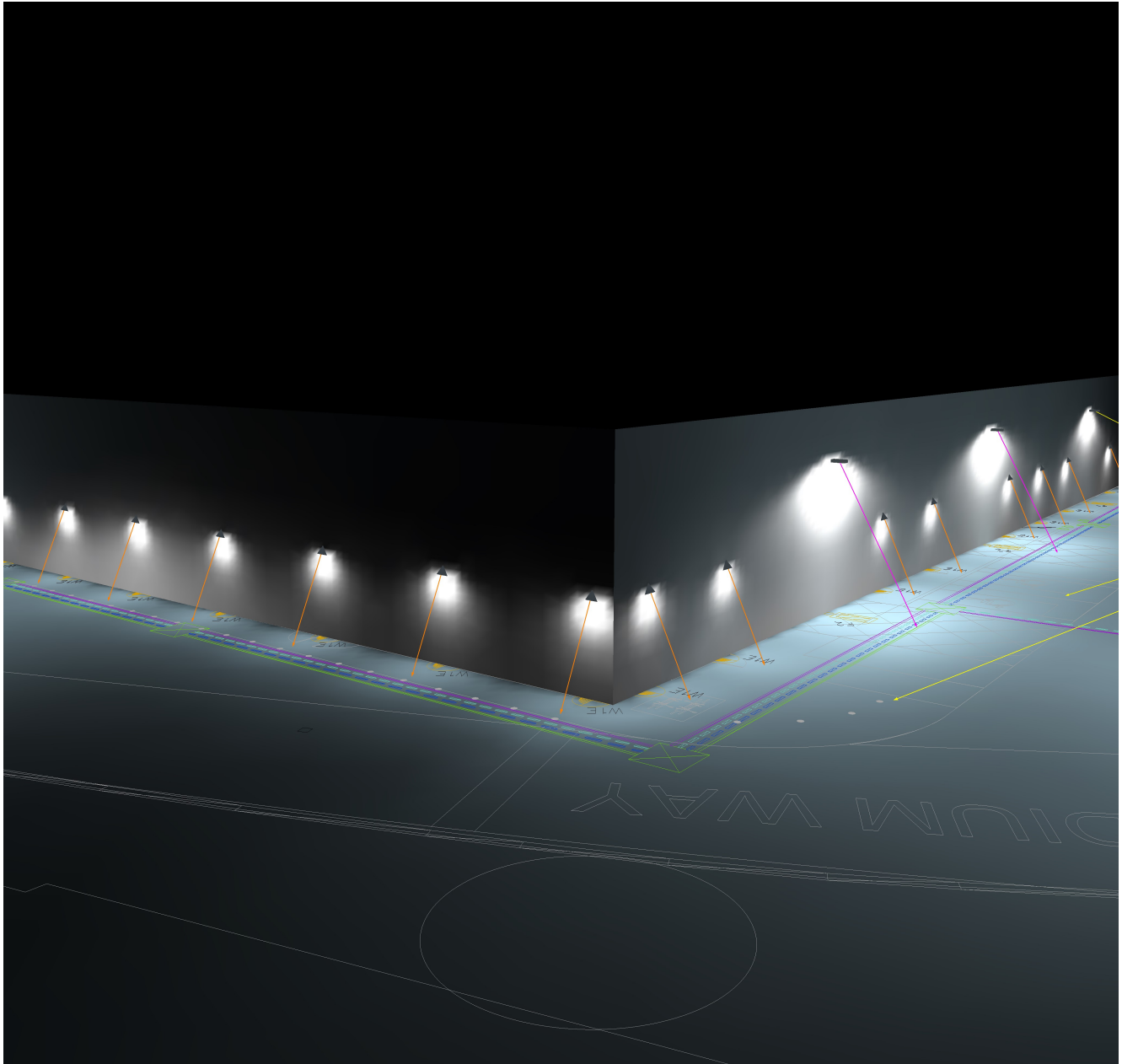
2.3 Calculation results, Exterior 1

2.3.9 3D luminance, View 2



2.3 Calculation results, Exterior 1

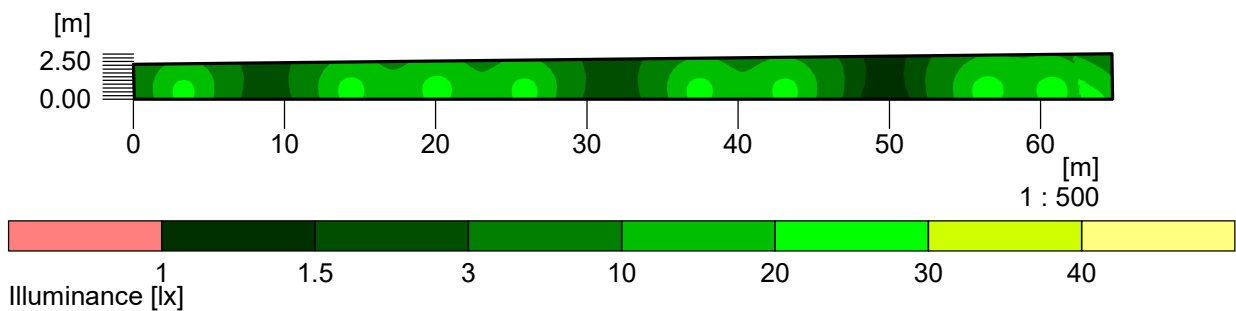
2.3.10 3D luminance, View 3



2 Exterior 1

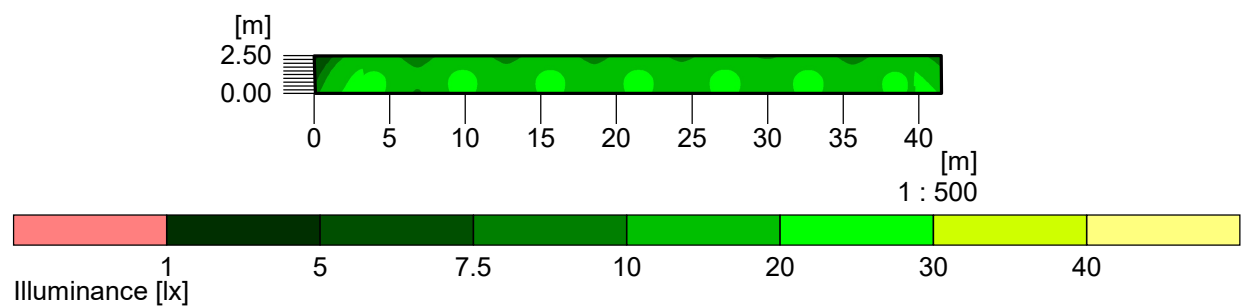
2.4 Calculation results, Exterior 1

2.4.1 Boundary line, Perimeter Area 1 Emergency (E)



Required minimum illuminance		: 1 lx
Minimum illuminance	Emin	: 1 lx
Maximum illuminance	Emax	: 29 lx
Diversity	Emin/Emax	: 1 : 29.90 (0.03) (Threshold value 1:40)
Height		: 0 m
Calculation algorithm used		: Direct component
Maintenance factor		: 0.8

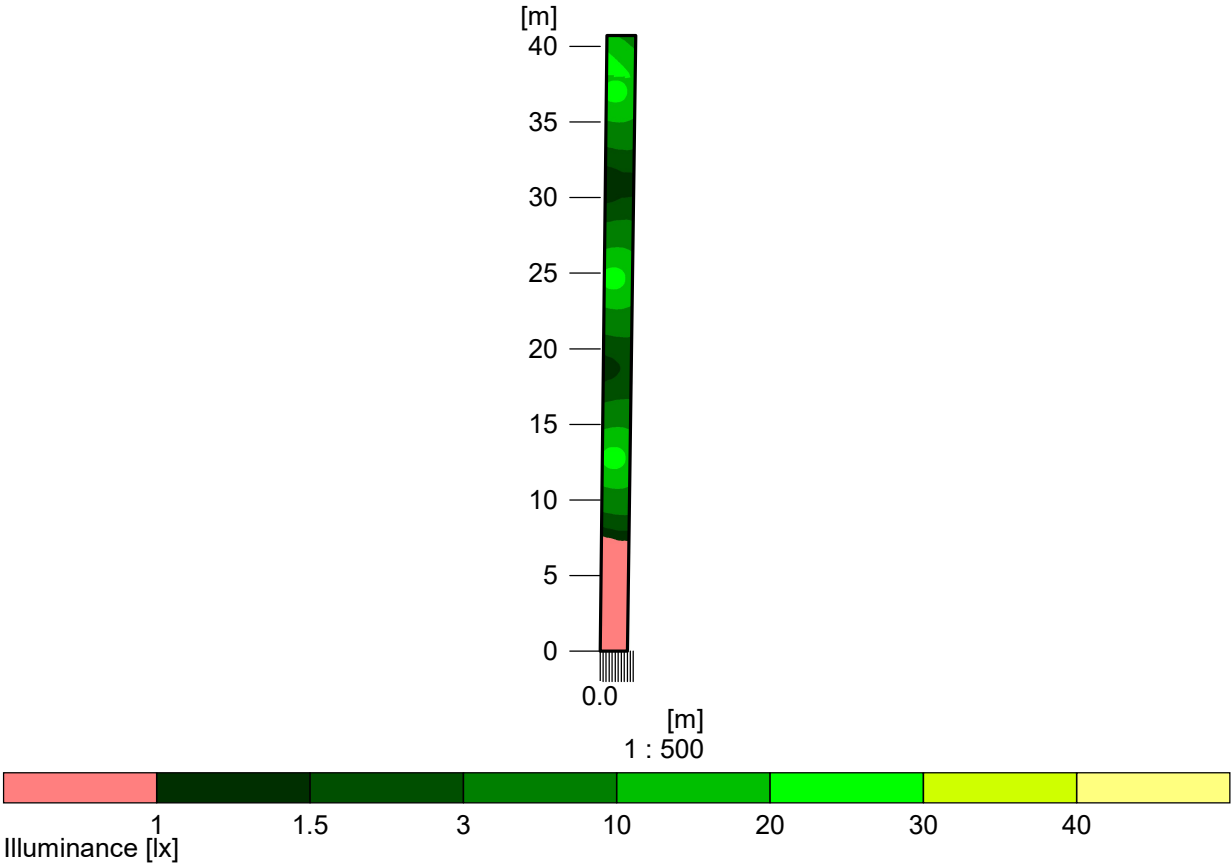
2.4 Calculation results, Exterior 1
2.4.2 Boundary line, Perimeter Area 2 Emergency (E)



Required minimum illuminance		: 1 lx
Minimum illuminance	Emin	: 4.3 lx
Maximum illuminance	Emax	: 29 lx
Diversity	Emin/Emax	: 1 : 6.86 (0.15) (Threshold value 1:40)
Height		: 0 m
Calculation algorithm used		: Direct component
Maintenance factor		: 0.8

2.4 Calculation results, Exterior 1

2.4.3 Boundary line, Perimeter Area 3 Emergency (E)



Required minimum illuminance		: 1 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 30 lx
Diversity	Emin/Emax	: 1 : 1010.00 (0.00) (Threshold value 1:40)
Height		: 0 m
Calculation algorithm used		: Direct component
Maintenance factor		: 0.8

Object : Exterior Lighting
 Installation : Reading Stadium Trade and Business Park
 Project number :
 Date : 28.03.2022



2.4 Summary, Exterior 1

2.4.4 Result overview (emergency lighting)

Type No.\Make

3	18	Whitecroft Lighting	
		Order No.	: SPXAH14K
		Luminaire name	: SPECTRE WX
		Equipment	: 1 x LED 9 W / 704 lm

Result evaluation area

Calculation algorithm used: Direct component
 Maintenance factor: 0.8

Emergency area:

No.	Default[lx]	Emin[lx]	Surface Emax[lx]	Diversity	Height
Perimeter Area 1 Emergency					
5	1.0	1.0	29.2	1: 29.89	0.00
Perimeter Area 2 Emergency					
6	1.0	4.3	29.3	1: 6.86	0.00
Perimeter Area 3 Emergency					
7	1.0	0.0	29.5	1:1008.29	0.00