

R+ - Reading - Entry Canopy

Installation :

Project number : 0512533
Customer : Essex Group
Processed by :
Date : 05.01.2023

Project description:
Revision with all luminaires

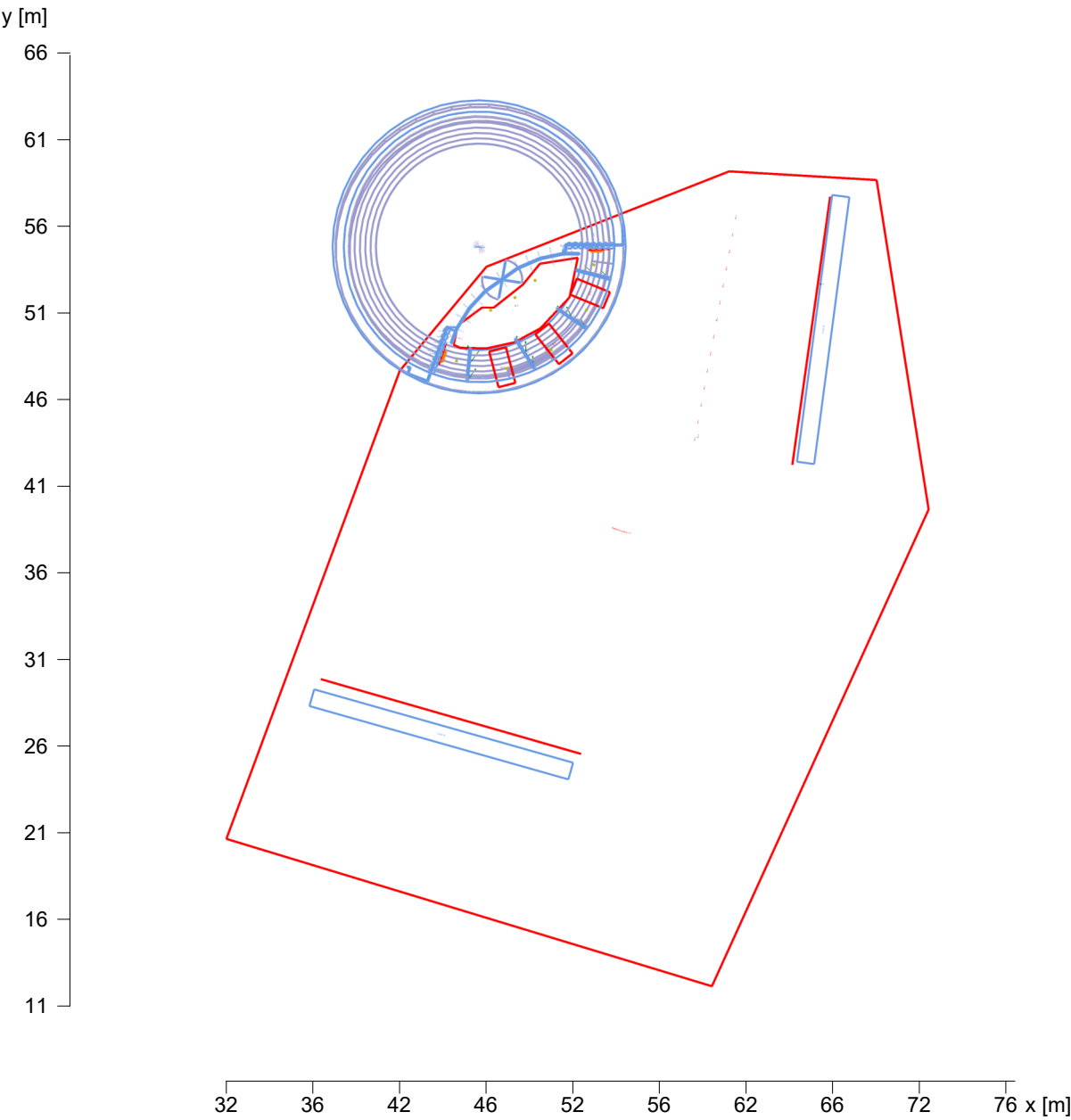
The following values are based on precise calculations performed on calibrated lamps and luminaires, and their configurations, whereby gradual, unavoidable deviations can occur in practice. All guarantee claims are excluded for the specified data.

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

Exterior 1

Description, Exterior 1

Floor plan

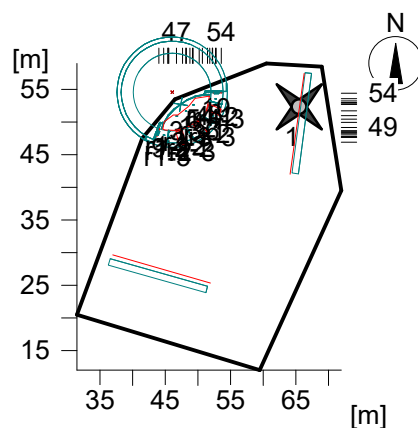


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Exterior 1

Calculation results, Exterior 1

Luminous intensity - I(p) 1



Measuring point for luminous intensity: I(p) 1

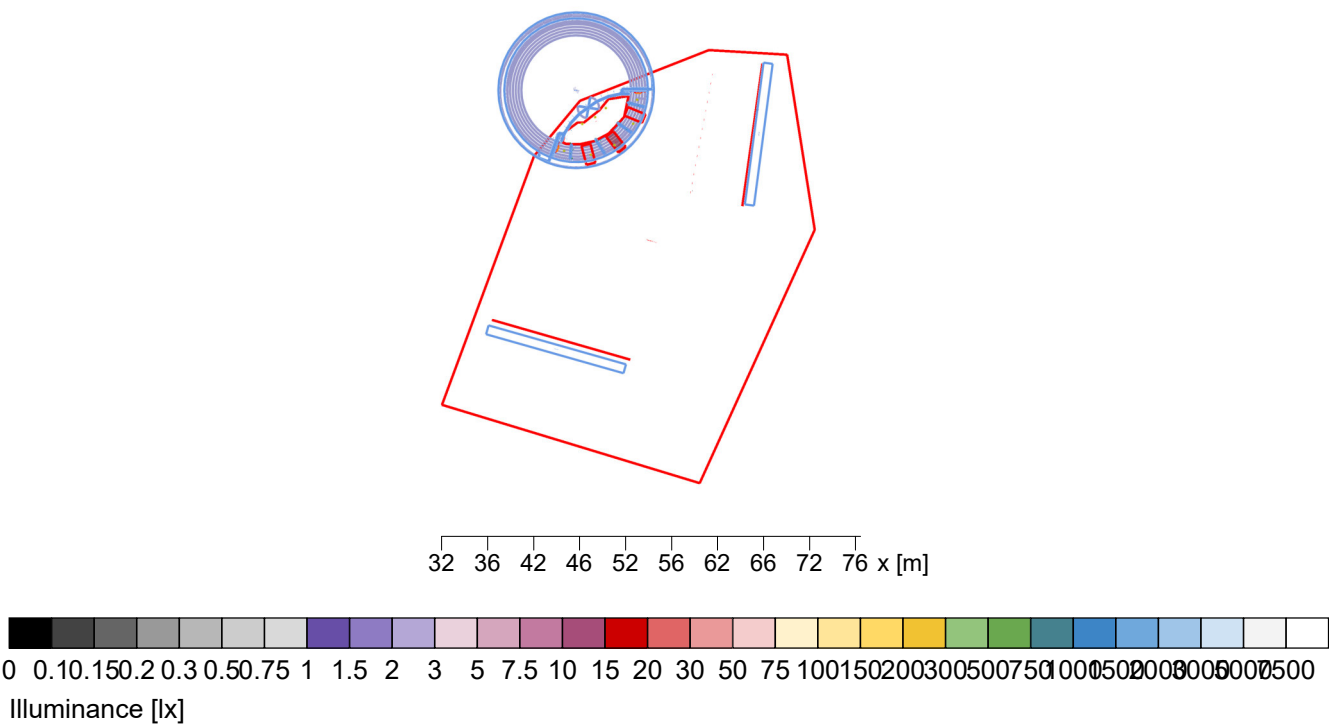
Position : x = 65.58 m, y = 52.31 m, z = -0.00 m

No.	Luminaire	Position			Lumin. intensity I[kcd]
		x[m]	y[m]	z[m]	
1	, PUCK ZERO 30?	45.54	48.59	2.22	0.000
2	, PUCK ZERO 30?	45.47	47.83	1.83	0.000
3	, PUCK ZERO 30?	45.39	46.93	1.36	0.000
4	, PUCK ZERO 30?	48.79	48.41	1.88	0.000
5	, PUCK ZERO 30?	48.26	49.20	2.24	0.000
6	, PUCK ZERO 30?	49.20	47.71	1.54	0.000
7	DEEP RINGO X 93033, 19434 9320	44.77	48.07	7.70	0.000
8	DEEP RINGO X 93033, 19434 9320	52.70	53.61	7.70	0.000
9	DEEP RINGO X 93033, 19434 9320	49.30	52.71	7.70	0.000
10	MI/CIELO, MI/CIELO	52.83	54.42	1.55	0.000
11	DEEP RINGO X 93033, 19434 9320	47.68	47.64	7.70	0.000
12	DEEP RINGO X 93033, 19434 9320	48.14	51.72	7.70	0.000
13	DEEP RINGO X 93033, 19434 9320	46.74	50.99	7.70	0.000
14	DEEP RINGO X 93033, 19434 9320	50.23	48.70	7.70	0.000
15	DEEP RINGO X 93033, 19434 9320	52.27	51.01	7.70	0.000
16	MI/CIELO, MI/CIELO	44.02	48.32	1.50	0.000
17	, PUCK ZERO 30?	51.47	50.47	1.90	0.000
18	, PUCK ZERO 30?	52.21	49.96	1.54	0.000
19	, PUCK ZERO 30?	50.72	50.99	2.23	0.000
20	, PUCK ZERO 30?	52.73	53.02	1.89	0.000
21	, PUCK ZERO 30?	53.60	52.79	1.56	0.000
22	, PUCK ZERO 30?	51.84	53.27	2.23	0.000

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Summary, Exterior 1

Result overview, Measuring area 1



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux	10000 lm
Total power	100.8 W
Total power per area (1249.50 m²)	0.08 W/m²
Upward light ratio (ULR)	0.05

Illuminance

Average illuminance	Em	32 lx
Minimum illuminance	Emin	21.1 lx
Maximum illuminance	Emax	39.8 lx
Uniformity Uo	Emin/Em	1:1.52 (0.66)
Diversity Ud	Emin/Emax	1:1.89 (0.53)

Type No.Make

8 12 x **Optaled**
Order No. : PUCK ZERO 30?
Luminaire name :
Equipment : 1 x 1.4 W / 92 lm

4 8 x **Delta Light**
Order No. : 19434 9320
Luminaire name : DEEP RINGO X 93033
Equipment : 1 x LED ARRAY BR-V8H-G7 3000K-cri90-350mA 7 W / 812 lm

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

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Summary, Exterior 1

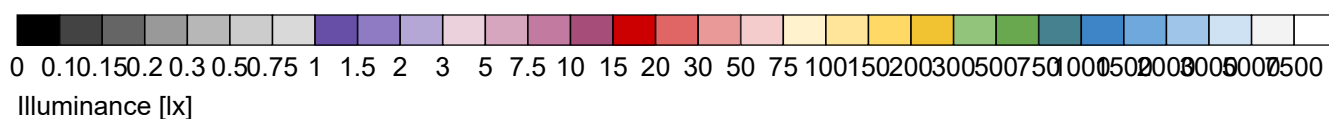
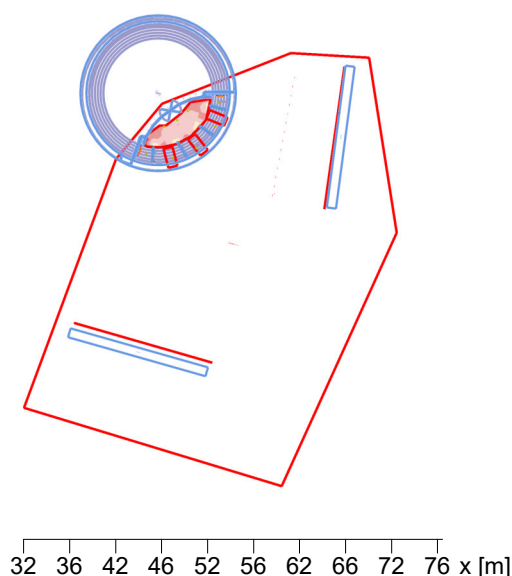
Result overview, Measuring area 1

		Marlow Integrated Designs Ltd.	
6	2 x	Order No.	: MI/CIELO
		Luminaire name	: MI/CIELO
		Equipment	: 1 x LED 14 W / 1200 lm

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Summary, Exterior 1

Result overview, Measuring area 2



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	1.55 m
Maintenance factor	0.80
Total luminous flux	10000 lm
Total power	100.8 W
Total power per area (1249.50 m²)	0.08 W/m²
Upward light ratio (ULR)	0.05

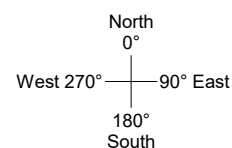
Illuminance

Average illuminance	Em	54.9 lx
Minimum illuminance	Emin	26 lx
Maximum illuminance	Emax	83.7 lx
Uniformity Uo	Emin/Em	1:2.12 (0.47)
Diversity Ud	Emin/Emax	1:3.23 (0.31)

Observer TI

Lm = 4.37 cd/m², Ehav(MF:1.0) = 68.7 lx, ρ = 20 %

No.	Description	Position	Max TI	Direction
1	TI 1	58.5 m/43.5 m/1.5 m	0	10° (-1°)



Type No. Make

8	12 x	Optaled	
		Order No.	: PUCK ZERO 30?
		Luminaire name	:
		Equipment	: 1 x 1.4 W / 92 lm

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Summary, Exterior 1

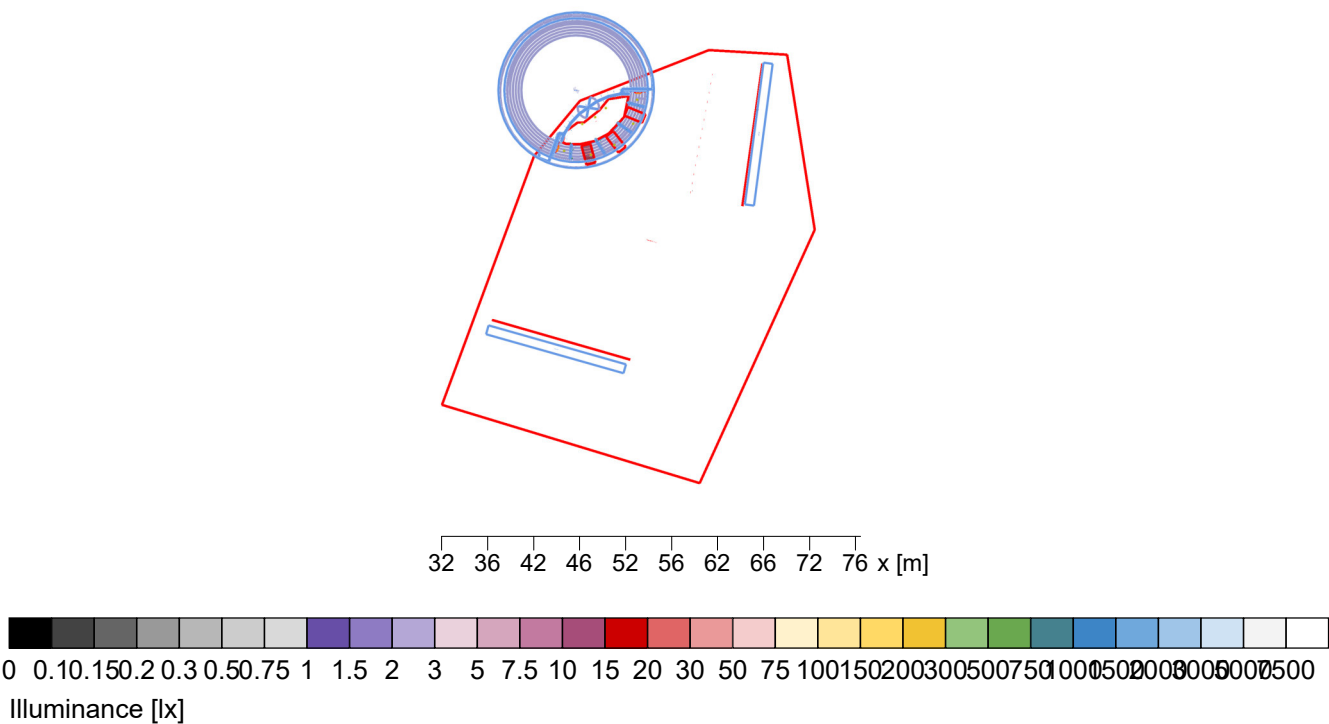
Result overview, Measuring area 2

		Delta Light	
4	8 x	Order No.	: 19434 9320
		Luminaire name	: DEEP RINGO X 93033
		Equipment	: 1 x LED ARRAY BR-V8H-G7 3000K-cri90-350mA 7 W / 812 lm
		Marlow Integrated Designs Ltd.	
6	2 x	Order No.	: MI/CIELO
		Luminaire name	: MI/CIELO
		Equipment	: 1 x LED 14 W / 1200 lm

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Summary, Exterior 1

Result overview, Measuring area 3



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux	10000 lm
Total power	100.8 W
Total power per area (1249.50 m²)	0.08 W/m²
Upward light ratio (ULR)	0.05

Illuminance

Average illuminance	Em	30.4 lx
Minimum illuminance	Emin	19.6 lx
Maximum illuminance	Emax	43.3 lx
Uniformity Uo	Emin/Em	1:1.55 (0.64)
Diversity Ud	Emin/Emax	1:2.21 (0.45)

Type No.Make

8	12 x	Optaled
	Order No.	: PUCK ZERO 30?
	Luminaire name	:
	Equipment	: 1 x 1.4 W / 92 lm

4	8 x	Delta Light
	Order No.	: 19434 9320
	Luminaire name	: DEEP RINGO X 93033
	Equipment	: 1 x LED ARRAY BR-V8H-G7 3000K-cri90-350mA 7 W / 812 lm

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Summary, Exterior 1

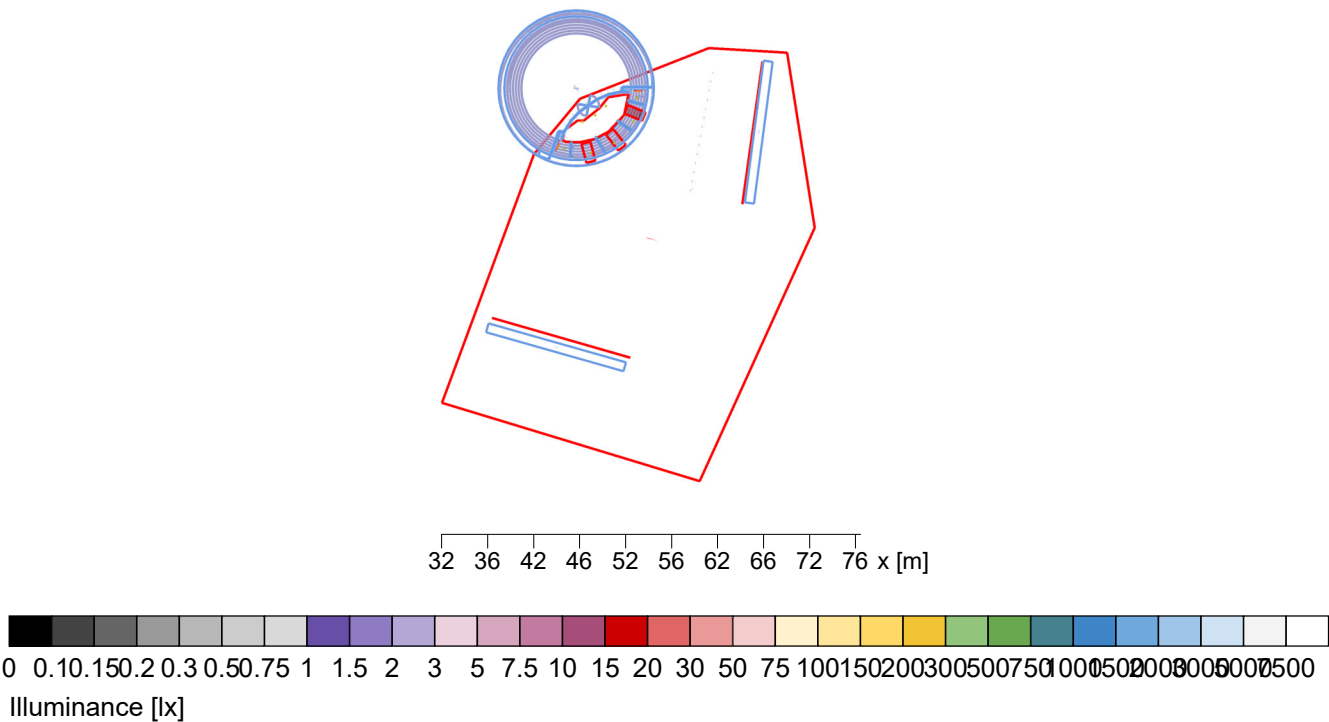
Result overview, Measuring area 3

		Marlow Integrated Designs Ltd.	
6	2 x	Order No.	: MI/CIELO
		Luminaire name	: MI/CIELO
		Equipment	: 1 x LED 14 W / 1200 lm

Object : R+ - Reading - Entry Canopy
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Project number : 0512533
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Summary, Exterior 1

Result overview, Measuring area 4



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux	10000 lm
Total power	100.8 W
Total power per area (1249.50 m²)	0.08 W/m²
Upward light ratio (ULR)	0.05

Illuminance

Average illuminance	Em	34.6 lx
Minimum illuminance	Emin	22.9 lx
Maximum illuminance	Emax	60.1 lx
Uniformity Uo	Emin/Em	1:1.51 (0.66)
Diversity Ud	Emin/Emax	1:2.63 (0.38)

Type No.Make

8 12 x **Optaled**
Order No. : PUCK ZERO 30?
Luminaire name :
Equipment : 1 x 1.4 W / 92 lm

4 8 x **Delta Light**
Order No. : 19434 9320
Luminaire name : DEEP RINGO X 93033
Equipment : 1 x LED ARRAY BR-V8H-G7 3000K-cri90-350mA 7 W / 812 lm

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

Object : R+ - Reading - Entry Canopy
Installation :
Project number : 0512533
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Summary, Exterior 1

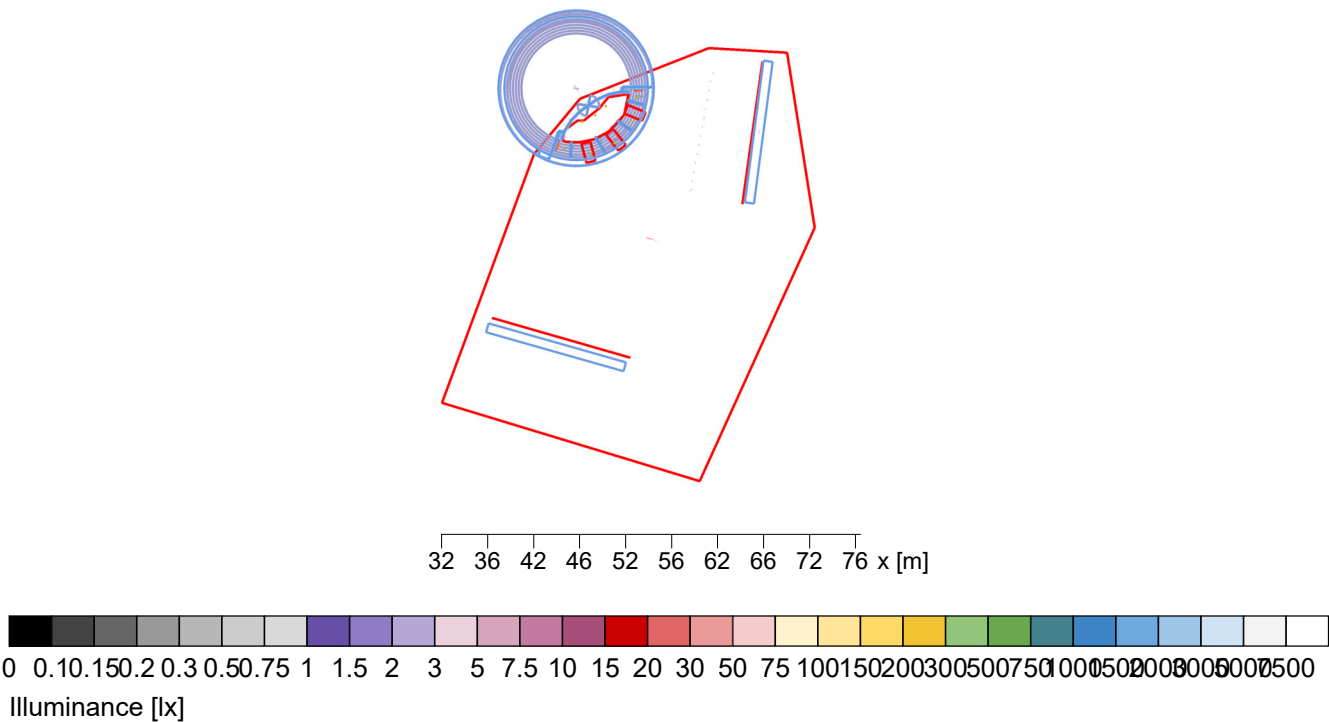
Result overview, Measuring area 4

		Marlow Integrated Designs Ltd.	
6	2 x	Order No.	: MI/CIELO
		Luminaire name	: MI/CIELO
		Equipment	: 1 x LED 14 W / 1200 lm

Object : R+ - Reading - Entry Canopy
Installation :
Project number : 0512533
Date : 05.01.2023

Summary, Exterior 1

Result overview, Measuring area 5



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux	10000 lm
Total power	100.8 W
Total power per area (1249.50 m²)	0.08 W/m²
Upward light ratio (ULR)	0.05

Illuminance

Average illuminance	Em	13.4 lx
Minimum illuminance	Emin	11.1 lx
Maximum illuminance	Emax	15.6 lx
Uniformity Uo	Emin/Em	1:1.21 (0.83)
Diversity Ud	Emin/Emax	1:1.41 (0.71)

Type No.Make

8	12 x	Optaled
	Order No.	: PUCK ZERO 30?
	Luminaire name	:
	Equipment	: 1 x 1.4 W / 92 lm

4	8 x	Delta Light
	Order No.	: 19434 9320
	Luminaire name	: DEEP RINGO X 93033
	Equipment	: 1 x LED ARRAY BR-V8H-G7 3000K-cri90-350mA 7 W / 812 lm

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

Object : R+ - Reading - Entry Canopy
Installation :
Project number : 0512533
Date : 05.01.2023

Summary, Exterior 1

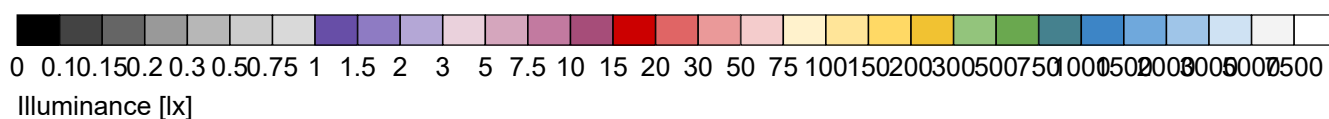
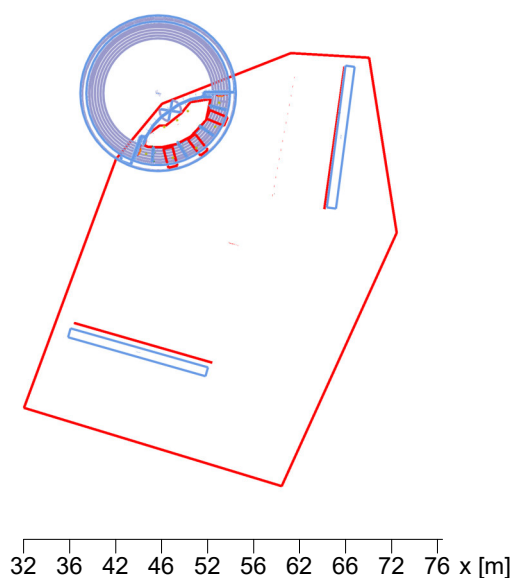
Result overview, Measuring area 5

		Marlow Integrated Designs Ltd.	
6	2 x	Order No.	: MI/CIELO
		Luminaire name	: MI/CIELO
		Equipment	: 1 x LED 14 W / 1200 lm

Object : R+ - Reading - Entry Canopy
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Summary, Exterior 1

Result overview, Measuring area 6



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux	10000 lm
Total power	100.8 W
Total power per area (1249.50 m²)	0.08 W/m²
Upward light ratio (ULR)	0.05

Illuminance

Average illuminance	Em	12.6 lx
Minimum illuminance	Emin	9.6 lx
Maximum illuminance	Emax	15 lx
Uniformity Uo	Emin/Em	1:1.31 (0.76)
Diversity Ud	Emin/Emax	1:1.56 (0.64)

Type No. Make

8	12 x	Optaled
	Order No.	: PUCK ZERO 30?
	Luminaire name	:
	Equipment	: 1 x 1.4 W / 92 lm

4	8 x	Delta Light
	Order No.	: 19434 9320
	Luminaire name	: DEEP RINGO X 93033
	Equipment	: 1 x LED ARRAY BR-V8H-G7 3000K-cri90-350mA 7 W / 812 lm

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

Object : R+ - Reading - Entry Canopy
Installation :
Project number : 0512533
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Summary, Exterior 1

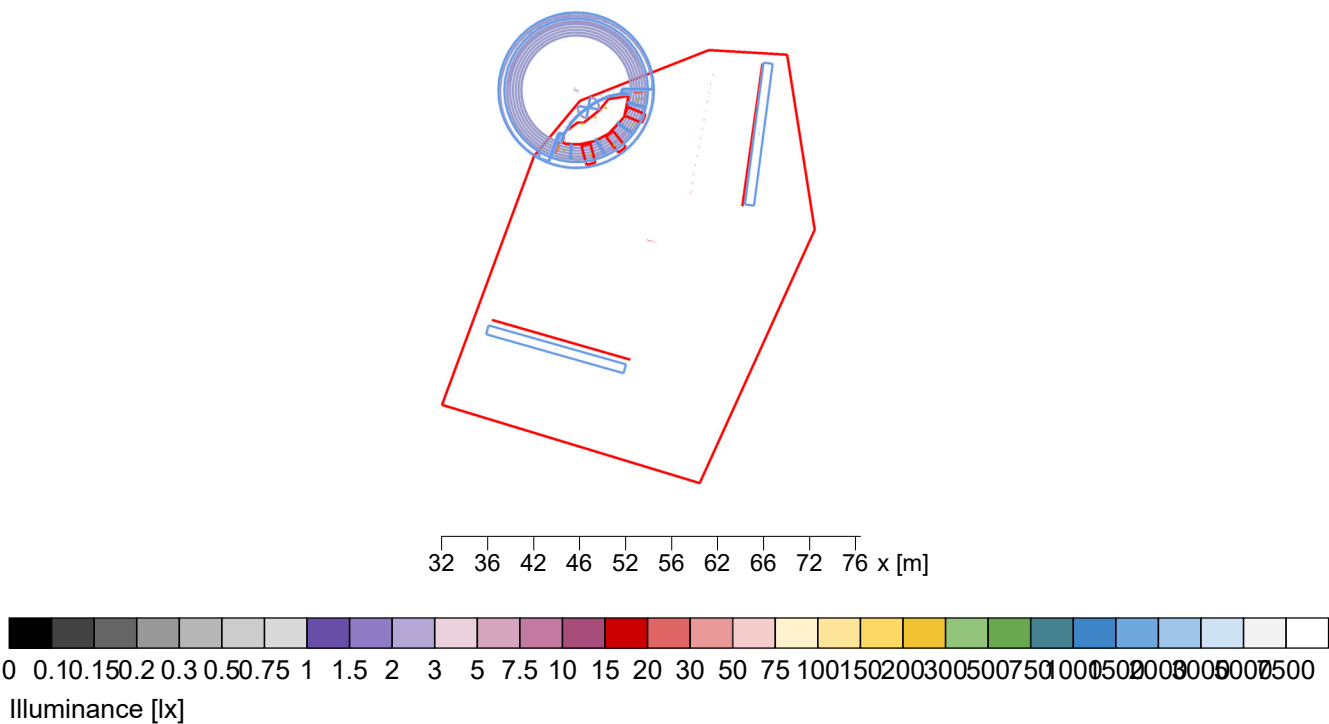
Result overview, Measuring area 6

		Marlow Integrated Designs Ltd.	
6	2 x	Order No.	: MI/CIELO
		Luminaire name	: MI/CIELO
		Equipment	: 1 x LED 14 W / 1200 lm

Object : R+ - Reading - Entry Canopy
Installation :
Project number : 0512533
Date : 05.01.2023

Summary, Exterior 1

Result overview, Measuring area 7



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux	10000 lm
Total power	100.8 W
Total power per area (1249.50 m²)	0.08 W/m²
Upward light ratio (ULR)	0.05

Illuminance

Average illuminance	Em	0.24 lx
Minimum illuminance	Emin	0.1 lx
Maximum illuminance	Emax	0.36 lx
Uniformity Uo	Emin/Em	1:2.4 (0.42)
Diversity Ud	Emin/Emax	1:3.66 (0.27)

Type No.Make

8	12 x	Optaled
	Order No.	: PUCK ZERO 30?
	Luminaire name	:
	Equipment	: 1 x 1.4 W / 92 lm

4	8 x	Delta Light
	Order No.	: 19434 9320
	Luminaire name	: DEEP RINGO X 93033
	Equipment	: 1 x LED ARRAY BR-V8H-G7 3000K-cri90-350mA 7 W / 812 lm

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

Object : R+ - Reading - Entry Canopy
Installation :
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Summary, Exterior 1

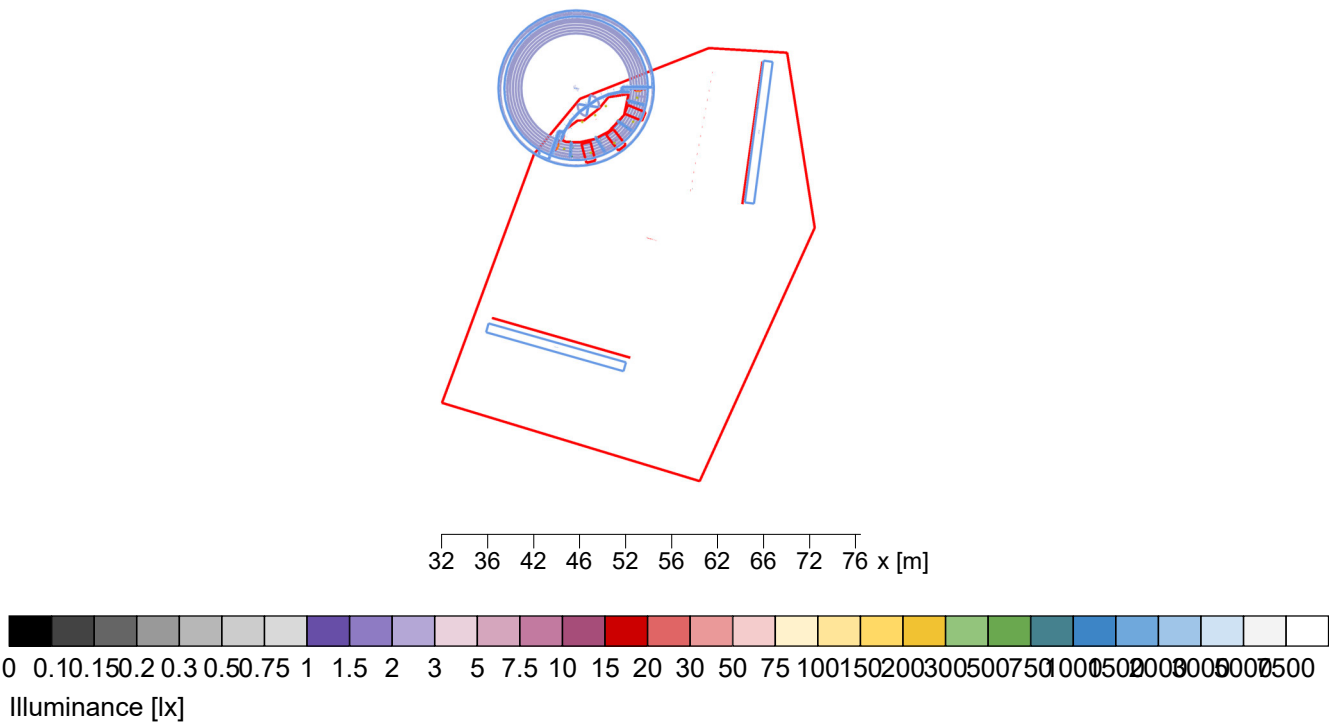
Result overview, Measuring area 7

		Marlow Integrated Designs Ltd.	
6	2 x	Order No.	: MI/CIELO
		Luminaire name	: MI/CIELO
		Equipment	: 1 x LED 14 W / 1200 lm

Object : R+ - Reading - Entry Canopy
Installation :
Project number : 0512533
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Summary, Exterior 1

Result overview, Measuring area 8



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux	10000 lm
Total power	100.8 W
Total power per area (1249.50 m²)	0.08 W/m²
Upward light ratio (ULR)	0.05

Illuminance

Average illuminance	Em	0.51 lx
Minimum illuminance	Emin	0.11 lx
Maximum illuminance	Emax	0.87 lx
Uniformity Uo	Emin/Em	1:4.75 (0.21)
Diversity Ud	Emin/Emax	1:8.12 (0.12)

Type No.Make

8	12 x	Optaled
	Order No.	: PUCK ZERO 30?
	Luminaire name	:
	Equipment	: 1 x 1.4 W / 92 lm

4	8 x	Delta Light
	Order No.	: 19434 9320
	Luminaire name	: DEEP RINGO X 93033
	Equipment	: 1 x LED ARRAY BR-V8H-G7 3000K-cri90-350mA 7 W / 812 lm

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Object : R+ - Reading - Entry Canopy
Installation :
Project number : 0512533
Date : 05.01.2023

Summary, Exterior 1

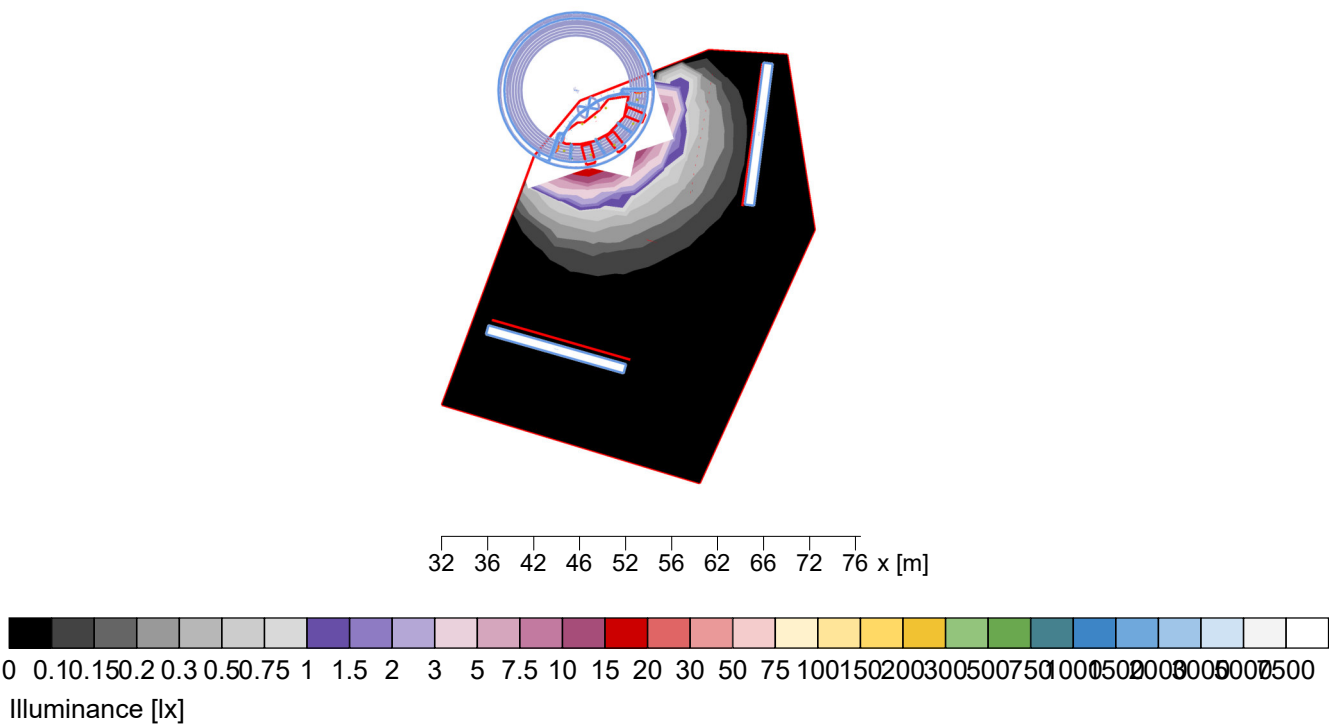
Result overview, Measuring area 8

		Marlow Integrated Designs Ltd.	
6	2 x	Order No.	: MI/CIELO
		Luminaire name	: MI/CIELO
		Equipment	: 1 x LED 14 W / 1200 lm

Object : R+ - Reading - Entry Canopy
Installation :
Project number : 0512533
Date : 05.01.2023

Summary, Exterior 1

Result overview, Evaluation area 1



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux	10000.00 lm
Total power	100.8 W
Total power per area (1249.50 m²)	0.08 W/m² (26.35 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

	Horizontal
Em	0.31 lx
Emin	0 lx
Emin/Em (Uo)	---
Emin/Emax (Ud)	---
Upward light ratio (ULR)	0.05
Position	0.00 m

Type No. Make

8	12 x	Optaled
		Order No. : PUCK ZERO 30?
		Luminaire name :
		Equipment : 1 x 1.4 W / 92 lm

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Summary, Exterior 1

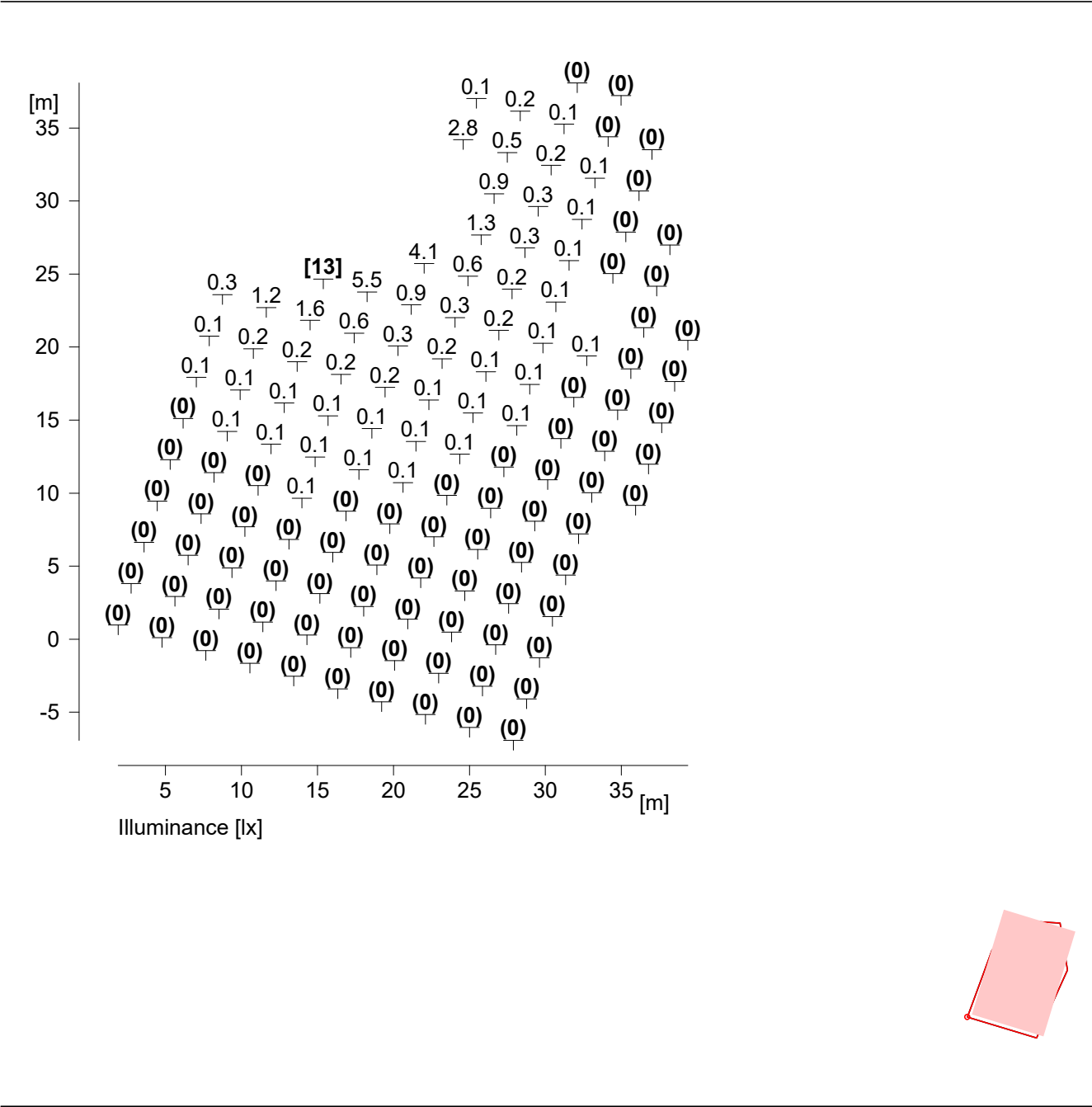
Result overview, Evaluation area 1

4	8 x		Delta Light	
			Order No.	: 19434 9320
			Luminaire name	: DEEP RINGO X 93033
			Equipment	: 1 x LED ARRAY BR-V8H-G7 3000K-cri90-350mA 7 W / 812 lm
6	2 x		Marlow Integrated Designs Ltd.	
			Order No.	: MI/CIELO
			Luminaire name	: MI/CIELO
			Equipment	: 1 x LED 14 W / 1200 lm

Exterior 1

Calculation results, Exterior 1

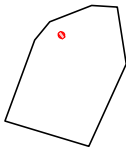
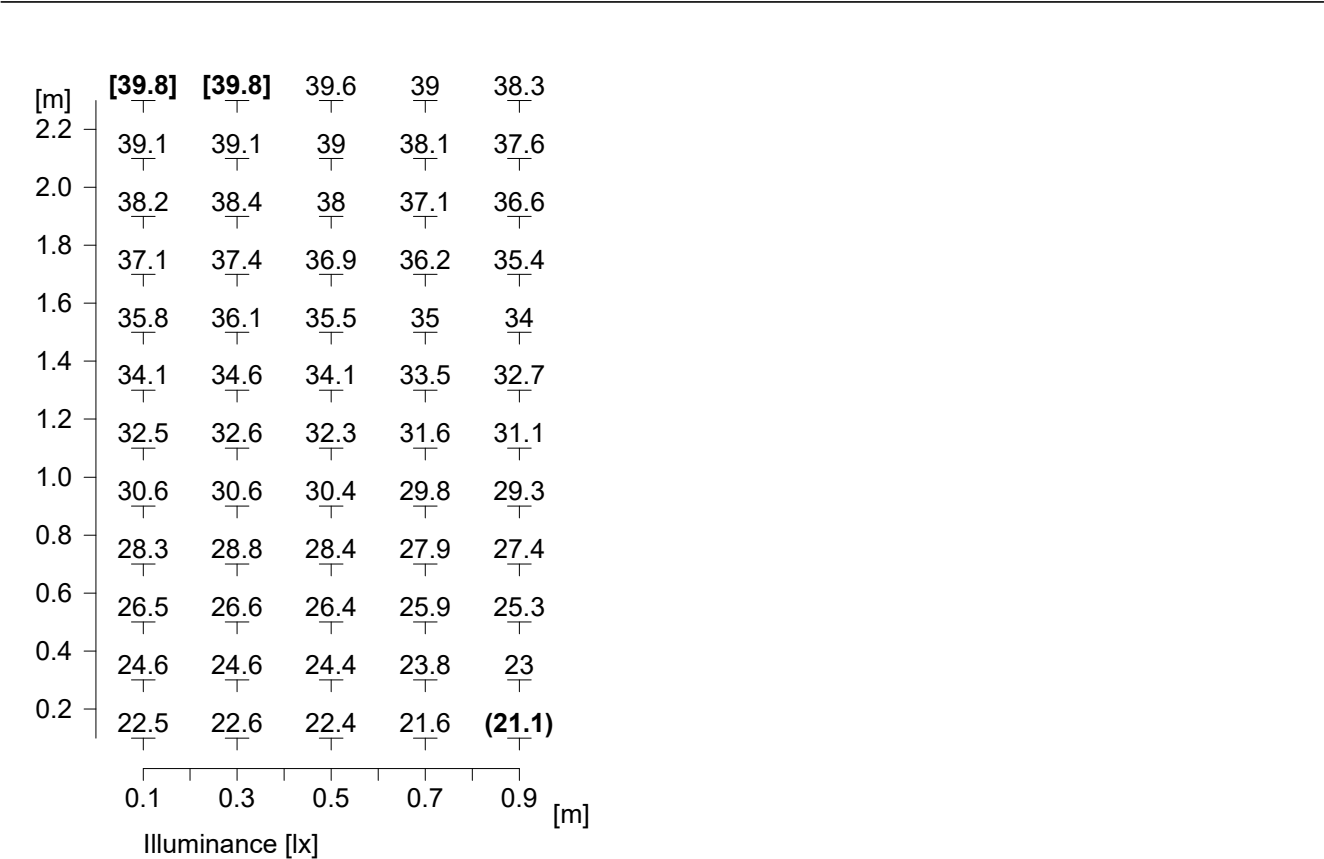
Table, Reference plane 1.1 (E)



Height reference plane		: 0.00 m
Average illuminance	Em	: 0.3 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 13 lx
Uniformity Uo	Emin/Em	: ---
Diversity Ud	Emin/Emax	: ---

Calculation results, Exterior 1

Table, Measuring area 1 (E)

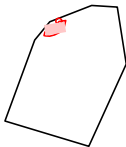
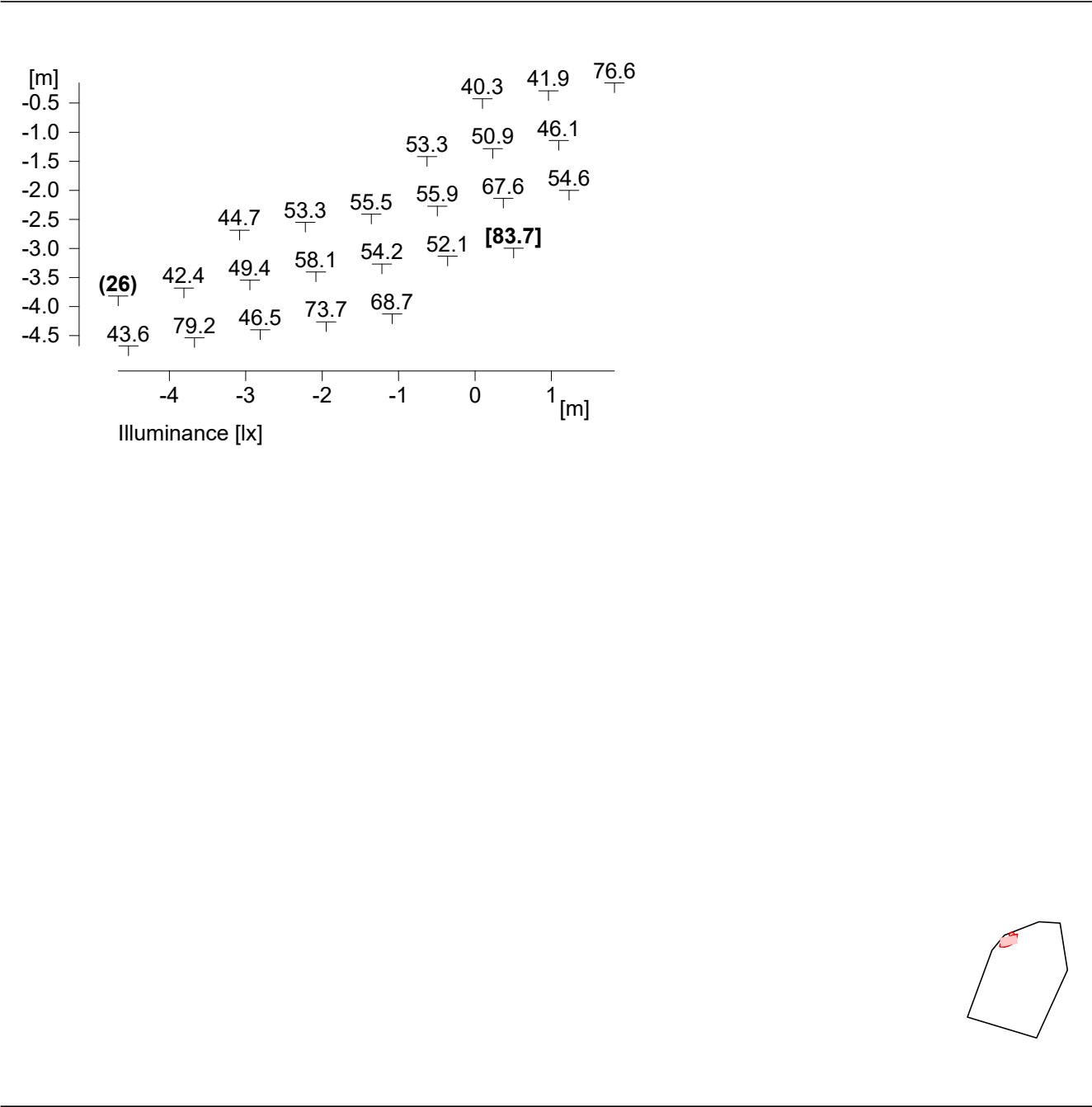


Average illuminance	Em	: 32 lx
Minimum illuminance	Emin	: 21.1 lx
Maximum illuminance	Emax	: 39.8 lx
Uniformity Uo	Emin/Em	: 1 : 1.52 (0.66)
Diversity Ud	Emin/Emax	: 1 : 1.89 (0.53)

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Calculation results, Exterior 1

Table, Measuring area 2 (E)

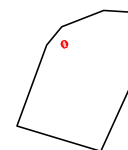
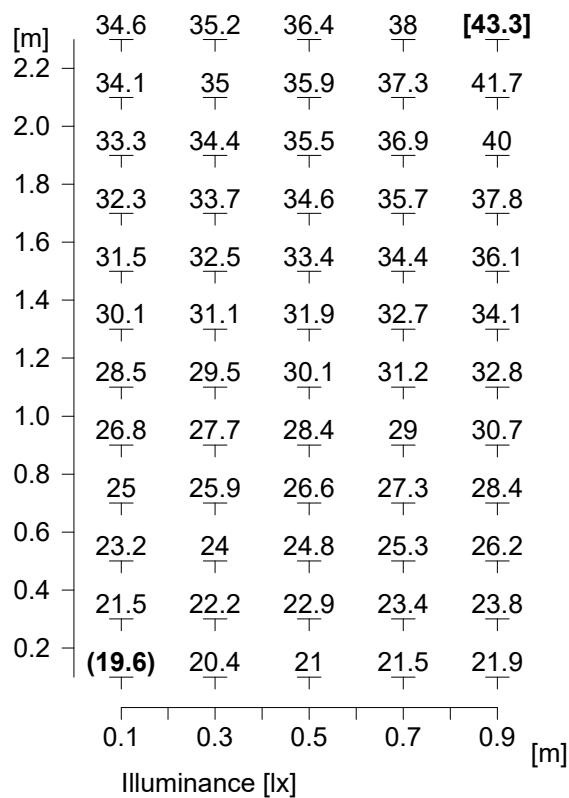


Height reference plane	: 1.55 m
Average illuminance	Em : 54.9 lx
Minimum illuminance	Emin : 26 lx
Maximum illuminance	Emax : 83.7 lx
Uniformity Uo	Emin/Em : 1 : 2.12 (0.47)
Diversity Ud	Emin/Emax : 1 : 3.23 (0.31)

Object : R+ - Reading - Entry Canopy
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Calculation results, Exterior 1

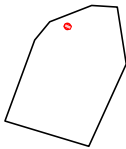
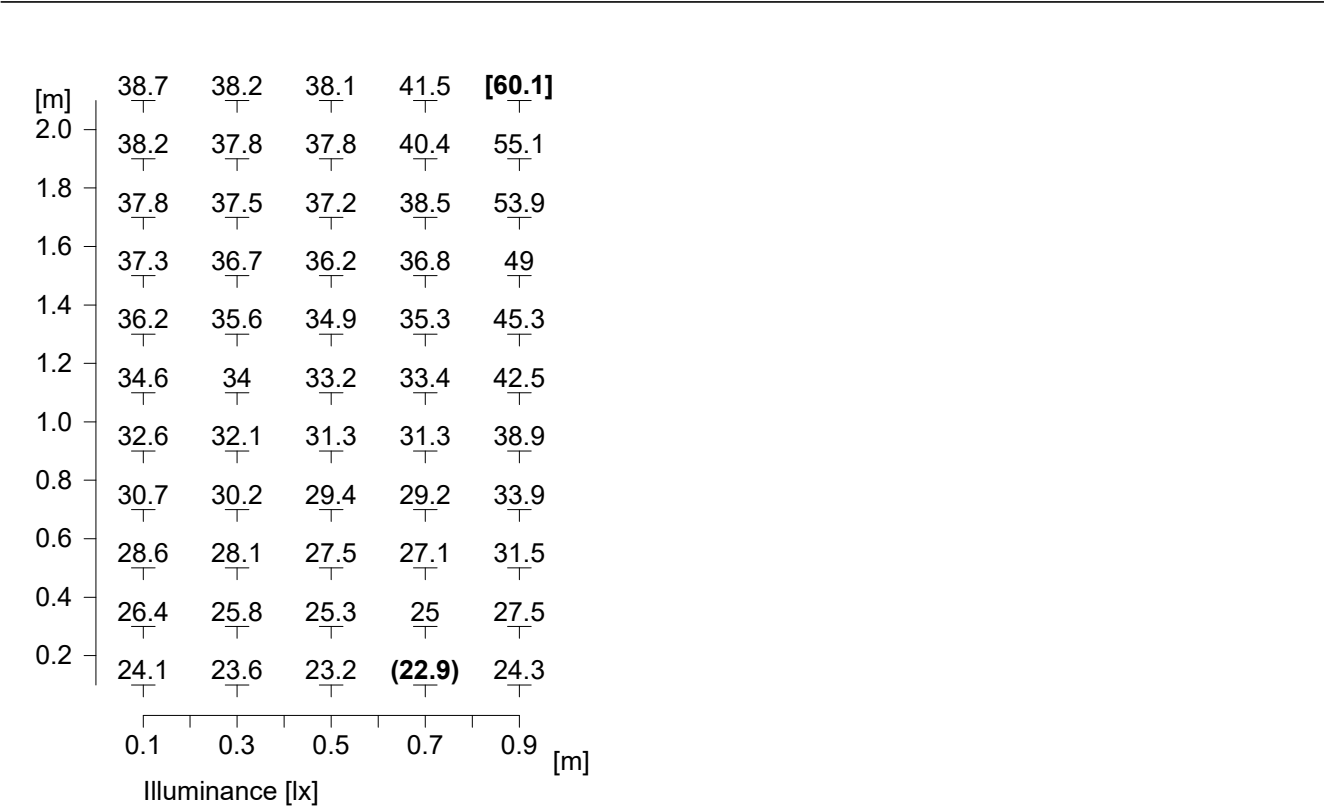
Table, Measuring area 3 (E)



Average illuminance	Em	: 30.4 lx
Minimum illuminance	Emin	: 19.6 lx
Maximum illuminance	Emax	: 43.3 lx
Uniformity Uo	Emin/Em	: 1 : 1.55 (0.64)
Diversity Ud	Emin/Emax	: 1 : 2.21 (0.45)

Calculation results, Exterior 1

Table, Measuring area 4 (E)

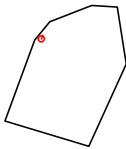
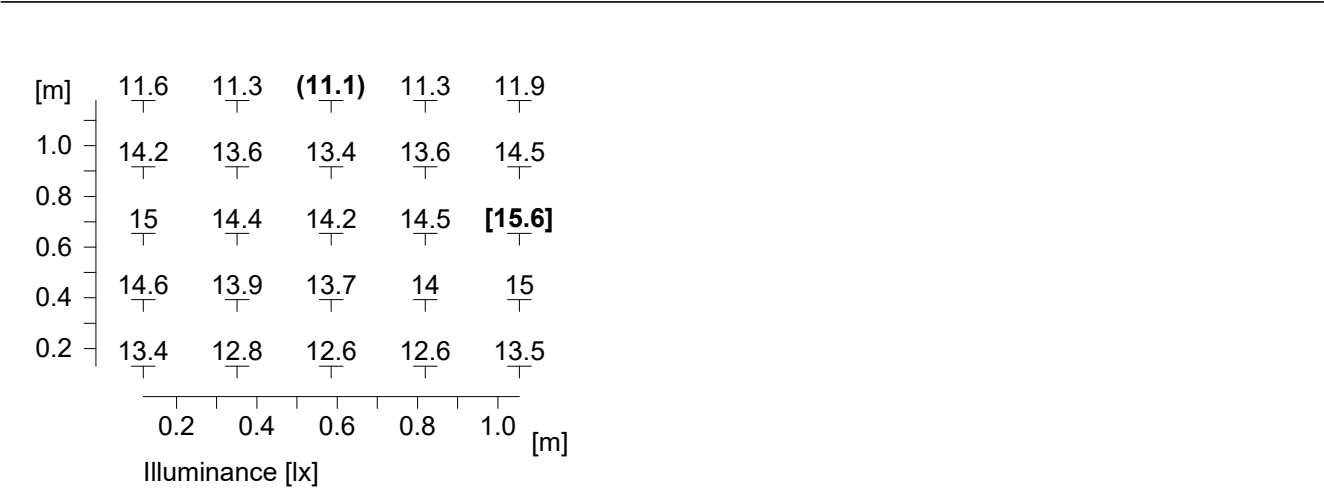


Average illuminance	Em	: 34.6 lx
Minimum illuminance	Emin	: 22.9 lx
Maximum illuminance	Emax	: 60.1 lx
Uniformity Uo	Emin/Em	: 1 : 1.51 (0.66)
Diversity Ud	Emin/Emax	: 1 : 2.63 (0.38)

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Calculation results, Exterior 1

Table, Measuring area 5 (E)

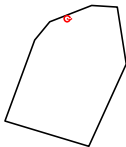
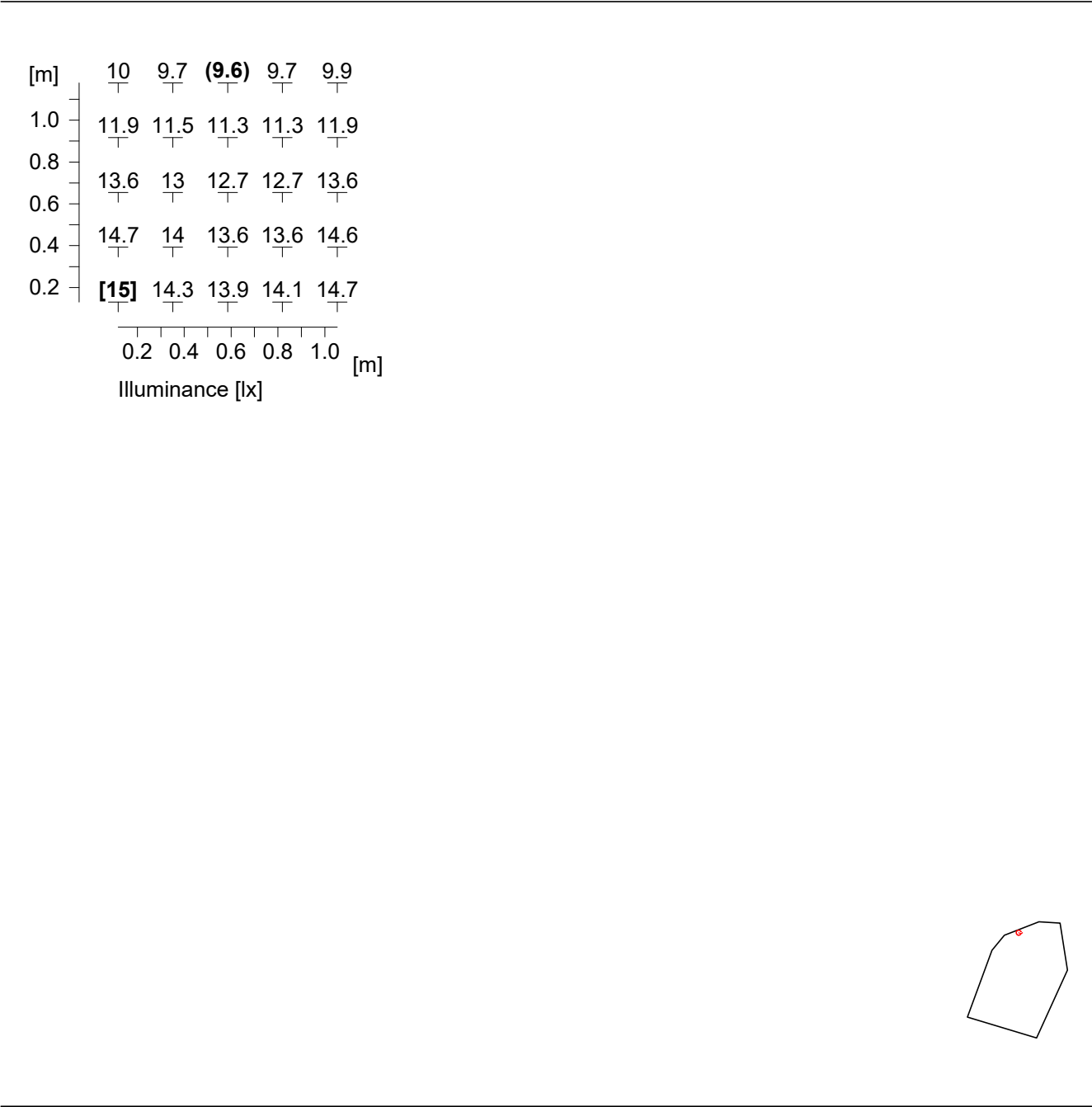


Average illuminance	Em	: 13.4 lx
Minimum illuminance	Emin	: 11.1 lx
Maximum illuminance	Emax	: 15.6 lx
Uniformity Uo	Emin/Em	: 1 : 1.21 (0.83)
Diversity Ud	Emin/Emax	: 1 : 1.41 (0.71)

Object : R+ - Reading - Entry Canopy
Installation :
Project number : 0512533
Date : 05.01.2023

Calculation results, Exterior 1

Table, Measuring area 6 (E)



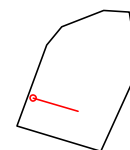
Average illuminance	Em	: 12.6 lx
Minimum illuminance	Emin	: 9.6 lx
Maximum illuminance	Emax	: 15 lx
Uniformity Uo	Emin/Em	: 1 : 1.31 (0.76)
Diversity Ud	Emin/Emax	: 1 : 1.56 (0.64)

Object : R+ - Reading - Entry Canopy
Installation :
Project number : 0512533
Date : 05.01.2023

Calculation results, Exterior 1

Table, Measuring area 7 (E)

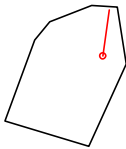
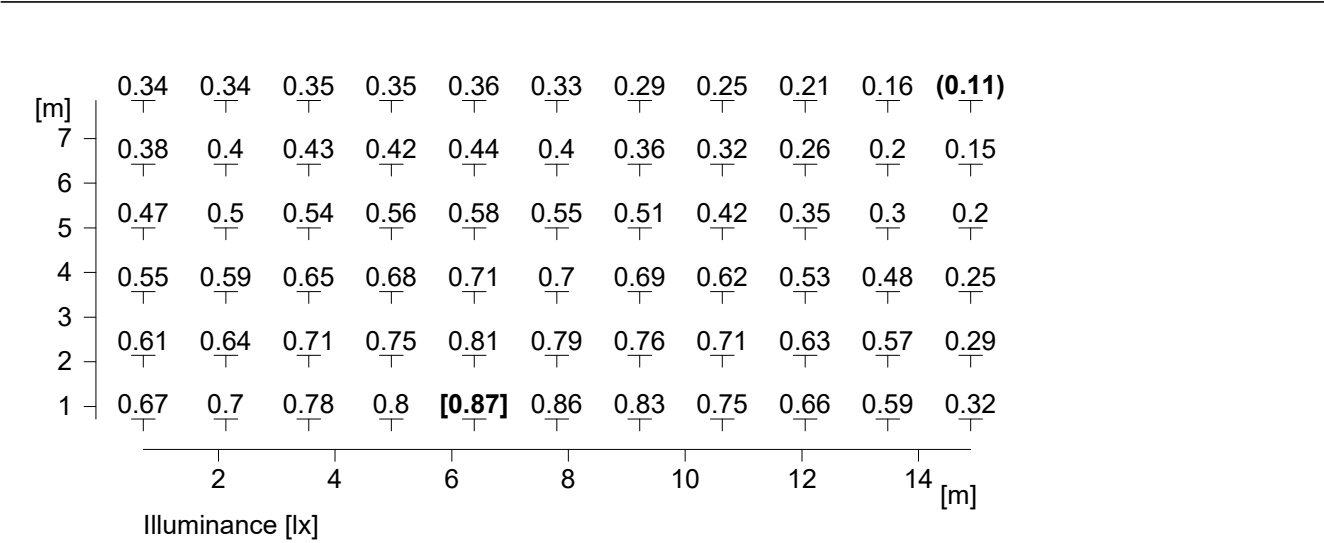
[m]	(0.1)	0.12	0.14	0.15	0.16	0.16	0.17	0.17	0.17	0.17	0.16
7	0.13	0.15	0.16	0.18	0.19	0.2	0.2	0.19	0.2	0.19	0.18
6											
5	0.15	0.18	0.2	0.21	0.23	0.24	0.24	0.23	0.23	0.22	0.21
4	0.19	0.22	0.25	0.27	0.28	0.28	0.26	0.27	0.27	0.26	0.24
3											
2	0.25	0.28	0.29	0.31	0.33	0.33	0.31	0.3	0.3	0.28	0.26
1	0.3	0.31	0.33	0.35	0.35	[0.36]	0.35	0.32	0.32	0.31	0.28
		2	4	6	8	10	12	14	[m]		
Illuminance [lx]											



Average illuminance	Em	: 0.24 lx
Minimum illuminance	Emin	: 0.1 lx
Maximum illuminance	Emax	: 0.36 lx
Uniformity Uo	Emin/Em	: 1 : 2.40 (0.42)
Diversity Ud	Emin/Emax	: 1 : 3.66 (0.27)

Calculation results, Exterior 1

Table, Measuring area 8 (E)

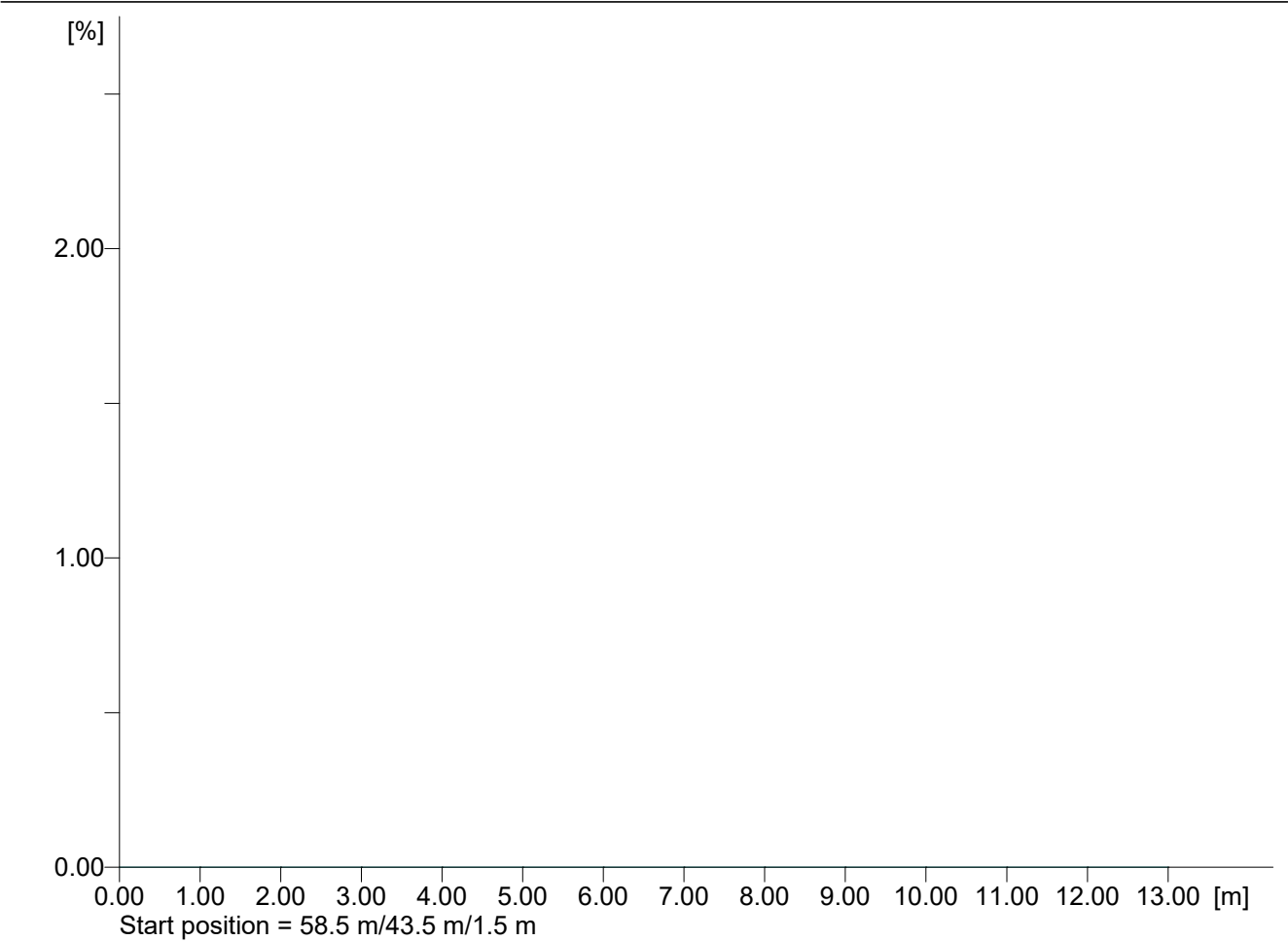


Average illuminance	Em	: 0.51 lx
Minimum illuminance	Emin	: 0.11 lx
Maximum illuminance	Emax	: 0.87 lx
Uniformity Uo	Emin/Em	: 1 : 4.75 (0.21)
Diversity Ud	Emin/Emax	: 1 : 8.12 (0.12)

Object : R+ - Reading - Entry Canopy
Installation :
Project number : 0512533
Date : 05.01.2023

Calculation results, Exterior 1

Intersection representation TI - TI 1



Lm = 4.37 cd/m², Ehav(MF:1.0) = 69 lx, ρ = 20 %

No.	Description	Position	Max TI	Direction	North 0° West 270° — 90° East 180° South
1	TI 1	58.5 m/43.5 m/1.5 m	0	10° (-1°)	