LDL LIGHTING

ADA External

LIGHTING CALCULATIONS

External Lighting

Installation : ADA

Project number	:	
Customer	:	Dragonfly
Processed by	:	SH
Date	:	08.01.2024

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.

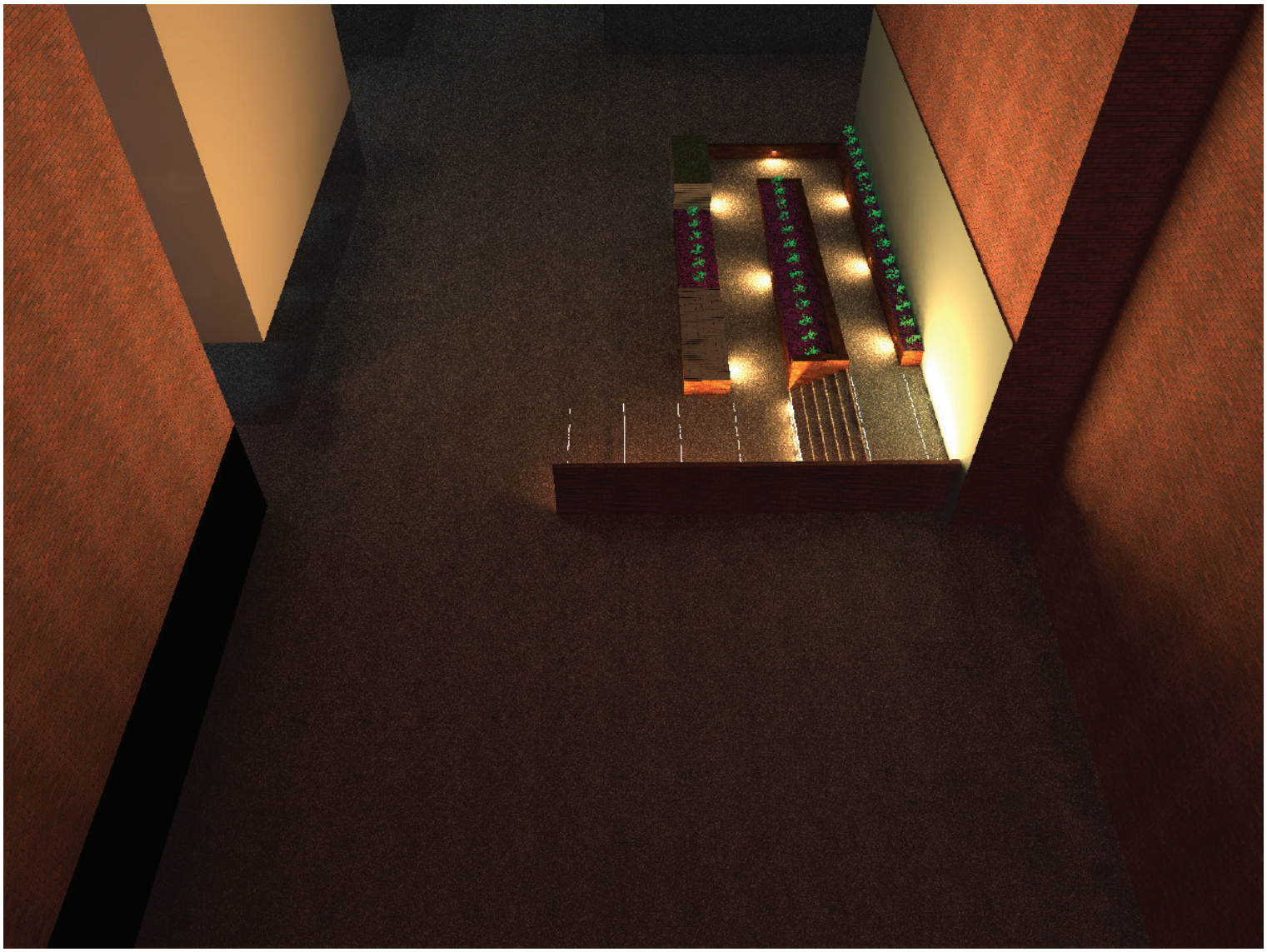
This exclusion of liability applies irrespective of the legal grounds for both damages and consequential damages suffered by users and third parties.

Object : External Lighting
Installation : ADA
Project number :
Date : 08.01.2024

ADA External Lighting

Calculation results, ADA External Lighting

3D luminance (raytracing), Variable view



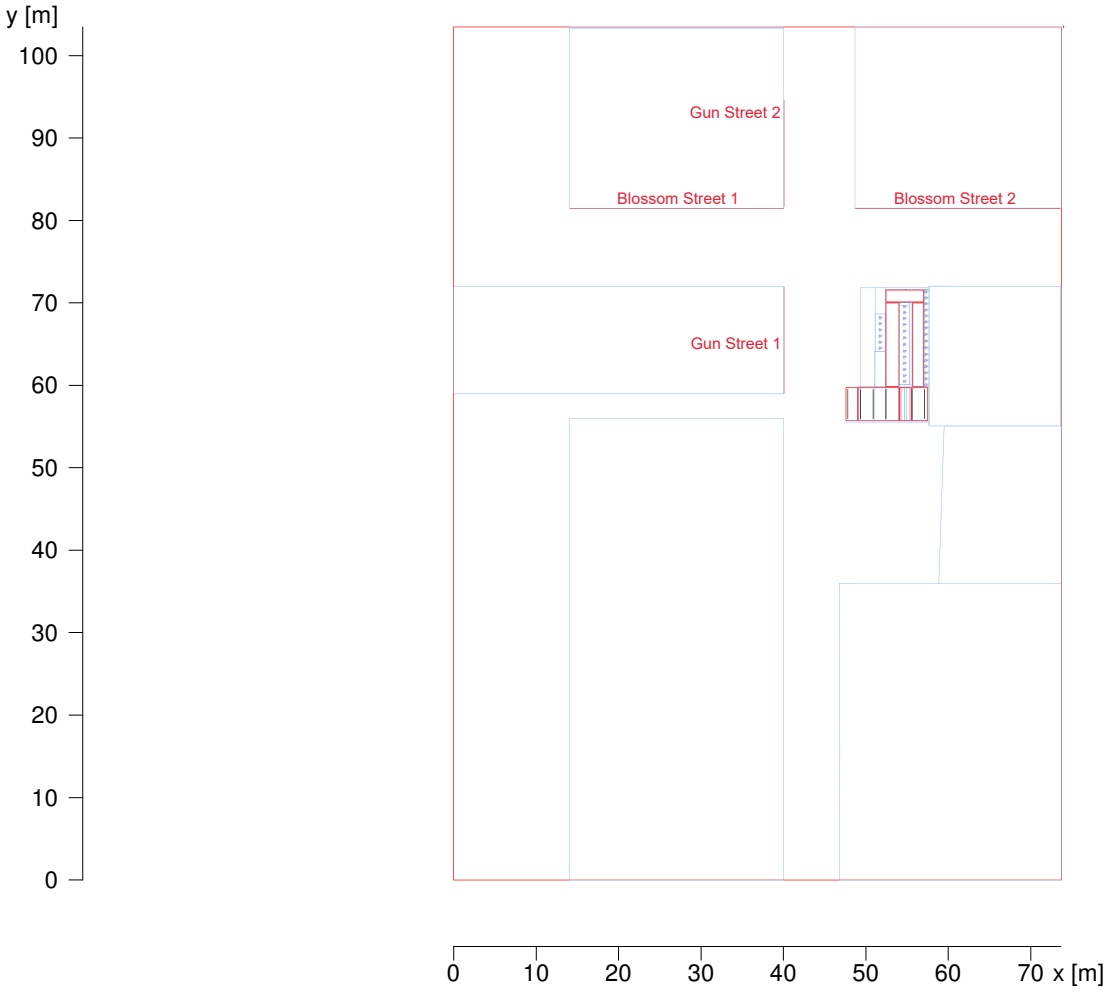
Luminance in the illustration:
Minimum: : 0 cd/m²
Maximum: : 1810 cd/m²

Artificial light calculation : Direct part, with 2 inter-reflections

Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Description, ADA External Lighting

Floor plan

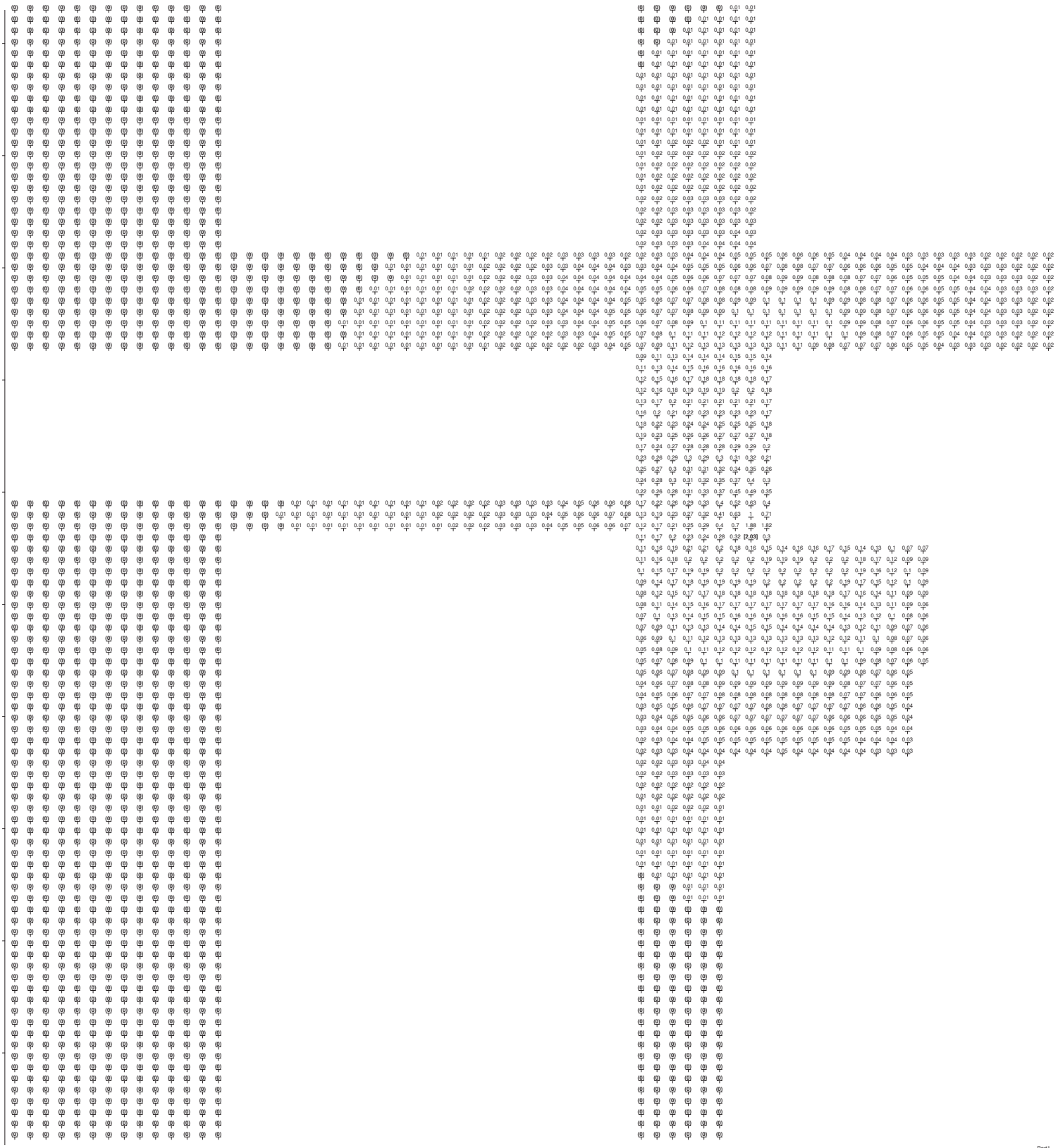


Object : External Lighting
Installation : ADA
Project number :
Date : 08.01.2024

ADA External Lighting

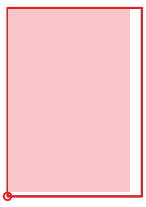
Calculation results, ADA External Lighting

Table, Reference plane 1.1 (E)



Part1

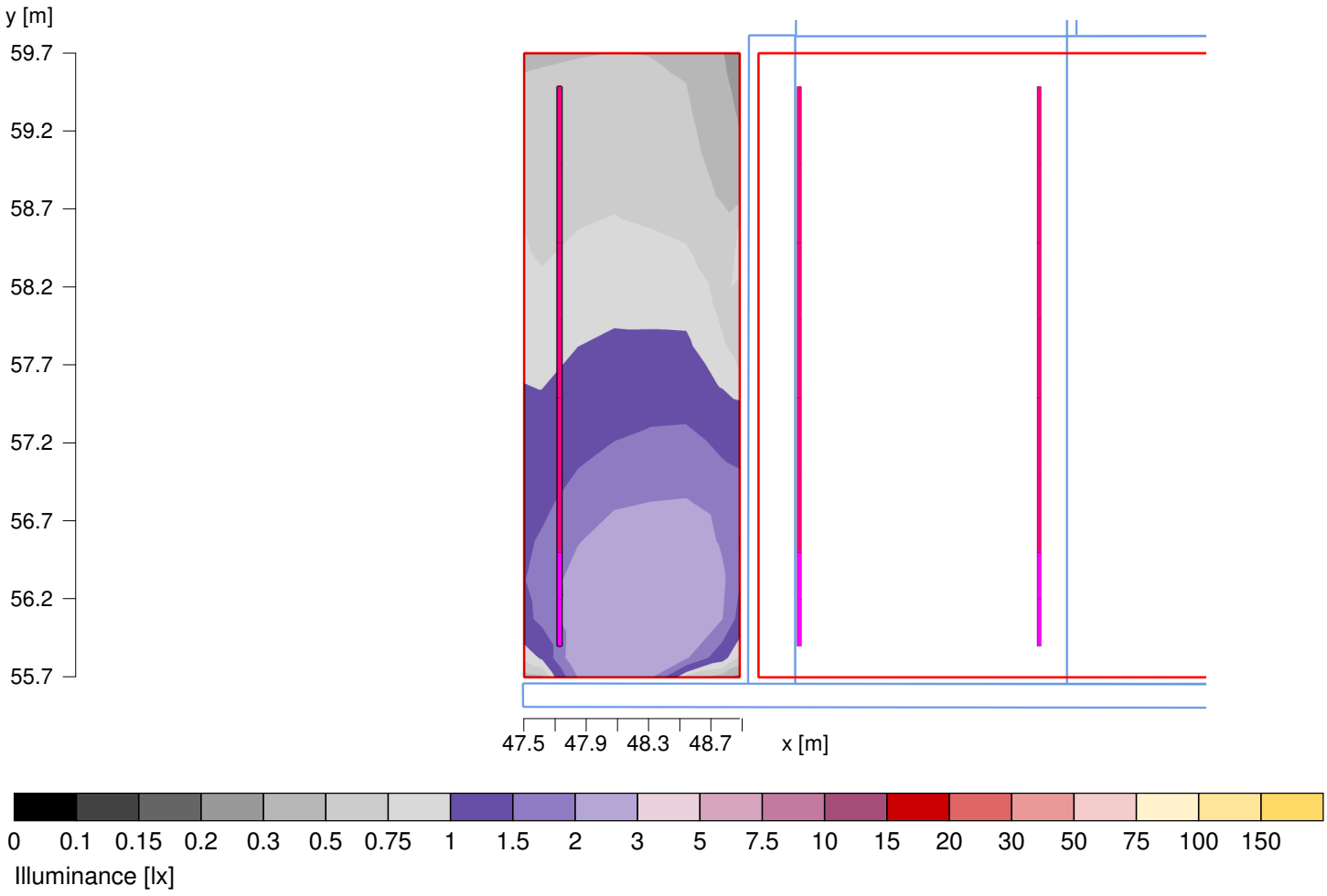
Height reference plane		: 0.00 m
Average illuminance	Em	: 0.04 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 2.03 lx
Uniformity Uo	Emin/Em	: ---
Diversity Ud	Emin/Emax	: ---



Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Pseudo colours, Path 1 (E)



Height reference plane		: 0.00 m
Average illuminance	Em	: 1.27 lx
Minimum illuminance	Emin	: 0.32 lx
Maximum illuminance	Emax	: 2.95 lx
Uniformity Uo	Emin/Em	: 1 : 4.01 (0.25)
Diversity Ud	Emin/Emax	: 1 : 9.31 (0.11)

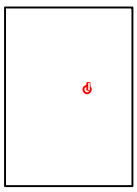
Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Table, Path 1 (E)

[m]						
3.5	0.51	0.53	0.53	0.52	0.49	**(0.32)**
	0.55	0.59	0.6	0.56	0.53	0.35
	0.6	0.64	0.65	0.61	0.58	0.38
	0.64	0.69	0.71	0.67	0.65	0.46
3.0	0.69	0.75	0.77	0.75	0.72	0.59
	0.75	0.82	0.85	0.83	0.8	0.65
	0.82	0.9	0.94	0.93	0.92	0.7
2.5	0.9	1	1.05	1.05	1.05	0.78
	0.99	1.12	1.2	1.23	1.25	0.97
	1.11	1.28	1.39	1.48	1.5	1.35
2.0	1.24	1.47	1.63	1.78	1.69	1.52
	1.39	1.69	1.93	2	2.03	1.81
	1.55	1.97	2.26	2.37	2.4	1.93
1.5	1.66	2.25	2.57	2.68	2.73	2.11
	1.62	2.45	2.87	**[2.95]**	2.87	2.02
	1.05	2.5	2.66	2.75	2.07	1.16
1.0						
0.5						
	0.2	0.4	0.6	0.8	1.0	1.2 [m]

Illuminance [lx]

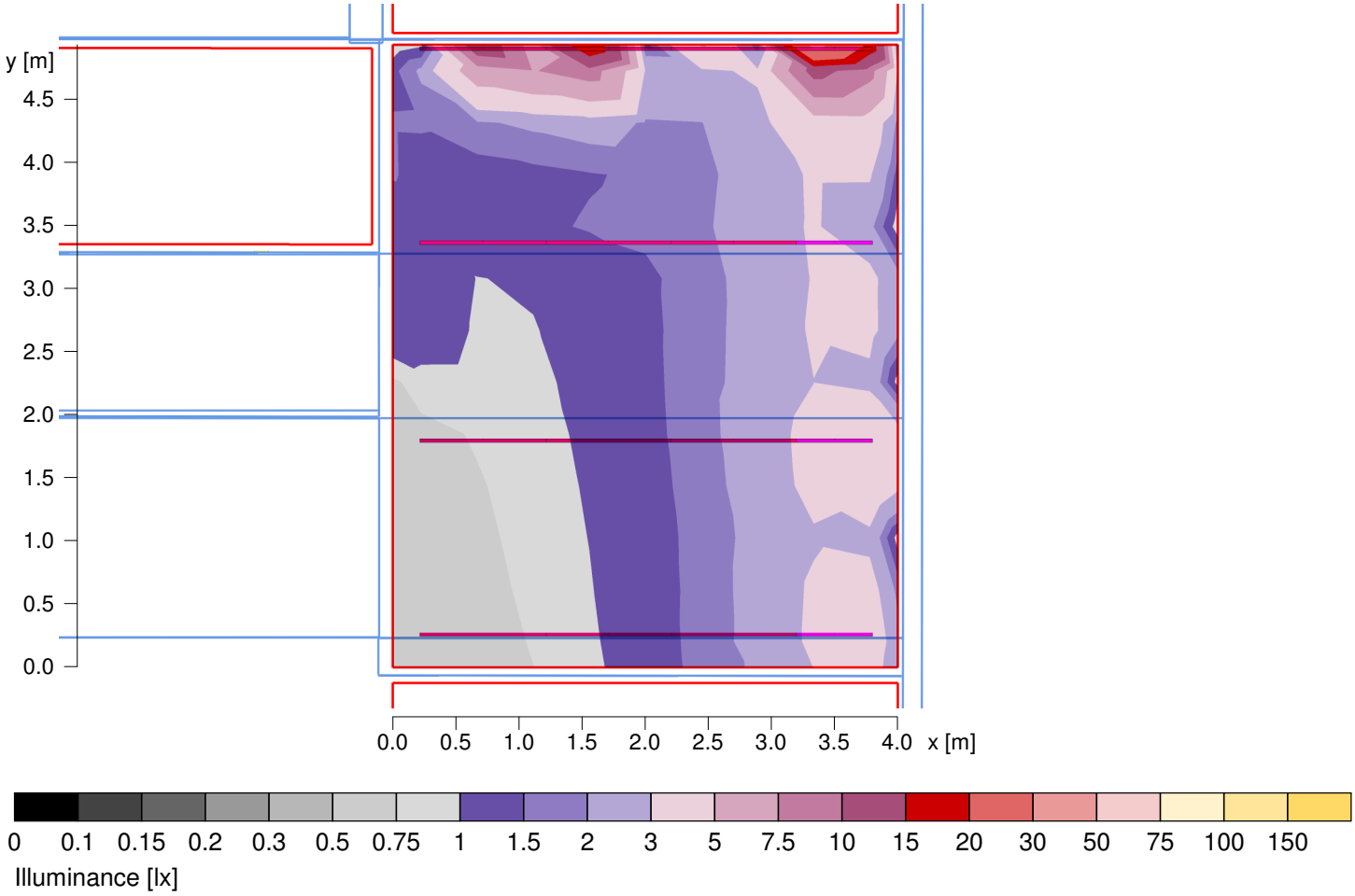


Height reference plane		: 0.00 m
Average illuminance	Em	: 1.27 lx
Minimum illuminance	Emin	: 0.32 lx
Maximum illuminance	Emax	: 2.95 lx
Uniformity Uo	Emin/Em	: 1 : 4.01 (0.25)
Diversity Ud	Emin/Emax	: 1 : 9.31 (0.11)

Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Pseudo colours, Path 2 (E)



Average illuminance		Em	: 2.2 lx
Minimum illuminance		Emin	: 0.6 lx
Maximum illuminance		Emax	: 11.4 lx
Uniformity Uo		Emin/Em	: 1 : 3.87 (0.26)
Diversity Ud		Emin/Emax	: 1 : 20.26 (0.05)

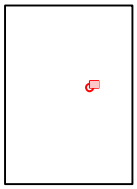
Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Table, Path 2 (E)

[m]												
3.5	**(0.6)**	**(0.6)**	**(0.6)**	**(0.6)**	0.7	0.9	1.2	1.2	1.2	1.3	1.6	2.1
3.0	**(0.6)**	0.7	0.7	0.7	0.8	0.9	1	1	1.2	1.2	1.9	6.3
2.5	0.8	0.8	0.8	0.9	0.9	0.9	1	1	1.4	1.3	2.2	7.4
2.0	0.9	1	1	1	1.1	1.1	1.1	1.2	1.5	1.5	2.4	8.9
1.5	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.4	1.6	1.6	2	3
1.0	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.9	1.8	2	2.8
0.5	2.2	2.3	2.2	2.4	2.5	2.3	2.3	2.3	2.4	2.4	2.7	3.1
	3.2	3.2	2.9	3.3	3.4	3	3.1	3.1	3.1	3.2	4	**[11.4]**
	4	3.6	2.7	4.3	4.4	2.7	3.4	3.3	2.2	3.1	4.2	8.6
	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	[m]		

Illuminance [lx]

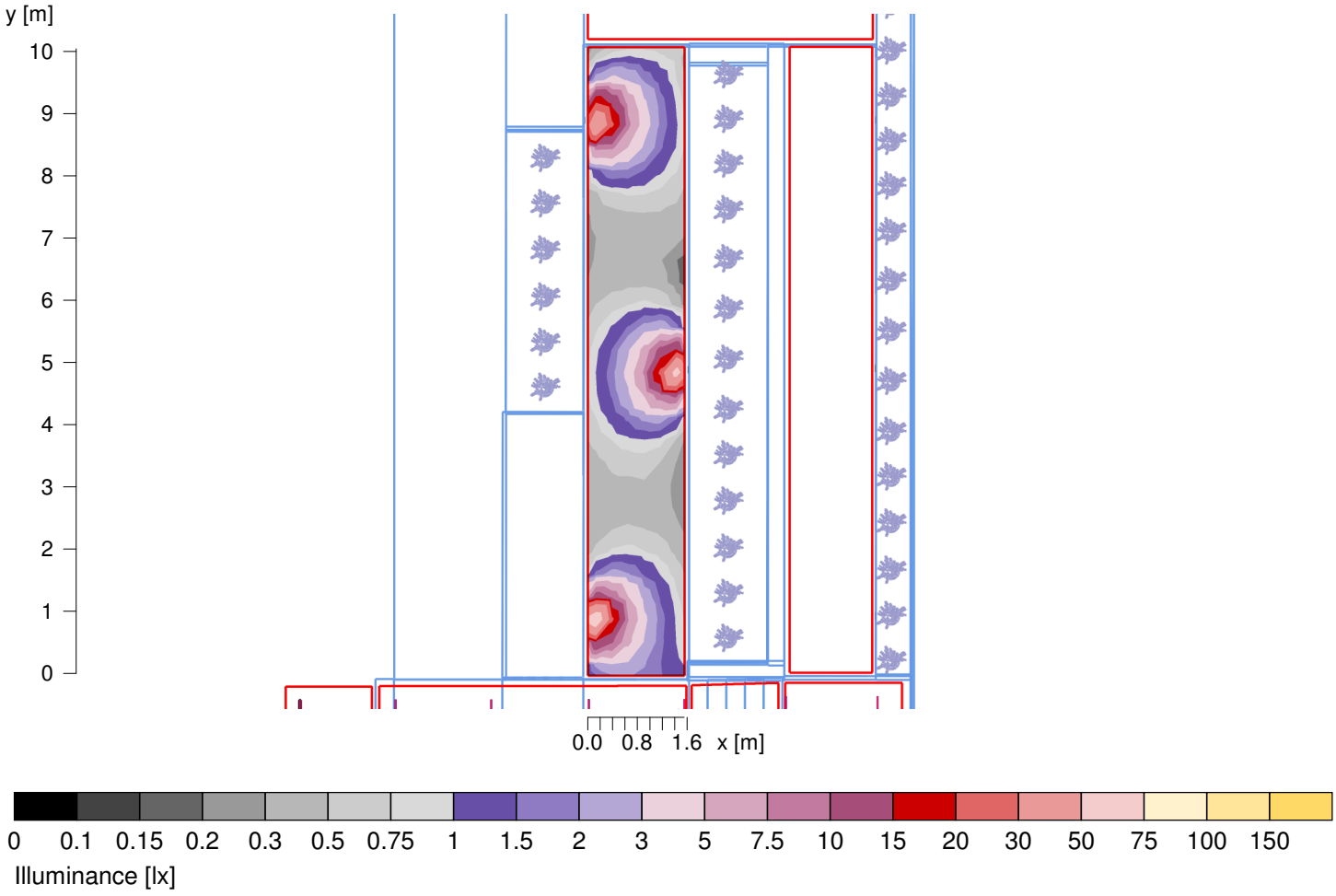


Average illuminance	Em	: 2.2 lx	
Minimum illuminance	Emin	: 0.6 lx	
Maximum illuminance	Emax	: 11.4 lx	
Uniformity Uo	Emin/Em	: 1 : 3.87 (0.26)	
Diversity Ud	Emin/Emax	: 1 : 20.26 (0.05)	

Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Pseudo colours, Ramp 1 (E)

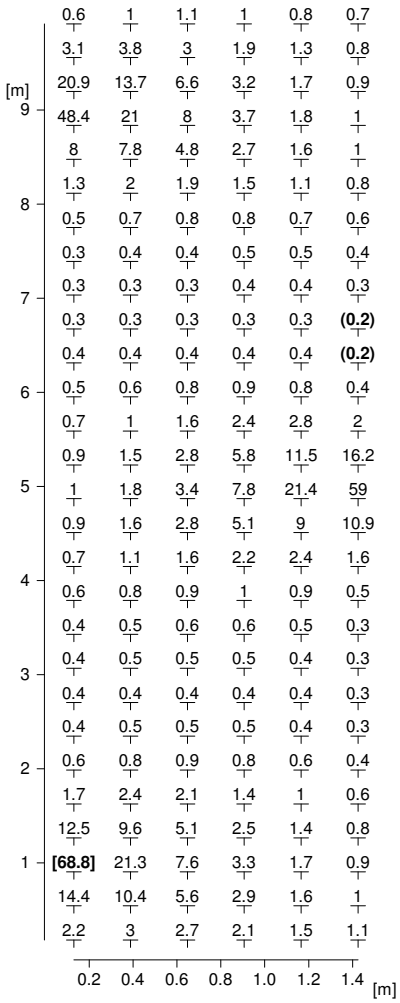


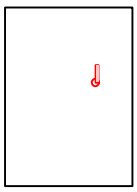
Average illuminance		Em	: 3.6 lx
Minimum illuminance		Emin	: 0.2 lx
Maximum illuminance		Emax	: 68.8 lx
Uniformity Uo		Emin/Em	: 1 : 17.56 (0.06)
Diversity Ud		Emin/Emax	: 1 : 339.59 (0.00)

Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Table, Ramp 1 (E)



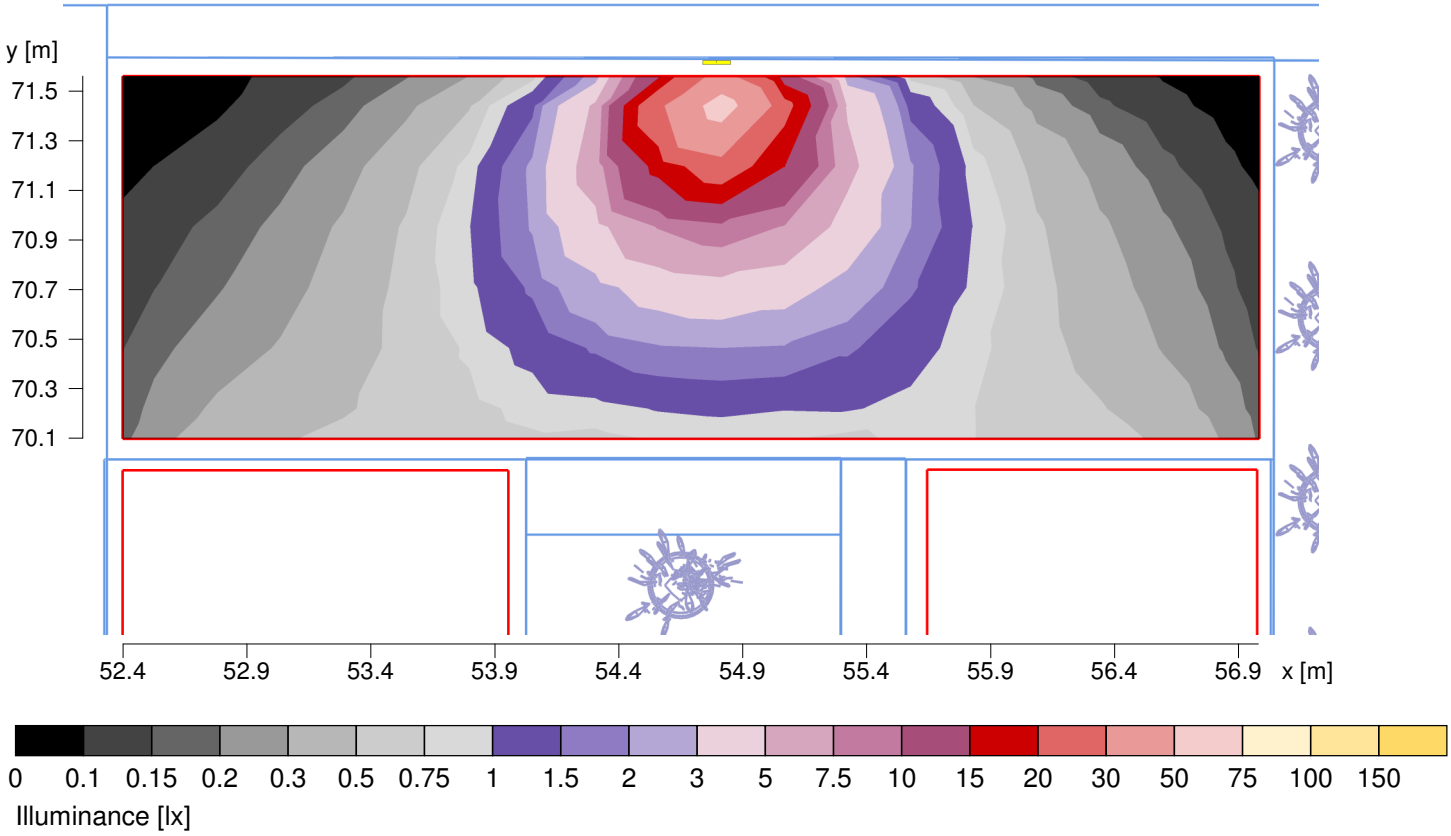


Average illuminance	Em	: 3.6 lx
Minimum illuminance	Emin	: 0.2 lx
Maximum illuminance	Emax	: 68.8 lx
Uniformity Uo	Emin/Em	: 1 : 17.56 (0.06)
Diversity Ud	Emin/Emax	: 1 : 339.59 (0.00)

Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Pseudo colours, Ramp 2 (E)

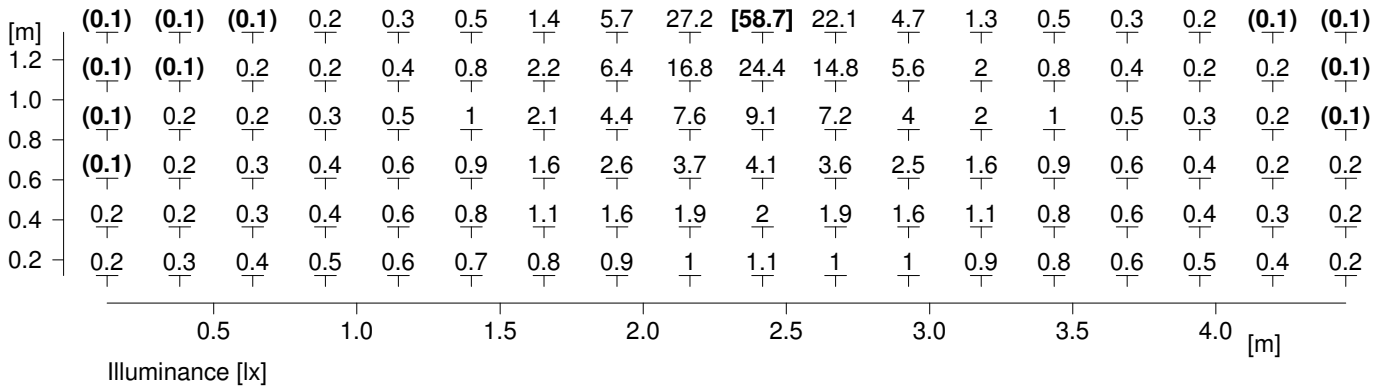


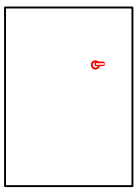
Height reference plane		: 0.74 m
Average illuminance	Em	: 2.7 lx
Minimum illuminance	Emin	: 0.1 lx
Maximum illuminance	Emax	: 58.7 lx
Uniformity Uo	Emin/Em	: 1 : 36.01 (0.03)
Diversity Ud	Emin/Emax	: 1 : 780.36 (0.00)

Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Table, Ramp 2 (E)



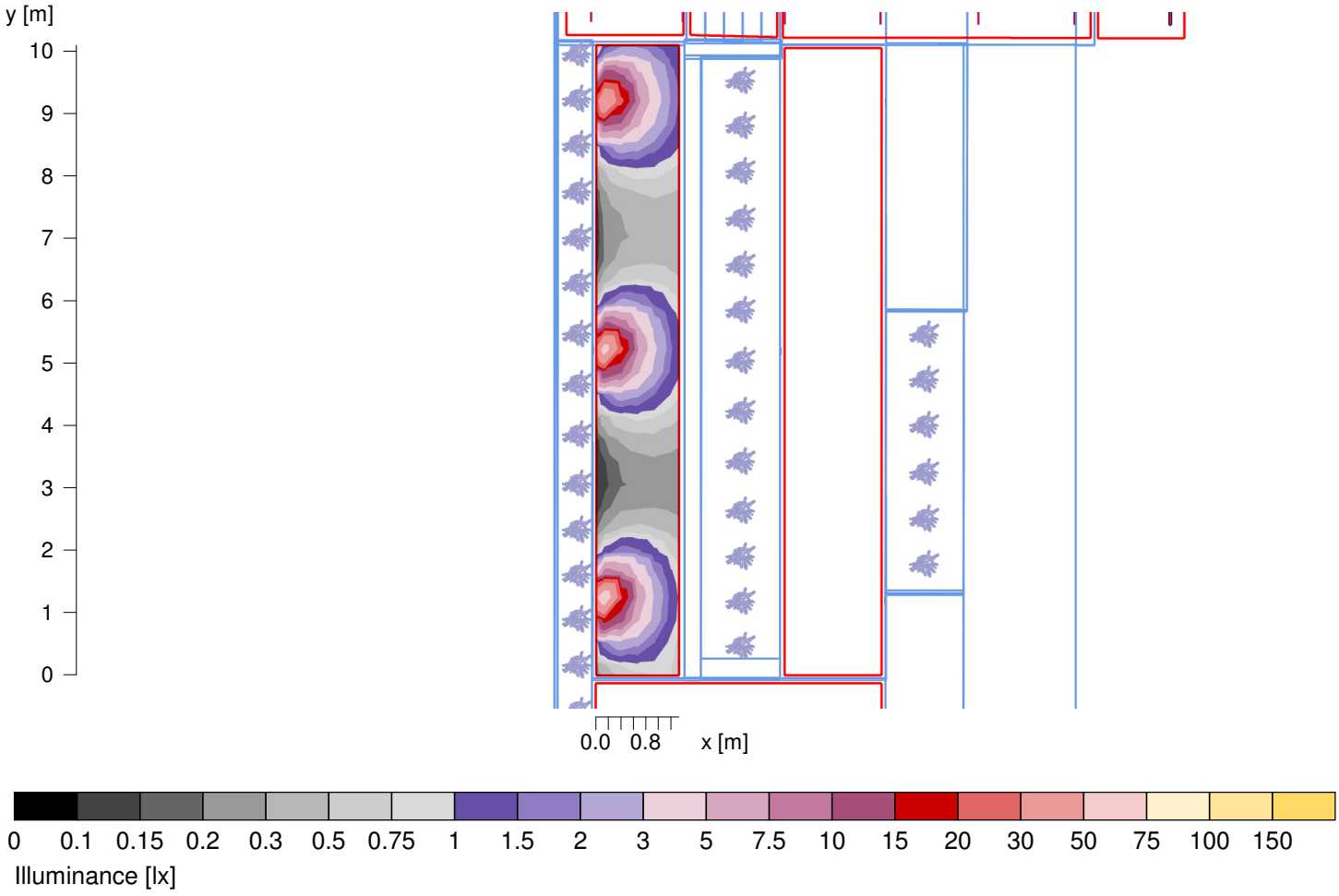


Height reference plane		: 0.74 m
Average illuminance	Em	: 2.7 lx
Minimum illuminance	Emin	: 0.1 lx
Maximum illuminance	Emax	: 58.7 lx
Uniformity Uo	Emin/Em	: 1 : 36.01 (0.03)
Diversity Ud	Emin/Emax	: 1 : 780.36 (0.00)

Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Pseudo colours, Ramp 3 (E)

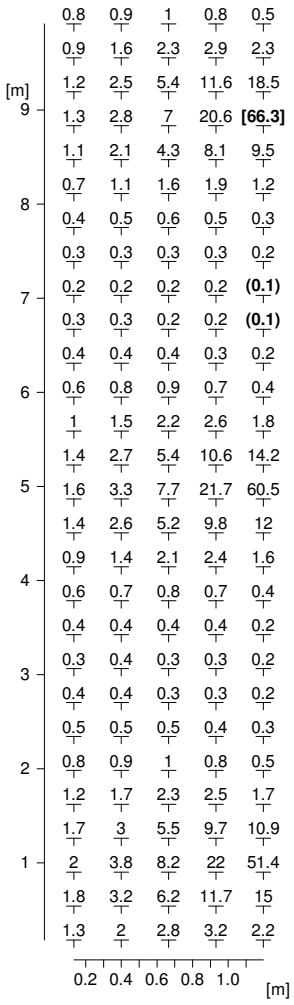


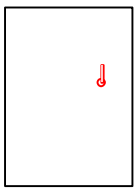
Average illuminance	Em	: 4 lx
Minimum illuminance	Emin	: 0.1 lx
Maximum illuminance	Emax	: 66.3 lx
Uniformity Uo	Emin/Em	: 1 : 29.60 (0.03)
Diversity Ud	Emin/Emax	: 1 : 488.15 (0.00)

Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Table, Ramp 3 (E)



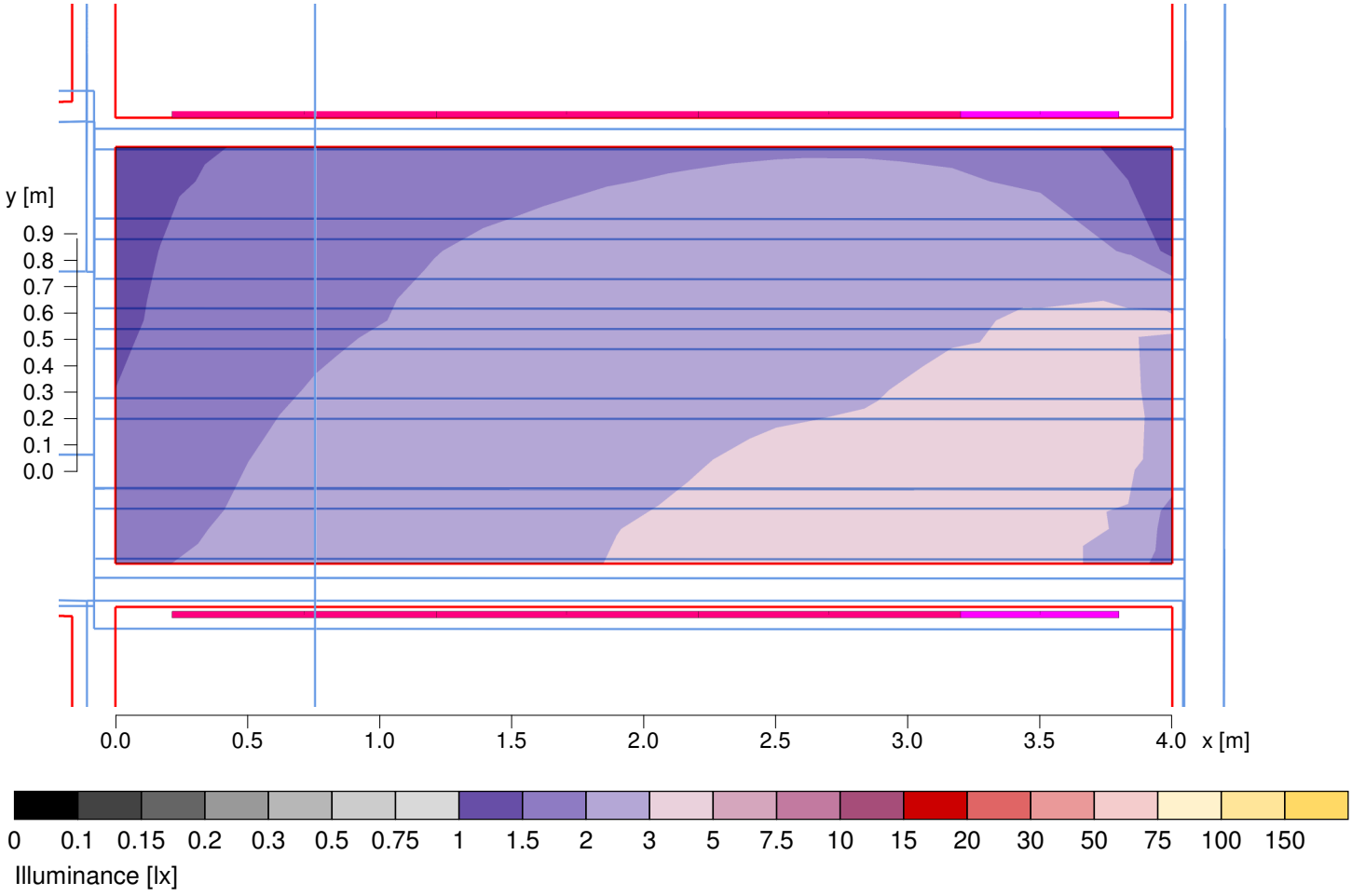


Average illuminance		Em	: 4 lx
Minimum illuminance		Emin	: 0.1 lx
Maximum illuminance		Emax	: 66.3 lx
Uniformity Uo		Emin/Em	: 1 : 29.60 (0.03)
Diversity Ud		Emin/Emax	: 1 : 488.15 (0.00)

Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Pseudo colours, Steps (E)



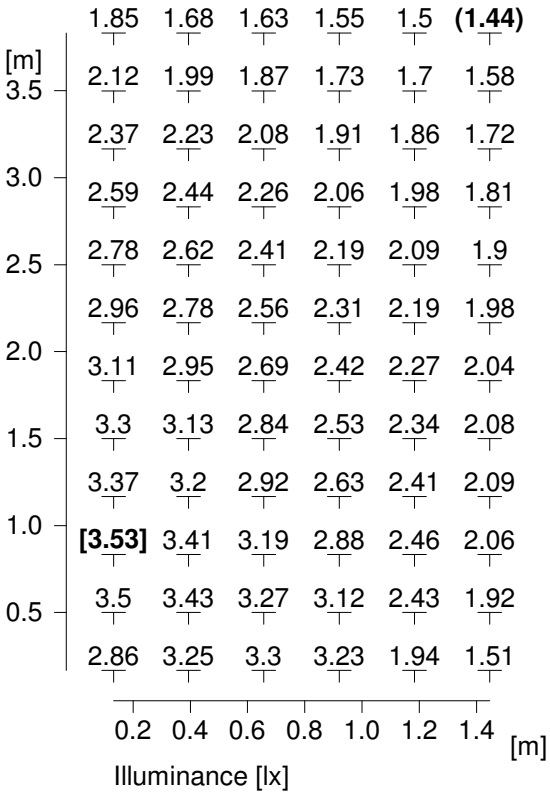
Illuminance [lx]

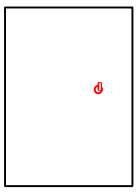
Average illuminance	Em	: 2.42 lx
Minimum illuminance	Emin	: 1.44 lx
Maximum illuminance	Emax	: 3.53 lx
Uniformity Uo	Emin/Em	: 1 : 1.68 (0.60)
Diversity Ud	Emin/Emax	: 1 : 2.45 (0.41)

Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Table, Steps (E)



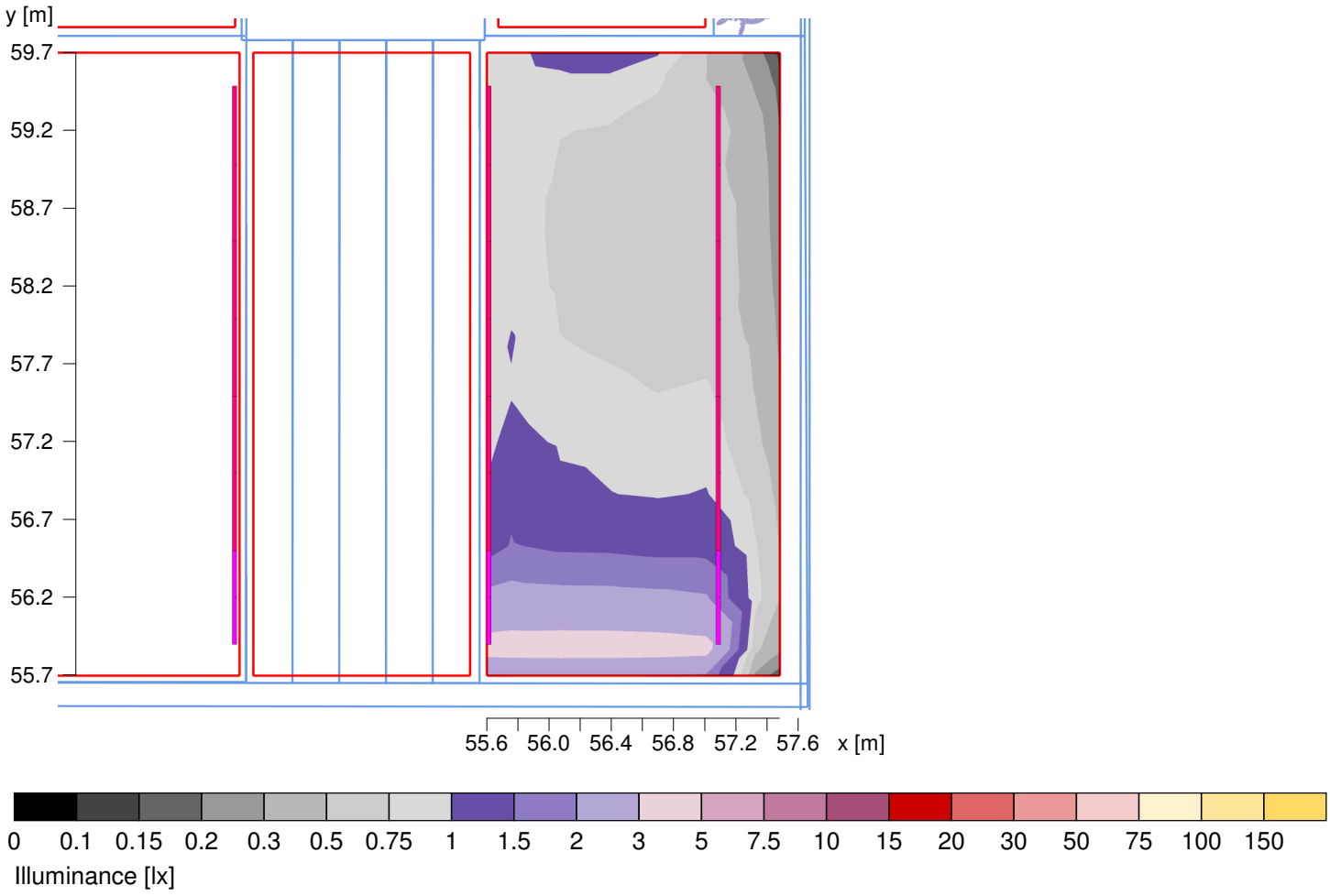


Average illuminance	Em	: 2.42 lx
Minimum illuminance	Emin	: 1.44 lx
Maximum illuminance	Emax	: 3.53 lx
Uniformity Uo	Emin/Em	: 1 : 1.68 (0.60)
Diversity Ud	Emin/Emax	: 1 : 2.45 (0.41)

Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Pseudo colours, Entrance (E)



Height reference plane		: 1.22 m
Average illuminance	Em	: 1.08 lx
Minimum illuminance	Emin	: 0.27 lx
Maximum illuminance	Emax	: 3.48 lx
Uniformity Uo	Emin/Em	: 1 : 3.95 (0.25)
Diversity Ud	Emin/Emax	: 1 : 12.76 (0.08)

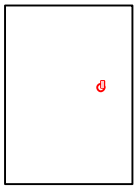
Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Table, Entrance (E)

[m]						
3.5	0.89	0.94	0.95	0.8	0.5	**(0.27)**
	0.91	0.76	0.72	0.64	0.64	0.36
	0.98	0.7	0.66	0.61	0.59	0.39
3.0	0.87	0.7	0.65	0.61	0.66	0.4
	0.88	0.71	0.67	0.63	0.68	0.42
2.5	1.02	0.75	0.71	0.67	0.65	0.46
	0.98	0.83	0.79	0.74	0.78	0.49
2.0	1.1	0.97	0.95	0.89	0.89	0.55
	1.41	1.06	1.01	0.97	1.01	0.67
1.5	1.53	1.41	1.39	1.32	1.32	0.77
	2.23	2.19	2.18	2.14	2.05	0.83
1.0	3.46	**[3.48]**	**[3.48]**	3.44	3.32	0.55
0.5						
	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	[m]

Illuminance [lx]

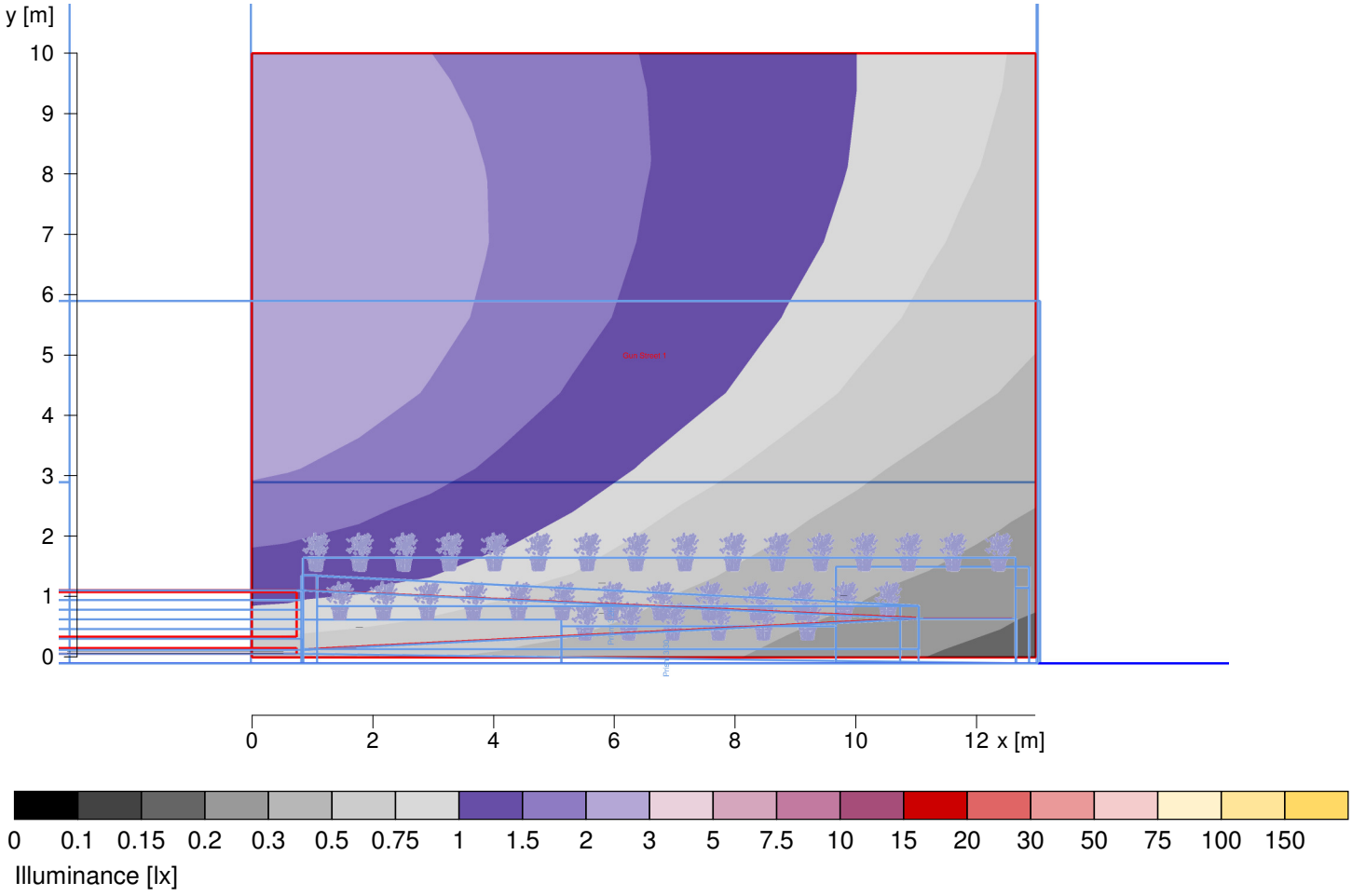


Height reference plane		: 1.22 m
Average illuminance	Em	: 1.08 lx
Minimum illuminance	Emin	: 0.27 lx
Maximum illuminance	Emax	: 3.48 lx
Uniformity Uo	Emin/Em	: 1 : 3.95 (0.25)
Diversity Ud	Emin/Emax	: 1 : 12.76 (0.08)

Object	:	External Lighting
Installation	:	ADA
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Calculation results, ADA External Lighting

Pseudo colours, Gun Street 1 (E)

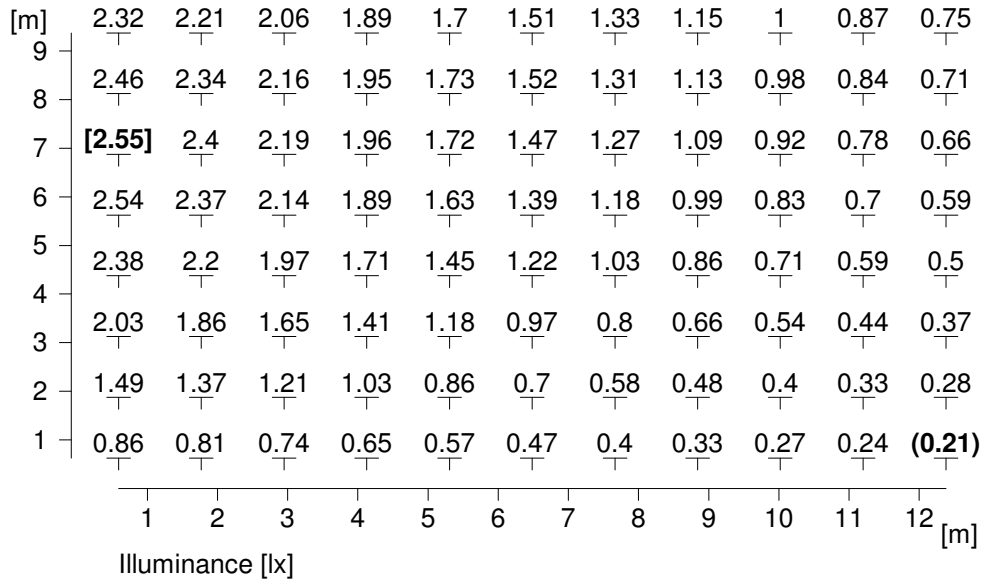


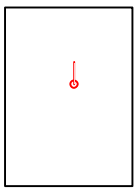
Average illuminance	Em	: 1.23 lx
Minimum illuminance	Emin	: 0.21 lx
Maximum illuminance	Emax	: 2.55 lx
Uniformity Uo	Emin/Em	: 1 : 5.95 (0.17)
Diversity Ud	Emin/Emax	: 1 : 12.36 (0.08)

Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Table, Gun Street 1 (E)



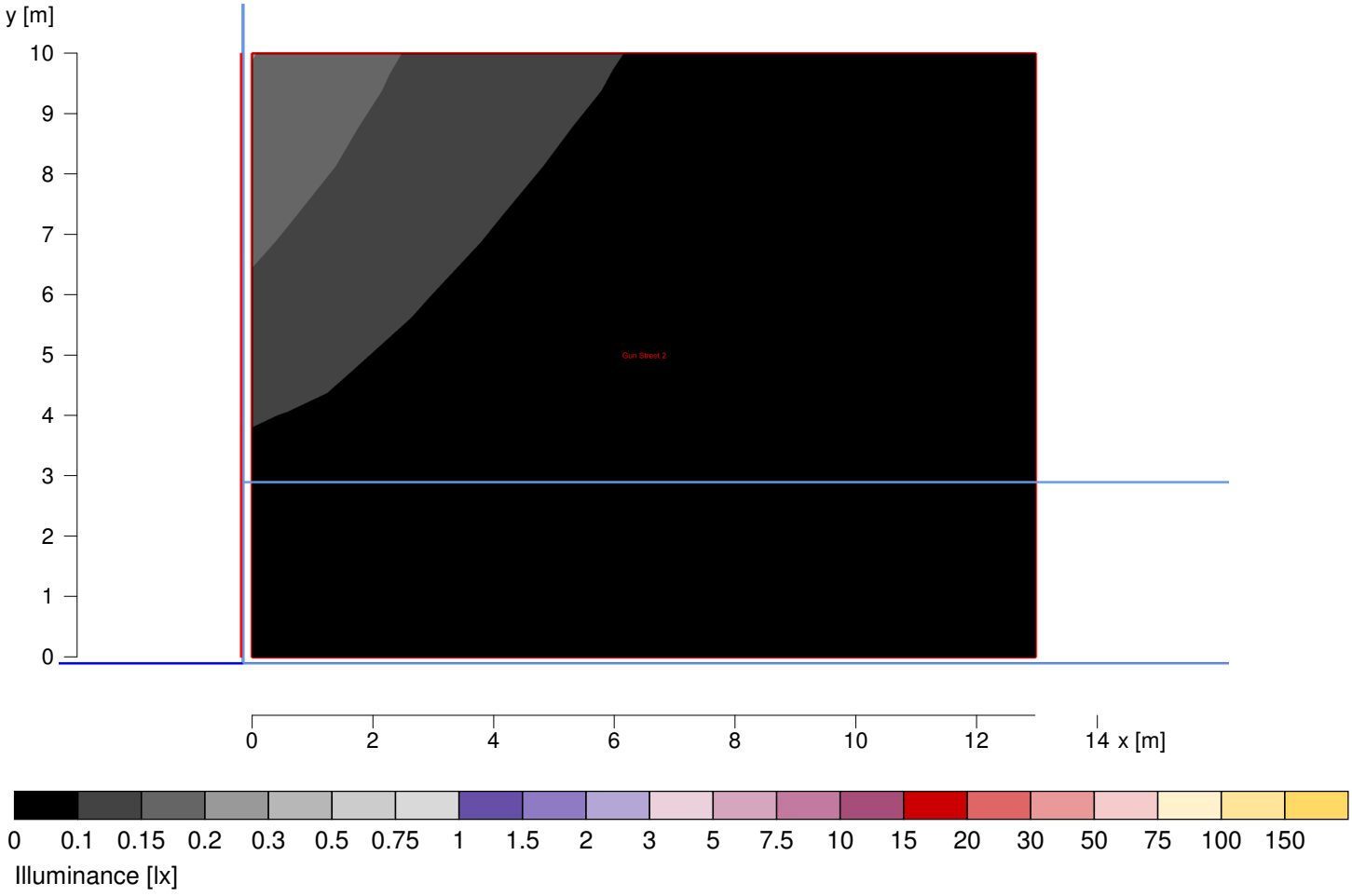


Average illuminance	Em	: 1.23 lx
Minimum illuminance	Emin	: 0.21 lx
Maximum illuminance	Emax	: 2.55 lx
Uniformity Uo	Emin/Em	: 1 : 5.95 (0.17)
Diversity Ud	Emin/Emax	: 1 : 12.36 (0.08)

Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Pseudo colours, Gun Street 2 (E)

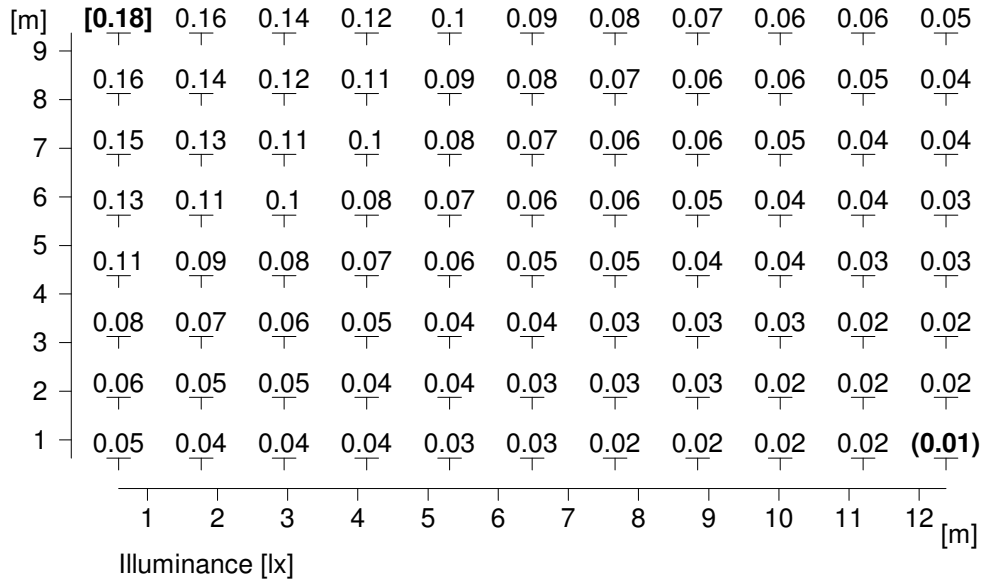


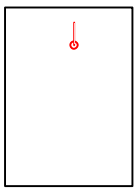
Average illuminance	Em	: 0.06 lx
Minimum illuminance	Emin	: 0.01 lx
Maximum illuminance	Emax	: 0.18 lx
Uniformity Uo	Emin/Em	: 1 : 4.59 (0.22)
Diversity Ud	Emin/Emax	: 1 : 12.84 (0.08)

Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Table, Gun Street 2 (E)



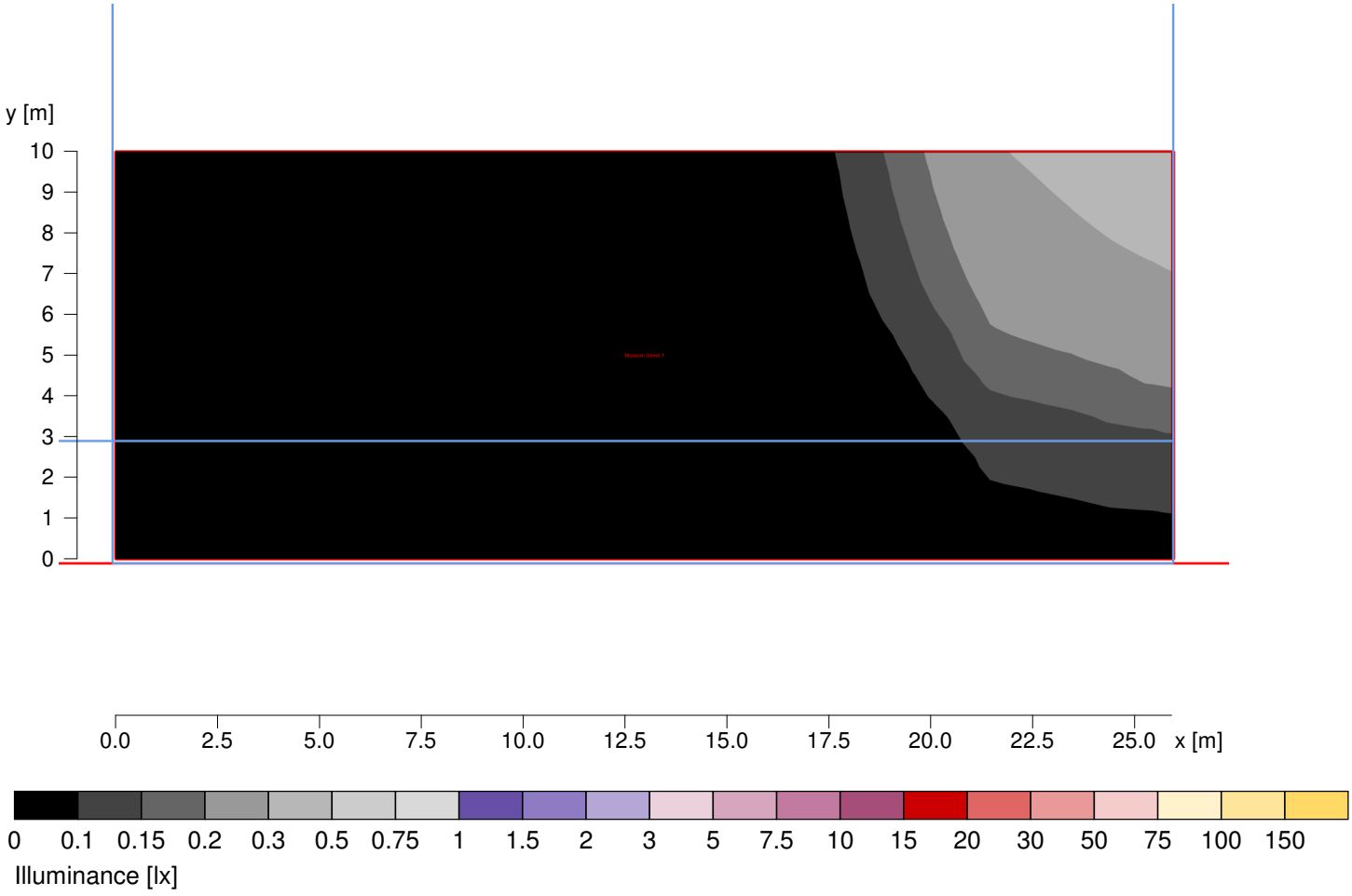


Average illuminance	Em	: 0.06 lx
Minimum illuminance	Emin	: 0.01 lx
Maximum illuminance	Emax	: 0.18 lx
Uniformity Uo	Emin/Em	: 1 : 4.59 (0.22)
Diversity Ud	Emin/Emax	: 1 : 12.84 (0.08)

Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Pseudo colours, Blossom Street 1 (E)

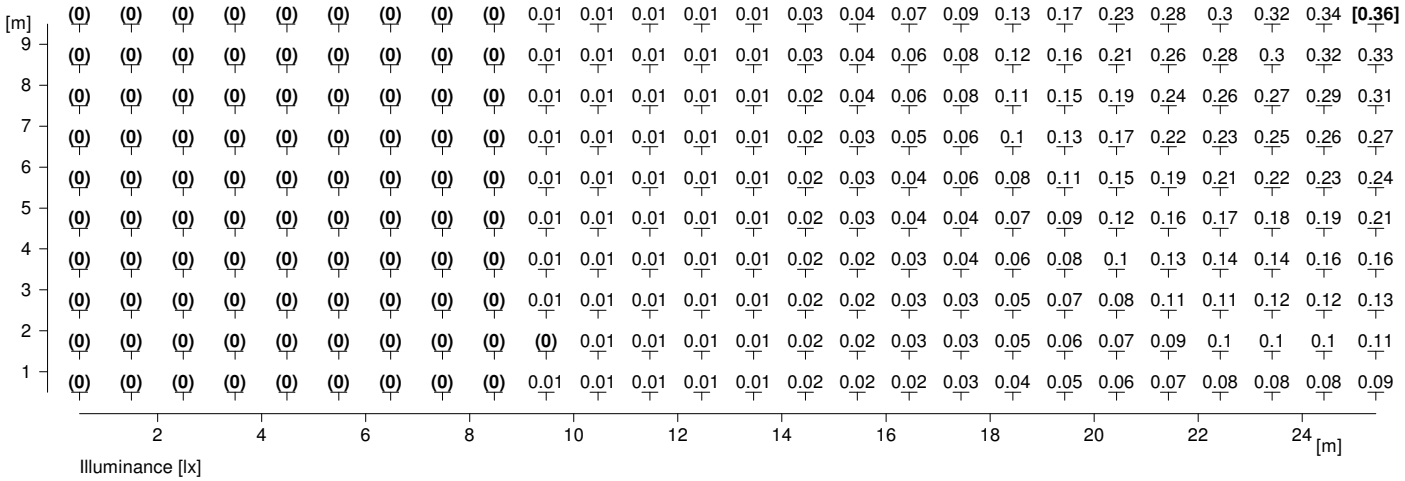


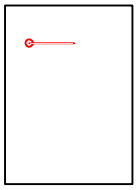
Average illuminance	Em	: 0.06 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 0.36 lx
Uniformity Uo	Emin/Em	: ---
Diversity Ud	Emin/Emax	: ---

Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Table, Blossom Street 1 (E)



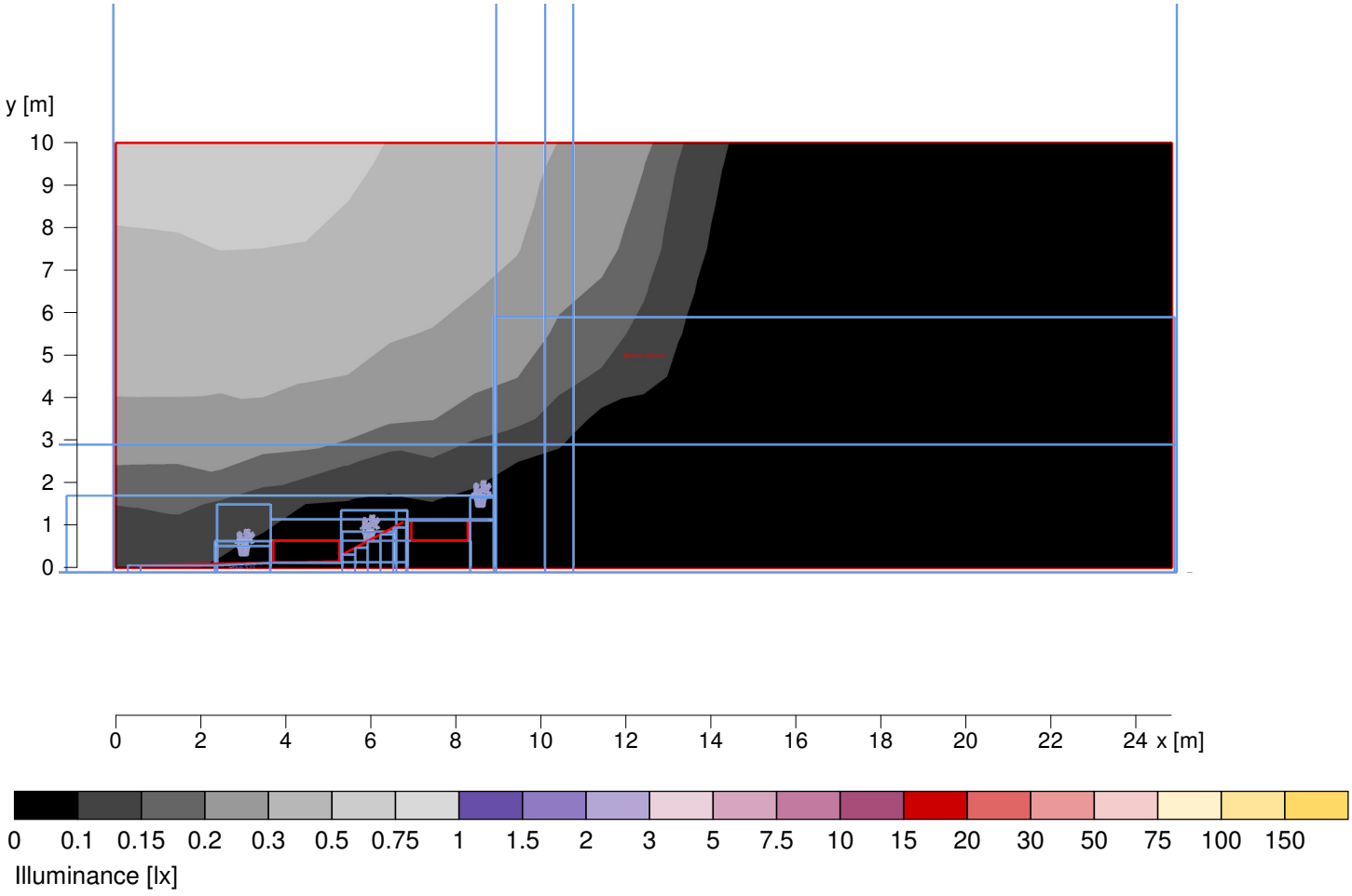


Average illuminance	Em	: 0.06 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 0.36 lx
Uniformity Uo	Emin/Em	: ---
Diversity Ud	Emin/Emax	: ---

Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Pseudo colours, Blossom Street 2 (E)

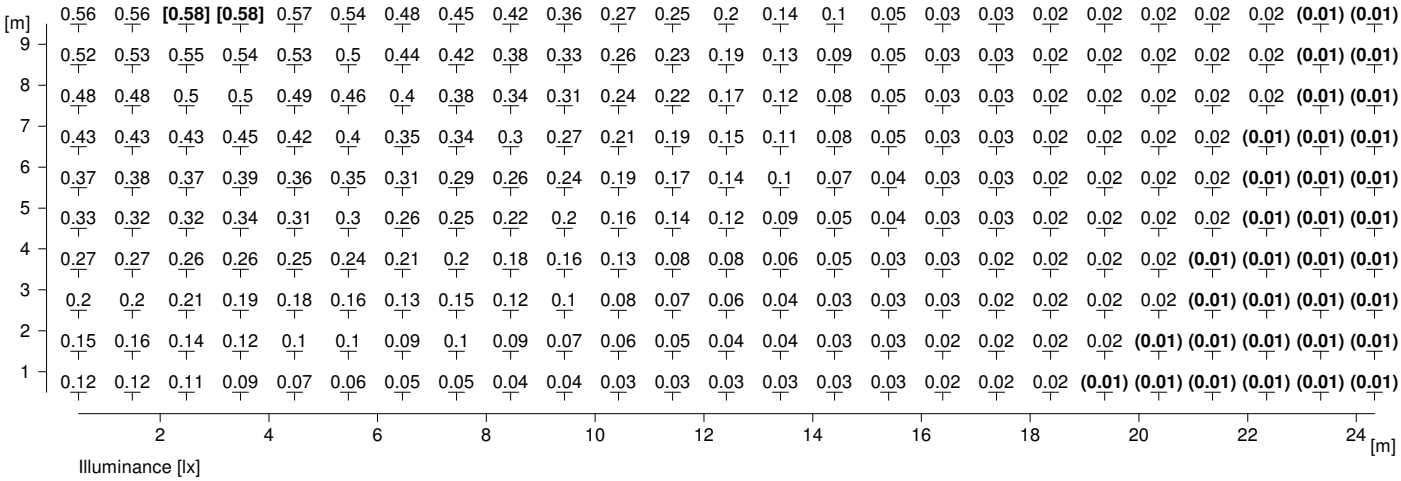


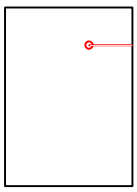
Average illuminance	Em	: 0.15 lx
Minimum illuminance	Emin	: 0.01 lx
Maximum illuminance	Emax	: 0.58 lx
Uniformity Uo	Emin/Em	: 1 : 26.18 (0.04)
Diversity Ud	Emin/Emax	: 1 : 101.54 (0.01)

Object	:	External Lighting
Installation	:	ADA
Project number	:	
Date	:	08.01.2024

Calculation results, ADA External Lighting

Table, Blossom Street 2 (E)





Average illuminance	Em	: 0.15 lx
Minimum illuminance	Emin	: 0.01 lx
Maximum illuminance	Emax	: 0.58 lx
Uniformity Uo	Emin/Em	: 1 : 26.18 (0.04)
Diversity Ud	Emin/Emax	: 1 : 101.54 (0.01)