

EXTERNAL LIGHTING

Installation : SAMPLE

Project number : 10125-QC

Customer : MM

Processed by : NM

Date : 15.06.2015

Project description:

SAMPLE CALCULATION BASED ON:

10M X 10M AREA

1.8M LUMINAIRE MOUNTING HEIGHT

1.8M FENCE - 5M FROM THE LUMINAIRE

HORIZONTAL MEASURING PLANE - FLOOR LEVEL

VERTICAL MEASURING PLANE - FLOOR TO 1.8M TOP OF FENCE

0.8 MAINTENANCE FACTOR

The following values are based on exact calculations on calibrated lamps, luminaires and their arrangement. In practice, gradual divergences can occur.

Guarantee claims for luminaire data are excluded.

Relux and the luminaire manufacturers accept no liability for consequential damage and damage which is occasioned to the user or to third parties.

Object : EXTERNAL LIGHTING
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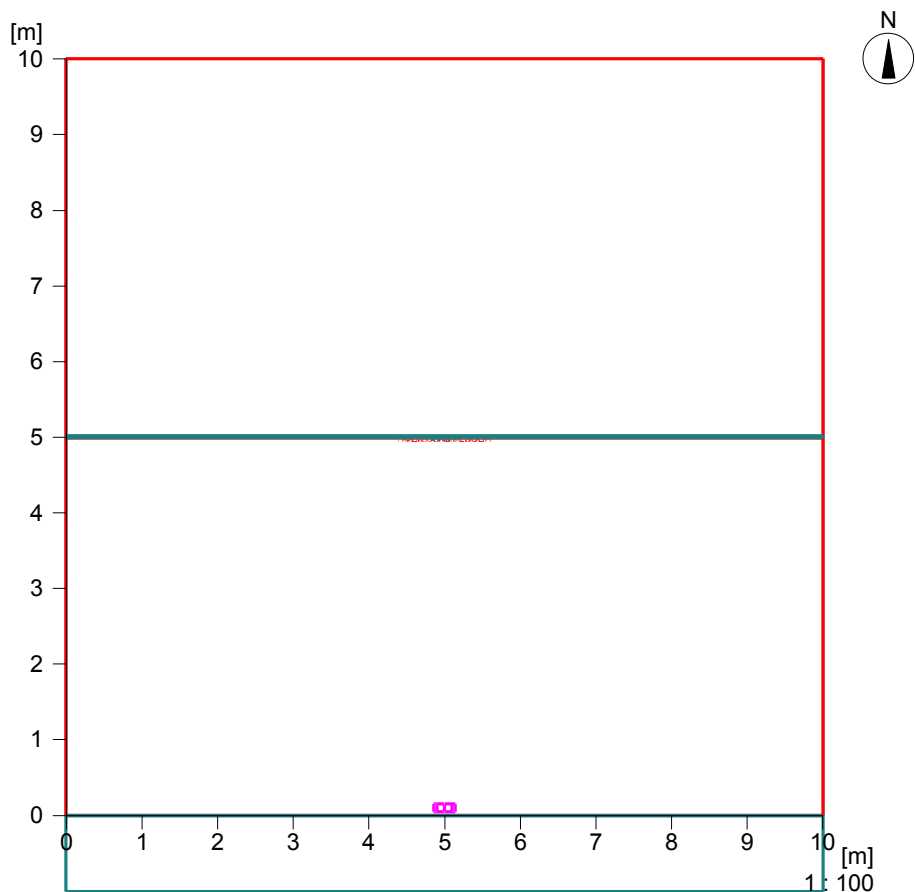
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1 Exterior 1

1.1 Description, Exterior 1

1.1.1 Floor plan

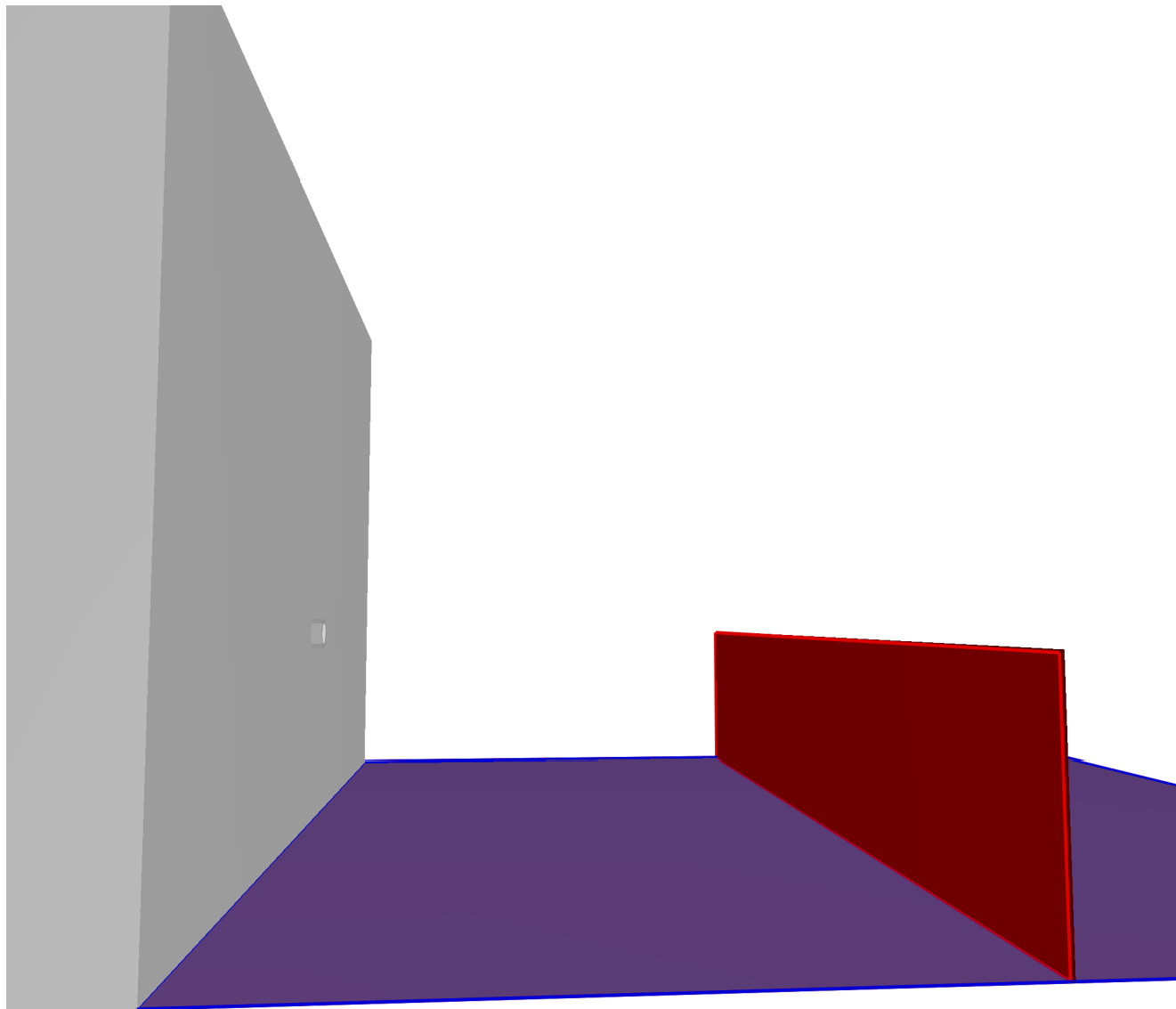


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1.1 Description, Exterior 1

1.1.2 3D view, View 1



Object : EXTERNAL LIGHTING
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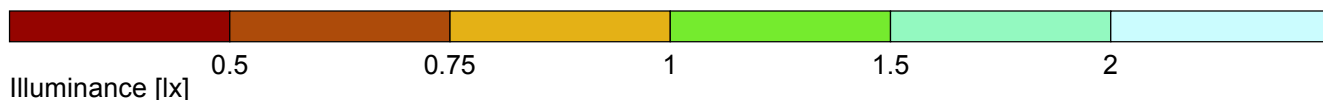
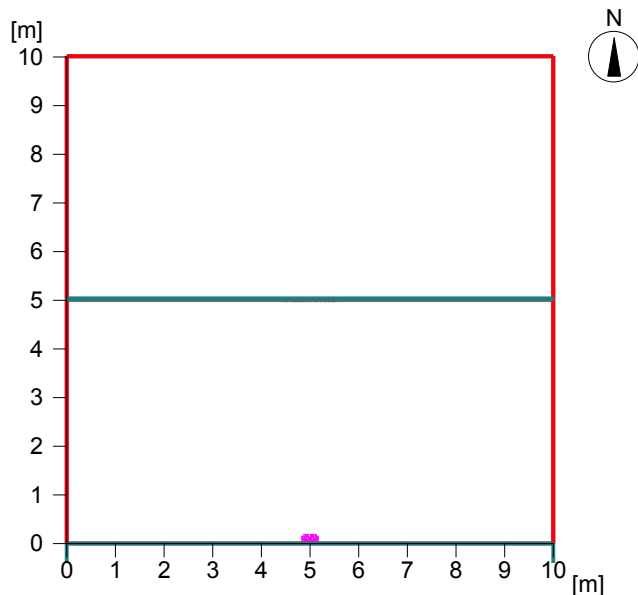
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1 Exterior 1

1.2 Summary, Exterior 1

1.2.1 Result overview, VERTICAL FENCE



General

Calculation algorithm used	Average indirect fraction
photometric centre height. [m]:	1.85 m
Maintenance factor	0.80
Total luminous flux of all lamps	116 lm
Total power	7 W
Total power per area (100.00 m ²)	0.07 W/m ²

Illuminance

Average illuminance	Eav	0.94 lx
Minimum illuminance	Emin	0.31 lx
Maximum illuminance	Emax	1.75 lx
Uniformity Uo	Emin/Em	1:3.03 (0.33)
Diversity Ud	Emin/Emax	1:5.63 (0.18)

Type No.\Make

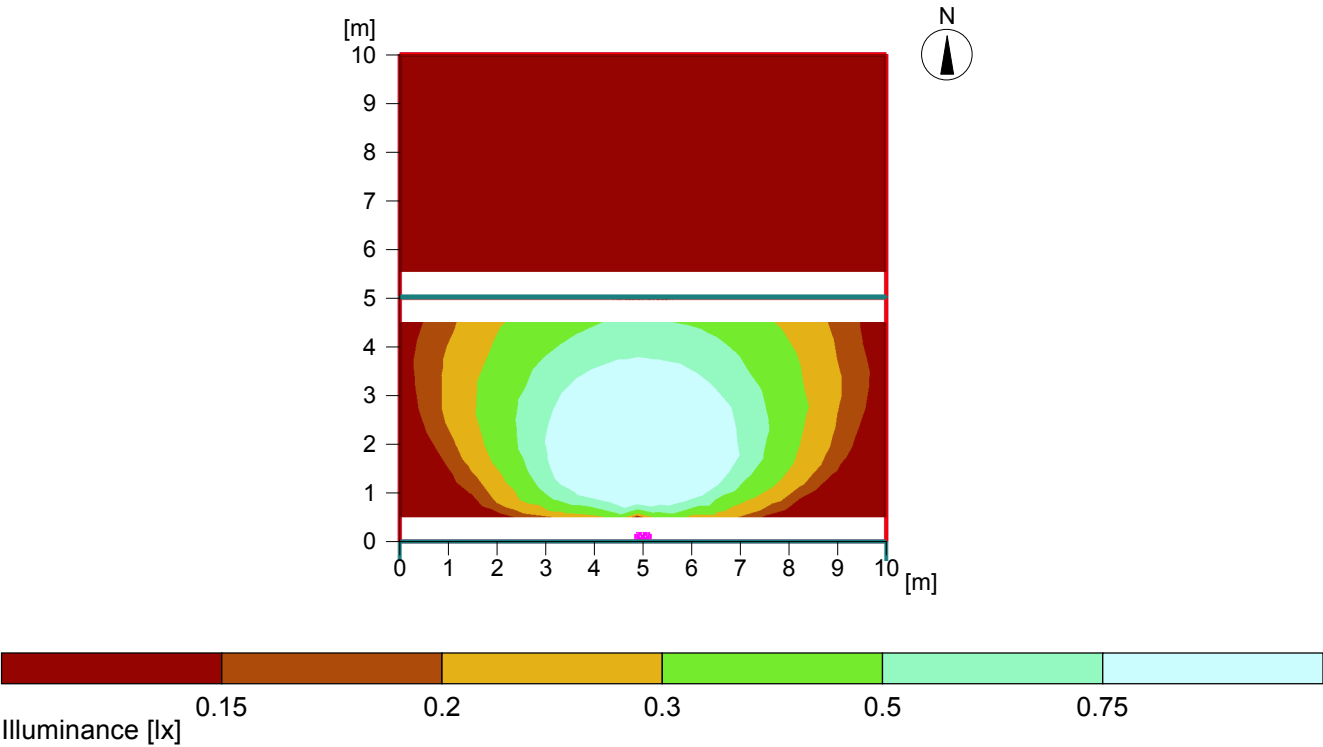
ASD Lighting PLC

2	1	Order No.	: HR2/BLELED5
		Luminaire name	: HORIZON 283mm OPAL EYELID LED 5
		Equipment	: 5 x LED / 23.2 lm



1.2 Summary, Exterior 1

1.2.2 Result overview, Evaluation area 1



General

Calculation algorithm used	Average indirect fraction
photometric centre height.	1.85 m
Maintenance factor	0.80
Total luminous flux of all lamps	116 lm
Total power	7.0 W
Total power per area (100.00 m²)	0.07 W/m² (27.92 W/m²/100lx)

Evaluation area 1

HORIZONTAL FLOOR

Em	Horizontal
Emin	0.25 lx
Emin/Eav (Uo)	0 lx
Emin/Emax (Ud)	---
Position	---
	0.00 m

Type No.\Make

ASD Lighting PLC

2	1	Order No.	: HR2/BLELED5
		Luminaire name	: HORIZON 283mm OPAL EYELID LED 5
		Equipment	: 5 x LED / 23.2 lm



Object : EXTERNAL LIGHTING
 Installation : SAMPLE
 Project number : 10125-QC
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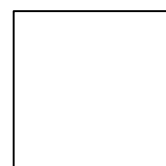
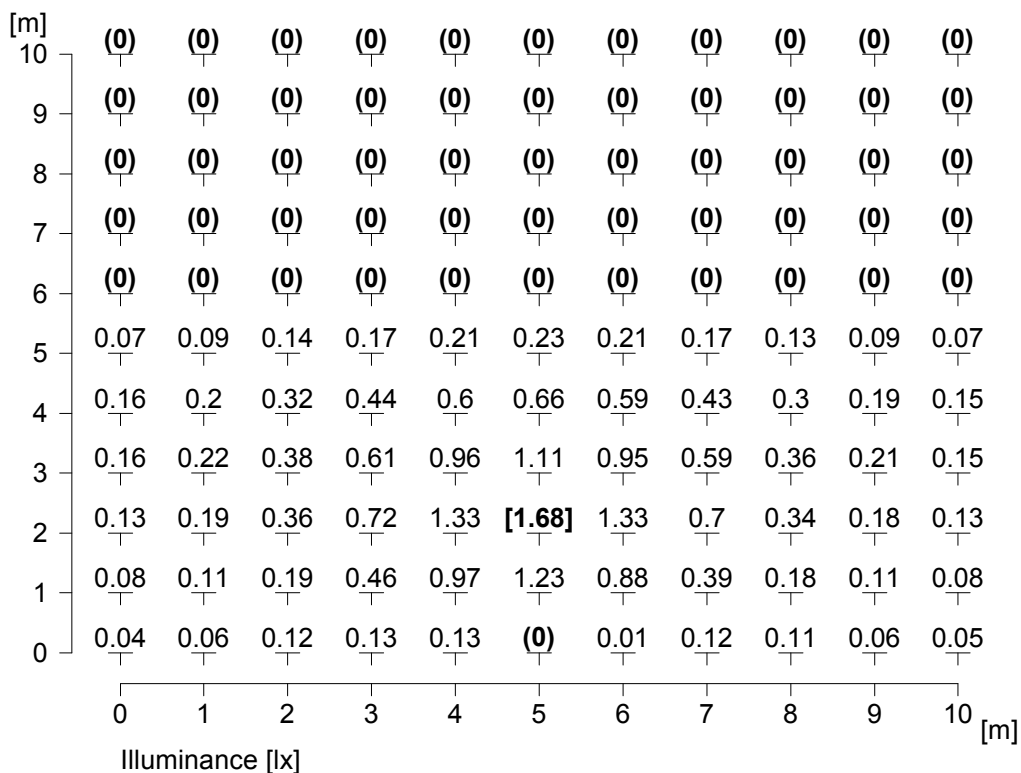
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1 Exterior 1

1.3 Calculation results, Exterior 1

1.3.1 Table, Floor (E)



Average illuminance
 Minimum illuminance
 Maximum illuminance
 Uniformity U_o
 Diversity U_d

E_{av} : 0.2 lx
 E_{min} : 0 lx
 E_{max} : 1.68 lx
 E_{min}/E_{av} : ---
 E_{min}/E_{max} : ---

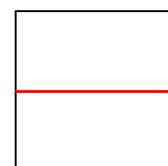
Object : EXTERNAL LIGHTING
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1.3 Calculation results, Exterior 1

1.3.3 Table, VERTICAL FENCE (E)

	0.42	0.44	0.46	0.48	0.5	0.52	0.54	0.56	0.59	0.61	0.64	0.66	0.69	0.72	0.75	0.78	0.81	0.84	0.88	0.92	0.95	0.99	1.02	1.06	1.09	1.12	1.15
1.6	0.42	0.44	0.46	0.48	0.5	0.52	0.54	0.56	0.59	0.61	0.64	0.66	0.69	0.72	0.75	0.78	0.81	0.84	0.87	0.91	0.95	0.98	1.02	1.05	1.08	1.11	1.14
	0.42	0.44	0.46	0.48	0.5	0.51	0.54	0.56	0.58	0.61	0.63	0.66	0.68	0.71	0.74	0.77	0.8	0.83	0.87	0.91	0.94	0.97	1.01	1.04	1.07	1.1	1.13
1.4	0.42	0.43	0.45	0.47	0.49	0.51	0.53	0.55	0.58	0.6	0.63	0.65	0.68	0.71	0.73	0.76	0.79	0.83	0.86	0.9	0.91	0.95	0.98	1.01	1.04	1.06	1.09
	0.41	0.43	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.6	0.62	0.65	0.66	0.69	0.71	0.74	0.77	0.8	0.83	0.87	0.9	0.93	0.97	1	1.03	1.05	1.08
1.2	0.41	0.42	0.44	0.46	0.46	0.48	0.51	0.53	0.55	0.58	0.6	0.63	0.65	0.68	0.7	0.73	0.76	0.79	0.82	0.86	0.89	0.92	0.95	0.98	1.01	1.03	1.06
	0.38	0.4	0.42	0.44	0.46	0.48	0.5	0.52	0.55	0.57	0.59	0.62	0.64	0.67	0.69	0.72	0.75	0.78	0.81	0.84	0.87	0.9	0.93	0.96	0.99	1.02	1.04
1.0	0.38	0.4	0.41	0.43	0.45	0.47	0.49	0.52	0.54	0.56	0.58	0.61	0.63	0.66	0.68	0.71	0.74	0.76	0.79	0.82	0.86	0.89	0.92	0.95	0.98	1.01	1.03
	0.37	0.39	0.41	0.42	0.44	0.46	0.49	0.51	0.53	0.55	0.58	0.6	0.62	0.65	0.67	0.7	0.72	0.75	0.78	0.81	0.84	0.87	0.9	0.93	0.96	0.99	1.01
0.8	0.37	0.38	0.4	0.42	0.43	0.45	0.48	0.5	0.52	0.54	0.57	0.59	0.61	0.64	0.66	0.68	0.71	0.74	0.76	0.79	0.82	0.85	0.88	0.91	0.94	0.97	1
	0.36	0.37	0.39	0.41	0.43	0.44	0.46	0.49	0.51	0.53	0.56	0.58	0.6	0.63	0.65	0.67	0.7	0.72	0.75	0.78	0.8	0.83	0.86	0.89	0.92	0.95	0.98
0.6	0.35	0.37	0.38	0.4	0.42	0.44	0.45	0.48	0.5	0.52	0.55	0.57	0.59	0.61	0.63	0.66	0.68	0.71	0.73	0.76	0.79	0.81	0.84	0.87	0.9	0.92	0.95
	0.35	0.36	0.38	0.39	0.41	0.43	0.45	0.47	0.49	0.51	0.53	0.56	0.58	0.6	0.62	0.64	0.67	0.69	0.72	0.74	0.77	0.79	0.82	0.85	0.87	0.9	0.93
0.4	0.34	0.35	0.37	0.38	0.4	0.42	0.44	0.46	0.48	0.5	0.52	0.54	0.57	0.59	0.61	0.63	0.65	0.68	0.7	0.72	0.75	0.77	0.8	0.83	0.85	0.88	0.9
	0.33	0.35	0.36	0.38	0.39	0.41	0.43	0.44	0.47	0.49	0.51	0.53	0.55	0.57	0.6	0.62	0.64	0.66	0.68	0.71	0.73	0.75	0.78	0.8	0.83	0.85	0.88
0.2	0.33	0.34	0.35	0.37	0.38	0.4	0.42	0.43	0.46	0.48	0.5	0.52	0.54	0.56	0.58	0.6	0.62	0.64	0.66	0.69	0.71	0.73	0.76	0.78	0.8	0.83	0.85
	0.32	0.33	0.35	0.36	0.37	0.39	0.41	0.42	0.44	0.47	0.49	0.51	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.69	0.71	0.74	0.76	0.78	0.8	0.82
0.0	(0.31)	0.33	0.34	0.35	0.37	0.38	0.4	0.41	0.43	0.45	0.48	0.5	0.52	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.69	0.72	0.74	0.76	0.78	0.8
	0										1												2				
Illuminance [lx]																											



Part1

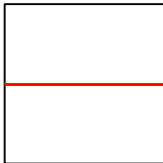
Average illuminance	Eav	: 0.94 lx
Minimum illuminance	Emin	: 0.31 lx
Maximum illuminance	Emax	: 1.75 lx
Uniformity Uo	Emin/Eav	: 1 : 3.03 (0.33)
Diversity Ud	Emin/Emax	: 1 : 5.63 (0.18)



1.3 Calculation results, Exterior 1

1.3.3 Table, VERTICAL FENCE (E)

1.19	1.23	1.27	1.32	1.37	1.41	1.44	1.48	1.51	1.54	1.57	1.6	1.61	1.64	1.66	1.69	1.71	1.71	1.72	1.72	1.73	[1.75]	[1.75]	[1.75]	1.73	1.73	1.73	1.71	1.7	
1.18	1.22	1.26	1.31	1.35	1.39	1.43	1.46	1.46	1.49	1.52	1.55	1.6	1.63	1.66	1.68	1.7	1.69	1.71	1.72	[1.75]	1.72	1.73	1.73	1.72	1.69	1.67	1.67	1.67	
1.14	1.18	1.22	1.27	1.31	1.34	1.38	1.41	1.43	1.46	1.49	1.52	1.56	1.61	1.64	1.66	1.67	1.68	1.69	1.71	1.72	1.69	1.71	1.7	1.7	1.68	1.66	1.64	1.62	
1.13	1.16	1.2	1.25	1.29	1.32	1.36	1.39	1.41	1.44	1.47	1.5	1.53	1.58	1.6	1.62	1.64	1.65	1.67	1.68	1.66	1.67	1.68	1.68	1.67	1.66	1.64	1.63	1.61	
1.11	1.14	1.18	1.23	1.27	1.3	1.33	1.37	1.38	1.41	1.44	1.47	1.5	1.55	1.57	1.59	1.6	1.62	1.63	1.64	1.63	1.64	1.65	1.65	1.64	1.63	1.62	1.62	1.61	
1.09	1.13	1.16	1.2	1.24	1.28	1.31	1.34	1.38	1.39	1.42	1.45	1.47	1.5	1.53	1.55	1.56	1.58	1.61	1.62	1.62	1.61	1.62	1.62	1.61	1.6	1.58	1.58	1.58	
1.08	1.11	1.14	1.18	1.22	1.26	1.3	1.33	1.35	1.37	1.4	1.42	1.44	1.47	1.48	1.51	1.53	1.55	1.58	1.59	1.58	1.57	1.58	1.58	1.58	1.57	1.55	1.54	1.54	
1.06	1.09	1.12	1.16	1.21	1.24	1.27	1.3	1.33	1.36	1.37	1.39	1.41	1.43	1.45	1.47	1.5	1.54	1.55	1.55	1.54	1.54	1.55	1.55	1.54	1.53	1.51	1.5	1.49	
1.04	1.08	1.11	1.15	1.18	1.22	1.25	1.28	1.31	1.33	1.34	1.36	1.38	1.4	1.42	1.44	1.48	1.51	1.52	1.5	1.5	1.5	1.51	1.51	1.51	1.5	1.49	1.47	1.45	
1.03	1.06	1.09	1.12	1.15	1.19	1.22	1.25	1.28	1.3	1.33	1.33	1.35	1.37	1.39	1.43	1.45	1.46	1.47	1.46	1.46	1.46	1.47	1.47	1.47	1.46	1.45	1.43	1.42	
1	1.03	1.07	1.1	1.13	1.16	1.19	1.22	1.25	1.28	1.3	1.32	1.32	1.34	1.36	1.39	1.41	1.42	1.42	1.42	1.42	1.43	1.44	1.44	1.43	1.43	1.41	1.4	1.38	
0.98	1.01	1.04	1.07	1.1	1.12	1.15	1.19	1.22	1.24	1.27	1.29	1.31	1.31	1.34	1.36	1.37	1.38	1.38	1.38	1.38	1.39	1.4	1.4	1.39	1.39	1.38	1.36	1.34	
0.96	0.98	1.01	1.04	1.06	1.09	1.11	1.15	1.18	1.21	1.23	1.25	1.27	1.29	1.31	1.32	1.33	1.34	1.33	1.34	1.34	1.35	1.36	1.36	1.35	1.35	1.34	1.33	1.31	
0.93	0.95	0.98	1.01	1.03	1.05	1.07	1.1	1.14	1.17	1.19	1.22	1.24	1.25	1.27	1.28	1.29	1.29	1.29	1.3	1.3	1.31	1.32	1.32	1.31	1.31	1.3	1.29	1.27	
0.9	0.93	0.95	0.96	0.99	1.01	1.04	1.06	1.09	1.13	1.15	1.17	1.19	1.21	1.23	1.24	1.25	1.25	1.25	1.26	1.26	1.27	1.28	1.28	1.27	1.27	1.26	1.25	1.24	
0.87	0.9	0.91	0.93	0.95	0.98	1	1.02	1.05	1.07	1.09	1.13	1.15	1.17	1.18	1.19	1.2	1.2	1.21	1.22	1.22	1.24	1.24	1.24	1.24	1.23	1.22	1.21	1.2	
0.84	0.86	0.88	0.9	0.92	0.94	0.96	0.98	1.01	1.03	1.05	1.07	1.1	1.12	1.14	1.15	1.15	1.16	1.17	1.17	1.18	1.19	1.2	1.2	1.19	1.19	1.18	1.17	1.16	
0.81	0.83	0.85	0.88	0.89	0.91	0.93	0.95	0.97	0.99	1.01	1.03	1.05	1.07	1.09	1.11	1.11	1.12	1.13	1.13	1.14	1.15	1.15	1.15	1.15	1.14	1.14	1.13	1.11	
3			4			5																							



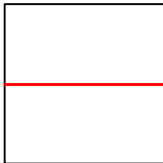
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1.3 Calculation results, Exterior 1

1.3.3 Table, VERTICAL FENCE (E)

1.66	1.65	1.63	1.6	1.56	1.53	1.5	1.47	1.43	1.4	1.36	1.33	1.29	1.26	1.23	1.19	1.15	1.11	1.07	1.03	0.99	0.95	0.92	0.88	0.85	0.81	0.78	0.75		
1.65	1.63	1.61	1.59	1.56	1.54	1.51	1.47	1.44	1.42	1.38	1.35	1.31	1.28	1.25	1.22	1.18	1.14	1.1	1.06	1.02	0.98	0.95	0.91	0.88	0.84	0.81	0.78	0.75	
1.61	1.61	1.59	1.57	1.55	1.52	1.49	1.46	1.42	1.37	1.34	1.3	1.27	1.24	1.22	1.18	1.15	1.13	1.09	1.05	1.01	0.98	0.94	0.9	0.87	0.84	0.8	0.77	0.74	
1.59	1.57	1.55	1.54	1.52	1.5	1.47	1.43	1.4	1.35	1.31	1.28	1.25	1.22	1.2	1.16	1.13	1.1	1.06	1.02	0.98	0.95	0.91	0.88	0.86	0.83	0.8	0.77	0.74	
1.59	1.55	1.53	1.51	1.5	1.47	1.44	1.41	1.38	1.33	1.29	1.26	1.23	1.2	1.18	1.15	1.11	1.08	1.04	1	0.97	0.93	0.9	0.87	0.83	0.8	0.77	0.74	0.71	
1.56	1.54	1.51	1.49	1.47	1.45	1.42	1.39	1.35	1.31	1.27	1.24	1.21	1.19	1.16	1.12	1.09	1.06	1.02	0.98	0.95	0.92	0.88	0.85	0.82	0.79	0.76	0.73	0.7	
1.53	1.52	1.49	1.47	1.44	1.42	1.39	1.36	1.32	1.29	1.25	1.22	1.19	1.16	1.13	1.1	1.07	1.04	1	0.97	0.93	0.9	0.87	0.84	0.81	0.78	0.75	0.72	0.69	
1.5	1.47	1.46	1.43	1.41	1.39	1.36	1.33	1.3	1.26	1.23	1.2	1.16	1.14	1.11	1.08	1.05	1.02	0.98	0.95	0.92	0.88	0.85	0.82	0.79	0.76	0.74	0.71	0.68	
1.44	1.44	1.42	1.4	1.38	1.35	1.33	1.3	1.27	1.24	1.2	1.17	1.14	1.11	1.08	1.05	1.02	0.99	0.96	0.93	0.9	0.87	0.84	0.81	0.78	0.75	0.72	0.7	0.67	
1.4	1.39	1.38	1.36	1.34	1.32	1.29	1.27	1.24	1.21	1.18	1.15	1.11	1.08	1.05	1.02	0.99	0.96	0.94	0.91	0.88	0.85	0.82	0.79	0.76	0.74	0.71	0.68	0.66	
1.37	1.35	1.34	1.32	1.31	1.28	1.26	1.23	1.21	1.18	1.15	1.12	1.09	1.06	1.03	1	0.97	0.94	0.91	0.88	0.85	0.83	0.8	0.77	0.75	0.72	0.69	0.67	0.64	
1.33	1.31	1.3	1.29	1.27	1.25	1.22	1.2	1.18	1.15	1.12	1.09	1.06	1.03	1	0.97	0.94	0.92	0.89	0.86	0.83	0.8	0.78	0.76	0.73	0.7	0.68	0.65	0.63	
1.29	1.27	1.26	1.24	1.23	1.21	1.19	1.17	1.14	1.12	1.09	1.06	1.03	1	0.97	0.95	0.92	0.89	0.87	0.84	0.81	0.79	0.76	0.73	0.71	0.69	0.66	0.64	0.62	
1.25	1.24	1.22	1.2	1.19	1.17	1.15	1.13	1.11	1.09	1.06	1.03	1	0.98	0.95	0.92	0.9	0.87	0.84	0.82	0.79	0.77	0.74	0.72	0.69	0.67	0.64	0.62	0.6	
1.22	1.2	1.18	1.17	1.15	1.13	1.12	1.1	1.08	1.05	1.03	1	0.98	0.95	0.92	0.9	0.87	0.85	0.82	0.8	0.77	0.75	0.72	0.7	0.67	0.65	0.63	0.61	0.59	
1.18	1.16	1.15	1.13	1.11	1.1	1.08	1.06	1.04	1.02	1	0.97	0.95	0.93	0.9	0.87	0.85	0.82	0.8	0.77	0.75	0.73	0.7	0.68	0.66	0.63	0.61	0.59	0.57	
1.14	1.12	1.11	1.09	1.08	1.06	1.04	1.03	1.01	0.99	0.97	0.94	0.92	0.9	0.87	0.85	0.82	0.8	0.78	0.75	0.73	0.71	0.69	0.66	0.64	0.62	0.6	0.58	0.56	
1.1	1.08	1.07	1.05	1.04	1.02	1.01	0.99	0.98	0.96	0.93	0.91	0.89	0.87	0.85	0.82	0.8	0.78	0.75	0.73	0.71	0.69	0.67	0.65	0.62	0.6	0.58	0.56	0.54	
6						7						8																	



Part3

Object : EXTERNAL LIGHTING
 Installation : SAMPLE
 Project number : 10125-QC
 Date : 15.06.2015

Brighter By Design

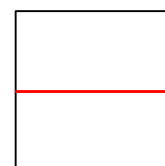


1.3 Calculation results, Exterior 1

1.3.3 Table, VERTICAL FENCE (E)

0.72	0.69	0.67	0.64	0.61	0.59	0.56	0.54	0.52	0.5	0.48	0.46	0.44	0.42	0.41
0.72	0.69	0.66	0.64	0.61	0.59	0.56	0.54	0.52	0.5	0.48	0.46	0.44	0.42	0.4
0.71	0.69	0.66	0.63	0.61	0.58	0.56	0.54	0.52	0.49	0.47	0.46	0.44	0.42	0.4
0.71	0.68	0.65	0.63	0.6	0.58	0.56	0.53	0.51	0.49	0.47	0.45	0.43	0.42	0.4
0.69	0.66	0.63	0.62	0.6	0.57	0.55	0.53	0.51	0.49	0.47	0.45	0.43	0.41	0.4
0.68	0.65	0.63	0.6	0.58	0.55	0.53	0.51	0.49	0.47	0.45	0.44	0.43	0.41	0.39
0.67	0.64	0.62	0.59	0.57	0.55	0.53	0.5	0.48	0.47	0.45	0.43	0.41	0.4	0.38
0.66	0.63	0.61	0.58	0.56	0.54	0.52	0.5	0.48	0.46	0.44	0.42	0.41	0.39	0.37
0.64	0.62	0.6	0.57	0.55	0.53	0.51	0.49	0.47	0.45	0.44	0.42	0.4	0.38	0.37
0.63	0.61	0.59	0.56	0.54	0.52	0.5	0.48	0.46	0.45	0.43	0.41	0.39	0.38	0.36
0.62	0.6	0.58	0.55	0.53	0.51	0.49	0.47	0.46	0.44	0.42	0.41	0.39	0.37	0.36
0.61	0.59	0.56	0.54	0.52	0.5	0.48	0.47	0.45	0.43	0.42	0.4	0.38	0.37	0.35
0.6	0.57	0.55	0.53	0.51	0.49	0.47	0.46	0.44	0.42	0.41	0.39	0.38	0.36	0.34
0.58	0.56	0.54	0.52	0.5	0.48	0.47	0.45	0.43	0.42	0.4	0.38	0.37	0.35	0.34
0.57	0.55	0.53	0.51	0.49	0.47	0.46	0.44	0.42	0.41	0.39	0.38	0.36	0.35	0.33
0.55	0.54	0.52	0.5	0.48	0.46	0.45	0.43	0.42	0.4	0.38	0.37	0.35	0.34	0.32
0.54	0.52	0.51	0.49	0.47	0.45	0.44	0.42	0.41	0.39	0.38	0.36	0.35	0.33	0.32
0.53	0.51	0.49	0.48	0.46	0.44	0.43	0.41	0.4	0.38	0.37	0.35	0.34	0.33	(0.31)

⁹[m]



Part4

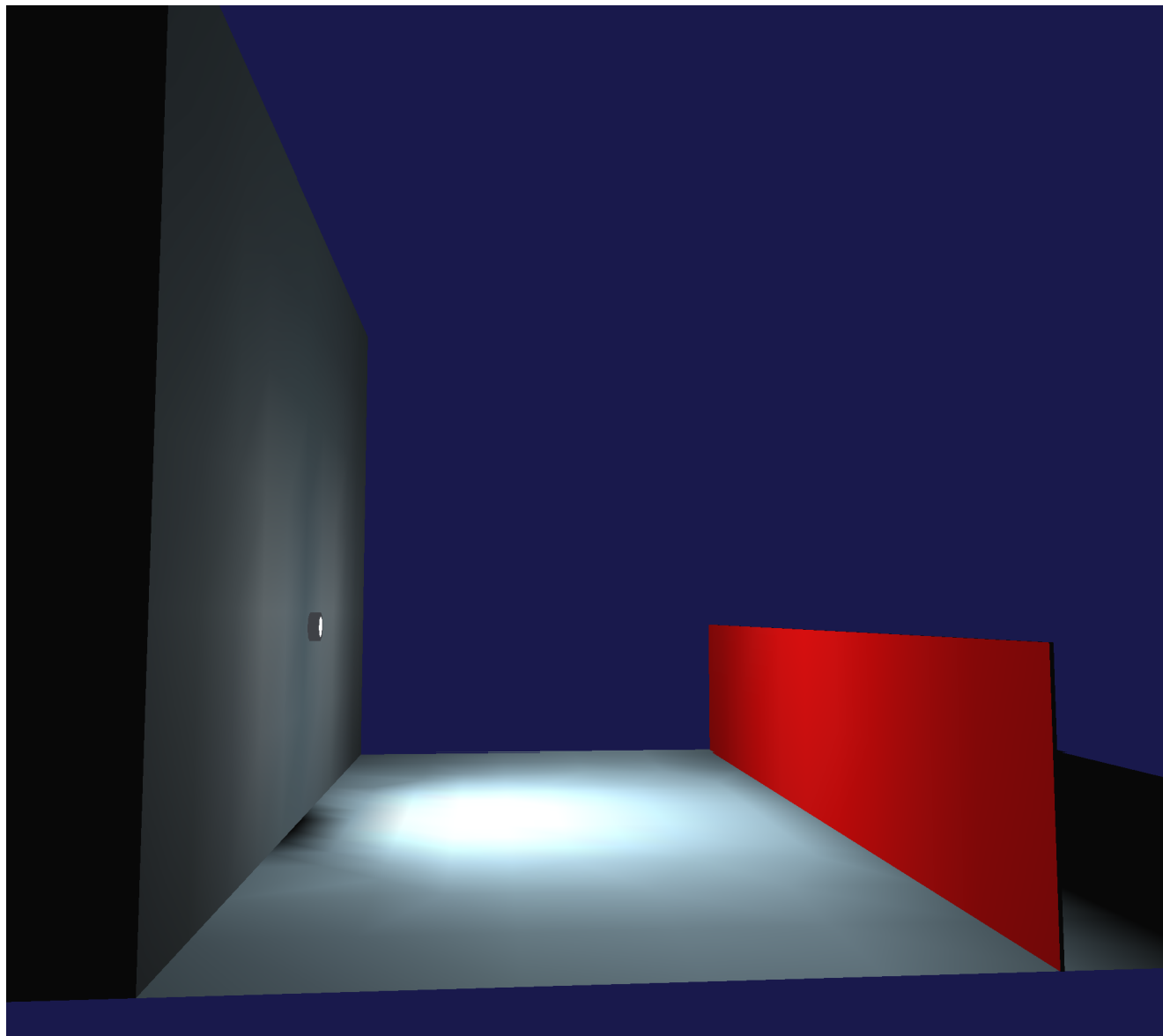
Object : EXTERNAL LIGHTING
Installation : SAMPLE
Project number : 10125-QC
Date : 15.06.2015

Brighter By Design

ASD
LIGHTING

1.3 Calculation results, Exterior 1

1.3.4 3D luminance, View 1



Luminance in the scene

Minimum: : 0 cd/m²

Maximum: : 0.11 cd/m²