Santander Deansgate Exterior

Installation : Current by GE

Project number : SAPN0148
Customer : Santander
Processed by : G.Ingham
Date : 11.01.2019

Project description:
REV04
As per REV03 with the addition of new vertical measuring surfaces to residential properties showing spill luminance/illuminance values from proposed rear car park lighting.
REV03
As per REV02 with the exception of the following change:
Main Central building - Facade
Design revised to include 6 no. LED floodlights to replace the assumed 400W Metal Halide Floodlights, to soften the washing of the building whilst reducing the light pollution.
Glass Facades
2 no. assumed 1KW Metal Halide Floodlights per facade to be replaced with LED versions of a lower output to aide in the reduction from light spill onto the road whilst soften the washing of the glass facades.
REV00
Lighting design based upon the EN 12464-2:2014 standards for the client's requirement to reduce light pollution with products that will soften the lighting for the front of the buildings, with minimum light spill on the public walkway.
Rear carparks:
Car parks to be lit in accordance to the EN 12464-2:2014 standards based upon an E3 environmental zone.
Maintenance Factor 0.9.
Measuring plane at floor level.
Exterior walls reflectance's set to 30.
Vertical measuring planes on neighbouring houses to show obtrusive lighting results.
Front of building:
Maintenance Factor 0.9.
Measuring plane at floor level.
Exterior walls reflectance's set to 30
Horizontal measuring planes at 20m and 30m above the main building to provide the obtrusive lighting results.
Disclaimer associated to this scheme design has been attached as the last page.

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.

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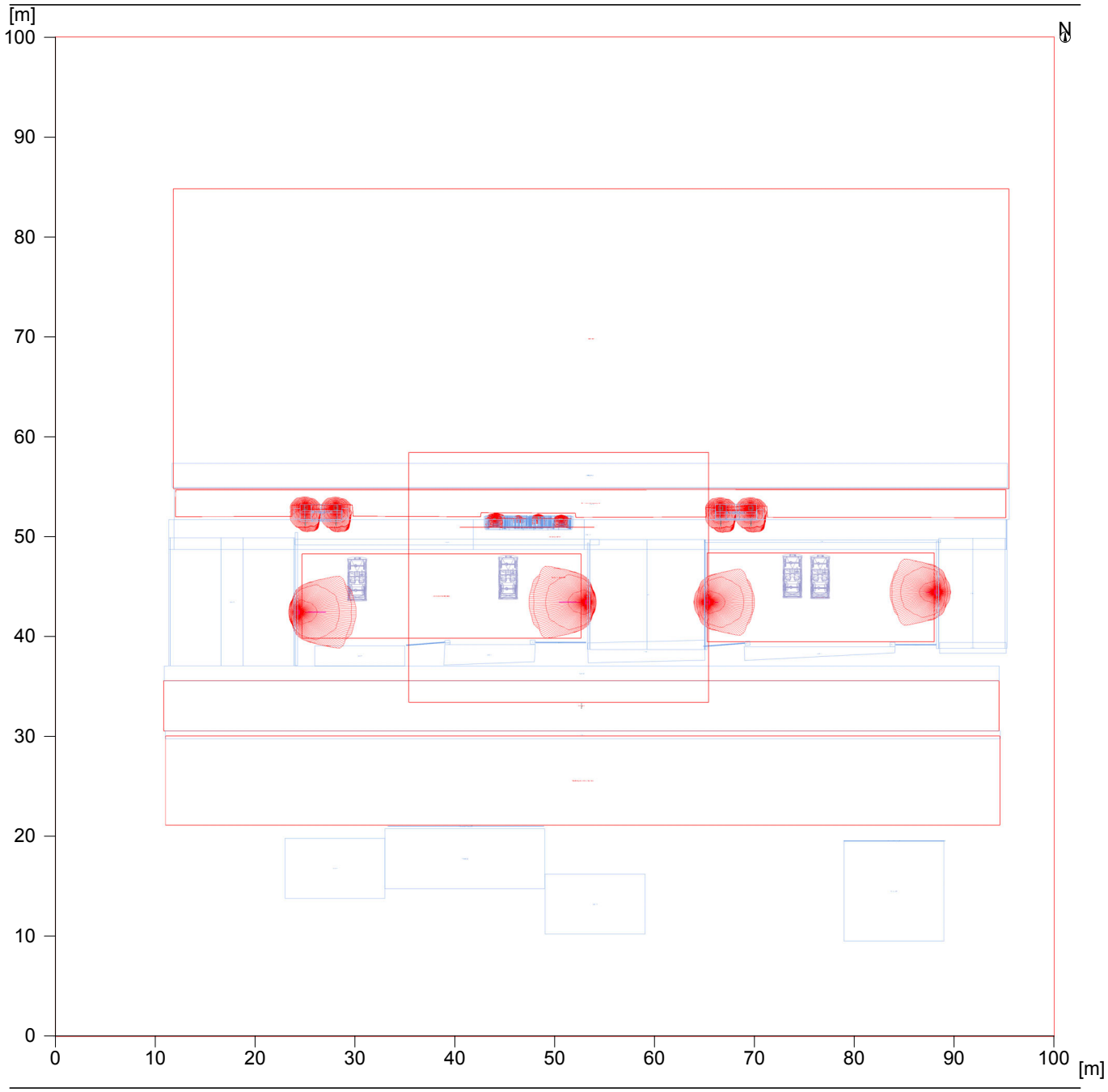
1 Exterior 1

1.1 Description, Exterior 1

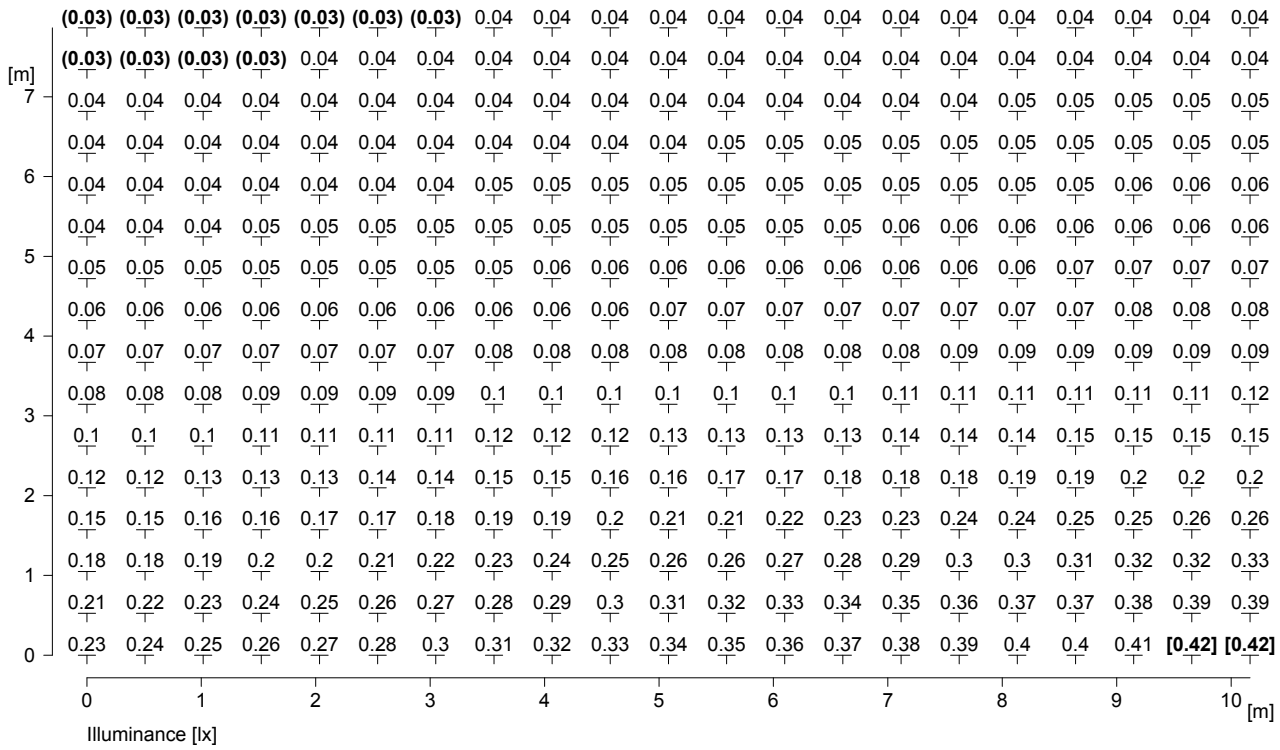
1.1.1 Floor plan



1 Exterior 1

1.3 Calculation results, Exterior 1

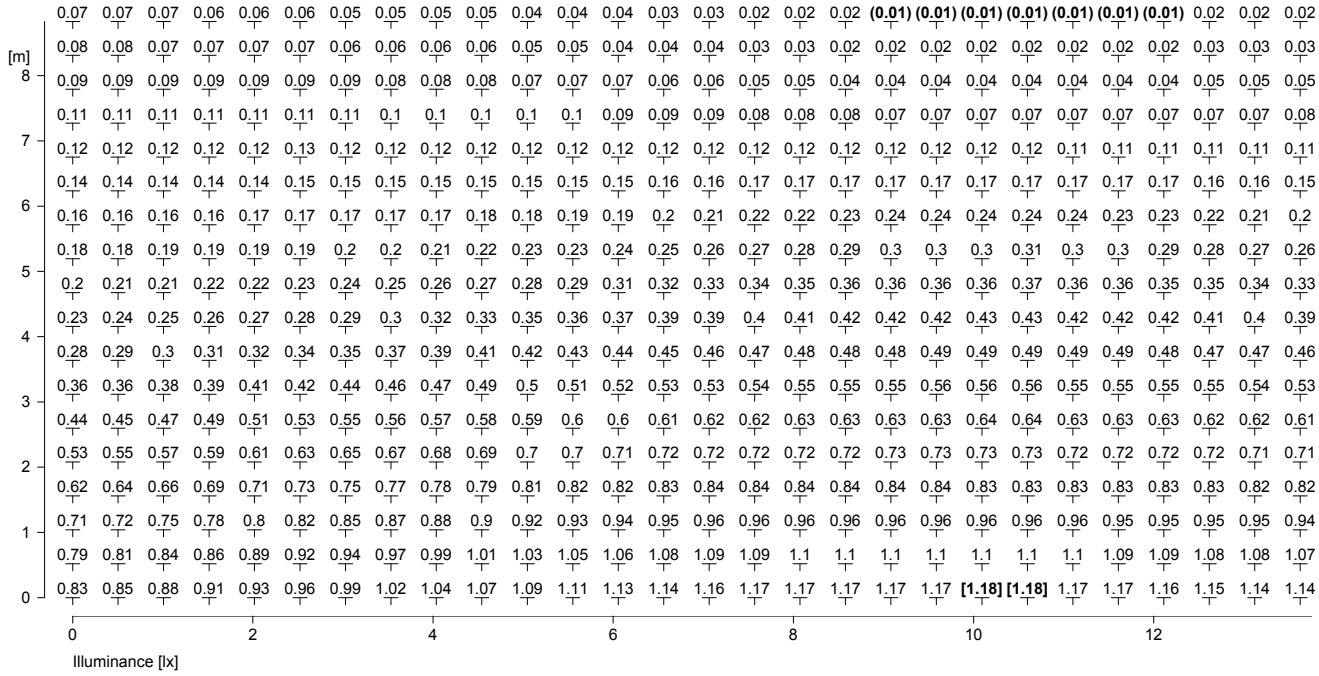
1.3.1 Table, Residential Property 01 (E)



Average illuminance	Eav	: 0.12 lx
Minimum illuminance	Emin	: 0.03 lx
Maximum illuminance	Emax	: 0.42 lx
Uniformity Uo	Emin/Eav	: 1 : 3.81 (0.26)
Diversity Ud	Emin/Emax	: 1 : 13.14 (0.08)

1.3 Calculation results, Exterior 1

1.3.2 Table, Residencital Property 02 (E)



0.07	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03	0.02	0.02	0.02	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	0.02	0.02	0.02
0.08	0.08	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03
0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.07	0.07	0.07	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05
0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.1	0.1	0.1	0.1	0.1	0.09	0.09	0.09	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08
0.12	0.12	0.12	0.12	0.12	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11
0.14	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.15
0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.18	0.18	0.19	0.19	0.2	0.21	0.22	0.22	0.23	0.24	0.24	0.24	0.24	0.24	0.23	0.23	0.22	0.21	0.2
0.18	0.18	0.19	0.19	0.19	0.19	0.2	0.2	0.21	0.22	0.23	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.3	0.3	0.3	0.31	0.3	0.3	0.29	0.28	0.27	0.26
0.2	0.21	0.21	0.22	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.31	0.32	0.33	0.34	0.35	0.36	0.36	0.36	0.36	0.37	0.36	0.36	0.35	0.35	0.34	0.33
0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.3	0.32	0.33	0.35	0.36	0.37	0.39	0.39	0.4	0.41	0.42	0.42	0.42	0.43	0.43	0.42	0.42	0.42	0.41	0.4	0.39
0.28	0.29	0.3	0.31	0.32	0.34	0.35	0.37	0.39	0.41	0.42	0.43	0.44	0.45	0.46	0.47	0.48	0.48	0.48	0.49	0.49	0.49	0.49	0.49	0.48	0.47	0.47	0.46
0.36	0.36	0.38	0.39	0.41	0.42	0.44	0.46	0.47	0.49	0.5	0.51	0.52	0.53	0.53	0.54	0.55	0.55	0.55	0.56	0.56	0.56	0.55	0.55	0.55	0.55	0.54	0.53
0.44	0.45	0.47	0.49	0.51	0.53	0.55	0.56	0.57	0.58	0.59	0.6	0.6	0.61	0.62	0.62	0.63	0.63	0.63	0.63	0.64	0.64	0.63	0.63	0.63	0.62	0.62	0.61
0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.68	0.69	0.7	0.7	0.71	0.72	0.72	0.72	0.72	0.72	0.73	0.73	0.73	0.73	0.72	0.72	0.72	0.72	0.71	0.71
0.62	0.64	0.66	0.69	0.71	0.73	0.75	0.77	0.78	0.79	0.81	0.82	0.82	0.83	0.84	0.84	0.84	0.84	0.84	0.84	0.83	0.83	0.83	0.83	0.83	0.83	0.82	0.82
0.71	0.72	0.75	0.78	0.8	0.82	0.85	0.87	0.88	0.9	0.92	0.93	0.94	0.95	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.95	0.95	0.95	0.95	0.94
0.79	0.81	0.84	0.86	0.89	0.92	0.94	0.97	0.99	1.01	1.03	1.05	1.06	1.08	1.09	1.09	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.09	1.09	1.08	1.08	1.07
0.83	0.85	0.88	0.91	0.93	0.96	0.99	1.02	1.04	1.07	1.09	1.11	1.13	1.14	1.16	1.17	1.17	1.17	1.17	1.17	[1.18]	[1.18]	1.17	1.17	1.16	1.15	1.14	1.14

Part1

Average illuminance	Eav	: 0.42 lx
Minimum illuminance	Emin	: 0.01 lx
Maximum illuminance	Emax	: 1.18 lx
Uniformity Uo	Emin/Eav	: 1 : 36.41 (0.03)
Diversity Ud	Emin/Emax	: 1 : 101.55 (0.01)

1.3 Calculation results, Exterior 1

1.3.2 Table, Residencital Property 02 (E)

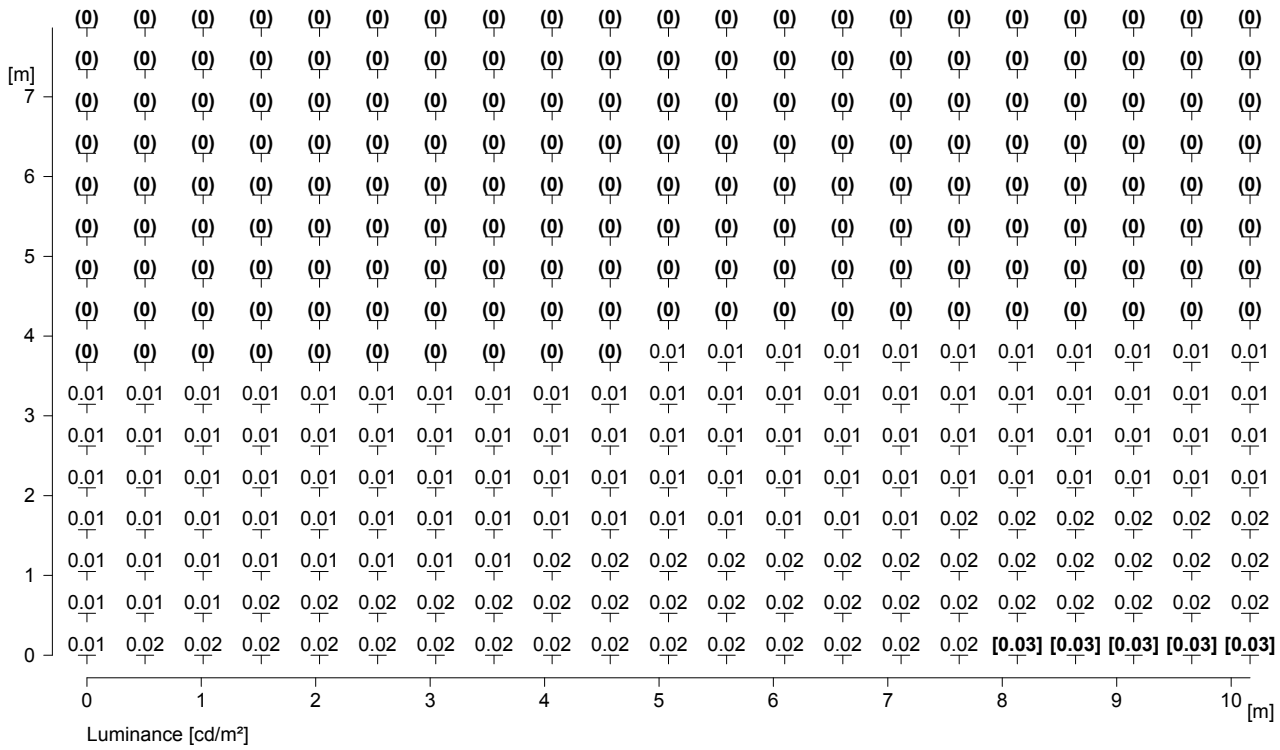
0.03	0.03	0.04	0.04
0.04	0.04	0.04	0.05
0.06	0.06	0.06	0.06
0.08	0.08	0.09	0.09
0.11	0.11	0.11	0.11
0.15	0.14	0.14	0.14
0.19	0.18	0.18	0.17
0.25	0.24	0.23	0.22
0.31	0.3	0.29	0.28
0.38	0.37	0.36	0.35
0.45	0.44	0.43	0.43
0.52	0.51	0.5	0.5
0.6	0.59	0.58	0.58
0.7	0.69	0.69	0.68
0.81	0.81	0.8	0.79
0.94	0.93	0.91	0.91
1.07	1.05	1.04	1.03
1.13	1.12	1.11	1.1

14 [m]

Part2

1.3 Calculation results, Exterior 1

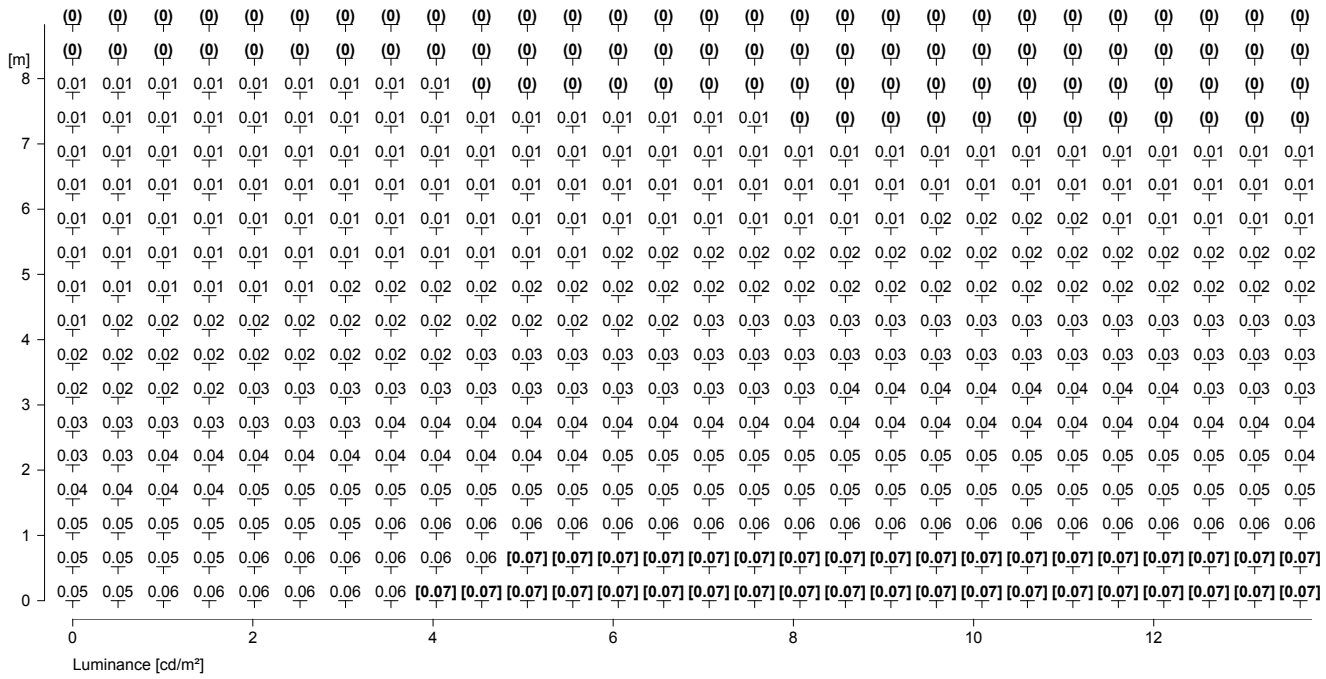
1.3.3 Table, Residential Property 01 (L)



Average luminance	Lav	: 0.01 cd/m²
Minimum luminance	Lmin	: 0 cd/m²
Maximum luminance	Lmax	: 0.03 cd/m²

1.3 Calculation results, Exterior 1

1.3.4 Table, Residencital Property 02 (L)



Part1

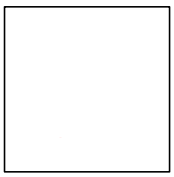
Average luminance	Lav	: 0.03 cd/m²
Minimum luminance	Lmin	: 0 cd/m²
Maximum luminance	Lmax	: 0.07 cd/m²

1.3 Calculation results, Exterior 1

1.3.4 Table, Residencital Property 02 (L)

(0)	(0)	(0)	(0)
(0)	(0)	(0)	(0)
(0)	(0)	(0)	(0)
0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01
0.02	0.02	0.01	0.01
0.02	0.02	0.02	0.02
0.02	0.02	0.02	0.02
0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03
0.04	0.04	0.04	0.04
0.04	0.04	0.04	0.04
0.05	0.05	0.05	0.05
0.06	0.06	0.06	0.06
[0.07]	[0.07]	[0.07]	[0.07]
[0.07]	[0.07]	[0.07]	[0.07]

14 [m]



Part2