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Photometric Test Report

Job Ref. 42 / 5482
Report Ref. 42 / 5482 / 54825a
Report Date 2002.12.30

Customer Encapsulite

Luminaire catalog No. MT50 IP68 35W CLEAR
Luminaire description linear cylindrical luminaire
with clear cover
data derived from range test series

Lamp description 35W T5 1450mm HE
Lamp lumen output 3300lm
No. of lamps in luminaire 1

width of luminaire 0.050m
length of luminaire 1.560m
height of luminaire 0.050m

The luminaire has been treated as though it has 2 planes of symmetry through the 0°/180° plane and the 90°/270° plane.

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All measurements taken in accordance with BS5225.

The photometric centre of the luminaire was taken as the centre of the lamp.

The photometric nadir was taken to be perpendicular to the front face of the reflector.

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Light Output Ratios	Up	0.12
	Down	0.87
	Total	0.99

Lighting design calculations should be performed using an initial (100 hour) lumen output of 3300 lm

Spacing to Height Ratios	SHR NOM	1.75
	SHR MAX	1.83
	SHR MAX TRANS	2.43

Utilisation Factors UF(F) Standard Presentation SHR NOM = 1.75

Room Reflectances			Room Index										
C	W	F	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00		
.70	.50	.20	N/A	.57	.63	.68	.75	.81	.84	.89	.93		
	.30		N/A	.48	.55	.60	.68	.74	.78	.84	.88		
	.10		N/A	.42	.48	.54	.62	.68	.72	.79	.84		
.50	.50	.20	N/A	.53	.59	.64	.70	.75	.78	.83	.86		
	.30		N/A	.46	.52	.57	.64	.69	.73	.79	.82		
	.10		N/A	.40	.46	.51	.59	.64	.68	.75	.79		
.30	.50	.20	N/A	.50	.55	.59	.66	.70	.73	.77	.80		
	.30		N/A	.44	.49	.54	.60	.65	.69	.74	.77		
	.10		N/A	.39	.44	.49	.56	.61	.65	.70	.74		
.00	.00	.00	N/A	.35	.40	.44	.50	.55	.58	.63	.67		
BZ Class			N/A	6	6	6	6	6	6	6	6		
CIE Flux code			33 / 61 / 83 / 87 / 99										
CIE Room Index			0.60 0.80 1.00 1.25 1.50 2.00 2.50 3.00 4.00 5.00 10.0 20.0										
CIE DRR			0.21 0.28 0.34 0.41 0.46 0.54 0.60 0.65 0.70 0.74 0.81 0.85										
CIE class			7 / 7 / 7 / 8 / 8 / 8 / 8 / 8 / 8 / 8 / 8 / 9 / -										
Flux Fraction Ratio			0.14										
DIN Class			0.99 B										

Calculated in accordance with CIBSE Technical Memorandum No. 5 1980
 In accordance with TM5, this UF table is valid for values of SHR from 0.5 below SHR NOM to 0.5 above SHR NOM. SHR MAX is a separate limitation.
 Reflectances given in the UF table are the effective reflectances of the ceiling cavity, walls and floor cavity, and must be determined for the actual room in which the luminaire will be used.
 UF(F),UF(W), and UF(C) for 0% reflectance of the room surfaces are equivalent to DF(F),DF(W) and DF(C) respectively.



Average Luminous Intensities (cd/Klm)

Angle	Transverse plane	Axial plane	Average all planes
0°	198.63	198.63	198.63
5°	198.86	197.95	198.17
10°	198.99	195.25	196.19
15°	199.17	190.60	192.78
20°	199.13	184.48	188.36
25°	198.67	176.40	182.77
30°	197.77	166.22	175.64
35°	196.45	154.63	167.23
40°	195.13	141.62	158.09
45°	194.13	126.92	148.03
50°	194.00	112.18	137.53
55°	193.13	94.79	127.11
60°	190.86	77.77	116.36
65°	186.96	59.69	107.18
70°	181.47	40.89	97.44
75°	172.93	24.13	86.49
80°	161.08	10.50	73.27
85°	148.23	2.19	59.21
90°	141.24	0.00	49.97
95°	138.88	0.00	43.03
100°	123.90	0.00	16.01
105°	102.02	0.00	1.44
110°	22.79	0.00	0.52
115°	0.86	0.00	0.21
120°	0.50	0.00	0.16
125°	0.00	0.00	0.00
130°	0.00	0.00	0.00
135°	0.00	0.00	0.00
140°	0.00	0.00	0.00
145°	0.00	0.00	0.00
150°	0.00	0.00	0.00
155°	0.00	0.00	0.00
160°	0.00	0.00	0.00
165°	0.00	0.00	0.00
170°	0.00	0.00	0.00
175°	0.00	0.00	0.00
180°	0.00	0.00	0.00



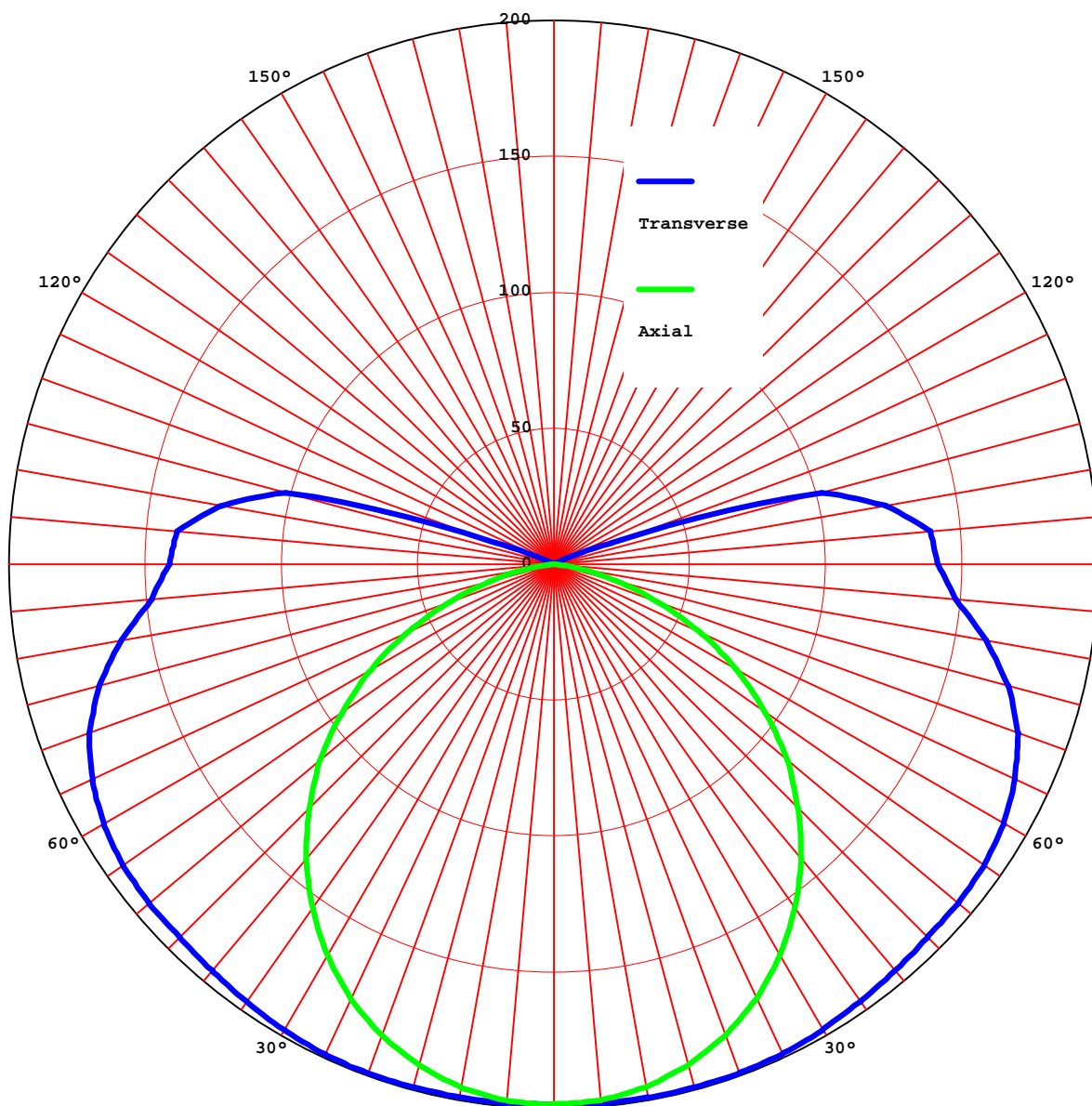
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Luminous Intensities (cd/Klm)



Angle

Aspect Factors

	Parallel plane	Perpendicular plane
0°	0.000	0.000
5°	0.087	0.004
10°	0.173	0.015
15°	0.255	0.033
20°	0.334	0.058
25°	0.407	0.089
30°	0.474	0.123
35°	0.533	0.161
40°	0.585	0.201
45°	0.628	0.241
50°	0.664	0.279
55°	0.692	0.315
60°	0.712	0.347
65°	0.726	0.374
70°	0.734	0.394
75°	0.739	0.408
80°	0.740	0.416
85°	0.741	0.418
90°	0.741	0.419

Zonal fluxes (Lumens)

Zone	% lamp	% luminaire
0°- 10°	1.9%	1.9%
10°- 20°	5.5%	5.6%
20°- 30°	8.7%	8.8%
30°- 40°	11.1%	11.2%
40°- 50°	12.6%	12.7%
50°- 60°	13.3%	13.4%
60°- 70°	13.1%	13.2%
70°- 80°	11.8%	11.9%
80°- 90°	9.4%	9.5%
90°-100°	8.2%	8.2%
100°-110°	4.4%	4.4%
110°-120°	0.0%	0.0%
120°-130°	0.0%	0.0%
130°-140°	0.0%	0.0%
140°-150°	0.0%	0.0%
150°-160°	0.0%	0.0%
160°-170°	0.0%	0.0%
170°-180°	0.0%	0.0%



Average Luminous Intensities (cd/Klm)

Angles	0°	30°	60°	90°	120°	150°
0°	198.6	198.6	198.6	198.6	198.6	198.6
5°	198.9	198.6	198.2	197.9	198.2	198.6
10°	199.0	198.2	196.2	195.3	196.2	198.2
15°	199.2	197.3	192.8	190.6	192.8	197.3
20°	199.1	195.8	188.4	184.5	188.4	195.8
25°	198.7	193.5	182.8	176.4	182.8	193.5
30°	197.8	191.0	175.6	166.2	175.6	191.0
35°	196.4	187.3	167.2	154.6	167.2	187.3
40°	195.1	183.7	158.1	141.6	158.1	183.7
45°	194.1	179.9	148.0	126.9	148.0	179.9
50°	194.0	176.7	137.5	112.2	137.5	176.7
55°	193.1	173.9	127.1	94.8	127.1	173.9
60°	190.9	170.6	116.4	77.8	116.4	170.6
65°	187.0	165.1	107.2	59.7	107.2	165.1
70°	181.5	158.3	97.4	40.9	97.4	158.3
75°	172.9	149.4	86.5	24.1	86.5	149.4
80°	161.1	138.0	73.3	10.5	73.3	138.0
85°	148.2	123.5	59.2	2.2	59.2	123.5
90°	141.2	116.2	50.0	0.0	50.0	116.2
95°	138.9	112.2	43.0	0.0	43.0	112.2
100°	123.9	97.1	16.0	0.0	16.0	97.1
105°	102.0	71.4	1.4	0.0	1.4	71.4
110°	22.8	1.0	0.5	0.0	0.5	1.0
115°	0.9	0.5	0.2	0.0	0.2	0.5
120°	0.5	0.5	0.2	0.0	0.2	0.5
125°	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0

Average Luminous Intensities (cd/Klm)

Angles	180°	210°	240°	270°	300°	330°
0°	198.6	198.6	198.6	198.6	198.6	198.6
5°	198.9	198.6	198.2	197.9	198.2	198.6
10°	199.0	198.2	196.2	195.3	196.2	198.2
15°	199.2	197.3	192.8	190.6	192.8	197.3
20°	199.1	195.8	188.4	184.5	188.4	195.8
25°	198.7	193.5	182.8	176.4	182.8	193.5
30°	197.8	191.0	175.6	166.2	175.6	191.0
35°	196.4	187.3	167.2	154.6	167.2	187.3
40°	195.1	183.7	158.1	141.6	158.1	183.7
45°	194.1	179.9	148.0	126.9	148.0	179.9
50°	194.0	176.7	137.5	112.2	137.5	176.7
55°	193.1	173.9	127.1	94.8	127.1	173.9
60°	190.9	170.6	116.4	77.8	116.4	170.6
65°	187.0	165.1	107.2	59.7	107.2	165.1
70°	181.5	158.3	97.4	40.9	97.4	158.3
75°	172.9	149.4	86.5	24.1	86.5	149.4
80°	161.1	138.0	73.3	10.5	73.3	138.0
85°	148.2	123.5	59.2	2.2	59.2	123.5
90°	141.2	116.2	50.0	0.0	50.0	116.2
95°	138.9	112.2	43.0	0.0	43.0	112.2
100°	123.9	97.1	16.0	0.0	16.0	97.1
105°	102.0	71.4	1.4	0.0	1.4	71.4
110°	22.8	1.0	0.5	0.0	0.5	1.0
115°	0.9	0.5	0.2	0.0	0.2	0.5
120°	0.5	0.5	0.2	0.0	0.2	0.5
125°	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0

Non Averaged Luminous Intensities (cd/Klm)

Angles	0°	30°	60°	90°	120°	150°
0°	198.6	198.6	198.6	198.6	198.6	198.6
5°	198.6	198.4	198.3	198.0	198.4	198.7
10°	198.5	198.2	196.4	195.5	196.8	198.8
15°	198.4	197.0	193.1	190.8	193.8	198.4
20°	198.2	195.5	188.6	185.0	189.4	197.0
25°	197.6	193.4	182.9	177.0	184.1	194.9
30°	196.6	190.6	175.9	167.1	177.2	192.3
35°	195.2	187.3	167.4	155.1	168.4	189.0
40°	193.8	183.7	159.2	142.8	159.5	185.2
45°	192.8	180.0	148.8	128.0	149.4	181.5
50°	192.6	176.6	138.9	113.8	138.9	178.3
55°	191.4	173.6	128.4	96.0	128.0	175.6
60°	189.4	170.4	117.6	78.6	117.7	172.2
65°	185.5	165.0	108.4	61.1	107.8	167.1
70°	180.4	158.4	98.8	41.8	97.8	159.9
75°	171.9	149.6	87.9	26.1	86.9	150.7
80°	160.1	139.2	73.7	10.8	73.8	138.8
85°	146.5	126.2	61.6	2.5	58.9	124.1
90°	139.3	115.8	51.2	0.0	49.2	117.2
95°	136.0	111.2	45.1	0.0	43.2	114.8
100°	121.7	97.4	25.1	0.0	14.0	98.8
105°	102.5	78.7	1.9	0.0	1.5	71.3
110°	22.8	0.9	0.6	0.0	0.4	0.9
115°	0.9	0.5	0.3	0.0	0.1	0.5
120°	0.4	0.4	0.2	0.0	0.1	0.5
125°	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0



Non Averaged Luminous Intensities (cd/Klm)

Angles	180°	210°	240°	270°	300°	330°
0°	198.6	198.6	198.6	198.6	198.6	198.6
5°	199.1	198.7	198.0	197.9	198.0	198.4
10°	199.4	198.5	195.9	195.1	195.7	197.4
15°	200.0	197.7	192.5	190.4	191.7	196.3
20°	200.1	196.3	187.9	183.9	187.5	194.3
25°	199.7	193.6	182.3	175.8	181.8	192.1
30°	198.9	191.1	175.3	165.3	174.2	190.0
35°	197.7	187.5	167.1	154.2	166.0	185.4
40°	196.5	184.3	157.6	140.4	156.1	181.7
45°	195.5	180.4	147.7	125.8	146.1	177.7
50°	195.4	176.9	137.4	110.5	134.9	174.9
55°	194.8	174.4	126.5	93.6	125.5	171.9
60°	192.3	170.8	116.1	76.9	114.1	168.9
65°	188.4	165.6	106.9	58.3	105.5	162.9
70°	182.5	158.5	97.5	40.0	95.7	156.3
75°	174.0	149.7	86.5	22.1	84.7	147.5
80°	162.0	138.3	73.9	10.2	71.6	135.7
85°	150.0	124.0	59.1	1.8	57.2	119.7
90°	143.2	117.9	51.3	0.0	48.3	114.0
95°	141.7	114.9	43.1	0.0	40.7	108.2
100°	126.1	98.1	10.5	0.0	14.4	94.1
105°	101.6	68.4	1.5	0.0	0.9	67.5
110°	22.7	1.0	0.6	0.0	0.5	1.1
115°	0.8	0.5	0.2	0.0	0.3	0.6
120°	0.6	0.5	0.2	0.0	0.2	0.6
125°	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0



Uncorrected Glare Indices

Reflectance of										
Ceiling	.70	.70	.50	.50	.30	.70	.70	.50	.50	.30
Wall	.50	.30	.50	.30	.30	.50	.30	.50	.30	.30
Floor Cavity	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20

Room dimension		Viewed crosswise					Viewed endwise				
X	Y	0°					90°				
2H	2H	14.8	16.7	15.4	17.4	18.1	11.2	13.1	11.9	13.8	14.5
	3H	18.2	20.0	18.9	20.7	21.5	13.2	14.9	13.8	15.6	16.4
	4H	19.9	21.6	20.6	22.3	23.1	13.8	15.5	14.5	16.2	17.0
	6H	21.7	23.3	22.4	24.0	24.9	14.2	15.8	15.0	16.5	17.4
	8H	22.6	24.1	23.3	24.8	25.7	14.3	15.8	15.0	16.6	17.4
	12H	23.4	24.9	24.2	25.7	26.5	14.3	15.8	15.1	16.6	17.4
4H	2H	15.7	17.4	16.4	18.1	18.9	13.4	15.1	14.1	15.8	16.6
	3H	19.6	21.0	20.3	21.8	22.6	15.7	17.2	16.5	18.0	18.8
	4H	21.5	22.9	22.3	23.7	24.5	16.7	18.1	17.5	18.9	19.7
	6H	23.5	24.7	24.3	25.5	26.4	17.4	18.6	18.2	19.4	20.3
	8H	24.5	25.6	25.3	26.5	27.4	17.6	18.7	18.4	19.6	20.5
	12H	25.6	26.6	26.4	27.4	28.4	17.7	18.8	18.5	19.6	20.5
8H	4H	22.2	23.4	23.0	24.2	25.1	18.9	20.1	19.7	20.9	21.8
	6H	24.5	25.5	25.3	26.3	27.2	19.9	20.9	20.7	21.7	22.7
	8H	25.8	26.7	26.6	27.5	28.5	20.4	21.3	21.2	22.2	23.1
	12H	27.1	27.9	27.9	28.7	29.7	20.7	21.5	21.6	22.4	23.3
12H	4H	22.4	23.4	23.2	24.2	25.2	19.8	20.9	20.6	21.7	22.6
	6H	24.8	25.7	25.6	26.5	27.5	21.1	22.0	22.0	22.9	23.8
	8H	26.1	26.9	27.0	27.8	28.7	21.7	22.5	22.5	23.3	24.3

Calculated in accordance with CIBSE Technical Memorandum No. 10 1985

Luminance values

Using a lamp with an initial (100 hour) output of 3300 lm

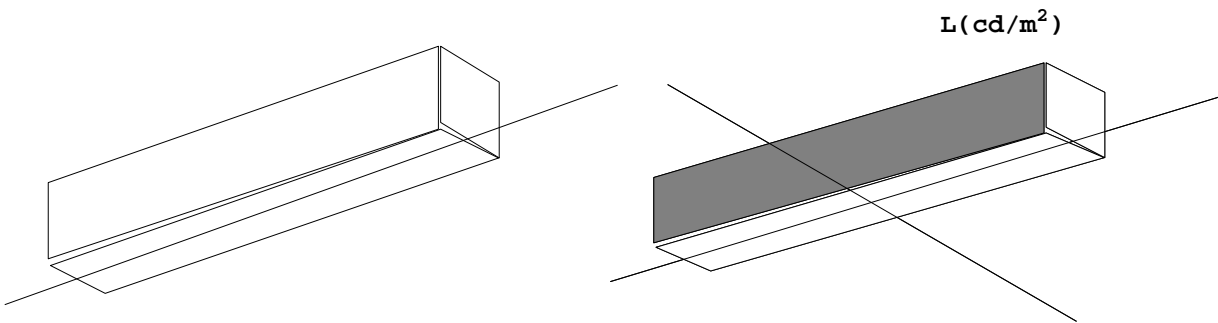
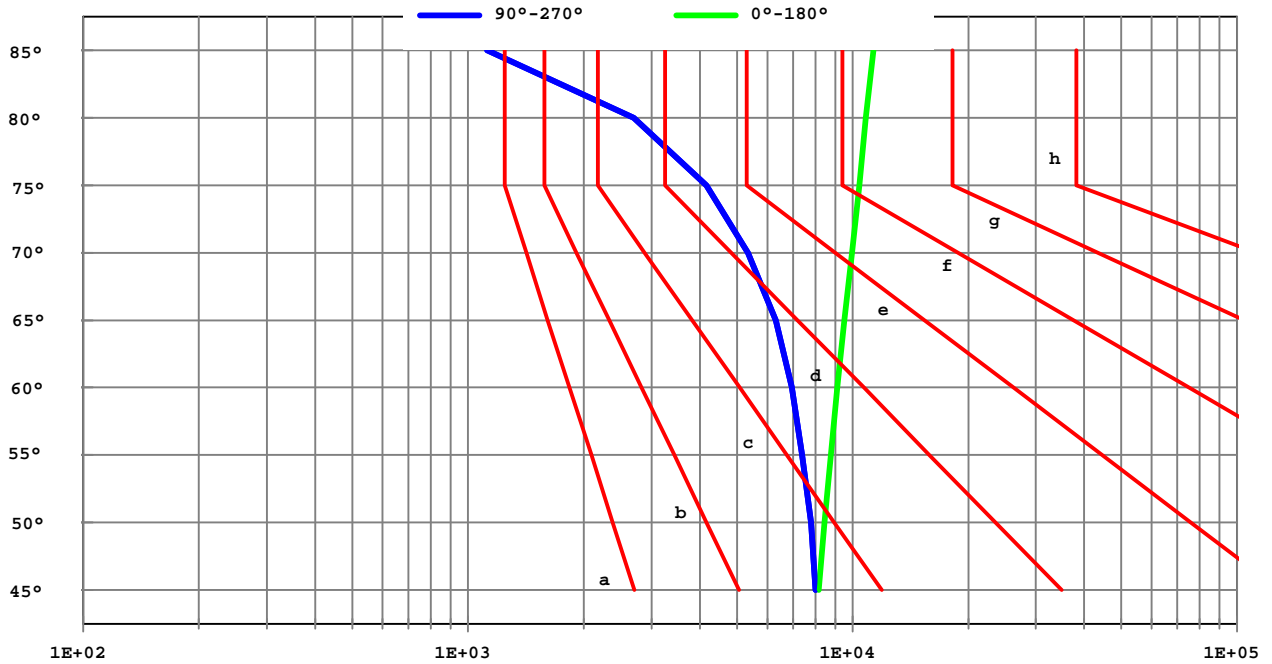
Averaged Luminance values (cd/m²)

Angle	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°
45°	8190	7945	7494	8032	7494	7945	8190	7945	7494	8032	7494	7945
50°	8462	8112	7376	7809	7376	8112	8462	8112	7376	7809	7376	8112
55°	8790	8382	7307	7395	7307	8382	8790	8382	7307	7395	7307	8382
60°	9154	8722	7266	6960	7266	8722	9154	8722	7266	6960	7266	8722
65°	9552	9066	7388	6320	7388	9066	9552	9066	7388	6320	7388	9066
70°	10001	9457	7557	5350	7557	9457	10001	9457	7557	5350	7557	9457
75°	10432	9871	7735	4172	7735	9871	10432	9871	7735	4172	7735	9871
80°	10822	10289	7809	2705	7809	10289	10822	10289	7809	2705	7809	10289
85°	11333	10656	7881	1124	7881	10656	11333	10656	7881	1124	7881	10656

Non Averaged Luminance values (cd/m²)

Angle	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°
45°	8134	7948	7535	8100	7565	8015	8246	7967	7478	7963	7399	7849
50°	8402	8109	7450	7925	7449	8188	8522	8121	7368	7693	7237	8030
55°	8713	8368	7384	7486	7358	8465	8867	8407	7273	7304	7213	8288
60°	9085	8715	7345	7036	7347	8804	9222	8733	7250	6884	7124	8637
65°	9479	9056	7473	6469	7433	9173	9625	9090	7371	6171	7273	8944
70°	9944	9465	7660	5463	7583	9555	10058	9469	7564	5236	7421	9338
75°	10368	9886	7865	4520	7770	9957	10495	9896	7734	3824	7571	9745
80°	10758	10381	7858	2784	7866	10349	10885	10311	7881	2625	7631	10117
85°	11200	10891	8202	1305	7841	10710	11466	10699	7871	942	7609	10326

Glare Rating	Quality Class	Service values of illuminance (lx)							
		a	b	c	d	e	f	g	h
1.15	A	2000	1000	500	<300				
1.50	B		2000	1000	500	<300			
1.85	C			2000	1000	500	<300		
2.20	D				2000	1000	500	<300	
2.55	E					2000	1000	500	<300



Glare Rating	Quality Class	Service values of illuminance (lx)							
		a	b	c	d	e	f	g	h
1.15	A	2000	1000	500	<300				
1.50	B		2000	1000	500	<300			
1.85	C			2000	1000	500	<300		
2.20	D				2000	1000	500	<300	
2.55	E					2000	1000	500	<300

