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Photometric Report

Job / Report / Date	42 / 10692 / 10692-8a / 2013.06.17
Customer	Encapsulite International Ltd.
Luminaire Range	MT50 IP68
Luminaire catalog No.	MT50 SC 21W
Luminaire description	linear cylindrical luminaire with opal cover data derived from range test series
Lamp description	21W/840 HE Osram Lumilux
Lamp lumen output	1,900 lm
Lamp quantity	1

Photometric Report

- Pictures
- Luminaire information
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- Principal Axes Intensities
- Light Output Ratios & CIBSE TM5 Results
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Job / Report / Date

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Customer

Encapsulite International Ltd.

Luminaire Range

MT50 IP68

Luminaire catalog No.

MT50 SC 21W

Luminaire description

linear cylindrical luminaire
with opal cover

data derived from range test series

Lamp description

21W/840 HE Osram Lumilux

Lamp lumen output

1,900 lm

Lamp quantity

1



Helvar
www.helvar.com

ELECTRONIC BALLAST EL1x14-35s
220-240V 0/50-60Hz



T5:14W 0.08-0.06A λ 0.96

T5:21,28,35W 0.18-0.09A λ 0.98

ta = -20...+50°C

75



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Luminaire physical characteristics

Overall Dimensions

Length	960mm
Width	50mm
Height	50mm

Visible Dimensions when installed

Length	960mm
Width	50mm
Height	50mm

Luminous Dimensions

Length	880mm
Width	50mm
Height 0°	25mm
Height 90°	0mm
Height 180°	25mm
Height 270°	0mm

Luminous Areas

Base	0.044m ²
Sides	0.022m ² (0°/180° azimuth)
Ends	0m ² (90°/270° azimuth)

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Report Basis

All measurements taken in accordance with EN13032.

Lamp tests were performed with the lamps in a horizontal orientation.

Luminaire tests were performed with the lamps in a horizontal orientation.

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

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

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

The lumen output, light output ratio (LORL) and power consumption of the luminaire were determined at 25°C after 100 hours pre-conditioning.

Lamps used for test were provided by the customer.

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Lamp lumen output 1,900 lm
Lamp quantity 1

Electrical input & Photometric output characteristics

Control gear

1 * Helvar EL1x14-35S

Ballast Voltage Range 220-240V
Ballast Current Range .09-.18A
Ballast Power Factor 0.98

Sample	Voltage (V)	Current (mA)	Power Factor	Power (W)	VA	Output (lm)	% of Nominal	Efficacy (lm/W)
Luminaire	230.1	101.0	0.960	22.3	23.3	1,416	75%	63.4
Lamp	230.0	101.5	0.961	22.4	23.3	1,539	81%	68.7

Electrical characteristics at 25°C

Ballast Nominal	230V	93.9mA	0.98PF	21.2W	21.6VA
Lamp Nominal	230V	91.3mA	1.00PF	21.0W	21.0VA
Luminaire	230V	101.0mA	0.96PF	22.3W	23.3VA
Lamp	230V	101.5mA	0.96PF	22.4W	23.3VA

Measured Electrical characteristics relative to Ballast Nominal

Luminaire	Current	108%	Power	105%	VA	108%
Lamp	Current	108%	Power	106%	VA	108%

Measured Electrical characteristics relative to Lamp Nominal

Luminaire	Current	111%	Power	106%	VA	111%
Lamp	Current	111%	Power	107%	VA	111%

Lumen Output figures used in this report (lumens)

Nominal Lamp Output	1,900
Measured Luminaire Output	1,416
Measured Lamp Output	1,539

Measured Lumen Output characteristics relative to Lamp Nominal Total

Luminaire	75%
Lamp	81%

Measured luminous efficacy at 25°C

Luminaire	63.4 lm/W
Lamp	68.7 lm/W

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The light output ratio of the luminaire was measured as 0.920 at 25°C.
This is the ratio of the output of the luminaire to the output of the lamp.

The measured lumen output of the luminaire was 1,416 lumens at 25°C.
This figure can be related to the nominal lumen output of the lamp quoted by the manufacturer of 1,900 lumens, to give a nominal light output ratio of 0.745.

The measured lumen output of the lamp was 1,539 lumens at 25°C.
This figure can be related to the nominal lumen output of the lamp quoted by the manufacturer of 1,900 lumens, to give a nominal BLF of 0.81.

For lighting design calculations:

A light output ratio of 1 should be used in conjunction with the measured lumen output of the luminaire of 1,416 lumens.

or

The nominal light output ratio of 0.745 should be used in conjunction with the nominal lumen output of the lamp of 1,900 lumens.

or

The measured light output ratio of 0.920 should be used in conjunction with the measured lumen output of the lamp of 1,539 lumens.

or

The measured light output ratio of 0.920 should be used in conjunction with the nominal lumen output of the lamp of 1,900 lumens and the nominal BLF of 0.81.

This report is based on the following parameters:

The Light Output Ratio is the nominal value of 0.745.

The lamp output is the nominal value of 1,900 lumens.

There is 1 lamp in the luminaire.

No measurements relating to the ballast factor of the control gear were made.

The nominal ballast factor represented by the ratio of the measured lumen output of the lamp to the declared lumen output has been incorporated into the nominal Light Output Ratio figure. The resultant nominal LOR allows lighting calculations to be performed using the declared lamp output without having to incorporate a separate BLF calculation to allow for deviation from the nominal output due to thermal and gear effects.

If the measured LOR figure is used, the measured lumen output of the lamp should be used to perform lighting calculations. If the nominal lamp output is used with the measured LOR figure, an allowance should be made for any deviation of the lamp and gear combination from the published lumen output, represented by the nominal BLF.

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linear cylindrical luminaire
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data derived from range test series

Lamp description

21W/840 HE Osram Lumilux

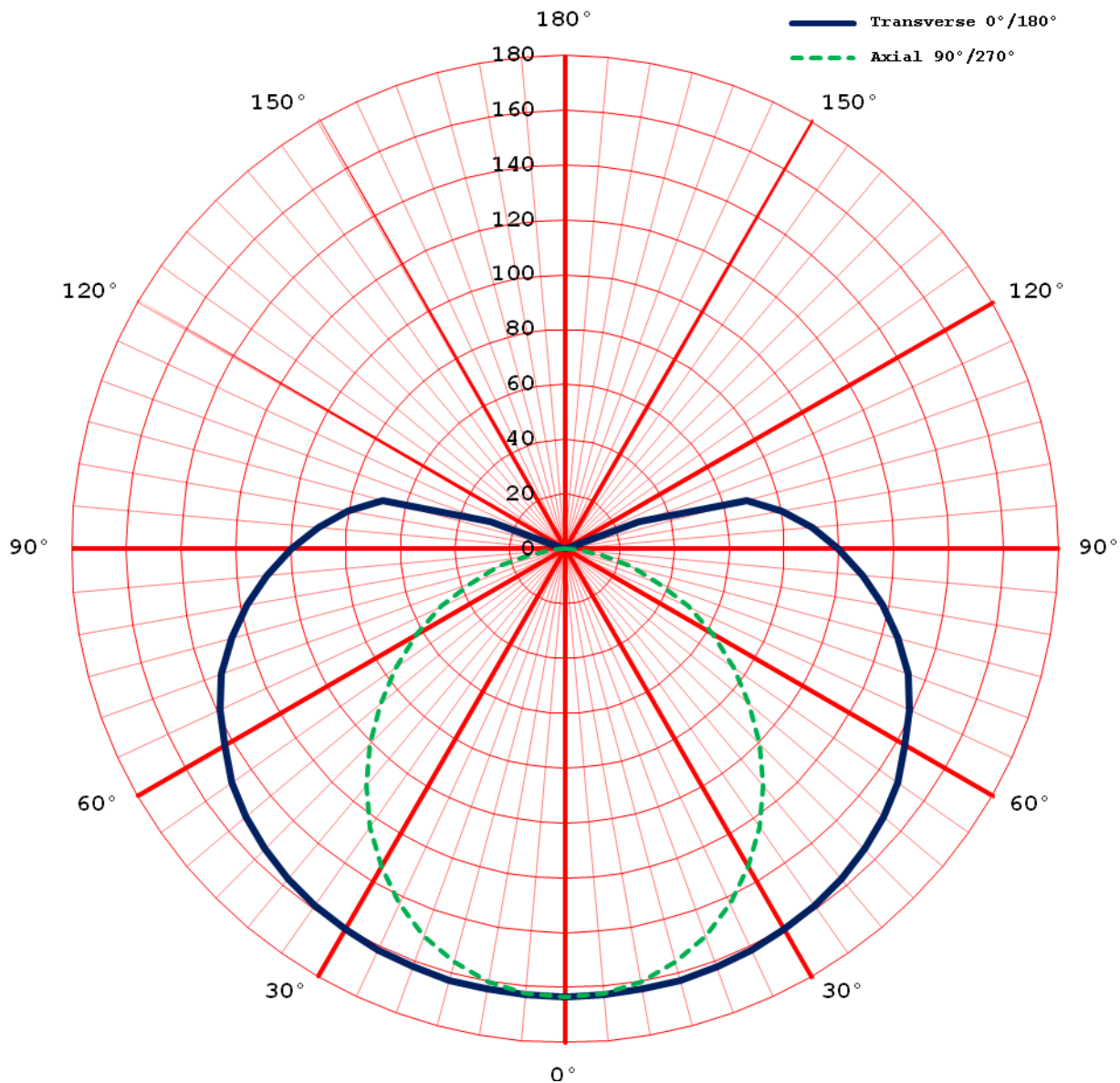
Lamp lumen output

1,900 lm

Lamp quantity

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Average Principal Axes Luminous Intensities (cd/klm)



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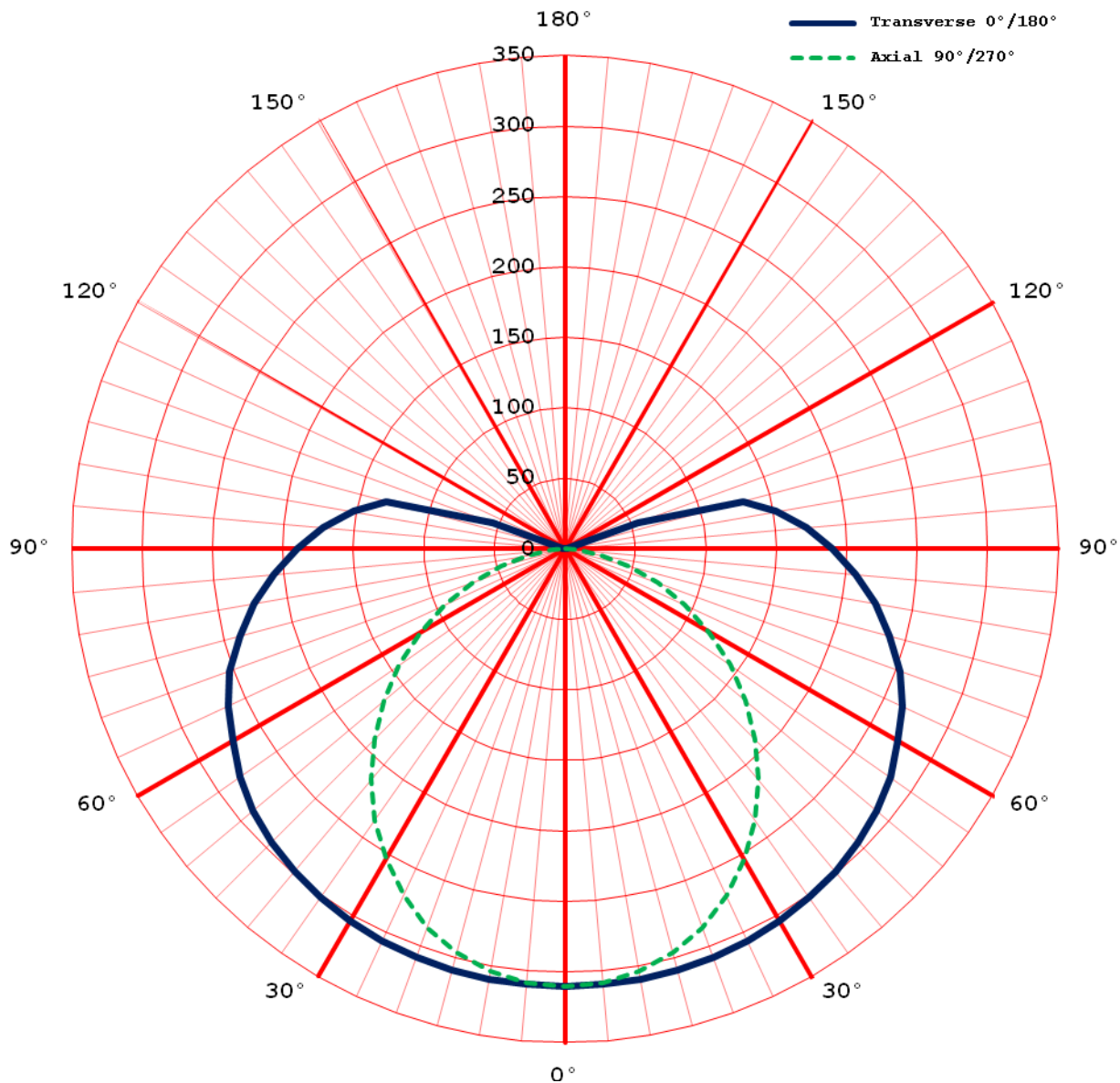
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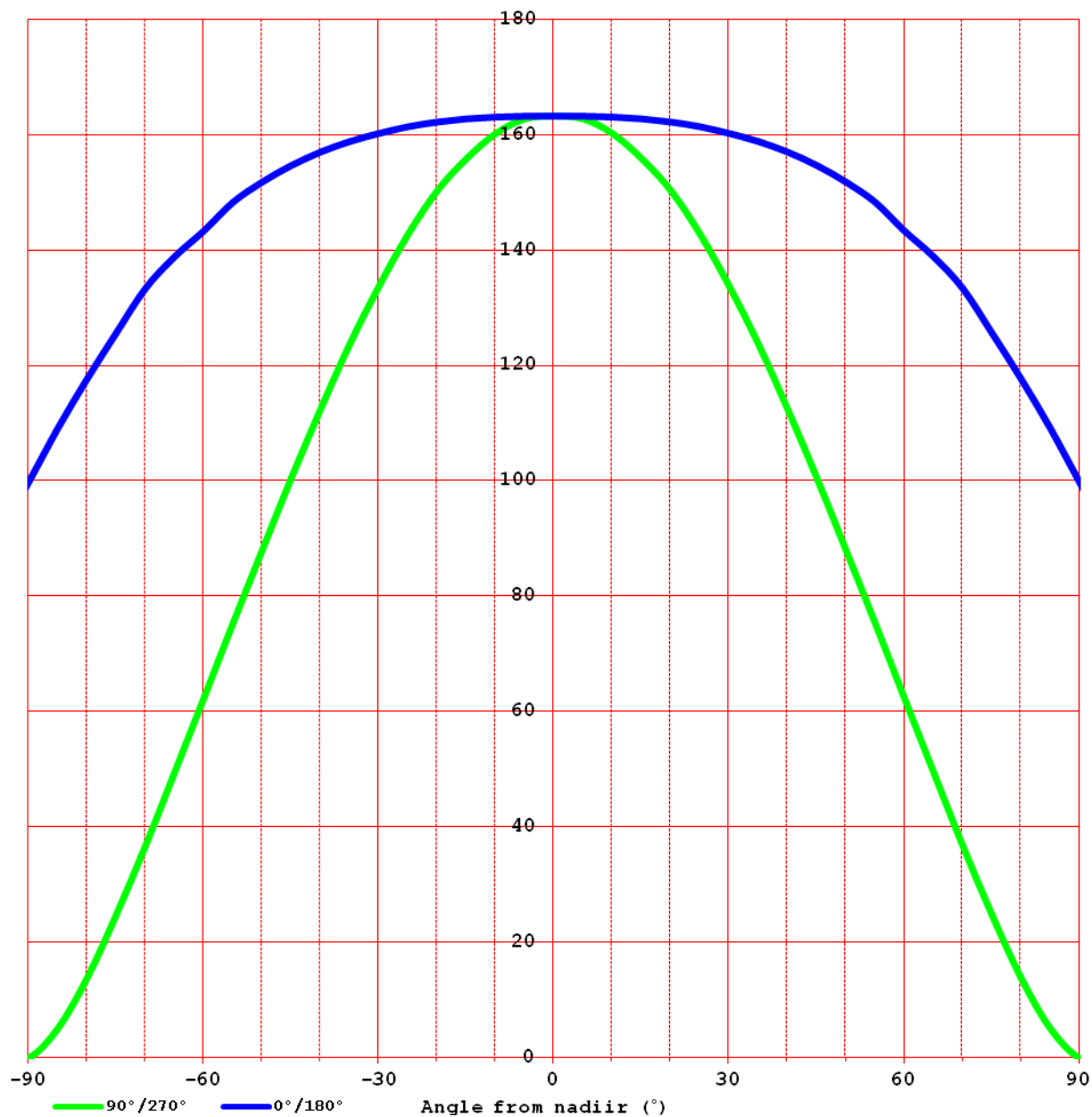
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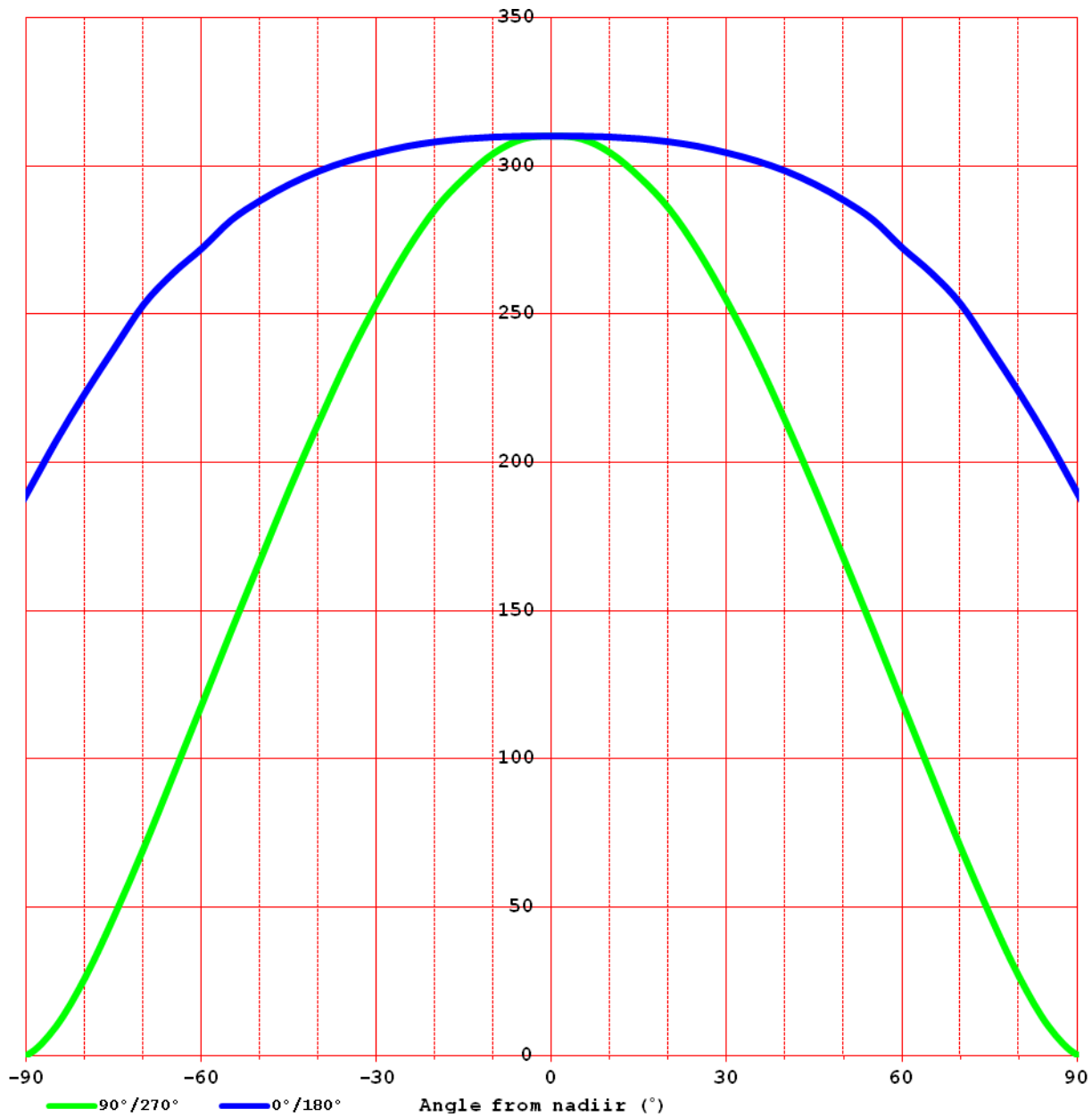
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Average Luminous Intensities (cd/Klm)

Angle	Transverse plane	Axial plane
0°	163.27	163.27
5°	163.27	162.76
10°	163.11	160.22
15°	162.80	155.89
20°	162.26	150.35
25°	161.44	142.78
30°	160.28	133.77
35°	158.88	123.75
40°	157.05	112.47
45°	154.72	100.57
50°	151.84	88.01
55°	148.34	75.37
60°	143.37	62.38
65°	138.90	49.54
70°	133.38	36.75
75°	125.65	24.81
80°	117.68	13.85
85°	109.13	5.11
90°	99.76	0.00
95°	90.47	0.00
100°	80.29	0.00
105°	68.90	0.00
110°	28.84	0.00
115°	0.58	0.00
120°	0.47	0.04
125°	0.00	0.00
130°	0.00	0.00
135°	0.00	0.00
140°	0.00	0.00
145°	0.00	0.00
150°	0.00	0.00
155°	0.00	0.00
160°	0.00	0.00
165°	0.00	0.00
170°	0.00	0.00
175°	0.00	0.00
180°	0.00	0.00

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Lamp quantity

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Average Luminous Intensities (cd)

Angle	Transverse plane	Axial plane
0°	310.21	310.21
5°	310.21	309.25
10°	309.92	304.43
15°	309.32	296.20
20°	308.29	285.67
25°	306.74	271.29
30°	304.52	254.17
35°	301.86	235.12
40°	298.39	213.69
45°	293.96	191.09
50°	288.50	167.22
55°	281.85	143.20
60°	272.40	118.52
65°	263.91	94.13
70°	253.42	69.82
75°	238.73	47.14
80°	223.59	26.31
85°	207.34	9.71
90°	189.55	0.00
95°	171.90	0.00
100°	152.55	0.00
105°	130.92	0.00
110°	54.80	0.00
115°	1.11	0.00
120°	0.89	0.07
125°	0.00	0.00
130°	0.00	0.00
135°	0.00	0.00
140°	0.00	0.00
145°	0.00	0.00
150°	0.00	0.00
155°	0.00	0.00
160°	0.00	0.00
165°	0.00	0.00
170°	0.00	0.00
175°	0.00	0.00
180°	0.00	0.00

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Light Output Ratios Up 0.08
Down 0.66
Total 0.75

Spacing to Height Ratios SHR NOM 1.75
SHR MAX 1.81
SHR MAX TRANS 2.34

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	.44	.49	.52	.58	.61	.64	.68	.70	
	.30		N/A	.37	.43	.46	.52	.56	.59	.64	.67	
	.10		N/A	.33	.38	.42	.48	.52	.55	.60	.64	
.50	.50	.20	N/A	.41	.46	.49	.54	.57	.60	.63	.66	
	.30		N/A	.36	.41	.44	.50	.53	.56	.60	.63	
	.10		N/A	.32	.36	.40	.46	.50	.53	.57	.60	
.30	.50	.20	N/A	.39	.43	.46	.51	.54	.56	.59	.61	
	.30		N/A	.34	.39	.42	.47	.50	.53	.57	.59	
	.10		N/A	.31	.35	.39	.44	.47	.50	.54	.57	
.00	.00	.00	N/A	.28	.32	.35	.40	.43	.45	.49	.52	
BZ Class			N/A	6	6	6	6	6	6	6	6	

CIE Flux code 35 / 63 / 84 / 89 / 75

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 0.23 0.30 0.36 0.42 0.48 0.56 0.62 0.66 0.72 0.75 0.82 0.86
CIE class 7 / 7 / 7 / 7 / 7 / 7 / 7 / 7 / 7 / 8 / 8 / 10

Flux Fraction Ratio 0.12
DIN Class 0.75 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.

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Luminaire description

linear cylindrical luminaire
with opal cover

data derived from range test series

Lamp description

21W/840 HE Osram Lumilux

Lamp lumen output

1,900 lm

Lamp quantity

1

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°	0.333	0.058
25°	0.405	0.088
30°	0.471	0.122
35°	0.529	0.159
40°	0.579	0.197
45°	0.621	0.236
50°	0.655	0.273
55°	0.682	0.308
60°	0.701	0.339
65°	0.715	0.365
70°	0.724	0.386
75°	0.729	0.402
80°	0.731	0.412
85°	0.732	0.417
90°	0.732	0.419

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Zonal Flux Calculations

Angles	Individual	Cumulative
0° - 5°	0.5%	0.5%
5° - 10°	1.6%	2.1%
10° - 15°	2.6%	4.6%
15° - 20°	3.5%	8.1%
20° - 25°	4.3%	12.5%
25° - 30°	5.1%	17.6%
30° - 35°	5.7%	23.3%
35° - 40°	6.2%	29.5%
40° - 45°	6.5%	36.0%
45° - 50°	6.8%	42.8%
50° - 55°	6.8%	49.6%
55° - 60°	6.8%	56.4%
60° - 65°	6.6%	62.9%
65° - 70°	6.2%	69.2%
70° - 75°	5.8%	75.0%
75° - 80°	5.3%	80.3%
80° - 85°	4.8%	85.1%
85° - 90°	4.2%	89.3%
90° - 95°	3.7%	93.0%
95° - 100°	3.1%	96.2%
100° - 105°	2.4%	98.5%
105° - 110°	1.2%	99.7%
110° - 115°	0.2%	100.0%
115° - 120°	0.0%	100.0%
120° - 125°	0.0%	100.0%
125° - 130°	0.0%	100.0%
130° - 135°	0.0%	100.0%
135° - 140°	0.0%	100.0%
140° - 145°	0.0%	100.0%
145° - 150°	0.0%	100.0%
150° - 155°	0.0%	100.0%
155° - 160°	0.0%	100.0%
160° - 165°	0.0%	100.0%
165° - 170°	0.0%	100.0%
170° - 175°	0.0%	100.0%
175° - 180°	0.0%	100.0%

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Averaged Luminance Values (cd/m²)

Elevation(°)	Azimuth(°)						
	0.0°	30.0°	60.0°	90.0°	120.0°	150.0°	180.0°
45°	6299	6061	5615	6142	5615	6061	6299
50°	6392	6084	5449	5912	5449	6084	6392
55°	6516	6133	5297	5674	5297	6133	6516
60°	6635	6192	5152	5387	5152	6192	6635
65°	6849	6305	5008	5062	5008	6305	6849
70°	7094	6464	4915	4640	4915	6464	7094
75°	7314	6653	4890	4139	4890	6653	7314
80°	7629	6902	4905	3443	4905	6902	7629
85°	8052	7260	5080	2531	5080	7260	8052
	180.0°	210.0°	240.0°	270.0°	300.0°	330.0°	0.0°
45°	6299	6061	5615	6142	5615	6061	6299
50°	6392	6084	5449	5912	5449	6084	6392
55°	6516	6133	5297	5674	5297	6133	6516
60°	6635	6192	5152	5387	5152	6192	6635
65°	6849	6305	5008	5062	5008	6305	6849
70°	7094	6464	4915	4640	4915	6464	7094
75°	7314	6653	4890	4139	4890	6653	7314
80°	7629	6902	4905	3443	4905	6902	7629
85°	8052	7260	5080	2531	5080	7260	8052

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Lamp quantity

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Non averaged Luminance Values (cd/m²)

Elevation(°)

Azimuth(°)

	0.0°	30.0°	60.0°	90.0°	120.0°	150.0°	180.0°
45°	6251	6054	5661	6215	5656	6115	6347
50°	6335	6078	5506	5980	5507	6166	6448
55°	6456	6123	5362	5771	5351	6213	6575
60°	6537	6200	5225	5486	5200	6285	6734
65°	6776	6272	5083	5172	5074	6398	6922
70°	7036	6471	5003	4741	4972	6556	7153
75°	7220	6675	4971	4268	4983	6747	7408
80°	7521	6926	5018	3635	4956	7016	7738
85°	7922	7295	5228	2735	5123	7389	8182
	180.0°	210.0°	240.0°	270.0°	300.0°	330.0°	0.0°
45°	6347	6080	5611	6068	5530	5994	6251
50°	6448	6105	5440	5844	5342	5988	6335
55°	6575	6159	5290	5577	5184	6036	6456
60°	6734	6204	5150	5289	5034	6079	6537
65°	6922	6364	5020	4953	4854	6187	6776
70°	7153	6514	4931	4538	4755	6314	7036
75°	7408	6719	4906	4011	4702	6470	7220
80°	7738	6988	4932	3252	4712	6679	7521
85°	8182	7323	5137	2328	4833	7032	7922

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Averaged Luminance Values (cd/m²/klm)

Elevation(°)	Azimuth(°)						
	0.0°	30.0°	60.0°	90.0°	120.0°	150.0°	180.0°
45°	3315	3190	2955	3232	2955	3190	3315
50°	3364	3202	2868	3112	2868	3202	3364
55°	3429	3228	2788	2986	2788	3228	3429
60°	3492	3259	2712	2835	2712	3259	3492
65°	3605	3319	2636	2664	2636	3319	3605
70°	3734	3402	2587	2442	2587	3402	3734
75°	3850	3501	2574	2179	2574	3501	3850
80°	4015	3633	2581	1812	2581	3633	4015
85°	4238	3821	2674	1332	2674	3821	4238
	180.0°	210.0°	240.0°	270.0°	300.0°	330.0°	0.0°
45°	3315	3190	2955	3232	2955	3190	3315
50°	3364	3202	2868	3112	2868	3202	3364
55°	3429	3228	2788	2986	2788	3228	3429
60°	3492	3259	2712	2835	2712	3259	3492
65°	3605	3319	2636	2664	2636	3319	3605
70°	3734	3402	2587	2442	2587	3402	3734
75°	3850	3501	2574	2179	2574	3501	3850
80°	4015	3633	2581	1812	2581	3633	4015
85°	4238	3821	2674	1332	2674	3821	4238

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Customer

Encapsulite International Ltd.

Luminaire Range

MT50 IP68

Luminaire catalog No.

MT50 SC 21W

Luminaire description

linear cylindrical luminaire
with opal cover

data derived from range test series

Lamp description

21W/840 HE Osram Lumilux

Lamp lumen output

1,900 lm

Lamp quantity

1

Non averaged Luminance Values (cd/m²/klm)

Elevation(°)

Azimuth(°)

	0.0°	30.0°	60.0°	90.0°	120.0°	150.0°	180.0°
45°	3290	3187	2980	3271	2977	3218	3340
50°	3334	3199	2898	3148	2898	3245	3394
55°	3398	3223	2822	3038	2816	3270	3460
60°	3440	3263	2750	2887	2737	3308	3544
65°	3566	3301	2675	2722	2670	3367	3643
70°	3703	3406	2633	2495	2617	3451	3765
75°	3800	3513	2616	2246	2623	3551	3899
80°	3959	3645	2641	1913	2609	3693	4072
85°	4169	3839	2751	1439	2696	3889	4306
	180.0°	210.0°	240.0°	270.0°	300.0°	330.0°	0.0°
45°	3340	3200	2953	3194	2911	3155	3290
50°	3394	3213	2863	3076	2811	3151	3334
55°	3460	3242	2784	2935	2728	3177	3398
60°	3544	3265	2711	2783	2649	3200	3440
65°	3643	3349	2642	2607	2555	3256	3566
70°	3765	3428	2595	2388	2503	3323	3703
75°	3899	3536	2582	2111	2475	3405	3800
80°	4072	3678	2596	1712	2480	3516	3959
85°	4306	3854	2704	1225	2544	3701	4169

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Customer Encapsulite International Ltd.
Luminaire Range MT50 IP68
Luminaire catalog No. MT50 SC 21W
Luminaire description linear cylindrical luminaire
with opal cover
data derived from range test series
Lamp description 21W/840 HE Osram Lumilux
Lamp lumen output 1,900 lm
Lamp quantity 1

Maximum Non averaged Luminance Values (cd/m²)

Elevation(°)

Maximum Azimuth Angle

45°	6347	180°
50°	6448	180°
55°	6575	180°
60°	6734	180°
65°	6922	180°
70°	7153	180°
75°	7408	180°
80°	7738	180°
85°	8182	180°

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Customer Encapsulite International Ltd.
Luminaire Range MT50 IP68
Luminaire catalog No. MT50 SC 21W
Luminaire description linear cylindrical luminaire
with opal cover
data derived from range test series
Lamp description 21W/840 HE Osram Lumilux
Lamp lumen output 1,900 lm
Lamp quantity 1

VDT Luminance Information
BS EN 12464 (2002) / CIBSE LG7 (2005) / CIBSE LG3 (2001)

Permitted Usage according to Screen Type and Luminance Limit Angle	Limiting luminance (cd/m ²)	Use permitted at Luminance Limit Angle(°)	
		55°	65°
Screen Type III (No screen treatment) used with some negative polarity software	200	NO	NO
Screen Type I and II (Good or moderate screen treatment) used with some negative polarity software	500	NO	NO
Screen Type III (No screen treatment) used with only positive polarity software	1000	NO	NO
Screen Type I and II (Good or moderate screen treatment) used with only positive polarity software	1500	NO	NO

VDT Luminance Information
BS EN 12464 (2011) / CIBSE LG7 (2012)

Permitted Usage according to Screen Type and Luminance Limit Angle	Limiting luminance (cd/m ²)	Use permitted at Luminance Limit Angle(°)	
		55°	65°
Medium luminance screen (L <= 200 cdm ²) Case B negative polarity and/or higher requirements	1000	-	NO
Medium luminance screen (L <= 200 cdm ²) Case A positive polarity and normal requirements	1500	-	NO
High luminance screen (L > 200 cd/m ²) Case B negative polarity and/or higher requirements	1500	-	NO
High luminance screen (L > 200 cd/m ²) Case A positive polarity and normal requirements	3000	-	NO

Customer Encapsulite International Ltd.
 Luminaire Range MT50 IP68
 Luminaire catalog No. MT50 SC 21W
 Luminaire description linear cylindrical luminaire
 with opal cover
 data derived from range test series
 Lamp description 21W/840 HE Osram Lumilux
 Lamp lumen output 1,900 lm
 Lamp quantity 1

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	15.9	17.8	16.6	18.5	19.2	12.4	14.3	13.1	15.0	15.7	
3H	19.3	21.0	19.9	21.7	22.5	14.4	16.2	15.1	16.9	17.6	
4H	20.9	22.6	21.6	23.3	24.0	15.1	16.8	15.8	17.5	18.3	
6H	22.6	24.2	23.3	24.9	25.7	15.7	17.3	16.4	18.0	18.8	
8H	23.5	25.0	24.2	25.7	26.5	15.8	17.4	16.5	18.1	18.9	
12H	24.4	25.9	25.1	26.6	27.4	15.9	17.4	16.6	18.1	18.9	
4H 2H	16.8	18.5	17.5	19.2	19.9	14.4	16.1	15.1	16.8	17.6	
3H	20.5	22.0	21.2	22.7	23.5	16.7	18.2	17.4	18.9	19.7	
4H	22.4	23.8	23.2	24.5	25.4	17.7	19.0	18.4	19.8	20.6	
6H	24.3	25.6	25.1	26.3	27.2	18.4	19.6	19.1	20.4	21.2	
8H	25.4	26.5	26.1	27.3	28.2	18.6	19.8	19.4	20.6	21.4	
12H	26.5	27.5	27.2	28.3	29.2	18.8	19.9	19.6	20.7	21.6	
8H 4H	23.0	24.2	23.8	25.0	25.8	19.7	20.8	20.4	21.6	22.5	
6H	25.3	26.3	26.1	27.1	28.0	20.7	21.7	21.5	22.5	23.4	
8H	26.6	27.5	27.4	28.3	29.2	21.2	22.1	22.0	22.9	23.8	
12H	27.9	28.7	28.7	29.5	30.4	21.5	22.3	22.3	23.1	24.0	
12H 4H	23.2	24.3	23.9	25.0	25.9	20.6	21.6	21.3	22.4	23.3	
6H	25.6	26.5	26.4	27.3	28.2	21.8	22.7	22.7	23.6	24.5	
8H	26.9	27.7	27.7	28.5	29.5	22.4	23.2	23.2	24.0	24.9	

Calculated in accordance with CIBSE Technical Memorandum No. 10 1985

Customer

Encapsulite International Ltd.

Luminaire Range

MT50 IP68

Luminaire catalog No.

MT50 SC 21W

Luminaire description

linear cylindrical luminaire
with opal cover

data derived from range test series

Lamp description

21W/840 HE Osram Lumilux

Lamp lumen output

1,900 lm

Lamp quantity

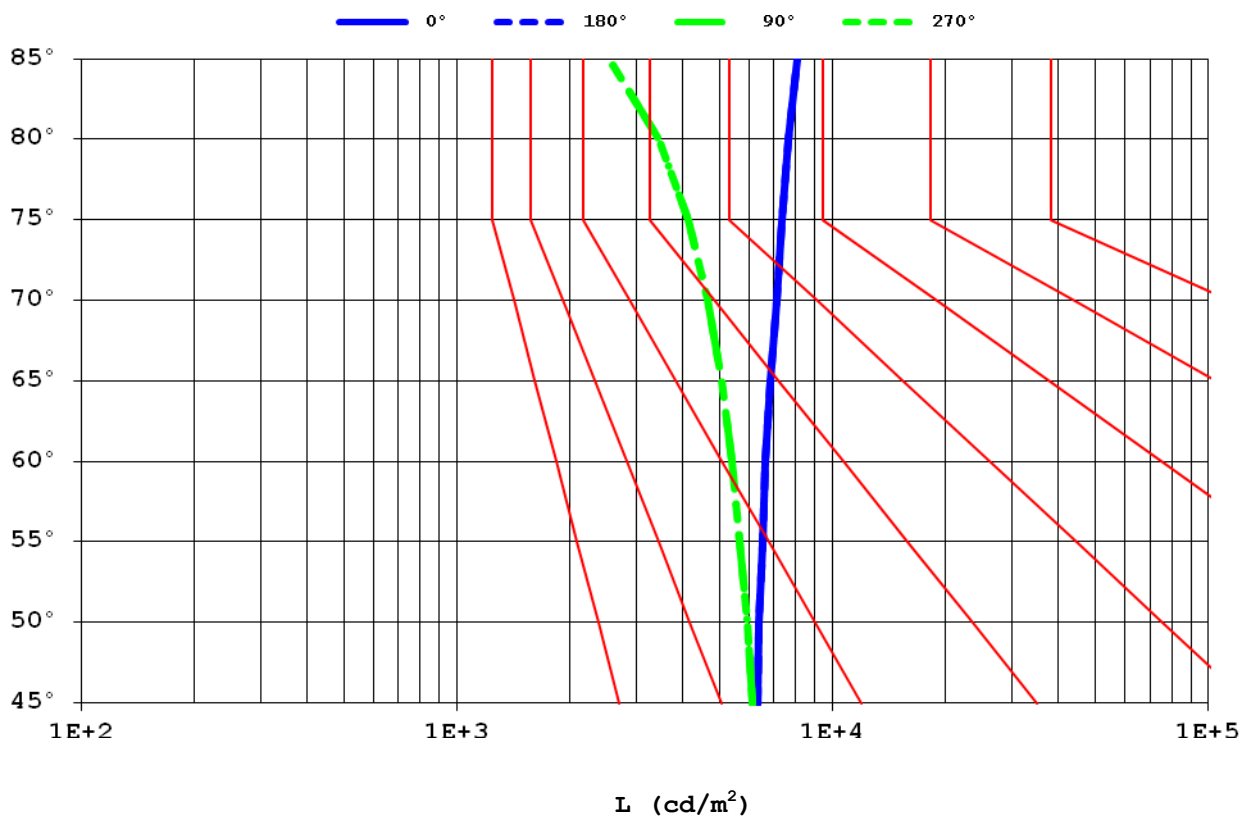
1

CIE Glare Limiting (Soellnor) Diagram

Glare Quality
Rating Class

Service values of illuminance

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
		a	b	c	d	e	f	g	h



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Customer	Encapsulite International Ltd.
Luminaire Range	MT50 IP68
Luminaire catalog No.	MT50 SC 21W
Luminaire description	linear cylindrical luminaire with opal cover data derived from range test series
Lamp description	21W/840 HE Osram Lumilux
Lamp lumen output	1,900 lm
Lamp quantity	1

Comments

It is recommended that point to point calculations are used when designing lighting schemes in order to accurately predict uniformity. Data files in various formats are available to allow easy transfer of this data to a computer. Please enquire for details.

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Customer Encapsulite International Ltd.
Luminaire Range MT50 IP68
Luminaire catalog No. MT50 SC 21W
Luminaire description linear cylindrical luminaire
with opal cover
data derived from range test series
Lamp description 21W/840 HE Osram Lumilux
Lamp lumen output 1,900 lm
Lamp quantity 1

Quick Design Table

Based on: reflectances of Ceiling = 0.5
Wall = 0.5
Floor = 0.2
Room Index = 2.00
lamp output = 1900 lumens
ballast lumen factor = 1.00

To achieve an Illuminance of 100 lux

Surface Area (m ²)	20	30	40	50	80	100	200	300	500
No. of luminaires	1.9	2.9	3.9	4.9	7.8	9.7	19.5	29.2	48.7