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Registered in England: Company Number 3021552  
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## Photometric Report

Job / Report / Date	42 / 10692 / 10692-9a / 2013.06.17
Customer	Encapsulite International Ltd.
Luminaire Range	MT50 IP68
Luminaire catalog No.	MT50 SC 28W
Luminaire description	linear cylindrical luminaire with opal cover data derived from range test series
Lamp description	28W/840 HE FH Osram Lumilux
Lamp lumen output	2,600 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 28W

Luminaire description

linear cylindrical luminaire  
with opal cover

Lamp description

data derived from range test series

Lamp lumen output

2,600 lm

Lamp quantity

1



**Helvar**  
www.helvar.com

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



T5:14W 0.08-0.06A  $\lambda$  0.96

T5:21,28,35W 0.18-0.09A  $\lambda$  0.98

ta = -20...+50°C

75

**OSRAM FH 28W/840 HE**  
LUMILUX COOL WHITE



Germany



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#### Luminaire physical characteristics

##### Overall Dimensions

Length	1260mm
Width	50mm
Height	50mm

##### Visible Dimensions when installed

Length	1260mm
Width	50mm
Height	50mm

##### Luminous Dimensions

Length	1175mm
Width	50mm
Height 0°	25mm
Height 90°	0mm
Height 180°	25mm
Height 270°	0mm

##### Luminous Areas

Base	0.05875m <sup>2</sup>
Sides	0.029375m <sup>2</sup> ( 0°/180° azimuth)
Ends	0m <sup>2</sup> (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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#### 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	230.0	129.0	0.982	29.1	29.7	1,971	76%	67.6
Lamp	230.0	133.7	0.984	30.2	30.7	2,265	87%	74.9

##### Electrical characteristics at 25°C

Ballast Nominal	230V	133.0mA	0.98PF	30.0W	30.6VA
Lamp Nominal	230V	121.7mA	1.00PF	28.0W	28.0VA
Luminaire	230V	129.0mA	0.98PF	29.1W	29.7VA
Lamp	230V	133.7mA	0.98PF	30.2W	30.7VA

##### Measured Electrical characteristics relative to Ballast Nominal

Luminaire	Current	97%	Power	97%	VA	97%
Lamp	Current	100%	Power	101%	VA	100%

##### Measured Electrical characteristics relative to Lamp Nominal

Luminaire	Current	106%	Power	104%	VA	106%
Lamp	Current	110%	Power	108%	VA	110%

##### Lumen Output figures used in this report (lumens)

Nominal Lamp Output	2,600
Measured Luminaire Output	1,971
Measured Lamp Output	2,265

##### Measured Lumen Output characteristics relative to Lamp Nominal Total

Luminaire	76%
Lamp	87%

##### Measured luminous efficacy at 25°C

Luminaire	67.6 lm/W
Lamp	74.9 lm/W

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The light output ratio of the luminaire was measured as 0.870 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 1,971 lumens at 25°C.  
This figure can be related to the nominal lumen output of the lamp quoted by the manufacturer of 2,600 lumens, to give a nominal light output ratio of 0.758.

The measured lumen output of the lamp was 2,265 lumens at 25°C.  
This figure can be related to the nominal lumen output of the lamp quoted by the manufacturer of 2,600 lumens, to give a nominal BLF of 0.871.

For lighting design calculations:

A light output ratio of 1 should be used in conjunction with the measured lumen output of the luminaire of 1,971 lumens.

or

The nominal light output ratio of 0.758 should be used in conjunction with the nominal lumen output of the lamp of 2,600 lumens.

or

The measured light output ratio of 0.870 should be used in conjunction with the measured lumen output of the lamp of 2,265 lumens.

or

The measured light output ratio of 0.870 should be used in conjunction with the nominal lumen output of the lamp of 2,600 lumens and the nominal BLF of 0.871.

This report is based on the following parameters:

The Light Output Ratio is the nominal value of 0.758.

The lamp output is the nominal value of 2,600 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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Lamp description

28W/840 HE FH Osram Lumilux

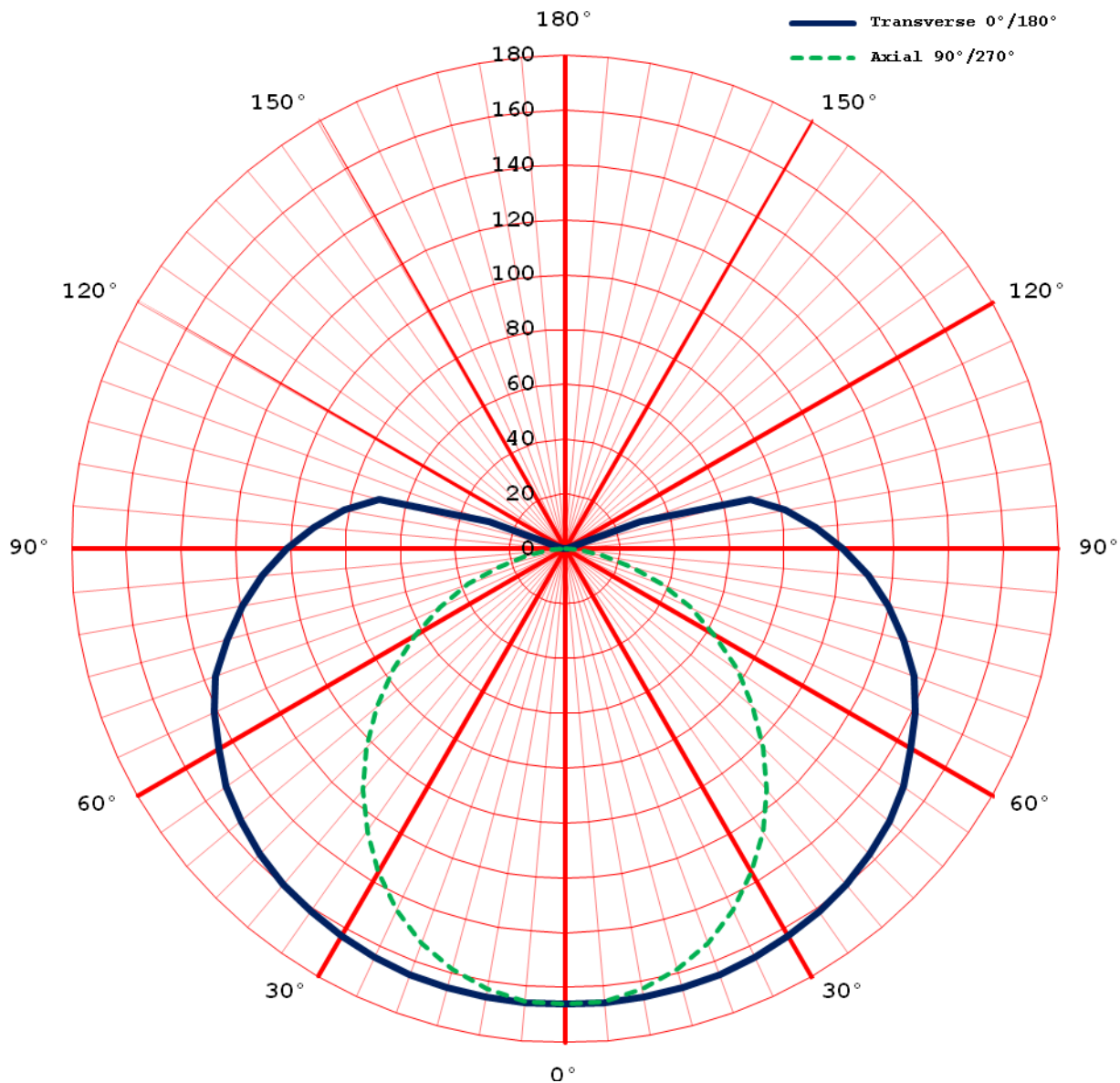
Lamp lumen output

2,600 lm

Lamp quantity

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## Average Principal Axes Luminous Intensities (cd/klm)





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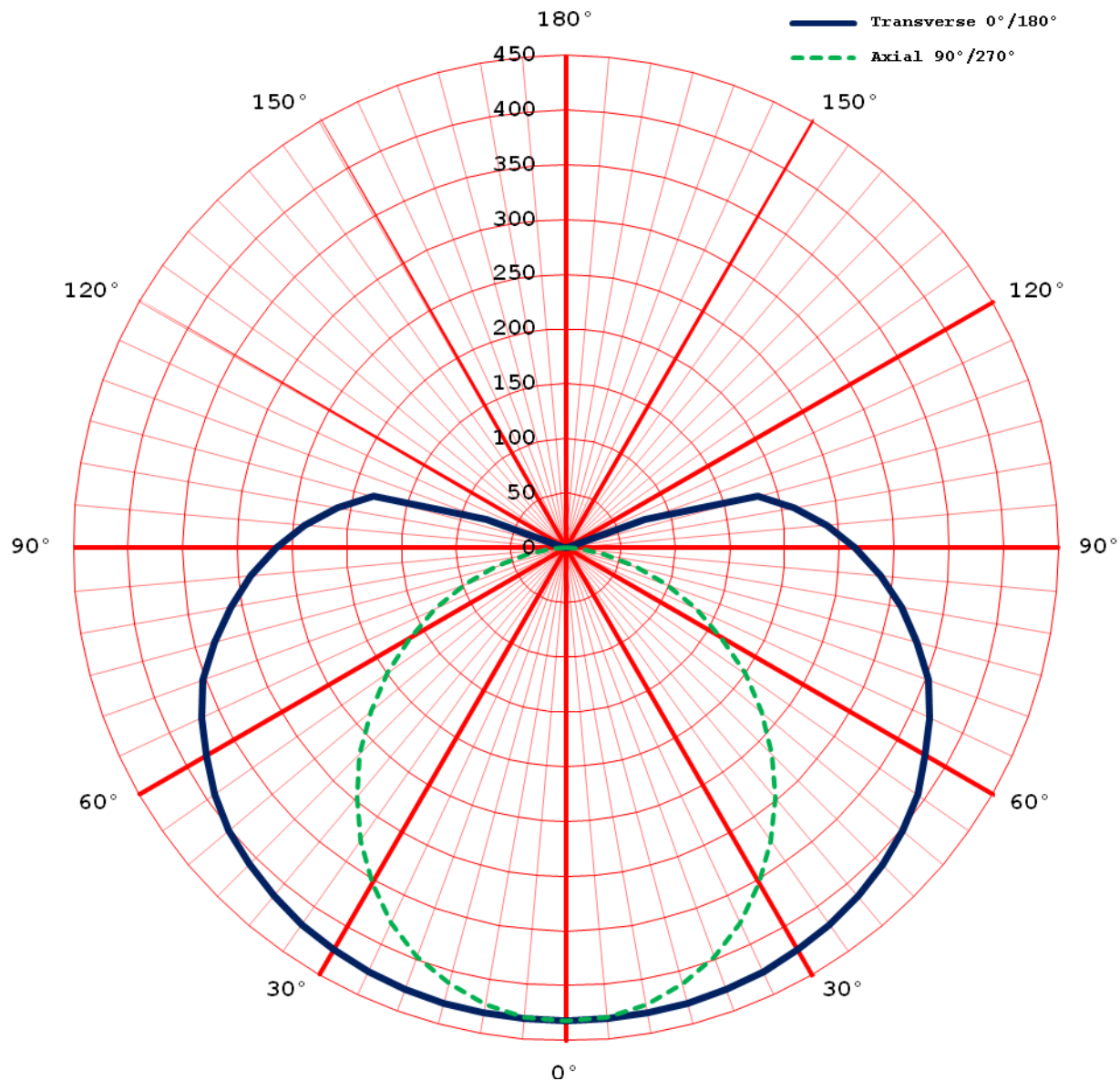
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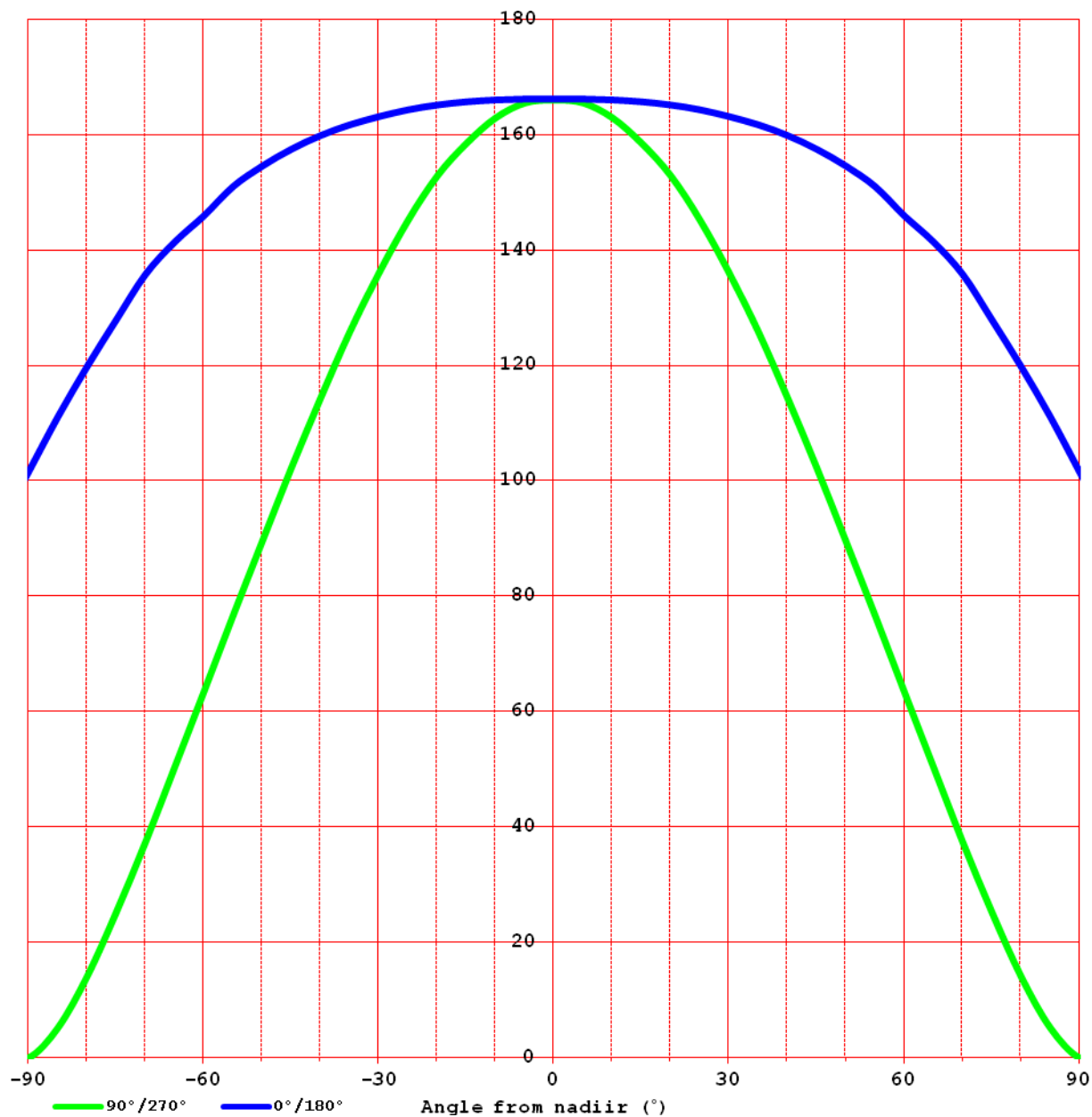
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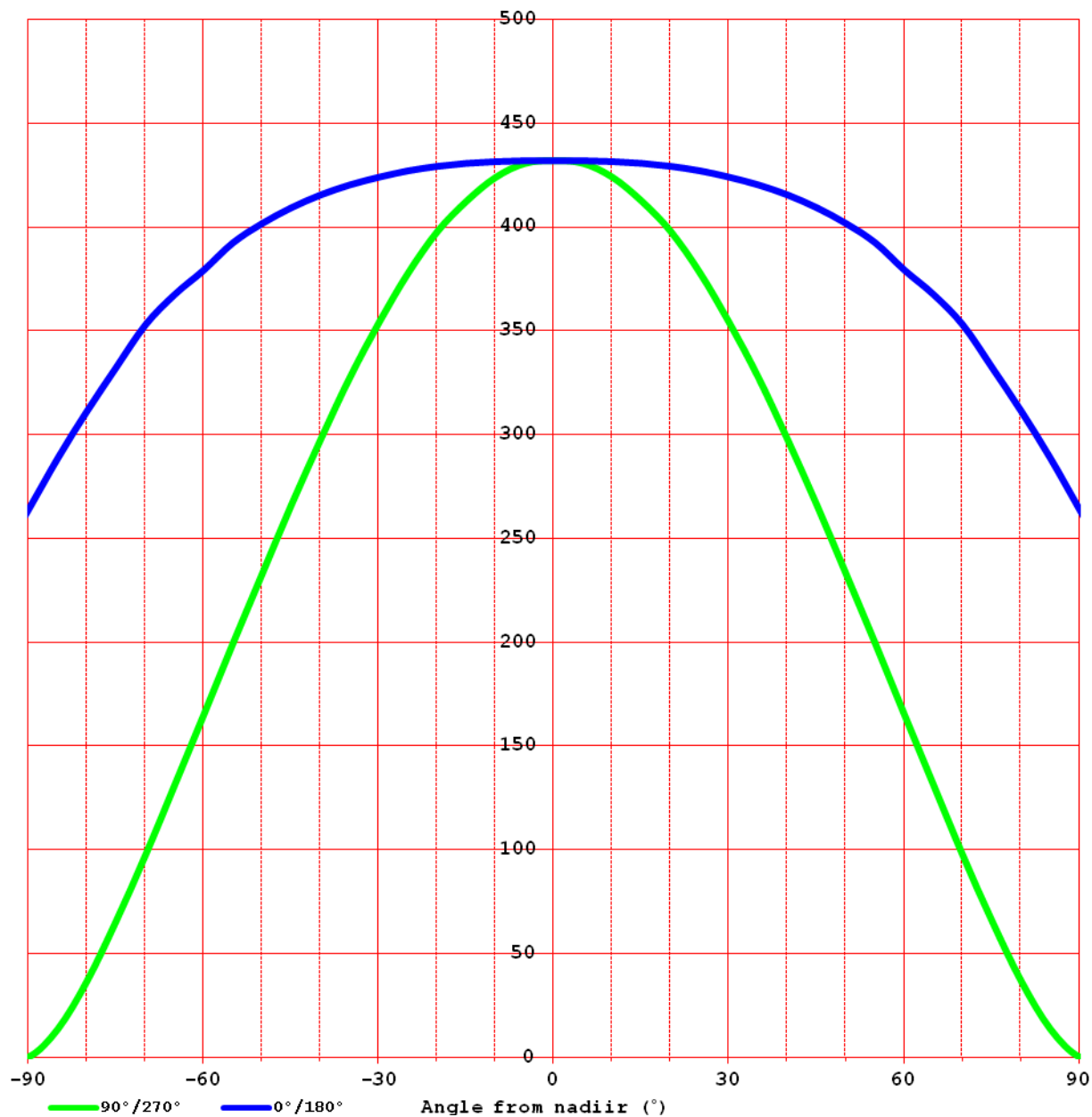
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## Average Principal Axes Luminous Intensities (cd)



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Average Luminous Intensities (cd/Klm)

Angle	Transverse plane	Axial plane
0°	166.09	166.09
5°	166.09	165.58
10°	165.93	162.99
15°	165.62	158.59
20°	165.06	152.95
25°	164.23	145.25
30°	163.05	136.08
35°	161.62	125.89
40°	159.76	114.42
45°	157.39	102.31
50°	154.47	89.53
55°	150.91	76.67
60°	145.85	63.46
65°	141.30	50.40
70°	135.69	37.38
75°	127.82	25.24
80°	119.71	14.09
85°	111.02	5.20
90°	101.49	0.00
95°	92.04	0.00
100°	81.68	0.00
105°	70.10	0.00
110°	29.34	0.00
115°	0.59	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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Average Luminous Intensities (cd)

Angle	Transverse plane	Axial plane
0°	431.84	431.84
5°	431.84	430.50
10°	431.43	423.79
15°	430.61	412.33
20°	429.17	397.68
25°	427.01	377.66
30°	423.92	353.82
35°	420.22	327.30
40°	415.39	297.48
45°	409.22	266.01
50°	401.61	232.78
55°	392.36	199.35
60°	379.20	164.99
65°	367.38	131.04
70°	352.79	97.20
75°	332.33	65.62
80°	311.26	36.62
85°	288.64	13.51
90°	263.87	0.00
95°	239.30	0.00
100°	212.37	0.00
105°	182.25	0.00
110°	76.29	0.00
115°	1.54	0.00
120°	1.23	0.10
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 0.68  
Total 0.76

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	.53	.59	.63	.65	.69	.72
	.30		N/A	.38	.43	.47	.53	.57	.61	.65	.68
	.10		N/A	.33	.38	.43	.49	.53	.56	.61	.65
.50	.50	.20	N/A	.42	.47	.50	.55	.58	.61	.64	.67
	.30		N/A	.36	.41	.45	.50	.54	.57	.61	.64
	.10		N/A	.32	.37	.41	.46	.51	.54	.58	.61
.30	.50	.20	N/A	.40	.44	.47	.52	.55	.57	.60	.62
	.30		N/A	.35	.39	.43	.48	.51	.54	.58	.60
	.10		N/A	.31	.36	.39	.44	.48	.51	.55	.58
.00	.00	.00	N/A	.28	.32	.36	.40	.44	.46	.50	.52
BZ Class			N/A	6	6	6	6	6	6	6	6

CIE Flux code 35 / 63 / 84 / 89 / 76

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 0.76 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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MT50 SC 28W

Luminaire description

linear cylindrical luminaire  
with opal cover

data derived from range test series

Lamp description

28W/840 HE FH Osram Lumilux

Lamp lumen output

2,600 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/m<sup>2</sup>)

Elevation(°)	Azimuth(°)						
	0.0°	30.0°	60.0°	90.0°	120.0°	150.0°	180.0°
45°	6567	6319	5854	6403	5854	6319	6567
50°	6664	6343	5681	6164	5681	6343	6664
55°	6793	6394	5522	5916	5522	6394	6793
60°	6918	6456	5372	5617	5372	6456	6918
65°	7140	6574	5221	5278	5221	6574	7140
70°	7396	6739	5125	4837	5125	6739	7396
75°	7626	6936	5099	4316	5099	6936	7626
80°	7954	7196	5114	3590	5114	7196	7954
85°	8395	7569	5297	2639	5297	7569	8395
	180.0°	210.0°	240.0°	270.0°	300.0°	330.0°	0.0°
45°	6567	6319	5854	6403	5854	6319	6567
50°	6664	6343	5681	6164	5681	6343	6664
55°	6793	6394	5522	5916	5522	6394	6793
60°	6918	6456	5372	5617	5372	6456	6918
65°	7140	6574	5221	5278	5221	6574	7140
70°	7396	6739	5125	4837	5125	6739	7396
75°	7626	6936	5099	4316	5099	6936	7626
80°	7954	7196	5114	3590	5114	7196	7954
85°	8395	7569	5297	2639	5297	7569	8395

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Non averaged Luminance Values (cd/m<sup>2</sup>)

Elevation(°)

Azimuth(°)

	0.0°	30.0°	60.0°	90.0°	120.0°	150.0°	180.0°
45°	6517	6312	5902	6480	5897	6375	6617
50°	6605	6337	5741	6235	5741	6428	6723
55°	6731	6384	5590	6017	5579	6478	6855
60°	6815	6464	5447	5719	5422	6553	7021
65°	7064	6539	5300	5392	5290	6671	7216
70°	7335	6746	5216	4943	5183	6835	7457
75°	7528	6959	5182	4449	5195	7035	7724
80°	7841	7221	5232	3790	5167	7315	8067
85°	8259	7606	5450	2851	5341	7704	8530
	180.0°	210.0°	240.0°	270.0°	300.0°	330.0°	0.0°
45°	6617	6339	5850	6327	5766	6249	6517
50°	6723	6365	5672	6093	5569	6242	6605
55°	6855	6421	5515	5814	5405	6293	6731
60°	7021	6468	5369	5514	5248	6338	6815
65°	7216	6635	5234	5164	5061	6450	7064
70°	7457	6791	5141	4731	4957	6583	7335
75°	7724	7005	5115	4182	4902	6745	7528
80°	8067	7285	5142	3390	4913	6964	7841
85°	8530	7635	5356	2427	5039	7332	8259

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Averaged Luminance Values (cd/m<sup>2</sup>/klm)

Elevation(°)	Azimuth(°)						
	0.0°	30.0°	60.0°	90.0°	120.0°	150.0°	180.0°
45°	2526	2430	2251	2463	2251	2430	2526
50°	2563	2440	2185	2371	2185	2440	2563
55°	2613	2459	2124	2275	2124	2459	2613
60°	2661	2483	2066	2160	2066	2483	2661
65°	2746	2528	2008	2030	2008	2528	2746
70°	2845	2592	1971	1860	1971	2592	2845
75°	2933	2668	1961	1660	1961	2668	2933
80°	3059	2768	1967	1381	1967	2768	3059
85°	3229	2911	2037	1015	2037	2911	3229
	180.0°	210.0°	240.0°	270.0°	300.0°	330.0°	0.0°
45°	2526	2430	2251	2463	2251	2430	2526
50°	2563	2440	2185	2371	2185	2440	2563
55°	2613	2459	2124	2275	2124	2459	2613
60°	2661	2483	2066	2160	2066	2483	2661
65°	2746	2528	2008	2030	2008	2528	2746
70°	2845	2592	1971	1860	1971	2592	2845
75°	2933	2668	1961	1660	1961	2668	2933
80°	3059	2768	1967	1381	1967	2768	3059
85°	3229	2911	2037	1015	2037	2911	3229

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Customer

Encapsulite International Ltd.

Luminaire Range

MT50 IP68

Luminaire catalog No.

MT50 SC 28W

Luminaire description

linear cylindrical luminaire  
with opal cover

data derived from range test series

Lamp description

28W/840 HE FH Osram Lumilux

Lamp lumen output

2,600 lm

Lamp quantity

1

Non averaged Luminance Values (cd/m<sup>2</sup>/klm)

Elevation(°)

Azimuth(°)

	0.0°	30.0°	60.0°	90.0°	120.0°	150.0°	180.0°
45°	2507	2428	2270	2492	2268	2452	2545
50°	2540	2437	2208	2398	2208	2472	2586
55°	2589	2455	2150	2314	2146	2491	2636
60°	2621	2486	2095	2200	2085	2520	2700
65°	2717	2515	2038	2074	2035	2566	2776
70°	2821	2595	2006	1901	1994	2629	2868
75°	2895	2677	1993	1711	1998	2706	2971
80°	3016	2777	2012	1458	1987	2813	3103
85°	3177	2925	2096	1097	2054	2963	3281
	180.0°	210.0°	240.0°	270.0°	300.0°	330.0°	0.0°
45°	2545	2438	2250	2433	2218	2404	2507
50°	2586	2448	2181	2344	2142	2401	2540
55°	2636	2470	2121	2236	2079	2420	2589
60°	2700	2488	2065	2121	2019	2438	2621
65°	2776	2552	2013	1986	1946	2481	2717
70°	2868	2612	1977	1820	1907	2532	2821
75°	2971	2694	1967	1608	1885	2594	2895
80°	3103	2802	1978	1304	1890	2678	3016
85°	3281	2936	2060	933	1938	2820	3177

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Customer Encapsulite International Ltd.  
Luminaire Range MT50 IP68  
Luminaire catalog No. MT50 SC 28W  
Luminaire description linear cylindrical luminaire  
with opal cover  
data derived from range test series  
Lamp description 28W/840 HE FH Osram Lumilux  
Lamp lumen output 2,600 lm  
Lamp quantity 1

Maximum Non averaged Luminance Values (cd/m<sup>2</sup>)

Elevation(°)

-----  
Maximum Azimuth Angle  
-----

45°	6617	180°
50°	6723	180°
55°	6855	180°
60°	7021	180°
65°	7216	180°
70°	7457	180°
75°	7724	180°
80°	8067	180°
85°	8530	180°

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Luminaire description linear cylindrical luminaire  
with opal cover  
data derived from range test series  
Lamp description 28W/840 HE FH Osram Lumilux  
Lamp lumen output 2,600 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 <sup>2</sup> )	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 <sup>2</sup> )	Use permitted at Luminance Limit Angle(°)	
		55°	65°
Medium luminance screen ( L <= 200 cdm <sup>2</sup> ) Case B negative polarity and/or higher requirements	1000	-	NO
Medium luminance screen ( L <= 200 cdm <sup>2</sup> ) Case A positive polarity and normal requirements	1500	-	NO
High luminance screen ( L > 200 cd/m <sup>2</sup> ) Case B negative polarity and/or higher requirements	1500	-	NO
High luminance screen ( L > 200 cd/m <sup>2</sup> ) Case A positive polarity and normal requirements	3000	-	NO

Customer Encapsulite International Ltd.  
 Luminaire Range MT50 IP68  
 Luminaire catalog No. MT50 SC 28W  
 Luminaire description linear cylindrical luminaire  
 with opal cover  
 data derived from range test series  
 Lamp description 28W/840 HE FH Osram Lumilux  
 Lamp lumen output 2,600 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	15.0	16.9	15.6	17.5	18.2	11.5	13.4	12.1	14.0	14.8
	3H	18.3	20.1	19.0	20.8	21.5	13.4	15.2	14.1	15.9	16.6
	4H	19.9	21.6	20.6	22.3	23.1	14.2	15.9	14.8	16.5	17.3
	6H	21.7	23.3	22.4	24.0	24.8	14.7	16.3	15.4	17.0	17.8
	8H	22.5	24.1	23.2	24.8	25.6	14.8	16.4	15.5	17.1	17.9
	12H	23.4	24.9	24.1	25.7	26.5	14.9	16.4	15.6	17.1	17.9
4H	2H	15.8	17.5	16.5	18.2	19.0	13.5	15.2	14.2	15.9	16.6
	3H	19.5	21.0	20.2	21.7	22.6	15.7	17.2	16.4	17.9	18.8
	4H	21.5	22.8	22.2	23.6	24.4	16.7	18.1	17.4	18.8	19.7
	6H	23.4	24.6	24.1	25.4	26.2	17.4	18.7	18.2	19.4	20.3
	8H	24.4	25.6	25.2	26.3	27.2	17.7	18.8	18.5	19.6	20.5
	12H	25.5	26.6	26.3	27.3	28.2	17.9	19.0	18.6	19.7	20.6
8H	4H	22.1	23.2	22.9	24.0	24.9	18.7	19.9	19.5	20.6	21.5
	6H	24.3	25.3	25.1	26.1	27.0	19.7	20.7	20.5	21.5	22.4
	8H	25.6	26.5	26.4	27.3	28.2	20.2	21.1	21.0	21.9	22.8
	12H	27.0	27.7	27.8	28.6	29.5	20.6	21.3	21.4	22.2	23.1
12H	4H	22.2	23.3	23.0	24.1	25.0	19.6	20.7	20.4	21.4	22.4
	6H	24.6	25.5	25.4	26.3	27.2	20.9	21.8	21.7	22.6	23.5
	8H	26.0	26.7	26.8	27.6	28.5	21.5	22.2	22.3	23.1	24.0

Calculated in accordance with CIBSE Technical Memorandum No. 10 1985

Customer

Encapsulite International Ltd.

Luminaire Range

MT50 IP68

Luminaire catalog No.

MT50 SC 28W

Luminaire description

linear cylindrical luminaire  
with opal cover

data derived from range test series

Lamp description

28W/840 HE FH Osram Lumilux

Lamp lumen output

2,600 lm

Lamp quantity

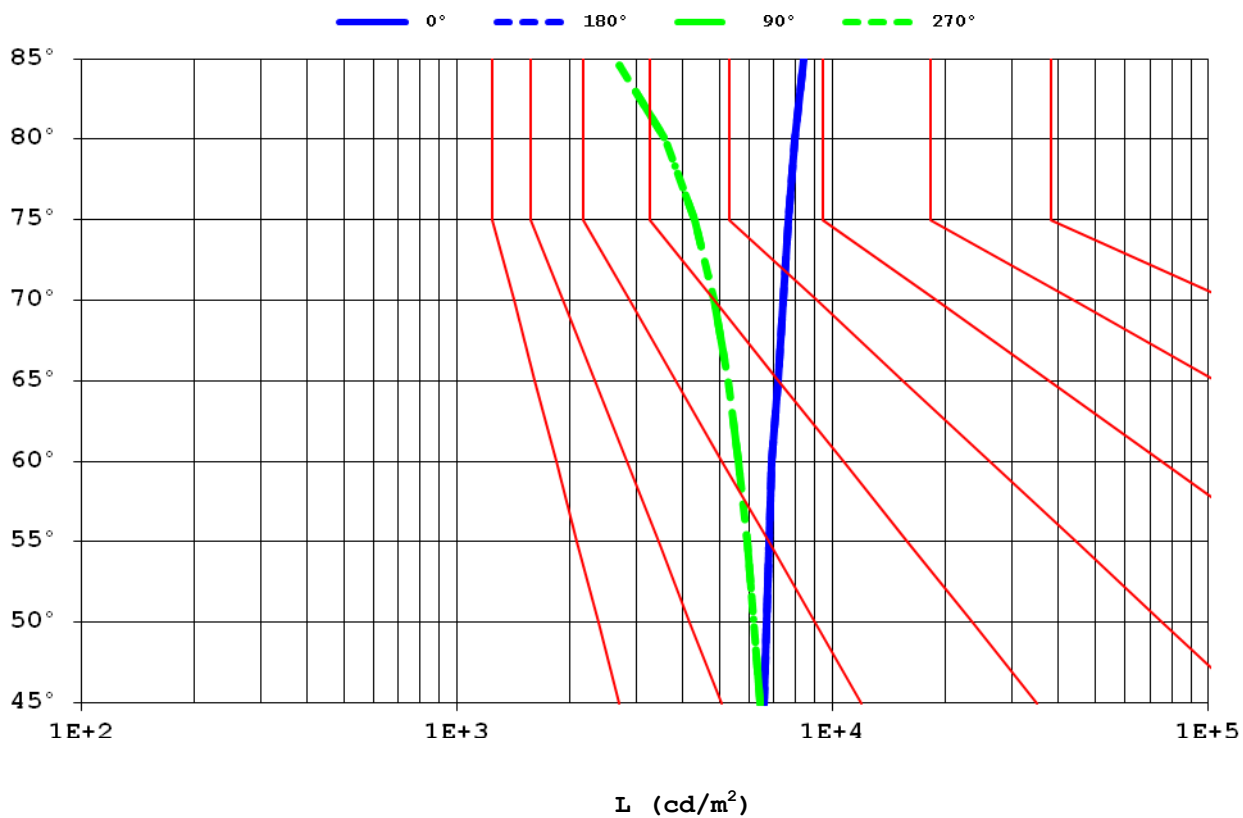
1

## 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 28W
Luminaire description	linear cylindrical luminaire with opal cover data derived from range test series
Lamp description	28W/840 HE FH Osram Lumilux
Lamp lumen output	2,600 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 28W  
Luminaire description linear cylindrical luminaire  
with opal cover  
data derived from range test series  
Lamp description 28W/840 HE FH Osram Lumilux  
Lamp lumen output 2,600 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 = 2600 lumens  
ballast lumen factor = 1.00

To achieve an Illuminance of 100 lux

Surface Area (m <sup>2</sup> )	20	30	40	50	80	100	200	300	500
No. of luminaires	1.4	2.1	2.8	3.5	5.6	7.0	14.0	21.0	35.0