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Registered in England: Company Number 3021552  
VAT Registration Number: GB 661 1596 34

# Photometric Report

Job / Report / Date	42 / 10692 / 10692-1a / 2013.06.17
Customer	Encapsulite International Ltd.
Luminaire Range	MT50 IP68
Luminaire catalog No.	MT50 8W
Luminaire description	linear cylindrical luminaire with clear cover data derived from range test series
Lamp description	8W/840 L Osram Lumilux
Lamp lumen output	470 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 8W

Luminaire description

linear cylindrical luminaire  
with clear cover

data derived from range test series

Lamp description

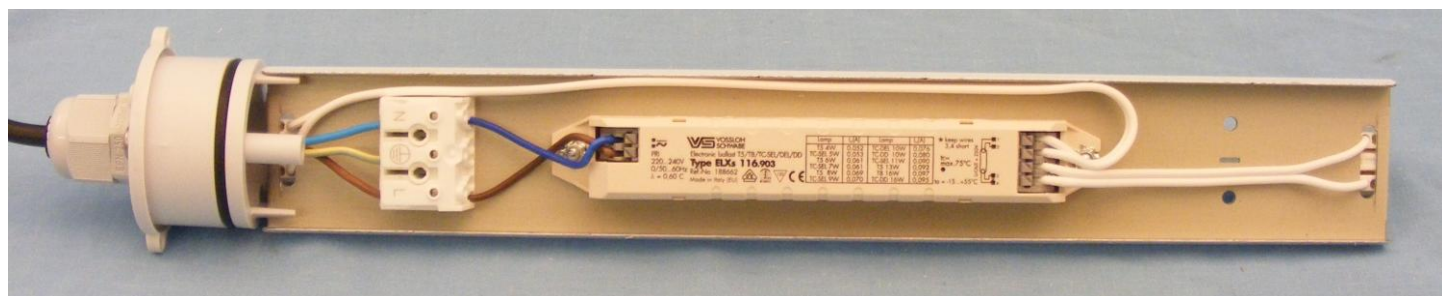
8W/840 L Osram Lumilux

Lamp lumen output

470 lm

Lamp quantity

1



PRI

220...240V

0/50...60Hz

$\lambda = 0,60 \text{ C}$

**VS VOSSLOH  
SCHWABE**

Electronic ballast T5/T8/TC-SEL/DEL/DD

**Type ELXs 116.903**

Ref.No. 188662

Made in Italy (EU)

Lamp	$I_N(A)$	Lamp	$I_N(A)$
T5 4W	0,052	TC-DEL 10W	0,076
TC-SEL 5W	0,053	TC-DD 10W	0,080
T5 6W	0,061	TC-SEL 11W	0,090
TC-SEL 7W	0,061	T5 13W	0,092
T5 8W	0,069	T8 16W	0,097
TC-SEL 9W	0,070	TC-DD 16W	0,095

\* keep wires  
3,4 short

$t_c =$   
max. 75°C

$t_a = -15...+55^\circ\text{C}$



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#### Luminaire physical characteristics

##### Overall Dimensions

Length	400mm
Width	50mm
Height	50mm

##### Visible Dimensions when installed

Length	400mm
Width	50mm
Height	50mm

##### Luminous Dimensions

Length	316mm
Width	50mm
Height 0°	25mm
Height 90°	0mm
Height 180°	25mm
Height 270°	0mm

##### Luminous Areas

Base	0.0158m <sup>2</sup>
Sides	0.0079m <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 \* Vossloh Scwabe ELXs 116.903  
Ballast Voltage Range 220-240V  
Ballast Current Range 0.069A  
Ballast Power Factor 0.6

Sample	Voltage (V)	Current (mA)	Power Factor	Power (W)	VA	Output (lm)	% of Nominal	Efficacy (lm/W)
Luminaire	230.0	64.0	0.569	8.4	14.7	361	77%	43.1
Lamp	230.0	70.7	0.583	9.5	16.2	500	106%	52.8

##### Electrical characteristics at 25°C

Ballast Nominal	230V	69.0mA	0.60PF	9.5W	15.9VA
Lamp Nominal	230V	34.8mA	1.00PF	8.0W	8.0VA
Luminaire	230V	64.0mA	0.57PF	8.4W	14.7VA
Lamp	230V	70.7mA	0.58PF	9.5W	16.2VA

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

Luminaire	Current	93%	Power	88%	VA	93%
Lamp	Current	102%	Power	99%	VA	102%

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

Luminaire	Current	184%	Power	105%	VA	184%
Lamp	Current	203%	Power	118%	VA	203%

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

Nominal Lamp Output	470
Measured Luminaire Output	361
Measured Lamp Output	500

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

Luminaire	77%
Lamp	106%

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

Luminaire	43.1 lm/W
Lamp	52.8 lm/W

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The light output ratio of the luminaire was measured as 0.723 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 361 lumens at 25°C.  
This figure can be related to the nominal lumen output of the lamp quoted by the manufacturer of 470 lumens, to give a nominal light output ratio of 0.769.

The measured lumen output of the lamp was 500 lumens at 25°C.  
This figure can be related to the nominal lumen output of the lamp quoted by the manufacturer of 470 lumens, to give a nominal BLF of 1.063.

For lighting design calculations:

A light output ratio of 1 should be used in conjunction with the measured lumen output of the luminaire of 361 lumens.

or

The nominal light output ratio of 0.769 should be used in conjunction with the nominal lumen output of the lamp of 470 lumens.

or

The measured light output ratio of 0.723 should be used in conjunction with the measured lumen output of the lamp of 500 lumens.

or

The measured light output ratio of 0.723 should be used in conjunction with the nominal lumen output of the lamp of 470 lumens and the nominal BLF of 1.063.

This report is based on the following parameters:

The Light Output Ratio is the nominal value of 0.769.

The lamp output is the nominal value of 470 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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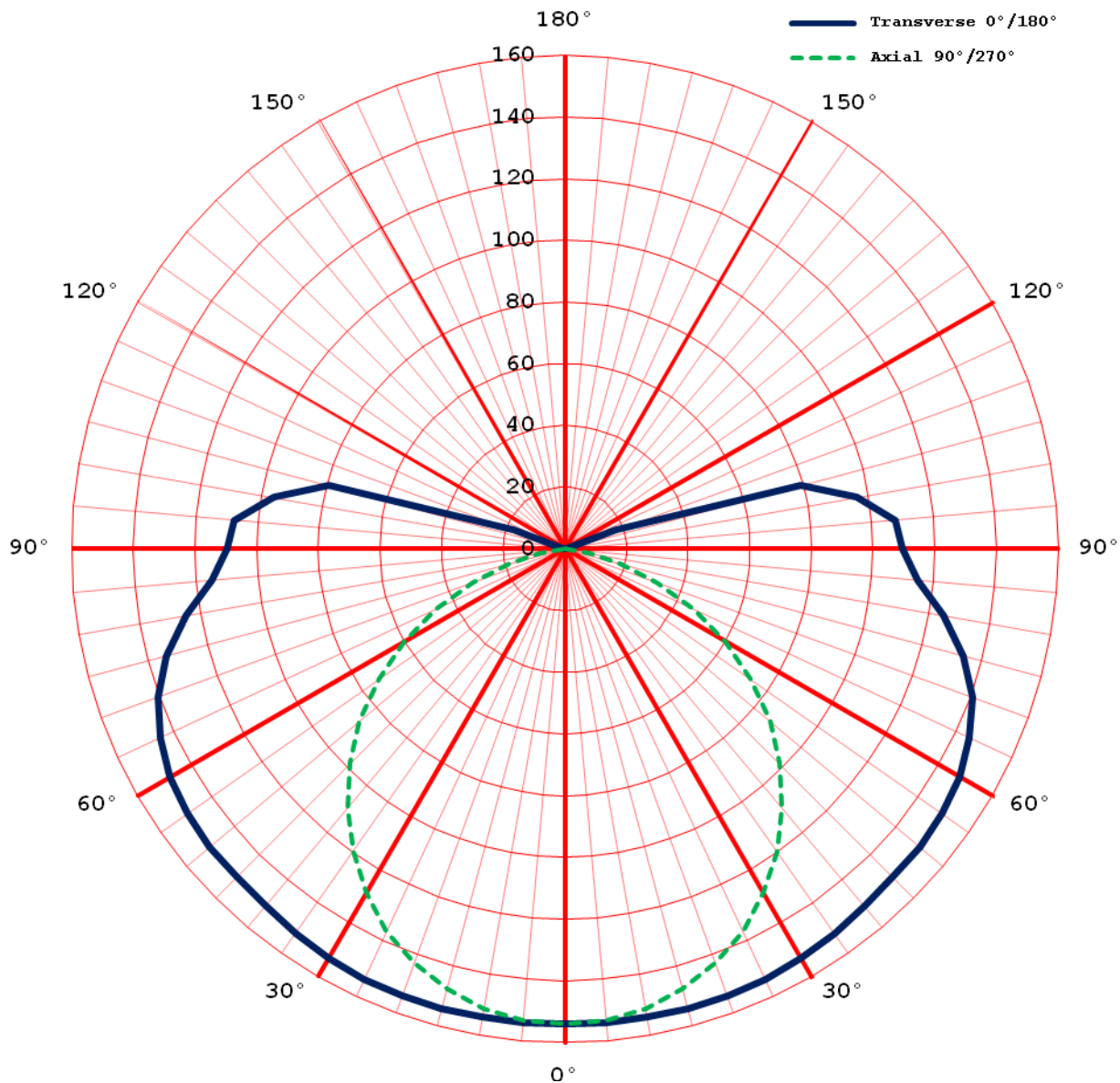
Lamp lumen output

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





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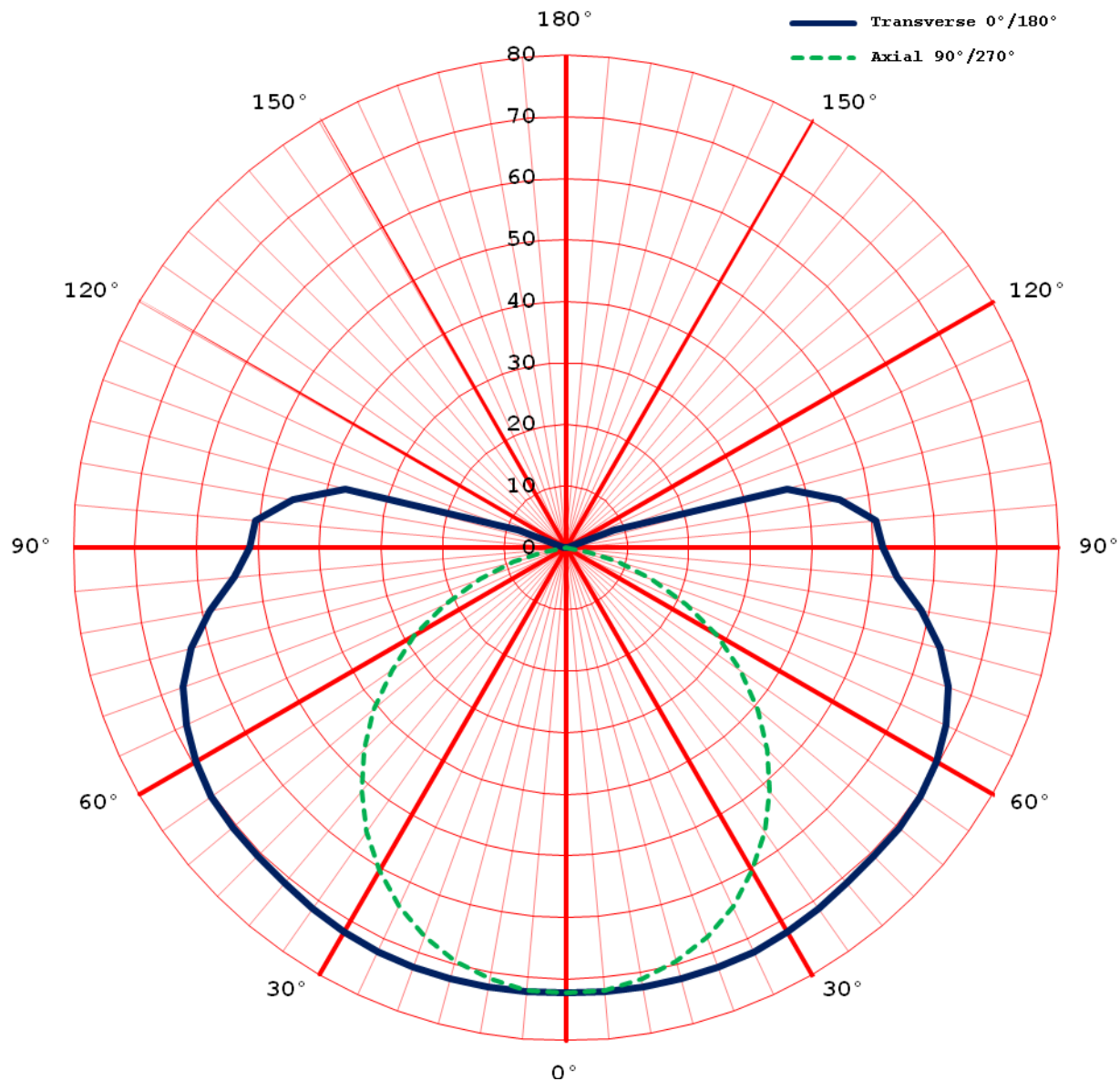
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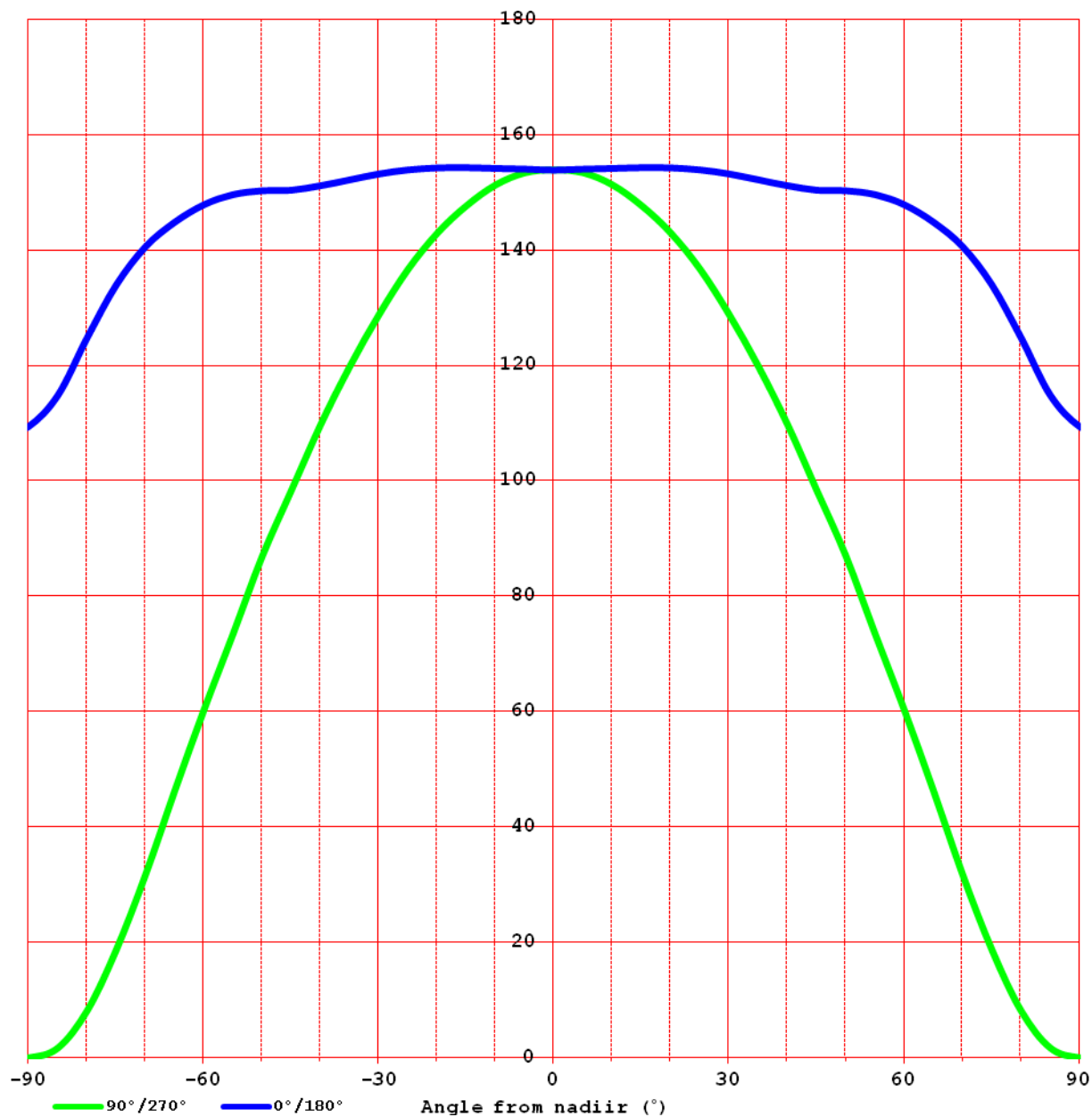
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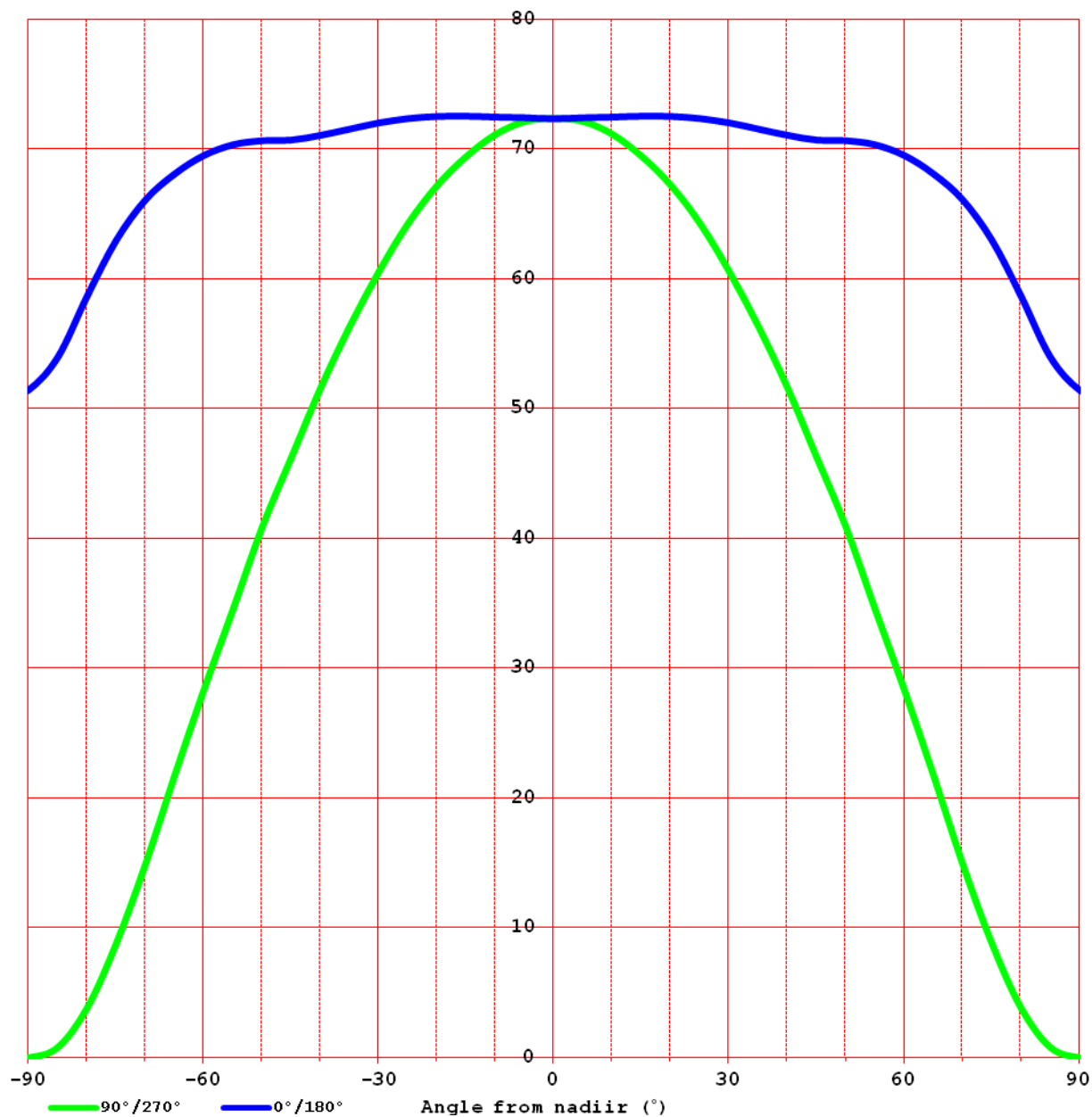
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Average Luminous Intensities (cd/Klm)

Angle	Transverse plane	Axial plane
0°	153.89	153.89
5°	154.07	153.36
10°	154.17	151.28
15°	154.31	147.67
20°	154.28	142.93
25°	153.93	136.67
30°	153.22	128.78
35°	152.20	119.80
40°	151.18	109.72
45°	150.41	98.34
50°	150.30	86.91
55°	149.63	73.44
60°	147.88	60.25
65°	144.85	46.25
70°	140.60	31.68
75°	133.98	18.70
80°	124.80	8.13
85°	114.85	1.70
90°	109.43	0.00
95°	107.60	0.00
100°	95.99	0.00
105°	79.04	0.00
110°	17.66	0.00
115°	0.67	0.00
120°	0.39	0.00
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°	72.33	72.33
5°	72.41	72.08
10°	72.46	71.10
15°	72.53	69.40
20°	72.51	67.18
25°	72.35	64.23
30°	72.01	60.53
35°	71.54	56.31
40°	71.06	51.57
45°	70.69	46.22
50°	70.64	40.85
55°	70.33	34.52
60°	69.50	28.32
65°	68.08	21.74
70°	66.08	14.89
75°	62.97	8.79
80°	58.66	3.82
85°	53.98	0.80
90°	51.43	0.00
95°	50.57	0.00
100°	45.12	0.00
105°	37.15	0.00
110°	8.30	0.00
115°	0.31	0.00
120°	0.18	0.00
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 0.10  
Down 0.67  
Total 0.77

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	.44	.49	.53	.58	.62	.65	.69	.72	
	.30		N/A	.37	.43	.47	.53	.57	.60	.65	.68	
	.10		N/A	.32	.38	.42	.48	.53	.56	.61	.65	
.50	.50	.20	N/A	.41	.46	.49	.54	.58	.61	.64	.67	
	.30		N/A	.35	.40	.44	.50	.54	.57	.61	.64	
	.10		N/A	.31	.36	.40	.46	.50	.53	.58	.61	
.30	.50	.20	N/A	.39	.43	.46	.51	.54	.56	.60	.62	
	.30		N/A	.34	.38	.42	.47	.50	.53	.57	.60	
	.10		N/A	.30	.34	.38	.43	.47	.50	.54	.57	
.00	.00	.00	N/A	.27	.31	.34	.39	.42	.45	.49	.52	
BZ Class			N/A	6	6	6	6	6	6	6	6	

CIE Flux code 33 / 61 / 83 / 87 / 77

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 / 9 / -

Flux Fraction Ratio 0.14  
DIN Class 0.77 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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Lamp description

8W/840 L Osram Lumilux

Lamp lumen output

470 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°	0.334	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



















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## Zonal Flux Calculations

Angles	Individual	Cumulative
0° - 5°	0.5%	0.5%
5° - 10°	1.4%	1.9%
10° - 15°	2.3%	4.2%
15° - 20°	3.2%	7.5%
20° - 25°	4.0%	11.5%
25° - 30°	4.7%	16.2%
30° - 35°	5.3%	21.5%
35° - 40°	5.8%	27.4%
40° - 45°	6.2%	33.6%
45° - 50°	6.5%	40.1%
50° - 55°	6.7%	46.7%
55° - 60°	6.7%	53.5%
60° - 65°	6.7%	60.1%
65° - 70°	6.5%	66.6%
70° - 75°	6.2%	72.8%
75° - 80°	5.7%	78.5%
80° - 85°	5.1%	83.5%
85° - 90°	4.6%	88.1%
90° - 95°	4.2%	92.3%
95° - 100°	3.6%	96.0%
100° - 105°	2.7%	98.7%
105° - 110°	1.2%	99.9%
110° - 115°	0.1%	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°	4218	4092	3860	4137	3860	4092	4218
50°	4359	4178	3799	4022	3799	4178	4359
55°	4527	4317	3764	3809	3764	4317	4527
60°	4715	4493	3743	3585	3743	4493	4715
65°	4920	4670	3805	3255	3805	4670	4920
70°	5151	4871	3892	2755	3892	4871	5151
75°	5373	5084	3984	2149	3984	5084	5373
80°	5574	5300	4022	1393	4022	5300	5574
85°	5837	5489	4059	579	4059	5489	5837
	180.0°	210.0°	240.0°	270.0°	300.0°	330.0°	0.0°
45°	4218	4092	3860	4137	3860	4092	4218
50°	4359	4178	3799	4022	3799	4178	4359
55°	4527	4317	3764	3809	3764	4317	4527
60°	4715	4493	3743	3585	3743	4493	4715
65°	4920	4670	3805	3255	3805	4670	4920
70°	5151	4871	3892	2755	3892	4871	5151
75°	5373	5084	3984	2149	3984	5084	5373
80°	5574	5300	4022	1393	4022	5300	5574
85°	5837	5489	4059	579	4059	5489	5837

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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°	4190	4094	3881	4172	3896	4128	4247
50°	4328	4177	3837	4082	3837	4217	4389
55°	4488	4310	3803	3856	3790	4360	4567
60°	4680	4489	3783	3624	3784	4535	4750
65°	4882	4665	3849	3332	3829	4724	4958
70°	5122	4875	3946	2814	3906	4921	5181
75°	5340	5092	4051	2328	4002	5129	5406
80°	5541	5347	4048	1434	4051	5331	5606
85°	5769	5609	4225	672	4039	5516	5906
	180.0°	210.0°	240.0°	270.0°	300.0°	330.0°	0.0°
45°	4247	4104	3852	4102	3811	4043	4190
50°	4389	4183	3795	3962	3727	4136	4328
55°	4567	4330	3746	3762	3715	4269	4488
60°	4750	4498	3734	3546	3669	4449	4680
65°	4958	4682	3797	3179	3746	4607	4882
70°	5181	4877	3896	2697	3822	4810	5122
75°	5406	5097	3983	1970	3900	5019	5340
80°	5606	5311	4059	1352	3931	5211	5541
85°	5906	5511	4054	485	3919	5318	5769

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Luminaire catalog No. MT50 8W  
Luminaire description linear cylindrical luminaire  
with clear cover  
data derived from range test series  
Lamp description 8W/840 L Osram Lumilux  
Lamp lumen output 470 lm  
Lamp quantity 1

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°	8975	8706	8213	8802	8213	8706	8975
50°	9274	8890	8084	8558	8084	8890	9274
55°	9633	9186	8008	8104	8008	9186	9633
60°	10031	9559	7963	7627	7963	9559	10031
65°	10468	9935	8096	6926	8096	9935	10468
70°	10960	10363	8282	5862	8282	10363	10960
75°	11432	10818	8477	4572	8477	10818	11432
80°	11859	11276	8558	2964	8558	11276	11859
85°	12420	11678	8637	1232	8637	11678	12420
	180.0°	210.0°	240.0°	270.0°	300.0°	330.0°	0.0°
45°	8975	8706	8213	8802	8213	8706	8975
50°	9274	8890	8084	8558	8084	8890	9274
55°	9633	9186	8008	8104	8008	9186	9633
60°	10031	9559	7963	7627	7963	9559	10031
65°	10468	9935	8096	6926	8096	9935	10468
70°	10960	10363	8282	5862	8282	10363	10960
75°	11432	10818	8477	4572	8477	10818	11432
80°	11859	11276	8558	2964	8558	11276	11859
85°	12420	11678	8637	1231	8637	11678	12420

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Customer

Encapsulite International Ltd.

Luminaire Range

MT50 IP68

Luminaire catalog No.

MT50 8W

Luminaire description

linear cylindrical luminaire  
with clear cover

data derived from range test series

Lamp description

8W/840 L Osram Lumilux

Lamp lumen output

470 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°	8914	8710	8257	8877	8290	8783	9036
50°	9208	8887	8165	8685	8164	8973	9339
55°	9548	9171	8092	8204	8064	9276	9717
60°	9956	9551	8049	7710	8052	9648	10106
65°	10388	9925	8189	7089	8146	10052	10548
70°	10898	10372	8395	5987	8310	10471	11023
75°	11362	10834	8619	4953	8515	10912	11501
80°	11790	11376	8612	3051	8620	11342	11928
85°	12274	11935	8989	1430	8593	11737	12565
	180.0°	210.0°	240.0°	270.0°	300.0°	330.0°	0.0°
45°	9036	8731	8195	8727	8108	8601	8914
50°	9339	8900	8075	8431	7931	8800	9208
55°	9717	9214	7970	8004	7904	9083	9548
60°	10106	9570	7945	7544	7807	9465	9956
65°	10548	9962	8078	6763	7970	9802	10388
70°	11023	10377	8290	5738	8133	10233	10898
75°	11501	10845	8475	4191	8297	10679	11362
80°	11928	11299	8637	2877	8363	11087	11790
85°	12565	11725	8626	1033	8339	11316	12274

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Luminaire Range MT50 IP68  
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Lamp lumen output 470 lm  
Lamp quantity 1

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

Elevation(°)

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

45°	4247	180°
50°	4389	180°
55°	4567	180°
60°	4750	180°
65°	4958	180°
70°	5181	180°
75°	5406	180°
80°	5606	180°
85°	5906	180°

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Lamp lumen output 470 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 8W  
 Luminaire description linear cylindrical luminaire  
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 Lamp lumen output 470 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	19.5	21.4	20.1	22.1	22.8	15.9	17.8	16.6	18.5	19.2
	3H	22.9	24.7	23.6	25.4	26.2	17.8	19.6	18.5	20.3	21.1
	4H	24.6	26.3	25.3	27.0	27.8	18.5	20.2	19.2	20.9	21.7
	6H	26.4	28.0	27.1	28.7	29.5	18.9	20.5	19.6	21.2	22.1
	8H	27.2	28.8	28.0	29.5	30.4	19.0	20.5	19.7	21.3	22.1
	12H	28.1	29.6	28.9	30.4	31.2	19.0	20.5	19.7	21.3	22.1
4H	2H	20.4	22.1	21.1	22.8	23.6	18.1	19.8	18.8	20.5	21.3
	3H	24.2	25.7	25.0	26.5	27.3	20.4	21.9	21.2	22.7	23.5
	4H	26.2	27.6	27.0	28.3	29.2	21.4	22.8	22.2	23.5	24.4
	6H	28.2	29.4	28.9	30.2	31.1	22.1	23.3	22.8	24.1	25.0
	8H	29.2	30.3	30.0	31.1	32.0	22.3	23.4	23.1	24.2	25.1
	12H	30.3	31.3	31.0	32.1	33.1	22.4	23.5	23.2	24.3	25.2
8H	4H	26.9	28.1	27.7	28.9	29.8	23.6	24.7	24.4	25.5	26.4
	6H	29.2	30.2	30.0	31.0	31.9	24.6	25.6	25.4	26.4	27.4
	8H	30.5	31.3	31.3	32.2	33.1	25.1	26.0	25.9	26.8	27.8
	12H	31.8	32.5	32.6	33.4	34.4	25.4	26.2	26.2	27.0	28.0
12H	4H	27.1	28.1	27.9	28.9	29.9	24.5	25.6	25.3	26.4	27.3
	6H	29.5	30.4	30.3	31.2	32.2	25.8	26.7	26.6	27.6	28.5
	8H	30.8	31.6	31.7	32.5	33.4	26.4	27.2	27.2	28.0	29.0

Calculated in accordance with CIBSE Technical Memorandum No. 10 1985

Customer

Encapsulite International Ltd.

Luminaire Range

MT50 IP68

Luminaire catalog No.

MT50 8W

Luminaire description

linear cylindrical luminaire  
with clear cover

data derived from range test series

Lamp description

8W/840 L Osram Lumilux

Lamp lumen output

470 lm

Lamp quantity

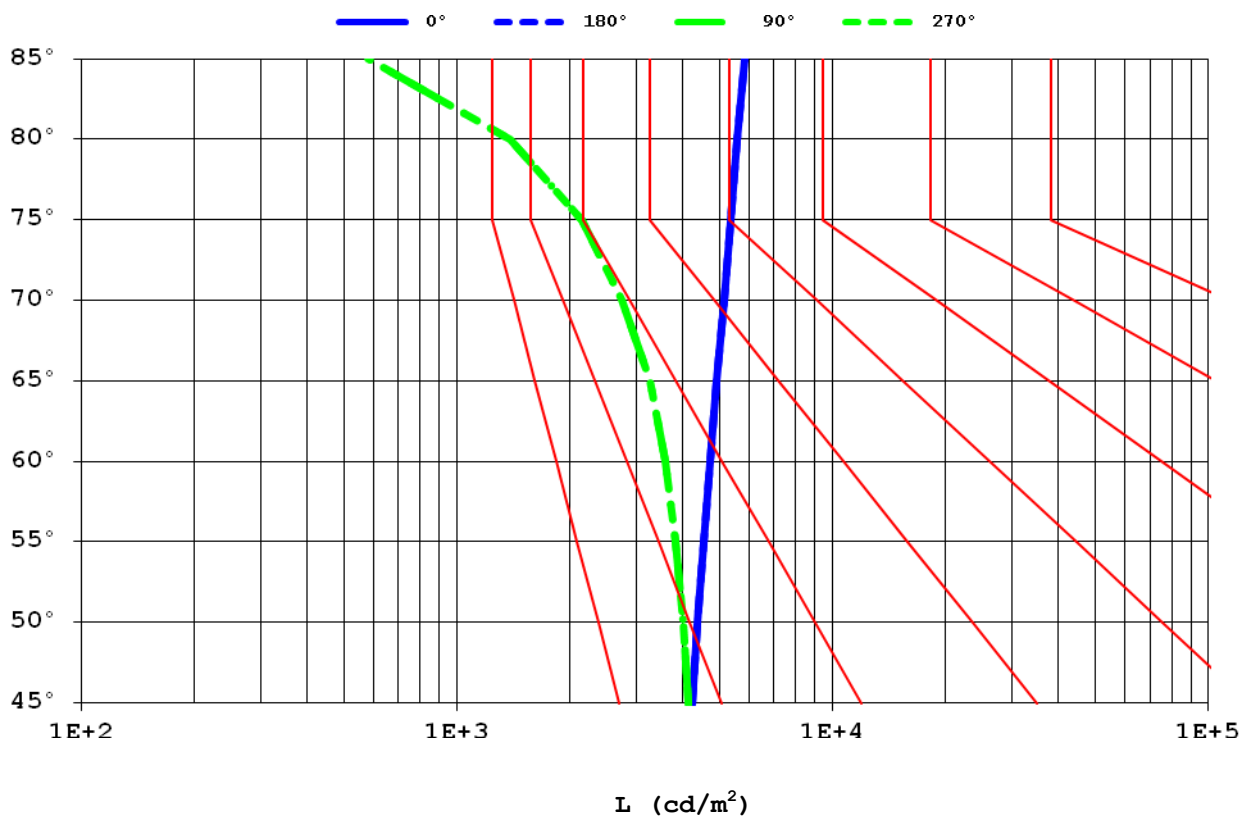
1

## 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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Luminaire Range	MT50 IP68
Luminaire catalog No.	MT50 8W
Luminaire description	linear cylindrical luminaire with clear cover data derived from range test series
Lamp description	8W/840 L Osram Lumilux
Lamp lumen output	470 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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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 = 470 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	7.8	11.7	15.6	19.5	31.3	39.1	78.1	117.2	195.3