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Photometric Report

Job / Report / Date	42 / 10692 / 10692-6a / 2013.06.17
Customer	Encapsulite International Ltd.
Luminaire Range	MT50 IP68
Luminaire catalog No.	MT50 SC 8W
Luminaire description	linear cylindrical luminaire with opal 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 SC 8W

Luminaire description

linear cylindrical luminaire
with opal cover

data derived from range test series

Lamp description

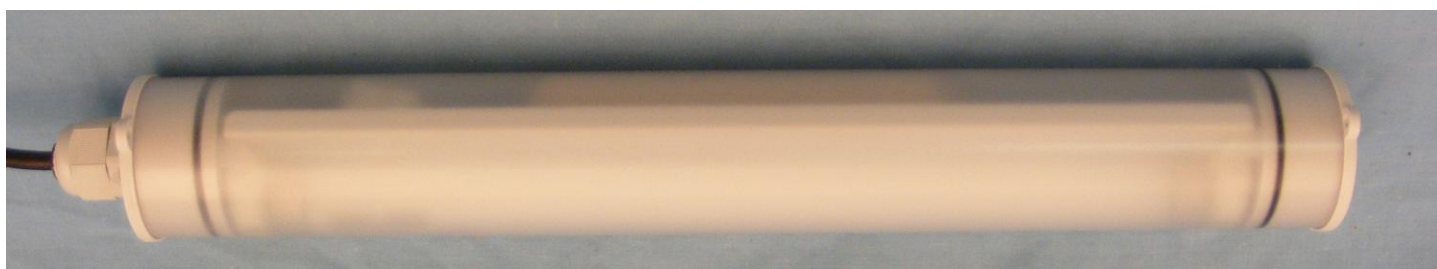
8W/840 L Osram Lumilux

Lamp lumen output

470 lm

Lamp quantity

1



VS VOSSLÖH 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°C
U_{OUT} = 250V



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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 ²
Sides	0.0079m 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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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	64.1	0.566	8.3	14.7	340	72%	40.7
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	64.1mA	0.57PF	8.3W	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	104%	VA	184%
Lamp	Current	203%	Power	118%	VA	203%

Lumen Output figures used in this report (lumens)

Nominal Lamp Output	470
Measured Luminaire Output	340
Measured Lamp Output	500

Measured Lumen Output characteristics relative to Lamp Nominal Total

Luminaire	72%
Lamp	106%

Measured luminous efficacy at 25°C

Luminaire	40.7 lm/W
Lamp	52.8 lm/W

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The light output ratio of the luminaire was measured as 0.679 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 340 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 0.722.

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 340 lumens.

or

The nominal light output ratio of 0.722 should be used in conjunction with the nominal lumen output of the lamp of 470 lumens.

or

The measured light output ratio of 0.679 should be used in conjunction with the measured lumen output of the lamp of 500 lumens.

or

The measured light output ratio of 0.679 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 0.722.

The lamp output is the nominal value of 470 lumens.

There is 1 lamp in the luminaire.

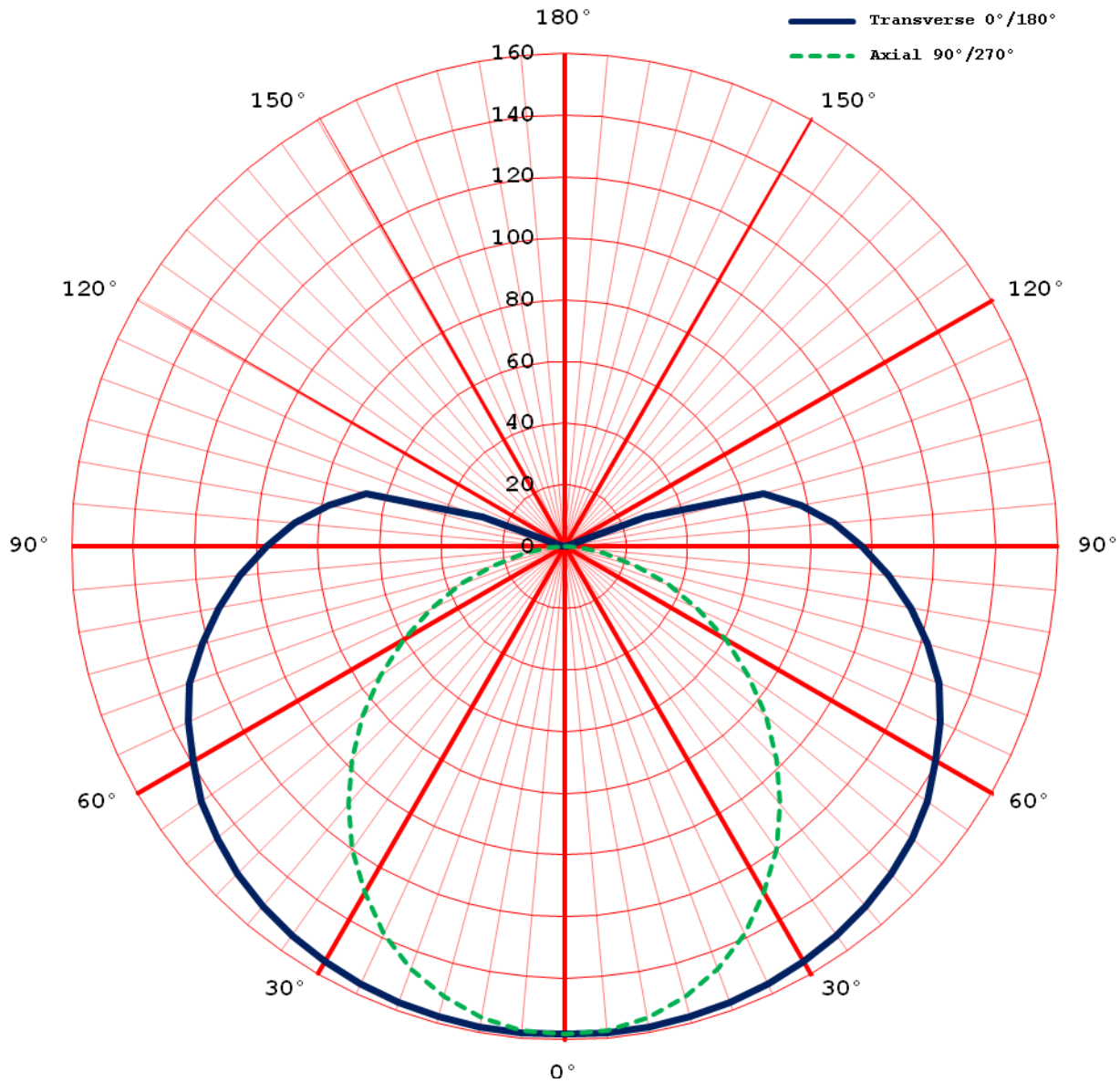
No measurements relating to the ballast factor of the control gear were made.

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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Average Principal Axes Luminous Intensities (cd/klm)



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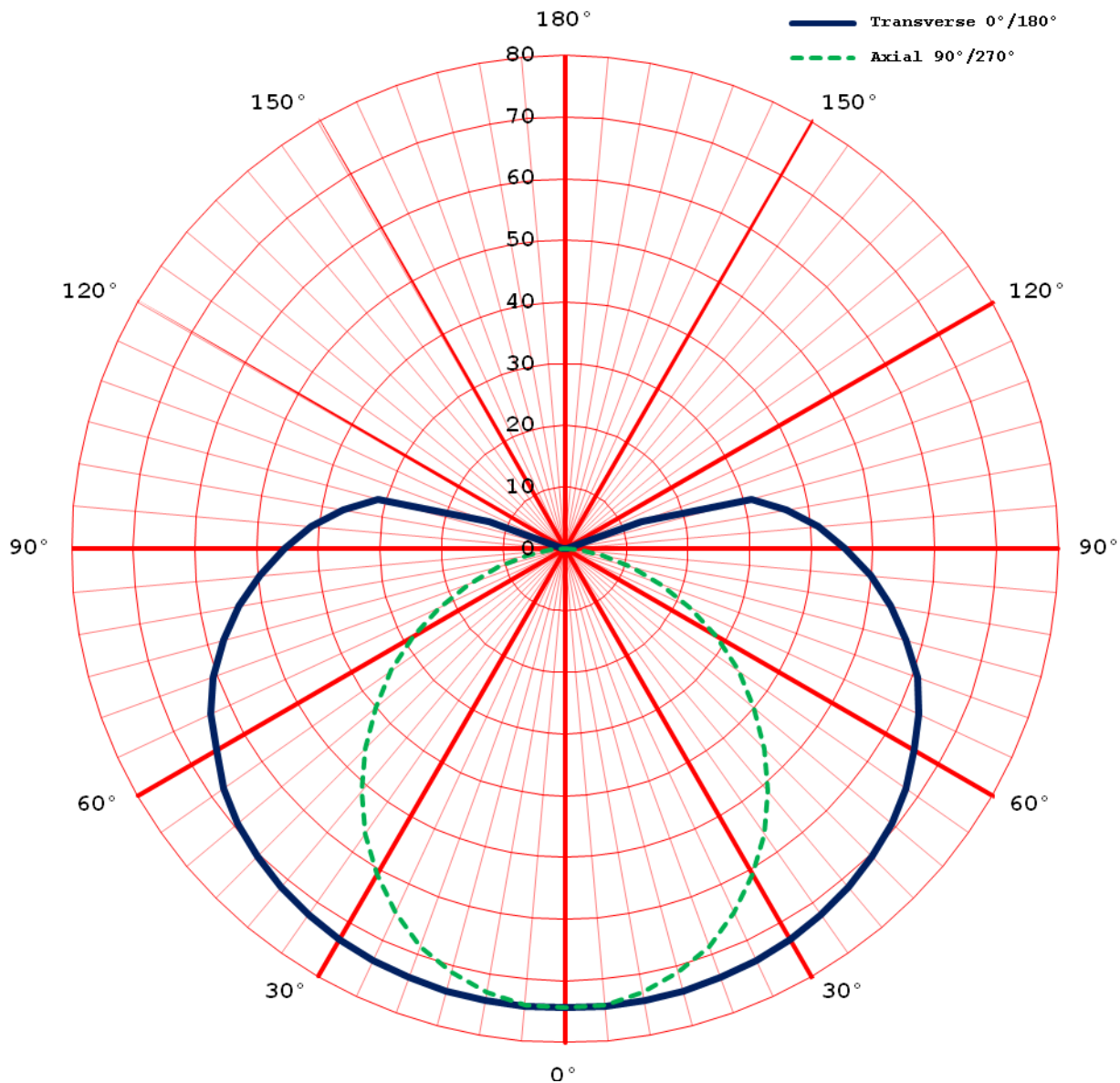
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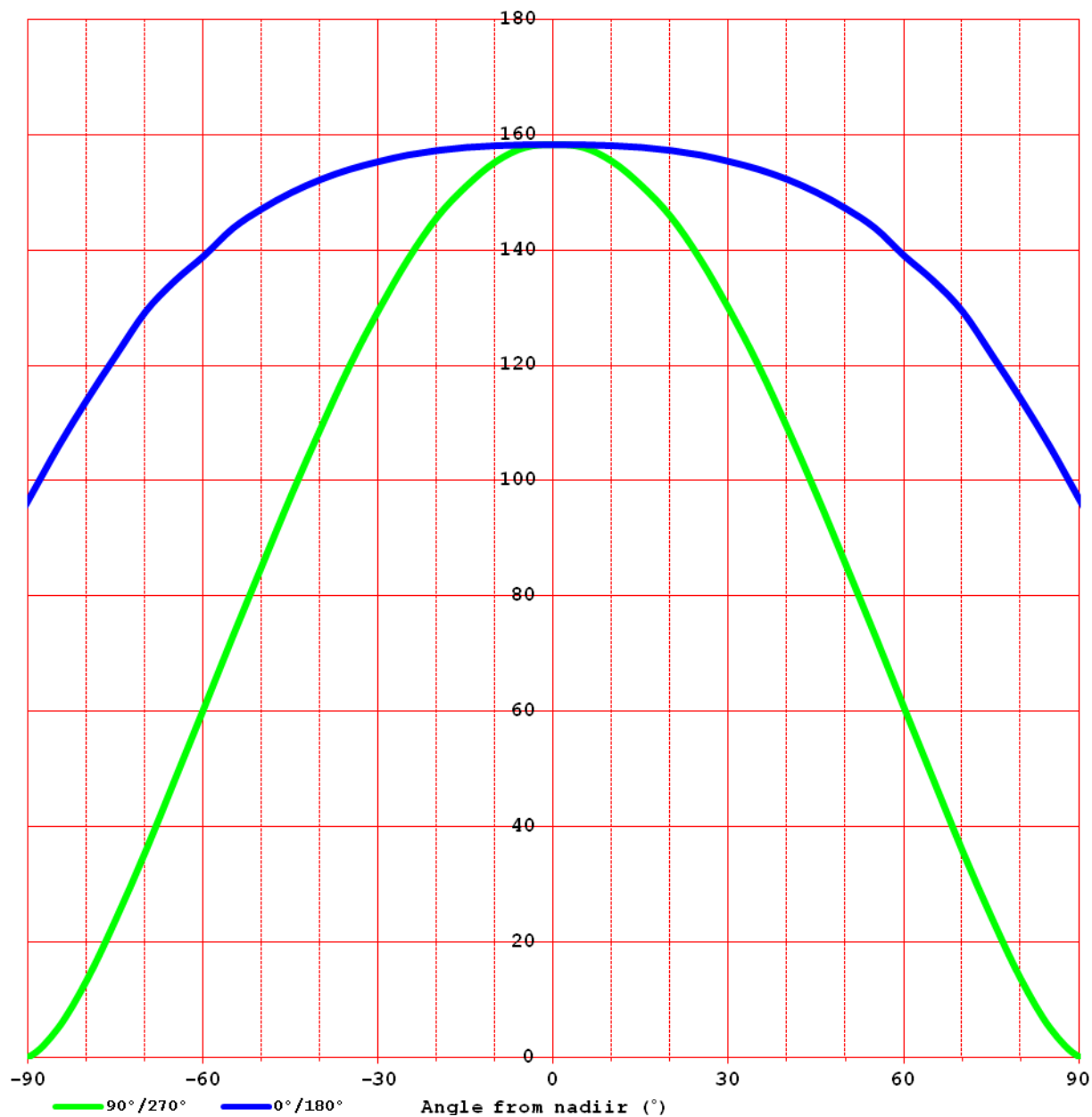
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Average Luminous Intensities (cd/Klm)

Angle	Transverse plane	Axial plane
0°	158.31	158.31
5°	158.31	157.82
10°	158.16	155.36
15°	157.86	151.16
20°	157.33	145.79
25°	156.54	138.45
30°	155.41	129.71
35°	154.05	119.99
40°	152.28	109.06
45°	150.02	97.52
50°	147.23	85.34
55°	143.84	73.08
60°	139.01	60.48
65°	134.68	48.04
70°	129.33	35.63
75°	121.83	24.06
80°	114.11	13.43
85°	105.81	4.95
90°	96.73	0.00
95°	87.73	0.00
100°	77.85	0.00
105°	66.81	0.00
110°	27.97	0.00
115°	0.57	0.00
120°	0.45	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°	74.41	74.41
5°	74.41	74.18
10°	74.34	73.02
15°	74.19	71.05
20°	73.95	68.52
25°	73.57	65.07
30°	73.04	60.96
35°	72.40	56.39
40°	71.57	51.26
45°	70.51	45.83
50°	69.20	40.11
55°	67.60	34.35
60°	65.34	28.43
65°	63.30	22.58
70°	60.79	16.75
75°	57.26	11.31
80°	53.63	6.31
85°	49.73	2.33
90°	45.46	0.00
95°	41.23	0.00
100°	36.59	0.00
105°	31.40	0.00
110°	13.14	0.00
115°	0.27	0.00
120°	0.21	0.02
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	0.64
	Total	0.72

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	.42	.47	.51	.56	.60	.62	.66	.68	
	.30		N/A	.36	.41	.45	.51	.55	.58	.62	.65	
	.10		N/A	.32	.37	.41	.46	.51	.54	.58	.62	
.50	.50	.20	N/A	.40	.44	.48	.52	.56	.58	.61	.64	
	.30		N/A	.35	.39	.43	.48	.52	.54	.58	.61	
	.10		N/A	.31	.35	.39	.44	.48	.51	.55	.58	
.30	.50	.20	N/A	.38	.42	.45	.49	.52	.54	.57	.59	
	.30		N/A	.33	.37	.41	.45	.49	.51	.55	.57	
	.10		N/A	.30	.34	.37	.42	.46	.49	.52	.55	
.00	.00	.00	N/A	.27	.31	.34	.38	.42	.44	.48	.50	
BZ Class			N/A	6	6	6	6	6	6	6	6	

CIE Flux code 35 / 63 / 84 / 89 / 72

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	7	8	8 / 10

Flux Fraction Ratio 0.12
DIN Class 0.72 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°	0.333	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°	4207	4048	3750	4102	3750	4048	4207
50°	4269	4064	3639	3949	3639	4064	4269
55°	4352	4096	3538	3790	3538	4096	4352
60°	4432	4136	3442	3598	3442	4136	4432
65°	4575	4212	3345	3381	3345	4212	4575
70°	4739	4317	3283	3099	3283	4317	4739
75°	4886	4444	3267	2765	3267	4444	4886
80°	5096	4610	3276	2300	3276	4610	5096
85°	5378	4849	3393	1691	3393	4849	5378
	180.0°	210.0°	240.0°	270.0°	300.0°	330.0°	0.0°
45°	4207	4048	3750	4102	3750	4048	4207
50°	4269	4064	3639	3949	3639	4064	4269
55°	4352	4096	3538	3790	3538	4096	4352
60°	4432	4136	3442	3598	3442	4136	4432
65°	4575	4212	3345	3381	3345	4212	4575
70°	4739	4317	3283	3099	3283	4317	4739
75°	4886	4444	3267	2765	3267	4444	4886
80°	5096	4610	3276	2300	3276	4610	5096
85°	5378	4849	3393	1691	3393	4849	5378

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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°	4175	4044	3781	4151	3778	4085	4239
50°	4232	4060	3678	3995	3678	4119	4307
55°	4313	4090	3582	3855	3574	4150	4392
60°	4366	4141	3490	3664	3474	4198	4498
65°	4526	4189	3395	3454	3389	4274	4623
70°	4700	4322	3342	3167	3321	4379	4778
75°	4823	4459	3320	2851	3329	4507	4949
80°	5024	4626	3352	2428	3311	4686	5168
85°	5291	4873	3492	1827	3422	4936	5465
	180.0°	210.0°	240.0°	270.0°	300.0°	330.0°	0.0°
45°	4239	4061	3748	4053	3694	4004	4175
50°	4307	4078	3634	3904	3568	3999	4232
55°	4392	4114	3534	3725	3463	4031	4313
60°	4498	4144	3440	3533	3362	4061	4366
65°	4623	4251	3353	3308	3242	4133	4526
70°	4778	4351	3294	3031	3176	4217	4700
75°	4949	4488	3277	2679	3141	4321	4823
80°	5168	4668	3294	2172	3148	4462	5024
85°	5465	4891	3432	1555	3228	4697	5291

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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°	8952	8614	7980	8729	7980	8614	8952
50°	9084	8647	7743	8403	7743	8647	9084
55°	9260	8716	7528	8064	7528	8716	9260
60°	9430	8800	7322	7656	7322	8800	9430
65°	9733	8961	7117	7194	7117	8961	9733
70°	10082	9186	6986	6594	6986	9186	10082
75°	10395	9455	6950	5883	6950	9455	10395
80°	10843	9809	6971	4894	6971	9809	10843
85°	11443	10318	7220	3598	7220	10318	11443
	180.0°	210.0°	240.0°	270.0°	300.0°	330.0°	0.0°
45°	8952	8614	7980	8729	7980	8614	8952
50°	9084	8647	7743	8403	7743	8647	9084
55°	9260	8716	7528	8064	7528	8716	9260
60°	9430	8800	7322	7656	7322	8800	9430
65°	9733	8961	7117	7194	7117	8961	9733
70°	10082	9186	6986	6594	6986	9186	10082
75°	10395	9455	6950	5883	6950	9455	10395
80°	10843	9809	6971	4894	6971	9809	10843
85°	11443	10318	7220	3598	7220	10318	11443

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Customer

Encapsulite International Ltd.

Luminaire Range

MT50 IP68

Luminaire catalog No.

MT50 SC 8W

Luminaire description

linear cylindrical luminaire
with opal 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/m²/klm)

Elevation(°)

Azimuth(°)

	0.0°	30.0°	60.0°	90.0°	120.0°	150.0°	180.0°
45°	8884	8604	8045	8833	8039	8690	9020
50°	9004	8638	7825	8499	7826	8763	9164
55°	9176	8702	7621	8202	7605	8830	9344
60°	9290	8811	7425	7796	7391	8932	9570
65°	9630	8913	7224	7350	7211	9093	9837
70°	9999	9196	7111	6738	7066	9318	10165
75°	10261	9487	7064	6065	7082	9589	10529
80°	10689	9843	7132	5166	7044	9971	10997
85°	11258	10367	7429	3887	7281	10502	11628
	180.0°	210.0°	240.0°	270.0°	300.0°	330.0°	0.0°
45°	9020	8641	7974	8624	7860	8519	8884
50°	9164	8676	7731	8306	7592	8509	9004
55°	9344	8753	7518	7926	7367	8578	9176
60°	9570	8817	7319	7516	7154	8640	9290
65°	9837	9044	7135	7039	6898	8793	9630
70°	10165	9257	7008	6449	6758	8973	9999
75°	10529	9549	6972	5700	6682	9194	10261
80°	10997	9931	7009	4622	6697	9493	10689
85°	11628	10407	7301	3308	6869	9994	11258

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Customer Encapsulite International Ltd.
Luminaire Range MT50 IP68
Luminaire catalog No. MT50 SC 8W
Luminaire description linear cylindrical luminaire
with opal cover
data derived from range test series
Lamp description 8W/840 L Osram Lumilux
Lamp lumen output 470 lm
Lamp quantity 1

Maximum Non averaged Luminance Values (cd/m²)

Elevation(°)

Maximum Azimuth Angle

45°	4239	180°
50°	4307	180°
55°	4392	180°
60°	4498	180°
65°	4623	180°
70°	4778	180°
75°	4949	180°
80°	5168	180°
85°	5465	180°

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Luminaire catalog No. MT50 SC 8W
Luminaire description linear cylindrical luminaire
with opal cover
data derived from range test series
Lamp description 8W/840 L Osram Lumilux
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 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

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Customer

Encapsulite International Ltd.

Luminaire Range

MT50 IP68

Luminaire catalog No.

MT50 SC 8W

Luminaire description

linear cylindrical luminaire
with opal cover

data derived from range test series

Lamp description

8W/840 L Osram Lumilux

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	19.4	21.3	20.0	22.0	22.7	15.9	17.8	16.5	18.5	19.2
3H	22.7	24.5	23.4	25.2	25.9	17.9	19.7	18.5	20.3	21.1
4H	24.4	26.1	25.1	26.8	27.5	18.6	20.3	19.3	21.0	21.7
6H	26.1	27.7	26.8	28.4	29.2	19.1	20.7	19.8	21.4	22.2
8H	27.0	28.5	27.7	29.2	30.0	19.3	20.8	20.0	21.5	22.3
12H	27.9	29.4	28.6	30.1	30.9	19.3	20.9	20.1	21.6	22.4
4H 2H	20.3	22.0	21.0	22.7	23.4	17.9	19.6	18.6	20.3	21.1
3H	24.0	25.5	24.7	26.2	27.0	20.2	21.7	20.9	22.4	23.2
4H	25.9	27.3	26.6	28.0	28.8	21.2	22.5	21.9	23.3	24.1
6H	27.8	29.1	28.6	29.8	30.7	21.9	23.1	22.6	23.9	24.7
8H	28.8	30.0	29.6	30.8	31.6	22.1	23.3	22.9	24.1	24.9
12H	29.9	31.0	30.7	31.8	32.7	22.3	23.4	23.1	24.2	25.1
8H 4H	26.5	27.7	27.3	28.5	29.3	23.2	24.3	23.9	25.1	25.9
6H	28.7	29.8	29.5	30.5	31.4	24.1	25.2	24.9	25.9	26.8
8H	30.1	31.0	30.9	31.8	32.7	24.7	25.5	25.5	26.4	27.3
12H	31.4	32.2	32.2	33.0	33.9	25.0	25.8	25.8	26.6	27.5
12H 4H	26.6	27.7	27.4	28.5	29.4	24.0	25.1	24.8	25.9	26.8
6H	29.1	29.9	29.9	30.8	31.7	25.3	26.2	26.1	27.0	27.9
8H	30.4	31.2	31.2	32.0	32.9	25.9	26.7	26.7	27.5	28.4

Calculated in accordance with CIBSE Technical Memorandum No. 10 1985

Customer

Encapsulite International Ltd.

Luminaire Range

MT50 IP68

Luminaire catalog No.

MT50 SC 8W

Luminaire description

linear cylindrical luminaire
with opal cover

data derived from range test series

Lamp description

8W/840 L Osram Lumilux

Lamp lumen output

470 lm

Lamp quantity

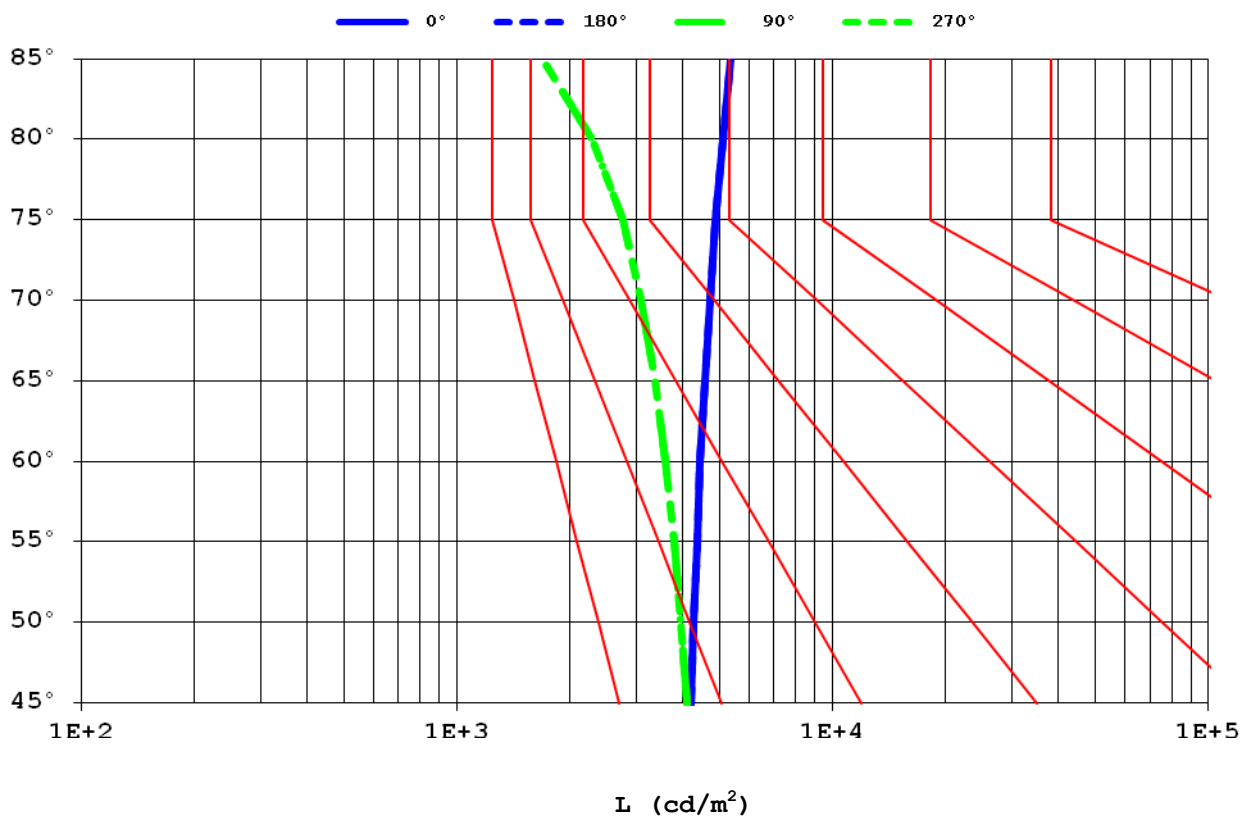
1

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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Customer	Encapsulite International Ltd.
Luminaire Range	MT50 IP68
Luminaire catalog No.	MT50 SC 8W
Luminaire description	linear cylindrical luminaire with opal 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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Customer Encapsulite International Ltd.
Luminaire Range MT50 IP68
Luminaire catalog No. MT50 SC 8W
Luminaire description linear cylindrical luminaire
with opal cover
data derived from range test series
Lamp description 8W/840 L Osram Lumilux
Lamp lumen output 470 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 = 470 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	8.1	12.2	16.2	20.3	32.5	40.6	81.2	121.7	202.9