



**42 Partners Limited**

21 Woden Road  
Wolverhampton  
WV10 0AU  
UK

[www.42partners.com](http://www.42partners.com)

[42@42partners.com](mailto:42@42partners.com)

T +44 (0) 1902 453650

F +44 (0) 8721 153400

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

# Photometric Report

Job / Report / Date 42 / 10692 / 10692-19a / 2013.06.17

Customer	Encapsulite International Ltd.
Luminaire Range	MT70 IP68
Luminaire catalog No.	MT70 30W
Luminaire description	linear cylindrical luminaire with clear cover data derived from range test series
Source description	30W/840 L Osram
Source lumen output	2,400 lm
Source quantity	1

#### Photometric Report

- Pictures
- Luminaire information
- Report basis
- Polar Curves
- HV Distribution Curves
- Principal Axes Intensities
- Light Output Ratios & CIBSE TM5 Results
- Aspect Factors
- Luminous intensities
- Zonal Flux Calculations
- Luminance calculations
- VDI Luminance table
- CIBSE TM10 Glare Index Results
- CIE Glare Limiting (Soellnor) Diagram
- Comments
- Quick Design Table

Job / Report / Date

42 / 10692 / 10692-19a / 2013.06.17

Customer

Encapsulite International Ltd.

Luminaire Range

MT70 IP68

Luminaire catalog No.

MT70 30W

Luminaire description

linear cylindrical luminaire  
with clear cover

data derived from range test series

Source description

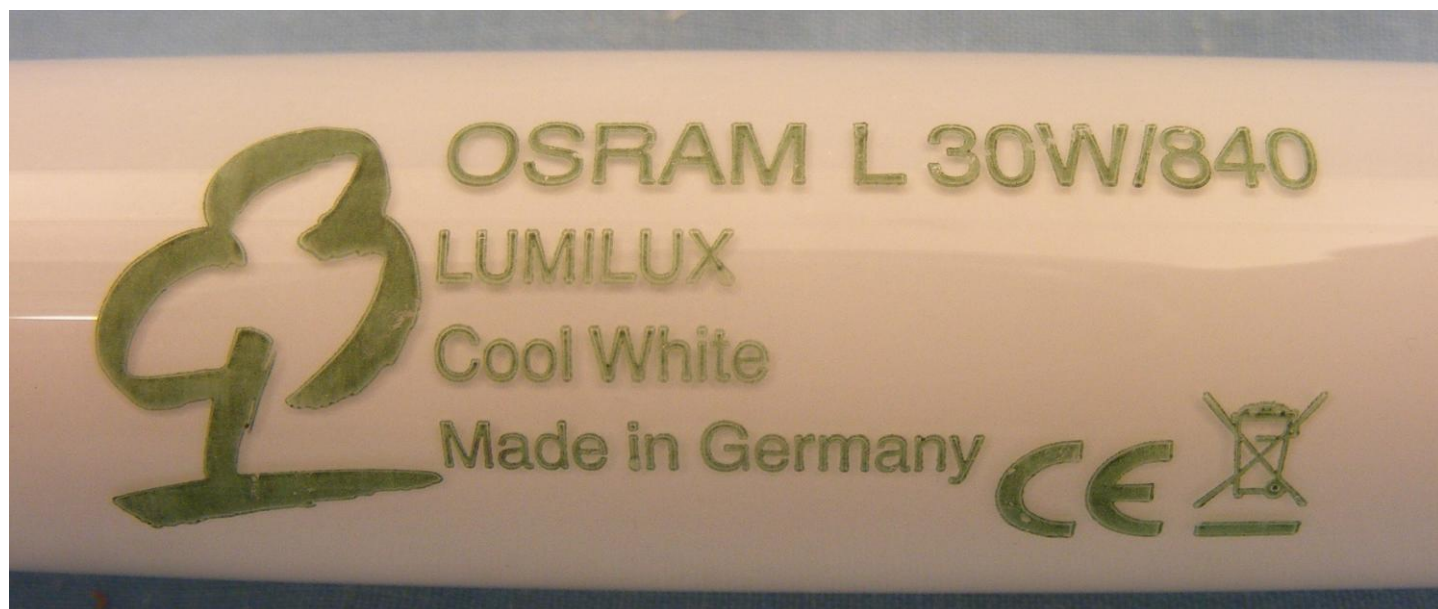
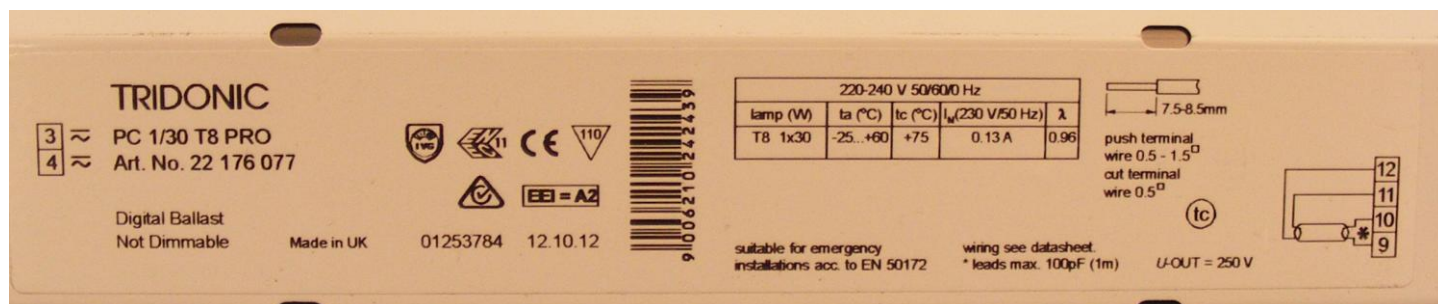
30W/840 L Osram

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#### Luminaire physical characteristics

##### Overall Dimensions

Length	1008mm
Width	70mm
Height	70mm

##### Visible Dimensions when installed

Length	1008mm
Width	70mm
Height	70mm

##### Luminous Dimensions

Length	942mm
Width	70mm
Height 0°	35mm
Height 90°	0mm
Height 180°	35mm
Height 270°	0mm

##### Luminous Areas

Base	0.06594m <sup>2</sup>
Sides	0.03297m <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 no planes of symmetry.

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.

Job / Report / Date 42 / 10692 / 10692-19a / 2013.06.17

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#### Electrical input & Photometric output characteristics

##### Control gear

1 \* Tridonic PC 1/30 T8 PRO  
Ballast Voltage Range 220-240V  
Ballast Current Range 0.13A  
Ballast Power Factor 0.96

Sample	Voltage (V)	Current (mA)	Power Factor	Power (W)	VA	Output (lm)	% of Nominal	Efficacy (lm/W)
Luminaire	230.0	126.4	0.960	27.9	29.1	1,768	74%	63.3
Lamp 1	230.0	135.3	0.964	30.0	31.1	2,196	91%	-

##### Electrical characteristics at 25°C

Ballast Nominal	230V	130.0mA	0.96PF	28.7W	29.9VA
Lamp Nominal	230V	130.4mA	1.00PF	30.0W	30.0VA
Luminaire	230V	126.4mA	0.96PF	27.9W	29.1VA
Lamp	230V	135.3mA	0.96PF	30.0W	31.1VA

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

Luminaire	Current	97%	Power	97%	VA	97%
Lamp	Current	104%	Power	104%	VA	104%

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

Luminaire	Current	97%	Power	93%	VA	97%
Lamp	Current	104%	Power	100%	VA	104%

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

Nominal Lamp Output	2,400
Measured Luminaire Output	1,768
Measured Lamp Output	2,196

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

Luminaire	74%
Lamp	91%

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

Luminaire	63.3 lm/W
Lamp	73.2 lm/W

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The light output ratio of the luminaire was measured as 0.805 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 1,768 lumens at 25°C.  
This figure can be related to the nominal lumen output of the lamp quoted by the manufacturer of 2,400 lumens, to give a nominal light output ratio of 0.737.

The measured lumen output of the lamp was 2,196 lumens at 25°C.  
This figure can be related to the nominal lumen output of the lamp quoted by the manufacturer of 2,400 lumens, to give a nominal BLF of 0.915.

For lighting design calculations:

A light output ratio of 1 should be used in conjunction with the measured lumen output of the luminaire of 1,768 lumens.

or

The nominal light output ratio of 0.737 should be used in conjunction with the nominal lumen output of the lamp of 2,400 lumens.

or

The measured light output ratio of 0.805 should be used in conjunction with the measured lumen output of the lamp of 2,196 lumens.

or

The measured light output ratio of 0.805 should be used in conjunction with the nominal lumen output of the lamp of 2,400 lumens and the nominal BLF of 0.915.

This report is based on the following parameters:

The Light Output Ratio is the nominal value of 0.737.

The lamp output is the nominal value of 2,400 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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## Source description

30W/840 L Osram

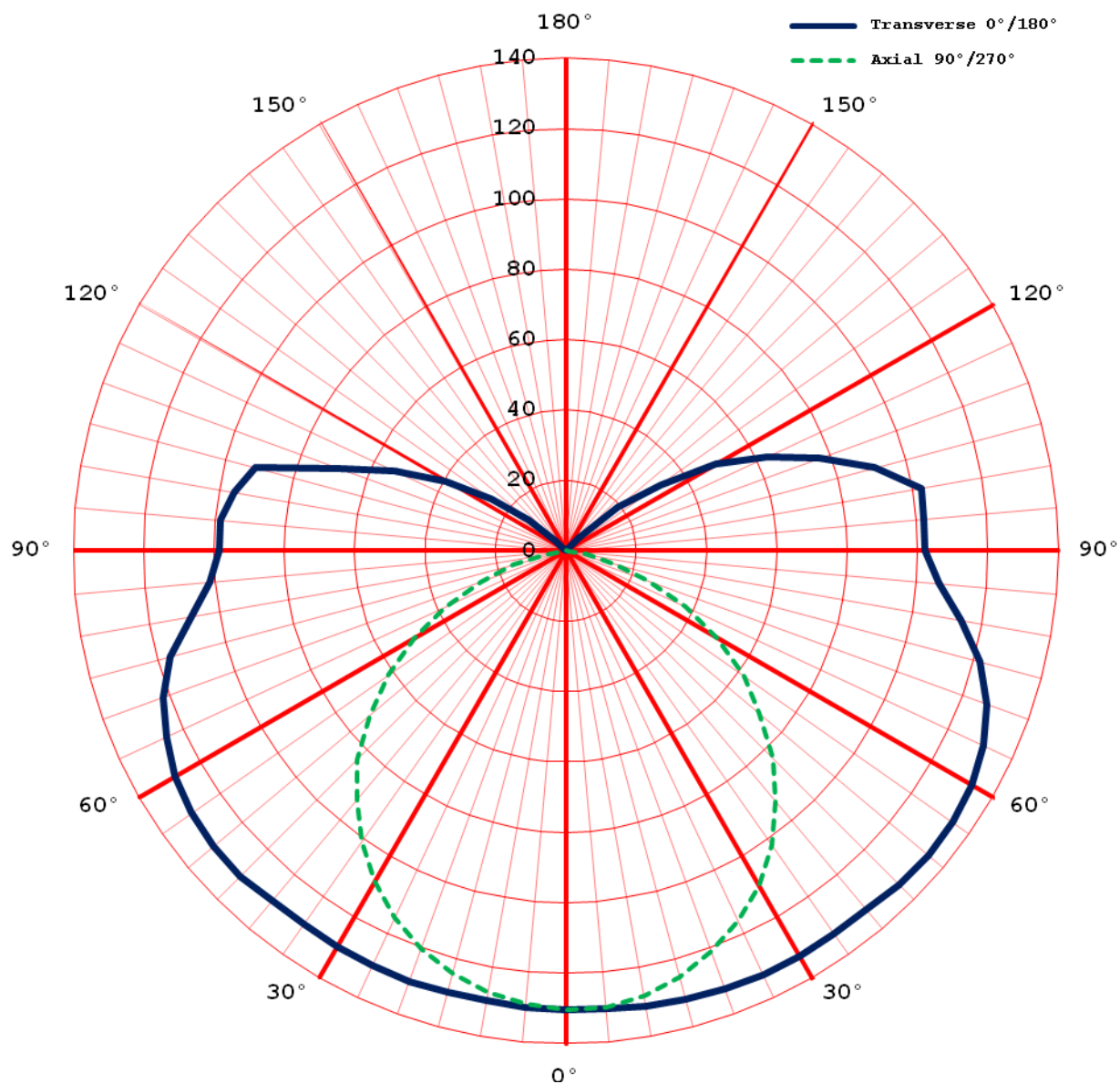
## Source lumen output

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## Source quantity

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





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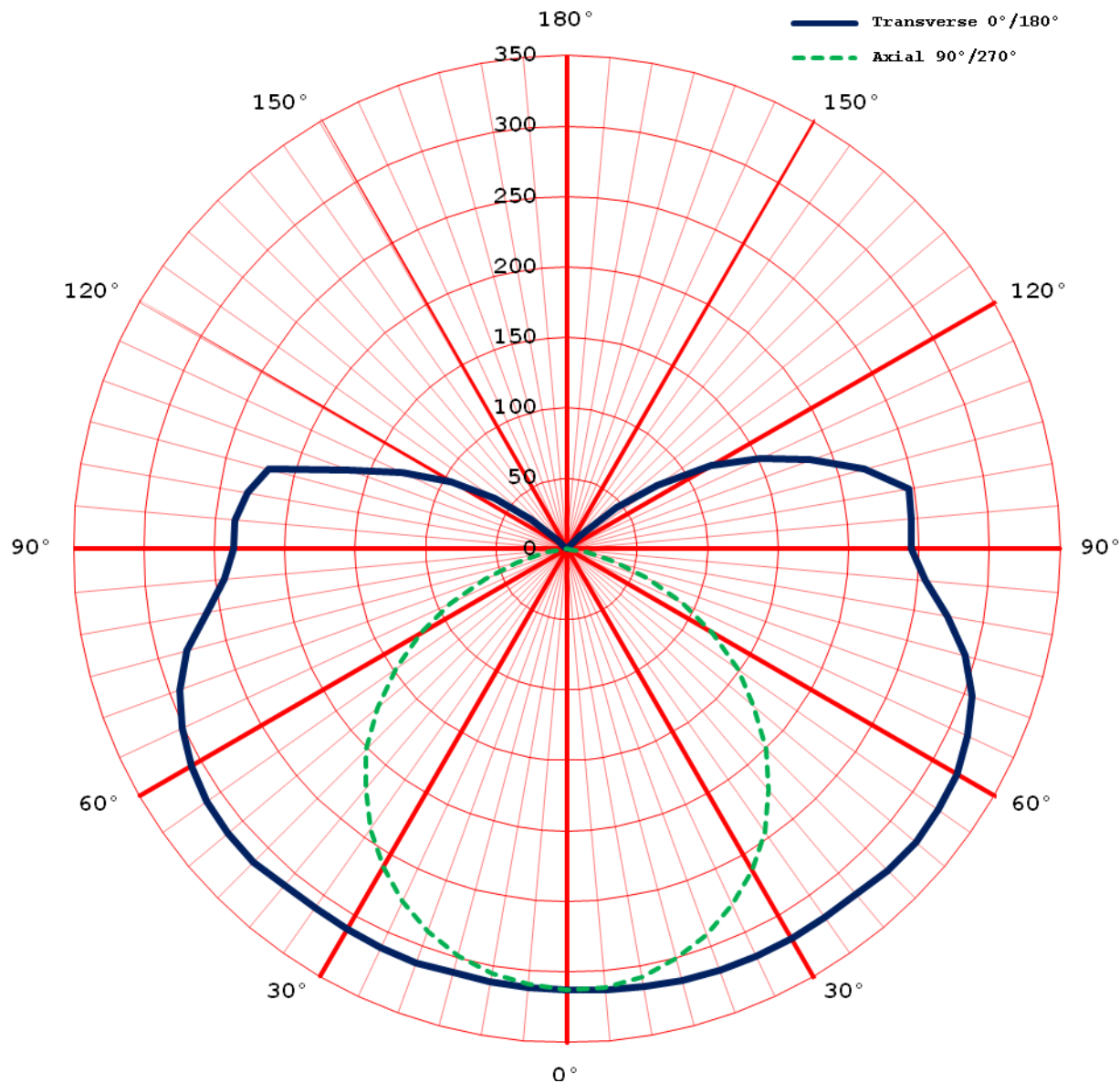
## Source lumen output

2,400 lm

## Source quantity

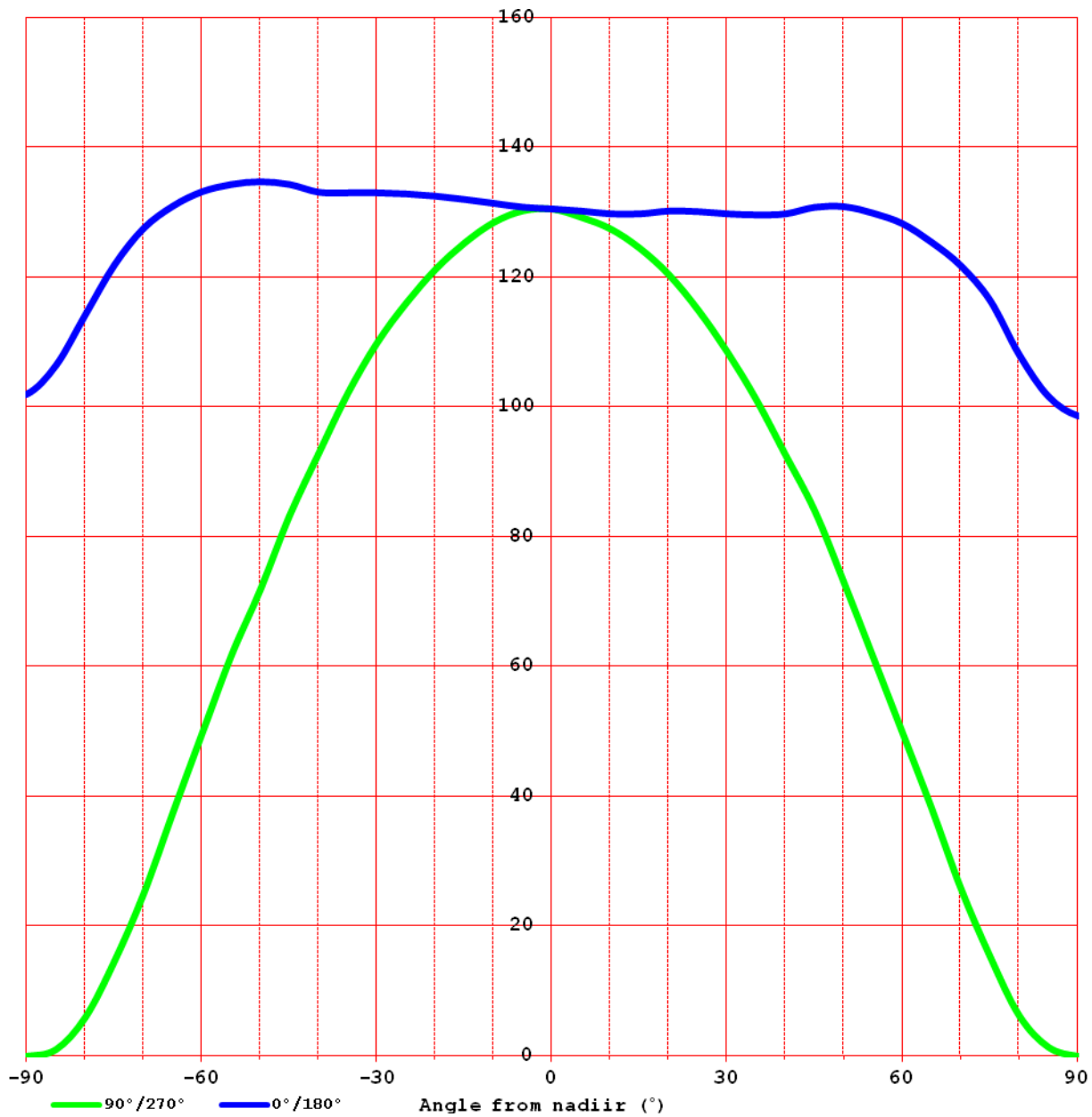
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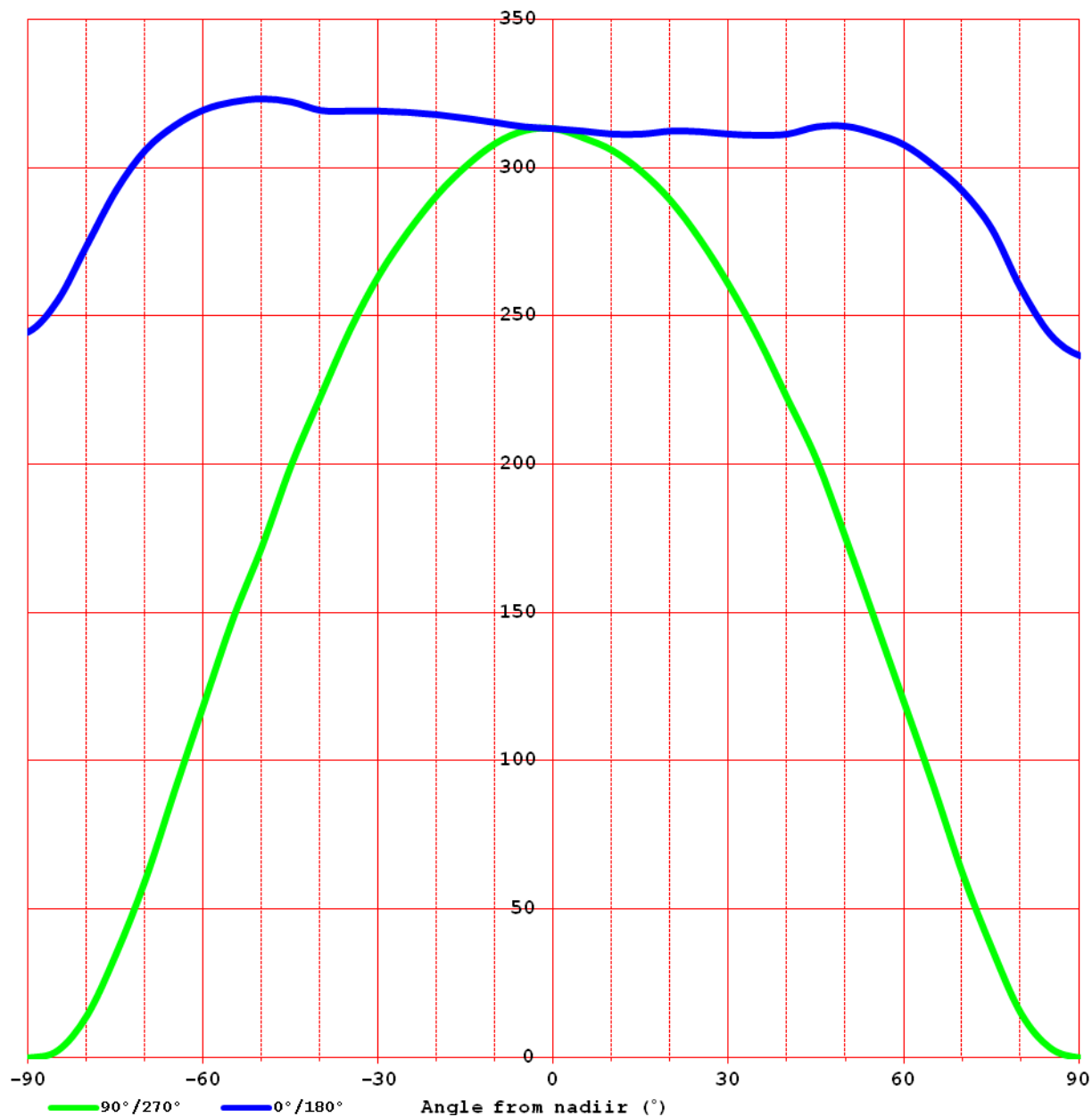
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## Average Luminous Intensities (cd/Klm)

Angle	Transverse plane		Axial plane	
	0°	180°	90°	270°
0°	130.49	130.49	130.49	130.49
5°	130.15	130.75	129.21	130.24
10°	129.73	131.34	127.43	128.45
15°	129.73	131.94	124.45	125.30
20°	130.15	132.46	120.36	121.22
25°	130.07	132.80	114.91	116.03
30°	129.73	132.97	108.44	109.91
35°	129.56	132.97	101.04	102.16
40°	129.73	133.05	92.53	92.89
45°	130.74	134.25	83.93	83.28
50°	130.83	134.68	72.86	71.88
55°	129.81	134.25	61.37	61.67
60°	128.21	133.14	49.80	49.68
65°	125.34	130.92	38.13	37.51
70°	121.70	127.50	25.79	25.01
75°	116.38	121.87	15.32	14.63
80°	108.01	114.18	6.21	5.95
85°	101.59	106.41	1.36	1.02
90°	98.63	101.97	0.00	0.00
95°	98.63	102.14	0.00	0.00
100°	95.76	102.74	0.00	0.00
105°	91.28	91.04	0.00	0.00
110°	68.20	76.77	0.00	0.00
115°	53.84	63.11	0.00	0.00
120°	39.47	49.28	0.00	0.00
125°	25.86	32.88	0.00	0.00
130°	13.61	19.04	0.00	0.00
135°	3.80	5.47	0.00	0.00
140°	0.68	0.60	0.00	0.00
145°	0.59	0.43	0.00	0.00
150°	0.00	0.00	0.00	0.00
155°	0.00	0.00	0.00	0.00
160°	0.00	0.00	0.00	0.00
165°	0.00	0.00	0.00	0.00
170°	0.00	0.00	0.00	0.00
175°	0.00	0.00	0.00	0.00
180°	0.00	0.00	0.00	0.00

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## Average Luminous Intensities (cd)

Angle	Transverse plane		Axial plane	
	0°	180°	90°	270°
0°	313.18	313.18	313.18	313.18
5°	312.37	313.79	310.11	312.57
10°	311.35	315.23	305.82	308.28
15°	311.35	316.66	298.67	300.72
20°	312.37	317.89	288.87	290.93
25°	312.16	318.71	275.79	278.47
30°	311.35	319.12	260.27	263.77
35°	310.95	319.12	242.49	245.19
40°	311.35	319.33	222.06	222.94
45°	313.79	322.20	201.43	199.87
50°	313.99	323.22	174.87	172.51
55°	311.56	322.20	147.29	148.01
60°	307.70	319.53	119.51	119.23
65°	300.81	314.20	91.52	90.03
70°	292.08	306.00	61.90	60.02
75°	279.30	292.48	36.77	35.12
80°	259.22	274.03	14.91	14.29
85°	243.81	255.38	3.27	2.45
90°	236.71	244.72	0.00	0.00
95°	236.71	245.13	0.00	0.00
100°	229.81	246.57	0.00	0.00
105°	219.06	218.49	0.00	0.00
110°	163.69	184.26	0.00	0.00
115°	129.21	151.47	0.00	0.00
120°	94.72	118.26	0.00	0.00
125°	62.07	78.91	0.00	0.00
130°	32.66	45.71	0.00	0.00
135°	9.13	13.12	0.00	0.00
140°	1.62	1.43	0.00	0.00
145°	1.42	1.02	0.00	0.00
150°	0.00	0.00	0.00	0.00
155°	0.00	0.00	0.00	0.00
160°	0.00	0.00	0.00	0.00
165°	0.00	0.00	0.00	0.00
170°	0.00	0.00	0.00	0.00
175°	0.00	0.00	0.00	0.00
180°	0.00	0.00	0.00	0.00

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Light Output Ratios Up 0.15  
Down 0.59  
Total 0.74

Spacing to Height Ratios SHR NOM 1.75  
SHR MAX 1.86  
SHR MAX TRANS 2.51  
SHR MAX TRANS 0° 2.48  
SHR MAX TRANS 180° 2.54

Please see the comments section for further information.

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	.41	.45	.49	.54	.58	.61	.65	.67	
	.30		N/A	.34	.39	.43	.49	.53	.56	.61	.64	
	.10		N/A	.30	.35	.39	.45	.49	.52	.57	.60	
.50	.50	.20	N/A	.37	.42	.45	.50	.53	.56	.59	.61	
	.30		N/A	.32	.37	.40	.45	.49	.52	.56	.58	
	.10		N/A	.28	.33	.36	.42	.45	.48	.53	.56	
.30	.50	.20	N/A	.34	.38	.41	.46	.49	.51	.54	.56	
	.30		N/A	.30	.34	.37	.42	.45	.48	.51	.54	
	.10		N/A	.27	.31	.34	.39	.42	.45	.49	.51	
.00	.00	.00	N/A	.23	.27	.29	.34	.37	.39	.42	.45	
BZ Class			N/A	6	6	6	6	6	6	6	6	

CIE Flux code 32 / 60 / 83 / 80 / 74

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 0.40 0.46 0.54 0.60 0.64 0.69 0.72 0.79 0.81  
CIE class 8 / 8 / 8 / 8 / 8 / 8 / 8 / 8 / 8 / 8 / 9 / -

Flux Fraction Ratio 0.25  
DIN Class 0.74 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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Angle Aspect Factors

	Parallel plane	Perpendicular plane
0°	0.000	0.000
5°	0.087	0.004
10°	0.172	0.015
15°	0.254	0.033
20°	0.332	0.058
25°	0.405	0.088
30°	0.471	0.122
35°	0.530	0.160
40°	0.581	0.199
45°	0.625	0.239
50°	0.660	0.278
55°	0.688	0.313
60°	0.707	0.345
65°	0.721	0.371
70°	0.729	0.391
75°	0.733	0.404
80°	0.735	0.411
85°	0.735	0.413
90°	0.735	0.414











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## Individual Zonal Flux Calculations

Angles	Total	Backward	Forward
0° - 5°	0.4%	0.2%	0.2%
5° - 10°	1.3%	0.6%	0.6%
10° - 15°	2.1%	1.0%	1.0%
15° - 20°	2.9%	1.4%	1.4%
20° - 25°	3.6%	1.8%	1.8%
25° - 30°	4.2%	2.1%	2.1%
30° - 35°	4.8%	2.4%	2.4%
35° - 40°	5.2%	2.6%	2.6%
40° - 45°	5.6%	2.8%	2.8%
45° - 50°	5.9%	3.0%	2.9%
50° - 55°	6.1%	3.1%	3.0%
55° - 60°	6.2%	3.1%	3.0%
60° - 65°	6.1%	3.1%	3.0%
65° - 70°	6.0%	3.0%	3.0%
70° - 75°	5.7%	2.9%	2.8%
75° - 80°	5.3%	2.7%	2.6%
80° - 85°	4.7%	2.4%	2.3%
85° - 90°	4.3%	2.2%	2.1%
90° - 95°	4.2%	2.1%	2.1%
95° - 100°	4.0%	2.0%	2.0%
100° - 105°	3.6%	1.8%	1.8%
105° - 110°	2.8%	1.4%	1.4%
110° - 115°	2.1%	1.1%	1.0%
115° - 120°	1.4%	0.8%	0.7%
120° - 125°	0.9%	0.5%	0.4%
125° - 130°	0.5%	0.2%	0.2%
130° - 135°	0.2%	0.1%	0.1%
135° - 140°	0.0%	0.0%	0.0%
140° - 145°	0.0%	0.0%	0.0%
145° - 150°	0.0%	0.0%	0.0%
150° - 155°	0.0%	0.0%	0.0%
155° - 160°	0.0%	0.0%	0.0%
160° - 165°	0.0%	0.0%	0.0%
165° - 170°	0.0%	0.0%	0.0%
170° - 175°	0.0%	0.0%	0.0%
175° - 180°	0.0%	0.0%	0.0%

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## Cumulative Zonal Flux Calculations

Angles	Total	Backward	Forward
0° - 5°	0.4%	0.2%	0.2%
5° - 10°	1.7%	0.8%	0.8%
10° - 15°	3.8%	1.9%	1.9%
15° - 20°	6.6%	3.3%	3.3%
20° - 25°	10.2%	5.1%	5.1%
25° - 30°	14.4%	7.2%	7.2%
30° - 35°	19.2%	9.6%	9.5%
35° - 40°	24.4%	12.3%	12.1%
40° - 45°	30.0%	15.1%	14.9%
45° - 50°	35.9%	18.1%	17.8%
50° - 55°	42.0%	21.2%	20.9%
55° - 60°	48.2%	24.3%	23.9%
60° - 65°	54.3%	27.4%	26.9%
65° - 70°	60.3%	30.4%	29.9%
70° - 75°	66.0%	33.3%	32.7%
75° - 80°	71.2%	35.9%	35.3%
80° - 85°	75.9%	38.3%	37.6%
85° - 90°	80.3%	40.5%	39.8%
90° - 95°	84.5%	42.6%	41.8%
95° - 100°	88.5%	44.7%	43.8%
100° - 105°	92.1%	46.5%	45.6%
105° - 110°	94.9%	47.9%	47.0%
110° - 115°	97.0%	49.0%	48.0%
115° - 120°	98.4%	49.7%	48.7%
120° - 125°	99.3%	50.2%	49.1%
125° - 130°	99.8%	50.5%	49.3%
130° - 135°	100.0%	50.6%	49.4%
135° - 140°	100.0%	50.6%	49.4%
140° - 145°	100.0%	50.6%	49.4%
145° - 150°	100.0%	50.6%	49.4%
150° - 155°	100.0%	50.6%	49.4%
155° - 160°	100.0%	50.6%	49.4%
160° - 165°	100.0%	50.6%	49.4%
165° - 170°	100.0%	50.6%	49.4%
170° - 175°	100.0%	50.6%	49.4%
175° - 180°	100.0%	50.6%	49.4%

Job / Report / Date 42 / 10692 / 10692-19a / 2013.06.17

Customer Encapsulite International Ltd.  
Luminaire Range MT70 IP68  
Luminaire catalog No. MT70 30W  
Luminaire description linear cylindrical luminaire  
with clear cover  
data derived from range test series  
Source description 30W/840 L Osram  
Source lumen output 2,400 lm  
Source quantity 1

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°	4487	4327	4014	4320	4132	4453	4607
50°	4642	4465	3971	4126	4076	4608	4778
55°	4806	4610	3918	3894	4057	4767	4970
60°	5001	4746	3988	3625	4052	4958	5194
65°	5209	4974	4063	3284	4228	5162	5441
70°	5456	5195	4132	2745	4278	5405	5716
75°	5710	5440	4202	2155	4368	5698	5980
80°	5902	5654	4240	1302	4346	5915	6239
85°	6318	6001	4264	569	4456	6263	6617
	180.0°	210.0°	240.0°	270.0°	300.0°	330.0°	0.0°
45°	4607	4436	4076	4287	4052	4381	4487
50°	4778	4584	4019	4070	4015	4533	4642
55°	4970	4736	4007	3913	4002	4688	4806
60°	5194	4907	4056	3616	4050	4860	5001
65°	5441	5090	4121	3231	4141	5058	5209
70°	5716	5365	4124	2661	4226	5322	5456
75°	5980	5605	4238	2058	4330	5603	5710
80°	6239	5813	4265	1248	4394	5871	5902
85°	6617	6148	4272	426	4476	6178	6318

Job / Report / Date 42 / 10692 / 10692-19a / 2013.06.17

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Source 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°	1869	1803	1673	1800	1722	1856	1919
50°	1934	1860	1655	1719	1698	1920	1991
55°	2002	1921	1633	1623	1691	1986	2071
60°	2084	1978	1662	1510	1688	2066	2164
65°	2170	2073	1693	1368	1762	2151	2267
70°	2273	2164	1722	1144	1782	2252	2382
75°	2379	2267	1751	898	1820	2374	2491
80°	2459	2356	1767	543	1811	2465	2600
85°	2632	2500	1777	237	1857	2609	2757
	180.0°	210.0°	240.0°	270.0°	300.0°	330.0°	0.0°
45°	1919	1849	1698	1786	1688	1825	1869
50°	1991	1910	1675	1696	1673	1889	1934
55°	2071	1973	1670	1631	1667	1953	2002
60°	2164	2045	1690	1507	1687	2025	2084
65°	2267	2121	1717	1346	1725	2107	2170
70°	2382	2236	1718	1109	1761	2218	2273
75°	2491	2336	1766	857	1804	2334	2379
80°	2600	2422	1777	520	1831	2446	2459
85°	2757	2562	1780	178	1865	2574	2632

Job / Report / Date 42 / 10692 / 10692-19a / 2013.06.17

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Source quantity 1

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

Elevation(°)

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

45°	4607	180°
50°	4778	180°
55°	4970	180°
60°	5194	180°
65°	5441	180°
70°	5716	180°
75°	5980	180°
80°	6239	180°
85°	6617	180°



Job / Report / Date 42 / 10692 / 10692-19a / 2013.06.17

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Source lumen output 2,400 lm  
Source 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

Job / Report / Date

42 / 10692 / 10692-19a / 2013.06.17

Customer

Encapsulite International Ltd.

Luminaire Range

MT70 IP68

Luminaire catalog No.

MT70 30W

Luminaire description

linear cylindrical luminaire  
with clear cover

data derived from range test series

Source description

30W/840 L Osram

Source lumen output

2,400 lm

Source 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	13.5	15.2	14.3	16.0	17.0	9.8	11.5	10.6	12.4	13.3
3H	16.9	18.5	17.7	19.4	20.4	11.7	13.4	12.6	14.2	15.2
4H	18.6	20.2	19.4	21.0	22.0	12.4	13.9	13.2	14.8	15.7
6H	20.4	21.8	21.2	22.7	23.7	12.8	14.2	13.6	15.1	16.1
8H	21.2	22.6	22.1	23.5	24.5	12.9	14.3	13.7	15.1	16.1
12H	22.2	23.5	23.0	24.4	25.4	12.9	14.2	13.7	15.1	16.1
4H 2H	14.5	16.0	15.3	16.8	17.8	12.1	13.6	12.9	14.5	15.5
3H	18.3	19.6	19.1	20.5	21.5	14.4	15.8	15.3	16.7	17.7
4H	20.2	21.5	21.1	22.4	23.4	15.4	16.6	16.3	17.5	18.6
6H	22.2	23.3	23.1	24.2	25.3	16.0	17.1	16.9	18.0	19.1
8H	23.2	24.2	24.1	25.2	26.2	16.2	17.3	17.1	18.2	19.3
12H	24.3	25.3	25.2	26.2	27.3	16.4	17.3	17.3	18.2	19.4
8H 4H	20.9	22.0	21.8	22.9	24.0	17.6	18.7	18.5	19.6	20.7
6H	23.2	24.1	24.1	25.0	26.1	18.6	19.5	19.5	20.4	21.6
8H	24.5	25.3	25.4	26.3	27.4	19.1	19.9	20.0	20.9	22.0
12H	25.8	26.5	26.7	27.5	28.6	19.4	20.1	20.3	21.1	22.2
12H 4H	21.1	22.0	22.0	23.0	24.1	18.5	19.5	19.4	20.4	21.5
6H	23.5	24.3	24.4	25.3	26.4	19.8	20.6	20.8	21.6	22.7
8H	24.9	25.6	25.8	26.5	27.6	20.4	21.1	21.3	22.1	23.2

Calculated in accordance with CIBSE Technical Memorandum No. 10 1985

Job / Report / Date

42 / 10692 / 10692-19a / 2013.06.17

Customer

Encapsulite International Ltd.

Luminaire Range

MT70 IP68

Luminaire catalog No.

MT70 30W

Luminaire description

linear cylindrical luminaire  
with clear cover

data derived from range test series

Source description

30W/840 L Osram

Source lumen output

2,400 lm

Source 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

180°

270°

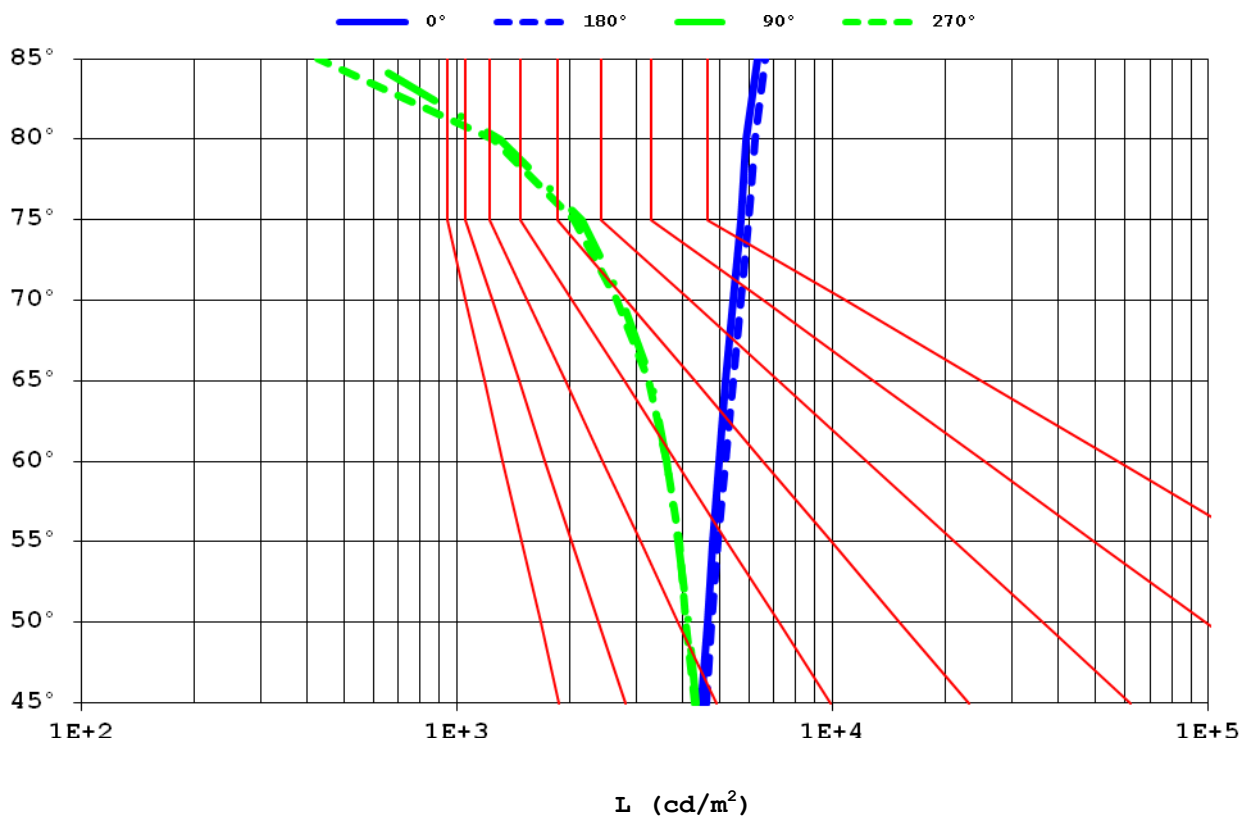
2H 2H	13.7	15.4	14.5	16.2	17.2	9.8	11.6	10.6	12.4	13.3
3H	17.2	18.8	18.0	19.6	20.6	11.7	13.3	12.5	14.2	15.1
4H	18.9	20.4	19.7	21.3	22.2	12.3	13.9	13.2	14.7	15.7
6H	20.7	22.1	21.5	23.0	24.0	12.8	14.2	13.6	15.0	16.1
8H	21.5	22.9	22.4	23.8	24.8	12.8	14.2	13.6	15.1	16.1
12H	22.4	23.8	23.3	24.7	25.7	12.8	14.2	13.7	15.0	16.1
4H 2H	14.6	16.2	15.5	17.0	18.0	12.1	13.7	12.9	14.5	15.5
3H	18.5	19.8	19.3	20.7	21.7	14.4	15.8	15.3	16.6	17.7
4H	20.5	21.7	21.3	22.6	23.6	15.4	16.6	16.2	17.5	18.6
6H	22.4	23.5	23.3	24.5	25.5	16.0	17.1	16.9	18.0	19.1
8H	23.5	24.5	24.3	25.4	26.5	16.2	17.2	17.1	18.2	19.2
12H	24.5	25.5	25.4	26.4	27.5	16.3	17.3	17.2	18.2	19.3
8H 4H	21.1	22.2	22.0	23.1	24.2	17.6	18.7	18.5	19.6	20.7
6H	23.4	24.3	24.3	25.2	26.3	18.6	19.5	19.5	20.5	21.6
8H	24.7	25.5	25.7	26.5	27.6	19.1	19.9	20.0	20.9	22.0
12H	26.0	26.7	27.0	27.7	28.8	19.4	20.1	20.3	21.1	22.2
12H 4H	21.3	22.2	22.2	23.2	24.3	18.6	19.5	19.5	20.4	21.6
6H	23.7	24.5	24.6	25.5	26.6	19.9	20.7	20.8	21.6	22.7
8H	25.1	25.8	26.0	26.8	27.9	20.4	21.1	21.4	22.1	23.2

Calculated in accordance with CIBSE Technical Memorandum No. 10 1985

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Source quantity 1

## CIE Glare Limiting (Soellnor) Diagram

Glare Rating	Quality Class	Service values of illuminance							
		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



Job / Report / Date 42 / 10692 / 10692-19a / 2013.06.17

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Source description	30W/840 L Osram
Source lumen output	2,400 lm
Source quantity	1

#### Comments

Lumen method calculations using Utilisation Factor tables are based on the assumption that luminaires are di-symmetric, this is not the case with this luminaire. Any calculations for this luminaire using the Lumen method should be treated with caution.

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.

Job / Report / Date 42 / 10692 / 10692-19a / 2013.06.17

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#### Quick Design Table

Based on: reflectances of Ceiling = 0.5  
Wall = 0.5  
Floor = 0.2  
Room Index = 2.00  
lamp output = 2400 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	1.7	2.5	3.3	4.2	6.7	8.4	16.7	25.1	41.8