

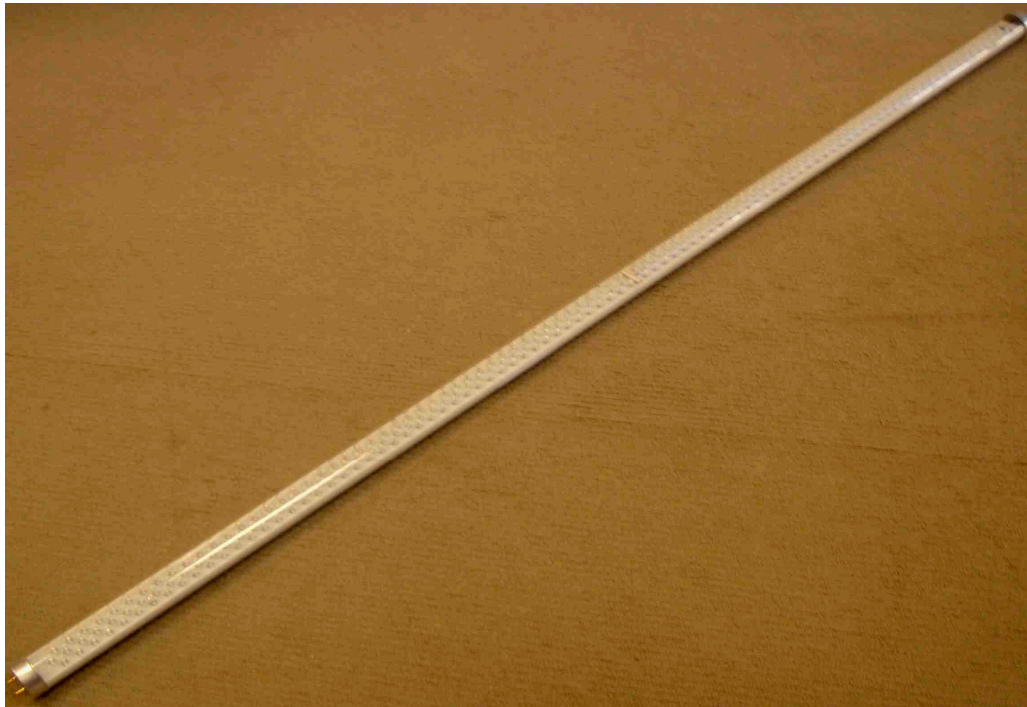
Report of Test LL11790

Spectrum Lighting LED tube as replacement for T8 fluorescent lamps.

Product ID: FFL-T8-1200-D/L.

Array of 3 x 92 LEDs contained within a clear glass tube, 30 mm dia. x 1198 mm, fitted with T8 lamp caps. LED driver internal to tube. Electrical parameters: 240.0 V.ac / 0.0648 A / 13.81 W.

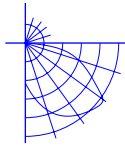
Total flux, 1115 lm.



Performance Summary

Light Output Ratio	N / A
Luminaire Power	13.8 W

PREPARED FOR : Spectrum Lighting Pty, Ltd., Brookvale, NSW. 2100.



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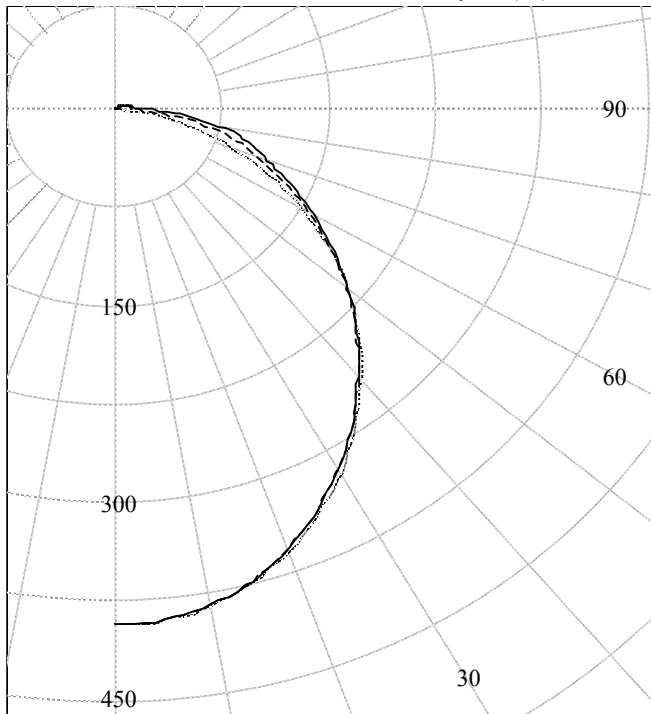
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LEGEND : C0-Solid, C45-Dashed, C90-Grey (cd)



INTENSITY SUMMARY (cd)

Gamma	C-Plane					Output Lumens
	C0	C22.5	C45	C67.5	C90	
0.0	394	394	394	394	394	
5.0	391	392	392	392	392	37
10.0	385	385	385	385	386	
15.0	373	373	373	373	374	105
20.0	357	356	357	356	359	
25.0	337	337	337	338	341	155
30.0	316	316	315	317	319	
35.0	292	291	291	293	295	183
40.0	267	267	267	268	269	
45.0	241	241	240	242	242	186
50.0	214	215	213	214	214	
55.0	188	188	185	185	183	166
60.0	161	161	157	155	152	
65.0	136	135	130	126	120	129
70.0	114	112	106	98	88	
75.0	97	94	85	74	59	87
80.0	74	75	58	55	33	
85.0	46	49	29	33	7	39
90.0	23	27	15	11	0	

AVERAGE LUMINANCE (cd / sq.m)

Gamma	C0	C45	C90
45.0	9709	9675	9767
55.0	9337	9184	9105
65.0	9186	8750	8092
75.0	10650	9357	6457
85.0	15009	9466	2153

ZONAL LUMENS AND PERCENTAGES

Zone	Lumens	% Lamp	% Luminaire
0-30	298	N / A	26.7
0-40	481	N / A	43.1
0-60	833	N / A	74.7
0-90	1088	N / A	97.6
40-90	607	N / A	54.5
60-90	255	N / A	22.8
90-180	27	N / A	2.4
0-180	1115	N / A	100.0

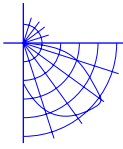
Light Output Ratio = N / A

CERTIFIED BY:

E. Southgate
Authorised Signatory

Date of test 28-Apr-2008
Date of report 8-May-2008





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Array of 3 x 92 LEDs contained within a clear glass tube, 30 mm dia. x 1198 mm, fitted with T8 lamp caps. LED driver internal to tube. Electrical parameters: 240.0 V.ac / 0.0648 A / 13.81 W.

Total flux, 1115 lm.

Test Distance: 8.0 metres
Test Temperature: 25.2 degrees Celsius

Significance: This laboratory has no control over the selection of samples to be tested. All testing is performed on the understanding that the significance of the report is limited to the extent that the test sample is representative of production units.

Special Notes: The intensity values contained in this report are shown as tested. When using these values in calculations the appropriate Ballast Factor and Manufacturer's rated lumens MUST be taken into account.

It should also be noted that prorating the lumen output for the use of other lamp/ballast combinations, or for use in different environmental conditions, than that tested may produce erroneous results.

The generic term "LOR" is used in this report, it denotes the "Light Output Ratio Luminaire" as defined in Australian Standard AS1680, Part 3, 1991, Section 1.3.9.

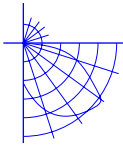
This report is free of erasures and corrections.

Photometric intensity values are reported using the CIE Cgamma coordinate system as described in CIE Publication number 121.

Uncertainties: At the 95% confidence interval with a factor $k = 2$, the uncertainties for this report are :-

Temperature	+/- 1 degree Celsius
Light Output Ratio	+/- 4%
Luminous Intensity	+/- 4%
Angular displacement	+/- 0.25 degrees.

Testing Procedure: Tested in accordance with the applicable sections of CIE Publication Number 24 and Australian Standard AS1680, Part 3, 1991.



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Trichromatic Co-ordinates

CIE (x,y) 1931 co-ordinates	x	y
	0.32	0.34

Test conditions: 240.1 V.ac / 64.98 mA / 25.1 °C

At the 95% confidence interval, with a factor $k = 2$, the uncertainties for trichromaticity co-ordinates are ± 0.03 .

Test electrical setup.

