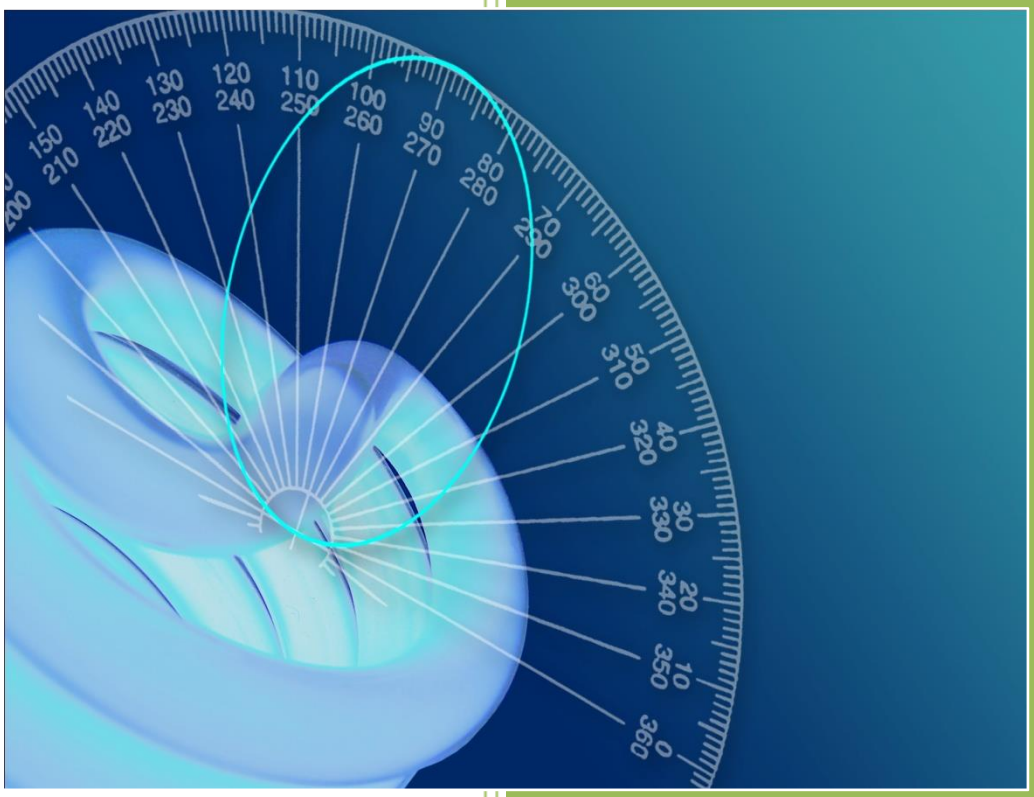
PHOTOMETRIC & OPTICAL TESTING

Photometric Test Report



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POTS Photometric Test Report

Report Number: POTS/12011_4	Report Date: 03-02-2012	Prepared By: G John
Test Laboratory: Photometric and Optical Testing Services, Cotswold Business Centre, 42 A P Ellis Road, Rissington Business Park, Upper Rissington, Gloucestershire, GL54 2QB		
Company Registration Number: Registered in England & Wales No. OC352911		
Registered Address: Thistle Down Barn, Holcot Lane, Sywell, Northampton, NN6 0BG		

Client Details

Contact:	Company: TLC Southern Ltd
Address: The TLC Building, 5 Newton Road, Crawley, West Sussex, RH10 9TS	

Details of Product Tested

Manufacturer: TLC	Source Type: Ceiling panel light
Model: LTMOD45W WHITE	Serial Number: L
Description: LED PANEL	
Lamp Type: LED	
Power Supply Used: Interruptible AC power supply	
Input voltage(V): 247.4	Input Current (mA): 213
Input power(W): 46.44	Power factor: 0.8781
Length of luminaire (mm):600	Width of Luminaire (mm): 600
Height of luminaire (mm): 40	

Results	
Flux (lumens): 3412.7 lumens	
CIE 1931 Chromaticity Cx: 0.3824	CIE 1931 Chromaticity Cy: 0.3867
CRI (%): 81.5	CCT (K): 4010

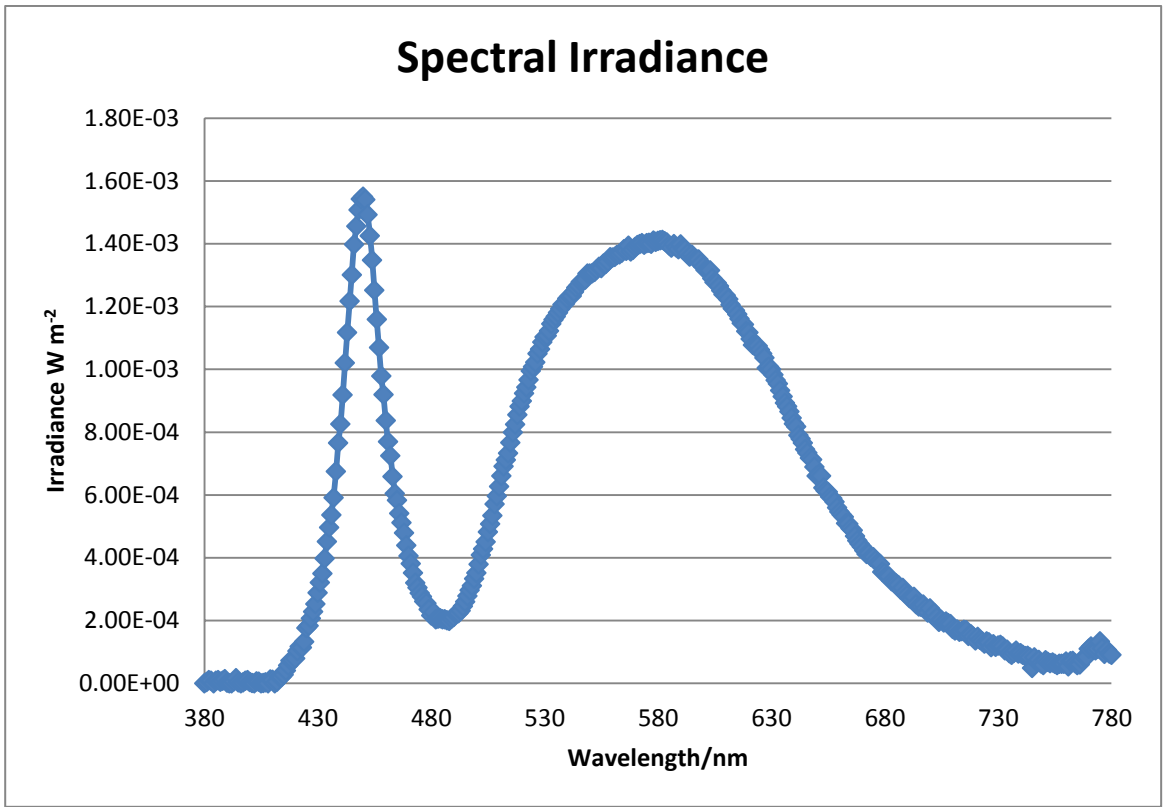

Figure 1: Spectral Irradiance

Figure 2: CIE 1931 2° Chromaticity Diagram

Goniophotometer Test	
Date of Test: 31-01-2012	Ambient Temperature: 25°C
Measurement Filename: LTMOD45W WHITE	
Instrument Used: Radiant Imaging NFMS0800 Goniometer with ProMetric PM-1200N-1 Imaging Photometer	
Photometer Working Distance: 4m	Measurement Geometry: Near-Field
Comments:	
Reference Photometer Used: Specbos1201	Reference Photometer Serial Number: 2911670
Traceable: to NPL standards, UKAS Accredited	Calibration Certificate Number: 121104
Calibration Certificate Date: 25th October 2011	Sample Stabilisation Time (minutes):60
Reference Photometer Calibration Uncertainty: ± 2.4% (*k*=2, 20-200 lux, CIE illuminant A source)	

Scan Set Up		
Direction	**Range**	**Increment**
Inclination Zone 1	0-90°	3°
Azimuth	0-360°	10°

Results (after stabilisation)		
Integrated Luminous Flux (lumens): 3412.7	Peak Intensity (1° Spot, candelas): 1288.1	
Beam Angle (50% of max intensity C0-180, degrees): 107.0		
Photometric Filename (IES LM-63-2002): LTMOD45W WHITE		
IES File – Absolute or Relative Format? Absolute		
Photometric Filename (EULUMDAT): LTMOD45W WHITE		
EULUMDAT File – Absolute or Relative Format? Absolute		

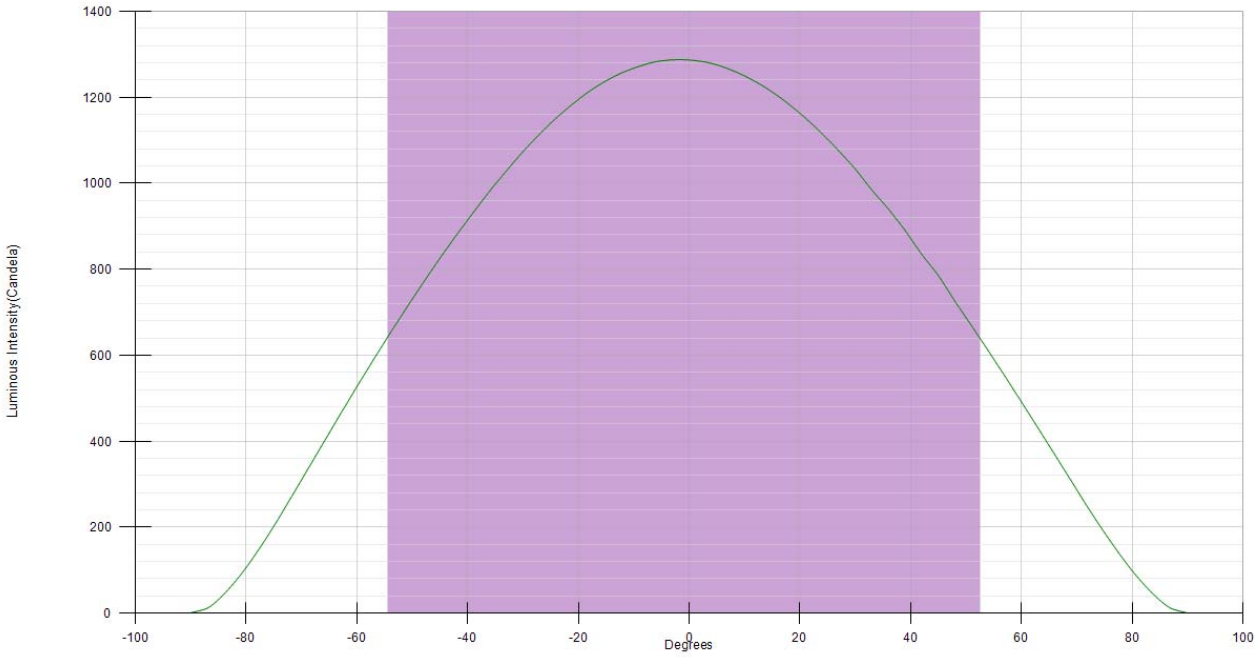

Figure 3: Far-Field Luminous Intensity (C0-180, Cartesian Coordinates)

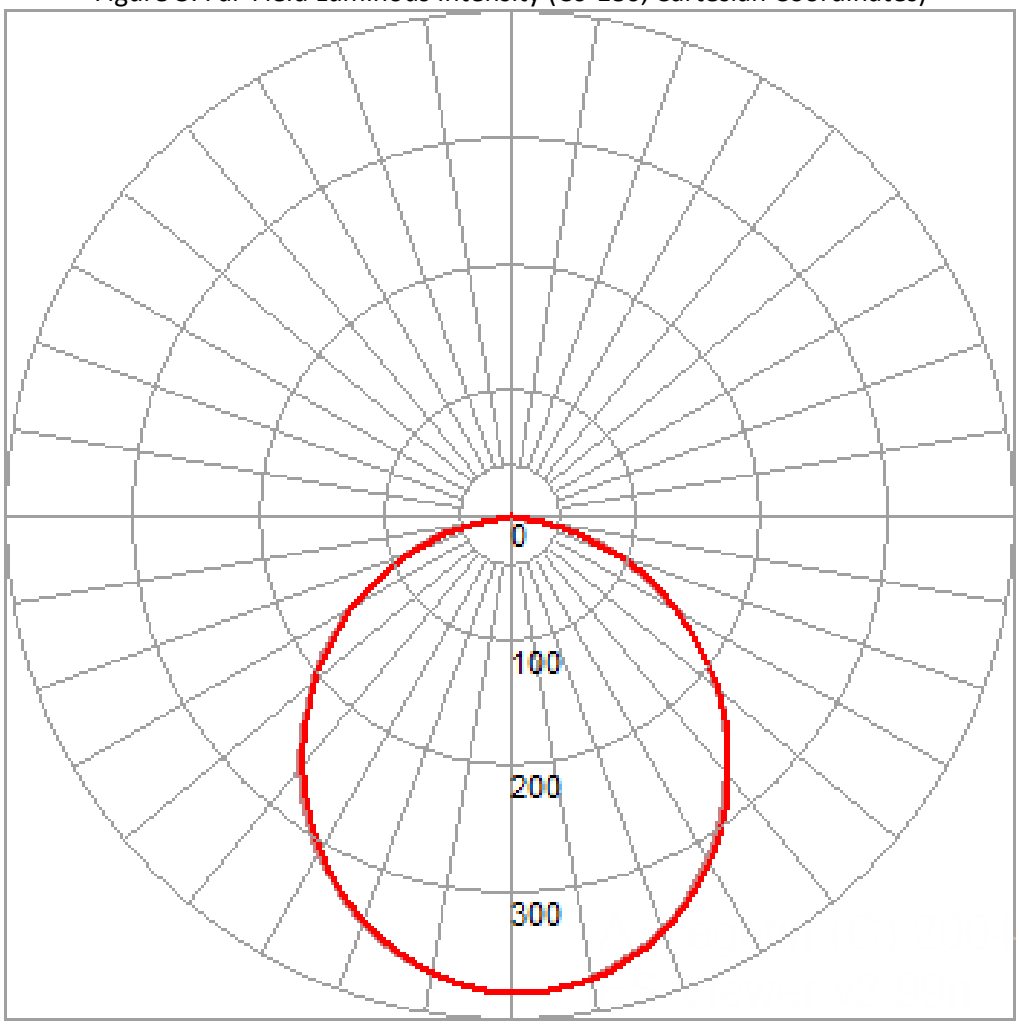

Figure 4: Far-Field Luminous Intensity (C0-180, C90-270, Polar Coordinates)

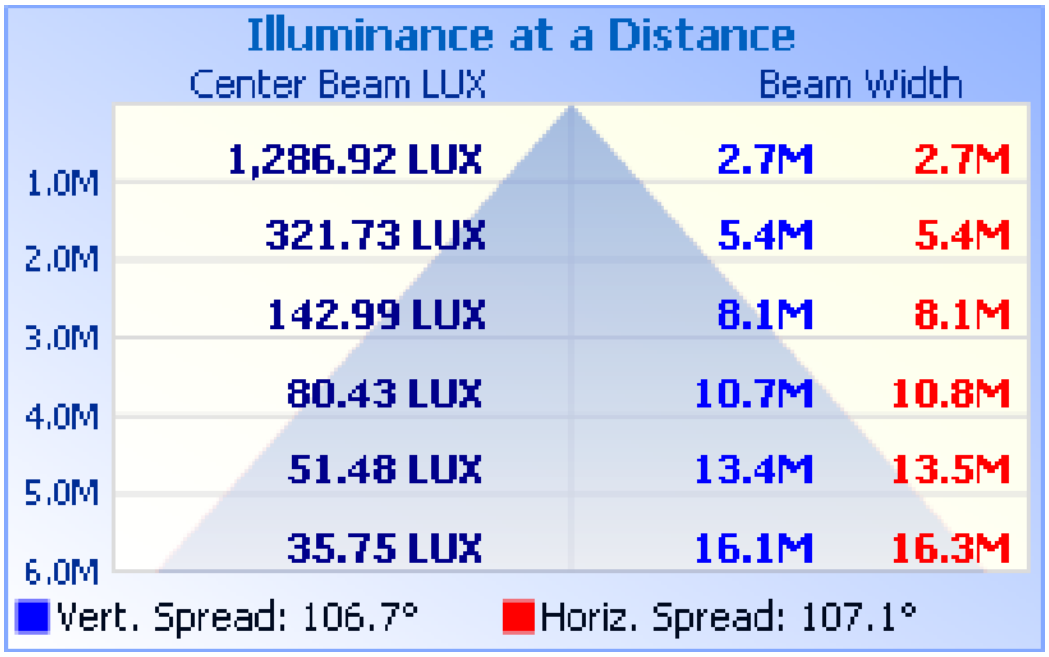

Figure 5. Illuminance cone diagram.

	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350
0	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9	128 6.9
3	128 7.3	128 7.9	128 8.2	128 8.2	128 7.9	128 7.7	128 7.4	128 7.1	128 6.7	128 6.4	128 6.0	128 5.4	128 4.7	128 3.9	128 3.2	128 3.2	128 2.2	128 2.2	128 2.0	128 1.6	128 1.1	128 1.8	128 1.3	128 1.4	128 1.8	128 2.1	128 2.3	128 2.8	128 3.3	128 4.0	128 4.5	128 4.9	128 5.7	128 6.5	128 6.7	128 7.0
6	128 2.9	128 3.0	128 3.8	128 3.9	128 3.4	128 2.9	128 2.7	128 1.7	128 0.9	128 0.1	127 8.8	127 8.0	127 7.1	127 5.8	127 5.2	127 4.6	127 3.5	127 1.7	127 1.4	127 0.6	127 1.6	127 1.6	127 1.2	127 1.3	127 2.1	127 2.7	127 3.3	127 4.2	127 5.1	127 6.3	127 7.3	127 7.7	127 9.4	128 0.8	128 1.0	128 1.7
9	127 2.3	127 2.8	127 4.0	127 3.2	127 3.1	127 2.7	127 2.2	127 1.4	127 0.3	126 8.8	126 7.5	126 6.0	126 3.9	126 2.1	126 0.0	125 8.4	125 8.2	125 6.1	125 6.0	125 4.8	125 5.3	125 3.7	125 4.7	125 5.4	125 6.7	125 7.9	125 8.5	126 0.4	126 1.5	126 3.2	126 4.3	126 5.6	126 7.0	126 8.0	127 0.8	127 1.1
12	125 7.9	125 8.1	125 8.6	125 9.0	126 0.0	125 8.7	125 7.6	125 5.8	125 4.6	125 3.0	125 0.7	124 8.7	124 6.6	124 4.9	124 3.4	123 9.9	123 7.9	123 6.1	123 6.3	123 5.0	123 4.2	123 4.6	123 6.7	123 7.0	123 7.2	123 8.0	123 9.5	124 1.0	124 3.7	124 4.8	124 7.9	124 9.8	125 2.3	125 2.5	125 4.0	125 6.6
15	123 8.6	123 8.5	124 0.6	124 0.8	124 0.1	123 9.6	123 7.7	123 6.8	123 3.8	123 2.4	122 9.8	122 7.8	122 3.7	122 0.4	121 8.6	121 5.2	121 3.6	121 1.2	121 2.5	121 0.4	121 1.5	121 1.0	121 1.3	121 3.1	121 3.3	121 4.3	121 3.9	121 7.6	121 8.2	122 2.7	122 4.6	122 7.7	123 0.8	123 2.3	123 2.2	123 6.0
18	121 4.4	121 6.9	121 5.8	121 7.4	121 5.6	121 5.7	121 2.5	121 0.6	121 0.7	120 7.8	120 5.2	120 1.7	119 5.5	119 1.9	119 0.9	118 6.8	118 3.8	118 4.1	118 4.1	118 4.4	118 2.0	118 3.6	118 1.9	118 4.5	118 3.5	118 5.1	118 8.6	118 8.9	119 6.0	119 4.4	119 6.6	120 0.8	120 1.5	120 6.5	120 6.4	121 3.5
21	118 5.0	118 8.0	118 7.8	118 7.0	118 7.3	118 6.1	118 5.5	118 4.6	118 1.9	117 8.1	117 5.6	117 3.8	116 6.0	116 1.2	115 9.6	115 5.7	115 2.6	114 9.6	115 1.8	115 0.6	115 1.2	115 2.5	115 2.4	115 0.7	115 1.6	115 3.9	115 6.6	116 1.0	116 2.4	116 6.7	116 9.5	117 3.4	117 7.1	118 1.1	118 1.2	118 4.4
24	115 2.0	115 4.3	115 5.4	115 3.8	115 7.0	115 5.3	115 4.1	115 2.6	114 8.0	114 5.3	114 0.3	113 7.7	113 1.1	112 5.0	112 2.1	111 3.9	111 6.1	111 0.9	111 5.6	111 5.1	111 5.6	111 2.3	111 4.6	111 3.6	111 4.1	111 9.5	112 0.7	112 3.0	112 7.9	113 2.9	113 3.9	113 7.6	113 8.5	114 0.5	114 4.5	115 0.3
27	111 4.7	111 7.6	111 6.8	111 7.2	111 9.1	111 6.9	111 4.0	111 0.6	111 0.9	110 7.3	110 2.1	109 8.9	109 4.5	109 1.6	108 0.6	107 5.7	107 3.8	107 6.7	107 5.8	107 5.9	107 4.3	107 5.0	107 4.2	107 5.2	107 7.0	107 9.0	108 1.4	108 2.6	108 6.6	109 0.3	109 5.6	109 9.8	110 5.0	110 5.6	110 9.5	111 3.2
30	107 3.7	107 6.5	107 6.3	107 7.4	107 6.3	107 3.8	107 4.6	107 2.7	106 9.6	106 0.8	106 2.0	105 8.1	104 8.8	104 3.1	104 1.2	103 4.3	103 1.6	102 7.8	103 3.0	103 2.6	103 0.6	103 3.8	103 3.8	103 1.4	103 5.2	103 7.7	104 1.3	104 3.5	104 7.0	105 1.3	105 4.2	105 4.4	106 0.6	106 4.2	106 6.7	106 9.9
33	102 9.1	103 1.5	103 3.7	103 5.4	103 5.2	103 2.3	103 0.4	102 7.6	102 5.5	102 0.3	101 6.8	101 1.4	100 4.3	994 .3	997 .3	989 .8	985 .8	987 .0	984 .4	986 .6	985 .4	990 .2	991 .0	985 .0	987 .5	989 .1	995 .8	999 .0	100 2.9	100 4.8	100 9.1	101 2.4	101 8.2	102 0.0	102 1.1	102 6.6
36	982 .1	983 .2	983 .9	989 .6	988 .5	986 .9	985 .0	979 .8	976 .0	973 .2	968 .4	964 .1	961 .2	947 .6	945 .0	943 .5	935 .8	937 .2	939 .9	937 .9	936 .4	944 .5	944 .1	939 .1	941 .9	940 .8	946 .7	951 .3	954 .1	957 .2	962 .8	966 .1	970 .5	974 .7	975 .0	976 .6
39	931 .9	932 .3	937 .1	933 .8	936 .5	937 .5	934 .1	932 .2	928 .8	924 .2	920 .8	917 .3	910 .1	900 .3	892 .4	886 .7	883 .1	879 .1	890 .1	887 .5	889 .2	885 .2	893 .8	888 .6	889 .9	895 .3	896 .8	901 .4	905 .1	909 .1	912 .2	917 .8	919 .6	918 .9	925 .3	927 .5
42	880 .0	879 .7	883 .5	883 .1	887 .9	885 .4	883 .8	879 .7	876 .7	873 .4	866 .7	862 .4	859 .4	846 .8	844 .1	836 .5	834 .7	833 .0	834 .7	836 .0	837 .4	835 .9	845 .9	836 .5	838 .8	840 .2	843 .8	848 .7	851 .4	855 .4	861 .2	865 .2	870 .0	872 .5	878 .6	876 .2
45	825 .9	825 .6	827 .1	828 .9	831 .7	828 .1	829 .6	824 .6	819 .3	818 .9	814 .6	807 .3	804 .9	800 .0	788 .2	783 .8	773 .7	772 .7	785 .4	782 .8	781 .8	783 .6	785 .3	791 .2	784 .0	785 .4	790 .2	794 .6	795 .9	800 .9	806 .8	810 .0	816 .1	820 .5	819 .8	821 .2
48	769 .3	770 .4	774 .3	775 .5	773 .4	770 .6	771 .7	769 .2	764 .6	763 .6	763 .6	760 .3	751 .3	742 .0	741 .5	724 .7	726 .6	718 .2	725 .4	729 .2	730 .3	730 .9	728 .4	733 .3	728 .3	732 .2	734 .4	739 .7	743 .8	749 .3	751 .6	753 .3	760 .8	763 .4	765 .3	766 .3
51	711 .1	715 .7	709 .2	715 .4	713 .4	712 .4	715 .0	708 .7	708 .6	706 .1	701 .0	689 .6	684 .9	677 .4	670 .5	667 .9	667 .8	664 .5	668 .6	676 .8	671 .7	676 .2	674 .0	676 .6	676 .6	676 .6	681 .8	682 .6	689 .2	689 .8	693 .8	695 .4	699 .0	707 .0	706 .0	710 .7
54	651 .4	654 .6	658 .8	651 .1	654 .5	657 .1	654 .7	654 .0	649 .3	644 .6	640 .4	643 .6	625 .0	617 .3	615 .4	602 .6	615 .8	611 .8	610 .7	617 .2	621 .0	613 .0	616 .4	619 .2	613 .9	620 .8	621 .8	626 .9	628 .6	636 .6	634 .6	643 .4	644 .2	644 .0	654 .6	650 .8
57	589 .8	592 .6	592 .6	590 .0	595 .5	590 .7	594 .0	590 .1	587 .8	583 .6	581 .1	580 .5	565 .3	555 .6	559 .1	544 .3	553 .8	552 .1	551 .7	557 .6	559 .2	555 .5	559 .9	559 .4	559 .0	567 .7	562 .7	567 .1	568 .6	572 .5	574 .9	578 .9	581 .1	578 .5	584 .5	589 .4
60	526 .9	528 .1	529 .6	533 .0	531 .7	532 .2	531 .3	528 .2	526 .1	520 .6	514 .8	511 .9	505 .6	494 .3	508 .7	493 .0	491 .0	490 .8	491 .4	486 .5	497 .4	498 .3	500 .2	494 .3	493 .4	499 .5	500 .6	505 .2	507 .9	513 .4	513 .7	522 .5	524 .7	522 .1	521 .9	526 .4
63	462 .6	464 .6	464 .1	462 .9	457 .7	462 .1	466 .0	464 .1	462 .9	458 .1	453 .4	452 .0	443 .0	428 .4	440 .2	433 .6	435 .6	430 .2	430 .7	426 .3	443 .2	438 .3	434 .5	436 .7	434 .8	439 .3	439 .0	442 .5	444 .8	446 .8	451 .6	449 .2	447 .0	459 .9	466 .2	462 .4
66	397 .4	397 .9	400 .0	404 .7	400 .6	403 .6	406 .6	403 .6	397 .1	394 .8	390 .8	387 .3	374 .2	387 .7	366 .4	366 .9	367 .4	368 .9	369 .3	376 .7	362 .5	367 .7	378 .9	371 .5	371 .0	375 .3	377 .7	378 .3	382 .5	387 .6	391 .1	392 .7	395 .4	401 .6	398 .5	397 .8
69	332 .0	331 .4	330 .0	328 .2	331 .1	326 .4	331 .0	331 .7	327 .6	329 .7	325 .3	323 .1	316 .3	320 .4	300 .5	295 .9	304 .3	305 .6	307 .5	314 .5	300 .9	298 .1	313 .8	313 .6	308 .7	312 .3	313 .4	313 .1	314 .8	319 .4	320 .9	321 .1	324 .1	324 .0	327 .1	330 .8
72	266 .5	264 .7	269 .5	266 .2	271 .4	269 .3	269 .2	270 .2	267 .6	264 .5	262 .6	259 .8	254 .3	250 .8	248 .9	242 .1	245 .5	242 .0	245 .7	246 .4	249 .6	245 .1	249 .4	246 .9	247 .8	250 .8	250 .6	251 .9	255 .3	258 .4	259 .3	261 .5	266 .5	264 .2	270 .1	266 .4
75	202 .3	198 .8	203 .4	203 .9	205 .9	207 .6	204 .0	204 .7	203 .2	201 .1	198 .8	196 .2	191 .5	191 .8	187 .5	183 .9	183 .4	181 .5	187 .4	187 .1	189 .6	188 .3	188 .5	190 .0	186 .6	189 .1	188 .8	190 .9	193 .0	194 .9	195 .9	202 .0	202 .7	203 .7	205 .6	202 .6
78	142 .6	138 .3	141 .8	145 .3	144 .8	145 .1	145 .3	142 .0	141 .9	141 .0	138 .4	135 .1	135 .3	132 .5	129 .9	129 .1	125 .4	124 .9	132 .3	132 .1	133 .2	134 .4	132 .4	132 .0	131 .7	129 .6	130 .7	133 .0	133 .8	134 .5	138 .8	141 .3	143 .3	146 .2	145 .4	143 .4
81	88. 9	84. 1	91. 6	92. 1	91. 8	91. 8	89. 9	90. 0	86. 7	86. 8	84. 1	84. 8	82. 4	82. 2	80. 5	79. 9	79. 0	73. 7	82. 9	82. 6	86. 9	85. 5	83. 3	82. 1	80. 3	81. 2	79. 1	81. 3	81. 2	84. 5	85. 1	88. 9	91. 2	94. 0	95. 9	90. 1
84	44. 3	45. 0	43. 8	47. 7	43. 3	44. 9	45. 7	44. 0	43. 3	42. 3	42. 6	40. 6	40. 7	38. 6	36. 1	39. 5	35. 8	37. 5	41. 6	46. 2	42. 9	44. 2	39. 1	39. 5	40. 1	39. 0	40. 0	40. 1	41. 0	40. 9	43. 0	43. 3	43. 8	49. 6	48. 4	51. 0

87	11.3	11.8	11.2	11.2	12.7	12.1	12.2	11.1	11.6	11.0	11.1	9.6	9.8	9.1	8.9	7.5	7.2	8.0	11.0	13.6	11.3	10.5	11.0	9.9	9.7	8.8	9.9	9.8	10.3	9.6	11.0	11.7	13.2	12.9	14.1	16.3
90	1.5	2.5	2.9	2.4	2.4	0.7	2.1	2.1	1.9	1.7	1.7	1.7	0.6	0.5	0.6	0.4	0.5	0.5	0.4	1.1	1.5	0.4	0.5	0.3	0.4	0.3	0.6	0.4	0.6	0.4	0.4	0.4	1.4	0.5	1.9	1.3

Table 1. Luminous intensity values

Signature:

_____

Print Name:

GH JOHN

_____

Date:

03-02-2012

_____

Partner / Director
Duly authorised to sign on behalf of:
Photometric and Optical Testing Services LLP