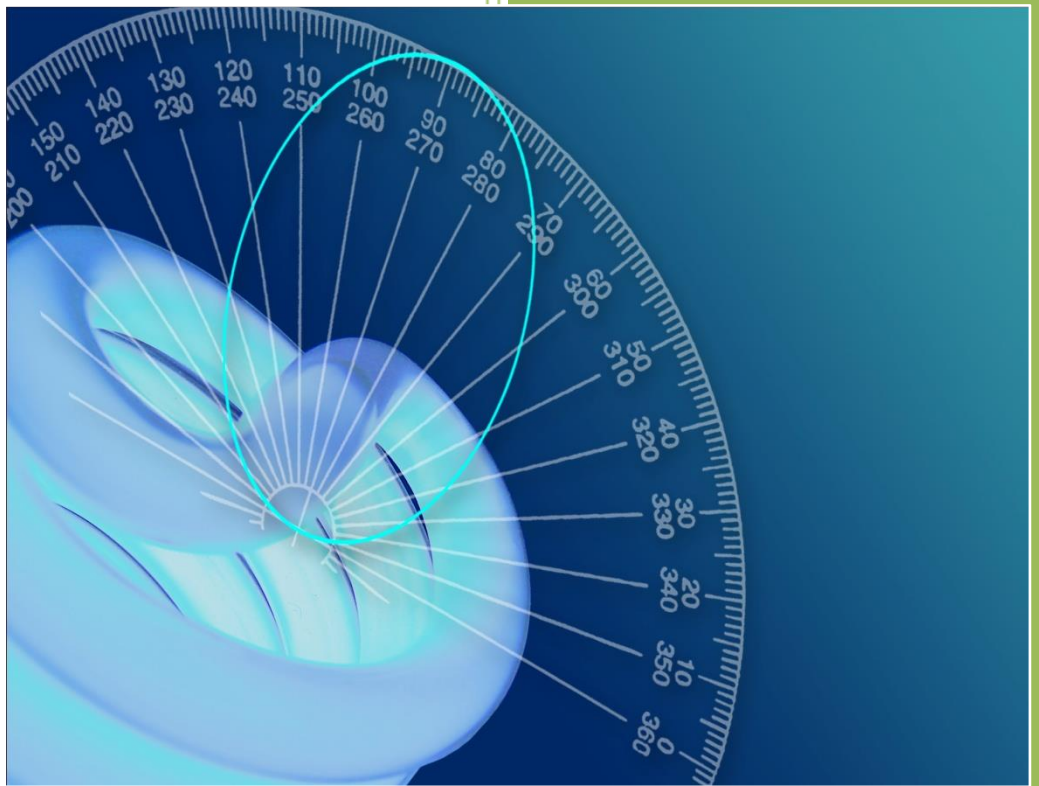


Photometric Test Report



Photometric and Optical Testing
Services
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POTS Photometric Test Report

Report Number: POTS/PM12040	Report Date: 26-03-2012	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: LED CEILING LIGHT
Model: LTMOD456CW	Serial Number:
Lamp Type: LED cool white	
Power Supply Used: Uninterruptible AC power supply	
Voltage(AC) = 244.8 V	Current (mA)= 218
Power (Watts)= 50.85	Power factor= 0.9554

Results	
Flux (lumens): 3063.3 lumens	
CIE 1931 Chromaticity Cx: 0.3206	CIE 1931 Chromaticity Cy: 0.3386
CRI (%): 81.4	CCT (K): 6046

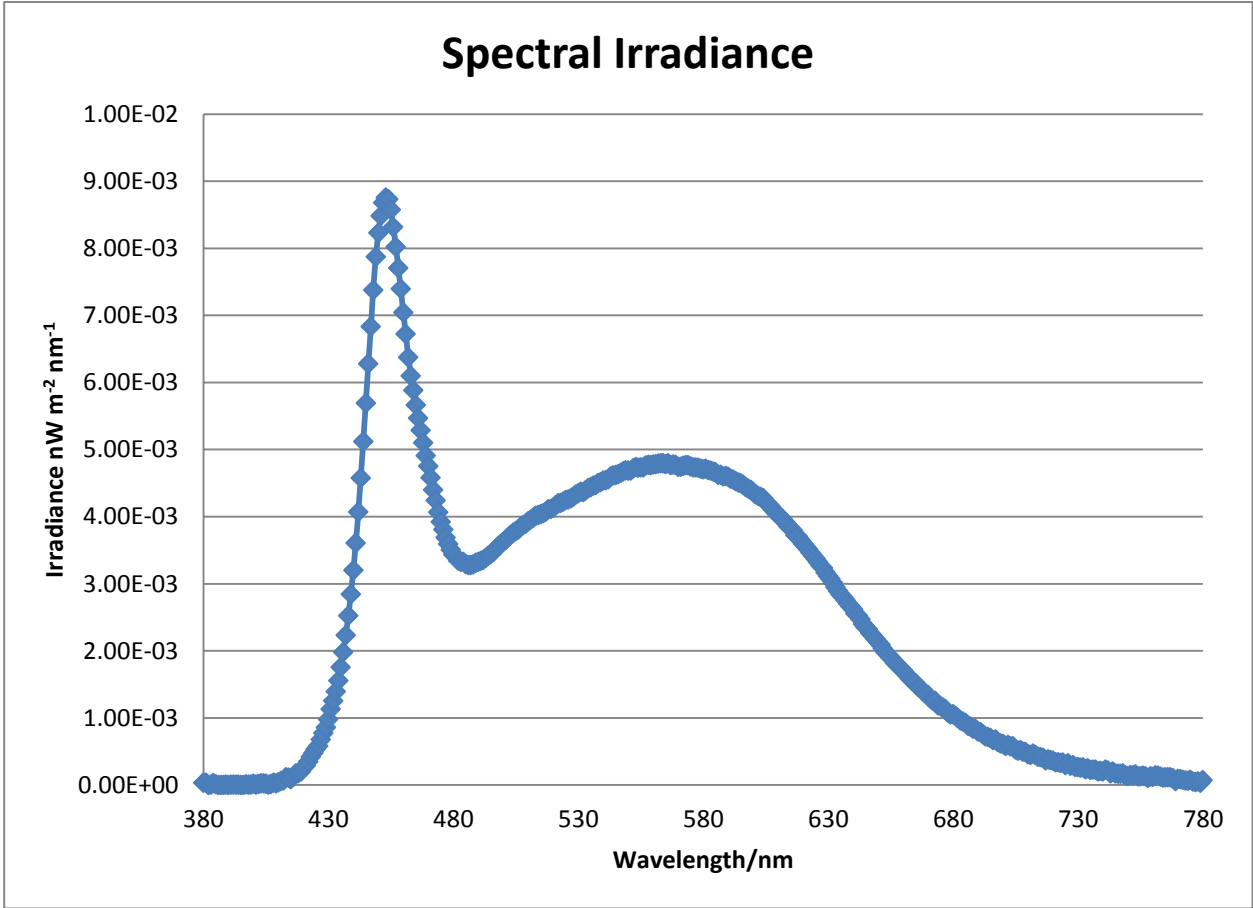


Figure 1: Spectral Irradiance

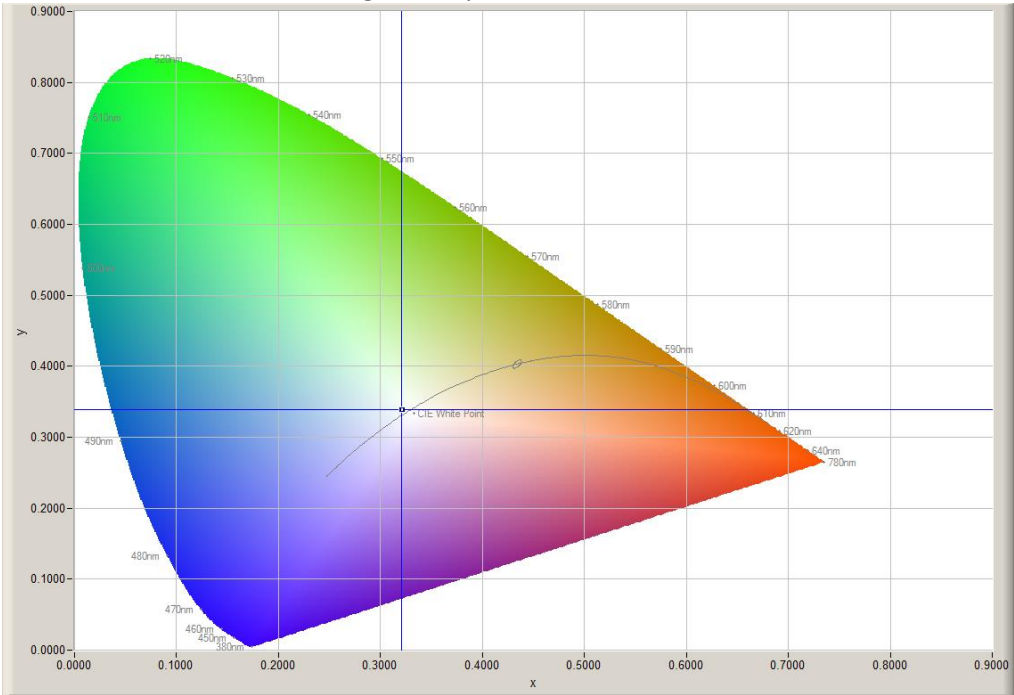


Figure 2: CIE 1931 diagram.

Goniophotometer Test		
Date of Test: 26-03-2012		Ambient Temperature: 25°C
Measurement Filename: LTMOD456CW		
Instrument Used: Radiant Imaging NFMS0800 Goniometer with ProMetric PM-1200N-1 Imaging Photometer		
Photometer Working Distance: 2m		Measurement Geometry: Far-Field
Comments:		
Reference Photometer Used: Specbos1201		Reference Photometer Serial Number: 2911670
Traceable: to NPL standards, UKAS Accredited		Calibration Certificate Number: 121104
Calibration Certificate Date: 25 th October 2011		Sample Stabilisation Time (minutes):45
Reference Photometer Calibration Uncertainty: $\pm 2.4\%$ ($k=2$, 20-200 lux, CIE illuminant A source)		
Scan Set Up		
Direction	Range	Increment
Inclination Zone 1	0-90°	3°
Azimuth	0-360°	10°
Results		
Integrated Luminous Flux (lumens): 3063.3	Peak Intensity (1° Spot, candelas): 1194.0	
Beam Angle (50% of max intensity C0-180, degrees): 105.2		
Photometric Filename (IES LM-63-2002): LED PANEL 6000K-6500K		
IES File – Absolute or Relative Format? Absolute		
Photometric Filename (EULUMDAT): LED PANEL 6000K-6500K		
EULUMDAT File – Absolute or Relative Format? Absolute		

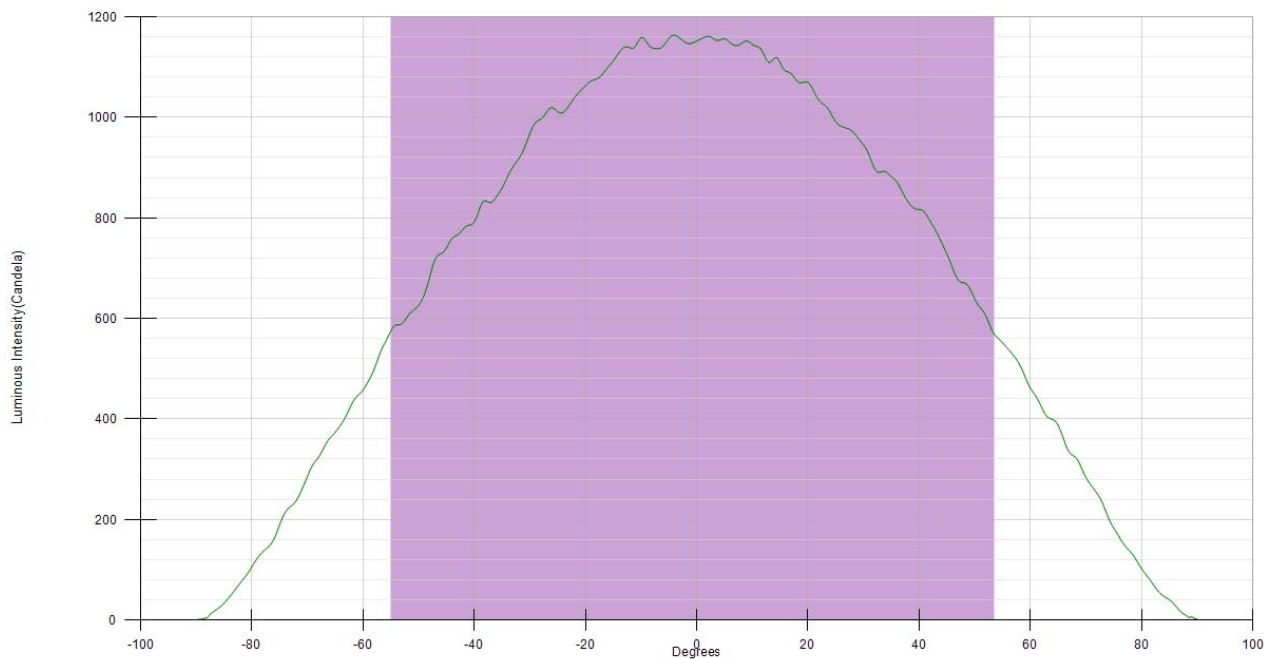


Figure 3: Far-Field Luminous Intensity (C0-180, Cartesian Coordinates)

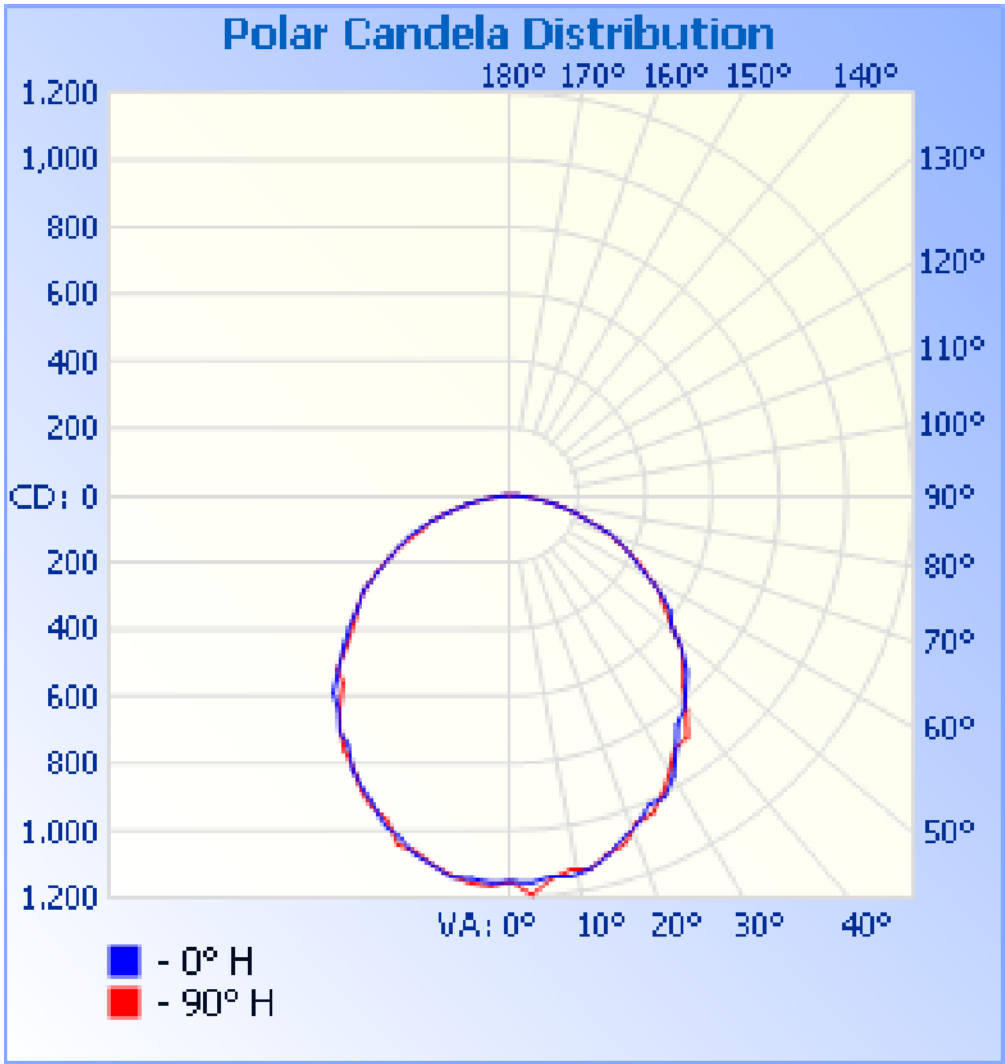


Figure 4: Far-Field Luminous Intensity (C0-180, C90-270, Polar Coordinates)

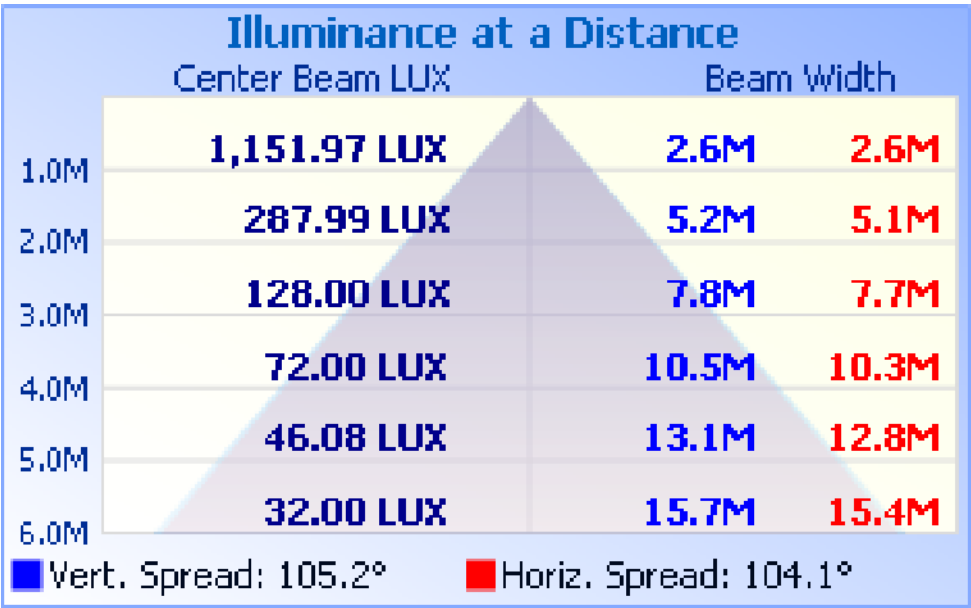


Figure 4. Illuminance cone diagram.

	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	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0	115 2.0
3	115 7.6	116 3.0	116 6.4	117 0.1	117 1.0	117 4.3	117 9.2	118 4.7	119 2.1	119 4.2	119 0.5	117 8.1	116 2.9	114 9.3	114 4.6	114 9.4	114 8.1	115 3.0	115 6.8	115 8.5	115 7.1	115 3.1	115 3.8	115 7.1	116 0.7	116 5.0	116 8.0	116 7.9	116 7.6	116 9.8	117 4.2	117 5.8	116 5.9	115 4.6	115 3.4	115 3.2
6	114 2.2	114 7.5	115 7.2	115 0.5	114 5.1	114 6.8	115 1.9	115 8.0	115 4.8	115 0.3	116 4.9	116 6.7	115 4.5	112 8.9	111 5.6	113 5.8	115 1.4	115 2.4	115 8.8	116 4.8	116 2.3	115 4.4	116 3.6	117 1.7	116 4.5	115 8.4	116 4.3	116 2.8	116 0.6	116 1.9	115 6.8	115 7.9	115 0.3	116 6.8	114 0.0	114 4.7
9	114 9.9	113 7.3	114 9.2	113 4.2	115 115	115 7.9	115 6.9	115 1.4	113 7.9	113 1.0	114 3.6	114 3.5	113 7.8	111 7.1	115 5.7	113 5.6	114 0.2	116 1.1	115 2.1	112 4.6	113 1.2	116 8.3	117 5.5	116 1.1	114 7.7	113 6.0	114 0.2	114 7.5	116 7.1	115 4.8	113 8.3	113 5.6	115 1.3	114 7.1	113 6.3	
1	113 8.2	112 6.3	112 0.3	112 6.2	111 9.0	110 7.1	112 3.1	112 5.3	113 1.7	113 9.9	111 7.7	111 6.5	113 0.3	113 9.6	114 2.3	112 4.3	111 3.0	112 0.5	112 6.9	114 1.1	114 9.6	113 1.1	110 2.5	113 2.1	115 2.2	113 2.2	113 3.7	112 6.3	110 9.5	109 1.1	110 9.3	112 7.3	111 6.2	112 3.1	112 8.6	113 5.5
2	111 2.4	111 5.9	112 6.4	111 5.0	110 5.2	110 5.1	109 4.3	110 7.6	111 7.9	110 8.1	110 1.7	112 3.8	111 9.0	110 7.7	110 5.1	110 6.5	110 3.5	110 1.7	110 9.2	110 4.4	110 6.6	110 8.9	110 1.6	110 7.1	110 5.9	110 6.3	110 2.0	109 9.8	109 6.2	110 0.4	110 4.8	111 0.6	111 3.4	113 2.7	108 3.3	
1	107 6.4	108 0.2	109 1.7	109 2.2	108 1.7	109 2.7	108 4.1	108 5.6	109 1.8	109 4.6	110 2.2	108 6.6	108 8.3	107 3.9	107 0.8	108 4.4	107 2.3	108 4.7	107 2.8	109 2.0	106 7.7	107 4.8	107 4.6	107 0.8	108 7.2	107 6.3	107 9.6	109 5.6	109 9.0	108 4.5	106 4.2	104 1.8	108 5.0	108 6.7	107 1.3	109 7.9
2	105 2.0	105 4.8	106 3.9	105 6.7	105 3.4	105 6.1	103 9.4	104 1.0	107 6.4	104 5.1	105 7.3	104 8.2	106 1.8	103 9.0	103 4.1	105 7.0	103 2.4	105 8.9	104 3.2	104 6.4	105 1.2	104 6.8	105 3.9	106 4.3	103 4.3	105 3.8	105 1.9	103 4.8	104 2.8	104 2.8	105 3.9	105 6.6	102 1.9	105 3.8	105 0.1	106 6.8
2	100 9.8	102 1.7	103 0.9	101 5.1	102 7.3	102 7.9	101 6.2	103 3.7	101 7.9	103 8.1	101 8.1	100 6.8	101 2.3	102 6.3	102 7.9	102 1.2	102 2.7	101 9.5	101 0.6	104 1.8	102 3.1	103 1.4	100 1.0	100 2.4	102 9.3	101 4.3	102 0.5	102 0.4	101 9.0	102 2.2	103 6.7	101 9.5	102 7.1	102 5.6	102 4.7	102 8.8
2	101 0.3	101 5.9	987 .5	970 .1	993 .7	995 .4	963 .0	999 .4	977 .8	997 .2	986 .9	991 .1	100 1.8	977 .9	982 .8	971 .5	965 .3	989 .8	978 .3	101 8.1	980 .8	996 .4	989 .5	988 .7	990 .7	100 5.8	993 .3	986 .3	979 .2	100 6.7	991 .8	100 3.9	987 .4	996 .7	986 .2	980 .8
3	968 0	945 .9	963 .6	934 .3	958 .2	933 .8	952 .0	964 .1	952 .0	947 .1	942 .2	936 .7	929 .9	957 .5	952 .4	933 .6	937 .1	944 .0	945 .2	929 .0	953 .6	939 .4	945 .2	936 .4	941 .6	954 .0	952 .2	940 .8	946 .5	963 .0	928 .5	948 .2	945 .0	953 .4	944 .4	964 .3
3	902 .3	905 .7	896 .8	909 .9	903 .2	922 .0	891 .3	890 .1	909 .9	898 .0	912 .1	898 .7	907 .4	913 .0	916 .0	917 .2	889 .2	909 .8	890 .7	896 .1	913 .1	905 .3	905 .8	910 .5	880 .5	892 .5	907 .9	911 .3	899 .0	902 .8	932 .0	910 .4	914 .4	903 .1	898 .5	906 .7
3	842 .3	838 .8	867 .9	867 .4	854 .5	873 .2	870 .8	871 .1	875 .1	893 .0	872 .1	845 .9	867 .8	851 .5	862 .9	864 .9	849 .1	873 .7	871 .7	870 .4	886 .7	891 .2	880 .8	869 .8	878 .2	872 .1	862 .6	868 .1	859 .1	860 .2	855 .3	870 .9	867 .7	846 .8	869 .2	864 .3
3	819 .8	845 .3	851 .6	806 .8	815 .3	825 .2	835 .0	817 .0	833 .7	829 .1	830 .2	819 .2	816 .3	799 .3	795 .6	801 .4	808 .4	819 .9	805 .8	793 .5	802 .6	837 .1	827 .9	822 .1	822 .3	832 .1	810 .8	836 .3	831 .8	805 .1	820 .9	814 .9	804 .2	822 .3	824 .1	
4	777 .6	773 .8	780 .9	776 .3	791 .9	777 .2	770 .5	797 .3	767 .6	765 .4	775 .1	775 .7	781 .6	746 .8	779 .8	754 .7	755 .7	745 .7	793 .2	779 .4	765 .0	779 .7	783 .8	784 .1	770 .9	765 .0	767 .0	750 .2	769 .3	774 .2	784 .2	772 .1	792 .0	773 .0	785 .3	757 .1
2	740 .4	733 .7	724 .9	720 .5	718 .8	734 .6	721 .2	708 .3	723 .5	725 .9	724 .8	717 .2	723 .0	707 .4	717 .7	710 .2	714 .4	727 .9	719 .8	730 .7	729 .4	728 .7	735 .8	739 .6	711 .9	703 .0	732 .2	716 .3	717 .7	723 .3	737 .0	730 .7	731 .6	720 .3	729 .3	
4	683 .0	689 .1	686 .7	672 .8	660 .4	677 .3	659 .4	679 .8	658 .7	683 .2	663 .7	679 .8	654 .3	663 .1	677 .3	675 .1	669 .9	675 .7	682 .1	683 .9	677 .0	679 .9	691 .5	689 .2	664 .3	678 .7	655 .3	670 .3	683 .9	677 .5	676 .4	686 .6	689 .8	660 .6	673 .5	
5	615 .6	629 .1	628 .8	630 .1	629 .2	608 .5	635 .0	626 .1	617 .8	614 .5	637 .9	616 .8	615 .8	594 .3	616 .0	619 .5	617 .3	624 .5	621 .3	632 .6	613 .1	635 .1	611 .2	617 .7	628 .2	628 .6	643 .5	601 .5	619 .4	628 .8	604 .4	606 .4	620 .8	633 .7	627 .7	623 .0
5	587 .2	562 .1	582 .8	575 .5	578 .8	584 .1	563 .1	570 .8	573 .1	565 .0	583 .1	577 .1	568 .1	566 .6	557 .5	558 .6	585 .1	561 .0	562 .5	565 .6	585 .2	575 .9	568 .6	580 .6	571 .8	582 .6	581 .1	565 .2	568 .7	567 .2	581 .4	567 .7	575 .0	570 .8	575 .8	573 .9
5	529 .5	501 .5	532 .9	512 .4	534 .0	518 .7	528 .4	520 .0	527 .2	528 .7	515 .7	507 .2	504 .7	515 .0	503 .8	511 .1	521 .8	525 .9	537 .5	512 .1	523 .9	546 .2	535 .6	500 .4	535 .6	521 .6	523 .7	512 .3	516 .4	528 .3	525 .3	517 .1	506 .8	524 .0	539 .2	
6	457 .3	471 .5	445 .0	464 .2	465 .6	460 .5	452 .8	471 .1	465 .3	462 .8	476 .0	463 .7	451 .4	458 .3	473 .1	445 .5	462 .0	461 .1	462 .8	477 .2	480 .2	476 .2	473 .9	472 .3	455 .9	467 .3	466 .5	477 .3	458 .7	459 .3	463 .0	458 .3	472 .0	468 .8	472 .3	
6	406 .9	419 .9	424 .3	420 .6	388 .7	416 .3	407 .1	423 .0	416 .9	418 .3	411 .5	391 .6	409 .3	405 .1	395 .3	400 .5	389 .3	396 .6	404 .3	403 .6	427 .2	419 .3	423 .5	410 .6	397 .2	403 .9	408 .8	405 .5	412 .9	415 .9	404 .6	409 .5	409 .5	424 .5	409 .3	413 .5
6	361 .3	345 .4	346 .1	344 .5	353 .9	352 .4	350 .5	364 .3	347 .9	351 .7	349 .8	352 .0	345 .8	355 .0	349 .8	339 .2	343 .8	345 .2	359 .4	352 .2	367 .6	369 .1	367 .4	352 .4	356 .6	348 .6	347 .5	342 .9	348 .9	358 .0	364 .9	368 .5	352 .2	373 .1	360 .7	348 .2
6	309 .5	293 .3	301 .6	275 .0	300 .2	302 .5	303 .3	305 .1	298 .4	304 .1	293 .7	284 .0	293 .4	305 .8	275 .5	275 .2	280 .7	296 .4	307 .8	307 .5	308 .9	305 .5	299 .7	280 .5	296 .9	292 .8	281 .2	282 .6	295 .6	296 .8	286 .7	307 .9	292 .1	300 .8	307 .8	296 .7
7	237 .7	253 .1	250 .4	229 .2	251 .6	250 .7	242 .2	234 .9	238 .3	241 .2	235 .7	231 .0	240 .8	241 .4	229 .4	231 .0	237 .1	237 .5	251 .8	245 .4	256 .3	241 .3	255 .3	254 .0	242 .4	232 .8	236 .9	249 .7	234 .6	236 .9	232 .9	243 .9	246 .0	240 .0	254 .4	
7	189 .5	171 .4	176 .8	178 .9	179 .0	192 .4	181 .8	185 .3	193 .9	186 .2	189 .2	184 .1	189 .5	181 .2	188 .3	179 .0	187 .8	181 .7	182 .4	184 .6	197 .5	199 .5	192 .6	193 .1	190 .6	185 .0	176 .2	186 .8	176 .4	181 .4	180 .5	184 .4	197 .2	188 .6	193 .4	183 .4
7	135 .9	124 .6	128 .8	132 .8	126 .9	141 .8	144 .3	134 .5	142 .3	139 .0	140 .2	131 .2	138 .2	135 .2	127 .0	129 .6	119 .0	133 .2	135 .8	151 .2	147 .9	141 .6	142 .2	134 .6	137 .6	138 .6	134 .5	129 .1	131 .4	139 .9	131 .9	138 .9	144 .0	138 .7	133 .4	
8	88 1	80 7	83 5	83 8	89 6	90 8	93 6	96 0	95 3	90 6	87 6	92 9	88 8	87 9	87 2	87 3	87 3	75 1	87 2	94 2	102 .6	100 .7	100 .3	93 9	86 4	92 1	80 5	87 4	82 4	89 2	82 3	98 4	95 8	93 4	89 8	90 9
8	46 3	40 7	40 2	47 3	47 2	45 7	47 7	55 2	53 9	57 5	52 9																									

87	15.6	18.1	14.0	16.0	17.4	20.2	17.2	22.3	20.3	21.0	21.4	15.4	24.6	18.1	17.5	13.0	14.9	18.3	16.8	30.4	26.9	20.1	20.8	16.3	17.3	17.9	15.6	18.4	16.2	19.6	17.3	20.2	21.0	21.1	22.6	23.1
90	0.0	7.9	6.4	7.9	11.0	0.0	8.4	8.2	13.8	0.0	10.2	8.8	0.0	0.0	8.4	6.3	0.0	6.8	7.8	11.1	10.8	7.9	8.8	0.0	0.0	9.1	8.2	0.0	7.4	0.0	0.0	0.0	7.7	0.0	6.8	7.2

Table 1. Luminous intensity values

Signature:



Print Name:

GH JOHN

Date:

26-03-2012

Partner / Director

Duly authorised to sign on behalf of:

Photometric and Optical Testing Services LLP