IESNA LM-79: 2008

Measurement and Test Report

for

Philips (China) Investment Co., Ltd.

No.2 Bld. No.9, Laue 888, Tian Lin Road, Shanghai, CHINA

Nov 09, 2011

Product Name:	LED Integral Lamp
Model No:	9290002097
Test Engineer:	David Zhang
Report No.:	BTR66.180.10.295.20
Sample Received Date:	Nov 04, 2011
Test Performed Date:	Nov 04, 2011 to Nov 08, 2011
Reviewed By:	Steven Hsu
Prepared By:	**BEST Test Service Shenzhen Co., Ltd.** 1st Floor, 1st Building, Weitai Industrial Park, Yingrenshi, Shiyan, Baoan, Shenzhen, China TEL: +86-755-28236006 FAX: +86-755-23467087-811 Email: certification@bestcert.cn

NVLAP LAB CODE 200770-0

Efficient Lighting Initiative

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1 - GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

Applicant	:	Philips (China) Investment Co., Ltd.
Product Name	:	LED Integral Lamp
Model No	:	9290002097
Input Rating	:	AC 120V/60Hz
Power Rating	:	10W
Shape of Bulb	:	A19, E26 Base
Date of Receiving Sample	:	Nov 04, 2011
Quantity of samples	:	1 pcs
Test Requested	:	1. Electrical and Photometric Test; 2. Luminous Intensity Distribution Test;

1.2 Objective

The following test report is prepared on behalf of Philips (China) Investment Co., Ltd. in accordance with IESNA LM-79-08, used the following American National Standards or illumination Engineering Society of North America test guides:

ANSI C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products;
ANSI C79.1– 2002: American National Standard for Electric Lamps – Nomenclature for Glass Bulbs Intended for Use with Electric Lamps;
ANSI C78.20 – 2003: American National Standard for Electric Lamps – A, G, PS, and Similar Shapes with E26 Medium Screw Bases;
ANSI C78.21 – 2003: American National Standard for Electric Lamps – PAR and R Shapes;
ANSI C78.24 – 2001: American National Standard for Electric Lamps – Two-inch (51 mm); Integral-reflector Lamps with Front Covers and GU5.3 or GX 5.3 Bases;
ANSI/IEC C81.61-2003: American National Standard for Electric Lamp Bases;
ANSI/IEEE C62.41 – 1991 (01-May-1991): Surge Voltages in Low-Voltage AC Power Circuits, Recommended Practice for;
CIE Publication No. 13.3 – 1995: Method of Measuring and Specifying Color Rendering of Light Sources;
CIE Publication No. 18.2 – 1983: The Basis of Physical Photometry;
IESNA LM-16-1993: Practical Guide to Colorimetry of Light Sources;
IESNA LM-28-89 – 1989: Guide for the Selection, Care, and Use of Electrical Instruments in the Photometric Laboratory;
IESNA LM-79-08 Electrical and Photometric Measurement of Solid State Lighting Products
UL 1993 – 1999: Standard for Self-Ballasted Lamps and Lamp Adapters;
UL 8750 – 2009: Light Emitting Diode (LED) Equipment for Use in Lighting Products.

1.3 Test Facility Description

The Energy Efficiency Lab used by BEST to collect energy efficiency measurement data is located in 1st Floor, 1st Building, Weitai Industrial Park, Yingrenshi, Shiyan, Baoan, Shenzhen, China. BEST Test Service Shenzhen Co., Ltd is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200770-0). BEST Test Service Shenzhen Co., Ltd is also an ELI accredited lab for lighting products (ELI Certificate No. ELI-L04-2010) and UL accredited lab for lighting products

1.4 Test Equipment List

Device	Manufacture	Model No	Serial No	Cal. Date	Cal Due Date
Integral Sphere	Everfine	1.5M SPEKTRON	608040T	Oct 20, 2011	Oct 20, 2012
Integral Sphere	Everfine	1.5M SPEKTRON	906025	Oct 20, 2011	Oct 20, 2012
Integral Sphere	Labsphere	LMS-650	6101002416	Mar 10, 2011	Mar 09, 2012
Spectro Meter Assy	Labsphere	CDS 2100	217101416	Mar 10, 2011	Mar 09, 2012
Plus UV-VIS-Near IR Spectrophotometer Colorimeter	Everfine	PMS-80-V1 (380nm-800nm)	608033	Oct 20, 2011	Oct 20, 2012
Plus UV-VIS-Near IR Spectrophotometer Colorimeter	Everfine	PMS-700 (200nm-800nm)	908001	Oct 20, 2011	Oct 20, 2012
Goniophotometer	Everfine	GOR-5000	1009001	Nov 20, 2010	Nov 19, 2011
6 $^{1/2}$ Digital Multimeter	Agilent	34401A	MY4702386	Oct 18, 2011	Oct 17, 2012
AC Power Source	California Instrument	1501I	S13093	N/A	N/A
AC Power Source	California Instrument	1501L	L03572	N/A	N/A
Standard Light Source	OSRAM	24V/50W	NO.1	Sep 17, 2011	Sep 16, 2012
Standard Light Source	OSRAM	24V/50W	NO.2	Sep 17, 2011	Sep 16, 2012
Multi-Function AC standard Meter	Everfine	PF2010S	605010	Oct 18, 2011	Oct 17, 2012
Digital Power Meter	Everfine	PF9811	902029	Oct 18, 2011	Oct 17, 2012
Digital Power Meter	YOKOGAWA	WT210	91K310009	Oct 18, 2011	Oct 17, 2012
Digital Power Meter	YOKOGAWA	WT210	91K310017	Oct 18, 2011	Oct 17, 2012
Digital Power Meter	YOKOGAWA	WT210	91K310016	Oct 18, 2011	Oct 17, 2012
Ballast Parameter Analyzer	Everfine	PF9821	905050	Oct 18, 2011	Oct 17, 2012
Second Meter	TIANFU	PC 396	N/A	Oct 18, 2011	Oct 17, 2012
Digital Storage Oscilloscope	Tektronix	TDS2012B	C051911	Oct 18, 2011	Oct 17, 2012

Statement of Traceability: BEST Test Service Shenzhen Co., Ltd. certifies that all calibration has been performed using suitable standards traceable to the NIM China.

2 - Test Method

2.1 Photometric and Electrical Measurement (Integrated Sphere Method)

Total light output (luminous flux) for the 25℃ ±1℃ ambient temperature conditions is measured using a 1.6m integrating sphere. Temperature is measured at a position inside the sphere. Spectral radiant flux measurements are made using Labsphere LMS-650 to the detector port of the integrating sphere. Each lamp is operated at rated voltage in its designated orientation. Each lamp should be stable before measurements are made. The determining method of stable is as follows:

Step 1 Take 3 measurements of the lamp light output at 15 minute interval (total time=30mintues.)This time period is in addition to the recommended pre-burning time.

Step 2 Calculate the percent difference between the maximum measured value and the minimum measured value for the three consecutive measurements.

Step 3 if the value calculated in Step 2 does not exceed 0.5 percent, the lamp is considered stable.
Luminous flux, chromaticity coordinates, correlated color temperature and color rendering index for each lamp are calculated from the spectral radiant flux measurements taken at 2 nm intervals over the range 350 to 1050 nm. The calibration of the sphere photometer-spectrometer system is traceable to the NIST USA. Lamp efficacy (lumens per watts) for each lamp model is computed based on the revised luminous flux result. Electrical measurements including voltage, current, power and power factor are measured using the YOKOGAWA WT210 digital power Meter.

The total uncertainty of the light output measurements is estimated, at the 95% confidence level, not to exceed ±1.12% over the wavelength range 350-1050 nm.

2.2 Photometric and Electrical Measurement (Gonio Photometer Method)

Before each measurement, the method below should be used to determine the lamp is stable or not.

Step 1 Take 3 measurements of the lamp intensity at 15 minute interval (total time=30mintues.)This time period is in addition to the recommended pre-burning time.

Step 2 Calculate the percent difference between the maximum measured value and the minimum measured value for the three consecutive measurements.

Step 3 if the value calculated in Step 2 does not exceed 0.5 percent, the lamp is considered stable.

A Everfine GOR-5000 Goniometer was used to measure the intensity (candelas) at each angle of distribution for each sample. Ambient temperature was measured equal to the height of the sample mounted on the Goniometer equipment. Each sample was operated at input rated voltage in its designated orientation. Each sample was allowed to be stable before measurement was made. Electrical measurements including voltage, current, power and power factor were measured using the YOKOGAWA Power Analyzer.

Some graphics were created with Photometric Plus software.

3 –Executive Summary

Brand Name= EnduraLED A19 Bulb

12NC number= 929000209703

SKU number= 046677420079

Model Number= 9290002097

Input Power (Watts)	Power Factor	Luminous Flux (Lumens)	Luminous Efficiency (Lumens/Watt)	CCT (K)	CRI	Stabilization Time (Hours) (Light & Power)
9.773	0.7836	979.8	100.26	2810.5	92.7	1.5

4 – Test Result

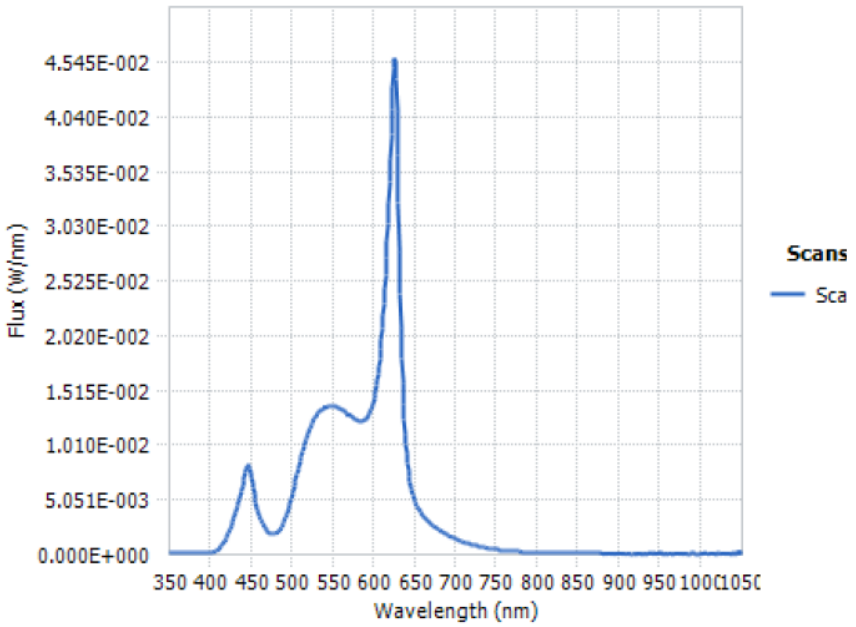
Item	Test Result	Accreditation
Input Voltage	120.0	NVLAP/EPA
Input Current	0.1036	NVLAP/EPA
Power Factor	0.7859	NVLAP/EPA
Input Power	9.769	NVLAP/EPA
Lumen Output (Lumens)	958.14	NVLAP/EPA
Luminous Efficacy (lm/w)	98.08	NVLAP/EPA
Maximum Luminous Intensity (cd)	84.79	NVLAP/EPA
Beam Angle (°)	327.2	NVLAP/EPA
Correlated Color Temperature (CCT)	2810.5	NVLAP/EPA
x	0.4531	NVLAP/EPA
y	0.4126	NVLAP/EPA
u’	0.2573	NVLAP/EPA
v’	0.5271	NVLAP/EPA
Duv	0.0013	NVLAP/EPA
Color Rendering Index– CRI	92.7	NVLAP/EPA
R9	74.9	NVLAP/EPA

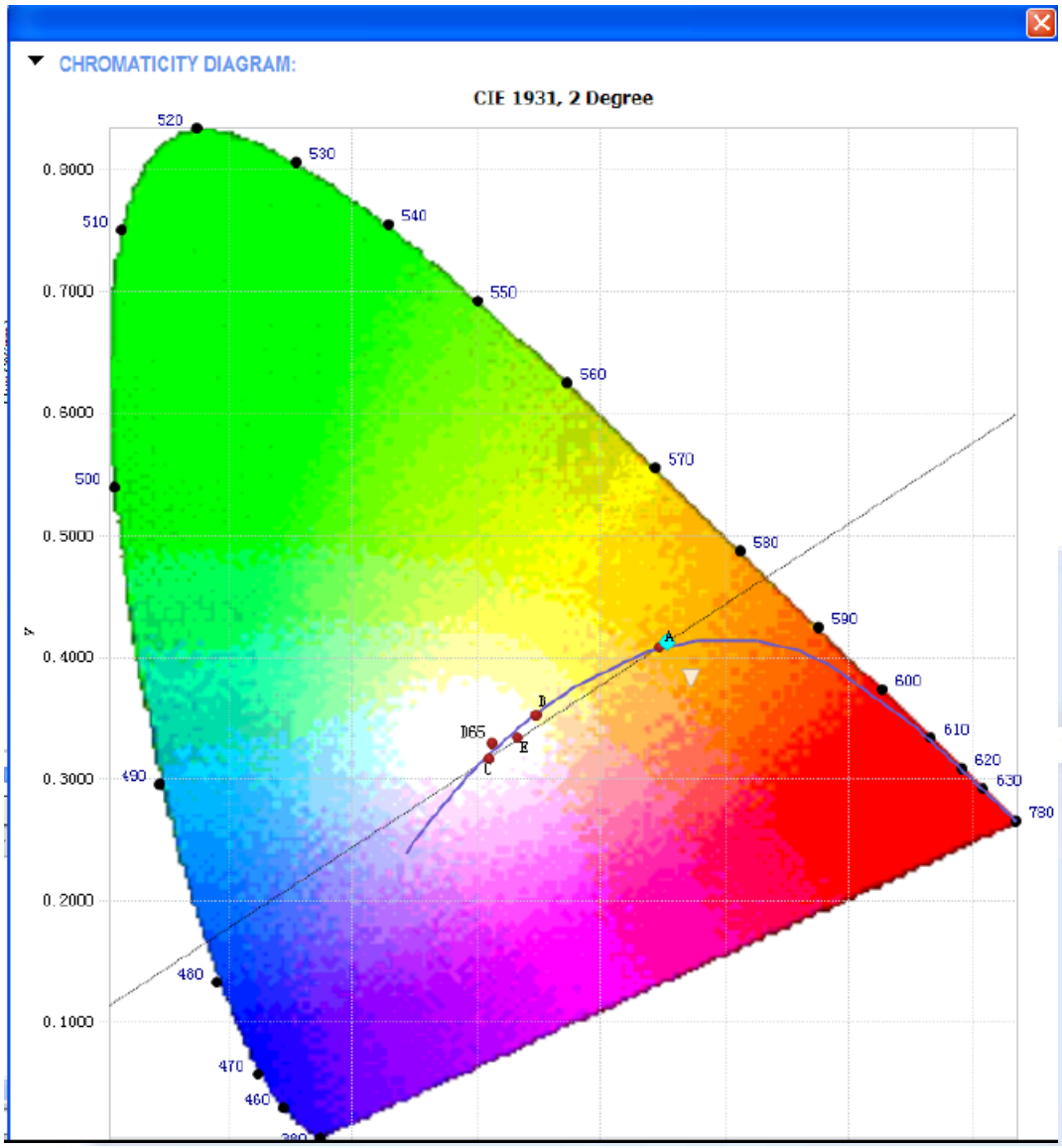
5 – Spectral Flux Plots

Spectral Results

Name	Value	Unit
Φ	2.837E00	Watts
Φ(v)	9.798E02	lumens
Φ(v')	1.263E03	lm'
Chrom x	0.4531	
Chrom y	0.4126	
Chrom u	0.2573	
Chrom v	0.3514	
Duv	0.0013	
Chrom u'	0.2573	
Chrom v'	0.5271	
λ (peak)	626.2	nm
λ (center)	623.1	nm
λ (centroid)	578.9	nm
λ (dom)	583.2	nm
FWHM	20.6	nm
Purity	59.9	%
CCT	2810.5	°K
Correlation	0.0054	
Corr. Coef.	0.0014	
RA	92.7	
R1	94.6	
R2	96.2	
R3	84	
R4	86.7	
R5	95.9	
R6	98	
R7	93.5	
R8	92.7	
R9	74.9	
R10	84.7	
R11	84.4	
R12	82.7	
R13	97.2	
R14	88	

Spectral Flux Graph




CHROMATICITY DIAGRAM:
CIE 1931, 2 Degree
520
530
540
550
560
570
580
590
600
610
620
630
730
510
500
490
480
470
460
0.8000
0.7000
0.6000
0.5000
0.4000
0.3000
0.2000
0.1000
y
A
D65
B
C

6 – Spectral Energy Distribution

Derived Data	
Parameter	Scan 1
Date/Time	2011-11-8 17:19
Radiant Flux (Watts)	2.84E+00
Luminous Flux (lumens)	9.80E+02
Scotopic Luminous Flux (lm')	1.26E+03
Chromaticity x coord	0.4531
Chromaticity y coord	0.4126
Chromaticity u coord	0.2573
Chromaticity v coord	0.3514
Delta uv	0.0013
Chromaticity u' coord	0.2573
Chromaticity v' coord	0.5271
Peak Wavelength (nm)	626.2
Center Wavelength (nm)	623.1
Centroid Wavelength (nm)	578.9
Dominant Wavelength (nm)	583.2
Full Width Half Max Bandwidth (nm)	20.6
Excitation Purity (%)	59.9
Correlated Color Temperature (deg. K)	2810.5
Luminous Efficacy (lm/W)	
SDCM	5.5 F 2700
Correlation	0.0054
Correlation Coeficient	0.0014
Color Rendering Index Average (RA)	92.7
Color Rendering Index (R1)	94.6
Color Rendering Index (R2)	96.2
Color Rendering Index (R3)	84
Color Rendering Index (R4)	86.7
Color Rendering Index (R5)	95.9
Color Rendering Index (R6)	98
Color Rendering Index (R7)	93.5
Color Rendering Index (R8)	92.7
Color Rendering Index (R9)	74.9
Color Rendering Index (R10)	84.7
Color Rendering Index (R11)	84.4
Color Rendering Index (R12)	82.7
Color Rendering Index (R13)	97.2
Color Rendering Index (R14)	88
Measured DUT Current (A)	N/A
Measured DUT Voltage (V)	N/A

Spectral Data

Wavelength	Scan1
350	7.56E-05
351	4.77E-05
352	7.49E-05
353	8.25E-05
354	5.46E-05
355	7.43E-05
356	6.71E-05
357	4.22E-05
358	6.08E-05
359	7.33E-05
360	4.59E-05
361	7.71E-05
362	3.45E-05
363	5.19E-05
364	4.41E-05
365	5.81E-05
366	6.13E-05
367	6.30E-05
368	6.24E-05
369	5.17E-05
370	5.49E-05
371	6.63E-05
372	6.34E-05
373	5.58E-05
374	5.66E-05
375	6.43E-05
376	6.52E-05
377	4.46E-05
378	4.60E-05
379	5.93E-05
380	6.15E-05
381	5.20E-05
382	6.04E-05
383	5.37E-05
384	5.61E-05
385	5.53E-05
386	5.56E-05
387	4.51E-05
388	5.80E-05
389	6.54E-05
390	7.23E-05
391	5.74E-05
392	6.54E-05
393	7.00E-05
394	6.86E-05

395	7.84E-05
396	8.65E-05
397	8.33E-05
398	8.99E-05
399	9.58E-05
400	0.000107702
401	0.000122313
402	0.000132142
403	0.000149034
404	0.000166257
405	0.000197121
406	0.000227408
407	0.000265626
408	0.000301246
409	0.000348926
410	0.000407398
411	0.000484347
412	0.000556972
413	0.000649074
414	0.000766792
415	0.000864848
416	0.000980073
417	0.001097742
418	0.001238237
419	0.001367193
420	0.001515064
421	0.001687848
422	0.001826221
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424	0.002212107
425	0.002379013
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428	0.003088103
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431	0.003793057
432	0.004081899
433	0.004305715
434	0.004588009
435	0.004826964
436	0.005056476
437	0.005428095
438	0.005716114
439	0.006041745
440	0.006347571

441	0.006730103
442	0.007152608
443	0.0074864
444	0.007837728
445	0.008087223
446	0.008134841
447	0.008187368
448	0.008050941
449	0.007850856
450	0.007496137
451	0.007050196
452	0.006577894
453	0.006069439
454	0.005563707
455	0.005051201
456	0.004619965
457	0.004280021
458	0.00399207
459	0.003765413
460	0.003530176
461	0.00335495
462	0.003180082
463	0.003037643
464	0.002900456
465	0.00275495
466	0.002608064
467	0.002475438
468	0.002320477
469	0.002225722
470	0.002109474
471	0.002042978
472	0.00193789
473	0.001888157
474	0.001838853
475	0.001791222
476	0.001792009
477	0.00180119
478	0.001826603
479	0.00184082
480	0.001864398
481	0.00192144
482	0.001962303
483	0.002042615
484	0.002122419
485	0.002222366
486	0.002299065

487	0.002425954
488	0.002560317
489	0.002698748
490	0.002868042
491	0.003065354
492	0.003255463
493	0.003439924
494	0.003681834
495	0.003945173
496	0.004154602
497	0.004447935
498	0.004752272
499	0.005032292
500	0.00528617
501	0.005646072
502	0.005959843
503	0.006284759
504	0.006612474
505	0.006911048
506	0.007235936
507	0.007570162
508	0.007923801
509	0.008210922
510	0.008508367
511	0.008818873
512	0.009130111
513	0.009403557
514	0.009648473
515	0.009940665
516	0.010252283
517	0.010471816
518	0.010655207
519	0.010882329
520	0.011071201
521	0.01132849
522	0.011500113
523	0.011767649
524	0.011883527
525	0.012058029
526	0.012241846
527	0.01238352
528	0.012579311
529	0.012624511
530	0.012811654
531	0.012871974
532	0.013008362

533	0.013111336
534	0.013205768
535	0.01324722
536	0.013276681
537	0.013370672
538	0.013376888
539	0.013512031
540	0.013516749
541	0.013640154
542	0.013556438
543	0.013615157
544	0.013572789
545	0.013634962
546	0.013605902
547	0.013626687
548	0.013680538
549	0.013661199
550	0.013659731
551	0.013592855
552	0.013626993
553	0.013677321
554	0.01358128
555	0.01356881
556	0.013536233
557	0.013494375
558	0.013547817
559	0.013444224
560	0.013447704
561	0.013369858
562	0.01336958
563	0.013303875
564	0.013221412
565	0.013173426
566	0.013109363
567	0.01301741
568	0.013035172
569	0.012862295
570	0.012897064
571	0.012807242
572	0.012693408
573	0.012710683
574	0.012594074
575	0.012601145
576	0.01257638
577	0.012497335
578	0.012424198

579	0.012378514
580	0.012365376
581	0.012323194
582	0.012247646
583	0.012271372
584	0.012256072
585	0.012230187
586	0.012249063
587	0.012260831
588	0.012295056
589	0.012374283
590	0.012417302
591	0.012473535
592	0.012482986
593	0.012706513
594	0.012725193
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618	0.030592996
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621	0.036493425
622	0.038804499
623	0.041137623
624	0.043159239

625	0.044925988
626	0.045850546
627	0.045447949
628	0.043849484
629	0.040898086
630	0.036840687
631	0.032407376
632	0.027983619
633	0.024038943
634	0.020789199
635	0.018009735
636	0.015792444
637	0.0139132
638	0.012422122
639	0.011101874
640	0.010070925
641	0.009204062
642	0.008419024
643	0.007744876
644	0.007178826
645	0.006682649
646	0.006224198
647	0.005884037
648	0.005578365
649	0.005307801
650	0.00509563
651	0.004880539
652	0.004670813
653	0.004495223
654	0.004347285
655	0.004198359
656	0.004072106
657	0.003955009
658	0.003827795
659	0.003730881
660	0.003624384
661	0.003516411
662	0.003434003
663	0.003352203
664	0.003266025
665	0.003206006
666	0.003111554
667	0.003028367
668	0.002969574
669	0.002884868
670	0.002821519

671	0.002756443
672	0.002695874
673	0.002605598
674	0.00255266
675	0.002510421
676	0.00245063
677	0.002392248
678	0.002338856
679	0.002272471
680	0.002241954
681	0.002192697
682	0.002131699
683	0.002102486
684	0.002048896
685	0.001996814
686	0.00196245
687	0.001897063
688	0.001873093
689	0.001828826
690	0.001790634
691	0.001723401
692	0.001703355
693	0.001652185
694	0.001609924
695	0.001589391
696	0.001542471
697	0.001510315
698	0.001474199
699	0.001431406
700	0.001402255
701	0.00138691
702	0.001338157
703	0.00131244
704	0.001290414
705	0.001242594
706	0.001214761
707	0.001183813
708	0.001156678
709	0.001112195
710	0.0011011
711	0.001070502
712	0.001049362
713	0.001021675
714	0.000987697
715	0.000968534
716	0.000945534

717	0.000927963
718	0.000900238
719	0.000871526
720	0.000869035
721	0.000849225
722	0.000833777
723	0.00079091
724	0.000785548
725	0.000765665
726	0.000742821
727	0.000726286
728	0.000707409
729	0.000691771
730	0.000683641
731	0.00065134
732	0.000638999
733	0.000620733
734	0.000609873
735	0.0005934
736	0.000582712
737	0.000564872
738	0.000556779
739	0.000537423
740	0.000526265
741	0.000510185
742	0.000502136
743	0.000481942
744	0.000476417
745	0.000462156
746	0.000451365
747	0.000441802
748	0.000429008
749	0.000416142
750	0.000410723
751	0.000401439
752	0.00038933
753	0.000376122
754	0.000368115
755	0.000360738
756	0.000353838
757	0.000348073
758	0.000344096
759	0.00032892
760	0.000320301
761	0.000318858
762	0.000310458

763	0.000294032
764	0.000291347
765	0.000280113
766	0.000275659
767	0.000270749
768	0.000268025
769	0.000254311
770	0.000252947
771	0.000245049
772	0.000236554
773	0.000230187
774	0.000235151
775	0.000223302
776	0.000218817
777	0.000212943
778	0.000212996
779	0.000203211
780	0.000195592
781	0.000186813
782	0.00019205
783	0.000185069
784	0.000188467
785	0.000174551
786	0.000171703
787	0.000164748
788	0.000161137
789	0.000156646
790	0.000162009
791	0.000151264
792	0.00014581
793	0.00014108
794	0.000139792
795	0.000135761
796	0.000141847
797	0.00012852
798	0.000136184
799	0.000118865
800	0.000126014
801	0.000116095
802	0.000118249
803	0.000112356
804	0.000115291
805	0.000108898
806	0.000112059
807	0.000104925
808	0.000108603

809	9.69E-05
810	0.000102936
811	8.86E-05
812	9.71E-05
813	8.75E-05
814	9.42E-05
815	8.16E-05
816	8.84E-05
817	8.08E-05
818	8.11E-05
819	7.08E-05
820	8.14E-05
821	7.41E-05
822	7.70E-05
823	6.81E-05
824	8.07E-05
825	6.86E-05
826	7.54E-05
827	6.74E-05
828	6.49E-05
829	5.85E-05
830	6.74E-05
831	5.86E-05
832	6.71E-05
833	6.00E-05
834	5.93E-05
835	4.72E-05
836	5.90E-05
837	5.10E-05
838	6.43E-05
839	5.51E-05
840	5.16E-05
841	4.13E-05
842	5.05E-05
843	4.18E-05
844	5.32E-05
845	4.01E-05
846	4.26E-05
847	4.23E-05
848	5.48E-05
849	4.48E-05
850	4.18E-05
851	3.82E-05
852	3.94E-05
853	3.52E-05
854	3.31E-05

855	3.66E-05
856	3.57E-05
857	3.58E-05
858	3.10E-05
859	2.81E-05
860	2.61E-05
861	3.22E-05
862	3.74E-05
863	3.32E-05
864	3.40E-05
865	2.60E-05
866	2.02E-05
867	2.97E-05
868	2.63E-05
869	3.60E-05
870	2.19E-05
871	2.47E-05
872	2.23E-05
873	2.50E-05
874	1.99E-05
875	3.04E-05
876	2.35E-05
877	2.77E-05
878	1.86E-05
879	3.12E-05
880	1.70E-05
881	3.41E-05
882	1.57E-05
883	2.15E-05
884	7.95E-06
885	2.31E-05
886	1.10E-05
887	3.74E-05
888	7.31E-06
889	2.99E-05
890	-2.10E-06
891	2.79E-05
892	1.16E-05
893	2.48E-05
894	1.01E-05
895	2.82E-05
896	1.10E-05
897	2.25E-05
898	1.08E-05
899	1.86E-05
900	1.46E-05

901	3.02E-05
902	1.37E-05
903	2.50E-05
904	5.27E-06
905	1.94E-05
906	1.60E-05
907	2.37E-05
908	8.60E-06
909	2.40E-05
910	1.88E-05
911	2.04E-05
912	1.73E-05
913	2.74E-05
914	1.50E-05
915	1.23E-05
916	1.15E-05
917	1.63E-05
918	1.43E-05
919	1.19E-05
920	1.23E-05
921	2.53E-05
922	2.49E-06
923	8.73E-06
924	2.41E-05
925	1.73E-05
926	2.92E-05
927	1.40E-06
928	1.90E-05
929	-5.46E-06
930	1.82E-05
931	1.39E-05
932	3.44E-05
933	-4.66E-06
934	1.52E-05
935	-2.02E-05
936	3.99E-05
937	-4.20E-05
938	8.61E-05
939	2.86E-05
940	7.82E-05
941	1.19E-05
942	7.71E-05
943	2.07E-05
944	5.82E-05
945	2.92E-06
946	4.88E-05

947	1.31E-05
948	5.16E-05
949	-1.38E-05
950	5.44E-05
951	2.81E-05
952	-1.04E-05
953	2.60E-05
954	2.54E-05
955	1.18E-05
956	9.68E-06
957	2.69E-05
958	1.21E-05
959	3.07E-06
960	9.30E-06
961	1.56E-05
962	2.82E-05
963	1.66E-05
964	8.77E-06
965	3.66E-05
966	-2.96E-06
967	1.24E-06
968	-2.03E-05
969	1.83E-05
970	8.96E-06
971	5.15E-05
972	-1.34E-05
973	3.46E-05
974	-2.05E-05
975	2.49E-05
976	4.04E-06
977	4.27E-05
978	-1.68E-05
979	4.34E-05
980	-3.58E-06
981	3.41E-05
982	-1.50E-05
983	3.38E-05
984	-1.02E-05
985	1.44E-06
986	1.48E-05
987	2.12E-06
988	5.30E-06
989	9.58E-07
990	2.97E-05
991	3.06E-05
992	2.20E-05

993	3.47E-05
994	4.99E-06
995	-3.46E-05
996	5.95E-06
997	-1.77E-05
998	1.02E-05
999	-3.32E-06
1000	3.16E-06
1001	1.42E-05
1002	3.15E-05
1003	4.04E-06
1004	2.47E-05
1005	1.19E-05
1006	6.17E-05
1007	3.40E-05
1008	5.30E-05
1009	-4.62E-05
1010	2.46E-05
1011	2.27E-05
1012	1.19E-05
1013	3.51E-05
1014	1.69E-05
1015	5.38E-06
1016	1.17E-05
1017	2.12E-05
1018	5.01E-06
1019	4.96E-05
1020	1.27E-05
1021	3.04E-06
1022	-1.66E-05
1023	2.00E-05
1024	3.04E-05
1025	4.17E-05
1026	1.22E-05
1027	9.40E-05
1028	0
1029	0.000116033
1030	-2.31E-05
1031	6.66E-05
1032	5.36E-06
1033	5.77E-05
1034	-4.09E-05
1035	7.83E-05
1036	-6.97E-05
1037	-3.93E-05
1038	9.23E-05

1039	-3.04E-06
1040	6.68E-06
1041	4.95E-05
1042	6.52E-05
1043	4.45E-05
1044	0
1045	-5.66E-05
1046	0.000152525
1047	8.25E-05
1048	0.000207743
1049	-4.72E-05
1050	0.000195382

7 – EUT Photos

8 – Luminous Intensity Distribution Test Plots

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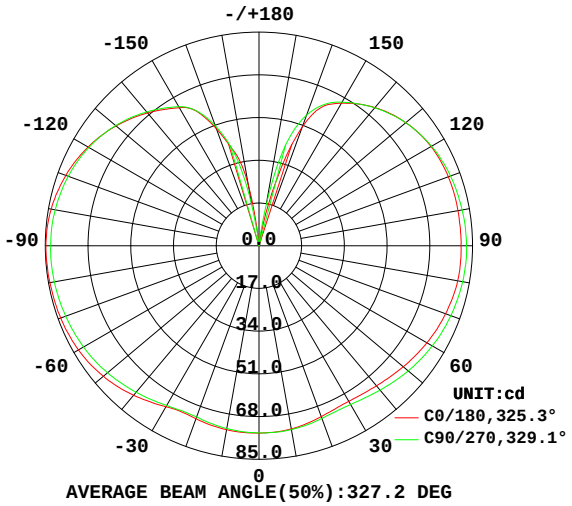
LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:120.0V I:0.1036A P:9.769W PF:0.7859 Lamp Flux:958.14x1 lm		
NAME: LED Integral lamp	TYPE:Indoor	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: Philips	SUR.:	PROTECTION ANGLE:

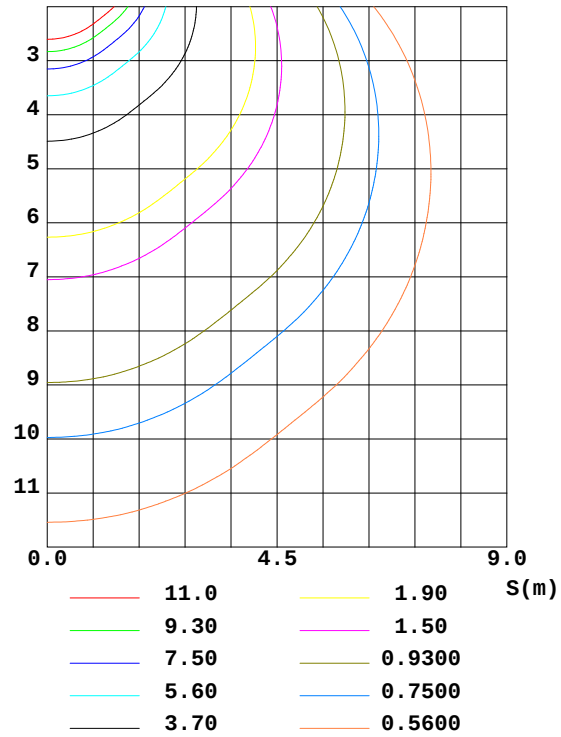
DATA OF LAMP		PHOTOMETRIC DATA		Eff: 98.08 lm/W	
MODEL	9290002097	Imax(cd)	84.79	S/MH(C0/180)	1.58
NOMINAL POWER(W)	10	LOR(%)	100.0	S/MH(C90/270)	1.56
RATED VOLTAGE(V)	120	TOTAL FLUX(lm)	958.14	η UP,DN(C0-180)	24.1,25.9
NOMINAL FLUX(lm)	958.14	CIE CLASS	DIFFUSE	η UP,DN(C180-360)	24.2,25.8
LAMPS INSIDE	1	η up(%)	48.3	CIBSE SHR NOM	1.75
TEST VOLTAGE(V)	120.0	η down(%)	51.7	CIBSE SHR MAX	1.75

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):327.2 DEG

C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature:25.2DEG
Operators:Katrina
Test Date:2011-11-08

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.265
Humidity:43.1%
Test Distance:2.417m [K=1.0000]
Remarks:

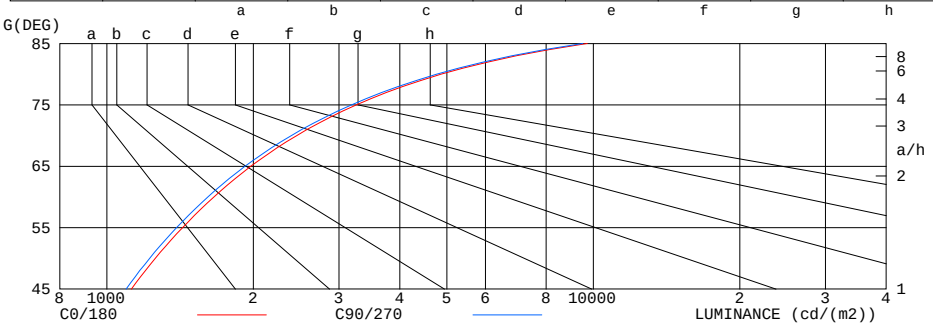
ZONAL FLUX DIAGRAM
AND LUMINANCE LIMITATION CURVES

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	74.34	74.08	73.87	73.80	74.02	74.16	74.33	74.37	0- 10	7.095	7.095	0.74,0.74
20	73.27	72.75	72.56	72.39	72.41	73.00	73.14	73.22	10- 20	20.82	27.92	2.91,2.91
30	73.99	71.78	73.44	73.63	71.52	74.30	72.98	72.43	20- 30	33.62	61.54	6.42,6.42
40	77.67	72.99	76.13	76.54	72.77	77.73	75.01	73.85	30- 40	46.57	108.1	11.3,11.3
50	80.83	75.28	78.69	79.20	74.93	80.67	77.49	76.24	40- 50	59.38	167.5	17.5,17.5
60	82.98	77.64	80.63	81.08	77.19	82.59	79.68	78.58	50- 60	70.92	238.4	24.9,24.9
70	83.98	79.56	81.88	82.17	79.07	83.46	81.27	80.50	60- 70	80.21	318.6	33.3,33.3
80	84.45	80.88	82.69	82.97	80.29	84.04	82.28	81.85	70- 80	86.73	405.3	42.3,42.3
90	84.75	81.22	82.89	83.12	80.40	84.09	82.57	82.30	80- 90	90.14	495.5	51.7,51.7
100	83.94	81.11	82.34	82.22	80.37	83.21	82.10	82.00	90-100	89.99	585.5	61.1,61.1
110	81.83	80.82	80.77	80.25	80.19	80.98	81.12	81.25	100-110	86.31	671.8	70.1,70.1
120	78.55	79.70	78.21	77.20	79.04	77.78	79.29	79.72	110-120	79.31	751.1	78.4,78.4
130	74.23	77.03	74.44	73.00	76.26	73.34	76.18	76.91	120-130	69.13	820.2	85.6,85.6
140	68.99	72.68	69.53	67.82	71.79	68.06	71.68	72.41	130-140	56.48	876.7	91.5,91.5
150	63.43	66.65	63.95	62.16	65.51	61.18	66.00	66.63	140-150	42.49	919.2	95.9,95.9
160	49.47	57.17	50.83	44.77	50.26	43.02	55.25	56.52	150-160	27.48	946.7	98.8,98.8
170	24.38	16.50	15.18	14.56	5.523	17.00	16.27	19.67	160-170	10.96	957.6	99.9,99.9
180	0	0	0	0	0	0	0	0	170-180	0.4911	958.1	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

LUMINANCE LIMITATION CURVES

GLARE	CLASS	ILLUMINANCE (lx)							
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



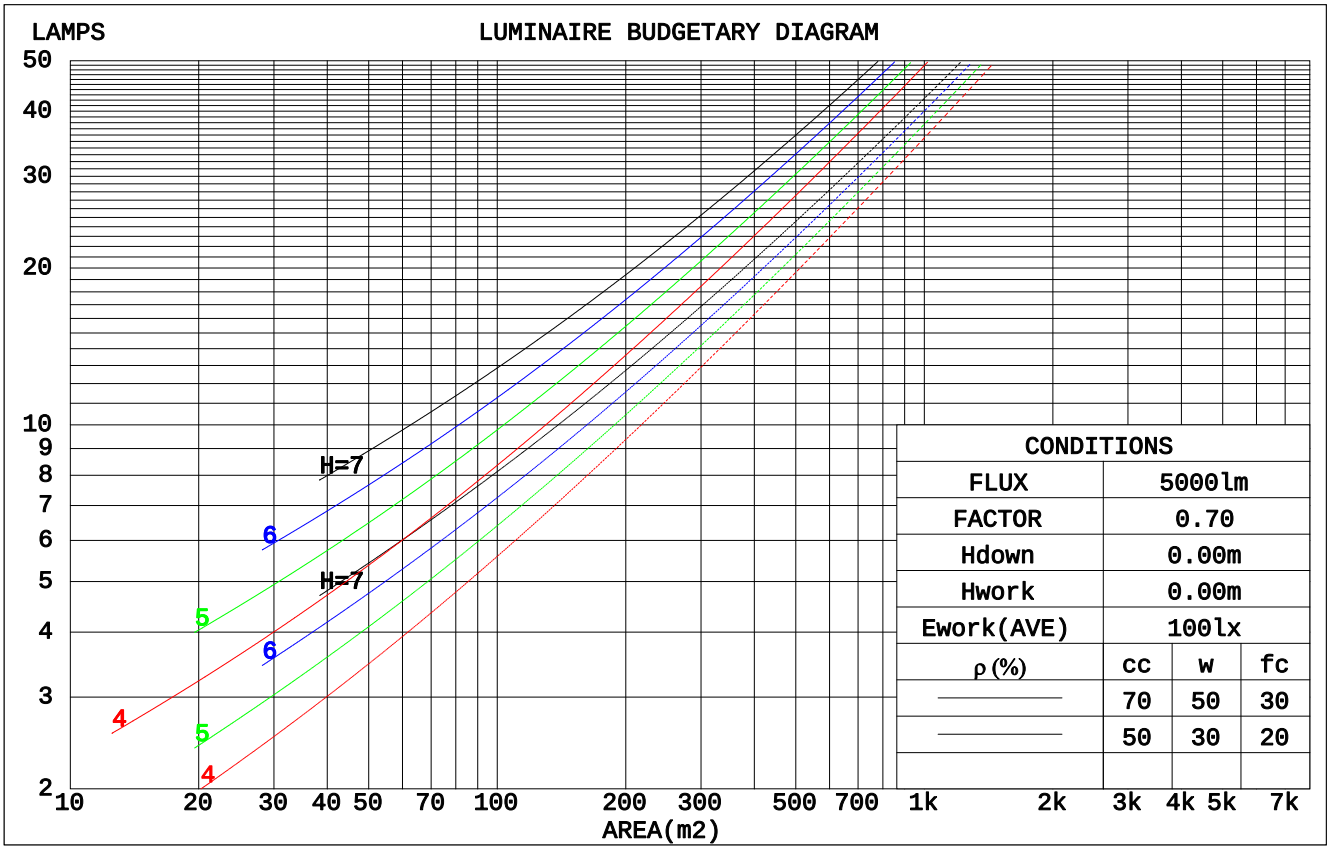
LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	9715	9513
80	4863	4762
75	3256	3182
70	2455	2394
65	1976	1923
60	1660	1613
55	1431	1390
50	1257	1224
45	1123	1095

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature:25.2DEG
Operators:Katrina
Test Date:2011-11-08

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.265
Humidity:43.1%
Test Distance:2.417m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio			Coefficients of Utilization(CU)												
0.0	1.08	1.08	1.08	.99	.99	.99	.84	.84	.84	.70	.70	.70	.58	.58	.58	.52
1.0	.87	.82	.76	.80	.75	.71	.67	.63	.60	.55	.52	.49	.44	.42	.40	.34
2.0	.74	.66	.59	.68	.61	.55	.56	.51	.46	.46	.42	.38	.36	.33	.30	.25
3.0	.63	.54	.47	.58	.50	.44	.48	.42	.37	.39	.34	.30	.31	.27	.24	.19
4.0	.55	.46	.39	.51	.42	.36	.42	.36	.30	.34	.29	.25	.27	.23	.19	.16
5.0	.49	.39	.33	.45	.36	.30	.37	.31	.25	.30	.25	.21	.24	.20	.16	.13
6.0	.43	.34	.28	.40	.32	.26	.33	.27	.22	.27	.22	.18	.21	.17	.14	.11
7.0	.39	.30	.24	.36	.28	.22	.30	.23	.19	.24	.19	.15	.19	.15	.12	.09
8.0	.35	.27	.21	.32	.25	.19	.27	.21	.16	.22	.17	.13	.17	.13	.11	.08
9.0	.32	.24	.18	.29	.22	.17	.25	.19	.14	.20	.15	.12	.16	.12	.09	.07
10.0	.29	.21	.16	.27	.20	.15	.23	.17	.13	.19	.14	.11	.15	.11	.08	.06



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature:25.2DEG
Operators:Katrina
Test Date:2011-11-08

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.265
Humidity:43.1%
Test Distance:2.417m [K=1.0000]
Remarks:

WEC AND CCEC

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coeffcients(WEC)									
0.0																
1.0	.407	.231	.073	.385	.219	.070	.344	.197	.063	.306	.176	.057	.271	.157	.051	
2.0	.340	.186	.057	.320	.176	.054	.282	.157	.049	.248	.139	.044	.216	.122	.038	
3.0	.297	.158	.047	.278	.149	.045	.244	.132	.040	.212	.116	.036	.183	.101	.031	
4.0	.264	.137	.040	.248	.130	.038	.216	.115	.034	.187	.100	.030	.160	.087	.026	
5.0	.239	.122	.035	.223	.115	.033	.194	.101	.030	.167	.088	.026	.142	.076	.023	
6.0	.218	.109	.031	.203	.103	.030	.177	.091	.026	.152	.079	.023	.129	.068	.020	
7.0	.200	.099	.028	.187	.093	.027	.162	.082	.024	.139	.071	.021	.117	.061	.018	
8.0	.185	.090	.025	.173	.085	.024	.150	.075	.021	.128	.065	.019	.108	.055	.016	
9.0	.172	.083	.023	.161	.078	.022	.139	.069	.020	.119	.060	.017	.100	.051	.015	
10.0	.161	.077	.021	.150	.073	.020	.130	.064	.018	.111	.055	.016	.094	.047	.013	

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.558	.558	.558	.477	.477	.477	.326	.326	.326	.187	.187	.187	.060	.060	.060	
1.0	.558	.526	.498	.477	.452	.428	.327	.311	.296	.188	.180	.172	.060	.058	.056	
2.0	.552	.505	.466	.473	.435	.403	.324	.301	.281	.187	.175	.165	.060	.057	.054	
3.0	.545	.490	.446	.467	.423	.387	.321	.294	.271	.185	.171	.160	.060	.056	.052	
4.0	.538	.478	.433	.461	.413	.376	.317	.288	.265	.184	.169	.157	.059	.055	.052	
5.0	.530	.469	.424	.455	.406	.369	.314	.284	.261	.182	.167	.155	.059	.054	.051	
6.0	.523	.462	.418	.450	.400	.364	.310	.280	.258	.180	.165	.153	.058	.054	.051	
7.0	.516	.456	.414	.444	.395	.360	.307	.277	.255	.178	.163	.152	.058	.053	.050	
8.0	.510	.451	.410	.439	.391	.358	.304	.274	.254	.177	.162	.151	.057	.053	.050	
9.0	.504	.446	.407	.434	.387	.355	.301	.272	.252	.175	.161	.150	.057	.053	.050	
10.0	.498	.442	.405	.429	.384	.354	.298	.270	.251	.174	.160	.150	.056	.052	.050	

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature:25.2DEG
Operators:Katrina
Test Date:2011-11-08

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.265
Humidity:43.1%
Test Distance:2.417m [K=1.0000]
Remarks:

Uncorrected UGR Table

ceiling/cavity		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
x = 2H	y = 2H	11.0	12.1	11.8	12.9	14.0	10.8	11.9	11.6	12.7	13.9
	3H	14.3	15.3	15.1	16.2	17.3	14.1	15.1	14.9	16.0	17.1
	4H	16.1	17.1	17.0	18.0	19.1	15.9	16.9	16.8	17.8	19.0
	6H	18.2	19.1	19.1	20.0	21.2	18.0	18.9	18.9	19.8	21.0
	8H	19.3	20.2	20.3	21.1	22.3	19.2	20.0	20.1	21.0	22.2
	12H	20.7	21.5	21.6	22.4	23.6	20.5	21.3	21.4	22.3	23.5
4H	2H	11.9	12.8	12.8	13.7	14.9	11.8	12.7	12.6	13.6	14.8
	3H	15.3	16.1	16.2	17.1	18.3	15.2	16.0	16.1	16.9	18.1
	4H	17.3	18.1	18.3	19.0	20.3	17.1	17.9	18.1	18.8	20.1
	6H	19.5	20.2	20.5	21.2	22.4	19.4	20.0	20.3	21.0	22.3
	8H	20.8	21.4	21.8	22.4	23.7	20.6	21.3	21.6	22.2	23.5
	12H	22.2	22.8	23.2	23.8	25.1	22.1	22.6	23.0	23.6	24.9
8H	4H	18.0	18.6	19.0	19.6	20.9	17.9	18.5	18.8	19.5	20.7
	6H	20.5	21.0	21.5	22.0	23.3	20.3	20.9	21.3	21.9	23.2
	8H	21.9	22.4	22.9	23.4	24.7	21.8	22.2	22.8	23.3	24.6
	12H	23.6	24.0	24.6	25.0	26.3	23.4	23.8	24.4	24.8	26.2
12H	4H	18.2	18.8	19.2	19.8	21.0	18.1	18.7	19.0	19.6	20.9
	6H	20.8	21.3	21.8	22.3	23.6	20.7	21.1	21.7	22.2	23.5
	8H	22.3	22.8	23.3	23.8	25.1	22.2	22.6	23.2	23.6	25.0
Variations with the observer position at spacings:											
S = 1.0H		+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H		+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H		+ 0.3 / - 0.4					+ 0.3 / - 0.4				

CIE Pub.117 Corrected 958.1 lm Total Lamp Luminous Flux.(8log(F/F0) = -0.1)

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature:25.2DEG
Operators:Katrina
Test Date:2011-11-08

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.265
Humidity:43.1%
Test Distance:2.417m [K=1.0000]
Remarks:

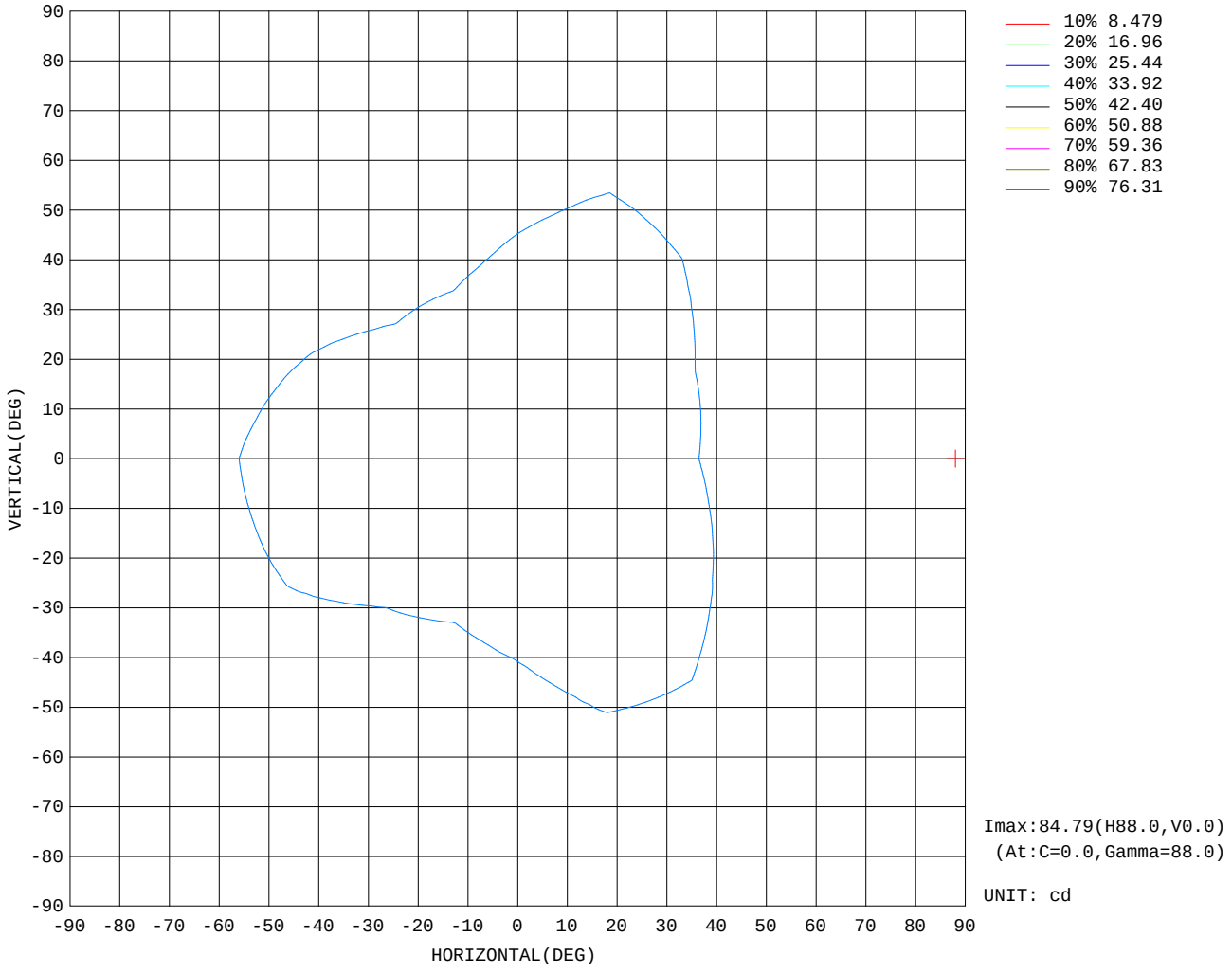
UTILIZATION FACTORS TABLE

REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	37	24	17	35	23	17	31	21	15	8
0.80	45	32	23	43	30	22	38	27	20	11
1.00	53	38	30	49	36	28	43	34	25	14
1.25	59	45	36	55	43	34	48	38	31	17
1.50	65	51	41	60	48	39	52	42	35	20
2.00	72	60	50	67	56	47	57	48	41	24
2.50	77	65	56	72	61	53	61	53	46	26
3.00	81	70	62	75	66	58	64	56	50	29
4.00	87	77	69	80	72	65	68	61	56	32
5.00	90	82	75	83	76	70	70	65	60	35
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004	Suspended								SHRNOM = 1.25	

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature:25.2DEG
Operators:Katrina
Test Date:2011-11-08

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.265
Humidity:43.1%
Test Distance:2.417m [K=1.0000]
Remarks:

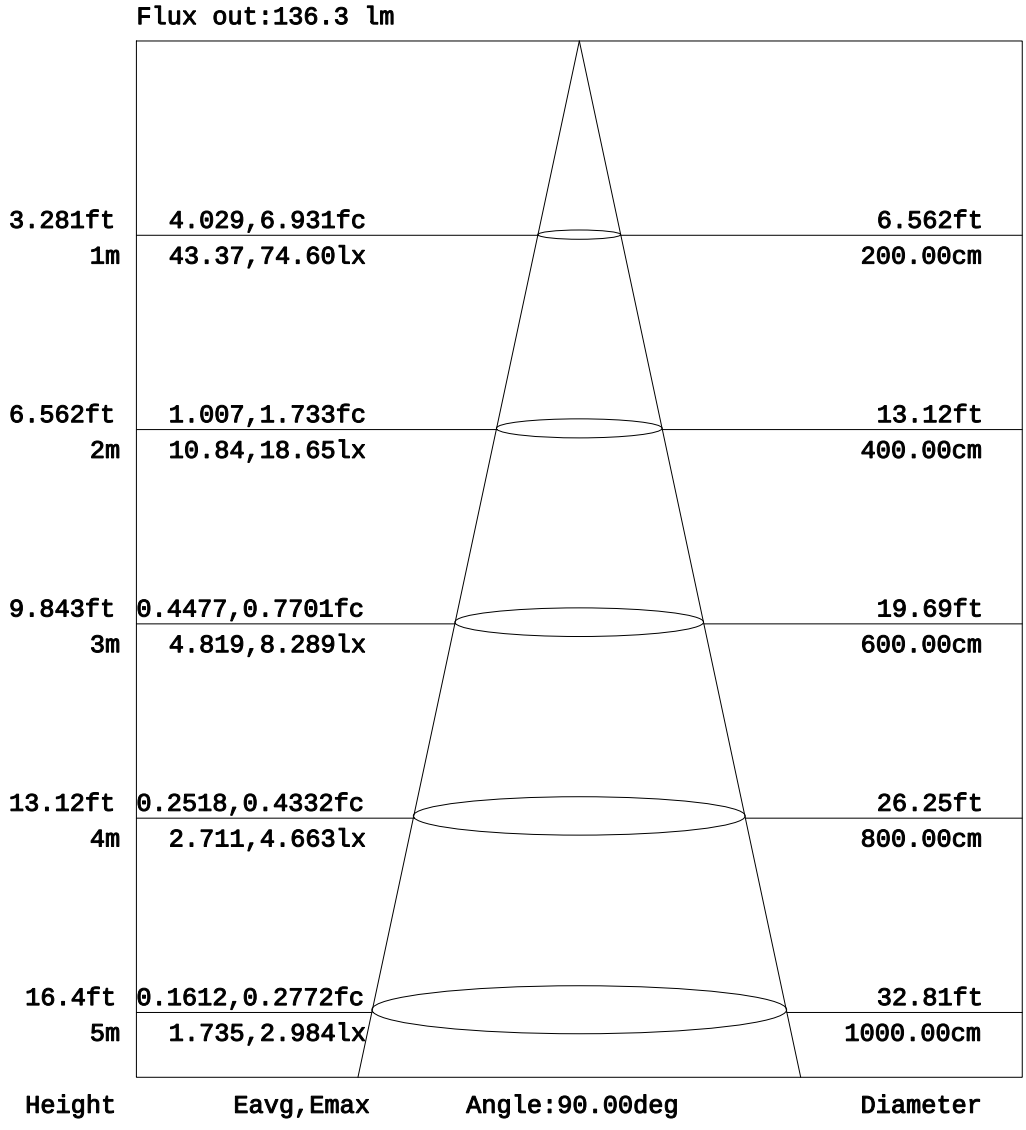
ISOCANDELA DIAGRAM



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature:25.2DEG
Operators:Katrina
Test Date:2011-11-08

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.265
Humidity:43.1%
Test Distance:2.417m [K=1.0000]
Remarks:

AAI Figure

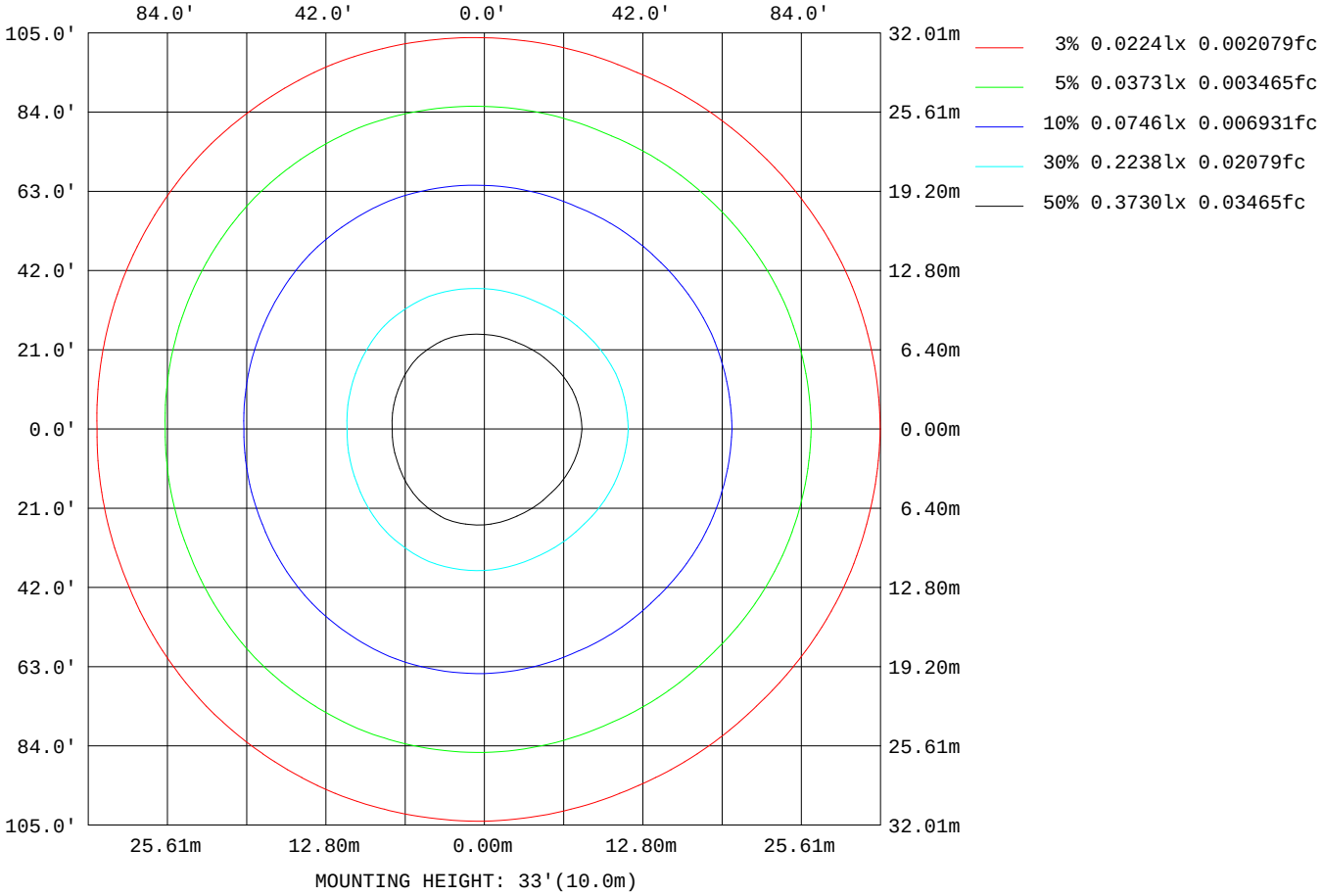


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature:25.2DEG
Operators:Katrina
Test Date:2011-11-08

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.265
Humidity:43.1%
Test Distance:2.417m [K=1.0000]
Remarks:

ISOLUX DIAGRAM



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature:25.2DEG
Operators:Katrina
Test Date:2011-11-08

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.265
Humidity:43.1%
Test Distance:2.417m [K=1.0000]
Remarks:

Average Luminance Table(CIBSE)

Parameter description for average Luminance	Symbol	Value	Unit
Luminance in Azimuth Plane	Bc	refer Table 2	cd/sq.m.
Intensity at angle Gamma in given azimuth plane	I	from data	cd/klm
Number of lamps	N	1	
Output of each lamp(initial lumens as specified)	F	958.14	lm
Multiplying factor	K	1	
Luminous area in horizontal plane used in calculations	A	0.1	sq.m.
Angle to the downward vertical from light centre	Gamma	from data	deg

Table 1. Calculation parameters for determination of CIBSE LG3:1996 Average Luminance

G	C plane(deg)																		
deg	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
55	1431	1419	1403	1378	1352	1335	1330	1336	1356	1381	1404	1422	1427	1419	1401	1376	1351	1334	1326
60	1660	1647	1629	1602	1574	1555	1548	1555	1577	1603	1627	1646	1651	1644	1625	1598	1572	1553	1544
65	1976	1964	1945	1917	1887	1865	1857	1863	1886	1915	1940	1959	1965	1957	1937	1908	1880	1861	1851
70	2455	2443	2423	2390	2355	2330	2321	2328	2354	2385	2412	2431	2437	2429	2408	2377	2346	2323	2312
75	3256	3242	3219	3180	3139	3108	3096	3103	3134	3171	3201	3223	3230	3222	3198	3163	3126	3098	3083
80	4863	4849	4820	4769	4711	4668	4648	4656	4699	4750	4790	4819	4829	4820	4788	4737	4686	4645	4624
85	9715	9687	9632	9535	9425	9339	9296	9309	9393	9494	9569	9623	9642	9625	9561	9462	9359	9275	9230

Table 2. Average Luminance(cd/sq.m.) for defined C plane,Gamma angle

CIBSE Category	Gamma (deg)	Average Luminance		Patch Luminance	
		maximum calculated	specified maximum	maximum measured	specified maximum
Category 1	55 to 90	9715	200	---	500
Category 2	65 to 90	9715	200	---	500
Category 3	75 to 90	9715	200	---	500

Table 3. Tabulation of Average and Patch Luminance(cd/sq.m.) for defined CIBSE categories

No match

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature:25.2DEG
Operators:Katrina
Test Date:2011-11-08

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.265
Humidity:43.1%
Test Distance:2.417m [K=1.0000]
Remarks:

Average Luminance Table(CIBSE)

Parameter description for average Luminance	Symbol	Value	Unit
Luminance in Azimuth Plane	Bc	refer Table 2	cd/sq.m.
Intensity at angle Gamma in given azimuth plane	I	from data	cd/klm
Number of lamps	N	1	
Output of each lamp(initial lumens as specified)	F	958.14	lm
Multiplying factor	K	1	
Luminous area in horizontal plane used in calculations	A	0.1	sq.m.
Angle to the downward vertical from light centre	Gamma	from data	deg

Table 1. Calculation parameters for determination of CIBSE LG3:2001 Average Luminance

G	C plane(deg)																		
deg	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
55	1431	1419	1403	1378	1352	1335	1330	1336	1356	1381	1404	1422	1427	1419	1401	1376	1351	1334	1326
60	1660	1647	1629	1602	1574	1555	1548	1555	1577	1603	1627	1646	1651	1644	1625	1598	1572	1553	1544
65	1976	1964	1945	1917	1887	1865	1857	1863	1886	1915	1940	1959	1965	1957	1937	1908	1880	1861	1851
70	2455	2443	2423	2390	2355	2330	2321	2328	2354	2385	2412	2431	2437	2429	2408	2377	2346	2323	2312
75	3256	3242	3219	3180	3139	3108	3096	3103	3134	3171	3201	3223	3230	3222	3198	3163	3126	3098	3083
80	4863	4849	4820	4769	4711	4668	4648	4656	4699	4750	4790	4819	4829	4820	4788	4737	4686	4645	4624
85	9715	9687	9632	9535	9425	9339	9296	9309	9393	9494	9569	9623	9642	9625	9561	9462	9359	9275	9230

Table 2. Average Luminance(cd/sq.m.) for defined C plane,Gamma angle

range (deg)	Maximum measured	Average Luminance(cd/sq.m) Maximum limit for screen type & software category used			
		Type I,II screen Some neg.s'ware	Type I,II screen Only pos.s'ware	Type III screen Some neg.s'ware	Type III screen Only pos.s'ware
55 to 90	9715	1000	1500	200	500
65 to 90	9715	1000	1500	200	500

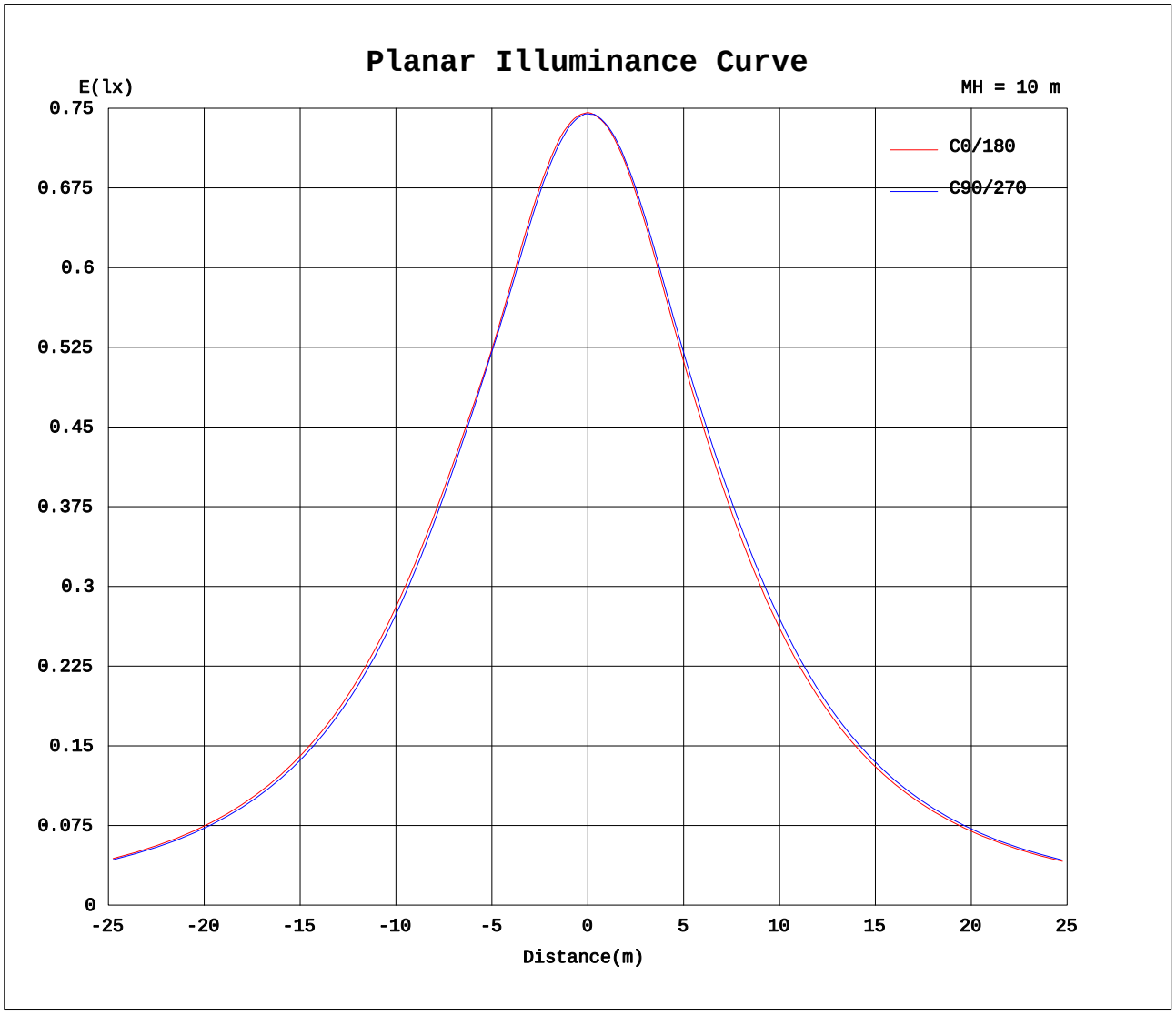
Table 3. Tabulation of average luminance(cd/sq.m.) and luminance limits

No match

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature:25.2DEG
Operators:Katrina
Test Date:2011-11-08

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.265
Humidity:43.1%
Test Distance:2.417m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature:25.2DEG
Operators:Katrina
Test Date:2011-11-08

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.265
Humidity:43.1%
Test Distance:2.417m [K=1.0000]
Remarks:

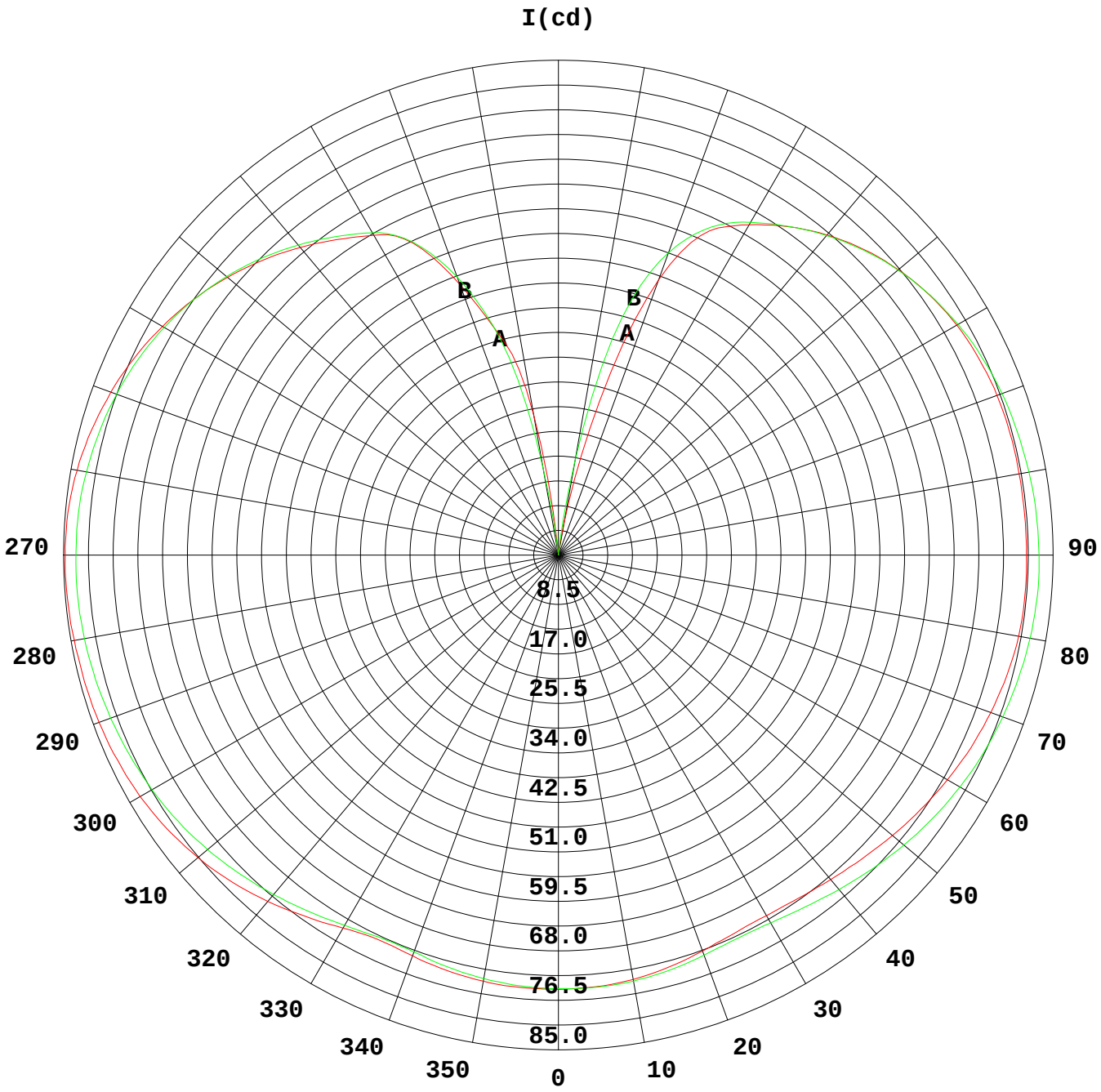
LUMINOUS DISTRIBUTION INTENSITY DATA

Table--1 UNIT: cd

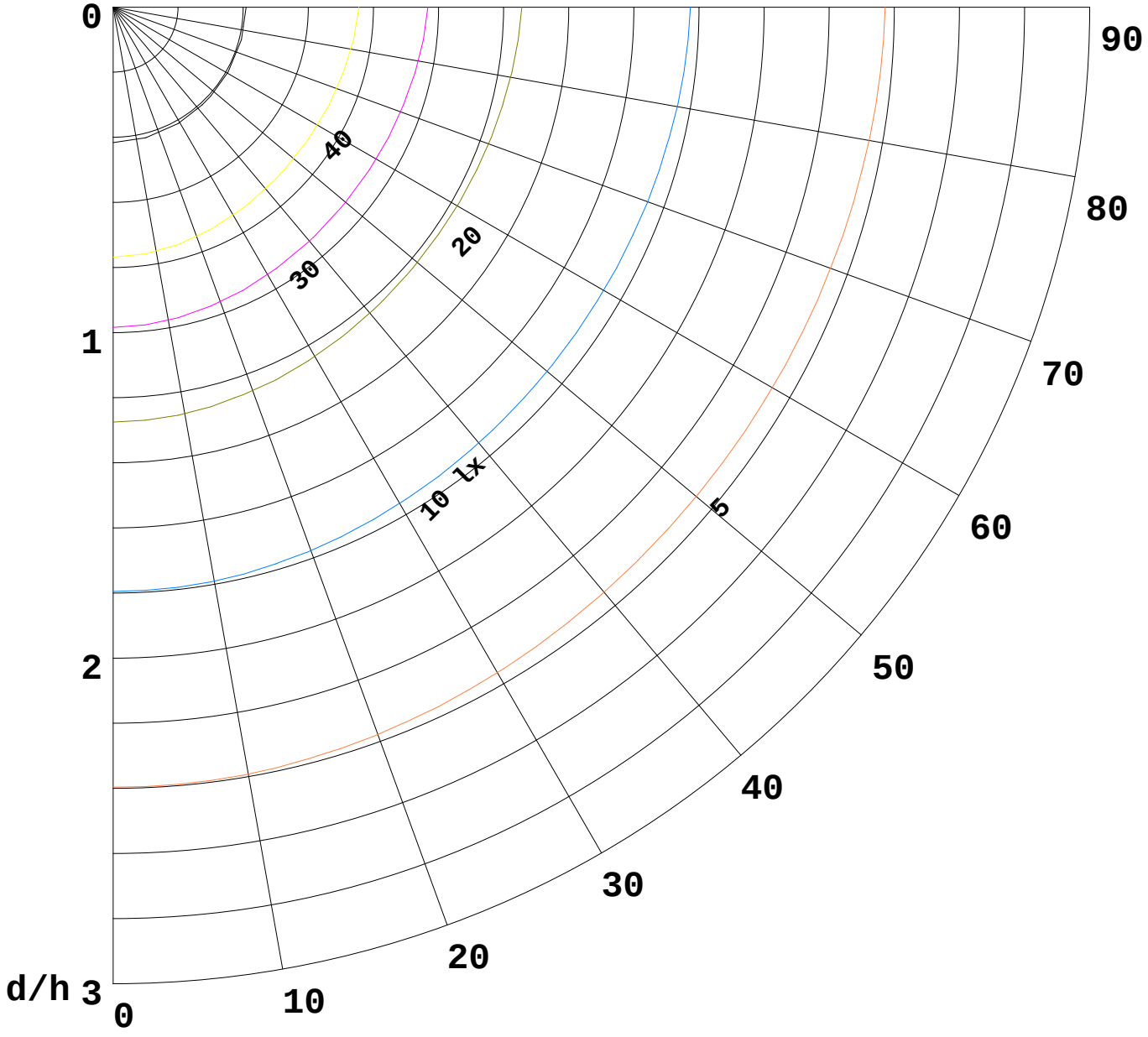
C(DEG) / γ (DEG)	0	23	45	68	90	113	135	158	180	203	225	248	270	293	315	338			
0	74.6	74.6	74.5	74.5	74.5	74.5	74.4	74.4	74.6	74.6	74.5	74.5	74.5	74.5	74.4	74.4			
5	74.6	74.5	74.4	74.4	74.3	74.3	74.2	74.3	74.4	74.4	74.5	74.5	74.5	74.6	74.5	74.5			
10	74.3	74.2	74.1	74.0	73.9	73.9	73.8	73.8	74.0	74.1	74.2	74.3	74.3	74.4	74.4	74.3			
15	73.9	73.7	73.5	73.4	73.3	73.2	73.1	73.0	73.3	73.5	73.6	73.8	73.8	73.8	73.9	73.8			
20	73.3	73.0	72.8	72.6	72.6	72.6	72.4	72.2	72.4	72.7	73.0	73.2	73.1	73.1	73.2	73.2			
25	73.0	72.6	72.0	72.0	72.5	72.9	72.5	71.7	71.7	72.3	73.0	73.1	72.7	72.4	72.5	72.8			
30	74.0	73.0	71.8	71.9	73.4	74.5	73.6	71.9	71.5	72.8	74.3	74.3	73.0	72.0	72.4	73.5			
35	75.8	74.0	72.2	72.5	74.8	76.3	75.1	72.6	72.0	73.7	76.0	76.0	73.8	72.2	72.9	75.0			
40	77.7	75.4	73.0	73.4	76.1	78.0	76.5	73.6	72.8	74.9	77.7	77.8	75.0	72.9	73.8	76.6			
45	79.4	76.8	74.1	74.4	77.4	79.5	77.9	74.8	73.8	76.2	79.3	79.4	76.3	73.8	75.0	78.2			
50	80.8	78.2	75.3	75.5	78.7	80.7	79.2	75.9	74.9	77.5	80.7	80.7	77.5	75.0	76.2	79.7			
55	82.1	79.5	76.5	76.7	79.7	81.7	80.3	77.1	76.1	78.5	81.8	81.8	78.6	76.2	77.4	80.9			
60	83.0	80.6	77.6	77.8	80.6	82.3	81.1	78.1	77.2	79.7	82.6	82.6	79.7	77.3	78.6	81.8			
65	83.5	81.4	78.7	78.8	81.3	82.6	81.7	79.0	78.2	80.5	83.1	83.3	80.6	78.3	79.6	82.6			
70	84.0	82.1	79.6	79.7	81.9	82.9	82.2	79.7	79.1	81.2	83.5	83.6	81.3	79.2	80.5	83.2			
75	84.3	82.7	80.3	80.3	82.3	83.2	82.6	80.4	79.8	81.9	83.8	83.9	81.8	80.0	81.2	83.5			
80	84.4	83.2	80.9	80.9	82.7	83.4	83.0	80.8	80.3	82.4	84.0	84.2	82.3	80.6	81.8	83.9			
85	84.7	83.5	81.2	81.2	82.9	83.6	83.2	81.0	80.4	82.6	84.2	84.3	82.6	80.9	82.3	84.1			
90	84.8	83.6	81.2	81.2	82.9	83.6	83.1	80.9	80.4	82.7	84.1	84.3	82.6	80.9	82.3	84.2			
95	84.6	83.4	81.2	81.1	82.8	83.3	82.9	80.8	80.4	82.5	83.9	84.1	82.4	80.7	82.2	84.1			
100	83.9	83.1	81.1	81.0	82.3	82.5	82.2	80.7	80.4	82.1	83.2	83.5	82.1	80.7	82.0	83.5			
105	83.0	82.5	81.0	81.0	81.7	81.5	81.3	80.4	80.4	81.6	82.2	82.5	81.6	80.7	81.7	82.7			
110	81.8	81.7	80.8	80.7	80.8	80.2	80.2	80.0	80.2	80.9	81.0	81.3	81.1	80.6	81.3	81.7			
115	80.3	80.6	80.4	80.3	79.7	78.7	78.9	79.3	79.7	80.0	79.5	79.9	80.3	80.3	80.6	80.4			
120	78.5	79.2	79.7	79.5	78.2	76.8	77.2	78.3	79.0	78.7	77.8	78.1	79.3	79.7	79.7	78.9			
125	76.5	77.5	78.6	78.3	76.5	74.8	75.2	77.0	77.9	76.9	75.7	76.1	77.9	78.8	78.5	77.0			
130	74.2	75.4	77.0	76.8	74.4	72.4	73.0	75.2	76.3	75.0	73.3	73.9	76.2	77.5	76.9	74.9			
135	71.7	73.1	75.1	74.8	72.1	69.9	70.5	73.1	74.2	72.6	70.8	71.5	74.1	75.7	74.8	72.6			
140	69.0	70.4	72.7	72.4	69.5	67.2	67.8	70.6	71.8	69.9	68.1	68.8	71.7	73.5	72.4	69.9			
145	66.2	67.5	69.9	69.6	66.8	64.5	65.0	67.7	68.9	67.0	65.3	66.1	68.9	70.8	69.7	67.1			
150	63.4	64.7	66.7	66.5	63.9	61.9	62.2	63.8	65.5	63.9	61.2	63.4	66.0	67.7	66.6	64.3			
155	59.2	60.5	62.9	62.8	59.4	56.1	55.1	57.5	61.5	59.1	51.7	57.9	62.2	64.2	62.9	60.3			
160	49.5	52.4	57.2	57.1	50.8	45.3	44.8	46.9	50.3	50.6	43.0	48.5	55.3	59.1	56.5	51.4			
165	39.1	41.4	43.6	42.7	38.3	35.2	34.9	32.4	27.3	35.2	35.8	38.3	42.2	45.1	44.2	40.7			
170	24.4	21.3	16.5	14.6	15.2	16.9	14.6	9.05	5.52	9.83	17.0	18.4	16.3	16.4	19.7	22.9			
175	0.30	0.56	0.79	0.95	0.31	0.06	0.50	0.73	0.39	0.19	0.06	0.51	0.73	0.95	0.94	0.01			
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature:25.2DEG
Operators:Katrina
Test Date:2011-11-08

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.265
Humidity:43.1%
Test Distance:2.417m [K=1.0000]
Remarks:


I(cd)
B
A
B
A
270
90
280
80
290
70
300
60
310
50
320
40
330
30
340
20
350
10
0
8.5
17.0
25.5
34.0
42.5
51.0
59.5
68.0
76.5
85.0

1000 lm K = 1



F = 5000 lm
K = 0.7
Hcc = 0.0 m
Hfc = 0.0 m
Eave = 100 lx

	Pcc	Pw	Pfc
———	70	50	30
———	50	30	20