



NVLAP Lab Code 500077-0

Report Number: CESTL-2013-0111
Model: CPY250-A-xx-D-A-UL-xx or BXCCAxD08-Ux
Date: 5/14/2013

Cree Engineering Services Testing Laboratory (CESTL) Photometric Testing and Evaluation Report

Prepared For:

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Product Information

Manufacturer	Cree, Inc
Model Number (SKU)	CPY250-A-xx-D-A-UL-xx or BXCCAxD08-Ux
Serial Number	D1
LED Type	XTE AWT

Product Description

High- Bay Canopy with White Housing with Prismatic Glass Drop Lens

Driver Information (Where Applicable)

Phillips ADVANCE LEDINTA700C140F30

Aperture Size	Length	Width
6.5 x 6.5"	15"	16.5"

Sample

The following sample was submitted for evaluation





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Key Photometric Data	Sphere Output	Goniophotometer	
Luminous Flux	8417	8353.2	lm
Efficacy	103.20	102.36	lm/W
Correlated Color Temperature (CCT)	5971	K	
Color Rendering Index (CRI)	70		
R ₉	-32		
Duv	0.006785		
S/P Ratio*	1.92		

Electrical Measurements	Sphere		Goniophotometer		
	120V	277V	120V	277V	
Input Wattage	81.56	81.02	81.61	81.74	W
Input Current	.683	.310	.684	.314	A
Input Voltage	119.95	277.12	119.97	277.06	V
Power Factor	.994	.941	.995	.939	
Off-State Power	0	0	0	0	W
Total Harmonic Distortion (Voltage)	.06	.05	-	.06	%
Total Harmonic Distortion (Amperage)	8.51	8.92	8.4	8.98	%

Note: All photometric measurements taken at 120VAC.

Luminous Intensity Distribution	Goniophotometer	
Max Candela	3456.9	Cd
Angle of Max Candela (Horizontal)	90	°
Angle of Max Candela (Vertical)	5	°

Key Test Parameters	Sphere Output	Goniophotometer	
Stabilization Time	180	90	min
Total Operating Time (Stabilization + Test)	180	105	min
Ambient Temperature	24.9	25.0	°C

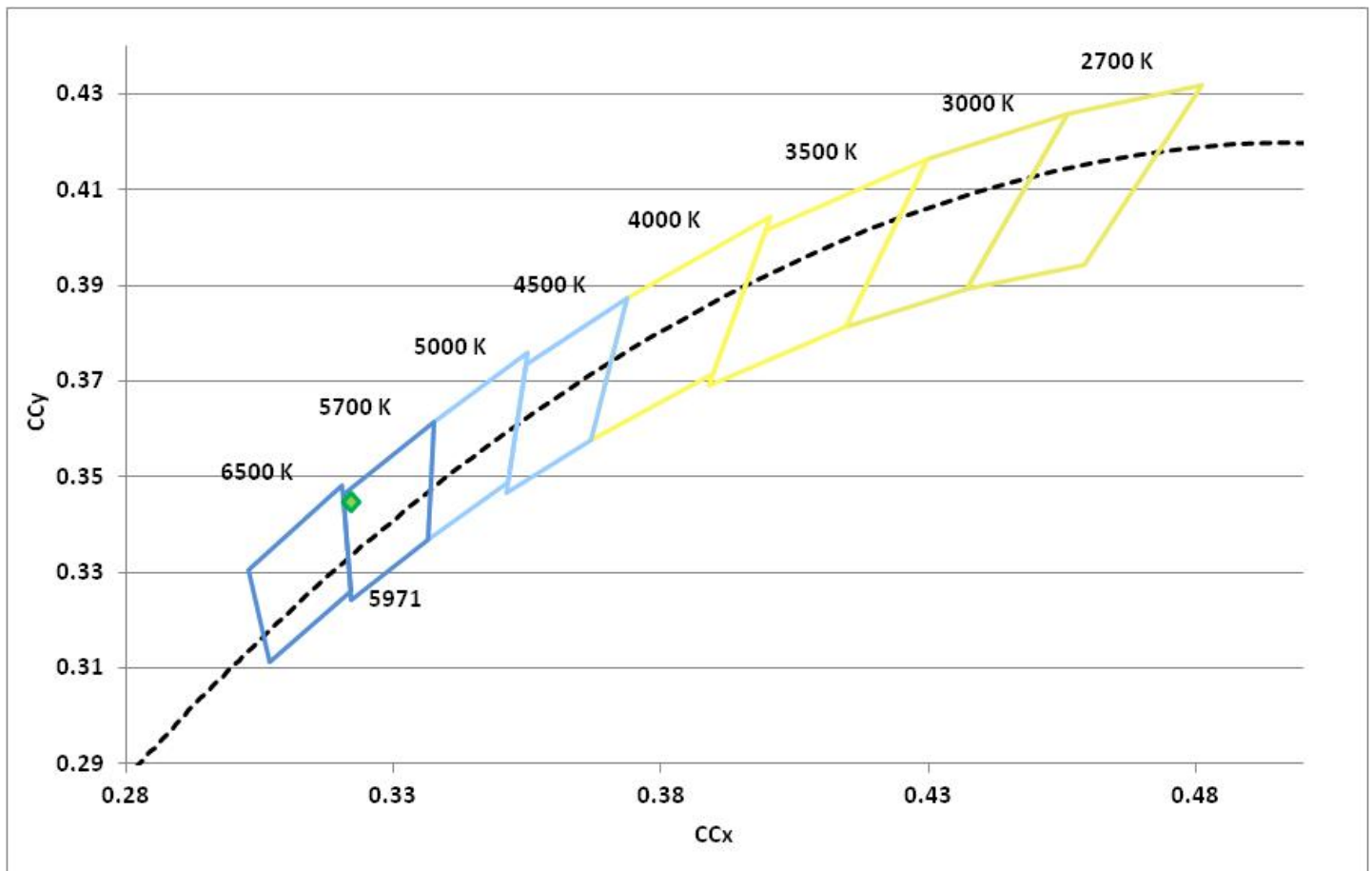
Chromaticity Coordinates

x	y	u	v	u'	v'	Duv
.3218	.3448	.1982	.3186	.1982	.4779	0.006785

Color Rendering Index Details

Ra	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
70	67	73	76	71	68	63	80	60	-32	35	68	38	67	86

Chromaticity Diagram



Spectral Distribution

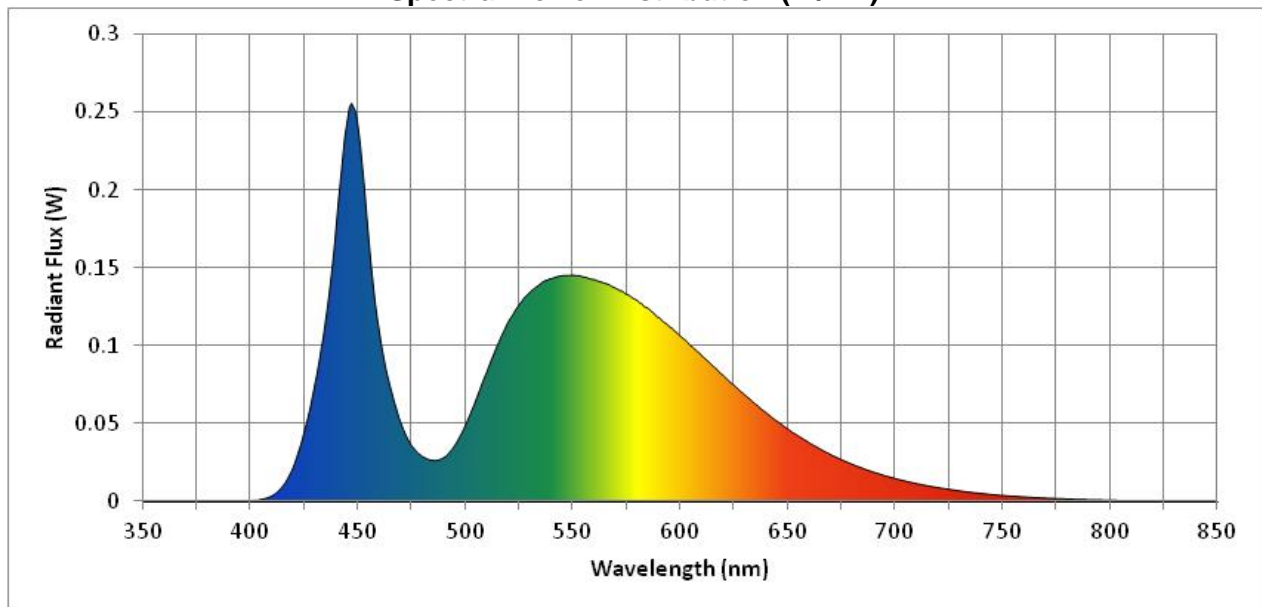
$\lambda(\text{nm})$	W/nm
360	0.000741
370	0.000815
380	0.000495
390	0.000577
400	0.000975
410	0.004097
420	0.022593
430	0.075866
440	0.178457
450	0.241839
460	0.108794
470	0.050799
480	0.029314
490	0.028725
500	0.049241
510	0.083770
520	0.115910

$\lambda(\text{nm})$	W/nm
530	0.135045
540	0.143540
550	0.145940
560	0.143050
570	0.137340
580	0.129400
590	0.118656
600	0.106646
610	0.093947
620	0.081328
630	0.068722
640	0.057270
650	0.046961
660	0.038036
670	0.030395
680	0.024212
690	0.019176

$\lambda(\text{nm})$	W/nm
700	0.015095
710	0.011810
720	0.009291
730	0.007186
740	0.005539
750	0.004288
760	0.003357
770	0.002551
780	0.002027
790	0.001604
800	0.001255
810	0.000995
820	0.000798
830	0.000648

Dominant Wavelength	506	nm
Peak Wavelength:	447	nm

Spectral Power Distribution (W/nm)



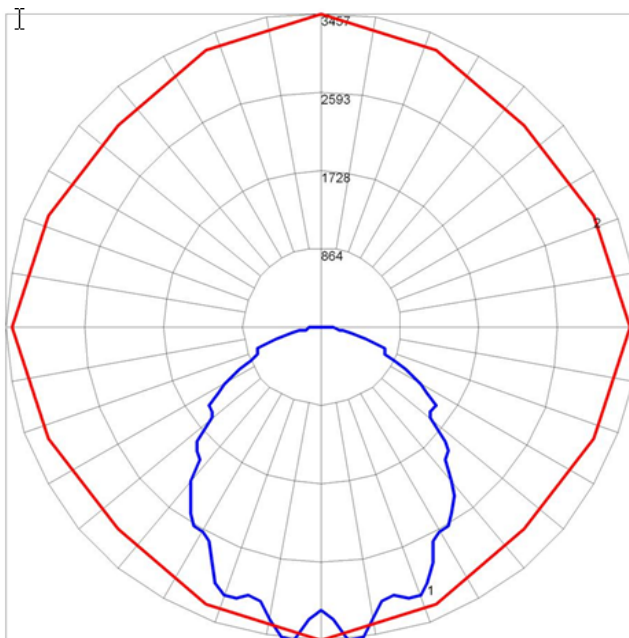


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Zonal Lumen Summary

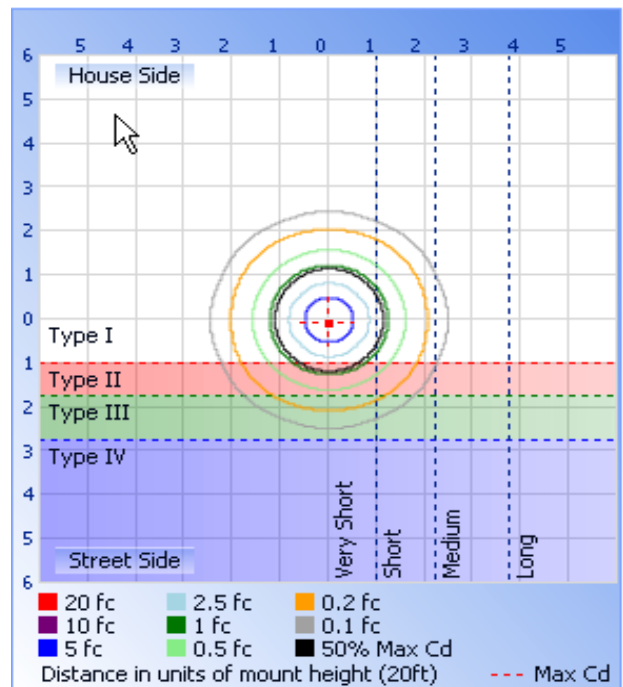
Zone	Lumens	% of Total	Zone	Lumens	% of Total
0-5	76.8	0.9%	90-95	17.1	0.2%
5-10	230.7	2.8%	95-100	6.6	0.1%
10-15	374.8	4.5%	100-105	2.8	0%
15-20	508.3	6.1%	105-110	0.6	0%
20-25	616.9	7.4%	110-115	0.0	0%
25-30	701.2	8.4%	115-120	0	0%
30-35	753.2	9.0%	120-125	0	0%
35-40	776.5	9.3%	125-130	0	0%
40-45	754.2	9.0%	130-135	0	0%
45-50	729.4	8.7%	135-140	0	0%
50-55	662.1	7.9%	140-145	0	0%
55-60	613.9	7.3%	145-150	0	0%
60-65	521.6	6.2%	150-155	0	0%
65-70	392.8	4.7%	155-160	0	0%
70-75	288.8	3.5%	160-165	0	0%
75-80	179.8	2.2%	165-170	0	0%
80-85	97.9	1.2%	170-175	0	0%
85-90	47.1	0.6%	175-180	0.0	0%
			Total	8353.2 lm	100%

Candela Plot

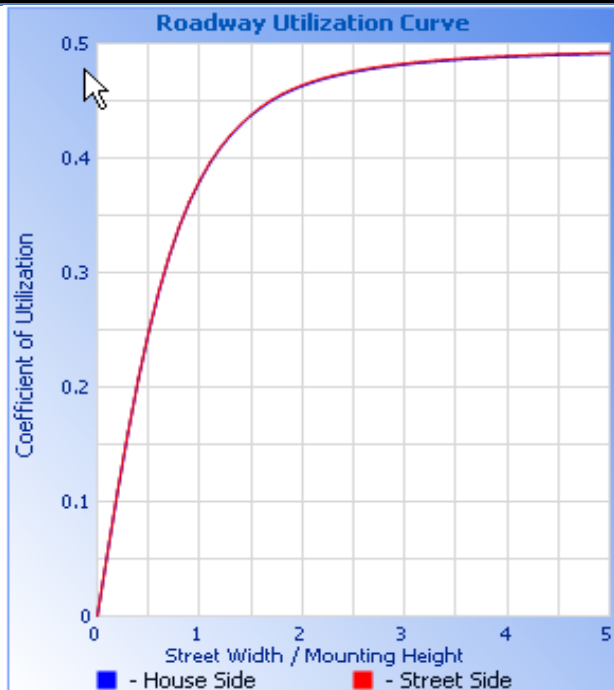


Maximum Candela = 3456.9 Located At Horizontal Angle = 90, Vertical Angle = 5
 # 1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)
 # 2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)

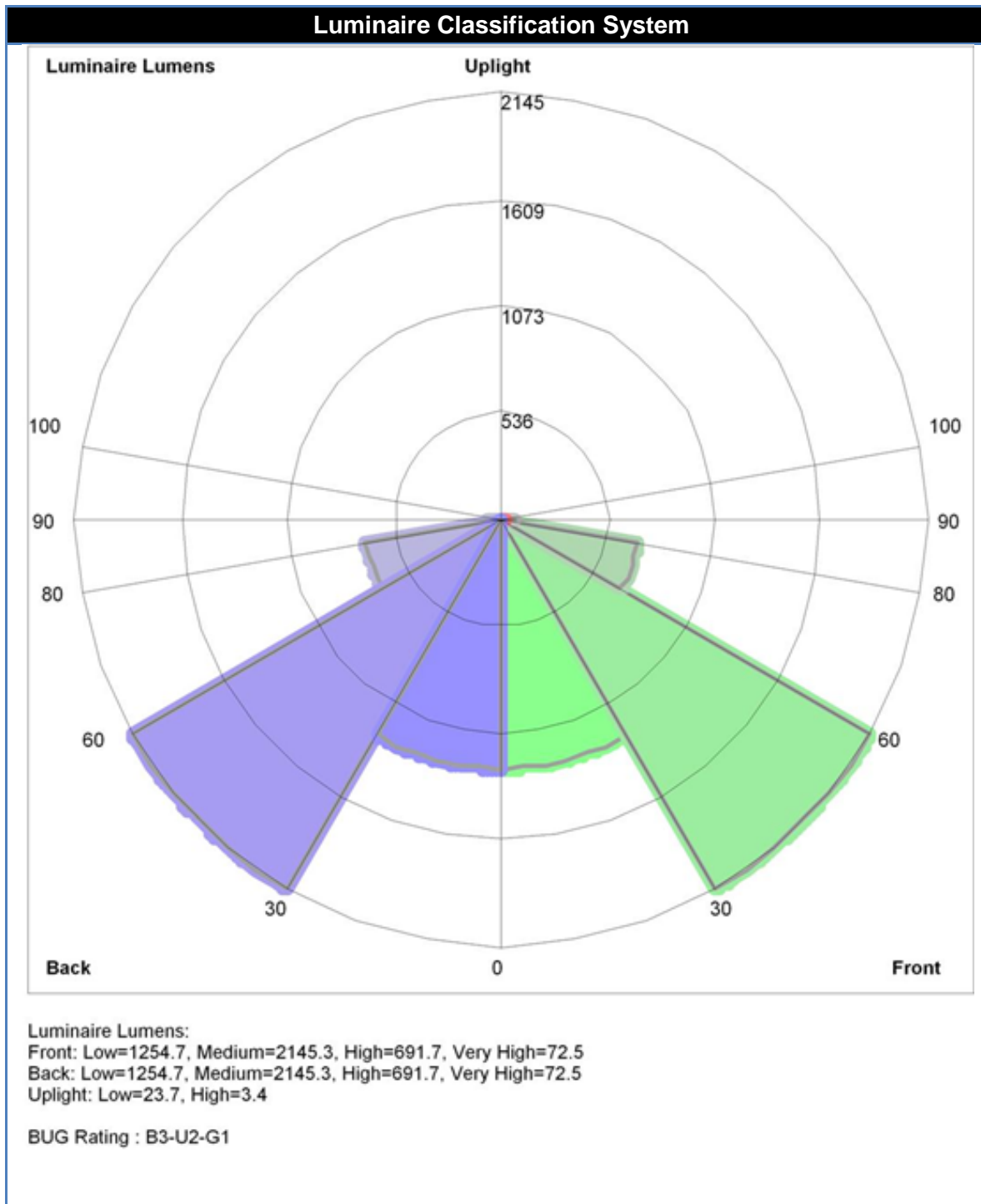
Illuminance Plot



Roadway Utilization



Roadway Summary	Lumens	% Lamp
Cutoff Classification	Cutoff	
Distribution	Type VS	
Downward Street Side	4163.4	49.8%
Downward House Side	4163.4	49.8%
Downward Total	8326.9	99.7%
Upward Street Side	13.6	0.2%
Upward House Side	13.6	0.2%
Upward Total	27.1	0.3%
Total Lumens	8354.0	100%



Candela Tabulations

	0	22.5	45	67.5	90
0	3112	3112	3112	3112	3112
2.5	3094	3116	3164	3222	3238
5	3374	3237	3151	3315	3457
7.5	3378	3300	3101	3201	3448
10	3189	3165	3048	3140	3259
12.5	2996	3252	3116	3244	3087
15	2954	3199	3168	3272	3070
17.5	3021	3096	3028	3172	3149
20	3123	2974	2922	2960	3164
22.5	2964	2986	2886	2932	3042
25	2836	2909	2890	2838	2858
27.5	2673	2829	2844	2780	2675
30	2630	2683	2744	2594	2607
32.5	2672	2558	2505	2500	2614
35	2528	2558	2405	2429	2498
37.5	2389	2380	2274	2307	2365
40	2223	2210	2083	2192	2211
42.5	2039	2063	2046	1988	1995
45	2046	1906	1936	1850	1950
47.5	1946	1816	1812	1768	1859
50	1676	1691	1657	1650	1573
52.5	1557	1537	1494	1468	1511
55	1498	1418	1393	1370	1524
57.5	1362	1321	1321	1345	1352
60	1205	1224	1217	1216	1246
62.5	1012	1102	1095	1101	1028
65	924	912	963	897	862
67.5	778	746	807	744	764
70	678	642	615	658	739
72.5	580	530	477	594	663
75	456	421	403	470	514
77.5	320	314	338	343	334
80	231	229	249	242	244
82.5	172	172	178	181	182
85	127	123	126	131	131
87.5	84	77	81	88	88
90	49	43	46	58	56

Candela Tabulations (Continued)

	0	22.5	45	67.5	90
92.5	25	19	25	40	41
95	6	2	15	30	34
97.5	0	0	8	24	31
100	0	0	2	18	25
102.5	0	0	0	11	18
105	0	0	0	6	12
107.5	0	0	0	1	5
110	0	0	0	0	1
112.5	0	0	0	0	0
115	0	0	0	0	0
117.5	0	0	0	0	0
120	0	0	0	0	0
122.5	0	0	0	0	0
125	0	0	0	0	0
127.5	0	0	0	0	0
130	0	0	0	0	0
132.5	0	0	0	0	0
135	0	0	0	0	0
137.5	0	0	0	0	0
140	0	0	0	0	0
142.5	0	0	0	0	0
145	0	0	0	0	0
147.5	0	0	0	0	0
150	0	0	0	0	0
152.5	0	0	0	0	0
155	0	0	0	0	0
157.5	0	0	0	0	0
160	0	0	0	0	0
162.5	0	0	0	0	0
165	0	0	0	0	0
167.5	0	0	0	0	0
170	0	0	0	0	0
172.5	0	0	0	0	0
175	0	0	0	0	0
177.5	0	0	0	0	0
180	0	0	0	0	0



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Integrating Sphere Equipment List

Description	Manufacturer	Model	Serial Number
3M Sphere	Labsphere	CSTM-CSLMS-3M98-HDS	82456
CCD Array Spectrometer	Otsuka	MC-9801	98010165
Programmable AC Source	Quadtech	31005	QT3100500136
Single Channel Power Analyzer	Xitron	2801	28011110008
Aux Lamp Power Supply	Labsphere	LPS-100-0833	1027119144

Goniophotometer Equipment List

Description	Manufacturer	Model	Serial Number
AC Power Source	Adaptive	FC210	2300229
Type C Goniophotometer	LSI / UL	6440T	6440TE0192T
Spectroradiometer	Gooch & Housego	770VIS/NIR	11414155
Power Meter	Yokogawa	WT210	91L220953

Test Methods Used:

Title	Description
ANSI C82.77:2002	Harmonic Emission Limits- Related Power Quality Req't's for Lighting Equipment
CIE Pub. 13.3:1995	Method of Measuring and Specifying Color Rendering of Light Sources
CIE Pub. 15:2004	Colorimetry
IES LM-58:1994	Spectroradiometric Measurements
IES LM-65:2001	Single-Ended Compact Fluorescent Lamps – Life Test Performance
IES LM-79:2008	Electrical and Photometric Measurements of Solid-State Lighting Products

Reference Standard Used:

Equipment	Description
3m Sphere	Tungsten Halogen Omni-Directional 75W Calibration Lamp, Serial Number H111
Type C Goniophotometer	Tungsten Halogen Omni-Directional 500W Calibration Lamp, Serial Number 97A

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