



Report of Test

LLIA000901-009A

Catalog Number: P53414/F11/D61/L414

Pendant mounted, formed white enamel steel frame with white "lumenate" diffuser, translucent white top and bottom enclosures.

Six white LED modules with clear patterned hemispherical lenses below each.

Two ERP ESP050W-1200-42 LED drivers and two ERP ESS030W-0620-42 LED drivers
120.0Vac, 60.00Hz, 1.212A, 143.0W, 0.984PF, 12.3%THD(i)



Performance Summary

Total Light Output	9469 lm
Luminaire Power	143.0 W
Luminous Efficacy	66.2 lm/W

PREPARED FOR : Lumetta, Inc, 33 Minnesota Avenue, Warwick, RI 02888, USA



Test Report No. LLIA000901-009A

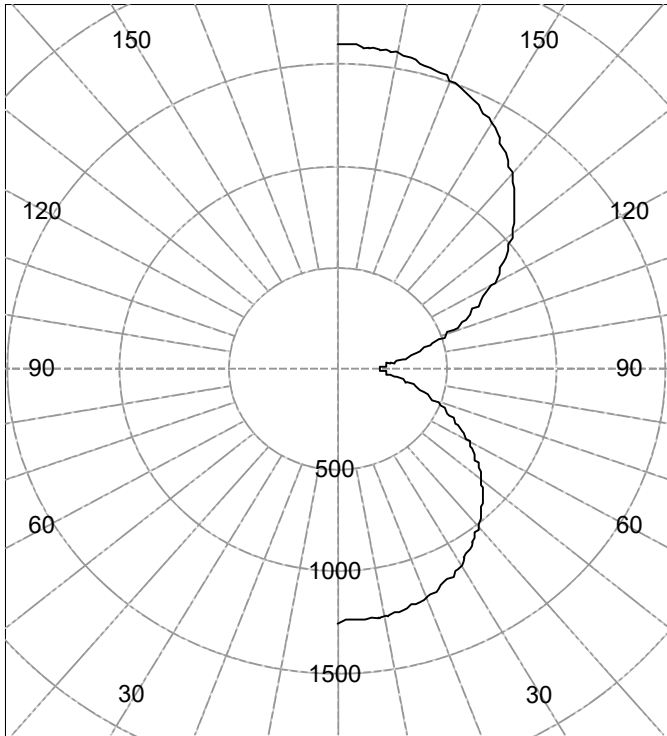
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Legend: All planes - Solid (cd)



(Rotational symmetry)

AVERAGE LUMINANCE (cd / m²)

Gamma	C0
45.0	1471
55.0	1305
65.0	1107
75.0	860
85.0	619

INTENSITY SUMMARY (cd)

Gamma	All Planes	Flux (lm)	Gamma	C0	Flux (lm)
0	1245		90	192	
5	1242	118	95	224	255
10	1234		100	314	
15	1217	344	105	431	456
20	1192		110	556	
25	1157	534	115	682	675
30	1113		120	804	
35	1061	664	125	921	823
40	999		130	1032	
45	930	717	135	1135	876
50	852		140	1232	
55	768	686	145	1318	825
60	678		150	1394	
65	583	577	155	1458	672
70	485		160	1510	
75	386	409	165	1549	437
80	293		170	1575	
85	221	249	175	1589	151
90	192		180	1594	

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	%Lamp	%Luminaire
0-30	996	N / A	10.5
0-40	1660	N / A	17.5
0-60	3063	N / A	32.4
0-90	4298	N / A	45.4
40-90	2638	N / A	27.9
60-90	1234	N / A	13.0
90-180	5171	N / A	54.6
0-180	9469	N / A	100.0

Total Light Output = 9,469 lm

Spacing Criterion: 0-180 1.3
Spacing Criterion: 90-270 1.3

Signed:

Authorized Signatory

Date of test 6-Dec-2017
Date of report 6-Dec-2017



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Intensity (cd) and Flux (lm) data

Gamma	Intensity	Flux	Gamma	Intensity	Flux
0.0	1245		90.0	192	
2.5	1244		92.5	200	
5.0	1242	118	95.0	224	
7.5	1239		97.5	263	255
10.0	1234		100.0	314	
12.5	1227		102.5	370	
15.0	1217	344	105.0	431	
17.5	1206		107.5	493	456
20.0	1192		110.0	556	
22.5	1175		112.5	619	
25.0	1157	534	115.0	682	
27.5	1136		117.5	743	675
30.0	1113		120.0	804	
32.5	1088		122.5	863	
35.0	1061	664	125.0	921	
37.5	1031		127.5	977	823
40.0	999		130.0	1032	
42.5	966		132.5	1085	
45.0	930	717	135.0	1135	
47.5	892		137.5	1184	876
50.0	852		140.0	1232	
52.5	811		142.5	1276	
55.0	768	686	145.0	1318	
57.5	723		147.5	1357	825
60.0	678		150.0	1394	
62.5	631		152.5	1428	
65.0	583	577	155.0	1458	
67.5	534		157.5	1485	672
70.0	485		160.0	1510	
72.5	435		162.5	1531	
75.0	386	409	165.0	1549	
77.5	338		167.5	1563	437
80.0	293		170.0	1575	
82.5	253		172.5	1583	
85.0	221	249	175.0	1589	
87.5	199		177.5	1592	151
90.0	192		180.0	1594	



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Coefficients Of Utilization - Zonal Cavity Method

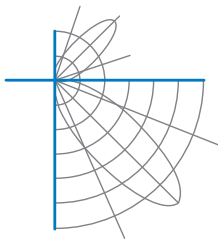
Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	45
1	96	91	87	83	87	83	80	76	69	66	64	56	54	52	44	43	42	36
2	87	79	72	67	79	72	66	62	60	56	52	49	46	43	38	36	34	29
3	79	69	61	55	72	63	56	51	52	47	43	43	39	36	33	31	29	24
4	72	61	52	46	65	56	48	43	46	41	36	38	34	30	30	27	24	20
5	66	54	45	39	60	49	42	36	41	35	31	34	29	26	26	23	21	17
6	60	48	40	34	55	44	37	31	37	31	27	30	26	22	24	21	18	15
7	56	43	35	29	51	40	33	27	33	28	23	27	23	20	22	18	16	13
8	52	39	31	26	47	36	29	24	30	25	21	25	21	17	20	17	14	12
9	48	36	28	23	44	33	26	21	28	22	18	23	19	16	18	15	13	11
10	45	33	25	20	41	30	23	19	25	20	16	21	17	14	17	14	12	9

For absolute test reports, CUs are expressed as a percentage of total lumen output. Calculations were based on published IES procedures, and are based on the zonal cavity method. Basic assumptions: 1) Room surfaces are lambertian reflectors. 2) Incident flux on each surface is uniformly distributed. 3) The room is spectrally neutral. When luminaires are not evenly distributed throughout the room, or do not exhibit lateral symmetry, CU values may differ from actual performance.

Circle of Light Plot

Height(ft)	Illuminance at Nadir (fc)	Beam Width (across 50% Nadir Illum)	
		0-180	90-270
6.0	34.6	7.96	7.96
8.0	19.5	10.62	10.62
10.0	12.5	13.27	13.27
12.0	8.6	15.93	15.93
14.0	6.4	18.58	18.58
16.0	4.9	21.24	21.24



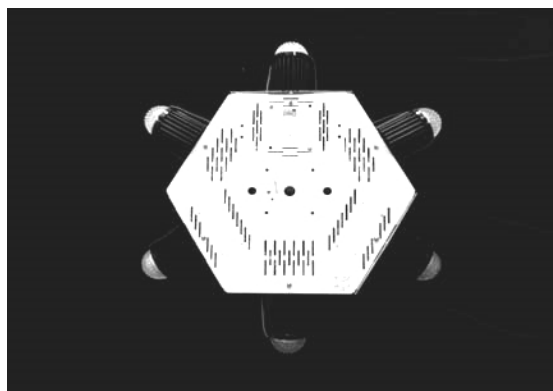
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Test Distance 9.5 m
Test Temperature 25.6 °C

Notes

The laboratory has not participated in 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.

Tested in accordance with the applicable sections of publications: IES LM-79-08 (Sec. 12), IES LM-16-93, IES LM-58-13, CIE 13.3:1995, CIE 15:2004, ANSI C78.377:2015, ANSI C82.77-10:2014.

The luminous intensity values, and other derived quantities, contained in this report are based on the absolute data, as measured.

Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

This report is free of erasures and corrections.

Photometric intensity values are reported using the CIE Gamma coordinate system as defined in CIE publication number 121.

This report may contain data that are not covered by the NVLAP accreditation. Quantities marked with * are not covered.

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the Federal Government.



Report of Test

LLIA000901-009B

Integrating Sphere Report

Catalog Number: P53414/F11/D61/L414

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"lumenate" diffuser, translucent white top and bottom enclosures.

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Performance Summary

Voltage	120.0 Vac
Current	1.211 A
Power	142.9 W
Frequency	59.97 Hz
Power Factor	0.983
Current THD	12.4 %

Total Luminous Flux	9631.2 lm
Efficacy	67.4 lm/W
Chromaticity (x,y)	(0.4359, 0.3983)
(u',v')	(0.2524, 0.5189)
Duv	-0.0022
CCT	2970 K
CRI (Ra)	93
R9	71
TM-30: Rf	91
TM-30: Rg	102

Prepared For:

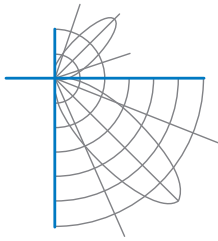
Lumetta, Inc

33 Minnesota Avenue

Warwick, RI 02888, USA

Test date: 12/01/2017

Report date: 12/13/2017



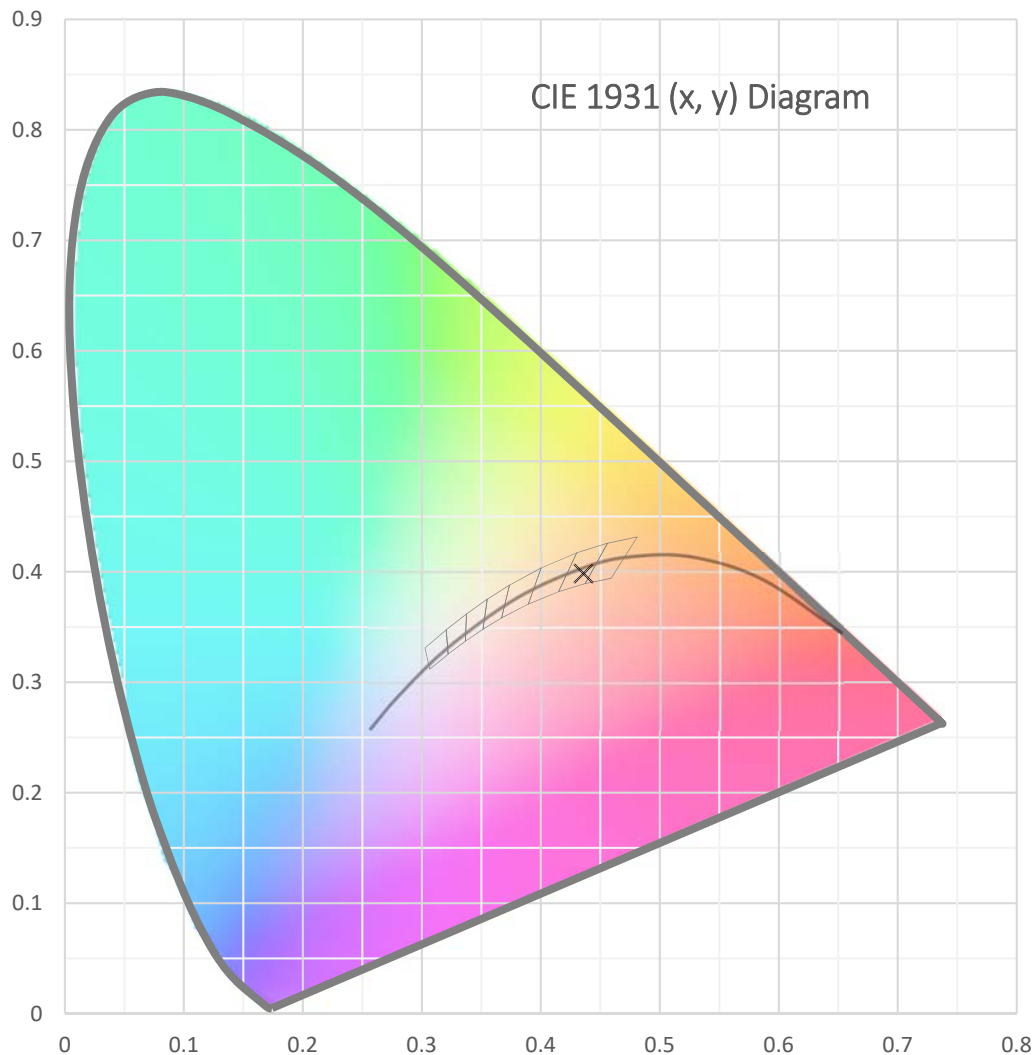
Test Report Number: LLIA000901-009B

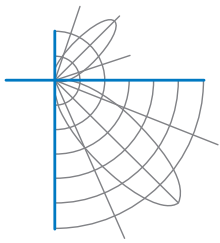
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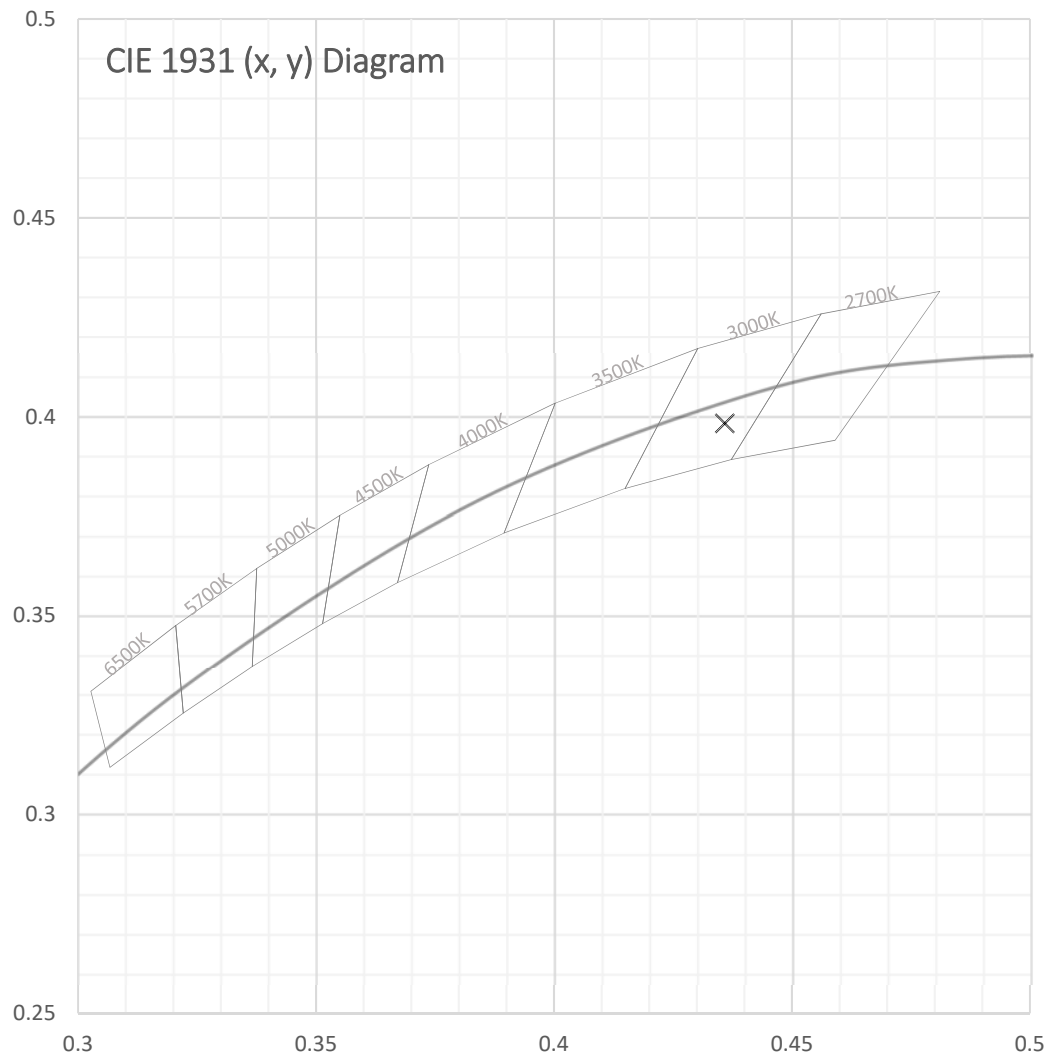
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Spectral Data	Total Radiant Flux	36.51 W
	Total Luminous Flux	9631.2 Lm
	Chromaticity CIE 1931 (x, y)	(0.4359, 0.3983)
	Chromaticity CIE 1976 (u', v')	(0.2524, 0.5189)
	Correlated Color Temperature (CCT)	2970 K
	Color Rendering Index (Ra)	93
	R1	94
	R2	96
	R3	94
	R4	93
	R5	93
	R6	94
	R7	94
	R8	88
	R9	71
	R10	88
	R11	93
	R12	82
	R13	95
	R14	96
	TM-30: Rf	91
	TM-30: Rg	102
	Distance from Planckian Locus (Duv)	-0.0022
	Scotopic/Photopic Ratio *	1.389

Electrical Data

Voltage	120.0 Vac
Current	1.211 A
Power	142.9 W
Frequency	59.97 Hz
Power Factor	0.983
Current THD	12.4 %



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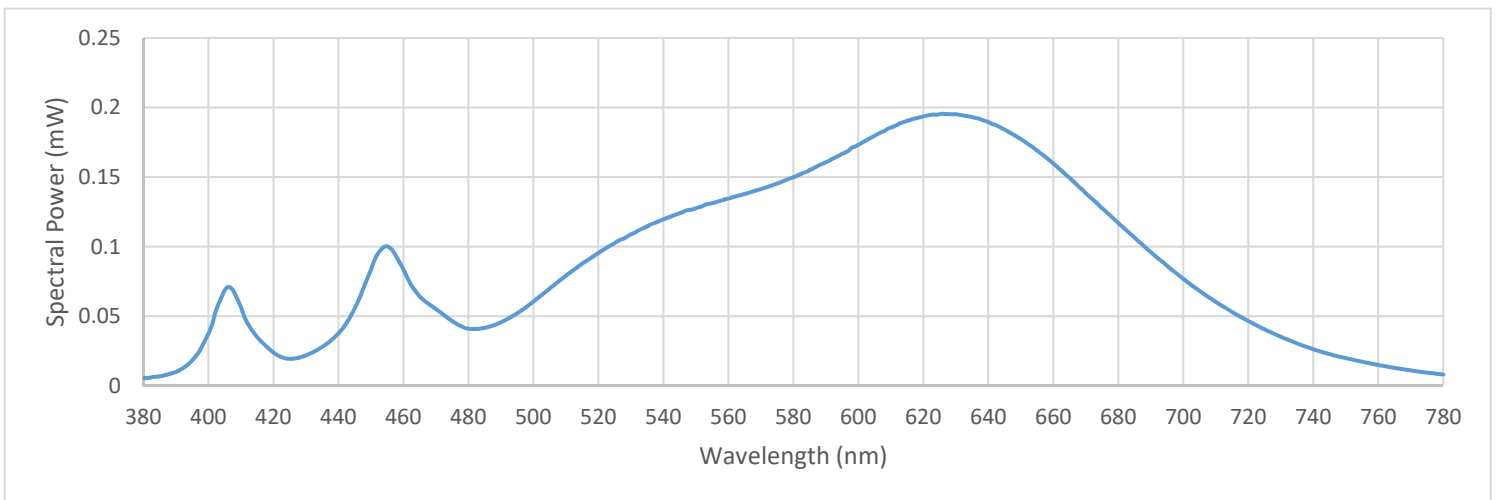
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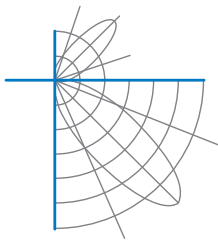
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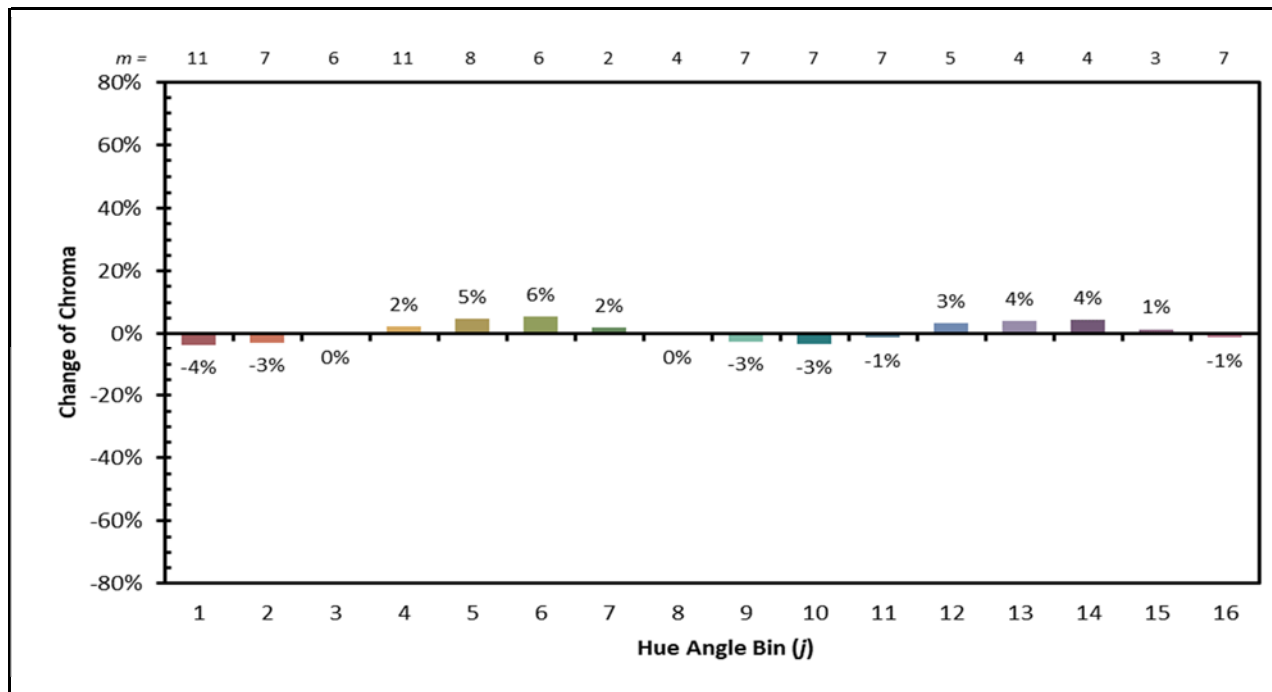
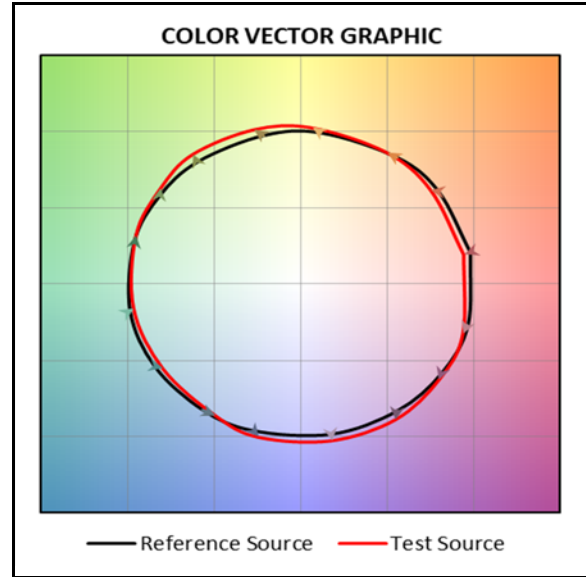
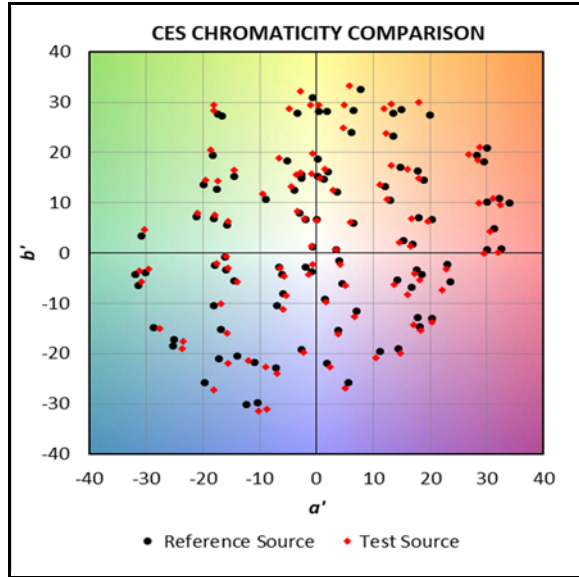
Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.005441	480	0.041095	580	0.149867	680	0.117004
385	0.006739	485	0.041709	585	0.155073	685	0.106550
390	0.009885	490	0.045730	590	0.160528	690	0.096009
395	0.018097	495	0.052021	595	0.166661	695	0.086024
400	0.037481	500	0.060528	600	0.173383	700	0.076907
405	0.068600	505	0.069872	605	0.179718	705	0.068169
410	0.056601	510	0.078900	610	0.185515	710	0.060147
415	0.034954	515	0.087799	615	0.190296	715	0.053133
420	0.023790	520	0.095530	620	0.193697	720	0.046475
425	0.019273	525	0.102459	625	0.195208	725	0.040531
430	0.021822	530	0.108790	630	0.195202	730	0.035322
435	0.027851	535	0.114413	635	0.193113	735	0.030488
440	0.037754	540	0.119538	640	0.189596	740	0.026222
445	0.055668	545	0.123993	645	0.184016	745	0.022725
450	0.083352	550	0.127633	650	0.177357	750	0.019918
455	0.100161	555	0.131268	655	0.169054	755	0.017287
460	0.083715	560	0.134474	660	0.159992	760	0.014944
465	0.064184	565	0.137839	665	0.149566	765	0.012879
470	0.055082	570	0.141349	670	0.138396	770	0.011018
475	0.046557	575	0.145188	675	0.127629	775	0.009466
						780	0.008156





IES TM-30 Details





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Test Equipment Configuration: LightLab International Allentown 2m Integrating Sphere
Measurements acquired using a Labsphere CDS 2600 spectroradiometer
Testing was performed using 4π geometry

Test Temperature: 26.0 °C

Test Procedure: Tested in accordance with the applicable sections of:
LM-79-08, LM-78-07, LM-58-13, ANSI_ANSLG C78.377-2015,
ANSI C82-77-10:2014, TM-30-15

Significance: The laboratory has not participated in 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.

Notes: The measurements and other derived quantities contained in this report are based on the absolute data as measured.

Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

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