

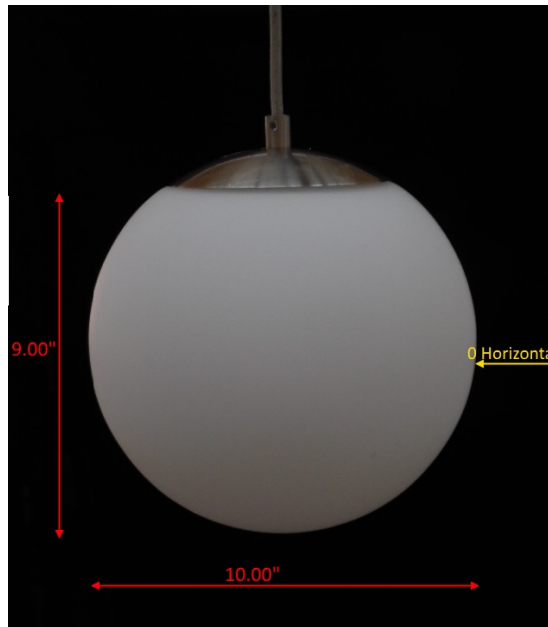


Report of Test

LLIA000954-015A

Catalog Number: 3-672-24 Luna 10" Pendant

Pendant mounted, formed steel and aluminum housing, translucent white glass enclosure.
24 white LEDs, one Harvard Engineering LEDENG-165-930 LED board with white plastic diffuser
One LTF DA12W350C1834D010-0014 dimmable LED driver.
120.0Vac, 60.00Hz, 0.0904A, 10.42W, 0.961PF, 10.7%THD(i)



Performance Summary

Total Light Output	714 lm
Luminaire Power	10.4 W
Luminous Efficacy	68.7 lm/W

PREPARED FOR : Oxygen Lighting, 201 Railhead Road, Fort Worth, TX 76106, USA



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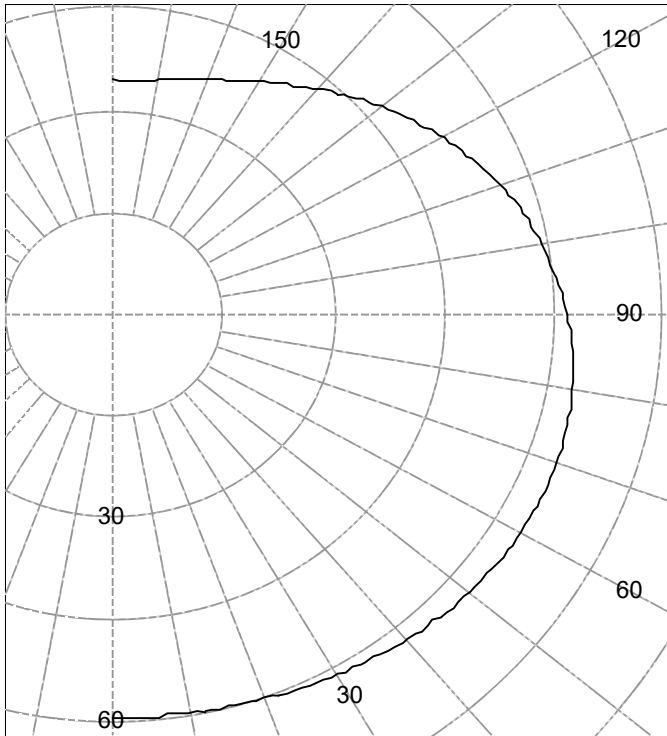
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Legend: All planes - Black (cd)



(Rotational symmetry)

AVERAGE LUMINANCE (cd / m²)

Gamma	C0
45.0	1244
55.0	1262
65.0	1269
75.0	1262
85.0	1238

INTENSITY SUMMARY (cd)

Gamma	All Planes	Flux (lm)	Gamma	C0	Flux (lm)
0	59.3		90	61.8	
5	59.4	6	95	60.6	66
10	59.6		100	59.3	
15	59.9	17	105	57.8	61
20	60.3		110	56.0	
25	60.7	28	115	54.1	54
30	61.3		120	52.0	
35	61.9	39	125	49.9	45
40	62.5		130	47.7	
45	63.1	49	135	45.6	35
50	63.5		140	43.5	
55	63.9	57	145	41.5	26
60	64.2		150	39.7	
65	64.3	64	155	38.2	18
70	64.2		160	36.9	
75	63.9	68	165	35.9	10
80	63.4		170	35.2	
85	62.7	68	175	34.7	3
90	61.8		180	34.6	

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	%Lamp	%Luminaire
0-30	51	N / A	7.1
0-40	90	N / A	12.6
0-60	196	N / A	27.4
0-90	396	N / A	55.4
40-90	306	N / A	42.8
60-90	200	N / A	28.0
90-180	318	N / A	44.6
0-180	714	N / A	100.0

Total Light Output = 714 lm

Spacing Criterion: 0-180 1.6
Spacing Criterion: 90-270 1.6

Signed:

Authorized Signatory

Date of test 29-Mar-2018
Date of report 29-Mar-2018



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Intensity (cd) and Flux (lm) data

Gamma	Intensity	Flux	Gamma	Intensity	Flux
0.0	59.3		90.0	61.8	
2.5	59.3		92.5	61.2	
5.0	59.4	6	95.0	60.6	66
7.5	59.5		97.5	60.0	
10.0	59.6		100.0	59.3	
12.5	59.8		102.5	58.6	
15.0	59.9	17	105.0	57.8	61
17.5	60.1		107.5	56.9	
20.0	60.3		110.0	56.0	
22.5	60.5		112.5	55.1	
25.0	60.7	28	115.0	54.1	54
27.5	61.0		117.5	53.1	
30.0	61.3		120.0	52.0	
32.5	61.6		122.5	50.9	
35.0	61.9	39	125.0	49.9	45
37.5	62.2		127.5	48.8	
40.0	62.5		130.0	47.7	
42.5	62.8		132.5	46.6	
45.0	63.1	49	135.0	45.6	35
47.5	63.3		137.5	44.5	
50.0	63.5		140.0	43.5	
52.5	63.8		142.5	42.4	
55.0	63.9	57	145.0	41.5	26
57.5	64.1		147.5	40.6	
60.0	64.2		150.0	39.7	
62.5	64.3		152.5	38.9	
65.0	64.3	64	155.0	38.2	18
67.5	64.3		157.5	37.5	
70.0	64.2		160.0	36.9	
72.5	64.1		162.5	36.4	
75.0	63.9	68	165.0	35.9	10
77.5	63.7		167.5	35.5	
80.0	63.4		170.0	35.2	
82.5	63.1		172.5	34.9	
85.0	62.7	68	175.0	34.7	3
87.5	62.3		177.5	34.6	
90.0	61.8		180.0	34.6	



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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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55
1	94	88	82	77	87	81	76	72	69	65	61	57	54	51	47	44	42	37
2	84	74	66	59	77	68	61	55	58	52	47	48	43	40	38	35	32	27
3	76	64	55	47	69	59	51	44	49	43	38	41	36	32	33	29	26	21
4	69	56	46	39	63	51	43	36	43	36	31	36	30	26	28	24	21	17
5	63	49	40	33	57	45	37	30	38	31	26	31	26	22	25	21	17	14
6	57	44	34	28	53	40	32	26	34	27	22	28	23	19	23	18	15	12
7	53	39	30	24	48	36	28	22	31	24	19	25	20	16	20	16	13	10
8	49	35	27	21	45	33	25	19	28	21	17	23	18	14	19	14	11	9
9	46	32	24	18	42	30	22	17	25	19	15	21	16	12	17	13	10	8
10	42	29	21	16	39	27	20	15	23	17	13	19	15	11	16	12	9	7

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	1.6	9.61	9.61
8.0	0.9	12.81	12.81
10.0	0.6	16.01	16.01
12.0	0.4	19.22	19.22
14.0	0.3	22.42	22.42
16.0	0.2	25.62	25.62



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120.0Vac, 60.00Hz, 0.0904A, 10.42W, 0.961PF, 10.7%THD(i)

Test Distance 9.5 m
Test Temperature 25.0 °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

LLIA000954-015B

Integrating Sphere Report

Catalog Number: 3-672-24 Luna 10" Pendant

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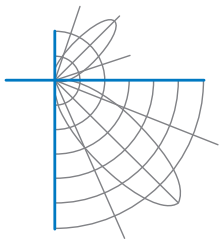
Performance Summary

Voltage	120.0 Vac
Current	0.0904 A
Power	10.45 W
Frequency	59.97 Hz
Power Factor	0.964
Current THD	10.8 %

Total Luminous Flux	708.4 lm
Efficacy	67.8 lm/W
Chromaticity (x,y)	(0.4312, 0.4009)
(u',v')	(0.2482, 0.5193)
Duv	-0.0004
CCT	3073 K
CRI (Ra)	93
R9	65
TM-30: Rf	91
TM-30: Rg	101

Prepared For:
Oxygen Lighting
201 Railhead Road
Fort Worth, TX 76106, USA

Test date: 03/09/2018
Report date: 03/29/2018



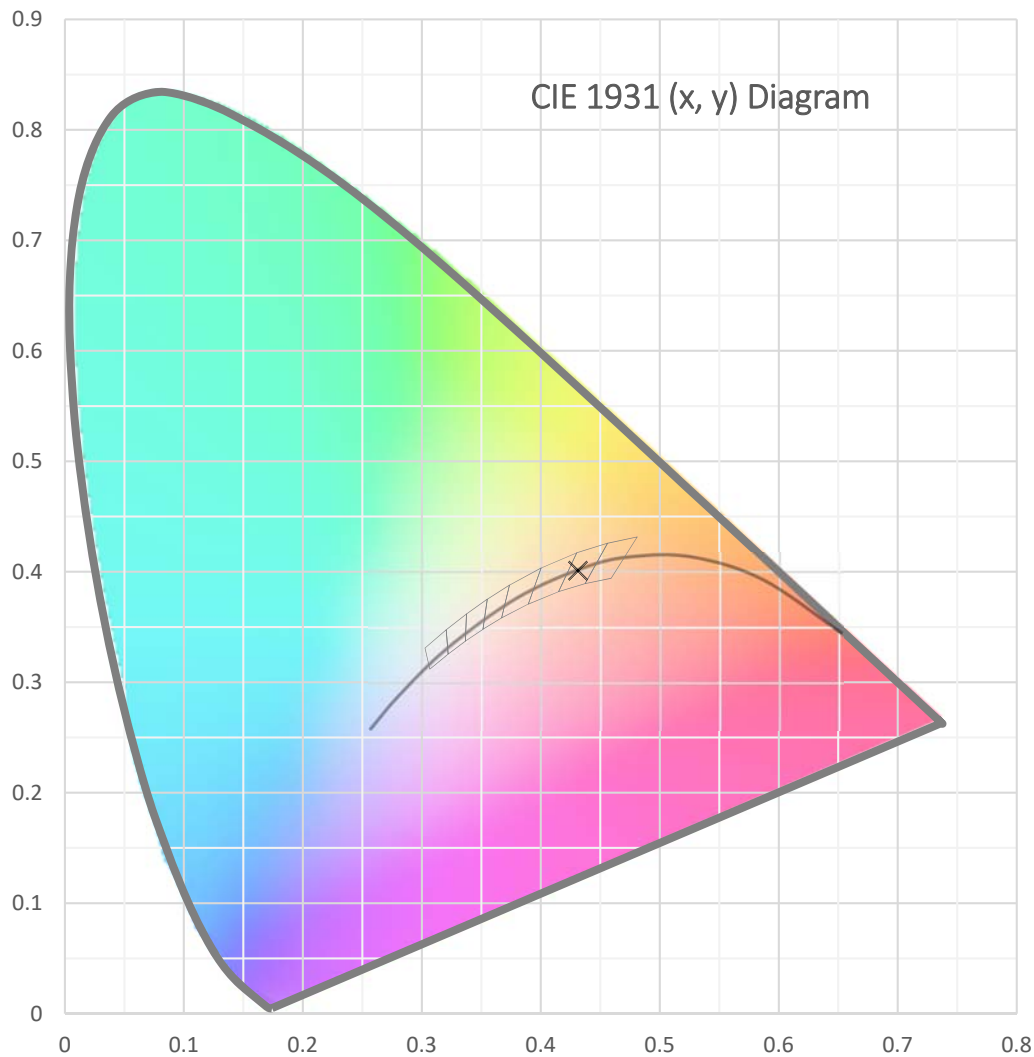
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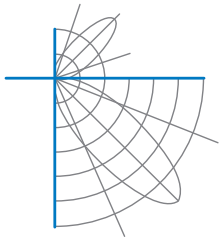
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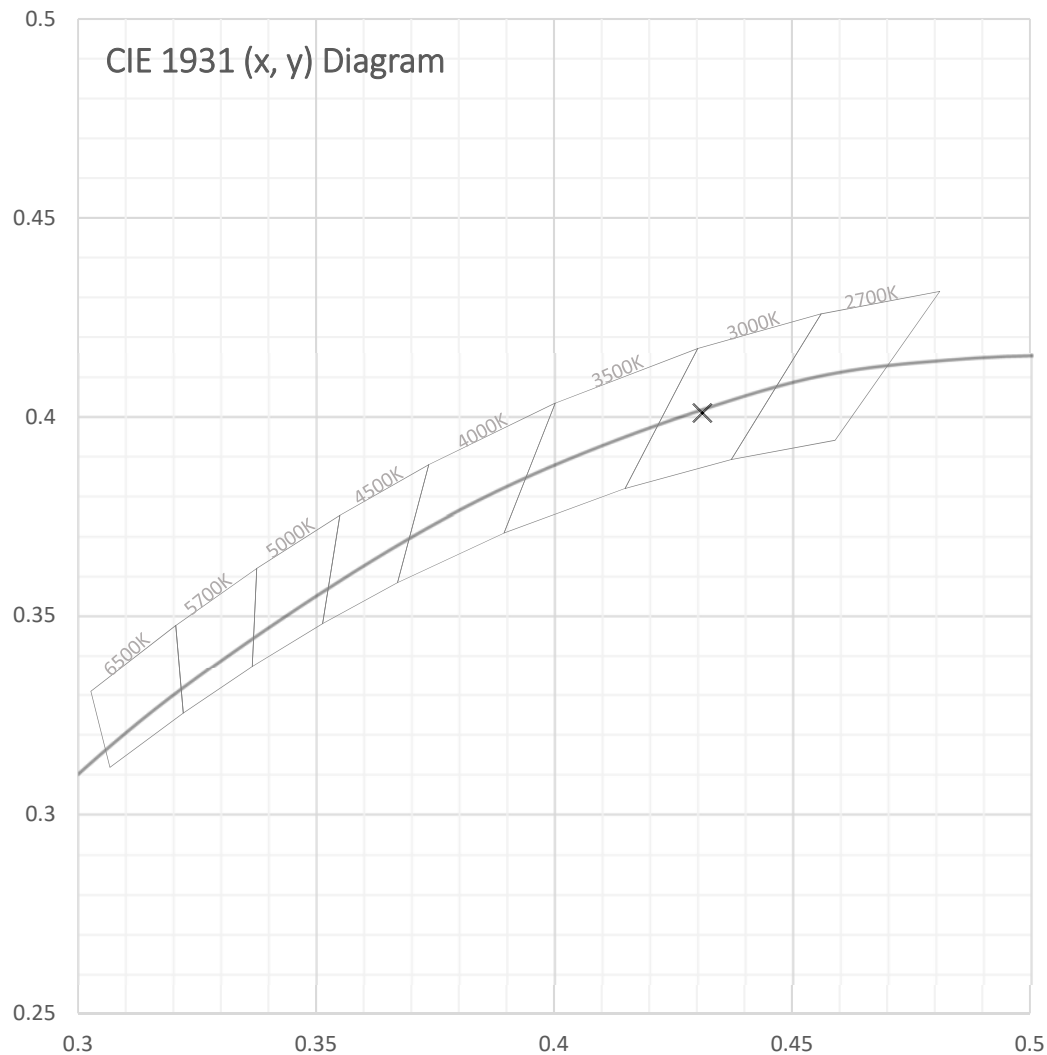
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Spectral Data

Total Radiant Flux	2.519 W
Total Luminous Flux	708.4 Lm
Chromaticity CIE 1931 (x, y)	(0.4312, 0.4009)
Chromaticity CIE 1976 (u', v')	(0.2482, 0.5193)
Correlated Color Temperature (CCT)	3073 K
Color Rendering Index (Ra)	93
R1	93
R2	95
R3	96
R4	94
R5	93
R6	94
R7	94
R8	85
R9	65
R10	88
R11	94
R12	83
R13	94
R14	97
TM-30: Rf	91
TM-30: Rg	101
Distance from Planckian Locus (Duv)	-0.0004
Scotopic/Photopic Ratio *	1.436

Electrical Data

Voltage	120.0 Vac
Current	0.0904 A
Power	10.45 W
Frequency	59.97 Hz
Power Factor	0.964
Current THD	10.8 %



Test Report Number: LLIA000954-015B

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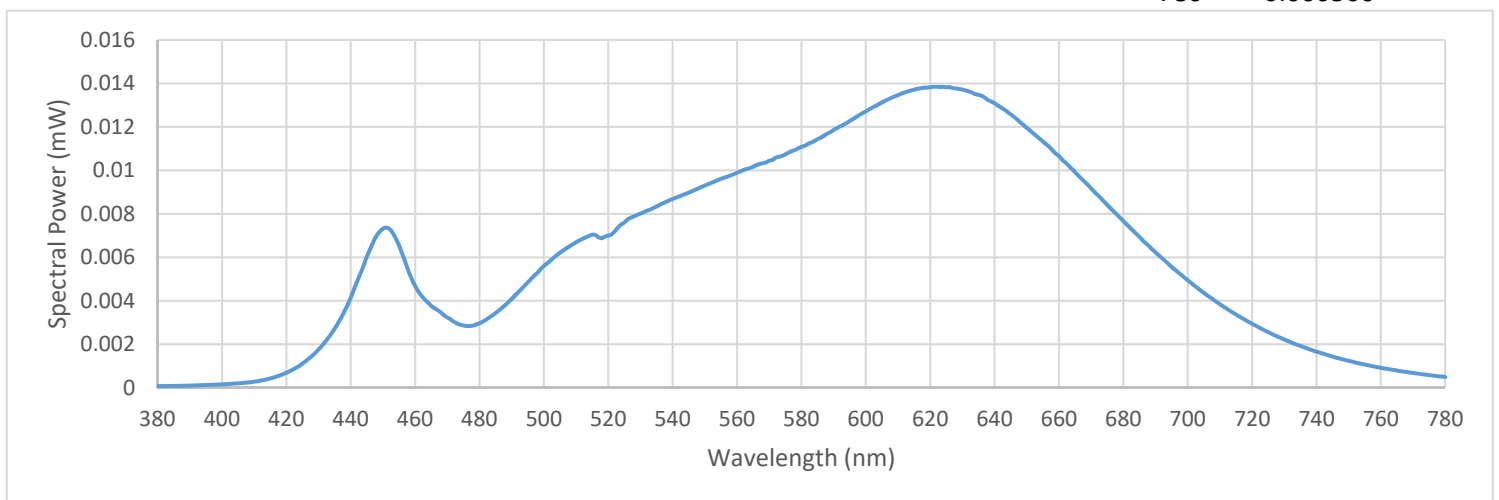
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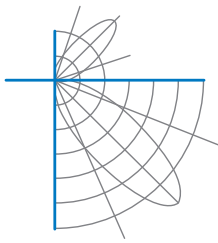
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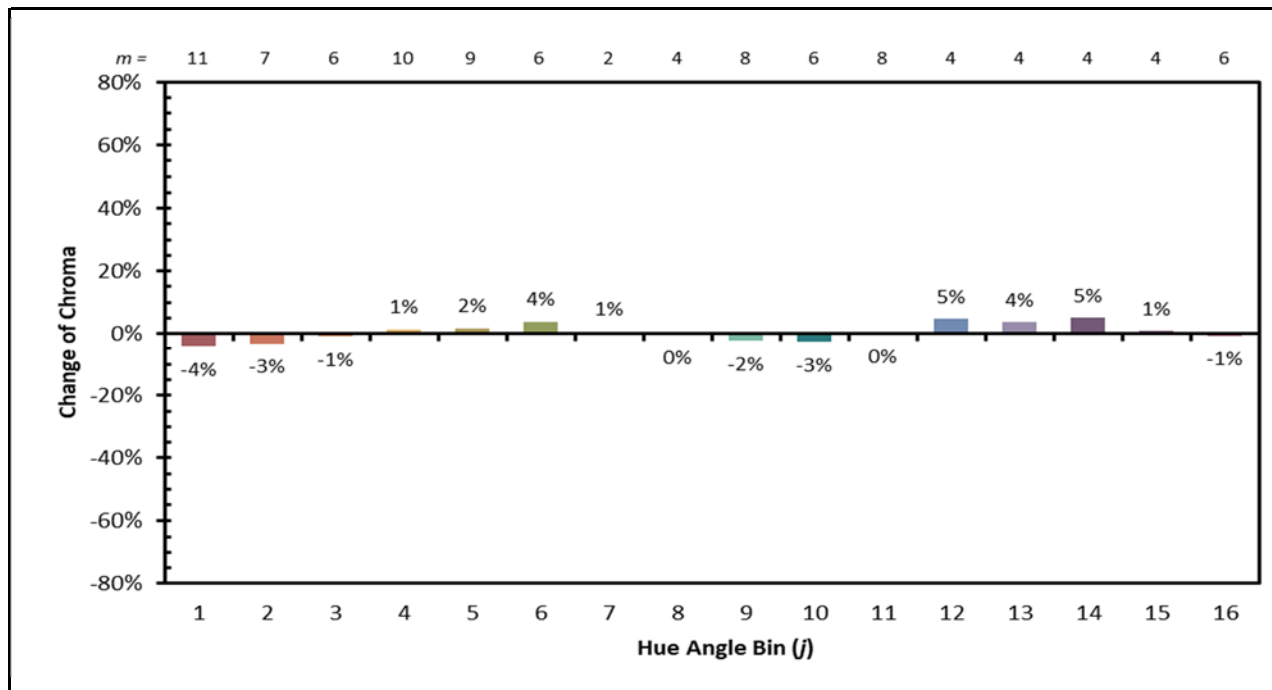
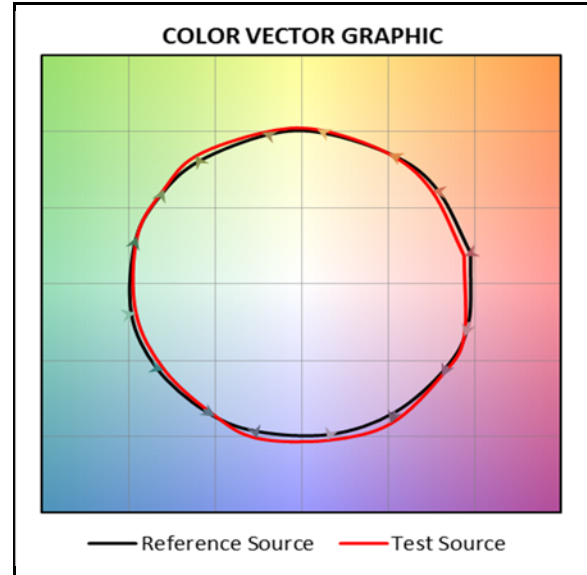
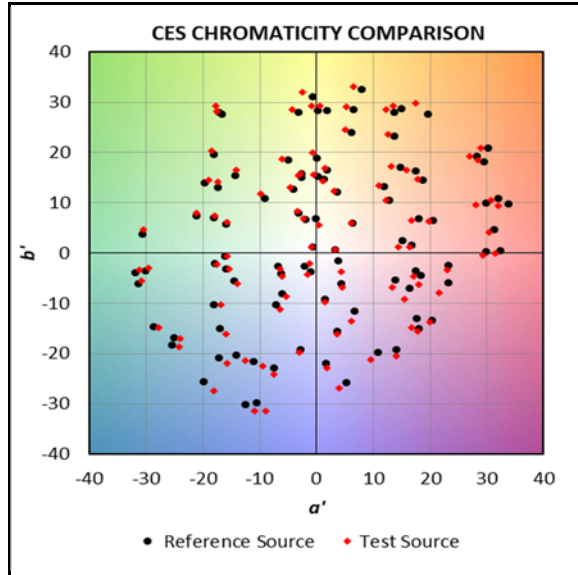
Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000075	480	0.002972	580	0.011084	680	0.007671
385	0.000083	485	0.003448	585	0.011440	685	0.006953
390	0.000101	490	0.004085	590	0.011861	690	0.006234
395	0.000124	495	0.004850	595	0.012272	695	0.005553
400	0.000157	500	0.005610	600	0.012720	700	0.004953
405	0.000202	505	0.006209	605	0.013119	705	0.004363
410	0.000282	510	0.006690	610	0.013456	710	0.003834
415	0.000428	515	0.007039	615	0.013717	715	0.003377
420	0.000691	520	0.007005	620	0.013818	720	0.002941
425	0.001112	525	0.007600	625	0.013823	725	0.002559
430	0.001774	530	0.008011	630	0.013708	730	0.002224
435	0.002728	535	0.008346	635	0.013473	735	0.001920
440	0.004138	540	0.008686	640	0.013093	740	0.001656
445	0.006042	545	0.008974	645	0.012582	745	0.001433
450	0.007321	550	0.009298	650	0.011963	750	0.001235
455	0.006521	555	0.009613	655	0.011334	755	0.001065
460	0.004695	560	0.009887	660	0.010659	760	0.000924
465	0.003766	565	0.010170	665	0.009912	765	0.000792
470	0.003236	570	0.010445	670	0.009171	770	0.000678
475	0.002862	575	0.010727	675	0.008420	775	0.000581
						780	0.000500





IES TM-30 Summary





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One LTF DA12W350C1834D010-0014 dimmable LED driver.

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

Test Temperature: 24.9 °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
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