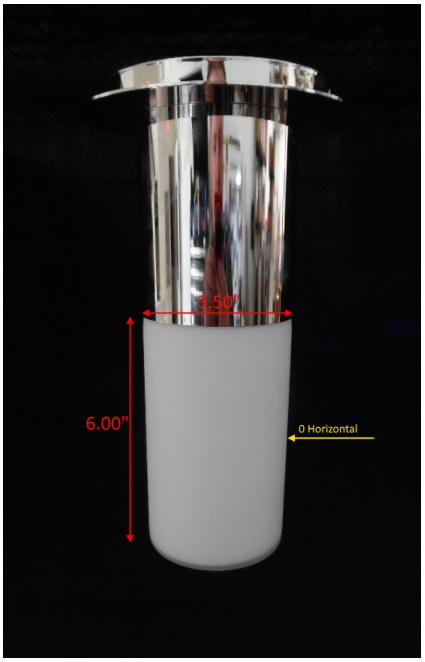
LightLab INTERNATIONAL ALLENTOWN LLC

NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA000954-003A

Catalog Number: 3-309-120 Pilar LG
Ceiling mounted, formed steel housing, formed steel center lamp holder, cast aluminum heatsink, frosted glass enclosure above LEDs, translucent white glass outer enclosure.
12 white LEDs, one Harvard Engineering E-C041041-01201J15-930 LED board
One LTF DA6W150C2040LPD010-0014 dimmable LED driver.
120.0Vac, 60.00Hz, 0.0580A, 6.44W, 0.927PF, 10.6%THD(i)



Performance Summary

Total Light Output	280	lm
Luminaire Power	6.44	W
Luminous Efficacy	43.5	lm/W

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

USA west coast LightLab International, LLC, 24825 N. 16th Avenue, Suite 125, Phoenix, AZ, 85085, Ph : +1 623-434-1499, Fx : +1 623-434-1492, www.lightlabint.com

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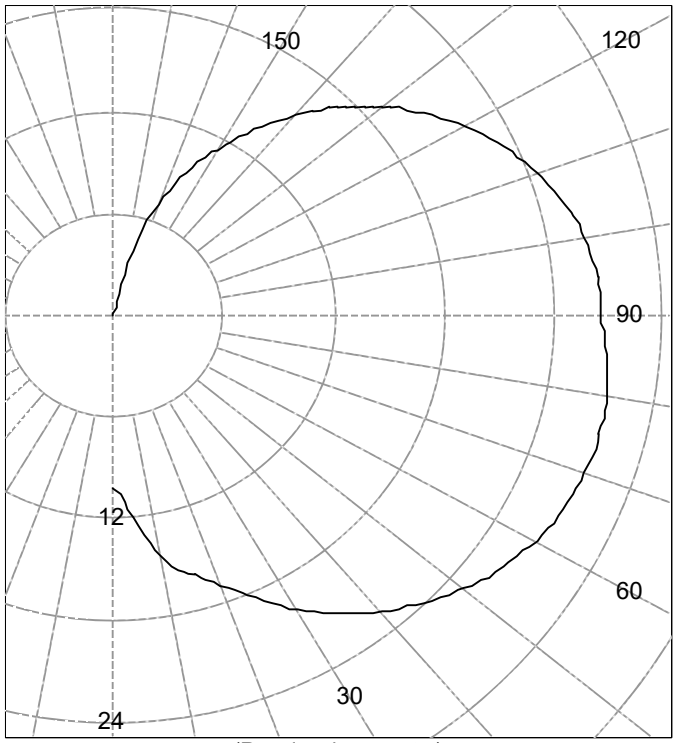
Legend: All planes - Black (cd)



(Rotational symmetry)

INTENSITY SUMMARY (cd)

Gamma	All Planes	Flux (lm)	Gamma	C0	Flux (lm)
0	10.2		90	26.7	
5	12.0	1	95	26.5	29
10	14.5		100	26.1	
15	15.8	5	105	25.5	27
20	17.0		110	24.6	
25	18.5	9	115	23.5	23
30	20.0		120	22.2	
35	21.5	14	125	20.8	19
40	22.8		130	19.1	
45	24.0	19	135	17.3	13
50	25.0		140	15.4	
55	25.9	23	145	13.4	8
60	26.6		150	11.4	
65	27.1	27	155	9.3	4
70	27.4		160	7.0	
75	27.4	29	165	4.0	1
80	27.3		170	0.8	
85	27.0	29	175	0.0	0
90	26.7		180	0.0	

AVERAGE LUMINANCE (cd / m^2)

Gamma	C0
45.0	1719
55.0	1767
65.0	1817
75.0	1870
85.0	1925

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	%Lamp	%Luminaire
0-30	14	N / A	5.1
0-40	28	N / A	9.9
0-60	70	N / A	24.9
0-90	155	N / A	55.3
40-90	127	N / A	45.4
60-90	85	N / A	30.4
90-180	125	N / A	44.7
0-180	280	N / A	100.0

Total Light Output = 280 lm

Spacing Criterion: 0-180 2.8
Spacing Criterion: 90-270 2.8

Signed: Michael L. Grather

Authorized Signatory

Date of test 6-Mar-2018
Date of report 7-Mar-2018

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One LTF DA6W150C2040LPD010-0014 dimmable LED driver.

120.0Vac, 60.00Hz, 0.0580A, 6.44W, 0.927PF, 10.6%THD(i)

Intensity (cd) and Flux (lm) data

Gamma	Intensity	Flux	Gamma	Intensity	Flux
0.0	10.2		90.0	26.7	
2.5	10.8		92.5	26.6	
5.0	12.0	1	95.0	26.5	29
7.5	13.3		97.5	26.3	
10.0	14.5		100.0	26.1	
12.5	15.3		102.5	25.8	
15.0	15.8	5	105.0	25.5	27
17.5	16.3		107.5	25.1	
20.0	17.0		110.0	24.6	
22.5	17.7		112.5	24.1	
25.0	18.5	9	115.0	23.5	23
27.5	19.3		117.5	22.9	
30.0	20.0		120.0	22.2	
32.5	20.8		122.5	21.5	
35.0	21.5	14	125.0	20.8	19
37.5	22.2		127.5	20.0	
40.0	22.8		130.0	19.1	
42.5	23.4		132.5	18.2	
45.0	24.0	19	135.0	17.3	13
47.5	24.5		137.5	16.4	
50.0	25.0		140.0	15.4	
52.5	25.5		142.5	14.4	
55.0	25.9	23	145.0	13.4	8
57.5	26.3		147.5	12.4	
60.0	26.6		150.0	11.4	
62.5	26.8		152.5	10.3	
65.0	27.1	27	155.0	9.3	4
67.5	27.2		157.5	8.2	
70.0	27.4		160.0	7.0	
72.5	27.4		162.5	5.7	
75.0	27.4	29	165.0	4.0	1
77.5	27.4		167.5	2.1	
80.0	27.3		170.0	0.8	
82.5	27.2		172.5	0.1	
85.0	27.0	29	175.0	0.0	0
87.5	26.8		177.5	0.0	
90.0	26.7		180.0	0.0	

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Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55
1	94	87	81	76	86	80	75	70	68	64	60	56	53	50	46	43	41	36
2	83	73	65	58	76	67	60	53	56	50	45	46	42	38	37	34	30	26
3	75	62	53	46	68	57	49	42	48	41	36	39	34	30	31	27	24	19
4	68	54	44	37	62	50	41	34	42	35	29	34	28	24	27	23	19	15
5	61	48	38	31	56	44	35	29	37	30	24	30	24	20	24	19	16	12
6	56	42	33	26	51	39	30	24	33	26	20	27	21	17	21	17	13	10
7	52	38	29	22	47	35	27	21	29	22	17	24	18	14	19	15	11	8
8	48	34	25	19	44	31	23	18	26	20	15	22	16	12	17	13	10	7
9	44	31	22	17	41	28	21	16	24	18	13	20	15	11	16	12	9	6
10	41	28	20	15	38	26	19	14	22	16	12	18	13	10	15	11	8	5

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	0.3	16.72	16.72
8.0	0.2	22.30	22.30
10.0	0.1	27.87	27.87
12.0	0.1	33.45	33.45
14.0	0.1	39.02	39.02
16.0	0.0	44.60	44.60

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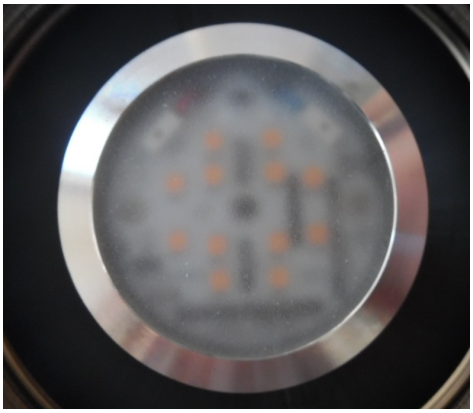

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Test Distance	9.5 m
Test Temperature	24.6 °C

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.

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Report of Test

LLIA000954-003B

Integrating Sphere Report

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One LTF DA6W150C2040LPD010-0014 dimmable LED driver.

Performance Summary

Voltage	120.0	Vac
Current	0.0578	A
Power	6.43	W
Frequency	59.97	Hz
Power Factor	0.927	
Current THD	10.5	%
Total Luminous Flux	282.8	lm
Efficacy	44.0	lm/W
Chromaticity (x,y)	(0.4421, 0.4073)	
(u',v')	(0.2525, 0.5234)	
Duv	0.0006	
CCT	2942	K
CRI (Ra)	96	
R9	82	
TM-30: Rf	93	
TM-30: Rg	101	

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

Test date: 03/06/2018
Report date: 03/07/2018

Test Report Number: LLIA000954-003B

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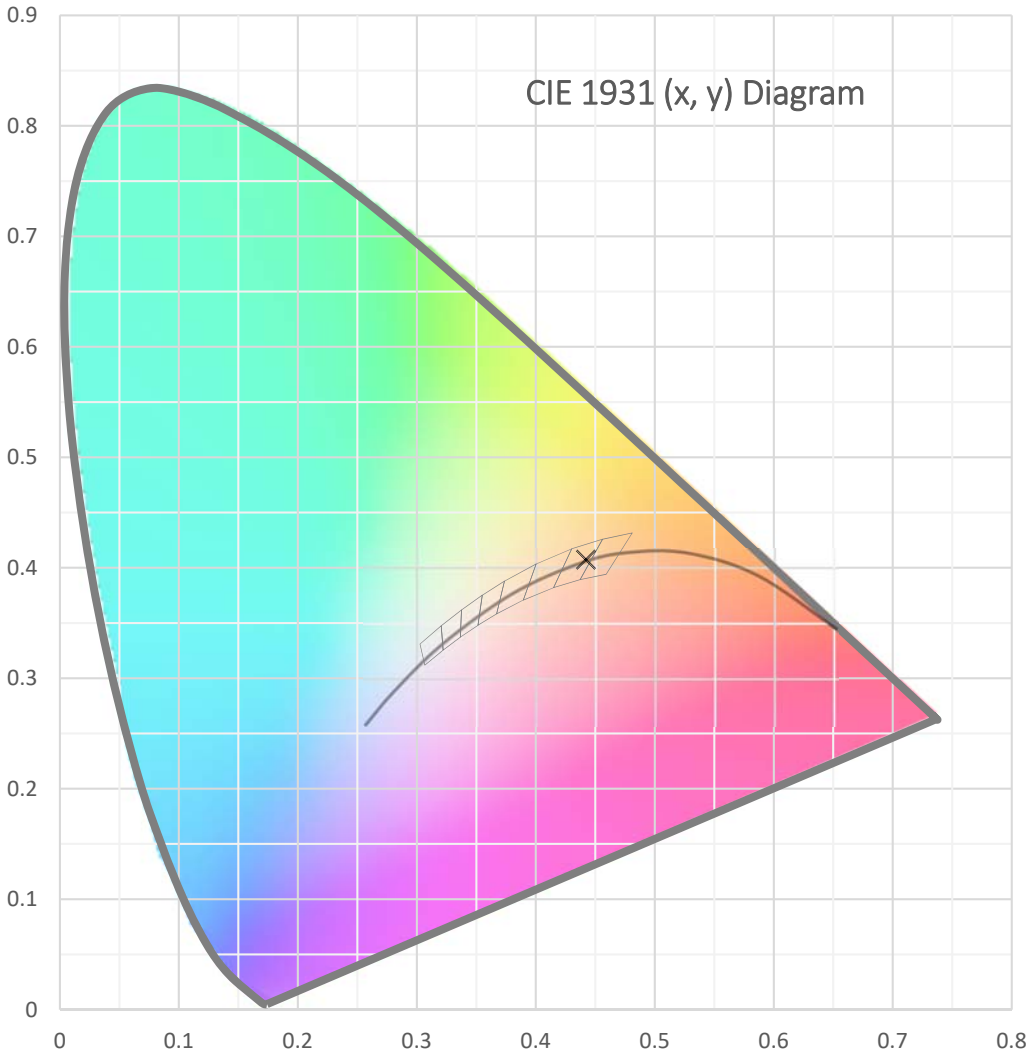

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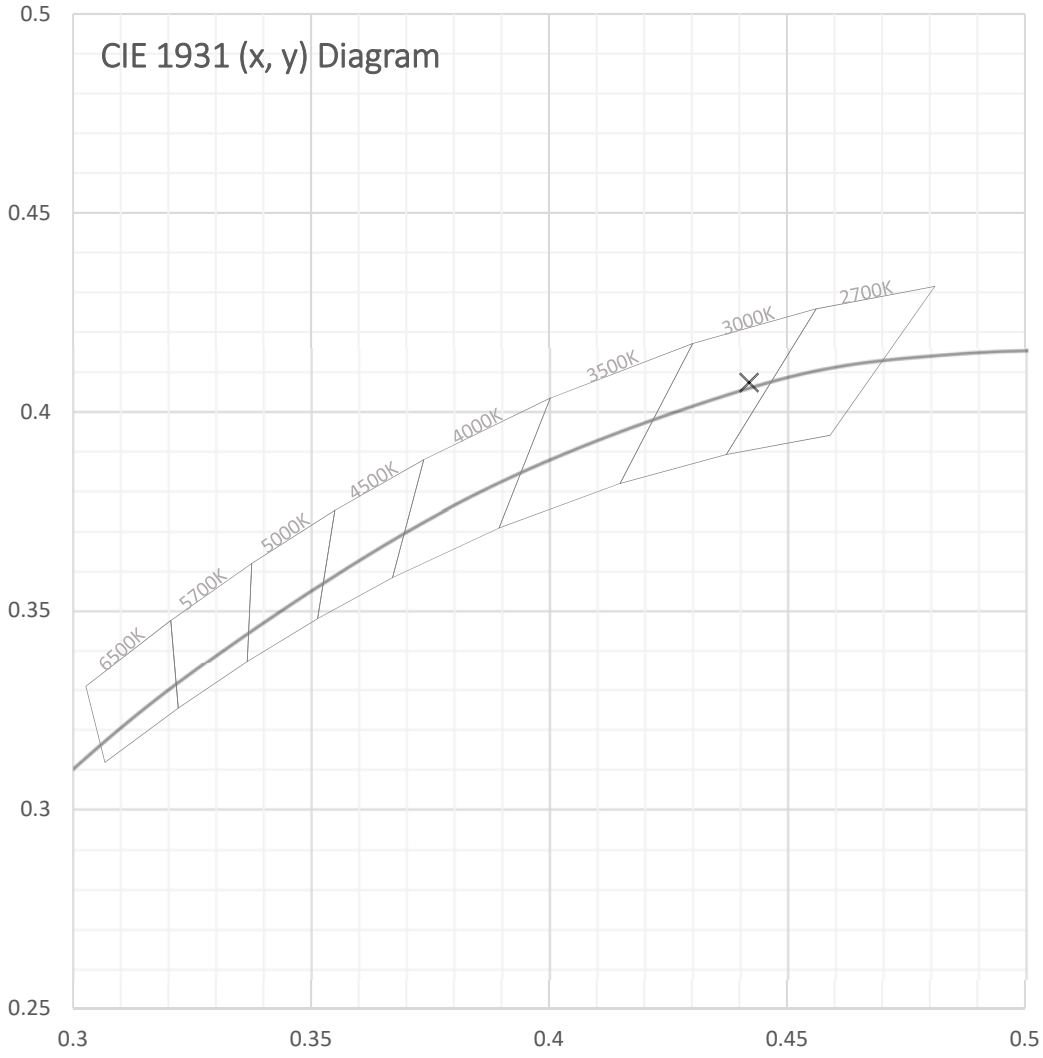

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Spectral Data	Total Radiant Flux	1.059	W
	Total Luminous Flux	282.8	Lm
	Chromaticity CIE 1931 (x, y)	(0.4421, 0.4073)	
	Chromaticity CIE 1976 (u', v')	(0.2525, 0.5234)	
	Correlated Color Temperature (CCT)	2942	K
	Color Rendering Index (Ra)	96	
	R1	97	
	R2	97	
	R3	94	
	R4	97	
	R5	96	
	R6	95	
	R7	97	
	R8	93	
	R9	82	
	R10	90	
	R11	96	
	R12	82	
	R13	97	
	R14	96	
	TM-30: Rf	93	
	TM-30: Rg	101	
	Distance from Planckian Locus (Duv)	0.0006	
	Scotopic/Photopic Ratio *	1.391	
Electrical Data			
	Voltage	120.0	Vac
	Current	0.0578	A
	Power	6.43	W
	Frequency	59.97	Hz
	Power Factor	0.927	
	Current THD	10.5	%

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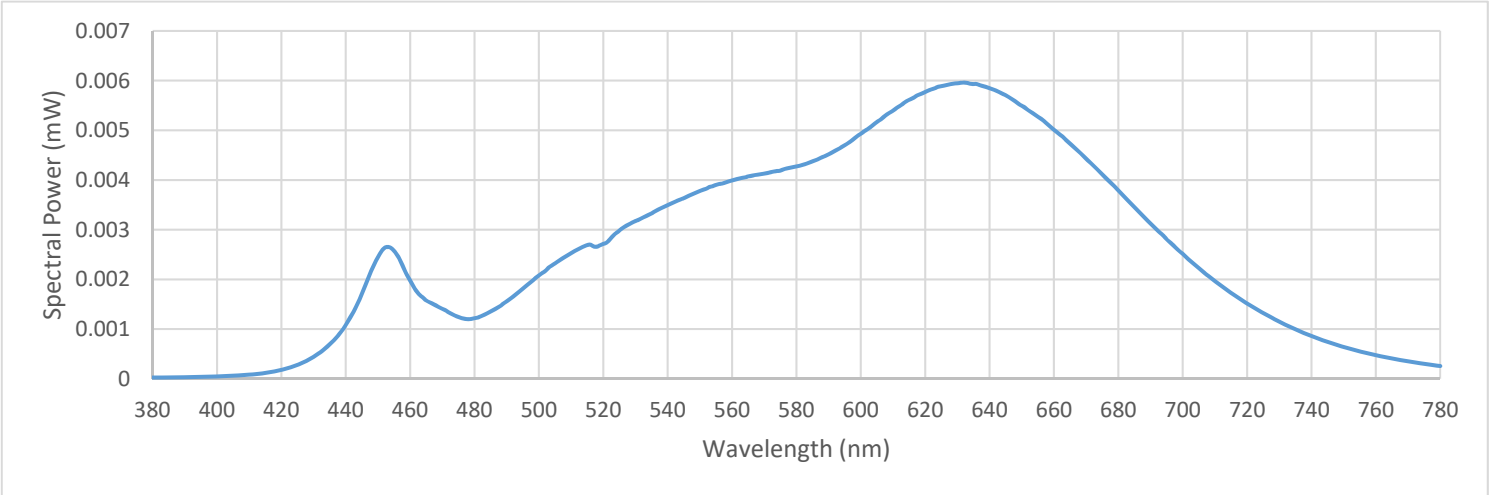
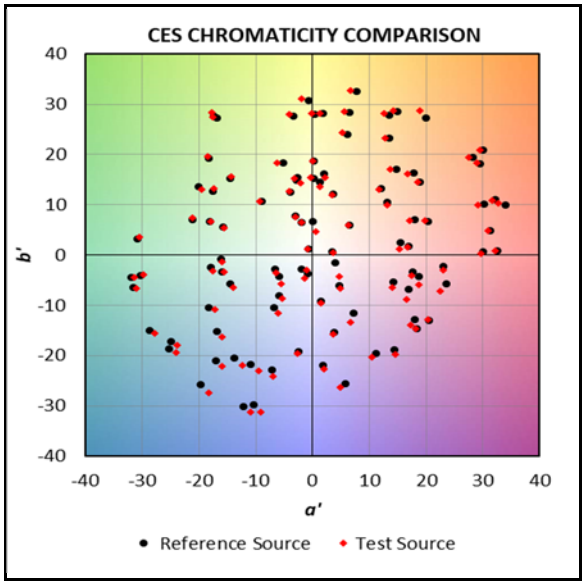
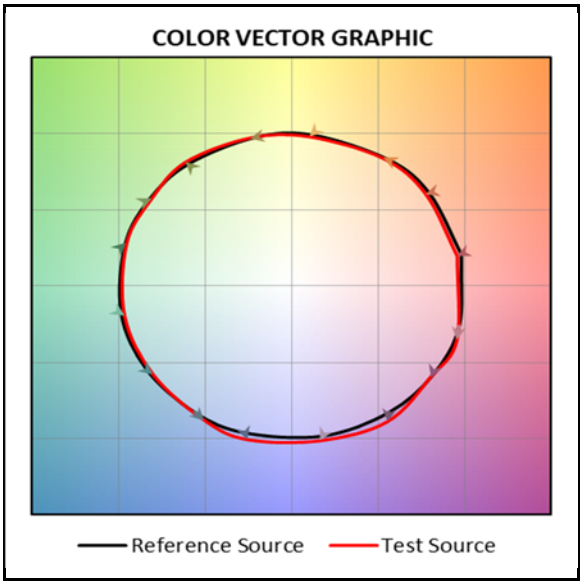
Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

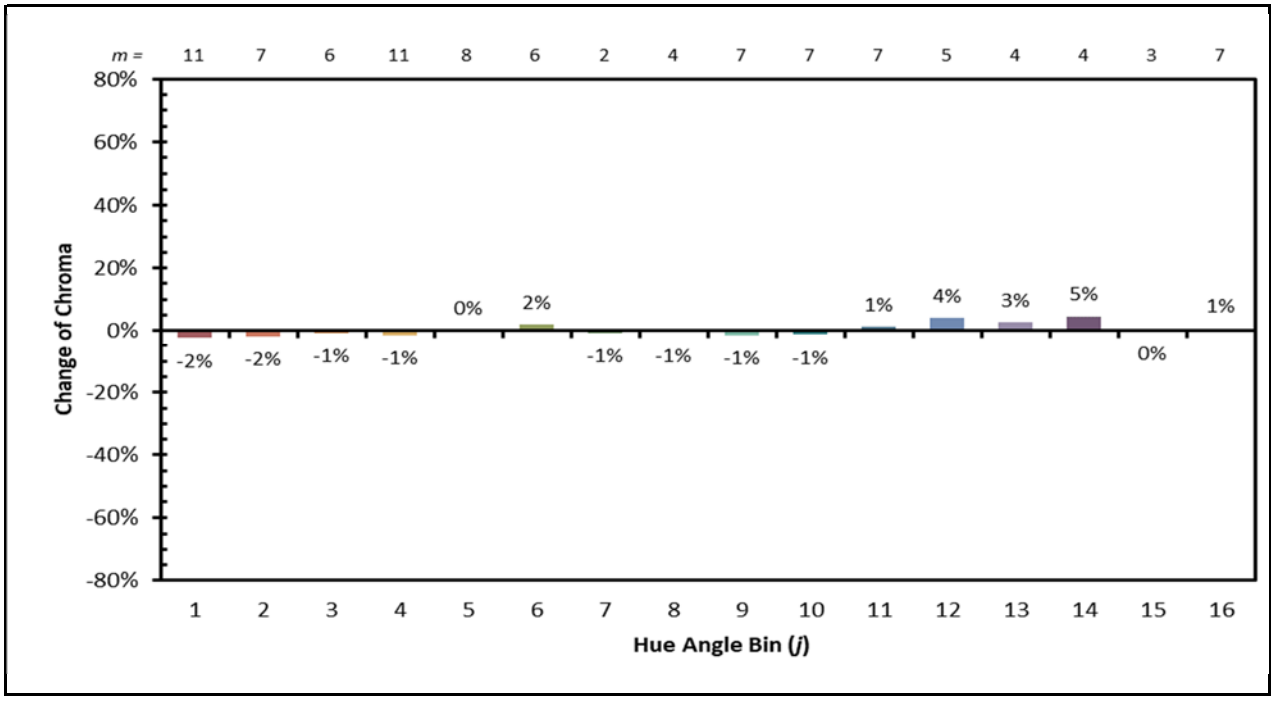
380	0.000025	480	0.001219	580	0.004273	680	0.003791
385	0.000026	485	0.001357	585	0.004377	685	0.003459
390	0.000031	490	0.001560	590	0.004519	690	0.003129
395	0.000038	495	0.001812	595	0.004701	695	0.002806
400	0.000048	500	0.002081	600	0.004928	700	0.002514
405	0.000061	505	0.002321	605	0.005171	705	0.002224
410	0.000082	510	0.002527	610	0.005392	710	0.001963
415	0.000117	515	0.002691	615	0.005616	715	0.001731
420	0.000179	520	0.002715	620	0.005768	720	0.001513
425	0.000280	525	0.002980	625	0.005885	725	0.001321
430	0.000445	530	0.003175	630	0.005946	730	0.001152
435	0.000695	535	0.003327	635	0.005932	735	0.000996
440	0.001079	540	0.003496	640	0.005851	740	0.000859
445	0.001715	545	0.003634	645	0.005708	745	0.000742
450	0.002446	550	0.003780	650	0.005494	750	0.000639
455	0.002576	555	0.003902	655	0.005275	755	0.000551
460	0.001980	560	0.003993	660	0.005018	760	0.000476
465	0.001572	565	0.004073	665	0.004732	765	0.000410
470	0.001406	570	0.004129	670	0.004427	770	0.000350
475	0.001241	575	0.004188	675	0.004118	775	0.000300
						780	0.000258



IES TM-30 Summary







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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:	24.2 °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. This report is free of erasures and corrections This report may contain data that are not covered by the NVLAP accreditation. Quantities marked with * are not covered.

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