

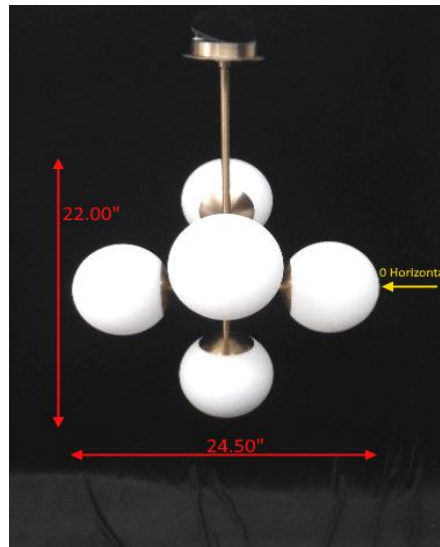
Report of Test

LLIA001286-002A

Indoor Distribution Photometry Test Report

Catalog Number: 3-681-40

Pendant mounted, formed steel housing and canopy, frosted plastic enclosure around each LED board, translucent white glass enclosures.
70 White LEDs, 5 LED boards with 14 LEDs each.



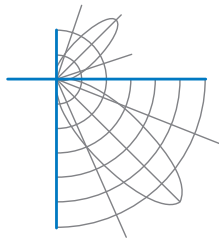
Prepared For:
Oxygen Lighting
201 Railhead Road
Fort Worth, TX 76106, USA

Performance Summary			
Input Voltage	120.0 V	Luminous Flux	1604.3 Lumens
Input Current	0.2501 A	Total Efficacy	55.1 Lm/W
Input Power	29.13 W	Downward Flux	829.2 Lumens
Frequency	60.00 Hz	Downward Flux	51.7 % of Total
Power Factor	0.971		
Current THD	23.2 %		

This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

Test date: 07/20/2020
Report date: 07/23/2020

Signed: _____

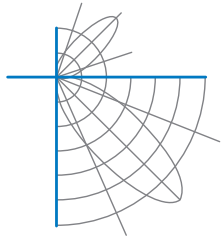


Report of Test

LLIA001286-002A

Luminous Intensity (Candela) Table

		Lateral (C-Plane) Angles								
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles	0	149	149	149	149	149	149	149	149	149
	2.5	150	150	149	149	149	149	149	149	149
	5	150	150	150	149	149	149	149	149	149
	7.5	150	150	150	149	149	149	149	149	149
	10	151	150	150	148	147	148	149	149	148
	12.5	150	150	149	147	145	146	148	148	147
	15	149	150	149	145	143	145	147	146	145
	17.5	147	149	148	143	140	143	145	145	144
	20	145	148	147	142	137	141	144	144	141
	22.5	143	146	146	140	134	139	143	142	139
	25	141	145	145	139	131	138	142	141	137
	27.5	139	143	144	138	128	137	142	139	134
	30	136	142	144	137	126	137	141	137	132
	32.5	134	140	143	137	126	136	140	136	130
	35	132	139	142	137	127	136	139	134	127
	37.5	129	137	142	137	129	135	138	132	125
	40	127	136	141	137	131	135	136	130	122
	42.5	125	135	141	137	133	135	135	129	120
	45	125	134	139	138	135	135	133	127	120
	47.5	126	133	138	138	137	135	131	126	120
50	127	132	136	138	138	135	129	125	120	
52.5	127	132	134	138	139	134	127	124	121	
55	129	131	132	137	140	133	125	123	121	
57.5	130	131	130	137	140	132	122	123	122	
60	131	131	128	135	140	131	120	122	122	
62.5	132	131	126	134	139	129	117	122	123	
65	132	132	124	134	138	129	115	122	123	
67.5	133	132	124	133	137	128	115	123	123	
70	133	133	125	133	137	128	116	123	123	
72.5	133	134	126	133	136	128	117	124	123	
75	133	135	127	134	135	129	118	124	123	
77.5	133	136	128	134	134	129	119	125	122	
80	132	136	129	135	133	130	120	125	121	
82.5	130	137	130	136	131	130	121	125	120	
85	127	137	130	136	129	131	121	125	117	
87.5	124	137	129	136	126	131	120	125	114	
90	122	137	129	136	123	131	120	125	112	

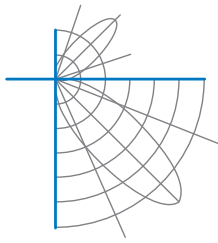


Report of Test

LLIA001286-002A

Luminous Intensity (Candela) Table

		Lateral (C-Plane) Angles								
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles	90	122	137	129	136	123	131	120	125	112
	92.5	123	136	128	136	123	131	120	124	113
	95	125	135	127	135	125	131	120	123	115
	97.5	128	134	127	134	127	130	119	123	118
	100	130	133	126	133	129	129	118	121	119
	102.5	131	131	124	132	130	129	117	120	119
	105	131	129	122	132	131	128	115	119	119
	107.5	130	128	120	131	132	128	113	117	119
	110	129	126	118	130	133	127	112	116	118
	112.5	129	125	116	130	133	127	110	115	117
	115	128	124	114	129	134	126	109	114	117
	117.5	127	123	114	129	134	126	109	113	116
	120	125	122	116	129	134	126	111	113	114
	122.5	123	122	118	129	134	127	113	113	113
	125	122	122	120	130	134	127	115	113	112
	127.5	120	122	122	130	133	128	117	113	110
	130	118	122	124	131	133	128	119	114	109
	132.5	117	122	126	131	131	128	120	114	108
	135	115	122	127	131	128	127	122	115	108
	137.5	116	123	128	130	123	126	123	116	109
	140	117	123	129	128	119	124	124	116	110
	142.5	119	124	130	126	113	122	124	117	112
	145	118	125	130	124	108	120	125	118	111
	147.5	117	124	129	122	104	117	124	118	110
150	115	123	129	120	105	116	123	118	109	
152.5	112	121	128	120	108	116	124	117	107	
155	109	120	128	121	112	117	124	117	107	
157.5	108	119	128	122	115	119	124	118	110	
160	111	121	128	124	118	121	125	121	114	
162.5	116	123	128	126	122	124	126	123	118	
165	120	125	129	128	125	126	128	125	122	
167.5	125	127	131	130	128	128	129	128	126	
170	128	130	131	131	129	129	130	129	128	
172.5	130	131	131	131	130	129	130	130	129	
175	131	131	131	130	129	129	129	129	129	
177.5	130	129	129	129	129	128	128	128	128	
180	128	128	128	128	128	128	128	128	128	



Report of Test

LLIA001286-002A

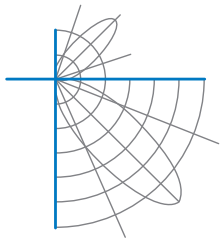
Coefficients of Utilization/Room Utilization - Zonal Cavity Method																						
Effective Floor Cavity Reflectance 0.20																						
RC	80					70					50				30				10			0
RW	70	50	30	10		70	50	30	10		50	30	10		50	30	10		50	30	10	0
RCR																						
0	108	108	108	108		99	99	99	99		84	84	84		70	70	70		58	58	58	52
1	94	88	82	77		86	81	76	72		68	64	60		56	53	50		44	42	40	35
2	84	75	67	60		77	68	62	56		57	52	47		47	42	39		37	34	31	26
3	76	64	55	48		69	59	51	45		49	43	38		40	35	31		32	28	25	21
4	69	56	47	40		63	52	43	37		43	37	31		35	30	26		28	24	21	17
5	63	50	40	34		57	46	37	31		38	32	26		31	26	22		24	21	17	14
6	58	44	35	29		53	41	33	27		34	28	23		28	23	19		22	18	15	12
7	53	40	31	25		49	37	29	23		31	24	20		25	20	16		20	16	13	10
8	49	36	27	22		45	33	25	20		28	22	17		23	18	14		18	14	11	9
9	46	33	25	19		42	30	23	18		25	19	15		21	16	13		17	13	10	8
10	43	30	22	17		39	28	21	16		23	18	14		19	15	11		16	12	9	7

For absolute test reports, RUs are expressed as a percentage of total lumen output. For relative test reports, CUs are expressed as a percentage of total lamp 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)	Ground-level distance to half-of-nadir illuminance (ft)		
		0-180 deg	90-270 deg	
6.0	4.1	8.07	7.80	
8.0	2.3	10.76	10.39	
10.0	1.5	13.45	12.99	
12.0	1.0	16.15	15.59	
14.0	0.8	18.84	18.19	
16.0	0.6	21.53	20.79	

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	920	920	920
45	772	858	831
55	793	814	862
65	815	765	852
75	821	784	832
85	784	799	795

Spacing Criterion	
0 degree plane:	1.4
90 degree plane:	1.3
180 degree plane:	1.3
270 degree plane:	1.3



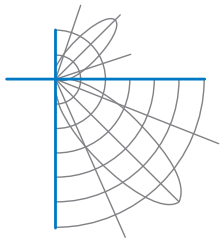
Report of Test

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UGR TABLE - CORRECTED

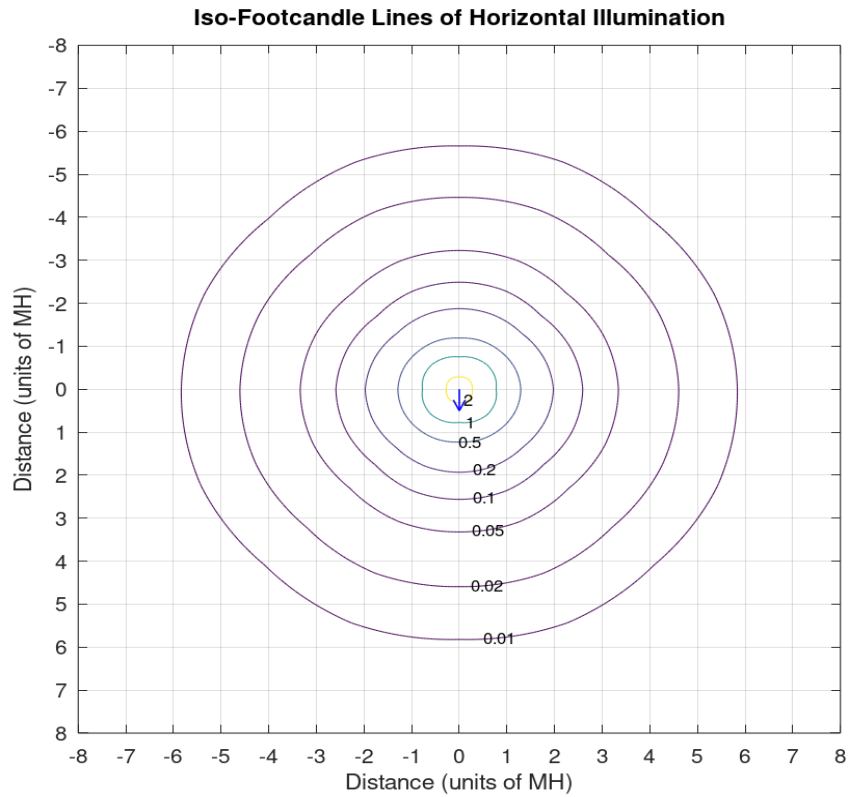
Reflectances											
Ceiling Cavity	70	70	50	50	30	70	70	50	50	30	
Walls	50	30	50	30	30	50	30	50	30	30	
Floor Cavity	20	20	20	20	20	20	20	20	20	20	
Room Size	UGR Viewed Crosswise					UGR Viewed Endwise					
X=2H	Y=2H	5.0	6.0	5.9	6.9	8.2	5.2	6.2	6.1	7.2	8.4
	3H	8.0	8.9	8.9	9.9	11.1	8.1	9.0	9.0	10.0	11.2
	4H	9.4	10.3	10.4	11.3	12.6	9.5	10.4	10.5	11.4	12.6
	6H	10.9	11.7	11.8	12.7	14.0	10.9	11.8	11.9	12.7	14.0
	8H	11.6	12.4	12.5	13.4	14.6	11.6	12.4	12.6	13.4	14.7
	12H	12.2	13.0	13.2	14.0	15.3	12.3	13.1	13.2	14.0	15.3
4H	2H	5.7	6.5	6.6	7.5	8.8	5.8	6.7	6.7	7.6	8.9
	3H	8.9	9.6	9.8	10.6	11.9	8.9	9.7	9.9	10.7	12.0
	4H	10.5	11.3	11.5	12.2	13.5	10.5	11.2	11.5	12.2	13.5
	6H	12.2	12.8	13.2	13.8	15.1	12.2	12.8	13.1	13.8	15.1
	8H	13.0	13.6	14.0	14.6	15.9	13.0	13.6	13.9	14.6	15.9
	12H	13.8	14.3	14.8	15.3	16.6	13.7	14.3	14.7	15.3	16.6
8H	4H	11.0	11.6	12.0	12.7	14.0	11.0	11.6	12.0	12.6	13.9
	6H	12.9	13.4	13.9	14.5	15.8	12.8	13.4	13.8	14.4	15.7
	8H	13.9	14.3	14.9	15.4	16.7	13.8	14.3	14.8	15.3	16.6
	12H	14.8	15.3	15.8	16.3	17.6	14.8	15.2	15.8	16.2	17.6
12H	4H	11.2	11.7	12.2	12.7	14.1	11.1	11.7	12.1	12.7	14.0
	6H	13.1	13.6	14.1	14.6	15.9	13.0	13.5	14.0	14.5	15.9
	8H	14.1	14.6	15.2	15.6	17.0	14.1	14.5	15.1	15.5	16.9

Maximum UGR = 17.6

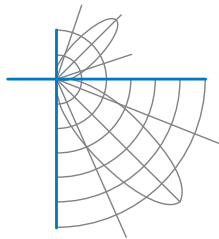


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LLIA001286-002A

Iso-Illuminance Plot



The isofootcandle values shown in the plot above are based on a mounting height of $h = 8.0$ feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution of room reflections.



Report of Test

LLIA001286-002A

Test Distance 9.5 m
Ambient Temperature 25.4 °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-79-19 and ANSI C82.77-10:2014. Format of reports and angular increments based on IES LM-41-14 and LM-46-04.

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

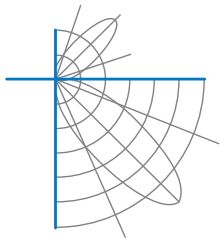
Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

This report is free of erasures and corrections.

Photometric intensity values are reported using the CIE C-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

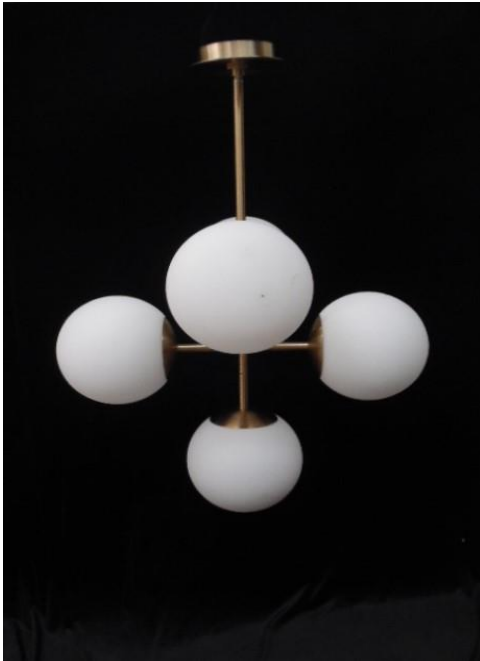
LLIA001286-002B

Integrating Sphere Report

Catalog Number: 3-681-40

Pendant mounted, formed steel housing and canopy, frosted plastic enclosure around each LED board, translucent white glass enclosures.

70 White LEDs, 5 LED boards with 14 LEDs each.



Performance Summary

Voltage	120.0 Vac
Current	0.2504 A
Power	29.15 W
Frequency	59.99 Hz
Power Factor	0.970
Current THD	23.1 %
Total Luminous Flux	1642.2 lm
Efficacy	56.3 lm/W
Chromaticity (x,y)	(0.4401, 0.4024)
(u',v')	(0.2533, 0.5212)
Duv	-0.0011
CCT	2934 K
CRI (Ra)	92
R9	64
TM-30: Rf	89
TM-30: Rg	102

Prepared For:

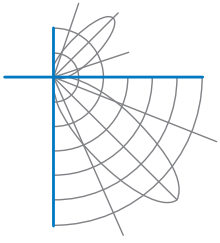
Oxygen Lighting

201 Railhead Road

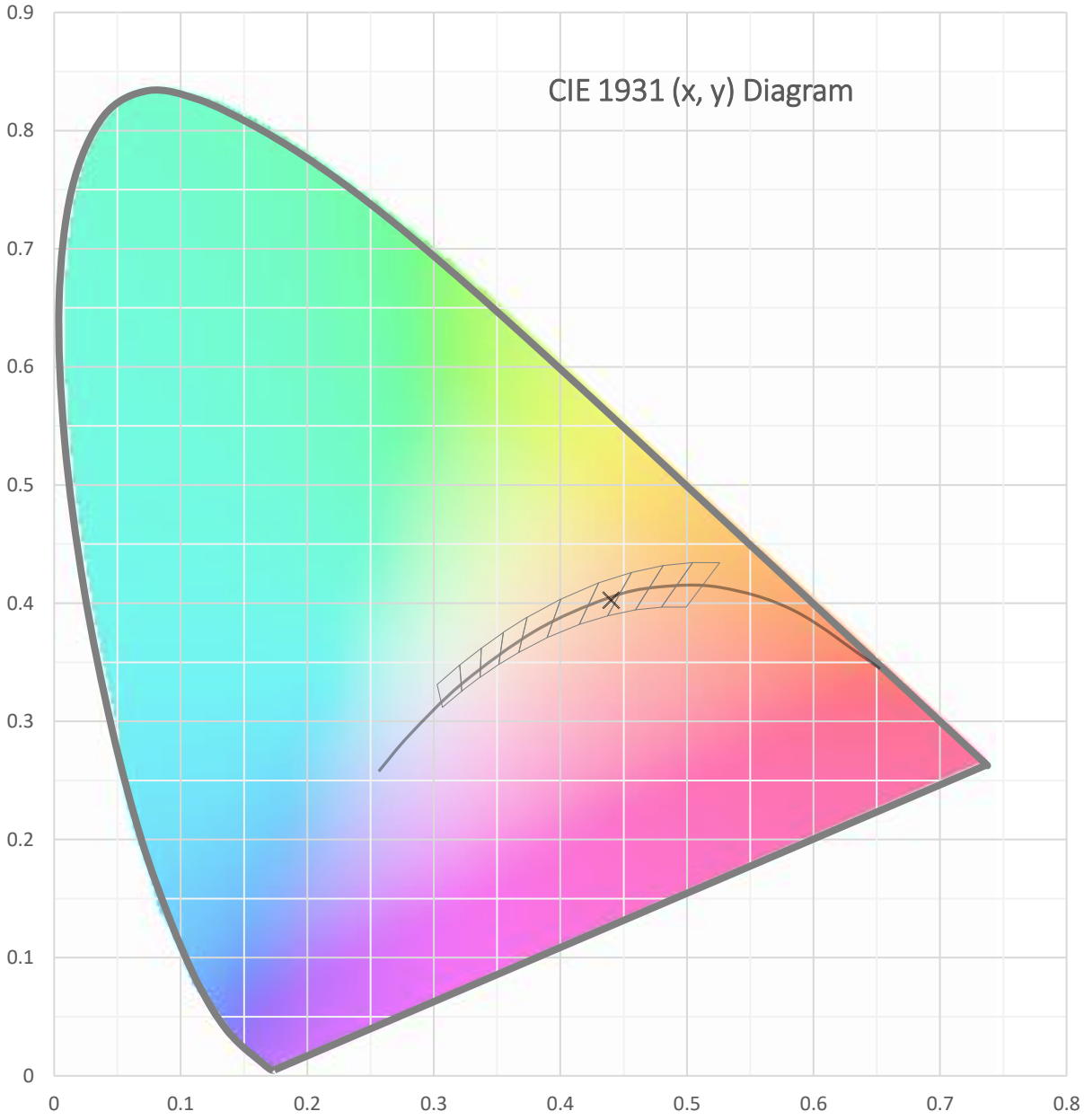
Fort Worth, TX 76106, USA

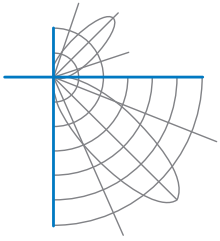
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Report date: 07/22/2020

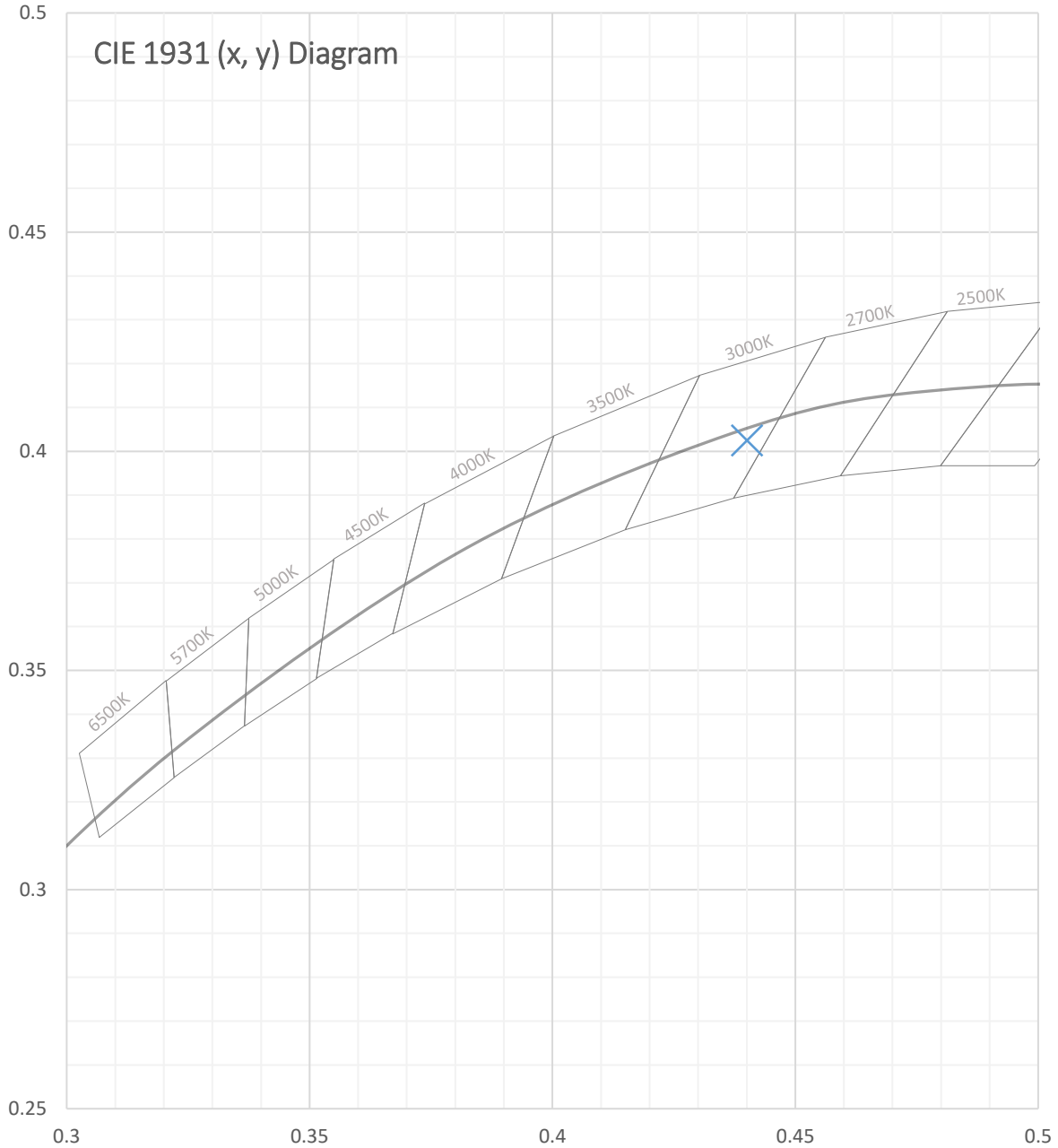


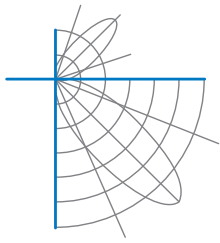
Test Report Number: LLIA001286-002B





Test Report Number: LLIA001286-002B



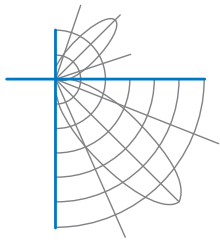


Test Report Number: LLIA001286-002B

Total Radiant Flux	5.839 W
Total Luminous Flux	1642.2 Lm
Chromaticity CIE 1931 (x, y)	(0.4401, 0.4024)
Chromaticity CIE 1976 (u', v')	(0.2533, 0.5212)
Correlated Color Temperature (CCT)	2934 K
Color Rendering Index (Ra)	92
R1	93
R2	94
R3	94
R4	93
R5	92
R6	92
R7	93
R8	85
R9	64
R10	86
R11	93
R12	79
R13	93
R14	96
TM-30: Rf	89
TM-30: Rg	102
Distance from Planckian Locus (Duv)	-0.0011
Scotopic/Photopic Ratio ϕ	1.356

Electrical Data

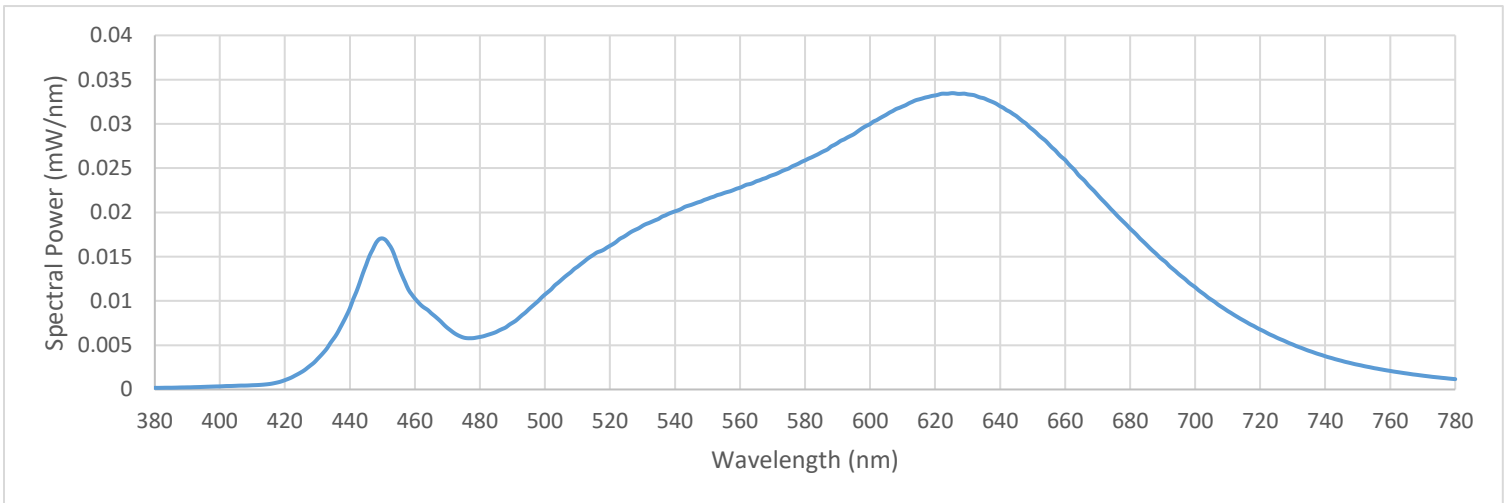
Voltage	120.0 Vac
Current	0.2504 A
Power	29.15 W
Frequency	59.99 Hz
Power Factor	0.970
Current THD	23.1 %

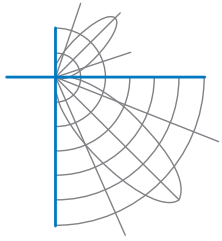


Test Report Number: LLIA001286-002B

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

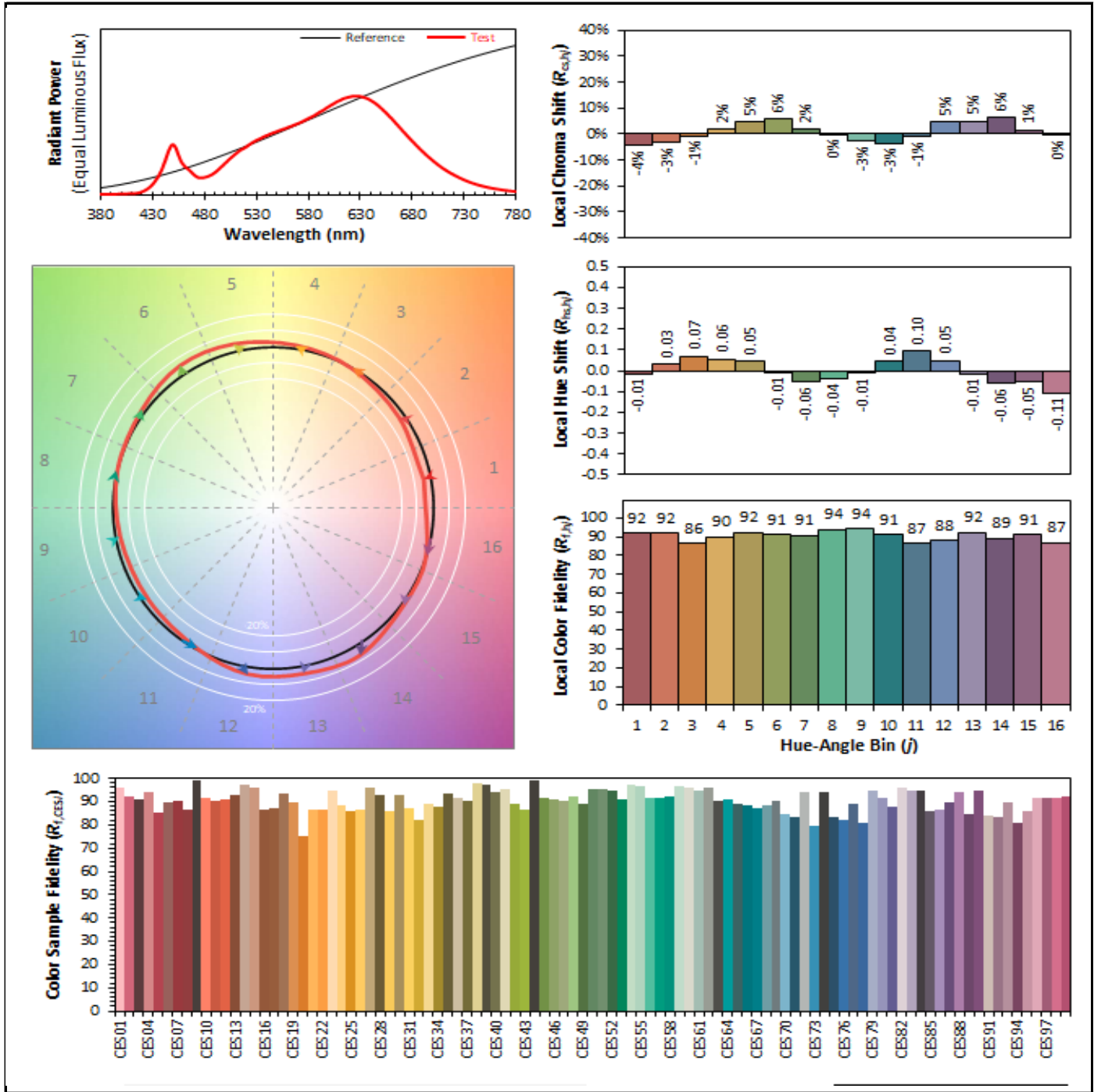
380	0.000186	480	0.005932	580	0.025874	680	0.018163
385	0.000196	485	0.006492	585	0.026780	685	0.016369
390	0.000239	490	0.007531	590	0.027838	690	0.014652
395	0.000292	495	0.009048	595	0.028832	695	0.013015
400	0.000348	500	0.010728	600	0.029975	700	0.011554
405	0.000414	505	0.012358	605	0.031038	705	0.010136
410	0.000478	510	0.013857	610	0.031969	710	0.008868
415	0.000604	515	0.015230	615	0.032766	715	0.007771
420	0.001055	520	0.016229	620	0.033209	720	0.006770
425	0.001942	525	0.017421	625	0.033469	725	0.005870
430	0.003430	530	0.018483	630	0.033340	730	0.005083
435	0.005742	535	0.019277	635	0.032898	735	0.004364
440	0.009175	540	0.020121	640	0.031997	740	0.003754
445	0.014077	545	0.020854	645	0.030887	745	0.003239
450	0.017061	550	0.021530	650	0.029367	750	0.002796
455	0.013833	555	0.022183	655	0.027699	755	0.002411
460	0.010275	560	0.022794	660	0.025936	760	0.002097
465	0.008613	565	0.023514	665	0.023911	765	0.001811
470	0.006956	570	0.024209	670	0.021973	770	0.001561
475	0.005858	575	0.024961	675	0.020041	775	0.001351
						780	0.001163

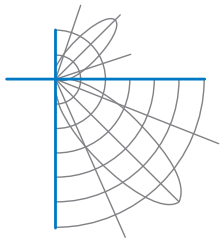




Test Report Number: LLIA001286-002B

IES TM-30 Details





Test Report Number: LLIA001286-002B

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: 25.3 °C

Test Procedure: Tested in accordance with the applicable sections of:
LM-79-19, LM-78-07, LM-58-13, ANSI_ANSLG C78.377-2017, TM-30-18

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

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