



## Report of Test

**LLIA001333-006A**

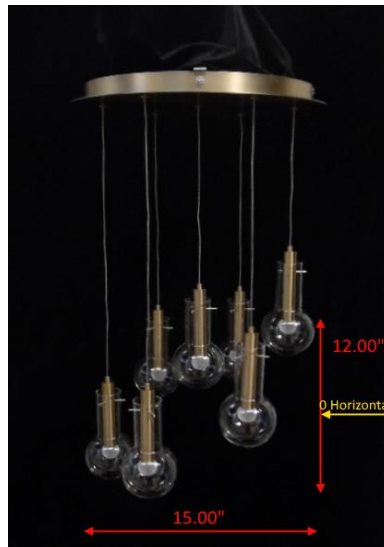
Indoor Distribution Photometry Test Report

Catalog Number: 3-674-40 Primo

Pendant mounted, formed steel and aluminum canopy, tubular steel housings, translucent white plastic enclosures with outer clear glass enclosures.

7 White LEDs

One ES LD017D-CA07224-M18F LED driver



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

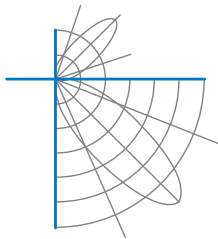
Performance Summary			
Input Voltage	120.0 V	Luminous Flux	630.0 Lumens
Input Current	0.1572 A	Total Efficacy	33.6 Lm/W
Input Power	18.77 W	Downward Flux	491.7 Lumens
Frequency	60.00 Hz	Downward Flux	78.0 % of Total
Power Factor	0.995		
Current THD	4.6 %		

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

Test date: 10/21/2020

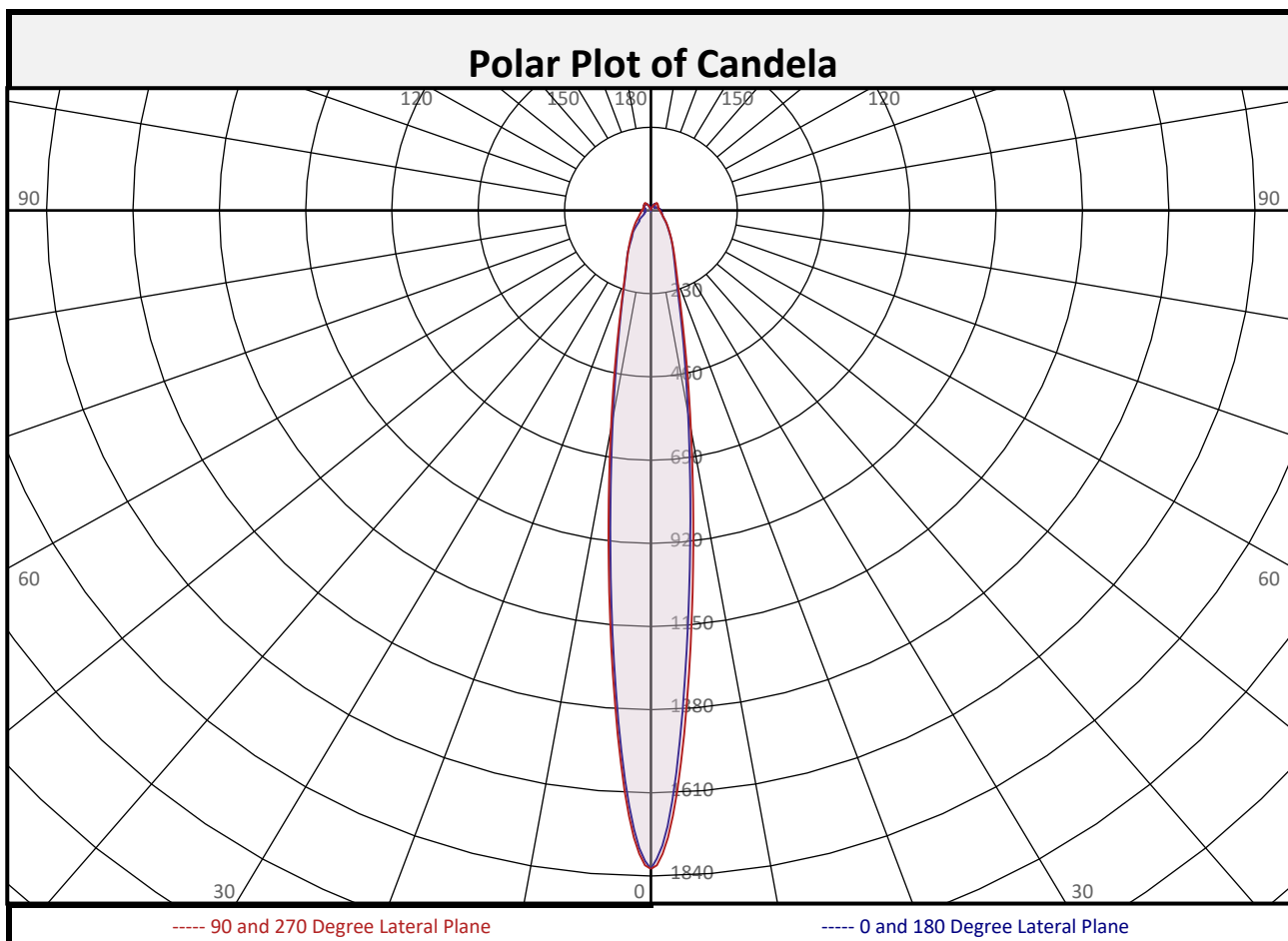
Report date: 10/21/2020

Signed: \_\_\_\_\_

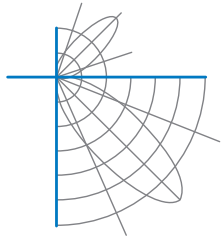


## Report of Test

### LLIA001333-006A



Zonal Flux Summary										
Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	93.3	14.8%		90-100	27.7	4.4%		0-20	185.7	29.5%
10-20	92.3	14.7%		100-110	25.3	4.0%		0-30	255.2	40.5%
20-30	69.6	11.0%		110-120	22.5	3.6%		0-40	314.0	49.8%
30-40	58.8	9.3%		120-130	20.3	3.2%		0-60	400.5	63.6%
40-50	47.7	7.6%		130-140	18.2	2.9%		0-80	462.9	73.5%
50-60	38.7	6.1%		140-150	14.3	2.3%		10-90	398.4	63.2%
60-70	32.3	5.1%		150-160	7.2	1.1%		20-50	176.1	28.0%
70-80	30.0	4.8%		160-170	2.6	0.4%		40-90	177.7	28.2%
80-90	28.9	4.6%		170-180	0.3	0.0%		60-90	91.2	14.5%
0-90	491.7	78.0%		90-180	138.3	22.0%		0-180	630.0	100.0%

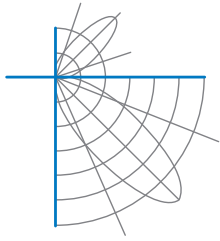


## Report of Test

### LLIA001333-006A

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	1820	1820	1820	1820	1820	1820	1820	1820	1820
	2.5	1556	1563	1580	1587	1606	1606	1591	1583	1576
	5	1141	1140	1162	1180	1210	1218	1198	1181	1172
	7.5	807	812	827	844	864	863	846	831	823
	10	572	584	593	602	612	606	594	585	580
	12.5	415	425	431	437	441	436	428	423	419
	15	311	314	321	325	327	326	320	319	316
	17.5	241	242	248	252	255	254	250	248	248
	20	197	198	201	205	207	206	204	202	201
	22.5	168	169	172	173	175	174	172	171	171
	25	147	148	149	150	151	151	149	149	150
	27.5	130	130	132	132	133	133	132	131	133
	30	116	116	117	117	118	118	117	117	115
	32.5	104	104	105	105	105	106	105	105	98
	35	93	94	94	94	94	95	95	95	86
	37.5	83	84	84	84	85	83	86	86	79
	40	75	75	76	76	76	72	76	78	68
	42.5	68	68	69	69	69	64	68	71	56
	45	63	63	63	63	63	57	61	65	45
	47.5	58	58	58	58	58	52	56	59	41
50	53	53	53	54	54	47	51	54	40	
52.5	49	49	49	49	49	43	47	50	35	
55	45	45	45	44	45	39	43	45	29	
57.5	41	41	41	41	42	35	40	41	24	
60	38	39	38	38	39	32	38	37	22	
62.5	36	36	36	35	36	30	36	34	20	
65	35	35	34	33	34	28	34	33	19	
67.5	33	33	33	32	33	26	33	32	18	
70	32	32	31	31	32	25	32	33	18	
72.5	31	31	30	30	30	24	31	33	17	
75	30	30	30	28	29	24	30	32	16	
77.5	29	30	29	28	27	24	29	31	16	
80	29	29	29	27	27	24	29	30	16	
82.5	28	29	28	27	26	23	29	30	17	
85	28	29	28	26	25	23	29	29	17	
87.5	27	28	28	25	24	23	29	29	17	
90	27	28	28	25	24	23	28	28	16	

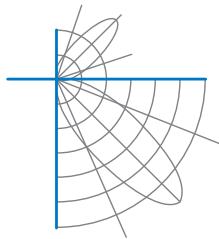


## Report of Test

### LLIA001333-006A

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	27	28	28	25	24	23	28	28	16
	92.5	25	28	28	25	23	23	28	28	16
	95	25	28	28	25	22	23	28	28	16
	97.5	25	28	28	25	22	23	28	28	16
	100	24	27	27	24	22	23	27	27	16
	102.5	23	27	27	23	22	23	26	27	16
	105	22	27	26	22	21	23	26	27	16
	107.5	21	26	26	22	21	23	25	26	17
	110	20	25	25	21	21	23	25	26	18
	112.5	20	24	25	20	21	23	25	25	18
	115	18	24	25	20	21	23	25	25	19
	117.5	18	23	25	21	22	23	25	25	19
	120	15	24	24	20	22	23	25	25	20
	122.5	14	25	24	19	22	23	25	25	21
	125	15	26	24	19	23	23	25	24	22
	127.5	13	25	24	20	23	22	25	25	23
	130	13	24	24	20	24	22	25	25	23
	132.5	13	25	24	20	24	23	25	25	24
	135	14	26	25	20	25	23	25	25	24
	137.5	14	27	26	21	25	23	25	25	23
140	15	27	26	22	26	24	25	22	21	
142.5	17	27	27	22	26	25	25	21	21	
145	18	26	26	22	25	23	20	21	21	
147.5	20	26	25	21	22	21	18	21	21	
150	20	24	23	21	19	20	17	17	20	
152.5	20	19	21	18	17	17	16	16	19	
155	18	17	18	16	16	13	15	15	14	
157.5	13	14	13	13	12	9	12	12	10	
160	10	13	10	11	11	9	11	12	10	
162.5	10	12	10	9	9	9	10	11	10	
165	10	10	9	9	8	9	9	9	10	
167.5	9	7	8	7	7	9	8	8	9	
170	6	5	5	5	5	7	6	6	8	
172.5	1	2	2	3	4	4	4	5	4	
175	0	0	0	0	0	1	1	1	2	
177.5	0	0	0	0	0	0	0	0	0	
180	0	0	0	0	0	0	0	0	0	



## Report of Test

### LLIA001333-006A

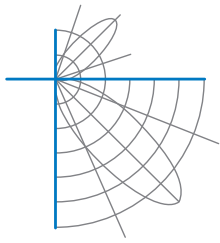
Coefficients of Utilization/Room Utilization - Zonal Cavity Method																					
Effective Floor Cavity Reflectance 0.20																					
RC	80				70				50				30				10				0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	114	114	114	114	109	109	109	109	99	99	99	90	90	90	82	82	82	78			
1	104	100	96	92	99	95	92	89	87	84	82	80	78	76	73	71	70	66			
2	97	89	84	79	92	86	80	76	79	75	71	72	69	66	66	64	62	58			
3	90	81	74	69	86	78	72	67	72	67	63	66	63	59	61	58	56	53			
4	84	74	67	61	80	72	65	60	66	61	57	62	57	54	57	54	51	48			
5	79	68	61	56	76	66	59	54	62	56	52	58	53	49	54	50	47	45			
6	74	64	56	51	71	62	55	50	58	52	48	54	49	46	51	47	44	42			
7	70	59	52	47	68	58	51	46	54	49	45	51	46	43	48	44	41	39			
8	67	56	49	44	64	54	48	43	51	46	42	48	44	40	46	42	39	37			
9	64	53	46	41	61	51	45	41	49	43	39	46	41	38	44	40	37	35			
10	61	50	43	39	58	49	42	38	46	41	37	44	39	36	42	38	35	34			

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	50.6	1.38	1.47
8.0	28.4	1.84	1.95
10.0	18.2	2.31	2.44
12.0	12.6	2.77	2.93
14.0	9.3	3.23	3.42
16.0	7.1	3.69	3.91

Average Luminance (cd/m <sup>2</sup> )			
	0 deg Plane	45 deg Plane	90 deg Plane
0	303664	303664	303664
45	10434	10507	10574
55	7430	7502	7541
65	5767	5691	5745
75	5042	4925	4768
85	4667	4703	4201

Spacing Criterion	
0 degree plane:	0.2
90 degree plane:	0.2
180 degree plane:	0.2
270 degree plane:	0.2



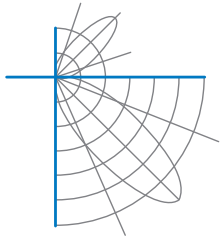
## Report of Test

### LLIA001333-006A

#### UGR TABLE - CORRECTED

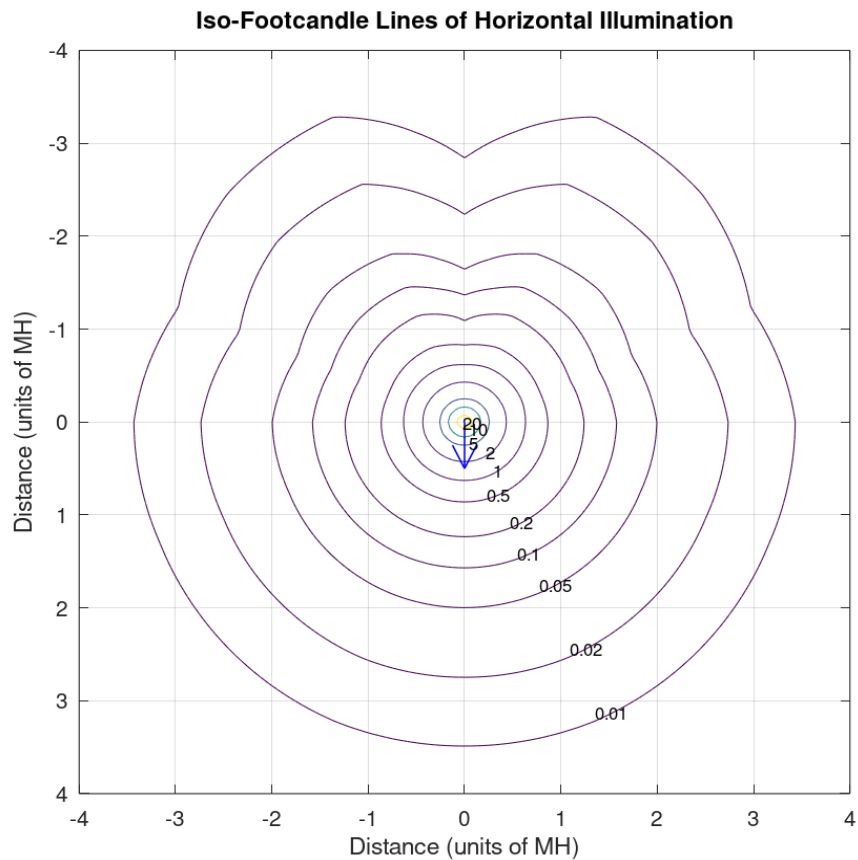
Reflectances											
Ceiling Cavity		70	70	50	50	30	70	70	50	50	30
Walls		50	30	50	30	30	50	30	50	30	30
Floor Cavity		20	20	20	20	20	20	20	20	20	20
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	3.0	4.0	3.7	4.7	5.5	2.5	3.6	3.2	4.3	5.1
	3H	5.1	6.1	5.8	6.8	7.6	4.7	5.6	5.4	6.3	7.2
	4H	6.2	7.1	6.9	7.8	8.7	5.7	6.6	6.4	7.3	8.2
	6H	7.3	8.1	8.0	8.9	9.7	6.7	7.6	7.5	8.3	9.2
	8H	7.8	8.7	8.6	9.4	10.3	7.3	8.1	8.0	8.8	9.7
	12H	8.4	9.2	9.1	9.9	10.8	7.8	8.6	8.6	9.3	10.2
4H	2H	3.5	4.4	4.2	5.1	5.9	3.1	4.1	3.9	4.8	5.6
	3H	5.9	6.7	6.6	7.4	8.3	5.4	6.2	6.2	7.0	7.8
	4H	7.1	7.8	7.9	8.6	9.5	6.6	7.3	7.3	8.1	8.9
	6H	8.4	9.1	9.2	9.8	10.7	7.8	8.5	8.6	9.2	10.1
	8H	9.1	9.7	9.8	10.4	11.4	8.5	9.1	9.2	9.8	10.8
	12H	9.8	10.3	10.5	11.1	12.0	9.1	9.7	9.9	10.5	11.4
8H	4H	7.5	8.1	8.3	8.9	9.8	7.1	7.7	7.8	8.4	9.3
	6H	9.0	9.5	9.8	10.3	11.2	8.5	9.0	9.3	9.8	10.7
	8H	9.8	10.3	10.6	11.1	12.0	9.3	9.7	10.1	10.5	11.5
	12H	10.7	11.1	11.5	11.9	12.9	10.1	10.5	10.9	11.3	12.3
12H	4H	7.6	8.1	8.4	8.9	9.8	7.2	7.7	7.9	8.5	9.4
	6H	9.2	9.6	10.0	10.4	11.4	8.7	9.1	9.5	9.9	10.9
	8H	10.1	10.5	10.9	11.3	12.3	9.5	9.9	10.3	10.7	11.7

Maximum UGR = 12.9

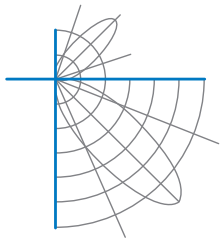


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**Iso-Illuminance Plot**



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.

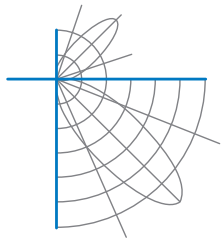


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**Additional Pictures of Test Subject**







## Report of Test

### LLIA001333-006A

Test Distance                    9.5 m  
Ambient Temperature        24.8 °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 IES LM-79-19. 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.

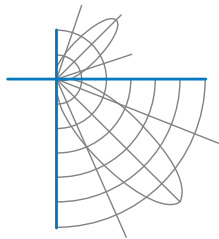
Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

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

**LLIA001333-006B**

Integrating Sphere Report

Catalog Number: 3-674-40 Primo

Pendant mounted, formed steel and aluminum canopy, tubular steel housings,  
translucent white plastic enclosures with outer clear glass enclosures.

7 White LEDs

One ES LD017D-CA07224-M18F LED driver

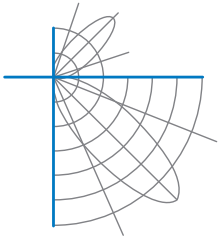


### Performance Summary

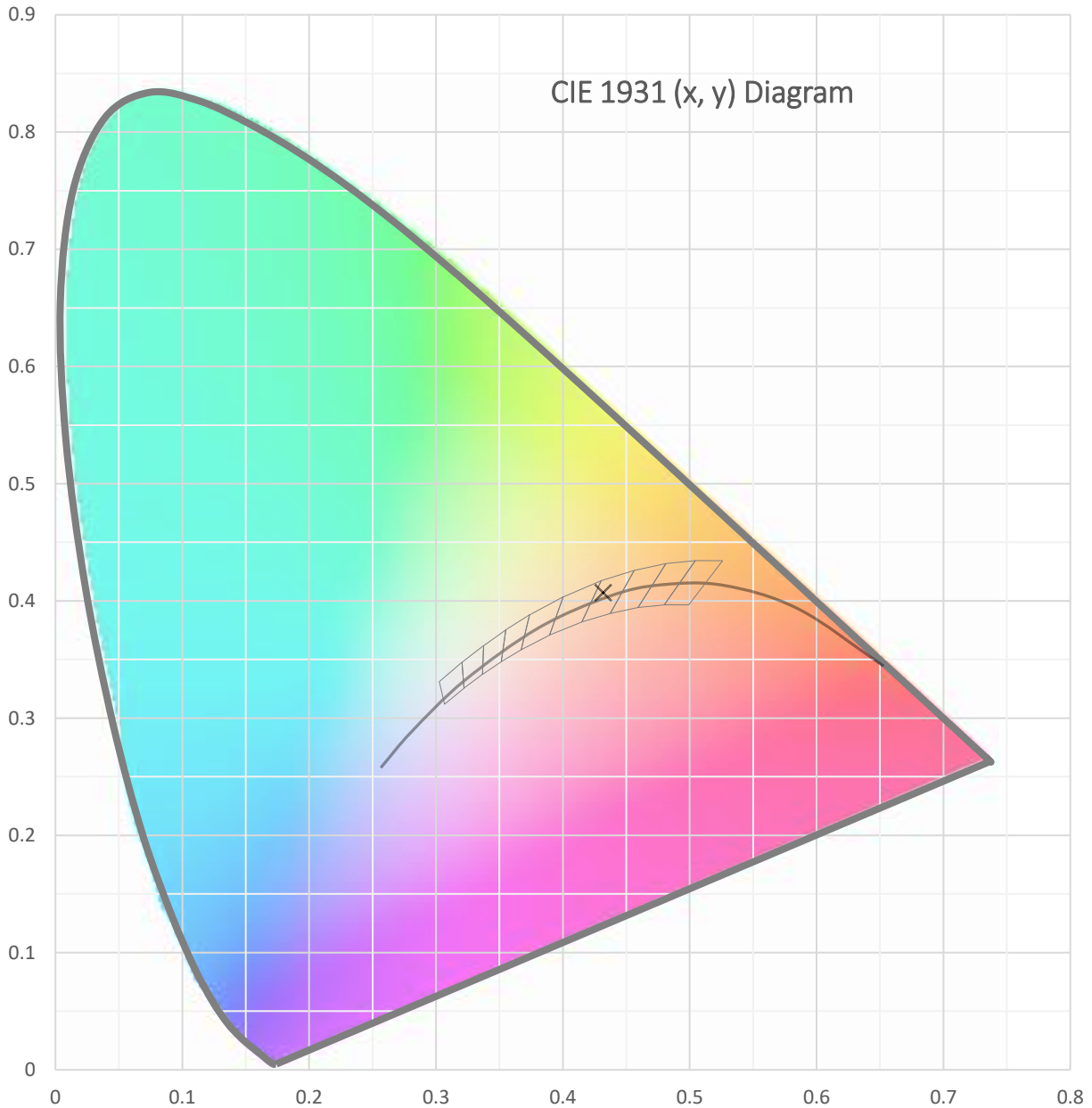
Voltage	120.0 Vac
Current	0.1586 A
Power	18.92 W
Frequency	59.99 Hz
Power Factor	0.995
Current THD	5.2 %
Total Luminous Flux	652.2 lm
Efficacy	34.5 lm/W
Chromaticity (x,y)	(0.4317, 0.4070)
(u',v')	(0.2459, 0.5218)
Duv	0.0020
CCT	3115 K
CRI (Ra)	92
R9	59
TM-30: Rf	91
TM-30: Rg	99

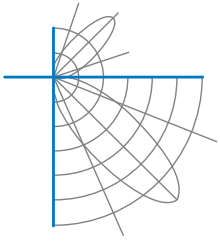
Prepared For:  
Oxygen Lighting  
201 Railhead Road  
Fort Worth, TX 76106, USA

Test date: 10/21/2020  
Report date: 10/21/2020

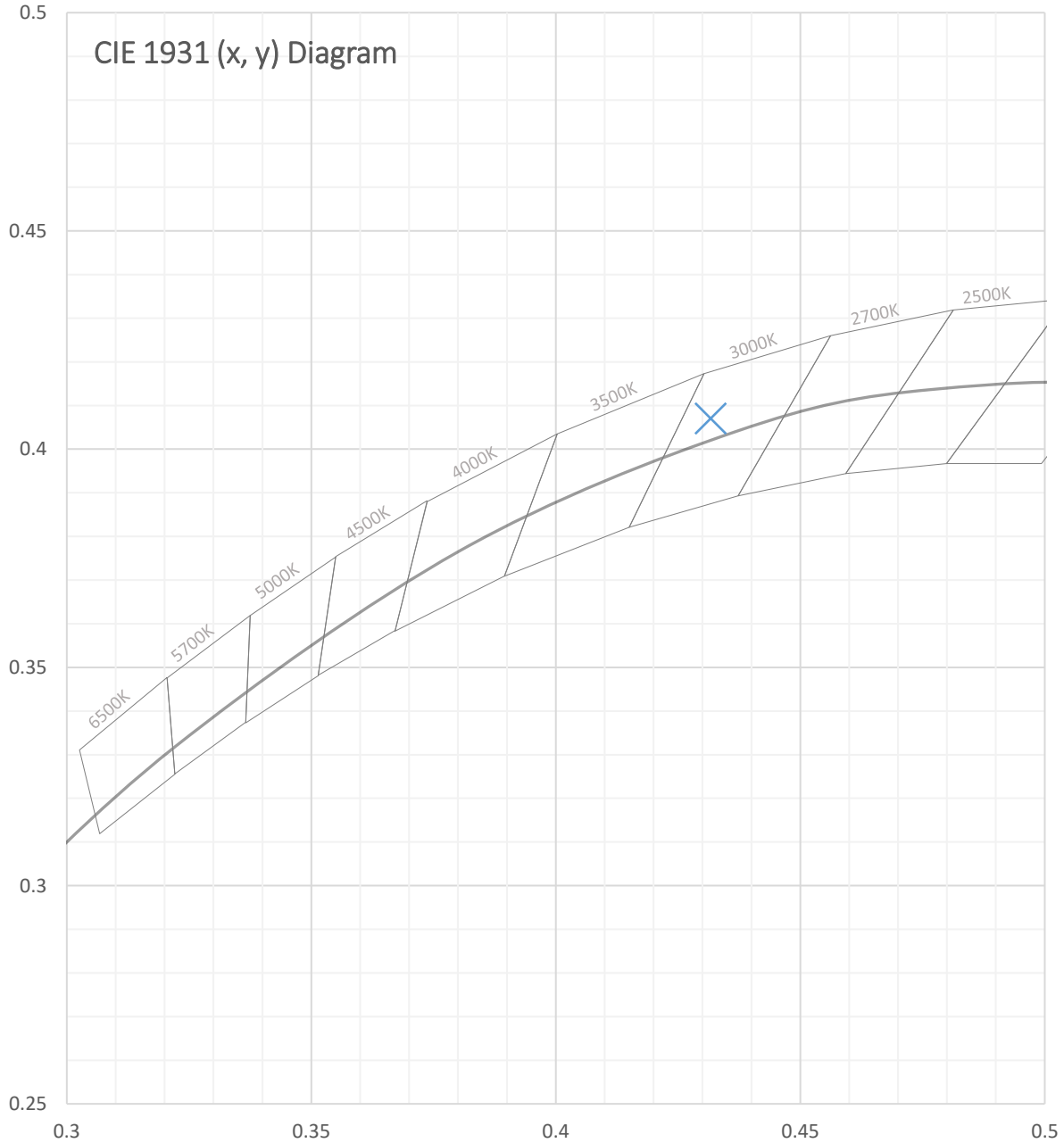


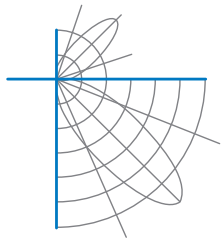
Test Report Number: LLIA001333-006B





Test Report Number: LLIA001333-006B



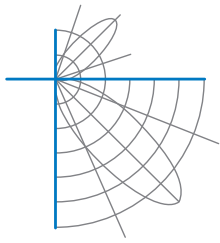


Test Report Number: LLIA001333-006B

Total Radiant Flux	2.243 W
Total Luminous Flux	652.2 Lm
Chromaticity CIE 1931 (x, y)	(0.4317, 0.4070)
Chromaticity CIE 1976 (u', v')	(0.2459, 0.5218)
Correlated Color Temperature (CCT)	3115 K
Color Rendering Index (Ra)	92
R1	92
R2	95
R3	96
R4	93
R5	91
R6	93
R7	94
R8	83
R9	59
R10	87
R11	93
R12	80
R13	93
R14	97
TM-30: Rf	91
TM-30: Rg	99
Distance from Planckian Locus (Duv)	0.0020
Scotopic/Photopic Ratio ‡	1.440

**Electrical Data**

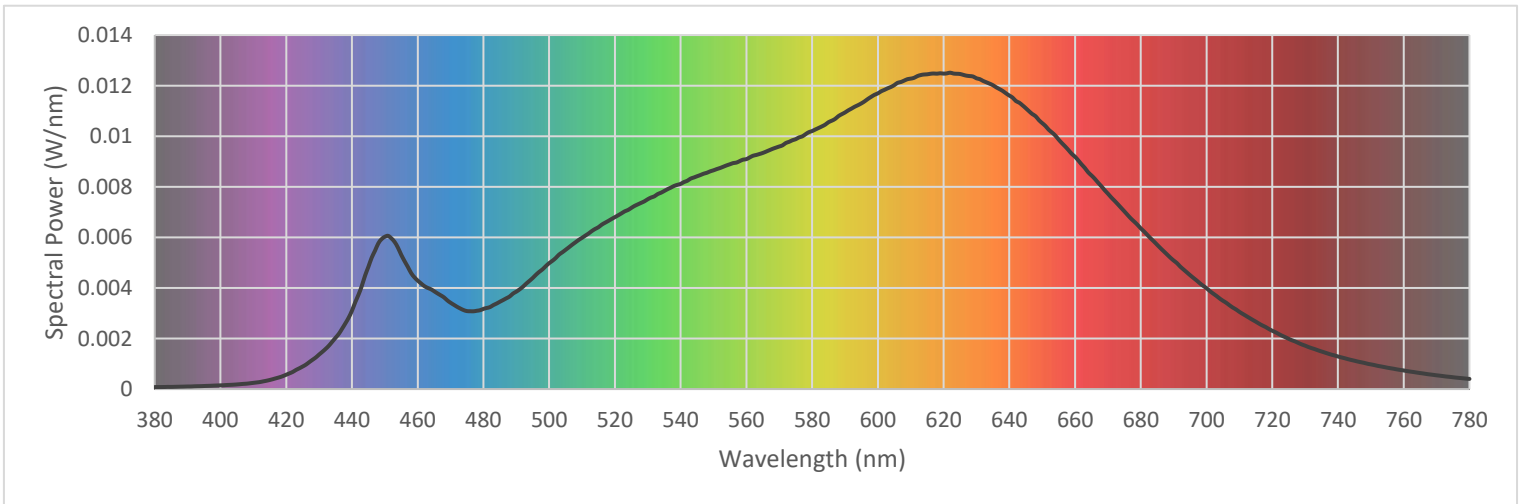
Voltage	120.0 Vac
Current	0.1586 A
Power	18.92 W
Frequency	59.99 Hz
Power Factor	0.995
Current THD	5.2 %

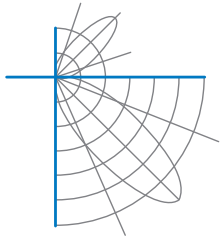


Test Report Number: LLIA001333-006B

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

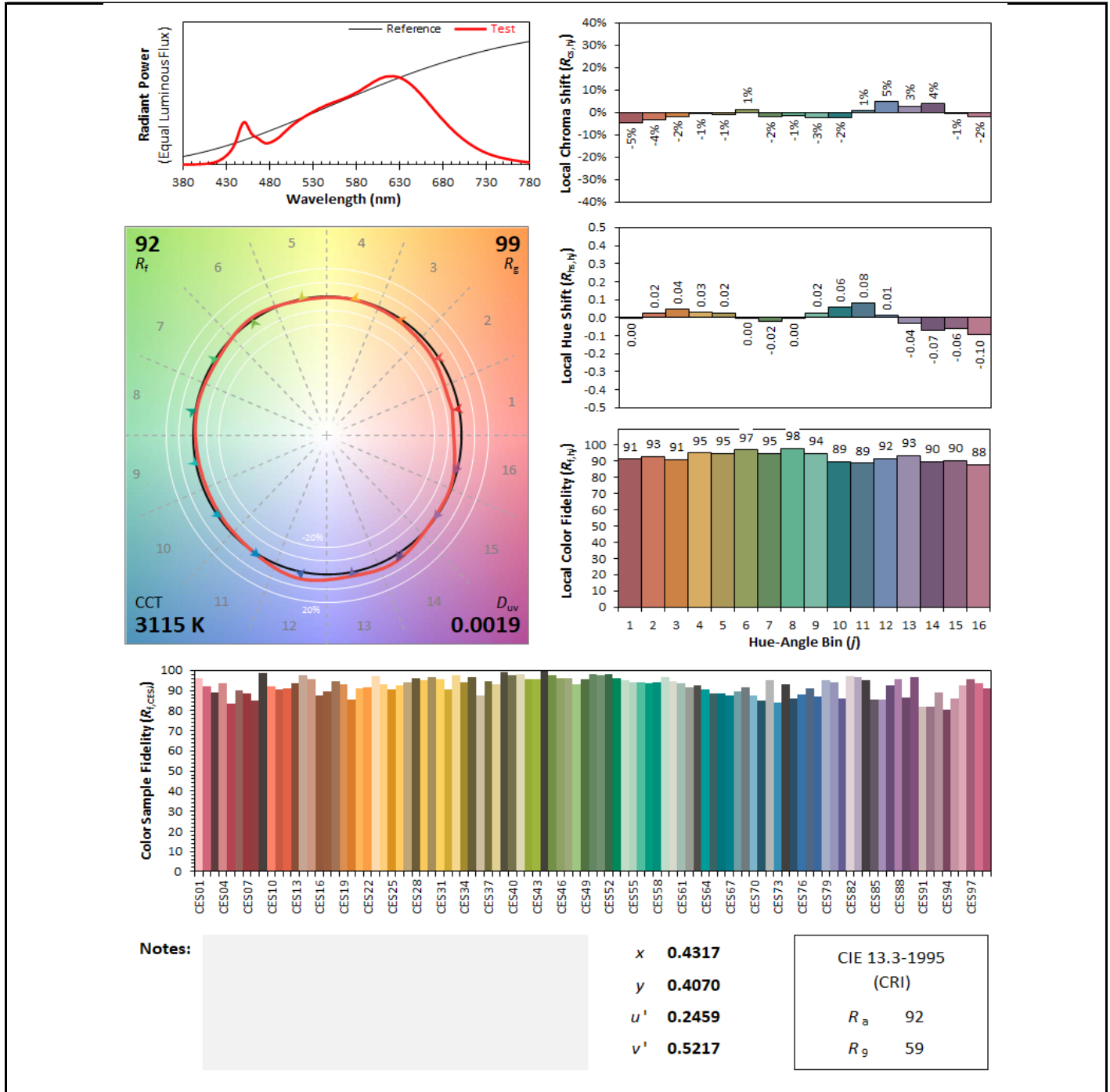
380	0.000080	480	0.003171	580	0.010203	680	0.006353
385	0.000085	485	0.003453	585	0.010554	685	0.005703
390	0.000102	490	0.003852	590	0.010937	690	0.005084
395	0.000121	495	0.004393	595	0.011299	695	0.004504
400	0.000147	500	0.004981	600	0.011693	700	0.003988
405	0.000183	505	0.005507	605	0.012020	705	0.003493
410	0.000245	510	0.005981	610	0.012277	710	0.003054
415	0.000359	515	0.006402	615	0.012448	715	0.002665
420	0.000568	520	0.006798	620	0.012475	720	0.002306
425	0.000892	525	0.007164	625	0.012460	725	0.001986
430	0.001365	530	0.007508	630	0.012289	730	0.001717
435	0.002028	535	0.007833	635	0.012017	735	0.001485
440	0.003100	540	0.008113	640	0.011607	740	0.001288
445	0.004835	545	0.008416	645	0.011109	745	0.001121
450	0.006022	550	0.008651	650	0.010519	750	0.000976
455	0.005308	555	0.008890	655	0.009868	755	0.000846
460	0.004290	560	0.009092	660	0.009187	760	0.000736
465	0.003869	565	0.009337	665	0.008448	765	0.000634
470	0.003414	570	0.009593	670	0.007727	770	0.000544
475	0.003083	575	0.009880	675	0.007029	775	0.000467
						780	0.000402

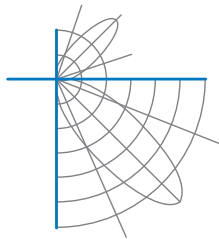




Test Report Number: LLIA001333-006B

IES TM-30 Details





## Test Report Number: LLIA001333-006B

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

**Test Temperature:** 24.6 °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

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.