



## Report of Test

**LLIA001431-001A**

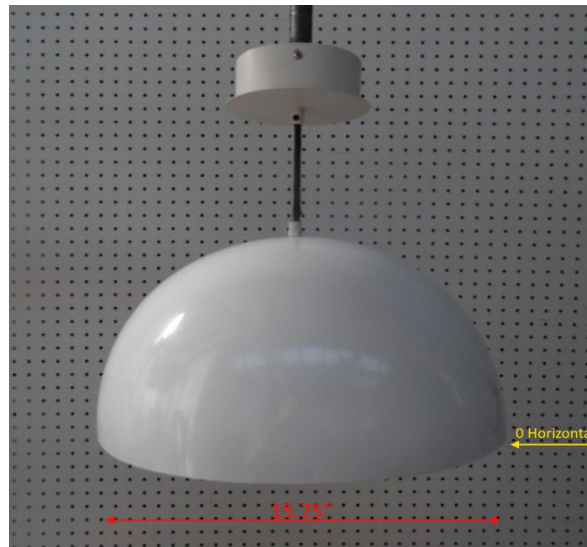
Indoor Distribution Photometry Test Report

Catalog Number: 3-20-15 Lucci

Pendant mounted, spun aluminum housing, formed white enamel steel reflector/LED tray translucent white plastic enclosure.

18 white LEDs, 3 LED boards with 6 LEDs each.

One Novbo NE024120058-1G LED driver



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

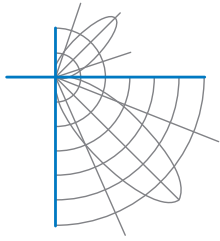
Performance Summary			
Input Voltage	120.0 V	Luminous Flux	952.8 Lumens
Input Current	0.1617 A	Total Efficacy	49.9 Lm/W
Input Power	19.08 W	Downward Flux	952.7 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.983		
Current THD	17.7 %		

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

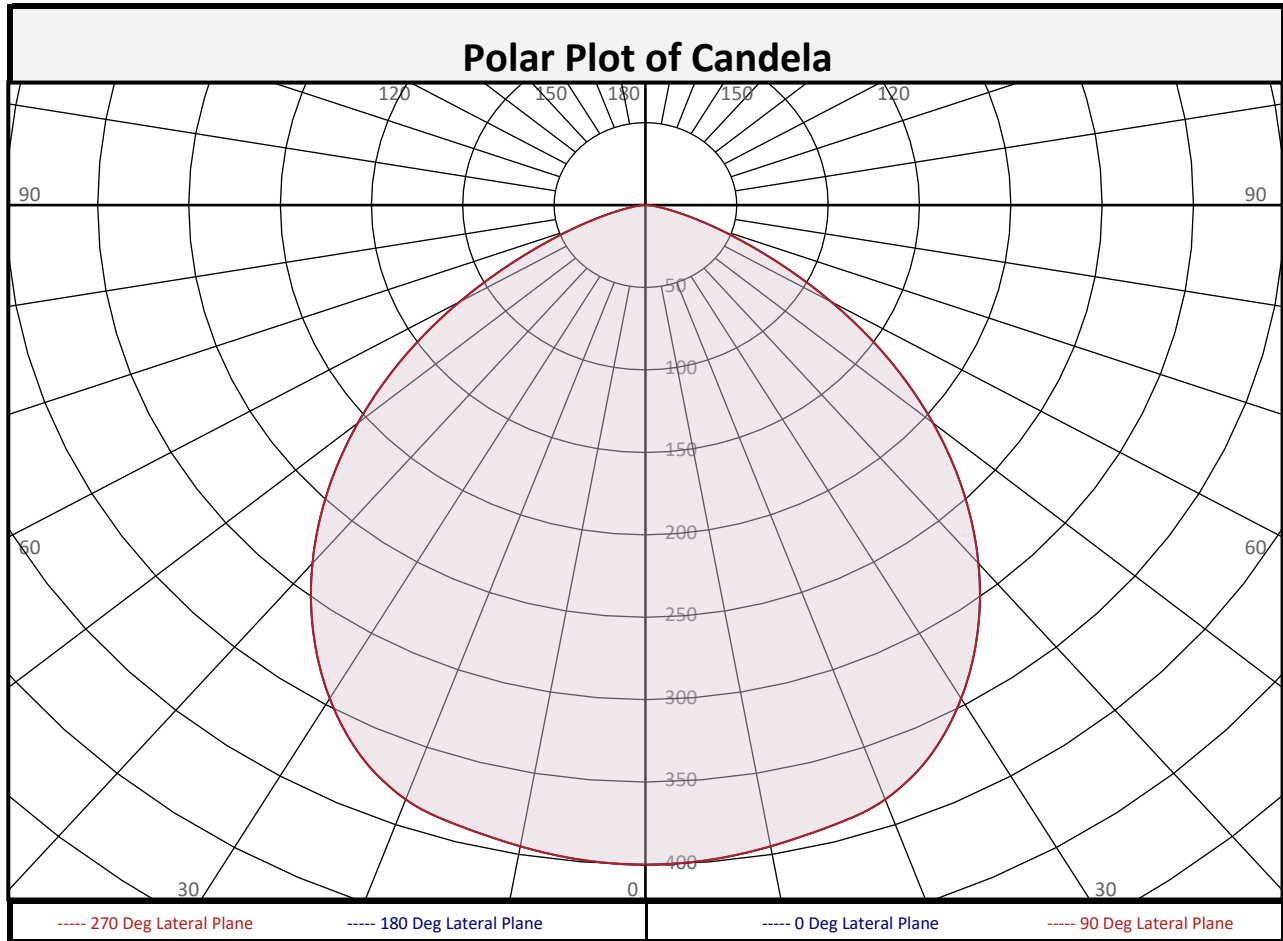
Test date: 04/05/2021

Report date: 04/06/2021

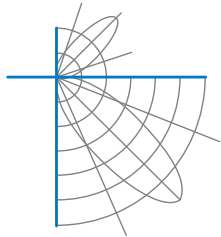
Signed: \_\_\_\_\_



Report of Test  
LLIA001431-001A



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	38.0	4.0%		90-100	0.0	0.0%		0-20	148.4	15.6%	
10-20	110.4	11.6%		100-110	0.0	0.0%		0-30	317.8	33.4%	
20-30	169.4	17.8%		110-120	0.0	0.0%		0-40	515.6	54.1%	
30-40	197.8	20.8%		120-130	0.0	0.0%		0-60	849.2	89.1%	
40-50	189.3	19.9%		130-140	0.0	0.0%		0-80	948.8	99.6%	
50-60	144.4	15.2%		140-150	0.0	0.0%		10-90	914.8	96.0%	
60-70	76.0	8.0%		150-160	0.0	0.0%		20-50	556.5	58.4%	
70-80	23.6	2.5%		160-170	0.0	0.0%		40-90	437.2	45.9%	
80-90	4.0	0.4%		170-180	0.0	0.0%		60-90	103.6	10.9%	
0-90	952.7	100.0%		90-180	0.0	0.0%		0-180	952.8	100.0%	



## Report of Test

### LLIA001431-001A

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	400	400	400	400	400	400	400	400	400
	2.5	400	400	400	400	400	400	400	400	400
	5	399	399	399	399	399	399	399	399	399
	7.5	397	397	397	397	397	397	397	397	397
	10	395	395	395	395	395	395	395	395	395
	12.5	393	393	393	393	393	393	393	393	393
	15	390	390	390	390	390	390	390	390	390
	17.5	388	388	388	388	388	388	388	388	388
	20	384	384	384	384	384	384	384	384	384
	22.5	377	377	377	377	377	377	377	377	377
	25	369	369	369	369	369	369	369	369	369
	27.5	358	358	358	358	358	358	358	358	358
	30	346	346	346	346	346	346	346	346	346
	32.5	332	332	332	332	332	332	332	332	332
	35	317	317	317	317	317	317	317	317	317
	37.5	301	301	301	301	301	301	301	301	301
	40	283	283	283	283	283	283	283	283	283
	42.5	265	265	265	265	265	265	265	265	265
	45	246	246	246	246	246	246	246	246	246
	47.5	226	226	226	226	226	226	226	226	226
50	205	205	205	205	205	205	205	205	205	
52.5	184	184	184	184	184	184	184	184	184	
55	162	162	162	162	162	162	162	162	162	
57.5	140	140	140	140	140	140	140	140	140	
60	118	118	118	118	118	118	118	118	118	
62.5	96	96	96	96	96	96	96	96	96	
65	76	76	76	76	76	76	76	76	76	
67.5	58	58	58	58	58	58	58	58	58	
70	43	43	43	43	43	43	43	43	43	
72.5	31	31	31	31	31	31	31	31	31	
75	21	21	21	21	21	21	21	21	21	
77.5	13	13	13	13	13	13	13	13	13	
80	8	8	8	8	8	8	8	8	8	
82.5	5	5	5	5	5	5	5	5	5	
85	3	3	3	3	3	3	3	3	3	
87.5	2	2	2	2	2	2	2	2	2	
90	0	0	0	0	0	0	0	0	0	



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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	0	0	0	0	0	0	0	0	0
	92.5	0	0	0	0	0	0	0	0	0
	95	0	0	0	0	0	0	0	0	0
	97.5	0	0	0	0	0	0	0	0	0
	100	0	0	0	0	0	0	0	0	0
	102.5	0	0	0	0	0	0	0	0	0
	105	0	0	0	0	0	0	0	0	0
	107.5	0	0	0	0	0	0	0	0	0
	110	0	0	0	0	0	0	0	0	0
	112.5	0	0	0	0	0	0	0	0	0
	115	0	0	0	0	0	0	0	0	0
	117.5	0	0	0	0	0	0	0	0	0
	120	0	0	0	0	0	0	0	0	0
	122.5	0	0	0	0	0	0	0	0	0
	125	0	0	0	0	0	0	0	0	0
	127.5	0	0	0	0	0	0	0	0	0
	130	0	0	0	0	0	0	0	0	0
	132.5	0	0	0	0	0	0	0	0	0
	135	0	0	0	0	0	0	0	0	0
	137.5	0	0	0	0	0	0	0	0	0
	140	0	0	0	0	0	0	0	0	0
	142.5	0	0	0	0	0	0	0	0	0
	145	0	0	0	0	0	0	0	0	0
	147.5	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	
152.5	0	0	0	0	0	0	0	0	0	
155	0	0	0	0	0	0	0	0	0	
157.5	0	0	0	0	0	0	0	0	0	
160	0	0	0	0	0	0	0	0	0	
162.5	0	0	0	0	0	0	0	0	0	
165	0	0	0	0	0	0	0	0	0	
167.5	0	0	0	0	0	0	0	0	0	
170	0	0	0	0	0	0	0	0	0	
172.5	0	0	0	0	0	0	0	0	0	
175	0	0	0	0	0	0	0	0	0	
177.5	0	0	0	0	0	0	0	0	0	
180	0	0	0	0	0	0	0	0	0	



## Report of Test

### LLIA001431-001A

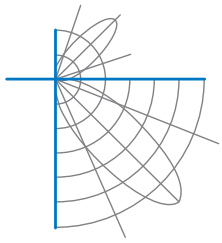
Coefficients of Utilization/Room Utilization - Zonal Cavity Method																		
Effective Floor Cavity Reflectance 0.20																		
RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88
2	102	95	89	84	99	93	87	83	89	85	81	86	82	79	83	80	77	75
3	94	84	77	71	91	83	76	71	80	74	69	77	72	68	75	71	67	65
4	86	75	67	61	84	74	67	61	72	65	60	69	64	59	67	63	59	57
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50
6	74	61	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46	44
7	69	56	48	42	67	55	47	42	54	47	42	52	46	41	51	45	41	39
8	64	51	43	38	63	51	43	38	49	42	37	48	42	37	47	41	37	35
9	60	47	39	34	59	47	39	34	45	39	34	44	38	34	43	38	33	32
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	30	29

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	11.1	7.62	7.62	
8.0	6.3	10.15	10.15	
10.0	4.0	12.69	12.69	
12.0	2.8	15.23	15.23	
14.0	2.0	17.77	17.77	
16.0	1.6	20.31	20.31	

Average Luminance (cd/m <sup>2</sup> )			
	0 deg Plane	45 deg Plane	90 deg Plane
0	3184	3184	3184
45	2769	2769	2769
55	2248	2248	2248
65	1421	1421	1421
75	639	639	639
85	303	303	303

Spacing Criterion	
Spacing Criterion:	1.3



## Report of Test

### LLIA001431-001A

#### UGR TABLE - CORRECTED

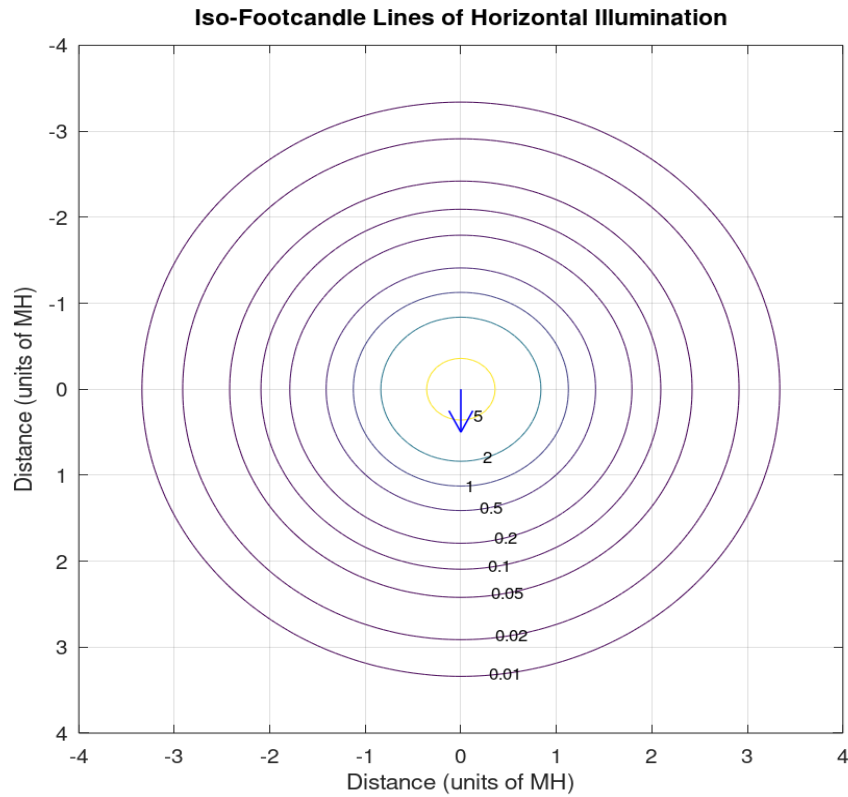
Reflectances											
Ceiling Cavity	70	70	50	50	30	70	70	50	50	30	
Walls	50	30	50	30	30	50	30	50	30	30	
Floor Cavity	20	20	20	20	20	20	20	20	20	20	
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	13.5	15.0	13.9	15.3	15.7	13.5	15.0	13.9	15.3	15.7
	3H	14.2	15.6	14.6	15.9	16.3	14.2	15.6	14.6	15.9	16.3
	4H	14.3	15.6	14.7	15.9	16.3	14.3	15.6	14.7	15.9	16.3
	6H	14.3	15.5	14.8	15.9	16.3	14.3	15.5	14.8	15.9	16.3
	8H	14.3	15.4	14.8	15.8	16.2	14.3	15.4	14.8	15.8	16.2
	12H	14.3	15.4	14.7	15.7	16.2	14.3	15.4	14.7	15.7	16.2
4H	2H	13.8	15.1	14.2	15.4	15.8	13.8	15.1	14.2	15.4	15.8
	3H	14.6	15.7	15.0	16.1	16.5	14.6	15.7	15.0	16.1	16.5
	4H	14.8	15.7	15.2	16.1	16.6	14.8	15.7	15.2	16.1	16.6
	6H	14.8	15.6	15.3	16.1	16.5	14.8	15.6	15.3	16.1	16.5
	8H	14.8	15.6	15.3	16.0	16.5	14.8	15.6	15.3	16.0	16.5
	12H	14.8	15.5	15.3	15.9	16.4	14.8	15.5	15.3	15.9	16.4
8H	4H	14.8	15.5	15.2	16.0	16.4	14.8	15.5	15.2	16.0	16.4
	6H	14.8	15.4	15.3	15.9	16.4	14.8	15.4	15.3	15.9	16.4
	8H	14.8	15.4	15.3	15.9	16.4	14.8	15.4	15.3	15.9	16.4
	12H	14.8	15.3	15.3	15.8	16.4	14.8	15.3	15.3	15.8	16.4
12H	4H	14.8	15.4	15.2	15.9	16.4	14.8	15.4	15.2	15.9	16.4
	6H	14.8	15.4	15.3	15.8	16.4	14.8	15.4	15.3	15.8	16.4
	8H	14.8	15.3	15.3	15.8	16.4	14.8	15.3	15.3	15.8	16.4

Maximum UGR = 16.6

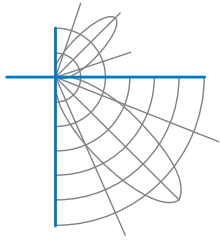


Report of Test  
LLIA001431-001A

**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  
LLIA001431-001A

**Additional Pictures of Test Subject**







## Report of Test

### LLIA001431-001A

Test Distance                    9.5 m  
Ambient Temperature        25.1 °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.

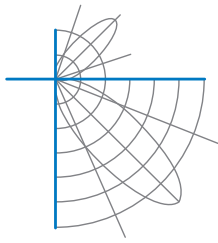
Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

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

**LLIA001431-001B**

Integrating Sphere Report

Catalog Number: 3-20-15 Lucci

Pendant mounted, spun aluminum housing, formed white enamel steel reflector/LED tray translucent white plastic enclosure.

18 white LEDs, 3 LED boards with 6 LEDs each.

One Novbo NE024120058-1G LED driver



### Performance Summary

Voltage	120.0 Vac
Current	0.1615 A
Power	19.05 W
Frequency	59.99 Hz
Power Factor	0.983
Current THD	17.6 %
Total Luminous Flux	941.4 lm
Efficacy	49.4 lm/W
Chromaticity (x,y)	(0.4532, 0.4196)
(u',v')	(0.2543, 0.5297)
Duv	0.0040
CCT	2866 K
CRI (Ra)	78
R9	-1
TM-30: Rf	76
TM-30: Rg	98
TM-30: Rcs,h1	-12

Prepared For:

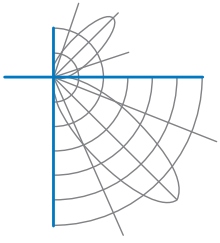
Oxygen Lighting

201 Railhead Road

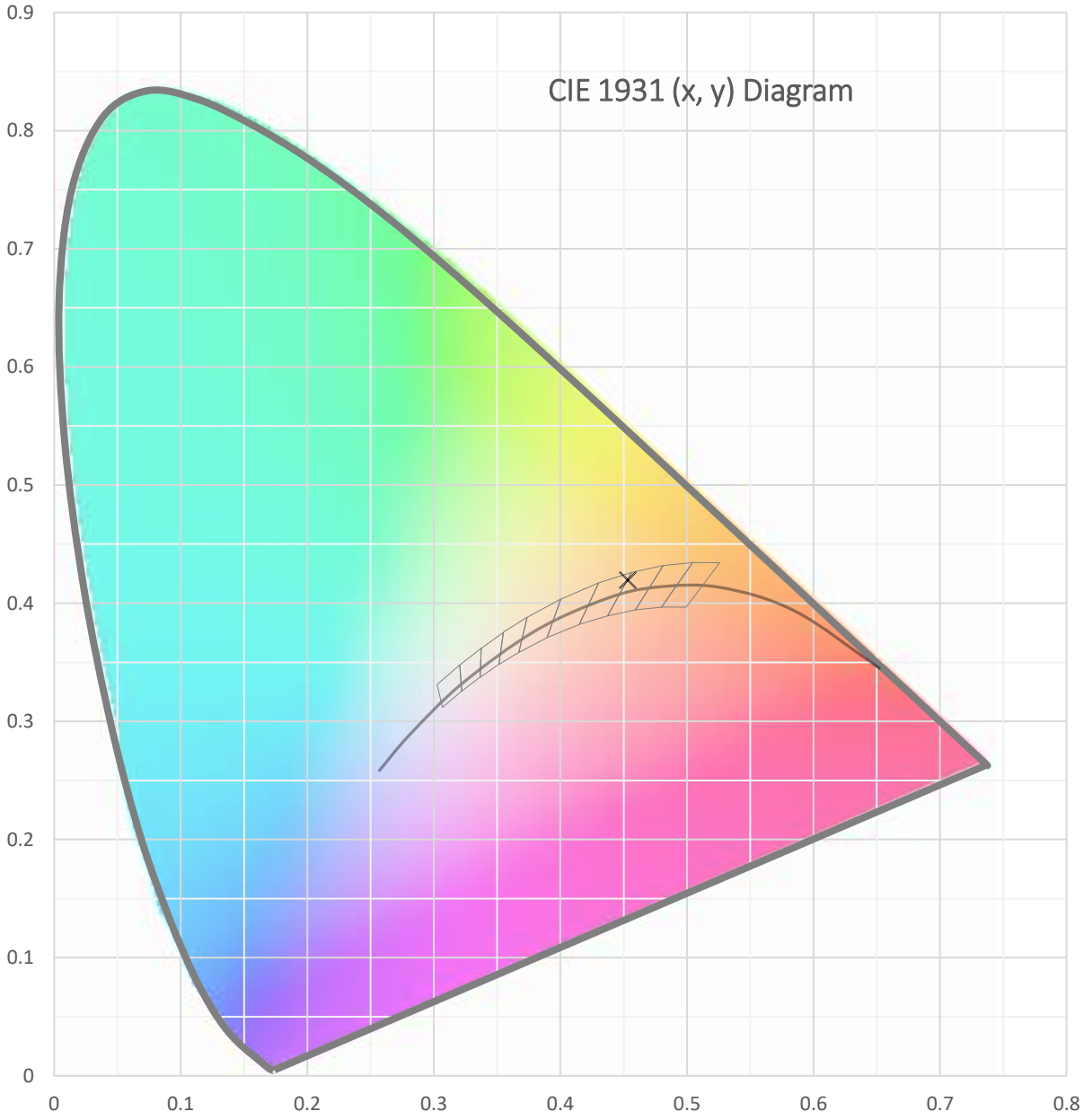
Fort Worth, TX 76106, USA

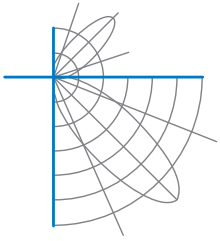
Test date: 04/05/2021

Report date: 04/06/2021

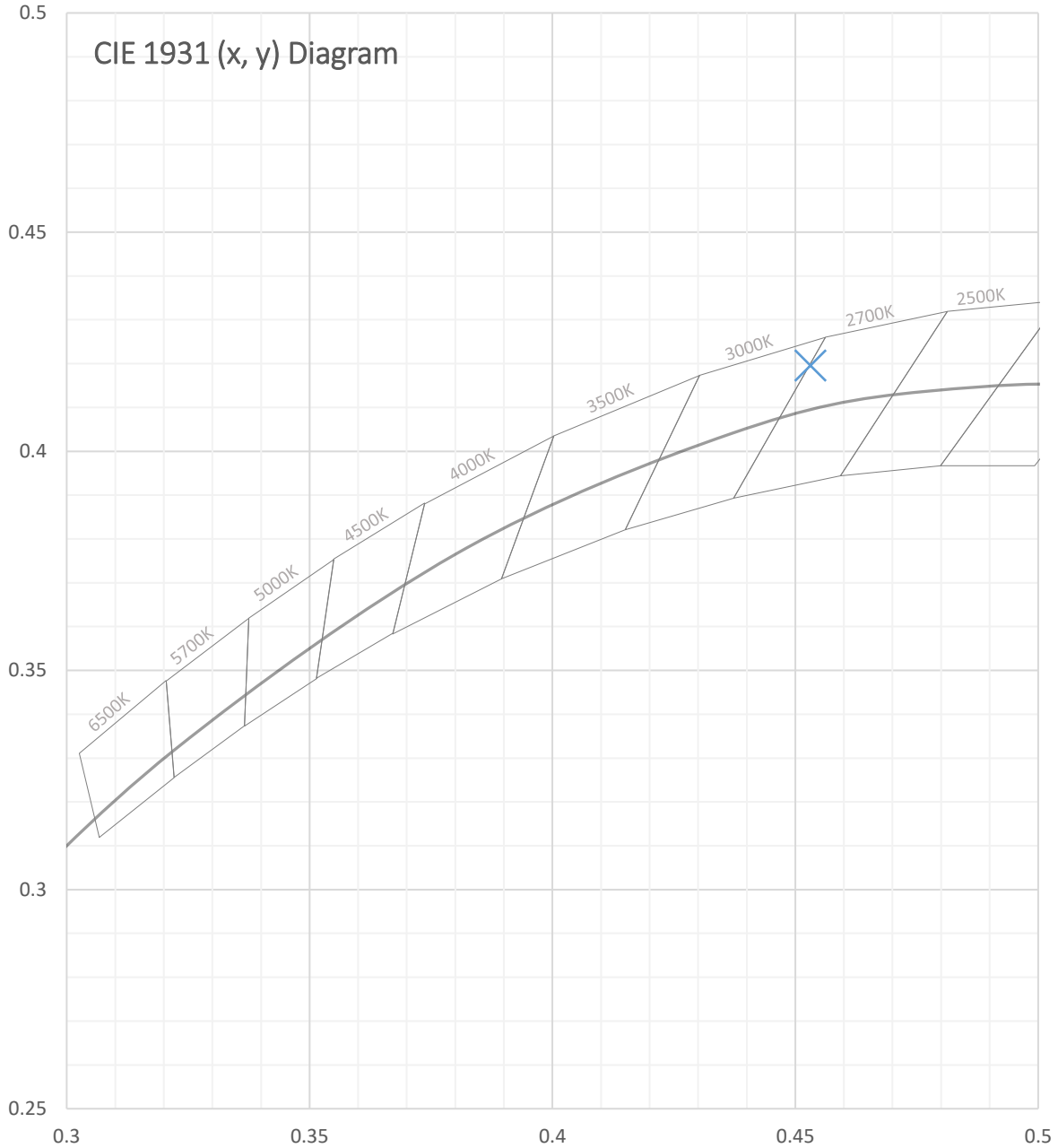


Test Report Number: LLIA001431-001B





Test Report Number: LLIA001431-001B





**Test Report Number: LLIA001431-001B**

Total Radiant Flux	2.864 W
Total Luminous Flux	941.4 Lm
Chromaticity CIE 1931 (x, y)	(0.4532, 0.4196)
Chromaticity CIE 1976 (u', v')	(0.2543, 0.5297)
Correlated Color Temperature (CCT)	2866 K
Color Rendering Index (Ra)	78
R1	76
R2	84
R3	92
R4	79
R5	75
R6	79
R7	84
R8	57
R9	-1
R10	63
R11	77
R12	59
R13	77
R14	95
TM-30: Rf	76
TM-30: Rg	98
TM-30: Rcs,h1	-12
Distance from Planckian Locus (Duv)	0.0040
Scotopic/Photopic Ratio ‡	1.165

**Electrical Data**

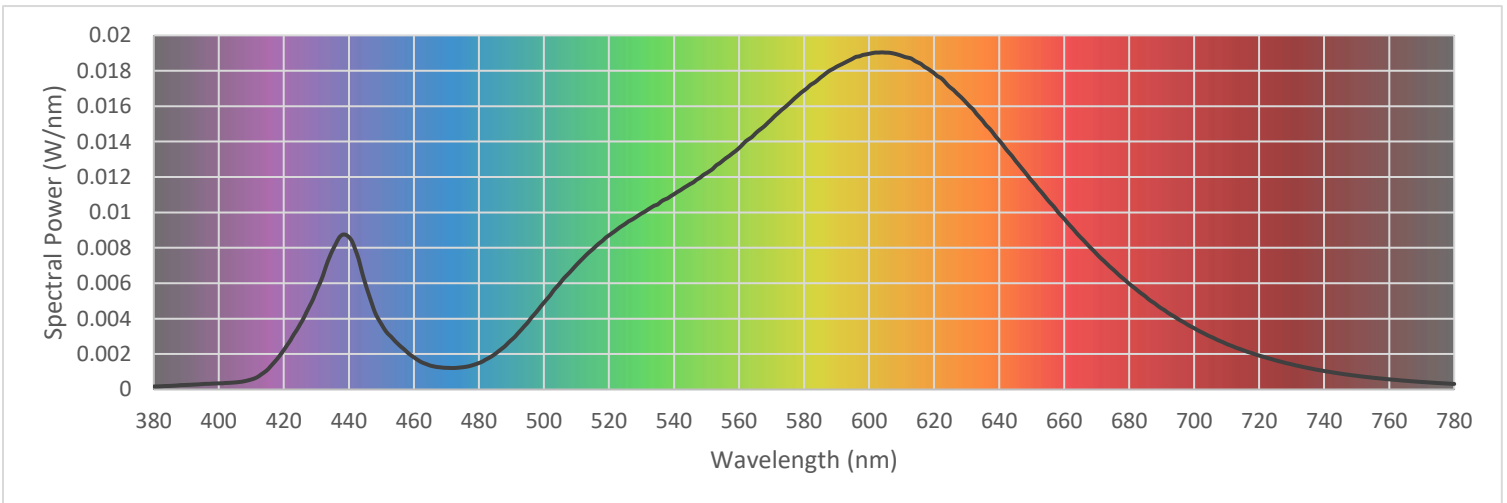
Voltage	120.0 Vac
Current	0.1615 A
Power	19.05 W
Frequency	59.99 Hz
Power Factor	0.983
Current THD	17.6 %

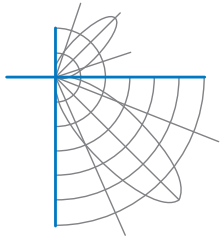


Test Report Number: LLIA001431-001B

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

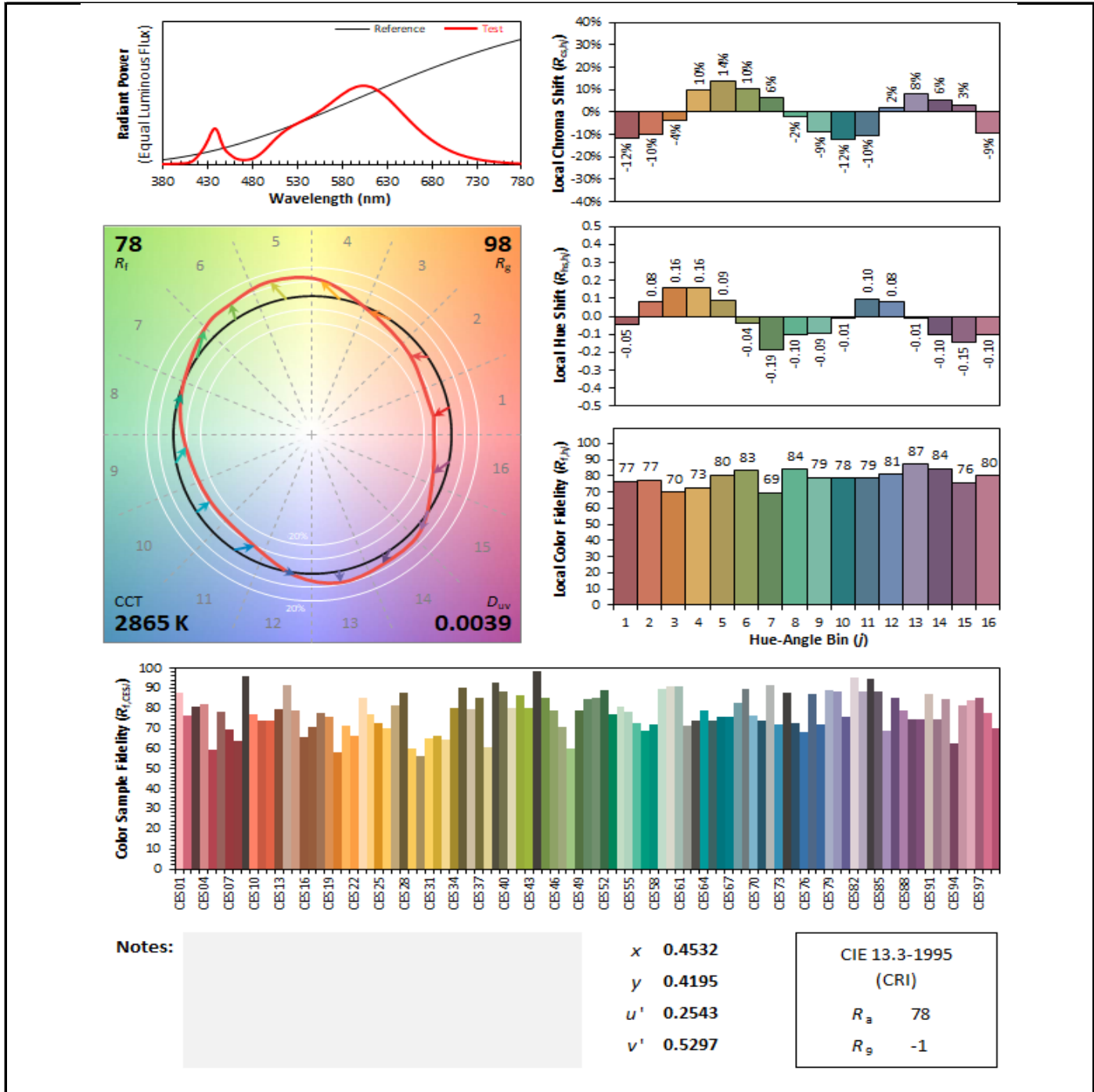
380	0.000168	480	0.001496	580	0.016885	680	0.005973
385	0.000201	485	0.002008	585	0.017606	685	0.005258
390	0.000256	490	0.002799	590	0.018227	690	0.004574
395	0.000305	495	0.003776	595	0.018686	695	0.003981
400	0.000346	500	0.004906	600	0.018959	700	0.003463
405	0.000397	505	0.006013	605	0.019025	705	0.002986
410	0.000566	510	0.007034	610	0.018849	710	0.002568
415	0.001120	515	0.007920	615	0.018473	715	0.002222
420	0.002231	520	0.008704	620	0.017867	720	0.001912
425	0.003683	525	0.009353	625	0.017054	725	0.001647
430	0.005564	530	0.009942	630	0.016180	730	0.001419
435	0.007878	535	0.010449	635	0.015168	735	0.001216
440	0.008608	540	0.011028	640	0.014073	740	0.001041
445	0.006009	545	0.011605	645	0.012930	745	0.000896
450	0.003693	550	0.012218	650	0.011799	750	0.000772
455	0.002588	555	0.012921	655	0.010693	755	0.000663
460	0.001816	560	0.013635	660	0.009646	760	0.000574
465	0.001351	565	0.014449	665	0.008607	765	0.000494
470	0.001222	570	0.015255	670	0.007656	770	0.000423
475	0.001256	575	0.016080	675	0.006789	775	0.000363
						780	0.000313

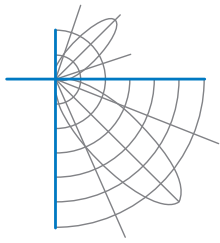




Test Report Number: LLIA001431-001B

IES TM-30 Details





## Test Report Number: LLIA001431-001B

**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:** 24.9 °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.

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