

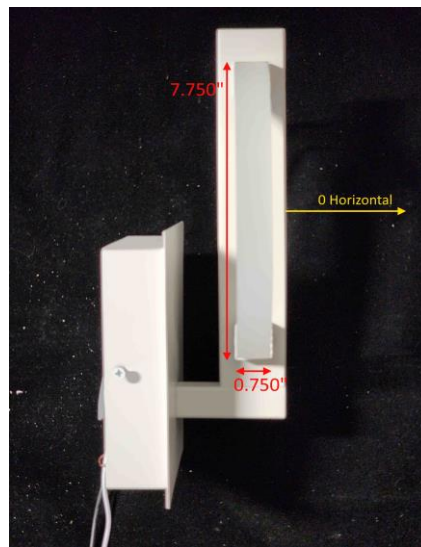


Report of Test

LLIA002028-002A

Indoor Distribution Photometry Test Report

Catalog Number: 3-5014-6 ARENA LED SCONCE - WH
Wall mounted, white painted formed steel housing,
decorative clear plastic light guide with frosted sections.
Four multi-chip LEDs.
One Novbo NE012120035-2G LED driver



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

Performance Summary			
Input Voltage	120.0 Vac	Luminous Flux	966.8 Lumens
Input Current	0.1102 A	Total Efficacy	74.5 Lm/W
Input Power	12.98 W	Downward Flux	465.8 Lumens
Frequency	60.00 Hz	Downward Flux	48.2 % of Total
Power Factor	0.982		
Current THD	12.9 %		

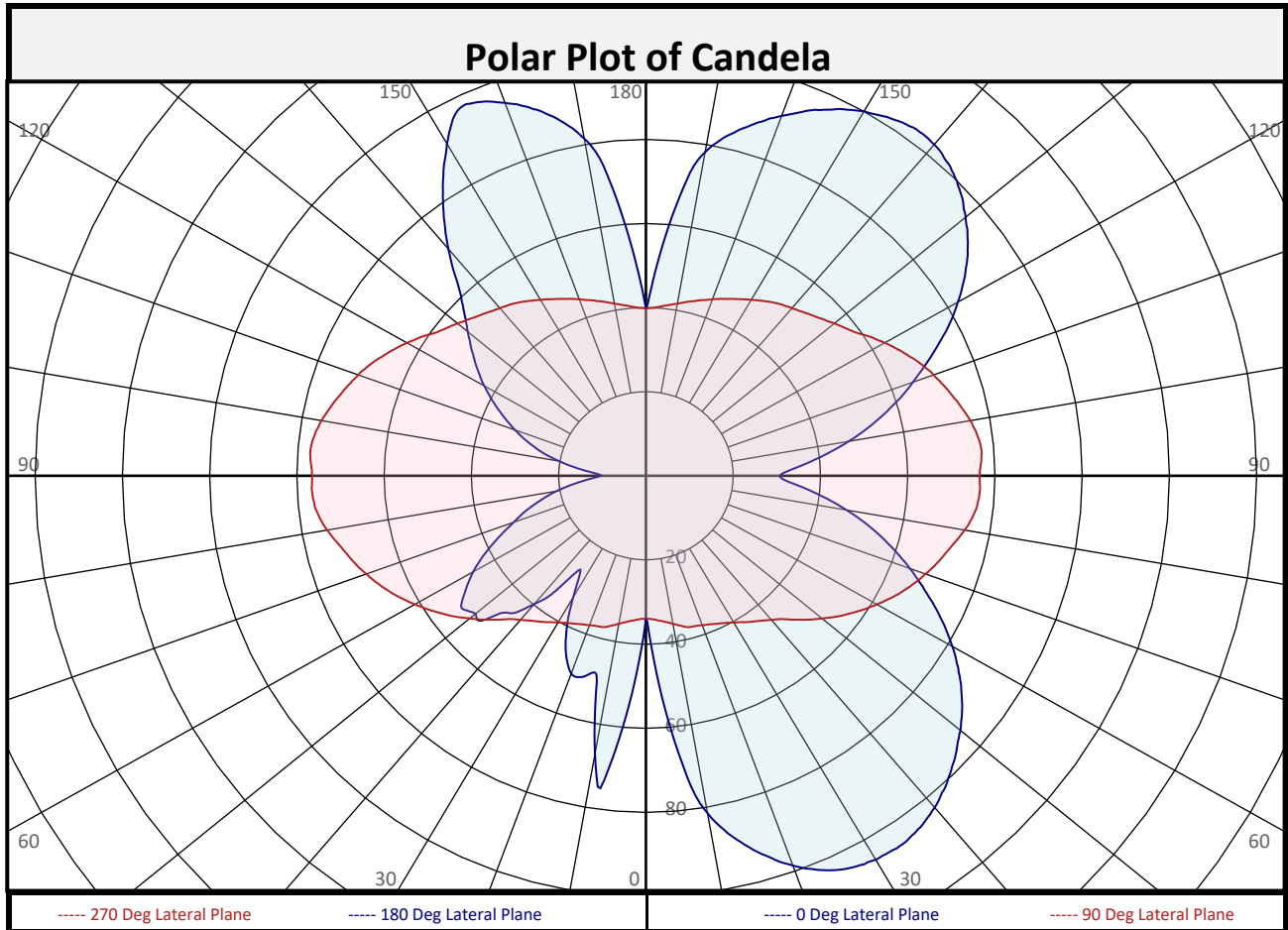
This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

Test date: 03/06/2023
Report date: 03/07/2023

Signed: _____



Report of Test
LLIA002028-002A



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	5.1	0.5%	90-100	82.8	8.6%	0-20	23.4	2.4%
10-20	18.3	1.9%	100-110	81.9	8.5%	0-30	55.1	5.7%
20-30	31.7	3.3%	110-120	79.0	8.2%	0-40	99.0	10.2%
30-40	43.9	4.5%	120-130	73.2	7.6%	0-60	226.0	23.4%
40-50	57.5	5.9%	130-140	65.2	6.7%	0-80	383.7	39.7%
50-60	69.5	7.2%	140-150	54.1	5.6%	10-90	460.7	47.6%
60-70	77.0	8.0%	150-160	38.4	4.0%	20-50	133.1	13.8%
70-80	80.7	8.3%	160-170	20.9	2.2%	40-90	366.8	37.9%
80-90	82.1	8.5%	170-180	5.5	0.6%	60-90	239.8	24.8%
0-90	465.8	48.2%	90-180	501.0	51.8%	0-180	966.8	100.0%



Report of Test

LLIA002028-002A

Luminous Intensity (Candela) Table

Lateral (C-Plane) Angles										
	0	22.5	45	67.5	90	112.5	135	157.5	180	
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	0	34	34	34	34	34	34	34	34	34
	2.5	44	43	40	36	34	39	43	45	46
	5	58	56	49	41	35	43	51	57	60
	7.5	72	69	59	45	35	47	59	70	73
	10	81	79	68	49	36	50	66	71	67
	12.5	87	85	76	53	36	54	69	59	53
	15	91	90	81	57	37	57	66	51	49
	17.5	95	93	85	60	37	60	64	52	50
	20	99	97	88	63	38	62	63	52	50
	22.5	101	99	91	66	38	63	63	50	47
	25	103	102	93	69	39	64	63	47	44
	27.5	105	104	95	71	39	64	63	44	39
	30	105	105	97	73	40	65	62	40	33
	32.5	105	106	99	75	41	65	62	37	28
	35	105	106	100	77	42	66	62	34	28
	37.5	104	106	102	79	43	67	62	36	35
	40	103	106	102	81	45	68	62	40	40
	42.5	101	105	103	83	46	69	62	42	44
	45	99	103	104	85	48	71	63	45	46
	47.5	97	102	104	87	51	73	66	46	51
	50	94	100	104	89	53	76	68	48	51
	52.5	91	98	104	91	55	78	71	47	52
	55	88	95	104	93	57	81	73	47	51
	57.5	85	93	104	95	59	84	75	47	49
	60	81	90	104	97	61	86	77	45	46
	62.5	77	87	103	99	63	89	78	44	43
	65	73	84	103	101	65	92	78	43	39
	67.5	69	82	102	102	67	94	79	41	36
	70	64	79	102	104	68	96	79	40	32
	72.5	60	76	101	106	70	99	79	39	30
	75	56	73	101	107	71	101	79	37	27
	77.5	51	70	101	108	73	103	79	35	24
	80	47	68	101	110	74	105	79	34	21
	82.5	42	67	101	111	75	107	79	34	18
	85	37	66	101	112	76	108	79	33	15
	87.5	33	66	102	113	77	108	79	34	12
90	31	65	101	112	77	108	79	35	10	

16 lateral half-planes of data were acquired, 22.5 degree increments shown.

North America (issuing laboratory)

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Report of Test

LLIA002028-002A

Luminous Intensity (Candela) Table

		Lateral (C-Plane) Angles								
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	90	31	65	101	112	77	108	79	35	10
	92.5	33	66	102	112	77	109	79	37	11
	95	38	66	102	112	77	109	79	38	14
	97.5	42	67	101	111	77	108	78	38	17
	100	47	69	101	110	76	107	78	39	20
	102.5	52	71	101	109	74	106	77	40	24
	105	56	74	101	107	73	105	77	41	26
	107.5	61	76	101	105	72	104	78	43	29
	110	65	79	101	104	70	102	78	45	32
	112.5	69	82	101	102	69	101	79	47	35
	115	74	85	101	100	67	99	80	49	37
	117.5	79	88	102	97	65	98	81	51	40
	120	83	91	102	95	63	96	82	53	43
	122.5	86	93	102	93	61	95	83	55	45
	125	90	95	102	91	59	94	85	57	48
	127.5	93	98	102	90	58	92	86	60	51
	130	96	100	102	88	56	91	88	62	53
	132.5	98	101	101	87	55	90	90	65	56
	135	100	102	101	86	54	88	92	69	60
	137.5	102	103	100	85	53	87	94	74	65
	140	103	103	99	84	52	86	96	79	70
	142.5	103	102	98	82	51	85	97	84	76
	145	103	102	97	81	50	83	99	88	81
	147.5	101	100	95	79	49	81	98	92	86
150	100	99	93	77	48	79	97	96	91	
152.5	98	97	91	75	47	77	95	98	96	
155	96	95	90	72	46	75	93	97	98	
157.5	94	93	87	69	46	72	91	96	96	
160	91	90	85	66	45	69	88	94	94	
162.5	88	88	82	63	44	66	85	91	92	
165	86	85	79	60	43	63	82	88	89	
167.5	82	81	75	57	42	59	78	85	86	
170	78	77	68	53	42	55	72	80	81	
172.5	71	68	61	50	41	52	64	72	74	
175	59	58	53	46	40	48	55	60	62	
177.5	49	48	45	42	40	44	47	49	50	
180	40	40	40	40	40	40	40	40	40	

16 lateral half-planes of data were acquired, 22.5 degree increments shown.

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Report of Test

LLIA002028-002A

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	50	30	10	0
RCR																					
0	107	107	107	107	98	98	98	98	82	82	82	68	68	68	54	54	54	48			
1	93	87	82	77	85	80	75	70	66	62	59	53	50	48	41	39	38	32			
2	83	74	66	59	76	67	60	55	55	50	46	44	40	37	34	31	29	24			
3	75	63	55	48	68	58	50	44	48	41	36	38	33	29	29	26	23	18			
4	68	55	46	39	62	51	42	36	41	35	30	33	28	24	25	21	18	14			
5	62	49	39	33	56	45	36	30	37	30	25	29	24	20	22	18	15	12			
6	57	43	34	28	51	40	31	26	33	26	21	26	21	17	20	16	13	10			
7	52	39	30	24	47	36	28	22	29	23	18	23	18	15	18	14	11	8			
8	48	35	27	21	44	32	24	19	27	20	16	21	16	13	16	13	10	7			
9	45	32	24	18	41	29	22	17	24	18	14	19	15	11	15	11	9	6			
10	42	29	21	16	38	27	20	15	22	16	12	18	13	10	14	10	8	6			

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	0.9	12.34	12.10
8.0	0.5	16.45	16.13
10.0	0.3	20.56	20.16
12.0	0.2	24.67	24.19
14.0	0.2	28.79	28.22
16.0	0.1	32.90	32.26

Spacing Criterion	
0 deg:	2.8
90 deg:	2.0
180 deg:	1.3
270 deg:	2.0

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	9049	9049	9049
45	10427	13023	14598
55	8759	12570	19557
65	7048	12250	26698
75	5420	12275	37929
85	3747	12991	60594



Report of Test

LLIA002028-002A

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

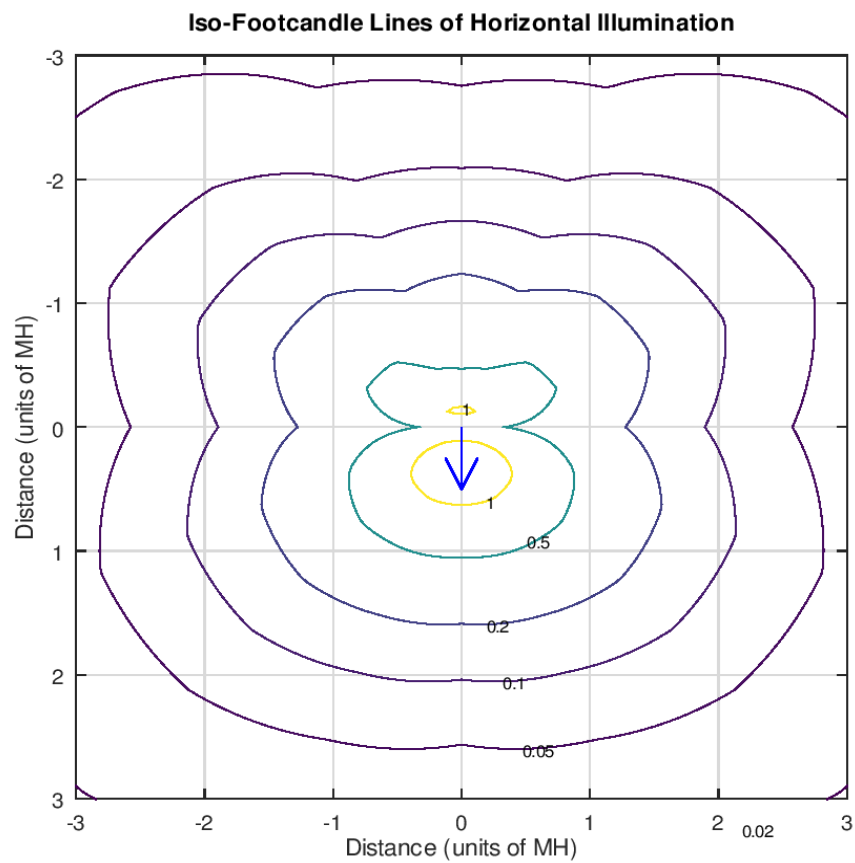
X=2H	Y=2H	14.9	15.8	15.8	16.8	18.1	11.6	12.6	12.5	13.5	14.8	
		3H	17.3	18.2	18.3	19.2	20.5	14.1	15.0	15.0	16.0	17.3
		4H	18.4	19.2	19.3	20.2	21.5	15.3	16.1	16.2	17.1	18.4
		6H	19.4	20.2	20.4	21.2	22.5	16.5	17.3	17.4	18.3	19.6
		8H	19.9	20.6	20.8	21.6	23.0	17.0	17.8	18.0	18.8	20.1
		12H	20.3	21.0	21.3	22.0	23.4	17.6	18.3	18.6	19.3	20.7
4H	2H	15.4	16.2	16.4	17.2	18.5	12.8	13.6	13.7	14.6	15.9	
	3H	18.0	18.7	19.0	19.7	21.1	15.6	16.3	16.6	17.4	18.7	
	4H	19.2	19.9	20.2	20.9	22.2	17.1	17.8	18.1	18.8	20.1	
	6H	20.4	21.0	21.4	22.0	23.4	18.4	19.1	19.4	20.1	21.4	
	8H	20.9	21.5	21.9	22.5	23.9	19.1	19.6	20.1	20.7	22.0	
	12H	21.4	21.9	22.4	23.0	24.4	19.7	20.2	20.7	21.2	22.6	
8H	4H	19.6	20.2	20.6	21.2	22.6	17.7	18.3	18.7	19.3	20.7	
	6H	21.0	21.5	22.0	22.5	23.9	19.5	20.0	20.5	21.0	22.4	
	8H	21.6	22.1	22.7	23.1	24.5	20.3	20.8	21.4	21.8	23.2	
	12H	22.3	22.7	23.3	23.7	25.2	21.1	21.5	22.2	22.6	24.0	
12H	4H	19.7	20.2	20.7	21.3	22.6	17.8	18.4	18.9	19.4	20.8	
	6H	21.1	21.6	22.2	22.6	24.0	19.7	20.1	20.7	21.2	22.6	
	8H	21.9	22.3	22.9	23.3	24.8	20.7	21.1	21.7	22.1	23.5	

Maximum UGR = 25.2



Report of Test
LLIA002028-002A

Iso-Illuminance Plot

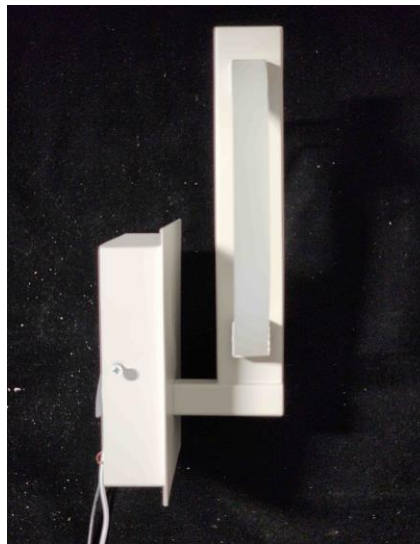
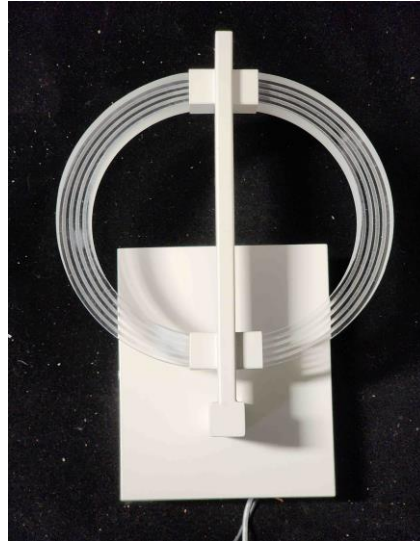


The isofootcandle values shown in the plot above are based on a mounting height of $h = 8.0$ feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution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



Report of Test
LLIA002028-002A

Additional Pictures of Test Subject





Report of Test

LLIA002028-002A

Test Distance 9.5 m
Ambient 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 IES LM-79-19. Format of reports and angular increments based on IES LM-41-20 and LM-46-20.

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.

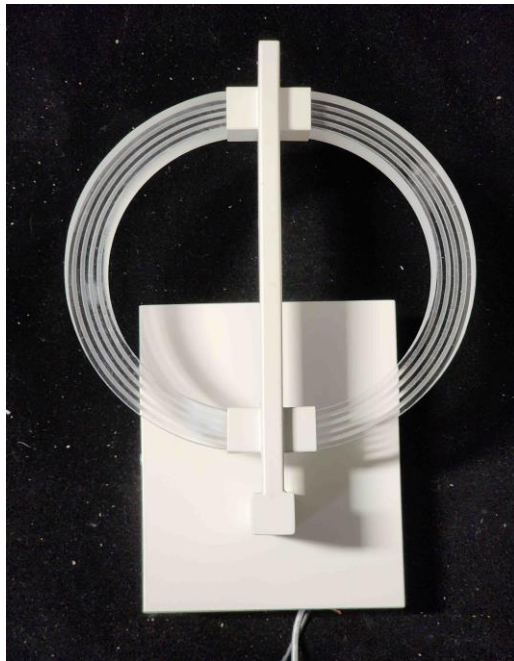


Report of Test

LLIA002028-002B

Integrating Sphere Report

Catalog Number: 3-5014-6 ARENA LED SCONCE - WH
Wall mounted, white painted formed steel housing,
decorative clear plastic light guide with frosted sections.
Four multi-chip LEDs.
One Novbo NE012120035-2G LED driver



Performance Summary

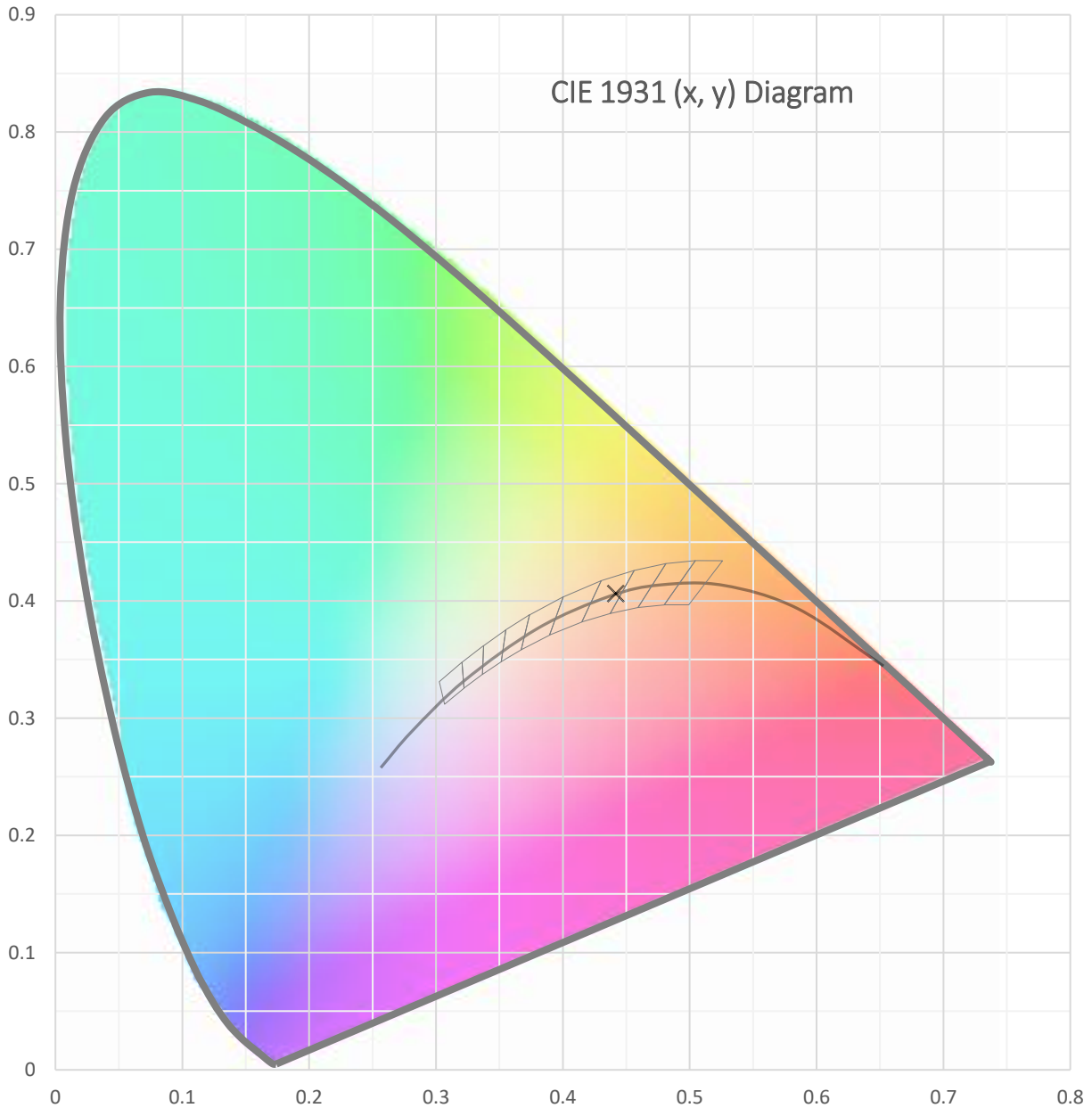
Voltage	120.0 Vac
Current	0.1101 A
Power	12.97 W
Frequency	59.99 Hz
Power Factor	0.982
Current THD	12.8 %
Total Luminous Flux	982.5 lm
Efficacy	75.8 lm/W
Chromaticity (x,y)	(0.4417, 0.4064)
(u',v')	(0.2527, 0.5230)
Duv	0.0003
CCT	2940 K
CRI (Ra)	95
R9	69
TM-30: Rf	92
TM-30: Rg	98
TM-30: Rcs,h1	-4

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

Test date: 02/27/2023
Report date: 03/07/2023

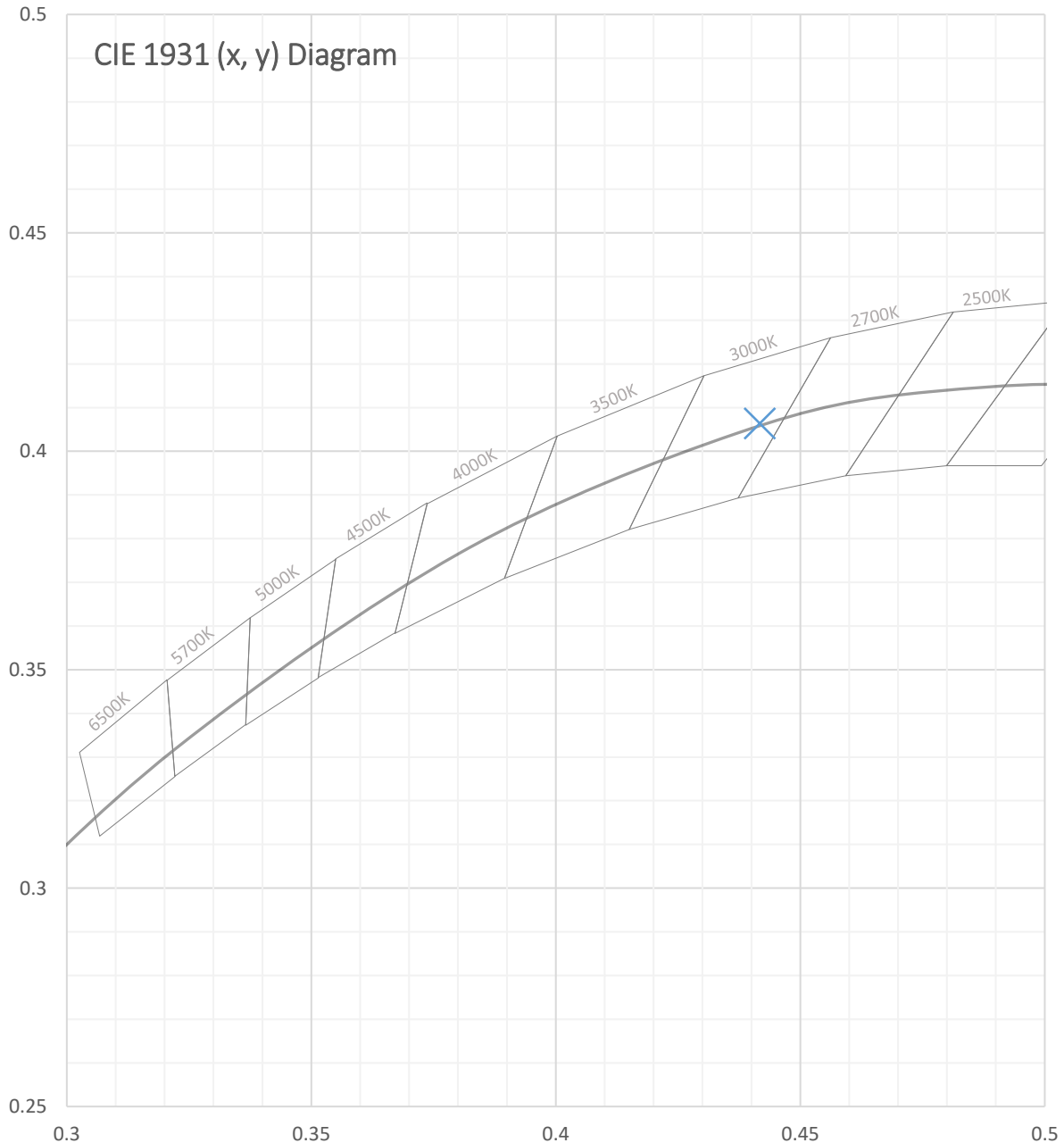


Test Report Number: LLIA002028-002B





Test Report Number: LLIA002028-002B





Test Report Number: LLIA002028-002B

Total Radiant Flux	3.477 W
Total Luminous Flux	982.5 Lm
Chromaticity CIE 1931 (x, y)	(0.4417, 0.4064)
Chromaticity CIE 1976 (u', v')	(0.2527, 0.5230)
Correlated Color Temperature (CCT)	2940 K
Color Rendering Index (Ra)	95
R1	96
R2	98
R3	99
R4	96
R5	96
R6	98
R7	94
R8	86
R9	69
R10	95
R11	97
R12	85
R13	97
R14	99
TM-30: Rf	92
TM-30: Rg	98
TM-30: Rcs,h1	-4
Distance from Planckian Locus (Duv)	0.0003
Scotopic/Photopic Ratio ‡	1.417

Electrical Data

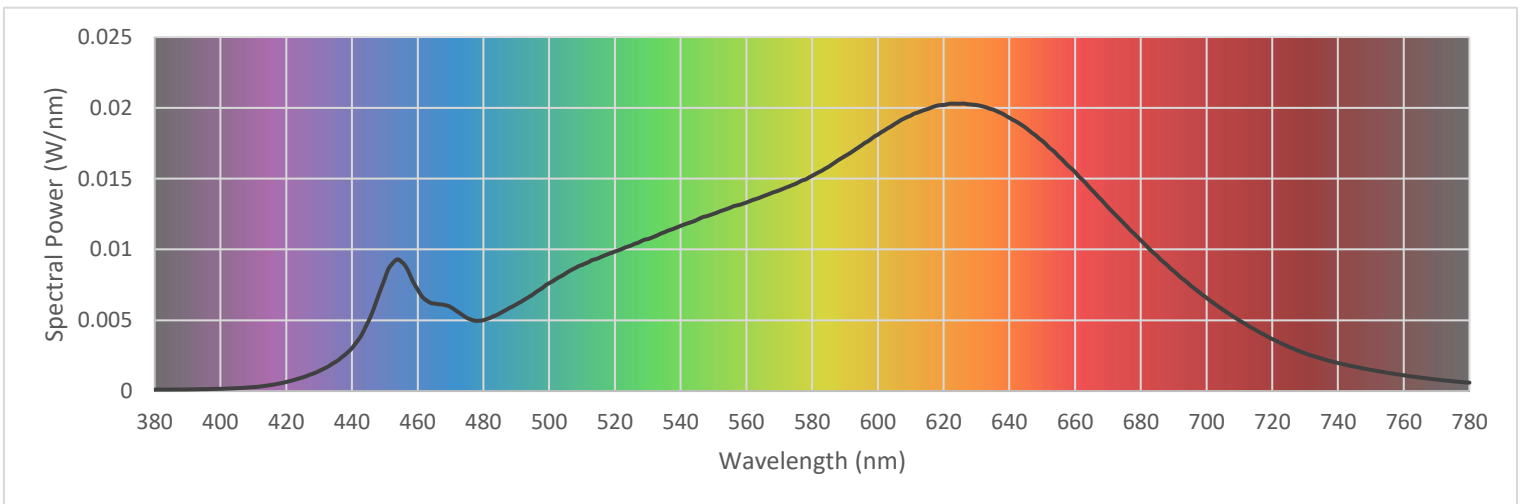
Voltage	120.0 Vac
Current	0.1101 A
Power	12.97 W
Frequency	59.99 Hz
Power Factor	0.982
Current THD	12.8 %



Test Report Number: LLIA002028-002B

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

380	0.000103	480	0.005003	580	0.015200	680	0.010640
385	0.000105	485	0.005487	585	0.015835	685	0.009543
390	0.000114	490	0.006121	590	0.016594	690	0.008479
395	0.000134	495	0.006814	595	0.017344	695	0.007487
400	0.000159	500	0.007621	600	0.018105	700	0.006590
405	0.000204	505	0.008307	605	0.018841	705	0.005745
410	0.000276	510	0.008908	610	0.019448	710	0.004988
415	0.000416	515	0.009388	615	0.019905	715	0.004310
420	0.000639	520	0.009850	620	0.020202	720	0.003673
425	0.000966	525	0.010283	625	0.020287	725	0.003127
430	0.001416	530	0.010732	630	0.020198	730	0.002672
435	0.002054	535	0.011207	635	0.019884	735	0.002294
440	0.003028	540	0.011662	640	0.019306	740	0.001982
445	0.004921	545	0.012094	645	0.018588	745	0.001730
450	0.007944	550	0.012515	650	0.017674	750	0.001495
455	0.009142	555	0.012939	655	0.016573	755	0.001292
460	0.007168	560	0.013310	660	0.015468	760	0.001117
465	0.006185	565	0.013746	665	0.014229	765	0.000953
470	0.005938	570	0.014175	670	0.012991	770	0.000813
475	0.005163	575	0.014638	675	0.011809	775	0.000692
						780	0.000592

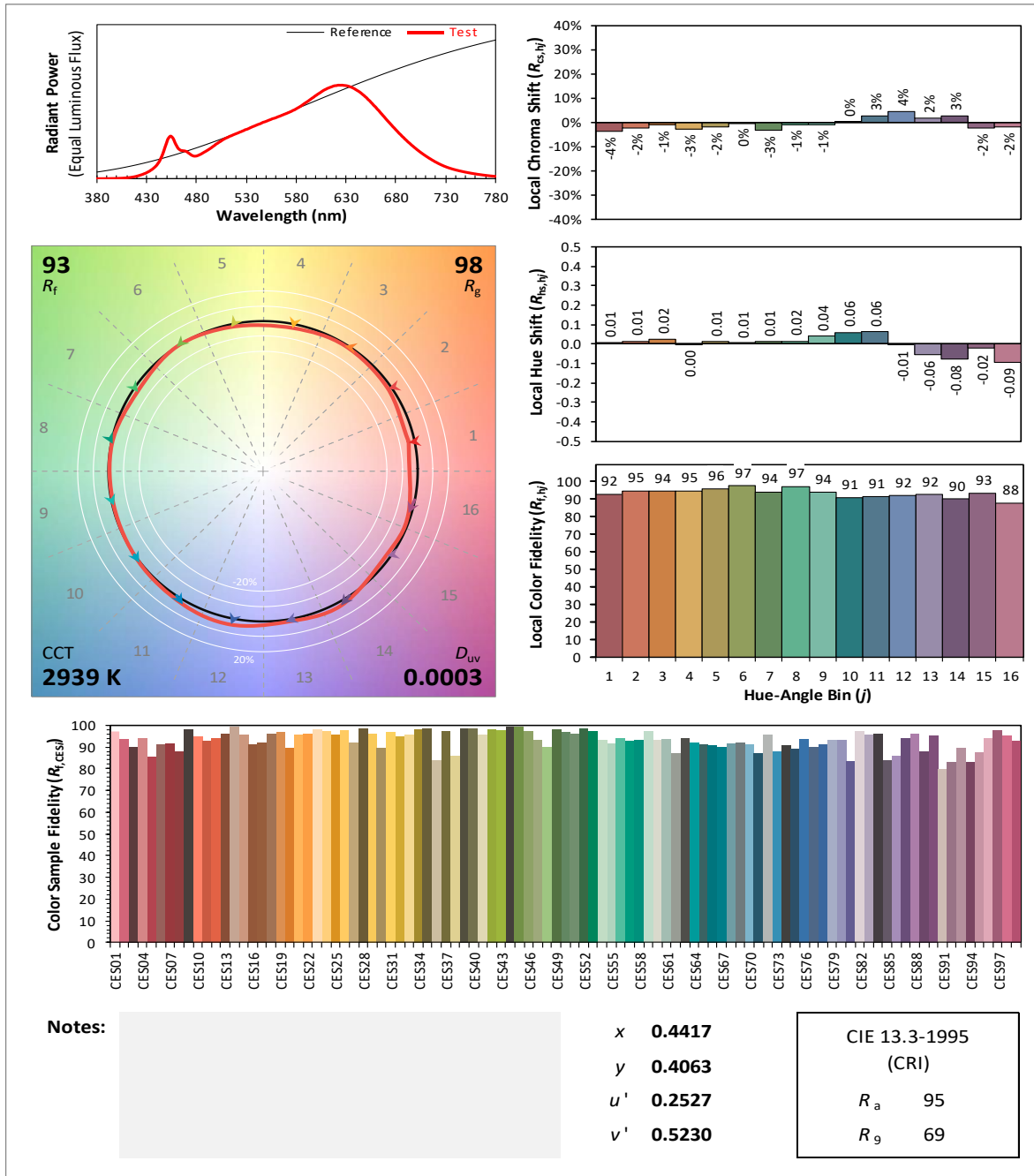




Test Report Number: LLIA002028-002B

IES TM-30 Details

Source: LLIA002028-002B	Manufacturer: Oxygen Lighting
Date: 3/7/2023	Model: 3-5014-6 ARENA LED SCONCE - WH





Test Report Number: LLIA002028-002B

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: 25.2 °C

Test Procedure: Tested in accordance with the applicable sections of:
LM-79-19, LM-78-20, LM-58-20, ANSI_ANSLG C78.377-2017, TM-30-20

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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