

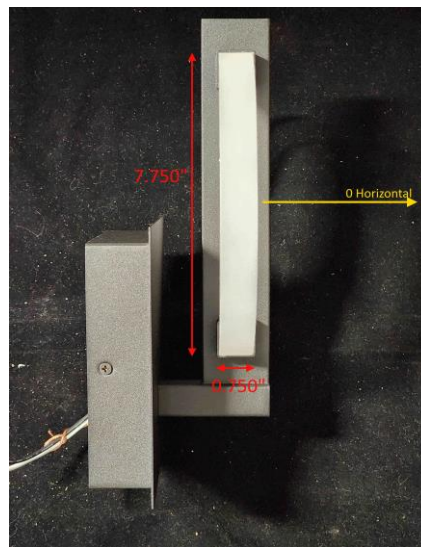


Report of Test

LLIA002028-001A

Indoor Distribution Photometry Test Report

Catalog Number: 3-5014-15 ARENA LED SCONCE - BK
Wall mounted, black 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	728.8 Lumens
Input Current	0.1096 A	Total Efficacy	56.4 lm/W
Input Power	12.92 W	Downward Flux	358.5 Lumens
Frequency	60.00 Hz	Downward Flux	49.2 % of Total
Power Factor	0.983		
Current THD	12.1 %		

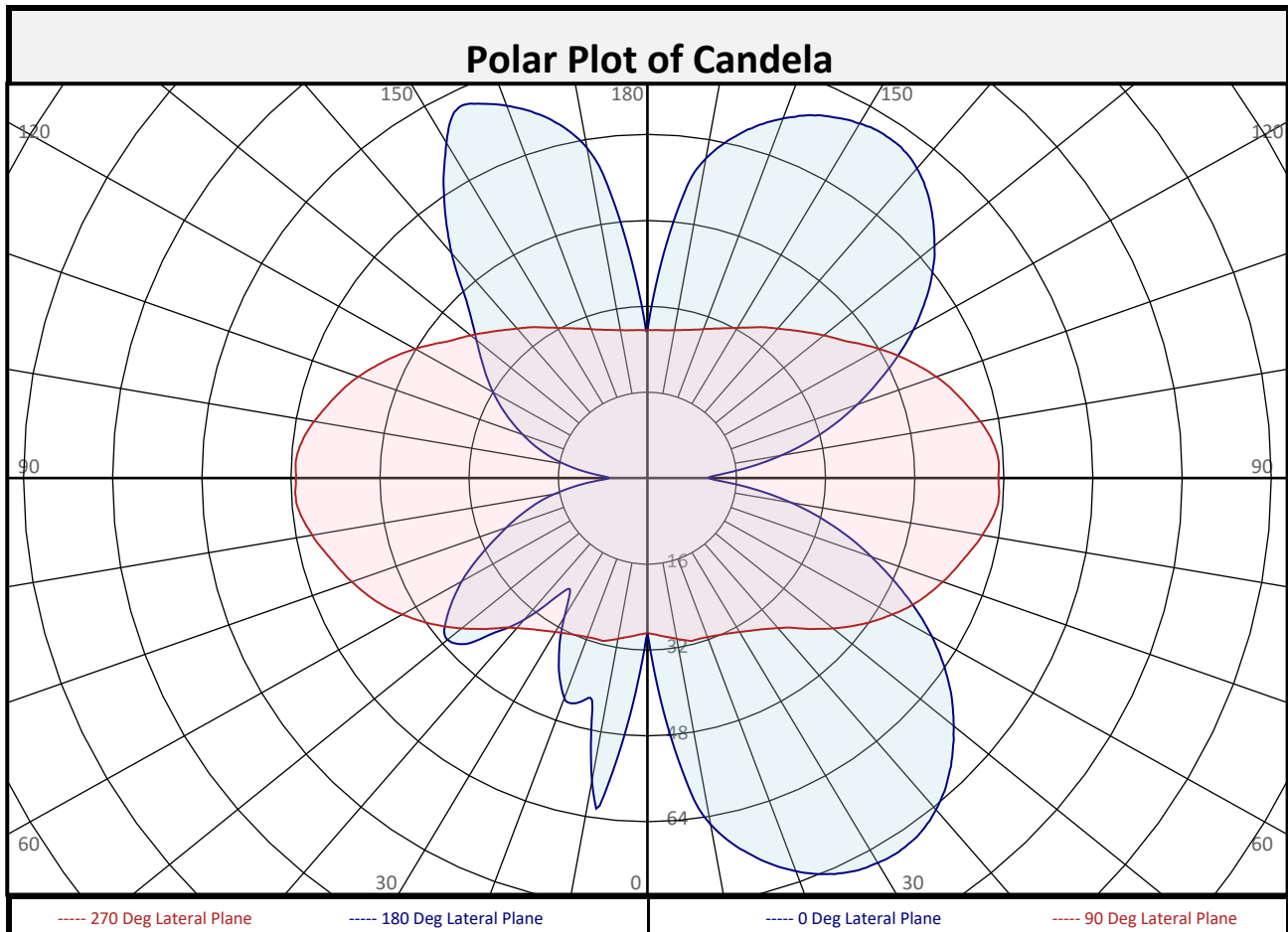
This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

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

Signed: _____



Report of Test
LLIA002028-001A



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	4.2	0.6%	90-100	60.7	8.3%	0-20	19.2	2.6%
10-20	14.9	2.1%	100-110	59.8	8.2%	0-30	44.6	6.1%
20-30	25.5	3.5%	110-120	57.8	7.9%	0-40	79.4	10.9%
30-40	34.7	4.8%	120-130	54.1	7.4%	0-60	178.5	24.5%
40-50	45.1	6.2%	130-140	48.6	6.7%	0-80	297.8	40.9%
50-60	54.0	7.4%	140-150	40.6	5.6%	10-90	354.3	48.6%
60-70	58.8	8.1%	150-160	29.0	4.0%	20-50	105.3	14.5%
70-80	60.5	8.3%	160-170	15.7	2.2%	40-90	279.1	38.3%
80-90	60.7	8.3%	170-180	4.0	0.5%	60-90	180.0	24.7%
0-90	358.5	49.2%	90-180	370.3	50.8%	0-180	728.8	100.0%



Report of Test

LLIA002028-001A

Luminous Intensity (Candela) Table

		Lateral (C-Plane) Angles								
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	0	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8
	2.5	38.1	37.1	34.9	31.8	29.1	31.7	34.8	36.9	37.7
	5	48.4	46.6	41.8	35.1	29.5	35.1	41.8	46.7	48.4
	7.5	58.7	56.2	48.7	38.1	29.9	38.2	48.2	56.7	59.5
	10	65.5	64.0	55.4	40.9	30.4	40.9	54.0	59.7	57.3
	12.5	69.5	68.2	61.3	43.8	30.9	43.4	57.1	51.2	46.3
	15	72.7	71.5	65.2	46.6	31.3	45.6	55.4	44.5	42.6
	17.5	75.5	74.2	68.0	48.8	31.3	47.5	53.5	44.8	43.9
	20	77.9	76.5	70.2	50.8	31.5	48.9	52.1	44.9	43.6
	22.5	79.8	78.4	71.9	52.7	31.7	49.8	51.8	42.7	40.9
	25	81.2	79.9	73.3	54.4	32.1	50.0	51.8	39.8	37.6
	27.5	82.3	81.2	74.6	56.0	32.5	50.1	51.2	37.4	34.0
	30	82.7	81.9	75.9	57.5	33.0	50.4	50.6	34.2	29.8
	32.5	82.9	82.4	76.9	58.8	33.7	50.6	50.2	31.6	26.1
	35	82.6	82.4	77.7	60.1	34.5	51.1	49.4	29.8	25.3
	37.5	81.9	82.1	78.4	61.4	35.3	51.7	49.0	31.3	29.5
	40	80.6	81.5	78.9	62.8	36.4	52.5	49.0	34.3	34.4
	42.5	79.0	80.5	79.2	64.1	37.7	53.6	49.3	36.0	38.2
	45	76.8	79.0	79.5	65.6	39.6	54.8	50.0	37.4	42.3
	47.5	74.4	77.3	79.6	67.2	41.5	56.7	51.8	38.9	45.7
50	71.8	75.4	79.6	68.8	43.5	58.6	53.5	39.9	46.8	
52.5	69.0	73.0	79.4	70.4	45.4	60.6	55.4	39.9	45.9	
55	66.0	70.4	79.1	72.0	47.3	62.7	57.3	38.9	43.7	
57.5	62.6	67.6	78.7	73.4	49.1	64.8	59.3	37.1	41.1	
60	59.0	65.0	78.1	74.9	50.8	66.9	60.6	35.8	38.5	
62.5	55.1	62.2	77.3	76.4	52.5	69.0	61.3	34.1	35.6	
65	50.9	59.3	76.5	77.9	53.9	71.1	61.6	32.3	32.5	
67.5	46.8	56.4	75.6	79.2	55.2	73.1	61.7	30.9	29.6	
70	42.8	53.4	75.0	80.5	56.4	74.9	61.6	29.6	27.0	
72.5	38.9	50.4	74.3	81.6	57.6	76.7	61.3	28.2	24.6	
75	34.7	47.6	73.8	82.7	58.7	78.4	60.9	26.8	22.1	
77.5	30.5	45.0	73.4	83.7	59.9	79.9	60.7	25.5	19.7	
80	26.3	42.8	73.2	84.8	61.0	81.4	60.4	24.4	17.0	
82.5	21.9	41.2	73.1	85.8	62.1	82.7	60.2	23.6	14.1	
85	17.5	40.2	73.2	86.6	63.0	83.8	60.2	23.4	11.3	
87.5	13.4	39.7	73.2	86.8	63.3	84.5	60.2	24.5	8.5	
90	11.1	39.5	72.9	86.7	63.1	84.7	60.0	25.7	6.9	

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



Report of Test

LLIA002028-001A

Luminous Intensity (Candela) Table

		Lateral (C-Plane) Angles								
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	90	11.1	39.5	72.9	86.7	63.1	84.7	60.0	25.7	6.9
	92.5	12.4	39.3	72.9	86.7	63.2	85.1	59.9	26.7	7.8
	95	16.0	39.5	72.5	86.2	62.7	84.9	59.5	27.4	10.0
	97.5	20.2	40.1	72.0	85.2	61.9	84.2	58.8	27.5	12.6
	100	24.4	41.5	71.7	83.9	60.7	83.1	58.3	27.9	15.1
	102.5	28.5	43.4	71.6	82.5	59.4	82.1	58.0	28.6	17.5
	105	32.5	45.6	71.7	81.2	58.1	81.1	58.0	29.6	19.7
	107.5	36.4	48.1	72.1	79.8	56.8	80.0	58.3	31.0	21.8
	110	40.1	50.8	72.5	78.2	55.2	78.9	58.7	32.6	23.8
	112.5	43.8	53.5	73.0	76.7	53.5	77.6	59.3	34.1	25.9
	115	47.6	56.2	73.5	74.9	51.8	76.3	60.0	35.6	27.9
	117.5	51.4	58.9	74.1	73.3	50.0	75.0	60.9	37.2	30.0
	120	55.1	61.4	74.6	71.7	48.1	73.8	62.0	38.9	32.0
	122.5	58.5	63.9	75.0	70.1	46.2	72.6	63.3	40.5	33.9
	125	61.8	66.3	75.4	68.7	44.2	71.5	64.7	42.4	35.9
	127.5	64.7	68.6	75.7	67.5	42.7	70.4	66.3	44.4	37.9
	130	67.3	70.8	75.9	66.3	41.3	69.2	67.9	46.5	40.1
	132.5	69.7	72.6	76.0	65.2	40.0	67.8	69.4	48.9	42.6
	135	71.9	74.1	75.9	64.2	38.7	66.5	70.9	52.5	45.7
	137.5	73.8	75.4	75.7	63.1	37.5	65.2	72.4	56.9	49.9
	140	75.3	76.2	75.2	62.0	36.3	64.0	73.7	61.1	54.7
	142.5	76.4	76.6	74.7	60.8	35.3	62.6	74.8	64.9	59.2
	145	76.8	76.7	73.8	59.4	34.3	61.0	75.5	68.3	63.6
	147.5	76.8	76.4	72.7	57.9	33.2	59.4	74.9	71.6	68.0
150	76.3	75.8	71.4	56.4	32.3	57.8	73.7	75.1	72.1	
152.5	75.5	74.8	69.8	54.8	31.5	56.0	72.4	76.9	75.9	
155	74.5	73.5	68.2	53.1	30.7	54.0	70.9	75.9	76.9	
157.5	73.1	71.8	66.5	51.2	30.1	51.8	69.2	74.6	75.5	
160	71.3	70.0	64.6	49.1	29.5	49.4	67.3	72.9	73.8	
162.5	69.2	67.9	62.5	46.9	29.0	46.8	65.1	70.9	71.9	
165	66.8	65.6	60.1	44.5	28.6	44.0	62.3	68.4	69.5	
167.5	63.9	62.8	57.1	41.9	28.2	41.1	58.5	65.3	66.5	
170	60.5	59.3	52.3	39.3	27.9	38.2	52.4	60.9	62.5	
172.5	55.0	52.8	46.5	36.7	27.7	35.3	45.7	52.8	55.2	
175	45.8	44.2	40.0	33.8	27.7	32.2	38.5	43.0	44.7	
177.5	36.2	35.5	33.5	30.5	27.6	28.8	31.8	33.8	34.6	
180	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6	

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



Report of Test

LLIA002028-001A

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	50	30	10	0
RCR																					
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	55	55	55	49			
1	93	87	82	77	85	80	75	71	66	63	59	54	51	49	42	40	39	33			
2	84	74	66	60	76	68	61	55	56	51	46	45	41	38	35	32	29	24			
3	75	64	55	48	68	58	51	44	48	42	37	39	34	30	30	26	23	19			
4	68	56	46	39	62	51	43	36	42	36	30	34	29	25	26	22	19	15			
5	62	49	40	33	56	45	37	30	37	30	25	30	25	21	23	19	16	12			
6	57	44	34	28	52	40	32	26	33	27	22	27	21	18	20	17	14	10			
7	53	39	30	24	48	36	28	22	30	23	19	24	19	15	19	15	12	9			
8	49	35	27	21	44	32	25	19	27	21	16	22	17	13	17	13	10	8			
9	45	32	24	18	41	29	22	17	24	19	14	20	15	12	16	12	9	7			
10	42	29	21	16	38	27	20	15	22	17	13	18	14	10	14	11	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	0.8	12.09	11.64
8.0	0.4	16.12	15.52
10.0	0.3	20.15	19.40
12.0	0.2	24.18	23.28
14.0	0.1	28.22	27.15
16.0	0.1	32.25	31.03

Spacing Criterion	
0 deg:	2.7
90 deg:	1.9
180 deg:	1.3
270 deg:	1.9

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	7679	7679	7679
45	8093	9988	11950
55	6549	9535	16214
65	4921	9120	22161
75	3363	8975	31304
85	1754	9385	50009



Report of Test

LLIA002028-001A

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

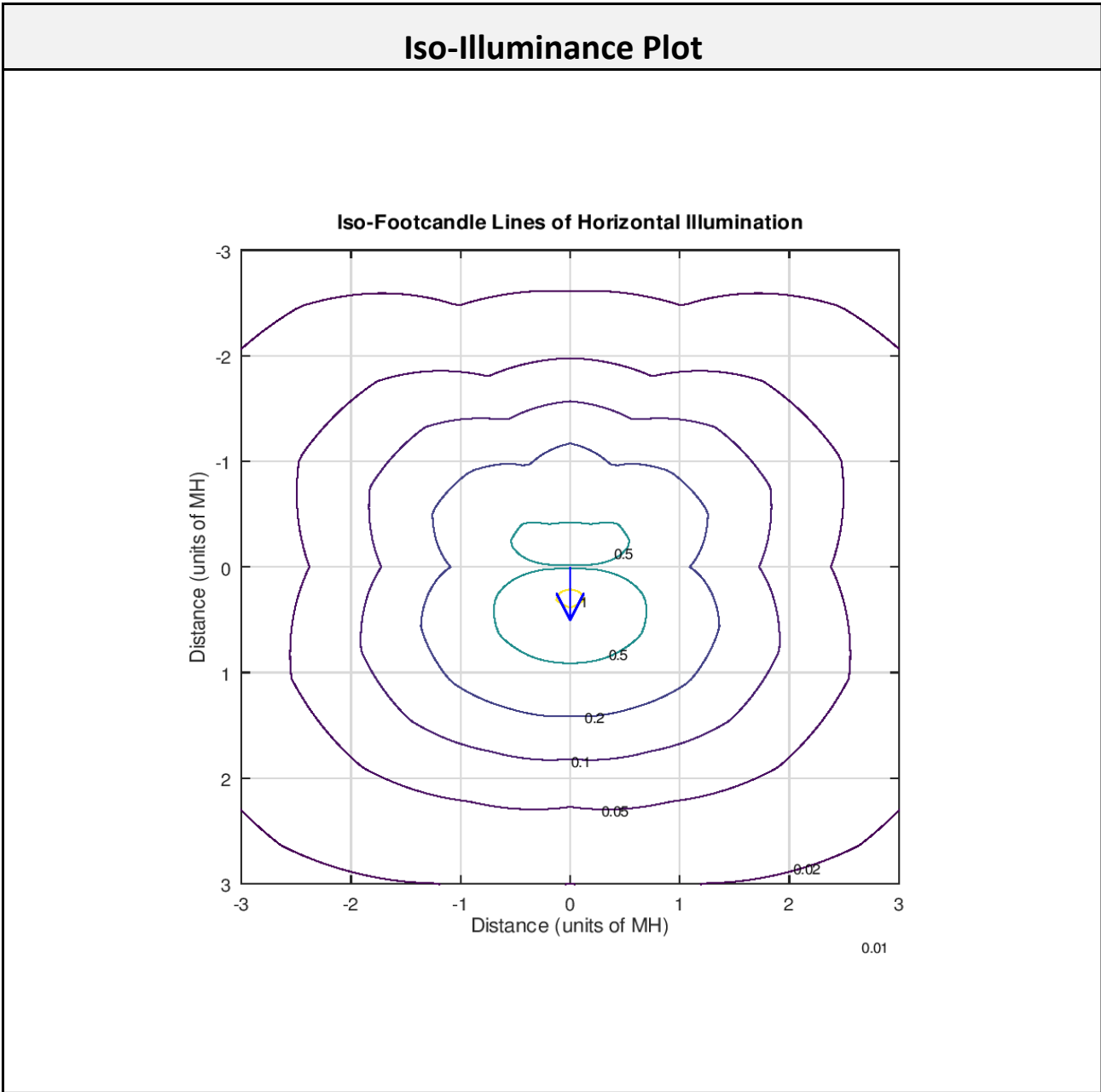
UGR Viewed Endwise

X=2H	Y=2H	13.7	14.7	14.6	15.6	16.9	10.8	11.8	11.8	12.8	14.1
		3H	15.9	16.7	16.8	17.7	19.0	13.4	14.3	14.4	15.3
	4H	16.8	17.6	17.7	18.6	19.9	14.6	15.5	15.6	16.5	17.8
	6H	17.5	18.3	18.5	19.3	20.7	15.9	16.7	16.8	17.7	19.0
	8H	17.9	18.6	18.8	19.6	20.9	16.4	17.2	17.4	18.2	19.5
	12H	18.1	18.8	19.1	19.8	21.2	17.0	17.7	18.0	18.7	20.1
4H	2H	14.2	15.1	15.2	16.1	17.4	12.0	12.8	12.9	13.8	15.1
	3H	16.6	17.3	17.5	18.3	19.6	14.8	15.6	15.8	16.6	17.9
	4H	17.6	18.3	18.6	19.3	20.6	16.3	17.0	17.3	18.0	19.4
	6H	18.5	19.1	19.5	20.2	21.5	17.8	18.4	18.7	19.4	20.7
	8H	18.9	19.5	19.9	20.5	21.9	18.4	19.0	19.4	20.0	21.4
	12H	19.2	19.8	20.3	20.8	22.2	19.0	19.6	20.0	20.6	22.0
8H	4H	18.1	18.6	19.1	19.7	21.0	16.9	17.5	17.9	18.5	19.9
	6H	19.2	19.7	20.2	20.7	22.1	18.7	19.2	19.7	20.3	21.6
	8H	19.7	20.2	20.7	21.2	22.6	19.6	20.0	20.6	21.1	22.4
	12H	20.2	20.6	21.2	21.6	23.0	20.4	20.8	21.5	21.9	23.3
12H	4H	18.2	18.7	19.2	19.7	21.1	17.0	17.5	18.0	18.6	19.9
	6H	19.4	19.9	20.4	20.9	22.3	18.9	19.3	19.9	20.4	21.8
	8H	20.0	20.4	21.0	21.5	22.9	19.9	20.3	20.9	21.3	22.7

Maximum UGR = 23.3



Report of Test
LLIA002028-001A

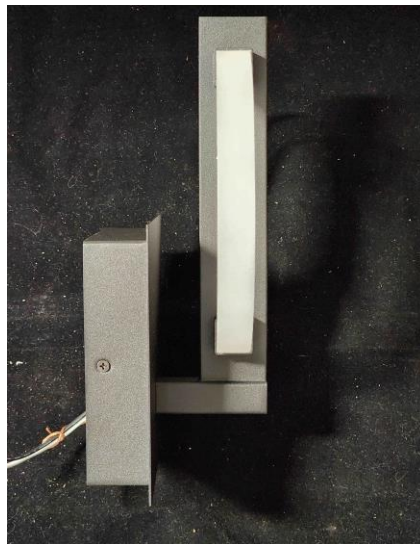


The isofootcandle values shown in the plot above are based on a mounting height of $h = 8.0$ feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution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



Report of Test
LLIA002028-001A

Additional Pictures of Test Subject





Report of Test

LLIA002028-001A

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-41-20 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.

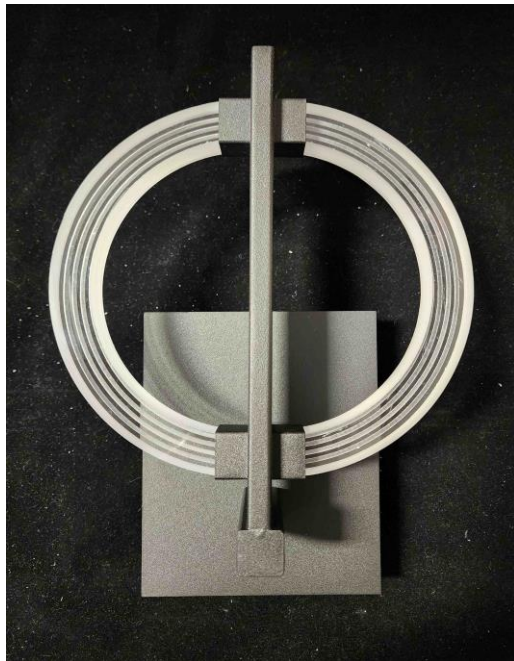


Report of Test

LLIA002028-001B

Integrating Sphere Report

Catalog Number: 3-5014-15 ARENA LED SCONCE - BK
Wall mounted, black painted formed steel housing,
decorative clear plastic light guide with frosted sections.
Four multi-chip LEDs.
One Novbo NE012120035-2G LED driver



Performance Summary

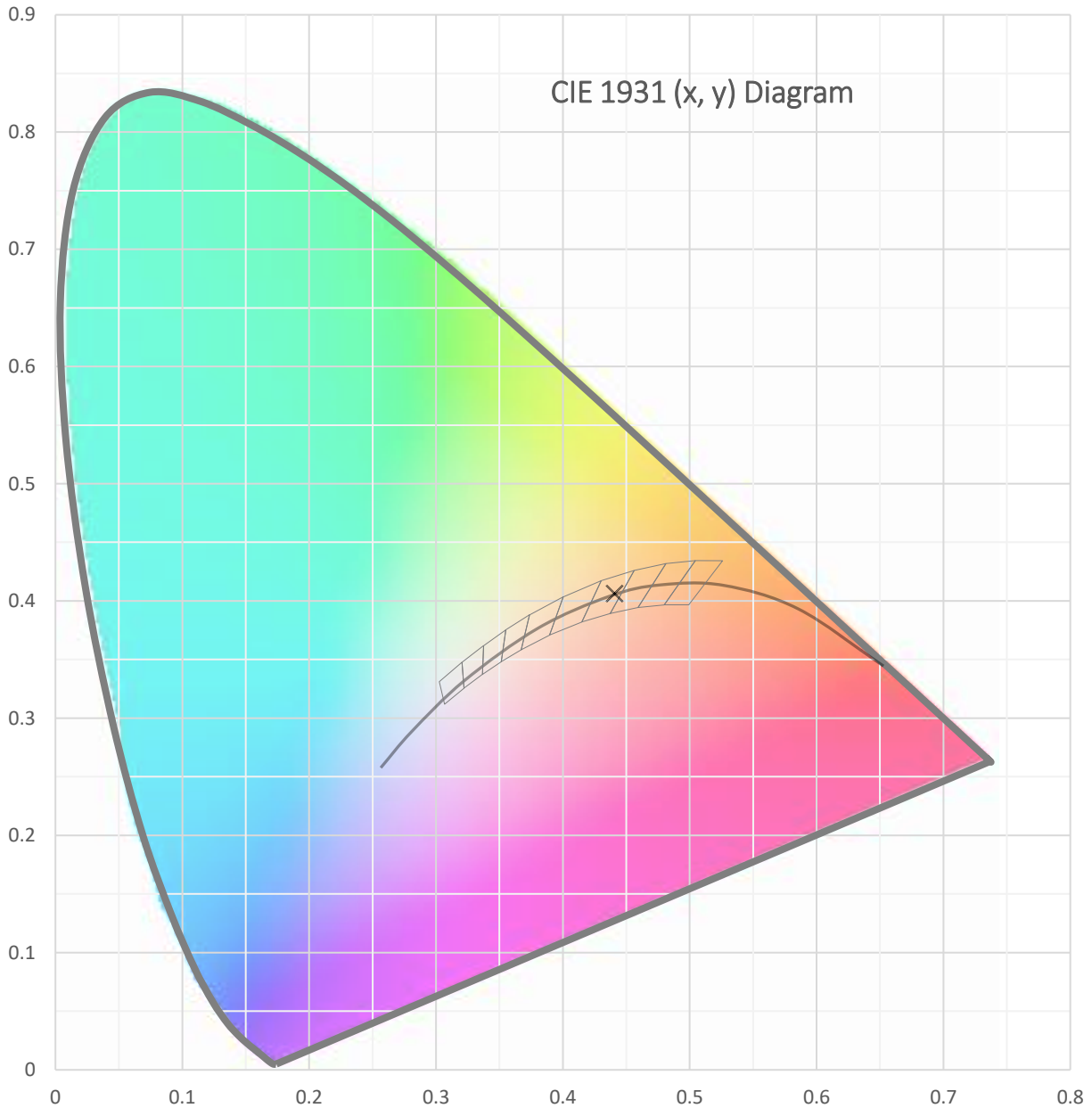
Voltage	120.0 Vac
Current	0.1097 A
Power	12.93 W
Frequency	59.99 Hz
Power Factor	0.983
Current THD	12.2 %
Total Luminous Flux	743.9 lm
Efficacy	57.5 lm/W
Chromaticity (x,y)	(0.4408, 0.4064)
(u',v')	(0.2520, 0.5229)
Duv	0.0004
CCT	2956 K
CRI (Ra)	95
R9	70
TM-30: Rf	93
TM-30: Rg	99
TM-30: Rcs,h1	-4

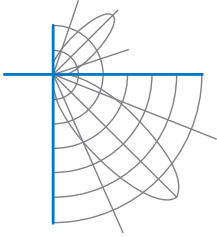
Prepared For:
Oxygen Lighting
201 Railhead Road
Fort Worth, TX 76106, USA

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

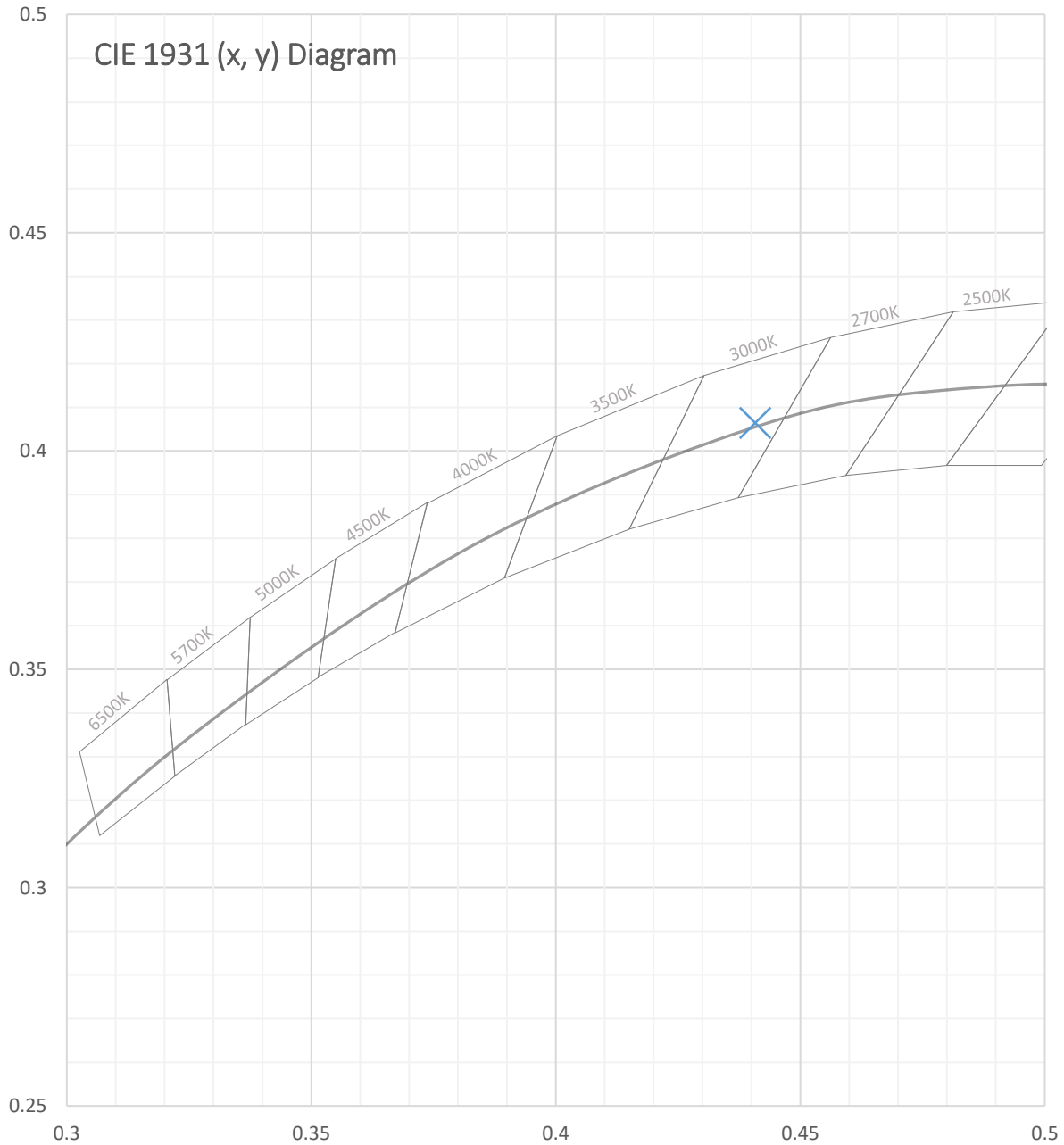


Test Report Number: LLIA002028-001B





Test Report Number: LLIA002028-001B





Test Report Number: LLIA002028-001B

Total Radiant Flux	2.639 W
Total Luminous Flux	743.9 Lm
Chromaticity CIE 1931 (x, y)	(0.4408, 0.4064)
Chromaticity CIE 1976 (u', v')	(0.2520, 0.5229)
Correlated Color Temperature (CCT)	2956 K
Color Rendering Index (Ra)	95
R1	96
R2	98
R3	98
R4	96
R5	95
R6	97
R7	94
R8	87
R9	70
R10	93
R11	97
R12	85
R13	96
R14	98
TM-30: Rf	93
TM-30: Rg	99
TM-30: Rcs,h1	-4
Distance from Planckian Locus (Duv)	0.0004
Scotopic/Photopic Ratio ‡	1.415

Electrical Data

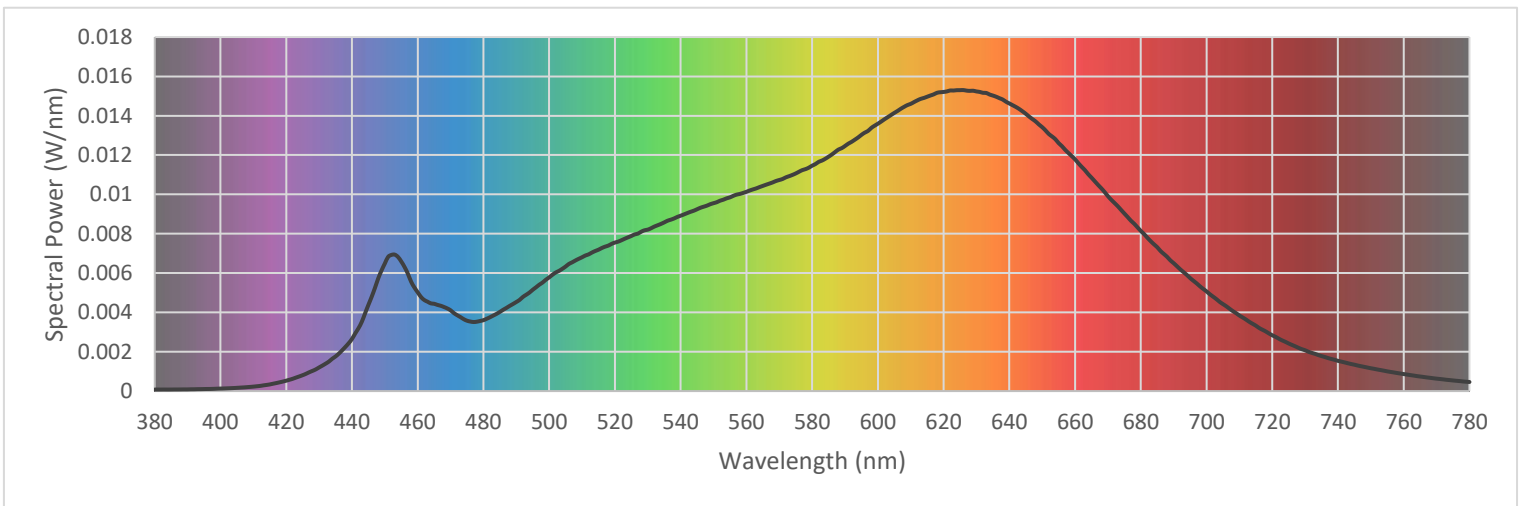
Voltage	120.0 Vac
Current	0.1097 A
Power	12.93 W
Frequency	59.99 Hz
Power Factor	0.983
Current THD	12.2 %



Test Report Number: LLIA002028-001B

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

380	0.000077	480	0.003605	580	0.011459	680	0.008143
385	0.000079	485	0.004025	585	0.011915	685	0.007314
390	0.000085	490	0.004529	590	0.012459	690	0.006504
395	0.000102	495	0.005151	595	0.013025	695	0.005748
400	0.000127	500	0.005780	600	0.013592	700	0.005068
405	0.000164	505	0.006331	605	0.014143	705	0.004423
410	0.000226	510	0.006803	610	0.014603	710	0.003843
415	0.000338	515	0.007186	615	0.014965	715	0.003326
420	0.000528	520	0.007550	620	0.015208	720	0.002837
425	0.000808	525	0.007886	625	0.015299	725	0.002419
430	0.001201	530	0.008208	630	0.015234	730	0.002074
435	0.001759	535	0.008576	635	0.015025	735	0.001779
440	0.002649	540	0.008915	640	0.014623	740	0.001536
445	0.004381	545	0.009244	645	0.014099	745	0.001340
450	0.006485	550	0.009553	650	0.013418	750	0.001160
455	0.006589	555	0.009849	655	0.012609	755	0.001002
460	0.005021	560	0.010131	660	0.011782	760	0.000865
465	0.004438	565	0.010432	665	0.010852	765	0.000740
470	0.004108	570	0.010731	670	0.009911	770	0.000631
475	0.003578	575	0.011063	675	0.009029	775	0.000539
						780	0.000461

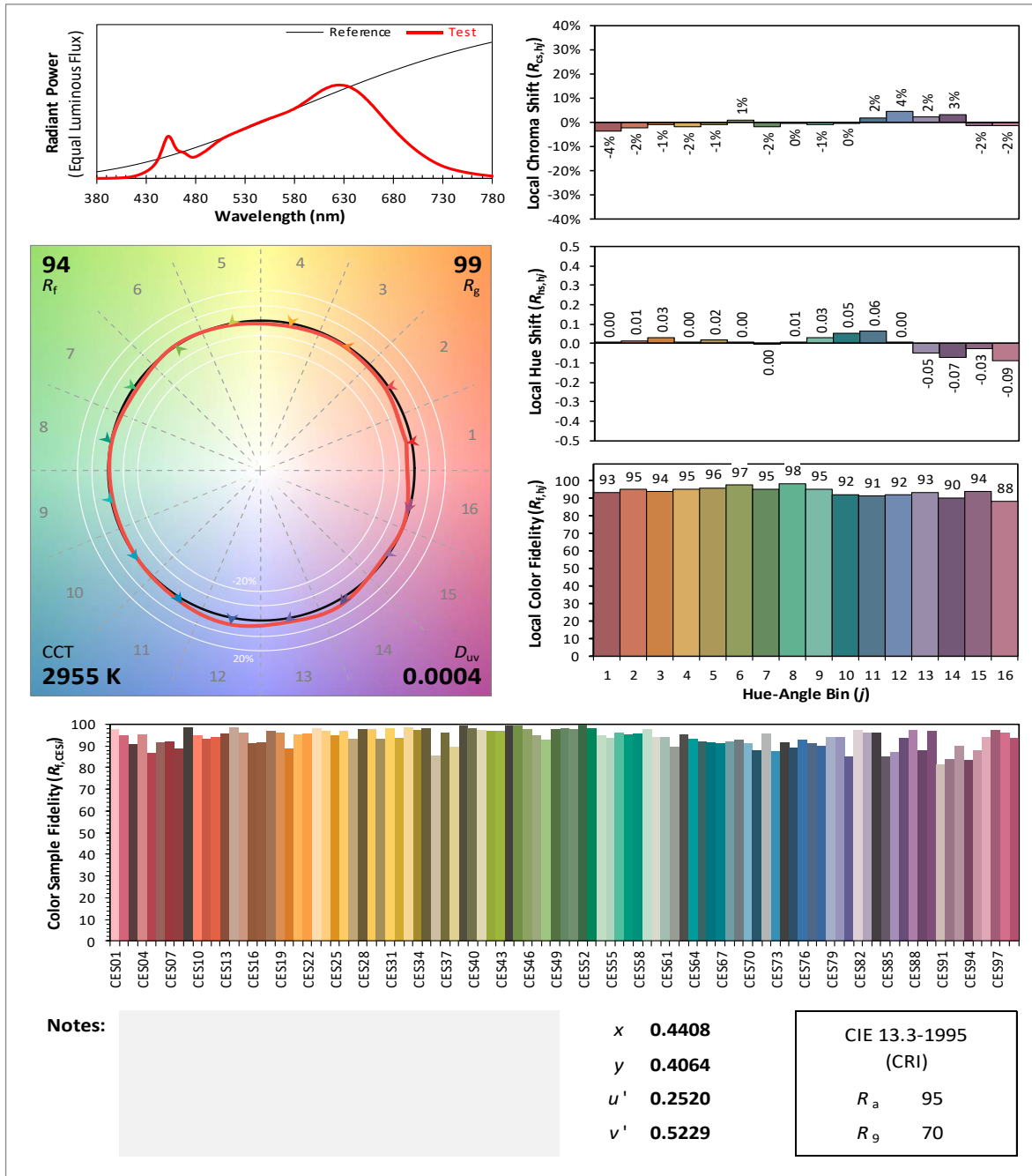




Test Report Number: LLIA002028-001B

IES TM-30 Details

Source: LLIA002028-001B Manufacturer: Oxygen Lighting
Date: 3/7/2023 Model: 3-5014-15 ARENA LED SCONCE - BK





Test Report Number: LLIA002028-001B

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: 25.7 °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.

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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