LightLab INTERNATIONAL ALLENTOWN LLC

NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA001751-006A

Indoor Distribution Photometry Test Report

Catalog Number: 3-764-24 Rico Sconce
Wall mounted, steel back/mounting plate, aluminum housing, two sealed aluminum disks with clear cylindrical glass enclosures, frosted inner surface and outer ring; one aimed up, one down.
20 white LEDs on two white LED boards - 10 aimed up, 10 aimed down.
One BQ BQE15A-0420-35-TD LED driver

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

Performance Summary					
Input Voltage	120.0	Vac	Luminous Flux	869.0	Lumens
Input Current	0.1191	A	Total Efficacy	61.7	Lm/W
Input Power	14.08	W	Downward Flux	434.1	Lumens
Frequency	60.00	Hz	Downward Flux	50.0	% of Total
Power Factor	0.984				
Current THD	13.2	%			

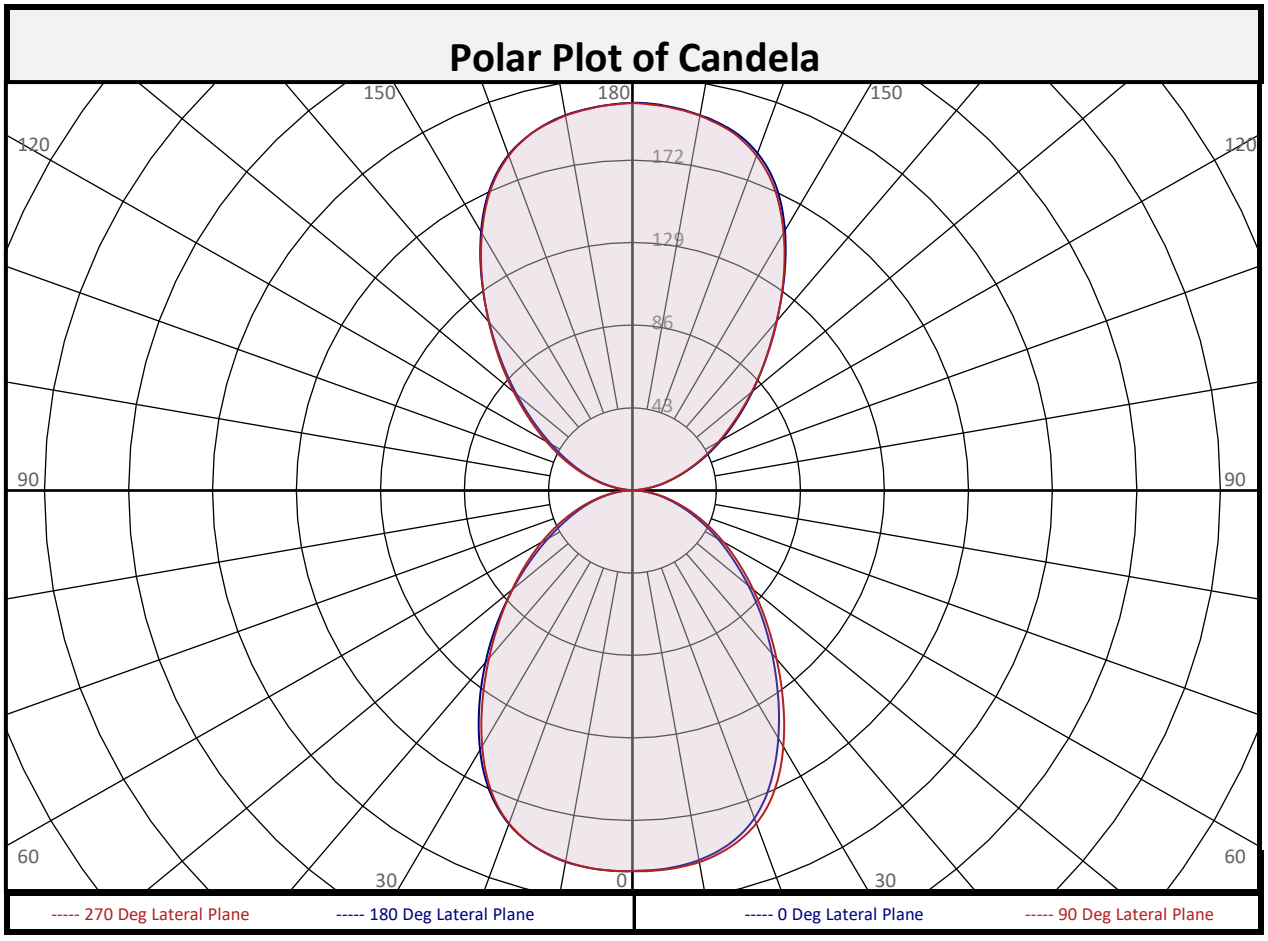
This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

Test date: 05/19/2022
Report date: 05/23/2022

Signed: Michael L. Grather

Report of Test

LLIA001751-006A



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	18.9	2.2%	90-100	5.4	0.6%	0-20	73.0	8.4%
10-20	54.1	6.2%	100-110	21.1	2.4%	0-30	151.4	17.4%
20-30	78.4	9.0%	110-120	39.1	4.5%	0-40	234.9	27.0%
30-40	83.5	9.6%	120-130	57.6	6.6%	0-60	367.0	42.2%
40-50	74.2	8.5%	130-140	74.4	8.6%	0-80	428.4	49.3%
50-60	57.9	6.7%	140-150	84.2	9.7%	10-90	415.2	47.8%
60-70	39.6	4.6%	150-160	79.3	9.1%	20-50	236.1	27.2%
70-80	21.8	2.5%	160-170	54.6	6.3%	40-90	199.2	22.9%
80-90	5.8	0.7%	170-180	19.1	2.2%	60-90	67.2	7.7%
0-90	434.1	50.0%	90-180	434.8	50.0%	0-180	869.0	100.0%

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Luminous Intensity (Candela) Table

Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	Lateral (C-Plane) Angles								
	0	22.5	45	67.5	90	112.5	135	157.5	180
0	198	198	198	198	198	198	198	198	198
2.5	198	198	198	199	199	199	199	199	199
5	198	198	198	198	198	198	198	198	198
7.5	197	197	198	198	198	198	198	198	198
10	196	196	196	197	197	197	197	197	196
12.5	194	194	194	195	195	195	195	195	195
15	191	191	192	192	193	193	193	193	192
17.5	187	187	188	189	189	189	189	189	189
20	182	182	183	184	185	185	185	185	185
22.5	176	176	177	178	179	179	180	180	180
25	168	168	169	171	172	173	173	173	173
27.5	159	159	161	162	164	164	165	165	165
30	149	150	151	153	154	155	156	156	156
32.5	140	140	141	143	144	145	146	146	147
35	130	130	131	133	134	135	136	136	137
37.5	120	121	122	123	124	125	126	126	127
40	111	112	112	113	114	115	116	117	117
42.5	102	103	104	104	105	106	106	107	107
45	94	94	95	96	97	96	97	97	98
47.5	86	86	87	88	88	88	88	88	89
50	78	78	79	80	81	80	79	79	80
52.5	70	71	72	73	73	72	71	71	71
55	63	64	65	66	66	65	64	64	63
57.5	56	57	58	59	60	59	57	56	56
60	50	51	52	53	53	52	51	50	49
62.5	44	45	46	47	47	47	45	44	43
65	39	39	40	41	42	41	39	39	38
67.5	33	34	34	35	36	36	34	34	33
70	28	29	29	30	31	31	30	29	28
72.5	24	24	25	25	26	26	26	25	24
75	19	19	20	21	21	21	21	20	19
77.5	15	16	16	16	17	17	17	16	15
80	12	12	12	12	13	13	13	12	11
82.5	8	8	8	8	9	9	9	8	8
85	4	4	5	5	5	5	5	5	4
87.5	2	2	2	2	2	2	2	2	2
90	1	1	1	1	1	1	1	1	1

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Luminous Intensity (Candela) Table

Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	Lateral (C-Plane) Angles								
	0	22.5	45	67.5	90	112.5	135	157.5	180
90	1	1	1	1	1	1	1	1	1
92.5	2	2	2	2	2	2	2	2	1
95	5	5	5	5	4	4	4	4	3
97.5	8	8	8	8	8	8	8	7	7
100	12	12	12	12	12	12	11	11	10
102.5	16	17	16	16	16	16	15	15	14
105	20	21	20	20	20	20	20	19	18
107.5	25	25	25	25	24	24	24	23	22
110	30	30	30	30	29	29	29	28	27
112.5	35	36	35	35	34	34	33	32	32
115	41	41	41	40	40	39	38	37	37
117.5	47	47	46	46	45	45	43	43	42
120	53	53	53	52	51	51	49	49	48
122.5	59	60	59	59	58	57	55	55	55
125	66	66	66	65	64	63	62	62	62
127.5	73	73	73	73	72	71	69	70	69
130	80	81	81	80	79	79	77	78	77
132.5	88	89	89	89	88	87	86	87	86
135	96	97	97	97	96	96	95	96	95
137.5	105	106	106	106	105	105	105	105	104
140	115	115	115	116	115	115	114	115	114
142.5	125	125	125	125	125	125	124	125	124
145	136	136	135	135	135	135	135	135	135
147.5	146	146	145	145	145	145	145	145	145
150	156	156	155	155	154	155	155	155	155
152.5	166	166	165	165	164	164	164	165	165
155	174	174	174	173	172	173	173	173	173
157.5	181	181	181	180	180	180	180	180	180
160	187	187	186	186	185	186	186	186	186
162.5	191	191	191	190	190	190	190	190	190
165	195	194	194	194	194	194	194	194	194
167.5	197	197	196	196	196	196	196	196	196
170	198	199	198	198	198	198	198	198	198
172.5	200	200	200	199	200	199	200	200	200
175	201	201	201	200	201	200	201	201	201
177.5	202	201	201	201	201	201	201	201	201
180	202	202	202	202	202	202	202	202	202

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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	107	107	107	107		99	99	99	99		83	83	83		69	69	69		56	56	56	50
1	98	94	90	87		90	87	84	81		74	71	69		61	60	58		50	49	48	43
2	90	83	77	72		83	77	71	67		65	61	58		55	52	50		45	43	41	37
3	82	73	66	60		76	68	62	57		58	53	49		49	45	42		40	38	36	32
4	75	65	57	51		69	60	54	48		52	47	43		44	40	37		36	33	31	28
5	69	58	50	44		64	54	47	42		47	41	37		39	35	32		33	30	27	24
6	64	52	44	39		59	49	42	37		42	37	33		36	32	28		30	27	24	22
7	59	47	40	34		55	44	37	32		38	33	29		33	29	25		27	24	22	19
8	55	43	36	30		51	40	34	29		35	30	26		30	26	23		25	22	20	17
9	52	40	32	27		48	37	30	26		32	27	23		28	24	21		23	20	18	16
10	48	36	29	25		45	34	28	23		30	25	21		26	22	19		22	19	16	15

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	5.5	6.93	6.97
8.0	3.1	9.24	9.30
10.0	2.0	11.55	11.62
12.0	1.4	13.85	13.95
14.0	1.0	16.16	16.27
16.0	0.8	18.47	18.60

Spacing Criterion

0 deg:	1.1
90 deg:	1.2
180 deg:	1.2
270 deg:	1.2

Average Luminance (cd/m^2)

	0 deg Plane	45 deg Plane	90 deg Plane
0	56843	56843	56843
45	27892	28248	28680
55	20687	21273	21756
65	14733	15241	15850
75	9059	9366	9926
85	2779	2875	3069

Beam and Field Angle

0-180 Degree Plane

Beam Angle: 87.1°

Field Angle: 149.0°

90-270 Degree Plane

Beam Angle: 87.4°

Field Angle: 151.1°

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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	17.0	17.8	18.0	18.8	20.1	17.3	18.1	18.2	19.1	20.3
	3H	18.2	19.0	19.2	20.0	21.3	18.6	19.3	19.5	20.3	21.6
	4H	18.6	19.3	19.6	20.3	21.6	19.0	19.7	20.0	20.7	22.0
	6H	18.8	19.5	19.8	20.5	21.8	19.2	19.9	20.2	20.9	22.2
	8H	18.9	19.5	19.9	20.5	21.8	19.3	19.9	20.3	20.9	22.2
	12H	18.9	19.5	19.9	20.5	21.8	19.3	19.9	20.3	20.9	22.2
4H	2H	17.4	18.1	18.4	19.1	20.4	17.6	18.3	18.6	19.3	20.6
	3H	18.8	19.4	19.8	20.4	21.7	19.1	19.7	20.1	20.7	22.0
	4H	19.2	19.8	20.3	20.8	22.1	19.6	20.1	20.6	21.1	22.5
	6H	19.6	20.0	20.6	21.1	22.4	19.9	20.4	20.9	21.4	22.8
	8H	19.6	20.1	20.7	21.1	22.4	20.0	20.4	21.0	21.4	22.8
	12H	19.6	20.0	20.7	21.1	22.4	20.0	20.4	21.0	21.4	22.8
8H	4H	19.4	19.8	20.4	20.8	22.2	19.7	20.1	20.7	21.1	22.5
	6H	19.8	20.1	20.8	21.2	22.5	20.1	20.5	21.1	21.5	22.9
	8H	19.9	20.2	20.9	21.2	22.6	20.2	20.5	21.3	21.6	22.9
	12H	19.9	20.2	20.9	21.2	22.6	20.2	20.5	21.3	21.6	23.0
12H	4H	19.3	19.7	20.4	20.8	22.1	19.6	20.0	20.7	21.1	22.4
	6H	19.7	20.1	20.8	21.1	22.5	20.1	20.4	21.1	21.5	22.8
	8H	19.9	20.1	20.9	21.2	22.6	20.2	20.5	21.3	21.5	23.0

Maximum UGR = 23.0

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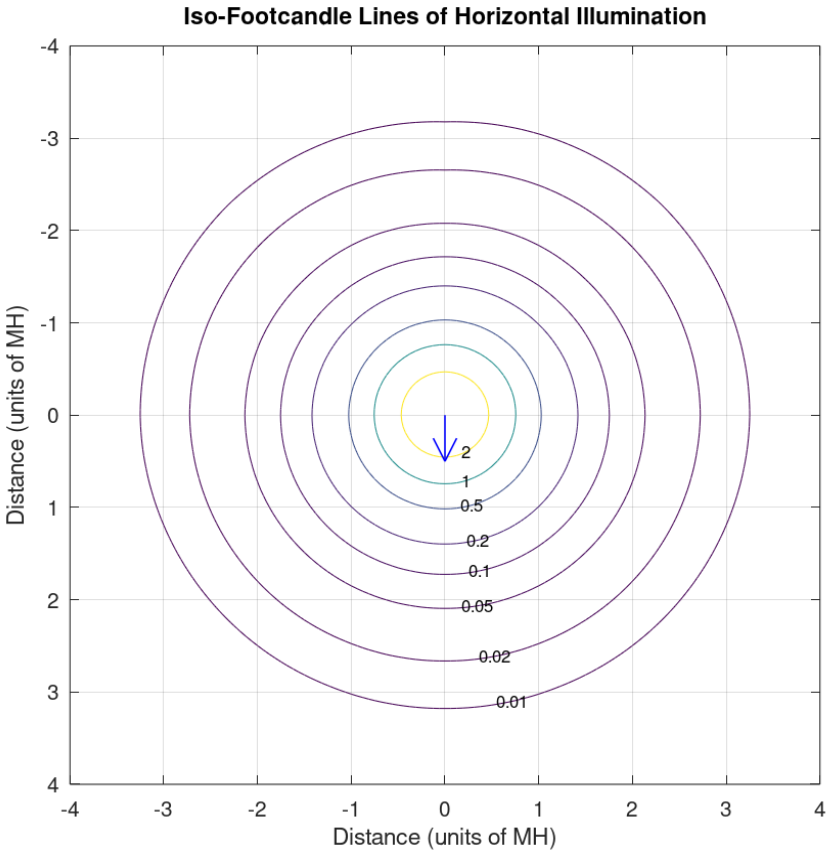
Iso-Illuminance Plot



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

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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 ǂ 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

LLIA001751-006B

Integrating Sphere Report

Catalog Number: 3-764-24 Rico Sconce

Wall mounted, steel back/mounting plate, aluminum housing, two sealed aluminum disks with clear cylindrical glass enclosures, frosted inner surface and outer ring; one aimed up, one down.

20 white LEDs on two white LED boards - 10 aimed up, 10 aimed down.

One BQ BQE15A-0420-35-TD LED driver

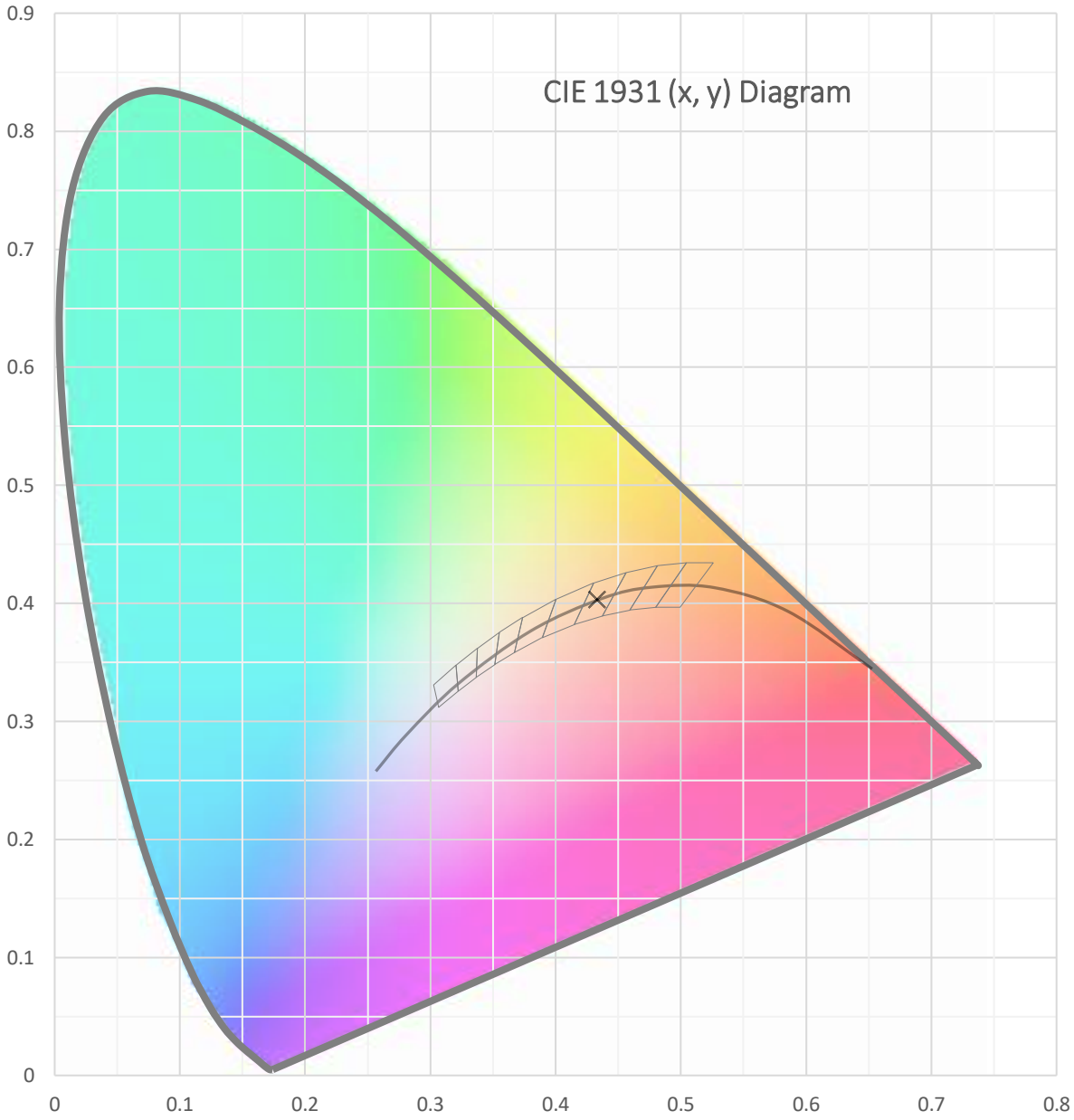
Performance Summary

Voltage	120.0	Vac
Current	0.1195	A
Power	14.11	W
Frequency	59.99	Hz
Power Factor	0.985	
Current THD	13.2	%
Total Luminous Flux	865.1	lm
Efficacy	61.3	lm/W
Chromaticity (x,y)	(0.4330, 0.4034)	
(u',v')	(0.2483, 0.5205)	
Duv	0.0003	
CCT	3062	K
CRI (Ra)	92	
R9	58	
TM-30: Rf	90	
TM-30: Rg	98	
TM-30: Rcs,h1	-5	

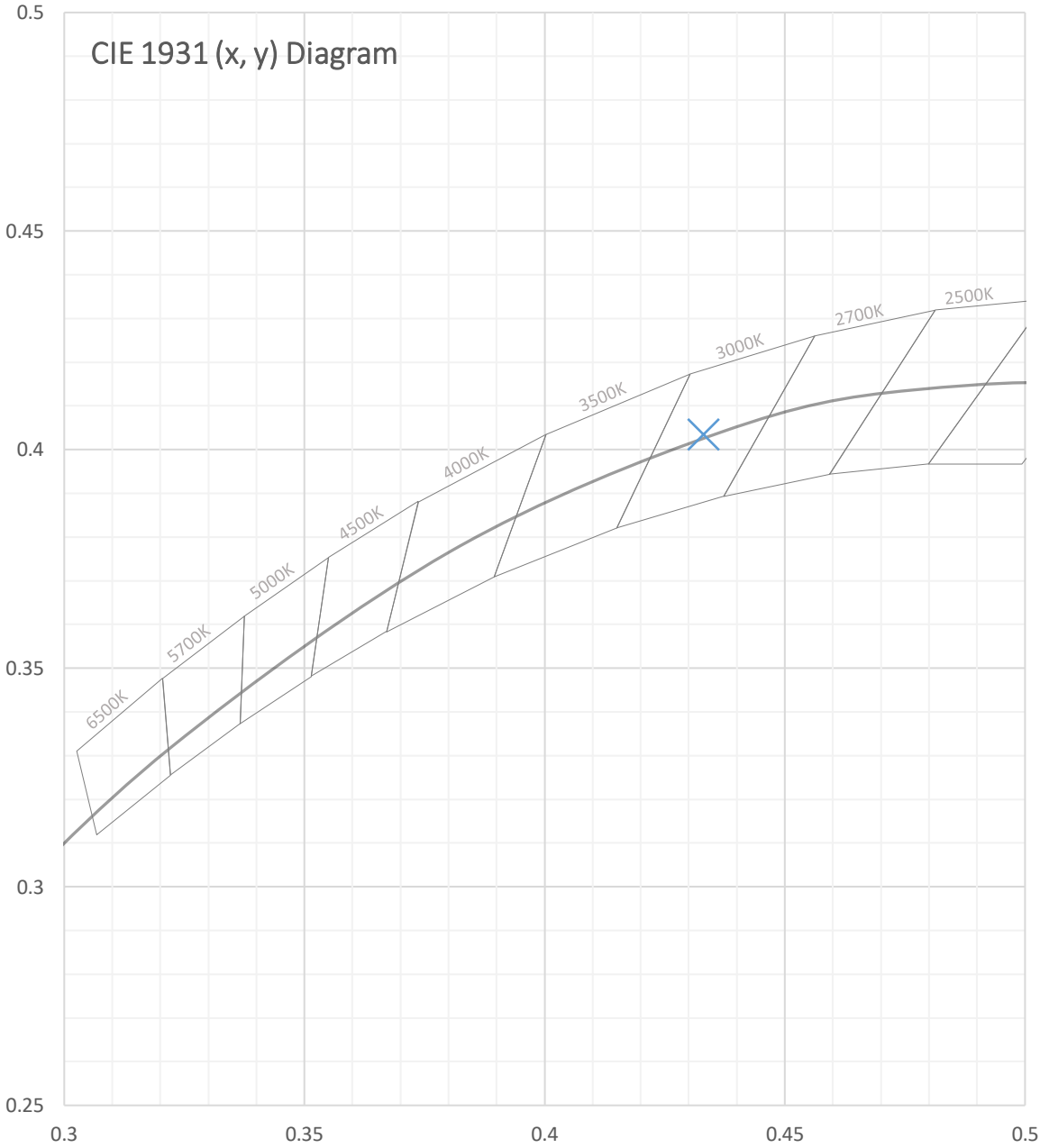
Prepared For:
Oxygen Lighting
201 Railhead Road
Fort Worth, TX 76106, USA

Test date: 05/18/2022
Report date: 05/23/2022

Test Report Number: LLIA001751-006B



Test Report Number: LLIA001751-006B



Test Report Number: LLIA001751-006B

Total Radiant Flux	2.990	W
Total Luminous Flux	865.1	Lm
Chromaticity CIE 1931 (x, y)	(0.4330, 0.4034)	
Chromaticity CIE 1976 (u', v')	(0.2483, 0.5205)	
Correlated Color Temperature (CCT)	3062	K
Color Rendering Index (Ra)	92	
R1	92	
R2	96	
R3	98	
R4	91	
R5	92	
R6	95	
R7	92	
R8	81	
R9	58	
R10	90	
R11	92	
R12	78	
R13	93	
R14	99	
TM-30: Rf	90	
TM-30: Rg	98	
TM-30: Rcs,h1	-5	
Distance from Planckian Locus (Duv)	0.0003	
Scotopic/Photopic Ratio ǂ	1.442	

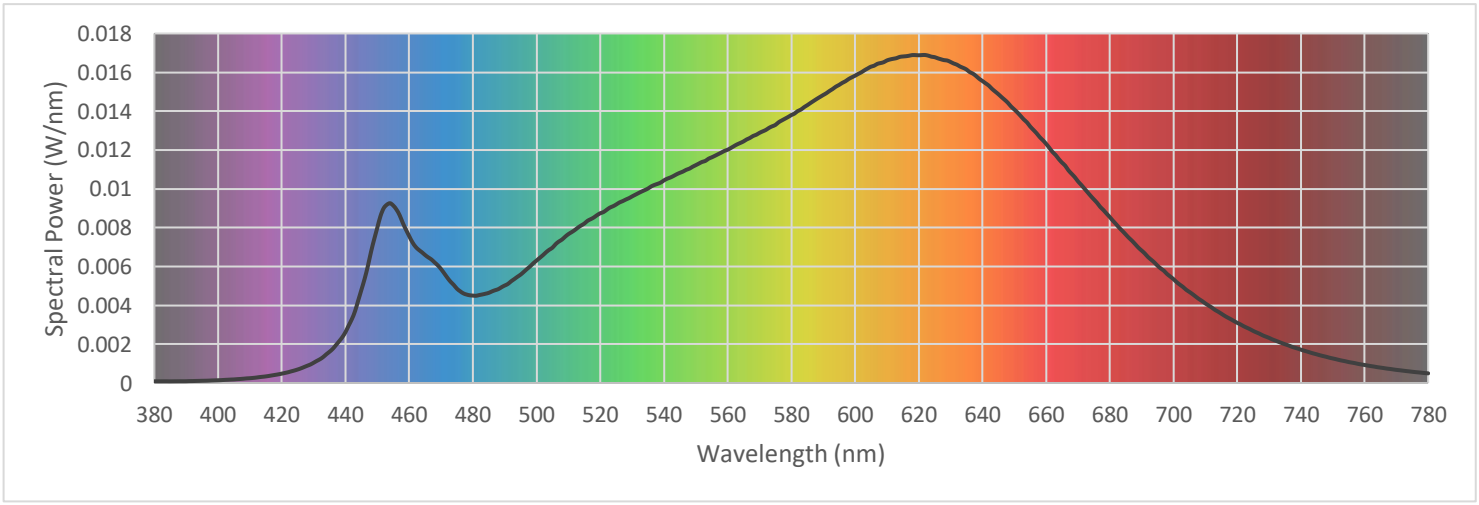
Electrical Data

Voltage	120.0	Vac
Current	0.1195	A
Power	14.11	W
Frequency	59.99	Hz
Power Factor	0.985	
Current THD	13.2	%

Test Report Number: LLIA001751-006B

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

380	0.000087	480	0.004500	580	0.013797	680	0.008546
385	0.000085	485	0.004642	585	0.014303	685	0.007651
390	0.000092	490	0.005019	590	0.014827	690	0.006821
395	0.000114	495	0.005582	595	0.015348	695	0.006040
400	0.000141	500	0.006304	600	0.015822	700	0.005350
405	0.000184	505	0.006968	605	0.016290	705	0.004690
410	0.000247	510	0.007666	610	0.016607	710	0.004099
415	0.000339	515	0.008209	615	0.016814	715	0.003573
420	0.000481	520	0.008740	620	0.016876	720	0.003102
425	0.000696	525	0.009190	625	0.016779	725	0.002685
430	0.001044	530	0.009608	630	0.016532	730	0.002326
435	0.001610	535	0.010015	635	0.016145	735	0.001998
440	0.002623	540	0.010432	640	0.015552	740	0.001718
445	0.004799	545	0.010824	645	0.014876	745	0.001476
450	0.008001	550	0.011217	650	0.014090	750	0.001264
455	0.009137	555	0.011621	655	0.013212	755	0.001079
460	0.007563	560	0.012012	660	0.012321	760	0.000927
465	0.006589	565	0.012441	665	0.011349	765	0.000793
470	0.005869	570	0.012880	670	0.010390	770	0.000675
475	0.004854	575	0.013288	675	0.009457	775	0.000578
						780	0.000495

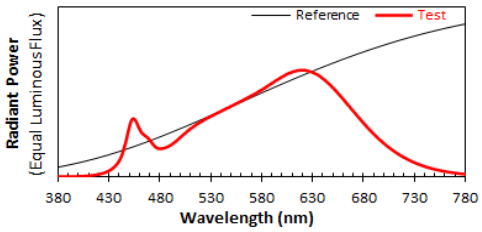


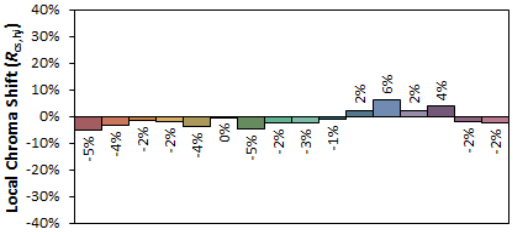
Test Report Number: LLIA001751-006B

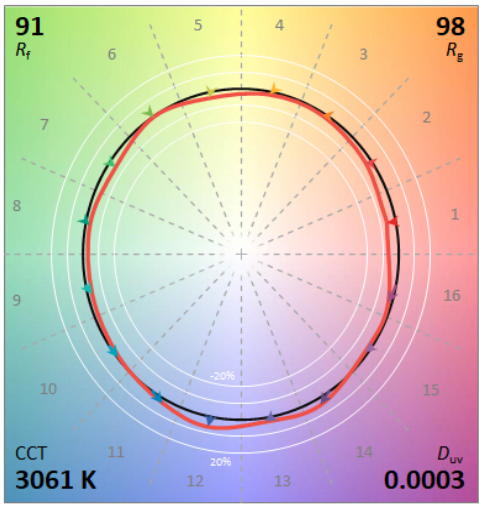
IES TM-30 Details

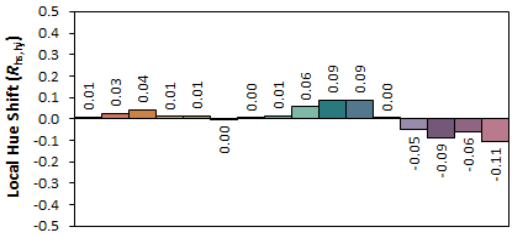
Source: LLIA001751-006B **Manufacturer:** Oxygen Lighting

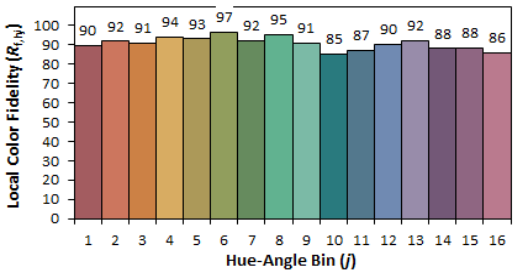
Date: 5/23/2022 **Model:** 3-764-24 Rico Sconce

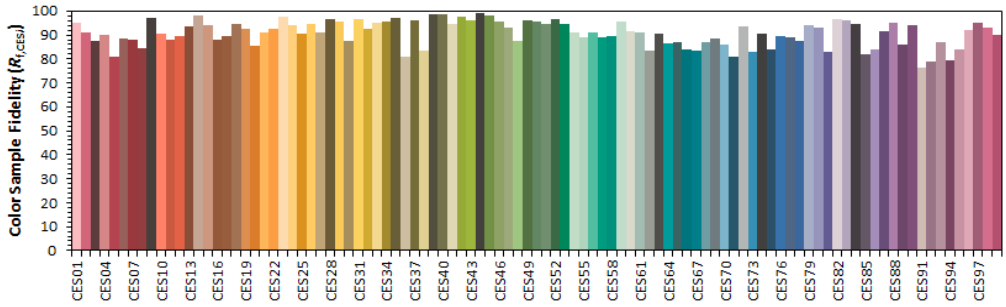












Notes:

x	**0.4330**
y	**0.4034**
u'	**0.2484**
v'	**0.5205**

CIE 13.3-1995 (CRI)

R_a	92
R_9	58

Test Report Number: LLIA001751-006B

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. 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.

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