



Report of Test

LLIA001626-009A-R01*

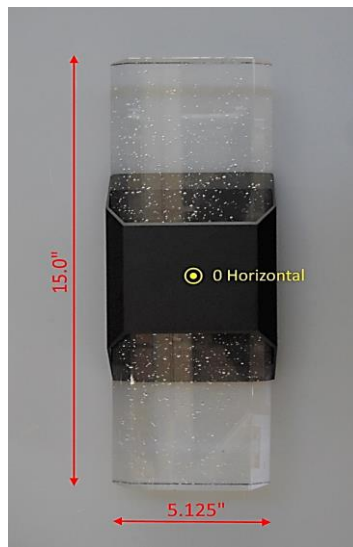
Indoor Distribution Photometry Test Report

Catalog Number: Esprit 3-756-xx

Wall mounted, cast aluminum housing, two decorative vertical columnar trapezium clear air bubble glass enclosures.

28 white LEDs, 14 each on two white circuit boards, one aimed up, one aimed down.

One integral LED driver on each circuit board



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

Performance Summary			
Input Voltage	120.0 Vac	Luminous Flux	323.2 Lumens
Input Current	0.1125 A	Total Efficacy	25.0 Lm/W
Input Power	12.93 W	Downward Flux	171.7 Lumens
Frequency	60.00 Hz	Downward Flux	53.1 % of Total
Power Factor	0.958		
Current THD	29.0 %		

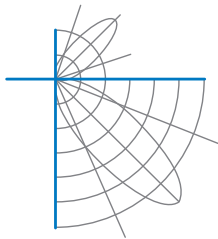
*This test report supersedes previous versions - see the end of this report for a list of revisions

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

Test date: 01/18/2022

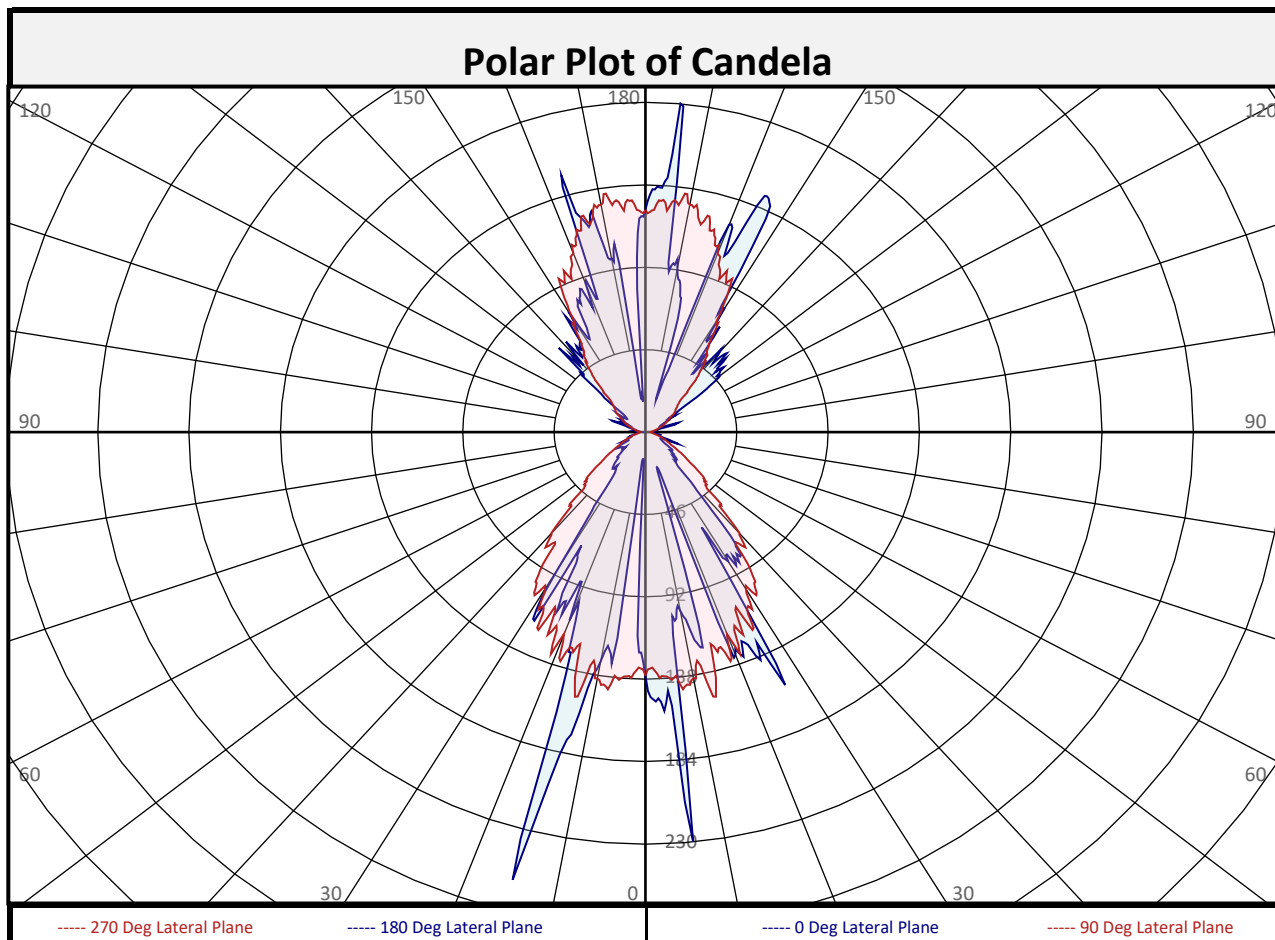
Report date: 01/24/2022

Signed: _____



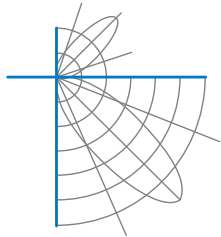
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Zonal Flux Summary

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	10.7	3.3%	90-100	5.0	1.5%	0-20	41.0	12.7%
10-20	30.3	9.4%	100-110	7.9	2.4%	0-30	80.0	24.8%
20-30	39.1	12.1%	110-120	10.1	3.1%	0-40	114.9	35.6%
30-40	34.9	10.8%	120-130	14.1	4.4%	0-60	149.6	46.3%
40-50	20.4	6.3%	130-140	19.7	6.1%	0-80	167.0	51.7%
50-60	14.2	4.4%	140-150	28.4	8.8%	10-90	161.0	49.8%
60-70	10.2	3.2%	150-160	33.3	10.3%	20-50	94.4	29.2%
70-80	7.1	2.2%	160-170	23.6	7.3%	40-90	56.8	17.6%
80-90	4.7	1.5%	170-180	9.5	2.9%	60-90	22.1	6.8%
0-90	171.7	53.1%	90-180	151.5	46.9%	0-180	323.2	100.0%

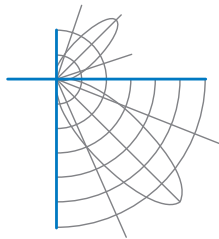


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Luminous Intensity (Candela) Table

		Lateral (C-Plane) Angles								
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	0	136	136	136	136	136	136	136	136	136
	2.5	149	149	142	139	135	129	109	90	61
	5	153	160	150	148	138	113	17	17	15
	7.5	104	120	193	152	145	24	19	111	131
	10	101	94	112	144	140	15	112	157	130
	12.5	121	106	96	141	143	16	122	162	173
	15	40	107	98	185	132	15	126	156	259
	17.5	21	20	96	117	126	51	146	102	129
	20	133	45	73	88	120	79	138	73	112
	22.5	126	132	19	90	117	67	75	60	110
	25	136	148	23	85	108	65	56	63	99
	27.5	94	136	92	85	111	64	41	33	94
	30	83	60	87	78	101	64	49	67	89
	32.5	82	42	95	73	103	76	45	55	38
	35	84	36	85	64	90	61	26	33	26
	37.5	54	30	71	54	80	42	16	29	24
	40	29	26	45	41	74	25	26	26	25
	42.5	22	18	28	30	55	28	21	32	22
	45	21	18	22	26	43	26	21	31	20
	47.5	20	15	20	26	40	22	19	22	16
50	17	14	20	23	37	20	16	16	13	
52.5	16	14	19	19	29	22	13	13	14	
55	14	12	17	14	25	19	12	12	15	
57.5	11	11	15	12	20	18	11	11	16	
60	10	10	13	11	17	15	10	11	15	
62.5	9	10	12	10	14	12	10	12	10	
65	9	9	11	10	12	10	9	13	12	
67.5	15	9	10	9	10	9	8	8	9	
70	13	9	10	8	9	7	8	7	7	
72.5	8	7	9	8	7	6	7	7	8	
75	7	6	9	7	6	6	7	7	6	
77.5	8	6	8	6	5	5	6	5	5	
80	6	6	8	6	4	5	5	5	4	
82.5	5	5	7	5	4	4	4	4	4	
85	4	4	7	5	3	4	4	3	3	
87.5	4	4	7	5	3	3	3	3	3	
90	3	4	6	5	3	3	3	3	3	



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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 - Data was acquired in 0.5° increments, 2.5° increments shown.	90	3	4	6	5	3	3	3	3	3
	92.5	3	4	6	5	3	4	3	3	3
	95	4	4	8	5	3	4	5	4	3
	97.5	5	5	8	5	3	4	4	6	5
	100	6	6	8	6	4	5	5	6	4
	102.5	7	6	9	7	5	6	5	6	5
	105	12	10	9	8	6	7	6	7	7
	107.5	18	10	11	7	7	7	9	9	10
	110	7	7	10	8	8	8	7	12	18
	112.5	8	8	11	8	9	9	8	9	13
	115	8	9	12	9	11	10	9	9	10
	117.5	10	10	13	10	12	11	9	12	12
	120	13	13	14	10	13	12	9	14	13
	122.5	14	14	14	12	15	14	10	10	14
	125	20	18	16	15	17	16	12	11	16
	127.5	36	21	17	22	19	17	14	12	12
	130	49	22	19	25	20	18	14	15	13
	132.5	54	23	20	26	22	18	14	16	28
	135	56	17	23	27	25	19	15	22	46
	137.5	59	20	26	27	32	25	14	33	58
	140	58	27	26	27	42	27	14	39	48
	142.5	49	34	46	35	50	34	19	39	52
	145	54	39	76	44	54	42	28	34	56
	147.5	70	45	94	53	62	43	32	39	68
150	80	73	93	64	72	45	36	27	78	
152.5	117	117	87	72	93	50	36	44	63	
155	145	117	23	72	96	51	50	47	81	
157.5	108	108	19	75	98	56	110	52	86	
160	123	30	50	73	106	38	98	57	88	
162.5	30	19	69	96	115	16	94	128	96	
165	50	73	84	148	125	16	93	114	123	
167.5	81	91	90	132	123	17	95	108	126	
170	93	94	91	134	129	17	19	101	98	
172.5	90	99	179	136	128	88	18	19	45	
175	156	143	140	136	124	113	26	19	20	
177.5	137	133	133	134	127	116	112	106	98	
180	124	124	124	124	124	124	124	124	124	



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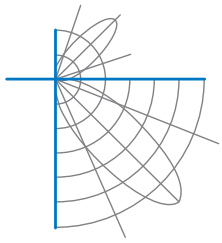
Coefficients of Utilization/Room Utilization - Zonal Cavity Method																						
Effective Floor Cavity Reflectance 0.20																						
RC	80					70					50				30				10			0
RW	70	50	30	10		70	50	30	10		50	30	10		50	30	10		50	30	10	0
RCR																						
0	108	108	108	108		100	100	100	100		85	85	85		71	71	71		59	59	59	53
1	99	95	91	88		92	88	85	82		76	73	71		64	62	61		53	52	51	46
2	91	84	79	74		84	79	74	70		68	64	61		58	55	53		48	47	45	41
3	84	75	69	63		78	70	65	60		61	57	53		52	49	46		44	42	40	36
4	78	68	61	55		72	63	57	52		55	50	46		48	44	41		40	38	36	32
5	72	61	54	48		67	58	51	46		50	45	41		44	40	37		37	34	32	29
6	67	56	48	43		62	52	46	41		46	41	37		40	36	33		35	32	29	27
7	62	51	44	38		58	48	41	37		42	37	33		37	33	30		32	29	27	24
8	58	47	40	35		54	44	38	33		39	34	30		34	30	27		30	27	25	22
9	55	43	36	31		51	41	34	30		36	31	28		32	28	25		28	25	23	21
10	51	40	33	29		48	38	32	27		34	29	25		30	26	23		26	23	21	19

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	3.8	1.81	6.79	
8.0	2.1	2.42	9.06	
10.0	1.4	3.02	11.32	
12.0	0.9	3.62	13.59	
14.0	0.7	4.23	15.85	
16.0	0.5	4.83	18.12	

Spacing Criterion	
0 deg:	0.5
90 deg:	1.1
180 deg:	0.1
270 deg:	1.1

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	41123	41123	41123
45	735	926	6407
55	452	640	3483
65	251	384	1684
75	188	288	859
85	111	228	474



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UGR Table - Corrected

Reflectances

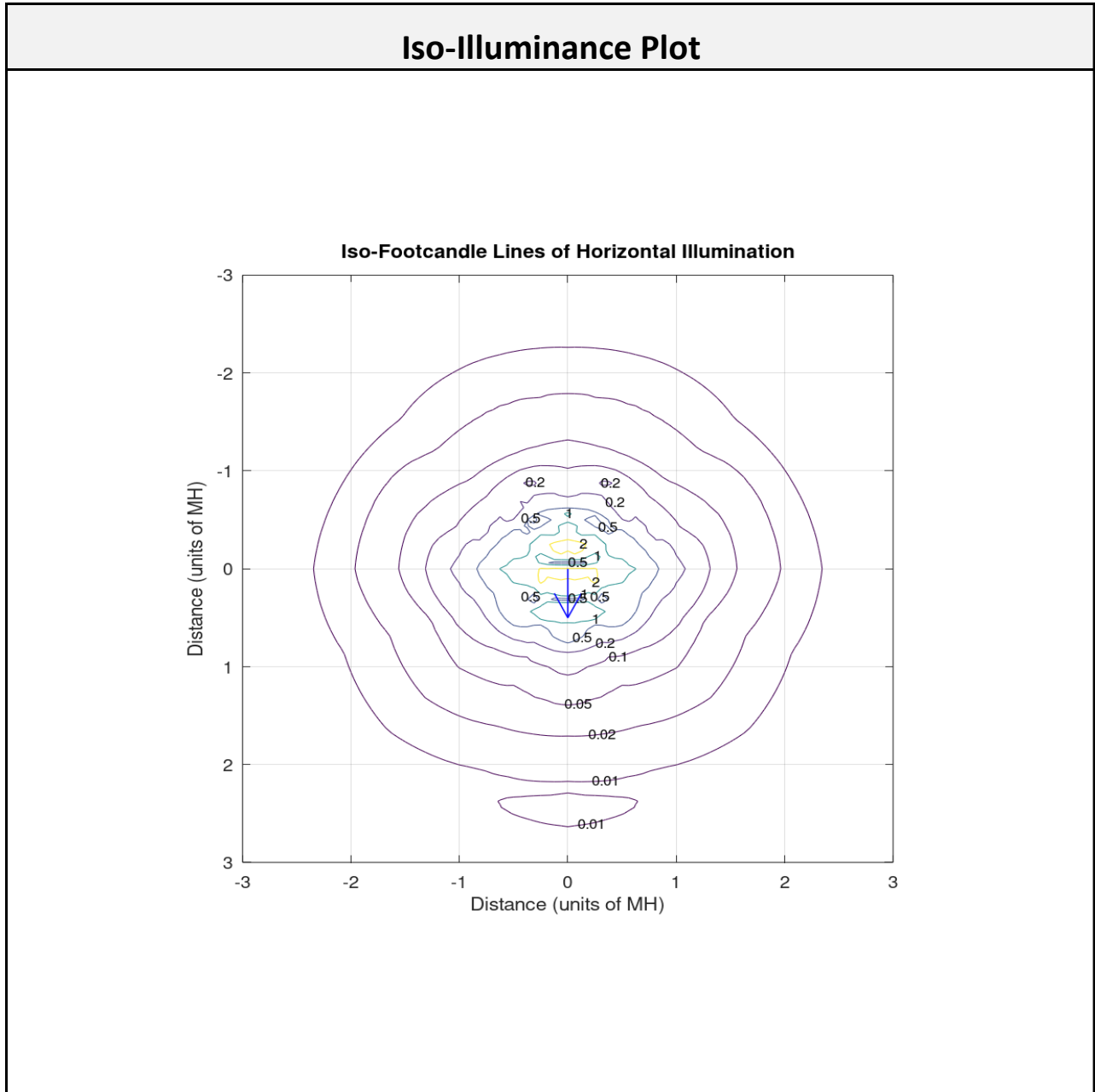
Ceiling Cavity	70	70	50	50	30	70	70	50	50	30
Walls	50	30	50	30	30	50	30	50	30	30
Floor Cavity	20	20	20	20	20	20	20	20	20	20

Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	2.9	3.7	3.8	4.6	5.8	3.3	4.1	4.3	5.1	6.3
	3H	7.0	7.7	7.9	8.6	9.9	4.2	5.0	5.2	5.9	7.2
	4H	7.5	8.1	8.4	9.1	10.4	4.5	5.2	5.5	6.2	7.4
	6H	8.1	8.7	9.1	9.7	11.0	4.7	5.3	5.7	6.3	7.5
	8H	8.3	8.9	9.3	9.9	11.1	4.7	5.3	5.7	6.3	7.6
	12H	8.5	9.0	9.4	10.0	11.3	4.8	5.3	5.8	6.3	7.6
4H	2H	3.3	4.0	4.3	4.9	6.2	3.6	4.3	4.6	5.2	6.5
	3H	7.2	7.7	8.2	8.7	10.0	4.7	5.3	5.7	6.2	7.5
	4H	7.7	8.3	8.7	9.3	10.5	5.1	5.6	6.1	6.6	7.9
	6H	8.5	9.0	9.5	10.0	11.3	5.4	5.8	6.4	6.8	8.1
	8H	8.8	9.2	9.8	10.2	11.5	5.5	5.9	6.5	6.9	8.2
	12H	9.0	9.4	10.0	10.4	11.7	5.6	6.0	6.6	7.0	8.3
8H	4H	7.8	8.3	8.8	9.3	10.6	5.4	5.8	6.4	6.8	8.1
	6H	8.7	9.1	9.8	10.1	11.4	5.8	6.2	6.9	7.2	8.5
	8H	9.1	9.4	10.1	10.4	11.7	6.1	6.4	7.1	7.4	8.7
	12H	9.4	9.6	10.4	10.7	12.0	6.2	6.5	7.3	7.5	8.9
12H	4H	7.8	8.2	8.8	9.2	10.5	5.4	5.8	6.4	6.8	8.1
	6H	8.8	9.1	9.8	10.1	11.4	5.9	6.2	7.0	7.3	8.6
	8H	9.1	9.4	10.2	10.4	11.8	6.2	6.5	7.3	7.5	8.9

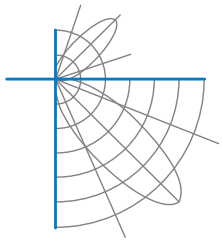
Maximum UGR = 12.0



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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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Test Distance 9.5 m
Ambient Temperature 24.5 °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.

Revision History: R01 - 01/24/2022 - Revised catalog number and UGR table



Report of Test

LLIA001626-009B-R01*

Integrating Sphere Report

Catalog Number: Esprit 3-756-xx

Wall mounted, cast aluminum housing, two decorative vertical
columnar trapezium clear air bubble glass enclosures.

28 white LEDs, 14 each on two white circuit boards, one aimed up, one aimed down.

One integral LED driver on each circuit board



Performance Summary

Voltage	120.0 Vac
Current	0.1125 A
Power	12.94 W
Frequency	59.97 Hz
Power Factor	0.959
Current THD	28.7 %
Total Luminous Flux	316.8 lm
Efficacy	24.5 lm/W
Chromaticity (x,y)	(0.4321, 0.4109)
(u',v')	(0.2446, 0.5233)
Duv	0.0034
CCT	3137 K
CRI (Ra)	91
R9	54
TM-30: Rf	89
TM-30: Rg	96
TM-30: Rcs,h1	-6

Prepared For:

Oxygen Lighting

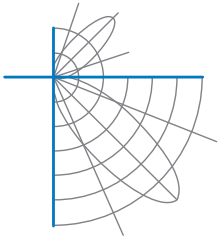
201 Railhead Road

Fort Worth, TX 76106, USA

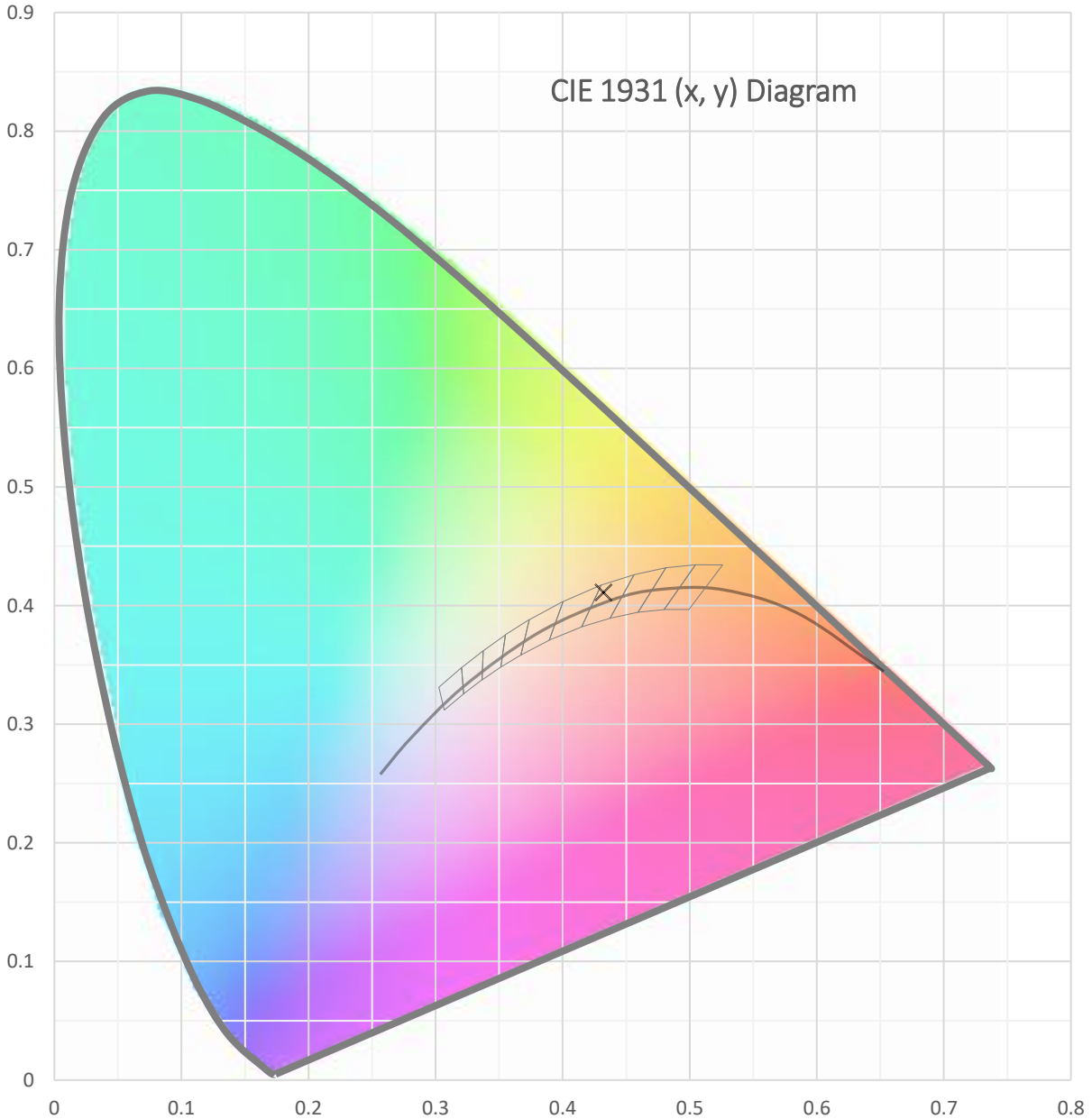
*This test report supersedes previous versions - see the end of this report for a list of revisions

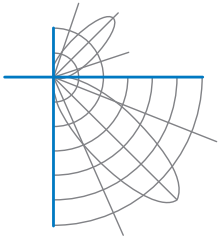
Test date: 01/14/2022

Report date: 01/24/2022

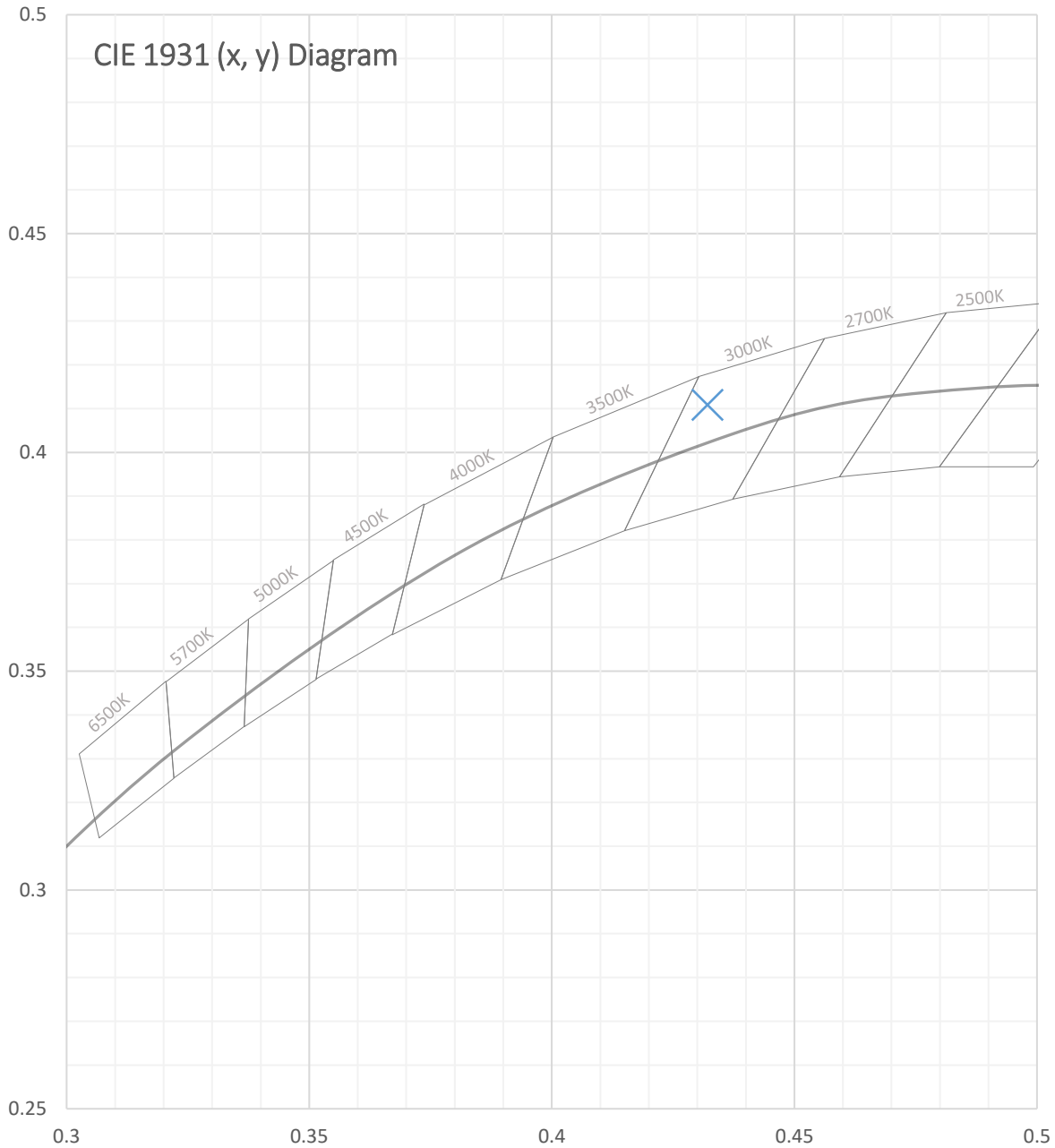


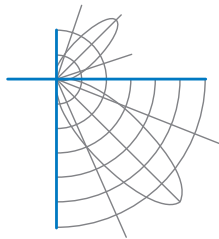
Test Report Number: LLIA001626-009B-R01





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Total Radiant Flux	1.086 W
Total Luminous Flux	316.8 Lm
Chromaticity CIE 1931 (x, y)	(0.4321, 0.4109)
Chromaticity CIE 1976 (u', v')	(0.2446, 0.5233)
Correlated Color Temperature (CCT)	3137 K
Color Rendering Index (Ra)	91
R1	90
R2	94
R3	97
R4	90
R5	89
R6	92
R7	93
R8	81
R9	54
R10	85
R11	89
R12	74
R13	91
R14	98
TM-30: Rf	89
TM-30: Rg	96
TM-30: Rcs,h1	-6
Distance from Planckian Locus (Duv)	0.0034
Scotopic/Photopic Ratio ‡	1.441

Electrical Data

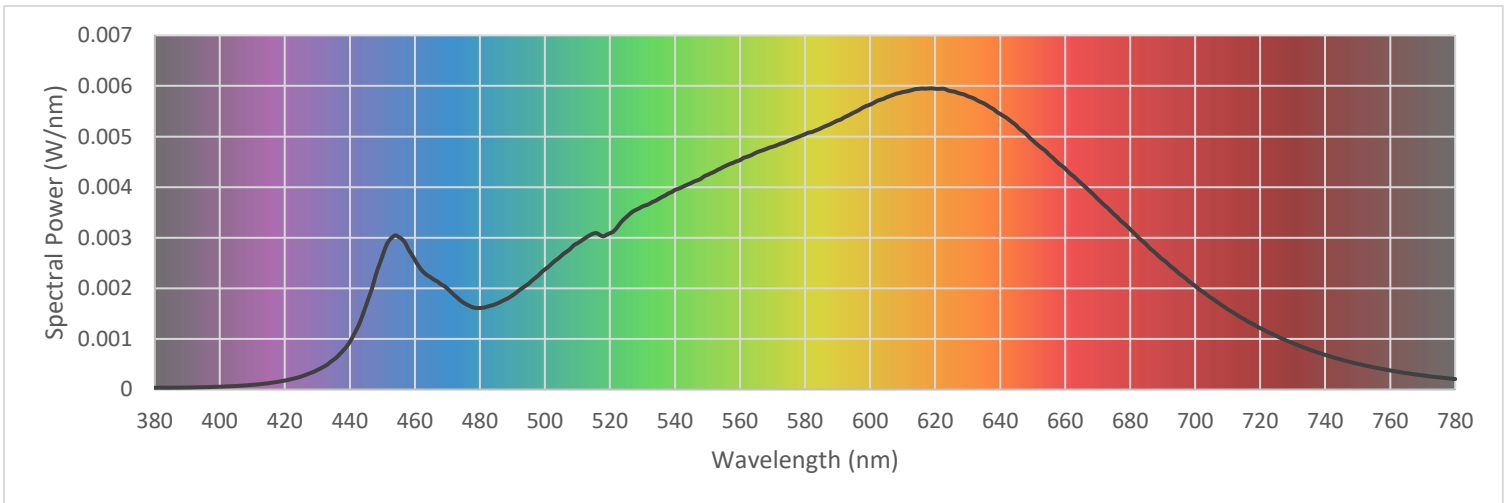
Voltage	120.0 Vac
Current	0.1125 A
Power	12.94 W
Frequency	59.97 Hz
Power Factor	0.959
Current THD	28.7 %



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

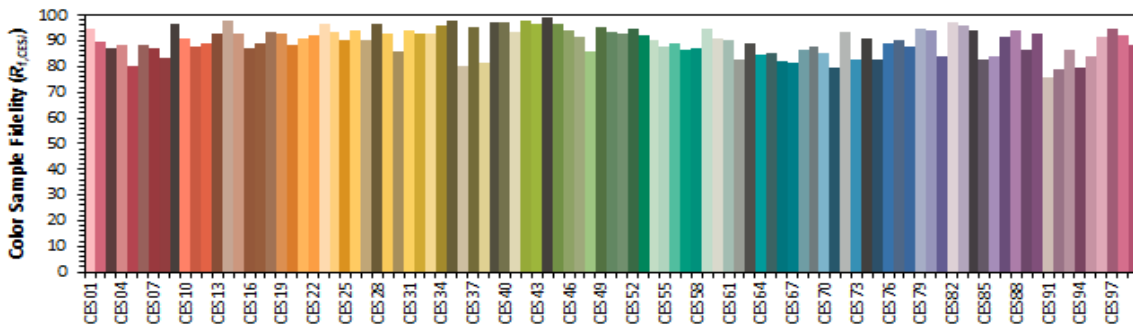
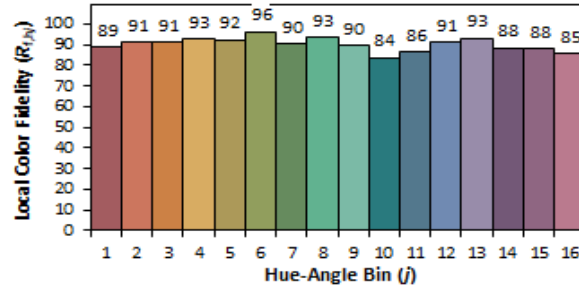
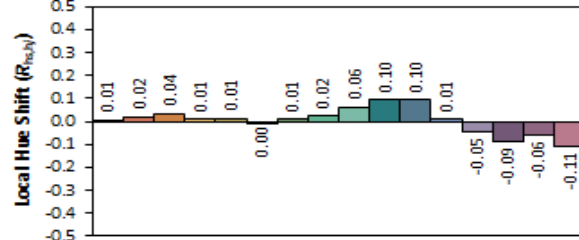
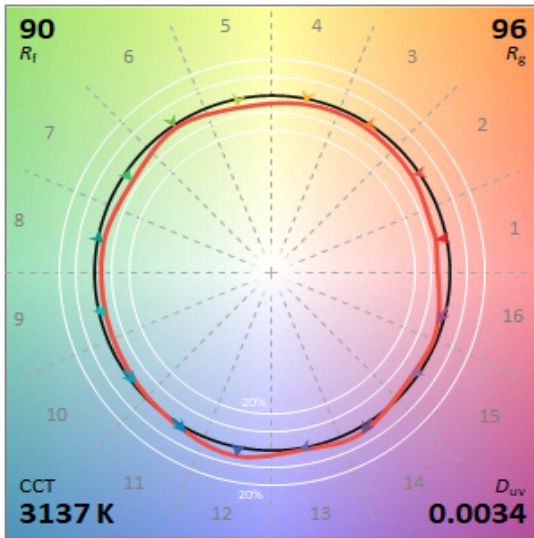
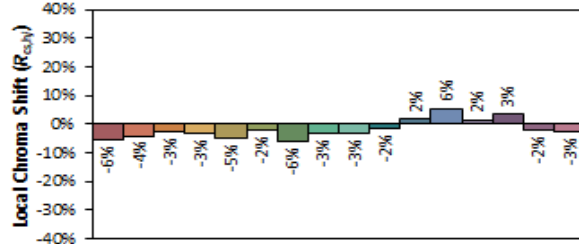
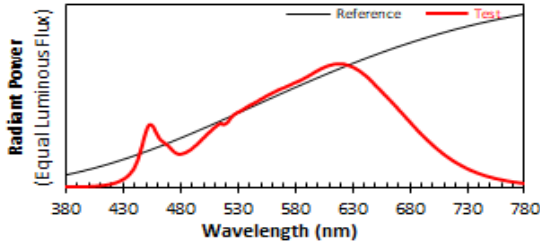
380	0.000035	480	0.001610	580	0.005046	680	0.003167
385	0.000035	485	0.001692	585	0.005166	685	0.002863
390	0.000038	490	0.001859	590	0.005316	690	0.002569
395	0.000045	495	0.002090	595	0.005475	695	0.002297
400	0.000054	500	0.002373	600	0.005630	700	0.002048
405	0.000068	505	0.002640	605	0.005772	705	0.001808
410	0.000090	510	0.002890	610	0.005879	710	0.001588
415	0.000123	515	0.003084	615	0.005942	715	0.001393
420	0.000176	520	0.003088	620	0.005945	720	0.001213
425	0.000256	525	0.003405	625	0.005896	725	0.001057
430	0.000385	530	0.003617	630	0.005798	730	0.000918
435	0.000588	535	0.003767	635	0.005655	735	0.000792
440	0.000942	540	0.003944	640	0.005448	740	0.000682
445	0.001666	545	0.004082	645	0.005220	745	0.000590
450	0.002635	550	0.004242	650	0.004925	750	0.000507
455	0.003015	555	0.004402	655	0.004647	755	0.000436
460	0.002561	560	0.004532	660	0.004369	760	0.000376
465	0.002210	565	0.004683	665	0.004073	765	0.000323
470	0.001994	570	0.004798	670	0.003769	770	0.000277
475	0.001715	575	0.004921	675	0.003466	775	0.000239
						780	0.000206



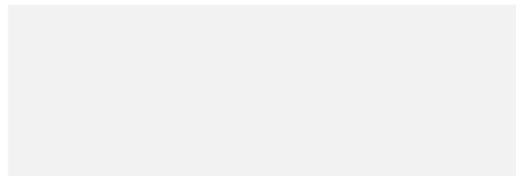


Test Report Number: LLIA001626-009B-R01

IES TM-30 Details



Notes:



x 0.4321
y 0.4108
u' 0.2446
v' 0.5233

CIE 13.3-1995 (CRI)	
R _a	91
R _s	54



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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: 24.2 °C

Test Procedure: Tested in accordance with the applicable sections of:
LM-79-19, LM-78-20, LM-58-20, ANSI_ANSI 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.

Revision History: R01 - 01/24/2022 - Revised catalog number