



## Report of Test

LLIA001626-004A

Indoor Distribution Photometry Test Report

Catalog Number: Favero 3-402-xx

Wall mounted, formed steel housing, translucent white plastic top and bottom enclosures.  
48 white LEDs, two Luxtech 3-9-30040 LED boards with 24 LEDs, one aimed up, one aimed down.  
One ERP ESS010W-0180-42-XGN LED driver



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

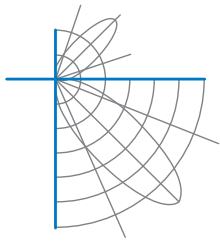
Performance Summary			
Input Voltage	120.0 Vac	Luminous Flux	201.8 Lumens
Input Current	0.0588 A	Total Efficacy	29.3 Lm/W
Input Power	6.88 W	Downward Flux	108.4 Lumens
Frequency	60.00 Hz	Downward Flux	53.7 % of Total
Power Factor	0.976		
Current THD	18.1 %		

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

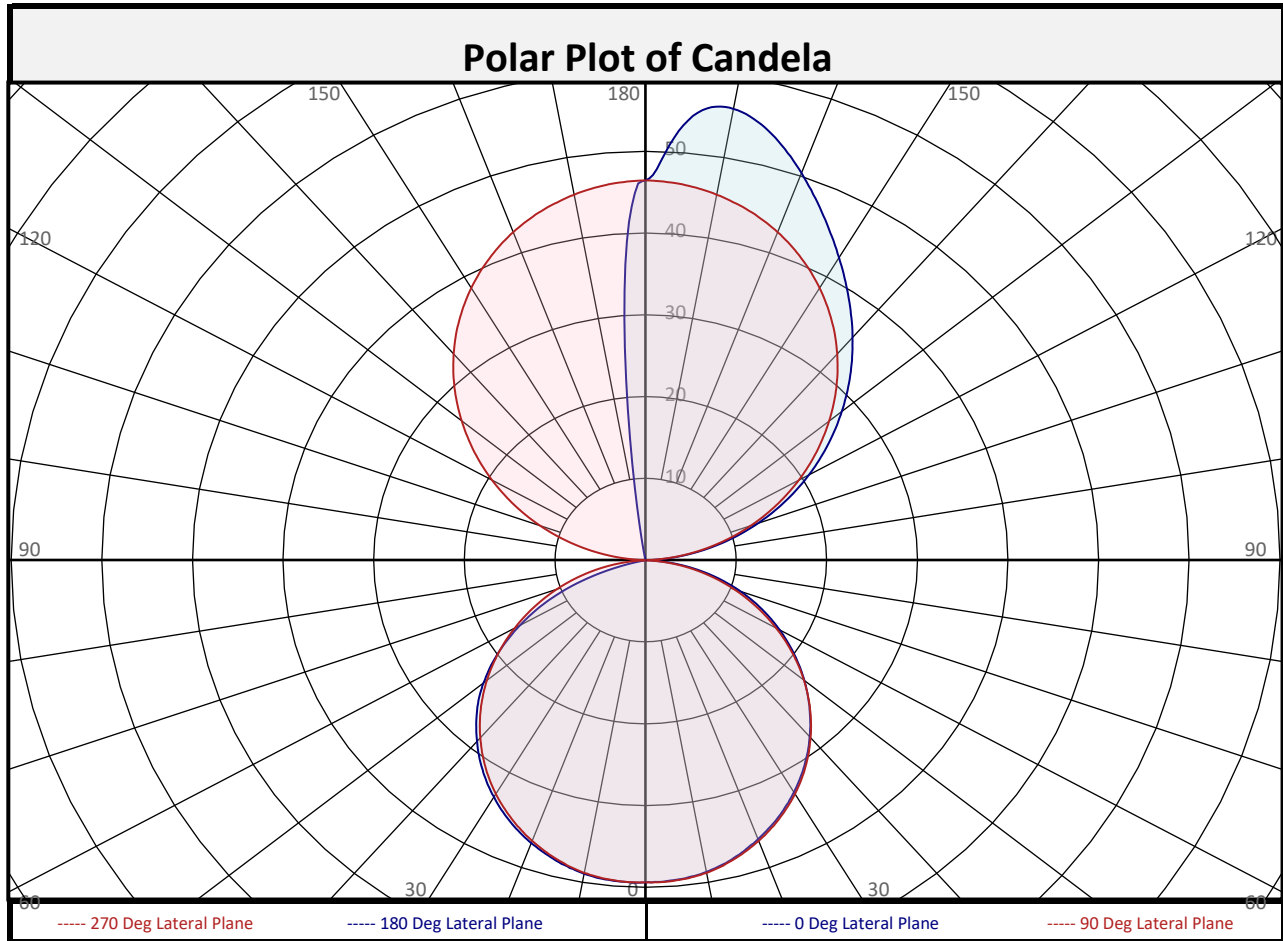
Test date: 01/11/2022

Report date: 01/19/2022

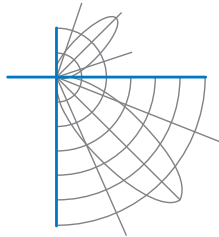
Signed: \_\_\_\_\_



Report of Test  
LLIA001626-004A



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	Zone (Deg Vert)	Flux (Lumens)	Percent of Total						
0-10	3.7	1.8%	90-100	1.7	0.8%	0-20	14.3	7.1%	10-20	10.6	5.3%	100-110	6.7	3.3%	0-30	30.2	15.0%
20-30	15.9	7.9%	110-120	11.3	5.6%	0-40	49.3	24.4%	30-40	19.1	9.5%	120-130	14.7	7.3%	0-60	86.7	43.0%
40-50	19.7	9.8%	130-140	16.4	8.1%	0-80	106.8	52.9%	50-60	17.6	8.7%	140-150	16.1	8.0%	0-90	104.7	51.9%
60-70	13.2	6.5%	150-160	13.6	6.7%	10-90	54.8	27.2%	60-70	13.2	6.5%	160-170	9.2	4.6%	20-50	59.0	29.2%
70-80	7.0	3.5%	170-180	3.8	1.9%	40-90	21.7	10.8%	70-80	7.0	3.5%	170-180	3.8	1.9%	40-90	59.0	29.2%
80-90	1.5	0.7%	90-180	93.5	46.3%	60-90	21.7	10.8%	80-90	1.5	0.7%	90-180	93.5	46.3%	60-90	21.7	10.8%
0-90	108.4	53.7%				0-180	201.8	100.0%				0-180	201.8	100.0%			

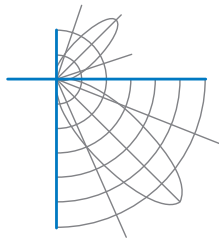


## Report of Test

### LLIA001626-004A

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	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0
	2.5	39.0	38.9	38.9	39.0	39.0	39.0	39.0	39.0	39.0
	5	38.8	38.8	38.8	38.9	38.9	38.9	38.9	39.0	39.0
	7.5	38.6	38.6	38.6	38.7	38.7	38.7	38.8	38.8	38.8
	10	38.3	38.3	38.3	38.4	38.4	38.5	38.5	38.5	38.5
	12.5	37.9	37.8	37.9	37.9	38.0	38.0	38.1	38.1	38.2
	15	37.3	37.3	37.3	37.4	37.5	37.5	37.6	37.7	37.7
	17.5	36.7	36.6	36.7	36.8	36.9	36.9	37.0	37.1	37.1
	20	35.9	35.9	36.0	36.1	36.2	36.3	36.3	36.4	36.4
	22.5	35.1	35.2	35.2	35.3	35.4	35.5	35.6	35.7	35.7
	25	34.3	34.3	34.4	34.5	34.6	34.7	34.8	34.9	34.9
	27.5	33.4	33.4	33.5	33.6	33.6	33.8	33.9	34.0	34.1
	30	32.4	32.4	32.5	32.6	32.7	32.8	33.0	33.1	33.1
	32.5	31.4	31.4	31.4	31.5	31.6	31.8	31.9	32.1	32.1
	35	30.3	30.3	30.3	30.4	30.5	30.6	30.8	31.0	31.0
	37.5	29.2	29.1	29.1	29.2	29.3	29.5	29.6	29.8	29.8
	40	27.9	27.9	27.9	28.0	28.1	28.3	28.4	28.6	28.6
	42.5	26.7	26.6	26.6	26.7	26.8	27.0	27.2	27.3	27.3
	45	25.4	25.3	25.3	25.3	25.4	25.6	25.8	26.0	26.0
	47.5	24.0	24.0	23.9	24.0	24.1	24.2	24.4	24.6	24.6
50	22.7	22.6	22.5	22.5	22.6	22.8	23.0	23.2	23.1	
52.5	21.3	21.2	21.1	21.1	21.1	21.3	21.5	21.6	21.4	
55	19.8	19.8	19.7	19.6	19.6	19.8	20.0	19.8	19.6	
57.5	18.4	18.3	18.2	18.1	18.1	18.3	18.4	18.0	17.8	
60	17.0	16.9	16.7	16.5	16.5	16.7	16.7	16.2	15.9	
62.5	15.5	15.4	15.2	15.0	15.0	15.2	15.0	14.3	13.9	
65	14.1	13.9	13.7	13.5	13.4	13.6	13.2	12.4	11.9	
67.5	12.6	12.4	12.2	11.9	11.9	12.1	11.4	10.3	9.8	
70	11.1	11.0	10.7	10.4	10.4	10.5	9.6	8.2	7.5	
72.5	9.5	9.5	9.2	8.9	8.8	8.9	7.7	5.9	5.3	
75	8.0	7.9	7.7	7.4	7.3	7.3	5.8	3.7	3.0	
77.5	6.5	6.4	6.1	5.9	5.8	5.8	3.9	1.7	1.0	
80	4.9	4.8	4.6	4.4	4.4	4.3	2.4	0.4	0.0	
82.5	3.4	3.3	3.1	3.0	2.9	2.9	1.5	0.0	0.0	
85	1.8	1.8	1.6	1.5	1.5	1.5	0.8	0.0	0.0	
87.5	0.8	0.7	0.6	0.4	0.2	0.3	0.0	0.0	0.0	
90	0.6	0.5	0.4	0.2	0.0	0.0	0.0	0.0	0.0	

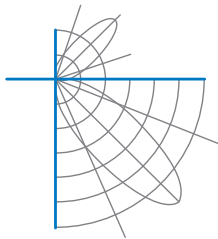


## Report of Test

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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	0.6	0.5	0.4	0.2	0.0	0.0	0.0	0.0	0.0
	92.5	0.8	0.7	0.6	0.4	0.2	0.0	0.0	0.0	0.0
	95	2.1	2.1	1.9	1.8	1.7	1.6	0.5	0.0	0.0
	97.5	3.9	3.9	3.8	3.6	3.5	3.1	1.0	0.0	0.0
	100	5.7	5.7	5.6	5.4	5.3	4.5	1.5	0.0	0.0
	102.5	7.5	7.5	7.4	7.2	7.0	6.0	1.9	0.0	0.0
	105	9.4	9.3	9.2	9.0	8.7	7.5	2.4	0.0	0.0
	107.5	11.2	11.2	11.1	10.8	10.5	9.0	2.8	0.0	0.0
	110	13.1	13.1	12.9	12.6	12.2	10.5	3.2	0.0	0.0
	112.5	15.0	14.9	14.8	14.4	14.0	11.9	3.6	0.0	0.0
	115	16.8	16.8	16.6	16.3	15.8	13.4	4.0	0.0	0.0
	117.5	18.7	18.7	18.5	18.1	17.5	14.8	4.4	0.0	0.0
	120	20.6	20.6	20.4	19.9	19.3	16.3	4.8	0.0	0.0
	122.5	22.5	22.5	22.3	21.8	21.1	17.7	5.1	0.0	0.0
	125	24.3	24.3	24.2	23.6	22.8	19.1	5.5	0.0	0.0
	127.5	26.2	26.2	26.0	25.4	24.5	20.4	5.8	0.0	0.0
	130	28.0	28.1	27.9	27.2	26.2	21.8	6.0	0.0	0.0
	132.5	29.8	29.9	29.8	29.0	27.9	23.0	6.3	0.0	0.0
	135	31.6	31.7	31.6	30.8	29.5	24.3	6.5	0.0	0.0
	137.5	33.4	33.5	33.4	32.5	31.1	25.5	6.6	0.0	0.0
140	35.2	35.3	35.2	34.2	32.6	26.6	6.8	0.0	0.0	
142.5	37.0	37.1	37.0	35.8	34.1	27.6	6.8	0.0	0.0	
145	38.7	38.9	38.8	37.4	35.5	28.6	6.8	0.0	0.0	
147.5	40.5	40.7	40.5	39.0	36.8	29.4	6.7	0.0	0.0	
150	42.3	42.5	42.3	40.6	38.1	30.1	6.6	0.0	0.0	
152.5	44.2	44.4	44.1	42.0	39.3	30.7	6.3	0.0	0.0	
155	46.0	46.3	45.9	43.5	40.3	31.1	6.0	0.0	0.0	
157.5	47.9	48.3	47.7	45.0	41.4	31.3	5.5	0.0	0.0	
160	49.9	50.2	49.6	46.4	42.3	31.2	4.9	0.0	0.0	
162.5	51.7	52.0	51.4	47.9	43.1	30.8	4.1	0.0	0.0	
165	53.4	53.6	53.0	49.2	43.8	30.3	3.3	0.0	0.0	
167.5	54.7	54.8	54.0	50.1	44.4	30.9	4.7	0.0	0.0	
170	55.5	55.3	54.2	50.1	44.9	34.2	11.4	2.2	0.9	
172.5	55.3	55.0	53.4	49.3	45.4	38.9	23.1	12.0	8.9	
175	53.4	52.9	51.1	47.8	45.7	43.0	35.5	28.3	25.7	
177.5	49.3	48.9	47.8	46.5	45.9	45.6	43.6	41.7	41.0	
180	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	



## Report of Test

### LLIA001626-004A

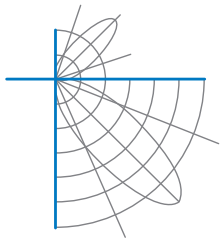
Coefficients of Utilization/Room Utilization - Zonal Cavity Method																		
Effective Floor Cavity Reflectance 0.20																		
RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	108	108	108	108	100	100	100	100	85	85	85	72	72	72	60	60	60	54
1	99	94	90	87	91	88	84	81	75	72	70	63	62	60	53	51	50	45
2	90	82	76	71	83	76	71	66	66	61	58	55	53	50	46	44	42	38
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36	32
4	75	64	56	50	69	59	52	47	51	46	41	44	39	36	36	33	31	27
5	69	57	49	42	63	53	46	40	46	40	36	39	35	31	33	29	27	24
6	63	51	43	37	58	48	40	35	41	35	31	35	31	27	30	26	23	21
7	58	46	38	32	54	43	36	31	37	31	27	32	27	24	27	23	21	18
8	54	42	34	28	50	39	32	27	34	28	24	29	25	21	25	21	19	16
9	50	38	30	25	47	36	29	24	31	26	22	27	22	19	23	19	17	15
10	47	35	28	23	44	33	26	22	29	23	19	25	20	17	21	18	15	13

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	1.1	7.50	7.47	
8.0	0.6	9.99	9.97	
10.0	0.4	12.49	12.46	
12.0	0.3	14.99	14.95	
14.0	0.2	17.49	17.44	
16.0	0.2	19.99	19.93	

Spacing Criterion	
0 deg:	1.2
90 deg:	1.2
180 deg:	1.3
270 deg:	1.2

Average Luminance (cd/m <sup>2</sup> )			
	0 deg Plane	45 deg Plane	90 deg Plane
0	11513	11513	11513
45	1257	1691	10618
55	880	1192	10107
65	581	780	9389
75	319	425	8357
85	73	90	4920



## Report of Test

### LLIA001626-004A

#### 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

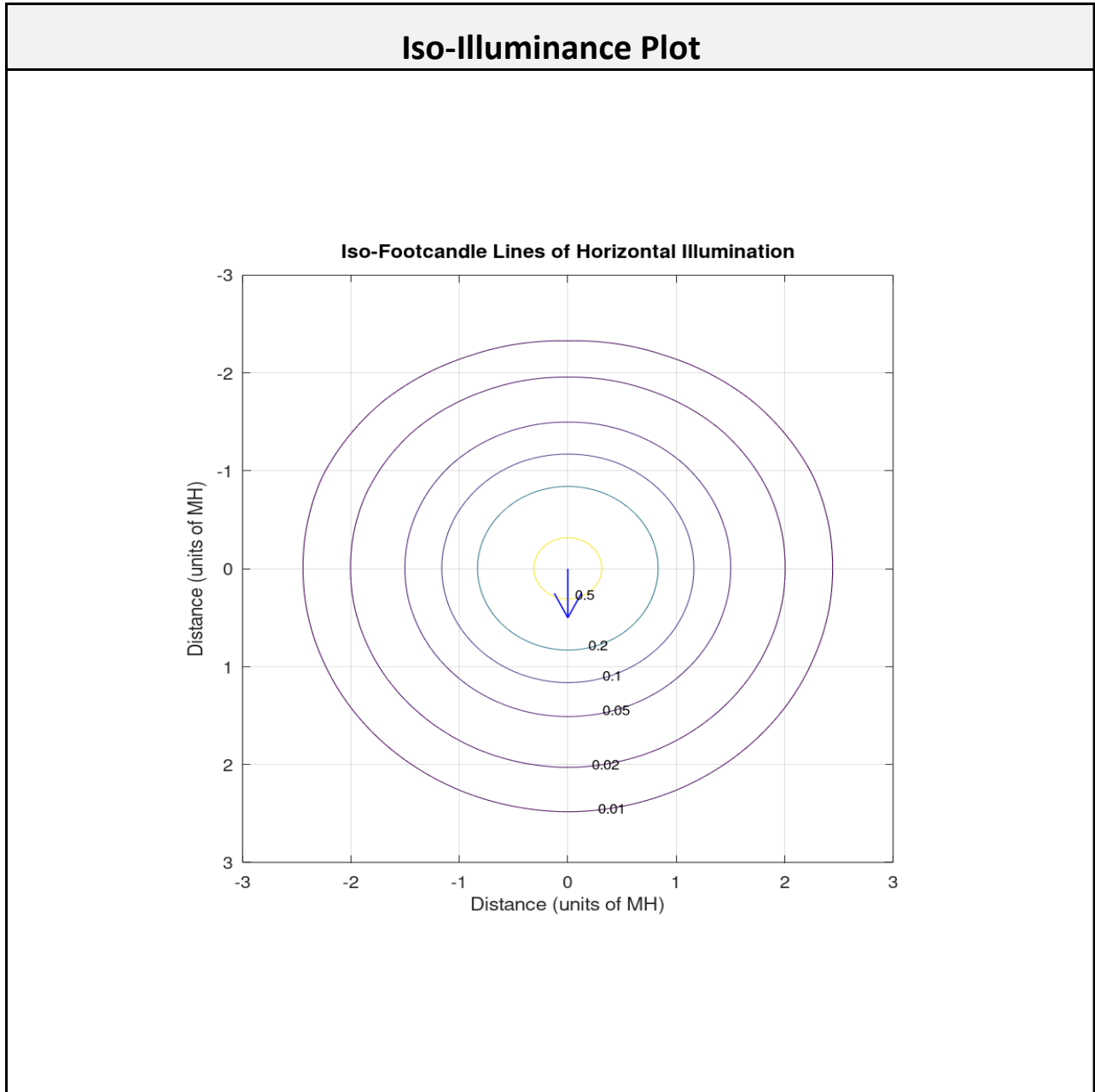
##### UGR Viewed Endwise

X=2H	Y=2H	7.1	8.0	8.0	8.9	10.1	6.1	7.0	7.0	7.9	9.1
	3H	8.5	9.3	9.5	10.3	11.5	7.3	8.1	8.2	9.1	10.3
	4H	9.0	9.8	9.9	10.7	12.0	7.7	8.4	8.6	9.4	10.6
	6H	9.2	10.0	10.2	10.9	12.2	7.8	8.5	8.8	9.5	10.8
	8H	9.3	10.0	10.3	10.9	12.2	7.8	8.5	8.8	9.5	10.8
	12H	9.3	9.9	10.3	10.9	12.2	7.8	8.5	8.8	9.4	10.7
4H	2H	7.3	8.1	8.3	9.1	10.3	6.5	7.2	7.4	8.2	9.4
	3H	8.9	9.6	9.9	10.6	11.8	7.9	8.5	8.8	9.5	10.7
	4H	9.5	10.1	10.5	11.0	12.3	8.3	8.9	9.3	9.9	11.1
	6H	9.8	10.3	10.8	11.3	12.6	8.5	9.1	9.5	10.1	11.3
	8H	9.9	10.4	10.9	11.4	12.7	8.6	9.1	9.6	10.0	11.3
	12H	9.9	10.3	10.9	11.3	12.6	8.6	9.0	9.6	10.0	11.3
8H	4H	9.5	10.0	10.5	11.0	12.3	8.4	8.8	9.3	9.8	11.1
	6H	9.9	10.3	11.0	11.4	12.7	8.7	9.1	9.7	10.1	11.4
	8H	10.1	10.4	11.1	11.4	12.7	8.7	9.1	9.8	10.1	11.4
	12H	10.1	10.4	11.1	11.4	12.8	8.8	9.1	9.8	10.1	11.4
12H	4H	9.5	9.9	10.5	10.9	12.2	8.3	8.8	9.3	9.8	11.1
	6H	9.9	10.3	10.9	11.3	12.6	8.6	9.0	9.7	10.0	11.3
	8H	10.0	10.3	11.1	11.4	12.7	8.7	9.0	9.8	10.1	11.4

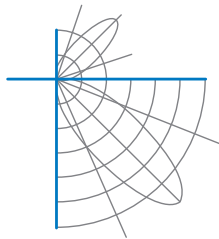
Maximum UGR = 12.8



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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.



## Report of Test

### LLIA001626-004A

Test Distance                    9.5 m  
Ambient Temperature        24.6 °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

**LLIA001626-004B**

Integrating Sphere Report

Catalog Number: Favero 3-402-xx

Wall mounted, formed steel housing, translucent white plastic top and bottom enclosures.  
48 white LEDs, two Luxtech 3-9-30040 LED boards with 24 LEDs, one aimed up, one aimed down.

One ERP ESS010W-0180-42-XGN LED driver



### Performance Summary

Voltage	120.0 Vac
Current	0.0588 A
Power	6.89 W
Frequency	59.97 Hz
Power Factor	0.977
Current THD	17.9 %
Total Luminous Flux	201.2 lm
Efficacy	29.2 lm/W
Chromaticity (x,y)	(0.4407, 0.3950)
(u',v')	(0.2570, 0.5183)
Duv	-0.0041
CCT	2863 K
CRI (Ra)	95
R9	75
TM-30: Rf	92
TM-30: Rg	101
TM-30: Rcs,h1	-3

Prepared For:

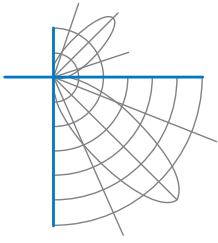
Oxygen Lighting

201 Railhead Road

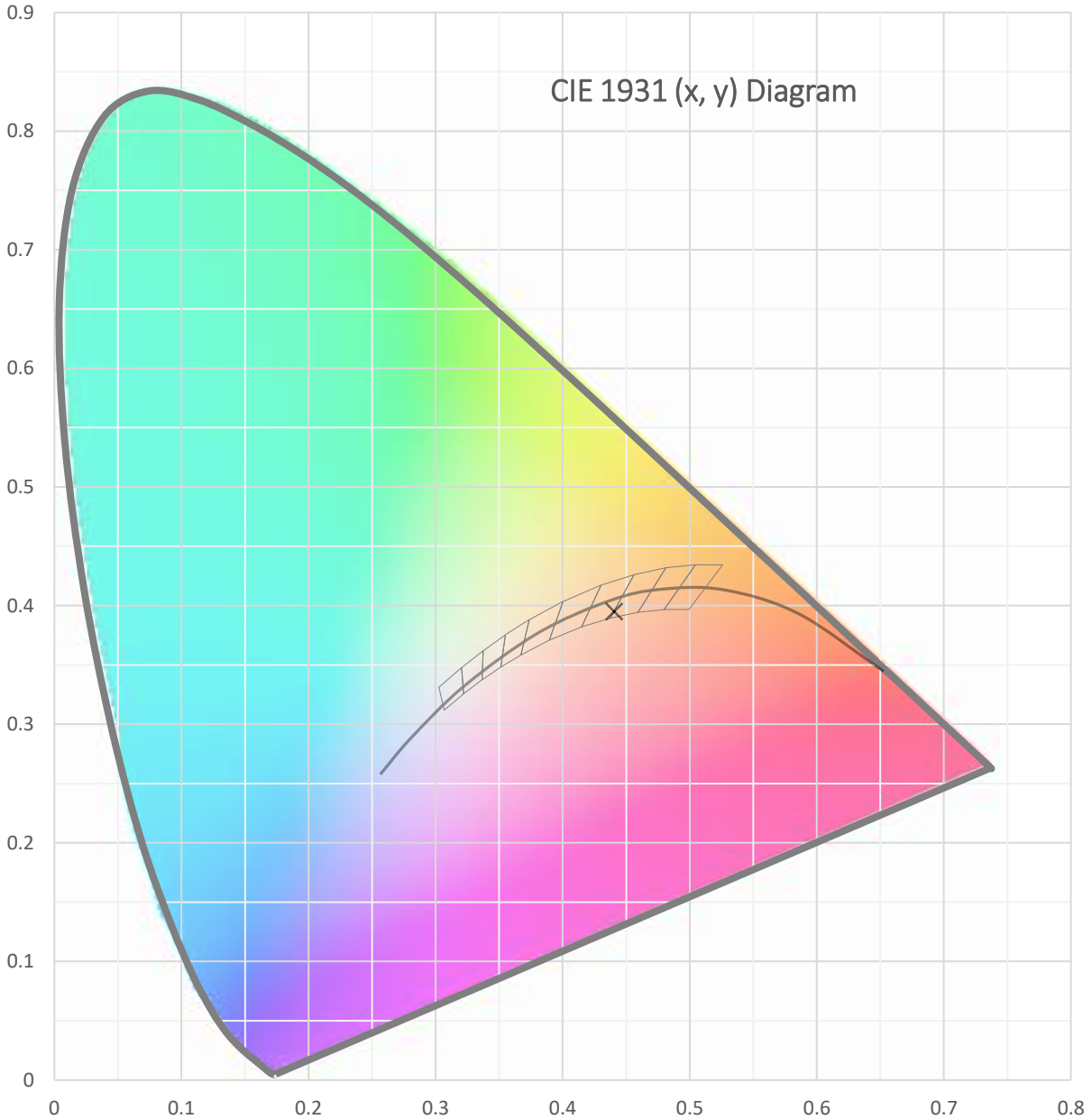
Fort Worth, TX 76106, USA

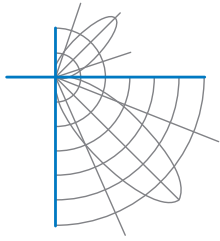
Test date: 01/20/2022

Report date: 01/21/2022

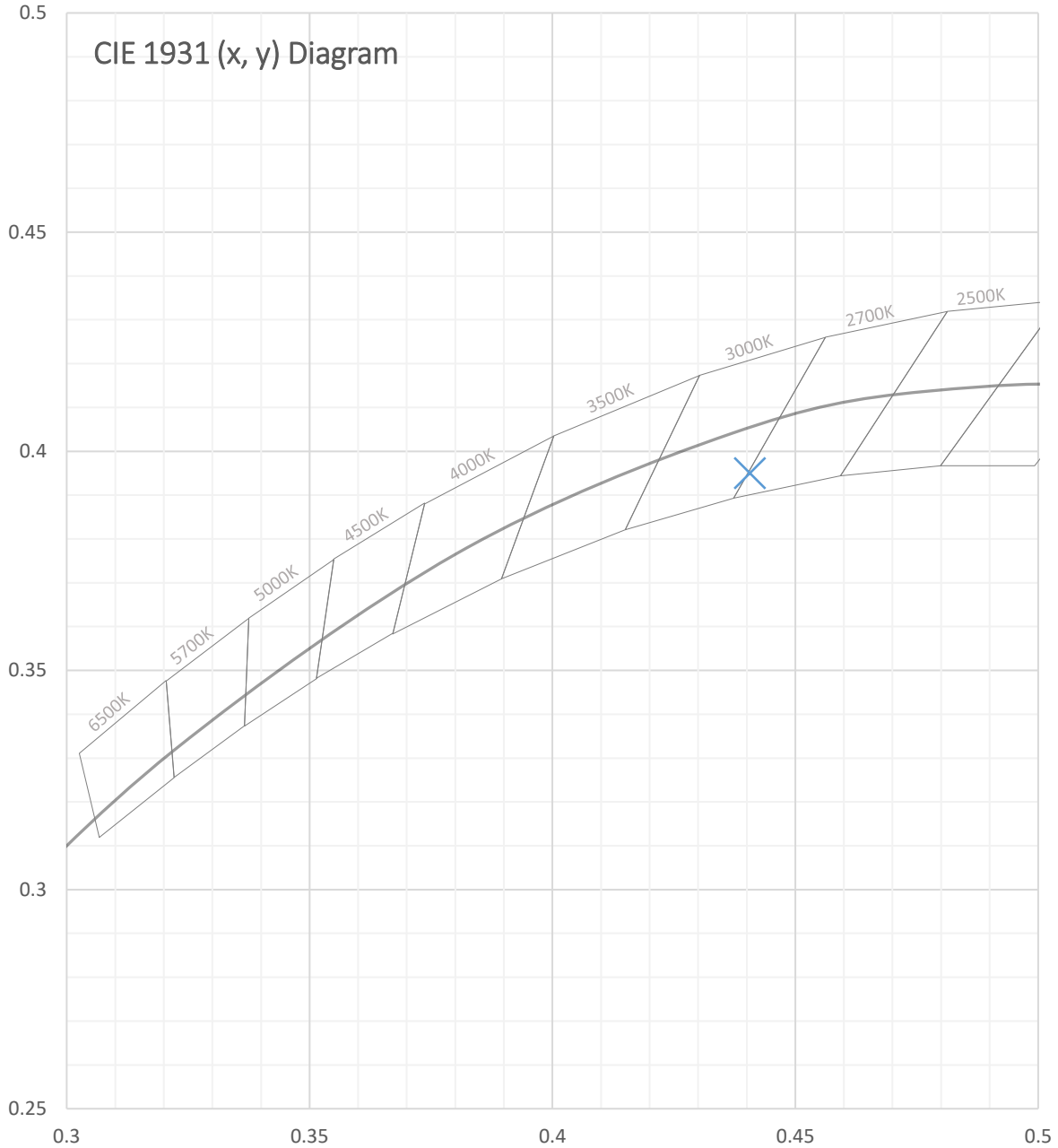


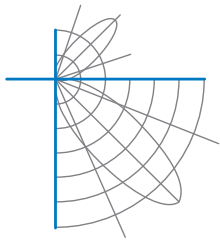
Test Report Number: LLIA001626-004B





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Total Radiant Flux	0.741 W
Total Luminous Flux	201.2 Lm
Chromaticity CIE 1931 (x, y)	(0.4407, 0.3950)
Chromaticity CIE 1976 (u', v')	(0.2570, 0.5183)
Correlated Color Temperature (CCT)	2863 K
Color Rendering Index (Ra)	95
R1	98
R2	98
R3	97
R4	97
R5	98
R6	94
R7	92
R8	87
R9	75
R10	98
R11	98
R12	86
R13	99
R14	99
TM-30: Rf	92
TM-30: Rg	101
TM-30: Rcs,h1	-3
Distance from Planckian Locus (Duv)	-0.0041
Scotopic/Photopic Ratio ‡	1.430

**Electrical Data**

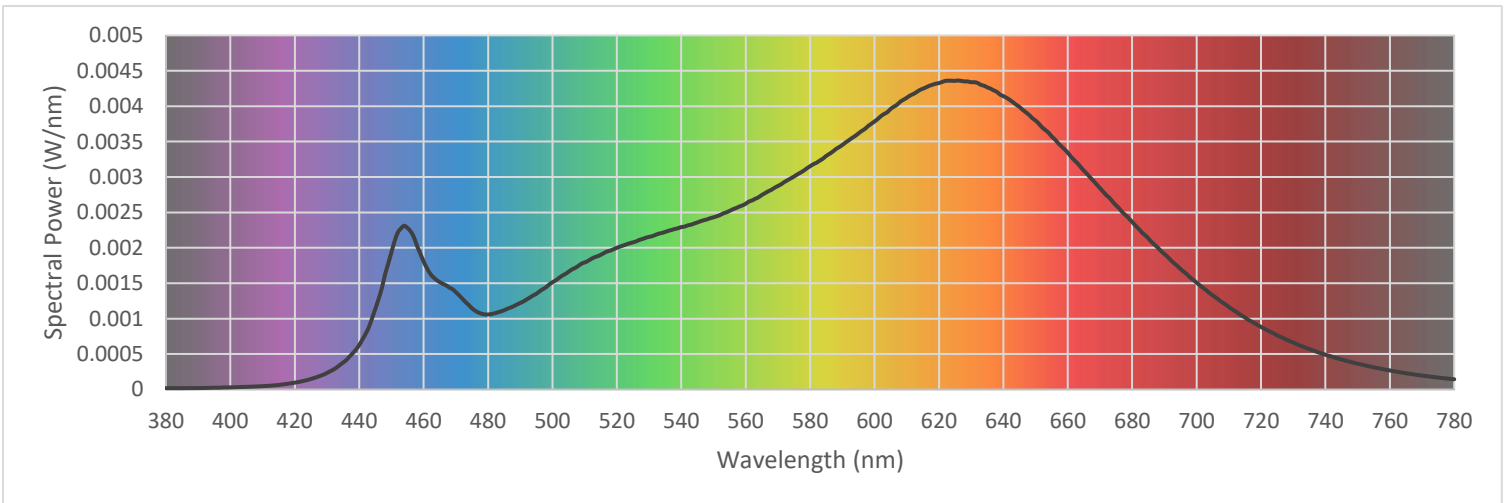
Voltage	120.0 Vac
Current	0.0588 A
Power	6.89 W
Frequency	59.97 Hz
Power Factor	0.977
Current THD	17.9 %

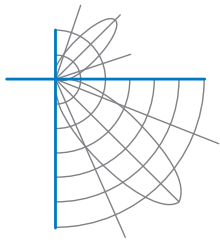


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Summary Spectral Power Distribution (wavelength - nm, spectral power - W/nm)

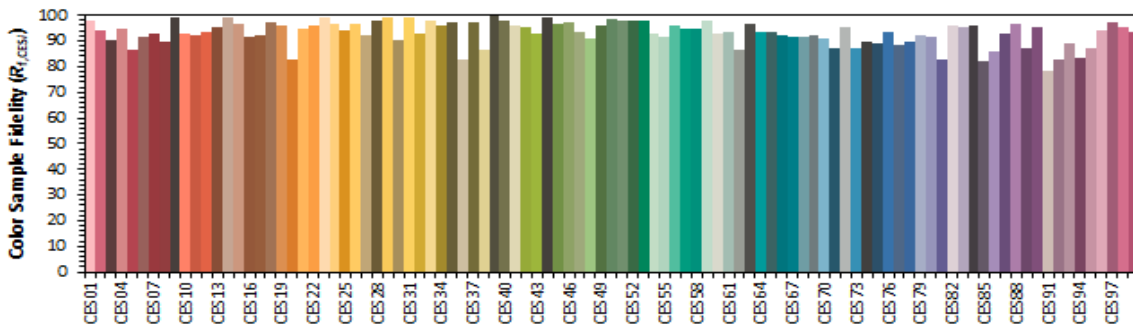
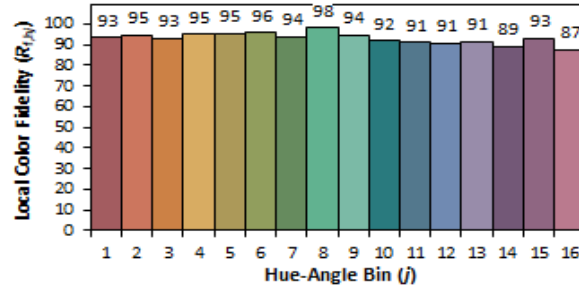
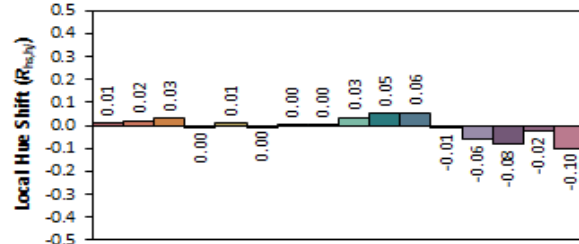
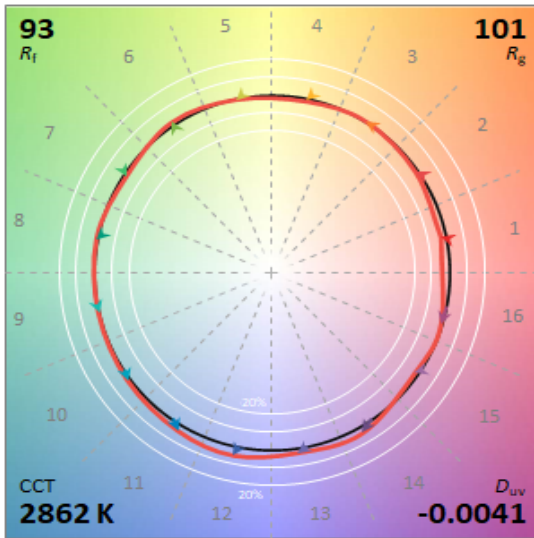
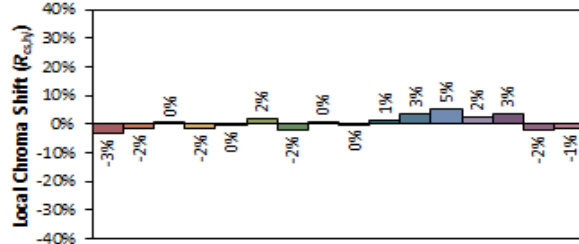
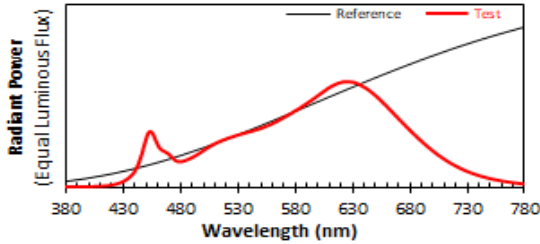
380	0.000018	480	0.001059	580	0.003152	680	0.002365
385	0.000018	485	0.001119	585	0.003298	685	0.002136
390	0.000020	490	0.001222	590	0.003452	690	0.001912
395	0.000025	495	0.001351	595	0.003615	695	0.001702
400	0.000030	500	0.001514	600	0.003784	700	0.001509
405	0.000037	505	0.001662	605	0.003961	705	0.001328
410	0.000046	510	0.001794	610	0.004118	710	0.001165
415	0.000063	515	0.001901	615	0.004247	715	0.001017
420	0.000096	520	0.002001	620	0.004326	720	0.000883
425	0.000148	525	0.002077	625	0.004357	725	0.000765
430	0.000234	530	0.002154	630	0.004338	730	0.000664
435	0.000379	535	0.002224	635	0.004266	735	0.000570
440	0.000627	540	0.002293	640	0.004142	740	0.000491
445	0.001138	545	0.002358	645	0.003989	745	0.000424
450	0.001938	550	0.002430	650	0.003797	750	0.000363
455	0.002279	555	0.002522	655	0.003574	755	0.000312
460	0.001807	560	0.002622	660	0.003344	760	0.000269
465	0.001516	565	0.002746	665	0.003090	765	0.000229
470	0.001374	570	0.002873	670	0.002843	770	0.000197
475	0.001146	575	0.003007	675	0.002600	775	0.000168
						780	0.000144





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IES TM-30 Details



Notes:

x **0.4407**  
y **0.3950**  
u' **0.2570**  
v' **0.5183**

CIE 13.3-1995  
(CRI)  
 $R_a$  95  
 $R_s$  75



## Test Report Number: LLIA001626-004B

**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-78-20, 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.