

# Report of Test

## LLIA000802-048A

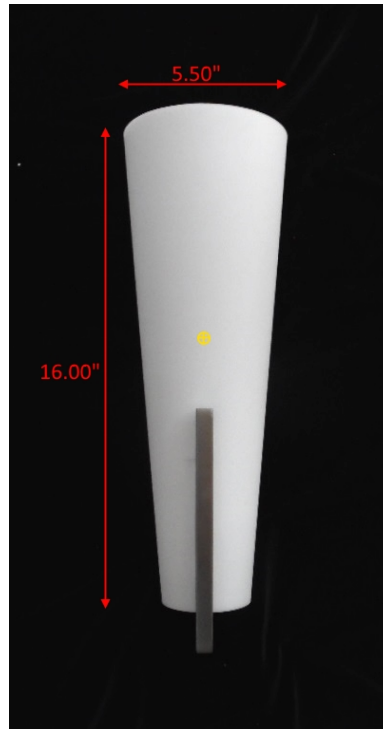
Catalog Number: 3-589-124 Songbird Sconce

Wall mounted, formed white enamel steel housing, translucent white glass enclosure.

30 white LEDs, one Harvard Engineering LEDENG-152-930-NL LED board

One LTF DA12W350C1834D010-0014 dimming LED driver.

120.0Vac, 60.00Hz, 0.1134A, 13.31W, 0.978PF, 8.3%THD(i)



### Performance Summary

Total Light Output	1007 lm
Luminaire Power	13.3 W
Luminous Efficacy	75.7 lm/W

**PREPARED FOR : Oxygen Lighting, 201 Railhead Road, Fort Worth, TX 76106, USA**



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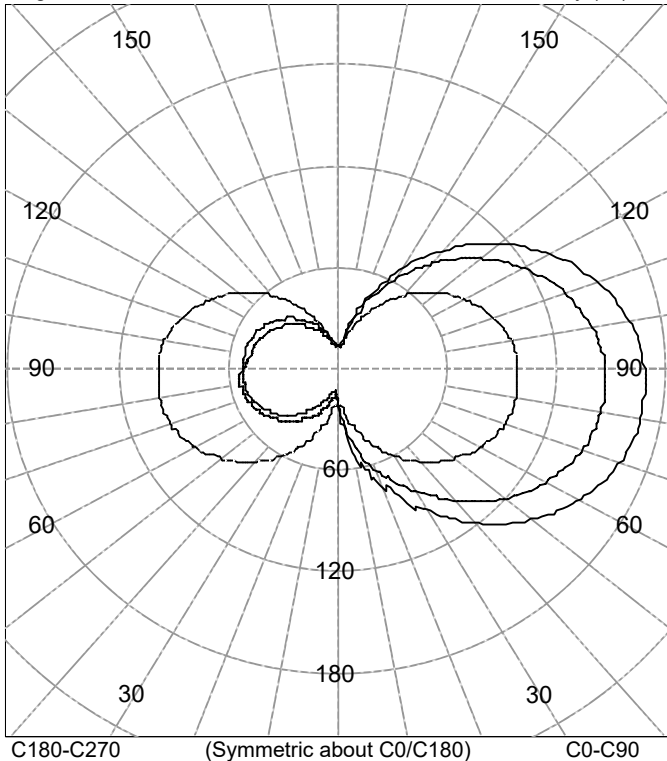
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Legend: C0/C180-Solid, C45/C225-Dashed, C90/C270-Grey (cd)



**INTENSITY SUMMARY (cd)**

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	21	21	21	21	21	
5.0	34	33	30	26	22	2
10.0	53	50	44	37	30	
15.0	62	63	56	46	37	11
20.0	76	73	65	55	45	
25.0	84	84	74	64	52	25
30.0	96	93	83	72	59	
35.0	108	103	92	81	65	42
40.0	119	114	102	89	71	
45.0	129	124	111	97	77	61
50.0	138	132	119	104	82	
55.0	147	140	126	110	87	80
60.0	154	147	132	116	91	
65.0	159	152	138	120	94	96
70.0	164	157	142	123	97	
75.0	167	160	144	126	98	107
80.0	168	161	146	127	99	
85.0	168	161	146	127	99	111
90.0	168	161	146	127	99	

**AVERAGE LUMINANCE (cd/m<sup>2</sup>)**

Gamma	C0	C45	C90
45.0	2600	1938	2099
55.0	2704	2005	2217
65.0	2787	2059	2320
75.0	2855	2103	12724
85.0	2912	2137	2495

**ZONAL FLUX AND PERCENTAGES**

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	38	N / A	3.8
0-40	80	N / A	8.0
0-60	221	N / A	21.9
0-90	535	N / A	53.1
40-90	455	N / A	45.2
60-90	314	N / A	31.2
90-180	472	N / A	46.9
0-180	1007	N / A	100.0

Total Light Output = 1,007 lm

Signed:

Authorized Signatory

Date of test

6-Oct-2017

Date of report

6-Oct-2017



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**Intensity data (cd)**

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	21	21	21	21	21
2.5	27	27	26	24	21
5.0	34	33	30	26	22
7.5	41	40	37	31	26
10.0	53	50	44	37	30
12.5	57	56	50	41	33
15.0	62	63	56	46	37
17.5	66	70	61	51	41
20.0	76	73	65	55	45
22.5	78	77	69	59	49
25.0	84	84	74	64	52
27.5	94	87	79	68	56
30.0	96	93	83	72	59
32.5	102	98	87	77	62
35.0	108	103	92	81	65
37.5	113	109	97	85	68
40.0	119	114	102	89	71
42.5	124	119	106	93	74
45.0	129	124	111	97	77
47.5	134	128	115	100	80
50.0	138	132	119	104	82
52.5	143	137	123	107	85
55.0	147	140	126	110	87
57.5	150	144	129	113	89
60.0	154	147	132	116	91
62.5	157	150	135	118	93
65.0	159	152	138	120	94
67.5	162	155	140	122	95
70.0	164	157	142	123	97
72.5	165	158	143	125	97
75.0	167	160	144	126	98
77.5	168	161	145	126	99
80.0	168	161	146	127	99
82.5	168	161	146	127	99
85.0	168	161	146	127	99
87.5	168	161	146	127	99
90.0	168	161	146	127	99



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**Intensity data (cd)**

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	168	161	146	127	99
92.5	167	160	145	126	98
95.0	166	159	144	125	98
97.5	164	157	143	124	97
100.0	162	155	141	123	96
102.5	160	153	139	121	95
105.0	157	150	137	119	93
107.5	154	148	134	117	92
110.0	151	145	132	115	90
112.5	147	141	129	112	88
115.0	143	138	126	109	86
117.5	139	134	122	107	83
120.0	135	129	118	103	81
122.5	130	125	114	100	78
125.0	125	120	110	96	76
127.5	120	116	106	93	73
130.0	115	110	101	89	70
132.5	109	105	97	85	67
135.0	104	100	92	80	64
137.5	98	94	87	76	60
140.0	92	88	82	72	57
142.5	86	83	76	67	53
145.0	80	77	71	63	50
147.5	73	71	66	58	46
150.0	67	65	60	53	43
152.5	61	59	55	48	39
155.0	54	52	49	44	35
157.5	48	46	44	39	32
160.0	41	40	38	35	28
162.5	35	34	33	30	25
165.0	29	29	28	26	21
167.5	24	23	23	21	19
170.0	19	18	18	17	16
172.5	14	14	14	13	13
175.0	13	13	13	13	13
177.5	13	13	13	13	13
180.0	13	13	13	13	13



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**Intensity data (cd)**

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
0.0	21	21	21	21	21
2.5	21	19	18	16	16
5.0	22	18	15	13	12
7.5	26	22	17	14	13
10.0	30	24	19	15	14
12.5	33	27	21	16	15
15.0	37	30	23	18	16
17.5	41	33	25	20	17
20.0	45	35	27	21	19
22.5	49	38	29	23	21
25.0	52	40	31	25	23
27.5	56	42	32	27	25
30.0	59	44	34	29	27
32.5	62	46	35	31	29
35.0	65	48	37	32	31
37.5	68	50	38	34	33
40.0	71	52	40	35	35
42.5	74	54	41	37	37
45.0	77	56	43	38	39
47.5	80	58	44	39	40
50.0	82	60	45	41	42
52.5	85	61	47	42	43
55.0	87	63	48	43	45
57.5	89	64	49	44	46
60.0	91	66	50	45	47
62.5	93	67	51	46	48
65.0	94	68	52	47	49
67.5	95	69	52	48	49
70.0	97	69	53	48	50
72.5	97	70	53	48	51
75.0	98	70	54	48	51
77.5	99	70	54	49	51
80.0	99	71	54	49	52
82.5	99	71	54	49	52
85.0	99	71	54	49	52
87.5	99	70	53	45	52
90.0	99	70	52	42	52



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**Intensity data (cd)**

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
90.0	99	70	52	42	52
92.5	98	69	50	38	52
95.0	98	69	49	35	52
97.5	97	68	49	35	52
100.0	96	68	49	35	52
102.5	95	67	48	35	51
105.0	93	66	48	35	51
107.5	92	65	47	35	51
110.0	90	64	47	35	51
112.5	88	63	46	35	50
115.0	86	61	45	35	50
117.5	83	60	44	35	49
120.0	81	58	43	35	48
122.5	78	56	43	34	47
125.0	76	55	42	34	47
127.5	73	53	40	34	46
130.0	70	51	39	33	44
132.5	67	49	38	33	43
135.0	64	47	37	32	42
137.5	60	44	35	31	41
140.0	57	42	34	31	39
142.5	53	40	32	30	37
145.0	50	37	31	29	36
147.5	46	35	29	28	34
150.0	43	33	28	27	32
152.5	39	31	26	26	30
155.0	35	28	25	24	28
157.5	32	26	24	23	27
160.0	28	24	22	22	25
162.5	25	22	21	20	23
165.0	21	20	19	19	21
167.5	19	18	17	18	19
170.0	16	16	16	17	17
172.5	13	14	15	15	16
175.0	13	14	14	15	15
177.5	13	14	14	14	14
180.0	13	13	13	13	13



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**Coefficients Of Utilization - Zonal Cavity Method**

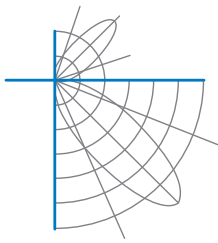
Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59	53
1	93	86	80	75	85	79	74	69	66	62	58	54	51	48	43	41	39	33
2	82	72	64	56	75	66	58	52	55	49	44	44	40	36	35	31	28	23
3	74	61	52	44	67	56	48	41	47	40	34	37	32	28	29	25	22	17
4	67	53	43	36	61	49	40	33	40	33	28	32	27	22	25	21	17	13
5	61	47	37	30	55	43	34	27	35	28	23	28	23	18	22	18	14	11
6	55	41	32	25	50	38	29	23	31	24	19	25	20	15	19	15	12	9
7	51	37	28	21	46	34	26	20	28	21	16	23	17	13	17	13	10	7
8	47	33	24	18	43	30	23	17	25	19	14	20	15	11	16	12	8	6
9	44	30	22	16	40	28	20	15	23	17	12	19	14	10	15	10	7	5
10	41	27	19	14	37	25	18	13	21	15	11	17	12	9	13	9	6	4

For absolute test reports, CUs are expressed as a percentage of total lumen 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)	Beam Width (across 50% Nadir Illum)	
		0-180	90-270
6.0	0.6	21.04	21.57
8.0	0.3	28.05	28.76
10.0	0.2	35.06	35.95
12.0	0.1	42.08	43.14
14.0	0.1	49.09	50.33
16.0	0.1	56.10	57.52



**Test Report No. LLIA000802-048A**

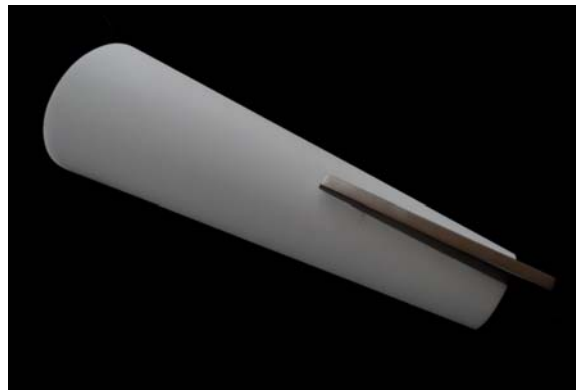
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**Test Distance**            9.5 m  
**Test Temperature**      25.1 °C

**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 publications: IES LM-79-08 (Sec. 12), IES LM-16-93, IES LM-58-13, CIE 13.3:1995, CIE 15:2004, ANSI C78.377:2015, ANSI C82.77-10:2014.

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 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

**LLIA000802-048B**

Integrating Sphere Report

Catalog Number: 3-589-124 Songbird Sconce

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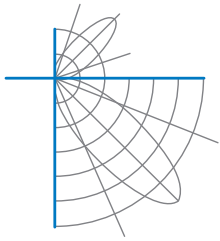
### Performance Summary

Voltage	120.0 Vac
Current	0.1133 A
Power	13.31 W
Frequency	60.00 Hz
Power Factor	0.979
Current THD	8.4 %
Total Luminous Flux	1007.8 lm
Efficacy	75.7 lm/W
Chromaticity (x,y)	(0.4300, 0.4023)
(u',v')	(0.2468, 0.5197)
Duv	0.0003
CCT	3106 K
CRI (Ra)	92
R9	61

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

Test date: 10/04/2017

Report date: 10/06/2017



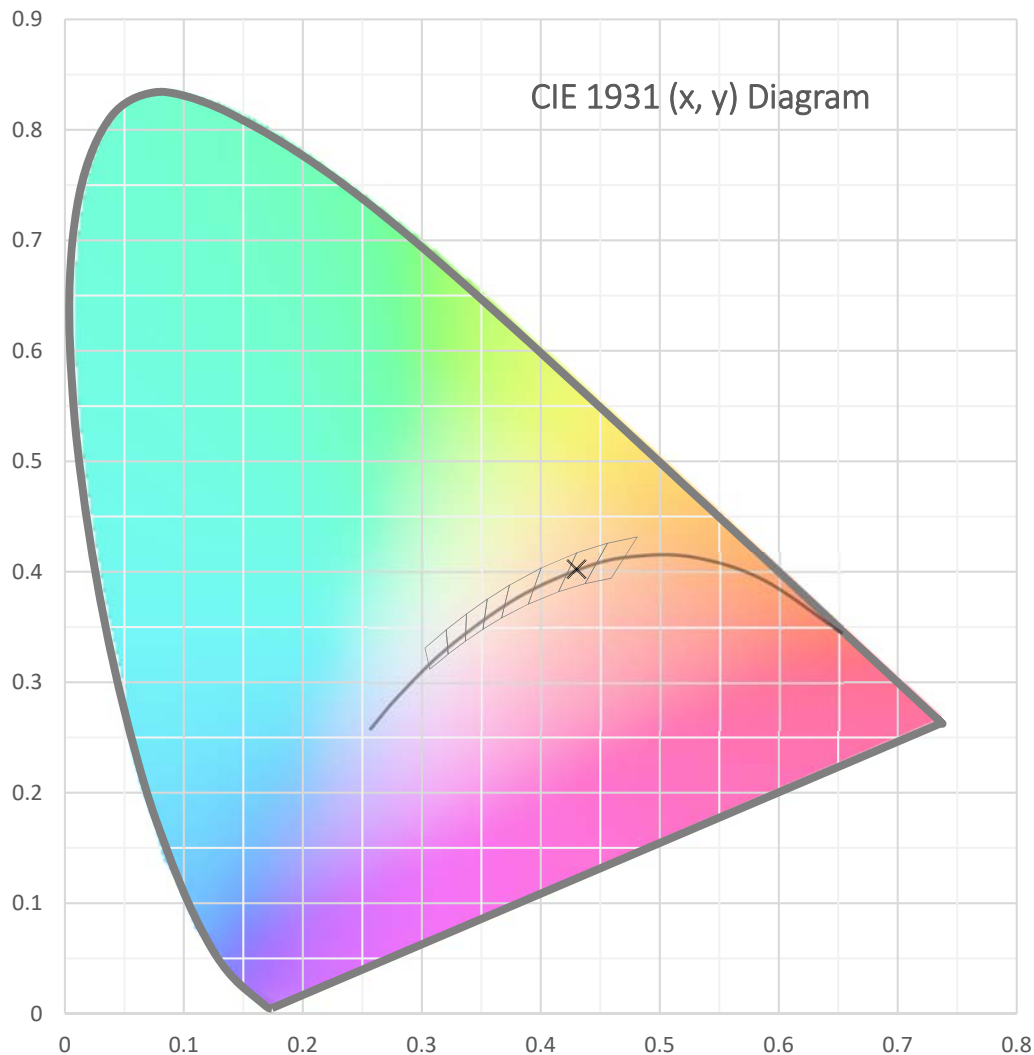
**Test Report Number: LLIA000802-048B**

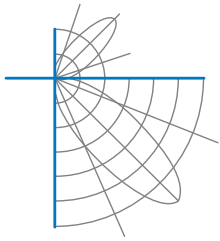
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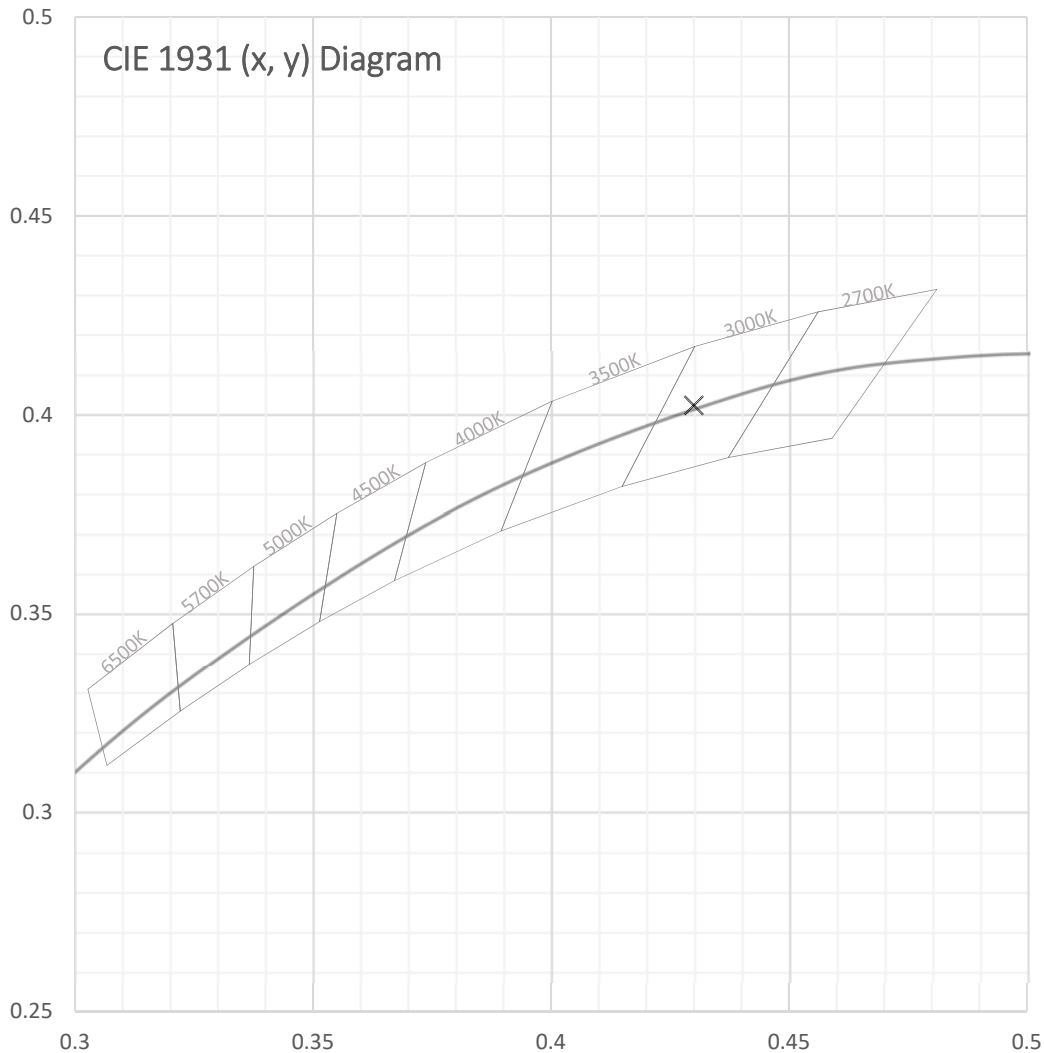
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**Spectral Data**

Total Radiant Flux	3.529 W
Total Luminous Flux	1007.8 Lm
Chromaticity CIE 1931 (x, y)	(0.4300, 0.4023)
Chromaticity CIE 1976 (u', v')	(0.2468, 0.5197)
Correlated Color Temperature (CCT)	3106 K
Color Rendering Index (Ra)	92
R1	92
R2	95
R3	95
R4	92
R5	91
R6	93
R7	93
R8	84
R9	61
R10	86
R11	92
R12	79
R13	92
R14	97
Distance from Planckian Locus (Duv)	0.0003
Scotopic/Photopic Ratio *	1.435

**Electrical Data**

Voltage	120.0 Vac
Current	0.1133 A
Power	13.31 W
Frequency	60.00 Hz
Power Factor	0.979
Current THD	8.4 %



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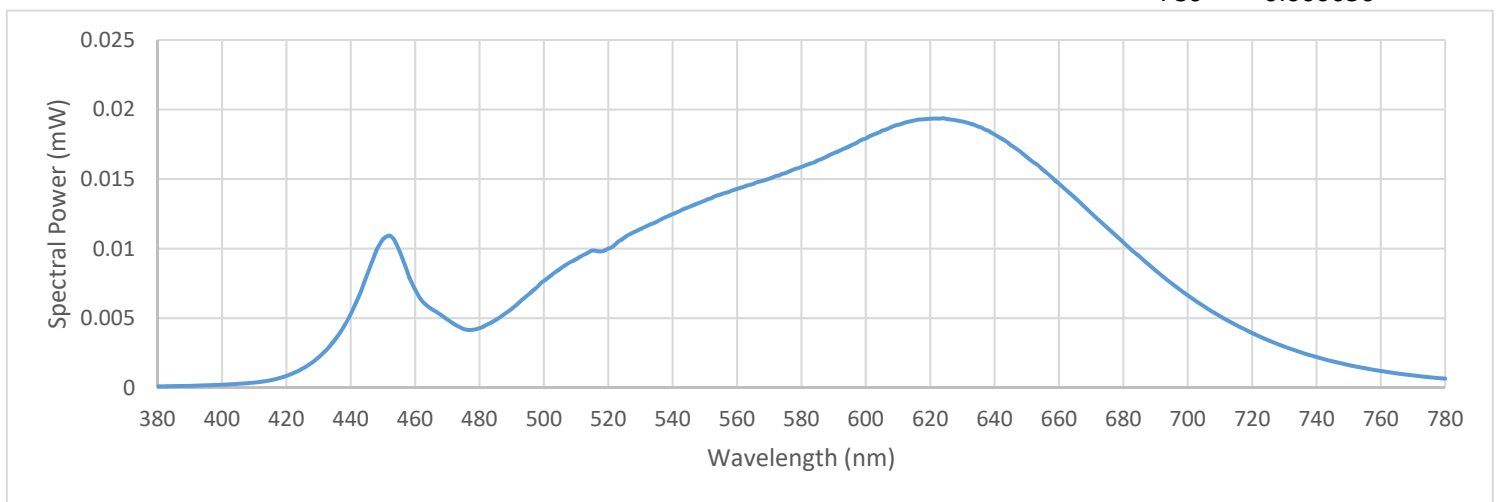
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Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000102	480	0.004283	580	0.015876	680	0.010448
385	0.000111	485	0.004875	585	0.016335	685	0.009439
390	0.000138	490	0.005683	590	0.016861	690	0.008435
395	0.000172	495	0.006654	595	0.017361	695	0.007486
400	0.000219	500	0.007682	600	0.017915	700	0.006656
405	0.000276	505	0.008534	605	0.018476	705	0.005864
410	0.000371	510	0.009238	610	0.018898	710	0.005145
415	0.000537	515	0.009862	615	0.019199	715	0.004509
420	0.000855	520	0.009997	620	0.019332	720	0.003927
425	0.001367	525	0.010788	625	0.019322	725	0.003414
430	0.002201	530	0.011406	630	0.019124	730	0.002967
435	0.003439	535	0.011926	635	0.018765	735	0.002556
440	0.005300	540	0.012472	640	0.018212	740	0.002200
445	0.008073	545	0.012977	645	0.017446	745	0.001896
450	0.010674	550	0.013455	650	0.016578	750	0.001631
455	0.009894	555	0.013899	655	0.015661	755	0.001401
460	0.007073	560	0.014280	660	0.014678	760	0.001209
465	0.005671	565	0.014647	665	0.013635	765	0.001037
470	0.004916	570	0.015022	670	0.012551	770	0.000888
475	0.004221	575	0.015423	675	0.011512	775	0.000764
						780	0.000656





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One LTF DA12W350C1834D010-0014 dimming LED driver.

**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:** 25.2 °C

**Test Procedure:** Tested in accordance with the applicable sections of:  
LM-79-08, LM-78-07, LM-58-13, ANSI\_ANSLG C78.377-2015, ANSI C82-77-10:2014

**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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