LightLab INTERNATIONAL ALLENTOWN LLC

NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA000802-055A

Catalog Number: 3-563-124 Siren Sconce
Wall mounted, formed white enamel steel housing, translucent white glass enclosure.
30 white LEDs, One Harvard Engineering LEDENG-152-930-NL
One LTF DA12W350C1834D010-0014 dimming LED driver.
120.0Vac, 60.00Hz, 0.1129A, 13.23W, 0.977PF, 9.8%THD(i)

Performance Summary

Total Light Output	980	lm
Luminaire Power	13.2	W
Luminous Efficacy	74.2	lm/W

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

USA west coast LightLab International, LLC, 24825 N. 16th Avenue, Suite 125, Phoenix, AZ, 85085, Ph : +1 623-434-1499, Fx : +1 623-434-1492, www.lightlabint.com

USA east coast LightLab Int'l Allentown LLC, 905 Harrison Street, Suite 135, Allentown, PA 18103, Ph: +1 484-273-0705, www.lightlabint.com (issuing laboratory)

Australasia & S.E. Asia LightLab International, 50 Redcliffe Gardens Drive, Clontarf, Queensland, 4019, Australia, Ph : +61 7 3283 7862, Fx : +61 7 3283 8751, www.lightlabint.com

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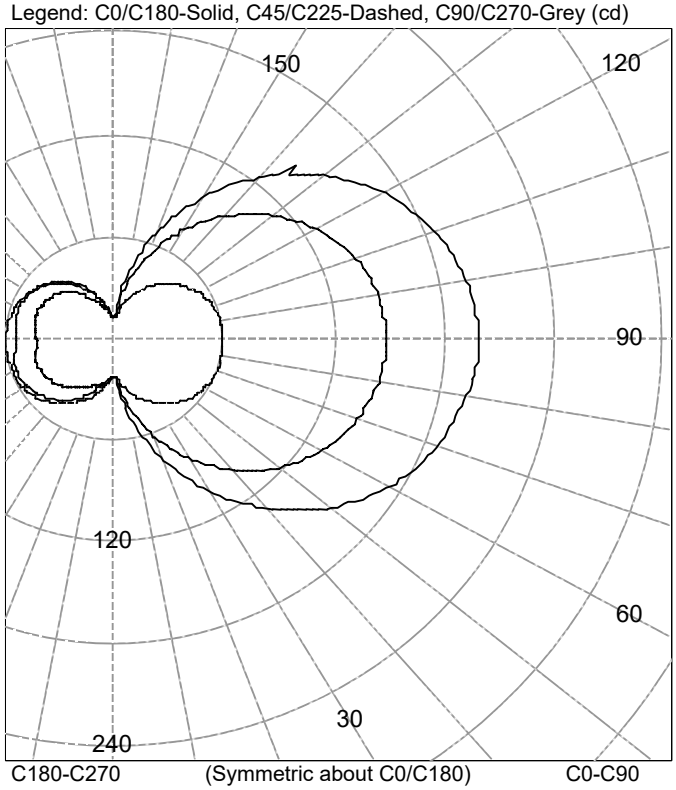
Legend: C0/C180-Solid, C45/C225-Dashed, C90/C270-Grey (cd)



INTENSITY SUMMARY (cd)

Gamma	C-Plane C0	C22.5	C45	C67.5	C90	Flux (lm)
0.0	22	22	22	22	22	
5.0	30	29	28	27	25	3
10.0	45	43	38	33	29	
15.0	60	57	50	41	33	11
20.0	75	71	61	48	37	
25.0	90	85	72	55	40	24
30.0	104	98	82	62	44	
35.0	118	111	92	69	47	40
40.0	132	122	101	75	50	
45.0	143	134	110	80	52	58
50.0	155	145	118	85	55	
55.0	165	154	125	90	56	75
60.0	174	162	132	94	58	
65.0	181	169	137	97	59	89
70.0	187	174	141	99	59	
75.0	192	178	144	100	59	98
80.0	196	182	147	102	60	
85.0	198	184	148	103	60	103
90.0	199	185	149	103	60	

AVERAGE LUMINANCE (cd/m^2)

Gamma	C0	C45	C90
45.0	2495	1861	1535
55.0	2670	1968	1621
65.0	2821	2060	1706
75.0	2961	2145	1800
85.0	3127	2256	1955

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	38	N / A	3.9
0-40	78	N / A	8.0
0-60	211	N / A	21.5
0-90	501	N / A	51.1
40-90	422	N / A	43.1
60-90	290	N / A	29.6
90-180	479	N / A	48.9
0-180	980	N / A	100.0

Total Light Output = 980 lm

Signed: Michael L. Grather

Authorized Signatory

Date of test 28-Jul-2017

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120.0Vac, 60.00Hz, 0.1129A, 13.23W, 0.977PF, 9.8%THD(i)

Intensity data (cd)

	C-Plane				
Gamma	**C0**	**C22.5**	**C45**	**C67.5**	**C90**
0.0	22	22	22	22	22
2.5	24	24	24	23	23
5.0	30	29	28	27	25
7.5	37	36	33	30	27
10.0	45	43	38	33	29
12.5	52	50	44	37	31
15.0	60	57	50	41	33
17.5	67	64	55	44	35
20.0	75	71	61	48	37
22.5	82	78	66	52	39
25.0	90	85	72	55	40
27.5	97	91	77	58	42
30.0	104	98	82	62	44
32.5	111	104	87	65	45
35.0	118	111	92	69	47
37.5	124	116	96	72	48
40.0	132	122	101	75	50
42.5	137	128	106	77	51
45.0	143	134	110	80	52
47.5	149	139	114	83	54
50.0	155	145	118	85	55
52.5	160	149	122	88	56
55.0	165	154	125	90	56
57.5	170	158	129	92	57
60.0	174	162	132	94	58
62.5	178	166	134	95	58
65.0	181	169	137	97	59
67.5	185	172	139	98	59
70.0	187	174	141	99	59
72.5	190	177	143	100	59
75.0	192	178	144	100	59
77.5	194	180	145	101	60
80.0	196	182	147	102	60
82.5	197	183	148	102	60
85.0	198	184	148	103	60
87.5	199	185	149	103	60
90.0	199	185	149	103	60

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Intensity data (cd)

	C-Plane				
Gamma	**C0**	**C22.5**	**C45**	**C67.5**	**C90**
90.0	199	185	149	103	60
92.5	199	185	148	103	59
95.0	198	184	148	102	59
97.5	197	183	147	102	59
100.0	196	182	146	101	59
102.5	194	180	145	100	59
105.0	192	178	144	100	58
107.5	189	176	142	98	58
110.0	186	173	140	97	57
112.5	183	170	137	96	56
115.0	179	167	134	94	56
117.5	175	163	132	92	55
120.0	170	159	128	90	54
122.5	166	154	125	87	53
125.0	160	149	121	85	51
127.5	155	144	117	82	50
130.0	149	139	113	79	49
132.5	143	133	108	76	47
135.0	137	128	104	73	45
137.5	130	122	99	70	44
140.0	124	115	94	67	42
142.5	117	109	89	63	40
145.0	109	102	83	60	38
147.5	102	98	78	56	36
150.0	95	89	74	53	34
152.5	88	82	67	50	32
155.0	80	76	62	47	30
157.5	72	69	56	43	28
160.0	65	62	50	38	26
162.5	57	54	45	34	24
165.0	50	47	40	30	22
167.5	42	40	34	26	20
170.0	34	33	28	22	18
172.5	27	26	22	19	16
175.0	20	19	17	15	14
177.5	14	13	13	13	12
180.0	12	12	12	12	12

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120.0Vac, 60.00Hz, 0.1129A, 13.23W, 0.977PF, 9.8%THD(i)

Intensity data (cd)

	C-Plane				
Gamma	**C90**	**C112.5**	**C135**	**C157.5**	**C180**
0.0	22	22	22	22	22
2.5	23	23	23	23	23
5.0	25	24	24	24	24
7.5	27	25	25	25	25
10.0	29	26	26	26	27
12.5	31	27	27	28	28
15.0	33	28	28	29	30
17.5	35	29	29	30	31
20.0	37	30	30	32	33
22.5	39	31	31	33	35
25.0	40	32	31	35	37
27.5	42	33	32	37	39
30.0	44	34	33	39	41
32.5	45	34	35	40	43
35.0	47	35	36	42	44
37.5	48	35	37	44	46
40.0	50	36	38	45	47
42.5	51	36	39	46	49
45.0	52	37	40	48	50
47.5	54	37	41	49	51
50.0	55	38	42	50	52
52.5	56	38	42	51	53
55.0	56	38	43	52	54
57.5	57	38	43	53	55
60.0	58	38	44	54	55
62.5	58	38	44	54	56
65.0	59	38	44	55	56
67.5	59	38	45	55	57
70.0	59	37	45	55	57
72.5	59	37	45	56	57
75.0	59	37	45	56	57
77.5	60	36	44	55	56
80.0	60	36	43	55	56
82.5	60	35	42	55	55
85.0	60	35	42	54	54
87.5	60	34	42	54	54
90.0	60	34	42	54	54

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Intensity data (cd)

	C-Plane				
Gamma	**C90**	**C112.5**	**C135**	**C157.5**	**C180**
90.0	60	34	42	54	54
92.5	59	34	43	54	54
95.0	59	35	43	55	55
97.5	59	35	44	55	55
100.0	59	35	44	55	55
102.5	59	35	44	55	55
105.0	58	35	44	55	55
107.5	58	35	45	55	55
110.0	57	35	45	55	55
112.5	56	35	44	54	55
115.0	56	35	44	54	54
117.5	55	34	44	53	54
120.0	54	34	44	53	53
122.5	53	34	43	52	53
125.0	51	33	42	51	52
127.5	50	33	42	50	51
130.0	49	32	41	49	50
132.5	47	32	40	48	48
135.0	45	31	38	46	47
137.5	44	30	37	45	46
140.0	42	29	35	43	44
142.5	40	28	34	41	42
145.0	38	27	32	39	40
147.5	36	26	30	37	38
150.0	34	25	28	35	36
152.5	32	24	26	32	34
155.0	30	23	25	30	32
157.5	28	22	23	27	29
160.0	26	21	22	25	27
162.5	24	19	20	22	24
165.0	22	18	18	20	21
167.5	20	17	17	18	19
170.0	18	15	15	16	17
172.5	16	14	14	15	15
175.0	14	13	13	13	13
177.5	12	12	12	12	12
180.0	12	12	12	12	12

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Coefficients Of 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
0	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	51
1	93	86	80	75	85	79	74	69	66	62	58	53	50	47	42	40	38	32
2	82	72	64	57	75	66	59	52	55	49	44	44	39	36	34	31	28	23
3	74	62	52	45	67	56	48	41	46	40	34	37	32	28	28	25	21	17
4	67	54	44	37	61	49	40	34	40	33	28	32	27	22	24	20	17	13
5	61	47	37	30	55	43	34	28	35	28	23	28	23	18	21	17	14	10
6	56	42	32	26	50	38	30	23	31	25	19	25	20	15	19	15	12	8
7	51	37	28	22	46	34	26	20	28	21	17	22	17	13	17	13	10	7
8	47	33	25	19	43	31	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	14	10	7	5
10	41	28	20	14	37	25	18	13	21	15	11	17	12	9	13	9	7	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	22.18	16.70
8.0	0.3	29.58	22.27
10.0	0.2	36.97	27.83
12.0	0.2	44.36	33.40
14.0	0.1	51.76	38.97
16.0	0.1	59.15	44.53

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Test Distance	9.5 m
Test Temperature	24.8 °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.

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Report of Test

LLIA000802-055B

Integrating Sphere Report

Catalog Number: 3-563-124 Siren Sconce

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

30 white LEDs, One Harvard Engineering LEDENG-152-930-NL

One LTF DA12W350C1834D010-0014 dimming LED driver.

Performance Summary

Voltage	120.0	Vac
Current	0.1129	A
Power	13.25	W
Frequency	60.00	Hz
Power Factor	0.977	
Current THD	9.9	%
Total Luminous Flux	1002.9	lm
Efficacy	75.7	lm/W
Chromaticity (x,y)	(0.4364, 0.4046)	
(u',v')	(0.2500, 0.5215)	
Duv	0.0003	
CCT	3013	K
CRI (Ra)	92	
R9	61	

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

Test date: 07/28/2017
Report date: 07/28/2017

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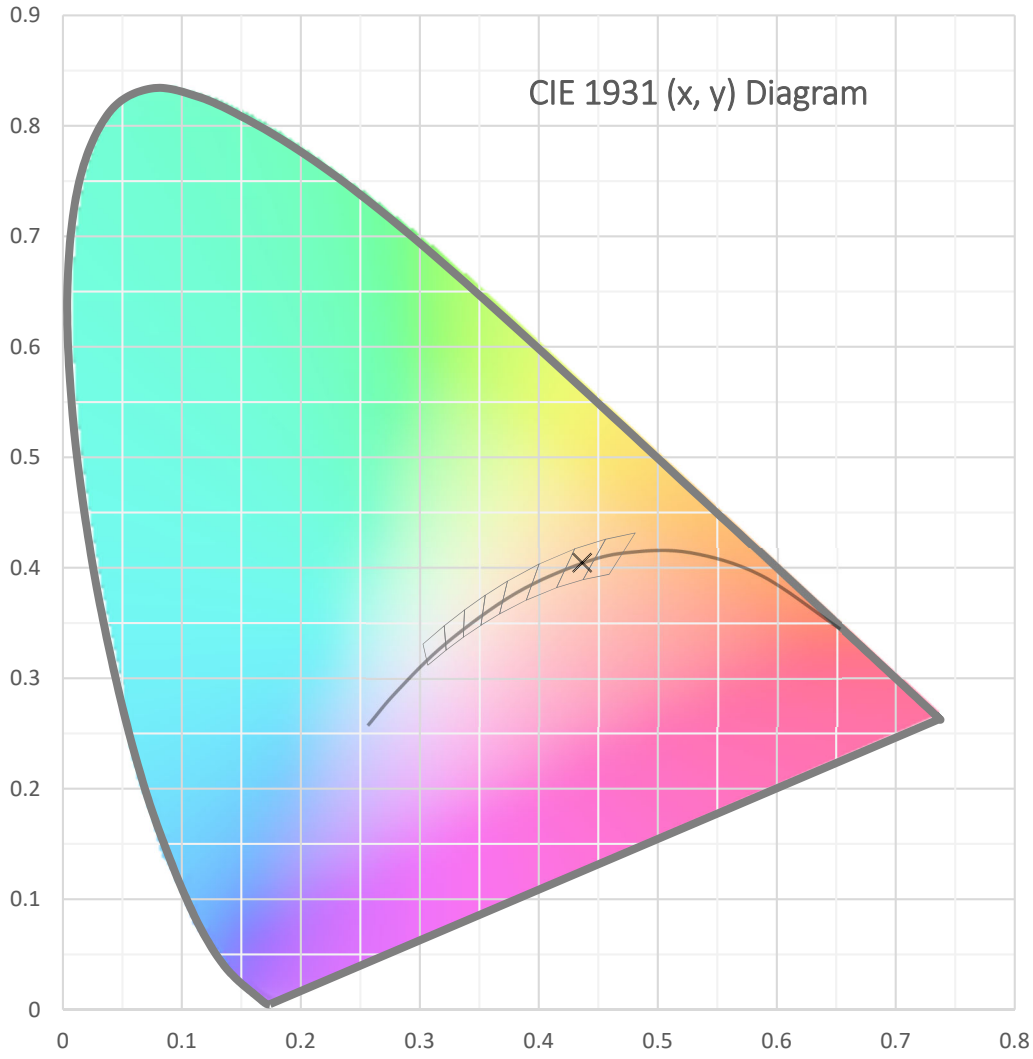

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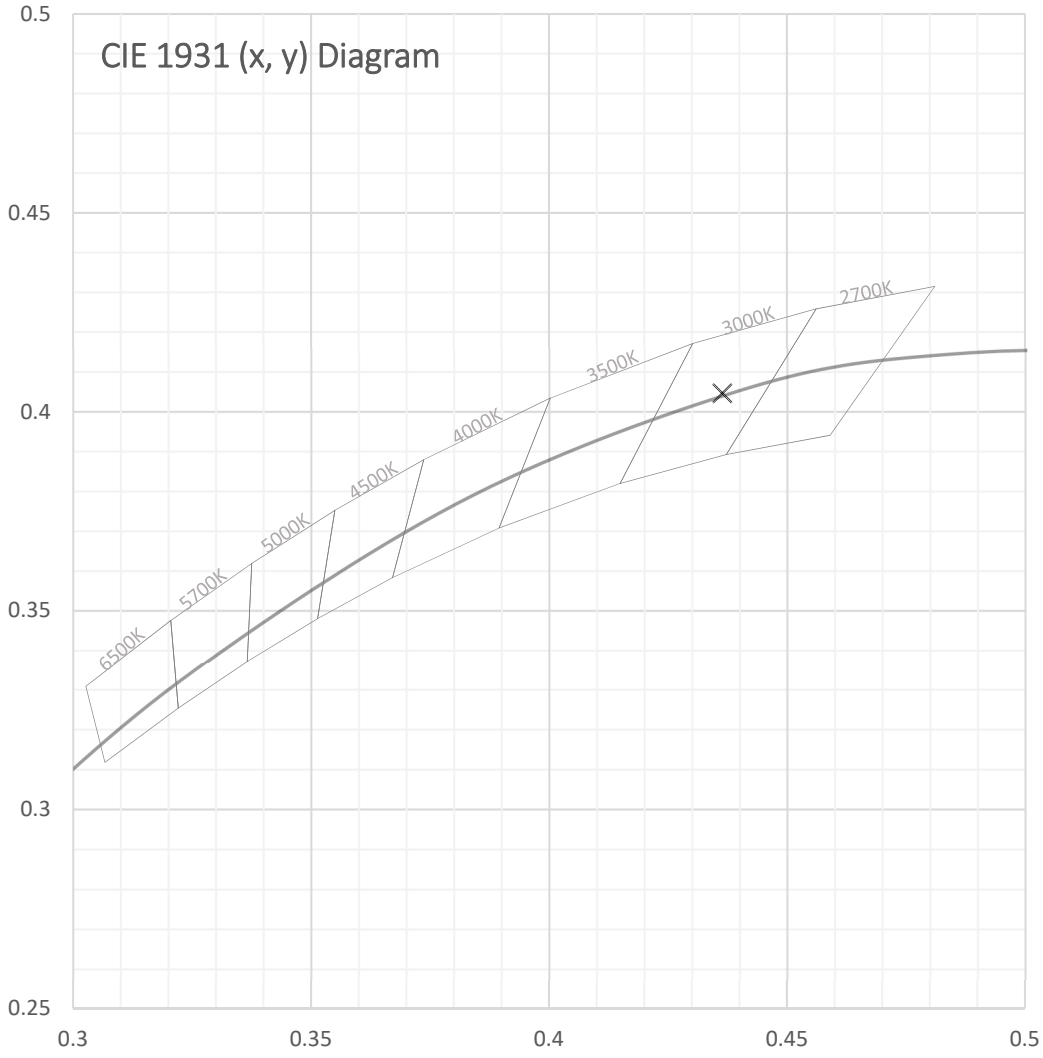

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Spectral Data	Total Radiant Flux	3.528	W
	Total Luminous Flux	1002.9	Lm
	Chromaticity CIE 1931 (x, y)	(0.4364, 0.4046)	
	Chromaticity CIE 1976 (u', v')	(0.2500, 0.5215)	
	Correlated Color Temperature (CCT)	3013	K
	Color Rendering Index (Ra)	92	
	R1	92	
	R2	95	
	R3	96	
	R4	92	
	R5	91	
	R6	93	
	R7	93	
	R8	83	
	R9	61	
	R10	86	
	R11	92	
	R12	79	
	R13	92	
	R14	97	
	Distance from Planckian Locus (Duv)	0.0003	
	Scotopic/Photopic Ratio *	1.396	
Electrical Data			
	Voltage	120.0	Vac
	Current	0.1129	A
	Power	13.25	W
	Frequency	60.00	Hz
	Power Factor	0.977	
	Current THD	9.9	%

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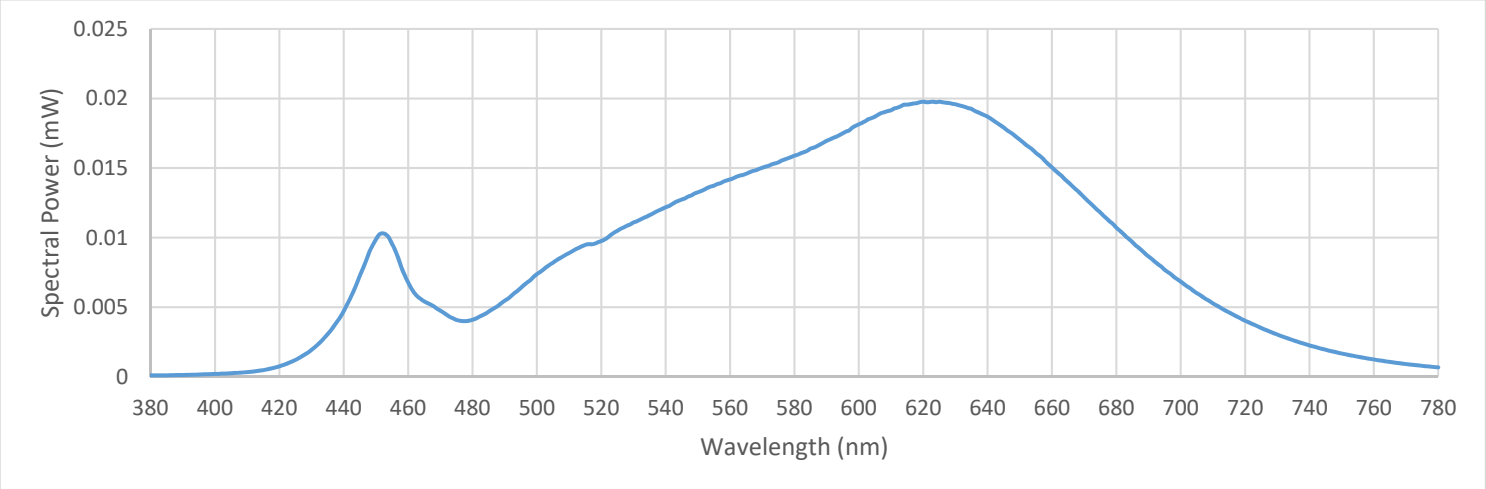
Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000098	480	0.004099	580	0.015890	680	0.010715
385	0.000106	485	0.004680	585	0.016400	685	0.009679
390	0.000127	490	0.005466	590	0.016960	690	0.008652
395	0.000159	495	0.006390	595	0.017493	695	0.007692
400	0.000201	500	0.007371	600	0.018146	700	0.006843
405	0.000253	505	0.008201	605	0.018697	705	0.006014
410	0.000335	510	0.008891	610	0.019152	710	0.005275
415	0.000478	515	0.009476	615	0.019559	715	0.004629
420	0.000756	520	0.009754	620	0.019771	720	0.004028
425	0.001214	525	0.010494	625	0.019765	725	0.003507
430	0.001938	530	0.011089	630	0.019586	730	0.003037
435	0.003071	535	0.011616	635	0.019253	735	0.002620
440	0.004729	540	0.012184	640	0.018698	740	0.002251
445	0.007270	545	0.012738	645	0.017923	745	0.001945
450	0.009870	550	0.013258	650	0.017049	750	0.001674
455	0.009548	555	0.013737	655	0.016096	755	0.001442
460	0.006779	560	0.014182	660	0.015055	760	0.001246
465	0.005415	565	0.014592	665	0.013993	765	0.001068
470	0.004757	570	0.015020	670	0.012901	770	0.000913
475	0.004088	575	0.015408	675	0.011814	775	0.000786
						780	0.000675



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30 white LEDs, One Harvard Engineering LEDENG-152-930-NL

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 4π geometry
Test Temperature:	24.4 °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. 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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