

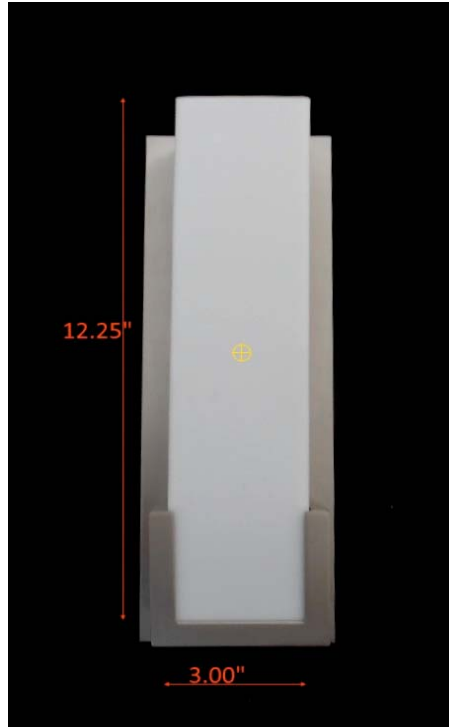


Report of Test

LLIA000802-043A

Catalog Number: 3-540-24 Orion Sconce

Wall mounted, formed steel housing, formed white enamel
steel LED mounting plate, translucent white plastic enclosure.
36 white LEDs, one Harvard Engineering LER7-284x17-930-36S-I LED board
One L.T.F. DA12W350C1834D010-0014 dimmable LED driver
120.0Vac, 60.00Hz, 0.1296A, 15.37W, 0.988PF, 8.4%THD(i)



Performance Summary

Total Light Output	926 lm
Luminaire Power	15.4 W
Luminous Efficacy	60.1 lm/W

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



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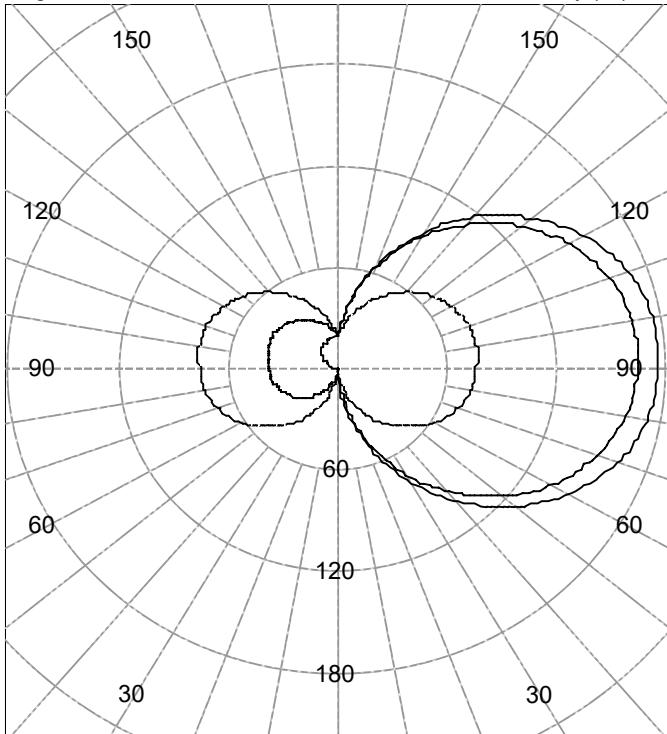
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Legend: C0/C180-Solid, C45/C225-Dashed, C90/C270-Grey (cd)



C180-C270 (Symmetric about C0/C180) C0-C90

AVERAGE LUMINANCE (cd/m²)

Gamma	C0	C45	C90
45.0	6549	4220	2397
55.0	7174	4540	2621
65.0	7714	4802	2812
75.0	8191	5025	2980
85.0	8628	5220	3133

INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	0	0	0	0	0	
5.0	5	5	3	2	1	0
10.0	22	21	19	13	8	
15.0	35	35	31	23	13	5
20.0	49	50	44	32	19	
25.0	62	64	57	42	25	15
30.0	76	78	70	52	31	
35.0	89	92	83	62	37	29
40.0	102	105	95	71	43	
45.0	115	118	106	80	48	46
50.0	126	130	117	88	53	
55.0	137	141	127	96	58	64
60.0	147	151	136	102	62	
65.0	155	160	144	108	66	80
70.0	162	167	150	113	69	
75.0	168	173	156	118	72	92
80.0	172	178	160	121	74	
85.0	175	180	162	123	75	99
90.0	176	182	163	124	76	

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	21	N / A	2.2
0-40	50	N / A	5.4
0-60	160	N / A	17.3
0-90	432	N / A	46.6
40-90	382	N / A	41.3
60-90	272	N / A	29.4
90-180	494	N / A	53.4
0-180	926	N / A	100.0

Total Light Output = 926 lm

Signed:

Authorized Signatory

Date of test 25-Sep-2017
Date of report 27-Sep-2017



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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	0	0	0	0	0
2.5	0	0	0	0	0
5.0	5	5	3	2	1
7.5	15	14	12	7	5
10.0	22	21	19	13	8
12.5	28	28	25	18	10
15.0	35	35	31	23	13
17.5	42	42	38	27	16
20.0	49	50	44	32	19
22.5	55	57	51	37	22
25.0	62	64	57	42	25
27.5	69	71	64	47	28
30.0	76	78	70	52	31
32.5	83	85	77	57	34
35.0	89	92	83	62	37
37.5	96	99	89	67	40
40.0	102	105	95	71	43
42.5	109	112	101	76	46
45.0	115	118	106	80	48
47.5	121	124	112	84	51
50.0	126	130	117	88	53
52.5	132	136	122	92	56
55.0	137	141	127	96	58
57.5	142	146	132	99	60
60.0	147	151	136	102	62
62.5	151	156	140	106	64
65.0	155	160	144	108	66
67.5	159	164	147	111	68
70.0	162	167	150	113	69
72.5	165	170	153	116	71
75.0	168	173	156	118	72
77.5	170	176	158	119	73
80.0	172	178	160	121	74
82.5	174	179	161	122	75
85.0	175	180	162	123	75
87.5	175	181	163	123	75
90.0	176	182	163	124	76



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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	176	182	163	124	76
92.5	176	182	164	124	76
95.0	176	182	164	124	76
97.5	176	182	164	124	77
100.0	175	181	163	124	77
102.5	174	180	162	123	77
105.0	173	178	161	123	77
107.5	171	176	159	122	76
110.0	168	174	157	120	76
112.5	166	171	155	119	75
115.0	163	168	153	117	74
117.5	160	165	150	115	73
120.0	156	161	146	113	72
122.5	152	157	143	110	71
125.0	148	153	139	108	70
127.5	143	148	135	105	68
130.0	138	143	131	102	67
132.5	133	138	126	99	65
135.0	128	133	121	95	63
137.5	123	127	117	92	61
140.0	117	121	111	88	59
142.5	111	115	106	84	57
145.0	105	109	100	80	55
147.5	99	103	95	76	52
150.0	93	96	89	72	50
152.5	86	90	83	67	47
155.0	80	83	77	63	45
157.5	73	76	71	59	42
160.0	67	70	65	54	40
162.5	61	63	59	49	37
165.0	54	56	53	45	34
167.5	48	49	47	40	32
170.0	42	43	41	36	29
172.5	36	36	35	31	26
175.0	30	30	29	26	24
177.5	24	24	23	22	21
180.0	20	20	20	20	20



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Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
0.0	0	0	0	0	0
2.5	0	0	0	0	0
5.0	1	1	0	0	0
7.5	5	4	1	0	0
10.0	8	6	3	0	0
12.5	10	8	5	0	0
15.0	13	11	6	0	0
17.5	16	13	8	1	0
20.0	19	16	9	1	0
22.5	22	18	11	1	0
25.0	25	21	12	1	0
27.5	28	23	14	1	0
30.0	31	26	15	1	0
32.5	34	28	17	1	0
35.0	37	31	18	2	0
37.5	40	33	20	2	0
40.0	43	35	21	2	0
42.5	46	38	23	2	0
45.0	48	40	24	2	0
47.5	51	42	25	2	0
50.0	53	44	26	2	0
52.5	56	46	28	2	0
55.0	58	48	29	2	0
57.5	60	50	30	2	0
60.0	62	51	31	3	0
62.5	64	53	32	3	0
65.0	66	54	33	3	0
67.5	68	56	34	3	0
70.0	69	57	34	3	0
72.5	71	58	35	3	0
75.0	72	59	36	3	0
77.5	73	60	36	3	0
80.0	74	61	37	3	0
82.5	75	61	37	3	0
85.0	75	62	37	3	0
87.5	75	62	38	3	0
90.0	76	62	38	3	0



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Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
90.0	76	62	38	3	0
92.5	76	63	38	3	0
95.0	76	63	38	3	0
97.5	77	63	39	4	1
100.0	77	63	39	5	2
102.5	77	64	40	6	2
105.0	77	64	40	6	3
107.5	76	63	40	7	4
110.0	76	63	40	8	5
112.5	75	63	40	9	5
115.0	74	62	40	10	6
117.5	73	62	40	10	7
120.0	72	61	40	11	8
122.5	71	60	40	12	9
125.0	70	59	40	13	9
127.5	68	58	40	13	10
130.0	67	57	39	14	11
132.5	65	56	39	15	12
135.0	63	54	38	16	12
137.5	61	53	38	16	13
140.0	59	51	37	17	13
142.5	57	50	36	17	14
145.0	55	48	35	18	15
147.5	52	46	34	18	15
150.0	50	44	34	19	16
152.5	47	42	33	19	16
155.0	45	40	32	20	17
157.5	42	38	30	20	17
160.0	40	36	29	20	18
162.5	37	34	28	21	18
165.0	34	32	27	21	18
167.5	32	30	26	21	19
170.0	29	27	25	21	19
172.5	26	25	23	21	19
175.0	24	23	22	20	19
177.5	21	21	20	20	19
180.0	20	20	20	20	20



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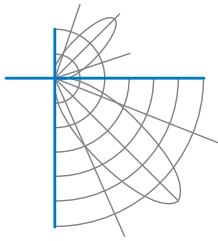
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Coefficients Of Utilization - Zonal Cavity Method

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	106	106	106	106	98	98	98	98	81	81	81	67	67	67	53	53	53	47
1	91	85	79	73	83	77	72	67	63	59	55	50	47	44	38	36	34	28
2	81	71	63	56	73	64	57	51	52	47	42	41	37	33	30	27	24	19
3	73	61	51	44	66	55	47	40	44	38	33	34	29	25	25	22	18	14
4	66	53	43	35	59	48	39	32	38	32	26	30	24	20	22	18	14	10
5	60	46	36	29	54	42	33	27	34	27	22	26	21	17	19	15	12	8
6	55	41	31	25	49	37	29	22	30	23	18	23	18	14	17	13	10	6
7	50	36	27	21	45	33	25	19	27	20	15	21	15	12	15	11	8	5
8	46	33	24	18	42	30	22	16	24	18	13	19	14	10	14	10	7	4
9	43	30	21	16	39	27	19	14	22	16	11	17	12	9	12	9	6	4
10	40	27	19	14	36	24	17	12	20	14	10	15	11	8	11	8	5	3

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.



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Test Distance 9.5 m
Test Temperature 25.6 °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 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

LLIA000802-043B

Integrating Sphere Report

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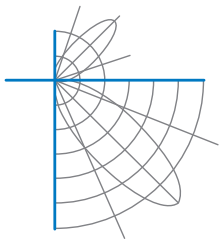


Performance Summary

Voltage	120.0 Vac
Current	0.1295 A
Power	15.34 W
Frequency	60.00 Hz
Power Factor	0.988
Current THD	8.4 %
Total Luminous Flux	930.0 lm
Efficacy	60.6 lm/W
Chromaticity (x,y)	(0.4353, 0.3975)
(u',v')	(0.2524, 0.5185)
Duv	-0.0024
CCT	2973 K
CRI (Ra)	94
R9	65

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

Test date: 09/25/2017
Report date: 09/27/2017



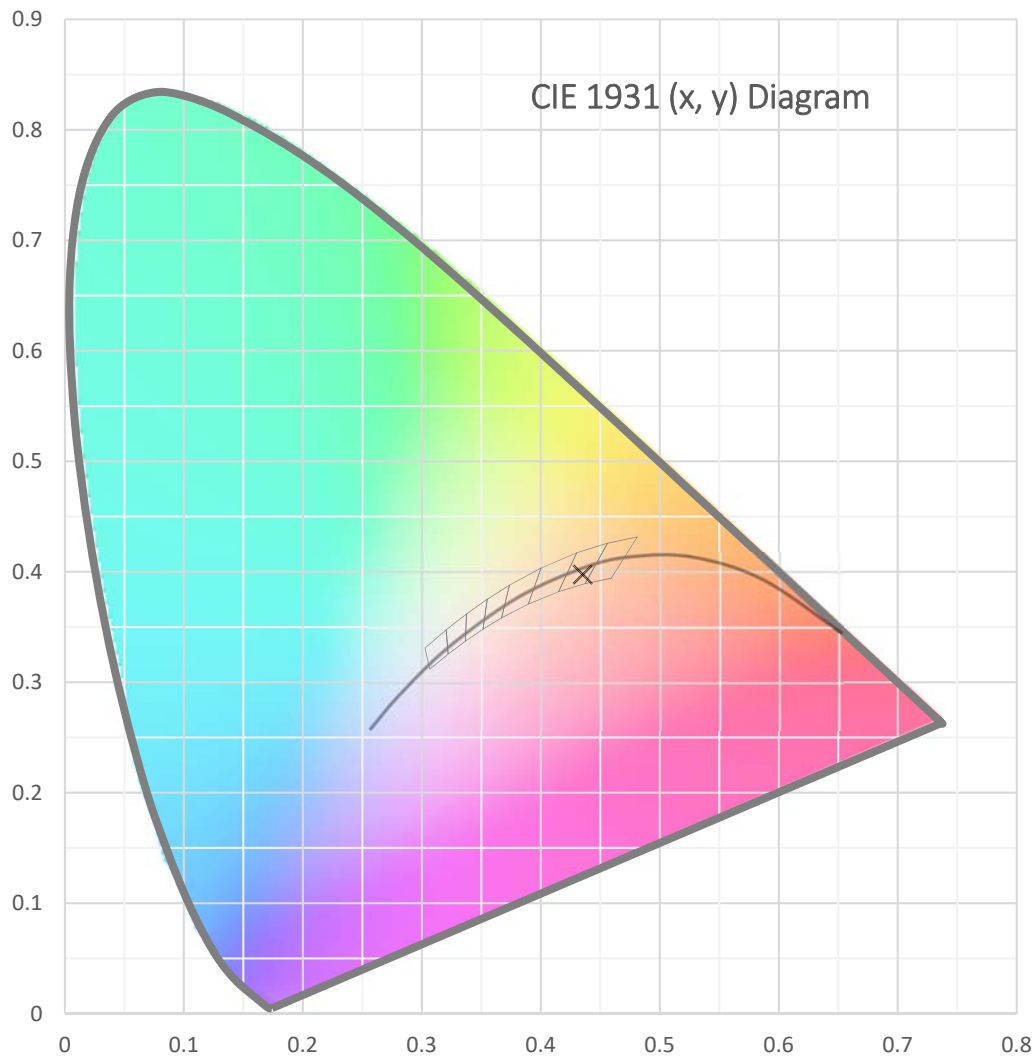
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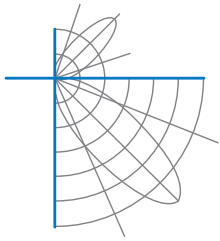
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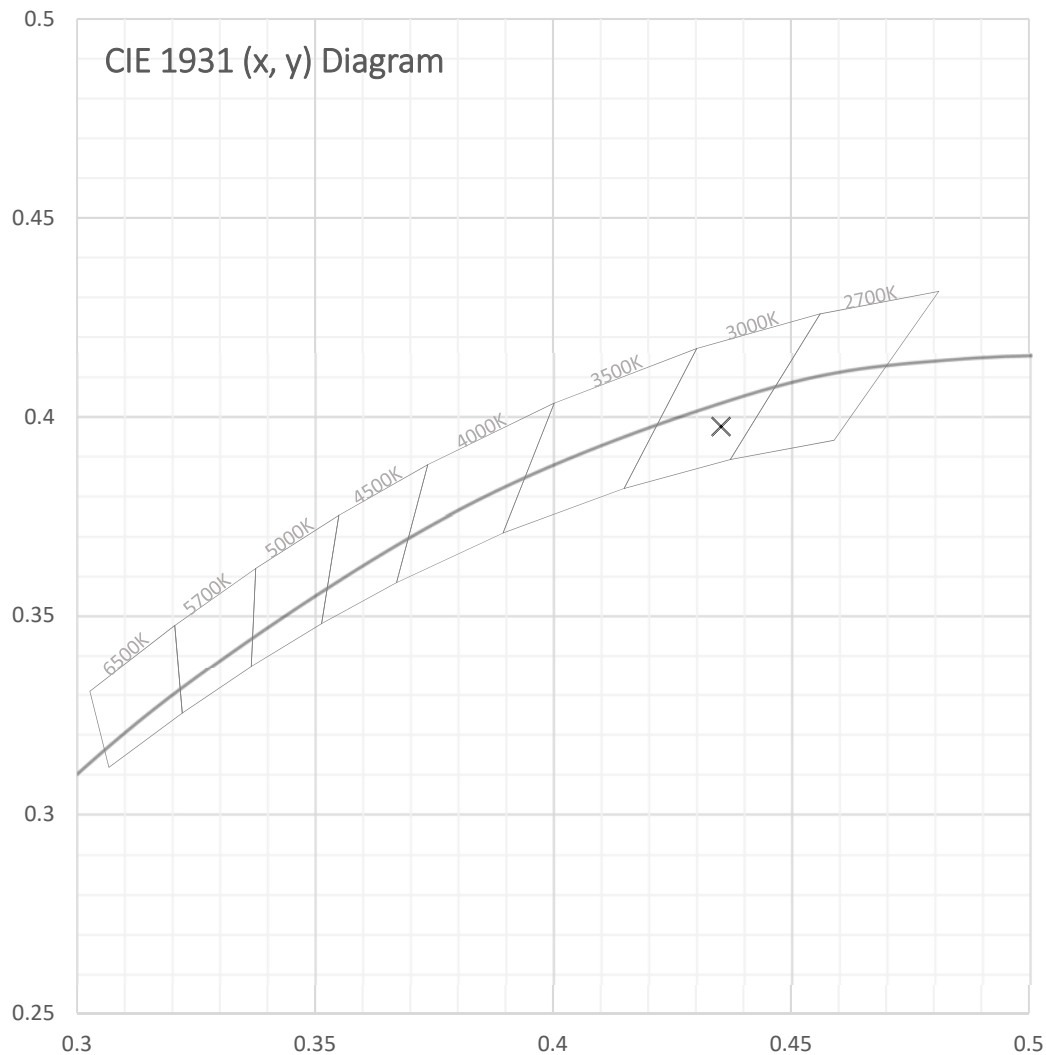
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Spectral Data

Total Radiant Flux	3.326 W
Total Luminous Flux	930.0 Lm
Chromaticity CIE 1931 (x, y)	(0.4353, 0.3975)
Chromaticity CIE 1976 (u', v')	(0.2524, 0.5185)
Correlated Color Temperature (CCT)	2973 K
Color Rendering Index (Ra)	94
R1	95
R2	98
R3	98
R4	94
R5	94
R6	96
R7	92
R8	84
R9	65
R10	94
R11	94
R12	84
R13	96
R14	99
Distance from Planckian Locus (Duv)	-0.0024
Scotopic/Photopic Ratio *	1.429

Electrical Data

Voltage	120.0 Vac
Current	0.1295 A
Power	15.34 W
Frequency	60.00 Hz
Power Factor	0.988
Current THD	8.4 %



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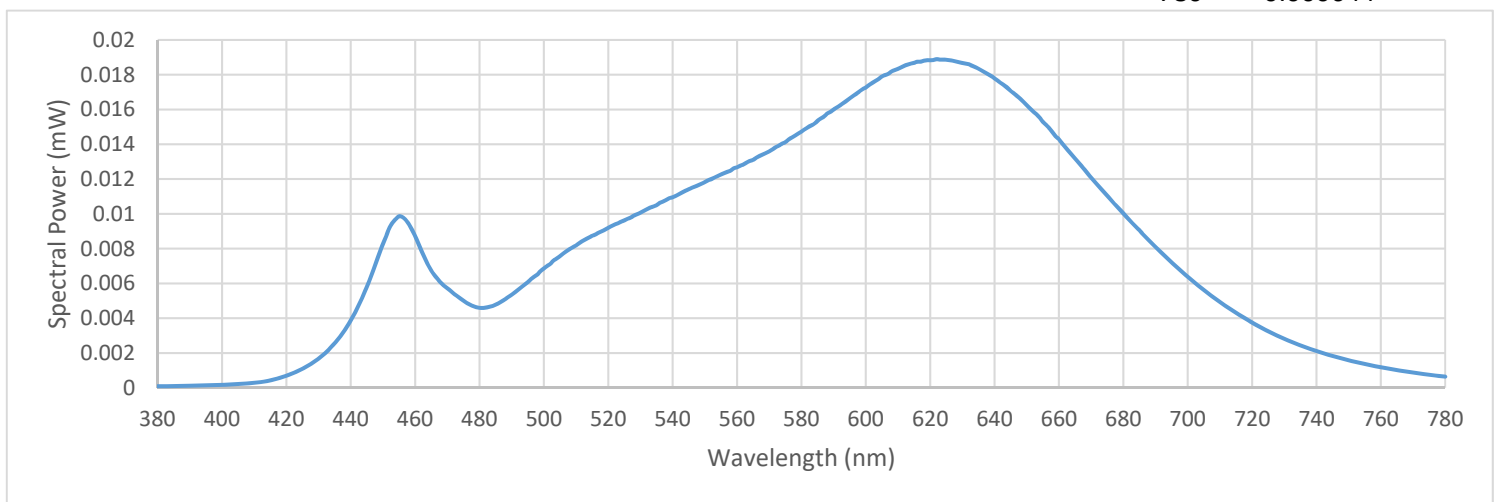
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Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000090	480	0.004596	580	0.014731	680	0.010026
385	0.000097	485	0.004777	585	0.015352	685	0.009059
390	0.000115	490	0.005364	590	0.015998	690	0.008103
395	0.000140	495	0.006074	595	0.016647	695	0.007196
400	0.000173	500	0.006862	600	0.017263	700	0.006392
405	0.000211	505	0.007573	605	0.017900	705	0.005631
410	0.000280	510	0.008188	610	0.018338	710	0.004929
415	0.000424	515	0.008740	615	0.018683	715	0.004317
420	0.000692	520	0.009203	620	0.018831	720	0.003750
425	0.001092	525	0.009624	625	0.018851	725	0.003251
430	0.001684	530	0.010064	630	0.018668	730	0.002821
435	0.002557	535	0.010501	635	0.018348	735	0.002434
440	0.003883	540	0.010949	640	0.017786	740	0.002108
445	0.005806	545	0.011413	645	0.017062	745	0.001828
450	0.008258	550	0.011825	650	0.016240	750	0.001579
455	0.009862	555	0.012267	655	0.015295	755	0.001366
460	0.008724	560	0.012677	660	0.014293	760	0.001183
465	0.006745	565	0.013105	665	0.013173	765	0.001015
470	0.005718	570	0.013595	670	0.012074	770	0.000873
475	0.004995	575	0.014121	675	0.011045	775	0.000750
						780	0.000644





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36 white LEDs, one Harvard Engineering LER7-284x17-930-36S-I LED board

One L.T.F. DA12W350C1834D010-0014 dimmable LED driver

Test Equipment Configuration:	LightLab International Allentown 2m Integrating Sphere Measurements acquired using a Labsphere CDS 2600 spectroradiometer Testing was performed using 4 π geometry
Test Temperature:	24.8 °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.