



Report of Test

LLIA000802-003A

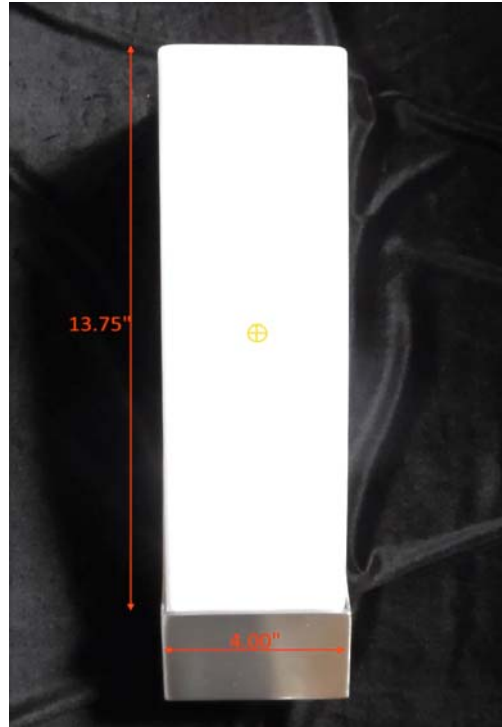
Catalog Number: 3-570-24 Apollo Sconce

Wall mounted, formed steel housing, formed white enamel steel LED tray, translucent white plastic enclosure with perforated white enamel steel upper diffuser.

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

One LTF DA12W350C1834D010-0000 dimming LED driver.

120.0Vac, 60.00Hz, 0.1120A, 13.12W, 0.976PF, 8.4%THD(i)



Performance Summary

Total Light Output	809 lm
Luminaire Power	13.1 W
Luminous Efficacy	61.8 lm/W

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



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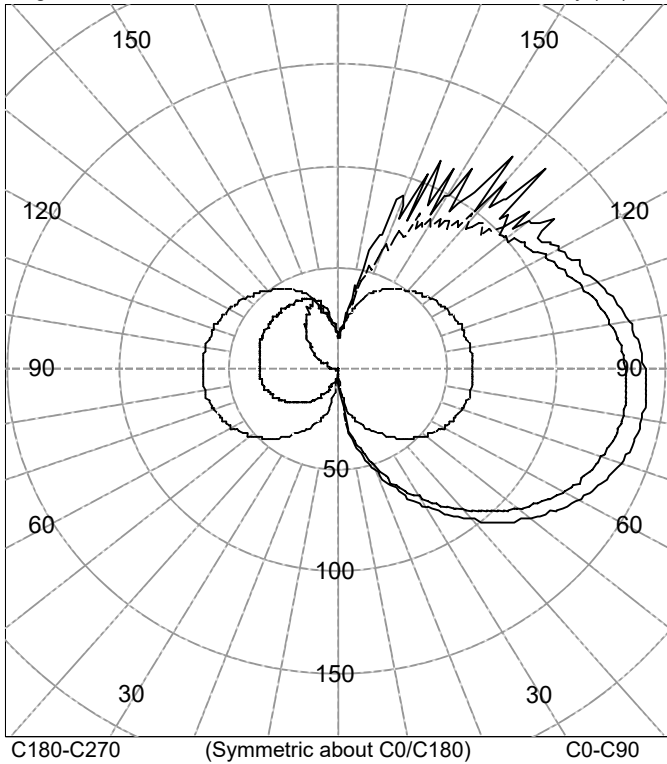
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Legend: C0/C180-Solid, C45/C225-Dashed, C90/C270-Grey (cd)



INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	0	0	0	0	0	
5.0	6	6	5	4	3	1
10.0	33	33	31	25	17	
15.0	45	46	42	34	24	7
20.0	56	57	53	42	28	
25.0	67	69	63	50	32	17
30.0	77	80	73	57	37	
35.0	88	90	82	64	41	30
40.0	97	100	91	71	44	
45.0	106	110	99	77	48	44
50.0	114	118	107	83	51	
55.0	122	126	114	88	54	59
60.0	128	132	120	92	56	
65.0	133	137	124	95	58	71
70.0	137	142	128	98	60	
75.0	139	144	131	99	61	80
80.0	141	146	132	100	61	
85.0	141	146	132	100	61	84
90.0	140	145	131	99	61	

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	25	N / A	3.0
0-40	54	N / A	6.7
0-60	158	N / A	19.5
0-90	393	N / A	48.5
40-90	338	N / A	41.8
60-90	235	N / A	29.0
90-180	417	N / A	51.5
0-180	809	N / A	100.0

Total Light Output = 809 lm

Signed:

Authorized Signatory

Date of test

8-Sep-2017

Date of report

24-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	6	6	5	4	3
7.5	22	22	19	15	11
10.0	33	33	31	25	17
12.5	39	40	37	31	22
15.0	45	46	42	34	24
17.5	50	52	47	38	26
20.0	56	57	53	42	28
22.5	61	63	58	46	30
25.0	67	69	63	50	32
27.5	72	74	68	54	35
30.0	77	80	73	57	37
32.5	83	85	78	61	39
35.0	88	90	82	64	41
37.5	92	95	87	68	43
40.0	97	100	91	71	44
42.5	102	105	95	74	46
45.0	106	110	99	77	48
47.5	110	114	103	80	50
50.0	114	118	107	83	51
52.5	118	122	111	85	53
55.0	122	126	114	88	54
57.5	125	129	117	90	55
60.0	128	132	120	92	56
62.5	130	135	122	94	57
65.0	133	137	124	95	58
67.5	135	140	126	96	59
70.0	137	142	128	98	60
72.5	138	143	129	99	60
75.0	139	144	131	99	61
77.5	140	145	131	100	61
80.0	141	146	132	100	61
82.5	141	146	132	100	61
85.0	141	146	132	100	61
87.5	141	146	132	100	62
90.0	140	145	131	99	61



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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	140	145	131	99	61
92.5	139	144	130	99	62
95.0	138	143	129	98	61
97.5	136	142	128	97	61
100.0	134	140	126	95	61
102.5	133	138	124	94	61
105.0	130	136	123	93	60
107.5	128	133	120	91	60
110.0	125	131	118	90	60
112.5	123	128	116	88	59
115.0	121	126	114	86	59
117.5	118	124	111	84	58
120.0	117	122	109	82	57
122.5	115	119	107	81	57
125.0	111	130	104	79	56
127.5	114	117	105	77	55
130.0	113	120	100	73	54
132.5	114	112	100	72	53
135.0	105	109	98	69	52
137.5	110	115	91	69	51
140.0	119	106	90	64	50
142.5	118	111	97	63	49
145.0	104	91	89	61	48
147.5	99	100	86	57	47
150.0	98	115	85	57	45
152.5	106	95	76	54	44
155.0	113	78	72	49	42
157.5	104	89	75	46	40
160.0	85	77	65	42	38
162.5	71	74	64	40	35
165.0	63	60	47	35	32
167.5	61	51	39	29	29
170.0	35	35	34	26	26
172.5	25	29	23	22	23
175.0	18	19	19	19	20
177.5	15	16	16	17	18
180.0	17	17	17	17	17



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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	3	3	2	1	0
7.5	11	7	4	2	0
10.0	17	11	6	2	0
12.5	22	13	7	3	0
15.0	24	14	8	3	0
17.5	26	15	9	4	0
20.0	28	16	11	5	0
22.5	30	18	12	5	1
25.0	32	20	13	6	1
27.5	35	22	15	7	1
30.0	37	24	16	7	1
32.5	39	25	17	8	1
35.0	41	27	19	9	1
37.5	43	29	20	9	1
40.0	44	31	21	10	1
42.5	46	33	23	10	1
45.0	48	35	24	11	1
47.5	50	37	25	11	1
50.0	51	38	26	12	1
52.5	53	40	27	12	1
55.0	54	41	28	13	1
57.5	55	43	29	13	1
60.0	56	44	30	14	1
62.5	57	45	31	14	1
65.0	58	46	32	15	1
67.5	59	48	33	15	1
70.0	60	49	33	15	1
72.5	60	49	34	15	1
75.0	61	50	34	16	1
77.5	61	51	35	16	1
80.0	61	51	35	16	1
82.5	61	52	36	16	1
85.0	61	52	36	16	1
87.5	62	52	36	16	1
90.0	61	52	36	16	1



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120.0Vac, 60.00Hz, 0.1120A, 13.12W, 0.976PF, 8.4%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
90.0	61	52	36	16	1
92.5	62	53	36	16	2
95.0	61	53	36	17	2
97.5	61	53	37	17	3
100.0	61	53	37	18	3
102.5	61	52	37	18	4
105.0	60	52	37	19	4
107.5	60	52	37	19	6
110.0	60	52	38	20	6
112.5	59	52	38	20	7
115.0	59	52	38	21	9
117.5	58	51	38	21	10
120.0	57	51	38	22	10
122.5	57	51	38	23	12
125.0	56	50	38	24	12
127.5	55	50	38	24	15
130.0	54	49	38	25	16
132.5	53	49	38	26	17
135.0	52	48	38	27	18
137.5	51	47	38	28	21
140.0	50	47	38	28	21
142.5	49	46	38	30	22
145.0	48	45	38	30	27
147.5	47	44	38	31	25
150.0	45	44	38	32	28
152.5	44	43	38	35	28
155.0	42	42	38	35	34
157.5	40	40	37	35	33
160.0	38	39	37	36	33
162.5	35	36	36	33	33
165.0	32	34	34	32	30
167.5	29	31	32	31	29
170.0	26	28	29	29	28
172.5	23	24	25	26	26
175.0	20	21	21	21	22
177.5	18	18	18	18	19
180.0	17	17	17	17	17



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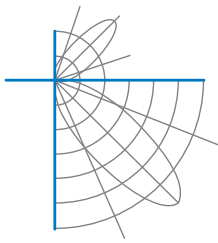
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Coefficients Of Utilization - Zonal Cavity Method																		
Effective Floor Cavity Reflectance 0.20																		
RC	80				70				50			30			10			0
	RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
0	107	107	107	107	98	98	98	98	83	83	83	68	68	68	55	55	55	49
1	92	86	80	74	84	78	73	68	64	60	57	52	49	46	40	38	36	30
2	82	72	63	56	74	65	58	52	53	48	43	42	38	34	32	29	26	21
3	73	61	52	45	66	56	48	41	45	39	34	36	31	27	27	23	20	15
4	66	53	44	36	60	48	40	33	39	32	27	31	26	21	23	19	16	12
5	60	47	37	30	54	42	34	27	34	28	22	27	22	18	20	16	13	9
6	55	41	32	25	50	38	29	23	31	24	19	24	19	15	18	14	11	7
7	51	37	28	21	46	34	25	20	27	21	16	21	16	12	16	12	9	6
8	47	33	24	18	42	30	22	17	25	18	14	19	14	11	15	11	8	5
9	43	30	22	16	39	27	20	15	22	16	12	18	13	9	13	9	7	4
10	40	27	19	14	37	25	18	13	20	15	10	16	11	8	12	8	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.



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120.0Vac, 60.00Hz, 0.1120A, 13.12W, 0.976PF, 8.4%THD(i)

Test Distance 9.5 m
Test Temperature 25.0 °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

LLIA000802-003B

Integrating Sphere Report

Catalog Number: 3-570-24 Apollo Sconce

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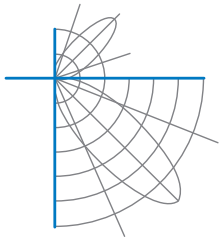
Performance Summary

Voltage	120.0 Vac
Current	0.1126 A
Power	13.21 W
Frequency	60.00 Hz
Power Factor	0.977
Current THD	8.3 %
Total Luminous Flux	814.5 lm
Efficacy	61.7 lm/W
Chromaticity (x,y)	(0.4301, 0.3958)
(u',v')	(0.2498, 0.5171)
Duv	-0.0024
CCT	3049 K
CRI (Ra)	95
R9	73

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

Test date: 09/08/2017

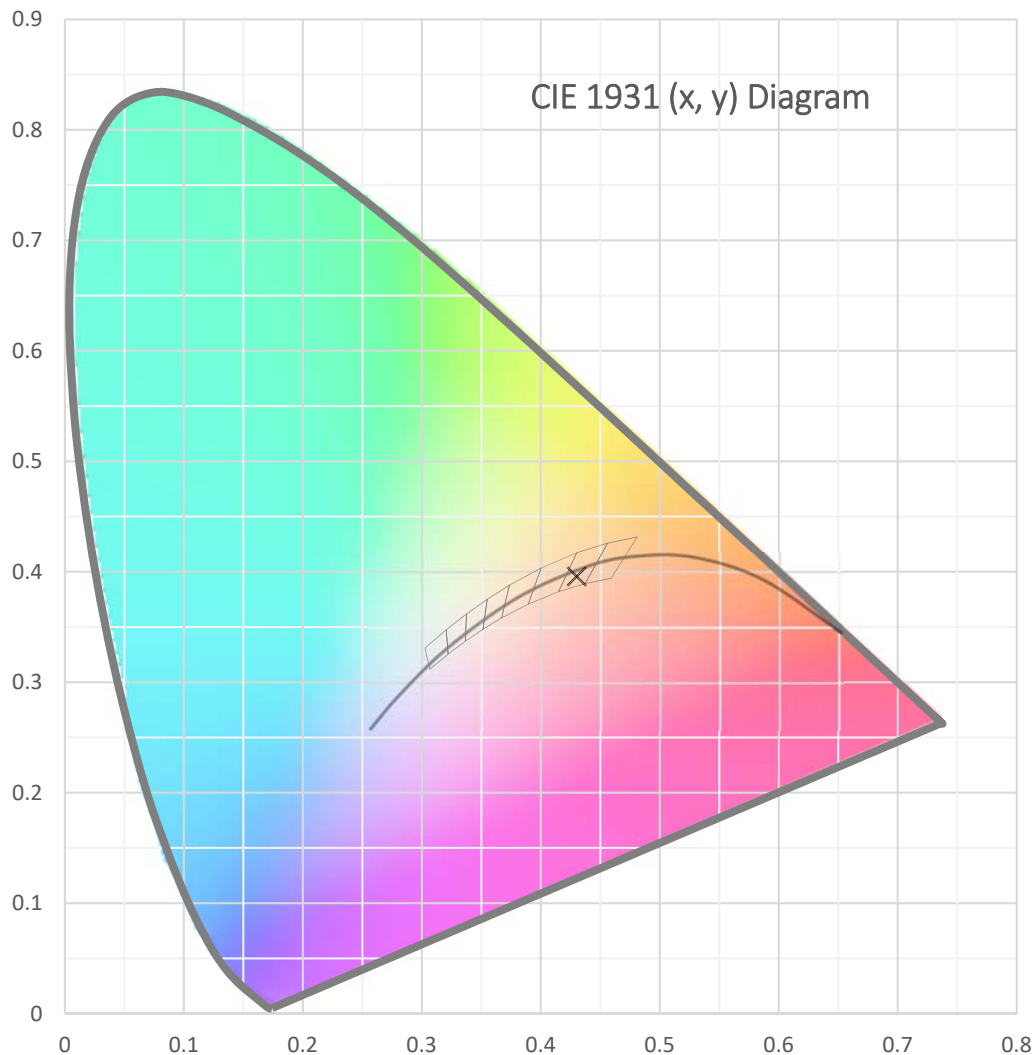
Report date: 09/22/2017

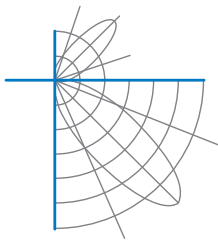


Test Report Number: LLIA000802-003B

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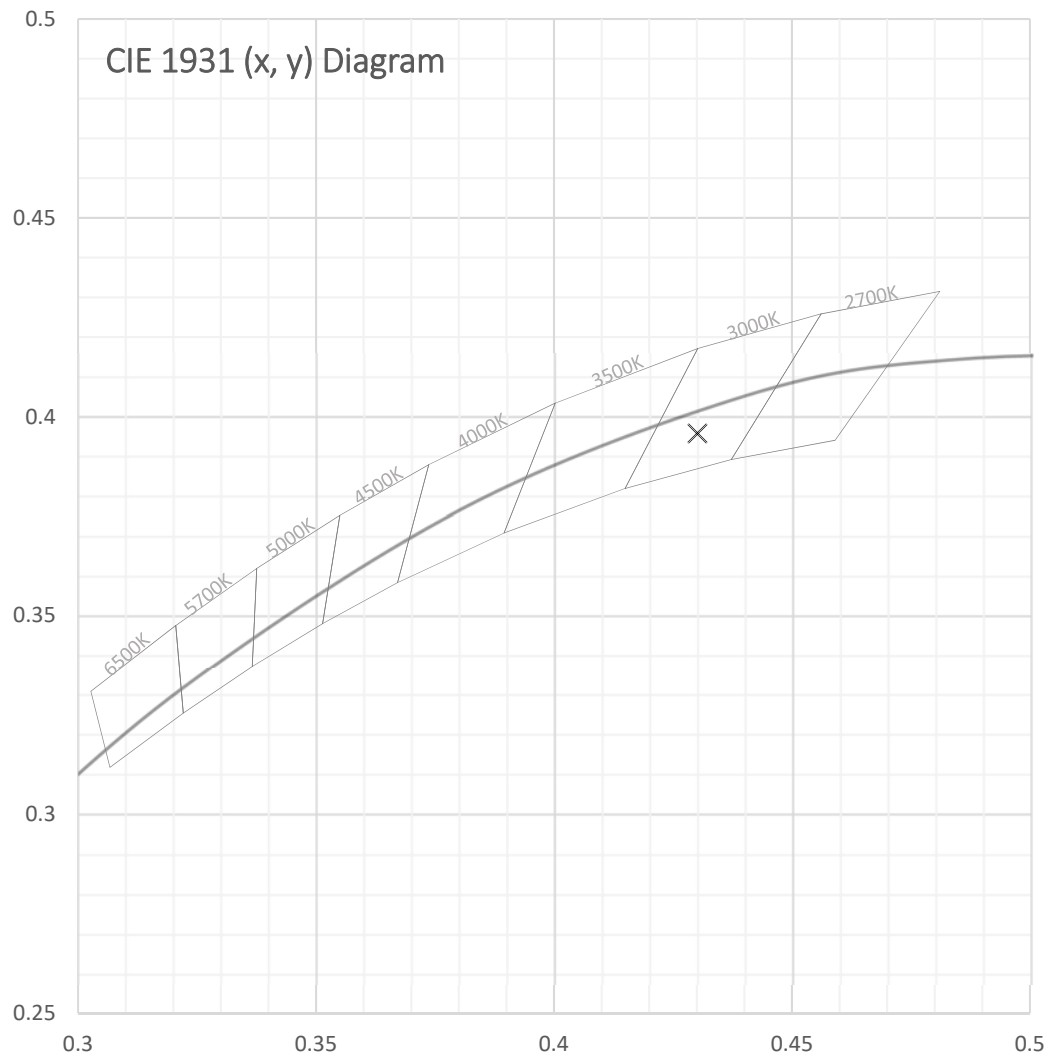




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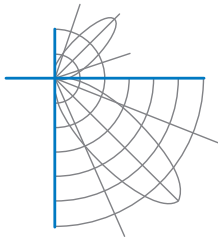
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Spectral Data

Total Radiant Flux	2.964 W
Total Luminous Flux	814.5 Lm
Chromaticity CIE 1931 (x, y)	(0.4301, 0.3958)
Chromaticity CIE 1976 (u', v')	(0.2498, 0.5171)
Correlated Color Temperature (CCT)	3049 K
Color Rendering Index (Ra)	95
R1	96
R2	97
R3	97
R4	95
R5	95
R6	96
R7	94
R8	88
R9	73
R10	93
R11	95
R12	84
R13	96
R14	98
Distance from Planckian Locus (Duv)	-0.0024
Scotopic/Photopic Ratio *	1.456

Electrical Data

Voltage	120.0 Vac
Current	0.1126 A
Power	13.21 W
Frequency	60.00 Hz
Power Factor	0.977
Current THD	8.3 %



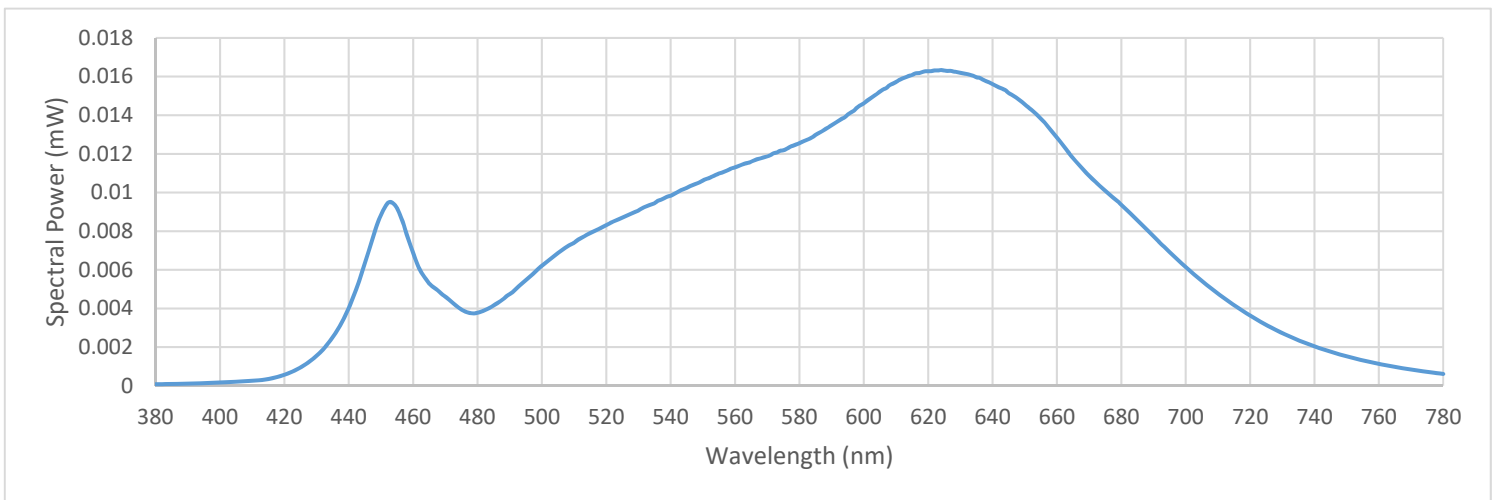
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Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000081	480	0.003781	580	0.012553	680	0.009362
385	0.000088	485	0.004161	585	0.012981	685	0.008575
390	0.000109	490	0.004746	590	0.013492	690	0.007736
395	0.000135	495	0.005452	595	0.014033	695	0.006904
400	0.000172	500	0.006211	600	0.014612	700	0.006151
405	0.000210	505	0.006863	605	0.015226	705	0.005430
410	0.000255	510	0.007402	610	0.015718	710	0.004757
415	0.000349	515	0.007912	615	0.016081	715	0.004178
420	0.000570	520	0.008317	620	0.016278	720	0.003630
425	0.000950	525	0.008700	625	0.016313	725	0.003146
430	0.001562	530	0.009071	630	0.016196	730	0.002730
435	0.002518	535	0.009451	635	0.015963	735	0.002356
440	0.004027	540	0.009833	640	0.015610	740	0.002038
445	0.006341	545	0.010244	645	0.015148	745	0.001763
450	0.008841	550	0.010618	650	0.014557	750	0.001522
455	0.009193	555	0.010982	655	0.013807	755	0.001314
460	0.006882	560	0.011300	660	0.012858	760	0.001136
465	0.005289	565	0.011584	665	0.011780	765	0.000979
470	0.004612	570	0.011864	670	0.010852	770	0.000836
475	0.003937	575	0.012185	675	0.010093	775	0.000716
						780	0.000615





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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 4 π geometry

Test Temperature: 24.9 °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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