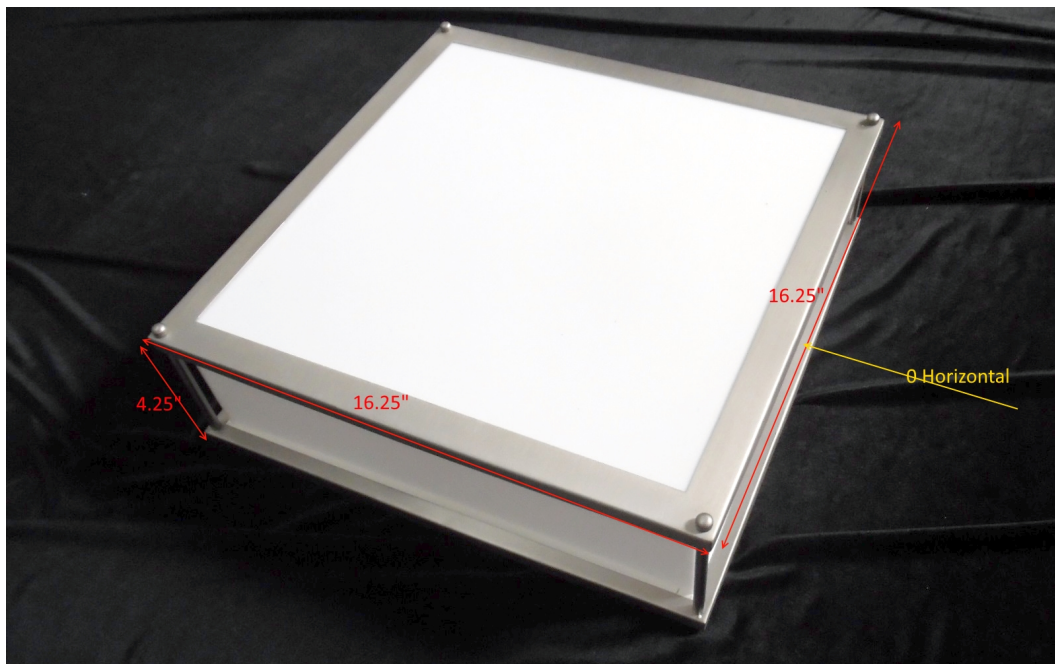


Report of Test

LLIA000802-040A

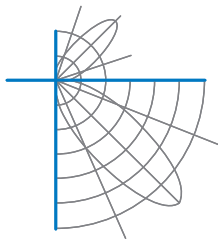
Catalog Number: 3-683-24 Modulo Ceiling Mount
Ceiling mounted, formed steel housing with white enamel steel reflector,
translucent white plastic enclosure with decorative trim.
60 white LEDs, Two Harvard Engineering LEDENG-152-930-NL LED boards with 30 LEDs each
Two LTF DA12W350C1834D010-0014 dimming LED drivers.
120.0Vac, 60.00Hz, 0.2237A, 26.16W, 0.974PF, 9.3%THD(i)



Performance Summary

Total Light Output	1742 lm
Luminaire Power	26.2 W
Luminous Efficacy	66.5 lm/W

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



Test Report No. LLIA000802-040A

Catalog Number: 3-683-24 Modulo Ceiling Mount

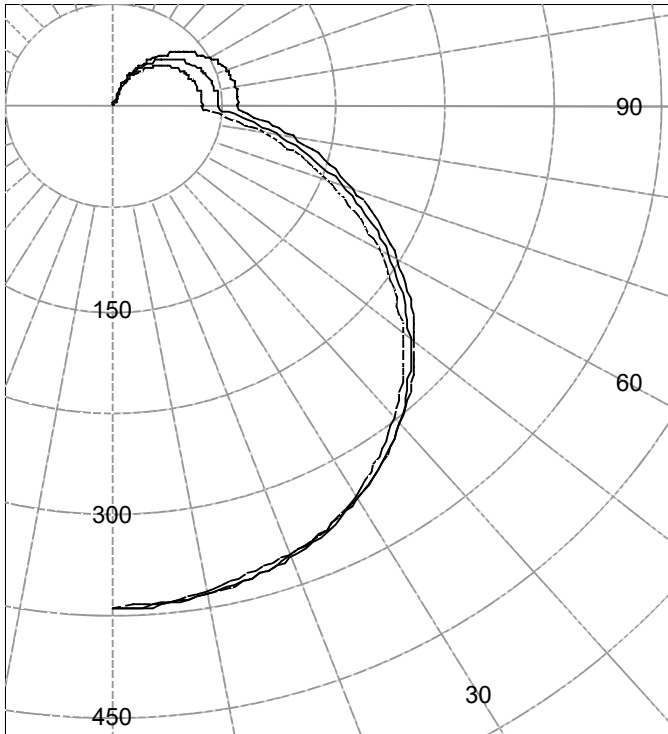
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120.0Vac, 60.00Hz, 0.2237A, 26.16W, 0.974PF, 9.3%THD(i)

Legend: C0-Solid, C45-Dashed, C90-Grey (cd)



(Two plane symmetry) C0-C90

AVERAGE LUMINANCE (cd / m²)

Gamma	C0	C45	C90
45.0	1926	1790	1887
55.0	1842	1694	1785
65.0	1737	1578	1655
75.0	1616	1446	1498
85.0	1502	1313	1318

INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	369	369	369	369	369	
5.0	368	367	367	367	369	35
10.0	364	363	363	363	364	
15.0	360	358	357	358	360	101
20.0	354	352	351	351	353	
25.0	345	343	343	341	343	158
30.0	334	332	332	330	330	
35.0	320	319	320	316	316	199
40.0	303	304	304	300	298	
45.0	284	286	287	282	278	219
50.0	263	266	268	261	257	
55.0	240	244	246	239	233	216
60.0	216	221	223	215	208	
65.0	190	196	199	190	181	191
70.0	164	171	174	165	154	
75.0	137	146	148	139	127	149
80.0	112	121	123	114	101	
85.0	87	97	100	91	77	102
90.0	71	81	84	75	60	

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	294	N / A	16.9
0-40	494	N / A	28.3
0-60	929	N / A	53.3
0-90	1371	N / A	78.7
40-90	878	N / A	50.4
60-90	442	N / A	25.4
90-180	371	N / A	21.3
0-180	1742	N / A	100.0

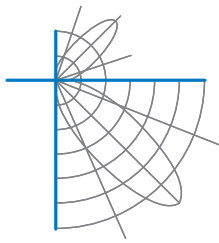
Total Light Output = 1,742 lm

Signed:

Authorized Signatory

Spacing Criterion: 0-180 1.4
Spacing Criterion: 90-270 1.3

Date of test 14-Aug-2017
Date of report 15-Aug-2017



Test Report No. LLIA000802-040A

Catalog Number: 3-683-24 Modulo Ceiling Mount

Ceiling mounted, formed steel housing with white enamel steel reflector,
translucent white plastic enclosure with decorative trim.

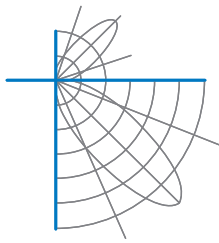
60 white LEDs, Two Harvard Engineering LEDENG-152-930-NL LED boards with 30 LEDs each

Two LTF DA12W350C1834D010-0014 dimming LED drivers.

120.0Vac, 60.00Hz, 0.2237A, 26.16W, 0.974PF, 9.3%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	369	369	369	369	369
2.5	369	368	368	368	370
5.0	368	367	367	367	369
7.5	366	365	365	366	367
10.0	364	363	363	363	364
12.5	362	361	360	361	362
15.0	360	358	357	358	360
17.5	357	355	354	355	356
20.0	354	352	351	351	353
22.5	350	348	347	346	348
25.0	345	343	343	341	343
27.5	340	338	338	336	337
30.0	334	332	332	330	330
32.5	327	326	326	323	323
35.0	320	319	320	316	316
37.5	312	312	312	308	307
40.0	303	304	304	300	298
42.5	294	295	296	291	289
45.0	284	286	287	282	278
47.5	274	276	278	272	268
50.0	263	266	268	261	257
52.5	252	255	257	251	245
55.0	240	244	246	239	233
57.5	228	233	235	228	220
60.0	216	221	223	215	208
62.5	203	209	211	203	194
65.0	190	196	199	190	181
67.5	177	184	186	178	168
70.0	164	171	174	165	154
72.5	151	158	161	152	141
75.0	137	146	148	139	127
77.5	124	133	136	127	114
80.0	112	121	123	114	101
82.5	99	109	112	102	89
85.0	87	97	100	91	77
87.5	76	87	90	80	66
90.0	71	81	84	75	60



Test Report No. LLIA000802-040A

Catalog Number: 3-683-24 Modulo Ceiling Mount

Ceiling mounted, formed steel housing with white enamel steel reflector,
translucent white plastic enclosure with decorative trim.

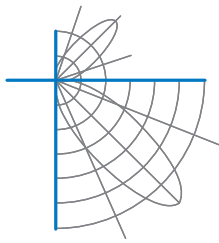
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Two LTF DA12W350C1834D010-0014 dimming LED drivers.

120.0Vac, 60.00Hz, 0.2237A, 26.16W, 0.974PF, 9.3%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	71	81	84	75	60
92.5	71	82	85	75	60
95.0	71	82	85	75	60
97.5	71	82	85	75	60
100.0	70	81	84	75	59
102.5	70	81	84	74	59
105.0	69	80	83	73	59
107.5	68	79	82	72	58
110.0	68	78	81	71	57
112.5	67	76	80	70	57
115.0	66	75	78	69	56
117.5	64	73	76	67	55
120.0	63	71	74	65	54
122.5	61	68	71	63	53
125.0	59	66	69	61	51
127.5	57	63	67	59	49
130.0	55	61	63	56	47
132.5	53	58	60	53	45
135.0	50	55	57	51	43
137.5	48	52	53	48	41
140.0	45	48	50	44	39
142.5	42	45	46	41	36
145.0	39	41	43	38	34
147.5	36	38	39	35	31
150.0	33	34	35	31	29
152.5	30	30	31	28	26
155.0	27	26	27	24	23
157.5	24	23	24	21	21
160.0	20	20	20	18	18
162.5	17	16	15	15	14
165.0	13	13	12	12	12
167.5	10	10	8	9	9
170.0	7	7	7	6	6
172.5	5	5	5	5	5
175.0	4	4	5	4	4
177.5	3	3	3	3	3
180.0	2	2	2	2	2



Test Number: LLIA000802-040A

Catalog Number: 3-683-24 Modulo Ceiling Mount

Ceiling mounted, formed steel housing with white enamel steel reflector,
translucent white plastic enclosure with decorative trim.

60 white LEDs, Two Harvard Engineering LEDENG-152-930-NL LED boards with 30 LEDs each

Two LTF DA12W350C1834D010-0014 dimming LED drivers.

120.0Vac, 60.00Hz, 0.2237A, 26.16W, 0.974PF, 9.3%THD(i)

Coefficients Of Utilization - Zonal Cavity Method

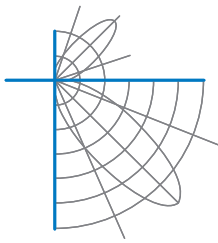
Effective Floor Cavity Reflectance 0.20

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	114	114	114	114	109	109	109	109	99	99	99	91	91	91	82	82	82	79
1	102	96	91	86	97	92	87	83	83	80	76	76	73	70	69	67	64	61
2	91	82	75	68	87	79	72	66	71	66	61	65	60	57	59	55	52	49
3	83	71	63	56	78	68	60	54	62	56	50	57	51	47	51	47	43	40
4	75	63	54	46	71	60	52	45	55	48	42	50	44	39	45	40	36	34
5	69	56	46	39	65	53	45	38	49	41	36	44	38	34	41	35	31	29
6	64	50	41	34	60	48	39	33	44	36	31	40	34	29	37	31	27	25
7	59	45	36	30	56	43	35	29	40	32	27	36	30	26	33	28	24	22
8	54	41	32	26	52	39	31	25	36	29	24	33	27	23	30	25	21	19
9	51	37	29	23	48	36	28	23	33	26	22	30	25	20	28	23	19	17
10	47	34	26	21	45	33	25	20	30	24	19	28	22	18	26	21	17	15

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	10.2	8.07	7.99
8.0	5.8	10.76	10.65
10.0	3.7	13.45	13.32
12.0	2.6	16.14	15.98
14.0	1.9	18.83	18.64
16.0	1.4	21.52	21.31



Test Report No. LLIA000802-040A

Catalog Number: 3-683-24 Modulo Ceiling Mount

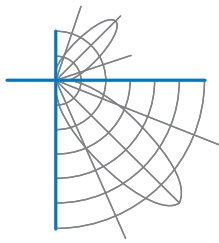
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Two LTF DA12W350C1834D010-0014 dimming LED drivers.

120.0Vac, 60.00Hz, 0.2237A, 26.16W, 0.974PF, 9.3%THD(i)





Test Report No. LLIA000802-040A

Catalog Number: 3-683-24 Modulo Ceiling Mount

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120.0Vac, 60.00Hz, 0.2237A, 26.16W, 0.974PF, 9.3%THD(i)

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.

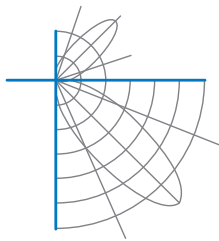
Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

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.



Report of Test

LLIA000802-040B

Integrating Sphere Report

Catalog Number: 3-683-24 Modulo Ceiling Mount

Ceiling mounted, formed steel housing with white enamel steel reflector,
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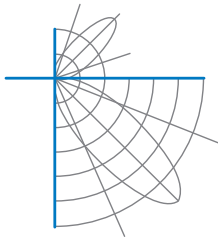
Performance Summary

Voltage	119.8 Vac
Current	0.2246 A
Power	26.26 W
Frequency	59.97 Hz
Power Factor	0.976
Current THD	9.1 %

Total Luminous Flux	1761.4 lm
Efficacy	67.1 lm/W
Chromaticity (x,y)	(0.4338, 0.4046)
(u',v')	(0.2483, 0.5211)
Duv	0.0007
CCT	3059 K
CRI (Ra)	92
R9	63

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

Test date: 08/14/2017
Report date: 08/15/2017



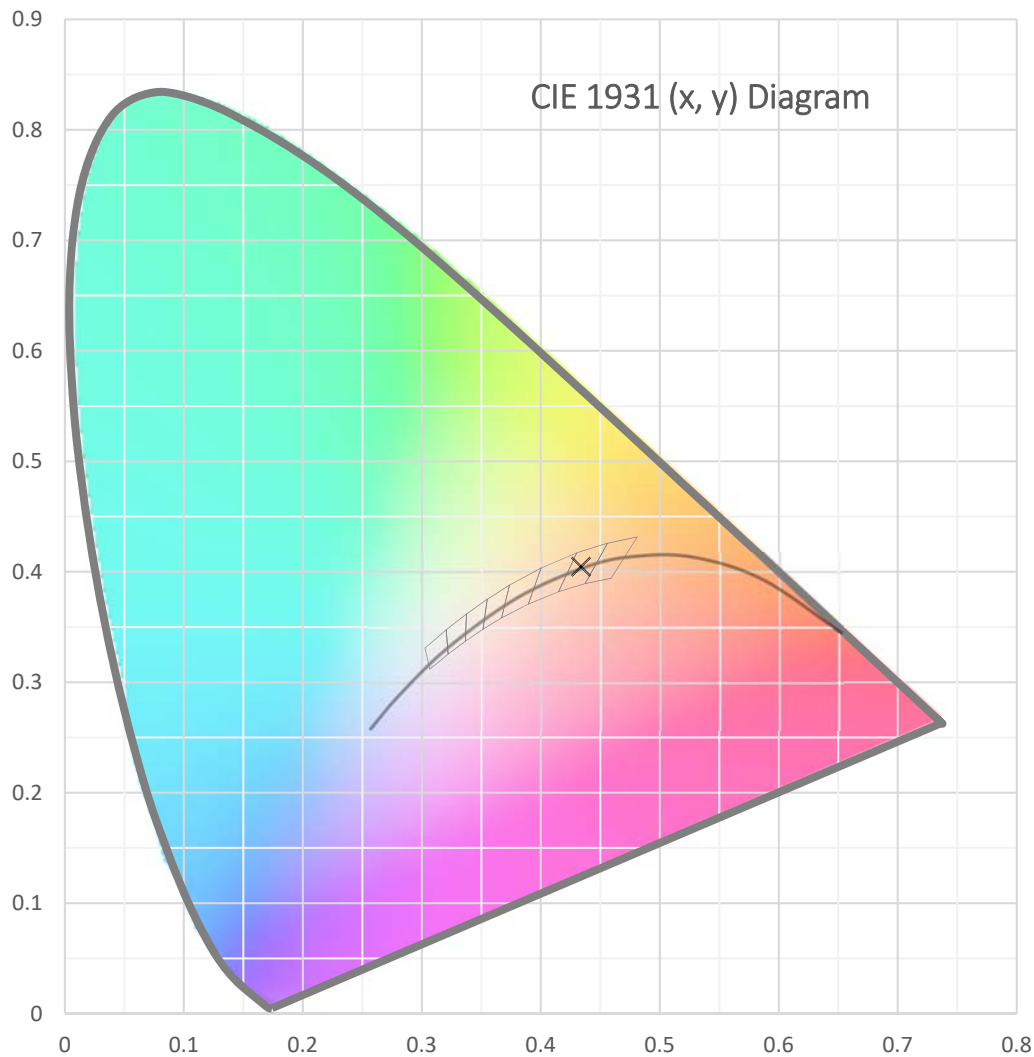
Test Report Number: LLIA000802-040B

Catalog Number: 3-683-24 Modulo Ceiling Mount

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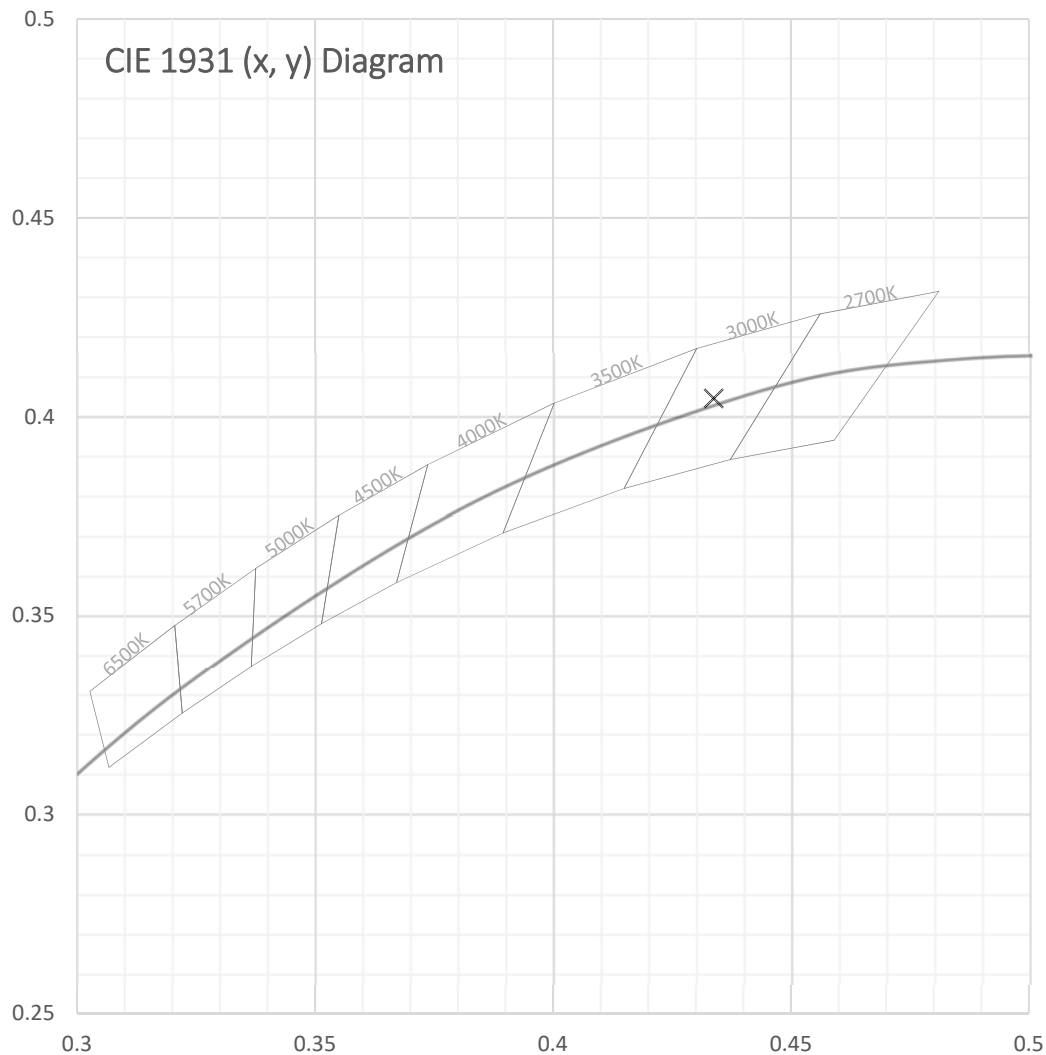
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Spectral Data

Total Radiant Flux	6.188 W
Total Luminous Flux	1761.4 Lm
Chromaticity CIE 1931 (x, y)	(0.4338, 0.4046)
Chromaticity CIE 1976 (u', v')	(0.2483, 0.5211)
Correlated Color Temperature (CCT)	3059 K
Color Rendering Index (Ra)	92
R1	93
R2	95
R3	95
R4	93
R5	92
R6	93
R7	94
R8	85
R9	63
R10	87
R11	93
R12	79
R13	93
R14	97
Distance from Planckian Locus (Duv)	0.0007
Scotopic/Photopic Ratio *	1.416

Electrical Data

Voltage	119.8 Vac
Current	0.2246 A
Power	26.26 W
Frequency	59.97 Hz
Power Factor	0.976
Current THD	9.1 %



Test Report Number: LLIA000802-040B

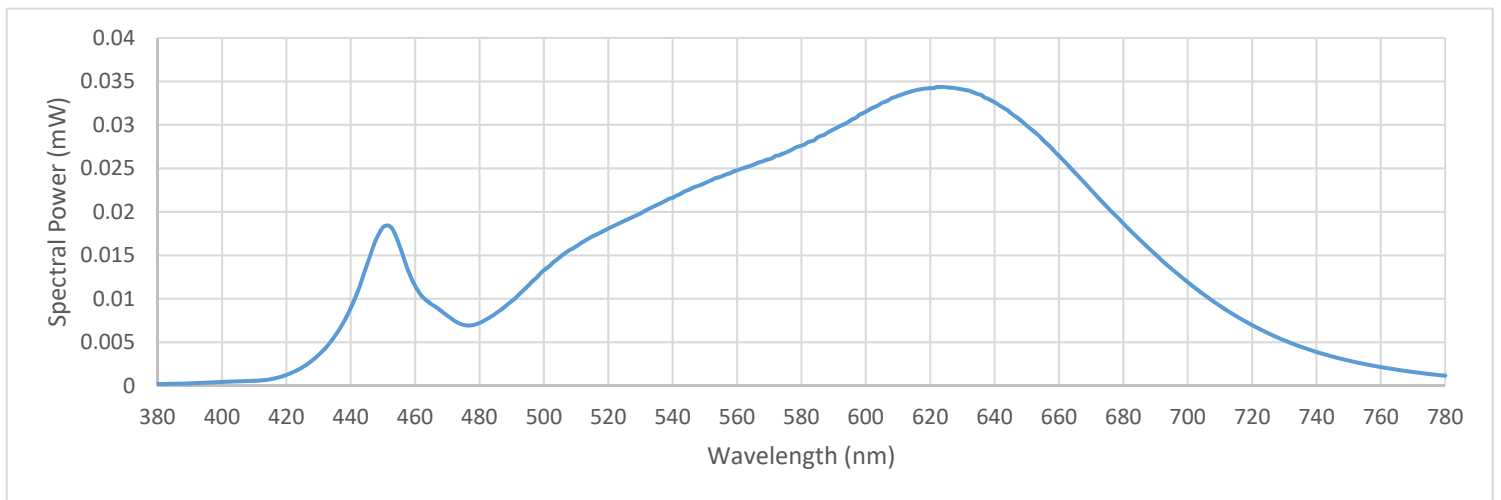
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Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000199	480	0.007231	580	0.027617	680	0.018651
385	0.000226	485	0.008305	585	0.028552	685	0.016851
390	0.000277	490	0.009733	590	0.029501	690	0.015109
395	0.000351	495	0.011461	595	0.030452	695	0.013421
400	0.000433	500	0.013279	600	0.031504	700	0.011932
405	0.000507	505	0.014792	605	0.032526	705	0.010514
410	0.000585	510	0.016022	610	0.033311	710	0.009176
415	0.000752	515	0.017170	615	0.033922	715	0.008034
420	0.001244	520	0.018070	620	0.034229	720	0.006968
425	0.002134	525	0.018958	625	0.034334	725	0.006030
430	0.003551	530	0.019810	630	0.034095	730	0.005226
435	0.005683	535	0.020748	635	0.033511	735	0.004496
440	0.008948	540	0.021611	640	0.032608	740	0.003881
445	0.013863	545	0.022528	645	0.031353	745	0.003355
450	0.018230	550	0.023299	650	0.029901	750	0.002894
455	0.016262	555	0.024042	655	0.028258	755	0.002488
460	0.011510	560	0.024762	660	0.026471	760	0.002156
465	0.009389	565	0.025394	665	0.024482	765	0.001850
470	0.008067	570	0.026052	670	0.022515	770	0.001579
475	0.006981	575	0.026783	675	0.020545	775	0.001354
						780	0.001159





Test Report Number: LLIA000802-040B

Catalog Number: 3-683-24 Modulo Ceiling Mount

Ceiling mounted, formed steel housing with white enamel steel reflector,
translucent white plastic enclosure with decorative trim.

60 white LEDs, Two Harvard Engineering LEDENG-152-930-NL LED boards with 30 LEDs each

Two LTF DA12W350C1834D010-0014 dimming LED drivers.

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:	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. 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.