



Report of Test

LLIA000824-005A

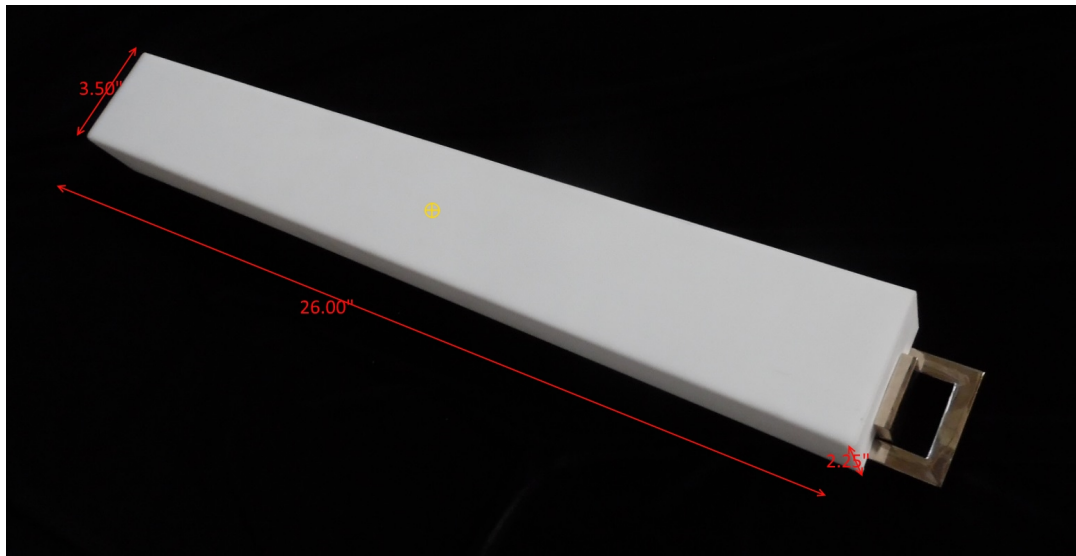
Catalog Number: 3-552 Axel Vanity

Wall mounted, formed steel housing and LED mounting plate, translucent white plastic enclosure.

72 white LEDs, one Harvard Engineering LEDENG-157-30-NL LED board

One L.T.F. DA12W350C1834D010-0000 dimmable LED driver

120.0Vac, 60.00Hz, 0.1233A, 14.49W, 0.980PF, 7.8%THD(i)



Performance Summary

Total Light Output	1297 lm
Luminaire Power	14.5 W
Luminous Efficacy	89.4 lm/W

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



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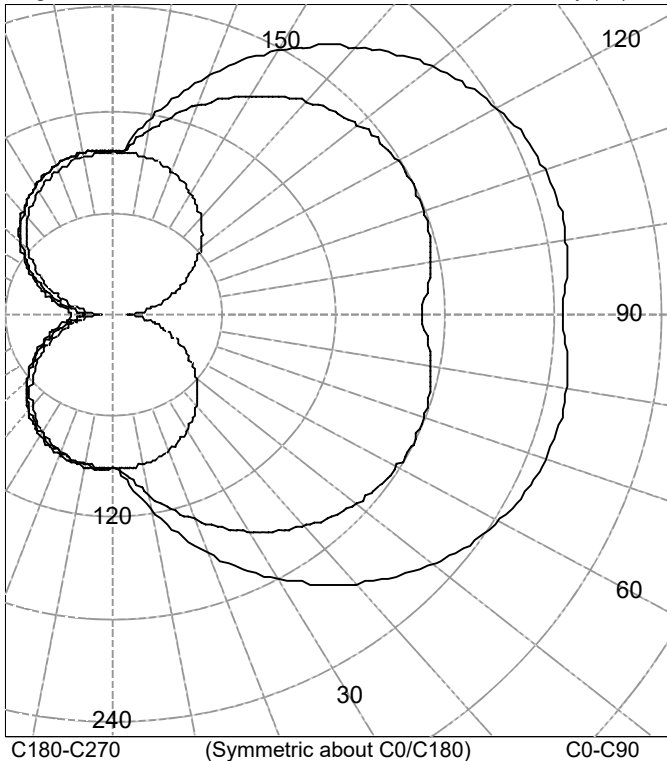
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Legend: C0/C180-Solid, C45/C225-Dashed, C90/C270-Grey (cd)



INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	91	91	91	91	91	
5.0	101	100	97	91	91	9
10.0	117	114	108	95	90	
15.0	134	129	119	100	88	29
20.0	150	144	129	104	86	
25.0	166	158	139	107	83	50
30.0	180	172	148	110	79	
35.0	194	184	156	112	75	70
40.0	207	195	163	113	70	
45.0	219	206	169	114	65	87
50.0	229	214	173	114	59	
55.0	237	221	177	112	52	98
60.0	243	227	179	110	46	
65.0	248	231	180	108	39	103
70.0	251	233	180	104	32	
75.0	252	233	178	100	25	102
80.0	251	232	176	96	18	
85.0	248	229	172	91	12	95
90.0	244	225	168	87	7	

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	88	N / A	6.8
0-40	158	N / A	12.2
0-60	343	N / A	26.4
0-90	642	N / A	49.5
40-90	484	N / A	37.4
60-90	300	N / A	23.1
90-180	654	N / A	50.5
0-180	1297	N / A	100.0

Total Light Output = 1,297 lm

Signed:

Authorized Signatory

Date of test 13-Sep-2017
Date of report 13-Sep-2017



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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	91	91	91	91	91
2.5	93	93	93	90	91
5.0	101	100	97	91	91
7.5	109	107	102	93	91
10.0	117	114	108	95	90
12.5	125	122	113	97	89
15.0	134	129	119	100	88
17.5	142	137	124	102	87
20.0	150	144	129	104	86
22.5	158	151	134	105	85
25.0	166	158	139	107	83
27.5	173	165	143	109	81
30.0	180	172	148	110	79
32.5	188	178	152	111	77
35.0	194	184	156	112	75
37.5	201	190	159	113	72
40.0	207	195	163	113	70
42.5	213	201	166	114	67
45.0	219	206	169	114	65
47.5	224	210	171	114	62
50.0	229	214	173	114	59
52.5	233	218	175	113	56
55.0	237	221	177	112	52
57.5	240	224	178	112	49
60.0	243	227	179	110	46
62.5	246	229	180	109	42
65.0	248	231	180	108	39
67.5	250	232	180	106	35
70.0	251	233	180	104	32
72.5	252	233	179	102	29
75.0	252	233	178	100	25
77.5	252	233	177	98	22
80.0	251	232	176	96	18
82.5	250	231	174	94	15
85.0	248	229	172	91	12
87.5	246	226	169	88	9
90.0	244	225	168	87	7



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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	244	225	168	87	7
92.5	246	226	169	88	9
95.0	248	229	172	91	12
97.5	250	230	174	94	16
100.0	251	231	176	96	19
102.5	251	232	177	98	23
105.0	251	233	178	101	26
107.5	251	233	179	103	30
110.0	250	232	180	105	34
112.5	249	231	180	106	37
115.0	247	230	180	108	41
117.5	245	228	180	109	45
120.0	242	226	179	111	48
122.5	239	224	178	112	52
125.0	236	221	177	113	55
127.5	232	217	176	113	58
130.0	227	214	174	114	62
132.5	223	210	172	114	65
135.0	218	205	170	114	68
137.5	212	201	167	114	71
140.0	206	196	164	114	73
142.5	200	190	161	114	76
145.0	194	184	157	113	79
147.5	187	178	153	112	81
150.0	180	172	149	111	83
152.5	173	166	145	110	85
155.0	165	159	140	109	87
157.5	157	152	135	108	89
160.0	150	145	131	106	90
162.5	142	138	126	104	92
165.0	134	131	121	102	93
167.5	126	124	116	100	94
170.0	118	116	110	98	94
172.5	110	109	105	96	95
175.0	103	102	100	94	95
177.5	96	96	97	94	96
180.0	96	96	96	96	96



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Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
0.0	91	91	91	91	91
2.5	91	90	92	91	90
5.0	91	90	92	91	90
7.5	91	89	92	91	90
10.0	90	89	91	90	90
12.5	89	89	91	90	89
15.0	88	88	90	89	88
17.5	87	87	89	88	87
20.0	86	86	88	87	86
22.5	85	84	87	86	85
25.0	83	83	85	84	84
27.5	81	81	84	83	82
30.0	79	79	82	81	80
32.5	77	77	80	79	79
35.0	75	75	78	77	77
37.5	72	73	75	75	74
40.0	70	71	73	73	72
42.5	67	68	70	70	70
45.0	65	65	68	67	67
47.5	62	63	65	65	65
50.0	59	60	62	62	62
52.5	56	57	59	59	59
55.0	52	54	56	56	56
57.5	49	51	52	53	53
60.0	46	47	49	50	50
62.5	42	44	46	47	48
65.0	39	41	43	44	45
67.5	35	37	40	41	42
70.0	32	34	36	38	39
72.5	29	31	33	35	36
75.0	25	27	30	33	34
77.5	22	24	27	30	31
80.0	18	21	24	27	28
82.5	15	18	21	24	26
85.0	12	15	19	22	24
87.5	9	13	17	21	23
90.0	7	12	17	21	23



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Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
90.0	7	12	17	21	23
92.5	9	13	18	21	23
95.0	12	16	20	23	24
97.5	16	19	23	25	27
100.0	19	23	26	28	30
102.5	23	26	29	31	33
105.0	26	29	32	35	36
107.5	30	33	36	38	39
110.0	34	36	39	41	42
112.5	37	40	42	44	45
115.0	41	44	46	48	48
117.5	45	47	49	51	52
120.0	48	51	53	54	55
122.5	52	54	56	57	58
125.0	55	57	59	61	61
127.5	58	61	63	64	64
130.0	62	64	66	67	67
132.5	65	67	69	70	70
135.0	68	70	72	73	73
137.5	71	73	75	75	76
140.0	73	76	77	78	78
142.5	76	78	80	80	81
145.0	79	81	82	83	83
147.5	81	83	84	85	85
150.0	83	85	86	87	87
152.5	85	87	88	89	89
155.0	87	88	90	90	90
157.5	89	90	92	92	92
160.0	90	91	93	93	93
162.5	92	92	94	94	95
165.0	93	93	95	95	96
167.5	94	94	96	96	96
170.0	94	95	97	96	97
172.5	95	95	97	97	97
175.0	95	95	97	97	97
177.5	96	95	97	96	97
180.0	96	96	96	96	96



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Coefficients Of Utilization - Zonal Cavity Method

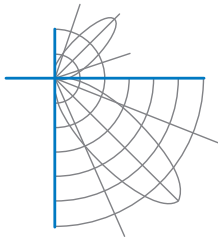
Effective Floor Cavity Reflectance 0.20

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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	94	88	83	78	86	81	76	72	67	64	61	55	52	50	43	42	40	34
2	84	75	67	61	77	69	62	56	57	52	47	46	42	39	36	33	31	26
3	76	65	56	49	69	59	52	45	49	43	38	40	35	31	31	28	25	20
4	69	56	47	40	63	52	44	37	43	37	32	35	30	26	27	23	20	16
5	63	50	41	34	57	46	38	31	38	31	26	31	26	22	24	20	17	14
6	58	44	35	29	52	41	33	27	34	27	23	27	22	19	21	18	15	11
7	53	40	31	25	48	36	29	23	30	24	20	25	20	16	19	15	13	10
8	49	36	27	22	45	33	25	20	28	21	17	22	18	14	18	14	11	9
9	46	33	24	19	42	30	23	18	25	19	15	20	16	12	16	12	10	7
10	43	30	22	17	39	27	20	16	23	17	13	19	14	11	15	11	9	7

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	2.5	12.43	7.76
8.0	1.4	16.57	10.35
10.0	0.9	20.72	12.93
12.0	0.6	24.86	15.52
14.0	0.5	29.01	18.11
16.0	0.4	33.15	20.69



Test Report No. LLIA000824-005A

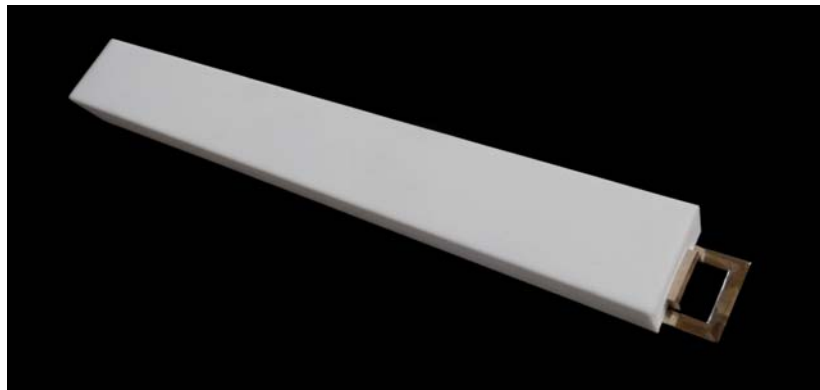
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Test Distance 9.5 m
Test Temperature 25.0 °C

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.

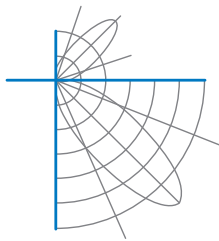
Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

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

LLIA000824-005B

Integrating Sphere Report

Catalog Number: 3-552 Axel Vanity

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Performance Summary

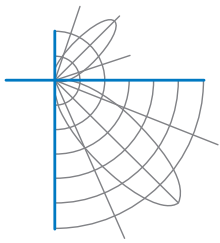
Voltage	120.0 Vac
Current	0.1238 A
Power	14.58 W
Frequency	60.00 Hz
Power Factor	0.982
Current THD	7.7 %

Total Luminous Flux	1313.2 lm
Efficacy	90.1 lm/W
Chromaticity (x,y)	(0.4384, 0.4063)
(u',v')	(0.2506, 0.5225)
Duv	0.0007
CCT	2993 K
CRI (Ra)	92
R9	61

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

Test date: 09/10/2017

Report date: 09/13/2017



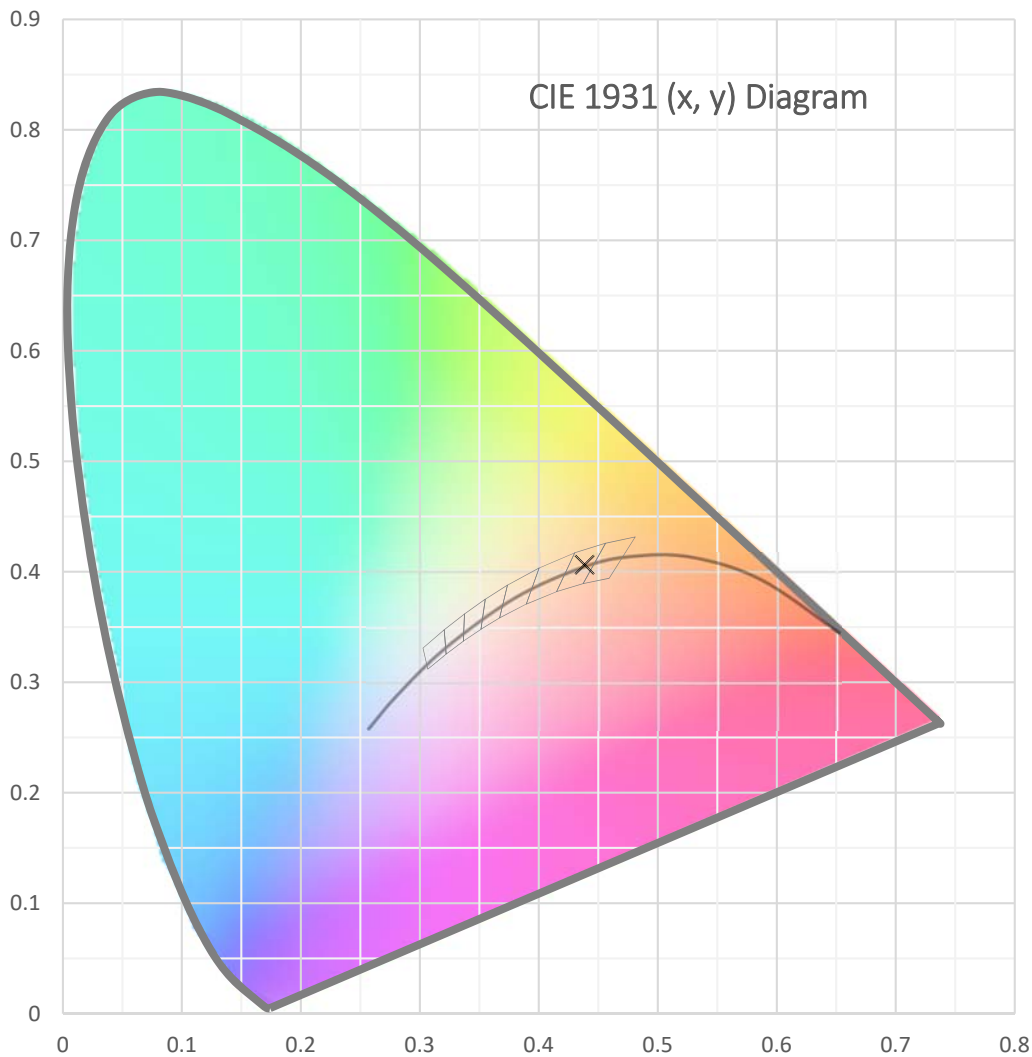
Test Report Number: LLIA000824-005B

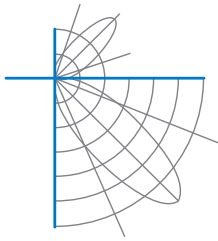
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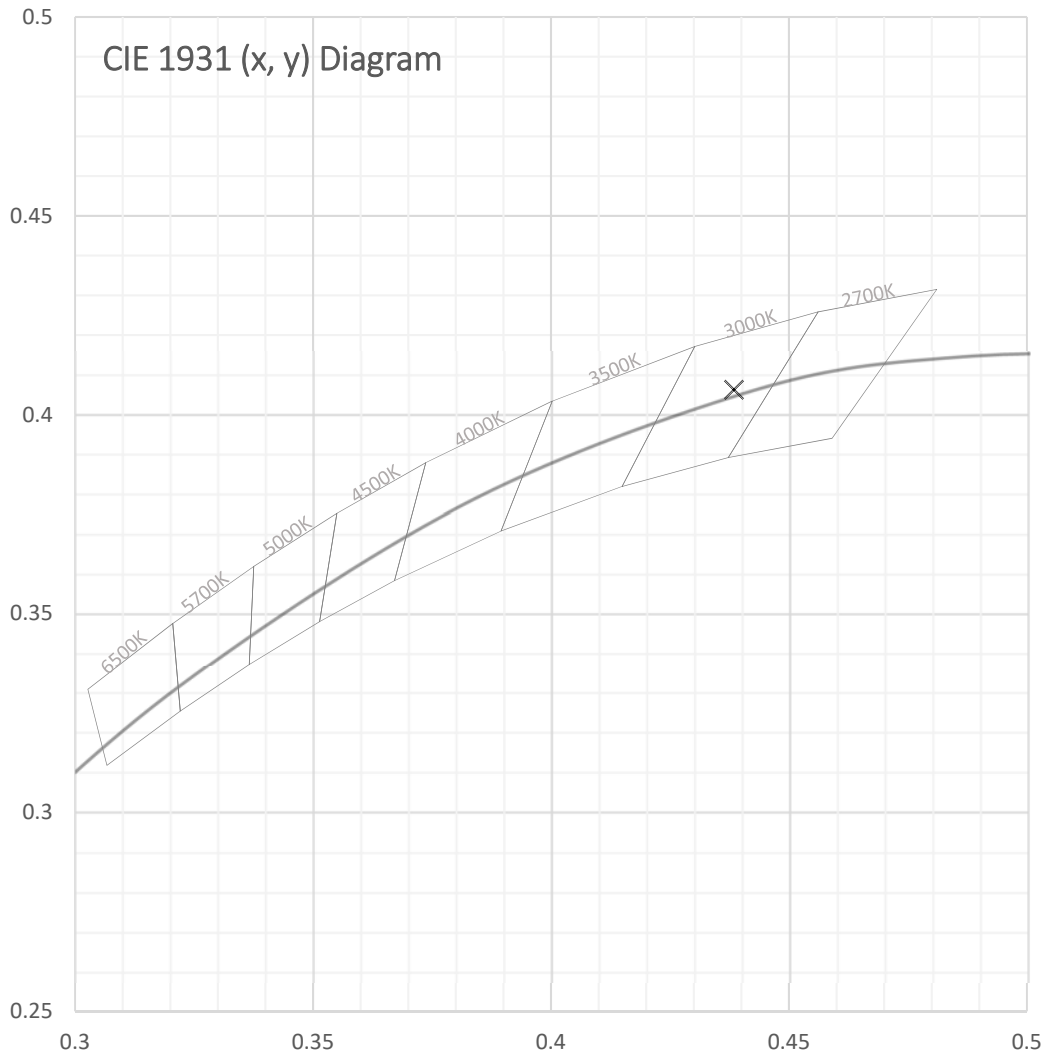
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Spectral Data	Total Radiant Flux	4.596 W
	Total Luminous Flux	1313.2 Lm
	Chromaticity CIE 1931 (x, y)	(0.4384, 0.4063)
	Chromaticity CIE 1976 (u', v')	(0.2506, 0.5225)
	Correlated Color Temperature (CCT)	2993 K
	Color Rendering Index (Ra)	92
	R1	92
	R2	94
	R3	95
	R4	93
	R5	91
	R6	93
	R7	94
	R8	84
	R9	61
	R10	86
	R11	93
	R12	79
	R13	92
	R14	97
	Distance from Planckian Locus (Duv)	0.0007
	Scotopic/Photopic Ratio *	1.383

Electrical Data

Voltage	120.0 Vac
Current	0.1238 A
Power	14.58 W
Frequency	60.00 Hz
Power Factor	0.982
Current THD	7.7 %



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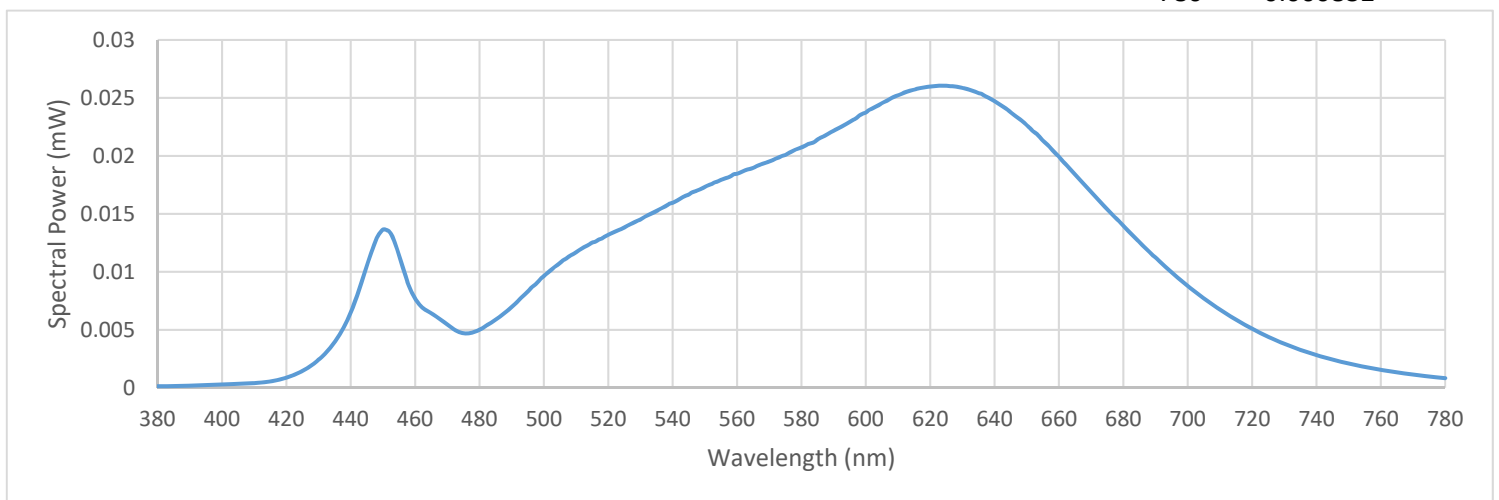
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Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000133	480	0.005011	580	0.020727	680	0.013963
385	0.000146	485	0.005877	585	0.021411	685	0.012578
390	0.000181	490	0.006977	590	0.022172	690	0.011238
395	0.000230	495	0.008299	595	0.022932	695	0.009938
400	0.000284	500	0.009637	600	0.023741	700	0.008800
405	0.000339	505	0.010757	605	0.024560	705	0.007715
410	0.000405	510	0.011684	610	0.025215	710	0.006731
415	0.000548	515	0.012525	615	0.025696	715	0.005879
420	0.000875	520	0.013194	620	0.025974	720	0.005092
425	0.001457	525	0.013823	625	0.026038	725	0.004393
430	0.002426	530	0.014511	630	0.025855	730	0.003800
435	0.003956	535	0.015236	635	0.025421	735	0.003264
440	0.006506	540	0.015958	640	0.024719	740	0.002814
445	0.010520	545	0.016666	645	0.023764	745	0.002427
450	0.013645	550	0.017320	650	0.022631	750	0.002093
455	0.011412	555	0.017927	655	0.021322	755	0.001798
460	0.007714	560	0.018457	660	0.019942	760	0.001555
465	0.006404	565	0.018962	665	0.018397	765	0.001329
470	0.005452	570	0.019510	670	0.016860	770	0.001133
475	0.004691	575	0.020076	675	0.015403	775	0.000974
						780	0.000832





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One L.T.F. DA12W350C1834D010-0000 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:	24.1 °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.