



Report of Test

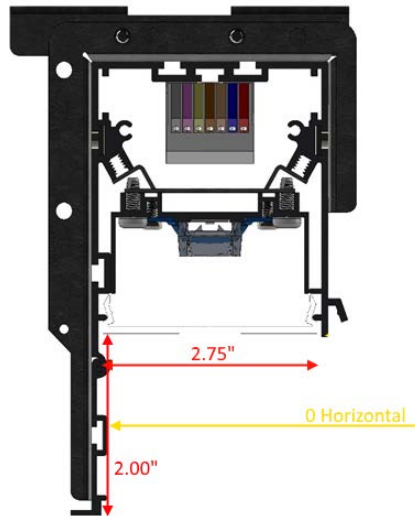
LLIA000977-006A

Catalog Number: PSWW3-MO-K40-80-4-XXX-XX-FL-UNV-XXX

Recessed mounted, extruded aluminum housing, frosted plastic enclosure.

One PAL-Lighting LED board with 88 LEDs and clear prismatic plastic lenses below LEDs.

One Osram Optotronic OTi 30/120-277/1A0 DIM L LED driver
120.0Vac, 60.00Hz, 0.1551A, 18.51W, 0.994PF, 5.3%THD(i)



Performance Summary

Total Light Output	1750 lm
Luminaire Power	18.5 W
Luminous Efficacy	94.6 lm/W

PREPARED FOR : Precision Architectural Lighting, 4830 Timber Creek Drive, Houston, TX 77017



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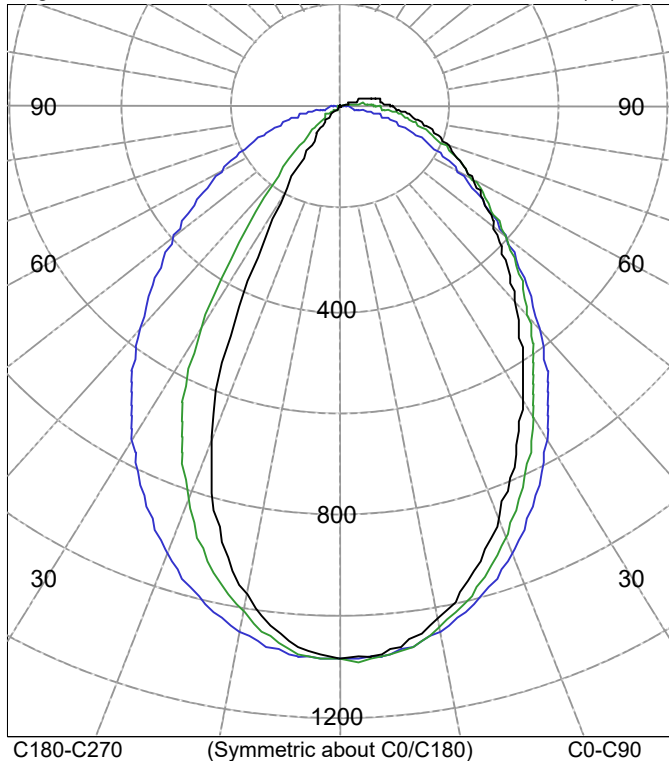
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Legend: C0/C180-Black, C45/C225-Green, C90/C270-Blue (cd)



INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	1087	1087	1087	1087	1087	
5.0	1071	1076	1080	1071	1078	101
10.0	1022	1029	1040	1039	1046	
15.0	946	956	976	985	995	265
20.0	852	863	893	913	926	
25.0	755	765	799	829	844	332
30.0	664	672	704	738	753	
35.0	577	586	614	646	659	304
40.0	496	504	534	556	564	
45.0	427	432	460	473	474	248
50.0	369	371	392	399	391	
55.0	319	320	331	335	316	185
60.0	276	275	279	279	250	
65.0	238	235	233	227	191	130
70.0	205	200	191	178	140	
75.0	175	170	155	136	95	86
80.0	147	141	124	98	57	
85.0	120	114	95	65	23	49
90.0	98	92	69	36	0	

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	697	N / A	39.8
0-40	1001	N / A	57.2
0-60	1434	N / A	82.0
0-90	1699	N / A	97.1
40-90	698	N / A	39.9
60-90	264	N / A	15.1
90-180	51	N / A	2.9
0-180	1750	N / A	100.0

Total Light Output = 1,750 lm

Signed:

Authorized Signatory

Date of test

27-Apr-2018

Date of report

2-May-2018



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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	1087	1087	1087	1087	1087
2.5	1081	1087	1090	1078	1085
5.0	1071	1076	1080	1071	1078
7.5	1050	1057	1064	1058	1065
10.0	1022	1029	1040	1039	1046
12.5	987	995	1011	1014	1023
15.0	946	956	976	985	995
17.5	899	911	936	951	962
20.0	852	863	893	913	926
22.5	803	814	847	872	886
25.0	755	765	799	829	844
27.5	708	718	751	784	800
30.0	664	672	704	738	753
32.5	620	628	658	692	706
35.0	577	586	614	646	659
37.5	535	544	573	601	611
40.0	496	504	534	556	564
42.5	460	466	497	514	518
45.0	427	432	460	473	474
47.5	397	400	425	435	431
50.0	369	371	392	399	391
52.5	343	345	360	365	353
55.0	319	320	331	335	316
57.5	297	296	304	306	282
60.0	276	275	279	279	250
62.5	256	254	255	252	220
65.0	238	235	233	227	191
67.5	221	217	212	202	165
70.0	205	200	191	178	140
72.5	190	185	173	157	117
75.0	175	170	155	136	95
77.5	160	155	139	117	76
80.0	147	141	124	98	57
82.5	133	128	109	81	40
85.0	120	114	95	65	23
87.5	106	99	80	51	7
90.0	98	92	69	36	0



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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	98	92	69	36	0
92.5	93	86	64	30	0
95.0	86	79	56	26	0
97.5	78	72	53	19	0
100.0	75	69	48	13	0
102.5	70	63	41	10	0
105.0	64	56	31	3	0
107.5	55	46	25	2	0
110.0	44	37	20	0	0
112.5	36	30	16	0	0
115.0	30	24	9	0	0
117.5	25	22	2	0	0
120.0	22	16	0	0	0
122.5	14	3	0	0	0
125.0	0	0	0	0	0
127.5	0	0	0	0	0
130.0	0	0	0	0	0
132.5	0	0	0	0	0
135.0	0	0	0	0	0
137.5	0	0	0	0	0
140.0	0	0	0	0	0
142.5	0	0	0	0	0
145.0	0	0	0	0	0
147.5	0	0	0	0	0
150.0	0	0	0	0	0
152.5	0	0	0	0	0
155.0	0	0	0	0	0
157.5	0	0	0	0	0
160.0	0	0	0	0	0
162.5	0	0	0	0	0
165.0	0	0	0	0	0
167.5	0	0	0	0	0
170.0	0	0	0	0	0
172.5	0	0	0	0	0
175.0	0	0	0	0	0
177.5	0	0	0	0	0
180.0	0	0	0	0	0



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Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
0.0	1087	1087	1087	1087	1087
2.5	1085	1076	1086	1081	1074
5.0	1078	1066	1069	1060	1052
7.5	1065	1049	1044	1029	1019
10.0	1046	1025	1011	988	975
12.5	1023	997	971	937	920
15.0	995	963	924	877	856
17.5	962	924	871	808	779
20.0	926	880	812	728	688
22.5	886	833	747	634	573
25.0	844	784	678	516	433
27.5	800	733	601	387	307
30.0	753	680	515	278	214
32.5	706	627	418	197	150
35.0	659	573	322	140	105
37.5	611	520	242	98	74
40.0	564	467	177	70	55
42.5	518	415	128	52	41
45.0	474	363	91	39	30
47.5	431	311	65	28	20
50.0	391	257	48	18	10
52.5	353	205	35	9	0
55.0	316	157	25	0	0
57.5	282	116	15	0	0
60.0	250	81	7	0	0
62.5	220	55	0	0	0
65.0	191	36	0	0	0
67.5	165	23	0	0	0
70.0	140	14	0	0	0
72.5	117	5	0	0	0
75.0	95	0	0	0	0
77.5	76	0	0	0	0
80.0	57	0	0	0	0
82.5	40	0	0	0	0
85.0	23	0	0	0	0
87.5	7	0	0	0	0
90.0	0	0	0	0	0



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Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
90.0	0	0	0	0	0
92.5	0	0	0	0	0
95.0	0	0	0	0	0
97.5	0	0	0	0	0
100.0	0	0	0	0	0
102.5	0	0	0	0	0
105.0	0	0	0	0	0
107.5	0	0	0	0	0
110.0	0	0	0	0	0
112.5	0	0	0	0	0
115.0	0	0	0	0	0
117.5	0	0	0	0	0
120.0	0	0	0	0	0
122.5	0	0	0	0	0
125.0	0	0	0	0	0
127.5	0	0	0	0	0
130.0	0	0	0	0	0
132.5	0	0	0	0	0
135.0	0	0	0	0	0
137.5	0	0	0	0	0
140.0	0	0	0	0	0
142.5	0	0	0	0	0
145.0	0	0	0	0	0
147.5	0	0	0	0	0
150.0	0	0	0	0	0
152.5	0	0	0	0	0
155.0	0	0	0	0	0
157.5	0	0	0	0	0
160.0	0	0	0	0	0
162.5	0	0	0	0	0
165.0	0	0	0	0	0
167.5	0	0	0	0	0
170.0	0	0	0	0	0
172.5	0	0	0	0	0
175.0	0	0	0	0	0
177.5	0	0	0	0	0
180.0	0	0	0	0	0



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Coefficients Of Utilization - Zonal Cavity Method

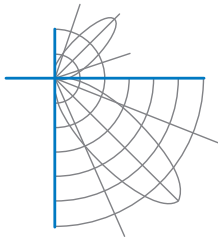
Effective Floor Cavity Reflectance 0.20

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	118	118	118	118	115	115	115	115	109	109	109	104	104	104	99	99	99	97
1	109	105	101	97	106	102	99	95	97	94	92	93	91	88	89	87	85	83
2	101	93	87	82	98	91	85	81	87	82	78	83	80	76	80	77	74	72
3	93	83	76	70	90	82	75	70	78	73	68	75	71	67	73	69	65	63
4	86	75	68	62	84	74	67	61	71	65	60	69	63	59	66	62	58	56
5	80	69	61	55	78	67	60	54	65	58	53	63	57	53	61	56	52	50
6	75	63	55	49	73	62	54	49	60	53	48	58	52	47	56	51	47	45
7	70	58	50	44	68	57	49	44	55	48	44	53	48	43	52	47	43	41
8	66	53	46	40	64	53	45	40	51	44	40	50	44	39	48	43	39	37
9	62	50	42	37	60	49	42	37	48	41	37	46	40	36	45	40	36	34
10	58	46	39	34	57	46	39	34	45	38	34	43	38	34	42	37	33	32

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	30.2	5.14	6.39
8.0	17.0	6.85	8.51
10.0	10.9	8.57	10.64
12.0	7.5	10.28	12.77
14.0	5.5	11.99	14.90
16.0	4.2	13.70	17.03



Test Report No. LLIA000977-006A

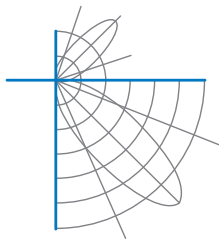
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Test Distance 9.5 m
Test Temperature 25.0 °C

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

LLIA000977-006B

Integrating Sphere Report

Catalog Number: PSWW3-MO-K40-80-4-XXX-XX-FL-UNV-XXX

Recessed mounted, extruded aluminum housing, frosted plastic enclosure.

One PAL-Lighting LED board with 88 LEDs and clear prismatic plastic lenses below LEDs.

One Osram Optotronic OTi 30/120-277/1A0 DIM L LED driver



Performance Summary

Voltage	120.0 Vac
Current	0.1553 A
Power	18.54 W
Frequency	59.97 Hz
Power Factor	0.995
Current THD	5.3 %

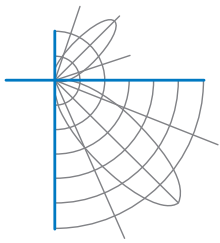
Total Luminous Flux	1797.1 lm
Efficacy	96.9 lm/W
Chromaticity (x,y)	(0.3784, 0.3748)
(u',v')	(0.2245, 0.5004)
Duv	-0.0003
CCT	4044 K
CRI (Ra)	86
R9	23
TM-30: Rf	83
TM-30: Rg	96

Prepared For:

Precision Architectural Lighting
4830 Timber Creek Drive
Houston, TX 77017, USA

Test date: 04/26/2018

Report date: 05/02/2018



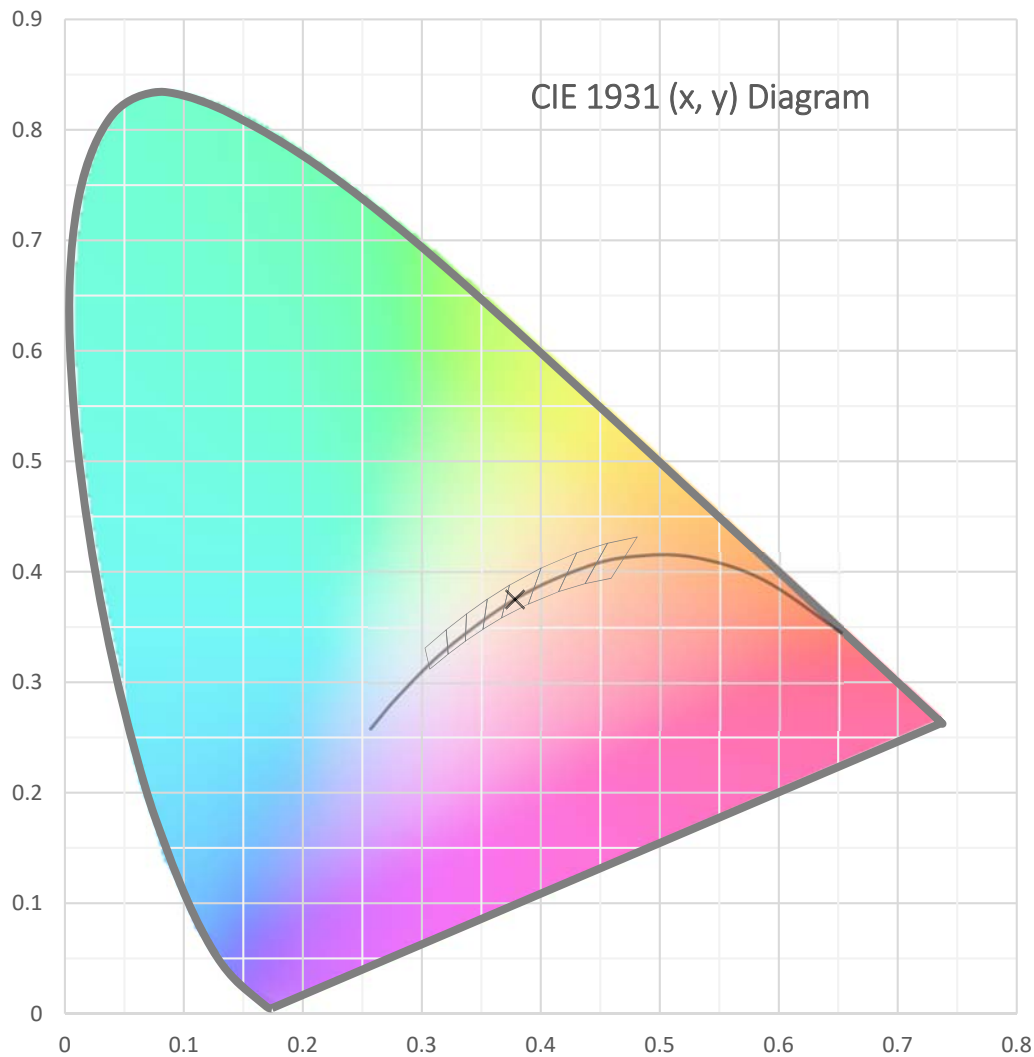
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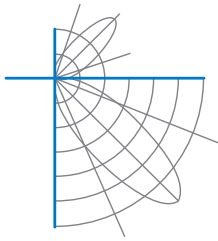
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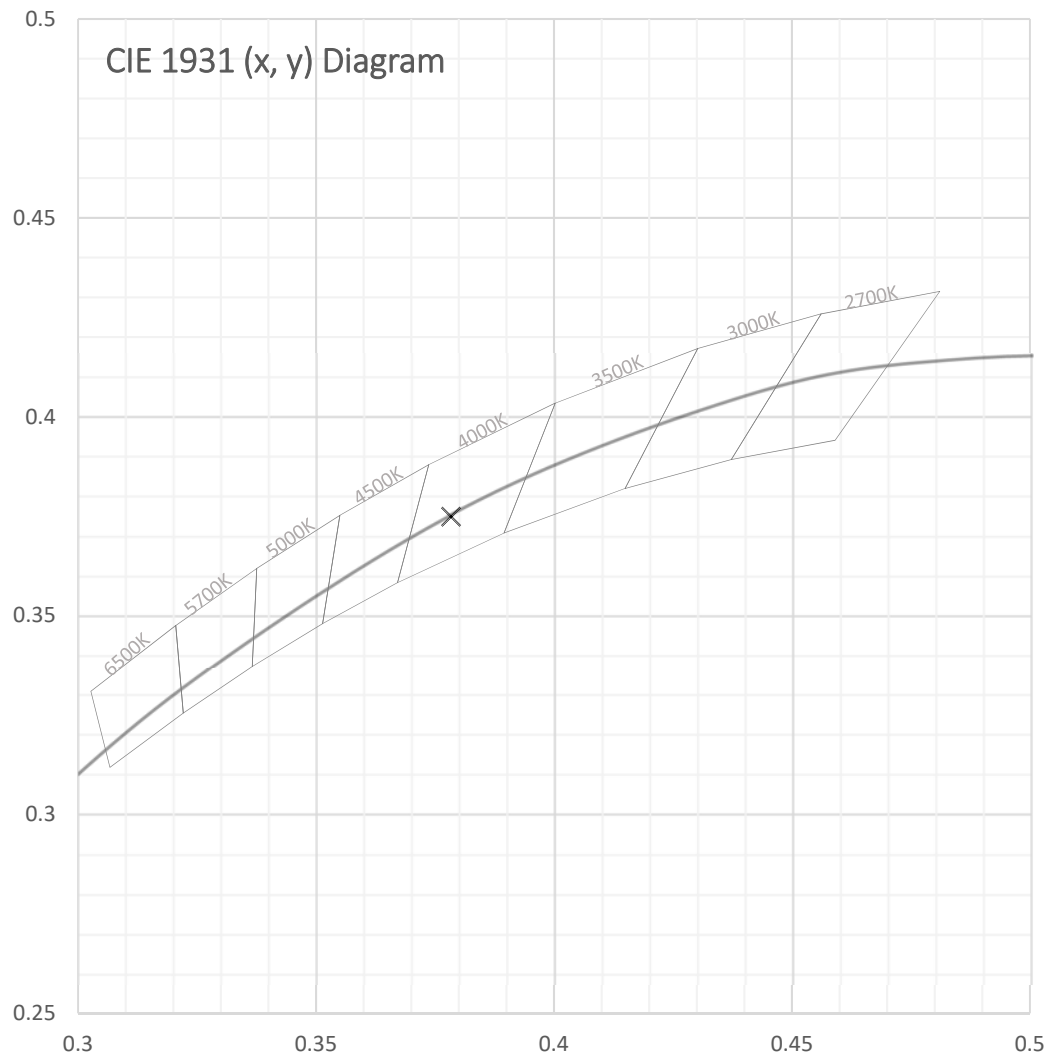
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Spectral Data

Total Radiant Flux	5.668 W
Total Luminous Flux	1797.1 Lm
Chromaticity CIE 1931 (x, y)	(0.3784, 0.3748)
Chromaticity CIE 1976 (u', v')	(0.2245, 0.5004)
Correlated Color Temperature (CCT)	4044 K
Color Rendering Index (Ra)	86
R1	84
R2	92
R3	96
R4	84
R5	84
R6	87
R7	88
R8	70
R9	23
R10	79
R11	83
R12	62
R13	86
R14	98
TM-30: Rf	83
TM-30: Rg	96
Distance from Planckian Locus (Duv)	-0.0003
Scotopic/Photopic Ratio *	1.733

Electrical Data

Voltage	120.0 Vac
Current	0.1553 A
Power	18.54 W
Frequency	59.97 Hz
Power Factor	0.995
Current THD	5.3 %



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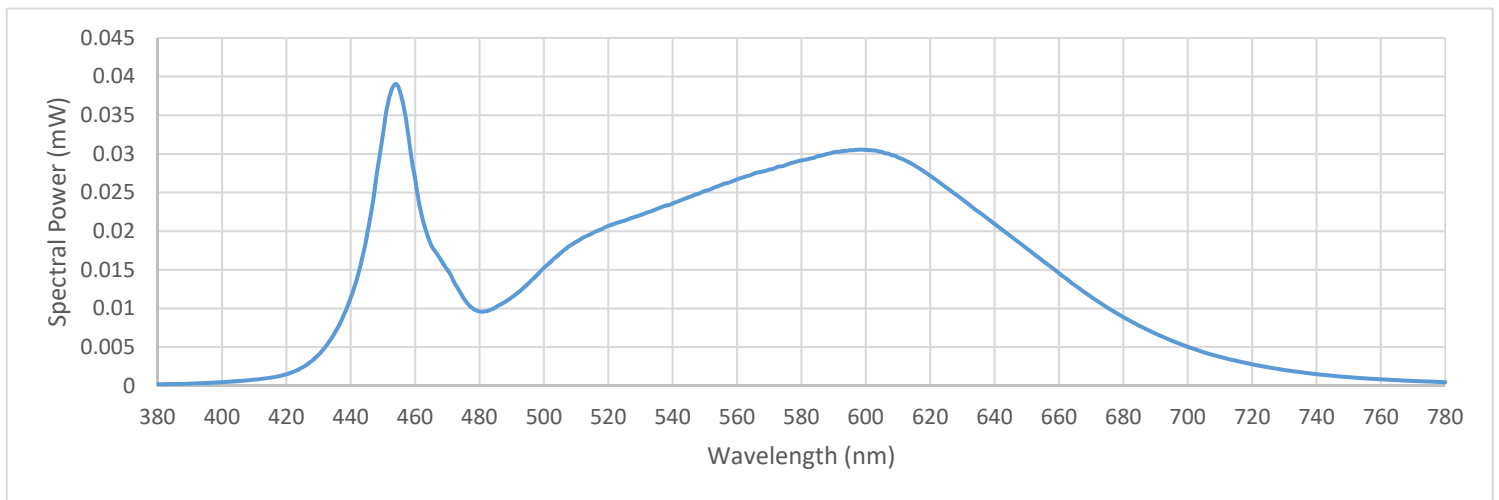
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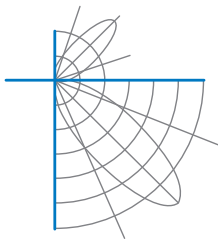
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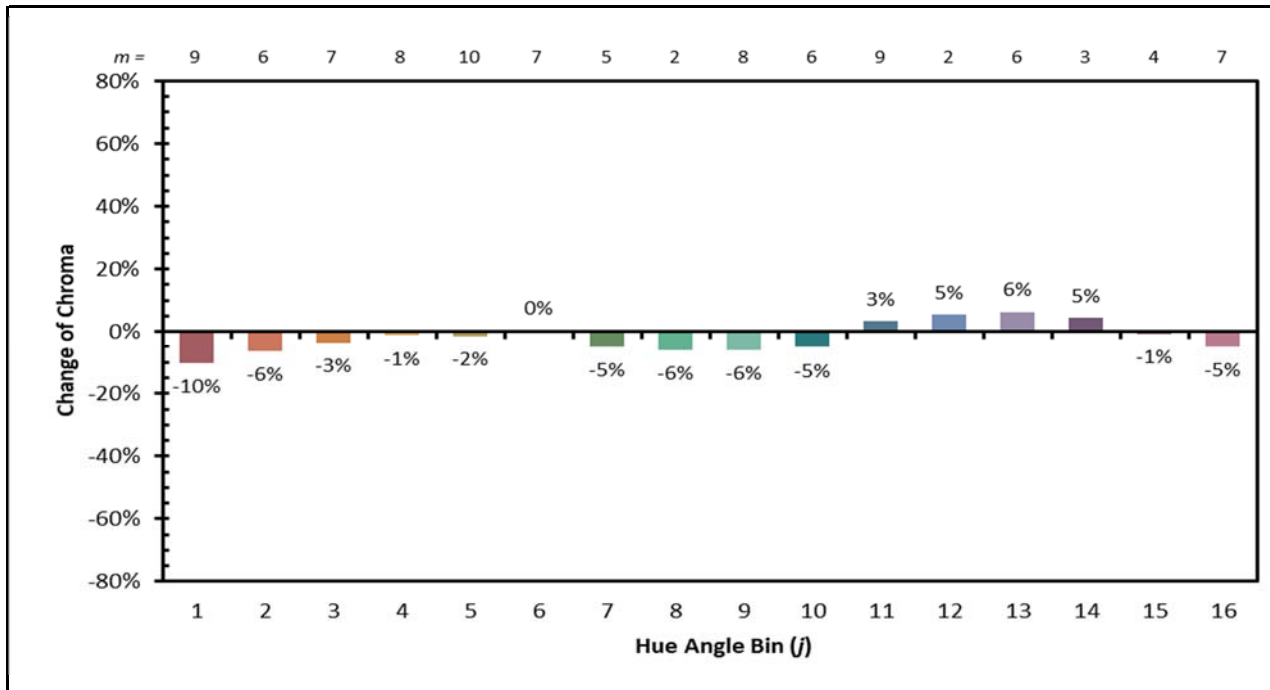
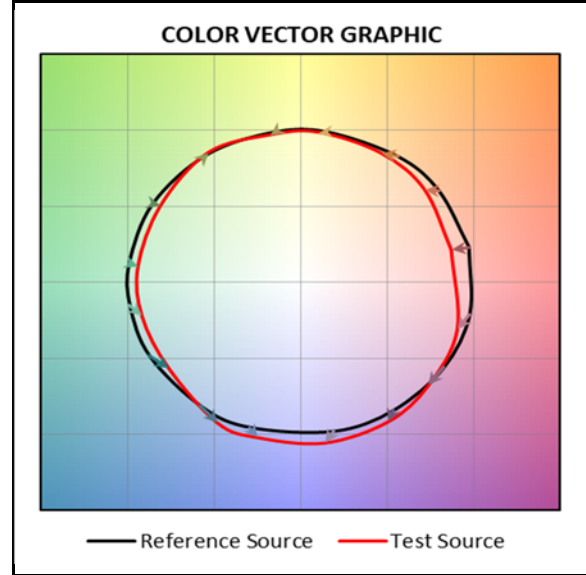
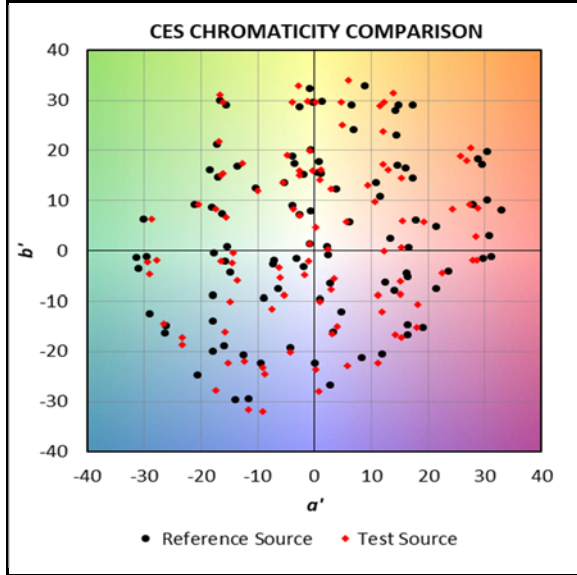
Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000204	480	0.009615	580	0.029146	680	0.008874
385	0.000223	485	0.010144	585	0.029700	685	0.007773
390	0.000277	490	0.011434	590	0.030206	690	0.006744
395	0.000357	495	0.013165	595	0.030479	695	0.005840
400	0.000475	500	0.015262	600	0.030530	700	0.005060
405	0.000615	505	0.017098	605	0.030255	705	0.004338
410	0.000786	510	0.018628	610	0.029542	710	0.003728
415	0.001036	515	0.019708	615	0.028565	715	0.003227
420	0.001492	520	0.020673	620	0.027170	720	0.002775
425	0.002365	525	0.021345	625	0.025645	725	0.002383
430	0.004038	530	0.022099	630	0.024101	730	0.002051
435	0.006866	535	0.022855	635	0.022517	735	0.001752
440	0.011318	540	0.023592	640	0.020929	740	0.001500
445	0.019421	545	0.024385	645	0.019371	745	0.001292
450	0.032516	550	0.025204	650	0.017773	750	0.001113
455	0.038491	555	0.025965	655	0.016155	755	0.000959
460	0.026769	560	0.026692	660	0.014589	760	0.000834
465	0.018172	565	0.027412	665	0.012990	765	0.000721
470	0.015010	570	0.027965	670	0.011499	770	0.000620
475	0.011359	575	0.028515	675	0.010142	775	0.000538
						780	0.000462





IES TM-30 Summary





Test Report Number: LLIA000977-006B

Catalog Number: PSWW3-MO-K40-80-4-XXX-XX-FL-UNV-XXX

Recessed mounted, extruded aluminum housing, frosted plastic enclosure.

One PAL-Lighting LED board with 88 LEDs and clear prismatic plastic lenses below LEDs.

One Osram Optotronic OTi 30/120-277/1A0 DIM L 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: 24.5 °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, TM-30-15

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.