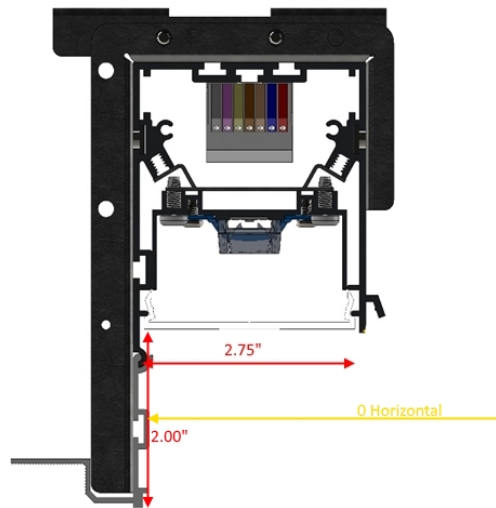


Report of Test

LLIA000977-002A

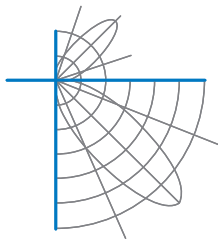
Catalog Number: PSWG3-MO-K40-80-4-XXX-XX-CL-UNV-XXX
Recessed mounted, extruded aluminum housing, clear plastic enclosure.
One PAL-Lighting LED board with 88 LEDs and clear plastic lenses below LEDs.
One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver
120.0Vac, 60.00Hz, 0.1554A, 18.54W, 0.995PF, 5.2%THD(i)



Performance Summary

Total Light Output	2402 lm
Luminaire Power	18.5 W
Luminous Efficacy	129.8 lm/W

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



Test Report No. LLIA000977-002A

Catalog Number: PSWG3-MO-K40-80-4-XXX-XX-CL-UNV-XXX

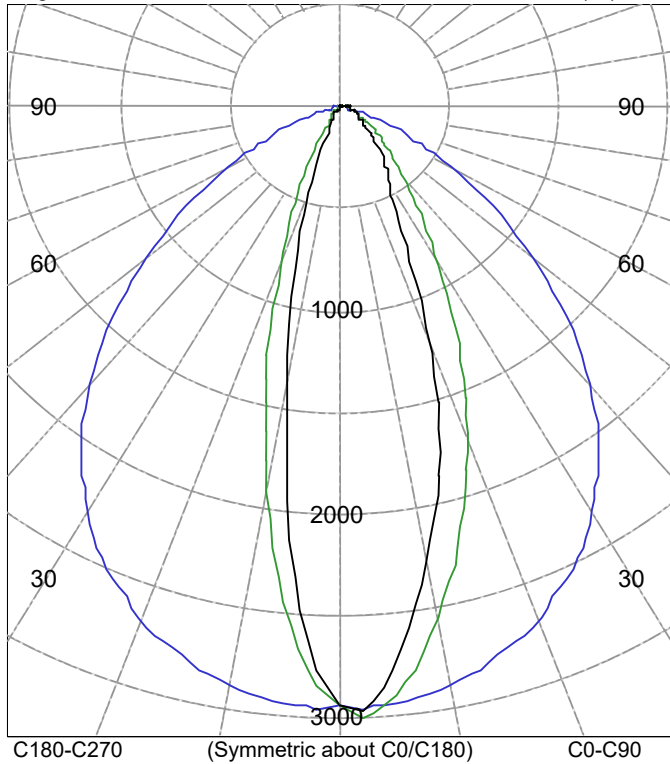
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120.0Vac, 60.00Hz, 0.1554A, 18.54W, 0.995PF, 5.2%THD(i)

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	2948	2948	2948	2948	2948	
5.0	2773	2812	2905	2949	2947	246
10.0	2278	2345	2548	2812	2889	
15.0	1754	1851	2139	2566	2781	511
20.0	1150	1306	1701	2278	2676	
25.0	672	807	1283	1959	2501	507
30.0	461	517	902	1621	2293	
35.0	369	377	639	1290	2055	418
40.0	309	306	459	988	1776	
45.0	213	238	334	745	1463	313
50.0	146	164	255	556	1147	
55.0	124	128	195	416	849	195
60.0	108	109	129	315	590	
65.0	95	96	99	229	372	109
70.0	83	83	82	154	215	
75.0	75	73	68	74	107	50
80.0	62	62	58	48	47	
85.0	55	54	46	35	20	25
90.0	51	49	40	24	0	

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	1263	N / A	52.6
0-40	1681	N / A	70.0
0-60	2189	N / A	91.1
0-90	2374	N / A	98.8
40-90	692	N / A	28.8
60-90	184	N / A	7.7
90-180	29	N / A	1.2
0-180	2402	N / A	100.0

Total Light Output = 2,402 lm

Signed:

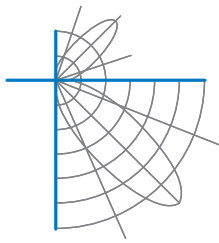
Authorized Signatory

Date of test

30-Apr-2018

Date of report

2-May-2018



Test Report No. LLIA000977-002A

Catalog Number: PSWG3-MO-K40-80-4-XXX-XX-CL-UNV-XXX

Recessed mounted, extruded aluminum housing, clear plastic enclosure.

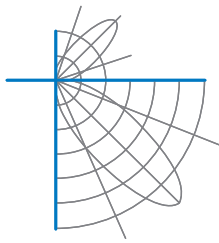
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One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver

120.0Vac, 60.00Hz, 0.1554A, 18.54W, 0.995PF, 5.2%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	2948	2948	2948	2948	2948
2.5	2948	2970	2990	2959	2953
5.0	2773	2812	2905	2949	2947
7.5	2526	2583	2747	2886	2916
10.0	2278	2345	2548	2812	2889
12.5	2005	2093	2346	2698	2842
15.0	1754	1851	2139	2566	2781
17.5	1457	1591	1910	2421	2737
20.0	1150	1306	1701	2278	2676
22.5	872	1030	1491	2123	2585
25.0	672	807	1283	1959	2501
27.5	546	637	1084	1794	2414
30.0	461	517	902	1621	2293
32.5	401	440	756	1449	2178
35.0	369	377	639	1290	2055
37.5	332	343	537	1134	1913
40.0	309	306	459	988	1776
42.5	256	283	384	855	1613
45.0	213	238	334	745	1463
47.5	174	203	287	647	1298
50.0	146	164	255	556	1147
52.5	134	139	224	479	996
55.0	124	128	195	416	849
57.5	114	119	153	363	713
60.0	108	109	129	315	590
62.5	102	102	112	267	472
65.0	95	96	99	229	372
67.5	89	89	90	197	287
70.0	83	83	82	154	215
72.5	79	78	75	108	155
75.0	75	73	68	74	107
77.5	69	68	63	58	72
80.0	62	62	58	48	47
82.5	58	57	50	41	30
85.0	55	54	46	35	20
87.5	53	51	42	28	8
90.0	51	49	40	24	0



Test Report No. LLIA000977-002A

Catalog Number: PSWG3-MO-K40-80-4-XXX-XX-CL-UNV-XXX

Recessed mounted, extruded aluminum housing, clear plastic enclosure.

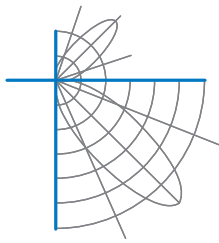
One PAL-Lighting LED board with 88 LEDs and clear plastic lenses below LEDs.

One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver

120.0Vac, 60.00Hz, 0.1554A, 18.54W, 0.995PF, 5.2%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	51	49	40	24	0
92.5	50	48	38	20	0
95.0	45	43	32	17	0
97.5	40	39	31	13	0
100.0	39	38	27	10	0
102.5	37	35	23	8	0
105.0	33	31	18	0	0
107.5	28	24	15	0	0
110.0	23	20	12	0	0
112.5	19	17	10	0	0
115.0	15	14	5	0	0
117.5	14	13	0	0	0
120.0	12	9	0	0	0
122.5	7	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



Test Report No. LLIA000977-002A

Catalog Number: PSWG3-MO-K40-80-4-XXX-XX-CL-UNV-XXX

Recessed mounted, extruded aluminum housing, clear plastic enclosure.

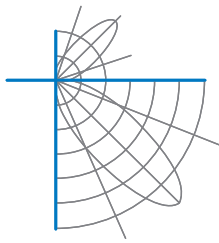
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120.0Vac, 60.00Hz, 0.1554A, 18.54W, 0.995PF, 5.2%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
0.0	2948	2948	2948	2948	2948
2.5	2953	2858	2812	2740	2709
5.0	2947	2760	2557	2377	2313
7.5	2916	2606	2255	1954	1855
10.0	2889	2432	1908	1524	1407
12.5	2842	2241	1559	1149	1021
15.0	2781	2036	1261	835	728
17.5	2737	1818	976	608	531
20.0	2676	1612	755	456	385
22.5	2585	1401	583	297	210
25.0	2501	1209	462	170	107
27.5	2414	1040	356	93	75
30.0	2293	877	210	72	60
32.5	2178	730	135	59	54
35.0	2055	610	86	52	46
37.5	1913	516	67	46	40
40.0	1776	434	56	39	31
42.5	1613	368	49	30	24
45.0	1463	290	43	23	16
47.5	1298	203	36	16	13
50.0	1147	148	28	13	8
52.5	996	81	21	9	0
55.0	849	54	15	0	0
57.5	713	43	12	0	0
60.0	590	36	7	0	0
62.5	472	30	0	0	0
65.0	372	23	0	0	0
67.5	287	16	0	0	0
70.0	215	11	0	0	0
72.5	155	6	0	0	0
75.0	107	0	0	0	0
77.5	72	0	0	0	0
80.0	47	0	0	0	0
82.5	30	0	0	0	0
85.0	20	0	0	0	0
87.5	8	0	0	0	0
90.0	0	0	0	0	0



Test Report No. LLIA000977-002A

Catalog Number: PSWG3-MO-K40-80-4-XXX-XX-CL-UNV-XXX

Recessed mounted, extruded aluminum housing, clear plastic enclosure.

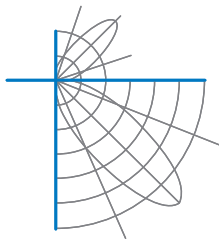
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One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver

120.0Vac, 60.00Hz, 0.1554A, 18.54W, 0.995PF, 5.2%THD(i)

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



Test Number: LLIA000977-002A

Catalog Number: PSWG3-MO-K40-80-4-XXX-XX-CL-UNV-XXX

Recessed mounted, extruded aluminum housing, clear plastic enclosure.

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

One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver
120.0Vac, 60.00Hz, 0.1554A, 18.54W, 0.995PF, 5.2%THD(i)

Coefficients Of Utilization - Zonal Cavity Method

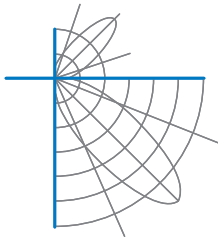
Effective Floor Cavity Reflectance 0.20

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	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101	99
1	111	108	105	102	109	106	103	100	101	99	97	97	95	94	94	92	91	89
2	104	98	93	89	102	96	91	88	93	89	85	89	86	83	86	84	81	80
3	98	90	83	78	95	88	82	78	85	80	76	82	78	75	80	76	74	72
4	91	82	75	70	89	81	75	70	78	73	69	76	72	68	74	70	67	65
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	69	65	61	59
6	81	70	63	58	79	69	63	58	68	62	57	66	61	57	64	60	56	55
7	76	65	58	53	75	65	58	53	63	57	53	62	56	52	60	56	52	50
8	72	61	54	50	71	61	54	49	59	53	49	58	53	49	57	52	48	47
9	68	57	51	46	67	57	50	46	56	50	46	55	49	46	54	49	45	44
10	65	54	48	43	64	54	47	43	53	47	43	52	46	43	51	46	42	41

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	81.9	2.68	6.98
8.0	46.1	3.57	9.31
10.0	29.5	4.47	11.64
12.0	20.5	5.36	13.96
14.0	15.0	6.25	16.29
16.0	11.5	7.15	18.62



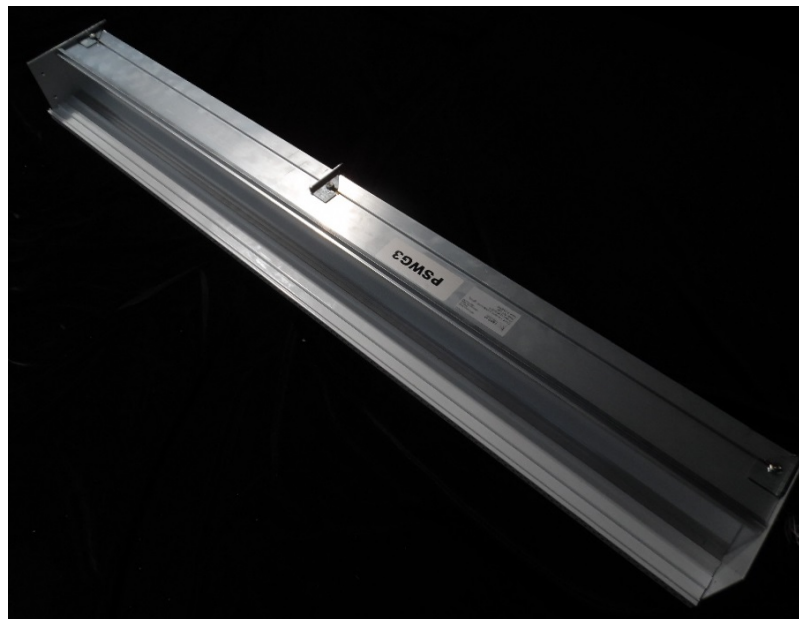
Test Report No. LLIA000977-002A

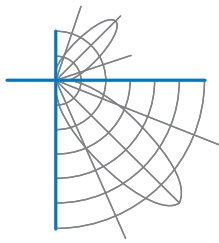
Catalog Number: PSWG3-MO-K40-80-4-XXX-XX-CL-UNV-XXX

Recessed mounted, extruded aluminum housing, clear plastic enclosure.

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

One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver
120.0Vac, 60.00Hz, 0.1554A, 18.54W, 0.995PF, 5.2%THD(i)





Test Report No. LLIA000977-002A

Catalog Number: PSWG3-MO-K40-80-4-XXX-XX-CL-UNV-XXX

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One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver
120.0Vac, 60.00Hz, 0.1554A, 18.54W, 0.995PF, 5.2%THD(i)

Test Distance 9.5 m
Test Temperature 24.7 °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

LLIA000977-002B

Integrating Sphere Report

Catalog Number: PSWG3-MO-K40-80-4-XXX-XX-CL-UNV-XXX

Recessed mounted, extruded aluminum housing, clear plastic enclosure.

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

One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver



Performance Summary

Voltage	120.0 Vac
Current	0.1554 A
Power	18.55 W
Frequency	59.97 Hz
Power Factor	0.995
Current THD	5.2 %

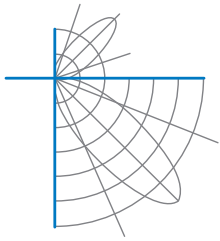
Total Luminous Flux	2442.3 lm
Efficacy	131.7 lm/W
Chromaticity (x,y)	(0.3804, 0.3770)
(u',v')	(0.2250, 0.5017)
Duv	0.0001
CCT	4003 K
CRI (Ra)	84
R9	17
TM-30: Rf	83
TM-30: Rg	95

Prepared For:

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

Test date: 04/27/2018

Report date: 05/02/2018



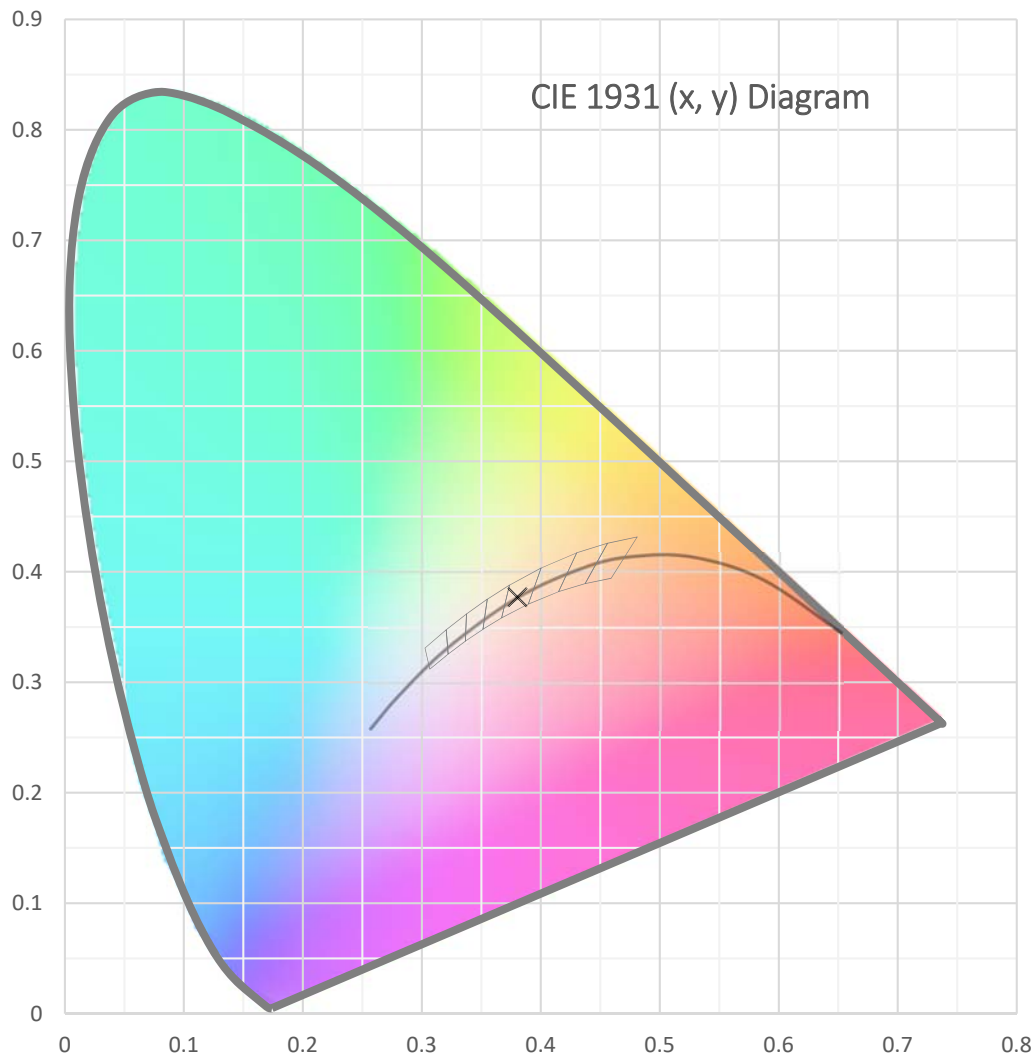
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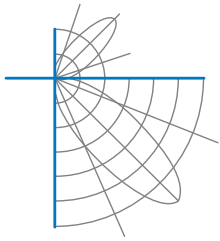
Catalog Number: PSWG3-MO-K40-80-4-XXX-XX-CL-UNV-XXX

Recessed mounted, extruded aluminum housing, clear plastic enclosure.

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

One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver





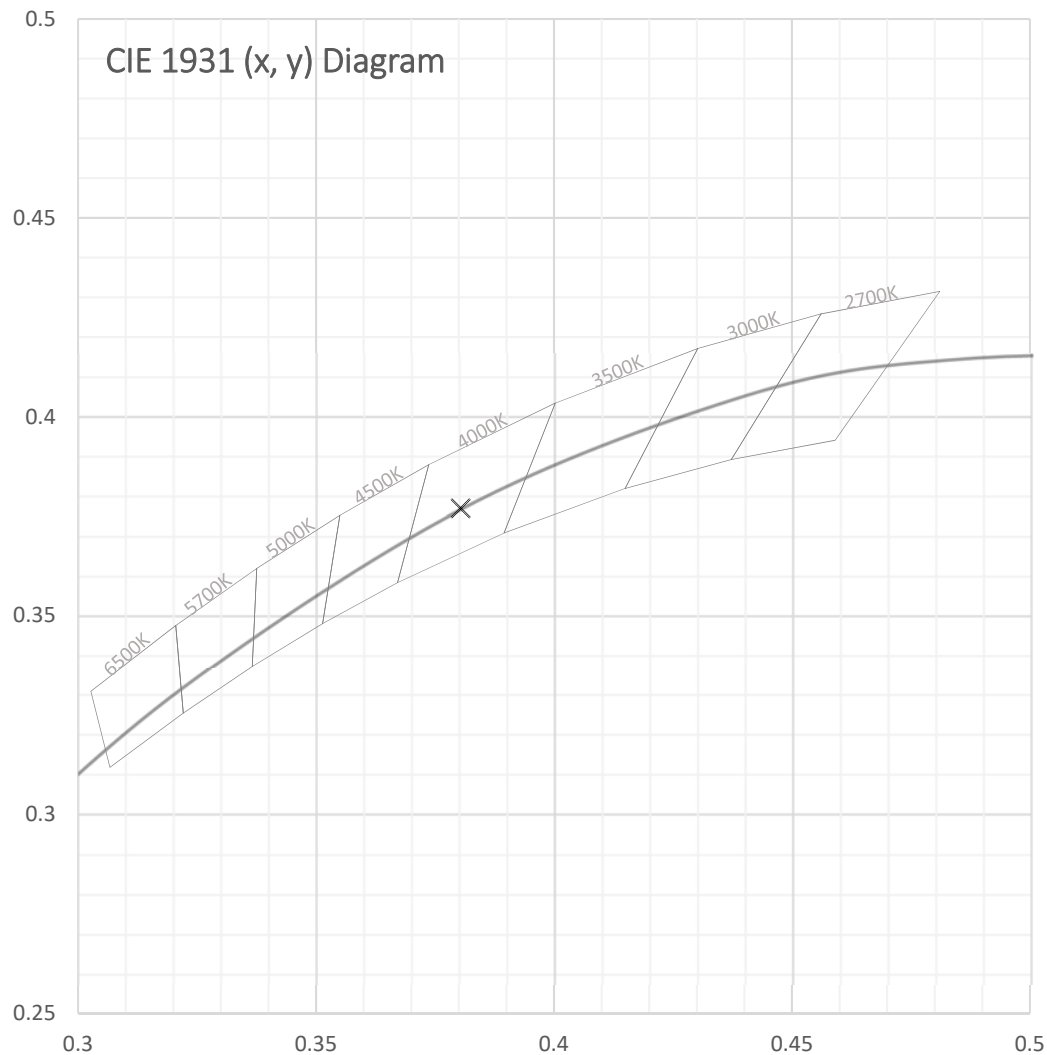
Test Report Number: LLIA000977-002B

Catalog Number: PSWG3-MO-K40-80-4-XXX-XX-CL-UNV-XXX

Recessed mounted, extruded aluminum housing, clear plastic enclosure.

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Test Report Number: LLIA000977-002B

Catalog Number: PSWG3-MO-K40-80-4-XXX-XX-CL-UNV-XXX

Recessed mounted, extruded aluminum housing, clear plastic enclosure.

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One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver

Spectral Data

Total Radiant Flux	7.575 W
Total Luminous Flux	2442.3 Lm
Chromaticity CIE 1931 (x, y)	(0.3804, 0.3770)
Chromaticity CIE 1976 (u', v')	(0.2250, 0.5017)
Correlated Color Temperature (CCT)	4003 K
Color Rendering Index (Ra)	84
R1	83
R2	91
R3	95
R4	82
R5	83
R6	86
R7	87
R8	67
R9	17
R10	77
R11	81
R12	61
R13	85
R14	98
TM-30: Rf	83
TM-30: Rg	95
Distance from Planckian Locus (Duv)	0.0001
Scotopic/Photopic Ratio *	1.708

Electrical Data

Voltage	120.0 Vac
Current	0.1554 A
Power	18.55 W
Frequency	59.97 Hz
Power Factor	0.995
Current THD	5.2 %



Test Report Number: LLIA000977-002B

Catalog Number: PSWG3-MO-K40-80-4-XXX-XX-CL-UNV-XXX

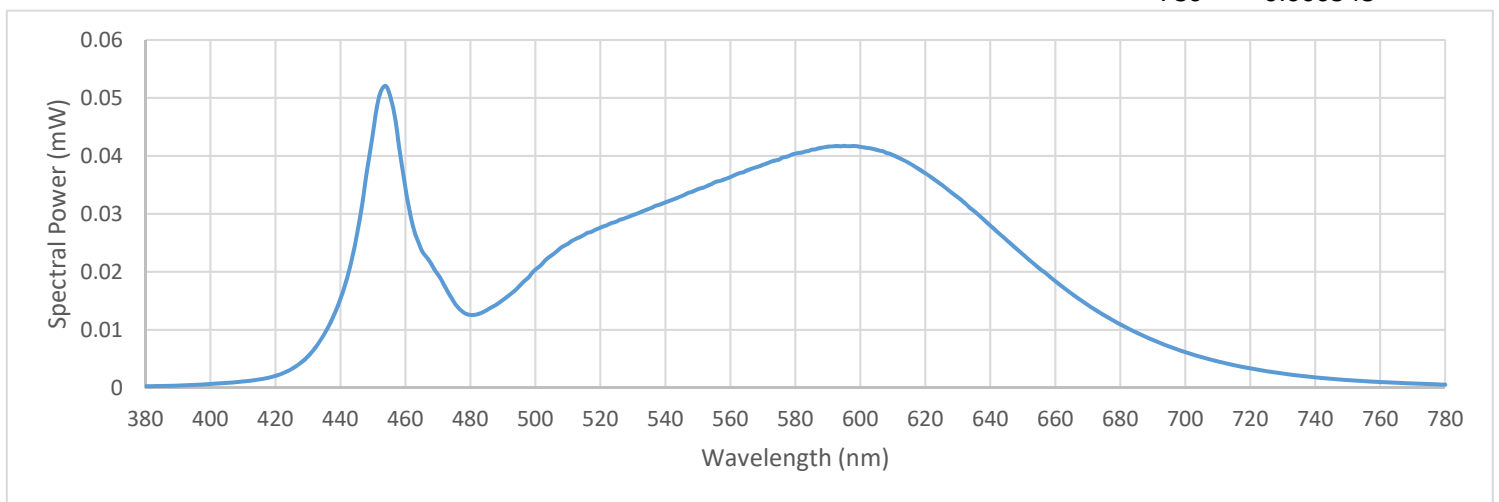
Recessed mounted, extruded aluminum housing, clear plastic enclosure.

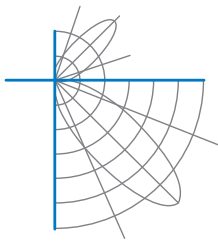
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One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver

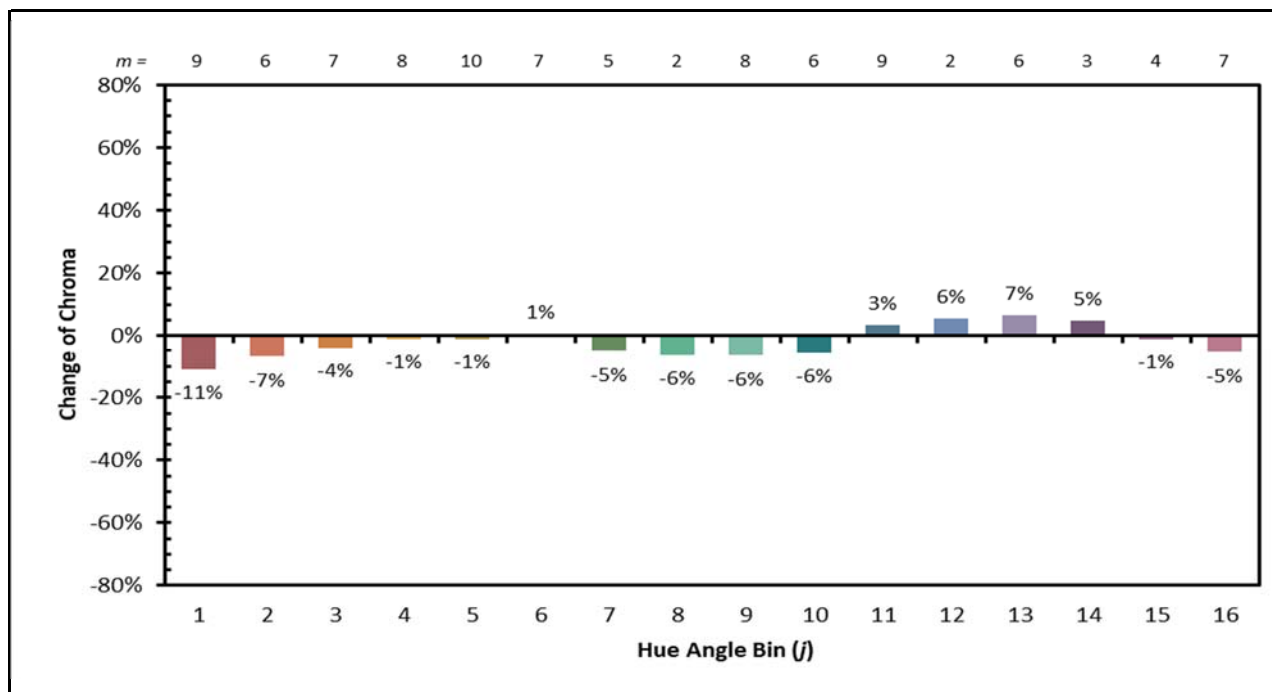
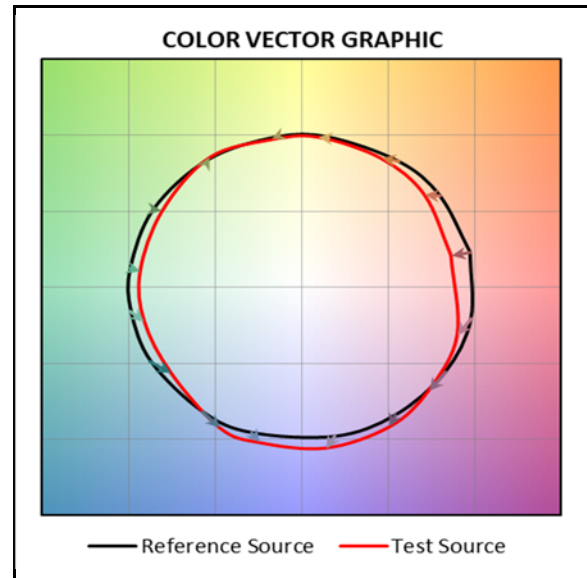
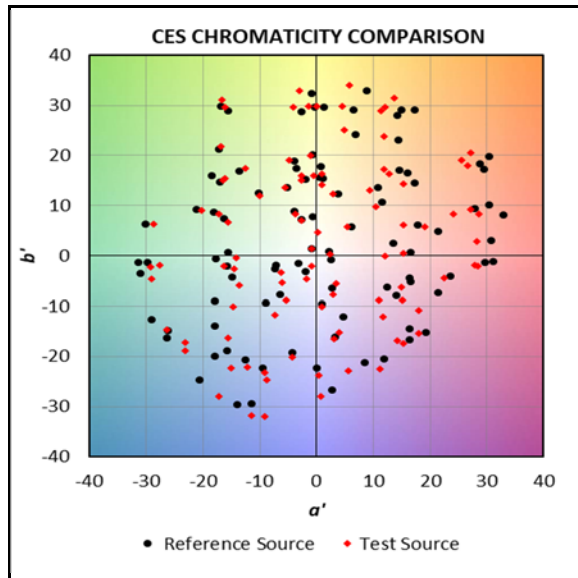
Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000275	480	0.012585	580	0.040385	680	0.010935
385	0.000296	485	0.013418	585	0.041063	685	0.009525
390	0.000377	490	0.015153	590	0.041605	690	0.008245
395	0.000486	495	0.017502	595	0.041726	695	0.007113
400	0.000646	500	0.020386	600	0.041550	700	0.006159
405	0.000844	505	0.022846	605	0.041054	705	0.005282
410	0.001081	510	0.024844	610	0.040096	710	0.004533
415	0.001426	515	0.026381	615	0.038779	715	0.003902
420	0.002057	520	0.027612	620	0.036971	720	0.003341
425	0.003234	525	0.028679	625	0.035038	725	0.002856
430	0.005456	530	0.029794	630	0.032858	730	0.002453
435	0.009285	535	0.030888	635	0.030492	735	0.002098
440	0.015290	540	0.031979	640	0.027981	740	0.001793
445	0.026296	545	0.033057	645	0.025500	745	0.001548
450	0.043865	550	0.034259	650	0.023032	750	0.001332
455	0.050908	555	0.035381	655	0.020593	755	0.001145
460	0.034551	560	0.036341	660	0.018430	760	0.000993
465	0.023712	565	0.037472	665	0.016231	765	0.000855
470	0.019562	570	0.038461	670	0.014284	770	0.000735
475	0.014719	575	0.039353	675	0.012542	775	0.000636
						780	0.000548





IES TM-30 Summary





Test Report Number: LLIA000977-002B

Catalog Number: PSWG3-MO-K40-80-4-XXX-XX-CL-UNV-XXX

Recessed mounted, extruded aluminum housing, clear plastic enclosure.

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

One Osram Optotronic OTi30/120-277/1A0 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 4π geometry

Test Temperature: 24.3 °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.