

Report of Test

LLIA001084-010A

Catalog Number: MLP2-IASY-MO-K40-80-4-W-OP-FXXX-UNV-XXX

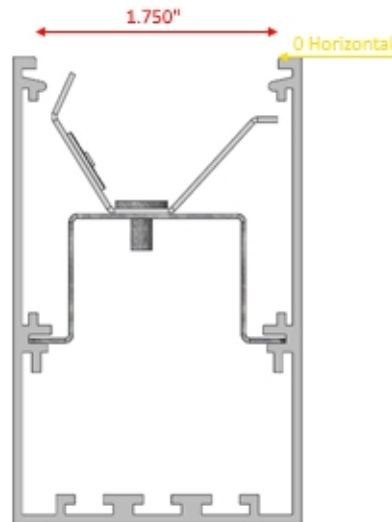
Pendant mounted, extruded aluminum housing, formed

white enamel aluminum LED tray, no enclosure.

92 white LEDs, one PAL-Lighting LED board with 92 white LEDs

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

120.0Vac, 60.00Hz, 0.1551A, 18.51W, 0.994PF, 5.4%THD(i)



Performance Summary

Total Light Output	2575 lm
Luminaire Power	18.5 W
Luminous Efficacy	139.2 lm/W

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



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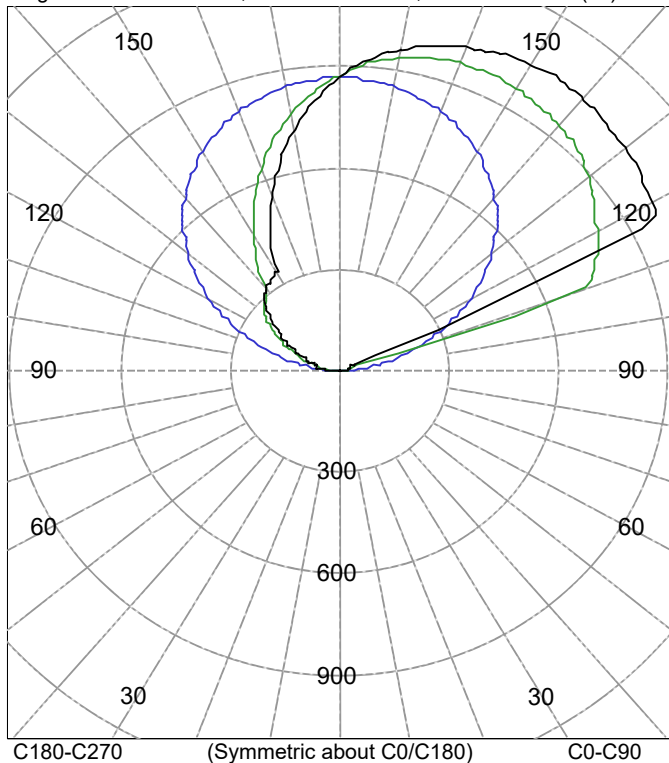
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Legend: C0/C180-Black, C45/C225-Green, C90/C270-Blue (cd)



INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
90.0	0	0	0	0	0	
95.0	11	11	9	10	39	25
100.0	24	24	21	104	105	
105.0	30	30	27	416	178	136
110.0	36	35	716	487	253	
115.0	294	845	771	557	330	370
120.0	989	939	811	621	405	
125.0	1004	964	847	671	475	478
130.0	1019	979	887	720	542	
135.0	1027	999	919	766	603	474
140.0	1041	1018	938	804	658	
145.0	1049	1027	953	837	705	427
150.0	1043	1024	963	862	747	
155.0	1032	1016	968	881	782	350
160.0	1015	1003	965	893	812	
165.0	993	983	956	898	835	233
170.0	963	956	938	895	851	
175.0	923	919	911	884	861	82
180.0	868	868	868	868	868	

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
180-150	665	N / A	25.8
180-140	1092	N / A	42.4
180-120	2044	N / A	79.4
180-90	2575	N / A	100.0
140-90	1483	N / A	57.6
120-90	532	N / A	20.6
90-0	0	N / A	0.0
180-0	2575	N / A	100.0

Total Light Output = 2,575 lm

Signed:

Authorized Signatory

Date of test

4-Mar-2019

Date of report

4-Mar-2019



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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	0	0	0	0	0
7.5	0	0	0	0	0
10.0	0	0	0	0	0
12.5	0	0	0	0	0
15.0	0	0	0	0	0
17.5	0	0	0	0	0
20.0	0	0	0	0	0
22.5	0	0	0	0	0
25.0	0	0	0	0	0
27.5	0	0	0	0	0
30.0	0	0	0	0	0
32.5	0	0	0	0	0
35.0	0	0	0	0	0
37.5	0	0	0	0	0
40.0	0	0	0	0	0
42.5	0	0	0	0	0
45.0	0	0	0	0	0
47.5	0	0	0	0	0
50.0	0	0	0	0	0
52.5	0	0	0	0	0
55.0	0	0	0	0	0
57.5	0	0	0	0	0
60.0	0	0	0	0	0
62.5	0	0	0	0	0
65.0	0	0	0	0	0
67.5	0	0	0	0	0
70.0	0	0	0	0	0
72.5	0	0	0	0	0
75.0	0	0	0	0	0
77.5	0	0	0	0	0
80.0	0	0	0	0	0
82.5	0	0	0	0	0
85.0	0	0	0	0	0
87.5	0	0	0	0	0
90.0	0	0	0	0	0



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92 white LEDs, one PAL-Lighting LED board with 92 white LEDs

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120.0Vac, 60.00Hz, 0.1551A, 18.51W, 0.994PF, 5.4%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	0	0	0	0	0
92.5	5	5	6	4	12
95.0	11	11	9	10	39
97.5	15	15	18	13	71
100.0	24	24	21	104	105
102.5	27	26	24	382	141
105.0	30	30	27	416	178
107.5	34	33	89	451	215
110.0	36	35	716	487	253
112.5	39	121	751	522	292
115.0	294	845	771	557	330
117.5	974	929	791	591	367
120.0	989	939	811	621	405
122.5	996	951	829	646	441
125.0	1004	964	847	671	475
127.5	1013	974	869	696	508
130.0	1019	979	887	720	542
132.5	1022	988	904	743	574
135.0	1027	999	919	766	603
137.5	1035	1009	930	787	632
140.0	1041	1018	938	804	658
142.5	1046	1024	946	822	683
145.0	1049	1027	953	837	705
147.5	1047	1026	959	850	727
150.0	1043	1024	963	862	747
152.5	1038	1021	966	872	765
155.0	1032	1016	968	881	782
157.5	1024	1009	967	888	798
160.0	1015	1003	965	893	812
162.5	1005	993	961	896	824
165.0	993	983	956	898	835
167.5	979	970	948	897	844
170.0	963	956	938	895	851
172.5	944	939	926	890	857
175.0	923	919	911	884	861
177.5	898	896	893	875	864
180.0	868	868	868	868	868



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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	0	0	0	0	0
7.5	0	0	0	0	0
10.0	0	0	0	0	0
12.5	0	0	0	0	0
15.0	0	0	0	0	0
17.5	0	0	0	0	0
20.0	0	0	0	0	0
22.5	0	0	0	0	0
25.0	0	0	0	0	0
27.5	0	0	0	0	0
30.0	0	0	0	0	0
32.5	0	0	0	0	0
35.0	0	0	0	0	0
37.5	0	0	0	0	0
40.0	0	0	0	0	0
42.5	0	0	0	0	0
45.0	0	0	0	0	0
47.5	0	0	0	0	0
50.0	0	0	0	0	0
52.5	0	0	0	0	0
55.0	0	0	0	0	0
57.5	0	0	0	0	0
60.0	0	0	0	0	0
62.5	0	0	0	0	0
65.0	0	0	0	0	0
67.5	0	0	0	0	0
70.0	0	0	0	0	0
72.5	0	0	0	0	0
75.0	0	0	0	0	0
77.5	0	0	0	0	0
80.0	0	0	0	0	0
82.5	0	0	0	0	0
85.0	0	0	0	0	0
87.5	0	0	0	0	0
90.0	0	0	0	0	0



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Pendant mounted, extruded aluminum housing, formed white enamel aluminum LED tray, no enclosure.

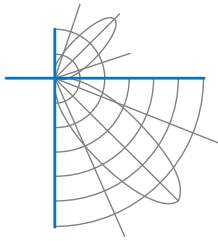
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120.0Vac, 60.00Hz, 0.1551A, 18.51W, 0.994PF, 5.4%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
90.0	0	0	0	0	0
92.5	12	14	20	16	17
95.0	39	24	31	35	37
97.5	71	36	43	46	48
100.0	105	51	50	58	62
102.5	141	69	62	63	65
105.0	178	89	77	75	74
107.5	215	110	93	89	88
110.0	253	133	111	103	102
112.5	292	155	131	118	116
115.0	330	172	152	137	132
117.5	367	188	173	156	151
120.0	405	202	194	177	171
122.5	441	215	215	196	191
125.0	475	250	235	216	210
127.5	508	290	253	236	230
130.0	542	323	265	256	250
132.5	574	356	276	275	269
135.0	603	390	286	292	288
137.5	632	424	294	302	303
140.0	658	459	304	311	312
142.5	683	494	354	319	320
145.0	705	528	397	325	327
147.5	727	562	435	333	332
150.0	747	594	474	397	340
152.5	765	626	513	438	413
155.0	782	656	553	481	454
157.5	798	684	592	524	498
160.0	812	711	629	568	544
162.5	824	736	667	612	589
165.0	835	760	703	654	633
167.5	844	782	736	695	677
170.0	851	801	768	735	720
172.5	857	819	798	773	760
175.0	861	835	826	808	798
177.5	864	849	850	840	833
180.0	868	868	868	868	868



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Pendant mounted, extruded aluminum housing, formed
white enamel aluminum LED tray, no enclosure.

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120.0Vac, 60.00Hz, 0.1551A, 18.51W, 0.994PF, 5.4%THD(i)

Test Distance 9.5 m
Test Temperature 24.9 °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

LLIA001084-010B

Integrating Sphere Report

Catalog Number: MLP2-IASY-MO-K40-80-4-W-OP-FXXX-UNV-XXX

Pendant mounted, extruded aluminum housing, formed
white enamel aluminum LED tray, no enclosure.

92 white LEDs, one PAL-Lighting LED board with 92 white LEDs
One Osram Optotronic OTi30/120-277/1A0 DIM-1 L LED driver.



Performance Summary

Voltage	120.0 Vac
Current	0.1551 A
Power	18.50 W
Frequency	59.97 Hz
Power Factor	0.994
Current THD	5.5 %

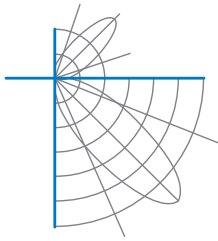
Total Luminous Flux	2637.3 lm
Efficacy	142.6 lm/W
Chromaticity (x,y)	(0.3822, 0.3791)
(u',v')	(0.2253, 0.5029)
Duv	0.0006
CCT	3970 K
CRI (Ra)	83
R9	14
TM-30: Rf	82
TM-30: Rg	96

Prepared For:

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

Test date: 02/27/2019

Report date: 03/01/2019



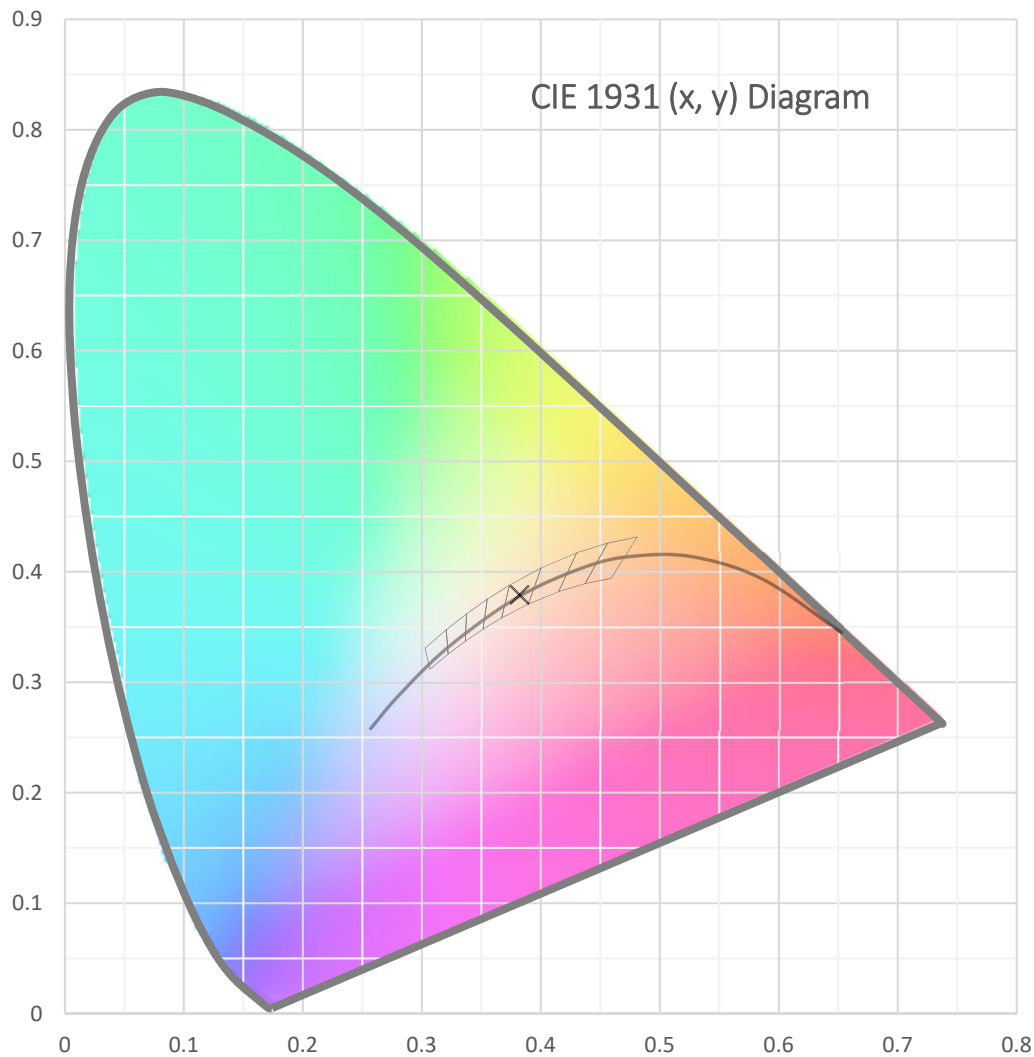
Test Report Number: LLIA001084-010B

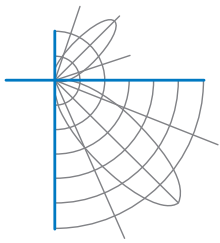
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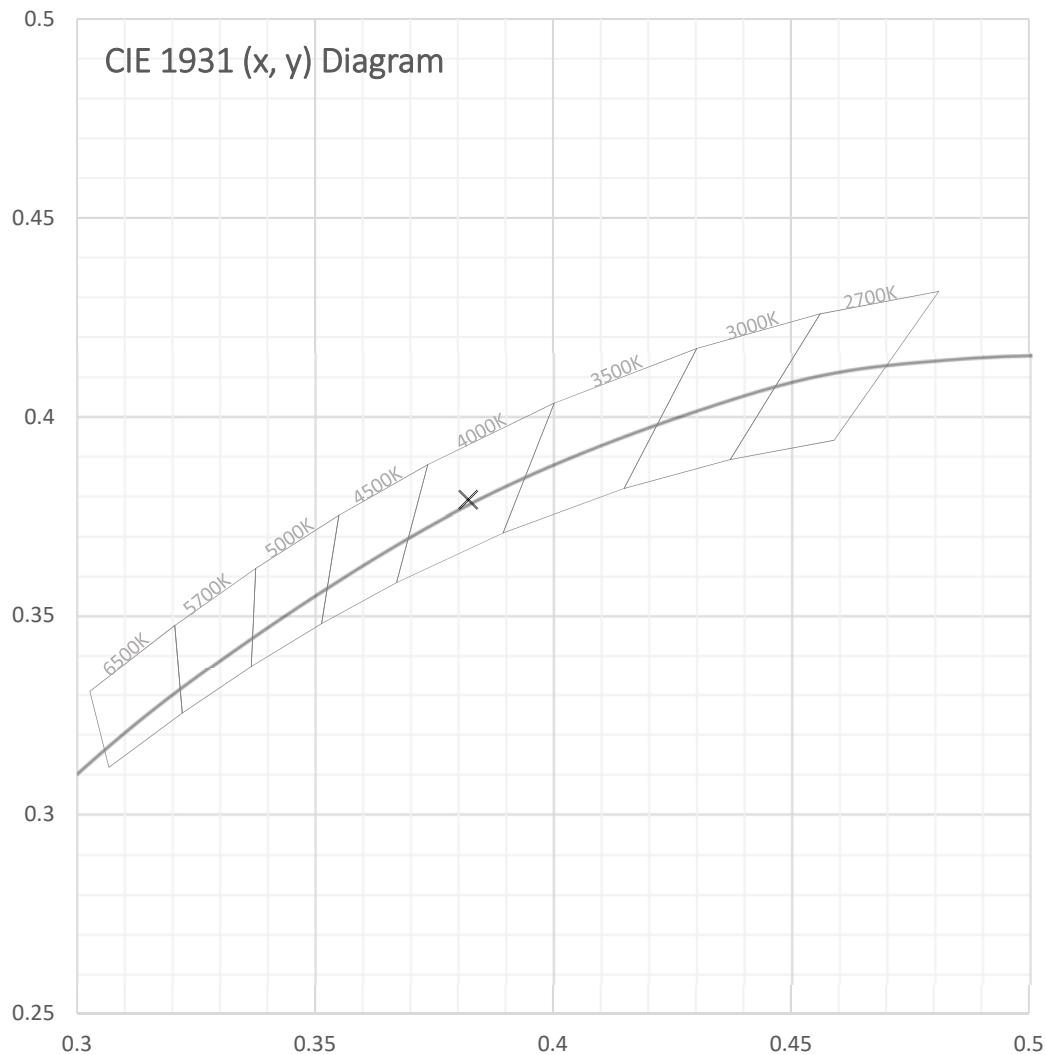
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92 white LEDs, one PAL-lighting LED board with 92 white LEDs

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





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Catalog Number: MLP2-IASY-MO-K40-80-4-W-OP-FXXX-UNV-XXX

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Spectral Data

Total Radiant Flux	8.135 W
Total Luminous Flux	2637.3 Lm
Chromaticity CIE 1931 (x, y)	(0.3822, 0.3791)
Chromaticity CIE 1976 (u', v')	(0.2253, 0.5029)
Correlated Color Temperature (CCT)	3970 K
Color Rendering Index (Ra)	83
R1	82
R2	89
R3	94
R4	82
R5	81
R6	84
R7	87
R8	67
R9	14
R10	74
R11	81
R12	60
R13	83
R14	97
TM-30: Rf	82
TM-30: Rg	96
Distance from Planckian Locus (Duv)	0.0006
Scotopic/Photopic Ratio *	1.676

Electrical Data

Voltage	120.0 Vac
Current	0.1551 A
Power	18.50 W
Frequency	59.97 Hz
Power Factor	0.994
Current THD	5.5 %



Test Report Number: LLIA001084-010B

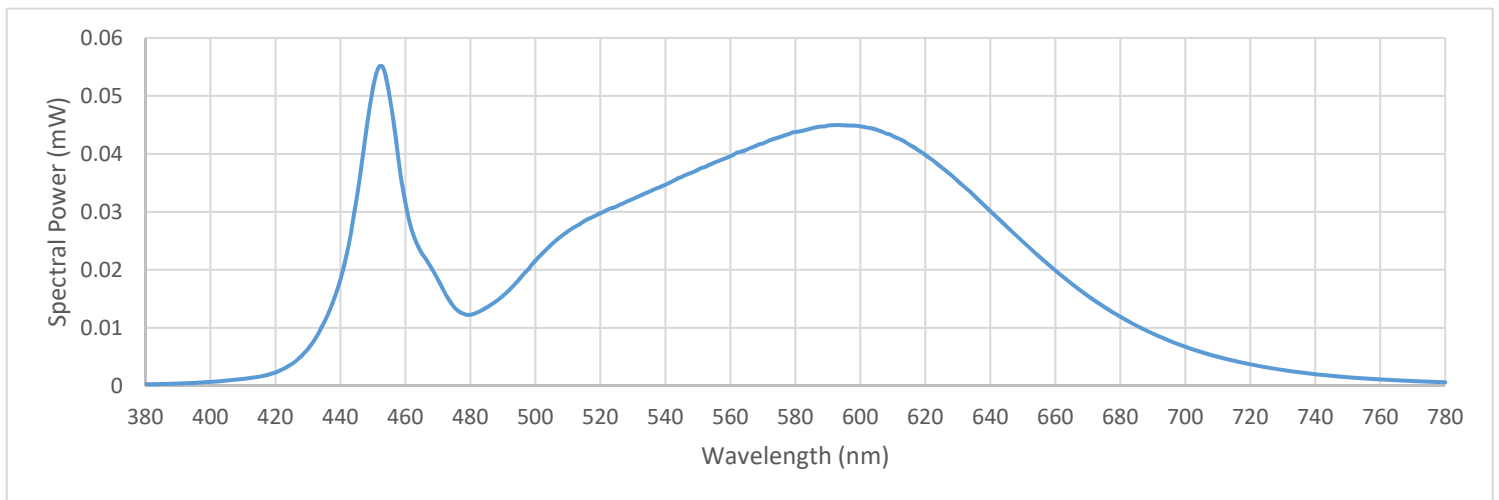
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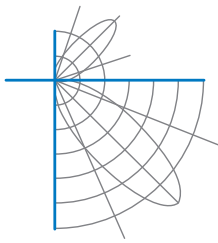
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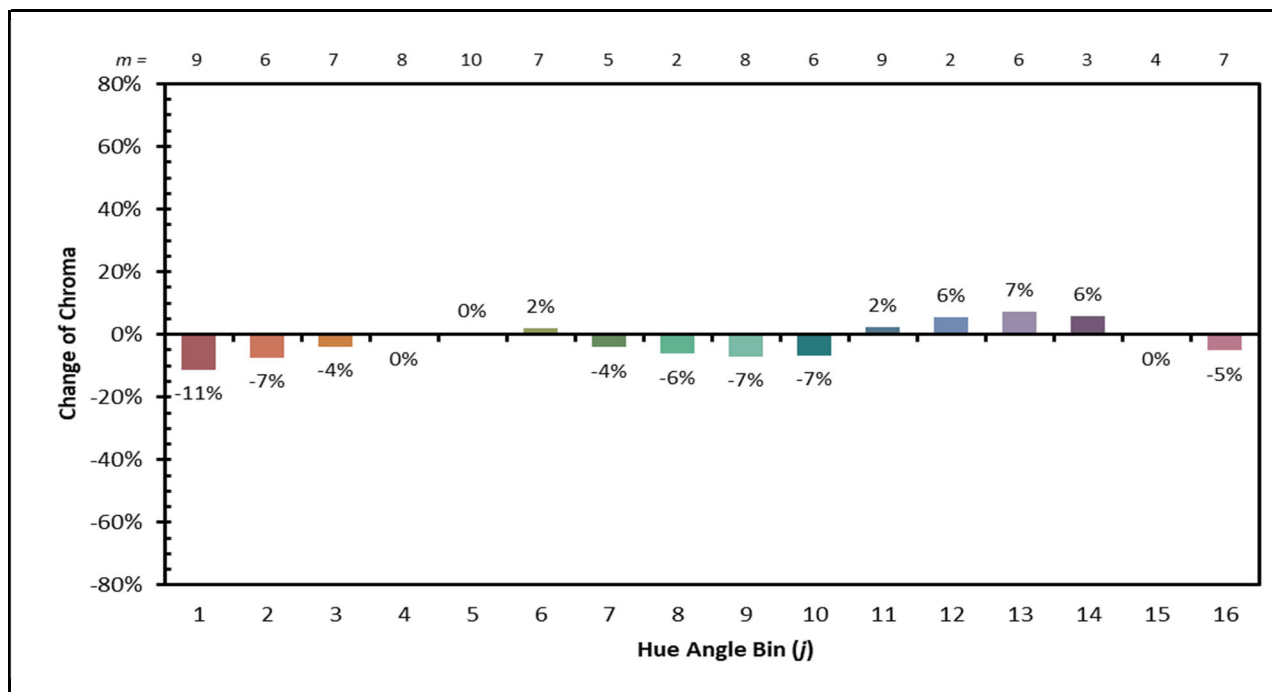
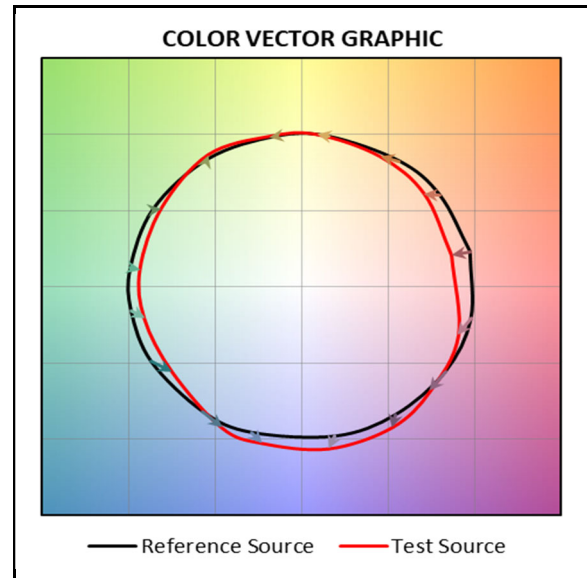
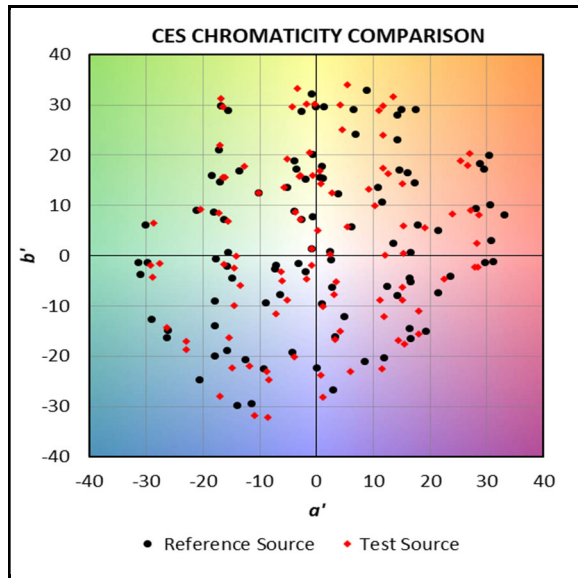
Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000266	480	0.012260	580	0.043781	680	0.011898
385	0.000292	485	0.013526	585	0.044423	685	0.010382
390	0.000379	490	0.015479	590	0.044877	690	0.009008
395	0.000503	495	0.018354	595	0.044923	695	0.007794
400	0.000667	500	0.021597	600	0.044736	700	0.006738
405	0.000888	505	0.024413	605	0.044178	705	0.005800
410	0.001174	510	0.026623	610	0.043089	710	0.004985
415	0.001561	515	0.028408	615	0.041616	715	0.004302
420	0.002320	520	0.029788	620	0.039794	720	0.003699
425	0.003741	525	0.030947	625	0.037699	725	0.003180
430	0.006376	530	0.032247	630	0.035258	730	0.002728
435	0.010966	535	0.033457	635	0.032804	735	0.002338
440	0.018301	540	0.034669	640	0.030109	740	0.002001
445	0.032360	545	0.036019	645	0.027460	745	0.001720
450	0.051300	550	0.037262	650	0.024853	750	0.001470
455	0.050359	555	0.038482	655	0.022287	755	0.001270
460	0.031630	560	0.039599	660	0.019930	760	0.001100
465	0.022833	565	0.040720	665	0.017591	765	0.000942
470	0.018345	570	0.041773	670	0.015489	770	0.000812
475	0.013566	575	0.042861	675	0.013638	775	0.000700
						780	0.000604





IES TM-30 Summary





Test Report Number: LLIA001084-010B

Catalog Number: MLP2-IASY-MO-K40-80-4-W-OP-FXXX-UNV-XXX

Pendant mounted, extruded aluminum housing, formed
white enamel aluminum LED tray, no enclosure.

92 white LEDs, one PAL-Lighting LED board with 92 white LEDs
One Osram Optotronic OTi30/120-277/1A0 DIM-1 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: 25.4 °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.

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