

Report of Test

LLIA001084-008A

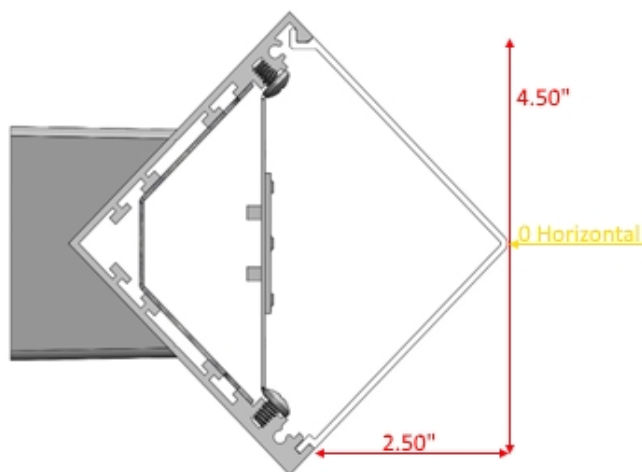
Catalog Number: AS350-MO-K40-80-4-DW-LOH-FXXX-UNV-XXX

Surface wall mounted, extruded aluminum housing, formed white enamel aluminum LED tray, frosted plastic enclosure.

144 white LEDs, One Osram PrevaLED BAR with 144 LEDs

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

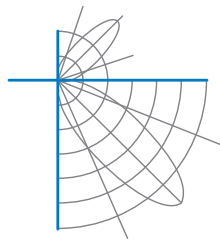
120.0Vac, 60.00Hz, 0.1418A, 16.90W, 0.993PF, 5.6%THD(i)



Performance Summary

Total Light Output	2094 lm
Luminaire Power	16.9 W
Luminous Efficacy	123.9 lm/W

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



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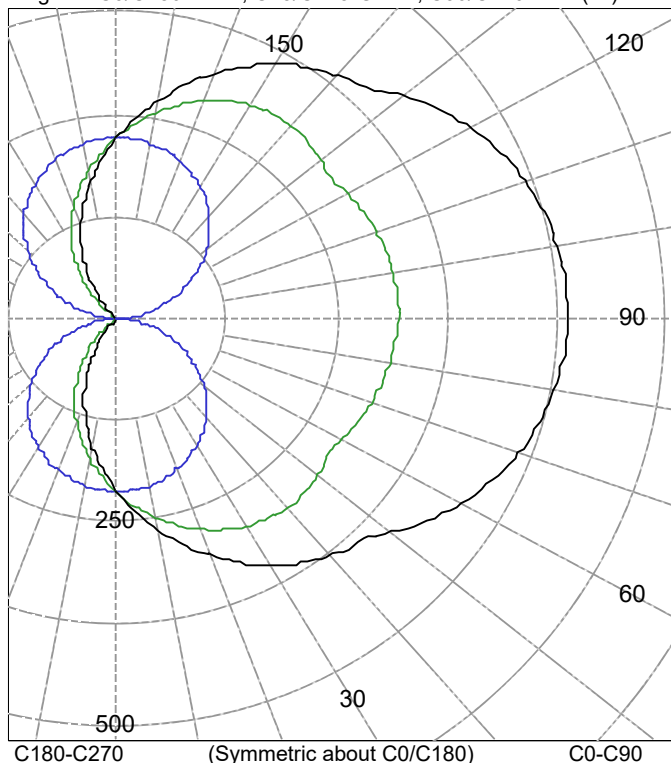
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Legend: C0/C180-Black, C45/C225-Green, C90/C270-Blue (cd)



AVERAGE LUMINANCE (cd/m²)

Gamma	C0	C45	C90
45.0	2535	2359	2377
55.0	2728	2258	2204
65.0	2965	2386	1976
75.0	3217	2592	1632
85.0	3511	2893	968

INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	213	213	213	213	213	
5.0	239	237	232	222	212	20
10.0	264	260	249	229	209	
15.0	288	281	263	234	205	59
20.0	310	302	276	237	198	
25.0	331	320	287	238	190	92
30.0	350	336	295	237	181	
35.0	367	349	300	234	170	117
40.0	380	359	303	229	157	
45.0	389	365	303	221	143	130
50.0	409	372	299	211	128	
55.0	433	391	292	200	112	141
60.0	454	407	296	187	95	
65.0	471	422	302	172	78	152
70.0	486	434	307	155	61	
75.0	497	444	311	151	44	159
80.0	505	451	315	149	29	
85.0	510	456	318	148	14	162
90.0	512	458	320	148	1	

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	171	N / A	8.2
0-40	288	N / A	13.8
0-60	560	N / A	26.7
0-90	1032	N / A	49.3
40-90	744	N / A	35.5
60-90	473	N / A	22.6
90-180	1062	N / A	50.7
0-180	2094	N / A	100.0

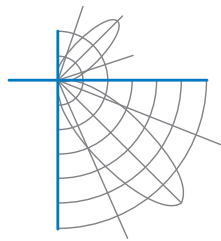
Total Light Output = 2,094 lm

Signed:

Authorized Signatory

Spacing Criterion: 0-180 2.4
Spacing Criterion: 90-270 1.3

Date of test 4-Mar-2019
Date of report 4-Mar-2019



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Surface wall mounted, extruded aluminum housing, formed
white enamel aluminum LED tray, frosted plastic enclosure.

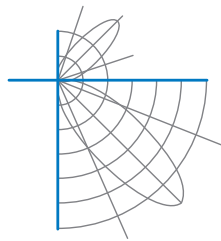
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120.0Vac, 60.00Hz, 0.1418A, 16.90W, 0.993PF, 5.6%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	213	213	213	213	213
2.5	227	226	224	217	213
5.0	239	237	232	222	212
7.5	252	249	241	226	211
10.0	264	260	249	229	209
12.5	276	271	256	232	207
15.0	288	281	263	234	205
17.5	299	292	270	236	202
20.0	310	302	276	237	198
22.5	321	311	282	238	195
25.0	331	320	287	238	190
27.5	341	328	291	238	186
30.0	350	336	295	237	181
32.5	359	343	298	236	176
35.0	367	349	300	234	170
37.5	374	355	302	232	164
40.0	380	359	303	229	157
42.5	385	363	303	225	151
45.0	389	365	303	221	143
47.5	396	367	301	216	136
50.0	409	372	299	211	128
52.5	421	382	296	206	120
55.0	433	391	292	200	112
57.5	444	400	292	193	104
60.0	454	407	296	187	95
62.5	463	415	299	180	87
65.0	471	422	302	172	78
67.5	479	428	305	164	70
70.0	486	434	307	155	61
72.5	492	439	309	153	53
75.0	497	444	311	151	44
77.5	502	448	313	150	36
80.0	505	451	315	149	29
82.5	508	454	317	148	21
85.0	510	456	318	148	14
87.5	512	457	319	148	6
90.0	512	458	320	148	1



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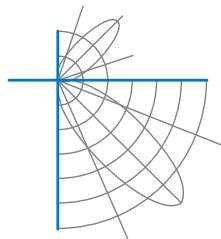
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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	512	458	320	148	1
92.5	512	458	320	149	7
95.0	511	458	320	150	15
97.5	510	457	320	151	23
100.0	509	455	319	152	30
102.5	506	453	318	153	39
105.0	503	450	317	155	47
107.5	499	446	315	157	56
110.0	494	442	314	158	64
112.5	488	437	312	164	73
115.0	482	431	310	173	82
117.5	475	425	307	181	91
120.0	466	418	305	189	100
122.5	457	411	301	196	108
125.0	447	403	297	203	117
127.5	437	394	299	209	125
130.0	426	385	303	215	134
132.5	413	375	306	221	142
135.0	400	371	308	226	150
137.5	395	369	309	230	157
140.0	390	366	309	234	164
142.5	384	362	308	238	171
145.0	377	357	307	241	177
147.5	369	351	305	243	183
150.0	361	344	303	244	189
152.5	351	337	299	246	194
155.0	341	328	295	246	199
157.5	331	320	290	246	203
160.0	320	310	284	245	207
162.5	308	301	278	244	211
165.0	297	290	272	242	214
167.5	284	280	265	240	216
170.0	272	269	257	237	218
172.5	259	257	249	234	220
175.0	247	246	241	230	221
177.5	234	234	232	226	222
180.0	223	223	223	223	223



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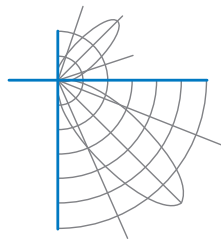
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Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
0.0	213	213	213	213	213
2.5	213	207	205	202	199
5.0	212	202	196	190	186
7.5	211	196	186	178	173
10.0	209	190	176	166	160
12.5	207	183	166	154	148
15.0	205	177	156	141	135
17.5	202	169	146	129	122
20.0	198	162	135	117	110
22.5	195	155	125	105	97
25.0	190	147	115	93	85
27.5	186	139	104	81	73
30.0	181	130	94	70	61
32.5	176	122	83	58	50
35.0	170	113	73	47	39
37.5	164	105	63	37	28
40.0	157	96	52	27	18
42.5	151	87	43	17	9
45.0	143	78	33	7	1
47.5	136	69	24	1	1
50.0	128	60	15	1	1
52.5	120	52	6	1	1
55.0	112	43	1	1	1
57.5	104	35	1	1	1
60.0	95	27	0	1	1
62.5	87	19	0	0	0
65.0	78	11	0	0	0
67.5	70	3	0	0	0
70.0	61	0	0	0	0
72.5	53	0	0	0	0
75.0	44	0	0	0	0
77.5	36	0	0	0	0
80.0	29	0	0	0	0
82.5	21	0	0	0	0
85.0	14	0	0	0	0
87.5	6	0	0	0	0
90.0	1	0	0	0	0



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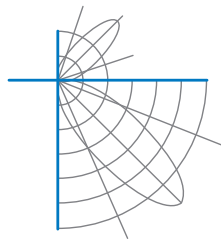
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Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
90.0	1	0	0	0	0
92.5	7	0	0	0	0
95.0	15	0	0	0	0
97.5	23	0	0	0	0
100.0	30	0	0	0	0
102.5	39	0	0	0	1
105.0	47	0	0	0	1
107.5	56	0	0	1	1
110.0	64	0	0	1	1
112.5	73	7	0	1	1
115.0	82	15	1	1	1
117.5	91	23	1	1	1
120.0	100	32	1	1	1
122.5	108	40	1	1	1
125.0	117	49	3	1	1
127.5	125	58	12	1	1
130.0	134	67	21	1	1
132.5	142	76	31	4	1
135.0	150	85	40	14	5
137.5	157	94	50	24	16
140.0	164	103	60	34	26
142.5	171	112	70	45	37
145.0	177	121	80	56	48
147.5	183	130	91	67	59
150.0	189	139	102	78	71
152.5	194	147	112	90	83
155.0	199	155	123	102	96
157.5	203	163	134	114	108
160.0	207	171	144	126	121
162.5	211	179	155	138	133
165.0	214	186	165	151	146
167.5	216	193	175	163	159
170.0	218	199	185	175	172
172.5	220	206	195	187	185
175.0	221	211	205	200	198
177.5	222	217	215	212	211
180.0	223	223	223	223	223



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Coefficients Of Utilization - Zonal Cavity Method

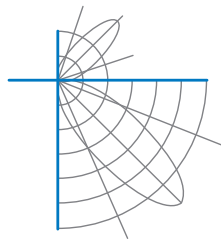
Effective Floor Cavity Reflectance 0.20

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
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	55	55	55	49
1	94	88	83	78	86	81	76	72	67	64	61	55	52	50	43	41	40	34
2	84	75	68	61	77	69	62	57	57	52	48	46	42	39	36	33	31	26
3	76	65	56	50	69	60	52	46	49	44	39	40	36	32	31	28	25	21
4	69	57	48	41	63	52	44	38	43	37	32	35	30	26	27	24	21	17
5	63	50	41	35	58	46	38	32	38	32	27	31	26	22	24	21	18	14
6	58	45	36	30	53	41	33	28	34	28	23	28	23	19	22	18	15	12
7	54	40	32	26	49	37	29	24	31	25	20	25	21	17	20	16	13	11
8	50	37	28	23	45	34	26	21	28	22	18	23	18	15	18	15	12	9
9	46	33	25	20	42	31	24	19	26	20	16	21	17	13	17	13	11	8
10	43	30	23	18	39	28	21	17	24	18	14	20	15	12	16	12	10	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	5.9	9.12	7.57
8.0	3.3	12.16	10.09
10.0	2.1	15.20	12.61
12.0	1.5	18.24	15.14
14.0	1.1	21.28	17.66
16.0	0.8	24.32	20.18



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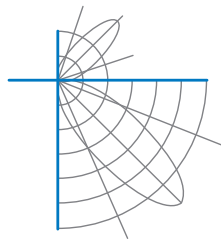
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Test Distance 9.5 m
Test Temperature 24.7 °C

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.

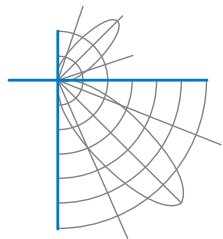
Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

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

LLIA001084-008B

Integrating Sphere Report

Catalog Number: AS350-MO-K40-80-4-DW-LOH-FXXX-UNV-XXX

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Performance Summary

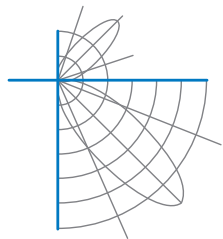
Voltage	120.0 Vac
Current	0.1420 A
Power	16.92 W
Frequency	59.97 Hz
Power Factor	0.993
Current THD	5.5 %
Total Luminous Flux	2142.8 lm
Efficacy	126.6 lm/W
Chromaticity (x,y)	(0.3796, 0.3750)
(u',v')	(0.2252, 0.5007)
Duv	-0.0006
CCT	4011 K
CRI (Ra)	85
R9	19
TM-30: Rf	82
TM-30: Rg	94

Prepared For:

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

Test date: 02/26/2019

Report date: 03/04/2019



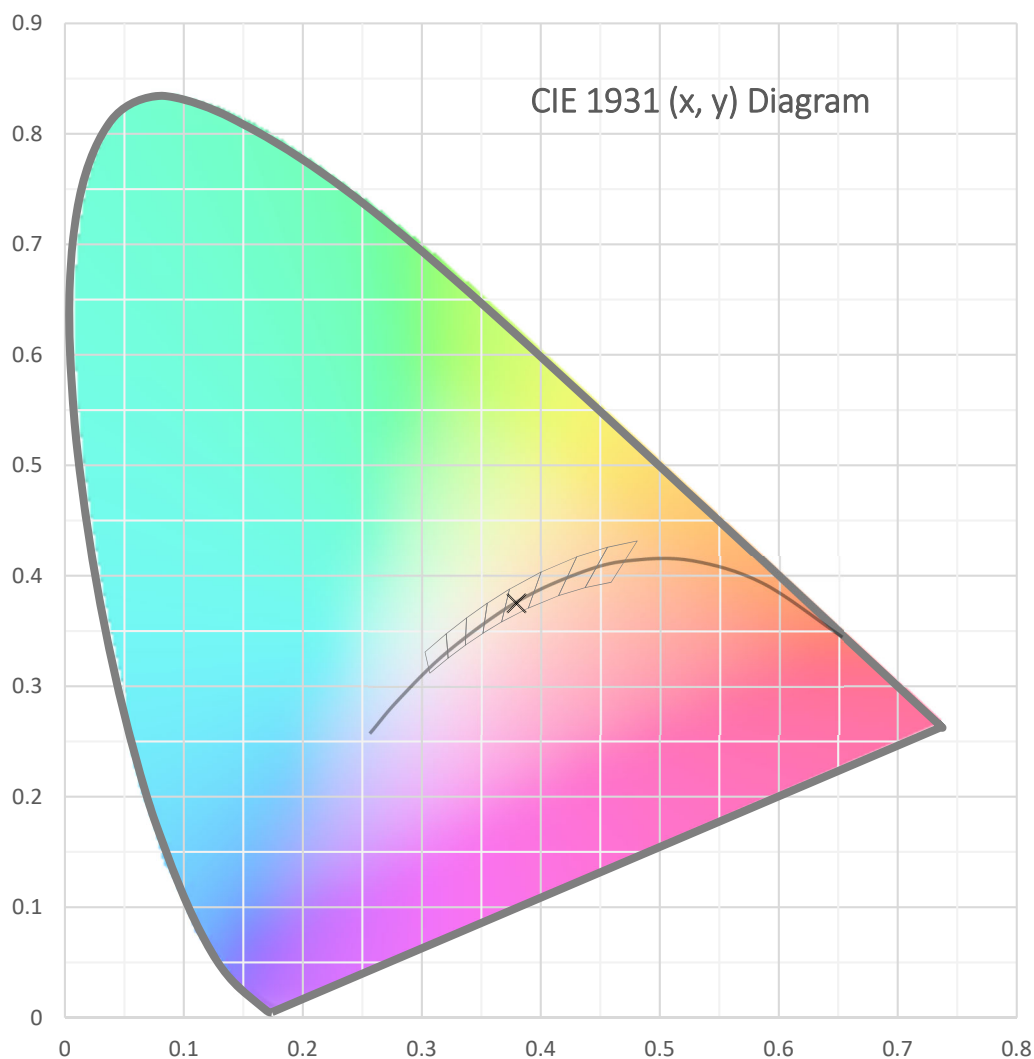
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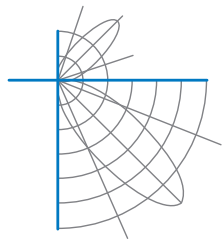
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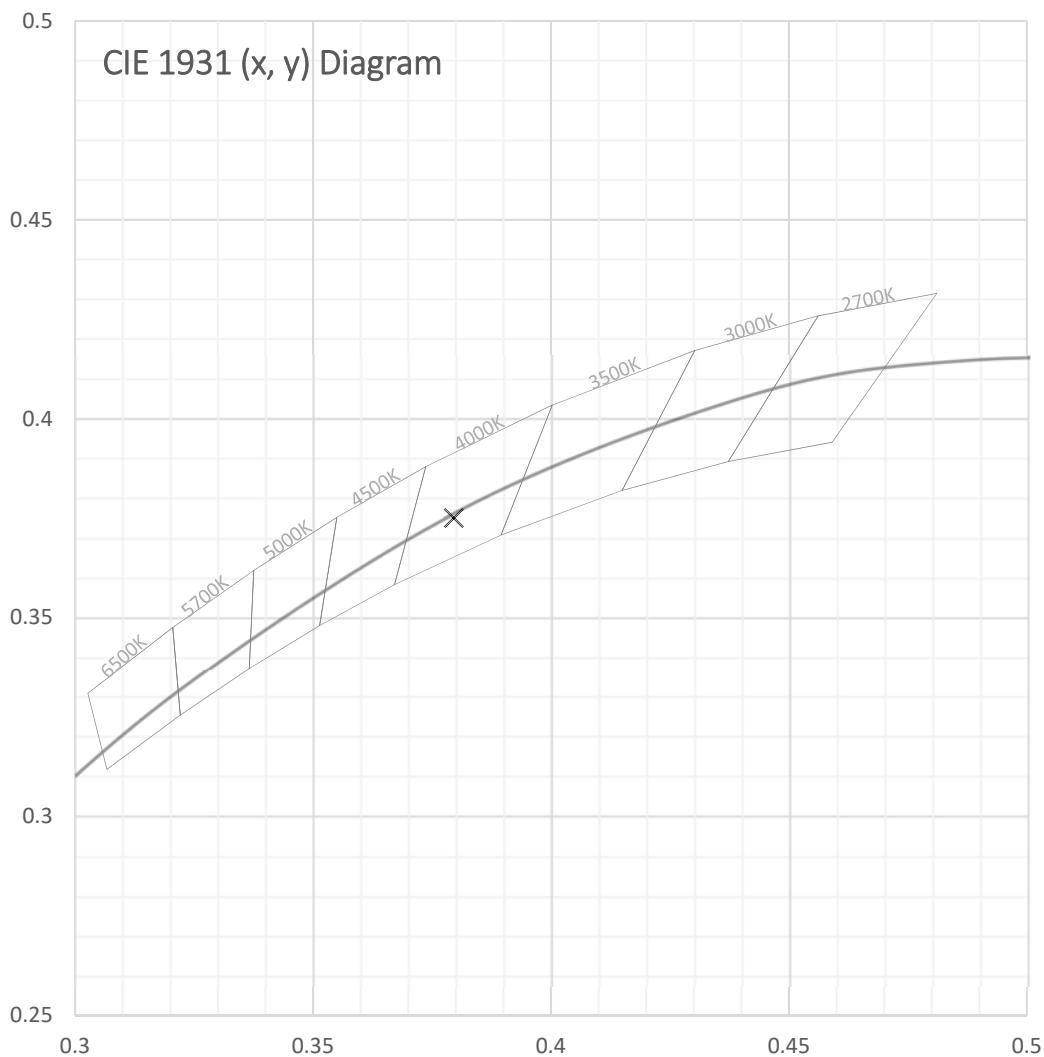
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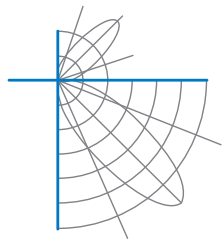
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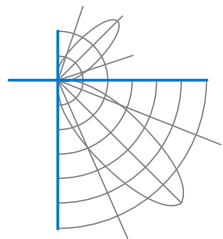
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Spectral Data

Total Radiant Flux	6.713 W
Total Luminous Flux	2142.8 Lm
Chromaticity CIE 1931 (x, y)	(0.3796, 0.3750)
Chromaticity CIE 1976 (u', v')	(0.2252, 0.5007)
Correlated Color Temperature (CCT)	4011 K
Color Rendering Index (Ra)	85
R1	84
R2	92
R3	96
R4	82
R5	83
R6	87
R7	87
R8	68
R9	19
R10	79
R11	80
R12	62
R13	86
R14	98
TM-30: Rf	82
TM-30: Rg	94
Distance from Planckian Locus (Duv)	-0.0006
Scotopic/Photopic Ratio *	1.722

Electrical Data

Voltage	120.0 Vac
Current	0.1420 A
Power	16.92 W
Frequency	59.97 Hz
Power Factor	0.993
Current THD	5.5 %



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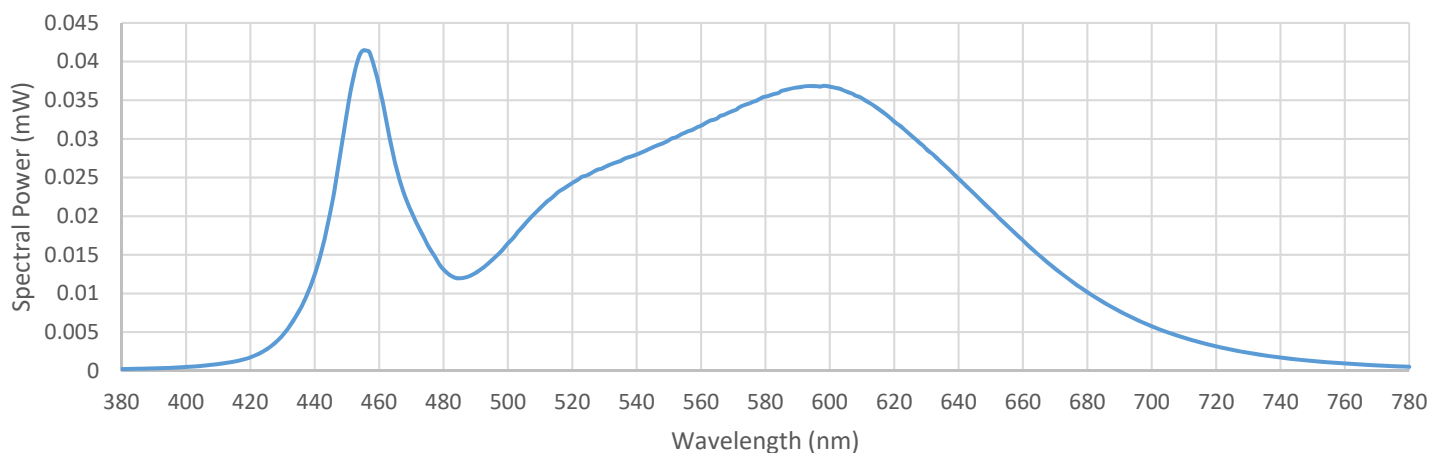
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white enamel aluminum LED tray, frosted plastic enclosure.

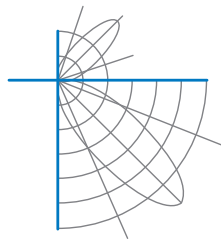
144 white LEDs, One Osram PrevaLED BAR with 144 LEDs

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

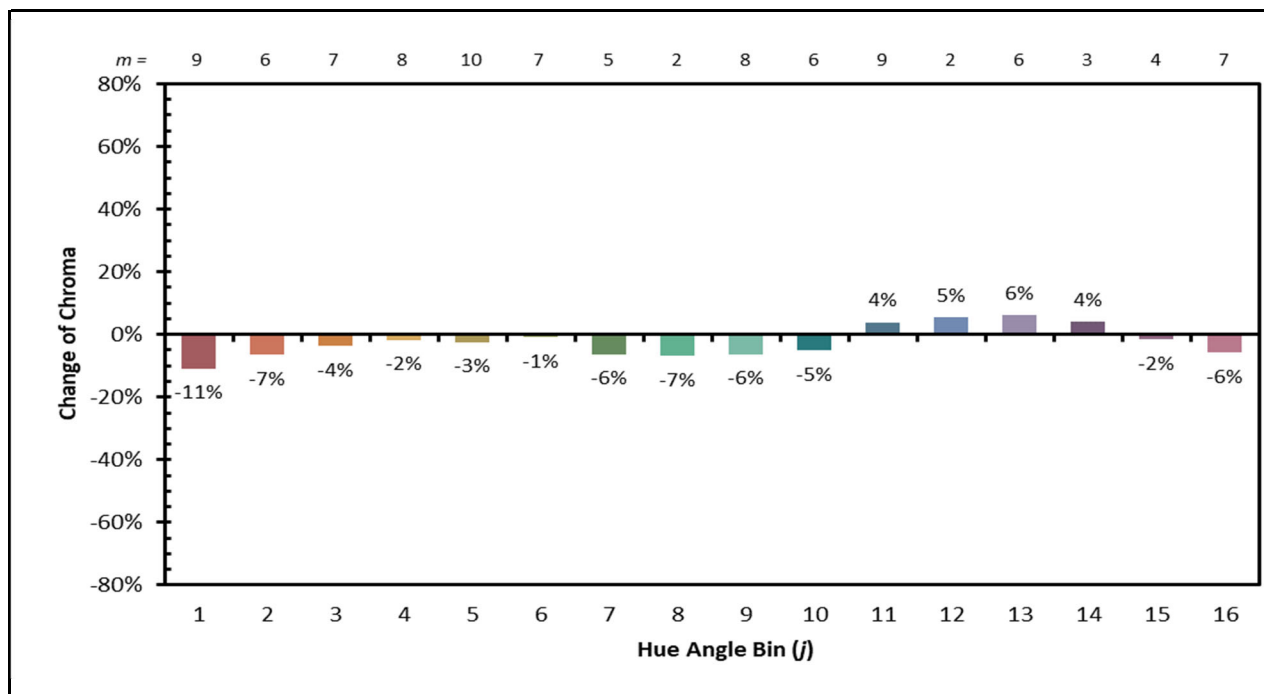
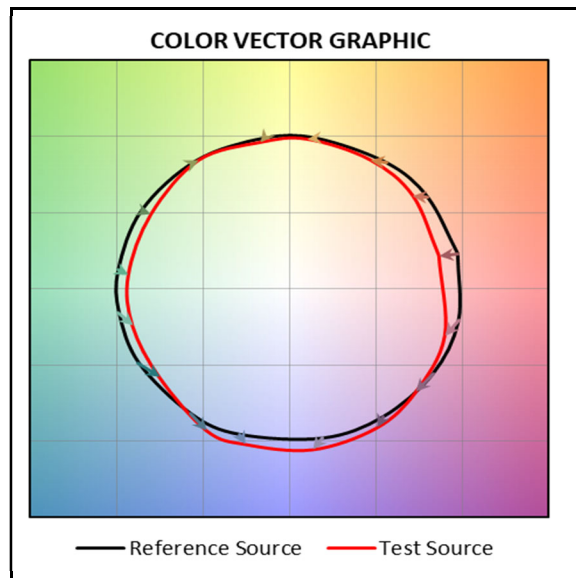
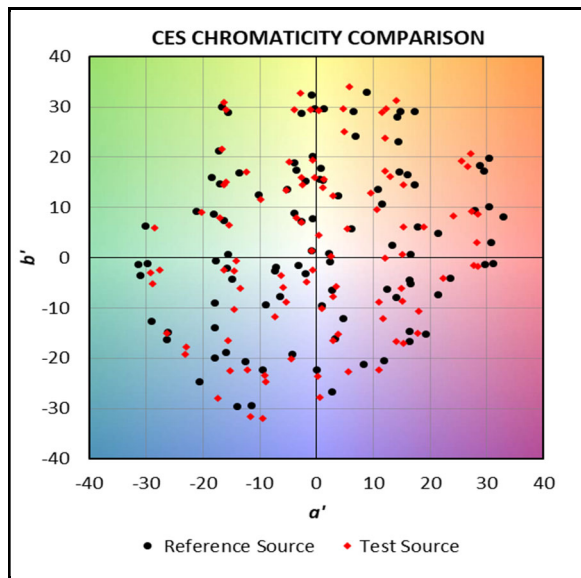
Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

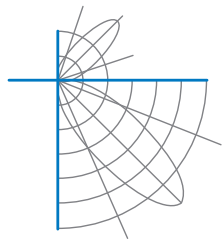
380	0.000230	480	0.013103	580	0.035469	680	0.010163
385	0.000245	485	0.011976	585	0.036206	685	0.008874
390	0.000308	490	0.012672	590	0.036662	690	0.007696
395	0.000381	495	0.014292	595	0.036816	695	0.006670
400	0.000487	500	0.016472	600	0.036748	700	0.005764
405	0.000647	505	0.018819	605	0.036133	705	0.004957
410	0.000859	510	0.021007	610	0.035255	710	0.004271
415	0.001179	515	0.022899	615	0.033897	715	0.003682
420	0.001736	520	0.024303	620	0.032228	720	0.003160
425	0.002759	525	0.025366	625	0.030568	725	0.002708
430	0.004592	530	0.026334	630	0.028661	730	0.002326
435	0.007681	535	0.027143	635	0.026823	735	0.001993
440	0.012475	540	0.027959	640	0.024812	740	0.001704
445	0.020901	545	0.028892	645	0.022854	745	0.001466
450	0.033388	550	0.029822	650	0.020821	750	0.001260
455	0.041428	555	0.030793	655	0.018770	755	0.001084
460	0.036940	560	0.031697	660	0.016876	760	0.000940
465	0.026696	565	0.032645	665	0.014941	765	0.000805
470	0.020564	570	0.033623	670	0.013187	770	0.000693
475	0.016336	575	0.034587	675	0.011638	775	0.000599
						780	0.000519





IES TM-30 Summary





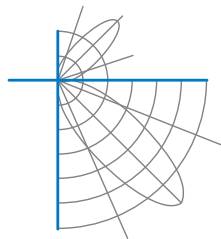
Test Report Number: LLIA001084-008B

Catalog Number: AS350-MO-K40-80-4-DW-LOH-FXXX-UNV-XXX

Surface wall mounted, extruded aluminum housing, formed
white enamel aluminum LED tray, frosted plastic enclosure.

144 white LEDs, One Osram PrevaLED BAR with 144 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:	25.1 °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, 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.



Report of Test

LLIA001084-008C

Electrical Test Report

Catalog Number: AS350-MO-K40-80-4-DW-LOH-FXXX-UNV-XXX

Surface wall mounted, extruded aluminum housing, formed white enamel aluminum LED tray, frosted plastic enclosure.

144 white LEDs, One Osram PrevaLED BAR with 144 LEDs
One Osram Optotronic OTi30/120-277/1A0 DIM-1 L LED driver.



Performance Summary

Voltage	277.0 Vac
Current	0.0760 A
Power	18.86 W
Frequency	60.00 Hz
Power Factor	0.897
Current THD	18.8 %
Ambient Temperature:	24.8 °C

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

Tested in accordance with the applicable sections of C82.77-10-2014. 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. 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.

Test date: 02/28/2019

Report date: 03/04/2019

Electrical Report Template V1-2