

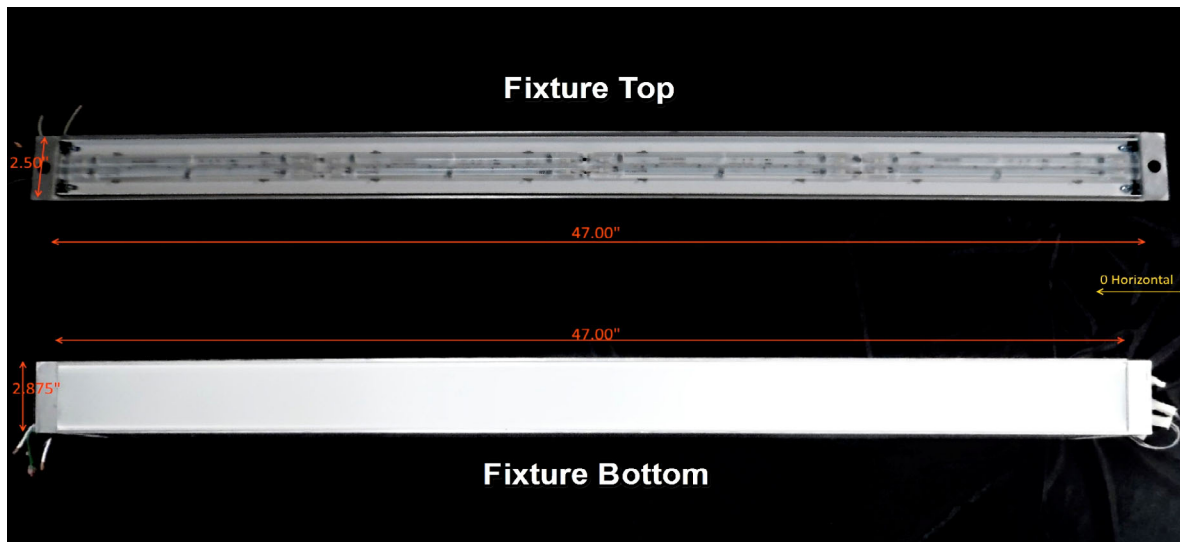
# Report of Test

## LLIA000762-003A-R02\*

\*This test report supersedes test report LLIA000762-003A-R01

Catalog Number: MLS3-I/D-HO/HO-K40/K40-XX-4-XX-WSOP/LOH-XXXX-XXX

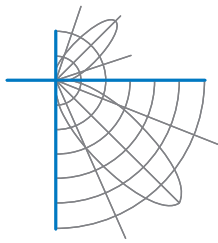
Pendant mounted, extruded aluminum housing, formed white aluminum reflector tray, frosted plastic lower enclosure, open top. 288 White LEDs, four upper PrevaLED Line boards with 36 LEDs each, clear plastic optics over each board. Four lower PrevaLED Bar boards with 36 LEDs each. Two Osram Optotronic OTi 30/120-277/1A0 DIM L LED drivers.  
120.0Vac, 60.00Hz, 0.4774A, 57.10W, 0.997PF, 6.0%THD(i)



### Performance Summary

Total Light Output	6737 lm
Luminaire Power	57.1 W
Luminous Efficacy	118.0 lm/W

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



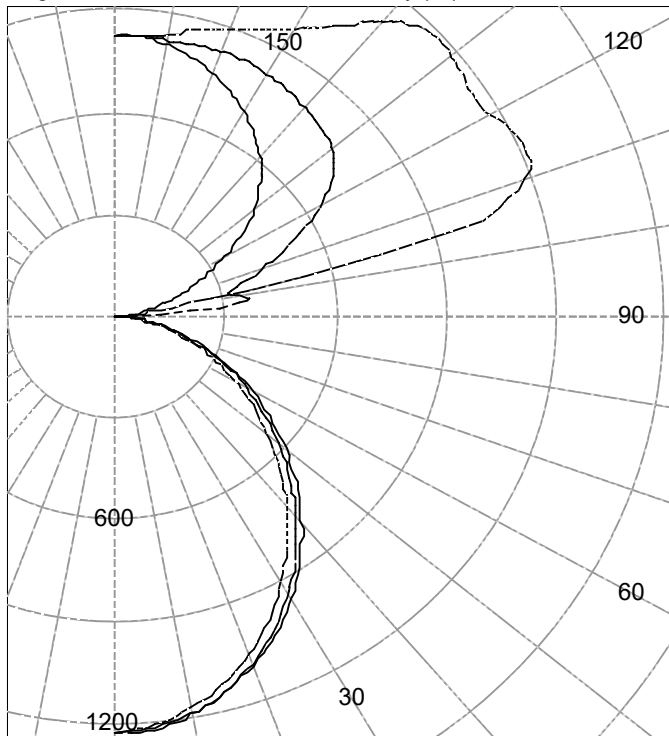
**Test Report No. LLIA000762-003A-R02**

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120.0Vac, 60.00Hz, 0.4774A, 57.10W, 0.997PF, 6.0%THD(i)

Legend: C0-Solid, C45-Dashed, C90-Grey (cd)



(Two plane symmetry) C0-C90

**INTENSITY SUMMARY (cd)**

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	1222	1222	1222	1222	1222	
5.0	1213	1209	1218	1215	1206	115
10.0	1189	1183	1191	1186	1174	
15.0	1149	1143	1147	1139	1125	321
20.0	1097	1088	1090	1078	1062	
25.0	1035	1026	1020	1004	986	467
30.0	960	946	941	922	902	
35.0	878	863	853	832	813	530
40.0	789	774	762	741	722	
45.0	697	684	669	649	631	514
50.0	603	592	578	559	542	
55.0	510	502	488	469	455	434
60.0	419	414	401	383	372	
65.0	331	330	317	302	293	312
70.0	247	248	236	225	219	
75.0	170	170	162	154	150	172
80.0	100	101	96	91	89	
85.0	43	43	41	38	37	46
90.0	1	2	2	2	1	

**AVERAGE LUMINANCE (cd / m<sup>2</sup>)**

Gamma	C0	C45	C90
45.0	10223	4711	3736
55.0	8851	3408	2612
65.0	7316	2262	1683
75.0	5385	1220	890
85.0	2531	335	233

**ZONAL FLUX AND PERCENTAGES**

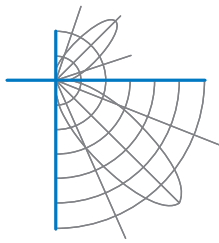
Zone	Flux (lm)	% Lamp	% Luminaire
0-30	903	N / A	13.4
0-40	1433	N / A	21.3
0-60	2382	N / A	35.4
0-90	2912	N / A	43.2
40-90	1478	N / A	21.9
60-90	530	N / A	7.9
90-180	3825	N / A	56.8
0-180	6737	N / A	100.0

Total Light Output = 6,737 lm

Signed:

Michael L. Grather  
Authorized Signatory

Date of test 13-Apr-2017  
Date of report 12-Apr-2018



**Test Report No. LLIA000762-003A-R02**

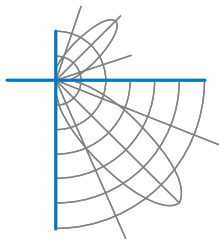
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Pendant mounted, extruded aluminum housing, formed white aluminum reflector tray, frosted plastic lower enclosure, open top. 288 White LEDs, four upper PrevaLED Line boards with 36 LEDs each, clear plastic optics over each board. Four lower PrevaLED Bar boards with 36 LEDs each. Two Osram Optotronic OTi 30/120-277/1A0 DIM L LED drivers.

120.0Vac, 60.00Hz, 0.4774A, 57.10W, 0.997PF, 6.0%THD(i)

**Intensity data (cd)**

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	1222	1222	1222	1222	1222
2.5	1219	1215	1225	1222	1214
5.0	1213	1209	1218	1215	1206
7.5	1203	1198	1207	1202	1192
10.0	1189	1183	1191	1186	1174
12.5	1171	1165	1171	1164	1151
15.0	1149	1143	1147	1139	1125
17.5	1125	1117	1120	1110	1095
20.0	1097	1088	1090	1078	1062
22.5	1067	1057	1057	1043	1025
25.0	1035	1026	1020	1004	986
27.5	998	986	981	964	945
30.0	960	946	941	922	902
32.5	920	905	900	877	858
35.0	878	863	853	832	813
37.5	834	819	808	787	767
40.0	789	774	762	741	722
42.5	743	729	716	695	676
45.0	697	684	669	649	631
47.5	650	638	623	603	586
50.0	603	592	578	559	542
52.5	556	547	533	513	498
55.0	510	502	488	469	455
57.5	464	458	444	426	413
60.0	419	414	401	383	372
62.5	374	371	358	342	332
65.0	331	330	317	302	293
67.5	289	288	276	262	256
70.0	247	248	236	225	219
72.5	208	208	198	188	184
75.0	170	170	162	154	150
77.5	133	134	127	121	119
80.0	100	101	96	91	89
82.5	69	70	67	64	62
85.0	43	43	41	38	37
87.5	20	19	17	15	14
90.0	1	2	2	2	1



**Test Report No. LLIA000762-003A-R02**

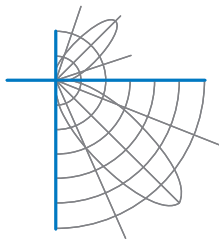
Catalog Number: MLS3-I/D-HO/HO-K40/K40-XX-4-XX-WSOP/LOH-XXXX-XXX

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120.0Vac, 60.00Hz, 0.4774A, 57.10W, 0.997PF, 6.0%THD(i)

**Intensity data (cd)**

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	1	2	2	2	1
92.5	7	20	74	25	20
95.0	21	45	281	86	56
97.5	40	73	368	184	107
100.0	64	102	340	399	201
102.5	90	131	312	860	437
105.0	119	164	336	1093	934
107.5	150	198	388	1099	1109
110.0	183	235	438	1081	1191
112.5	218	272	489	1059	1220
115.0	254	310	543	1038	1222
117.5	293	349	594	1025	1207
120.0	333	389	642	1027	1185
122.5	373	428	687	1040	1174
125.0	414	467	724	1056	1176
127.5	454	504	752	1073	1185
130.0	492	541	771	1086	1196
132.5	526	576	782	1089	1202
135.0	558	608	790	1077	1195
137.5	586	637	797	1051	1171
140.0	611	663	803	1018	1132
142.5	634	684	809	986	1086
145.0	656	702	816	959	1044
147.5	676	718	821	938	1007
150.0	696	731	825	921	976
152.5	715	743	829	907	951
155.0	733	754	832	895	931
157.5	750	765	834	884	913
160.0	766	775	834	876	897
162.5	780	785	832	868	884
165.0	793	795	830	860	872
167.5	805	803	827	849	858
170.0	814	811	826	839	844
172.5	822	817	827	832	833
175.0	827	822	830	830	827
177.5	830	825	831	830	826
180.0	829	829	829	829	829



**Test Number: LLIA000762-003A-R02**

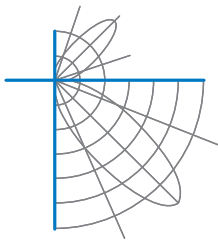
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120.0Vac, 60.00Hz, 0.4774A, 57.10W, 0.997PF, 6.0%THD(i)

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	106	106	106	106	96	96	96	96	80	80	80	64	64	64	50	50	50	43
1	96	92	88	85	88	84	81	78	70	68	66	57	55	54	44	43	42	37
2	88	81	75	70	80	74	69	64	61	58	54	50	47	45	39	37	36	31
3	80	71	64	58	73	65	59	54	54	50	46	44	41	38	35	33	31	26
4	73	63	55	49	67	58	51	46	48	43	39	39	36	33	31	29	27	23
5	67	56	48	42	61	52	45	39	43	38	34	35	32	28	28	25	23	20
6	62	50	42	37	57	46	39	34	39	34	30	32	28	25	26	23	20	17
7	57	45	38	32	52	42	35	30	35	30	26	29	25	22	23	20	18	16
8	53	41	34	28	49	38	31	27	32	27	23	27	23	20	21	19	16	14
9	50	38	30	25	45	35	28	24	30	24	21	25	21	18	20	17	15	13
10	46	34	27	23	42	32	26	21	27	22	19	23	19	16	18	16	13	12

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.

Height(ft)	Illuminance at Nadir (fc)	Beam Width (across 50% Nadir Illum)	
		0-180	90-270
6.0	34.0	7.05	6.69
8.0	19.1	9.40	8.92
10.0	12.2	11.75	11.15
12.0	8.5	14.09	13.38
14.0	6.2	16.44	15.61
16.0	4.8	18.79	17.84

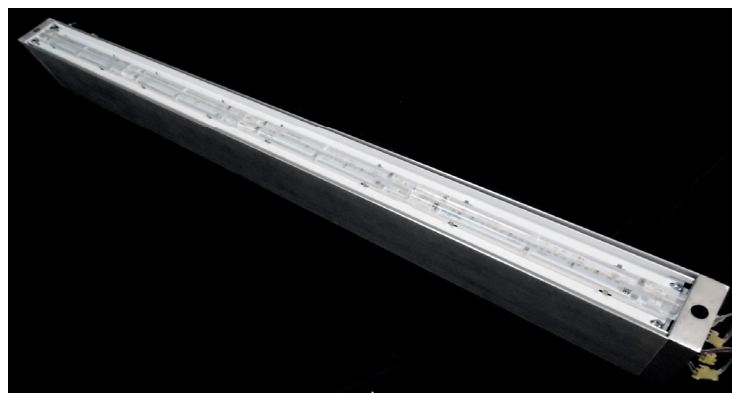
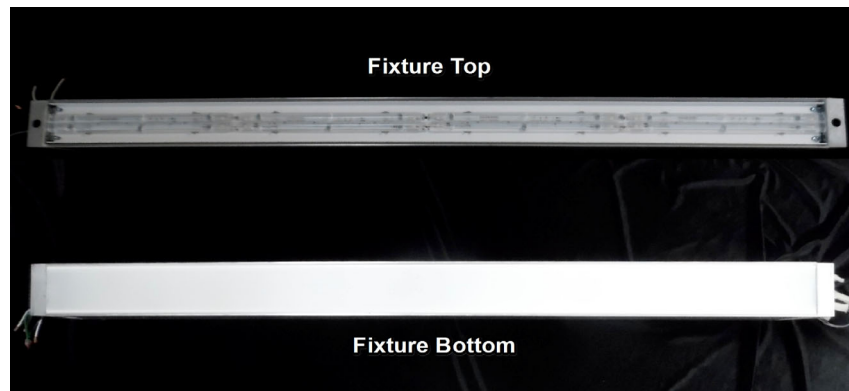


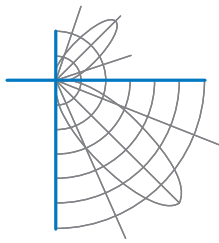
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120.0Vac, 60.00Hz, 0.4774A, 57.10W, 0.997PF, 6.0%THD(i)





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120.0Vac, 60.00Hz, 0.4774A, 57.10W, 0.997PF, 6.0%THD(i)

**Test Distance** 9.5 m  
**Test Temperature** 25.2 °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

### LLIA000762-003B-R02\*

#### Integrating Sphere Report

Catalog Number: MLS3-I/D-HO/HO-K40/K40-XX-4-XX-WSOP/LOH-XXXX-XXX

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#### Performance Summary

Voltage	120.0 Vac
Current	0.4769 A
Power	57.03 W
Frequency	60.00 Hz
Power Factor	0.997
Current THD	6.0 %

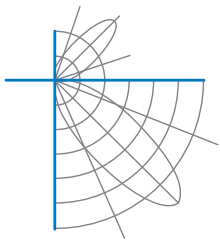
Total Luminous Flux	6822.1 lm
Efficacy	119.6 lm/W
Chromaticity (x,y)	(0.3809, 0.3785)
(u',v')	(0.2247, 0.5024)
Duv	0.0007
CCT	4002 K
CRI (Ra)	83
R9	13

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

\*This test report supersedes test report LLIA000762-003B-R01

Test date: 04/12/2017  
Report date: 04/12/2018

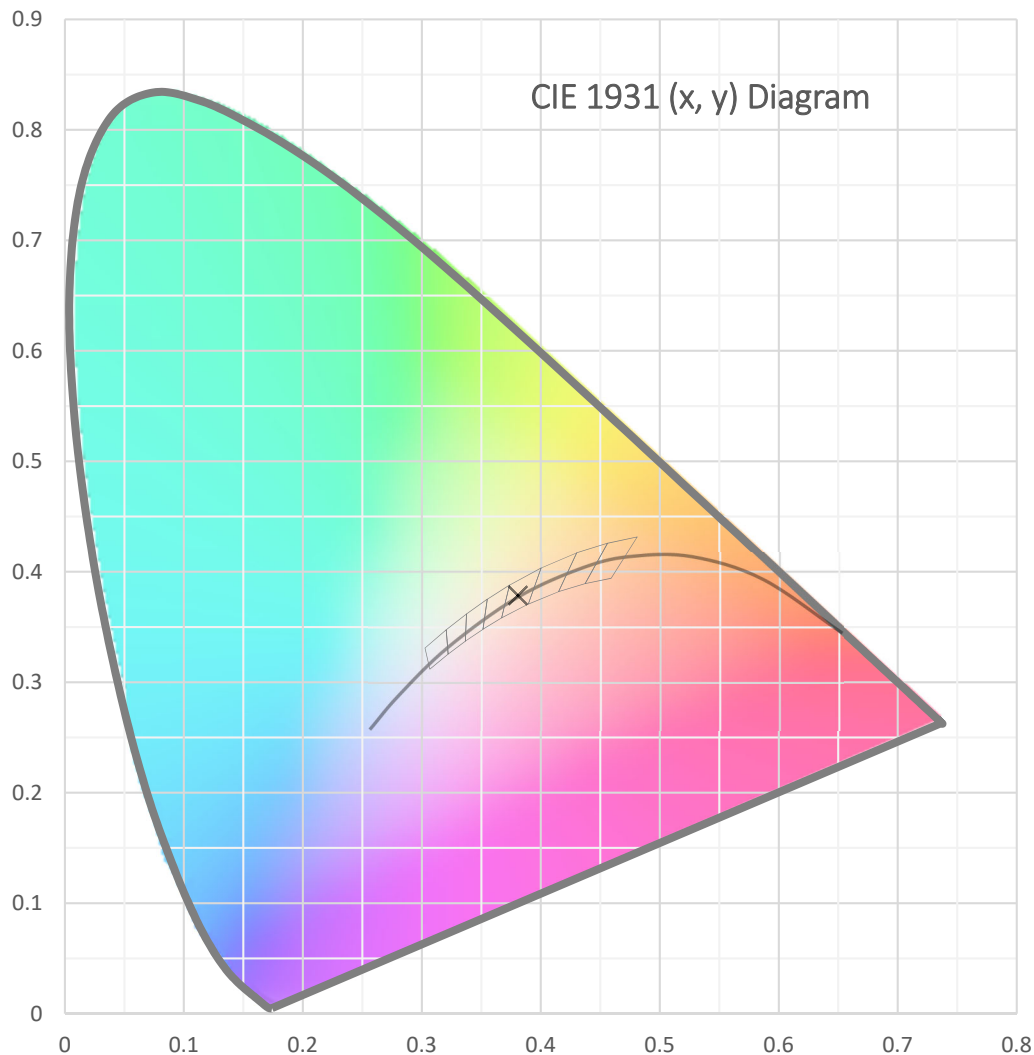


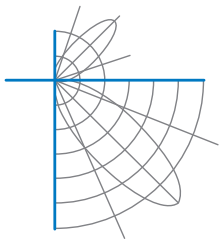


**Test Report Number: LLIA000762-003B-R02**

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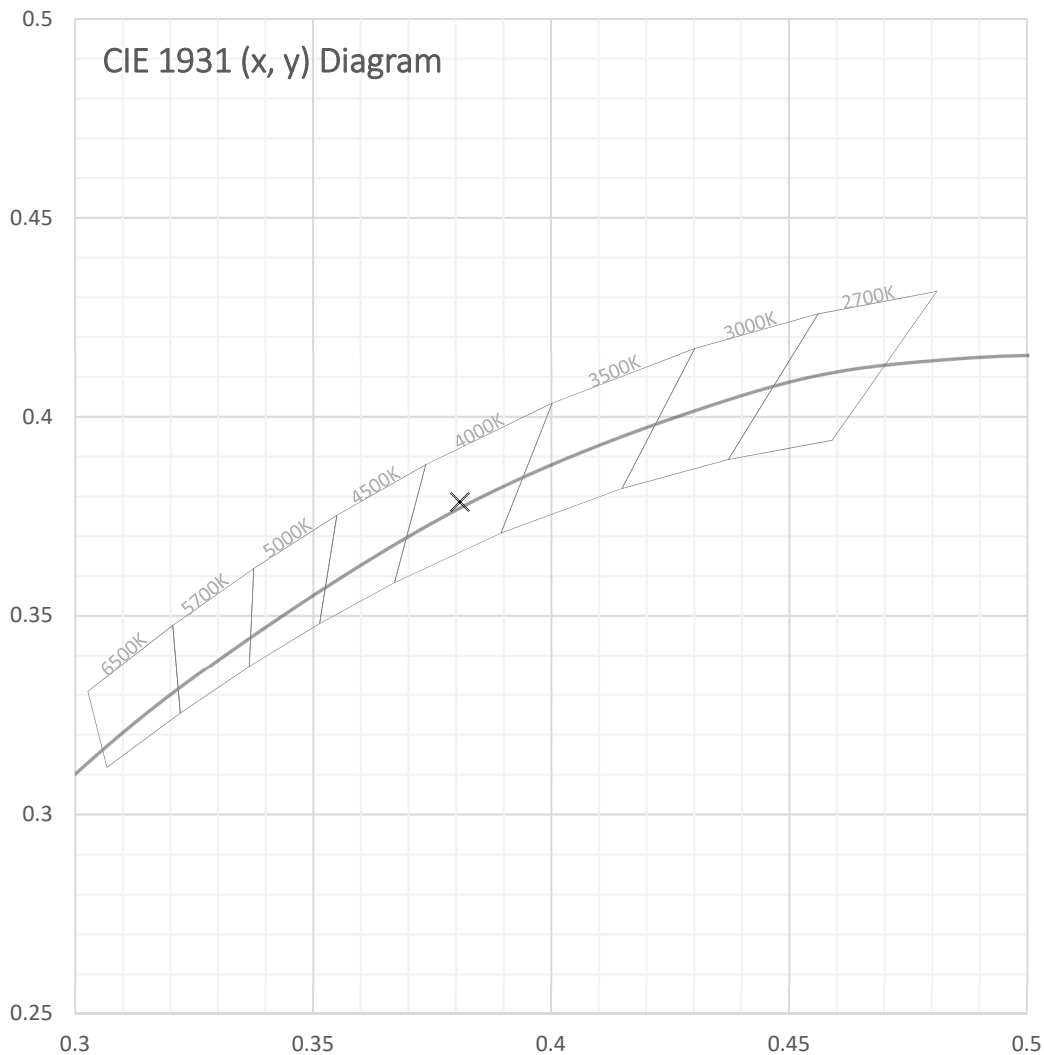




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<b>Spectral Data</b>	Total Radiant Flux	21.12 W
	Total Luminous Flux	6822.1 Lm
	Chromaticity CIE 1931 (x, y)	(0.3809, 0.3785)
	Chromaticity CIE 1976 (u', v')	(0.2247, 0.5024)
	Correlated Color Temperature (CCT)	4002 K
	Color Rendering Index (Ra)	83
	R1	81
	R2	89
	R3	94
	R4	81
	R5	81
	R6	84
	R7	87
	R8	67
	R9	13
	R10	72
	R11	79
	R12	58
	R13	83
	R14	96
	Distance from Planckian Locus (Duv)	0.0007
	Scotopic/Photopic Ratio *	1.675

**Electrical Data**

Voltage	120.0 Vac
Current	0.4769 A
Power	57.03 W
Frequency	60.00 Hz
Power Factor	0.997
Current THD	6.0 %



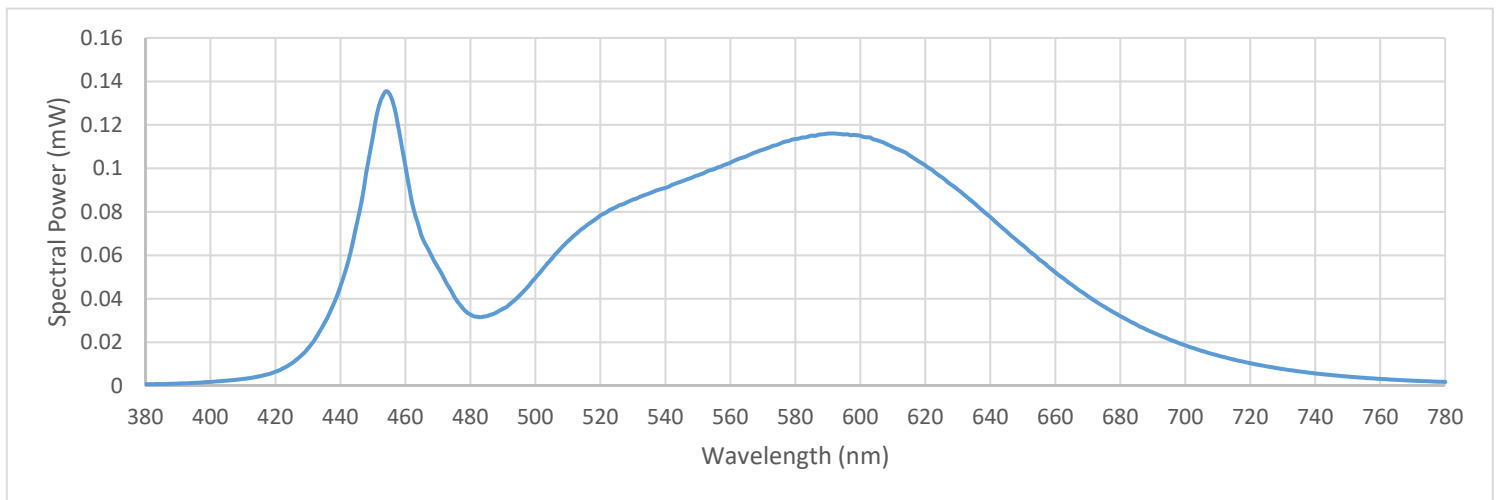
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Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000707	480	0.032754	580	0.113489	680	0.032022
385	0.000789	485	0.032014	585	0.115105	685	0.028122
390	0.001014	490	0.035422	590	0.116002	690	0.024544
395	0.001330	495	0.041331	595	0.115580	695	0.021387
400	0.001785	500	0.049634	600	0.114993	700	0.018592
405	0.002367	505	0.058421	605	0.112988	705	0.016089
410	0.003148	510	0.066437	610	0.109821	710	0.013910
415	0.004326	515	0.072828	615	0.106114	715	0.012054
420	0.006461	520	0.078367	620	0.101345	720	0.010379
425	0.010325	525	0.082344	625	0.096010	725	0.008941
430	0.017158	530	0.085631	630	0.090207	730	0.007716
435	0.028691	535	0.088461	635	0.084122	735	0.006628
440	0.045719	540	0.090993	640	0.077624	740	0.005687
445	0.074332	545	0.093990	645	0.071035	745	0.004921
450	0.114747	550	0.096788	650	0.064642	750	0.004236
455	0.134476	555	0.099642	655	0.058136	755	0.003652
460	0.101003	560	0.102615	660	0.052219	760	0.003170
465	0.068847	565	0.105630	665	0.046538	765	0.002724
470	0.054481	570	0.108595	670	0.041215	770	0.002353
475	0.041037	575	0.111183	675	0.036448	775	0.002027
						780	0.001759





**Test Report Number: LLIA000762-003B-R02**

Catalog Number: MLS3-I/D-HO/HO-K40/K40-XX-4-XX-WSOP/LOH-XXXX-XXX

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**Test Equipment Configuration:** LightLab International Allentown 2m Integrating Sphere  
Measurements acquired using a Labsphere CDS 2600 spectroradiometer  
Testing was performed using 4 $\pi$  geometry

**Test Temperature:** 24.8 °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.

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