



Report of Test

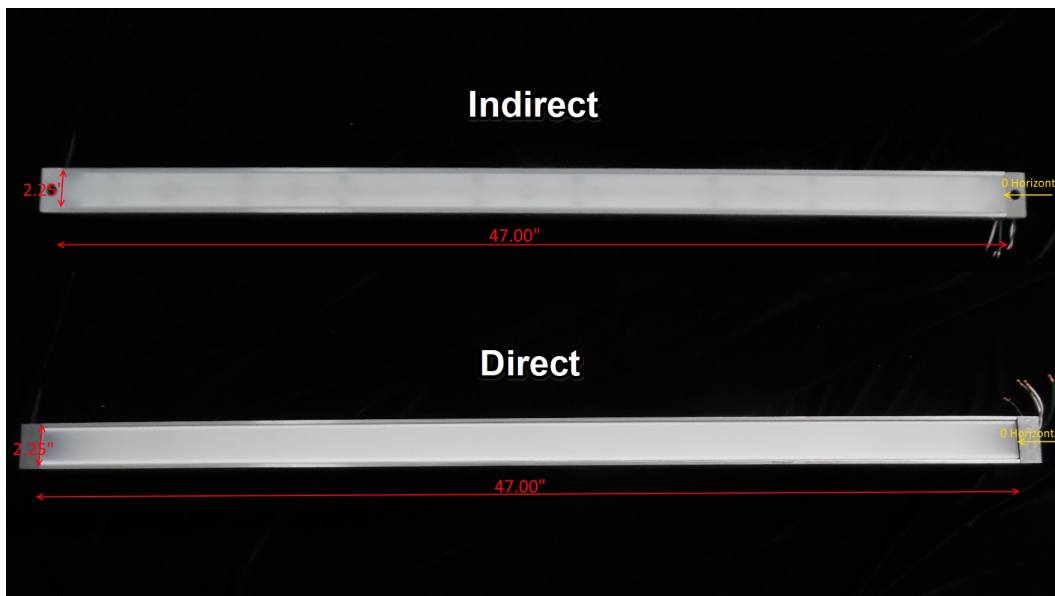
LLIA000844-007A-R01*

*This test report supersedes test report LLIA000844-007A

Catalog Number: MLS2-I/D-HO/HO-K40-XX-4-XX-FDC/LOH-XXXX-120

Pendant mounted, extruded aluminum housing with aluminum end caps, formed white enamel aluminum LED tray/reflectors, frosted plastic enclosures. Three upper connected PAL-Lighting LED boards with 92 LEDs, three lower connected PAL-Lighting LED boards with 92 LEDs .

Two Osram Optotronic OTi 30/120-277/1A0-DIM L LED drivers programmed to 720mA
120.0Vac, 60.00Hz, 0.4629A, 55.36W, 0.997PF, 6.1%THD(i)



Performance Summary

Total Light Output	6657 lm
Luminaire Power	55.4 W
Luminous Efficacy	120.2 lm/W

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



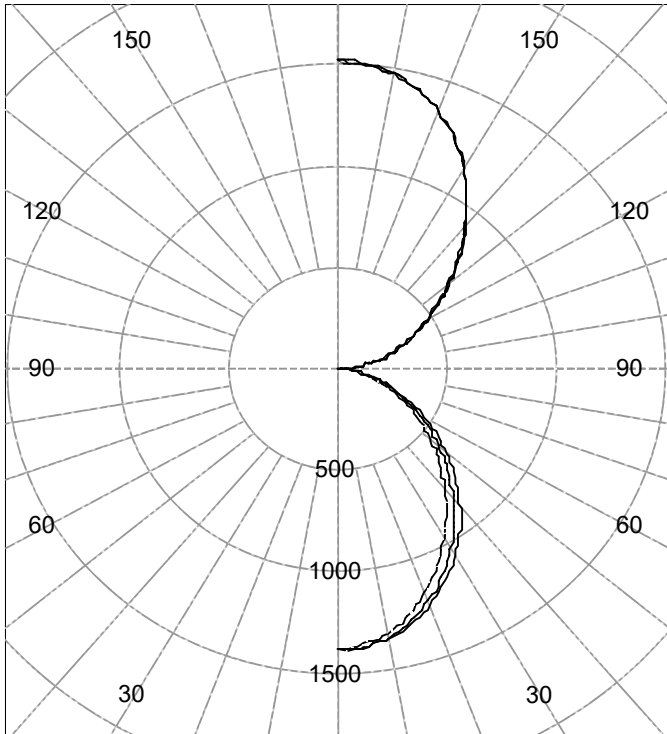
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Legend: C0-Solid, C45-Dashed, C90-Grey (cd)



(Two plane symmetry) C0-C90

INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	1382	1382	1382	1382	1382	
5.0	1373	1364	1377	1371	1359	130
10.0	1344	1333	1341	1331	1316	
15.0	1297	1284	1285	1269	1250	359
20.0	1234	1217	1211	1187	1165	
25.0	1156	1136	1122	1093	1068	513
30.0	1067	1044	1024	990	964	
35.0	968	944	920	885	858	572
40.0	863	840	814	779	754	
45.0	756	735	708	676	653	545
50.0	648	631	607	576	556	
55.0	543	530	509	481	465	453
60.0	442	434	416	392	379	
65.0	348	344	327	308	298	323
70.0	259	258	244	229	222	
75.0	176	176	166	157	153	177
80.0	104	104	99	94	92	
85.0	44	44	43	41	39	49
90.0	4	5	8	10	10	

AVERAGE LUMINANCE (cd / m²)

Gamma	C0	C45	C90
45.0	15703	14721	13574
55.0	13901	13049	11907
65.0	12090	11377	10353
75.0	9995	9449	8689
85.0	7469	7212	6575

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	1002	N / A	15.1
0-40	1574	N / A	23.6
0-60	2572	N / A	38.6
0-90	3120	N / A	46.9
40-90	1546	N / A	23.2
60-90	548	N / A	8.2
90-180	3537	N / A	53.1
0-180	6657	N / A	100.0

Total Light Output = 6,657 lm

Signed:

Authorized Signatory

Date of test

28-Aug-2017

Date of report

15-Dec-2017



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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	1382	1382	1382	1382	1382
2.5	1380	1372	1386	1381	1371
5.0	1373	1364	1377	1371	1359
7.5	1361	1351	1362	1354	1341
10.0	1344	1333	1341	1331	1316
12.5	1323	1311	1316	1303	1286
15.0	1297	1284	1285	1269	1250
17.5	1268	1252	1250	1230	1209
20.0	1234	1217	1211	1187	1165
22.5	1197	1178	1168	1141	1118
25.0	1156	1136	1122	1093	1068
27.5	1113	1092	1074	1042	1017
30.0	1067	1044	1024	990	964
32.5	1018	995	972	938	911
35.0	968	944	920	885	858
37.5	916	893	867	831	806
40.0	863	840	814	779	754
42.5	810	787	761	727	703
45.0	756	735	708	676	653
47.5	701	682	657	626	604
50.0	648	631	607	576	556
52.5	595	580	558	528	510
55.0	543	530	509	481	465
57.5	491	482	462	436	421
60.0	442	434	416	392	379
62.5	394	389	371	349	338
65.0	348	344	327	308	298
67.5	303	300	285	268	259
70.0	259	258	244	229	222
72.5	216	216	204	192	187
75.0	176	176	166	157	153
77.5	138	138	131	125	122
80.0	104	104	99	94	92
82.5	72	72	70	66	65
85.0	44	44	43	41	39
87.5	20	19	18	18	17
90.0	4	5	8	10	10



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120.0Vac, 60.00Hz, 0.4629A, 55.36W, 0.997PF, 6.1%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	4	5	8	10	10
92.5	35	38	40	42	42
95.0	72	74	76	78	78
97.5	109	111	112	113	113
100.0	147	148	148	148	147
102.5	184	184	183	182	182
105.0	221	221	219	217	217
107.5	259	258	257	253	252
110.0	298	296	293	290	289
112.5	337	336	332	329	327
115.0	378	378	373	368	367
117.5	421	421	415	409	408
120.0	466	466	460	452	452
122.5	514	513	508	498	499
125.0	563	562	558	546	548
127.5	616	613	610	597	601
130.0	671	668	665	651	655
132.5	728	724	721	708	712
135.0	787	782	780	767	772
137.5	848	842	840	828	833
140.0	910	903	901	890	896
142.5	972	964	963	953	959
145.0	1033	1024	1025	1016	1022
147.5	1092	1083	1085	1077	1083
150.0	1149	1140	1144	1137	1143
152.5	1204	1195	1200	1194	1199
155.0	1255	1246	1252	1248	1252
157.5	1302	1294	1301	1298	1301
160.0	1346	1337	1346	1343	1346
162.5	1384	1376	1386	1383	1385
165.0	1418	1410	1421	1418	1419
167.5	1447	1439	1451	1448	1448
170.0	1470	1463	1476	1473	1471
172.5	1489	1481	1495	1492	1489
175.0	1502	1494	1509	1506	1501
177.5	1510	1502	1517	1514	1507
180.0	1512	1512	1512	1512	1512



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Coefficients Of Utilization - Zonal Cavity Method

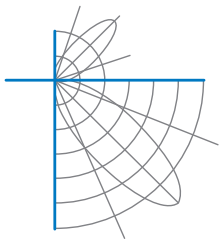
Effective Floor Cavity Reflectance 0.20

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	106	106	106	106	98	98	98	98	82	82	82	67	67	67	53	53	53	47
1	97	93	89	86	89	86	82	79	72	70	67	59	58	56	47	46	45	40
2	89	82	76	70	81	75	70	66	63	59	56	52	49	47	42	40	39	34
3	81	72	65	59	74	66	60	55	56	51	47	46	43	40	37	35	33	29
4	74	64	56	50	68	59	52	47	50	45	41	41	38	35	34	31	29	25
5	68	57	49	43	63	53	46	40	45	39	35	37	33	30	30	27	25	22
6	63	51	43	37	58	47	40	35	40	35	31	34	30	26	28	25	22	19
7	58	46	38	33	53	43	36	31	37	31	27	31	27	24	25	22	20	17
8	54	42	34	29	50	39	32	27	33	28	24	28	24	21	23	20	18	16
9	50	38	31	26	46	36	29	25	31	25	22	26	22	19	22	18	16	14
10	47	35	28	23	43	33	26	22	28	23	20	24	20	17	20	17	15	13

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	38.4	6.95	6.39
8.0	21.6	9.26	8.53
10.0	13.8	11.58	10.66
12.0	9.6	13.89	12.79
14.0	7.0	16.21	14.92
16.0	5.4	18.52	17.05

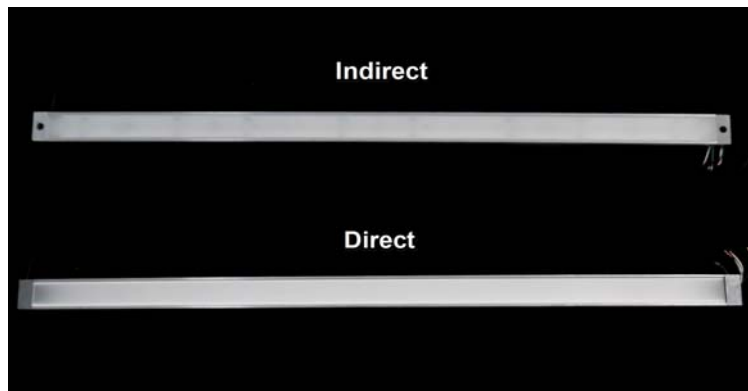


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120.0Vac, 60.00Hz, 0.4629A, 55.36W, 0.997PF, 6.1%THD(i)

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.



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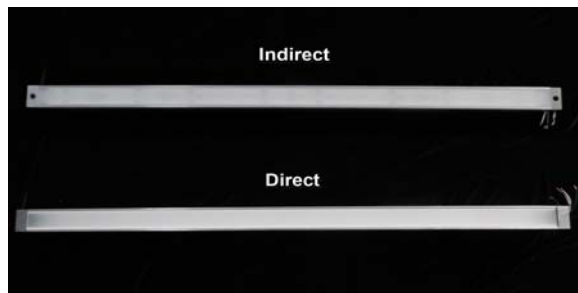
Integrating Sphere Report

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Performance Summary

Voltage	120.0 Vac
Current	0.4623 A
Power	55.30 W
Frequency	59.97 Hz
Power Factor	0.997
Current THD	6.1 %

Total Luminous Flux	6658.0 lm
Efficacy	120.4 lm/W
Chromaticity (x,y)	(0.3818, 0.3785)
(u',v')	(0.2253, 0.5025)
Duv	0.0004
CCT	3977 K
CRI (Ra)	84
R9	16

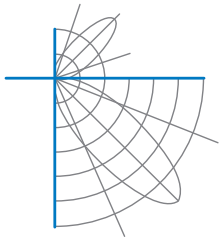
Prepared For:

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

*This test reports supersedes test report LLIA000844-007B

Test date: 08/24/2017

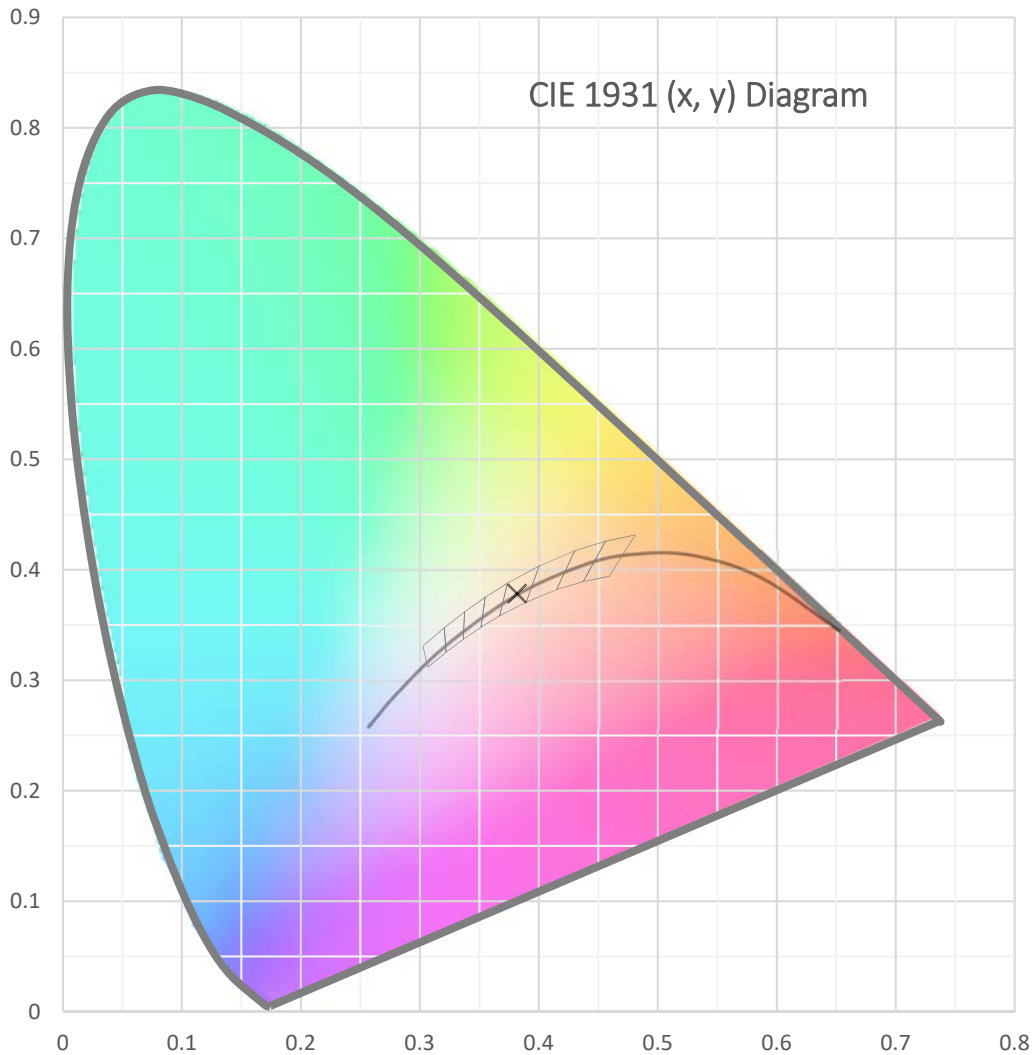
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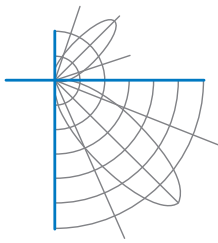


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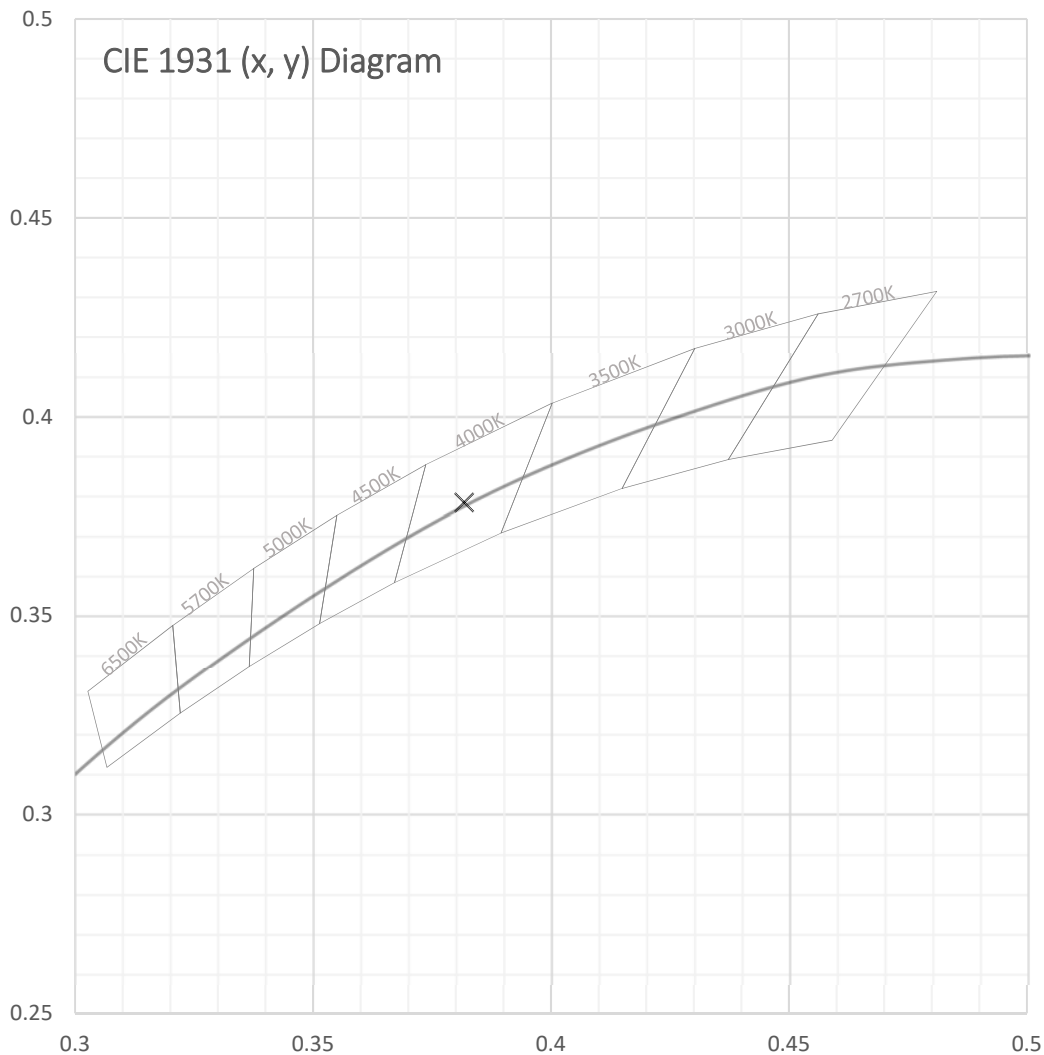




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Spectral Data	Total Radiant Flux	20.64 W
	Total Luminous Flux	6658.0 Lm
	Chromaticity CIE 1931 (x, y)	(0.3818, 0.3785)
	Chromaticity CIE 1976 (u', v')	(0.2253, 0.5025)
	Correlated Color Temperature (CCT)	3977 K
	Color Rendering Index (Ra)	84
	R1	83
	R2	91
	R3	96
	R4	82
	R5	82
	R6	86
	R7	87
	R8	67
	R9	16
	R10	77
	R11	80
	R12	61
	R13	85
	R14	98
	Distance from Planckian Locus (Duv)	0.0004
	Scotopic/Photopic Ratio *	1.701

Electrical Data

Voltage	120.0 Vac
Current	0.4623 A
Power	55.30 W
Frequency	59.97 Hz
Power Factor	0.997
Current THD	6.1 %



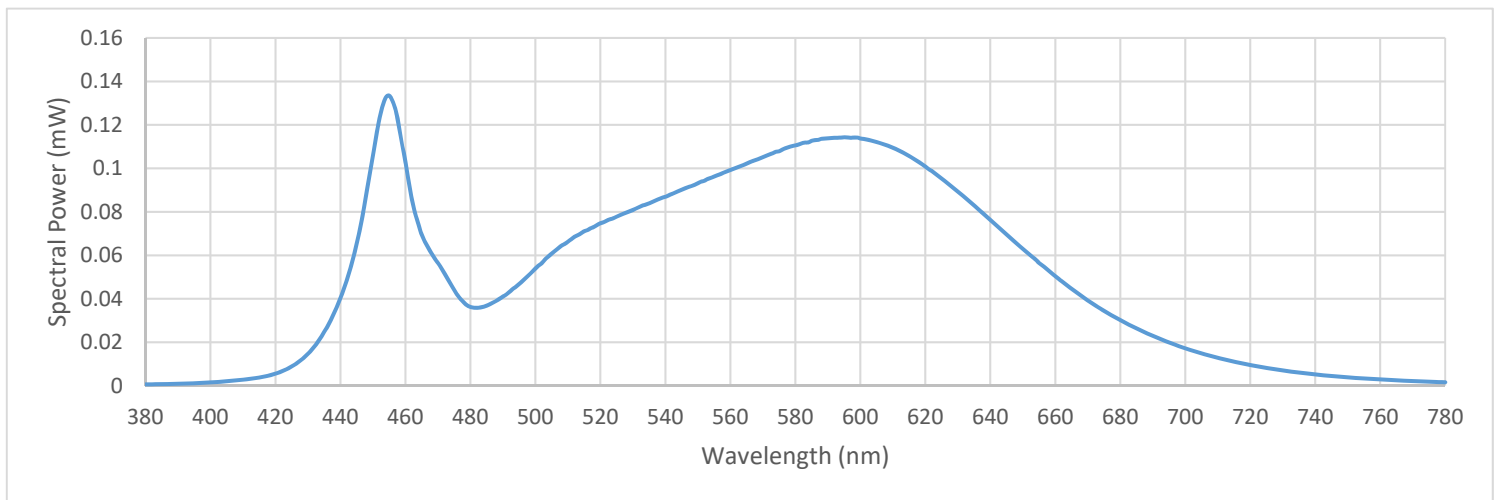
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Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000653	480	0.036328	580	0.110574	680	0.030203
385	0.000701	485	0.036861	585	0.112650	685	0.026403
390	0.000888	490	0.041017	590	0.113857	690	0.022959
395	0.001145	495	0.046732	595	0.114274	695	0.019918
400	0.001542	500	0.053933	600	0.113752	700	0.017268
405	0.002069	505	0.060770	605	0.112118	705	0.014911
410	0.002780	510	0.066273	610	0.109501	710	0.012828
415	0.003793	515	0.071082	615	0.105690	715	0.011110
420	0.005588	520	0.074749	620	0.100828	720	0.009551
425	0.008870	525	0.077819	625	0.095297	725	0.008231
430	0.014751	530	0.080811	630	0.089217	730	0.007105
435	0.024805	535	0.083920	635	0.082979	735	0.006079
440	0.040284	540	0.086926	640	0.076224	740	0.005209
445	0.065193	545	0.090106	645	0.069551	745	0.004490
450	0.105806	550	0.093168	650	0.062909	750	0.003871
455	0.133456	555	0.096274	655	0.056498	755	0.003340
460	0.102952	560	0.099144	660	0.050540	760	0.002906
465	0.069498	565	0.102116	665	0.044589	765	0.002506
470	0.056506	570	0.105111	670	0.039205	770	0.002154
475	0.043967	575	0.107857	675	0.034502	775	0.001869
						780	0.001612





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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 4π geometry

Test Temperature: 25.5 °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

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.

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