

Report of Test

LLIA000849-004A-R02*

*This test report supersedes test report LLIA000849-004A-R01

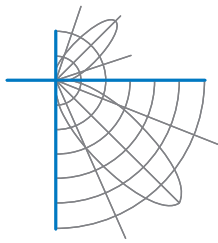
Catalog Number: MLS3-I/D-MO/MO-K40/K40-XX-4-XX-FDC/LOH-XXXX-XXX
Pendant mounted, extruded aluminum housing, formed white aluminum upper and lower reflector trays, frosted plastic top and bottom enclosures. 288 White LEDs, four upper PrevaLED Line boards with 36 LEDs each and four lower PrevaLED Bars with 36 LEDs each.
Two Osram Optotronic OTi 30/120-277/1A0 DIM L LED drivers.
120.0Vac, 60.00Hz, 0.2907A, 34.68W, 0.994PF, 5.2%THD(i)



Performance Summary

Total Light Output	4117 lm
Luminaire Power	34.7 W
Luminous Efficacy	118.6 lm/W

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



Test Report No. LLIA000849-004A-R02

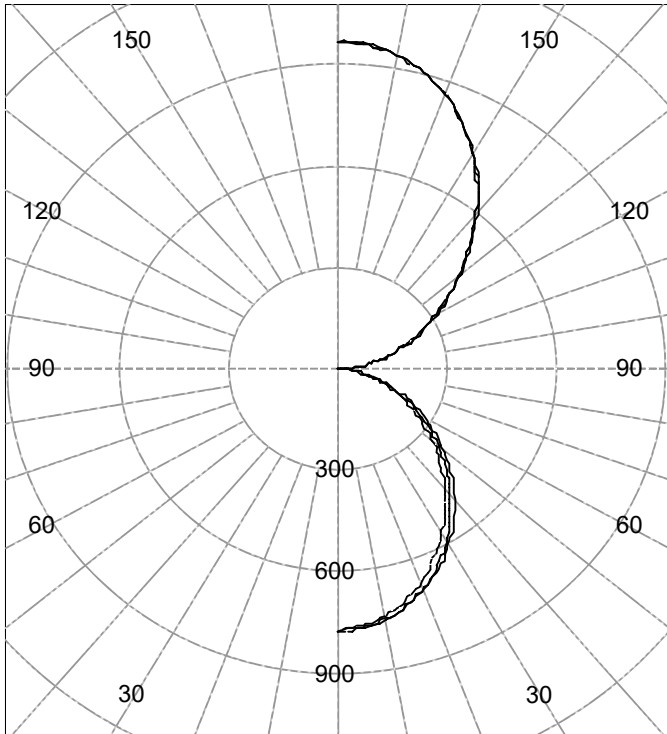
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Legend: C0-Solid, C45-Dashed, C90-Grey (cd)



(Two plane symmetry) C0-C90

INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	771	771	771	771	771	
5.0	765	762	769	766	760	72
10.0	749	747	751	748	740	
15.0	725	721	724	718	708	203
20.0	691	686	687	679	667	
25.0	651	645	642	631	619	294
30.0	603	596	592	579	566	
35.0	551	543	536	522	509	333
40.0	495	487	478	465	452	
45.0	437	430	420	407	395	323
50.0	378	372	362	350	339	
55.0	320	315	306	293	285	272
60.0	262	259	251	240	233	
65.0	208	206	198	189	184	195
70.0	155	155	148	141	137	
75.0	106	106	101	97	95	108
80.0	63	63	60	58	57	
85.0	27	27	26	25	25	30
90.0	1	2	3	4	4	

AVERAGE LUMINANCE (cd / m²)

Gamma	C0	C45	C90
45.0	6816	6545	6156
55.0	6139	5878	5469
65.0	5413	5171	4789
75.0	4533	4309	4038
85.0	3386	3327	3157

ZONAL FLUX AND PERCENTAGES

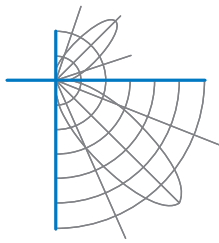
Zone	Flux (lm)	% Lamp	% Luminaire
0-30	569	N / A	13.8
0-40	902	N / A	21.9
0-60	1496	N / A	36.3
0-90	1829	N / A	44.4
40-90	928	N / A	22.5
60-90	333	N / A	8.1
90-180	2288	N / A	55.6
0-180	4117	N / A	100.0

Total Light Output = 4,117 lm

Signed:

Authorized Signatory

Date of test 27-Aug-2017
Date of report 12-Apr-2018



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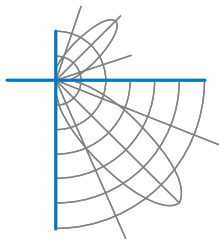
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120.0Vac, 60.00Hz, 0.2907A, 34.68W, 0.994PF, 5.2%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	771	771	771	771	771
2.5	768	766	773	771	765
5.0	765	762	769	766	760
7.5	758	756	762	758	751
10.0	749	747	751	748	740
12.5	738	735	739	734	725
15.0	725	721	724	718	708
17.5	709	705	707	699	689
20.0	691	686	687	679	667
22.5	672	666	666	656	644
25.0	651	645	642	631	619
27.5	627	621	617	606	593
30.0	603	596	592	579	566
32.5	577	570	566	551	538
35.0	551	543	536	522	509
37.5	523	515	508	494	481
40.0	495	487	478	465	452
42.5	466	459	449	436	424
45.0	437	430	420	407	395
47.5	408	401	391	378	367
50.0	378	372	362	350	339
52.5	349	343	334	321	312
55.0	320	315	306	293	285
57.5	290	287	278	266	259
60.0	262	259	251	240	233
62.5	235	233	224	214	208
65.0	208	206	198	189	184
67.5	181	180	173	164	160
70.0	155	155	148	141	137
72.5	130	130	124	118	116
75.0	106	106	101	97	95
77.5	84	84	80	77	75
80.0	63	63	60	58	57
82.5	44	44	42	41	41
85.0	27	27	26	25	25
87.5	12	12	11	11	11
90.0	1	2	3	4	4



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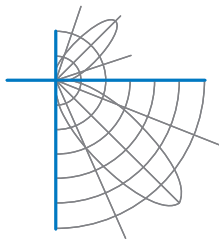
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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	1	2	3	4	4
92.5	22	23	23	24	24
95.0	46	47	47	47	47
97.5	70	70	70	70	70
100.0	94	94	93	93	93
102.5	118	118	117	117	116
105.0	142	142	141	140	139
107.5	166	166	165	164	164
110.0	192	193	190	189	189
112.5	219	218	217	214	214
115.0	246	246	244	241	241
117.5	275	276	272	269	269
120.0	306	305	302	298	299
122.5	337	336	333	329	330
125.0	369	367	366	360	362
127.5	402	401	400	394	396
130.0	437	436	435	429	432
132.5	474	472	471	465	469
135.0	512	509	508	502	507
137.5	551	547	546	541	546
140.0	590	585	585	580	586
142.5	629	623	623	619	625
145.0	667	661	662	657	664
147.5	704	698	699	695	702
150.0	739	733	735	732	738
152.5	773	767	770	767	773
155.0	805	799	802	800	805
157.5	835	828	833	831	835
160.0	861	855	860	859	862
162.5	885	879	885	883	885
165.0	906	901	907	905	906
167.5	924	919	926	924	924
170.0	939	934	941	939	938
172.5	951	945	953	951	949
175.0	959	953	962	960	957
177.5	964	958	967	965	961
180.0	964	964	964	964	964



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Coefficients Of Utilization - Zonal Cavity Method

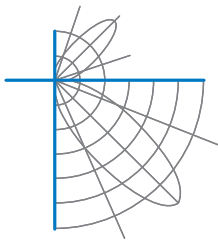
Effective Floor Cavity Reflectance 0.20

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	97	97	97	97	80	80	80	65	65	65	51	51	51	44
1	97	92	89	85	88	85	82	79	71	68	66	57	56	54	45	44	43	38
2	88	81	75	70	80	74	69	65	62	58	55	51	48	46	40	38	37	32
3	80	71	64	58	73	65	59	54	55	50	46	45	42	39	36	33	31	27
4	74	63	55	49	67	58	51	46	49	44	40	40	36	33	32	29	27	23
5	68	56	48	42	62	52	45	40	44	38	34	36	32	29	29	26	24	20
6	62	50	42	37	57	47	40	34	39	34	30	33	28	25	26	23	21	18
7	58	46	38	32	53	42	35	30	36	30	26	30	26	22	24	21	19	16
8	53	41	34	29	49	38	32	27	33	27	23	27	23	20	22	19	17	14
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	20	17	15	13
10	47	35	28	23	43	32	26	21	27	22	19	23	19	16	19	16	14	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.

Circle of Light Plot

Height(ft)	Illuminance at Nadir (fc)	Beam Width (across 50% Nadir Illum)	
		0-180	90-270
6.0	21.4	7.03	6.66
8.0	12.0	9.37	8.88
10.0	7.7	11.71	11.10
12.0	5.4	14.05	13.32
14.0	3.9	16.40	15.54
16.0	3.0	18.74	17.76



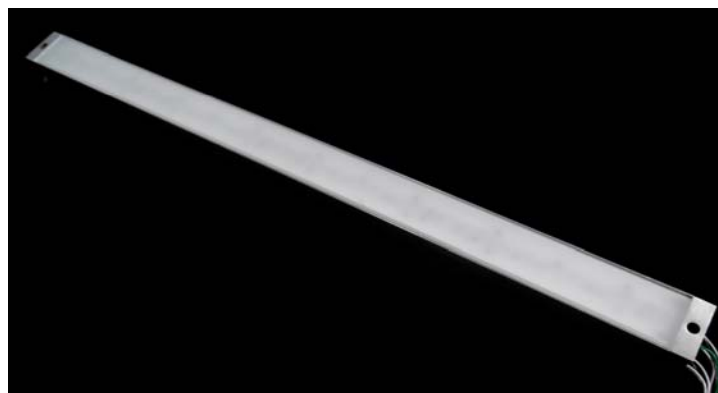
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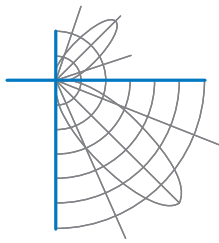
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120.0Vac, 60.00Hz, 0.2907A, 34.68W, 0.994PF, 5.2%THD(i)

Test Distance 9.5 m
Test Temperature 24.8 °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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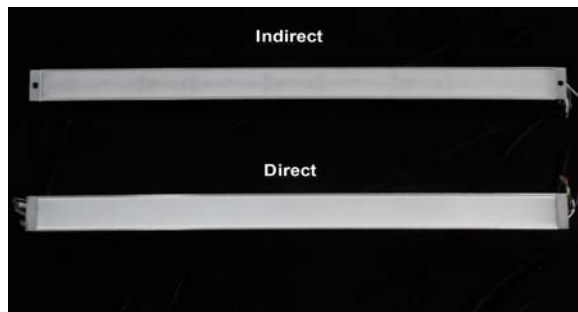
LLIA000849-004B-R02*

Integrating Sphere Report

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Performance Summary

Voltage	120.0 Vac
Current	0.2908 A
Power	34.67 W
Frequency	59.97 Hz
Power Factor	0.994
Current THD	5.2 %

Total Luminous Flux	4149.4 lm
Efficacy	119.7 lm/W
Chromaticity (x,y)	(0.3820, 0.3795)
(u',v')	(0.2250, 0.5030)
Duv	0.0008
CCT	3978 K
CRI (Ra)	83
R9	15

Prepared For:

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

*This test report supersedes test report LLIA000849-004B-R01

Test date: 08/25/2017

Report date: 04/12/2018

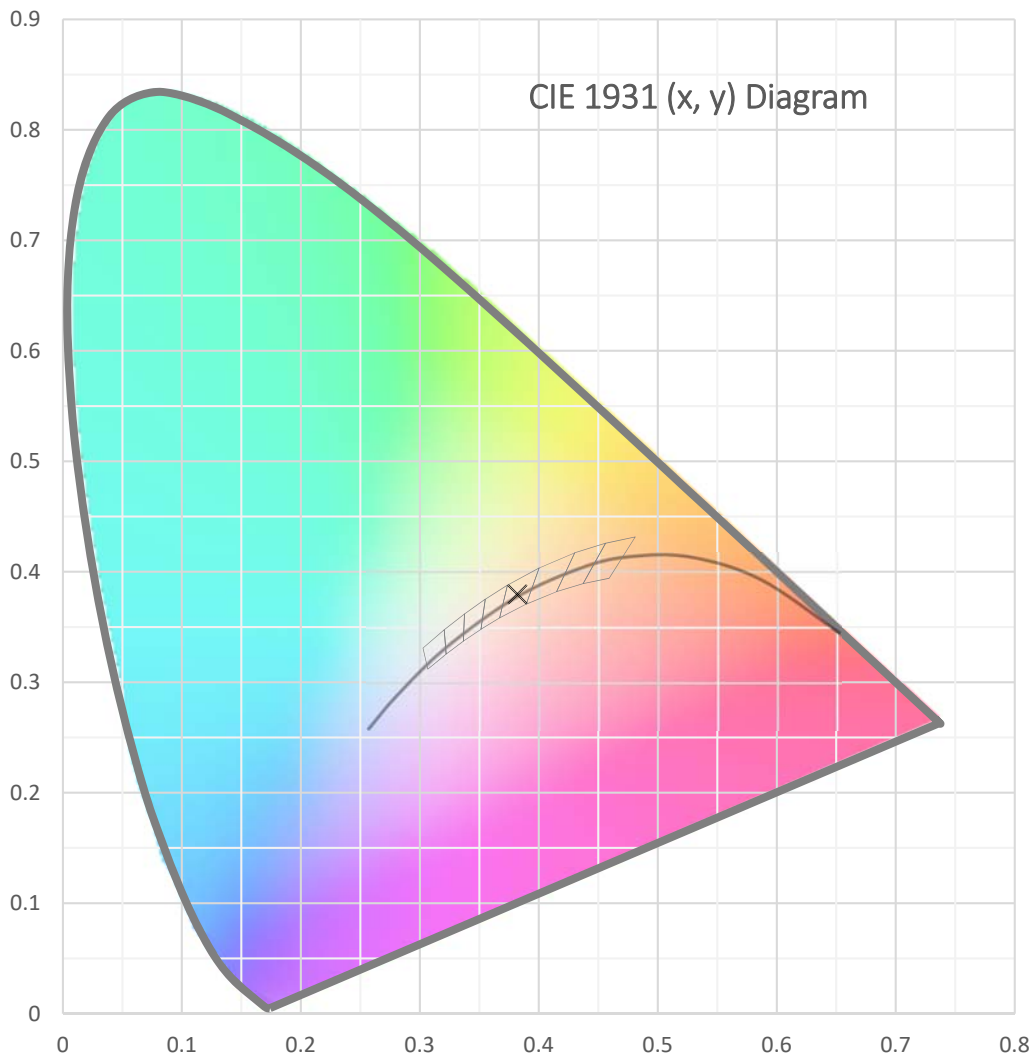


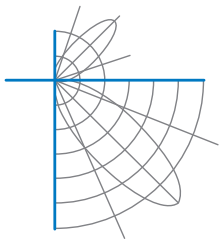
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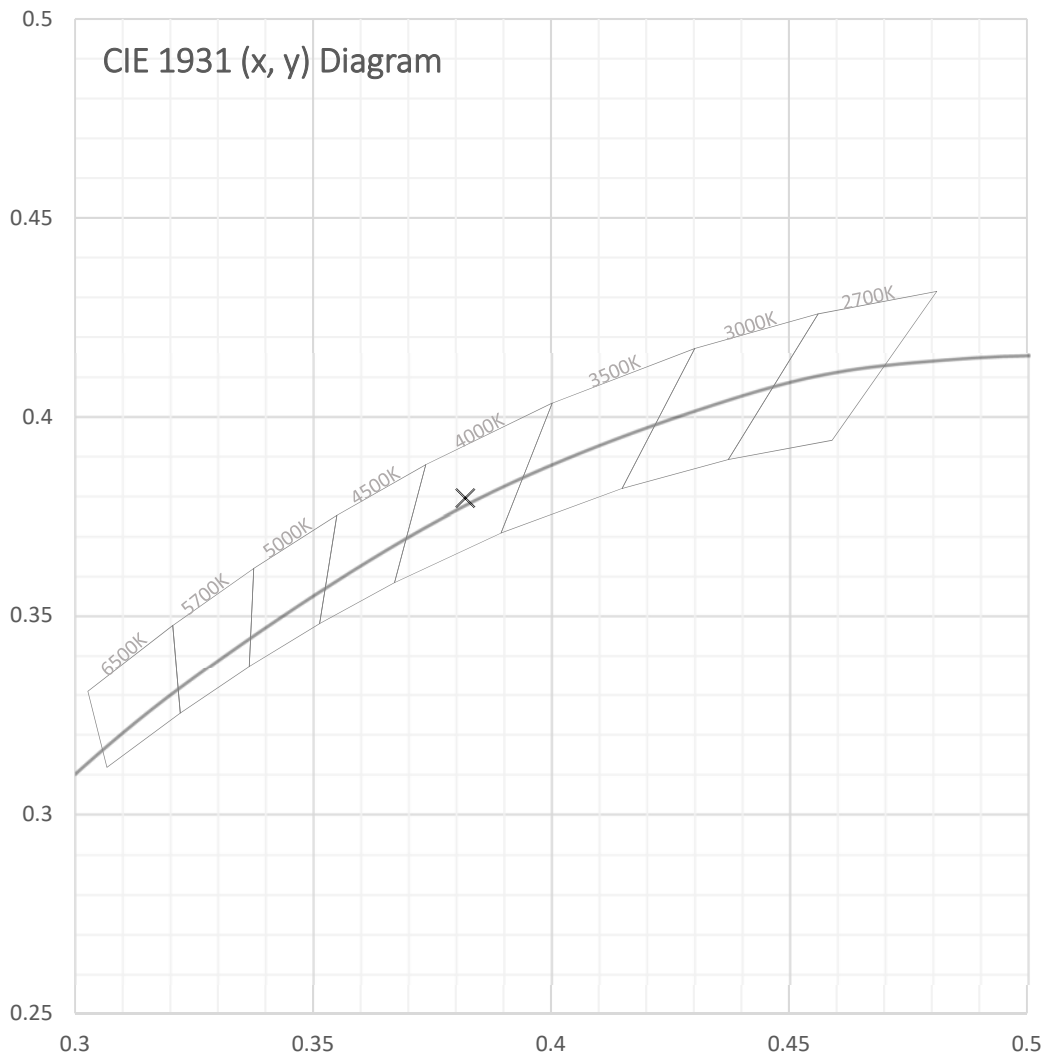


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Spectral Data	Total Radiant Flux	12.83 W
	Total Luminous Flux	4149.4 Lm
	Chromaticity CIE 1931 (x, y)	(0.3820, 0.3795)
	Chromaticity CIE 1976 (u', v')	(0.2250, 0.5030)
	Correlated Color Temperature (CCT)	3978 K
	Color Rendering Index (Ra)	83
	R1	82
	R2	89
	R3	94
	R4	81
	R5	81
	R6	84
	R7	87
	R8	67
	R9	15
	R10	73
	R11	79
	R12	57
	R13	83
	R14	97
	Distance from Planckian Locus (Duv)	0.0008
	Scotopic/Photopic Ratio *	1.671

Electrical Data

Voltage	120.0 Vac
Current	0.2908 A
Power	34.67 W
Frequency	59.97 Hz
Power Factor	0.994
Current THD	5.2 %



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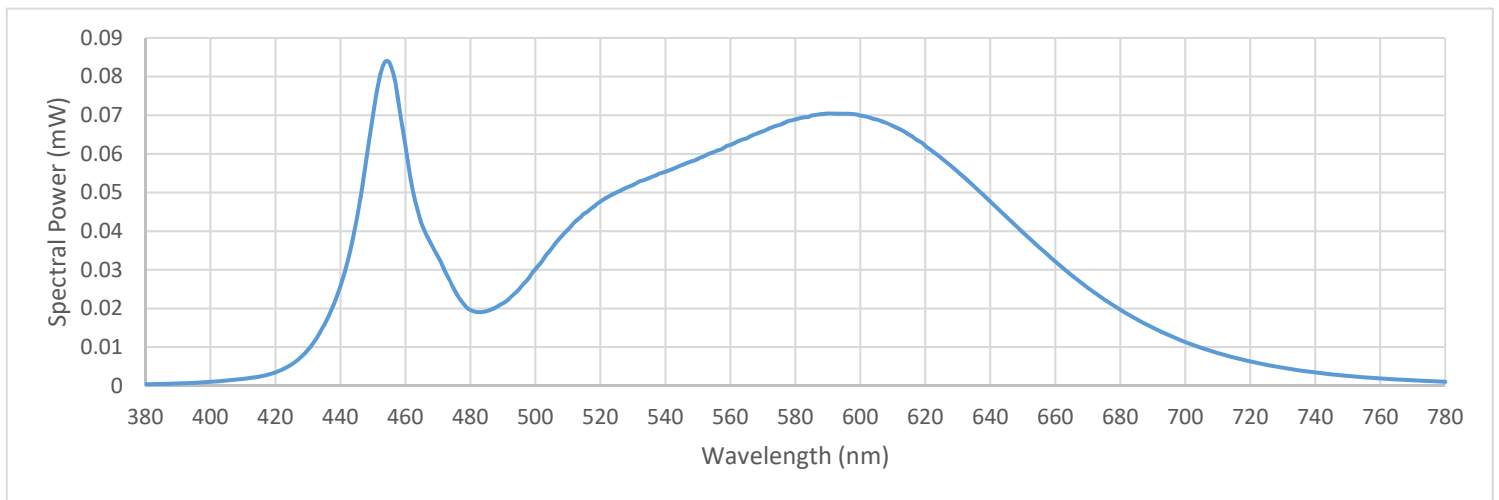
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Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000424	480	0.019628	580	0.068935	680	0.019667
385	0.000456	485	0.019329	585	0.069930	685	0.017254
390	0.000586	490	0.021350	590	0.070504	690	0.015034
395	0.000753	495	0.024987	595	0.070357	695	0.013063
400	0.001014	500	0.030157	600	0.069897	700	0.011326
405	0.001344	505	0.035542	605	0.068921	705	0.009791
410	0.001786	510	0.040368	610	0.067193	710	0.008430
415	0.002359	515	0.044537	615	0.064959	715	0.007302
420	0.003489	520	0.047671	620	0.062070	720	0.006293
425	0.005532	525	0.050036	625	0.058867	725	0.005417
430	0.009327	530	0.051898	630	0.055328	730	0.004679
435	0.015740	535	0.053701	635	0.051609	735	0.004008
440	0.025715	540	0.055356	640	0.047613	740	0.003432
445	0.043103	545	0.057076	645	0.043664	745	0.002955
450	0.069896	550	0.058701	650	0.039680	750	0.002548
455	0.083664	555	0.060488	655	0.035826	755	0.002189
460	0.062043	560	0.062284	660	0.032196	760	0.001905
465	0.041806	565	0.064007	665	0.028619	765	0.001630
470	0.033442	570	0.065828	670	0.025369	770	0.001406
475	0.024857	575	0.067410	675	0.022385	775	0.001218
						780	0.001043





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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 π 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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