



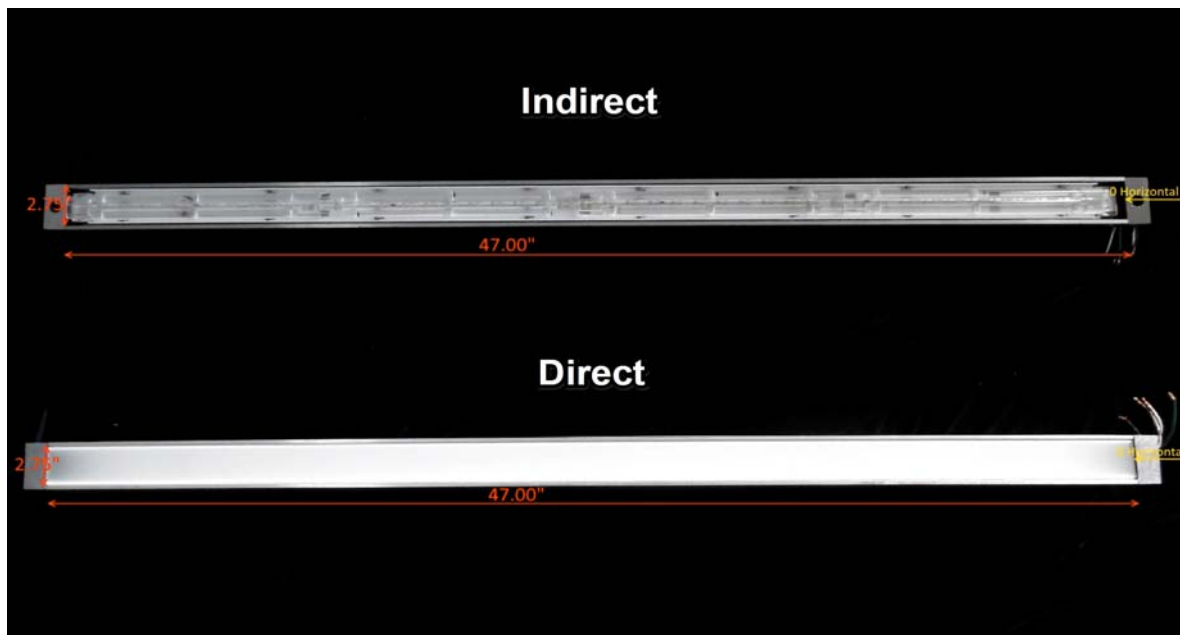
Report of Test

LLIA000844-004A-R01*

*This test report supersedes test report LLIA000844-004A

Catalog Number: MLS2-I/D-MO/MO-K40-XX-4-XX-WSOP/LOH-XXXX-120

Pendant mounted, extruded aluminum housing with aluminum end caps, formed white enamel aluminum LED tray/reflectors, frosted plastic lower enclosure. Three upper connected PAL-Lighting LED boards with 92 LEDs, clear linear plastic lens above, three lower connected PAL-Lighting LED boards with 92 LEDs. Two Osram Optotronic OTi 30/120-277/1A0-DIM L LED drivers programmed to 480mA. 120.0Vac, 60.00Hz, 0.3106A, 37.06W, 0.995PF, 5.2%THD(i)



Performance Summary

Total Light Output	4722 lm
Luminaire Power	37.0 W
Luminous Efficacy	127.6 lm/W

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

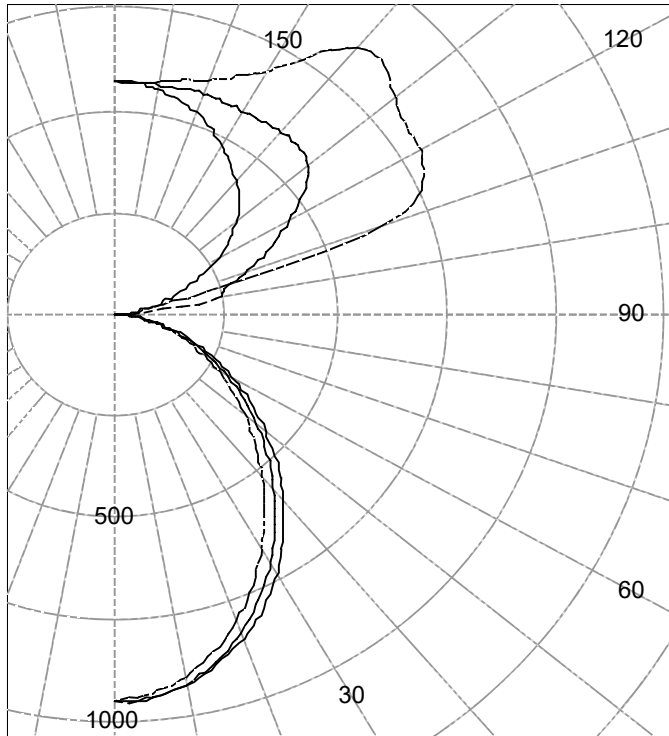


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Legend: C0-Solid, C45-Dashed, C90-Grey (cd)



(Two plane symmetry) C0-C90

INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	951	951	951	951	951	
5.0	945	939	948	944	935	89
10.0	925	918	923	916	906	
15.0	893	883	884	872	860	247
20.0	849	837	832	816	801	
25.0	795	781	771	750	733	352
30.0	733	717	703	679	661	
35.0	665	648	631	606	588	392
40.0	592	576	557	533	516	
45.0	518	504	485	462	447	373
50.0	444	432	415	394	380	
55.0	371	363	348	329	318	310
60.0	303	297	284	268	259	
65.0	238	235	224	210	204	221
70.0	177	176	167	157	152	
75.0	120	120	114	108	105	121
80.0	71	71	68	65	63	
85.0	30	30	29	27	26	33
90.0	1	2	2	2	2	

AVERAGE LUMINANCE (cd / m²)

Gamma	C0	C45	C90
45.0	9591	8976	8266
55.0	8475	7946	7255
65.0	7368	6927	6311
75.0	6074	5760	5325
85.0	4537	4341	3933

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	689	N / A	14.6
0-40	1081	N / A	22.9
0-60	1764	N / A	37.4
0-90	2138	N / A	45.3
40-90	1057	N / A	22.4
60-90	374	N / A	7.9
90-180	2584	N / A	54.7
0-180	4722	N / A	100.0

Total Light Output = 4,722 lm

Signed:

Authorized Signatory

Date of test

1-Sep-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	951	951	951	951	951
2.5	950	944	954	951	944
5.0	945	939	948	944	935
7.5	937	930	937	932	923
10.0	925	918	923	916	906
12.5	911	902	905	896	885
15.0	893	883	884	872	860
17.5	872	861	859	845	831
20.0	849	837	832	816	801
22.5	823	810	803	784	768
25.0	795	781	771	750	733
27.5	765	750	737	715	697
30.0	733	717	703	679	661
32.5	700	683	667	642	625
35.0	665	648	631	606	588
37.5	629	612	594	569	552
40.0	592	576	557	533	516
42.5	555	540	521	497	481
45.0	518	504	485	462	447
47.5	481	468	450	427	413
50.0	444	432	415	394	380
52.5	407	397	381	361	349
55.0	371	363	348	329	318
57.5	337	330	316	298	288
60.0	303	297	284	268	259
62.5	270	266	253	239	231
65.0	238	235	224	210	204
67.5	207	205	195	183	178
70.0	177	176	167	157	152
72.5	148	148	140	132	128
75.0	120	120	114	108	105
77.5	94	95	90	86	83
80.0	71	71	68	65	63
82.5	49	50	48	45	44
85.0	30	30	29	27	26
87.5	13	13	12	10	10
90.0	1	2	2	2	2



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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	1	2	2	2	2
92.5	9	15	16	13	12
95.0	21	34	64	31	30
97.5	38	53	172	59	47
100.0	57	75	235	116	75
102.5	78	97	250	228	119
105.0	102	121	265	439	218
107.5	126	146	290	638	441
110.0	148	173	320	697	663
112.5	174	202	358	710	739
115.0	201	231	391	715	769
117.5	230	262	422	717	786
120.0	260	292	454	722	798
122.5	287	320	487	727	803
125.0	313	347	519	736	804
127.5	337	371	548	752	813
130.0	359	394	570	770	828
132.5	378	416	582	788	847
135.0	394	436	588	799	863
137.5	410	453	588	796	869
140.0	425	467	585	776	855
142.5	439	479	582	744	820
145.0	453	489	579	710	775
147.5	467	498	577	680	731
150.0	480	506	576	657	694
152.5	493	513	576	639	666
155.0	506	521	576	625	644
157.5	518	528	578	613	627
160.0	528	535	578	605	614
162.5	538	541	577	600	605
165.0	547	548	575	594	598
167.5	554	553	573	587	590
170.0	561	558	572	580	581
172.5	566	562	571	575	574
175.0	569	566	572	572	570
177.5	571	568	574	572	569
180.0	571	571	571	571	571



Test Number: LLIA000844-004A-R01

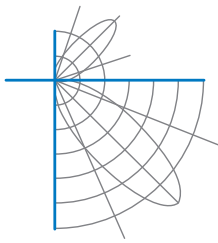
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Coefficients Of Utilization - Zonal Cavity Method																		
Effective Floor Cavity Reflectance 0.20																		
RC	80				70				50			30			10			0
	RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	
0	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	45
1	97	93	89	86	89	85	82	79	71	69	67	58	56	55	46	45	44	39
2	88	81	75	70	81	75	70	65	62	59	56	51	49	46	41	39	37	33
3	81	72	64	59	74	66	60	55	55	51	47	45	42	39	36	34	32	28
4	74	63	56	50	68	59	52	47	49	44	40	41	37	34	33	30	28	24
5	68	57	49	43	62	52	45	40	44	39	35	37	33	30	30	27	24	21
6	63	51	43	37	57	47	40	35	40	34	30	33	29	26	27	24	22	19
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	25	22	19	17
8	54	42	34	29	49	39	32	27	33	28	24	28	24	21	23	20	17	15
9	50	38	31	26	46	35	29	24	30	25	21	26	21	19	21	18	16	14
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	19	17	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.

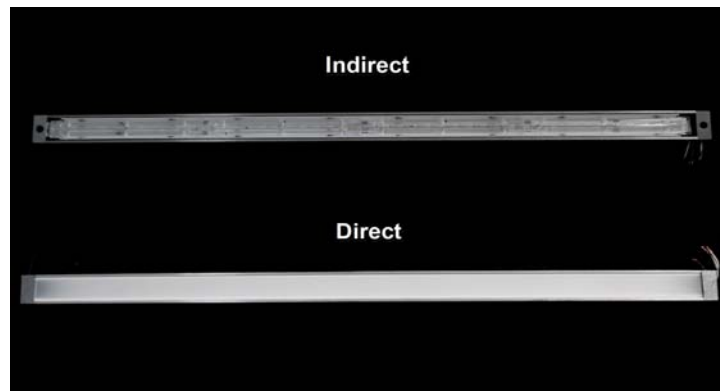
Circle of Light Plot			
Height(ft)	Illuminance at Nadir (fc)	Beam Width (across 50% Nadir Illum)	
		0-180	90-270
6.0	26.4	6.94	6.38
8.0	14.9	9.25	8.50
10.0	9.5	11.56	10.63
12.0	6.6	13.87	12.75
14.0	4.9	16.19	14.88
16.0	3.7	18.50	17.00



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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.



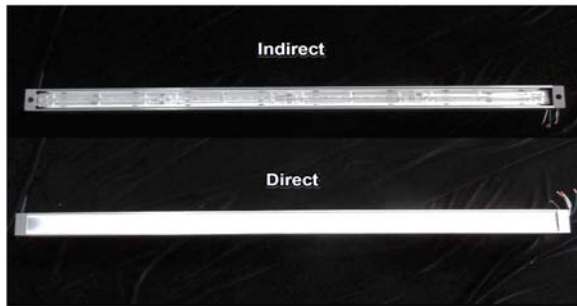
Report of Test

LLIA000844-004B-R01*

Integrating Sphere Report

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Performance Summary

Voltage	120.0 Vac
Current	0.3101 A
Power	37.02 W
Frequency	60.00 Hz
Power Factor	0.995
Current THD	5.3 %

Total Luminous Flux	4756.5 lm
Efficacy	128.5 lm/W
Chromaticity (x,y)	(0.3812, 0.3778)
(u',v')	(0.2252, 0.5021)
Duv	0.0003
CCT	3988 K
CRI (Ra)	84
R9	17

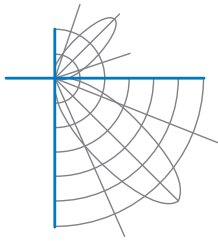
Prepared For:

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

*This test report supersedes test report LLIA000844-004B

Test date: 08/30/2017

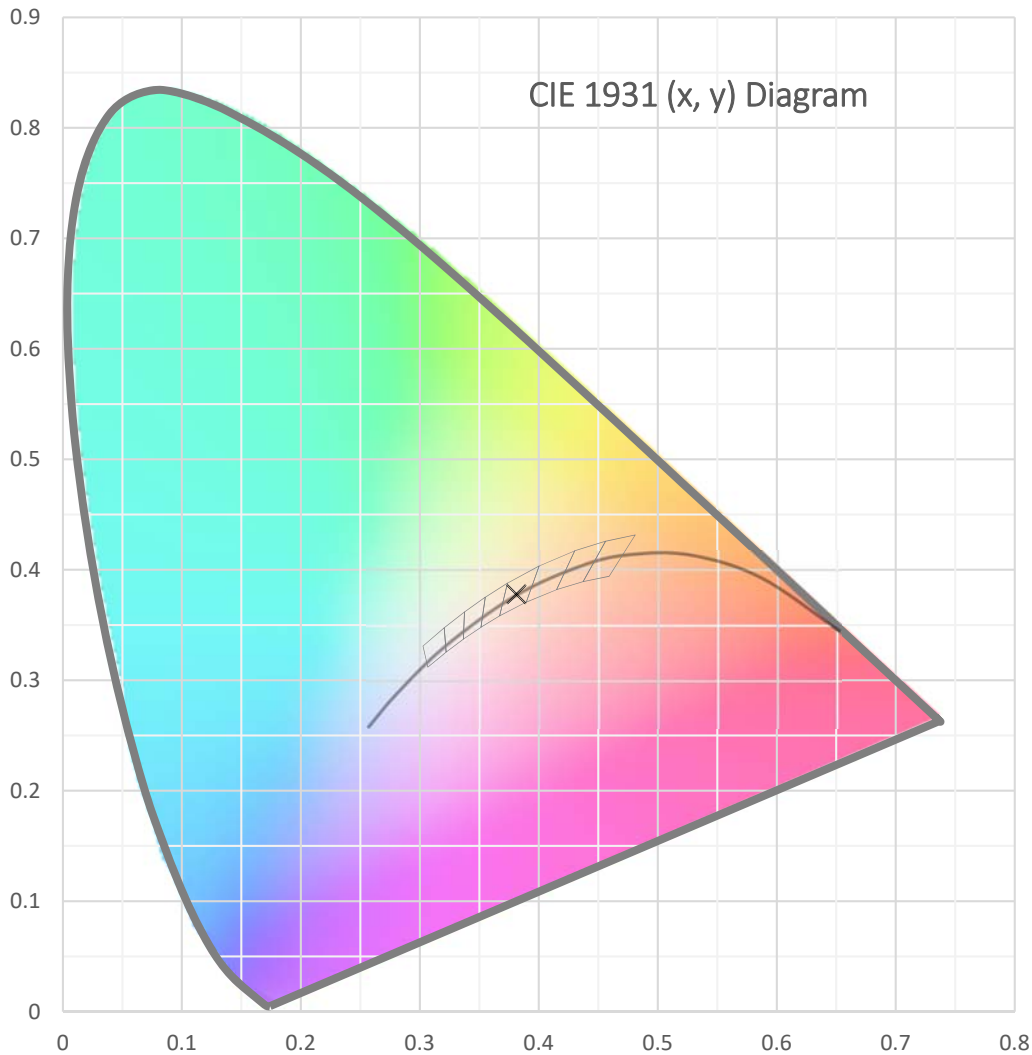
Report date: 12/15/2017

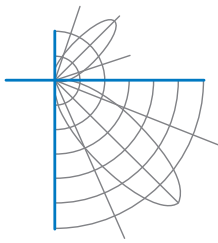


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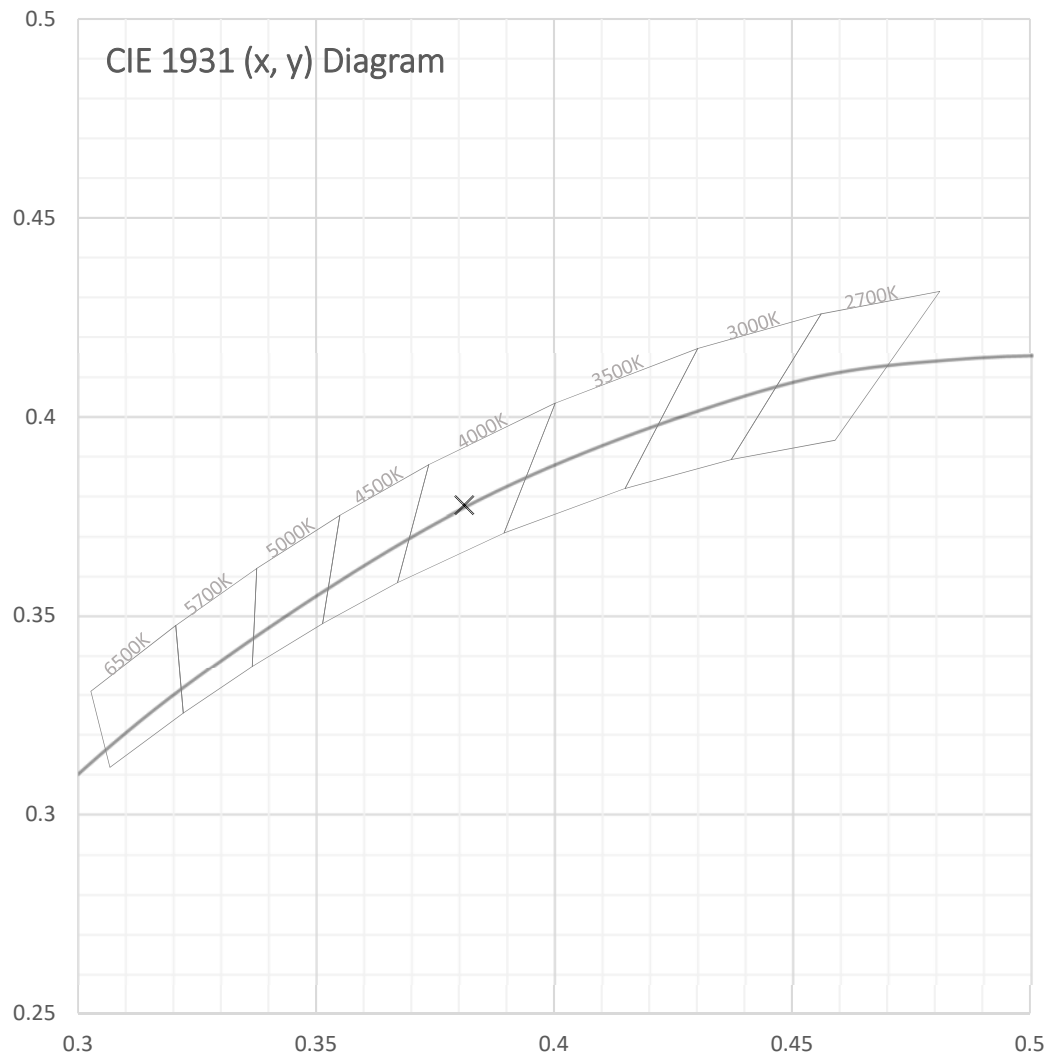




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Spectral Data	Total Radiant Flux	14.75 W
	Total Luminous Flux	4756.5 Lm
	Chromaticity CIE 1931 (x, y)	(0.3812, 0.3778)
	Chromaticity CIE 1976 (u', v')	(0.2252, 0.5021)
	Correlated Color Temperature (CCT)	3988 K
	Color Rendering Index (Ra)	84
	R1	83
	R2	91
	R3	96
	R4	82
	R5	82
	R6	86
	R7	87
	R8	67
	R9	17
	R10	77
	R11	81
	R12	61
	R13	85
	R14	98
	Distance from Planckian Locus (Duv)	0.0003
	Scotopic/Photopic Ratio *	1.705

Electrical Data

Voltage	120.0 Vac
Current	0.3101 A
Power	37.02 W
Frequency	60.00 Hz
Power Factor	0.995
Current THD	5.3 %



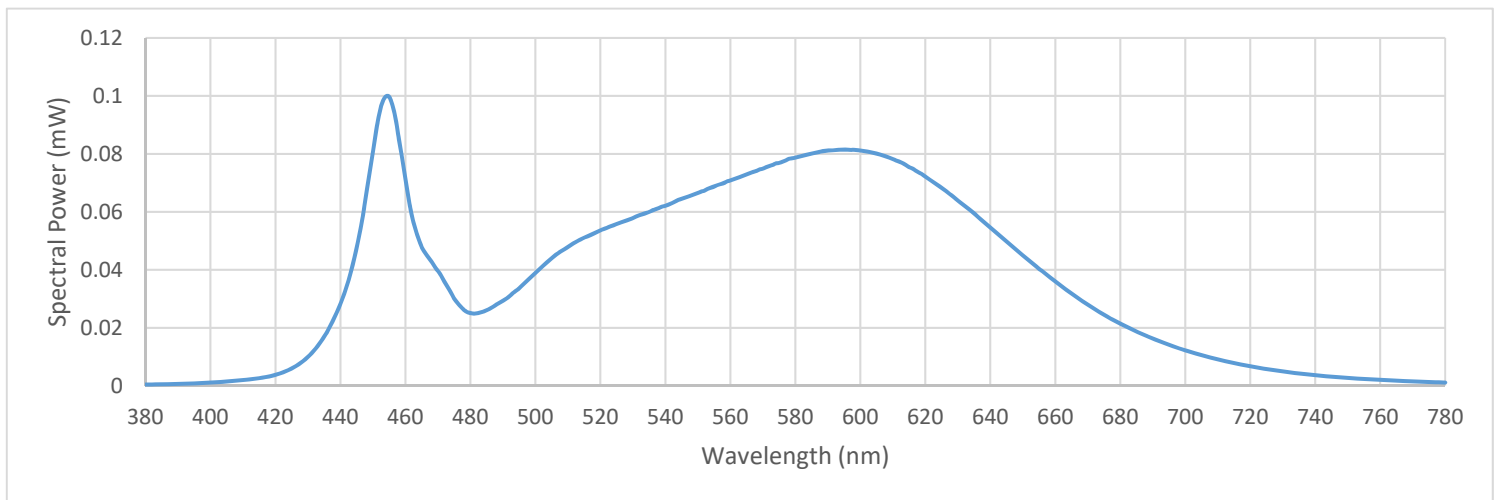
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Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000454	480	0.025120	580	0.078696	680	0.021455
385	0.000492	485	0.026071	585	0.080133	685	0.018723
390	0.000621	490	0.029370	590	0.081192	690	0.016293
395	0.000813	495	0.033617	595	0.081487	695	0.014111
400	0.001094	500	0.038982	600	0.081155	700	0.012236
405	0.001483	505	0.043943	605	0.080142	705	0.010570
410	0.001961	510	0.047860	610	0.078200	710	0.009064
415	0.002612	515	0.051132	615	0.075434	715	0.007837
420	0.003785	520	0.053653	620	0.072068	720	0.006720
425	0.005984	525	0.055781	625	0.068301	725	0.005760
430	0.010008	530	0.057862	630	0.063851	730	0.004962
435	0.016969	535	0.059921	635	0.059519	735	0.004251
440	0.028249	540	0.062061	640	0.054540	740	0.003648
445	0.047665	545	0.064459	645	0.049695	745	0.003141
450	0.080695	550	0.066504	650	0.044945	750	0.002708
455	0.099696	555	0.068734	655	0.040322	755	0.002329
460	0.071522	560	0.070776	660	0.036062	760	0.002025
465	0.047882	565	0.072861	665	0.031768	765	0.001744
470	0.039615	570	0.074901	670	0.027940	770	0.001504
475	0.030078	575	0.076862	675	0.024518	775	0.001297
						780	0.001124





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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: 24.9 °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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