



# Report of Test

## LLIA000844-002A-R01\*

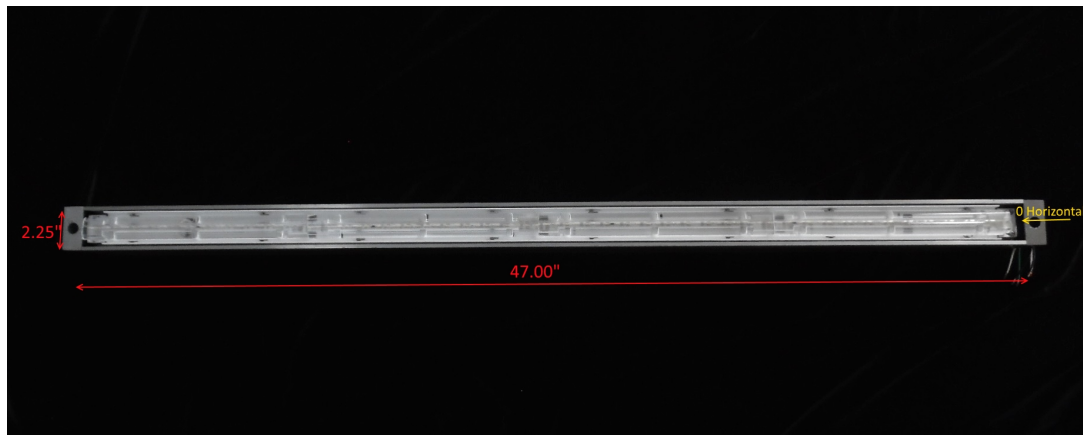
\*This test report supersedes test report LLIA000844-002A

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

Pendant mounted, extruded aluminum housing with aluminum end caps,  
formed white enamel aluminum LED tray/reflector.

Three connected PAL-Lighting LED boards with 92 white LEDs and clear linear plastic lens above.

One Osram Optotronic OTi 30/120-277/1A0-DIM L LED driver programmed to 480mA  
120.0Vac, 60.00Hz, 0.1553A, 18.52W, 0.994PF, 5.5%THD(i)



### Performance Summary

Total Light Output	2574 lm
Luminaire Power	18.5 W
Luminous Efficacy	139.1 lm/W

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



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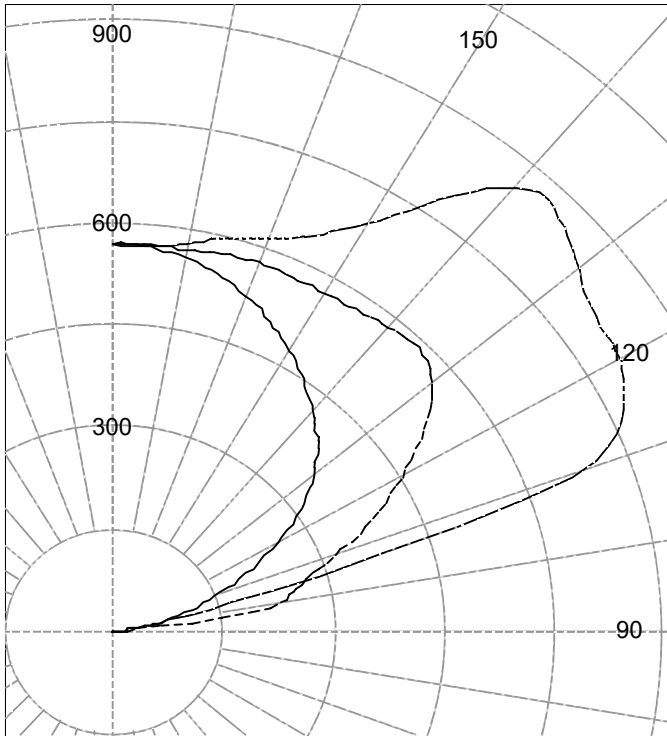
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Legend: C0-Solid, C45-Dashed, C90-Grey (cd)



(Two plane symmetry) C0-C90

**INTENSITY SUMMARY (cd)**

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
90.0	0	0	0	0	0	
95.0	20	32	63	30	28	51
100.0	55	73	233	115	74	
105.0	100	119	263	436	216	265
110.0	146	172	319	696	662	
115.0	199	230	390	714	768	448
120.0	258	290	452	721	797	
125.0	311	345	518	735	804	483
130.0	356	393	568	768	827	
135.0	392	434	586	798	862	469
140.0	422	465	584	774	854	
145.0	450	487	577	708	773	375
150.0	478	504	574	655	692	
155.0	503	519	575	623	643	266
160.0	526	533	577	604	613	
165.0	544	545	574	593	596	162
170.0	558	556	570	578	579	
175.0	567	563	570	569	567	54
180.0	569	569	569	569	569	

**ZONAL FLUX AND PERCENTAGES**

Zone	Flux (lm)	% Lamp	% Luminaire
180-150	481	N / A	18.7
180-140	857	N / A	33.3
180-120	1809	N / A	70.3
180-90	2574	N / A	100.0
140-90	1717	N / A	66.7
120-90	765	N / A	29.7
90-0	0	N / A	0.0
180-0	2574	N / A	100.0

Total Light Output = 2,574 lm

Signed:

Authorized Signatory

Date of test 30-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
90.0	0	0	0	0	0
92.5	7	14	15	12	11
95.0	20	32	63	30	28
97.5	37	51	171	58	46
100.0	55	73	233	115	74
102.5	77	96	249	226	118
105.0	100	119	263	436	216
107.5	124	144	288	637	439
110.0	146	172	319	696	662
112.5	172	200	356	710	739
115.0	199	230	390	714	768
117.5	228	260	420	717	785
120.0	258	290	452	721	797
122.5	285	318	485	726	802
125.0	311	345	518	735	804
127.5	335	369	546	750	811
130.0	356	393	568	768	827
132.5	375	414	581	786	845
135.0	392	434	586	798	862
137.5	407	451	586	795	868
140.0	422	465	584	774	854
142.5	436	477	580	742	819
145.0	450	487	577	708	773
147.5	464	496	575	679	729
150.0	478	504	574	655	692
152.5	491	512	574	638	664
155.0	503	519	575	623	643
157.5	515	526	576	612	626
160.0	526	533	577	604	613
162.5	536	539	576	598	603
165.0	544	545	574	593	596
167.5	552	551	572	586	588
170.0	558	556	570	578	579
172.5	563	560	569	572	572
175.0	567	563	570	569	567
177.5	569	565	571	569	566
180.0	569	569	569	569	569



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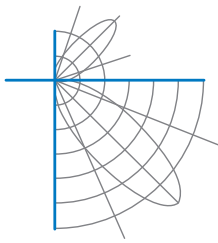
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**Coefficients Of Utilization - Zonal Cavity Method**

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	95	95	95	95	81	81	81	81	56	56	56	32	32	32	10	10	10	0
1	87	83	79	76	74	71	68	65	48	47	45	28	27	26	9	9	9	0
2	79	72	66	62	67	62	57	53	42	40	37	24	23	22	8	8	7	0
3	72	63	57	51	61	54	49	44	37	34	31	22	20	18	7	7	6	0
4	65	56	48	43	56	48	42	37	33	29	26	19	17	16	6	6	5	0
5	60	49	42	36	51	42	36	32	29	25	22	17	15	13	6	5	4	0
6	55	44	36	31	47	38	32	27	26	22	19	15	13	11	5	4	4	0
7	50	39	32	27	43	34	28	23	23	19	17	14	11	10	4	4	3	0
8	47	35	28	23	40	30	24	20	21	17	14	12	10	9	4	3	3	0
9	43	32	25	20	37	28	22	18	19	15	13	11	9	8	4	3	3	0
10	40	29	22	18	34	25	19	16	17	14	11	10	8	7	3	3	2	0

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.



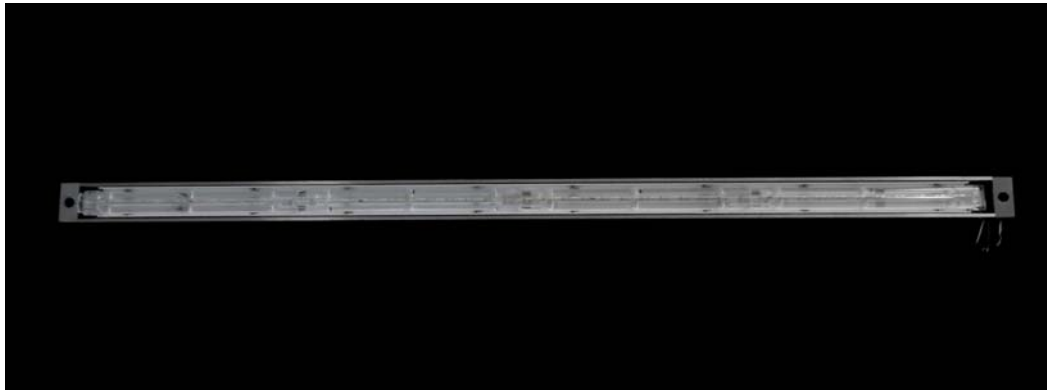
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**Test Distance**            9.5 m  
**Test Temperature**      25.0 °C

**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

**LLIA000844-002B-R01\***

Integrating Sphere Report

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

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### Performance Summary

Voltage	120.0 Vac
Current	0.1552 A
Power	18.51 W
Frequency	60.00 Hz
Power Factor	0.994
Current THD	5.4 %

Total Luminous Flux	2661.4 lm
Efficacy	143.8 lm/W
Chromaticity (x,y)	(0.3800, 0.3767)
(u',v')	(0.2249, 0.5015)
Duv	0.0001
CCT	4010 K
CRI (Ra)	84
R9	17

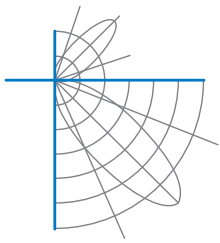
Prepared For:

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

\*This test report supersedes test report LLIA000844-002B

Test date: 08/29/2017

Report date: 12/15/2017



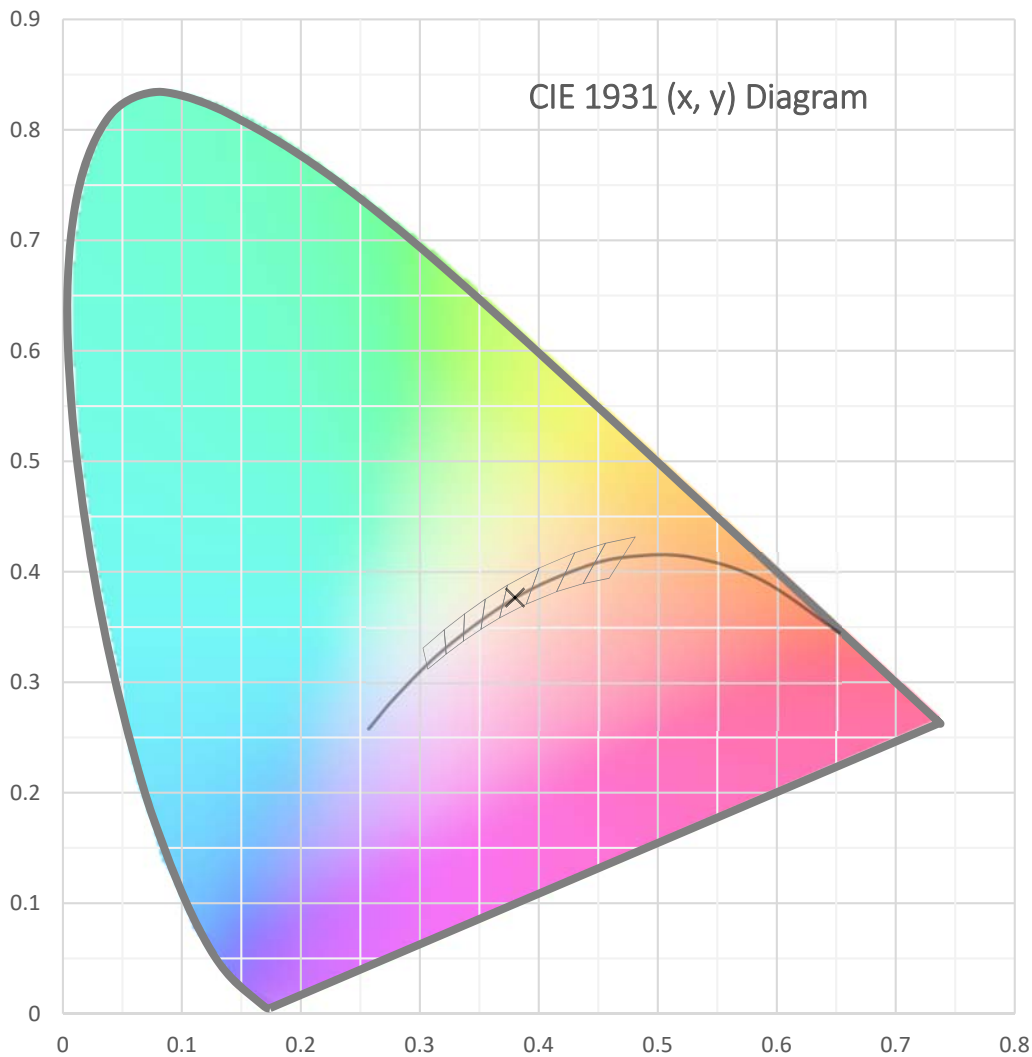
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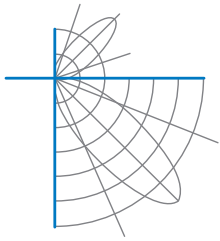
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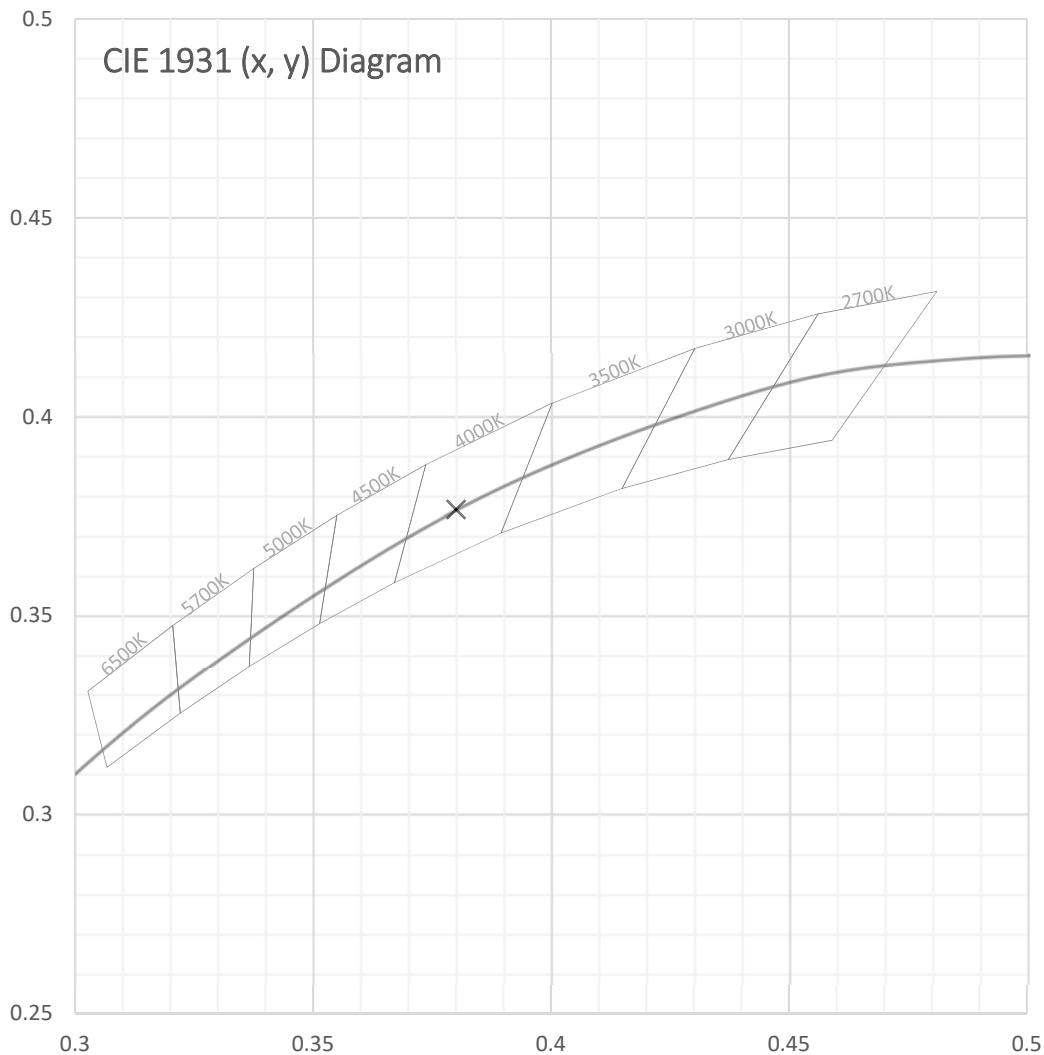
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<b>Spectral Data</b>	Total Radiant Flux	8.254 W
	Total Luminous Flux	2661.4 Lm
	Chromaticity CIE 1931 (x, y)	(0.3800, 0.3767)
	Chromaticity CIE 1976 (u', v')	(0.2249, 0.5015)
	Correlated Color Temperature (CCT)	4010 K
	Color Rendering Index (Ra)	84
	R1	83
	R2	91
	R3	95
	R4	82
	R5	83
	R6	86
	R7	87
	R8	67
	R9	17
	R10	77
	R11	81
	R12	61
	R13	85
	R14	98
	Distance from Planckian Locus (Duv)	0.0001
	Scotopic/Photopic Ratio *	1.712

**Electrical Data**

Voltage	120.0 Vac
Current	0.1552 A
Power	18.51 W
Frequency	60.00 Hz
Power Factor	0.994
Current THD	5.4 %



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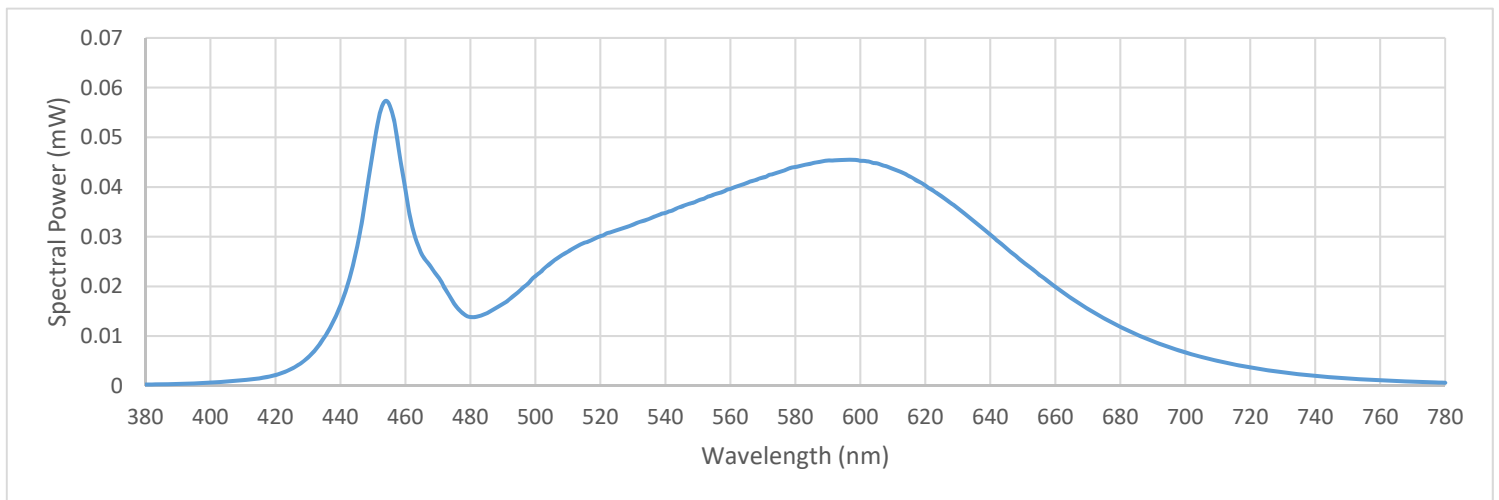
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Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000261	480	0.013848	580	0.044033	680	0.011863
385	0.000287	485	0.014576	585	0.044735	685	0.010345
390	0.000356	490	0.016477	590	0.045345	690	0.008971
395	0.000470	495	0.018989	595	0.045442	695	0.007776
400	0.000641	500	0.022065	600	0.045266	700	0.006727
405	0.000858	505	0.024795	605	0.044776	705	0.005805
410	0.001124	510	0.026983	610	0.043691	710	0.004984
415	0.001491	515	0.028779	615	0.042191	715	0.004298
420	0.002166	520	0.030118	620	0.040309	720	0.003682
425	0.003408	525	0.031290	625	0.038117	725	0.003154
430	0.005710	530	0.032377	630	0.035665	730	0.002716
435	0.009712	535	0.033592	635	0.033133	735	0.002321
440	0.016169	540	0.034768	640	0.030391	740	0.001990
445	0.027549	545	0.036037	645	0.027617	745	0.001716
450	0.047095	550	0.037260	650	0.024956	750	0.001481
455	0.056665	555	0.038472	655	0.022365	755	0.001275
460	0.039402	560	0.039623	660	0.019947	760	0.001106
465	0.026515	565	0.040766	665	0.017605	765	0.000954
470	0.021971	570	0.041892	670	0.015473	770	0.000820
475	0.016504	575	0.042964	675	0.013574	775	0.000710
						780	0.000613





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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:	25.3 °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.  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.