

# Report of Test

## LLIA000849-001A-R01\*

\*This test report supersedes test report LLIA000849-001A

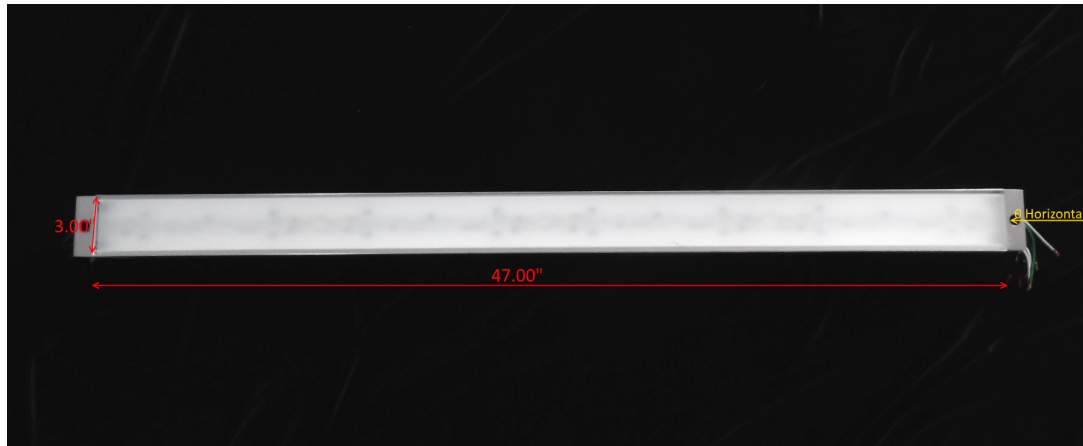
Catalog Number: MLS3-I-HO-K40-4-XX-FDC-XXXX-120

Pendant mounted, extruded aluminum housing, formed white aluminum reflector tray, frosted plastic top enclosure.

144 White LEDs, four PrevaLED Line boards with 36 LEDs each.

One Osram Optotronic OTi 30/120-277/1A0 DIM L LED driver.

120.0Vac, 60.00Hz, 0.2356A, 28.18W, 0.997PF, 5.9%THD(i)



### Performance Summary

Total Light Output	3600 lm
Luminaire Power	28.2 W
Luminous Efficacy	127.7 lm/W

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

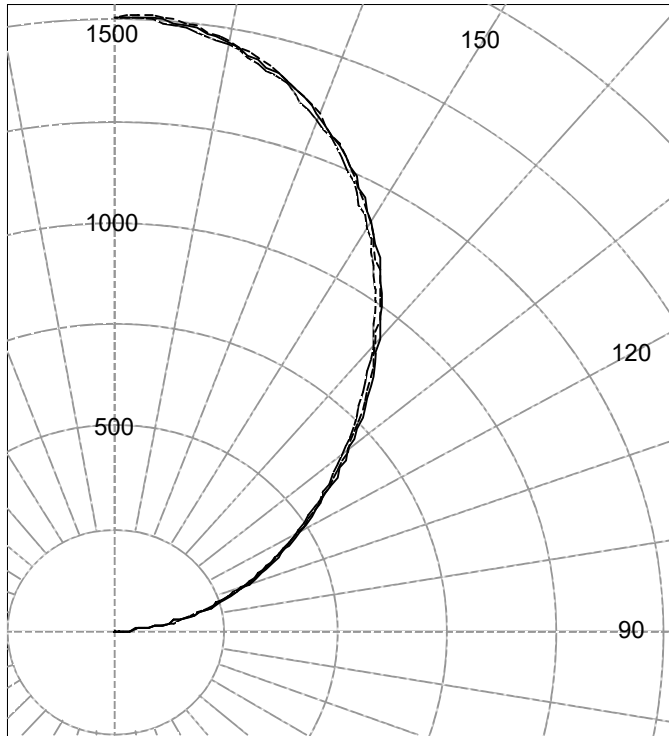


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Legend: C0-Solid, C45-Dashed, C90-Grey (cd)



(Two plane symmetry) C0-C90

**INTENSITY SUMMARY (cd)**

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
90.0	1	3	5	7	8	
95.0	76	76	76	76	76	83
100.0	150	150	149	148	147	
105.0	226	226	224	221	220	237
110.0	307	308	302	298	296	
115.0	390	392	387	379	378	383
120.0	484	484	477	468	466	
125.0	584	579	577	567	564	515
130.0	692	686	686	675	671	
135.0	809	800	801	791	786	615
140.0	929	919	921	912	906	
145.0	1048	1037	1041	1034	1027	648
150.0	1160	1149	1156	1149	1142	
155.0	1261	1251	1260	1254	1247	577
160.0	1348	1338	1350	1344	1337	
165.0	1417	1408	1421	1416	1409	398
170.0	1467	1459	1472	1468	1461	
175.0	1497	1489	1503	1499	1493	142
180.0	1507	1507	1507	1507	1507	

**ZONAL FLUX AND PERCENTAGES**

Zone	Flux (lm)	% Lamp	% Luminaire
180-150	1117	N / A	31.0
180-140	1765	N / A	49.0
180-120	2895	N / A	80.4
180-90	3597	N / A	99.9
140-90	1832	N / A	50.9
120-90	702	N / A	19.5
90-0	3	N / A	0.1
180-0	3600	N / A	100.0

Total Light Output = 3,600 lm

Signed:

Authorized Signatory

Date of test 23-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	0	0	0	0	0
2.5	0	0	0	0	0
5.0	0	0	0	0	0
7.5	0	0	0	0	0
10.0	0	0	0	0	0
12.5	0	0	0	0	0
15.0	0	0	0	0	0
17.5	0	0	0	0	0
20.0	0	0	0	0	0
22.5	0	0	0	0	0
25.0	0	0	0	0	0
27.5	0	0	0	0	0
30.0	0	0	0	0	0
32.5	0	0	0	0	0
35.0	0	0	0	0	0
37.5	0	0	0	0	0
40.0	0	0	0	0	0
42.5	0	0	0	0	0
45.0	0	0	0	0	0
47.5	0	0	0	0	0
50.0	0	0	0	0	0
52.5	0	0	0	0	0
55.0	0	0	0	0	0
57.5	0	0	0	0	0
60.0	0	0	0	0	0
62.5	0	0	0	0	0
65.0	0	0	0	0	0
67.5	0	0	0	0	0
70.0	0	0	0	0	0
72.5	0	0	0	0	2
75.0	0	0	0	2	2
77.5	0	0	1	2	2
80.0	0	0	1	2	3
82.5	0	0	2	3	3
85.0	0	1	2	3	3
87.5	0	1	2	4	4
90.0	1	3	5	7	8



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**Intensity data (cd)**

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	1	3	5	7	8
92.5	38	39	39	40	40
95.0	76	76	76	76	76
97.5	113	113	113	112	111
100.0	150	150	149	148	147
102.5	188	187	186	185	183
105.0	226	226	224	221	220
107.5	265	265	262	259	257
110.0	307	308	302	298	296
112.5	349	349	344	338	336
115.0	390	392	387	379	378
117.5	436	438	431	423	421
120.0	484	484	477	468	466
122.5	533	531	526	516	514
125.0	584	579	577	567	564
127.5	636	631	630	620	617
130.0	692	686	686	675	671
132.5	750	742	743	732	728
135.0	809	800	801	791	786
137.5	869	859	861	851	846
140.0	929	919	921	912	906
142.5	989	978	981	973	967
145.0	1048	1037	1041	1034	1027
147.5	1105	1094	1099	1092	1085
150.0	1160	1149	1156	1149	1142
152.5	1212	1202	1210	1204	1196
155.0	1261	1251	1260	1254	1247
157.5	1306	1297	1307	1301	1294
160.0	1348	1338	1350	1344	1337
162.5	1384	1376	1387	1382	1375
165.0	1417	1408	1421	1416	1409
167.5	1444	1436	1449	1444	1437
170.0	1467	1459	1472	1468	1461
172.5	1484	1476	1490	1486	1479
175.0	1497	1489	1503	1499	1493
177.5	1504	1497	1511	1507	1501
180.0	1507	1507	1507	1507	1507



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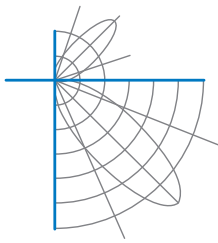
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Coefficients Of Utilization - Zonal Cavity Method																		
Effective Floor Cavity Reflectance 0.20																		
RC	80				70				50			30			10			0
	RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
0	95	95	95	95	81	81	81	81	56	56	56	32	32	32	10	10	10	0
1	87	83	79	76	74	71	68	65	48	47	45	28	27	26	9	9	8	0
2	79	72	66	62	67	62	57	53	42	40	37	24	23	22	8	7	7	0
3	72	63	56	51	61	54	49	44	37	34	31	21	20	18	7	6	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	5	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	27	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

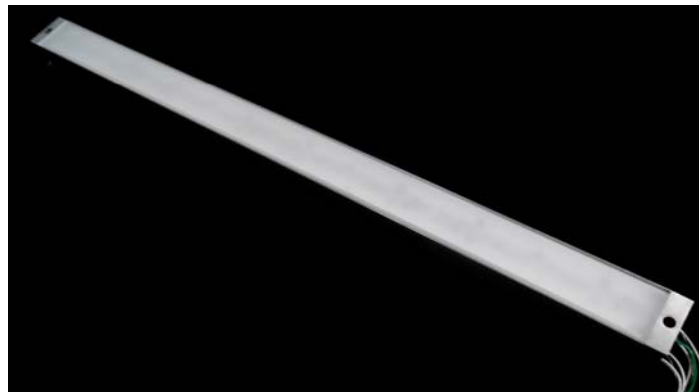
For absolute test reports, CUs are expressed as a percentage of total lumen output. Calculations were based on published IES procedures, and are based on the zonal cavity method. Basic assumptions: 1) Room surfaces are lambertian reflectors. 2) Incident flux on each surface is uniformly distributed. 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** 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.



## Report of Test

**LLIA000849-001B-R01\***

Integrating Sphere Report

Catalog Number: MLS3-I-HO-K40-4-XX-FDC-XXXX-120

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### Performance Summary

Voltage	120.0 Vac
Current	0.2356 A
Power	28.19 W
Frequency	59.97 Hz
Power Factor	0.997
Current THD	5.9 %

Total Luminous Flux	3728.8 lm
Efficacy	132.3 lm/W
Chromaticity (x,y)	(0.3833, 0.3806)
(u',v')	(0.2255, 0.5037)
Duv	0.0010
CCT	3951 K
CRI (Ra)	83
R9	13

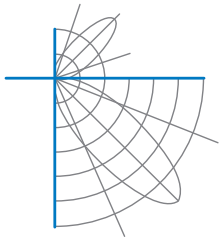
Prepared For:

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

\*This test report supersedes test report LLIA000849-001B

Test date: 08/23/2017  
Report date: 12/15/2017

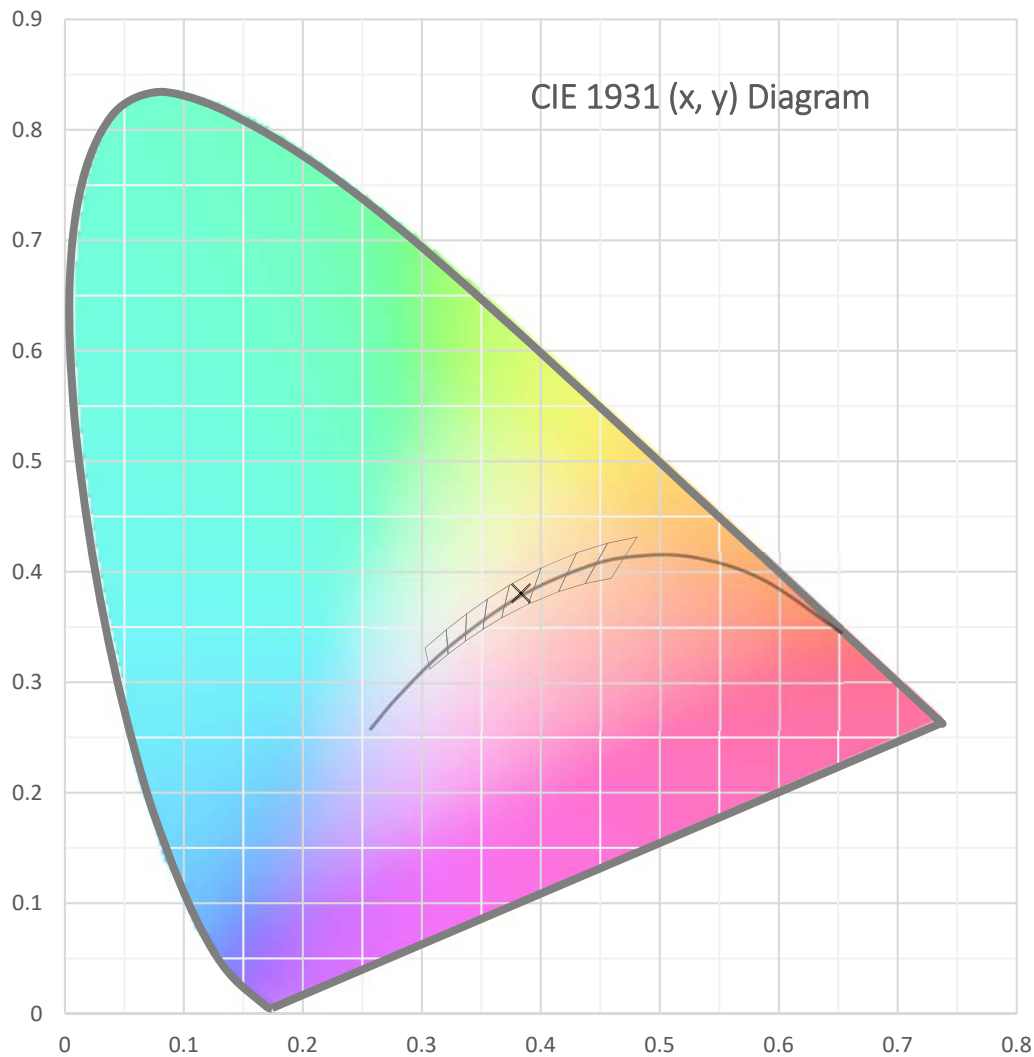


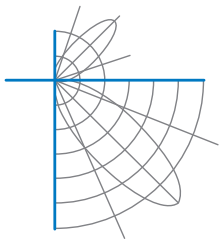


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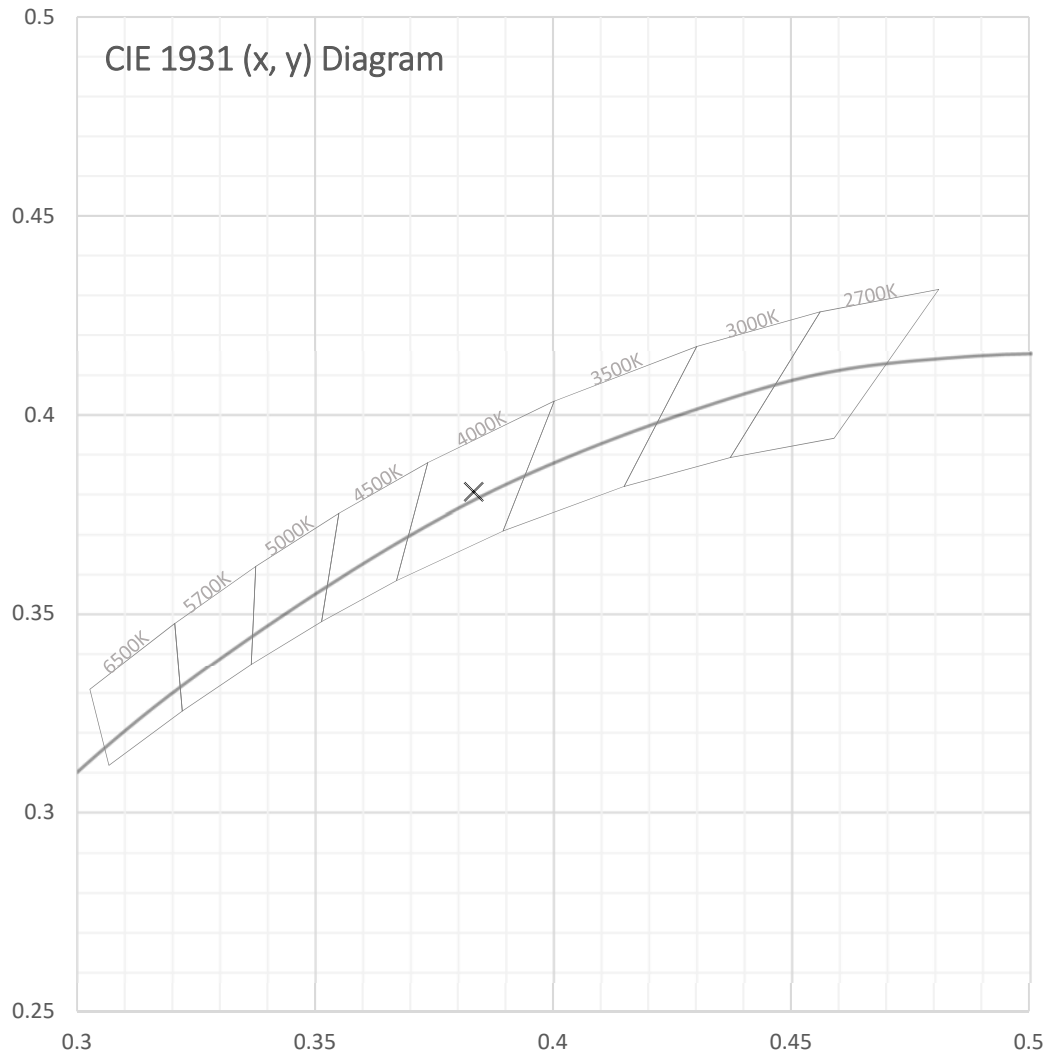
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**Spectral Data**

Total Radiant Flux	11.51 W
Total Luminous Flux	3728.8 Lm
Chromaticity CIE 1931 (x, y)	(0.3833, 0.3806)
Chromaticity CIE 1976 (u', v')	(0.2255, 0.5037)
Correlated Color Temperature (CCT)	3951 K
Color Rendering Index (Ra)	83
R1	81
R2	89
R3	94
R4	80
R5	80
R6	84
R7	87
R8	66
R9	13
R10	73
R11	78
R12	56
R13	83
R14	97
Distance from Planckian Locus (Duv)	0.0010
Scotopic/Photopic Ratio *	1.661

**Electrical Data**

Voltage	120.0 Vac
Current	0.2356 A
Power	28.19 W
Frequency	59.97 Hz
Power Factor	0.997
Current THD	5.9 %



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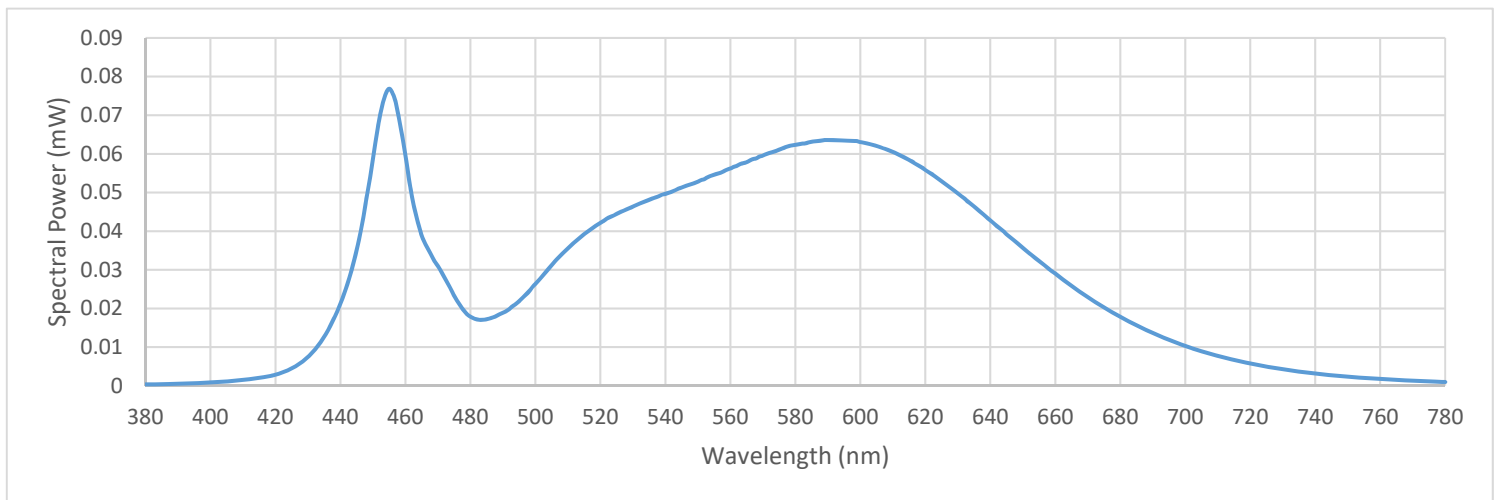
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**Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)**

380	0.000367	480	0.017890	580	0.062312	680	0.017834
385	0.000398	485	0.017220	585	0.063171	685	0.015654
390	0.000497	490	0.018894	590	0.063589	690	0.013651
395	0.000646	495	0.021900	595	0.063435	695	0.011894
400	0.000858	500	0.026378	600	0.063027	700	0.010298
405	0.001142	505	0.031158	605	0.062097	705	0.008912
410	0.001513	510	0.035519	610	0.060523	710	0.007670
415	0.002004	515	0.039256	615	0.058406	715	0.006666
420	0.002889	520	0.042177	620	0.055846	720	0.005756
425	0.004493	525	0.044461	625	0.052924	725	0.004979
430	0.007485	530	0.046310	630	0.049708	730	0.004301
435	0.012703	535	0.048094	635	0.046359	735	0.003693
440	0.021266	540	0.049637	640	0.042807	740	0.003165
445	0.035153	545	0.051299	645	0.039194	745	0.002726
450	0.058533	550	0.052798	650	0.035671	750	0.002349
455	0.076847	555	0.054620	655	0.032225	755	0.002020
460	0.059724	560	0.056207	660	0.029022	760	0.001754
465	0.038906	565	0.057835	665	0.025822	765	0.001511
470	0.030974	570	0.059530	670	0.022917	770	0.001298
475	0.023259	575	0.061110	675	0.020270	775	0.001121
						780	0.000971





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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.  
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**Notes:** The measurements and other derived quantities contained in this report are based on the absolute data as measured.

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