



Report of Test

LLIA000817-012A

Catalog Number: MLS2-I/D-HO/MO-K40-80-4-XX-AL/AL-XXX-UNV
Pendant mounted, extruded aluminum housing, formed white enamel
aluminum reflectors, translucent white plastic enclosures.
92 white upper LEDs, 92 white lower LEDs
Two Osram Optotronic OT30W/PRG1050C/UNV/DIM/L LED drivers
120.0Vac, 60.00Hz, 0.3864A, 46.19W, 0.996PF, 5.3%THD(i)



Performance Summary

Total Light Output	5369 lm
Luminaire Power	46.2 W
Luminous Efficacy	116.2 lm/W

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



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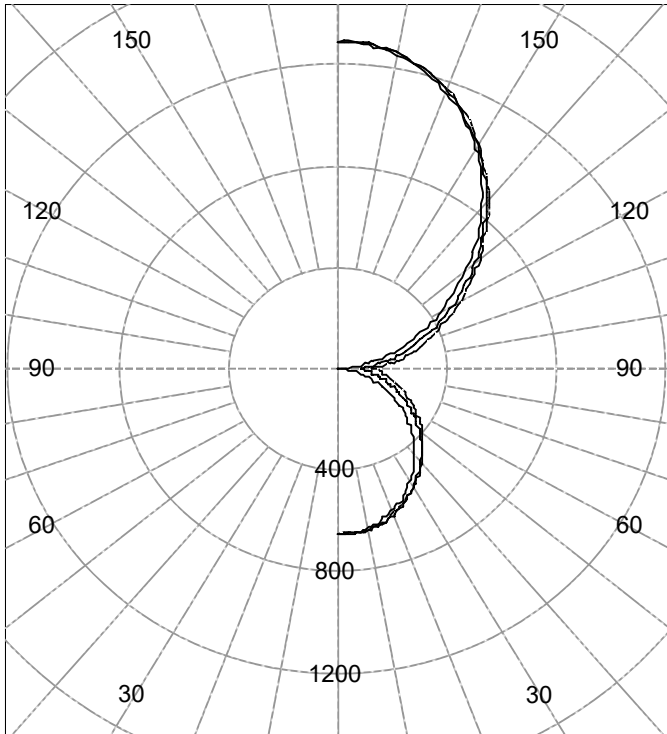
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Legend: C0-Solid, C45-Dashed, C90-Grey (cd)



(Two plane symmetry) C0-C90

INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	650	650	650	650	650	
5.0	647	645	652	651	647	62
10.0	635	634	644	645	640	
15.0	615	616	629	631	625	176
20.0	588	592	607	608	602	
25.0	556	565	577	580	573	263
30.0	518	528	544	547	542	
35.0	478	489	507	513	508	313
40.0	433	448	467	476	473	
45.0	386	405	427	439	437	324
50.0	338	360	385	400	401	
55.0	289	314	344	362	364	301
60.0	241	269	302	323	328	
65.0	192	224	259	284	291	250
70.0	144	178	217	246	255	
75.0	97	134	177	210	221	180
80.0	55	93	141	177	190	
85.0	21	61	111	150	163	113
90.0	1	35	78	113	124	

AVERAGE LUMINANCE (cd / m²)

Gamma	C0	C45	C90
45.0	8029	7636	7396
55.0	7414	7157	7035
65.0	6680	6703	6799
75.0	5519	6279	6781
85.0	3593	6573	7629

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	501	N / A	9.3
0-40	814	N / A	15.2
0-60	1440	N / A	26.8
0-90	1982	N / A	36.9
40-90	1168	N / A	21.8
60-90	543	N / A	10.1
90-180	3387	N / A	63.1
0-180	5369	N / A	100.0

Total Light Output = 5,369 lm

Signed:

Authorized Signatory

Date of test

18-Jul-2017

Date of report

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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	650	650	650	650	650
2.5	650	647	654	652	648
5.0	647	645	652	651	647
7.5	642	640	649	649	645
10.0	635	634	644	645	640
12.5	626	626	638	639	634
15.0	615	616	629	631	625
17.5	602	605	619	620	614
20.0	588	592	607	608	602
22.5	574	578	593	594	588
25.0	556	565	577	580	573
27.5	538	545	561	564	558
30.0	518	528	544	547	542
32.5	498	509	528	530	525
35.0	478	489	507	513	508
37.5	455	469	487	495	491
40.0	433	448	467	476	473
42.5	410	426	447	458	455
45.0	386	405	427	439	437
47.5	363	382	406	420	419
50.0	338	360	385	400	401
52.5	314	337	365	381	382
55.0	289	314	344	362	364
57.5	265	292	323	342	346
60.0	241	269	302	323	328
62.5	216	247	281	303	309
65.0	192	224	259	284	291
67.5	168	201	238	265	273
70.0	144	178	217	246	255
72.5	120	156	197	228	238
75.0	97	134	177	210	221
77.5	75	113	158	193	205
80.0	55	93	141	177	190
82.5	37	76	125	163	176
85.0	21	61	111	150	163
87.5	9	48	97	136	150
90.0	1	35	78	113	124



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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	1	35	78	113	124
92.5	17	54	95	120	129
95.0	42	78	127	168	182
97.5	68	105	154	194	207
100.0	99	135	182	221	233
102.5	132	167	213	250	262
105.0	167	202	245	280	292
107.5	205	238	280	312	324
110.0	245	277	316	346	357
112.5	288	317	353	382	392
115.0	331	360	393	418	429
117.5	376	403	434	456	467
120.0	422	447	477	495	506
122.5	469	492	520	536	546
125.0	516	538	564	578	587
127.5	565	585	609	620	630
130.0	614	632	655	663	674
132.5	664	679	701	707	717
135.0	714	727	747	752	762
137.5	765	776	793	797	807
140.0	815	824	841	842	852
142.5	864	871	888	887	897
145.0	912	917	932	932	940
147.5	958	963	974	976	983
150.0	1005	1008	1017	1018	1025
152.5	1048	1047	1058	1059	1065
155.0	1085	1085	1097	1097	1102
157.5	1122	1121	1133	1133	1137
160.0	1155	1154	1166	1166	1169
162.5	1186	1183	1196	1196	1198
165.0	1212	1209	1222	1222	1223
167.5	1235	1232	1245	1244	1244
170.0	1254	1250	1263	1262	1261
172.5	1269	1264	1277	1276	1274
175.0	1280	1274	1287	1285	1281
177.5	1286	1280	1292	1290	1285
180.0	1288	1288	1288	1288	1288



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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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	44	44	44	37
1	94	89	85	82	85	81	78	74	65	63	61	51	49	48	38	37	36	29
2	85	78	71	66	77	70	65	60	57	53	50	44	42	39	33	31	29	24
3	78	68	61	55	70	62	55	50	50	45	41	39	36	33	29	27	25	20
4	71	60	52	46	64	55	48	42	44	39	35	35	31	28	26	23	21	17
5	65	53	45	39	58	48	41	36	39	34	30	31	27	24	23	20	18	15
6	60	48	40	34	54	43	36	31	35	30	26	28	24	21	21	18	16	13
7	55	43	35	29	50	39	32	27	32	27	23	25	21	18	19	16	14	11
8	51	39	31	26	46	35	29	24	29	24	20	23	19	16	17	15	13	10
9	47	35	28	23	43	32	26	21	27	21	18	21	17	15	16	13	11	9
10	44	32	25	20	40	30	23	19	24	19	16	19	16	13	15	12	10	8

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	18.1	7.14	7.44
8.0	10.2	9.52	9.92
10.0	6.5	11.90	12.40
12.0	4.5	14.28	14.88
14.0	3.3	16.66	17.36
16.0	2.5	19.04	19.84



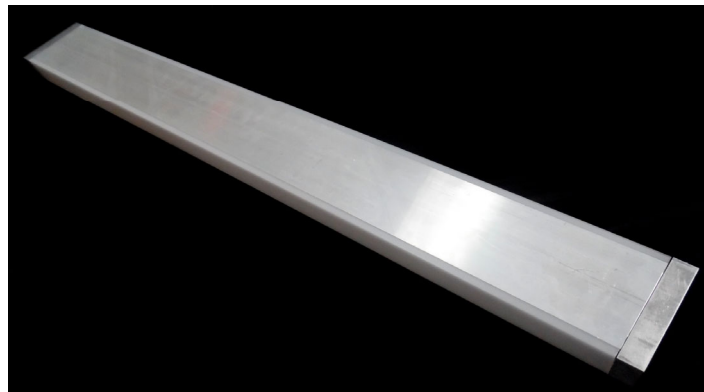
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Test Distance 9.5 m
Test Temperature 24.9 °C

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

LLIA000817-012B

Integrating Sphere Report

Catalog Number: MLS2-I/D-HO/MO-K40-80-4-XX-AL/AL-XXX-UNV

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Performance Summary

Voltage	120.0 Vac
Current	0.3859 A
Power	46.14 W
Frequency	60.00 Hz
Power Factor	0.996
Current THD	5.3 %

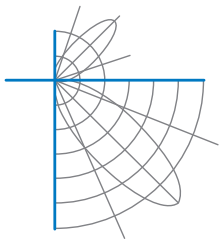
Total Luminous Flux	5405.8 lm
Efficacy	117.2 lm/W
Chromaticity (x,y)	(0.3799, 0.3772)
(u',v')	(0.2246, 0.5017)
Duv	0.0004
CCT	4018 K
CRI (Ra)	84
R9	17

Prepared For:

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

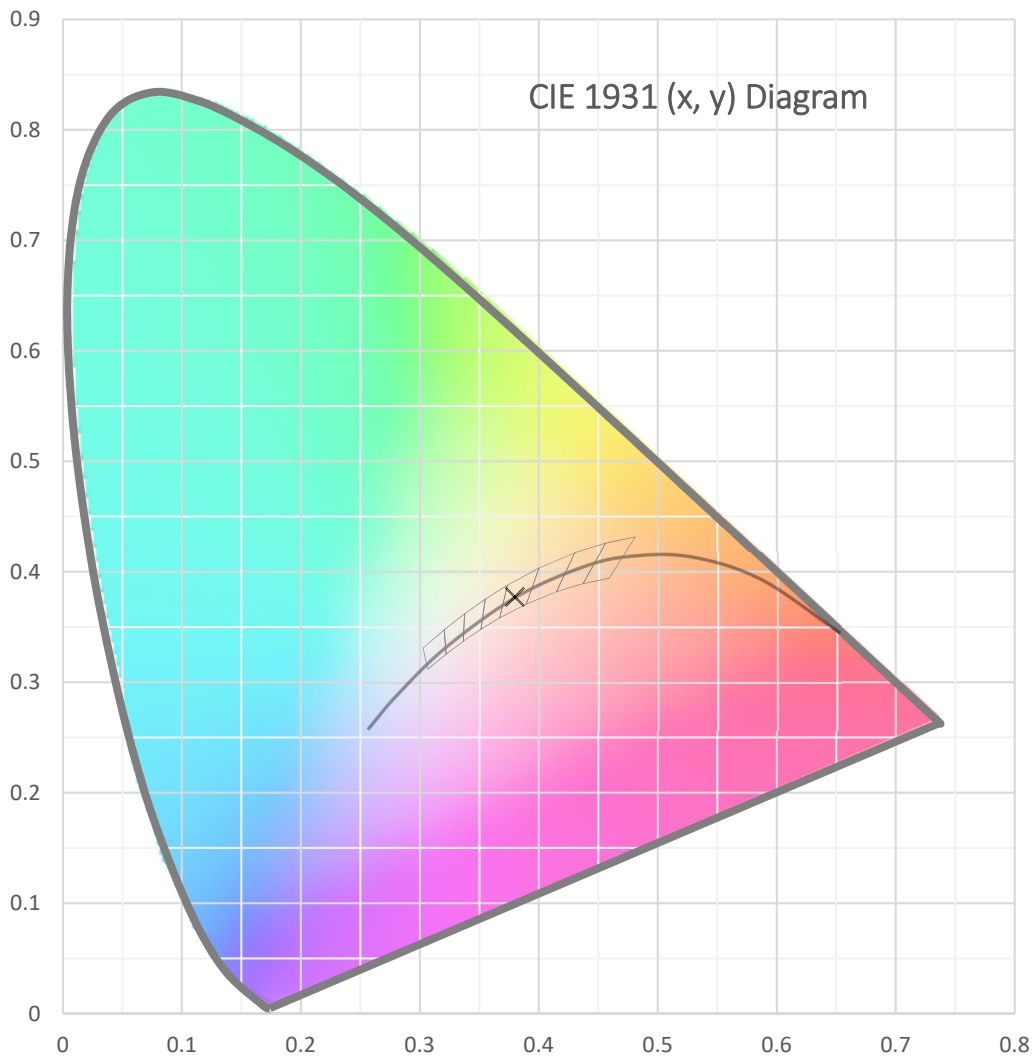
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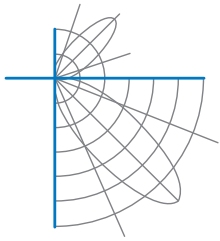
Report date: 07/18/2017



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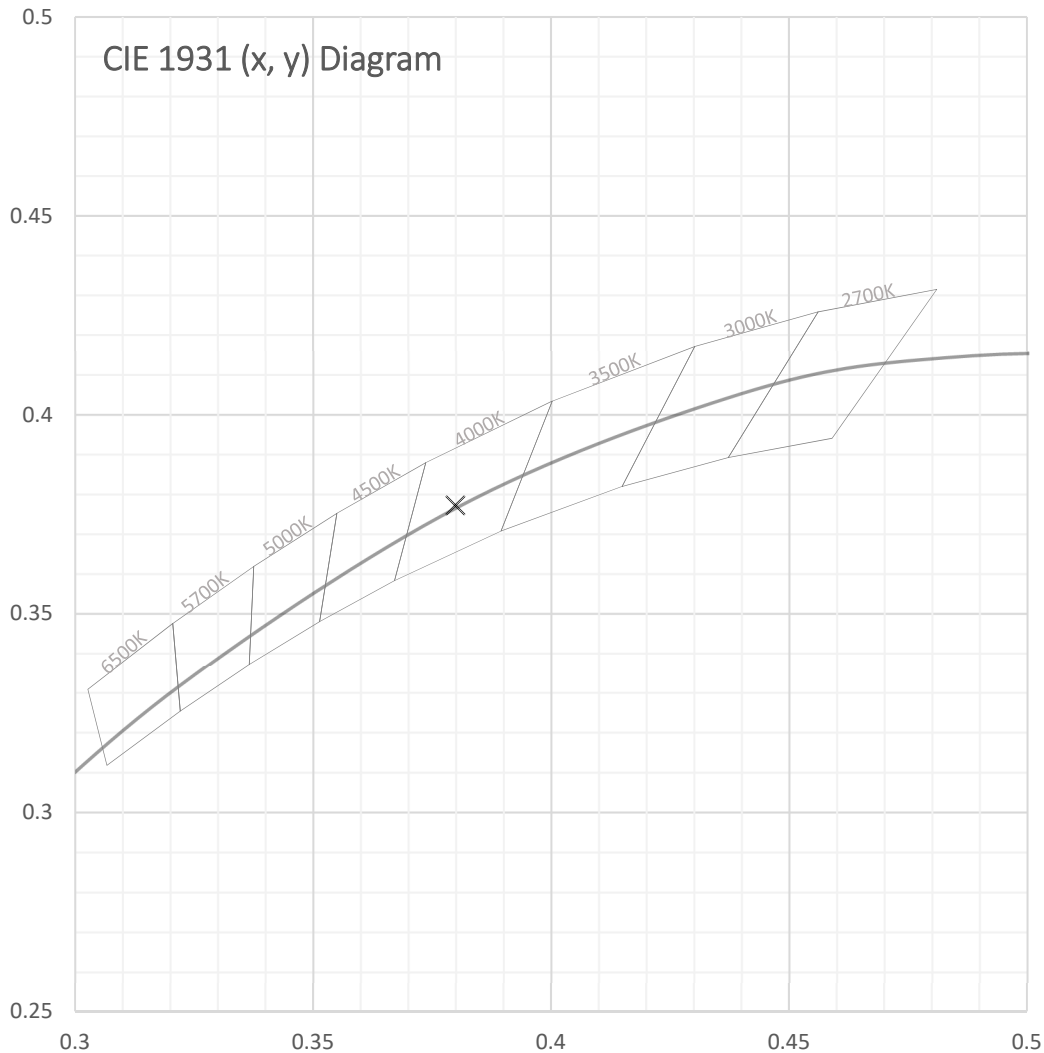
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Spectral Data	Total Radiant Flux	16.83 W
	Total Luminous Flux	5405.8 Lm
	Chromaticity CIE 1931 (x, y)	(0.3799, 0.3772)
	Chromaticity CIE 1976 (u', v')	(0.2246, 0.5017)
	Correlated Color Temperature (CCT)	4018 K
	Color Rendering Index (Ra)	84
	R1	83
	R2	91
	R3	96
	R4	82
	R5	82
	R6	87
	R7	87
	R8	67
	R9	17
	R10	78
	R11	80
	R12	61
	R13	85
	R14	98
	Distance from Planckian Locus (Duv)	0.0004
	Scotopic/Photopic Ratio *	1.719

Electrical Data

Voltage	120.0 Vac
Current	0.3859 A
Power	46.14 W
Frequency	60.00 Hz
Power Factor	0.996
Current THD	5.3 %



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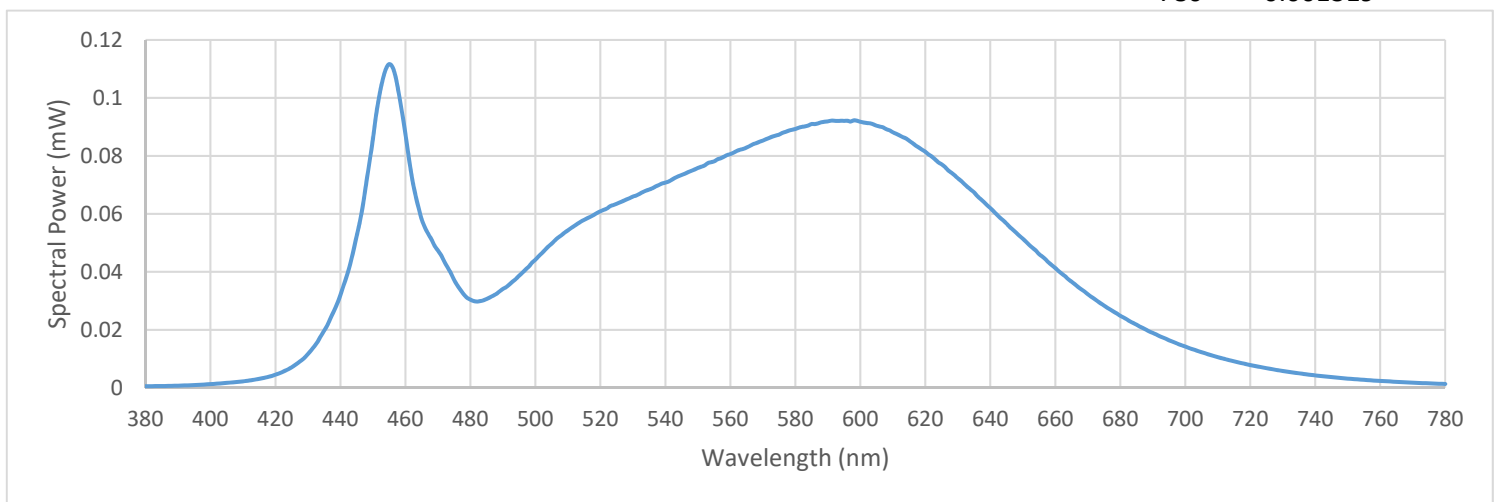
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Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000548	480	0.030412	580	0.089286	680	0.024825
385	0.000587	485	0.030647	585	0.090993	685	0.021760
390	0.000721	490	0.034115	590	0.091914	690	0.018904
395	0.000931	495	0.038677	595	0.092087	695	0.016383
400	0.001251	500	0.044191	600	0.091770	700	0.014227
405	0.001684	505	0.049710	605	0.090416	705	0.012268
410	0.002228	510	0.054307	610	0.088142	710	0.010582
415	0.003082	515	0.057929	615	0.085242	715	0.009133
420	0.004526	520	0.060875	620	0.081418	720	0.007835
425	0.007074	525	0.063460	625	0.077113	725	0.006755
430	0.011659	530	0.065958	630	0.072272	730	0.005799
435	0.019703	535	0.068381	635	0.067412	735	0.004991
440	0.031976	540	0.070772	640	0.062005	740	0.004270
445	0.052395	545	0.073392	645	0.056630	745	0.003681
450	0.085856	550	0.075816	650	0.051418	750	0.003167
455	0.111645	555	0.078099	655	0.046109	755	0.002734
460	0.087530	560	0.080611	660	0.041313	760	0.002375
465	0.058143	565	0.082903	665	0.036620	765	0.002050
470	0.047387	570	0.085271	670	0.032277	770	0.001760
475	0.037182	575	0.087347	675	0.028376	775	0.001526
						780	0.001319





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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: 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
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