

Report of Test

LLIA000844-009A-R01*

*This test report supersedes test report LLIA000844-009A

Catalog Number: MLS5-I-HO-K40-4-XX-WSOP-XXXX-120

Pendant mounted, extruded aluminum housing with aluminum end caps,
formed white enamel aluminum LED tray. 144 white LEDs, four Osram
PrevaLED line LED boards with 36 LEDs each, clear linear plastic lens above.

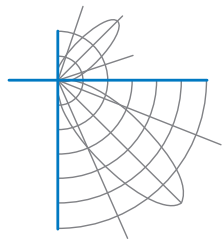
One Osram Optotronic OTi 50/120-277/1A4 DIM L LED driver
120.0Vac, 60.00Hz, 0.2804A, 33.53W, 0.996PF, 7.6%THD(i)



Performance Summary

Total Light Output	4524 lm
Luminaire Power	33.5 W
Luminous Efficacy	135.0 lm/W

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



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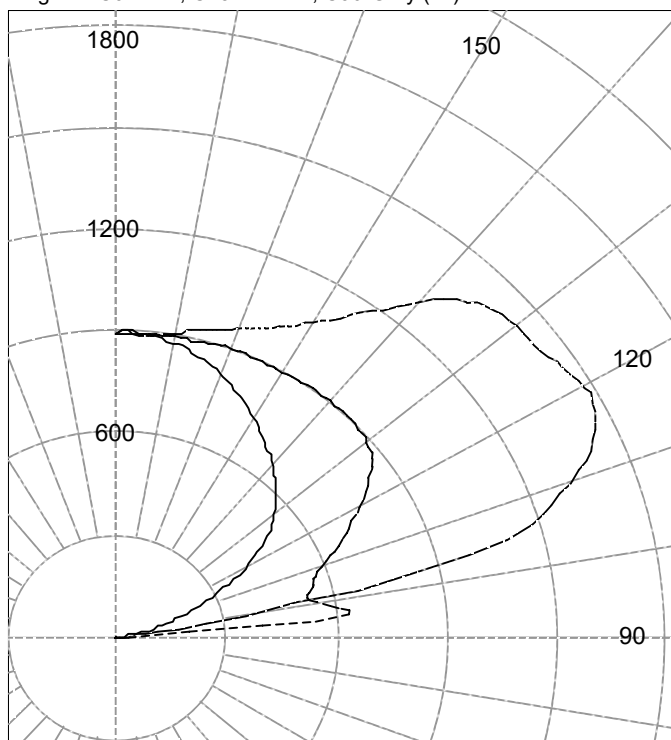
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Legend: C0-Solid, C45-Dashed, C90-Grey (cd)



INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
90.0	0	0	1	1	1	
95.0	27	70	542	88	51	187
100.0	77	134	559	674	357	
105.0	140	193	549	1209	1098	649
110.0	215	273	595	1309	1318	
115.0	302	359	679	1329	1440	799
120.0	401	449	767	1303	1472	
125.0	491	535	847	1286	1437	814
130.0	562	616	892	1294	1422	
135.0	614	685	903	1258	1390	741
140.0	659	731	904	1168	1287	
145.0	701	762	904	1080	1162	579
150.0	744	786	903	1018	1068	
155.0	786	811	904	977	1005	416
160.0	824	835	903	949	964	
165.0	856	858	899	928	935	254
170.0	880	876	896	907	908	
175.0	895	888	898	897	893	85
180.0	896	896	896	896	896	

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
180-150	755	N / A	16.7
180-140	1334	N / A	29.5
180-120	2888	N / A	63.8
180-90	4524	N / A	100.0
140-90	3190	N / A	70.5
120-90	1636	N / A	36.2
90-0	0	N / A	0.0
180-0	4524	N / A	100.0

Total Light Output = 4,524 lm

Signed:

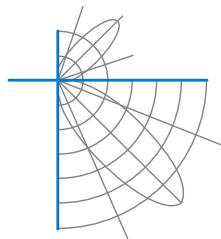
Authorized Signatory

Date of test

11-Aug-2017

Date of report

15-Dec-2017



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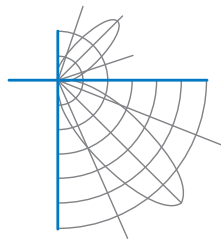
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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	0	0	1	1	1
92.5	10	28	93	15	12
95.0	27	70	542	88	51
97.5	50	107	626	265	137
100.0	77	134	559	674	357
102.5	107	162	533	1075	759
105.0	140	193	549	1209	1098
107.5	176	232	566	1266	1233
110.0	215	273	595	1309	1318
112.5	256	315	637	1327	1395
115.0	302	359	679	1329	1440
117.5	351	404	721	1319	1467
120.0	401	449	767	1303	1472
122.5	448	493	810	1289	1458
125.0	491	535	847	1286	1437
127.5	529	577	874	1291	1425
130.0	562	616	892	1294	1422
132.5	590	653	900	1285	1414
135.0	614	685	903	1258	1390
137.5	637	711	904	1217	1347
140.0	659	731	904	1168	1287
142.5	680	748	904	1121	1223
145.0	701	762	904	1080	1162
147.5	723	774	904	1046	1110
150.0	744	786	903	1018	1068
152.5	765	799	904	996	1033
155.0	786	811	904	977	1005
157.5	805	823	904	962	982
160.0	824	835	903	949	964
162.5	841	847	901	939	949
165.0	856	858	899	928	935
167.5	869	868	897	917	921
170.0	880	876	896	907	908
172.5	889	883	897	900	898
175.0	895	888	898	897	893
177.5	898	891	899	896	892
180.0	896	896	896	896	896



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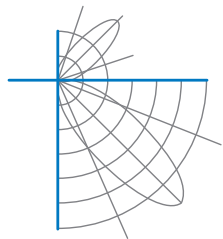
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Coefficients Of Utilization - Zonal Cavity Method																		
Effective Floor Cavity Reflectance 0.20																		
RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	95	95	95	95	81	81	81	81	56	56	56	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	57	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.



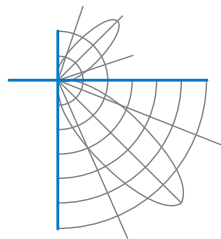
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Test Distance 9.5 m
Test Temperature 24.8 °C

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.

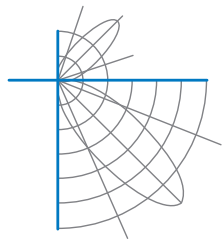
Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

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

LLIA000844-009B-R01*

Integrating Sphere Report

Catalog Number: MLS5-I-HO-K40-4-XX-WSOP-XXXX-120

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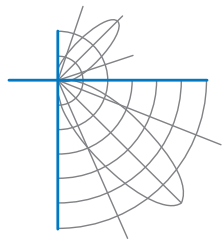
Performance Summary

Voltage	120.0 Vac
Current	0.2804 A
Power	33.52 W
Frequency	59.97 Hz
Power Factor	0.996
Current THD	7.6 %
Total Luminous Flux	4735.6 lm
Efficacy	141.3 lm/W
Chromaticity (x,y)	(0.3817, 0.3809)
(u',v')	(0.2243, 0.5036)
Duv	0.0016
CCT	3995 K
CRI (Ra)	81
R9	8

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

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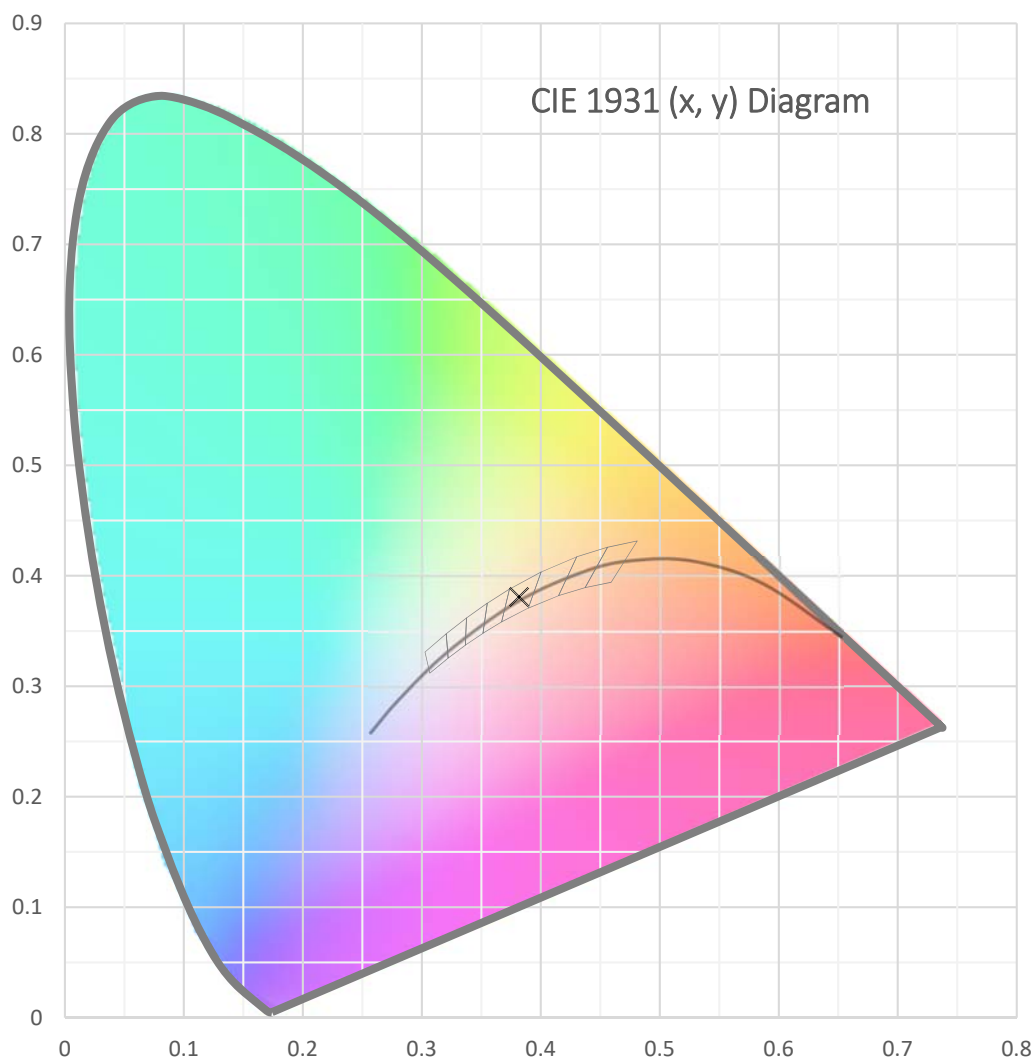
Test date: 08/11/2017
Report date: 12/15/2017

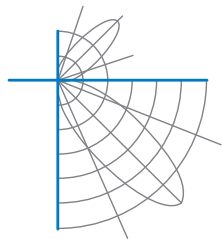


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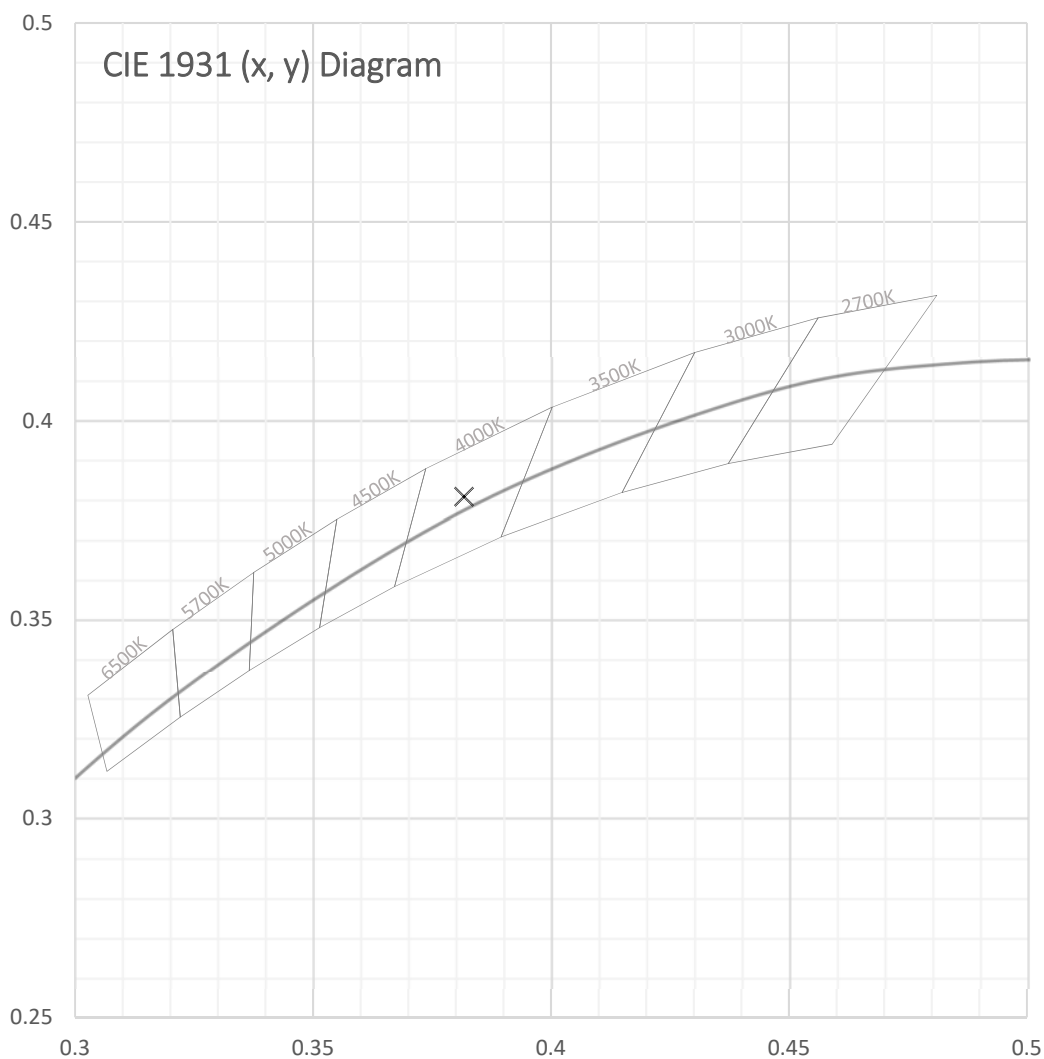


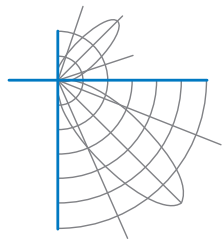


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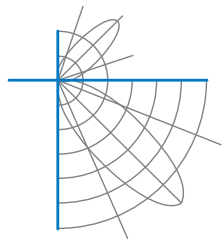
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Spectral Data

Total Radiant Flux	14.47 W
Total Luminous Flux	4735.6 Lm
Chromaticity CIE 1931 (x, y)	(0.3817, 0.3809)
Chromaticity CIE 1976 (u', v')	(0.2243, 0.5036)
Correlated Color Temperature (CCT)	3995 K
Color Rendering Index (Ra)	81
R1	80
R2	87
R3	92
R4	80
R5	79
R6	81
R7	87
R8	65
R9	8
R10	68
R11	78
R12	55
R13	81
R14	96
Distance from Planckian Locus (Duv)	0.0016
Scotopic/Photopic Ratio *	1.646

Electrical Data

Voltage	120.0 Vac
Current	0.2804 A
Power	33.52 W
Frequency	59.97 Hz
Power Factor	0.996
Current THD	7.6 %



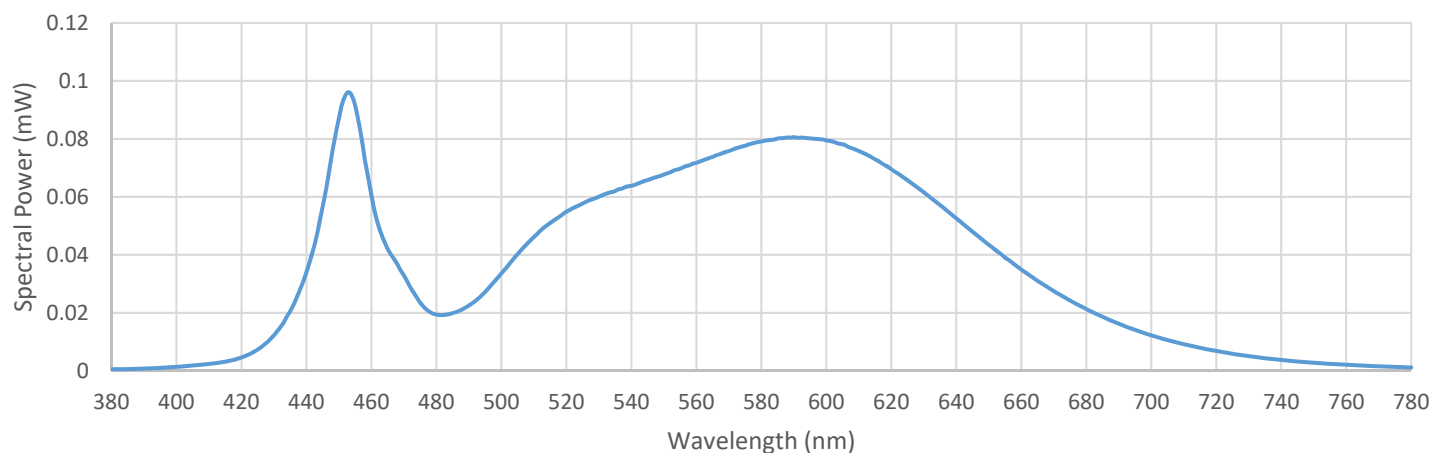
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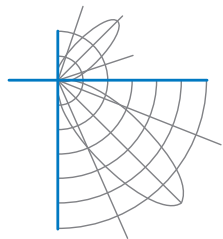
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Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000519	480	0.019393	580	0.079068	680	0.021256
385	0.000585	485	0.019850	585	0.080111	685	0.018611
390	0.000763	490	0.022465	590	0.080587	690	0.016233
395	0.001011	495	0.027116	595	0.080193	695	0.014096
400	0.001354	500	0.033656	600	0.079476	700	0.012244
405	0.001795	505	0.040187	605	0.078146	705	0.010597
410	0.002349	510	0.046128	610	0.075773	710	0.009137
415	0.003134	515	0.051034	615	0.072944	715	0.007921
420	0.004607	520	0.054849	620	0.069500	720	0.006809
425	0.007308	525	0.057665	625	0.065829	725	0.005837
430	0.012321	530	0.060030	630	0.061491	730	0.005050
435	0.020589	535	0.062017	635	0.057173	735	0.004330
440	0.034012	540	0.063822	640	0.052569	740	0.003722
445	0.056670	545	0.065762	645	0.047920	745	0.003210
450	0.087264	550	0.067705	650	0.043434	750	0.002763
455	0.091516	555	0.069701	655	0.039038	755	0.002387
460	0.060619	560	0.071723	660	0.034985	760	0.002069
465	0.042027	565	0.073749	665	0.031038	765	0.001783
470	0.032823	570	0.075770	670	0.027474	770	0.001533
475	0.023478	575	0.077612	675	0.024210	775	0.001330
						780	0.001143





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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_ANSI 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.