

Report of Test

LLIA001503-006A

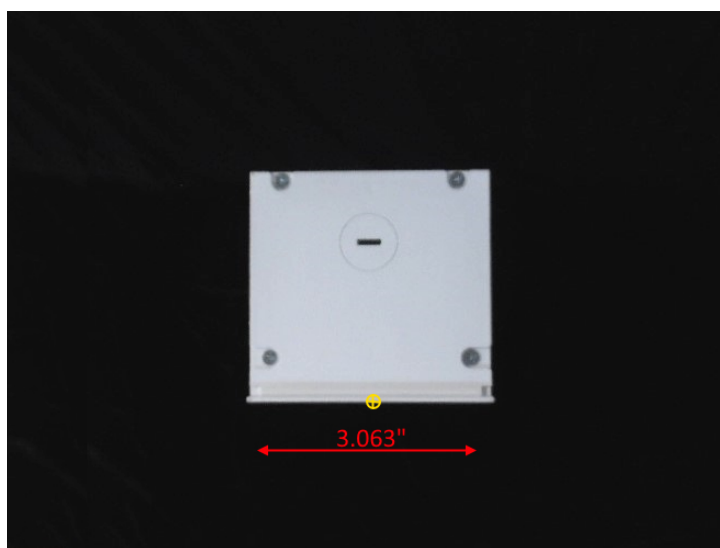
Indoor Distribution Photometry Test Report

Catalog Number: MLS4-G-48-830-35K-HTA-1%-U

Recessed mounted, extruded aluminum housing, frosted plastic enclosure.

112 white LEDs, two Advance FO Strip PR 22 in 2200lm 835 LV5 LED boards with 56 LEDs each.

One Advance XI040C110V054BST2 LED driver labeled as 640mA



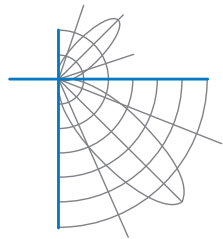
Prepared For:
Mercury Lighting Products Company, Inc.
20 Audrey Place
Fairfield, NJ 07004, USA

Performance Summary			
Input Voltage	120.0 V	Luminous Flux	3330.5 Lumens
Input Current	0.2464 A	Total Efficacy	114.1 Lm/W
Input Power	29.18 W	Downward Flux	3330.4 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.987		
Current THD	9.1 %		

This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

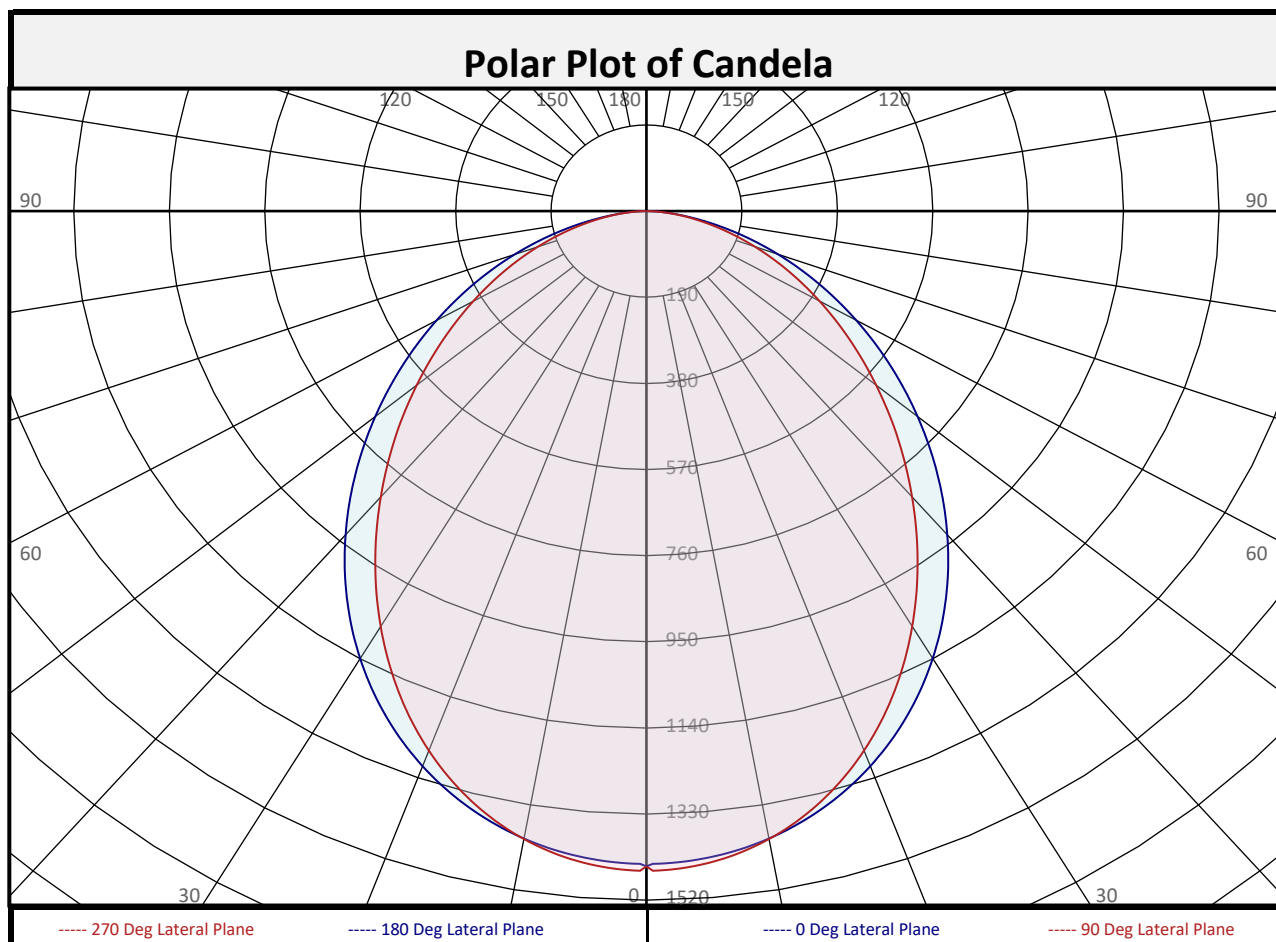
Test date: 08/06/2021
Report date: 08/09/2021

Signed: _____

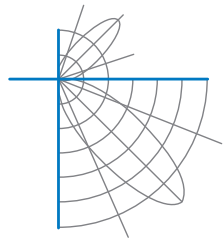


Report of Test

LLIA001503-006A



Zonal Flux Summary											
Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total	
0-10	136.1	4.1%		90-100	0.1	0.0%		0-20	517.0	15.5%	
10-20	380.9	11.4%		100-110	0.0	0.0%		0-30	1067	32.0%	
20-30	550.5	16.5%		110-120	0.0	0.0%		0-40	1685	50.6%	
30-40	618.0	18.6%		120-130	0.0	0.0%		0-60	2759	82.8%	
40-50	587.8	17.6%		130-140	0.0	0.0%		0-80	3283	98.6%	
50-60	485.6	14.6%		140-150	0.0	0.0%		10-90	3194	95.9%	
60-70	341.7	10.3%		150-160	0.0	0.0%		20-50	1756	52.7%	
70-80	182.4	5.5%		160-170	0.0	0.0%		40-90	1645	49.4%	
80-90	47.5	1.4%		170-180	0.0	0.0%		60-90	571.6	17.2%	
0-90	3330	100.0%		90-180	0.1	0.0%		0-180	3331	100.0%	

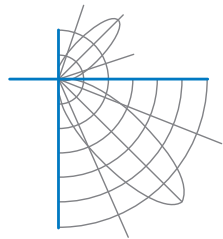


Report of Test

LLIA001503-006A

Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles									
Vertical (Gamma) Angles		0	22.5	45	67.5	90	112.5	135	157.5	180
	0	1446	1446	1446	1446	1446	1446	1446	1446	1446
	2.5	1438	1438	1441	1448	1452	1448	1441	1438	1438
	5	1431	1431	1434	1439	1443	1439	1434	1431	1431
	7.5	1421	1420	1421	1425	1428	1425	1421	1420	1421
	10	1405	1404	1403	1405	1407	1405	1403	1404	1405
	12.5	1386	1383	1380	1379	1380	1379	1380	1383	1386
	15	1363	1359	1352	1348	1347	1348	1352	1359	1363
	17.5	1335	1329	1319	1312	1309	1312	1319	1329	1335
	20	1303	1296	1282	1271	1266	1271	1282	1296	1303
	22.5	1268	1259	1241	1226	1219	1226	1241	1259	1268
	25	1228	1218	1196	1177	1169	1177	1196	1218	1228
	27.5	1186	1174	1148	1125	1115	1125	1148	1174	1186
	30	1140	1126	1096	1070	1058	1070	1096	1126	1140
	32.5	1091	1076	1043	1013	1000	1013	1043	1076	1091
	35	1040	1024	987	955	941	955	987	1024	1040
	37.5	987	970	931	897	882	897	931	970	987
	40	932	914	874	838	822	838	874	914	932
	42.5	876	858	817	780	764	780	817	858	876
	45	819	801	760	723	707	723	760	801	819
	47.5	762	744	704	668	651	668	704	744	762
	50	705	688	649	613	597	613	649	688	705
	52.5	648	632	595	559	544	559	595	632	648
	55	592	577	542	508	493	508	542	577	592
	57.5	537	523	490	458	445	458	490	523	537
	60	483	471	440	411	398	411	440	471	483
	62.5	430	419	391	365	354	365	391	419	430
	65	378	369	344	320	311	320	344	369	378
	67.5	328	320	298	278	269	278	298	320	328
	70	279	273	254	237	230	237	254	273	279
	72.5	232	227	212	198	192	198	212	227	232
	75	186	183	171	161	156	161	171	183	186
	77.5	144	141	133	126	122	126	133	141	144
	80	104	103	98	94	92	94	98	103	104
	82.5	69	69	67	65	64	65	67	69	69
	85	40	40	41	40	40	40	41	40	40
	87.5	17	18	19	20	20	20	19	18	17
90	0	2	4	5	5	5	4	2	0	

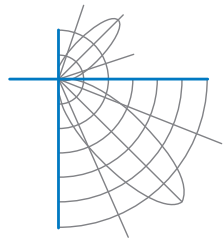


Report of Test

LLIA001503-006A

Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles									
		0	22.5	45	67.5	90	112.5	135	157.5	180
	90	0	2	4	5	5	5	4	2	0
Vertical (Gamma) Angles	92.5	0	0	0	0	0	0	0	0	0
	95	0	0	0	0	0	0	0	0	0
	97.5	0	0	0	0	0	0	0	0	0
	100	0	0	0	0	0	0	0	0	0
	102.5	0	0	0	0	0	0	0	0	0
	105	0	0	0	0	0	0	0	0	0
	107.5	0	0	0	0	0	0	0	0	0
	110	0	0	0	0	0	0	0	0	0
	112.5	0	0	0	0	0	0	0	0	0
	115	0	0	0	0	0	0	0	0	0
	117.5	0	0	0	0	0	0	0	0	0
	120	0	0	0	0	0	0	0	0	0
	122.5	0	0	0	0	0	0	0	0	0
	125	0	0	0	0	0	0	0	0	0
	127.5	0	0	0	0	0	0	0	0	0
	130	0	0	0	0	0	0	0	0	0
	132.5	0	0	0	0	0	0	0	0	0
	135	0	0	0	0	0	0	0	0	0
	137.5	0	0	0	0	0	0	0	0	0
	140	0	0	0	0	0	0	0	0	0
	142.5	0	0	0	0	0	0	0	0	0
	145	0	0	0	0	0	0	0	0	0
	147.5	0	0	0	0	0	0	0	0	0
	150	0	0	0	0	0	0	0	0	0
	152.5	0	0	0	0	0	0	0	0	0
	155	0	0	0	0	0	0	0	0	0
	157.5	0	0	0	0	0	0	0	0	0
	160	0	0	0	0	0	0	0	0	0
	162.5	0	0	0	0	0	0	0	0	0
	165	0	0	0	0	0	0	0	0	0
	167.5	0	0	0	0	0	0	0	0	0
	170	0	0	0	0	0	0	0	0	0
172.5	0	0	0	0	0	0	0	0	0	
175	0	0	0	0	0	0	0	0	0	
177.5	0	0	0	0	0	0	0	0	0	
180	0	0	0	0	0	0	0	0	0	



Report of Test

LLIA001503-006A

Coefficients of Utilization/Room 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
RCR																						
0	119	119	119	119		116	116	116	116		111	111	111		106	106	106		102	102	102	100
1	110	105	101	97		107	103	99	96		99	96	93		95	92	90		91	89	87	85
2	100	92	86	81		98	91	85	80		87	82	78		84	80	76		81	77	74	72
3	92	82	74	68		89	80	73	67		77	71	66		75	69	65		72	68	64	62
4	84	73	65	58		82	72	64	58		69	62	57		67	61	56		65	60	56	53
5	78	66	57	51		76	65	56	50		62	55	50		61	54	49		59	53	49	47
6	72	59	51	45		70	58	50	44		57	49	44		55	49	44		53	48	43	41
7	67	54	46	40		65	53	45	40		52	45	39		50	44	39		49	43	39	37
8	63	50	41	36		61	49	41	36		48	40	35		46	40	35		45	39	35	33
9	59	46	38	32		57	45	37	32		44	37	32		43	37	32		42	36	32	30
10	55	42	35	29		54	42	34	29		41	34	29		40	34	29		39	33	29	27

For absolute test reports, RUs are expressed as a percentage of total lumen output. For relative test reports, CUs are expressed as a percentage of total lamp 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.

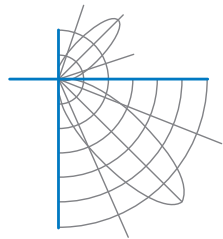
Circle of Light Plot

Height(ft)	Illuminance at Nadir (fc)	Ground-level distance to half-of-nadir illuminance (ft)	
		0-180 deg	90-270 deg
6.0	40.2	7.07	6.65
8.0	22.6	9.43	8.87
10.0	14.5	11.78	11.09
12.0	10.0	14.14	13.31
14.0	7.4	16.50	15.53
16.0	5.6	18.86	17.74

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	15244	15244	15244
45	12211	11335	10547
55	10882	9970	9071
65	9433	8574	7751
75	7593	6966	6355
85	4798	4928	4786

Spacing Criterion

0 degree plane:	1.2
90 degree plane:	1.1
180 degree plane:	1.2
270 degree plane:	1.1



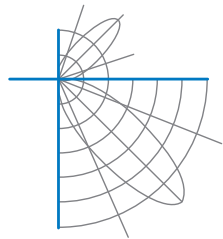
Report of Test

LLIA001503-006A

UGR TABLE - CORRECTED

Reflectances											
Ceiling Cavity	70	70	50	50	30	70	70	50	50	30	
Walls	50	30	50	30	30	50	30	50	30	30	
Floor Cavity	20	20	20	20	20	20	20	20	20	20	
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	20.2	21.8	20.6	22.1	22.4	19.2	20.8	19.6	21.1	21.4
	3H	21.8	23.2	22.2	23.6	23.9	20.8	22.2	21.1	22.5	22.9
	4H	22.4	23.7	22.8	24.1	24.4	21.3	22.6	21.7	23.0	23.4
	6H	22.8	24.0	23.2	24.4	24.8	21.7	22.9	22.1	23.3	23.7
	8H	22.9	24.0	23.3	24.4	24.8	21.8	23.0	22.2	23.4	23.8
	12H	22.9	24.0	23.4	24.4	24.9	21.9	23.0	22.3	23.4	23.8
4H	2H	20.7	22.0	21.1	22.4	22.7	19.9	21.2	20.3	21.6	21.9
	3H	22.5	23.6	22.9	24.0	24.4	21.6	22.7	22.0	23.1	23.5
	4H	23.2	24.2	23.6	24.6	25.1	22.3	23.3	22.7	23.7	24.1
	6H	23.7	24.6	24.2	25.0	25.5	22.8	23.7	23.3	24.1	24.6
	8H	23.8	24.7	24.3	25.1	25.6	23.0	23.8	23.4	24.2	24.7
	12H	23.9	24.7	24.4	25.1	25.6	23.1	23.8	23.6	24.3	24.7
8H	4H	23.4	24.2	23.9	24.7	25.1	22.6	23.4	23.1	23.9	24.3
	6H	24.0	24.7	24.5	25.2	25.7	23.2	23.9	23.7	24.4	24.8
	8H	24.2	24.8	24.7	25.3	25.8	23.4	24.0	23.9	24.5	25.0
	12H	24.4	24.9	24.9	25.4	26.0	23.6	24.1	24.1	24.6	25.2
12H	4H	23.4	24.1	23.9	24.6	25.1	22.6	23.4	23.1	23.8	24.3
	6H	24.1	24.7	24.6	25.1	25.7	23.3	23.9	23.8	24.3	24.9
	8H	24.3	24.8	24.8	25.3	25.9	23.5	24.1	24.0	24.5	25.1

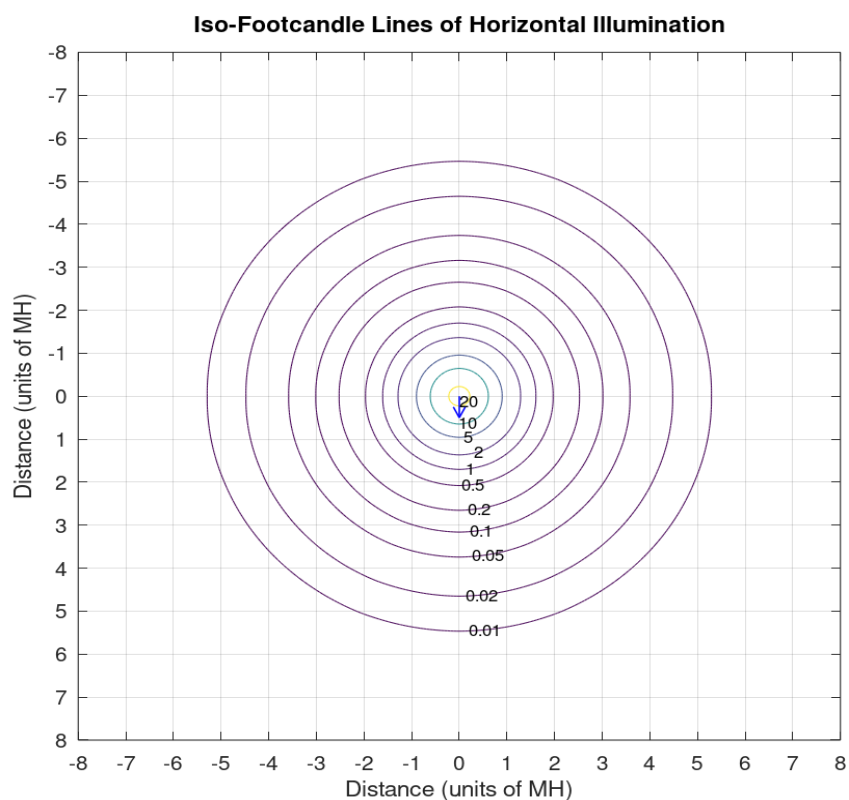
Maximum UGR = 26.0



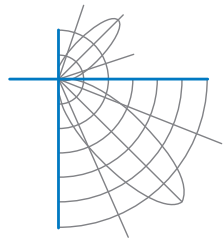
Report of Test

LLIA001503-006A

Iso-Illuminance Plot



The isofootcandle values shown in the plot above are based on a mounting height of $h = 8.0$ feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution of room reflections.

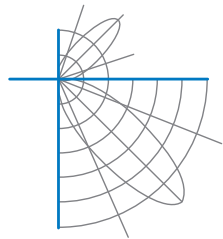


Report of Test

LLIA001503-006A

Additional Pictures of Test Subject





Report of Test

LLIA001503-006A

Test Distance 9.5 m
Ambient Temperature 25.3 °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 IES LM-79-19. Format of reports and angular increments based on IES LM-41-14 and LM-46-04.

The luminous intensity values, and other derived quantities, contained in this report are based on the absolute data, as measured.

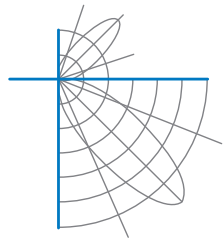
Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

This report is free of erasures and corrections.

Photometric intensity values are reported using the CIE C-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

LLIA001503-006B

Integrating Sphere Report

Catalog Number: MLS4-G-48-830-35K-HTA-1%-U

Recessed mounted, extruded aluminum housing, frosted plastic enclosure.

112 white LEDs, two Advance FO Strip PR 22 in 2200lm 835 LV5 LED boards with 56 LEDs each.

One Advance XI040C110V054BST2 LED driver labeled as 640mA



Performance Summary

Voltage	120.0 Vac
Current	0.2470 A
Power	29.15 W
Frequency	59.99 Hz
Power Factor	0.983
Current THD	9.3 %
Total Luminous Flux	3421.0 lm
Efficacy	117.4 lm/W
Chromaticity (x,y)	(0.4035, 0.3859)
(u',v')	(0.2365, 0.5090)
Duv	-0.0017
CCT	3500 K
CRI (Ra)	83
R9	10
TM-30: Rf	83
TM-30: Rg	96
TM-30: Rcs,h1	-12

Prepared For:

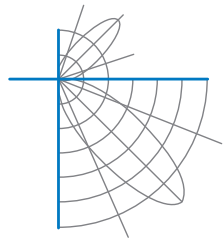
Mercury Lighting Products Company, Inc.

20 Audrey Place

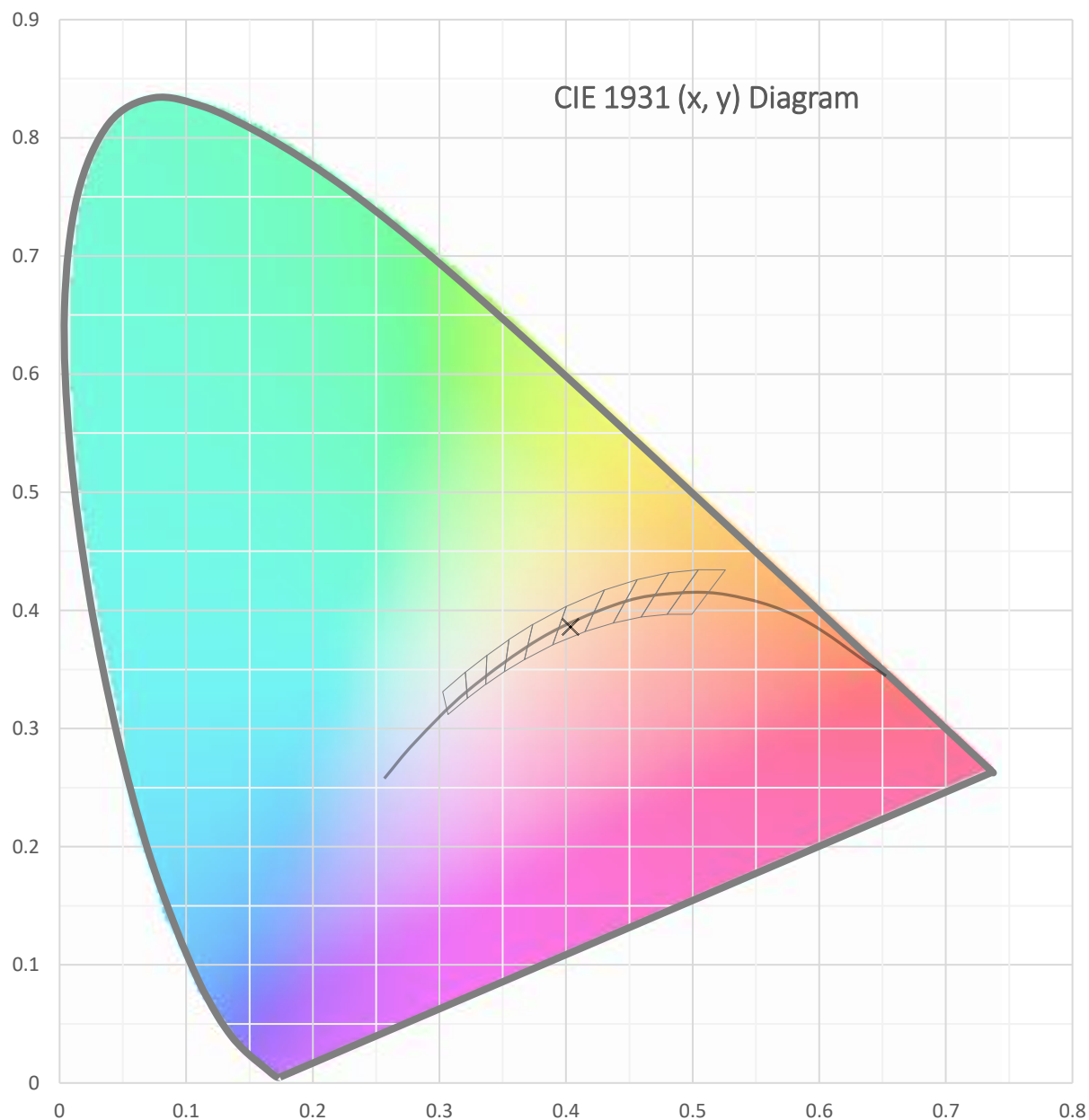
Fairfield, NJ 07004, USA

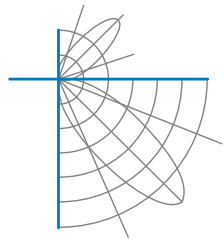
Test date: 08/04/2021

Report date: 08/09/2021

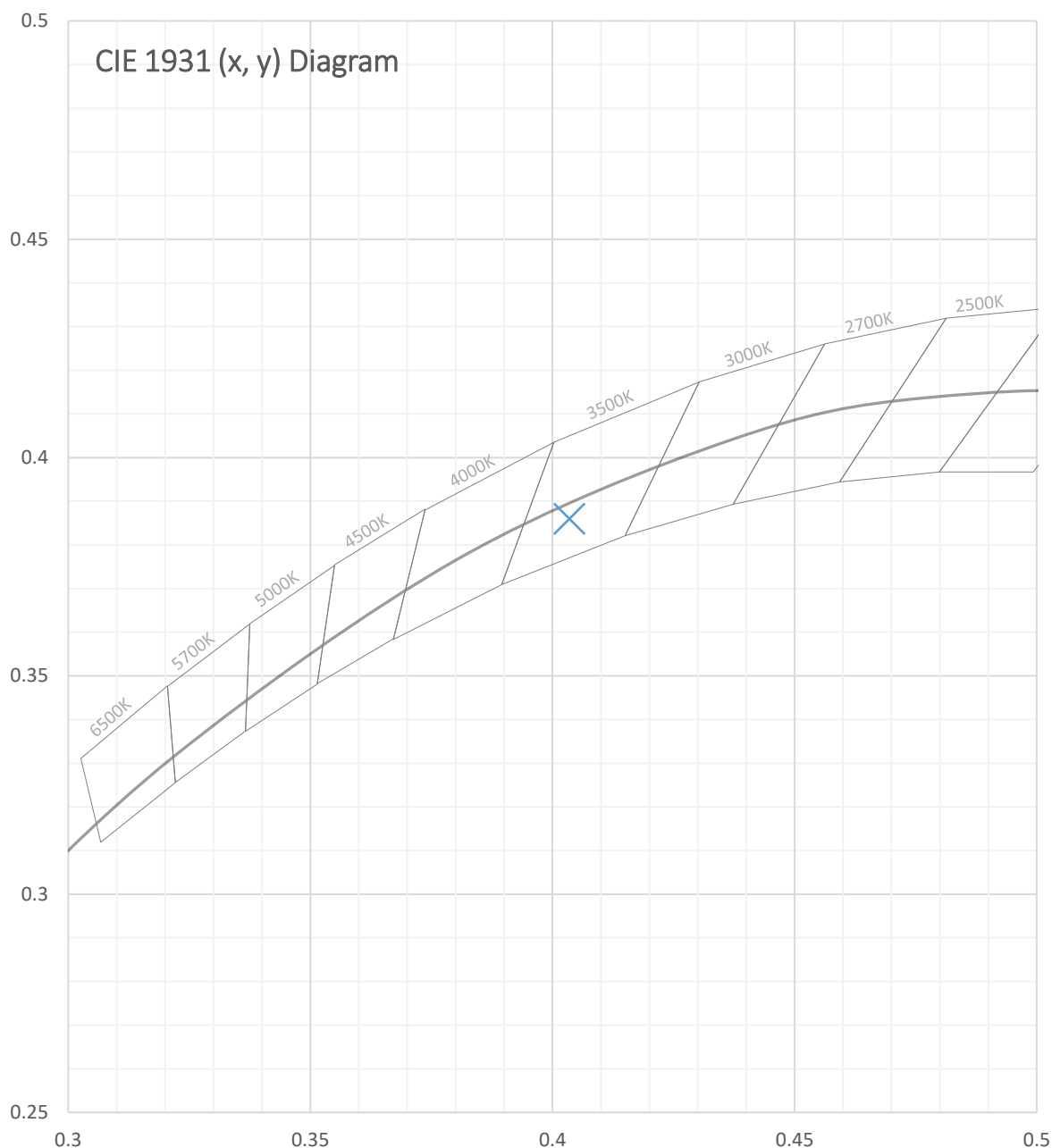


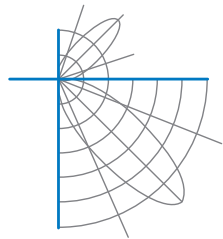
Test Report Number: LLIA001503-006B





Test Report Number: LLIA001503-006B



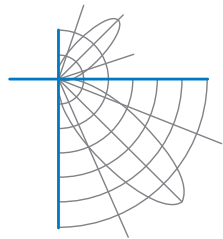


Test Report Number: LLIA001503-006B

Total Radiant Flux	10.49 W
Total Luminous Flux	3421.0 Lm
Chromaticity CIE 1931 (x, y)	(0.4035, 0.3859)
Chromaticity CIE 1976 (u', v')	(0.2365, 0.5090)
Correlated Color Temperature (CCT)	3500 K
Color Rendering Index (Ra)	83
R1	82
R2	91
R3	96
R4	82
R5	82
R6	88
R7	84
R8	62
R9	10
R10	79
R11	81
R12	67
R13	85
R14	98
TM-30: Rf	83
TM-30: Rg	96
TM-30: Rcs,h1	-12
Distance from Planckian Locus (Duv)	-0.0017
Scotopic/Photopic Ratio $\frac{V_{sc}}{V_{ph}}$	1.545

Electrical Data

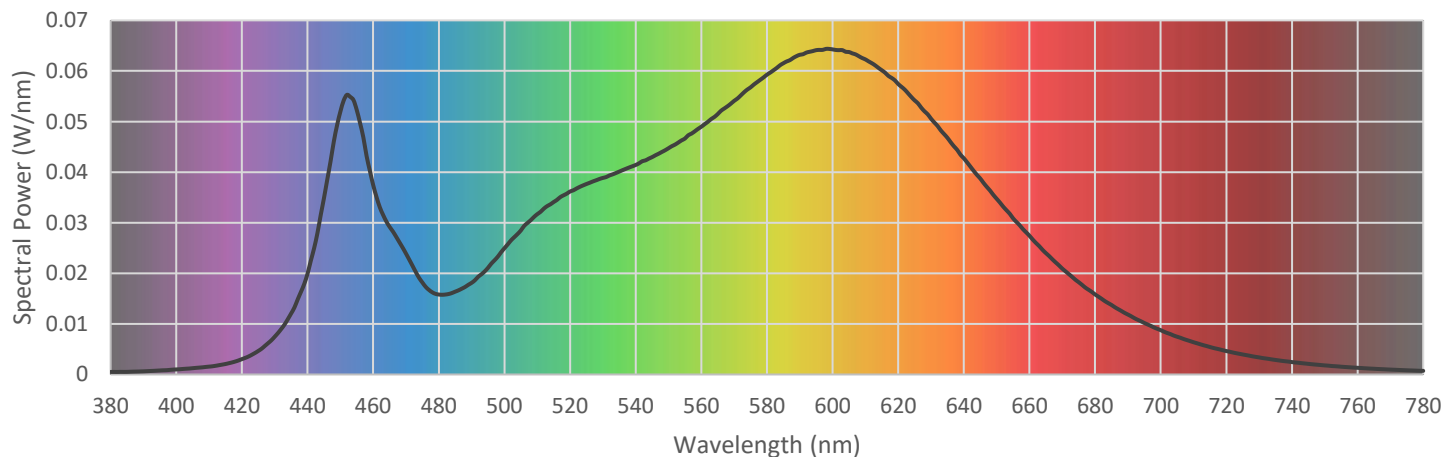
Voltage	120.0 Vac
Current	0.2470 A
Power	29.15 W
Frequency	59.99 Hz
Power Factor	0.983
Current THD	9.3 %

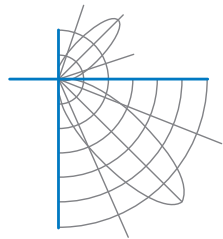


Test Report Number: LLIA001503-006B

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

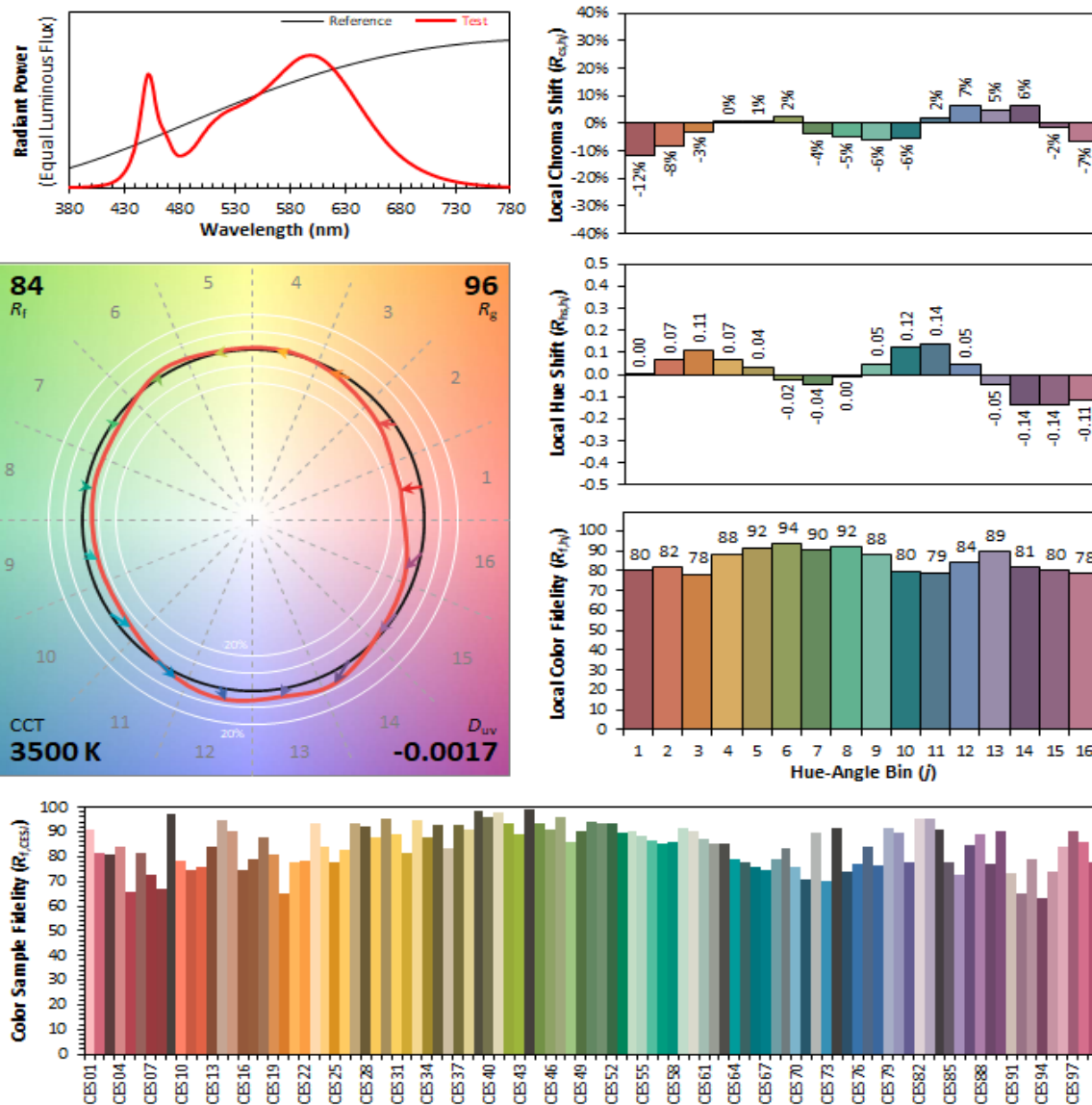
380	0.000499	480	0.015803	580	0.059262	680	0.015816
385	0.000515	485	0.016373	585	0.061525	685	0.013740
390	0.000622	490	0.018119	590	0.063196	690	0.011851
395	0.000791	495	0.021092	595	0.064114	695	0.010173
400	0.000995	500	0.024960	600	0.064266	700	0.008759
405	0.001242	505	0.028466	605	0.063750	705	0.007464
410	0.001553	510	0.031687	610	0.062284	710	0.006371
415	0.002068	515	0.034087	615	0.060134	715	0.005430
420	0.003034	520	0.036172	620	0.057415	720	0.004627
425	0.004657	525	0.037652	625	0.054183	725	0.003953
430	0.007471	530	0.038858	630	0.050570	730	0.003371
435	0.012062	535	0.040106	635	0.046779	735	0.002866
440	0.019938	540	0.041419	640	0.042734	740	0.002447
445	0.034867	545	0.042965	645	0.038742	745	0.002097
450	0.051955	550	0.044721	650	0.034739	750	0.001793
455	0.052266	555	0.046633	655	0.030867	755	0.001534
460	0.037430	560	0.048976	660	0.027424	760	0.001318
465	0.029179	565	0.051476	665	0.023993	765	0.001125
470	0.023893	570	0.054087	670	0.020927	770	0.000964
475	0.018173	575	0.056751	675	0.018242	775	0.000826
						780	0.000714





Test Report Number: LLIA001503-006B

IES TM-30 Details



Notes:

x 0.4035
 y 0.3859
 u' 0.2365
 v' 0.5090

CIE 13.3-1995
(CRI)

R_a 83
 R_g 10

Test Report Number: LLIA001503-006B

Test Equipment Configuration: LightLab International Allentown 2m Integrating Sphere
Measurements acquired using a Labsphere CDS 2600 spectroradiometer
Testing was performed using 4π geometry

Test Temperature: 24.6 °C

Test Procedure: Tested in accordance with the applicable sections of:
LM-79-19, LM-78-07, LM-58-13, ANSI_ANSI C78.377-2017, TM-30-18

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.

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.

Sphere Report Template V2-15