

Report of Test

LLIA001626-006A

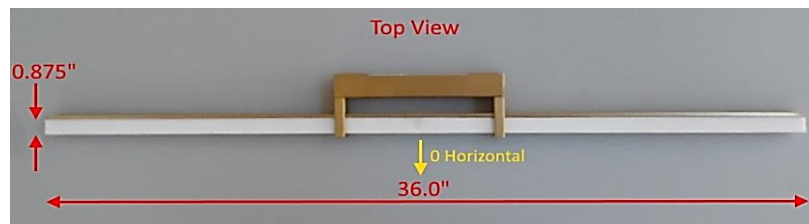
Indoor Distribution Photometry Test Report

Catalog Number: Wand 3-56-xx

Wall mounted, formed steel and aluminum housing,
translucent white plastic enclosure.

72 white LEDs on Luxtech board

One ERP PSB50W-1200-42-XGN LED driver labelled as 1050mA



Prepared For:
Oxygen Lighting
201 Railhead Road
Fort Worth, TX 76106, USA

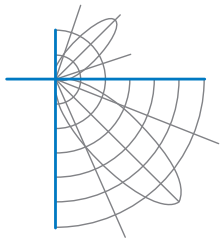
Performance Summary			
Input Voltage	120.0 Vac	Luminous Flux	3049.4 Lumens
Input Current	0.3493 A	Total Efficacy	74.7 Lm/W
Input Power	40.82 W	Downward Flux	1513.9 Lumens
Frequency	60.00 Hz	Downward Flux	49.6 % of Total
Power Factor	0.974		
Current THD	15.8 %		

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

Test date: 01/10/2022

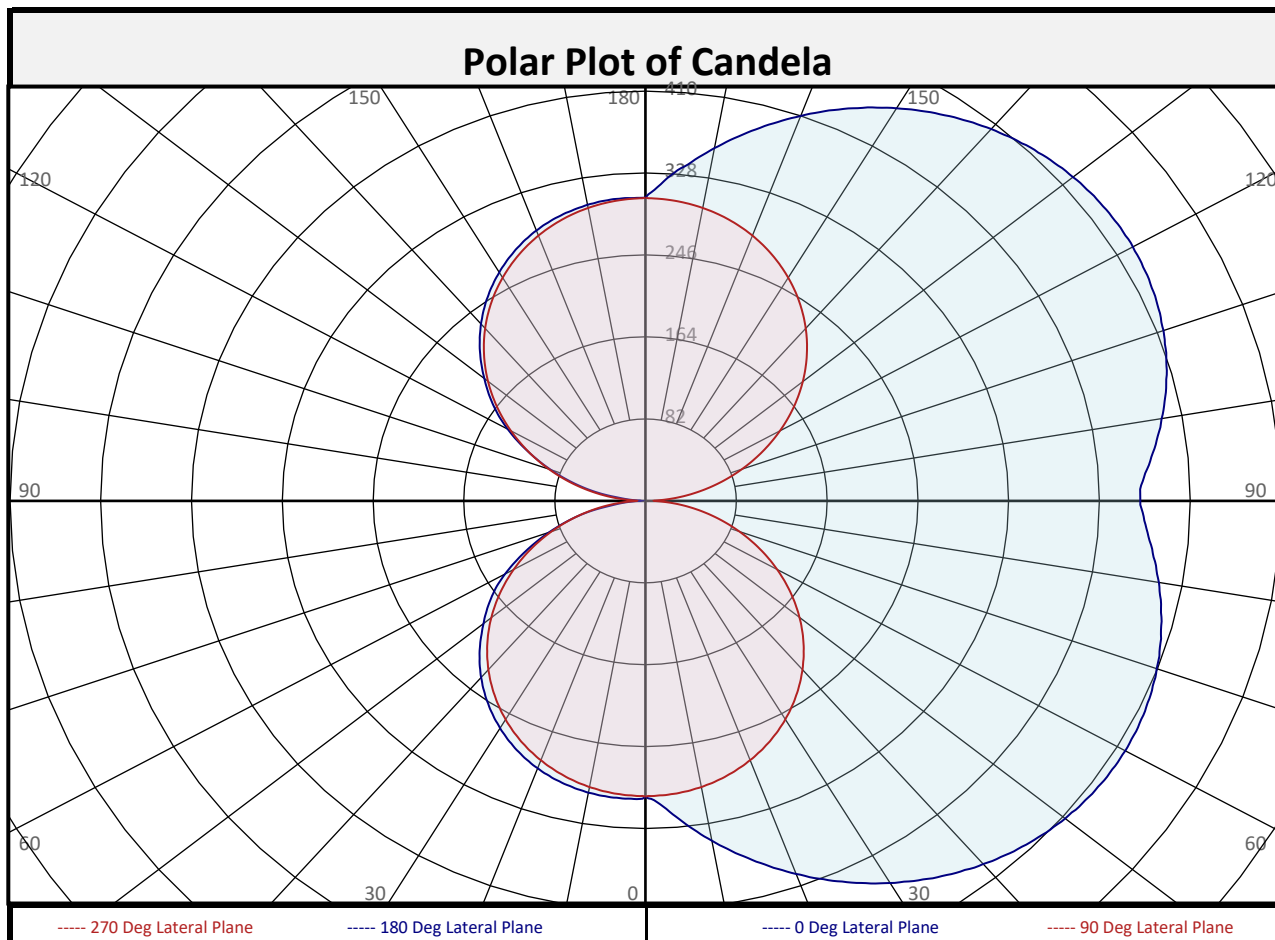
Report date: 01/14/2022

Signed: _____



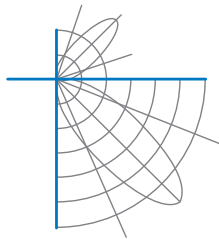
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Zonal Flux Summary

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	29.0	1.0%	90-100	166.8	5.5%	0-20	117.4	3.8%
10-20	88.4	2.9%	100-110	204.7	6.7%	0-30	262.5	8.6%
20-30	145.1	4.8%	110-120	231.3	7.6%	0-40	454.6	14.9%
30-40	192.1	6.3%	120-130	239.8	7.9%	0-60	914.9	30.0%
40-50	223.8	7.3%	130-140	227.7	7.5%	0-80	1347	44.2%
50-60	236.5	7.8%	140-150	196.0	6.4%	10-90	1485	48.7%
60-70	229.0	7.5%	150-160	148.5	4.9%	20-50	560.9	18.4%
70-80	203.3	6.7%	160-170	90.8	3.0%	40-90	1059	34.7%
80-90	166.8	5.5%	170-180	29.8	1.0%	60-90	599.0	19.6%
0-90	1514	49.6%	90-180	1536	50.4%	0-180	3049	100.0%

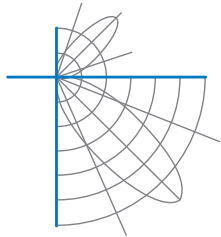


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Luminous Intensity (Candela) Table

		Lateral (C-Plane) Angles								
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	0	296	296	296	296	296	296	296	296	296
	2.5	304	303	299	296	295	295	296	297	299
	5	317	315	307	298	295	295	296	297	298
	7.5	331	328	316	301	293	293	295	296	298
	10	345	340	325	304	291	291	293	295	297
	12.5	359	352	333	307	288	289	291	293	295
	15	372	364	341	309	285	286	288	290	292
	17.5	385	375	348	311	281	282	285	287	289
	20	397	386	355	312	276	278	281	284	285
	22.5	409	396	361	313	271	273	277	279	280
	25	420	406	366	312	266	268	271	274	275
	27.5	431	416	371	312	260	262	266	268	269
	30	442	424	376	310	253	255	259	261	263
	32.5	451	432	379	308	245	248	252	255	256
	35	460	440	382	306	237	241	244	247	248
	37.5	468	446	385	303	229	233	237	239	240
	40	474	452	387	299	221	224	228	230	231
	42.5	481	457	388	295	212	215	219	221	222
	45	487	461	388	290	202	206	210	211	212
	47.5	491	465	388	285	192	196	200	201	201
50	495	467	387	279	182	186	189	191	191	
52.5	497	469	385	272	171	175	179	180	181	
55	499	470	383	265	160	164	167	170	170	
57.5	500	470	380	258	149	153	156	159	159	
60	500	469	376	251	137	142	145	147	146	
62.5	500	467	372	243	126	130	134	134	133	
65	498	464	367	234	114	118	122	121	119	
67.5	495	461	362	226	102	106	110	107	106	
70	491	457	356	217	91	94	96	94	93	
72.5	487	452	350	207	79	83	83	81	80	
75	482	446	343	198	67	71	70	69	68	
77.5	477	440	335	189	56	59	58	56	55	
80	471	434	328	179	45	47	46	42	39	
82.5	464	427	319	170	34	35	33	28	27	
85	457	419	311	161	23	24	21	19	17	
87.5	451	412	304	153	12	13	13	11	9	
90	447	408	299	148	8	9	9	6	4	

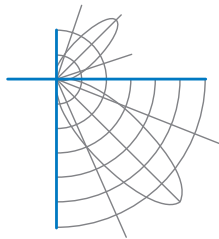


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Luminous Intensity (Candela) Table

		Lateral (C-Plane) Angles								
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	90	447	408	299	148	8	9	9	6	4
	92.5	450	410	303	152	13	13	12	9	8
	95	458	419	312	162	23	24	20	18	16
	97.5	466	428	321	171	34	35	34	28	25
	100	473	436	329	181	46	46	45	42	40
	102.5	481	444	338	191	57	59	57	55	53
	105	488	450	346	201	69	71	70	67	66
	107.5	493	456	353	210	81	83	82	80	79
	110	498	461	360	220	93	95	96	93	91
	112.5	502	466	366	229	105	107	109	106	104
	115	505	470	372	239	117	119	121	119	117
	117.5	507	473	378	248	129	131	133	133	131
	120	508	475	382	256	140	143	145	146	144
	122.5	509	476	386	264	152	155	156	157	157
	125	508	477	390	272	164	166	168	169	168
	127.5	507	477	393	279	175	178	180	180	179
	130	504	475	395	286	186	188	191	191	190
	132.5	501	473	396	292	196	199	201	202	201
	135	497	470	397	298	206	209	211	212	212
	137.5	492	466	397	303	216	219	221	222	222
	140	486	461	396	307	225	228	231	232	231
	142.5	479	456	395	311	234	236	240	241	240
	145	471	450	392	315	243	245	248	249	249
	147.5	463	443	390	318	250	252	256	257	257
	150	454	435	386	320	258	260	263	265	264
	152.5	444	427	382	322	265	266	269	271	271
	155	433	418	378	323	271	272	276	278	277
	157.5	422	408	372	323	277	278	281	283	283
160	410	398	366	323	283	283	286	288	288	
162.5	398	387	360	322	287	288	290	292	292	
165	385	376	353	322	291	292	294	296	296	
167.5	372	364	345	320	295	295	297	299	299	
170	359	352	337	317	298	297	299	301	301	
172.5	345	339	330	313	300	299	301	303	303	
175	332	329	320	309	302	300	302	304	303	
177.5	317	315	310	305	303	301	302	304	303	
180	303	303	303	303	303	303	303	303	303	



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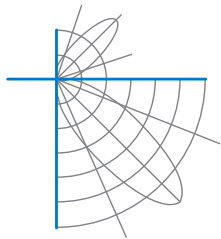
Coefficients of Utilization/Room Utilization - Zonal Cavity Method																						
Effective Floor Cavity Reflectance 0.20																						
RC	80					70					50				30				10			0
RW	70	50	30	10		70	50	30	10		50	30	10		50	30	10		50	30	10	0
RCR																						
0	107	107	107	107		99	99	99	99		83	83	83		69	69	69		56	56	56	50
1	95	90	85	80		87	82	78	74		69	66	63		57	54	52		45	43	42	36
2	85	77	69	63		78	70	64	59		59	54	50		48	44	41		38	36	33	28
3	77	66	58	51		70	61	54	48		51	45	41		42	37	34		33	30	27	23
4	70	58	49	43		64	54	46	40		45	39	34		36	32	28		29	25	23	19
5	64	51	43	36		59	47	39	34		40	33	29		32	28	24		26	22	19	16
6	59	46	37	31		54	42	34	29		35	29	25		29	24	20		23	19	16	13
7	54	41	33	27		50	38	30	25		32	26	21		26	21	18		21	17	14	12
8	50	37	29	23		46	34	27	22		29	23	19		24	19	16		19	15	13	10
9	47	34	26	21		43	31	24	19		26	21	17		22	17	14		18	14	11	9
10	44	31	23	18		40	29	22	17		24	19	15		20	16	12		16	13	10	8

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	8.2	10.58	7.60	
8.0	4.6	14.10	10.14	
10.0	3.0	17.63	12.67	
12.0	2.1	21.16	15.21	
14.0	1.5	24.68	17.74	
16.0	1.2	28.21	20.28	

Spacing Criterion	
0 deg:	2.2
90 deg:	1.3
180 deg:	1.3
270 deg:	1.3

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	14577	14577	14577
45	16928	15670	13717
55	17629	16156	13263
65	18437	16750	12607
75	19378	17593	11727
85	20762	18949	10046



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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

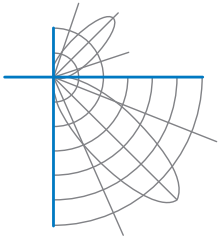
Room Size

UGR Viewed Crosswise

UGR Viewed Endwise

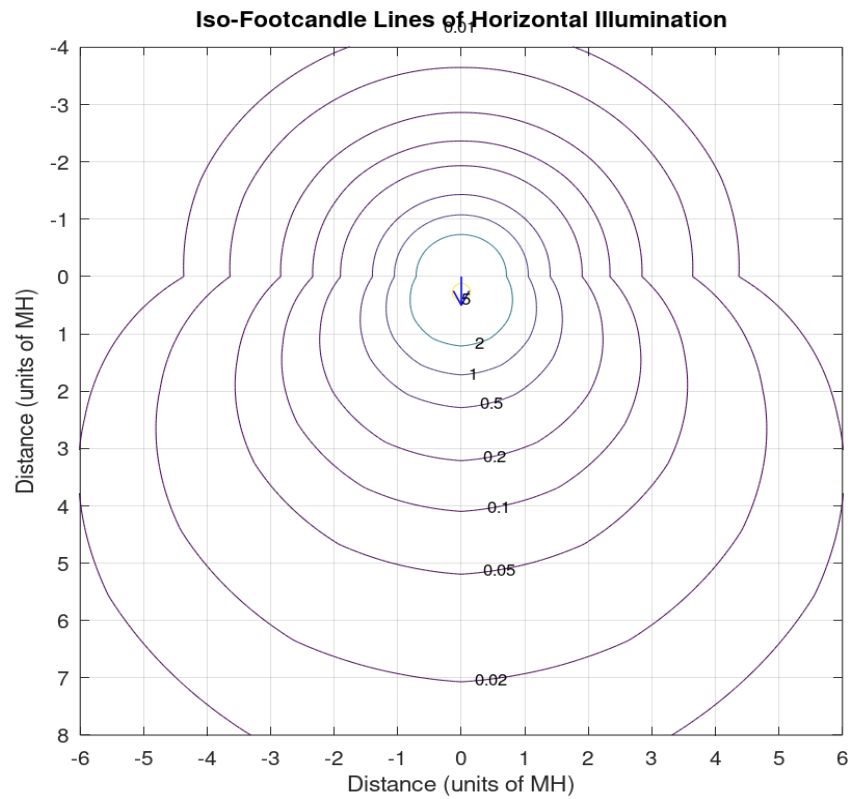
X=2H	Y=2H	22.2	23.1	23.1	24.1	25.4	14.4	15.4	15.4	16.3	17.6
	3H	25.7	26.6	26.6	27.5	28.8	15.9	16.8	16.9	17.8	19.0
	4H	27.5	28.3	28.5	29.3	30.6	16.4	17.2	17.4	18.2	19.5
	6H	29.5	30.3	30.5	31.3	32.6	16.7	17.5	17.7	18.5	19.8
	8H	30.6	31.3	31.5	32.3	33.6	16.8	17.5	17.8	18.5	19.9
	12H	31.7	32.4	32.7	33.4	34.8	16.8	17.5	17.8	18.5	19.9
4H	2H	22.4	23.3	23.4	24.2	25.5	16.3	17.2	17.3	18.2	19.4
	3H	26.2	26.9	27.2	27.9	29.2	18.1	18.8	19.1	19.9	21.2
	4H	28.2	28.8	29.2	29.8	31.2	18.8	19.5	19.8	20.5	21.8
	6H	30.3	30.9	31.3	31.9	33.3	19.3	19.9	20.3	20.9	22.2
	8H	31.5	32.0	32.5	33.1	34.4	19.4	20.0	20.4	21.0	22.3
	12H	32.8	33.3	33.8	34.3	35.7	19.5	20.0	20.5	21.0	22.4
8H	4H	28.3	28.8	29.3	29.9	31.2	20.4	21.0	21.4	22.0	23.3
	6H	30.6	31.1	31.7	32.2	33.5	21.2	21.7	22.2	22.7	24.1
	8H	31.9	32.3	33.0	33.4	34.7	21.5	21.9	22.5	23.0	24.3
	12H	33.4	33.8	34.4	34.8	36.2	21.7	22.1	22.7	23.1	24.5
12H	4H	28.3	28.8	29.3	29.8	31.2	21.0	21.4	22.0	22.5	23.8
	6H	30.7	31.1	31.7	32.1	33.5	22.0	22.4	23.0	23.4	24.8
	8H	32.0	32.4	33.0	33.4	34.8	22.4	22.8	23.4	23.8	25.2

Maximum UGR = 36.2

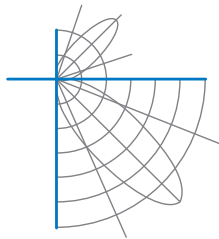


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Iso-Illuminance Plot



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.



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Test Distance 9.5 m
Ambient Temperature 24.6 °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-41-20 and LM-46-20.

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

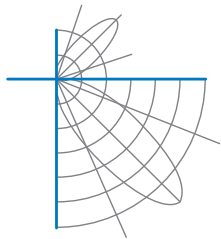
Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

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

LLIA001626-006B

Integrating Sphere Report

Catalog Number: Wand 3-56-xx

Wall mounted, formed steel and aluminum housing,
translucent white plastic enclosure.

72 white LEDs on Luxtech board

One ERP PSB50W-1200-42-XGN LED driver labelled as 1050mA



Performance Summary

Voltage	120.0 Vac
Current	0.3491 A
Power	40.78 W
Frequency	59.99 Hz
Power Factor	0.974
Current THD	15.9 %
Total Luminous Flux	3027.8 lm
Efficacy	74.2 lm/W
Chromaticity (x,y)	(0.4436, 0.4044)
(u',v')	(0.2547, 0.5225)
Duv	-0.0007
CCT	2894 K
CRI (Ra)	93
R9	62
TM-30: Rf	91
TM-30: Rg	101
TM-30: Rcs,h1	-5

Prepared For:

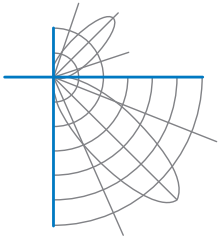
Oxygen Lighting

201 Railhead Road

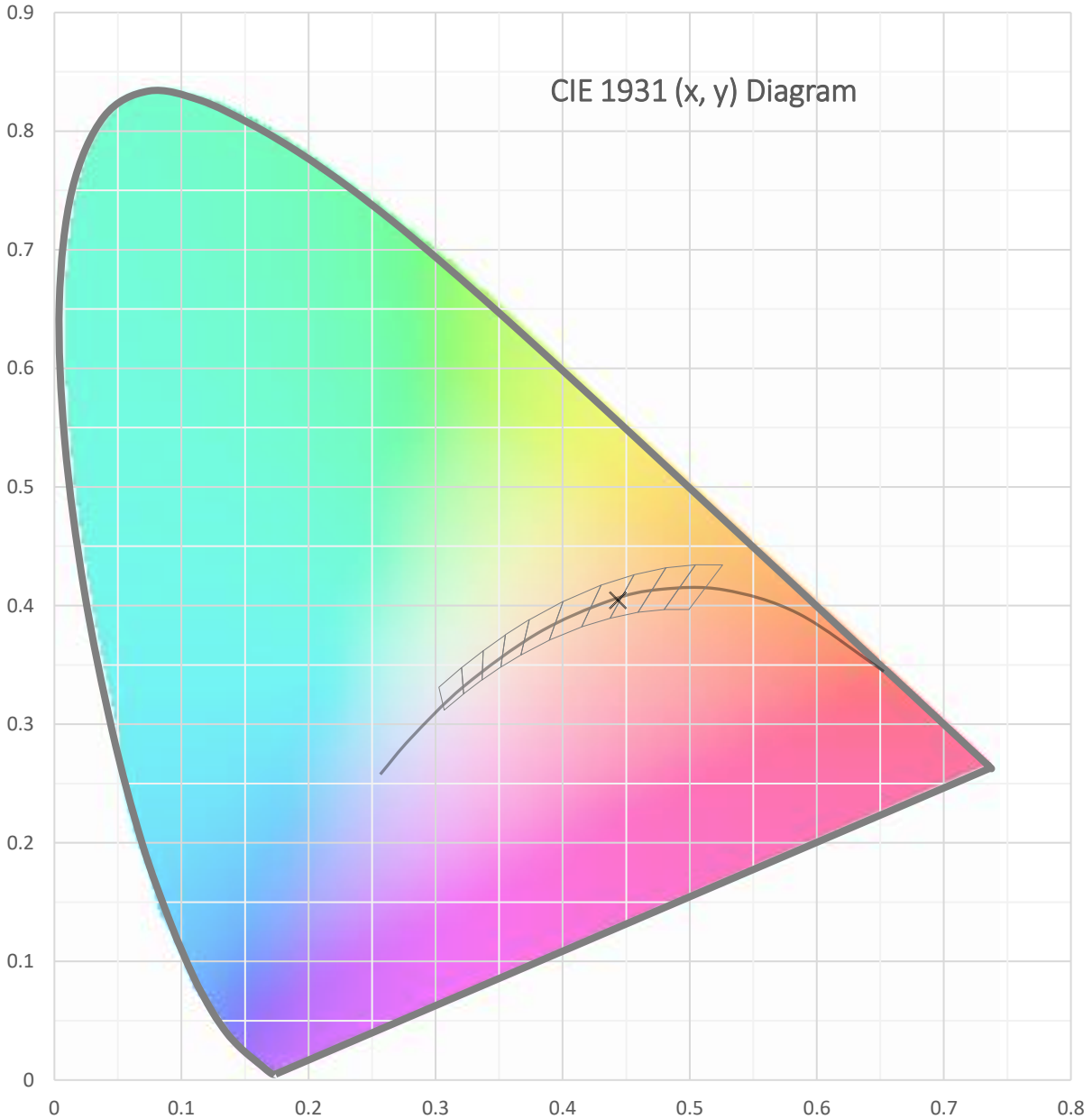
Fort Worth, TX 76106, USA

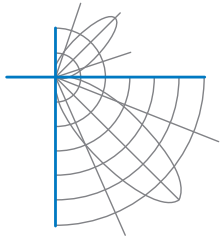
Test date: 01/10/2022

Report date: 01/12/2022

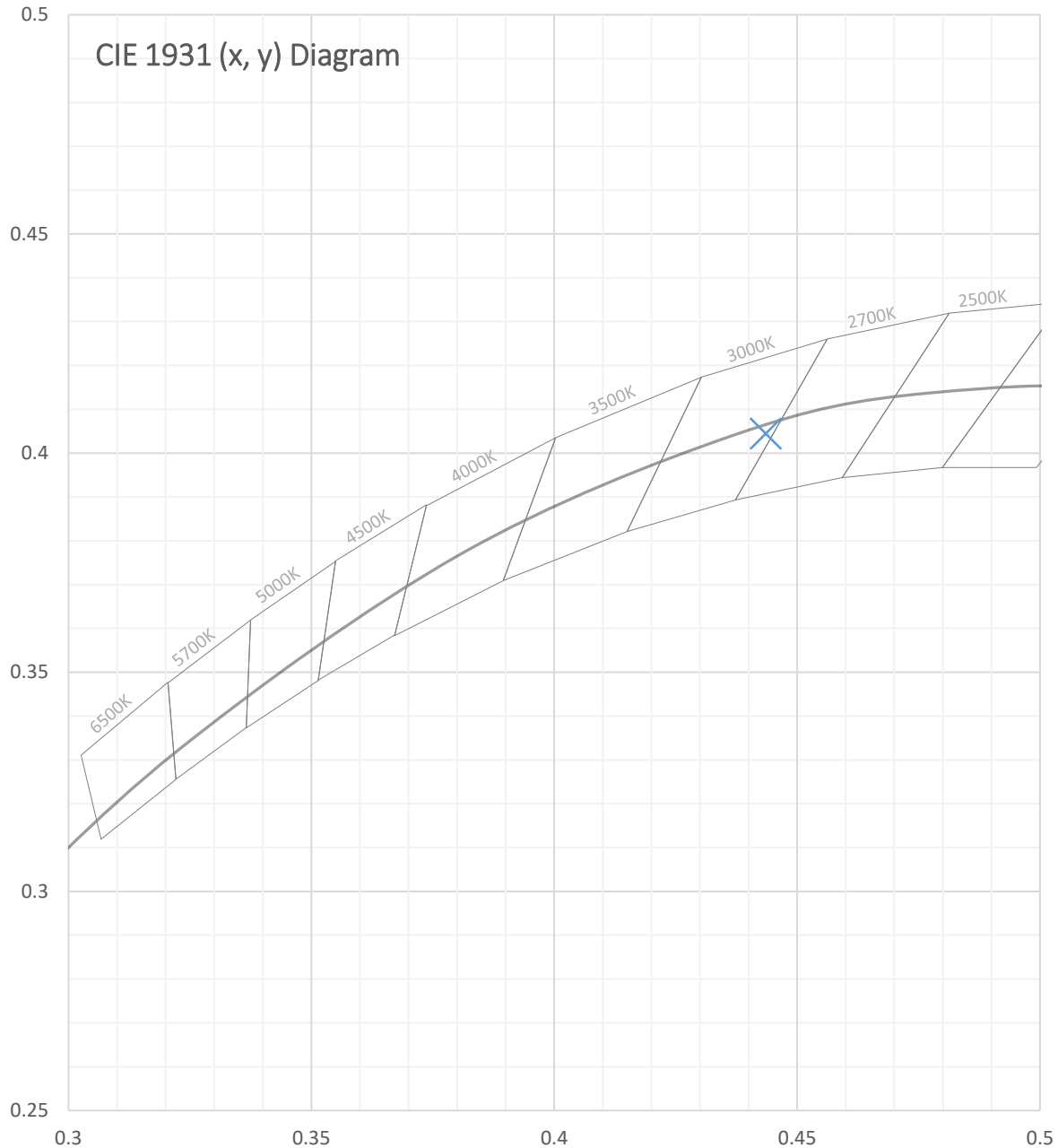


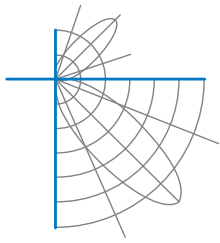
Test Report Number: LLIA001626-006B





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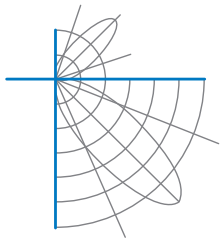


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Total Radiant Flux	10.83 W
Total Luminous Flux	3027.8 Lm
Chromaticity CIE 1931 (x, y)	(0.4436, 0.4044)
Chromaticity CIE 1976 (u', v')	(0.2547, 0.5225)
Correlated Color Temperature (CCT)	2894 K
Color Rendering Index (Ra)	93
R1	93
R2	96
R3	96
R4	93
R5	92
R6	94
R7	93
R8	83
R9	62
R10	88
R11	94
R12	83
R13	94
R14	97
TM-30: Rf	91
TM-30: Rg	101
TM-30: Rcs,h1	-5
Distance from Planckian Locus (Duv)	-0.0007
Scotopic/Photopic Ratio ‡	1.356

Electrical Data

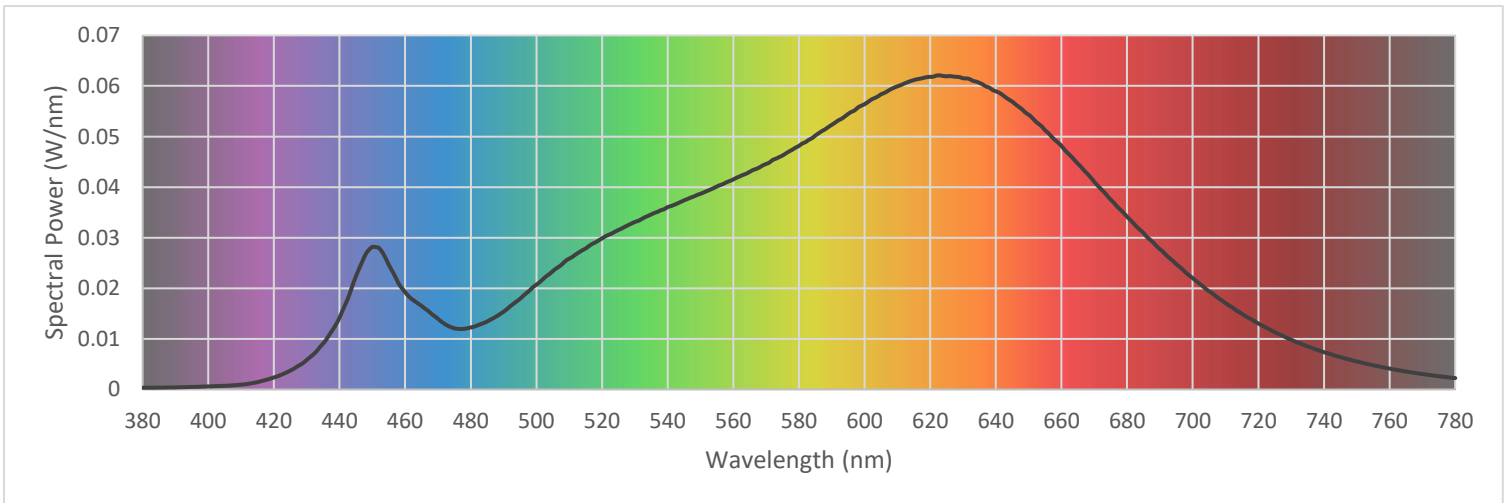
Voltage	120.0 Vac
Current	0.3491 A
Power	40.78 W
Frequency	59.99 Hz
Power Factor	0.974
Current THD	15.9 %

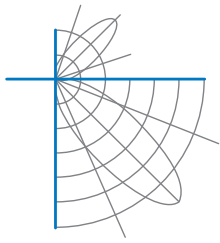


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Summary Spectral Power Distribution (wavelength - nm, spectral power - W/nm)

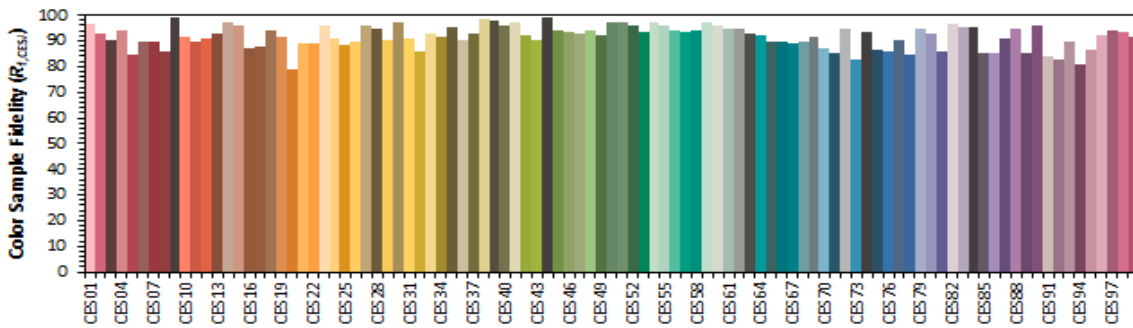
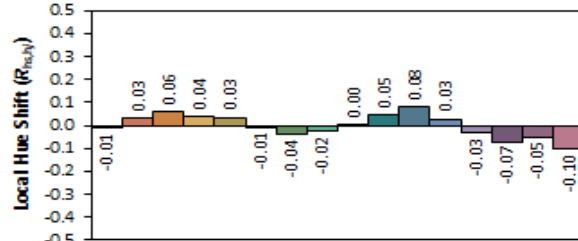
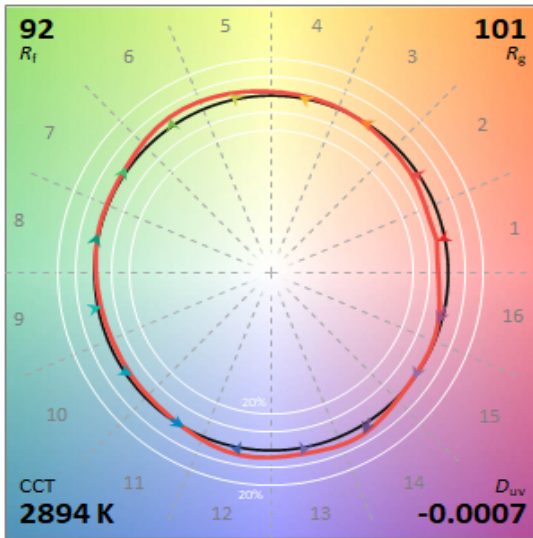
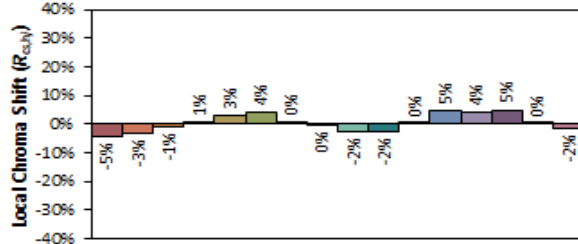
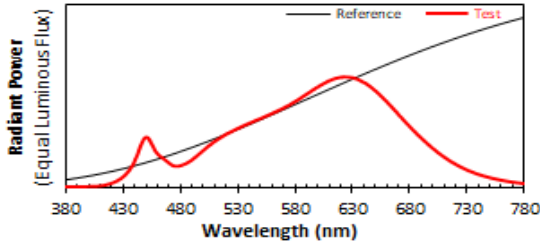
380	0.000349	480	0.012258	580	0.048143	680	0.034139
385	0.000364	485	0.013448	585	0.050206	685	0.030944
390	0.000405	490	0.015379	590	0.052321	690	0.027739
395	0.000507	495	0.017916	595	0.054475	695	0.024766
400	0.000605	500	0.020722	600	0.056397	700	0.022013
405	0.000727	505	0.023416	605	0.058352	705	0.019407
410	0.000946	510	0.025862	610	0.059923	710	0.017064
415	0.001445	515	0.027871	615	0.061156	715	0.014960
420	0.002375	520	0.029862	620	0.061798	720	0.013033
425	0.003735	525	0.031531	625	0.061905	725	0.011321
430	0.005837	530	0.033121	630	0.061514	730	0.009851
435	0.009087	535	0.034613	635	0.060608	735	0.008524
440	0.014208	540	0.036062	640	0.058943	740	0.007365
445	0.022376	545	0.037390	645	0.056905	745	0.006415
450	0.028181	550	0.038686	650	0.054316	750	0.005539
455	0.024638	555	0.040129	655	0.051245	755	0.004782
460	0.019205	560	0.041523	660	0.048142	760	0.004128
465	0.016512	565	0.043030	665	0.044642	765	0.003553
470	0.013967	570	0.044582	670	0.041053	770	0.003044
475	0.012084	575	0.046246	675	0.037535	775	0.002623
						780	0.002248



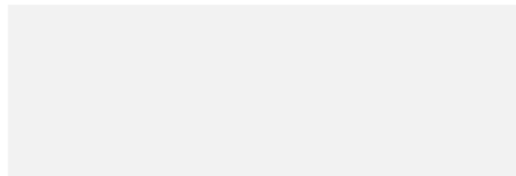


Test Report Number: LLIA001626-006B

IES TM-30 Details

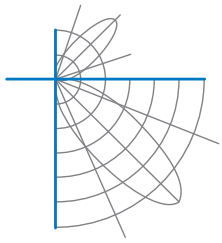


Notes:



x 0.4436
y 0.4044
u' 0.2547
v' 0.5225

CIE 13.3-1995 (CRI)	
R _a	93
R _s	62



Test Report Number: LLIA001626-006B

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: 24.5 °C

Test Procedure: Tested in accordance with the applicable sections of:
LM-79-19, LM-78-20, LM-58-20, ANSI_ANSLG C78.377-2017, TM-30-20

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

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