



Report of Test

LLIA001599-004A

Indoor Distribution Photometry Test Report

Catalog Number: L1.2X-VW 5600K w/Int-2- MF screen

Yoke mounted, formed aluminum housing, extruded aluminum heatsink, formed white enamel steel reflector, diffuse plastic enclosure above plastic baffle with specular aluminum interior, black hex cell screen. 272 white LEDs - 136 WW, 136 CW. Controller set for 5600K, full output.
One EldoLED POWERdrive 1061/S LED driver.



Prepared For:
Brightline L.P.
580 Mayer Street
Suite 7

Bridgeville, PA 15017, USA

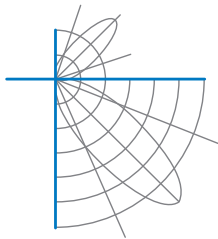
Performance Summary			
Input Voltage	120.0 Vac	Luminous Flux	2214.4 Lumens
Input Current	0.8660 A	Total Efficacy	21.4 Lm/W
Input Power	103.4 W	Downward Flux	2211.5 Lumens
Frequency	60.00 Hz	Downward Flux	99.9 % of Total
Power Factor	0.995		
Current THD	5.3 %		

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

Test date: 12/09/2021

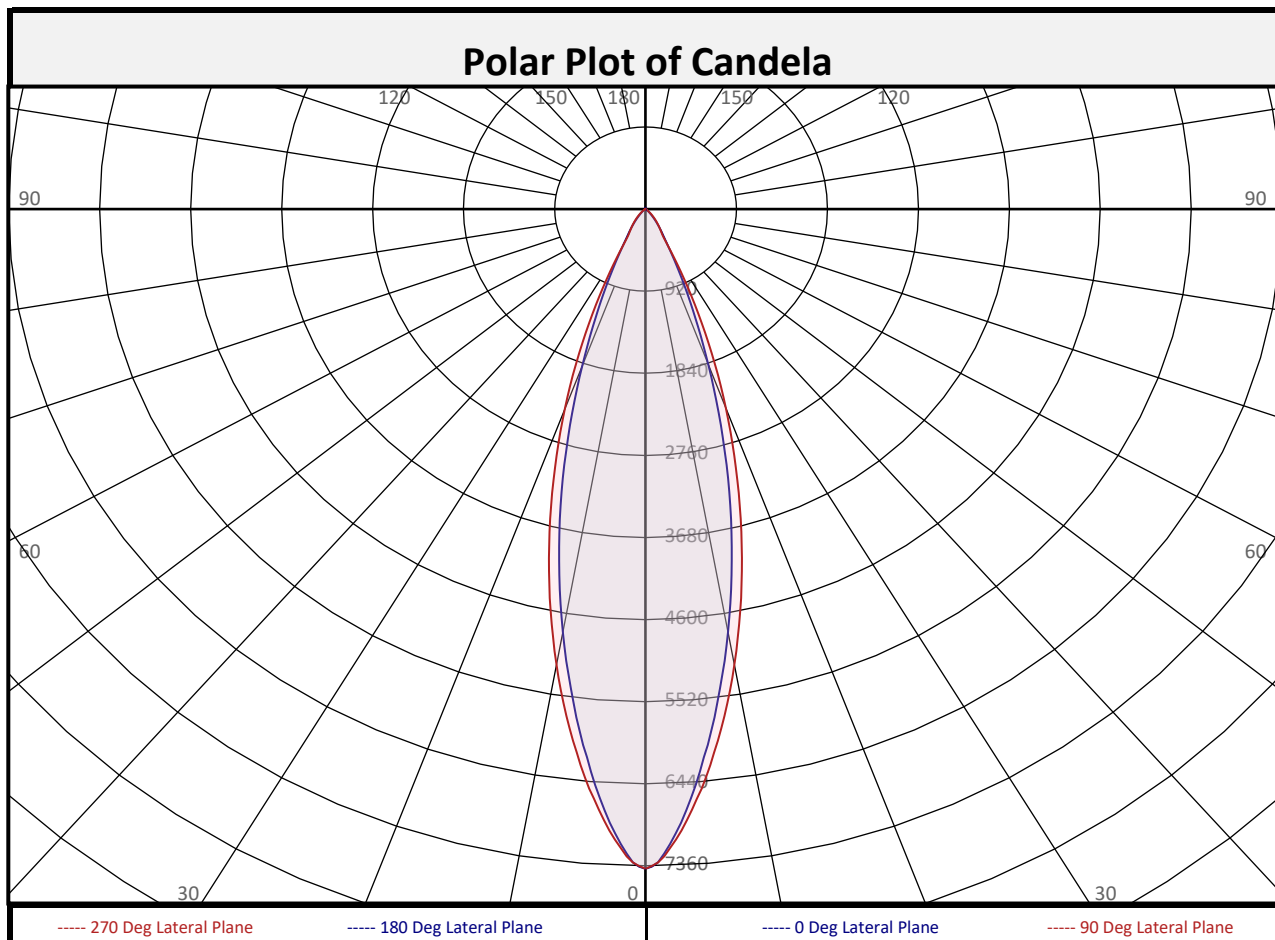
Report date: 12/10/2021

Signed: _____



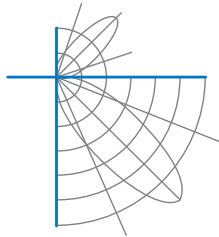
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Zonal Flux Summary

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	566.9	25.6%	90-100	0.1	0.0%	0-20	1517	68.5%
10-20	950.1	42.9%	100-110	0.3	0.0%	0-30	1989	89.8%
20-30	472.3	21.3%	110-120	0.2	0.0%	0-40	2132	96.3%
30-40	142.9	6.5%	120-130	0.2	0.0%	0-60	2205	99.6%
40-50	56.1	2.5%	130-140	0.2	0.0%	0-80	2211	99.8%
50-60	16.9	0.8%	140-150	0.4	0.0%	10-90	1645	74.3%
60-70	4.6	0.2%	150-160	0.6	0.0%	20-50	671.2	30.3%
70-80	1.3	0.1%	160-170	0.6	0.0%	40-90	79.3	3.6%
80-90	0.4	0.0%	170-180	0.2	0.0%	60-90	6.3	0.3%
0-90	2211	99.8%	90-180	2.9	0.1%	0-180	2214	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	7394	7394	7394	7394	7394	7394	7394	7394	7394
	2.5	7006	7017	7042	7066	7073	7066	7042	7017	7006
	5	6330	6343	6419	6516	6520	6516	6419	6343	6330
	7.5	5579	5594	5699	5859	5870	5859	5699	5594	5579
	10	4814	4839	4970	5140	5178	5140	4970	4839	4814
	12.5	4036	4088	4221	4399	4467	4399	4221	4088	4036
	15	3279	3347	3479	3648	3743	3648	3479	3347	3279
	17.5	2541	2632	2764	2904	3036	2904	2764	2632	2541
	20	1870	1978	2089	2193	2378	2193	2089	1978	1870
	22.5	1319	1393	1474	1578	1750	1578	1474	1393	1319
	25	905	898	964	1070	1181	1070	964	898	905
	27.5	600	525	582	690	699	690	582	525	600
	30	406	348	357	438	370	438	357	348	406
	32.5	305	272	273	304	289	304	273	272	305
	35	232	213	214	231	237	231	214	213	232
	37.5	171	166	165	174	193	174	165	166	171
	40	123	128	124	128	152	128	124	128	123
	42.5	85	97	92	92	117	92	92	97	85
	45	59	72	67	65	87	65	67	72	59
	47.5	41	53	48	46	63	46	48	53	41
50	29	38	35	32	45	32	35	38	29	
52.5	20	28	24	22	32	22	24	28	20	
55	15	20	17	16	22	16	17	20	15	
57.5	10	14	12	11	15	11	12	14	10	
60	8	10	9	8	11	8	9	10	8	
62.5	5	7	6	5	7	5	6	7	5	
65	4	5	4	4	5	4	4	5	4	
67.5	3	4	3	3	3	3	3	4	3	
70	2	3	2	2	2	2	2	3	2	
72.5	1	2	1	1	2	1	1	2	1	
75	1	1	1	1	1	1	1	1	1	
77.5	1	1	1	1	1	1	1	1	1	
80	1	1	0	1	1	1	0	1	1	
82.5	0	0	0	1	1	1	0	0	0	
85	0	0	0	1	1	1	0	0	0	
87.5	0	0	0	0	0	0	0	0	0	
90	0	0	0	0	0	0	0	0	0	



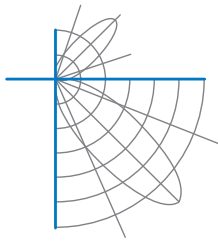
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Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles									
	0	22.5	45	67.5	90	112.5	135	157.5	180	
90	0	0	0	0	0	0	0	0	0	0
92.5	0	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0	0
97.5	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0
102.5	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0
107.5	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0
112.5	0	0	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0	0	0
117.5	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0	0
122.5	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0
127.5	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0
132.5	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0
137.5	0	0	0	0	0	0	0	0	0	0
140	0	0	1	0	0	0	1	0	0	0
142.5	0	1	1	0	0	0	1	1	0	0
145	1	1	1	1	1	1	1	1	1	1
147.5	1	1	1	1	1	1	1	1	1	1
150	1	1	1	1	1	1	1	1	1	1
152.5	1	1	1	1	1	1	1	1	1	1
155	1	1	1	1	1	1	1	1	1	1
157.5	2	2	2	2	2	2	2	2	2	2
160	2	2	2	2	2	2	2	2	2	2
162.5	2	2	2	2	2	2	2	2	2	2
165	2	2	2	2	2	2	2	2	2	2
167.5	2	2	2	2	2	2	2	2	2	2
170	2	2	2	2	2	2	2	2	2	2
172.5	2	3	2	2	2	2	2	3	2	2
175	2	2	2	2	2	2	2	2	2	2
177.5	2	2	2	2	2	2	2	2	2	2
180	2	2	2	2	2	2	2	2	2	2

Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	115	112	110	108	112	110	108	107	106	105	103	102	101	100	99	98	97	96
2	110	106	103	100	108	105	102	99	101	99	97	98	96	95	96	94	93	91
3	106	101	97	94	104	100	96	93	97	94	91	95	92	90	93	90	89	87
4	102	96	92	88	101	95	91	88	93	90	87	91	88	86	89	87	85	84
5	99	92	87	84	97	91	87	83	89	86	83	88	85	82	86	84	81	80
6	95	88	83	80	94	87	83	80	86	82	79	85	81	79	83	80	78	77
7	92	85	80	77	91	84	79	76	83	79	76	82	78	76	81	78	75	74
8	89	81	77	73	88	81	76	73	80	76	73	79	75	73	78	75	72	71
9	86	78	74	71	85	78	74	70	77	73	70	76	73	70	76	72	70	69
10	83	76	71	68	82	75	71	68	75	71	68	74	70	68	73	70	67	66

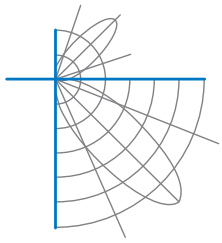
For absolute test reports, RUs are expressed as a percentage of total lumen output. For relative test reports, CUs are expressed as a percentage of total lamp output. Calculations were based on published IES procedures, and are based on the zonal cavity method. Basic assumptions: 1) Room surfaces are 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	205.4	2.70	2.98	
8.0	115.5	3.60	3.97	
10.0	73.9	4.50	4.97	
12.0	51.3	5.40	5.96	
14.0	37.7	6.30	6.96	
16.0	28.9	7.20	7.95	

Spacing Criterion	
0 deg:	0.5
90 deg:	0.5
180 deg:	0.5
270 deg:	0.5

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	65986	65986	65986
45	746	849	1098
55	227	267	345
65	85	88	103
75	39	38	39
85	28	38	97

Beam and Field Angle	
0-180 Degree Plane	
Beam Angle:	27.2°
Field Angle:	52.5°
90-270 Degree Plane	
Beam Angle:	30.3°
Field Angle:	54.5°



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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

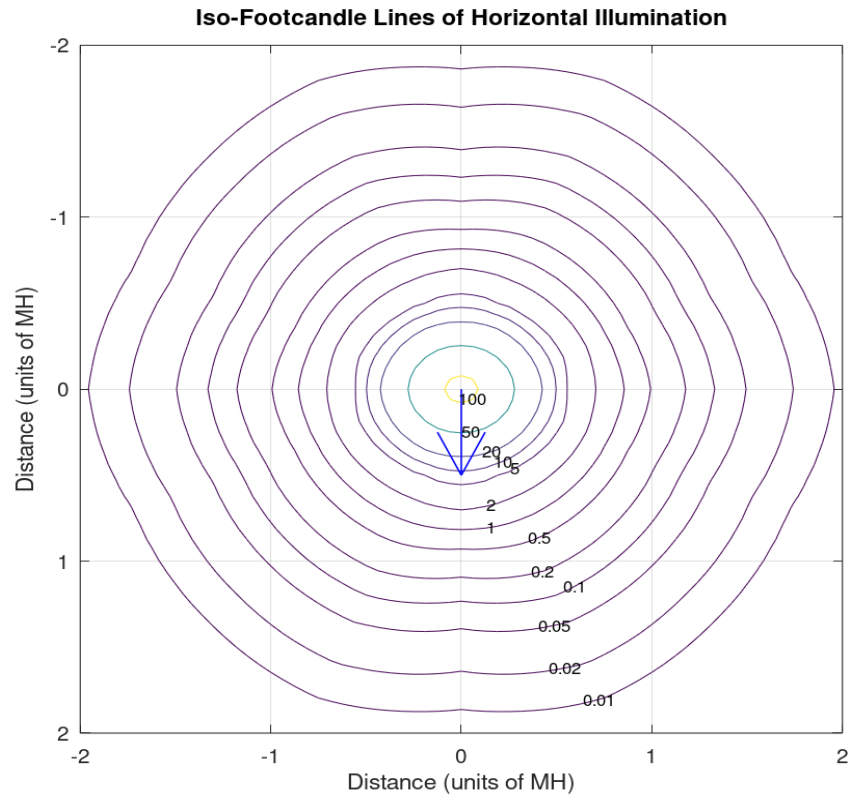
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	3H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	4H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	6H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	8H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	12H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
4H	2H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	3H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	4H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	6H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	8H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	12H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
8H	4H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	6H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	8H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	12H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
12H	4H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	6H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	8H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8

Maximum UGR = 2.8

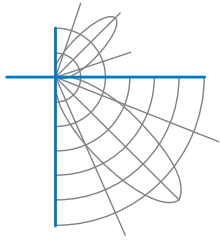


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Iso-Illuminance Plot



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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Additional Pictures of Test Subject





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Test Distance 9.5 m
Ambient 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 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.

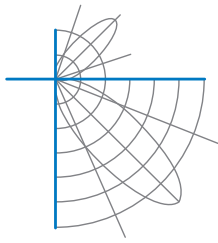
Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

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

LLIA001599-004B

Integrating Sphere Report

Catalog Number: L1.2X-VW 5600K w/Int-2- MF screen

Yoke mounted, formed aluminum housing, extruded aluminum heatsink, formed white enamel steel reflector, diffuse plastic enclosure above plastic baffle with specular aluminum interior, black hex cell screen. 272 white LEDs - 136 WW, 136 CW. Controller set for 5600K, full output.

One EldoLED POWERdrive 1061/S LED driver.



Performance Summary

Voltage	120.0 Vac
Current	0.8608 A
Power	102.8 W
Frequency	59.99 Hz
Power Factor	0.995
Current THD	5.2 %
Total Luminous Flux	2215.4 lm
Efficacy	21.6 lm/W
Chromaticity (x,y)	(0.3281, 0.3343)
(u',v')	(0.2065, 0.4734)
Duv	-0.0015
CCT	5699 K
CRI (Ra)	95
R9	90
TM-30: Rf	89
TM-30: Rg	98
TM-30: Rcs,h1	0

Prepared For:

Brightline L.P.

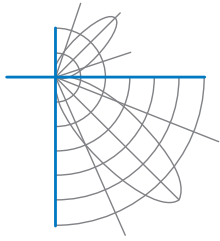
580 Mayer Street

Suite 7

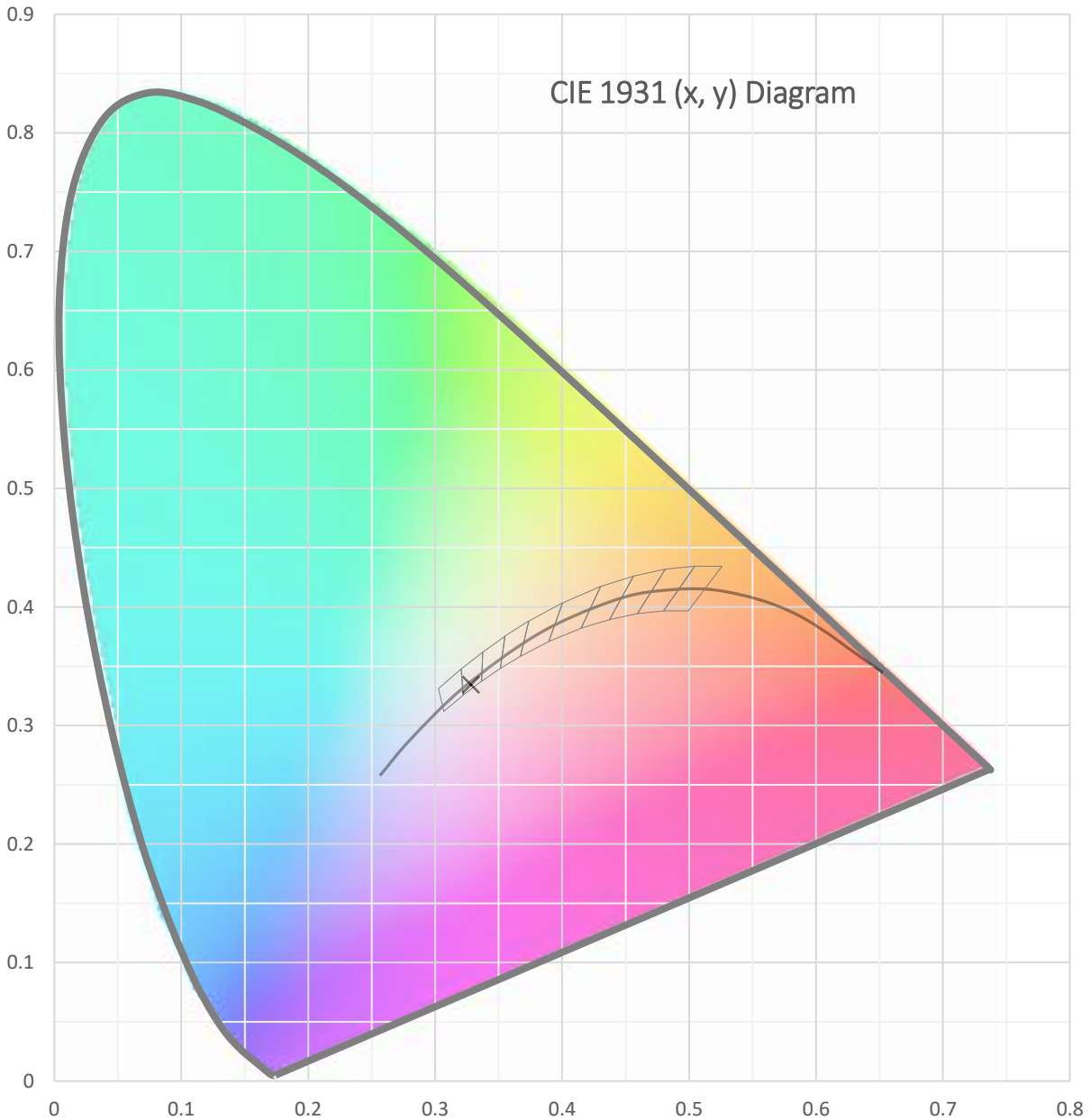
Bridgeville, PA 15017, USA

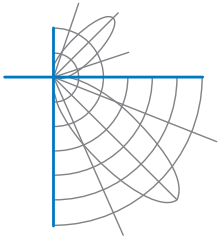
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Report date: 12/10/2021

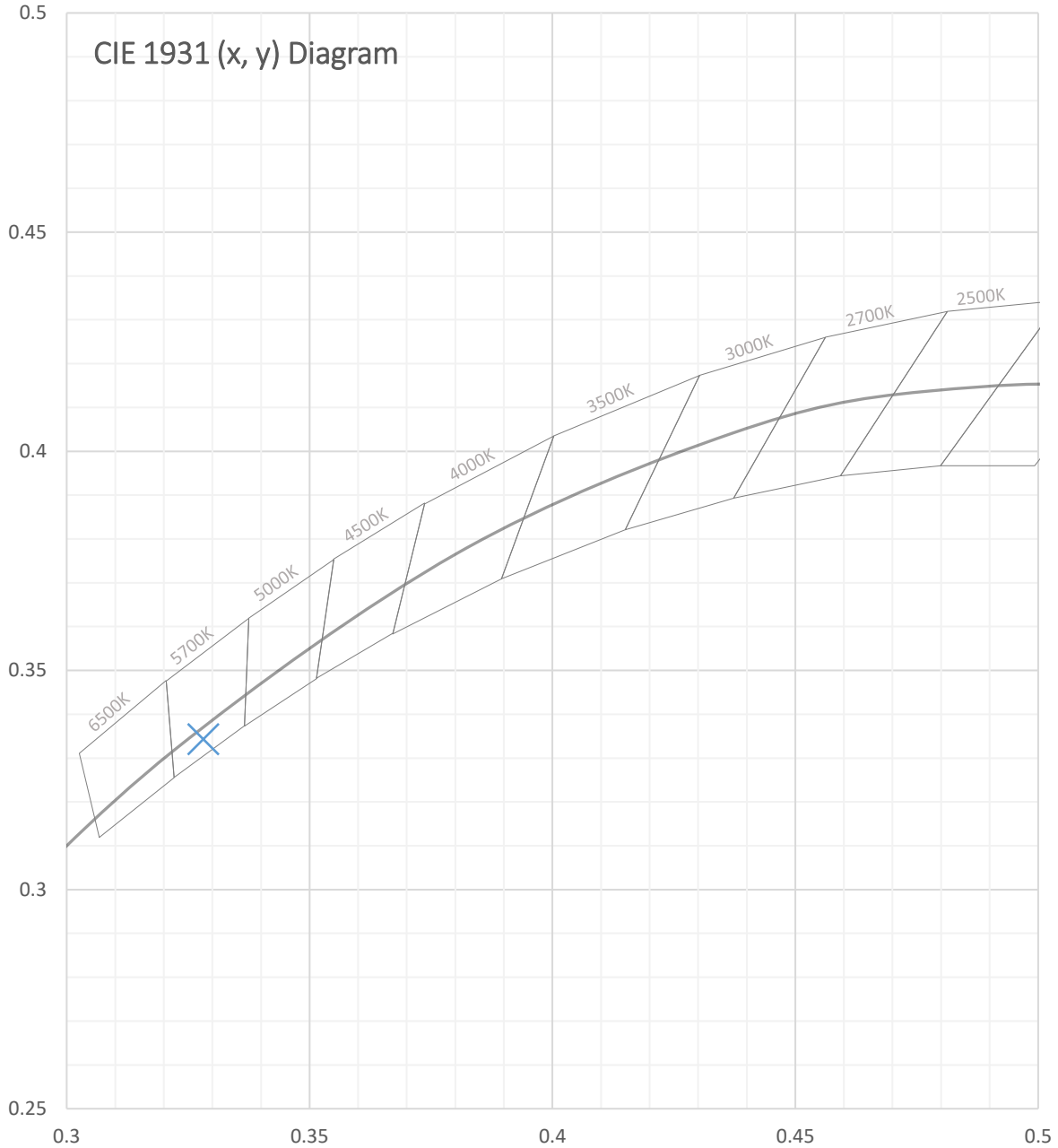


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Total Radiant Flux	8.375 W
Total Luminous Flux	2215.4 Lm
Chromaticity CIE 1931 (x, y)	(0.3281, 0.3343)
Chromaticity CIE 1976 (u', v')	(0.2065, 0.4734)
Correlated Color Temperature (CCT)	5699 K
Color Rendering Index (Ra)	95
R1	95
R2	96
R3	98
R4	94
R5	94
R6	94
R7	94
R8	95
R9	90
R10	95
R11	97
R12	74
R13	96
R14	99
TM-30: Rf	89
TM-30: Rg	98
TM-30: Rcs,h1	0
Distance from Planckian Locus (Duv)	-0.0015
Scotopic/Photopic Ratio ‡	2.321

Electrical Data

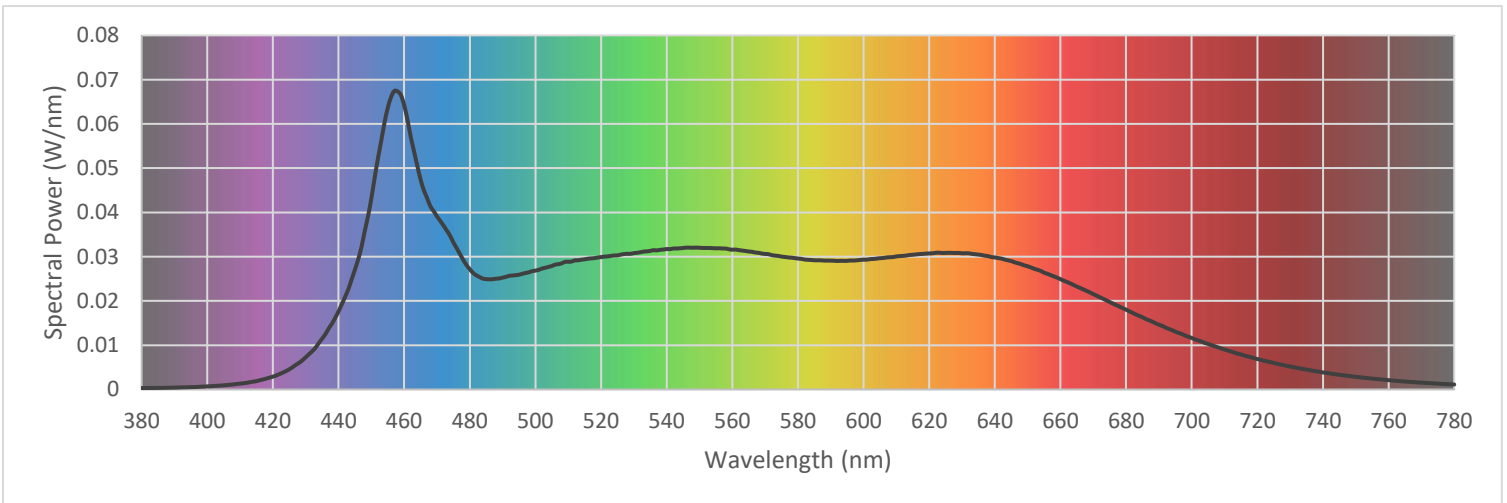
Voltage	120.0 Vac
Current	0.8608 A
Power	102.8 W
Frequency	59.99 Hz
Power Factor	0.995
Current THD	5.2 %

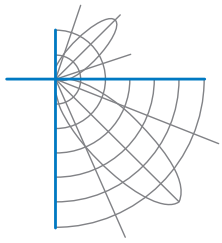


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Summary Spectral Power Distribution (wavelength - nm, spectral power - W/nm)

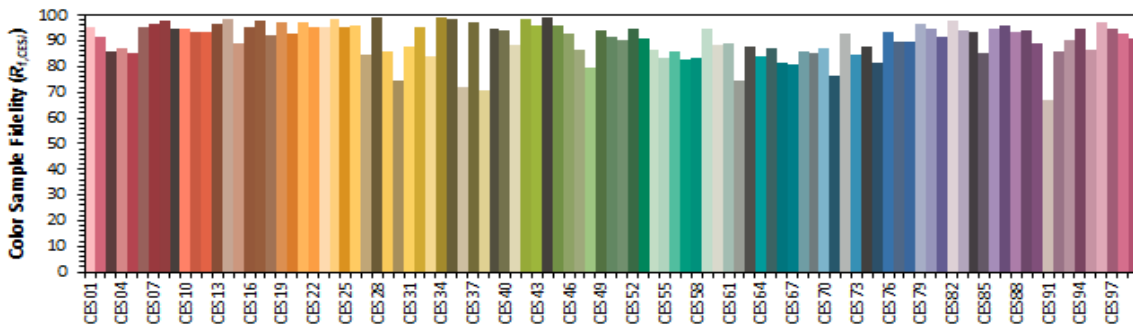
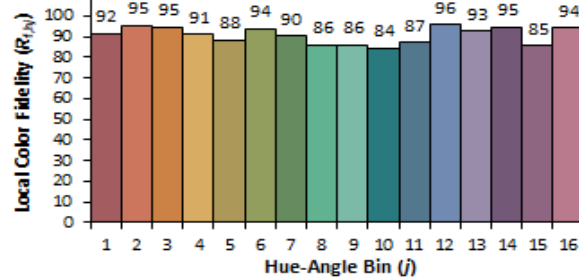
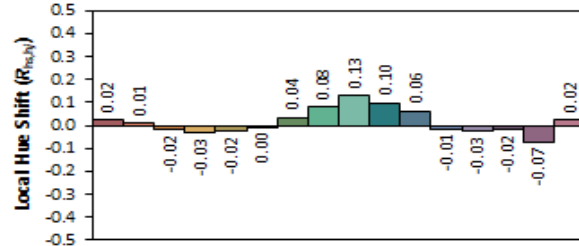
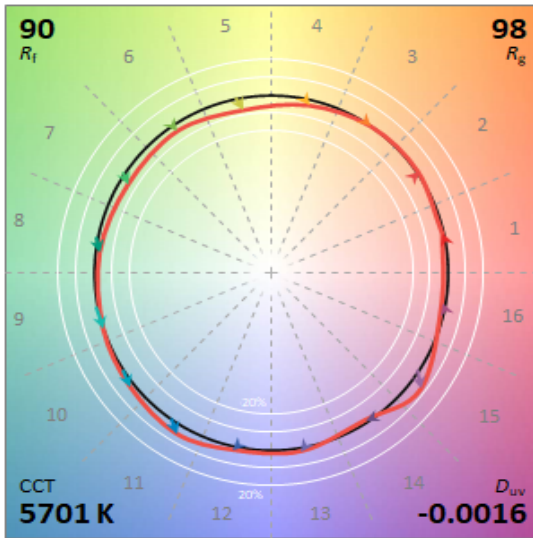
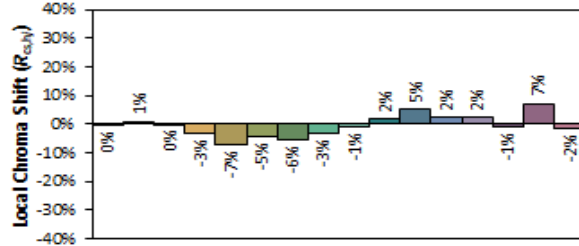
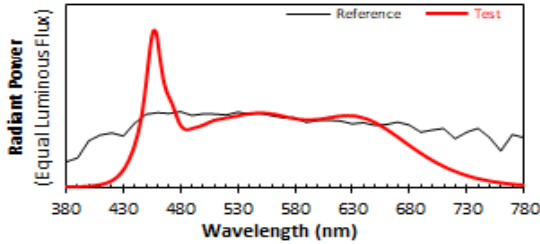
380	0.000319	480	0.027159	580	0.029573	680	0.018023
385	0.000349	485	0.024926	585	0.029186	685	0.016318
390	0.000414	490	0.025269	590	0.029105	690	0.014638
395	0.000530	495	0.025926	595	0.029063	695	0.013063
400	0.000703	500	0.026853	600	0.029321	700	0.011629
405	0.000941	505	0.027891	605	0.029657	705	0.010275
410	0.001318	510	0.028852	610	0.030056	710	0.009027
415	0.001889	515	0.029406	615	0.030435	715	0.007910
420	0.002903	520	0.029902	620	0.030735	720	0.006877
425	0.004563	525	0.030287	625	0.030850	725	0.005994
430	0.007295	530	0.030801	630	0.030766	730	0.005193
435	0.011493	535	0.031308	635	0.030478	735	0.004479
440	0.017645	540	0.031719	640	0.029823	740	0.003851
445	0.027101	545	0.031964	645	0.029018	745	0.003325
450	0.043168	550	0.032014	650	0.027832	750	0.002854
455	0.063603	555	0.031885	655	0.026386	755	0.002444
460	0.064200	560	0.031581	660	0.024929	760	0.002103
465	0.047407	565	0.031171	665	0.023251	765	0.001798
470	0.039091	570	0.030624	670	0.021546	770	0.001535
475	0.033209	575	0.030022	675	0.019756	775	0.001311
						780	0.001119



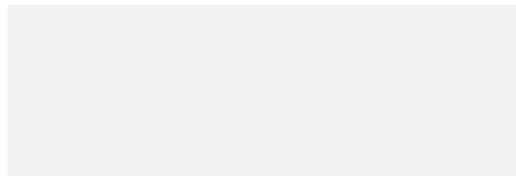


Test Report Number: LLIA001599-004B

IES TM-30 Details

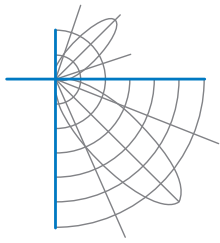


Notes:



x 0.3281
y 0.3342
u' 0.2065
v' 0.4734

CIE 13.3-1995 (CRI)	
R _a	95
R _s	90



Test Report Number: LLIA001599-004B

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: 25.0 °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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