



Report of Test

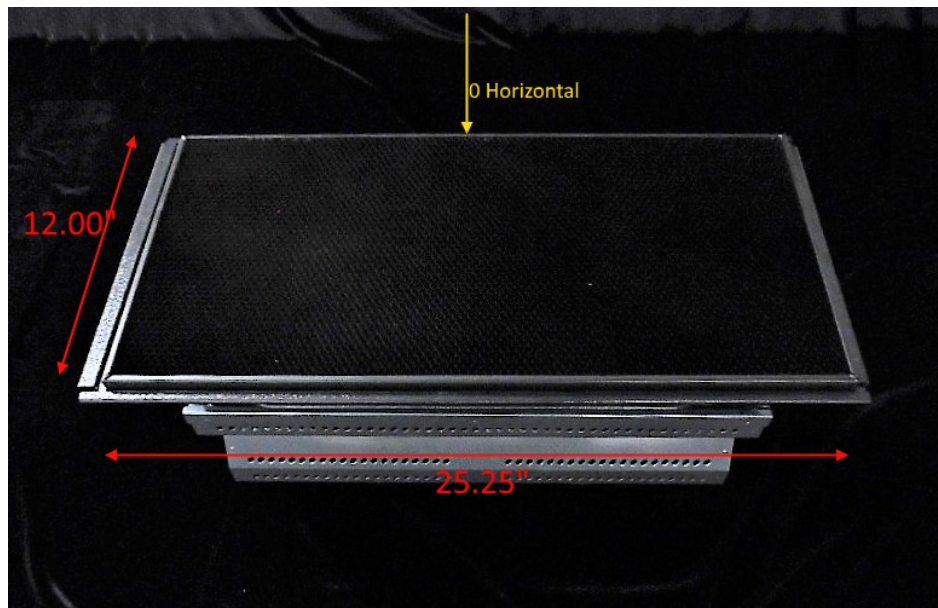
LLIA001046-002A

Catalog Number: L1.4X1-56-H w/INT-1 & INT-1/CS-MF

Yoke mounted, formed aluminum housing, extruded aluminum heatsink, formed white enamel steel reflector, phosphor coated plastic enclosure above formed plastic baffle assembly with specular interior and formed black aluminum honeycomb baffle below. 152 blue LEDs

Two EldoLED SOLOdrive 1060/M LED drivers.

120.0Vac, 60.00Hz, 1.947A, 233.0W, 0.997PF, 4.1%THD(i)



Performance Summary

Total Light Output	4066 lm
Luminaire Power	233.0 W
Luminous Efficacy	17.5 lm/W

PREPARED FOR : Brightline L.P., 580 Mayer Street, Bridgeville, PA 15017, USA



Test Report No. LLIA001046-002A

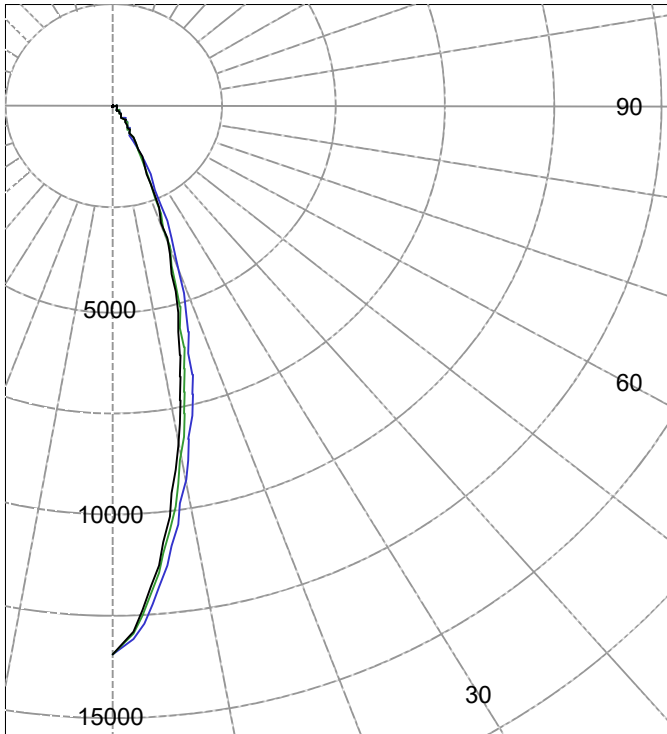
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Legend: C0-Black, C45-Green, C90-Blue (cd)



(Two plane symmetry) C0-C90

AVERAGE LUMINANCE (cd / m²)

Gamma	C0	C45	C90
45.0	781	1202	1472
55.0	248	401	475
65.0	89	133	151
75.0	37	49	54
85.0	32	25	26

INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	13420	13420	13420	13420	13420	
5.0	11299	11345	11526	11674	11807	1012
10.0	8447	8513	8803	9078	9337	
15.0	5731	5841	6107	6422	6799	1679
20.0	3419	3542	3663	3908	4380	
25.0	1814	1743	1760	1960	2235	882
30.0	863	702	747	869	782	
35.0	456	453	484	521	537	310
40.0	231	288	297	301	353	
45.0	108	165	166	154	204	129
50.0	54	87	88	76	106	
55.0	28	45	45	38	53	40
60.0	14	22	22	19	26	
65.0	7	11	11	9	12	11
70.0	4	5	5	5	6	
75.0	2	2	2	2	3	3
80.0	1	1	1	1	1	
85.0	1	0	0	0	0	1
90.0	0	0	0	0	0	

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	3573	N / A	87.9
0-40	3882	N / A	95.5
0-60	4052	N / A	99.7
0-90	4066	N / A	100.0
40-90	183	N / A	4.5
60-90	14	N / A	0.3
90-180	0	N / A	0.0
0-180	4066	N / A	100.0

Total Light Output = 4,066 lm

Spacing Criterion: 0-180 0.4
Spacing Criterion: 90-270 0.5

Signed:

Authorized Signatory

Date of test 5-Nov-2018
Date of report 8-Nov-2018



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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	13420	13420	13420	13420	13420
2.5	12612	12655	12749	12787	12864
5.0	11299	11345	11526	11674	11807
7.5	9873	9926	10175	10399	10597
10.0	8447	8513	8803	9078	9337
12.5	7061	7137	7432	7739	8050
15.0	5731	5841	6107	6422	6799
17.5	4486	4631	4836	5141	5560
20.0	3419	3542	3663	3908	4380
22.5	2527	2569	2615	2835	3275
25.0	1814	1743	1760	1960	2235
27.5	1263	1088	1123	1302	1314
30.0	863	702	747	869	782
32.5	612	558	600	655	643
35.0	456	453	484	521	537
37.5	331	365	384	404	442
40.0	231	288	297	301	353
42.5	157	221	224	218	273
45.0	108	165	166	154	204
47.5	75	121	121	109	148
50.0	54	87	88	76	106
52.5	38	63	63	54	75
55.0	28	45	45	38	53
57.5	20	32	32	27	37
60.0	14	22	22	19	26
62.5	10	16	16	13	18
65.0	7	11	11	9	12
67.5	5	8	8	6	8
70.0	4	5	5	5	6
72.5	3	4	4	3	4
75.0	2	2	2	2	3
77.5	1	2	2	1	2
80.0	1	1	1	1	1
82.5	1	1	1	1	1
85.0	1	0	0	0	0
87.5	0	0	0	0	0
90.0	0	0	0	0	0



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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	0	0	0	0	0
92.5	0	0	0	0	0
95.0	0	0	0	0	0
97.5	0	0	0	0	0
100.0	0	0	0	0	0
102.5	0	0	0	0	0
105.0	0	0	0	0	0
107.5	0	0	0	0	0
110.0	0	0	0	0	0
112.5	0	0	0	0	0
115.0	0	0	0	0	0
117.5	0	0	0	0	0
120.0	0	0	0	0	0
122.5	0	0	0	0	0
125.0	0	0	0	0	0
127.5	0	0	0	0	0
130.0	0	0	0	0	0
132.5	0	0	0	0	0
135.0	0	0	0	0	0
137.5	0	0	0	0	0
140.0	0	0	0	0	0
142.5	0	0	0	0	0
145.0	0	0	0	0	0
147.5	0	0	0	0	0
150.0	0	0	0	0	0
152.5	0	0	0	0	0
155.0	0	0	0	0	0
157.5	0	0	0	0	0
160.0	0	0	0	0	0
162.5	0	0	0	0	0
165.0	0	0	0	0	0
167.5	0	0	0	0	0
170.0	0	0	0	0	0
172.5	0	0	0	0	0
175.0	0	0	0	0	0
177.5	0	0	0	0	0
180.0	0	0	0	0	0



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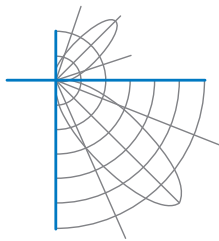
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Coefficients Of Utilization - Zonal Cavity Method																		
Effective Floor Cavity Reflectance 0.20																		
RC	80				70				50			30			10			0
	RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	114	112	110	108	112	110	108	106	106	104	103	102	101	100	99	98	97	95
2	110	106	103	100	108	104	101	99	101	99	96	98	96	94	96	94	93	91
3	106	100	96	93	104	99	95	92	97	93	91	94	92	90	92	90	88	87
4	102	96	91	88	100	95	90	87	92	89	86	91	88	85	89	86	84	83
5	98	91	86	83	97	90	86	83	89	85	82	87	84	81	86	83	81	79
6	94	87	82	79	93	87	82	79	85	81	78	84	80	78	83	80	77	76
7	91	84	79	75	90	83	78	75	82	78	75	81	77	75	80	77	74	73
8	88	80	76	72	87	80	75	72	79	75	72	78	74	72	77	74	71	70
9	85	77	73	69	84	77	72	69	76	72	69	75	72	69	75	71	69	68
10	82	75	70	67	81	74	70	67	73	69	67	73	69	66	72	69	66	65

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	372.8	2.61	2.97
8.0	209.7	3.48	3.97
10.0	134.2	4.35	4.96
12.0	93.2	5.22	5.95
14.0	68.5	6.09	6.94
16.0	52.4	6.96	7.93



Test Report No. LLIA001046-002A

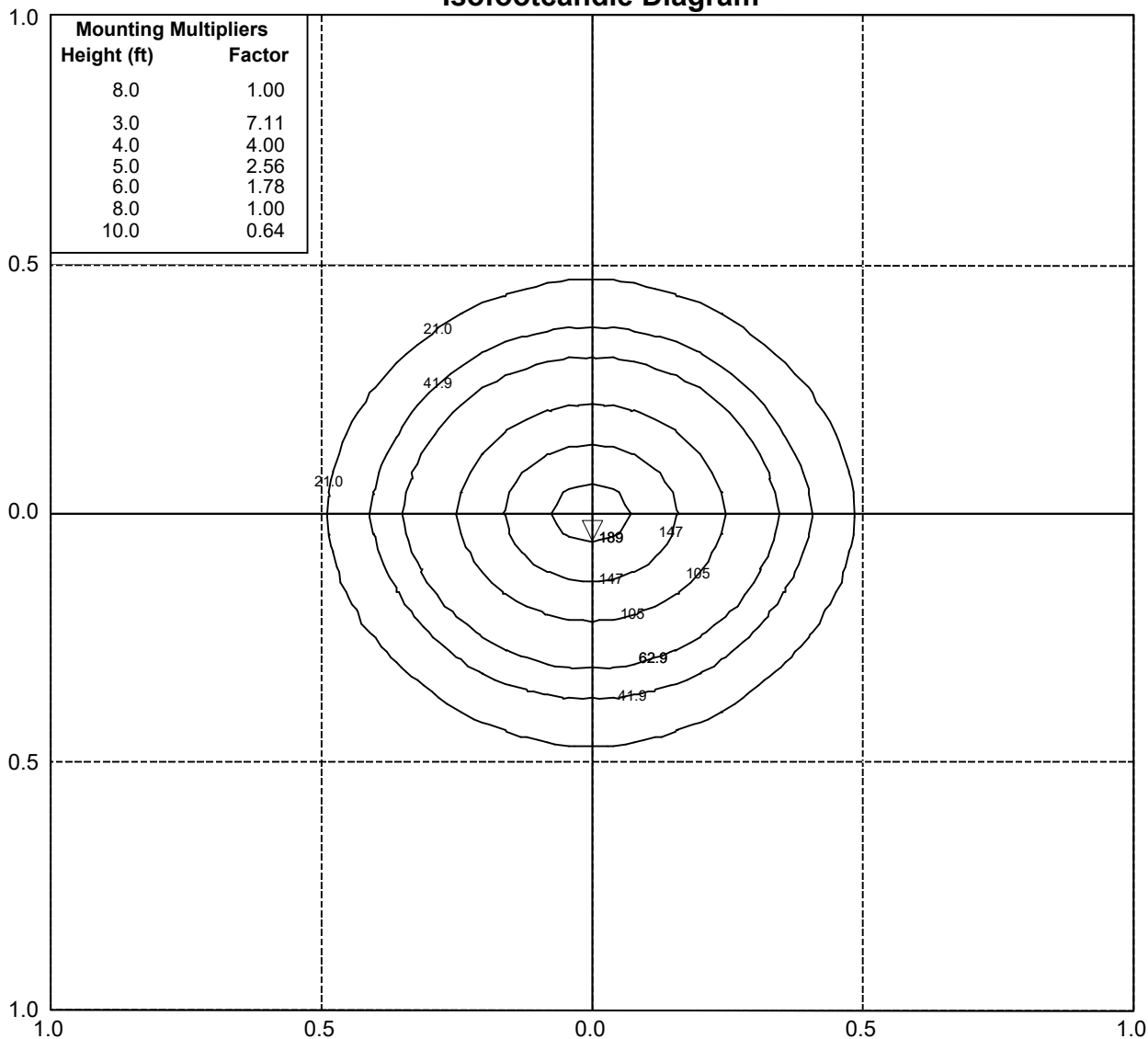
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Isofootcandle Diagram



Note: The isolux levels are based on a mounting height of H = 8.0 metres. Grid values show multiples of mounting height.
The isolux contours are set to 10%, 20%, 30%, 50%, 70%, 90% of the maximum.
The isolux contour units are expressed as lux. The left and right sides of photometric data have been averaged.



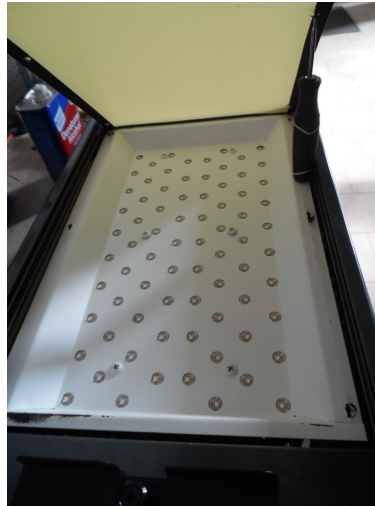
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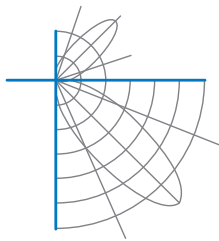
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Test Distance 9.5 m
Test Temperature 25.0 °C

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

LLIA001046-002B

Integrating Sphere Report

Catalog Number: L1.4X1-56-H w/INT-1 & INT-1/CS-MF

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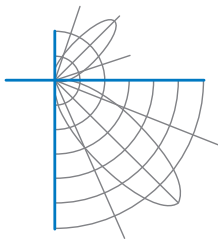
Performance Summary

Voltage	120.0 Vac
Current	1.893 A
Power	226.5 W
Frequency	59.99 Hz
Power Factor	0.997
Current THD	4.3 %

Total Luminous Flux	3967.5 lm
Efficacy	17.5 lm/W
Chromaticity (x,y)	(0.3250, 0.3369)
(u',v')	(0.2033, 0.4743)
Duv	0.0013
CCT	5846 K
CRI (Ra)	96
R9	94
TM-30: Rf	90
TM-30: Rg	98

Prepared For:
Brightline L.P.
580 Mayer Street
Suite 7
Bridgeville, PA 15017, USA

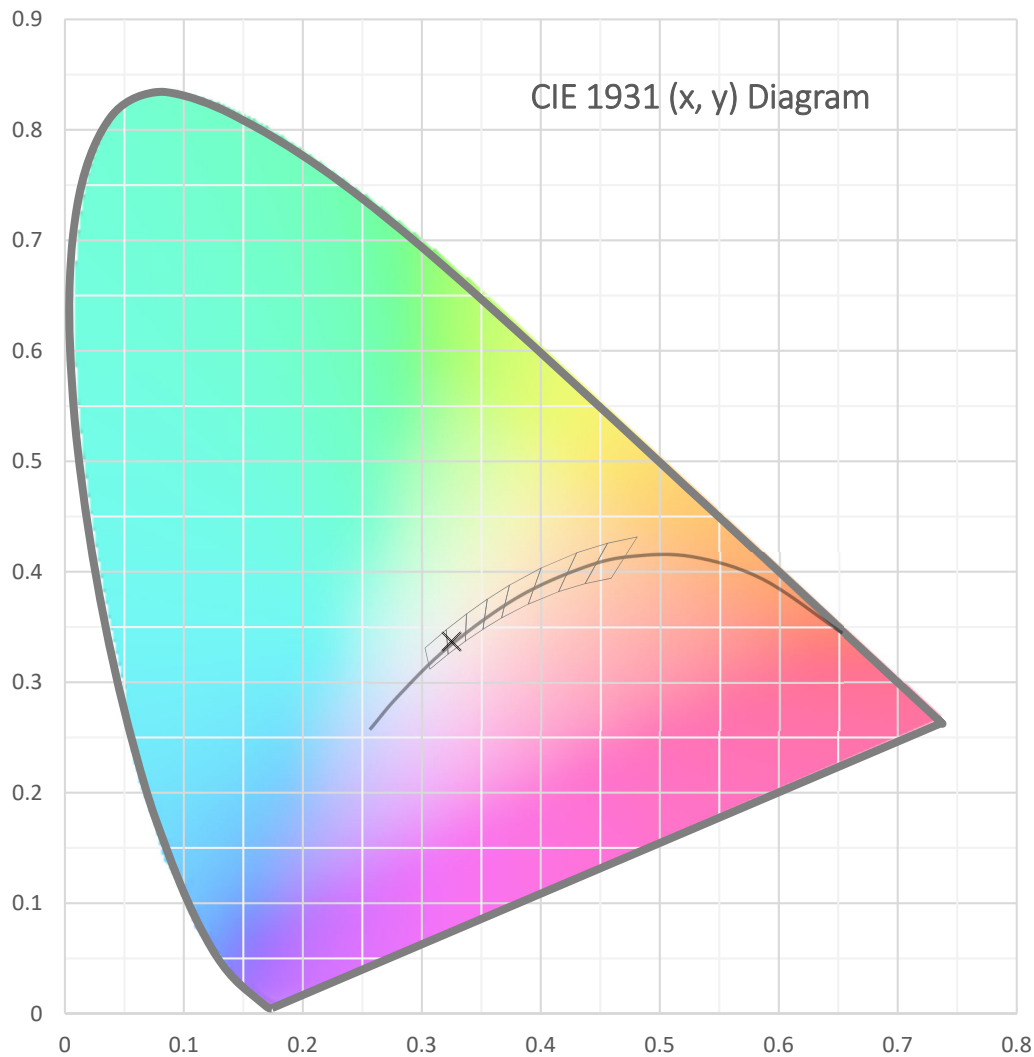
Test date: 11/07/2018
Report date: 11/08/2018

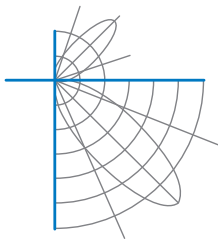


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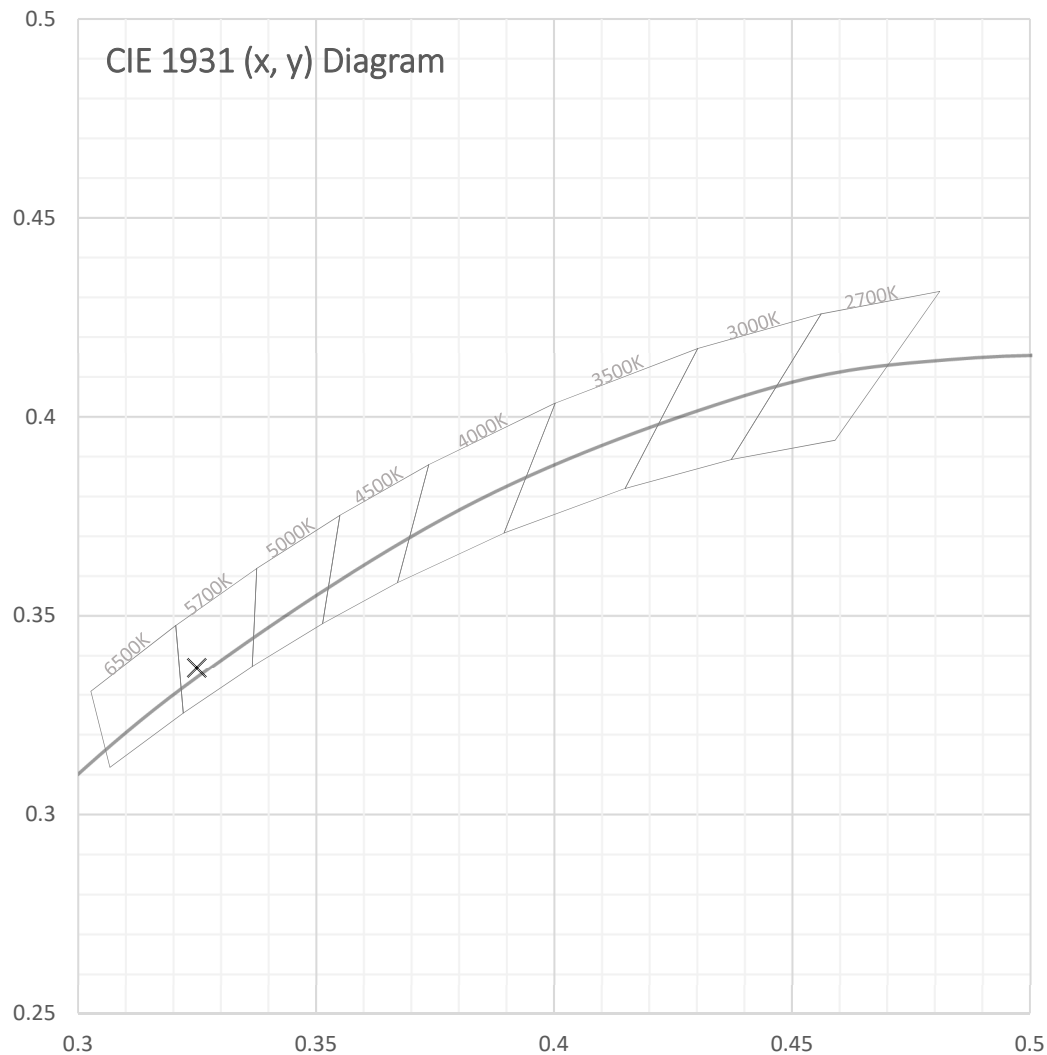




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Spectral Data	Total Radiant Flux	14.73 W
	Total Luminous Flux	3967.5 Lm
	Chromaticity CIE 1931 (x, y)	(0.3250, 0.3369)
	Chromaticity CIE 1976 (u', v')	(0.2033, 0.4743)
	Correlated Color Temperature (CCT)	5846 K
	Color Rendering Index (Ra)	96
	R1	97
	R2	99
	R3	97
	R4	94
	R5	95
	R6	94
	R7	97
	R8	96
	R9	94
	R10	95
	R11	95
	R12	73
	R13	99
	R14	98
	TM-30: Rf	90
	TM-30: Rg	98
	Distance from Planckian Locus (Duv)	0.0013
	Scotopic/Photopic Ratio *	2.298

Electrical Data

Voltage	120.0 Vac
Current	1.893 A
Power	226.5 W
Frequency	59.99 Hz
Power Factor	0.997
Current THD	4.3 %



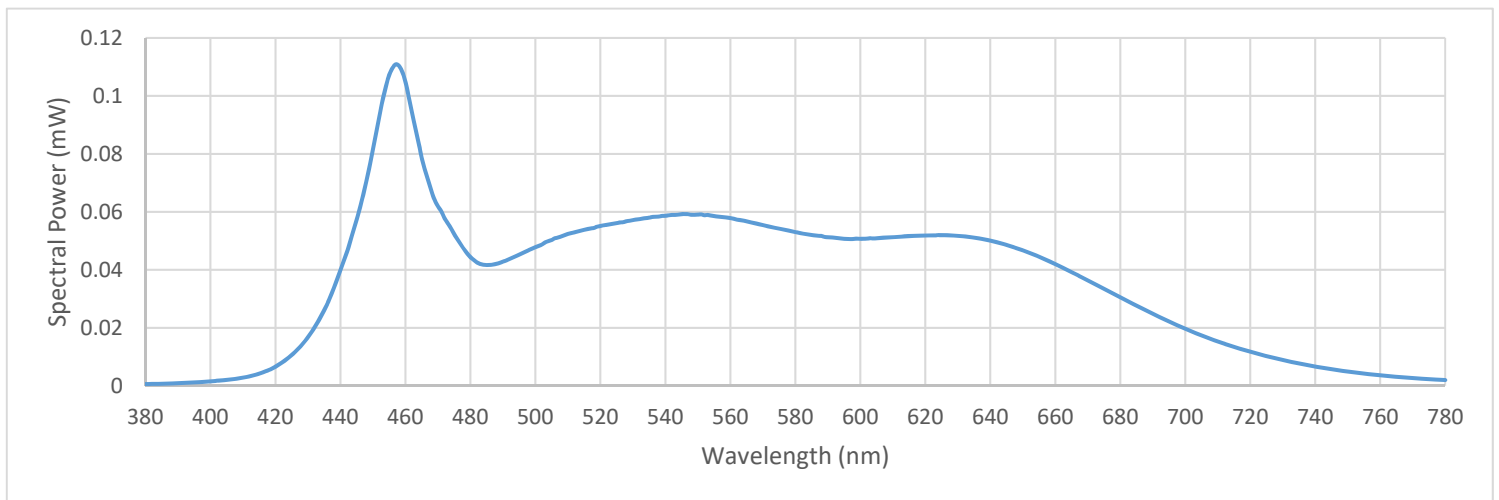
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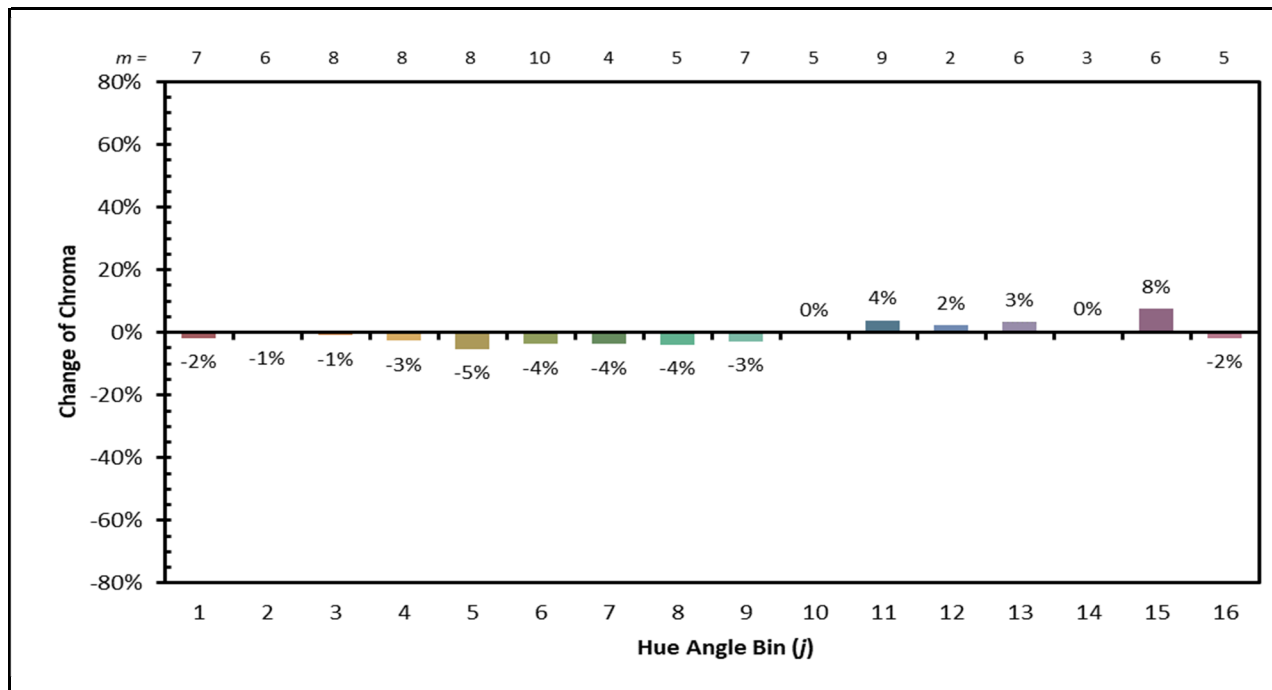
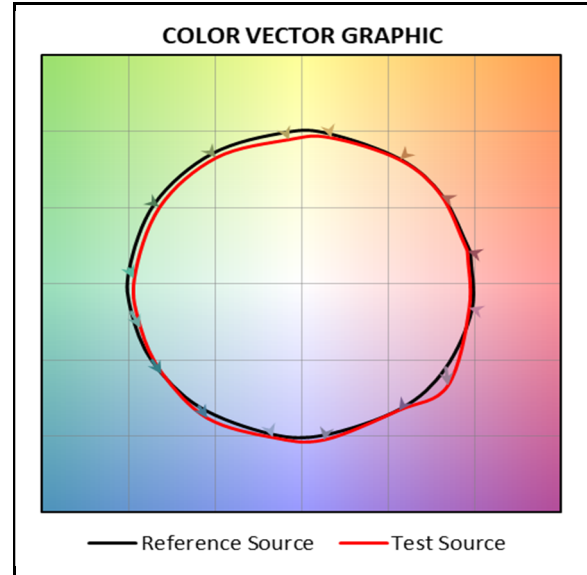
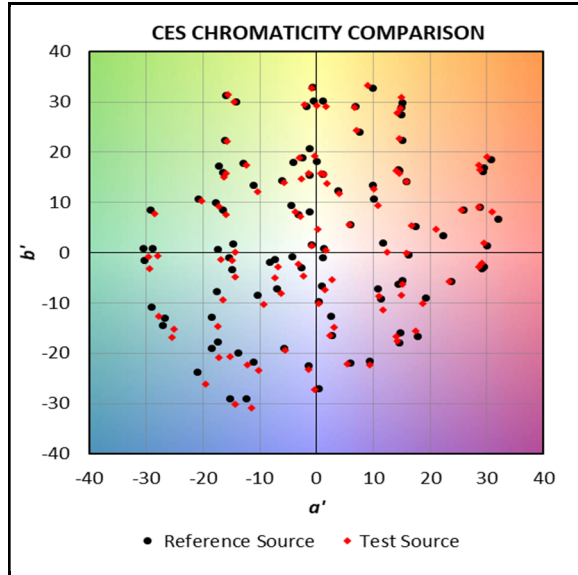
Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000593	480	0.044347	580	0.052999	680	0.030527
385	0.000674	485	0.041650	585	0.052038	685	0.027678
390	0.000897	490	0.042812	590	0.051234	690	0.024818
395	0.001149	495	0.045271	595	0.050683	695	0.022122
400	0.001532	500	0.047816	600	0.050687	700	0.019715
405	0.002029	505	0.050291	605	0.050908	705	0.017369
410	0.002808	510	0.052329	610	0.051236	710	0.015272
415	0.004170	515	0.053832	615	0.051650	715	0.013459
420	0.006644	520	0.055097	620	0.051875	720	0.011776
425	0.010634	525	0.056091	625	0.051929	725	0.010232
430	0.016732	530	0.057148	630	0.051703	730	0.008899
435	0.026226	535	0.057988	635	0.051111	735	0.007669
440	0.039724	540	0.058625	640	0.050038	740	0.006588
445	0.057185	545	0.059212	645	0.048576	745	0.005690
450	0.081269	550	0.059037	650	0.046659	750	0.004899
455	0.107232	555	0.058589	655	0.044510	755	0.004215
460	0.104966	560	0.057895	660	0.042063	760	0.003641
465	0.078563	565	0.056782	665	0.039204	765	0.003118
470	0.061943	570	0.055446	670	0.036327	770	0.002659
475	0.052255	575	0.054161	675	0.033425	775	0.002290
						780	0.001958





IES TM-30 Summary





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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: 25.1 °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, TM-30-15

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.

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