

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P1357201

Luminaire Tested: 4ASL4-25VHE-3-27-UNV

Issue Date: 2/17/2026

**Test Information**

Test Method: LM-79-2019  
Report Number: P1357201  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2511-597-12)  
Test Lab: INNOVATION CENTER  
Issue Date: 2/17/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: 4ASL4-25VHE-3-27-UNV  
Description: 4FT 2500 LUMEN PER FOOT 4ASL LED LUMINAIRE WITH OPL LENS AND 2700K LEDS 3 ROW  
Light Source: -  
Ballast/Driver: -

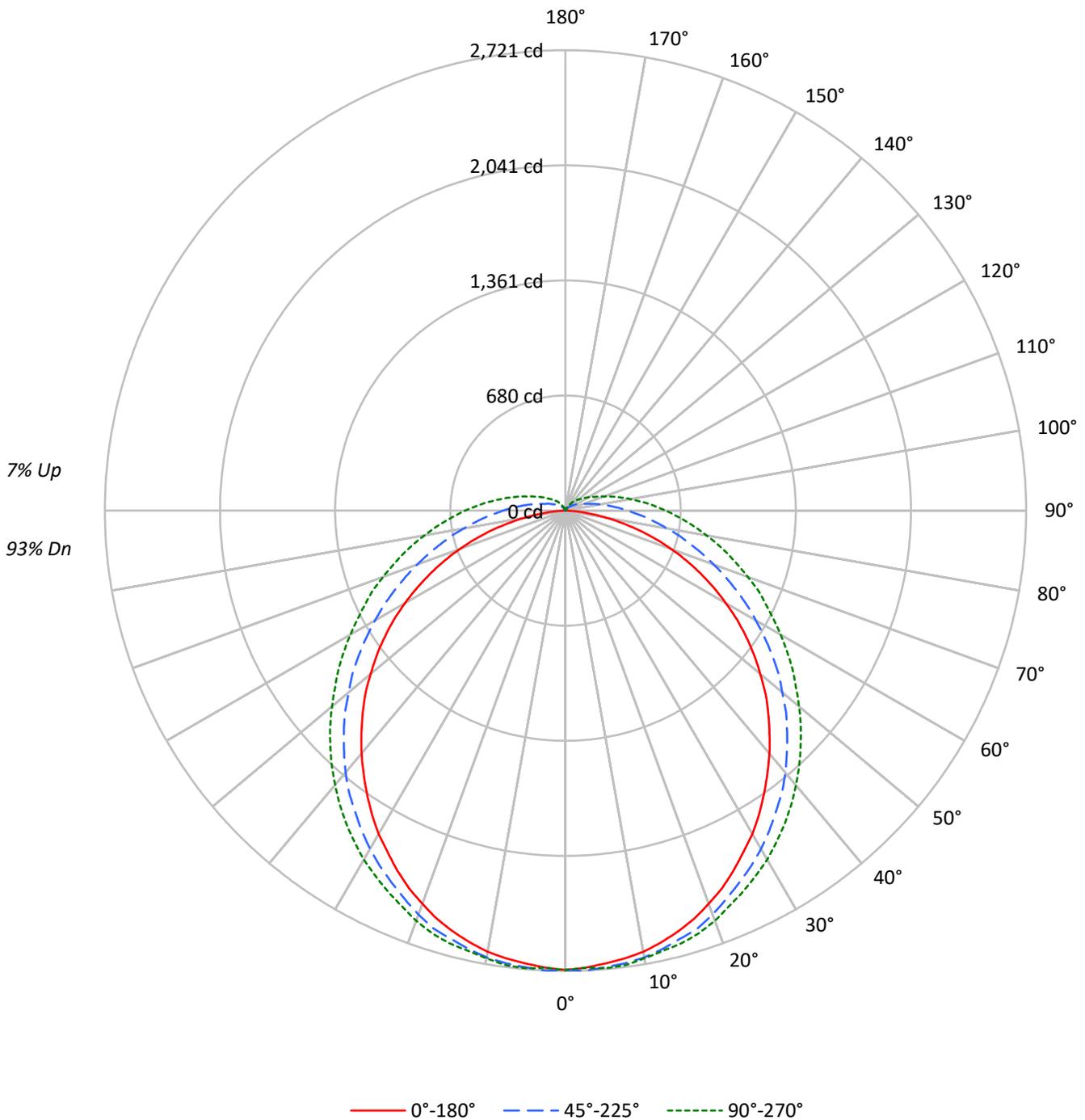
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9232.0 lumens  
Efficiency: N/A  
Efficacy: 107.9 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.3 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 3.98' x H: 0.1')  
CIE Type: Direct

Input Watts (W): 85.6  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P1357201  
CATALOG NUMBER: 4ASL4-25VHE-3-27-UNV

### Luminous Intensity Polar Plot





TEST NUMBER: P1357201  
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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20				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	50	30	10	0
RCR																					
0	117	117	117	117	114	114	114	114	107	107	107	101	101	101	96	96	96	96	96	96	93
1	105	100	95	91	102	97	92	88	91	88	84	86	83	80	81	79	77	77	77	77	74
2	95	86	79	72	92	84	77	71	79	73	68	75	70	66	71	67	63	63	63	63	61
3	86	75	67	60	83	73	65	59	69	62	57	65	60	55	62	57	53	53	53	53	50
4	79	66	57	50	76	65	56	49	61	54	48	58	52	47	55	50	45	45	45	45	43
5	73	59	50	43	70	58	49	42	55	47	41	52	45	40	49	44	39	39	39	39	37
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	45	39	34	34	34	34	32
7	62	48	39	33	60	47	38	32	45	37	32	43	36	31	41	35	30	30	30	30	28
8	58	44	35	29	56	43	35	29	41	34	28	39	32	28	37	32	27	27	27	27	25
9	54	40	32	26	52	39	31	26	38	30	25	36	30	25	35	29	24	24	24	24	22
10	50	37	29	24	49	36	29	23	35	28	23	33	27	23	32	26	22	22	22	22	20

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	22035	22035	22035
5°	21839	21620	21531
10°	21716	21201	20986
15°	21476	20679	20524
20°	21151	20179	20004
25°	20774	19552	19412
30°	20375	19007	18911
35°	19880	18391	18354
40°	19427	17827	17767
45°	18940	17144	17178
50°	18384	16411	16566
55°	17785	15712	16015
60°	17003	14895	15456
65°	16011	14109	14992
70°	14744	13329	14629
75°	12900	12618	14380
80°	10108	12083	14275
85°	6070	11954	14486

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 18940 cd/sqm



TEST NUMBER: P1357201  
 CATALOG NUMBER: 4ASL4-25VHE-3-27-UNV

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	257.5	2.8
10°-20°	739.3	8.0
20°-30°	1117.7	12.1
30°-40°	1353.4	14.7
40°-50°	1421.5	15.4
50°-60°	1326.2	14.4
60°-70°	1096.0	11.9
70°-80°	789.1	8.5
80°-90°	490.4	5.3
90°-100°	287.3	3.1
100°-110°	164.4	1.8
110°-120°	92.8	1.0
120°-130°	53.4	0.6
130°-140°	28.8	0.3
140°-150°	12.1	0.1
150°-160°	2.2	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	2114.5	22.9
0°-40°	3467.8	37.6
0°-60°	6215.5	67.3
0°-90°	8591.0	93.1
90°-120°	544.5	5.9
90°-150°	638.8	6.9
90°-180°	641.0	6.9
0°-180°	9232.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2715	2715	2715	2715	2715	
5°	2687	2710	2710	2710	2715	255
15°	2574	2608	2619	2636	2648	726
25°	2348	2388	2427	2461	2484	1082
35°	2044	2100	2168	2230	2258	1279
45°	1694	1756	1852	1931	1964	1307
55°	1304	1377	1490	1598	1637	1165
65°	881	965	1112	1253	1304	871
75°	452	564	762	926	994	478
85°	85	254	480	649	711	104
90°	0	152	367	525	593	4
95°	0	96	277	423	486	0
105°	0	34	152	265	310	0
115°	0	17	90	164	192	0
125°	0	11	56	107	124	0
135°	0	0	34	68	85	0
145°	0	0	17	40	45	0
155°	0	0	0	11	17	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P1357201

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2715.3	2715.3	2715.3	2715.3	2715.3
2.5°	2704.0	2720.9	2720.9	2704.0	2704.0
5°	2687.0	2709.6	2709.6	2709.6	2715.3
7.5°	2670.1	2698.3	2698.3	2698.3	2709.6
10°	2647.5	2675.7	2681.4	2681.4	2687.0
12.5°	2613.6	2647.5	2653.2	2658.8	2664.4
15°	2574.1	2608.0	2619.3	2636.2	2647.5
17.5°	2529.0	2568.5	2591.1	2608.0	2619.3
20°	2472.5	2512.0	2540.3	2562.8	2579.8
22.5°	2416.1	2449.9	2483.8	2512.0	2529.0
25°	2348.3	2387.8	2427.4	2461.2	2483.8
27.5°	2274.9	2320.1	2370.9	2410.4	2433.0
30°	2207.2	2252.4	2308.8	2359.6	2382.2
32.5°	2128.2	2179.0	2241.1	2291.9	2320.1
35°	2043.5	2099.9	2167.7	2229.8	2258.0
37.5°	1958.8	2015.3	2099.9	2162.0	2190.3
40°	1874.1	1930.6	2020.9	2088.7	2116.9
42.5°	1783.8	1840.3	1936.2	2009.6	2043.5
45°	1693.5	1755.6	1851.6	1930.6	1964.5
47.5°	1603.2	1665.3	1766.9	1851.6	1885.4
50°	1501.6	1569.3	1670.9	1766.9	1800.8
52.5°	1405.6	1473.4	1586.3	1682.2	1716.1
55°	1304.0	1377.4	1490.3	1597.5	1637.1
57.5°	1202.4	1275.8	1394.3	1507.2	1552.4
60°	1095.1	1174.2	1298.4	1416.9	1467.7
62.5°	987.9	1072.6	1208.0	1332.2	1383.0
65°	880.6	965.3	1112.1	1253.2	1304.0
67.5°	773.4	863.7	1021.7	1168.5	1230.6
70°	666.1	762.1	931.4	1083.8	1145.9
72.5°	558.9	660.5	846.8	1004.8	1066.9
75°	451.6	564.5	762.1	925.8	993.5
77.5°	344.3	474.2	688.7	852.4	920.1
80°	248.4	395.2	609.7	779.0	846.8
82.5°	158.1	316.1	541.9	711.3	779.0
85°	84.7	254.0	479.8	649.2	711.3
87.5°	28.2	197.6	417.7	587.1	649.2
90°	0.0	152.4	366.9	525.0	592.7
92.5°	0.0	118.5	321.8	474.2	536.3
95°	0.0	96.0	276.6	423.4	485.5
97.5°	0.0	79.0	242.7	378.2	434.7
100°	0.0	62.1	208.9	338.7	389.5
102.5°	0.0	50.8	180.6	299.2	350.0
105°	0.0	33.9	152.4	265.3	310.5
107.5°	0.0	28.2	129.8	237.1	276.6
110°	0.0	22.6	118.5	203.2	242.7



TEST NUMBER: P1357201  
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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	16.9	107.3	180.6	220.2
115°	0.0	16.9	90.3	163.7	191.9
117.5°	0.0	16.9	79.0	146.8	175.0
120°	0.0	11.3	73.4	129.8	158.1
122.5°	0.0	11.3	62.1	118.5	141.1
125°	0.0	11.3	56.5	107.3	124.2
127.5°	0.0	5.6	50.8	96.0	112.9
130°	0.0	5.6	45.2	84.7	101.6
132.5°	0.0	5.6	39.5	79.0	96.0
135°	0.0	0.0	33.9	67.7	84.7
137.5°	0.0	0.0	28.2	62.1	73.4
140°	0.0	0.0	22.6	50.8	67.7
142.5°	0.0	0.0	16.9	45.2	56.5
145°	0.0	0.0	16.9	39.5	45.2
147.5°	0.0	0.0	11.3	28.2	39.5
150°	0.0	0.0	5.6	22.6	28.2
152.5°	0.0	0.0	0.0	16.9	22.6
155°	0.0	0.0	0.0	11.3	16.9
157.5°	0.0	0.0	0.0	0.0	5.6
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0



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**CIE UGR TABLE:**

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	20.08	21.62	20.55	22.07	22.56	22.10	23.64	22.57	24.10	24.58
	3H	21.57	22.98	22.06	23.44	23.97	24.57	25.97	25.05	26.44	26.96
	4H	22.06	23.39	22.56	23.87	24.41	25.76	27.10	26.27	27.58	28.12
	6H	22.33	23.57	22.85	24.07	24.62	27.02	28.26	27.53	28.75	29.31
	8H	22.38	23.57	22.91	24.09	24.65	27.66	28.85	28.19	29.37	29.93
	12H	22.40	23.54	22.93	24.05	24.64	28.37	29.51	28.91	30.03	30.62
4H	2H	20.95	22.29	21.46	22.77	23.31	22.54	23.87	23.04	24.35	24.89
	3H	22.69	23.82	23.20	24.35	24.91	25.23	26.36	25.74	26.89	27.45
	4H	23.29	24.33	23.83	24.87	25.46	26.60	27.63	27.13	28.17	28.76
	6H	23.69	24.61	24.25	25.17	25.78	28.04	28.96	28.59	29.52	30.13
	8H	23.79	24.65	24.35	25.21	25.83	28.79	29.66	29.35	30.22	30.84
	12H	23.83	24.61	24.41	25.21	25.83	29.63	30.41	30.21	31.00	31.63
8H	4H	23.98	24.84	24.54	25.40	26.02	26.81	27.67	27.37	28.24	28.86
	6H	24.55	25.29	25.15	25.89	26.51	28.43	29.16	29.02	29.76	30.39
	8H	24.74	25.40	25.34	26.01	26.65	29.32	29.98	29.92	30.59	31.23
	12H	24.85	25.44	25.46	26.04	26.75	30.34	30.93	30.95	31.53	32.24
12H	4H	24.17	24.95	24.75	25.54	26.17	26.82	27.60	27.40	28.19	28.82
	6H	24.85	25.51	25.45	26.12	26.76	28.46	29.12	29.07	29.74	30.38
	8H	25.13	25.72	25.73	26.32	27.02	29.43	30.02	30.03	30.62	31.32

LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

Fail-Safe

Report Number: SP1-2511-597-2

Test Date: 11/17/2025

Luminaire Tested: 4ASL-2-27-UNV-OPL-1\_600mA

Data in this report applies to families of products including 4ASL

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2511-597-2  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 11/18/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: Fail-Safe  
 Catalog Number: **4ASL-2-27-UNV-OPL-1\_600mA**  
 Description: 2foot 4ASL LED LUMINAIRE WITH OPL LENS AND 2700K LEDs with 1 rows at 600mA

**Spectral Parameters**

CCT (K): 2696  
 CIE u': 0.2632  
 CIE v': 0.5245  
 Duv: -0.0020  
 CIE x: 0.4568  
 CIE y: 0.4045  
 CIE z: 0.1387  
 Peak Wavelength (nm): 630  
 Dominant Wavelength (nm): 584  
 Purity: 58.52757  
 R<sub>f</sub>: 90.1  
 R<sub>g</sub>: 103.5

CRI (Ra):	94.4		
R1:	97.5	R9:	61.8
R2:	97.8	R10:	93.6
R3:	96.9	R11:	93.7
R4:	95.3	R12:	94.1
R5:	97.2	R13:	97.6
R6:	96.5	R14:	96.8
R7:	91.2	R15:	91.9
R8:	83.2		



**Test Conditions**

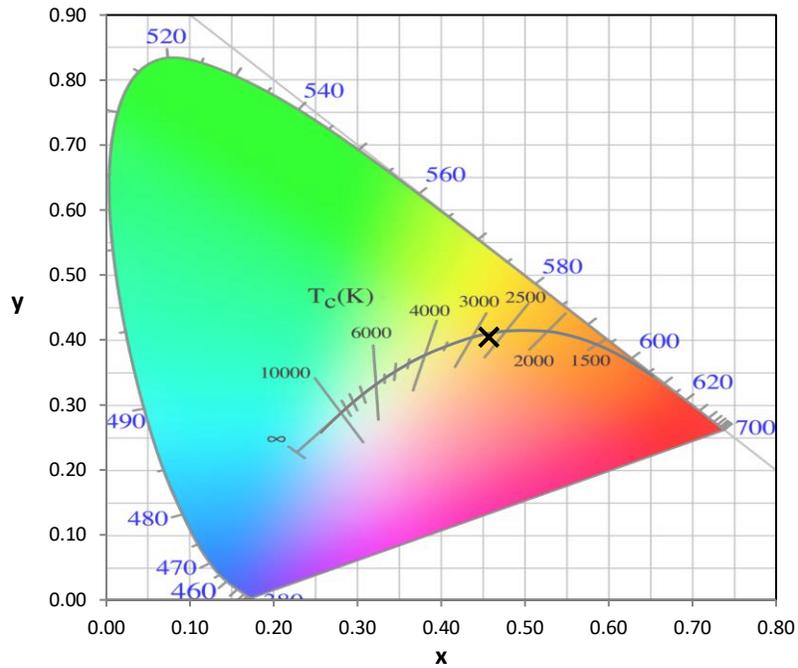
Stabilization Time: 32M  
 Operation Time: 1H 32M  
 Sphere Temperature (°C): 24.1

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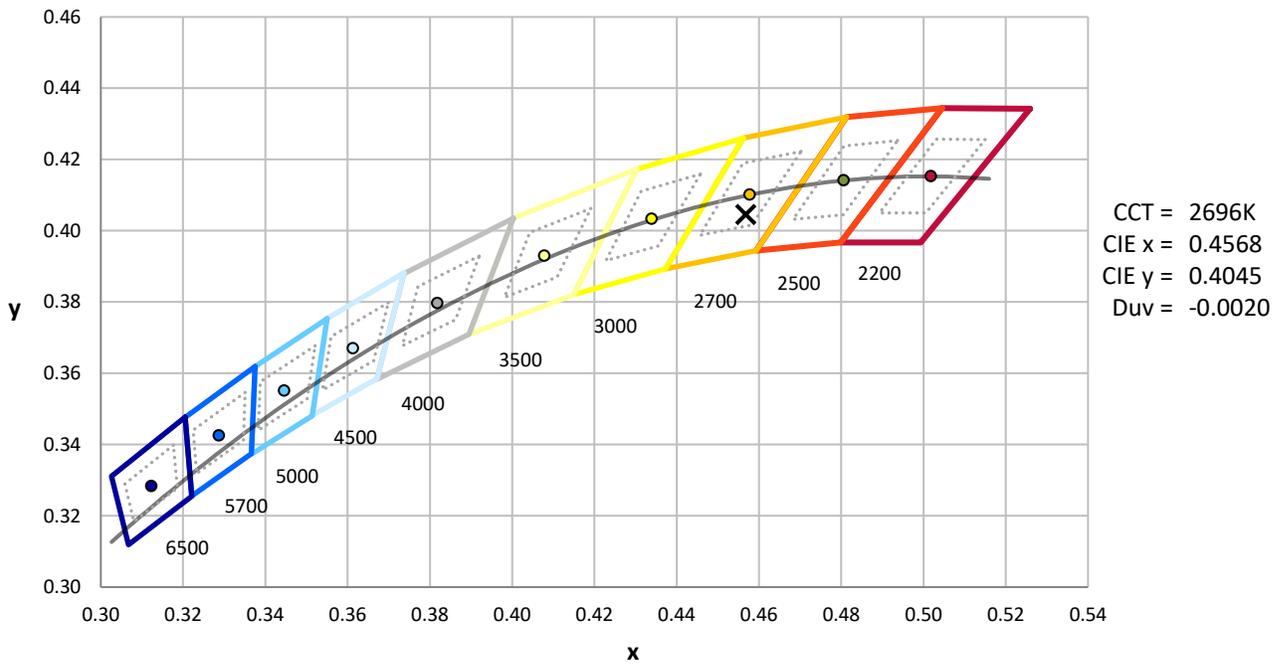
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	6/16/2025	12/16/2025
Power Meter	XITRON INXT2011004	10/21/2025	10/21/2026
AC Power Source	CHROMA 61603 IN0063	10/21/2025	10/21/2026
DC Power Source	AGILENT E3634A IN0208	10/21/2025	10/21/2026
Sphere Thermometer	ONSET IN0085	10/21/2025	10/21/2026
Room Thermometer	ONSET IN0046	10/21/2025	10/21/2026

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**CIE 1931 Chromaticity Diagram**



**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 2700K 4-step quadrangle

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**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	70	NR	620	281	NR	750	7	NR	880	0	NR
365	0	NR	495	88	NR	625	288	NR	755	6	NR	885	0	NR
370	0	NR	500	106	NR	630	1000	NR	760	5	NR	890	0	NR
375	0	NR	505	121	NR	635	581	NR	765	5	NR	895	0	NR
380	0	NR	510	133	NR	640	184	NR	770	4	NR	900	0	NR
385	0	NR	515	143	NR	645	191	NR	775	3	NR	905	0	NR
390	0	NR	520	149	NR	650	161	NR	780	3	NR	910	0	NR
395	1	NR	525	155	NR	655	136	NR	785	2	NR	915	0	NR
400	1	NR	530	158	NR	660	116	NR	790	2	NR	920	0	NR
405	2	NR	535	163	NR	665	99	NR	795	2	NR	925	0	NR
410	3	NR	540	168	NR	670	92	NR	800	2	NR	930	0	NR
415	6	NR	545	173	NR	675	75	NR	805	1	NR	935	0	NR
420	11	NR	550	179	NR	680	65	NR	810	1	NR	940	0	NR
425	19	NR	555	187	NR	685	56	NR	815	1	NR	945	0	NR
430	32	NR	560	195	NR	690	48	NR	820	1	NR	950	0	NR
435	54	NR	565	203	NR	695	41	NR	825	1	NR	955	0	NR
440	90	NR	570	211	NR	700	35	NR	830	1	NR	960	0	NR
445	134	NR	575	219	NR	705	30	NR	835	1	NR	965	0	NR
450	128	NR	580	228	NR	710	26	NR	840	1	NR	970	0	NR
455	83	NR	585	237	NR	715	22	NR	845	0	NR	975	0	NR
460	67	NR	590	246	NR	720	19	NR	850	0	NR	980	0	NR
465	55	NR	595	251	NR	725	16	NR	855	0	NR	985	0	NR
470	42	NR	600	259	NR	730	13	NR	860	0	NR	990	0	NR
475	41	NR	605	266	NR	735	11	NR	865	0	NR	995	0	NR
480	46	NR	610	299	NR	740	10	NR	870	0	NR	1000	0	NR
485	55	NR	615	317	NR	745	8	NR	875	0	NR			

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Scotopic Flux vs. Wavelength



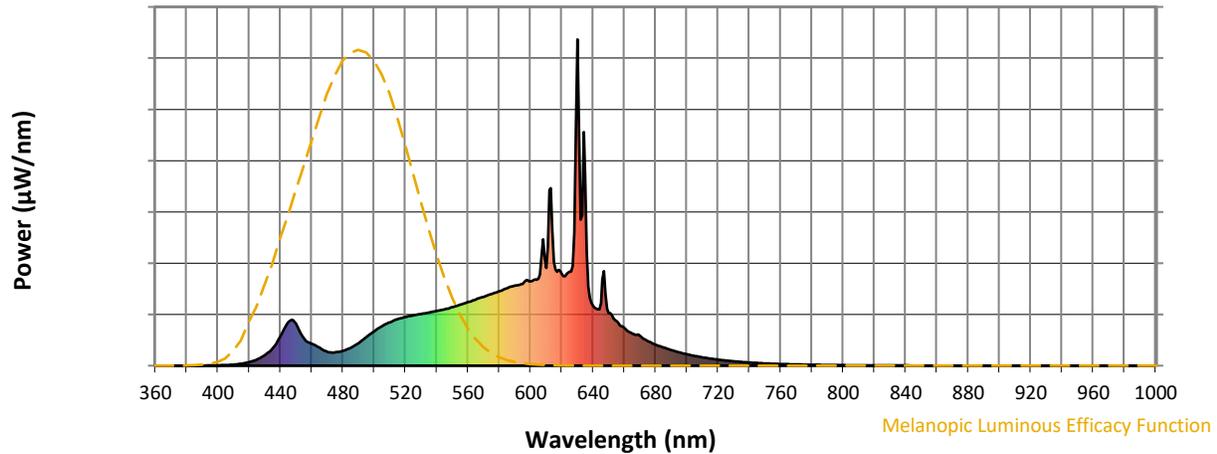
Scotopic Lumens: NR

S/P: 1.29

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	70	NR	620	281	NR	750	7	NR	880	0	NR
365	0	NR	495	88	NR	625	288	NR	755	6	NR	885	0	NR
370	0	NR	500	106	NR	630	1000	NR	760	5	NR	890	0	NR
375	0	NR	505	121	NR	635	581	NR	765	5	NR	895	0	NR
380	0	NR	510	133	NR	640	184	NR	770	4	NR	900	0	NR
385	0	NR	515	143	NR	645	191	NR	775	3	NR	905	0	NR
390	0	NR	520	149	NR	650	161	NR	780	3	NR	910	0	NR
395	1	NR	525	155	NR	655	136	NR	785	2	NR	915	0	NR
400	1	NR	530	158	NR	660	116	NR	790	2	NR	920	0	NR
405	2	NR	535	163	NR	665	99	NR	795	2	NR	925	0	NR
410	3	NR	540	168	NR	670	92	NR	800	2	NR	930	0	NR
415	6	NR	545	173	NR	675	75	NR	805	1	NR	935	0	NR
420	11	NR	550	179	NR	680	65	NR	810	1	NR	940	0	NR
425	19	NR	555	187	NR	685	56	NR	815	1	NR	945	0	NR
430	32	NR	560	195	NR	690	48	NR	820	1	NR	950	0	NR
435	54	NR	565	203	NR	695	41	NR	825	1	NR	955	0	NR
440	90	NR	570	211	NR	700	35	NR	830	1	NR	960	0	NR
445	134	NR	575	219	NR	705	30	NR	835	1	NR	965	0	NR
450	128	NR	580	228	NR	710	26	NR	840	1	NR	970	0	NR
455	83	NR	585	237	NR	715	22	NR	845	0	NR	975	0	NR
460	67	NR	590	246	NR	720	19	NR	850	0	NR	980	0	NR
465	55	NR	595	251	NR	725	16	NR	855	0	NR	985	0	NR
470	42	NR	600	259	NR	730	13	NR	860	0	NR	990	0	NR
475	41	NR	605	266	NR	735	11	NR	865	0	NR	995	0	NR
480	46	NR	610	299	NR	740	10	NR	870	0	NR	1000	0	NR
485	55	NR	615	317	NR	745	8	NR	875	0	NR			

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**Melanopic Flux vs. Wavelength**



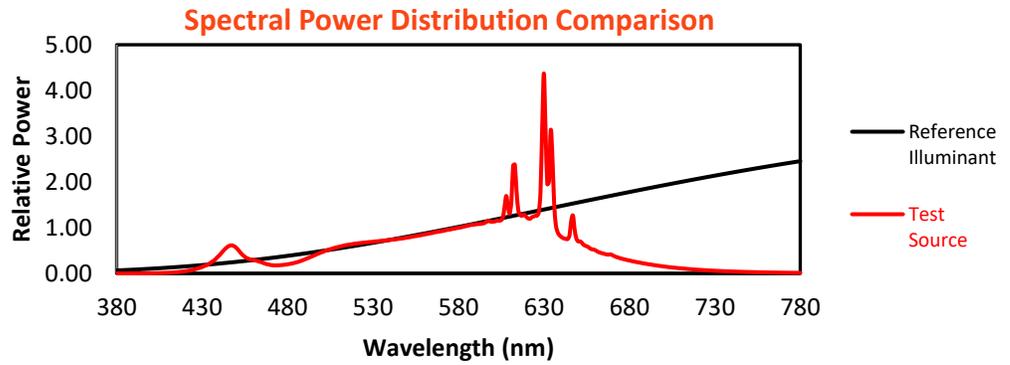
**Melanopic Lumens: NR**

**M/P: 2.45**

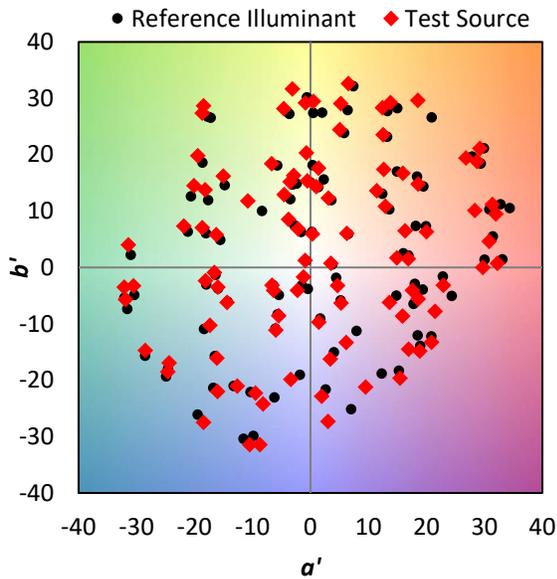
λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	70	NR	620	281	NR	750	7	NR	880	0	NR
365	0	NR	495	88	NR	625	288	NR	755	6	NR	885	0	NR
370	0	NR	500	106	NR	630	1000	NR	760	5	NR	890	0	NR
375	0	NR	505	121	NR	635	581	NR	765	5	NR	895	0	NR
380	0	NR	510	133	NR	640	184	NR	770	4	NR	900	0	NR
385	0	NR	515	143	NR	645	191	NR	775	3	NR	905	0	NR
390	0	NR	520	149	NR	650	161	NR	780	3	NR	910	0	NR
395	1	NR	525	155	NR	655	136	NR	785	2	NR	915	0	NR
400	1	NR	530	158	NR	660	116	NR	790	2	NR	920	0	NR
405	2	NR	535	163	NR	665	99	NR	795	2	NR	925	0	NR
410	3	NR	540	168	NR	670	92	NR	800	2	NR	930	0	NR
415	6	NR	545	173	NR	675	75	NR	805	1	NR	935	0	NR
420	11	NR	550	179	NR	680	65	NR	810	1	NR	940	0	NR
425	19	NR	555	187	NR	685	56	NR	815	1	NR	945	0	NR
430	32	NR	560	195	NR	690	48	NR	820	1	NR	950	0	NR
435	54	NR	565	203	NR	695	41	NR	825	1	NR	955	0	NR
440	90	NR	570	211	NR	700	35	NR	830	1	NR	960	0	NR
445	134	NR	575	219	NR	705	30	NR	835	1	NR	965	0	NR
450	128	NR	580	228	NR	710	26	NR	840	1	NR	970	0	NR
455	83	NR	585	237	NR	715	22	NR	845	0	NR	975	0	NR
460	67	NR	590	246	NR	720	19	NR	850	0	NR	980	0	NR
465	55	NR	595	251	NR	725	16	NR	855	0	NR	985	0	NR
470	42	NR	600	259	NR	730	13	NR	860	0	NR	990	0	NR
475	41	NR	605	266	NR	735	11	NR	865	0	NR	995	0	NR
480	46	NR	610	299	NR	740	10	NR	870	0	NR	1000	0	NR
485	55	NR	615	317	NR	745	8	NR	875	0	NR			

**Summary**

$R_f = 90.1$   
 $R_g = 103.5$   
 $CIE R_a = 94.4$   
 $R_9 = 61.8$



**Color Vector Graphics**

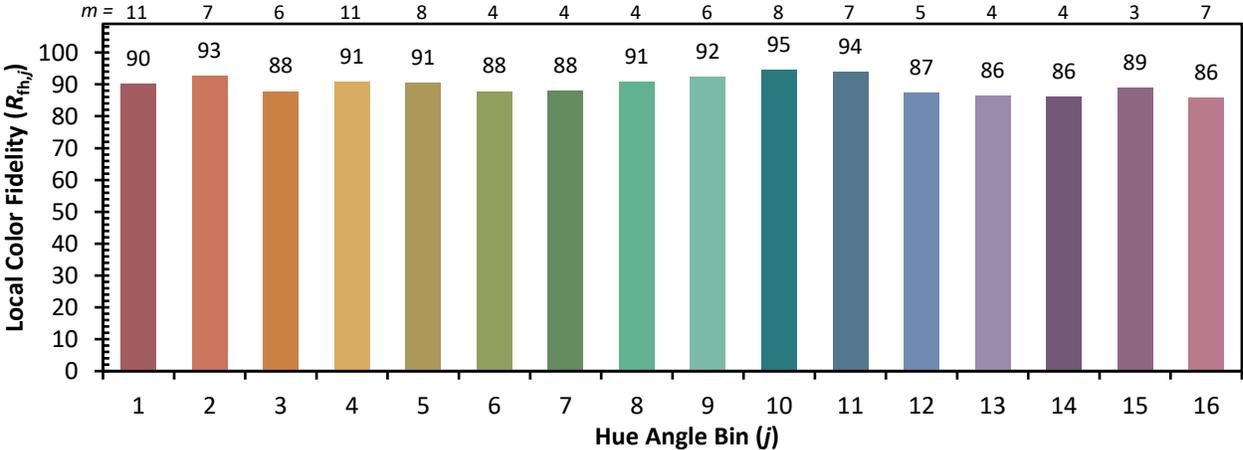


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

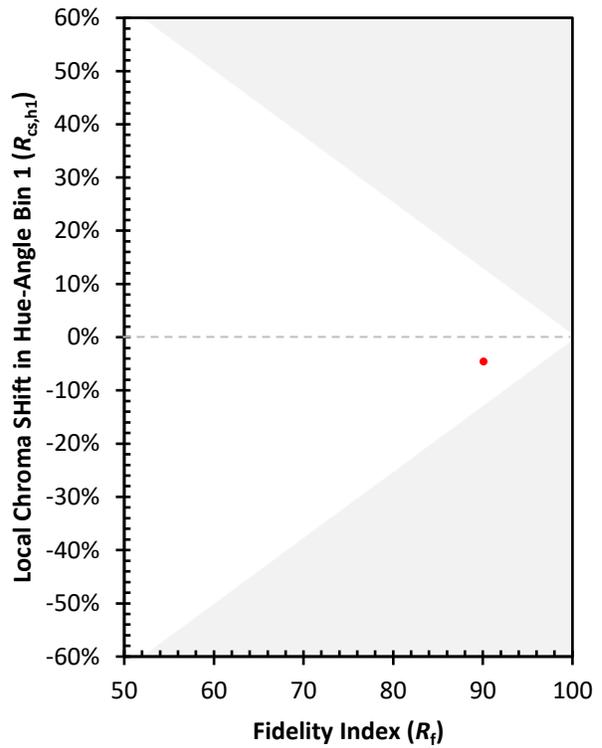
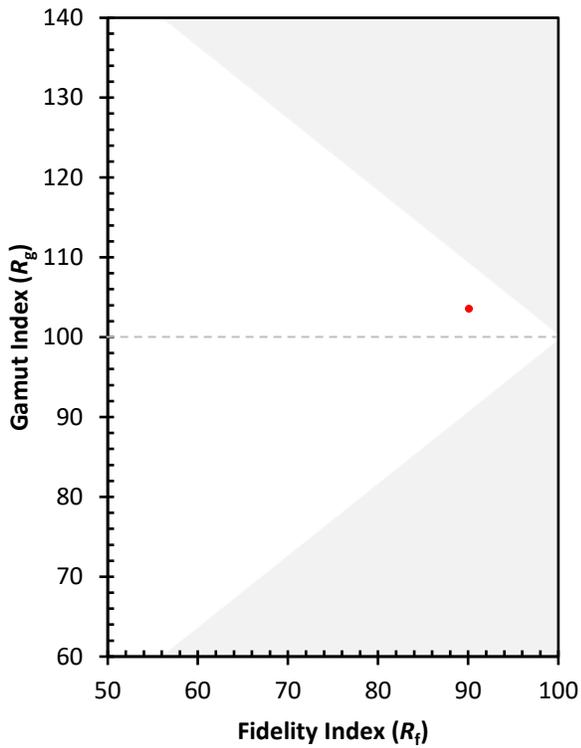
CES01 = 86	CES26 = 89	CES51 = 92	CES76 = 90
CES02 = 64	CES27 = 97	CES52 = 92	CES77 = 84
CES03 = 32	CES28 = 96	CES53 = 88	CES78 = 87
CES04 = 71	CES29 = 83	CES54 = 97	CES79 = 88
CES05 = 51	CES30 = 85	CES55 = 95	CES80 = 91
CES06 = 51	CES31 = 85	CES56 = 89	CES81 = 69
CES07 = 44	CES32 = 80	CES57 = 87	CES82 = 95
CES08 = 43	CES33 = 84	CES58 = 88	CES83 = 91
CES09 = 29	CES34 = 91	CES59 = 98	CES84 = 97
CES10 = 77	CES35 = 96	CES60 = 99	CES85 = 81
CES11 = 59	CES36 = 98	CES61 = 99	CES86 = 75
CES12 = 66	CES37 = 93	CES62 = 91	CES87 = 91
CES13 = 45	CES38 = 89	CES63 = 90	CES88 = 94
CES14 = 74	CES39 = 95	CES64 = 93	CES89 = 80
CES15 = 72	CES40 = 91	CES65 = 92	CES90 = 93
CES16 = 48	CES41 = 89	CES66 = 92	CES91 = 91
CES17 = 50	CES42 = 89	CES67 = 93	CES92 = 80
CES18 = 57	CES43 = 85	CES68 = 97	CES93 = 88
CES19 = 72	CES44 = 98	CES69 = 98	CES94 = 72
CES20 = 68	CES45 = 90	CES70 = 93	CES95 = 88
CES21 = 87	CES46 = 89	CES71 = 95	CES96 = 92
CES22 = 79	CES47 = 79	CES72 = 98	CES97 = 90
CES23 = 92	CES48 = 87	CES73 = 89	CES98 = 91
CES24 = 91	CES49 = 87	CES74 = 88	CES99 = 92
CES25 = 72	CES50 = 92	CES75 = 94	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)