

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: P1357072

Luminaire Tested: 3ASL4-5-1-40-UNV

Issue Date: 2/17/2026

Test Information

Test Method: LM-79-2019
Report Number: P1357072
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2511-597-6)
Test Lab: INNOVATION CENTER
Issue Date: 2/17/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: 3ASL4-5-1-40-UNV
Description: 3FT 500 LUMEN PER FOOT 4ASL LED LUMINAIRE WITH OPL LENS AND 4000K LEDS 1 ROW
Light Source: -
Ballast/Driver: -

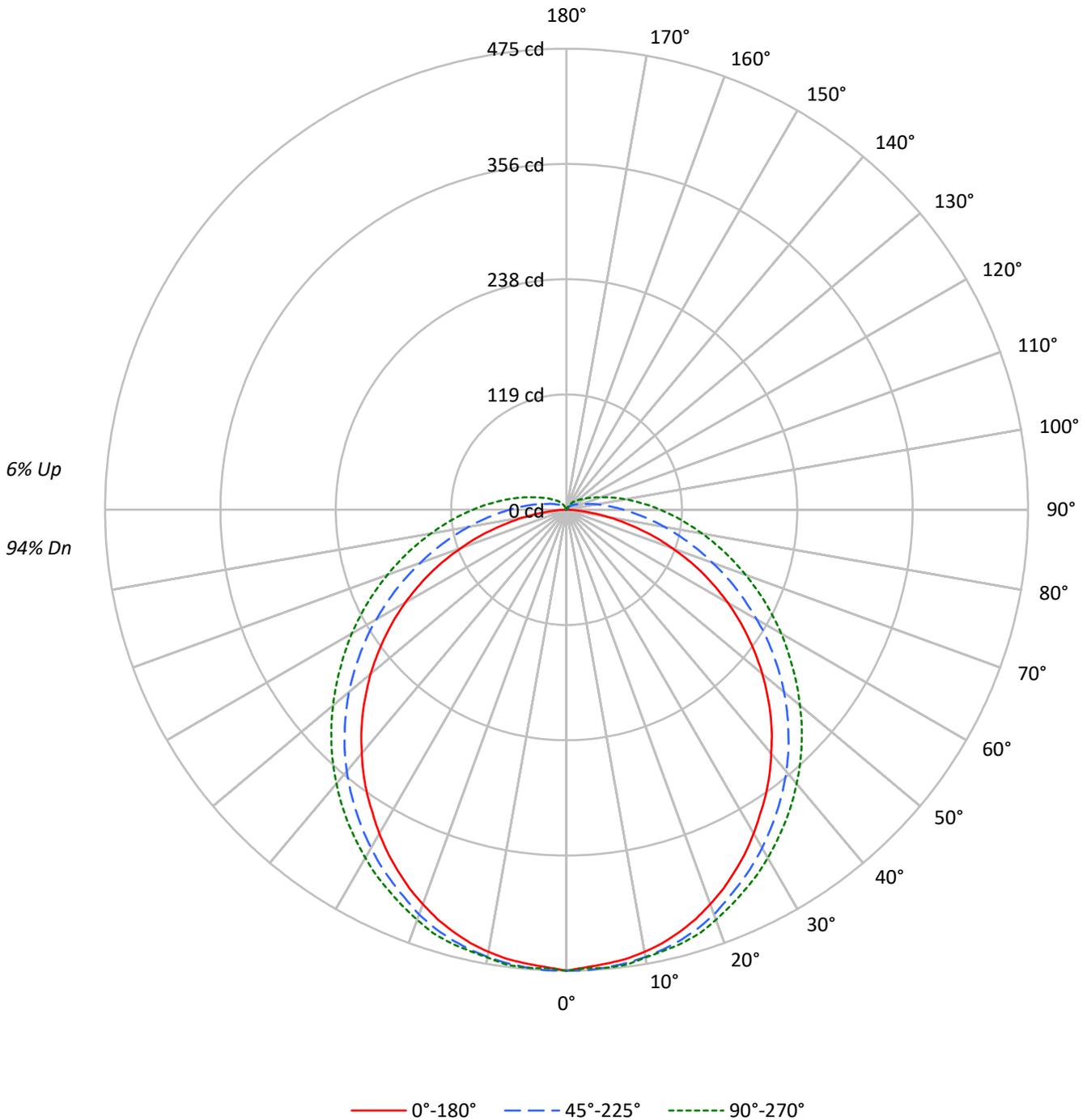
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1590.0 lumens
Efficiency: N/A
Efficacy: 123.3 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.3 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 2.98' x H: 0.1')
CIE Type: Direct

Input Watts (W): 12.9
Input Voltage (V): NR
Input Current (A_{in}): 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: P1357072
CATALOG NUMBER: 3ASL4-5-1-40-UNV

Luminous Intensity Polar Plot





TEST NUMBER: P1357072
 CATALOG NUMBER: 3ASL4-5-1-40-UNV

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	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	118	118	118	118	114	114	114	114	108	108	108	102	102	102	96	96	96	96	96	96	94
1	106	100	95	91	102	97	93	89	92	88	85	87	84	81	82	80	78	82	80	78	75
2	95	86	79	73	92	84	77	71	79	74	69	75	70	66	71	67	64	71	67	64	61
3	87	76	67	60	84	73	65	59	69	63	57	66	60	55	62	58	54	62	58	54	51
4	79	67	57	50	76	65	56	50	62	54	48	58	52	47	56	50	46	56	50	46	43
5	73	59	50	43	70	58	49	43	55	47	42	52	46	41	50	44	40	50	44	40	37
6	67	53	44	38	65	52	43	37	50	42	36	47	41	35	45	39	35	45	39	35	32
7	62	48	39	33	60	47	39	33	45	37	32	43	36	31	41	35	31	41	35	31	29
8	58	44	35	29	56	43	35	29	41	34	29	39	33	28	38	32	27	38	32	27	25
9	54	40	32	26	52	39	32	26	38	31	26	36	30	25	35	29	25	35	29	25	23
10	51	37	29	24	49	36	29	24	35	28	23	34	27	23	32	27	22	32	27	22	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5148	5148	5148
5°	5093	5041	5018
10°	5060	4936	4887
15°	5005	4825	4784
20°	4926	4699	4658
25°	4831	4549	4520
30°	4726	4411	4392
35°	4621	4270	4263
40°	4505	4128	4131
45°	4393	3973	3997
50°	4261	3813	3854
55°	4100	3630	3713
60°	3921	3440	3589
65°	3691	3240	3464
70°	3340	3029	3344
75°	2886	2840	3252
80°	2266	2676	3193
85°	1288	2560	3215

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4393 cd/sqm



TEST NUMBER: P1357072
 CATALOG NUMBER: 3ASL4-5-1-40-UNV

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	45.0	2.8
10°-20°	129.1	8.1
20°-30°	195.2	12.3
30°-40°	235.9	14.8
40°-50°	248.1	15.6
50°-60°	231.1	14.5
60°-70°	189.9	11.9
70°-80°	134.8	8.5
80°-90°	81.2	5.1
90°-100°	45.5	2.9
100°-110°	25.2	1.6
110°-120°	14.0	0.9
120°-130°	8.1	0.5
130°-140°	4.4	0.3
140°-150°	2.0	0.1
150°-160°	0.4	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	369.3	23.2
0°-40°	605.2	38.1
0°-60°	1084.4	68.2
0°-90°	1490.3	93.7
90°-120°	84.8	5.3
90°-150°	99.2	6.2
90°-180°	100.0	6.3
0°-180°	1590.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	475	475	475	475	475	
5°	470	474	473	473	474	45
15°	450	456	458	460	462	127
25°	410	418	424	430	433	189
35°	358	367	378	388	393	224
45°	297	307	323	336	342	229
55°	228	241	260	277	284	204
65°	155	169	193	215	226	153
75°	78	98	130	157	168	83
85°	14	42	78	107	118	18
90°	0	25	59	86	96	1
95°	0	14	43	68	77	0
105°	0	5	23	41	48	0
115°	0	3	14	25	30	0
125°	0	2	9	16	19	0
135°	0	0	5	10	13	0
145°	0	0	2	6	8	0
155°	0	0	0	2	2	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P1357072
 CATALOG NUMBER: 3ASL4-5-1-40-UNV

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	474.9	474.9	474.9	474.9	474.9
2.5°	471.7	476.0	474.9	472.8	472.8
5°	469.5	473.8	473.3	472.8	473.8
7.5°	466.9	471.2	471.2	471.7	472.8
10°	462.6	467.9	467.9	467.9	468.5
12.5°	457.2	462.6	463.6	464.2	465.2
15°	450.2	456.1	458.3	460.4	462.0
17.5°	442.1	448.1	451.8	454.5	457.2
20°	432.5	438.9	443.8	447.0	449.7
22.5°	422.3	428.7	433.6	438.4	441.6
25°	410.5	418.0	423.9	429.8	433.0
27.5°	398.6	406.2	413.7	420.7	424.4
30°	385.2	393.8	402.4	410.5	414.2
32.5°	371.2	380.4	390.6	399.2	403.5
35°	357.8	366.9	378.2	387.9	392.7
37.5°	343.3	352.4	365.3	376.1	380.9
40°	327.7	337.9	351.9	363.2	368.5
42.5°	312.7	322.9	337.9	350.3	355.7
45°	296.6	307.3	322.9	336.3	342.2
47.5°	279.9	291.2	307.8	321.8	328.3
50°	263.2	275.1	292.3	307.3	313.7
52.5°	245.5	257.9	276.1	292.3	299.2
55°	227.8	240.7	259.5	276.7	284.2
57.5°	210.1	223.0	243.4	261.6	269.7
60°	191.8	205.2	226.2	246.1	255.2
62.5°	173.0	187.0	209.0	230.5	240.1
65°	154.7	168.7	192.9	215.4	225.6
67.5°	135.4	150.4	176.2	199.9	210.6
70°	115.5	132.7	160.1	185.3	196.1
72.5°	97.8	115.5	145.1	170.8	182.1
75°	77.9	97.8	130.0	156.9	168.2
77.5°	60.7	82.2	116.0	143.4	154.7
80°	43.5	67.2	102.6	130.5	141.8
82.5°	27.9	53.7	90.3	118.7	129.5
85°	14.5	41.9	78.4	107.4	118.2
87.5°	4.3	32.2	67.7	96.2	106.9
90°	0.0	24.7	58.6	86.0	96.2
92.5°	0.0	18.8	50.5	76.8	87.0
95°	0.0	14.5	43.0	67.7	77.4
97.5°	0.0	11.3	37.1	59.6	69.3
100°	0.0	9.1	31.7	52.6	61.8
102.5°	0.0	7.5	27.4	46.7	54.8
105°	0.0	5.4	22.6	40.8	48.4
107.5°	0.0	3.8	19.9	36.0	42.4
110°	0.0	3.2	17.7	31.2	37.6



TEST NUMBER: P1357072
 CATALOG NUMBER: 3ASL4-5-1-40-UNV

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	2.7	15.6	27.9	33.3
115°	0.0	2.7	14.0	24.7	29.5
117.5°	0.0	2.1	11.8	22.0	26.3
120°	0.0	2.1	10.7	19.9	23.6
122.5°	0.0	1.6	9.7	17.7	21.5
125°	0.0	1.6	8.6	16.1	18.8
127.5°	0.0	1.1	7.5	14.5	17.2
130°	0.0	1.1	7.0	12.9	15.6
132.5°	0.0	0.5	6.4	11.8	14.0
135°	0.0	0.5	5.4	10.2	12.9
137.5°	0.0	0.0	4.8	9.1	11.3
140°	0.0	0.0	3.8	8.1	10.2
142.5°	0.5	0.0	3.2	7.0	8.6
145°	0.5	0.0	2.1	5.9	7.5
147.5°	0.5	0.5	1.6	4.8	5.9
150°	0.5	0.5	1.1	3.2	4.8
152.5°	0.5	0.5	0.5	2.1	3.2
155°	0.5	0.5	0.0	1.6	2.1
157.5°	0.5	0.5	0.0	0.5	1.1
160°	0.5	0.5	0.0	0.0	0.5
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



TEST NUMBER: P1357072
 CATALOG NUMBER: 3ASL4-5-1-40-UNV

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	15.09	16.64	15.55	17.08	17.55	17.04	18.59	17.50	19.04	19.50
	3H	16.58	18.00	17.05	18.45	18.96	19.44	20.85	19.91	21.31	21.82
	4H	17.06	18.40	17.55	18.87	19.39	20.60	21.94	21.09	22.41	22.93
	6H	17.33	18.58	17.84	19.07	19.60	21.79	23.03	22.29	23.52	24.06
	8H	17.39	18.58	17.90	19.09	19.63	22.39	23.59	22.91	24.10	24.64
	12H	17.40	18.55	17.92	19.05	19.62	23.05	24.20	23.58	24.70	25.28
4H	2H	15.95	17.29	16.44	17.76	18.28	17.48	18.82	17.97	19.29	19.81
	3H	17.68	18.82	18.18	19.33	19.88	20.10	21.24	20.60	21.75	22.30
	4H	18.28	19.32	18.80	19.84	20.42	21.42	22.47	21.95	22.99	23.57
	6H	18.67	19.59	19.22	20.15	20.74	22.80	23.72	23.35	24.28	24.87
	8H	18.77	19.63	19.32	20.18	20.79	23.51	24.38	24.07	24.93	25.54
	12H	18.81	19.59	19.38	20.17	20.78	24.30	25.09	24.87	25.67	26.28
8H	4H	18.92	19.79	19.47	20.34	20.94	21.64	22.50	22.19	23.06	23.66
	6H	19.49	20.22	20.07	20.82	21.43	23.18	23.92	23.77	24.51	25.12
	8H	19.67	20.33	20.26	20.93	21.56	24.03	24.70	24.63	25.30	25.92
	12H	19.77	20.37	20.37	20.96	21.65	25.00	25.59	25.60	26.18	26.88
12H	4H	19.10	19.88	19.67	20.46	21.07	21.65	22.43	22.22	23.01	23.62
	6H	19.76	20.42	20.35	21.03	21.65	23.22	23.88	23.81	24.49	25.11
	8H	20.03	20.62	20.63	21.21	21.90	24.14	24.73	24.73	25.32	26.01

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

Report Prepared for

Cooper Lighting Solutions

Fail-Safe

Report Number: SP1-2511-597-4

Test Date: 11/18/2025

Luminaire Tested: 4ASL-2-40-UNV-OPL-1_600mA

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

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2511-597-4
 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-2-40-UNV-OPL-1_600mA**
 Description: 2foot 4ASL LED LUMINAIRE WITH OPL LENS AND 4000K LEDs with 1 rows at 600mA

Spectral Parameters

CCT (K): 4015
 CIE u': 0.2259
 CIE v': 0.4990
 Duv: -0.0019
 CIE x: 0.3785
 CIE y: 0.3715
 CIE z: 0.2500
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 580
 Purity: 25.06827
 Rf: 90.7
 Rg: 100.2

CRI (Ra): 93.9
 R1: 95.7
 R2: 96.3
 R3: 94.8
 R4: 95.2
 R5: 94.6
 R6: 93.5
 R7: 94.0
 R8: 87.2
 R9: 66.3
 R10: 89.1
 R11: 95.0
 R12: 73.8
 R13: 96.0
 R14: 96.4
 R15: 93.2



Test Conditions

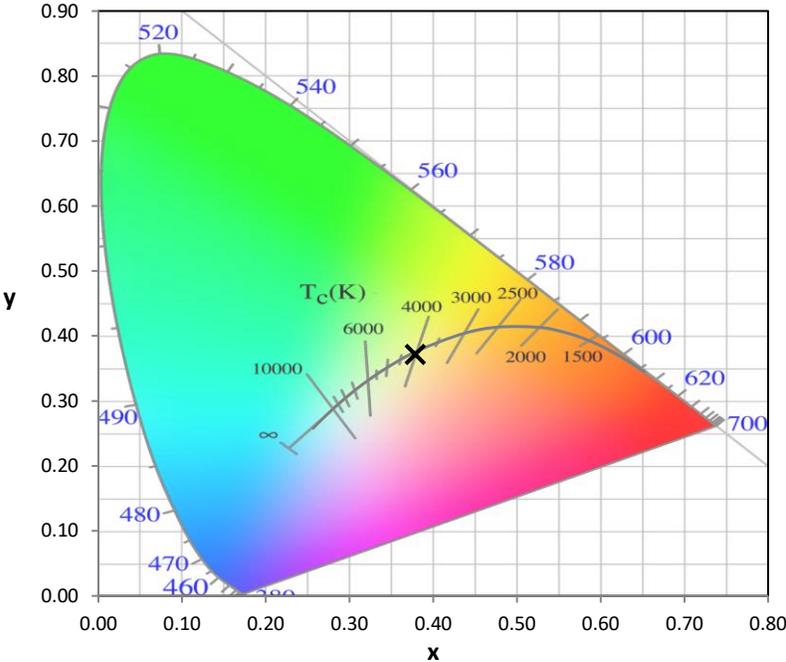
Stabilization Time: 23M
 Operation Time: 1H 23M
 Sphere Temperature (°C): 24.1

REPORT NUMBER: SP1-2511-597-4

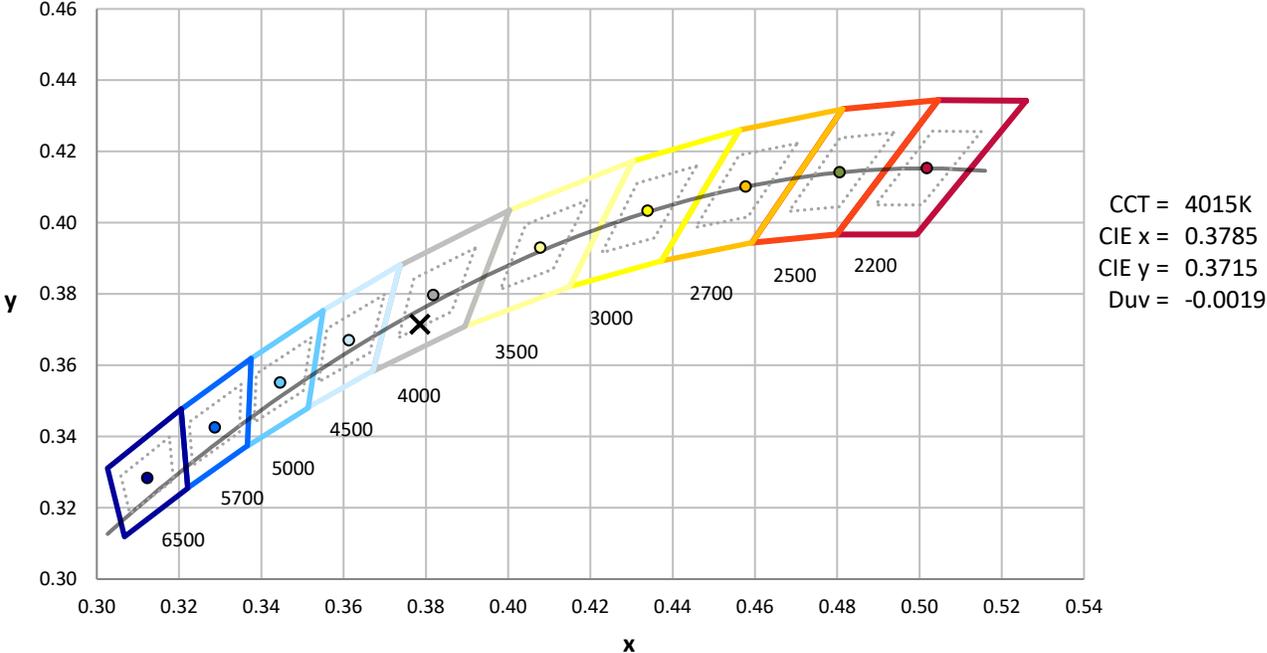
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	6/16/2025	12/16/2025
Power Meter	XITRON INXT2011004	10/21/2025	10/21/2026
AC Power Source	CHROMA 61603 IN0063	10/21/2025	10/21/2026
DC Power Source	AGILENT E3634A IN0208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

REPORT NUMBER: SP1-2511-597-4

CIE 1931 Chromaticity Diagram



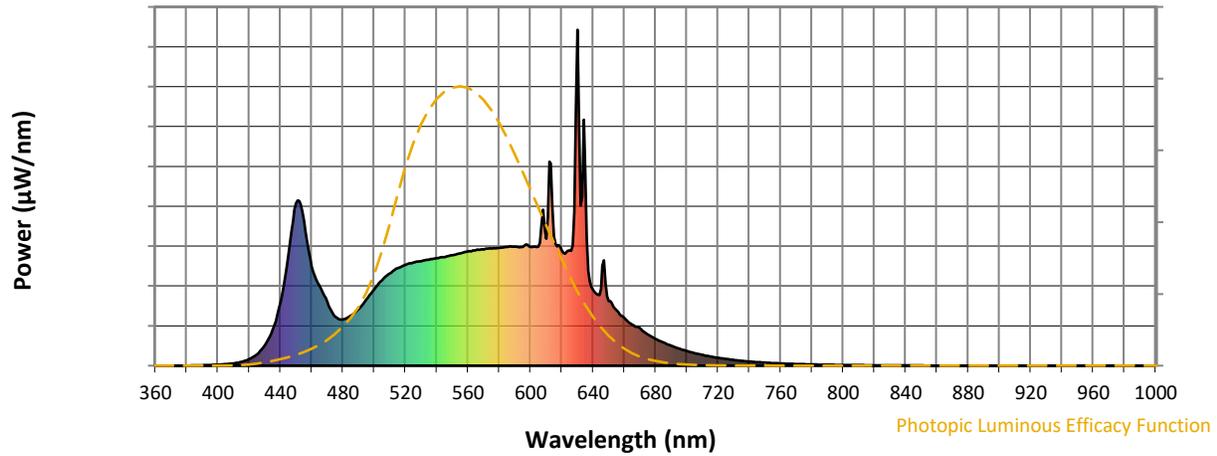
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2511-597-4

Photopic Flux vs. Wavelength



Photopic Lumens: NR

λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	169	NR	620	343	NR	750	9	NR	880	0	NR
365	0	NR	495	197	NR	625	343	NR	755	8	NR	885	0	NR
370	0	NR	500	228	NR	630	1000	NR	760	7	NR	890	0	NR
375	0	NR	505	254	NR	635	591	NR	765	6	NR	895	0	NR
380	0	NR	510	274	NR	640	225	NR	770	5	NR	900	0	NR
385	1	NR	515	290	NR	645	229	NR	775	4	NR	905	0	NR
390	1	NR	520	300	NR	650	193	NR	780	4	NR	910	0	NR
395	2	NR	525	307	NR	655	165	NR	785	3	NR	915	0	NR
400	3	NR	530	311	NR	660	142	NR	790	3	NR	920	0	NR
405	5	NR	535	316	NR	665	122	NR	795	2	NR	925	0	NR
410	7	NR	540	320	NR	670	112	NR	800	2	NR	930	0	NR
415	11	NR	545	323	NR	675	93	NR	805	2	NR	935	0	NR
420	20	NR	550	329	NR	680	80	NR	810	2	NR	940	0	NR
425	35	NR	555	334	NR	685	69	NR	815	1	NR	945	0	NR
430	61	NR	560	340	NR	690	59	NR	820	1	NR	950	0	NR
435	108	NR	565	344	NR	695	51	NR	825	1	NR	955	0	NR
440	187	NR	570	346	NR	700	43	NR	830	1	NR	960	0	NR
445	329	NR	575	349	NR	705	37	NR	835	1	NR	965	0	NR
450	484	NR	580	351	NR	710	32	NR	840	1	NR	970	0	NR
455	433	NR	585	353	NR	715	27	NR	845	1	NR	975	0	NR
460	296	NR	590	354	NR	720	23	NR	850	1	NR	980	0	NR
465	237	NR	595	353	NR	725	20	NR	855	0	NR	985	0	NR
470	188	NR	600	354	NR	730	17	NR	860	0	NR	990	0	NR
475	146	NR	605	354	NR	735	15	NR	865	0	NR	995	0	NR
480	138	NR	610	378	NR	740	12	NR	870	0	NR	1000	0	NR
485	149	NR	615	385	NR	745	11	NR	875	0	NR			

REPORT NUMBER: SP1-2511-597-4

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.79

λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)	λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)	λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)	λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)	λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)
360	0	NR	490	169	NR	620	343	NR	750	9	NR	880	0	NR
365	0	NR	495	197	NR	625	343	NR	755	8	NR	885	0	NR
370	0	NR	500	228	NR	630	1000	NR	760	7	NR	890	0	NR
375	0	NR	505	254	NR	635	591	NR	765	6	NR	895	0	NR
380	0	NR	510	274	NR	640	225	NR	770	5	NR	900	0	NR
385	1	NR	515	290	NR	645	229	NR	775	4	NR	905	0	NR
390	1	NR	520	300	NR	650	193	NR	780	4	NR	910	0	NR
395	2	NR	525	307	NR	655	165	NR	785	3	NR	915	0	NR
400	3	NR	530	311	NR	660	142	NR	790	3	NR	920	0	NR
405	5	NR	535	316	NR	665	122	NR	795	2	NR	925	0	NR
410	7	NR	540	320	NR	670	112	NR	800	2	NR	930	0	NR
415	11	NR	545	323	NR	675	93	NR	805	2	NR	935	0	NR
420	20	NR	550	329	NR	680	80	NR	810	2	NR	940	0	NR
425	35	NR	555	334	NR	685	69	NR	815	1	NR	945	0	NR
430	61	NR	560	340	NR	690	59	NR	820	1	NR	950	0	NR
435	108	NR	565	344	NR	695	51	NR	825	1	NR	955	0	NR
440	187	NR	570	346	NR	700	43	NR	830	1	NR	960	0	NR
445	329	NR	575	349	NR	705	37	NR	835	1	NR	965	0	NR
450	484	NR	580	351	NR	710	32	NR	840	1	NR	970	0	NR
455	433	NR	585	353	NR	715	27	NR	845	1	NR	975	0	NR
460	296	NR	590	354	NR	720	23	NR	850	1	NR	980	0	NR
465	237	NR	595	353	NR	725	20	NR	855	0	NR	985	0	NR
470	188	NR	600	354	NR	730	17	NR	860	0	NR	990	0	NR
475	146	NR	605	354	NR	735	15	NR	865	0	NR	995	0	NR
480	138	NR	610	378	NR	740	12	NR	870	0	NR	1000	0	NR
485	149	NR	615	385	NR	745	11	NR	875	0	NR			

REPORT NUMBER: SP1-2511-597-4

Melanopic Flux vs. Wavelength



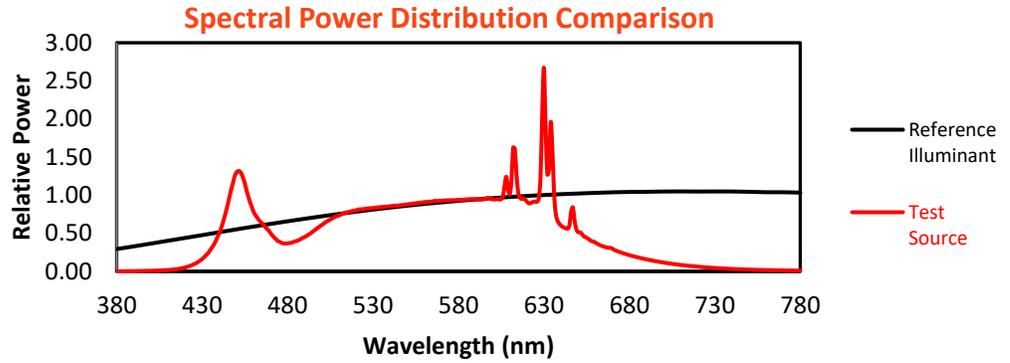
Melanopic Lumens: NR

M/P: 3.74

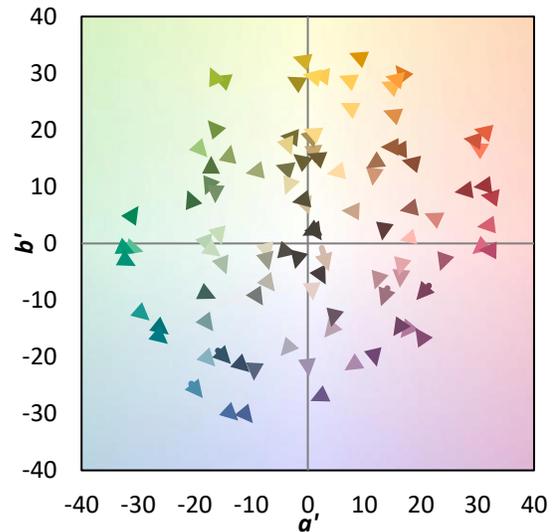
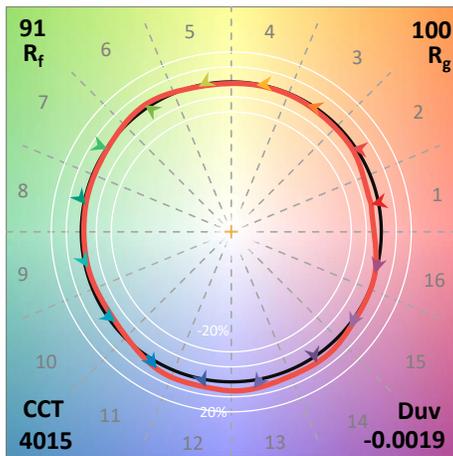
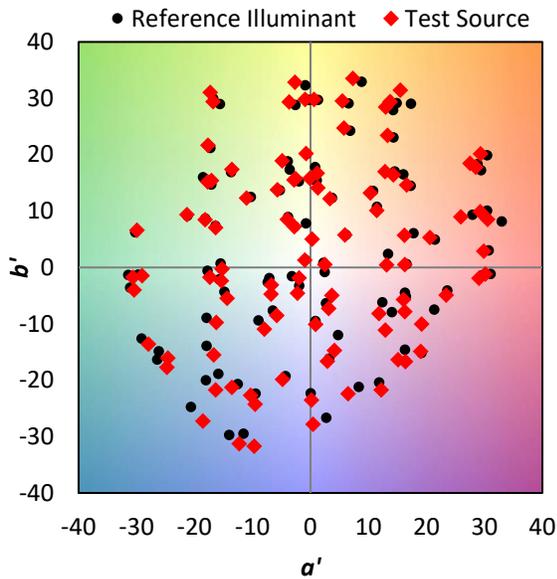
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	169	NR	620	343	NR	750	9	NR	880	0	NR
365	0	NR	495	197	NR	625	343	NR	755	8	NR	885	0	NR
370	0	NR	500	228	NR	630	1000	NR	760	7	NR	890	0	NR
375	0	NR	505	254	NR	635	591	NR	765	6	NR	895	0	NR
380	0	NR	510	274	NR	640	225	NR	770	5	NR	900	0	NR
385	1	NR	515	290	NR	645	229	NR	775	4	NR	905	0	NR
390	1	NR	520	300	NR	650	193	NR	780	4	NR	910	0	NR
395	2	NR	525	307	NR	655	165	NR	785	3	NR	915	0	NR
400	3	NR	530	311	NR	660	142	NR	790	3	NR	920	0	NR
405	5	NR	535	316	NR	665	122	NR	795	2	NR	925	0	NR
410	7	NR	540	320	NR	670	112	NR	800	2	NR	930	0	NR
415	11	NR	545	323	NR	675	93	NR	805	2	NR	935	0	NR
420	20	NR	550	329	NR	680	80	NR	810	2	NR	940	0	NR
425	35	NR	555	334	NR	685	69	NR	815	1	NR	945	0	NR
430	61	NR	560	340	NR	690	59	NR	820	1	NR	950	0	NR
435	108	NR	565	344	NR	695	51	NR	825	1	NR	955	0	NR
440	187	NR	570	346	NR	700	43	NR	830	1	NR	960	0	NR
445	329	NR	575	349	NR	705	37	NR	835	1	NR	965	0	NR
450	484	NR	580	351	NR	710	32	NR	840	1	NR	970	0	NR
455	433	NR	585	353	NR	715	27	NR	845	1	NR	975	0	NR
460	296	NR	590	354	NR	720	23	NR	850	1	NR	980	0	NR
465	237	NR	595	353	NR	725	20	NR	855	0	NR	985	0	NR
470	188	NR	600	354	NR	730	17	NR	860	0	NR	990	0	NR
475	146	NR	605	354	NR	735	15	NR	865	0	NR	995	0	NR
480	138	NR	610	378	NR	740	12	NR	870	0	NR	1000	0	NR
485	149	NR	615	385	NR	745	11	NR	875	0	NR			

Summary

$R_f = 90.7$
 $R_g = 100.2$
 $CIE R_a = 93.9$
 $R_9 = 66.3$

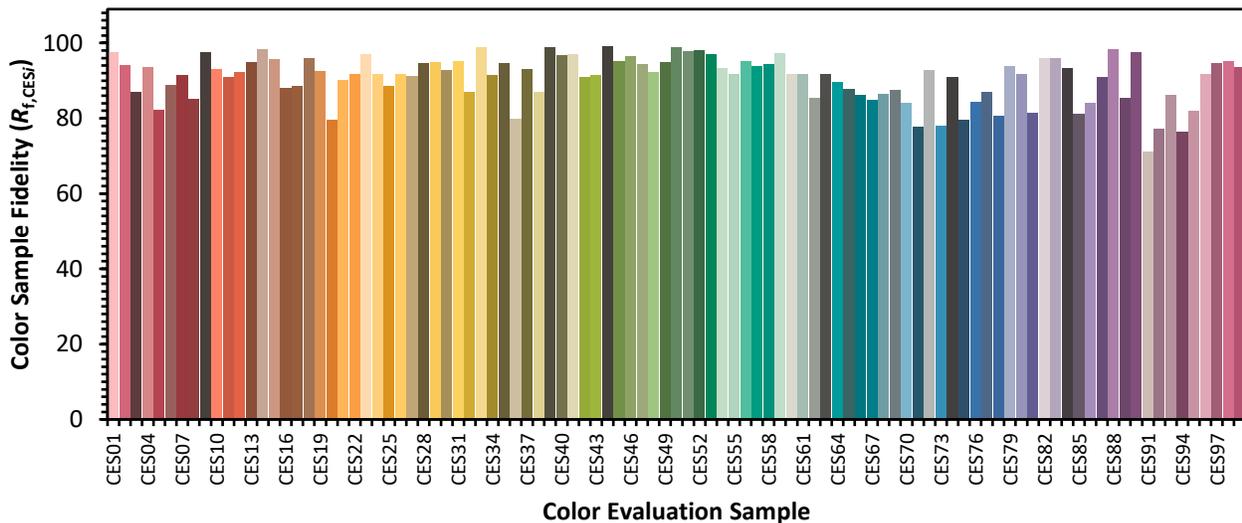


Color Vector Graphics

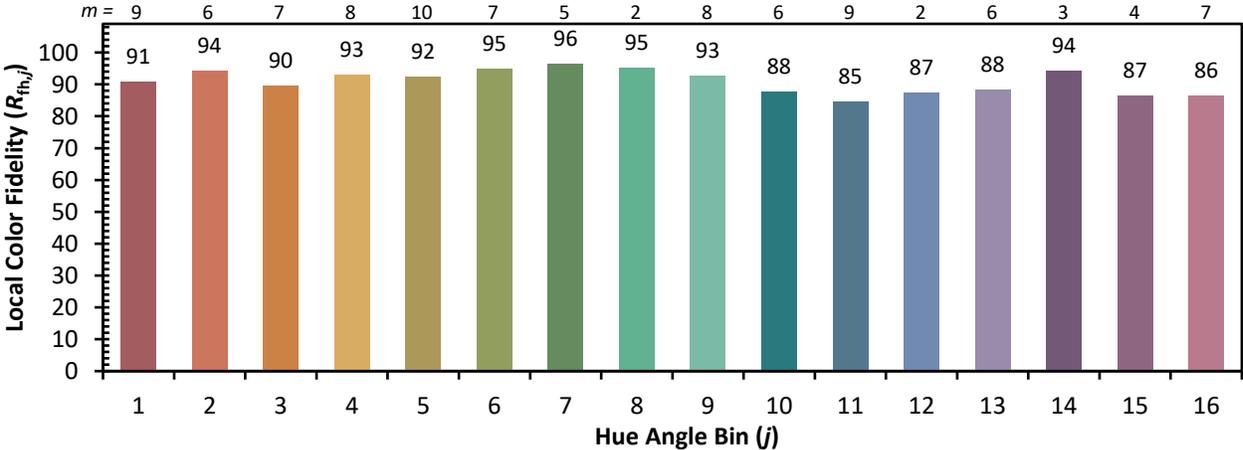


Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 86	CES26 = 92	CES51 = 98	CES76 = 84
CES02 = 62	CES27 = 91	CES52 = 98	CES77 = 87
CES03 = 31	CES28 = 95	CES53 = 97	CES78 = 81
CES04 = 69	CES29 = 95	CES54 = 93	CES79 = 94
CES05 = 49	CES30 = 93	CES55 = 92	CES80 = 92
CES06 = 50	CES31 = 95	CES56 = 95	CES81 = 81
CES07 = 42	CES32 = 87	CES57 = 94	CES82 = 96
CES08 = 41	CES33 = 99	CES58 = 94	CES83 = 96
CES09 = 29	CES34 = 91	CES59 = 97	CES84 = 93
CES10 = 74	CES35 = 95	CES60 = 92	CES85 = 81
CES11 = 57	CES36 = 80	CES61 = 92	CES86 = 84
CES12 = 63	CES37 = 93	CES62 = 85	CES87 = 91
CES13 = 43	CES38 = 87	CES63 = 92	CES88 = 98
CES14 = 74	CES39 = 99	CES64 = 90	CES89 = 85
CES15 = 71	CES40 = 97	CES65 = 88	CES90 = 98
CES16 = 47	CES41 = 97	CES66 = 86	CES91 = 71
CES17 = 49	CES42 = 91	CES67 = 85	CES92 = 77
CES18 = 56	CES43 = 91	CES68 = 87	CES93 = 86
CES19 = 71	CES44 = 99	CES69 = 87	CES94 = 76
CES20 = 66	CES45 = 95	CES70 = 84	CES95 = 82
CES21 = 85	CES46 = 96	CES71 = 78	CES96 = 92
CES22 = 78	CES47 = 94	CES72 = 93	CES97 = 95
CES23 = 91	CES48 = 92	CES73 = 78	CES98 = 95
CES24 = 90	CES49 = 95	CES74 = 91	CES99 = 94
CES25 = 71	CES50 = 99	CES75 = 80	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)