

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: P1357114

Luminaire Tested: 4ASL4-10HE-2-40-UNV

Issue Date: 2/17/2026

Test Information

Test Method: LM-79-2019
Report Number: P1357114
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2511-597-7)
Test Lab: INNOVATION CENTER
Issue Date: 2/17/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: 4ASL4-10HE-2-40-UNV
Description: 4FT 1000 LUMEN PER FOOT 4ASL LED LUMINAIRE WITH OPL LENS AND 4000K LEDS 2 ROW
Light Source: -
Ballast/Driver: -

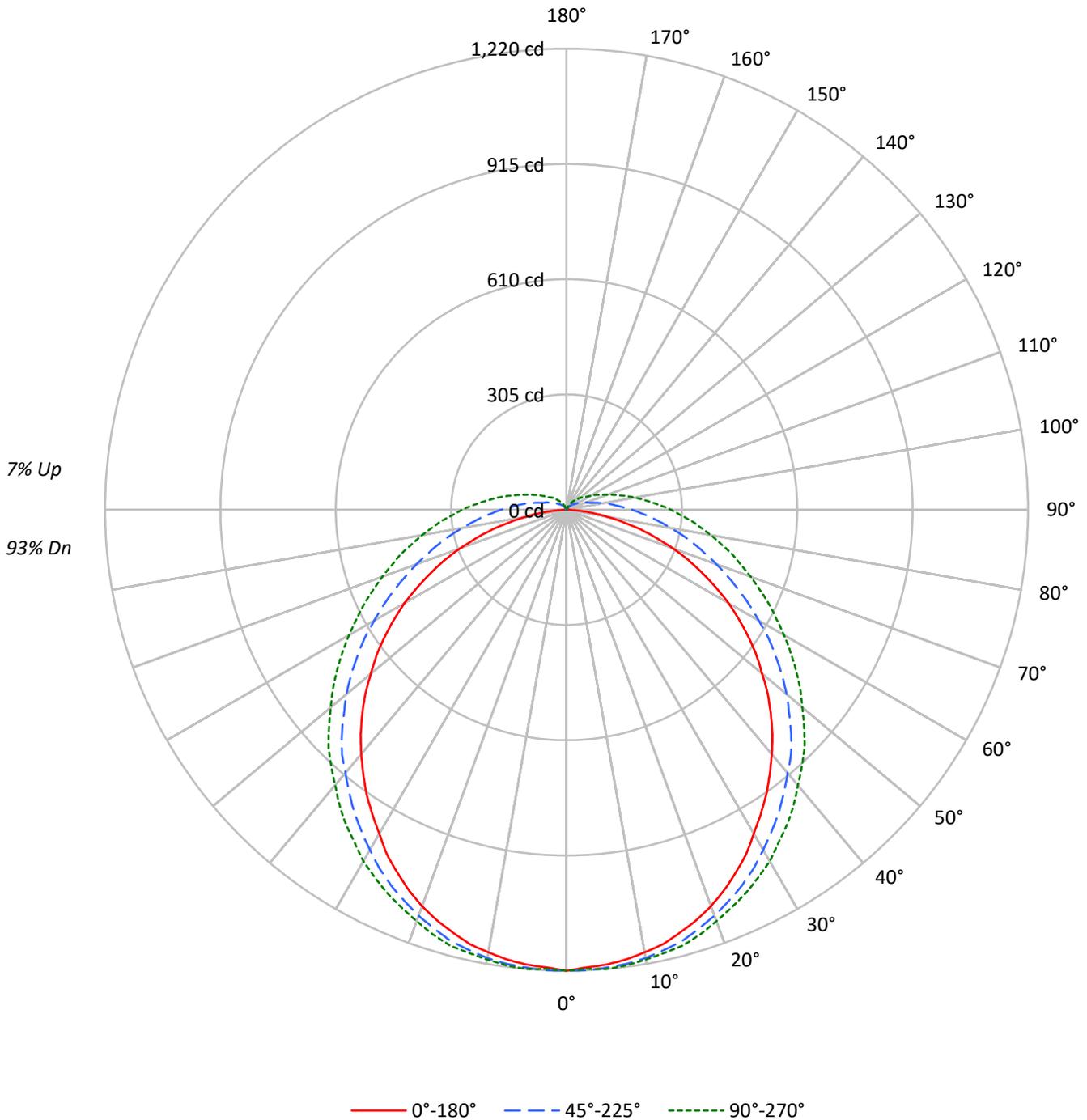
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4188.0 lumens
Efficiency: N/A
Efficacy: 126.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.3 / 1.4
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 3.98' x H: 0.1')
CIE Type: Direct

Input Watts (W): 33.2
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: P1357114
CATALOG NUMBER: 4ASL4-10HE-2-40-UNV

Luminous Intensity Polar Plot





TEST NUMBER: P1357114

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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	117	117	117	117	114	114	114	114	107	107	107	101	101	101	95	95	95	95	95	95	93
1	105	100	95	90	102	97	92	88	91	87	84	86	83	80	81	79	77	77	77	77	74
2	95	86	79	72	92	84	77	71	79	73	68	74	70	65	70	66	63	63	63	63	60
3	86	75	66	59	83	73	65	58	69	62	56	65	59	55	62	57	53	53	53	53	50
4	79	66	57	50	76	64	56	49	61	54	48	58	51	46	55	49	45	45	45	45	42
5	72	59	50	43	70	57	49	42	54	47	41	52	45	40	49	43	39	39	39	39	36
6	67	53	44	37	64	52	43	37	49	41	36	47	40	35	44	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	34	29	41	33	28	39	32	28	37	31	27	27	27	27	25
9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	29	24	24	24	24	22
10	50	37	29	24	49	36	28	23	35	28	23	33	27	22	32	26	22	22	22	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9900	9900	9900
5°	9821	9703	9673
10°	9755	9524	9438
15°	9665	9329	9249
20°	9549	9081	8983
25°	9366	8838	8755
30°	9136	8558	8527
35°	8957	8299	8263
40°	8749	8020	7985
45°	8538	7779	7782
50°	8267	7461	7482
55°	8005	7118	7243
60°	7684	6733	6989
65°	7184	6375	6793
70°	6623	6039	6612
75°	5807	5780	6552
80°	4529	5549	6532
85°	2752	5543	6719

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 8538 cd/sqm



TEST NUMBER: P1357114
 CATALOG NUMBER: 4ASL4-10HE-2-40-UNV

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	115.7	2.8
10°-20°	332.6	7.9
20°-30°	503.9	12.0
30°-40°	609.5	14.6
40°-50°	642.5	15.3
50°-60°	599.7	14.3
60°-70°	495.1	11.8
70°-80°	359.2	8.6
80°-90°	226.9	5.4
90°-100°	135.4	3.2
100°-110°	77.6	1.9
110°-120°	44.1	1.1
120°-130°	25.1	0.6
130°-140°	13.6	0.3
140°-150°	6.0	0.1
150°-160°	1.1	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	952.2	22.7
0°-40°	1561.6	37.3
0°-60°	2803.8	66.9
0°-90°	3885.0	92.8
90°-120°	257.2	6.1
90°-150°	301.9	7.2
90°-180°	303.0	7.2
0°-180°	4188.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1220	1220	1220	1220	1220	
5°	1208	1220	1216	1216	1220	115
15°	1158	1174	1182	1185	1193	327
25°	1059	1074	1097	1112	1120	488
35°	921	944	978	1005	1017	575
45°	763	794	840	875	890	589
55°	587	622	675	721	740	525
65°	395	437	502	564	591	392
75°	203	257	349	422	453	214
85°	38	119	222	299	330	47
90°	0	73	173	246	276	2
95°	0	46	130	200	226	0
105°	0	15	73	127	146	0
115°	0	8	42	77	92	0
125°	0	4	27	50	58	0
135°	0	0	15	31	38	0
145°	0	0	8	19	23	0
155°	0	0	0	4	8	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P1357114

CATALOG NUMBER: 4ASL4-10HE-2-40-UNV

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1219.9	1219.9	1219.9	1219.9	1219.9
2.5°	1212.2	1223.8	1219.9	1216.1	1216.1
5°	1208.4	1219.9	1216.1	1216.1	1219.9
7.5°	1200.7	1212.2	1212.2	1212.2	1216.1
10°	1189.2	1204.6	1204.6	1204.6	1208.4
12.5°	1177.7	1189.2	1193.1	1196.9	1200.7
15°	1158.5	1173.9	1181.6	1185.4	1193.1
17.5°	1139.4	1150.9	1162.4	1173.9	1177.7
20°	1116.3	1131.7	1143.2	1154.7	1158.5
22.5°	1089.5	1104.8	1120.2	1131.7	1139.4
25°	1058.8	1074.1	1097.2	1112.5	1120.2
27.5°	1028.1	1043.5	1070.3	1089.5	1097.2
30°	989.7	1012.8	1039.6	1062.6	1074.1
32.5°	955.2	978.2	1008.9	1035.8	1043.5
35°	920.7	943.7	978.2	1005.1	1016.6
37.5°	882.3	909.2	943.7	974.4	985.9
40°	844.0	870.8	909.2	943.7	951.4
42.5°	805.6	832.5	878.5	909.2	920.7
45°	763.4	794.1	840.1	874.7	890.0
47.5°	721.2	751.9	797.9	836.3	851.6
50°	675.2	709.7	759.6	797.9	813.3
52.5°	633.0	667.5	717.4	759.6	778.8
55°	586.9	621.5	675.2	721.2	740.4
57.5°	540.9	575.4	633.0	682.8	702.0
60°	494.9	529.4	586.9	644.5	663.7
62.5°	445.0	483.4	544.7	602.3	625.3
65°	395.1	437.3	502.5	563.9	590.8
67.5°	349.1	391.3	460.3	529.4	552.4
70°	299.2	345.3	422.0	491.0	517.9
72.5°	249.4	299.2	383.6	456.5	483.4
75°	203.3	257.0	349.1	422.0	452.7
77.5°	153.4	218.7	314.6	391.3	418.1
80°	111.3	180.3	280.0	360.6	387.5
82.5°	72.9	145.8	249.4	329.9	356.8
85°	38.4	118.9	222.5	299.2	329.9
87.5°	11.5	92.1	195.6	272.4	299.2
90°	0.0	72.9	172.6	245.5	276.2
92.5°	0.0	57.5	149.6	222.5	249.4
95°	0.0	46.0	130.4	199.5	226.3
97.5°	0.0	38.4	115.1	180.3	203.3
100°	0.0	30.7	99.7	161.1	184.1
102.5°	0.0	23.0	84.4	141.9	165.0
105°	0.0	15.3	72.9	126.6	145.8
107.5°	0.0	11.5	61.4	111.3	130.4
110°	0.0	11.5	57.5	95.9	115.1



TEST NUMBER: P1357114
 CATALOG NUMBER: 4ASL4-10HE-2-40-UNV

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	7.7	49.9	88.2	103.6
115°	0.0	7.7	42.2	76.7	92.1
117.5°	0.0	7.7	38.4	69.1	84.4
120°	0.0	7.7	34.5	61.4	72.9
122.5°	0.0	3.8	30.7	53.7	65.2
125°	0.0	3.8	26.9	49.9	57.5
127.5°	0.0	3.8	23.0	46.0	53.7
130°	0.0	3.8	23.0	42.2	49.9
132.5°	0.0	0.0	19.2	38.4	46.0
135°	0.0	0.0	15.3	30.7	38.4
137.5°	0.0	0.0	15.3	26.9	34.5
140°	0.0	0.0	11.5	26.9	30.7
142.5°	0.0	0.0	7.7	23.0	26.9
145°	0.0	0.0	7.7	19.2	23.0
147.5°	0.0	0.0	3.8	15.3	19.2
150°	0.0	0.0	3.8	11.5	15.3
152.5°	0.0	0.0	0.0	7.7	11.5
155°	0.0	0.0	0.0	3.8	7.7
157.5°	0.0	0.0	0.0	0.0	3.8
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	17.28	18.81	17.75	19.27	19.76	19.34	20.87	19.81	21.33	21.82
	3H	18.78	20.18	19.26	20.65	21.18	21.79	23.19	22.27	23.66	24.19
	4H	19.26	20.59	19.77	21.07	21.62	23.00	24.33	23.50	24.81	25.36
	6H	19.53	20.77	20.05	21.27	21.83	24.27	25.51	24.79	26.01	26.57
	8H	19.59	20.77	20.12	21.30	21.86	24.93	26.11	25.46	26.64	27.20
	12H	19.60	20.74	20.14	21.26	21.86	25.66	26.79	26.19	27.31	27.91
4H	2H	18.16	19.48	18.66	19.97	20.52	19.77	21.09	20.27	21.58	22.13
	3H	19.90	21.03	20.42	21.56	22.13	22.45	23.58	22.97	24.11	24.68
	4H	20.51	21.54	21.05	22.08	22.68	23.83	24.87	24.37	25.41	26.01
	6H	20.91	21.82	21.47	22.39	23.00	25.30	26.22	25.86	26.78	27.40
	8H	21.01	21.87	21.57	22.44	23.06	26.07	26.93	26.63	27.50	28.12
	12H	21.05	21.84	21.64	22.43	23.06	26.92	27.71	27.51	28.30	28.93
8H	4H	21.20	22.06	21.77	22.63	23.26	24.05	24.91	24.62	25.48	26.11
	6H	21.79	22.52	22.39	23.13	23.76	25.70	26.43	26.29	27.04	27.67
	8H	21.98	22.64	22.59	23.26	23.90	26.61	27.27	27.22	27.89	28.53
	12H	22.10	22.69	22.71	23.30	24.01	27.65	28.24	28.26	28.85	29.56
12H	4H	21.40	22.19	21.99	22.78	23.41	24.06	24.84	24.65	25.44	26.07
	6H	22.09	22.75	22.70	23.37	24.02	25.74	26.40	26.34	27.02	27.66
	8H	22.38	22.97	22.99	23.58	24.29	26.72	27.31	27.33	27.91	28.62

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

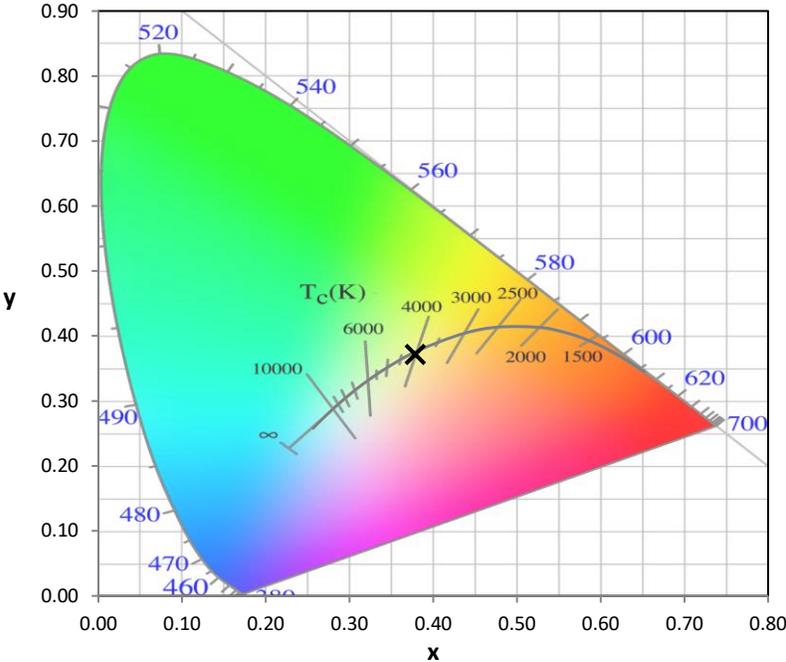
Stabilization Time: 23M
 Operation Time: 1H 23M
 Sphere Temperature (°C): 24.1

REPORT NUMBER: SP1-2511-597-4

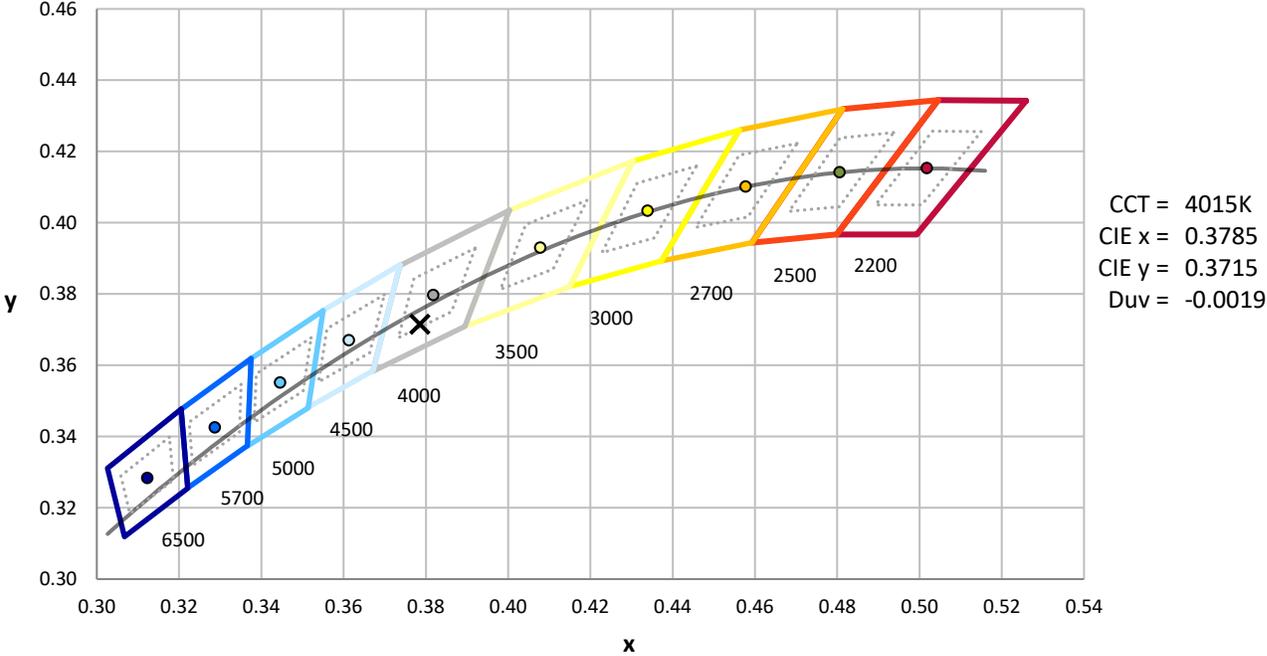
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	6/16/2025	12/16/2025
Power Meter	XITRON INXT2011004	10/21/2025	10/21/2026
AC Power Source	CHROMA 61603 IN0063	10/21/2025	10/21/2026
DC Power Source	AGILENT E3634A IN0208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

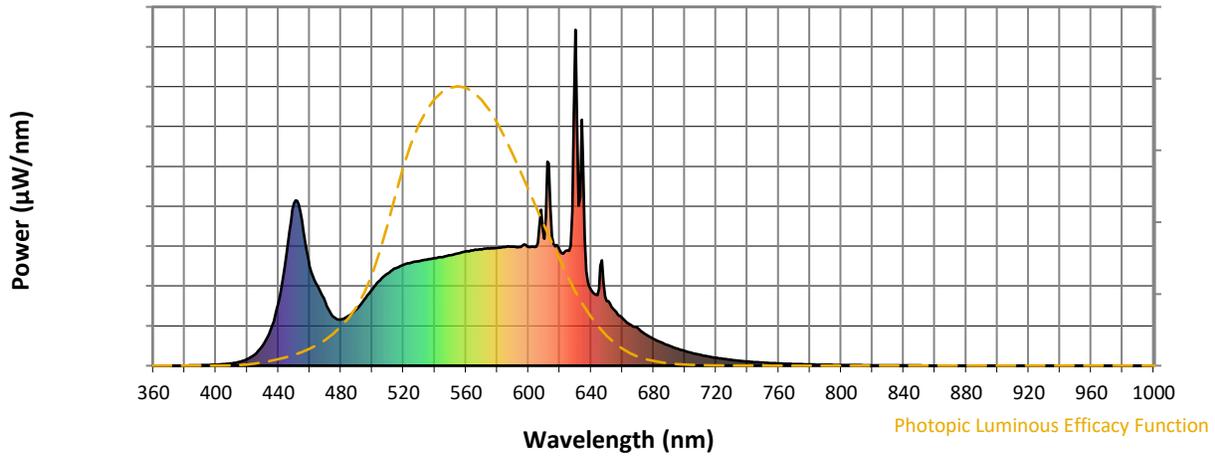


CCT = 4015K
 CIE x = 0.3785
 CIE y = 0.3715
 Duv = -0.0019

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



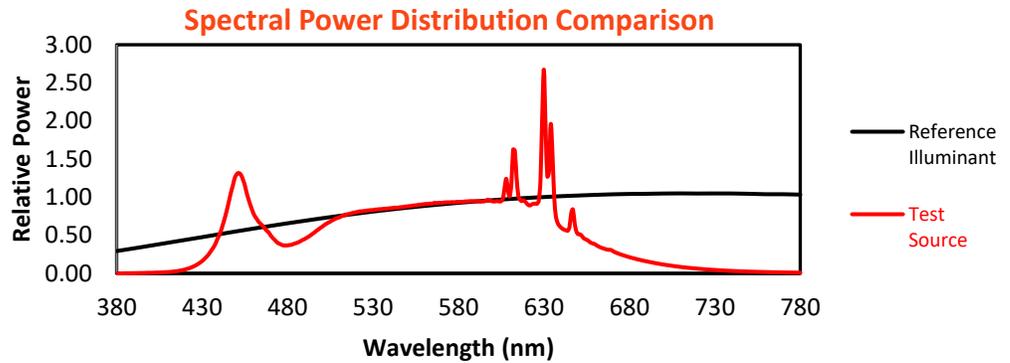
Melanopic Lumens: NR

M/P: 3.74

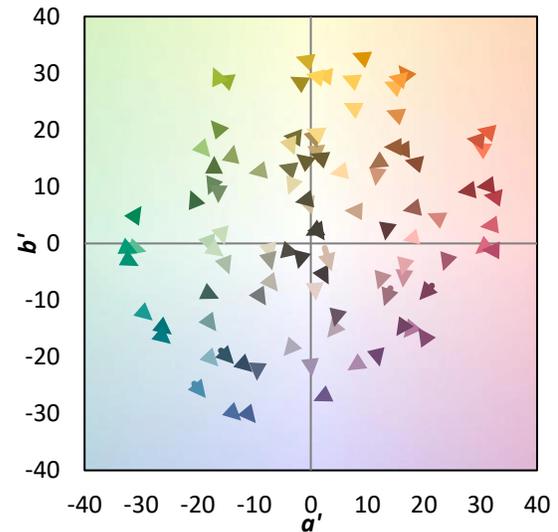
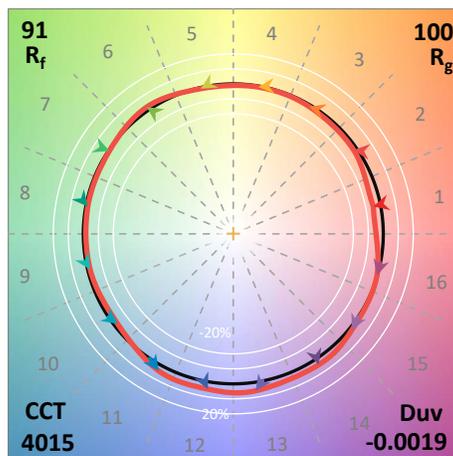
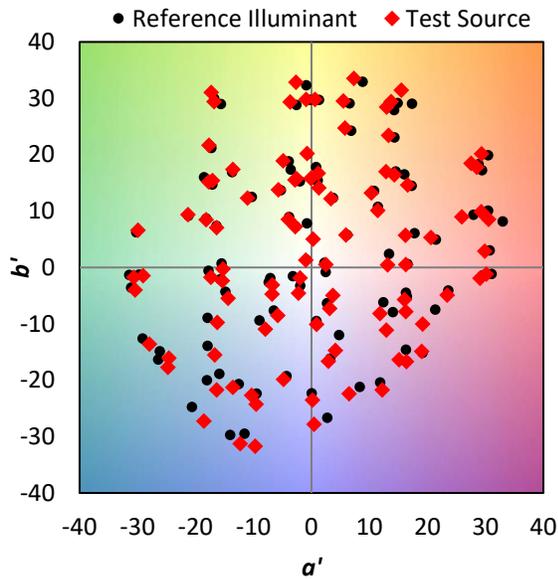
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	169	NR	620	343	NR	750	9	NR	880	0	NR
365	0	NR	495	197	NR	625	343	NR	755	8	NR	885	0	NR
370	0	NR	500	228	NR	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 $R_a = 93.9$
 $R_9 = 66.3$

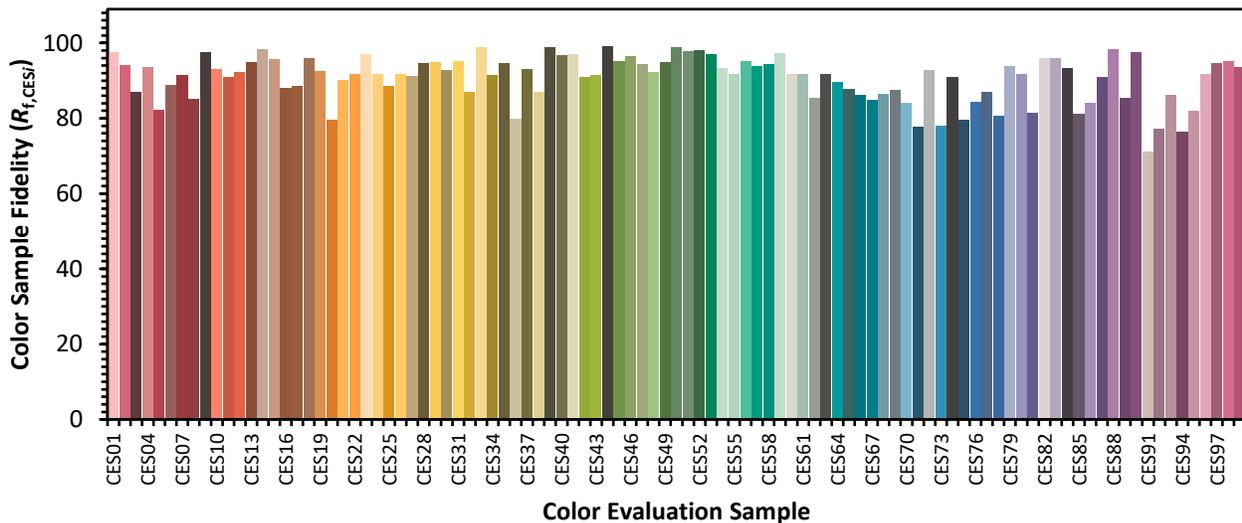


Color Vector Graphics



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)