

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: P1357285

Luminaire Tested: 6ASL4-10-1-27-UNV

Issue Date: 2/17/2026

Test Information

Test Method: LM-79-2019
Report Number: P1357285
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: 6ASL4-10-1-27-UNV
Description: 6FT 1000 LUMEN PER FOOT 4ASL LED LUMINAIRE WITH OPL LENS AND 2700K LEDS 1 ROW
Light Source: -
Ballast/Driver: -

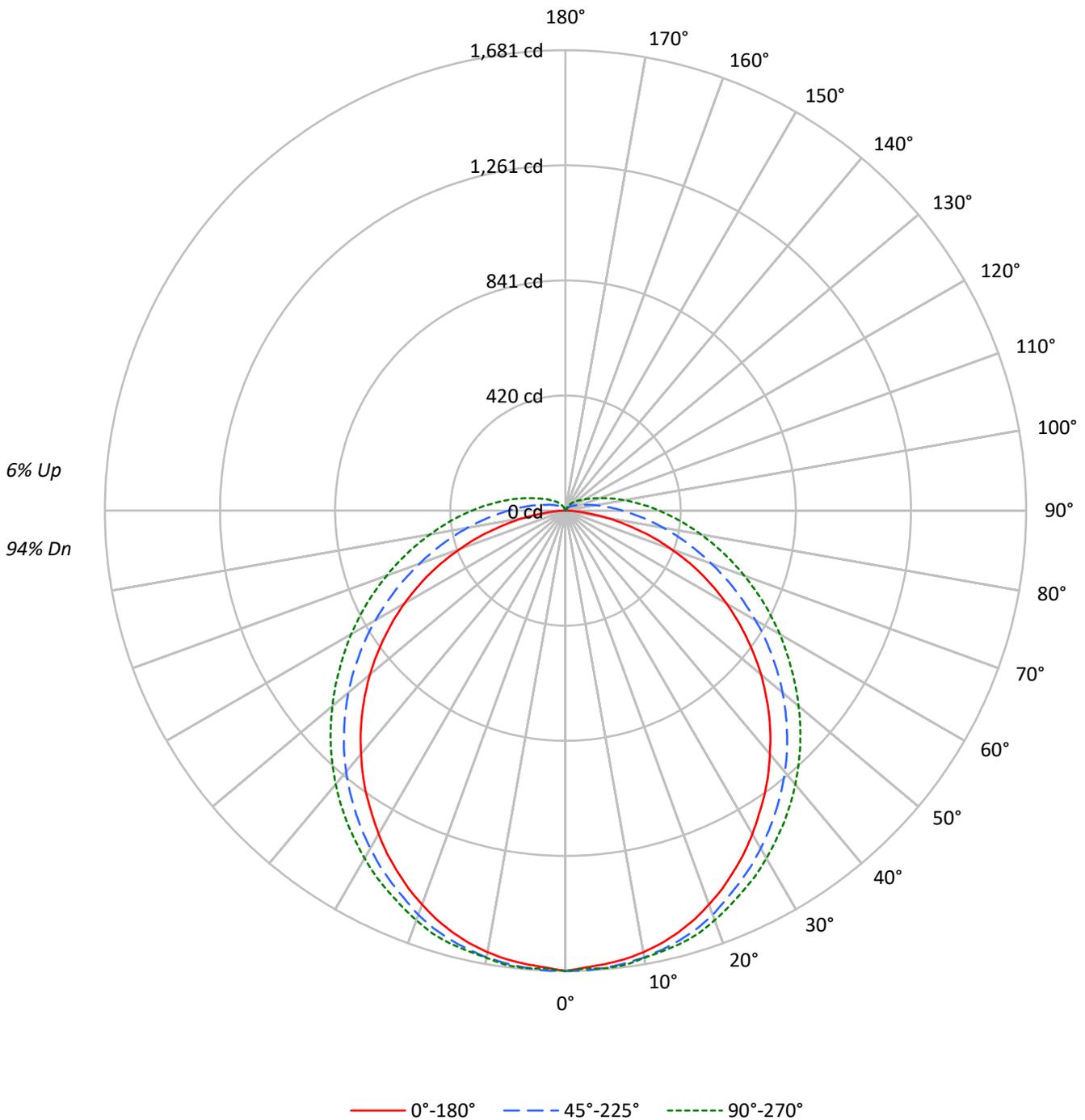
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5628.0 lumens
Efficiency: N/A
Efficacy: 106.6 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.3 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 5.98' x H: 0.1')
CIE Type: Direct

Input Watts (W): 52.8
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: P1357285
CATALOG NUMBER: 6ASL4-10-1-27-UNV

Luminous Intensity Polar Plot





TEST NUMBER: P1357285
 CATALOG NUMBER: 6ASL4-10-1-27-UNV

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	159.2	2.8
10°-20°	457.0	8.1
20°-30°	690.9	12.3
30°-40°	835.2	14.8
40°-50°	878.1	15.6
50°-60°	818.0	14.5
60°-70°	672.0	11.9
70°-80°	477.1	8.5
80°-90°	287.6	5.1
90°-100°	161.1	2.9
100°-110°	89.2	1.6
110°-120°	49.8	0.9
120°-130°	28.7	0.5
130°-140°	15.7	0.3
140°-150°	6.9	0.1
150°-160°	1.6	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1307.1	23.2
0°-40°	2142.2	38.1
0°-60°	3838.3	68.2
0°-90°	5275.0	93.7
90°-120°	300.1	5.3
90°-150°	351.4	6.2
90°-180°	353.0	6.3
0°-180°	5628.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1681	1681	1681	1681	1681	
5°	1662	1677	1675	1673	1677	158
15°	1594	1614	1622	1630	1635	449
25°	1453	1480	1500	1521	1533	670
35°	1266	1299	1339	1373	1390	792
45°	1050	1088	1143	1190	1211	809
55°	806	852	918	979	1006	721
65°	548	597	683	763	799	540
75°	276	346	460	555	595	295
85°	51	148	278	380	418	64
90°	0	88	207	304	340	2
95°	0	51	152	240	274	0
105°	0	19	80	144	171	0
115°	0	10	49	88	105	0
125°	0	6	30	57	67	0
135°	0	2	19	36	46	0
145°	2	0	8	21	27	1
155°	2	2	0	6	8	1
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P1357285

CATALOG NUMBER: 6ASL4-10-1-27-UNV

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1681.0	1681.0	1681.0	1681.0	1681.0
2.5°	1669.6	1684.8	1681.0	1673.4	1673.4
5°	1662.0	1677.2	1675.3	1673.4	1677.2
7.5°	1652.5	1667.7	1667.7	1669.6	1673.4
10°	1637.3	1656.3	1656.3	1656.3	1658.2
12.5°	1618.3	1637.3	1641.1	1643.0	1646.8
15°	1593.6	1614.5	1622.1	1629.7	1635.4
17.5°	1565.0	1586.0	1599.3	1608.8	1618.3
20°	1530.8	1553.6	1570.7	1582.2	1591.7
22.5°	1494.7	1517.5	1534.6	1551.7	1563.1
25°	1452.8	1479.5	1500.4	1521.3	1532.7
27.5°	1411.0	1437.6	1464.3	1489.0	1502.3
30°	1363.5	1393.9	1424.3	1452.8	1466.2
32.5°	1314.0	1346.4	1382.5	1412.9	1428.1
35°	1266.5	1298.8	1338.7	1373.0	1390.1
37.5°	1215.1	1247.5	1293.1	1331.1	1348.3
40°	1160.0	1196.1	1245.6	1285.5	1304.5
42.5°	1106.7	1142.9	1196.1	1239.9	1258.9
45°	1049.7	1087.7	1142.9	1190.4	1211.3
47.5°	990.7	1030.7	1089.6	1139.1	1161.9
50°	931.8	973.6	1034.5	1087.7	1110.5
52.5°	869.0	912.8	977.4	1034.5	1059.2
55°	806.3	851.9	918.5	979.3	1006.0
57.5°	743.5	789.2	861.4	926.1	954.6
60°	678.9	726.4	800.6	870.9	903.3
62.5°	612.3	661.8	739.7	815.8	850.0
65°	547.7	597.1	682.7	762.6	798.7
67.5°	479.2	532.5	623.7	707.4	745.4
70°	408.8	469.7	566.7	656.1	694.1
72.5°	346.1	408.8	513.4	604.7	644.7
75°	275.7	346.1	460.2	555.3	595.2
77.5°	214.9	290.9	410.8	507.7	547.7
80°	154.0	237.7	363.2	462.1	502.0
82.5°	98.9	190.2	319.5	420.3	458.3
85°	51.3	148.3	277.6	380.3	418.4
87.5°	15.2	114.1	239.6	340.4	378.4
90°	0.0	87.5	207.3	304.3	340.4
92.5°	0.0	66.6	178.8	271.9	308.1
95°	0.0	51.3	152.1	239.6	273.8
97.5°	0.0	39.9	131.2	211.1	245.3
100°	0.0	32.3	112.2	186.4	218.7
102.5°	0.0	26.6	97.0	165.4	194.0
105°	0.0	19.0	79.9	144.5	171.1
107.5°	0.0	13.3	70.4	127.4	150.2
110°	0.0	11.4	62.8	110.3	133.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	9.5	55.1	98.9	117.9
115°	0.0	9.5	49.4	87.5	104.6
117.5°	0.0	7.6	41.8	78.0	93.2
120°	0.0	7.6	38.0	70.4	83.7
122.5°	0.0	5.7	34.2	62.8	76.1
125°	0.0	5.7	30.4	57.0	66.6
127.5°	0.0	3.8	26.6	51.3	60.9
130°	0.0	3.8	24.7	45.6	55.1
132.5°	0.0	1.9	22.8	41.8	49.4
135°	0.0	1.9	19.0	36.1	45.6
137.5°	0.0	0.0	17.1	32.3	39.9
140°	0.0	0.0	13.3	28.5	36.1
142.5°	1.9	0.0	11.4	24.7	30.4
145°	1.9	0.0	7.6	20.9	26.6
147.5°	1.9	1.9	5.7	17.1	20.9
150°	1.9	1.9	3.8	11.4	17.1
152.5°	1.9	1.9	1.9	7.6	11.4
155°	1.9	1.9	0.0	5.7	7.6
157.5°	1.9	1.9	0.0	1.9	3.8
160°	1.9	1.9	0.0	0.0	1.9
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	17.08	18.63	17.54	19.07	19.54	19.09	20.64	19.55	21.08	21.55
	3H	18.57	19.98	19.04	20.44	20.95	21.51	22.93	21.98	23.38	23.89
	4H	19.05	20.39	19.54	20.86	21.38	22.69	24.03	23.18	24.50	25.02
	6H	19.32	20.57	19.83	21.05	21.59	23.91	25.16	24.42	25.65	26.19
	8H	19.37	20.57	19.89	21.08	21.62	24.55	25.75	25.07	26.25	26.80
	12H	19.39	20.53	19.91	21.04	21.61	25.26	26.40	25.78	26.90	27.48
4H	2H	17.95	19.29	18.44	19.76	20.28	19.52	20.86	20.02	21.33	21.86
	3H	19.68	20.82	20.18	21.33	21.88	22.17	23.31	22.67	23.82	24.37
	4H	20.28	21.32	20.80	21.85	22.42	23.51	24.56	24.04	25.08	25.66
	6H	20.67	21.59	21.22	22.14	22.74	24.93	25.85	25.47	26.40	26.99
	8H	20.76	21.63	21.32	22.18	22.79	25.67	26.53	26.22	27.08	27.69
	12H	20.81	21.59	21.38	22.17	22.78	26.50	27.28	27.07	27.86	28.47
8H	4H	20.93	21.80	21.48	22.35	22.96	23.72	24.59	24.28	25.14	25.75
	6H	21.50	22.24	22.09	22.83	23.44	25.30	26.04	25.89	26.63	27.24
	8H	21.68	22.34	22.27	22.95	23.57	26.18	26.84	26.78	27.45	28.07
	12H	21.79	22.38	22.38	22.97	23.66	27.19	27.79	27.79	28.38	29.07
12H	4H	21.12	21.90	21.69	22.48	23.09	23.73	24.52	24.31	25.10	25.71
	6H	21.78	22.44	22.38	23.05	23.67	25.34	26.00	25.93	26.61	27.23
	8H	22.05	22.64	22.65	23.23	23.92	26.28	26.88	26.88	27.47	28.16

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
 Rf: 90.1
 Rg: 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

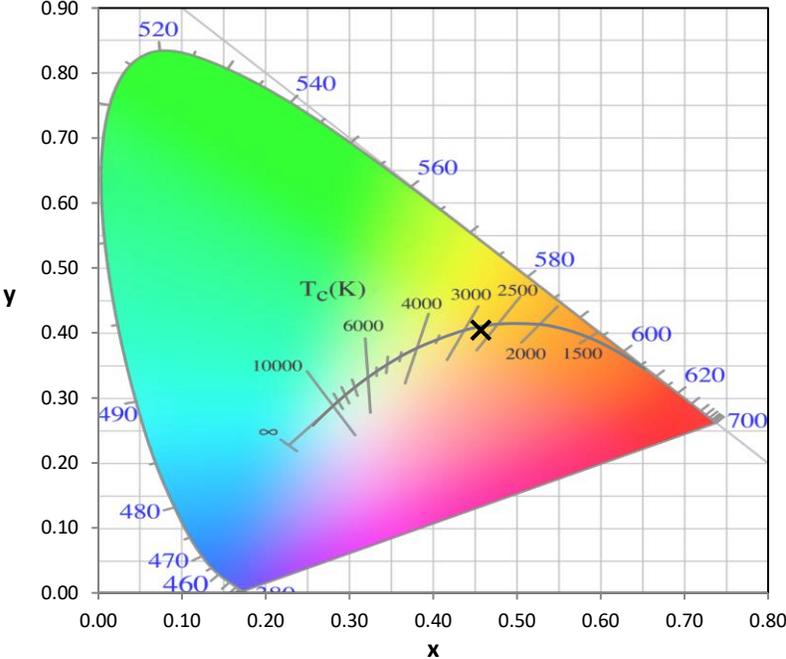
Stabilization Time: 32M
 Operation Time: 1H 32M
 Sphere Temperature (°C): 24.1

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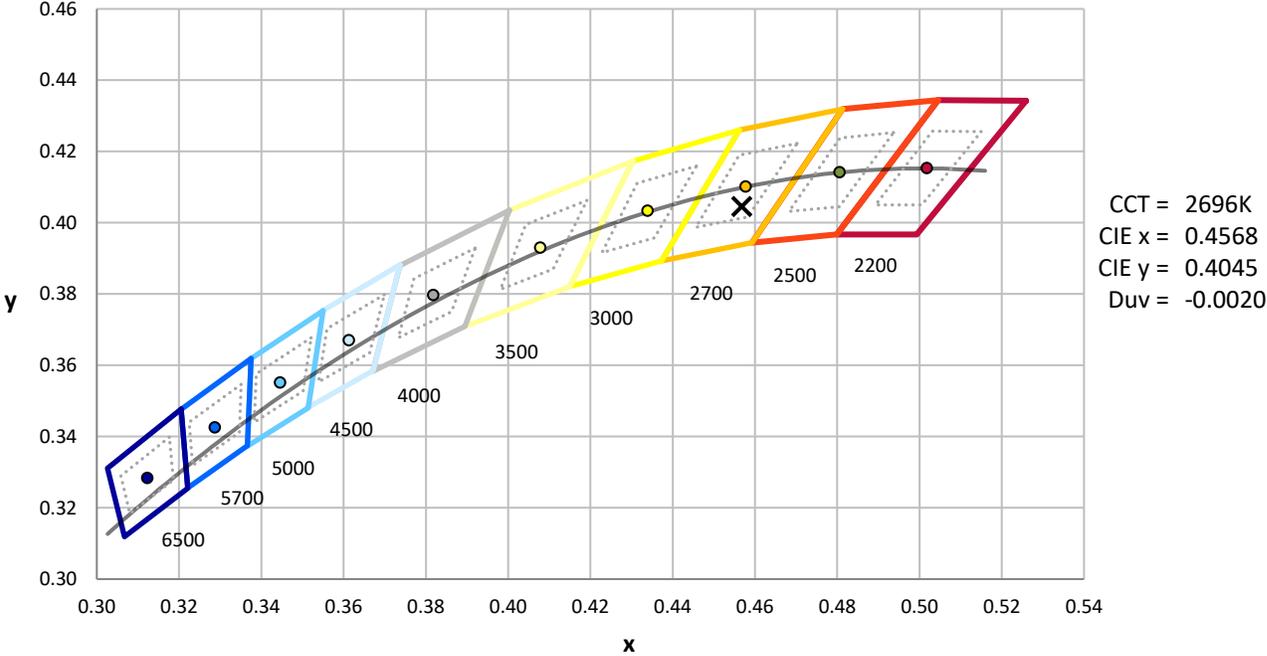
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	6/16/2025	12/16/2025
Power Meter	XITRON INXT2011004	10/21/2025	10/21/2026
AC Power Source	CHROMA 61603 IN0063	10/21/2025	10/21/2026
DC Power Source	AGILENT E3634A IN0208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



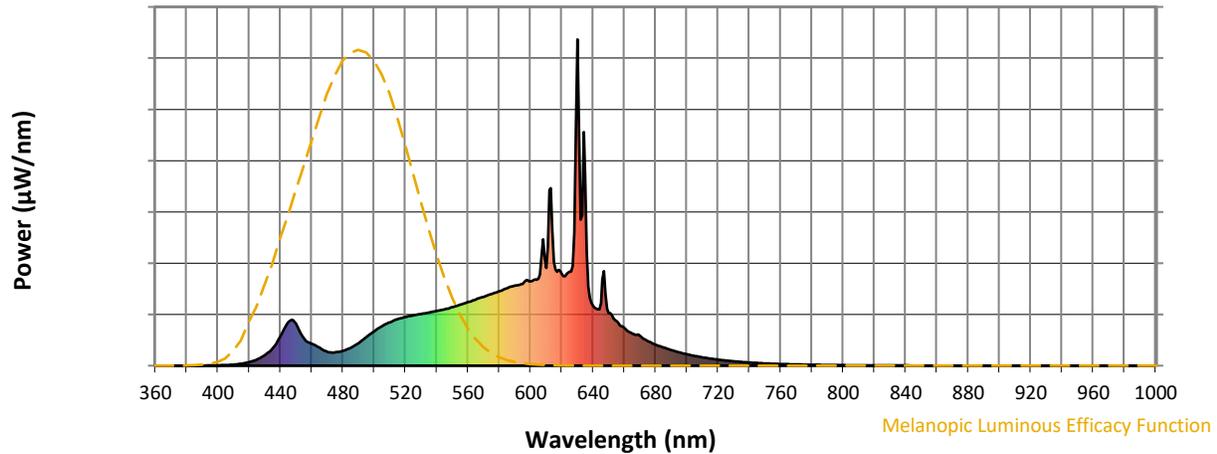
Scotopic Lumens: NR

S/P: 1.29

λ (nm)	Power W [^] /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	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

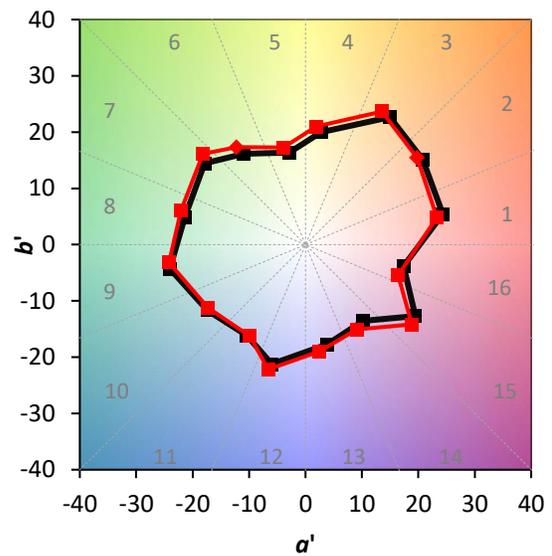
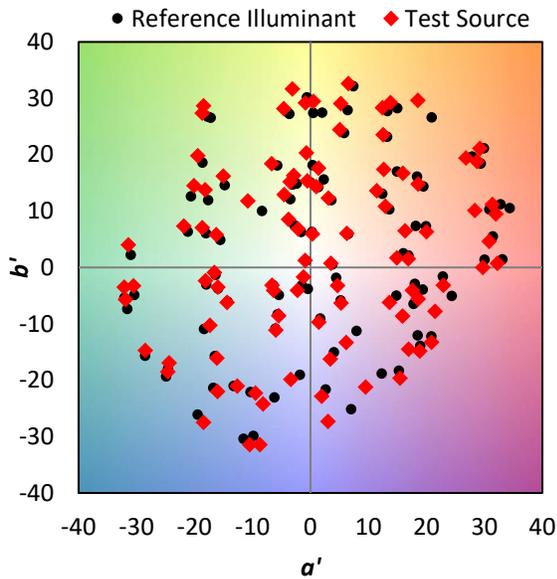
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	70	NR	620	281	NR	750	7	NR	880	0	NR
365	0	NR	495	88	NR	625	288	NR	755	6	NR	885	0	NR
370	0	NR	500	106	NR	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

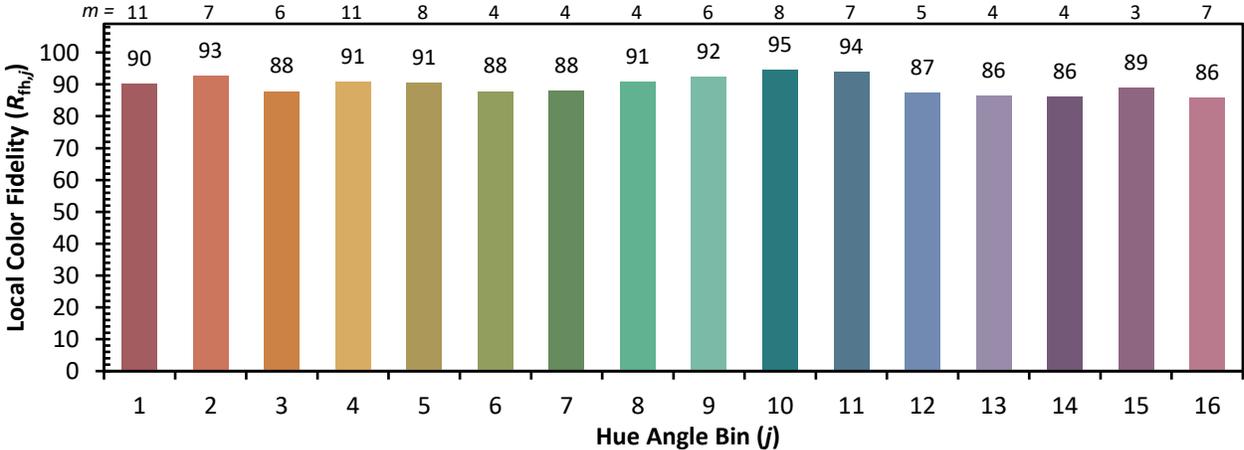


Individual Sample Fidelity Index ($R_{f,i}$)

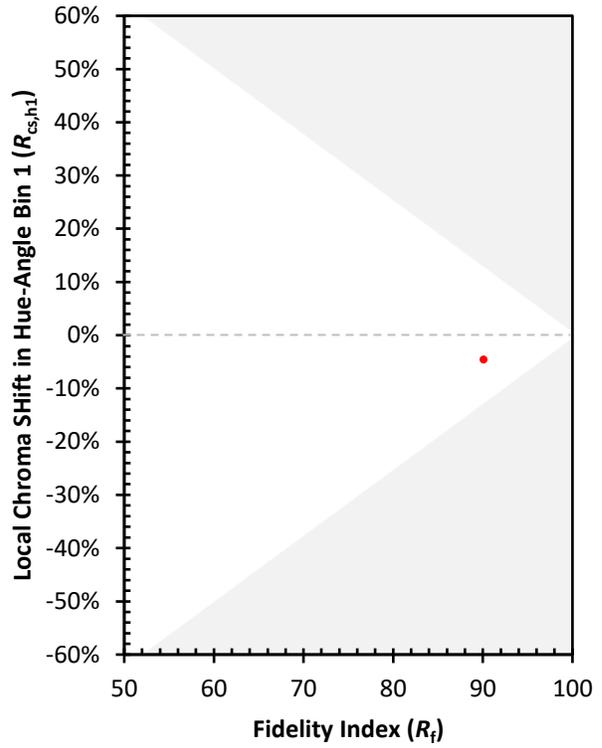
CES01 = 86	CES26 = 89	CES51 = 92	CES76 = 90
CES02 = 64	CES27 = 97	CES52 = 92	CES77 = 84
CES03 = 32	CES28 = 96	CES53 = 88	CES78 = 87
CES04 = 71	CES29 = 83	CES54 = 97	CES79 = 88
CES05 = 51	CES30 = 85	CES55 = 95	CES80 = 91
CES06 = 51	CES31 = 85	CES56 = 89	CES81 = 69
CES07 = 44	CES32 = 80	CES57 = 87	CES82 = 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)