

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: LUMARK

Report Number: P979119

Luminaire Tested: **WPSLED15S-60W-3500K**

Issue Date: 03/31/2025



Test Information

Test Method: LM-79-08
Report Number: P979119
Test Lab: Cooper Lighting Solutions
Issue Date: 03/31/2025
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: WPSLED15S-60W-3500K
Description: LUMARK WALL PACK LED SMALL 80CRI CCT AND LUMEN SELECTIVE FIXTURE
OPERATING @60W-3500K
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

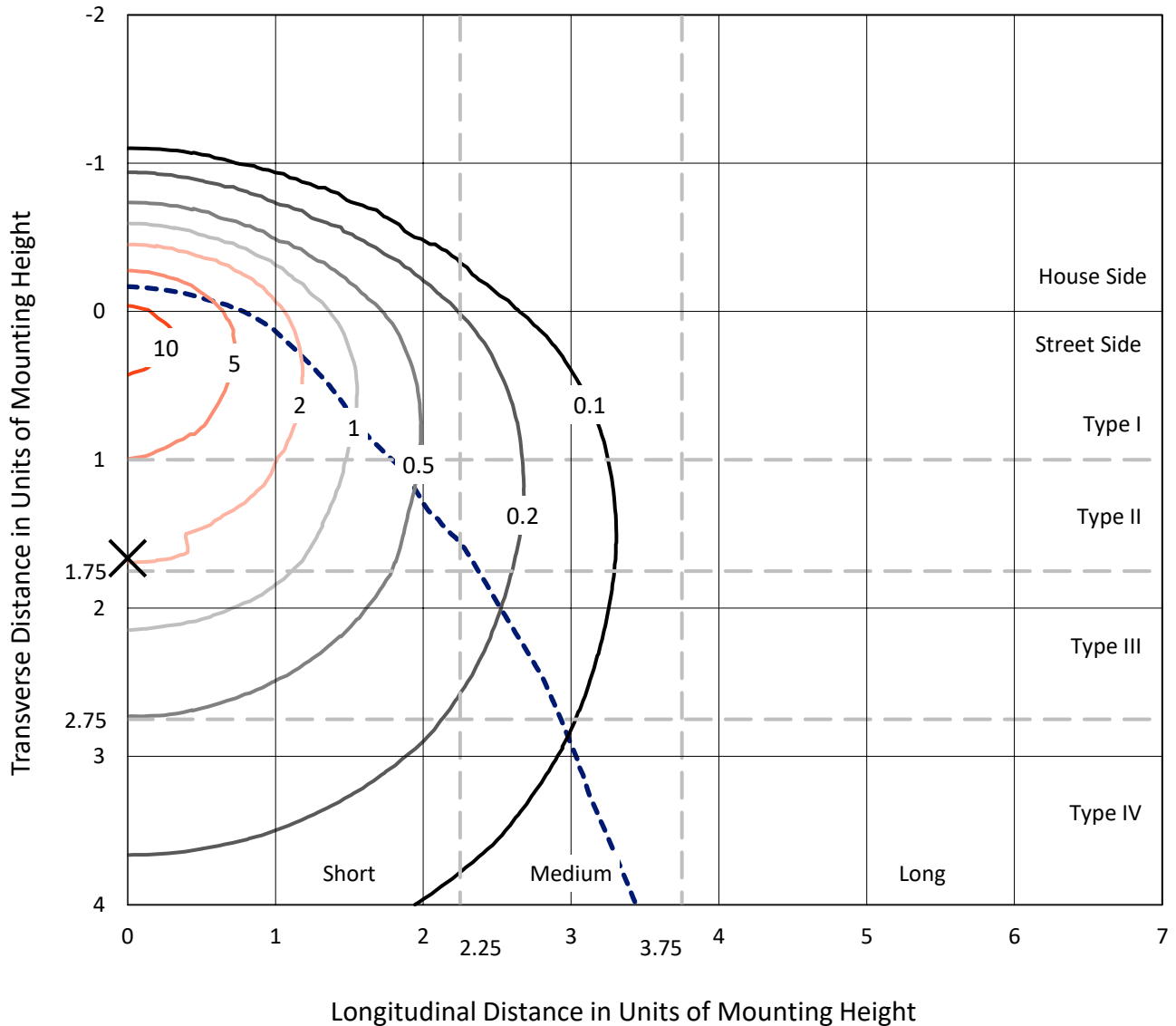
Lumens per Lamp: N/A
Luminaire Lumens: 8173 lumens
Efficiency: N/A
Efficacy: 134.4 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 0.61' x L: 0.12' x H: 0.44')
IES Classification: Type IV - Short
BUG Rating: B2 - U3 - G4

Input Watts (W): 60.8
Input Voltage (V): 120
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: 28.75 FT

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Iso-Footcandle Lines of Horizontal Illumination

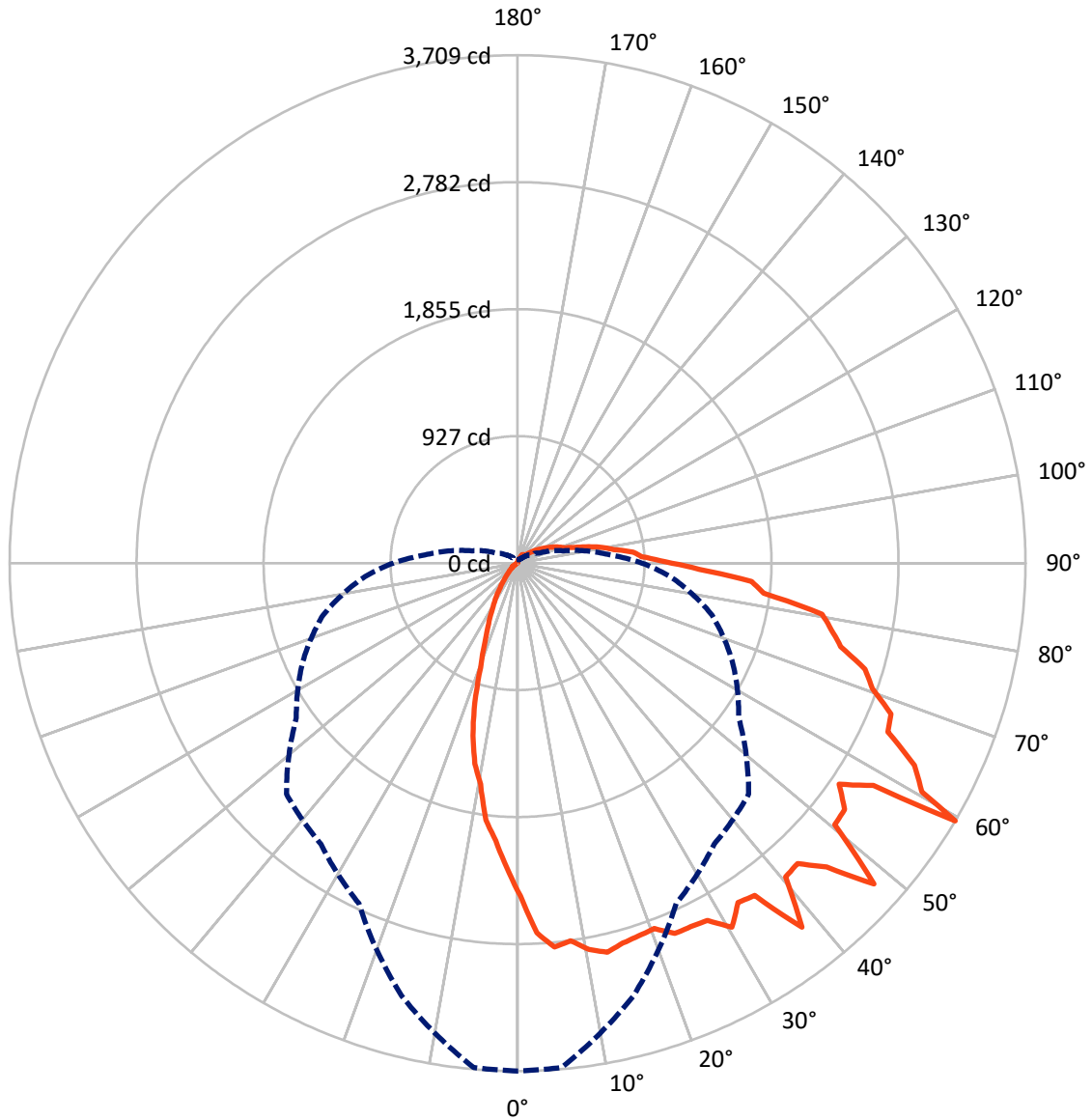
✕ Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 12.1 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 0-Deg Lateral - - - Horizontal Cone Through 59-Deg Vertical

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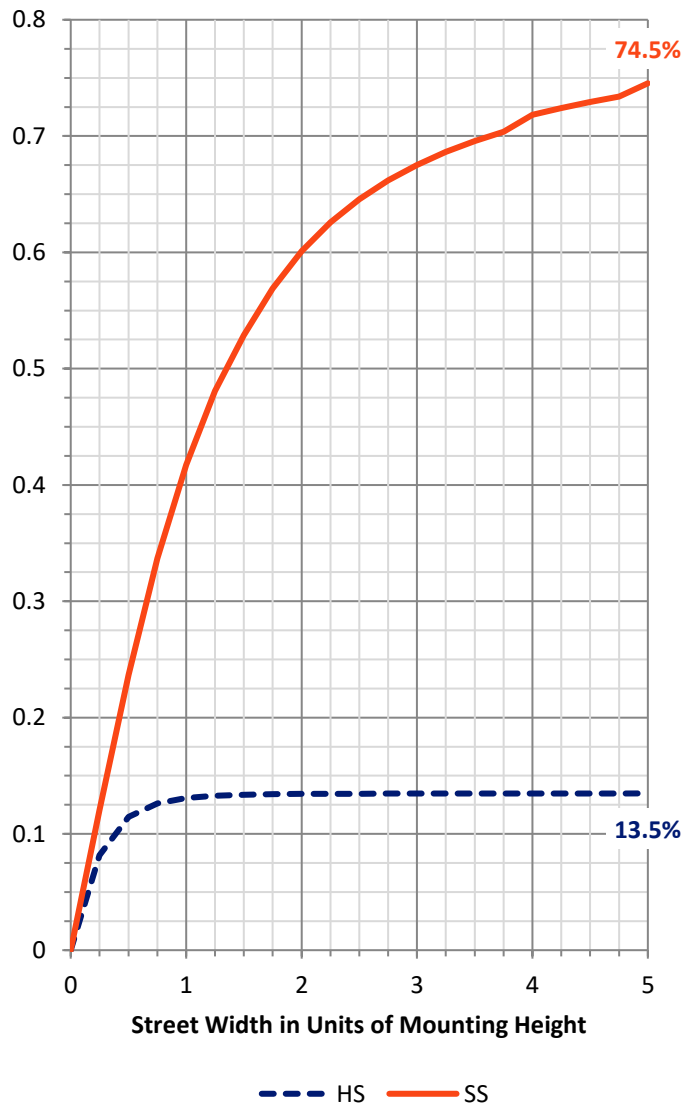
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1114.9	9.9	1124.7
	% Fixture	13.6	0.1	13.8
Street Side	Lumens	6475.5	572.7	7048.2
	% Fixture	79.2	7.0	86.2
Total	Lumens	7590.4	582.6	8173.0
	% Fixture	92.9	7.1	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	228.4	2.8
10°-20°	609.7	7.5
20°-30°	861.6	10.5
30°-40°	1029.0	12.6
40°-50°	1121.6	13.7
50°-60°	1131.6	13.8
60°-70°	1113.5	13.6
70°-80°	914.4	11.2
80°-90°	580.4	7.1
90°-100°	275.0	3.4
100°-110°	138.6	1.7
110°-120°	78.0	1.0
120°-130°	43.1	0.5
130°-140°	23.9	0.3
140°-150°	15.4	0.2
150°-160°	6.8	0.1
160°-170°	1.7	0.0
170°-180°	0.1	0.0
0°-90°	7590.4	92.9
0°-180°	8173.0	100.0



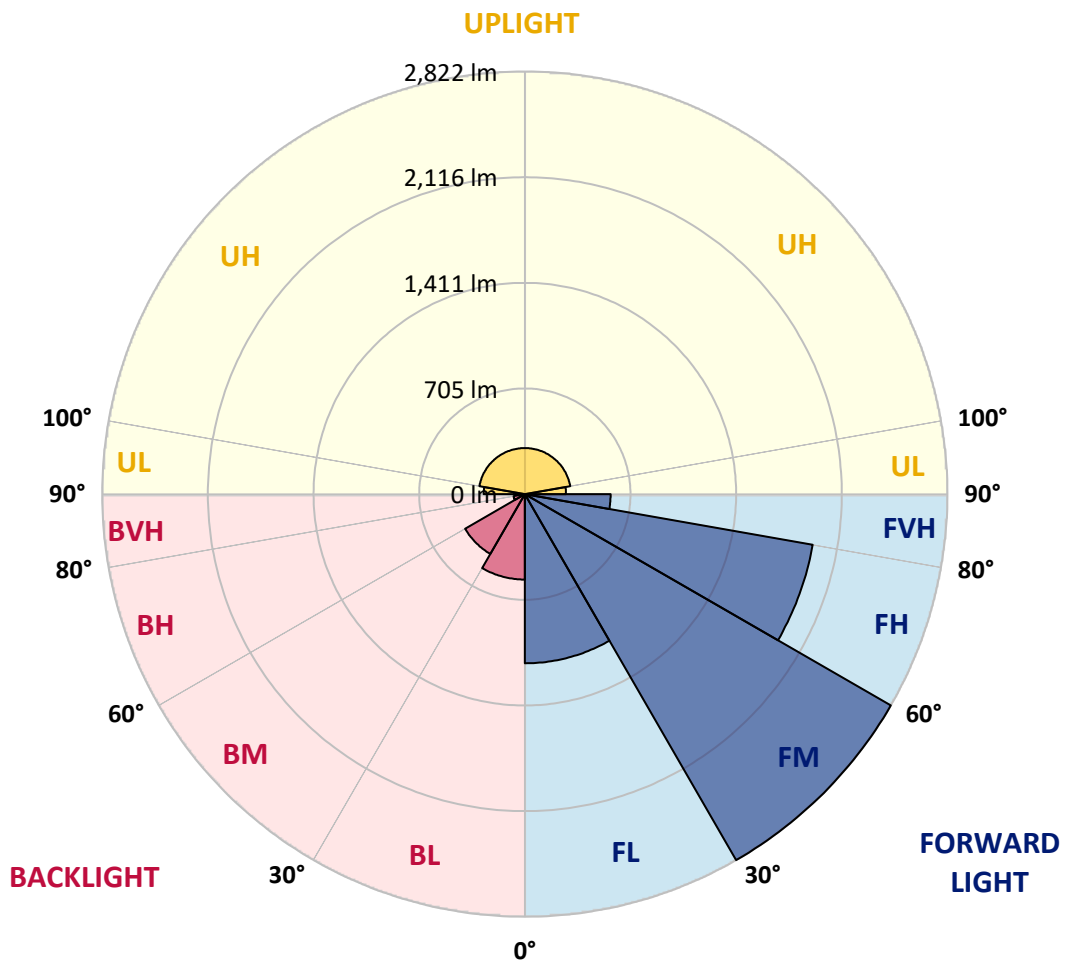
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1129.5	13.8			
FM (30°-60°)	2821.7	34.5			
FH (60°-80°)	1951.4	23.9			G2/5000
FVH (80°-90°)	572.9	7.0			G4/750
BL (0°-30°)	570.2	7.0	B2/1000		
BM (30°-60°)	460.6	5.6	B1/1000		
BH (60°-80°)	76.6	0.9	B0/110		G0/110
BVH (80°-90°)	7.5	0.1			G0/10
UL (90°-100°)	275.0	3.4		U3/500	
UH (100°-180°)	307.6	3.8		U3/500	

BUG Rating: B2-U3-G4

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	2430.4	2430.4	2430.4	2430.4	2430.4	2430.4	2430.4	2430.4	2430.4	2430.4	2430.4
2.5°	2704.0	2711.0	2719.0	2694.9	2700.9	2702.0	2681.9	2653.8	2574.7	2483.5	2434.4
5°	2817.2	2812.2	2802.2	2745.0	2705.0	2679.9	2680.9	2682.9	2656.9	2510.5	2417.3
7.5°	2784.1	2798.2	2797.2	2770.1	2802.2	2820.2	2672.9	2641.8	2625.8	2497.5	2355.2
10°	2869.3	2872.3	2858.3	2809.2	2767.1	2705.0	2770.1	2621.8	2610.7	2467.4	2311.1
12.5°	2916.4	2938.5	2897.4	2832.2	2776.1	2740.0	2664.9	2703.0	2584.7	2455.4	2268.0
15°	2878.3	2855.3	2803.2	2770.1	2838.3	2739.0	2681.9	2666.9	2541.6	2447.4	2244.9
17.5°	2862.3	2886.4	2873.3	2830.2	2732.0	2789.1	2679.9	2629.8	2543.6	2430.4	2227.9
20°	2848.3	2874.3	2826.2	2770.1	2811.2	2677.9	2691.9	2606.7	2558.6	2394.3	2198.8
22.5°	2938.5	2935.5	2854.3	2805.2	2719.0	2760.1	2714.0	2600.7	2545.6	2368.2	2139.7
25°	2940.5	2942.5	2879.3	2807.2	2760.1	2692.9	2607.7	2554.6	2489.5	2317.1	2077.6
27.5°	2954.5	2957.5	2829.2	2800.2	2764.1	2673.9	2628.8	2522.6	2434.4	2252.0	2034.5
30°	3084.8	3051.7	2994.6	2859.3	2742.0	2695.9	2604.7	2522.6	2360.2	2193.8	1977.4
32.5°	2954.5	2940.5	2886.4	2937.5	2780.1	2653.8	2530.6	2407.3	2311.1	2099.6	1907.2
35°	2981.6	2968.5	2853.3	2846.3	2876.3	2628.8	2498.5	2344.2	2248.0	2032.5	1836.0
37.5°	3373.4	3322.3	3077.8	2850.3	2778.1	2667.9	2485.5	2372.2	2176.8	1955.3	1744.8
40°	3012.6	2990.6	2954.5	3098.8	2734.0	2666.9	2422.3	2360.2	2113.7	1880.1	1669.7
42.5°	2998.6	2980.6	2936.5	2863.3	2886.4	2581.7	2407.3	2273.0	2020.4	1773.9	1562.4
45°	3164.0	3133.9	2964.5	2870.3	2734.0	2578.7	2373.2	2196.8	1942.3	1667.7	1458.2
47.5°	3501.7	3456.6	3072.8	2843.3	2680.9	2622.8	2338.1	2126.7	1852.1	1568.5	1344.0
50°	3001.6	2999.6	3143.9	3067.8	2614.8	2494.5	2317.1	2047.5	1779.9	1444.2	1227.7
52.5°	2990.6	2997.6	2978.6	2878.3	2762.1	2407.3	2248.0	1958.3	1687.7	1347.0	1140.5
55°	2849.3	2826.2	2758.1	2781.1	2717.0	2359.2	2154.7	1881.1	1601.5	1250.8	1045.3
57.5°	3063.7	3005.6	2828.2	2671.9	2554.6	2433.4	2055.5	1783.9	1525.4	1162.6	946.1
59°	3709.2	3697.1	3270.2	2742.0	2504.5	2386.3	1972.3	1734.8	1471.2	1117.5	909.0
60°	3391.5	3365.4	3503.7	2886.4	2527.6	2305.1	1924.2	1704.8	1437.2	1082.4	884.9
62.5°	3253.2	3249.2	3089.8	3027.7	2672.9	2263.0	1935.3	1630.6	1345.0	1004.2	810.8
65°	2971.5	2949.5	2910.4	2843.3	2684.9	2265.0	1896.2	1571.5	1264.8	916.0	697.5
67.5°	2941.5	2908.4	2840.3	2687.9	2525.6	2259.0	1776.9	1486.3	1176.6	811.8	587.3
70°	2748.1	2762.1	2690.9	2586.7	2409.3	2114.7	1733.8	1400.1	1088.4	705.6	481.1
72.5°	2653.8	2668.9	2589.7	2470.4	2299.1	1965.3	1620.6	1335.9	985.2	595.3	387.9
75°	2437.4	2437.4	2398.3	2293.1	2146.7	1856.1	1512.3	1197.6	858.9	493.1	306.7
77.5°	2343.2	2342.2	2259.0	2133.7	1977.4	1693.7	1361.0	1077.4	757.7	398.9	223.5
80°	2255.0	2265.0	2158.8	2026.5	1847.1	1573.5	1250.8	968.1	645.4	300.7	163.4
82.5°	1811.0	1790.9	1773.9	1686.7	1570.5	1358.0	1064.3	838.8	524.2	215.5	117.3
85°	1714.8	1726.8	1670.7	1576.5	1446.2	1195.6	901.0	689.5	411.9	155.3	87.2
87.5°	1328.9	1316.9	1280.8	1259.8	1173.6	968.1	734.6	537.2	318.7	114.3	64.1
90°	1077.4	1092.4	1056.3	1010.2	915.0	785.7	587.3	417.9	233.5	83.2	50.1
92.5°	906.0	930.0	911.0	858.9	768.7	638.4	474.0	312.7	173.4	63.1	42.1
95°	845.9	842.9	799.8	724.6	659.5	546.2	378.8	249.5	138.3	51.1	38.1
97.5°	710.6	719.6	703.5	627.4	566.2	460.0	307.7	197.4	110.2	45.1	34.1
100°	629.4	622.4	596.3	544.2	477.1	383.8	255.6	165.4	91.2	41.1	33.1
102.5°	534.2	534.2	499.1	451.0	397.9	317.7	214.5	143.3	75.2	40.1	32.1
105°	424.9	428.9	402.9	372.8	334.7	257.6	183.4	120.3	65.1	39.1	32.1
107.5°	361.8	368.8	355.8	325.7	290.6	224.5	155.3	101.2	57.1	38.1	31.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
110°	331.7	335.7	319.7	295.7	258.6	196.4	135.3	86.2	53.1	38.1	30.1
112.5°	303.7	308.7	293.6	267.6	224.5	171.4	117.3	74.2	51.1	37.1	29.1
115°	269.6	272.6	260.6	236.5	197.4	150.3	103.2	68.2	50.1	35.1	27.1
117.5°	238.5	241.5	226.5	204.5	170.4	129.3	92.2	63.1	48.1	33.1	25.1
120°	209.5	208.5	199.4	179.4	148.3	114.3	82.2	58.1	46.1	31.1	23.1
122.5°	183.4	186.4	177.4	157.3	126.3	99.2	72.2	56.1	44.1	29.1	20.0
125°	160.4	160.4	153.3	135.3	109.2	86.2	66.1	53.1	43.1	27.1	18.0
127.5°	139.3	140.3	131.3	114.3	94.2	77.2	61.1	52.1	41.1	24.1	16.0
130°	118.3	118.3	110.2	97.2	83.2	72.2	61.1	50.1	38.1	21.0	14.0
132.5°	100.2	100.2	94.2	86.2	76.2	70.2	59.1	47.1	34.1	18.0	12.0
135°	85.2	85.2	81.2	78.2	71.2	66.1	56.1	45.1	31.1	16.0	10.0
137.5°	77.2	76.2	75.2	73.2	68.2	62.1	53.1	42.1	28.1	13.0	8.0
140°	73.2	74.2	73.2	72.2	67.1	60.1	52.1	40.1	25.1	11.0	7.0
142.5°	75.2	74.2	73.2	71.2	64.1	58.1	49.1	37.1	22.0	10.0	5.0
145°	76.2	76.2	73.2	68.2	61.1	53.1	45.1	33.1	19.0	8.0	5.0
147.5°	74.2	74.2	69.2	63.1	56.1	49.1	40.1	28.1	16.0	6.0	4.0
150°	70.2	69.2	63.1	56.1	51.1	43.1	34.1	24.1	13.0	5.0	4.0
152.5°	62.1	61.1	55.1	49.1	42.1	36.1	29.1	19.0	11.0	4.0	3.0
155°	47.1	48.1	43.1	38.1	33.1	29.1	24.1	16.0	8.0	4.0	3.0
157.5°	36.1	35.1	33.1	31.1	27.1	24.1	19.0	13.0	6.0	3.0	2.0
160°	30.1	30.1	28.1	25.1	22.0	19.0	15.0	10.0	5.0	3.0	2.0
162.5°	25.1	25.1	23.1	21.0	18.0	15.0	11.0	7.0	4.0	2.0	2.0
165°	20.0	20.0	19.0	16.0	14.0	10.0	7.0	5.0	3.0	2.0	2.0
167.5°	15.0	15.0	14.0	12.0	9.0	7.0	5.0	4.0	3.0	2.0	2.0
170°	9.0	9.0	8.0	7.0	5.0	4.0	4.0	3.0	3.0	2.0	2.0
172.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0
175°	1.0	1.0	1.0	2.0	2.0	3.0	2.0	2.0	2.0	2.0	2.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2430.4	2430.4	2430.4	2430.4	2430.4	2430.4	2430.4	2430.4	2430.4	2430.4
2.5°	2389.3	2352.2	2325.1	2302.1	2285.0	2258.0	2240.9	2238.9	2237.9	2226.9
5°	2341.2	2295.1	2243.9	2188.8	2149.7	2110.6	2072.6	2046.5	2040.5	2032.5
7.5°	2282.0	2212.9	2117.7	2056.5	2020.4	2026.5	1981.4	1921.2	1882.1	1889.2
10°	2228.9	2134.7	2024.5	1996.4	1877.1	1814.0	1750.9	1689.7	1656.6	1636.6
12.5°	2194.8	2057.5	1953.3	1828.0	1705.8	1572.5	1496.3	1481.3	1500.3	1497.3
15°	2162.8	1992.4	1883.1	1667.7	1505.3	1455.2	1417.1	1365.0	1310.9	1300.9
17.5°	2139.7	1933.3	1739.8	1516.3	1404.1	1280.8	1130.5	1075.4	1068.4	1065.3
20°	2091.6	1876.1	1629.6	1420.1	1261.8	1051.3	958.1	872.9	816.8	809.8
22.5°	2021.5	1789.9	1497.3	1312.9	1055.3	882.9	743.6	684.5	654.4	646.4
25°	1959.3	1675.7	1396.1	1143.5	904.0	716.6	604.3	548.2	534.2	528.2
27.5°	1885.2	1567.5	1299.9	971.1	750.7	592.3	496.1	455.0	438.0	437.0
30°	1812.0	1459.2	1161.6	843.9	634.4	490.1	417.9	378.8	364.8	359.8
32.5°	1734.8	1353.0	1011.2	719.6	523.2	417.9	346.8	315.7	301.7	298.7
35°	1646.6	1247.7	875.9	618.4	447.0	340.8	288.6	250.6	236.5	236.5
37.5°	1554.4	1147.5	763.7	517.1	370.8	284.6	228.5	202.4	190.4	188.4
40°	1454.2	1056.3	668.5	436.0	303.7	228.5	185.4	158.3	150.3	149.3
42.5°	1355.0	928.0	582.3	364.8	252.6	185.4	147.3	128.3	121.3	119.3
45°	1214.7	813.8	482.1	299.7	204.5	151.3	119.3	101.2	93.2	92.2
47.5°	1084.4	688.5	399.9	247.5	164.4	120.3	94.2	79.2	75.2	74.2
50°	978.2	598.3	330.7	199.4	136.3	95.2	74.2	64.1	58.1	57.1
52.5°	877.9	521.1	283.6	165.4	110.2	74.2	59.1	49.1	50.1	50.1
55°	793.7	461.0	235.5	140.3	88.2	58.1	44.1	40.1	43.1	43.1
57.5°	724.6	384.8	197.4	119.3	70.2	47.1	33.1	33.1	34.1	34.1
59°	678.5	346.8	175.4	106.2	61.1	39.1	27.1	28.1	27.1	26.1
60°	650.4	320.7	166.4	99.2	54.1	34.1	24.1	23.1	22.0	22.0
62.5°	565.2	254.6	140.3	80.2	41.1	22.0	15.0	13.0	12.0	11.0
65°	474.0	209.5	116.3	63.1	30.1	12.0	5.0	3.0	1.0	0.0
67.5°	369.8	170.4	95.2	49.1	20.0	4.0	0.0	0.0	0.0	0.0
70°	296.7	137.3	77.2	37.1	11.0	0.0	0.0	0.0	0.0	0.0
72.5°	231.5	112.2	62.1	26.1	3.0	0.0	0.0	0.0	0.0	0.0
75°	174.4	90.2	49.1	17.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	130.3	70.2	38.1	10.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	101.2	55.1	29.1	6.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	76.2	42.1	21.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	58.1	33.1	16.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	45.1	26.1	12.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	36.1	21.0	10.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	30.1	18.0	8.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	28.1	16.0	7.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	26.1	15.0	6.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	25.1	14.0	5.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	25.1	13.0	4.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
105°	25.1	13.0	4.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	24.1	12.0	4.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P979119
 CATALOG NUMBER: WPSLED15S-60W-3500K

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
110°	24.1	10.0	4.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
112.5°	22.0	9.0	3.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
115°	21.0	7.0	3.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	18.0	4.0	3.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	14.0	3.0	3.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	13.0	2.0	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
125°	11.0	2.0	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	10.0	2.0	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	9.0	2.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	8.0	3.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	7.0	2.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	5.0	2.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	5.0	2.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0
142.5°	4.0	3.0	2.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0
145°	4.0	2.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0
147.5°	4.0	2.0	2.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0
150°	3.0	2.0	2.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0
152.5°	3.0	2.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0
155°	2.0	2.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	2.0	2.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0
160°	2.0	2.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	2.0	2.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	2.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	2.0	2.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	2.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	2.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	2.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

Report Prepared for

Cooper Lighting Solutions

Lumark

Report Number: SP1-2407-168-2

Test Date: 08/08/2024

Luminaire Tested: LSDL-92S-100W 3500k

Data in this report applies to families of products including LSDL-92S-100W 3500k.

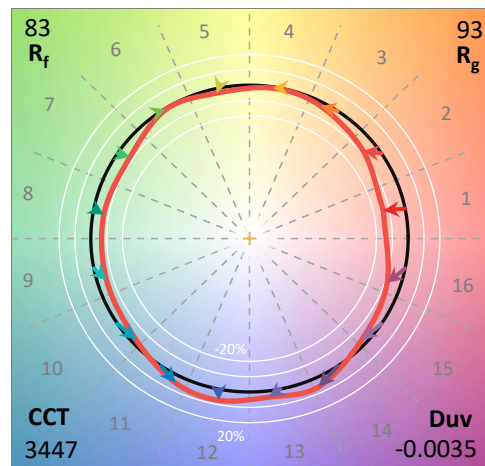
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-168-2
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 08/12/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Lumark
 Catalog Number: **LSDL-92S-100W 3500k**
 Description: Lumark Wallpack 100W

Spectral Parameters

CCT (K): 3447
 CIE u': 0.2387
 CIE v': 0.5076
 Duv: -0.0035
 CIE x: 0.4046
 CIE y: 0.3824
 CIE z: 0.2130
 Peak Wavelength (nm): 597
 Dominant Wavelength (nm): 582
 Purity: 36.18615
 R_f: 82.6
 R_g: 93

CRI (Ra):	81.3		
R1:	80.7	R9:	-0.6
R2:	93.3	R10:	84.3
R3:	92.2	R11:	76.0
R4:	77.2	R12:	69.4
R5:	81.3	R13:	84.3
R6:	90.3	R14:	96.4
R7:	79.5	R15:	73.7
R8:	55.9		



Test Conditions

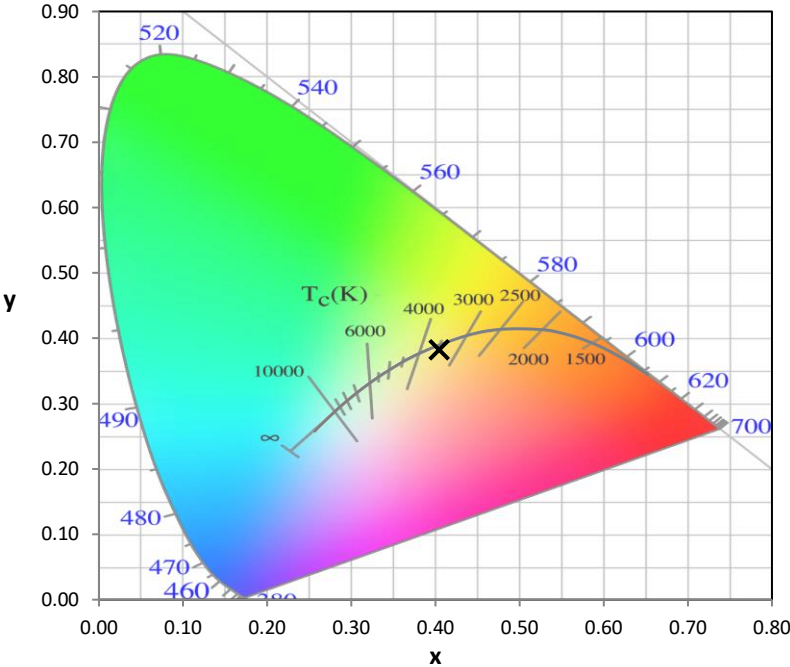
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2407-168-2

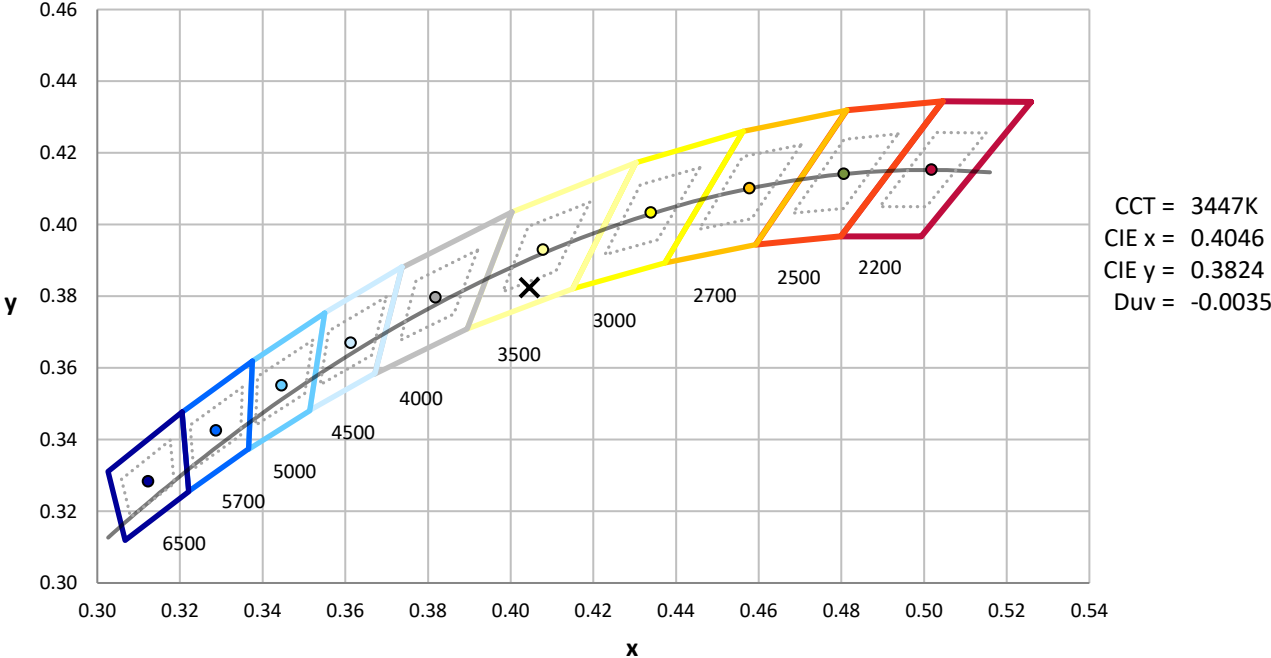
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085	10/24/2023	10/24/2024
Room Thermometer	IN0046	10/24/2023	10/24/2024

REPORT NUMBER: SP1-2407-168-2

CIE 1931 Chromaticity Diagram



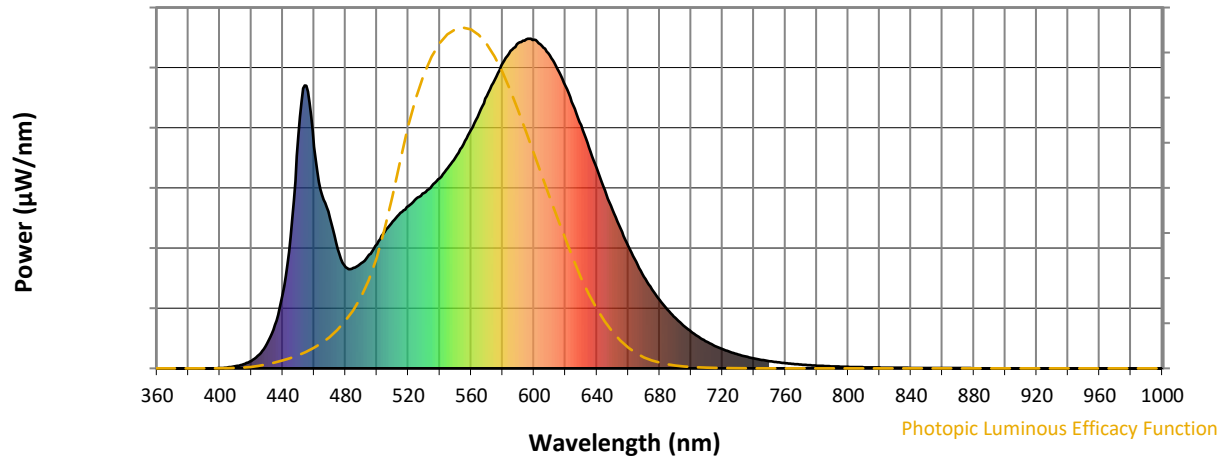
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3500K 7-step quadrangle

REPORT NUMBER: SP1-2407-168-2

Photopic Flux vs. Wavelength

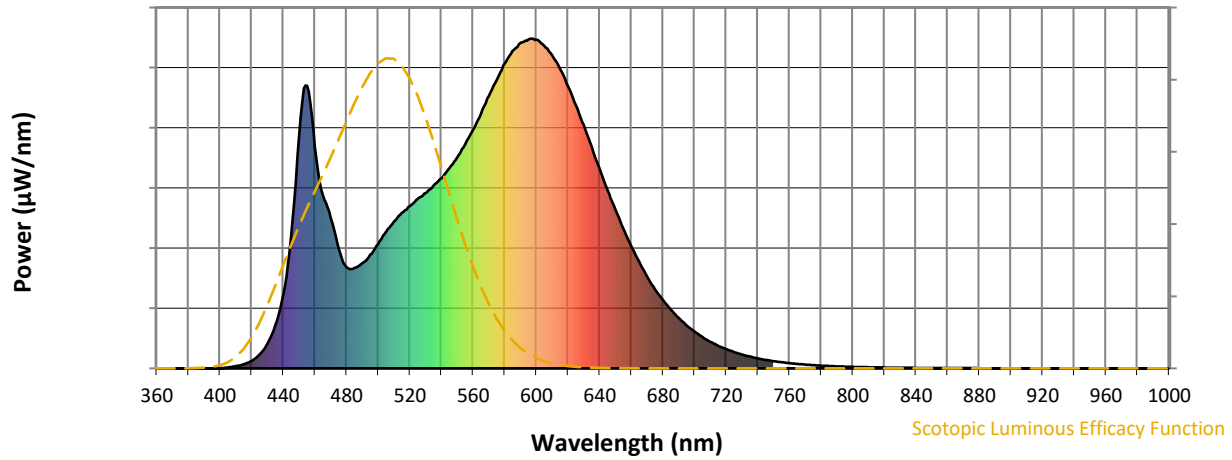


Photopic Lumens: NR

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	319	NR	620	856	NR	750	22	NR	880	1	NR
365	0	NR	495	344	NR	625	798	NR	755	18	NR	885	0	NR
370	0	NR	500	377	NR	630	738	NR	760	16	NR	890	0	NR
375	0	NR	505	415	NR	635	671	NR	765	13	NR	895	0	NR
380	0	NR	510	445	NR	640	606	NR	770	11	NR	900	0	NR
385	0	NR	515	472	NR	645	541	NR	775	10	NR	905	0	NR
390	0	NR	520	492	NR	650	481	NR	780	8	NR	910	0	NR
395	0	NR	525	514	NR	655	424	NR	785	7	NR	915	0	NR
400	1	NR	530	532	NR	660	371	NR	790	6	NR	920	0	NR
405	3	NR	535	554	NR	665	323	NR	795	5	NR	925	0	NR
410	6	NR	540	577	NR	670	278	NR	800	4	NR	930	0	NR
415	12	NR	545	608	NR	675	240	NR	805	4	NR	935	0	NR
420	23	NR	550	640	NR	680	207	NR	810	3	NR	940	0	NR
425	42	NR	555	680	NR	685	178	NR	815	3	NR	945	0	NR
430	75	NR	560	725	NR	690	154	NR	820	3	NR	950	0	NR
435	132	NR	565	774	NR	695	131	NR	825	2	NR	955	0	NR
440	225	NR	570	826	NR	700	111	NR	830	2	NR	960	0	NR
445	400	NR	575	875	NR	705	95	NR	835	2	NR	965	0	NR
450	706	NR	580	925	NR	710	80	NR	840	1	NR	970	0	NR
455	858	NR	585	963	NR	715	68	NR	845	1	NR	975	0	NR
460	672	NR	590	987	NR	720	58	NR	850	1	NR	980	0	NR
465	526	NR	595	998	NR	725	49	NR	855	1	NR	985	0	NR
470	456	NR	600	997	NR	730	42	NR	860	1	NR	990	0	NR
475	363	NR	605	978	NR	735	36	NR	865	1	NR	995	0	NR
480	307	NR	610	950	NR	740	30	NR	870	1	NR	1000	0	NR
485	305	NR	615	908	NR	745	26	NR	875	1	NR			

REPORT NUMBER: SP1-2407-168-2

Scotopic Flux vs. Wavelength



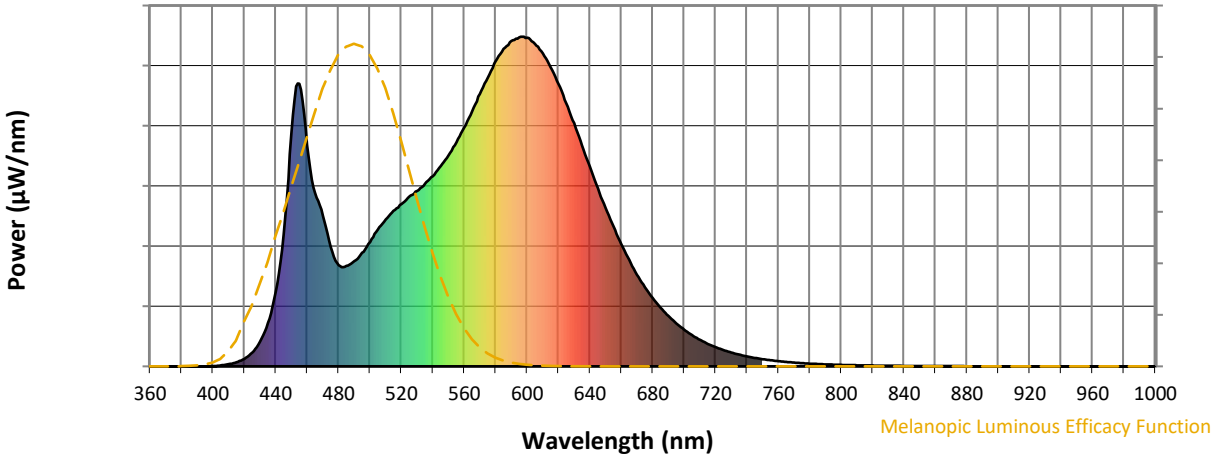
Scotopic Lumens: NR

S/P: 1.56

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	319	NR	620	856	NR	750	22	NR	880	1	NR
365	0	NR	495	344	NR	625	798	NR	755	18	NR	885	0	NR
370	0	NR	500	377	NR	630	738	NR	760	16	NR	890	0	NR
375	0	NR	505	415	NR	635	671	NR	765	13	NR	895	0	NR
380	0	NR	510	445	NR	640	606	NR	770	11	NR	900	0	NR
385	0	NR	515	472	NR	645	541	NR	775	10	NR	905	0	NR
390	0	NR	520	492	NR	650	481	NR	780	8	NR	910	0	NR
395	0	NR	525	514	NR	655	424	NR	785	7	NR	915	0	NR
400	1	NR	530	532	NR	660	371	NR	790	6	NR	920	0	NR
405	3	NR	535	554	NR	665	323	NR	795	5	NR	925	0	NR
410	6	NR	540	577	NR	670	278	NR	800	4	NR	930	0	NR
415	12	NR	545	608	NR	675	240	NR	805	4	NR	935	0	NR
420	23	NR	550	640	NR	680	207	NR	810	3	NR	940	0	NR
425	42	NR	555	680	NR	685	178	NR	815	3	NR	945	0	NR
430	75	NR	560	725	NR	690	154	NR	820	3	NR	950	0	NR
435	132	NR	565	774	NR	695	131	NR	825	2	NR	955	0	NR
440	225	NR	570	826	NR	700	111	NR	830	2	NR	960	0	NR
445	400	NR	575	875	NR	705	95	NR	835	2	NR	965	0	NR
450	706	NR	580	925	NR	710	80	NR	840	1	NR	970	0	NR
455	858	NR	585	963	NR	715	68	NR	845	1	NR	975	0	NR
460	672	NR	590	987	NR	720	58	NR	850	1	NR	980	0	NR
465	526	NR	595	998	NR	725	49	NR	855	1	NR	985	0	NR
470	456	NR	600	997	NR	730	42	NR	860	1	NR	990	0	NR
475	363	NR	605	978	NR	735	36	NR	865	1	NR	995	0	NR
480	307	NR	610	950	NR	740	30	NR	870	1	NR	1000	0	NR
485	305	NR	615	908	NR	745	26	NR	875	1	NR			

REPORT NUMBER: SP1-2407-168-2

Melanopic Flux vs. Wavelength



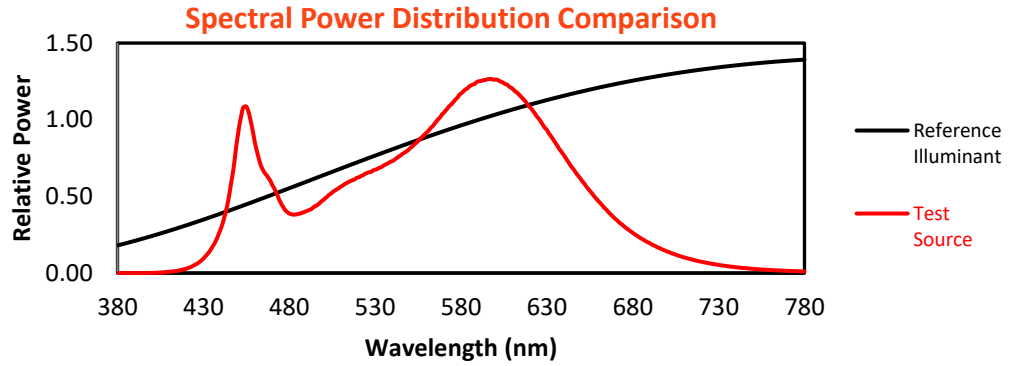
Melanopic Lumens: NR

M/P: 3.22

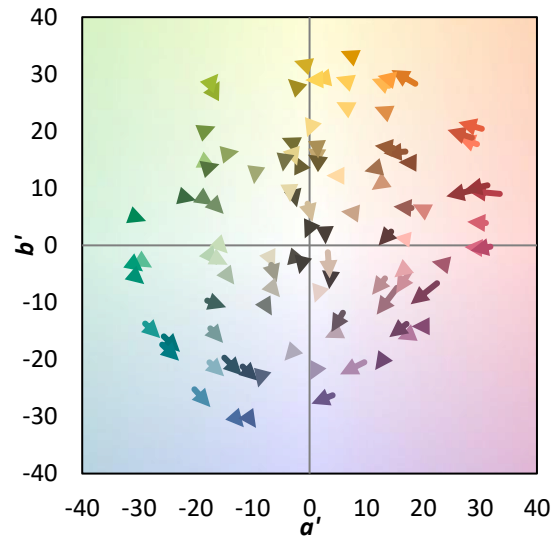
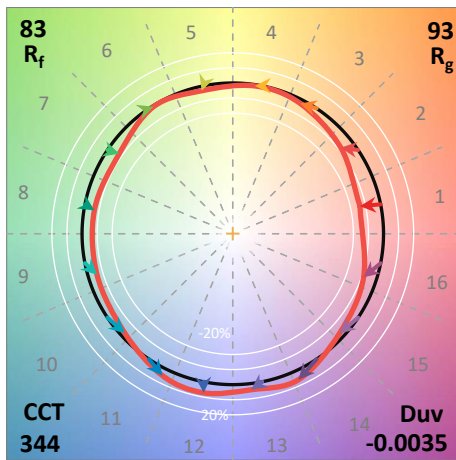
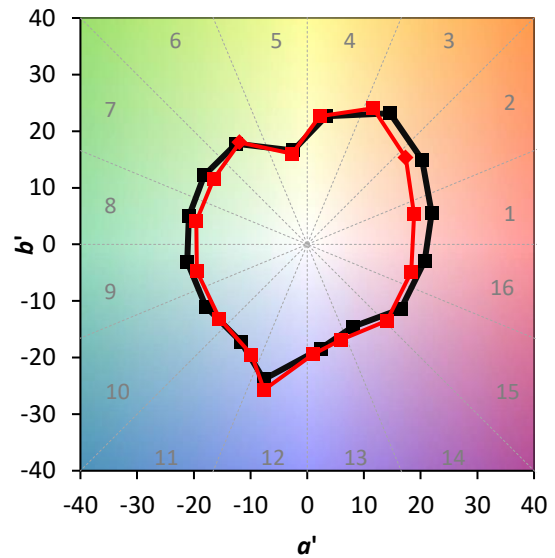
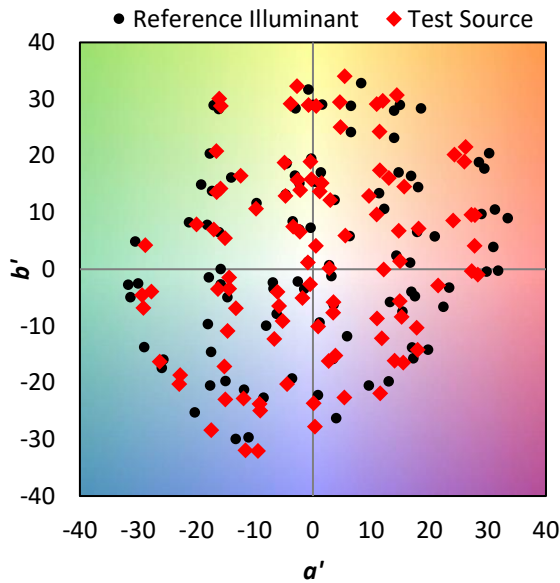
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	319	NR	620	856	NR	750	22	NR	880	1	NR
365	0	NR	495	344	NR	625	798	NR	755	18	NR	885	0	NR
370	0	NR	500	377	NR	630	738	NR	760	16	NR	890	0	NR
375	0	NR	505	415	NR	635	671	NR	765	13	NR	895	0	NR
380	0	NR	510	445	NR	640	606	NR	770	11	NR	900	0	NR
385	0	NR	515	472	NR	645	541	NR	775	10	NR	905	0	NR
390	0	NR	520	492	NR	650	481	NR	780	8	NR	910	0	NR
395	0	NR	525	514	NR	655	424	NR	785	7	NR	915	0	NR
400	1	NR	530	532	NR	660	371	NR	790	6	NR	920	0	NR
405	3	NR	535	554	NR	665	323	NR	795	5	NR	925	0	NR
410	6	NR	540	577	NR	670	278	NR	800	4	NR	930	0	NR
415	12	NR	545	608	NR	675	240	NR	805	4	NR	935	0	NR
420	23	NR	550	640	NR	680	207	NR	810	3	NR	940	0	NR
425	42	NR	555	680	NR	685	178	NR	815	3	NR	945	0	NR
430	75	NR	560	725	NR	690	154	NR	820	3	NR	950	0	NR
435	132	NR	565	774	NR	695	131	NR	825	2	NR	955	0	NR
440	225	NR	570	826	NR	700	111	NR	830	2	NR	960	0	NR
445	400	NR	575	875	NR	705	95	NR	835	2	NR	965	0	NR
450	706	NR	580	925	NR	710	80	NR	840	1	NR	970	0	NR
455	858	NR	585	963	NR	715	68	NR	845	1	NR	975	0	NR
460	672	NR	590	987	NR	720	58	NR	850	1	NR	980	0	NR
465	526	NR	595	998	NR	725	49	NR	855	1	NR	985	0	NR
470	456	NR	600	997	NR	730	42	NR	860	1	NR	990	0	NR
475	363	NR	605	978	NR	735	36	NR	865	1	NR	995	0	NR
480	307	NR	610	950	NR	740	30	NR	870	1	NR	1000	0	NR
485	305	NR	615	908	NR	745	26	NR	875	1	NR			

Summary

$R_f = 82.6$
 $R_g = 93$
 CIE $R_a = 81.3$
 $R_9 = -0.6$

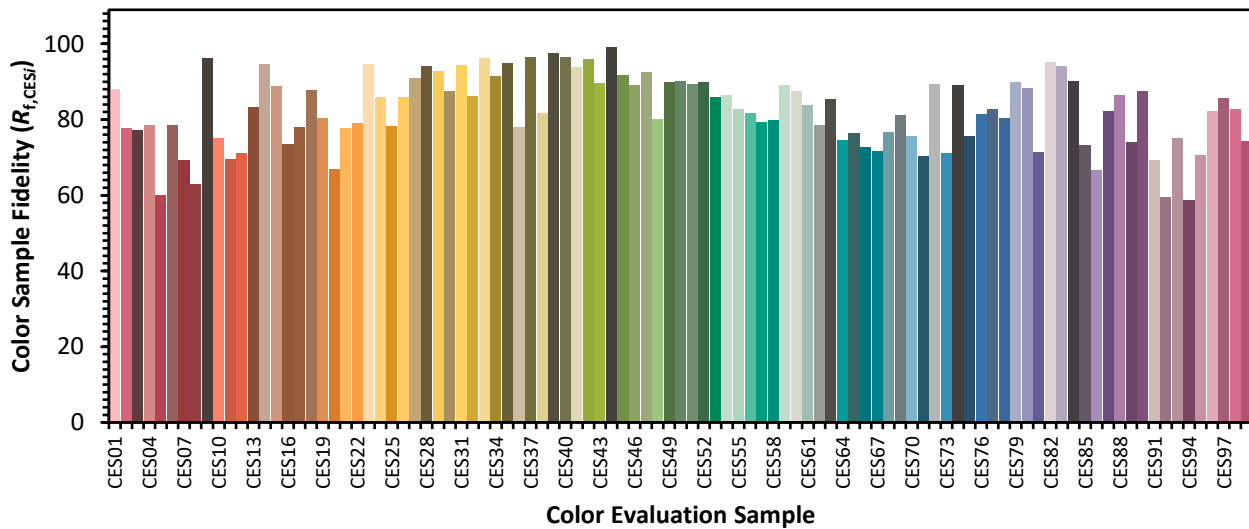


Color Vector Graphics

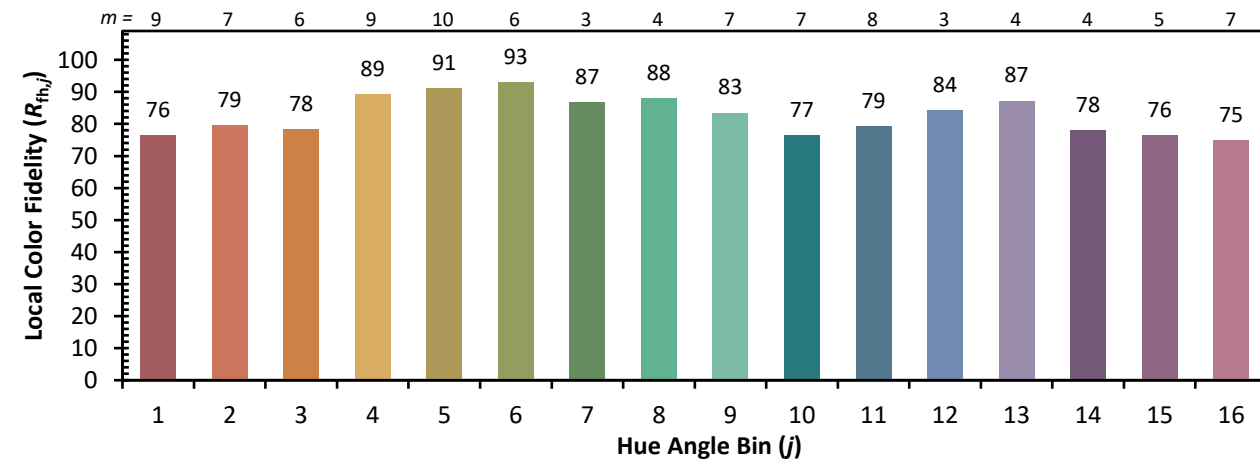
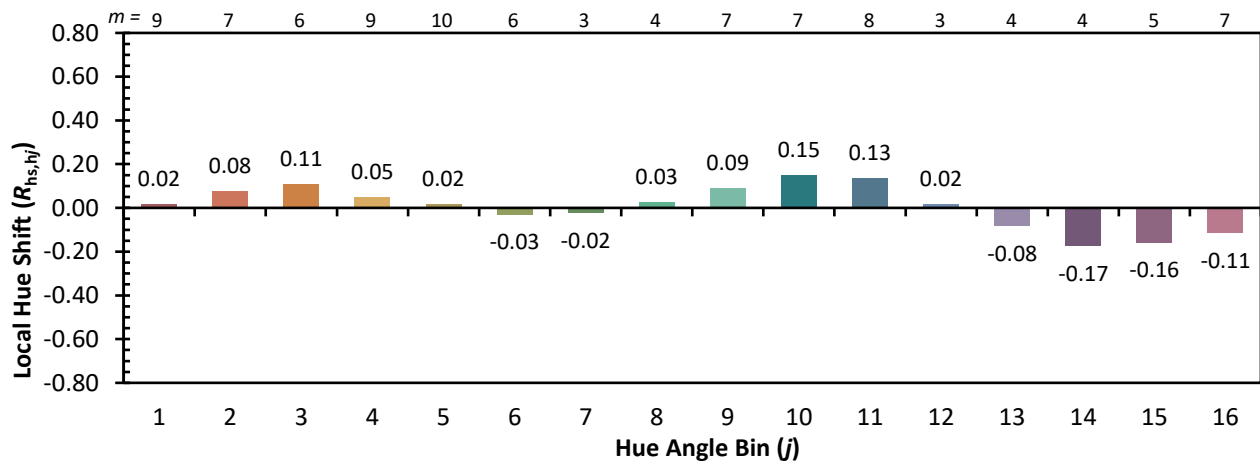
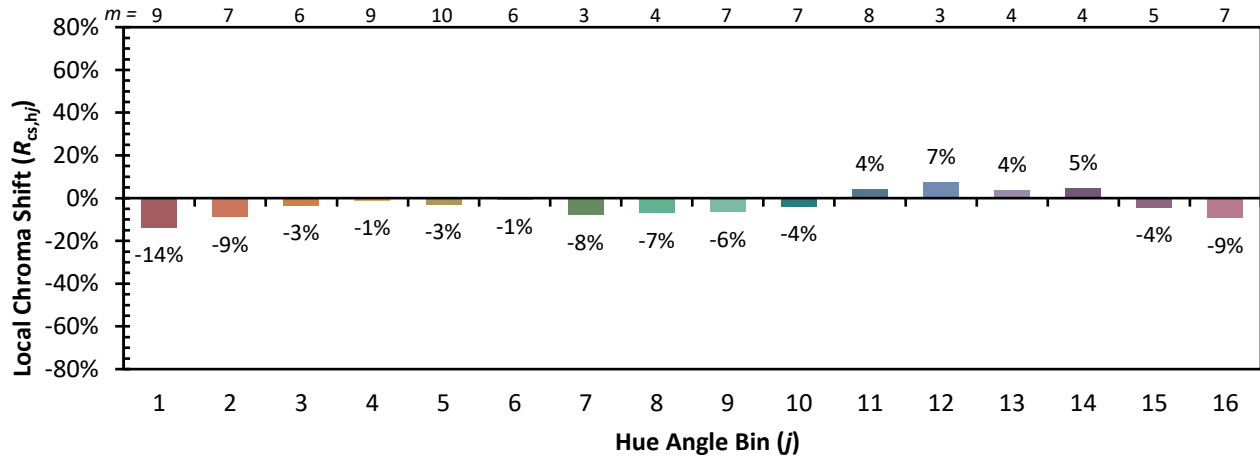


Individual Sample Fidelity Index ($R_{f,i}$)

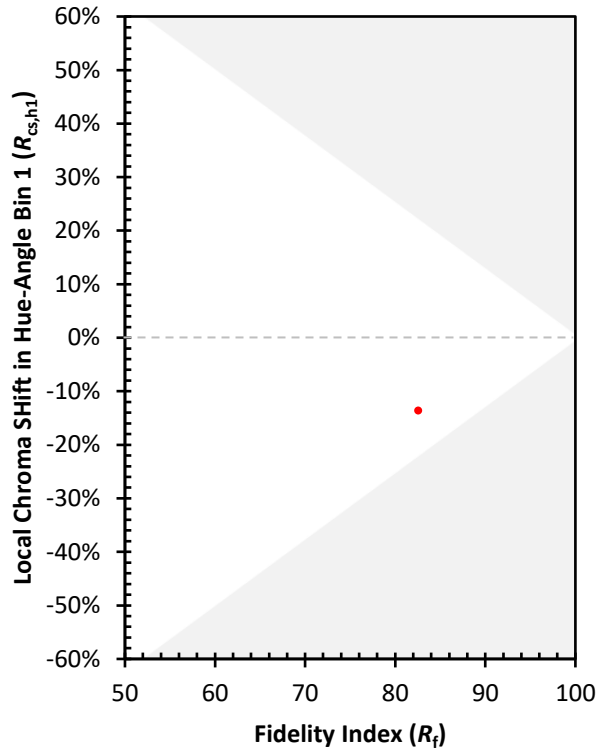
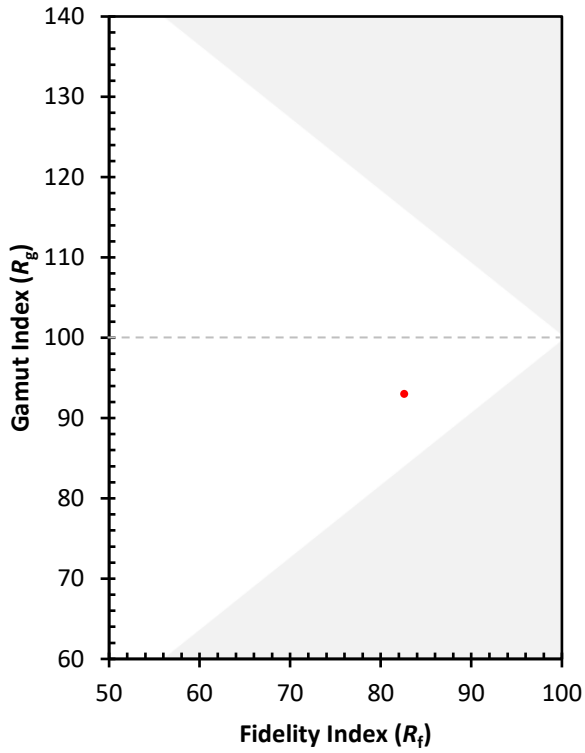
CES01 = 86	CES26 = 86	CES51 = 89	CES76 = 81
CES02 = 62	CES27 = 91	CES52 = 90	CES77 = 83
CES03 = 31	CES28 = 94	CES53 = 86	CES78 = 80
CES04 = 70	CES29 = 93	CES54 = 86	CES79 = 90
CES05 = 49	CES30 = 87	CES55 = 83	CES80 = 88
CES06 = 51	CES31 = 94	CES56 = 82	CES81 = 71
CES07 = 41	CES32 = 86	CES57 = 79	CES82 = 95
CES08 = 40	CES33 = 96	CES58 = 80	CES83 = 94
CES09 = 29	CES34 = 91	CES59 = 89	CES84 = 90
CES10 = 75	CES35 = 95	CES60 = 88	CES85 = 73
CES11 = 58	CES36 = 78	CES61 = 84	CES86 = 67
CES12 = 64	CES37 = 96	CES62 = 79	CES87 = 82
CES13 = 43	CES38 = 82	CES63 = 86	CES88 = 86
CES14 = 74	CES39 = 97	CES64 = 74	CES89 = 74
CES15 = 71	CES40 = 96	CES65 = 76	CES90 = 88
CES16 = 47	CES41 = 94	CES66 = 73	CES91 = 69
CES17 = 50	CES42 = 96	CES67 = 72	CES92 = 59
CES18 = 56	CES43 = 90	CES68 = 77	CES93 = 75
CES19 = 72	CES44 = 99	CES69 = 81	CES94 = 59
CES20 = 66	CES45 = 92	CES70 = 76	CES95 = 71
CES21 = 86	CES46 = 89	CES71 = 70	CES96 = 82
CES22 = 79	CES47 = 92	CES72 = 89	CES97 = 86
CES23 = 92	CES48 = 80	CES73 = 71	CES98 = 83
CES24 = 91	CES49 = 90	CES74 = 89	CES99 = 74
CES25 = 72	CES50 = 90	CES75 = 76	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)