

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: P979126

Luminaire Tested: **WPSLED15S-50W-5000K**

Issue Date: 03/31/2025



Test Information

Test Method: LM-79-08
Report Number: P979126
Test Lab: Cooper Lighting Solutions
Issue Date: 03/31/2025
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: WPSLED15S-50W-5000K
Description: LUMARK WALL PACK LED SMALL 80CRI CCT AND LUMEN SELECTIVE FIXTURE
OPERATING @50W-5000K
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

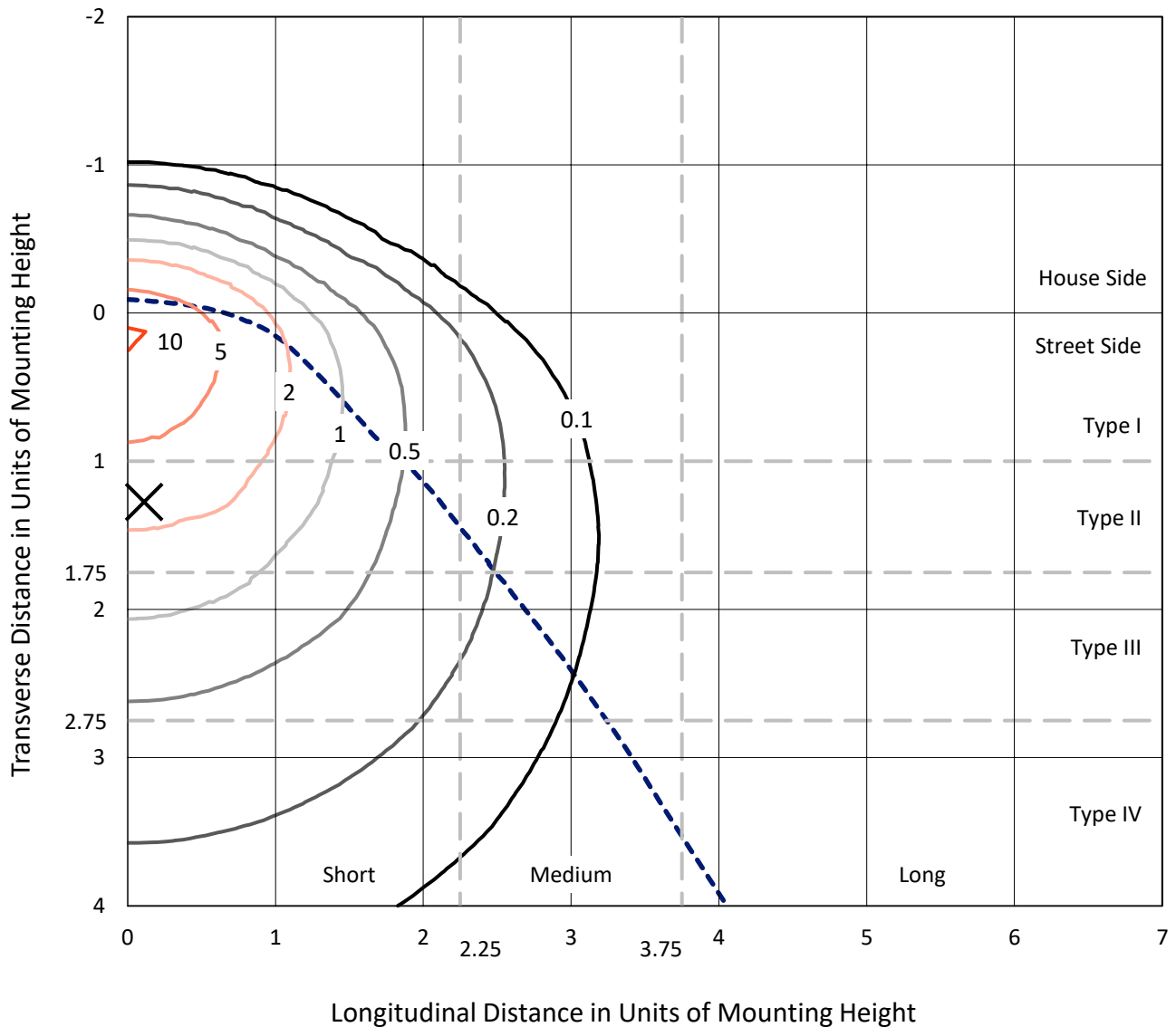
Lumens per Lamp: N/A
Luminaire Lumens: 7116.6 lumens
Efficiency: N/A
Efficacy: 143.5 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 0.61' x L: 0.12' x H: 0.44')
IES Classification: Type IV - Short
BUG Rating: B1 - U3 - G4

Input Watts (W): 49.6
Input Voltage (V): 120
Input Current (Ain): 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

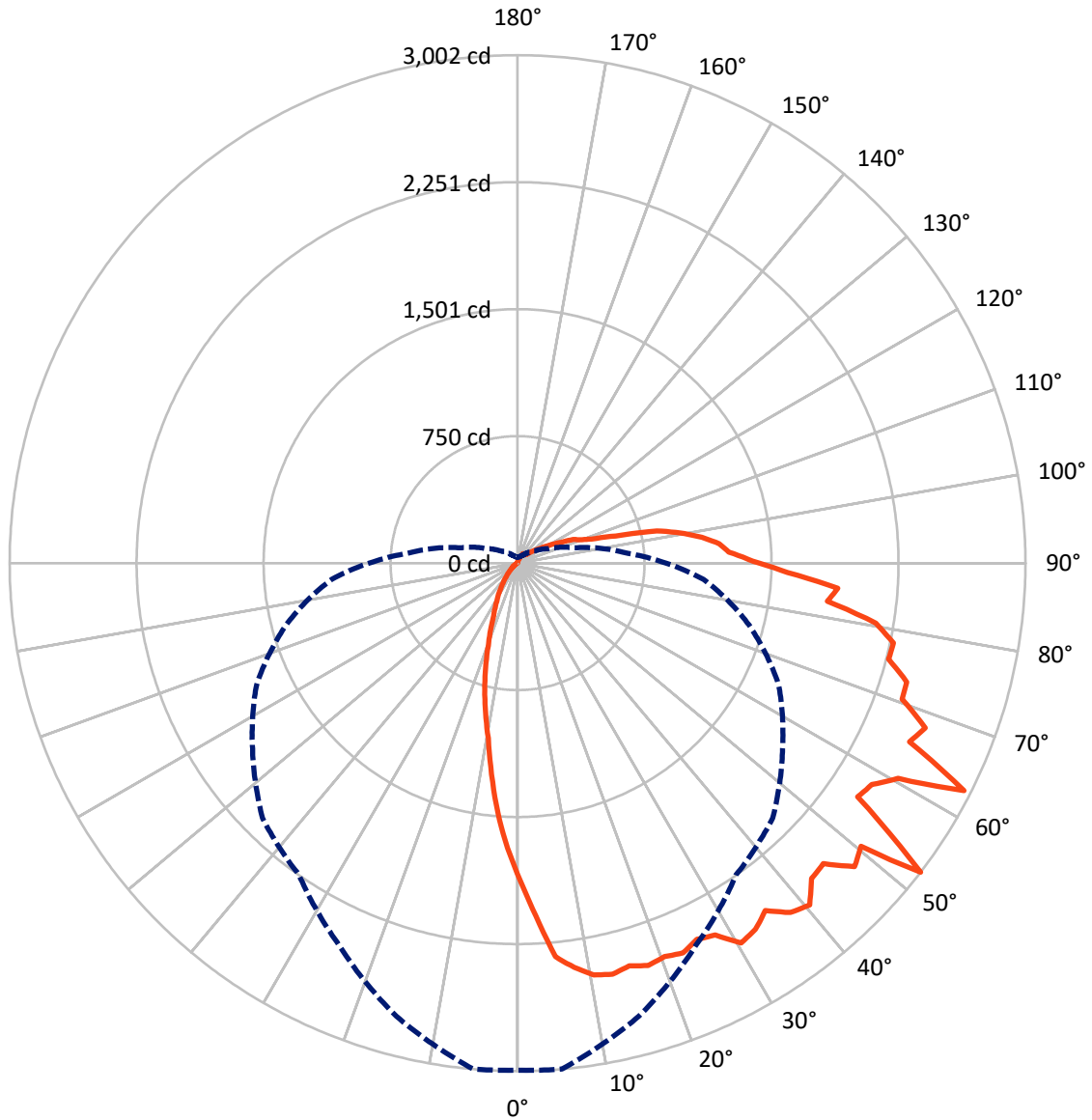
× Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 10.4 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 5-Deg Lateral - - - Horizontal Cone Through 52-Deg Vertical

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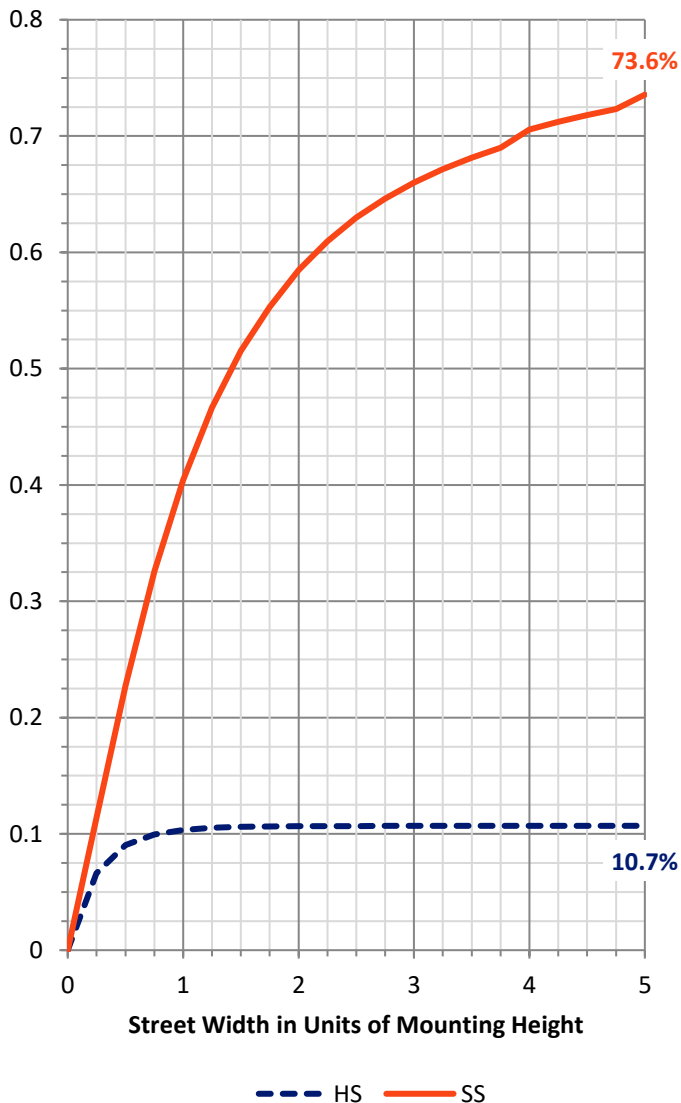
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	769.6	7.8	777.5
	% Fixture	10.8	0.1	10.9
Street Side	Lumens	5652.1	687.0	6339.1
	% Fixture	79.4	9.7	89.1
Total	Lumens	6421.7	694.9	7116.6
	% Fixture	90.2	9.8	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	177.1	2.5
10°-20°	474.3	6.7
20°-30°	684.9	9.6
30°-40°	834.8	11.7
40°-50°	923.6	13.0
50°-60°	953.8	13.4
60°-70°	947.7	13.3
70°-80°	824.9	11.6
80°-90°	600.6	8.4
90°-100°	361.6	5.1
100°-110°	174.3	2.4
110°-120°	78.5	1.1
120°-130°	37.4	0.5
130°-140°	20.9	0.3
140°-150°	13.9	0.2
150°-160°	6.3	0.1
160°-170°	1.7	0.0
170°-180°	0.1	0.0
0°-90°	6421.7	90.2
0°-180°	7116.6	100.0



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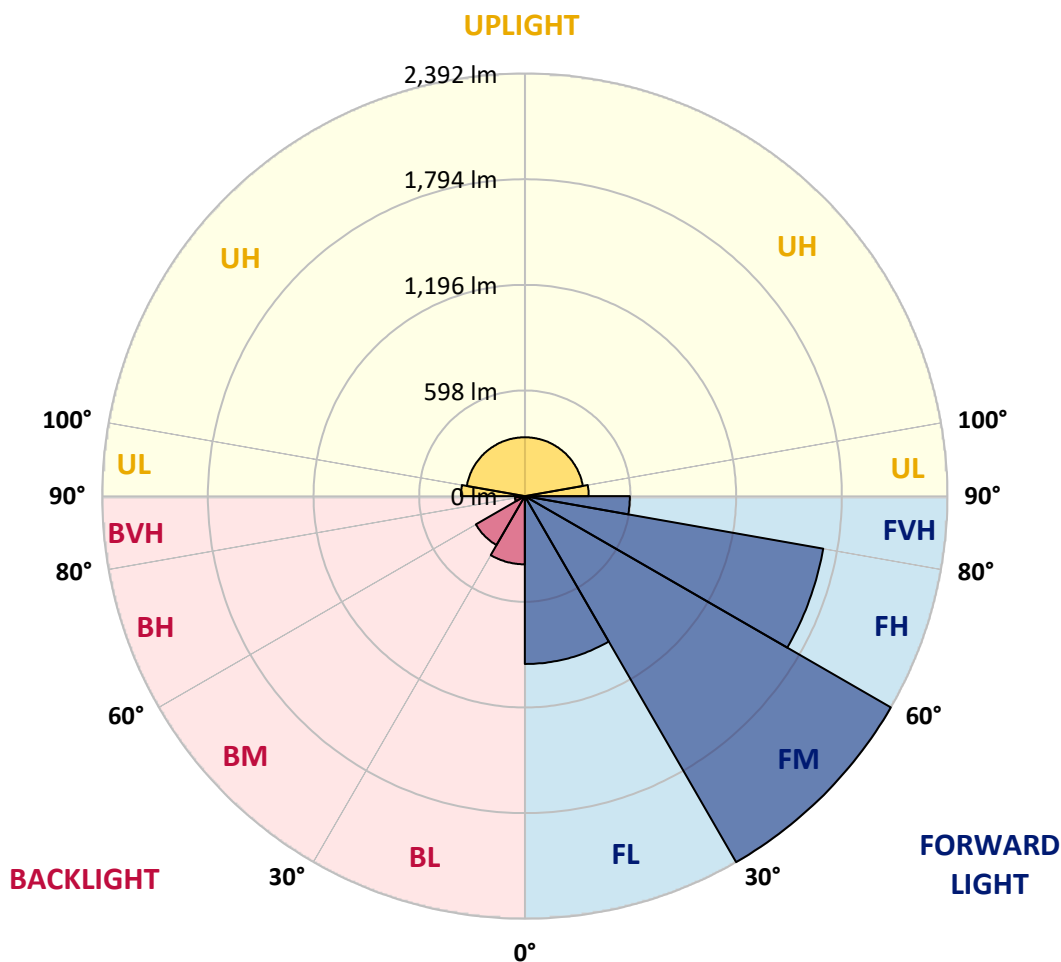
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	950.3	13.4			
FM (30°-60°)	2392.2	33.6			
FH (60°-80°)	1715.2	24.1			G1/1800
FVH (80°-90°)	594.4	8.4			G4/750
BL (0°-30°)	386.0	5.4	B1/500		
BM (30°-60°)	319.9	4.5	B1/1000		
BH (60°-80°)	57.5	0.8	B0/110		G0/110
BVH (80°-90°)	6.3	0.1			G0/10
UL (90°-100°)	361.6	5.1		U3/500	
UH (100°-180°)	333.3	4.7		U3/500	

BUG Rating: B1-U3-G4

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1875.2	1875.2	1875.2	1875.2	1875.2	1875.2	1875.2	1875.2	1875.2	1875.2	1875.2
2.5°	2089.6	2089.6	2085.4	2080.3	2079.5	2076.1	2060.1	2020.4	1954.6	1893.8	1871.9
5°	2334.4	2336.9	2335.2	2285.4	2234.8	2158.8	2101.4	2058.4	2030.5	1904.8	1858.4
7.5°	2409.5	2412.8	2424.7	2403.6	2378.2	2340.3	2215.4	2086.2	2022.9	1898.0	1822.1
10°	2468.5	2475.3	2460.1	2411.2	2358.8	2352.9	2318.3	2163.9	2013.7	1892.1	1790.0
12.5°	2479.5	2493.0	2439.8	2390.1	2390.1	2347.0	2315.8	2242.4	2030.5	1893.8	1768.9
15°	2463.5	2470.2	2423.8	2406.9	2405.2	2336.9	2286.3	2266.0	2058.4	1889.6	1744.4
17.5°	2497.2	2499.8	2483.7	2435.6	2347.9	2363.9	2309.9	2259.2	2108.2	1882.8	1725.9
20°	2487.1	2482.0	2425.5	2400.2	2426.3	2312.4	2280.3	2223.8	2138.6	1865.1	1693.8
22.5°	2505.7	2503.1	2433.9	2417.1	2361.4	2359.7	2320.0	2227.2	2135.2	1839.0	1654.1
25°	2463.5	2463.5	2401.9	2399.3	2377.4	2325.9	2236.5	2201.0	2111.6	1811.1	1616.2
27.5°	2500.6	2488.8	2405.2	2372.3	2363.0	2293.0	2240.7	2166.4	2071.0	1769.8	1572.3
30°	2614.5	2604.4	2514.1	2399.3	2320.9	2303.1	2228.9	2139.4	2015.3	1720.0	1522.5
32.5°	2591.8	2581.6	2536.1	2494.7	2342.0	2262.6	2153.8	2068.5	1961.3	1666.0	1470.2
35°	2541.1	2521.7	2458.4	2461.8	2425.5	2235.6	2149.5	1996.8	1909.0	1614.5	1412.8
37.5°	2648.3	2620.5	2516.6	2435.6	2396.0	2238.1	2136.9	1989.2	1859.2	1558.8	1344.4
40°	2692.2	2657.6	2506.5	2505.7	2328.4	2289.6	2082.0	1974.8	1808.6	1494.6	1282.0
42.5°	2558.0	2548.7	2643.2	2494.7	2382.5	2217.0	2060.9	1922.5	1742.7	1417.8	1202.6
45°	2558.0	2533.5	2442.4	2488.0	2352.9	2157.1	2039.8	1867.7	1663.4	1339.3	1119.1
47.5°	2720.0	2680.4	2525.1	2379.1	2369.8	2188.4	2009.4	1828.0	1570.6	1257.5	1027.9
50°	2651.7	2630.6	2592.6	2490.5	2235.6	2186.7	1964.7	1765.5	1483.7	1168.9	934.2
52°	2996.9	3001.9	2771.5	2493.0	2250.8	2131.8	1912.4	1702.2	1417.0	1103.0	878.5
52.5°	2870.3	2906.6	2878.7	2462.6	2271.9	2103.1	1903.1	1680.3	1398.4	1081.1	865.0
55°	2441.5	2439.0	2428.0	2659.3	2270.2	2016.2	1878.6	1605.2	1321.6	1011.9	797.5
57.5°	2464.3	2469.4	2385.8	2323.4	2375.7	2001.0	1819.5	1518.3	1255.8	941.0	729.2
60°	2591.8	2584.2	2607.8	2362.2	2182.4	1996.8	1687.0	1452.4	1200.9	866.7	675.2
62.5°	2983.4	2961.4	2722.6	2414.5	2185.8	2007.7	1638.1	1395.9	1137.6	805.1	618.6
65°	2554.6	2545.3	2498.9	2586.7	2225.5	1912.4	1618.7	1363.0	1071.0	741.0	539.3
67.5°	2605.3	2599.4	2502.3	2353.8	2255.0	1911.5	1570.6	1293.8	1006.8	659.1	456.6
70°	2412.8	2411.2	2356.3	2277.8	2105.6	1877.8	1498.0	1206.0	932.6	568.0	372.2
72.5°	2396.0	2405.2	2325.9	2196.8	2031.4	1745.3	1421.2	1138.5	844.8	486.1	304.7
75°	2266.8	2265.2	2206.1	2093.0	1932.6	1655.8	1345.3	1077.7	751.1	405.1	238.8
77.5°	2268.5	2271.1	2197.6	2052.5	1863.4	1560.5	1261.7	961.3	660.0	321.5	182.3
80°	2144.5	2146.2	2049.1	1926.7	1747.0	1460.9	1146.1	863.4	561.2	246.4	134.2
82.5°	1835.6	1844.0	1780.7	1695.5	1566.4	1312.3	1022.0	772.2	471.8	184.0	99.6
85°	1885.4	1898.9	1807.7	1685.4	1519.9	1232.2	913.2	663.3	373.9	131.7	73.4
87.5°	1575.6	1595.9	1529.2	1449.9	1306.4	1058.3	784.0	540.1	293.7	99.6	56.5
90°	1375.6	1389.1	1337.7	1250.7	1108.9	914.8	677.7	450.7	227.0	74.3	44.7
92.5°	1229.6	1249.9	1225.4	1156.2	1026.2	815.3	577.3	361.2	172.2	57.4	38.0
95°	1179.0	1196.7	1130.0	1027.9	899.6	708.9	478.5	289.5	132.5	46.4	32.9
97.5°	1087.8	1099.7	1051.6	915.7	790.8	605.1	387.4	216.1	103.0	39.7	29.5
100°	973.9	978.1	910.6	821.2	672.6	487.0	294.5	168.8	83.6	36.3	27.0
102.5°	835.5	844.8	752.0	642.2	527.5	381.5	231.2	136.7	69.2	34.6	27.0
105°	595.8	600.9	546.9	487.8	411.0	295.4	192.4	114.8	58.2	33.8	27.0
107.5°	451.5	457.4	430.4	386.5	324.1	244.7	157.0	95.4	51.5	32.9	26.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
110°	392.4	393.3	371.3	335.0	280.2	201.7	130.0	79.3	47.3	32.9	25.3
112.5°	350.2	356.1	329.1	292.8	237.1	172.2	108.9	67.5	45.6	32.1	24.5
115°	286.1	287.8	269.2	242.2	194.1	142.6	93.7	60.8	44.7	30.4	22.8
117.5°	239.7	238.8	225.3	197.5	160.3	118.2	82.7	56.5	43.0	27.9	21.1
120°	192.4	195.0	183.1	162.9	133.3	100.4	72.6	53.2	41.4	26.2	19.4
122.5°	162.9	163.7	154.4	136.7	109.7	86.1	64.1	49.8	39.7	24.5	16.9
125°	135.9	136.7	129.1	113.9	92.8	75.1	58.2	48.1	38.8	22.8	15.2
127.5°	115.6	116.5	108.9	95.4	80.2	67.5	55.7	47.3	38.0	20.3	13.5
130°	97.9	97.1	91.1	81.9	71.7	63.3	54.9	45.6	34.6	17.7	11.8
132.5°	82.7	81.9	77.6	72.6	65.8	61.6	53.2	43.9	31.2	16.0	10.1
135°	71.7	70.9	69.2	67.5	63.3	59.1	51.5	41.4	28.7	13.5	8.4
137.5°	65.0	65.8	66.7	65.8	60.8	56.5	48.9	38.8	25.3	11.8	6.8
140°	67.5	66.7	65.8	65.0	59.9	54.0	47.3	37.1	22.8	10.1	5.9
142.5°	67.5	67.5	66.7	64.1	57.4	52.3	44.7	34.6	20.3	8.4	5.1
145°	67.5	67.5	65.0	60.8	55.7	48.9	41.4	30.4	17.7	6.8	4.2
147.5°	66.7	66.7	62.5	56.5	50.6	45.6	37.1	26.2	15.2	5.9	4.2
150°	63.3	62.5	56.5	50.6	46.4	40.5	31.2	22.8	12.7	5.1	3.4
152.5°	54.9	54.9	50.6	44.7	38.8	33.8	27.0	18.6	10.1	4.2	2.5
155°	43.9	43.0	39.7	35.4	31.2	28.7	22.8	16.0	8.4	3.4	2.5
157.5°	33.8	32.9	31.2	28.7	27.0	24.5	18.6	12.7	6.8	3.4	2.5
160°	29.5	29.5	27.0	25.3	22.8	19.4	15.2	10.1	5.1	2.5	1.7
162.5°	25.3	25.3	22.8	21.1	17.7	14.3	11.0	6.8	4.2	2.5	1.7
165°	19.4	19.4	17.7	16.0	13.5	10.1	7.6	5.1	3.4	2.5	1.7
167.5°	14.3	14.3	12.7	11.8	9.3	6.8	5.1	4.2	2.5	2.5	1.7
170°	8.4	8.4	7.6	6.8	5.1	4.2	4.2	3.4	2.5	1.7	1.7
172.5°	3.4	3.4	3.4	2.5	3.4	3.4	3.4	2.5	2.5	1.7	1.7
175°	0.8	0.8	1.7	1.7	2.5	2.5	2.5	2.5	2.5	1.7	1.7
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°	1875.2	1875.2	1875.2	1875.2	1875.2	1875.2	1875.2	1875.2	1875.2	1875.2
2.5°	1856.7	1833.1	1788.3	1736.8	1712.4	1696.3	1688.7	1688.7	1685.4	1688.7
5°	1831.4	1739.4	1684.5	1641.5	1587.5	1550.3	1523.3	1496.3	1480.3	1479.4
7.5°	1781.6	1660.0	1585.8	1510.7	1427.1	1374.8	1319.9	1279.4	1257.5	1260.9
10°	1725.9	1600.1	1483.7	1377.3	1260.9	1189.1	1121.6	1081.9	1049.0	1044.8
12.5°	1681.1	1530.9	1371.4	1218.7	1102.2	1002.6	936.8	915.7	904.7	901.3
15°	1640.6	1460.0	1272.7	1093.8	954.5	882.8	837.2	796.7	773.9	774.7
17.5°	1610.2	1390.0	1163.8	975.6	854.1	764.6	687.0	657.4	647.3	649.8
20°	1570.6	1312.3	1074.3	887.0	749.4	644.8	587.4	536.7	518.2	516.5
22.5°	1518.3	1232.2	978.1	792.5	642.2	543.5	474.3	439.7	425.3	421.1
25°	1465.9	1146.9	891.2	696.3	558.7	456.6	391.6	357.0	341.0	339.3
27.5°	1411.1	1064.2	812.7	600.0	470.9	383.2	319.0	293.7	286.1	282.7
30°	1349.5	991.6	720.7	521.6	401.7	319.0	275.1	250.7	242.2	240.5
32.5°	1282.8	914.0	632.1	450.7	341.8	274.3	232.1	215.2	205.9	205.9
35°	1211.9	834.7	551.1	390.7	290.3	232.9	196.6	176.4	165.4	163.7
37.5°	1137.6	755.3	481.0	335.9	248.1	197.5	161.2	143.5	137.6	134.2
40°	1061.7	680.2	419.4	288.6	208.5	160.3	131.7	114.8	108.9	108.9
42.5°	982.4	600.9	363.7	246.4	177.2	132.5	106.3	92.8	87.8	88.6
45°	893.7	524.1	309.7	208.5	146.8	108.0	86.9	74.3	68.4	67.5
47.5°	797.5	450.7	265.0	176.4	120.7	88.6	70.0	59.1	54.9	53.2
50°	717.4	388.2	224.5	145.2	100.4	70.9	54.9	46.4	42.2	41.4
52°	654.9	347.7	200.9	126.6	86.1	59.1	45.6	38.0	36.3	37.1
52.5°	643.9	338.4	195.8	123.2	81.9	56.5	43.0	35.4	35.4	36.3
55°	578.9	297.9	169.6	104.6	66.7	44.7	32.1	28.7	30.4	29.5
57.5°	525.8	252.3	143.5	89.5	54.0	34.6	22.8	22.8	22.8	21.9
60°	469.2	216.9	123.2	76.0	42.2	24.5	16.0	14.3	12.7	12.7
62.5°	403.4	180.6	106.3	62.5	32.1	15.2	8.4	6.8	5.9	5.9
65°	339.3	151.1	90.3	50.6	22.8	7.6	1.7	0.0	0.0	0.0
67.5°	275.1	127.4	75.1	39.7	15.2	1.7	0.0	0.0	0.0	0.0
70°	222.0	105.5	62.5	29.5	7.6	0.0	0.0	0.0	0.0	0.0
72.5°	175.5	87.8	50.6	20.3	1.7	0.0	0.0	0.0	0.0	0.0
75°	135.9	71.7	39.7	12.7	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	103.8	57.4	30.4	7.6	0.0	0.0	0.0	0.0	0.0	0.0
80°	80.2	45.6	23.6	4.2	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	61.6	36.3	17.7	2.5	0.0	0.0	0.0	0.0	0.0	0.0
85°	48.1	27.9	13.5	1.7	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	38.8	21.9	9.3	0.8	0.0	0.0	0.0	0.0	0.0	0.0
90°	31.2	17.7	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	27.0	14.3	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	22.8	11.8	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	21.1	11.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	20.3	10.1	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	20.3	9.3	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105°	20.3	9.3	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	19.4	8.4	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P979126
 CATALOG NUMBER: WPSLED15S-50W-5000K

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
110°	19.4	7.6	2.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0
112.5°	18.6	5.9	2.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0
115°	16.9	4.2	2.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	15.2	2.5	2.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0
120°	11.8	1.7	1.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	10.1	1.7	1.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0
125°	9.3	0.8	1.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	9.3	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
130°	7.6	2.5	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	6.8	2.5	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
135°	5.9	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	5.1	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
140°	4.2	2.5	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0
142.5°	3.4	2.5	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0
145°	3.4	2.5	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0
147.5°	3.4	1.7	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0
150°	2.5	1.7	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0
152.5°	2.5	1.7	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0
155°	2.5	1.7	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0
157.5°	1.7	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
160°	1.7	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	1.7	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
165°	1.7	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	1.7	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
170°	1.7	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	1.7	0.8	0.8	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

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



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

Report Prepared for

Cooper Lighting Solutions

Lumark

Report Number: SP1-2407-168-4

Test Date: 08/08/2024

Luminaire Tested: LSDL-92S-100W 5000k

Data in this report applies to families of products including LSDL-92S-100W 5000k.

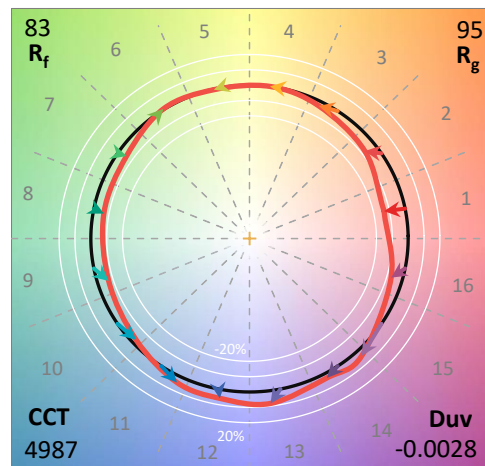
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-168-4
 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 5000k**
 Description: Lumark Wallpack 100W

Spectral Parameters

CCT (K): 4987
 CIE u': 0.2135
 CIE v': 0.4819
 Duv: -0.0028
 CIE x: 0.3449
 CIE y: 0.3461
 CIE z: 0.3090
 Peak Wavelength (nm): 453
 Dominant Wavelength (nm): 576
 Purity: 7.317109
 Rf: 82.9
 Rg: 94.6

CRI (Ra):	83.4		
R1:	82.5	R9:	6.6
R2:	92.4	R10:	80.3
R3:	94.5	R11:	78.9
R4:	79.9	R12:	59.3
R5:	82.3	R13:	85.9
R6:	86.3	R14:	97.8
R7:	84.5	R15:	77.3
R8:	64.7		



Test Conditions

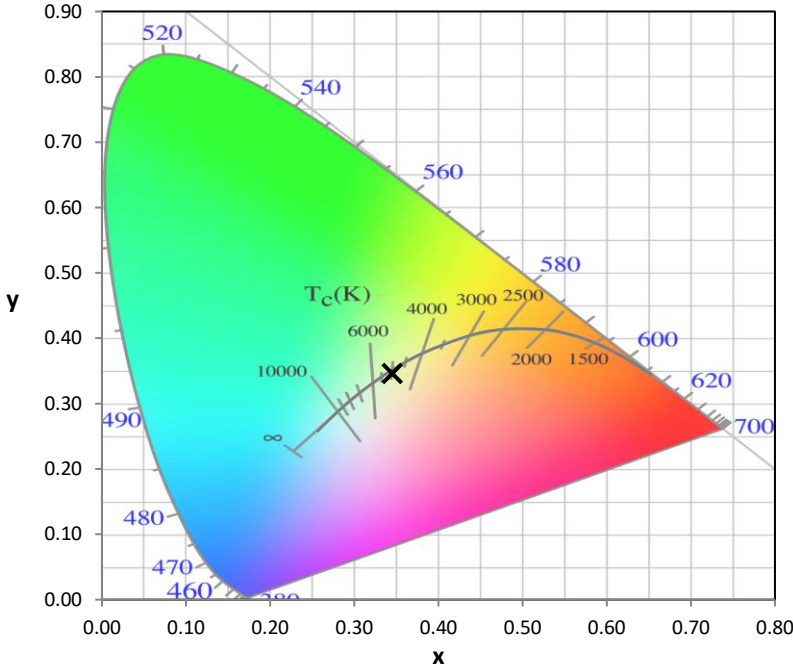
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2407-168-4

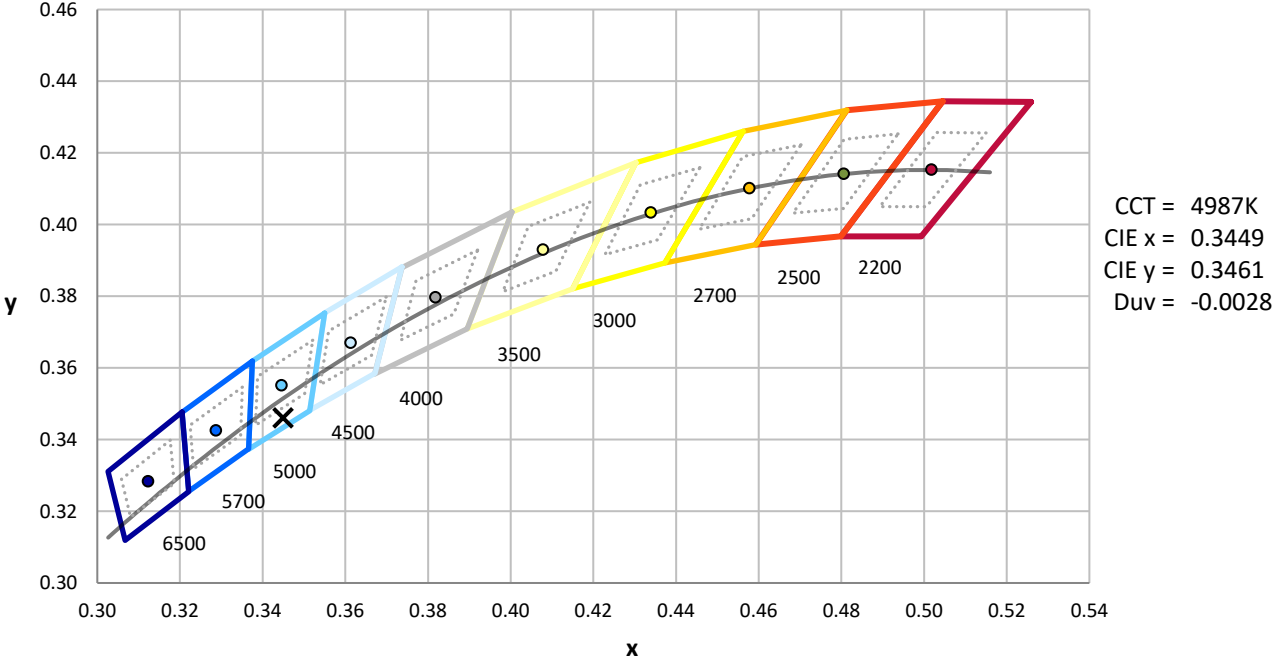
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2407-168-4

CIE 1931 Chromaticity Diagram



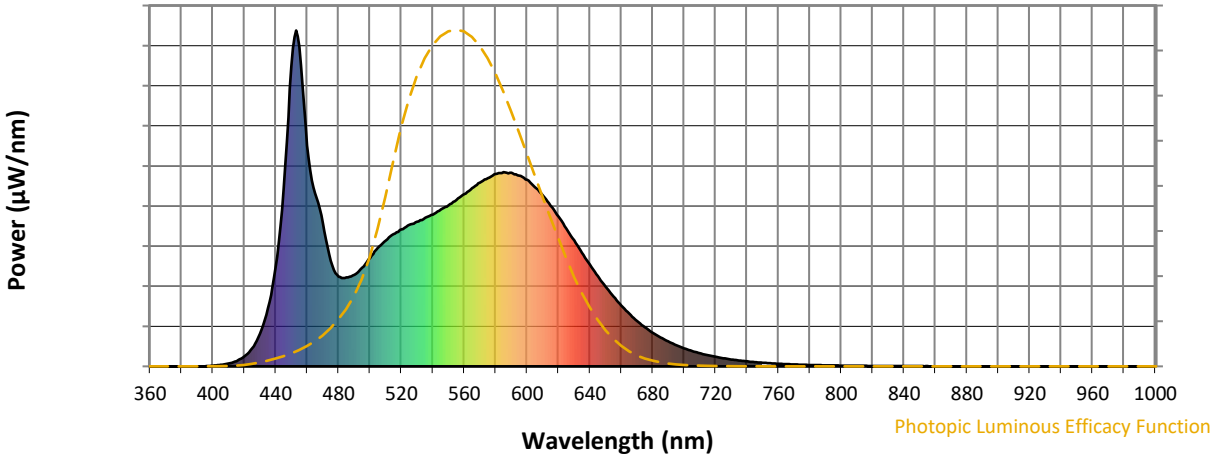
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 5000K 7-step quadrangle

REPORT NUMBER: SP1-2407-168-4

Photopic Flux vs. Wavelength

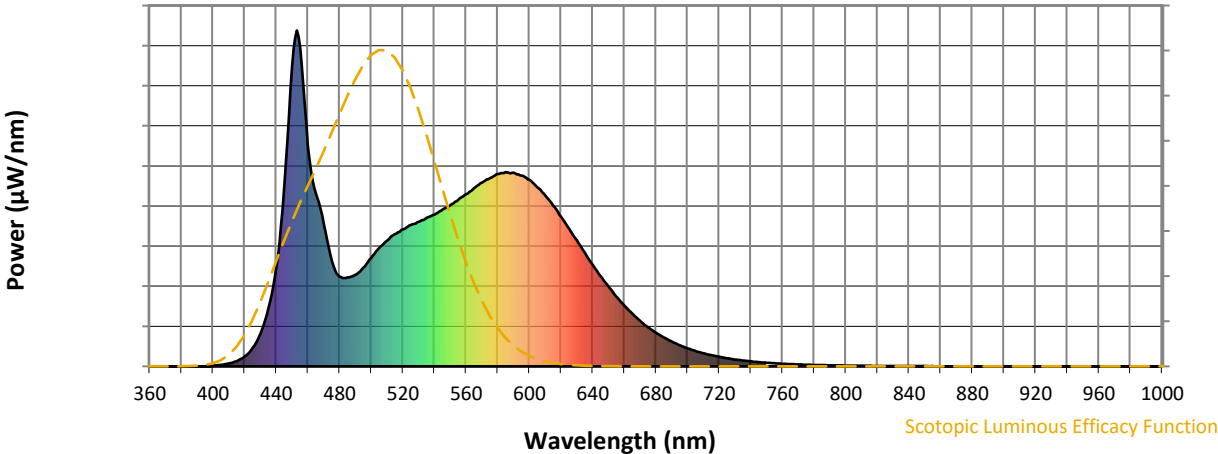


Photopic Lumens: NR

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	273	NR	620	446	NR	750	11	NR	880	0	NR
365	0	NR	495	294	NR	625	410	NR	755	9	NR	885	0	NR
370	0	NR	500	322	NR	630	376	NR	760	8	NR	890	0	NR
375	0	NR	505	352	NR	635	338	NR	765	7	NR	895	0	NR
380	0	NR	510	374	NR	640	303	NR	770	6	NR	900	0	NR
385	0	NR	515	393	NR	645	269	NR	775	5	NR	905	0	NR
390	0	NR	520	408	NR	650	237	NR	780	4	NR	910	0	NR
395	0	NR	525	421	NR	655	208	NR	785	4	NR	915	0	NR
400	2	NR	530	430	NR	660	181	NR	790	3	NR	920	0	NR
405	5	NR	535	442	NR	665	157	NR	795	3	NR	925	0	NR
410	9	NR	540	451	NR	670	135	NR	800	2	NR	930	0	NR
415	16	NR	545	467	NR	675	116	NR	805	2	NR	935	0	NR
420	29	NR	550	480	NR	680	100	NR	810	2	NR	940	0	NR
425	54	NR	555	495	NR	685	86	NR	815	2	NR	945	0	NR
430	98	NR	560	513	NR	690	74	NR	820	1	NR	950	0	NR
435	174	NR	565	530	NR	695	63	NR	825	1	NR	955	0	NR
440	296	NR	570	546	NR	700	54	NR	830	1	NR	960	0	NR
445	529	NR	575	561	NR	705	46	NR	835	1	NR	965	0	NR
450	894	NR	580	572	NR	710	39	NR	840	1	NR	970	0	NR
455	952	NR	585	578	NR	715	33	NR	845	1	NR	975	0	NR
460	658	NR	590	576	NR	720	28	NR	850	1	NR	980	0	NR
465	516	NR	595	568	NR	725	24	NR	855	1	NR	985	0	NR
470	424	NR	600	555	NR	730	21	NR	860	0	NR	990	0	NR
475	314	NR	605	534	NR	735	17	NR	865	0	NR	995	0	NR
480	267	NR	610	509	NR	740	15	NR	870	0	NR	1000	0	NR
485	265	NR	615	479	NR	745	13	NR	875	0	NR			

REPORT NUMBER: SP1-2407-168-4

Scotopic Flux vs. Wavelength



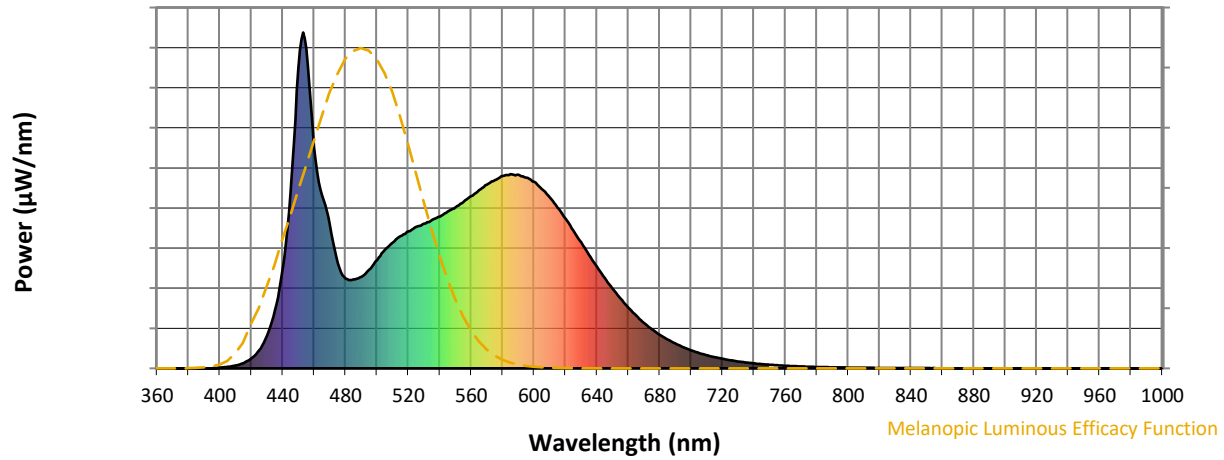
Scotopic Lumens: NR

S/P: 2

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	273	NR	620	446	NR	750	11	NR	880	0	NR
365	0	NR	495	294	NR	625	410	NR	755	9	NR	885	0	NR
370	0	NR	500	322	NR	630	376	NR	760	8	NR	890	0	NR
375	0	NR	505	352	NR	635	338	NR	765	7	NR	895	0	NR
380	0	NR	510	374	NR	640	303	NR	770	6	NR	900	0	NR
385	0	NR	515	393	NR	645	269	NR	775	5	NR	905	0	NR
390	0	NR	520	408	NR	650	237	NR	780	4	NR	910	0	NR
395	0	NR	525	421	NR	655	208	NR	785	4	NR	915	0	NR
400	2	NR	530	430	NR	660	181	NR	790	3	NR	920	0	NR
405	5	NR	535	442	NR	665	157	NR	795	3	NR	925	0	NR
410	9	NR	540	451	NR	670	135	NR	800	2	NR	930	0	NR
415	16	NR	545	467	NR	675	116	NR	805	2	NR	935	0	NR
420	29	NR	550	480	NR	680	100	NR	810	2	NR	940	0	NR
425	54	NR	555	495	NR	685	86	NR	815	2	NR	945	0	NR
430	98	NR	560	513	NR	690	74	NR	820	1	NR	950	0	NR
435	174	NR	565	530	NR	695	63	NR	825	1	NR	955	0	NR
440	296	NR	570	546	NR	700	54	NR	830	1	NR	960	0	NR
445	529	NR	575	561	NR	705	46	NR	835	1	NR	965	0	NR
450	894	NR	580	572	NR	710	39	NR	840	1	NR	970	0	NR
455	952	NR	585	578	NR	715	33	NR	845	1	NR	975	0	NR
460	658	NR	590	576	NR	720	28	NR	850	1	NR	980	0	NR
465	516	NR	595	568	NR	725	24	NR	855	1	NR	985	0	NR
470	424	NR	600	555	NR	730	21	NR	860	0	NR	990	0	NR
475	314	NR	605	534	NR	735	17	NR	865	0	NR	995	0	NR
480	267	NR	610	509	NR	740	15	NR	870	0	NR	1000	0	NR
485	265	NR	615	479	NR	745	13	NR	875	0	NR			

REPORT NUMBER: SP1-2407-168-4

Melanopic Flux vs. Wavelength



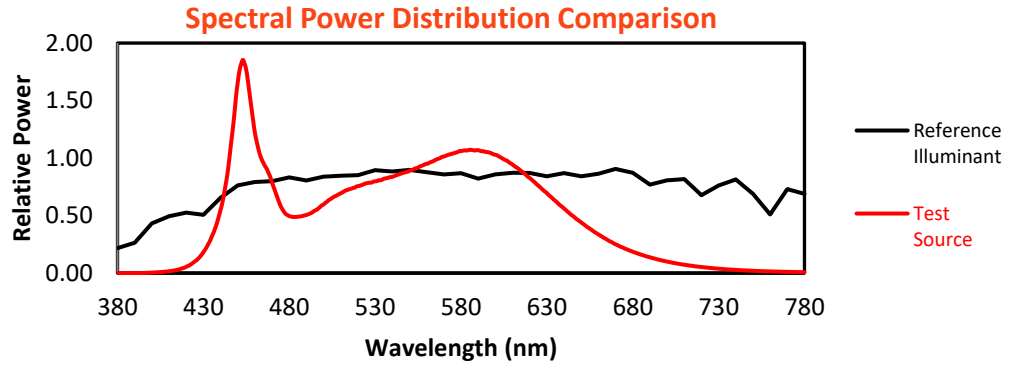
Melanopic Lumens: NR

M/P: 4.35

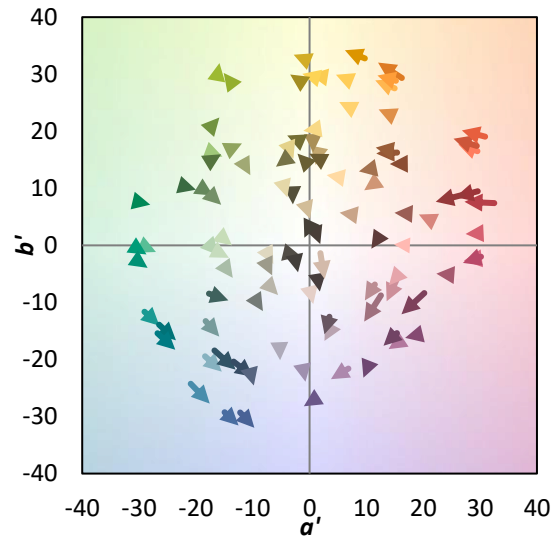
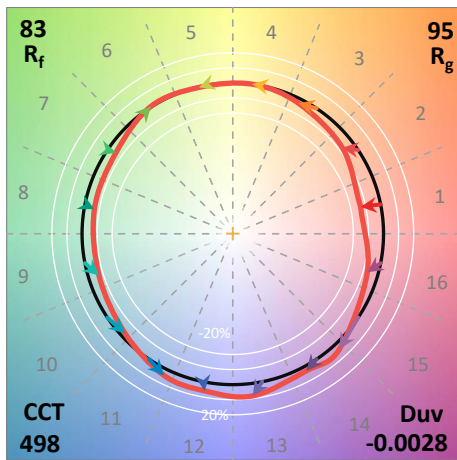
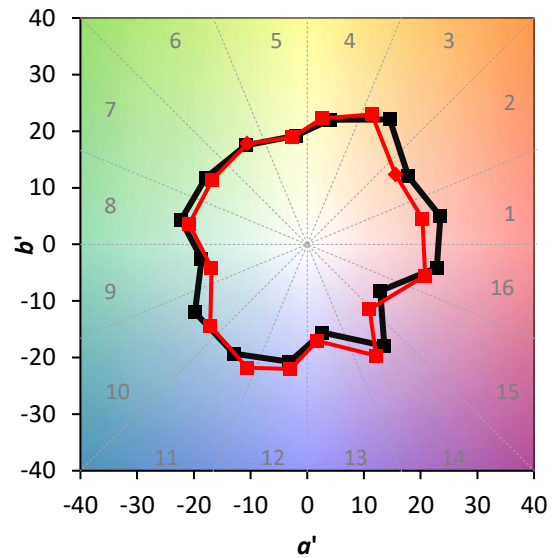
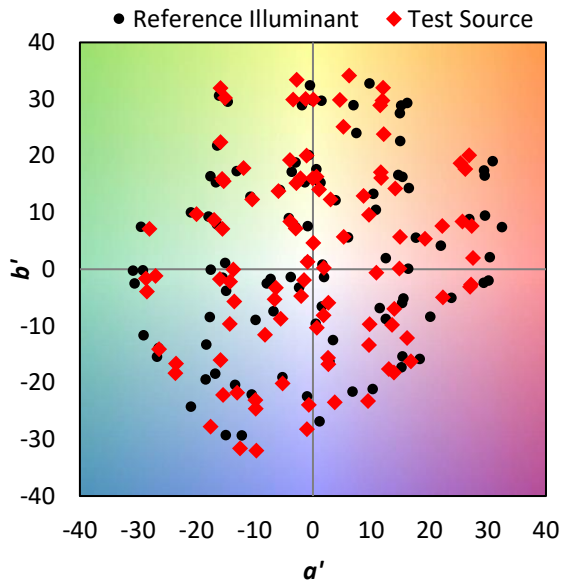
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	273	NR	620	446	NR	750	11	NR	880	0	NR
365	0	NR	495	294	NR	625	410	NR	755	9	NR	885	0	NR
370	0	NR	500	322	NR	630	376	NR	760	8	NR	890	0	NR
375	0	NR	505	352	NR	635	338	NR	765	7	NR	895	0	NR
380	0	NR	510	374	NR	640	303	NR	770	6	NR	900	0	NR
385	0	NR	515	393	NR	645	269	NR	775	5	NR	905	0	NR
390	0	NR	520	408	NR	650	237	NR	780	4	NR	910	0	NR
395	0	NR	525	421	NR	655	208	NR	785	4	NR	915	0	NR
400	2	NR	530	430	NR	660	181	NR	790	3	NR	920	0	NR
405	5	NR	535	442	NR	665	157	NR	795	3	NR	925	0	NR
410	9	NR	540	451	NR	670	135	NR	800	2	NR	930	0	NR
415	16	NR	545	467	NR	675	116	NR	805	2	NR	935	0	NR
420	29	NR	550	480	NR	680	100	NR	810	2	NR	940	0	NR
425	54	NR	555	495	NR	685	86	NR	815	2	NR	945	0	NR
430	98	NR	560	513	NR	690	74	NR	820	1	NR	950	0	NR
435	174	NR	565	530	NR	695	63	NR	825	1	NR	955	0	NR
440	296	NR	570	546	NR	700	54	NR	830	1	NR	960	0	NR
445	529	NR	575	561	NR	705	46	NR	835	1	NR	965	0	NR
450	894	NR	580	572	NR	710	39	NR	840	1	NR	970	0	NR
455	952	NR	585	578	NR	715	33	NR	845	1	NR	975	0	NR
460	658	NR	590	576	NR	720	28	NR	850	1	NR	980	0	NR
465	516	NR	595	568	NR	725	24	NR	855	1	NR	985	0	NR
470	424	NR	600	555	NR	730	21	NR	860	0	NR	990	0	NR
475	314	NR	605	534	NR	735	17	NR	865	0	NR	995	0	NR
480	267	NR	610	509	NR	740	15	NR	870	0	NR	1000	0	NR
485	265	NR	615	479	NR	745	13	NR	875	0	NR			

Summary

$R_f = 82.9$
 $R_g = 94.6$
 $CIE R_a = 83.4$
 $R_9 = 6.6$

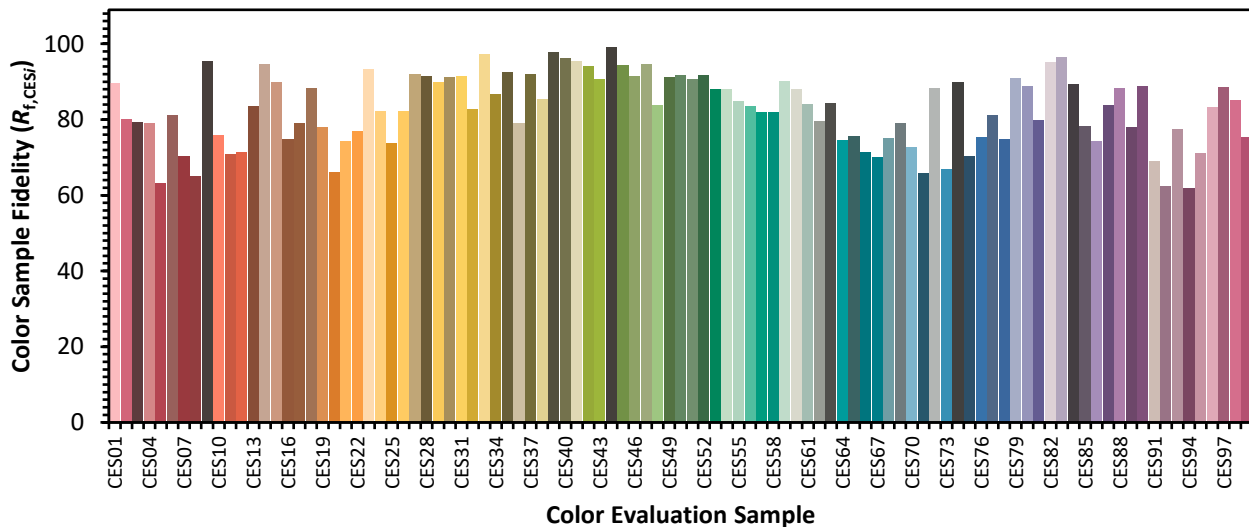


Color Vector Graphics

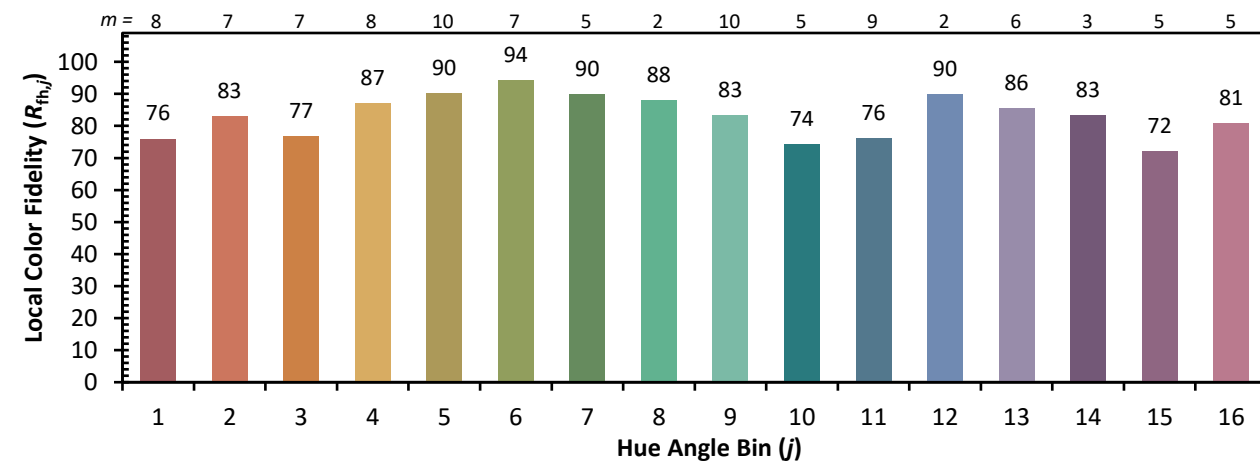
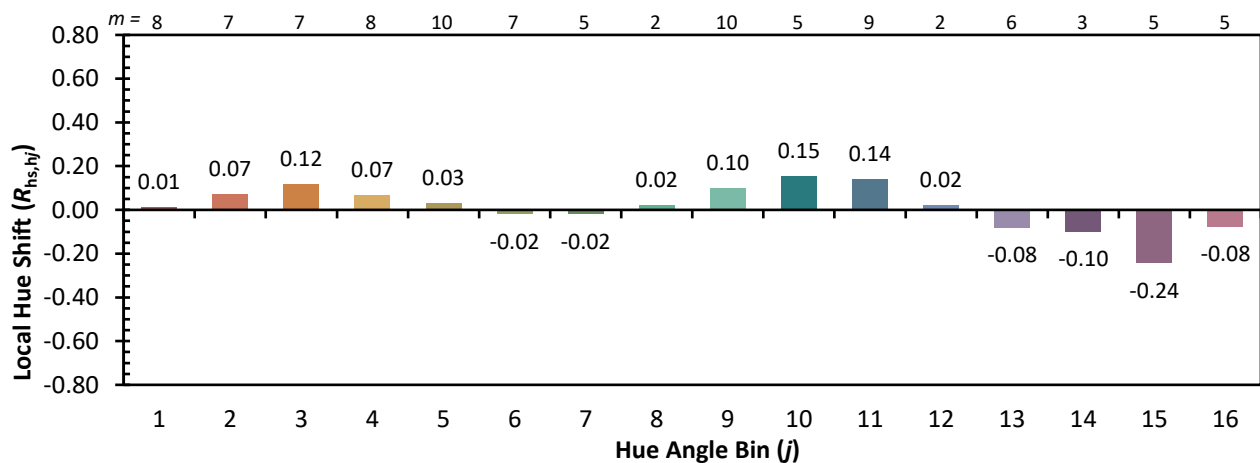
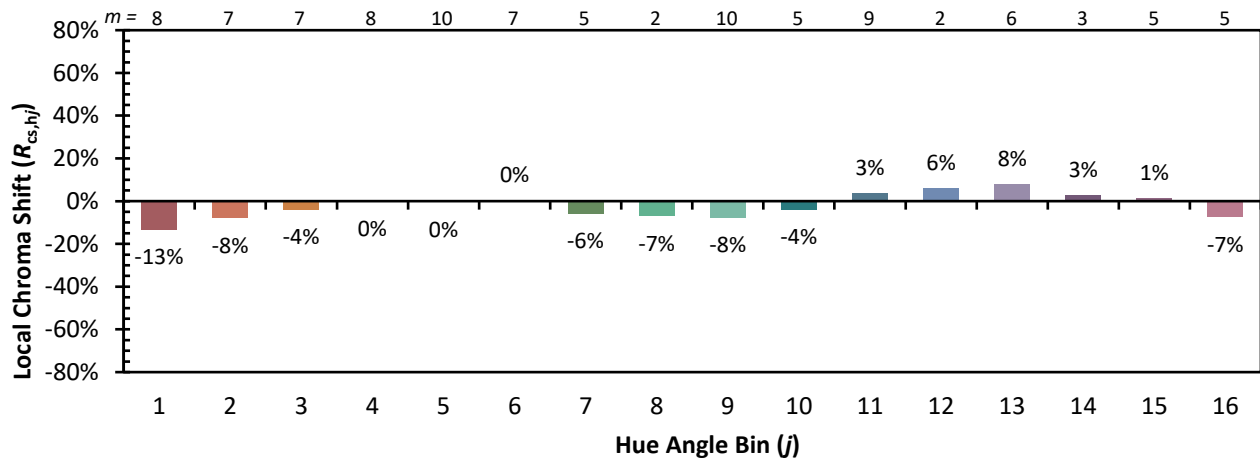


Individual Sample Fidelity Index ($R_{f,i}$)

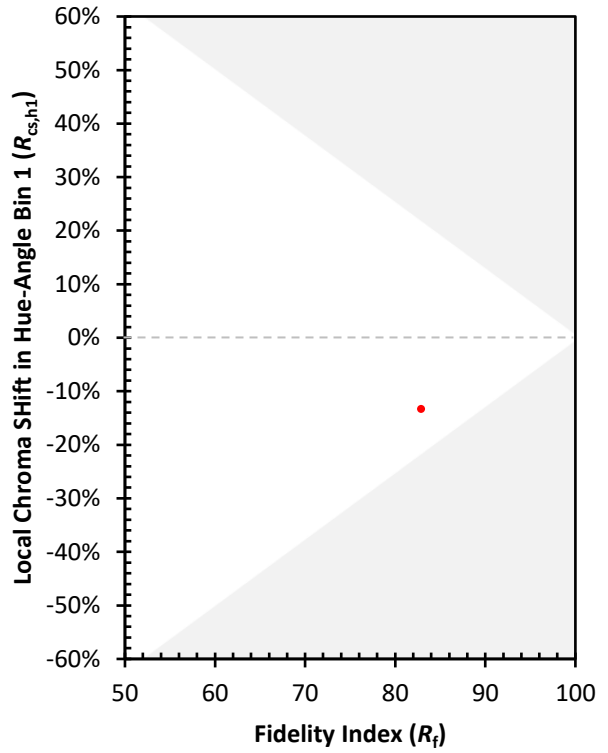
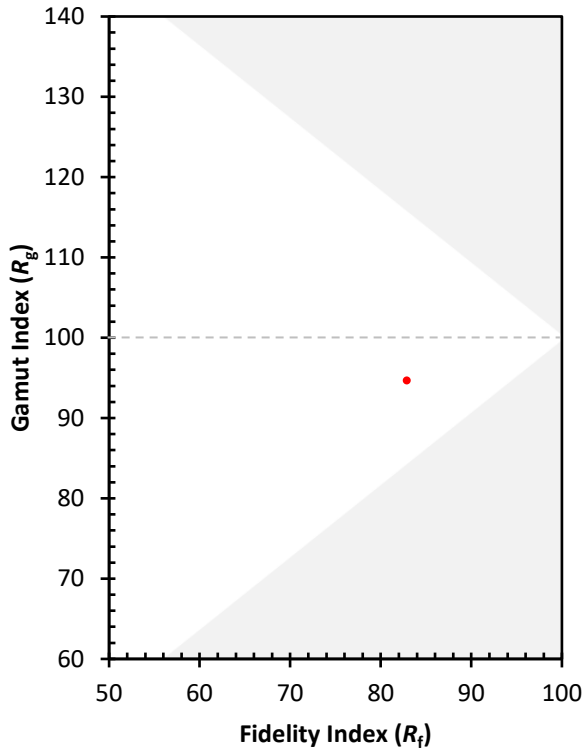
CES01 = 85	CES26 = 82	CES51 = 91	CES76 = 75
CES02 = 60	CES27 = 92	CES52 = 92	CES77 = 81
CES03 = 30	CES28 = 92	CES53 = 88	CES78 = 75
CES04 = 69	CES29 = 90	CES54 = 88	CES79 = 91
CES05 = 47	CES30 = 91	CES55 = 85	CES80 = 89
CES06 = 50	CES31 = 91	CES56 = 84	CES81 = 80
CES07 = 40	CES32 = 83	CES57 = 82	CES82 = 95
CES08 = 39	CES33 = 97	CES58 = 82	CES83 = 96
CES09 = 29	CES34 = 87	CES59 = 90	CES84 = 89
CES10 = 73	CES35 = 92	CES60 = 88	CES85 = 78
CES11 = 56	CES36 = 79	CES61 = 84	CES86 = 74
CES12 = 62	CES37 = 92	CES62 = 80	CES87 = 84
CES13 = 42	CES38 = 85	CES63 = 84	CES88 = 88
CES14 = 74	CES39 = 98	CES64 = 75	CES89 = 78
CES15 = 71	CES40 = 96	CES65 = 76	CES90 = 89
CES16 = 46	CES41 = 96	CES66 = 72	CES91 = 69
CES17 = 49	CES42 = 94	CES67 = 70	CES92 = 62
CES18 = 56	CES43 = 91	CES68 = 75	CES93 = 77
CES19 = 71	CES44 = 99	CES69 = 79	CES94 = 62
CES20 = 64	CES45 = 94	CES70 = 73	CES95 = 71
CES21 = 85	CES46 = 91	CES71 = 66	CES96 = 83
CES22 = 77	CES47 = 95	CES72 = 88	CES97 = 89
CES23 = 91	CES48 = 84	CES73 = 67	CES98 = 85
CES24 = 90	CES49 = 91	CES74 = 90	CES99 = 75
CES25 = 71	CES50 = 92	CES75 = 70	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)