

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: P979132

Luminaire Tested: **WPSLED15S-40W-6500K**

Issue Date: 03/31/2025



**Test Information**

Test Method: LM-79-08  
Report Number: P979132  
Test Lab: Cooper Lighting Solutions  
Issue Date: 03/31/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: WPSLED15S-40W-6500K  
Description: LUMARK WALL PACK LED SMALL 80CRI CCT AND LUMEN SELECTIVE FIXTURE  
OPERATING @40W-6500K  
Light Source: 6500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

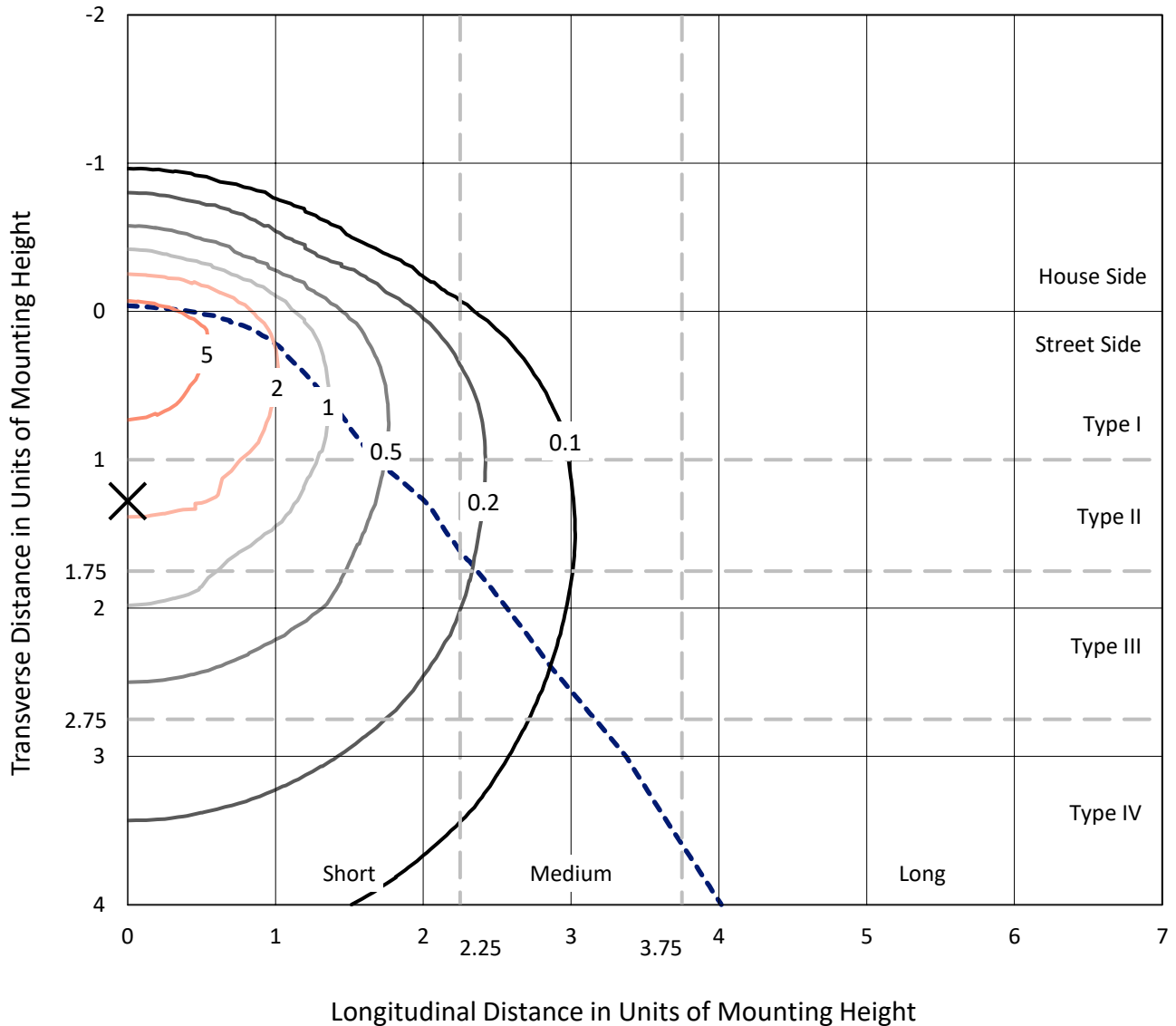
Lumens per Lamp: N/A  
Luminaire Lumens: 6076.1 lumens  
Efficiency: N/A  
Efficacy: 150.0 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.61' x L: 0.12' x H: 0.44')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U3 - G4

Input Watts (W): 40.5  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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

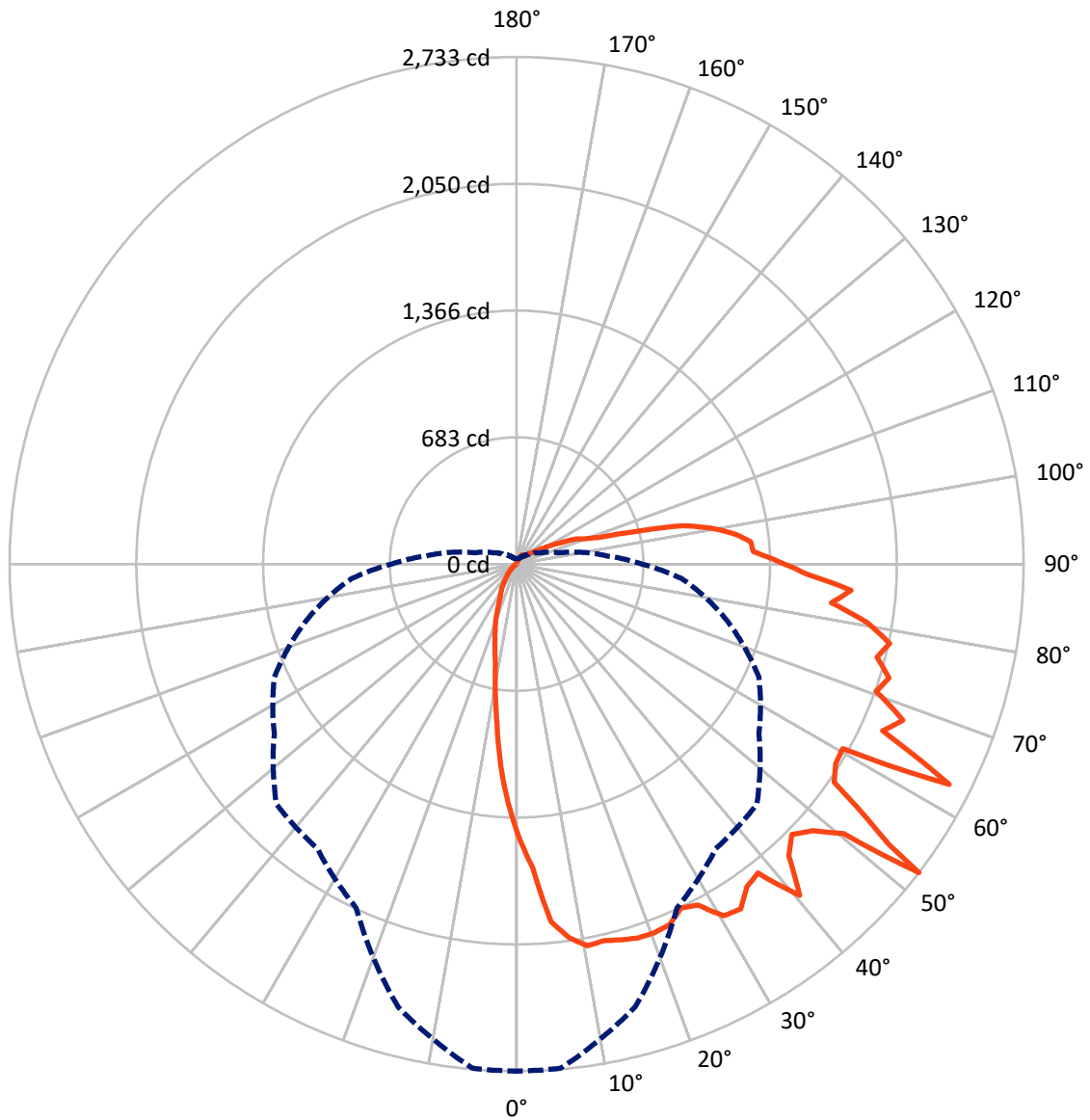
× Max cd  
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 8.8 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 0-Deg Lateral      - - - Horizontal Cone Through 52-Deg Vertical

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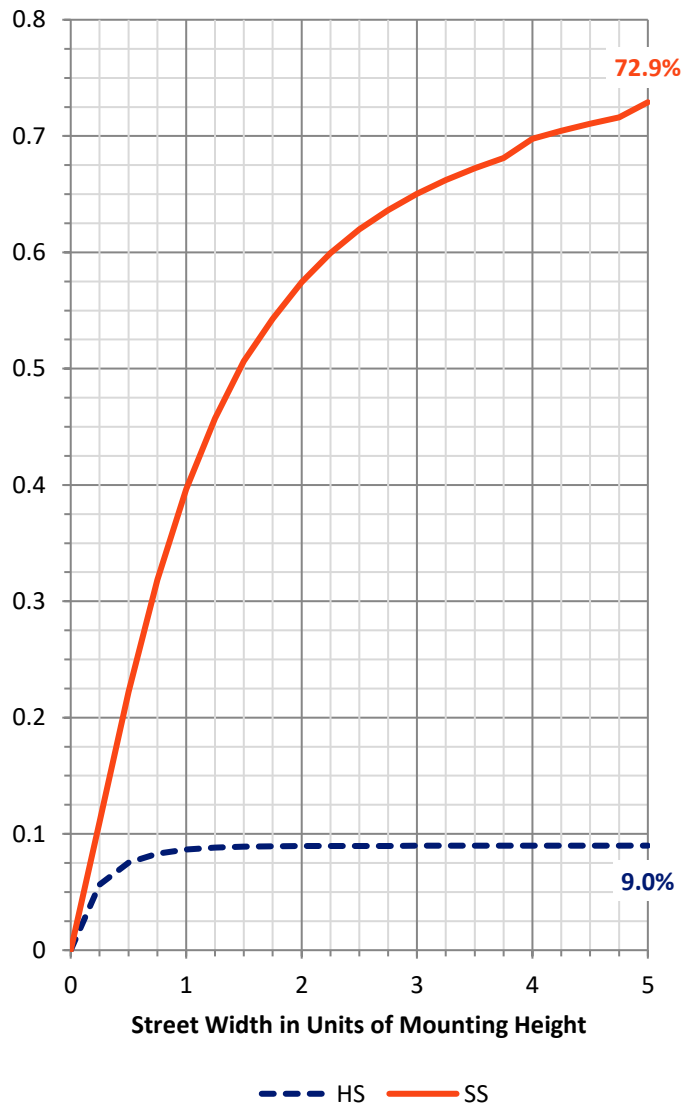
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	551.8	6.6	558.4
	% Fixture	9.1	0.1	9.2
<b>Street Side</b>	Lumens	4829.9	687.8	5517.7
	% Fixture	79.5	11.3	90.8
<b>Total</b>	Lumens	5381.7	694.4	6076.1
	% Fixture	88.6	11.4	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	139.3	2.3
10°-20°	374.6	6.2
20°-30°	549.8	9.0
30°-40°	680.2	11.2
40°-50°	760.0	12.5
50°-60°	797.7	13.1
60°-70°	797.3	13.1
70°-80°	719.5	11.8
80°-90°	563.3	9.3
90°-100°	374.1	6.2
100°-110°	178.3	2.9
110°-120°	72.7	1.2
120°-130°	31.9	0.5
130°-140°	17.9	0.3
140°-150°	12.1	0.2
150°-160°	5.6	0.1
160°-170°	1.6	0.0
170°-180°	0.1	0.0
0°-90°	5381.7	88.6
0°-180°	6076.1	100.0

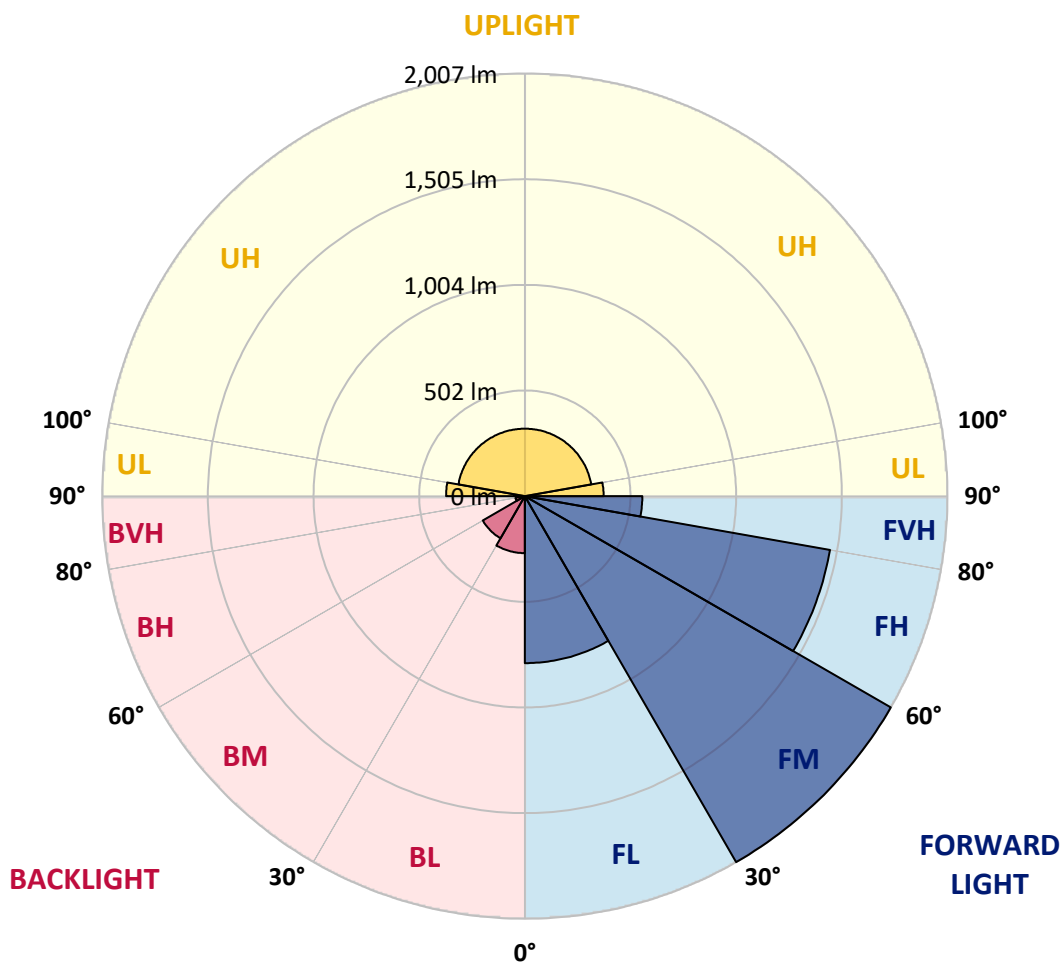


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	793.2	13.1			
FM (30°-60°)	2007.0	33.0			
FH (60°-80°)	1471.8	24.2			G1/1800
FVH (80°-90°)	557.9	9.2			G4/750
BL (0°-30°)	270.5	4.5	B1/500		
BM (30°-60°)	230.9	3.8	B1/1000		
BH (60°-80°)	45.0	0.7	B0/110		G0/110
BVH (80°-90°)	5.4	0.1			G0/10
UL (90°-100°)	374.1	6.2		U3/500	
UH (100°-180°)	320.3	5.3		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°	1471.8	1471.8	1471.8	1471.8	1471.8	1471.8	1471.8	1471.8	1471.8	1471.8	1471.8
2.5°	1635.6	1638.5	1635.6	1629.1	1627.0	1621.9	1606.9	1573.1	1513.4	1477.5	1468.2
5°	1936.0	1931.7	1931.7	1888.6	1833.2	1744.1	1657.9	1609.7	1583.1	1481.1	1455.9
7.5°	2033.0	2039.5	2059.6	2045.9	1994.9	1934.5	1833.9	1659.3	1582.4	1476.8	1432.2
10°	2092.6	2099.1	2081.9	2039.5	1983.4	2007.1	1926.6	1784.4	1581.0	1478.9	1411.4
12.5°	2083.3	2083.3	2036.6	2001.4	2024.4	1982.7	1973.4	1859.1	1616.2	1488.3	1395.6
15°	2101.3	2096.2	2062.5	2049.5	2012.9	1976.9	1930.2	1902.2	1673.7	1487.6	1375.5
17.5°	2118.5	2121.4	2106.3	2066.1	1992.0	1976.2	1956.1	1915.9	1742.0	1486.1	1354.6
20°	2120.7	2107.7	2055.3	2044.5	2053.8	1961.9	1918.0	1873.5	1778.6	1472.5	1329.5
22.5°	2110.6	2107.7	2046.7	2053.8	2006.4	1987.7	1951.8	1884.2	1782.9	1452.3	1299.3
25°	2054.6	2056.0	1994.2	2020.8	2013.6	1972.6	1891.4	1864.8	1769.3	1435.1	1271.3
27.5°	2081.1	2074.7	2017.2	1987.7	1992.8	1941.0	1882.8	1831.8	1743.4	1408.5	1234.6
30°	2200.4	2189.7	2097.7	2009.3	1947.5	1943.9	1879.2	1798.7	1698.1	1371.1	1193.6
32.5°	2216.2	2207.6	2167.4	2095.5	1953.9	1903.6	1813.1	1746.3	1655.0	1333.8	1153.4
35°	2137.2	2124.3	2081.9	2094.8	2027.2	1883.5	1826.0	1684.5	1605.4	1297.8	1104.5
37.5°	2112.8	2091.2	2063.2	2052.4	2033.0	1865.6	1808.8	1660.7	1568.0	1255.4	1049.9
40°	2349.2	2287.4	2099.8	2040.2	1963.3	1931.0	1763.5	1644.2	1533.6	1203.0	997.5
42.5°	2150.9	2147.3	2303.9	2122.8	1964.0	1878.5	1740.5	1609.7	1481.1	1144.1	939.2
45°	2079.7	2061.0	2010.7	2122.8	1986.3	1795.1	1729.0	1570.9	1403.5	1083.0	876.0
47.5°	2146.5	2130.7	2065.3	1975.5	2029.4	1813.8	1700.3	1545.1	1316.5	1019.7	798.4
50°	2283.8	2247.9	2117.8	2026.5	1880.6	1870.6	1650.7	1491.9	1231.0	945.7	725.8
52°	2732.9	2727.9	2470.6	2045.2	1872.0	1831.1	1594.6	1440.8	1172.8	891.8	676.2
52.5°	2513.0	2589.2	2617.2	2068.9	1873.5	1800.9	1594.6	1425.8	1162.0	876.0	669.8
55°	2076.1	2069.6	2079.0	2384.4	1875.6	1697.4	1609.0	1351.7	1090.2	822.1	619.5
57.5°	2028.0	2018.6	2001.4	1979.8	2098.4	1646.4	1565.9	1279.9	1038.4	761.0	567.7
60°	2019.3	2013.6	1980.5	1938.1	1854.8	1695.2	1443.7	1223.8	997.5	702.8	526.0
62.5°	2617.2	2601.4	2334.1	1933.8	1788.7	1744.1	1374.0	1180.7	955.1	648.2	480.8
65°	2168.1	2160.9	2119.2	2256.5	1836.1	1596.1	1364.7	1161.3	899.7	599.3	421.8
67.5°	2245.7	2244.3	2153.0	2012.9	1959.0	1596.1	1356.1	1104.5	852.3	536.8	355.7
70°	2056.0	2059.6	2013.6	1958.3	1806.6	1614.8	1272.0	1016.9	790.5	466.4	294.6
72.5°	2098.4	2095.5	2022.2	1896.5	1746.3	1508.4	1218.8	960.8	719.3	401.7	240.7
75°	2005.7	2005.0	1938.9	1835.4	1680.9	1427.9	1162.7	934.2	641.7	332.7	194.0
77.5°	2055.3	2060.3	1999.9	1852.6	1662.2	1381.2	1119.6	836.5	569.2	265.2	147.3
80°	1918.0	1918.7	1837.5	1728.3	1558.7	1297.1	1013.3	748.1	484.4	205.5	110.0
82.5°	1709.6	1715.4	1653.6	1557.3	1435.1	1186.5	922.0	682.7	410.3	154.5	81.9
85°	1808.1	1819.6	1733.3	1604.0	1438.7	1150.5	849.4	591.4	328.4	112.8	63.2
87.5°	1565.2	1602.5	1523.5	1427.2	1277.0	1012.5	743.1	500.9	263.7	86.2	49.6
90°	1414.3	1422.9	1362.5	1266.9	1113.9	905.5	669.8	429.0	206.2	64.7	39.5
92.5°	1277.0	1300.0	1279.2	1205.1	1060.7	829.3	582.8	357.2	159.5	51.0	33.8
95°	1266.9	1265.5	1199.4	1085.1	940.0	725.1	489.4	287.5	120.0	40.2	29.5
97.5°	1181.4	1190.8	1136.2	980.9	833.6	625.9	392.4	207.7	92.7	34.5	25.2
100°	1065.0	1072.2	988.8	881.8	712.2	494.4	294.6	156.7	74.0	31.6	23.7
102.5°	917.7	929.2	825.0	688.4	550.5	385.9	219.2	123.6	61.1	29.5	22.3
105°	643.9	636.0	567.0	503.0	420.4	291.8	183.3	102.8	51.0	28.7	22.3
107.5°	460.6	466.4	436.2	383.0	318.4	236.4	145.9	84.8	44.6	28.0	22.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
110°	387.3	392.4	365.1	328.4	268.8	186.1	117.1	69.7	41.7	28.0	21.6
112.5°	348.5	352.1	321.2	283.1	221.3	158.1	97.7	59.6	40.2	27.3	20.8
115°	271.6	273.8	254.4	226.4	176.1	127.2	81.9	53.2	39.5	25.9	19.4
117.5°	220.6	220.6	205.5	177.5	143.0	104.2	71.9	49.6	37.4	23.7	18.0
120°	170.3	172.5	161.0	141.6	114.3	86.2	62.5	46.0	35.9	22.3	16.5
122.5°	139.4	140.9	132.2	115.7	93.4	74.0	55.3	43.8	34.5	20.8	14.4
125°	114.3	114.3	107.8	94.9	78.3	64.0	51.0	42.4	34.5	19.4	12.9
127.5°	94.9	94.9	89.8	78.3	67.6	57.5	48.1	41.7	33.1	17.2	11.5
130°	79.8	79.8	74.7	67.6	60.4	54.6	48.1	40.2	30.2	15.1	10.1
132.5°	67.6	66.8	64.0	60.4	56.1	53.9	46.7	38.1	27.3	13.7	8.6
135°	58.2	58.9	58.2	56.8	54.6	51.7	45.3	35.9	24.4	11.5	7.2
137.5°	54.6	56.1	56.8	56.8	52.5	49.6	43.1	34.5	22.3	10.1	5.7
140°	59.6	58.2	57.5	56.8	52.5	47.4	41.7	32.3	20.1	8.6	5.0
142.5°	59.6	59.6	58.2	55.3	50.3	46.0	38.8	30.2	18.0	7.2	4.3
145°	58.2	58.2	56.1	52.5	48.1	42.4	36.7	26.6	15.1	6.5	3.6
147.5°	58.2	57.5	54.6	49.6	44.6	39.5	33.1	23.0	12.9	5.0	3.6
150°	54.6	53.9	49.6	43.8	41.0	35.2	28.0	20.1	11.5	4.3	2.9
152.5°	48.1	47.4	43.8	38.8	34.5	30.2	24.4	17.2	9.3	3.6	2.9
155°	38.8	38.1	34.5	30.9	28.0	25.9	20.8	14.4	7.9	3.6	2.2
157.5°	29.5	29.5	28.0	26.6	25.2	22.3	17.2	12.2	5.7	2.9	2.2
160°	27.3	26.6	25.2	23.0	20.8	17.2	13.7	9.3	4.3	2.2	2.2
162.5°	23.0	23.0	21.6	18.7	16.5	13.7	10.1	6.5	3.6	2.2	2.2
165°	18.0	18.0	16.5	14.4	12.2	9.3	7.2	5.0	2.9	2.2	1.4
167.5°	12.9	12.9	11.5	10.1	7.9	6.5	4.3	3.6	2.9	2.2	1.4
170°	7.2	7.2	7.2	5.7	4.3	3.6	3.6	2.9	2.2	2.2	1.4
172.5°	3.6	2.9	2.9	2.9	2.9	2.9	2.9	2.2	2.2	1.4	1.4
175°	0.7	0.7	1.4	2.2	2.2	2.2	2.2	2.2	2.2	1.4	1.4
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°	1471.8	1471.8	1471.8	1471.8	1471.8	1471.8	1471.8	1471.8	1471.8	1471.8
2.5°	1461.7	1450.9	1397.0	1343.1	1309.3	1302.2	1300.0	1295.7	1294.2	1289.9
5°	1447.3	1346.7	1291.4	1249.7	1203.7	1176.4	1149.8	1103.8	1090.9	1090.2
7.5°	1404.9	1273.4	1208.0	1141.9	1044.2	963.0	927.7	886.8	871.7	866.7
10°	1354.6	1226.0	1116.7	979.5	876.0	798.4	745.2	718.6	690.6	694.2
12.5°	1308.6	1164.2	993.1	845.1	736.6	655.4	608.7	573.5	556.2	550.5
15°	1266.9	1097.3	894.7	730.8	625.9	551.9	500.2	476.5	466.4	465.7
17.5°	1233.9	1024.0	808.5	645.3	530.3	465.0	430.5	413.2	403.9	398.8
20°	1203.7	948.6	738.0	572.0	459.2	403.2	370.1	350.7	342.8	342.1
22.5°	1164.9	876.0	665.4	490.1	404.6	348.5	316.2	295.4	283.1	282.4
25°	1123.2	812.8	590.0	431.2	353.6	301.1	264.5	239.3	228.5	227.1
27.5°	1078.7	751.0	520.3	380.2	304.0	255.1	217.7	200.5	195.5	193.3
30°	1026.9	692.8	458.5	332.7	267.3	213.4	188.3	172.5	168.9	167.4
32.5°	973.0	636.0	401.7	291.8	230.0	188.3	162.4	152.3	148.8	148.0
35°	915.5	575.6	358.6	258.0	199.1	164.6	142.3	128.6	121.4	120.0
37.5°	858.0	513.8	313.3	226.4	173.2	143.0	119.3	105.6	102.0	100.6
40°	799.1	457.8	273.8	198.3	150.9	118.6	98.5	87.0	83.4	81.9
42.5°	736.6	397.4	236.4	173.9	130.8	97.7	81.2	71.1	67.6	67.6
45°	674.8	347.8	207.0	151.6	110.0	81.2	67.6	57.5	53.2	52.5
47.5°	602.9	302.5	183.3	131.5	91.3	67.6	54.6	46.0	41.7	41.0
50°	537.5	260.9	160.3	110.7	76.9	56.1	43.1	36.7	32.3	32.3
52°	493.7	234.3	144.4	96.3	66.8	47.4	35.9	29.5	28.7	28.7
52.5°	482.2	227.8	140.9	94.1	64.0	45.3	34.5	28.0	28.0	28.0
55°	432.6	199.1	125.8	81.2	53.2	35.2	25.2	22.3	23.0	23.0
57.5°	392.4	173.9	109.2	69.7	43.8	27.3	18.0	18.0	17.2	16.5
60°	347.8	153.1	95.6	59.6	34.5	19.4	12.9	11.5	9.3	9.3
62.5°	299.7	131.5	84.1	51.0	25.9	12.2	7.2	5.0	4.3	3.6
65°	251.5	114.3	72.6	41.7	19.4	6.5	1.4	0.0	0.0	0.0
67.5°	209.8	99.2	61.8	33.1	12.9	1.4	0.0	0.0	0.0	0.0
70°	169.6	84.1	51.7	25.2	6.5	0.0	0.0	0.0	0.0	0.0
72.5°	136.5	71.9	42.4	17.2	2.2	0.0	0.0	0.0	0.0	0.0
75°	106.4	58.9	33.8	11.5	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	84.8	48.9	26.6	7.2	0.0	0.0	0.0	0.0	0.0	0.0
80°	66.1	38.8	20.1	4.3	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	51.7	30.9	15.8	2.2	0.0	0.0	0.0	0.0	0.0	0.0
85°	41.0	24.4	11.5	1.4	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	33.8	19.4	8.6	0.7	0.0	0.0	0.0	0.0	0.0	0.0
90°	28.0	15.1	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	23.7	12.2	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	20.1	10.1	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	18.0	8.6	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	17.2	7.9	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	16.5	7.9	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105°	16.5	7.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	16.5	7.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P979132  
 CATALOG NUMBER: WPSLED15S-40W-6500K

**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
110°	15.8	5.7	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
112.5°	15.1	5.0	2.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0
115°	14.4	3.6	2.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	12.2	2.2	1.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0
120°	10.1	1.4	1.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	8.6	0.7	1.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0
125°	7.9	0.7	1.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	7.2	1.4	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
130°	6.5	1.4	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	5.7	2.2	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
135°	5.0	2.2	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	4.3	2.2	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
140°	3.6	2.2	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	2.9	2.2	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
145°	2.9	2.2	1.4	0.7	0.7	0.0	0.0	0.0	0.0	0.0
147.5°	2.9	2.2	1.4	0.7	0.7	0.0	0.0	0.0	0.0	0.0
150°	2.2	1.4	1.4	0.7	0.7	0.0	0.0	0.0	0.0	0.0
152.5°	2.2	1.4	1.4	0.7	0.7	0.0	0.0	0.0	0.0	0.0
155°	2.2	1.4	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
157.5°	1.4	1.4	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
160°	1.4	1.4	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
162.5°	1.4	1.4	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
165°	1.4	1.4	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	1.4	1.4	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
170°	1.4	1.4	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	1.4	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	1.4	0.7	0.7	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: SP1-2407-168-5

Test Date: 08/08/2024

Luminaire Tested: LSDL-92S-100W 6500k

Data in this report applies to families of products including LSDL-92S-100W 6500k.

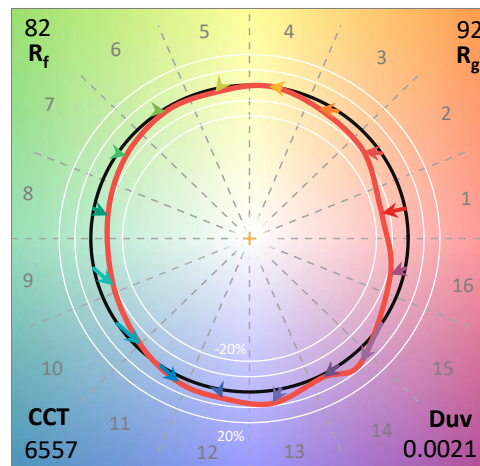
**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2407-168-5  
 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 6500k**  
 Description: Lumark Wallpack 100W

**Spectral Parameters**

CCT (K): 6557  
 CIE u': 0.1985  
 CIE v': 0.4668  
 Duv: 0.0021  
 CIE x: 0.3121  
 CIE y: 0.3263  
 CIE z: 0.3616  
 Peak Wavelength (nm): 453  
 Dominant Wavelength (nm): 487  
 Purity: 7.689333  
 Rf: 81.6  
 Rg: 92.3

CRI (Ra):	82.1		
R1:	80.1	R9:	-3.7
R2:	89.1	R10:	72.9
R3:	92.6	R11:	78.9
R4:	79.9	R12:	57.0
R5:	80.7	R13:	83.1
R6:	82.7	R14:	96.5
R7:	86.0	R15:	74.6
R8:	65.5		



**Test Conditions**

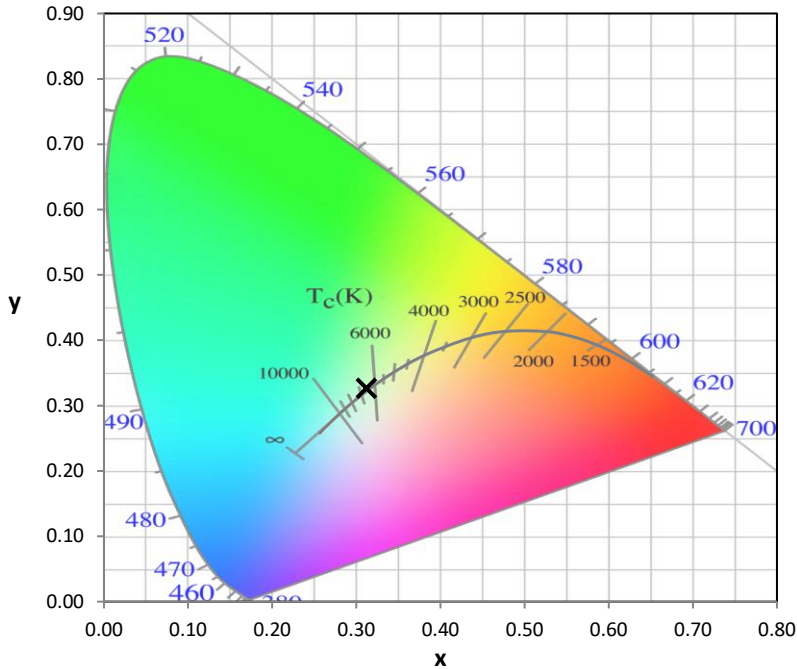
Stabilization Time: 20M  
 Operation Time: 1H 20M  
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2407-168-5

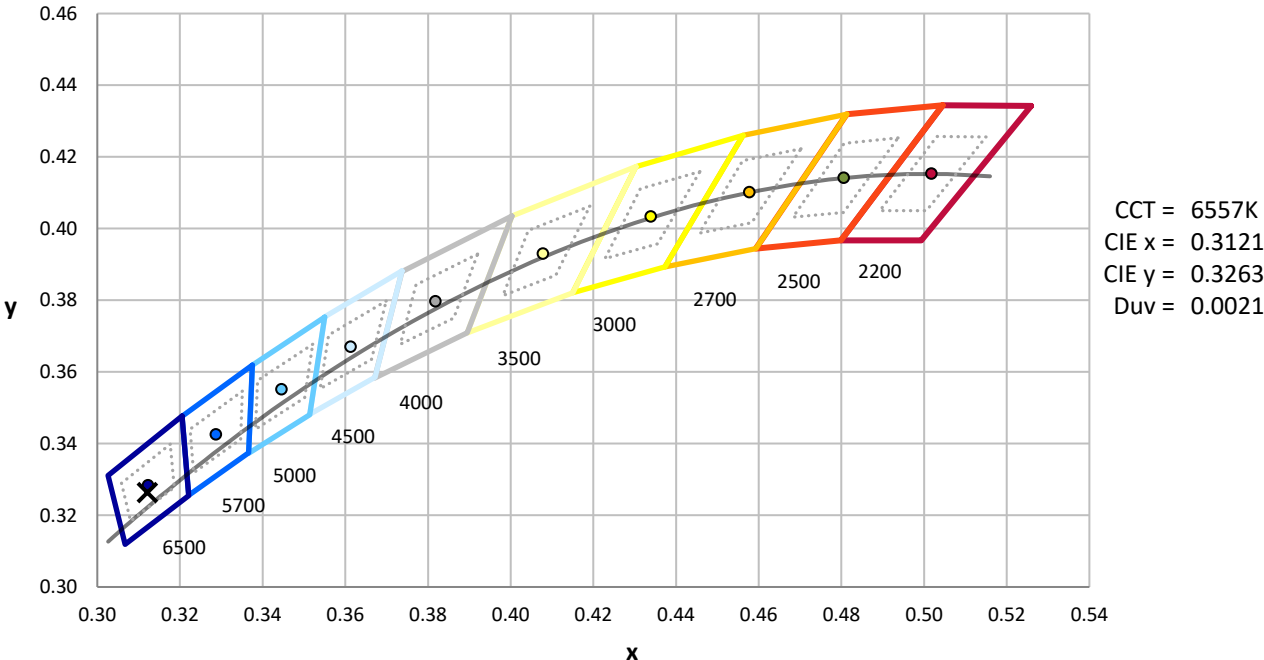
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

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CIE 1931 Chromaticity Diagram



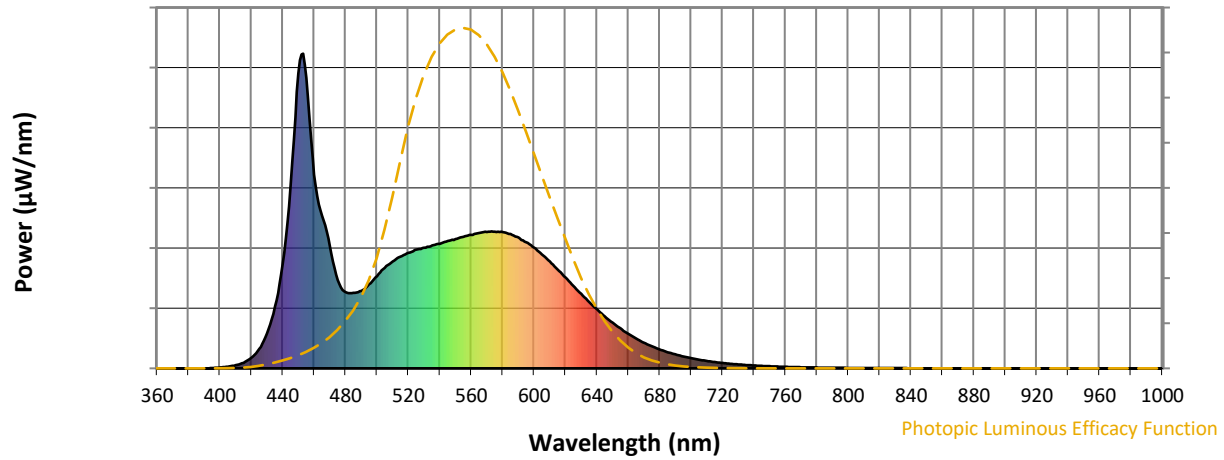
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 6500K 4-step quadrangle

REPORT NUMBER: SP1-2407-168-5

**Photopic Flux vs. Wavelength**

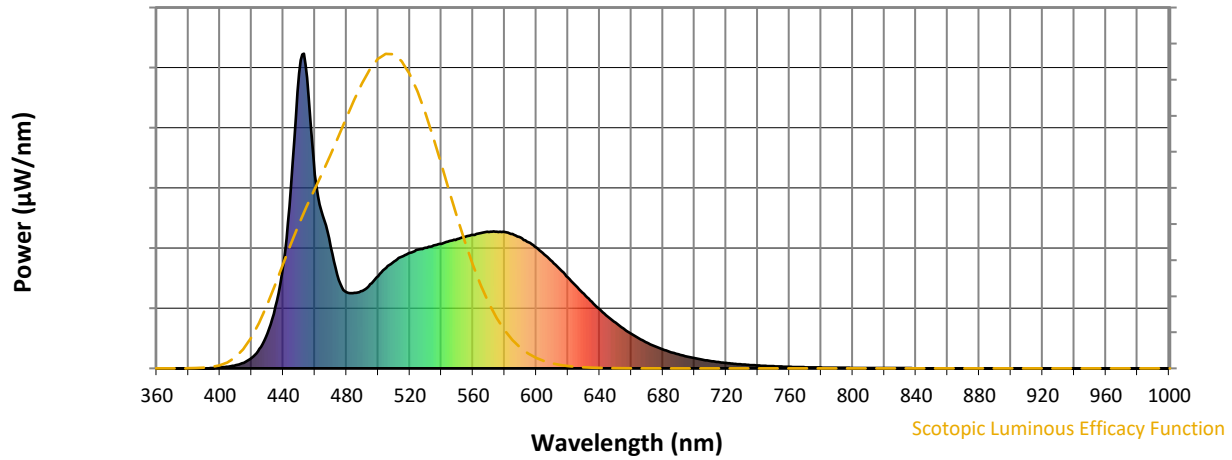


**Photopic Lumens: NR**

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	246	NR	620	288	NR	750	7	NR	880	0	NR
365	0	NR	495	267	NR	625	262	NR	755	6	NR	885	0	NR
370	0	NR	500	293	NR	630	237	NR	760	5	NR	890	0	NR
375	0	NR	505	319	NR	635	211	NR	765	4	NR	895	0	NR
380	0	NR	510	339	NR	640	188	NR	770	4	NR	900	0	NR
385	0	NR	515	355	NR	645	165	NR	775	3	NR	905	0	NR
390	0	NR	520	367	NR	650	145	NR	780	3	NR	910	0	NR
395	1	NR	525	377	NR	655	127	NR	785	2	NR	915	0	NR
400	3	NR	530	384	NR	660	110	NR	790	2	NR	920	0	NR
405	5	NR	535	391	NR	665	95	NR	795	2	NR	925	0	NR
410	10	NR	540	396	NR	670	81	NR	800	1	NR	930	0	NR
415	18	NR	545	405	NR	675	70	NR	805	1	NR	935	0	NR
420	33	NR	550	411	NR	680	60	NR	810	1	NR	940	0	NR
425	62	NR	555	418	NR	685	51	NR	815	1	NR	945	0	NR
430	111	NR	560	425	NR	690	44	NR	820	1	NR	950	0	NR
435	196	NR	565	430	NR	695	38	NR	825	1	NR	955	0	NR
440	331	NR	570	434	NR	700	32	NR	830	1	NR	960	0	NR
445	583	NR	575	434	NR	705	28	NR	835	1	NR	965	0	NR
450	937	NR	580	433	NR	710	23	NR	840	1	NR	970	0	NR
455	923	NR	585	427	NR	715	20	NR	845	0	NR	975	0	NR
460	616	NR	590	416	NR	720	17	NR	850	0	NR	980	0	NR
465	485	NR	595	401	NR	725	15	NR	855	0	NR	985	0	NR
470	386	NR	600	384	NR	730	13	NR	860	0	NR	990	0	NR
475	280	NR	605	362	NR	735	11	NR	865	0	NR	995	0	NR
480	242	NR	610	339	NR	740	9	NR	870	0	NR	1000	0	NR
485	240	NR	615	314	NR	745	8	NR	875	0	NR			

REPORT NUMBER: SP1-2407-168-5

**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

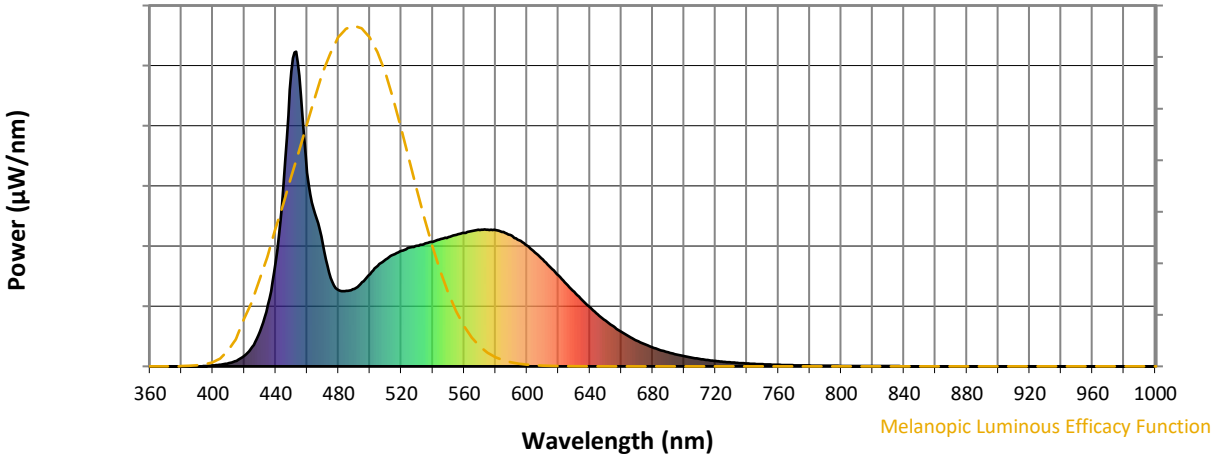
**S/P: 2.27**

$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)
360	0	NR	490	246	NR	620	288	NR	750	7	NR	880	0	NR
365	0	NR	495	267	NR	625	262	NR	755	6	NR	885	0	NR
370	0	NR	500	293	NR	630	237	NR	760	5	NR	890	0	NR
375	0	NR	505	319	NR	635	211	NR	765	4	NR	895	0	NR
380	0	NR	510	339	NR	640	188	NR	770	4	NR	900	0	NR
385	0	NR	515	355	NR	645	165	NR	775	3	NR	905	0	NR
390	0	NR	520	367	NR	650	145	NR	780	3	NR	910	0	NR
395	1	NR	525	377	NR	655	127	NR	785	2	NR	915	0	NR
400	3	NR	530	384	NR	660	110	NR	790	2	NR	920	0	NR
405	5	NR	535	391	NR	665	95	NR	795	2	NR	925	0	NR
410	10	NR	540	396	NR	670	81	NR	800	1	NR	930	0	NR
415	18	NR	545	405	NR	675	70	NR	805	1	NR	935	0	NR
420	33	NR	550	411	NR	680	60	NR	810	1	NR	940	0	NR
425	62	NR	555	418	NR	685	51	NR	815	1	NR	945	0	NR
430	111	NR	560	425	NR	690	44	NR	820	1	NR	950	0	NR
435	196	NR	565	430	NR	695	38	NR	825	1	NR	955	0	NR
440	331	NR	570	434	NR	700	32	NR	830	1	NR	960	0	NR
445	583	NR	575	434	NR	705	28	NR	835	1	NR	965	0	NR
450	937	NR	580	433	NR	710	23	NR	840	1	NR	970	0	NR
455	923	NR	585	427	NR	715	20	NR	845	0	NR	975	0	NR
460	616	NR	590	416	NR	720	17	NR	850	0	NR	980	0	NR
465	485	NR	595	401	NR	725	15	NR	855	0	NR	985	0	NR
470	386	NR	600	384	NR	730	13	NR	860	0	NR	990	0	NR
475	280	NR	605	362	NR	735	11	NR	865	0	NR	995	0	NR
480	242	NR	610	339	NR	740	9	NR	870	0	NR	1000	0	NR
485	240	NR	615	314	NR	745	8	NR	875	0	NR			



REPORT NUMBER: SP1-2407-168-5

Melanopic Flux vs. Wavelength



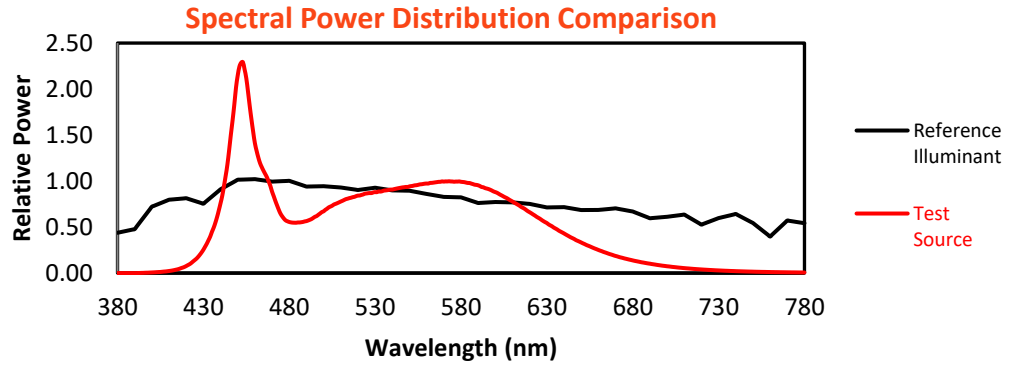
Melanopic Lumens: NR

M/P: 5.06

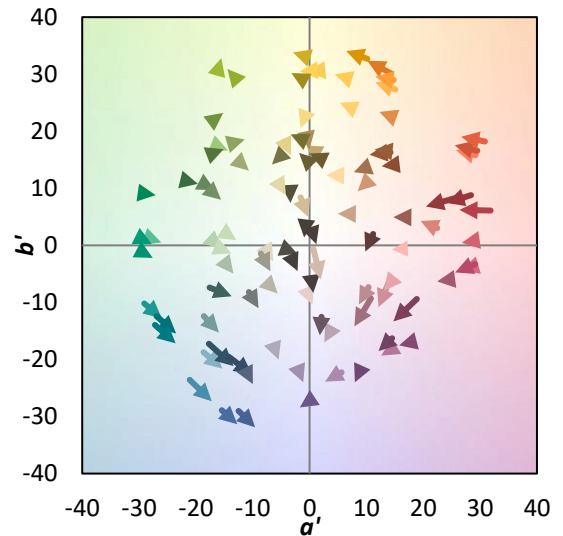
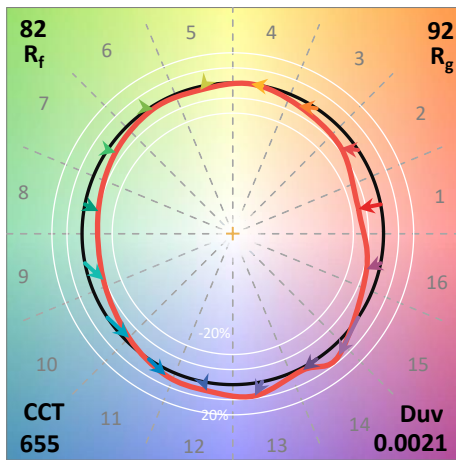
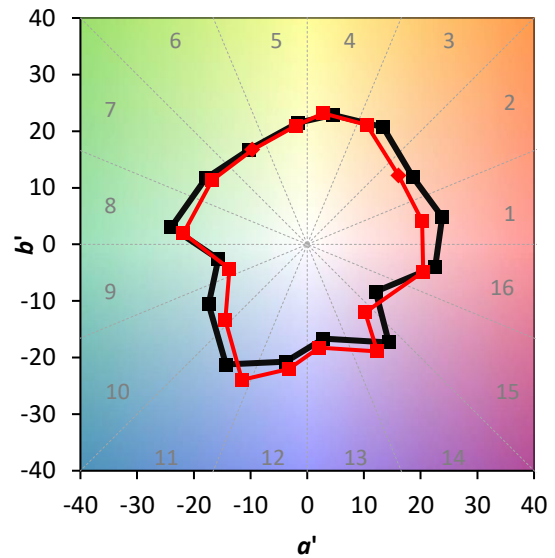
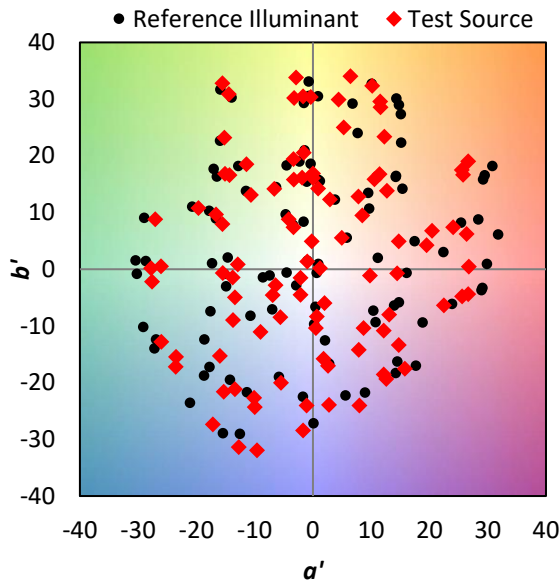
λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	246	NR	620	288	NR	750	7	NR	880	0	NR
365	0	NR	495	267	NR	625	262	NR	755	6	NR	885	0	NR
370	0	NR	500	293	NR	630	237	NR	760	5	NR	890	0	NR
375	0	NR	505	319	NR	635	211	NR	765	4	NR	895	0	NR
380	0	NR	510	339	NR	640	188	NR	770	4	NR	900	0	NR
385	0	NR	515	355	NR	645	165	NR	775	3	NR	905	0	NR
390	0	NR	520	367	NR	650	145	NR	780	3	NR	910	0	NR
395	1	NR	525	377	NR	655	127	NR	785	2	NR	915	0	NR
400	3	NR	530	384	NR	660	110	NR	790	2	NR	920	0	NR
405	5	NR	535	391	NR	665	95	NR	795	2	NR	925	0	NR
410	10	NR	540	396	NR	670	81	NR	800	1	NR	930	0	NR
415	18	NR	545	405	NR	675	70	NR	805	1	NR	935	0	NR
420	33	NR	550	411	NR	680	60	NR	810	1	NR	940	0	NR
425	62	NR	555	418	NR	685	51	NR	815	1	NR	945	0	NR
430	111	NR	560	425	NR	690	44	NR	820	1	NR	950	0	NR
435	196	NR	565	430	NR	695	38	NR	825	1	NR	955	0	NR
440	331	NR	570	434	NR	700	32	NR	830	1	NR	960	0	NR
445	583	NR	575	434	NR	705	28	NR	835	1	NR	965	0	NR
450	937	NR	580	433	NR	710	23	NR	840	1	NR	970	0	NR
455	923	NR	585	427	NR	715	20	NR	845	0	NR	975	0	NR
460	616	NR	590	416	NR	720	17	NR	850	0	NR	980	0	NR
465	485	NR	595	401	NR	725	15	NR	855	0	NR	985	0	NR
470	386	NR	600	384	NR	730	13	NR	860	0	NR	990	0	NR
475	280	NR	605	362	NR	735	11	NR	865	0	NR	995	0	NR
480	242	NR	610	339	NR	740	9	NR	870	0	NR	1000	0	NR
485	240	NR	615	314	NR	745	8	NR	875	0	NR			

**Summary**

$R_f = 81.6$   
 $R_g = 92.3$   
 $CIE R_a = 82.1$   
 $R_g = -3.7$

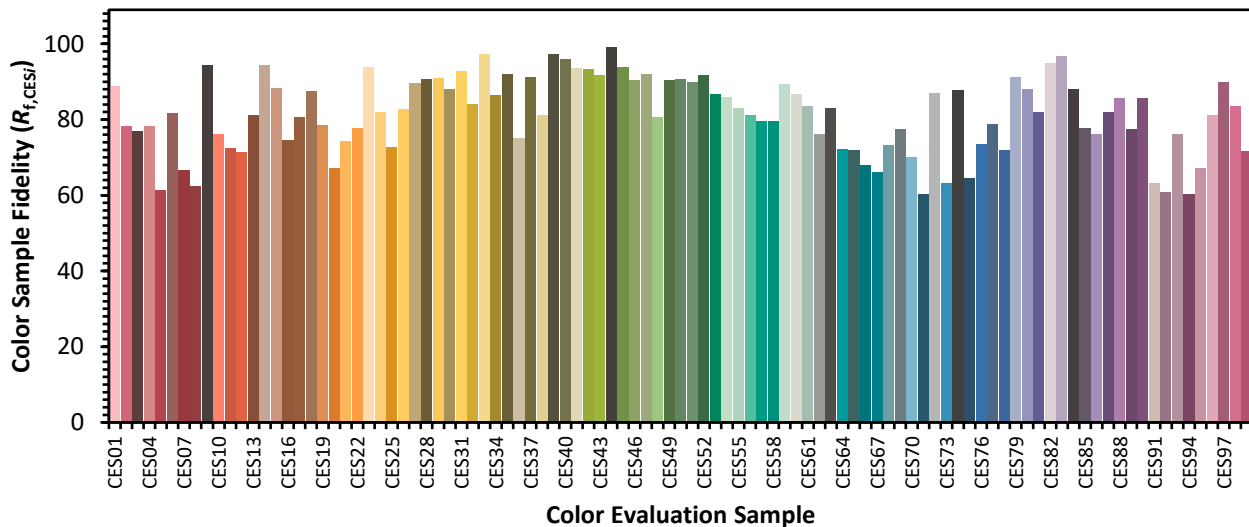


**Color Vector Graphics**

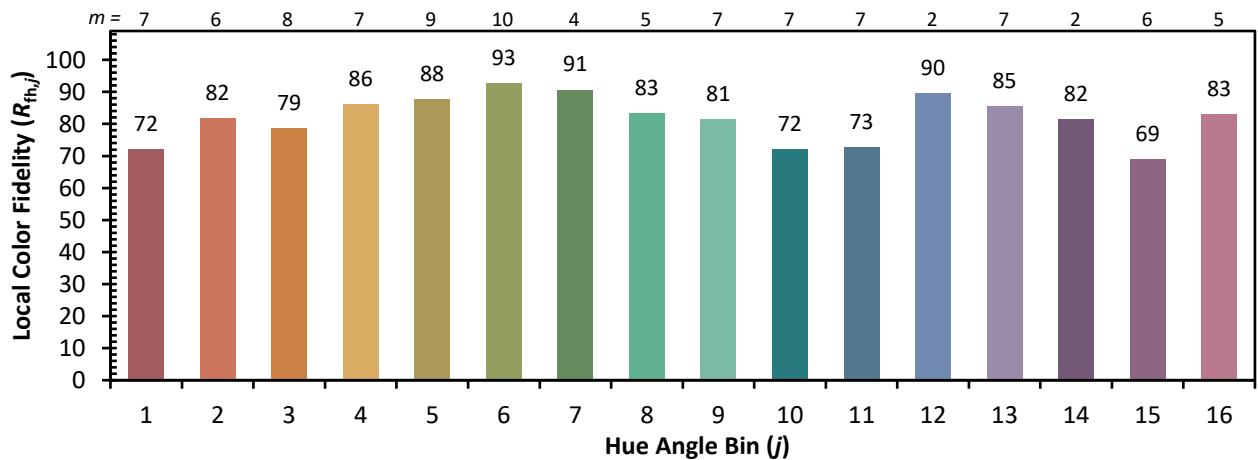
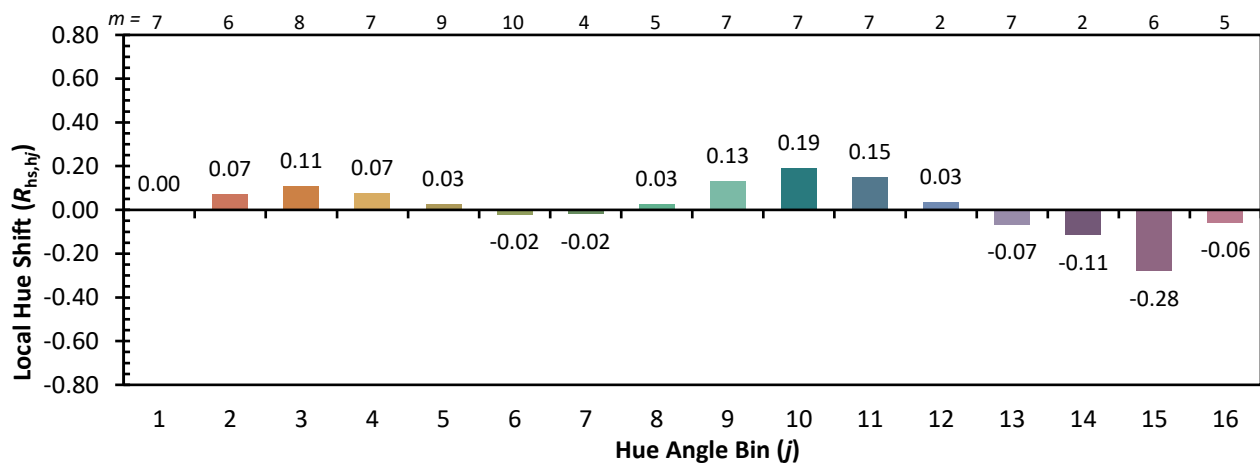
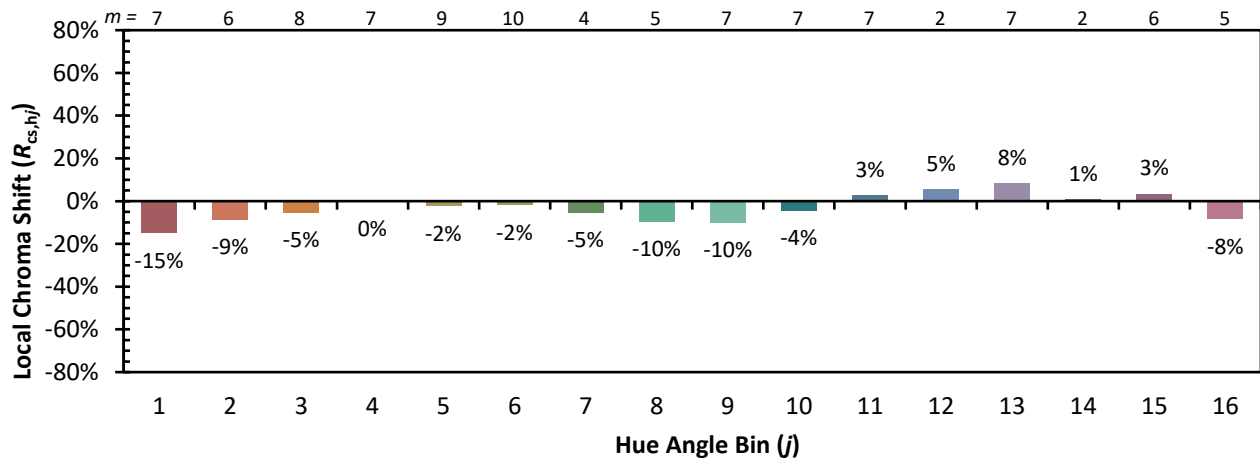


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

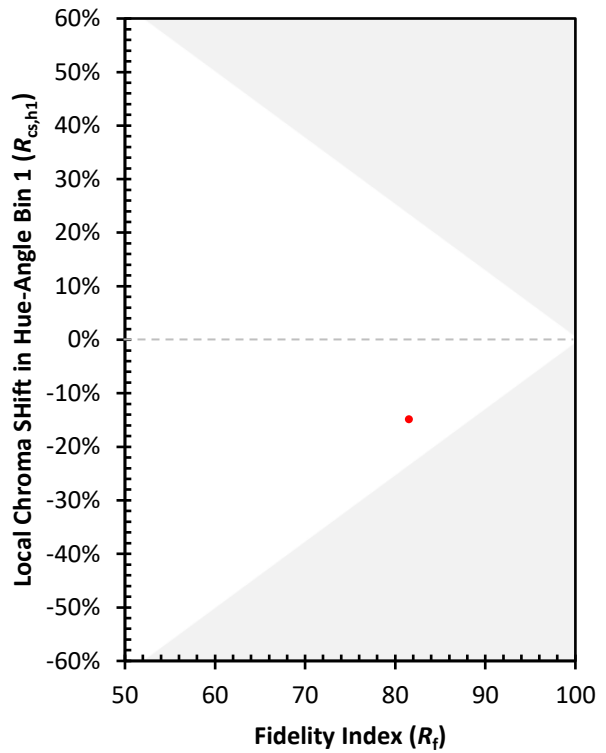
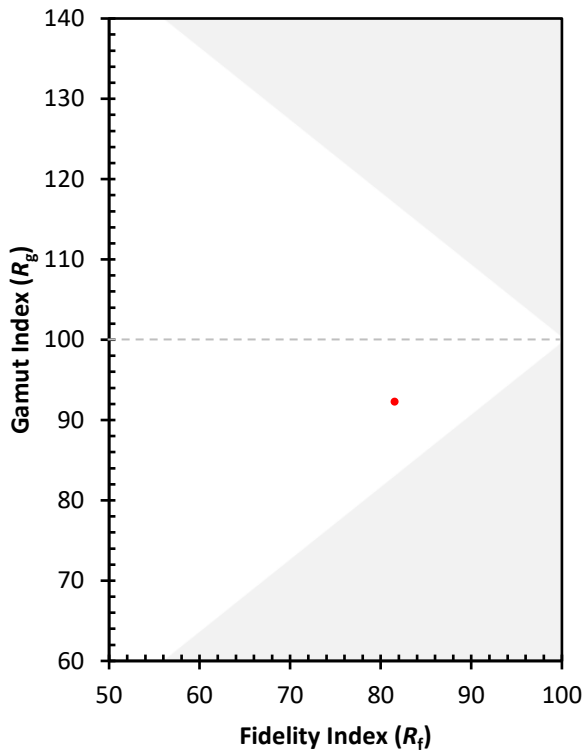
CES01 = 85	CES26 = 83	CES51 = 90	CES76 = 74
CES02 = 59	CES27 = 90	CES52 = 92	CES77 = 79
CES03 = 30	CES28 = 91	CES53 = 87	CES78 = 72
CES04 = 68	CES29 = 91	CES54 = 86	CES79 = 91
CES05 = 45	CES30 = 88	CES55 = 83	CES80 = 88
CES06 = 49	CES31 = 93	CES56 = 81	CES81 = 82
CES07 = 38	CES32 = 84	CES57 = 80	CES82 = 95
CES08 = 38	CES33 = 97	CES58 = 80	CES83 = 97
CES09 = 29	CES34 = 86	CES59 = 89	CES84 = 88
CES10 = 72	CES35 = 92	CES60 = 87	CES85 = 78
CES11 = 55	CES36 = 75	CES61 = 83	CES86 = 76
CES12 = 60	CES37 = 91	CES62 = 76	CES87 = 82
CES13 = 41	CES38 = 81	CES63 = 83	CES88 = 86
CES14 = 74	CES39 = 97	CES64 = 72	CES89 = 77
CES15 = 70	CES40 = 96	CES65 = 72	CES90 = 86
CES16 = 45	CES41 = 93	CES66 = 68	CES91 = 63
CES17 = 48	CES42 = 93	CES67 = 66	CES92 = 61
CES18 = 55	CES43 = 92	CES68 = 73	CES93 = 76
CES19 = 70	CES44 = 99	CES69 = 77	CES94 = 60
CES20 = 63	CES45 = 94	CES70 = 70	CES95 = 67
CES21 = 84	CES46 = 90	CES71 = 60	CES96 = 81
CES22 = 76	CES47 = 92	CES72 = 87	CES97 = 90
CES23 = 91	CES48 = 81	CES73 = 63	CES98 = 83
CES24 = 90	CES49 = 90	CES74 = 88	CES99 = 72
CES25 = 70	CES50 = 91	CES75 = 65	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)