

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: P979136

Luminaire Tested: **WPSLED15S-30W-5000K**

Issue Date: 03/31/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P979136  
Test Lab: Cooper Lighting Solutions  
Issue Date: 03/31/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: WPSLED15S-30W-5000K  
Description: LUMARK WALL PACK LED SMALL 80CRI CCT AND LUMEN SELECTIVE FIXTURE  
OPERATING @30W-5000K  
Light Source: 5000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

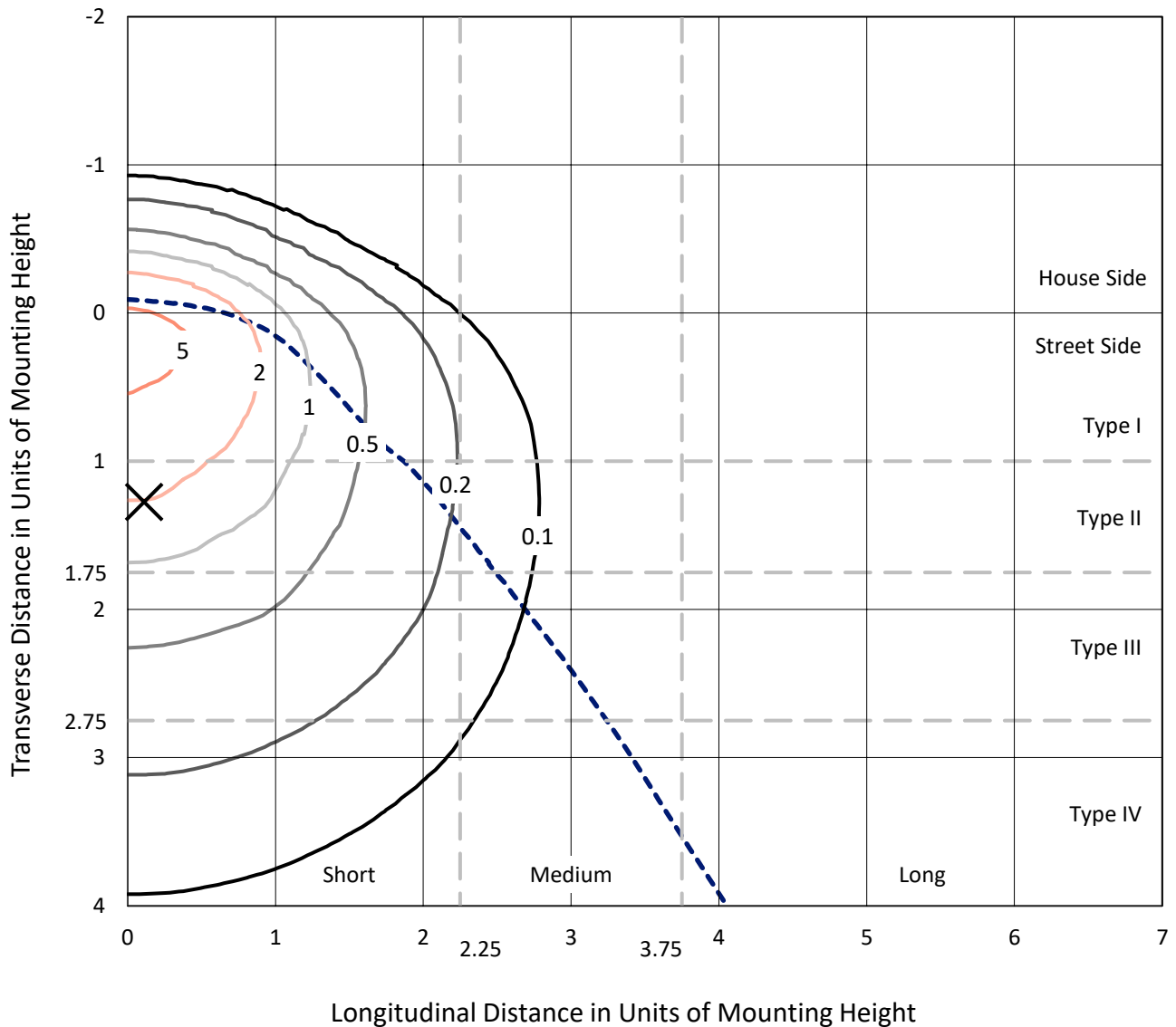
Lumens per Lamp: N/A  
Luminaire Lumens: 4676.8 lumens  
Efficiency: N/A  
Efficacy: 153.3 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.61' x L: 0.12' x H: 0.44')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U3 - G3

Input Watts (W): 30.5  
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

REPORT NUMBER: P979136  
 CATALOG NUMBER: WPSLED15S-30W-5000K

### Iso-Footcandle Lines of Horizontal Illumination

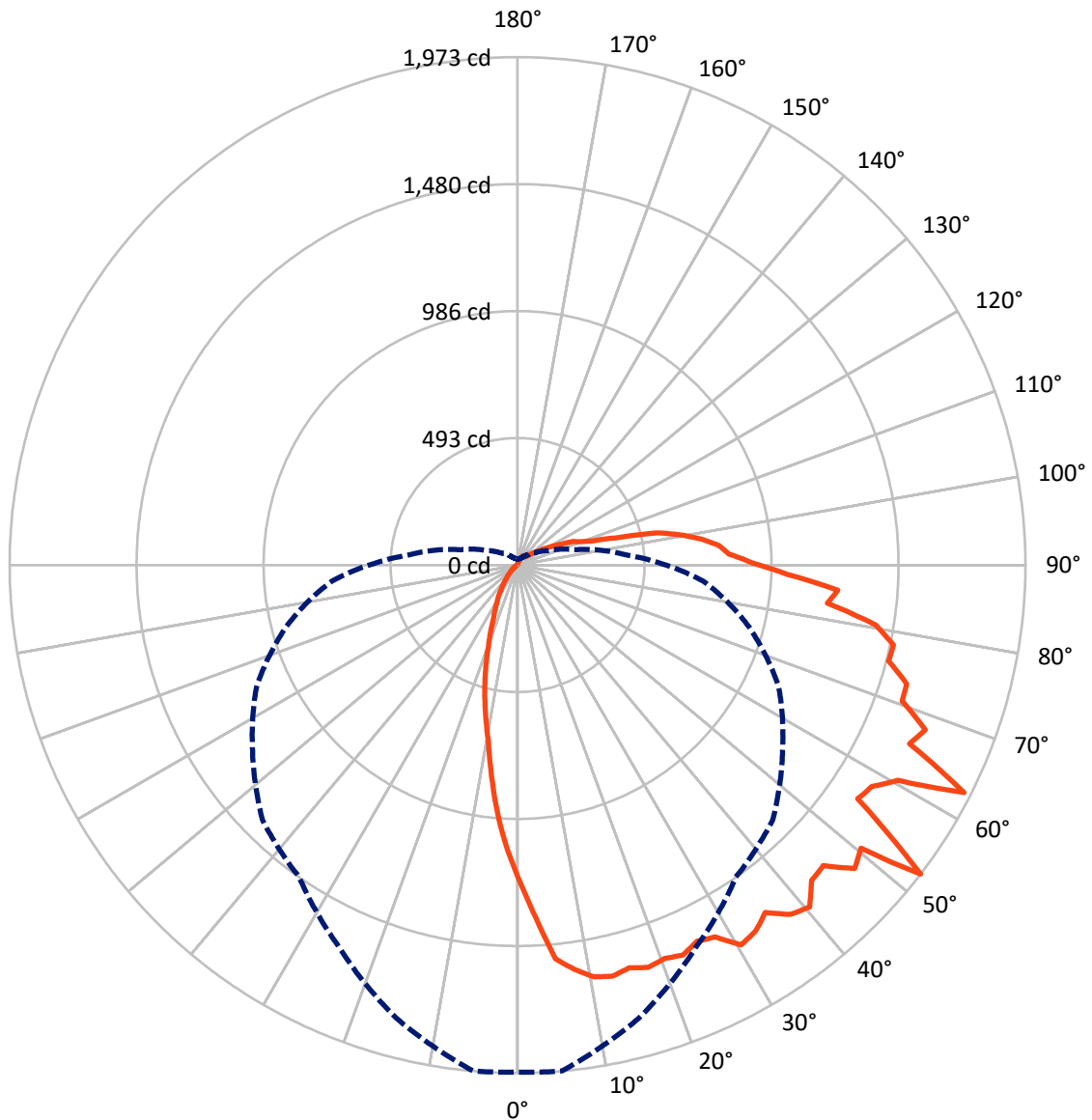
✕ Max cd  
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 6.8 fc  
 Type IV - Short - N/A

REPORT NUMBER: P979136  
CATALOG NUMBER: WPSLED15S-30W-5000K

### Luminous Intensity Polar Plot



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

REPORT NUMBER: P979136  
 CATALOG NUMBER: WPSLED15S-30W-5000K

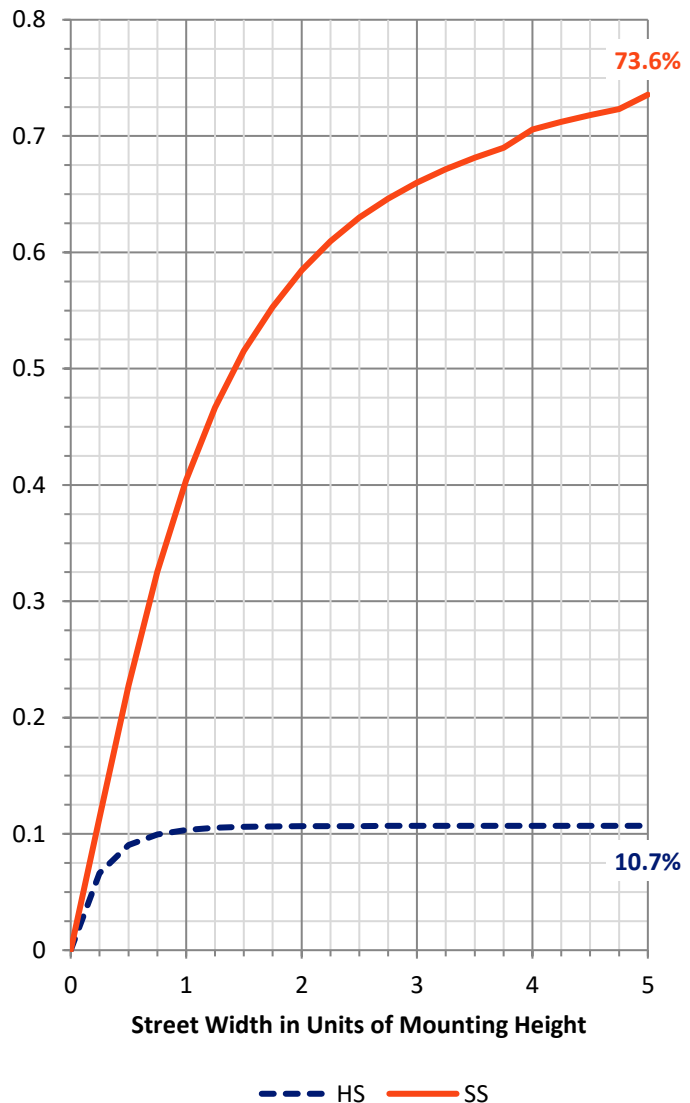
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	505.8	5.2	510.9
	% Fixture	10.8	0.1	10.9
<b>Street Side</b>	Lumens	3714.3	451.5	4165.8
	% Fixture	79.4	9.7	89.1
<b>Total</b>	Lumens	4220.1	456.7	4676.8
	% Fixture	90.2	9.8	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	116.4	2.5
10°-20°	311.7	6.7
20°-30°	450.1	9.6
30°-40°	548.6	11.7
40°-50°	606.9	13.0
50°-60°	626.8	13.4
60°-70°	622.8	13.3
70°-80°	542.1	11.6
80°-90°	394.7	8.4
90°-100°	237.6	5.1
100°-110°	114.5	2.4
110°-120°	51.6	1.1
120°-130°	24.6	0.5
130°-140°	13.8	0.3
140°-150°	9.2	0.2
150°-160°	4.2	0.1
160°-170°	1.1	0.0
170°-180°	0.1	0.0
0°-90°	4220.1	90.2
0°-180°	4676.8	100.0



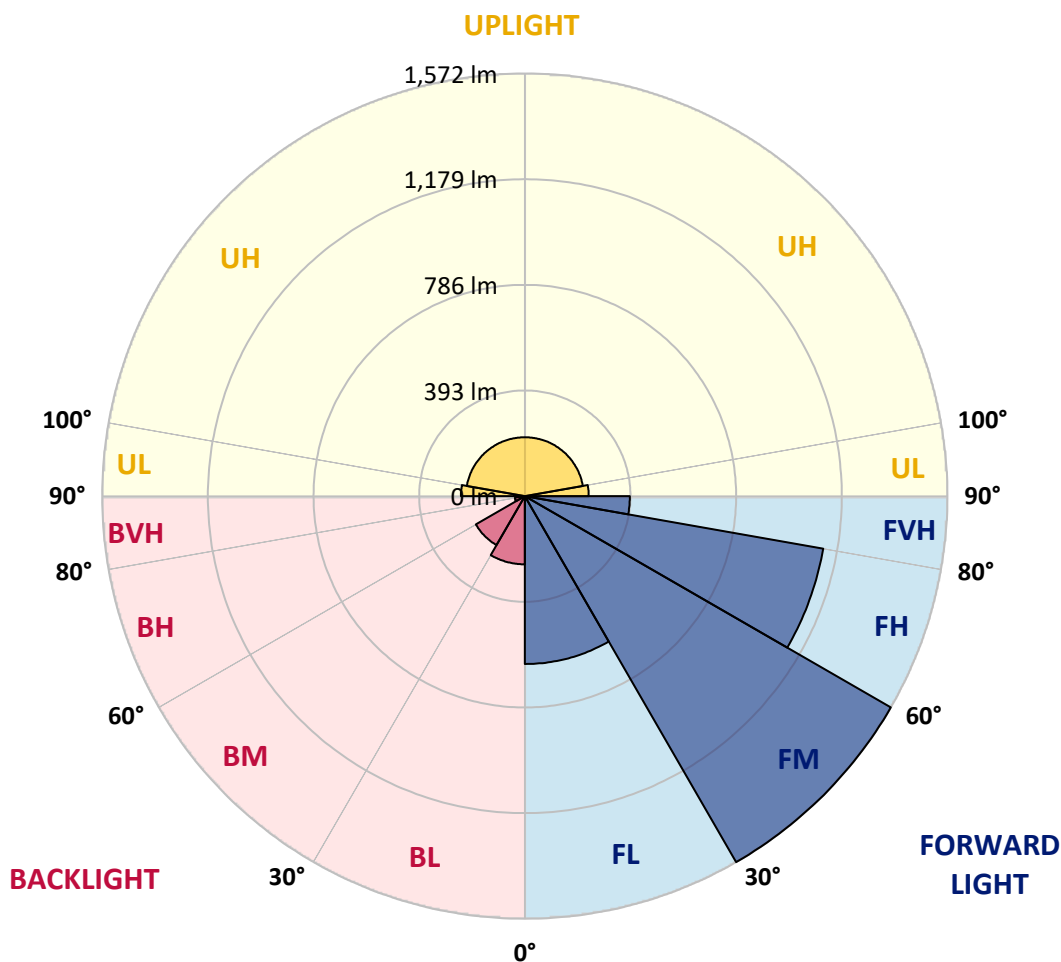
REPORT NUMBER: P979136  
 CATALOG NUMBER: WPSLED15S-30W-5000K

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	624.5	13.4			
FM (30°-60°)	1572.1	33.6			
FH (60°-80°)	1127.1	24.1			G1/1800
FVH (80°-90°)	390.6	8.4			G3/500
BL (0°-30°)	253.6	5.4	B1/500		
BM (30°-60°)	210.2	4.5	B0/220		
BH (60°-80°)	37.8	0.8	B0/110		G0/110
BVH (80°-90°)	4.1	0.1			G0/10
UL (90°-100°)	237.6	5.1		U3/500	
UH (100°-180°)	219.1	4.7		U3/500	

**BUG Rating: B1-U3-G3**

Type IV Short





REPORT NUMBER: P979136

CATALOG NUMBER: WPSLED15S-30W-5000K

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1232.3	1232.3	1232.3	1232.3	1232.3	1232.3	1232.3	1232.3	1232.3	1232.3	1232.3
2.5°	1373.2	1373.2	1370.4	1367.1	1366.6	1364.3	1353.8	1327.7	1284.5	1244.5	1230.1
5°	1534.0	1535.7	1534.6	1501.9	1468.6	1418.7	1381.0	1352.7	1334.4	1251.7	1221.2
7.5°	1583.4	1585.6	1593.4	1579.5	1562.9	1537.9	1455.8	1371.0	1329.4	1247.3	1197.4
10°	1622.2	1626.7	1616.7	1584.5	1550.1	1546.2	1523.5	1422.0	1323.3	1243.4	1176.3
12.5°	1629.4	1638.3	1603.4	1570.6	1570.6	1542.4	1521.8	1473.6	1334.4	1244.5	1162.5
15°	1618.9	1623.3	1592.8	1581.7	1580.6	1535.7	1502.4	1489.1	1352.7	1241.8	1146.4
17.5°	1641.1	1642.7	1632.2	1600.6	1542.9	1553.5	1518.0	1484.7	1385.4	1237.3	1134.2
20°	1634.4	1631.1	1593.9	1577.3	1594.5	1519.6	1498.5	1461.4	1405.4	1225.7	1113.1
22.5°	1646.6	1645.0	1599.5	1588.4	1551.8	1550.7	1524.6	1463.6	1403.2	1208.5	1087.0
25°	1618.9	1618.9	1578.4	1576.7	1562.3	1528.5	1469.7	1446.4	1387.6	1190.2	1062.1
27.5°	1643.3	1635.5	1580.6	1559.0	1552.9	1506.9	1472.5	1423.7	1361.0	1163.0	1033.2
30°	1718.2	1711.5	1652.2	1576.7	1525.2	1513.5	1464.7	1405.9	1324.4	1130.3	1000.5
32.5°	1703.2	1696.5	1666.6	1639.4	1539.0	1486.9	1415.4	1359.3	1288.9	1094.8	966.1
35°	1669.9	1657.2	1615.6	1617.8	1593.9	1469.2	1412.6	1312.2	1254.5	1061.0	928.4
37.5°	1740.4	1722.1	1653.8	1600.6	1574.5	1470.8	1404.3	1307.2	1221.8	1024.4	883.5
40°	1769.2	1746.5	1647.2	1646.6	1530.2	1504.6	1368.2	1297.8	1188.5	982.2	842.4
42.5°	1681.0	1674.9	1737.0	1639.4	1565.7	1457.0	1354.4	1263.4	1145.3	931.7	790.3
45°	1681.0	1664.9	1605.0	1635.0	1546.2	1417.6	1340.5	1227.3	1093.1	880.2	735.4
47.5°	1787.5	1761.4	1659.4	1563.4	1557.3	1438.1	1320.5	1201.3	1032.1	826.4	675.5
50°	1742.6	1728.7	1703.8	1636.6	1469.2	1437.0	1291.1	1160.2	975.0	768.1	613.9
52°	1969.4	1972.7	1821.3	1638.3	1479.1	1400.9	1256.7	1118.6	931.2	724.9	577.3
52.5°	1886.2	1910.1	1891.8	1618.3	1493.0	1382.1	1250.6	1104.2	919.0	710.5	568.5
55°	1604.5	1602.8	1595.6	1747.6	1491.9	1325.0	1234.6	1054.9	868.5	665.0	524.1
57.5°	1619.5	1622.8	1567.9	1526.8	1561.2	1315.0	1195.7	997.7	825.3	618.4	479.2
60°	1703.2	1698.2	1713.7	1552.3	1434.2	1312.2	1108.7	954.5	789.2	569.6	443.7
62.5°	1960.5	1946.1	1789.2	1586.7	1436.4	1319.4	1076.5	917.3	747.6	529.1	406.5
65°	1678.8	1672.7	1642.2	1699.9	1462.5	1256.7	1063.7	895.7	703.8	486.9	354.4
67.5°	1712.1	1708.2	1644.4	1546.8	1481.9	1256.2	1032.1	850.2	661.6	433.1	300.0
70°	1585.6	1584.5	1548.5	1496.9	1383.7	1234.0	984.4	792.5	612.8	373.3	244.6
72.5°	1574.5	1580.6	1528.5	1443.6	1334.9	1146.9	934.0	748.2	555.2	319.5	200.2
75°	1489.7	1488.6	1449.7	1375.4	1270.0	1088.1	884.0	708.2	493.6	266.2	157.0
77.5°	1490.8	1492.4	1444.2	1348.8	1224.6	1025.5	829.1	631.7	433.7	211.3	119.8
80°	1409.3	1410.4	1346.6	1266.2	1148.0	960.0	753.2	567.4	368.8	161.9	88.2
82.5°	1206.3	1211.8	1170.2	1114.2	1029.4	862.4	671.6	507.5	310.0	120.9	65.4
85°	1239.0	1247.9	1188.0	1107.5	998.8	809.7	600.1	435.9	245.7	86.5	48.3
87.5°	1035.5	1048.8	1004.9	952.8	858.5	695.5	515.2	354.9	193.0	65.4	37.2
90°	904.0	912.9	879.1	821.9	728.8	601.2	445.3	296.2	149.2	48.8	29.4
92.5°	808.1	821.4	805.3	759.8	674.4	535.8	379.4	237.4	113.1	37.7	25.0
95°	774.8	786.4	742.6	675.5	591.2	465.9	314.5	190.2	87.1	30.5	21.6
97.5°	714.9	722.7	691.0	601.7	519.7	397.7	254.6	142.0	67.7	26.1	19.4
100°	640.0	642.8	598.4	539.6	442.0	320.0	193.6	110.9	54.9	23.8	17.7
102.5°	549.1	555.2	494.2	422.1	346.6	250.7	152.0	89.8	45.5	22.7	17.7
105°	391.6	394.9	359.4	320.6	270.1	194.1	126.5	75.4	38.3	22.2	17.7
107.5°	296.7	300.6	282.8	254.0	213.0	160.8	103.2	62.7	33.8	21.6	17.2



REPORT NUMBER: P979136  
 CATALOG NUMBER: WPSLED15S-30W-5000K

**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
110°	257.9	258.4	244.0	220.2	184.1	132.6	85.4	52.1	31.1	21.6	16.6
112.5°	230.2	234.0	216.3	192.4	155.8	113.1	71.5	44.4	29.9	21.1	16.1
115°	188.0	189.1	176.9	159.2	127.6	93.7	61.6	39.9	29.4	20.0	15.0
117.5°	157.5	157.0	148.1	129.8	105.4	77.6	54.4	37.2	28.3	18.3	13.9
120°	126.5	128.1	120.3	107.0	87.6	66.0	47.7	34.9	27.2	17.2	12.8
122.5°	107.0	107.6	101.5	89.8	72.1	56.6	42.2	32.7	26.1	16.1	11.1
125°	89.3	89.8	84.9	74.9	61.0	49.4	38.3	31.6	25.5	15.0	10.0
127.5°	76.0	76.5	71.5	62.7	52.7	44.4	36.6	31.1	25.0	13.3	8.9
130°	64.3	63.8	59.9	53.8	47.1	41.6	36.0	29.9	22.7	11.6	7.8
132.5°	54.4	53.8	51.0	47.7	43.3	40.5	34.9	28.8	20.5	10.5	6.7
135°	47.1	46.6	45.5	44.4	41.6	38.8	33.8	27.2	18.9	8.9	5.5
137.5°	42.7	43.3	43.8	43.3	39.9	37.2	32.2	25.5	16.6	7.8	4.4
140°	44.4	43.8	43.3	42.7	39.4	35.5	31.1	24.4	15.0	6.7	3.9
142.5°	44.4	44.4	43.8	42.2	37.7	34.4	29.4	22.7	13.3	5.5	3.3
145°	44.4	44.4	42.7	39.9	36.6	32.2	27.2	20.0	11.6	4.4	2.8
147.5°	43.8	43.8	41.0	37.2	33.3	29.9	24.4	17.2	10.0	3.9	2.8
150°	41.6	41.0	37.2	33.3	30.5	26.6	20.5	15.0	8.3	3.3	2.2
152.5°	36.0	36.0	33.3	29.4	25.5	22.2	17.7	12.2	6.7	2.8	1.7
155°	28.8	28.3	26.1	23.3	20.5	18.9	15.0	10.5	5.5	2.2	1.7
157.5°	22.2	21.6	20.5	18.9	17.7	16.1	12.2	8.3	4.4	2.2	1.7
160°	19.4	19.4	17.7	16.6	15.0	12.8	10.0	6.7	3.3	1.7	1.1
162.5°	16.6	16.6	15.0	13.9	11.6	9.4	7.2	4.4	2.8	1.7	1.1
165°	12.8	12.8	11.6	10.5	8.9	6.7	5.0	3.3	2.2	1.7	1.1
167.5°	9.4	9.4	8.3	7.8	6.1	4.4	3.3	2.8	1.7	1.7	1.1
170°	5.5	5.5	5.0	4.4	3.3	2.8	2.8	2.2	1.7	1.1	1.1
172.5°	2.2	2.2	2.2	1.7	2.2	2.2	2.2	1.7	1.7	1.1	1.1
175°	0.6	0.6	1.1	1.1	1.7	1.7	1.7	1.7	1.7	1.1	1.1
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





REPORT NUMBER: P979136  
 CATALOG NUMBER: WPSLED15S-30W-5000K

**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1232.3	1232.3	1232.3	1232.3	1232.3	1232.3	1232.3	1232.3	1232.3	1232.3
2.5°	1220.1	1204.6	1175.2	1141.4	1125.3	1114.8	1109.8	1109.8	1107.5	1109.8
5°	1203.5	1143.0	1107.0	1078.7	1043.2	1018.8	1001.1	983.3	972.8	972.2
7.5°	1170.8	1090.9	1042.1	992.7	937.8	903.5	867.4	840.8	826.4	828.6
10°	1134.2	1051.5	975.0	905.1	828.6	781.4	737.1	711.0	689.4	686.6
12.5°	1104.8	1006.1	901.2	800.9	724.3	658.9	615.6	601.7	594.5	592.3
15°	1078.2	959.5	836.3	718.8	627.3	580.1	550.2	523.5	508.6	509.1
17.5°	1058.2	913.4	764.8	641.1	561.3	502.5	451.5	432.0	425.4	427.0
20°	1032.1	862.4	706.0	582.9	492.5	423.7	386.0	352.7	340.5	339.4
22.5°	997.7	809.7	642.8	520.8	422.1	357.2	311.7	289.0	279.5	276.7
25°	963.4	753.7	585.7	457.6	367.1	300.0	257.3	234.6	224.1	223.0
27.5°	927.3	699.4	534.1	394.3	309.5	251.8	209.6	193.0	188.0	185.8
30°	886.8	651.7	473.6	342.7	264.0	209.6	180.8	164.7	159.2	158.1
32.5°	843.0	600.6	415.4	296.2	224.6	180.2	152.5	141.4	135.3	135.3
35°	796.4	548.5	362.2	256.8	190.8	153.1	129.2	115.9	108.7	107.6
37.5°	747.6	496.4	316.1	220.7	163.1	129.8	105.9	94.3	90.4	88.2
40°	697.7	447.0	275.6	189.7	137.0	105.4	86.5	75.4	71.5	71.5
42.5°	645.6	394.9	239.0	161.9	116.5	87.1	69.9	61.0	57.7	58.2
45°	587.3	344.4	203.5	137.0	96.5	71.0	57.1	48.8	44.9	44.4
47.5°	524.1	296.2	174.1	115.9	79.3	58.2	46.0	38.8	36.0	34.9
50°	471.4	255.1	147.5	95.4	66.0	46.6	36.0	30.5	27.7	27.2
52°	430.4	228.5	132.0	83.2	56.6	38.8	29.9	25.0	23.8	24.4
52.5°	423.2	222.4	128.7	81.0	53.8	37.2	28.3	23.3	23.3	23.8
55°	380.5	195.8	111.5	68.8	43.8	29.4	21.1	18.9	20.0	19.4
57.5°	345.5	165.8	94.3	58.8	35.5	22.7	15.0	15.0	15.0	14.4
60°	308.4	142.5	81.0	49.9	27.7	16.1	10.5	9.4	8.3	8.3
62.5°	265.1	118.7	69.9	41.0	21.1	10.0	5.5	4.4	3.9	3.9
65°	223.0	99.3	59.3	33.3	15.0	5.0	1.1	0.0	0.0	0.0
67.5°	180.8	83.7	49.4	26.1	10.0	1.1	0.0	0.0	0.0	0.0
70°	145.9	69.3	41.0	19.4	5.0	0.0	0.0	0.0	0.0	0.0
72.5°	115.4	57.7	33.3	13.3	1.1	0.0	0.0	0.0	0.0	0.0
75°	89.3	47.1	26.1	8.3	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	68.2	37.7	20.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	52.7	29.9	15.5	2.8	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	40.5	23.8	11.6	1.7	0.0	0.0	0.0	0.0	0.0	0.0
85°	31.6	18.3	8.9	1.1	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	25.5	14.4	6.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0
90°	20.5	11.6	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	17.7	9.4	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	15.0	7.8	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	13.9	7.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	13.3	6.7	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	13.3	6.1	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105°	13.3	6.1	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	12.8	5.5	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P979136  
 CATALOG NUMBER: WPSLED15S-30W-5000K

**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
110°	12.8	5.0	1.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0
112.5°	12.2	3.9	1.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0
115°	11.1	2.8	1.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	10.0	1.7	1.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0
120°	7.8	1.1	1.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	6.7	1.1	1.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0
125°	6.1	0.6	1.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	6.1	1.1	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
130°	5.0	1.7	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	4.4	1.7	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
135°	3.9	1.1	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	3.3	1.1	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
140°	2.8	1.7	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
142.5°	2.2	1.7	1.1	0.6	0.6	0.0	0.0	0.0	0.0	0.0
145°	2.2	1.7	1.1	0.6	0.6	0.0	0.0	0.0	0.0	0.0
147.5°	2.2	1.1	1.1	0.6	0.6	0.0	0.0	0.0	0.0	0.0
150°	1.7	1.1	1.1	0.6	0.6	0.0	0.0	0.0	0.0	0.0
152.5°	1.7	1.1	1.1	0.6	0.6	0.0	0.0	0.0	0.0	0.0
155°	1.7	1.1	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
157.5°	1.1	1.1	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
160°	1.1	1.1	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	1.1	1.1	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
165°	1.1	1.1	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	1.1	1.1	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
170°	1.1	1.1	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	1.1	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	1.1	0.6	0.6	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.

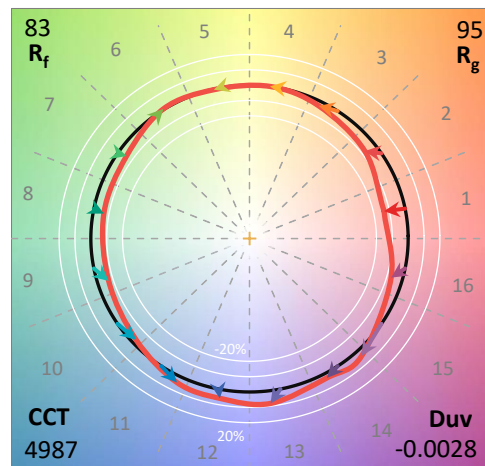
**Test Information**

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**

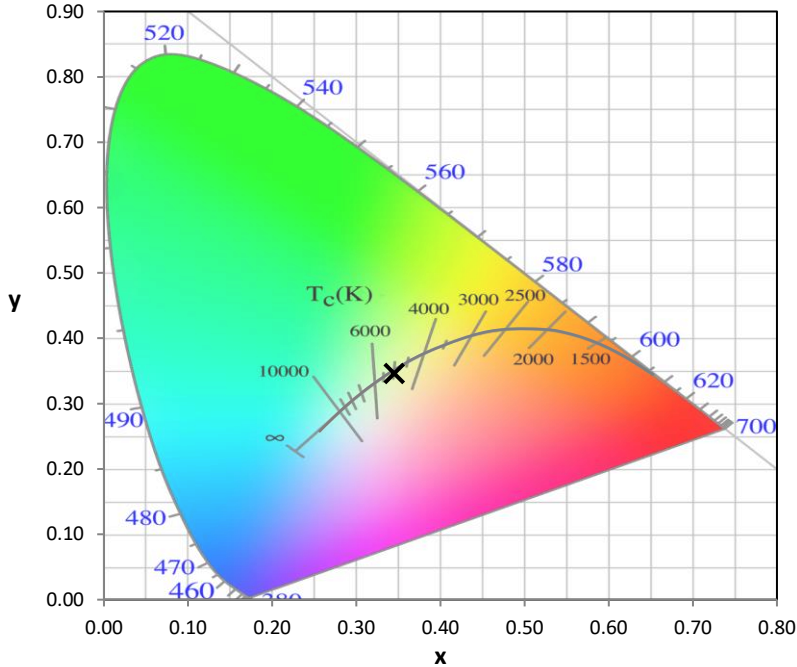
Stabilization Time: 20M  
 Operation Time: 1H 20M  
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2407-168-4

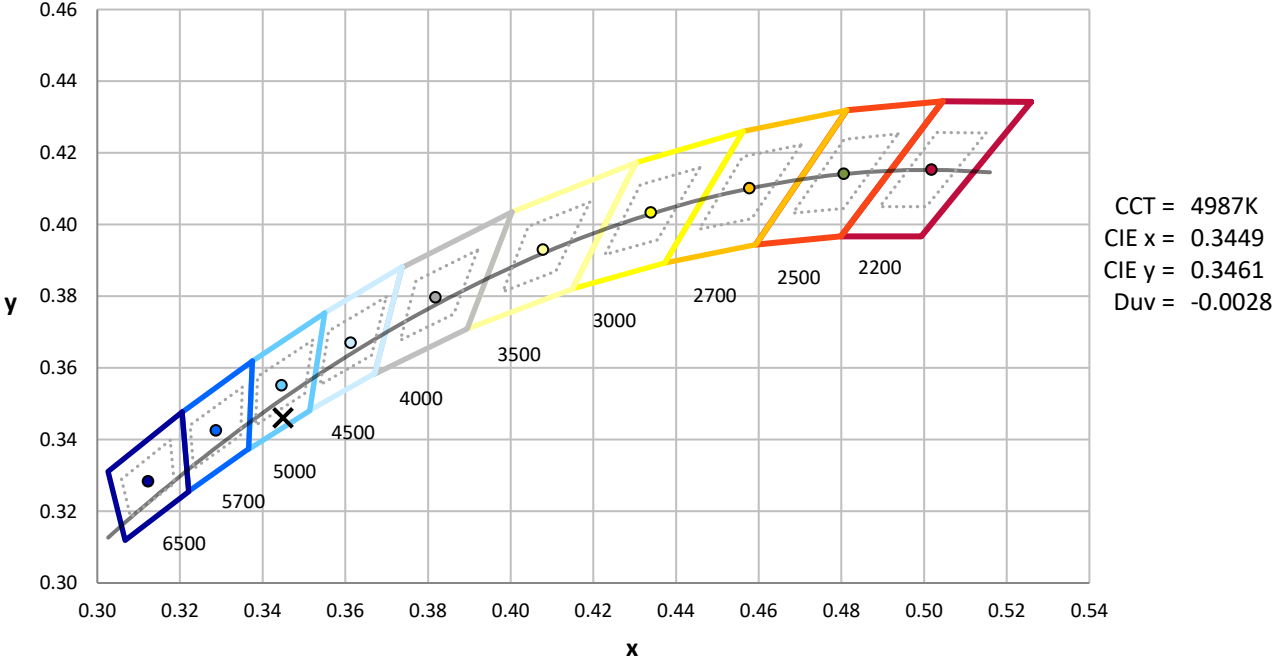
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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



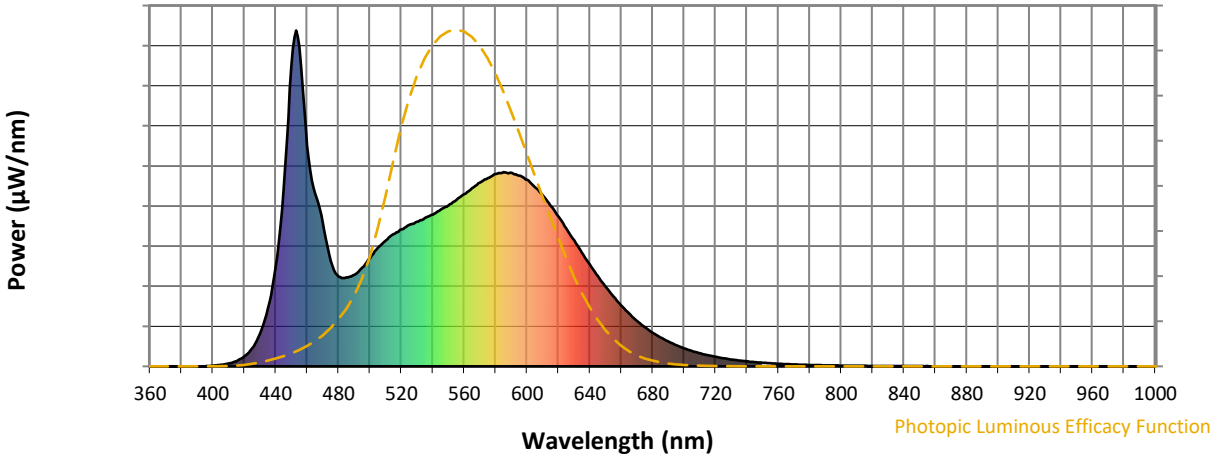
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 5000K 7-step quadrangle

REPORT NUMBER: SP1-2407-168-4

**Photopic Flux vs. Wavelength**

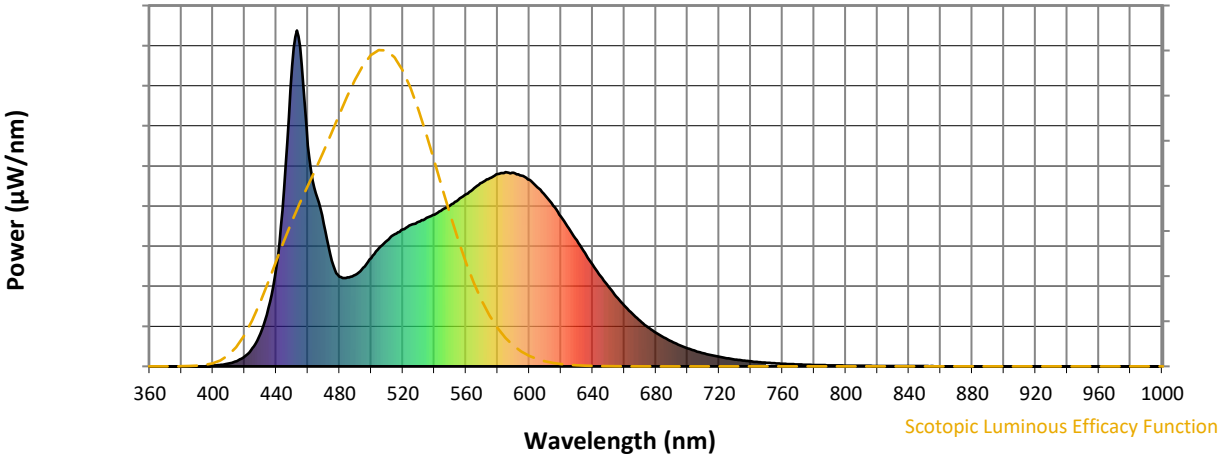


**Photopic Lumens: NR**

λ (nm)	Power W <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	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**

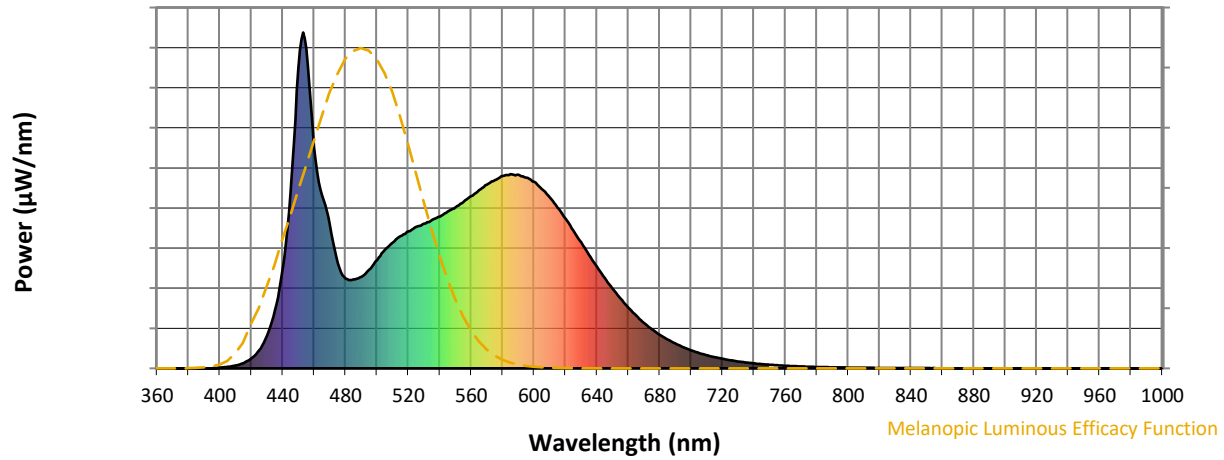
**S/P: 2**

λ (nm)	Power W <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	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**



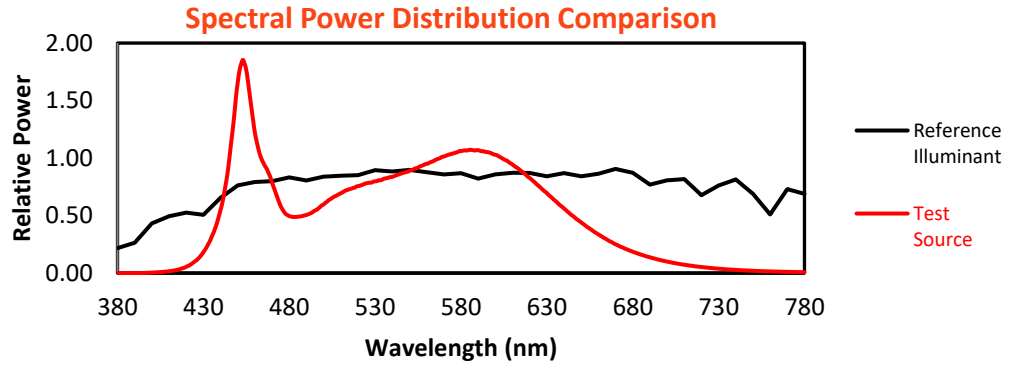
**Melanopic Lumens: NR**

**M/P: 4.35**

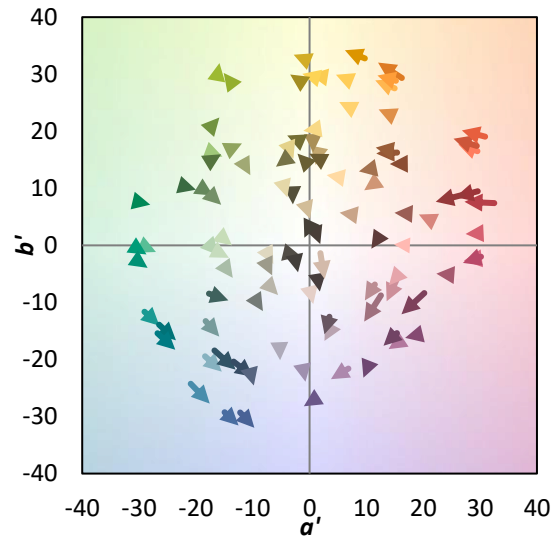
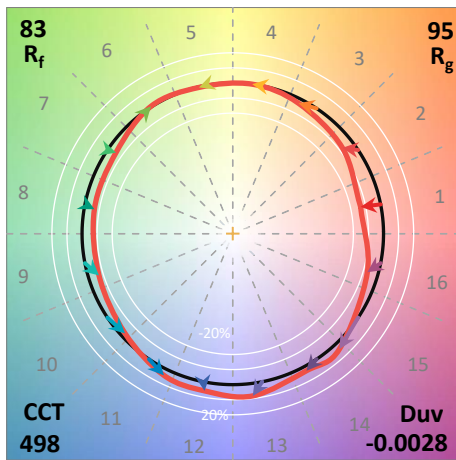
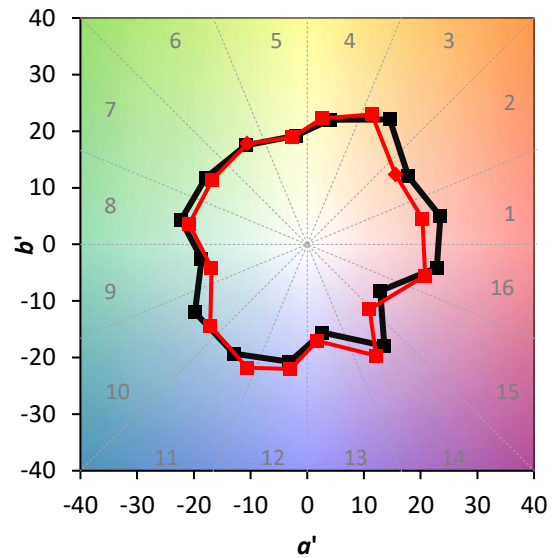
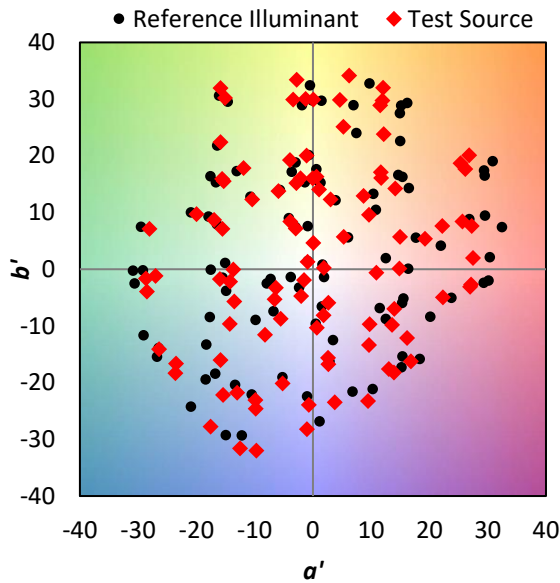
λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	273	NR	620	446	NR	750	11	NR	880	0	NR
365	0	NR	495	294	NR	625	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**

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

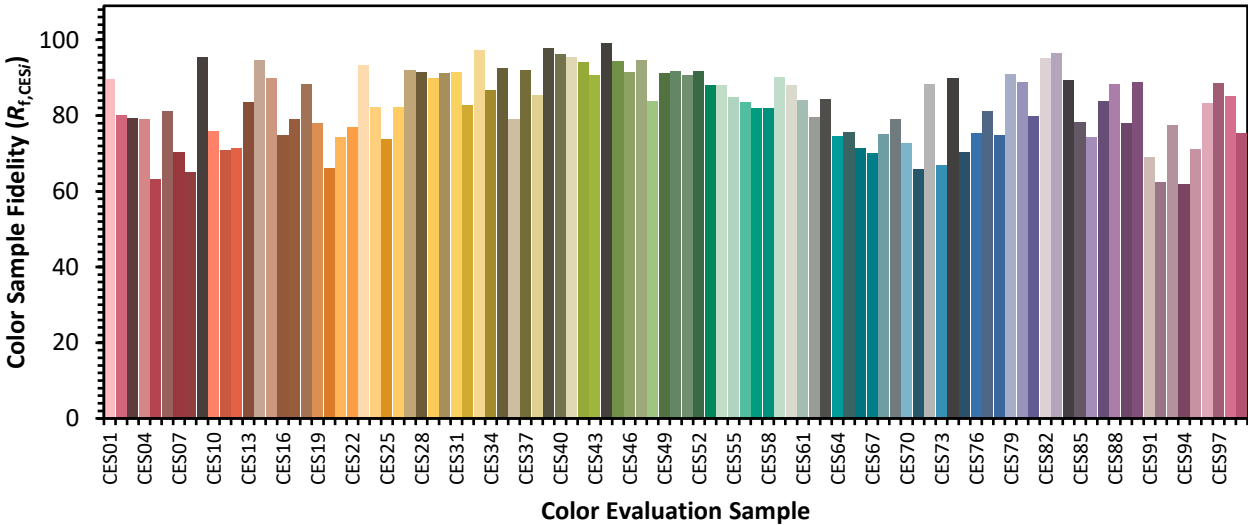


**Color Vector Graphics**

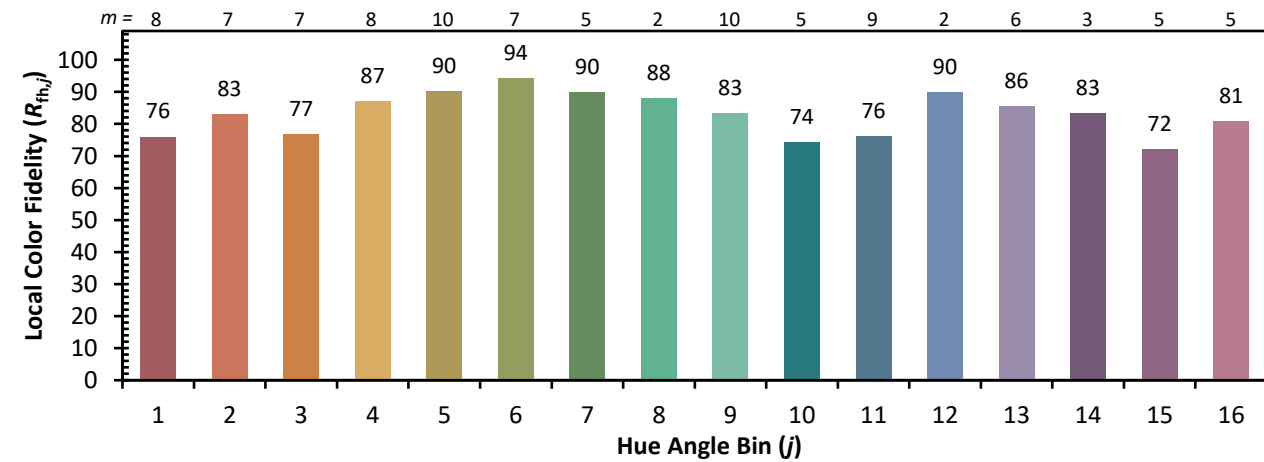
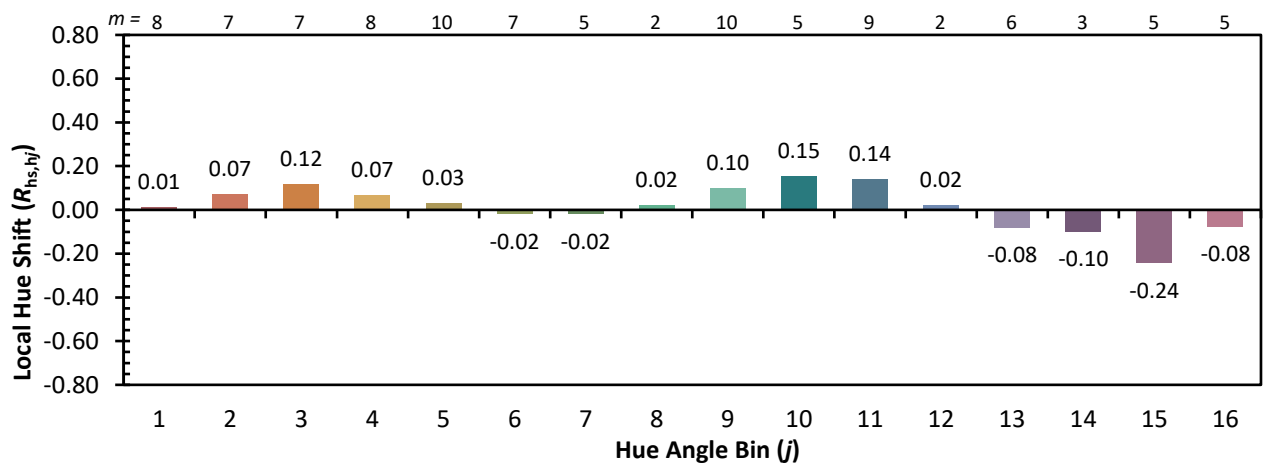
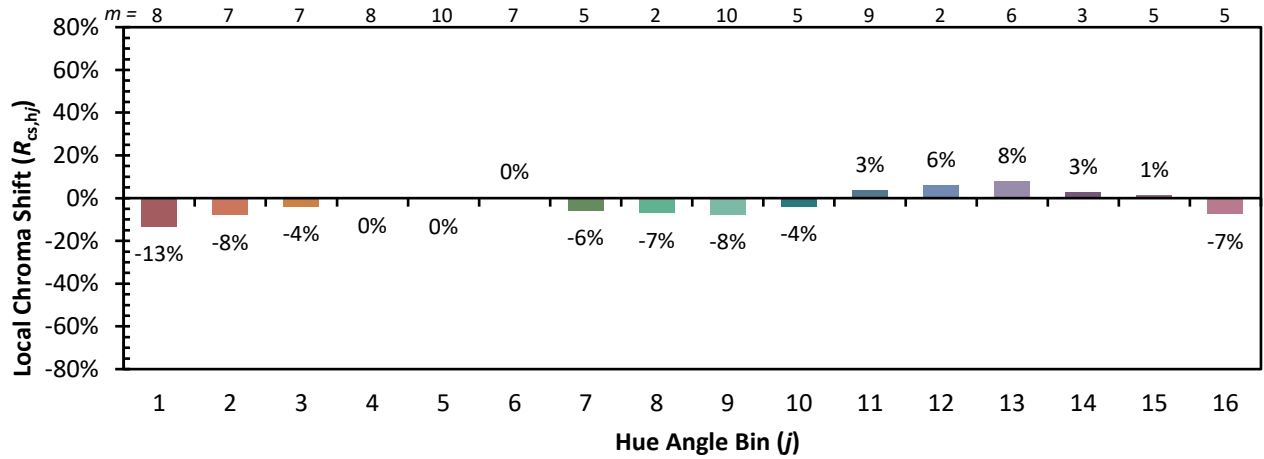


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

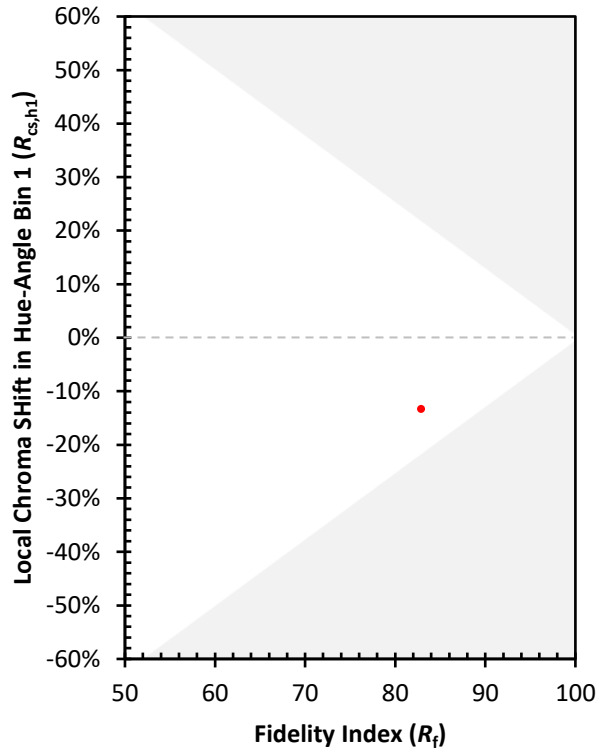
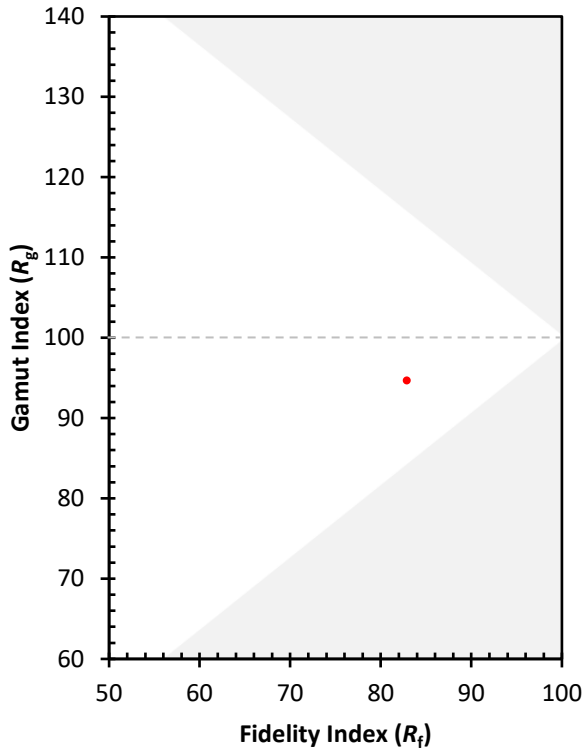
CES01 = 85	CES26 = 82	CES51 = 91	CES76 = 75
CES02 = 60	CES27 = 92	CES52 = 92	CES77 = 81
CES03 = 30	CES28 = 92	CES53 = 88	CES78 = 75
CES04 = 69	CES29 = 90	CES54 = 88	CES79 = 91
CES05 = 47	CES30 = 91	CES55 = 85	CES80 = 89
CES06 = 50	CES31 = 91	CES56 = 84	CES81 = 80
CES07 = 40	CES32 = 83	CES57 = 82	CES82 = 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)