

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: P979134

Luminaire Tested: **WPSLED15S-30W-3500K**

Issue Date: 03/31/2025



Test Information

Test Method: LM-79-08
Report Number: P979134
Test Lab: Cooper Lighting Solutions
Issue Date: 03/31/2025
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: WPSLED15S-30W-3500K
Description: LUMARK WALL PACK LED SMALL 80CRI CCT AND LUMEN SELECTIVE FIXTURE
OPERATING @30W-3500K
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

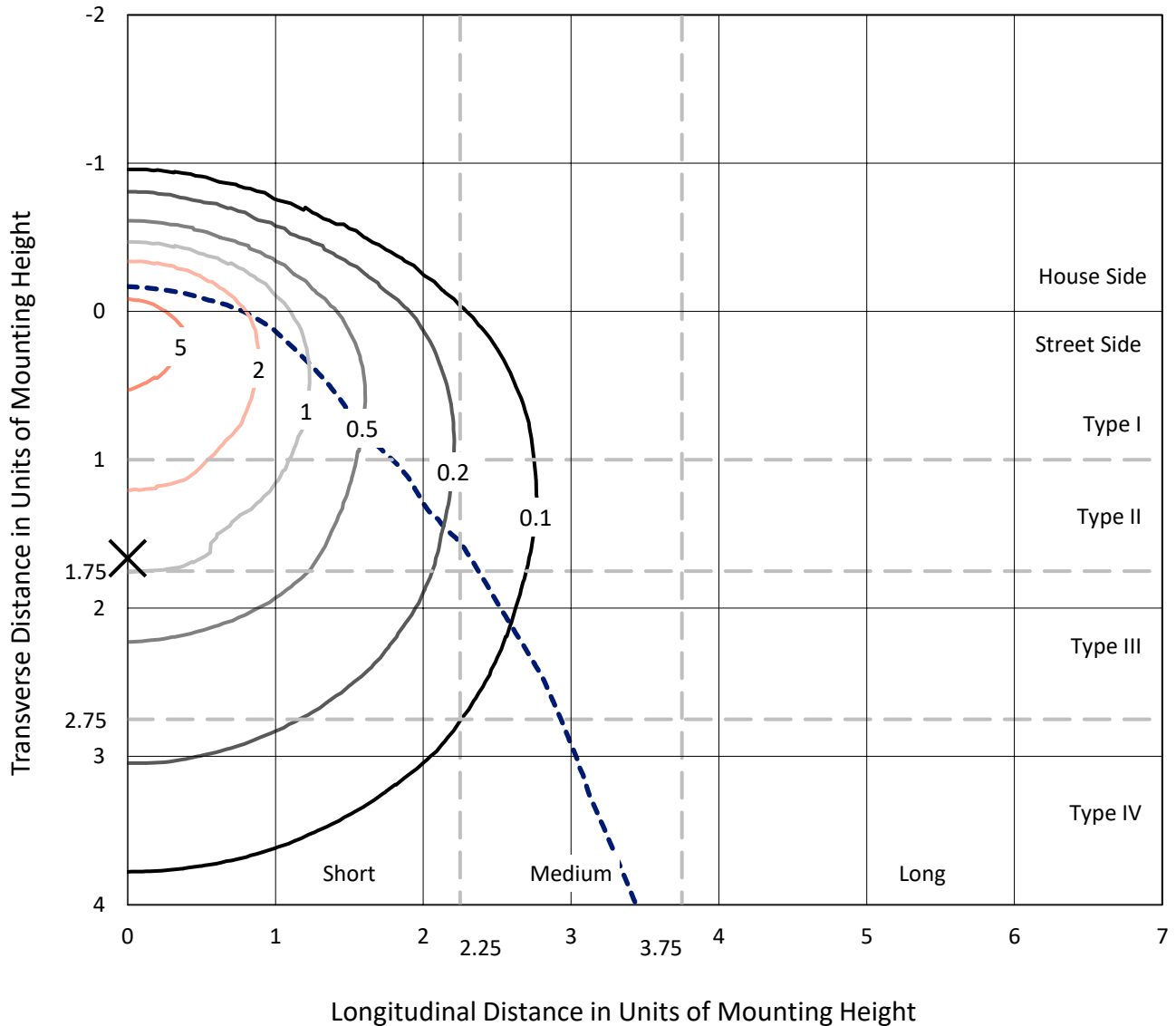
Lumens per Lamp: N/A
Luminaire Lumens: 4509 lumens
Efficiency: N/A
Efficacy: 147.4 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 0.61' x L: 0.12' x H: 0.44')
IES Classification: Type IV - Short
BUG Rating: B1 - U3 - G3

Input Watts (W): 30.6
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

REPORT NUMBER: P979134
 CATALOG NUMBER: WPSLED15S-30W-3500K

Iso-Footcandle Lines of Horizontal Illumination

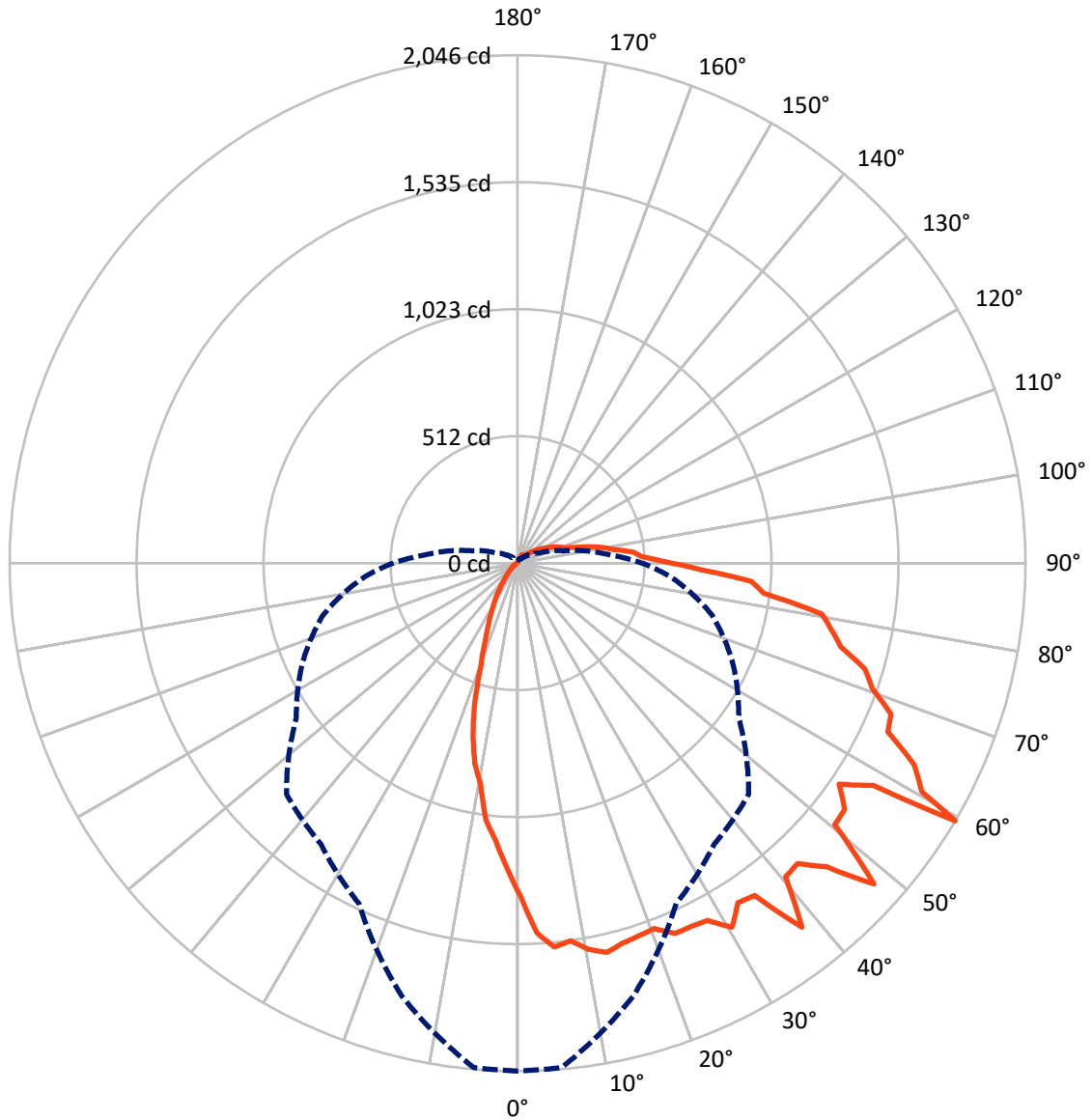
✕ Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 6.7 fc
 Type IV - Short - N/A

REPORT NUMBER: P979134
CATALOG NUMBER: WPSLED15S-30W-3500K

Luminous Intensity Polar Plot



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

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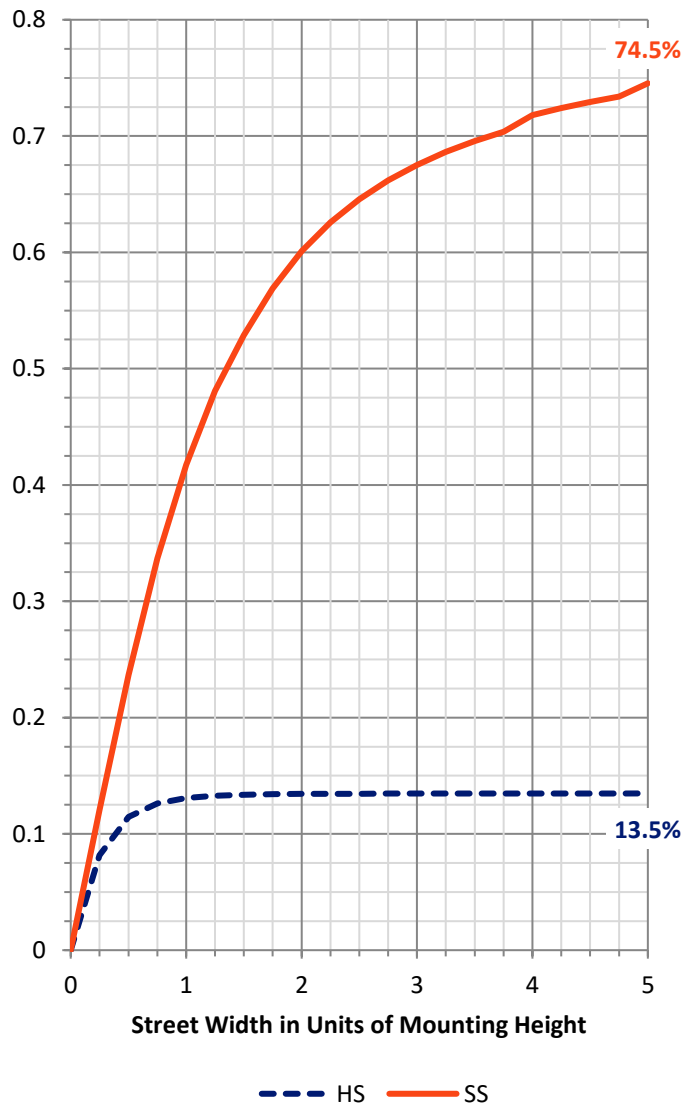
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	615.1	5.5	620.5
	% Fixture	13.6	0.1	13.8
Street Side	Lumens	3572.5	316.0	3888.5
	% Fixture	79.2	7.0	86.2
Total	Lumens	4187.6	321.4	4509.0
	% Fixture	92.9	7.1	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.0	2.8
10°-20°	336.4	7.5
20°-30°	475.3	10.5
30°-40°	567.7	12.6
40°-50°	618.8	13.7
50°-60°	624.3	13.8
60°-70°	614.3	13.6
70°-80°	504.5	11.2
80°-90°	320.2	7.1
90°-100°	151.7	3.4
100°-110°	76.5	1.7
110°-120°	43.0	1.0
120°-130°	23.8	0.5
130°-140°	13.2	0.3
140°-150°	8.5	0.2
150°-160°	3.7	0.1
160°-170°	1.0	0.0
170°-180°	0.1	0.0
0°-90°	4187.6	92.9
0°-180°	4509.0	100.0



REPORT NUMBER: P979134

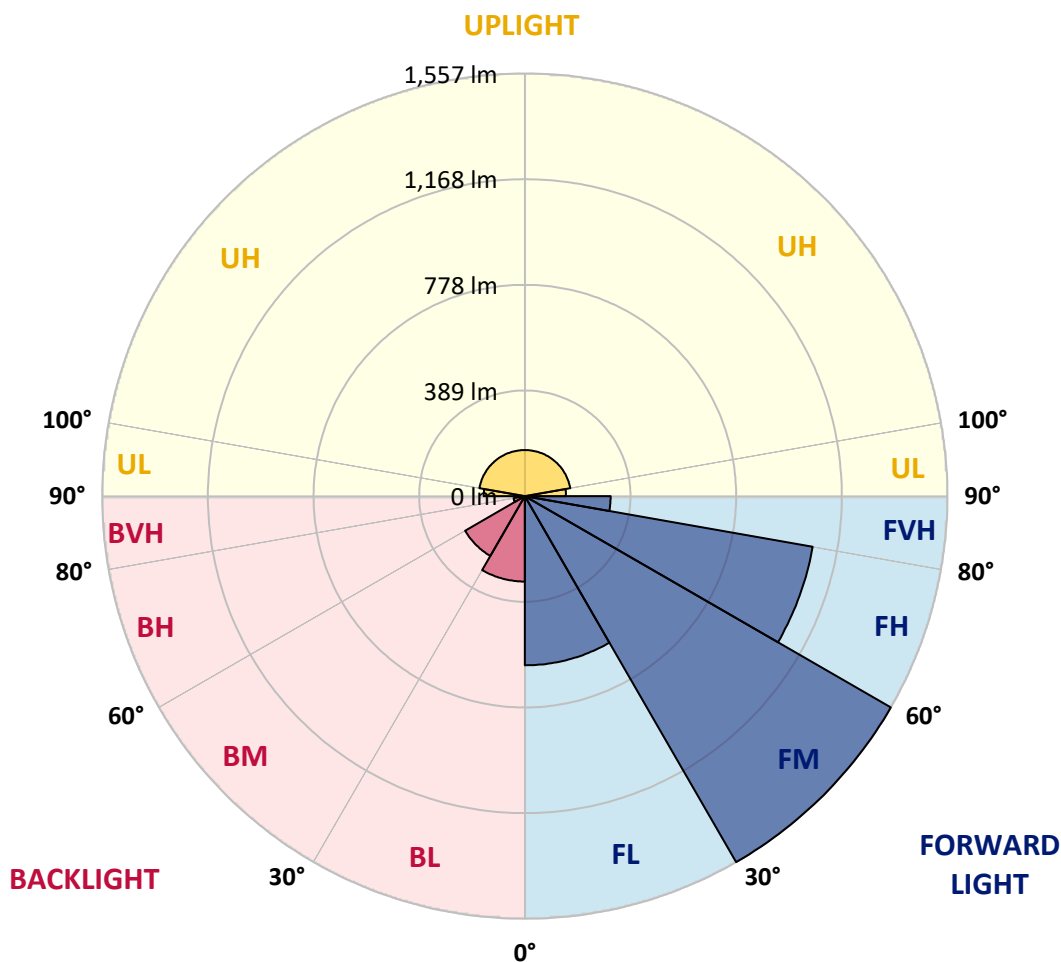
CATALOG NUMBER: WPSLED15S-30W-3500K

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	623.1	13.8			
FM (30°-60°)	1556.7	34.5			
FH (60°-80°)	1076.6	23.9			G1/1800
FVH (80°-90°)	316.1	7.0			G3/500
BL (0°-30°)	314.6	7.0	B1/500		
BM (30°-60°)	254.1	5.6	B1/1000		
BH (60°-80°)	42.2	0.9	B0/110		G0/110
BVH (80°-90°)	4.2	0.1			G0/10
UL (90°-100°)	151.7	3.4		U3/500	
UH (100°-180°)	169.7	3.8		U3/500	

BUG Rating: B1-U3-G3

Type IV Short





REPORT NUMBER: P979134

CATALOG NUMBER: WPSLED15S-30W-3500K

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1340.8	1340.8	1340.8	1340.8	1340.8	1340.8	1340.8	1340.8	1340.8	1340.8	1340.8
2.5°	1491.8	1495.6	1500.1	1486.8	1490.1	1490.7	1479.6	1464.1	1420.4	1370.1	1343.0
5°	1554.2	1551.5	1545.9	1514.4	1492.3	1478.5	1479.0	1480.1	1465.8	1385.0	1333.6
7.5°	1536.0	1543.7	1543.2	1528.2	1545.9	1555.9	1474.6	1457.5	1448.6	1377.9	1299.3
10°	1583.0	1584.6	1576.9	1549.8	1526.6	1492.3	1528.2	1446.4	1440.3	1361.3	1275.0
12.5°	1609.0	1621.1	1598.5	1562.5	1531.6	1511.7	1470.2	1491.2	1426.0	1354.6	1251.2
15°	1588.0	1575.2	1546.5	1528.2	1565.8	1511.1	1479.6	1471.3	1402.2	1350.2	1238.5
17.5°	1579.1	1592.4	1585.2	1561.4	1507.2	1538.8	1478.5	1450.8	1403.3	1340.8	1229.1
20°	1571.4	1585.8	1559.2	1528.2	1550.9	1477.4	1485.1	1438.1	1411.6	1320.9	1213.1
22.5°	1621.1	1619.5	1574.7	1547.6	1500.1	1522.7	1497.3	1434.8	1404.4	1306.5	1180.5
25°	1622.2	1623.4	1588.5	1548.7	1522.7	1485.7	1438.7	1409.4	1373.4	1278.3	1146.2
27.5°	1630.0	1631.6	1560.9	1544.8	1524.9	1475.2	1450.3	1391.7	1343.0	1242.4	1122.4
30°	1701.9	1683.6	1652.1	1577.5	1512.8	1487.3	1437.0	1391.7	1302.1	1210.3	1090.9
32.5°	1630.0	1622.2	1592.4	1620.6	1533.8	1464.1	1396.1	1328.1	1275.0	1158.4	1052.2
35°	1644.9	1637.7	1574.1	1570.3	1586.9	1450.3	1378.4	1293.3	1240.2	1121.3	1012.9
37.5°	1861.1	1832.9	1698.0	1572.5	1532.7	1471.9	1371.2	1308.7	1200.9	1078.7	962.6
40°	1662.1	1649.9	1630.0	1709.6	1508.3	1471.3	1336.4	1302.1	1166.1	1037.3	921.2
42.5°	1654.3	1644.4	1620.0	1579.7	1592.4	1424.3	1328.1	1254.0	1114.7	978.7	862.0
45°	1745.5	1729.0	1635.5	1583.5	1508.3	1422.6	1309.3	1212.0	1071.5	920.0	804.5
47.5°	1931.9	1907.0	1695.2	1568.6	1479.0	1447.0	1289.9	1173.3	1021.8	865.3	741.5
50°	1656.0	1654.9	1734.5	1692.5	1442.5	1376.2	1278.3	1129.6	982.0	796.7	677.3
52.5°	1649.9	1653.8	1643.3	1588.0	1523.8	1328.1	1240.2	1080.4	931.1	743.1	629.2
55°	1571.9	1559.2	1521.6	1534.3	1498.9	1301.6	1188.8	1037.8	883.6	690.0	576.7
57.5°	1690.3	1658.2	1560.3	1474.1	1409.4	1342.5	1134.0	984.2	841.5	641.4	521.9
59°	2046.3	2039.7	1804.2	1512.8	1381.7	1316.5	1088.1	957.1	811.7	616.5	501.5
60°	1871.1	1856.7	1933.0	1592.4	1394.4	1271.7	1061.6	940.5	792.9	597.1	488.2
62.5°	1794.8	1792.5	1704.6	1670.3	1474.6	1248.5	1067.7	899.6	742.0	554.0	447.3
65°	1639.4	1627.2	1605.7	1568.6	1481.3	1249.6	1046.1	867.0	697.8	505.4	384.8
67.5°	1622.8	1604.6	1567.0	1482.9	1393.3	1246.3	980.3	820.0	649.1	447.9	324.0
70°	1516.1	1523.8	1484.6	1427.1	1329.2	1166.6	956.5	772.4	600.5	389.3	265.4
72.5°	1464.1	1472.4	1428.7	1362.9	1268.4	1084.3	894.1	737.0	543.5	328.4	214.0
75°	1344.7	1344.7	1323.1	1265.1	1184.3	1024.0	834.3	660.7	473.8	272.0	169.2
77.5°	1292.7	1292.2	1246.3	1177.2	1090.9	934.4	750.9	594.4	418.0	220.1	123.3
80°	1244.1	1249.6	1191.0	1118.0	1019.0	868.1	690.0	534.1	356.1	165.9	90.1
82.5°	999.1	988.1	978.7	930.6	866.4	749.2	587.2	462.8	289.2	118.9	64.7
85°	946.0	952.7	921.7	869.7	797.9	659.6	497.1	380.4	227.2	85.7	48.1
87.5°	733.2	726.5	706.6	695.0	647.5	534.1	405.3	296.4	175.8	63.0	35.4
90°	594.4	602.7	582.8	557.3	504.8	433.5	324.0	230.6	128.8	45.9	27.6
92.5°	499.8	513.1	502.6	473.8	424.1	352.2	261.5	172.5	95.7	34.8	23.2
95°	466.7	465.0	441.2	399.8	363.8	301.3	209.0	137.7	76.3	28.2	21.0
97.5°	392.0	397.0	388.1	346.1	312.4	253.8	169.7	108.9	60.8	24.9	18.8
100°	347.2	343.4	329.0	300.2	263.2	211.8	141.0	91.2	50.3	22.7	18.2
102.5°	294.7	294.7	275.4	248.8	219.5	175.3	118.3	79.1	41.5	22.1	17.7
105°	234.4	236.6	222.3	205.7	184.7	142.1	101.2	66.3	35.9	21.6	17.7
107.5°	199.6	203.5	196.3	179.7	160.3	123.9	85.7	55.8	31.5	21.0	17.1



REPORT NUMBER: P979134
 CATALOG NUMBER: WPSLED15S-30W-3500K

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
110°	183.0	185.2	176.4	163.1	142.7	108.4	74.6	47.6	29.3	21.0	16.6
112.5°	167.5	170.3	162.0	147.6	123.9	94.5	64.7	40.9	28.2	20.5	16.0
115°	148.7	150.4	143.8	130.5	108.9	82.9	56.9	37.6	27.6	19.4	14.9
117.5°	131.6	133.3	125.0	112.8	94.0	71.3	50.9	34.8	26.5	18.2	13.8
120°	115.6	115.0	110.0	99.0	81.8	63.0	45.3	32.1	25.4	17.1	12.7
122.5°	101.2	102.8	97.9	86.8	69.7	54.7	39.8	31.0	24.3	16.0	11.1
125°	88.5	88.5	84.6	74.6	60.3	47.6	36.5	29.3	23.8	14.9	10.0
127.5°	76.9	77.4	72.4	63.0	52.0	42.6	33.7	28.8	22.7	13.3	8.8
130°	65.2	65.2	60.8	53.6	45.9	39.8	33.7	27.6	21.0	11.6	7.7
132.5°	55.3	55.3	52.0	47.6	42.0	38.7	32.6	26.0	18.8	10.0	6.6
135°	47.0	47.0	44.8	43.1	39.3	36.5	31.0	24.9	17.1	8.8	5.5
137.5°	42.6	42.0	41.5	40.4	37.6	34.3	29.3	23.2	15.5	7.2	4.4
140°	40.4	40.9	40.4	39.8	37.0	33.2	28.8	22.1	13.8	6.1	3.9
142.5°	41.5	40.9	40.4	39.3	35.4	32.1	27.1	20.5	12.2	5.5	2.8
145°	42.0	42.0	40.4	37.6	33.7	29.3	24.9	18.2	10.5	4.4	2.8
147.5°	40.9	40.9	38.2	34.8	31.0	27.1	22.1	15.5	8.8	3.3	2.2
150°	38.7	38.2	34.8	31.0	28.2	23.8	18.8	13.3	7.2	2.8	2.2
152.5°	34.3	33.7	30.4	27.1	23.2	19.9	16.0	10.5	6.1	2.2	1.7
155°	26.0	26.5	23.8	21.0	18.2	16.0	13.3	8.8	4.4	2.2	1.7
157.5°	19.9	19.4	18.2	17.1	14.9	13.3	10.5	7.2	3.3	1.7	1.1
160°	16.6	16.6	15.5	13.8	12.2	10.5	8.3	5.5	2.8	1.7	1.1
162.5°	13.8	13.8	12.7	11.6	10.0	8.3	6.1	3.9	2.2	1.1	1.1
165°	11.1	11.1	10.5	8.8	7.7	5.5	3.9	2.8	1.7	1.1	1.1
167.5°	8.3	8.3	7.7	6.6	5.0	3.9	2.8	2.2	1.7	1.1	1.1
170°	5.0	5.0	4.4	3.9	2.8	2.2	2.2	1.7	1.7	1.1	1.1
172.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.1	1.1	1.1
175°	0.6	0.6	0.6	1.1	1.1	1.7	1.1	1.1	1.1	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: P979134
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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1340.8	1340.8	1340.8	1340.8	1340.8	1340.8	1340.8	1340.8	1340.8	1340.8
2.5°	1318.1	1297.7	1282.8	1270.0	1260.6	1245.7	1236.3	1235.2	1234.7	1228.6
5°	1291.6	1266.2	1238.0	1207.6	1186.0	1164.4	1143.4	1129.0	1125.7	1121.3
7.5°	1259.0	1220.8	1168.3	1134.6	1114.7	1118.0	1093.1	1059.9	1038.4	1042.2
10°	1229.7	1177.7	1116.9	1101.4	1035.6	1000.8	965.9	932.2	914.0	902.9
12.5°	1210.9	1135.1	1077.6	1008.5	941.1	867.5	825.5	817.2	827.7	826.1
15°	1193.2	1099.2	1038.9	920.0	830.5	802.8	781.8	753.1	723.2	717.7
17.5°	1180.5	1066.6	959.9	836.6	774.6	706.6	623.7	593.3	589.4	587.7
20°	1153.9	1035.1	899.0	783.5	696.1	580.0	528.6	481.6	450.6	446.8
22.5°	1115.2	987.5	826.1	724.3	582.2	487.1	410.3	377.6	361.1	356.6
25°	1080.9	924.5	770.2	630.9	498.7	395.3	333.4	302.4	294.7	291.4
27.5°	1040.0	864.8	717.1	535.8	414.1	326.8	273.7	251.0	241.6	241.1
30°	999.7	805.0	640.8	465.6	350.0	270.4	230.6	209.0	201.3	198.5
32.5°	957.1	746.4	557.9	397.0	288.6	230.6	191.3	174.2	166.4	164.8
35°	908.4	688.4	483.2	341.1	246.6	188.0	159.2	138.2	130.5	130.5
37.5°	857.6	633.1	421.3	285.3	204.6	157.0	126.1	111.7	105.1	103.9
40°	802.3	582.8	368.8	240.5	167.5	126.1	102.3	87.4	82.9	82.4
42.5°	747.5	512.0	321.2	201.3	139.3	102.3	81.3	70.8	66.9	65.8
45°	670.1	449.0	266.0	165.3	112.8	83.5	65.8	55.8	51.4	50.9
47.5°	598.3	379.9	220.6	136.6	90.7	66.3	52.0	43.7	41.5	40.9
50°	539.6	330.1	182.5	110.0	75.2	52.5	40.9	35.4	32.1	31.5
52.5°	484.4	287.5	156.5	91.2	60.8	40.9	32.6	27.1	27.6	27.6
55°	437.9	254.3	129.9	77.4	48.7	32.1	24.3	22.1	23.8	23.8
57.5°	399.8	212.3	108.9	65.8	38.7	26.0	18.2	18.2	18.8	18.8
59°	374.3	191.3	96.8	58.6	33.7	21.6	14.9	15.5	14.9	14.4
60°	358.8	176.9	91.8	54.7	29.9	18.8	13.3	12.7	12.2	12.2
62.5°	311.8	140.4	77.4	44.2	22.7	12.2	8.3	7.2	6.6	6.1
65°	261.5	115.6	64.1	34.8	16.6	6.6	2.8	1.7	0.6	0.0
67.5°	204.0	94.0	52.5	27.1	11.1	2.2	0.0	0.0	0.0	0.0
70°	163.7	75.7	42.6	20.5	6.1	0.0	0.0	0.0	0.0	0.0
72.5°	127.7	61.9	34.3	14.4	1.7	0.0	0.0	0.0	0.0	0.0
75°	96.2	49.8	27.1	9.4	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	71.9	38.7	21.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0
80°	55.8	30.4	16.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	42.0	23.2	11.6	1.7	0.0	0.0	0.0	0.0	0.0	0.0
85°	32.1	18.2	8.8	1.1	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	24.9	14.4	6.6	1.1	0.0	0.0	0.0	0.0	0.0	0.0
90°	19.9	11.6	5.5	0.6	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	16.6	10.0	4.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0
95°	15.5	8.8	3.9	0.6	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	14.4	8.3	3.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0
100°	13.8	7.7	2.8	0.6	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	13.8	7.2	2.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0
105°	13.8	7.2	2.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	13.3	6.6	2.2	0.6	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°
110°	13.3	5.5	2.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0
112.5°	12.2	5.0	1.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0
115°	11.6	3.9	1.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	10.0	2.2	1.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0
120°	7.7	1.7	1.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	7.2	1.1	1.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0
125°	6.1	1.1	1.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	5.5	1.1	1.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0
130°	5.0	1.1	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°	2.8	1.1	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
140°	2.8	1.1	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	1.1	0.6	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	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
155°	1.1	1.1	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	1.1	1.1	0.6	0.6	0.6	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	0.6	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	0.6	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

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.

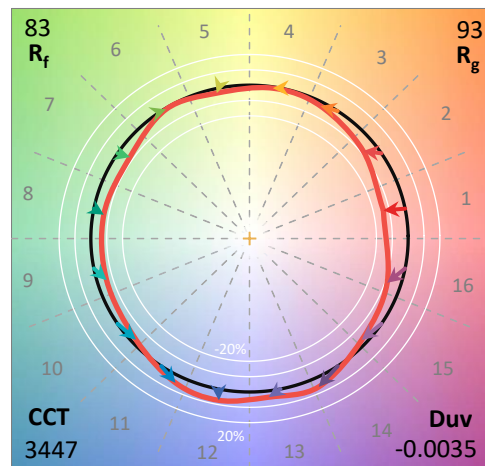
Test Information

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
 Rf: 82.6
 Rg: 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

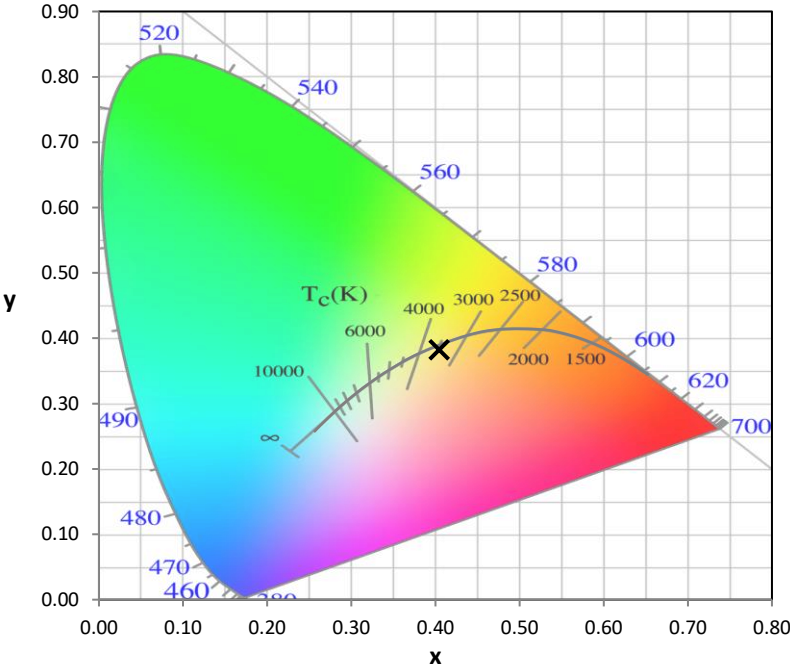
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2407-168-2

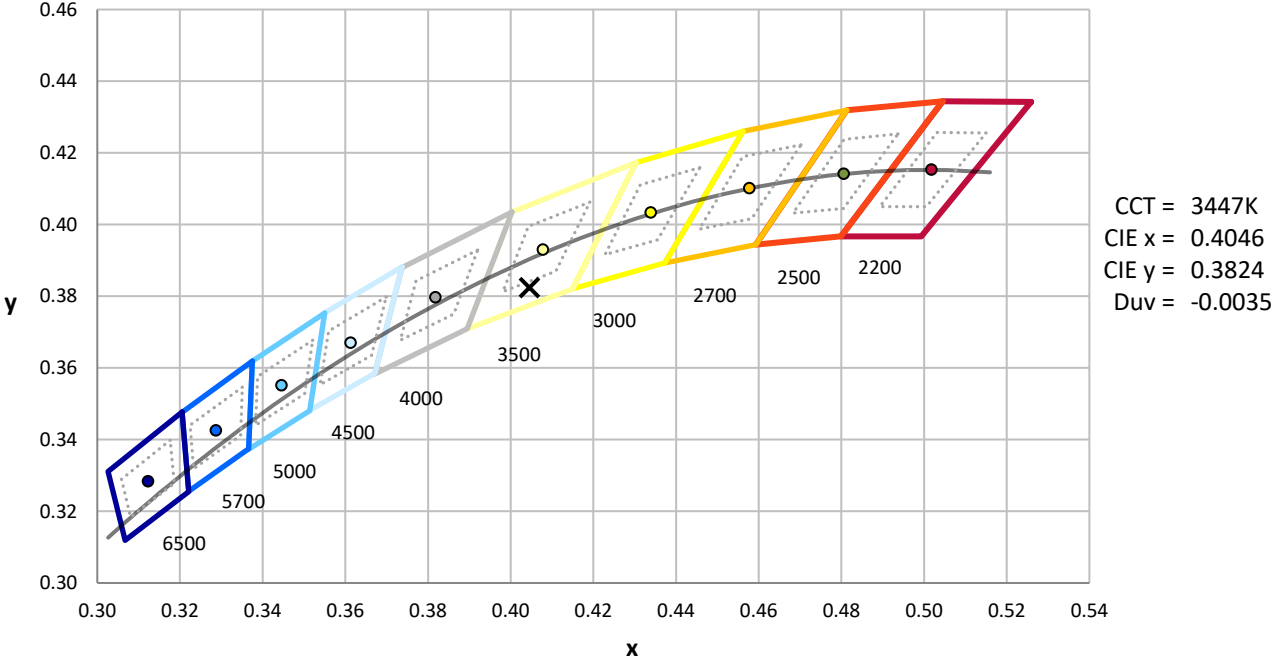
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

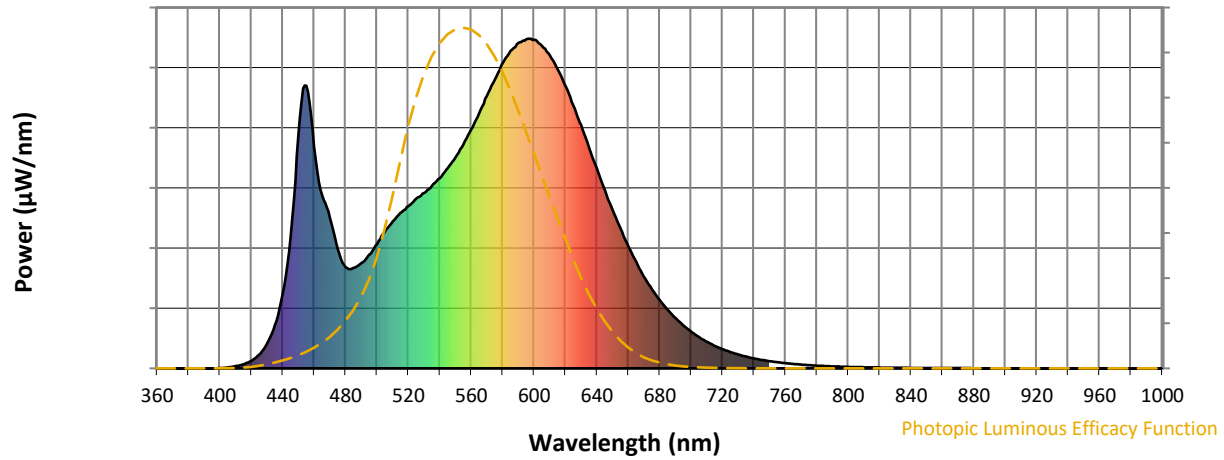


CCT = 3447K
 CIE x = 0.4046
 CIE y = 0.3824
 Duv = -0.0035

Point lies inside the ANSI 3500K 7-step quadrangle

REPORT NUMBER: SP1-2407-168-2

Photopic Flux vs. Wavelength

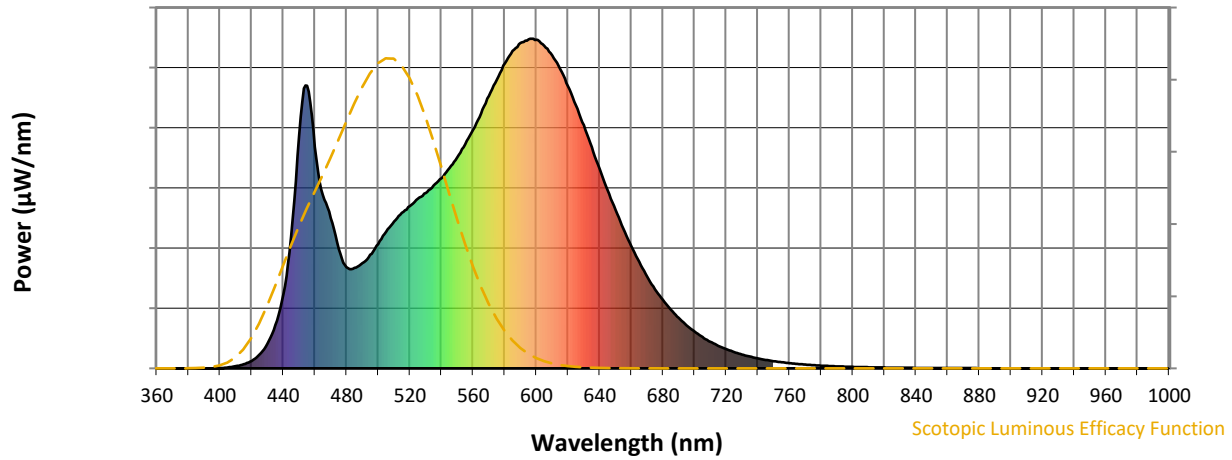


Photopic Lumens: NR

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



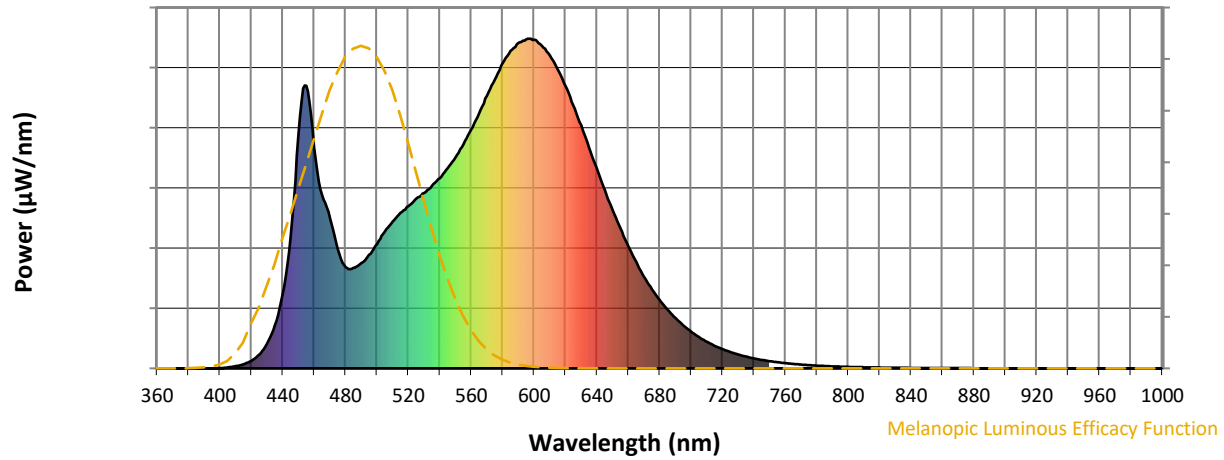
Scotopic Lumens: NR

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



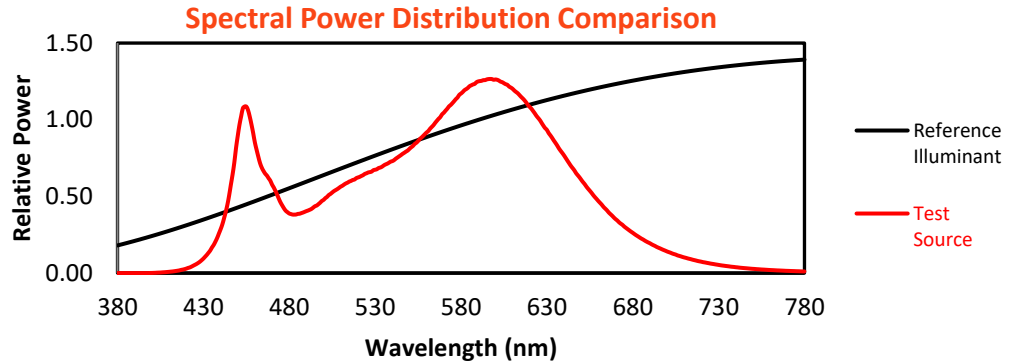
Melanopic Lumens: NR

M/P: 3.22

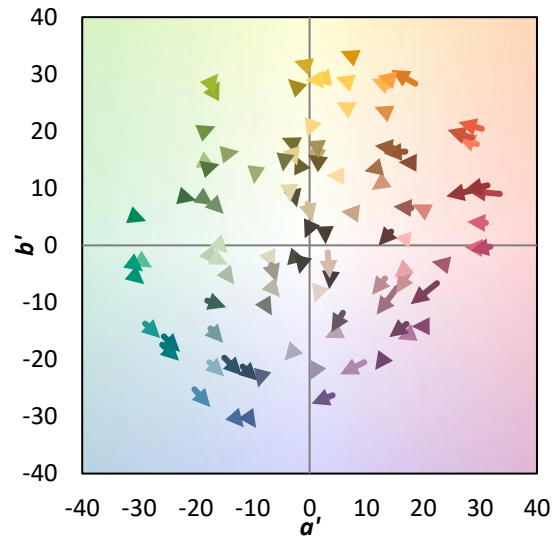
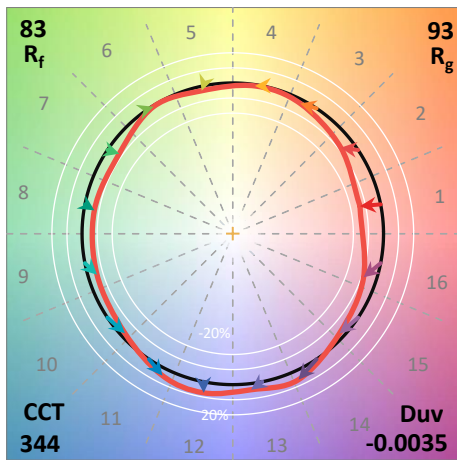
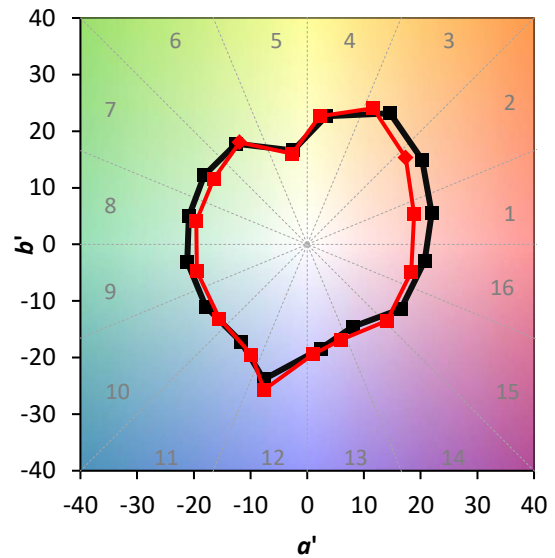
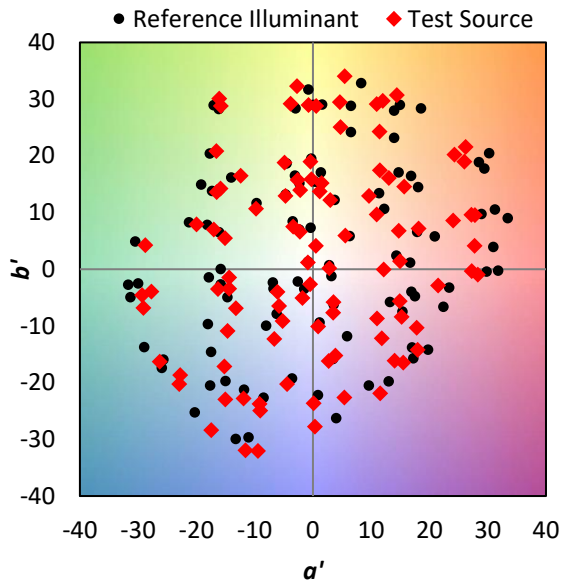
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	319	NR	620	856	NR	750	22	NR	880	1	NR
365	0	NR	495	344	NR	625	798	NR	755	18	NR	885	0	NR
370	0	NR	500	377	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 $R_a = 81.3$
 $R_9 = -0.6$

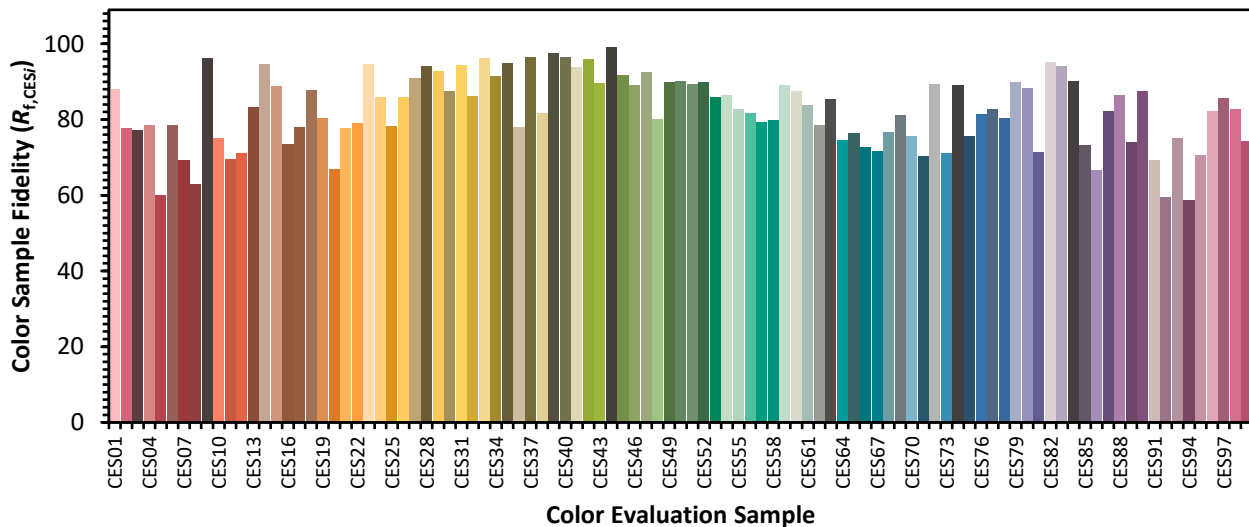


Color Vector Graphics

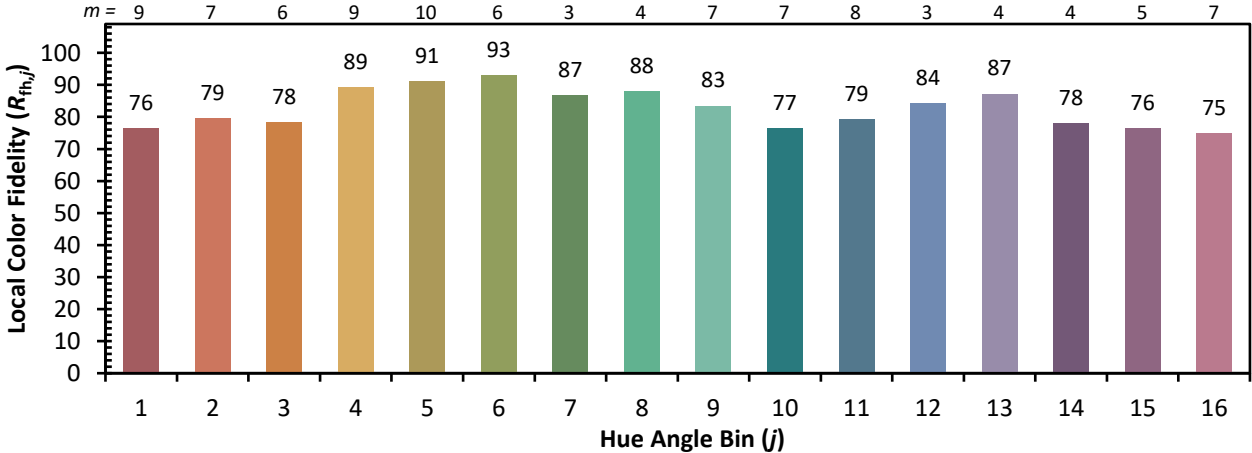
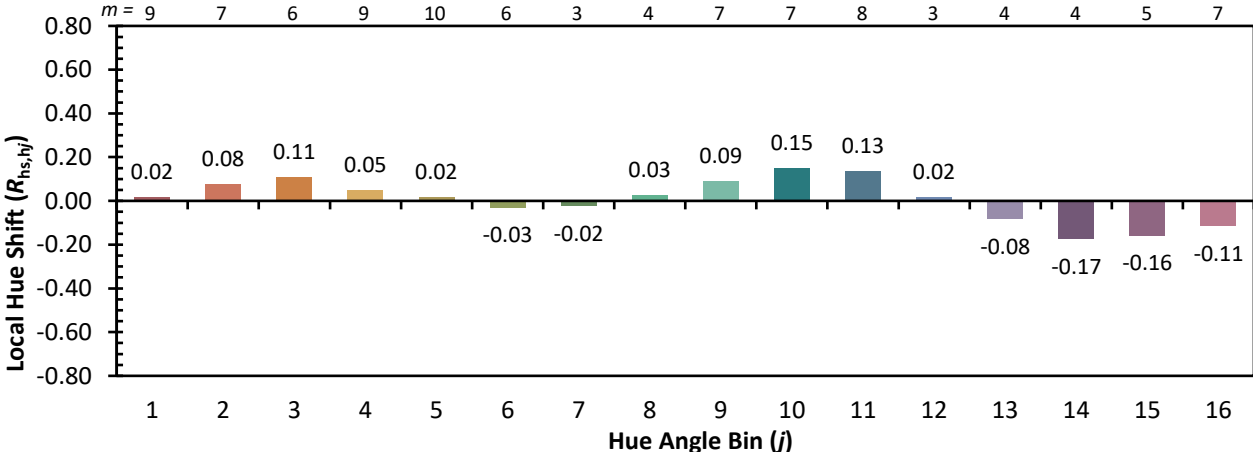
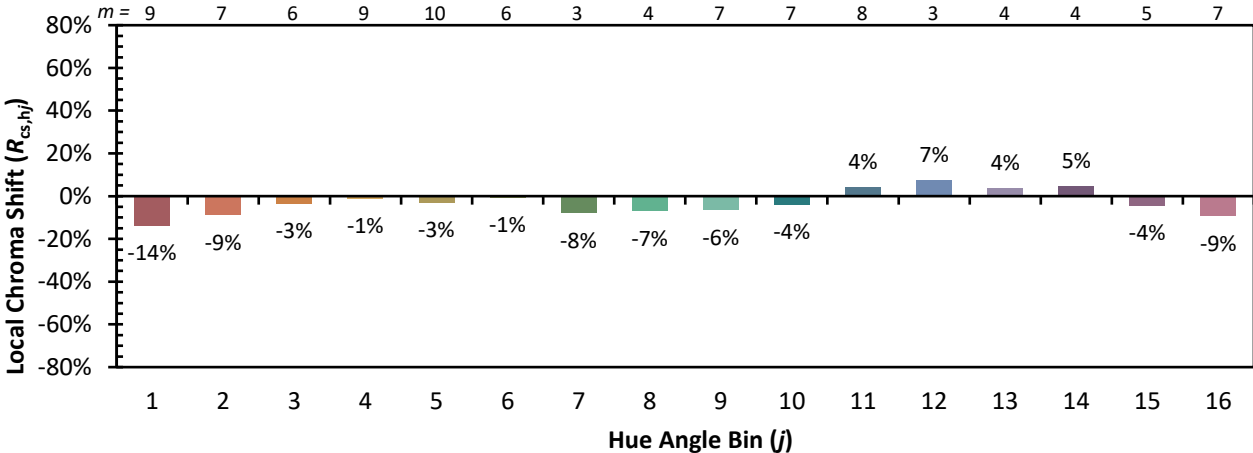


Individual Sample Fidelity Index ($R_{f,i}$)

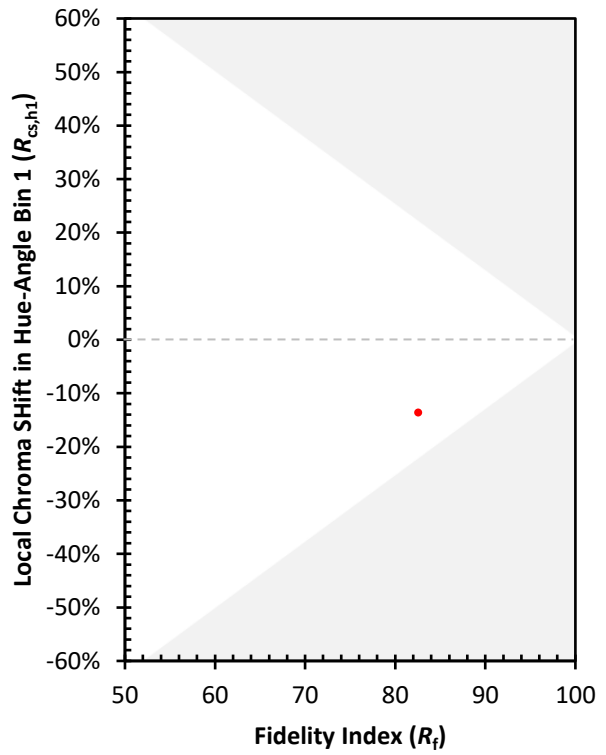
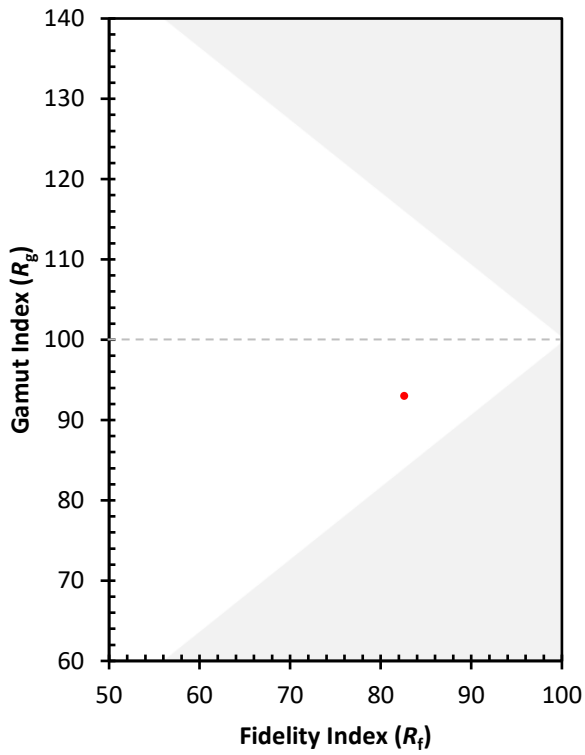
CES01 = 86	CES26 = 86	CES51 = 89	CES76 = 81
CES02 = 62	CES27 = 91	CES52 = 90	CES77 = 83
CES03 = 31	CES28 = 94	CES53 = 86	CES78 = 80
CES04 = 70	CES29 = 93	CES54 = 86	CES79 = 90
CES05 = 49	CES30 = 87	CES55 = 83	CES80 = 88
CES06 = 51	CES31 = 94	CES56 = 82	CES81 = 71
CES07 = 41	CES32 = 86	CES57 = 79	CES82 = 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)