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: McGRAW-EDISON

Report Number: P436853

Luminaire Tested: **TT-D4-830-U-CQ-HSS**

Issue Date: 12/2/2020

Report Generated By 670347003

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1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

Test Information

Test Method:	LM-79-08
Report Number:	P436853
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2010-017-3)
Test Lab:	INNOVATION CENTER
Issue Date:	12/2/2020
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	McGRAW-EDISON
Catalog Number:	TT-D4-830-U-CQ-HSS
Description:	TOPTIER LED PARKING GARAGE LUMINAIRE
	3000K, 80 CRI LEDS AND CONCENTRATED DISTRIBUTION WITH HOUSE SIDE SHIELD
Light Source:	-
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	5636.2 lumens
Efficiency:	N/A
Efficacy:	97.9 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type IV - Short
BUG Rating:	B2 - U2 - G1

Input Watts (W):	57.6
Input Voltage (V):	NR
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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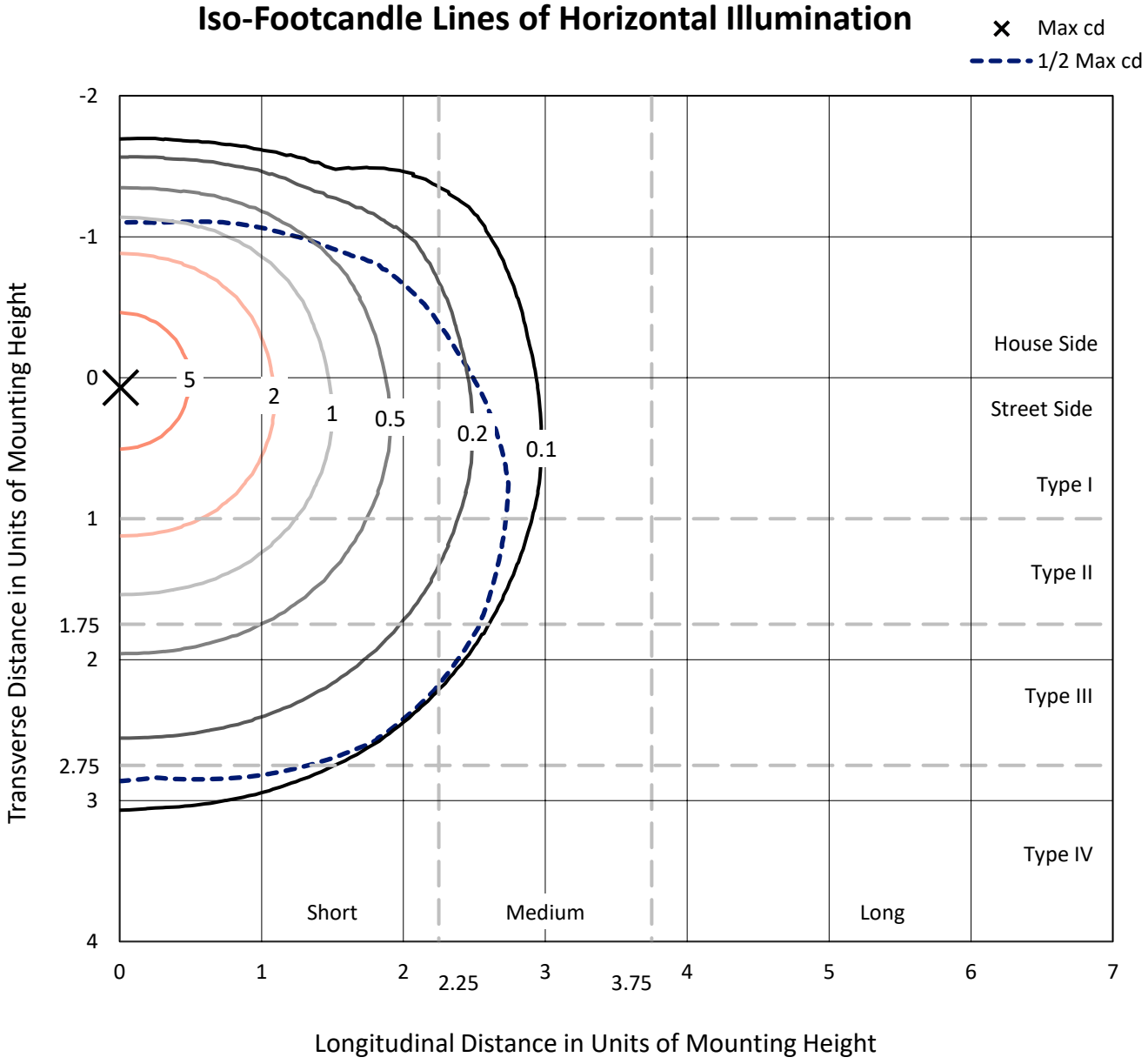
Iso-Footcandle Lines of Horizontal Illumination



Based on 15 foot mounting height. Maximum calculated value = 7.3 fc
Type IV - Short - N/A

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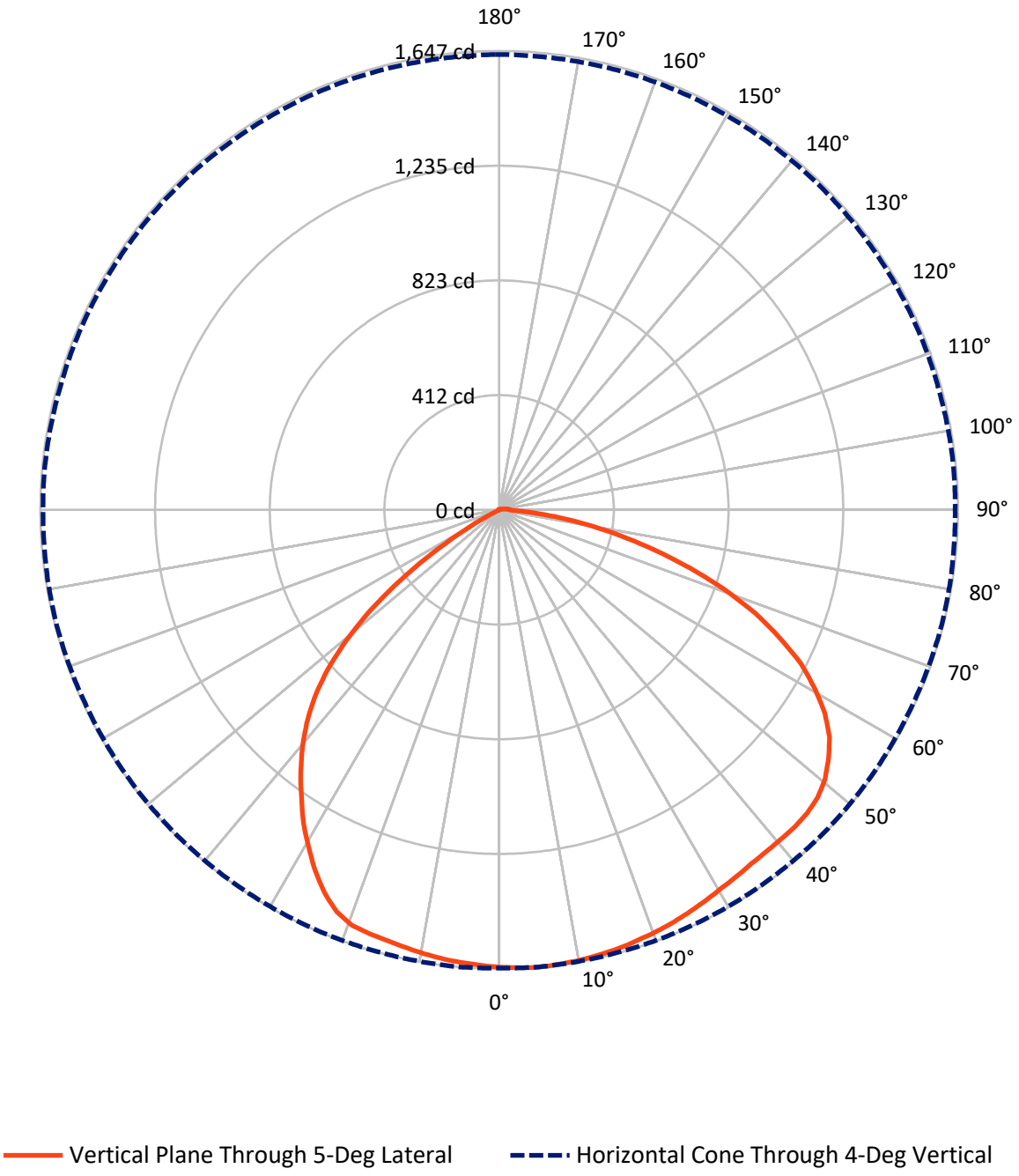
Luminous Intensity Polar Plot



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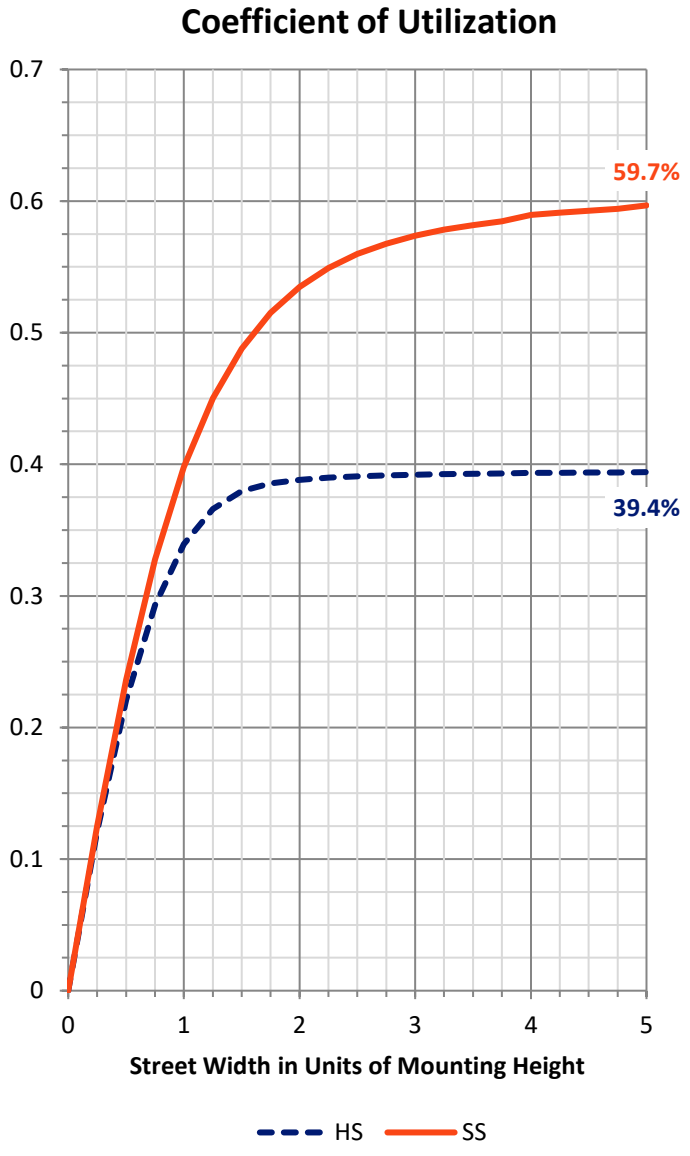
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2233.5	3.0	2236.5
	% Fixture	39.6	0.1	39.7
Street Side	Lumens	3383.9	15.8	3399.7
	% Fixture	60.0	0.3	60.3
Total	Lumens	5617.4	18.8	5636.2
	% Fixture	99.7	0.3	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	156.0	2.8
10°-20°	456.9	8.1
20°-30°	719.8	12.8
30°-40°	916.1	16.3
40°-50°	1058.2	18.8
50°-60°	1036.1	18.4
60°-70°	771.7	13.7
70°-80°	418.0	7.4
80°-90°	84.7	1.5
90°-100°	10.7	0.2
100°-110°	4.2	0.1
110°-120°	1.2	0.0
120°-130°	0.9	0.0
130°-140°	0.7	0.0
140°-150°	0.5	0.0
150°-160°	0.3	0.0
160°-170°	0.2	0.0
170°-180°	0.1	0.0
0°-90°	5617.4	99.7
0°-180°	5636.2	100.0



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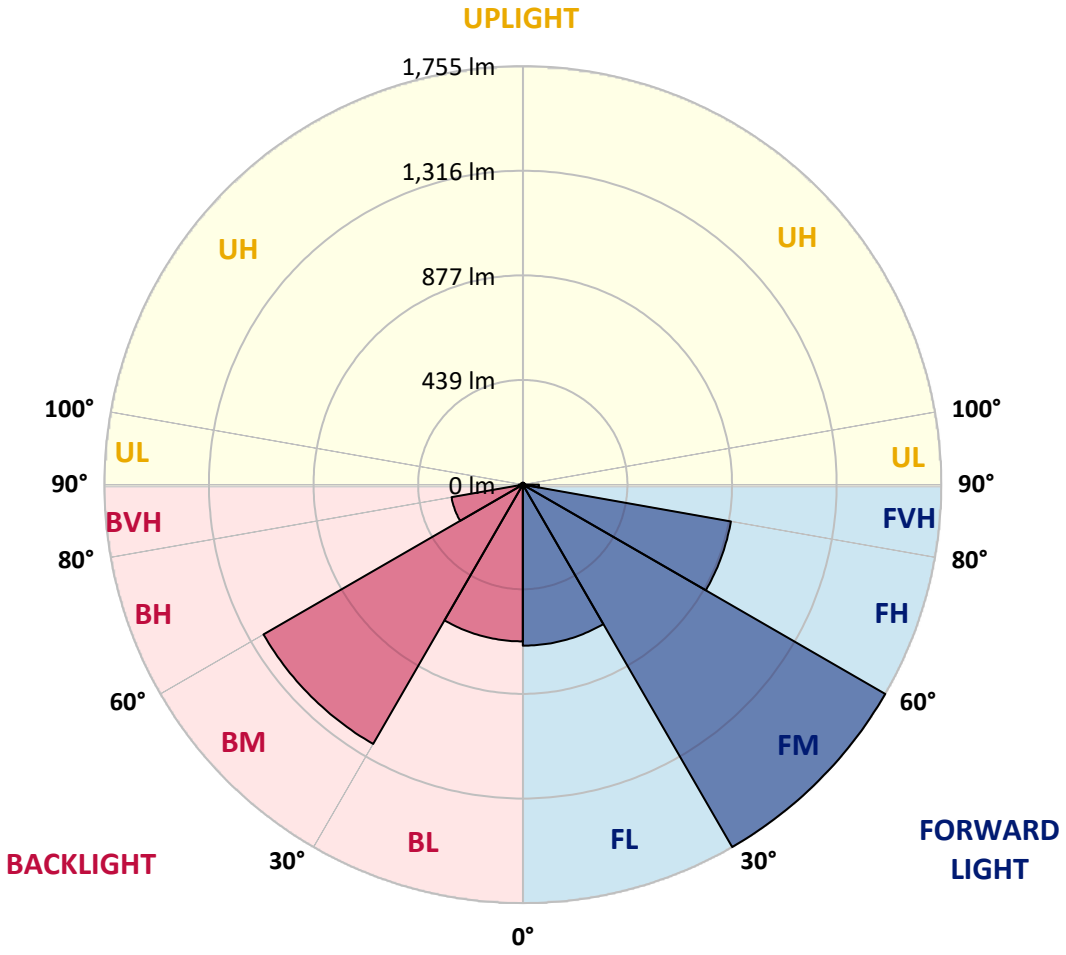
LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	675.3	12.0			
FM	(30°-60°)	1754.8	31.1			
FH	(60°-80°)	886.1	15.7			G1/1800
FVH	(80°-90°)	67.6	1.2			G1/100
BL	(0°-30°)	657.4	11.7	B2/1000		
BM	(30°-60°)	1255.6	22.3	B2/2500		
BH	(60°-80°)	303.5	5.4	B1/500		G1/500
BVH	(80°-90°)	17.1	0.3			G1/100
UL	(90°-100°)	10.7	0.2		U2/50	
UH	(100°-180°)	8.0	0.1		U1/10	

BUG Rating: B2-U2-G1
Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5
2.5°	1643.6	1645.8	1644.7	1644.7	1642.6	1643.6	1642.6	1642.6	1641.5	1640.5	1640.5
4°	1644.7	1646.8	1644.7	1644.7	1643.6	1643.6	1642.6	1640.5	1641.5	1638.3	1637.3
5°	1645.8	1646.8	1645.8	1645.8	1643.6	1642.6	1640.5	1640.5	1639.4	1637.3	1637.3
7.5°	1643.6	1644.7	1644.7	1643.6	1641.5	1639.4	1638.3	1637.3	1636.2	1633.0	1633.0
10°	1639.4	1641.5	1639.4	1639.4	1638.3	1636.2	1633.0	1632.0	1628.8	1626.7	1625.6
12.5°	1635.2	1636.2	1635.2	1635.2	1633.0	1629.9	1628.8	1626.7	1622.4	1619.3	1619.3
15°	1628.8	1630.9	1629.9	1628.8	1627.7	1624.6	1621.4	1618.2	1615.0	1611.9	1611.9
17.5°	1621.4	1622.4	1623.5	1622.4	1620.3	1618.2	1615.0	1610.8	1607.6	1604.4	1603.4
20°	1612.9	1615.0	1615.0	1615.0	1612.9	1610.8	1606.6	1602.3	1600.2	1596.0	1594.9
22.5°	1604.4	1606.6	1605.5	1606.6	1605.5	1602.3	1598.1	1593.8	1589.6	1586.4	1584.3
25°	1596.0	1596.0	1596.0	1596.0	1596.0	1591.7	1587.5	1582.2	1577.9	1572.6	1572.6
27.5°	1585.4	1585.4	1586.4	1586.4	1585.4	1582.2	1576.9	1570.5	1564.2	1558.9	1556.7
30°	1575.8	1574.8	1576.9	1579.0	1577.9	1574.8	1568.4	1561.0	1551.4	1544.0	1537.7
32.5°	1564.2	1567.3	1569.5	1573.7	1574.8	1570.5	1563.1	1553.6	1544.0	1530.3	1518.6
35°	1559.9	1559.9	1565.2	1571.6	1573.7	1571.6	1561.0	1550.4	1536.6	1516.5	1502.7
37.5°	1555.7	1556.7	1565.2	1574.8	1577.9	1577.9	1566.3	1552.5	1533.4	1504.8	1487.9
40°	1553.6	1555.7	1566.3	1580.1	1588.5	1587.5	1573.7	1556.7	1533.4	1496.3	1475.1
42.5°	1551.4	1555.7	1567.3	1586.4	1599.1	1598.1	1583.2	1561.0	1531.3	1485.7	1461.4
45°	1548.3	1551.4	1567.3	1591.7	1608.7	1611.9	1594.9	1566.3	1531.3	1476.2	1444.4
47.5°	1538.7	1539.8	1561.0	1589.6	1615.0	1619.3	1602.3	1568.4	1527.1	1460.3	1423.2
50°	1513.3	1516.5	1540.9	1579.0	1608.7	1615.0	1600.2	1563.1	1516.5	1433.8	1389.3
52.5°	1480.4	1480.4	1510.1	1552.5	1588.5	1599.1	1585.4	1544.0	1490.0	1394.6	1343.7
55°	1431.7	1439.1	1469.8	1514.4	1553.6	1568.4	1549.3	1509.1	1446.5	1344.8	1288.6
57.5°	1376.6	1378.7	1410.5	1463.5	1503.8	1513.3	1497.4	1449.7	1389.3	1285.5	1218.7
60°	1297.1	1301.4	1341.6	1388.2	1431.7	1444.4	1424.3	1376.6	1313.0	1209.2	1141.3
62.5°	1209.2	1215.5	1251.5	1299.2	1340.6	1360.7	1336.3	1286.5	1224.0	1118.0	1058.7
65°	1103.2	1105.3	1144.5	1198.6	1239.9	1247.3	1226.1	1177.4	1114.8	1013.1	960.1
67.5°	981.3	991.9	1030.1	1070.3	1106.4	1114.8	1100.0	1043.8	994.0	904.0	852.0
70°	863.7	858.4	890.2	930.4	963.3	970.7	953.8	901.8	855.2	770.4	730.2
72.5°	721.7	717.4	751.4	782.1	813.9	809.6	792.7	751.4	711.1	639.0	601.9
75°	578.6	574.4	600.9	627.4	643.3	645.4	633.7	603.0	559.5	503.4	474.8
77.5°	438.7	443.0	454.6	476.9	491.7	498.1	477.9	447.2	419.7	376.2	355.0
80°	312.6	313.7	317.9	333.8	344.4	344.4	334.9	310.5	279.8	249.0	238.4
82.5°	197.1	201.3	201.3	217.2	217.2	208.8	204.5	188.6	172.7	148.4	133.5
85°	108.1	106.0	112.3	113.4	112.3	106.0	99.6	90.1	79.5	62.5	56.2
87.5°	47.7	46.6	46.6	46.6	45.6	41.3	35.0	27.6	19.1	11.7	8.5
90°	37.1	37.1	36.0	33.9	30.7	27.6	22.3	17.0	10.6	4.2	2.1
92.5°	33.9	33.9	32.9	31.8	28.6	25.4	20.1	14.8	9.5	4.2	2.1
95°	29.7	28.6	28.6	26.5	24.4	21.2	18.0	12.7	8.5	3.2	2.1
97.5°	24.4	23.3	23.3	22.3	20.1	17.0	14.8	10.6	7.4	3.2	2.1
100°	18.0	19.1	18.0	17.0	15.9	13.8	11.7	8.5	5.3	2.1	2.1
102.5°	13.8	13.8	12.7	12.7	11.7	10.6	8.5	6.4	4.2	2.1	1.1
105°	9.5	9.5	9.5	8.5	8.5	7.4	6.4	4.2	3.2	2.1	1.1
107.5°	5.3	5.3	5.3	5.3	5.3	5.3	4.2	3.2	2.1	1.1	1.1

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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
110°	3.2	*3.2*	3.2	3.2	3.2	3.2	2.1	2.1	1.1	1.1	1.1
112.5°	1.1	*1.1*	2.1	2.1	2.1	2.1	2.1	1.1	1.1	1.1	1.1
115°	1.1	*1.1*	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
117.5°	0.0	*0.0*	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
120°	0.0	*0.0*	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
122.5°	0.0	*0.0*	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
125°	0.0	*0.0*	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
127.5°	0.0	*0.0*	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
130°	0.0	*0.0*	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
132.5°	0.0	*0.0*	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
135°	0.0	*0.0*	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
137.5°	0.0	*0.0*	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
140°	0.0	*0.0*	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
142.5°	0.0	*0.0*	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
145°	1.1	*1.1*	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
147.5°	1.1	*1.1*	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
150°	1.1	*0.0*	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
152.5°	0.0	*0.0*	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
155°	0.0	*0.0*	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
157.5°	0.0	*0.0*	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
160°	0.0	*0.0*	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
162.5°	0.0	*0.0*	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
165°	0.0	*0.0*	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
167.5°	0.0	*0.0*	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
170°	0.0	*0.0*	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
172.5°	0.0	*0.0*	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
175°	0.0	*0.0*	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
177.5°	0.0	*0.0*	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
180°	1.1	*1.1*	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5
2.5°	1639.4	1636.2	1638.3	1637.3	1638.3	1636.2	1636.2	1636.2	1637.3	1635.2
4°	*1638.3*	*1636.2*	*1636.2*	*1636.2*	*1636.2*	*1634.1*	*1634.1*	*1634.1*	*1633.0*	*1634.1*
5°	1636.2	1635.2	1634.1	1633.0	1634.1	1632.0	1630.9	1630.9	1630.9	1632.0
7.5°	1632.0	1628.8	1628.8	1625.6	1626.7	1625.6	1624.6	1625.6	1624.6	1624.6
10°	1624.6	1622.4	1621.4	1619.3	1619.3	1617.2	1616.1	1616.1	1616.1	1615.0
12.5°	1617.2	1615.0	1614.0	1611.9	1610.8	1608.7	1607.6	1608.7	1606.6	1606.6
15°	1608.7	1606.6	1605.5	1605.5	1603.4	1601.3	1600.2	1598.1	1598.1	1598.1
17.5°	1601.3	1599.1	1600.2	1598.1	1597.0	1594.9	1594.9	1590.7	1590.7	1589.6
20°	1593.8	1591.7	1591.7	1590.7	1590.7	1588.5	1585.4	1583.2	1582.2	1582.2
22.5°	1584.3	1581.1	1575.8	1568.4	1564.2	1561.0	1559.9	1556.7	1555.7	1553.6
25°	1569.5	1561.0	1549.3	1536.6	1523.9	1517.5	1515.4	1511.2	1511.2	1511.2
27.5°	1551.4	1535.6	1519.7	1500.6	1481.5	1468.8	1460.3	1456.1	1454.0	1454.0
30°	1528.1	1508.0	1485.7	1461.4	1440.2	1416.9	1402.0	1393.5	1389.3	1390.4
32.5°	1506.9	1481.5	1456.1	1425.3	1396.7	1369.2	1343.7	1331.0	1325.7	1323.6
35°	1485.7	1457.1	1426.4	1393.5	1356.5	1316.2	1282.3	1263.2	1252.6	1253.7
37.5°	1469.8	1435.9	1402.0	1361.8	1319.4	1270.6	1227.2	1196.4	1183.7	1185.8
40°	1452.9	1414.7	1377.7	1331.0	1281.2	1222.9	1166.8	1125.4	1110.6	1107.4
42.5°	1437.0	1392.5	1350.1	1300.3	1237.8	1172.1	1103.2	1054.4	1032.2	1029.0
45°	1416.9	1367.1	1321.5	1264.3	1195.4	1113.8	1033.2	969.7	946.3	936.8
47.5°	1390.4	1335.3	1284.4	1218.7	1143.5	1051.3	950.6	872.2	842.5	835.1
50°	1351.2	1287.6	1235.6	1161.5	1070.3	968.6	856.3	759.8	720.6	715.3
52.5°	1299.2	1234.6	1176.3	1091.5	980.3	860.5	733.3	633.7	588.2	585.0
55°	1236.7	1166.8	1103.2	1007.8	877.5	738.6	606.2	480.1	435.5	430.3
57.5°	1163.6	1091.5	1022.6	905.0	754.5	599.8	446.1	325.3	282.9	272.4
60°	1083.0	1008.9	931.5	788.4	589.2	425.0	270.2	172.7	140.9	130.3
62.5°	1004.6	924.1	842.5	649.6	403.8	242.7	122.9	49.8	31.8	30.7
65°	912.4	836.1	752.4	523.5	255.4	109.2	36.0	1.1	0.0	0.0
67.5°	805.4	740.8	666.6	468.4	225.7	95.4	30.7	1.1	0.0	0.0
70°	690.9	640.1	574.4	402.7	193.9	80.5	26.5	0.0	0.0	0.0
72.5°	570.1	526.7	477.9	334.9	161.1	66.8	21.2	0.0	0.0	0.0
75°	447.2	419.7	376.2	264.9	125.0	50.9	15.9	0.0	0.0	0.0
77.5°	331.7	309.4	277.6	195.0	94.3	37.1	11.7	0.0	0.0	0.0
80°	223.6	206.6	188.6	132.5	63.6	24.4	7.4	0.0	0.0	0.0
82.5°	130.3	117.6	106.0	75.2	35.0	13.8	3.2	0.0	0.0	0.0
85°	53.0	48.7	46.6	31.8	13.8	4.2	1.1	0.0	0.0	0.0
87.5°	6.4	5.3	5.3	3.2	1.1	0.0	0.0	0.0	0.0	0.0
90°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
95°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0
97.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.0
100°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
102.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
105°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
107.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

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

Scaled Data Report

REPORT NUMBER: P436853
CATALOG NUMBER: TT-D4-830-U-CQ-HSS

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
110°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
112.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
115°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
117.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
120°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
122.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
125°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
127.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
130°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
132.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
135°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
137.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0
140°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0
142.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0
145°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0
147.5°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	1.1
150°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
152.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
155°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
157.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
160°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
162.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
165°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
167.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
170°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
172.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
175°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
177.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
180°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

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

Streetworks

Report Number: SP1-2407-176-7

Test Date: 09/27/2024

Luminaire Tested: MEM2-HTN-VA-30-830-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-830-U-WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

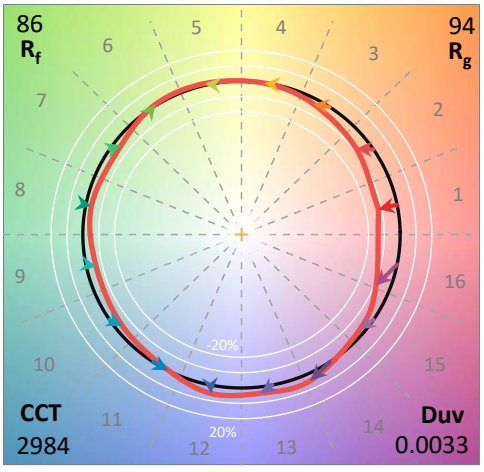
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-176-7
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	09/27/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	Streetworks
Catalog Number:	**MEM2-HTN-VA-30-830-U-WQ**
Description:	EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE

Spectral Parameters

CCT (K):	2984	CRI (Ra):	81.8		
CIE u':	0.2500	R1:	79.4	R9:	-1.1
CIE v':	0.5264	R2:	89.9	R10:	78.4
Duv:	0.0033	R3:	96.6	R11:	80.8
CIE x:	0.4431	R4:	80.6	R12:	72.8
CIE y:	0.4147	R5:	80.1	R13:	81.7
CIE z:	0.1422	R6:	88.9	R14:	98.5
Peak Wavelength (nm):	601	R7:	82.6	R15:	70.2
Dominant Wavelength (nm):	581	R8:	56.0		
Purity:	57.4798				

Rf:	85.8
Rg:	94.1



Test Conditions

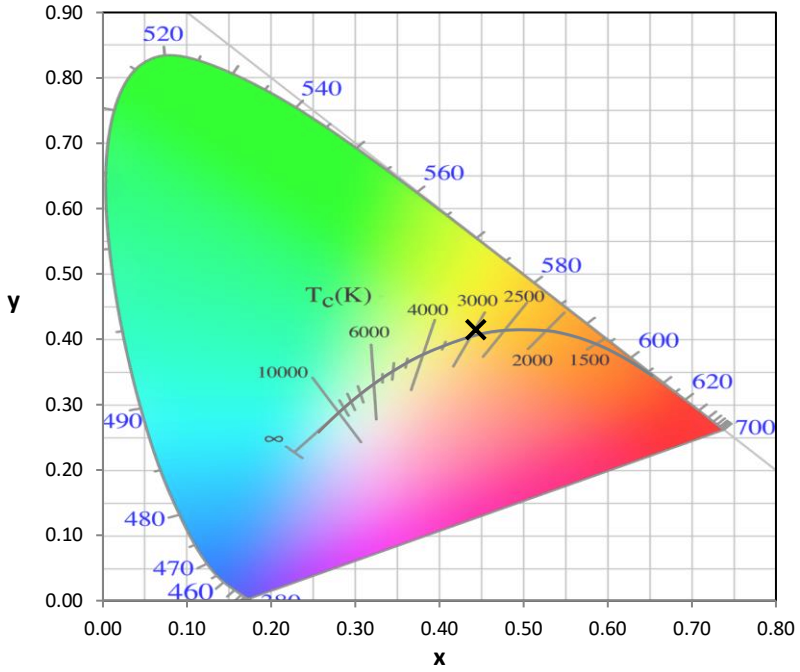
Stabilization Time:	29M
Operation Time:	1H 29M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-7

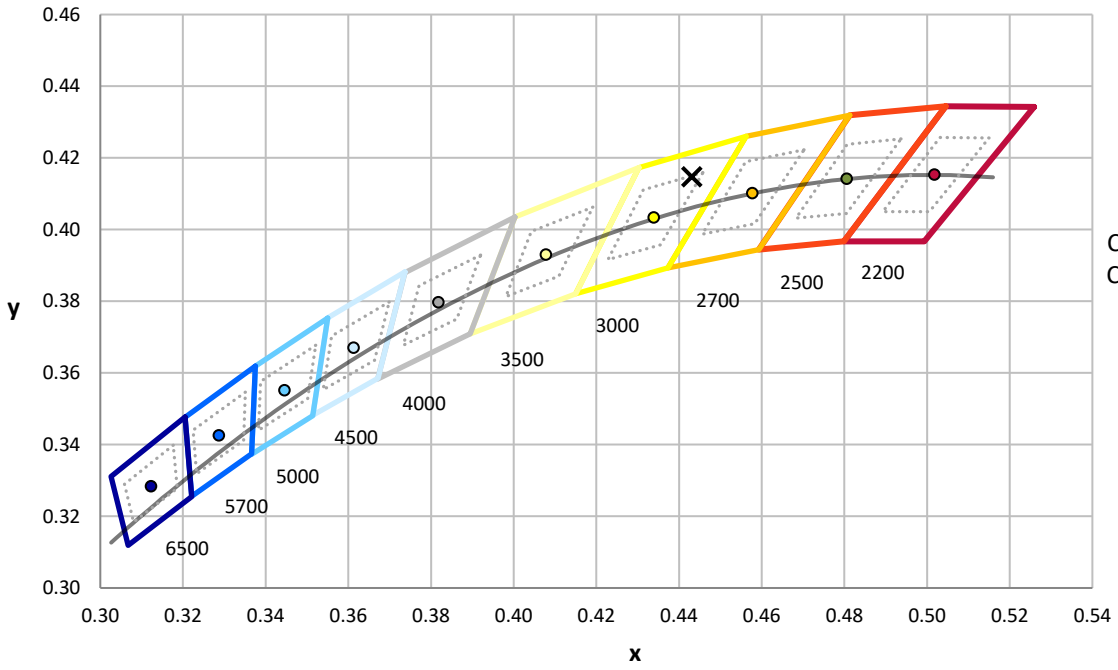
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2407-176-7

CIE 1931 Chromaticity Diagram



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

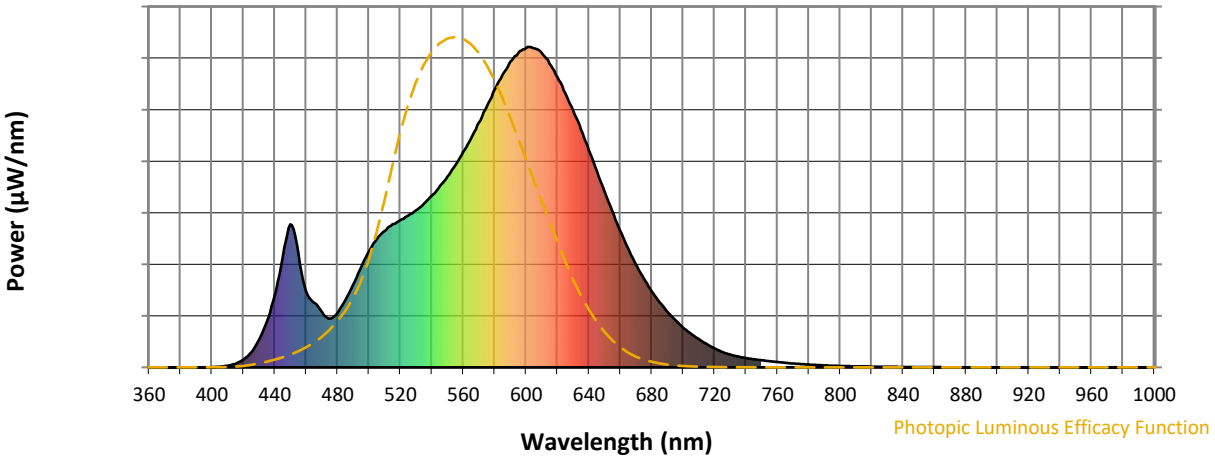


CCT = 2984K
CIE x = 0.4431
CIE y = 0.4147
Duv = 0.0033

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-7

Photopic Flux vs. Wavelength

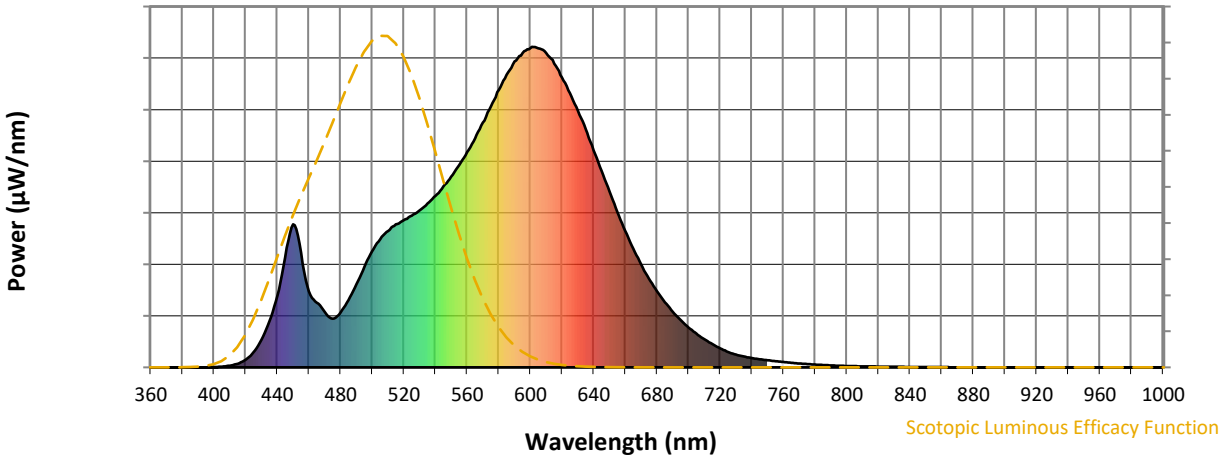


Photopic Lumens: NR

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	260	NR	620	905	NR	750	22	NR	880	0	NR
365	0	NR	495	312	NR	625	856	NR	755	19	NR	885	0	NR
370	0	NR	500	362	NR	630	801	NR	760	17	NR	890	0	NR
375	0	NR	505	399	NR	635	742	NR	765	14	NR	895	0	NR
380	0	NR	510	425	NR	640	677	NR	770	12	NR	900	0	NR
385	0	NR	515	446	NR	645	613	NR	775	10	NR	905	0	NR
390	0	NR	520	459	NR	650	549	NR	780	9	NR	910	0	NR
395	0	NR	525	473	NR	655	485	NR	785	7	NR	915	0	NR
400	1	NR	530	490	NR	660	425	NR	790	6	NR	920	0	NR
405	2	NR	535	511	NR	665	371	NR	795	5	NR	925	0	NR
410	5	NR	540	535	NR	670	321	NR	800	4	NR	930	0	NR
415	11	NR	545	565	NR	675	276	NR	805	4	NR	935	0	NR
420	24	NR	550	595	NR	680	238	NR	810	3	NR	940	0	NR
425	47	NR	555	631	NR	685	203	NR	815	3	NR	945	0	NR
430	86	NR	560	672	NR	690	174	NR	820	2	NR	950	0	NR
435	144	NR	565	715	NR	695	148	NR	825	2	NR	955	0	NR
440	224	NR	570	763	NR	700	124	NR	830	2	NR	960	0	NR
445	342	NR	575	814	NR	705	105	NR	835	2	NR	965	0	NR
450	446	NR	580	866	NR	710	88	NR	840	1	NR	970	0	NR
455	357	NR	585	912	NR	715	73	NR	845	1	NR	975	0	NR
460	237	NR	590	954	NR	720	59	NR	850	1	NR	980	0	NR
465	202	NR	595	981	NR	725	48	NR	855	1	NR	985	0	NR
470	172	NR	600	996	NR	730	40	NR	860	1	NR	990	0	NR
475	152	NR	605	996	NR	735	34	NR	865	1	NR	995	0	NR
480	171	NR	610	980	NR	740	29	NR	870	0	NR	1000	0	NR
485	210	NR	615	947	NR	745	25	NR	875	0	NR			

REPORT NUMBER: SP1-2407-176-7

Scotopic Flux vs. Wavelength

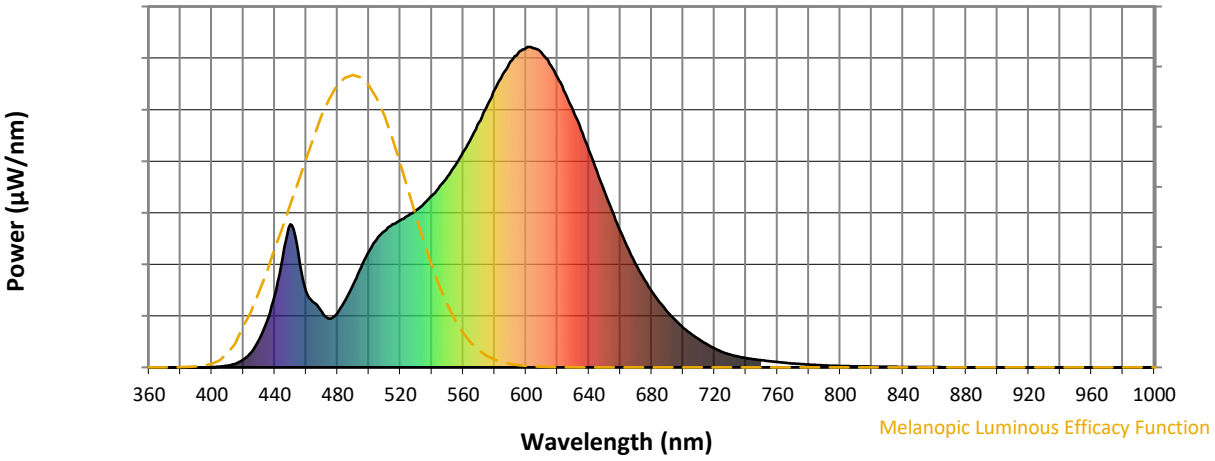


Scotopic Lumens: NR **S/P: 1.32**

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	260	NR	620	905	NR	750	22	NR	880	0	NR
365	0	NR	495	312	NR	625	856	NR	755	19	NR	885	0	NR
370	0	NR	500	362	NR	630	801	NR	760	17	NR	890	0	NR
375	0	NR	505	399	NR	635	742	NR	765	14	NR	895	0	NR
380	0	NR	510	425	NR	640	677	NR	770	12	NR	900	0	NR
385	0	NR	515	446	NR	645	613	NR	775	10	NR	905	0	NR
390	0	NR	520	459	NR	650	549	NR	780	9	NR	910	0	NR
395	0	NR	525	473	NR	655	485	NR	785	7	NR	915	0	NR
400	1	NR	530	490	NR	660	425	NR	790	6	NR	920	0	NR
405	2	NR	535	511	NR	665	371	NR	795	5	NR	925	0	NR
410	5	NR	540	535	NR	670	321	NR	800	4	NR	930	0	NR
415	11	NR	545	565	NR	675	276	NR	805	4	NR	935	0	NR
420	24	NR	550	595	NR	680	238	NR	810	3	NR	940	0	NR
425	47	NR	555	631	NR	685	203	NR	815	3	NR	945	0	NR
430	86	NR	560	672	NR	690	174	NR	820	2	NR	950	0	NR
435	144	NR	565	715	NR	695	148	NR	825	2	NR	955	0	NR
440	224	NR	570	763	NR	700	124	NR	830	2	NR	960	0	NR
445	342	NR	575	814	NR	705	105	NR	835	2	NR	965	0	NR
450	446	NR	580	866	NR	710	88	NR	840	1	NR	970	0	NR
455	357	NR	585	912	NR	715	73	NR	845	1	NR	975	0	NR
460	237	NR	590	954	NR	720	59	NR	850	1	NR	980	0	NR
465	202	NR	595	981	NR	725	48	NR	855	1	NR	985	0	NR
470	172	NR	600	996	NR	730	40	NR	860	1	NR	990	0	NR
475	152	NR	605	996	NR	735	34	NR	865	1	NR	995	0	NR
480	171	NR	610	980	NR	740	29	NR	870	0	NR	1000	0	NR
485	210	NR	615	947	NR	745	25	NR	875	0	NR			

REPORT NUMBER: SP1-2407-176-7

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.51**

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	260	NR	620	905	NR	750	22	NR	880	0	NR
365	0	NR	495	312	NR	625	856	NR	755	19	NR	885	0	NR
370	0	NR	500	362	NR	630	801	NR	760	17	NR	890	0	NR
375	0	NR	505	399	NR	635	742	NR	765	14	NR	895	0	NR
380	0	NR	510	425	NR	640	677	NR	770	12	NR	900	0	NR
385	0	NR	515	446	NR	645	613	NR	775	10	NR	905	0	NR
390	0	NR	520	459	NR	650	549	NR	780	9	NR	910	0	NR
395	0	NR	525	473	NR	655	485	NR	785	7	NR	915	0	NR
400	1	NR	530	490	NR	660	425	NR	790	6	NR	920	0	NR
405	2	NR	535	511	NR	665	371	NR	795	5	NR	925	0	NR
410	5	NR	540	535	NR	670	321	NR	800	4	NR	930	0	NR
415	11	NR	545	565	NR	675	276	NR	805	4	NR	935	0	NR
420	24	NR	550	595	NR	680	238	NR	810	3	NR	940	0	NR
425	47	NR	555	631	NR	685	203	NR	815	3	NR	945	0	NR
430	86	NR	560	672	NR	690	174	NR	820	2	NR	950	0	NR
435	144	NR	565	715	NR	695	148	NR	825	2	NR	955	0	NR
440	224	NR	570	763	NR	700	124	NR	830	2	NR	960	0	NR
445	342	NR	575	814	NR	705	105	NR	835	2	NR	965	0	NR
450	446	NR	580	866	NR	710	88	NR	840	1	NR	970	0	NR
455	357	NR	585	912	NR	715	73	NR	845	1	NR	975	0	NR
460	237	NR	590	954	NR	720	59	NR	850	1	NR	980	0	NR
465	202	NR	595	981	NR	725	48	NR	855	1	NR	985	0	NR
470	172	NR	600	996	NR	730	40	NR	860	1	NR	990	0	NR
475	152	NR	605	996	NR	735	34	NR	865	1	NR	995	0	NR
480	171	NR	610	980	NR	740	29	NR	870	0	NR	1000	0	NR
485	210	NR	615	947	NR	745	25	NR	875	0	NR			

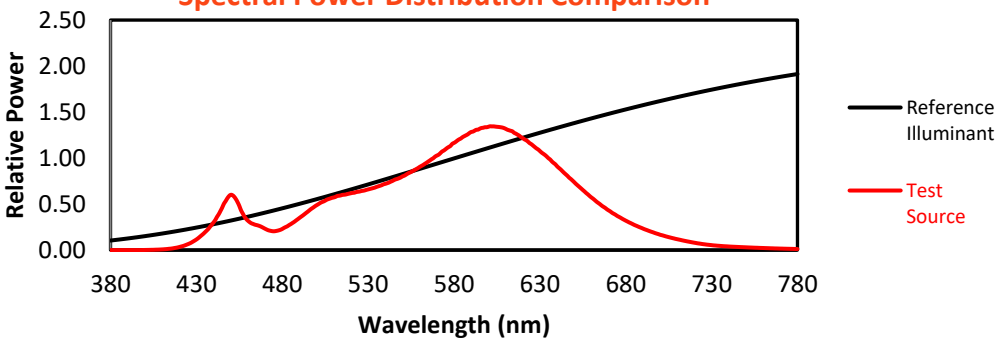
REPORT NUMBER: SP1-2407-176-7

TM-30-18

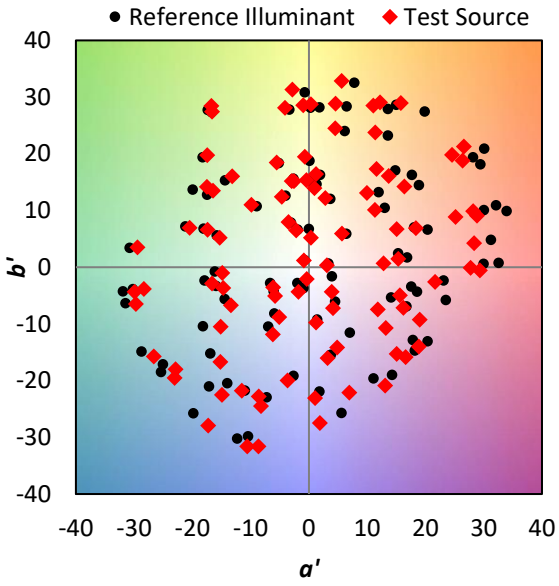
Summary

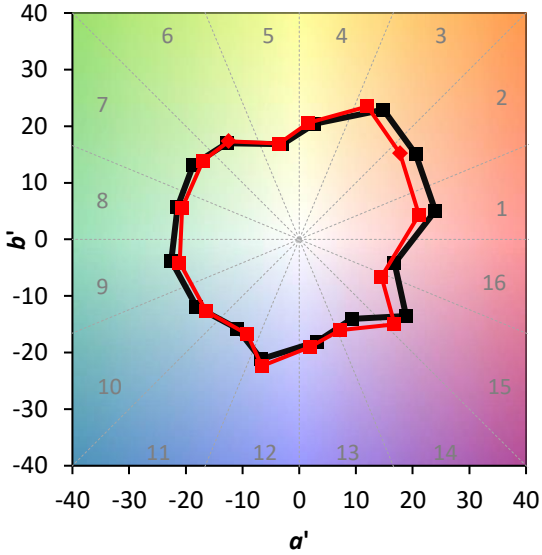
R_f = 85.8
R_g = 94.1
CIE R_a = 81.8
R_9 = -1.1

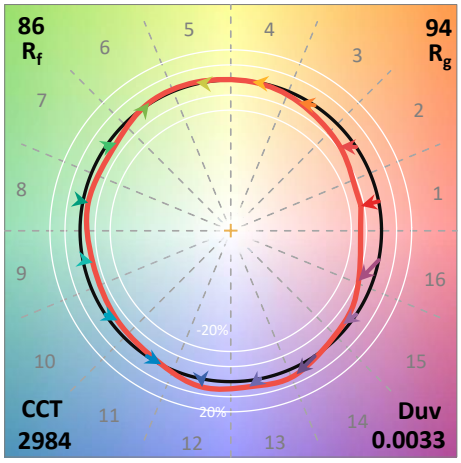
Spectral Power Distribution Comparison

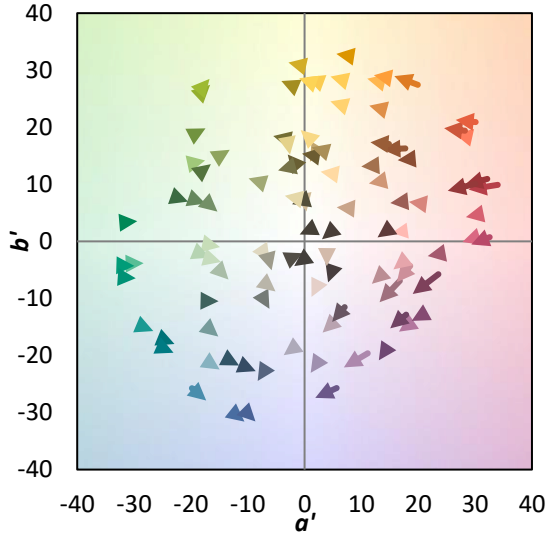


Color Vector Graphics







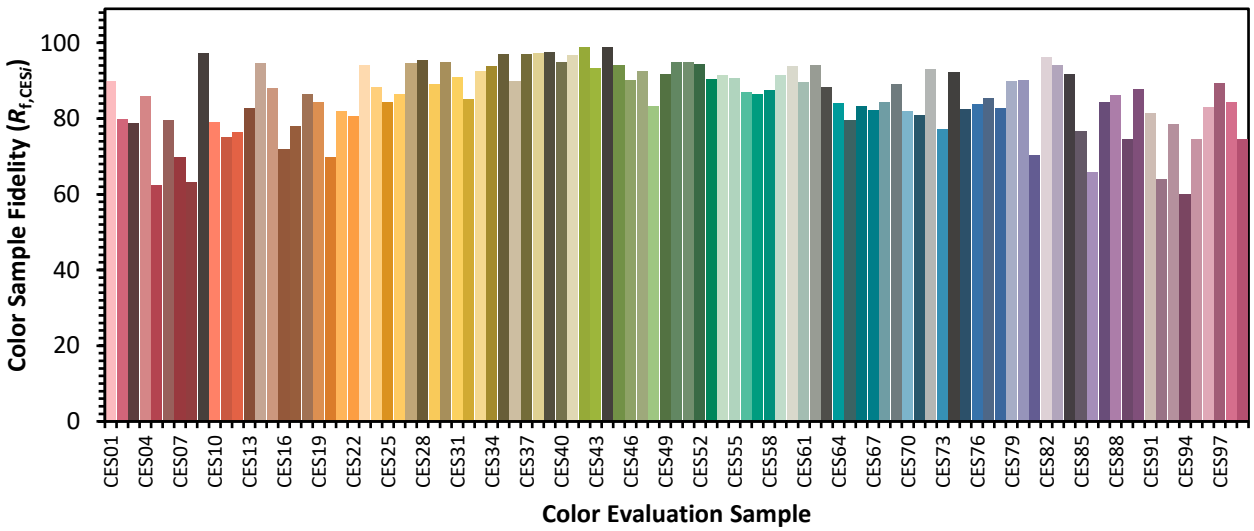


REPORT NUMBER: SP1-2407-176-7

TM-30-18

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

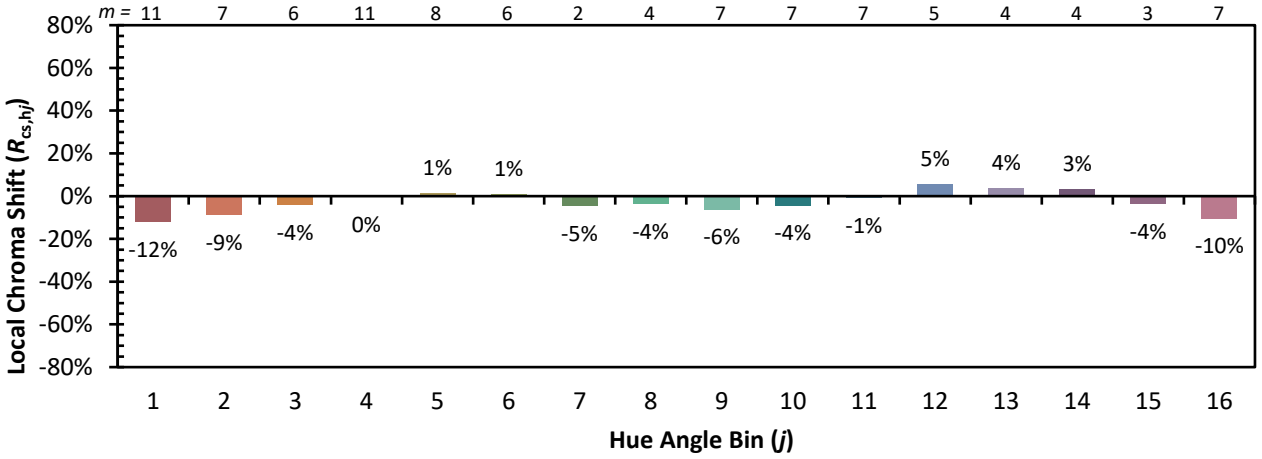
CES01 = 86	CES26 = 86	CES51 = 95	CES76 = 84
CES02 = 63	CES27 = 95	CES52 = 94	CES77 = 86
CES03 = 31	CES28 = 95	CES53 = 90	CES78 = 83
CES04 = 70	CES29 = 89	CES54 = 91	CES79 = 90
CES05 = 50	CES30 = 95	CES55 = 91	CES80 = 90
CES06 = 51	CES31 = 91	CES56 = 87	CES81 = 70
CES07 = 42	CES32 = 85	CES57 = 86	CES82 = 96
CES08 = 41	CES33 = 93	CES58 = 87	CES83 = 94
CES09 = 29	CES34 = 94	CES59 = 92	CES84 = 92
CES10 = 76	CES35 = 97	CES60 = 94	CES85 = 77
CES11 = 59	CES36 = 90	CES61 = 90	CES86 = 66
CES12 = 65	CES37 = 97	CES62 = 94	CES87 = 84
CES13 = 43	CES38 = 97	CES63 = 88	CES88 = 86
CES14 = 74	CES39 = 98	CES64 = 84	CES89 = 75
CES15 = 72	CES40 = 95	CES65 = 80	CES90 = 88
CES16 = 47	CES41 = 97	CES66 = 83	CES91 = 81
CES17 = 50	CES42 = 99	CES67 = 82	CES92 = 64
CES18 = 56	CES43 = 93	CES68 = 84	CES93 = 79
CES19 = 72	CES44 = 99	CES69 = 89	CES94 = 60
CES20 = 67	CES45 = 94	CES70 = 82	CES95 = 74
CES21 = 87	CES46 = 90	CES71 = 81	CES96 = 83
CES22 = 79	CES47 = 93	CES72 = 93	CES97 = 89
CES23 = 92	CES48 = 83	CES73 = 77	CES98 = 84
CES24 = 91	CES49 = 92	CES74 = 92	CES99 = 75
CES25 = 72	CES50 = 95	CES75 = 83	

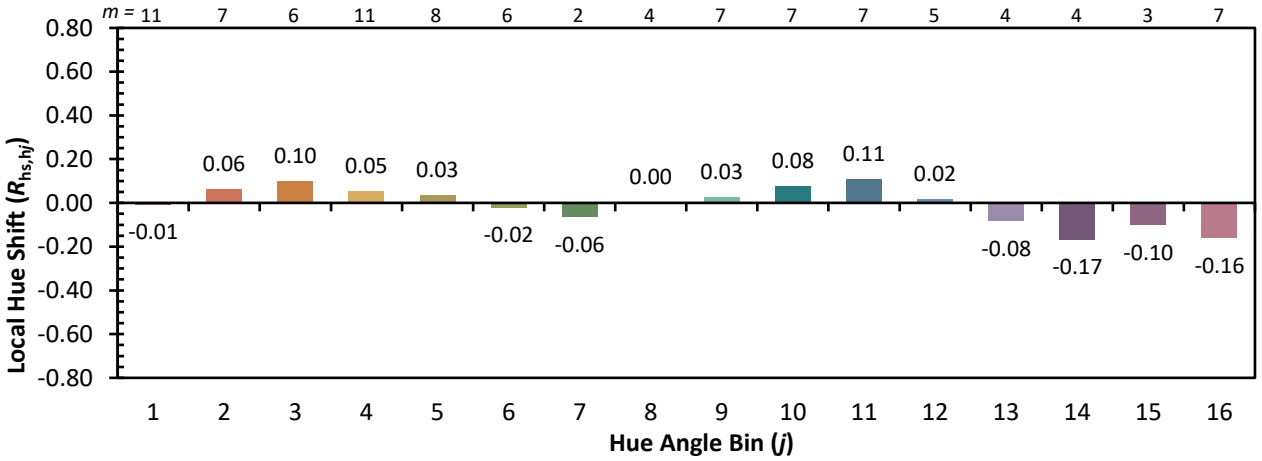


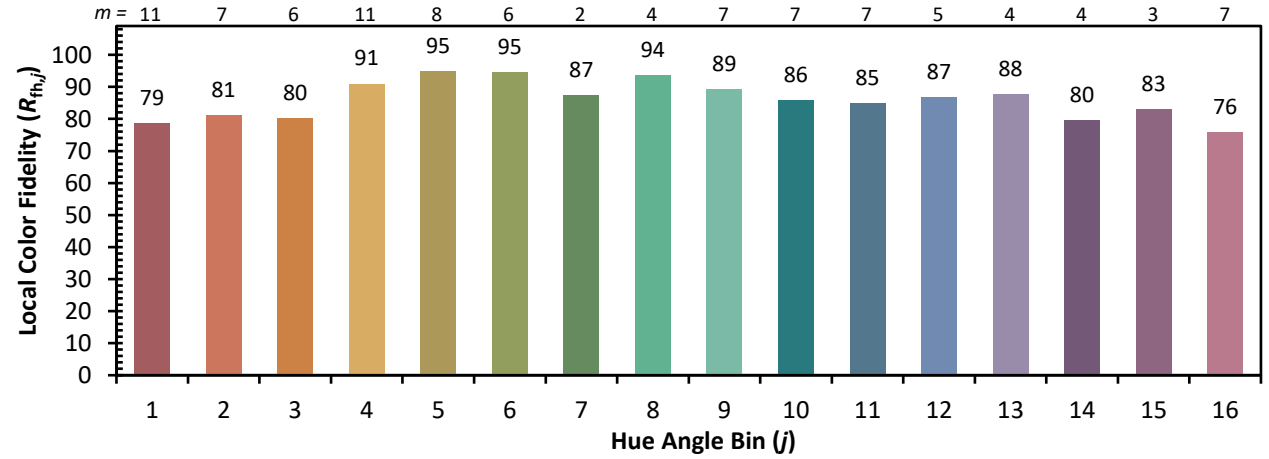
REPORT NUMBER: SP1-2407-176-7

TM-30-18

Color Rendition by Hue-Angle Bin







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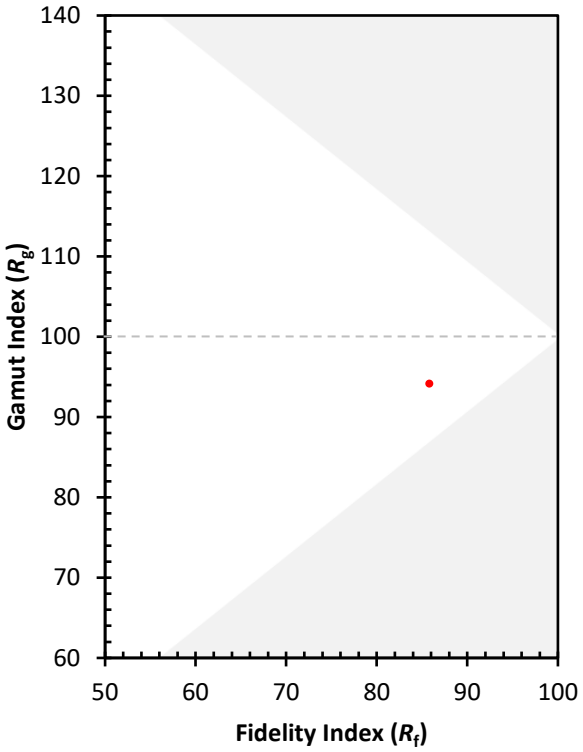
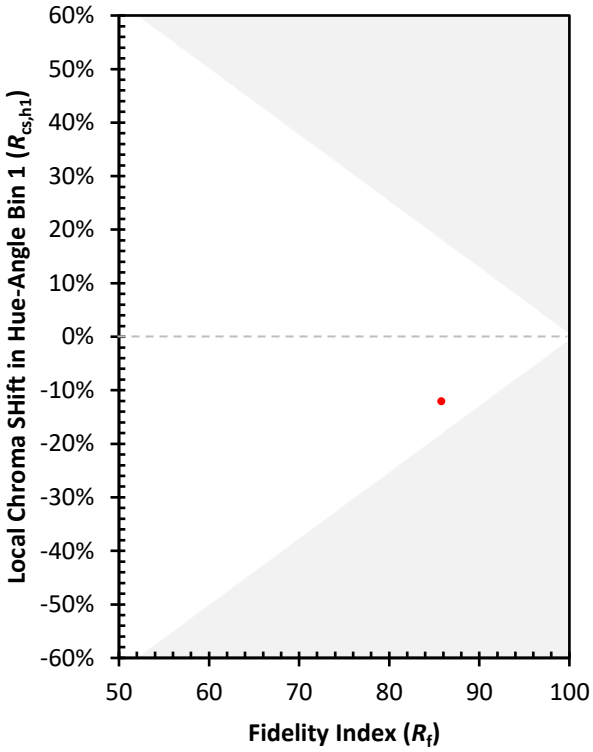
Measure Comparisons





(END OF REPORT)