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: P821461

Luminaire Tested: **TT-D5-830-12VDC-MQ-HSS**

Issue Date: 12/2/2020

Report Generated By 670245763

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

Scaled Data Report

Test Information

Test Method:	LM-79-08
Report Number:	P821461
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2010-017-1)
Test Lab:	INNOVATION CENTER
Issue Date:	12/2/2020
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	McGRAW-EDISON
Catalog Number:	TT-D5-830-12VDC-MQ-HSS
Description:	TOPTIER LED PARKING GARAGE LUMINAIRE
	3000K, 80 CRI LEDS AND MEDIUM DISTRIBUTION WITH HOUSE SIDE SHIELD
Light Source:	-
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	7548.9 lumens
Efficiency:	N/A
Efficacy:	103.4 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type IV - Short
BUG Rating:	B2 - U2 - G3

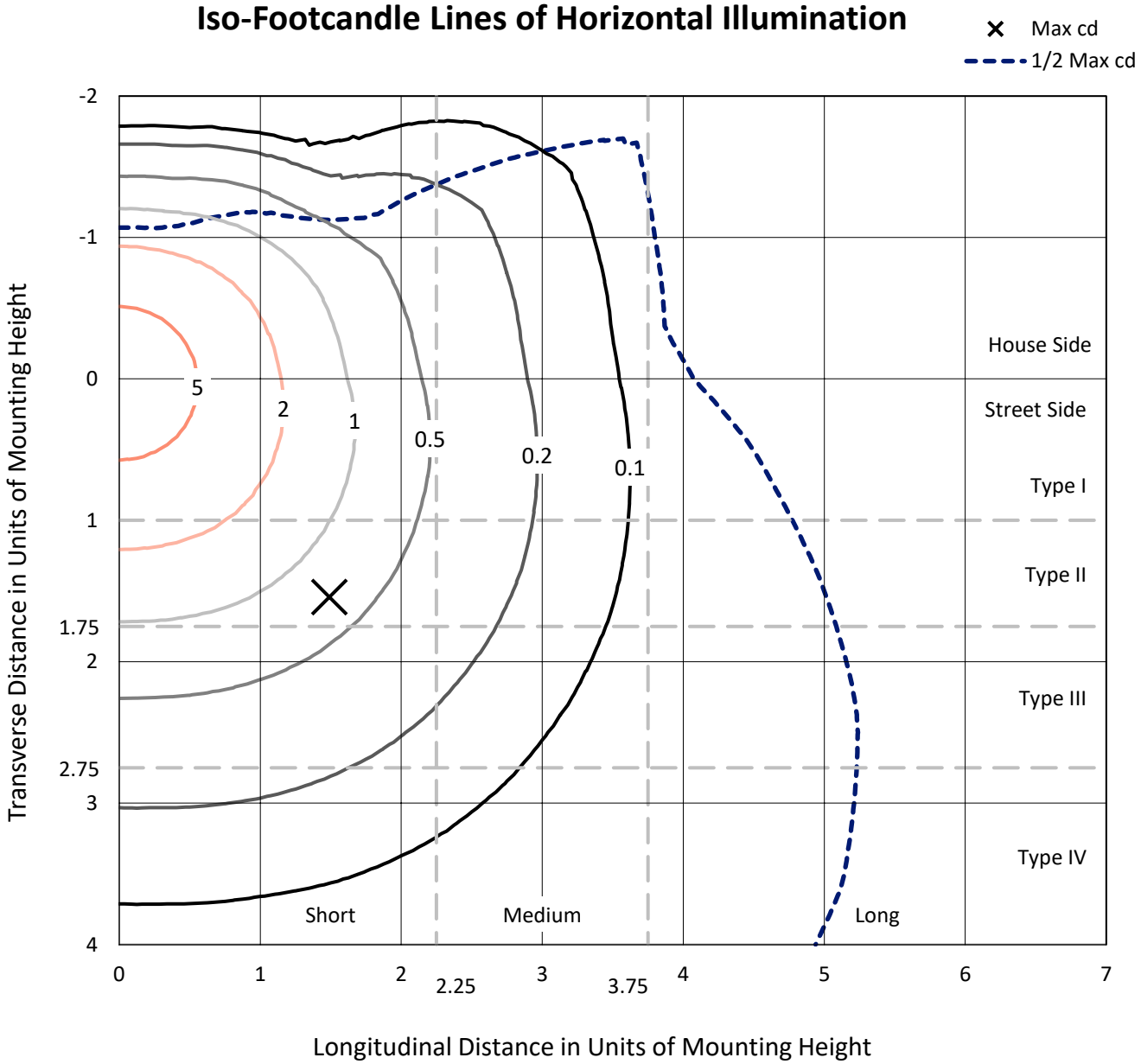
Input Watts (W):	73
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	25 FT

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

Scaled Data Report

REPORT NUMBER: P821461
CATALOG NUMBER: TT-D5-830-12VDC-MQ-HSS

Iso-Footcandle Lines of Horizontal Illumination



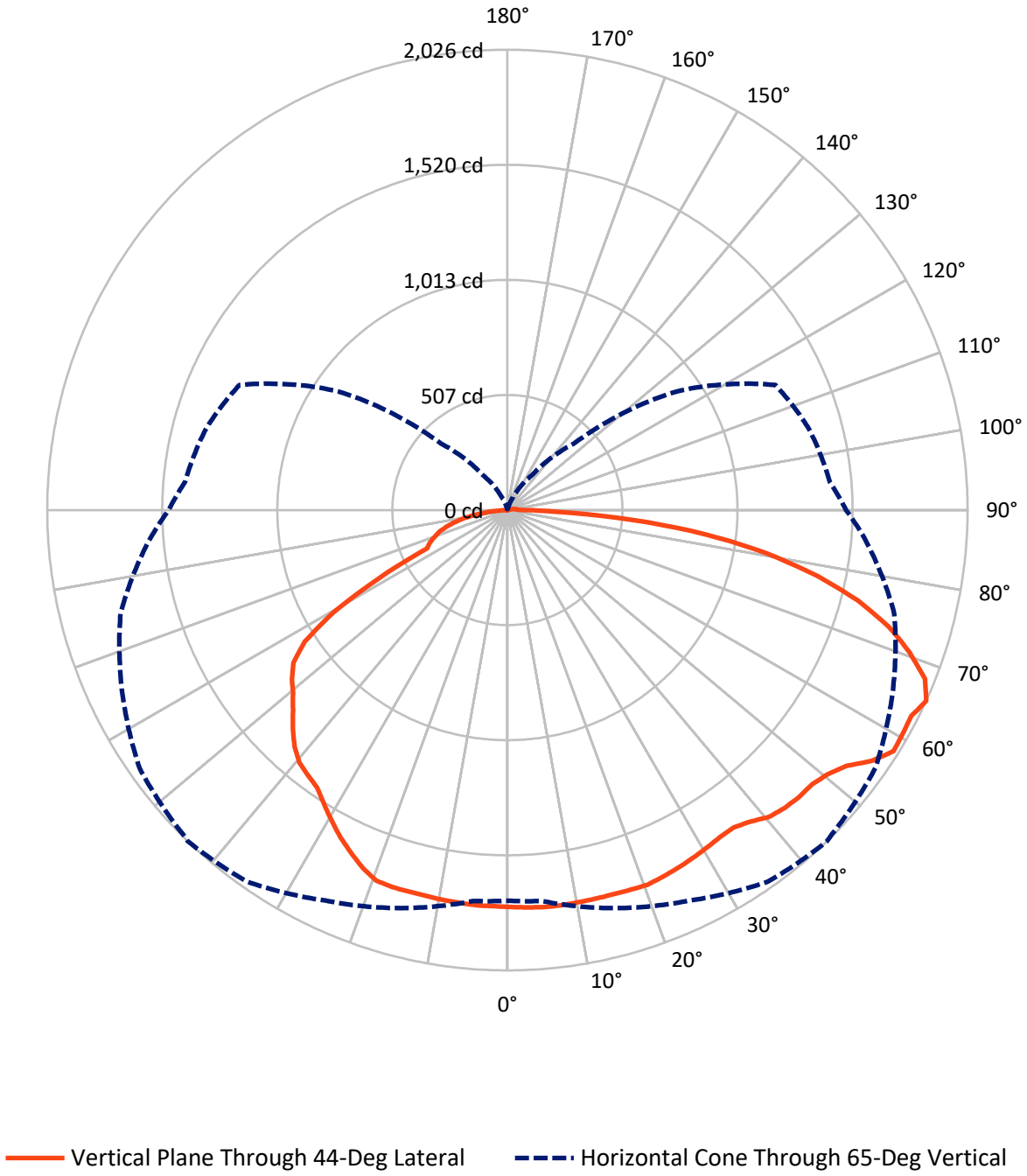
Based on 15 foot mounting height. Maximum calculated value = 7.8 fc
Type IV - Short - N/A

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

Scaled Data Report

REPORT NUMBER: P821461
CATALOG NUMBER: TT-D5-830-12VDC-MQ-HSS

Luminous Intensity Polar Plot



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

Scaled Data Report

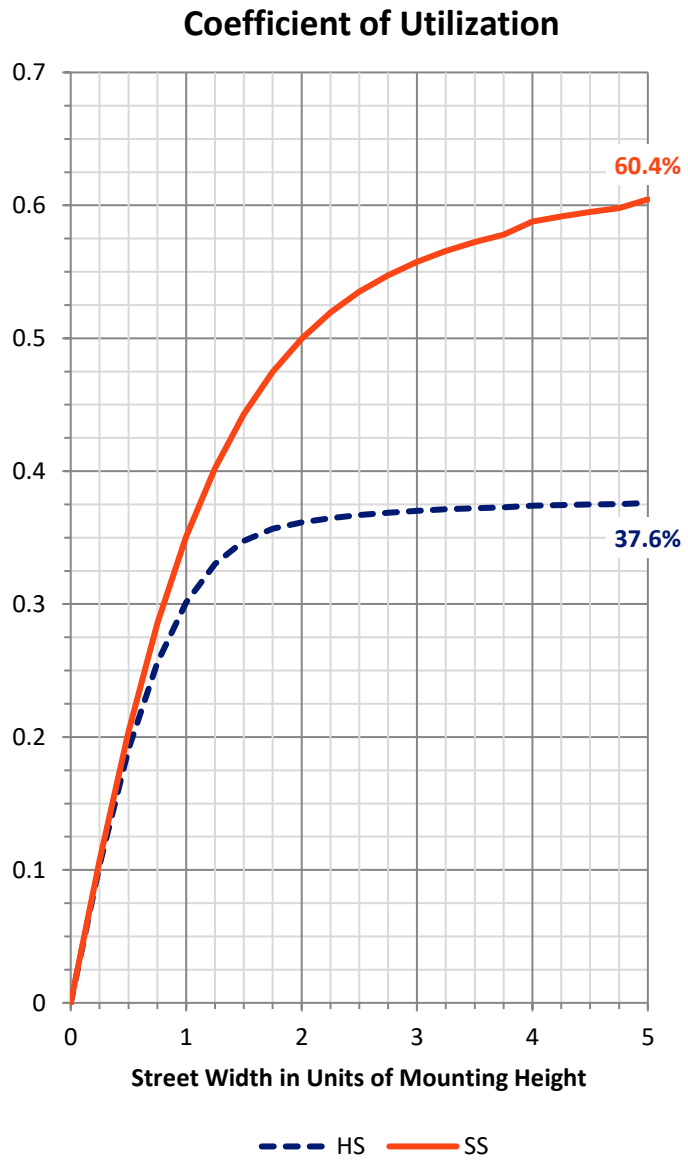
REPORT NUMBER: P821461
CATALOG NUMBER: TT-D5-830-12VDC-MQ-HSS

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2858.4	1.9	2860.3
	% Fixture	37.9	0.0	37.9
Street Side	Lumens	4663.0	25.5	4688.6
	% Fixture	61.8	0.3	62.1
Total	Lumens	7521.4	27.5	7548.9
	% Fixture	99.6	0.4	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	166.9	2.2
10°-20°	494.0	6.5
20°-30°	786.1	10.4
30°-40°	1007.2	13.3
40°-50°	1193.2	15.8
50°-60°	1306.8	17.3
60°-70°	1242.2	16.5
70°-80°	989.0	13.1
80°-90°	336.0	4.5
90°-100°	17.7	0.2
100°-110°	5.8	0.1
110°-120°	1.3	0.0
120°-130°	0.8	0.0
130°-140°	0.6	0.0
140°-150°	0.6	0.0
150°-160°	0.4	0.0
160°-170°	0.3	0.0
170°-180°	0.1	0.0
0°-90°	7521.4	99.6
0°-180°	7548.9	100.0



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

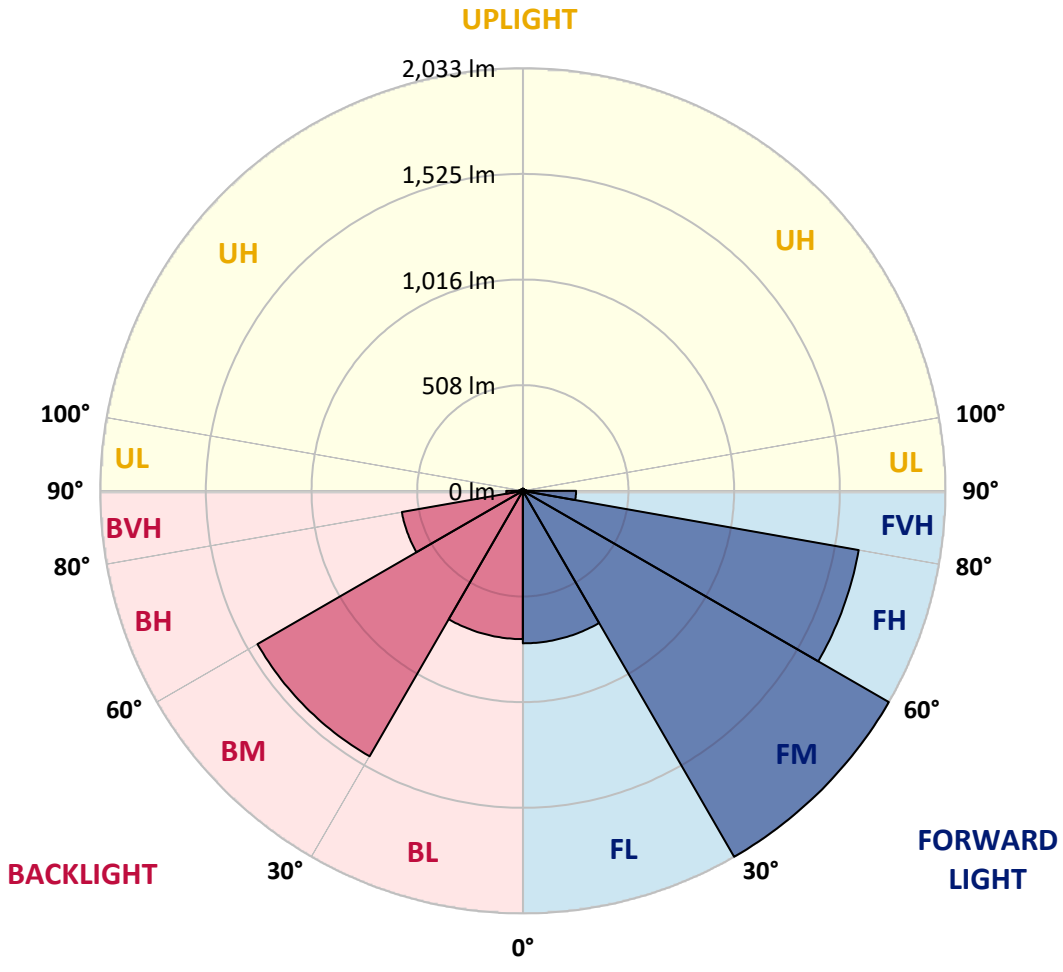
Scaled Data Report

REPORT NUMBER: P821461
CATALOG NUMBER: TT-D5-830-12VDC-MQ-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	733.7	9.7			
FM	(30°-60°)	2032.9	26.9			
FH	(60°-80°)	1640.5	21.7			G1/1800
FVH	(80°-90°)	255.9	3.4			G3/500
BL	(0°-30°)	713.3	9.4	B2/1000		
BM	(30°-60°)	1474.4	19.5	B2/2500		
BH	(60°-80°)	590.7	7.8	B2/1000		G2/1000
BVH	(80°-90°)	80.1	1.1			G1/100
UL	(90°-100°)	17.7	0.2		U2/50	
UH	(100°-180°)	9.8	0.1		U1/10	

BUG Rating: B2-U2-G3
Type IV Short



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

Scaled Data Report

REPORT NUMBER: P821461
CATALOG NUMBER: TT-D5-830-12VDC-MQ-HSS

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	44°	45°	55°	65°	75°	85°
0°	1747.5	1747.5	1747.5	1747.5	1747.5	1747.5	1747.5	1747.5	1747.5	1747.5	1747.5
2.5°	1754.2	1752.9	1752.9	1752.9	1752.9	1751.5	1752.9	1750.2	1751.5	1747.5	1747.5
5°	1758.2	1755.5	1756.9	1756.9	1756.9	1755.5	1756.9	1752.9	1754.2	1748.9	1747.5
7.5°	1759.5	1758.2	1758.2	1758.2	1758.2	1755.5	1756.9	1754.2	1752.9	1748.9	1746.2
10°	1759.5	1758.2	1758.2	1758.2	1756.9	1754.2	1755.5	1751.5	1751.5	1746.2	1743.5
12.5°	1759.5	1758.2	1759.5	1756.9	1756.9	1754.2	1754.2	1750.2	1750.2	1743.5	1740.9
15°	1758.2	1756.9	1756.9	1758.2	1756.9	1754.2	1754.2	1750.2	1748.9	1740.9	1738.2
17.5°	1756.9	1755.5	1756.9	1758.2	1759.5	1756.9	1758.2	1751.5	1748.9	1740.9	1736.9
20°	1758.2	1756.9	1758.2	1760.9	1760.9	1760.9	1760.9	1754.2	1748.9	1740.9	1734.2
22.5°	1754.2	1754.2	1754.2	1754.2	1756.9	1752.9	1752.9	1748.9	1742.2	1735.5	1728.9
25°	1744.9	1744.9	1746.2	1747.5	1747.5	1744.9	1743.5	1739.5	1734.2	1726.2	1718.2
27.5°	1734.2	1734.2	1735.5	1735.5	1738.2	1735.5	1734.2	1728.9	1723.5	1714.2	1704.9
30°	1722.2	1722.2	1722.2	1724.9	1726.2	1726.2	1724.9	1718.2	1711.5	1700.9	1688.8
32.5°	1708.9	1708.9	1712.9	1715.5	1716.9	1716.9	1716.9	1708.9	1700.9	1687.5	1670.2
35°	1698.2	1698.2	1703.5	1712.9	1718.2	1715.5	1714.2	1708.9	1696.8	1682.2	1654.2
37.5°	1704.9	1704.9	1716.9	1730.2	1742.2	1739.5	1739.5	1730.2	1714.2	1690.2	1655.5
40°	1720.9	1722.2	1740.9	1758.2	1772.9	1775.6	1775.6	1764.9	1740.9	1710.2	1662.2
42.5°	1724.9	1727.5	1746.2	1771.6	1784.9	1791.6	1791.6	1776.9	1751.5	1715.5	1659.5
45°	1724.9	1726.2	1747.5	1774.2	1795.6	1800.9	1800.9	1784.9	1752.9	1718.2	1650.2
47.5°	1724.9	1723.5	1742.2	1779.6	1800.9	1804.9	1804.9	1787.6	1756.9	1712.9	1636.8
50°	1720.9	1727.5	1755.5	1784.9	1822.2	1827.6	1826.2	1807.6	1764.9	1719.5	1626.1
52.5°	1730.2	1728.9	1766.2	1824.9	1858.3	1870.3	1871.6	1847.6	1803.6	1738.2	1619.5
55°	1768.9	1770.2	1806.2	1874.3	1925.0	1947.6	1945.0	1914.3	1851.6	1775.6	1638.2
57.5°	1782.2	1795.6	1847.6	1906.3	1983.7	2003.7	2003.7	1966.3	1890.3	1804.9	1651.5
60°	1755.5	1760.9	1824.9	1925.0	1995.7	1999.7	2001.0	1974.3	1894.3	1788.9	1624.8
62.5°	1748.9	1759.5	1808.9	1921.0	1966.3	1995.7	1994.3	1958.3	1890.3	1776.9	1615.5
65°	1719.5	1727.5	1814.2	1896.9	1997.0	2026.3	2019.7	1978.3	1872.9	1763.5	1586.1
67.5°	1659.5	1667.5	1747.5	1863.6	1954.3	1982.3	1989.0	1941.0	1831.6	1700.9	1523.4
70°	1559.4	1571.5	1652.8	1766.2	1862.3	1878.3	1875.6	1846.3	1736.9	1596.8	1431.4
72.5°	1419.4	1438.1	1540.8	1648.8	1731.5	1755.5	1744.9	1711.5	1622.1	1471.4	1306.0
75°	1271.3	1288.6	1370.0	1491.4	1578.1	1594.1	1586.1	1546.1	1455.4	1307.3	1157.9
77.5°	1109.9	1124.6	1193.9	1318.0	1382.0	1395.4	1399.4	1346.0	1260.6	1127.2	993.8
80°	892.4	899.1	992.5	1073.9	1129.9	1156.6	1153.9	1113.9	1028.5	917.8	784.4
82.5°	659.0	664.3	736.4	805.7	856.4	880.4	867.1	827.1	759.0	664.3	562.9
85°	404.2	394.9	453.6	505.6	536.3	552.3	538.9	516.3	456.2	381.5	310.8
87.5°	145.4	137.4	164.1	172.1	206.8	201.4	213.4	172.1	138.7	98.7	69.4
90°	64.0	64.0	62.7	60.0	54.7	49.4	48.0	40.0	29.3	18.7	6.7
92.5°	58.7	58.7	57.4	54.7	49.4	44.0	44.0	36.0	26.7	17.3	6.7
95°	49.4	49.4	48.0	45.4	41.4	37.4	37.4	29.3	22.7	14.7	5.3
97.5°	38.7	38.7	37.4	36.0	32.0	29.3	29.3	24.0	17.3	10.7	4.0
100°	29.3	29.3	28.0	26.7	25.3	22.7	21.3	17.3	13.3	8.0	2.7
102.5°	21.3	21.3	21.3	20.0	17.3	16.0	16.0	13.3	9.3	6.7	2.7
105°	14.7	14.7	14.7	13.3	12.0	10.7	10.7	9.3	6.7	4.0	1.3
107.5°	9.3	9.3	9.3	9.3	8.0	6.7	6.7	5.3	4.0	2.7	1.3
110°	5.3	4.0	5.3	5.3	5.3	4.0	4.0	2.7	2.7	1.3	1.3

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

Scaled Data Report

REPORT NUMBER: P821461
CATALOG NUMBER: TT-D5-830-12VDC-MQ-HSS

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	44°	45°	55°	65°	75°	85°
112.5°	2.7	2.7	2.7	2.7	2.7	*2.7*	2.7	1.3	1.3	1.3	1.3
115°	1.3	1.3	1.3	2.7	2.7	*1.3*	1.3	1.3	1.3	1.3	1.3
117.5°	0.0	1.3	1.3	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
120°	0.0	0.0	1.3	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
122.5°	0.0	0.0	0.0	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
125°	0.0	0.0	0.0	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
127.5°	0.0	0.0	0.0	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
130°	0.0	0.0	0.0	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
132.5°	0.0	0.0	0.0	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
135°	0.0	0.0	0.0	0.0	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
137.5°	0.0	0.0	0.0	0.0	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
140°	0.0	1.3	1.3	0.0	0.0	*1.3*	1.3	1.3	1.3	1.3	1.3
142.5°	1.3	1.3	1.3	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
145°	1.3	1.3	1.3	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
147.5°	1.3	1.3	0.0	0.0	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
150°	1.3	1.3	1.3	0.0	0.0	*1.3*	1.3	1.3	1.3	1.3	1.3
152.5°	1.3	1.3	1.3	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
155°	1.3	1.3	1.3	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
157.5°	1.3	1.3	1.3	0.0	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
160°	1.3	1.3	1.3	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
162.5°	1.3	1.3	1.3	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
165°	1.3	1.3	1.3	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
167.5°	1.3	1.3	1.3	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
170°	1.3	1.3	1.3	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
172.5°	1.3	1.3	1.3	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
175°	1.3	1.3	1.3	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
177.5°	1.3	1.3	1.3	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3
180°	1.3	1.3	1.3	1.3	1.3	*1.3*	1.3	1.3	1.3	1.3	1.3

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

Scaled Data Report

REPORT NUMBER: P821461
CATALOG NUMBER: TT-D5-830-12VDC-MQ-HSS

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1747.5	1747.5	1747.5	1747.5	1747.5	1747.5	1747.5	1747.5	1747.5	1747.5	1747.5
2.5°	1747.5	1746.2	1744.9	1746.2	1744.9	1744.9	1743.5	1743.5	1742.2	1742.2	1740.9
5°	1747.5	1746.2	1744.9	1746.2	1743.5	1744.9	1744.9	1743.5	1742.2	1740.9	1739.5
7.5°	1746.2	1746.2	1743.5	1744.9	1742.2	1742.2	1740.9	1740.9	1739.5	1739.5	1738.2
10°	1743.5	1742.2	1742.2	1742.2	1739.5	1739.5	1738.2	1736.9	1736.9	1735.5	1734.2
12.5°	1740.9	1739.5	1738.2	1738.2	1736.9	1735.5	1734.2	1734.2	1732.9	1731.5	1730.2
15°	1736.9	1735.5	1735.5	1735.5	1734.2	1734.2	1732.9	1731.5	1728.9	1727.5	1726.2
17.5°	1735.5	1734.2	1735.5	1735.5	1734.2	1735.5	1732.9	1730.2	1727.5	1726.2	1724.9
20°	1734.2	1734.2	1734.2	1732.9	1731.5	1730.2	1728.9	1727.5	1726.2	1724.9	1723.5
22.5°	1727.5	1726.2	1723.5	1715.5	1706.2	1699.5	1698.2	1700.9	1700.9	1700.9	1696.8
25°	1715.5	1711.5	1700.9	1686.2	1670.2	1659.5	1652.8	1652.8	1651.5	1648.8	1647.5
27.5°	1700.9	1692.8	1674.2	1655.5	1632.8	1619.5	1603.5	1594.1	1590.1	1588.8	1586.1
30°	1680.8	1668.8	1644.8	1620.8	1592.8	1574.1	1548.8	1532.8	1523.4	1519.4	1516.8
32.5°	1656.8	1644.8	1616.8	1587.5	1554.1	1527.4	1495.4	1470.1	1452.7	1444.7	1440.7
35°	1640.8	1623.5	1591.5	1556.8	1523.4	1484.7	1446.1	1411.4	1384.7	1375.4	1370.0
37.5°	1634.2	1618.1	1583.5	1548.8	1511.4	1464.7	1419.4	1370.0	1334.0	1318.0	1312.7
40°	1638.2	1618.1	1579.5	1542.1	1498.1	1446.1	1386.0	1324.7	1278.0	1255.3	1250.0
42.5°	1628.8	1606.1	1560.8	1520.8	1466.1	1407.4	1334.0	1263.3	1200.6	1181.9	1173.9
45°	1612.8	1584.8	1535.4	1484.7	1427.4	1355.3	1279.3	1188.6	1113.9	1091.2	1084.5
47.5°	1596.8	1558.1	1499.4	1452.7	1383.4	1299.3	1209.9	1108.6	1015.2	992.5	988.5
50°	1572.8	1536.8	1474.1	1419.4	1348.7	1251.3	1149.9	1023.2	917.8	879.1	868.4
52.5°	1562.1	1515.4	1455.4	1412.7	1327.3	1216.6	1088.5	952.5	800.4	752.4	741.7
55°	1572.8	1514.1	1450.1	1408.7	1310.0	1172.6	1015.2	841.8	665.7	615.0	600.3
57.5°	1554.1	1503.4	1439.4	1392.7	1264.6	1081.9	908.5	685.7	502.9	437.6	432.2
60°	1530.1	1458.1	1398.0	1355.3	1169.9	911.1	707.0	488.2	302.8	246.8	236.1
62.5°	1520.8	1446.1	1376.7	1324.7	1043.2	669.7	430.9	246.8	125.4	88.0	80.0
65°	*1491.4*	*1424.7*	*1375.4*	*1302.0*	*911.1*	*413.5*	*185.4*	*73.4*	*5.3*	*4.0*	*4.0*
67.5°	1435.4	1367.4	1334.0	1291.3	897.8	394.9	168.1	66.7	2.7	0.0	0.0
70°	1339.3	1286.0	1263.3	1240.6	859.1	365.5	153.4	60.0	1.3	0.0	0.0
72.5°	1212.6	1176.6	1172.6	1169.9	803.1	337.5	137.4	53.4	1.3	0.0	0.0
75°	1085.9	1041.9	1048.5	1064.5	733.7	298.8	118.7	46.7	1.3	0.0	0.0
77.5°	925.8	893.8	909.8	936.5	643.0	253.5	97.4	37.4	1.3	0.0	0.0
80°	728.4	707.0	743.0	767.1	525.6	201.4	73.4	26.7	0.0	0.0	0.0
82.5°	517.6	505.6	538.9	569.6	390.9	142.7	50.7	17.3	0.0	0.0	0.0
85°	278.8	272.1	304.2	337.5	234.8	81.4	25.3	8.0	0.0	0.0	0.0
87.5°	69.4	64.0	65.4	78.7	57.4	17.3	4.0	1.3	0.0	0.0	0.0
90°	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0
100°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
102.5°	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105°	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
110°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0

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

Scaled Data Report

REPORT NUMBER: P821461
CATALOG NUMBER: TT-D5-830-12VDC-MQ-HSS

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
115°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
117.5°	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0
120°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
122.5°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
125°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
127.5°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
130°	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
135°	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0
140°	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0
145°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
147.5°	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0
150°	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0
155°	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0
160°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
162.5°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
165°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
167.5°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
170°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
172.5°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
175°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
177.5°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
180°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3

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

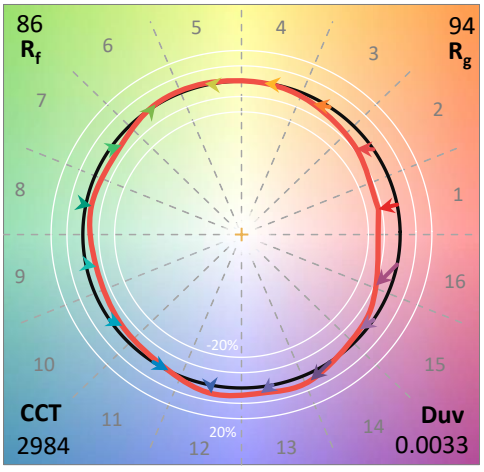
Test Information

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

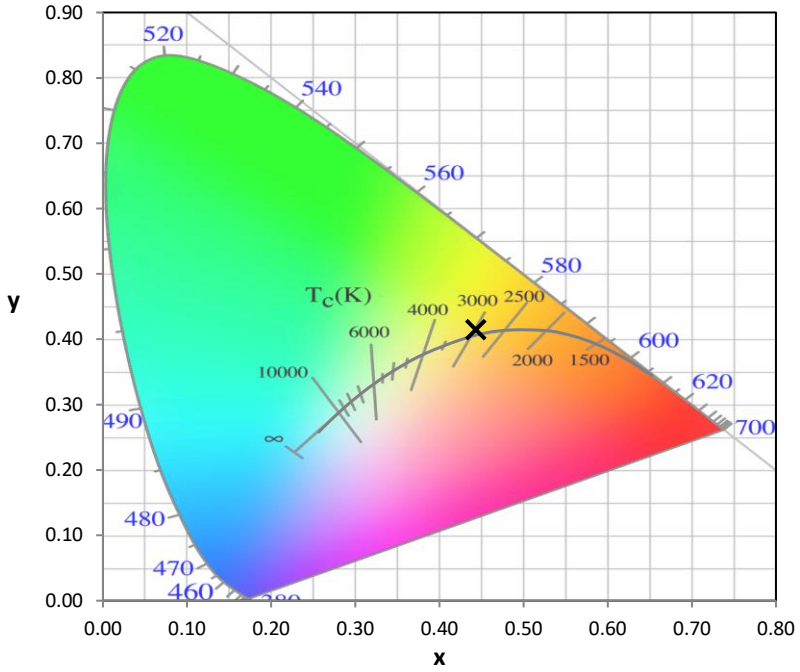
Stabilization Time:	29M
Operation Time:	1H 29M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-7

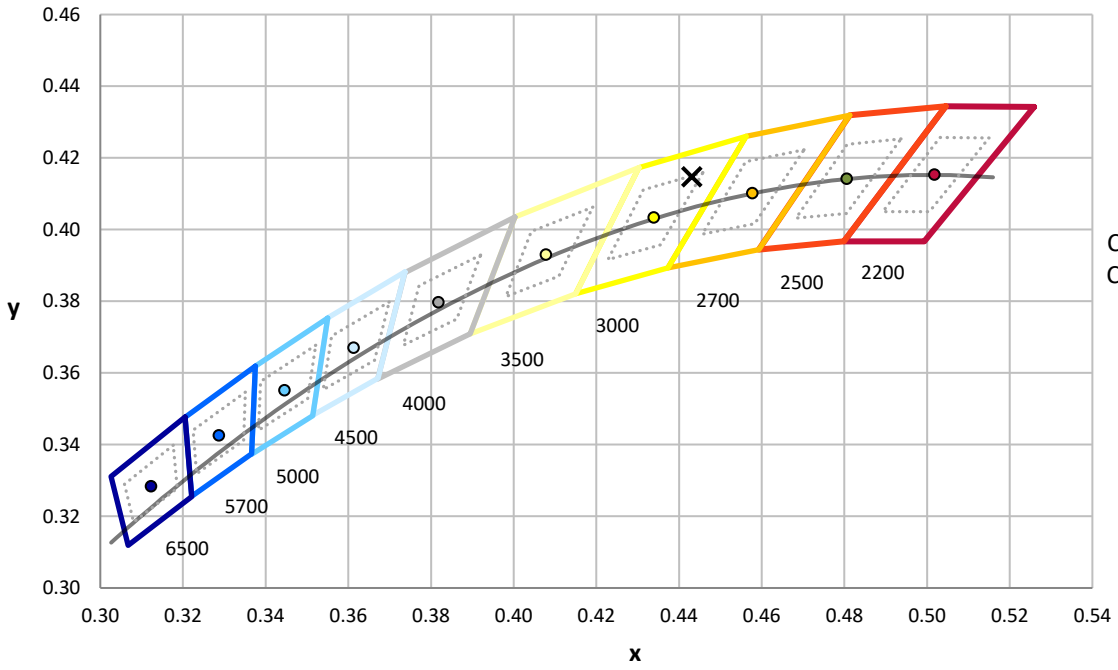
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

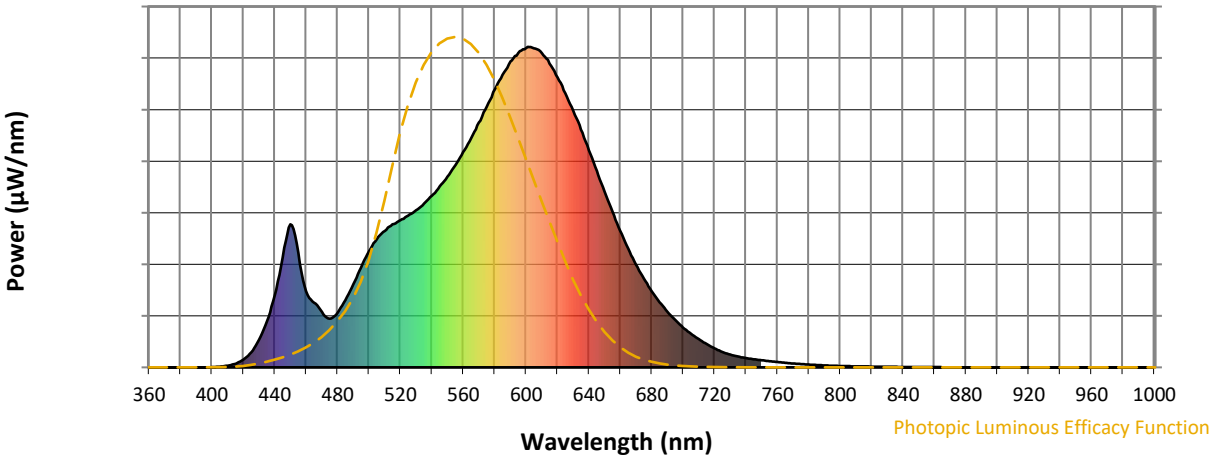


CCT = 2984K
CIE x = 0.4431
CIE y = 0.4147
Duv = 0.0033

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-7

Photopic Flux vs. Wavelength

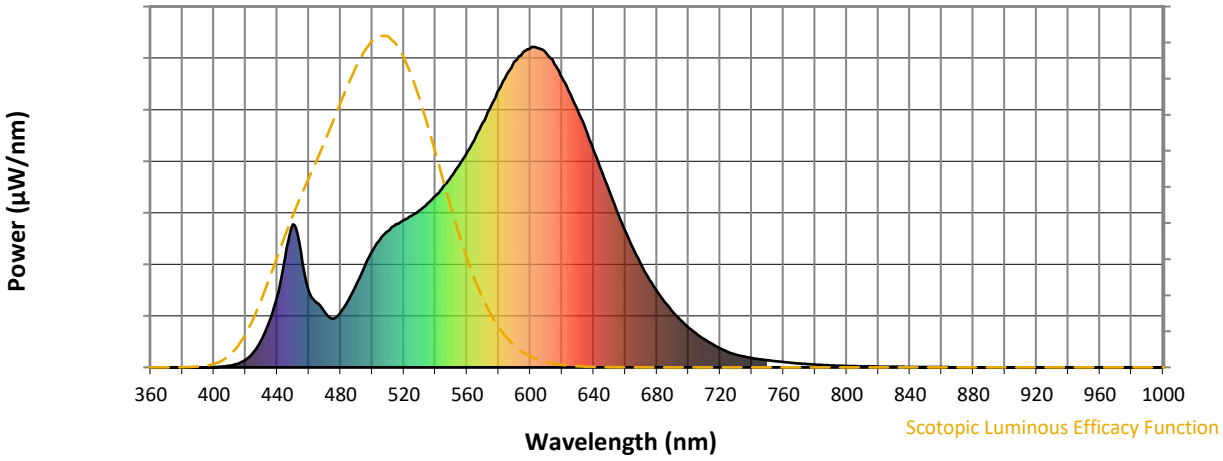


Photopic Lumens: NR

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

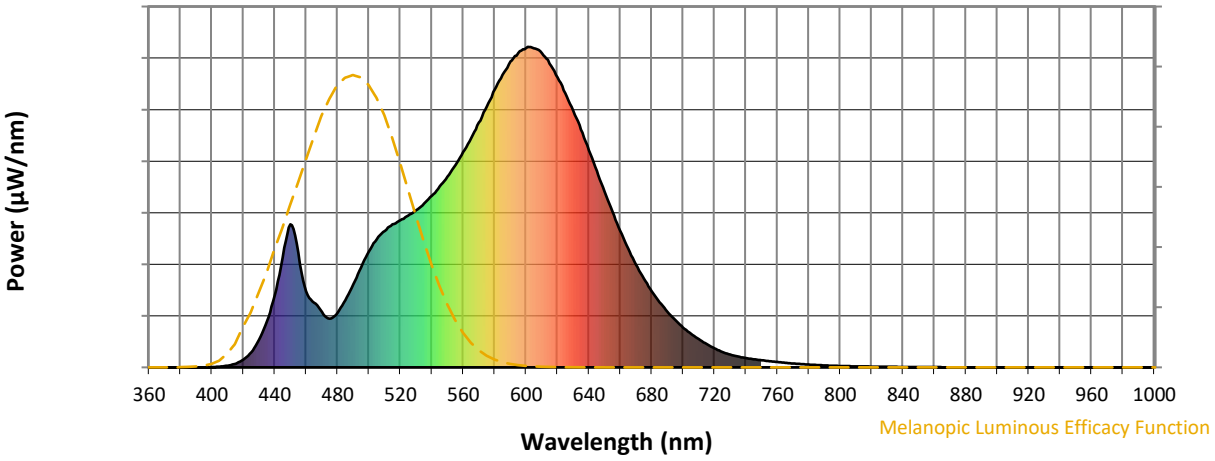


Scotopic Lumens: NR **S/P: 1.32**

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			

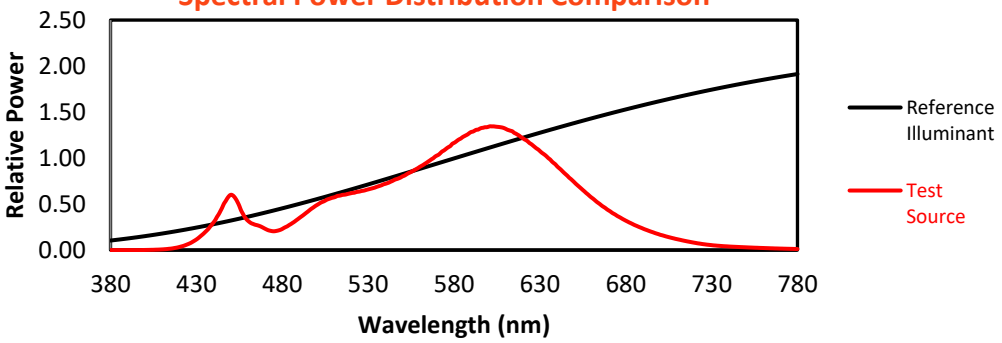
REPORT NUMBER: SP1-2407-176-7

TM-30-18

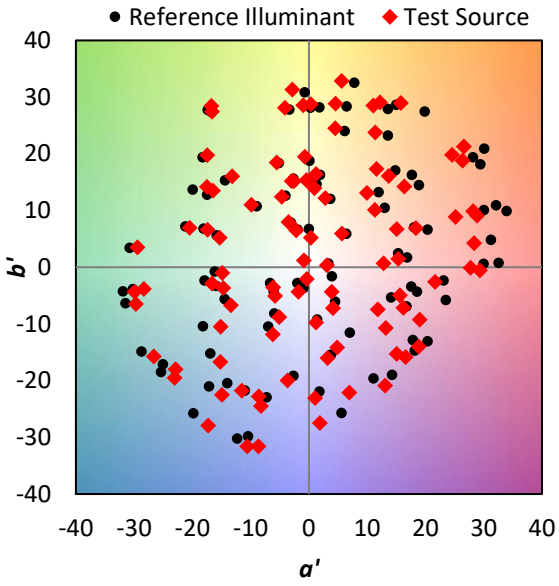
Summary

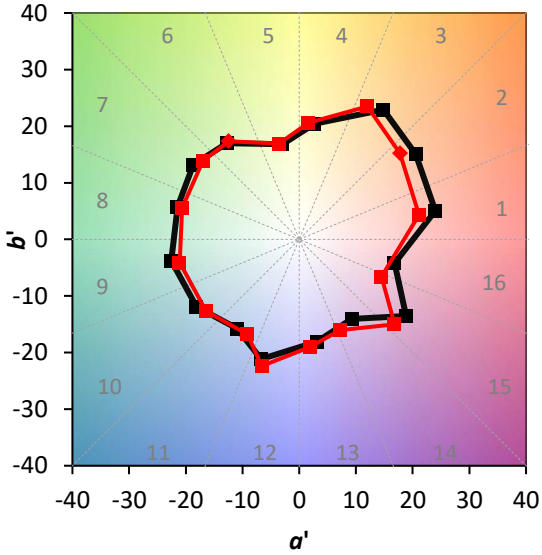
R_f = 85.8
R_g = 94.1
CIE R_a = 81.8
R_9 = -1.1

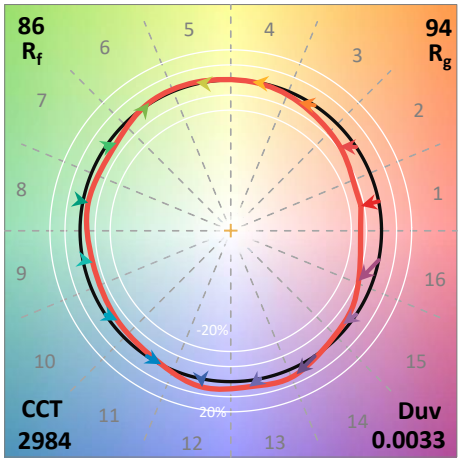
Spectral Power Distribution Comparison

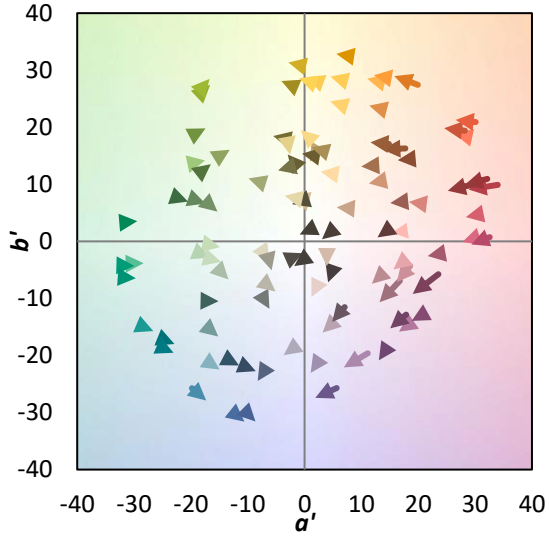


Color Vector Graphics







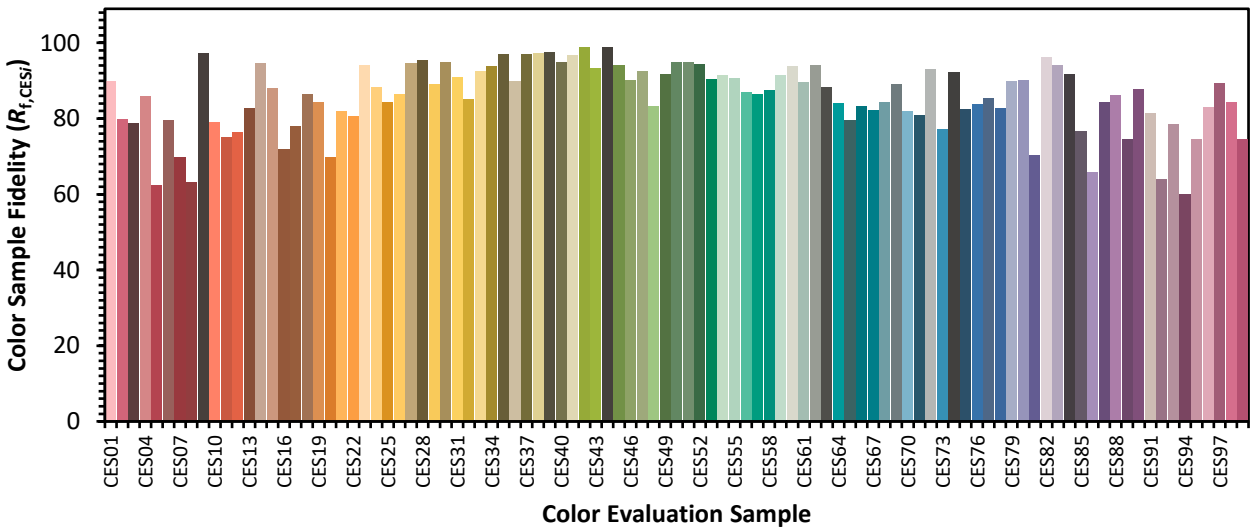


REPORT NUMBER: SP1-2407-176-7

TM-30-18

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

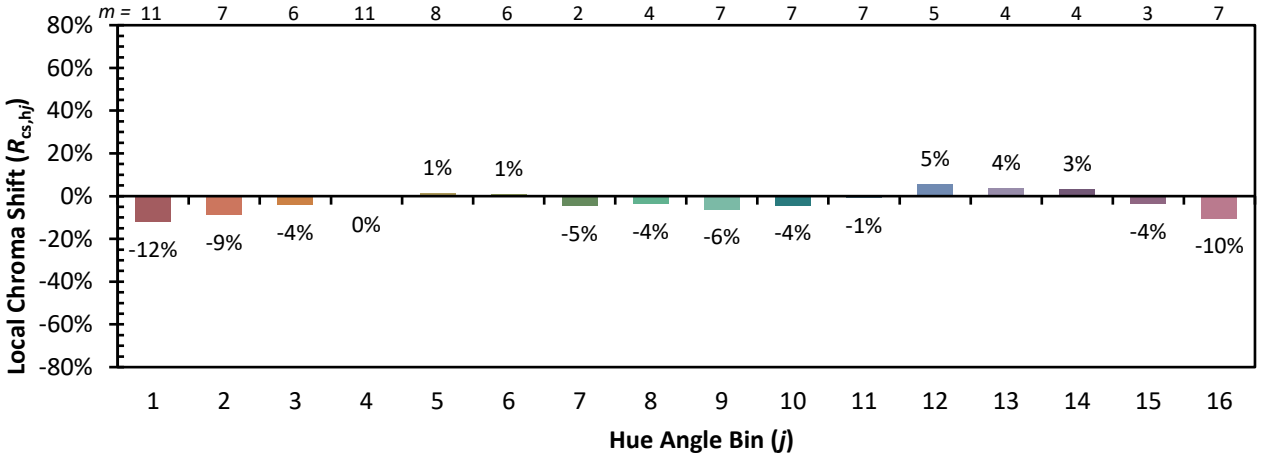
CES01 = 86	CES26 = 86	CES51 = 95	CES76 = 84
CES02 = 63	CES27 = 95	CES52 = 94	CES77 = 86
CES03 = 31	CES28 = 95	CES53 = 90	CES78 = 83
CES04 = 70	CES29 = 89	CES54 = 91	CES79 = 90
CES05 = 50	CES30 = 95	CES55 = 91	CES80 = 90
CES06 = 51	CES31 = 91	CES56 = 87	CES81 = 70
CES07 = 42	CES32 = 85	CES57 = 86	CES82 = 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	

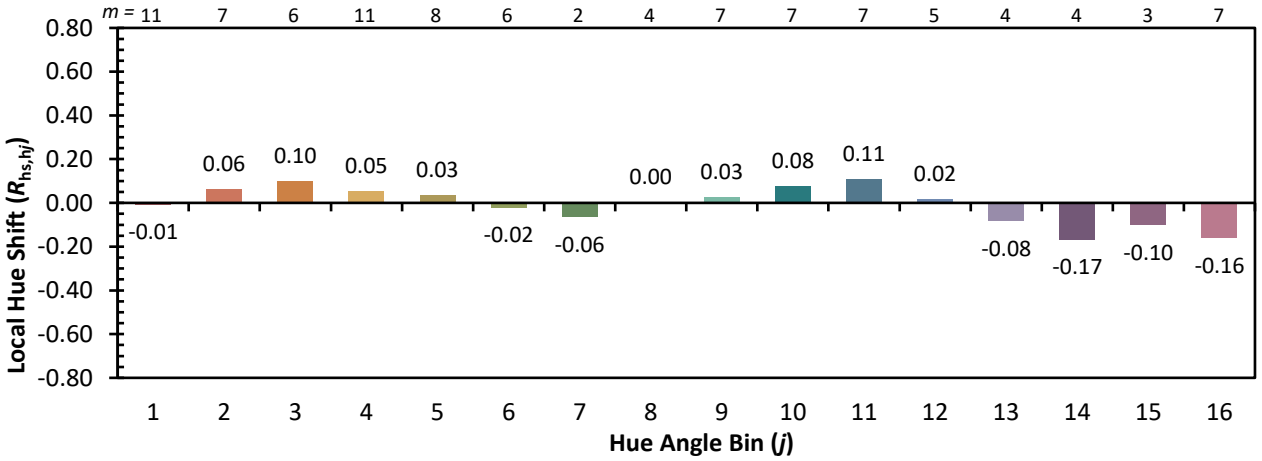


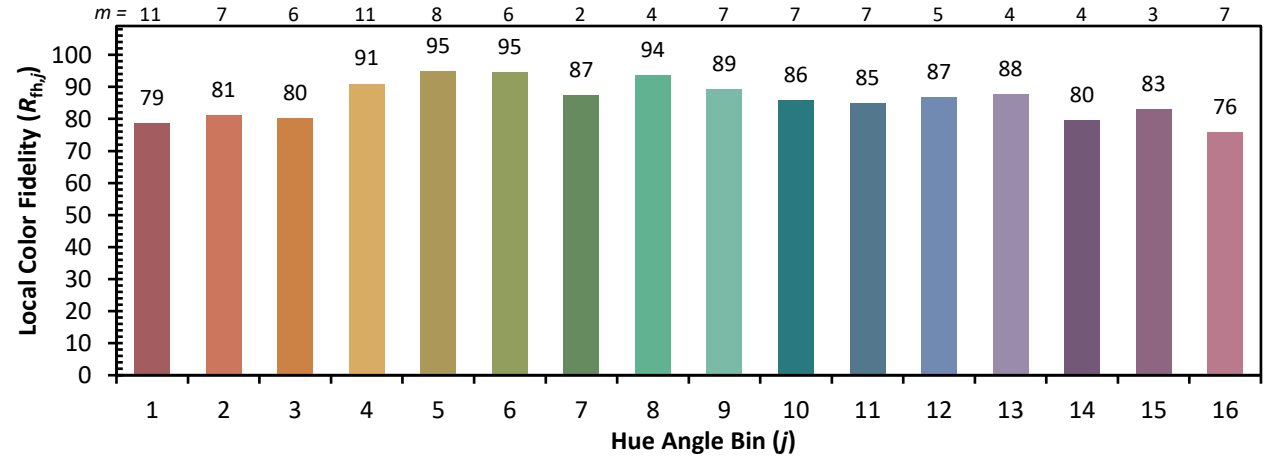
REPORT NUMBER: SP1-2407-176-7

TM-30-18

Color Rendition by Hue-Angle Bin



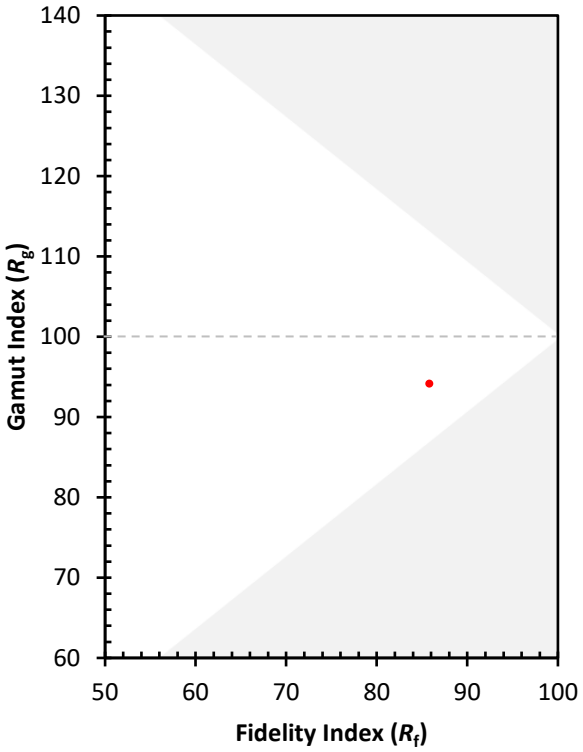


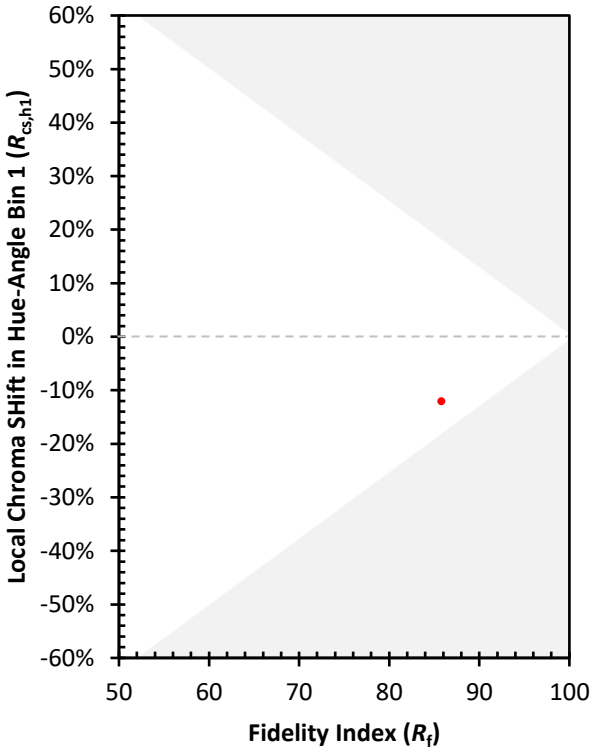


REPORT NUMBER: SP1-2407-176-7

TM-30-18

Measure Comparisons





(END OF REPORT)