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: P821174

Luminaire Tested: **TT-D5-830-24VDC-CQ-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:	P821174
	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-D5-830-24VDC-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:	7093.8 lumens
Efficiency:	N/A
Efficacy:	97.2 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type IV - Short
BUG Rating:	B2 - U2 - G1

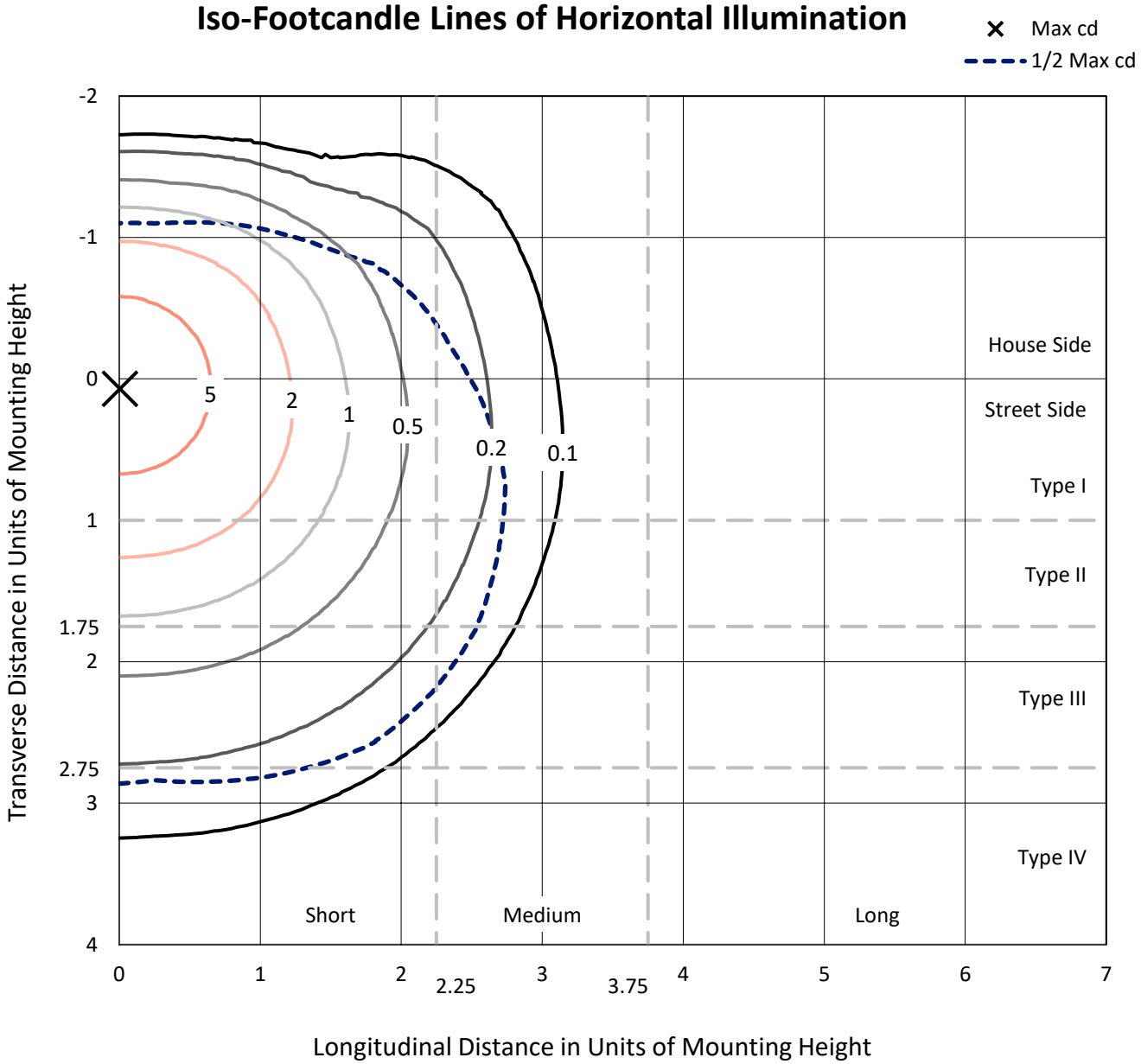
Input Watts (W):	73
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	25 FT

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

Scaled Data Report

REPORT NUMBER: P821174
CATALOG NUMBER: TT-D5-830-24VDC-CQ-HSS

Iso-Footcandle Lines of Horizontal Illumination



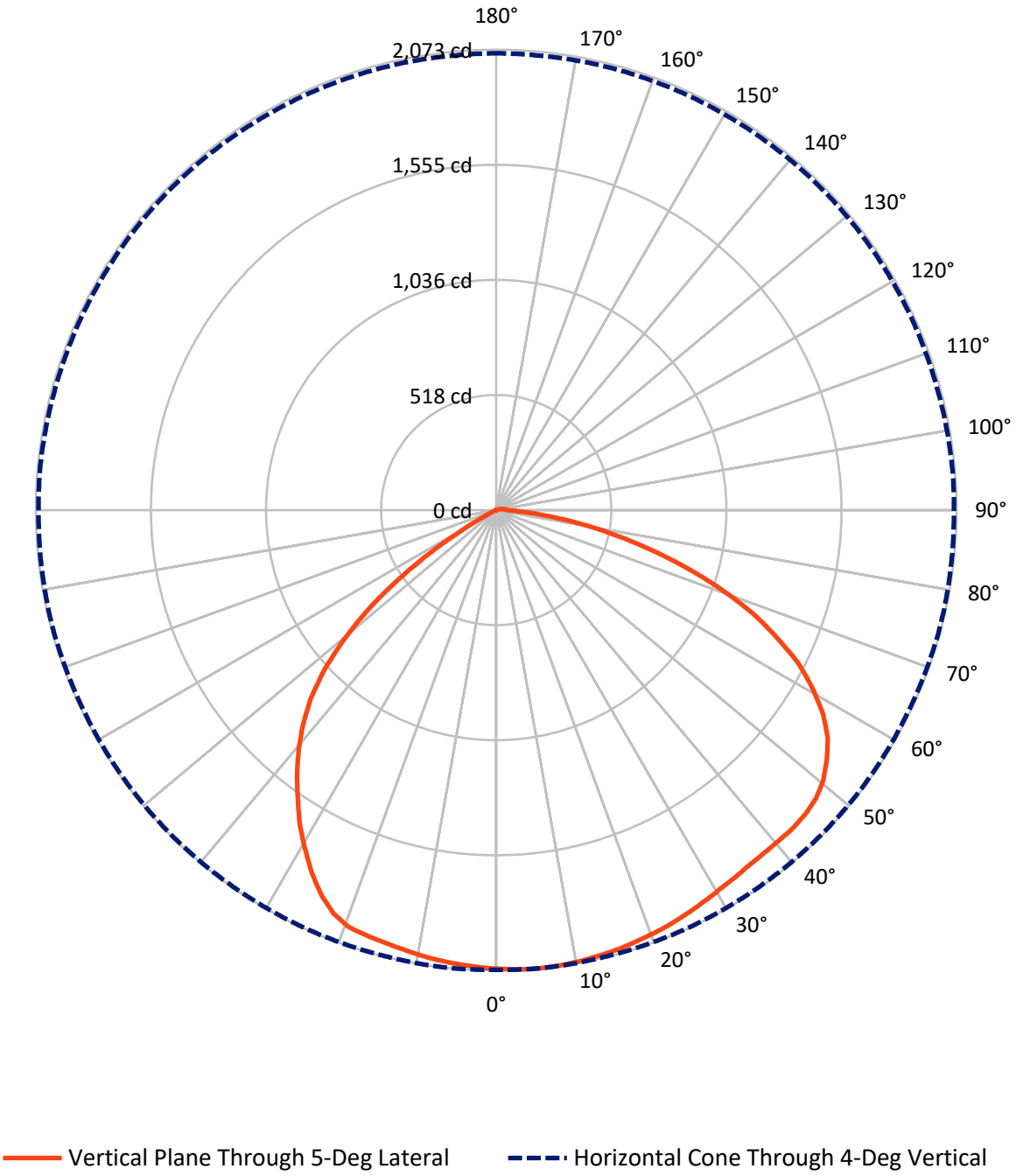
Based on 15 foot mounting height. Maximum calculated value = 9.2 fc
Type IV - Short - N/A

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

Scaled Data Report

REPORT NUMBER: P821174
CATALOG NUMBER: TT-D5-830-24VDC-CQ-HSS

Luminous Intensity Polar Plot



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

Scaled Data Report

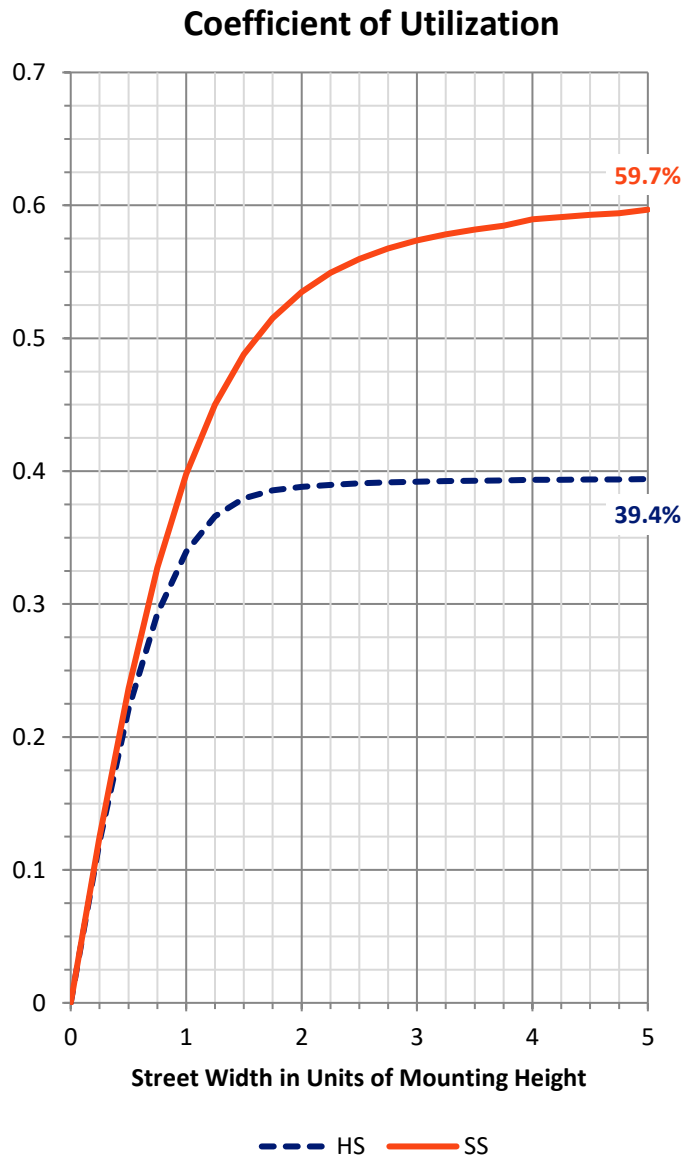
REPORT NUMBER: P821174
CATALOG NUMBER: TT-D5-830-24VDC-CQ-HSS

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2811.3	3.5	2814.8
	% Fixture	39.6	0.0	39.7
Street Side	Lumens	4259.3	19.7	4279.0
	% Fixture	60.0	0.3	60.3
Total	Lumens	7070.6	23.3	7093.8
	% Fixture	99.7	0.3	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	196.4	2.8
10°-20°	575.0	8.1
20°-30°	906.1	12.8
30°-40°	1153.1	16.3
40°-50°	1331.9	18.8
50°-60°	1304.1	18.4
60°-70°	971.3	13.7
70°-80°	526.1	7.4
80°-90°	106.6	1.5
90°-100°	13.5	0.2
100°-110°	5.2	0.1
110°-120°	1.5	0.0
120°-130°	1.0	0.0
130°-140°	0.8	0.0
140°-150°	0.6	0.0
150°-160°	0.3	0.0
160°-170°	0.2	0.0
170°-180°	0.1	0.0
0°-90°	7070.6	99.7
0°-180°	7093.8	100.0



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

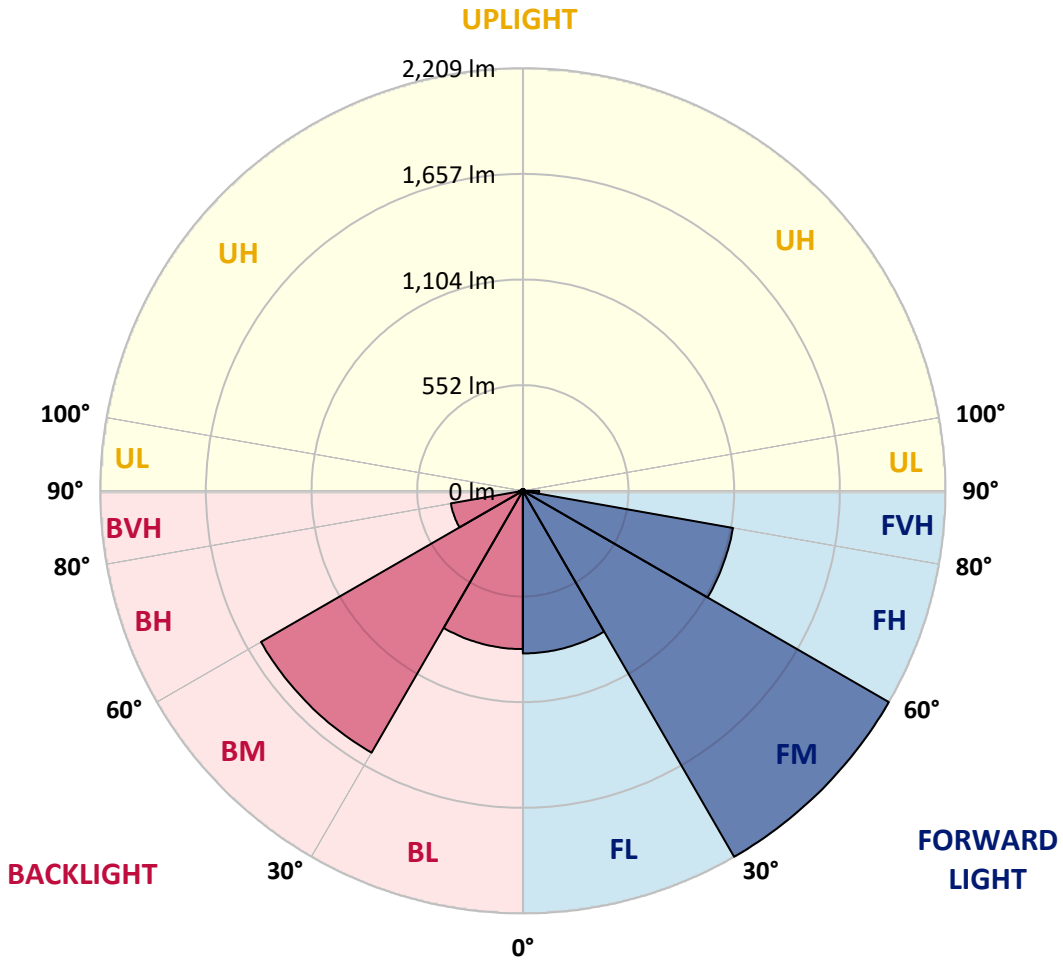
Scaled Data Report

REPORT NUMBER: P821174
CATALOG NUMBER: TT-D5-830-24VDC-CQ-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	850.0	12.0			
FM	(30°-60°)	2208.8	31.1			
FH	(60°-80°)	1115.4	15.7			G1/1800
FVH	(80°-90°)	85.1	1.2			G1/100
BL	(0°-30°)	827.4	11.7	B2/1000		
BM	(30°-60°)	1580.4	22.3	B2/2500		
BH	(60°-80°)	382.0	5.4	B1/500		G1/500
BVH	(80°-90°)	21.5	0.3			G1/100
UL	(90°-100°)	13.5	0.2		U2/50	
UH	(100°-180°)	9.8	0.1		U1/10	

BUG Rating: B2-U2-G1
Type IV Short



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

Scaled Data Report

REPORT NUMBER: P821174
CATALOG NUMBER: TT-D5-830-24VDC-CQ-HSS

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	2066.2	2066.2	2066.2	2066.2	2066.2	2066.2	2066.2	2066.2	2066.2	2066.2	2066.2
2.5°	2068.8	2071.5	2070.2	2070.2	2067.5	2068.8	2067.5	2067.5	2066.2	2064.8	2064.8
4°	2070.2	2072.8	2070.2	2070.2	2068.8	2068.8	2067.5	2064.8	2066.2	2062.2	2060.8
5°	2071.5	2072.8	2071.5	2071.5	2068.8	2067.5	2064.8	2064.8	2063.5	2060.8	2060.8
7.5°	2068.8	2070.2	2070.2	2068.8	2066.2	2063.5	2062.2	2060.8	2059.5	2055.5	2055.5
10°	2063.5	2066.2	2063.5	2063.5	2062.2	2059.5	2055.5	2054.2	2050.2	2047.5	2046.2
12.5°	2058.2	2059.5	2058.2	2058.2	2055.5	2051.5	2050.2	2047.5	2042.2	2038.2	2038.2
15°	2050.2	2052.8	2051.5	2050.2	2048.8	2044.8	2040.8	2036.8	2032.8	2028.8	2028.8
17.5°	2040.8	2042.2	2043.5	2042.2	2039.5	2036.8	2032.8	2027.5	2023.5	2019.5	2018.2
20°	2030.2	2032.8	2032.8	2032.8	2030.2	2027.5	2022.2	2016.8	2014.2	2008.8	2007.5
22.5°	2019.5	2022.2	2020.8	2022.2	2020.8	2016.8	2011.5	2006.2	2000.8	1996.8	1994.1
25°	2008.8	2008.8	2008.8	2008.8	2008.8	2003.5	1998.2	1991.5	1986.1	1979.5	1979.5
27.5°	1995.5	1995.5	1996.8	1996.8	1995.5	1991.5	1984.8	1976.8	1968.8	1962.1	1959.5
30°	1983.5	1982.1	1984.8	1987.5	1986.1	1982.1	1974.1	1964.8	1952.8	1943.5	1935.5
32.5°	1968.8	1972.8	1975.5	1980.8	1982.1	1976.8	1967.5	1955.5	1943.5	1926.1	1911.4
35°	1963.5	1963.5	1970.1	1978.1	1980.8	1978.1	1964.8	1951.5	1934.1	1908.8	1891.4
37.5°	1958.1	1959.5	1970.1	1982.1	1986.1	1986.1	1971.5	1954.1	1930.1	1894.1	1872.8
40°	1955.5	1958.1	1971.5	1988.8	1999.5	1998.2	1980.8	1959.5	1930.1	1883.4	1856.8
42.5°	1952.8	1958.1	1972.8	1996.8	2012.8	2011.5	1992.8	1964.8	1927.5	1870.1	1839.4
45°	1948.8	1952.8	1972.8	2003.5	2024.8	2028.8	2007.5	1971.5	1927.5	1858.1	1818.1
47.5°	1936.8	1938.1	1964.8	2000.8	2032.8	2038.2	2016.8	1974.1	1922.1	1838.1	1791.4
50°	1904.8	1908.8	1939.5	1987.5	2024.8	2032.8	2014.2	1967.5	1908.8	1804.7	1748.7
52.5°	1863.4	1863.4	1900.8	1954.1	1999.5	2012.8	1995.5	1943.5	1875.4	1755.4	1691.4
55°	1802.1	1811.4	1850.1	1906.1	1955.5	1974.1	1950.1	1899.4	1820.7	1692.7	1622.0
57.5°	1732.7	1735.4	1775.4	1842.1	1892.8	1904.8	1884.8	1824.7	1748.7	1618.0	1534.0
60°	1632.7	1638.0	1688.7	1747.4	1802.1	1818.1	1792.7	1732.7	1652.7	1522.0	1436.6
62.5°	1522.0	1530.0	1575.3	1635.3	1687.4	1712.7	1682.0	1619.3	1540.6	1407.2	1332.5
65°	1388.6	1391.2	1440.6	1508.6	1560.6	1570.0	1543.3	1481.9	1403.2	1275.2	1208.5
67.5°	1235.2	1248.5	1296.5	1347.2	1392.6	1403.2	1384.6	1313.9	1251.2	1137.8	1072.4
70°	1087.1	1080.4	1120.5	1171.1	1212.5	1221.8	1200.5	1135.1	1076.4	969.7	919.0
72.5°	908.4	903.0	945.7	984.4	1024.4	1019.1	997.7	945.7	895.0	804.3	757.6
75°	728.3	723.0	756.3	789.7	809.7	812.3	797.7	759.0	704.3	633.6	597.6
77.5°	552.2	557.6	572.2	600.2	618.9	626.9	601.6	562.9	528.2	473.5	446.8
80°	393.5	394.8	400.2	420.2	433.5	433.5	421.5	390.8	352.1	313.5	300.1
82.5°	248.1	253.4	253.4	273.4	273.4	262.8	257.4	237.4	217.4	186.7	168.1
85°	136.1	133.4	141.4	142.7	141.4	133.4	125.4	113.4	100.0	78.7	70.7
87.5°	60.0	58.7	58.7	58.7	57.4	52.0	44.0	34.7	24.0	14.7	10.7
90°	46.7	46.7	45.4	42.7	38.7	34.7	28.0	21.3	13.3	5.3	2.7
92.5°	42.7	42.7	41.4	40.0	36.0	32.0	25.3	18.7	12.0	5.3	2.7
95°	37.3	36.0	36.0	33.3	30.7	26.7	22.7	16.0	10.7	4.0	2.7
97.5°	30.7	29.3	29.3	28.0	25.3	21.3	18.7	13.3	9.3	4.0	2.7
100°	22.7	24.0	22.7	21.3	20.0	17.3	14.7	10.7	6.7	2.7	2.7
102.5°	17.3	17.3	16.0	16.0	14.7	13.3	10.7	8.0	5.3	2.7	1.3
105°	12.0	12.0	12.0	10.7	10.7	9.3	8.0	5.3	4.0	2.7	1.3
107.5°	6.7	6.7	6.7	6.7	6.7	6.7	5.3	4.0	2.7	1.3	1.3

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

Scaled Data Report

REPORT NUMBER: P821174
CATALOG NUMBER: TT-D5-830-24VDC-CQ-HSS

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
110°	4.0	*4.0*	4.0	4.0	4.0	4.0	2.7	2.7	1.3	1.3	1.3
112.5°	1.3	*1.3*	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	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
117.5°	0.0	*0.0*	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	0.0	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	*0.0*	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3	1.3
142.5°	0.0	*0.0*	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
145°	1.3	*1.3*	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
147.5°	1.3	*1.3*	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
150°	1.3	*0.0*	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
152.5°	0.0	*0.0*	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
155°	0.0	*0.0*	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
157.5°	0.0	*0.0*	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
160°	0.0	*0.0*	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
162.5°	0.0	*0.0*	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
165°	0.0	*0.0*	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
167.5°	0.0	*0.0*	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
170°	0.0	*0.0*	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
172.5°	0.0	*0.0*	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3	1.3
175°	0.0	*0.0*	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3	1.3
177.5°	0.0	*0.0*	0.0	0.0	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: P821174
CATALOG NUMBER: TT-D5-830-24VDC-CQ-HSS

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2066.2	2066.2	2066.2	2066.2	2066.2	2066.2	2066.2	2066.2	2066.2	2066.2
2.5°	2063.5	2059.5	2062.2	2060.8	2062.2	2059.5	2059.5	2059.5	2060.8	2058.2
4°	*2062.2*	*2059.5*	*2059.5*	*2059.5*	*2059.5*	*2056.8*	*2056.8*	*2056.8*	*2055.5*	*2056.8*
5°	2059.5	2058.2	2056.8	2055.5	2056.8	2054.2	2052.8	2052.8	2052.8	2054.2
7.5°	2054.2	2050.2	2050.2	2046.2	2047.5	2046.2	2044.8	2046.2	2044.8	2044.8
10°	2044.8	2042.2	2040.8	2038.2	2038.2	2035.5	2034.2	2034.2	2034.2	2032.8
12.5°	2035.5	2032.8	2031.5	2028.8	2027.5	2024.8	2023.5	2024.8	2022.2	2022.2
15°	2024.8	2022.2	2020.8	2020.8	2018.2	2015.5	2014.2	2011.5	2011.5	2011.5
17.5°	2015.5	2012.8	2014.2	2011.5	2010.2	2007.5	2007.5	2002.2	2002.2	2000.8
20°	2006.2	2003.5	2003.5	2002.2	2002.2	1999.5	1995.5	1992.8	1991.5	1991.5
22.5°	1994.1	1990.1	1983.5	1974.1	1968.8	1964.8	1963.5	1959.5	1958.1	1955.5
25°	1975.5	1964.8	1950.1	1934.1	1918.1	1910.1	1907.4	1902.1	1902.1	1902.1
27.5°	1952.8	1932.8	1912.8	1888.8	1864.8	1848.8	1838.1	1832.7	1830.1	1830.1
30°	1923.5	1898.1	1870.1	1839.4	1812.7	1783.4	1764.7	1754.1	1748.7	1750.0
32.5°	1896.8	1864.8	1832.7	1794.1	1758.1	1723.4	1691.4	1675.4	1668.7	1666.0
35°	1870.1	1834.1	1795.4	1754.1	1707.4	1656.7	1614.0	1590.0	1576.6	1578.0
37.5°	1850.1	1807.4	1764.7	1714.0	1660.7	1599.3	1544.6	1505.9	1489.9	1492.6
40°	1828.7	1780.7	1734.0	1675.4	1612.7	1539.3	1468.6	1416.6	1397.9	1393.9
42.5°	1808.7	1752.7	1699.4	1636.7	1558.0	1475.3	1388.6	1327.2	1299.2	1295.2
45°	1783.4	1720.7	1663.3	1591.3	1504.6	1401.9	1300.5	1220.5	1191.2	1179.1
47.5°	1750.0	1680.7	1616.7	1534.0	1439.3	1323.2	1196.5	1097.8	1060.4	1051.1
50°	1700.7	1620.7	1555.3	1461.9	1347.2	1219.2	1077.8	956.4	907.0	900.4
52.5°	1635.3	1554.0	1480.6	1373.9	1233.8	1083.1	923.0	797.7	740.3	736.3
55°	1556.6	1468.6	1388.6	1268.5	1104.5	929.7	763.0	604.2	548.2	541.6
57.5°	1464.6	1373.9	1287.2	1139.1	949.7	755.0	561.6	409.5	356.1	342.8
60°	1363.2	1269.9	1172.5	992.4	741.6	534.9	340.1	217.4	177.4	164.1
62.5°	1264.5	1163.1	1060.4	817.7	508.2	305.5	154.7	62.7	40.0	38.7
65°	1148.5	1052.4	947.1	658.9	321.5	137.4	45.4	1.3	0.0	0.0
67.5°	1013.7	932.4	839.0	589.6	284.1	120.0	38.7	1.3	0.0	0.0
70°	869.7	805.7	723.0	506.9	244.1	101.4	33.3	0.0	0.0	0.0
72.5°	717.6	662.9	601.6	421.5	202.7	84.0	26.7	0.0	0.0	0.0
75°	562.9	528.2	473.5	333.5	157.4	64.0	20.0	0.0	0.0	0.0
77.5°	417.5	389.5	349.5	245.4	118.7	46.7	14.7	0.0	0.0	0.0
80°	281.4	260.1	237.4	166.7	80.0	30.7	9.3	0.0	0.0	0.0
82.5°	164.1	148.1	133.4	94.7	44.0	17.3	4.0	0.0	0.0	0.0
85°	66.7	61.4	58.7	40.0	17.3	5.3	1.3	0.0	0.0	0.0
87.5°	8.0	6.7	6.7	4.0	1.3	0.0	0.0	0.0	0.0	0.0
90°	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	1.3	0.0	0.0	0.0	0.0	0.0
95°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0
97.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	0.0
100°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
102.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
105°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
107.5°	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: P821174
CATALOG NUMBER: TT-D5-830-24VDC-CQ-HSS

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
110°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
112.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
115°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
117.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
120°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
122.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
125°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
127.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
130°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
132.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
135°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
137.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0
140°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0
142.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	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
147.5°	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0	1.3
150°	1.3	1.3	1.3	1.3	1.3	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
155°	1.3	1.3	1.3	1.3	1.3	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
160°	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	0.0	0.0	0.0	0.0	0.0
165°	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	0.0	0.0	0.0	0.0	0.0
170°	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	0.0	0.0	0.0	0.0	0.0
175°	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	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

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

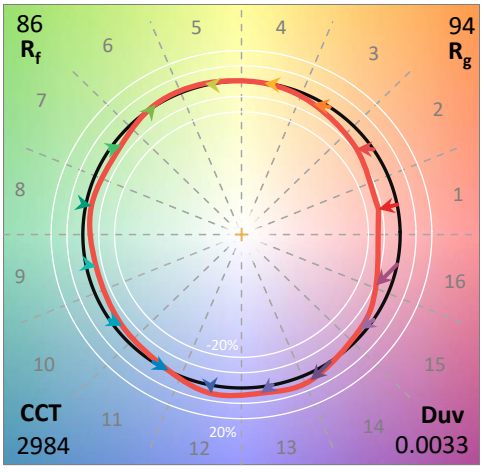
Test Information

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

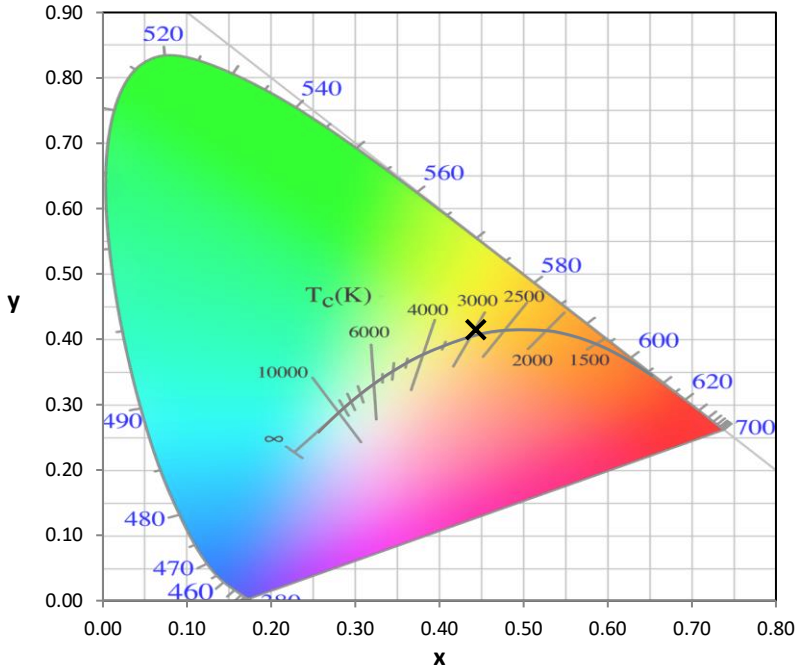
Stabilization Time:	29M
Operation Time:	1H 29M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-7

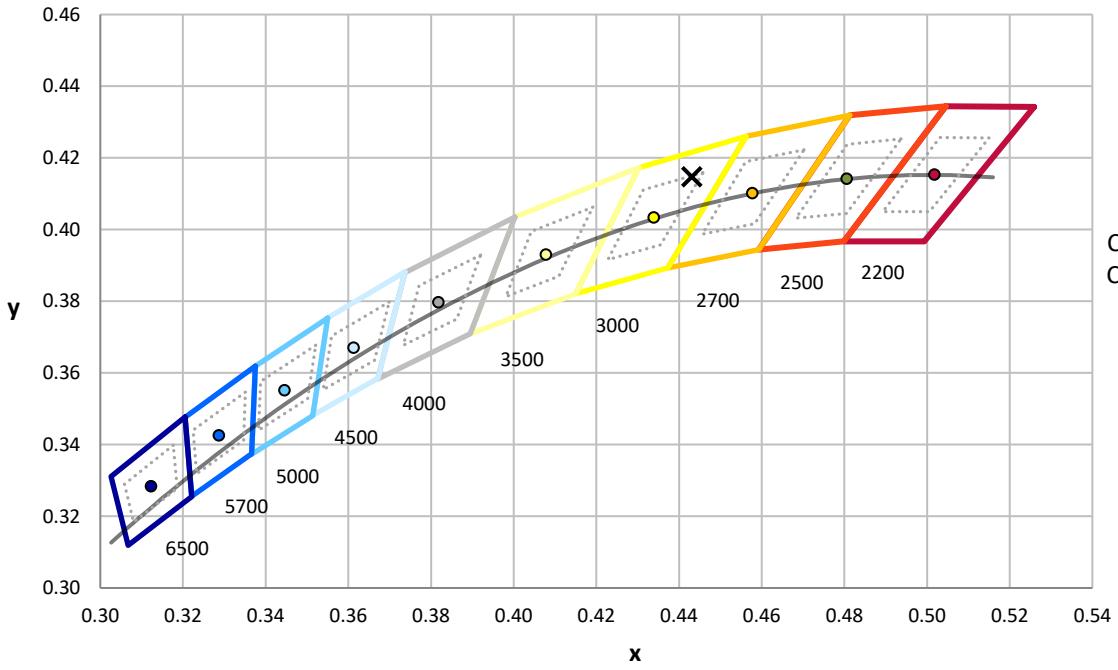
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

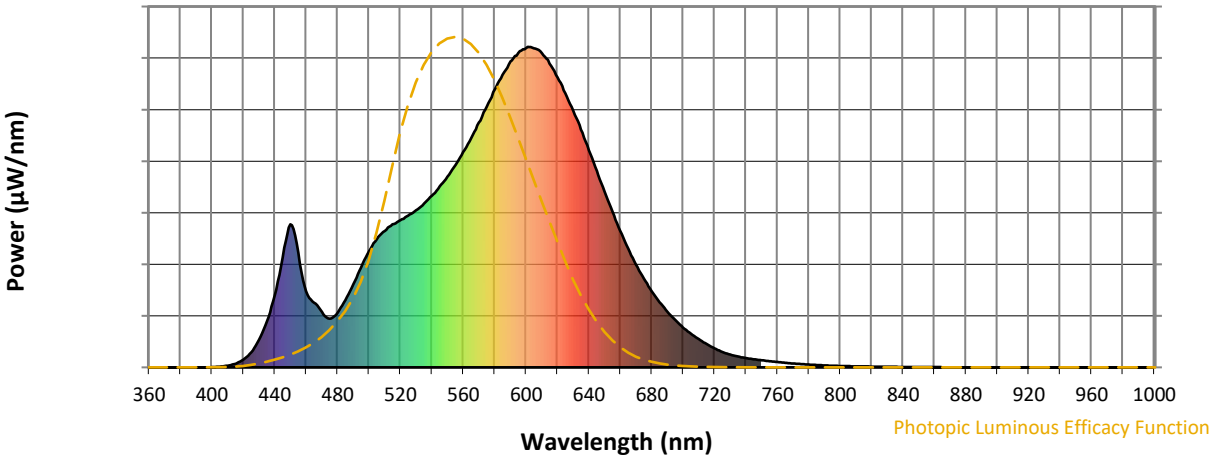


CCT = 2984K
CIE x = 0.4431
CIE y = 0.4147
Duv = 0.0033

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-7

Photopic Flux vs. Wavelength

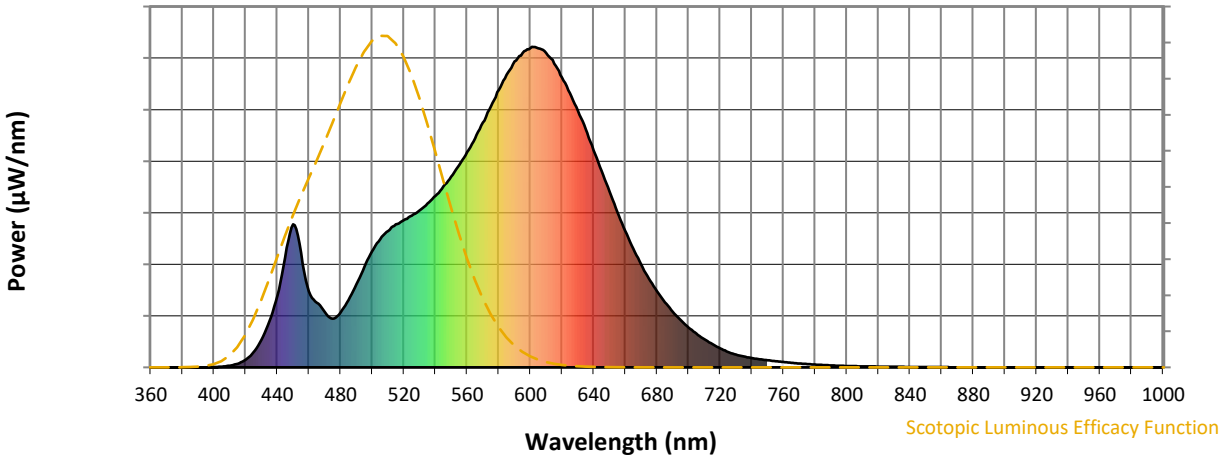


Photopic Lumens: NR

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

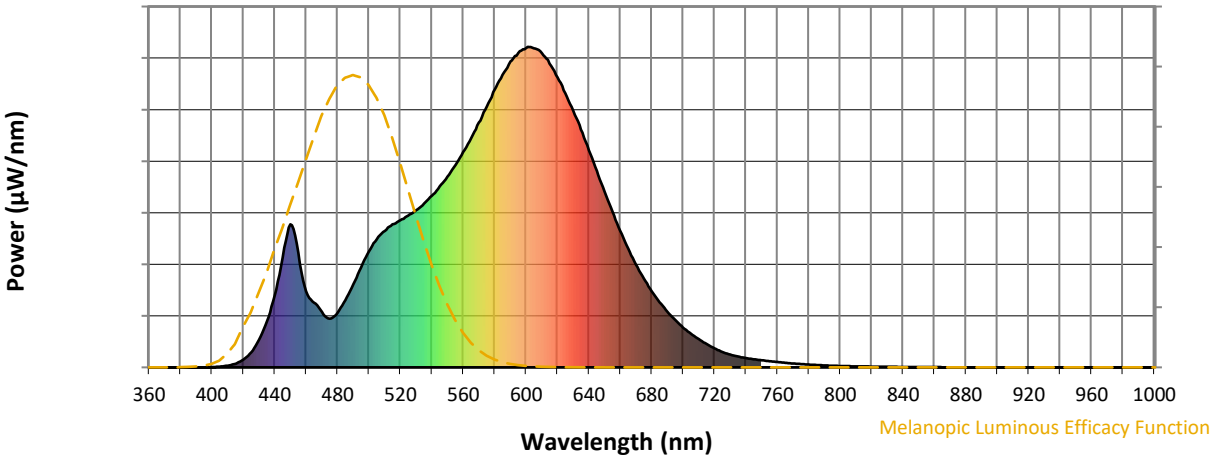


Scotopic Lumens: NR **S/P: 1.32**

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			

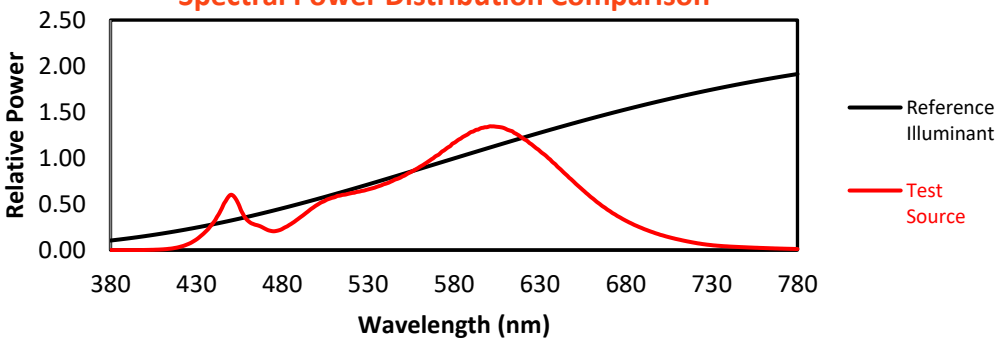
REPORT NUMBER: SP1-2407-176-7

TM-30-18

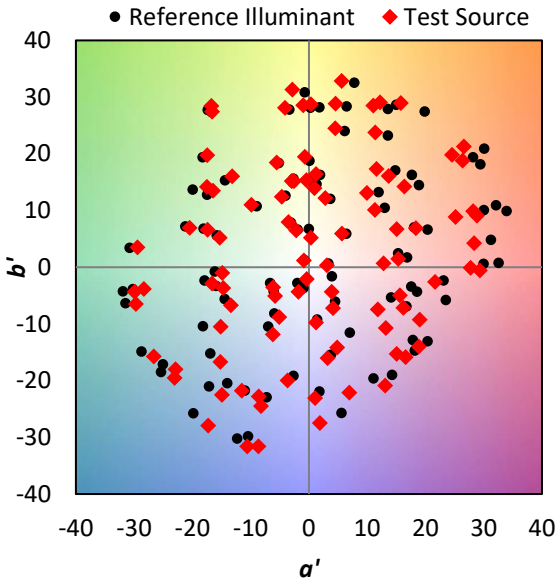
Summary

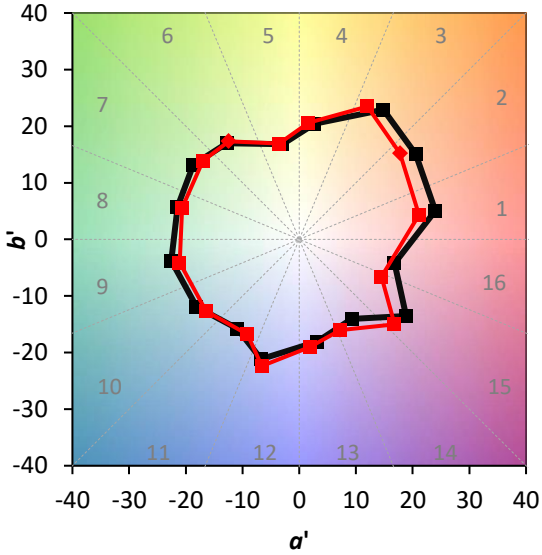
R_f = 85.8
R_g = 94.1
CIE R_a = 81.8
R_9 = -1.1

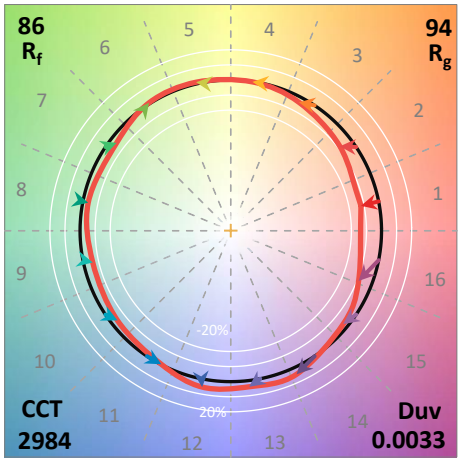
Spectral Power Distribution Comparison

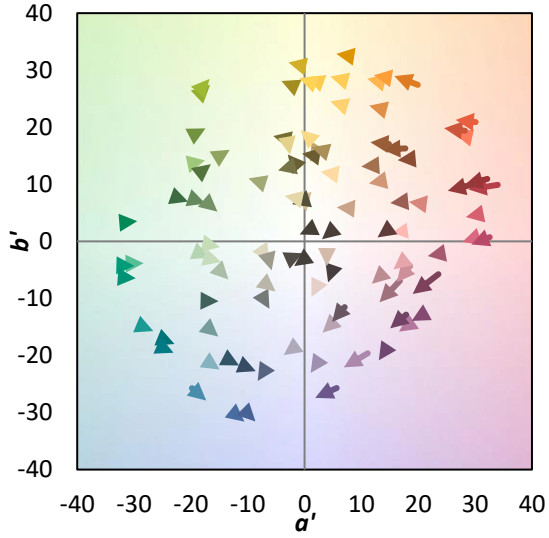


Color Vector Graphics







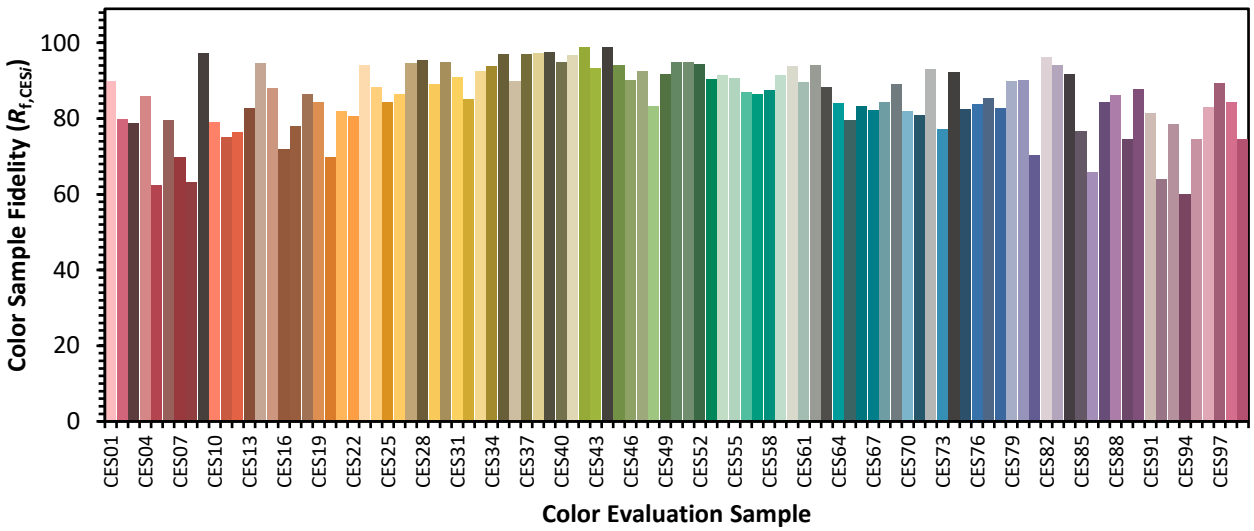


REPORT NUMBER: SP1-2407-176-7

TM-30-18

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

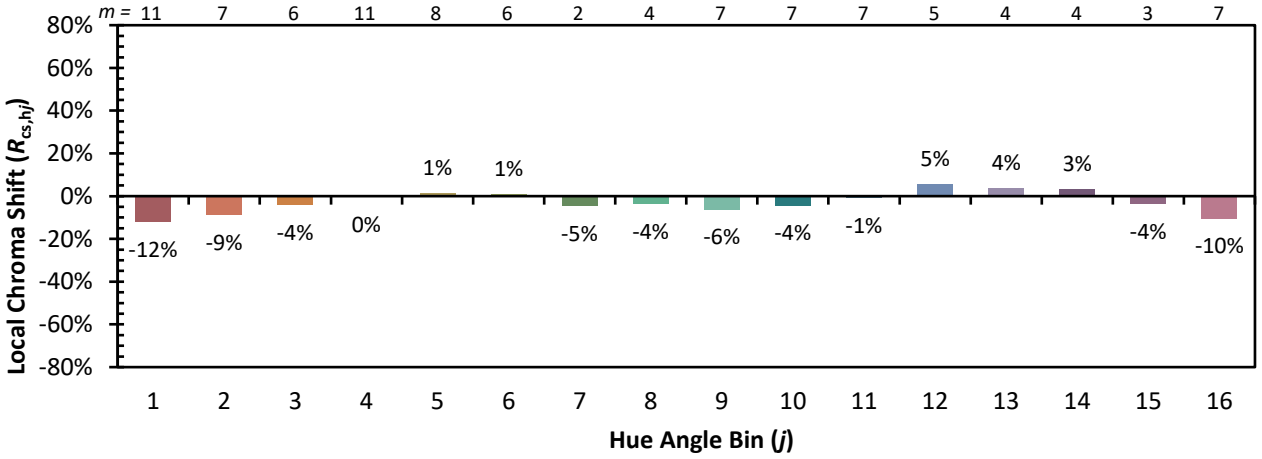
CES01 = 86	CES26 = 86	CES51 = 95	CES76 = 84
CES02 = 63	CES27 = 95	CES52 = 94	CES77 = 86
CES03 = 31	CES28 = 95	CES53 = 90	CES78 = 83
CES04 = 70	CES29 = 89	CES54 = 91	CES79 = 90
CES05 = 50	CES30 = 95	CES55 = 91	CES80 = 90
CES06 = 51	CES31 = 91	CES56 = 87	CES81 = 70
CES07 = 42	CES32 = 85	CES57 = 86	CES82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

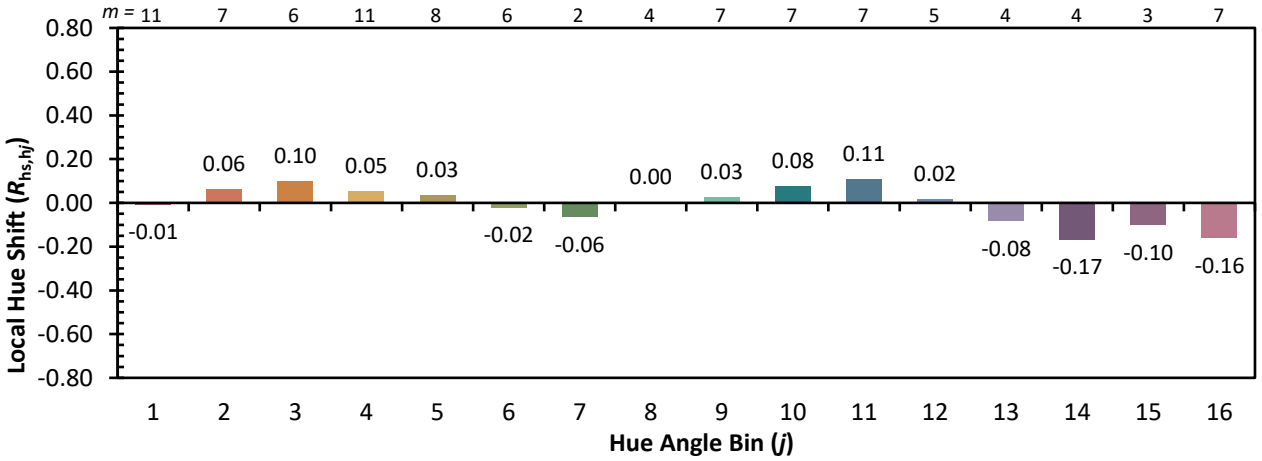


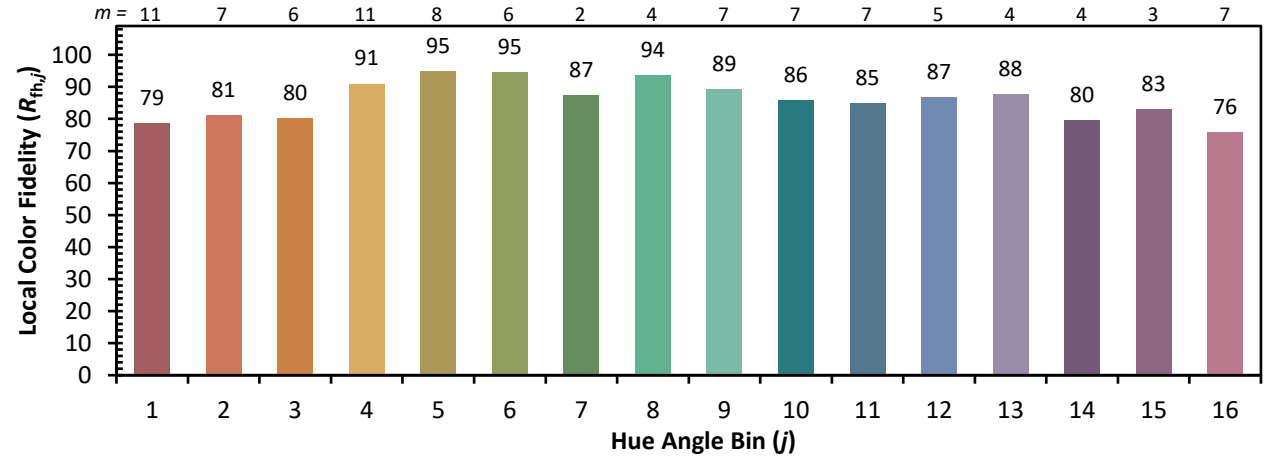
REPORT NUMBER: SP1-2407-176-7

TM-30-18

Color Rendition by Hue-Angle Bin



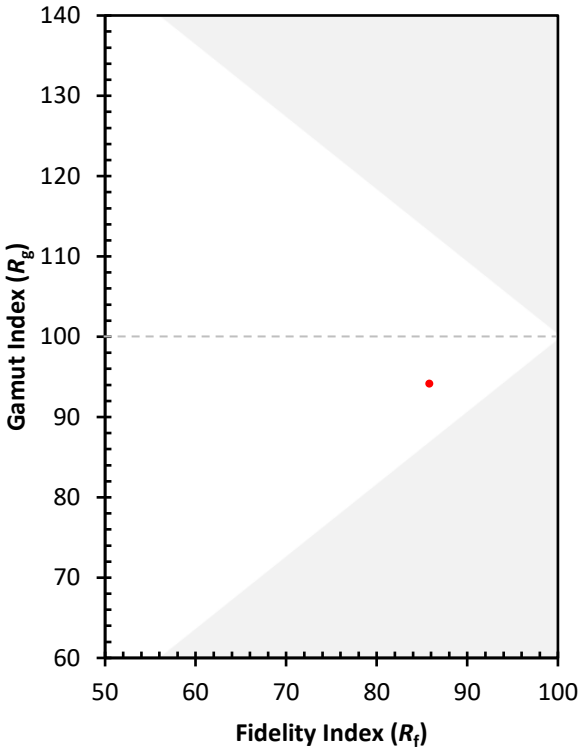


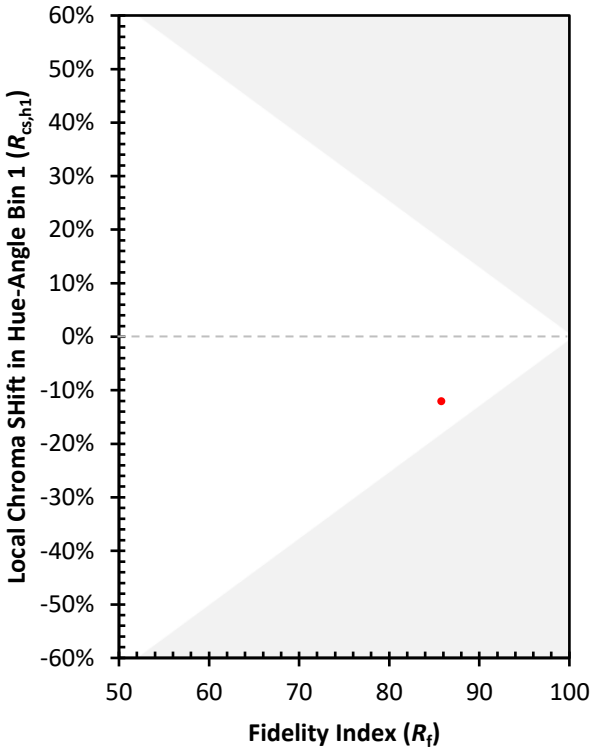


REPORT NUMBER: SP1-2407-176-7

TM-30-18

Measure Comparisons





(END OF REPORT)