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: P436857

Luminaire Tested: **TT-D4-830-U-WQ-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:	P436857
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2010-017-2)
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-WQ-HSS
Description:	TOPTIER LED PARKING GARAGE LUMINAIRE
	3000K, 80 CRI LEDS AND WIDE DISTRIBUTION WITH HOUSE SIDE SHIELD
Light Source:	-
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	5428.1 lumens
Efficiency:	N/A
Efficacy:	94.2 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type IV - Short
BUG Rating:	B2 - U2 - G3

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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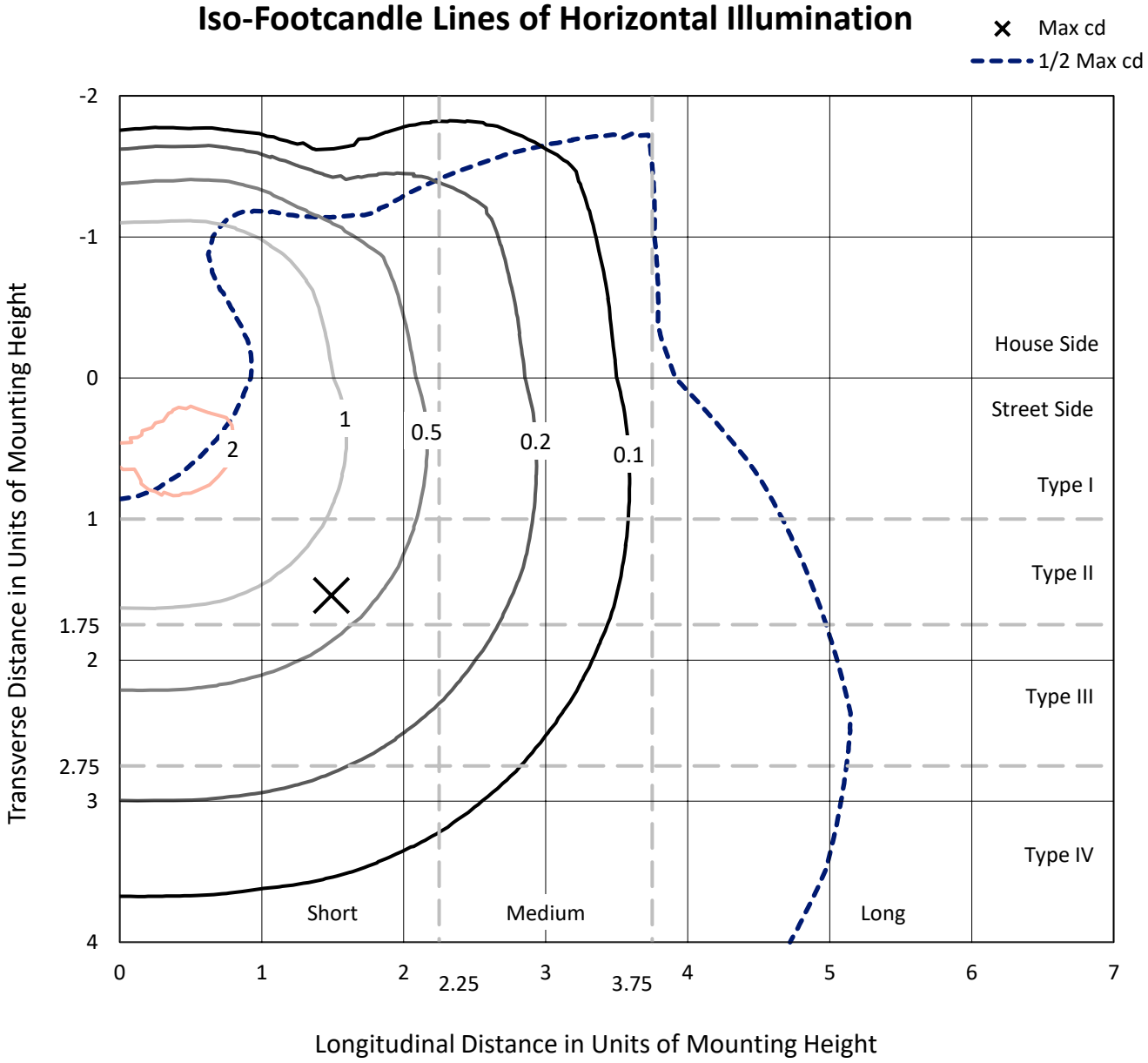
Iso-Footcandle Lines of Horizontal Illumination



Based on 15 foot mounting height. Maximum calculated value = 2.1 fc
Type IV - Short - N/A

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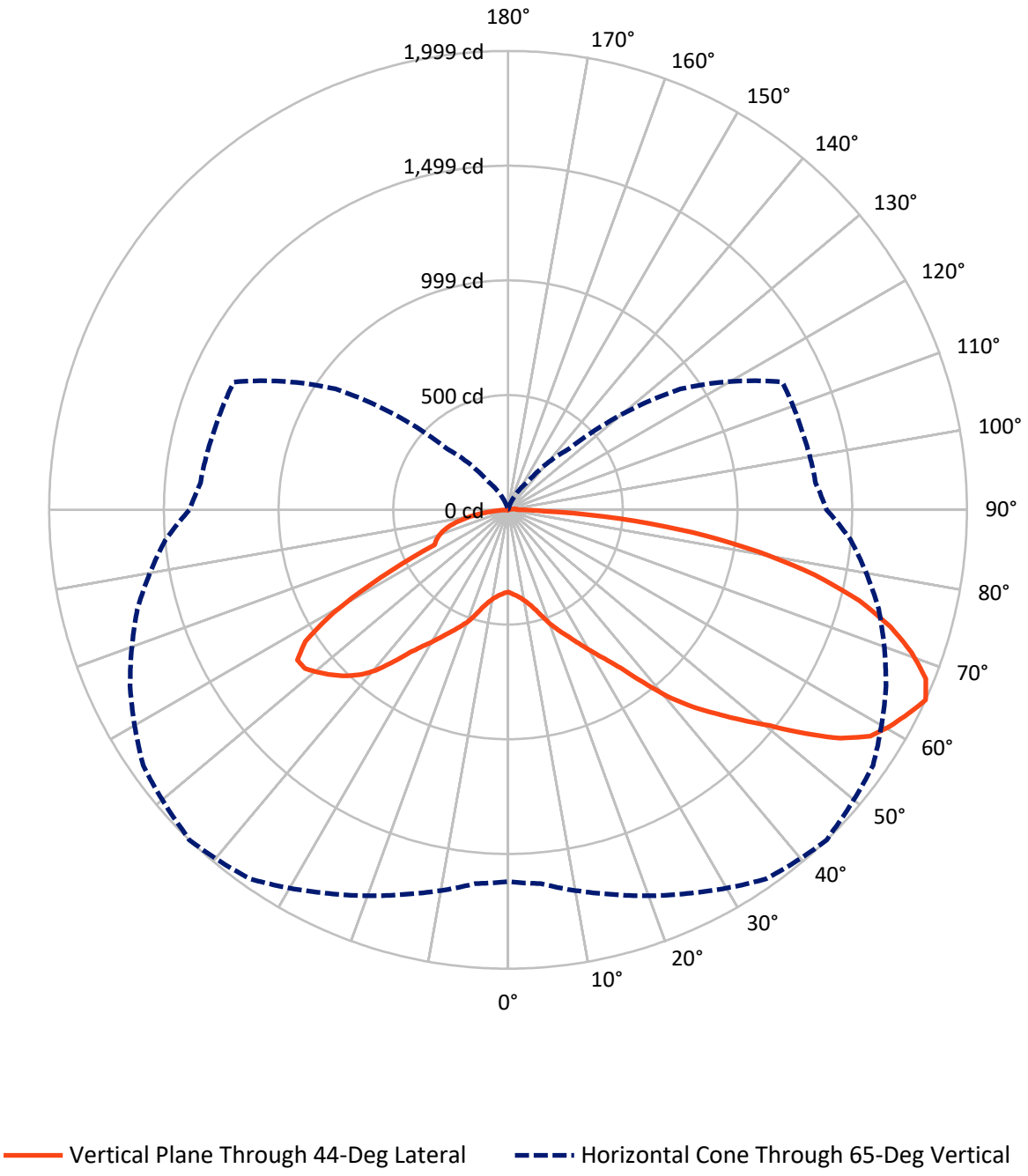
Luminous Intensity Polar Plot



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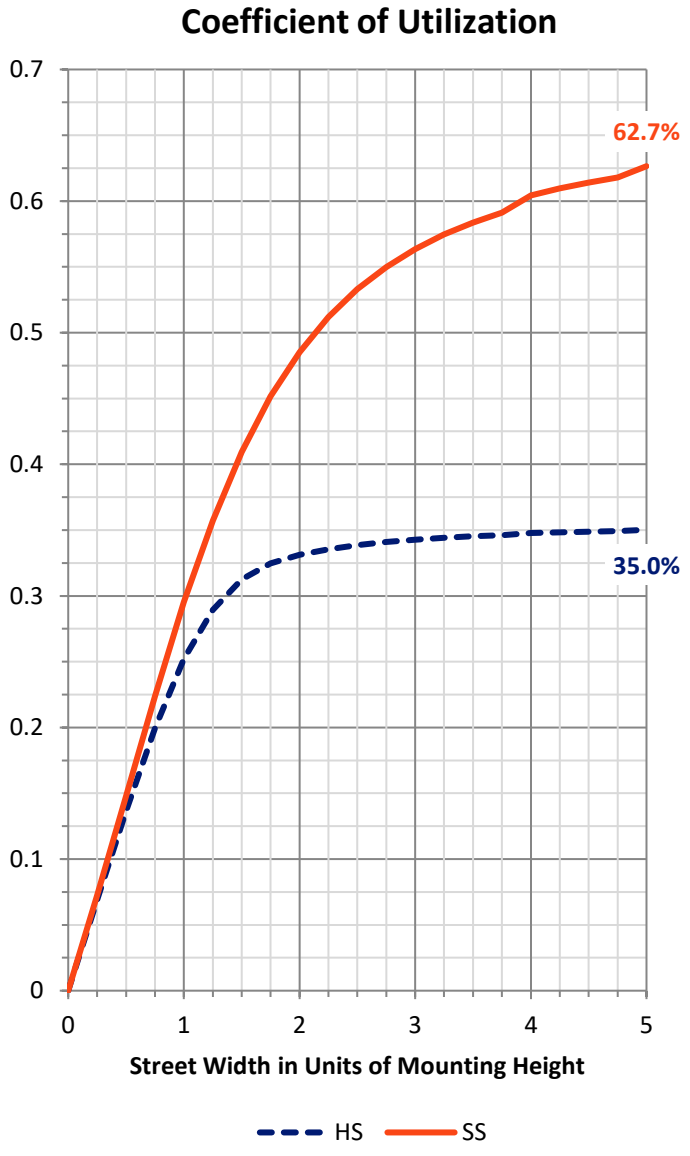
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1911.9	1.3	1913.2
	% Fixture	35.2	0.0	35.2
Street Side	Lumens	3492.9	22.0	3514.9
	% Fixture	64.3	0.4	64.8
Total	Lumens	5404.8	23.3	5428.1
	% Fixture	99.6	0.4	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.3	0.7
10°-20°	128.9	2.4
20°-30°	276.3	5.1
30°-40°	500.4	9.2
40°-50°	834.9	15.4
50°-60°	1156.5	21.3
60°-70°	1198.5	22.1
70°-80°	964.5	17.8
80°-90°	308.5	5.7
90°-100°	15.6	0.3
100°-110°	5.0	0.1
110°-120°	1.0	0.0
120°-130°	0.6	0.0
130°-140°	0.4	0.0
140°-150°	0.3	0.0
150°-160°	0.2	0.0
160°-170°	0.1	0.0
170°-180°	0.0	0.0
0°-90°	5404.8	99.6
0°-180°	5428.1	100.0



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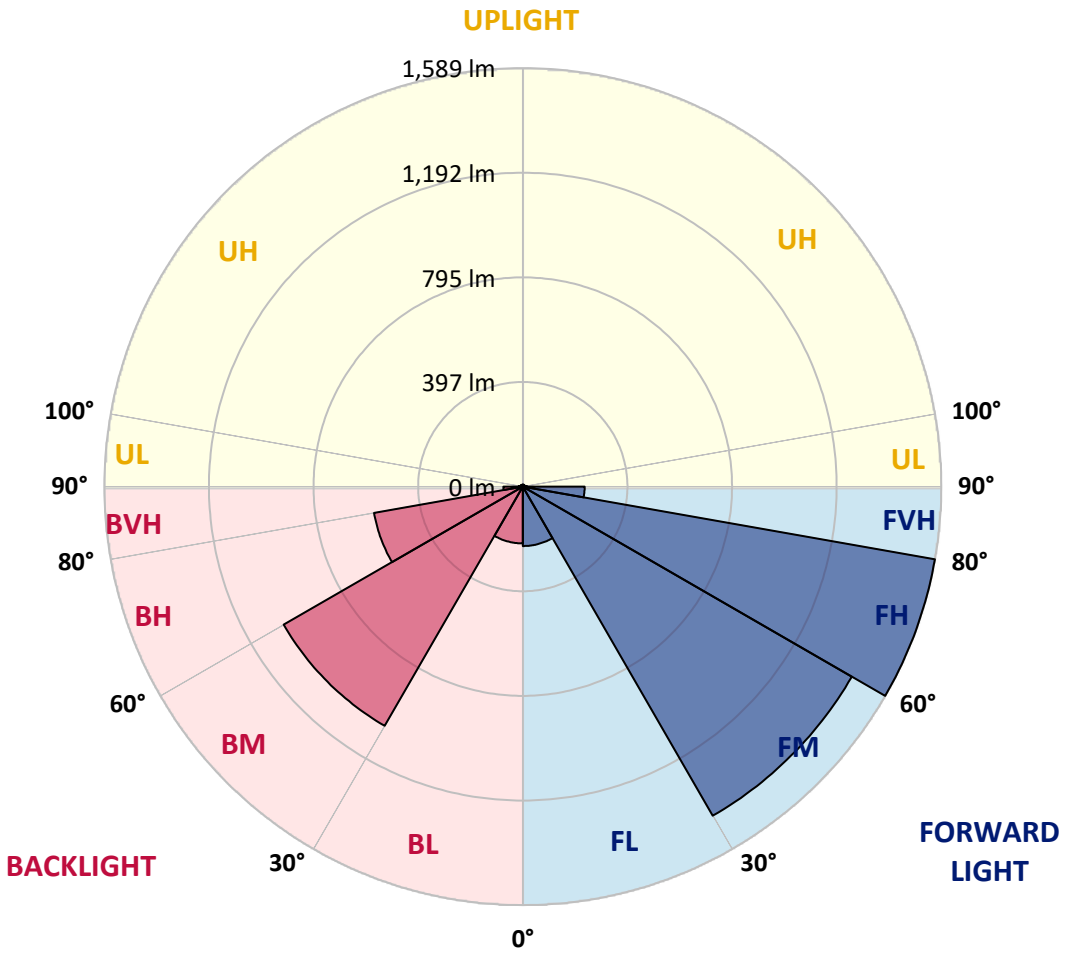
LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	225.7	4.2			
FM	(30°-60°)	1443.1	26.6			
FH	(60°-80°)	1589.4	29.3			G1/1800
FVH	(80°-90°)	234.7	4.3			G3/500
BL	(0°-30°)	215.8	4.0	B1/500		
BM	(30°-60°)	1048.7	19.3	B2/2500		
BH	(60°-80°)	573.6	10.6	B2/1000		G2/1000
BVH	(80°-90°)	73.8	1.4			G1/100
UL	(90°-100°)	15.6	0.3		U2/50	
UH	(100°-180°)	7.7	0.1		U1/10	

BUG Rating: B2-U2-G3
Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	44°	45°	55°	65°	75°	85°
0°	358.2	358.2	358.2	358.2	358.2	*358.2*	358.2	358.2	358.2	358.2	358.2
2.5°	368.8	367.7	367.7	366.7	366.7	*366.7*	366.7	366.7	365.6	364.5	363.5
5°	378.3	378.3	377.2	377.2	376.2	*375.1*	376.2	375.1	374.1	373.0	372.0
7.5°	391.0	390.0	390.0	387.8	387.8	*386.8*	386.8	386.8	385.7	383.6	382.5
10°	409.0	406.9	406.9	404.8	403.7	*402.7*	402.7	400.6	400.6	399.5	398.4
12.5°	429.2	427.1	429.2	428.1	426.0	*423.9*	423.9	421.8	420.7	419.6	415.4
15°	455.7	452.5	454.6	454.6	453.5	*452.5*	452.5	448.2	446.1	444.0	439.8
17.5°	487.5	485.3	486.4	487.5	490.6	*490.6*	491.7	486.4	482.2	474.7	471.6
20°	527.7	526.7	529.8	529.8	533.0	*533.0*	534.1	528.8	521.4	516.1	509.7
22.5°	566.9	566.9	571.2	571.2	574.4	*572.2*	572.2	570.1	561.6	555.3	548.9
25°	607.2	606.1	610.4	613.6	617.8	*612.5*	614.6	611.4	603.0	594.5	586.0
27.5°	651.7	649.6	651.7	655.9	663.4	*659.1*	661.2	655.9	647.5	635.8	628.4
30°	700.5	697.3	700.5	706.8	712.1	*714.2*	713.2	705.8	698.3	681.4	676.1
32.5°	748.1	748.1	755.6	767.2	773.6	*772.5*	773.6	767.2	756.6	735.4	722.7
35°	806.4	810.7	820.2	837.2	850.9	*845.6*	845.6	843.5	825.5	800.1	783.1
37.5°	883.8	888.0	907.1	927.2	952.7	*950.5*	951.6	945.2	910.3	883.8	859.4
40°	973.9	978.1	1006.7	1035.3	1059.7	*1067.1*	1068.2	1054.4	1016.2	978.1	939.9
42.5°	1056.5	1061.8	1091.5	1131.7	1158.2	*1169.9*	1172.0	1149.8	1109.5	1066.0	1018.4
45°	1139.2	1145.5	1179.4	1221.8	1260.0	*1265.3*	1266.3	1247.3	1202.7	1152.9	1091.5
47.5°	1223.9	1229.2	1264.2	1315.1	1356.4	*1367.0*	1368.1	1350.0	1296.0	1235.6	1163.5
50°	1301.3	1311.9	1359.6	1413.6	1468.7	*1477.2*	1478.3	1458.1	1394.5	1326.7	1231.4
52.5°	1392.4	1397.7	1448.6	1538.7	1585.3	*1618.1*	1619.2	1580.0	1512.2	1421.0	1298.1
55°	1498.4	1507.9	1559.9	1649.9	1733.6	*1755.9*	1762.3	1715.6	1625.6	1527.0	1382.9
57.5°	1559.9	1577.9	1654.2	1740.0	1844.9	*1859.8*	1862.9	1814.2	1714.6	1606.5	1446.5
60°	1592.7	1603.3	1683.8	1817.4	1899.0	*1912.7*	1911.7	1874.6	1775.0	1643.6	1476.1
62.5°	1629.8	1647.8	1715.6	1851.3	1922.3	*1956.2*	1950.9	1912.7	1811.0	1666.9	1504.8
65°	*1619.2*	*1634.0*	*1733.6*	*1843.9*	*1961.5*	*1998.6*	*1991.2*	*1940.3*	*1816.3*	*1671.1*	*1497.3*
67.5°	1576.8	1588.5	1687.0	1823.7	1936.1	*1962.5*	1975.3	1925.5	1786.6	1625.6	1450.7
70°	1489.9	1507.9	1603.3	1743.2	1846.0	*1865.1*	1867.2	1836.4	1711.4	1541.8	1373.4
72.5°	1370.2	1385.0	1488.9	1630.9	1719.9	*1742.1*	1744.2	1697.6	1603.3	1427.4	1262.1
75°	1227.1	1240.9	1321.4	1469.8	1557.7	*1580.0*	1577.9	1534.4	1434.8	1268.4	1114.8
77.5°	1050.2	1075.6	1146.6	1268.4	1354.3	*1365.9*	1368.1	1320.4	1239.8	1095.7	946.3
80°	828.7	853.0	933.6	1024.7	1096.8	*1106.3*	1109.5	1069.2	996.1	868.9	741.8
82.5°	589.2	610.4	674.0	748.1	808.5	*808.5*	810.7	777.8	721.6	612.5	512.9
85°	335.9	351.8	394.2	447.2	490.6	*485.3*	486.4	456.7	419.6	334.9	271.3
87.5°	110.2	117.6	127.2	147.3	167.4	*154.7*	161.1	133.5	120.8	90.1	69.9
90°	58.3	58.3	56.2	54.0	49.8	*43.4*	43.4	35.0	26.5	17.0	6.4
92.5°	53.0	53.0	50.9	48.7	44.5	*39.2*	39.2	31.8	23.3	14.8	5.3
95°	43.4	43.4	42.4	40.3	37.1	*32.9*	31.8	26.5	20.1	11.7	4.2
97.5°	33.9	33.9	32.9	31.8	28.6	*25.4*	25.4	20.1	14.8	9.5	3.2
100°	25.4	25.4	25.4	23.3	22.3	*19.1*	19.1	15.9	11.7	7.4	2.1
102.5°	18.0	19.1	18.0	17.0	15.9	*13.8*	13.8	11.7	8.5	5.3	2.1
105°	12.7	12.7	11.7	11.7	10.6	*9.5*	9.5	7.4	5.3	3.2	1.1
107.5°	7.4	7.4	7.4	7.4	6.4	*6.4*	6.4	5.3	3.2	2.1	1.1
110°	4.2	4.2	4.2	4.2	3.2	*3.2*	3.2	2.1	2.1	1.1	1.1

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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	44°	45°	55°	65°	75°	85°
112.5°	2.1	2.1	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	2.1	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	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	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
125°	0.0	0.0	1.1	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	1.1	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	0.0	0.0	1.1	1.1	1.1	1.1	1.1
140°	1.1	1.1	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
142.5°	1.1	1.1	1.1	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	0.0	0.0	1.1	1.1	1.1	1.1
147.5°	1.1	1.1	1.1	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
150°	1.1	1.1	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1
160°	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1
162.5°	1.1	1.1	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1
165°	1.1	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
167.5°	1.1	1.1	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
170°	1.1	0.0	0.0	0.0	0.0	1.1	0.0	1.1	1.1	1.1	1.1
172.5°	1.1	1.1	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
175°	1.1	1.1	1.1	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
177.5°	0.0	1.1	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	358.2	358.2	358.2	358.2	358.2	358.2	358.2	358.2	358.2	358.2	358.2
2.5°	363.5	363.5	362.4	361.4	361.4	361.4	360.3	360.3	360.3	359.2	359.2
5°	372.0	370.9	370.9	369.8	369.8	368.8	368.8	367.7	366.7	366.7	365.6
7.5°	383.6	382.5	380.4	381.5	379.4	378.3	377.2	377.2	377.2	376.2	376.2
10°	397.4	397.4	395.3	395.3	393.1	392.1	391.0	391.0	392.1	392.1	391.0
12.5°	415.4	414.3	414.3	413.3	412.2	411.2	412.2	412.2	411.2	410.1	409.0
15°	437.7	437.7	437.7	438.7	437.7	437.7	437.7	436.6	434.5	432.4	432.4
17.5°	471.6	470.5	468.4	469.4	471.6	474.7	471.6	468.4	465.2	465.2	464.1
20°	506.5	507.6	507.6	508.7	511.8	515.0	510.8	508.7	506.5	504.4	502.3
22.5°	544.7	545.7	545.7	544.7	546.8	545.7	543.6	541.5	539.4	536.2	534.1
25°	581.8	582.8	581.8	580.7	581.8	578.6	575.4	572.2	566.9	561.6	561.6
27.5°	623.1	622.0	617.8	618.9	616.7	614.6	608.3	600.8	593.4	588.1	588.1
30°	666.5	666.5	658.1	662.3	658.1	657.0	643.2	633.7	623.1	615.7	614.6
32.5°	714.2	712.1	705.8	710.0	705.8	701.5	684.6	671.8	653.8	643.2	642.2
35°	771.5	766.2	760.9	765.1	765.1	753.4	736.5	713.2	687.7	675.0	674.0
37.5°	841.4	838.2	831.9	837.2	841.4	829.7	804.3	770.4	734.4	715.3	714.2
40°	918.7	914.5	911.3	918.7	921.9	910.3	876.4	828.7	779.9	752.4	748.1
42.5°	991.9	982.3	977.0	987.6	984.5	971.7	925.1	870.0	803.2	771.5	766.2
45°	1057.6	1047.0	1039.6	1049.1	1044.9	1019.4	967.5	893.3	812.8	773.6	767.2
47.5°	1122.2	1106.3	1094.7	1107.4	1098.9	1059.7	996.1	905.0	802.2	755.6	745.0
50°	1177.3	1158.2	1150.8	1165.7	1152.9	1097.8	1016.2	899.7	775.7	707.9	690.9
52.5°	1243.0	1214.4	1207.0	1235.6	1207.0	1133.9	1020.5	887.0	715.3	633.7	617.8
55°	1309.8	1278.0	1266.3	1292.8	1249.4	1141.3	999.3	813.8	624.2	537.3	513.9
57.5°	1344.7	1315.1	1304.5	1323.6	1243.0	1069.2	905.0	678.2	487.5	390.0	364.5
60°	1376.5	1324.6	1310.8	1336.3	1177.3	901.8	700.5	486.4	294.6	221.5	202.4
62.5°	1398.8	1349.0	1320.4	1332.0	1056.5	655.9	402.7	234.2	111.3	77.4	76.3
65°	*1387.1*	*1344.7*	*1325.7*	*1317.2*	*917.7*	*377.2*	*148.4*	*59.3*	*3.2*	*3.2*	*2.1*
67.5°	1351.1	1304.5	1299.2	1306.6	908.2	362.4	137.8	54.0	0.0	0.0	0.0
70°	1271.6	1238.8	1238.8	1264.2	866.8	343.3	128.2	49.8	0.0	0.0	0.0
72.5°	1164.6	1139.2	1154.0	1192.1	805.4	316.8	115.5	44.5	0.0	0.0	0.0
75°	1036.4	1009.9	1029.0	1071.3	729.1	282.9	100.7	38.1	0.0	0.0	0.0
77.5°	873.2	855.2	884.8	924.0	627.3	238.4	82.7	30.7	0.0	0.0	0.0
80°	680.3	670.8	710.0	745.0	506.5	187.6	62.5	22.3	0.0	0.0	0.0
82.5°	469.4	465.2	503.4	539.4	362.4	131.4	42.4	14.8	0.0	0.0	0.0
85°	245.8	245.8	275.5	308.4	202.4	71.0	21.2	6.4	0.0	0.0	0.0
87.5°	54.0	51.9	56.2	72.1	40.3	13.8	3.2	1.1	0.0	0.0	0.0
90°	1.1	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
100°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
105°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
110°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0

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

Scaled Data Report

REPORT NUMBER: P436857
CATALOG NUMBER: TT-D4-830-U-WQ-HSS

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
115°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
117.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
120°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
122.5°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
125°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	1.1	1.1	1.1	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

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

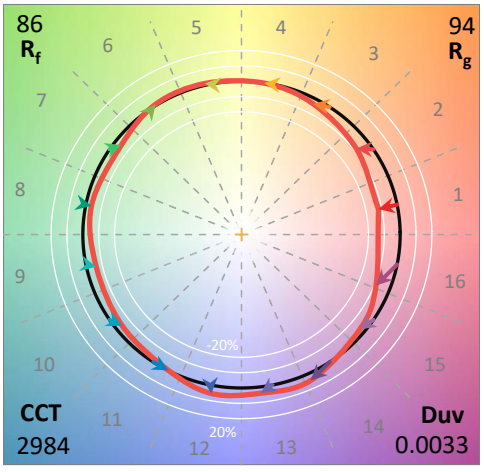
Test Information

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

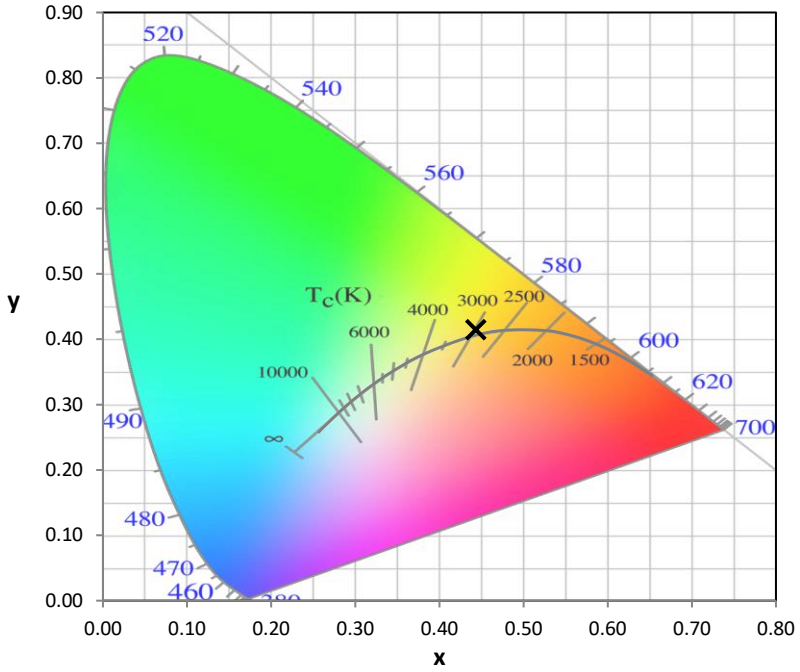
Stabilization Time:	29M
Operation Time:	1H 29M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-7

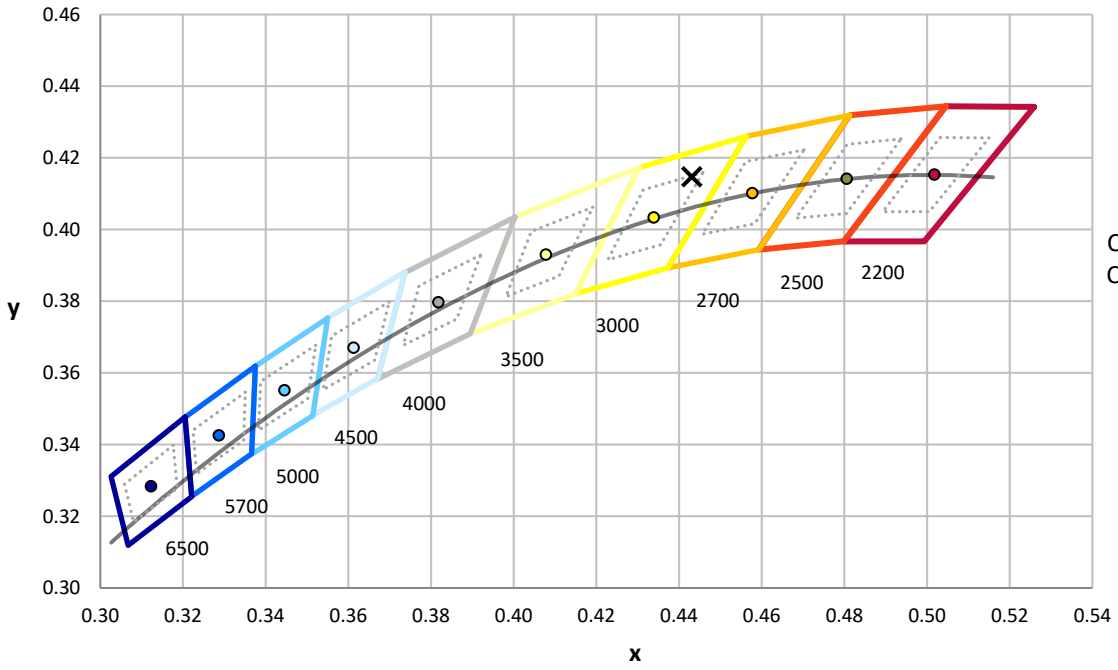
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

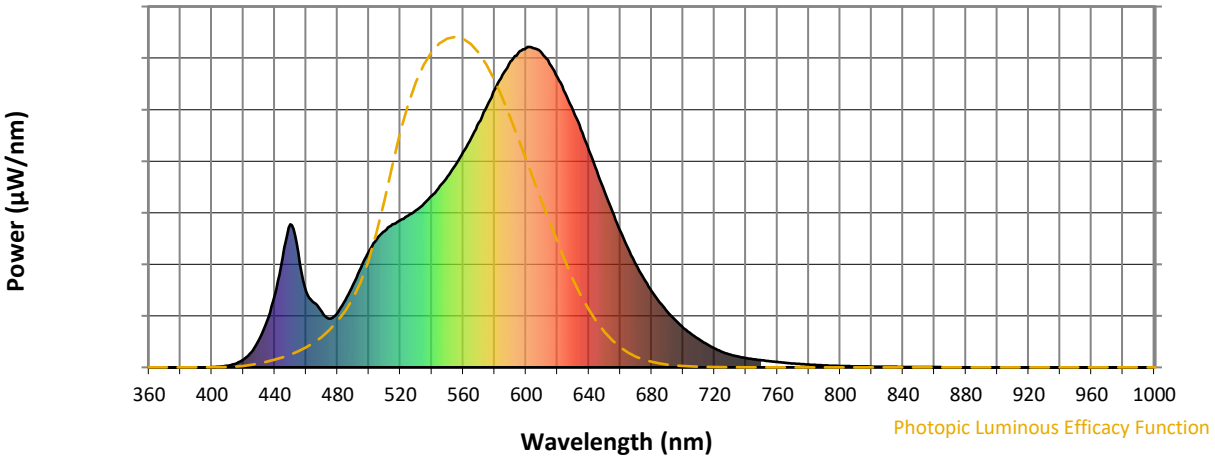


CCT = 2984K
CIE x = 0.4431
CIE y = 0.4147
Duv = 0.0033

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-7

Photopic Flux vs. Wavelength

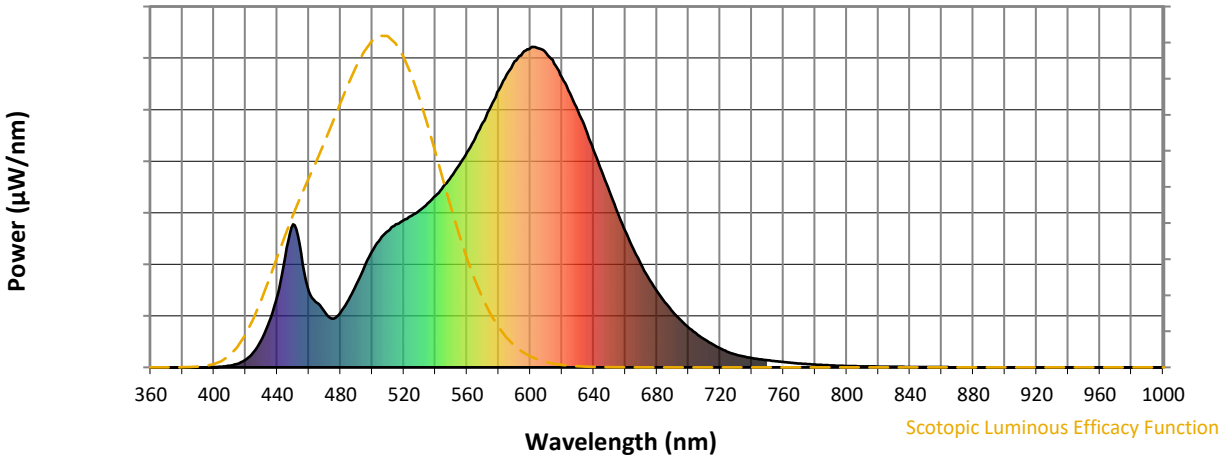


Photopic Lumens: NR

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

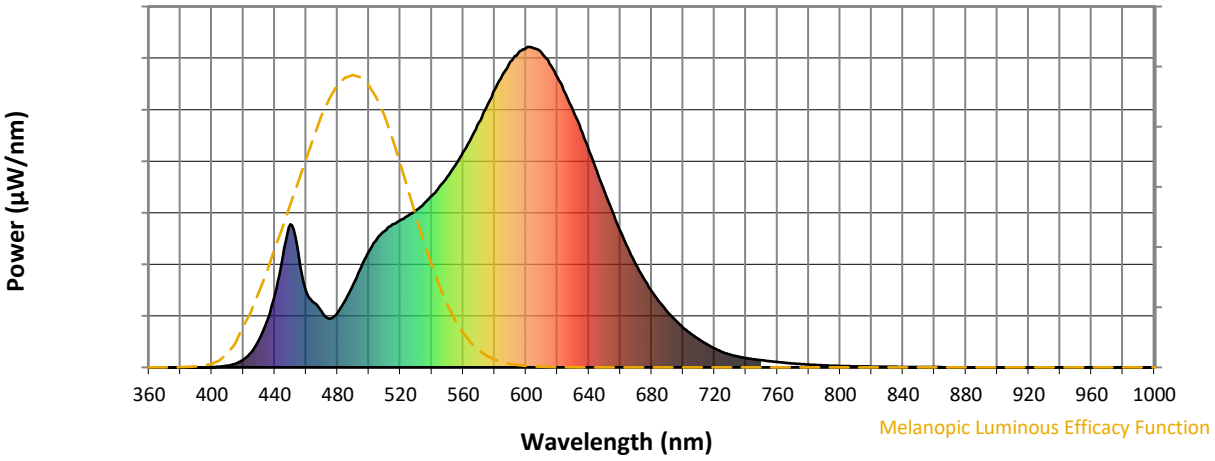


Scotopic Lumens: NR **S/P: 1.32**

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			

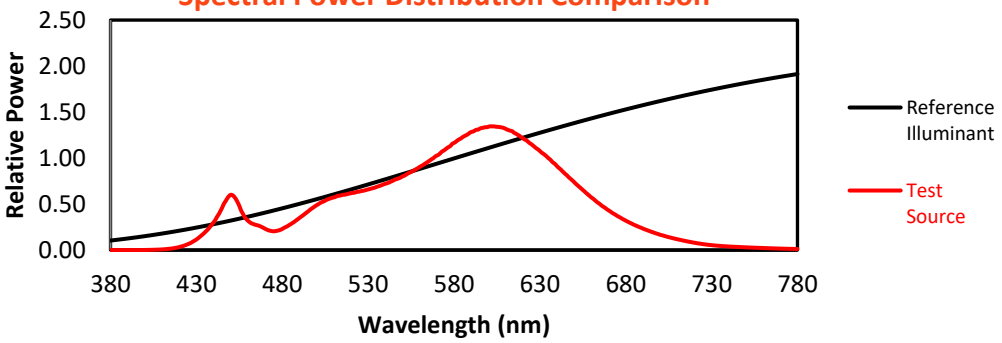
REPORT NUMBER: SP1-2407-176-7

TM-30-18

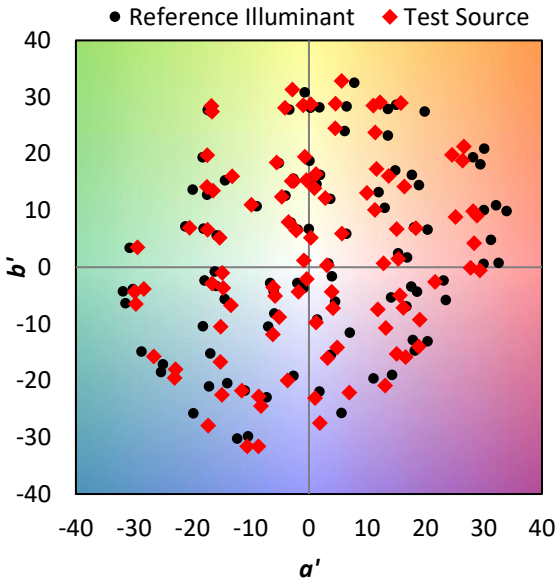
Summary

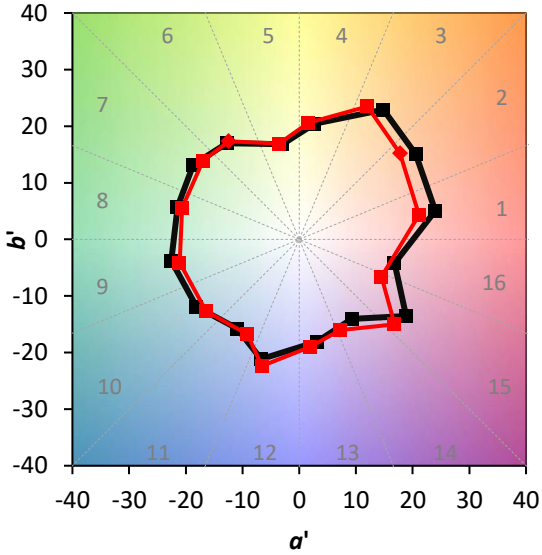
R_f = 85.8
R_g = 94.1
CIE R_a = 81.8
R_9 = -1.1

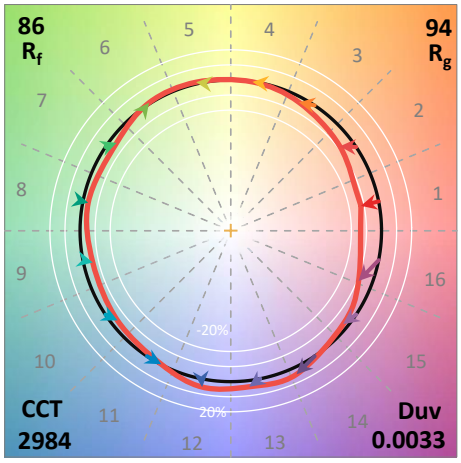
Spectral Power Distribution Comparison

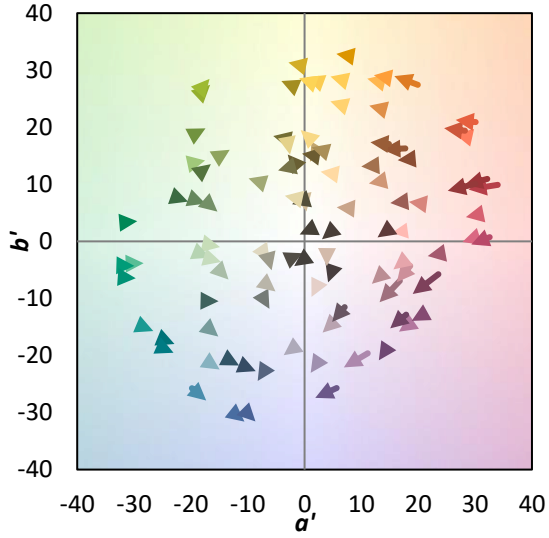


Color Vector Graphics







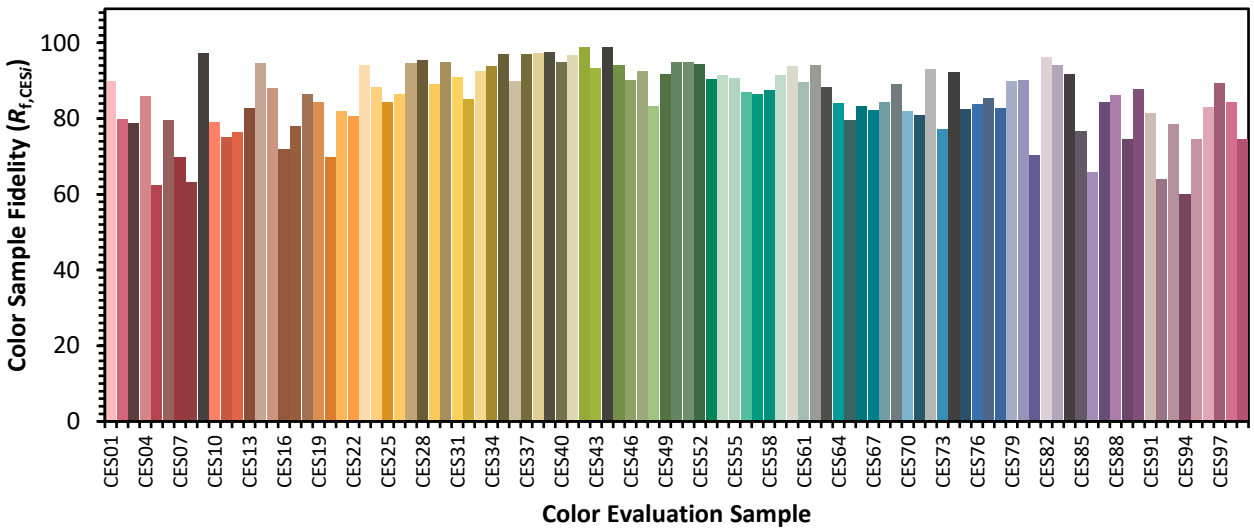


REPORT NUMBER: SP1-2407-176-7

TM-30-18

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

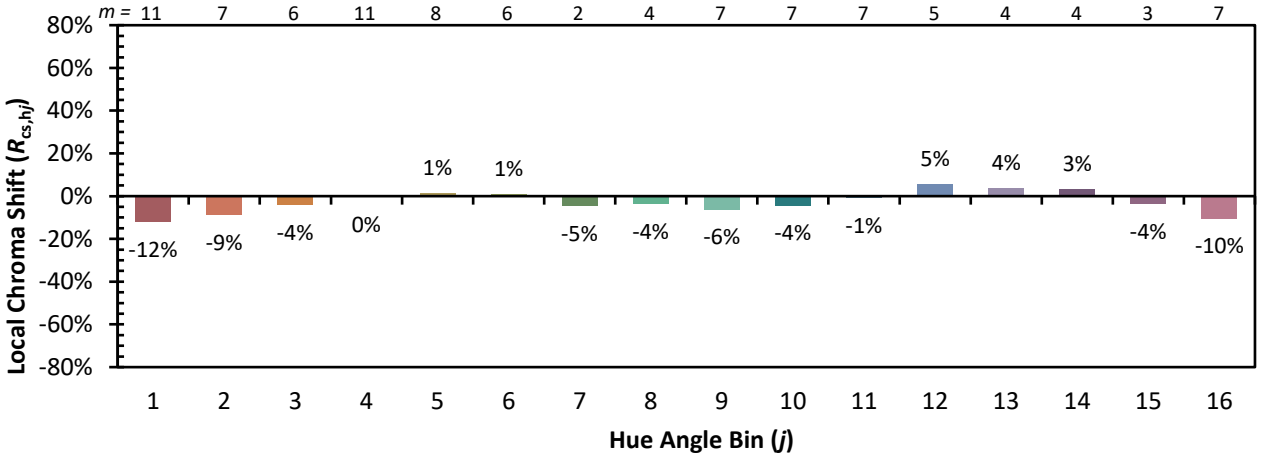
CES01 = 86	CES26 = 86	CES51 = 95	CES76 = 84
CES02 = 63	CES27 = 95	CES52 = 94	CES77 = 86
CES03 = 31	CES28 = 95	CES53 = 90	CES78 = 83
CES04 = 70	CES29 = 89	CES54 = 91	CES79 = 90
CES05 = 50	CES30 = 95	CES55 = 91	CES80 = 90
CES06 = 51	CES31 = 91	CES56 = 87	CES81 = 70
CES07 = 42	CES32 = 85	CES57 = 86	CES82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

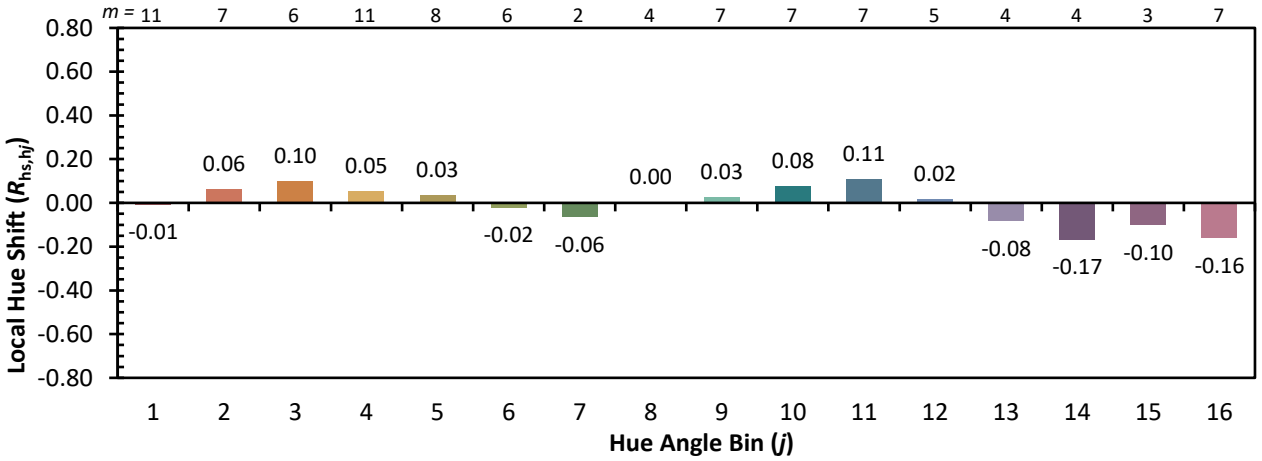


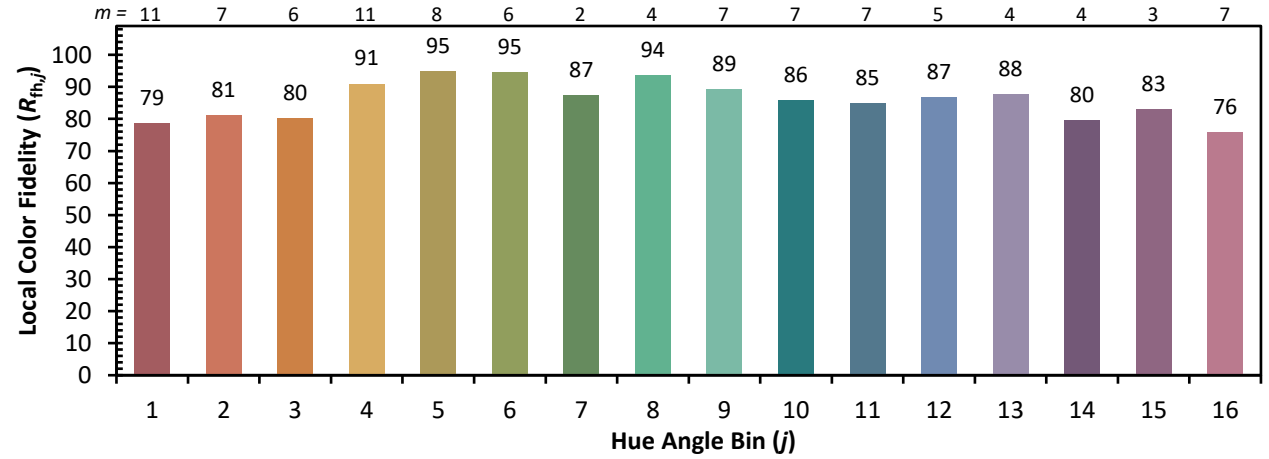
REPORT NUMBER: SP1-2407-176-7

TM-30-18

Color Rendition by Hue-Angle Bin







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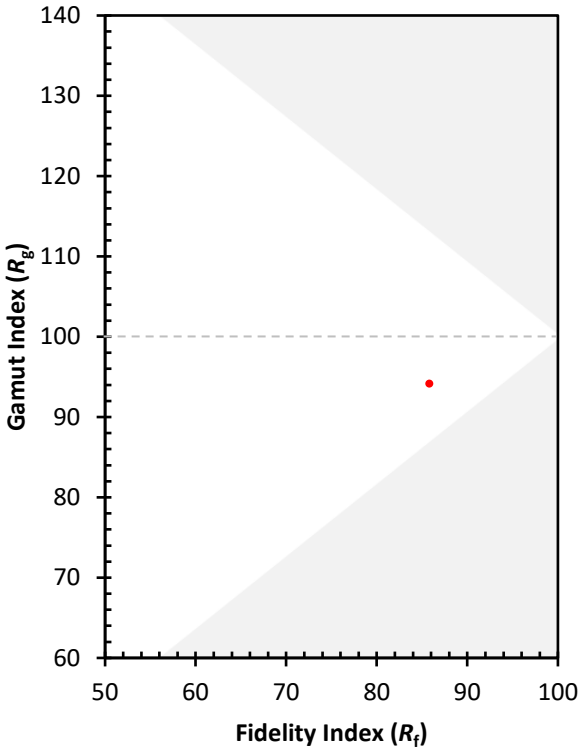
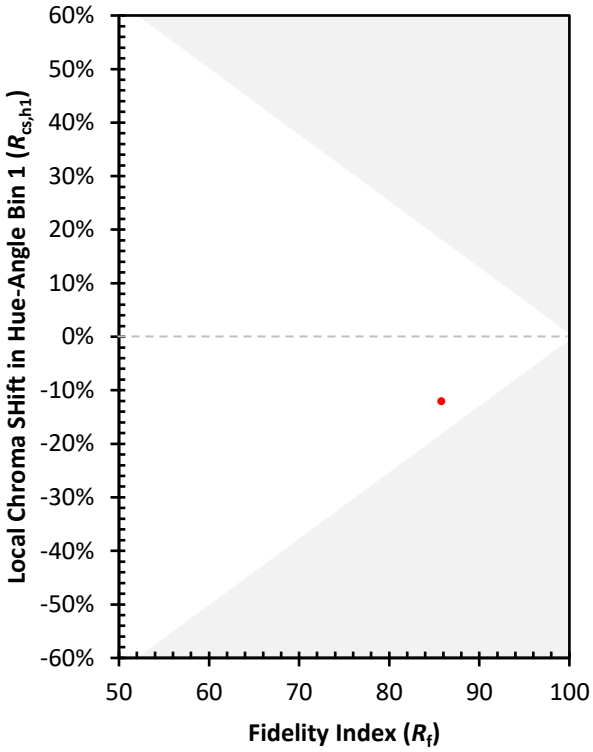
Measure Comparisons





(END OF REPORT)