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: P821304

Luminaire Tested: **TT-D3-740-24VDC-WQ-HSS**

Issue Date: 12/2/2020

Report Generated By 670245763

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Scaled Data Report

Test Information

Test Method:	LM-79-08
Report Number:	P821304
	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-D3-740-24VDC-WQ-HSS
Description:	TOPTIER LED PARKING GARAGE LUMINAIRE
	4000K, 70 CRI LEDS AND WIDE DISTRIBUTION WITH HOUSE SIDE SHIELD
Light Source:	-
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	5122 lumens
Efficiency:	N/A
Efficacy:	111.3 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type IV - Short
BUG Rating:	B2 - U2 - G2

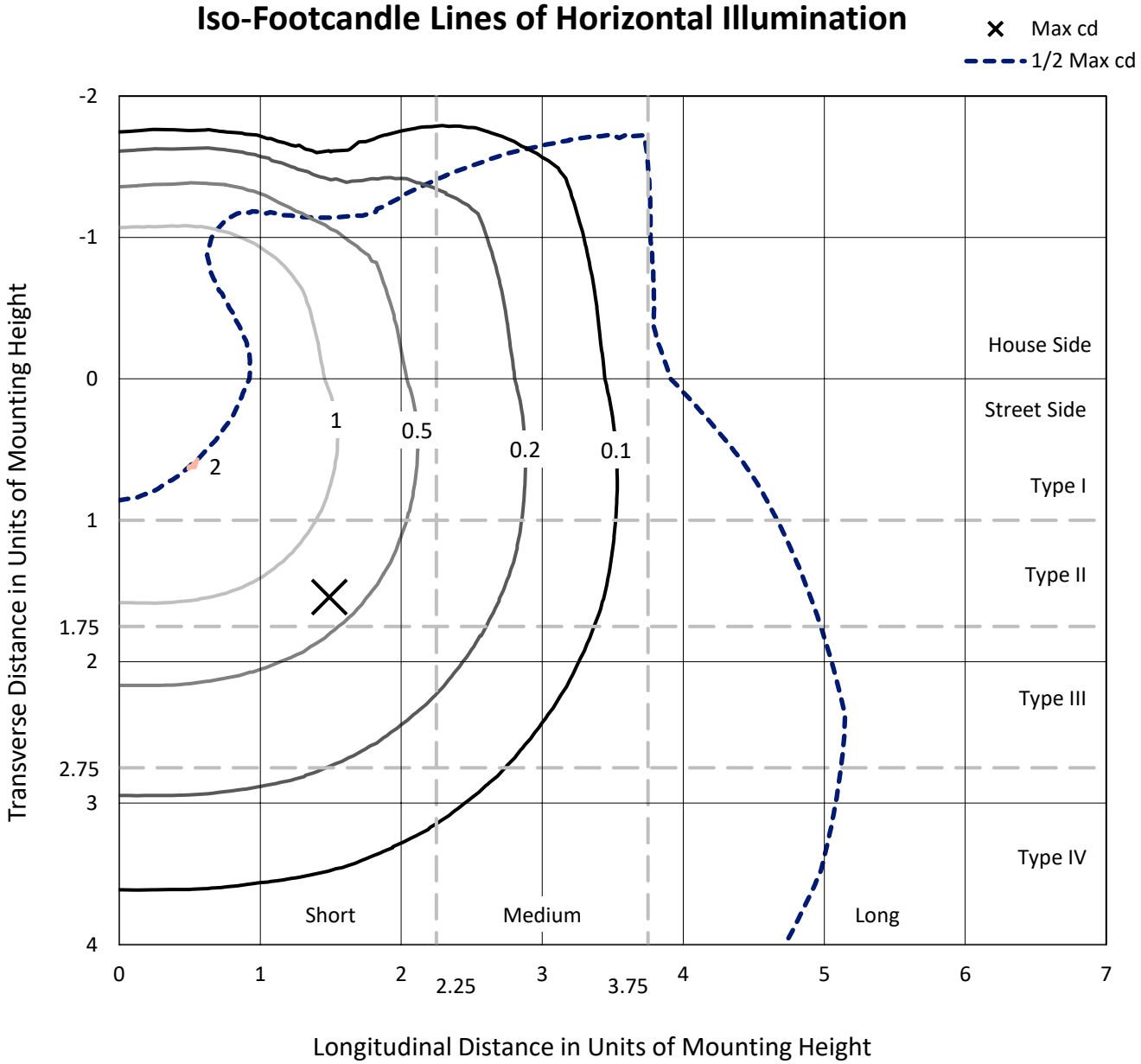
Input Watts (W):	46
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	25 FT

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Iso-Footcandle Lines of Horizontal Illumination



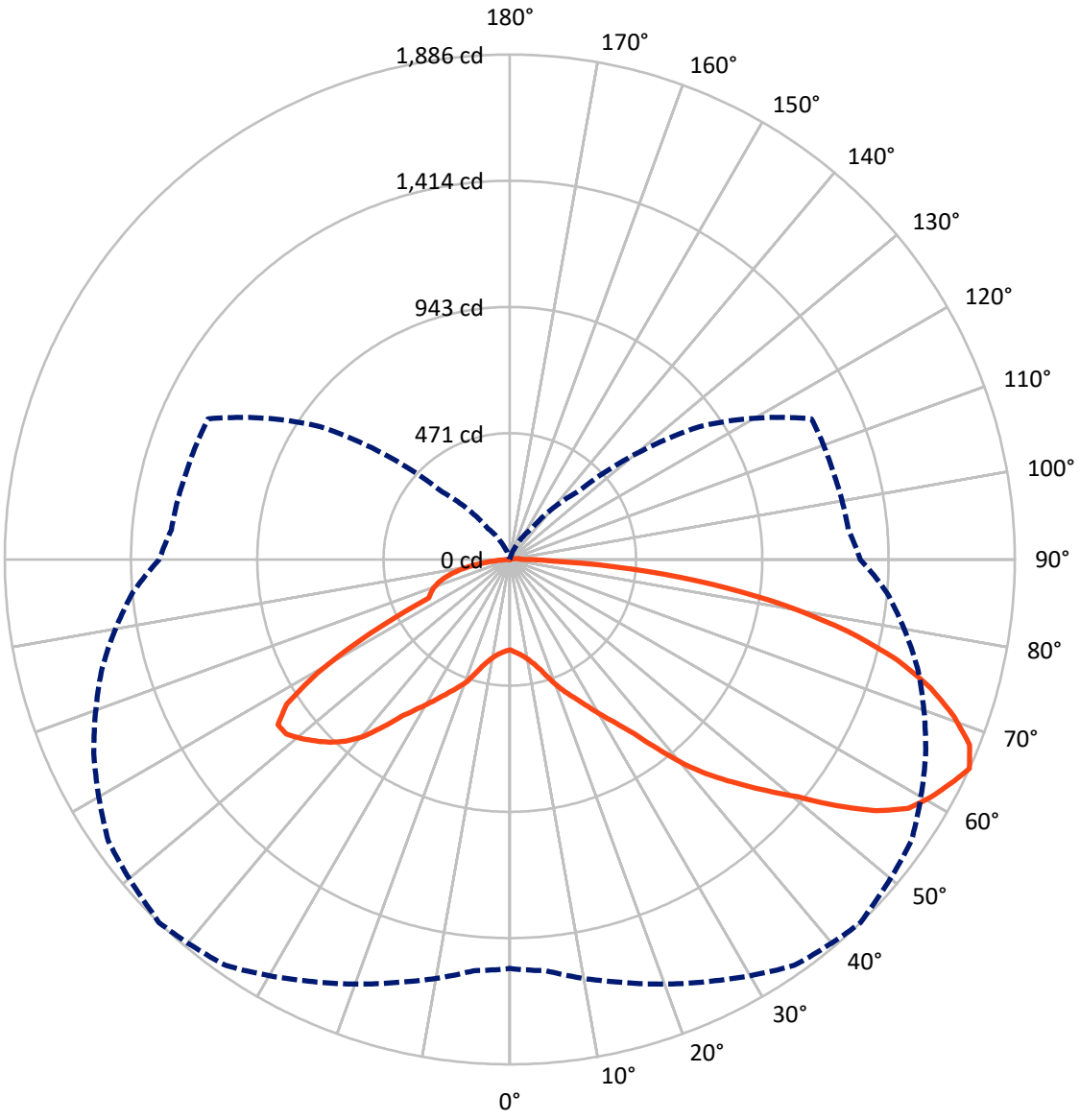
Based on 15 foot mounting height. Maximum calculated value = 2 fc
Type IV - Short - N/A

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Luminous Intensity Polar Plot



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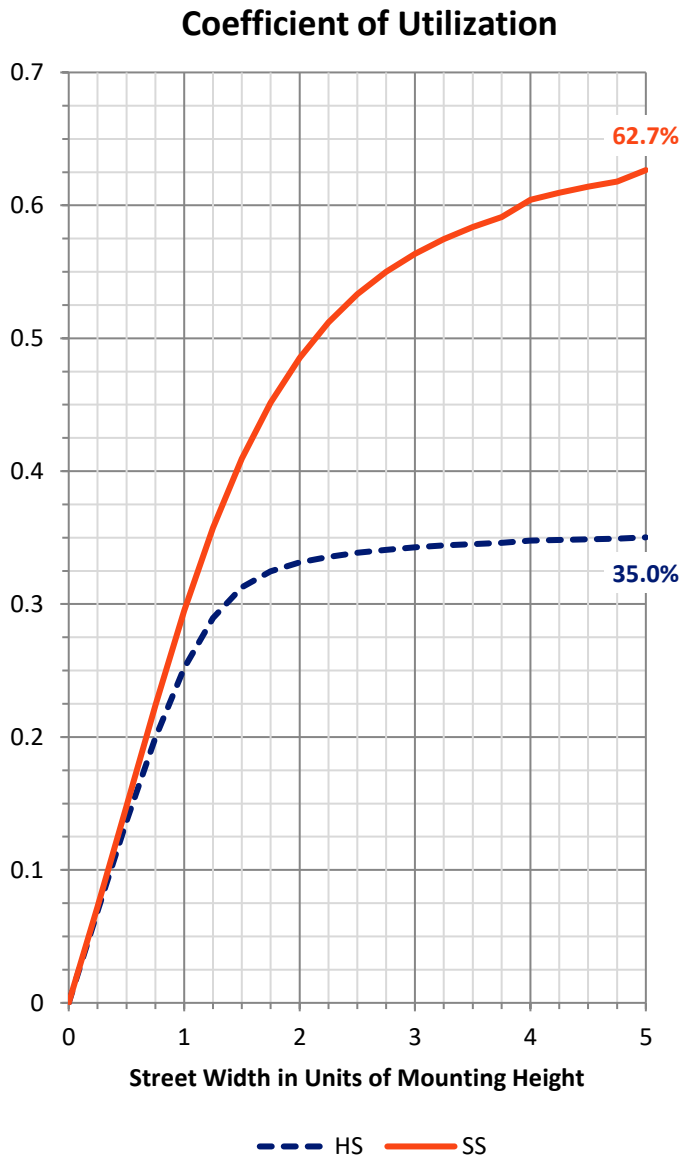
REPORT NUMBER: P821304
CATALOG NUMBER: TT-D3-740-24VDC-WQ-HSS

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1804.1	1.2	1805.3
	% Fixture	35.2	0.0	35.2
Street Side	Lumens	3296.0	20.7	3316.7
	% Fixture	64.3	0.4	64.8
Total	Lumens	5100.1	21.9	5122.0
	% Fixture	99.6	0.4	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	34.3	0.7
10°-20°	121.7	2.4
20°-30°	260.7	5.1
30°-40°	472.2	9.2
40°-50°	787.8	15.4
50°-60°	1091.2	21.3
60°-70°	1130.9	22.1
70°-80°	910.1	17.8
80°-90°	291.1	5.7
90°-100°	14.7	0.3
100°-110°	4.7	0.1
110°-120°	0.9	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°	5100.1	99.6
0°-180°	5122.0	100.0



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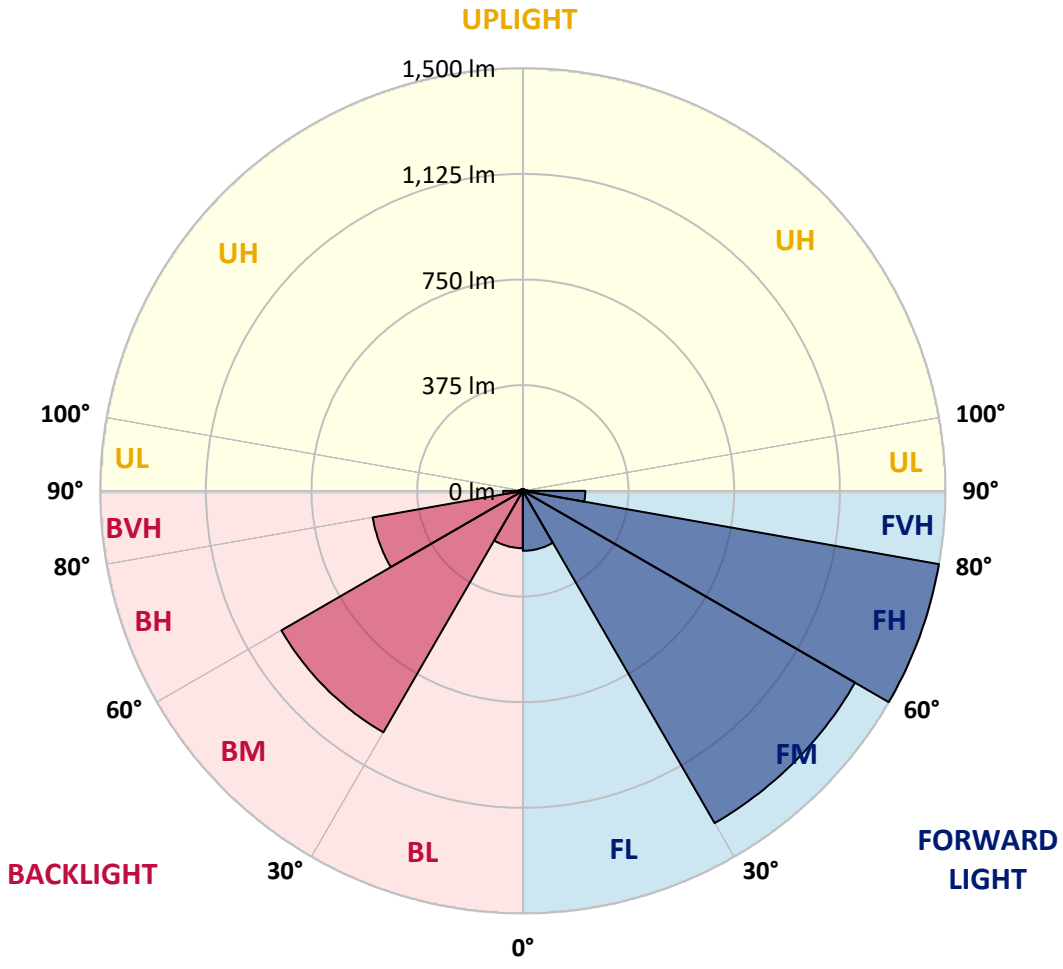
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	213.0	4.2			
FM	(30°-60°)	1361.7	26.6			
FH	(60°-80°)	1499.8	29.3			G1/1800
FVH	(80°-90°)	221.5	4.3			G2/225
BL	(0°-30°)	203.7	4.0	B1/500		
BM	(30°-60°)	989.6	19.3	B1/1000		
BH	(60°-80°)	541.2	10.6	B2/1000		G2/1000
BVH	(80°-90°)	69.6	1.4			G1/100
UL	(90°-100°)	14.7	0.3		U2/50	
UH	(100°-180°)	7.2	0.1		U1/10	

BUG Rating: B2-U2-G2
Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	44°	45°	55°	65°	75°	85°
0°	338.0	338.0	338.0	338.0	338.0	338.0	338.0	338.0	338.0	338.0	338.0
2.5°	348.0	347.0	347.0	346.0	346.0	346.0	346.0	346.0	345.0	344.0	343.0
5°	357.0	357.0	356.0	356.0	355.0	354.0	355.0	354.0	353.0	352.0	351.0
7.5°	369.0	368.0	368.0	366.0	366.0	365.0	365.0	365.0	364.0	362.0	361.0
10°	386.0	384.0	384.0	382.0	381.0	380.0	380.0	378.0	378.0	377.0	376.0
12.5°	405.0	403.0	405.0	404.0	402.0	400.0	400.0	398.0	397.0	396.0	392.0
15°	430.0	427.0	429.0	429.0	428.0	427.0	427.0	423.0	421.0	419.0	415.0
17.5°	460.0	458.0	459.0	460.0	463.0	463.0	464.0	459.0	455.0	448.0	445.0
20°	498.0	497.0	500.0	500.0	503.0	503.0	504.0	499.0	492.0	487.0	481.0
22.5°	535.0	535.0	539.0	539.0	542.0	540.0	540.0	538.0	530.0	524.0	518.0
25°	573.0	572.0	576.0	579.0	583.0	578.0	580.0	577.0	569.0	561.0	553.0
27.5°	615.0	613.0	615.0	619.0	626.0	622.0	624.0	619.0	611.0	600.0	593.0
30°	661.0	658.0	661.0	667.0	672.0	674.0	673.0	666.0	659.0	643.0	638.0
32.5°	706.0	706.0	713.0	724.0	730.0	729.0	730.0	724.0	714.0	694.0	682.0
35°	761.0	765.0	774.0	790.0	803.0	798.0	798.0	796.0	779.0	755.0	739.0
37.5°	834.0	838.0	856.0	875.0	899.0	897.0	898.0	892.0	859.0	834.0	811.0
40°	919.0	923.0	950.0	977.0	999.9	1006.9	1007.9	994.9	959.0	923.0	887.0
42.5°	996.9	1001.9	1029.9	1067.9	1092.9	1103.9	1105.9	1084.9	1046.9	1005.9	961.0
45°	1074.9	1080.9	1112.9	1152.9	1188.9	1193.9	1194.9	1176.9	1134.9	1087.9	1029.9
47.5°	1154.9	1159.9	1192.9	1240.9	1279.9	1289.9	1290.9	1273.9	1222.9	1165.9	1097.9
50°	1227.9	1237.9	1282.9	1333.9	1385.9	1393.9	1394.9	1375.9	1315.9	1251.9	1161.9
52.5°	1313.9	1318.9	1366.9	1451.9	1495.9	1526.9	1527.9	1490.9	1426.9	1340.9	1224.9
55°	1413.9	1422.9	1471.9	1556.9	1635.9	1656.9	1662.9	1618.9	1533.9	1440.9	1304.9
57.5°	1471.9	1488.9	1560.9	1641.9	1740.9	1754.9	1757.9	1711.9	1617.9	1515.9	1364.9
60°	1502.9	1512.9	1588.9	1714.9	1791.9	1804.9	1803.9	1768.9	1674.9	1550.9	1392.9
62.5°	1537.9	1554.9	1618.9	1746.9	1813.9	1845.9	1840.9	1804.9	1708.9	1572.9	1419.9
65°	1527.9	1541.9	1635.9	1739.9	1850.9	1885.9	1878.9	1830.9	1713.9	1576.9	1412.9
67.5°	1487.9	1498.9	1591.9	1720.9	1826.9	1851.9	1863.9	1816.9	1685.9	1533.9	1368.9
70°	1405.9	1422.9	1512.9	1644.9	1741.9	1759.9	1761.9	1732.9	1614.9	1454.9	1295.9
72.5°	1292.9	1306.9	1404.9	1538.9	1622.9	1643.9	1645.9	1601.9	1512.9	1346.9	1190.9
75°	1157.9	1170.9	1246.9	1386.9	1469.9	1490.9	1488.9	1447.9	1353.9	1196.9	1051.9
77.5°	990.9	1014.9	1081.9	1196.9	1277.9	1288.9	1290.9	1245.9	1169.9	1033.9	893.0
80°	782.0	805.0	881.0	967.0	1034.9	1043.9	1046.9	1008.9	940.0	820.0	700.0
82.5°	556.0	576.0	636.0	706.0	763.0	763.0	765.0	734.0	681.0	578.0	484.0
85°	317.0	332.0	372.0	422.0	463.0	458.0	459.0	431.0	396.0	316.0	256.0
87.5°	104.0	111.0	120.0	139.0	158.0	146.0	152.0	126.0	114.0	85.0	66.0
90°	55.0	55.0	53.0	51.0	47.0	41.0	41.0	33.0	25.0	16.0	6.0
92.5°	50.0	50.0	48.0	46.0	42.0	37.0	37.0	30.0	22.0	14.0	5.0
95°	41.0	41.0	40.0	38.0	35.0	31.0	30.0	25.0	19.0	11.0	4.0
97.5°	32.0	32.0	31.0	30.0	27.0	24.0	24.0	19.0	14.0	9.0	3.0
100°	24.0	24.0	24.0	22.0	21.0	18.0	18.0	15.0	11.0	7.0	2.0
102.5°	17.0	18.0	17.0	16.0	15.0	13.0	13.0	11.0	8.0	5.0	2.0
105°	12.0	12.0	11.0	11.0	10.0	9.0	9.0	7.0	5.0	3.0	1.0
107.5°	7.0	7.0	7.0	7.0	6.0	6.0	6.0	5.0	3.0	2.0	1.0
110°	4.0	4.0	4.0	4.0	3.0	3.0	3.0	2.0	2.0	1.0	1.0

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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	44°	45°	55°	65°	75°	85°
112.5°	2.0	2.0	2.0	2.0	2.0	*2.0*	2.0	1.0	1.0	1.0	1.0
115°	1.0	1.0	1.0	2.0	1.0	*1.0*	1.0	1.0	1.0	1.0	1.0
117.5°	1.0	1.0	1.0	1.0	1.0	*1.0*	1.0	1.0	1.0	1.0	1.0
120°	0.0	0.0	1.0	1.0	1.0	*1.0*	1.0	1.0	1.0	1.0	1.0
122.5°	0.0	0.0	1.0	1.0	1.0	*1.0*	1.0	1.0	1.0	1.0	1.0
125°	0.0	0.0	1.0	1.0	1.0	*1.0*	1.0	1.0	1.0	1.0	1.0
127.5°	0.0	0.0	0.0	1.0	1.0	*1.0*	1.0	1.0	1.0	1.0	1.0
130°	0.0	0.0	0.0	1.0	1.0	*1.0*	1.0	1.0	1.0	1.0	1.0
132.5°	0.0	0.0	0.0	1.0	1.0	*1.0*	1.0	1.0	1.0	1.0	1.0
135°	0.0	0.0	0.0	0.0	1.0	*1.0*	1.0	1.0	1.0	1.0	1.0
137.5°	0.0	0.0	0.0	0.0	0.0	*0.0*	1.0	1.0	1.0	1.0	1.0
140°	1.0	1.0	0.0	0.0	0.0	*0.0*	1.0	1.0	1.0	1.0	1.0
142.5°	1.0	1.0	1.0	0.0	0.0	*1.0*	1.0	1.0	1.0	1.0	1.0
145°	1.0	1.0	0.0	0.0	0.0	*0.0*	0.0	1.0	1.0	1.0	1.0
147.5°	1.0	1.0	1.0	0.0	0.0	*1.0*	1.0	1.0	1.0	1.0	1.0
150°	1.0	1.0	0.0	0.0	0.0	*0.0*	1.0	1.0	1.0	1.0	1.0
152.5°	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0	1.0	1.0	1.0	1.0
155°	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0	0.0	1.0	1.0	1.0
157.5°	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0	1.0	1.0	1.0	1.0
160°	1.0	0.0	0.0	0.0	0.0	*0.0*	0.0	1.0	1.0	1.0	1.0
162.5°	1.0	1.0	0.0	0.0	0.0	*0.0*	0.0	1.0	1.0	1.0	1.0
165°	1.0	0.0	0.0	0.0	0.0	*0.0*	1.0	1.0	1.0	1.0	1.0
167.5°	1.0	1.0	0.0	0.0	0.0	*0.0*	1.0	1.0	1.0	1.0	1.0
170°	1.0	0.0	0.0	0.0	0.0	*1.0*	0.0	1.0	1.0	1.0	1.0
172.5°	1.0	1.0	0.0	0.0	0.0	*0.0*	1.0	1.0	1.0	1.0	1.0
175°	1.0	1.0	1.0	0.0	0.0	*0.0*	1.0	1.0	1.0	1.0	1.0
177.5°	0.0	1.0	0.0	0.0	0.0	*0.0*	0.0	1.0	1.0	1.0	1.0
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°	338.0	338.0	338.0	338.0	338.0	338.0	338.0	338.0	338.0	338.0	338.0
2.5°	343.0	343.0	342.0	341.0	341.0	341.0	340.0	340.0	340.0	339.0	339.0
5°	351.0	350.0	350.0	349.0	349.0	348.0	348.0	347.0	346.0	346.0	345.0
7.5°	362.0	361.0	359.0	360.0	358.0	357.0	356.0	356.0	356.0	355.0	355.0
10°	375.0	375.0	373.0	373.0	371.0	370.0	369.0	369.0	370.0	370.0	369.0
12.5°	392.0	391.0	391.0	390.0	389.0	388.0	389.0	389.0	388.0	387.0	386.0
15°	413.0	413.0	413.0	414.0	413.0	413.0	413.0	412.0	410.0	408.0	408.0
17.5°	445.0	444.0	442.0	443.0	445.0	448.0	445.0	442.0	439.0	439.0	438.0
20°	478.0	479.0	479.0	480.0	483.0	486.0	482.0	480.0	478.0	476.0	474.0
22.5°	514.0	515.0	515.0	514.0	516.0	515.0	513.0	511.0	509.0	506.0	504.0
25°	549.0	550.0	549.0	548.0	549.0	546.0	543.0	540.0	535.0	530.0	530.0
27.5°	588.0	587.0	583.0	584.0	582.0	580.0	574.0	567.0	560.0	555.0	555.0
30°	629.0	629.0	621.0	625.0	621.0	620.0	607.0	598.0	588.0	581.0	580.0
32.5°	674.0	672.0	666.0	670.0	666.0	662.0	646.0	634.0	617.0	607.0	606.0
35°	728.0	723.0	718.0	722.0	722.0	711.0	695.0	673.0	649.0	637.0	636.0
37.5°	794.0	791.0	785.0	790.0	794.0	783.0	759.0	727.0	693.0	675.0	674.0
40°	867.0	863.0	860.0	867.0	870.0	859.0	827.0	782.0	736.0	710.0	706.0
42.5°	936.0	927.0	922.0	932.0	929.0	917.0	873.0	821.0	758.0	728.0	723.0
45°	997.9	987.9	980.9	989.9	985.9	962.0	913.0	843.0	767.0	730.0	724.0
47.5°	1058.9	1043.9	1032.9	1044.9	1036.9	999.9	940.0	854.0	757.0	713.0	703.0
50°	1110.9	1092.9	1085.9	1099.9	1087.9	1035.9	959.0	849.0	732.0	668.0	652.0
52.5°	1172.9	1145.9	1138.9	1165.9	1138.9	1069.9	963.0	837.0	675.0	598.0	583.0
55°	1235.9	1205.9	1194.9	1219.9	1178.9	1076.9	943.0	768.0	589.0	507.0	485.0
57.5°	1268.9	1240.9	1230.9	1248.9	1172.9	1008.9	854.0	640.0	460.0	368.0	344.0
60°	1298.9	1249.9	1236.9	1260.9	1110.9	851.0	661.0	459.0	278.0	209.0	191.0
62.5°	1319.9	1272.9	1245.9	1256.9	996.9	619.0	380.0	221.0	105.0	73.0	72.0
65°	*1308.9*	*1268.9*	*1250.9*	*1242.9*	*866.0*	*356.0*	*140.0*	*56.0*	*3.0*	*3.0*	*2.0*
67.5°	1274.9	1230.9	1225.9	1232.9	857.0	342.0	130.0	51.0	0.0	0.0	0.0
70°	1199.9	1168.9	1168.9	1192.9	818.0	324.0	121.0	47.0	0.0	0.0	0.0
72.5°	1098.9	1074.9	1088.9	1124.9	760.0	299.0	109.0	42.0	0.0	0.0	0.0
75°	978.0	953.0	971.0	1010.9	688.0	267.0	95.0	36.0	0.0	0.0	0.0
77.5°	824.0	807.0	835.0	872.0	592.0	225.0	78.0	29.0	0.0	0.0	0.0
80°	642.0	633.0	670.0	703.0	478.0	177.0	59.0	21.0	0.0	0.0	0.0
82.5°	443.0	439.0	475.0	509.0	342.0	124.0	40.0	14.0	0.0	0.0	0.0
85°	232.0	232.0	260.0	291.0	191.0	67.0	20.0	6.0	0.0	0.0	0.0
87.5°	51.0	49.0	53.0	68.0	38.0	13.0	3.0	1.0	0.0	0.0	0.0
90°	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0
105°	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
110°	1.0	1.0	1.0	1.0	1.0	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

Scaled Data Report

REPORT NUMBER: P821304
CATALOG NUMBER: TT-D3-740-24VDC-WQ-HSS

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
115°	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0
117.5°	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0
122.5°	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0
125°	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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: SP1-2407-176-5

Test Date: 09/24/2024

Luminaire Tested: MEM2-HTN-VA-30-740-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-740-U-WQ

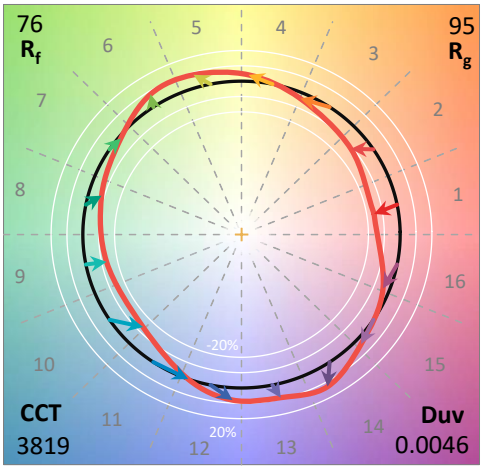
Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-176-5
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-30-740-U-WQ**
Description:	EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE

Spectral Parameters

CCT (K):	3819	CRI (Ra):	72.9		
CIE u':	0.2261	R1:	70.1	R9:	-21.5
CIE v':	0.5108	R2:	78.4	R10:	48.5
Duv:	0.0046	R3:	85.0	R11:	68.4
CIE x:	0.3926	R4:	72.9	R12:	39.0
CIE y:	0.3942	R5:	69.1	R13:	71.1
CIE z:	0.2132	R6:	69.2	R14:	91.3
Peak Wavelength (nm):	450	R7:	82.8	R15:	63.2
Dominant Wavelength (nm):	577	R8:	55.4		
Purity:	36.15483				
Rf:	75.6				
Rg:	94.8				



Test Conditions

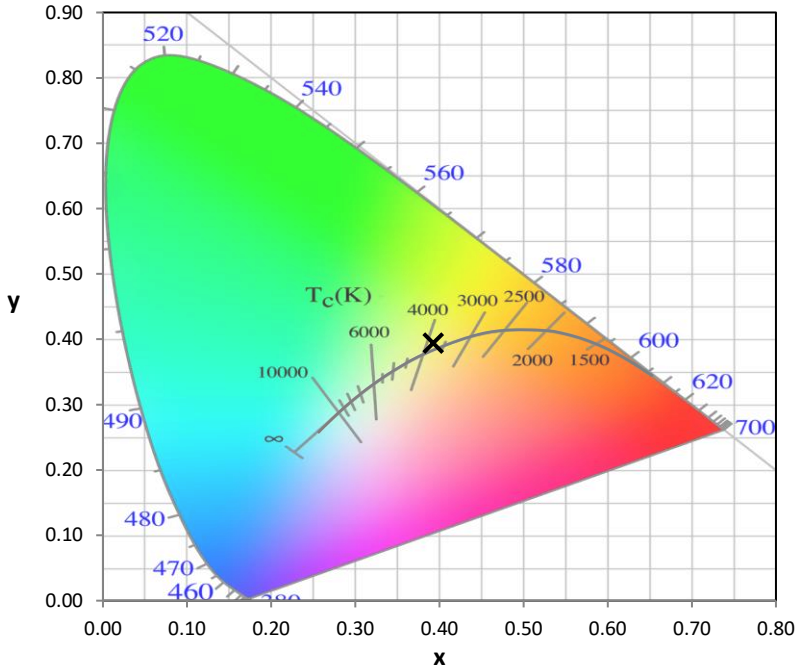
Stabilization Time:	30M
Operation Time:	1H 30M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-5

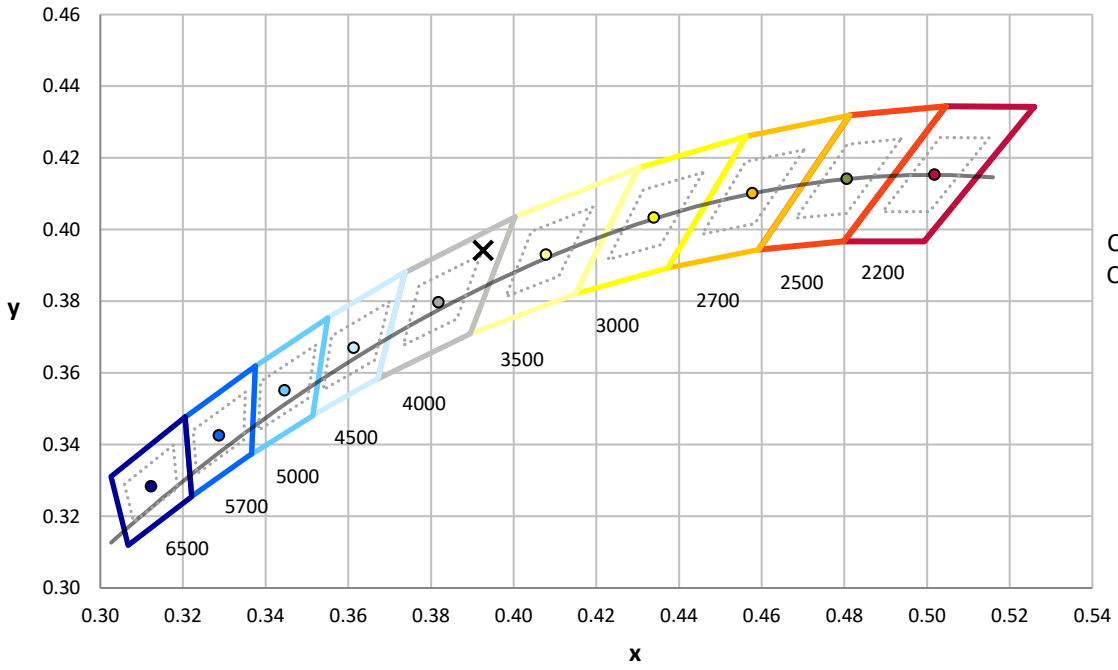
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2407-176-5

CIE 1931 Chromaticity Diagram



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

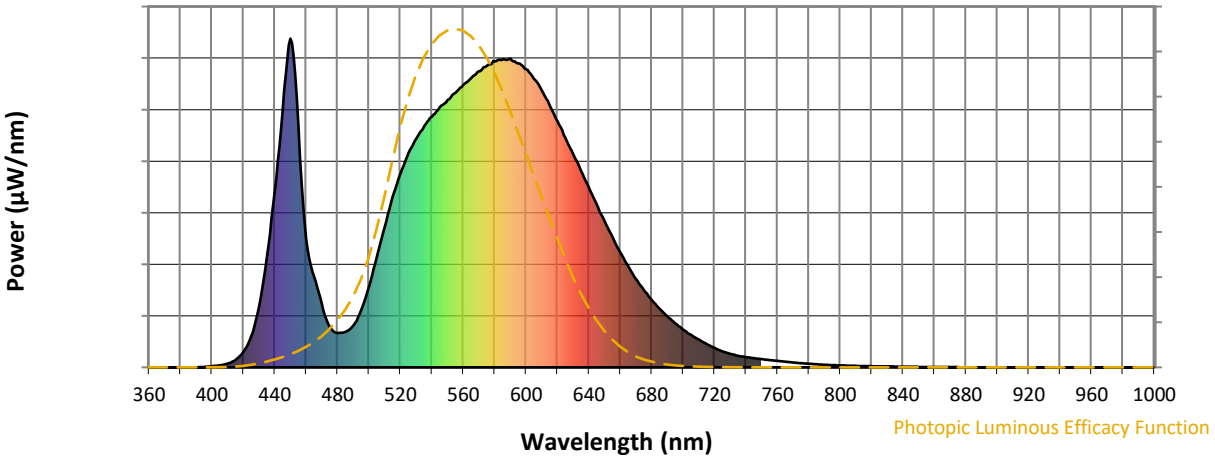


CCT = 3819K
CIE x = 0.3926
CIE y = 0.3942
Duv = 0.0046

Point lies inside the ANSI 4000K 7-step quadrangle

REPORT NUMBER: SP1-2407-176-5

Photopic Flux vs. Wavelength

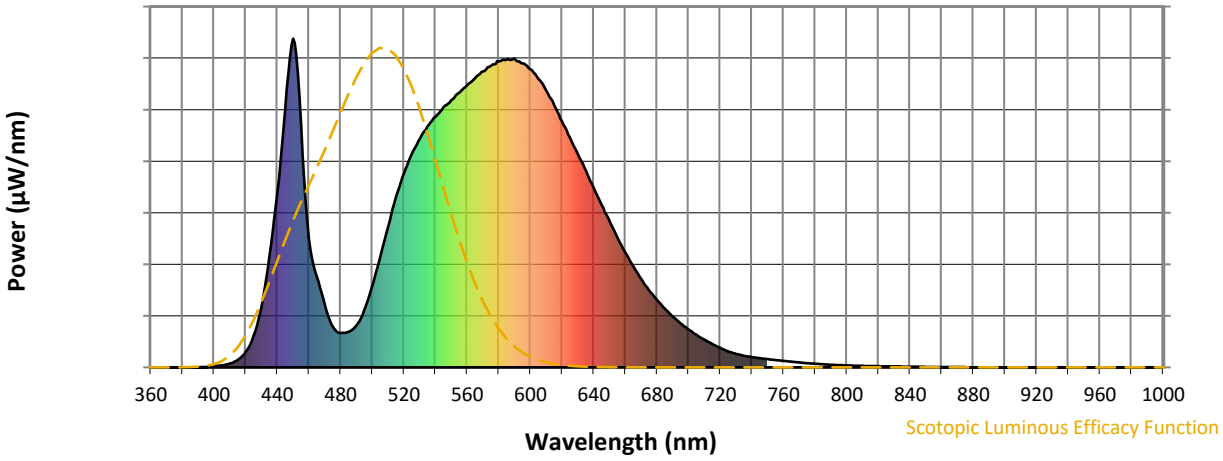


Photopic Lumens: NR

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	127	NR	620	748	NR	750	25	NR	880	0	NR
365	0	NR	495	173	NR	625	699	NR	755	22	NR	885	0	NR
370	0	NR	500	246	NR	630	648	NR	760	20	NR	890	0	NR
375	0	NR	505	335	NR	635	599	NR	765	17	NR	895	0	NR
380	0	NR	510	427	NR	640	547	NR	770	15	NR	900	0	NR
385	0	NR	515	517	NR	645	495	NR	775	13	NR	905	0	NR
390	0	NR	520	589	NR	650	445	NR	780	11	NR	910	0	NR
395	1	NR	525	649	NR	655	396	NR	785	9	NR	915	0	NR
400	4	NR	530	695	NR	660	349	NR	790	8	NR	920	0	NR
405	6	NR	535	733	NR	665	308	NR	795	7	NR	925	0	NR
410	11	NR	540	763	NR	670	269	NR	800	6	NR	930	0	NR
415	23	NR	545	792	NR	675	235	NR	805	5	NR	935	0	NR
420	46	NR	550	813	NR	680	205	NR	810	5	NR	940	0	NR
425	95	NR	555	835	NR	685	178	NR	815	4	NR	945	0	NR
430	183	NR	560	859	NR	690	155	NR	820	3	NR	950	0	NR
435	338	NR	565	880	NR	695	134	NR	825	3	NR	955	0	NR
440	534	NR	570	900	NR	700	115	NR	830	3	NR	960	0	NR
445	782	NR	575	918	NR	705	99	NR	835	2	NR	965	0	NR
450	1000	NR	580	931	NR	710	84	NR	840	2	NR	970	0	NR
455	739	NR	585	937	NR	715	71	NR	845	2	NR	975	0	NR
460	393	NR	590	939	NR	720	59	NR	850	1	NR	980	0	NR
465	276	NR	595	925	NR	725	49	NR	855	1	NR	985	0	NR
470	190	NR	600	907	NR	730	41	NR	860	1	NR	990	0	NR
475	123	NR	605	878	NR	735	35	NR	865	1	NR	995	0	NR
480	105	NR	610	842	NR	740	31	NR	870	1	NR	1000	0	NR
485	108	NR	615	797	NR	745	28	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-5

Scotopic Flux vs. Wavelength

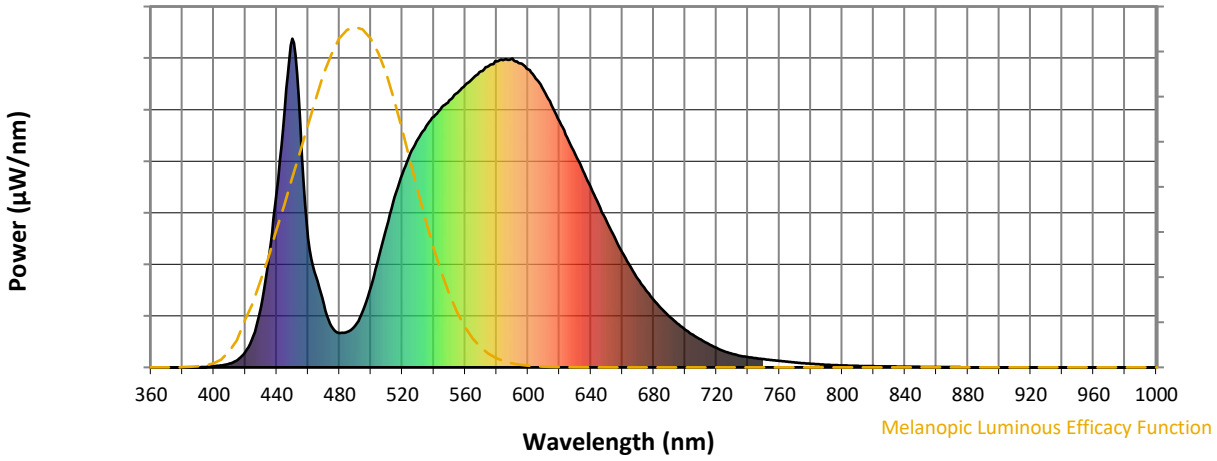


Scotopic Lumens: NR **S/P: 1.45**

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	127	NR	620	748	NR	750	25	NR	880	0	NR
365	0	NR	495	173	NR	625	699	NR	755	22	NR	885	0	NR
370	0	NR	500	246	NR	630	648	NR	760	20	NR	890	0	NR
375	0	NR	505	335	NR	635	599	NR	765	17	NR	895	0	NR
380	0	NR	510	427	NR	640	547	NR	770	15	NR	900	0	NR
385	0	NR	515	517	NR	645	495	NR	775	13	NR	905	0	NR
390	0	NR	520	589	NR	650	445	NR	780	11	NR	910	0	NR
395	1	NR	525	649	NR	655	396	NR	785	9	NR	915	0	NR
400	4	NR	530	695	NR	660	349	NR	790	8	NR	920	0	NR
405	6	NR	535	733	NR	665	308	NR	795	7	NR	925	0	NR
410	11	NR	540	763	NR	670	269	NR	800	6	NR	930	0	NR
415	23	NR	545	792	NR	675	235	NR	805	5	NR	935	0	NR
420	46	NR	550	813	NR	680	205	NR	810	5	NR	940	0	NR
425	95	NR	555	835	NR	685	178	NR	815	4	NR	945	0	NR
430	183	NR	560	859	NR	690	155	NR	820	3	NR	950	0	NR
435	338	NR	565	880	NR	695	134	NR	825	3	NR	955	0	NR
440	534	NR	570	900	NR	700	115	NR	830	3	NR	960	0	NR
445	782	NR	575	918	NR	705	99	NR	835	2	NR	965	0	NR
450	1000	NR	580	931	NR	710	84	NR	840	2	NR	970	0	NR
455	739	NR	585	937	NR	715	71	NR	845	2	NR	975	0	NR
460	393	NR	590	939	NR	720	59	NR	850	1	NR	980	0	NR
465	276	NR	595	925	NR	725	49	NR	855	1	NR	985	0	NR
470	190	NR	600	907	NR	730	41	NR	860	1	NR	990	0	NR
475	123	NR	605	878	NR	735	35	NR	865	1	NR	995	0	NR
480	105	NR	610	842	NR	740	31	NR	870	1	NR	1000	0	NR
485	108	NR	615	797	NR	745	28	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-5

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.76**

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	127	NR	620	748	NR	750	25	NR	880	0	NR
365	0	NR	495	173	NR	625	699	NR	755	22	NR	885	0	NR
370	0	NR	500	246	NR	630	648	NR	760	20	NR	890	0	NR
375	0	NR	505	335	NR	635	599	NR	765	17	NR	895	0	NR
380	0	NR	510	427	NR	640	547	NR	770	15	NR	900	0	NR
385	0	NR	515	517	NR	645	495	NR	775	13	NR	905	0	NR
390	0	NR	520	589	NR	650	445	NR	780	11	NR	910	0	NR
395	1	NR	525	649	NR	655	396	NR	785	9	NR	915	0	NR
400	4	NR	530	695	NR	660	349	NR	790	8	NR	920	0	NR
405	6	NR	535	733	NR	665	308	NR	795	7	NR	925	0	NR
410	11	NR	540	763	NR	670	269	NR	800	6	NR	930	0	NR
415	23	NR	545	792	NR	675	235	NR	805	5	NR	935	0	NR
420	46	NR	550	813	NR	680	205	NR	810	5	NR	940	0	NR
425	95	NR	555	835	NR	685	178	NR	815	4	NR	945	0	NR
430	183	NR	560	859	NR	690	155	NR	820	3	NR	950	0	NR
435	338	NR	565	880	NR	695	134	NR	825	3	NR	955	0	NR
440	534	NR	570	900	NR	700	115	NR	830	3	NR	960	0	NR
445	782	NR	575	918	NR	705	99	NR	835	2	NR	965	0	NR
450	1000	NR	580	931	NR	710	84	NR	840	2	NR	970	0	NR
455	739	NR	585	937	NR	715	71	NR	845	2	NR	975	0	NR
460	393	NR	590	939	NR	720	59	NR	850	1	NR	980	0	NR
465	276	NR	595	925	NR	725	49	NR	855	1	NR	985	0	NR
470	190	NR	600	907	NR	730	41	NR	860	1	NR	990	0	NR
475	123	NR	605	878	NR	735	35	NR	865	1	NR	995	0	NR
480	105	NR	610	842	NR	740	31	NR	870	1	NR	1000	0	NR
485	108	NR	615	797	NR	745	28	NR	875	1	NR			

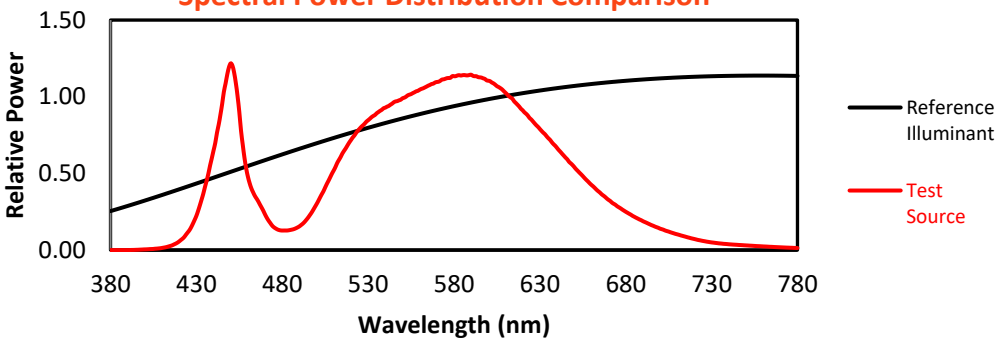
REPORT NUMBER: SP1-2407-176-5

TM-30-18

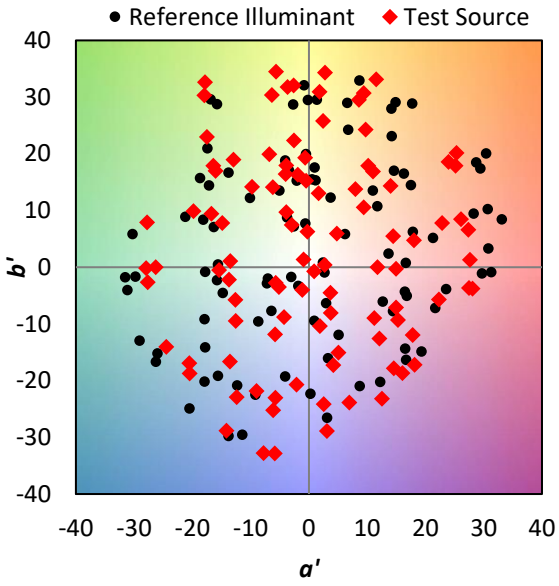
Summary

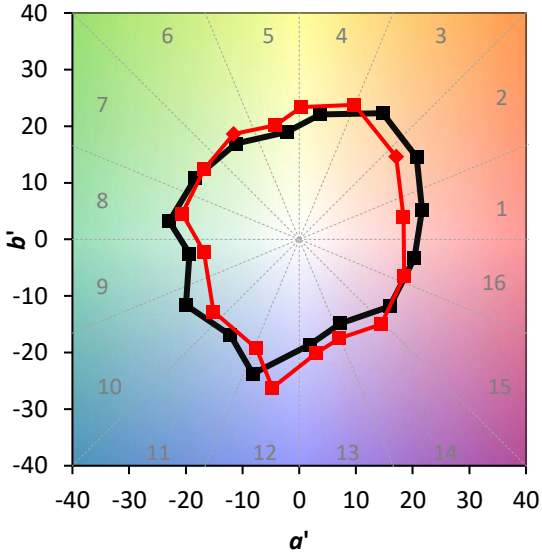
R_f = 75.6
R_g = 94.8
CIE R_a = 72.9
R_9 = -21.5

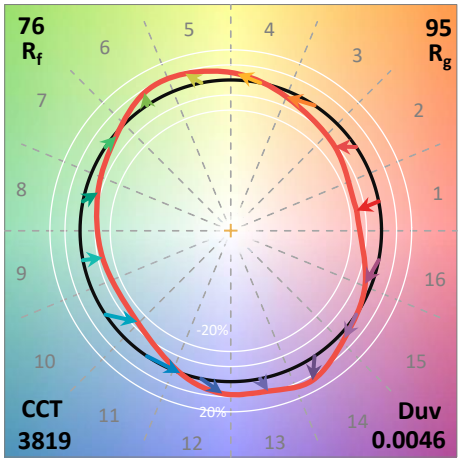
Spectral Power Distribution Comparison

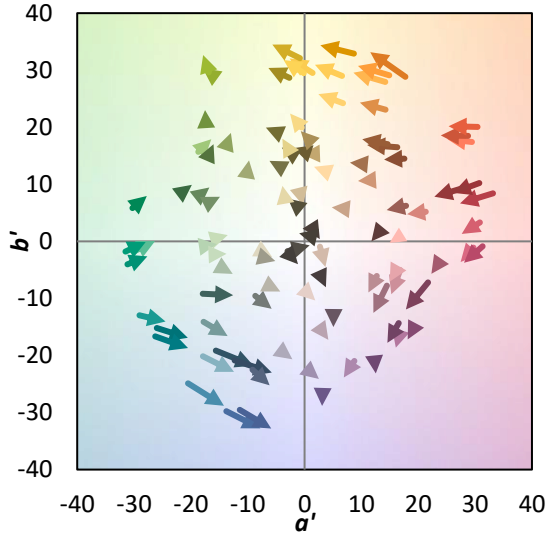


Color Vector Graphics







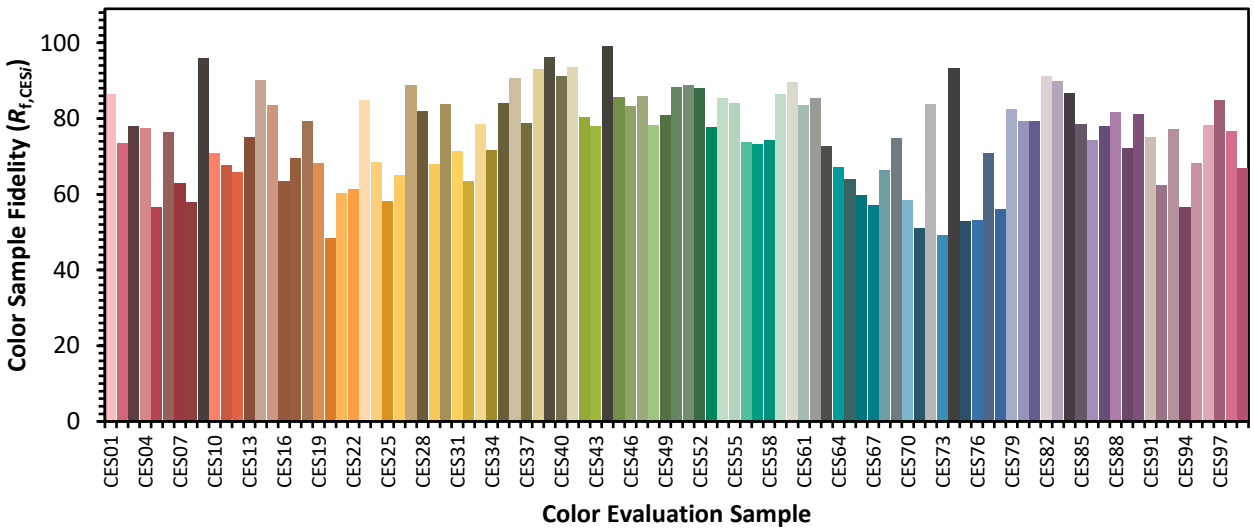


REPORT NUMBER: SP1-2407-176-5

TM-30-18

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

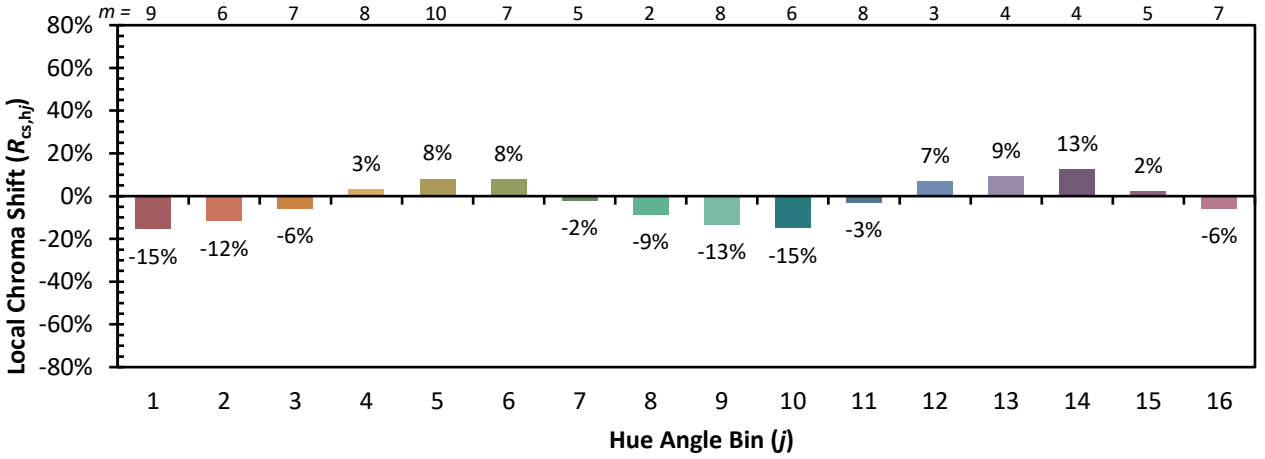
CES01 = 85	CES26 = 65	CES51 = 89	CES76 = 53
CES02 = 61	CES27 = 89	CES52 = 88	CES77 = 71
CES03 = 30	CES28 = 82	CES53 = 78	CES78 = 56
CES04 = 70	CES29 = 68	CES54 = 85	CES79 = 83
CES05 = 48	CES30 = 84	CES55 = 84	CES80 = 79
CES06 = 50	CES31 = 71	CES56 = 74	CES81 = 79
CES07 = 40	CES32 = 63	CES57 = 73	CES82 = 91
CES08 = 39	CES33 = 79	CES58 = 74	CES83 = 90
CES09 = 29	CES34 = 72	CES59 = 86	CES84 = 87
CES10 = 74	CES35 = 84	CES60 = 90	CES85 = 78
CES11 = 57	CES36 = 91	CES61 = 84	CES86 = 74
CES12 = 63	CES37 = 79	CES62 = 85	CES87 = 78
CES13 = 42	CES38 = 93	CES63 = 73	CES88 = 82
CES14 = 74	CES39 = 96	CES64 = 67	CES89 = 72
CES15 = 71	CES40 = 91	CES65 = 64	CES90 = 81
CES16 = 47	CES41 = 93	CES66 = 60	CES91 = 75
CES17 = 49	CES42 = 80	CES67 = 57	CES92 = 62
CES18 = 56	CES43 = 78	CES68 = 66	CES93 = 77
CES19 = 72	CES44 = 99	CES69 = 75	CES94 = 57
CES20 = 65	CES45 = 86	CES70 = 58	CES95 = 68
CES21 = 86	CES46 = 83	CES71 = 51	CES96 = 78
CES22 = 78	CES47 = 86	CES72 = 84	CES97 = 85
CES23 = 92	CES48 = 78	CES73 = 49	CES98 = 77
CES24 = 91	CES49 = 81	CES74 = 93	CES99 = 67
CES25 = 72	CES50 = 88	CES75 = 53	

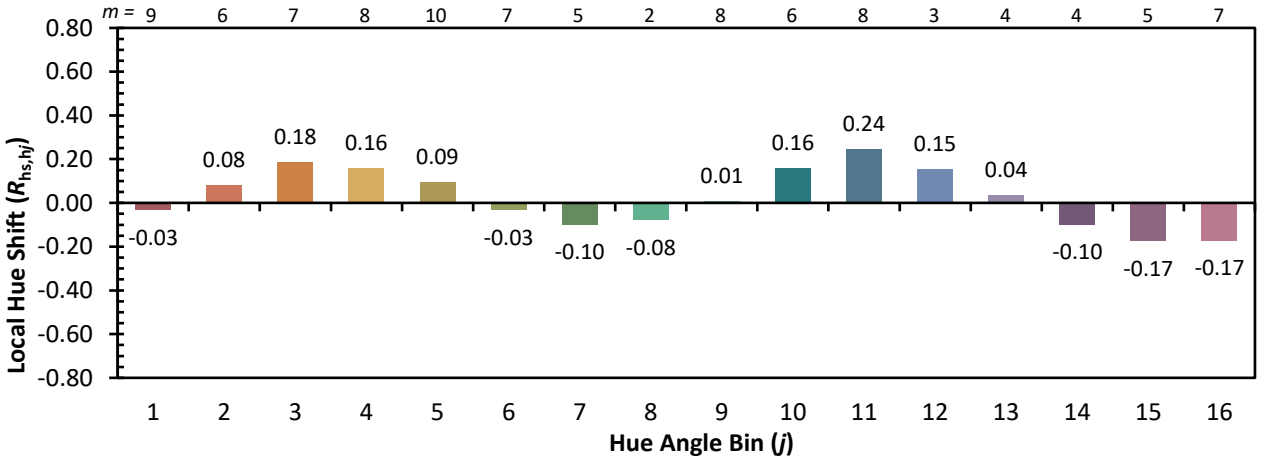


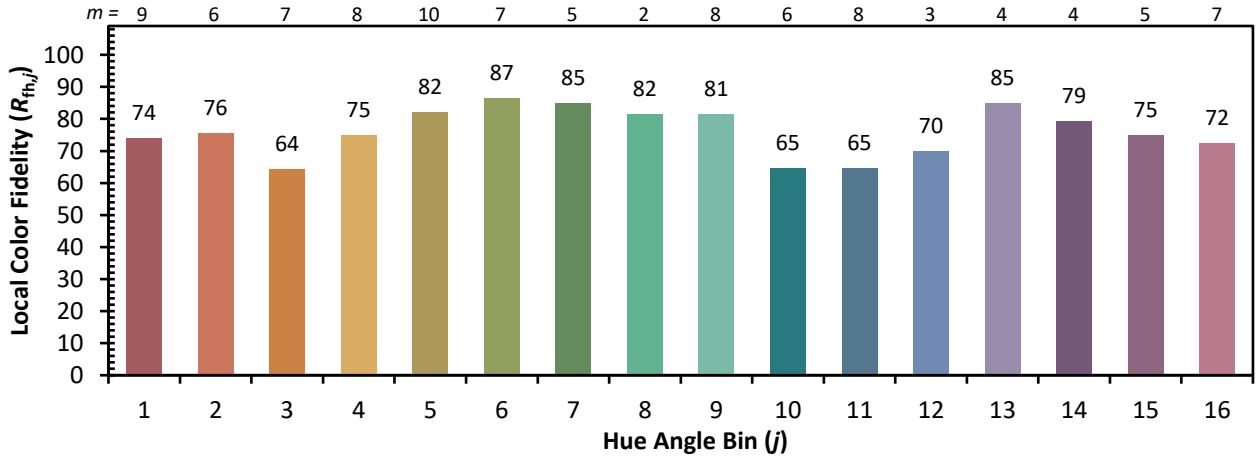
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Color Rendition by Hue-Angle Bin



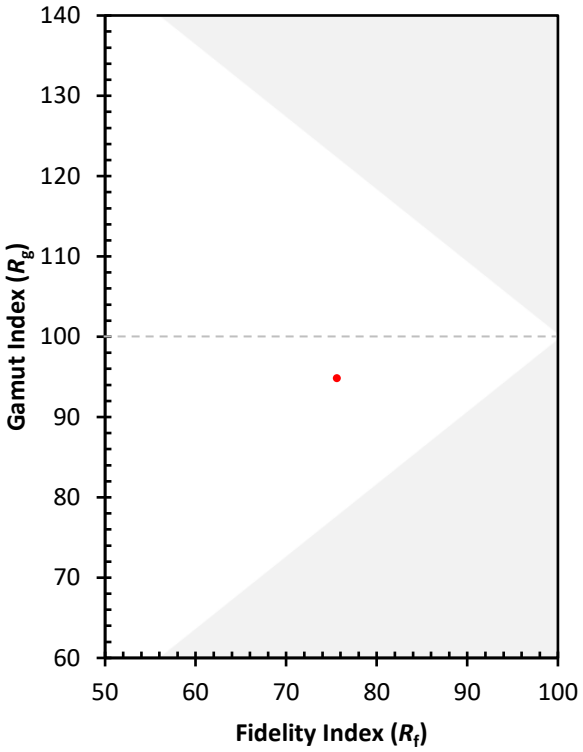


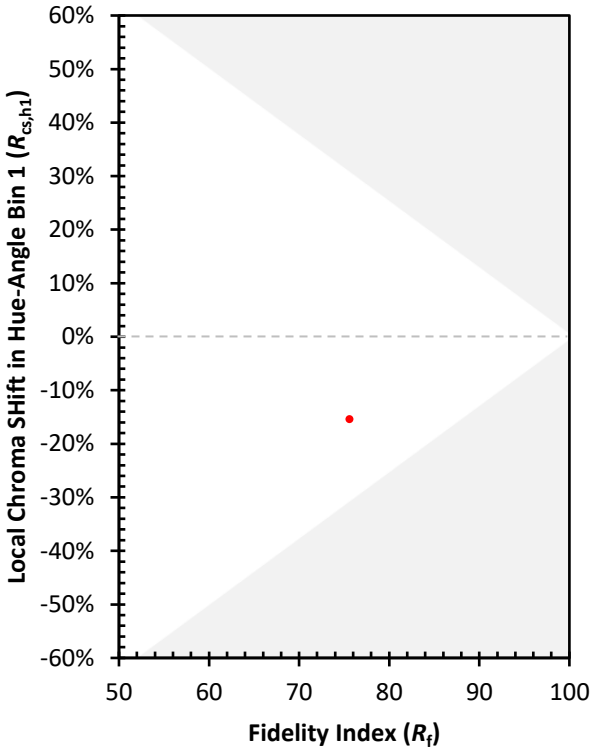


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Measure Comparisons





(END OF REPORT)