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: P821251

Luminaire Tested: **TT-D5-735-24VDC-DL-UPL**

Issue Date: 5/10/2022

Report Generated By 670245763

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Scaled Data Report

Test Information

Test Method:	LM-79-08
Report Number:	P821251
	REPORT IS FROM IESNA LM-79-08 TEST DATA - UPLIGHT (G2-2002-677-2) AND
Test Lab:	INNOVATION CENTER
Issue Date:	5/10/2022
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	McGRAW-EDISON
Catalog Number:	TT-D5-735-24VDC-DL-UPL
Description:	TOPTIER LED PARKING GARAGE LUMINAIRE WITH UPLIGHT
	3500K, 70 CRI LEDS AND DRIVE LANE DISTRIBUTION
Light Source:	-
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	8773.7 lumens
Efficiency:	N/A
Efficacy:	120.2 lumens/watt
Luminous Opening:	Vertical Cylinder (Dia: 1.12' x H: 0.1')
IES Classification:	Type IV - Short
BUG Rating:	B2 - U4 - G3

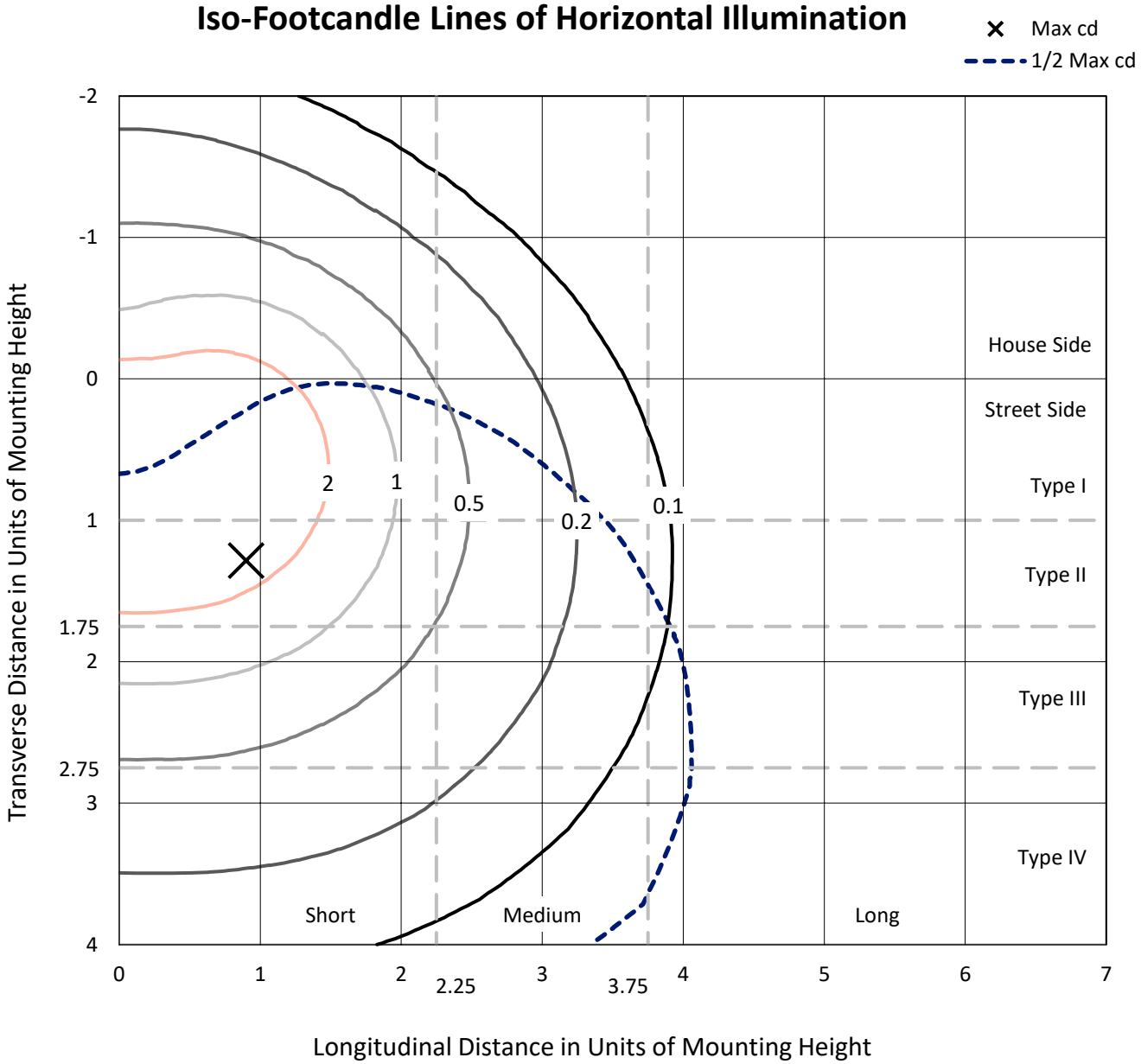
Input Watts (W):	73
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	25 FT

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Iso-Footcandle Lines of Horizontal Illumination



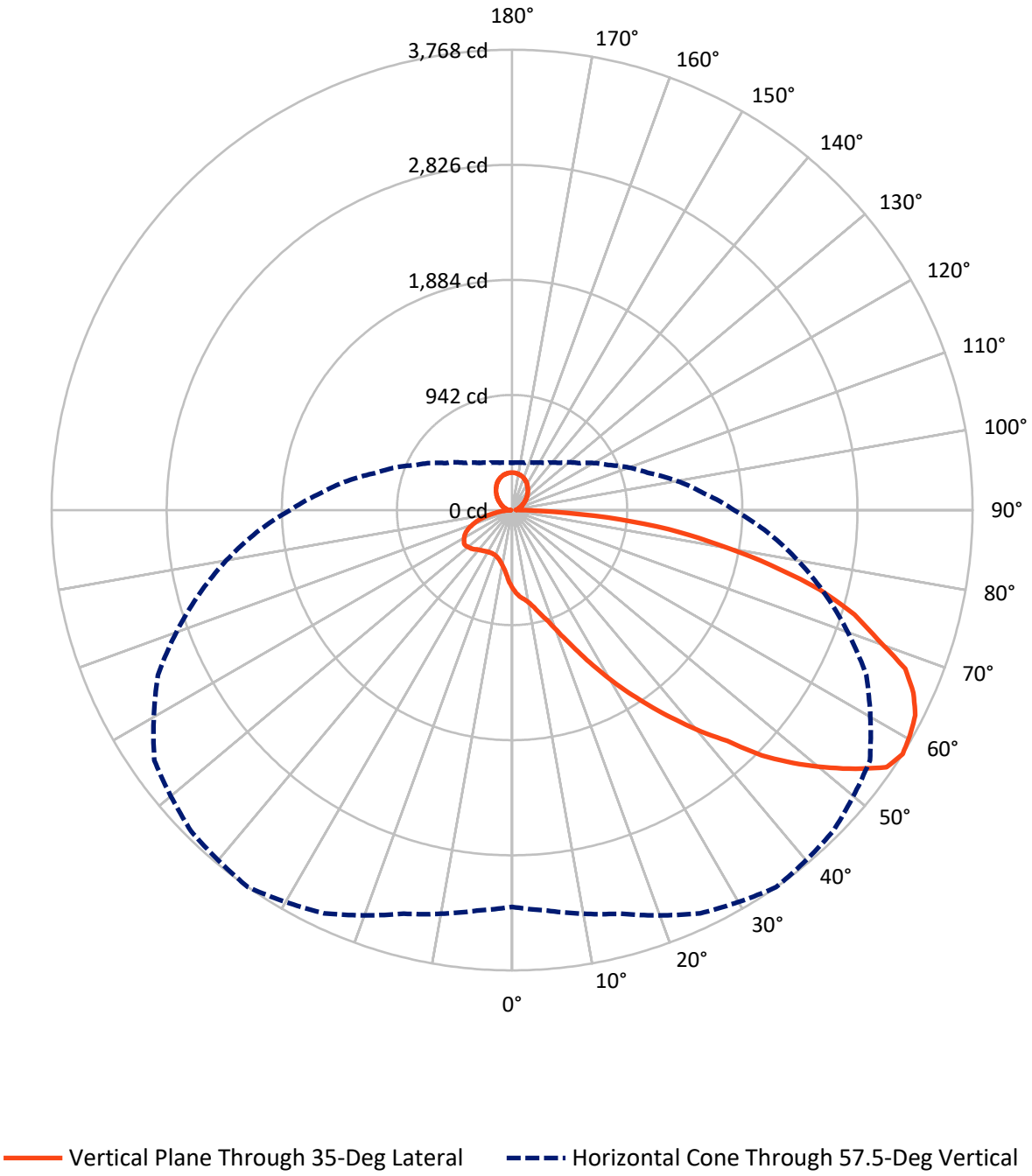
Based on 15 foot mounting height. Maximum calculated value = 4.9 fc
Type IV - Short - N/A

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Luminous Intensity Polar Plot



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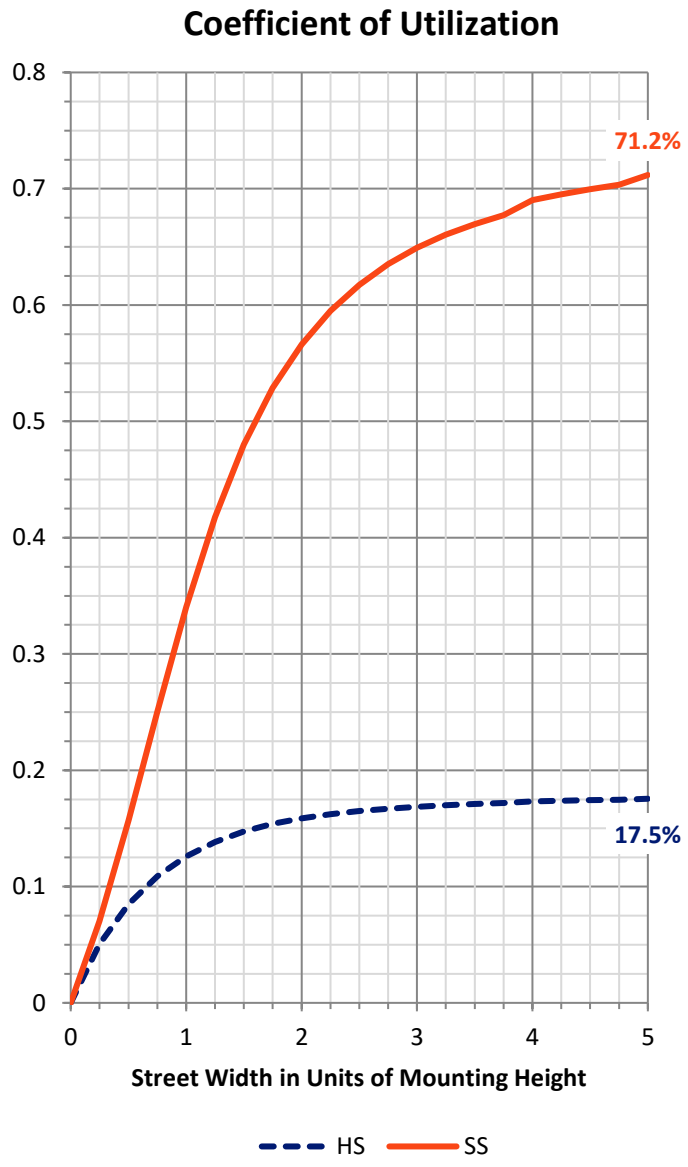
REPORT NUMBER: P821251
CATALOG NUMBER: TT-D5-735-24VDC-DL-UPL

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1556.5	415.9	1972.3
	% Fixture	17.7	4.7	22.5
Street Side	Lumens	6385.5	415.9	6801.4
	% Fixture	72.8	4.7	77.5
Total	Lumens	7942.0	831.7	8773.7
	% Fixture	90.5	9.5	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.4	0.7
10°-20°	187.3	2.1
20°-30°	396.0	4.5
30°-40°	742.0	8.5
40°-50°	1235.0	14.1
50°-60°	1743.0	19.9
60°-70°	1833.8	20.9
70°-80°	1343.4	15.3
80°-90°	402.1	4.6
90°-100°	42.6	0.5
100°-110°	66.0	0.8
110°-120°	91.9	1.0
120°-130°	119.0	1.4
130°-140°	138.7	1.6
140°-150°	140.5	1.6
150°-160°	121.9	1.4
160°-170°	82.2	0.9
170°-180°	28.9	0.3
0°-90°	7942.0	90.5
0°-180°	8773.7	100.0



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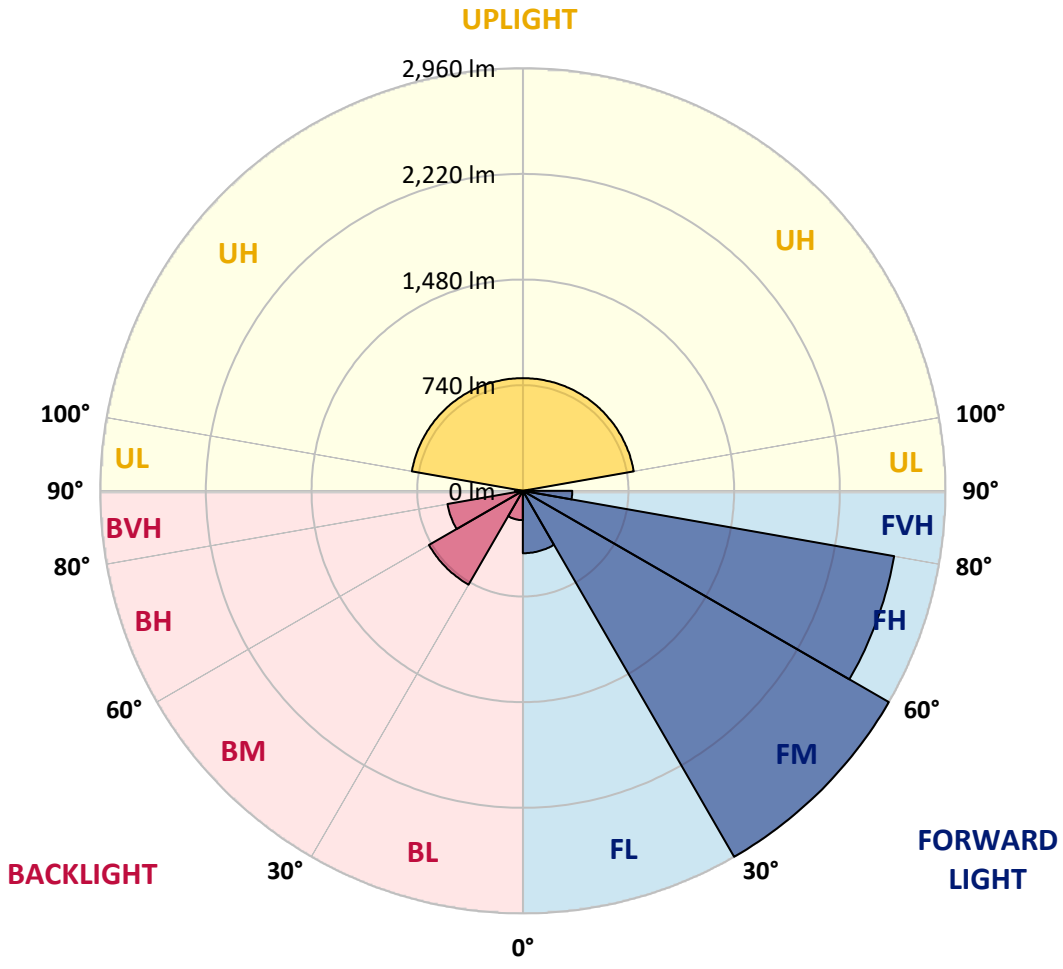
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	437.3	5.0			
FM	(30°-60°)	2960.4	33.7			
FH	(60°-80°)	2641.4	30.1			G2/5000
FVH	(80°-90°)	346.4	3.9			G3/500
BL	(0°-30°)	205.4	2.3	B1/500		
BM	(30°-60°)	759.6	8.7	B1/1000		
BH	(60°-80°)	535.8	6.1	B2/1000		G2/1000
BVH	(80°-90°)	55.7	0.6			G1/100
UL	(90°-100°)	42.6	0.5		U2/50	
UH	(100°-180°)	789.1	9.0		U4/1000	

BUG Rating: B2-U4-G3
Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	640.6	640.6	640.6	640.6	*640.6*	640.6	640.6	640.6	640.6	640.6	640.6
2.5°	697.5	694.1	691.1	686.2	*682.8*	681.8	675.4	667.6	656.8	647.5	642.6
5°	734.3	733.8	732.3	726.4	*715.6*	700.4	686.2	670.0	652.4	634.8	626.4
7.5°	769.1	765.6	763.7	755.3	*739.6*	723.0	701.4	677.4	651.9	626.9	614.2
10°	812.7	807.8	804.4	788.2	*772.0*	748.5	720.0	689.2	658.8	627.4	612.2
12.5°	868.6	864.6	850.4	842.6	*822.0*	795.0	759.3	722.0	682.8	642.6	623.0
15°	928.4	929.3	923.9	903.9	*887.2*	854.8	816.6	770.0	717.1	668.6	644.1
17.5°	1008.3	1006.8	996.5	983.3	*957.8*	924.9	877.9	828.4	766.6	702.9	674.9
20°	1102.4	1097.5	1088.2	1070.0	*1054.8*	1016.1	962.7	900.9	827.4	751.9	714.2
22.5°	1222.0	1211.2	1205.3	1189.1	*1170.5*	1134.2	1077.4	995.5	909.2	815.6	767.1
25°	1339.1	1345.0	1342.1	1332.7	*1309.2*	1264.6	1204.3	1114.1	996.0	886.7	831.8
27.5°	1486.2	1488.6	1489.6	1485.7	*1462.6*	1422.0	1360.7	1241.6	1109.7	973.9	901.4
30°	1639.1	1633.7	1640.6	1642.5	*1631.2*	1584.2	1509.2	1378.8	1221.0	1058.7	977.4
32.5°	1791.0	1796.9	1811.1	1802.3	*1804.3*	1750.8	1669.0	1515.6	1339.6	1148.4	1062.7
35°	1954.8	1962.6	1972.4	1989.1	*1988.1*	1945.4	1827.3	1673.4	1468.0	1251.9	1140.6
37.5°	2122.4	2120.4	2135.1	2173.4	*2180.7*	2140.0	2016.5	1839.1	1602.8	1356.3	1232.3
40°	2281.2	2299.3	2327.8	2353.7	*2385.1*	2327.3	2207.2	2006.2	1749.4	1464.6	1318.5
42.5°	2466.5	2473.8	2516.0	2574.3	*2582.6*	2538.0	2407.2	2198.9	1895.0	1567.5	1412.6
45°	2663.0	2672.8	2712.5	2796.8	*2865.0*	2836.1	2658.6	2411.1	2075.3	1707.7	1516.6
47.5°	2832.6	2861.5	2925.3	3022.8	*3095.4*	3080.2	2910.1	2619.4	2247.9	1825.4	1617.0
50°	2983.6	3018.4	3105.2	3245.8	*3310.5*	3290.4	3124.8	2825.3	2373.8	1927.3	1690.1
52.5°	3136.5	3185.1	3264.5	3418.4	*3519.3*	3527.2	3342.4	2982.6	2519.9	2034.2	1770.0
55°	3219.4	3254.7	3387.5	3574.2	*3716.9*	3720.8	3512.0	3130.2	2620.9	2081.2	1807.7
57.5°	*3248.3*	*3290.9*	*3420.3*	*3641.4*	*3767.9*	*3715.4*	*3573.3*	*3196.8*	*2649.3*	*2098.4*	*1815.5*
60°	3208.1	3250.7	3398.3	3634.0	*3740.9*	3766.4	3546.3	3196.3	2635.1	2076.3	1791.5
62.5°	3150.7	3205.1	3348.3	3578.2	*3701.7*	3715.9	3511.5	3160.1	2614.0	2038.6	1756.2
65°	3005.2	3038.0	3247.3	3418.9	*3609.5*	3592.4	3431.6	3033.6	2539.5	1941.0	1670.0
67.5°	2860.1	2894.4	3048.3	3283.6	*3468.4*	3449.7	3291.4	2911.1	2396.4	1850.4	1579.8
70°	2615.5	2637.5	2849.8	3032.6	*3170.8*	3239.5	3035.1	2706.7	2246.4	1698.4	1442.5
72.5°	2356.7	2391.5	2543.4	2772.8	*2929.2*	2907.1	2804.7	2455.2	2001.8	1521.9	1300.4
75°	2025.8	2059.2	2227.3	2448.8	*2600.8*	2583.1	2466.5	2156.2	1779.3	1317.1	1125.9
77.5°	1713.1	1702.8	1851.3	2019.5	*2157.7*	2198.4	2067.0	1823.4	1467.5	1082.3	916.6
80°	1316.1	1355.3	1448.4	1604.8	*1709.2*	1732.2	1630.8	1443.0	1172.5	847.0	702.9
82.5°	926.9	947.5	1061.2	1159.7	*1290.6*	1282.3	1212.2	1048.0	851.4	594.6	484.3
85°	505.8	510.3	613.2	682.3	*783.3*	795.5	746.0	633.8	487.2	338.2	249.5
87.5°	88.7	87.2	126.5	185.3	*235.3*	252.9	210.3	164.7	66.7	39.7	20.6
90°	30.1	29.1	29.1	29.1	*29.1*	29.1	29.1	29.1	29.1	29.1	29.1
92.5°	34.8	34.2	34.2	33.8	*33.8*	33.8	33.8	33.8	33.8	33.8	33.8
95°	39.4	39.4	39.4	38.5	*38.5*	38.5	38.5	38.5	38.5	38.5	38.5
97.5°	44.6	44.6	44.6	44.2	*44.2*	44.2	44.2	44.2	44.2	44.2	44.2
100°	49.8	49.8	49.8	49.8	*49.8*	49.8	49.8	49.8	49.8	49.8	49.8
102.5°	55.9	55.9	55.9	55.9	*55.9*	55.9	55.9	56.4	55.9	55.9	55.9
105°	62.0	62.0	62.0	62.0	*62.0*	62.0	62.0	62.9	62.0	62.0	62.0
107.5°	68.6	68.6	69.0	69.0	*69.0*	69.0	69.0	69.5	69.0	69.0	69.0
110°	75.1	75.1	76.1	76.1	*76.1*	76.1	76.1	76.1	76.1	76.1	76.1

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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
112.5°	83.1	83.1	84.0	84.0	*84.0*	84.0	84.6	84.6	84.0	84.0	84.0
115°	91.1	91.1	92.0	92.0	*92.0*	92.0	93.0	93.0	92.0	92.0	92.0
117.5°	100.5	100.5	101.0	101.4	*101.4*	101.4	102.4	102.4	101.4	101.4	101.4
120°	109.9	109.9	109.9	110.8	*110.8*	110.8	111.8	111.8	110.8	110.8	110.8
122.5°	120.7	120.7	121.2	121.6	*121.6*	121.6	122.6	122.6	122.1	122.1	121.6
125°	131.5	131.5	132.4	132.4	*132.4*	132.4	133.4	133.4	133.4	133.4	132.4
127.5°	143.2	143.2	144.2	144.2	*144.2*	144.2	145.1	145.1	145.1	145.1	144.2
130°	155.0	155.0	155.9	155.9	*155.9*	155.9	156.8	156.8	156.8	156.8	155.9
132.5°	167.2	167.2	167.6	167.6	*167.6*	168.1	168.6	168.6	168.6	168.6	168.1
135°	179.4	179.4	179.4	179.4	*179.4*	180.3	180.3	180.3	180.3	180.3	180.3
137.5°	191.2	190.6	191.2	190.6	*191.2*	191.6	191.6	191.6	191.6	191.6	191.6
140°	202.9	201.9	202.9	201.9	*202.9*	202.9	202.9	202.9	202.9	202.9	202.9
142.5°	213.7	213.2	213.7	212.7	*213.7*	213.7	213.7	213.7	213.7	213.7	213.7
145°	224.5	224.5	224.5	223.5	*224.5*	224.5	224.5	224.5	224.5	224.5	224.5
147.5°	235.8	235.3	235.8	234.8	*235.8*	235.8	235.8	235.8	235.8	235.8	235.8
150°	247.0	246.1	247.0	246.1	*247.0*	247.0	247.0	247.0	247.0	247.0	247.0
152.5°	256.0	255.5	256.4	255.5	*256.0*	256.0	256.4	256.0	256.0	256.0	256.0
155°	264.9	264.9	265.8	264.9	*264.9*	264.9	265.8	264.9	264.9	264.9	264.9
157.5°	272.4	272.4	273.3	272.4	*272.4*	272.4	273.3	272.4	272.4	272.4	272.4
160°	279.9	279.9	280.8	279.9	*279.9*	279.9	280.8	279.9	279.9	279.9	279.9
162.5°	286.0	286.0	286.9	286.0	*286.0*	286.0	286.9	286.0	286.0	286.0	286.0
165°	292.1	292.1	293.0	292.1	*292.1*	292.1	293.0	292.1	292.1	292.1	292.1
167.5°	295.8	295.8	296.8	295.8	*295.8*	295.8	296.8	295.8	295.8	295.8	295.8
170°	299.6	299.6	300.5	299.6	*299.6*	299.6	300.5	299.6	299.6	299.6	299.6
172.5°	302.0	302.0	302.8	302.0	*302.4*	302.0	302.8	302.0	302.0	302.0	302.0
175°	304.3	304.3	305.2	304.3	*305.2*	304.3	305.2	304.3	304.3	304.3	304.3
177.5°	305.2	305.2	305.7	305.2	*305.7*	305.2	305.7	305.2	305.2	305.2	305.2
180°	306.2	306.2	306.2	306.2	*306.2*	306.2	306.2	306.2	306.2	306.2	306.2

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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	640.6	640.6	640.6	640.6	640.6	640.6	640.6	640.6	640.6	640.6
2.5°	637.2	627.4	618.1	609.3	600.9	594.1	591.1	588.7	588.2	583.8
5°	616.1	600.4	583.3	567.6	553.4	538.2	525.9	522.0	521.5	524.0
7.5°	602.4	578.4	554.9	536.2	515.2	495.1	476.9	465.7	462.7	461.7
10°	597.5	568.1	539.7	511.2	487.7	463.2	441.1	427.4	419.6	417.6
12.5°	603.9	566.6	531.3	498.0	466.1	439.2	414.2	397.0	388.2	385.3
15°	621.0	573.0	528.4	488.2	453.4	419.6	395.1	373.0	362.7	361.2
17.5°	643.6	587.2	530.4	483.3	442.1	406.3	377.9	354.9	342.1	340.2
20°	675.9	605.3	539.7	483.8	437.2	397.0	365.2	340.7	326.9	325.5
22.5°	721.5	634.3	554.9	490.2	437.2	391.6	357.3	331.8	317.6	316.2
25°	773.5	667.6	575.4	499.0	438.7	390.7	352.9	326.0	311.7	310.3
27.5°	833.3	708.3	597.5	510.3	444.1	391.6	351.4	324.5	310.8	308.8
30°	900.4	748.5	621.5	522.5	450.9	393.6	351.9	324.0	310.8	308.8
32.5°	967.6	792.6	648.5	538.7	458.8	399.0	354.9	327.4	313.7	312.2
35°	1038.2	841.1	678.4	555.4	470.1	406.3	359.8	331.3	317.6	316.2
37.5°	1111.2	890.1	709.3	575.9	481.8	413.7	366.6	338.2	325.0	323.5
40°	1187.2	940.6	742.1	597.0	493.1	423.5	375.0	347.0	333.3	331.8
42.5°	1252.8	986.2	772.5	615.1	507.8	432.8	385.8	356.3	343.6	342.1
45°	1345.5	1038.2	803.9	637.7	525.5	449.5	398.5	371.1	359.3	356.3
47.5°	1422.9	1091.1	835.7	659.3	540.2	460.7	410.8	382.8	370.6	368.6
50°	1486.2	1124.4	860.7	670.5	548.0	468.1	420.6	392.1	381.3	377.9
52.5°	1552.8	1162.2	874.0	683.8	560.7	478.4	427.4	402.9	391.1	387.7
55°	1574.4	1164.1	883.8	686.2	558.8	480.8	431.8	403.4	394.1	390.7
57.5°	*1575.9*	*1163.6*	*870.5*	*669.6*	*545.1*	*470.1*	*427.4*	*400.5*	*389.7*	*386.7*
60°	1548.4	1134.7	844.1	649.5	530.4	454.9	415.2	389.2	380.9	377.9
62.5°	1514.1	1108.2	811.2	622.0	509.3	439.7	401.0	380.9	369.6	366.1
65°	1427.3	1038.6	761.2	584.8	478.9	416.6	378.4	358.8	350.0	347.5
67.5°	1350.4	964.1	711.2	546.0	444.6	388.2	353.4	336.2	329.4	327.9
70°	1225.4	883.3	633.8	485.7	400.5	346.1	320.1	307.3	299.0	296.1
72.5°	1098.4	775.4	558.8	427.9	347.0	311.3	285.3	271.5	267.1	264.7
75°	932.8	651.9	471.0	362.7	298.0	260.3	242.1	231.8	226.5	226.0
77.5°	763.2	522.0	379.4	287.2	235.8	209.8	197.0	187.2	186.3	188.2
80°	584.8	394.1	281.8	215.2	174.5	158.3	151.5	145.1	144.1	142.6
82.5°	388.7	261.3	178.4	136.3	117.1	107.8	105.9	101.5	100.5	99.5
85°	189.7	125.5	86.3	67.6	62.3	57.8	57.3	59.3	58.8	57.3
87.5°	19.6	16.2	15.7	12.3	11.3	10.3	10.3	9.3	11.3	8.3
90°	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	30.1
92.5°	33.8	33.8	33.8	33.8	33.8	33.8	33.8	34.2	34.2	34.8
95°	38.5	38.5	38.5	38.5	38.5	38.5	38.5	39.4	39.4	39.4
97.5°	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.6	44.6	44.6
100°	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8
102.5°	55.9	55.9	56.4	55.9	55.9	55.9	55.9	55.9	55.9	55.9
105°	62.0	62.0	62.9	62.0	62.0	62.0	62.0	62.0	62.0	62.0
107.5°	69.0	69.0	69.5	69.0	69.0	69.0	69.0	69.0	68.6	68.6
110°	76.1	76.1	76.1	76.1	76.1	76.1	76.1	76.1	75.1	75.1

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

Scaled Data Report

REPORT NUMBER: P821251
CATALOG NUMBER: TT-D5-735-24VDC-DL-UPL

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	84.0	84.0	84.6	84.6	84.0	84.0	84.0	84.0	83.1	83.1
115°	92.0	92.0	93.0	93.0	92.0	92.0	92.0	92.0	91.1	91.1
117.5°	101.4	101.4	102.4	102.4	101.4	101.4	101.4	101.0	100.5	100.5
120°	110.8	110.8	111.8	111.8	110.8	110.8	110.8	109.9	109.9	109.9
122.5°	122.1	122.1	122.6	122.6	121.6	121.6	121.6	121.2	120.7	120.7
125°	133.4	133.4	133.4	133.4	132.4	132.4	132.4	132.4	131.5	131.5
127.5°	145.1	145.1	145.1	145.1	144.2	144.2	144.2	144.2	143.2	143.2
130°	156.8	156.8	156.8	156.8	155.9	155.9	155.9	155.9	155.0	155.0
132.5°	168.6	168.6	168.6	168.6	168.1	167.6	167.6	167.6	167.2	167.2
135°	180.3	180.3	180.3	180.3	180.3	179.4	179.4	179.4	179.4	179.4
137.5°	191.6	191.6	191.6	191.6	191.6	191.2	190.6	191.2	190.6	191.2
140°	202.9	202.9	202.9	202.9	202.9	202.9	201.9	202.9	201.9	202.9
142.5°	213.7	213.7	213.7	213.7	213.7	213.7	212.7	213.7	213.2	213.7
145°	224.5	224.5	224.5	224.5	224.5	224.5	223.5	224.5	224.5	224.5
147.5°	235.8	235.8	235.8	235.8	235.8	235.8	234.8	235.8	235.3	235.8
150°	247.0	247.0	247.0	247.0	247.0	247.0	246.1	247.0	246.1	247.0
152.5°	256.0	256.0	256.0	256.4	256.0	256.0	255.5	256.4	255.5	256.0
155°	264.9	264.9	264.9	265.8	264.9	264.9	264.9	265.8	264.9	264.9
157.5°	272.4	272.4	272.4	273.3	272.4	272.4	272.4	273.3	272.4	272.4
160°	279.9	279.9	279.9	280.8	279.9	279.9	279.9	280.8	279.9	279.9
162.5°	286.0	286.0	286.0	286.9	286.0	286.0	286.0	286.9	286.0	286.0
165°	292.1	292.1	292.1	293.0	292.1	292.1	292.1	293.0	292.1	292.1
167.5°	295.8	295.8	295.8	296.8	295.8	295.8	295.8	296.8	295.8	295.8
170°	299.6	299.6	299.6	300.5	299.6	299.6	299.6	300.5	299.6	299.6
172.5°	302.0	302.0	302.0	302.8	302.0	302.4	302.0	302.8	302.0	302.0
175°	304.3	304.3	304.3	305.2	304.3	305.2	304.3	305.2	304.3	304.3
177.5°	305.2	305.2	305.2	305.7	305.2	305.7	305.2	305.7	305.2	305.2
180°	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2

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: SP1-2407-176-4

Test Date: 09/24/2024

Luminaire Tested: MEM2-HTN-VA-30-735-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-735-U-WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

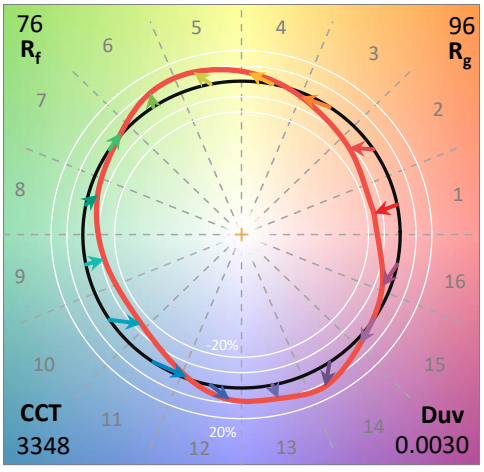
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-176-4
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-30-735-U-WQ**
Description:	EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE

Spectral Parameters

CCT (K):	3348	CRI (Ra):	73.4		
CIE u':	0.2384	R1:	70.8	R9:	-19.2
CIE v':	0.5184	R2:	79.9	R10:	52.5
Duv:	0.0030	R3:	87.6	R11:	68.0
CIE x:	0.4177	R4:	72.6	R12:	42.6
CIE y:	0.4036	R5:	69.3	R13:	72.0
CIE z:	0.1787	R6:	71.3	R14:	92.6
Peak Wavelength (nm):	593	R7:	82.1	R15:	63.8
Dominant Wavelength (nm):	580	R8:	53.3		
Purity:	46.5223				

Rf:	75.8
Rg:	95.8



Test Conditions

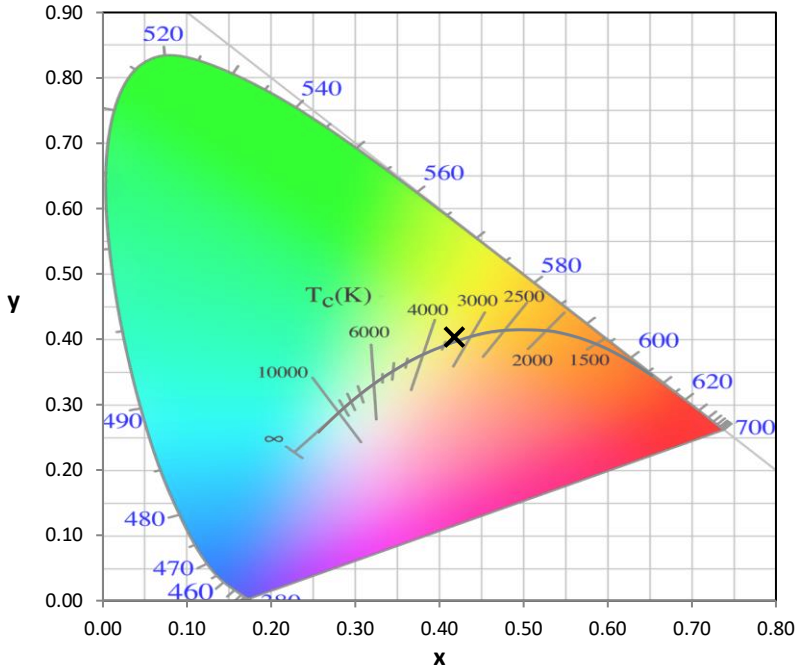
Stabilization Time:	30M
Operation Time:	1H 30M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-4

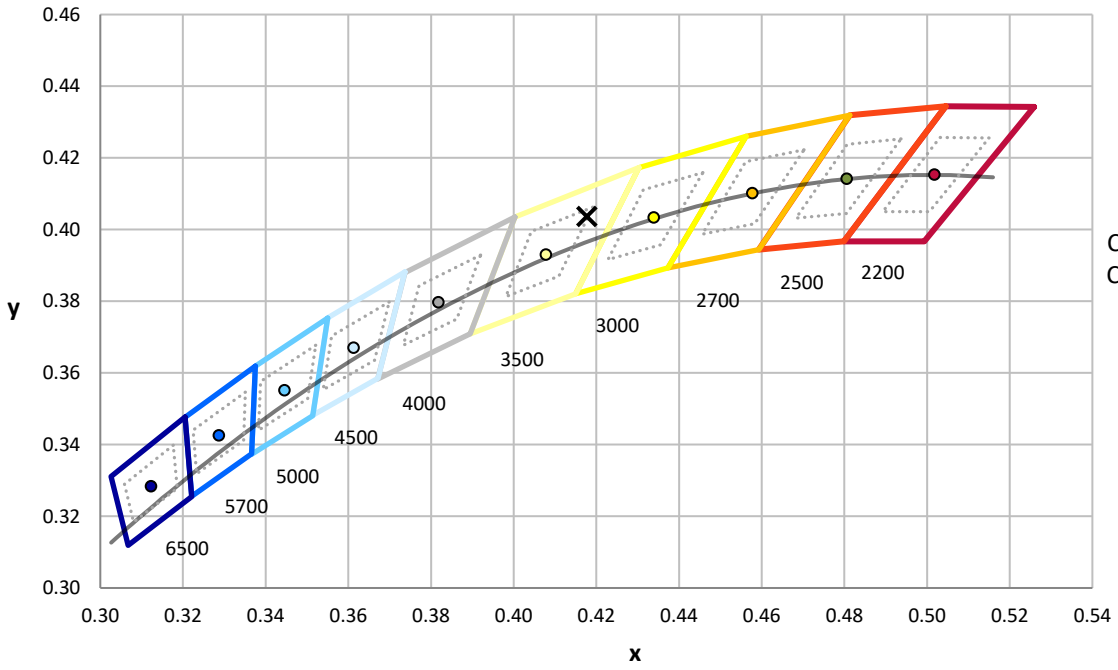
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2407-176-4

CIE 1931 Chromaticity Diagram



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

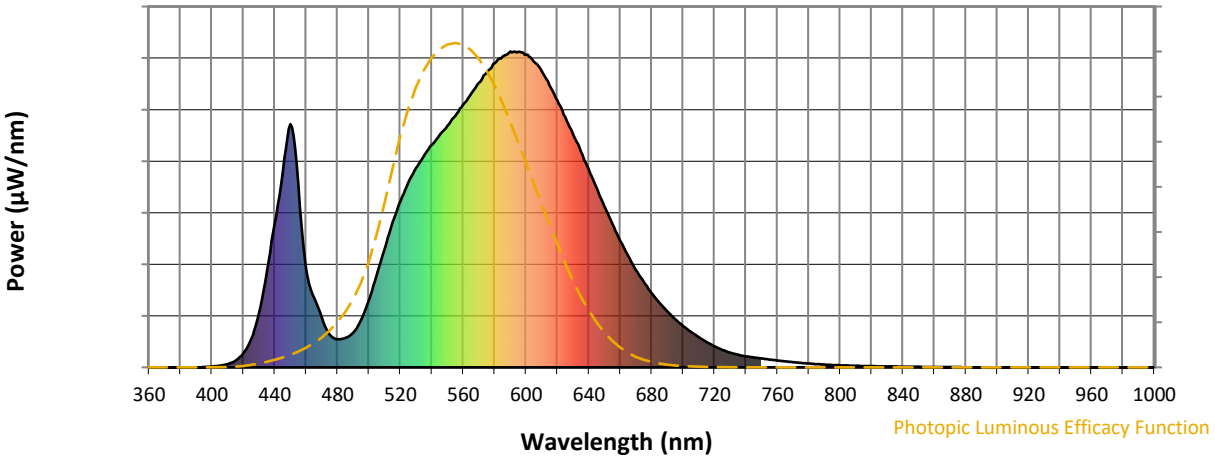


CCT = 3348K
CIE x = 0.4177
CIE y = 0.4036
Duv = 0.0030

Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-4

Photopic Flux vs. Wavelength

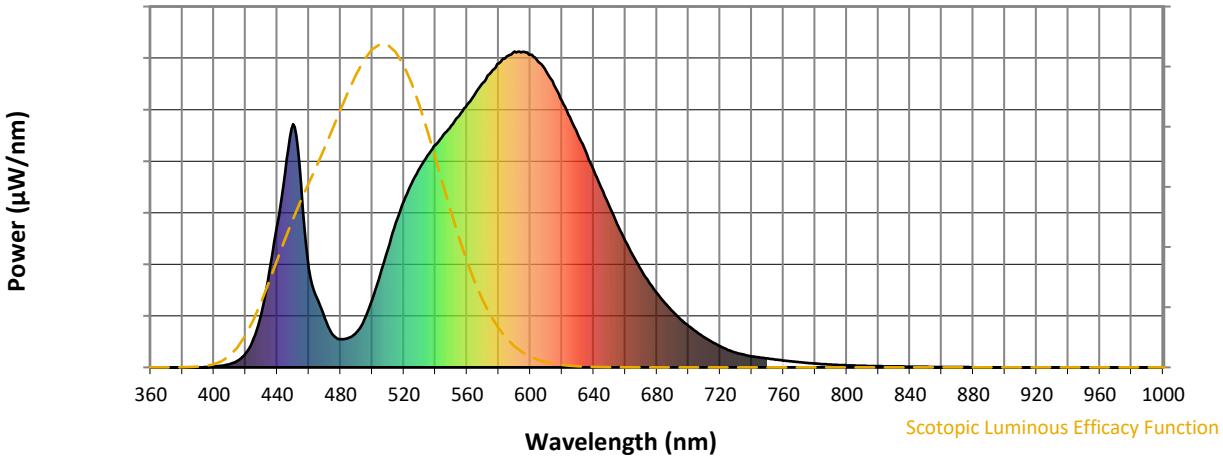


Photopic Lumens: NR

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	110	NR	620	844	NR	750	28	NR	880	0	NR
365	0	NR	495	150	NR	625	792	NR	755	25	NR	885	0	NR
370	0	NR	500	214	NR	630	737	NR	760	22	NR	890	0	NR
375	0	NR	505	293	NR	635	683	NR	765	19	NR	895	0	NR
380	0	NR	510	376	NR	640	625	NR	770	16	NR	900	0	NR
385	0	NR	515	458	NR	645	566	NR	775	14	NR	905	0	NR
390	0	NR	520	526	NR	650	509	NR	780	12	NR	910	0	NR
395	1	NR	525	584	NR	655	453	NR	785	10	NR	915	0	NR
400	3	NR	530	631	NR	660	401	NR	790	9	NR	920	0	NR
405	5	NR	535	671	NR	665	353	NR	795	8	NR	925	0	NR
410	10	NR	540	704	NR	670	308	NR	800	7	NR	930	0	NR
415	21	NR	545	737	NR	675	269	NR	805	6	NR	935	0	NR
420	44	NR	550	766	NR	680	235	NR	810	5	NR	940	0	NR
425	90	NR	555	797	NR	685	204	NR	815	4	NR	945	0	NR
430	171	NR	560	832	NR	690	177	NR	820	4	NR	950	0	NR
435	305	NR	565	866	NR	695	152	NR	825	3	NR	955	0	NR
440	455	NR	570	901	NR	700	131	NR	830	3	NR	960	0	NR
445	615	NR	575	933	NR	705	112	NR	835	3	NR	965	0	NR
450	771	NR	580	963	NR	710	96	NR	840	2	NR	970	0	NR
455	579	NR	585	984	NR	715	80	NR	845	2	NR	975	0	NR
460	313	NR	590	1000	NR	720	67	NR	850	2	NR	980	0	NR
465	221	NR	595	999	NR	725	55	NR	855	1	NR	985	0	NR
470	156	NR	600	990	NR	730	46	NR	860	1	NR	990	0	NR
475	103	NR	605	968	NR	735	40	NR	865	1	NR	995	0	NR
480	89	NR	610	937	NR	740	35	NR	870	1	NR	1000	0	NR
485	93	NR	615	893	NR	745	31	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-4

Scotopic Flux vs. Wavelength

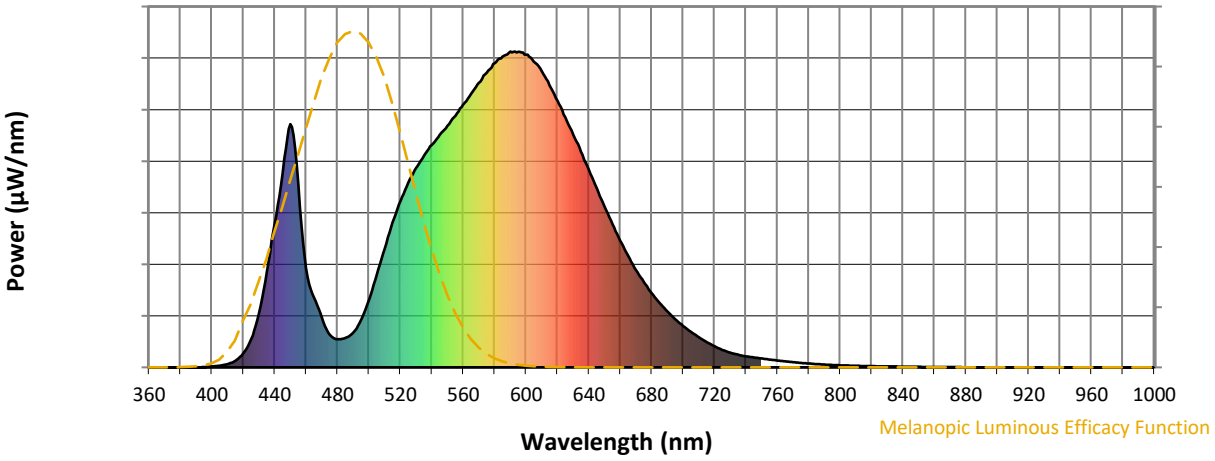


Scotopic Lumens: NR **S/P: 1.31**

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	110	NR	620	844	NR	750	28	NR	880	0	NR
365	0	NR	495	150	NR	625	792	NR	755	25	NR	885	0	NR
370	0	NR	500	214	NR	630	737	NR	760	22	NR	890	0	NR
375	0	NR	505	293	NR	635	683	NR	765	19	NR	895	0	NR
380	0	NR	510	376	NR	640	625	NR	770	16	NR	900	0	NR
385	0	NR	515	458	NR	645	566	NR	775	14	NR	905	0	NR
390	0	NR	520	526	NR	650	509	NR	780	12	NR	910	0	NR
395	1	NR	525	584	NR	655	453	NR	785	10	NR	915	0	NR
400	3	NR	530	631	NR	660	401	NR	790	9	NR	920	0	NR
405	5	NR	535	671	NR	665	353	NR	795	8	NR	925	0	NR
410	10	NR	540	704	NR	670	308	NR	800	7	NR	930	0	NR
415	21	NR	545	737	NR	675	269	NR	805	6	NR	935	0	NR
420	44	NR	550	766	NR	680	235	NR	810	5	NR	940	0	NR
425	90	NR	555	797	NR	685	204	NR	815	4	NR	945	0	NR
430	171	NR	560	832	NR	690	177	NR	820	4	NR	950	0	NR
435	305	NR	565	866	NR	695	152	NR	825	3	NR	955	0	NR
440	455	NR	570	901	NR	700	131	NR	830	3	NR	960	0	NR
445	615	NR	575	933	NR	705	112	NR	835	3	NR	965	0	NR
450	771	NR	580	963	NR	710	96	NR	840	2	NR	970	0	NR
455	579	NR	585	984	NR	715	80	NR	845	2	NR	975	0	NR
460	313	NR	590	1000	NR	720	67	NR	850	2	NR	980	0	NR
465	221	NR	595	999	NR	725	55	NR	855	1	NR	985	0	NR
470	156	NR	600	990	NR	730	46	NR	860	1	NR	990	0	NR
475	103	NR	605	968	NR	735	40	NR	865	1	NR	995	0	NR
480	89	NR	610	937	NR	740	35	NR	870	1	NR	1000	0	NR
485	93	NR	615	893	NR	745	31	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-4

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.4**

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	110	NR	620	844	NR	750	28	NR	880	0	NR
365	0	NR	495	150	NR	625	792	NR	755	25	NR	885	0	NR
370	0	NR	500	214	NR	630	737	NR	760	22	NR	890	0	NR
375	0	NR	505	293	NR	635	683	NR	765	19	NR	895	0	NR
380	0	NR	510	376	NR	640	625	NR	770	16	NR	900	0	NR
385	0	NR	515	458	NR	645	566	NR	775	14	NR	905	0	NR
390	0	NR	520	526	NR	650	509	NR	780	12	NR	910	0	NR
395	1	NR	525	584	NR	655	453	NR	785	10	NR	915	0	NR
400	3	NR	530	631	NR	660	401	NR	790	9	NR	920	0	NR
405	5	NR	535	671	NR	665	353	NR	795	8	NR	925	0	NR
410	10	NR	540	704	NR	670	308	NR	800	7	NR	930	0	NR
415	21	NR	545	737	NR	675	269	NR	805	6	NR	935	0	NR
420	44	NR	550	766	NR	680	235	NR	810	5	NR	940	0	NR
425	90	NR	555	797	NR	685	204	NR	815	4	NR	945	0	NR
430	171	NR	560	832	NR	690	177	NR	820	4	NR	950	0	NR
435	305	NR	565	866	NR	695	152	NR	825	3	NR	955	0	NR
440	455	NR	570	901	NR	700	131	NR	830	3	NR	960	0	NR
445	615	NR	575	933	NR	705	112	NR	835	3	NR	965	0	NR
450	771	NR	580	963	NR	710	96	NR	840	2	NR	970	0	NR
455	579	NR	585	984	NR	715	80	NR	845	2	NR	975	0	NR
460	313	NR	590	1000	NR	720	67	NR	850	2	NR	980	0	NR
465	221	NR	595	999	NR	725	55	NR	855	1	NR	985	0	NR
470	156	NR	600	990	NR	730	46	NR	860	1	NR	990	0	NR
475	103	NR	605	968	NR	735	40	NR	865	1	NR	995	0	NR
480	89	NR	610	937	NR	740	35	NR	870	1	NR	1000	0	NR
485	93	NR	615	893	NR	745	31	NR	875	1	NR			

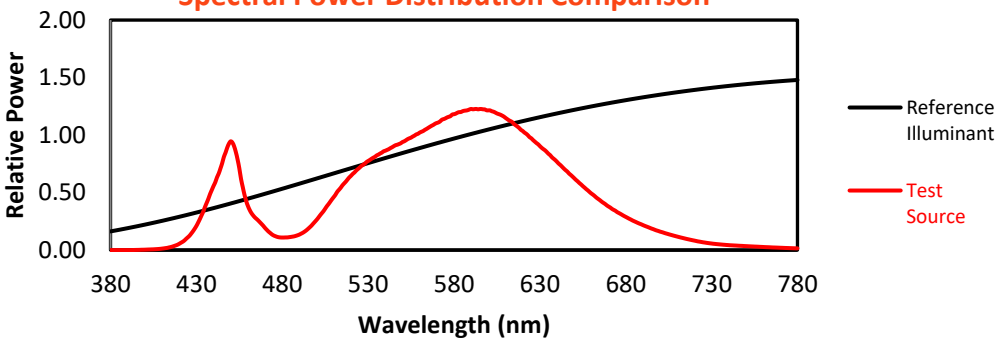
REPORT NUMBER: SP1-2407-176-4

TM-30-18

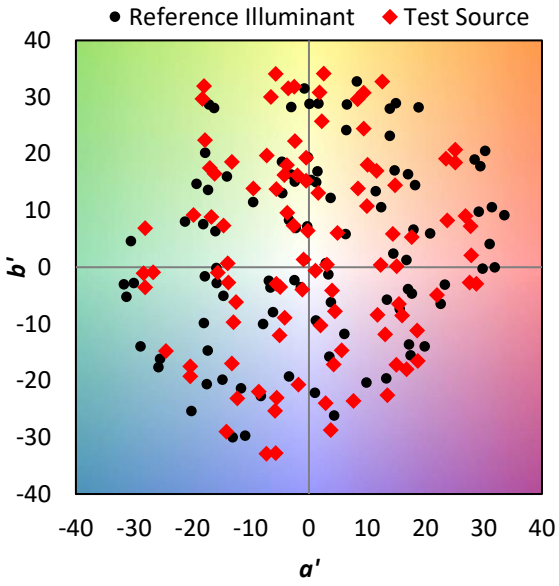
Summary

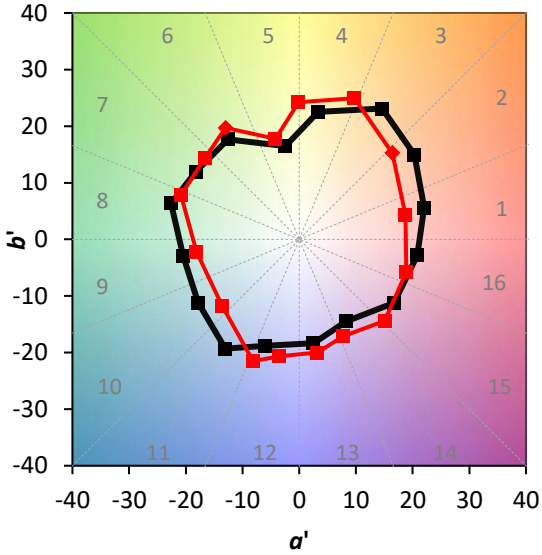
R_f = 75.8
R_g = 95.8
CIE R_a = 73.4
R_9 = -19.2

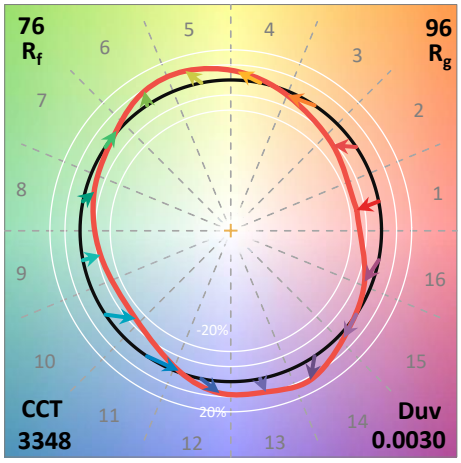
Spectral Power Distribution Comparison

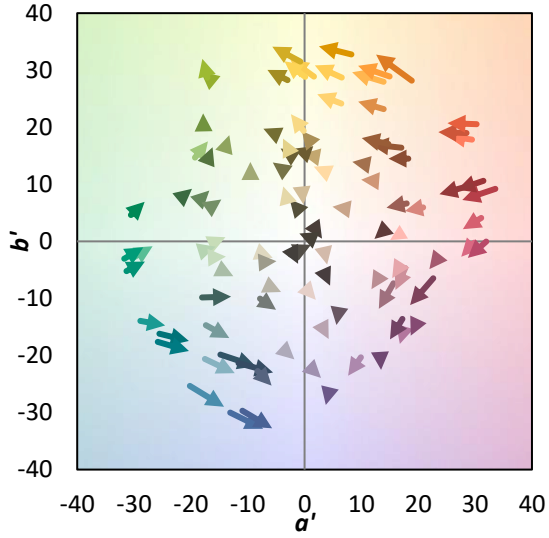


Color Vector Graphics







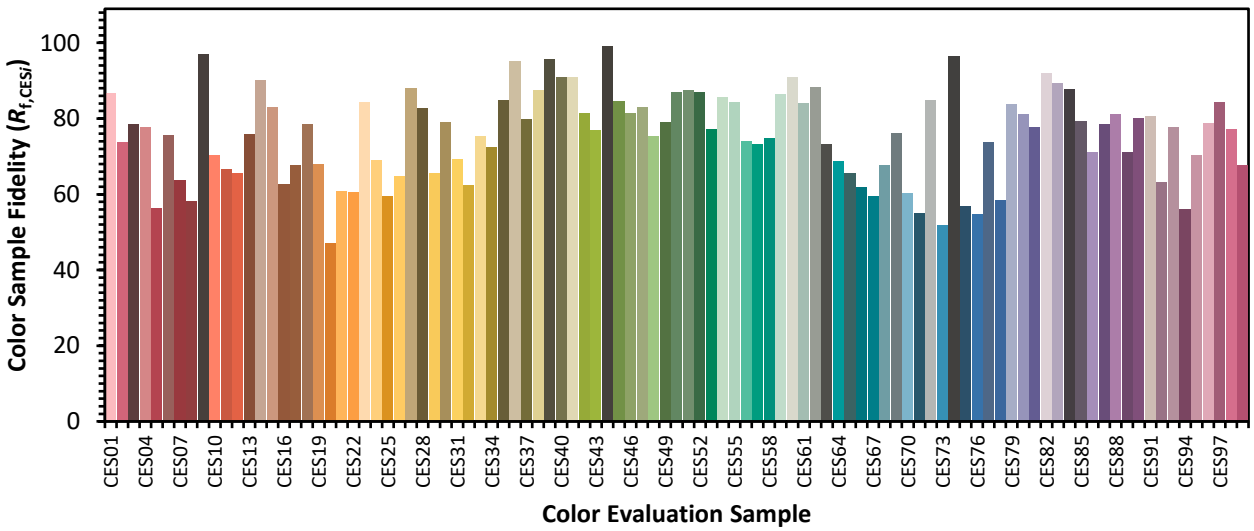


REPORT NUMBER: SP1-2407-176-4

TM-30-18

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

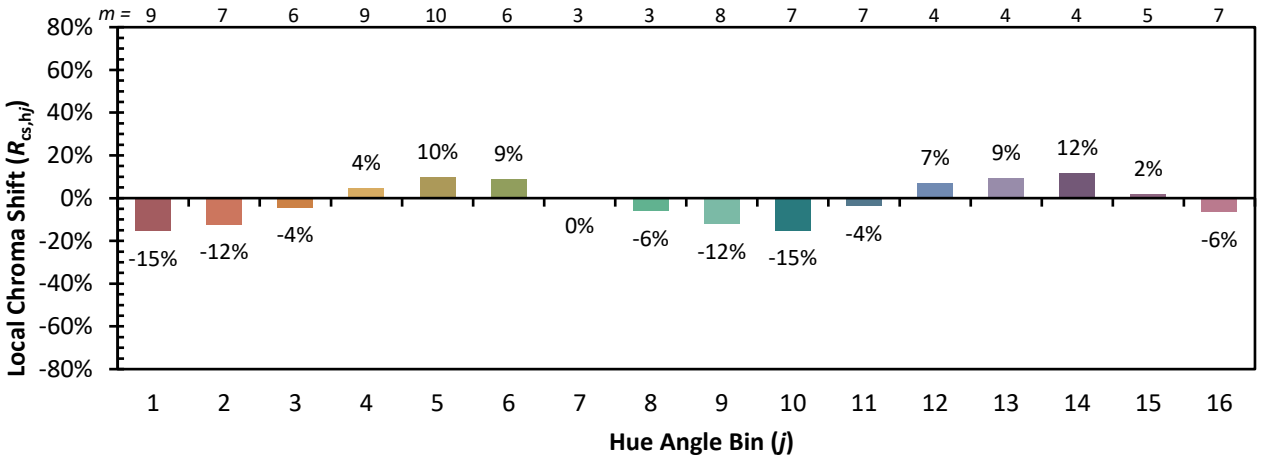
CES01 = 86	CES26 = 65	CES51 = 88	CES76 = 55
CES02 = 62	CES27 = 88	CES52 = 87	CES77 = 74
CES03 = 31	CES28 = 83	CES53 = 77	CES78 = 58
CES04 = 70	CES29 = 66	CES54 = 86	CES79 = 84
CES05 = 48	CES30 = 79	CES55 = 84	CES80 = 81
CES06 = 51	CES31 = 69	CES56 = 74	CES81 = 78
CES07 = 41	CES32 = 62	CES57 = 73	CES82 = 92
CES08 = 40	CES33 = 75	CES58 = 75	CES83 = 89
CES09 = 29	CES34 = 73	CES59 = 87	CES84 = 88
CES10 = 75	CES35 = 85	CES60 = 91	CES85 = 79
CES11 = 58	CES36 = 95	CES61 = 84	CES86 = 71
CES12 = 64	CES37 = 80	CES62 = 88	CES87 = 79
CES13 = 43	CES38 = 88	CES63 = 73	CES88 = 81
CES14 = 74	CES39 = 96	CES64 = 69	CES89 = 71
CES15 = 71	CES40 = 91	CES65 = 66	CES90 = 80
CES16 = 47	CES41 = 91	CES66 = 62	CES91 = 81
CES17 = 50	CES42 = 81	CES67 = 60	CES92 = 63
CES18 = 56	CES43 = 77	CES68 = 68	CES93 = 78
CES19 = 72	CES44 = 99	CES69 = 76	CES94 = 56
CES20 = 65	CES45 = 85	CES70 = 60	CES95 = 70
CES21 = 87	CES46 = 82	CES71 = 55	CES96 = 79
CES22 = 79	CES47 = 83	CES72 = 85	CES97 = 84
CES23 = 92	CES48 = 75	CES73 = 52	CES98 = 77
CES24 = 91	CES49 = 79	CES74 = 96	CES99 = 68
CES25 = 72	CES50 = 87	CES75 = 57	

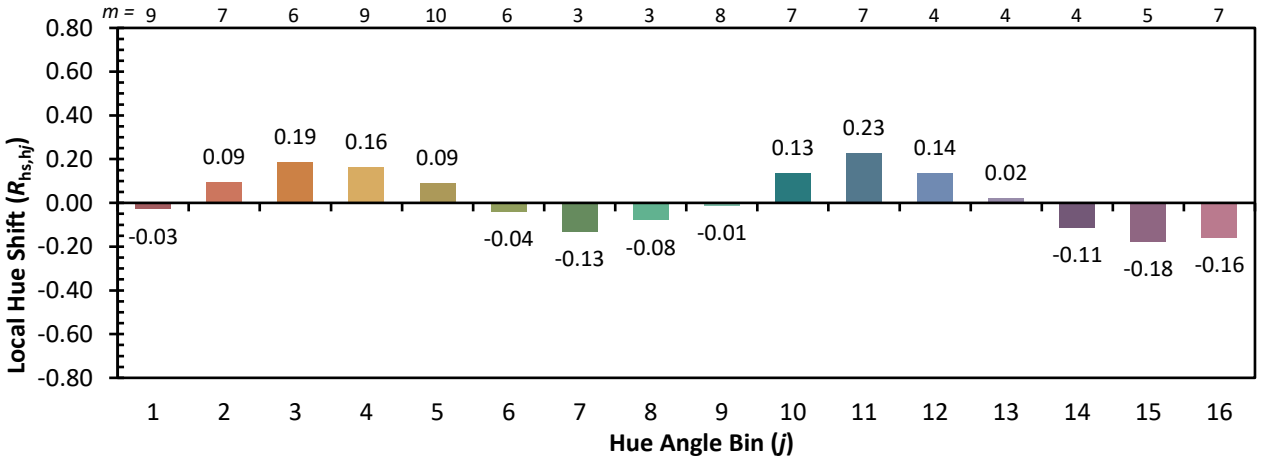


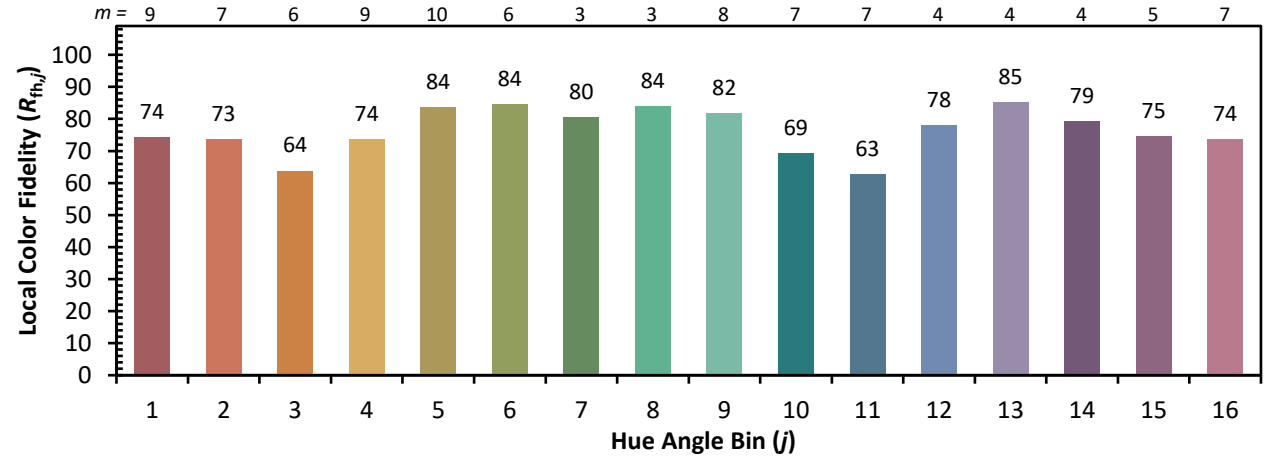
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Color Rendition by Hue-Angle Bin



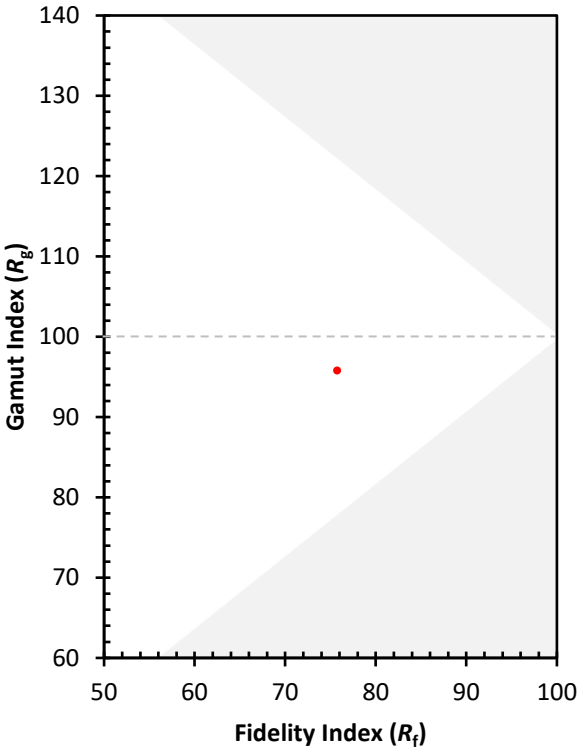


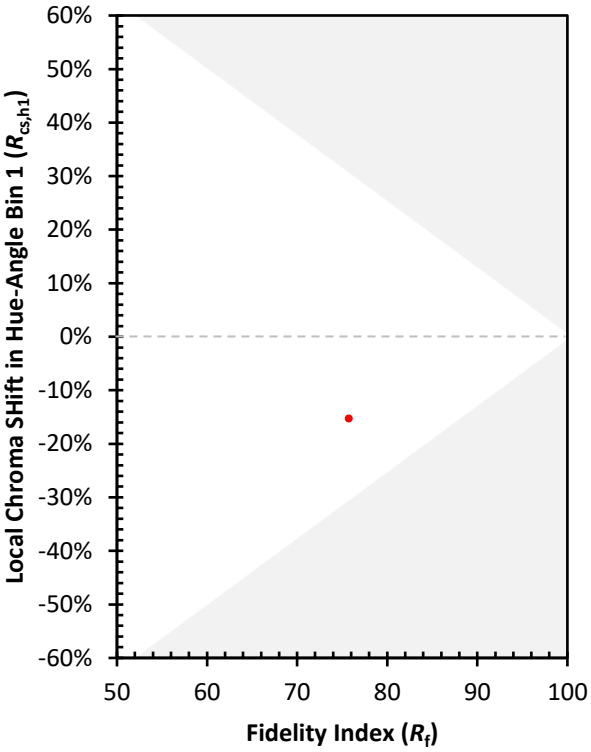


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Measure Comparisons





(END OF REPORT)