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: P821453

Luminaire Tested: **TT-D2-830-12VDC-WQ-HSS**

Issue Date: 12/2/2020

Report Generated By 670245763

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Peachtree City, GA 30269

Scaled Data Report

Test Information

Test Method:	LM-79-08
Report Number:	P821453
	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-D2-830-12VDC-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:	3781.9 lumens
Efficiency:	N/A
Efficacy:	99.5 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type IV - Short
BUG Rating:	B1 - U2 - G2

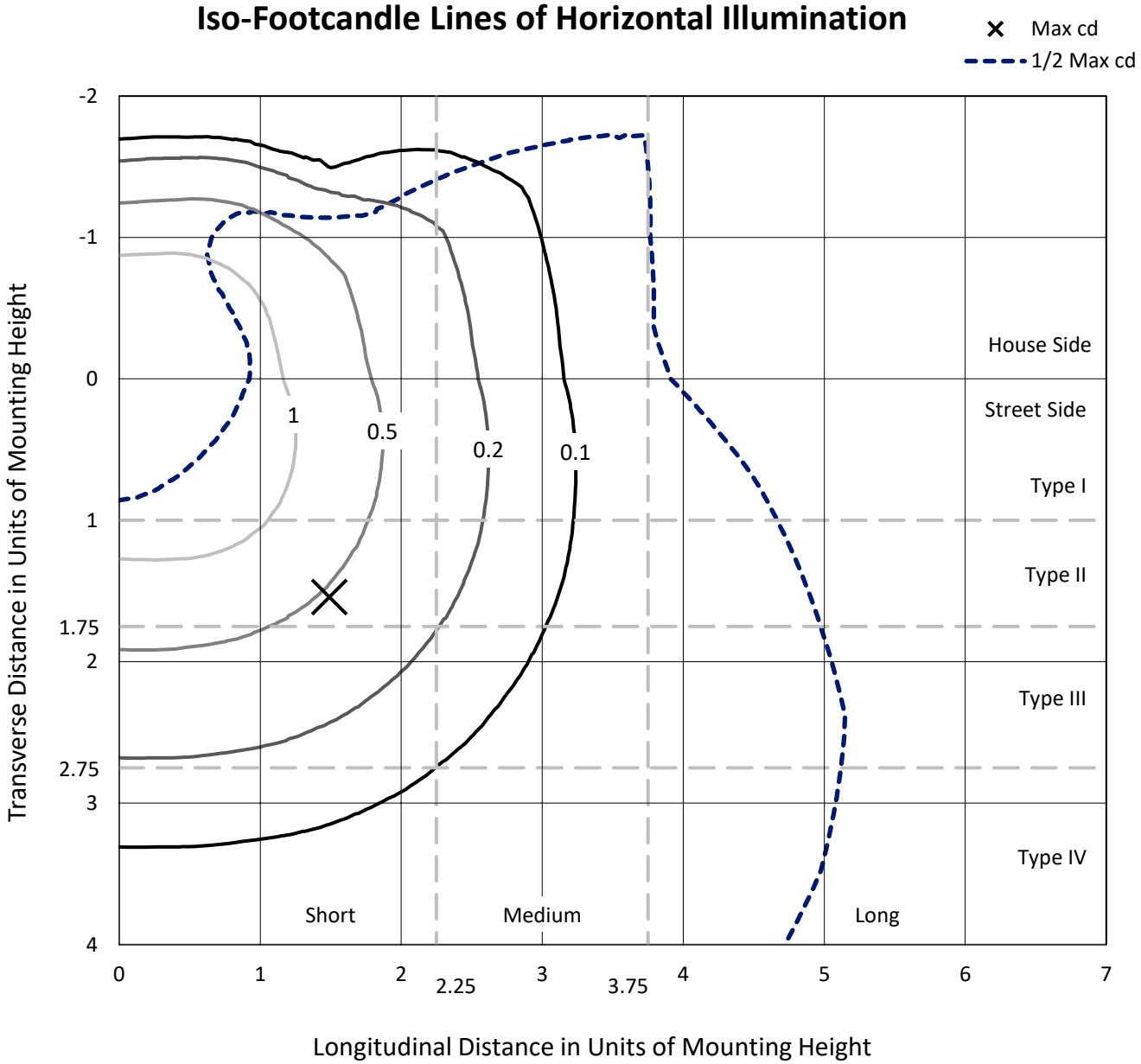
Input Watts (W):	38
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	25 FT

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Iso-Footcandle Lines of Horizontal Illumination



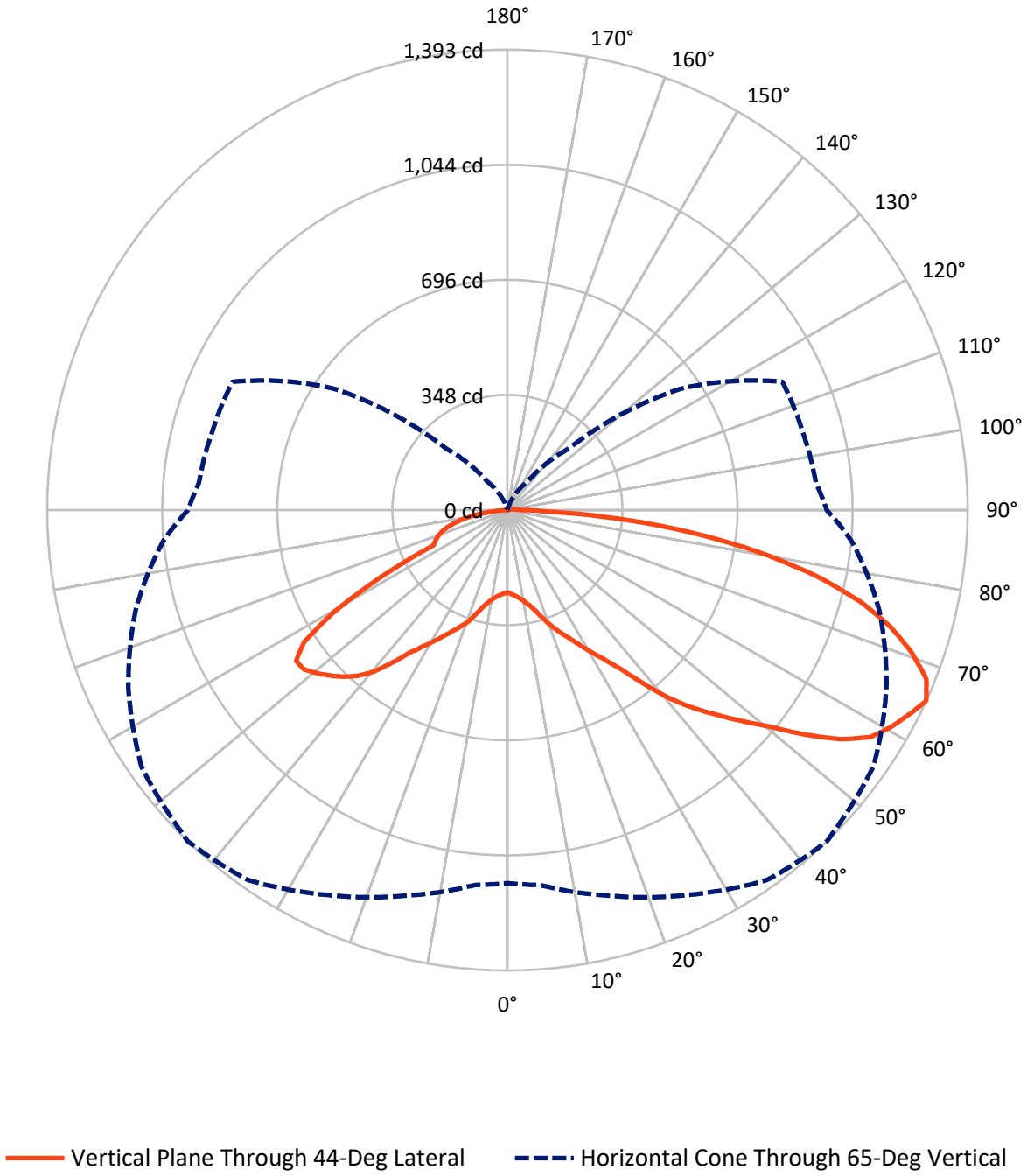
Based on 15 foot mounting height. Maximum calculated value = 1.5 fc
Type IV - Short - N/A

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Luminous Intensity Polar Plot



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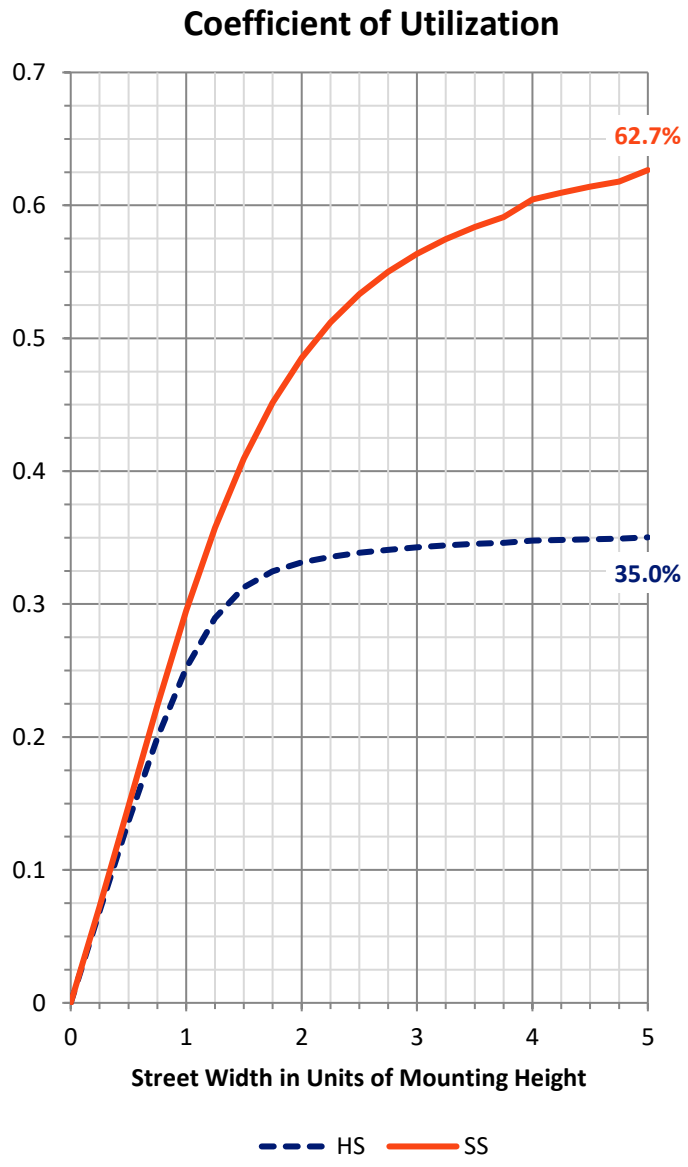
REPORT NUMBER: P821453
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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1332.1	0.8	1332.9
	% Fixture	35.2	0.0	35.2
Street Side	Lumens	2433.7	15.2	2449.0
	% Fixture	64.4	0.4	64.8
Total	Lumens	3765.8	16.1	3781.9
	% Fixture	99.6	0.4	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	25.3	0.7
10°-20°	89.8	2.4
20°-30°	192.5	5.1
30°-40°	348.6	9.2
40°-50°	581.7	15.4
50°-60°	805.8	21.3
60°-70°	835.0	22.1
70°-80°	672.0	17.8
80°-90°	215.0	5.7
90°-100°	10.9	0.3
100°-110°	3.5	0.1
110°-120°	0.7	0.0
120°-130°	0.4	0.0
130°-140°	0.3	0.0
140°-150°	0.2	0.0
150°-160°	0.1	0.0
160°-170°	0.1	0.0
170°-180°	0.0	0.0
0°-90°	3765.8	99.6
0°-180°	3781.9	100.0



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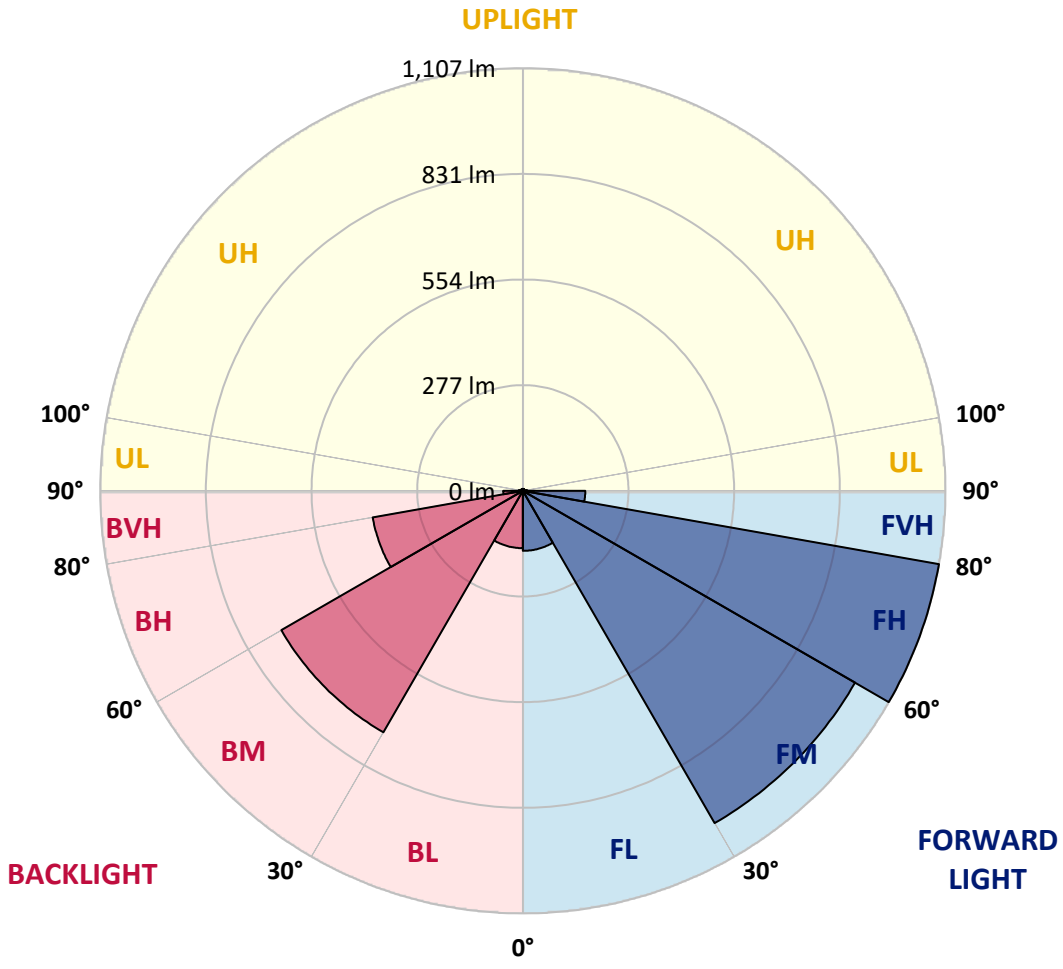
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	157.3	4.2			
FM	(30°-60°)	1005.5	26.6			
FH	(60°-80°)	1107.4	29.3			G1/1800
FVH	(80°-90°)	163.6	4.3			G2/225
BL	(0°-30°)	150.4	4.0	B1/500		
BM	(30°-60°)	730.7	19.3	B1/1000		
BH	(60°-80°)	399.6	10.6	B1/500		G1/500
BVH	(80°-90°)	51.4	1.4			G1/100
UL	(90°-100°)	10.9	0.3		U2/50	
UH	(100°-180°)	5.2	0.1		U1/10	

BUG Rating: B1-U2-G2
Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	44°	45°	55°	65°	75°	85°
0°	249.6	249.6	249.6	249.6	249.6	249.6	249.6	249.6	249.6	249.6	249.6
2.5°	256.9	256.2	256.2	255.5	255.5	255.5	255.5	255.5	254.7	254.0	253.3
5°	263.6	263.6	262.9	262.9	262.1	261.4	262.1	261.4	260.6	259.9	259.2
7.5°	272.4	271.7	271.7	270.2	270.2	269.5	269.5	269.5	268.8	267.3	266.5
10°	285.0	283.5	283.5	282.0	281.3	280.6	280.6	279.1	279.1	278.4	277.6
12.5°	299.0	297.6	299.0	298.3	296.8	295.3	295.3	293.9	293.1	292.4	289.4
15°	317.5	315.3	316.8	316.8	316.0	315.3	315.3	312.3	310.8	309.4	306.4
17.5°	339.6	338.2	338.9	339.6	341.9	341.9	342.6	338.9	335.9	330.8	328.6
20°	367.7	367.0	369.2	369.2	371.4	371.4	372.1	368.4	363.3	359.6	355.1
22.5°	395.0	395.0	398.0	398.0	400.2	398.7	398.7	397.2	391.3	386.9	382.5
25°	423.1	422.3	425.3	427.5	430.5	426.8	428.2	426.0	420.1	414.2	408.3
27.5°	454.1	452.6	454.1	457.0	462.2	459.3	460.7	457.0	451.1	443.0	437.8
30°	488.0	485.8	488.0	492.5	496.2	497.6	496.9	491.7	486.6	474.8	471.1
32.5°	521.3	521.3	526.4	534.6	539.0	538.3	539.0	534.6	527.2	512.4	503.6
35°	561.9	564.8	571.5	583.3	592.9	589.2	589.2	587.7	575.2	557.5	545.6
37.5°	615.8	618.7	632.0	646.1	663.8	662.3	663.0	658.6	634.2	615.8	598.8
40°	678.5	681.5	701.4	721.4	738.3	743.5	744.3	734.7	708.1	681.5	654.9
42.5°	736.1	739.8	760.5	788.6	807.0	815.1	816.6	801.1	773.0	742.8	709.6
45°	793.7	798.2	821.8	851.3	877.9	881.6	882.3	869.0	838.0	803.3	760.5
47.5°	852.8	856.5	880.8	916.3	945.1	952.5	953.2	940.7	903.0	860.9	810.7
50°	906.7	914.1	947.3	985.0	1023.3	1029.3	1030.0	1016.0	971.7	924.4	858.0
52.5°	970.2	973.9	1009.3	1072.1	1104.6	1127.5	1128.2	1100.9	1053.6	990.1	904.5
55°	1044.0	1050.7	1086.8	1149.6	1207.9	1223.4	1227.9	1195.4	1132.6	1064.0	963.5
57.5°	1086.8	1099.4	1152.6	1212.4	1285.5	1295.8	1298.0	1264.0	1194.6	1119.3	1007.8
60°	1109.7	1117.1	1173.2	1266.3	1323.1	1332.7	1332.0	1306.1	1236.7	1145.2	1028.5
62.5°	1135.6	1148.1	1195.4	1289.9	1339.4	1363.0	1359.3	1332.7	1261.8	1161.4	1048.5
65°	1128.2	1138.5	1207.9	1284.7	1366.7	1392.5	1387.4	1351.9	1265.5	1164.4	1043.3
67.5°	1098.7	1106.8	1175.4	1270.7	1349.0	1367.4	1376.3	1341.6	1244.9	1132.6	1010.8
70°	1038.1	1050.7	1117.1	1214.6	1286.2	1299.5	1301.0	1279.6	1192.4	1074.3	956.9
72.5°	954.7	965.0	1037.4	1136.3	1198.3	1213.8	1215.3	1182.8	1117.1	994.6	879.4
75°	855.0	864.6	920.7	1024.1	1085.4	1100.9	1099.4	1069.1	999.7	883.8	776.7
77.5°	731.7	749.4	798.9	883.8	943.6	951.7	953.2	920.0	863.9	763.4	659.3
80°	577.4	594.4	650.5	714.0	764.2	770.8	773.0	745.0	694.0	605.4	516.8
82.5°	410.5	425.3	469.6	521.3	563.4	563.4	564.8	541.9	502.8	426.8	357.4
85°	234.1	245.1	274.7	311.6	341.9	338.2	338.9	318.2	292.4	233.3	189.0
87.5°	76.8	82.0	88.6	102.6	116.7	107.8	112.2	93.0	84.2	62.8	48.7
90°	40.6	40.6	39.1	37.7	34.7	30.3	30.3	24.4	18.5	11.8	4.4
92.5°	36.9	36.9	35.4	34.0	31.0	27.3	27.3	22.2	16.2	10.3	3.7
95°	30.3	30.3	29.5	28.1	25.8	22.9	22.2	18.5	14.0	8.1	3.0
97.5°	23.6	23.6	22.9	22.2	19.9	17.7	17.7	14.0	10.3	6.6	2.2
100°	17.7	17.7	17.7	16.2	15.5	13.3	13.3	11.1	8.1	5.2	1.5
102.5°	12.6	13.3	12.6	11.8	11.1	9.6	9.6	8.1	5.9	3.7	1.5
105°	8.9	8.9	8.1	8.1	7.4	6.6	6.6	5.2	3.7	2.2	0.7
107.5°	5.2	5.2	5.2	5.2	4.4	4.4	4.4	3.7	2.2	1.5	0.7
110°	3.0	3.0	3.0	3.0	2.2	2.2	2.2	1.5	1.5	0.7	0.7

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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	44°	45°	55°	65°	75°	85°
112.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.7	0.7	0.7	0.7
115°	0.7	0.7	0.7	1.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7
117.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
120°	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
122.5°	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
125°	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
127.5°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
130°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
132.5°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
135°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7
140°	0.7	0.7	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7
142.5°	0.7	0.7	0.7	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
145°	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7
147.5°	0.7	0.7	0.7	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
150°	0.7	0.7	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7
160°	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7
162.5°	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7
165°	0.7	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7
167.5°	0.7	0.7	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7
170°	0.7	0.0	0.0	0.0	0.0	0.7	0.0	0.7	0.7	0.7	0.7
172.5°	0.7	0.7	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7
175°	0.7	0.7	0.7	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7
177.5°	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7
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°	249.6	249.6	249.6	249.6	249.6	249.6	249.6	249.6	249.6	249.6	249.6
2.5°	253.3	253.3	252.5	251.8	251.8	251.8	251.0	251.0	251.0	250.3	250.3
5°	259.2	258.4	258.4	257.7	257.7	256.9	256.9	256.2	255.5	255.5	254.7
7.5°	267.3	266.5	265.1	265.8	264.3	263.6	262.9	262.9	262.9	262.1	262.1
10°	276.9	276.9	275.4	275.4	273.9	273.2	272.4	272.4	273.2	273.2	272.4
12.5°	289.4	288.7	288.7	288.0	287.2	286.5	287.2	287.2	286.5	285.7	285.0
15°	304.9	304.9	304.9	305.7	304.9	304.9	304.9	304.2	302.7	301.2	301.2
17.5°	328.6	327.8	326.3	327.1	328.6	330.8	328.6	326.3	324.1	324.1	323.4
20°	352.9	353.7	353.7	354.4	356.6	358.8	355.9	354.4	352.9	351.5	350.0
22.5°	379.5	380.2	380.2	379.5	381.0	380.2	378.8	377.3	375.8	373.6	372.1
25°	405.4	406.1	405.4	404.6	405.4	403.1	400.9	398.7	395.0	391.3	391.3
27.5°	434.1	433.4	430.5	431.2	429.7	428.2	423.8	418.6	413.5	409.8	409.8
30°	464.4	464.4	458.5	461.5	458.5	457.8	448.2	441.5	434.1	429.0	428.2
32.5°	497.6	496.2	491.7	494.7	491.7	488.8	477.0	468.1	455.6	448.2	447.4
35°	537.5	533.8	530.1	533.1	533.1	525.0	513.2	496.9	479.2	470.3	469.6
37.5°	586.2	584.0	579.6	583.3	586.2	578.1	560.4	536.8	511.7	498.4	497.6
40°	640.1	637.2	635.0	640.1	642.4	634.2	610.6	577.4	543.4	524.2	521.3
42.5°	691.1	684.4	680.8	688.1	685.9	677.1	644.6	606.2	559.7	537.5	533.8
45°	736.9	729.5	724.3	731.0	728.0	710.3	674.1	622.4	566.3	539.0	534.6
47.5°	781.9	770.8	762.7	771.6	765.7	738.3	694.0	630.5	558.9	526.4	519.1
50°	820.3	807.0	801.8	812.2	803.3	764.9	708.1	626.9	540.5	493.2	481.4
52.5°	866.1	846.1	841.0	860.9	841.0	790.0	711.0	618.0	498.4	441.5	430.5
55°	912.6	890.4	882.3	900.8	870.5	795.2	696.3	567.0	434.9	374.3	358.1
57.5°	937.0	916.3	908.9	922.2	866.1	745.0	630.5	472.5	339.6	271.7	254.0
60°	959.1	922.9	913.3	931.1	820.3	628.3	488.0	338.9	205.3	154.3	141.0
62.5°	974.6	939.9	920.0	928.1	736.1	457.0	280.6	163.2	77.5	53.9	53.2
65°	*966.5*	*937.0*	*923.7*	*917.8*	*639.4*	*262.9*	*103.4*	*41.3*	*2.2*	*2.2*	*1.5*
67.5°	941.4	908.9	905.2	910.4	632.8	252.5	96.0	37.7	0.0	0.0	0.0
70°	886.0	863.1	863.1	880.8	604.0	239.2	89.3	34.7	0.0	0.0	0.0
72.5°	811.4	793.7	804.1	830.6	561.1	220.8	80.5	31.0	0.0	0.0	0.0
75°	722.1	703.6	716.9	746.5	508.0	197.1	70.1	26.6	0.0	0.0	0.0
77.5°	608.4	595.8	616.5	643.8	437.1	166.1	57.6	21.4	0.0	0.0	0.0
80°	474.0	467.4	494.7	519.1	352.9	130.7	43.6	15.5	0.0	0.0	0.0
82.5°	327.1	324.1	350.7	375.8	252.5	91.6	29.5	10.3	0.0	0.0	0.0
85°	171.3	171.3	192.0	214.9	141.0	49.5	14.8	4.4	0.0	0.0	0.0
87.5°	37.7	36.2	39.1	50.2	28.1	9.6	2.2	0.7	0.0	0.0	0.0
90°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
100°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
105°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
110°	0.7	0.7	0.7	0.7	0.7	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: P821453
CATALOG NUMBER: TT-D2-830-12VDC-WQ-HSS

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
115°	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
117.5°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
120°	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
122.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
125°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.7	0.7	0.7	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

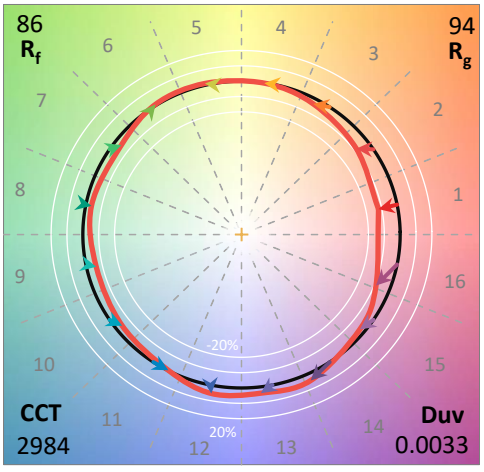
Test Information

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

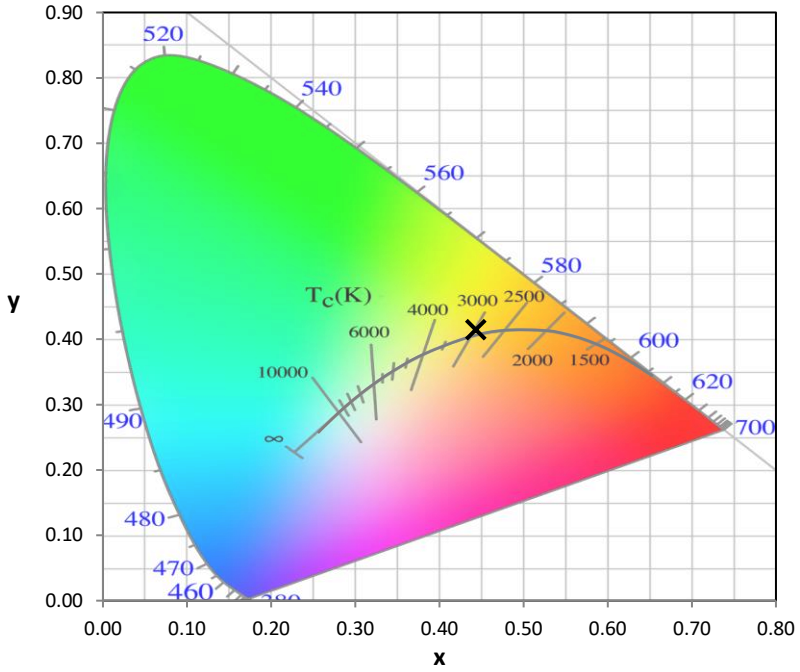
Stabilization Time:	29M
Operation Time:	1H 29M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-7

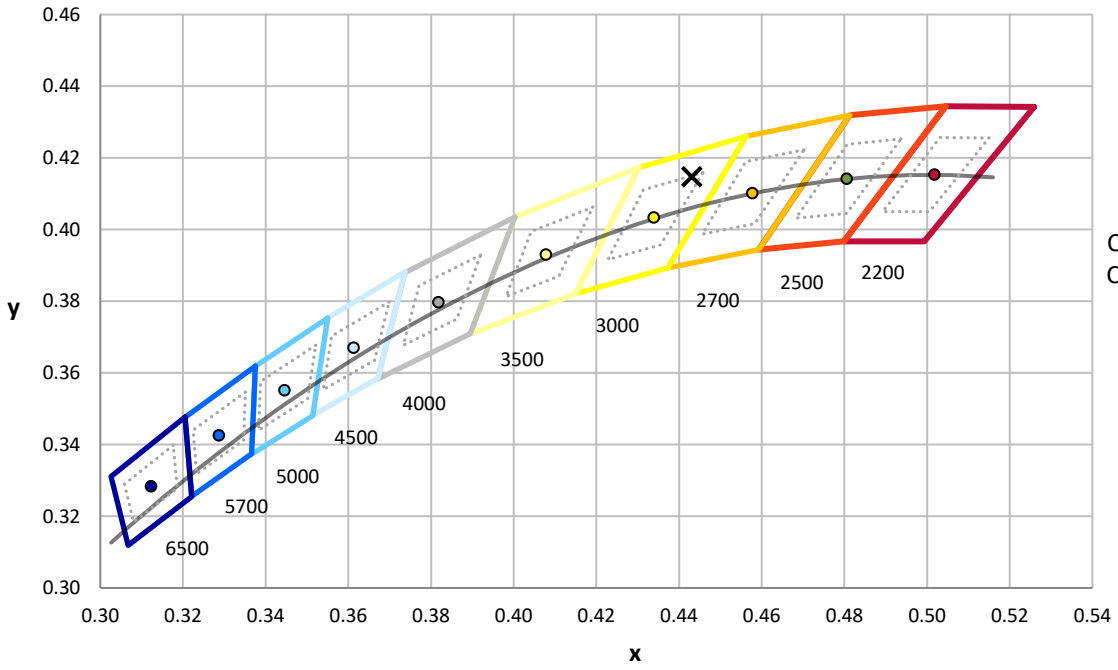
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

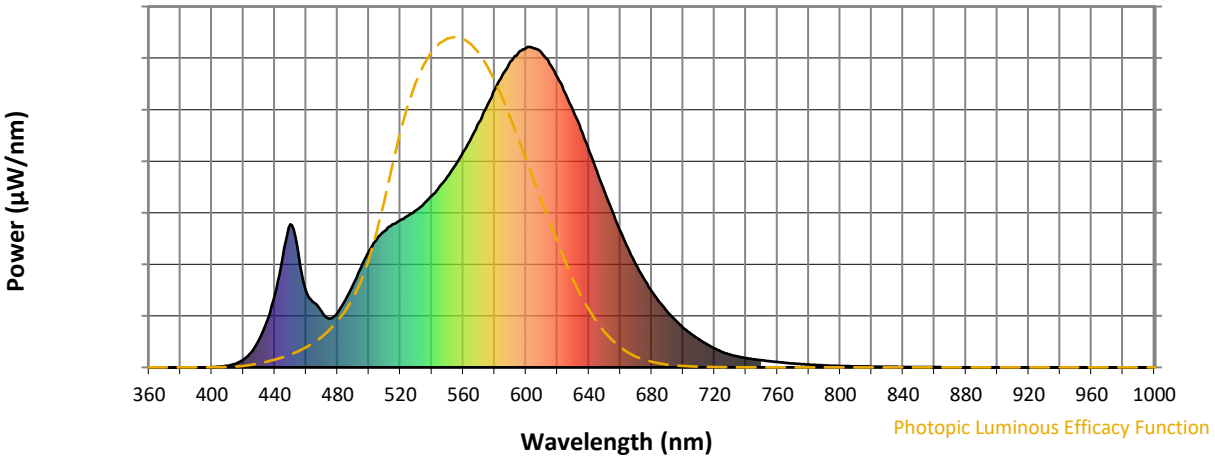


CCT = 2984K
CIE x = 0.4431
CIE y = 0.4147
Duv = 0.0033

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-7

Photopic Flux vs. Wavelength

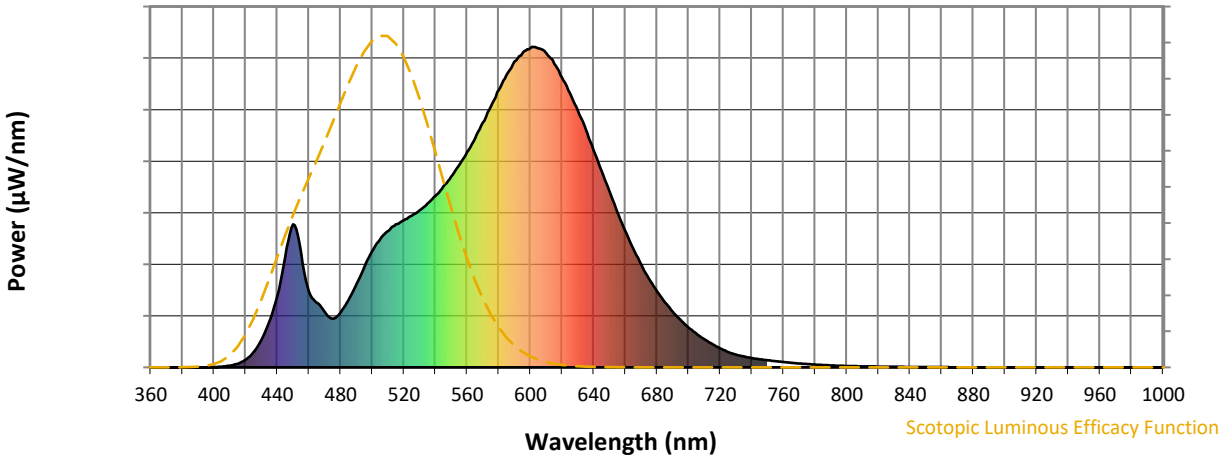


Photopic Lumens: NR

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

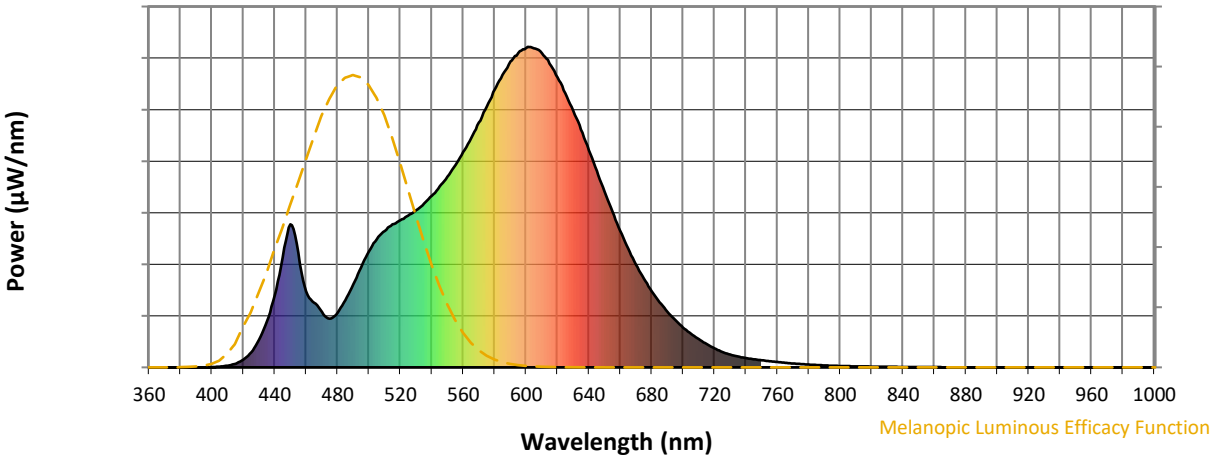


Scotopic Lumens: NR **S/P: 1.32**

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			

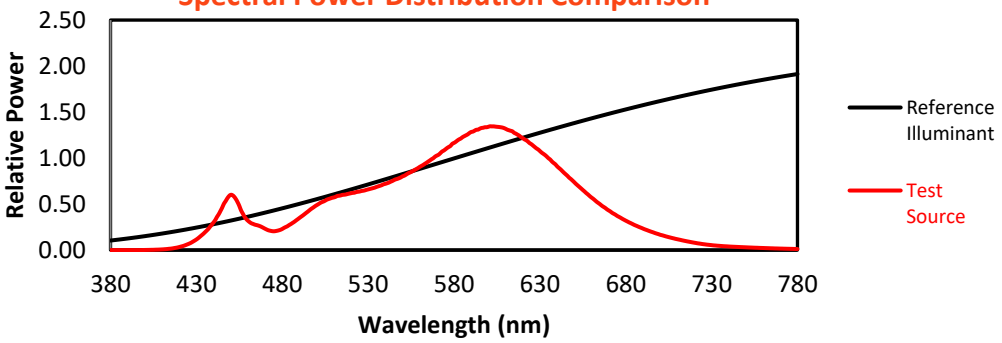
REPORT NUMBER: SP1-2407-176-7

TM-30-18

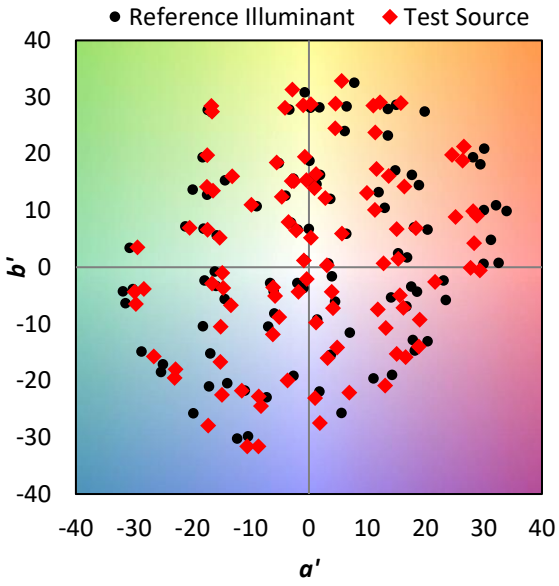
Summary

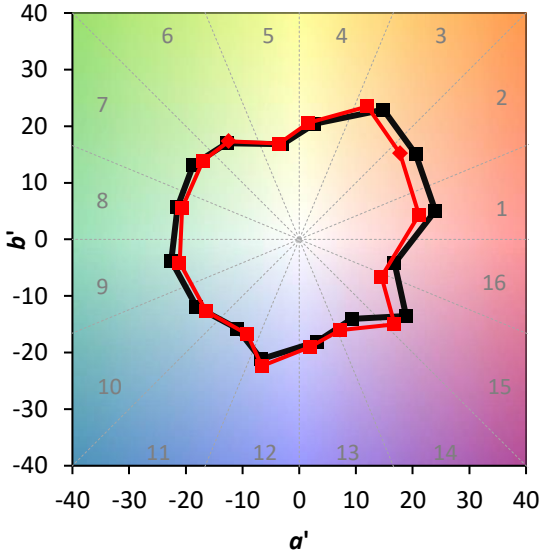
R_f = 85.8
R_g = 94.1
CIE R_a = 81.8
R_9 = -1.1

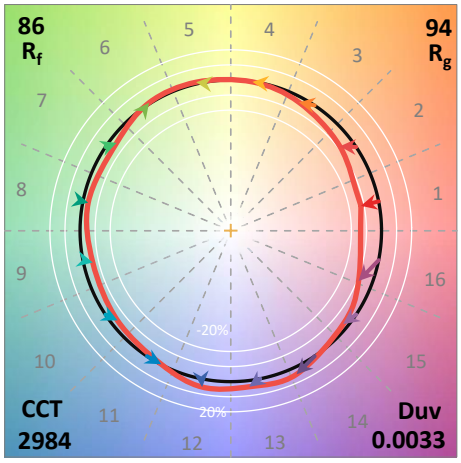
Spectral Power Distribution Comparison

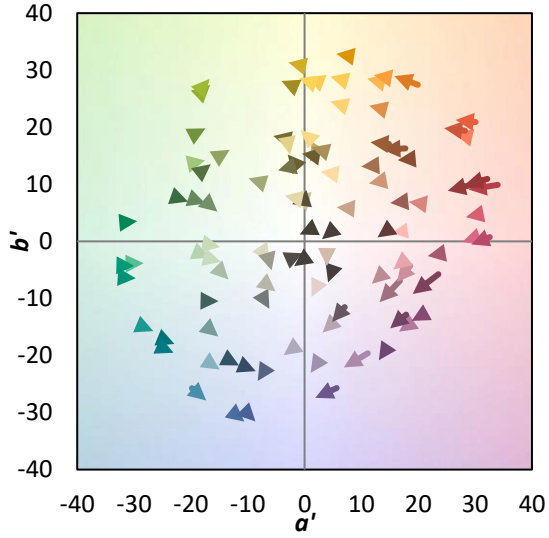


Color Vector Graphics







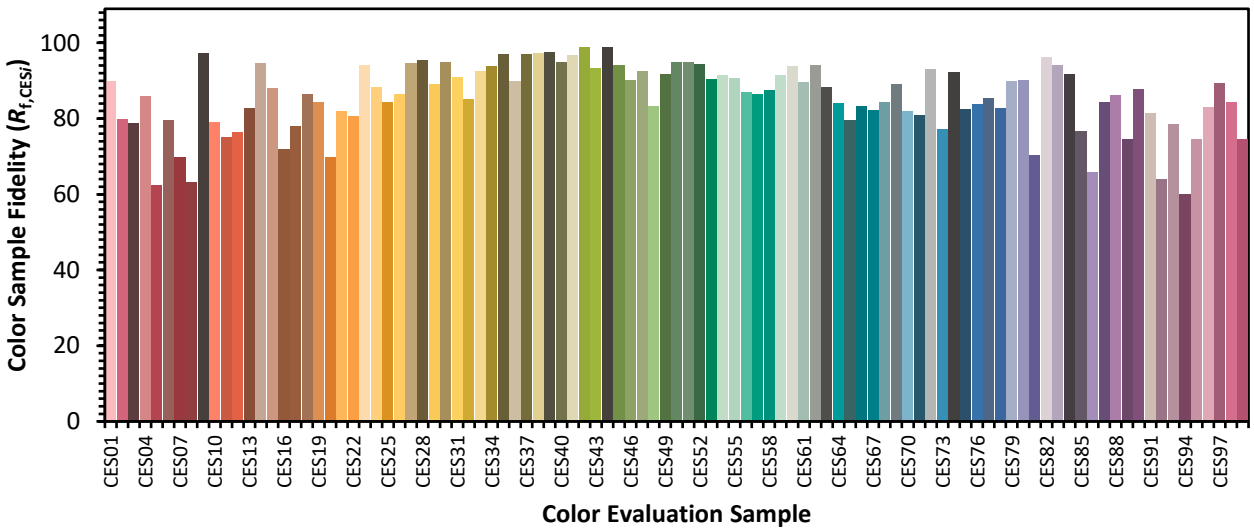


REPORT NUMBER: SP1-2407-176-7

TM-30-18

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

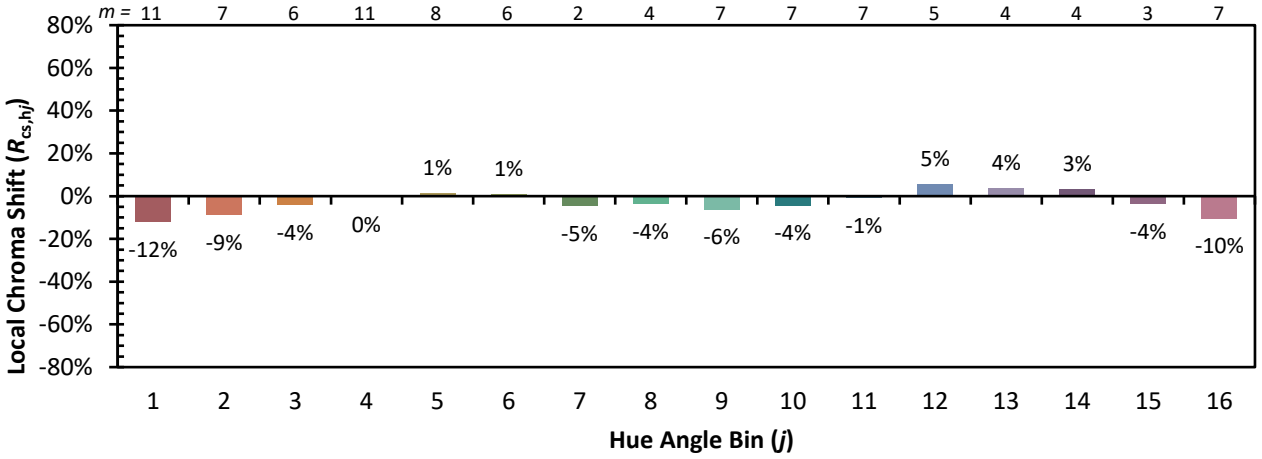
CES01 = 86	CES26 = 86	CES51 = 95	CES76 = 84
CES02 = 63	CES27 = 95	CES52 = 94	CES77 = 86
CES03 = 31	CES28 = 95	CES53 = 90	CES78 = 83
CES04 = 70	CES29 = 89	CES54 = 91	CES79 = 90
CES05 = 50	CES30 = 95	CES55 = 91	CES80 = 90
CES06 = 51	CES31 = 91	CES56 = 87	CES81 = 70
CES07 = 42	CES32 = 85	CES57 = 86	CES82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

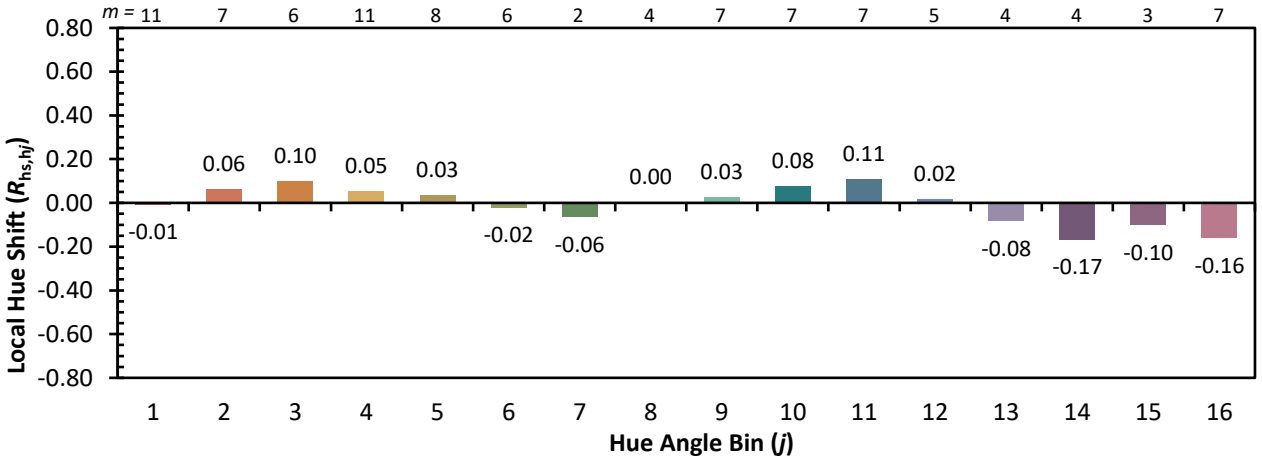


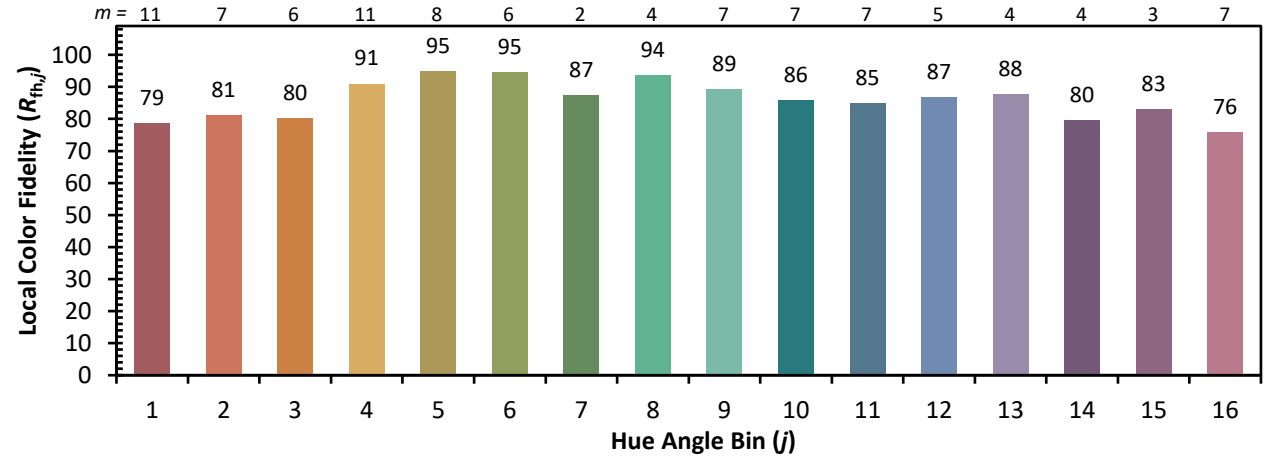
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Color Rendition by Hue-Angle Bin



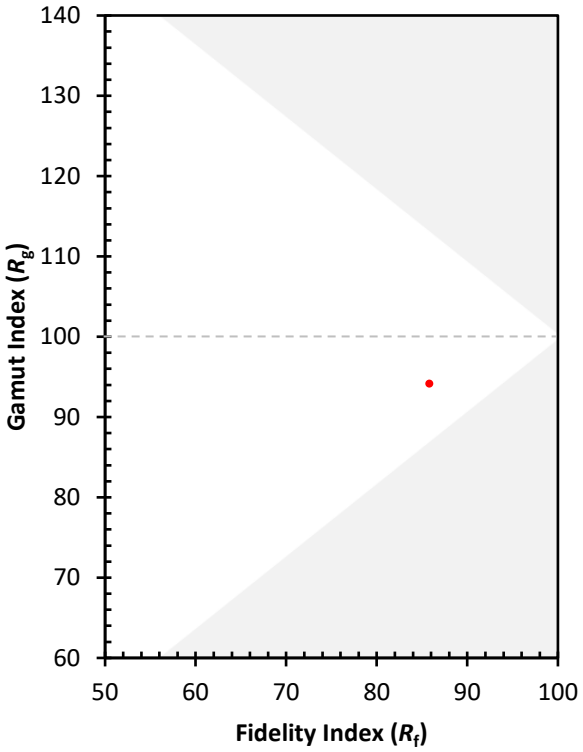


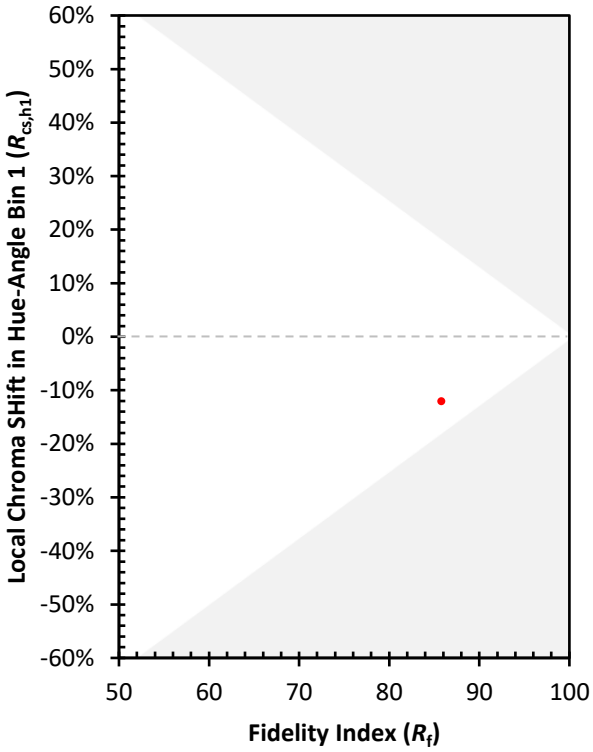


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Measure Comparisons





(END OF REPORT)