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: P821450

Luminaire Tested: **TT-D2-830-12VDC-RW-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:	P821450
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2010-017-5)
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-RW-HSS
Description:	TOPTIER LED PARKING GARAGE LUMINAIRE
	3000K, 80 CRI LEDS AND RECTANGULAR DISTRIBUTION WITH HOUSE SIDE SHIELD
Light Source:	-
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	2962.9 lumens
Efficiency:	N/A
Efficacy:	78.0 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type IV - Short
BUG Rating:	B1 - U1 - G2

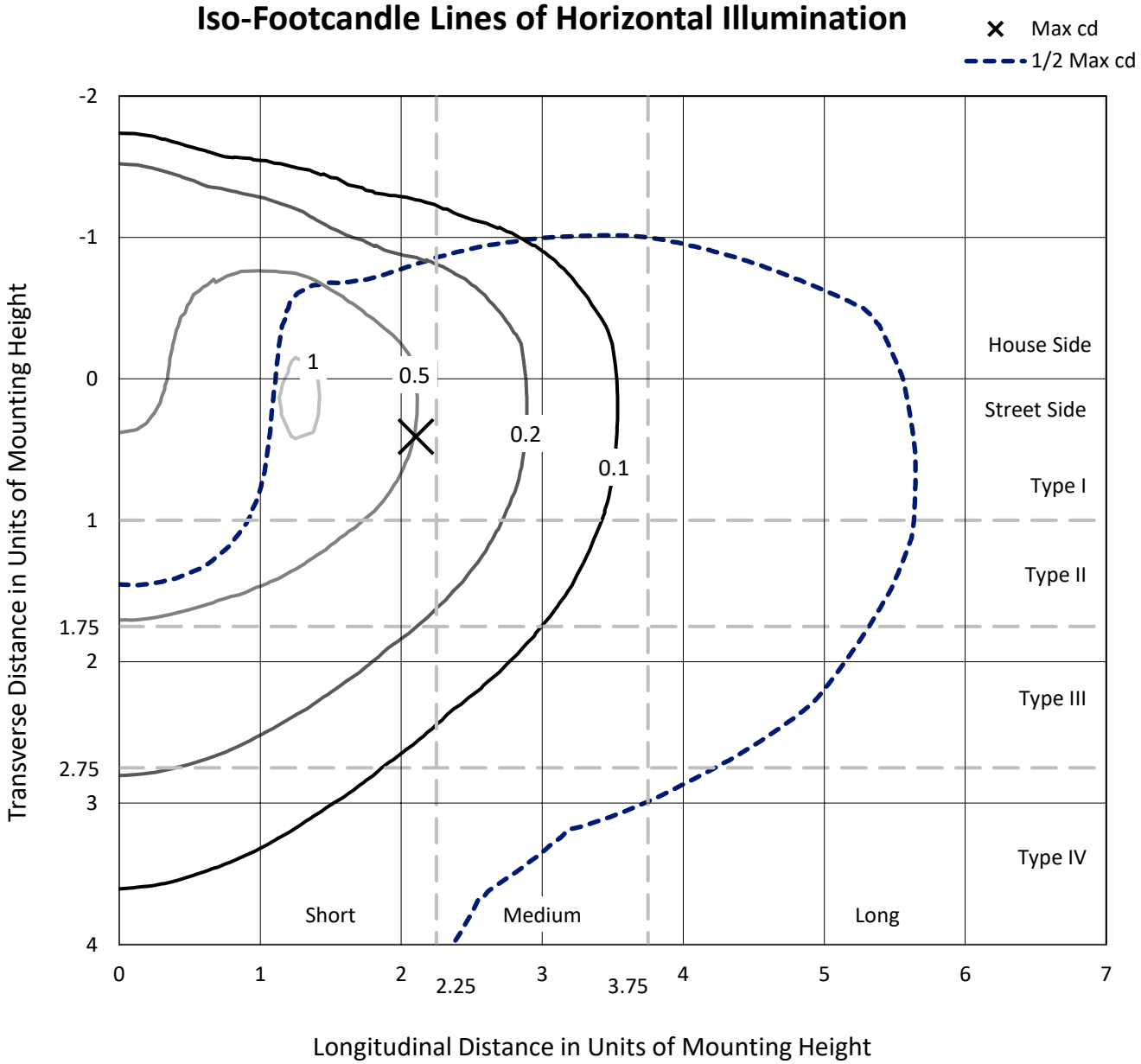
Input Watts (W):	38
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	25 FT

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Iso-Footcandle Lines of Horizontal Illumination



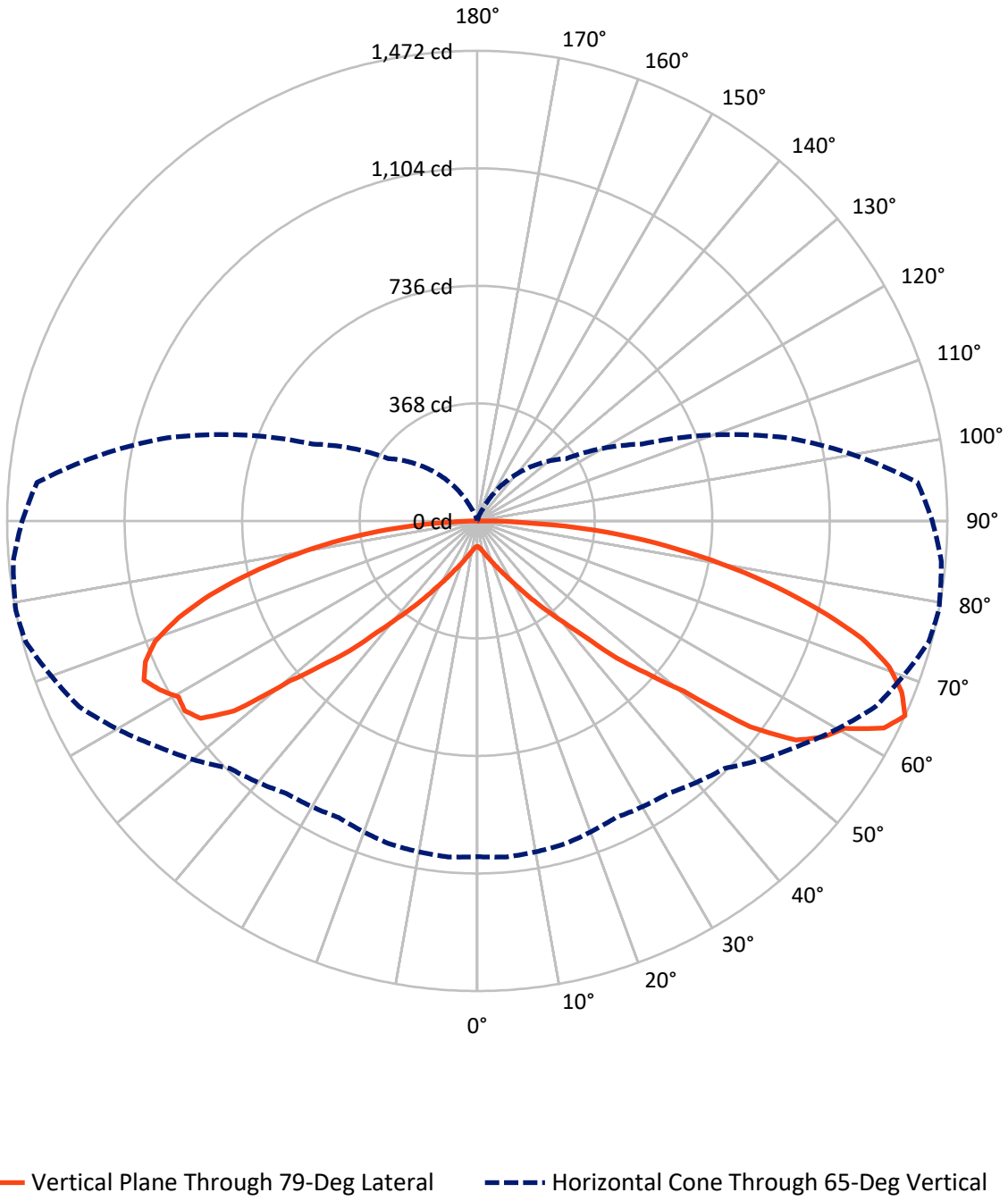
Based on 15 foot mounting height. Maximum calculated value = 1.1 fc
Type IV - Short - N/A

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Luminous Intensity Polar Plot



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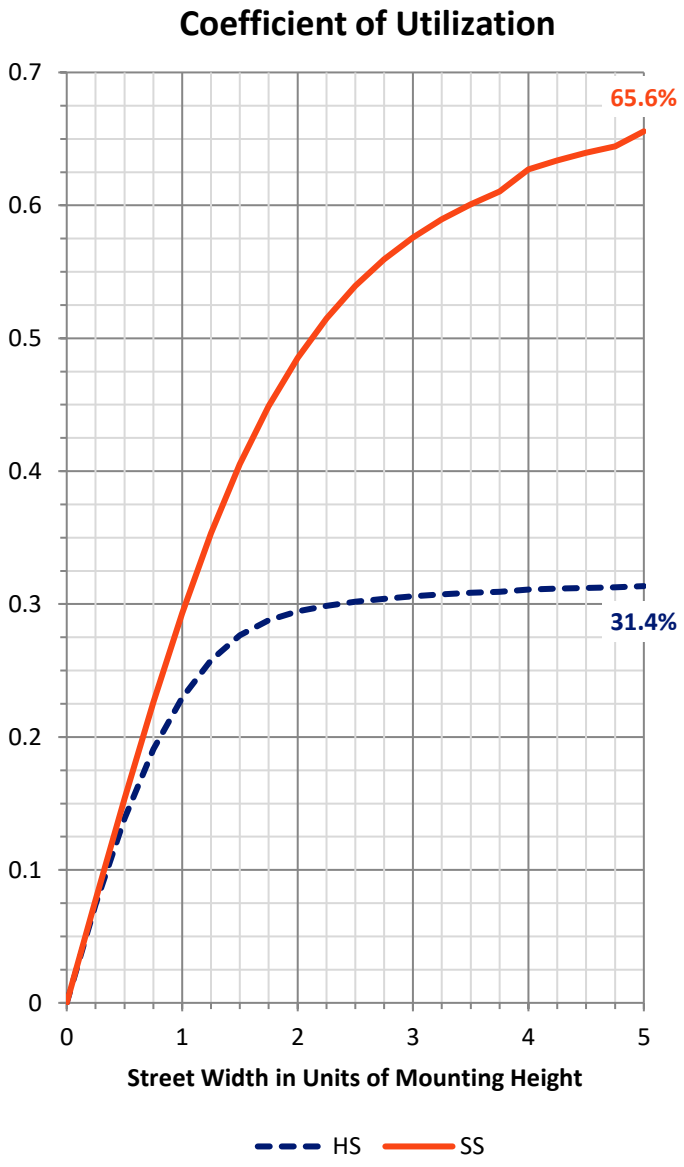
REPORT NUMBER: P821450
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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	935.7	1.1	936.8
	% Fixture	31.6	0.0	31.6
Street Side	Lumens	2013.1	13.0	2026.1
	% Fixture	67.9	0.4	68.4
Total	Lumens	2948.7	14.2	2962.9
	% Fixture	99.5	0.5	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	8.4	0.3
10°-20°	31.9	1.1
20°-30°	73.6	2.5
30°-40°	157.7	5.3
40°-50°	337.8	11.4
50°-60°	638.0	21.5
60°-70°	792.9	26.8
70°-80°	678.8	22.9
80°-90°	229.6	7.7
90°-100°	9.9	0.3
100°-110°	2.8	0.1
110°-120°	0.6	0.0
120°-130°	0.3	0.0
130°-140°	0.2	0.0
140°-150°	0.2	0.0
150°-160°	0.1	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	2948.7	99.5
0°-180°	2962.9	100.0



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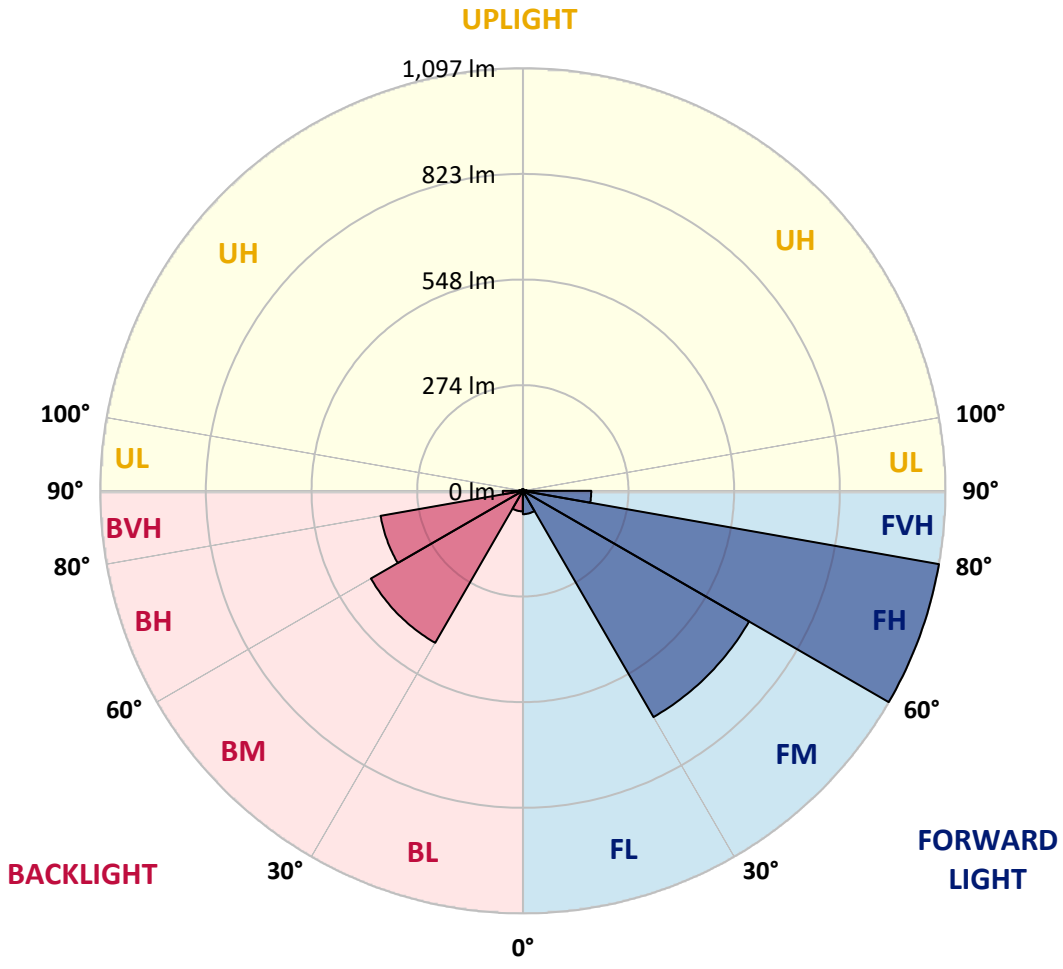
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	60.6	2.0			
FM	(30°-60°)	678.1	22.9			
FH	(60°-80°)	1096.8	37.0			G1/1800
FVH	(80°-90°)	177.6	6.0			G2/225
BL	(0°-30°)	53.4	1.8	B0/110		
BM	(30°-60°)	455.4	15.4	B1/1000		
BH	(60°-80°)	374.9	12.7	B1/500		G1/500
BVH	(80°-90°)	52.0	1.8			G1/100
UL	(90°-100°)	9.9	0.3		U1/10	
UH	(100°-180°)	4.3	0.1		U1/10	

BUG Rating: B1-U1-G2
Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	79°	85°
0°	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5
2.5°	84.9	84.9	84.9	84.2	84.2	84.2	83.4	82.7	82.0	82.0	82.0
5°	89.3	89.3	89.3	89.3	88.6	87.9	87.1	86.4	85.6	85.6	84.9
7.5°	95.2	94.5	95.2	94.5	94.5	93.8	93.0	92.3	90.8	90.8	90.1
10°	101.2	101.2	101.2	101.2	101.2	100.4	99.7	98.9	98.2	97.5	96.7
12.5°	108.5	108.5	108.5	107.8	108.5	107.8	107.1	107.1	106.3	104.8	104.8
15°	115.9	115.9	115.9	115.9	116.7	116.7	116.7	115.9	115.9	115.2	114.4
17.5°	124.8	124.0	124.8	124.8	125.5	126.3	127.0	127.7	127.7	127.0	127.0
20°	134.4	133.6	134.4	134.4	135.9	137.3	139.5	141.0	141.8	140.3	140.3
22.5°	144.7	144.0	145.4	145.4	147.7	149.9	153.6	155.0	157.3	156.5	156.5
25°	157.3	156.5	157.3	158.0	161.0	164.6	169.1	172.8	175.0	175.0	175.7
27.5°	171.3	171.3	172.0	172.8	175.7	181.6	188.3	194.9	200.1	199.3	200.1
30°	190.5	190.5	192.0	192.7	196.4	203.0	211.9	220.8	228.1	228.1	229.6
32.5°	211.9	211.2	213.4	214.1	217.8	226.7	239.2	253.2	262.8	262.8	264.3
35°	237.7	237.0	239.2	239.2	243.6	256.2	272.4	291.6	307.9	308.6	310.8
37.5°	270.2	268.8	268.8	271.0	276.1	292.4	314.5	341.1	358.1	359.6	363.3
40°	308.6	307.9	309.4	308.6	315.3	335.2	363.3	394.3	414.2	417.9	422.3
42.5°	355.9	357.3	355.1	355.1	363.3	386.1	419.4	455.5	491.7	496.2	498.4
45°	413.5	416.4	413.5	412.7	420.1	446.7	492.5	556.0	598.0	612.8	617.2
47.5°	482.9	484.3	480.6	479.2	487.3	521.3	580.3	651.2	700.7	711.7	723.6
50°	560.4	558.2	555.2	553.0	568.5	610.6	679.3	752.4	837.3	838.7	843.2
52.5°	640.1	633.5	634.2	633.5	654.9	700.7	792.2	916.3	1045.5	1072.0	1075.0
55°	719.9	711.7	711.0	718.4	748.7	814.4	929.6	1090.5	1195.3	1211.6	1209.4
57.5°	799.6	795.9	794.4	801.1	845.4	923.6	1053.6	1189.4	1278.8	1277.3	1261.8
60°	882.3	885.3	880.1	892.6	938.4	1016.7	1111.2	1243.3	1326.0	1319.4	1303.9
62.5°	967.2	974.6	969.4	970.9	1000.4	1058.0	1151.0	1304.6	1419.1	1428.7	1410.9
65°	1051.4	1056.5	1048.4	1025.5	1041.8	1095.7	1228.6	1376.2	1463.4	1472.2	1458.9
67.5°	1122.3	1127.4	1099.4	1063.2	1065.4	1104.5	1221.2	1362.2	1439.7	1433.8	1412.4
70°	1182.8	1173.2	1127.4	1065.4	1039.6	1058.0	1168.0	1292.8	1371.8	1368.9	1343.8
72.5°	1202.7	1190.2	1112.7	1016.7	965.7	972.4	1079.4	1190.9	1255.2	1260.3	1230.0
75°	1171.0	1149.6	1043.3	922.9	857.2	861.6	953.2	1055.8	1107.5	1101.6	1078.0
77.5°	1056.5	1035.1	920.0	791.5	727.2	733.9	806.3	886.7	929.6	927.3	911.1
80°	877.1	857.9	756.8	637.2	578.8	582.5	637.9	701.4	734.6	742.0	733.2
82.5°	648.2	635.0	563.3	466.6	419.4	418.6	460.7	509.4	541.9	557.4	551.5
85°	400.9	394.3	354.4	291.6	258.4	257.7	282.8	319.0	348.5	369.2	355.9
87.5°	159.5	157.3	145.4	117.4	102.6	97.5	91.6	114.4	116.7	138.1	137.3
90°	39.1	38.4	37.7	35.4	31.7	27.3	22.1	16.2	10.3	8.1	4.4
92.5°	34.7	34.7	34.0	31.7	28.8	24.4	19.9	14.8	9.6	7.4	3.7
95°	28.1	28.1	27.3	25.8	22.9	19.9	15.5	11.8	7.4	5.9	3.0
97.5°	21.4	20.7	20.7	19.2	17.7	14.8	11.8	8.9	5.9	4.4	2.2
100°	15.5	15.5	14.8	14.0	12.6	11.1	8.9	6.6	3.7	3.0	1.5
102.5°	11.1	10.3	10.3	10.3	8.9	7.4	5.9	4.4	3.0	2.2	0.7
105°	7.4	6.6	6.6	6.6	5.9	5.2	3.7	3.0	1.5	1.5	0.7
107.5°	4.4	4.4	4.4	4.4	3.7	3.0	2.2	1.5	0.7	0.7	0.7
110°	2.2	2.2	2.2	3.0	2.2	2.2	1.5	0.7	0.7	0.7	0.7

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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	79°	85°
112.5°	1.5	1.5	1.5	1.5	1.5	1.5	0.7	0.7	0.7	*0.7*	0.7
115°	0.7	0.7	0.7	1.5	1.5	0.7	0.7	0.0	0.0	*0.7*	0.7
117.5°	0.0	0.0	0.7	0.7	0.7	0.7	0.0	0.0	0.0	*0.0*	0.7
120°	0.0	0.0	0.7	0.7	0.7	0.7	0.0	0.0	0.0	*0.0*	0.7
122.5°	0.0	0.0	0.7	0.7	0.7	0.7	0.0	0.0	0.0	*0.0*	0.7
125°	0.0	0.0	0.0	0.7	0.7	0.7	0.0	0.0	0.0	*0.0*	0.7
127.5°	0.0	0.0	0.0	0.7	0.7	0.7	0.0	0.0	0.0	*0.0*	0.7
130°	0.0	0.0	0.0	0.7	0.7	0.7	0.0	0.0	0.0	*0.0*	0.7
132.5°	0.0	0.0	0.0	0.7	0.7	0.7	0.0	0.0	0.0	*0.0*	0.7
135°	0.0	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	*0.0*	0.0
137.5°	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	*0.0*	0.0
140°	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	*0.0*	0.0
142.5°	0.0	0.0	0.0	0.0	0.7	0.7	0.0	0.0	0.0	*0.0*	0.0
145°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.0	0.0	*0.0*	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	*0.0*	0.0
150°	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	*0.0*	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0
157.5°	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	*0.0*	0.0
160°	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	*0.0*	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0
177.5°	0.0	0.0	0.0	0.7	0.0	0.7	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

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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5
2.5°	81.2	81.2	81.2	80.5	80.5	80.5	79.7	79.7	79.0	79.0	79.0
5°	84.2	84.2	83.4	83.4	82.7	82.0	82.0	81.2	81.2	80.5	80.5
7.5°	89.3	89.3	88.6	87.9	86.4	85.6	84.9	84.2	84.2	83.4	83.4
10°	96.0	96.0	94.5	93.0	91.6	90.1	89.3	87.9	87.1	87.1	87.1
12.5°	104.1	103.4	101.9	99.7	98.2	96.0	94.5	93.0	91.6	91.6	91.6
15°	113.7	113.7	110.7	108.5	105.6	102.6	100.4	98.2	96.7	96.0	96.0
17.5°	125.5	125.5	121.8	118.1	114.4	110.7	107.8	104.8	103.4	102.6	102.6
20°	138.8	138.8	135.1	130.7	125.5	120.3	115.9	112.2	110.0	109.3	109.3
22.5°	155.0	155.0	149.9	144.0	137.3	129.9	124.0	119.6	117.4	115.9	115.9
25°	173.5	172.0	166.9	159.5	149.9	141.0	132.9	128.5	125.5	123.3	124.0
27.5°	198.6	196.4	189.7	177.2	165.4	153.6	144.0	138.1	134.4	132.9	133.6
30°	227.4	225.2	215.6	201.6	183.8	168.3	156.5	149.9	146.2	144.0	144.7
32.5°	262.1	259.2	247.3	228.1	207.5	185.3	170.6	162.4	158.7	156.5	155.8
35°	307.9	304.2	289.4	262.8	234.0	207.5	186.8	176.5	172.8	170.6	171.3
37.5°	359.6	354.4	334.5	302.0	265.8	231.8	208.2	194.9	190.5	186.8	186.8
40°	418.6	412.7	386.9	344.1	300.5	258.4	228.1	213.4	208.2	208.2	208.2
42.5°	492.5	486.6	457.0	394.3	336.7	287.2	251.0	234.0	228.9	230.4	230.4
45°	606.9	598.8	551.5	468.8	383.9	316.7	274.7	255.5	251.8	255.5	255.5
47.5°	711.7	701.4	632.0	538.2	430.4	346.3	298.3	276.1	274.7	282.8	282.8
50°	829.1	815.8	742.8	594.4	468.1	378.8	319.7	293.1	293.9	305.7	309.4
52.5°	1056.5	1042.5	916.3	696.2	508.7	390.6	328.6	296.8	296.8	310.1	315.3
55°	1191.7	1162.9	998.2	762.7	525.7	404.6	324.9	282.0	280.6	295.3	299.8
57.5°	1236.0	1206.4	1015.2	743.5	514.6	386.9	303.5	242.2	239.2	258.4	256.9
60°	1272.1	1233.0	987.9	679.3	451.9	349.2	262.1	180.2	167.6	184.6	183.8
62.5°	1374.0	1331.9	989.4	603.9	378.0	291.6	197.1	101.2	75.3	88.6	82.7
65°	*1425.0*	*1383.6*	*1004.9*	*568.5*	*340.4*	*241.4*	*141.0*	*41.3*	*3.0*	*3.0*	*1.5*
67.5°	1381.4	1344.5	984.9	559.7	335.2	240.0	143.2	40.6	0.0	0.0	0.0
70°	1317.9	1282.5	939.1	528.6	318.2	231.1	140.3	40.6	0.0	0.0	0.0
72.5°	1206.4	1170.2	860.1	484.3	292.4	211.9	129.9	38.4	0.0	0.0	0.0
75°	1059.5	1032.2	759.7	426.8	257.7	186.8	115.2	34.0	0.0	0.0	0.0
77.5°	897.1	864.6	637.2	355.1	215.6	155.0	97.5	28.1	0.0	0.0	0.0
80°	719.9	696.2	502.1	278.3	166.9	121.1	76.0	21.4	0.0	0.0	0.0
82.5°	535.3	515.4	371.4	199.3	118.9	84.2	52.4	14.0	0.0	0.0	0.0
85°	351.4	346.3	238.5	121.1	70.9	46.5	28.1	6.6	0.0	0.0	0.0
87.5°	127.0	131.4	87.1	34.7	19.2	8.1	3.7	0.7	0.0	0.0	0.0
90°	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
92.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
95°	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
97.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
100°	0.7	0.7	0.7	0.7	0.7	0.7	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	0.7	0.0	0.0	0.0	0.0	0.0
107.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
110°	0.7	0.7	0.7	0.7	0.7	0.7	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: P821450
CATALOG NUMBER: TT-D2-830-12VDC-RW-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	0.7	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	0.7	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	0.7	0.0	0.0	0.0	0.0	0.0
127.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
130°	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
132.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
135°	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.7	0.7	0.7	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

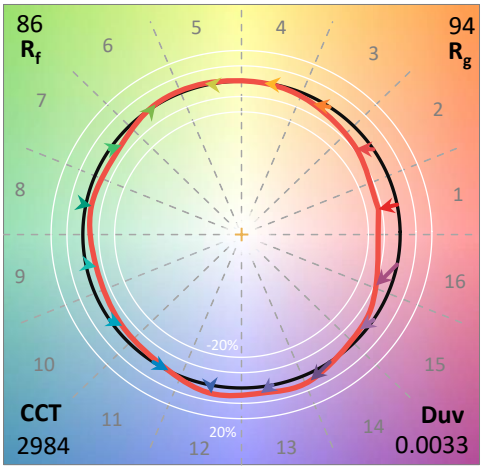
Test Information

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

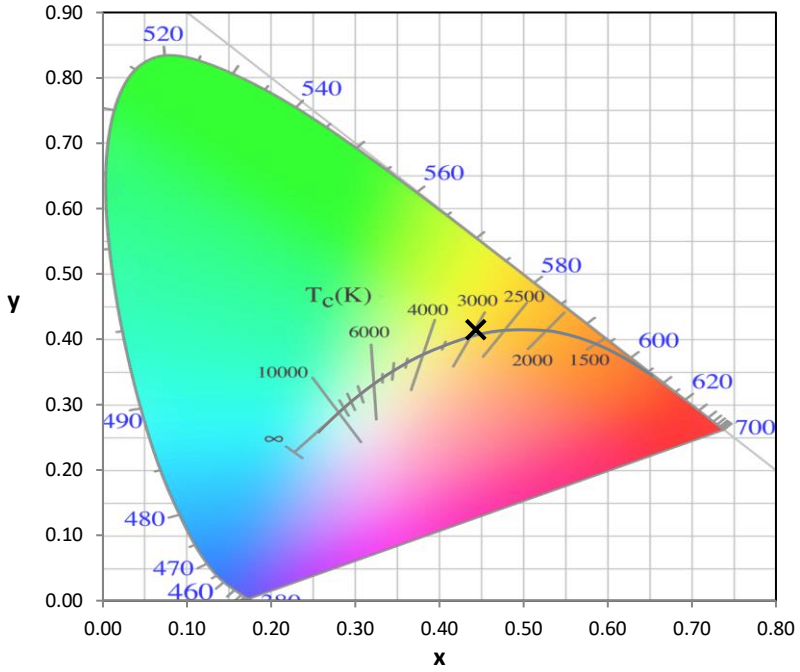
Stabilization Time:	29M
Operation Time:	1H 29M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-7

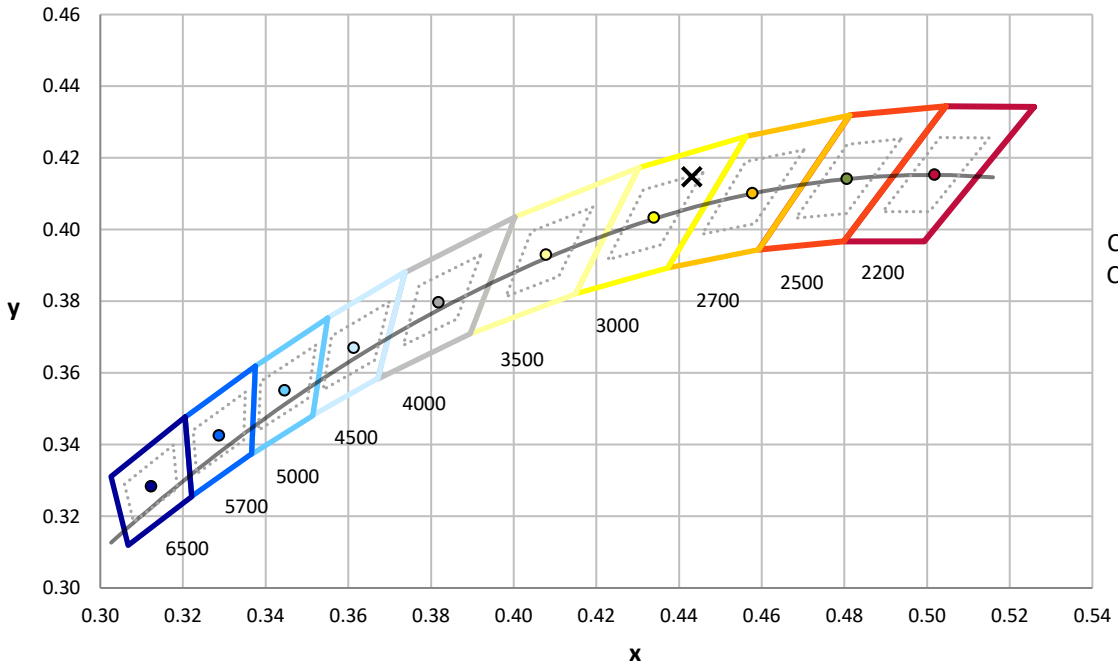
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

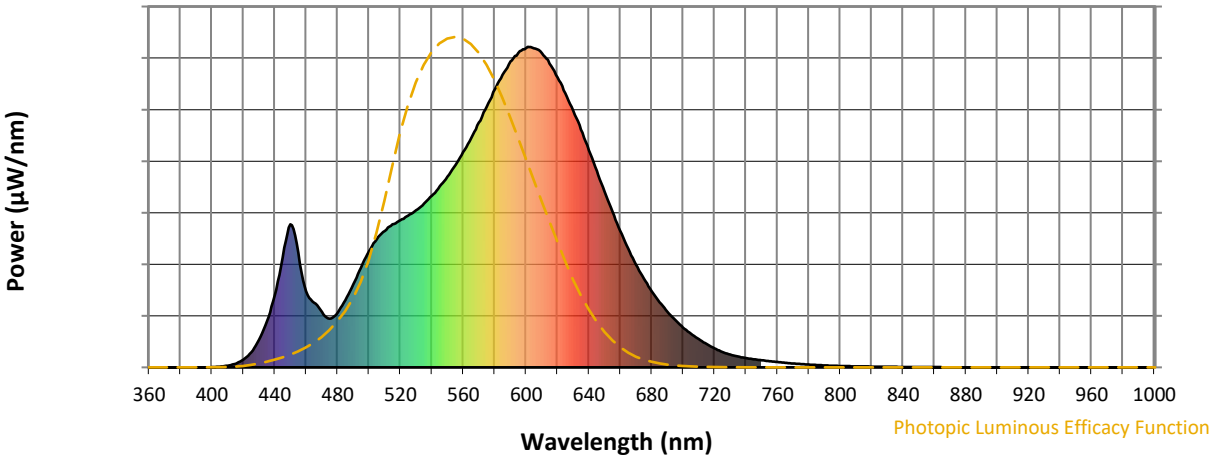


CCT = 2984K
CIE x = 0.4431
CIE y = 0.4147
Duv = 0.0033

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-7

Photopic Flux vs. Wavelength

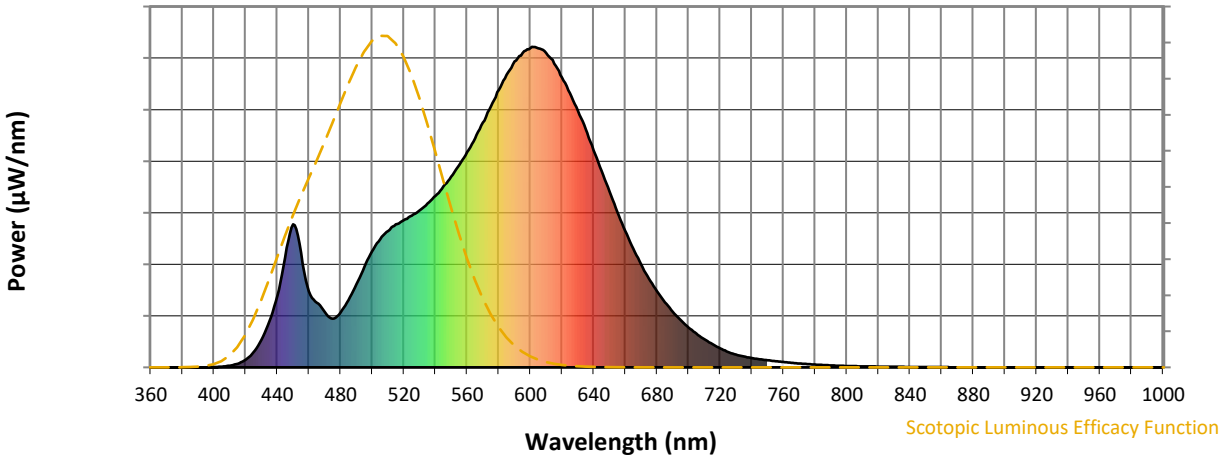


Photopic Lumens: NR

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

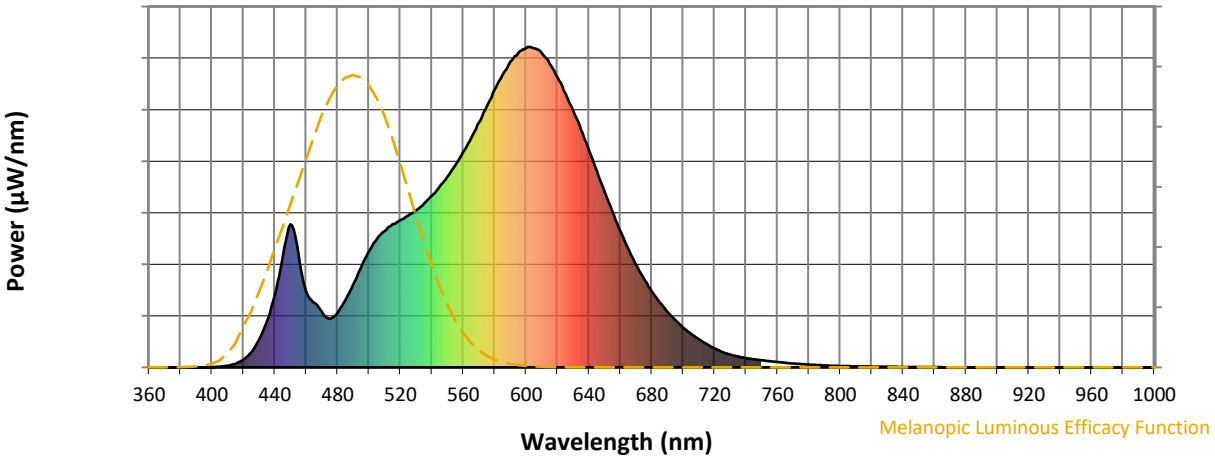


Scotopic Lumens: NR **S/P: 1.32**

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			

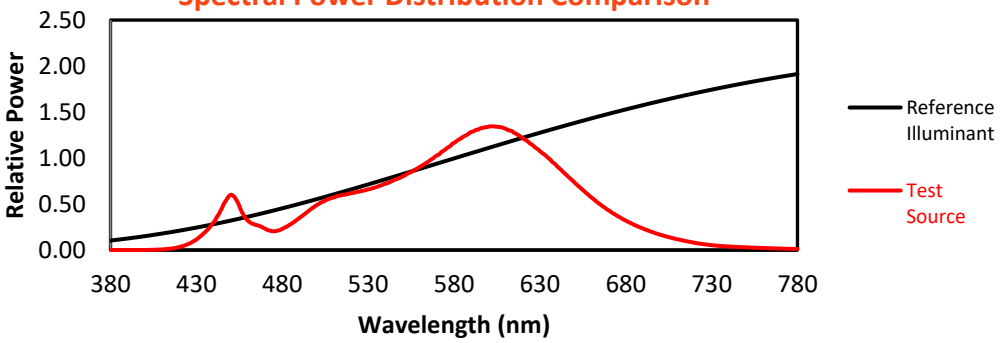
REPORT NUMBER: SP1-2407-176-7

TM-30-18

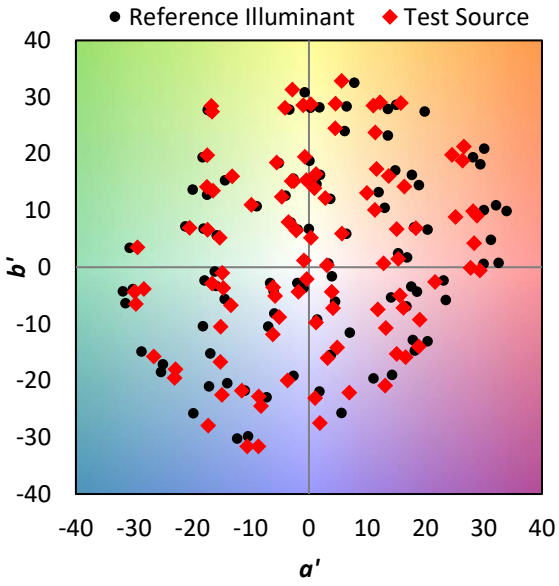
Summary

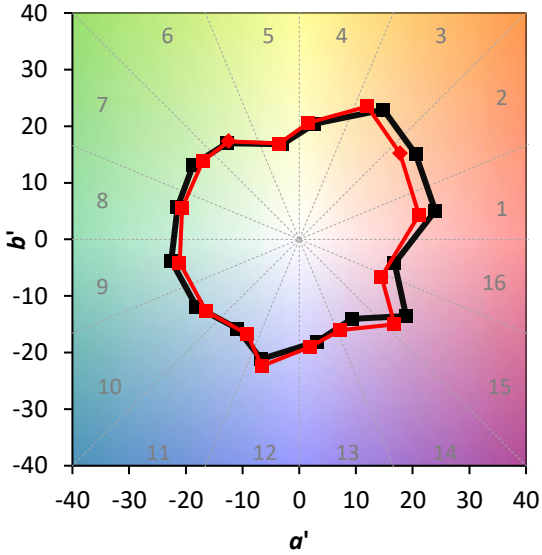
R_f = 85.8
R_g = 94.1
CIE R_a = 81.8
R_9 = -1.1

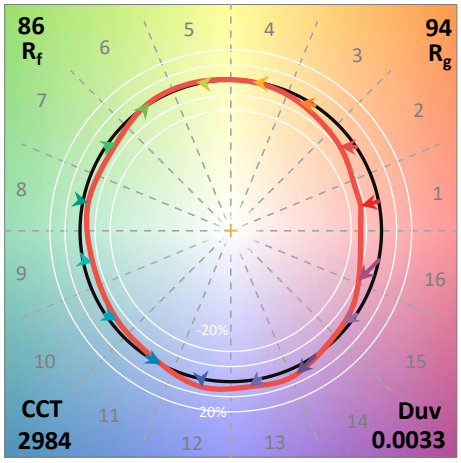
Spectral Power Distribution Comparison

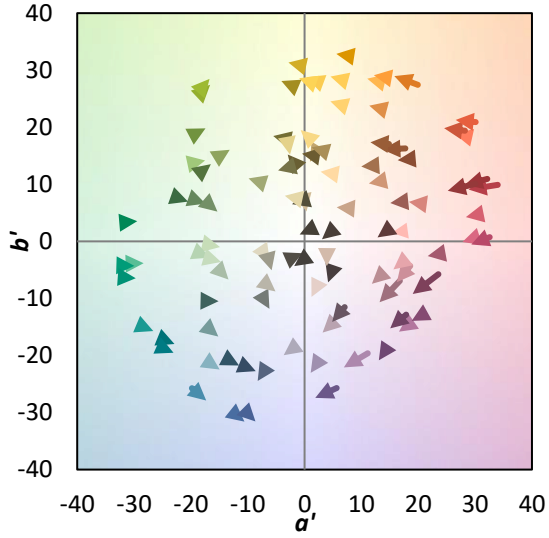


Color Vector Graphics







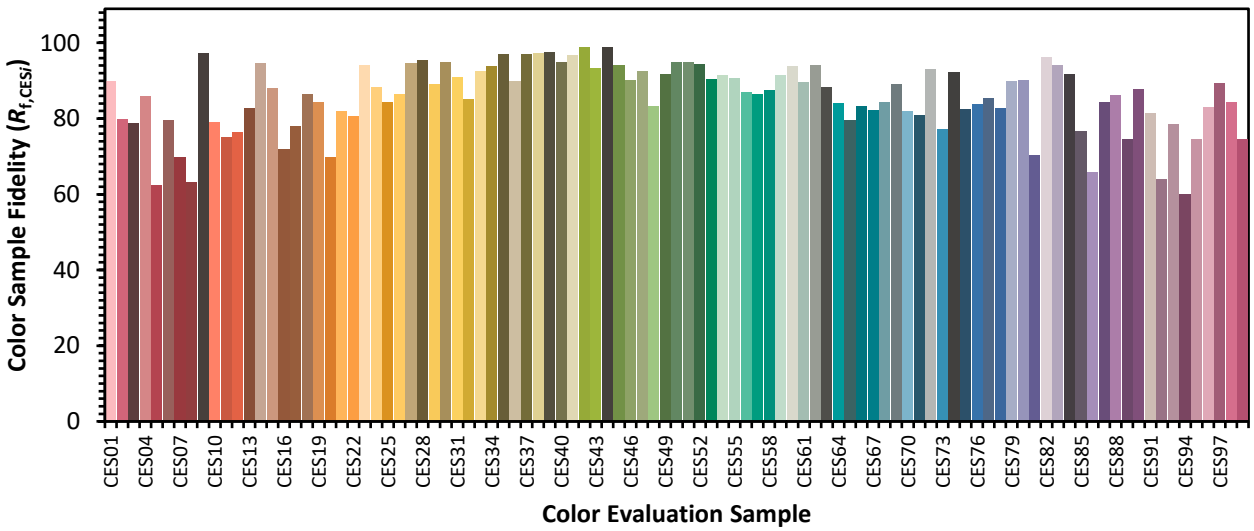


REPORT NUMBER: SP1-2407-176-7

TM-30-18

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

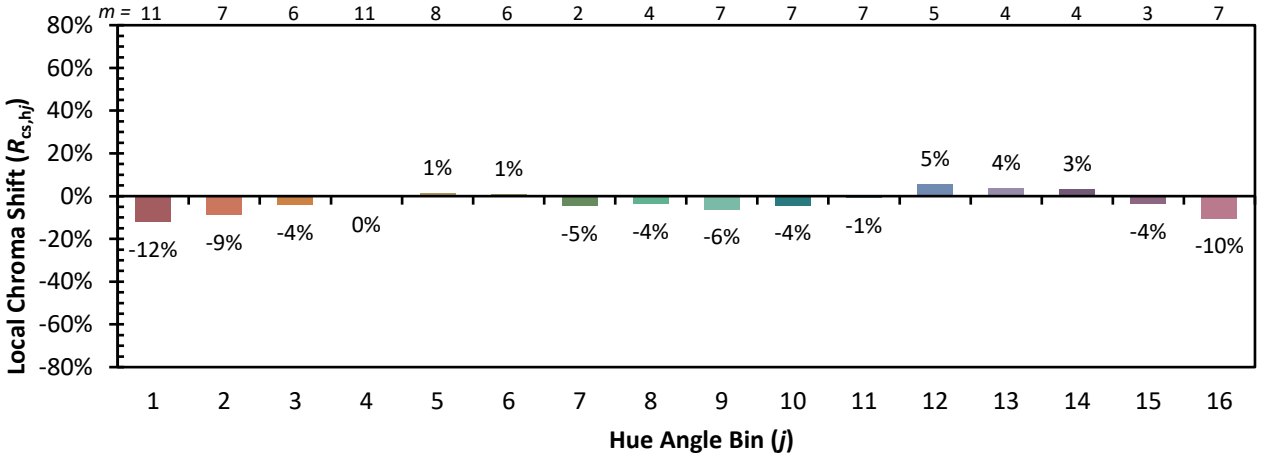
CES01 = 86	CES26 = 86	CES51 = 95	CES76 = 84
CES02 = 63	CES27 = 95	CES52 = 94	CES77 = 86
CES03 = 31	CES28 = 95	CES53 = 90	CES78 = 83
CES04 = 70	CES29 = 89	CES54 = 91	CES79 = 90
CES05 = 50	CES30 = 95	CES55 = 91	CES80 = 90
CES06 = 51	CES31 = 91	CES56 = 87	CES81 = 70
CES07 = 42	CES32 = 85	CES57 = 86	CES82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

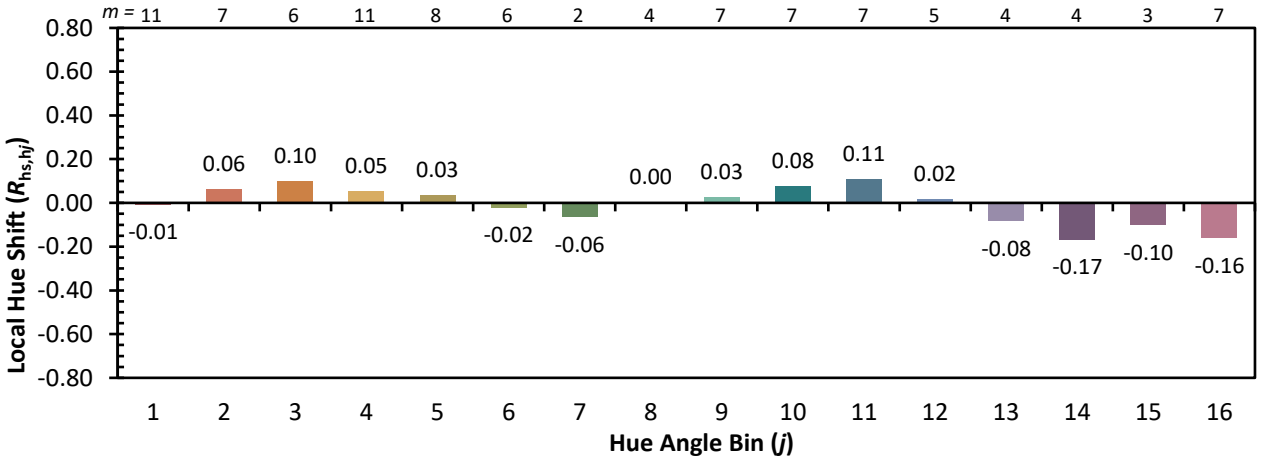


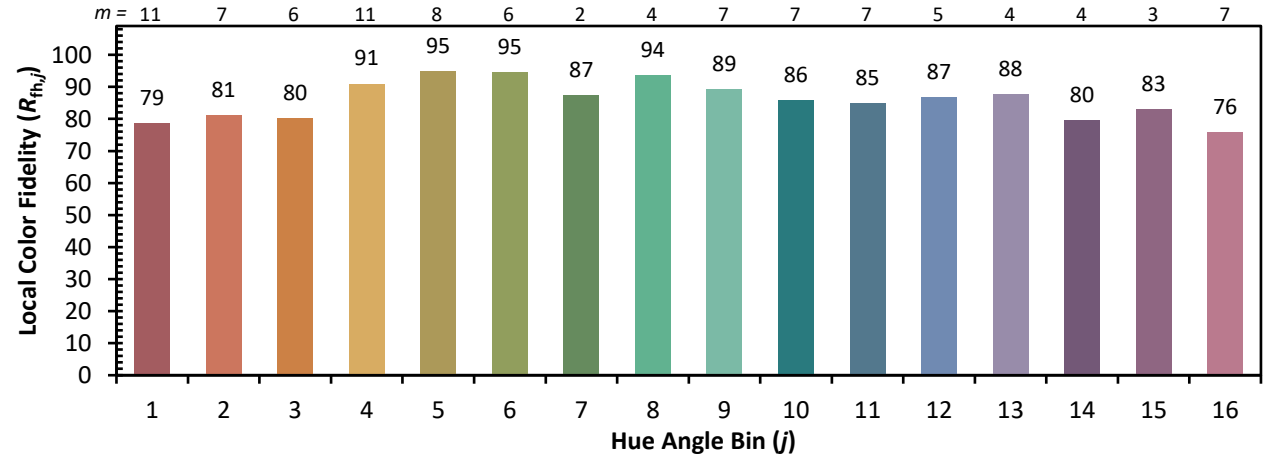
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Color Rendition by Hue-Angle Bin



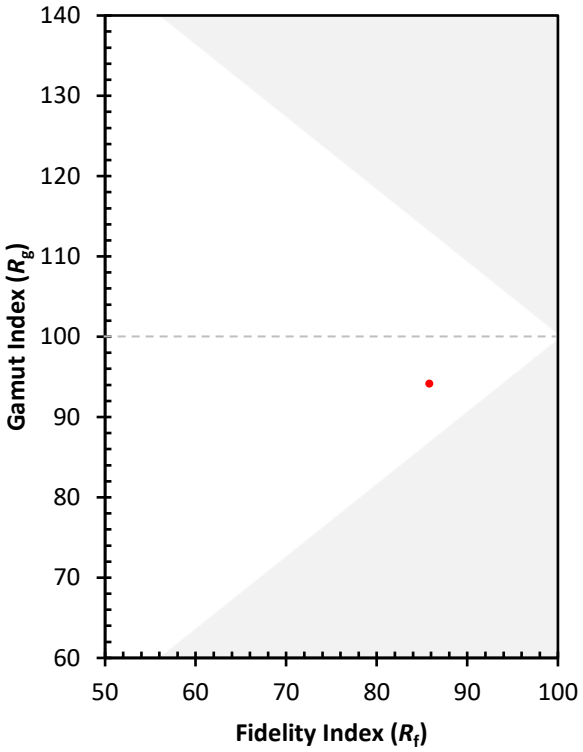


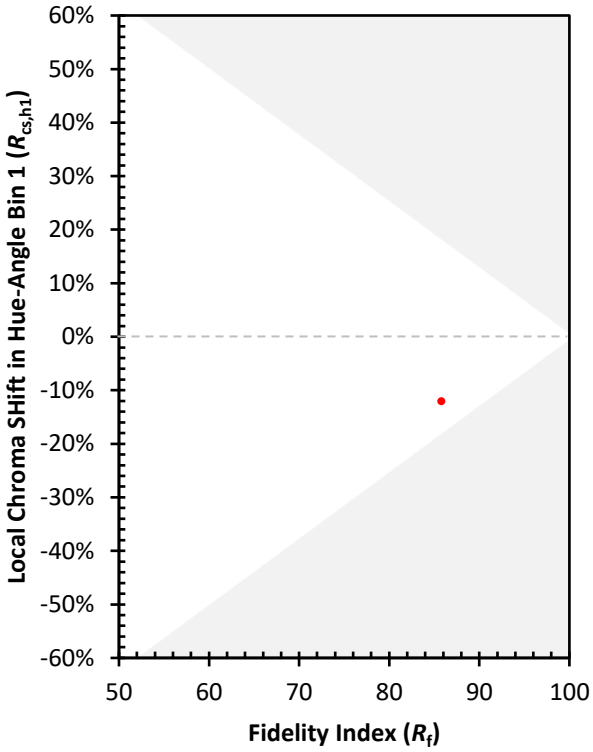


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Measure Comparisons





(END OF REPORT)