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: P821133

Luminaire Tested: **TT-D2-830-24VDC-DL-UPL**

Issue Date: 7/23/2020

Report Generated By 670245763

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Scaled Data Report

Test Information

Test Method:	LM-79-08
Report Number:	P821133
	REPORT IS FROM IESNA LM-79-08 TEST DATA - UPLIGHT (G2-2002-677-2) AND
Test Lab:	INNOVATION CENTER
Issue Date:	7/23/2020
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	McGRAW-EDISON
Catalog Number:	TT-D2-830-24VDC-DL-UPL
Description:	TOPTIER LED PARKING GARAGE LUMINAIRE WITH UPLIGHT
	3000K, 80 CRI LEDS AND DRIVE LANE DISTRIBUTION
Light Source:	-
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	4820.7 lumens
Efficiency:	N/A
Efficacy:	126.9 lumens/watt
Luminous Opening:	Vertical Cylinder (Dia: 1.12' x H: 0.1')
IES Classification:	Type IV - Short
BUG Rating:	B2 - U4 - G3

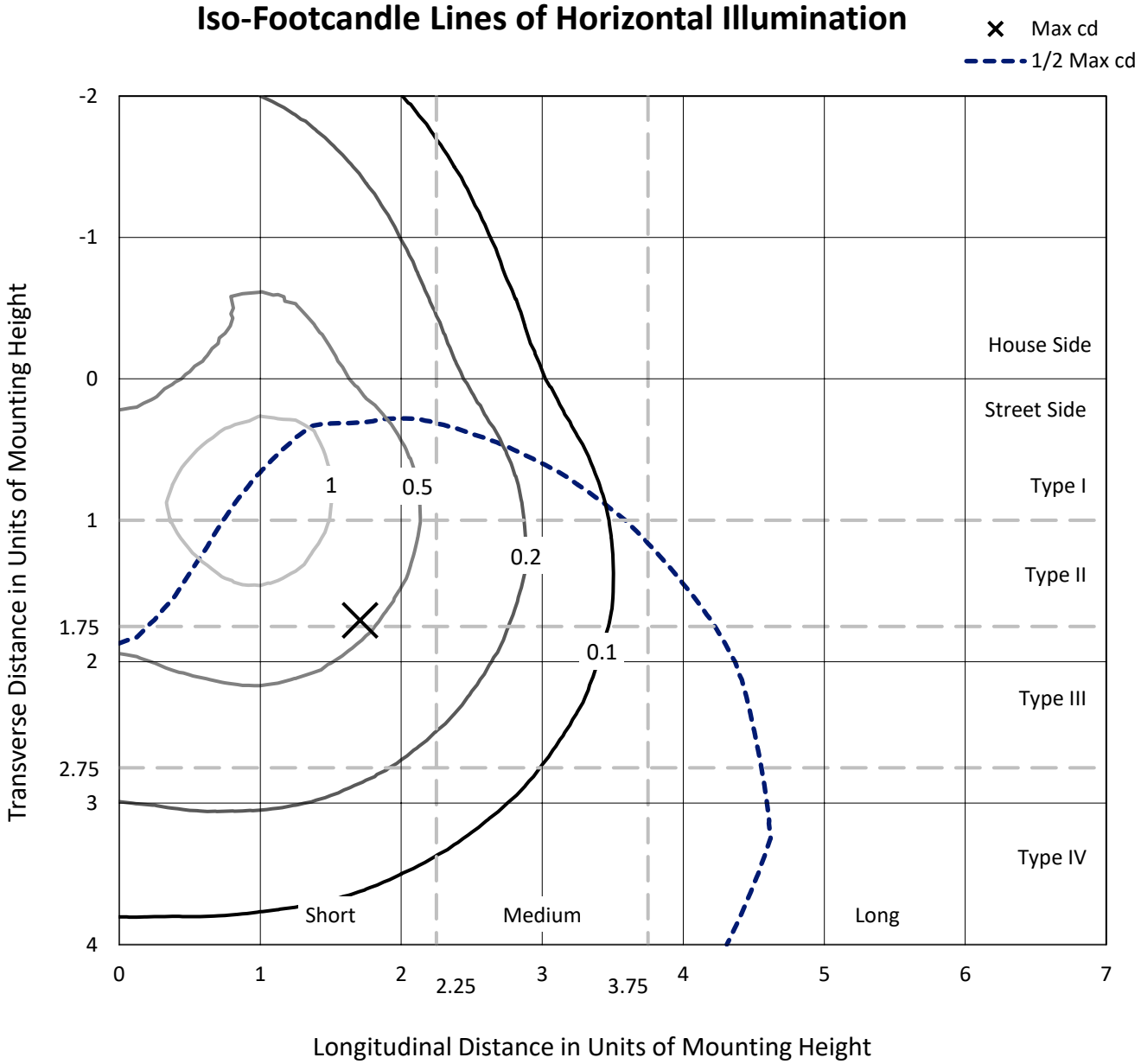
Input Watts (W):	38
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	25 FT

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Iso-Footcandle Lines of Horizontal Illumination



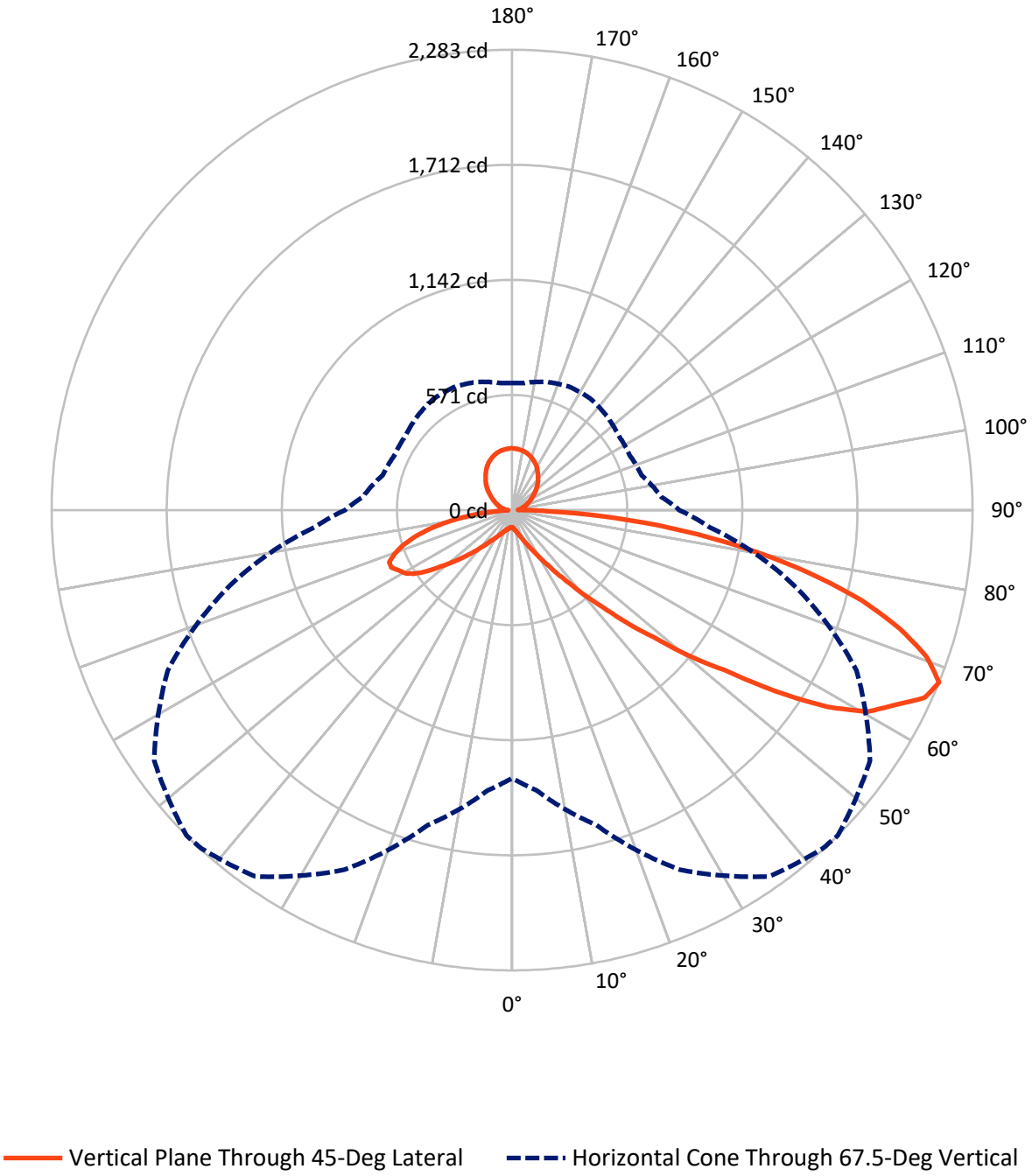
Based on 15 foot mounting height. Maximum calculated value = 1.4 fc
Type IV - Short - N/A

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Luminous Intensity Polar Plot



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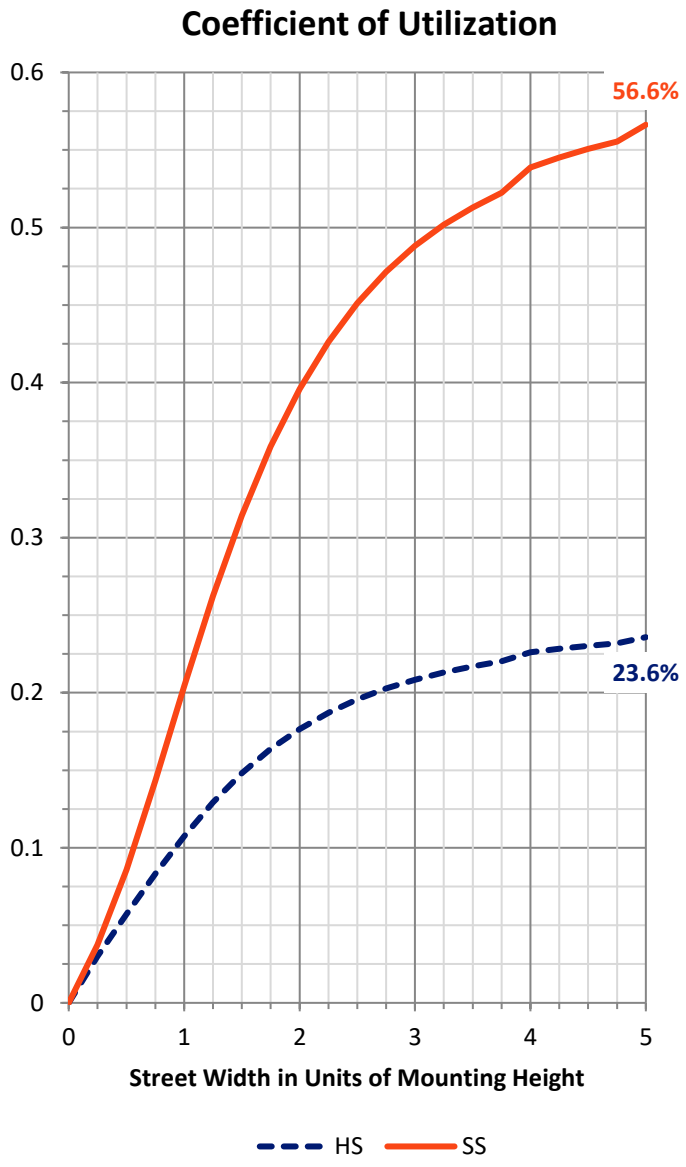
REPORT NUMBER: P821133
CATALOG NUMBER: TT-D2-830-24VDC-DL-UPL

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1163.2	415.9	1579.1
	% Fixture	24.1	8.6	32.8
Street Side	Lumens	2825.8	415.9	3241.6
	% Fixture	58.6	8.6	67.2
Total	Lumens	3989.0	831.7	4820.7
	% Fixture	82.7	17.3	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	8.9	0.2
10°-20°	33.1	0.7
20°-30°	78.2	1.6
30°-40°	176.9	3.7
40°-50°	394.4	8.2
50°-60°	793.0	16.4
60°-70°	1164.6	24.2
70°-80°	1024.1	21.2
80°-90°	315.8	6.6
90°-100°	42.6	0.9
100°-110°	66.0	1.4
110°-120°	91.9	1.9
120°-130°	119.0	2.5
130°-140°	138.7	2.9
140°-150°	140.5	2.9
150°-160°	121.9	2.5
160°-170°	82.2	1.7
170°-180°	28.9	0.6
0°-90°	3989.0	82.7
0°-180°	4820.7	100.0



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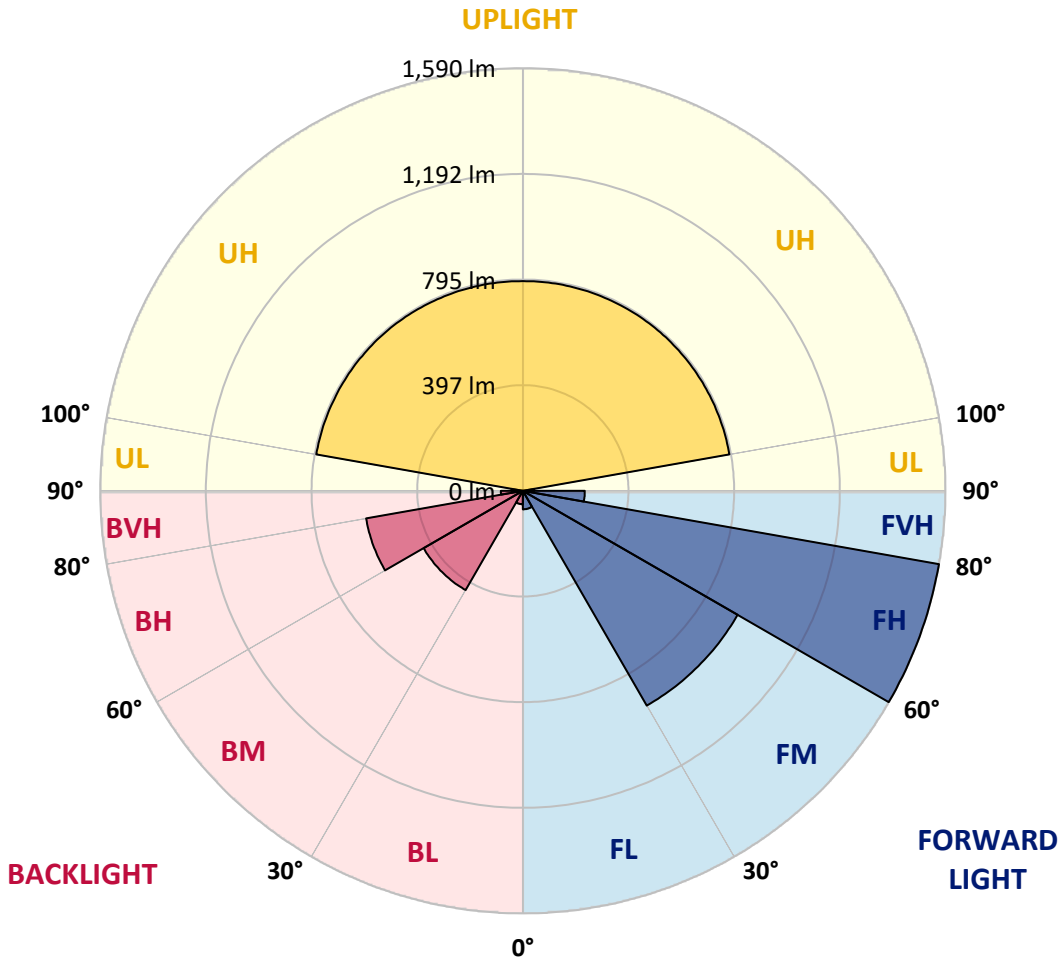
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	69.6	1.4			
FM	(30°-60°)	933.2	19.4			
FH	(60°-80°)	1589.9	33.0			G1/1800
FVH	(80°-90°)	233.0	4.8			G3/500
BL	(0°-30°)	50.5	1.0	B0/110		
BM	(30°-60°)	431.1	8.9	B1/1000		
BH	(60°-80°)	598.8	12.4	B2/1000		G2/1000
BVH	(80°-90°)	82.8	1.7			G1/100
UL	(90°-100°)	42.6	0.9		U2/50	
UH	(100°-180°)	789.1	16.4		U4/1000	

BUG Rating: B2-U4-G3
Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	42.5°	45°	55°	65°	75°	85°
0°	86.4	86.4	86.4	86.4	86.4	86.4	86.4	86.4	86.4	86.4	86.4
2.5°	90.2	89.4	89.4	89.4	88.7	88.7	88.7	88.7	87.9	87.9	87.9
5°	95.4	94.6	95.4	93.9	93.1	93.1	92.4	92.4	91.7	90.9	90.2
7.5°	102.8	102.1	102.1	100.6	99.9	99.1	99.1	97.6	96.9	95.4	93.9
10°	111.0	111.0	110.3	109.5	108.0	106.6	106.6	104.3	103.6	101.3	99.1
12.5°	120.7	120.7	120.7	119.2	117.7	117.0	115.5	114.0	111.8	108.0	105.8
15°	132.6	132.6	132.6	131.1	129.7	128.2	127.4	124.4	120.7	117.0	112.5
17.5°	147.5	146.1	146.1	144.6	143.1	142.3	140.8	137.9	132.6	128.2	122.2
20°	163.9	163.2	162.4	162.4	161.0	159.5	158.7	154.2	148.3	140.1	132.6
22.5°	182.6	181.8	181.8	183.3	182.6	180.3	180.3	173.6	165.4	155.7	144.6
25°	205.7	204.9	206.4	209.4	209.4	207.9	205.7	199.0	187.0	173.6	160.2
27.5°	231.0	230.3	233.2	238.5	239.9	237.7	236.2	228.8	215.4	197.5	178.1
30°	261.6	262.3	270.5	276.5	280.2	278.7	277.9	269.7	248.1	227.3	201.9
32.5°	298.8	296.6	307.0	316.7	323.4	327.1	324.9	315.2	296.6	263.8	231.7
35°	338.3	339.0	351.7	365.9	381.5	383.0	387.5	377.8	352.5	313.7	269.0
37.5°	389.7	383.8	400.1	427.0	445.6	462.0	459.0	453.1	423.2	371.8	310.7
40°	435.9	434.4	457.5	494.8	529.1	552.9	555.9	548.4	508.9	435.9	355.4
42.5°	488.8	493.3	525.3	576.8	628.9	663.2	655.0	651.3	605.1	511.9	416.5
45°	542.5	557.4	598.4	672.9	734.0	783.2	797.3	784.7	728.0	631.9	494.0
47.5°	607.3	627.4	678.1	778.7	878.5	935.9	938.9	976.9	891.2	747.4	574.5
50°	693.0	701.9	772.7	895.7	1032.8	1113.3	1136.4	1137.1	1051.4	863.6	665.4
52.5°	777.2	783.9	877.1	1035.8	1222.1	1313.7	1318.9	1348.0	1231.0	1051.4	795.8
55°	878.5	875.6	1003.7	1194.5	1414.3	1547.7	1586.4	1625.9	1476.9	1199.7	870.3
57.5°	976.9	972.4	1126.7	1377.1	1677.4	1810.0	1842.0	1813.7	1592.4	1261.6	906.9
60°	1067.8	1083.5	1271.2	1579.0	1880.8	2007.5	2029.1	1952.3	1666.9	1309.2	930.0
62.5°	1162.4	1193.7	1421.0	1747.4	2036.5	2127.4	2128.9	2038.8	1791.4	1401.6	1005.2
65°	1251.1	1301.0	1537.3	1891.2	2145.3	2236.2	2246.7	2165.4	1913.6	1482.1	1017.9
67.5°	1329.4	1395.7	1617.7	1968.7	2219.1	2277.9	2283.2	2166.2	1884.5	1449.3	982.9
70°	1392.7	1446.4	1667.7	1970.2	2167.7	2184.1	2180.3	2055.9	1804.0	1384.5	924.0
72.5°	1417.3	1461.3	1643.8	1877.8	2016.4	2012.7	2009.7	1894.9	1671.4	1276.5	839.0
75°	1382.3	1394.9	1513.4	1680.3	1768.3	1789.1	1792.1	1688.5	1466.5	1116.2	719.8
77.5°	1237.7	1231.0	1321.9	1432.2	1498.5	1513.4	1510.4	1424.0	1229.5	927.7	603.6
80°	981.4	995.5	1052.2	1125.2	1191.5	1207.9	1197.5	1131.9	956.8	723.5	463.5
82.5°	686.3	703.4	751.1	806.3	856.2	856.2	865.9	802.5	678.1	519.4	324.1
85°	370.3	360.7	412.8	475.4	511.2	517.9	521.6	500.7	419.5	313.7	192.3
87.5°	61.1	65.6	81.2	124.4	141.6	163.9	174.4	136.4	82.7	52.9	38.7
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	55.9	56.4	55.9	55.9
105°	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.9	62.0	62.0
107.5°	68.6	68.6	69.0	69.0	69.0	69.0	69.0	69.0	69.5	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°	42.5°	45°	55°	65°	75°	85°
112.5°	83.1	83.1	84.0	84.0	84.0	84.0	*84.0*	84.6	84.6	84.0	84.0
115°	91.1	91.1	92.0	92.0	92.0	92.0	*92.0*	93.0	93.0	92.0	92.0
117.5°	100.5	100.5	101.0	101.4	101.4	101.4	*101.4*	102.4	102.4	101.4	101.4
120°	109.9	109.9	109.9	110.8	110.8	110.8	*110.8*	111.8	111.8	110.8	110.8
122.5°	120.7	120.7	121.2	121.6	121.6	121.6	*121.6*	122.6	122.6	122.1	122.1
125°	131.5	131.5	132.4	132.4	132.4	132.4	*132.4*	133.4	133.4	133.4	133.4
127.5°	143.2	143.2	144.2	144.2	144.2	144.2	*144.2*	145.1	145.1	145.1	145.1
130°	155.0	155.0	155.9	155.9	155.9	155.9	*155.9*	156.8	156.8	156.8	156.8
132.5°	167.2	167.2	167.6	167.6	167.6	168.0	*168.1*	168.6	168.6	168.6	168.6
135°	179.4	179.4	179.4	179.4	179.4	180.1	*180.3*	180.3	180.3	180.3	180.3
137.5°	191.2	190.6	191.2	190.6	191.2	191.5	*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	*256.0*	256.4	256.0	256.0	256.0
155°	264.9	264.9	265.8	264.9	264.9	264.9	*264.9*	265.8	264.9	264.9	264.9
157.5°	272.4	272.4	273.3	272.4	272.4	272.4	*272.4*	273.3	272.4	272.4	272.4
160°	279.9	279.9	280.8	279.9	279.9	279.9	*279.9*	280.8	279.9	279.9	279.9
162.5°	286.0	286.0	286.9	286.0	286.0	286.0	*286.0*	286.9	286.0	286.0	286.0
165°	292.1	292.1	293.0	292.1	292.1	292.1	*292.1*	293.0	292.1	292.1	292.1
167.5°	295.8	295.8	296.8	295.8	295.8	295.8	*295.8*	296.8	295.8	295.8	295.8
170°	299.6	299.6	300.5	299.6	299.6	299.6	*299.6*	300.5	299.6	299.6	299.6
172.5°	302.0	302.0	302.8	302.0	302.4	302.1	*302.0*	302.8	302.0	302.0	302.0
175°	304.3	304.3	305.2	304.3	305.2	304.6	*304.3*	305.2	304.3	304.3	304.3
177.5°	305.2	305.2	305.7	305.2	305.7	305.4	*305.2*	305.7	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):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	86.4	86.4	86.4	86.4	86.4	86.4	86.4	86.4	86.4	86.4	86.4
2.5°	87.9	87.2	86.4	85.7	85.7	84.9	84.9	84.9	85.7	85.7	85.7
5°	90.2	89.4	88.7	87.9	86.4	86.4	86.4	86.4	86.4	86.4	86.4
7.5°	93.9	92.4	91.7	90.2	88.7	88.7	87.9	87.9	87.9	88.7	87.9
10°	98.4	96.9	95.4	93.1	92.4	91.7	90.9	90.9	91.7	91.7	90.9
12.5°	103.6	102.8	99.9	97.6	96.1	95.4	94.6	95.4	94.6	95.4	95.4
15°	111.0	108.8	105.1	102.8	100.6	99.9	99.1	99.9	99.9	100.6	99.9
17.5°	119.2	116.2	112.5	108.8	105.8	105.1	105.1	105.1	105.8	106.6	105.8
20°	128.9	125.2	120.0	115.5	112.5	111.8	111.8	112.5	113.3	114.0	114.0
22.5°	138.6	135.6	128.2	122.2	120.7	120.0	119.2	120.7	122.2	123.0	123.7
25°	153.5	147.5	138.6	131.9	128.9	128.9	129.7	131.1	131.9	133.4	132.6
27.5°	169.2	162.4	151.3	142.3	140.1	139.3	140.8	142.3	145.3	145.3	144.6
30°	190.8	179.6	165.4	157.2	151.3	152.0	154.2	156.5	159.5	161.0	161.0
32.5°	215.4	203.4	184.1	171.4	168.4	169.2	169.9	173.6	176.6	179.6	177.3
35°	247.4	232.5	208.6	194.5	187.0	186.3	189.3	193.7	196.7	198.2	198.2
37.5°	282.4	263.0	233.2	221.3	212.4	211.6	212.4	216.1	219.8	221.3	224.3
40°	324.9	301.0	266.0	246.6	239.9	238.5	241.4	246.6	246.6	248.9	249.6
42.5°	377.0	346.5	307.8	282.4	274.2	274.2	273.5	277.9	277.9	277.9	276.5
45°	443.4	409.1	358.4	332.3	318.2	310.7	313.0	310.0	309.2	311.5	304.8
47.5°	507.5	464.2	404.6	376.3	362.1	357.7	349.5	347.2	343.5	343.5	333.8
50°	582.0	528.3	470.9	430.7	417.3	404.6	397.9	387.5	376.3	374.1	370.3
52.5°	706.4	639.3	549.2	506.0	471.7	459.0	443.4	430.0	416.5	406.1	412.1
55°	757.1	688.5	602.8	561.1	537.3	525.3	496.3	478.4	458.3	443.4	451.6
57.5°	782.4	707.9	628.2	596.9	590.2	579.0	557.4	526.8	503.7	485.1	486.6
60°	796.6	718.3	641.6	613.3	609.5	617.0	605.8	584.9	549.2	530.6	528.3
62.5°	851.0	769.0	679.6	639.3	631.1	636.4	639.3	626.7	596.9	572.3	565.6
65°	862.1	775.0	687.0	661.0	661.7	663.2	665.4	652.0	637.1	606.6	600.6
67.5°	*828.6*	*742.9*	*664.7*	*643.1*	*644.6*	*661.7*	*675.1*	*674.4*	*658.0*	*631.9*	*629.7*
70°	777.9	694.5	622.2	602.8	606.6	622.2	651.3	666.2	663.2	646.1	649.8
72.5°	699.0	624.4	561.1	546.2	555.1	570.0	597.6	624.4	640.1	643.8	652.0
75°	606.6	546.9	487.3	478.4	485.1	502.2	527.6	558.9	593.1	611.8	617.0
77.5°	500.7	446.3	402.4	396.4	406.1	421.8	447.1	471.7	510.4	543.2	550.7
80°	392.0	345.0	313.7	308.5	314.5	327.9	347.2	367.4	404.6	430.0	433.7
82.5°	272.0	243.7	223.5	220.6	224.3	229.5	245.2	263.8	284.7	304.8	307.0
85°	158.0	140.1	134.9	130.4	138.6	138.6	142.3	152.8	163.2	164.7	169.2
87.5°	29.1	27.6	28.3	20.9	26.1	18.6	18.6	23.8	17.9	20.9	17.1
90°	29.1	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	33.8	34.2	34.2	34.8
95°	38.5	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	44.2	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	49.8
102.5°	55.9	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	62.0	62.9	62.0	62.0	62.0	62.0	62.0	62.0	62.0
107.5°	69.0	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	76.1	75.1	75.1

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

Scaled Data Report

REPORT NUMBER: P821133
CATALOG NUMBER: TT-D2-830-24VDC-DL-UPL

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	84.0	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	92.0	93.0	93.0	92.0	92.0	92.0	92.0	91.1	91.1
117.5°	101.4	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	110.8	111.8	111.8	110.8	110.8	110.8	109.9	109.9	109.9
122.5°	121.6	122.1	122.1	122.6	122.6	121.6	121.6	121.6	121.2	120.7	120.7
125°	132.4	133.4	133.4	133.4	133.4	132.4	132.4	132.4	132.4	131.5	131.5
127.5°	144.2	145.1	145.1	145.1	145.1	144.2	144.2	144.2	144.2	143.2	143.2
130°	155.9	156.8	156.8	156.8	156.8	155.9	155.9	155.9	155.9	155.0	155.0
132.5°	168.1	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	180.3	179.4	179.4	179.4	179.4	179.4
137.5°	191.6	191.6	191.6	191.6	191.6	191.6	191.2	190.6	191.2	190.6	191.2
140°	202.9	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	213.7	212.7	213.7	213.2	213.7
145°	224.5	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	235.8	234.8	235.8	235.3	235.8
150°	247.0	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	256.0	256.4	256.0	256.0	255.5	256.4	255.5	256.0
155°	264.9	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	272.4	273.3	272.4	272.4	272.4	273.3	272.4	272.4
160°	279.9	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	286.0	286.9	286.0	286.0	286.0	286.9	286.0	286.0
165°	292.1	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	295.8	296.8	295.8	295.8	295.8	296.8	295.8	295.8
170°	299.6	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	302.0	302.8	302.0	302.4	302.0	302.8	302.0	302.0
175°	304.3	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	305.2	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	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: SP1-2407-176-7

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

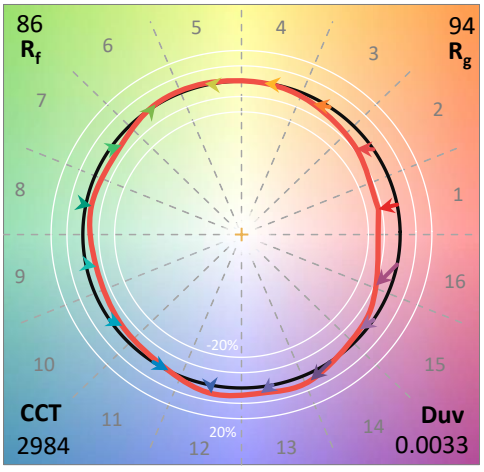
Test Information

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

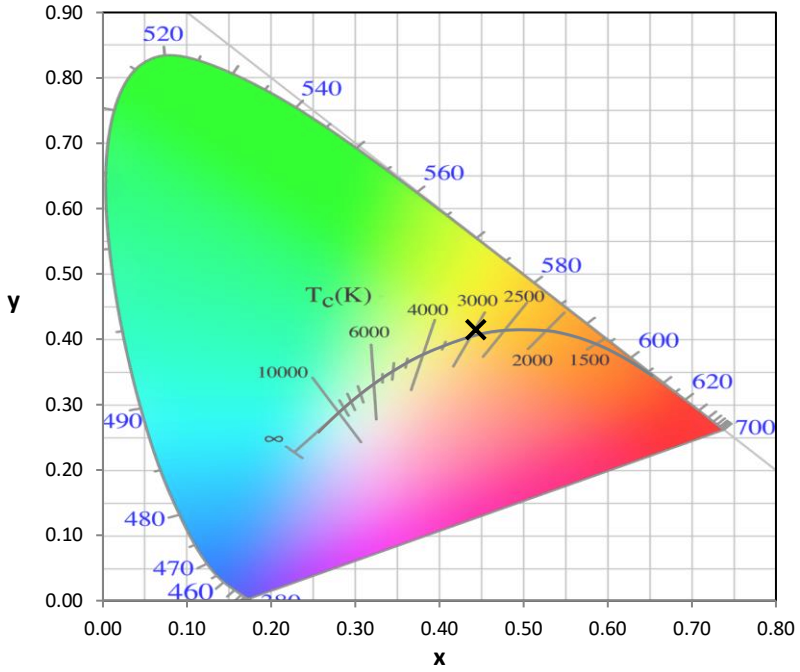
Stabilization Time:	29M
Operation Time:	1H 29M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-7

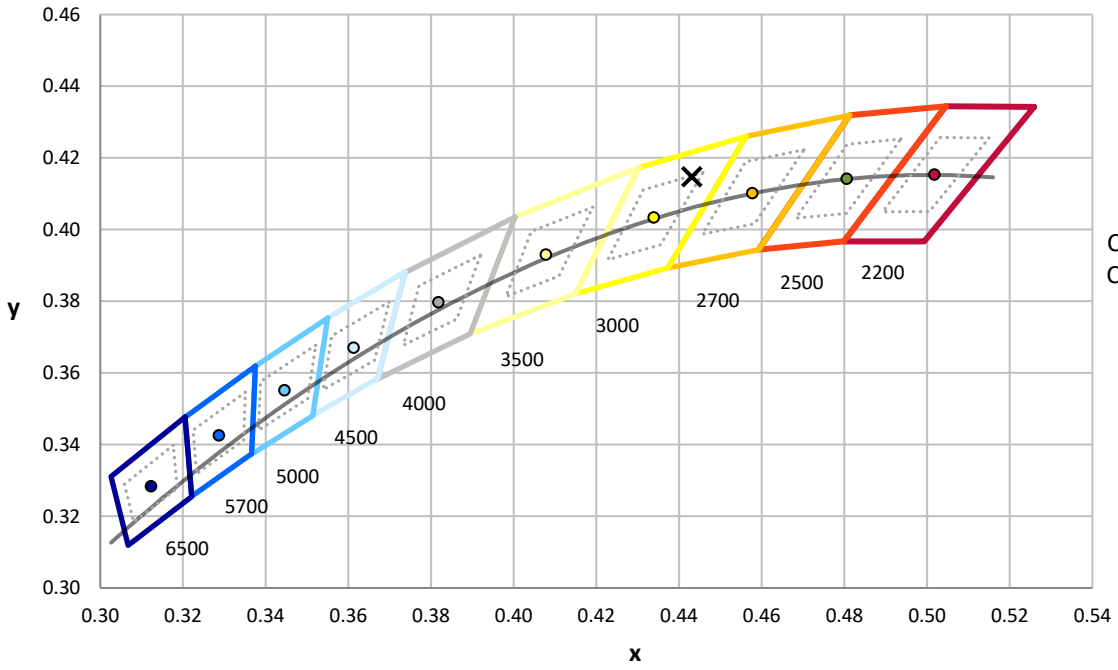
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

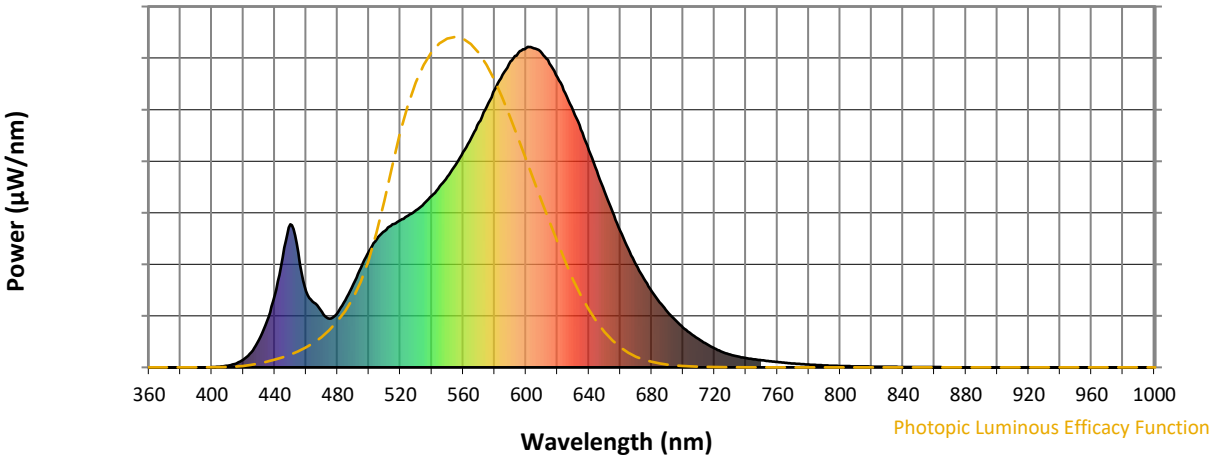


CCT = 2984K
CIE x = 0.4431
CIE y = 0.4147
Duv = 0.0033

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-7

Photopic Flux vs. Wavelength

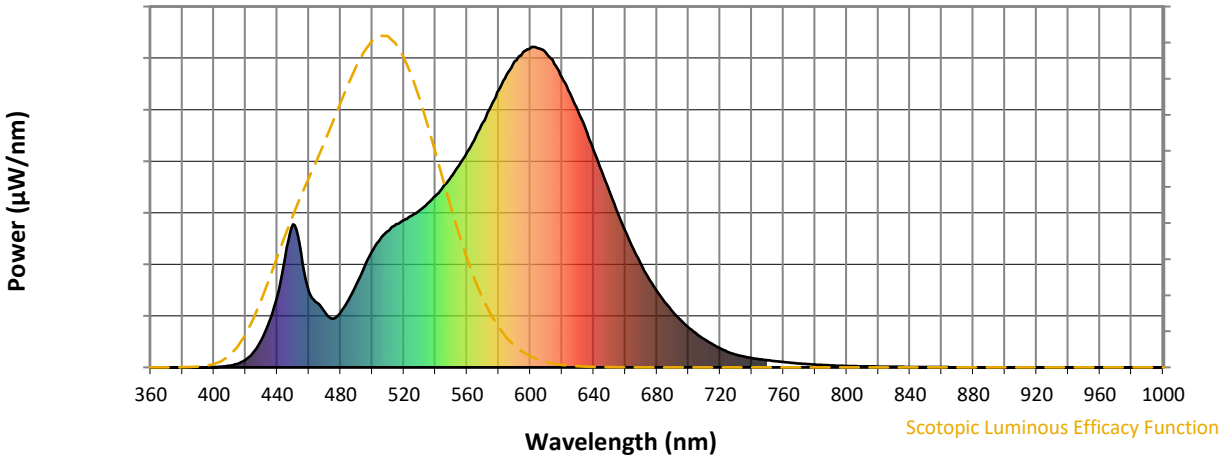


Photopic Lumens: NR

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

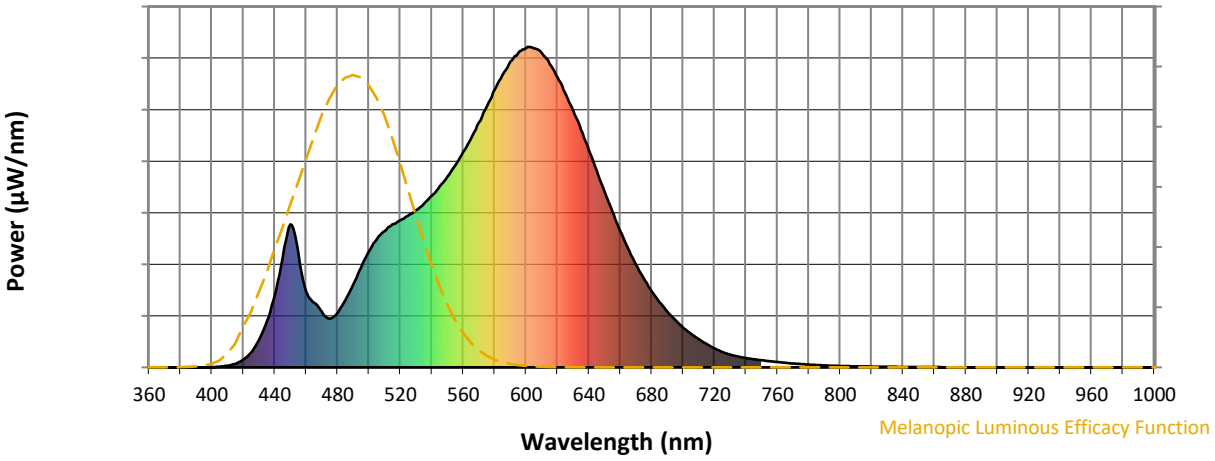


Scotopic Lumens: NR **S/P: 1.32**

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			

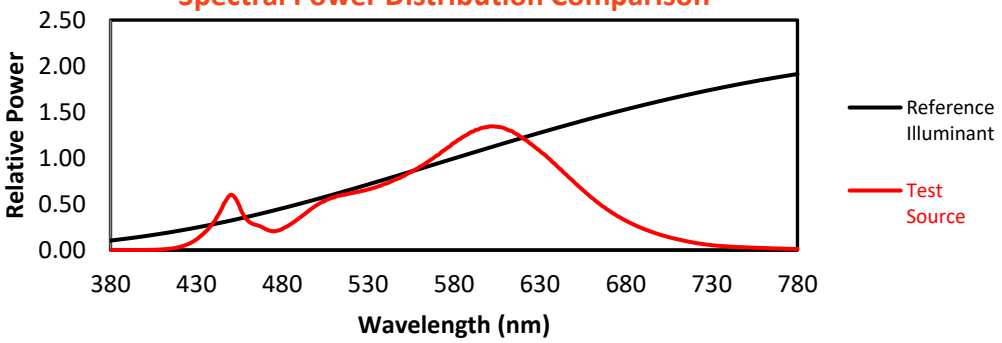
REPORT NUMBER: SP1-2407-176-7

TM-30-18

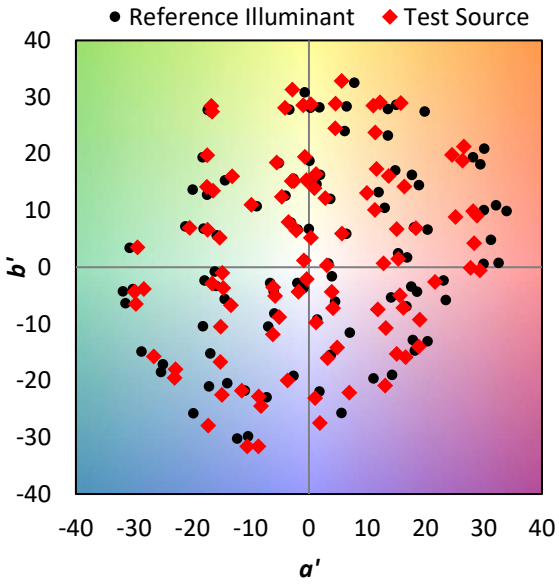
Summary

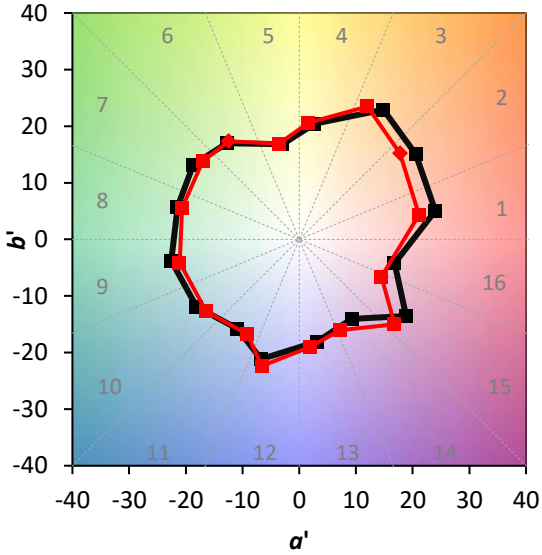
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R_g = 94.1
CIE R_a = 81.8
R_9 = -1.1

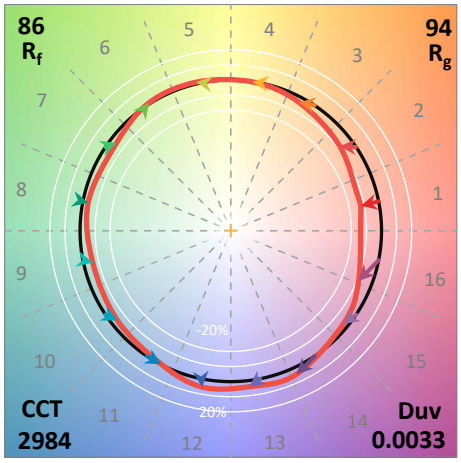
Spectral Power Distribution Comparison

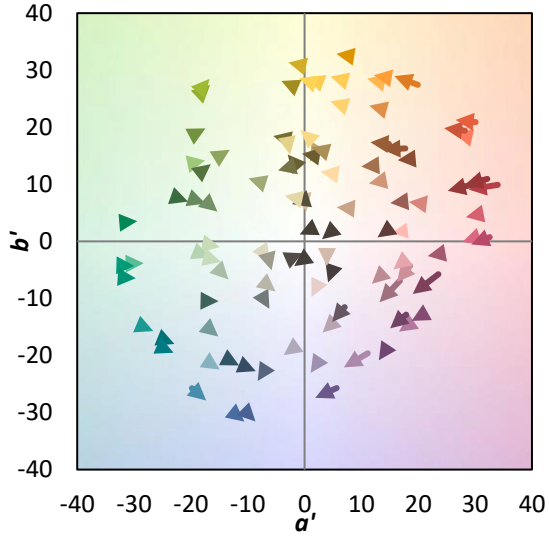


Color Vector Graphics







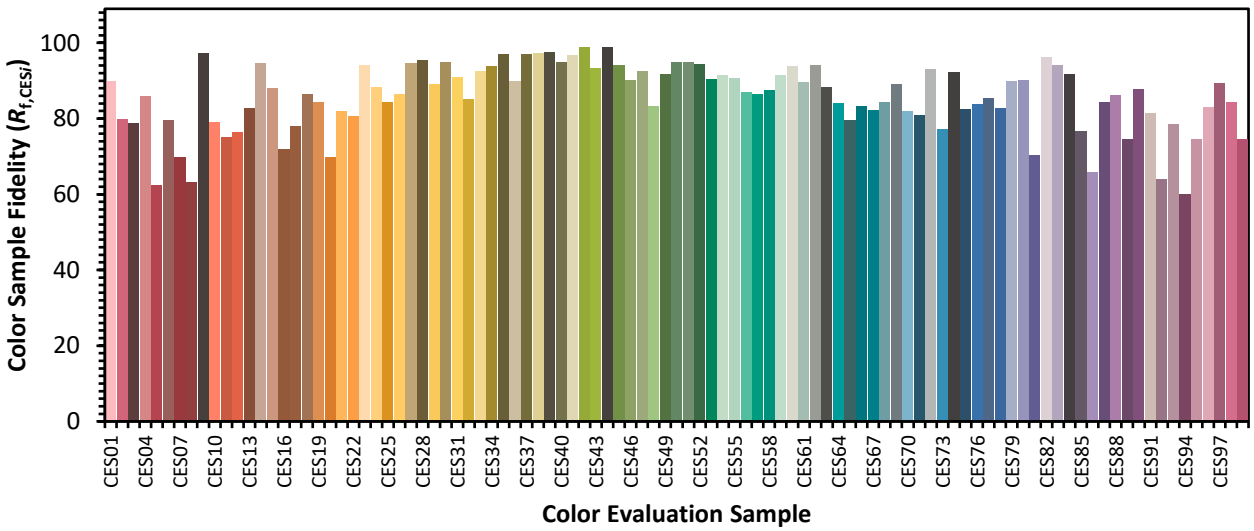


REPORT NUMBER: SP1-2407-176-7

TM-30-18

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

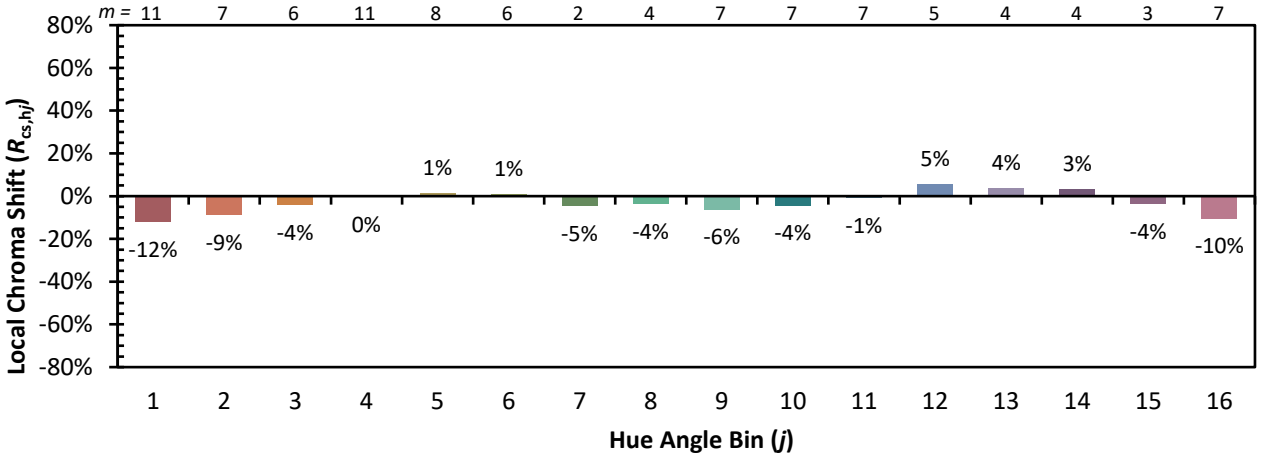
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CES02 = 63	CES27 = 95	CES52 = 94	CES77 = 86
CES03 = 31	CES28 = 95	CES53 = 90	CES78 = 83
CES04 = 70	CES29 = 89	CES54 = 91	CES79 = 90
CES05 = 50	CES30 = 95	CES55 = 91	CES80 = 90
CES06 = 51	CES31 = 91	CES56 = 87	CES81 = 70
CES07 = 42	CES32 = 85	CES57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

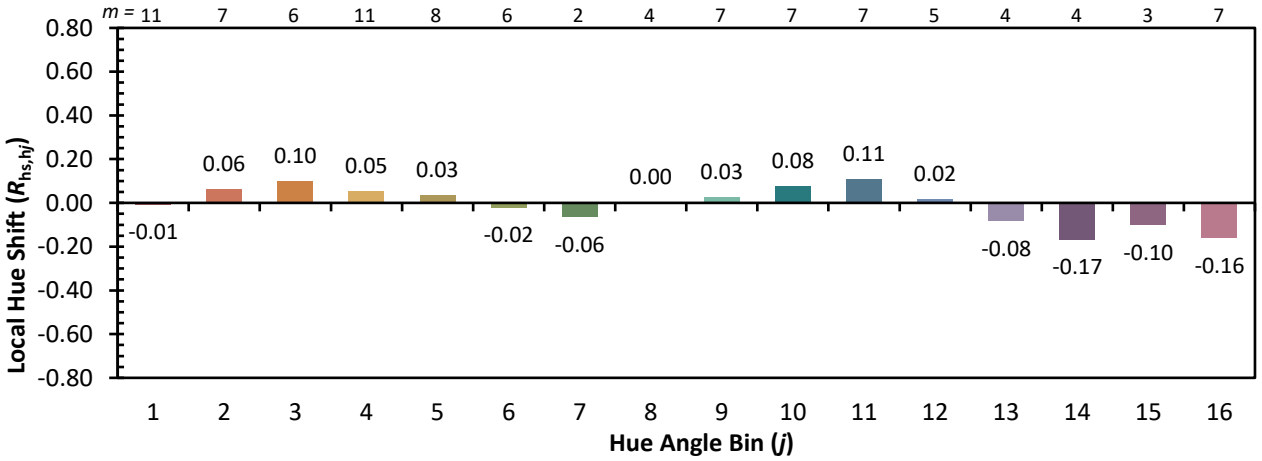


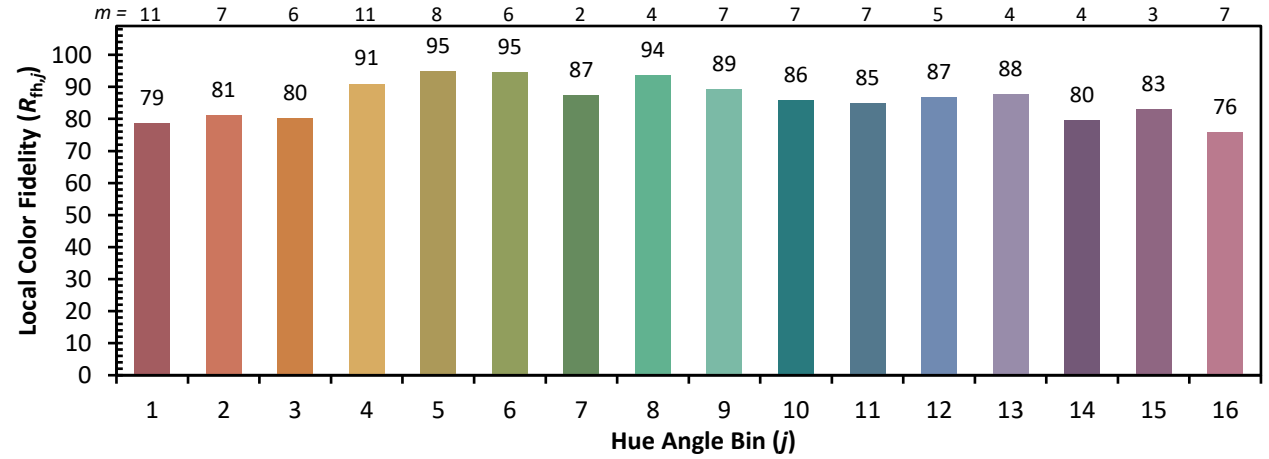
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Color Rendition by Hue-Angle Bin



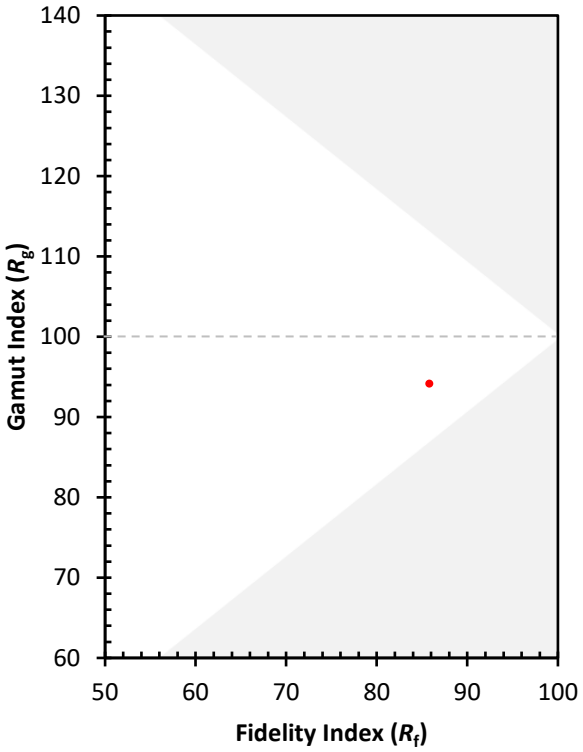


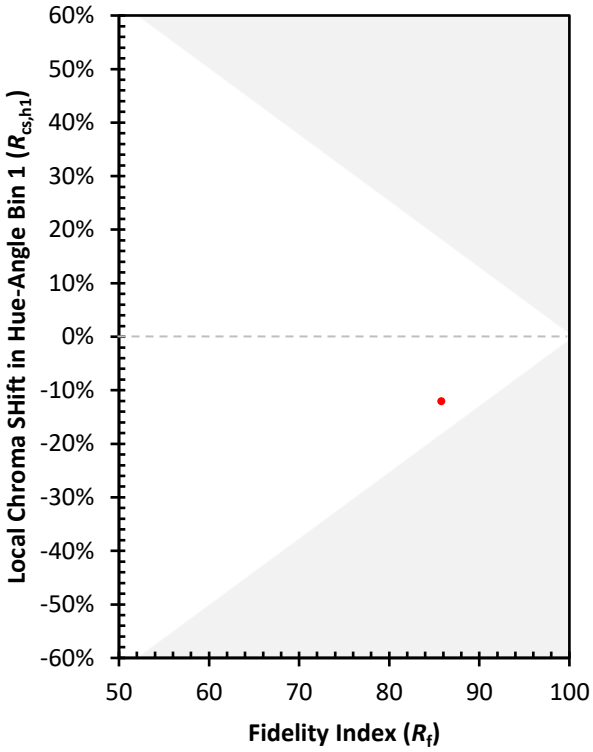


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Measure Comparisons





(END OF REPORT)