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: P821473

Luminaire Tested: **TT-D1-735-12VDC-DL-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:	P821473
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2010-017-4)
Test Lab:	INNOVATION CENTER
Issue Date:	12/2/2020
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	McGRAW-EDISON
Catalog Number:	TT-D1-735-12VDC-DL-HSS
Description:	TOPTIER LED PARKING GARAGE LUMINAIRE
	3500K, 70 CRI LEDS AND DRIVE LANE DISTRIBUTION WITH HOUSE SIDE SHIELD
Light Source:	-
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	2769 lumens
Efficiency:	N/A
Efficacy:	98.9 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type IV - Short
BUG Rating:	B1 - U1 - G2

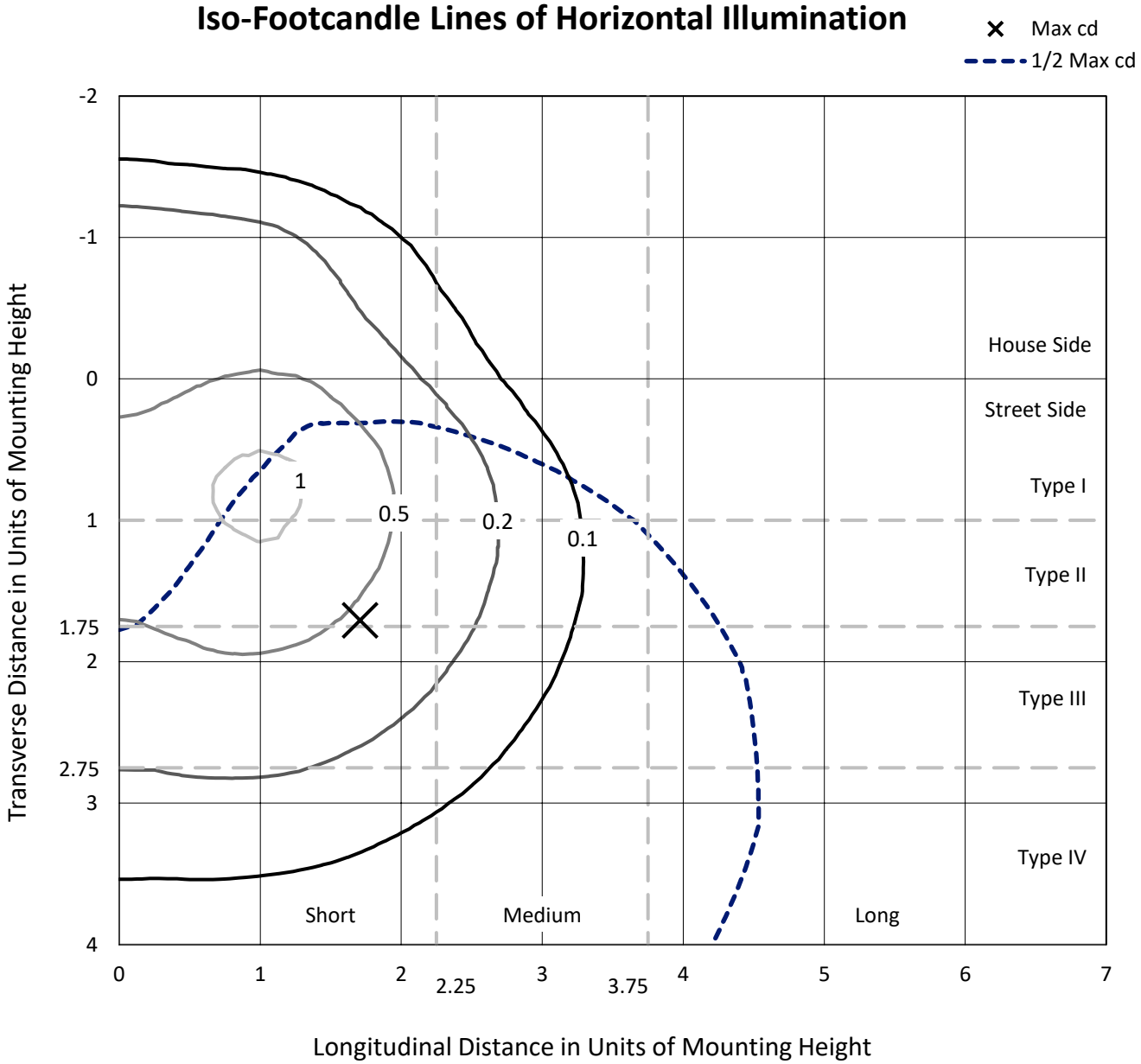
Input Watts (W):	28
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	25 FT

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REPORT NUMBER: P821473
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Iso-Footcandle Lines of Horizontal Illumination



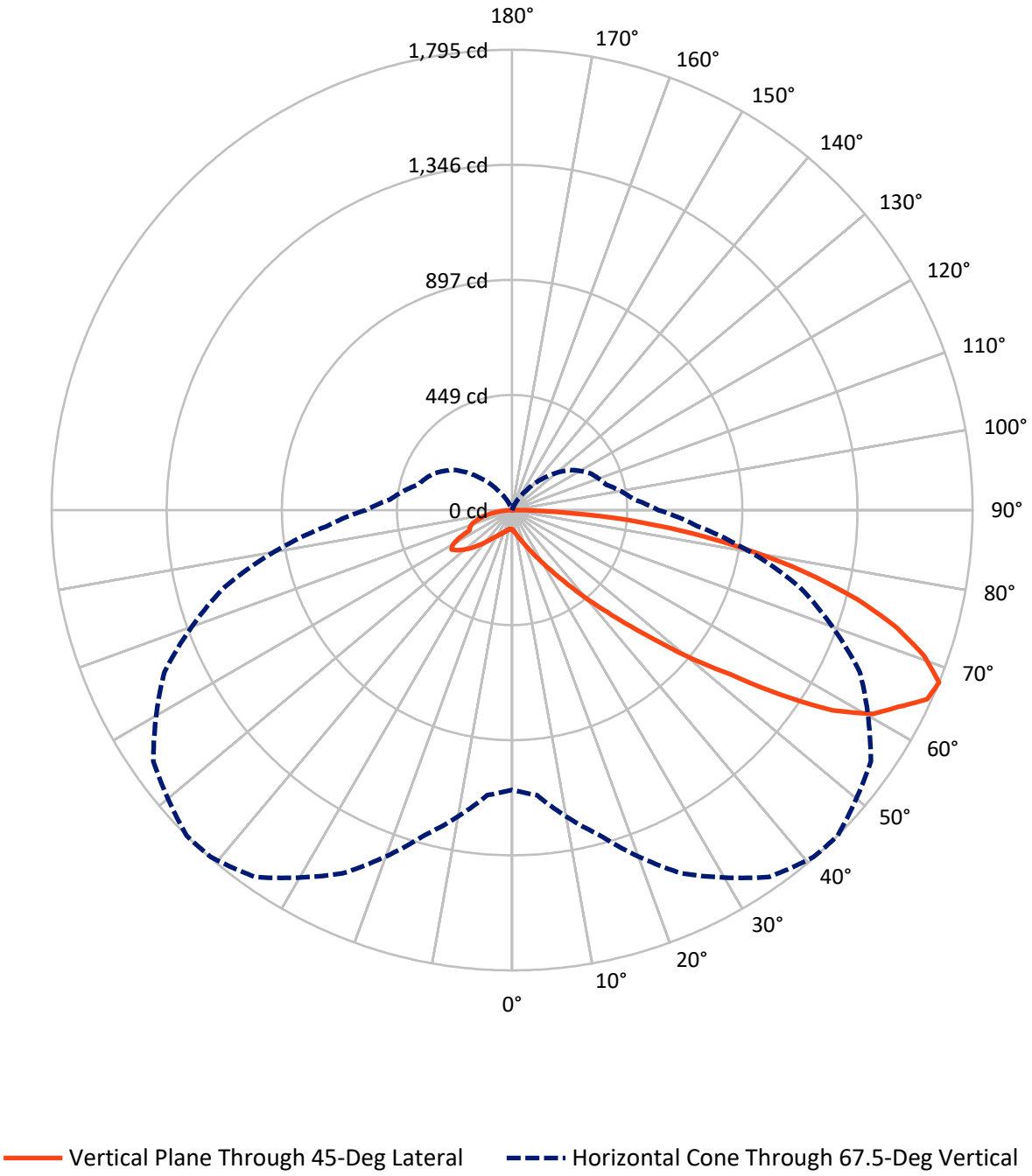
Based on 15 foot mounting height. Maximum calculated value = 1.1 fc
Type IV - Short - N/A

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Luminous Intensity Polar Plot



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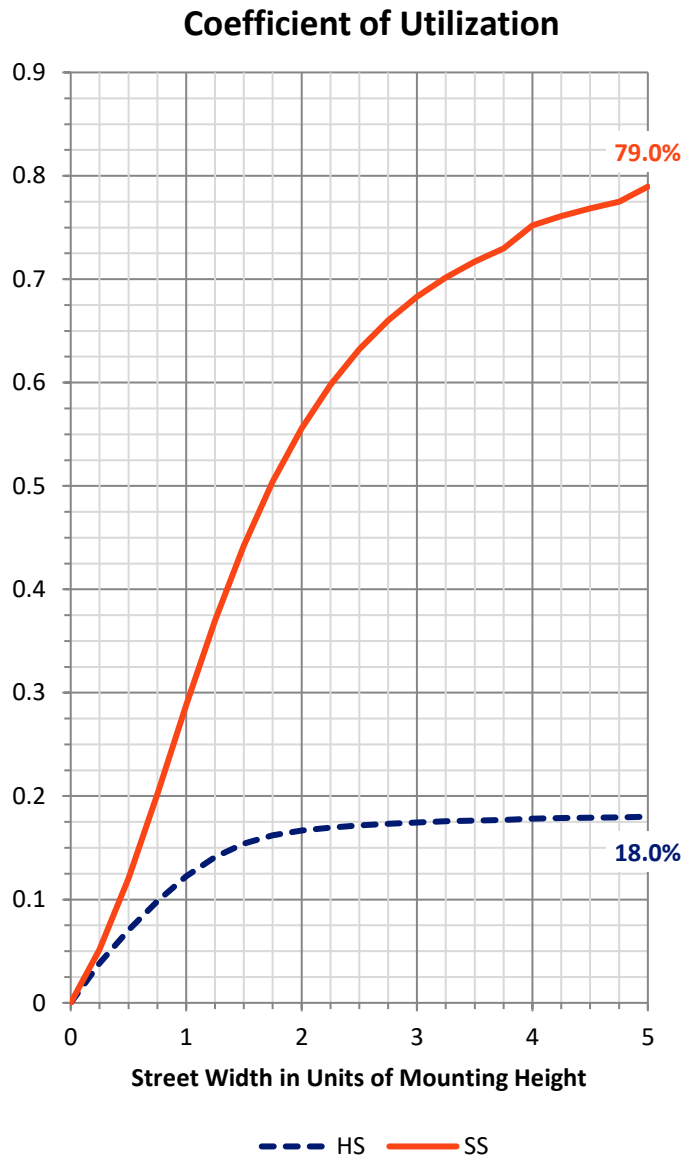
REPORT NUMBER: P821473
CATALOG NUMBER: TT-D1-735-12VDC-DL-HSS

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	503.1	0.6	503.7
	% Fixture	18.2	0.0	18.2
Street Side	Lumens	2259.2	6.2	2265.3
	% Fixture	81.6	0.2	81.8
Total	Lumens	2762.2	6.8	2769.0
	% Fixture	99.8	0.2	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	7.8	0.3
10°-20°	29.1	1.1
20°-30°	67.2	2.4
30°-40°	143.3	5.2
40°-50°	299.9	10.8
50°-60°	568.8	20.5
60°-70°	774.2	28.0
70°-80°	665.6	24.0
80°-90°	206.4	7.5
90°-100°	4.4	0.2
100°-110°	1.3	0.0
110°-120°	0.4	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°	0.1	0.0
170°-180°	0.0	0.0
0°-90°	2762.2	99.8
0°-180°	2769.0	100.0



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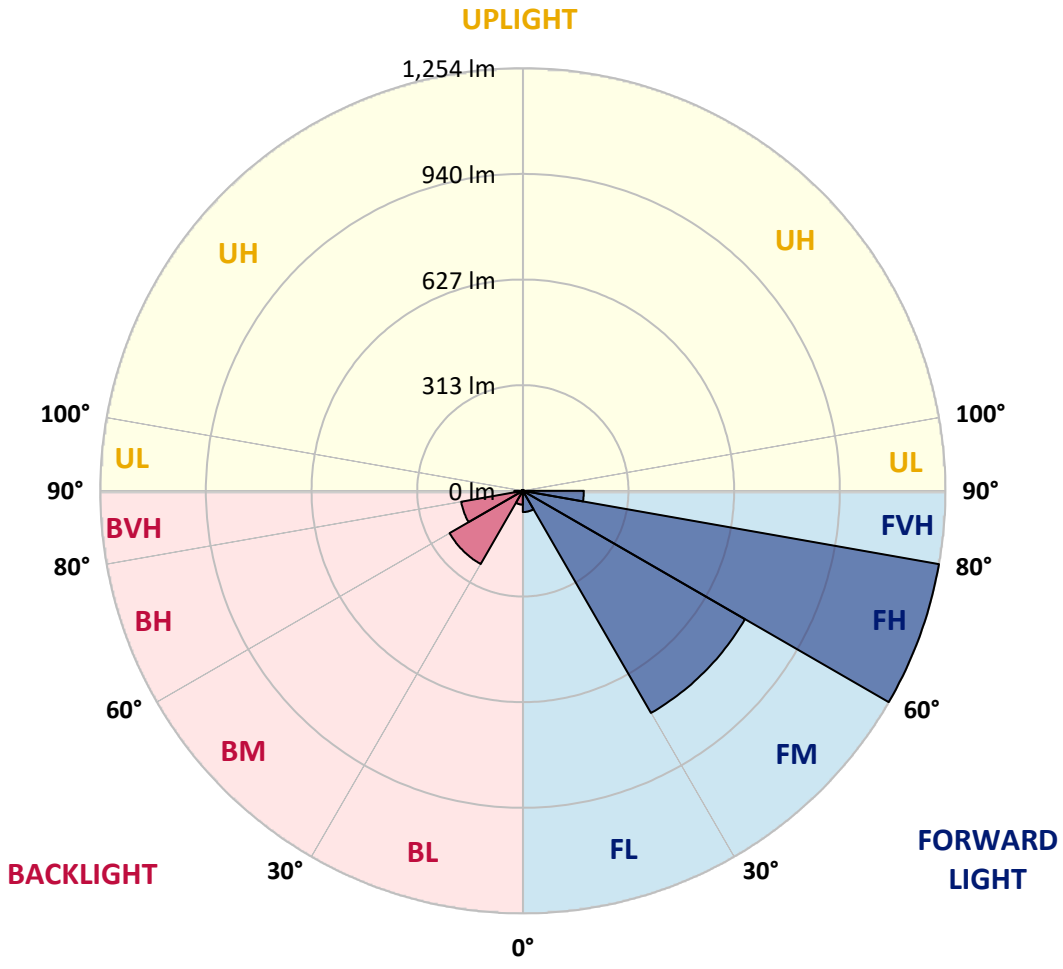
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	63.1	2.3			
FM	(30°-60°)	761.0	27.5			
FH	(60°-80°)	1253.9	45.3			G1/1800
FVH	(80°-90°)	181.1	6.5			G2/225
BL	(0°-30°)	41.0	1.5	B0/110		
BM	(30°-60°)	251.0	9.1	B1/1000		
BH	(60°-80°)	185.8	6.7	B1/500		G1/500
BVH	(80°-90°)	25.3	0.9			G1/100
UL	(90°-100°)	4.4	0.2		U1/10	
UH	(100°-180°)	2.4	0.1		U1/10	

BUG Rating: B1-U1-G2
Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	41°	45°	55°	65°	75°	85°
0°	75.8	75.8	75.8	75.8	75.8	75.8	*75.8*	75.8	75.8	75.8	75.8
2.5°	82.2	81.6	81.6	81.1	81.1	79.9	*79.9*	79.3	78.7	78.1	76.9
5°	88.1	87.5	87.5	86.9	86.3	85.2	*84.6*	83.4	82.2	81.1	79.9
7.5°	95.1	94.6	94.6	94.0	92.8	91.0	*90.4*	88.7	86.9	85.2	83.4
10°	104.0	103.4	103.4	102.2	101.0	99.3	*98.1*	95.7	94.0	91.0	88.1
12.5°	113.4	112.8	112.8	111.6	109.2	108.1	*106.9*	104.0	101.0	97.5	94.0
15°	123.9	123.9	123.9	123.3	121.0	118.6	*117.5*	113.9	110.4	105.1	100.4
17.5°	137.4	136.8	136.8	135.7	132.7	131.6	*129.8*	125.7	120.4	114.5	108.7
20°	153.9	153.3	152.1	151.5	148.6	147.4	*145.1*	140.4	133.3	125.7	117.5
22.5°	170.3	170.3	169.7	170.3	168.0	166.8	*163.9*	157.4	149.2	138.0	128.0
25°	189.1	189.7	190.9	192.6	189.7	188.5	*186.2*	178.0	168.0	153.9	139.8
27.5°	212.6	212.6	215.6	218.5	216.1	215.6	*212.0*	203.2	189.1	172.1	155.6
30°	237.9	238.5	243.2	248.4	247.3	247.3	*244.3*	234.3	217.3	197.3	174.4
32.5°	267.2	269.6	274.3	280.2	284.3	284.3	*283.1*	272.5	252.6	225.5	197.3
35°	306.0	301.9	310.7	319.5	328.3	330.1	*330.7*	320.7	297.8	263.7	225.5
37.5°	339.5	338.9	352.4	367.7	382.4	388.2	*390.0*	380.6	351.2	306.6	256.1
40°	378.2	381.8	400.0	422.9	447.5	457.5	*462.2*	451.7	415.2	357.7	291.3
42.5°	418.8	429.3	452.2	486.9	524.5	539.2	*544.5*	534.5	491.6	421.7	336.0
45°	466.3	481.0	511.6	560.9	610.2	632.0	*643.7*	640.2	596.1	509.2	393.5
47.5°	525.1	535.6	577.3	643.7	713.6	749.4	*765.9*	775.9	713.0	599.7	444.0
50°	591.4	593.2	650.8	734.8	836.9	884.5	*913.3*	908.6	834.0	703.6	508.0
52.5°	658.4	656.6	731.8	845.8	979.7	1041.9	*1061.3*	1080.7	1007.3	862.2	610.8
55°	734.8	731.2	825.8	970.3	1136.5	1218.7	*1273.3*	1300.4	1184.6	966.7	655.5
57.5°	798.2	809.3	928.0	1101.8	1333.8	1437.2	*1473.0*	1458.3	1282.1	1019.6	677.2
60°	878.6	895.1	1030.2	1273.9	1504.7	1581.7	*1614.6*	1547.6	1344.4	1059.5	692.5
62.5°	954.4	975.6	1142.4	1413.7	1611.6	1682.1	*1690.3*	1617.5	1431.9	1138.3	737.1
65°	1025.5	1049.6	1254.0	1496.5	1705.0	1763.8	*1777.9*	1720.3	1524.7	1184.6	754.7
67.5°	*1090.7*	*1115.9*	*1311.5*	*1562.9*	*1746.7*	*1792.0*	*1794.9*	*1707.4*	*1495.9*	*1160.6*	*726.5*
70°	1140.6	1151.8	1339.1	1561.1	1697.4	1715.0	*1703.3*	1615.2	1428.4	1111.2	686.0
72.5°	1150.6	1158.8	1300.9	1474.2	1560.5	1577.0	*1567.6*	1490.1	1322.1	1023.1	620.2
75°	1100.1	1101.8	1198.2	1318.0	1380.8	1400.8	*1388.5*	1316.8	1162.3	898.6	533.9
77.5°	967.9	971.4	1029.6	1110.1	1162.9	1180.0	*1170.6*	1104.8	973.8	754.7	441.7
80°	767.1	774.1	815.8	871.6	919.8	937.4	*926.2*	873.4	766.5	593.2	344.8
82.5°	522.7	531.5	569.7	616.1	658.4	675.4	*666.0*	632.6	552.7	427.6	246.1
85°	264.3	273.7	313.0	356.5	393.5	411.7	*408.8*	394.7	340.1	263.7	148.6
87.5°	41.7	45.8	62.3	82.8	105.7	122.8	*112.2*	111.0	88.1	70.5	35.8
90°	17.0	17.0	16.4	15.9	14.1	12.9	*12.3*	10.0	7.6	4.7	1.8
92.5°	15.3	15.3	14.7	13.5	12.3	11.7	*10.6*	8.8	6.5	4.1	1.8
95°	12.3	12.3	11.7	11.2	10.0	9.4	*8.2*	7.0	5.3	3.5	1.8
97.5°	9.4	9.4	8.8	8.2	7.6	6.5	*6.5*	5.3	3.5	2.3	1.2
100°	7.0	7.0	6.5	5.9	5.3	4.7	*4.7*	3.5	2.3	1.8	1.2
102.5°	4.7	4.7	4.7	4.1	3.5	3.5	*2.9*	2.3	1.8	1.2	1.2
105°	2.9	2.9	2.9	2.9	2.3	1.8	*1.8*	1.2	1.2	1.2	1.2
107.5°	1.8	1.8	1.8	1.8	1.2	1.2	*1.2*	1.2	1.2	1.2	1.2
110°	1.2	1.2	1.2	0.6	0.6	0.6	*0.6*	0.6	0.6	1.2	0.6

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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	41°	45°	55°	65°	75°	85°
112.5°	0.6	0.6	0.6	0.6	0.6	0.6	*0.6*	0.6	0.6	0.6	0.6
115°	0.0	0.0	0.6	0.6	0.6	0.6	*0.6*	0.6	0.6	0.6	0.6
117.5°	0.0	0.0	0.0	0.0	0.0	0.6	*0.6*	0.6	0.6	0.6	0.6
120°	0.0	0.0	0.0	0.0	0.0	0.6	*0.6*	0.6	0.6	0.6	0.6
122.5°	0.0	0.0	0.0	0.0	0.0	0.6	*0.6*	0.6	0.6	0.6	0.6
125°	0.0	0.0	0.0	0.6	0.0	0.6	*0.6*	0.6	0.6	0.6	0.6
127.5°	0.0	0.0	0.0	0.6	0.0	0.0	*0.6*	0.6	0.6	0.6	0.6
130°	0.0	0.0	0.0	0.0	0.0	0.0	*0.6*	0.6	0.6	0.6	0.6
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	*0.6*	0.6	0.6	0.6	0.6
135°	0.0	0.0	0.0	0.0	0.0	0.0	*0.6*	0.6	0.6	0.6	0.6
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	*0.6*	0.6	0.6	0.6	0.6
140°	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.6	0.6	0.6	0.6
142.5°	0.6	0.6	0.0	0.0	0.0	0.0	*0.6*	0.6	0.6	0.6	0.6
145°	0.6	0.6	0.0	0.0	0.0	0.0	*0.6*	0.6	0.6	0.6	0.6
147.5°	0.6	0.6	0.0	0.0	0.0	0.0	*0.6*	0.6	0.6	0.6	0.6
150°	0.0	0.0	0.0	0.0	0.0	0.0	*0.6*	0.6	0.6	0.6	0.6
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.6	0.6	0.6	0.6
155°	0.0	0.0	0.0	0.0	0.0	0.0	*0.6*	0.6	0.6	0.6	0.6
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	*0.6*	0.6	0.6	0.6	0.6
160°	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.6	0.6	0.6	0.6
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	*0.6*	0.6	0.6	0.6	0.6
165°	0.0	0.0	0.0	0.0	0.0	0.0	*0.6*	0.6	0.6	0.6	0.6
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	*0.6*	0.6	0.6	0.6	0.6
170°	0.0	0.0	0.0	0.0	0.0	0.0	*0.6*	0.6	0.6	0.6	0.6
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	*0.6*	0.6	0.6	0.6	0.6
175°	0.0	0.0	0.0	0.0	0.0	0.6	*0.6*	0.6	0.6	0.6	0.6
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	*0.6*	0.6	0.6	0.6	0.6
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°	75.8	75.8	75.8	75.8	75.8	75.8	75.8	75.8	75.8	75.8	75.8
2.5°	76.9	76.4	75.2	74.6	73.4	73.4	72.8	72.2	72.2	72.2	72.2
5°	78.7	78.1	76.9	75.8	74.6	73.4	72.8	72.2	72.2	72.2	71.7
7.5°	82.2	81.1	79.3	77.5	75.8	74.6	74.0	73.4	72.8	72.8	72.8
10°	86.3	85.2	82.2	80.5	78.1	76.4	75.8	75.2	74.6	74.6	74.6
12.5°	91.6	89.9	86.3	83.4	81.1	79.3	78.1	77.5	77.5	76.9	77.5
15°	98.1	95.7	91.0	87.5	84.6	82.8	81.6	81.1	81.1	81.1	80.5
17.5°	105.1	102.2	96.3	92.2	88.7	86.9	85.8	85.2	85.2	85.2	85.2
20°	113.4	109.2	102.8	97.5	94.0	91.6	90.4	90.4	89.9	90.4	90.4
22.5°	122.2	117.5	109.2	103.4	98.7	96.3	95.1	95.1	95.1	95.7	96.3
25°	132.7	126.9	116.9	109.2	104.0	101.6	100.4	101.0	101.0	101.6	101.6
27.5°	146.8	138.0	125.7	116.3	110.4	107.5	106.3	106.9	107.5	107.5	107.5
30°	162.7	152.1	135.1	125.1	118.1	114.5	113.4	113.9	114.5	115.7	115.1
32.5°	182.1	169.2	149.2	135.1	127.5	123.3	122.2	121.6	122.8	123.9	123.9
35°	205.6	189.1	165.6	149.2	138.0	132.7	131.6	131.0	131.6	132.7	133.9
37.5°	230.8	210.9	182.1	165.0	152.7	146.8	143.9	141.5	142.1	142.7	144.5
40°	259.6	234.9	200.9	180.3	169.2	162.1	158.0	154.5	155.6	155.6	156.2
42.5°	296.0	264.9	224.4	198.5	186.8	179.1	172.7	168.6	166.2	166.8	164.5
45°	343.6	304.8	253.7	224.4	207.9	196.2	188.5	180.3	174.4	175.6	172.1
47.5°	382.9	336.5	281.3	249.0	231.4	216.7	200.9	189.1	180.9	179.7	177.4
50°	431.1	375.3	313.0	276.0	257.3	234.9	216.1	196.2	182.7	179.1	179.7
52.5°	512.2	443.4	358.3	312.5	279.6	253.1	224.4	196.8	178.5	173.3	175.0
55°	541.5	466.3	381.8	342.4	310.1	269.0	227.9	190.3	166.8	162.1	162.7
57.5°	548.0	466.3	383.5	351.8	324.8	281.9	226.1	175.6	144.5	140.4	139.8
60°	551.5	463.4	377.1	344.8	315.4	269.6	203.2	141.5	111.0	108.1	106.3
62.5°	584.4	488.1	383.5	339.5	297.8	236.7	154.5	90.4	61.7	61.1	59.9
65°	594.4	496.9	391.8	343.0	278.4	183.8	91.6	30.5	6.5	7.0	5.9
67.5°	*569.7*	*476.9*	*380.0*	*337.7*	*272.5*	*179.1*	*88.1*	*25.8*	*0.0*	*0.0*	*0.0*
70°	535.6	448.1	359.4	319.5	260.2	172.1	86.3	25.8	0.0	0.0	0.0
72.5°	481.6	407.0	326.6	294.8	239.0	158.0	80.5	24.7	0.0	0.0	0.0
75°	418.2	354.2	286.0	261.4	212.0	138.6	72.2	22.3	0.0	0.0	0.0
77.5°	350.1	295.4	239.0	220.2	179.1	118.1	61.1	18.8	0.0	0.0	0.0
80°	274.9	233.8	188.5	175.6	141.5	94.0	48.7	14.7	0.0	0.0	0.0
82.5°	197.9	169.7	139.2	128.6	104.0	68.1	35.2	10.0	0.0	0.0	0.0
85°	122.2	106.3	89.9	83.4	65.8	42.3	21.1	5.3	0.0	0.0	0.0
87.5°	36.4	35.2	31.7	31.1	22.3	12.9	4.7	0.6	0.0	0.0	0.0
90°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
95°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110°	0.6	0.6	0.6	0.6	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

Scaled Data Report

REPORT NUMBER: P821473
CATALOG NUMBER: TT-D1-735-12VDC-DL-HSS

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.6	0.6	0.6	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: SP1-2407-176-4

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

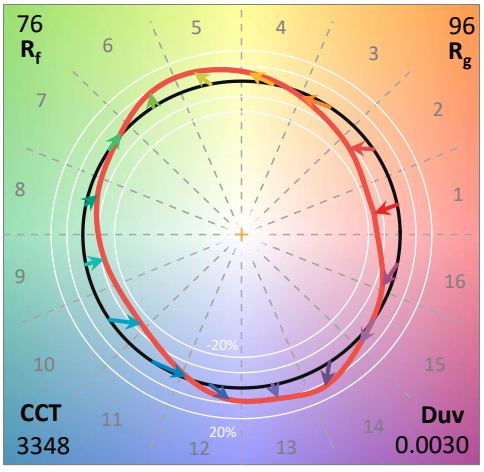
Test Information

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

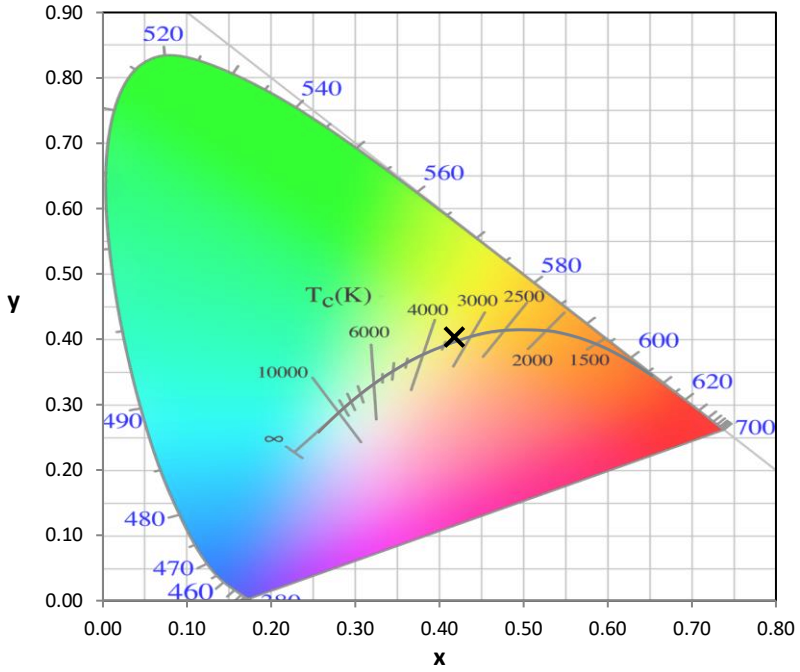
Stabilization Time:	30M
Operation Time:	1H 30M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-4

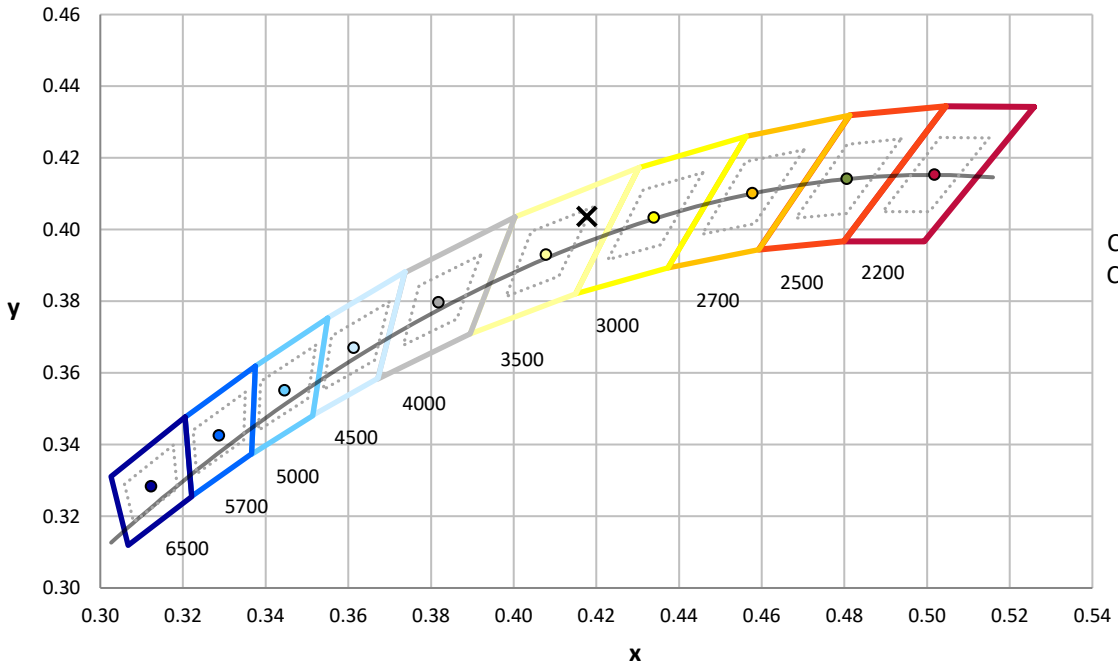
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

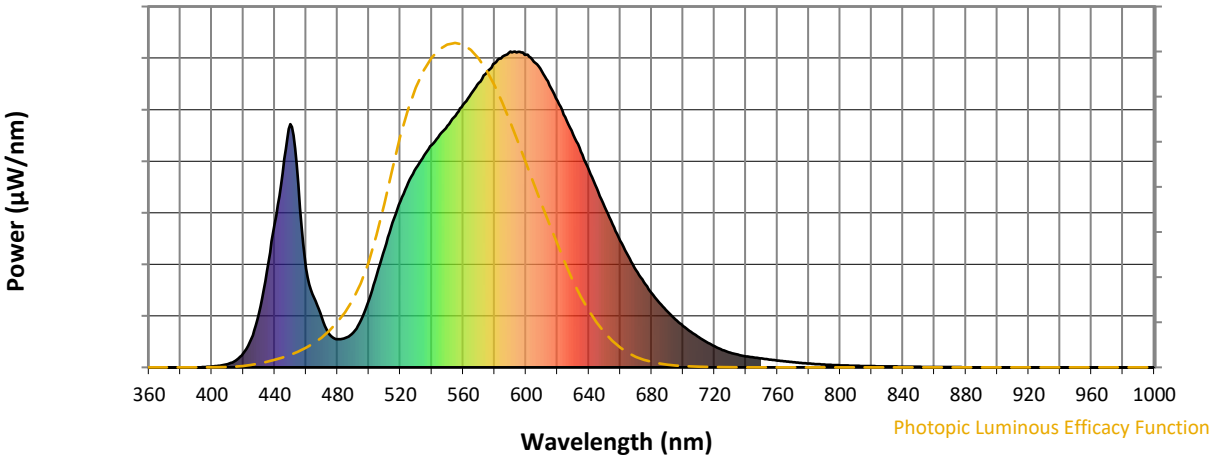


CCT = 3348K
CIE x = 0.4177
CIE y = 0.4036
Duv = 0.0030

Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-4

Photopic Flux vs. Wavelength

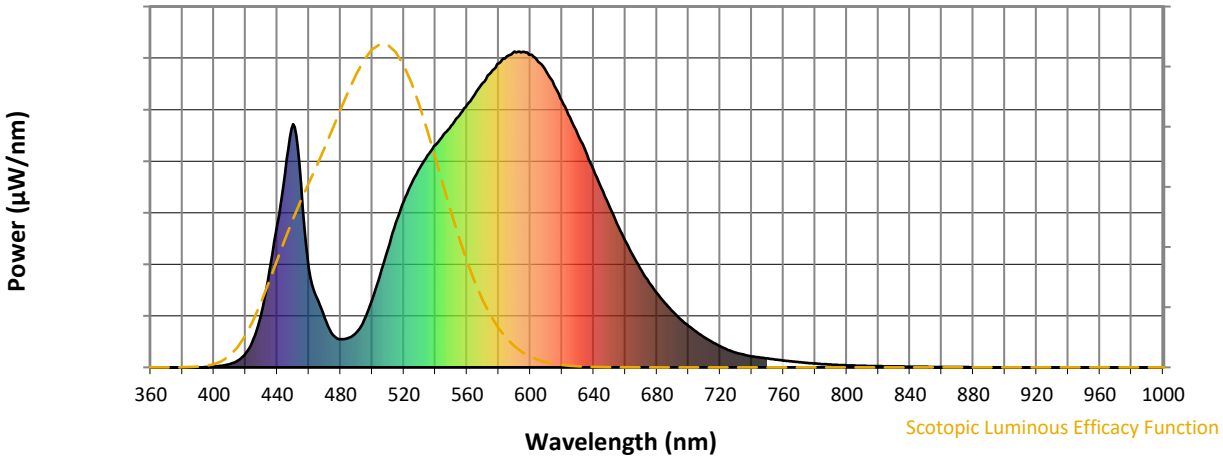


Photopic Lumens: NR

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

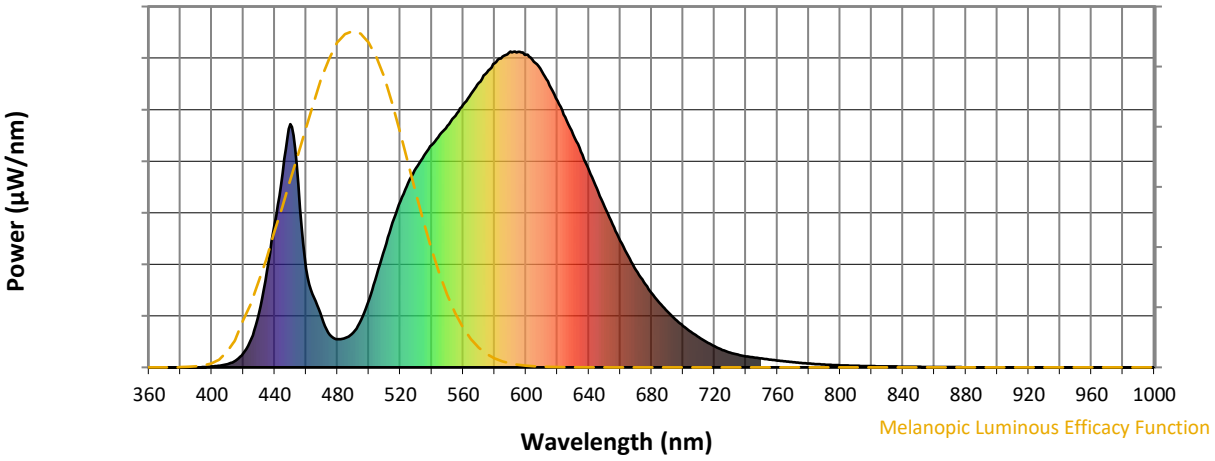


Scotopic Lumens: NR **S/P: 1.31**

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			

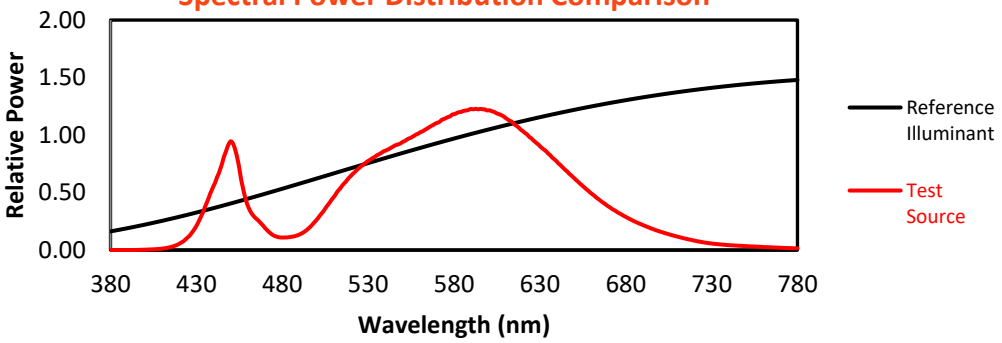
REPORT NUMBER: SP1-2407-176-4

TM-30-18

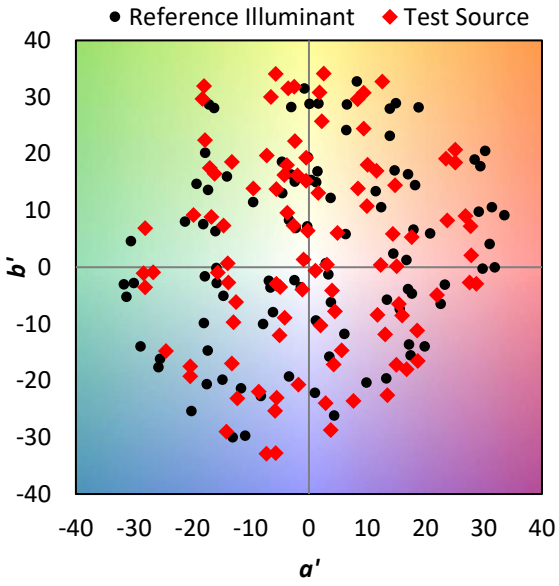
Summary

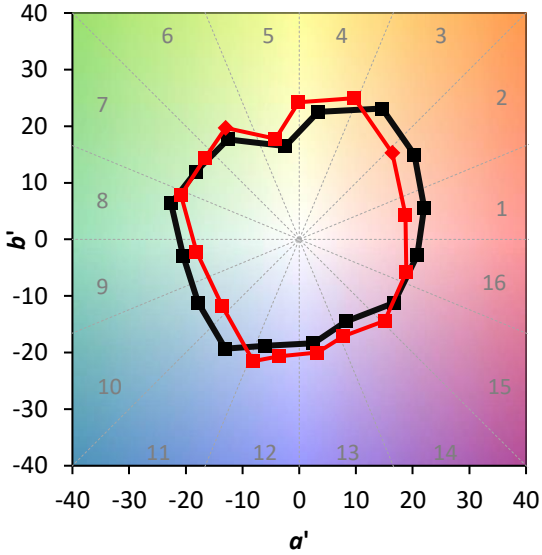
R_f = 75.8
R_g = 95.8
CIE R_a = 73.4
R_9 = -19.2

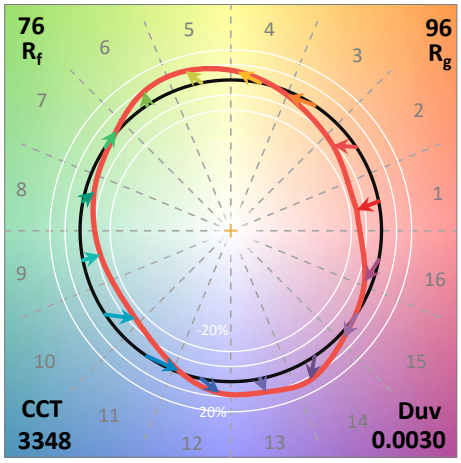
Spectral Power Distribution Comparison

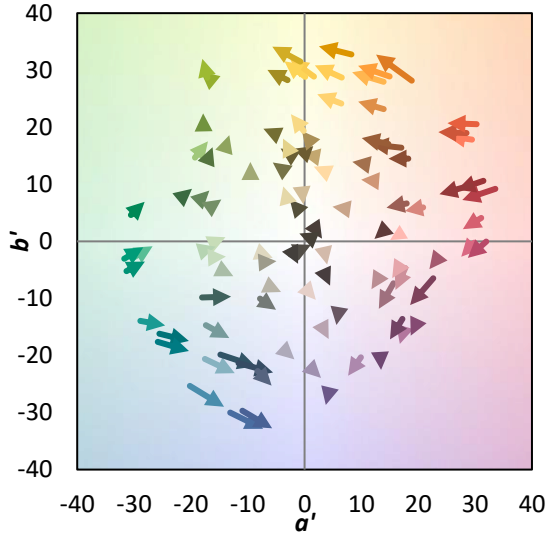


Color Vector Graphics







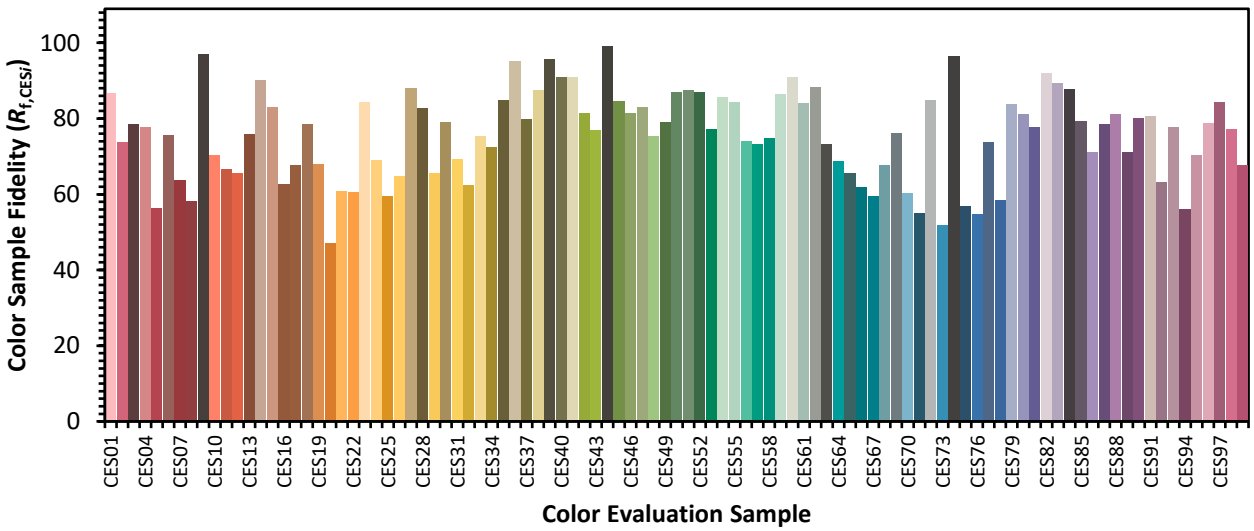


REPORT NUMBER: SP1-2407-176-4

TM-30-18

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

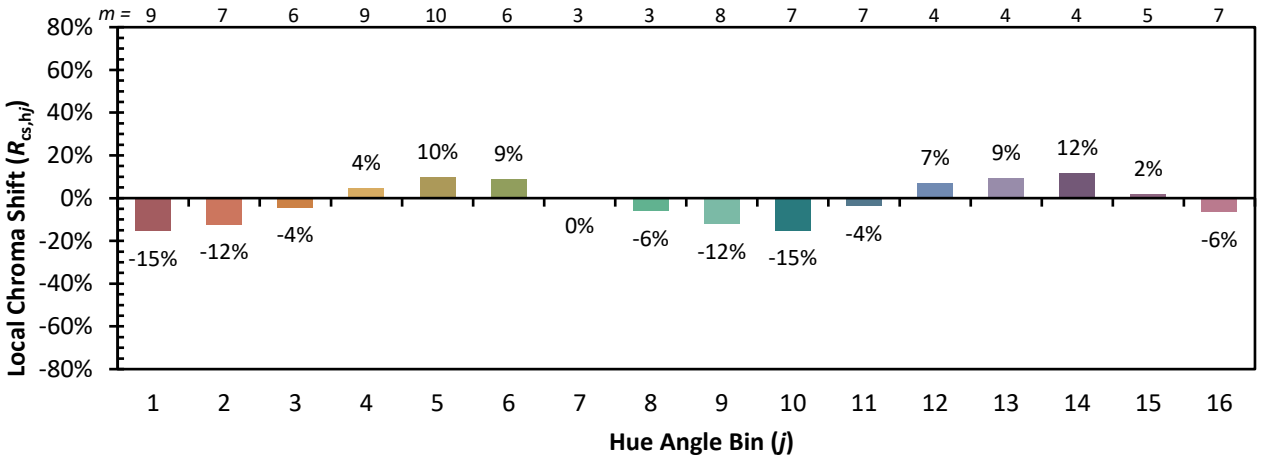
CES01 = 86	CES26 = 65	CES51 = 88	CES76 = 55
CES02 = 62	CES27 = 88	CES52 = 87	CES77 = 74
CES03 = 31	CES28 = 83	CES53 = 77	CES78 = 58
CES04 = 70	CES29 = 66	CES54 = 86	CES79 = 84
CES05 = 48	CES30 = 79	CES55 = 84	CES80 = 81
CES06 = 51	CES31 = 69	CES56 = 74	CES81 = 78
CES07 = 41	CES32 = 62	CES57 = 73	CES82 = 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	

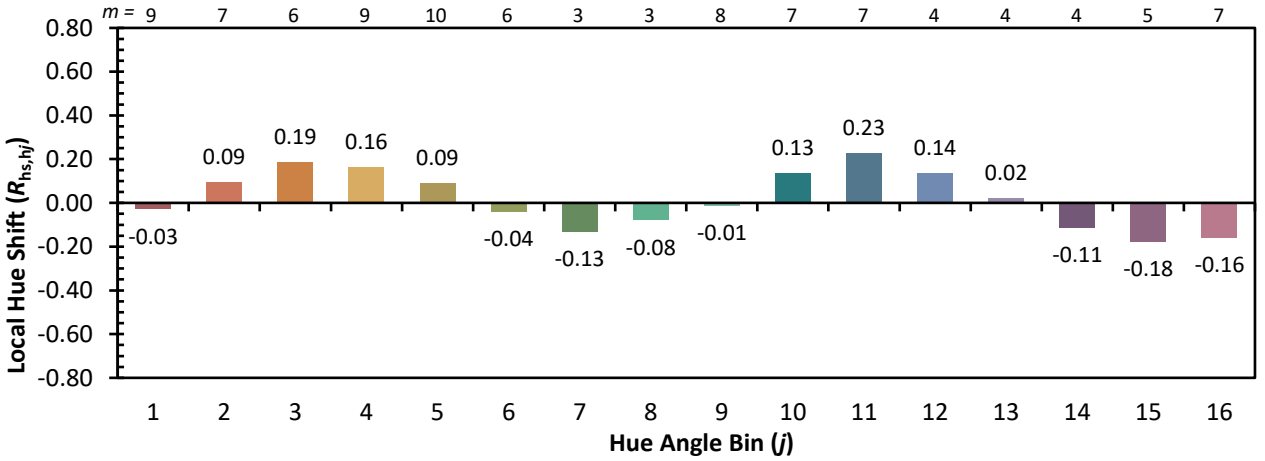


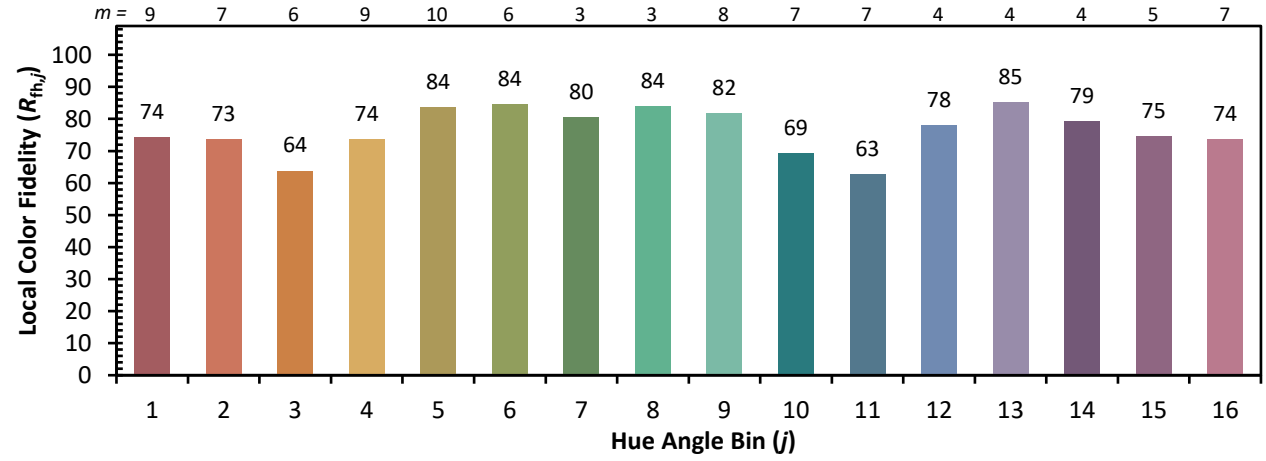
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Color Rendition by Hue-Angle Bin



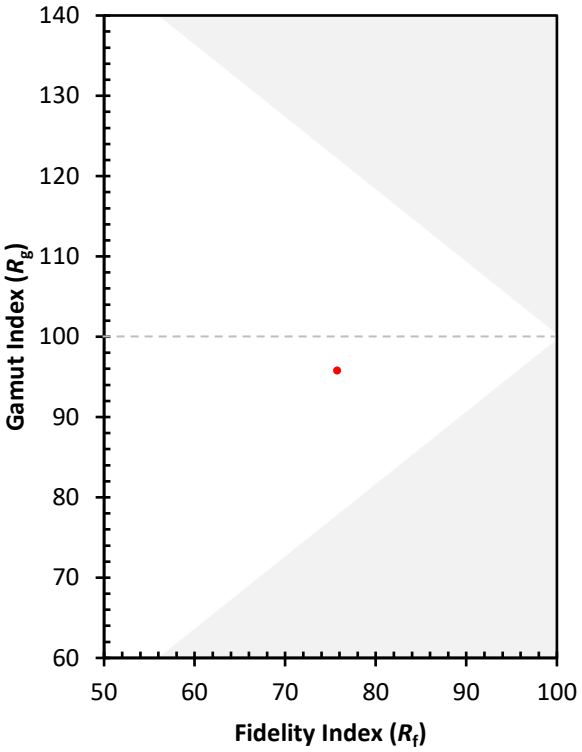


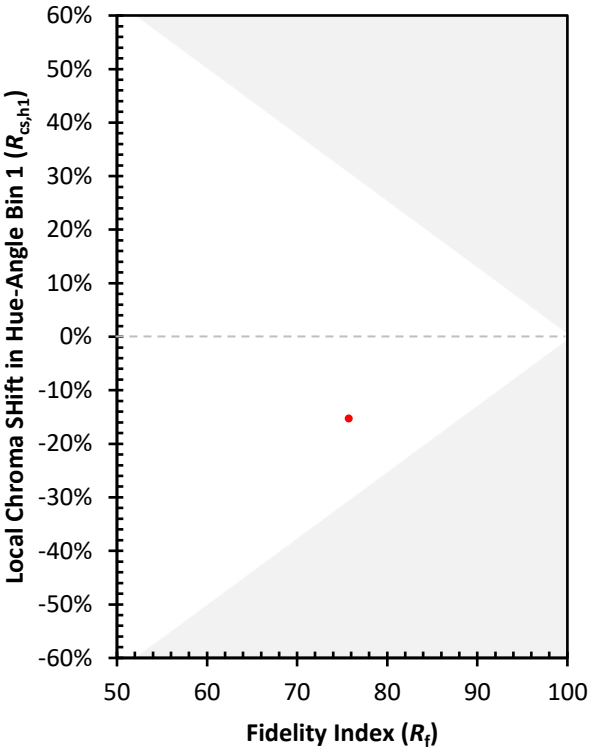


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Measure Comparisons





(END OF REPORT)