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: STREETWORKS

Report Number: P1440242

Luminaire Tested: **MPN-A5-D-U-ASYM-U-7040**

Issue Date: 04/14/2026

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.

Report Generated By 670245763

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1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

Test Information

Test Method:	LM-79-08
Report Number:	P1440242
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	04/14/2026
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	STREETWORKS
Catalog Number:	MPN-A5-D-U-ASYM-U-7040
Description:	NEW HEAVEN POST TOP LUMINAIRE w/ ASYMMETRIC DISTRIBUTION 04000K CCT 70 CRI LIGHT ENGINE
Light Source:	(1) 04000K CCT, 70 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Luminaire Equipment:

Sample No.	Condition	Description
a	good	reflector
b	good	lens
c	good	housing
d	good	cord

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	5287.1 lumens
Efficiency:	N/A
Efficacy:	101.9 lumens/watt
Luminous Opening:	Vertical Cylinder (Dia: 1' x H: 0.57')
IES Classification:	Type IV - Short
BUG Rating:	B2 - U4 - G4

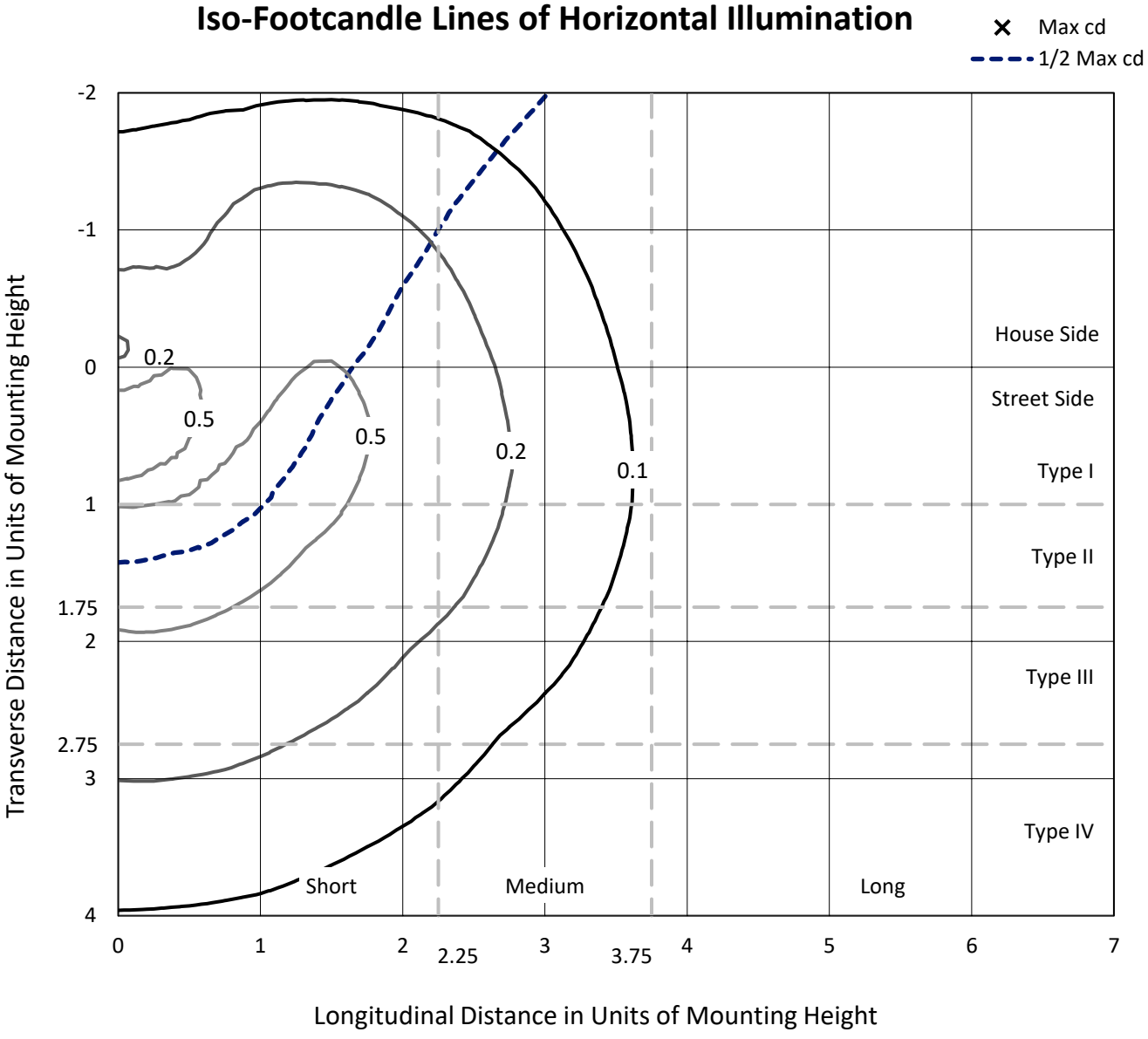
Input Watts (W):	51.9
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.95
Total Harmonic Distortion (THDi):	11.9%
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	28.75 FT

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Iso-Footcandle Lines of Horizontal Illumination



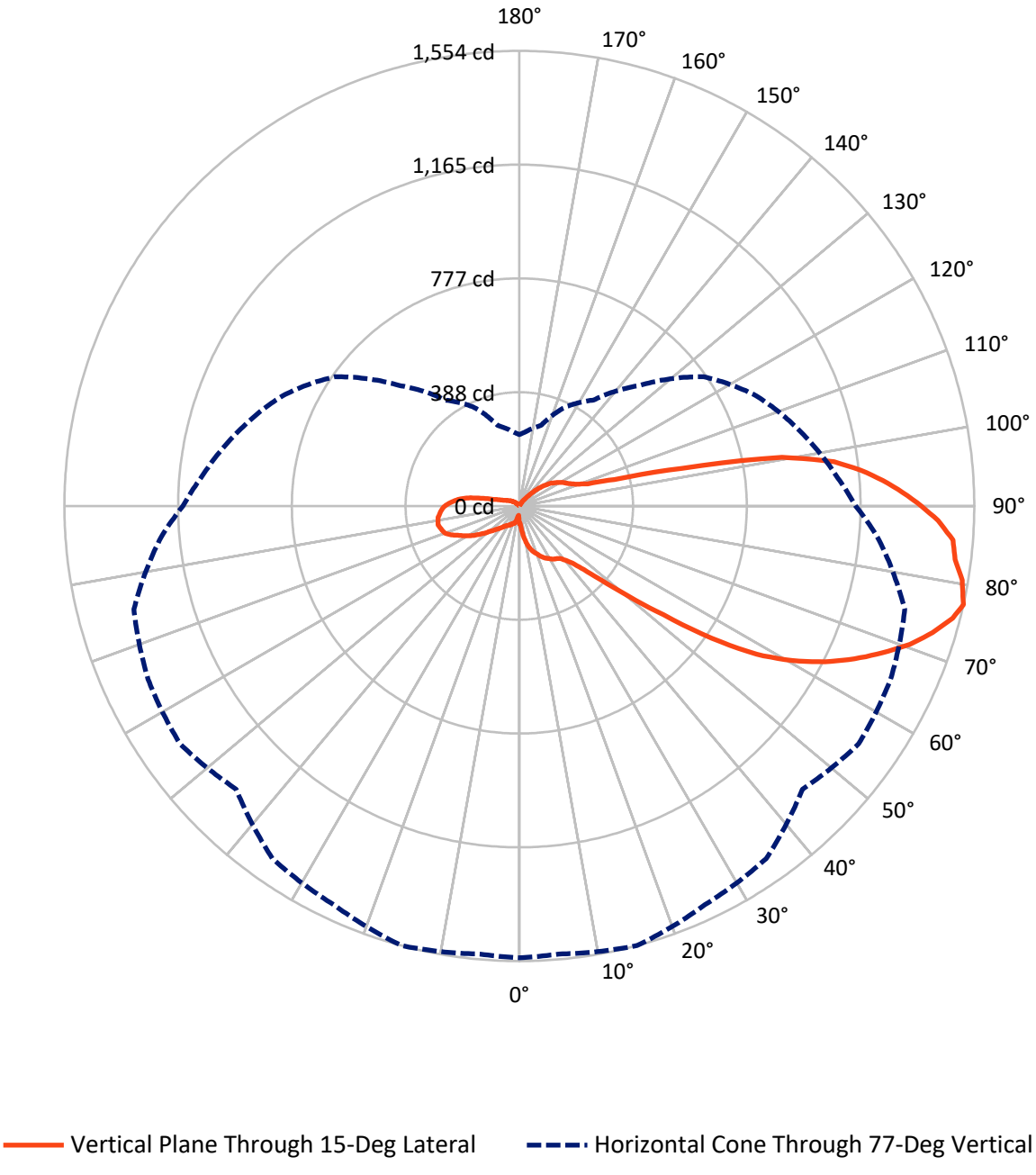
Based on 15 foot mounting height. Maximum calculated value = 0.7 fc
Type IV - Short - N/A

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Luminous Intensity Polar Plot



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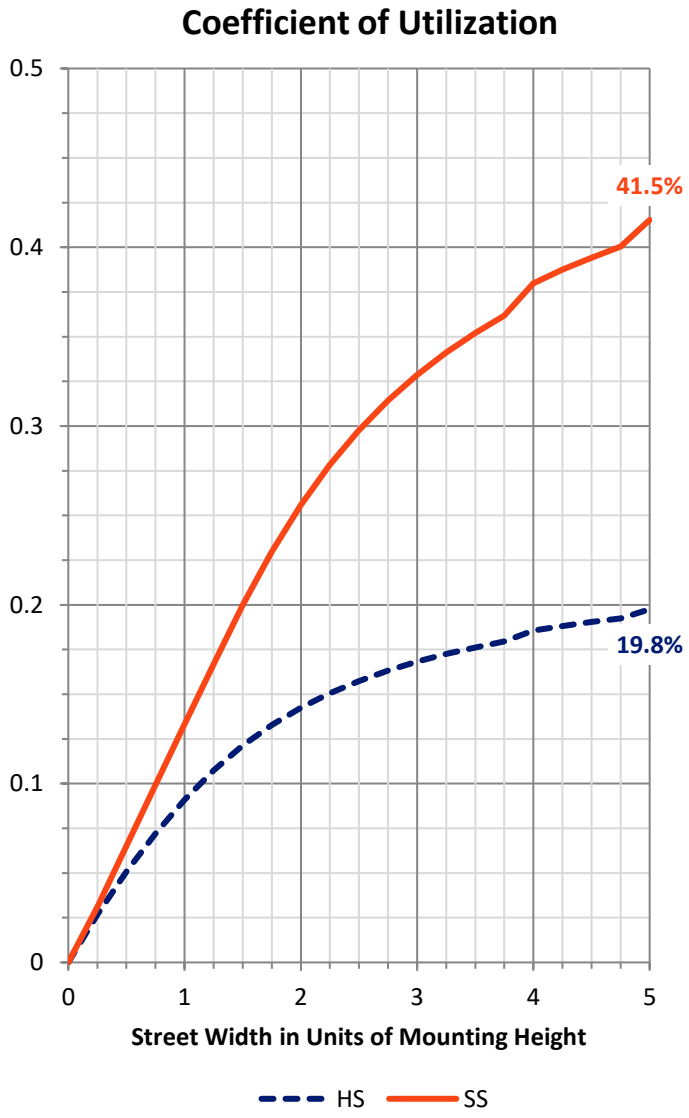
REPORT NUMBER: P1440242
CATALOG NUMBER: MPN-A5-D-U-ASYM-U-7040

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1190.8	459.2	1650.0
	% Fixture	22.5	8.7	31.2
Street Side	Lumens	2643.3	993.9	3637.1
	% Fixture	50.0	18.8	68.8
Total	Lumens	3834.1	1453.1	5287.1
	% Fixture	72.5	27.5	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	6.7	0.1
10°-20°	31.6	0.6
20°-30°	65.4	1.2
30°-40°	101.1	1.9
40°-50°	187.6	3.5
50°-60°	489.4	9.3
60°-70°	834.0	15.8
70°-80°	1055.9	20.0
80°-90°	1062.4	20.1
90°-100°	858.5	16.2
100°-110°	336.3	6.4
110°-120°	127.6	2.4
120°-130°	83.6	1.6
130°-140°	37.6	0.7
140°-150°	9.1	0.2
150°-160°	0.3	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	3834.1	72.5
0°-180°	5287.1	100.0



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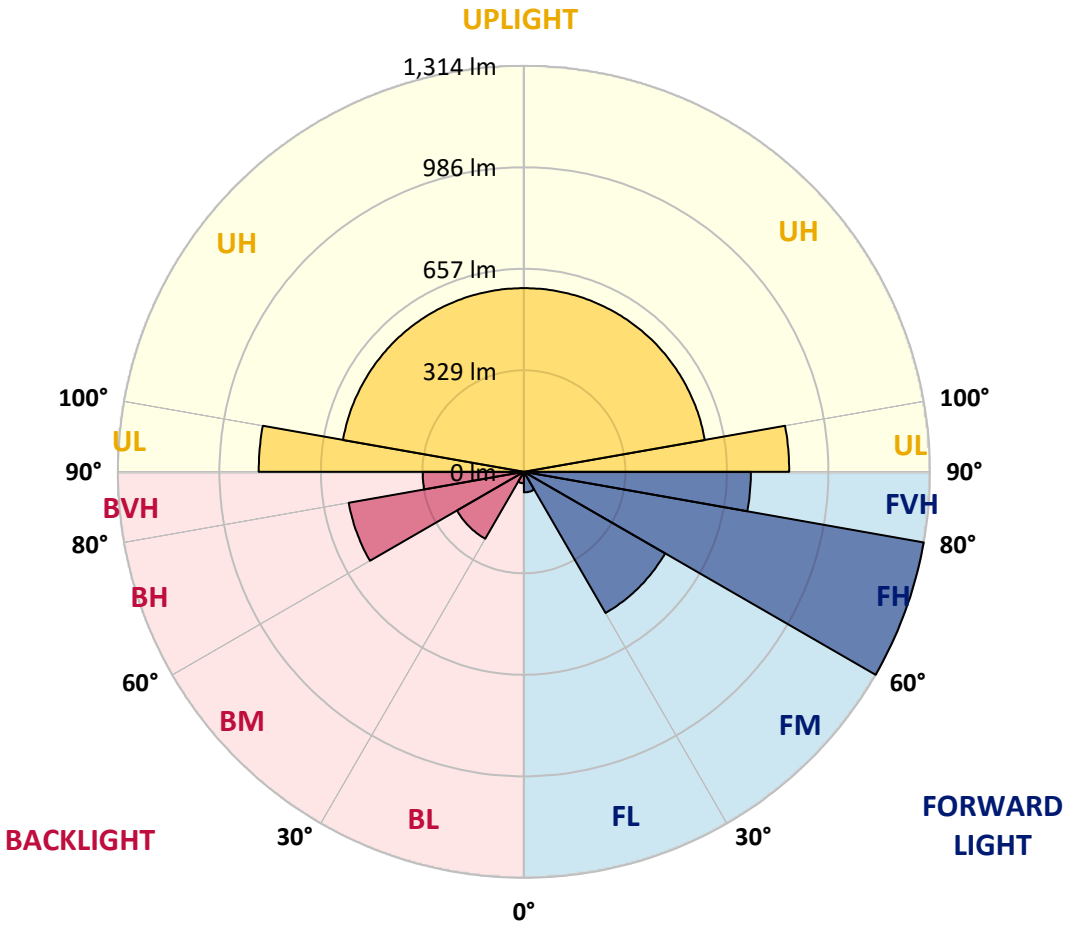
Scaled Data Report

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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°)	66.6	1.3			
FM	(30°-60°)	527.8	10.0			
FH	(60°-80°)	1314.2	24.9			G1/1800
FVH	(80°-90°)	734.7	13.9			G4/750
BL	(0°-30°)	37.1	0.7	B0/110		
BM	(30°-60°)	250.3	4.7	B1/1000		
BH	(60°-80°)	575.7	10.9	B2/1000		G2/1000
BVH	(80°-90°)	327.7	6.2			G3/500
UL	(90°-100°)	858.5	16.2		U4/1000	
UH	(100°-180°)	594.6	11.2		U4/1000	

BUG Rating: B2-U4-G4
Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	61.4	61.4	*61.4*	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4
2.5°	56.9	59.1	*59.1*	59.1	61.4	61.4	63.7	66.0	63.7	59.1	56.9
5°	79.6	81.9	*81.9*	81.9	79.6	77.3	75.1	72.8	70.5	68.2	63.7
7.5°	104.6	104.6	*104.6*	102.4	97.8	95.5	91.0	86.4	81.9	77.3	75.1
10°	127.4	127.4	*125.1*	120.6	118.3	113.7	109.2	102.4	97.8	91.0	91.0
12.5°	143.3	145.6	*143.3*	138.7	134.2	129.7	127.4	118.3	113.7	106.9	104.6
15°	156.9	156.9	*156.9*	154.7	147.8	143.3	141.0	134.2	127.4	118.3	116.0
17.5°	168.3	168.3	*166.0*	163.8	159.2	154.7	152.4	145.6	136.5	129.7	125.1
20°	177.4	177.4	*175.1*	172.9	170.6	166.0	161.5	154.7	147.8	138.7	134.2
22.5°	188.8	188.8	*186.5*	184.2	179.7	177.4	172.9	166.0	156.9	147.8	143.3
25°	200.2	197.9	*195.6*	193.3	188.8	186.5	182.0	175.1	166.0	156.9	152.4
27.5°	207.0	207.0	*202.4*	202.4	197.9	193.3	191.1	182.0	172.9	163.8	156.9
30°	213.8	213.8	*209.3*	207.0	204.7	197.9	195.6	186.5	177.4	168.3	161.5
32.5°	220.6	220.6	*216.1*	213.8	209.3	202.4	200.2	191.1	179.7	172.9	166.0
35°	225.2	225.2	*220.6*	216.1	213.8	207.0	202.4	191.1	182.0	172.9	166.0
37.5°	229.7	229.7	*227.5*	220.6	220.6	213.8	207.0	197.9	188.8	177.4	170.6
40°	245.7	243.4	*243.4*	236.6	238.8	232.0	225.2	213.8	204.7	191.1	182.0
42.5°	270.7	268.4	*266.1*	261.6	266.1	261.6	254.8	247.9	232.0	216.1	204.7
45°	313.9	311.6	*309.3*	300.2	307.1	304.8	307.1	293.4	279.8	254.8	243.4
47.5°	377.6	375.3	*377.6*	368.5	379.9	384.4	389.0	373.0	359.4	323.0	309.3
50°	479.9	482.2	*484.5*	473.1	475.4	482.2	491.3	477.7	452.6	411.7	389.0
52.5°	616.4	609.6	*616.4*	607.3	611.9	609.6	630.1	614.1	586.8	527.7	491.3
55°	782.5	782.5	*798.4*	757.4	775.6	768.8	791.6	768.8	741.5	661.9	616.4
57.5°	930.3	941.7	*955.3*	921.2	916.7	900.7	930.3	907.6	875.7	775.6	727.9
60°	1041.8	1069.0	*1071.3*	1046.3	1037.2	1007.6	1034.9	1023.6	987.2	871.2	816.6
62.5°	1137.3	1164.6	*1171.4*	1148.7	1123.6	1087.2	1123.6	1100.9	1071.3	939.4	884.8
65°	1226.0	1260.1	*1257.8*	1228.3	1207.8	1155.5	1201.0	1169.1	1137.3	1003.1	941.7
67.5°	1310.2	1348.8	*1337.4*	1301.1	1276.0	1226.0	1273.8	1235.1	1196.4	1050.9	987.2
70°	1398.9	1423.9	*1414.8*	1369.3	1339.7	1287.4	1330.6	1298.8	1248.7	1091.8	1034.9
72.5°	1460.3	1473.9	*1476.2*	1426.2	1398.9	1328.4	1376.1	1353.4	1287.4	1137.3	1071.3
75°	1524.0	1521.7	*1528.5*	1476.2	1448.9	1357.9	1410.2	1376.1	1305.6	1178.2	1105.4
77°	*1542.2*	*1535.3*	*1553.5*	*1501.2*	*1469.4*	*1367.0*	*1414.8*	*1398.9*	*1362.5*	*1228.3*	*1148.7*
77.5°	1544.4	1533.1	*1549.0*	1494.4	1458.0	1355.6	1405.7	1380.7	1321.5	1205.5	1130.5
80°	1521.7	1503.5	*1533.1*	1478.5	1444.4	1337.4	1398.9	1385.2	1335.2	1219.2	1141.8
82.5°	1492.1	1467.1	*1498.9*	1451.2	1426.2	1323.8	1385.2	1373.8	1346.5	1212.3	1116.8
85°	1471.6	1448.9	*1485.3*	1439.8	1405.7	1298.8	1369.3	1355.6	1321.5	1180.5	1089.5
87.5°	1408.0	1385.2	*1430.7*	1387.5	1357.9	1255.6	1332.9	1314.7	1266.9	1130.5	1034.9
90°	1326.1	1310.2	*1357.9*	1321.5	1287.4	1187.3	1248.7	1235.1	1178.2	1048.6	973.5
92.5°	1239.6	1228.3	*1278.3*	1246.5	1219.2	1123.6	1173.7	1148.7	1098.6	996.3	921.2
95°	1153.2	1146.4	*1191.9*	1160.0	1139.6	1053.1	1096.3	1089.5	1039.5	955.3	887.1
97.5°	1048.6	1046.3	*1085.0*	1057.7	1053.1	982.6	1023.6	1023.6	978.1	893.9	832.5
100°	864.3	878.0	*912.1*	893.9	896.2	857.5	898.5	891.6	864.3	796.1	737.0
102.5°	543.6	545.9	*570.9*	564.1	589.1	589.1	632.3	652.8	623.2	577.7	525.4
105°	320.7	323.0	*336.6*	325.3	329.8	327.5	354.8	359.4	352.6	329.8	309.3
107.5°	238.8	238.8	*245.7*	243.4	236.6	227.5	238.8	241.1	232.0	218.4	204.7

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Scaled Data Report

REPORT NUMBER: P1440242
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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
110°	207.0	207.0	*211.5*	207.0	202.4	195.6	200.2	200.2	193.3	177.4	168.3
112.5°	191.1	191.1	*193.3*	191.1	184.2	179.7	184.2	184.2	177.4	161.5	152.4
115°	177.4	177.4	*179.7*	179.7	172.9	168.3	172.9	172.9	166.0	152.4	143.3
117.5°	168.3	168.3	*170.6*	168.3	163.8	159.2	163.8	163.8	156.9	143.3	134.2
120°	159.2	156.9	*159.2*	156.9	152.4	152.4	154.7	154.7	147.8	134.2	127.4
122.5°	147.8	147.8	*145.6*	145.6	141.0	141.0	143.3	143.3	136.5	125.1	118.3
125°	136.5	136.5	*134.2*	131.9	129.7	127.4	131.9	129.7	125.1	116.0	111.5
127.5°	122.8	122.8	*118.3*	118.3	116.0	116.0	120.6	118.3	113.7	106.9	100.1
130°	104.6	104.6	*102.4*	100.1	100.1	100.1	104.6	102.4	100.1	93.3	91.0
132.5°	86.4	86.4	*84.2*	81.9	81.9	84.2	86.4	86.4	84.2	79.6	75.1
135°	68.2	66.0	*66.0*	63.7	66.0	66.0	68.2	68.2	68.2	66.0	61.4
137.5°	50.0	50.0	*47.8*	45.5	47.8	47.8	50.0	50.0	50.0	47.8	47.8
140°	36.4	36.4	*34.1*	34.1	34.1	34.1	36.4	36.4	36.4	34.1	34.1
142.5°	27.3	27.3	*25.0*	25.0	25.0	25.0	25.0	27.3	27.3	25.0	25.0
145°	20.5	20.5	*18.2*	18.2	18.2	18.2	18.2	18.2	20.5	18.2	18.2
147.5°	13.6	13.6	*11.4*	11.4	11.4	13.6	13.6	13.6	13.6	13.6	13.6
150°	6.8	6.8	*6.8*	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	*0.0*	0.0	0.0	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*	0.0	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

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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4
2.5°	56.9	56.9	52.3	50.0	43.2	43.2	40.9	40.9	43.2	40.9
5°	61.4	59.1	52.3	45.5	38.7	36.4	36.4	31.8	29.6	27.3
7.5°	72.8	70.5	66.0	56.9	50.0	45.5	38.7	36.4	31.8	31.8
10°	86.4	81.9	75.1	68.2	59.1	52.3	45.5	43.2	43.2	43.2
12.5°	100.1	93.3	86.4	77.3	70.5	63.7	56.9	52.3	50.0	50.0
15°	111.5	104.6	95.5	88.7	77.3	70.5	63.7	59.1	56.9	54.6
17.5°	122.8	111.5	104.6	93.3	81.9	75.1	68.2	61.4	59.1	56.9
20°	129.7	118.3	109.2	97.8	86.4	77.3	70.5	63.7	61.4	61.4
22.5°	138.7	125.1	116.0	102.4	91.0	81.9	72.8	66.0	66.0	66.0
25°	143.3	131.9	120.6	106.9	97.8	84.2	75.1	70.5	68.2	70.5
27.5°	147.8	136.5	125.1	113.7	102.4	88.7	77.3	72.8	72.8	72.8
30°	152.4	141.0	129.7	118.3	104.6	91.0	81.9	75.1	75.1	75.1
32.5°	156.9	145.6	131.9	120.6	109.2	95.5	84.2	79.6	79.6	79.6
35°	159.2	147.8	134.2	125.1	111.5	97.8	86.4	81.9	84.2	81.9
37.5°	163.8	150.1	136.5	127.4	116.0	102.4	91.0	88.7	88.7	86.4
40°	175.1	159.2	145.6	134.2	120.6	109.2	95.5	95.5	93.3	93.3
42.5°	195.6	175.1	156.9	147.8	129.7	116.0	102.4	102.4	100.1	100.1
45°	229.7	209.3	184.2	168.3	147.8	129.7	113.7	111.5	109.2	106.9
47.5°	288.9	259.3	227.5	202.4	172.9	147.8	127.4	122.8	116.0	116.0
50°	366.2	325.3	288.9	250.2	209.3	172.9	143.3	134.2	127.4	125.1
52.5°	457.2	409.4	363.9	309.3	254.8	202.4	166.0	150.1	138.7	136.5
55°	577.7	511.8	454.9	384.4	313.9	238.8	191.1	166.0	150.1	150.1
57.5°	677.8	611.9	550.4	457.2	366.2	282.0	218.4	184.2	166.0	166.0
60°	755.2	689.2	621.0	523.2	414.0	316.2	243.4	200.2	182.0	177.4
62.5°	816.6	743.8	668.7	570.9	448.1	341.2	263.9	216.1	191.1	184.2
65°	875.7	798.4	709.7	614.1	479.9	363.9	277.5	232.0	197.9	195.6
67.5°	923.5	837.0	757.4	650.5	505.0	386.7	300.2	252.5	209.3	211.5
70°	966.7	882.5	802.9	689.2	532.3	407.1	323.0	268.4	225.2	225.2
72.5°	1009.9	923.5	843.9	727.9	555.0	423.1	343.5	275.2	236.6	241.1
75°	1053.1	966.7	875.7	759.7	575.5	439.0	363.9	279.8	245.7	243.4
77°	*1091.8*	*991.7*	*891.6*	*768.8*	*582.3*	*441.3*	*373.0*	*284.3*	*254.8*	*243.4*
77.5°	1080.4	994.0	900.7	775.6	589.1	448.1	377.6	284.3	254.8	241.1
80°	1089.5	996.3	898.5	764.3	586.8	445.8	379.9	282.0	254.8	234.3
82.5°	1071.3	969.0	871.2	741.5	575.5	434.4	373.0	279.8	245.7	227.5
85°	1041.8	941.7	853.0	725.6	566.4	427.6	366.2	272.9	236.6	220.6
87.5°	996.3	907.6	827.9	702.8	545.9	416.2	357.1	266.1	227.5	213.8
90°	941.7	868.9	796.1	673.3	523.2	400.3	343.5	257.0	218.4	204.7
92.5°	896.2	827.9	750.6	636.9	495.9	379.9	323.0	241.1	202.4	188.8
95°	868.9	787.0	705.1	595.9	464.0	357.1	300.2	222.9	184.2	172.9
97.5°	807.5	725.6	646.0	548.2	420.8	323.0	270.7	202.4	166.0	154.7
100°	702.8	625.5	557.3	468.6	354.8	275.2	229.7	168.3	138.7	129.7
102.5°	509.5	448.1	398.1	327.5	247.9	195.6	168.3	125.1	106.9	102.4
105°	293.4	266.1	232.0	209.3	159.2	127.4	113.7	91.0	81.9	79.6
107.5°	195.6	182.0	163.8	141.0	113.7	95.5	86.4	72.8	66.0	63.7

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

Scaled Data Report

REPORT NUMBER: P1440242
CATALOG NUMBER: MPN-A5-D-U-ASYM-U-7040

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
110°	161.5	147.8	134.2	116.0	95.5	77.3	70.5	59.1	52.3	52.3
112.5°	145.6	134.2	120.6	104.6	81.9	68.2	61.4	52.3	45.5	45.5
115°	134.2	125.1	111.5	95.5	75.1	61.4	54.6	45.5	40.9	38.7
117.5°	127.4	116.0	102.4	86.4	68.2	56.9	50.0	40.9	36.4	34.1
120°	118.3	109.2	95.5	79.6	63.7	50.0	43.2	36.4	31.8	31.8
122.5°	111.5	102.4	88.7	72.8	56.9	45.5	38.7	31.8	27.3	27.3
125°	102.4	93.3	79.6	63.7	50.0	40.9	34.1	27.3	25.0	22.7
127.5°	93.3	84.2	70.5	56.9	43.2	34.1	29.6	22.7	20.5	20.5
130°	84.2	72.8	59.1	47.8	36.4	29.6	25.0	20.5	18.2	15.9
132.5°	70.5	61.4	50.0	38.7	29.6	22.7	20.5	15.9	13.6	13.6
135°	59.1	50.0	38.7	29.6	22.7	18.2	15.9	13.6	11.4	11.4
137.5°	43.2	36.4	29.6	22.7	15.9	13.6	11.4	9.1	9.1	9.1
140°	31.8	27.3	20.5	15.9	11.4	11.4	9.1	6.8	6.8	6.8
142.5°	22.7	20.5	15.9	11.4	9.1	6.8	6.8	6.8	4.5	4.5
145°	18.2	13.6	11.4	6.8	6.8	4.5	4.5	4.5	4.5	4.5
147.5°	11.4	9.1	6.8	4.5	4.5	4.5	2.3	2.3	2.3	2.3
150°	6.8	4.5	4.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3
152.5°	0.0	2.3	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
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	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
165°	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
170°	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
175°	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	0.0	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

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: SP3-2602-694-1

Test Date: 04/01/2026

Luminaire Tested: MPB-A2-D-U-SYM

Data in this report applies to families of products including MPB*

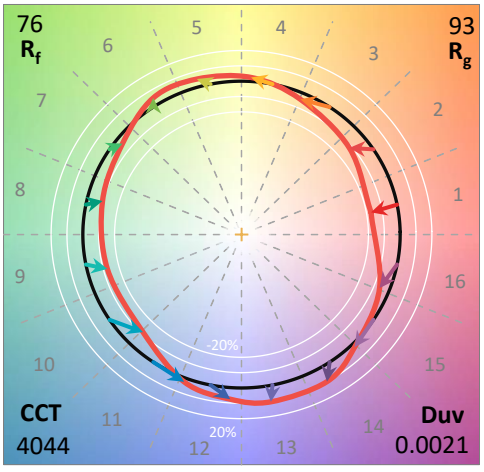
Report Generated By FNC07603 / LDUCLS01DT01661
Version: v7.05

Test Information

Test Method:	LM-79-2019
Report Number:	SP3-2602-694-1
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP3 - 3M SPHERE
Measurement Geometry:	4π
Issue Date:	04/02/2026
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	Streetworks
Catalog Number:	**MPB-A2-D-U-SYM**
Description:	MPB Breckenridge 20W DECORATIVE POSTTOP SYMMETRIC DISTRIBUTION

Spectral Parameters

CCT (K):	4044	CRI (Ra):	73.3		
CIE u':	0.2231	R1:	69.9	R9:	-31.0
CIE v':	0.5034	R2:	80.6	R10:	53.9
Duv:	0.0021	R3:	89.0	R11:	67.1
CIE x:	0.3799	R4:	71.4	R12:	42.6
CIE y:	0.3810	R5:	69.6	R13:	72.0
CIE z:	0.2391	R6:	72.4	R14:	93.8
Peak Wavelength (nm):	451	R7:	81.7	R15:	62.4
Dominant Wavelength (nm):	577	R8:	51.6		
Purity:	28.36865				
Rf:	75.8				
Rg:	92.7				



Test Conditions

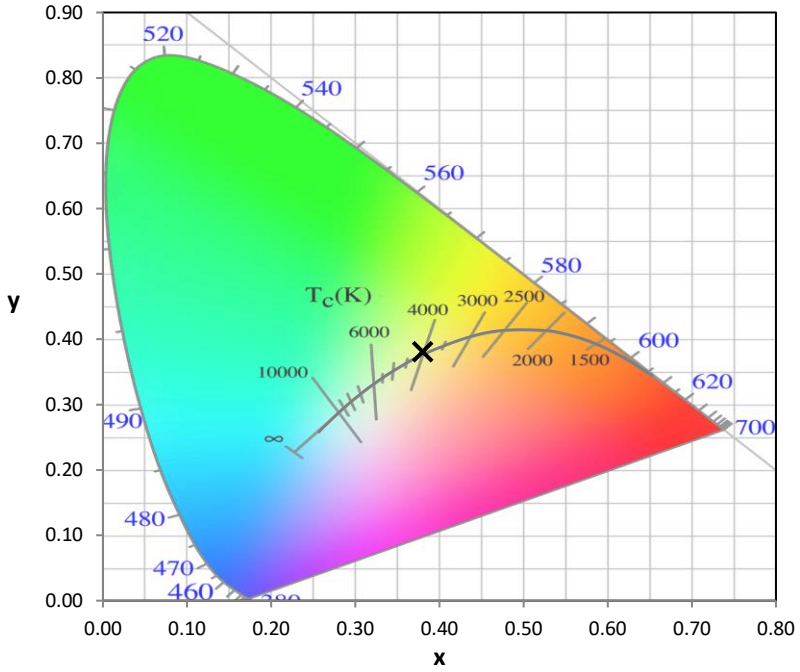
Stabilization Time:	32M
Operation Time:	1H 32M
Sphere Temperature (°C):	24.2

REPORT NUMBER: SP3-2602-694-1

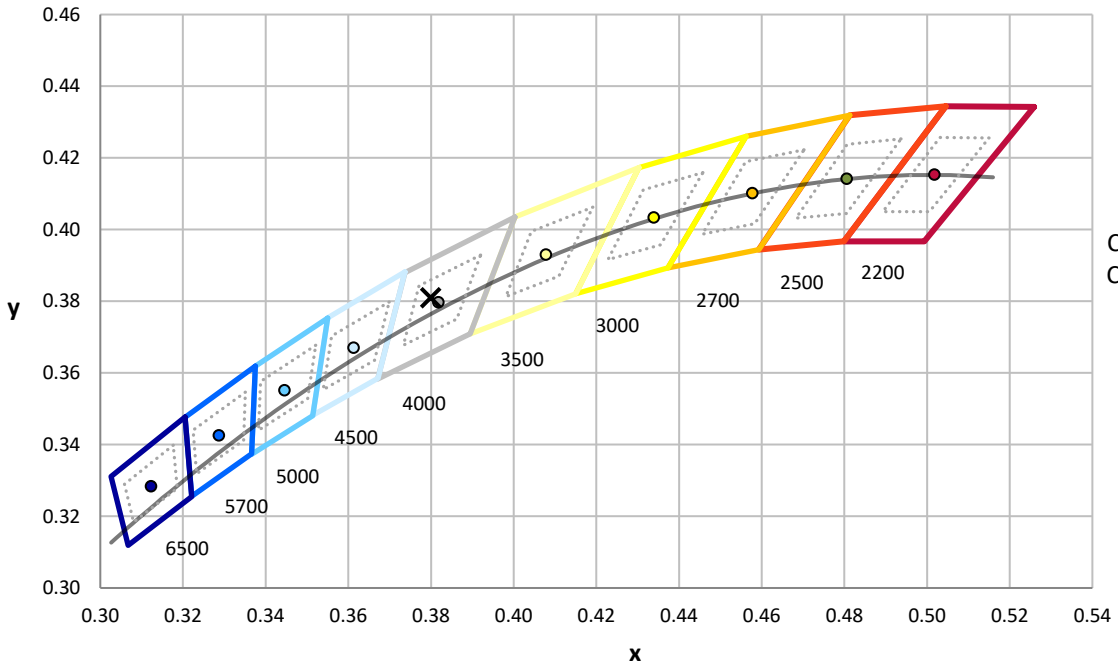
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	3M SPHERE IN02505	1/10/2026	7/10/2026
Power Meter	XITRON INXT2011006	10/21/2025	10/21/2026
AC Power Source	CHROMA 61604 IN6064A	10/20/2025	10/20/2026
DC Power Source	EYSIGHT N5770A IN0534	10/20/2025	10/20/2026
Sphere Thermometer	TANDD IN4036E	10/21/2025	10/21/2026

REPORT NUMBER: SP3-2602-694-1

CIE 1931 Chromaticity Diagram



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

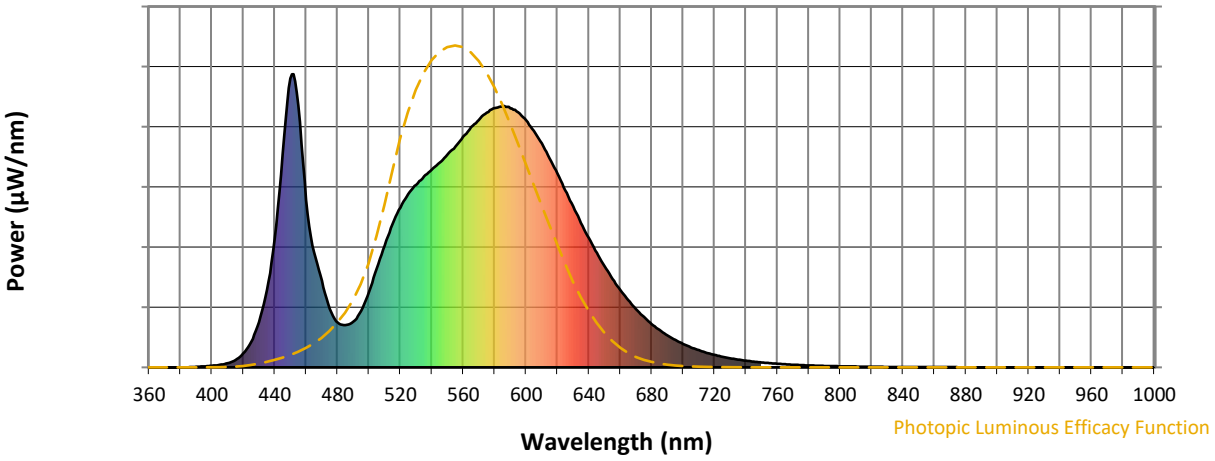


CCT = 4044K
CIE x = 0.3799
CIE y = 0.3810
Duv = 0.0021

Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP3-2602-694-1

Photopic Flux vs. Wavelength

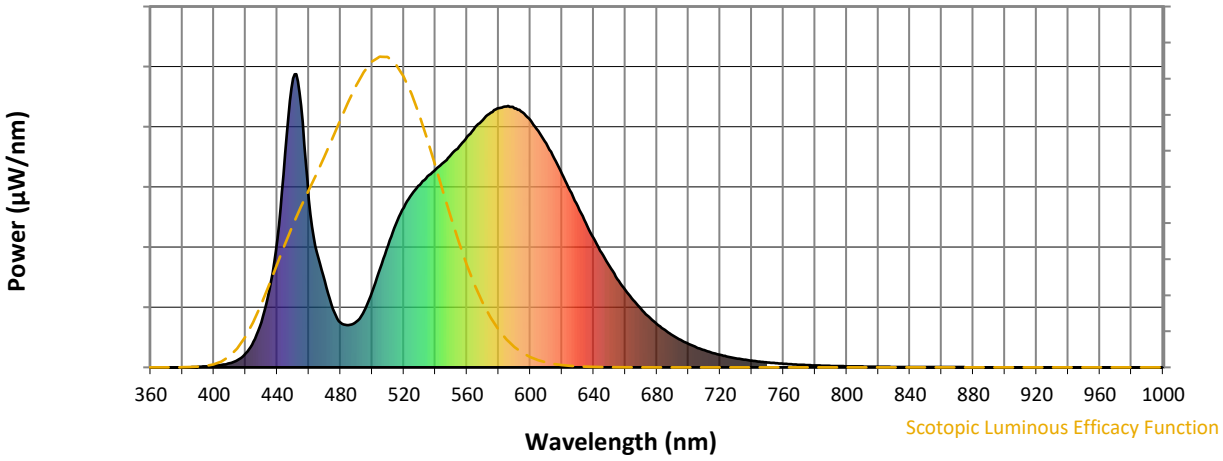


Photopic Lumens: NR

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	157	NR	620	660	NR	750	17	NR	880	0	NR
365	0	NR	495	192	NR	625	603	NR	755	14	NR	885	0	NR
370	0	NR	500	258	NR	630	549	NR	760	12	NR	890	0	NR
375	0	NR	505	337	NR	635	493	NR	765	11	NR	895	0	NR
380	0	NR	510	416	NR	640	442	NR	770	9	NR	900	0	NR
385	0	NR	515	488	NR	645	391	NR	775	8	NR	905	0	NR
390	2	NR	520	545	NR	650	345	NR	780	7	NR	910	0	NR
395	4	NR	525	590	NR	655	302	NR	785	6	NR	915	0	NR
400	6	NR	530	622	NR	660	264	NR	790	5	NR	920	0	NR
405	9	NR	535	651	NR	665	230	NR	795	4	NR	925	0	NR
410	14	NR	540	675	NR	670	199	NR	800	4	NR	930	0	NR
415	25	NR	545	699	NR	675	172	NR	805	3	NR	935	0	NR
420	48	NR	550	726	NR	680	148	NR	810	3	NR	940	0	NR
425	87	NR	555	753	NR	685	127	NR	815	2	NR	945	0	NR
430	154	NR	560	788	NR	690	109	NR	820	2	NR	950	0	NR
435	265	NR	565	820	NR	695	94	NR	825	2	NR	955	0	NR
440	438	NR	570	844	NR	700	80	NR	830	2	NR	960	0	NR
445	728	NR	575	869	NR	705	68	NR	835	1	NR	965	0	NR
450	986	NR	580	884	NR	710	58	NR	840	1	NR	970	0	NR
455	893	NR	585	890	NR	715	50	NR	845	1	NR	975	0	NR
460	572	NR	590	884	NR	720	43	NR	850	1	NR	980	0	NR
465	393	NR	595	871	NR	725	36	NR	855	1	NR	985	0	NR
470	295	NR	600	843	NR	730	31	NR	860	1	NR	990	0	NR
475	200	NR	605	807	NR	735	27	NR	865	1	NR	995	0	NR
480	152	NR	610	764	NR	740	23	NR	870	1	NR	1000	0	NR
485	144	NR	615	713	NR	745	19	NR	875	1	NR			

REPORT NUMBER: SP3-2602-694-1

Scotopic Flux vs. Wavelength

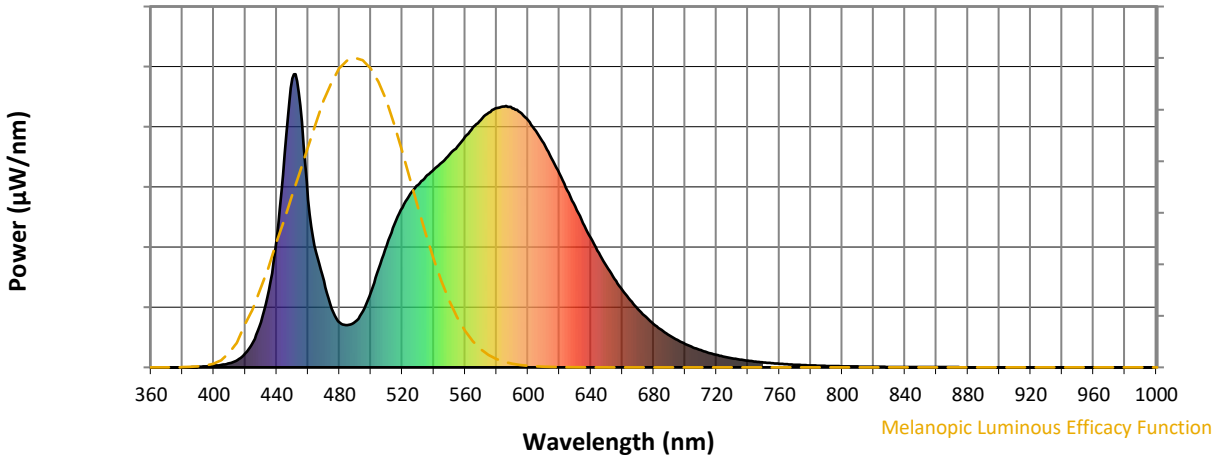


Scotopic Lumens: NR **S/P: 1.56**

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	157	NR	620	660	NR	750	17	NR	880	0	NR
365	0	NR	495	192	NR	625	603	NR	755	14	NR	885	0	NR
370	0	NR	500	258	NR	630	549	NR	760	12	NR	890	0	NR
375	0	NR	505	337	NR	635	493	NR	765	11	NR	895	0	NR
380	0	NR	510	416	NR	640	442	NR	770	9	NR	900	0	NR
385	0	NR	515	488	NR	645	391	NR	775	8	NR	905	0	NR
390	2	NR	520	545	NR	650	345	NR	780	7	NR	910	0	NR
395	4	NR	525	590	NR	655	302	NR	785	6	NR	915	0	NR
400	6	NR	530	622	NR	660	264	NR	790	5	NR	920	0	NR
405	9	NR	535	651	NR	665	230	NR	795	4	NR	925	0	NR
410	14	NR	540	675	NR	670	199	NR	800	4	NR	930	0	NR
415	25	NR	545	699	NR	675	172	NR	805	3	NR	935	0	NR
420	48	NR	550	726	NR	680	148	NR	810	3	NR	940	0	NR
425	87	NR	555	753	NR	685	127	NR	815	2	NR	945	0	NR
430	154	NR	560	788	NR	690	109	NR	820	2	NR	950	0	NR
435	265	NR	565	820	NR	695	94	NR	825	2	NR	955	0	NR
440	438	NR	570	844	NR	700	80	NR	830	2	NR	960	0	NR
445	728	NR	575	869	NR	705	68	NR	835	1	NR	965	0	NR
450	986	NR	580	884	NR	710	58	NR	840	1	NR	970	0	NR
455	893	NR	585	890	NR	715	50	NR	845	1	NR	975	0	NR
460	572	NR	590	884	NR	720	43	NR	850	1	NR	980	0	NR
465	393	NR	595	871	NR	725	36	NR	855	1	NR	985	0	NR
470	295	NR	600	843	NR	730	31	NR	860	1	NR	990	0	NR
475	200	NR	605	807	NR	735	27	NR	865	1	NR	995	0	NR
480	152	NR	610	764	NR	740	23	NR	870	1	NR	1000	0	NR
485	144	NR	615	713	NR	745	19	NR	875	1	NR			

REPORT NUMBER: SP3-2602-694-1

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 3.09**

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	157	NR	620	660	NR	750	17	NR	880	0	NR
365	0	NR	495	192	NR	625	603	NR	755	14	NR	885	0	NR
370	0	NR	500	258	NR	630	549	NR	760	12	NR	890	0	NR
375	0	NR	505	337	NR	635	493	NR	765	11	NR	895	0	NR
380	0	NR	510	416	NR	640	442	NR	770	9	NR	900	0	NR
385	0	NR	515	488	NR	645	391	NR	775	8	NR	905	0	NR
390	2	NR	520	545	NR	650	345	NR	780	7	NR	910	0	NR
395	4	NR	525	590	NR	655	302	NR	785	6	NR	915	0	NR
400	6	NR	530	622	NR	660	264	NR	790	5	NR	920	0	NR
405	9	NR	535	651	NR	665	230	NR	795	4	NR	925	0	NR
410	14	NR	540	675	NR	670	199	NR	800	4	NR	930	0	NR
415	25	NR	545	699	NR	675	172	NR	805	3	NR	935	0	NR
420	48	NR	550	726	NR	680	148	NR	810	3	NR	940	0	NR
425	87	NR	555	753	NR	685	127	NR	815	2	NR	945	0	NR
430	154	NR	560	788	NR	690	109	NR	820	2	NR	950	0	NR
435	265	NR	565	820	NR	695	94	NR	825	2	NR	955	0	NR
440	438	NR	570	844	NR	700	80	NR	830	2	NR	960	0	NR
445	728	NR	575	869	NR	705	68	NR	835	1	NR	965	0	NR
450	986	NR	580	884	NR	710	58	NR	840	1	NR	970	0	NR
455	893	NR	585	890	NR	715	50	NR	845	1	NR	975	0	NR
460	572	NR	590	884	NR	720	43	NR	850	1	NR	980	0	NR
465	393	NR	595	871	NR	725	36	NR	855	1	NR	985	0	NR
470	295	NR	600	843	NR	730	31	NR	860	1	NR	990	0	NR
475	200	NR	605	807	NR	735	27	NR	865	1	NR	995	0	NR
480	152	NR	610	764	NR	740	23	NR	870	1	NR	1000	0	NR
485	144	NR	615	713	NR	745	19	NR	875	1	NR			

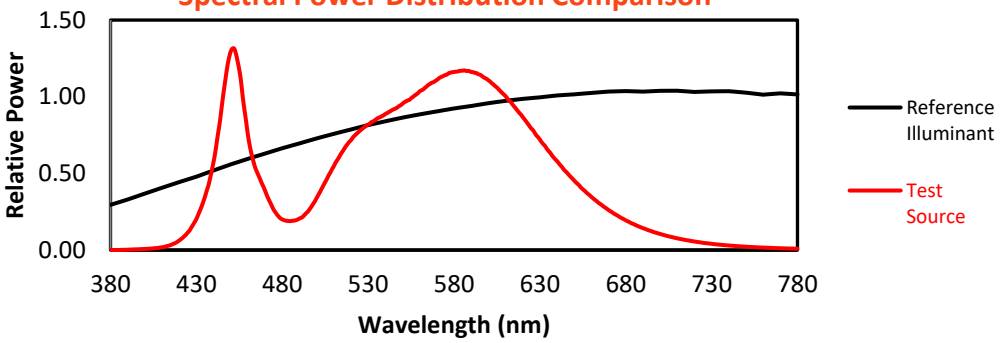
REPORT NUMBER: SP3-2602-694-1

TM-30-18

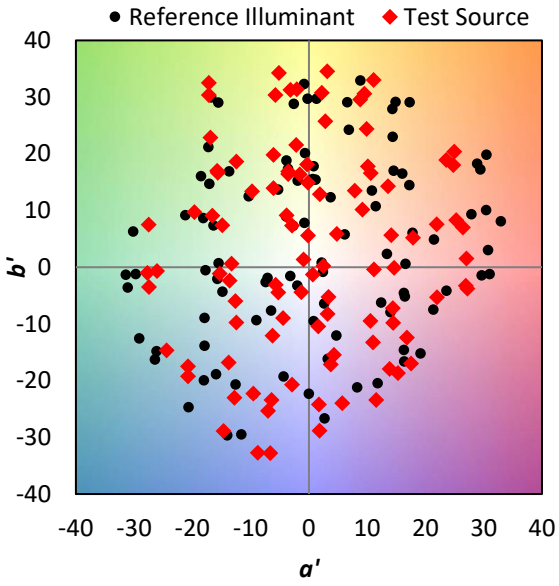
Summary

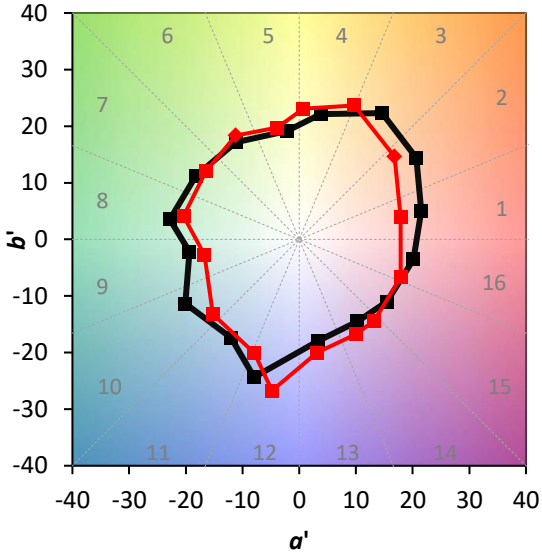
R_f = 75.8
R_g = 92.7
CIE R_a = 73.3
R_9 = -31.0

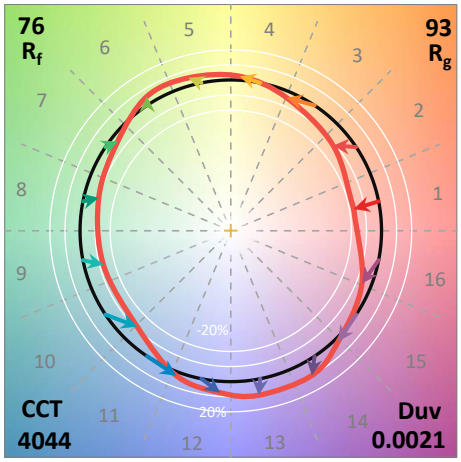
Spectral Power Distribution Comparison

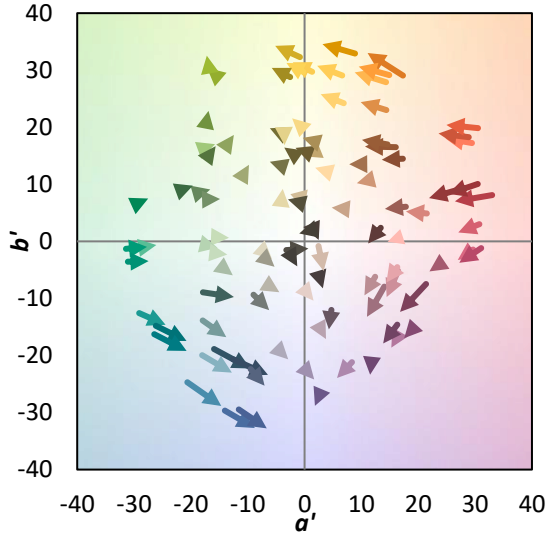


Color Vector Graphics







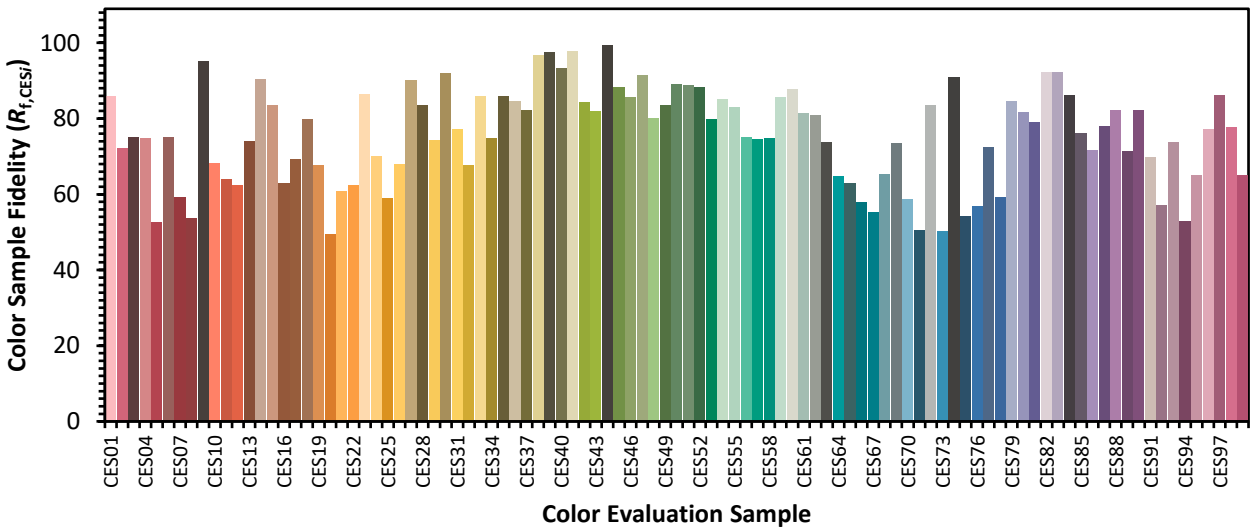


REPORT NUMBER: SP3-2602-694-1

TM-30-18

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

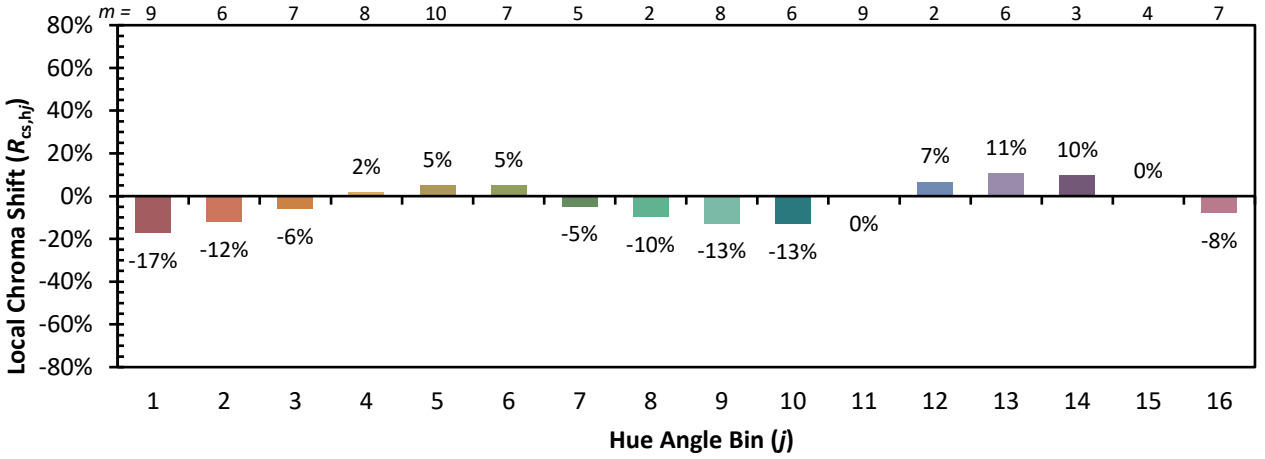
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CES02 = 61	CES27 = 90	CES52 = 88	CES77 = 72
CES03 = 30	CES28 = 84	CES53 = 80	CES78 = 59
CES04 = 70	CES29 = 74	CES54 = 85	CES79 = 85
CES05 = 47	CES30 = 92	CES55 = 83	CES80 = 82
CES06 = 50	CES31 = 77	CES56 = 75	CES81 = 79
CES07 = 40	CES32 = 68	CES57 = 75	CES82 = 92
CES08 = 39	CES33 = 86	CES58 = 75	CES83 = 92
CES09 = 29	CES34 = 75	CES59 = 86	CES84 = 86
CES10 = 74	CES35 = 86	CES60 = 88	CES85 = 76
CES11 = 57	CES36 = 85	CES61 = 81	CES86 = 72
CES12 = 63	CES37 = 82	CES62 = 81	CES87 = 78
CES13 = 42	CES38 = 97	CES63 = 74	CES88 = 82
CES14 = 74	CES39 = 98	CES64 = 65	CES89 = 71
CES15 = 71	CES40 = 93	CES65 = 63	CES90 = 82
CES16 = 46	CES41 = 98	CES66 = 58	CES91 = 70
CES17 = 49	CES42 = 84	CES67 = 55	CES92 = 57
CES18 = 56	CES43 = 82	CES68 = 65	CES93 = 74
CES19 = 71	CES44 = 99	CES69 = 73	CES94 = 53
CES20 = 64	CES45 = 88	CES70 = 59	CES95 = 65
CES21 = 86	CES46 = 86	CES71 = 51	CES96 = 77
CES22 = 78	CES47 = 92	CES72 = 84	CES97 = 86
CES23 = 92	CES48 = 80	CES73 = 50	CES98 = 78
CES24 = 91	CES49 = 84	CES74 = 91	CES99 = 65
CES25 = 72	CES50 = 89	CES75 = 54	

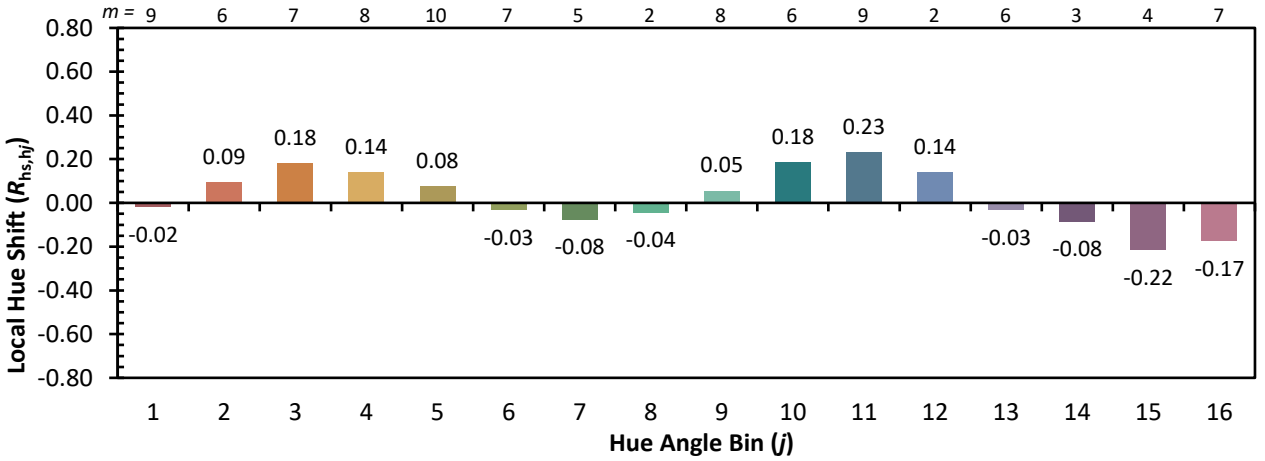


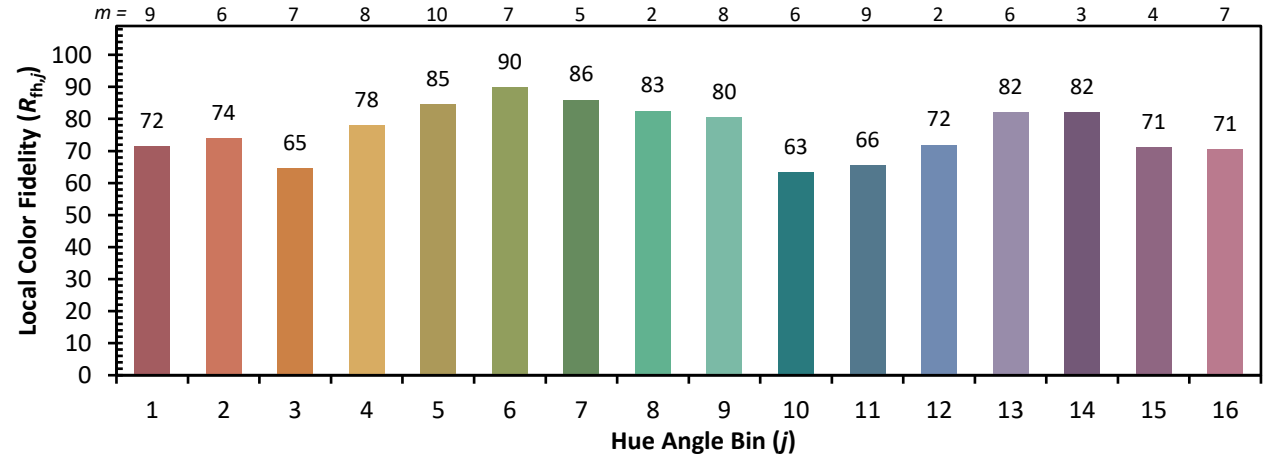
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Color Rendition by Hue-Angle Bin



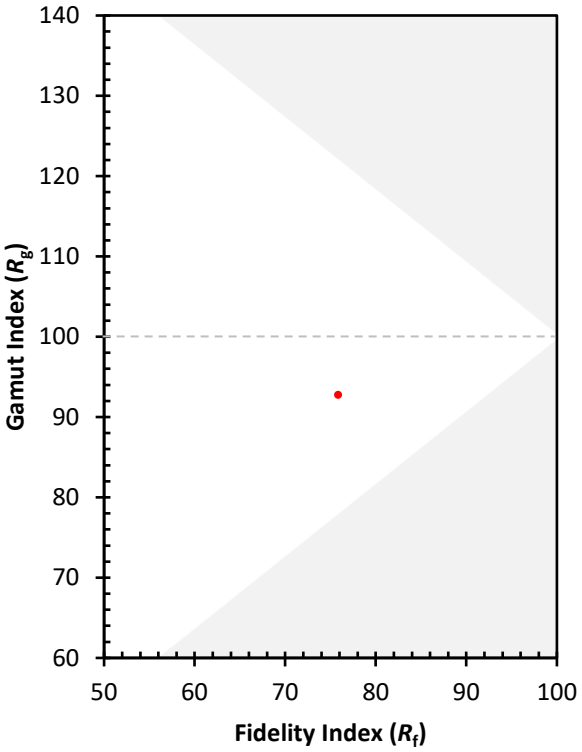


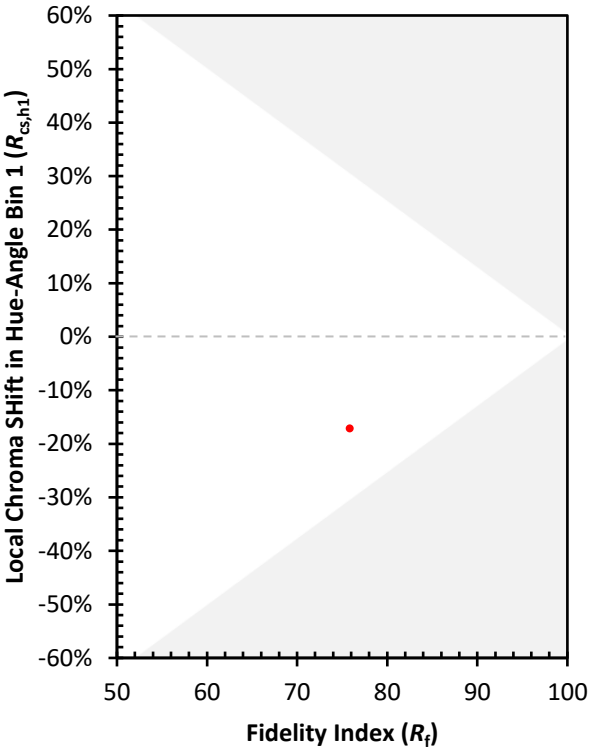


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Measure Comparisons





(END OF REPORT)