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: P821129

Luminaire Tested: **TT-D2-830-24VDC-CQ-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:	P821129
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2010-017-3)
Test Lab:	INNOVATION CENTER
Issue Date:	12/2/2020
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	McGRAW-EDISON
Catalog Number:	TT-D2-830-24VDC-CQ-HSS
Description:	TOPTIER LED PARKING GARAGE LUMINAIRE
	3000K, 80 CRI LEDS AND CONCENTRATED DISTRIBUTION WITH HOUSE SIDE SHIELD
Light Source:	-
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	3926.8 lumens
Efficiency:	N/A
Efficacy:	103.3 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type IV - Short
BUG Rating:	B1 - U1 - G1

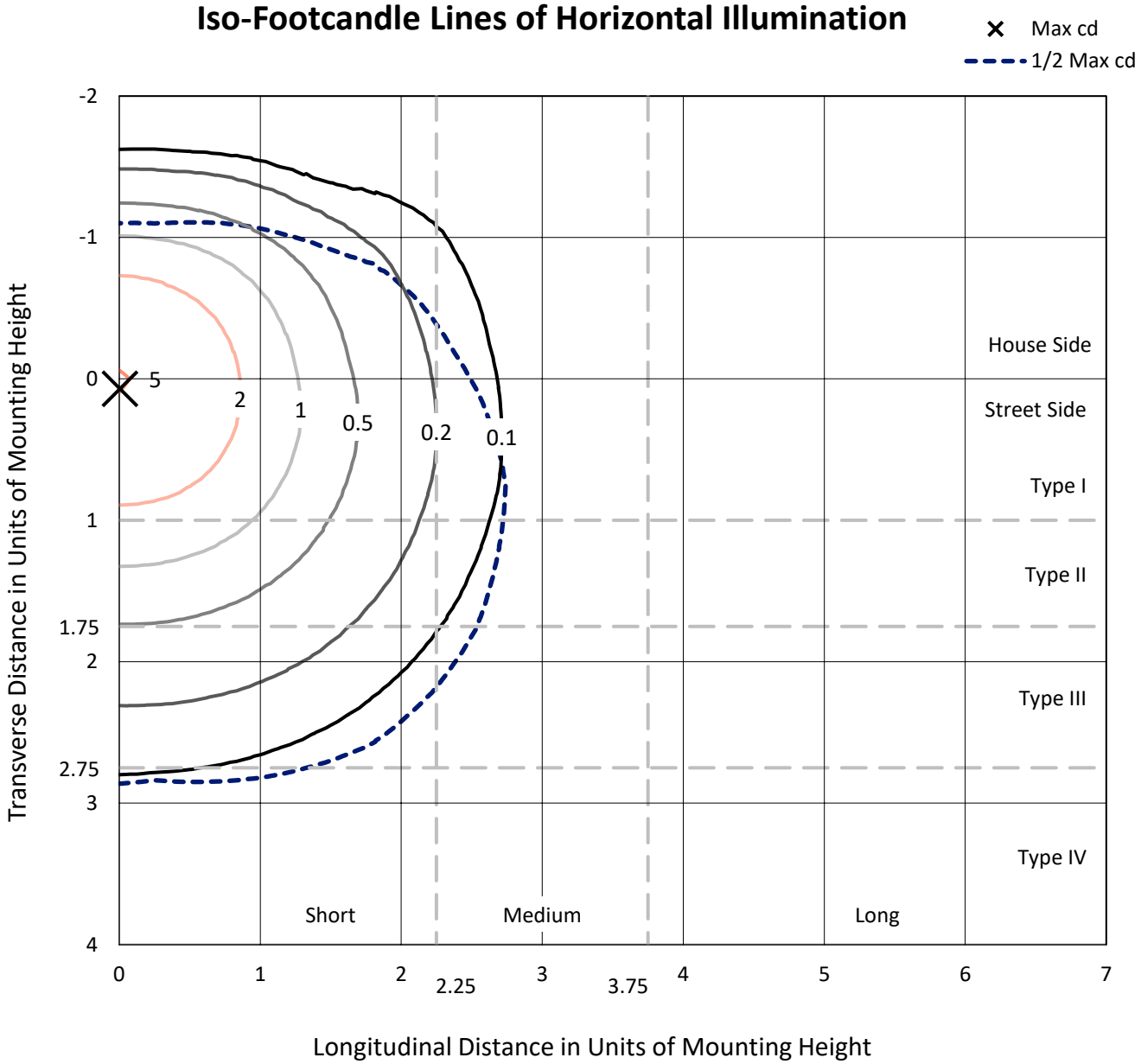
Input Watts (W):	38
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	25 FT

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Iso-Footcandle Lines of Horizontal Illumination



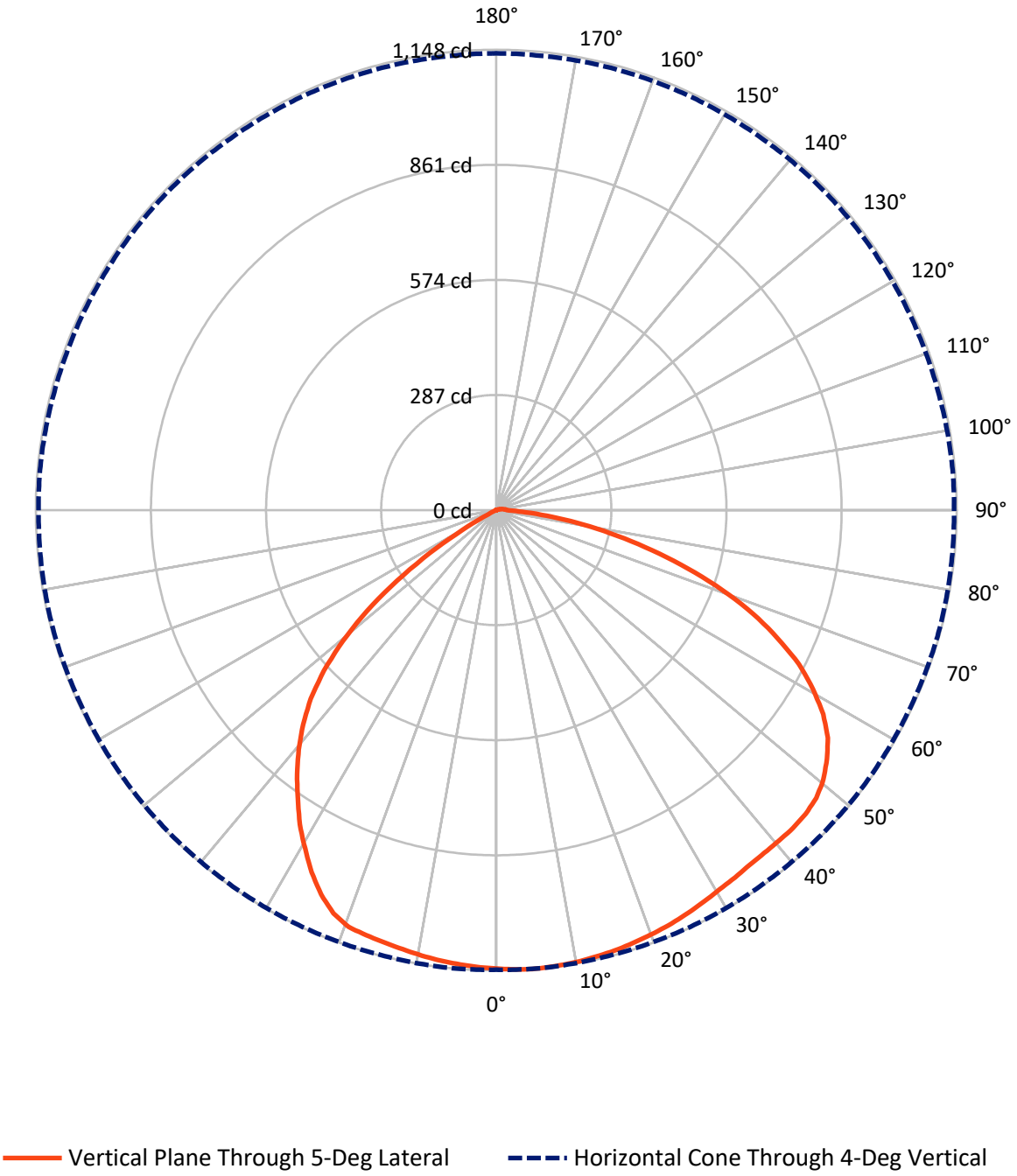
Based on 15 foot mounting height. Maximum calculated value = 5.1 fc
Type IV - Short - N/A

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Luminous Intensity Polar Plot



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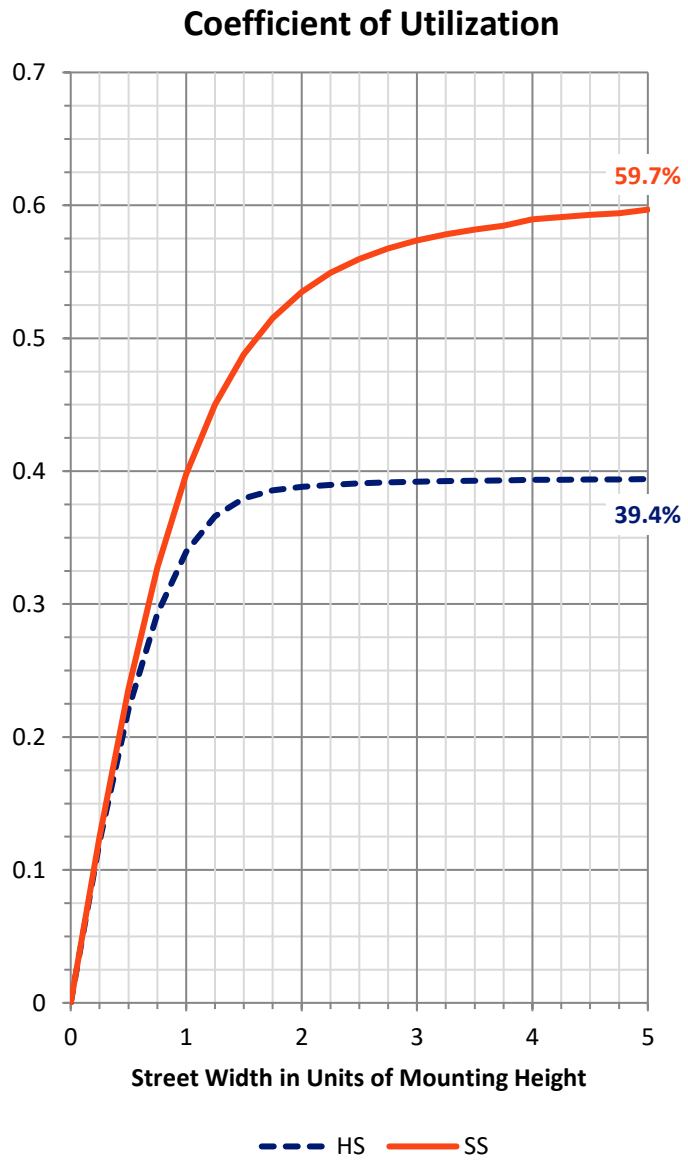
REPORT NUMBER: P821129
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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1556.2	1.9	1558.1
	% Fixture	39.6	0.0	39.7
Street Side	Lumens	2357.8	10.9	2368.7
	% Fixture	60.0	0.3	60.3
Total	Lumens	3914.0	12.8	3926.8
	% Fixture	99.7	0.3	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	108.7	2.8
10°-20°	318.3	8.1
20°-30°	501.6	12.8
30°-40°	638.3	16.3
40°-50°	737.3	18.8
50°-60°	721.9	18.4
60°-70°	537.7	13.7
70°-80°	291.2	7.4
80°-90°	59.0	1.5
90°-100°	7.5	0.2
100°-110°	2.9	0.1
110°-120°	0.8	0.0
120°-130°	0.6	0.0
130°-140°	0.4	0.0
140°-150°	0.3	0.0
150°-160°	0.2	0.0
160°-170°	0.1	0.0
170°-180°	0.0	0.0
0°-90°	3914.0	99.7
0°-180°	3926.8	100.0



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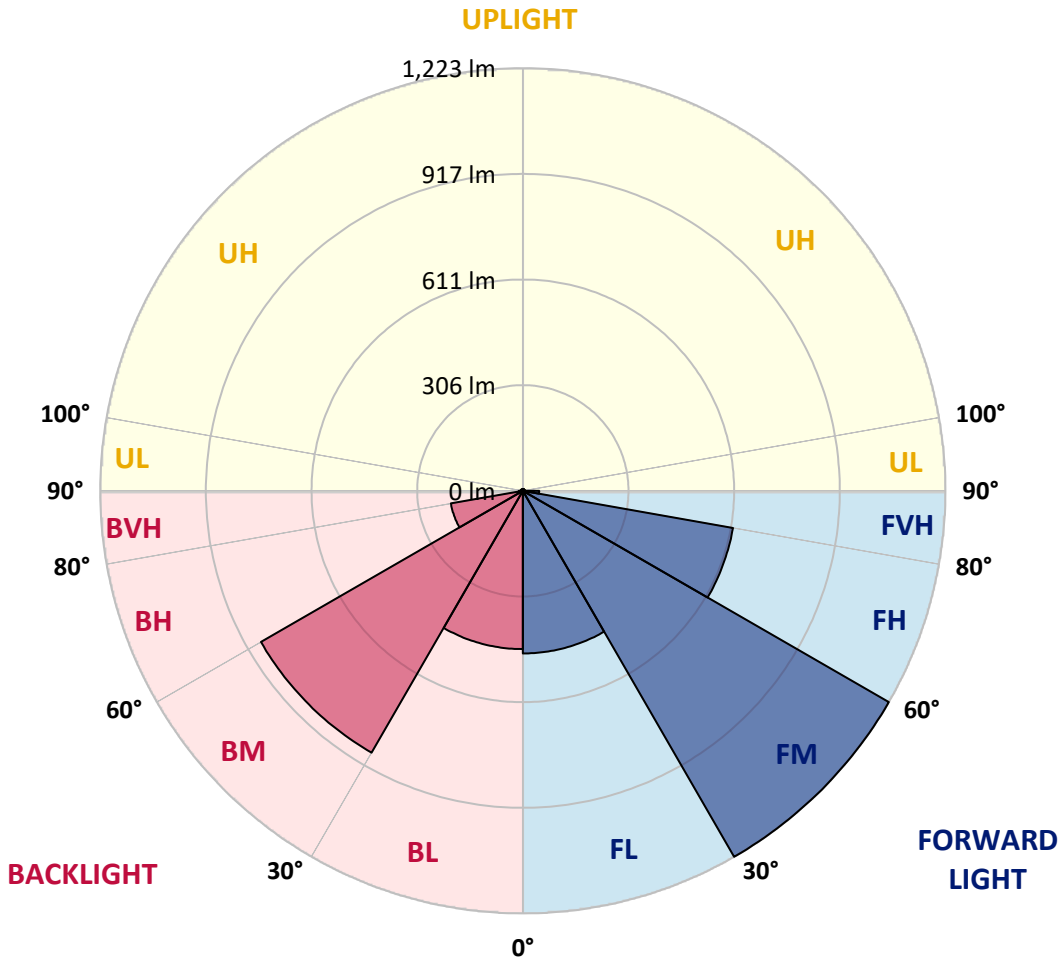
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	470.5	12.0			
FM	(30°-60°)	1222.7	31.1			
FH	(60°-80°)	617.4	15.7			G0/660
FVH	(80°-90°)	47.1	1.2			G1/100
BL	(0°-30°)	458.0	11.7	B1/500		
BM	(30°-60°)	874.8	22.3	B1/1000		
BH	(60°-80°)	211.5	5.4	B1/500		G1/500
BVH	(80°-90°)	11.9	0.3			G1/100
UL	(90°-100°)	7.5	0.2		U1/10	
UH	(100°-180°)	5.3	0.1		U1/10	

BUG Rating: B1-U1-G1
Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1143.8	1143.8	1143.8	1143.8	1143.8	1143.8	1143.8	1143.8	1143.8	1143.8	1143.8
2.5°	1145.2	1146.7	1146.0	1146.0	1144.5	1145.2	1144.5	1144.5	1143.8	1143.0	1143.0
4°	1146.0	1147.5	1146.0	1146.0	1145.2	1145.2	1144.5	1143.0	1143.8	1141.6	1140.8
5°	1146.7	1147.5	1146.7	1146.7	1145.2	1144.5	1143.0	1143.0	1142.3	1140.8	1140.8
7.5°	1145.2	1146.0	1146.0	1145.2	1143.8	1142.3	1141.6	1140.8	1140.1	1137.9	1137.9
10°	1142.3	1143.8	1142.3	1142.3	1141.6	1140.1	1137.9	1137.1	1134.9	1133.4	1132.7
12.5°	1139.3	1140.1	1139.3	1139.3	1137.9	1135.6	1134.9	1133.4	1130.5	1128.3	1128.3
15°	1134.9	1136.4	1135.6	1134.9	1134.2	1132.0	1129.7	1127.5	1125.3	1123.1	1123.1
17.5°	1129.7	1130.5	1131.2	1130.5	1129.0	1127.5	1125.3	1122.4	1120.1	1117.9	1117.2
20°	1123.8	1125.3	1125.3	1125.3	1123.8	1122.4	1119.4	1116.4	1115.0	1112.0	1111.3
22.5°	1117.9	1119.4	1118.7	1119.4	1118.7	1116.4	1113.5	1110.5	1107.6	1105.4	1103.9
25°	1112.0	1112.0	1112.0	1112.0	1112.0	1109.1	1106.1	1102.4	1099.5	1095.8	1095.8
27.5°	1104.6	1104.6	1105.4	1105.4	1104.6	1102.4	1098.7	1094.3	1089.9	1086.2	1084.7
30°	1098.0	1097.2	1098.7	1100.2	1099.5	1097.2	1092.8	1087.6	1081.0	1075.8	1071.4
32.5°	1089.9	1092.1	1093.6	1096.5	1097.2	1094.3	1089.1	1082.5	1075.8	1066.2	1058.1
35°	1086.9	1086.9	1090.6	1095.0	1096.5	1095.0	1087.6	1080.3	1070.7	1056.6	1047.0
37.5°	1084.0	1084.7	1090.6	1097.2	1099.5	1099.5	1091.3	1081.7	1068.5	1048.5	1036.7
40°	1082.5	1084.0	1091.3	1100.9	1106.8	1106.1	1096.5	1084.7	1068.5	1042.6	1027.8
42.5°	1081.0	1084.0	1092.1	1105.4	1114.2	1113.5	1103.2	1087.6	1067.0	1035.2	1018.2
45°	1078.8	1081.0	1092.1	1109.1	1120.9	1123.1	1111.3	1091.3	1067.0	1028.6	1006.4
47.5°	1072.1	1072.9	1087.6	1107.6	1125.3	1128.3	1116.4	1092.8	1064.0	1017.5	991.7
50°	1054.4	1056.6	1073.6	1100.2	1120.9	1125.3	1115.0	1089.1	1056.6	999.0	968.0
52.5°	1031.5	1031.5	1052.2	1081.7	1106.8	1114.2	1104.6	1075.8	1038.2	971.7	936.3
55°	997.6	1002.7	1024.1	1055.2	1082.5	1092.8	1079.5	1051.5	1007.9	937.0	897.9
57.5°	959.2	960.6	982.8	1019.7	1047.8	1054.4	1043.3	1010.1	968.0	895.7	849.1
60°	903.8	906.7	934.8	967.3	997.6	1006.4	992.4	959.2	914.9	842.5	795.2
62.5°	842.5	846.9	872.0	905.3	934.1	948.1	931.1	896.4	852.8	779.0	737.7
65°	768.7	770.1	797.5	835.1	863.9	869.1	854.3	820.4	776.8	705.9	669.0
67.5°	683.7	691.1	717.7	745.8	770.9	776.8	766.4	727.3	692.6	629.8	593.7
70°	601.8	598.1	620.2	648.3	671.2	676.4	664.6	628.4	595.9	536.8	508.8
72.5°	502.8	499.9	523.5	544.9	567.1	564.1	552.3	523.5	495.5	445.2	419.4
75°	403.2	400.2	418.7	437.1	448.2	449.7	441.6	420.1	389.9	350.7	330.8
77.5°	305.7	308.6	316.8	332.3	342.6	347.0	333.0	311.6	292.4	262.1	247.4
80°	217.8	218.6	221.5	232.6	240.0	240.0	233.3	216.3	194.9	173.5	166.1
82.5°	137.3	140.3	140.3	151.4	151.4	145.5	142.5	131.4	120.4	103.4	93.0
85°	75.3	73.8	78.3	79.0	78.3	73.8	69.4	62.8	55.4	43.6	39.1
87.5°	33.2	32.5	32.5	32.5	31.8	28.8	24.4	19.2	13.3	8.1	5.9
90°	25.8	25.8	25.1	23.6	21.4	19.2	15.5	11.8	7.4	3.0	1.5
92.5°	23.6	23.6	22.9	22.2	19.9	17.7	14.0	10.3	6.6	3.0	1.5
95°	20.7	19.9	19.9	18.5	17.0	14.8	12.6	8.9	5.9	2.2	1.5
97.5°	17.0	16.2	16.2	15.5	14.0	11.8	10.3	7.4	5.2	2.2	1.5
100°	12.6	13.3	12.6	11.8	11.1	9.6	8.1	5.9	3.7	1.5	1.5
102.5°	9.6	9.6	8.9	8.9	8.1	7.4	5.9	4.4	3.0	1.5	0.7
105°	6.6	6.6	6.6	5.9	5.9	5.2	4.4	3.0	2.2	1.5	0.7
107.5°	3.7	3.7	3.7	3.7	3.7	3.7	3.0	2.2	1.5	0.7	0.7

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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
110°	2.2	2.2	2.2	2.2	2.2	2.2	1.5	1.5	0.7	0.7	0.7
112.5°	0.7	0.7	1.5	1.5	1.5	1.5	1.5	0.7	0.7	0.7	0.7
115°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
117.5°	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
120°	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
122.5°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
125°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
127.5°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
130°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
132.5°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7
135°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7
137.5°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7
140°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7
142.5°	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
145°	0.7	0.7	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
147.5°	0.7	0.7	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
150°	0.7	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
152.5°	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
155°	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
157.5°	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
160°	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
162.5°	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
165°	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
167.5°	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
170°	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
172.5°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7
175°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7
177.5°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7
180°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1143.8	1143.8	1143.8	1143.8	1143.8	1143.8	1143.8	1143.8	1143.8	1143.8
2.5°	1142.3	1140.1	1141.6	1140.8	1141.6	1140.1	1140.1	1140.1	1140.8	1139.3
4°	*1141.6*	*1140.1*	*1140.1*	*1140.1*	*1140.1*	*1138.6*	*1138.6*	*1138.6*	*1137.9*	*1138.6*
5°	1140.1	1139.3	1138.6	1137.9	1138.6	1137.1	1136.4	1136.4	1136.4	1137.1
7.5°	1137.1	1134.9	1134.9	1132.7	1133.4	1132.7	1132.0	1132.7	1132.0	1132.0
10°	1132.0	1130.5	1129.7	1128.3	1128.3	1126.8	1126.0	1126.0	1126.0	1125.3
12.5°	1126.8	1125.3	1124.6	1123.1	1122.4	1120.9	1120.1	1120.9	1119.4	1119.4
15°	1120.9	1119.4	1118.7	1118.7	1117.2	1115.7	1115.0	1113.5	1113.5	1113.5
17.5°	1115.7	1114.2	1115.0	1113.5	1112.8	1111.3	1111.3	1108.3	1108.3	1107.6
20°	1110.5	1109.1	1109.1	1108.3	1108.3	1106.8	1104.6	1103.2	1102.4	1102.4
22.5°	1103.9	1101.7	1098.0	1092.8	1089.9	1087.6	1086.9	1084.7	1084.0	1082.5
25°	1093.6	1087.6	1079.5	1070.7	1061.8	1057.4	1055.9	1052.9	1052.9	1052.9
27.5°	1081.0	1069.9	1058.9	1045.6	1032.3	1023.4	1017.5	1014.5	1013.1	1013.1
30°	1064.8	1050.7	1035.2	1018.2	1003.5	987.2	976.9	971.0	968.0	968.8
32.5°	1050.0	1032.3	1014.5	993.1	973.2	954.0	936.3	927.4	923.7	922.2
35°	1035.2	1015.3	993.9	971.0	945.1	917.1	893.5	880.2	872.8	873.5
37.5°	1024.1	1000.5	976.9	948.8	919.3	885.3	855.1	833.6	824.8	826.3
40°	1012.3	985.8	959.9	927.4	892.7	852.1	813.0	784.2	773.8	771.6
42.5°	1001.3	970.2	940.7	906.0	862.4	816.7	768.7	734.7	719.2	717.0
45°	987.2	952.5	920.8	880.9	832.9	776.0	719.9	675.6	659.4	652.7
47.5°	968.8	930.4	894.9	849.1	796.7	732.5	662.3	607.7	587.0	581.9
50°	941.4	897.1	861.0	809.3	745.8	674.9	596.6	529.4	502.1	498.4
52.5°	905.3	860.2	819.6	760.5	683.0	599.6	511.0	441.6	409.8	407.6
55°	861.7	813.0	768.7	702.2	611.4	514.7	422.4	334.5	303.5	299.8
57.5°	810.8	760.5	712.5	630.6	525.7	417.9	310.9	226.7	197.2	189.8
60°	754.6	702.9	649.0	549.4	410.5	296.1	188.3	120.4	98.2	90.8
62.5°	700.0	643.9	587.0	452.6	281.3	169.1	85.7	34.7	22.2	21.4
65°	635.8	582.6	524.3	364.8	178.0	76.1	25.1	0.7	0.0	0.0
67.5°	561.2	516.1	464.4	326.4	157.3	66.5	21.4	0.7	0.0	0.0
70°	481.4	446.0	400.2	280.6	135.1	56.1	18.5	0.0	0.0	0.0
72.5°	397.3	367.0	333.0	233.3	112.2	46.5	14.8	0.0	0.0	0.0
75°	311.6	292.4	262.1	184.6	87.1	35.4	11.1	0.0	0.0	0.0
77.5°	231.1	215.6	193.5	135.9	65.7	25.8	8.1	0.0	0.0	0.0
80°	155.8	144.0	131.4	92.3	44.3	17.0	5.2	0.0	0.0	0.0
82.5°	90.8	82.0	73.8	52.4	24.4	9.6	2.2	0.0	0.0	0.0
85°	36.9	34.0	32.5	22.2	9.6	3.0	0.7	0.0	0.0	0.0
87.5°	4.4	3.7	3.7	2.2	0.7	0.0	0.0	0.0	0.0	0.0
90°	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.7	0.7	0.7	0.7	0.7	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
97.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.0
100°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
102.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
105°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
107.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

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

Scaled Data Report

REPORT NUMBER: P821129
CATALOG NUMBER: TT-D2-830-24VDC-CQ-HSS

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
110°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
112.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
115°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
117.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
120°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
122.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
125°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
127.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
130°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
132.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
135°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
137.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0
140°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0
142.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	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
147.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.7
150°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
152.5°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
155°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
157.5°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
160°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
162.5°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
165°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
167.5°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
170°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
172.5°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
175°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
177.5°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
180°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

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

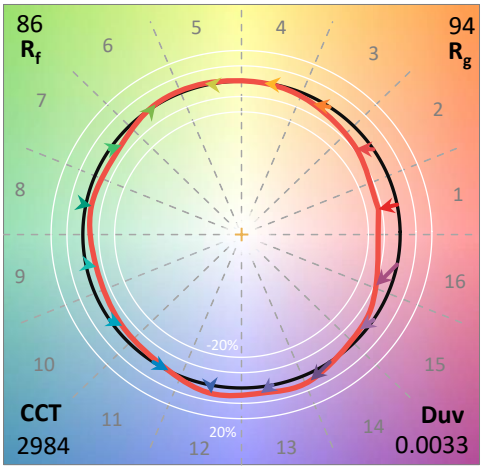
Test Information

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

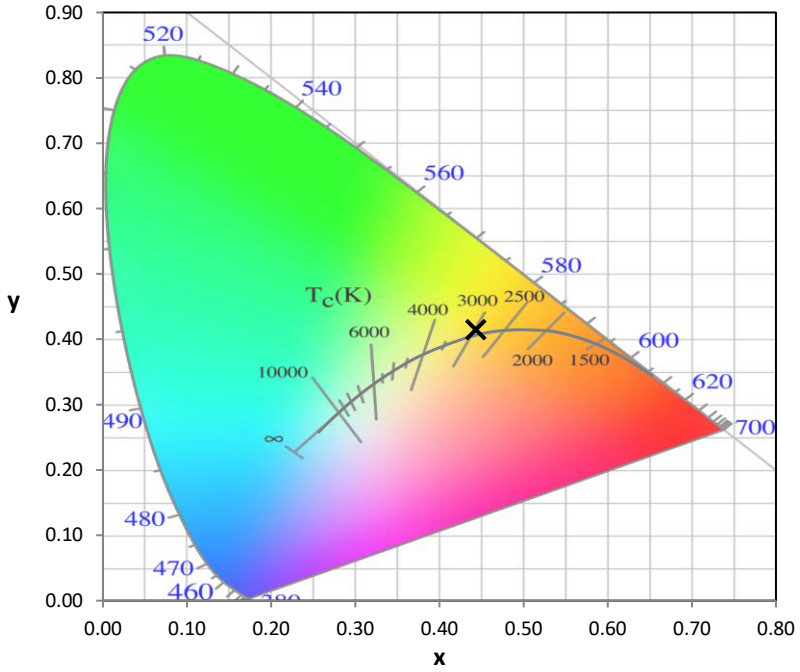
Stabilization Time:	29M
Operation Time:	1H 29M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-7

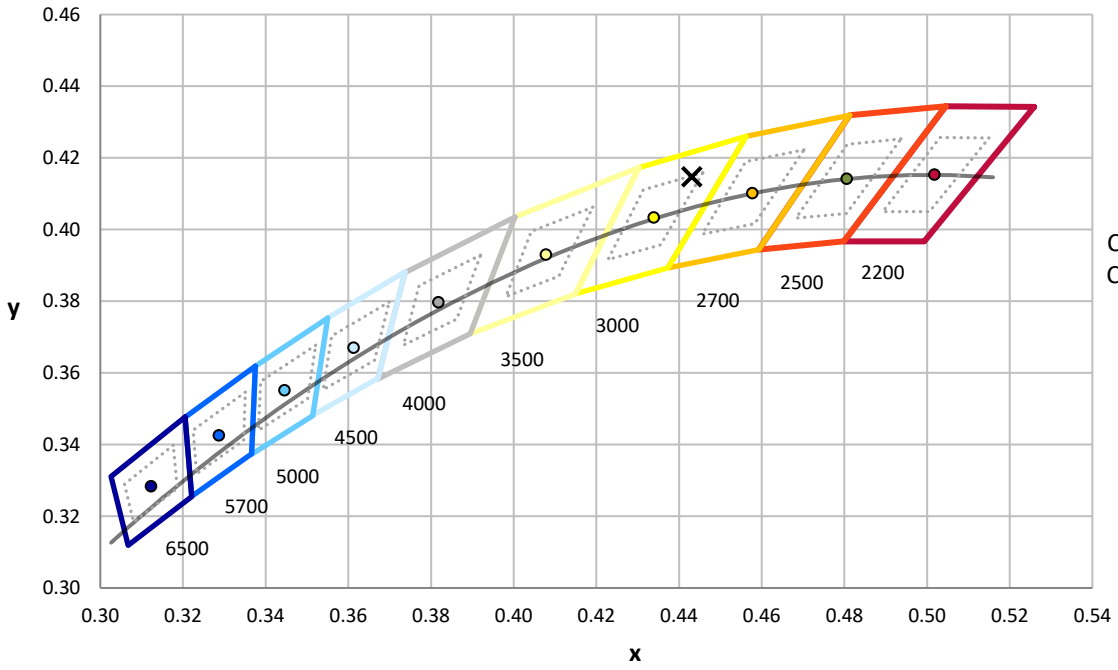
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

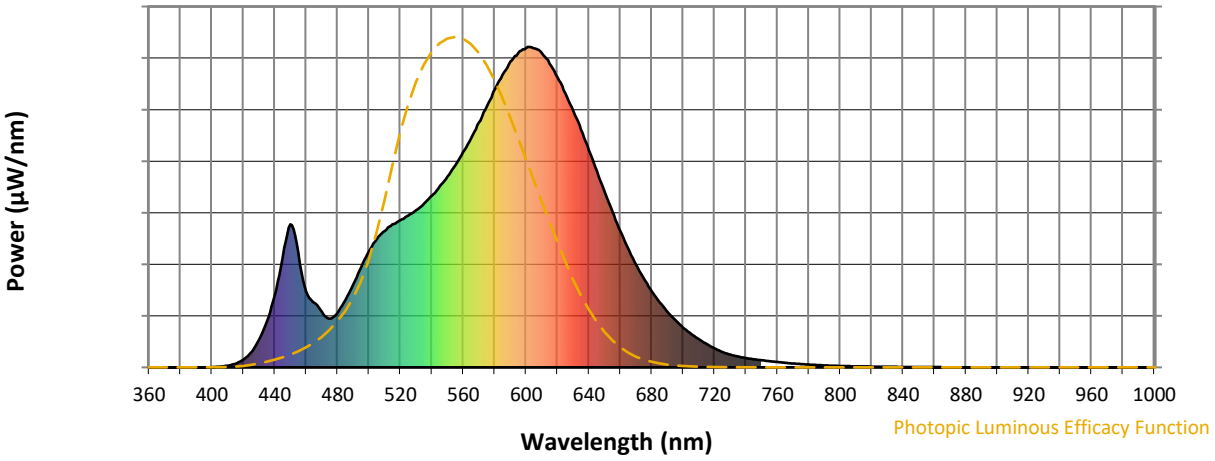


CCT = 2984K
CIE x = 0.4431
CIE y = 0.4147
Duv = 0.0033

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-7

Photopic Flux vs. Wavelength

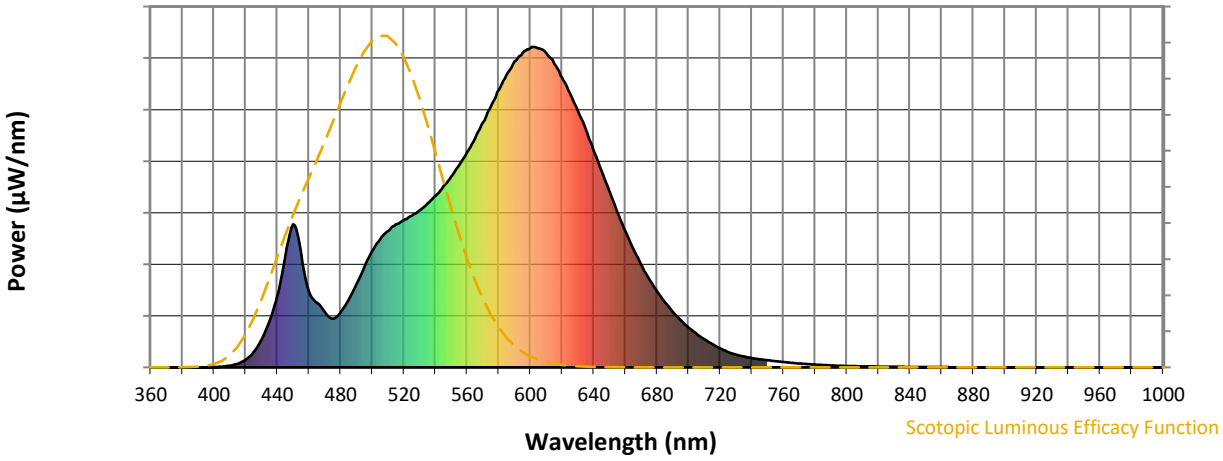


Photopic Lumens: NR

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

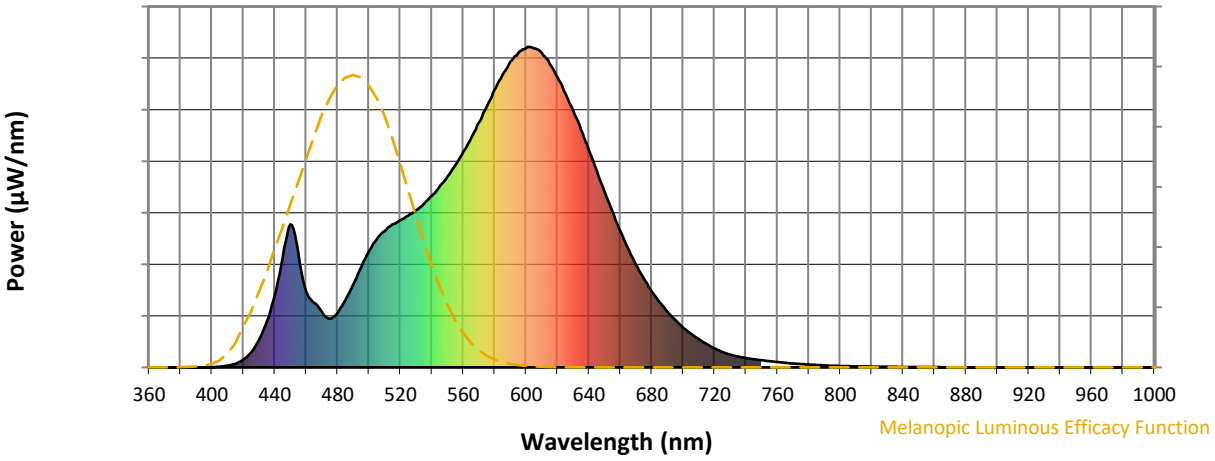


Scotopic Lumens: NR **S/P: 1.32**

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			

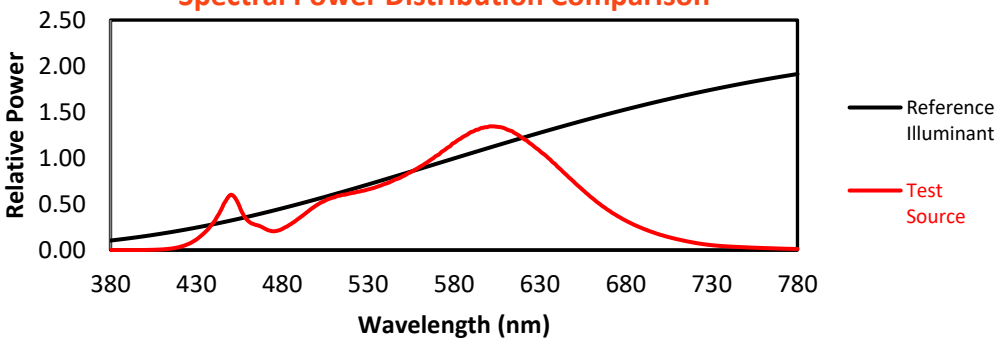
REPORT NUMBER: SP1-2407-176-7

TM-30-18

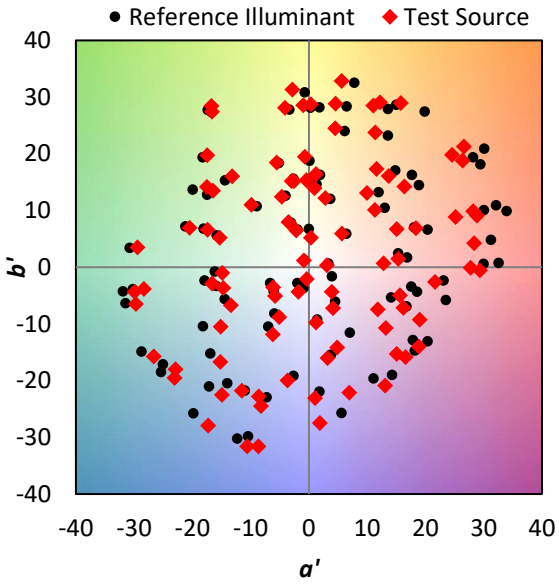
Summary

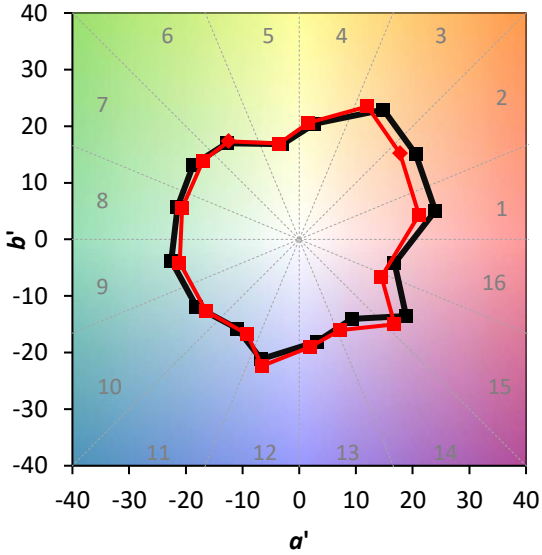
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R_g = 94.1
CIE R_a = 81.8
R_9 = -1.1

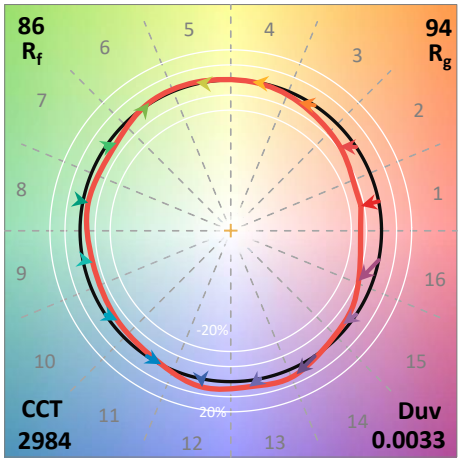
Spectral Power Distribution Comparison

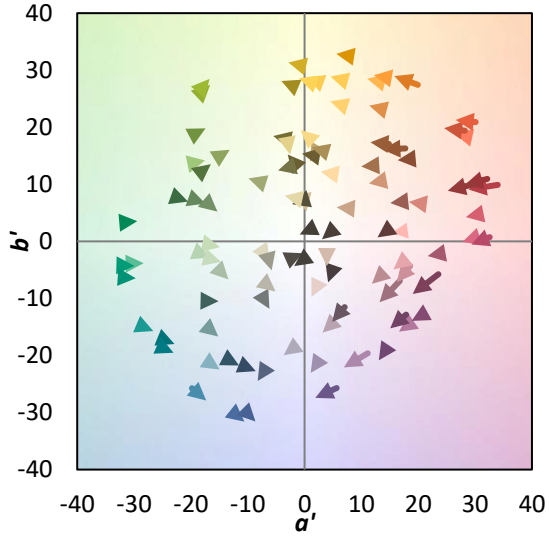


Color Vector Graphics







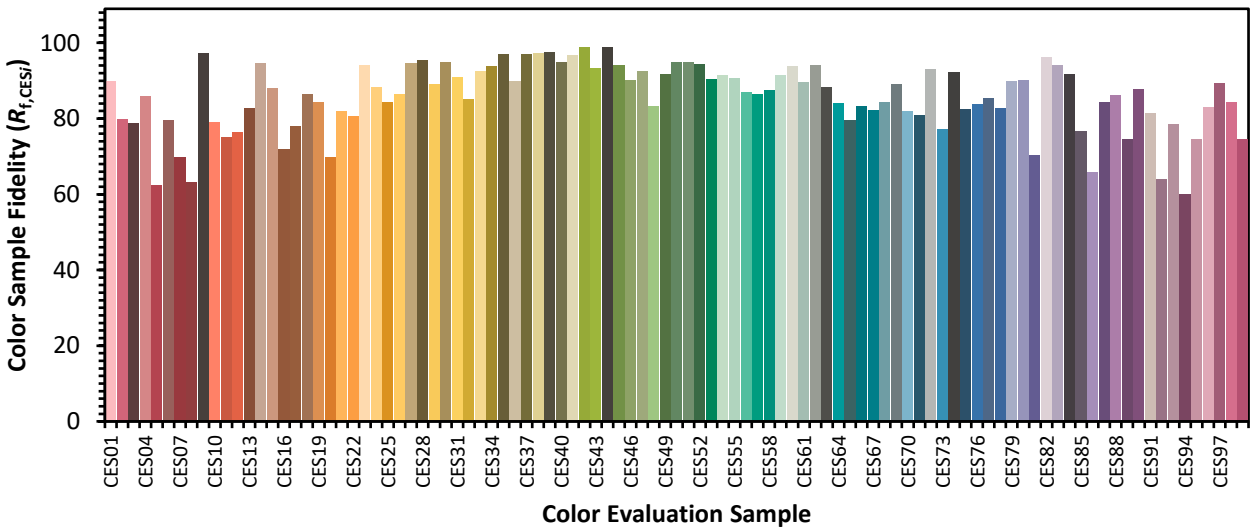


REPORT NUMBER: SP1-2407-176-7

TM-30-18

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

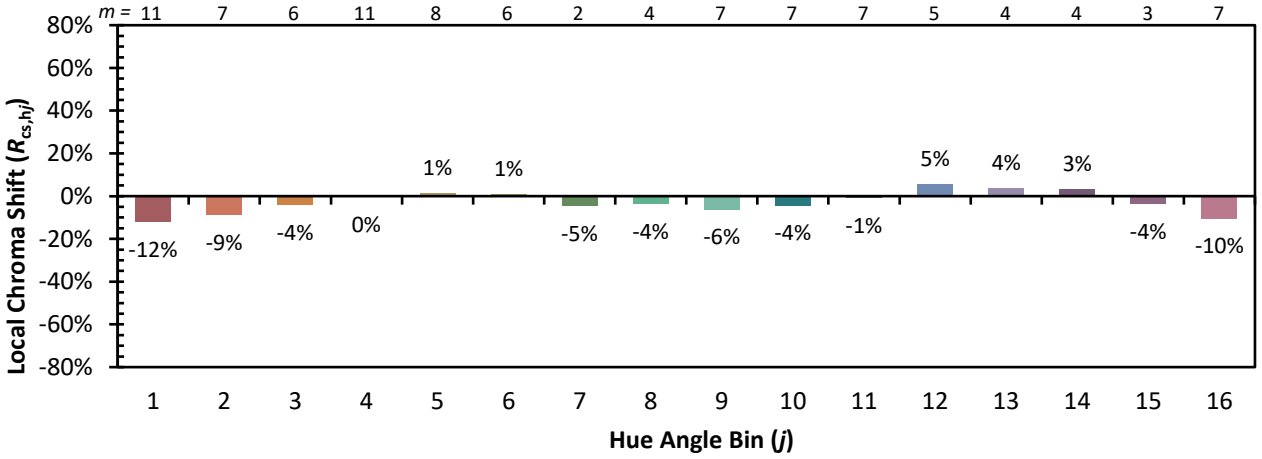
CES01 = 86	CES26 = 86	CES51 = 95	CES76 = 84
CES02 = 63	CES27 = 95	CES52 = 94	CES77 = 86
CES03 = 31	CES28 = 95	CES53 = 90	CES78 = 83
CES04 = 70	CES29 = 89	CES54 = 91	CES79 = 90
CES05 = 50	CES30 = 95	CES55 = 91	CES80 = 90
CES06 = 51	CES31 = 91	CES56 = 87	CES81 = 70
CES07 = 42	CES32 = 85	CES57 = 86	CES82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

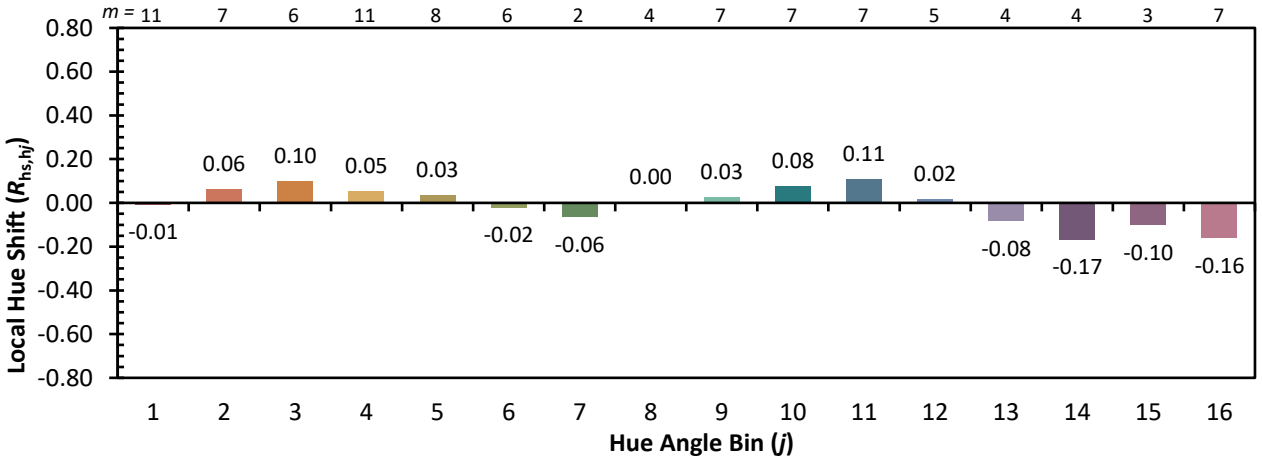


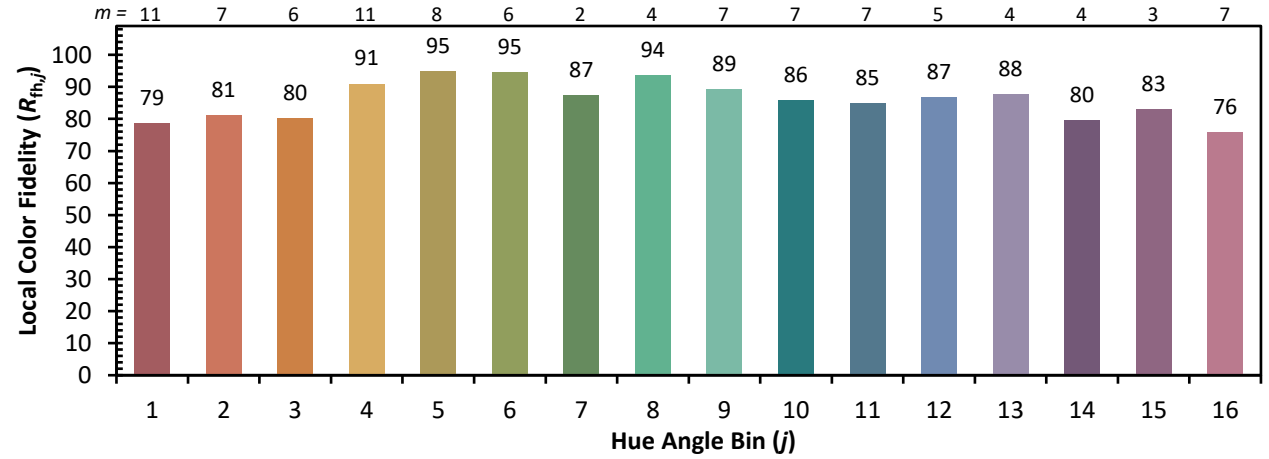
REPORT NUMBER: SP1-2407-176-7

TM-30-18

Color Rendition by Hue-Angle Bin



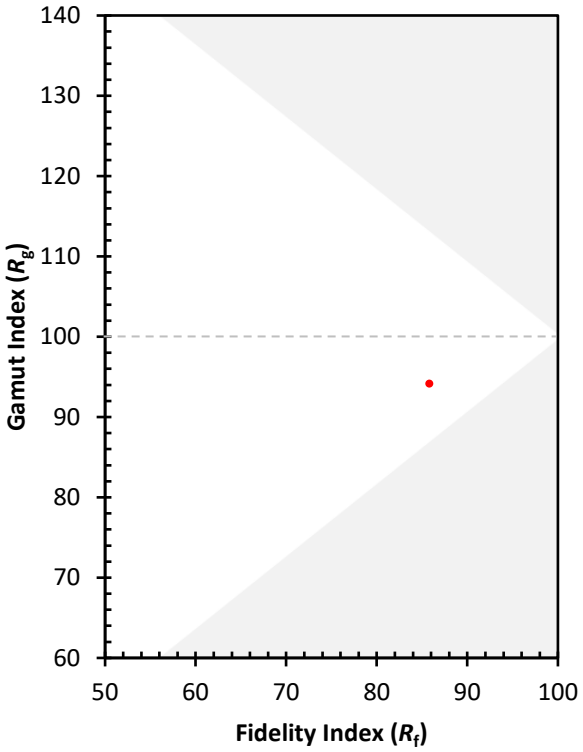


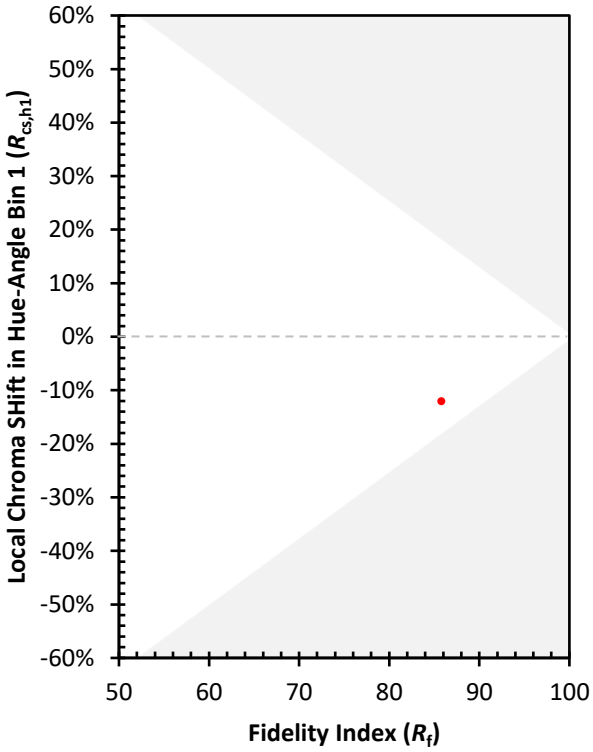


REPORT NUMBER: SP1-2407-176-7

TM-30-18

Measure Comparisons





(END OF REPORT)