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: P833947

Luminaire Tested: **TTN-D3-750-U-DL-UPL1**

Issue Date: 5/15/2024

Report Generated By 670246001

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Peachtree City, GA 30269

Scaled Data Report

Test Information

Test Method:	LM-79-08
Report Number:	P833947
	REPORT IS FROM IESNA LM-79-08 TEST DATA - UPLIGHT (G3-2308-121-4) AND
Test Lab:	INNOVATION CENTER
Issue Date:	5/15/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	McGRAW-EDISON
Catalog Number:	TTN-D3-750-U-DL-UPL1
Description:	TOPTIER NANO LED PARKING GARAGE LUMINAIRE WITH UPLIGHT
	5000K, 70 CRI LEDS AND DRIVE LANE DISTRIBUTION
Light Source:	-
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	6993.9 lumens
Efficiency:	N/A
Efficacy:	113.2 lumens/watt
Luminous Opening:	Vertical Cylinder (Dia: 0.71' x H: 0.1')
IES Classification:	Type IV - Short
BUG Rating:	B1 - U3 - G3

Input Watts (W):	61.8
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:	24 FT

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REPORT NUMBER: P833947
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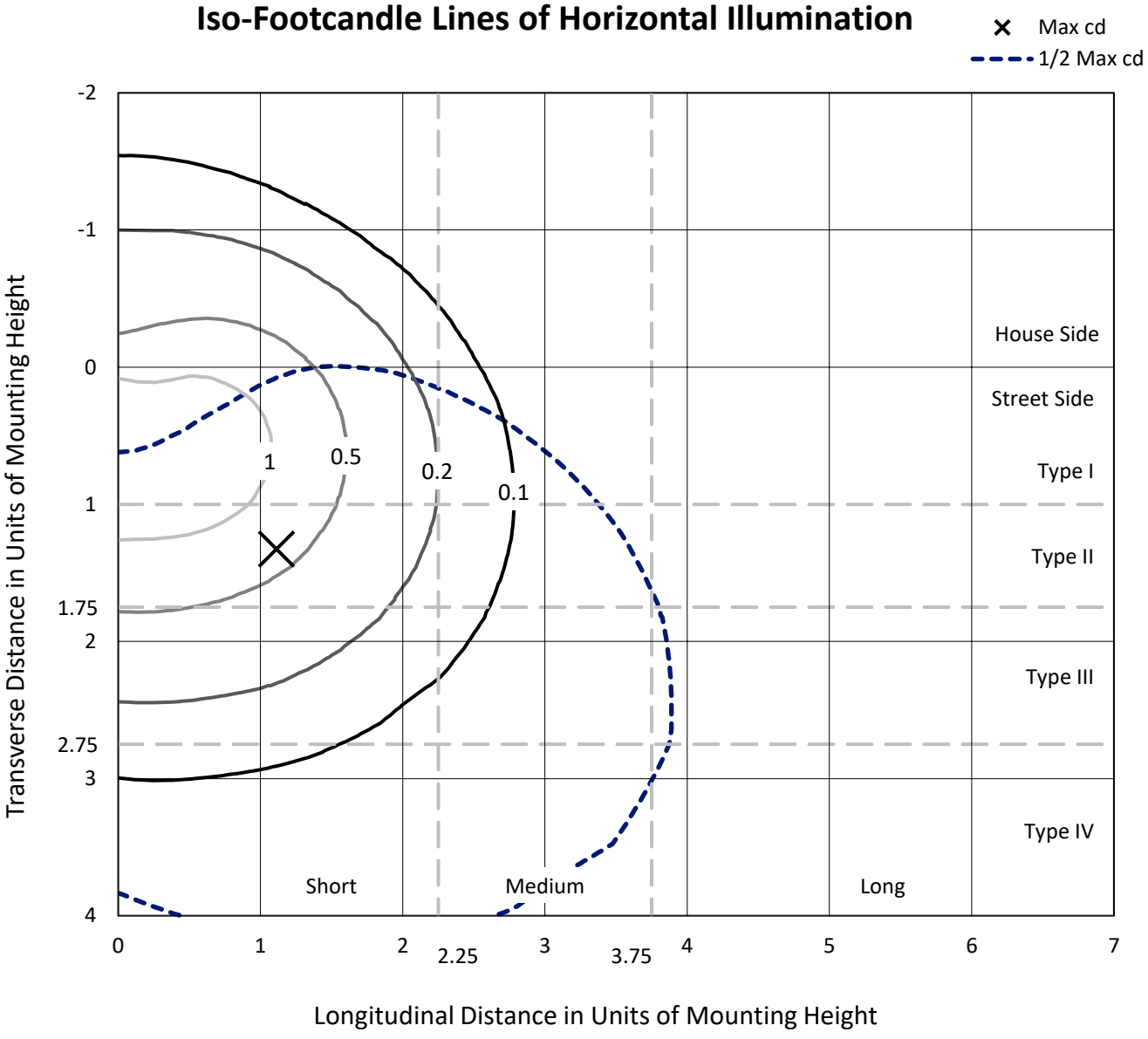
Iso-Footcandle Lines of Horizontal Illumination



Based on 25 foot mounting height. Maximum calculated value = 1.5 fc
Type IV - Short - N/A

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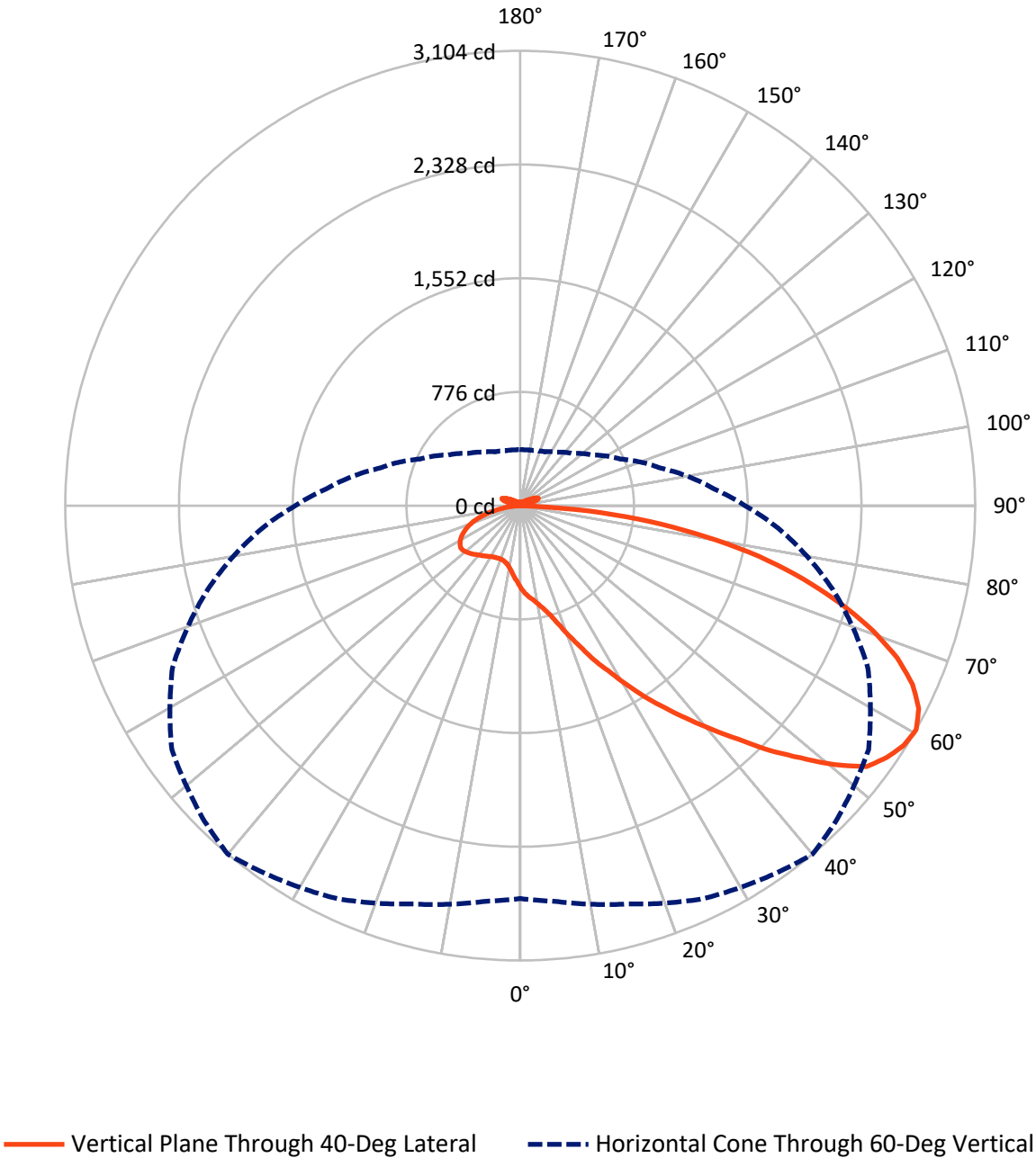
Luminous Intensity Polar Plot



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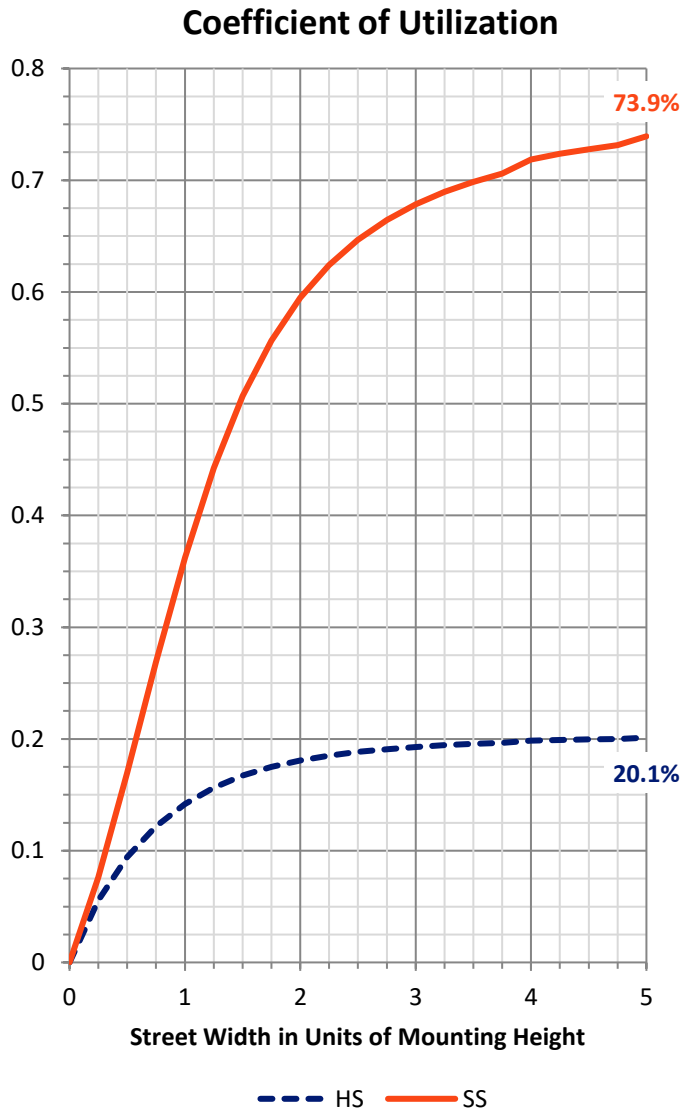
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1420.6	161.7	1582.3
	% Fixture	20.3	2.3	22.6
Street Side	Lumens	5249.8	161.7	5411.6
	% Fixture	75.1	2.3	77.4
Total	Lumens	6670.4	323.4	6993.9
	% Fixture	95.4	4.6	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	53.0	0.8
10°-20°	169.1	2.4
20°-30°	357.2	5.1
30°-40°	652.8	9.3
40°-50°	1060.8	15.2
50°-60°	1474.4	21.1
60°-70°	1528.4	21.9
70°-80°	1095.2	15.7
80°-90°	279.7	4.0
90°-100°	7.2	0.1
100°-110°	73.4	1.0
110°-120°	107.3	1.5
120°-130°	62.3	0.9
130°-140°	33.0	0.5
140°-150°	19.6	0.3
150°-160°	12.1	0.2
160°-170°	6.6	0.1
170°-180°	2.1	0.0
0°-90°	6670.4	95.4
0°-180°	6993.9	100.0



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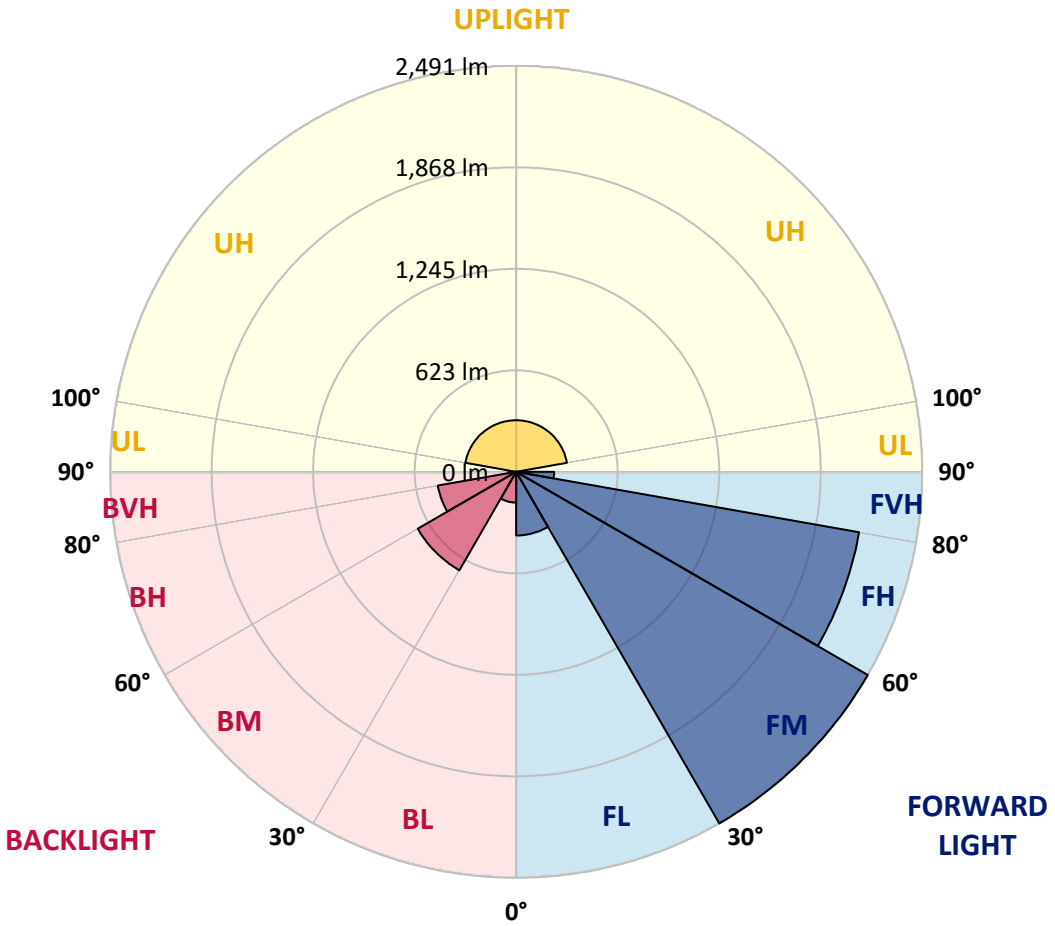
LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	390.3	5.6			
FM	(30°-60°)	2490.6	35.6			
FH	(60°-80°)	2136.1	30.5			G2/5000
FVH	(80°-90°)	232.8	3.3			G3/500
BL	(0°-30°)	188.9	2.7	B1/500		
BM	(30°-60°)	697.3	10.0	B1/1000		
BH	(60°-80°)	487.5	7.0	B1/500		G1/500
BVH	(80°-90°)	46.8	0.7			G1/100
UL	(90°-100°)	7.2	0.1		U1/10	
UH	(100°-180°)	316.2	4.5		U3/500	

BUG Rating: B1-U3-G3
Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	40°	45°	55°	65°	75°	85°
0°	561.8	561.8	561.8	561.8	561.8	*561.8*	561.8	561.8	561.8	561.8	561.8
2.5°	602.3	602.3	602.3	602.3	596.5	*596.5*	590.7	584.9	579.1	573.3	561.8
5°	654.4	654.4	648.6	642.8	631.3	*625.5*	619.7	608.1	596.5	584.9	567.6
7.5°	677.6	677.6	677.6	671.8	654.4	*648.6*	637.0	619.7	602.3	584.9	561.8
10°	718.1	718.1	712.3	706.5	689.2	*683.4*	671.8	648.6	619.7	590.7	561.8
12.5°	770.2	764.5	758.7	752.9	735.5	*723.9*	706.5	683.4	648.6	613.9	579.1
15°	834.0	822.4	822.4	810.8	793.4	*776.0*	764.5	729.7	695.0	648.6	602.3
17.5°	903.5	897.7	891.9	880.3	862.9	*851.3*	834.0	793.4	747.1	689.2	637.0
20°	990.3	978.7	984.5	967.2	949.8	*944.0*	915.0	868.7	810.8	747.1	683.4
22.5°	1094.6	1083.0	1083.0	1065.6	1054.0	*1042.4*	1013.5	961.4	886.1	816.6	735.5
25°	1210.4	1198.8	1198.8	1187.2	1175.6	*1164.1*	1129.3	1071.4	984.5	897.7	805.0
27.5°	1337.8	1326.2	1326.2	1320.4	1291.5	*1274.1*	1245.1	1181.4	1094.6	984.5	874.5
30°	1471.0	1459.4	1471.0	1459.4	1442.0	*1407.3*	1372.6	1303.1	1204.6	1083.0	949.8
32.5°	1575.2	1575.2	1581.0	1592.6	1581.0	*1552.1*	1511.5	1453.6	1320.4	1169.9	1019.3
35°	1696.9	1696.9	1708.4	1725.8	1720.0	*1691.1*	1650.5	1586.8	1447.8	1268.3	1094.6
37.5°	1830.1	1830.1	1841.6	1870.6	1859.0	*1841.6*	1812.7	1731.6	1575.2	1366.8	1175.6
40°	1974.9	1969.1	1980.6	2021.2	2027.0	*2003.8*	1969.1	1888.0	1708.4	1494.2	1262.5
42.5°	2119.6	2113.8	2137.0	2177.5	2183.3	*2177.5*	2142.8	2050.1	1847.4	1621.6	1349.4
45°	2264.4	2264.4	2299.2	2362.9	2391.8	*2380.2*	2351.3	2235.5	2021.2	1754.8	1465.2
47.5°	2415.0	2415.0	2461.3	2542.4	2577.2	*2571.4*	2559.8	2420.8	2189.1	1893.8	1563.7
50°	2530.8	2530.8	2606.1	2698.8	2756.7	*2779.8*	2721.9	2594.5	2333.9	2015.4	1644.7
52.5°	2646.6	2646.6	2721.9	2866.7	2924.6	*2959.4*	2884.1	2750.9	2496.1	2125.4	1720.0
55°	2704.6	2716.1	2820.4	2959.4	3052.0	*3034.7*	3063.6	2884.1	2600.3	2206.5	1766.4
57.5°	2710.4	2727.7	2843.6	2988.3	3092.6	*3086.8*	3092.6	2930.4	2640.9	2223.9	1772.2
60°	*2681.4*	*2710.4*	*2814.6*	*2959.4*	*3057.8*	*3104.2*	*3046.3*	*2901.5*	*2617.7*	*2206.5*	*1766.4*
62.5°	2611.9	2669.8	2779.8	2889.9	3034.7	*3052.0*	3005.7	2884.1	2554.0	2189.1	1737.4
65°	2455.5	2519.2	2675.6	2803.0	2918.8	*2942.0*	2889.9	2785.6	2490.3	2108.1	1644.7
67.5°	2299.2	2339.7	2472.9	2669.8	2750.9	*2774.1*	2756.7	2635.1	2380.2	1945.9	1534.7
70°	2119.6	2171.8	2276.0	2478.7	2559.8	*2554.0*	2606.1	2467.1	2212.3	1806.9	1418.9
72.5°	1876.4	1951.7	2055.9	2223.9	2322.3	*2287.6*	2368.7	2252.8	1992.2	1633.2	1262.5
75°	1592.6	1656.3	1789.5	1922.7	2032.8	*1992.2*	2055.9	1974.9	1737.4	1424.7	1083.0
77.5°	1274.1	1349.4	1471.0	1592.6	1667.9	*1667.9*	1696.9	1627.4	1442.0	1169.9	886.1
80°	944.0	1013.5	1123.5	1210.4	1279.9	*1285.7*	1314.6	1279.9	1111.9	909.2	677.6
82.5°	625.5	660.2	758.7	828.2	897.7	*891.9*	938.2	915.0	776.0	625.5	451.7
85°	266.4	289.6	370.6	428.6	492.3	*469.1*	532.8	527.0	417.0	301.2	202.7
87.5°	11.6	17.4	17.4	11.6	17.4	*5.8*	17.4	23.2	17.4	11.6	11.6
90°	2.8	2.8	3.3	3.3	3.3	*3.3*	3.3	3.3	3.3	3.3	2.8
92.5°	2.8	2.8	2.8	3.9	4.4	*4.2*	3.9	4.4	3.3	3.3	2.8
95°	3.3	3.3	3.9	5.0	6.1	*6.4*	6.6	6.6	3.9	3.9	3.3
97.5°	4.4	5.0	5.0	6.1	10.0	*14.2*	18.3	11.1	5.5	5.5	5.0
100°	7.2	7.7	7.7	13.8	29.3	*34.3*	39.3	28.2	14.4	10.5	7.7
102.5°	23.2	24.3	29.9	44.8	66.4	*63.4*	60.3	50.9	48.1	33.2	26.6
105°	59.2	58.7	63.1	74.7	93.0	*92.2*	91.3	84.1	76.4	65.8	60.9
107.5°	78.0	78.0	81.9	91.9	105.7	*114.6*	123.4	125.1	99.0	86.9	81.3
110°	88.0	88.0	91.3	99.6	117.9	*130.4*	142.8	141.6	122.3	107.3	100.2

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REPORT NUMBER: P833947
CATALOG NUMBER: TTN-D3-750-U-DL-UPL1

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	40°	45°	55°	65°	75°	85°
112.5°	90.2	90.7	95.2	107.9	127.8	*133.4*	138.9	133.9	126.2	119.5	114.0
115°	93.5	93.5	98.5	110.7	121.7	*124.0*	126.2	120.6	114.5	110.1	107.9
117.5°	92.4	94.1	95.2	101.8	109.0	*110.6*	112.3	109.6	101.3	97.9	96.8
120°	85.8	85.8	86.9	90.2	94.1	*94.9*	95.7	94.6	89.1	86.3	85.8
122.5°	76.4	76.9	76.4	78.0	80.8	*81.6*	82.4	81.3	76.9	75.8	75.8
125°	67.0	67.0	66.4	67.5	69.2	*68.9*	68.6	69.2	67.0	66.4	66.4
127.5°	60.3	59.8	58.7	59.2	59.8	*59.8*	59.8	60.3	58.1	58.7	59.2
130°	53.7	53.7	52.6	52.6	52.6	*52.0*	51.5	52.6	51.5	52.0	52.6
132.5°	47.6	47.6	45.9	45.4	45.4	*45.4*	45.4	45.9	45.4	46.5	47.6
135°	42.6	42.6	40.9	41.5	41.5	*41.2*	40.9	41.5	40.9	42.1	42.6
137.5°	38.7	38.7	37.6	37.6	37.6	*37.4*	37.1	37.6	37.6	38.2	39.3
140°	35.4	35.4	34.9	34.9	34.3	*34.6*	34.9	34.9	34.9	35.4	36.0
142.5°	33.8	33.2	32.6	32.1	32.6	*32.6*	32.6	32.6	32.1	32.6	33.8
145°	31.0	31.0	30.4	30.4	30.4	*30.7*	31.0	30.4	30.4	31.0	31.0
147.5°	29.3	29.3	28.8	29.3	29.3	*29.3*	29.3	29.3	28.8	29.3	29.3
150°	28.8	28.2	27.7	28.2	28.2	*28.0*	27.7	27.7	27.7	27.7	28.2
152.5°	27.1	27.1	26.6	27.1	26.6	*26.6*	26.6	26.6	26.6	26.6	27.1
155°	26.0	26.0	25.5	26.0	26.0	*26.0*	26.0	26.0	26.0	26.0	26.0
157.5°	24.9	25.5	24.9	24.9	24.9	*24.9*	24.9	24.9	24.9	24.9	25.5
160°	24.3	24.3	24.3	24.3	23.8	*23.8*	23.8	23.8	24.3	24.3	24.3
162.5°	23.8	23.8	23.8	23.8	23.2	*23.2*	23.2	23.2	23.2	23.8	23.8
165°	23.8	23.2	23.2	23.2	22.7	*22.7*	22.7	22.7	22.7	23.2	23.8
167.5°	22.7	22.7	22.7	22.7	22.7	*22.4*	22.1	22.1	22.7	22.7	22.7
170°	22.7	22.7	22.1	22.1	22.1	*22.1*	22.1	22.1	22.1	22.1	22.1
172.5°	22.7	22.7	22.7	22.7	22.1	*22.1*	22.1	22.1	22.1	22.1	22.7
175°	22.7	22.7	22.7	22.7	22.1	*22.1*	22.1	22.1	22.7	22.7	22.7
177.5°	22.7	22.7	22.7	22.7	22.1	*22.4*	22.7	22.7	22.7	22.7	22.7
180°	22.7	22.7	22.7	22.7	22.7	*22.7*	22.7	22.7	22.7	22.7	22.7

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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	561.8	561.8	561.8	561.8	561.8	561.8	561.8	561.8	561.8	561.8	561.8
2.5°	561.8	556.0	544.4	538.6	532.8	521.2	521.2	515.4	515.4	515.4	509.6
5°	561.8	550.2	538.6	521.2	509.6	498.1	486.5	474.9	469.1	469.1	463.3
7.5°	550.2	538.6	521.2	503.8	486.5	463.3	451.7	428.6	422.8	417.0	417.0
10°	550.2	538.6	509.6	486.5	463.3	440.1	422.8	399.6	382.2	376.4	376.4
12.5°	556.0	538.6	509.6	480.7	451.7	422.8	399.6	376.4	359.1	347.5	347.5
15°	579.1	556.0	521.2	480.7	445.9	411.2	388.0	359.1	341.7	330.1	330.1
17.5°	608.1	584.9	532.8	486.5	445.9	405.4	376.4	347.5	330.1	318.5	312.7
20°	648.6	613.9	556.0	492.3	445.9	405.4	370.6	341.7	318.5	306.9	306.9
22.5°	695.0	654.4	579.1	503.8	451.7	405.4	370.6	335.9	312.7	301.2	301.2
25°	752.9	700.8	613.9	527.0	463.3	411.2	370.6	335.9	312.7	301.2	301.2
27.5°	816.6	758.7	648.6	550.2	474.9	417.0	370.6	335.9	312.7	301.2	301.2
30°	874.5	810.8	683.4	573.3	492.3	422.8	376.4	341.7	318.5	306.9	301.2
32.5°	938.2	857.1	718.1	596.5	503.8	434.4	382.2	347.5	318.5	306.9	306.9
35°	1001.9	915.0	752.9	625.5	521.2	445.9	388.0	353.3	324.3	312.7	312.7
37.5°	1071.4	978.7	793.4	648.6	538.6	457.5	399.6	359.1	330.1	318.5	318.5
40°	1152.5	1042.4	834.0	677.6	556.0	469.1	405.4	370.6	341.7	330.1	330.1
42.5°	1227.8	1100.4	874.5	700.8	573.3	480.7	417.0	376.4	353.3	341.7	341.7
45°	1303.1	1169.9	915.0	729.7	590.7	498.1	428.6	393.8	364.9	353.3	353.3
47.5°	1389.9	1233.6	961.4	752.9	608.1	509.6	440.1	405.4	376.4	370.6	364.9
50°	1459.4	1279.9	990.3	776.0	619.7	521.2	451.7	411.2	388.0	376.4	376.4
52.5°	1523.1	1326.2	1013.5	787.6	625.5	527.0	463.3	422.8	399.6	388.0	388.0
55°	1557.9	1343.6	1030.9	787.6	631.3	532.8	463.3	422.8	399.6	393.8	388.0
57.5°	1557.9	1343.6	1019.3	776.0	619.7	521.2	457.5	417.0	399.6	388.0	388.0
60°	*1534.7*	*1326.2*	*990.3*	*752.9*	*602.3*	*503.8*	*445.9*	*405.4*	*388.0*	*382.2*	*382.2*
62.5°	1500.0	1297.3	967.2	723.9	579.1	480.7	428.6	388.0	376.4	376.4	370.6
65°	1407.3	1210.4	915.0	683.4	544.4	451.7	405.4	370.6	359.1	353.3	347.5
67.5°	1308.8	1129.3	834.0	637.0	498.1	422.8	376.4	347.5	330.1	330.1	324.3
70°	1210.4	1042.4	758.7	573.3	445.9	388.0	341.7	312.7	301.2	301.2	301.2
72.5°	1077.2	932.4	671.8	503.8	393.8	341.7	306.9	278.0	272.2	272.2	266.4
75°	920.8	793.4	567.6	428.6	330.1	289.6	260.6	231.7	231.7	231.7	231.7
77.5°	752.9	642.8	451.7	341.7	260.6	231.7	214.3	191.1	191.1	191.1	191.1
80°	567.6	474.9	330.1	249.0	191.1	167.9	156.4	144.8	150.6	150.6	144.8
82.5°	370.6	312.7	208.5	156.4	121.6	110.0	110.0	98.5	104.2	104.2	104.2
85°	162.2	139.0	86.9	69.5	57.9	57.9	57.9	52.1	57.9	57.9	57.9
87.5°	11.6	11.6	11.6	11.6	11.6	11.6	11.6	0.0	5.8	11.6	5.8
90°	2.8	2.8	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.8	2.8
92.5°	2.8	2.8	3.3	3.3	4.4	3.9	4.4	3.9	2.8	2.8	2.8
95°	3.3	3.3	3.9	3.9	6.6	6.6	6.1	5.0	3.9	3.3	3.3
97.5°	4.4	5.0	5.5	5.5	11.1	18.3	10.0	6.1	5.0	5.0	4.4
100°	7.7	7.7	10.5	14.4	28.2	39.3	29.3	13.8	7.7	7.7	7.2
102.5°	25.5	26.6	33.2	48.1	50.9	60.3	66.4	44.8	29.9	24.3	23.2
105°	60.9	60.9	65.8	76.4	84.1	91.3	93.0	74.7	63.1	58.7	59.2
107.5°	80.8	81.3	86.9	99.0	125.1	123.4	105.7	91.9	81.9	78.0	78.0
110°	99.0	100.2	107.3	122.3	141.6	142.8	117.9	99.6	91.3	88.0	88.0

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

Scaled Data Report

REPORT NUMBER: P833947
CATALOG NUMBER: TTN-D3-750-U-DL-UPL1

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	112.9	114.0	119.5	126.2	133.9	138.9	127.8	107.9	95.2	90.7	90.2
115°	109.0	107.9	110.1	114.5	120.6	126.2	121.7	110.7	98.5	93.5	93.5
117.5°	95.2	96.8	97.9	101.3	109.6	112.3	109.0	101.8	95.2	94.1	92.4
120°	84.7	85.8	86.3	89.1	94.6	95.7	94.1	90.2	86.9	85.8	85.8
122.5°	74.7	75.8	75.8	76.9	81.3	82.4	80.8	78.0	76.4	76.9	76.4
125°	65.8	66.4	66.4	67.0	69.2	68.6	69.2	67.5	66.4	67.0	67.0
127.5°	58.7	59.2	58.7	58.1	60.3	59.8	59.8	59.2	58.7	59.8	60.3
130°	53.1	52.6	52.0	51.5	52.6	51.5	52.6	52.6	52.6	53.7	53.7
132.5°	47.6	47.6	46.5	45.4	45.9	45.4	45.4	45.4	45.9	47.6	47.6
135°	42.6	42.6	42.1	40.9	41.5	40.9	41.5	41.5	40.9	42.6	42.6
137.5°	39.8	39.3	38.2	37.6	37.6	37.1	37.6	37.6	37.6	38.7	38.7
140°	36.0	36.0	35.4	34.9	34.9	34.9	34.3	34.9	34.9	35.4	35.4
142.5°	33.8	33.8	32.6	32.1	32.6	32.6	32.6	32.1	32.6	33.2	33.8
145°	31.5	31.0	31.0	30.4	30.4	31.0	30.4	30.4	30.4	31.0	31.0
147.5°	29.9	29.3	29.3	28.8	29.3	29.3	29.3	29.3	28.8	29.3	29.3
150°	28.2	28.2	27.7	27.7	27.7	27.7	28.2	28.2	27.7	28.2	28.8
152.5°	27.7	27.1	26.6	26.6	26.6	26.6	26.6	27.1	26.6	27.1	27.1
155°	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	25.5	26.0	26.0
157.5°	25.5	25.5	24.9	24.9	24.9	24.9	24.9	24.9	24.9	25.5	24.9
160°	24.9	24.3	24.3	24.3	23.8	23.8	23.8	24.3	24.3	24.3	24.3
162.5°	24.3	23.8	23.8	23.2	23.2	23.2	23.2	23.8	23.8	23.8	23.8
165°	23.2	23.8	23.2	22.7	22.7	22.7	22.7	23.2	23.2	23.2	23.8
167.5°	23.2	22.7	22.7	22.7	22.1	22.1	22.7	22.7	22.7	22.7	22.7
170°	22.7	22.1	22.1	22.1	22.1	22.1	22.1	22.1	22.1	22.7	22.7
172.5°	22.7	22.7	22.1	22.1	22.1	22.1	22.1	22.7	22.7	22.7	22.7
175°	22.1	22.7	22.7	22.7	22.1	22.1	22.1	22.7	22.7	22.7	22.7
177.5°	22.7	22.7	22.7	22.7	22.7	22.7	22.1	22.7	22.7	22.7	22.7
180°	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7

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

MCGRAW EDISON

Report Number: SP1-2411-284-3

Test Date: 11/21/2024

Luminaire Tested: TTN-D0-750-U-WQ

Data in this report applies to TT and TTN families of products

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

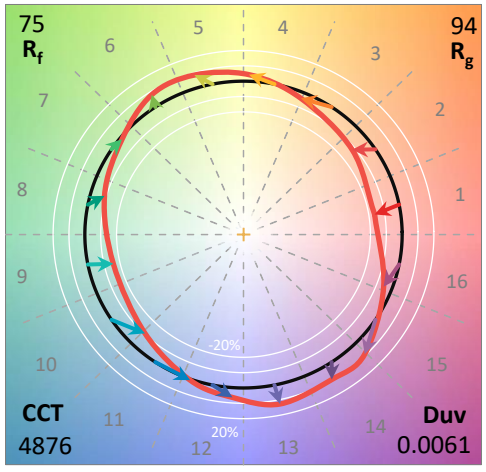
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2411-284-3
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	11/21/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	MCGRAW EDISON
Catalog Number:	**TTN-D0-750-U-WQ**
Description:	TOPTIER NANO LED PARKING GARAGE LUMINAIRE. 5000K, 70 CRI LEDS AND WIDE DISTRIBUTION

Spectral Parameters

CCT (K):	4876
CIE u':	0.2086
CIE v':	0.4932
Duv:	0.0061
CIE x:	0.3502
CIE y:	0.3680
CIE z:	0.2818
Peak Wavelength (nm):	451
Dominant Wavelength (nm):	569
Purity:	15.51324
Rf:	74.6
Rg:	94.4

CRI (Ra):	72.6				
R1:	69.5	R9:	-24.6		
R2:	77.0	R10:	44.8		
R3:	82.2	R11:	68.2		
R4:	72.6	R12:	36.1		
R5:	69.3	R13:	70.5		
R6:	67.6	R14:	89.9		
R7:	83.7	R15:	63.1		
R8:	58.6				



Test Conditions

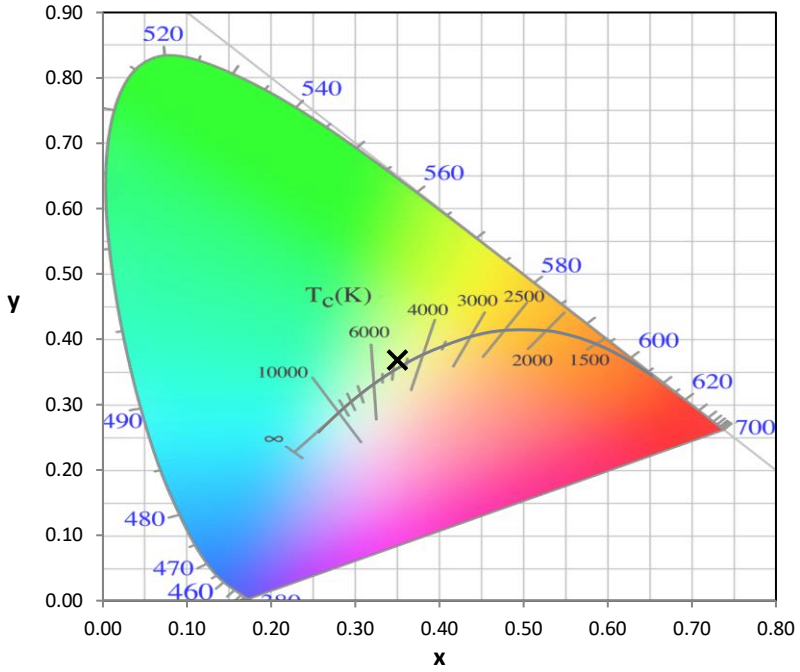
Stabilization Time:	51M
Operation Time:	1H 51M
Sphere Temperature (°C):	24.9

REPORT NUMBER: SP1-2411-284-3

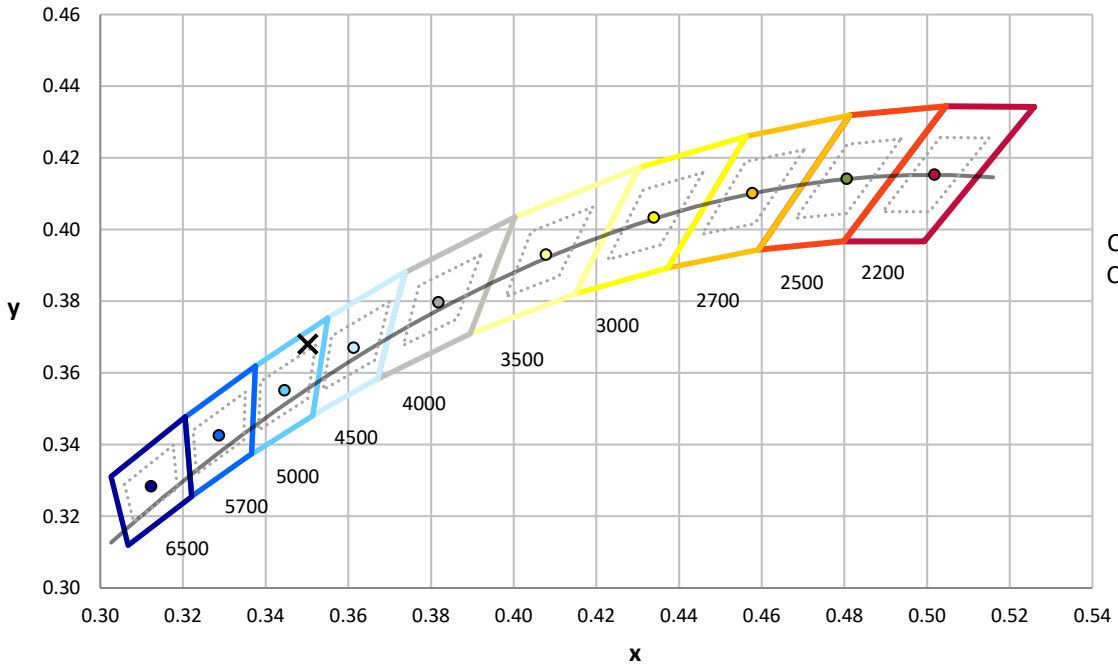
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085	10/22/2024	10/22/2025
Room Thermometer	IN0046	10/22/2024	10/22/2025

REPORT NUMBER: SP1-2411-284-3

CIE 1931 Chromaticity Diagram



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

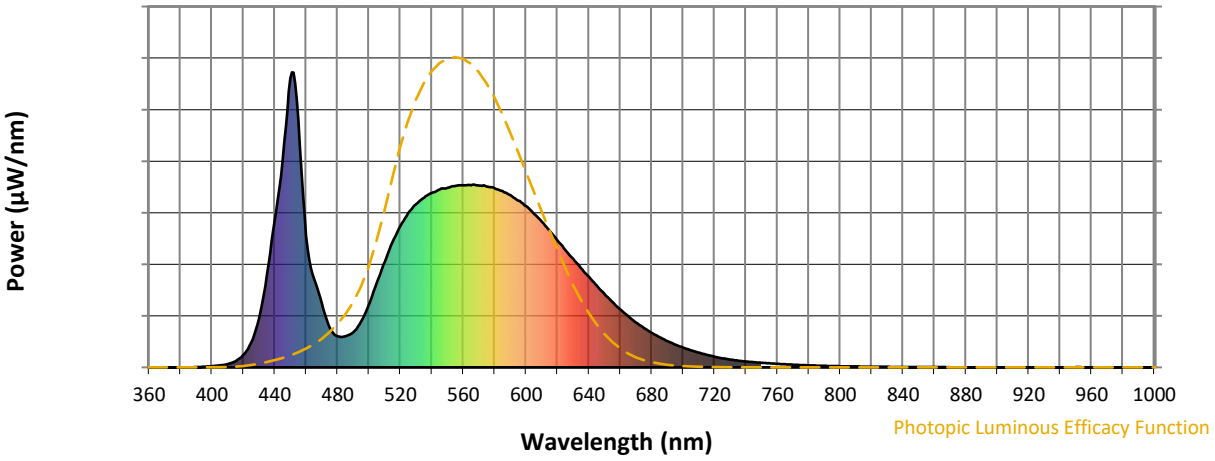


CCT = 4876K
CIE x = 0.3502
CIE y = 0.3680
Duv = 0.0061

Point lies inside the ANSI 5000K 7-step quadrangle

REPORT NUMBER: SP1-2411-284-3

Photopic Flux vs. Wavelength

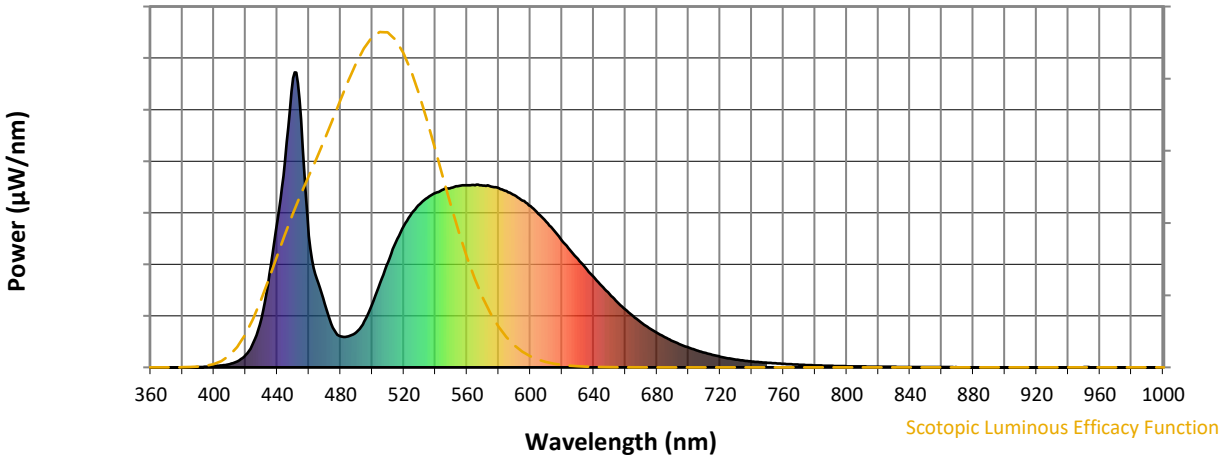


Photopic Lumens: NR

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	119	NR	620	430	NR	750	16	NR	880	0	NR
365	0	NR	495	156	NR	625	398	NR	755	14	NR	885	0	NR
370	0	NR	500	214	NR	630	368	NR	760	12	NR	890	0	NR
375	0	NR	505	286	NR	635	336	NR	765	11	NR	895	0	NR
380	0	NR	510	357	NR	640	306	NR	770	9	NR	900	0	NR
385	0	NR	515	425	NR	645	276	NR	775	8	NR	905	0	NR
390	1	NR	520	480	NR	650	248	NR	780	7	NR	910	0	NR
395	2	NR	525	523	NR	655	221	NR	785	6	NR	915	0	NR
400	4	NR	530	554	NR	660	196	NR	790	5	NR	920	0	NR
405	7	NR	535	575	NR	665	173	NR	795	4	NR	925	0	NR
410	11	NR	540	592	NR	670	152	NR	800	4	NR	930	0	NR
415	21	NR	545	603	NR	675	133	NR	805	3	NR	935	0	NR
420	42	NR	550	609	NR	680	117	NR	810	3	NR	940	0	NR
425	85	NR	555	615	NR	685	102	NR	815	3	NR	945	0	NR
430	165	NR	560	617	NR	690	89	NR	820	2	NR	950	1	NR
435	316	NR	565	617	NR	695	77	NR	825	2	NR	955	0	NR
440	497	NR	570	616	NR	700	67	NR	830	2	NR	960	0	NR
445	702	NR	575	613	NR	705	58	NR	835	2	NR	965	0	NR
450	981	NR	580	607	NR	710	50	NR	840	1	NR	970	0	NR
455	840	NR	585	598	NR	715	43	NR	845	1	NR	975	0	NR
460	446	NR	590	583	NR	720	36	NR	850	1	NR	980	0	NR
465	300	NR	595	566	NR	725	31	NR	855	1	NR	985	0	NR
470	215	NR	600	546	NR	730	26	NR	860	1	NR	990	0	NR
475	135	NR	605	521	NR	735	23	NR	865	1	NR	995	0	NR
480	105	NR	610	494	NR	740	20	NR	870	1	NR	1000	0	NR
485	106	NR	615	463	NR	745	18	NR	875	0	NR			

REPORT NUMBER: SP1-2411-284-3

Scotopic Flux vs. Wavelength

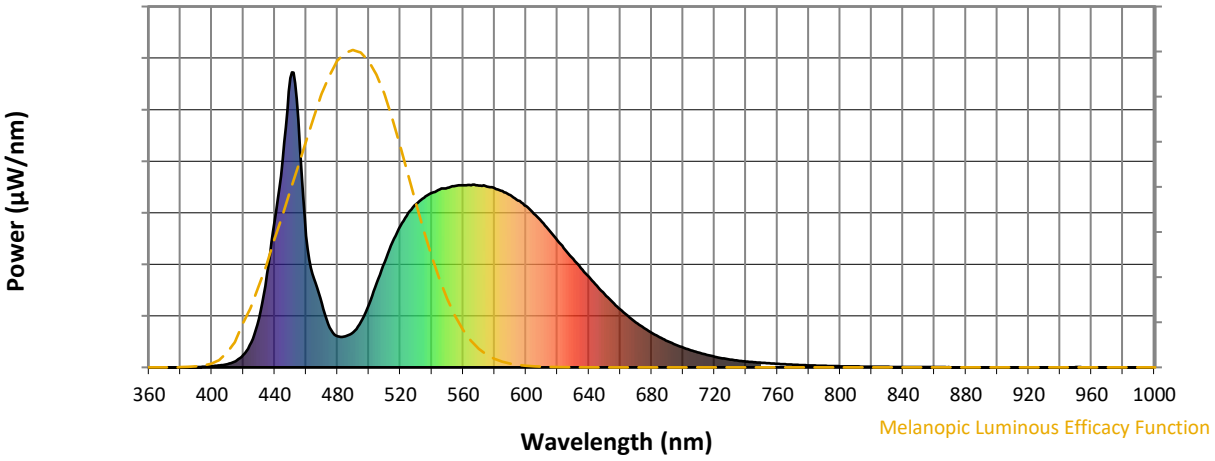


Scotopic Lumens: NR **S/P: 1.74**

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	119	NR	620	430	NR	750	16	NR	880	0	NR
365	0	NR	495	156	NR	625	398	NR	755	14	NR	885	0	NR
370	0	NR	500	214	NR	630	368	NR	760	12	NR	890	0	NR
375	0	NR	505	286	NR	635	336	NR	765	11	NR	895	0	NR
380	0	NR	510	357	NR	640	306	NR	770	9	NR	900	0	NR
385	0	NR	515	425	NR	645	276	NR	775	8	NR	905	0	NR
390	1	NR	520	480	NR	650	248	NR	780	7	NR	910	0	NR
395	2	NR	525	523	NR	655	221	NR	785	6	NR	915	0	NR
400	4	NR	530	554	NR	660	196	NR	790	5	NR	920	0	NR
405	7	NR	535	575	NR	665	173	NR	795	4	NR	925	0	NR
410	11	NR	540	592	NR	670	152	NR	800	4	NR	930	0	NR
415	21	NR	545	603	NR	675	133	NR	805	3	NR	935	0	NR
420	42	NR	550	609	NR	680	117	NR	810	3	NR	940	0	NR
425	85	NR	555	615	NR	685	102	NR	815	3	NR	945	0	NR
430	165	NR	560	617	NR	690	89	NR	820	2	NR	950	1	NR
435	316	NR	565	617	NR	695	77	NR	825	2	NR	955	0	NR
440	497	NR	570	616	NR	700	67	NR	830	2	NR	960	0	NR
445	702	NR	575	613	NR	705	58	NR	835	2	NR	965	0	NR
450	981	NR	580	607	NR	710	50	NR	840	1	NR	970	0	NR
455	840	NR	585	598	NR	715	43	NR	845	1	NR	975	0	NR
460	446	NR	590	583	NR	720	36	NR	850	1	NR	980	0	NR
465	300	NR	595	566	NR	725	31	NR	855	1	NR	985	0	NR
470	215	NR	600	546	NR	730	26	NR	860	1	NR	990	0	NR
475	135	NR	605	521	NR	735	23	NR	865	1	NR	995	0	NR
480	105	NR	610	494	NR	740	20	NR	870	1	NR	1000	0	NR
485	106	NR	615	463	NR	745	18	NR	875	0	NR			

REPORT NUMBER: SP1-2411-284-3

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 3.51**

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	119	NR	620	430	NR	750	16	NR	880	0	NR
365	0	NR	495	156	NR	625	398	NR	755	14	NR	885	0	NR
370	0	NR	500	214	NR	630	368	NR	760	12	NR	890	0	NR
375	0	NR	505	286	NR	635	336	NR	765	11	NR	895	0	NR
380	0	NR	510	357	NR	640	306	NR	770	9	NR	900	0	NR
385	0	NR	515	425	NR	645	276	NR	775	8	NR	905	0	NR
390	1	NR	520	480	NR	650	248	NR	780	7	NR	910	0	NR
395	2	NR	525	523	NR	655	221	NR	785	6	NR	915	0	NR
400	4	NR	530	554	NR	660	196	NR	790	5	NR	920	0	NR
405	7	NR	535	575	NR	665	173	NR	795	4	NR	925	0	NR
410	11	NR	540	592	NR	670	152	NR	800	4	NR	930	0	NR
415	21	NR	545	603	NR	675	133	NR	805	3	NR	935	0	NR
420	42	NR	550	609	NR	680	117	NR	810	3	NR	940	0	NR
425	85	NR	555	615	NR	685	102	NR	815	3	NR	945	0	NR
430	165	NR	560	617	NR	690	89	NR	820	2	NR	950	1	NR
435	316	NR	565	617	NR	695	77	NR	825	2	NR	955	0	NR
440	497	NR	570	616	NR	700	67	NR	830	2	NR	960	0	NR
445	702	NR	575	613	NR	705	58	NR	835	2	NR	965	0	NR
450	981	NR	580	607	NR	710	50	NR	840	1	NR	970	0	NR
455	840	NR	585	598	NR	715	43	NR	845	1	NR	975	0	NR
460	446	NR	590	583	NR	720	36	NR	850	1	NR	980	0	NR
465	300	NR	595	566	NR	725	31	NR	855	1	NR	985	0	NR
470	215	NR	600	546	NR	730	26	NR	860	1	NR	990	0	NR
475	135	NR	605	521	NR	735	23	NR	865	1	NR	995	0	NR
480	105	NR	610	494	NR	740	20	NR	870	1	NR	1000	0	NR
485	106	NR	615	463	NR	745	18	NR	875	0	NR			

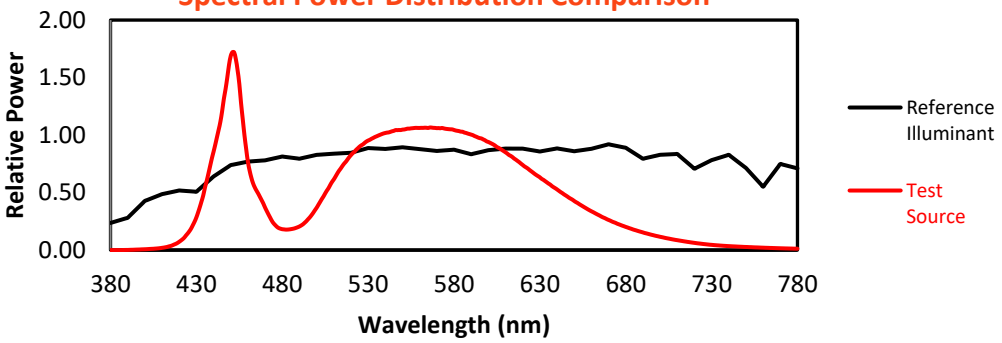
REPORT NUMBER: SP1-2411-284-3

TM-30-18

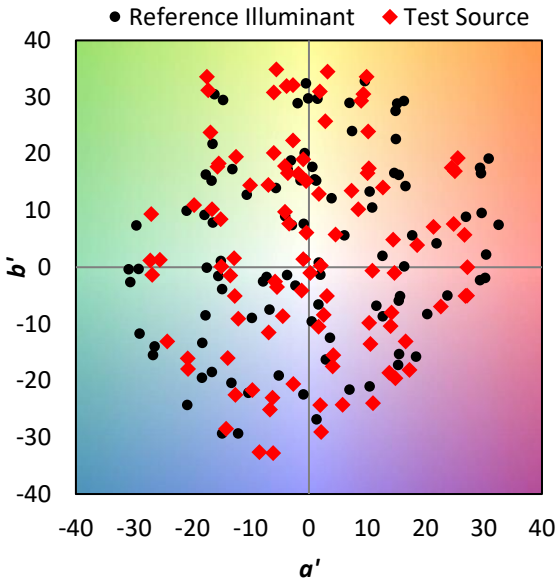
Summary

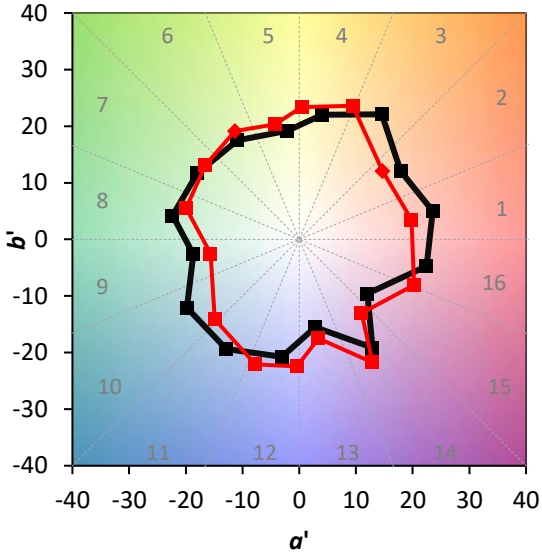
R_f = 74.6
R_g = 94.4
CIE R_a = 72.6
R_9 = -24.6

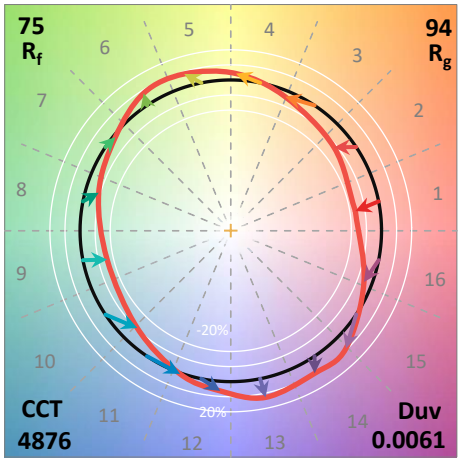
Spectral Power Distribution Comparison

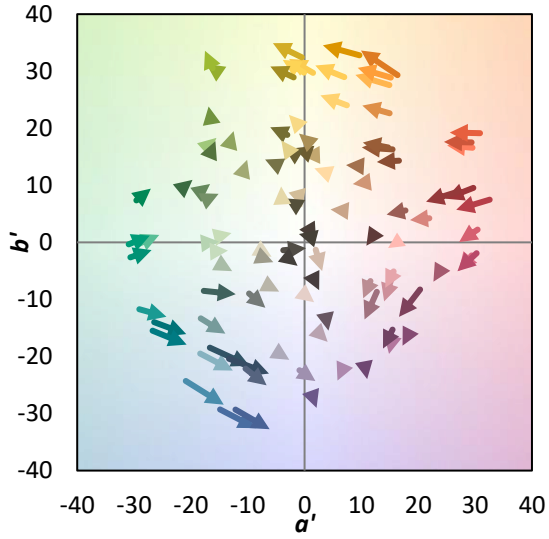


Color Vector Graphics







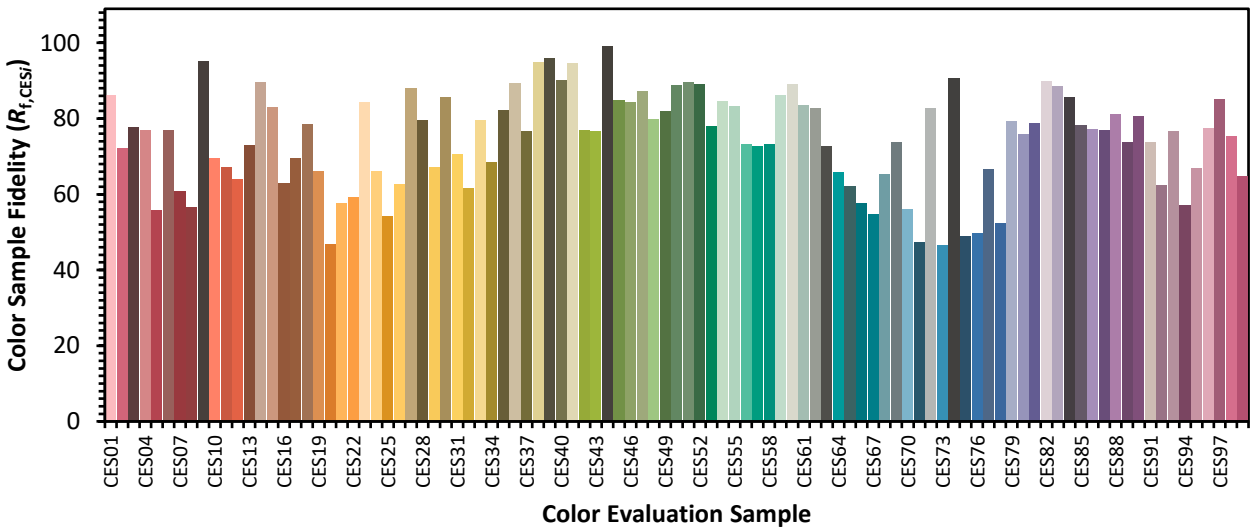


REPORT NUMBER: SP1-2411-284-3

TM-30-18

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

CES01 = 85	CES26 = 63	CES51 = 90	CES76 = 50
CES02 = 59	CES27 = 88	CES52 = 89	CES77 = 67
CES03 = 30	CES28 = 80	CES53 = 78	CES78 = 52
CES04 = 69	CES29 = 67	CES54 = 85	CES79 = 79
CES05 = 46	CES30 = 86	CES55 = 83	CES80 = 76
CES06 = 50	CES31 = 70	CES56 = 73	CES81 = 79
CES07 = 39	CES32 = 62	CES57 = 73	CES82 = 90
CES08 = 38	CES33 = 80	CES58 = 73	CES83 = 89
CES09 = 29	CES34 = 69	CES59 = 86	CES84 = 86
CES10 = 72	CES35 = 82	CES60 = 89	CES85 = 78
CES11 = 55	CES36 = 89	CES61 = 83	CES86 = 77
CES12 = 61	CES37 = 77	CES62 = 83	CES87 = 77
CES13 = 41	CES38 = 95	CES63 = 73	CES88 = 81
CES14 = 74	CES39 = 96	CES64 = 66	CES89 = 74
CES15 = 70	CES40 = 90	CES65 = 62	CES90 = 81
CES16 = 46	CES41 = 95	CES66 = 58	CES91 = 74
CES17 = 49	CES42 = 77	CES67 = 55	CES92 = 62
CES18 = 55	CES43 = 77	CES68 = 65	CES93 = 77
CES19 = 71	CES44 = 99	CES69 = 74	CES94 = 57
CES20 = 64	CES45 = 85	CES70 = 56	CES95 = 67
CES21 = 85	CES46 = 84	CES71 = 47	CES96 = 77
CES22 = 77	CES47 = 87	CES72 = 83	CES97 = 85
CES23 = 91	CES48 = 80	CES73 = 46	CES98 = 75
CES24 = 90	CES49 = 82	CES74 = 91	CES99 = 65
CES25 = 71	CES50 = 89	CES75 = 49	



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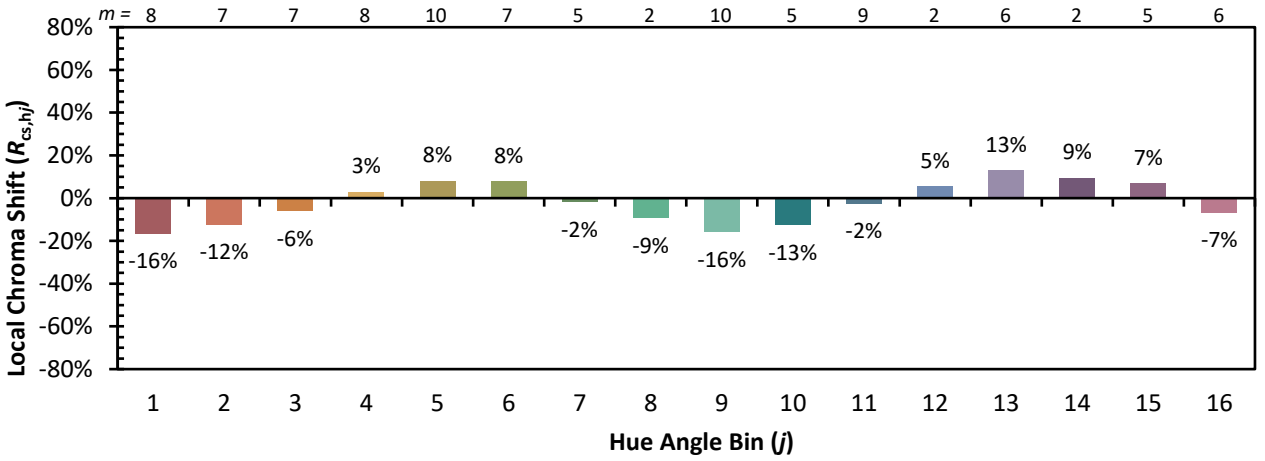
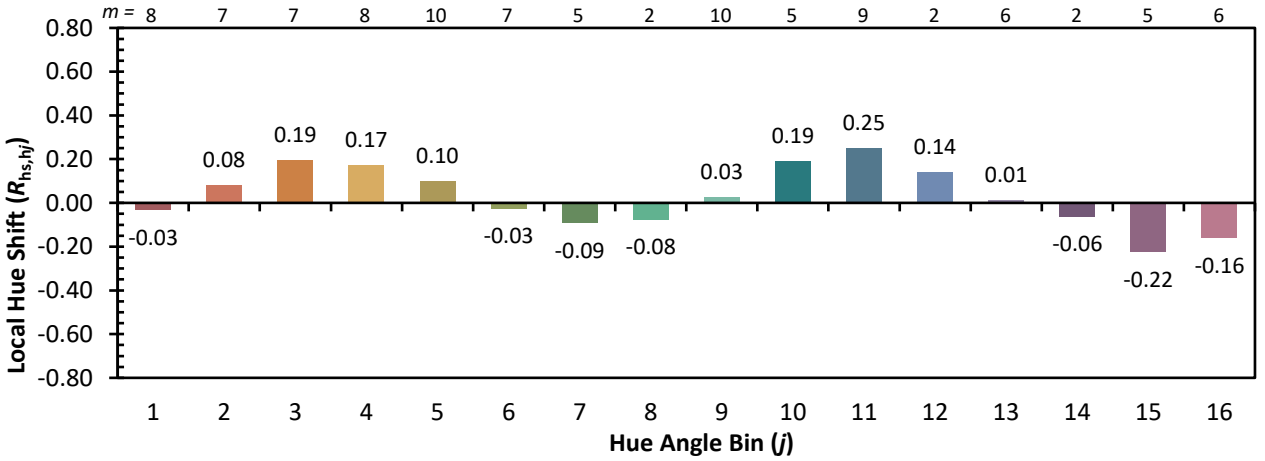
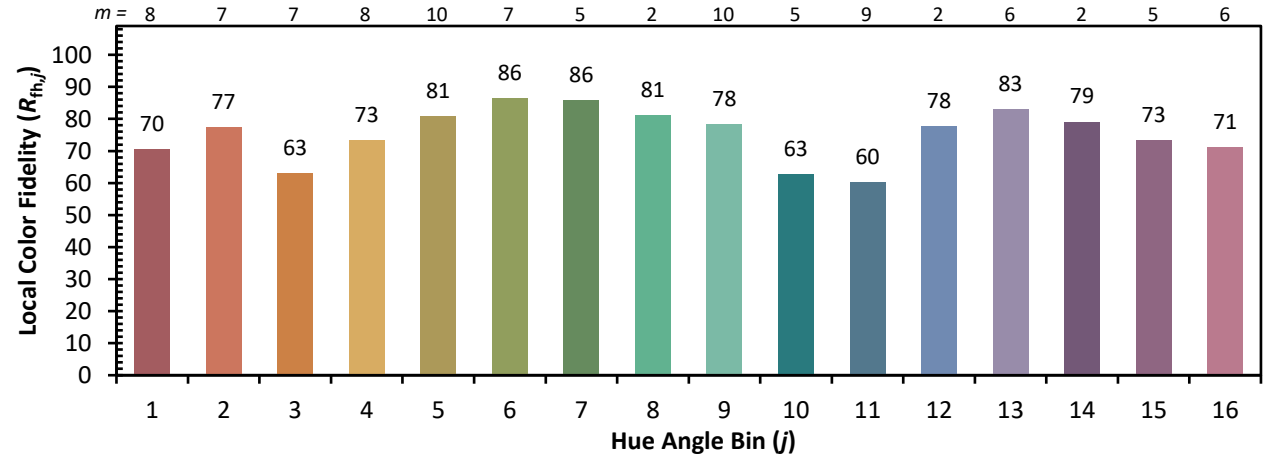
Color Rendition by Hue-Angle Bin







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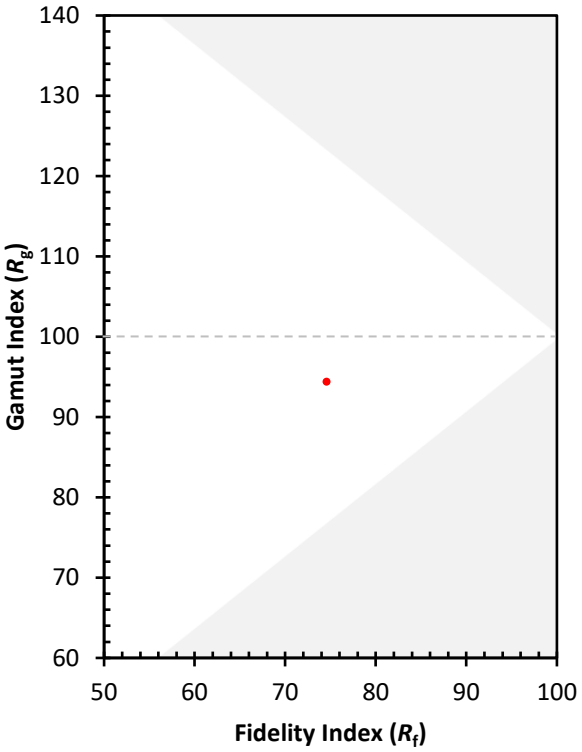
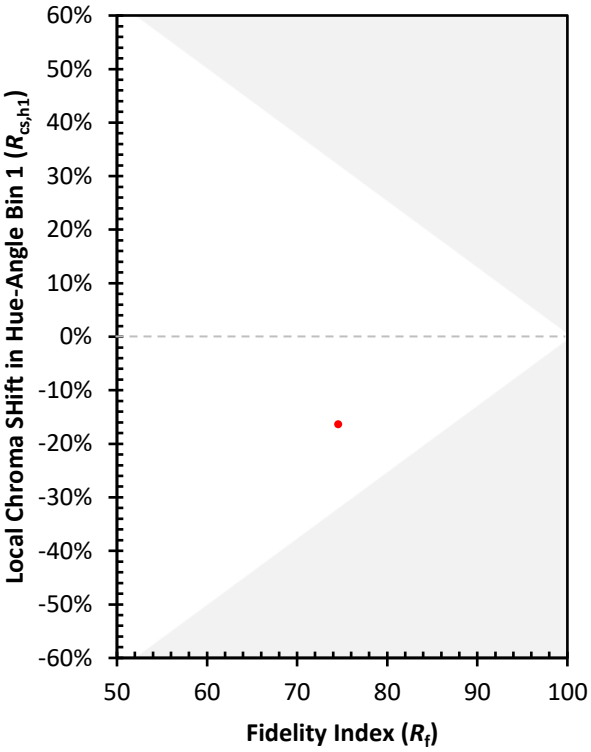
Measure Comparisons





(END OF REPORT)