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: P833946

Luminaire Tested: **TTN-D3-750-U-DL-CG-UPL3**

Issue Date: 5/15/2024

Report Generated By 670246001

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1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

Test Information

Test Method:	LM-79-08
Report Number:	P833946
	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-CG-UPL3
Description:	TOPTIER NANO LED PARKING GARAGE LUMINAIRE WITH UPLIGHT
	5000K, 70 CRI LEDS AND DRIVE LANE DISTRIBUTION WITH CLEAR GLASS
Light Source:	-
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	7424.6 lumens
Efficiency:	N/A
Efficacy:	112.2 lumens/watt
Luminous Opening:	Vertical Cylinder (Dia: 0.71' x H: 0.1')
IES Classification:	Type IV - Short
BUG Rating:	B1 - U4 - G2

Input Watts (W):	66.2
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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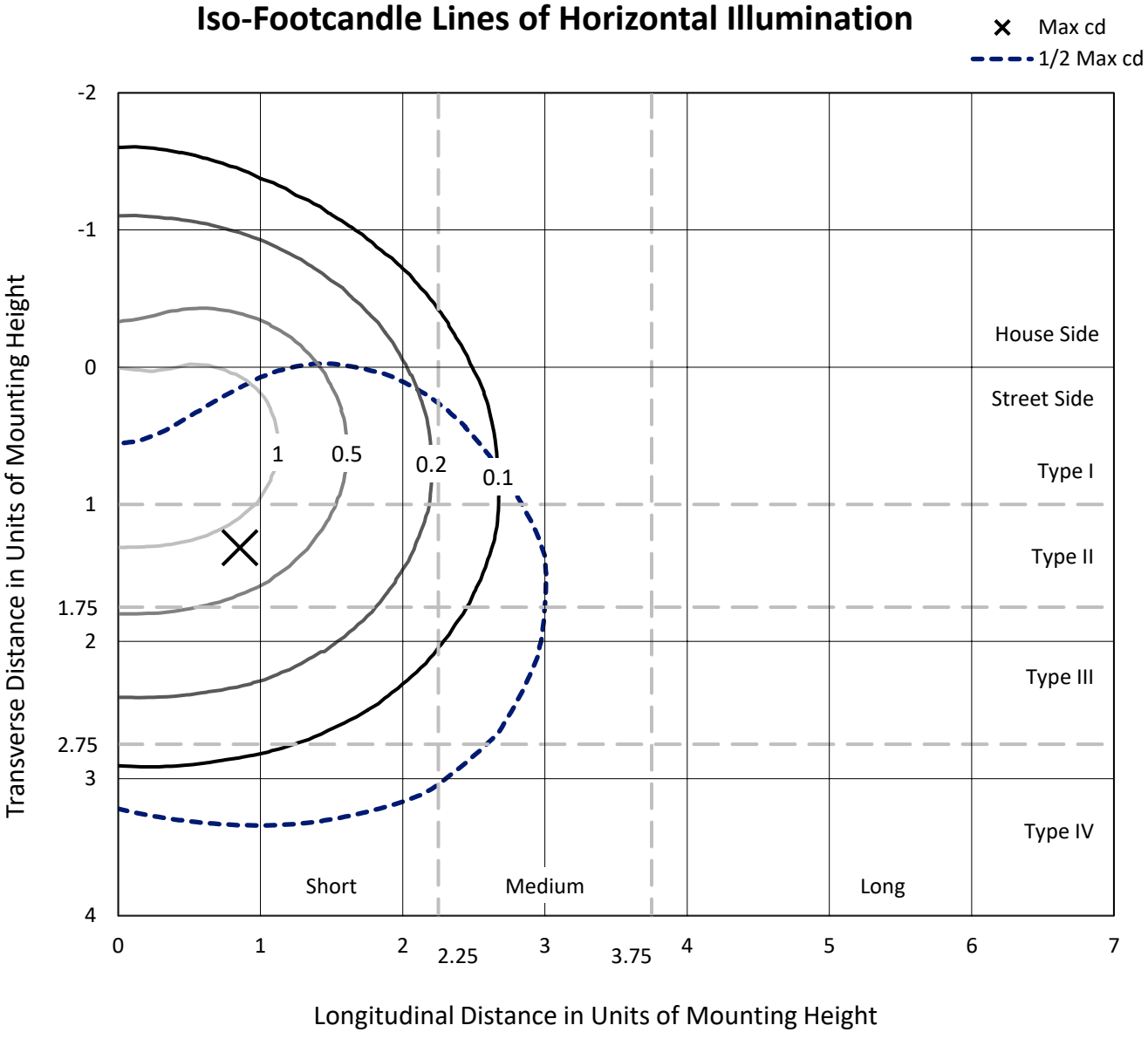
Iso-Footcandle Lines of Horizontal Illumination



Based on 25 foot mounting height. Maximum calculated value = 1.7 fc
Type IV - Short - N/A

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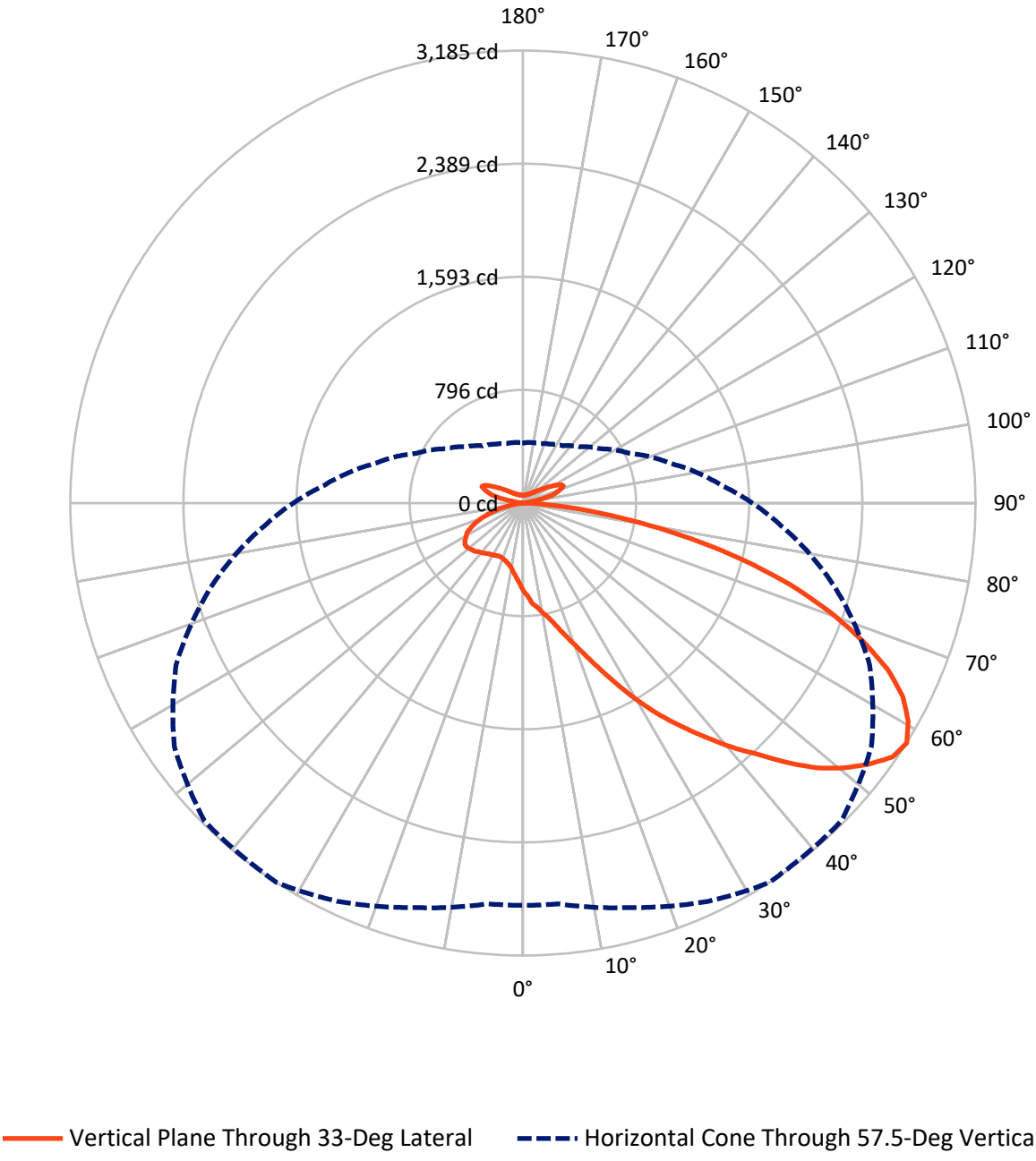
Luminous Intensity Polar Plot



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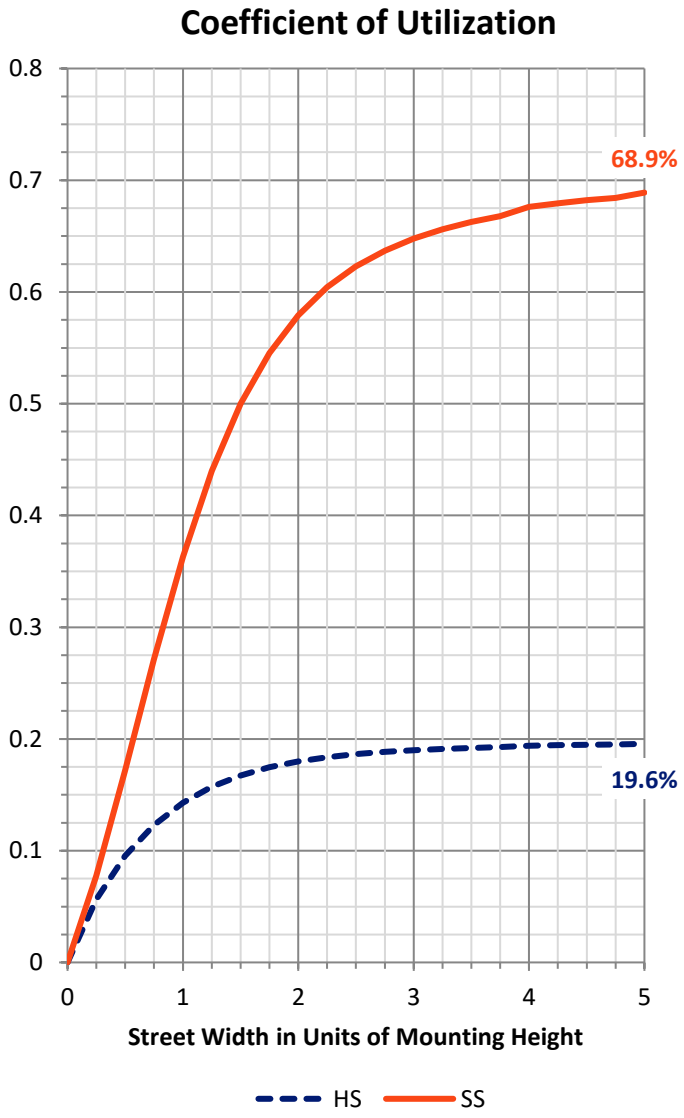
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1459.6	405.8	1865.3
	% Fixture	19.7	5.5	25.1
Street Side	Lumens	5153.5	405.8	5559.3
	% Fixture	69.4	5.5	74.9
Total	Lumens	6613.1	811.5	7424.6
	% Fixture	89.1	10.9	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.3	0.8
10°-20°	192.3	2.6
20°-30°	405.4	5.5
30°-40°	736.3	9.9
40°-50°	1163.5	15.7
50°-60°	1545.1	20.8
60°-70°	1487.2	20.0
70°-80°	873.0	11.8
80°-90°	150.9	2.0
90°-100°	18.1	0.2
100°-110°	184.1	2.5
110°-120°	269.1	3.6
120°-130°	156.2	2.1
130°-140°	82.7	1.1
140°-150°	49.1	0.7
150°-160°	30.3	0.4
160°-170°	16.5	0.2
170°-180°	5.4	0.1
0°-90°	6613.1	89.1
0°-180°	7424.6	100.0



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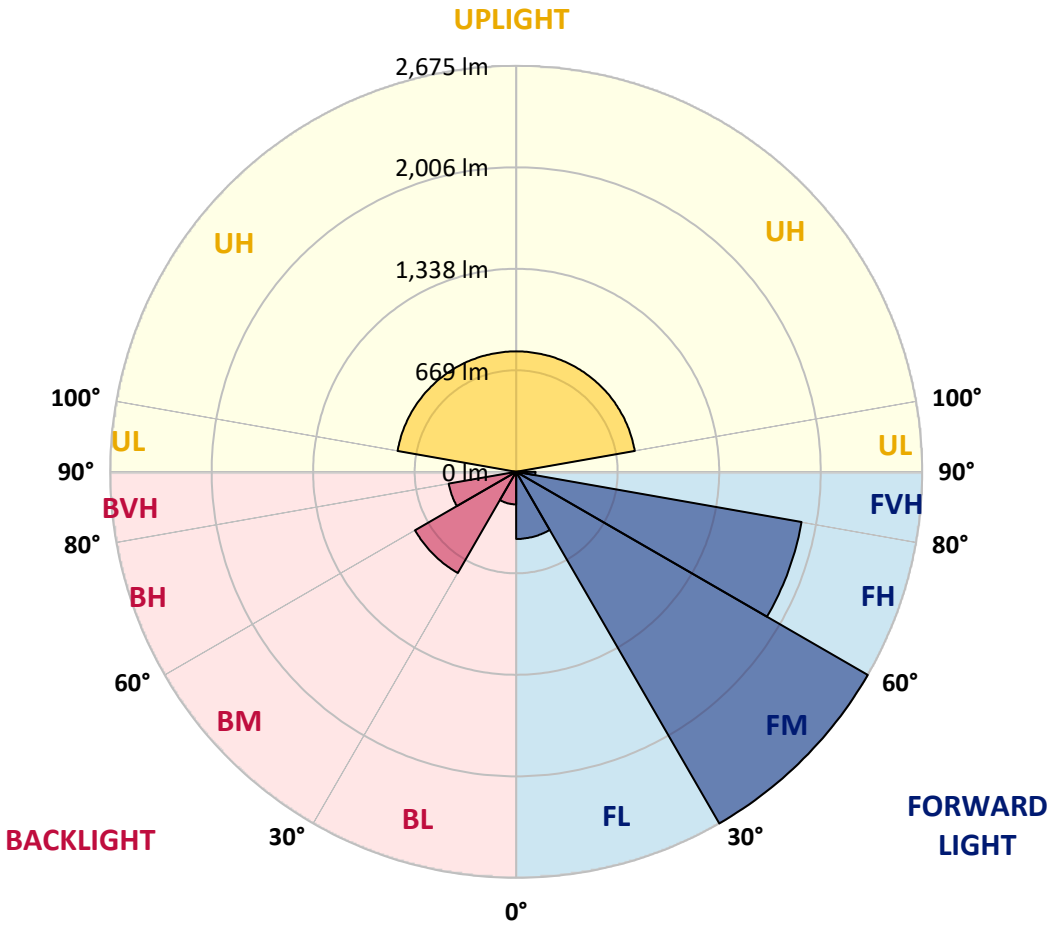
LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	442.4	6.0			
FM	(30°-60°)	2675.0	36.0			
FH	(60°-80°)	1909.0	25.7			G2/5000
FVH	(80°-90°)	127.1	1.7			G2/225
BL	(0°-30°)	214.6	2.9	B1/500		
BM	(30°-60°)	769.9	10.4	B1/1000		
BH	(60°-80°)	451.2	6.1	B1/500		G1/500
BVH	(80°-90°)	23.8	0.3			G1/100
UL	(90°-100°)	18.1	0.2		U2/50	
UH	(100°-180°)	793.4	10.7		U4/1000	

BUG Rating: B1-U4-G2
Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	33°	35°	45°	55°	65°	75°	85°
0°	619.7	619.7	619.7	619.7	619.7	619.7	619.7	619.7	619.7	619.7	619.7
2.5°	660.2	666.0	660.2	660.2	654.5	654.5	648.7	642.9	637.1	631.3	619.7
5°	735.5	735.5	729.7	718.2	712.4	706.6	695.0	677.6	666.0	648.7	631.3
7.5°	770.3	770.3	764.5	752.9	741.3	735.5	718.2	695.0	677.6	654.5	631.3
10°	816.6	822.4	810.8	799.2	787.7	781.9	758.7	729.7	700.8	671.8	637.1
12.5°	868.7	874.5	868.7	851.4	834.0	828.2	805.0	770.3	735.5	695.0	654.5
15°	938.2	949.8	932.5	920.9	903.5	897.7	868.7	828.2	787.7	735.5	683.4
17.5°	1019.3	1025.1	1013.5	996.2	984.6	978.8	949.8	903.5	845.6	787.7	724.0
20°	1112.0	1117.8	1112.0	1088.8	1077.2	1071.5	1042.5	990.4	920.9	857.2	776.1
22.5°	1222.0	1233.6	1216.2	1198.9	1187.3	1187.3	1152.5	1094.6	1013.5	932.5	839.8
25°	1349.5	1366.8	1343.7	1332.1	1320.5	1314.7	1285.7	1216.2	1123.6	1025.1	909.3
27.5°	1505.8	1517.4	1500.0	1494.2	1471.1	1471.1	1424.7	1343.7	1245.2	1129.4	996.2
30°	1644.8	1656.4	1644.8	1644.8	1627.4	1621.7	1575.3	1494.2	1372.6	1233.6	1071.5
32.5°	1778.0	1789.6	1783.8	1789.6	1783.8	1778.0	1720.1	1633.2	1511.6	1332.1	1146.7
35°	1911.2	1928.6	1922.8	1940.2	1934.4	1928.6	1882.3	1778.0	1633.2	1453.7	1227.8
37.5°	2050.2	2067.6	2067.6	2085.0	2090.8	2090.8	2038.7	1928.6	1766.4	1563.7	1320.5
40°	2200.8	2218.2	2218.2	2247.2	2258.7	2258.7	2200.8	2090.8	1911.2	1685.4	1418.9
42.5°	2345.6	2363.0	2368.8	2397.7	2415.1	2420.9	2374.6	2247.2	2038.7	1807.0	1511.6
45°	2484.6	2502.0	2519.4	2577.3	2606.2	2600.4	2565.7	2432.5	2200.8	1934.4	1610.1
47.5°	2617.8	2641.0	2669.9	2745.2	2785.8	2780.0	2756.8	2606.2	2351.4	2056.0	1696.9
50°	2722.1	2739.4	2797.4	2878.4	2930.6	2936.4	2901.6	2756.8	2478.8	2148.7	1760.7
52.5°	2803.1	2826.3	2895.8	3011.6	3052.2	3069.6	3029.0	2884.2	2606.2	2229.8	1812.8
55°	2861.1	2861.1	2965.3	3098.5	3156.4	3168.0	3168.0	2988.5	2681.5	2281.9	1841.7
57.5°	2832.1	2832.1	2947.9	3092.7	3185.4	3179.6	3168.0	2994.3	2693.1	2270.3	1824.4
60°	2751.0	2768.4	2878.4	3023.2	3115.9	3110.1	3075.4	2919.0	2635.2	2224.0	1789.6
62.5°	2641.0	2669.9	2785.8	2895.8	3000.1	3017.4	2971.1	2832.1	2536.7	2154.5	1725.9
65°	2432.5	2473.0	2617.8	2739.4	2820.5	2855.3	2797.4	2669.9	2403.5	2021.3	1592.7
67.5°	2200.8	2229.8	2351.4	2525.2	2571.5	2606.2	2577.3	2444.1	2218.2	1807.0	1442.1
70°	1934.4	1980.7	2061.8	2235.6	2287.7	2322.4	2322.4	2189.2	1974.9	1586.9	1262.6
72.5°	1621.7	1673.8	1772.2	1899.7	1969.2	1992.3	1986.5	1876.5	1685.4	1343.7	1065.7
75°	1280.0	1320.5	1436.3	1529.0	1604.3	1621.7	1615.9	1523.2	1349.5	1083.0	845.6
77.5°	944.0	984.6	1071.5	1141.0	1210.5	1198.9	1198.9	1129.4	1019.3	805.0	642.9
80°	619.7	654.5	729.7	752.9	828.2	822.4	822.4	770.3	695.0	538.6	428.6
82.5°	341.7	370.7	422.8	446.0	492.3	480.7	486.5	451.7	405.4	301.2	243.2
85°	121.6	144.8	173.7	191.1	214.3	214.3	214.3	185.3	173.7	115.8	98.5
87.5°	5.8	11.6	23.2	23.2	34.7	34.7	34.7	23.2	23.2	5.8	5.8
90°	6.9	6.9	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	6.9
92.5°	6.9	6.9	6.9	9.7	10.8	11.1	9.7	11.1	8.3	8.3	6.9
95°	8.3	8.3	9.7	12.5	14.7	15.3	16.7	16.7	9.7	9.7	8.3
97.5°	11.1	12.5	12.5	15.3	23.1	25.0	45.8	27.8	13.9	13.9	12.5
100°	18.0	19.4	19.4	34.7	65.8	73.6	98.6	70.8	36.1	26.4	19.4
102.5°	58.3	61.1	75.0	112.5	155.8	166.6	151.3	127.7	120.8	83.3	66.6
105°	148.6	147.2	158.3	187.4	224.1	233.3	229.1	211.0	191.6	165.2	152.7
107.5°	195.8	195.8	205.5	230.5	258.3	265.2	309.6	313.8	248.5	218.0	204.1
110°	220.8	220.8	229.1	249.9	286.5	295.7	358.2	355.4	306.8	269.4	251.3

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Scaled Data Report

REPORT NUMBER: P833946
CATALOG NUMBER: TTN-D3-750-U-DL-CG-UPL3

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	33°	35°	45°	55°	65°	75°	85°
112.5°	226.3	227.7	238.8	270.7	*310.7*	320.7	348.5	336.0	316.6	299.9	286.0
115°	234.6	234.6	247.1	277.7	*299.9*	305.5	316.6	302.7	287.4	276.3	270.7
117.5°	231.9	236.0	238.8	255.5	*269.9*	273.5	281.8	274.9	254.1	245.8	243.0
120°	215.2	215.2	218.0	226.3	*234.1*	236.0	240.2	237.4	223.5	216.6	215.2
122.5°	191.6	193.0	191.6	195.8	*201.3*	202.7	206.9	204.1	193.0	190.2	190.2
125°	168.0	168.0	166.6	169.4	*172.8*	173.6	172.2	173.6	168.0	166.6	166.6
127.5°	151.3	149.9	147.2	148.6	*149.6*	149.9	149.9	151.3	145.8	147.2	148.6
130°	134.7	134.7	131.9	131.9	*131.9*	131.9	129.1	131.9	129.1	130.5	131.9
132.5°	119.4	119.4	115.2	113.9	*113.9*	113.9	113.9	115.2	113.9	116.6	119.4
135°	106.9	106.9	102.7	104.1	*104.1*	104.1	102.7	104.1	102.7	105.5	106.9
137.5°	97.2	97.2	94.4	94.4	*94.4*	94.4	93.0	94.4	94.4	95.8	98.6
140°	88.9	88.9	87.5	87.5	*86.4*	86.1	87.5	87.5	87.5	88.9	90.2
142.5°	84.7	83.3	81.9	80.5	*81.6*	81.9	81.9	81.9	80.5	81.9	84.7
145°	77.8	77.8	76.4	76.4	*76.4*	76.4	77.8	76.4	76.4	77.8	77.8
147.5°	73.6	73.6	72.2	73.6	*73.6*	73.6	73.6	73.6	72.2	73.6	73.6
150°	72.2	70.8	69.4	70.8	*70.8*	70.8	69.4	69.4	69.4	69.4	70.8
152.5°	68.0	68.0	66.6	68.0	*66.9*	66.6	66.6	66.6	66.6	66.6	68.0
155°	65.3	65.3	63.9	65.3	*65.3*	65.3	65.3	65.3	65.3	65.3	65.3
157.5°	62.5	63.9	62.5	62.5	*62.5*	62.5	62.5	62.5	62.5	62.5	63.9
160°	61.1	61.1	61.1	61.1	*60.0*	59.7	59.7	59.7	61.1	61.1	61.1
162.5°	59.7	59.7	59.7	59.7	*58.6*	58.3	58.3	58.3	58.3	59.7	59.7
165°	59.7	58.3	58.3	58.3	*57.2*	56.9	56.9	56.9	56.9	58.3	59.7
167.5°	56.9	56.9	56.9	56.9	*56.9*	56.9	55.5	55.5	56.9	56.9	56.9
170°	56.9	56.9	55.5	55.5	*55.5*	55.5	55.5	55.5	55.5	55.5	55.5
172.5°	56.9	56.9	56.9	56.9	*55.8*	55.5	55.5	55.5	55.5	55.5	56.9
175°	56.9	56.9	56.9	56.9	*55.8*	55.5	55.5	55.5	56.9	56.9	56.9
177.5°	56.9	56.9	56.9	56.9	*55.8*	55.5	56.9	56.9	56.9	56.9	56.9
180°	56.9	56.9	56.9	56.9	*56.9*	56.9	56.9	56.9	56.9	56.9	56.9

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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	619.7	619.7	619.7	619.7	619.7	619.7	619.7	619.7	619.7	619.7	619.7
2.5°	613.9	608.1	602.3	590.7	585.0	579.2	573.4	567.6	567.6	567.6	567.6
5°	619.7	613.9	596.5	579.2	561.8	544.4	532.8	527.0	521.2	515.5	515.5
7.5°	619.7	608.1	585.0	561.8	544.4	521.2	503.9	486.5	474.9	469.1	469.1
10°	625.5	608.1	579.2	556.0	527.0	498.1	474.9	451.7	440.2	428.6	428.6
12.5°	637.1	619.7	579.2	550.2	515.5	480.7	451.7	428.6	411.2	399.6	399.6
15°	660.2	637.1	590.7	550.2	509.7	469.1	440.2	411.2	393.8	382.2	382.2
17.5°	695.0	666.0	608.1	550.2	503.9	463.3	428.6	399.6	376.5	364.9	364.9
20°	735.5	700.8	631.3	561.8	503.9	457.5	422.8	388.0	364.9	353.3	353.3
22.5°	793.5	741.3	660.2	579.2	515.5	463.3	417.0	382.2	359.1	347.5	347.5
25°	857.2	799.2	695.0	602.3	527.0	463.3	417.0	382.2	359.1	347.5	341.7
27.5°	926.7	863.0	735.5	625.5	538.6	474.9	422.8	382.2	359.1	347.5	347.5
30°	990.4	915.1	776.1	654.5	556.0	480.7	428.6	388.0	359.1	347.5	347.5
32.5°	1059.9	973.0	816.6	683.4	573.4	492.3	434.4	393.8	364.9	353.3	347.5
35°	1129.4	1030.9	857.2	706.6	590.7	503.9	440.2	399.6	370.7	359.1	359.1
37.5°	1204.7	1094.6	897.7	735.5	608.1	515.5	451.7	405.4	376.5	364.9	364.9
40°	1285.7	1158.3	938.2	758.7	625.5	527.0	463.3	417.0	388.0	376.5	376.5
42.5°	1366.8	1227.8	984.6	787.7	642.9	538.6	469.1	428.6	399.6	388.0	388.0
45°	1447.9	1285.7	1025.1	816.6	660.2	556.0	486.5	440.2	411.2	399.6	399.6
47.5°	1523.2	1349.5	1059.9	834.0	677.6	567.6	492.3	451.7	422.8	417.0	411.2
50°	1575.3	1390.0	1083.0	851.4	683.4	573.4	503.9	457.5	434.4	422.8	422.8
52.5°	1615.9	1430.5	1100.4	863.0	689.2	579.2	509.7	469.1	446.0	434.4	428.6
55°	1639.0	1436.3	1100.4	851.4	683.4	579.2	509.7	469.1	446.0	434.4	434.4
57.5°	*1615.9*	*1407.4*	*1077.2*	*828.2*	*666.0*	*561.8*	*492.3*	*457.5*	*434.4*	*428.6*	*422.8*
60°	1569.5	1361.0	1030.9	793.5	637.1	532.8	469.1	440.2	422.8	417.0	411.2
62.5°	1505.8	1303.1	984.6	747.1	596.5	498.1	451.7	417.0	405.4	399.6	393.8
65°	1378.4	1193.1	909.3	689.2	544.4	457.5	411.2	388.0	376.5	364.9	359.1
67.5°	1239.4	1071.5	805.0	619.7	480.7	411.2	370.7	347.5	330.1	330.1	324.3
70°	1088.8	944.0	695.0	527.0	417.0	359.1	318.5	301.2	289.6	289.6	283.8
72.5°	909.3	793.5	579.2	428.6	341.7	295.4	266.4	249.0	243.2	243.2	237.5
75°	729.7	625.5	457.5	335.9	266.4	231.7	208.5	196.9	191.1	191.1	185.3
77.5°	538.6	457.5	330.1	243.2	191.1	168.0	150.6	144.8	139.0	139.0	133.2
80°	359.1	301.2	214.3	156.4	115.8	104.2	92.7	92.7	86.9	92.7	86.9
82.5°	196.9	162.2	115.8	81.1	57.9	52.1	46.3	46.3	52.1	52.1	46.3
85°	75.3	57.9	40.5	23.2	17.4	17.4	17.4	17.4	17.4	17.4	11.6
87.5°	5.8	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	6.9	6.9	8.3	8.3	8.3	8.3	8.3	8.3	8.3	6.9	6.9
92.5°	6.9	6.9	8.3	8.3	11.1	9.7	11.1	9.7	6.9	6.9	6.9
95°	8.3	8.3	9.7	9.7	16.7	16.7	15.3	12.5	9.7	8.3	8.3
97.5°	11.1	12.5	13.9	13.9	27.8	45.8	25.0	15.3	12.5	12.5	11.1
100°	19.4	19.4	26.4	36.1	70.8	98.6	73.6	34.7	19.4	19.4	18.0
102.5°	63.9	66.6	83.3	120.8	127.7	151.3	166.6	112.5	75.0	61.1	58.3
105°	152.7	152.7	165.2	191.6	211.0	229.1	233.3	187.4	158.3	147.2	148.6
107.5°	202.7	204.1	218.0	248.5	313.8	309.6	265.2	230.5	205.5	195.8	195.8
110°	248.5	251.3	269.4	306.8	355.4	358.2	295.7	249.9	229.1	220.8	220.8

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

Scaled Data Report

REPORT NUMBER: P833946
CATALOG NUMBER: TTN-D3-750-U-DL-CG-UPL3

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	283.2	286.0	299.9	316.6	336.0	348.5	320.7	270.7	238.8	227.7	226.3
115°	273.5	270.7	276.3	287.4	302.7	316.6	305.5	277.7	247.1	234.6	234.6
117.5°	238.8	243.0	245.8	254.1	274.9	281.8	273.5	255.5	238.8	236.0	231.9
120°	212.4	215.2	216.6	223.5	237.4	240.2	236.0	226.3	218.0	215.2	215.2
122.5°	187.4	190.2	190.2	193.0	204.1	206.9	202.7	195.8	191.6	193.0	191.6
125°	165.2	166.6	166.6	168.0	173.6	172.2	173.6	169.4	166.6	168.0	168.0
127.5°	147.2	148.6	147.2	145.8	151.3	149.9	149.9	148.6	147.2	149.9	151.3
130°	133.3	131.9	130.5	129.1	131.9	129.1	131.9	131.9	131.9	134.7	134.7
132.5°	119.4	119.4	116.6	113.9	115.2	113.9	113.9	113.9	115.2	119.4	119.4
135°	106.9	106.9	105.5	102.7	104.1	102.7	104.1	104.1	102.7	106.9	106.9
137.5°	100.0	98.6	95.8	94.4	94.4	93.0	94.4	94.4	94.4	97.2	97.2
140°	90.2	90.2	88.9	87.5	87.5	87.5	86.1	87.5	87.5	88.9	88.9
142.5°	84.7	84.7	81.9	80.5	81.9	81.9	81.9	80.5	81.9	83.3	84.7
145°	79.1	77.8	77.8	76.4	76.4	77.8	76.4	76.4	76.4	77.8	77.8
147.5°	75.0	73.6	73.6	72.2	73.6	73.6	73.6	73.6	72.2	73.6	73.6
150°	70.8	70.8	69.4	69.4	69.4	69.4	70.8	70.8	69.4	70.8	72.2
152.5°	69.4	68.0	66.6	66.6	66.6	66.6	66.6	68.0	66.6	68.0	68.0
155°	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	63.9	65.3	65.3
157.5°	63.9	63.9	62.5	62.5	62.5	62.5	62.5	62.5	62.5	63.9	62.5
160°	62.5	61.1	61.1	61.1	59.7	59.7	59.7	61.1	61.1	61.1	61.1
162.5°	61.1	59.7	59.7	58.3	58.3	58.3	58.3	59.7	59.7	59.7	59.7
165°	58.3	59.7	58.3	56.9	56.9	56.9	56.9	58.3	58.3	58.3	59.7
167.5°	58.3	56.9	56.9	56.9	55.5	55.5	56.9	56.9	56.9	56.9	56.9
170°	56.9	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	56.9	56.9
172.5°	56.9	56.9	55.5	55.5	55.5	55.5	55.5	56.9	56.9	56.9	56.9
175°	55.5	56.9	56.9	56.9	55.5	55.5	55.5	56.9	56.9	56.9	56.9
177.5°	56.9	56.9	56.9	56.9	56.9	56.9	55.5	56.9	56.9	56.9	56.9
180°	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9

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

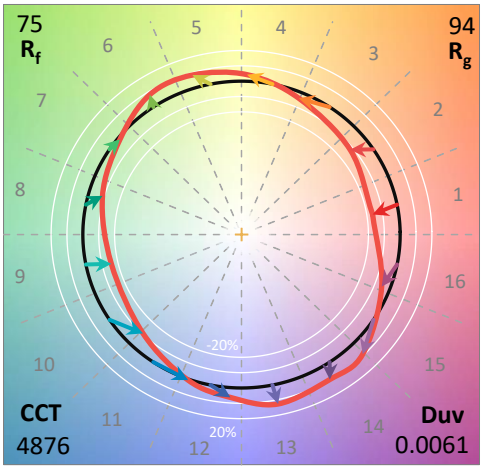
Test Information

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



Test Conditions

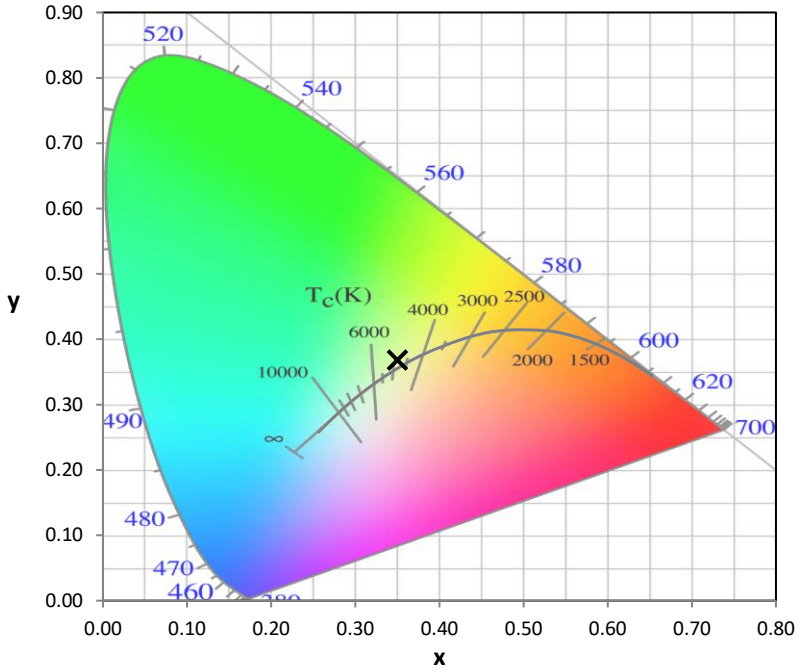
Stabilization Time:	51M
Operation Time:	1H 51M
Sphere Temperature (°C):	24.9

REPORT NUMBER: SP1-2411-284-3

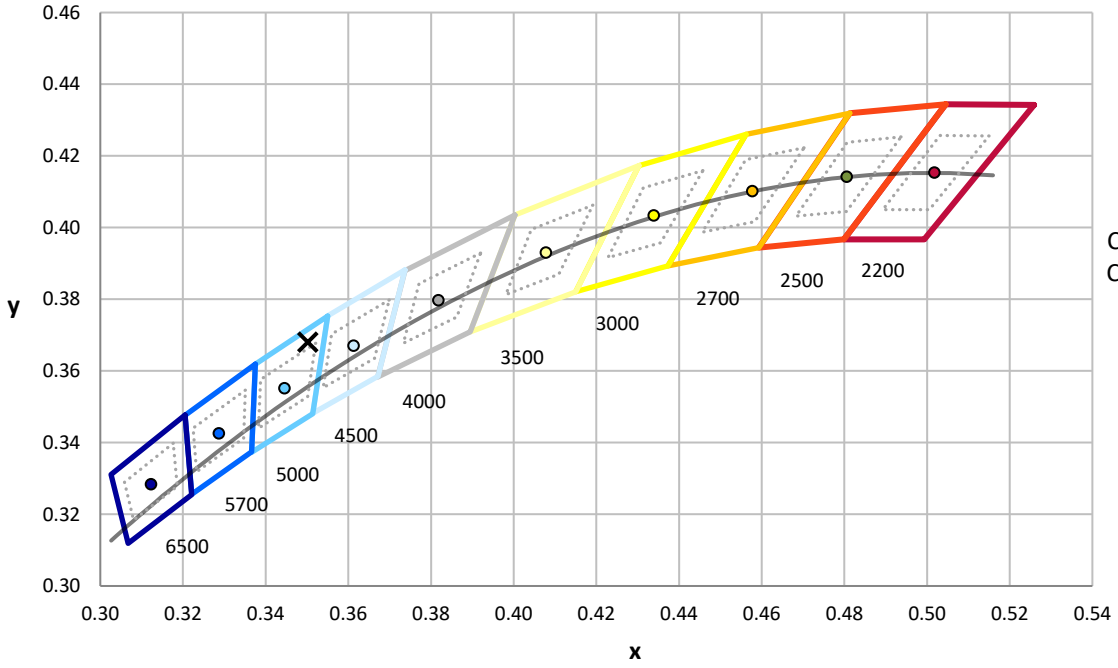
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085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

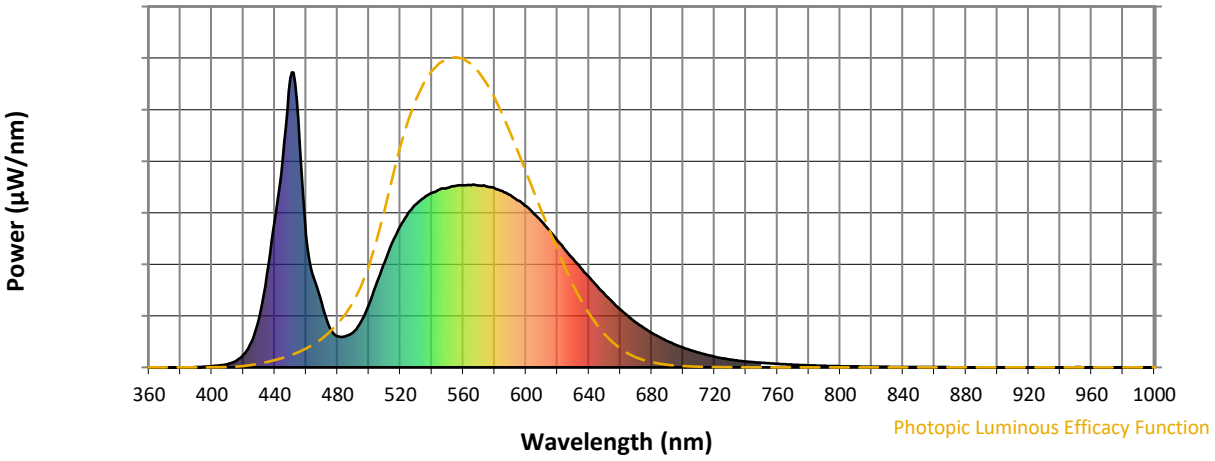


CCT = 4876K
CIE x = 0.3502
CIE y = 0.3680
Duv = 0.0061

Point lies inside the ANSI 5000K 7-step quadrangle

REPORT NUMBER: SP1-2411-284-3

Photopic Flux vs. Wavelength

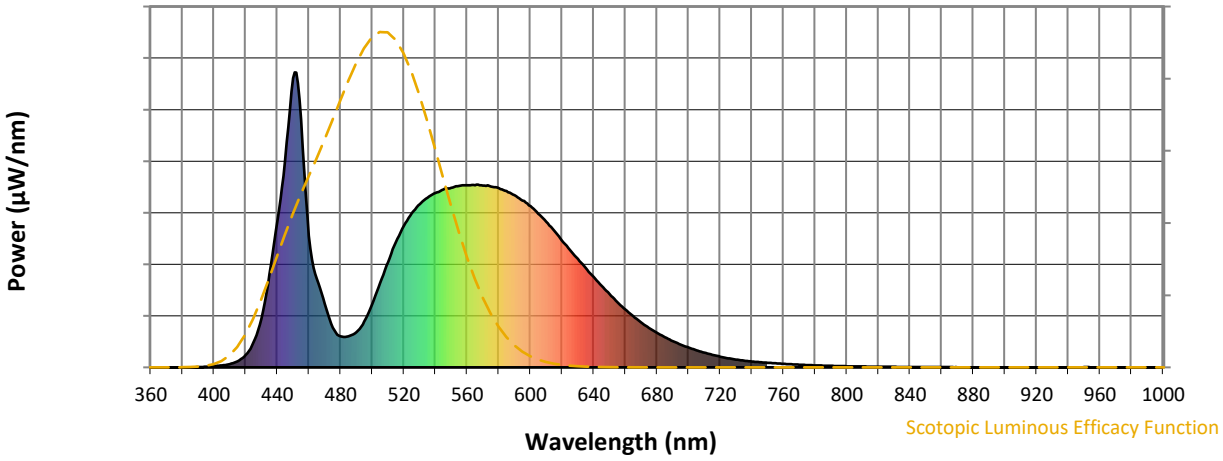


Photopic Lumens: NR

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

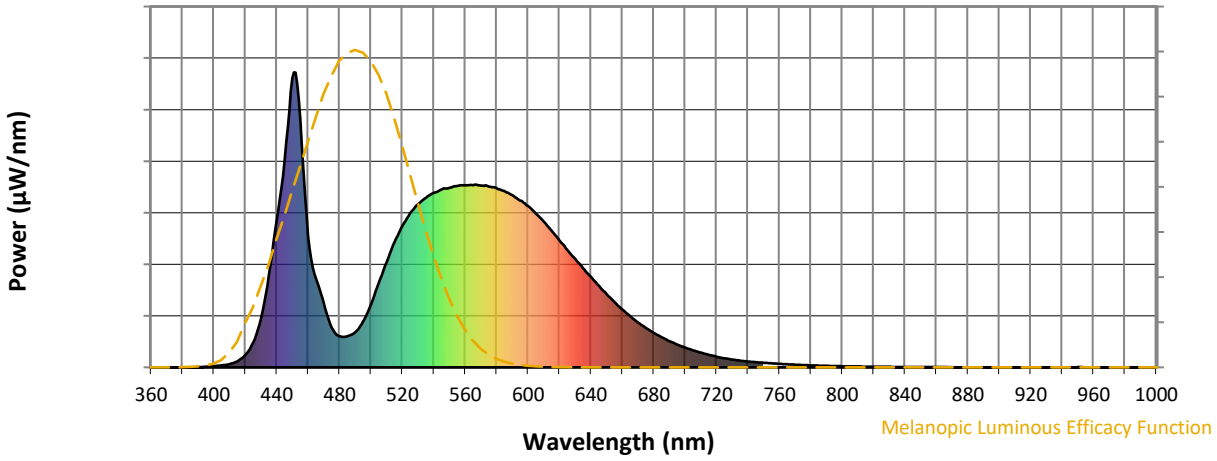


Scotopic Lumens: NR **S/P: 1.74**

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			

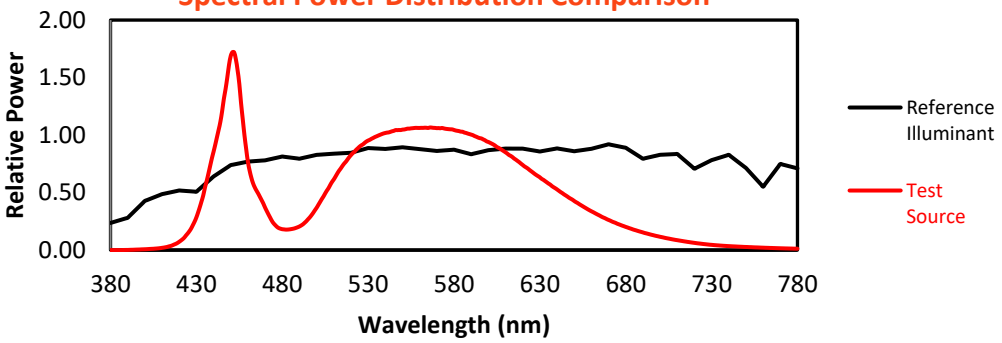
REPORT NUMBER: SP1-2411-284-3

TM-30-18

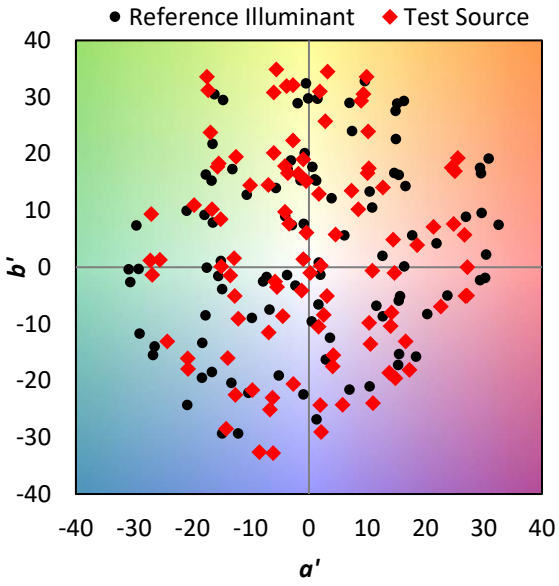
Summary

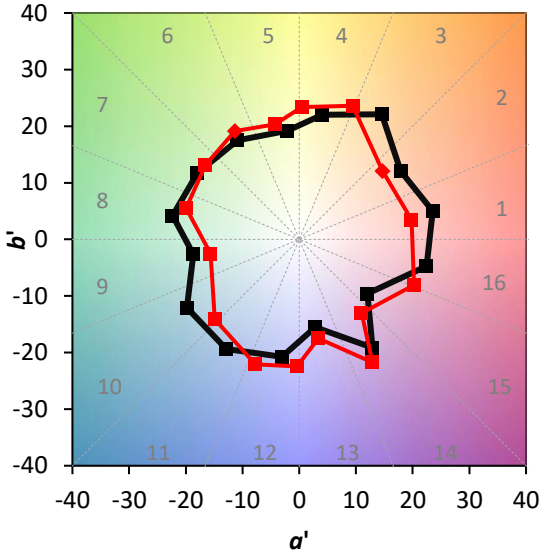
R_f = 74.6
R_g = 94.4
CIE R_a = 72.6
R_9 = -24.6

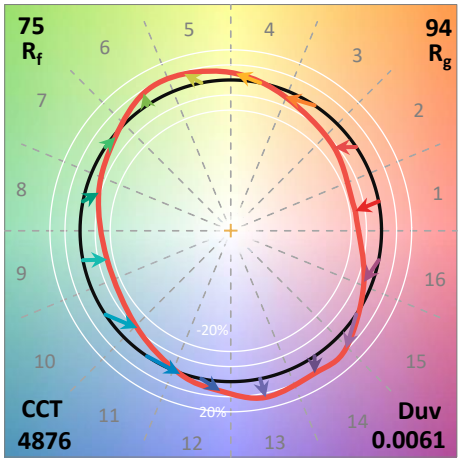
Spectral Power Distribution Comparison

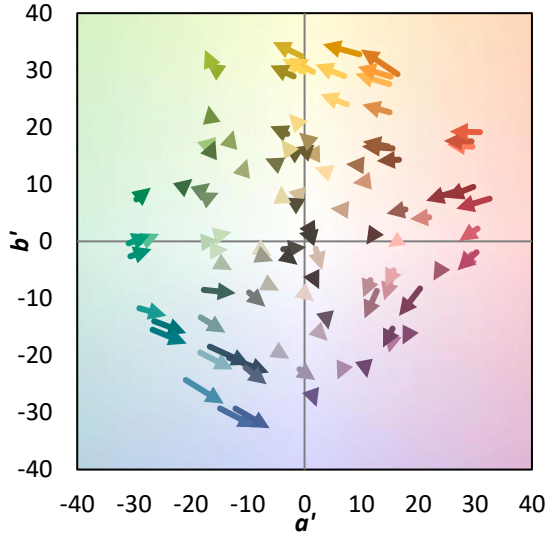


Color Vector Graphics







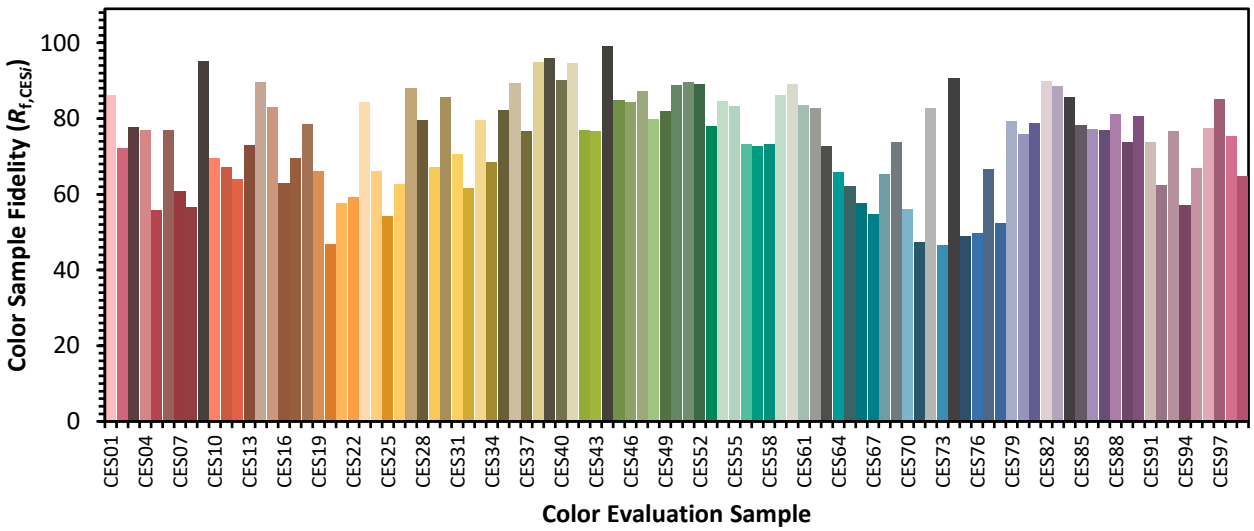


REPORT NUMBER: SP1-2411-284-3

TM-30-18

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

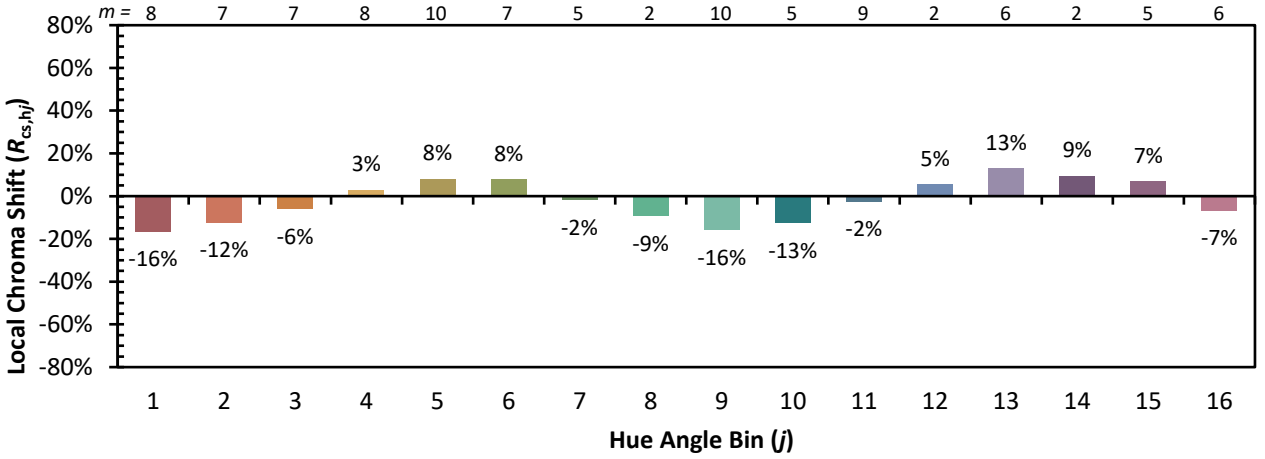
CES01 = 85	CES26 = 63	CES51 = 90	CES76 = 50
CES02 = 59	CES27 = 88	CES52 = 89	CES77 = 67
CES03 = 30	CES28 = 80	CES53 = 78	CES78 = 52
CES04 = 69	CES29 = 67	CES54 = 85	CES79 = 79
CES05 = 46	CES30 = 86	CES55 = 83	CES80 = 76
CES06 = 50	CES31 = 70	CES56 = 73	CES81 = 79
CES07 = 39	CES32 = 62	CES57 = 73	CES82 = 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	

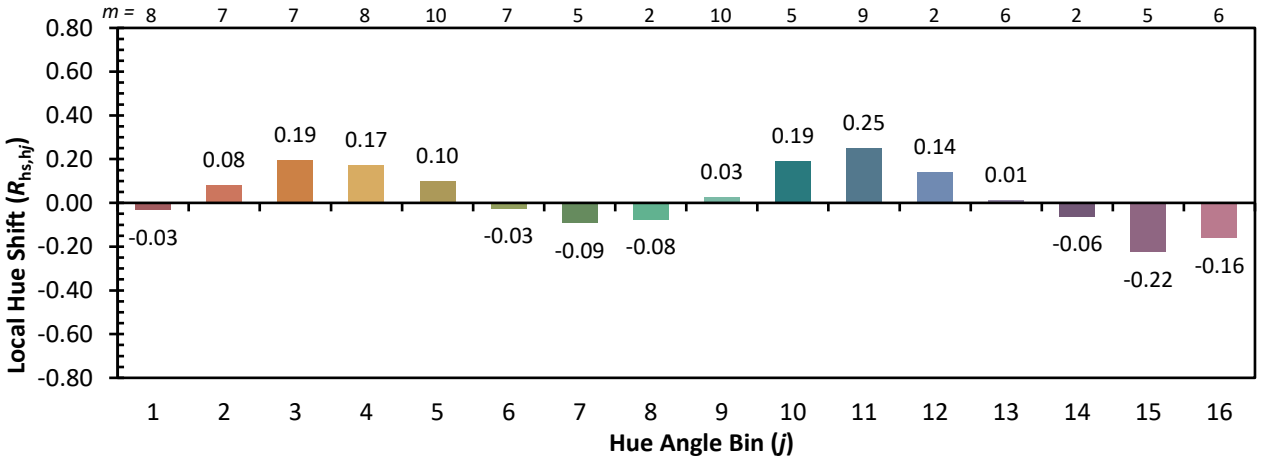


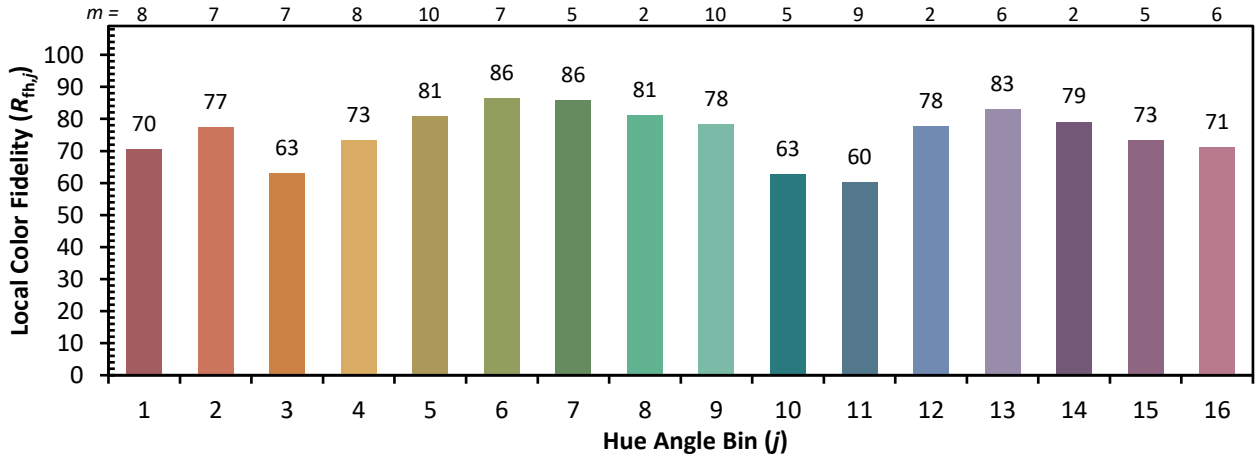
REPORT NUMBER: SP1-2411-284-3

TM-30-18

Color Rendition by Hue-Angle Bin



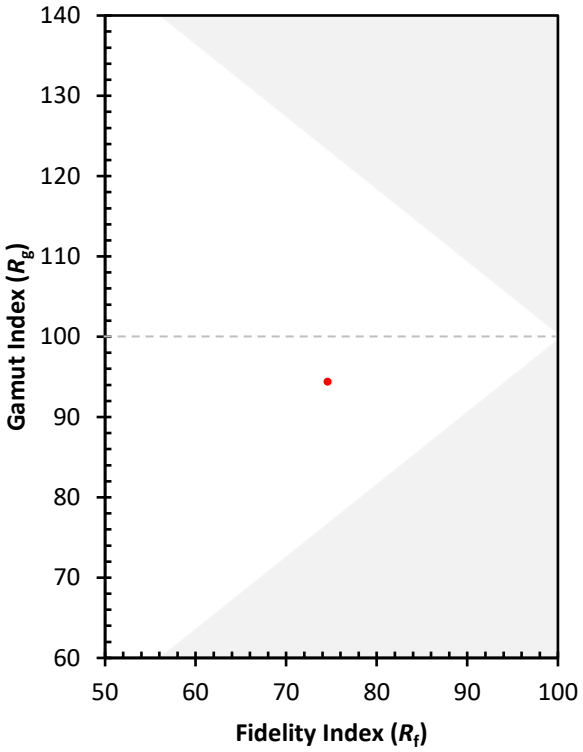


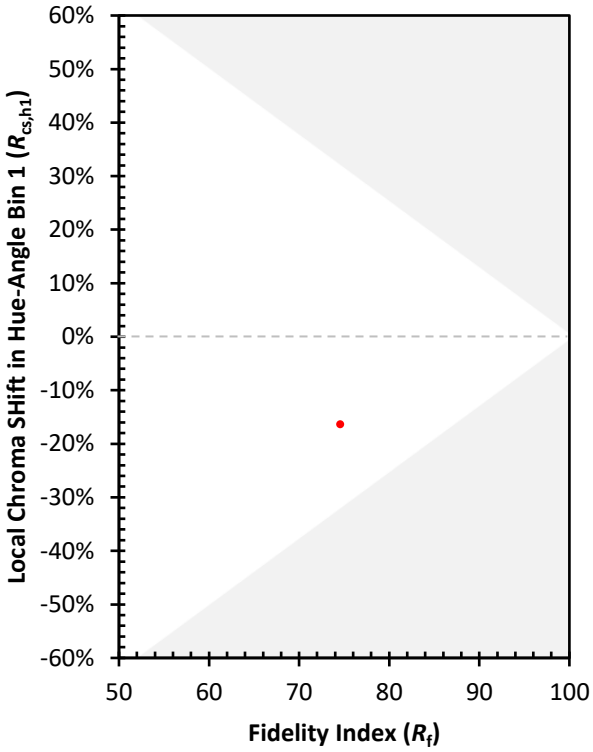


REPORT NUMBER: SP1-2411-284-3

TM-30-18

Measure Comparisons





(END OF REPORT)