

Signify Classified - Internal  
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: P833916

Luminaire Tested: **TTN-D3-740-U-DL-CG-UPL3**

Issue Date: 5/15/2024

**Test Information**

Test Method: LM-79-08  
Report Number: P833916  
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-D3-740-U-DL-CG-UPL3  
Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE WITH UPLIGHT  
4000K, 70 CRI LEDS AND DRIVE LANE DISTRIBUTION WITH CLEAR GLASS  
Light Source: -  
Ballast/Driver: -

**Summary**

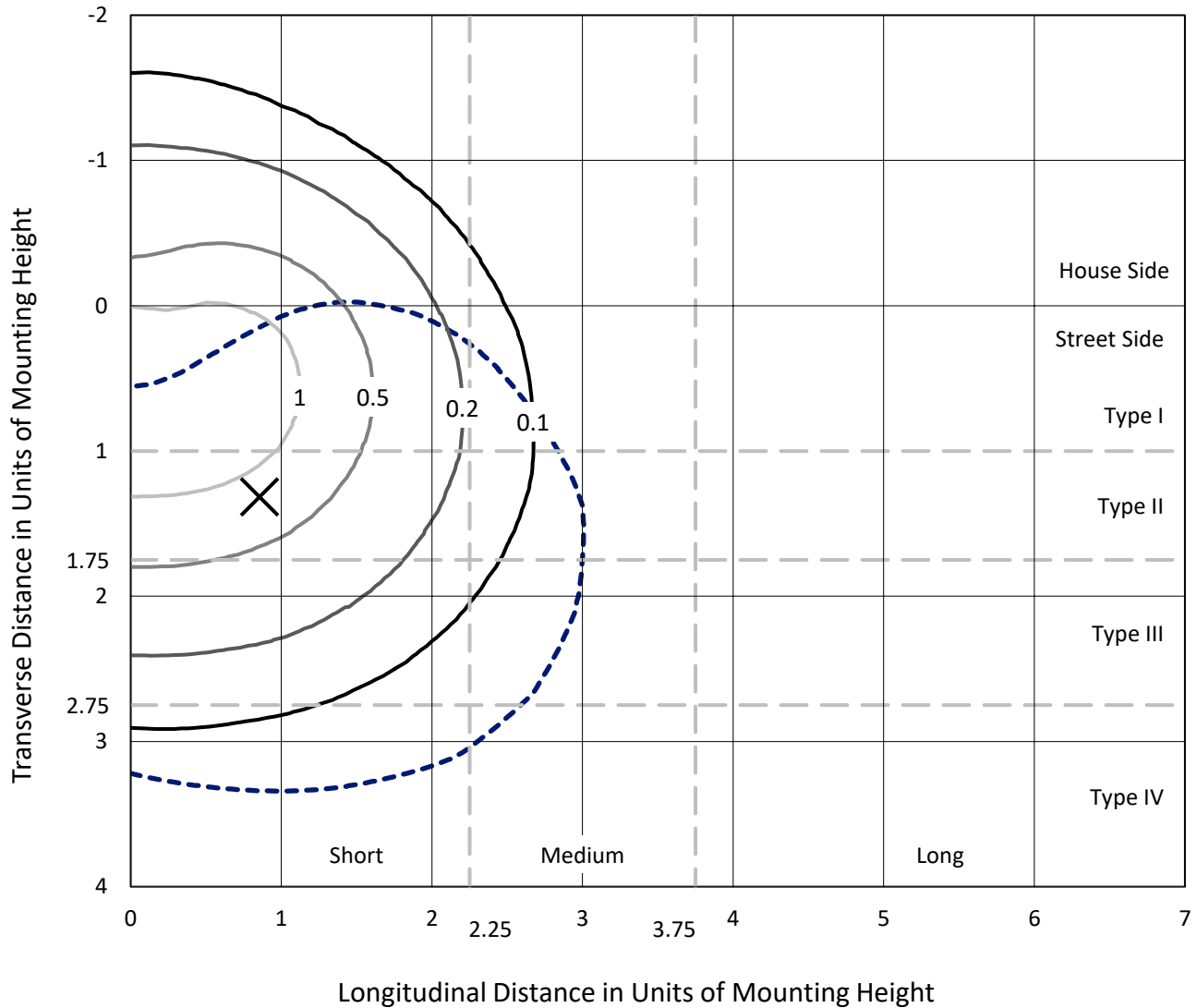
Lumens per Lamp: N/A  
Luminaire Lumens: 7424.6 lumens  
Efficiency: N/A  
Efficacy: 112.2 lumens/watt  
Luminous Opening: Vertical Cylinder (Dia: 0.71' x H: 0.1')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U4 - G2  
  
Input Watts (W): 66.2  
Input Voltage (V): NR  
Input Current (Ain): 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



REPORT NUMBER: P833916  
 CATALOG NUMBER: TTN-D3-740-U-DL-CG-UPL3

### Iso-Footcandle Lines of Horizontal Illumination

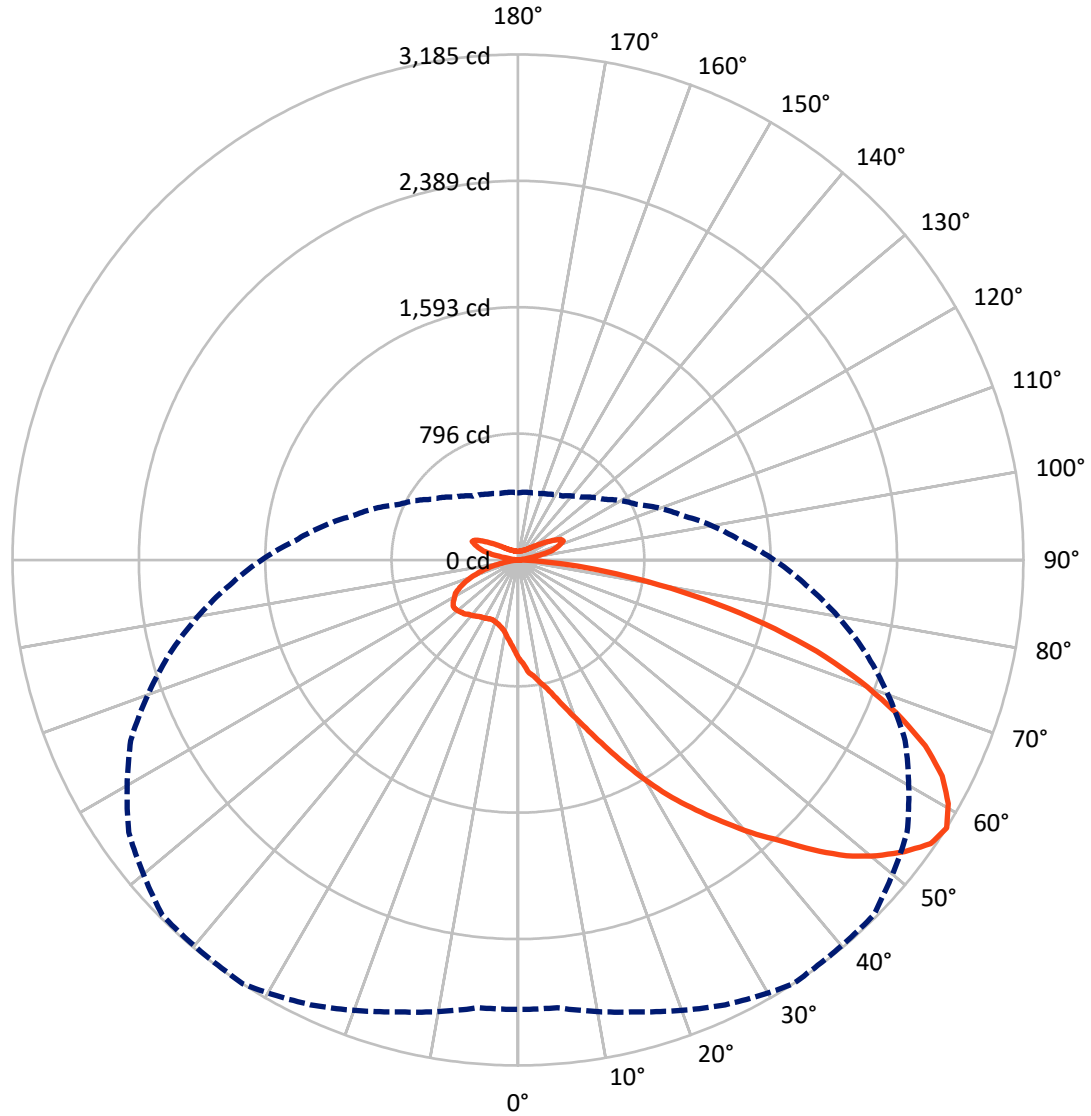
✕ Max cd  
 - - - 1/2 Max cd



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

REPORT NUMBER: P833916  
CATALOG NUMBER: TTN-D3-740-U-DL-CG-UPL3

### Luminous Intensity Polar Plot



— Vertical Plane Through 33-Deg Lateral    - - - Horizontal Cone Through 57.5-Deg Vertical

REPORT NUMBER: P833916  
 CATALOG NUMBER: TTN-D3-740-U-DL-CG-UPL3

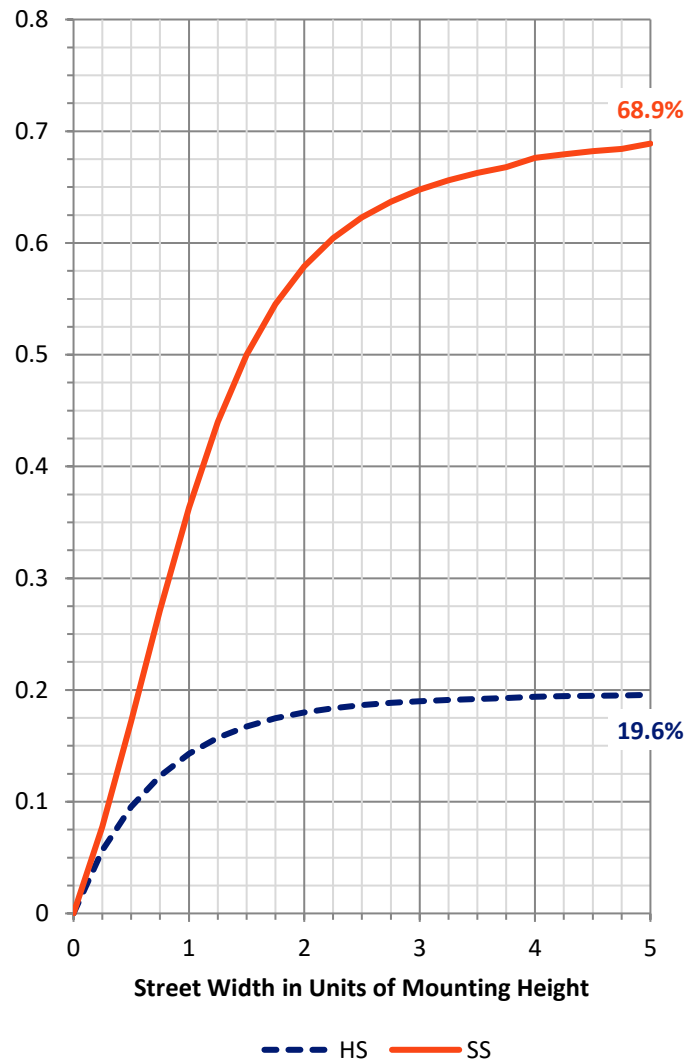
**FLUX DISTRIBUTION:**

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

**Coefficient of Utilization**

**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

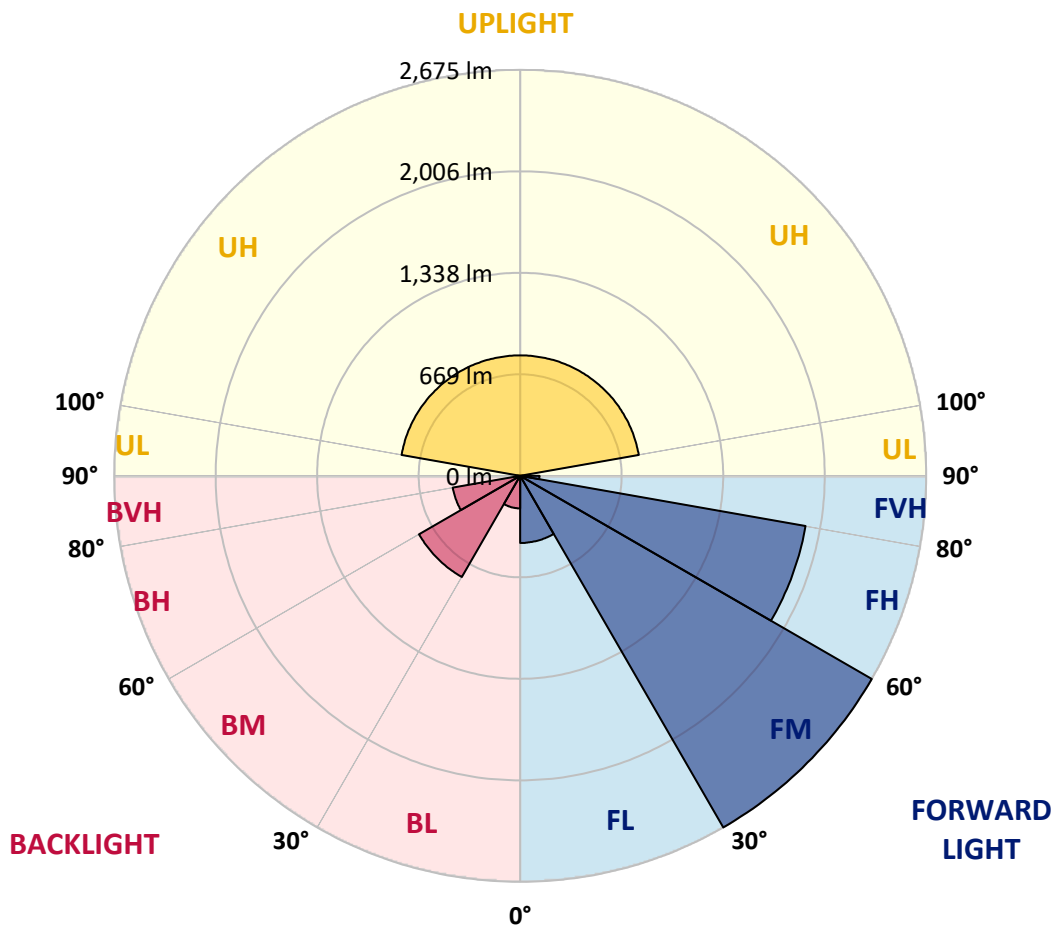


REPORT NUMBER: P833916  
 CATALOG NUMBER: TTN-D3-740-U-DL-CG-UPL3

**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





REPORT NUMBER: P833916

CATALOG NUMBER: TTN-D3-740-U-DL-CG-UPL3

**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



REPORT NUMBER: P833916  
 CATALOG NUMBER: TTN-D3-740-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





REPORT NUMBER: P833916

CATALOG NUMBER: TTN-D3-740-U-DL-CG-UPL3

**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



REPORT NUMBER: P833916  
 CATALOG NUMBER: TTN-D3-740-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: SP1-2411-284-2

Test Date: 11/20/2024

Luminaire Tested: TTN-D0-740-U-WQ

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

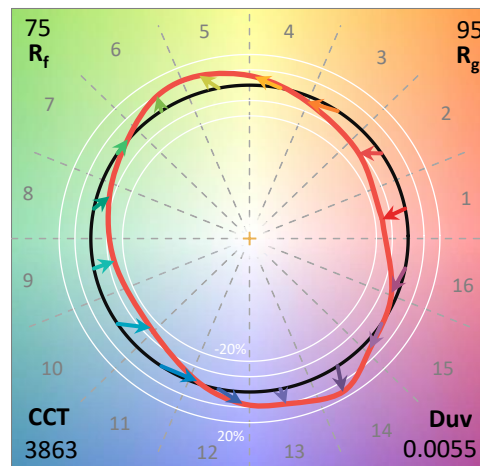
**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2411-284-2  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 11/20/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: MCGRAW EDISON  
 Catalog Number: **TTN-D0-740-U-WQ**  
 Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE. 4000K, 70 CRI LEDS AND WIDE DISTRIBUTION

**Spectral Parameters**

CCT (K): 3863  
 CIE u': 0.2247  
 CIE v': 0.5111  
 Duv: 0.0055  
 CIE x: 0.3911  
 CIE y: 0.3954  
 CIE z: 0.2136  
 Peak Wavelength (nm): 448  
 Dominant Wavelength (nm): 577  
 Purity: 36.03443  
 Rf: 74.7  
 Rg: 95.4

CRI (Ra):	71.9		
R1:	69.4	R9:	-23.5
R2:	76.9	R10:	45.4
R3:	83.3	R11:	68.7
R4:	72.7	R12:	38.7
R5:	68.4	R13:	70.0
R6:	67.5	R14:	90.3
R7:	82.0	R15:	62.1
R8:	55.3		



**Test Conditions**

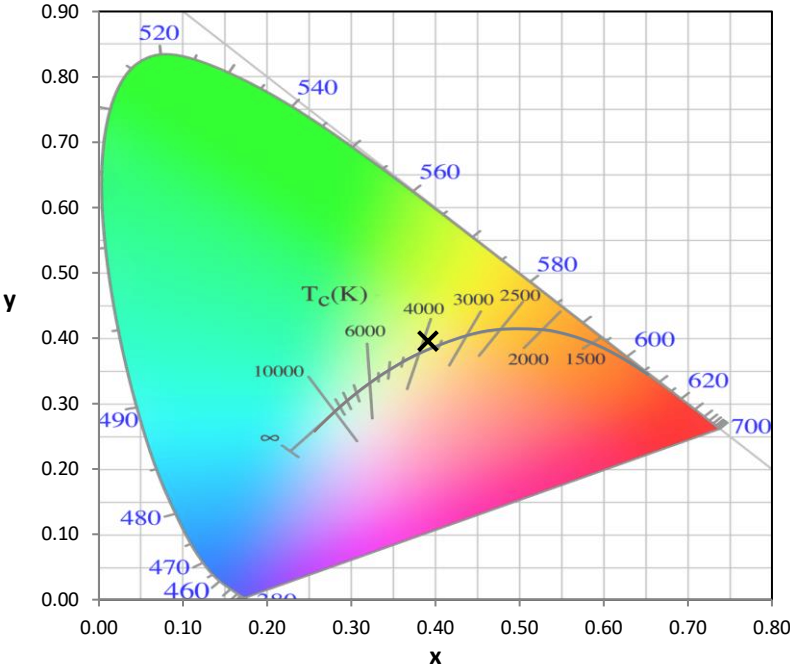
Stabilization Time: 37M  
 Operation Time: 1H 37M  
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2411-284-2

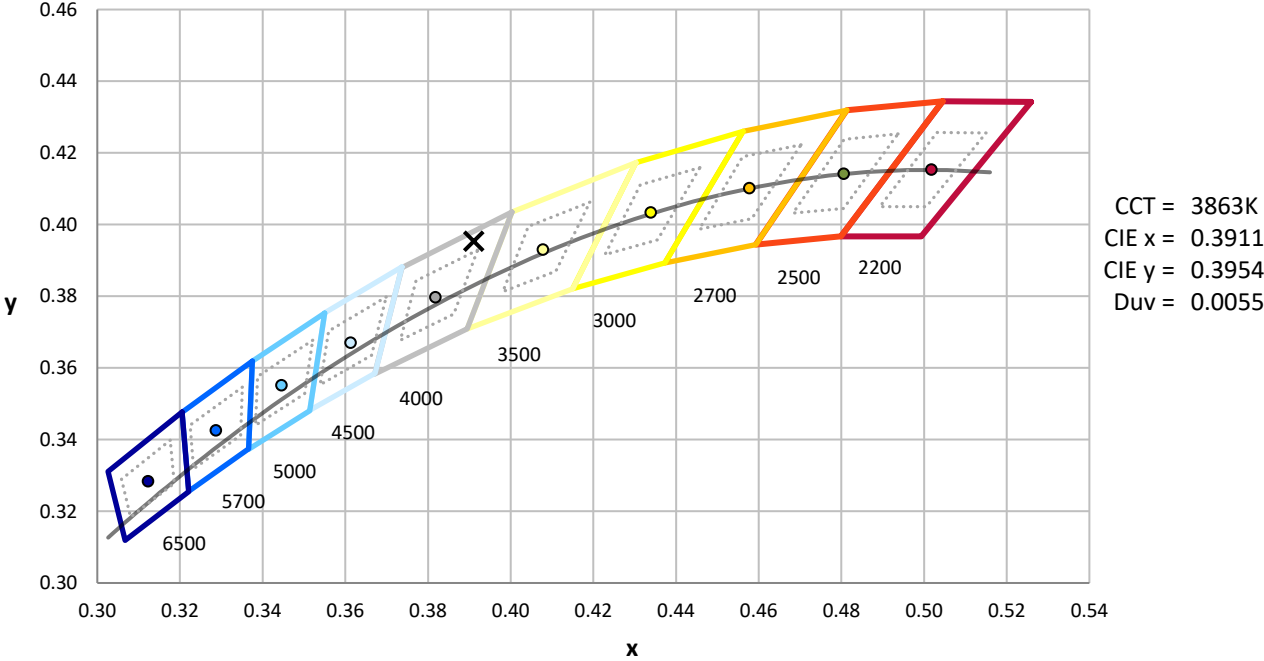
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2411-284-2

CIE 1931 Chromaticity Diagram



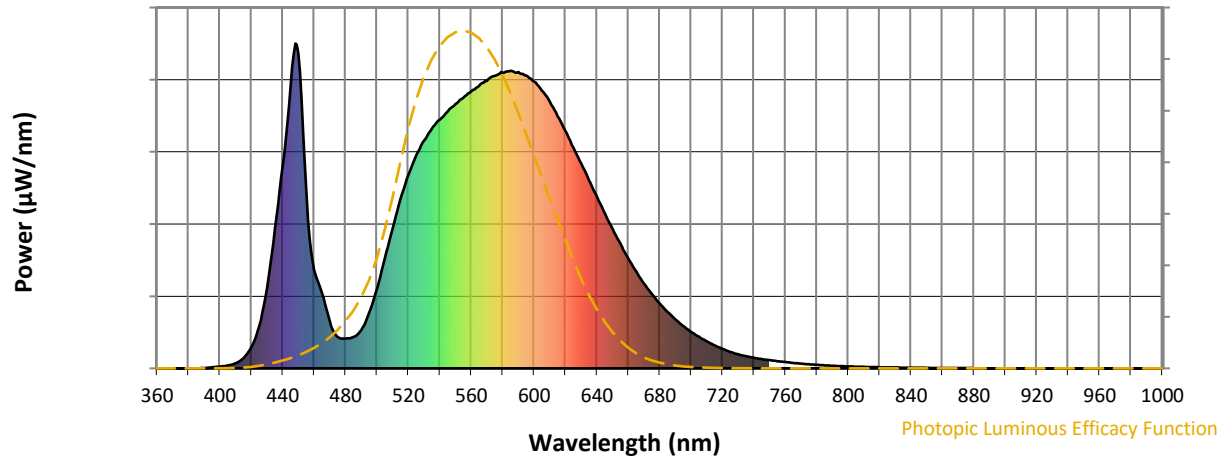
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 4000K 7-step quadrangle

REPORT NUMBER: SP1-2411-284-2

**Photopic Flux vs. Wavelength**

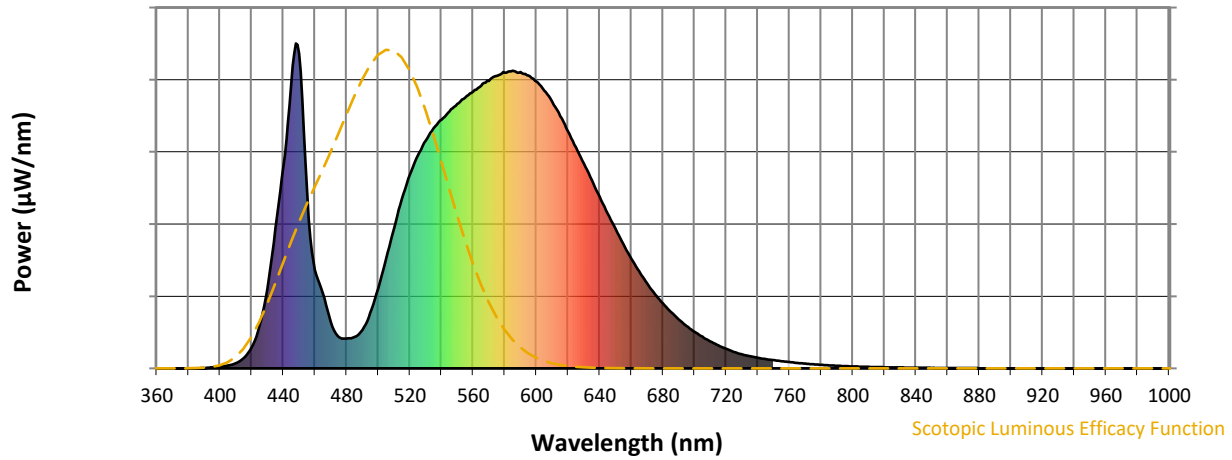


**Photopic Lumens: NR**

$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)
360	0	NR	490	118	NR	620	730	NR	750	25	NR	880	1	NR
365	0	NR	495	170	NR	625	680	NR	755	22	NR	885	0	NR
370	0	NR	500	245	NR	630	630	NR	760	19	NR	890	0	NR
375	0	NR	505	338	NR	635	579	NR	765	17	NR	895	0	NR
380	0	NR	510	431	NR	640	529	NR	770	14	NR	900	0	NR
385	0	NR	515	521	NR	645	477	NR	775	13	NR	905	0	NR
390	1	NR	520	596	NR	650	429	NR	780	11	NR	910	0	NR
395	3	NR	525	655	NR	655	383	NR	785	9	NR	915	0	NR
400	6	NR	530	701	NR	660	338	NR	790	8	NR	920	0	NR
405	9	NR	535	739	NR	665	298	NR	795	7	NR	925	0	NR
410	16	NR	540	766	NR	670	261	NR	800	6	NR	930	0	NR
415	32	NR	545	791	NR	675	228	NR	805	5	NR	935	0	NR
420	65	NR	550	813	NR	680	200	NR	810	5	NR	940	0	NR
425	131	NR	555	833	NR	685	173	NR	815	4	NR	945	0	NR
430	245	NR	560	852	NR	690	151	NR	820	3	NR	950	0	NR
435	432	NR	565	870	NR	695	130	NR	825	3	NR	955	0	NR
440	622	NR	570	885	NR	700	112	NR	830	3	NR	960	0	NR
445	870	NR	575	900	NR	705	97	NR	835	2	NR	965	0	NR
450	969	NR	580	911	NR	710	83	NR	840	2	NR	970	0	NR
455	544	NR	585	916	NR	715	71	NR	845	2	NR	975	0	NR
460	304	NR	590	912	NR	720	60	NR	850	1	NR	980	0	NR
465	231	NR	595	901	NR	725	51	NR	855	1	NR	985	0	NR
470	142	NR	600	882	NR	730	43	NR	860	1	NR	990	0	NR
475	96	NR	605	855	NR	735	37	NR	865	1	NR	995	0	NR
480	92	NR	610	820	NR	740	32	NR	870	1	NR	1000	0	NR
485	96	NR	615	776	NR	745	29	NR	875	1	NR			

REPORT NUMBER: SP1-2411-284-2

**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

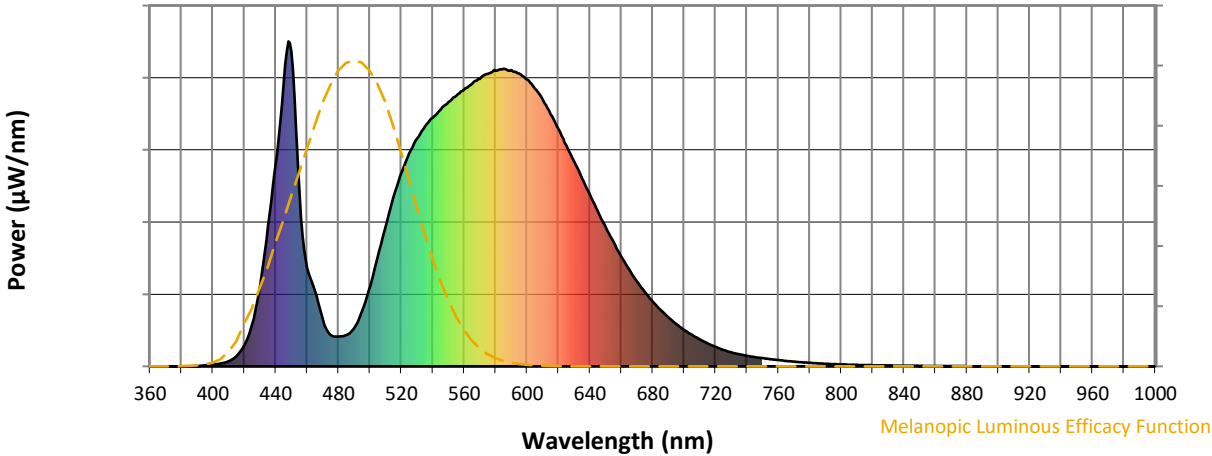
**S/P: 1.45**

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	118	NR	620	730	NR	750	25	NR	880	1	NR
365	0	NR	495	170	NR	625	680	NR	755	22	NR	885	0	NR
370	0	NR	500	245	NR	630	630	NR	760	19	NR	890	0	NR
375	0	NR	505	338	NR	635	579	NR	765	17	NR	895	0	NR
380	0	NR	510	431	NR	640	529	NR	770	14	NR	900	0	NR
385	0	NR	515	521	NR	645	477	NR	775	13	NR	905	0	NR
390	1	NR	520	596	NR	650	429	NR	780	11	NR	910	0	NR
395	3	NR	525	655	NR	655	383	NR	785	9	NR	915	0	NR
400	6	NR	530	701	NR	660	338	NR	790	8	NR	920	0	NR
405	9	NR	535	739	NR	665	298	NR	795	7	NR	925	0	NR
410	16	NR	540	766	NR	670	261	NR	800	6	NR	930	0	NR
415	32	NR	545	791	NR	675	228	NR	805	5	NR	935	0	NR
420	65	NR	550	813	NR	680	200	NR	810	5	NR	940	0	NR
425	131	NR	555	833	NR	685	173	NR	815	4	NR	945	0	NR
430	245	NR	560	852	NR	690	151	NR	820	3	NR	950	0	NR
435	432	NR	565	870	NR	695	130	NR	825	3	NR	955	0	NR
440	622	NR	570	885	NR	700	112	NR	830	3	NR	960	0	NR
445	870	NR	575	900	NR	705	97	NR	835	2	NR	965	0	NR
450	969	NR	580	911	NR	710	83	NR	840	2	NR	970	0	NR
455	544	NR	585	916	NR	715	71	NR	845	2	NR	975	0	NR
460	304	NR	590	912	NR	720	60	NR	850	1	NR	980	0	NR
465	231	NR	595	901	NR	725	51	NR	855	1	NR	985	0	NR
470	142	NR	600	882	NR	730	43	NR	860	1	NR	990	0	NR
475	96	NR	605	855	NR	735	37	NR	865	1	NR	995	0	NR
480	92	NR	610	820	NR	740	32	NR	870	1	NR	1000	0	NR
485	96	NR	615	776	NR	745	29	NR	875	1	NR			



REPORT NUMBER: SP1-2411-284-2

Melanopic Flux vs. Wavelength



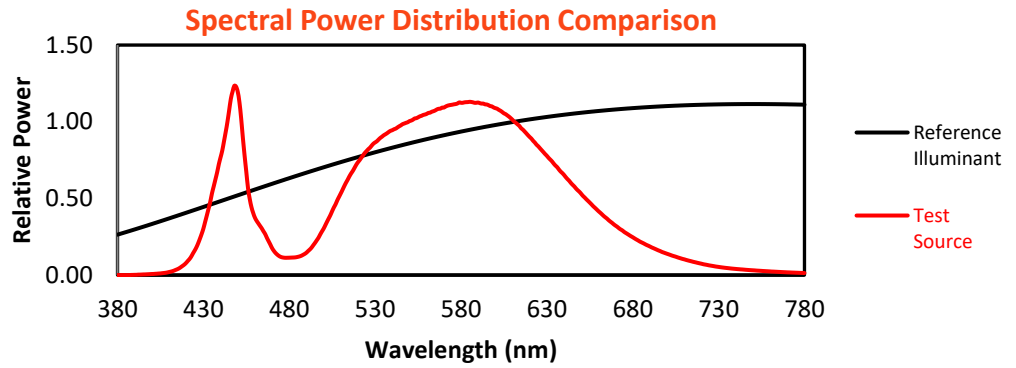
Melanopic Lumens: NR

M/P: 2.72

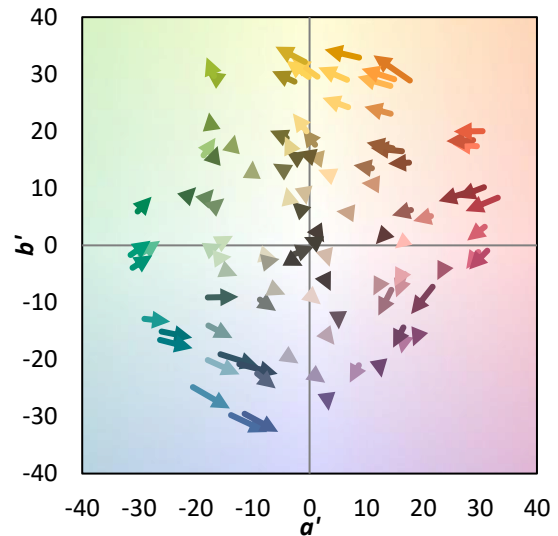
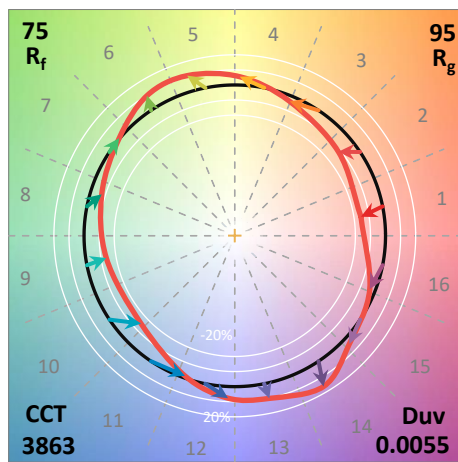
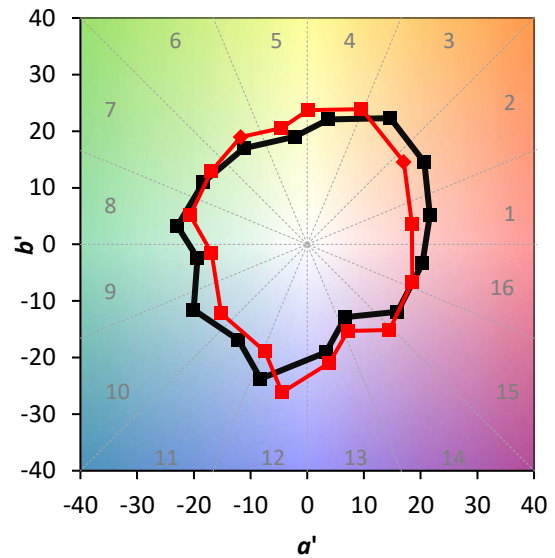
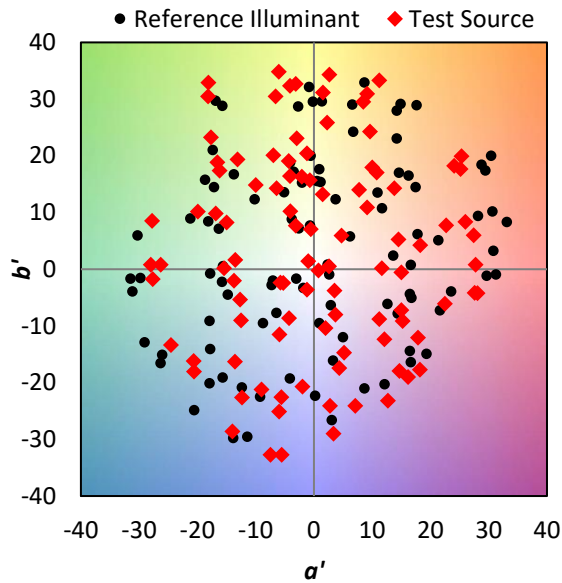
λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	118	NR	620	730	NR	750	25	NR	880	1	NR
365	0	NR	495	170	NR	625	680	NR	755	22	NR	885	0	NR
370	0	NR	500	245	NR	630	630	NR	760	19	NR	890	0	NR
375	0	NR	505	338	NR	635	579	NR	765	17	NR	895	0	NR
380	0	NR	510	431	NR	640	529	NR	770	14	NR	900	0	NR
385	0	NR	515	521	NR	645	477	NR	775	13	NR	905	0	NR
390	1	NR	520	596	NR	650	429	NR	780	11	NR	910	0	NR
395	3	NR	525	655	NR	655	383	NR	785	9	NR	915	0	NR
400	6	NR	530	701	NR	660	338	NR	790	8	NR	920	0	NR
405	9	NR	535	739	NR	665	298	NR	795	7	NR	925	0	NR
410	16	NR	540	766	NR	670	261	NR	800	6	NR	930	0	NR
415	32	NR	545	791	NR	675	228	NR	805	5	NR	935	0	NR
420	65	NR	550	813	NR	680	200	NR	810	5	NR	940	0	NR
425	131	NR	555	833	NR	685	173	NR	815	4	NR	945	0	NR
430	245	NR	560	852	NR	690	151	NR	820	3	NR	950	0	NR
435	432	NR	565	870	NR	695	130	NR	825	3	NR	955	0	NR
440	622	NR	570	885	NR	700	112	NR	830	3	NR	960	0	NR
445	870	NR	575	900	NR	705	97	NR	835	2	NR	965	0	NR
450	969	NR	580	911	NR	710	83	NR	840	2	NR	970	0	NR
455	544	NR	585	916	NR	715	71	NR	845	2	NR	975	0	NR
460	304	NR	590	912	NR	720	60	NR	850	1	NR	980	0	NR
465	231	NR	595	901	NR	725	51	NR	855	1	NR	985	0	NR
470	142	NR	600	882	NR	730	43	NR	860	1	NR	990	0	NR
475	96	NR	605	855	NR	735	37	NR	865	1	NR	995	0	NR
480	92	NR	610	820	NR	740	32	NR	870	1	NR	1000	0	NR
485	96	NR	615	776	NR	745	29	NR	875	1	NR			

**Summary**

$R_f = 74.7$   
 $R_g = 95.4$   
 $CIE R_a = 71.9$   
 $R_9 = -23.5$

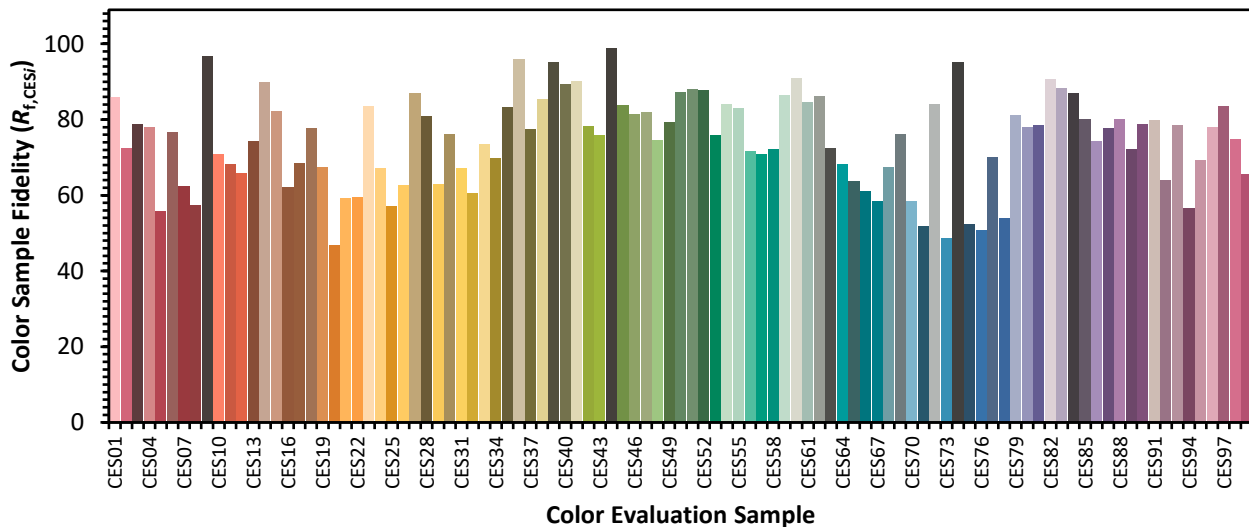


**Color Vector Graphics**

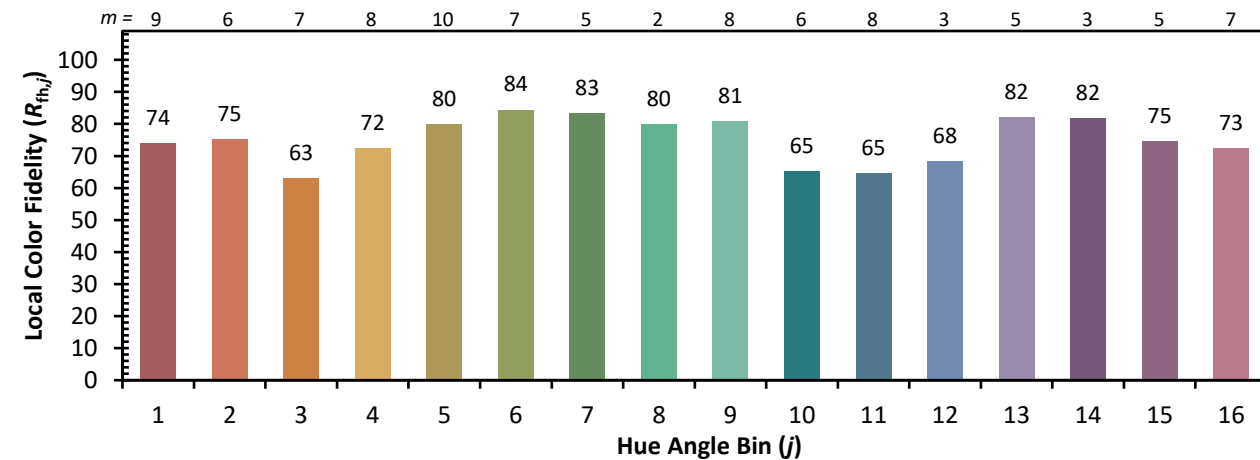
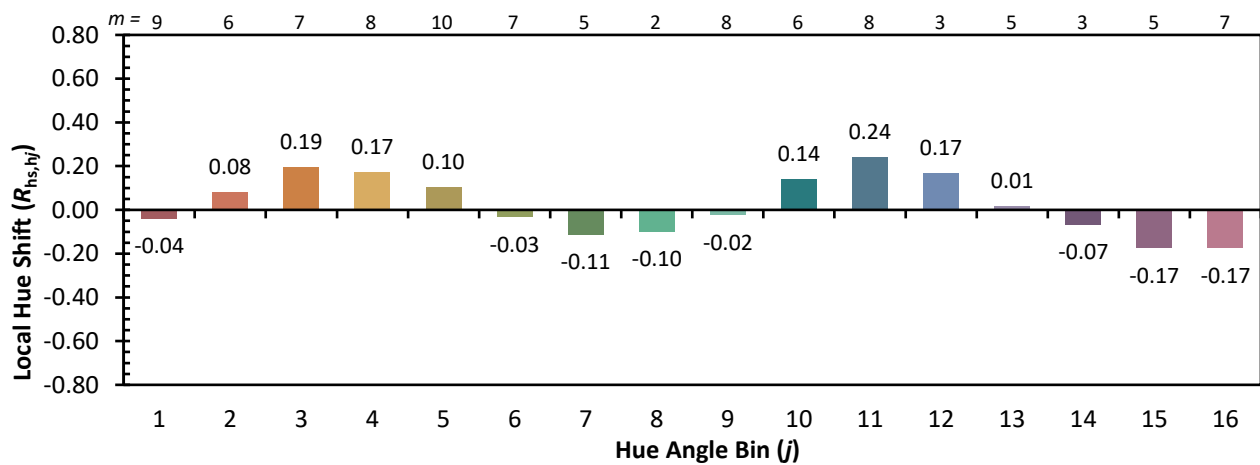
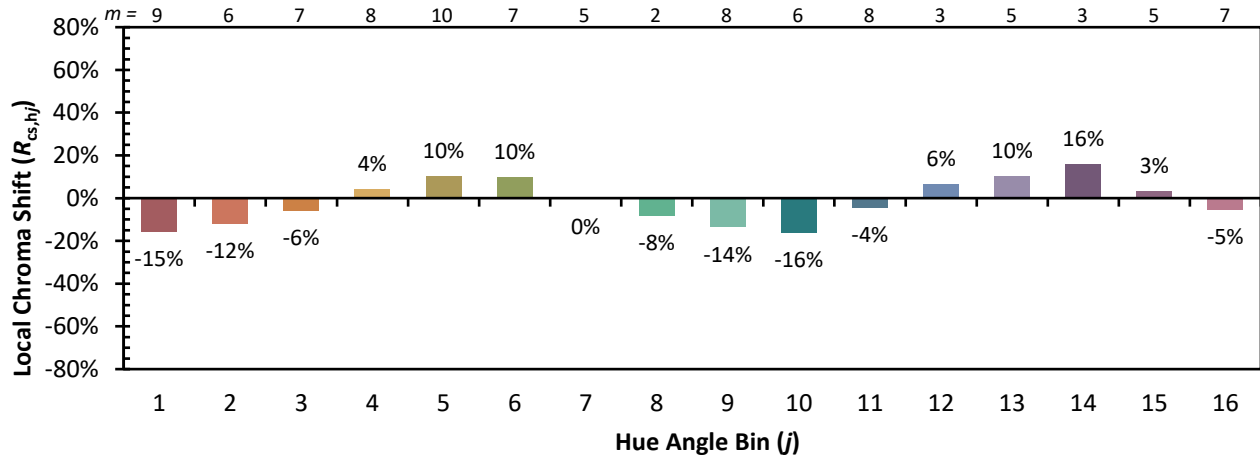


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

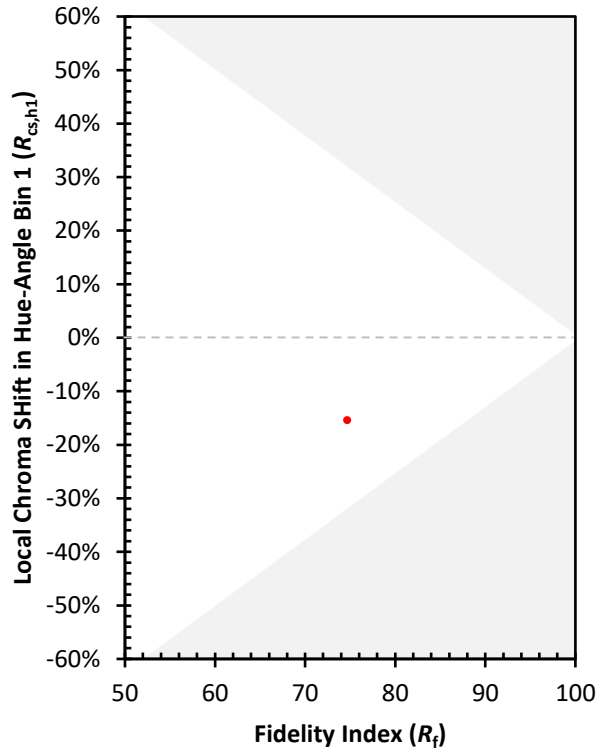
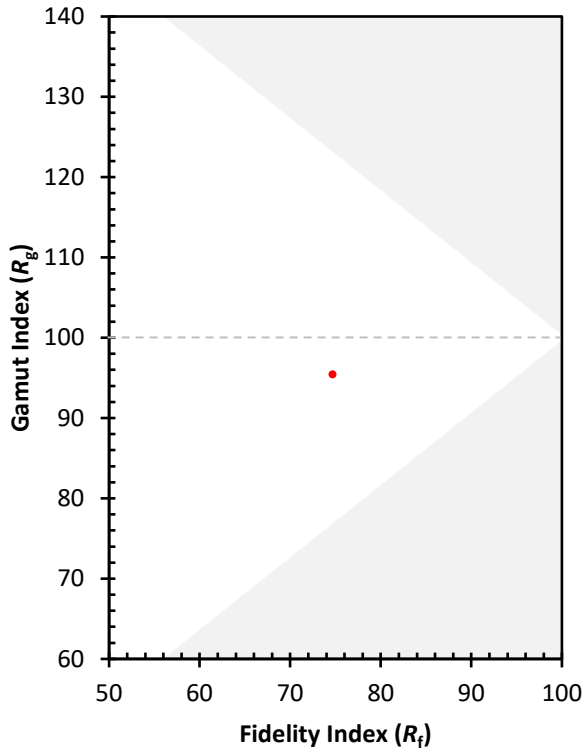
CES01 = 85	CES26 = 63	CES51 = 88	CES76 = 51
CES02 = 61	CES27 = 87	CES52 = 88	CES77 = 70
CES03 = 30	CES28 = 81	CES53 = 76	CES78 = 54
CES04 = 70	CES29 = 63	CES54 = 84	CES79 = 81
CES05 = 47	CES30 = 76	CES55 = 83	CES80 = 78
CES06 = 50	CES31 = 67	CES56 = 72	CES81 = 79
CES07 = 40	CES32 = 61	CES57 = 71	CES82 = 91
CES08 = 39	CES33 = 73	CES58 = 72	CES83 = 88
CES09 = 29	CES34 = 70	CES59 = 86	CES84 = 87
CES10 = 74	CES35 = 83	CES60 = 91	CES85 = 80
CES11 = 57	CES36 = 96	CES61 = 85	CES86 = 74
CES12 = 63	CES37 = 77	CES62 = 86	CES87 = 78
CES13 = 42	CES38 = 85	CES63 = 72	CES88 = 80
CES14 = 74	CES39 = 95	CES64 = 68	CES89 = 72
CES15 = 71	CES40 = 89	CES65 = 64	CES90 = 79
CES16 = 46	CES41 = 90	CES66 = 61	CES91 = 80
CES17 = 49	CES42 = 78	CES67 = 58	CES92 = 64
CES18 = 56	CES43 = 76	CES68 = 67	CES93 = 78
CES19 = 71	CES44 = 99	CES69 = 76	CES94 = 57
CES20 = 65	CES45 = 84	CES70 = 58	CES95 = 69
CES21 = 86	CES46 = 81	CES71 = 52	CES96 = 78
CES22 = 78	CES47 = 82	CES72 = 84	CES97 = 84
CES23 = 92	CES48 = 75	CES73 = 49	CES98 = 75
CES24 = 91	CES49 = 79	CES74 = 95	CES99 = 66
CES25 = 72	CES50 = 87	CES75 = 52	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)