

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: P833914

Luminaire Tested: **TTN-D3-740-U-DL-CG-UPL1**

Issue Date: 5/15/2024

Test Information

Test Method: LM-79-08
Report Number: P833914
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-UPL1
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: 6935.9 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 - U3 - G2

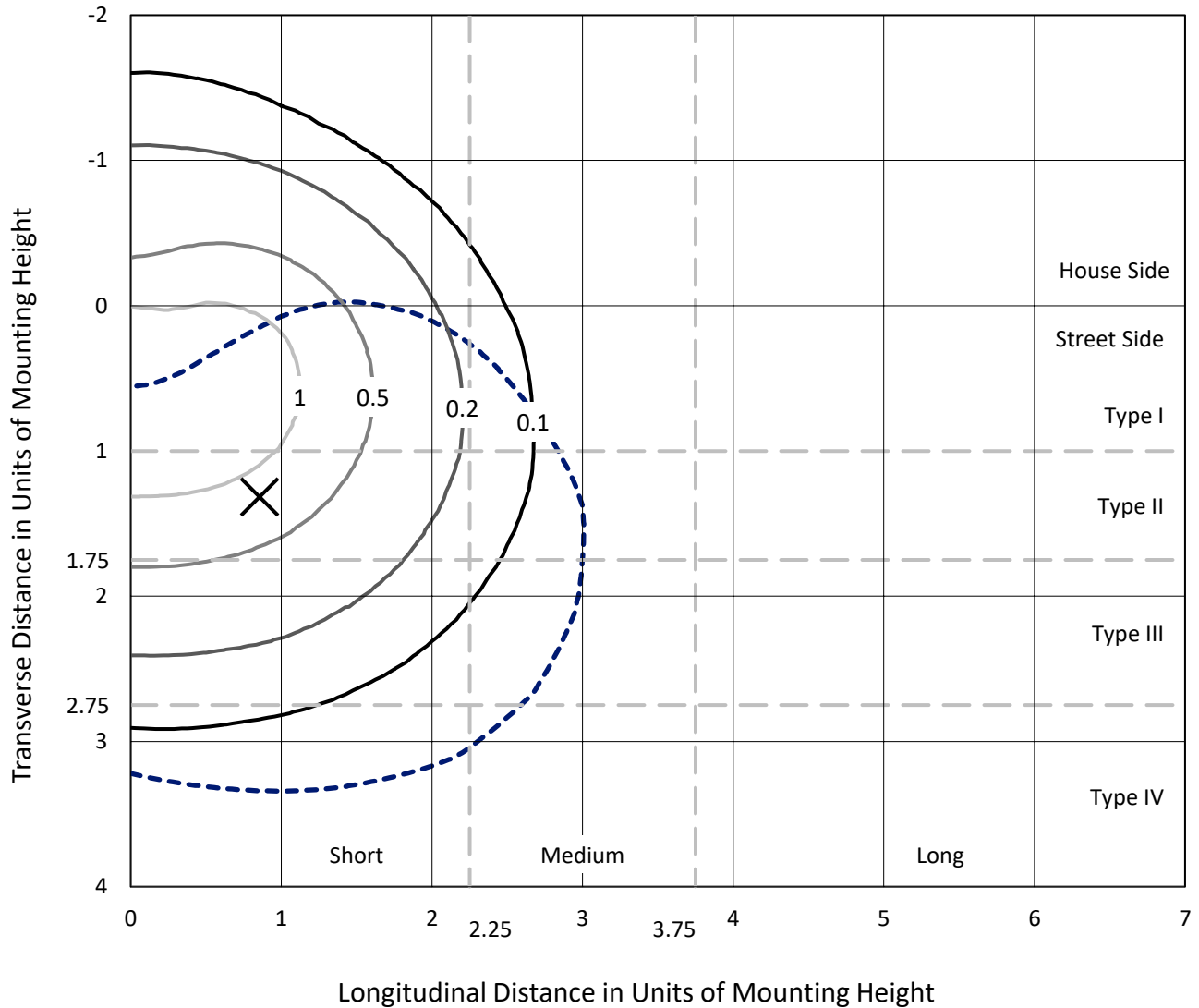
Input Watts (W): 61.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Iso-Footcandle Lines of Horizontal Illumination

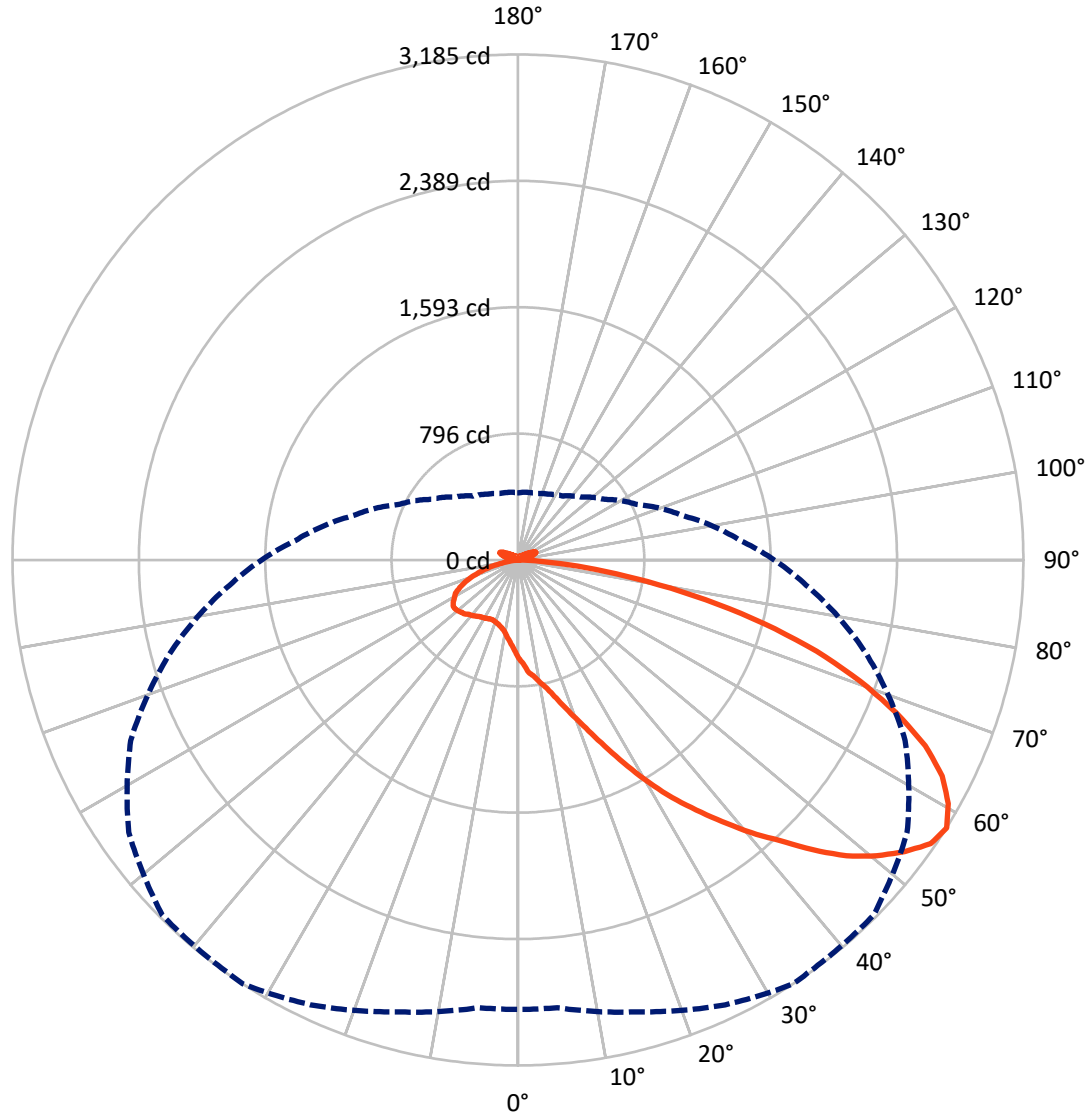
✕ Max cd
 - - - 1/2 Max cd



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

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Luminous Intensity Polar Plot



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

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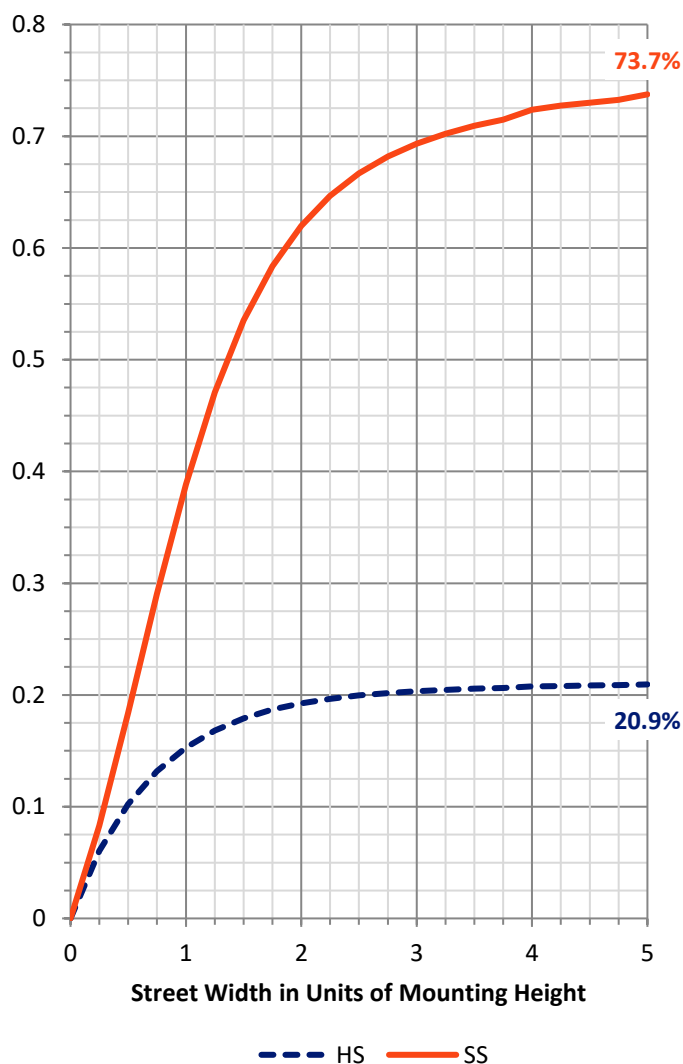
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1459.2	161.7	1620.9
	% Fixture	21.0	2.3	23.4
Street Side	Lumens	5153.2	161.7	5314.9
	% Fixture	74.3	2.3	76.6
Total	Lumens	6612.4	323.4	6935.9
	% Fixture	95.3	4.7	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.3	0.9
10°-20°	192.3	2.8
20°-30°	405.4	5.8
30°-40°	736.3	10.6
40°-50°	1163.5	16.8
50°-60°	1545.1	22.3
60°-70°	1487.2	21.4
70°-80°	873.0	12.6
80°-90°	150.3	2.2
90°-100°	7.2	0.1
100°-110°	73.4	1.1
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°	6612.4	95.3
0°-180°	6935.9	100.0

Coefficient of Utilization

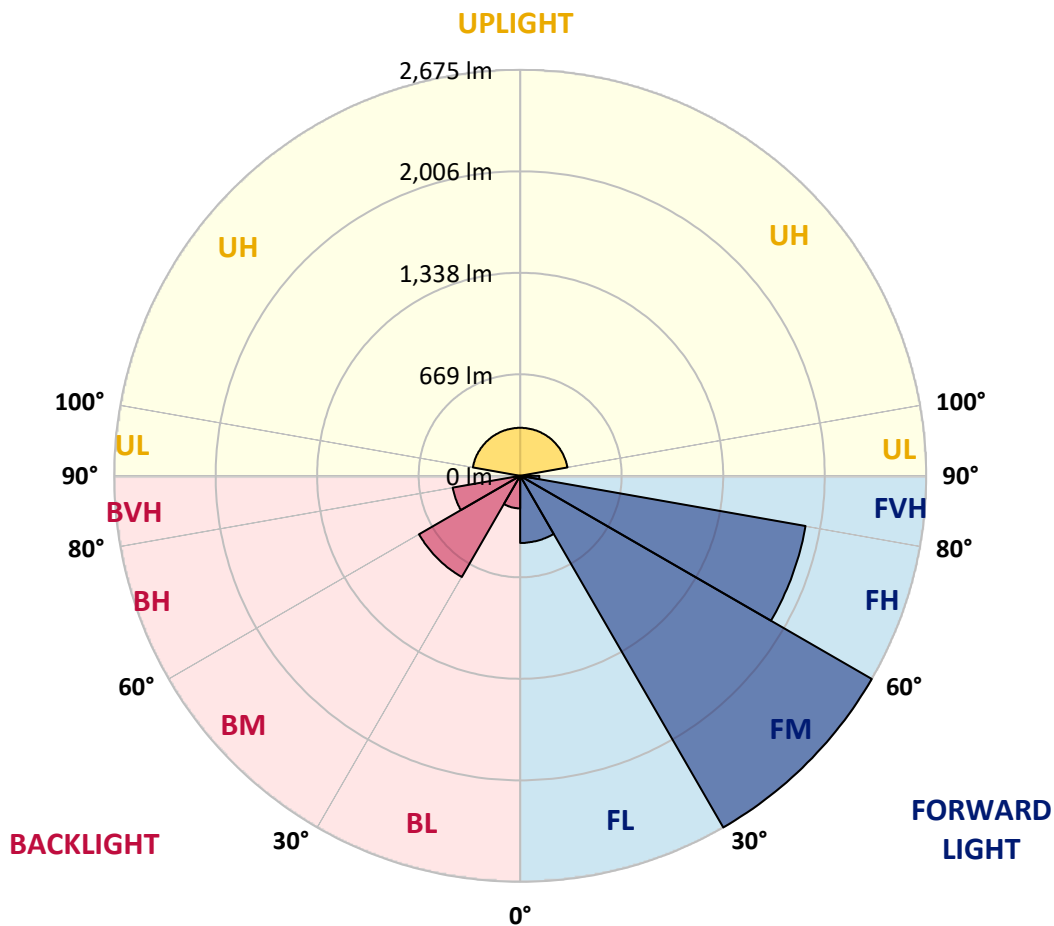


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	442.4	6.4			
FM (30°-60°)	2675.0	38.6			
FH (60°-80°)	1909.0	27.5			G2/5000
FVH (80°-90°)	126.8	1.8			G2/225
BL (0°-30°)	214.6	3.1	B1/500		
BM (30°-60°)	769.9	11.1	B1/1000		
BH (60°-80°)	451.2	6.5	B1/500		G1/500
BVH (80°-90°)	23.5	0.3			G1/100
UL (90°-100°)	7.2	0.1		U1/10	
UH (100°-180°)	316.2	4.6		U3/500	

BUG Rating: B1-U3-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°	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	4.3	4.4	3.9	4.4	3.3	3.3	2.8
95°	3.3	3.3	3.9	5.0	5.9	6.1	6.6	6.6	3.9	3.9	3.3
97.5°	4.4	5.0	5.0	6.1	9.2	10.0	18.3	11.1	5.5	5.5	5.0
100°	7.2	7.7	7.7	13.8	26.2	29.3	39.3	28.2	14.4	10.5	7.7
102.5°	23.2	24.3	29.9	44.8	62.1	66.4	60.3	50.9	48.1	33.2	26.6
105°	59.2	58.7	63.1	74.7	89.3	93.0	91.3	84.1	76.4	65.8	60.9
107.5°	78.0	78.0	81.9	91.9	102.9	105.7	123.4	125.1	99.0	86.9	81.3
110°	88.0	88.0	91.3	99.6	114.2	117.9	142.8	141.6	122.3	107.3	100.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	33°	35°	45°	55°	65°	75°	85°
112.5°	90.2	90.7	95.2	107.9	123.8	127.8	138.9	133.9	126.2	119.5	114.0
115°	93.5	93.5	98.5	110.7	119.5	121.7	126.2	120.6	114.5	110.1	107.9
117.5°	92.4	94.1	95.2	101.8	107.6	109.0	112.3	109.6	101.3	97.9	96.8
120°	85.8	85.8	86.9	90.2	93.3	94.1	95.7	94.6	89.1	86.3	85.8
122.5°	76.4	76.9	76.4	78.0	80.2	80.8	82.4	81.3	76.9	75.8	75.8
125°	67.0	67.0	66.4	67.5	68.9	69.2	68.6	69.2	67.0	66.4	66.4
127.5°	60.3	59.8	58.7	59.2	59.7	59.8	59.8	60.3	58.1	58.7	59.2
130°	53.7	53.7	52.6	52.6	52.6	52.6	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	41.5	40.9	41.5	40.9	42.1	42.6
137.5°	38.7	38.7	37.6	37.6	37.6	37.6	37.1	37.6	37.6	38.2	39.3
140°	35.4	35.4	34.9	34.9	34.4	34.3	34.9	34.9	34.9	35.4	36.0
142.5°	33.8	33.2	32.6	32.1	32.5	32.6	32.6	32.6	32.1	32.6	33.8
145°	31.0	31.0	30.4	30.4	30.4	30.4	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	28.2	27.7	27.7	27.7	27.7	28.2
152.5°	27.1	27.1	26.6	27.1	26.7	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	23.9	23.8	23.8	23.8	24.3	24.3	24.3
162.5°	23.8	23.8	23.8	23.8	23.3	23.2	23.2	23.2	23.2	23.8	23.8
165°	23.8	23.2	23.2	23.2	22.8	22.7	22.7	22.7	22.7	23.2	23.8
167.5°	22.7	22.7	22.7	22.7	22.7	22.7	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	22.2	22.1	22.1	22.1	22.1	22.1	22.7
175°	22.7	22.7	22.7	22.7	22.2	22.1	22.1	22.1	22.7	22.7	22.7
177.5°	22.7	22.7	22.7	22.7	22.2	22.1	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°	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°	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



REPORT NUMBER: P833914
 CATALOG NUMBER: TTN-D3-740-U-DL-CG-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: SP1-2411-284-2

Test Date: 11/20/2024

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

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

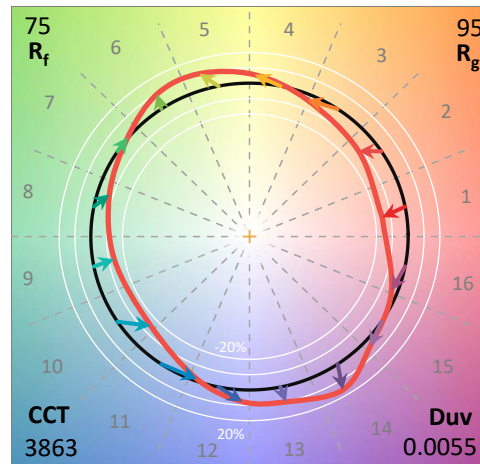
Test Information

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

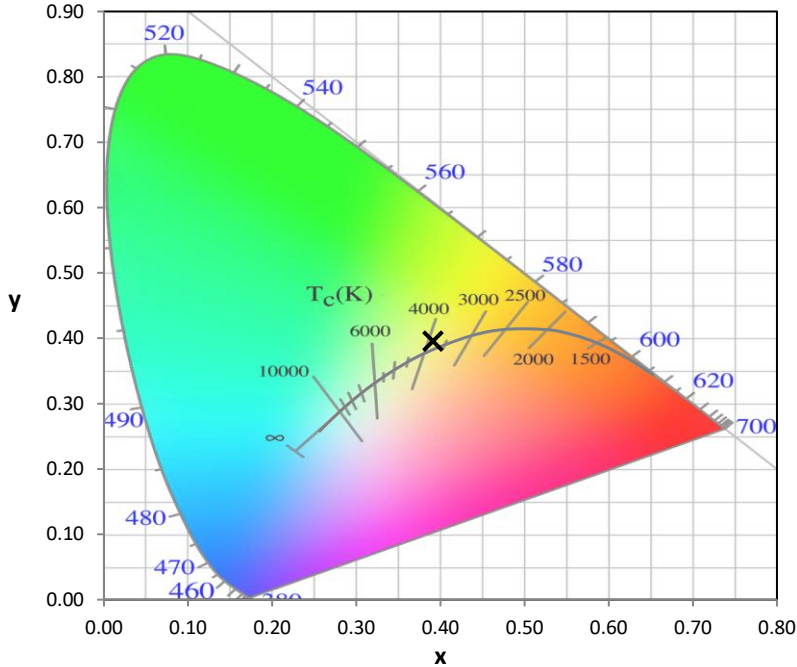
Stabilization Time: 37M
 Operation Time: 1H 37M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2411-284-2

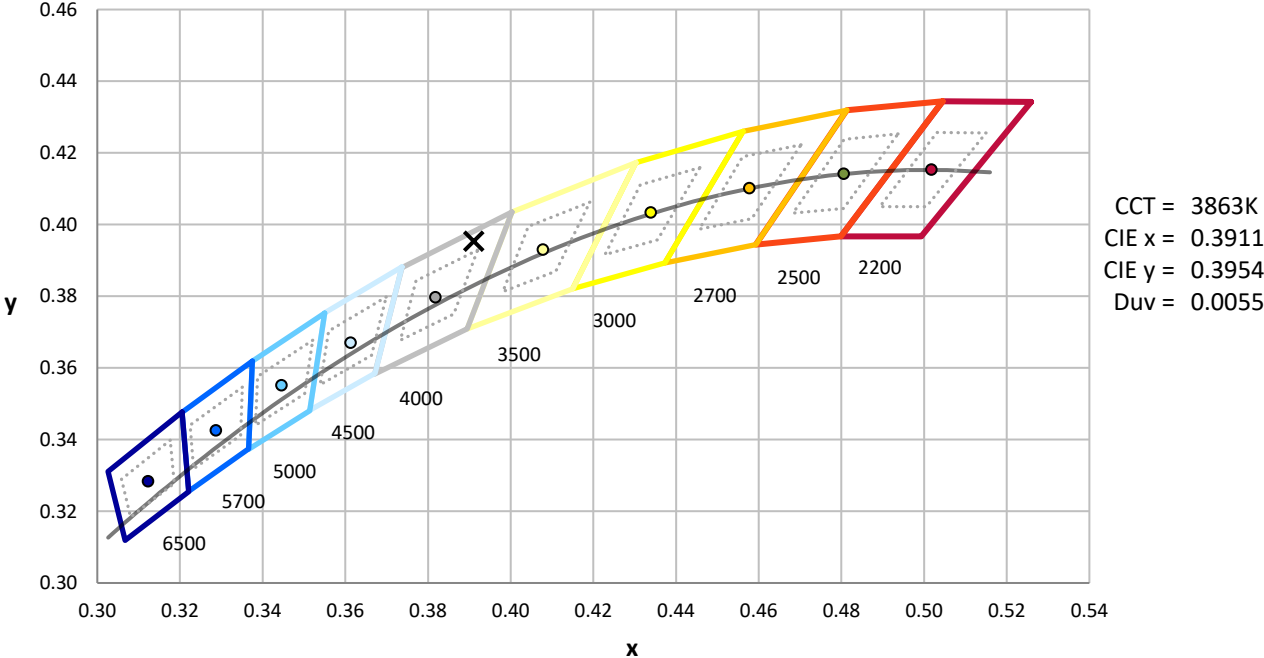
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085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

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CIE 1931 Chromaticity Diagram



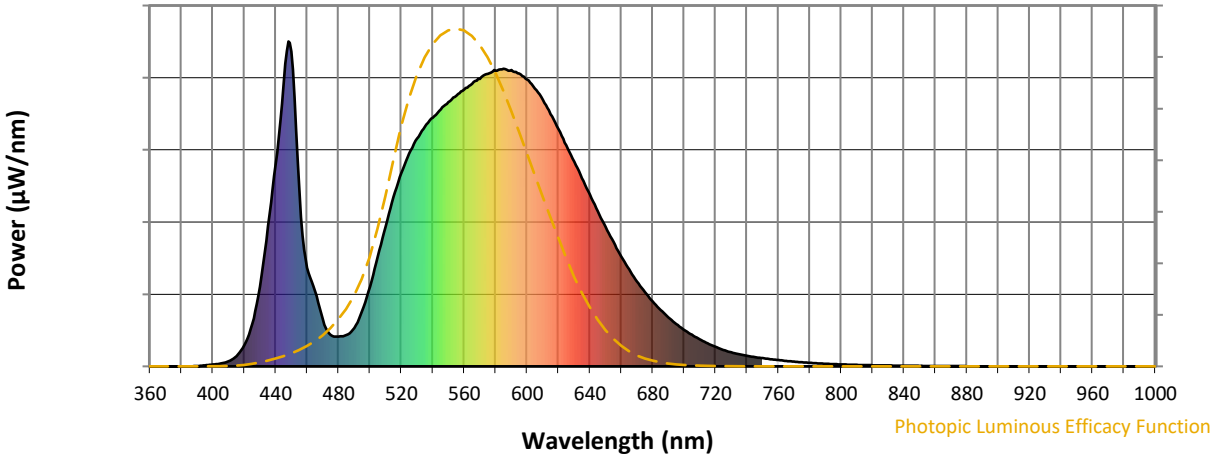
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 4000K 7-step quadrangle

REPORT NUMBER: SP1-2411-284-2

Photopic Flux vs. Wavelength

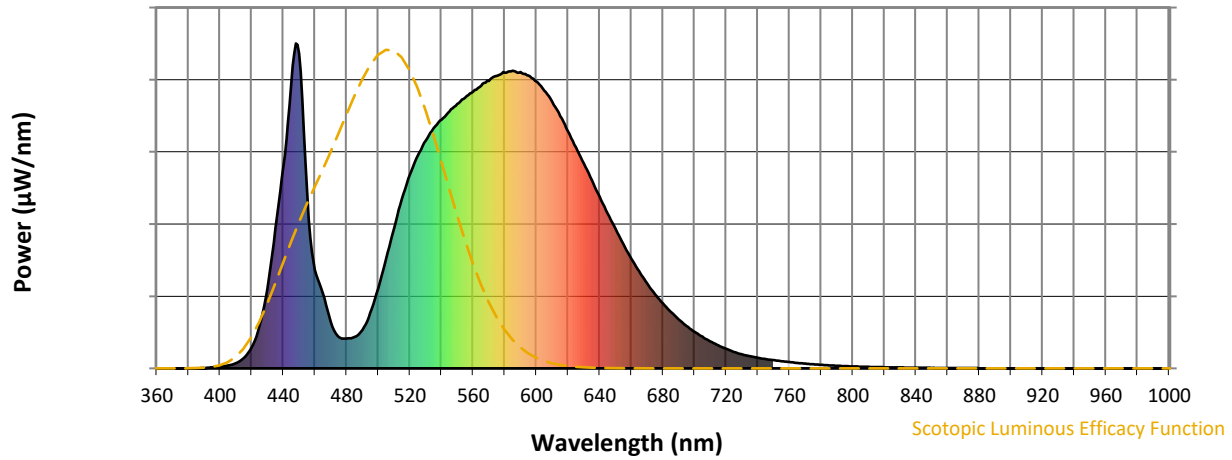


Photopic Lumens: NR

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	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



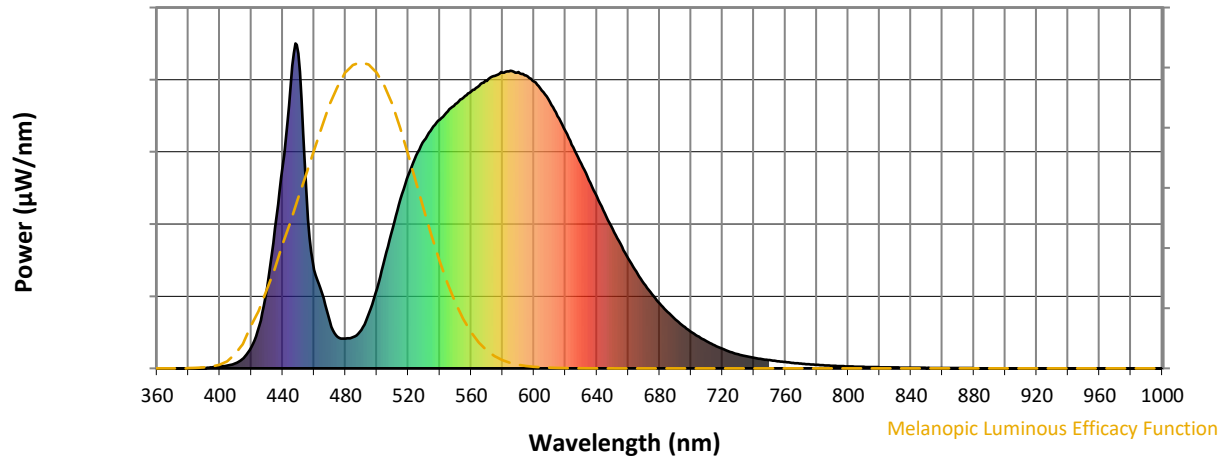
Scotopic Lumens: NR

S/P: 1.45

λ (nm)	Power W [^] /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	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



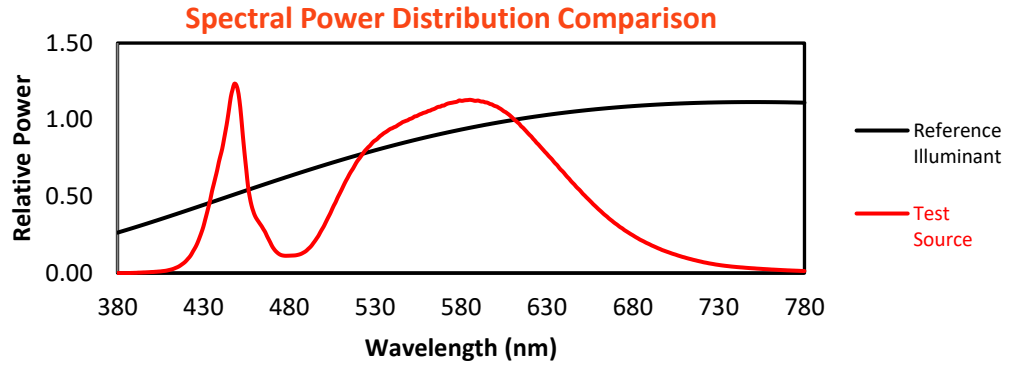
Melanopic Lumens: NR

M/P: 2.72

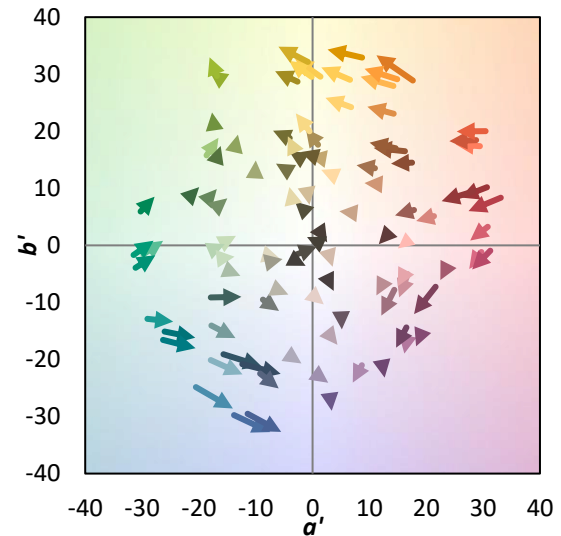
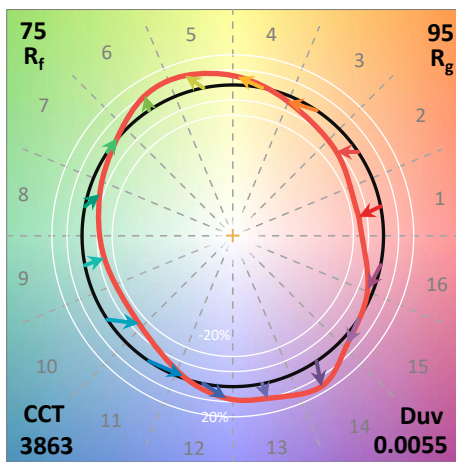
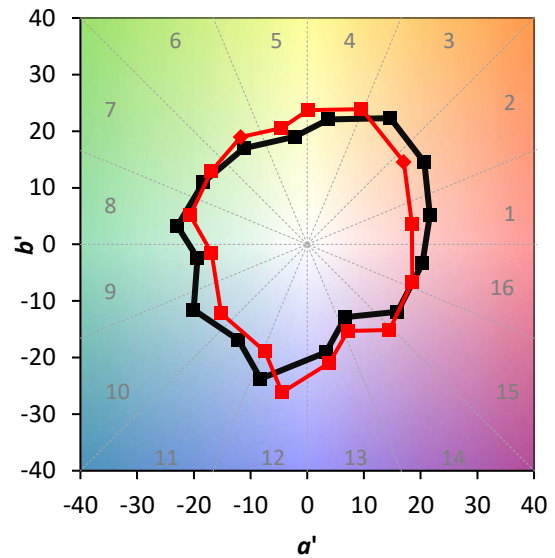
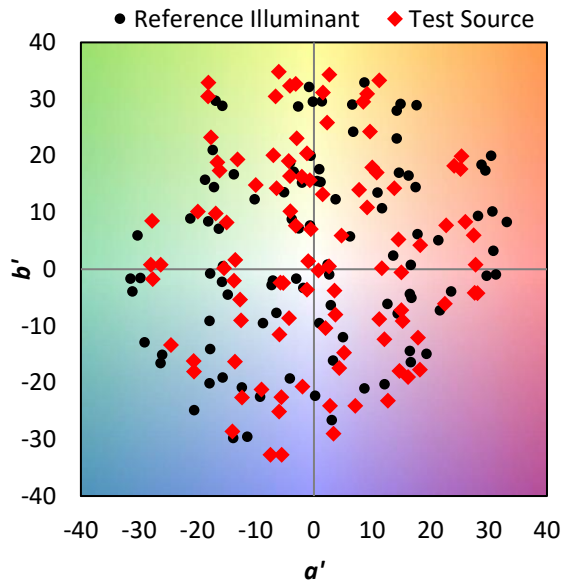
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	118	NR	620	730	NR	750	25	NR	880	1	NR
365	0	NR	495	170	NR	625	680	NR	755	22	NR	885	0	NR
370	0	NR	500	245	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

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

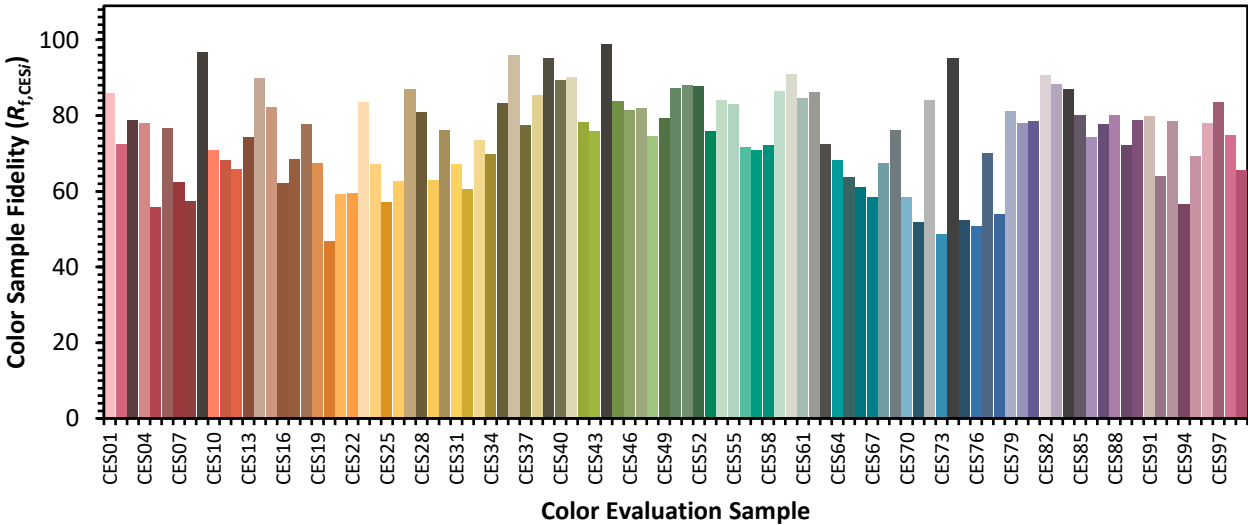


Color Vector Graphics

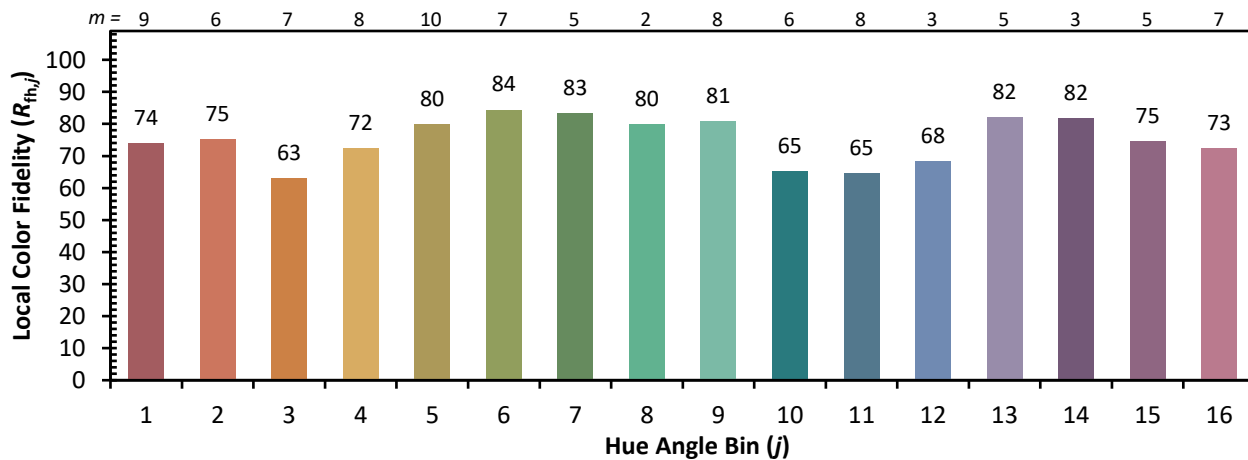
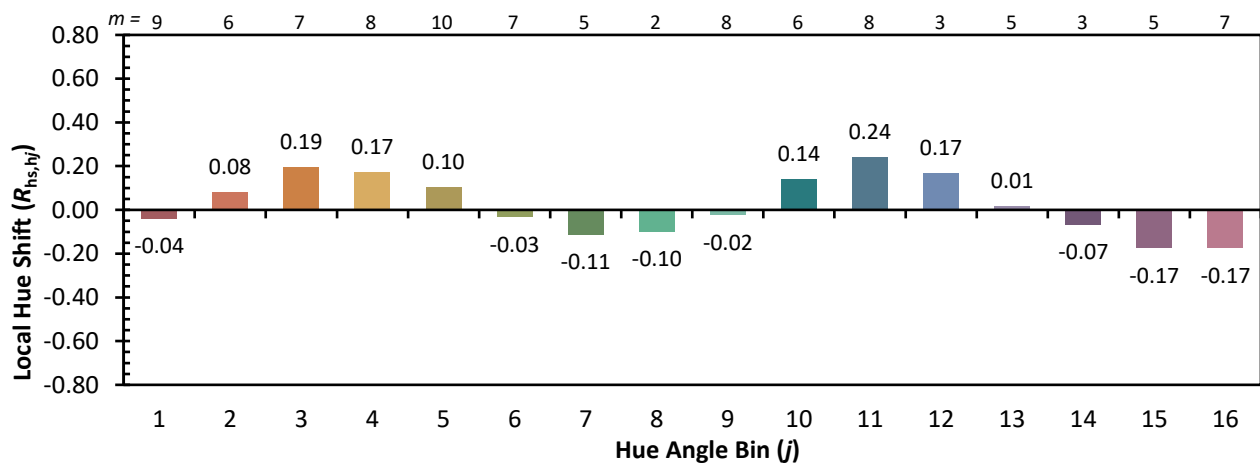
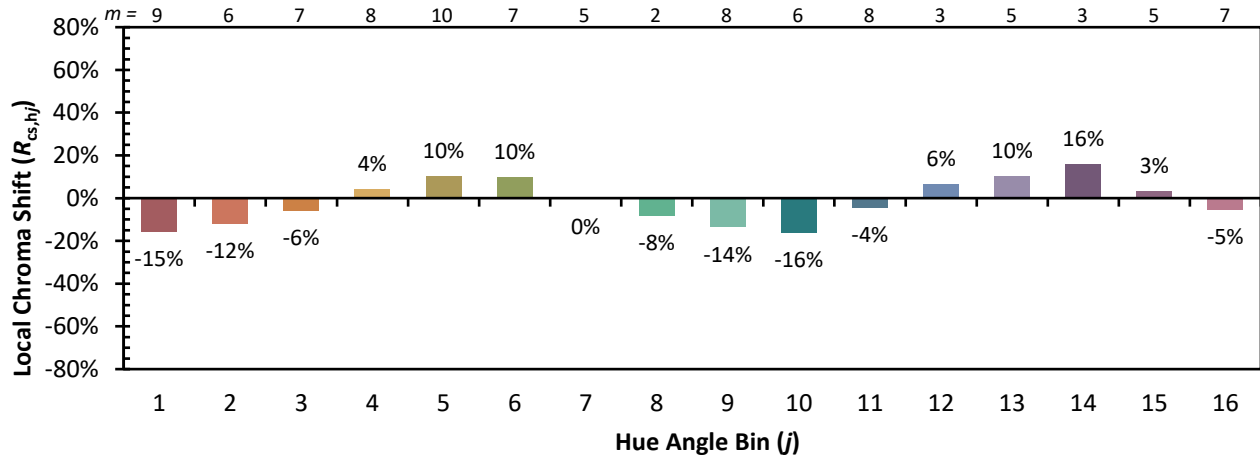


Individual Sample Fidelity Index ($R_{f,i}$)

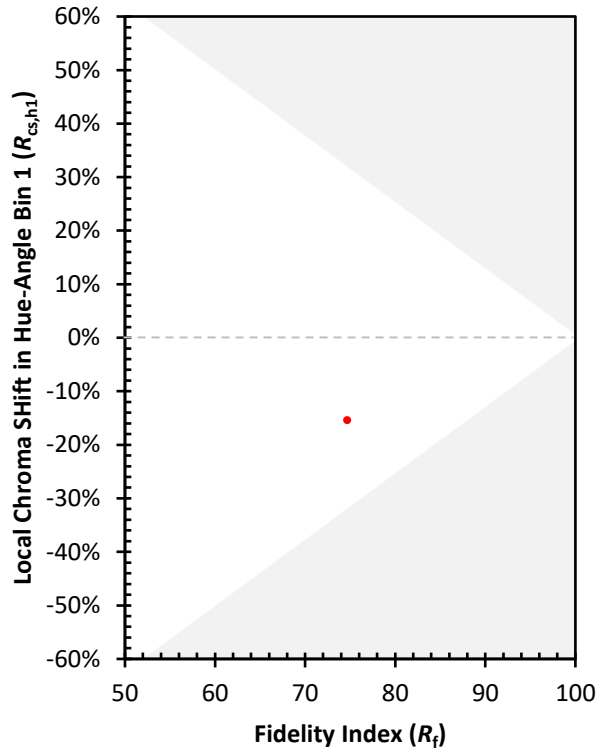
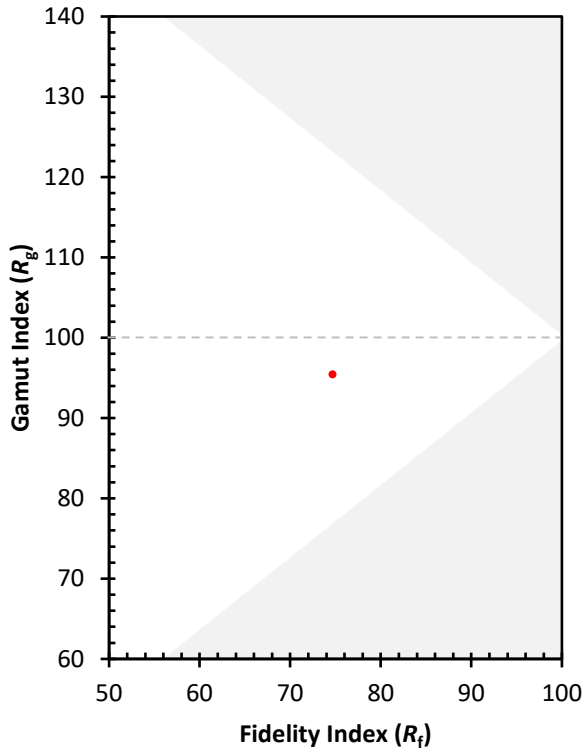
CES01 = 85	CES26 = 63	CES51 = 88	CES76 = 51
CES02 = 61	CES27 = 87	CES52 = 88	CES77 = 70
CES03 = 30	CES28 = 81	CES53 = 76	CES78 = 54
CES04 = 70	CES29 = 63	CES54 = 84	CES79 = 81
CES05 = 47	CES30 = 76	CES55 = 83	CES80 = 78
CES06 = 50	CES31 = 67	CES56 = 72	CES81 = 79
CES07 = 40	CES32 = 61	CES57 = 71	CES82 = 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)