

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: P833885

Luminaire Tested: **TTN-D3-735-U-DL-CG-UPL2**

Issue Date: 5/15/2024

Test Information

Test Method: LM-79-08
Report Number: P833885
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-D3-735-U-DL-CG-UPL2
Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE WITH UPLIGHT
3500K, 70 CRI LEDS AND DRIVE LANE DISTRIBUTION WITH CLEAR GLASS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6811.8 lumens
Efficiency: N/A
Efficacy: 106.9 lumens/watt
Luminous Opening: Vertical Cylinder (Dia: 0.71' x H: 0.1')
IES Classification: Type IV - Short
BUG Rating: B1 - U4 - G2

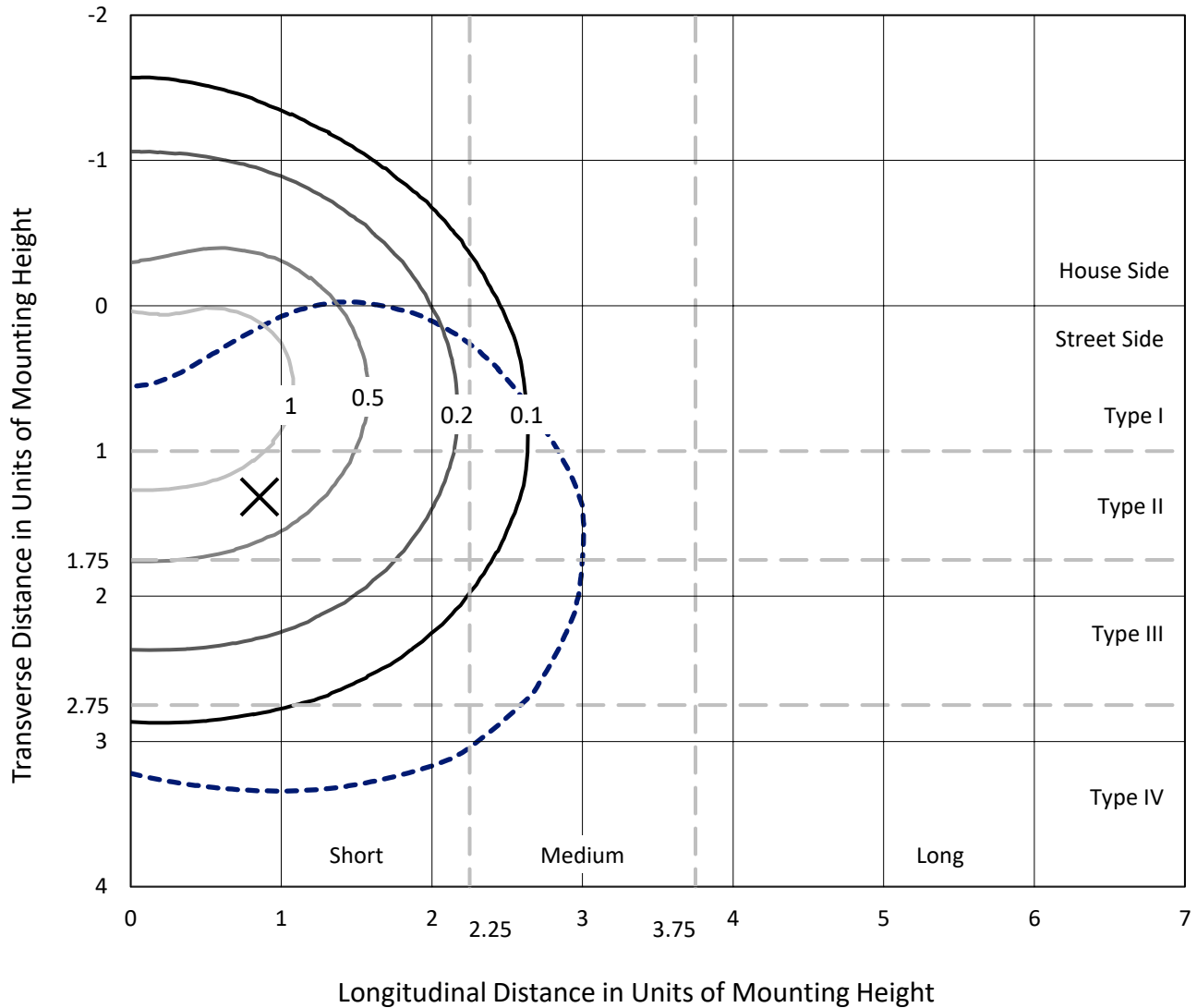
Input Watts (W): 63.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Iso-Footcandle Lines of Horizontal Illumination

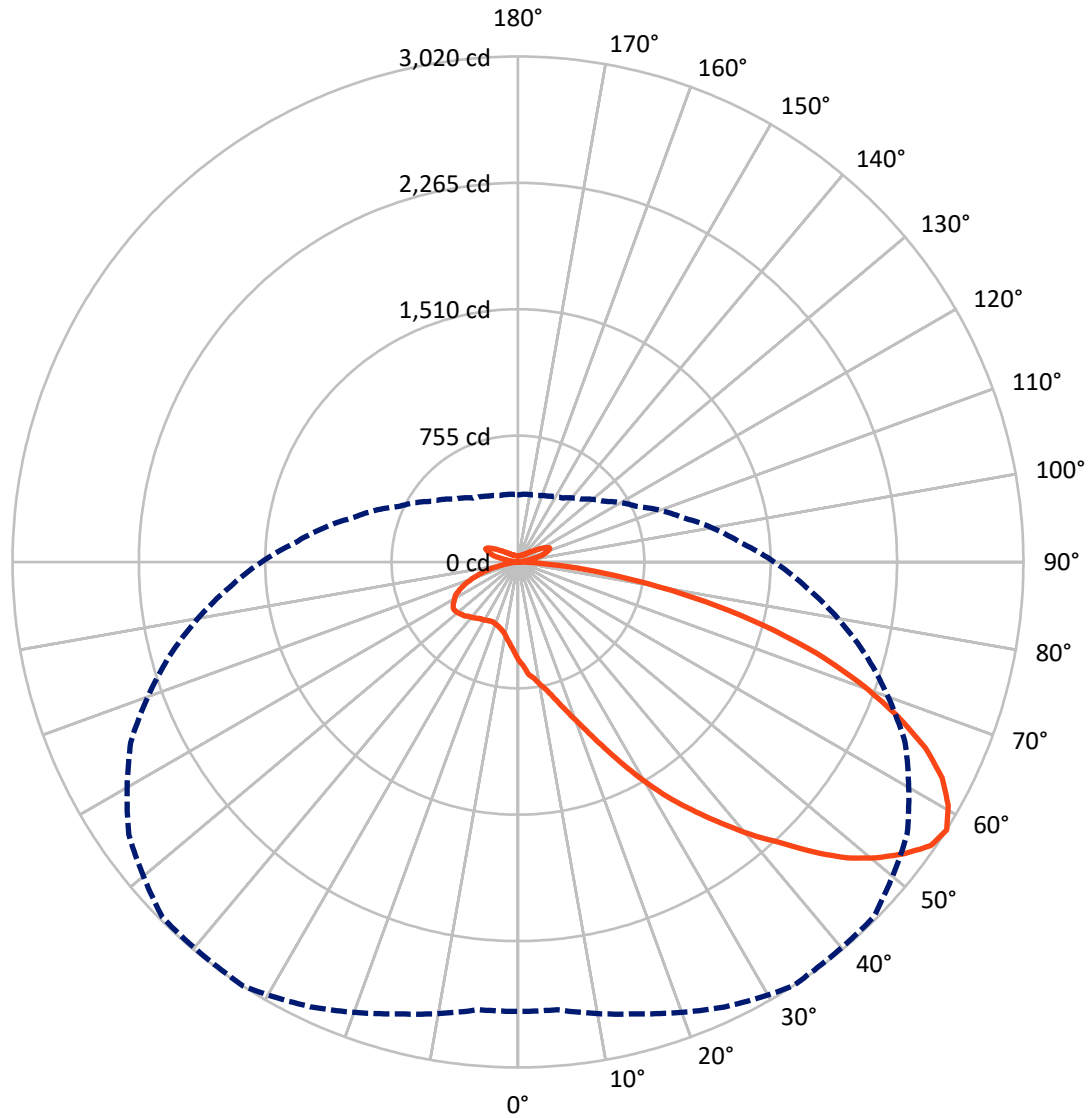
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.6 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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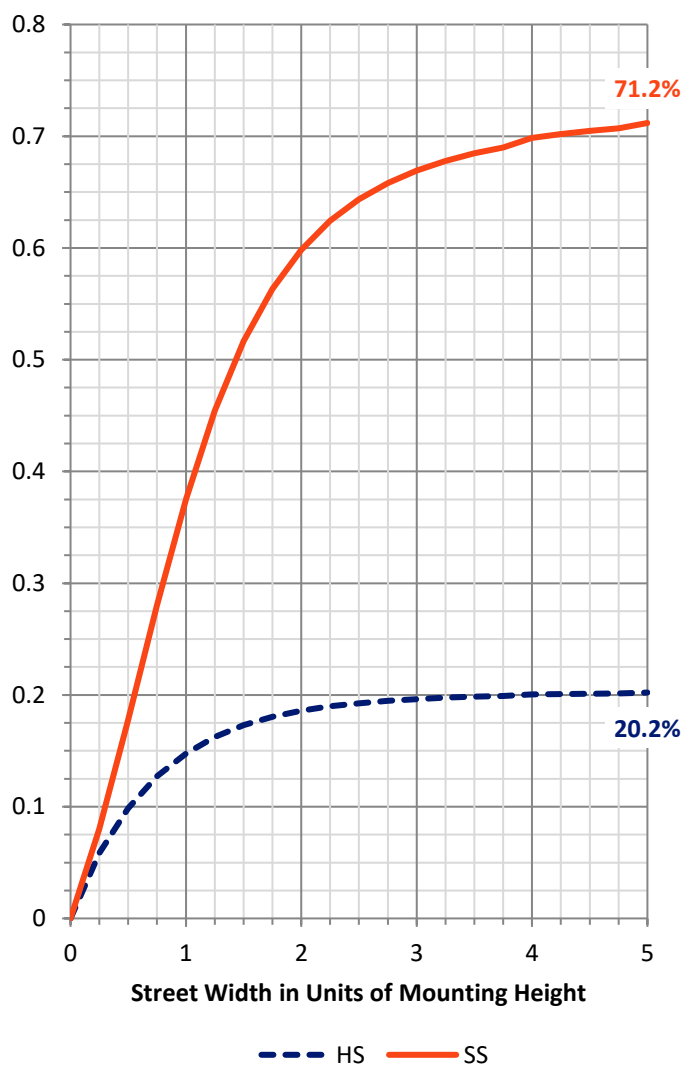
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1383.5	271.5	1655.0
	% Fixture	20.3	4.0	24.3
Street Side	Lumens	4885.3	271.5	5156.8
	% Fixture	71.7	4.0	75.7
Total	Lumens	6268.7	543.0	6811.8
	% Fixture	92.0	8.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	56.2	0.8
10°-20°	182.3	2.7
20°-30°	384.4	5.6
30°-40°	698.0	10.2
40°-50°	1103.0	16.2
50°-60°	1464.8	21.5
60°-70°	1409.8	20.7
70°-80°	827.6	12.1
80°-90°	142.8	2.1
90°-100°	12.1	0.2
100°-110°	123.2	1.8
110°-120°	180.1	2.6
120°-130°	104.5	1.5
130°-140°	55.4	0.8
140°-150°	32.9	0.5
150°-160°	20.2	0.3
160°-170°	11.0	0.2
170°-180°	3.6	0.1
0°-90°	6268.7	92.0
0°-180°	6811.8	100.0

Coefficient of Utilization

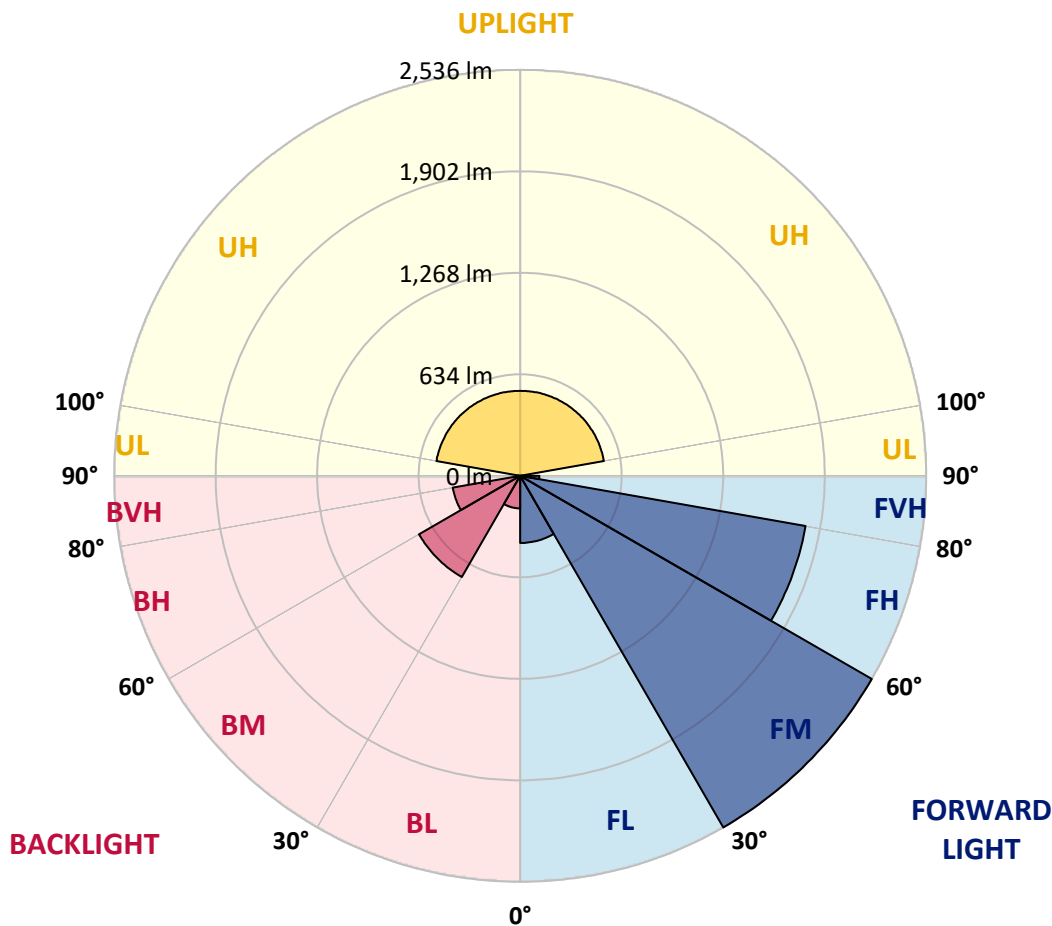


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	419.4	6.2			
FM (30°-60°)	2535.8	37.2			
FH (60°-80°)	1809.7	26.6			G2/5000
FVH (80°-90°)	120.4	1.8			G2/225
BL (0°-30°)	203.5	3.0	B1/500		
BM (30°-60°)	729.9	10.7	B1/1000		
BH (60°-80°)	427.7	6.3	B1/500		G1/500
BVH (80°-90°)	22.4	0.3			G1/100
UL (90°-100°)	12.1	0.2		U2/50	
UH (100°-180°)	530.9	7.8		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°	587.5	587.5	587.5	587.5	587.5	587.5	587.5	587.5	587.5	587.5	587.5
2.5°	625.9	631.4	625.9	625.9	620.4	620.4	614.9	609.4	603.9	598.4	587.5
5°	697.3	697.3	691.8	680.8	675.3	669.8	658.8	642.4	631.4	614.9	598.4
7.5°	730.2	730.2	724.7	713.7	702.8	697.3	680.8	658.8	642.4	620.4	598.4
10°	774.1	779.6	768.6	757.7	746.7	741.2	719.2	691.8	664.3	636.9	603.9
12.5°	823.5	829.0	823.5	807.1	790.6	785.1	763.2	730.2	697.3	658.8	620.4
15°	889.4	900.4	883.9	873.0	856.5	851.0	823.5	785.1	746.7	697.3	647.9
17.5°	966.3	971.8	960.8	944.3	933.4	927.9	900.4	856.5	801.6	746.7	686.3
20°	1054.1	1059.6	1054.1	1032.2	1021.2	1015.7	988.3	938.8	873.0	812.6	735.7
22.5°	1158.5	1169.4	1153.0	1136.5	1125.5	1125.5	1092.6	1037.7	960.8	883.9	796.1
25°	1279.2	1295.7	1273.8	1262.8	1251.8	1246.3	1218.8	1153.0	1065.1	971.8	862.0
27.5°	1427.5	1438.5	1422.0	1416.5	1394.5	1394.5	1350.6	1273.8	1180.4	1070.6	944.3
30°	1559.2	1570.2	1559.2	1559.2	1542.8	1537.3	1493.4	1416.5	1301.2	1169.4	1015.7
32.5°	1685.5	1696.5	1691.0	1696.5	1691.0	1685.5	1630.6	1548.3	1433.0	1262.8	1087.1
35°	1811.8	1828.3	1822.8	1839.3	1833.8	1828.3	1784.4	1685.5	1548.3	1378.1	1163.9
37.5°	1943.6	1960.0	1960.0	1976.5	1982.0	1982.0	1932.6	1828.3	1674.5	1482.4	1251.8
40°	2086.3	2102.8	2102.8	2130.2	2141.2	2141.2	2086.3	1982.0	1811.8	1597.7	1345.1
42.5°	2223.6	2240.0	2245.5	2273.0	2289.5	2295.0	2251.0	2130.2	1932.6	1713.0	1433.0
45°	2355.3	2371.8	2388.3	2443.2	2470.6	2465.2	2432.2	2305.9	2086.3	1833.8	1526.3
47.5°	2481.6	2503.6	2531.0	2602.4	2640.8	2635.3	2613.4	2470.6	2229.1	1949.1	1608.7
50°	2580.4	2596.9	2651.8	2728.7	2778.1	2783.6	2750.6	2613.4	2349.9	2036.9	1669.1
52.5°	2657.3	2679.3	2745.2	2855.0	2893.4	2909.9	2871.4	2734.2	2470.6	2113.8	1718.5
55°	2712.2	2712.2	2811.0	2937.3	2992.2	3003.2	3003.2	2833.0	2542.0	2163.2	1745.9
57.5°	2684.8	2684.8	2794.6	2931.8	3019.7	3014.2	3003.2	2838.5	2553.0	2152.2	1729.4
60°	2607.9	2624.4	2728.7	2865.9	2953.8	2948.3	2915.4	2767.1	2498.1	2108.3	1696.5
62.5°	2503.6	2531.0	2640.8	2745.2	2844.0	2860.5	2816.5	2684.8	2404.8	2042.4	1636.1
65°	2305.9	2344.4	2481.6	2596.9	2673.8	2706.7	2651.8	2531.0	2278.5	1916.1	1509.8
67.5°	2086.3	2113.8	2229.1	2393.8	2437.7	2470.6	2443.2	2316.9	2102.8	1713.0	1367.1
70°	1833.8	1877.7	1954.6	2119.3	2168.7	2201.6	2201.6	2075.3	1872.2	1504.3	1196.9
72.5°	1537.3	1586.7	1680.0	1800.8	1866.7	1888.7	1883.2	1778.9	1597.7	1273.8	1010.2
75°	1213.4	1251.8	1361.6	1449.4	1520.8	1537.3	1531.8	1444.0	1279.2	1026.7	801.6
77.5°	894.9	933.4	1015.7	1081.6	1147.5	1136.5	1136.5	1070.6	966.3	763.2	609.4
80°	587.5	620.4	691.8	713.7	785.1	779.6	779.6	730.2	658.8	510.6	406.3
82.5°	323.9	351.4	400.8	422.8	466.7	455.7	461.2	428.2	384.3	285.5	230.6
85°	115.3	137.3	164.7	181.2	203.1	203.1	203.1	175.7	164.7	109.8	93.3
87.5°	5.5	11.0	22.0	22.0	32.9	32.9	32.9	22.0	22.0	5.5	5.5
90°	4.6	4.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	4.6
92.5°	4.6	4.6	4.6	6.5	7.2	7.4	6.5	7.4	5.6	5.6	4.6
95°	5.6	5.6	6.5	8.4	9.8	10.2	11.1	11.1	6.5	6.5	5.6
97.5°	7.4	8.4	8.4	10.2	15.4	16.7	30.7	18.6	9.3	9.3	8.4
100°	12.1	13.0	13.0	23.2	44.0	49.2	66.0	47.4	24.2	17.7	13.0
102.5°	39.0	40.9	50.2	75.3	104.3	111.5	101.3	85.5	80.8	55.7	44.6
105°	99.4	98.5	105.9	125.4	150.0	156.1	153.3	141.2	128.2	110.6	102.2
107.5°	131.0	131.0	137.5	154.2	172.8	177.4	207.2	210.0	166.3	145.9	136.6
110°	147.7	147.7	153.3	167.2	191.8	197.9	239.7	237.8	205.3	180.2	168.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	33°	35°	45°	55°	65°	75°	85°
112.5°	151.4	152.4	159.8	181.2	207.9	214.6	233.2	224.8	211.8	200.7	191.4
115°	157.0	157.0	165.4	185.8	200.7	204.4	211.8	202.5	192.3	184.9	181.2
117.5°	155.1	157.9	159.8	170.9	180.6	183.0	188.6	183.9	170.0	164.4	162.6
120°	144.0	144.0	145.9	151.4	156.6	157.9	160.7	158.9	149.6	144.9	144.0
122.5°	128.2	129.1	128.2	131.0	134.7	135.6	138.4	136.6	129.1	127.3	127.3
125°	112.4	112.4	111.5	113.3	115.5	116.1	115.2	116.1	112.4	111.5	111.5
127.5°	101.3	100.3	98.5	99.4	100.1	100.3	100.3	101.3	97.5	98.5	99.4
130°	90.1	90.1	88.3	88.3	88.3	88.3	86.4	88.3	86.4	87.3	88.3
132.5°	79.9	79.9	77.1	76.2	76.2	76.2	76.2	77.1	76.2	78.0	79.9
135°	71.5	71.5	68.7	69.7	69.7	69.7	68.7	69.7	68.7	70.6	71.5
137.5°	65.0	65.0	63.2	63.2	63.2	63.2	62.2	63.2	63.2	64.1	66.0
140°	59.5	59.5	58.5	58.5	57.8	57.6	58.5	58.5	58.5	59.5	60.4
142.5°	56.7	55.7	54.8	53.9	54.6	54.8	54.8	54.8	53.9	54.8	56.7
145°	52.0	52.0	51.1	51.1	51.1	51.1	52.0	51.1	51.1	52.0	52.0
147.5°	49.2	49.2	48.3	49.2	49.2	49.2	49.2	49.2	48.3	49.2	49.2
150°	48.3	47.4	46.5	47.4	47.4	47.4	46.5	46.5	46.5	46.5	47.4
152.5°	45.5	45.5	44.6	45.5	44.8	44.6	44.6	44.6	44.6	44.6	45.5
155°	43.7	43.7	42.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7
157.5°	41.8	42.7	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	42.7
160°	40.9	40.9	40.9	40.9	40.1	39.9	39.9	39.9	40.9	40.9	40.9
162.5°	39.9	39.9	39.9	39.9	39.2	39.0	39.0	39.0	39.0	39.9	39.9
165°	39.9	39.0	39.0	39.0	38.3	38.1	38.1	38.1	38.1	39.0	39.9
167.5°	38.1	38.1	38.1	38.1	38.1	38.1	37.2	37.2	38.1	38.1	38.1
170°	38.1	38.1	37.2	37.2	37.2	37.2	37.2	37.2	37.2	37.2	37.2
172.5°	38.1	38.1	38.1	38.1	37.4	37.2	37.2	37.2	37.2	37.2	38.1
175°	38.1	38.1	38.1	38.1	37.4	37.2	37.2	37.2	38.1	38.1	38.1
177.5°	38.1	38.1	38.1	38.1	37.4	37.2	38.1	38.1	38.1	38.1	38.1
180°	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	587.5	587.5	587.5	587.5	587.5	587.5	587.5	587.5	587.5	587.5	587.5
2.5°	582.0	576.5	571.0	560.0	554.5	549.0	543.5	538.1	538.1	538.1	538.1
5°	587.5	582.0	565.5	549.0	532.6	516.1	505.1	499.6	494.1	488.6	488.6
7.5°	587.5	576.5	554.5	532.6	516.1	494.1	477.7	461.2	450.2	444.7	444.7
10°	593.0	576.5	549.0	527.1	499.6	472.2	450.2	428.2	417.3	406.3	406.3
12.5°	603.9	587.5	549.0	521.6	488.6	455.7	428.2	406.3	389.8	378.8	378.8
15°	625.9	603.9	560.0	521.6	483.1	444.7	417.3	389.8	373.3	362.4	362.4
17.5°	658.8	631.4	576.5	521.6	477.7	439.2	406.3	378.8	356.9	345.9	345.9
20°	697.3	664.3	598.4	532.6	477.7	433.7	400.8	367.9	345.9	334.9	334.9
22.5°	752.2	702.8	625.9	549.0	488.6	439.2	395.3	362.4	340.4	329.4	329.4
25°	812.6	757.7	658.8	571.0	499.6	439.2	395.3	362.4	340.4	329.4	323.9
27.5°	878.4	818.1	697.3	593.0	510.6	450.2	400.8	362.4	340.4	329.4	329.4
30°	938.8	867.5	735.7	620.4	527.1	455.7	406.3	367.9	340.4	329.4	329.4
32.5°	1004.7	922.4	774.1	647.9	543.5	466.7	411.8	373.3	345.9	334.9	329.4
35°	1070.6	977.3	812.6	669.8	560.0	477.7	417.3	378.8	351.4	340.4	340.4
37.5°	1142.0	1037.7	851.0	697.3	576.5	488.6	428.2	384.3	356.9	345.9	345.9
40°	1218.8	1098.1	889.4	719.2	593.0	499.6	439.2	395.3	367.9	356.9	356.9
42.5°	1295.7	1163.9	933.4	746.7	609.4	510.6	444.7	406.3	378.8	367.9	367.9
45°	1372.6	1218.8	971.8	774.1	625.9	527.1	461.2	417.3	389.8	378.8	378.8
47.5°	1444.0	1279.2	1004.7	790.6	642.4	538.1	466.7	428.2	400.8	395.3	389.8
50°	1493.4	1317.7	1026.7	807.1	647.9	543.5	477.7	433.7	411.8	400.8	400.8
52.5°	1531.8	1356.1	1043.2	818.1	653.3	549.0	483.1	444.7	422.8	411.8	406.3
55°	1553.8	1361.6	1043.2	807.1	647.9	549.0	483.1	444.7	422.8	411.8	411.8
57.5°	1531.8	1334.1	1021.2	785.1	631.4	532.6	466.7	433.7	411.8	406.3	400.8
60°	1487.9	1290.2	977.3	752.2	603.9	505.1	444.7	417.3	400.8	395.3	389.8
62.5°	1427.5	1235.3	933.4	708.3	565.5	472.2	428.2	395.3	384.3	378.8	373.3
65°	1306.7	1131.0	862.0	653.3	516.1	433.7	389.8	367.9	356.9	345.9	340.4
67.5°	1174.9	1015.7	763.2	587.5	455.7	389.8	351.4	329.4	312.9	312.9	307.5
70°	1032.2	894.9	658.8	499.6	395.3	340.4	302.0	285.5	274.5	274.5	269.0
72.5°	862.0	752.2	549.0	406.3	323.9	280.0	252.6	236.1	230.6	230.6	225.1
75°	691.8	593.0	433.7	318.4	252.6	219.6	197.7	186.7	181.2	181.2	175.7
77.5°	510.6	433.7	312.9	230.6	181.2	159.2	142.7	137.3	131.8	131.8	126.3
80°	340.4	285.5	203.1	148.2	109.8	98.8	87.8	87.8	82.4	87.8	82.4
82.5°	186.7	153.7	109.8	76.9	54.9	49.4	43.9	43.9	49.4	49.4	43.9
85°	71.4	54.9	38.4	22.0	16.5	16.5	16.5	16.5	16.5	16.5	11.0
87.5°	5.5	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	4.6	4.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	4.6	4.6
92.5°	4.6	4.6	5.6	5.6	7.4	6.5	7.4	6.5	4.6	4.6	4.6
95°	5.6	5.6	6.5	6.5	11.1	11.1	10.2	8.4	6.5	5.6	5.6
97.5°	7.4	8.4	9.3	9.3	18.6	30.7	16.7	10.2	8.4	8.4	7.4
100°	13.0	13.0	17.7	24.2	47.4	66.0	49.2	23.2	13.0	13.0	12.1
102.5°	42.7	44.6	55.7	80.8	85.5	101.3	111.5	75.3	50.2	40.9	39.0
105°	102.2	102.2	110.6	128.2	141.2	153.3	156.1	125.4	105.9	98.5	99.4
107.5°	135.6	136.6	145.9	166.3	210.0	207.2	177.4	154.2	137.5	131.0	131.0
110°	166.3	168.2	180.2	205.3	237.8	239.7	197.9	167.2	153.3	147.7	147.7



REPORT NUMBER: P833885
 CATALOG NUMBER: TTN-D3-735-U-DL-CG-UPL2

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	189.5	191.4	200.7	211.8	224.8	233.2	214.6	181.2	159.8	152.4	151.4
115°	183.0	181.2	184.9	192.3	202.5	211.8	204.4	185.8	165.4	157.0	157.0
117.5°	159.8	162.6	164.4	170.0	183.9	188.6	183.0	170.9	159.8	157.9	155.1
120°	142.1	144.0	144.9	149.6	158.9	160.7	157.9	151.4	145.9	144.0	144.0
122.5°	125.4	127.3	127.3	129.1	136.6	138.4	135.6	131.0	128.2	129.1	128.2
125°	110.6	111.5	111.5	112.4	116.1	115.2	116.1	113.3	111.5	112.4	112.4
127.5°	98.5	99.4	98.5	97.5	101.3	100.3	100.3	99.4	98.5	100.3	101.3
130°	89.2	88.3	87.3	86.4	88.3	86.4	88.3	88.3	88.3	90.1	90.1
132.5°	79.9	79.9	78.0	76.2	77.1	76.2	76.2	76.2	77.1	79.9	79.9
135°	71.5	71.5	70.6	68.7	69.7	68.7	69.7	69.7	68.7	71.5	71.5
137.5°	66.9	66.0	64.1	63.2	63.2	62.2	63.2	63.2	63.2	65.0	65.0
140°	60.4	60.4	59.5	58.5	58.5	58.5	57.6	58.5	58.5	59.5	59.5
142.5°	56.7	56.7	54.8	53.9	54.8	54.8	54.8	53.9	54.8	55.7	56.7
145°	53.0	52.0	52.0	51.1	51.1	52.0	51.1	51.1	51.1	52.0	52.0
147.5°	50.2	49.2	49.2	48.3	49.2	49.2	49.2	49.2	48.3	49.2	49.2
150°	47.4	47.4	46.5	46.5	46.5	46.5	47.4	47.4	46.5	47.4	48.3
152.5°	46.5	45.5	44.6	44.6	44.6	44.6	44.6	45.5	44.6	45.5	45.5
155°	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	42.7	43.7	43.7
157.5°	42.7	42.7	41.8	41.8	41.8	41.8	41.8	41.8	41.8	42.7	41.8
160°	41.8	40.9	40.9	40.9	39.9	39.9	39.9	40.9	40.9	40.9	40.9
162.5°	40.9	39.9	39.9	39.0	39.0	39.0	39.0	39.9	39.9	39.9	39.9
165°	39.0	39.9	39.0	38.1	38.1	38.1	38.1	39.0	39.0	39.0	39.9
167.5°	39.0	38.1	38.1	38.1	37.2	37.2	38.1	38.1	38.1	38.1	38.1
170°	38.1	37.2	37.2	37.2	37.2	37.2	37.2	37.2	37.2	38.1	38.1
172.5°	38.1	38.1	37.2	37.2	37.2	37.2	37.2	38.1	38.1	38.1	38.1
175°	37.2	38.1	38.1	38.1	37.2	37.2	37.2	38.1	38.1	38.1	38.1
177.5°	38.1	38.1	38.1	38.1	38.1	38.1	37.2	38.1	38.1	38.1	38.1
180°	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1

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: SP1-2411-284-1

Test Date: 11/15/2024

Luminaire Tested: TTN-D0-735-U-WQ

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

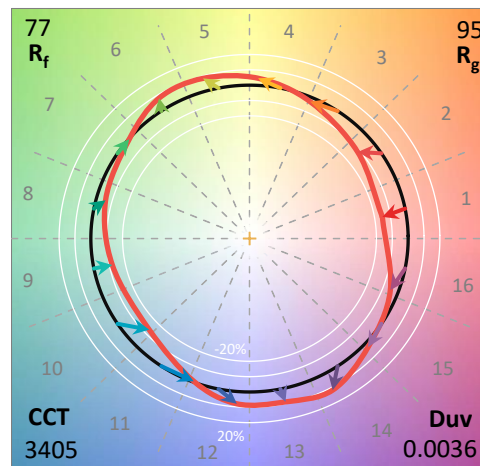
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2411-284-1
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 11/15/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: MCGRAW EDISON
 Catalog Number: **TTN-D0-735-U-WQ**
 Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE. 3500K, 70 CRI LEDS AND WIDE DISTRIBUTION

Spectral Parameters

CCT (K): 3405
 CIE u': 0.2365
 CIE v': 0.5180
 Duv: 0.0036
 CIE x: 0.4148
 CIE y: 0.4038
 CIE z: 0.1814
 Peak Wavelength (nm): 596
 Dominant Wavelength (nm): 579
 Purity: 45.70672
 Rf: 76.6
 Rg: 95.4

CRI (Ra):	73.9		
R1:	71.3	R9:	-18.0
R2:	80.3	R10:	53.1
R3:	87.8	R11:	68.6
R4:	73.2	R12:	42.6
R5:	69.8	R13:	72.5
R6:	71.8	R14:	92.7
R7:	82.8	R15:	64.3
R8:	54.1		



Test Conditions

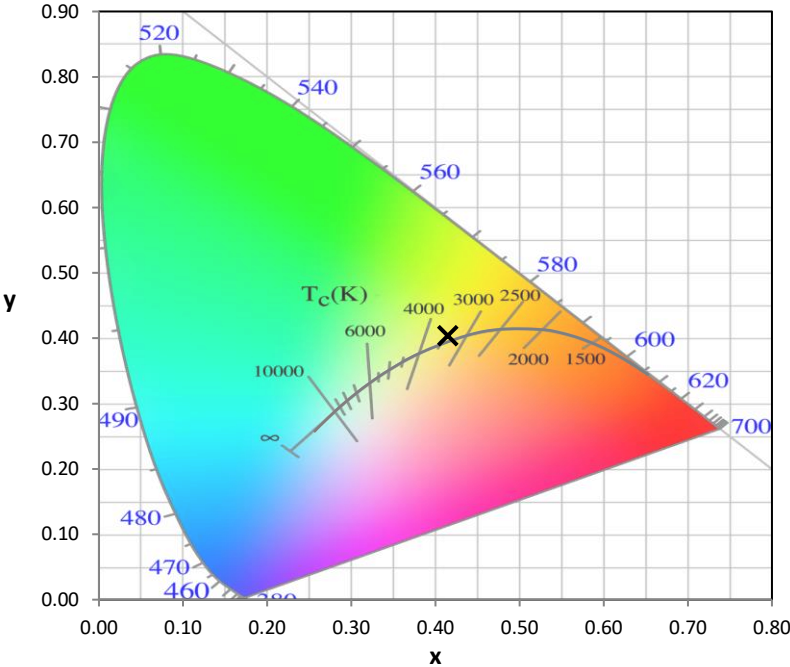
Stabilization Time: 38M
 Operation Time: 1H 38M
 Sphere Temperature (°C): 24.9

REPORT NUMBER: SP1-2411-284-1

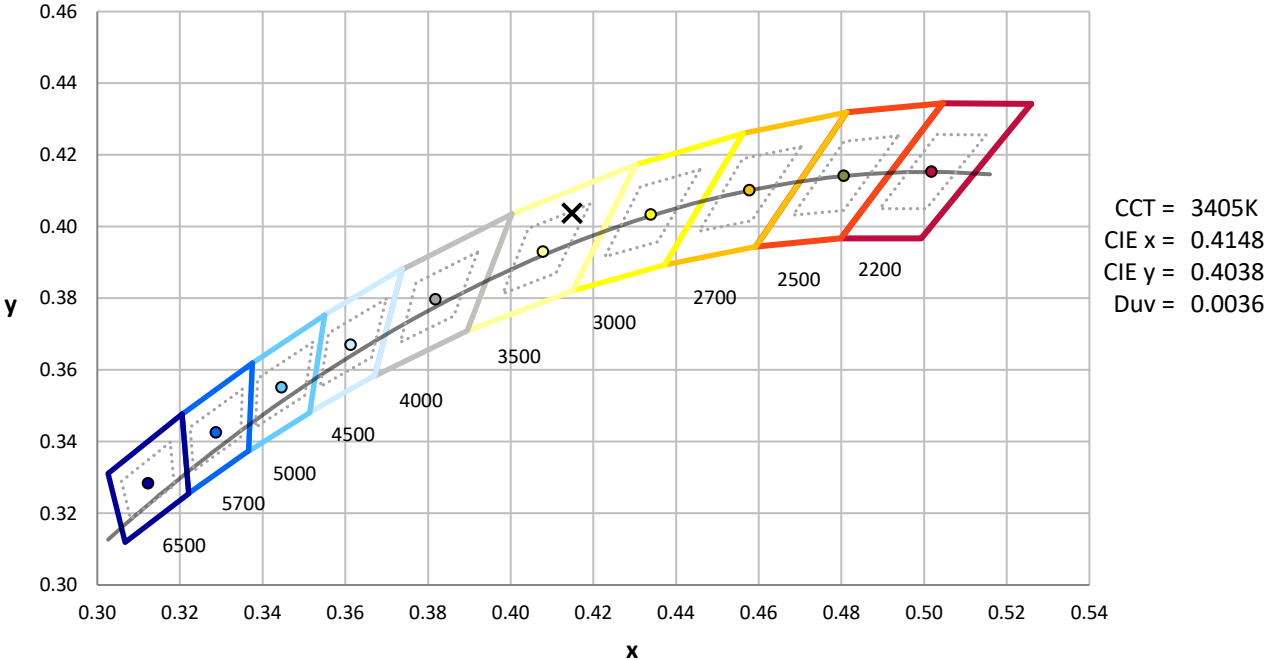
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2411-284-1

CIE 1931 Chromaticity Diagram



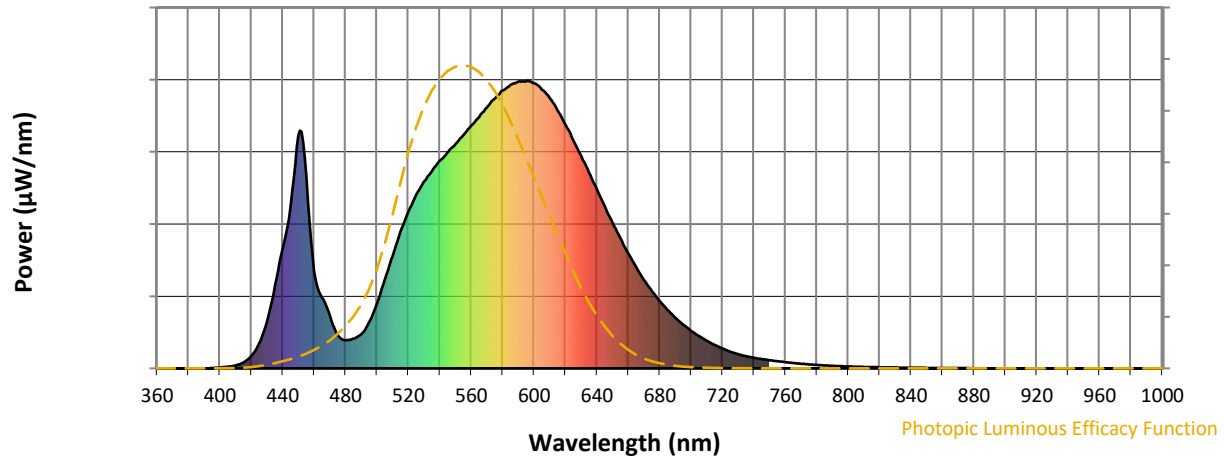
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2411-284-1

Photopic Flux vs. Wavelength

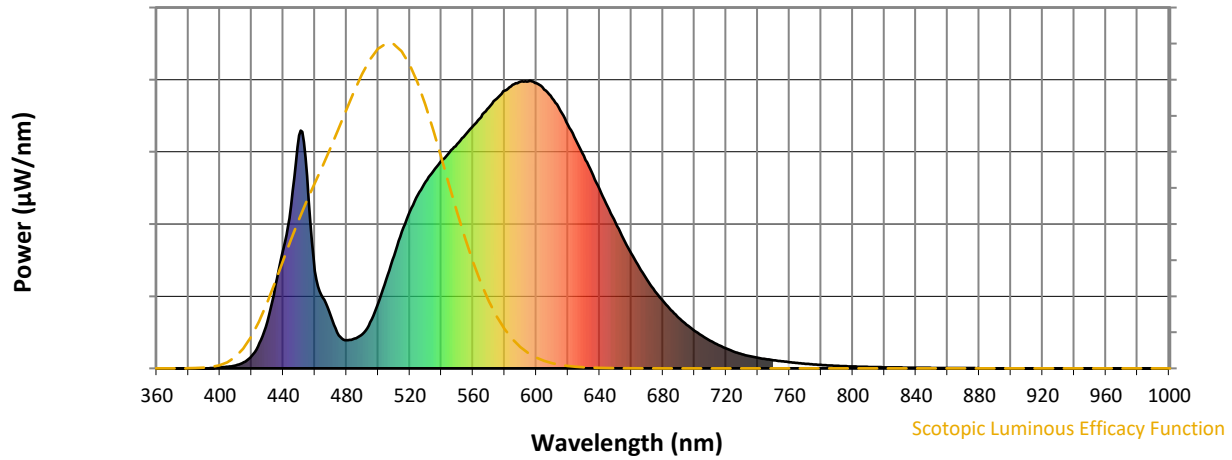


Photopic Lumens: NR

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	846	NR	750	28	NR	880	1	NR
365	0	NR	495	160	NR	625	793	NR	755	25	NR	885	0	NR
370	0	NR	500	225	NR	630	739	NR	760	22	NR	890	0	NR
375	0	NR	505	308	NR	635	681	NR	765	19	NR	895	0	NR
380	0	NR	510	392	NR	640	623	NR	770	16	NR	900	0	NR
385	0	NR	515	474	NR	645	563	NR	775	14	NR	905	0	NR
390	0	NR	520	545	NR	650	506	NR	780	12	NR	910	0	NR
395	1	NR	525	603	NR	655	451	NR	785	10	NR	915	0	NR
400	3	NR	530	649	NR	660	399	NR	790	9	NR	920	0	NR
405	5	NR	535	687	NR	665	352	NR	795	8	NR	925	0	NR
410	11	NR	540	721	NR	670	307	NR	800	6	NR	930	0	NR
415	21	NR	545	751	NR	675	268	NR	805	6	NR	935	0	NR
420	43	NR	550	779	NR	680	234	NR	810	5	NR	940	0	NR
425	88	NR	555	811	NR	685	203	NR	815	4	NR	945	0	NR
430	163	NR	560	843	NR	690	176	NR	820	4	NR	950	0	NR
435	288	NR	565	873	NR	695	152	NR	825	3	NR	955	0	NR
440	416	NR	570	907	NR	700	131	NR	830	3	NR	960	0	NR
445	566	NR	575	938	NR	705	112	NR	835	3	NR	965	0	NR
450	810	NR	580	965	NR	710	96	NR	840	2	NR	970	0	NR
455	669	NR	585	986	NR	715	81	NR	845	2	NR	975	0	NR
460	338	NR	590	997	NR	720	69	NR	850	2	NR	980	0	NR
465	246	NR	595	997	NR	725	58	NR	855	1	NR	985	0	NR
470	182	NR	600	991	NR	730	49	NR	860	1	NR	990	0	NR
475	115	NR	605	968	NR	735	42	NR	865	1	NR	995	0	NR
480	97	NR	610	939	NR	740	37	NR	870	1	NR	1000	0	NR
485	103	NR	615	896	NR	745	32	NR	875	1	NR			

REPORT NUMBER: SP1-2411-284-1

Scotopic Flux vs. Wavelength



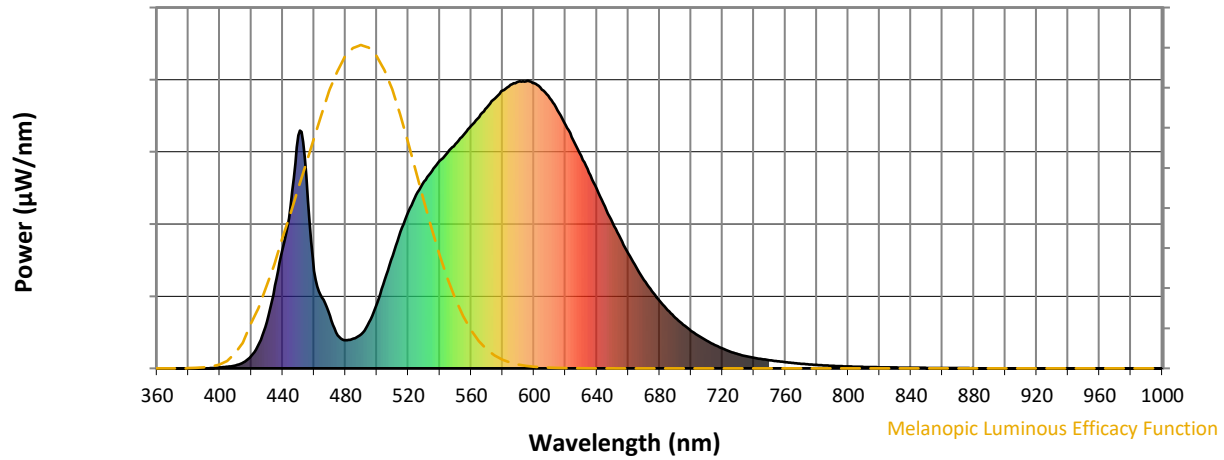
Scotopic Lumens: NR

S/P: 1.33

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	846	NR	750	28	NR	880	1	NR
365	0	NR	495	160	NR	625	793	NR	755	25	NR	885	0	NR
370	0	NR	500	225	NR	630	739	NR	760	22	NR	890	0	NR
375	0	NR	505	308	NR	635	681	NR	765	19	NR	895	0	NR
380	0	NR	510	392	NR	640	623	NR	770	16	NR	900	0	NR
385	0	NR	515	474	NR	645	563	NR	775	14	NR	905	0	NR
390	0	NR	520	545	NR	650	506	NR	780	12	NR	910	0	NR
395	1	NR	525	603	NR	655	451	NR	785	10	NR	915	0	NR
400	3	NR	530	649	NR	660	399	NR	790	9	NR	920	0	NR
405	5	NR	535	687	NR	665	352	NR	795	8	NR	925	0	NR
410	11	NR	540	721	NR	670	307	NR	800	6	NR	930	0	NR
415	21	NR	545	751	NR	675	268	NR	805	6	NR	935	0	NR
420	43	NR	550	779	NR	680	234	NR	810	5	NR	940	0	NR
425	88	NR	555	811	NR	685	203	NR	815	4	NR	945	0	NR
430	163	NR	560	843	NR	690	176	NR	820	4	NR	950	0	NR
435	288	NR	565	873	NR	695	152	NR	825	3	NR	955	0	NR
440	416	NR	570	907	NR	700	131	NR	830	3	NR	960	0	NR
445	566	NR	575	938	NR	705	112	NR	835	3	NR	965	0	NR
450	810	NR	580	965	NR	710	96	NR	840	2	NR	970	0	NR
455	669	NR	585	986	NR	715	81	NR	845	2	NR	975	0	NR
460	338	NR	590	997	NR	720	69	NR	850	2	NR	980	0	NR
465	246	NR	595	997	NR	725	58	NR	855	1	NR	985	0	NR
470	182	NR	600	991	NR	730	49	NR	860	1	NR	990	0	NR
475	115	NR	605	968	NR	735	42	NR	865	1	NR	995	0	NR
480	97	NR	610	939	NR	740	37	NR	870	1	NR	1000	0	NR
485	103	NR	615	896	NR	745	32	NR	875	1	NR			

REPORT NUMBER: SP1-2411-284-1

Melanopic Flux vs. Wavelength



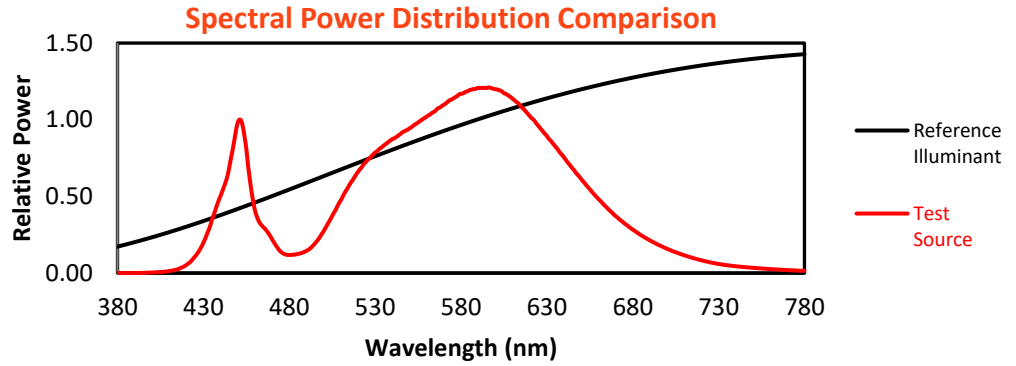
Melanopic Lumens: NR

M/P: 2.47

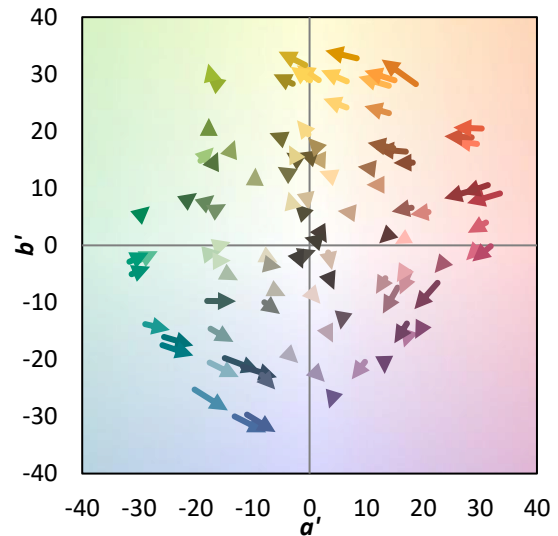
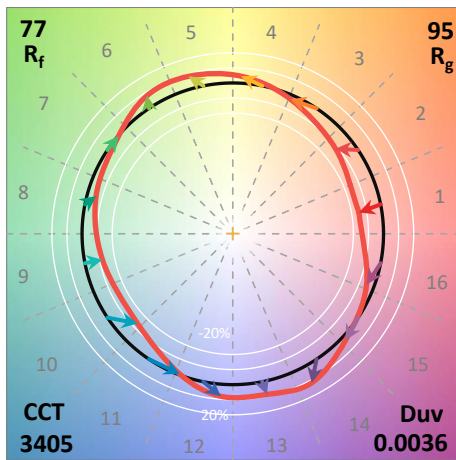
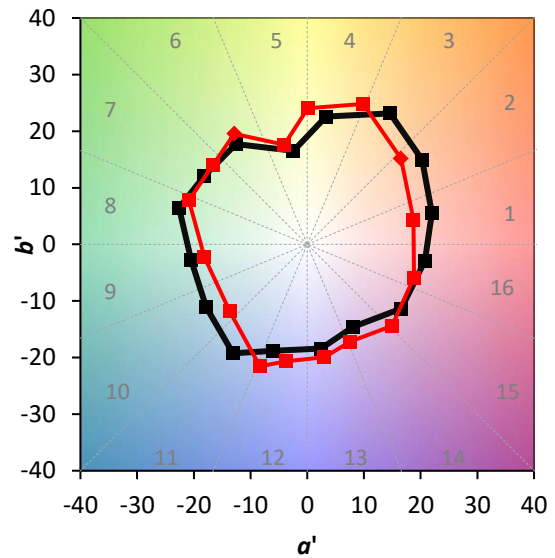
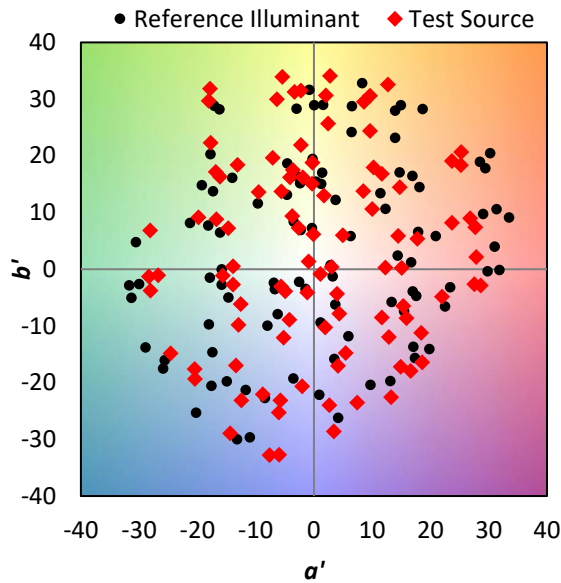
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	119	NR	620	846	NR	750	28	NR	880	1	NR
365	0	NR	495	160	NR	625	793	NR	755	25	NR	885	0	NR
370	0	NR	500	225	NR	630	739	NR	760	22	NR	890	0	NR
375	0	NR	505	308	NR	635	681	NR	765	19	NR	895	0	NR
380	0	NR	510	392	NR	640	623	NR	770	16	NR	900	0	NR
385	0	NR	515	474	NR	645	563	NR	775	14	NR	905	0	NR
390	0	NR	520	545	NR	650	506	NR	780	12	NR	910	0	NR
395	1	NR	525	603	NR	655	451	NR	785	10	NR	915	0	NR
400	3	NR	530	649	NR	660	399	NR	790	9	NR	920	0	NR
405	5	NR	535	687	NR	665	352	NR	795	8	NR	925	0	NR
410	11	NR	540	721	NR	670	307	NR	800	6	NR	930	0	NR
415	21	NR	545	751	NR	675	268	NR	805	6	NR	935	0	NR
420	43	NR	550	779	NR	680	234	NR	810	5	NR	940	0	NR
425	88	NR	555	811	NR	685	203	NR	815	4	NR	945	0	NR
430	163	NR	560	843	NR	690	176	NR	820	4	NR	950	0	NR
435	288	NR	565	873	NR	695	152	NR	825	3	NR	955	0	NR
440	416	NR	570	907	NR	700	131	NR	830	3	NR	960	0	NR
445	566	NR	575	938	NR	705	112	NR	835	3	NR	965	0	NR
450	810	NR	580	965	NR	710	96	NR	840	2	NR	970	0	NR
455	669	NR	585	986	NR	715	81	NR	845	2	NR	975	0	NR
460	338	NR	590	997	NR	720	69	NR	850	2	NR	980	0	NR
465	246	NR	595	997	NR	725	58	NR	855	1	NR	985	0	NR
470	182	NR	600	991	NR	730	49	NR	860	1	NR	990	0	NR
475	115	NR	605	968	NR	735	42	NR	865	1	NR	995	0	NR
480	97	NR	610	939	NR	740	37	NR	870	1	NR	1000	0	NR
485	103	NR	615	896	NR	745	32	NR	875	1	NR			

Summary

$R_f = 76.6$
 $R_g = 95.4$
 $CIE R_a = 73.9$
 $R_9 = -18.0$

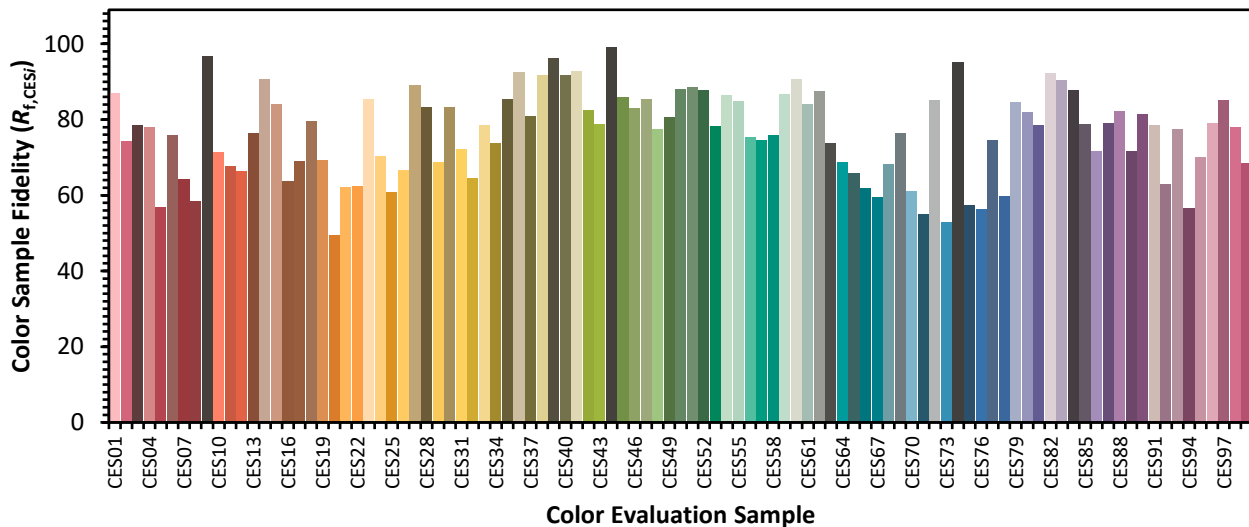


Color Vector Graphics

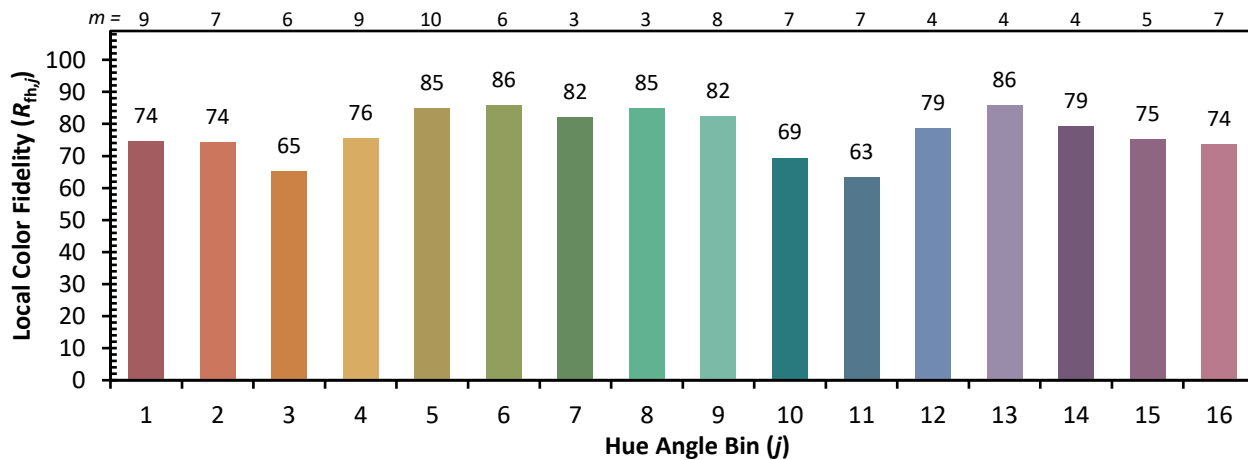
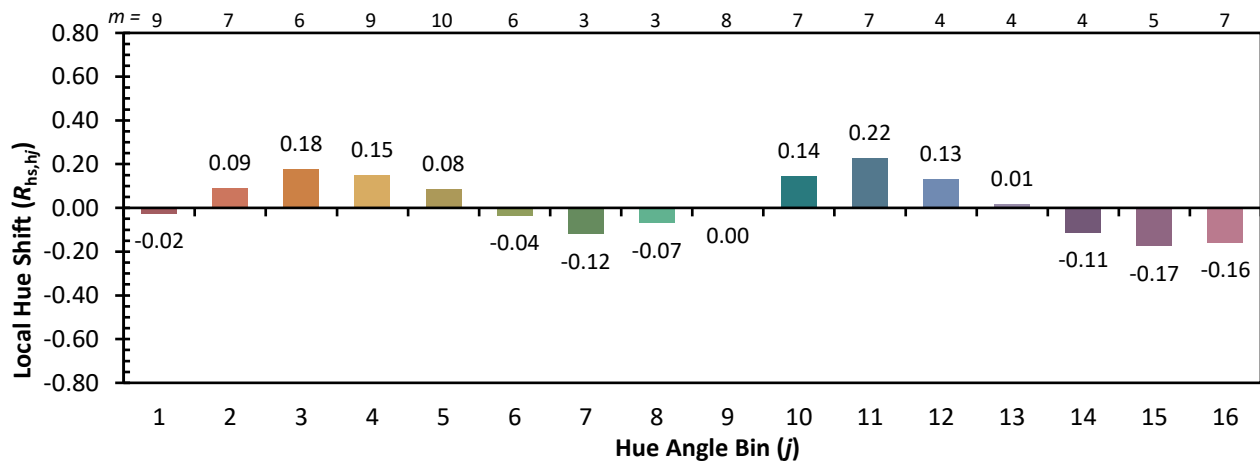
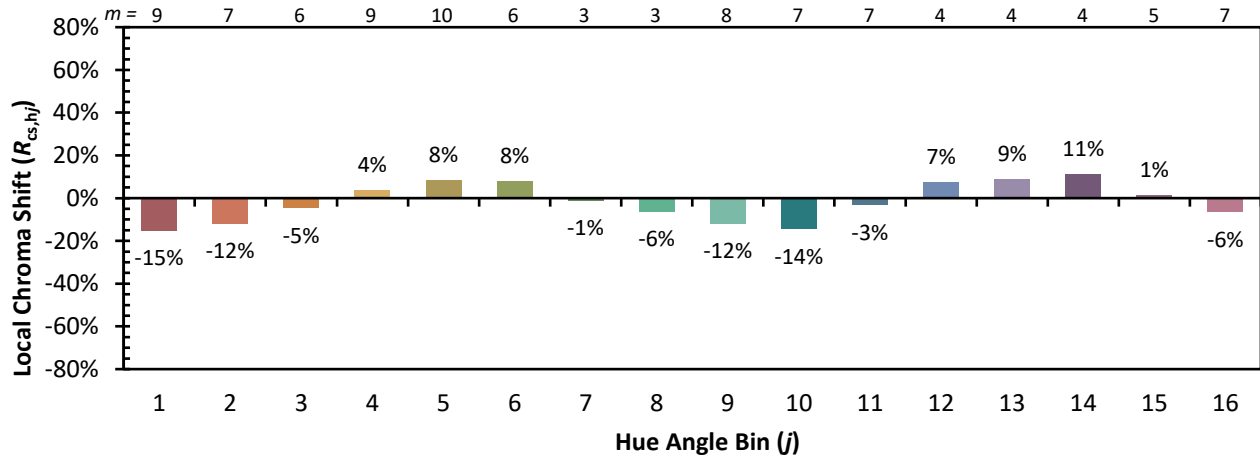


Individual Sample Fidelity Index ($R_{f,i}$)

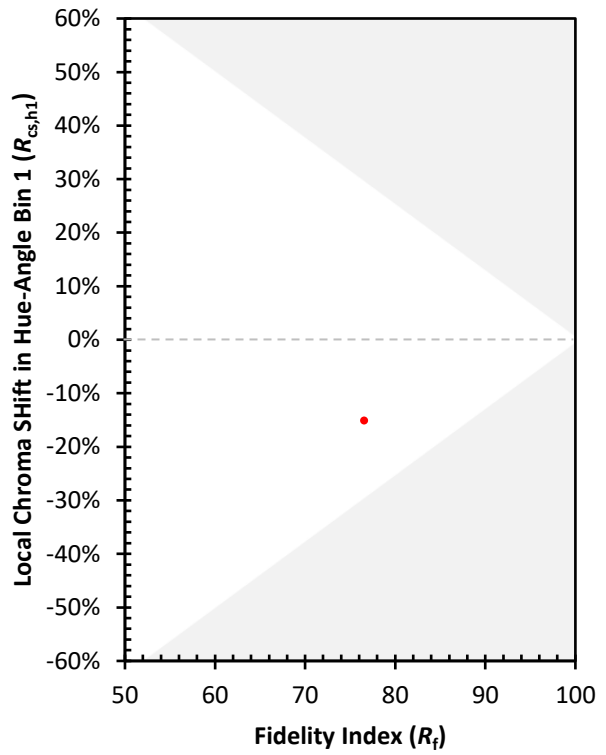
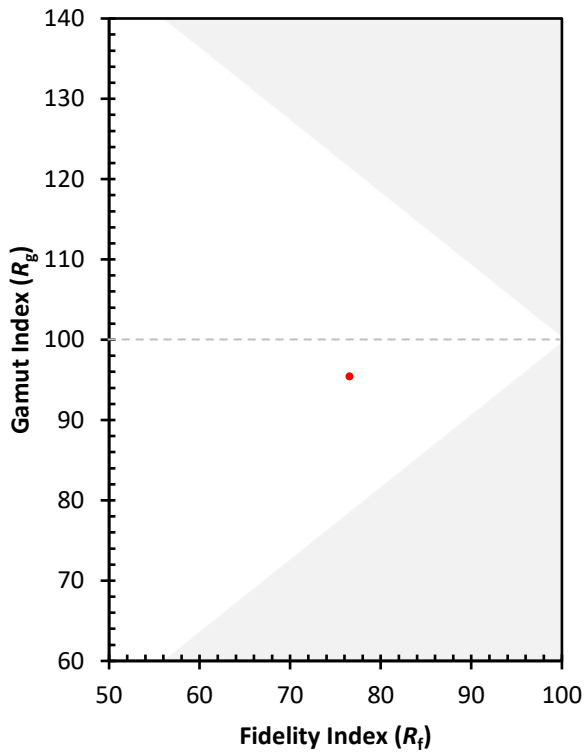
CES01 = 86	CES26 = 67	CES51 = 88	CES76 = 56
CES02 = 62	CES27 = 89	CES52 = 88	CES77 = 75
CES03 = 31	CES28 = 83	CES53 = 78	CES78 = 60
CES04 = 70	CES29 = 69	CES54 = 86	CES79 = 85
CES05 = 48	CES30 = 83	CES55 = 85	CES80 = 82
CES06 = 51	CES31 = 72	CES56 = 75	CES81 = 78
CES07 = 41	CES32 = 65	CES57 = 75	CES82 = 92
CES08 = 40	CES33 = 78	CES58 = 76	CES83 = 90
CES09 = 29	CES34 = 74	CES59 = 87	CES84 = 88
CES10 = 75	CES35 = 86	CES60 = 91	CES85 = 79
CES11 = 58	CES36 = 93	CES61 = 84	CES86 = 72
CES12 = 64	CES37 = 81	CES62 = 88	CES87 = 79
CES13 = 43	CES38 = 92	CES63 = 74	CES88 = 82
CES14 = 74	CES39 = 96	CES64 = 69	CES89 = 72
CES15 = 71	CES40 = 92	CES65 = 66	CES90 = 82
CES16 = 47	CES41 = 93	CES66 = 62	CES91 = 79
CES17 = 50	CES42 = 83	CES67 = 60	CES92 = 63
CES18 = 56	CES43 = 79	CES68 = 68	CES93 = 77
CES19 = 72	CES44 = 99	CES69 = 76	CES94 = 56
CES20 = 65	CES45 = 86	CES70 = 61	CES95 = 70
CES21 = 86	CES46 = 83	CES71 = 55	CES96 = 79
CES22 = 79	CES47 = 85	CES72 = 85	CES97 = 85
CES23 = 92	CES48 = 78	CES73 = 53	CES98 = 78
CES24 = 91	CES49 = 81	CES74 = 95	CES99 = 68
CES25 = 72	CES50 = 88	CES75 = 57	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)