

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: P833889

Luminaire Tested: **TTN-D3-735-U-DL-UPL3**

Issue Date: 5/15/2024

Test Information

Test Method: LM-79-08
Report Number: P833889
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-UPL3
Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE WITH UPLIGHT
3500K, 70 CRI LEDS AND DRIVE LANE DISTRIBUTION
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7076.7 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

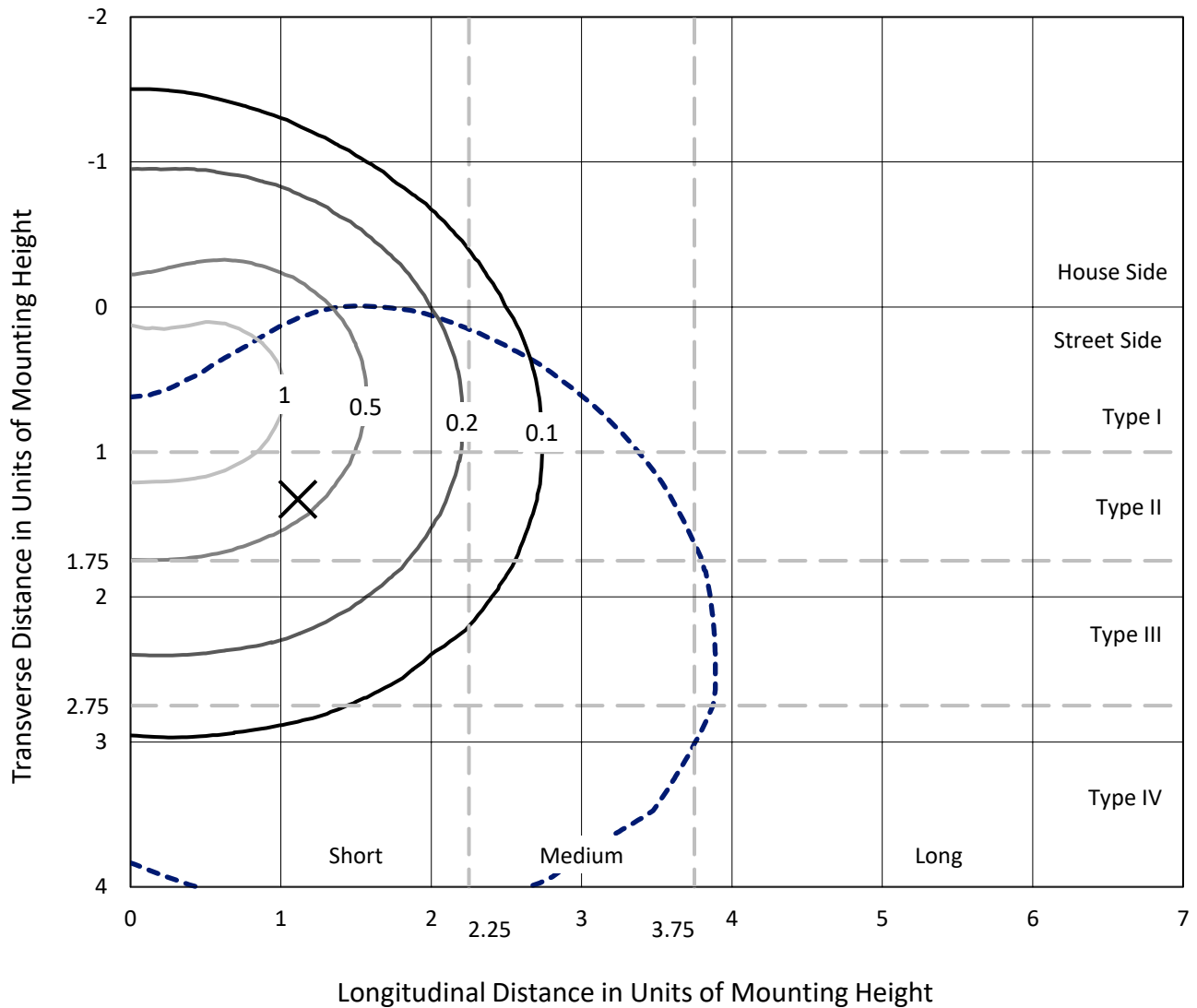
Input Watts (W): 66.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P833889
 CATALOG NUMBER: TTN-D3-735-U-DL-UPL3

Iso-Footcandle Lines of Horizontal Illumination

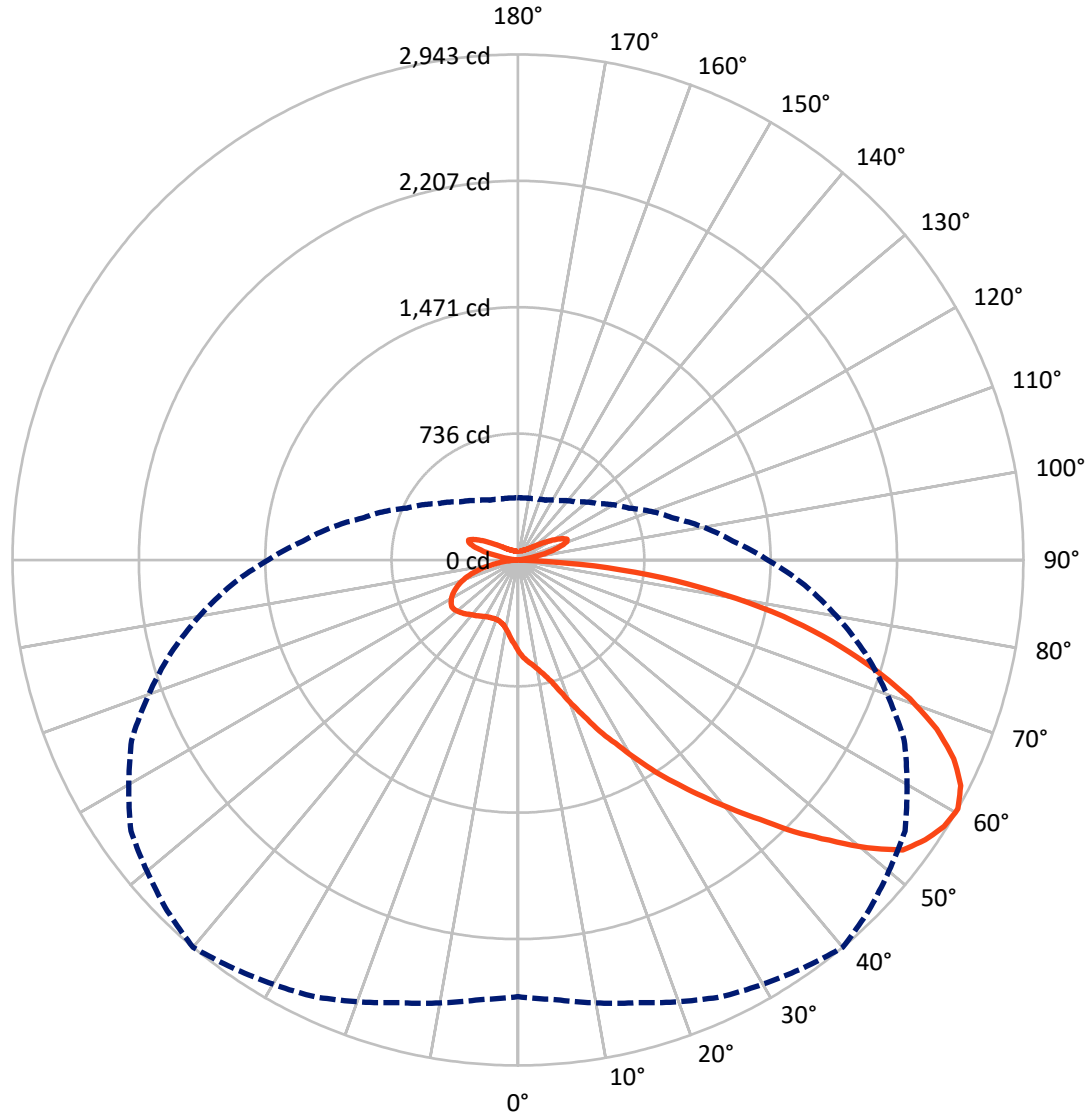
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.4 fc
 Type IV - Short - N/A

REPORT NUMBER: P833889
CATALOG NUMBER: TTN-D3-735-U-DL-UPL3

Luminous Intensity Polar Plot



— Vertical Plane Through 40-Deg Lateral - - - Horizontal Cone Through 60-Deg Vertical

REPORT NUMBER: P833889

CATALOG NUMBER: TTN-D3-735-U-DL-UPL3

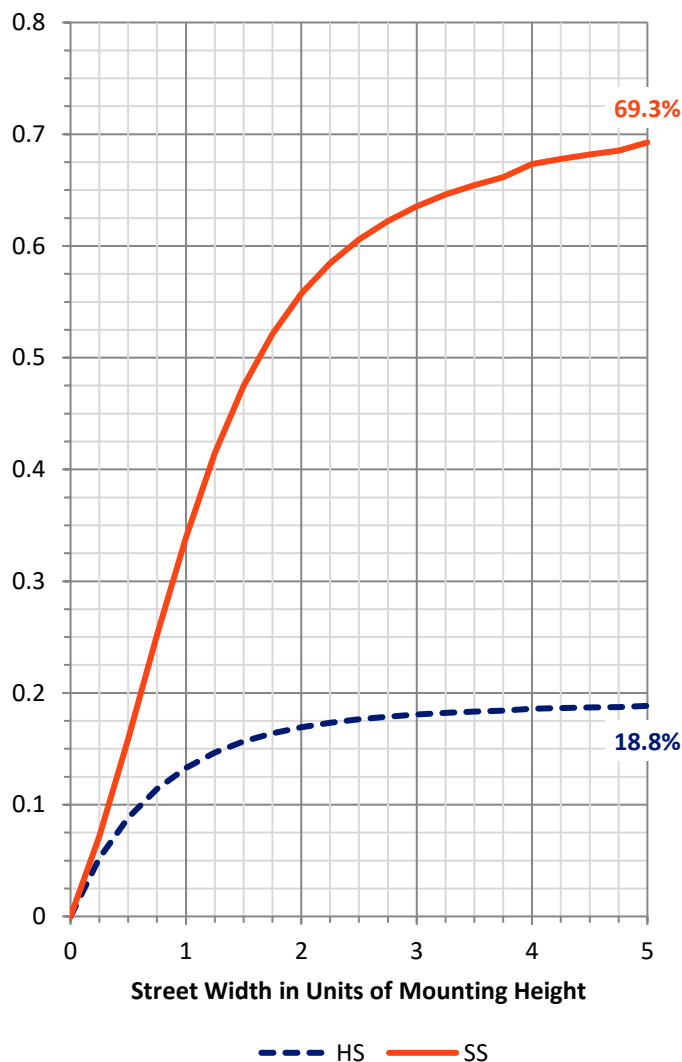
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1347.0	376.3	1723.3
	% Fixture	19.0	5.3	24.4
Street Side	Lumens	4977.0	376.3	5353.3
	% Fixture	70.3	5.3	75.6
Total	Lumens	6324.0	752.7	7076.7
	% Fixture	89.4	10.6	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	50.2	0.7
10°-20°	160.3	2.3
20°-30°	338.6	4.8
30°-40°	618.8	8.7
40°-50°	1005.6	14.2
50°-60°	1397.7	19.8
60°-70°	1448.9	20.5
70°-80°	1038.2	14.7
80°-90°	265.7	3.8
90°-100°	16.8	0.2
100°-110°	170.7	2.4
110°-120°	249.6	3.5
120°-130°	144.9	2.0
130°-140°	76.7	1.1
140°-150°	45.6	0.6
150°-160°	28.1	0.4
160°-170°	15.3	0.2
170°-180°	5.0	0.1
0°-90°	6324.0	89.4
0°-180°	7076.7	100.0

Coefficient of Utilization

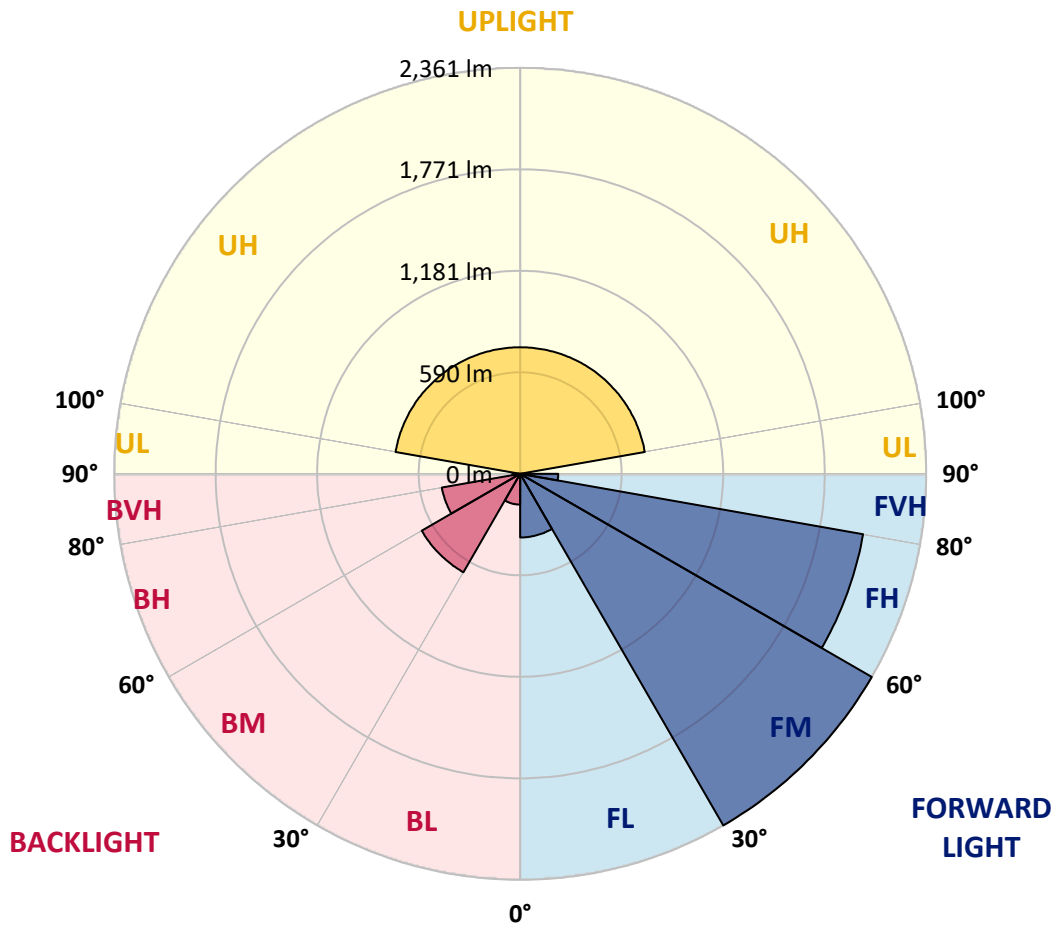


REPORT NUMBER: P833889
 CATALOG NUMBER: TTN-D3-735-U-DL-UPL3

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	370.0	5.2			
FM (30°-60°)	2361.0	33.4			
FH (60°-80°)	2025.0	28.6			G2/5000
FVH (80°-90°)	221.0	3.1			G2/225
BL (0°-30°)	179.1	2.5	B1/500		
BM (30°-60°)	661.1	9.3	B1/1000		
BH (60°-80°)	462.2	6.5	B1/500		G1/500
BVH (80°-90°)	44.7	0.6			G1/100
UL (90°-100°)	16.8	0.2		U2/50	
UH (100°-180°)	735.8	10.4		U4/1000	

BUG Rating: B1-U4-G2
 Type IV Short





REPORT NUMBER: P833889

CATALOG NUMBER: TTN-D3-735-U-DL-UPL3

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	40°	45°	55°	65°	75°	85°
0°	532.5	532.5	532.5	532.5	532.5	532.5	532.5	532.5	532.5	532.5	532.5
2.5°	571.0	571.0	571.0	571.0	565.5	565.5	560.0	554.5	549.0	543.5	532.5
5°	620.4	620.4	614.9	609.4	598.4	592.9	587.4	576.5	565.5	554.5	538.0
7.5°	642.3	642.3	642.3	636.8	620.4	614.9	603.9	587.4	571.0	554.5	532.5
10°	680.8	680.8	675.3	669.8	653.3	647.8	636.8	614.9	587.4	560.0	532.5
12.5°	730.2	724.7	719.2	713.7	697.2	686.3	669.8	647.8	614.9	581.9	549.0
15°	790.6	779.6	779.6	768.6	752.1	735.7	724.7	691.7	658.8	614.9	571.0
17.5°	856.4	851.0	845.5	834.5	818.0	807.0	790.6	752.1	708.2	653.3	603.9
20°	938.8	927.8	933.3	916.8	900.4	894.9	867.4	823.5	768.6	708.2	647.8
22.5°	1037.6	1026.6	1026.6	1010.2	999.2	988.2	960.8	911.4	840.0	774.1	697.2
25°	1147.4	1136.4	1136.4	1125.5	1114.5	1103.5	1070.6	1015.7	933.3	851.0	763.1
27.5°	1268.2	1257.2	1257.2	1251.7	1224.3	1207.8	1180.4	1120.0	1037.6	933.3	829.0
30°	1394.5	1383.5	1394.5	1383.5	1367.0	1334.1	1301.1	1235.3	1141.9	1026.6	900.4
32.5°	1493.3	1493.3	1498.8	1509.8	1498.8	1471.3	1432.9	1378.0	1251.7	1109.0	966.3
35°	1608.6	1608.6	1619.6	1636.0	1630.5	1603.1	1564.7	1504.3	1372.5	1202.3	1037.6
37.5°	1734.9	1734.9	1745.8	1773.3	1762.3	1745.8	1718.4	1641.5	1493.3	1295.7	1114.5
40°	1872.1	1866.6	1877.6	1916.0	1921.5	1899.6	1866.6	1789.8	1619.6	1416.4	1196.8
42.5°	2009.4	2003.9	2025.8	2064.3	2069.8	2064.3	2031.3	1943.5	1751.3	1537.2	1279.2
45°	2146.6	2146.6	2179.6	2239.9	2267.4	2256.4	2229.0	2119.2	1916.0	1663.5	1389.0
47.5°	2289.4	2289.4	2333.3	2410.1	2443.1	2437.6	2426.6	2294.8	2075.2	1795.3	1482.3
50°	2399.2	2399.2	2470.5	2558.4	2613.3	2635.2	2580.3	2459.5	2212.5	1910.5	1559.2
52.5°	2509.0	2509.0	2580.3	2717.6	2772.5	2805.4	2734.1	2607.8	2366.2	2014.9	1630.5
55°	2563.9	2574.8	2673.7	2805.4	2893.3	2876.8	2904.2	2734.1	2465.0	2091.7	1674.5
57.5°	2569.3	2585.8	2695.6	2832.9	2931.7	2926.2	2931.7	2778.0	2503.5	2108.2	1680.0
60°	2541.9	2569.3	2668.2	2805.4	2898.8	2942.7	2887.8	2750.5	2481.5	2091.7	1674.5
62.5°	2476.0	2530.9	2635.2	2739.5	2876.8	2893.3	2849.3	2734.1	2421.1	2075.2	1647.0
65°	2327.8	2388.2	2536.4	2657.2	2767.0	2789.0	2739.5	2640.7	2360.7	1998.4	1559.2
67.5°	2179.6	2218.0	2344.3	2530.9	2607.8	2629.7	2613.3	2498.0	2256.4	1844.7	1454.9
70°	2009.4	2058.8	2157.6	2349.7	2426.6	2421.1	2470.5	2338.8	2097.2	1712.9	1345.1
72.5°	1778.8	1850.2	1949.0	2108.2	2201.5	2168.6	2245.4	2135.6	1888.6	1548.2	1196.8
75°	1509.8	1570.2	1696.4	1822.7	1927.0	1888.6	1949.0	1872.1	1647.0	1350.6	1026.6
77.5°	1207.8	1279.2	1394.5	1509.8	1581.1	1581.1	1608.6	1542.7	1367.0	1109.0	840.0
80°	894.9	960.8	1065.1	1147.4	1213.3	1218.8	1246.2	1213.3	1054.1	861.9	642.3
82.5°	592.9	625.9	719.2	785.1	851.0	845.5	889.4	867.4	735.7	592.9	428.2
85°	252.5	274.5	351.4	406.3	466.7	444.7	505.1	499.6	395.3	285.5	192.2
87.5°	11.0	16.5	16.5	11.0	16.5	5.5	16.5	22.0	16.5	11.0	11.0
90°	6.4	6.4	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	6.4
92.5°	6.4	6.4	6.4	9.0	10.3	9.6	9.0	10.3	7.7	7.7	6.4
95°	7.7	7.7	9.0	11.6	14.2	14.8	15.5	15.5	9.0	9.0	7.7
97.5°	10.3	11.6	11.6	14.2	23.2	32.8	42.5	25.8	12.9	12.9	11.6
100°	16.7	18.0	18.0	32.2	68.2	79.8	91.4	65.7	33.5	24.5	18.0
102.5°	54.1	56.7	69.5	104.3	154.5	147.4	140.4	118.5	112.0	77.3	61.8
105°	137.8	136.5	146.8	173.8	216.3	214.4	212.5	195.7	177.7	153.2	141.6
107.5°	181.6	181.6	190.6	213.8	245.9	266.5	287.1	291.0	230.5	202.2	189.3
110°	204.7	204.7	212.5	231.8	274.3	303.2	332.2	329.6	284.6	249.8	233.1



REPORT NUMBER: P833889
 CATALOG NUMBER: TTN-D3-735-U-DL-UPL3

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	40°	45°	55°	65°	75°	85°
112.5°	209.9	211.2	221.5	251.1	297.5	310.4	323.2	311.6	293.6	278.1	265.3
115°	217.6	217.6	229.2	257.5	283.3	288.5	293.6	280.7	266.5	256.2	251.1
117.5°	215.0	218.9	221.5	236.9	253.7	257.5	261.4	255.0	235.6	227.9	225.3
120°	199.6	199.6	202.2	209.9	218.9	220.8	222.8	220.2	207.3	200.9	199.6
122.5°	177.7	179.0	177.7	181.6	188.0	190.0	191.9	189.3	179.0	176.4	176.4
125°	155.8	155.8	154.5	157.1	161.0	160.4	159.7	161.0	155.8	154.5	154.5
127.5°	140.4	139.1	136.5	137.8	139.1	139.1	139.1	140.4	135.2	136.5	137.8
130°	124.9	124.9	122.3	122.3	122.3	121.0	119.8	122.3	119.8	121.0	122.3
132.5°	110.7	110.7	106.9	105.6	105.6	105.6	105.6	106.9	105.6	108.2	110.7
135°	99.2	99.2	95.3	96.6	96.6	95.9	95.3	96.6	95.3	97.9	99.2
137.5°	90.1	90.1	87.6	87.6	87.6	86.9	86.3	87.6	87.6	88.8	91.4
140°	82.4	82.4	81.1	81.1	79.8	80.4	81.1	81.1	81.1	82.4	83.7
142.5°	78.5	77.3	76.0	74.7	76.0	76.0	76.0	76.0	74.7	76.0	78.5
145°	72.1	72.1	70.8	70.8	70.8	71.4	72.1	70.8	70.8	72.1	72.1
147.5°	68.2	68.2	67.0	68.2	68.2	68.2	68.2	68.2	67.0	68.2	68.2
150°	67.0	65.7	64.4	65.7	65.7	65.1	64.4	64.4	64.4	64.4	65.7
152.5°	63.1	63.1	61.8	63.1	61.8	61.8	61.8	61.8	61.8	61.8	63.1
155°	60.5	60.5	59.2	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5
157.5°	57.9	59.2	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	59.2
160°	56.7	56.7	56.7	56.7	55.4	55.4	55.4	55.4	56.7	56.7	56.7
162.5°	55.4	55.4	55.4	55.4	54.1	54.1	54.1	54.1	54.1	55.4	55.4
165°	55.4	54.1	54.1	54.1	52.8	52.8	52.8	52.8	52.8	54.1	55.4
167.5°	52.8	52.8	52.8	52.8	52.8	52.2	51.5	51.5	52.8	52.8	52.8
170°	52.8	52.8	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5
172.5°	52.8	52.8	52.8	52.8	51.5	51.5	51.5	51.5	51.5	51.5	52.8
175°	52.8	52.8	52.8	52.8	51.5	51.5	51.5	51.5	52.8	52.8	52.8
177.5°	52.8	52.8	52.8	52.8	51.5	52.2	52.8	52.8	52.8	52.8	52.8
180°	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8



REPORT NUMBER: P833889
 CATALOG NUMBER: TTN-D3-735-U-DL-UPL3

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	532.5	532.5	532.5	532.5	532.5	532.5	532.5	532.5	532.5	532.5	532.5
2.5°	532.5	527.0	516.1	510.6	505.1	494.1	494.1	488.6	488.6	488.6	483.1
5°	532.5	521.6	510.6	494.1	483.1	472.1	461.2	450.2	444.7	444.7	439.2
7.5°	521.6	510.6	494.1	477.6	461.2	439.2	428.2	406.3	400.8	395.3	395.3
10°	521.6	510.6	483.1	461.2	439.2	417.2	400.8	378.8	362.3	356.9	356.9
12.5°	527.0	510.6	483.1	455.7	428.2	400.8	378.8	356.9	340.4	329.4	329.4
15°	549.0	527.0	494.1	455.7	422.7	389.8	367.8	340.4	323.9	312.9	312.9
17.5°	576.5	554.5	505.1	461.2	422.7	384.3	356.9	329.4	312.9	302.0	296.5
20°	614.9	581.9	527.0	466.7	422.7	384.3	351.4	323.9	302.0	291.0	291.0
22.5°	658.8	620.4	549.0	477.6	428.2	384.3	351.4	318.4	296.5	285.5	285.5
25°	713.7	664.3	581.9	499.6	439.2	389.8	351.4	318.4	296.5	285.5	285.5
27.5°	774.1	719.2	614.9	521.6	450.2	395.3	351.4	318.4	296.5	285.5	285.5
30°	829.0	768.6	647.8	543.5	466.7	400.8	356.9	323.9	302.0	291.0	285.5
32.5°	889.4	812.5	680.8	565.5	477.6	411.8	362.3	329.4	302.0	291.0	291.0
35°	949.8	867.4	713.7	592.9	494.1	422.7	367.8	334.9	307.4	296.5	296.5
37.5°	1015.7	927.8	752.1	614.9	510.6	433.7	378.8	340.4	312.9	302.0	302.0
40°	1092.5	988.2	790.6	642.3	527.0	444.7	384.3	351.4	323.9	312.9	312.9
42.5°	1163.9	1043.1	829.0	664.3	543.5	455.7	395.3	356.9	334.9	323.9	323.9
45°	1235.3	1109.0	867.4	691.7	560.0	472.1	406.3	373.3	345.9	334.9	334.9
47.5°	1317.6	1169.4	911.4	713.7	576.5	483.1	417.2	384.3	356.9	351.4	345.9
50°	1383.5	1213.3	938.8	735.7	587.4	494.1	428.2	389.8	367.8	356.9	356.9
52.5°	1443.9	1257.2	960.8	746.6	592.9	499.6	439.2	400.8	378.8	367.8	367.8
55°	1476.8	1273.7	977.2	746.6	598.4	505.1	439.2	400.8	378.8	373.3	367.8
57.5°	1476.8	1273.7	966.3	735.7	587.4	494.1	433.7	395.3	378.8	367.8	367.8
60°	1454.9	1257.2	938.8	713.7	571.0	477.6	422.7	384.3	367.8	362.3	362.3
62.5°	1421.9	1229.8	916.8	686.3	549.0	455.7	406.3	367.8	356.9	356.9	351.4
65°	1334.1	1147.4	867.4	647.8	516.1	428.2	384.3	351.4	340.4	334.9	329.4
67.5°	1240.8	1070.6	790.6	603.9	472.1	400.8	356.9	329.4	312.9	312.9	307.4
70°	1147.4	988.2	719.2	543.5	422.7	367.8	323.9	296.5	285.5	285.5	285.5
72.5°	1021.2	883.9	636.8	477.6	373.3	323.9	291.0	263.5	258.0	258.0	252.5
75°	872.9	752.1	538.0	406.3	312.9	274.5	247.1	219.6	219.6	219.6	219.6
77.5°	713.7	609.4	428.2	323.9	247.1	219.6	203.1	181.2	181.2	181.2	181.2
80°	538.0	450.2	312.9	236.1	181.2	159.2	148.2	137.3	142.7	142.7	137.3
82.5°	351.4	296.5	197.6	148.2	115.3	104.3	104.3	93.3	98.8	98.8	98.8
85°	153.7	131.8	82.4	65.9	54.9	54.9	54.9	49.4	54.9	54.9	54.9
87.5°	11.0	11.0	11.0	11.0	11.0	11.0	11.0	0.0	5.5	11.0	5.5
90°	6.4	6.4	7.7	7.7	7.7	7.7	7.7	7.7	7.7	6.4	6.4
92.5°	6.4	6.4	7.7	7.7	10.3	9.0	10.3	9.0	6.4	6.4	6.4
95°	7.7	7.7	9.0	9.0	15.5	15.5	14.2	11.6	9.0	7.7	7.7
97.5°	10.3	11.6	12.9	12.9	25.8	42.5	23.2	14.2	11.6	11.6	10.3
100°	18.0	18.0	24.5	33.5	65.7	91.4	68.2	32.2	18.0	18.0	16.7
102.5°	59.2	61.8	77.3	112.0	118.5	140.4	154.5	104.3	69.5	56.7	54.1
105°	141.6	141.6	153.2	177.7	195.7	212.5	216.3	173.8	146.8	136.5	137.8
107.5°	188.0	189.3	202.2	230.5	291.0	287.1	245.9	213.8	190.6	181.6	181.6
110°	230.5	233.1	249.8	284.6	329.6	332.2	274.3	231.8	212.5	204.7	204.7



REPORT NUMBER: P833889
 CATALOG NUMBER: TTN-D3-735-U-DL-UPL3

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	262.7	265.3	278.1	293.6	311.6	323.2	297.5	251.1	221.5	211.2	209.9
115°	253.7	251.1	256.2	266.5	280.7	293.6	283.3	257.5	229.2	217.6	217.6
117.5°	221.5	225.3	227.9	235.6	255.0	261.4	253.7	236.9	221.5	218.9	215.0
120°	197.0	199.6	200.9	207.3	220.2	222.8	218.9	209.9	202.2	199.6	199.6
122.5°	173.8	176.4	176.4	179.0	189.3	191.9	188.0	181.6	177.7	179.0	177.7
125°	153.2	154.5	154.5	155.8	161.0	159.7	161.0	157.1	154.5	155.8	155.8
127.5°	136.5	137.8	136.5	135.2	140.4	139.1	139.1	137.8	136.5	139.1	140.4
130°	123.6	122.3	121.0	119.8	122.3	119.8	122.3	122.3	122.3	124.9	124.9
132.5°	110.7	110.7	108.2	105.6	106.9	105.6	105.6	105.6	106.9	110.7	110.7
135°	99.2	99.2	97.9	95.3	96.6	95.3	96.6	96.6	95.3	99.2	99.2
137.5°	92.7	91.4	88.8	87.6	87.6	86.3	87.6	87.6	87.6	90.1	90.1
140°	83.7	83.7	82.4	81.1	81.1	81.1	79.8	81.1	81.1	82.4	82.4
142.5°	78.5	78.5	76.0	74.7	76.0	76.0	76.0	74.7	76.0	77.3	78.5
145°	73.4	72.1	72.1	70.8	70.8	72.1	70.8	70.8	70.8	72.1	72.1
147.5°	69.5	68.2	68.2	67.0	68.2	68.2	68.2	68.2	67.0	68.2	68.2
150°	65.7	65.7	64.4	64.4	64.4	64.4	65.7	65.7	64.4	65.7	67.0
152.5°	64.4	63.1	61.8	61.8	61.8	61.8	61.8	63.1	61.8	63.1	63.1
155°	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	59.2	60.5	60.5
157.5°	59.2	59.2	57.9	57.9	57.9	57.9	57.9	57.9	57.9	59.2	57.9
160°	57.9	56.7	56.7	56.7	55.4	55.4	55.4	56.7	56.7	56.7	56.7
162.5°	56.7	55.4	55.4	54.1	54.1	54.1	54.1	55.4	55.4	55.4	55.4
165°	54.1	55.4	54.1	52.8	52.8	52.8	52.8	54.1	54.1	54.1	55.4
167.5°	54.1	52.8	52.8	52.8	51.5	51.5	52.8	52.8	52.8	52.8	52.8
170°	52.8	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	52.8	52.8
172.5°	52.8	52.8	51.5	51.5	51.5	51.5	51.5	52.8	52.8	52.8	52.8
175°	51.5	52.8	52.8	52.8	51.5	51.5	51.5	52.8	52.8	52.8	52.8
177.5°	52.8	52.8	52.8	52.8	52.8	52.8	51.5	52.8	52.8	52.8	52.8
180°	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8

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

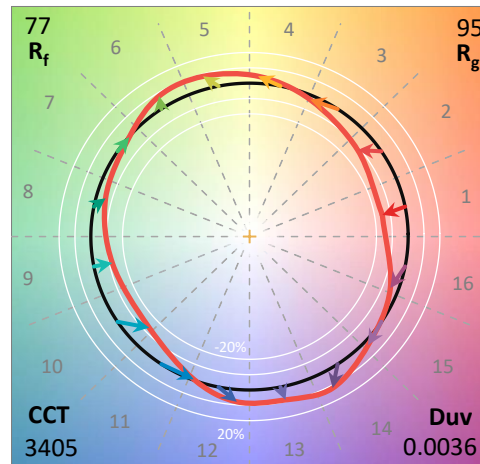
Test Information

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

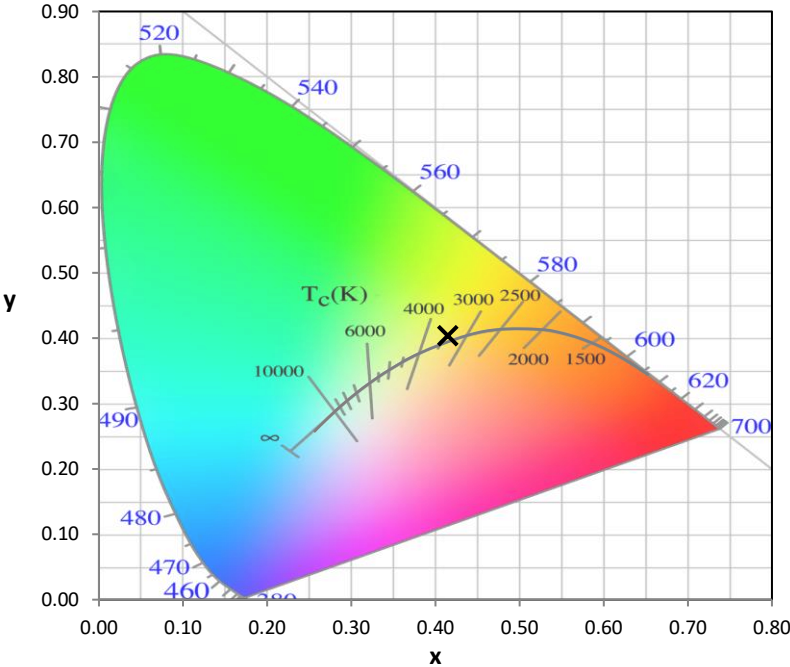
Stabilization Time: 38M
 Operation Time: 1H 38M
 Sphere Temperature (°C): 24.9

REPORT NUMBER: SP1-2411-284-1

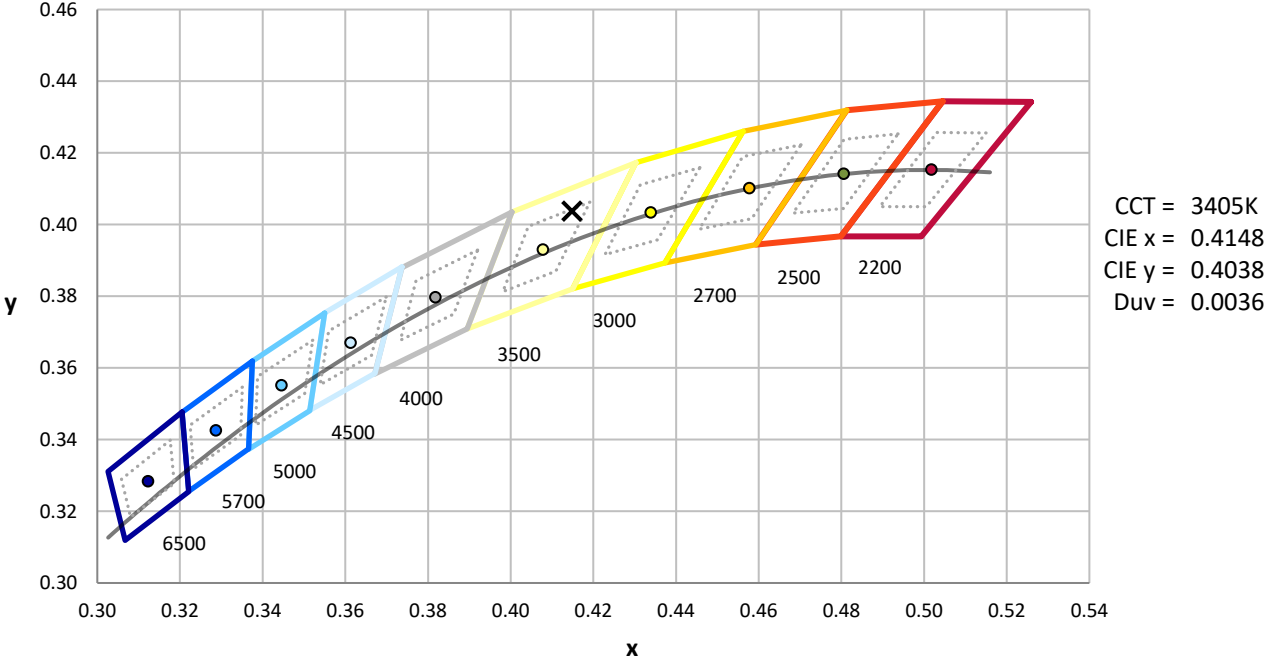
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085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



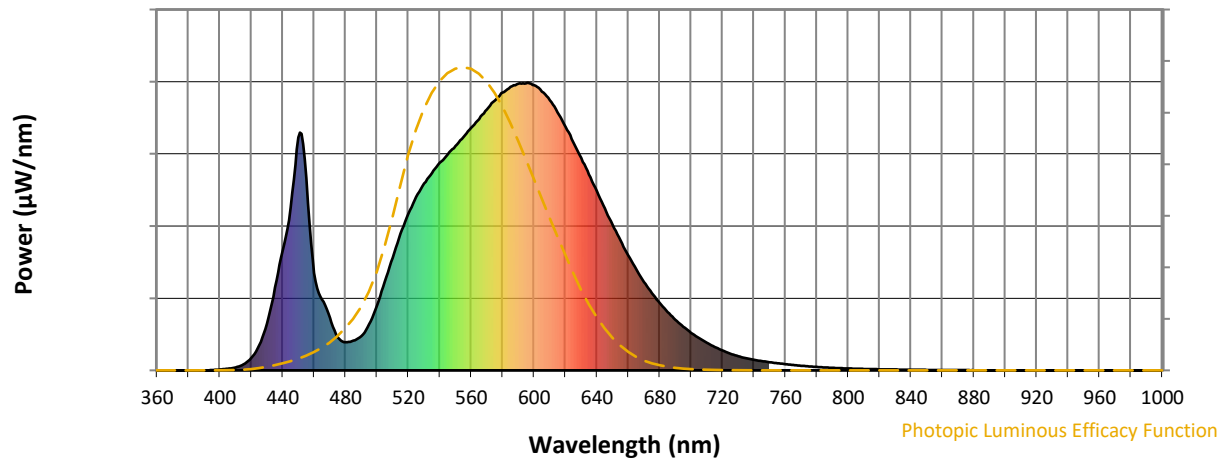
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2411-284-1

Photopic Flux vs. Wavelength

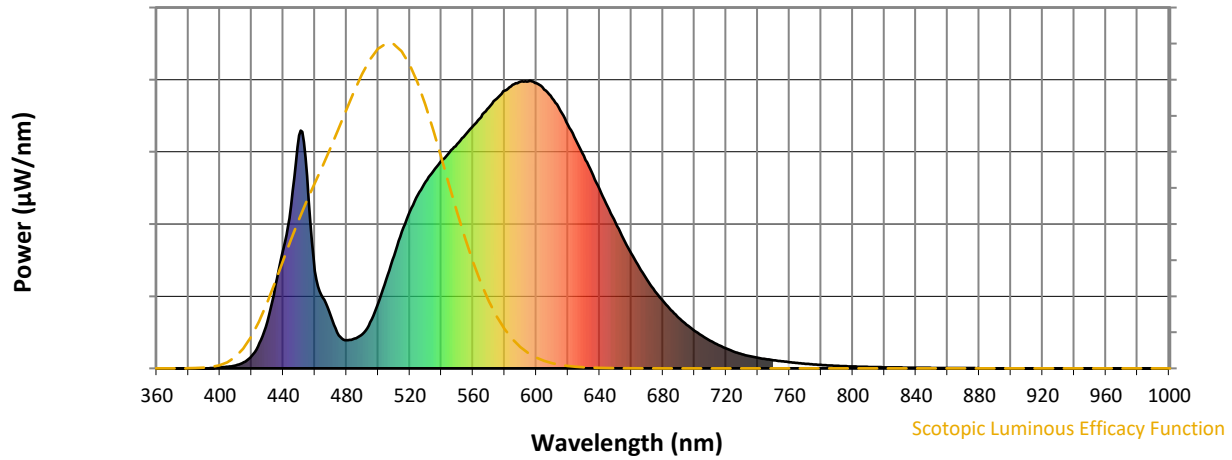


Photopic Lumens: NR

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



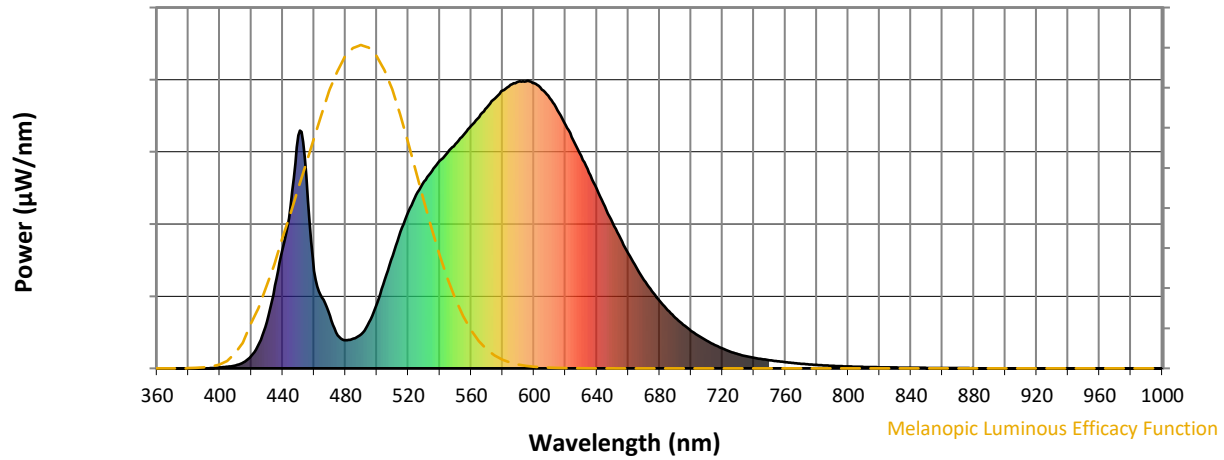
Scotopic Lumens: NR

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



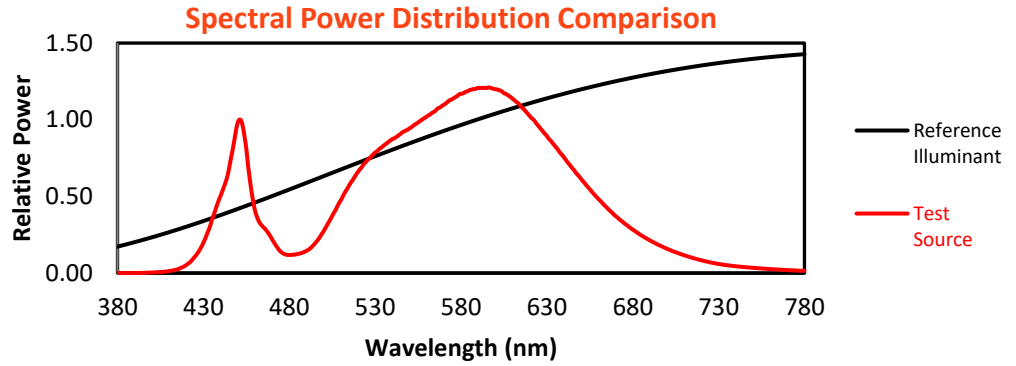
Melanopic Lumens: NR

M/P: 2.47

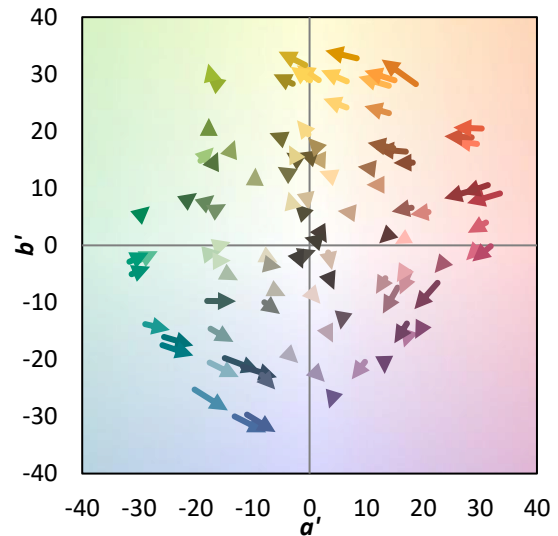
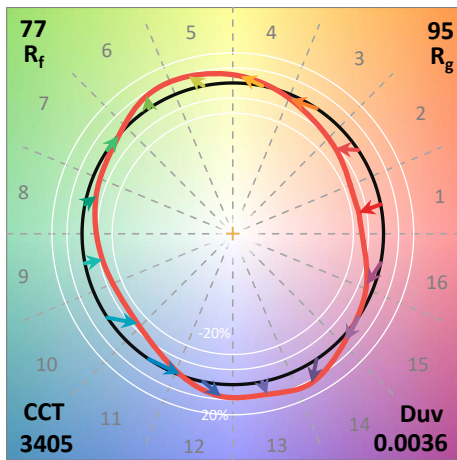
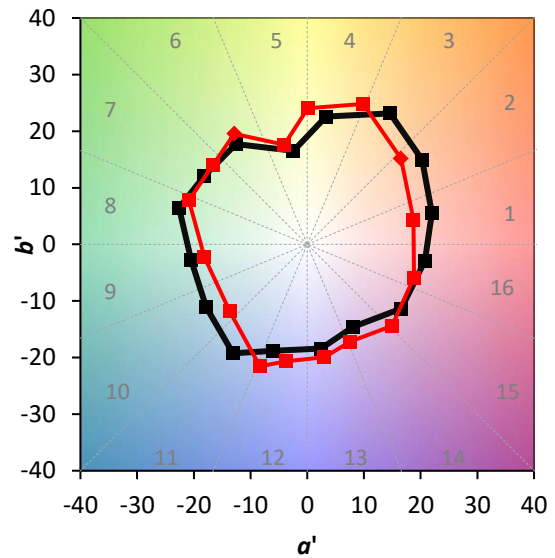
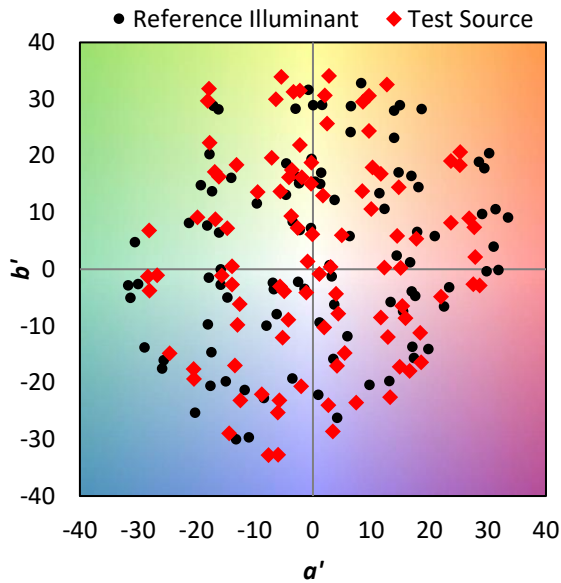
λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)	λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)	λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)	λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)	λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)
360	0	NR	490	119	NR	620	846	NR	750	28	NR	880	1	NR
365	0	NR	495	160	NR	625	793	NR	755	25	NR	885	0	NR
370	0	NR	500	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

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

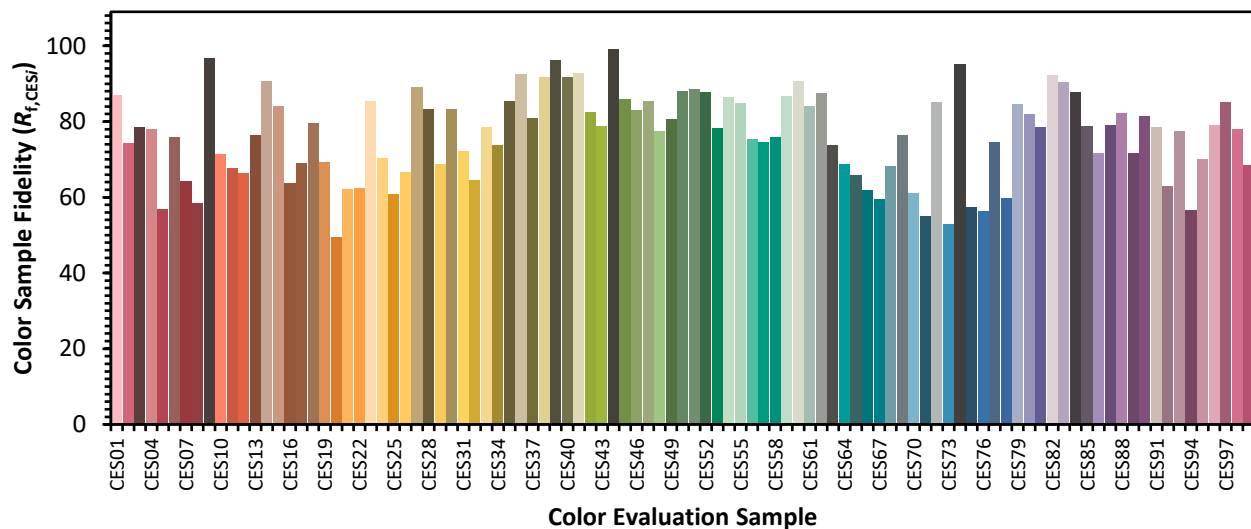


Color Vector Graphics

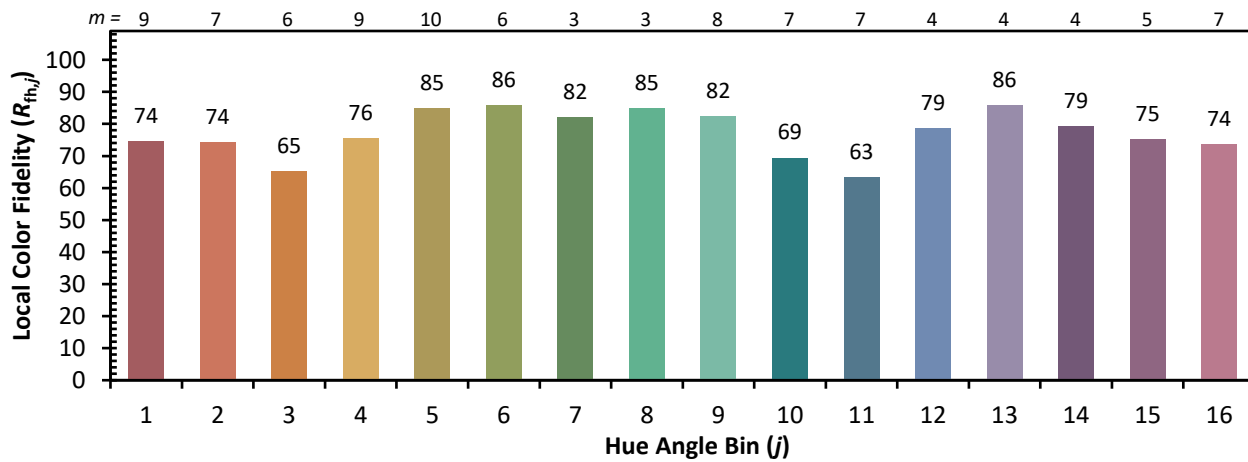
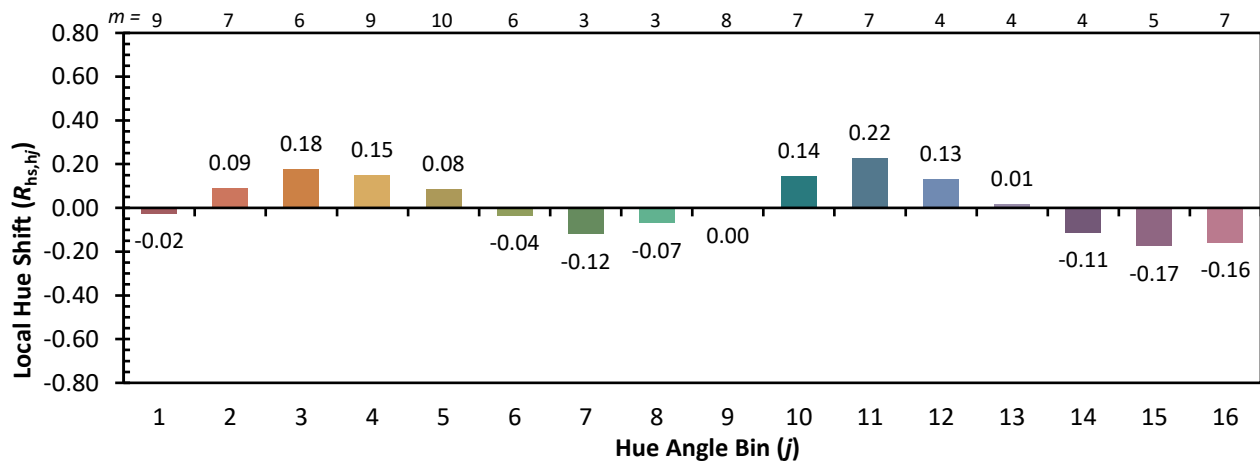
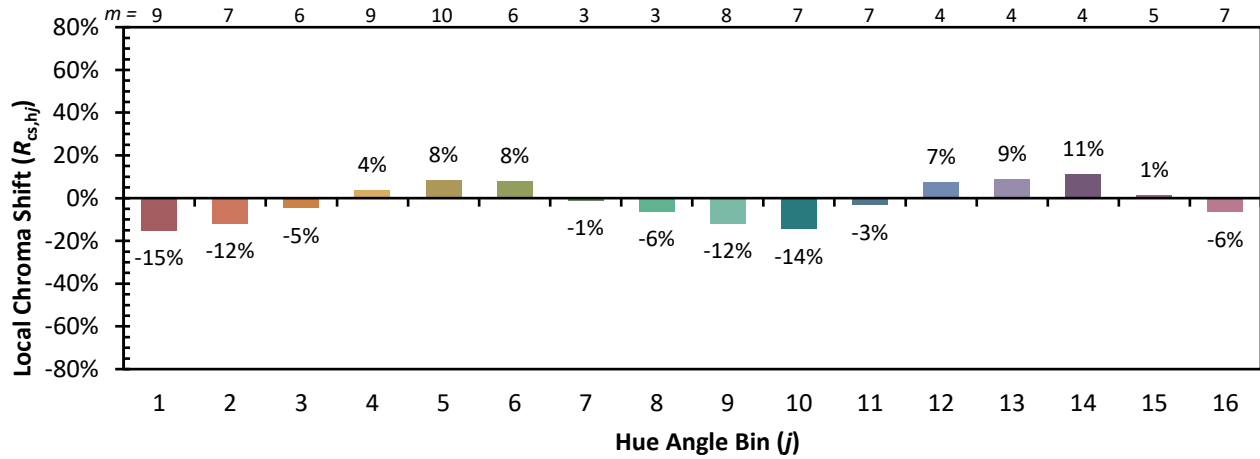


Individual Sample Fidelity Index ($R_{f,i}$)

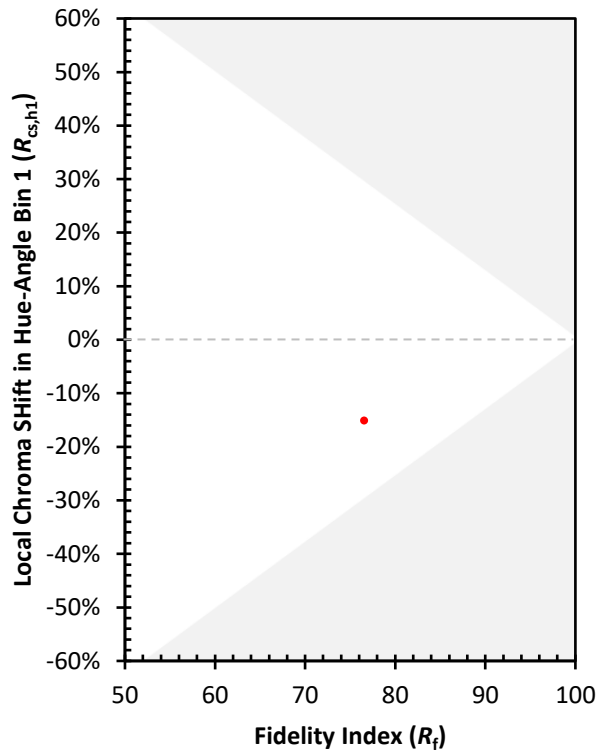
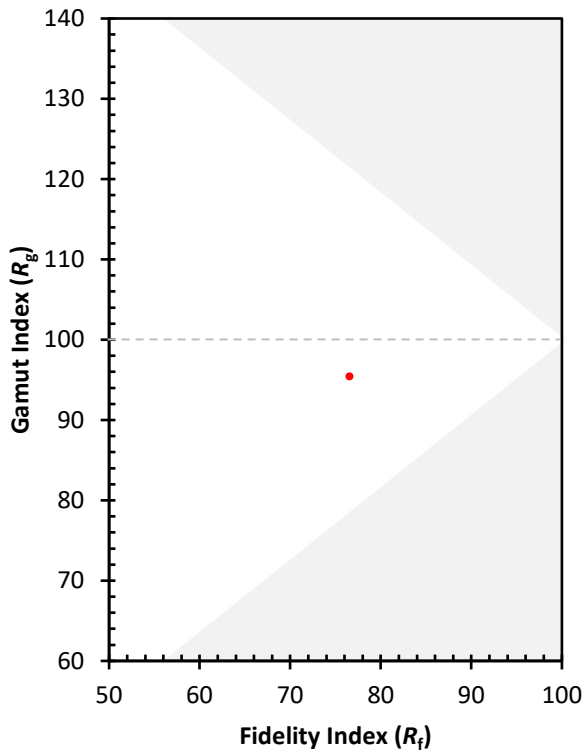
CES01 = 86	CES26 = 67	CES51 = 88	CES76 = 56
CES02 = 62	CES27 = 89	CES52 = 88	CES77 = 75
CES03 = 31	CES28 = 83	CES53 = 78	CES78 = 60
CES04 = 70	CES29 = 69	CES54 = 86	CES79 = 85
CES05 = 48	CES30 = 83	CES55 = 85	CES80 = 82
CES06 = 51	CES31 = 72	CES56 = 75	CES81 = 78
CES07 = 41	CES32 = 65	CES57 = 75	CES82 = 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)