

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: LUMARK

Report Number: P1068076

Luminaire Tested: **NAV-SA4D-830-U-LBC**

Issue Date: 08/07/2025

Test Information

Test Method: LM-79-08
Report Number: P1068076
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/07/2025
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-SA4D-830-U-LBC
Description: Navion AREA AND ROADWAY LUMINAIRE 1200mA 4xLight Square PACKAGE
80CRI 3000K FIXTURE w/ LEFT CORNER BACKLIGHT CONTROL
Light Source: (56) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 16654 lumens
Efficiency: N/A
Efficacy: 76.1 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B0 - U0 - G3

Input Watts (W): 218.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.97
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



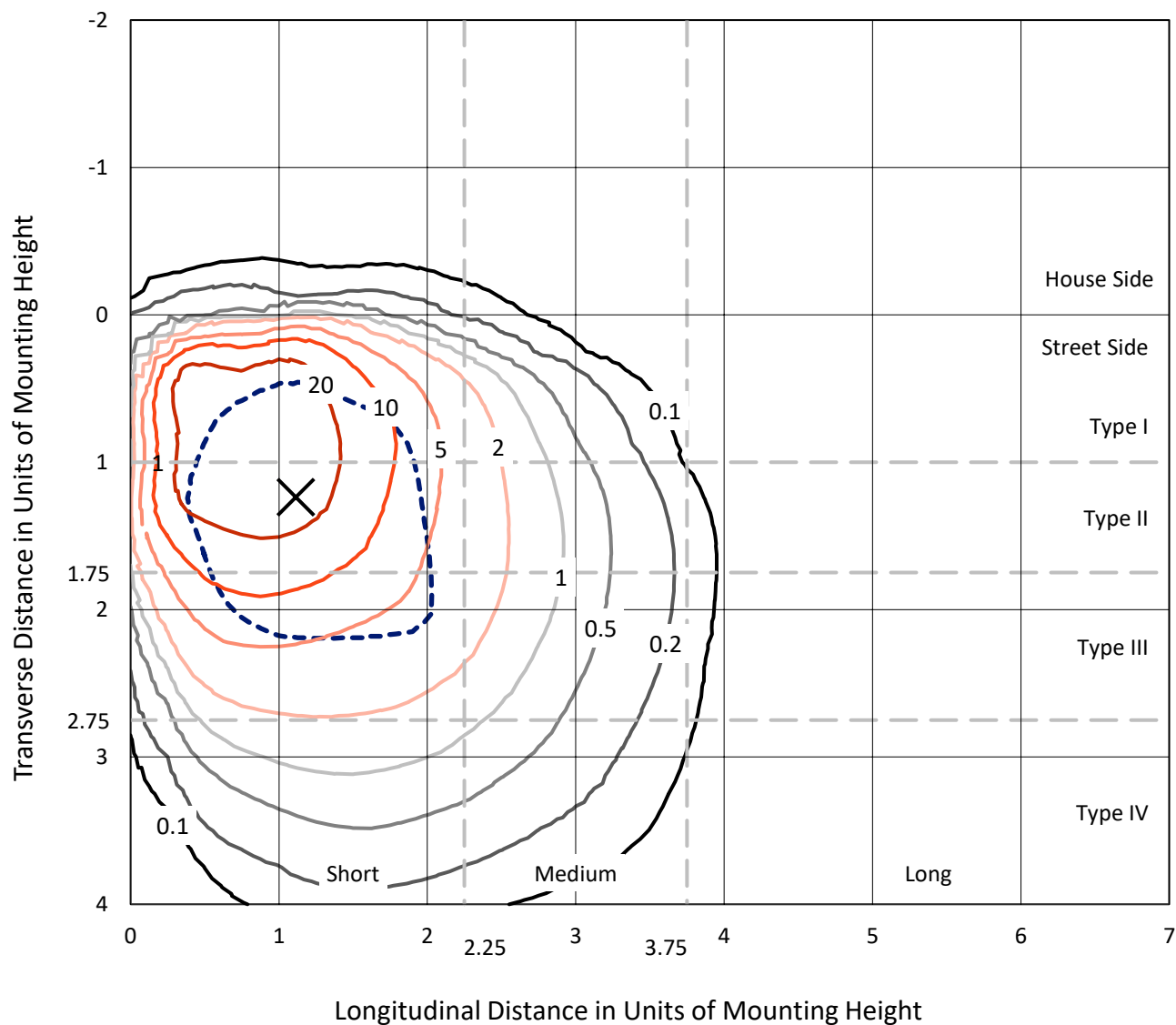
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Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

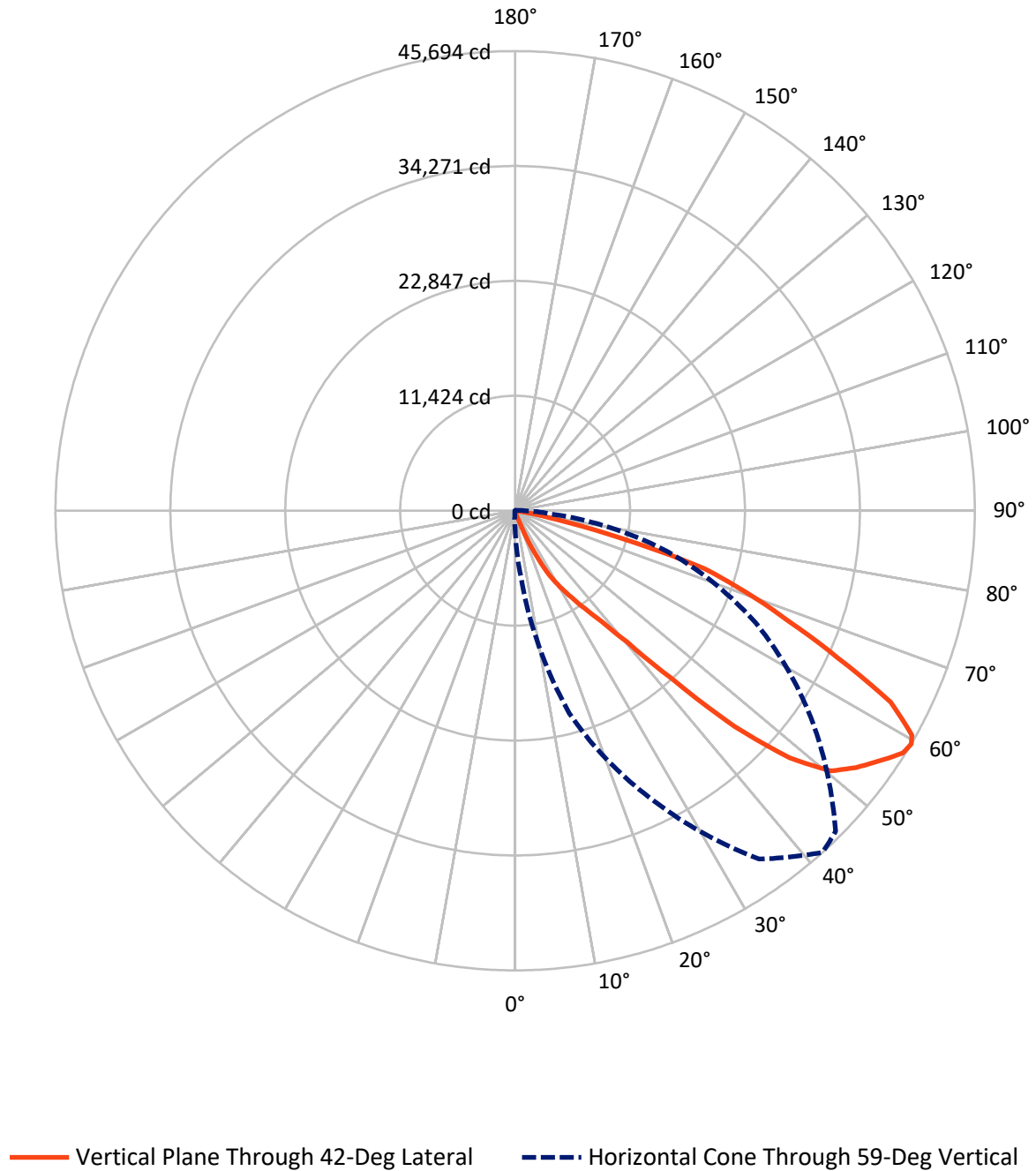


Based on 15 foot mounting height. Maximum calculated value = 49.5 fc
 Type III - Short - N/A

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Luminous Intensity Polar Plot



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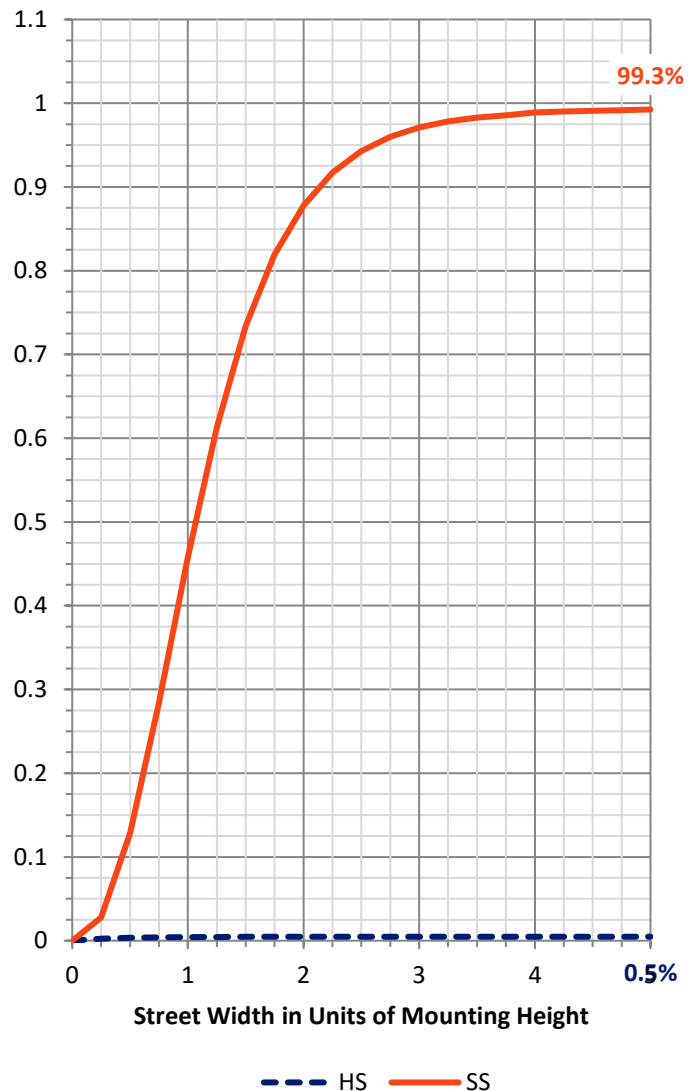
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	80.2	0.0	80.2
	% Fixture	0.5	0.0	0.5
Street Side	Lumens	16573.7	0.0	16573.7
	% Fixture	99.5	0.0	99.5
Total	Lumens	16654.0	0.0	16654.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	4.9	0.0
10°-20°	24.3	0.1
20°-30°	310.6	1.9
30°-40°	1047.3	6.3
40°-50°	3163.4	19.0
50°-60°	5584.1	33.5
60°-70°	4916.9	29.5
70°-80°	1565.1	9.4
80°-90°	37.4	0.2
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	16654.0	100.0
0°-180°	16654.0	100.0



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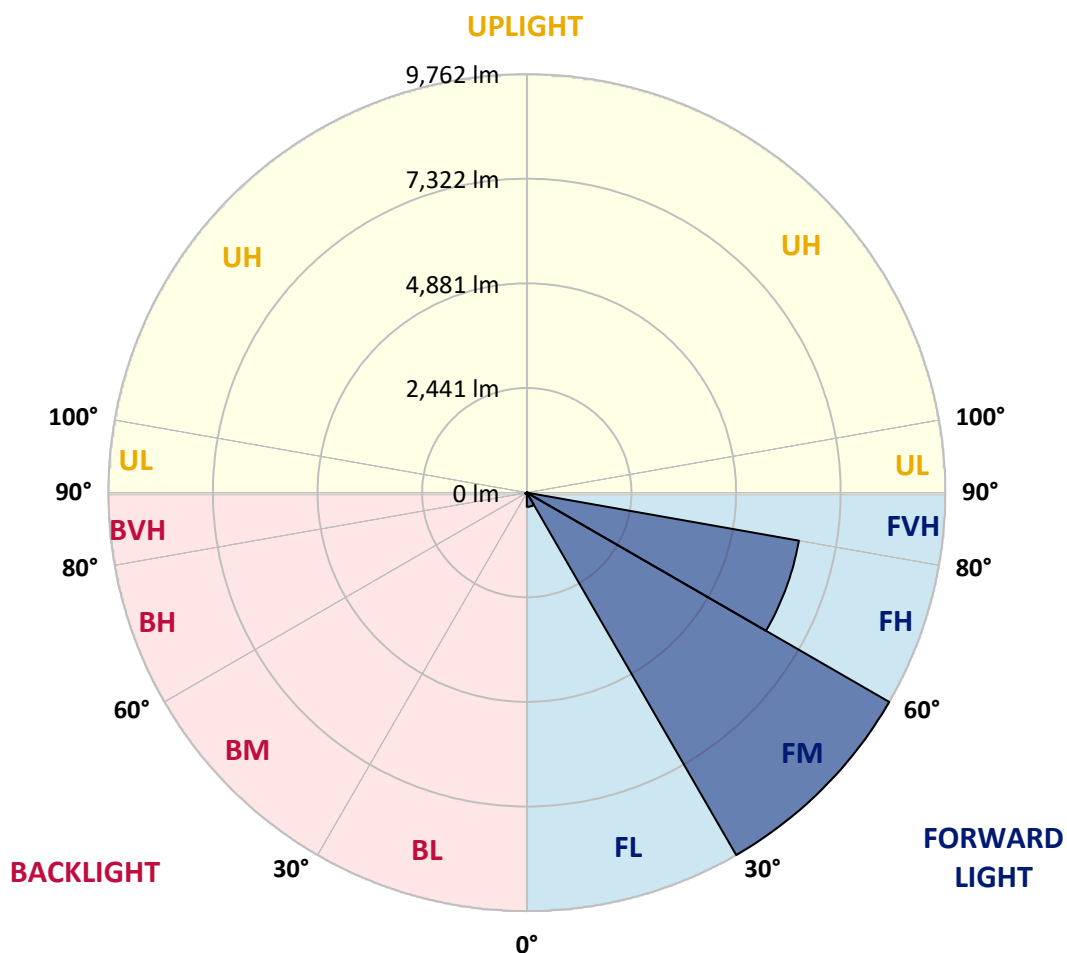
CATALOG NUMBER: NAV-SA4D-830-U-LBC

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	330.9	2.0			
FM	(30°-60°)	9762.0	58.6			
FH	(60°-80°)	6445.2	38.7			G3/7500
FVH	(80°-90°)	35.6	0.2			G1/100
BL	(0°-30°)	8.9	0.1	B0/110		
BM	(30°-60°)	32.8	0.2	B0/220		
BH	(60°-80°)	36.7	0.2	B0/110		G0/110
BVH	(80°-90°)	1.8	0.0			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B0-U0-G3

Type III Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	42°	45°	55°	65°	75°	85°
0°	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0
2.5°	73.1	73.1	67.9	62.7	57.4	52.2	52.2	52.2	47.0	47.0	41.8
5°	83.5	83.5	78.3	73.1	73.1	67.9	67.9	62.7	57.4	57.4	52.2
7.5°	88.8	88.8	88.8	88.8	83.5	83.5	83.5	78.3	73.1	67.9	62.7
10°	94.0	99.2	104.4	104.4	104.4	104.4	104.4	99.2	88.8	83.5	73.1
12.5°	104.4	109.7	120.1	130.5	130.5	130.5	130.5	125.3	114.9	99.2	83.5
15°	114.9	125.3	141.0	161.9	182.8	188.0	188.0	172.3	151.4	120.1	99.2
17.5°	130.5	146.2	188.0	255.9	329.0	386.4	386.4	344.6	240.2	156.6	114.9
20°	141.0	172.3	302.9	616.1	939.9	1180.1	1133.1	1002.5	537.8	245.4	125.3
22.5°	156.6	219.3	642.3	1618.7	2506.4	2945.0	2840.5	2156.5	1206.2	438.6	151.4
25°	177.5	318.5	1274.1	3033.7	4657.6	5132.8	5064.9	4025.8	2198.3	736.2	193.2
27.5°	219.3	469.9	2041.6	4600.2	6871.6	7278.9	7252.8	5895.2	3514.1	1185.3	250.6
30°	276.7	684.0	3028.5	6250.2	8338.9	8751.4	8620.8	7263.2	4741.2	1811.9	323.7
32.5°	344.6	955.5	3921.4	7466.9	9691.3	10234.3	10077.6	8453.7	5728.1	2344.5	480.4
35°	449.1	1221.8	4803.9	8542.5	11252.5	11941.8	11680.7	9680.8	6579.2	2945.0	579.6
37.5°	501.3	1378.5	5613.2	9712.1	13007.0	13946.8	13748.4	11231.6	7446.0	3712.5	710.1
40°	506.5	1566.5	6453.9	11236.8	15487.2	17163.3	16808.3	13894.6	9059.4	4699.4	913.8
42.5°	522.2	1848.4	7545.2	13837.2	20358.9	22766.1	22364.0	18792.5	12719.8	6678.4	1295.0
45°	595.3	2381.0	9769.6	18698.5	27047.8	30577.6	30112.8	25617.1	17831.7	10401.4	2208.7
47.5°	851.1	3582.0	13670.1	23946.2	33888.0	36702.5	36587.6	30995.3	22463.2	14218.4	3743.9
50°	1368.1	5498.3	18108.4	28358.4	38242.8	40660.4	40373.3	33240.6	25105.4	16823.9	4798.6
52.5°	1827.6	7331.1	20896.8	29982.3	39543.0	42425.3	42075.5	34060.4	25799.8	17591.5	5091.0
55°	1942.4	7994.2	21727.0	30483.6	40404.6	43918.7	43412.2	34608.6	25888.6	17043.2	4605.4
57.5°	1885.0	7367.6	21189.2	30974.4	41605.5	45453.8	44780.3	35679.1	26186.2	16113.8	3832.6
59°	1785.8	6594.9	20855.0	31366.0	42268.7	45694.0	45062.2	35914.0	26384.6	15690.8	3362.7
60°	1670.9	6072.7	20593.9	31621.9	42226.9	45318.1	44665.4	35804.4	26463.0	15325.3	3138.2
62.5°	1289.7	4845.6	20218.0	31439.1	39590.0	41887.5	41516.8	33120.5	25314.2	14155.7	2475.0
65°	1002.5	3707.3	18839.5	28039.9	33689.6	35235.2	35120.3	28045.1	21304.0	12202.8	1785.8
67.5°	793.7	2704.8	15931.0	22708.6	27105.2	29303.5	29220.0	22766.1	16171.2	9325.7	1284.5
70°	647.5	1926.8	10923.5	17121.6	21680.0	24447.4	24327.3	18322.5	11983.5	5916.0	934.7
72.5°	548.3	1232.3	6626.2	12907.7	18092.8	19674.9	19325.1	14782.3	8714.8	3221.7	741.5
75°	464.7	757.1	3284.4	8046.5	10777.3	10766.9	10417.1	7827.1	4678.5	1576.9	590.0
77.5°	376.0	532.6	1289.7	2208.7	3399.2	4208.6	4140.7	2772.7	1399.4	459.5	365.5
80°	245.4	250.6	344.6	605.7	934.7	1033.9	1174.9	845.9	407.3	219.3	151.4
82.5°	109.7	120.1	156.6	198.4	198.4	182.8	161.9	120.1	88.8	73.1	36.6
85°	26.1	36.6	26.1	31.3	26.1	20.9	20.9	10.4	0.0	0.0	0.0
87.5°	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0
2.5°	41.8	41.8	41.8	36.6	36.6	36.6	31.3	31.3	31.3	26.1	26.1
5°	52.2	47.0	41.8	41.8	36.6	36.6	31.3	26.1	26.1	26.1	20.9
7.5°	57.4	52.2	47.0	41.8	36.6	31.3	31.3	26.1	20.9	20.9	20.9
10°	67.9	62.7	52.2	41.8	36.6	31.3	26.1	26.1	20.9	15.7	15.7
12.5°	78.3	67.9	57.4	47.0	36.6	31.3	26.1	26.1	20.9	15.7	10.4
15°	88.8	78.3	62.7	47.0	36.6	31.3	26.1	26.1	15.7	10.4	5.2
17.5°	99.2	83.5	62.7	52.2	36.6	31.3	26.1	20.9	10.4	5.2	0.0
20°	104.4	88.8	67.9	52.2	36.6	31.3	26.1	15.7	5.2	0.0	0.0
22.5°	114.9	99.2	73.1	52.2	36.6	26.1	15.7	5.2	0.0	0.0	0.0
25°	135.8	104.4	73.1	52.2	36.6	26.1	10.4	0.0	0.0	0.0	0.0
27.5°	151.4	114.9	73.1	52.2	36.6	20.9	5.2	0.0	0.0	0.0	0.0
30°	177.5	125.3	78.3	52.2	36.6	15.7	5.2	0.0	0.0	0.0	0.0
32.5°	219.3	135.8	78.3	52.2	31.3	15.7	0.0	0.0	0.0	0.0	0.0
35°	266.3	156.6	78.3	52.2	31.3	15.7	0.0	0.0	0.0	0.0	0.0
37.5°	271.5	167.1	78.3	52.2	31.3	10.4	0.0	0.0	0.0	0.0	0.0
40°	282.0	156.6	83.5	52.2	31.3	10.4	0.0	0.0	0.0	0.0	0.0
42.5°	323.7	146.2	88.8	52.2	31.3	10.4	0.0	0.0	0.0	0.0	0.0
45°	480.4	151.4	88.8	57.4	31.3	15.7	0.0	0.0	0.0	0.0	0.0
47.5°	835.5	156.6	83.5	57.4	31.3	15.7	0.0	0.0	0.0	0.0	0.0
50°	1070.4	182.8	83.5	62.7	36.6	10.4	0.0	0.0	0.0	0.0	0.0
52.5°	1138.3	214.1	83.5	67.9	47.0	5.2	0.0	0.0	0.0	0.0	0.0
55°	1107.0	250.6	88.8	73.1	57.4	0.0	0.0	0.0	0.0	0.0	0.0
57.5°	1023.4	271.5	94.0	78.3	62.7	0.0	0.0	0.0	0.0	0.0	0.0
59°	934.7	287.2	109.7	83.5	62.7	0.0	0.0	0.0	0.0	0.0	0.0
60°	861.6	302.9	114.9	88.8	62.7	0.0	0.0	0.0	0.0	0.0	0.0
62.5°	694.5	323.7	125.3	104.4	52.2	0.0	0.0	0.0	0.0	0.0	0.0
65°	605.7	339.4	130.5	114.9	47.0	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	553.5	349.8	141.0	120.1	41.8	0.0	0.0	0.0	0.0	0.0	0.0
70°	511.7	344.6	151.4	114.9	36.6	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	464.7	329.0	182.8	104.4	31.3	0.0	0.0	0.0	0.0	0.0	0.0
75°	417.7	297.6	198.4	94.0	20.9	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	302.9	250.6	182.8	83.5	10.4	0.0	0.0	0.0	0.0	0.0	0.0
80°	130.5	135.8	130.5	62.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	26.1	31.3	26.1	15.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0
2.5°	26.1	26.1	26.1	26.1	31.3	31.3	41.8	52.2	62.7	67.9	67.9
5°	20.9	20.9	20.9	20.9	20.9	26.1	31.3	41.8	57.4	62.7	62.7
7.5°	15.7	15.7	15.7	15.7	15.7	15.7	26.1	36.6	52.2	57.4	62.7
10°	15.7	10.4	10.4	5.2	5.2	10.4	15.7	31.3	47.0	52.2	57.4
12.5°	10.4	5.2	5.2	0.0	0.0	5.2	10.4	26.1	41.8	47.0	52.2
15°	5.2	0.0	0.0	0.0	0.0	0.0	5.2	20.9	36.6	41.8	52.2
17.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.7	31.3	41.8	47.0
20°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.4	26.1	36.6	41.8
22.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	20.9	31.3	36.6
25°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.7	20.9	26.1
27.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.4	15.7	20.9
30°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.4	15.7	20.9
32.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	10.4	15.7
35°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	10.4	15.7
37.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	10.4	10.4
40°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	10.4
42.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	10.4
45°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	10.4
47.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	10.4
50°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	10.4
52.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	5.2
55°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	5.2
57.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2
59°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2
60°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2
62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2
65°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2
70°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	5.2
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	10.4
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	10.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	5.2
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	5.2
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	5.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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CANDELA DISTRIBUTION (continued):

	285°	295°	305°	315°	318°	325°	335°	345°	355°	360°
0°	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0
2.5°	73.1	73.1	67.9	62.7	62.7	62.7	67.9	73.1	73.1	73.1
5°	67.9	67.9	62.7	62.7	62.7	62.7	67.9	78.3	83.5	83.5
7.5°	67.9	67.9	62.7	62.7	62.7	62.7	67.9	78.3	83.5	88.8
10°	62.7	62.7	62.7	62.7	57.4	62.7	67.9	78.3	94.0	94.0
12.5°	62.7	62.7	62.7	62.7	57.4	62.7	73.1	83.5	99.2	104.4
15°	62.7	62.7	62.7	57.4	57.4	62.7	73.1	88.8	104.4	114.9
17.5°	57.4	62.7	62.7	57.4	57.4	62.7	73.1	88.8	114.9	130.5
20°	52.2	57.4	62.7	57.4	57.4	57.4	73.1	88.8	120.1	141.0
22.5°	47.0	52.2	57.4	57.4	52.2	57.4	73.1	94.0	130.5	156.6
25°	41.8	47.0	47.0	52.2	52.2	57.4	73.1	94.0	135.8	177.5
27.5°	31.3	36.6	41.8	47.0	47.0	57.4	73.1	99.2	146.2	219.3
30°	26.1	31.3	36.6	41.8	47.0	57.4	73.1	99.2	156.6	276.7
32.5°	26.1	31.3	36.6	41.8	47.0	52.2	73.1	104.4	172.3	344.6
35°	20.9	26.1	31.3	41.8	41.8	52.2	73.1	104.4	188.0	449.1
37.5°	20.9	26.1	31.3	41.8	41.8	52.2	73.1	104.4	229.7	501.3
40°	15.7	20.9	26.1	41.8	41.8	52.2	78.3	109.7	235.0	506.5
42.5°	15.7	20.9	26.1	36.6	41.8	52.2	78.3	109.7	219.3	522.2
45°	15.7	20.9	26.1	41.8	47.0	57.4	78.3	114.9	214.1	595.3
47.5°	15.7	20.9	26.1	41.8	52.2	57.4	78.3	114.9	219.3	851.1
50°	15.7	20.9	26.1	41.8	57.4	57.4	78.3	114.9	240.2	1368.1
52.5°	10.4	15.7	20.9	36.6	47.0	62.7	83.5	109.7	255.9	1827.6
55°	10.4	10.4	15.7	31.3	41.8	67.9	88.8	109.7	297.6	1942.4
57.5°	10.4	10.4	15.7	26.1	36.6	73.1	94.0	109.7	344.6	1885.0
59°	10.4	10.4	10.4	26.1	31.3	73.1	94.0	114.9	349.8	1785.8
60°	10.4	10.4	10.4	20.9	31.3	73.1	99.2	120.1	355.1	1670.9
62.5°	5.2	5.2	5.2	20.9	26.1	73.1	109.7	146.2	365.5	1289.7
65°	10.4	10.4	5.2	15.7	26.1	62.7	125.3	156.6	370.7	1002.5
67.5°	10.4	10.4	10.4	20.9	26.1	62.7	130.5	161.9	370.7	793.7
70°	10.4	10.4	10.4	20.9	31.3	62.7	130.5	167.1	365.5	647.5
72.5°	10.4	10.4	10.4	20.9	31.3	57.4	120.1	172.3	349.8	548.3
75°	10.4	10.4	10.4	15.7	26.1	52.2	114.9	188.0	318.5	464.7
77.5°	10.4	10.4	10.4	10.4	20.9	41.8	104.4	208.9	282.0	376.0
80°	15.7	10.4	10.4	10.4	15.7	36.6	99.2	203.6	235.0	245.4
82.5°	15.7	10.4	10.4	5.2	10.4	26.1	78.3	156.6	120.1	109.7
85°	10.4	10.4	10.4	5.2	5.2	15.7	36.6	47.0	36.6	26.1
87.5°	10.4	10.4	10.4	5.2	5.2	5.2	5.2	5.2	5.2	5.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-9

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-830-U-5WQ

Data in this report applies to families of products including GSS-SB1A-830-U-5WQ

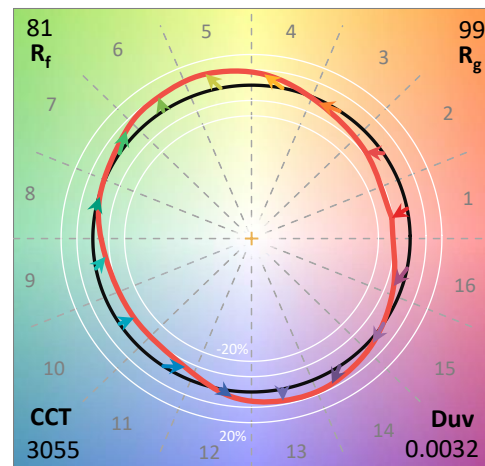
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-184-9
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/15/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: McGraw-Edison
 Catalog Number: **GSS-SB1A-830-U-5WQ**
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 80 CRI
 3000K CCT 26 LEDS

Spectral Parameters

CCT (K): 3055
 CIE u' : 0.2475
 CIE v' : 0.5247
 Duv: 0.0032
 CIE x: 0.4377
 CIE y: 0.4124
 CIE z: 0.1499
 Peak Wavelength (nm): 604
 Dominant Wavelength (nm): 581
 Purity: 55.16339
 R_f: 81.5
 R_g: 99.2

CRI (Ra): 80.9
 R1: 79.5
 R2: 85.6
 R3: 92.1
 R4: 82.4
 R5: 78.9
 R6: 81.7
 R7: 85.1
 R8: 61.9
 R9: 6.8
 R10: 67.1
 R11: 82.5
 R12: 63.4
 R13: 80.2
 R14: 95.1
 R15: 71.7



Test Conditions

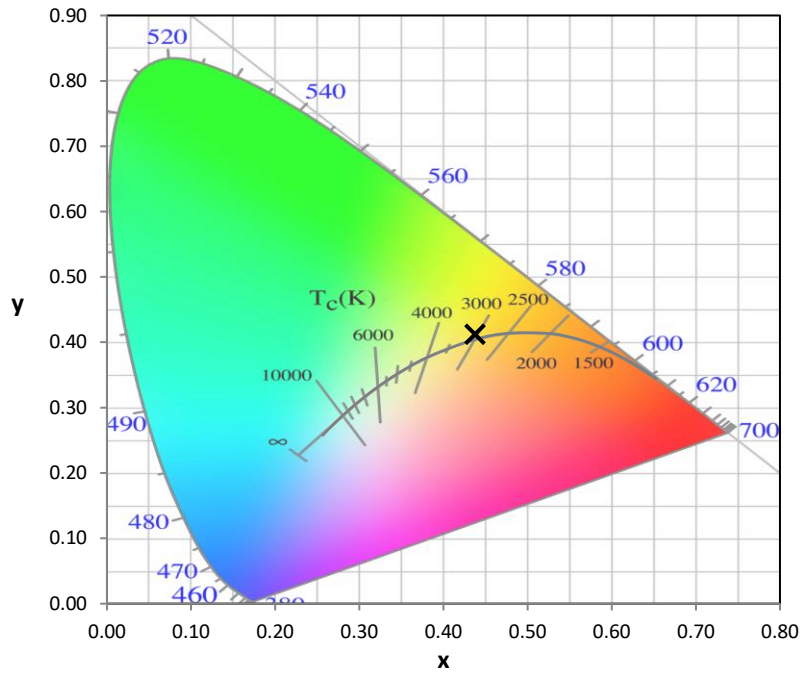
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-9

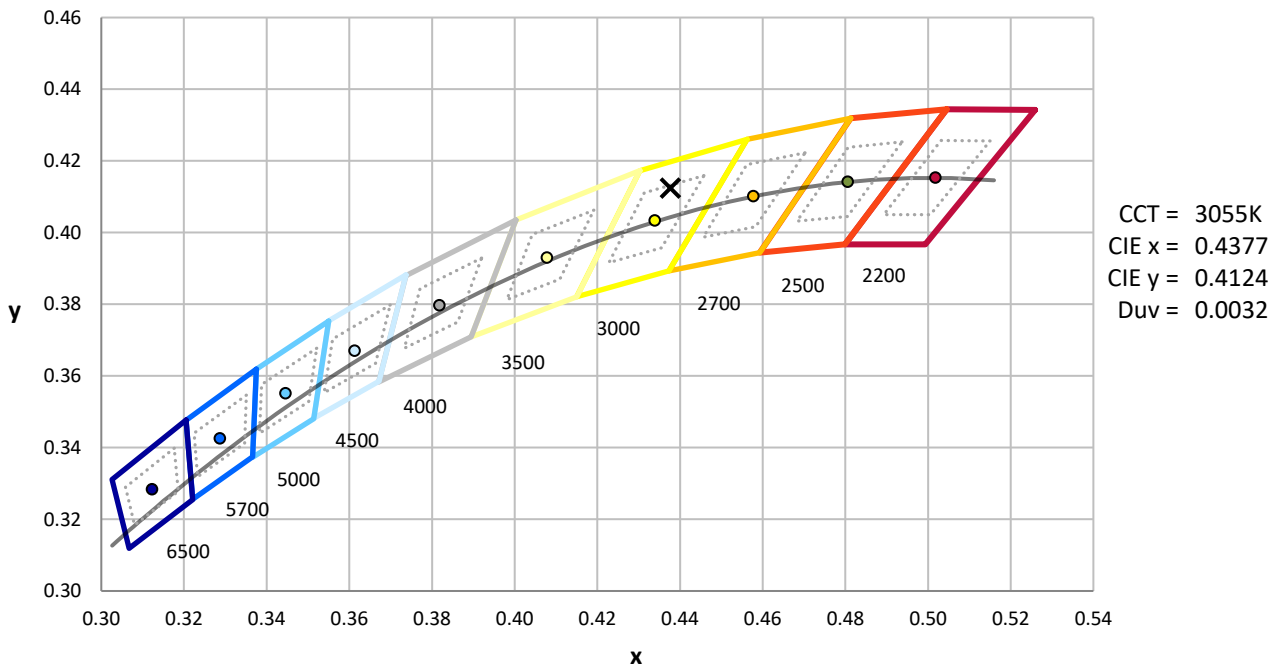
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085	10/24/2023	10/24/2024
Room Thermometer	IN0046	10/24/2023	10/24/2024

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CIE 1931 Chromaticity Diagram



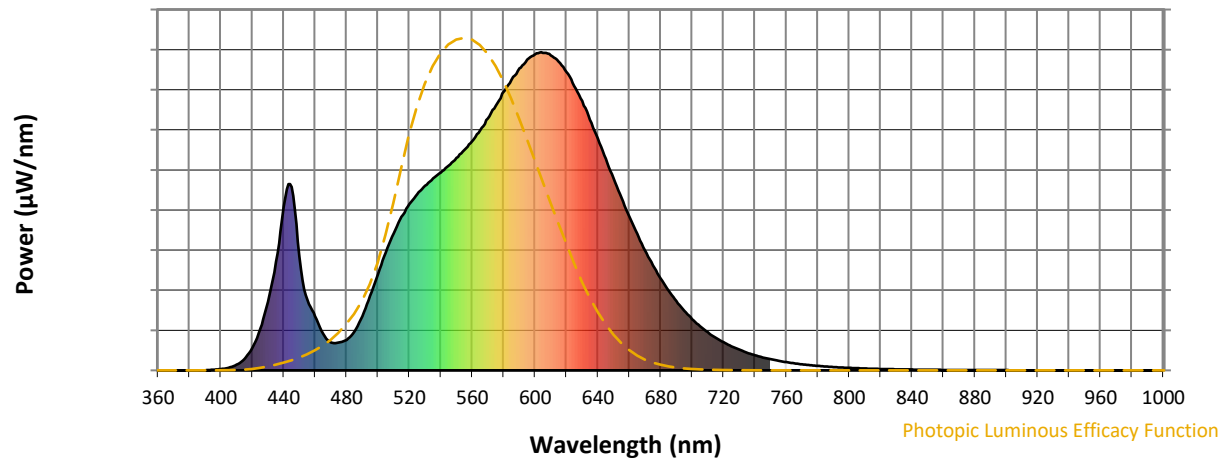
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-184-9

Photopic Flux vs. Wavelength

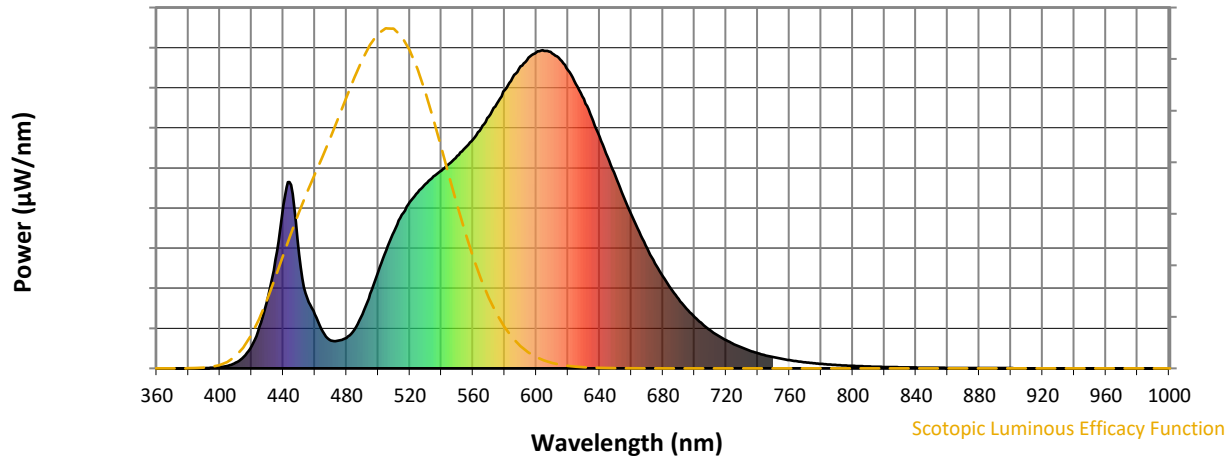


Photopic Lumens: NR

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	170	NR	620	938	NR	750	35	NR	880	1	NR
365	0	NR	495	234	NR	625	894	NR	755	30	NR	885	1	NR
370	0	NR	500	302	NR	630	847	NR	760	26	NR	890	1	NR
375	0	NR	505	371	NR	635	788	NR	765	22	NR	895	1	NR
380	0	NR	510	431	NR	640	728	NR	770	19	NR	900	1	NR
385	0	NR	515	482	NR	645	665	NR	775	16	NR	905	1	NR
390	0	NR	520	523	NR	650	603	NR	780	14	NR	910	0	NR
395	2	NR	525	553	NR	655	542	NR	785	12	NR	915	0	NR
400	4	NR	530	580	NR	660	484	NR	790	11	NR	920	0	NR
405	8	NR	535	603	NR	665	430	NR	795	9	NR	925	0	NR
410	18	NR	540	622	NR	670	377	NR	800	8	NR	930	0	NR
415	36	NR	545	644	NR	675	330	NR	805	7	NR	935	0	NR
420	71	NR	550	668	NR	680	289	NR	810	6	NR	940	0	NR
425	131	NR	555	693	NR	685	250	NR	815	5	NR	945	0	NR
430	215	NR	560	720	NR	690	218	NR	820	4	NR	950	0	NR
435	341	NR	565	754	NR	695	188	NR	825	4	NR	955	0	NR
440	514	NR	570	792	NR	700	161	NR	830	3	NR	960	0	NR
445	576	NR	575	832	NR	705	139	NR	835	3	NR	965	0	NR
450	358	NR	580	875	NR	710	119	NR	840	3	NR	970	0	NR
455	222	NR	585	913	NR	715	102	NR	845	2	NR	975	0	NR
460	170	NR	590	950	NR	720	88	NR	850	2	NR	980	0	NR
465	115	NR	595	977	NR	725	76	NR	855	2	NR	985	0	NR
470	88	NR	600	994	NR	730	65	NR	860	1	NR	990	0	NR
475	87	NR	605	997	NR	735	56	NR	865	1	NR	995	0	NR
480	96	NR	610	990	NR	740	47	NR	870	1	NR	1000	0	NR
485	122	NR	615	971	NR	745	41	NR	875	1	NR			

REPORT NUMBER: SP1-2407-184-9

Scotopic Flux vs. Wavelength



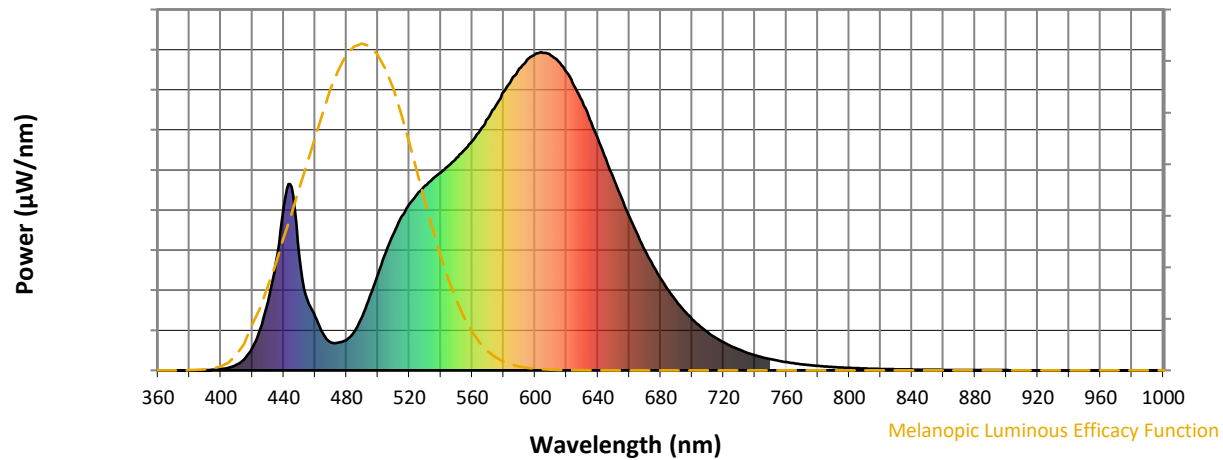
Scotopic Lumens: NR

S/P: 1.28

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	170	NR	620	938	NR	750	35	NR	880	1	NR
365	0	NR	495	234	NR	625	894	NR	755	30	NR	885	1	NR
370	0	NR	500	302	NR	630	847	NR	760	26	NR	890	1	NR
375	0	NR	505	371	NR	635	788	NR	765	22	NR	895	1	NR
380	0	NR	510	431	NR	640	728	NR	770	19	NR	900	1	NR
385	0	NR	515	482	NR	645	665	NR	775	16	NR	905	1	NR
390	0	NR	520	523	NR	650	603	NR	780	14	NR	910	0	NR
395	2	NR	525	553	NR	655	542	NR	785	12	NR	915	0	NR
400	4	NR	530	580	NR	660	484	NR	790	11	NR	920	0	NR
405	8	NR	535	603	NR	665	430	NR	795	9	NR	925	0	NR
410	18	NR	540	622	NR	670	377	NR	800	8	NR	930	0	NR
415	36	NR	545	644	NR	675	330	NR	805	7	NR	935	0	NR
420	71	NR	550	668	NR	680	289	NR	810	6	NR	940	0	NR
425	131	NR	555	693	NR	685	250	NR	815	5	NR	945	0	NR
430	215	NR	560	720	NR	690	218	NR	820	4	NR	950	0	NR
435	341	NR	565	754	NR	695	188	NR	825	4	NR	955	0	NR
440	514	NR	570	792	NR	700	161	NR	830	3	NR	960	0	NR
445	576	NR	575	832	NR	705	139	NR	835	3	NR	965	0	NR
450	358	NR	580	875	NR	710	119	NR	840	3	NR	970	0	NR
455	222	NR	585	913	NR	715	102	NR	845	2	NR	975	0	NR
460	170	NR	590	950	NR	720	88	NR	850	2	NR	980	0	NR
465	115	NR	595	977	NR	725	76	NR	855	2	NR	985	0	NR
470	88	NR	600	994	NR	730	65	NR	860	1	NR	990	0	NR
475	87	NR	605	997	NR	735	56	NR	865	1	NR	995	0	NR
480	96	NR	610	990	NR	740	47	NR	870	1	NR	1000	0	NR
485	122	NR	615	971	NR	745	41	NR	875	1	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.33

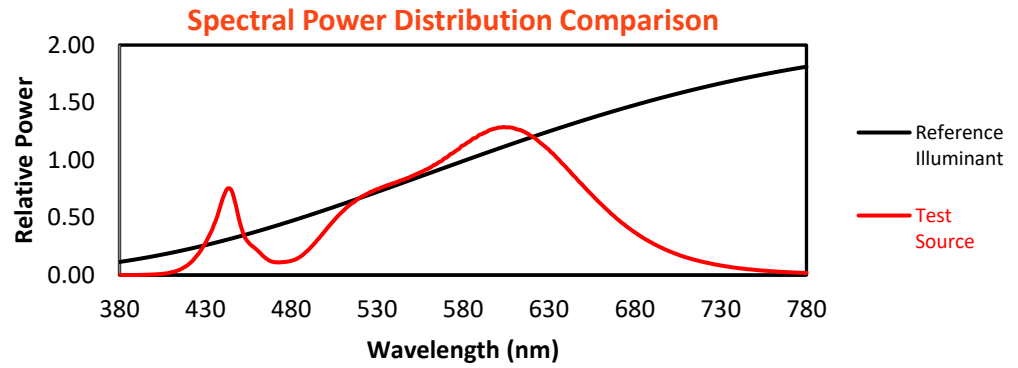
λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	170	NR	620	938	NR	750	35	NR	880	1	NR
365	0	NR	495	234	NR	625	894	NR	755	30	NR	885	1	NR
370	0	NR	500	302	NR	630	847	NR	760	26	NR	890	1	NR
375	0	NR	505	371	NR	635	788	NR	765	22	NR	895	1	NR
380	0	NR	510	431	NR	640	728	NR	770	19	NR	900	1	NR
385	0	NR	515	482	NR	645	665	NR	775	16	NR	905	1	NR
390	0	NR	520	523	NR	650	603	NR	780	14	NR	910	0	NR
395	2	NR	525	553	NR	655	542	NR	785	12	NR	915	0	NR
400	4	NR	530	580	NR	660	484	NR	790	11	NR	920	0	NR
405	8	NR	535	603	NR	665	430	NR	795	9	NR	925	0	NR
410	18	NR	540	622	NR	670	377	NR	800	8	NR	930	0	NR
415	36	NR	545	644	NR	675	330	NR	805	7	NR	935	0	NR
420	71	NR	550	668	NR	680	289	NR	810	6	NR	940	0	NR
425	131	NR	555	693	NR	685	250	NR	815	5	NR	945	0	NR
430	215	NR	560	720	NR	690	218	NR	820	4	NR	950	0	NR
435	341	NR	565	754	NR	695	188	NR	825	4	NR	955	0	NR
440	514	NR	570	792	NR	700	161	NR	830	3	NR	960	0	NR
445	576	NR	575	832	NR	705	139	NR	835	3	NR	965	0	NR
450	358	NR	580	875	NR	710	119	NR	840	3	NR	970	0	NR
455	222	NR	585	913	NR	715	102	NR	845	2	NR	975	0	NR
460	170	NR	590	950	NR	720	88	NR	850	2	NR	980	0	NR
465	115	NR	595	977	NR	725	76	NR	855	2	NR	985	0	NR
470	88	NR	600	994	NR	730	65	NR	860	1	NR	990	0	NR
475	87	NR	605	997	NR	735	56	NR	865	1	NR	995	0	NR
480	96	NR	610	990	NR	740	47	NR	870	1	NR	1000	0	NR
485	122	NR	615	971	NR	745	41	NR	875	1	NR			

REPORT NUMBER: SP1-2407-184-9

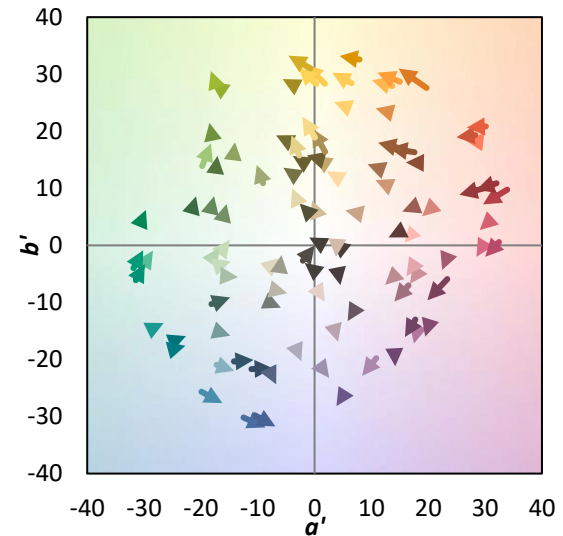
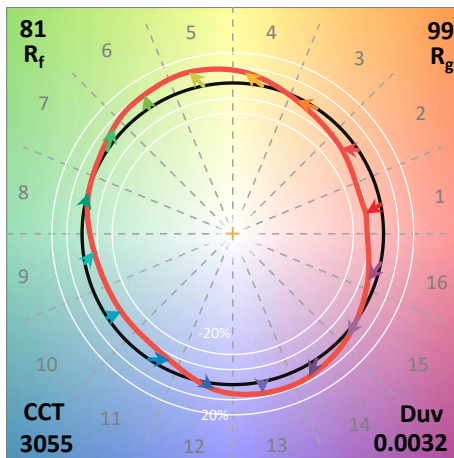
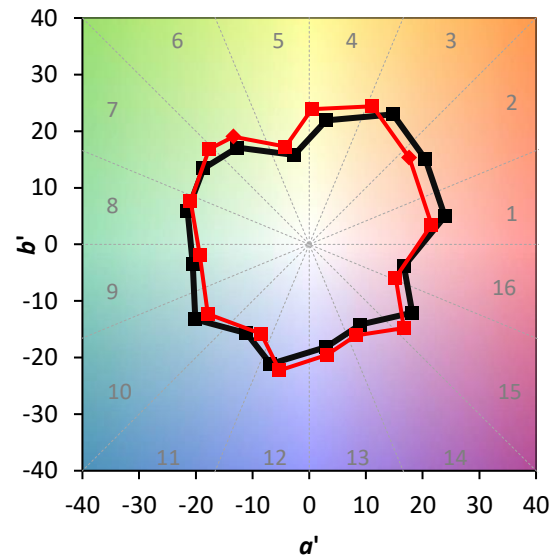
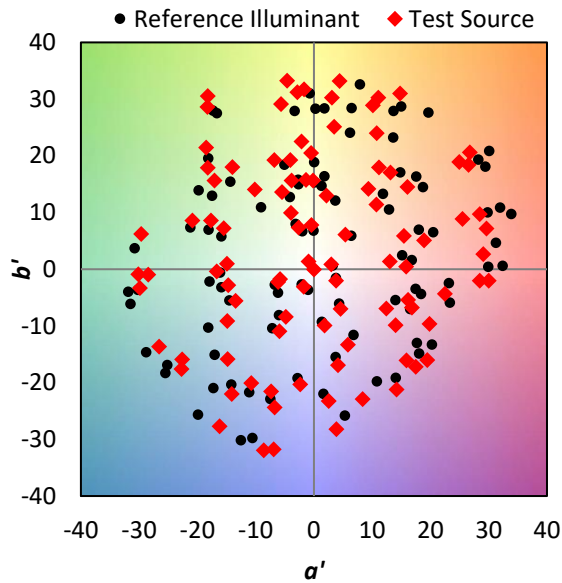
TM-30-18

Summary

$R_f = 81.5$
 $R_g = 99.2$
 $CIE R_a = 80.9$
 $R_9 = 6.8$

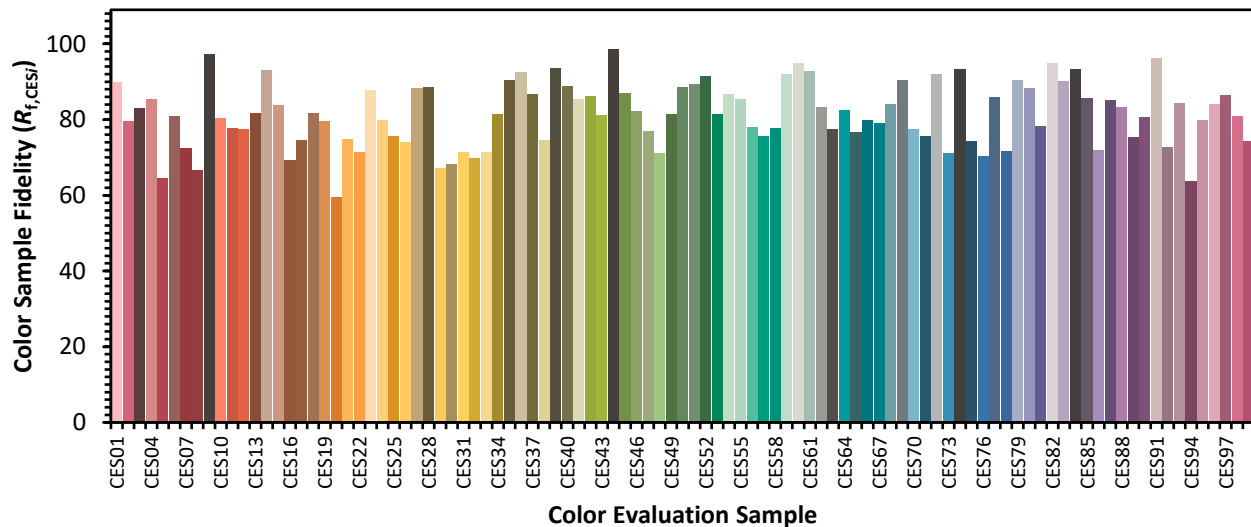


Color Vector Graphics

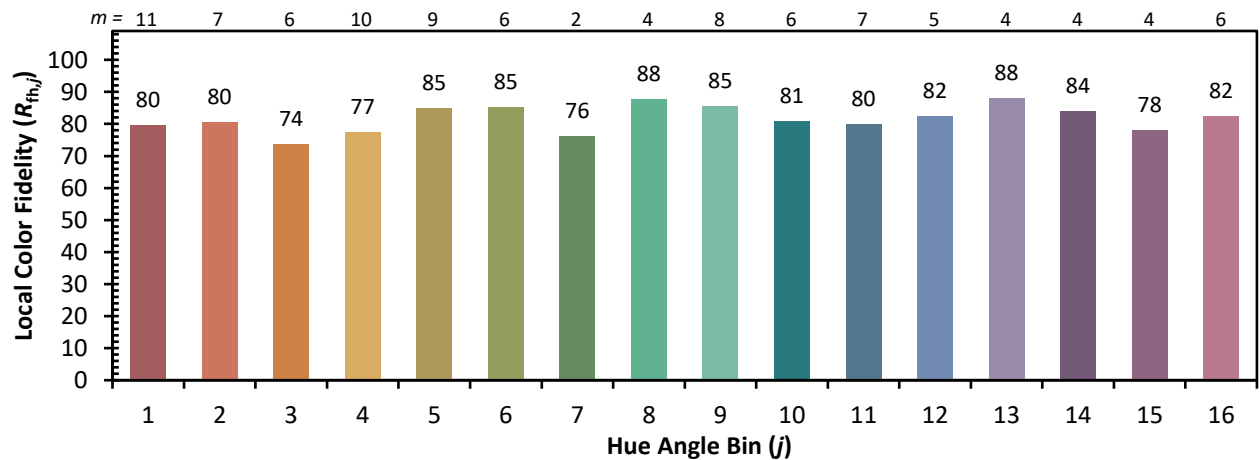
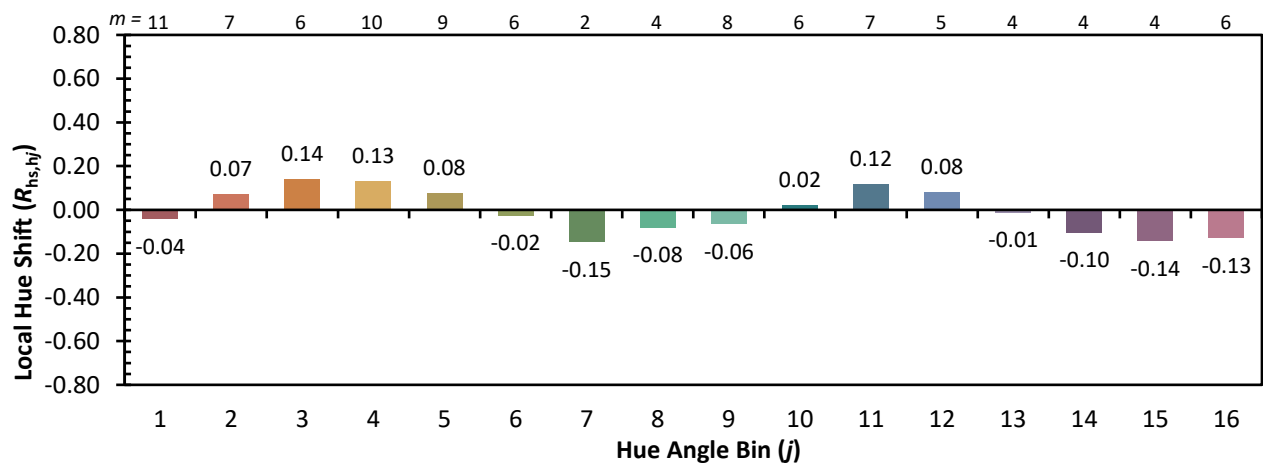
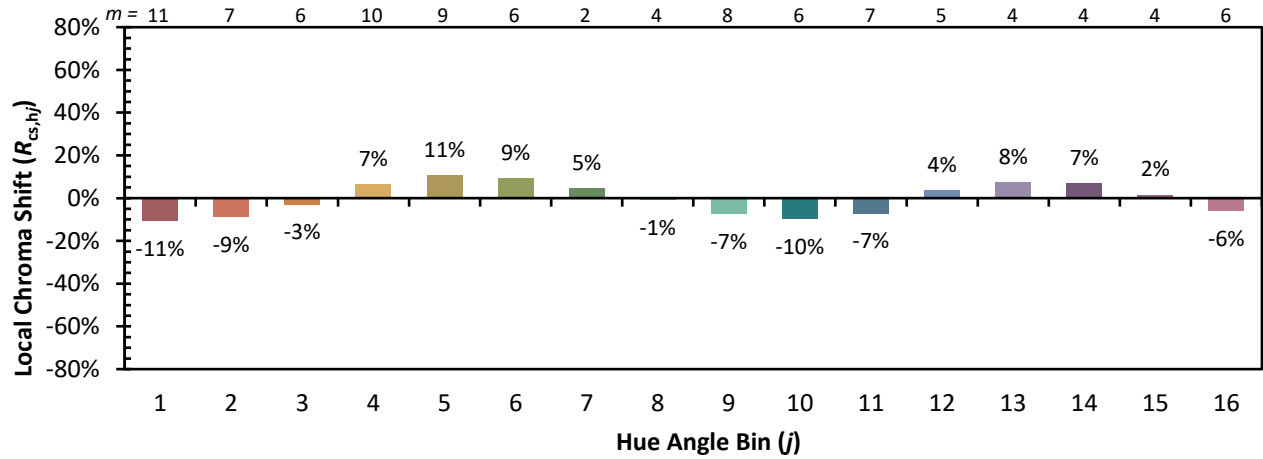


Individual Sample Fidelity Index ($R_{f,i}$)

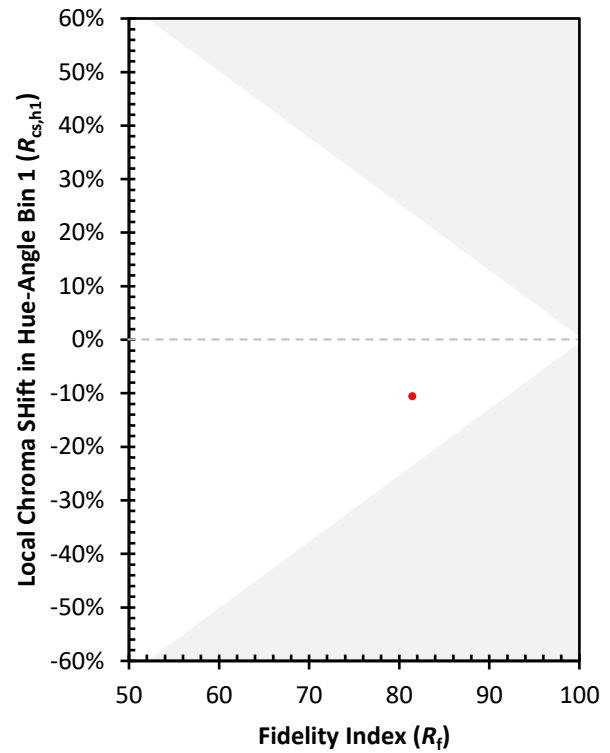
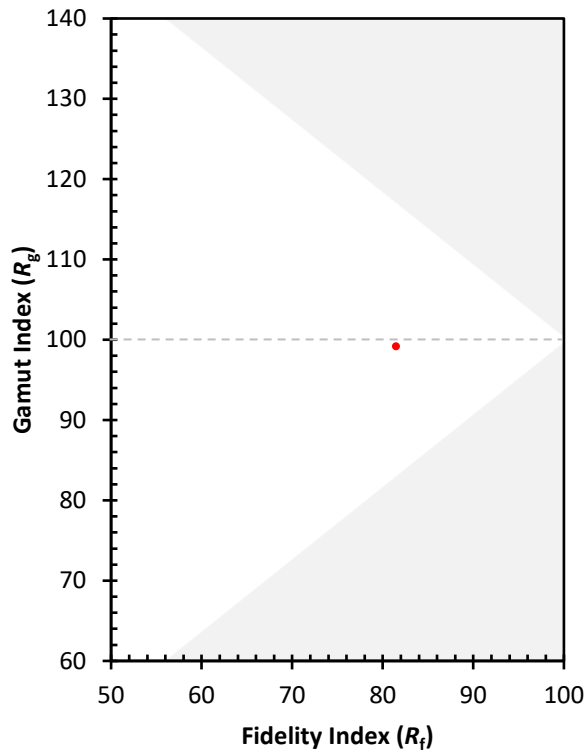
CES01 = 86	CES26 = 74	CES51 = 89	CES76 = 70
CES02 = 63	CES27 = 88	CES52 = 91	CES77 = 86
CES03 = 31	CES28 = 89	CES53 = 81	CES78 = 72
CES04 = 70	CES29 = 67	CES54 = 87	CES79 = 90
CES05 = 50	CES30 = 68	CES55 = 85	CES80 = 88
CES06 = 51	CES31 = 71	CES56 = 78	CES81 = 78
CES07 = 42	CES32 = 70	CES57 = 76	CES82 = 95
CES08 = 41	CES33 = 71	CES58 = 78	CES83 = 90
CES09 = 29	CES34 = 82	CES59 = 92	CES84 = 93
CES10 = 76	CES35 = 90	CES60 = 95	CES85 = 86
CES11 = 59	CES36 = 93	CES61 = 93	CES86 = 72
CES12 = 65	CES37 = 87	CES62 = 83	CES87 = 85
CES13 = 43	CES38 = 75	CES63 = 77	CES88 = 83
CES14 = 74	CES39 = 94	CES64 = 83	CES89 = 75
CES15 = 71	CES40 = 89	CES65 = 77	CES90 = 81
CES16 = 47	CES41 = 85	CES66 = 80	CES91 = 96
CES17 = 50	CES42 = 86	CES67 = 79	CES92 = 73
CES18 = 56	CES43 = 81	CES68 = 84	CES93 = 84
CES19 = 72	CES44 = 99	CES69 = 90	CES94 = 64
CES20 = 66	CES45 = 87	CES70 = 77	CES95 = 80
CES21 = 87	CES46 = 82	CES71 = 76	CES96 = 84
CES22 = 79	CES47 = 77	CES72 = 92	CES97 = 87
CES23 = 92	CES48 = 71	CES73 = 71	CES98 = 81
CES24 = 91	CES49 = 81	CES74 = 93	CES99 = 74
CES25 = 72	CES50 = 89	CES75 = 74	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)