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: P324647

Luminaire Tested: **GLEON-SA3C-830-U-SLR-HSS**

Issue Date: 3/3/2020

Report Generated By E0585644

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Peachtree City, GA 30269

Scaled Data Report

Test Information

Test Method:	LM-79-08
Report Number:	P324647
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-28)
Test Lab:	INNOVATION CENTER
Issue Date:	3/3/2020
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	McGRAW-EDISON
Catalog Number:	GLEON-SA3C-830-U-SLR-HSS
Description:	GALLEON AREA AND ROADWAY LUMINAIRE
	(3) 80 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT ELIMINATOR RIGHT OPTICS WITH HOUSE SIDE SHIELD
Light Source:	-
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	12720 lumens
Efficiency:	N/A
Efficacy:	76.6 lumens/watt
Luminous Opening:	Rectangular (W 1' x L: 1' x H: 0')
IES Classification:	Type IV - Medium
BUG Rating:	B1 - U0 - G2

Input Watts (W):	166
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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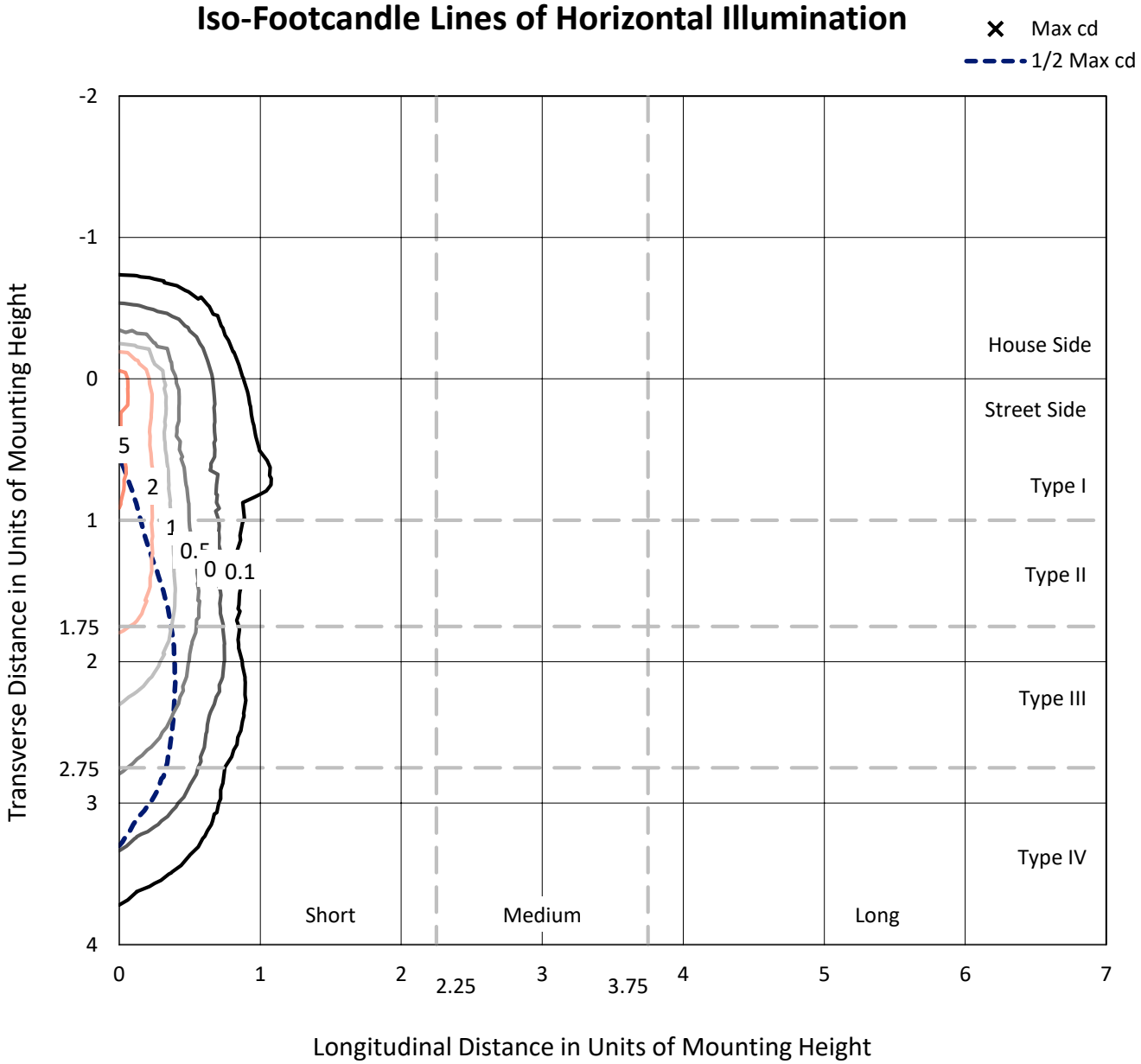
Iso-Footcandle Lines of Horizontal Illumination



Based on 25 foot mounting height. Maximum calculated value = 6.6 fc
Type IV - Medium - N/A

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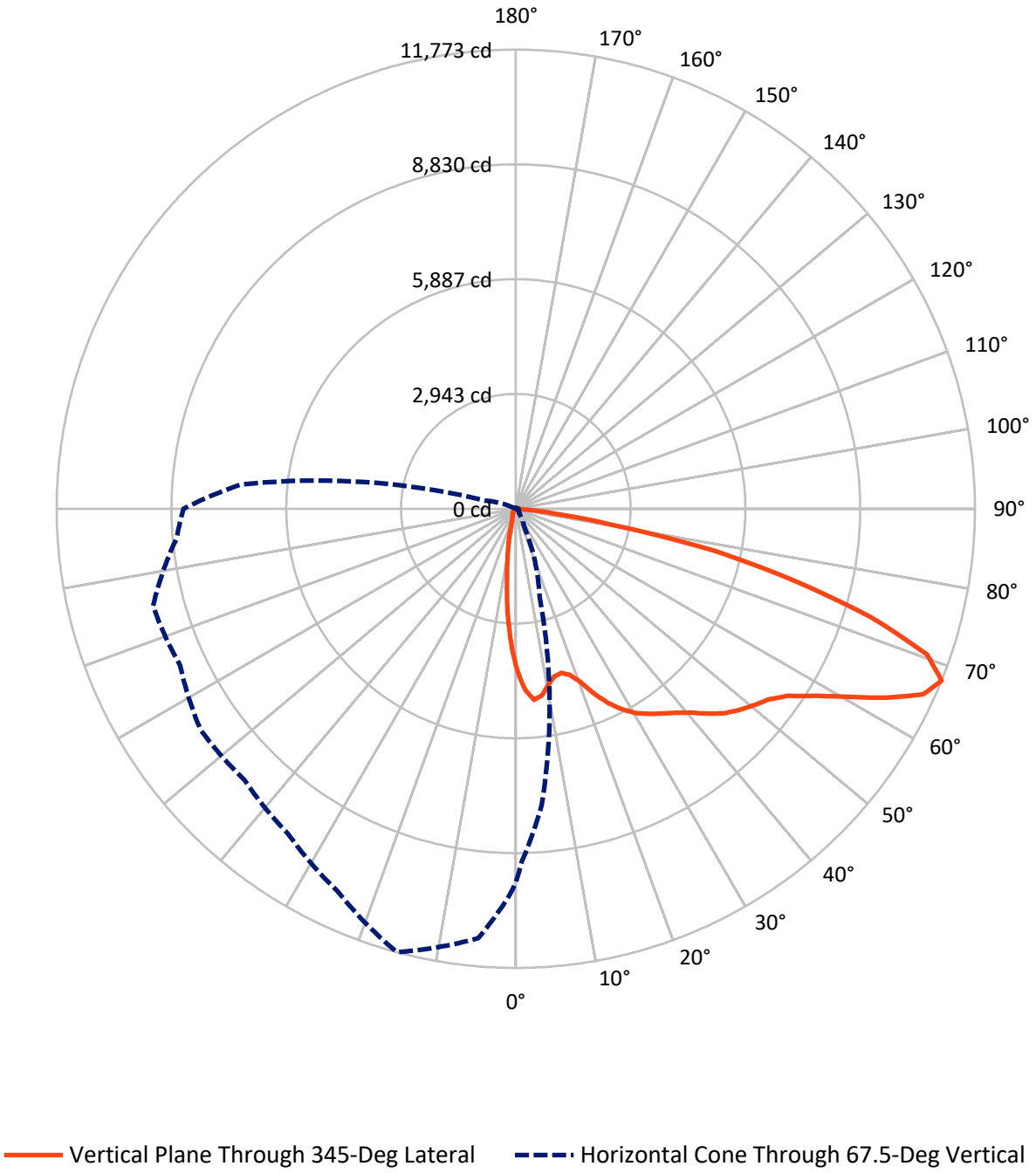
Luminous Intensity Polar Plot



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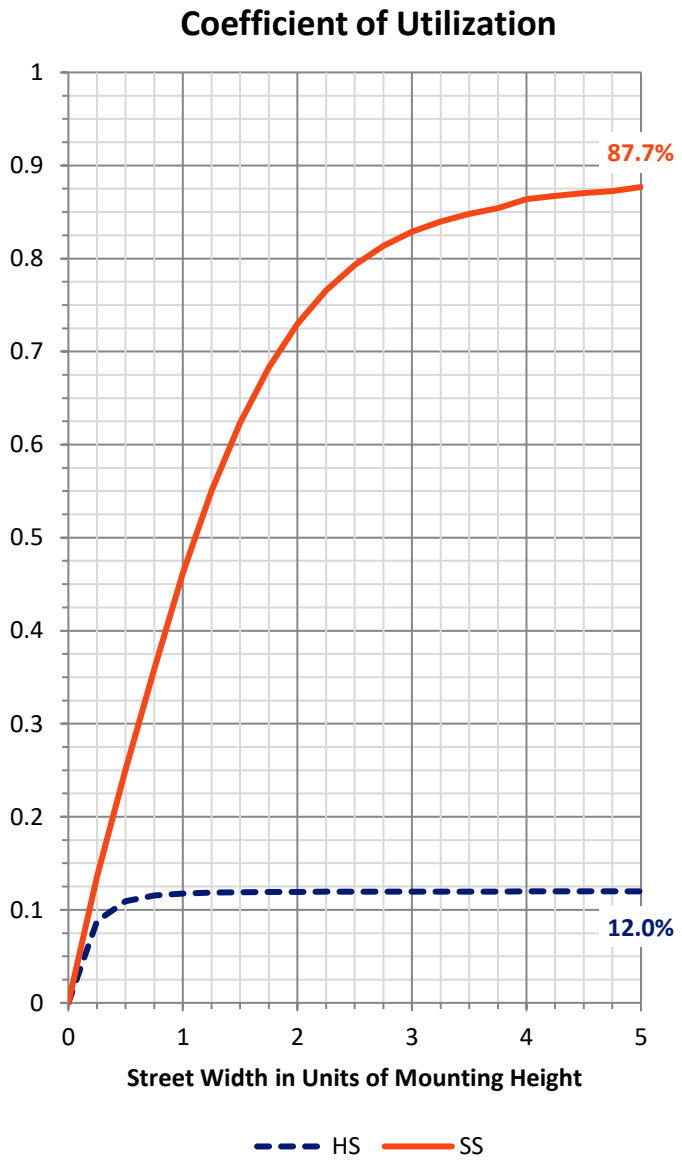
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1539.5	0.0	1539.5
	% Fixture	12.1	0.0	12.1
Street Side	Lumens	11180.5	0.0	11180.5
	% Fixture	87.9	0.0	87.9
Total	Lumens	12720.0	0.0	12720.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	318.0	2.5
10°-20°	633.0	5.0
20°-30°	898.9	7.1
30°-40°	1327.7	10.4
40°-50°	1914.8	15.1
50°-60°	2687.9	21.1
60°-70°	3133.4	24.6
70°-80°	1601.8	12.6
80°-90°	204.6	1.6
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°	12720.0	100.0
0°-180°	12720.0	100.0



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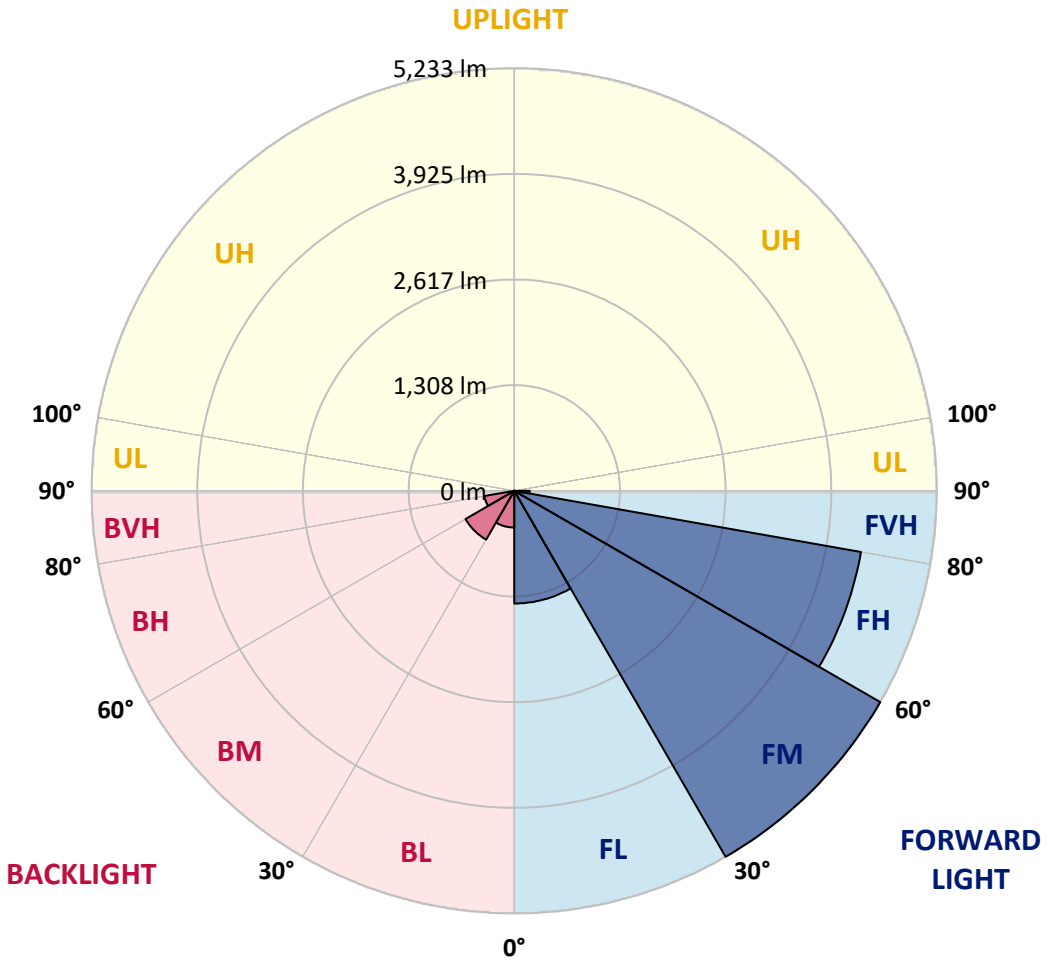
LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	1395.1	11.0			
FM	(30°-60°)	5233.2	41.1			
FH	(60°-80°)	4360.0	34.3			G2/5000
FVH	(80°-90°)	192.1	1.5			G2/225
BL	(0°-30°)	454.7	3.6	B1/500		
BM	(30°-60°)	697.2	5.5	B1/1000		
BH	(60°-80°)	375.2	2.9	B1/500		G1/500
BVH	(80°-90°)	12.4	0.1			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G2
Type IV Medium



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CANDELA DISTRIBUTION (FULL):

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5
2.5°	4537.0	4502.1	4463.5	4337.6	4220.6	4086.9	3977.8	3901.9	3806.7	3683.1	3651.8
5°	4504.5	4467.1	4346.0	4065.8	3820.5	3581.9	3351.7	3216.7	3049.2	2879.2	2837.1
7.5°	4177.3	4138.1	3963.3	3579.5	3249.2	2904.6	2605.7	2420.7	2231.4	2076.0	1993.4
10°	3836.8	3794.0	3597.6	3131.7	2725.0	2413.4	2194.1	2017.5	1838.5	1672.2	1539.7
12.5°	3602.4	3546.3	3333.0	2805.1	2450.8	2239.3	2034.4	1822.9	1580.6	1402.3	1256.4
15°	3504.2	3440.3	3214.9	2679.2	2353.8	2105.5	1838.5	1578.8	1295.0	1090.7	956.9
17.5°	3580.1	3496.9	3255.3	2670.7	2232.1	1894.0	1556.5	1251.6	943.7	737.0	641.8
20°	3838.0	3728.9	3422.2	2668.3	2084.4	1642.7	1214.9	870.2	621.9	500.2	450.1
22.5°	4244.2	4100.1	3662.0	2687.6	1932.0	1378.8	877.4	591.2	467.0	403.7	374.2
25°	4734.7	4567.8	4007.3	2755.7	1798.2	1122.1	637.6	467.0	394.1	347.7	323.0
27.5°	5201.1	5065.5	4443.6	2853.9	1694.5	914.8	517.6	395.9	336.9	306.1	286.2
30°	5666.9	5496.4	4891.4	2970.8	1569.8	774.3	455.0	361.0	301.9	269.4	256.7
32.5°	6005.6	5864.0	5242.1	3055.2	1436.6	682.8	406.8	330.2	282.0	248.9	230.2
35°	6403.9	6243.6	5542.8	3073.9	1351.0	624.9	365.8	297.1	244.7	215.1	195.2
37.5°	6834.2	6634.7	5889.9	3032.9	1284.2	596.6	335.0	282.0	228.4	198.3	177.2
40°	7310.2	7084.8	6223.1	2973.9	1218.5	586.9	311.5	270.6	215.7	185.0	163.3
42.5°	7811.6	7545.8	6511.8	2911.8	1176.9	553.8	309.1	259.1	206.1	172.9	151.3
45°	8232.8	7963.4	6808.2	2891.3	1147.4	517.6	319.4	251.3	199.5	163.3	142.2
47.5°	8568.4	8313.5	7112.0	2937.1	1130.5	484.5	291.1	261.5	195.8	154.9	134.4
50°	8969.2	8680.5	7539.8	3073.9	1105.8	451.4	263.3	299.5	195.8	149.4	127.8
52.5°	9471.8	9186.1	8017.1	3286.0	1056.4	405.6	236.8	300.1	197.7	142.2	119.3
55°	10103.9	9896.6	8698.6	3518.6	977.4	338.1	204.9	257.9	190.4	129.0	111.5
57.5°	10710.1	10540.8	9319.9	3677.7	872.0	263.9	178.4	207.9	174.2	113.3	99.4
59°	10875.8	10690.8	9547.7	3684.9	793.0	230.2	165.1	171.7	170.5	106.1	92.2
60°	10875.8	10679.4	9613.4	3646.4	735.8	211.5	156.7	153.1	177.8	101.2	88.0
62.5°	10678.8	10402.8	9400.0	3385.4	600.2	180.2	136.8	126.5	159.7	91.0	77.7
65°	10269.0	9867.1	8673.3	2913.6	535.1	165.1	118.1	103.6	110.9	80.1	68.1
67.5°	*9585.6*	*9040.9*	*7625.4*	*2353.8*	*509.2*	*160.9*	*101.8*	*88.0*	*83.8*	*68.7*	*59.7*
70°	8382.2	7777.8	6353.3	1850.6	486.9	159.1	85.6	74.1	67.5	57.9	50.6
72.5°	6100.8	5470.5	4510.5	1446.9	473.6	162.7	68.7	62.1	55.4	45.2	39.2
75°	3489.7	3076.9	2535.2	955.7	403.7	155.5	53.0	51.8	39.8	32.5	27.1
77.5°	1803.0	1748.2	1519.2	367.0	193.4	68.1	35.0	30.1	23.5	19.9	16.3
80°	778.0	769.5	665.9	106.1	51.2	38.0	19.9	12.7	10.8	8.4	6.6
82.5°	268.8	268.8	236.8	35.6	22.9	18.7	2.4	0.0	0.0	0.0	0.0
85°	54.2	60.9	42.8	0.0	7.8	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):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5
2.5°	3613.8	3540.9	3536.1	3490.3	3433.0	3407.1	3392.1	3418.6	3451.1	3454.7	3503.5
5°	2805.1	2728.6	2760.5	2679.2	2695.5	2679.2	2652.7	2657.5	2672.0	2626.8	2682.8
7.5°	1969.9	1912.1	1948.8	1927.1	1956.1	1967.5	1951.2	1927.1	1856.0	1847.6	1896.4
10°	1484.8	1419.1	1380.0	1339.0	1348.0	1366.7	1360.7	1343.2	1298.0	1300.4	1347.4
12.5°	1193.2	1119.6	1041.9	941.3	916.6	930.4	916.6	906.3	862.9	866.5	908.1
15°	905.1	844.9	763.5	682.8	638.8	643.0	604.4	577.3	550.2	517.6	542.9
17.5°	611.0	574.3	550.2	526.1	473.6	461.6	412.8	360.4	339.9	324.8	335.7
20°	432.7	412.8	403.1	401.9	371.8	356.7	309.1	276.6	266.4	263.3	270.0
22.5°	361.6	347.1	333.2	325.4	310.3	292.9	256.7	240.4	233.2	229.6	234.4
25°	314.6	303.7	289.3	276.0	270.0	251.3	225.4	213.3	208.5	204.9	207.3
27.5°	279.6	270.0	253.1	244.7	239.8	223.6	201.3	191.6	187.4	186.2	185.6
30°	251.9	242.9	227.2	217.5	209.1	194.6	181.4	171.7	167.5	166.3	165.1
32.5°	224.2	216.9	206.7	197.1	188.0	174.8	163.3	155.5	148.8	147.6	147.0
35°	189.2	182.0	176.6	176.0	167.5	154.9	146.4	136.2	130.8	129.0	129.6
37.5°	168.1	158.5	146.4	150.7	148.2	139.2	127.8	117.5	112.1	110.9	110.9
40°	154.9	144.6	130.8	123.5	130.8	129.0	110.9	100.6	95.2	94.6	93.4
42.5°	142.2	132.0	116.3	104.3	107.9	113.3	95.8	86.2	80.7	79.5	77.7
45°	133.2	122.3	104.9	91.0	83.8	95.2	82.0	69.9	66.9	64.5	63.3
47.5°	124.7	114.5	94.6	78.9	66.9	68.7	65.7	57.2	53.6	51.2	50.6
50°	117.5	106.7	85.6	67.5	55.4	50.6	53.0	45.2	42.2	39.8	38.6
52.5°	109.1	98.8	75.9	58.5	46.4	39.8	40.4	35.6	32.5	30.7	30.1
55°	102.4	92.2	68.1	51.2	41.0	32.5	28.9	27.7	25.9	24.7	24.1
57.5°	93.4	83.8	60.3	43.4	35.0	26.5	22.3	22.3	21.7	20.5	19.9
59°	88.0	79.5	55.4	39.2	31.9	22.9	19.9	20.5	19.9	18.7	18.1
60°	83.8	75.9	51.8	36.2	30.1	21.1	18.1	19.3	18.7	17.5	16.9
62.5°	74.1	68.7	44.6	30.1	26.5	16.9	15.1	16.3	16.3	15.7	15.1
65°	65.1	59.1	38.0	25.3	24.7	14.5	12.1	14.5	15.1	13.9	12.7
67.5°	*56.6*	*50.6*	*33.1*	*20.5*	*22.9*	*11.4*	*9.0*	*12.1*	*16.3*	*12.7*	*11.4*
70°	48.2	42.2	25.9	16.3	24.1	7.8	7.2	10.8	19.3	13.9	10.8
72.5°	37.4	32.5	18.1	12.1	25.9	5.4	5.4	9.0	21.7	15.1	10.2
75°	25.9	21.1	10.8	7.2	21.1	3.6	3.6	8.4	20.5	13.9	9.6
77.5°	15.1	11.4	3.6	0.6	10.8	0.0	0.6	6.0	14.5	8.4	4.2
80°	5.4	2.4	0.0	0.0	6.6	0.0	0.0	0.0	1.2	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	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°	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5
2.5°	3516.2	3597.6	3670.5	3780.7	3911.5	4062.2	4191.7	4330.9	4461.7	4515.9	4553.3
5°	2694.2	2794.9	2912.4	3074.5	3290.2	3556.0	3804.9	4086.3	4388.8	4540.0	4682.2
7.5°	1904.8	2007.3	2153.1	2325.5	2586.4	2902.8	3228.2	3616.8	4026.6	4265.8	4501.5
10°	1369.7	1495.7	1631.9	1867.5	2132.6	2432.7	2767.8	3201.6	3658.4	3923.6	4207.4
12.5°	932.2	1075.7	1281.7	1545.7	1857.2	2151.3	2442.4	2856.4	3386.6	3649.4	3953.7
15°	559.2	638.8	856.9	1162.4	1544.5	1910.9	2229.6	2644.8	3210.1	3531.9	3848.2
17.5°	344.7	381.4	500.2	750.8	1152.2	1615.6	2052.5	2573.1	3235.4	3627.1	3965.7
20°	274.8	289.3	327.2	443.5	763.5	1290.2	1853.0	2558.7	3442.1	3924.2	4287.5
22.5°	238.6	252.5	277.8	322.4	480.3	966.0	1663.8	2571.9	3738.6	4369.5	4793.7
25°	210.3	222.4	246.5	283.2	351.9	680.3	1461.3	2631.0	4124.8	4922.1	5372.8
27.5°	188.0	198.3	220.6	254.3	301.9	474.9	1231.7	2702.7	4582.8	5487.3	5932.0
30°	167.5	176.6	196.4	227.8	262.1	365.2	979.8	2751.5	5041.4	5932.0	6331.6
32.5°	150.0	156.7	174.8	201.3	227.8	291.1	744.8	2743.7	5381.9	6302.0	6619.0
35°	132.0	138.6	154.3	177.2	198.3	240.4	585.7	2597.2	5678.4	6685.9	6948.0
37.5°	112.1	120.5	135.6	156.1	170.5	211.5	473.6	2420.7	5979.1	7124.6	7315.0
40°	95.2	103.6	116.9	139.2	148.2	200.7	364.0	2205.5	6317.1	7615.1	7717.6
42.5°	78.9	86.8	100.6	119.9	139.8	172.9	269.4	1959.7	6641.9	8034.5	8084.6
45°	63.9	71.7	86.2	105.5	149.4	143.4	208.5	1696.3	6904.1	8383.4	8399.7
47.5°	50.6	57.9	72.9	99.4	139.2	114.5	148.8	1489.6	7124.0	8655.8	8613.0
50°	39.2	45.2	60.9	113.9	121.7	94.6	112.7	1420.9	7321.1	8824.6	8713.7
52.5°	30.7	36.2	50.0	106.7	94.6	78.3	94.6	1485.4	7591.0	8964.4	8770.3
55°	24.7	30.1	39.2	60.9	64.5	66.3	80.7	1545.7	8056.8	9292.2	9104.8
57.5°	20.5	25.9	31.9	42.8	48.8	56.0	71.7	1552.3	8605.8	9836.9	9659.8
59°	18.7	23.5	28.9	38.0	42.8	51.2	67.5	1516.2	8799.2	10035.2	9946.6
60°	17.5	22.3	27.1	35.0	39.8	48.2	65.1	1481.8	8807.7	10028.0	10068.9
62.5°	15.1	19.9	24.1	29.5	33.7	41.0	58.5	1354.7	8450.9	9699.5	9995.4
65°	13.3	17.5	21.7	25.3	28.9	36.8	53.0	1122.7	7841.7	9169.9	9492.2
67.5°	*12.1*	*15.1*	*19.9*	*22.3*	*25.9*	*32.5*	*47.0*	*800.3*	*7080.6*	*8522.0*	*8731.2*
70°	10.8	14.5	18.1	20.5	23.5	28.3	40.4	459.8	5979.1	7573.5	7722.4
72.5°	10.2	13.9	16.3	19.3	21.1	25.3	36.8	216.3	4377.9	6067.0	6455.7
75°	9.0	12.7	15.1	18.1	19.9	22.9	31.3	103.6	2911.8	4390.6	4832.3
77.5°	5.4	10.2	13.9	16.3	17.5	19.9	25.9	59.7	1858.4	3038.9	3579.5
80°	0.0	3.6	10.2	13.9	15.1	16.9	19.9	47.0	994.3	1736.1	2083.8
82.5°	0.0	0.0	7.2	10.8	10.2	11.4	15.1	29.5	448.3	1134.7	1278.7
85°	0.0	0.0	2.4	8.4	7.2	5.4	10.2	10.2	98.2	574.3	716.5
87.5°	0.0	0.0	0.0	0.6	3.6	2.4	4.2	1.2	0.6	42.8	173.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P324647
CATALOG NUMBER: GLEON-SA3C-830-U-SLR-HSS

CANDELA DISTRIBUTION (continued):

	285°	295°	305°	315°	325°	335°	345°	355°	359°	360°
0°	4143.5	4143.5	4143.5	4143.5	4143.5	4143.5	*4143.5*	4143.5	4143.5	4143.5
2.5°	4684.1	4728.6	4804.0	4839.5	4822.1	4747.9	*4659.3*	4569.0	4515.9	4537.0
5°	4972.1	5201.7	5334.3	5378.3	5304.7	5138.4	*4920.9*	4634.0	4532.2	4504.5
7.5°	4972.1	5404.2	5677.8	5726.0	5562.1	5236.0	*4828.1*	4380.3	4231.5	4177.3
10°	4797.3	5385.5	5766.9	5843.5	5614.5	5127.0	*4580.4*	4069.4	3892.8	3836.8
12.5°	4600.3	5233.6	5635.6	5741.0	5553.0	5018.5	*4408.7*	3859.1	3651.2	3602.4
15°	4479.2	5046.8	5379.5	5456.0	5376.4	4955.2	*4367.7*	3795.8	3551.2	3504.2
17.5°	4522.6	4902.2	5022.1	5066.7	5120.3	4932.9	*4479.2*	3934.4	3624.7	3580.1
20°	4685.9	4749.7	4687.7	4743.7	4888.3	4954.6	*4744.9*	4269.5	3897.7	3838.0
22.5°	4963.1	4670.8	4496.6	4518.9	4694.9	5026.3	*5151.1*	4747.9	4318.9	4244.2
25°	5286.1	4734.7	4390.6	4370.7	4551.5	5120.9	*5522.3*	5268.6	4817.2	4734.7
27.5°	5692.2	4878.1	4368.9	4349.0	4501.5	5209.5	*5830.8*	5783.2	5342.1	5201.1
30°	6005.6	5019.1	4433.4	4387.6	4551.5	5271.0	*6078.5*	6220.1	5760.3	5666.9
32.5°	6230.3	5185.4	4538.2	4471.9	4692.5	5377.1	*6269.5*	6620.2	6147.2	6005.6
35°	6401.5	5366.2	4707.6	4598.5	4886.5	5537.9	*6448.5*	7046.3	6558.8	6403.9
37.5°	6561.8	5619.9	4972.1	4841.9	5190.8	5797.1	*6637.7*	7529.6	7019.2	6834.2
40°	6785.3	5907.3	5380.1	5264.4	5702.5	6150.2	*6873.9*	8033.3	7542.8	7310.2
42.5°	7008.9	6215.9	5797.7	5829.0	6340.6	6579.2	*7178.8*	8566.0	8059.9	7811.6
45°	7213.2	6534.1	6392.4	6537.1	6933.0	7049.9	*7482.0*	8874.0	8472.6	8232.8
47.5°	7395.2	6931.8	6983.6	7368.7	7606.7	7475.9	*7708.5*	9139.7	8780.0	8568.4
50°	7606.7	7446.4	7762.8	8307.5	8382.2	7861.6	*7914.6*	9454.3	9139.1	8969.2
52.5°	7838.1	7988.7	8625.7	9106.0	9081.9	8280.4	*8121.9*	9806.8	9631.4	9471.8
55°	8100.8	8426.8	9385.6	9853.2	9832.7	8748.0	*8465.4*	10242.5	10248.5	10103.9
57.5°	8490.7	8804.1	9901.4	10457.6	10492.0	9288.0	*9047.5*	10730.6	10806.5	10710.1
59°	8770.3	9048.7	10105.7	10710.1	10849.9	9705.6	*9473.0*	11013.8	10963.8	10875.8
60°	8977.6	9204.2	10206.9	10842.1	11057.8	9988.8	*9786.9*	11180.1	10982.5	10875.8
62.5°	9490.4	9542.9	10389.5	10991.5	11297.0	10617.9	*10670.3*	11463.4	10852.9	10678.8
65°	9729.7	9756.8	10387.1	10724.0	11065.6	11107.8	*11471.8*	11471.8	10536.6	10269.0
67.5°	*9629.6*	*9498.9*	*9871.9*	*9836.9*	*10178.0*	*10816.8*	*11773.1*	*11051.2*	*9931.5*	*9585.6*
70°	8816.1	8312.9	8147.2	8162.3	8423.2	9408.5	*11176.5*	9813.4	8786.6	8382.2
72.5°	7335.5	6128.5	5719.3	6186.3	6254.4	7230.7	*9524.8*	7390.4	6479.8	6100.8
75°	5900.1	4320.1	3654.8	4147.7	4263.4	5291.5	*7368.1*	4602.7	3785.0	3489.7
77.5°	4238.7	3101.0	2622.5	2588.2	2737.6	3355.9	*5228.2*	2316.4	1932.0	1803.0
80°	2408.0	2041.0	2197.7	2073.6	2148.9	2098.3	*2483.9*	1016.0	832.2	778.0
82.5°	1453.5	1206.4	1306.4	1087.7	1376.4	1198.6	*956.9*	325.4	282.6	268.8
85°	945.5	659.3	343.5	230.2	474.3	765.9	*213.9*	88.6	68.1	54.2
87.5°	326.0	168.1	16.9	7.2	50.6	142.8	*7.8*	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

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: SP1-2408-195-9

Test Date: 08/07/2024

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

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

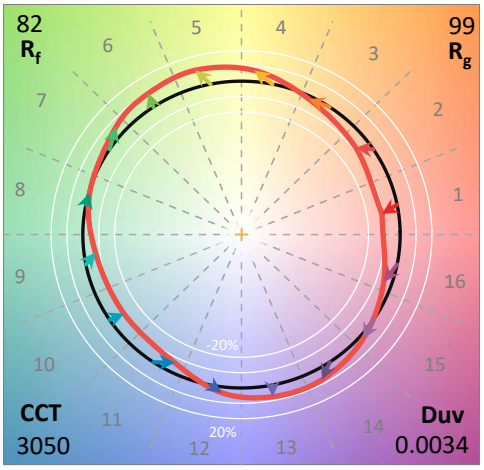
Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2408-195-9
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	08/07/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	MCGRAW EDISON
Catalog Number:	**GALN-SB1A-830-U-5WQ**
Description:	GALLEON AREA AND ROADWAY LUMINAIRE. (1) 80 CRI, 3000K, 350MA HIGH DENSITY LIGHTSQUARE WITH 26 LEDS AND TYPE V WIDE OPTICS

Spectral Parameters

CCT (K):	3050	CRI (Ra):	81.0		
CIE u':	0.2476	R1:	79.6	R9:	7.1
CIE v':	0.5251	R2:	85.6	R10:	67.0
Duv:	0.0034	R3:	92.0	R11:	82.7
CIE x:	0.4383	R4:	82.6	R12:	63.2
CIE y:	0.4131	R5:	78.9	R13:	80.3
CIE z:	0.1487	R6:	81.7	R14:	95.0
Peak Wavelength (nm):	603	R7:	85.2	R15:	71.7
Dominant Wavelength (nm):	581	R8:	62.0		
Purity:	55.55201				
Rf:	81.5				
Rg:	99.2				



Test Conditions

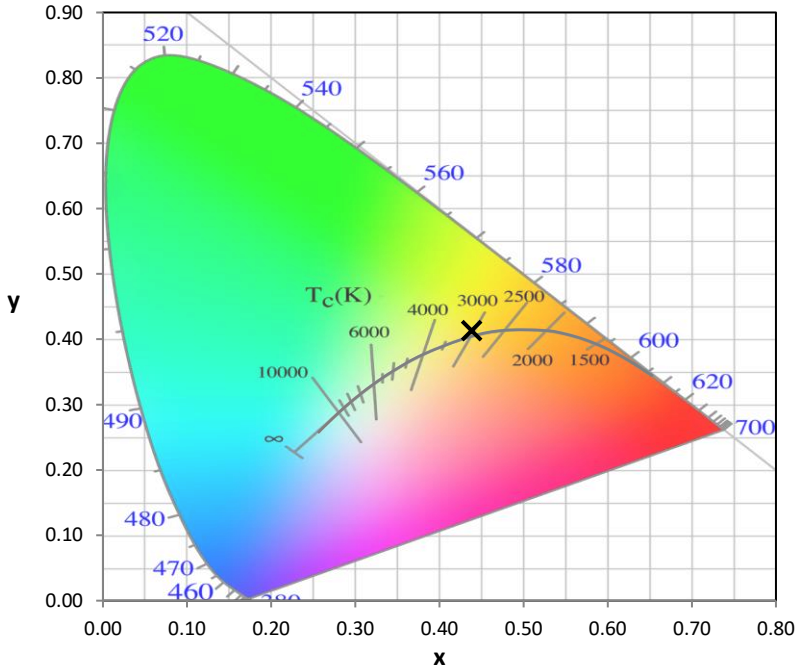
Stabilization Time:	20M
Operation Time:	1H 20M
Sphere Temperature (°C):	24.2

REPORT NUMBER: SP1-2408-195-9

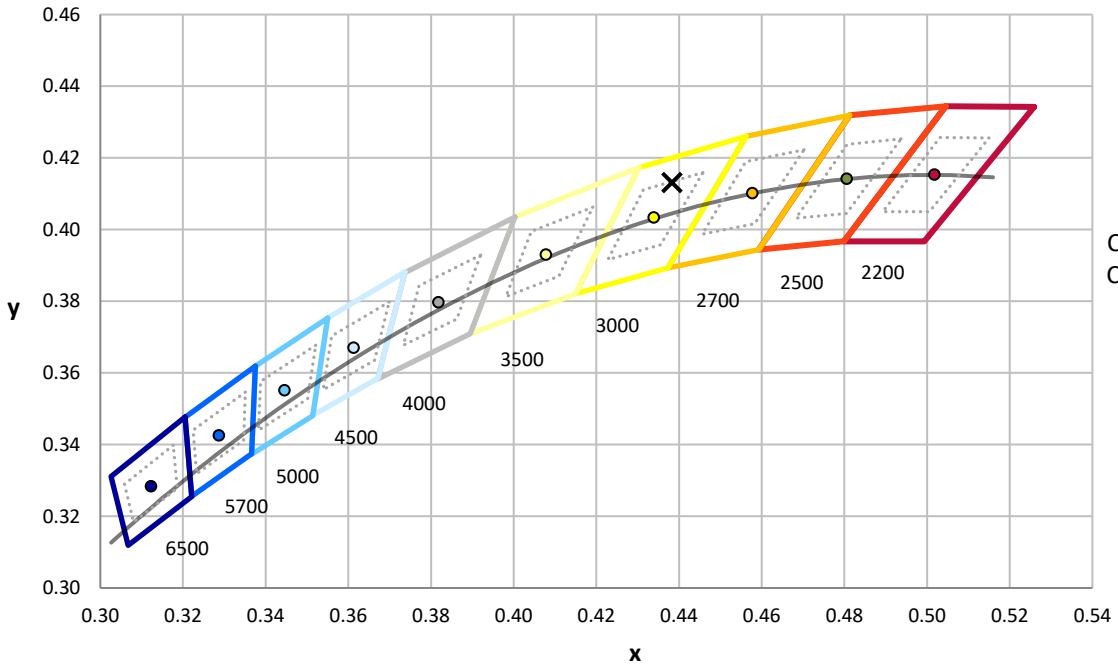
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2408-195-9

CIE 1931 Chromaticity Diagram



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

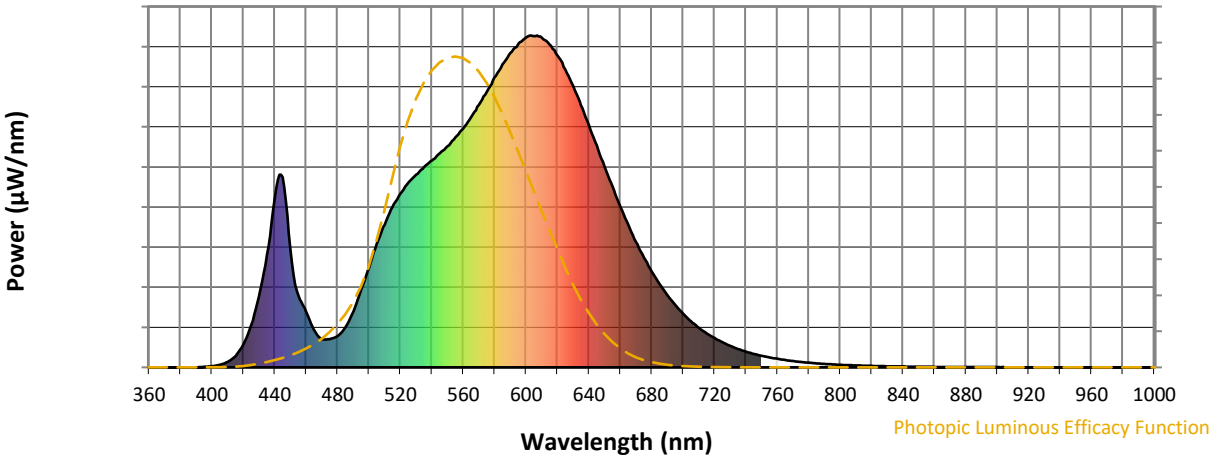


CCT = 3050K
CIE x = 0.4383
CIE y = 0.4131
Duv = 0.0034

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2408-195-9

Photopic Flux vs. Wavelength

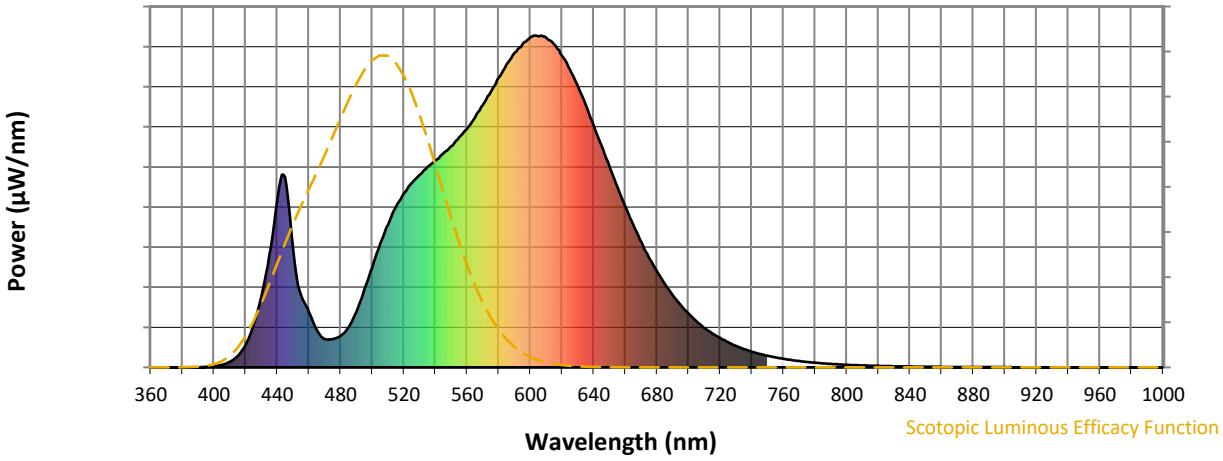


Photopic Lumens: NR

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	168	NR	620	940	NR	750	35	NR	880	1	NR
365	0	NR	495	233	NR	625	897	NR	755	30	NR	885	1	NR
370	0	NR	500	300	NR	630	847	NR	760	26	NR	890	1	NR
375	0	NR	505	372	NR	635	790	NR	765	22	NR	895	1	NR
380	0	NR	510	430	NR	640	730	NR	770	19	NR	900	1	NR
385	0	NR	515	483	NR	645	668	NR	775	16	NR	905	1	NR
390	0	NR	520	524	NR	650	605	NR	780	14	NR	910	0	NR
395	2	NR	525	555	NR	655	545	NR	785	12	NR	915	0	NR
400	4	NR	530	581	NR	660	485	NR	790	10	NR	920	0	NR
405	7	NR	535	604	NR	665	430	NR	795	9	NR	925	0	NR
410	17	NR	540	623	NR	670	378	NR	800	8	NR	930	0	NR
415	34	NR	545	645	NR	675	331	NR	805	7	NR	935	0	NR
420	68	NR	550	667	NR	680	290	NR	810	6	NR	940	0	NR
425	128	NR	555	693	NR	685	251	NR	815	5	NR	945	0	NR
430	214	NR	560	719	NR	690	218	NR	820	4	NR	950	0	NR
435	339	NR	565	754	NR	695	188	NR	825	4	NR	955	0	NR
440	507	NR	570	791	NR	700	162	NR	830	3	NR	960	0	NR
445	573	NR	575	830	NR	705	139	NR	835	3	NR	965	0	NR
450	356	NR	580	873	NR	710	119	NR	840	3	NR	970	0	NR
455	217	NR	585	913	NR	715	102	NR	845	2	NR	975	0	NR
460	168	NR	590	948	NR	720	88	NR	850	2	NR	980	0	NR
465	113	NR	595	974	NR	725	76	NR	855	2	NR	985	0	NR
470	85	NR	600	994	NR	730	65	NR	860	1	NR	990	0	NR
475	85	NR	605	998	NR	735	55	NR	865	1	NR	995	0	NR
480	94	NR	610	994	NR	740	47	NR	870	1	NR	1000	0	NR
485	120	NR	615	973	NR	745	41	NR	875	1	NR			

REPORT NUMBER: SP1-2408-195-9

Scotopic Flux vs. Wavelength

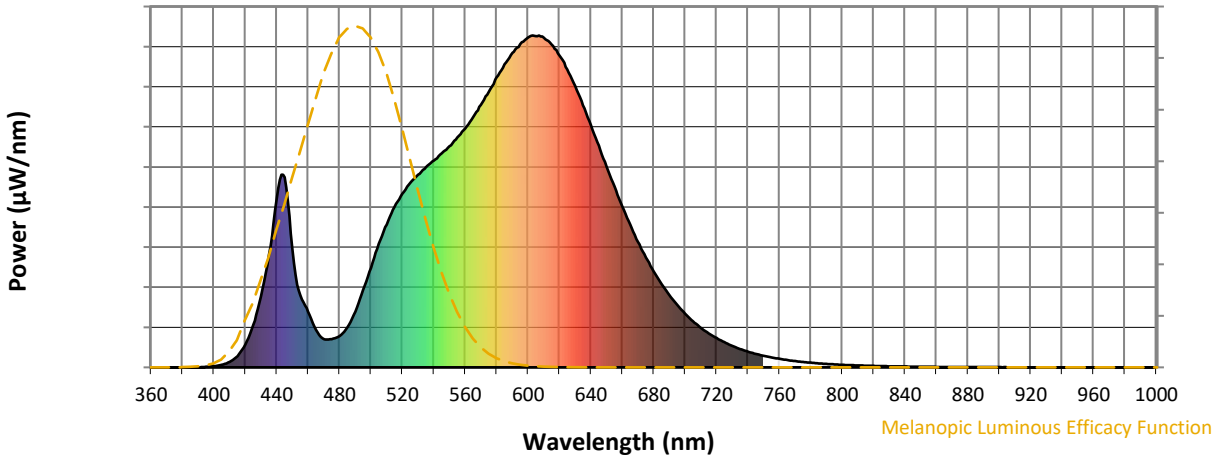


Scotopic Lumens: NR **S/P: 1.27**

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	168	NR	620	940	NR	750	35	NR	880	1	NR
365	0	NR	495	233	NR	625	897	NR	755	30	NR	885	1	NR
370	0	NR	500	300	NR	630	847	NR	760	26	NR	890	1	NR
375	0	NR	505	372	NR	635	790	NR	765	22	NR	895	1	NR
380	0	NR	510	430	NR	640	730	NR	770	19	NR	900	1	NR
385	0	NR	515	483	NR	645	668	NR	775	16	NR	905	1	NR
390	0	NR	520	524	NR	650	605	NR	780	14	NR	910	0	NR
395	2	NR	525	555	NR	655	545	NR	785	12	NR	915	0	NR
400	4	NR	530	581	NR	660	485	NR	790	10	NR	920	0	NR
405	7	NR	535	604	NR	665	430	NR	795	9	NR	925	0	NR
410	17	NR	540	623	NR	670	378	NR	800	8	NR	930	0	NR
415	34	NR	545	645	NR	675	331	NR	805	7	NR	935	0	NR
420	68	NR	550	667	NR	680	290	NR	810	6	NR	940	0	NR
425	128	NR	555	693	NR	685	251	NR	815	5	NR	945	0	NR
430	214	NR	560	719	NR	690	218	NR	820	4	NR	950	0	NR
435	339	NR	565	754	NR	695	188	NR	825	4	NR	955	0	NR
440	507	NR	570	791	NR	700	162	NR	830	3	NR	960	0	NR
445	573	NR	575	830	NR	705	139	NR	835	3	NR	965	0	NR
450	356	NR	580	873	NR	710	119	NR	840	3	NR	970	0	NR
455	217	NR	585	913	NR	715	102	NR	845	2	NR	975	0	NR
460	168	NR	590	948	NR	720	88	NR	850	2	NR	980	0	NR
465	113	NR	595	974	NR	725	76	NR	855	2	NR	985	0	NR
470	85	NR	600	994	NR	730	65	NR	860	1	NR	990	0	NR
475	85	NR	605	998	NR	735	55	NR	865	1	NR	995	0	NR
480	94	NR	610	994	NR	740	47	NR	870	1	NR	1000	0	NR
485	120	NR	615	973	NR	745	41	NR	875	1	NR			

REPORT NUMBER: SP1-2408-195-9

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.32**

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	168	NR	620	940	NR	750	35	NR	880	1	NR
365	0	NR	495	233	NR	625	897	NR	755	30	NR	885	1	NR
370	0	NR	500	300	NR	630	847	NR	760	26	NR	890	1	NR
375	0	NR	505	372	NR	635	790	NR	765	22	NR	895	1	NR
380	0	NR	510	430	NR	640	730	NR	770	19	NR	900	1	NR
385	0	NR	515	483	NR	645	668	NR	775	16	NR	905	1	NR
390	0	NR	520	524	NR	650	605	NR	780	14	NR	910	0	NR
395	2	NR	525	555	NR	655	545	NR	785	12	NR	915	0	NR
400	4	NR	530	581	NR	660	485	NR	790	10	NR	920	0	NR
405	7	NR	535	604	NR	665	430	NR	795	9	NR	925	0	NR
410	17	NR	540	623	NR	670	378	NR	800	8	NR	930	0	NR
415	34	NR	545	645	NR	675	331	NR	805	7	NR	935	0	NR
420	68	NR	550	667	NR	680	290	NR	810	6	NR	940	0	NR
425	128	NR	555	693	NR	685	251	NR	815	5	NR	945	0	NR
430	214	NR	560	719	NR	690	218	NR	820	4	NR	950	0	NR
435	339	NR	565	754	NR	695	188	NR	825	4	NR	955	0	NR
440	507	NR	570	791	NR	700	162	NR	830	3	NR	960	0	NR
445	573	NR	575	830	NR	705	139	NR	835	3	NR	965	0	NR
450	356	NR	580	873	NR	710	119	NR	840	3	NR	970	0	NR
455	217	NR	585	913	NR	715	102	NR	845	2	NR	975	0	NR
460	168	NR	590	948	NR	720	88	NR	850	2	NR	980	0	NR
465	113	NR	595	974	NR	725	76	NR	855	2	NR	985	0	NR
470	85	NR	600	994	NR	730	65	NR	860	1	NR	990	0	NR
475	85	NR	605	998	NR	735	55	NR	865	1	NR	995	0	NR
480	94	NR	610	994	NR	740	47	NR	870	1	NR	1000	0	NR
485	120	NR	615	973	NR	745	41	NR	875	1	NR			

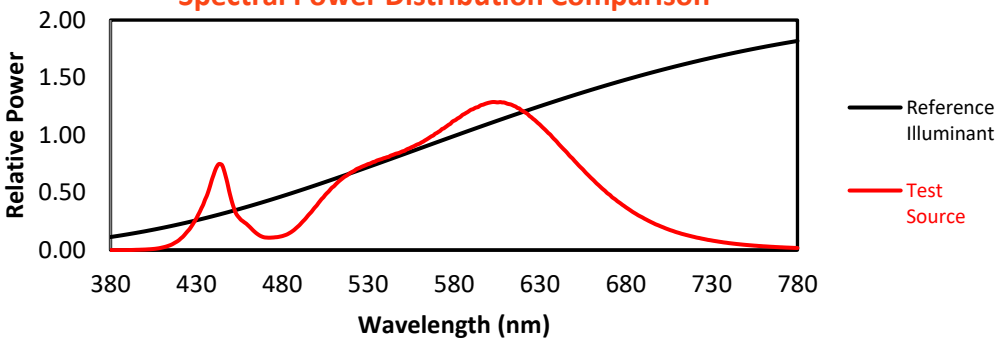
REPORT NUMBER: SP1-2408-195-9

TM-30-18

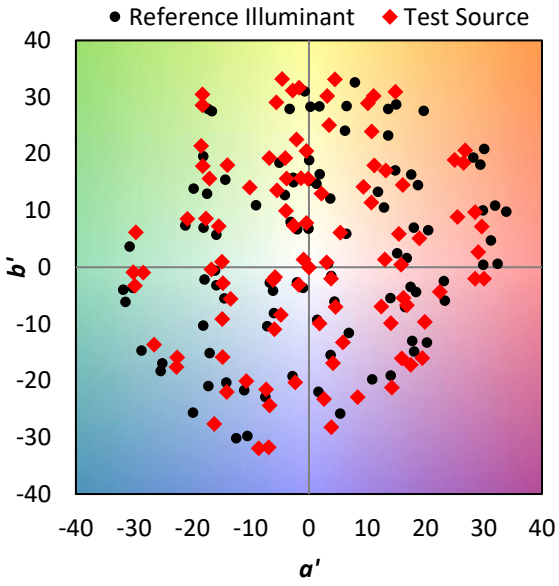
Summary

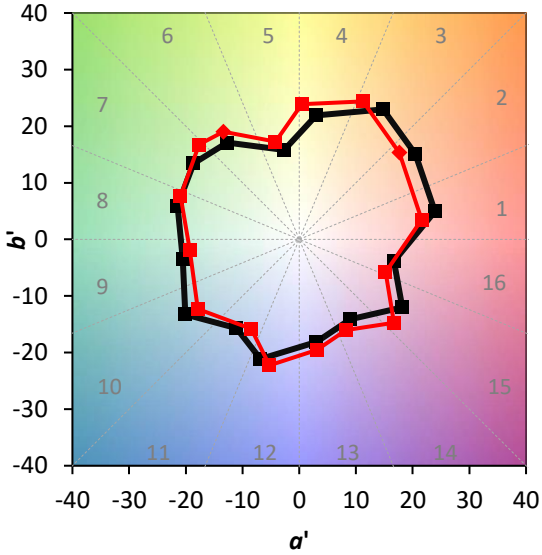
R_f = 81.5
R_g = 99.2
CIE R_a = 81.0
R_9 = 7.1

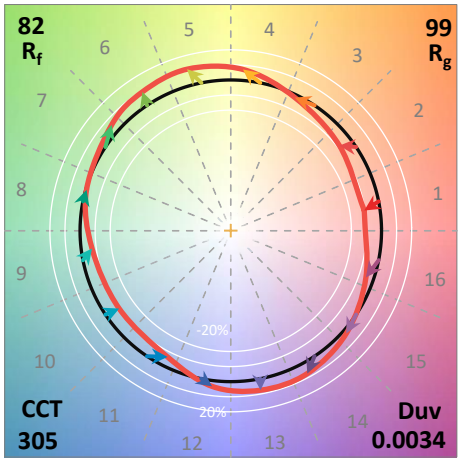
Spectral Power Distribution Comparison

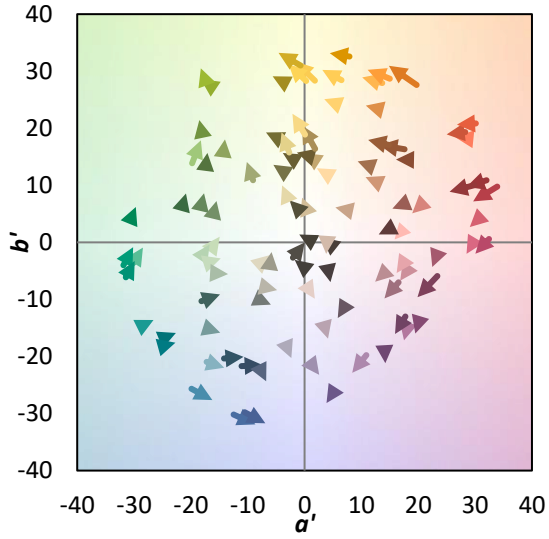


Color Vector Graphics









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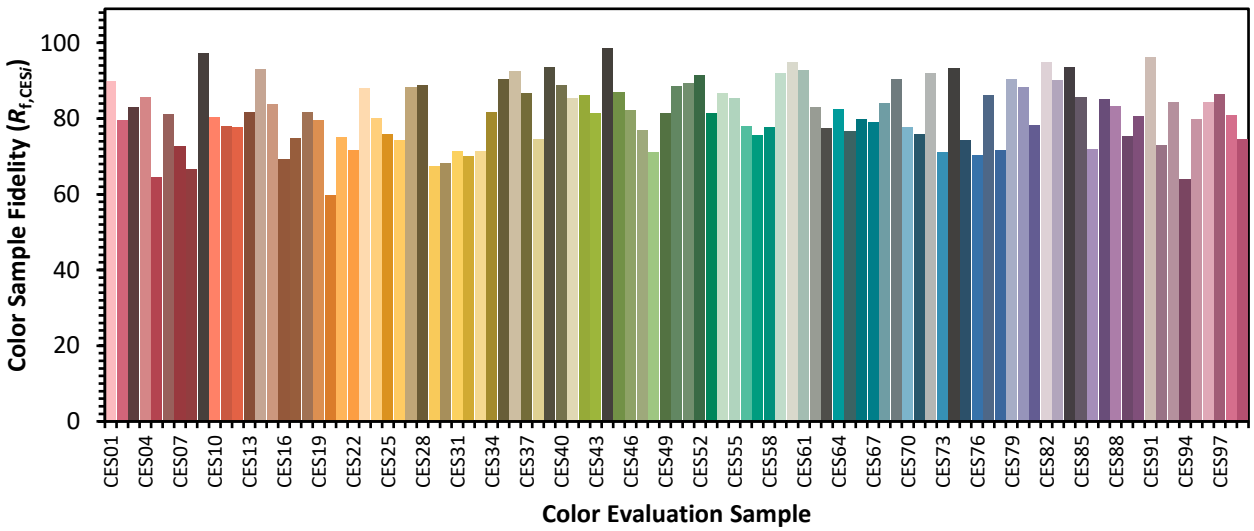
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 86	CES26 = 74	CES51 = 89	CES76 = 70
CES02 = 63	CES27 = 88	CES52 = 92	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 = 94
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 = 91	CES94 = 64
CES20 = 66	CES45 = 87	CES70 = 78	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	



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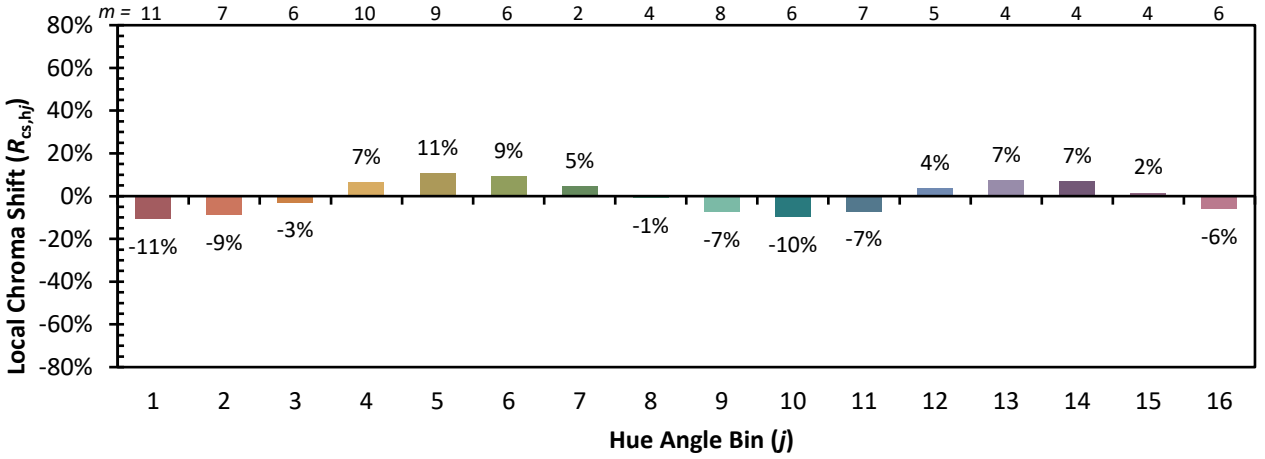
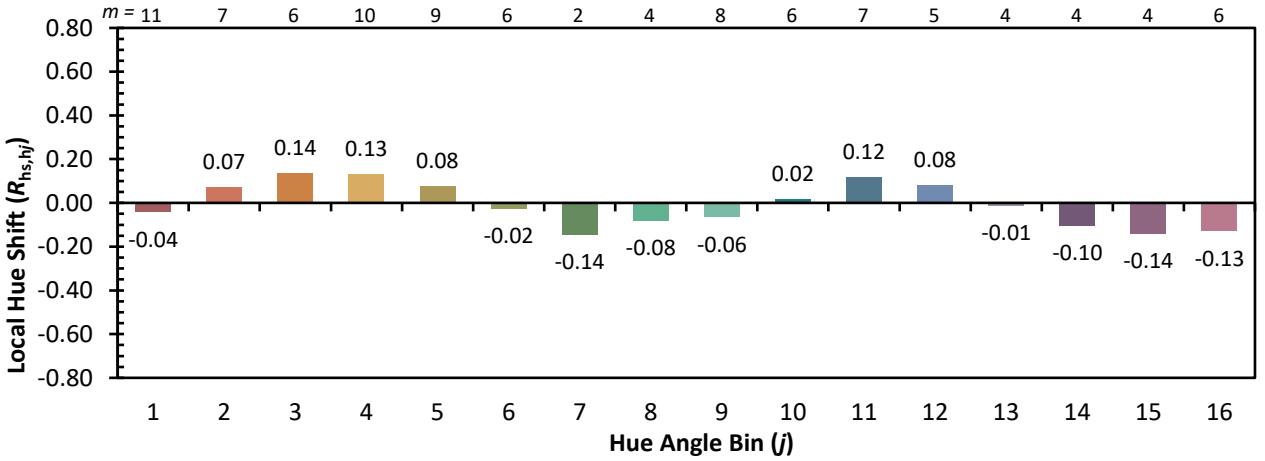
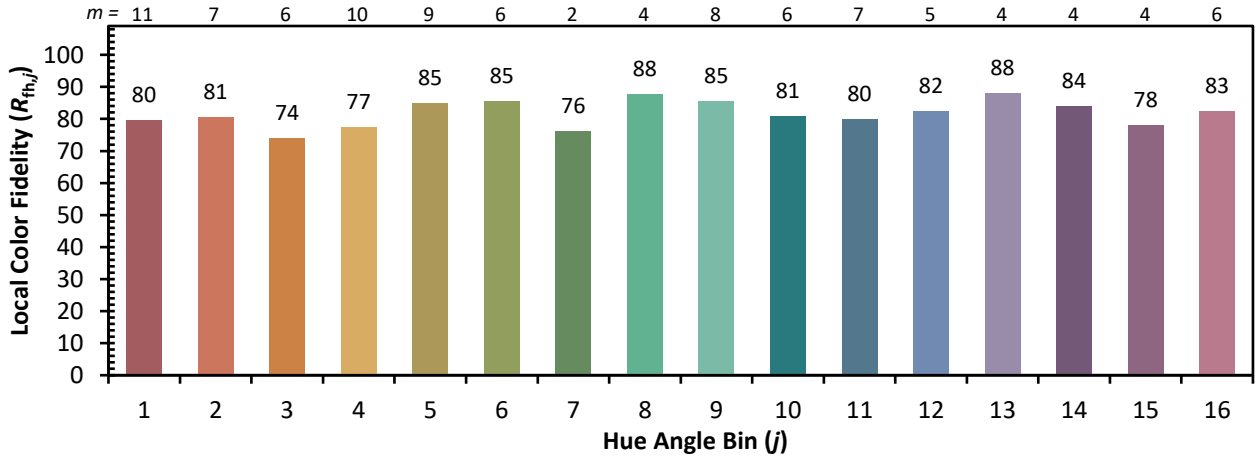
Color Rendition by Hue-Angle Bin







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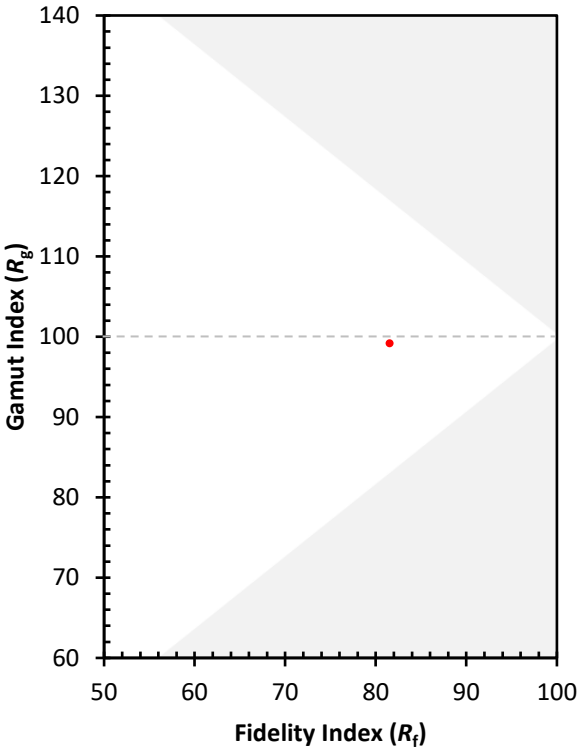
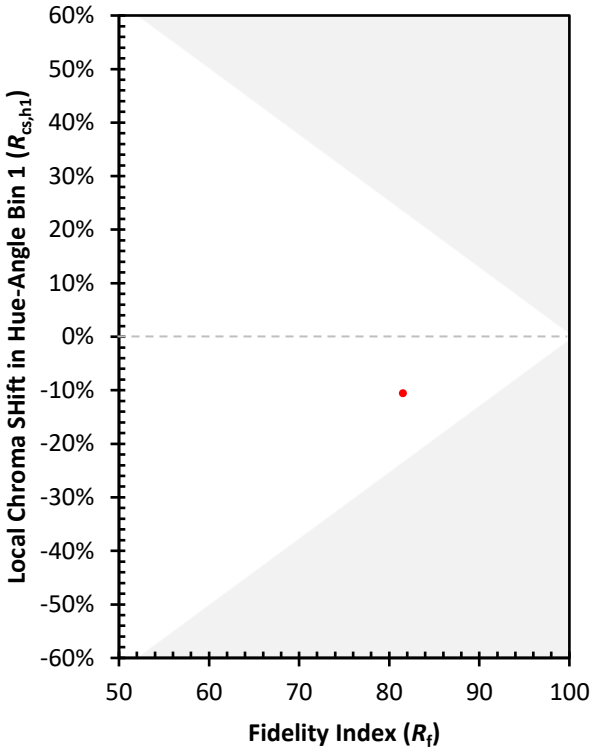
Measure Comparisons





(END OF REPORT)