

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P629079

Luminaire Tested: GWS-SA1A-830-U-SLL-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P629079  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-37)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA1A-830-U-SLL-W  
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT ELIMINATOR LEFT OPTICS  
Light Source: (16) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

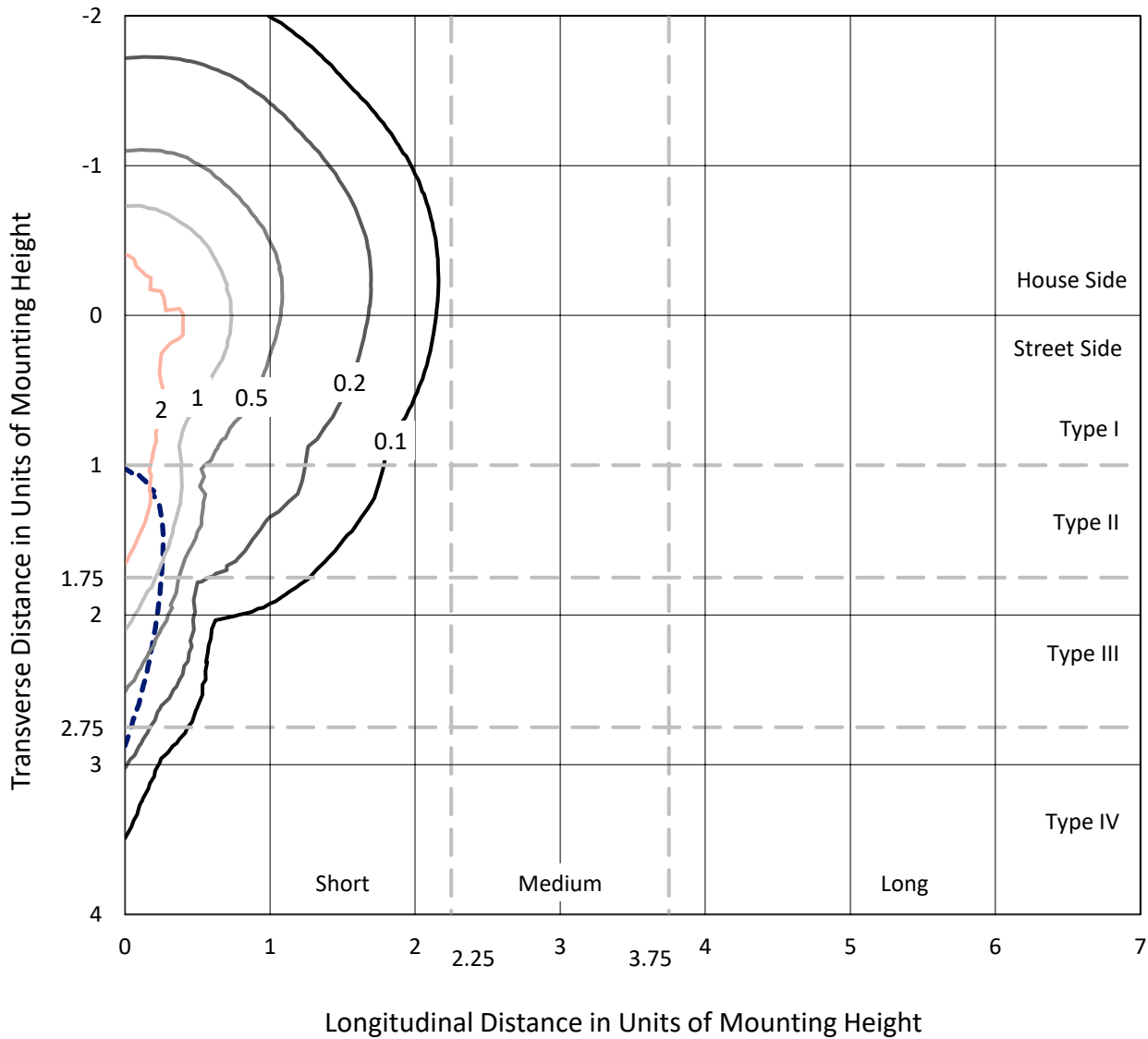
Lumens per Lamp: N/A  
Luminaire Lumens: 2117.3 lumens  
Efficiency: N/A  
Efficacy: 107.5 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B1 - U0 - G1  
  
Input Watts (W): 19.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 0  
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

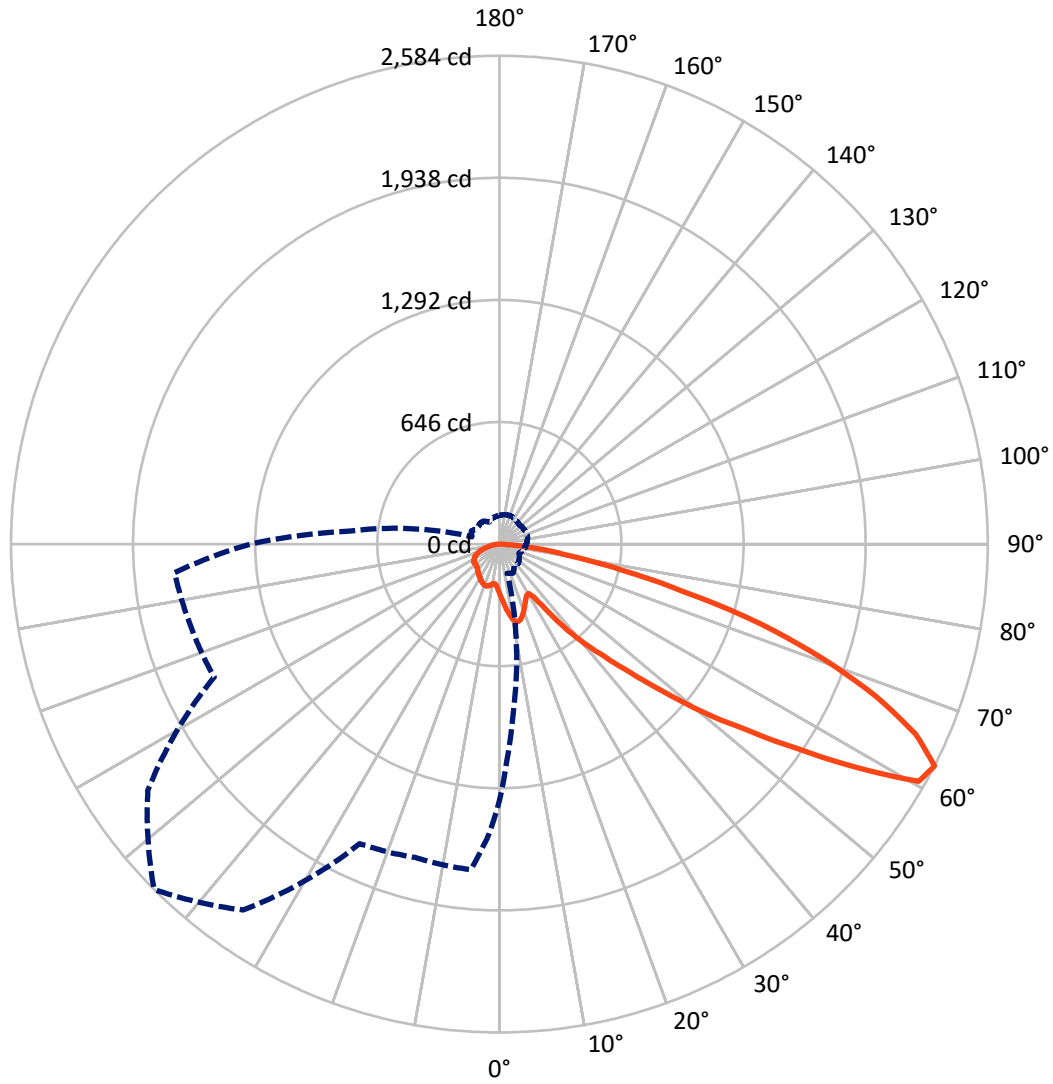
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 3.5 fc  
 Type III - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 315-Deg Lateral    - - - Horizontal Cone Through 62.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	506.2	0.0	506.2
	% Fixture	23.9	0.0	23.9
<b>Street Side</b>	Lumens	1611.1	0.0	1611.1
	% Fixture	76.1	0.0	76.1
<b>Total</b>	Lumens	2117.3	0.0	2117.3
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	26.0	1.2
10°-20°	84.5	4.0
20°-30°	133.1	6.3
30°-40°	182.4	8.6
40°-50°	284.6	13.4
50°-60°	490.6	23.2
60°-70°	568.6	26.9
70°-80°	300.1	14.2
80°-90°	47.4	2.2
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°	2117.3	100.0
0°-180°	2117.3	100.0

**Coefficient of Utilization**



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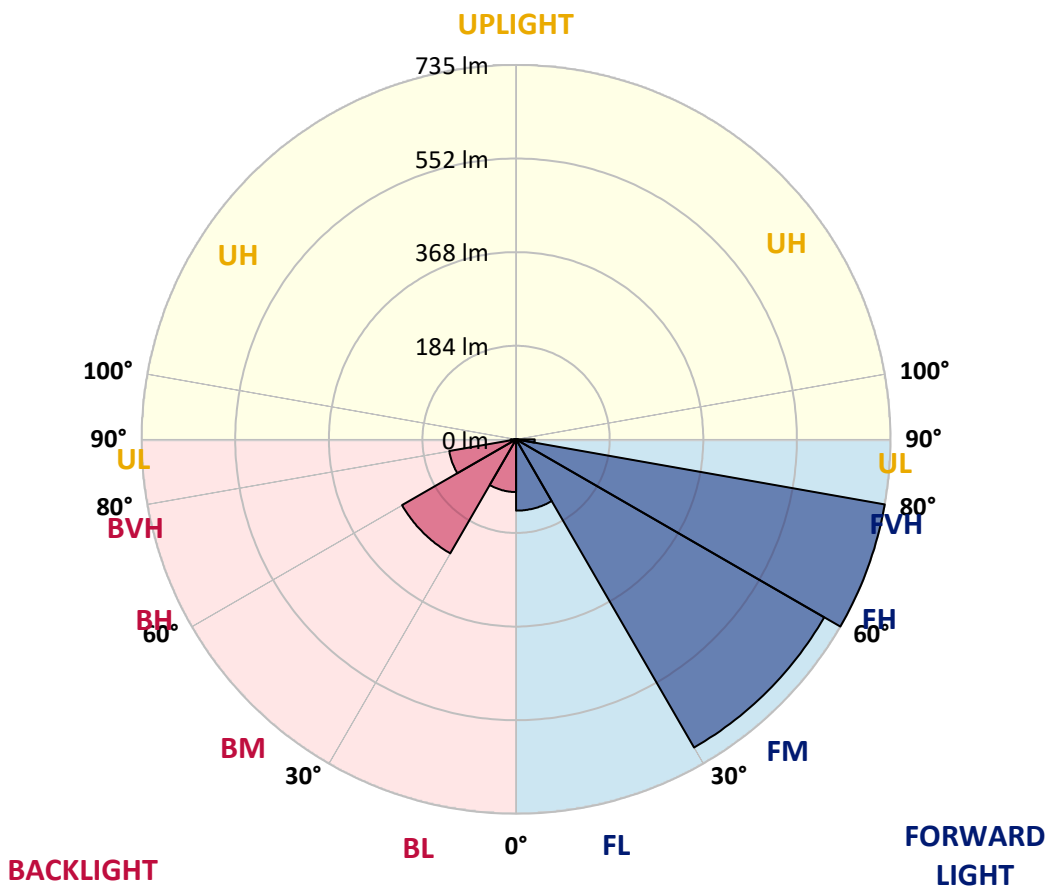
CATALOG NUMBER: GWS-SA1A-830-U-SLL-W

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	140.0	6.6			
FM (30°-60°)	699.0	33.0			
FH (60°-80°)	735.4	34.7			G1/1800
FVH (80°-90°)	36.6	1.7			G1/100
BL (0°-30°)	103.5	4.9	B0/110		
BM (30°-60°)	258.6	12.2	B1/1000		
BH (60°-80°)	133.3	6.3	B1/500		G1/500
BVH (80°-90°)	10.8	0.5			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G1**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	2°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	264.0	264.0	264.0	264.0	264.0	264.0	264.0	264.0	264.0	264.0	264.0
2.5°	286.8	285.7	284.1	278.6	275.2	271.3	267.2	262.5	257.2	253.5	249.7
5°	311.1	309.3	305.4	292.3	283.3	273.4	265.1	255.7	246.5	240.2	233.9
7.5°	334.4	332.2	326.2	306.1	291.4	277.1	264.6	251.0	237.3	227.9	220.4
10°	357.8	353.1	345.4	319.2	299.8	283.3	269.0	252.3	234.0	221.2	213.3
12.5°	375.6	371.2	362.9	331.2	308.2	287.5	271.4	256.0	240.5	226.9	218.8
15°	392.3	386.6	377.2	342.4	315.2	287.3	266.6	253.1	250.9	247.5	236.9
17.5°	404.2	399.1	389.3	351.4	319.0	282.3	253.1	245.2	255.4	265.8	255.7
20°	414.8	408.8	398.9	357.8	319.9	271.1	236.8	236.9	253.0	267.2	264.8
22.5°	423.7	417.0	408.3	364.9	319.5	255.6	222.5	232.2	248.3	259.4	259.8
25°	434.7	429.2	421.9	375.4	319.5	239.7	212.2	226.6	240.3	249.7	249.4
27.5°	448.1	444.4	438.4	391.4	322.4	226.4	206.3	219.3	230.1	238.2	238.1
30°	463.2	459.8	455.3	408.4	327.5	216.5	203.1	210.2	218.2	224.6	224.6
32.5°	478.6	477.3	472.4	422.0	323.6	213.5	200.3	201.1	205.4	210.7	210.2
35°	499.9	498.7	492.5	432.6	306.7	209.1	196.0	191.9	192.4	195.8	196.9
37.5°	531.2	529.3	520.2	444.9	281.3	198.1	188.8	182.2	180.7	182.2	184.3
40°	568.9	566.0	553.7	461.6	252.0	183.2	177.7	172.2	169.7	170.2	172.6
42.5°	616.2	610.1	592.4	479.2	223.0	170.1	165.2	161.8	159.0	158.7	163.4
45°	693.0	676.2	648.1	494.9	198.6	163.1	154.0	151.6	149.3	150.6	156.1
47.5°	827.1	796.0	741.4	508.4	183.7	163.2	145.1	142.5	142.4	144.9	151.1
50°	1011.4	966.5	882.3	517.4	175.9	165.2	139.8	135.6	138.6	141.2	147.1
52.5°	1187.9	1119.4	1019.2	517.3	172.5	165.5	141.2	129.1	138.6	139.3	144.8
55°	1338.7	1214.6	1056.1	464.2	167.6	164.2	146.9	124.1	136.9	139.3	143.7
57.5°	1458.5	1275.2	1053.3	374.9	182.4	157.1	150.3	122.9	131.7	139.6	144.6
60°	1445.3	1247.5	985.5	230.1	180.9	144.5	149.8	125.0	122.9	135.2	143.5
62.5°	1357.0	1148.2	868.7	159.7	169.9	137.2	141.9	128.8	114.8	128.9	138.0
65°	1233.4	1020.1	723.9	122.4	140.7	137.5	128.4	126.2	107.7	118.9	128.6
67.5°	1070.0	861.3	571.5	97.0	98.1	119.0	116.6	112.1	101.1	110.0	118.7
70°	804.4	628.5	393.2	78.1	74.3	99.4	104.8	100.7	94.6	97.2	106.4
72.5°	566.8	410.4	215.4	61.9	57.3	76.4	91.0	90.4	83.6	85.5	94.6
75°	421.2	290.4	134.6	48.9	46.6	54.7	76.3	78.2	72.6	74.8	81.8
77.5°	280.3	188.0	74.8	36.3	36.3	40.0	56.8	65.9	61.7	63.5	68.3
80°	154.7	95.7	37.4	23.8	24.5	27.5	41.5	47.5	47.6	52.0	53.3
82.5°	48.9	30.4	16.7	13.9	13.1	15.7	26.7	34.0	31.7	40.5	37.2
85°	11.2	7.1	3.1	3.1	3.4	5.2	10.2	18.1	23.2	27.9	20.2
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	7.1	10.5	9.4
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°	264.0	264.0	264.0	264.0	264.0	264.0	264.0	264.0	264.0	264.0	264.0
2.5°	247.5	244.2	243.3	240.5	240.2	237.6	236.6	236.6	237.7	237.7	238.9
5°	231.3	227.2	225.0	221.7	220.9	219.0	217.7	217.8	219.3	220.3	222.2
7.5°	217.0	214.3	212.6	211.2	210.9	210.5	209.1	208.9	209.4	210.9	212.3
10°	211.0	209.1	209.6	210.7	212.5	213.5	212.2	211.5	211.0	212.0	213.3
12.5°	216.9	214.9	215.9	217.8	220.3	221.2	220.7	220.6	221.1	224.8	227.5
15°	229.6	225.9	224.6	225.4	227.4	228.4	227.9	228.5	231.6	241.3	248.3
17.5°	245.5	236.5	231.3	229.8	230.6	231.4	231.4	233.1	238.4	252.6	261.4
20°	254.1	242.3	233.5	230.0	230.3	231.1	231.1	233.4	239.4	254.6	260.3
22.5°	251.8	241.0	230.3	226.4	226.6	227.2	227.2	229.2	234.5	248.0	250.5
25°	242.9	233.4	222.8	219.4	219.8	220.9	220.6	221.7	225.8	236.8	238.2
27.5°	232.2	223.8	213.5	210.9	212.3	214.6	212.6	212.8	216.5	225.8	225.9
30°	220.7	213.8	204.5	202.6	205.4	206.5	204.7	204.7	208.4	214.7	214.6
32.5°	208.3	203.9	197.3	195.2	198.2	200.0	197.7	198.1	201.0	205.2	203.6
35°	196.6	194.3	191.3	189.8	191.8	193.4	191.9	192.6	195.3	196.4	194.2
37.5°	185.4	185.1	185.4	185.4	185.9	186.4	185.4	187.1	189.5	188.0	185.4
40°	175.7	177.0	180.1	179.3	178.8	179.3	178.6	181.4	183.8	181.2	178.1
42.5°	167.6	170.1	174.7	174.7	173.8	174.1	173.8	177.2	179.0	175.4	172.0
45°	160.7	164.2	170.2	171.0	169.4	169.4	170.1	174.3	174.9	170.1	166.5
47.5°	155.8	160.2	167.0	168.4	166.0	165.8	167.6	172.2	172.2	166.5	162.4
50°	152.4	157.3	165.4	167.3	164.9	164.2	167.1	171.5	170.5	163.7	159.7
52.5°	150.1	155.2	165.2	167.9	166.3	165.7	168.6	171.7	169.2	162.0	157.7
55°	148.7	154.2	165.7	167.9	166.2	165.0	167.9	170.7	169.4	161.0	156.9
57.5°	149.5	155.0	165.0	166.2	164.1	162.1	165.5	169.4	168.9	161.3	157.3
60°	148.2	153.2	161.5	161.8	158.2	155.2	160.2	166.0	166.0	160.2	156.6
62.5°	142.2	147.2	154.5	154.8	150.8	147.4	153.2	160.2	160.0	155.3	151.6
65°	132.3	137.0	145.3	146.1	142.0	138.5	144.5	150.9	151.4	147.2	144.0
67.5°	121.5	125.7	131.8	135.1	131.7	127.9	133.4	139.6	139.4	134.4	131.0
70°	108.5	112.4	118.1	120.8	118.7	115.1	120.2	123.4	122.0	119.5	117.3
72.5°	95.7	99.4	104.8	104.8	102.5	99.1	100.6	106.4	108.2	106.4	104.9
75°	82.3	85.5	89.2	90.0	85.0	78.9	85.7	90.7	92.8	92.0	90.2
77.5°	68.5	70.9	76.4	75.0	65.6	62.4	67.9	75.3	76.8	76.3	73.9
80°	52.8	54.3	60.1	57.2	49.9	47.8	50.2	56.0	56.4	54.7	51.7
82.5°	35.5	37.4	41.3	35.6	35.5	33.5	31.6	32.2	35.1	34.8	32.7
85°	18.1	19.1	22.8	21.4	18.3	15.9	15.1	16.0	14.4	13.1	11.3
87.5°	7.6	8.3	11.3	6.3	1.9	0.0	0.0	1.0	1.5	2.1	2.3
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°	264.0	264.0	264.0	264.0	264.0	264.0	264.0	264.0	264.0	264.0	264.0
2.5°	241.5	243.3	247.6	253.1	258.5	264.0	270.0	273.7	278.2	284.1	284.2
5°	224.6	228.7	235.0	243.4	252.2	262.2	273.9	283.6	295.2	304.5	308.2
7.5°	214.3	220.1	228.0	238.7	250.2	262.7	277.9	294.3	313.4	325.7	333.0
10°	215.2	224.1	232.1	241.1	251.5	265.0	284.6	306.3	329.7	345.9	355.0
12.5°	232.6	242.0	240.5	240.0	247.0	263.3	289.9	318.4	347.1	363.3	374.1
15°	254.4	258.0	244.2	233.9	238.1	257.5	292.8	329.3	361.5	381.2	391.9
17.5°	265.6	258.5	241.8	226.2	225.1	248.6	294.3	340.3	377.7	397.4	408.8
20°	260.4	250.1	236.0	221.2	213.1	236.5	293.5	349.0	392.4	414.4	423.7
22.5°	249.2	240.2	229.2	215.1	203.4	223.2	291.4	357.8	405.5	427.7	435.8
25°	237.1	230.3	221.2	208.9	197.9	211.5	289.9	369.4	420.6	441.8	447.0
27.5°	225.0	219.9	212.5	202.9	196.6	203.4	290.4	384.6	440.0	460.1	458.0
30°	213.0	208.6	203.4	199.2	196.4	201.5	289.1	400.8	461.4	480.0	467.6
32.5°	201.6	197.6	194.3	195.0	196.6	202.3	282.4	415.6	481.0	496.9	477.9
35°	191.9	187.7	187.7	190.0	196.0	199.5	265.3	427.1	502.7	518.6	492.7
37.5°	182.8	179.1	181.5	185.3	190.9	192.1	243.3	438.2	534.3	549.2	515.5
40°	174.9	171.2	175.6	180.3	183.2	182.7	220.9	453.8	571.5	586.9	545.8
42.5°	168.6	165.2	169.1	175.1	175.6	176.0	204.5	468.7	614.8	634.4	597.9
45°	163.4	161.0	162.9	168.9	168.9	176.4	194.3	481.2	679.9	714.5	693.6
47.5°	159.4	157.9	158.9	160.8	164.1	182.2	187.9	490.7	798.4	866.4	845.4
50°	157.1	155.6	156.9	152.9	162.6	185.1	185.8	498.0	954.7	1061.3	1035.2
52.5°	155.2	154.7	155.5	146.1	165.8	183.2	184.1	488.3	1059.5	1253.0	1278.8
55°	154.5	154.8	150.9	141.1	169.7	176.7	179.3	418.8	1088.0	1418.4	1578.2
57.5°	154.8	153.9	144.0	141.5	169.9	163.7	186.2	298.8	1046.5	1490.3	1871.2
60°	153.7	148.8	135.6	145.9	162.4	148.5	181.2	194.8	937.2	1435.1	1888.2
62.5°	148.7	141.5	128.3	148.3	149.2	139.4	164.5	150.1	791.5	1316.8	1724.3
65°	141.4	131.8	122.1	143.3	135.7	135.2	123.7	120.3	636.5	1176.1	1568.8
67.5°	129.4	119.8	117.6	131.8	122.1	119.8	99.4	99.8	507.9	1026.1	1412.6
70°	115.8	106.2	108.0	119.2	108.7	99.6	80.5	83.1	385.3	855.0	1201.9
72.5°	106.9	94.1	94.3	104.9	95.6	80.7	66.2	68.5	244.5	644.4	955.5
75°	90.2	82.9	79.4	85.0	81.1	62.8	55.7	55.2	144.9	461.9	715.5
77.5°	75.3	69.6	67.9	70.1	60.6	46.5	44.9	44.1	82.1	295.9	468.9
80°	54.6	53.1	53.0	54.1	46.6	34.2	34.2	34.3	44.2	160.7	264.3
82.5°	34.7	37.9	33.5	37.2	31.7	24.3	22.7	25.8	25.4	68.5	111.4
85°	14.4	19.8	18.5	19.6	15.1	13.3	14.3	15.4	14.7	26.4	43.4
87.5°	2.8	3.2	3.6	3.4	3.4	4.2	4.7	5.7	5.7	7.6	13.1
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°	325°	335°	345°	355°	358°	360°
0°	264.0	264.0	264.0	264.0	264.0	264.0	264.0	264.0	264.0	264.0
2.5°	290.4	295.1	294.1	296.2	293.5	294.4	288.9	287.5	286.5	286.8
5°	320.2	329.7	331.5	335.1	332.7	332.7	322.9	315.6	313.1	311.1
7.5°	350.5	364.2	373.3	374.3	373.0	370.4	356.3	343.2	338.5	334.4
10°	377.4	393.9	404.1	408.9	406.5	402.5	385.0	367.0	361.3	357.8
12.5°	397.9	412.5	419.3	422.5	422.2	420.8	406.5	387.1	381.1	375.6
15°	411.2	418.5	415.9	415.7	418.0	423.8	419.5	404.2	397.3	392.3
17.5°	419.8	412.8	401.3	396.0	400.8	414.6	424.6	416.1	409.7	404.2
20°	422.9	398.1	381.4	371.5	377.2	397.1	421.9	424.6	419.3	414.8
22.5°	419.3	380.1	357.4	345.8	351.3	375.1	413.8	431.6	428.0	423.7
25°	410.6	361.3	334.1	323.6	329.6	353.9	399.4	438.1	438.2	434.7
27.5°	399.7	344.0	317.8	307.9	313.7	336.4	385.3	443.8	449.4	448.1
30°	388.7	333.6	310.0	303.0	307.4	327.5	370.9	449.6	460.9	463.2
32.5°	383.7	338.6	328.3	331.4	325.7	332.7	365.7	457.8	474.8	478.6
35°	390.3	383.2	409.4	421.6	401.5	375.1	372.3	470.3	494.4	499.9
37.5°	422.5	478.6	517.8	560.5	525.7	467.6	405.2	491.5	522.5	531.2
40°	492.7	561.8	632.6	687.8	635.2	557.0	467.7	523.1	561.0	568.9
42.5°	558.7	639.9	737.4	808.8	740.4	630.0	535.1	576.2	611.9	616.2
45°	623.5	716.5	864.2	963.5	870.7	699.5	603.9	666.0	692.8	693.0
47.5°	699.5	802.8	1023.2	1164.6	1043.5	776.4	668.5	808.0	845.4	827.1
50°	790.3	888.6	1187.0	1398.6	1254.2	871.0	750.7	981.1	1032.1	1011.4
52.5°	912.0	983.2	1367.4	1626.8	1483.8	978.7	869.7	1209.8	1226.6	1187.9
55°	1083.1	1119.7	1599.0	1908.6	1740.2	1111.3	1043.8	1496.8	1449.6	1338.7
57.5°	1473.0	1335.8	1896.3	2230.1	2030.2	1352.3	1425.3	1813.2	1645.6	1458.5
60°	1799.1	1598.2	2171.5	2549.1	2278.8	1617.9	1783.6	1868.3	1638.3	1445.3
62.5°	1689.2	1665.0	2270.7	2584.3	2363.7	1748.6	1717.0	1729.5	1531.4	1357.0
65°	1482.0	1536.0	2182.2	2417.6	2269.6	1631.5	1553.1	1601.2	1409.2	1233.4
67.5°	1359.8	1399.4	2024.6	2150.9	2098.6	1504.9	1425.7	1390.9	1219.3	1070.0
70°	1234.7	1267.6	1803.3	1816.1	1831.9	1294.3	1165.7	1062.1	908.9	804.4
72.5°	1066.9	1068.7	1523.7	1449.5	1479.3	1012.9	938.4	794.1	661.6	566.8
75°	895.1	846.2	1206.1	1013.2	1072.9	787.9	779.2	598.4	499.0	421.2
77.5°	682.5	625.3	881.0	666.3	753.6	524.7	585.8	405.9	351.1	280.3
80°	458.2	422.5	486.8	376.1	493.0	361.6	382.0	230.0	199.4	154.7
82.5°	241.6	206.3	300.9	223.0	297.3	198.7	143.3	71.1	60.6	48.9
85°	93.6	108.3	147.5	79.4	115.3	70.9	41.5	17.7	14.7	11.2
87.5°	18.1	28.0	15.4	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

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.

**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  
 CIE u': 0.2476  
 CIE v': 0.5251  
 Duv: 0.0034  
 CIE x: 0.4383  
 CIE y: 0.4131  
 CIE z: 0.1487  
 Peak Wavelength (nm): 603  
 Dominant Wavelength (nm): 581  
 Purity: 55.55201  
 Rf: 81.5  
 Rg: 99.2

CRI (Ra):	81.0		
R1:	79.6	R9:	7.1
R2:	85.6	R10:	67.0
R3:	92.0	R11:	82.7
R4:	82.6	R12:	63.2
R5:	78.9	R13:	80.3
R6:	81.7	R14:	95.0
R7:	85.2	R15:	71.7
R8:	62.0		



**Test Conditions**

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

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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



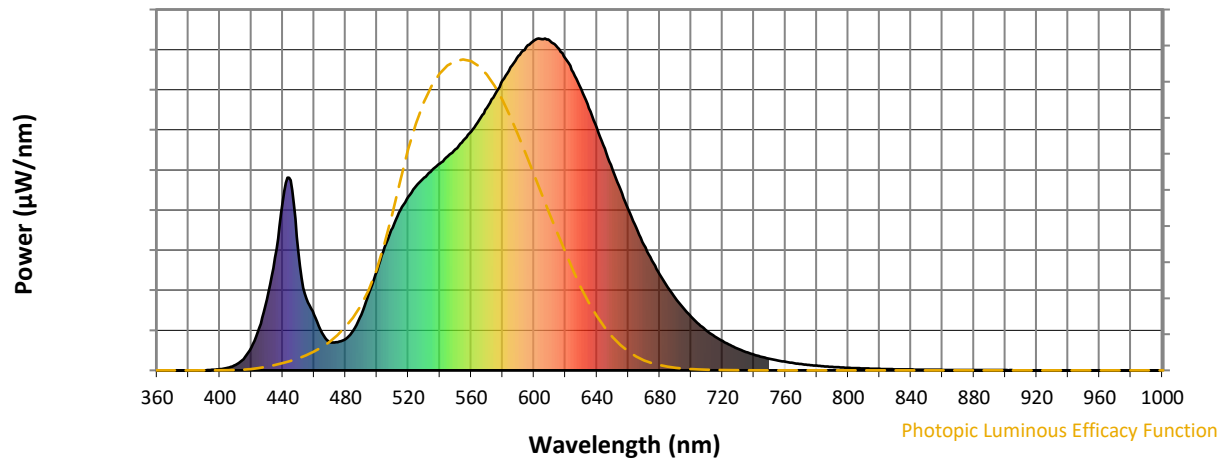
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2408-195-9

**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /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**

$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /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



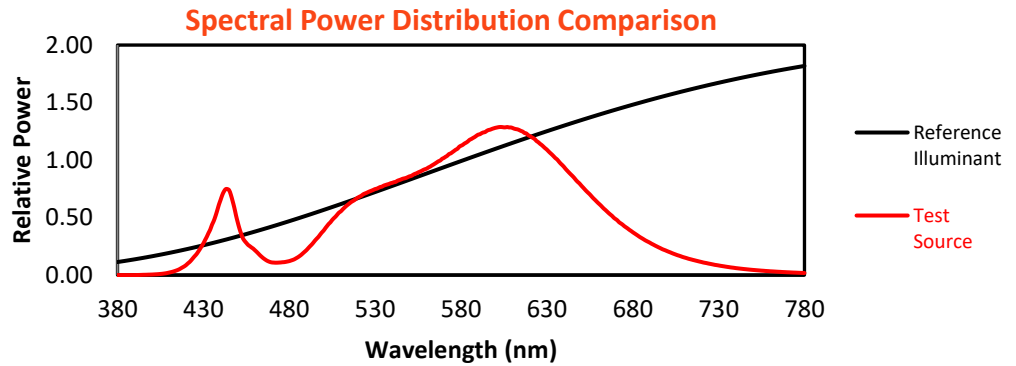
Melanopic Lumens: NR

M/P: 2.32

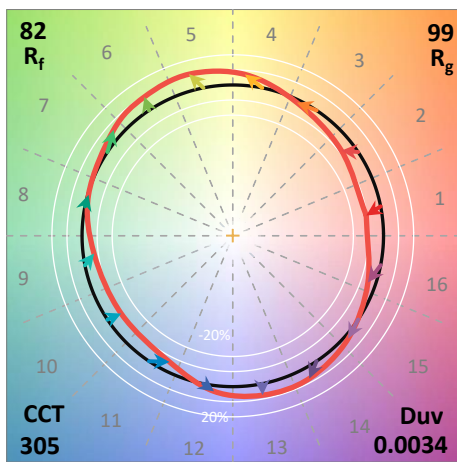
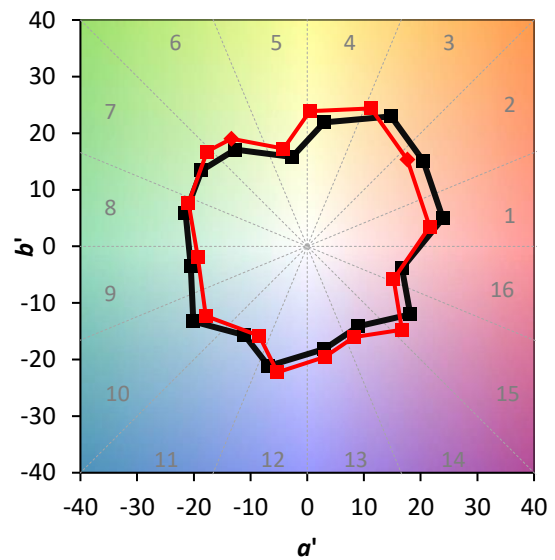
λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	168	NR	620	940	NR	750	35	NR	880	1	NR
365	0	NR	495	233	NR	625	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			

**Summary**

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

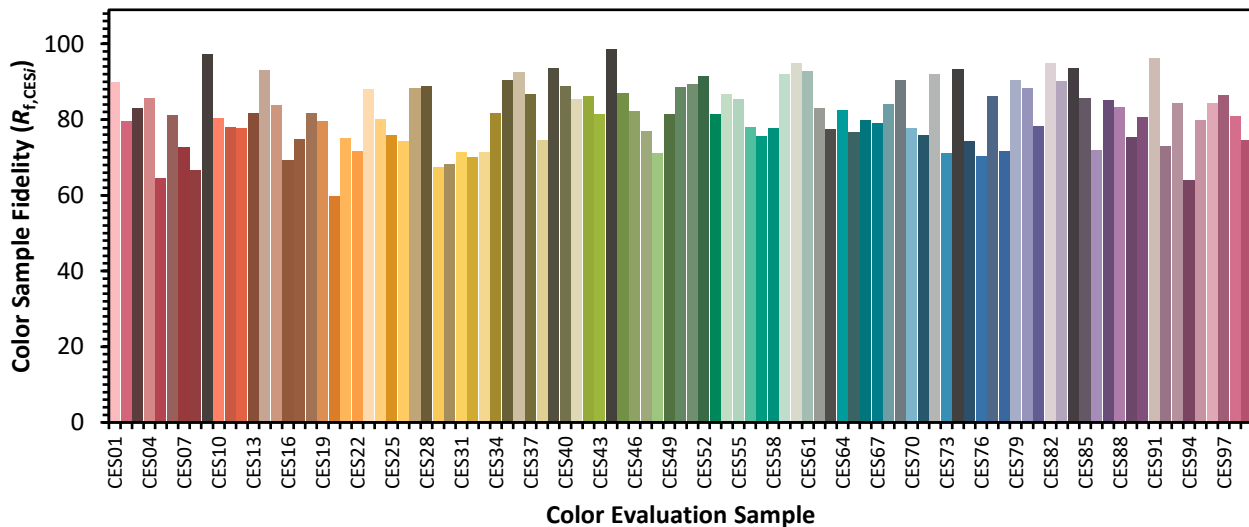


**Color Vector Graphics**



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	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)