

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: P639949

Luminaire Tested: GWS-SA5C-830-U-AFL-W-HSS

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P639949
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-48)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA5C-830-U-AFL-W-HSS
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND
AUTOMOTIVE FRONTLINE OPTICS WITH HOUSE SIDE SHIELD
Light Source: (80) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15863.2 lumens
Efficiency: N/A
Efficacy: 100.7 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G2

Input Watts (W): 157.5
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



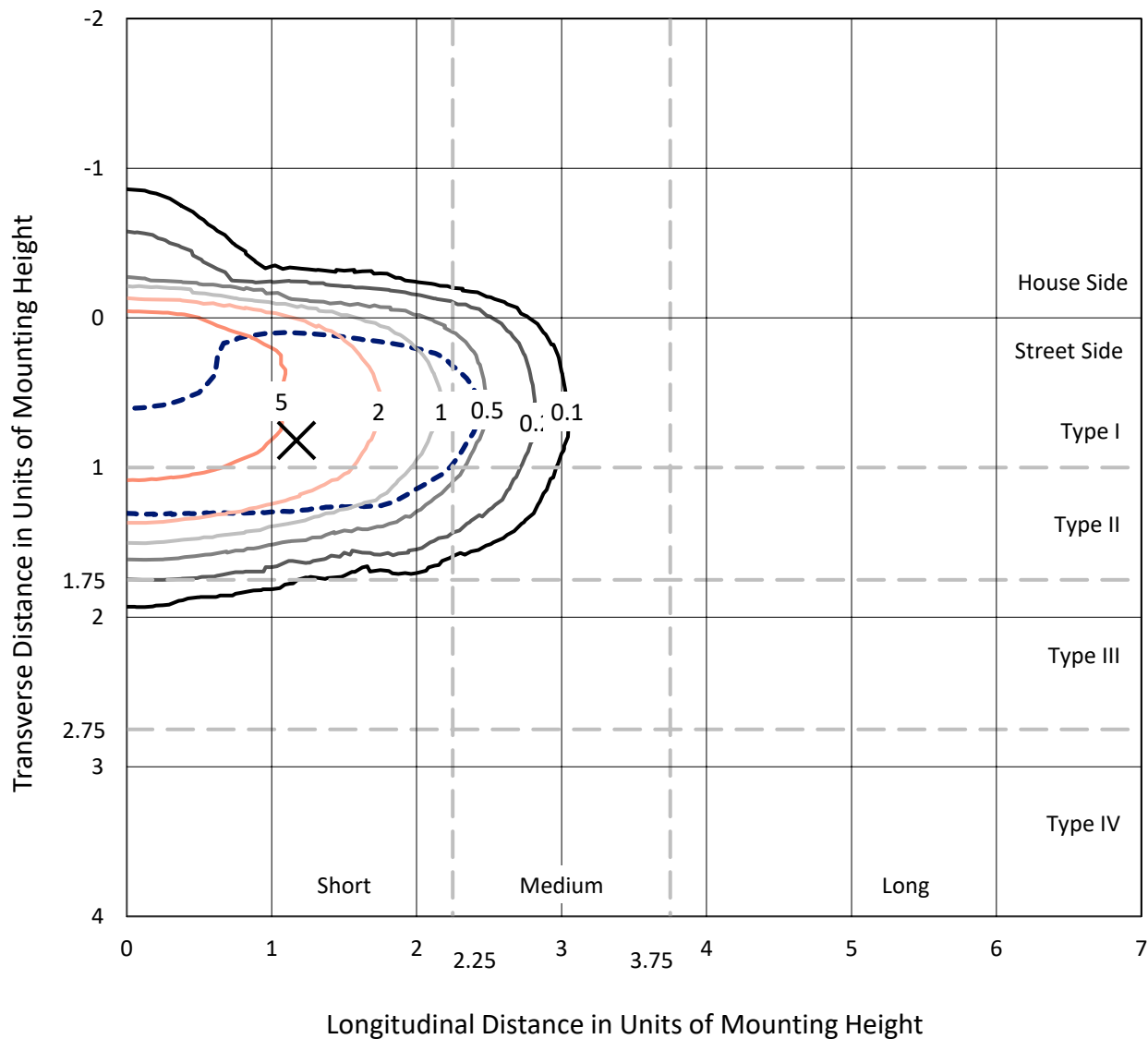
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Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd

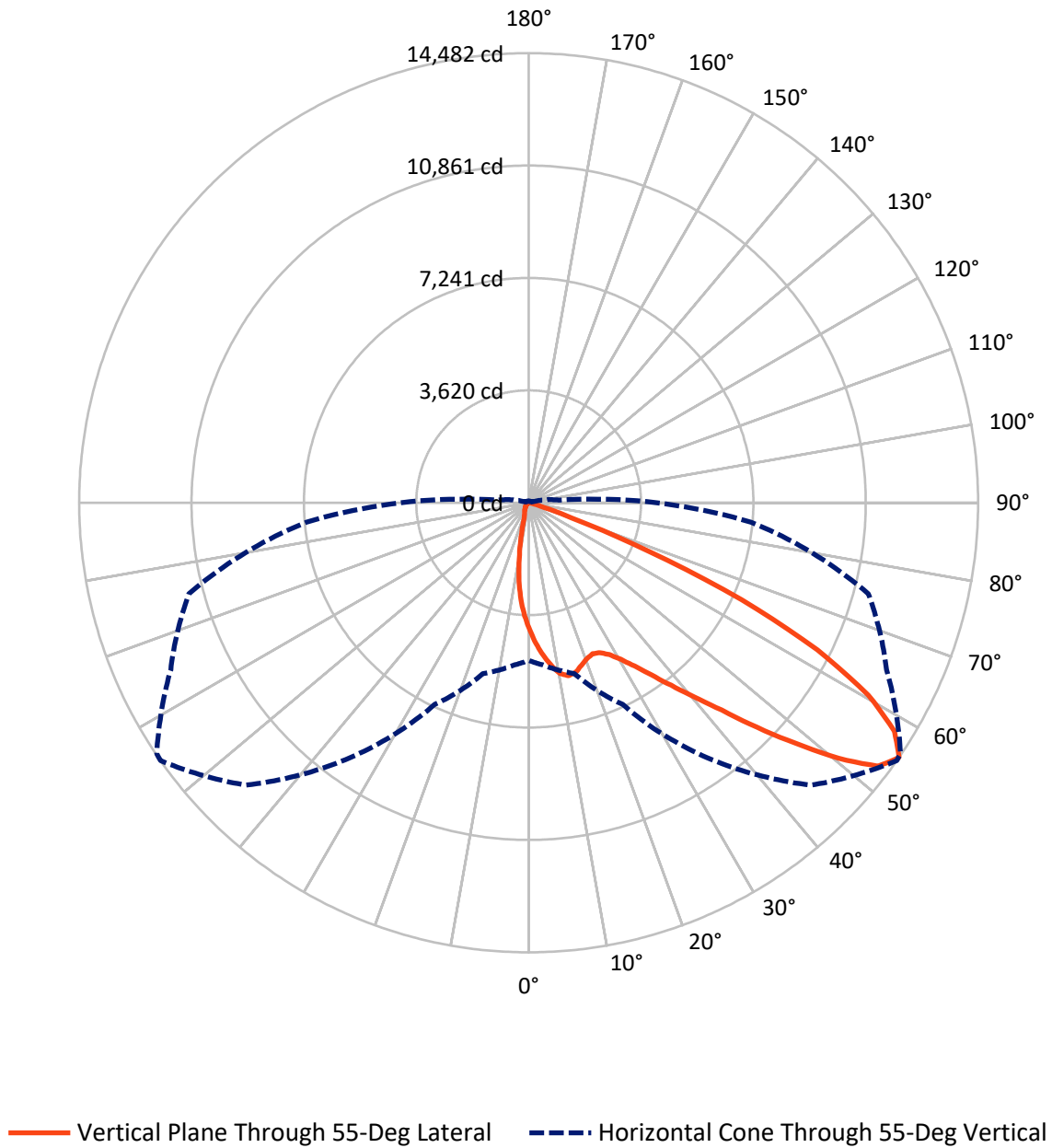
--- 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8.6 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



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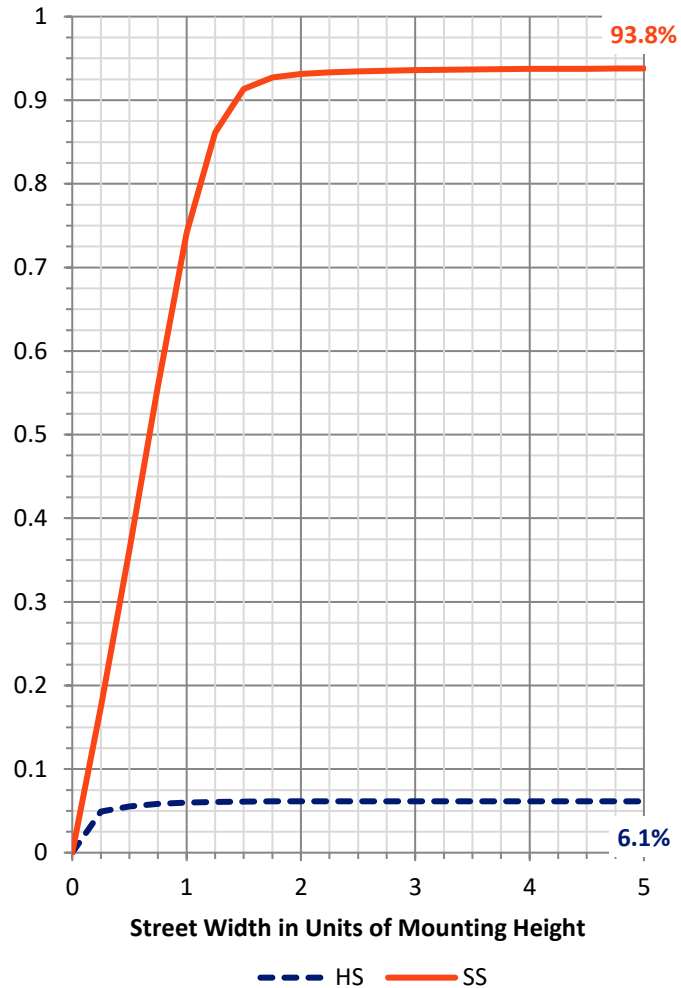
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	978.8	0.0	978.8
	% Fixture	6.2	0.0	6.2
Street Side	Lumens	14884.4	0.0	14884.4
	% Fixture	93.8	0.0	93.8
Total	Lumens	15863.2	0.0	15863.2
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	362.2	2.3
10°-20°	873.2	5.5
20°-30°	1454.2	9.2
30°-40°	2478.0	15.6
40°-50°	4044.9	25.5
50°-60°	4234.8	26.7
60°-70°	2136.0	13.5
70°-80°	269.8	1.7
80°-90°	10.3	0.1
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°	15863.2	100.0
0°-180°	15863.2	100.0

Coefficient of Utilization



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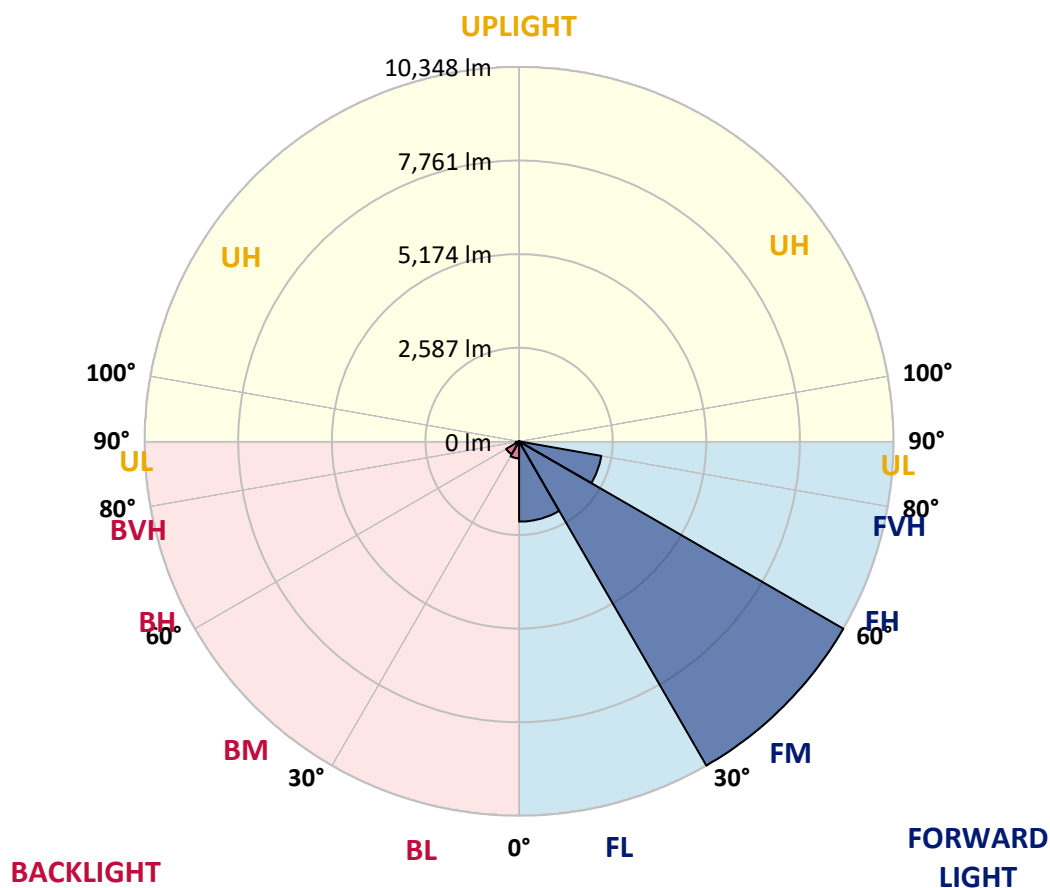
CATALOG NUMBER: GWS-SA5C-830-U-AFL-W-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2219.0	14.0			
FM	(30°-60°)	10348.4	65.2			
FH	(60°-80°)	2307.6	14.5			G2/5000
FVH	(80°-90°)	9.3	0.1			G0/10
BL	(0°-30°)	470.5	3.0	B1/500		
BM	(30°-60°)	409.2	2.6	B1/1000		
BH	(60°-80°)	98.2	0.6	B0/110		G0/110
BVH	(80°-90°)	0.9	0.0			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G2

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	56°	65°	75°	85°
0°	4098.1	4098.1	4098.1	4098.1	4098.1	4098.1	4098.1	4098.1	4098.1	4098.1	4098.1
2.5°	4777.5	4754.5	4789.7	4749.0	4679.9	4621.6	4545.6	4518.5	4396.5	4281.2	4170.0
5°	5357.9	5364.7	5353.9	5296.9	5199.3	5090.8	4937.5	4903.6	4690.7	4471.0	4233.7
7.5°	5501.7	5497.6	5520.7	5542.4	5526.1	5471.8	5305.0	5271.1	5006.7	4677.2	4331.4
10°	5058.2	5060.9	5108.4	5254.9	5436.6	5625.1	5599.3	5580.3	5321.3	4910.4	4439.9
12.5°	4431.7	4456.1	4506.3	4715.1	5023.0	5451.5	5717.3	5736.3	5610.2	5166.7	4567.3
15°	4160.5	4165.9	4206.6	4332.7	4561.9	5090.8	5667.1	5720.0	5851.6	5424.4	4705.7
17.5°	4153.7	4160.5	4178.1	4233.7	4382.9	4807.4	5505.7	5598.0	6033.3	5701.0	4871.1
20°	4408.7	4404.6	4392.4	4362.6	4427.7	4713.8	5356.6	5458.3	6132.3	5970.9	5037.9
22.5°	4871.1	4865.7	4811.4	4688.0	4635.1	4799.2	5283.3	5375.6	6191.9	6210.9	5174.9
25°	5404.0	5442.0	5340.3	5153.2	5023.0	5017.6	5348.4	5413.5	6243.5	6423.8	5268.4
27.5°	5988.5	6000.7	5913.9	5703.7	5515.2	5367.4	5536.9	5585.8	6300.4	6613.7	5321.3
30°	6630.0	6625.9	6526.9	6282.8	6053.6	5840.7	5854.3	5873.3	6433.3	6830.7	5379.6
32.5°	7431.4	7449.0	7272.7	6940.5	6665.2	6370.9	6269.2	6271.9	6673.3	7110.0	5467.8
35°	8520.4	8477.0	8243.7	7770.4	7301.2	6983.9	6810.3	6795.4	7043.6	7485.6	5621.0
37.5°	9557.8	9561.8	9317.7	8797.0	8204.4	7704.0	7458.5	7417.8	7564.3	8006.4	5876.0
40°	10277.9	10291.4	10189.7	9917.1	9289.3	8581.4	8220.7	8178.6	8239.6	8665.5	6209.6
42.5°	10658.9	10696.9	10725.4	10789.1	10313.1	9677.1	9122.5	9118.4	9054.7	9416.7	6596.1
45°	10673.8	10730.8	10904.4	11339.7	11393.9	10927.4	10324.0	10233.1	9987.6	10220.9	6941.9
47.5°	10083.9	10215.5	10584.3	11446.8	12016.4	12171.0	11572.9	11517.3	10828.4	10856.9	7200.9
50°	8708.8	8845.8	9525.2	10897.6	12173.7	13158.2	12943.9	12828.7	11530.9	11277.3	7325.6
52.5°	7298.5	7423.3	7884.3	9590.3	11521.4	13468.7	14099.3	13962.4	12161.5	11423.8	7274.1
55°	5078.6	5245.4	5695.6	7168.3	10018.8	12863.9	14481.7	14453.3	12724.2	11331.5	7194.1
57.5°	2489.8	2655.2	3104.1	4419.5	7421.9	11231.2	13897.3	14047.8	13060.6	11232.5	7129.0
60°	1040.1	1107.9	1262.5	1939.2	4152.4	8487.8	12577.8	12786.6	12854.4	11098.3	7122.2
62.5°	603.5	614.3	630.6	804.2	1615.1	4865.7	10433.8	10730.8	11770.9	10920.6	7015.1
65°	455.6	459.7	452.9	493.6	667.2	1845.6	7538.5	7942.7	9824.9	10226.3	6592.0
67.5°	374.3	374.3	356.7	364.8	419.0	691.6	4161.9	4726.0	7270.0	8405.1	5443.4
70°	298.3	305.1	297.0	286.1	299.7	382.4	1480.9	1836.2	4233.7	4963.3	3174.6
72.5°	226.5	226.5	240.0	231.9	222.4	240.0	516.7	580.4	1699.2	2069.4	1145.9
75°	174.9	180.4	189.9	181.7	168.2	142.4	248.2	263.1	512.6	481.4	256.3
77.5°	89.5	90.9	120.7	132.9	124.8	86.8	108.5	119.3	166.8	149.2	94.9
80°	54.2	57.0	67.8	104.4	82.7	46.1	44.8	47.5	78.7	67.8	39.3
82.5°	23.1	24.4	38.0	38.0	33.9	17.6	17.6	17.6	38.0	35.3	16.3
85°	0.0	0.0	6.8	5.4	5.4	6.8	6.8	6.8	9.5	13.6	8.1
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	4.1	4.1
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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CATALOG NUMBER: GWS-SA5C-830-U-AFL-W-HSS

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	4098.1	4098.1	4098.1	4098.1	4098.1	4098.1	4098.1	4098.1	4098.1	4098.1	4098.1
2.5°	4098.1	4011.3	3894.7	3788.9	3646.5	3566.5	3455.3	3364.5	3287.2	3262.8	3251.9
5°	4099.5	3950.3	3700.8	3451.3	3144.8	2903.4	2655.2	2458.6	2297.2	2245.7	2232.1
7.5°	4126.6	3906.9	3502.8	3049.9	2537.3	2114.2	1735.8	1396.8	1239.5	1186.6	1175.7
10°	4163.2	3870.3	3273.6	2568.4	1832.1	1288.3	912.7	695.7	592.6	535.7	543.8
12.5°	4210.7	3840.5	3020.0	2047.7	1212.3	707.9	501.8	420.4	398.7	387.8	382.4
15°	4274.4	3805.2	2705.4	1531.0	743.1	455.6	386.5	364.8	356.7	351.2	349.9
17.5°	4339.5	3764.5	2385.4	1076.7	493.6	378.4	347.2	336.3	330.9	326.8	325.5
20°	4408.7	3695.4	2009.7	741.8	389.2	340.4	320.0	307.8	301.1	294.3	292.9
22.5°	4438.5	3584.2	1650.4	519.4	345.8	313.3	287.5	272.6	264.4	259.0	259.0
25°	4410.0	3403.8	1278.8	394.6	314.6	283.4	257.7	241.4	234.6	229.2	229.2
27.5°	4334.1	3171.9	933.0	326.8	280.7	252.2	227.8	212.9	207.5	204.8	204.8
30°	4250.0	2879.0	657.7	280.7	242.7	219.7	199.3	189.9	188.5	185.8	185.8
32.5°	4178.1	2605.1	452.9	246.8	214.3	191.2	177.6	173.6	174.9	172.2	173.6
35°	4138.8	2336.6	336.3	219.7	191.2	169.5	162.7	162.7	162.7	161.4	161.4
37.5°	4155.1	2072.1	273.9	200.7	170.9	154.6	147.8	150.5	153.2	153.2	153.2
40°	4236.4	1837.5	242.7	183.1	153.2	141.0	135.6	139.7	143.7	146.5	146.5
42.5°	4339.5	1647.7	219.7	168.2	141.0	127.5	124.8	128.8	132.9	135.6	135.6
45°	4404.6	1456.4	196.6	149.2	128.8	112.6	112.6	118.0	116.6	118.0	118.0
47.5°	4434.4	1304.6	173.6	128.8	109.8	97.6	99.0	101.7	99.0	101.7	101.7
50°	4361.2	1151.3	153.2	107.1	90.9	85.4	88.1	86.8	86.8	92.2	92.2
52.5°	4227.0	1037.4	135.6	90.9	77.3	75.9	78.7	73.2	74.6	74.6	73.2
55°	4128.0	972.3	120.7	78.7	66.4	67.8	66.4	57.0	51.5	46.1	44.8
57.5°	4079.1	946.6	109.8	70.5	59.7	59.7	54.2	39.3	29.8	23.1	20.3
60°	4068.3	915.4	99.0	61.0	52.9	50.2	39.3	23.1	14.9	10.8	9.5
62.5°	3965.2	839.4	89.5	48.8	46.1	40.7	24.4	13.6	8.1	5.4	4.1
65°	3627.6	690.3	80.0	38.0	35.3	29.8	14.9	8.1	4.1	1.4	0.0
67.5°	2885.8	489.6	70.5	28.5	24.4	19.0	9.5	5.4	1.4	0.0	0.0
70°	1663.9	264.4	58.3	20.3	16.3	12.2	6.8	2.7	0.0	0.0	0.0
72.5°	556.0	123.4	44.8	13.6	12.2	9.5	4.1	1.4	0.0	0.0	0.0
75°	122.0	73.2	29.8	9.5	8.1	6.8	2.7	0.0	0.0	0.0	0.0
77.5°	46.1	51.5	14.9	6.8	5.4	4.1	1.4	0.0	0.0	0.0	0.0
80°	17.6	33.9	6.8	4.1	4.1	1.4	0.0	0.0	0.0	0.0	0.0
82.5°	9.5	13.6	4.1	2.7	2.7	0.0	0.0	0.0	0.0	0.0	0.0
85°	5.4	6.8	2.7	1.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	2.7	1.4	1.4	1.4	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	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: SP1-2408-195-9

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.

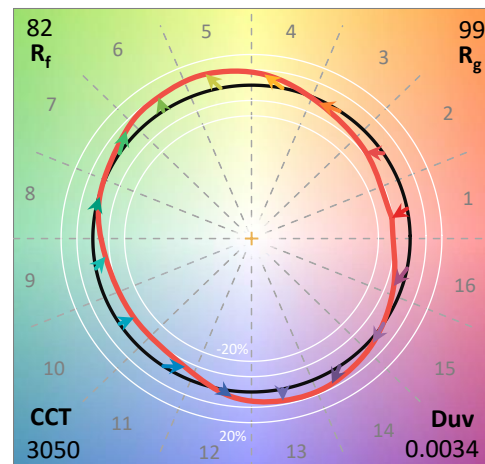
Test Information

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
 R_f: 81.5
 R_g: 99.2

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



Test Conditions

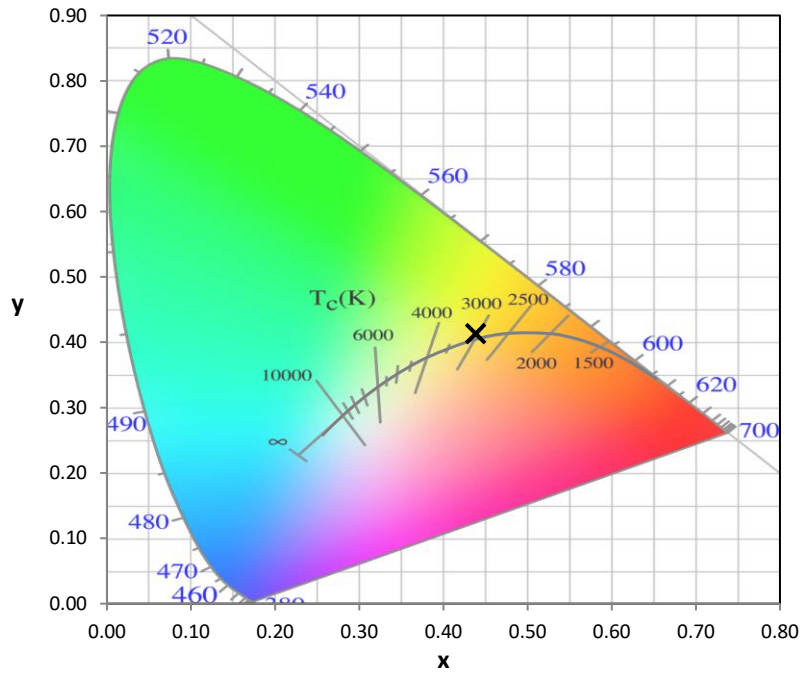
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

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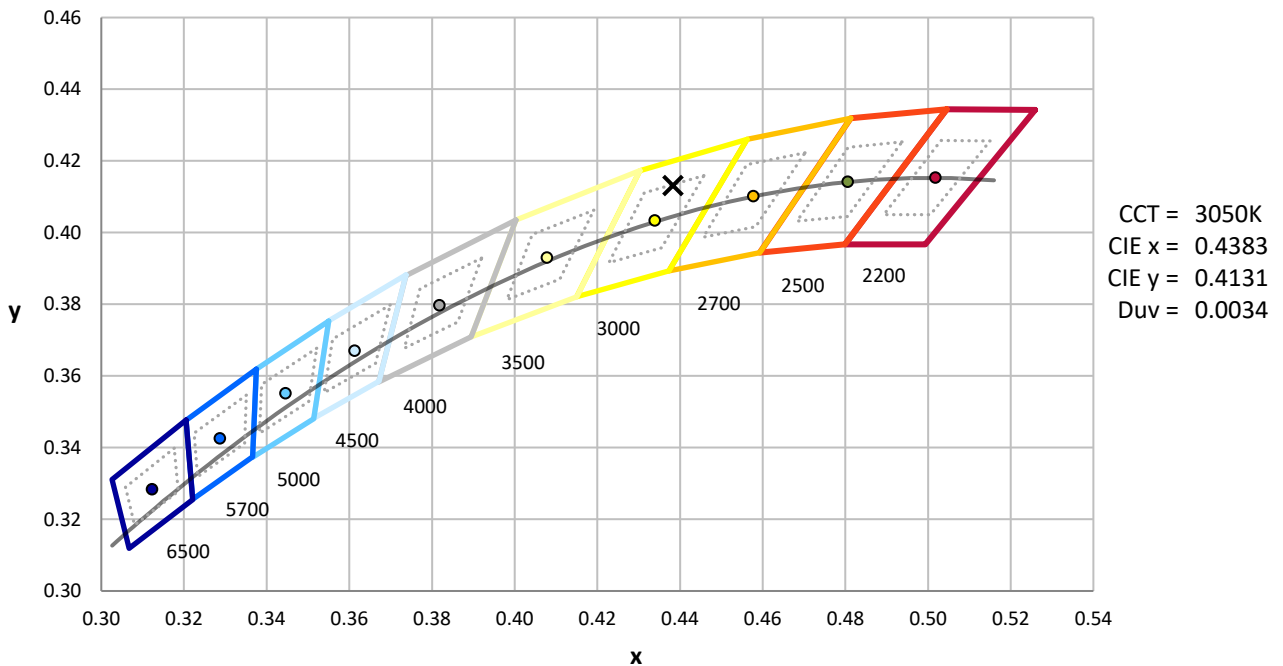
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

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CIE 1931 Chromaticity Diagram



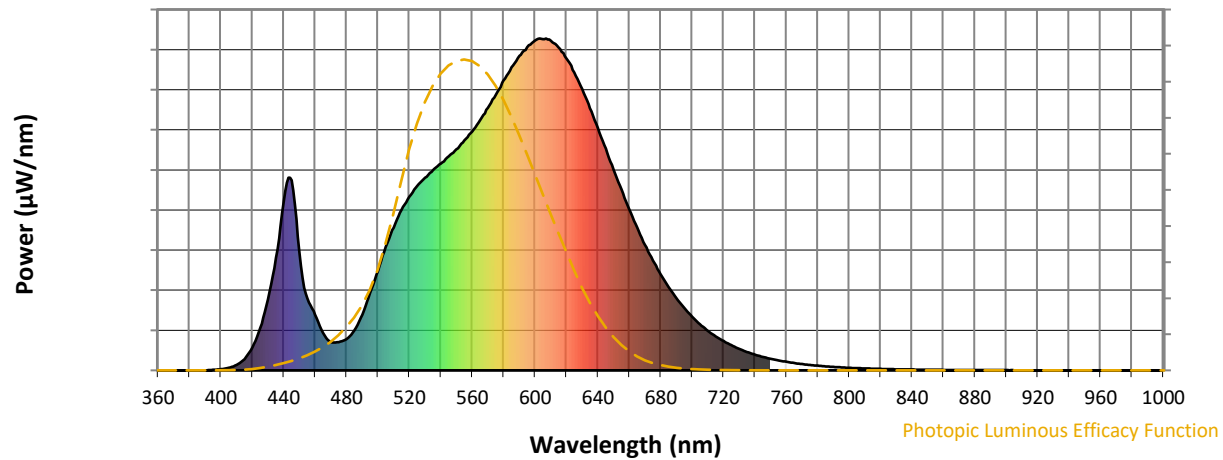
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

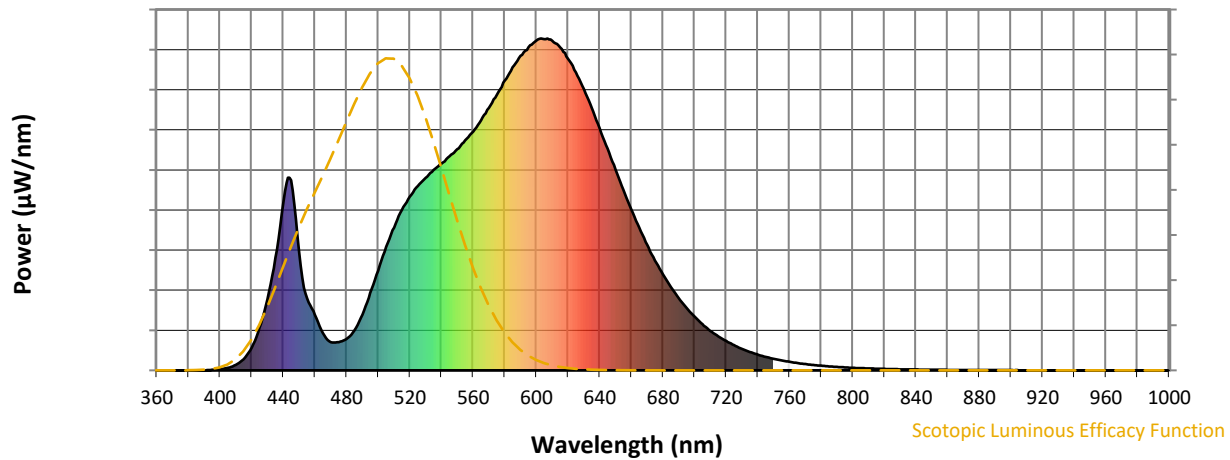


Photopic Lumens: NR

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	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			

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Scotopic Flux vs. Wavelength



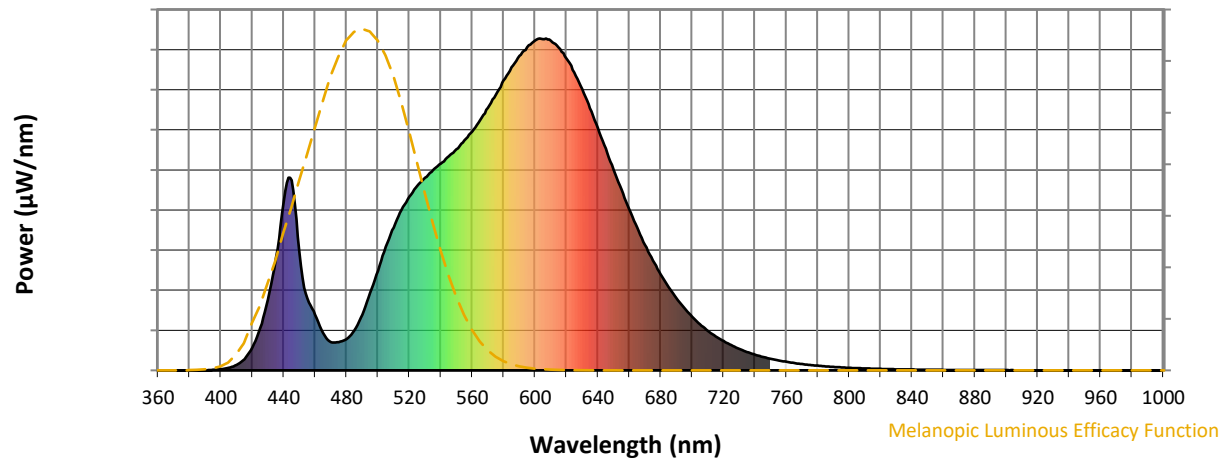
Scotopic Lumens: NR

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			

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Melanopic Flux vs. Wavelength


Melanopic Lumens: NR
M/P: 2.32

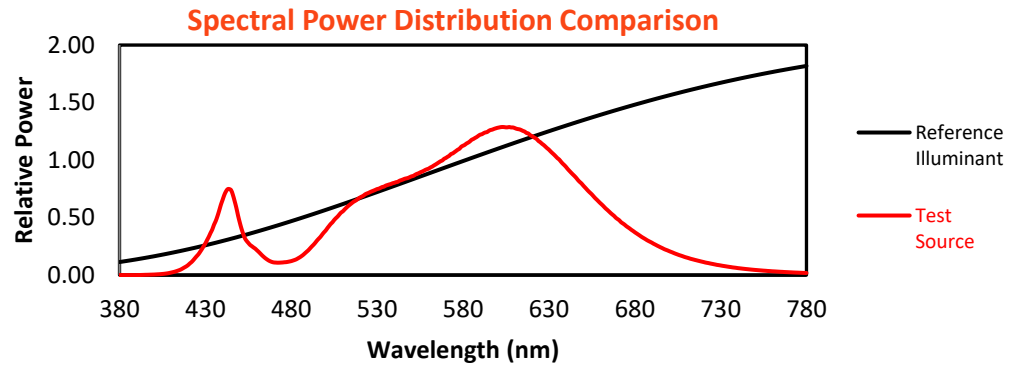
λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	168	NR	620	940	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			

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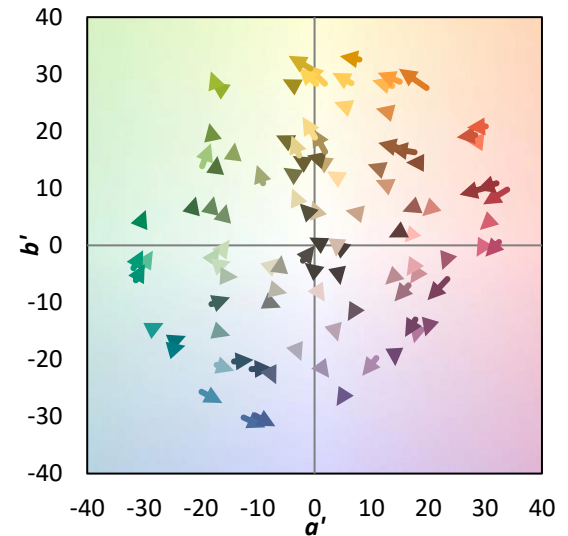
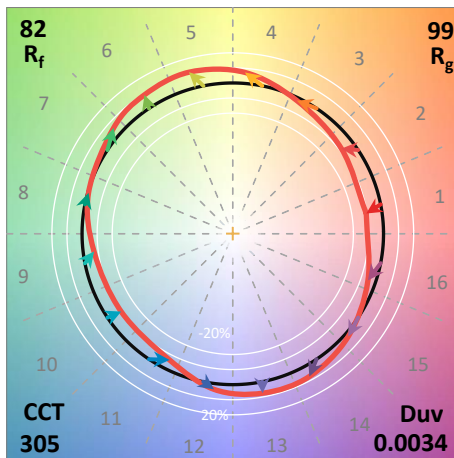
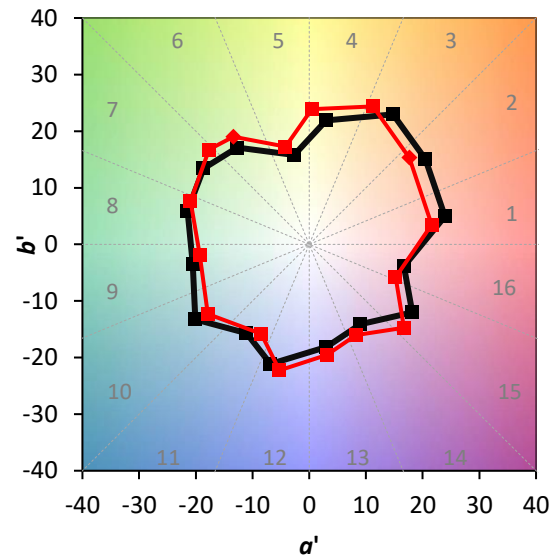
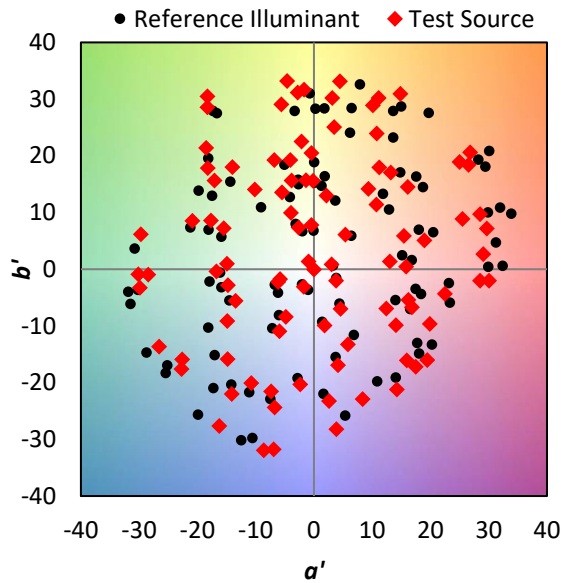
TM-30-18

Summary

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

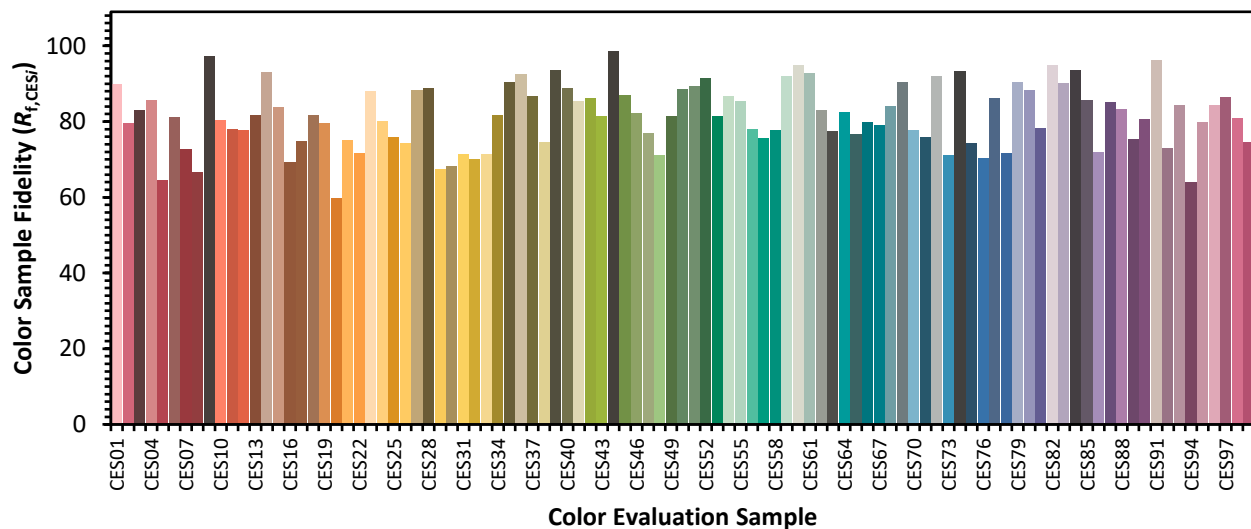


Color Vector Graphics

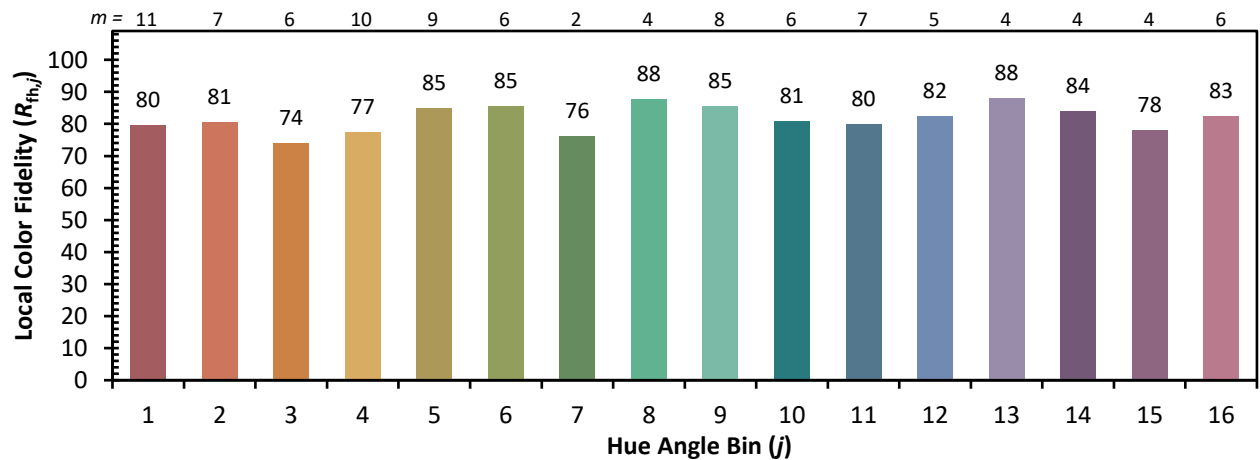
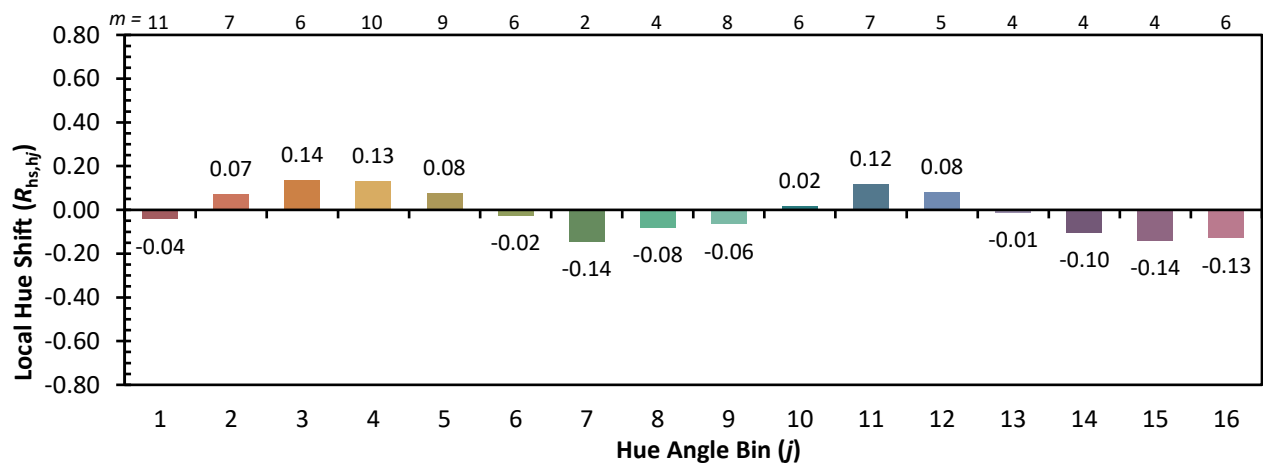
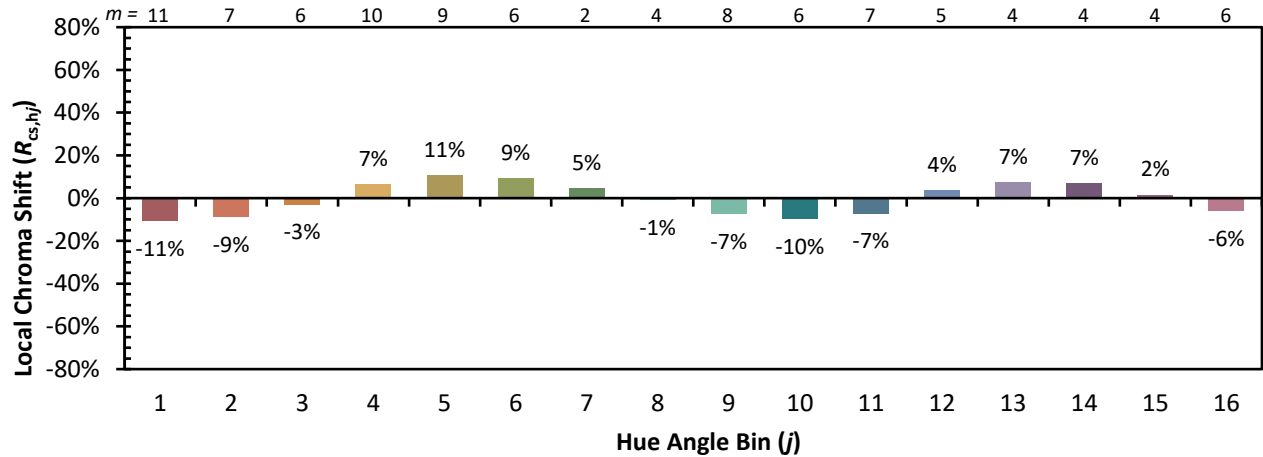


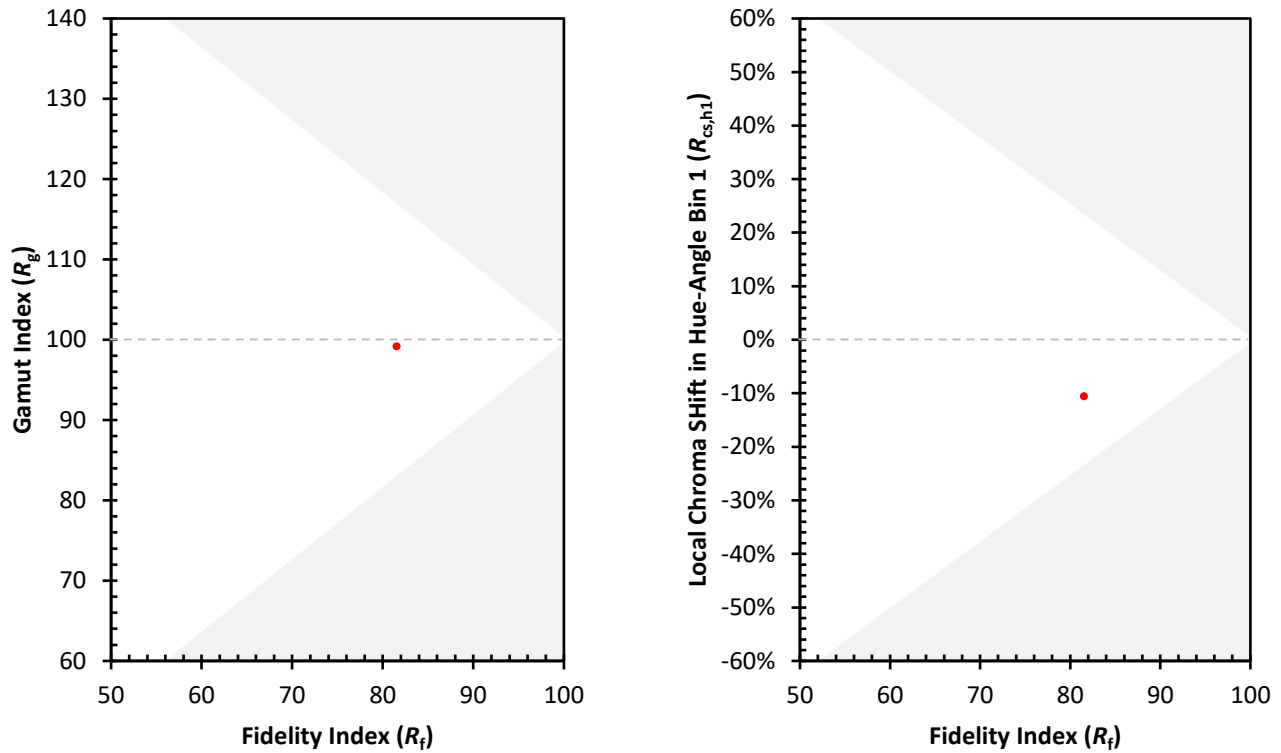
Individual Sample Fidelity Index ($R_{f,i}$)

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)