

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: P638982

Luminaire Tested: GWS-SA4F-830-U-T1-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P638982
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-10)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA4F-830-U-T1-W
Description: GALLEON WALL SLIM LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE I OPTICS
Light Source: (64) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 26979.3 lumens
Efficiency: N/A
Efficacy: 119.7 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type I - Medium
BUG Rating: B4 - U0 - G4

Input Watts (W): 225.3
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



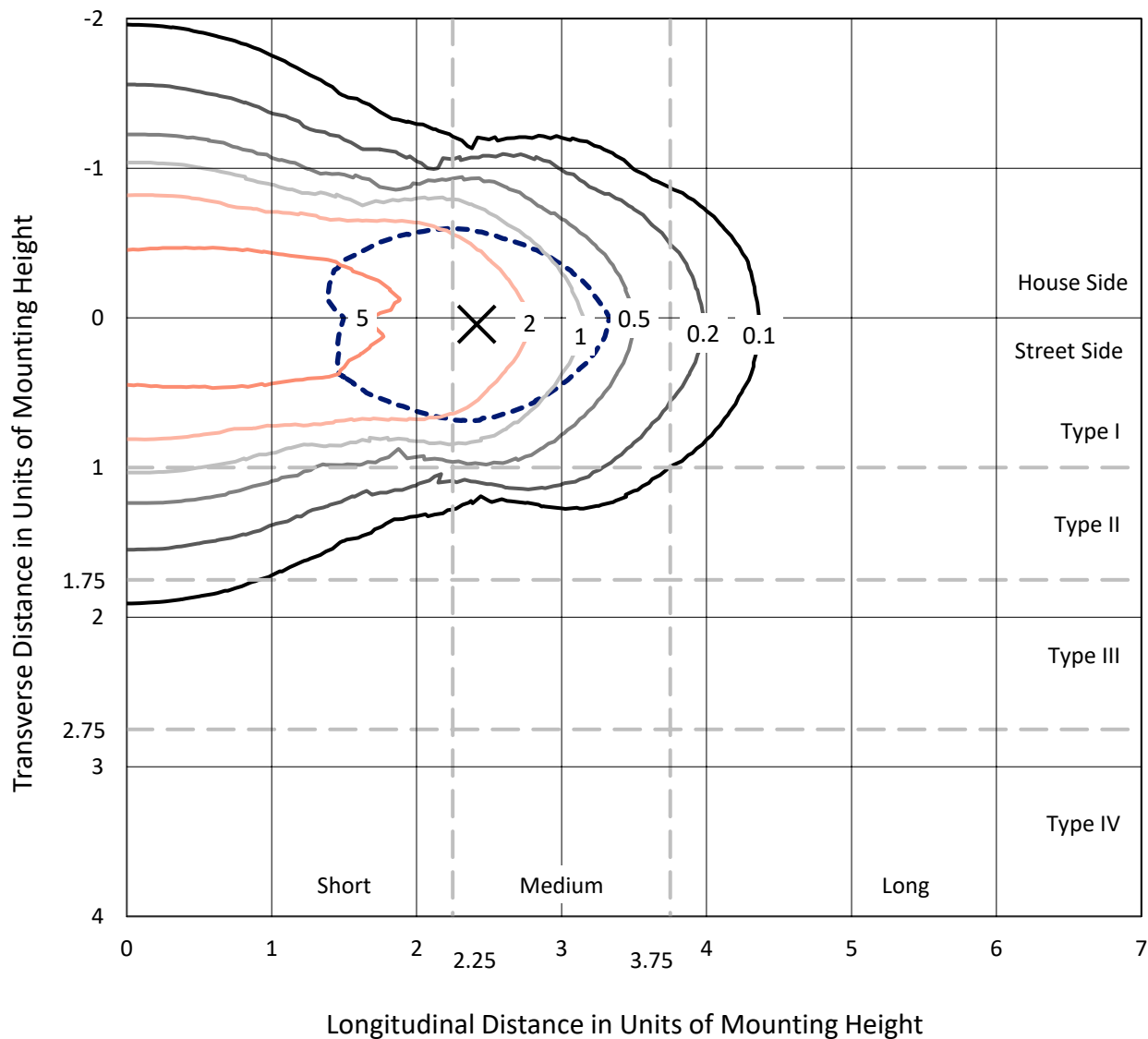
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Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd

--- 1/2 Max cd

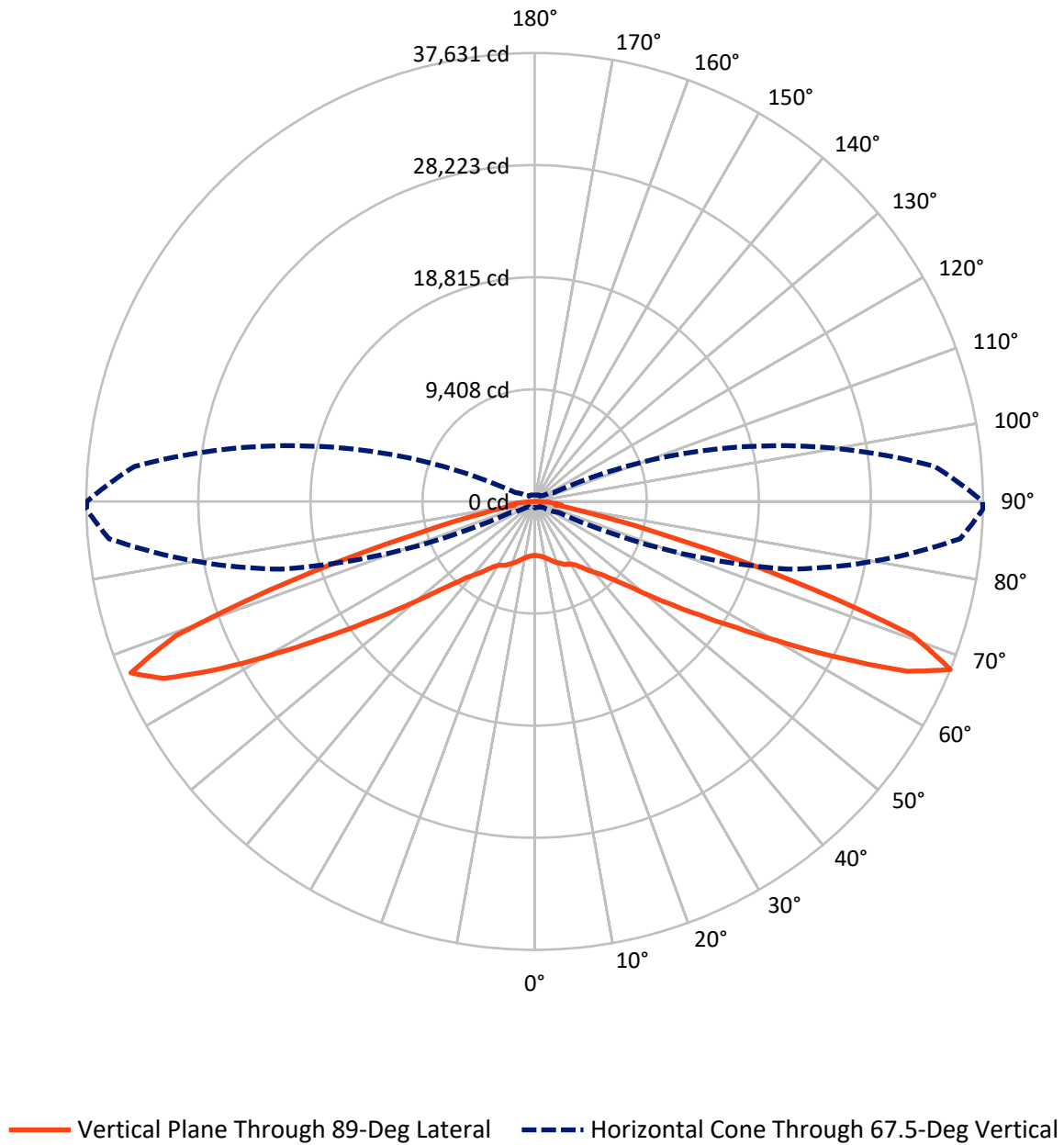


Based on 25 foot mounting height. Maximum calculated value = 7.9 fc
 Type I - Medium - N/A

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Luminous Intensity Polar Plot



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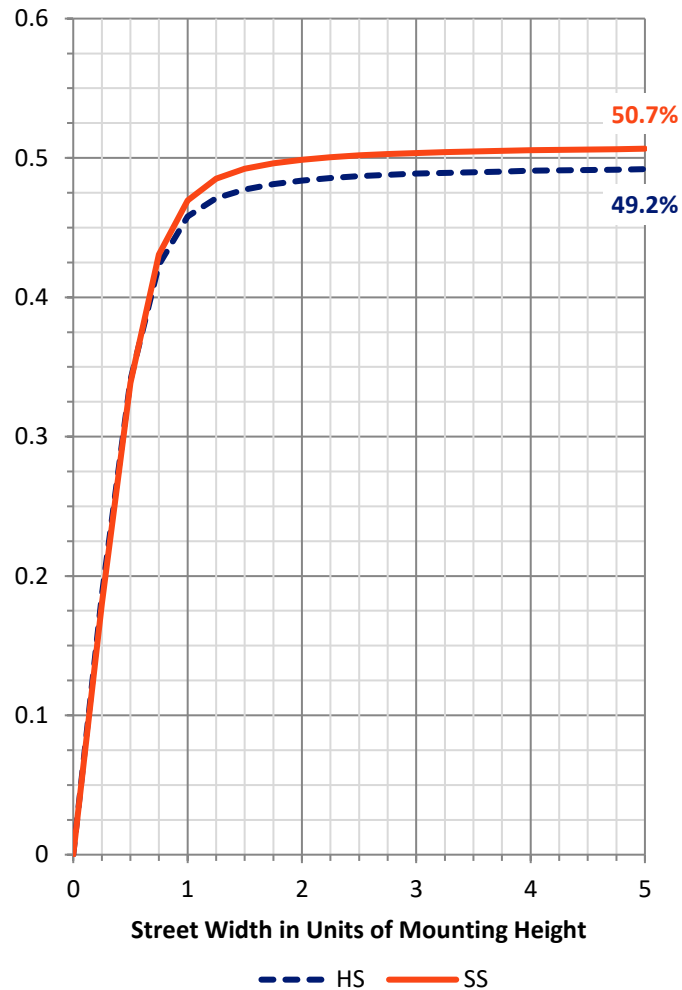
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	13371.4	0.0	13371.4
	% Fixture	49.6	0.0	49.6
Street Side	Lumens	13607.9	0.0	13607.9
	% Fixture	50.4	0.0	50.4
Total	Lumens	26979.3	0.0	26979.3
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	454.2	1.7
10°-20°	1479.0	5.5
20°-30°	2500.2	9.3
30°-40°	3431.2	12.7
40°-50°	4375.5	16.2
50°-60°	5489.8	20.3
60°-70°	6621.1	24.5
70°-80°	2395.3	8.9
80°-90°	232.9	0.9
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°	26979.3	100.0
0°-180°	26979.3	100.0

Coefficient of Utilization



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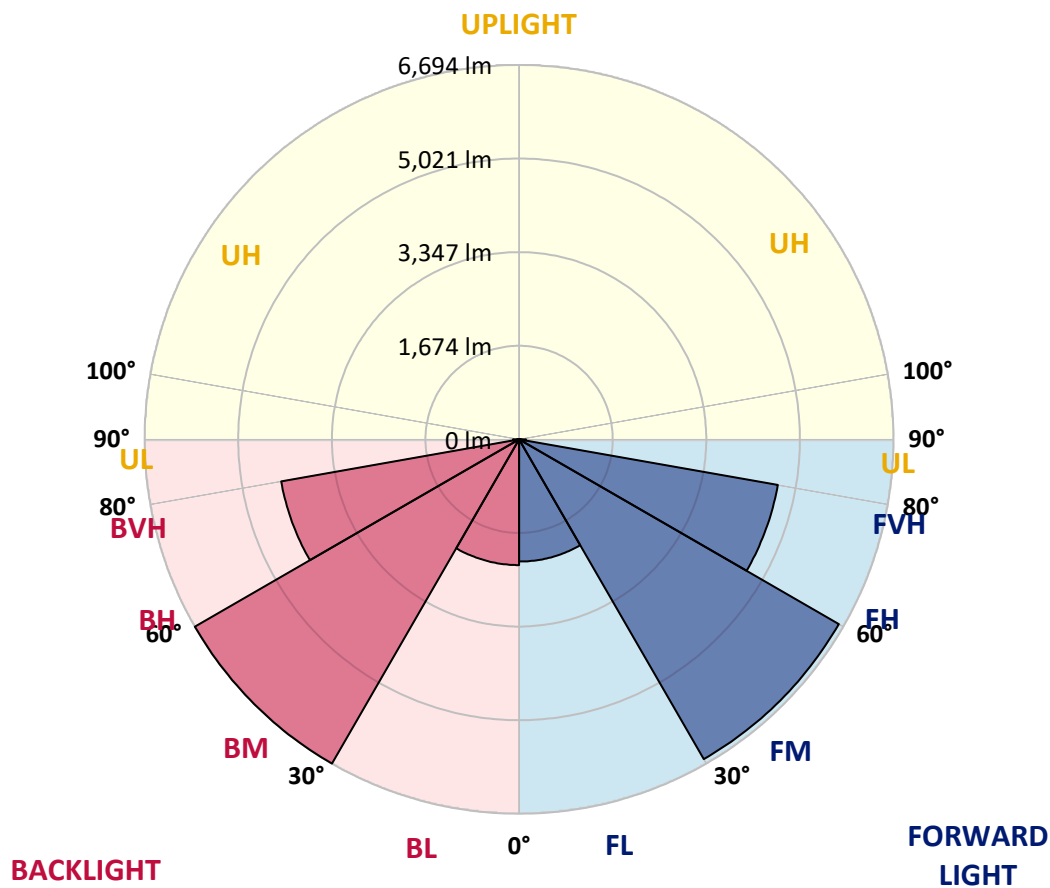
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2185.1	8.1			
FM	(30°-60°)	6602.4	24.5			
FH	(60°-80°)	4697.5	17.4			G2/5000
FVH	(80°-90°)	122.9	0.5			G2/225
BL	(0°-30°)	2248.3	8.3	B3/2500		
BM	(30°-60°)	6694.1	24.8	B4/8500		
BH	(60°-80°)	4319.0	16.0	B4/5000		G4/5000
BVH	(80°-90°)	110.0	0.4			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B4-U0-G4

Type I Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	89°
0°	4528.3	4528.3	4528.3	4528.3	4528.3	4528.3	4528.3	4528.3	4528.3	4528.3	4528.3
2.5°	4541.8	4537.9	4528.3	4557.3	4551.5	4553.4	4565.1	4557.3	4543.8	4520.5	4553.4
5°	4669.7	4667.8	4646.5	4663.9	4644.5	4631.0	4629.0	4609.6	4594.1	4568.9	4603.8
7.5°	4793.7	4791.8	4774.3	4805.3	4789.8	4774.3	4756.9	4718.1	4681.3	4644.5	4683.3
10°	4888.7	4886.7	4882.8	4927.4	4931.3	4937.1	4929.3	4863.5	4799.5	4755.0	4793.7
12.5°	4942.9	4948.7	4958.4	5039.8	5080.5	5119.2	5128.9	5074.7	4968.1	4904.2	4950.7
15°	4906.1	4917.7	4966.2	5113.4	5225.8	5313.0	5349.8	5305.3	5167.7	5061.1	5113.4
17.5°	4729.8	4739.5	4834.4	5059.2	5307.2	5508.7	5568.8	5541.6	5388.6	5258.7	5309.1
20°	4485.6	4506.9	4609.6	4923.5	5293.6	5644.3	5805.2	5795.5	5628.8	5429.3	5489.3
22.5°	4264.7	4289.9	4398.4	4745.3	5202.6	5679.2	6043.5	6068.7	5847.8	5599.8	5648.2
25°	4016.7	4040.0	4179.5	4534.1	5045.6	5652.1	6246.9	6361.3	6095.8	5795.5	5840.0
27.5°	3762.9	3780.3	3917.9	4295.7	4840.2	5601.7	6407.8	6682.9	6339.9	5931.1	5962.1
30°	3540.1	3563.3	3689.3	4057.4	4615.5	5501.0	6539.5	7025.9	6620.9	6084.2	6109.4
32.5°	3325.0	3344.4	3481.9	3823.0	4377.1	5345.9	6657.7	7428.9	7037.5	6369.0	6369.0
35°	3053.7	3088.6	3243.6	3598.2	4152.4	5140.6	6743.0	7897.8	7607.2	6789.5	6791.4
37.5°	2803.8	2823.1	2985.9	3344.4	3916.0	4908.0	6750.7	8384.2	8328.0	7324.3	7328.1
40°	2518.9	2544.1	2718.5	3073.1	3644.7	4663.9	6677.1	8837.6	9083.6	7874.6	7853.2
42.5°	2230.2	2267.0	2433.7	2780.5	3352.1	4365.5	6481.4	9269.7	10042.8	8512.0	8459.7
45°	1951.2	1974.5	2141.1	2468.5	3016.9	4009.0	6167.5	9684.3	11182.1	9480.9	9405.3
47.5°	1637.3	1647.0	1819.4	2133.3	2670.1	3611.8	5718.0	10054.4	12433.8	10763.6	10633.8
50°	1358.3	1371.8	1507.5	1776.8	2245.7	3140.9	5158.0	10271.4	14028.5	12513.3	12288.5
52.5°	1098.6	1112.2	1220.7	1435.8	1856.3	2604.2	4464.3	10221.0	15646.4	14685.4	14357.9
55°	887.4	897.1	970.8	1139.3	1461.0	2071.3	3644.7	9769.6	17442.6	17522.1	16816.8
57.5°	749.9	753.7	804.1	906.8	1141.3	1596.6	2813.4	8703.9	19326.0	21141.6	19982.9
60°	670.4	672.4	695.6	759.6	901.0	1218.8	2061.6	7006.5	21277.2	25669.8	24081.0
62.5°	620.0	620.0	639.4	676.2	747.9	937.8	1515.2	5032.0	22678.1	30597.2	29018.1
65°	571.6	571.6	585.2	616.2	654.9	765.4	1137.4	3245.5	23366.0	34716.6	34365.9
67.5°	509.6	511.5	521.2	554.2	589.0	639.4	862.2	2195.3	21937.9	35856.0	37630.9
70°	451.5	453.4	467.0	488.3	517.3	552.2	674.3	1513.3	15968.1	29862.9	33647.1
72.5°	387.5	395.3	405.0	428.2	445.7	470.8	550.3	980.4	9291.0	19209.7	22242.1
75°	317.8	327.5	339.1	362.3	374.0	383.7	453.4	699.5	4470.1	9734.7	11085.2
77.5°	246.1	255.8	269.3	290.6	298.4	310.0	346.8	505.7	2141.1	4315.1	4652.3
80°	164.7	168.6	180.2	205.4	219.0	226.7	255.8	344.9	930.1	1732.2	1716.7
82.5°	100.8	102.7	106.6	122.1	127.9	135.6	166.6	211.2	443.7	1968.6	2257.3
85°	36.8	34.9	32.9	42.6	50.4	58.1	77.5	106.6	193.8	1352.5	1513.3
87.5°	0.0	0.0	0.0	1.9	3.9	3.9	7.8	15.5	46.5	505.7	346.8
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-SA4F-830-U-T1-W

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	4528.3	4528.3	4528.3	4528.3	4528.3	4528.3	4528.3	4528.3	4528.3	4528.3	4528.3
2.5°	4543.8	4522.4	4549.6	4568.9	4611.6	4627.1	4631.0	4617.4	4617.4	4594.1	4598.0
5°	4596.1	4582.5	4627.1	4660.0	4722.0	4745.3	4760.8	4751.1	4756.9	4741.4	4745.3
7.5°	4675.5	4663.9	4741.4	4805.3	4869.3	4896.4	4910.0	4902.2	4904.2	4884.8	4890.6
10°	4786.0	4789.8	4882.8	4966.2	5051.4	5078.5	5084.4	5061.1	5041.7	5006.9	5008.8
12.5°	4937.1	4956.5	5088.2	5181.2	5268.4	5307.2	5264.6	5179.3	5099.9	5039.8	5032.0
15°	5101.8	5136.7	5326.6	5444.8	5539.7	5520.3	5394.4	5202.6	5045.6	4956.5	4939.0
17.5°	5299.4	5351.8	5590.1	5731.5	5812.9	5688.9	5425.4	5138.6	4919.7	4799.5	4776.3
20°	5485.5	5568.8	5869.1	6053.2	6062.9	5783.8	5411.8	5008.8	4733.6	4586.4	4555.4
22.5°	5656.0	5762.5	6161.7	6396.1	6270.2	5826.5	5328.5	4824.7	4508.9	4336.4	4309.3
25°	5842.0	5993.1	6502.7	6721.7	6477.5	5809.0	5154.1	4596.1	4237.6	4061.3	4041.9
27.5°	5969.9	6159.7	6845.7	7054.9	6648.0	5710.2	4929.3	4346.1	3989.6	3823.0	3795.8
30°	6117.1	6359.3	7223.5	7417.3	6752.7	5564.9	4689.1	4113.6	3759.0	3578.8	3559.4
32.5°	6384.5	6688.7	7692.4	7800.9	6785.6	5384.7	4458.5	3888.8	3518.7	3338.5	3311.4
35°	6814.7	7171.2	8351.2	8229.1	6760.4	5187.1	4239.6	3625.3	3272.7	3104.1	3077.0
37.5°	7357.2	7800.9	9085.6	8614.7	6690.7	4970.0	3979.9	3404.4	3051.8	2881.3	2865.8
40°	7862.9	8409.3	9909.1	8948.0	6549.2	4702.6	3730.0	3173.8	2813.4	2633.2	2598.4
42.5°	8496.5	9223.2	10862.4	9236.7	6316.7	4382.9	3449.0	2889.0	2515.1	2352.3	2309.7
45°	9459.5	10362.5	11970.7	9513.8	5969.9	3989.6	3096.3	2542.2	2187.6	2021.0	1988.0
47.5°	10660.9	11786.6	13172.1	9678.5	5442.8	3574.9	2697.2	2176.0	1821.4	1633.4	1617.9
50°	12348.6	13858.0	14460.6	9649.4	4853.8	3082.8	2247.7	1740.0	1443.5	1307.9	1286.6
52.5°	14404.4	16458.3	15853.7	9300.7	4227.9	2522.8	1751.6	1366.0	1145.1	1048.3	1030.8
55°	16983.4	19572.1	17320.5	8552.7	3437.4	1931.8	1375.7	1077.3	926.2	868.1	860.3
57.5°	20176.6	23604.3	18733.1	7293.3	2584.8	1474.5	1059.9	889.4	817.7	782.8	780.9
60°	24391.0	27884.5	19959.6	5667.6	1850.4	1127.7	875.8	794.4	738.2	715.0	713.1
62.5°	29401.7	31771.4	20723.0	3859.8	1391.2	899.1	771.2	720.8	687.9	674.3	672.4
65°	34551.9	34228.4	20358.8	2528.6	1056.0	763.4	691.7	664.6	635.5	622.0	622.0
67.5°	37594.0	33709.1	17562.7	1755.5	837.1	670.4	623.9	598.7	550.3	538.7	538.7
70°	33298.3	27314.9	11511.5	1284.7	678.2	587.1	542.5	507.7	488.3	476.7	474.7
72.5°	22023.2	17773.9	6121.0	891.3	565.8	499.9	459.2	445.7	422.4	410.8	408.8
75°	10961.2	9335.5	3137.0	643.3	470.8	401.1	383.7	377.8	358.5	343.0	339.1
77.5°	4568.9	4156.2	1462.9	467.0	358.5	323.6	308.1	308.1	286.8	269.3	261.6
80°	1722.6	1534.6	691.7	319.7	265.5	240.3	230.6	222.8	205.4	184.1	172.4
82.5°	2303.9	1505.5	339.1	199.6	174.4	155.0	141.4	135.6	125.9	116.3	108.5
85°	1492.0	1069.6	153.1	102.7	87.2	65.9	58.1	54.3	48.4	42.6	38.8
87.5°	304.2	358.5	46.5	19.4	11.6	5.8	5.8	1.9	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

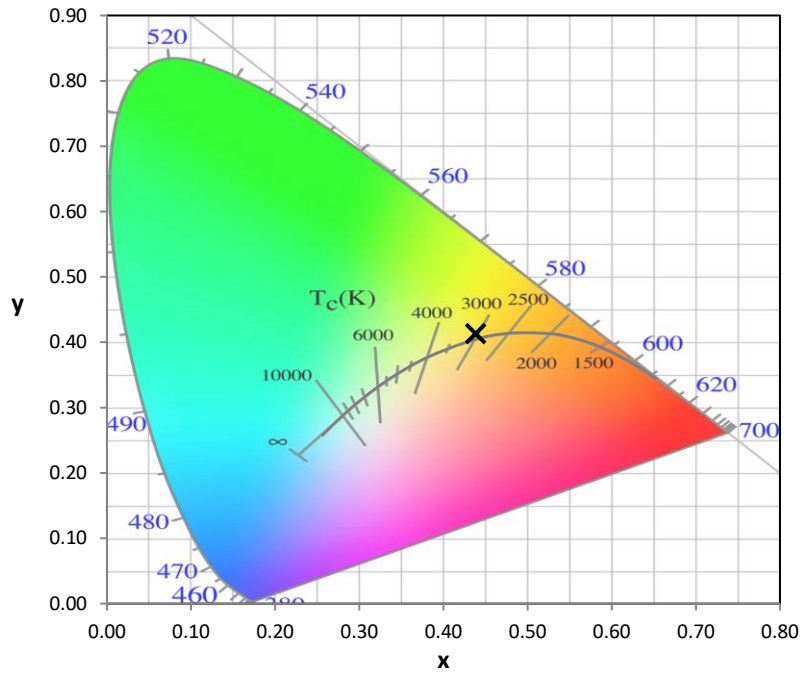
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

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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

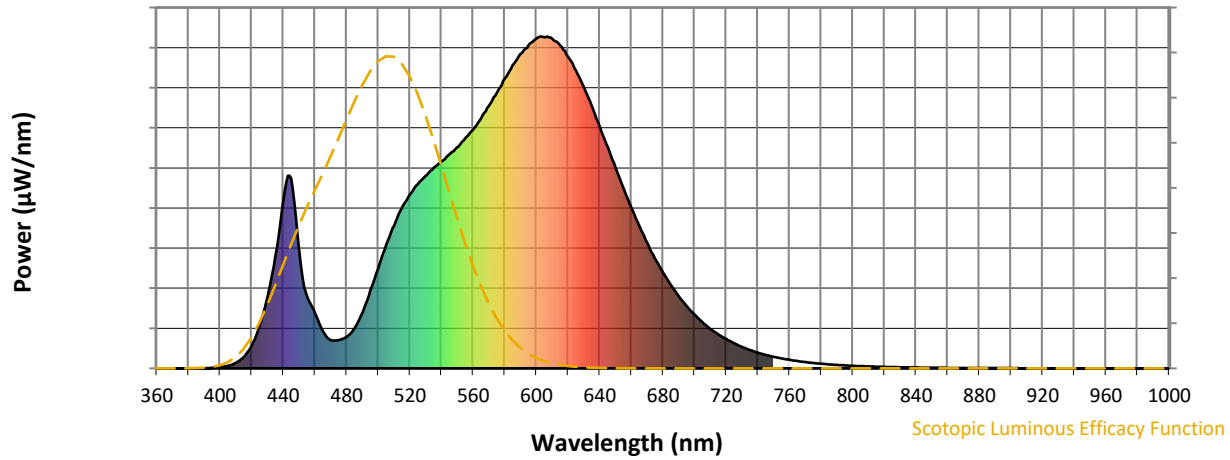


Photopic Lumens: NR

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



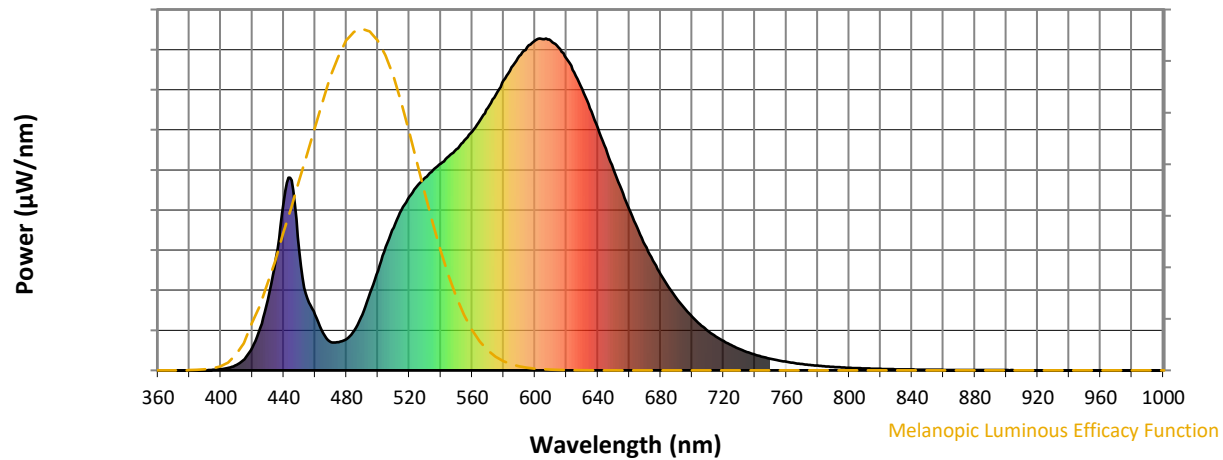
Scotopic Lumens: NR

S/P: 1.27

λ (nm)	Power $\text{W}^\wedge/\text{nm}$	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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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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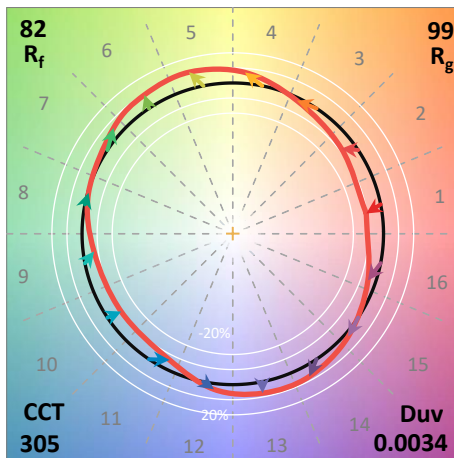
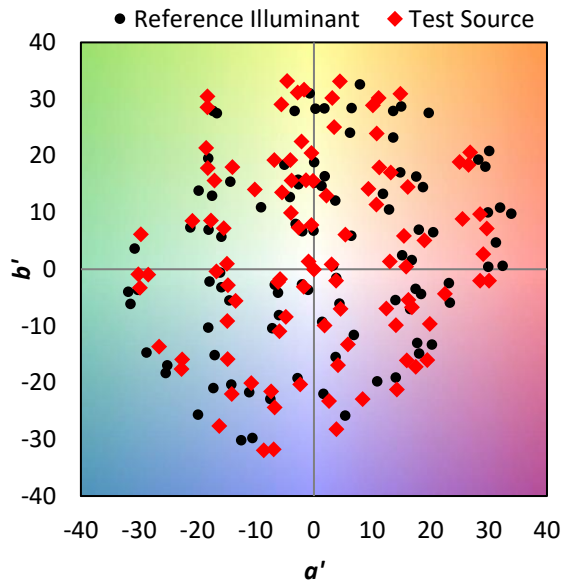
TM-30-18

Summary

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



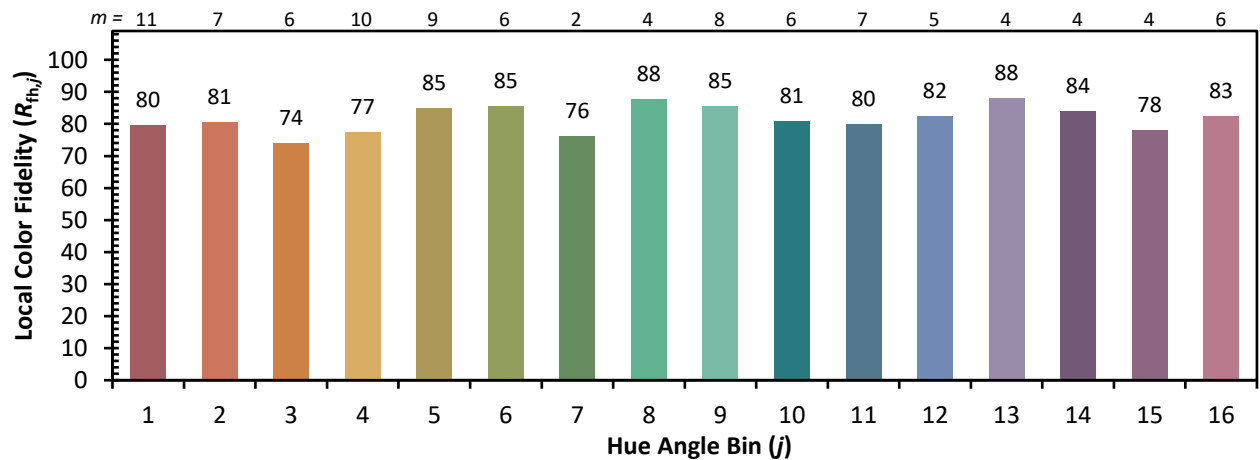
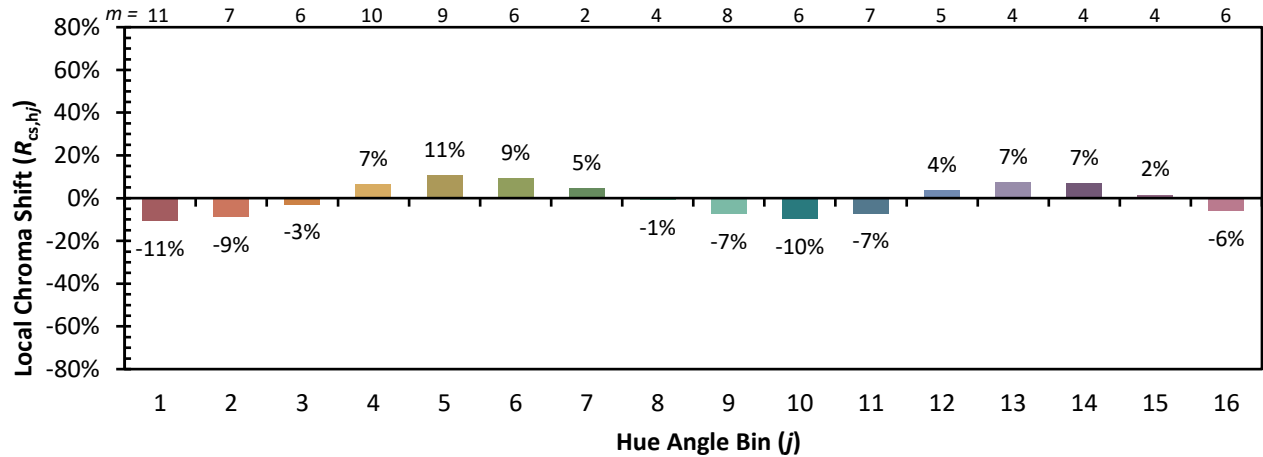
Color Vector Graphics

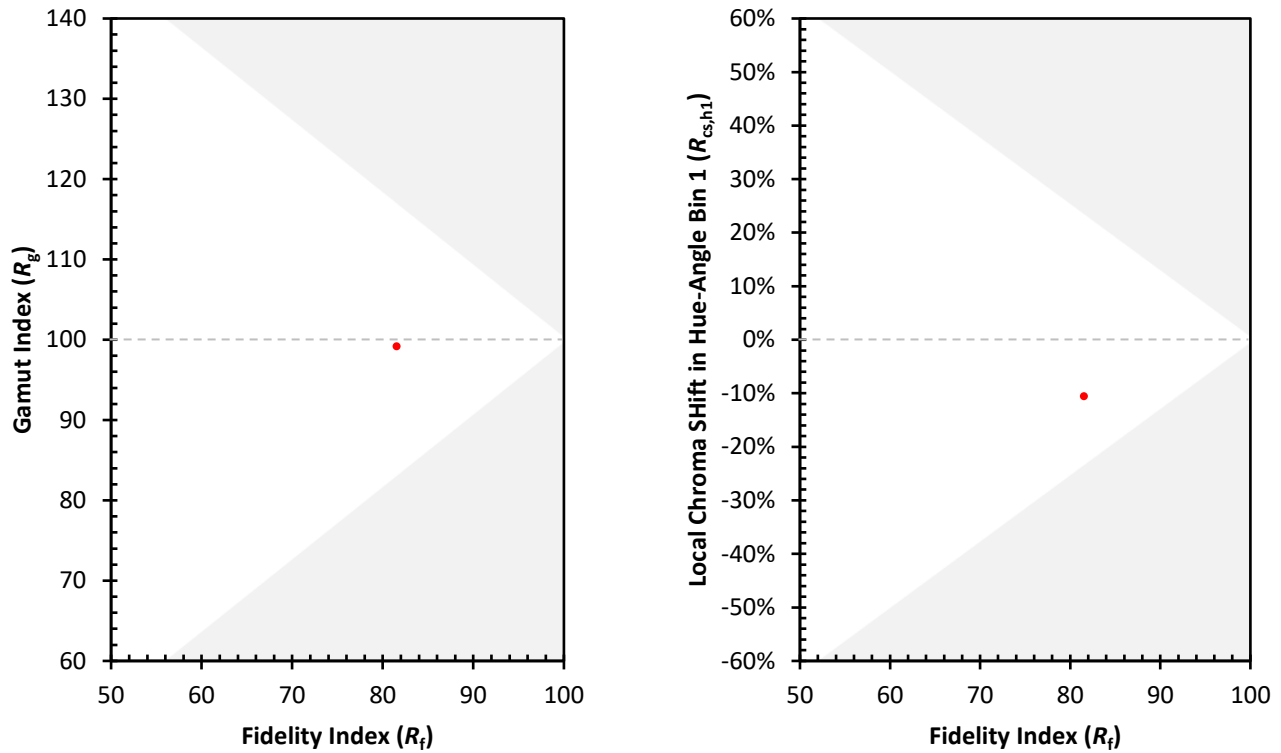


Individual Sample Fidelity Index ($R_{f,i}$)

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)