

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: P641428

Luminaire Tested: GWS-SA5F-830-U-5NQ-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P641428
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-7)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA5F-830-U-5NQ-W
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND
TYPE V NARROW OPTICS
Light Source: (80) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 34655.1 lumens
Efficiency: N/A
Efficacy: 111.7 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type V - Short
BUG Rating: B5 - U0 - G2

Input Watts (W): 310.3
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



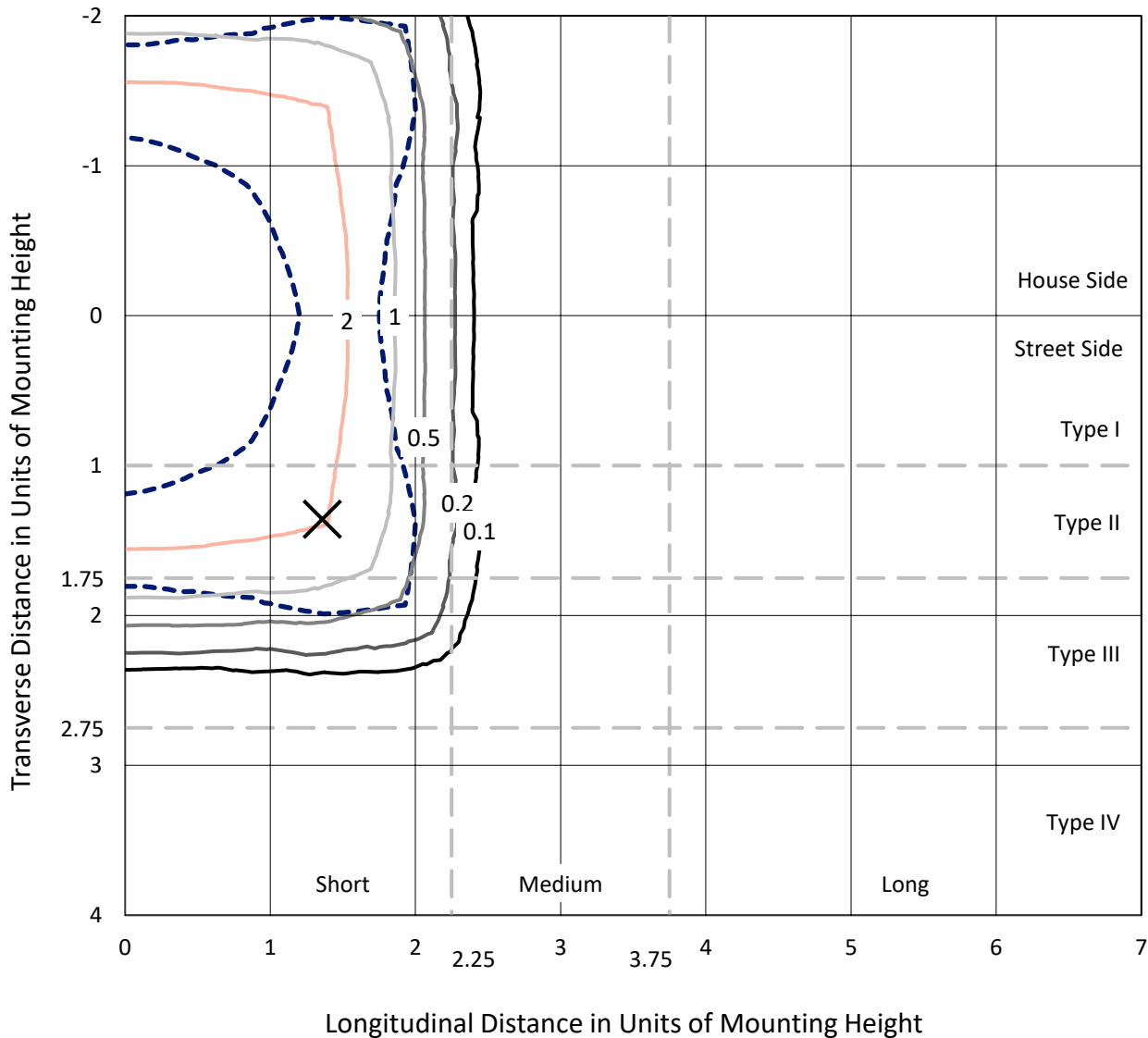
REPORT NUMBER: P641428

CATALOG NUMBER: GWS-SA5F-830-U-5NQ-W

Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd

--- 1/2 Max cd

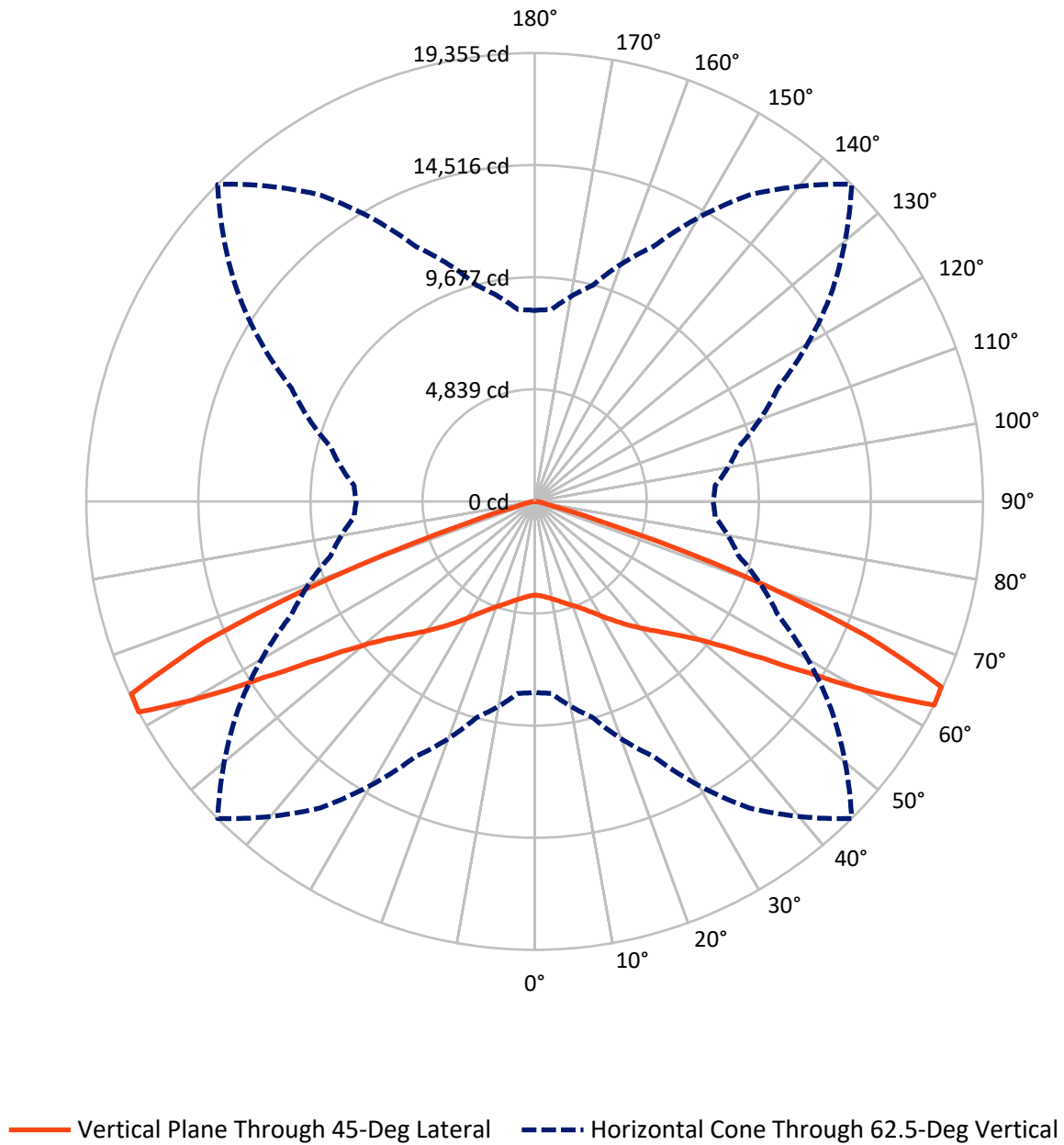


Based on 30 foot mounting height. Maximum calculated value = 4.5 fc
 Type V - Short - N/A

REPORT NUMBER: P641428

CATALOG NUMBER: GWS-SA5F-830-U-5NQ-W

Luminous Intensity Polar Plot



REPORT NUMBER: P641428

CATALOG NUMBER: GWS-SA5F-830-U-5NQ-W

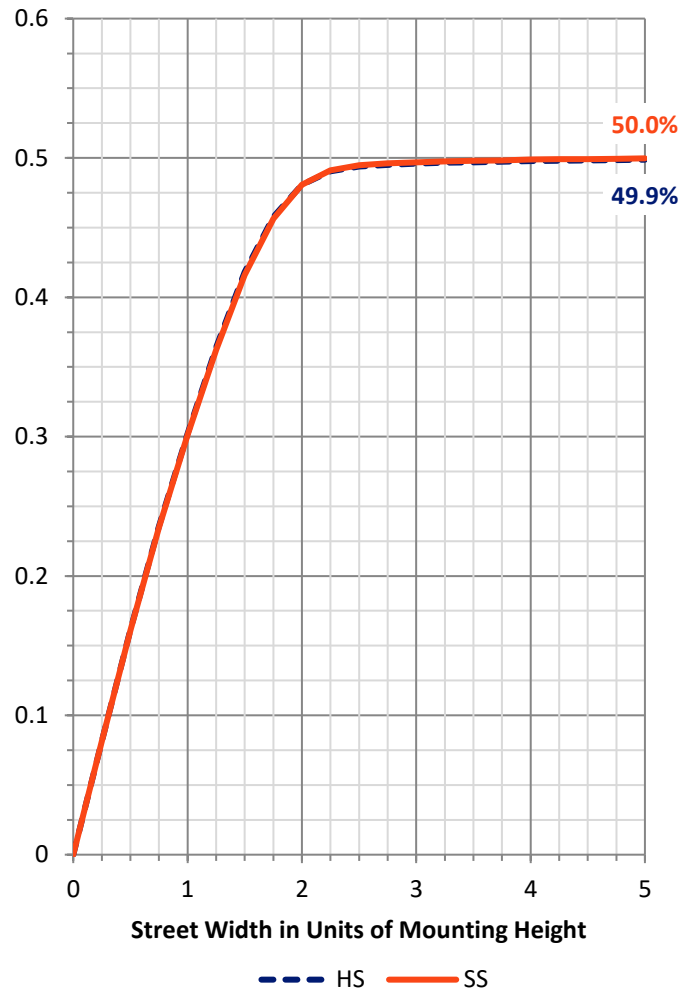
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	17327.6	0.0	17327.6
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	17327.6	0.0	17327.6
	% Fixture	50.0	0.0	50.0
Total	Lumens	34655.1	0.0	34655.1
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	396.7	1.1
10°-20°	1279.2	3.7
20°-30°	2420.1	7.0
30°-40°	4073.4	11.8
40°-50°	6508.1	18.8
50°-60°	10490.6	30.3
60°-70°	8559.2	24.7
70°-80°	831.2	2.4
80°-90°	96.7	0.3
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°	34655.1	100.0
0°-180°	34655.1	100.0

Coefficient of Utilization



REPORT NUMBER: P641428

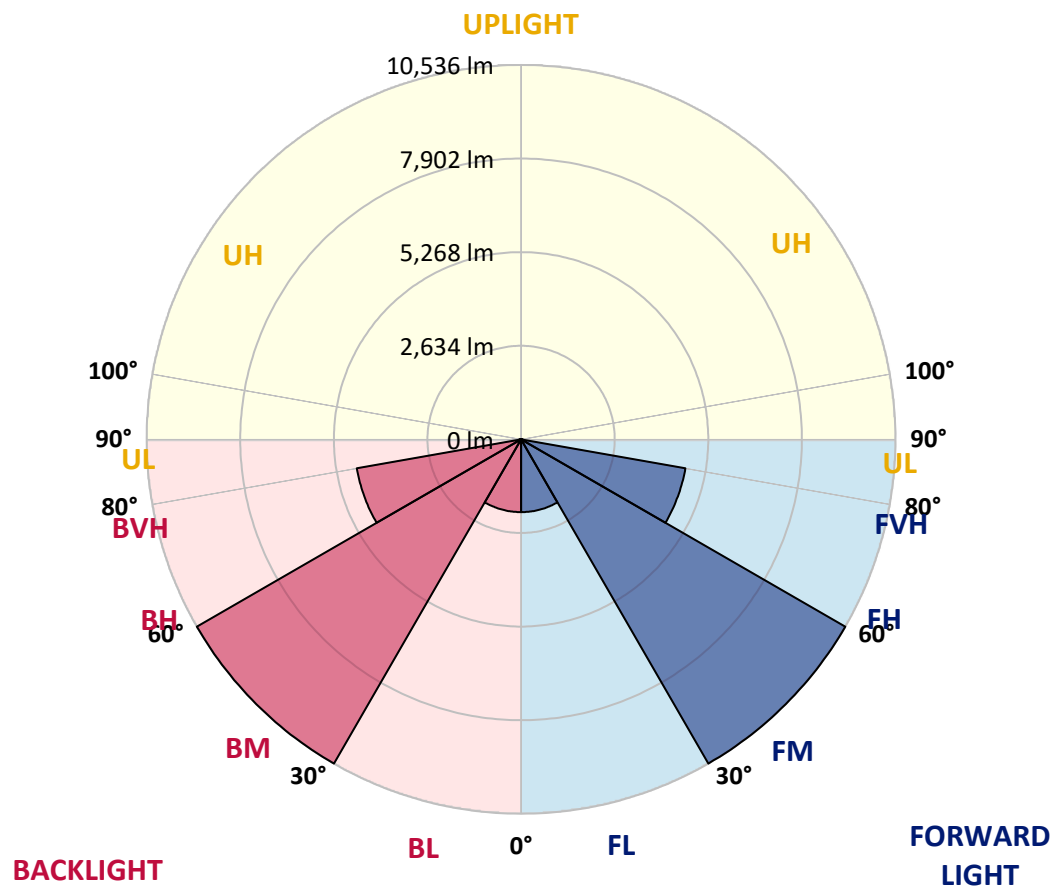
CATALOG NUMBER: GWS-SA5F-830-U-5NQ-W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2048.0	5.9			
FM	(30°-60°)	10536.0	30.4			
FH	(60°-80°)	4695.2	13.5			G2/5000
FVH	(80°-90°)	48.4	0.1			G1/100
BL	(0°-30°)	2048.0	5.9	B3/2500		
BM	(30°-60°)	10536.0	30.4	B5		
BH	(60°-80°)	4695.2	13.5	B4/5000		G2/5000
BVH	(80°-90°)	48.4	0.1			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B5-U0-G2

Type V Short



REPORT NUMBER: P641428

CATALOG NUMBER: GWS-SA5F-830-U-5NQ-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	4043.0	4043.0	4043.0	4043.0	4043.0	4043.0	4043.0	4043.0	4043.0	4043.0	4043.0
2.5°	4038.2	4038.2	4047.7	4054.9	4050.1	4069.1	4066.8	4062.0	4059.6	4052.5	4073.9
5°	4092.9	4092.9	4100.0	4107.2	4095.3	4119.0	4109.5	4104.8	4102.4	4092.9	4111.9
7.5°	4154.7	4161.8	4164.2	4176.1	4169.0	4195.1	4188.0	4178.5	4173.7	4161.8	4178.5
10°	4223.6	4228.4	4230.8	4252.1	4254.5	4285.4	4278.3	4266.4	4256.9	4245.0	4268.8
12.5°	4316.3	4318.7	4325.8	4352.0	4359.1	4382.9	4380.5	4363.9	4352.0	4335.3	4361.5
15°	4435.2	4437.5	4449.4	4475.6	4487.5	4516.0	4506.5	4480.3	4463.7	4444.7	4466.1
17.5°	4558.8	4568.3	4580.1	4606.3	4622.9	4656.2	4644.3	4615.8	4601.5	4582.5	4596.8
20°	4718.0	4720.4	4727.5	4756.0	4767.9	4805.9	4808.3	4779.8	4772.7	4753.7	4775.0
22.5°	4893.9	4896.3	4903.4	4934.3	4955.7	4979.5	4993.7	4977.1	4965.2	4941.4	4967.6
25°	5088.8	5112.6	5119.7	5157.7	5181.5	5195.7	5212.4	5205.3	5188.6	5160.1	5172.0
27.5°	5362.1	5366.9	5378.8	5421.5	5435.8	5450.1	5466.7	5469.1	5445.3	5412.0	5428.7
30°	5673.5	5671.1	5697.3	5730.5	5742.4	5754.3	5778.1	5792.3	5761.4	5725.8	5742.4
32.5°	5992.0	6020.5	6053.8	6084.7	6077.5	6082.3	6120.3	6146.5	6103.7	6039.5	6053.8
35°	6350.9	6369.9	6412.7	6457.8	6448.3	6441.2	6465.0	6491.1	6431.7	6348.5	6369.9
37.5°	6719.3	6747.8	6812.0	6866.7	6852.4	6819.1	6845.3	6873.8	6816.7	6721.7	6712.2
40°	7130.5	7175.6	7268.3	7313.5	7275.5	7211.3	7256.5	7325.4	7268.3	7159.0	7132.9
42.5°	7613.0	7667.6	7760.3	7829.3	7746.1	7641.5	7717.6	7817.4	7803.1	7658.1	7613.0
45°	8209.6	8245.2	8359.3	8392.6	8269.0	8124.0	8261.9	8414.0	8378.3	8221.4	8162.0
47.5°	8858.4	8913.1	9012.9	9074.7	8875.1	8694.4	8887.0	9091.4	9053.3	8906.0	8837.0
50°	9685.6	9756.9	9887.6	9939.9	9664.2	9457.4	9704.6	9963.7	9890.0	9692.7	9602.4
52.5°	10586.4	10643.4	10866.9	10971.4	10712.4	10488.9	10705.2	10959.6	10802.7	10541.2	10420.0
55°	11380.3	11437.3	11765.3	12112.3	12100.4	11945.9	12055.3	12060.0	11634.6	11202.0	11073.6
57.5°	11551.4	11608.4	12233.5	13141.5	13783.2	13961.5	13640.6	12965.6	11893.6	11135.4	10990.5
60°	10638.7	10702.9	11696.4	13355.4	15466.0	16656.8	15178.4	12946.6	11092.7	10065.9	9928.0
62.5°	8242.8	8311.8	9647.5	12138.5	16145.8	19354.5	15625.3	11584.7	9124.6	7824.5	7703.3
65°	3936.0	3936.0	5633.1	8706.3	14791.0	19290.3	14332.3	8570.8	5492.8	4218.9	4114.3
67.5°	974.5	979.3	1449.9	3389.4	10061.1	15394.7	10225.1	4114.3	1934.7	1369.1	1333.4
70°	608.5	606.1	672.6	917.5	3520.1	9343.3	4180.8	1240.7	786.7	694.0	689.3
72.5°	473.0	473.0	506.3	587.1	922.2	3182.6	1219.3	689.3	570.4	513.4	513.4
75°	373.2	373.2	396.9	439.7	544.3	820.0	648.9	511.0	442.1	404.1	399.3
77.5°	278.1	282.8	301.9	330.4	370.8	461.1	411.2	385.0	344.6	316.1	306.6
80°	180.6	187.8	211.5	228.2	242.4	304.2	268.6	280.5	261.5	228.2	223.4
82.5°	97.4	99.8	128.3	133.1	137.9	166.4	171.1	178.3	185.4	145.0	135.5
85°	35.7	35.7	42.8	49.9	54.7	59.4	80.8	99.8	104.6	83.2	80.8
87.5°	7.1	7.1	7.1	4.8	4.8	4.8	14.3	26.1	42.8	33.3	33.3
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.

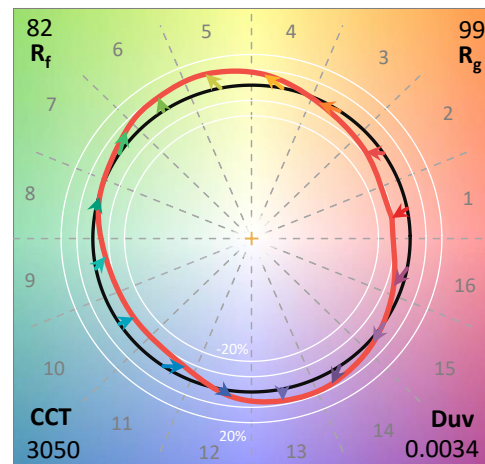
Test Information

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

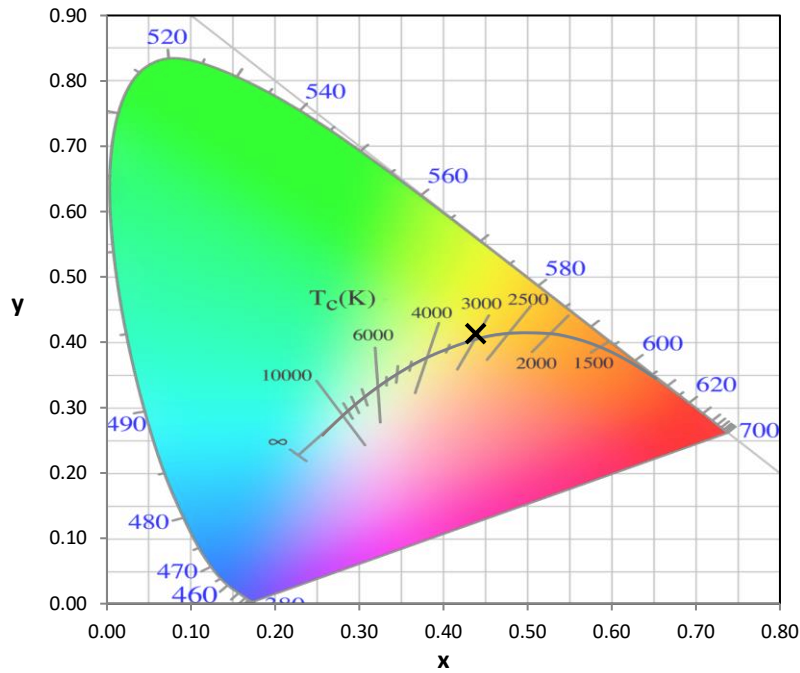
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

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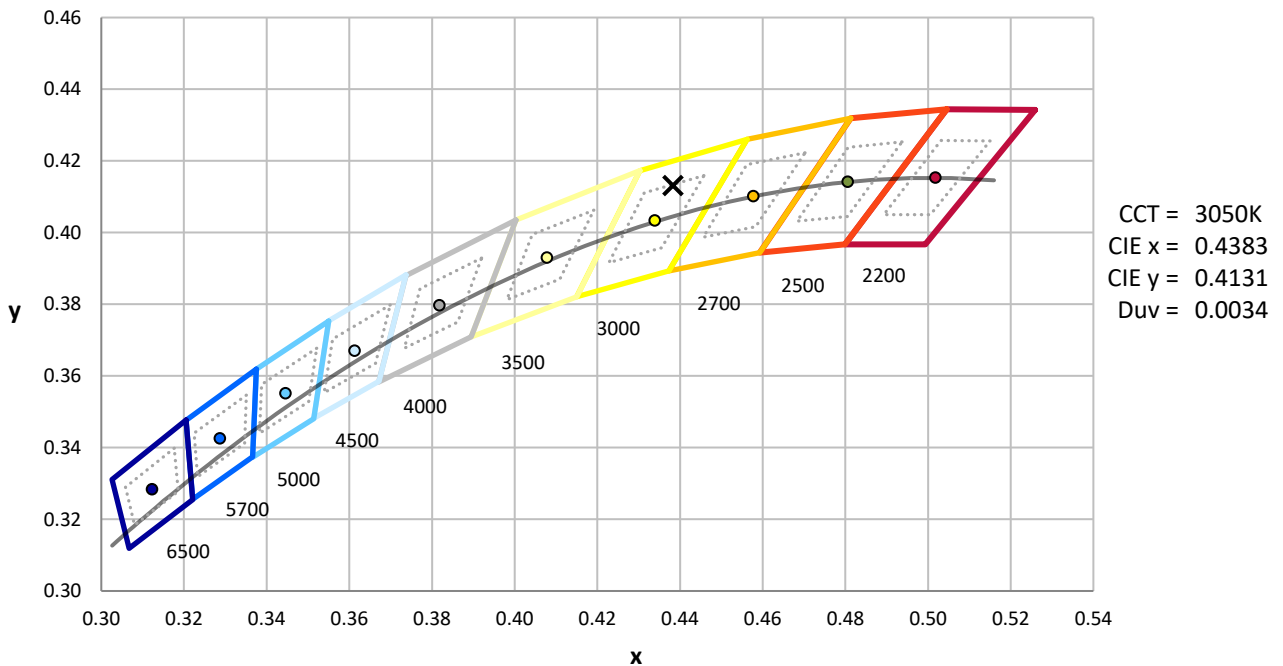
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

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CIE 1931 Chromaticity Diagram



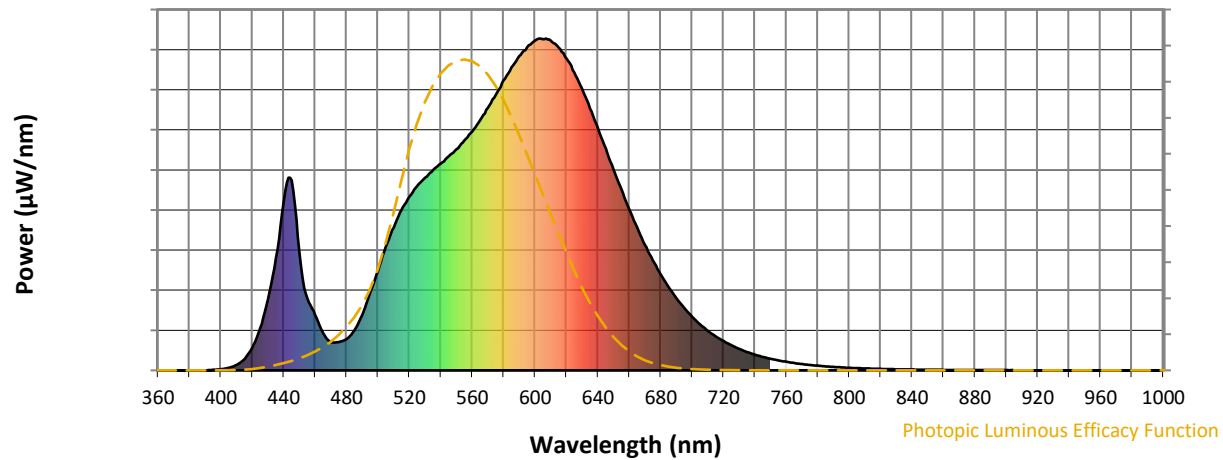
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

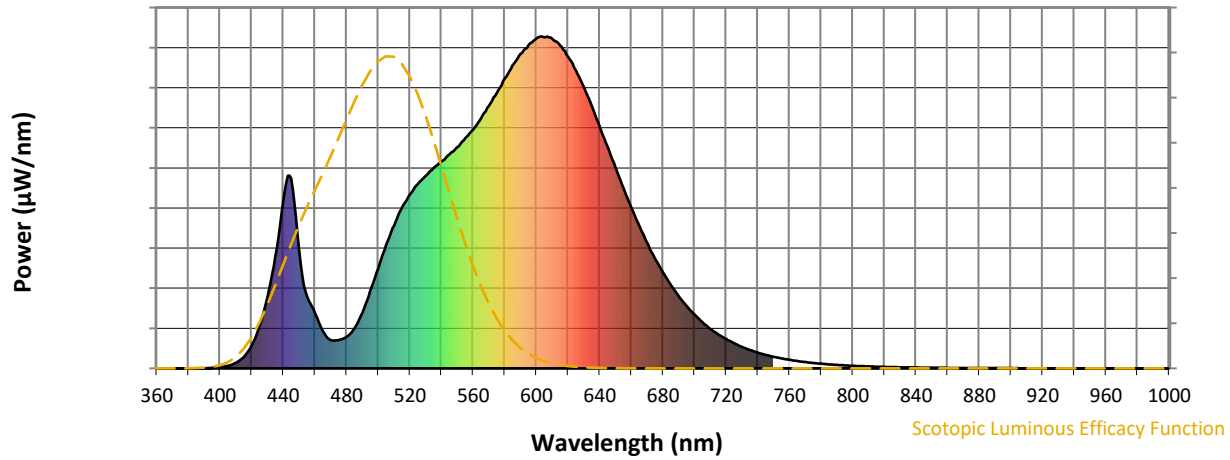


Photopic Lumens: NR

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



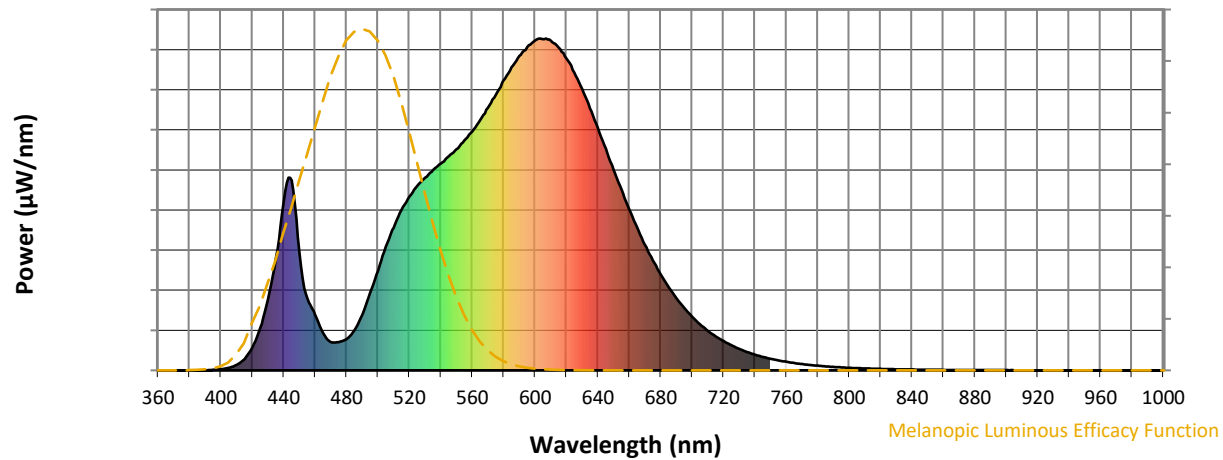
Scotopic Lumens: NR

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

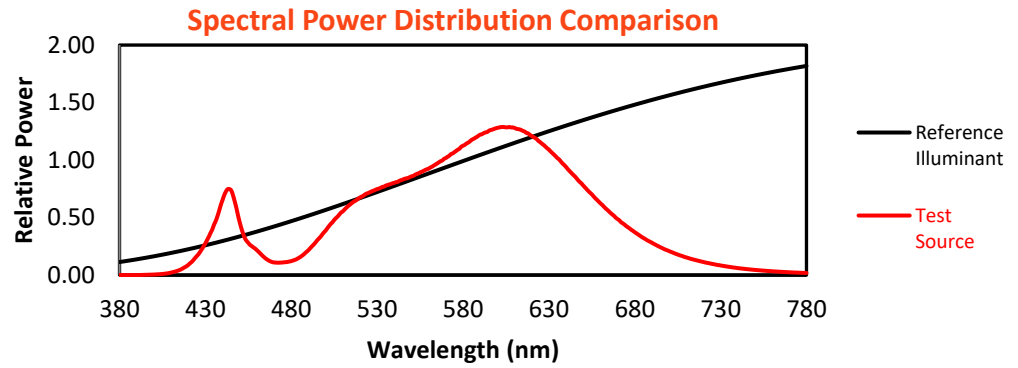
λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)
360	0	NR	490	168	NR	620	940	NR	750	35	NR	880	1	NR
365	0	NR	495	233	NR	625	897	NR	755	30	NR	885	1	NR
370	0	NR	500	300	NR	630	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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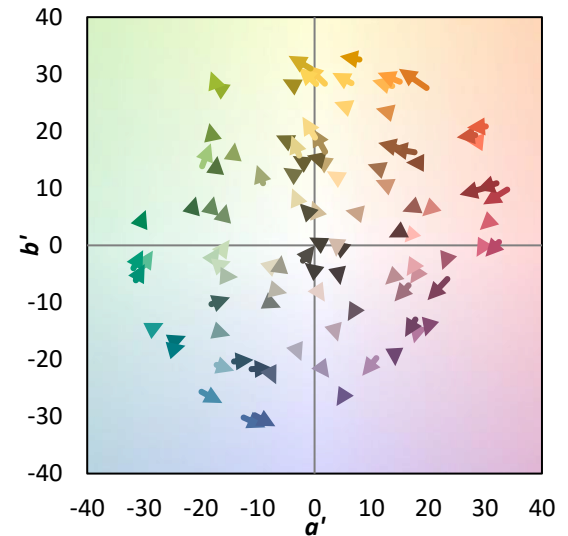
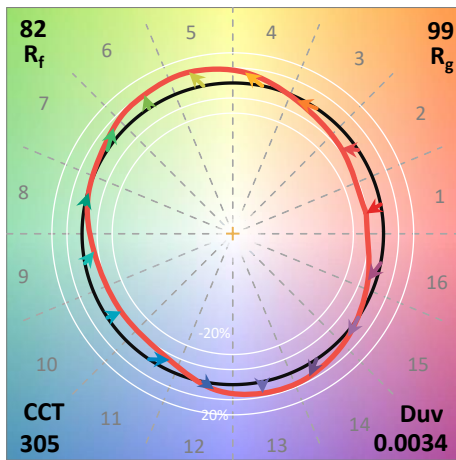
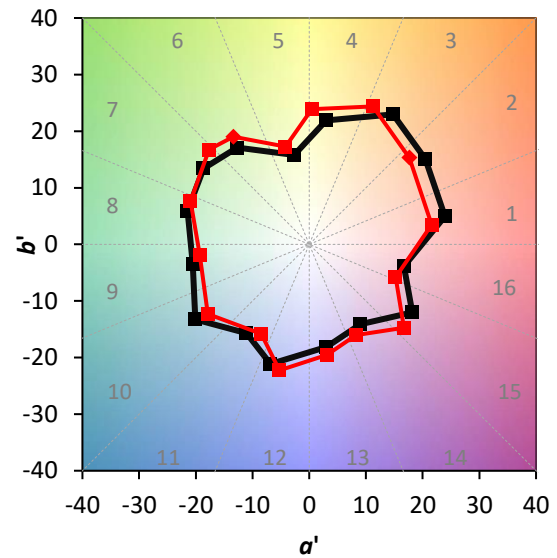
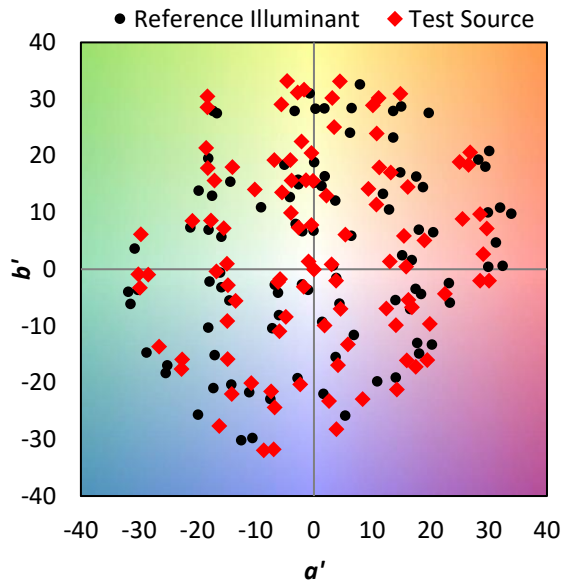
TM-30-18

Summary

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

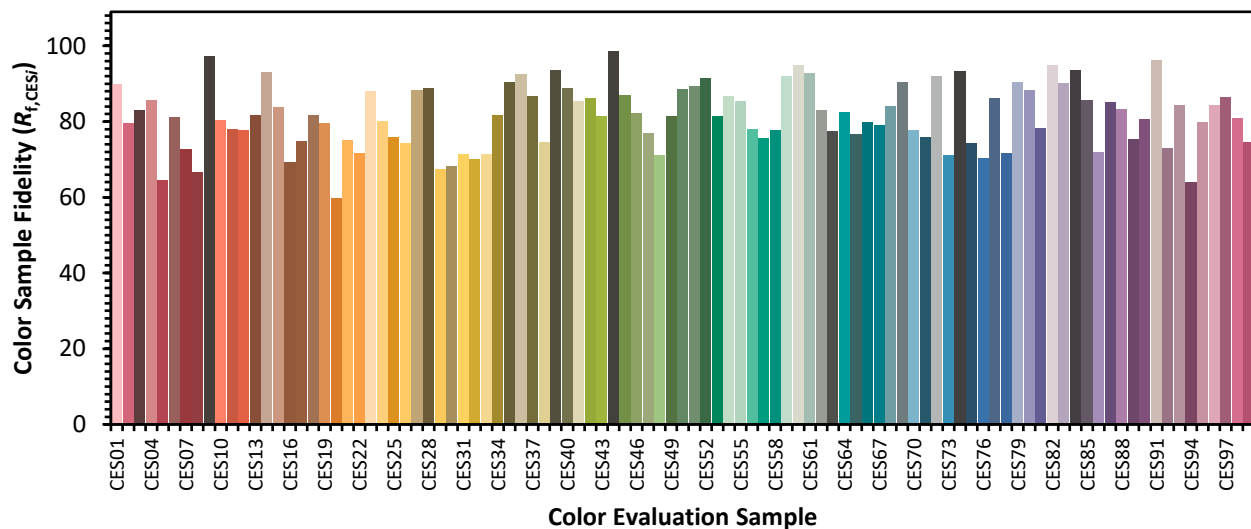


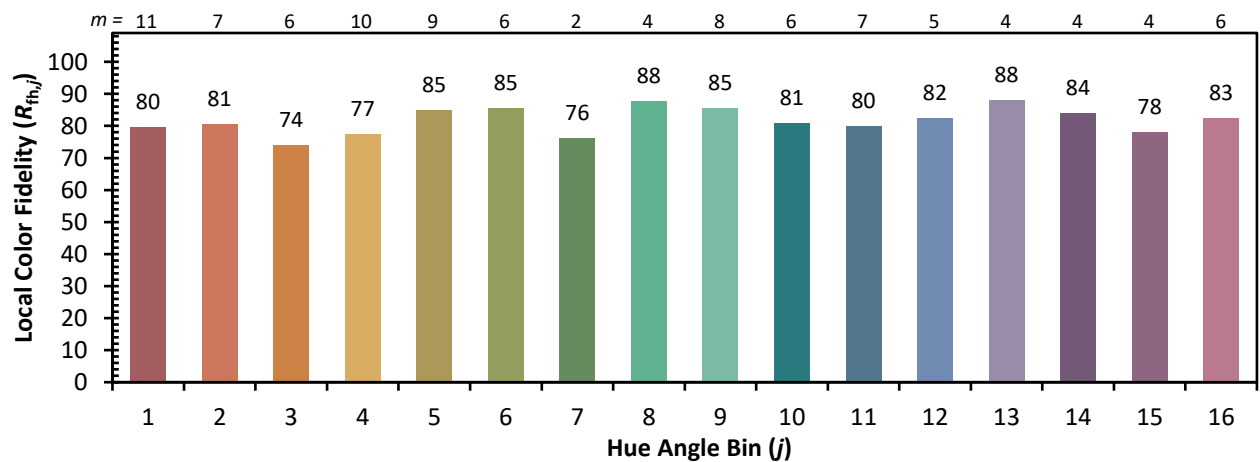
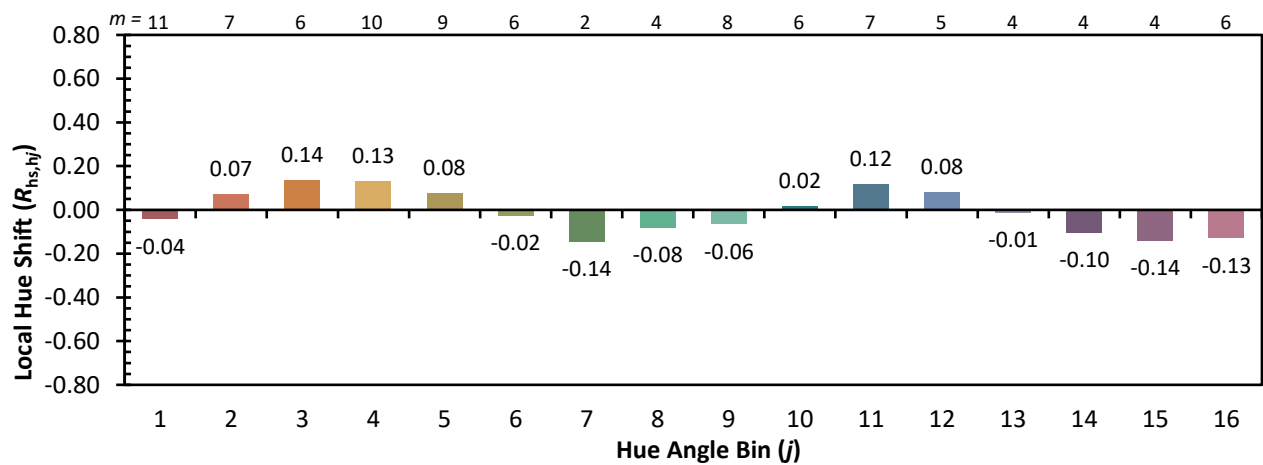
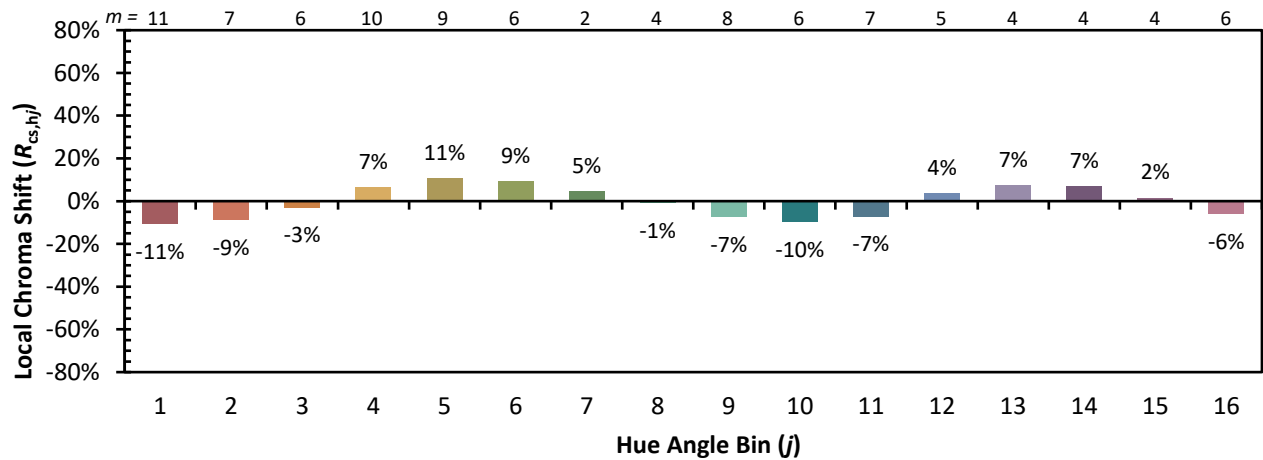
Color Vector Graphics

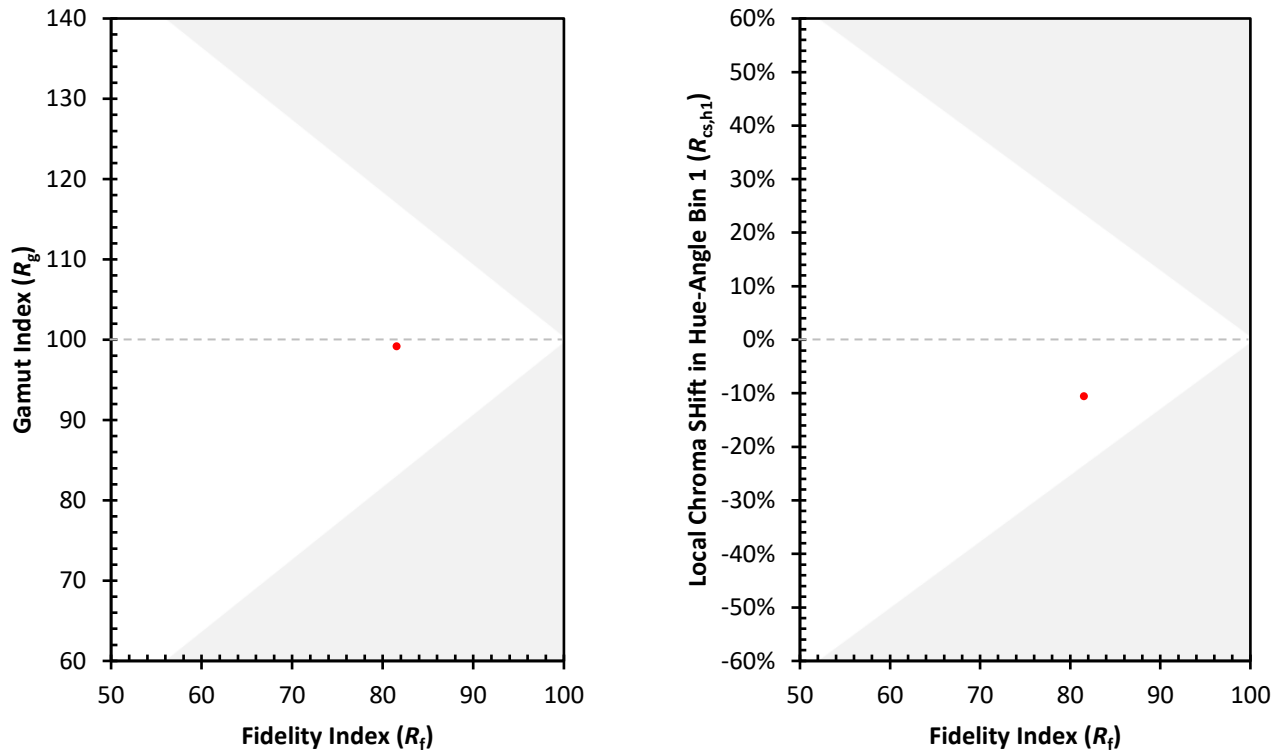


Individual Sample Fidelity Index ($R_{f,i}$)

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)