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: P641423

Luminaire Tested: GWS-SA5F-830-U-5MQ-W-GRSBK

Issue Date: 1/10/2023

Report Generated By 670246102 / DESKTOP-G35701P

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

Scaled Data Report

Test Information

Test Method:	LM-79-2019
Report Number:	P641423
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-5)
Test Lab:	COOPER LIGHTING SOLUTIONS
Issue Date:	1/10/2023
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	McGRAW-EDISON
Catalog Number:	GWS-SA5F-830-U-5MQ-W-GRSBK
Description:	GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V MEDIUM OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK
Light Source:	(80) 3000K CCT, 80 CRI LEDS
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	20258.3 lumens
Efficiency:	N/A
Efficacy:	65.3 lumens/watt
Luminous Opening:	Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification:	Type V - Short
BUG Rating:	B4 - U0 - G1

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

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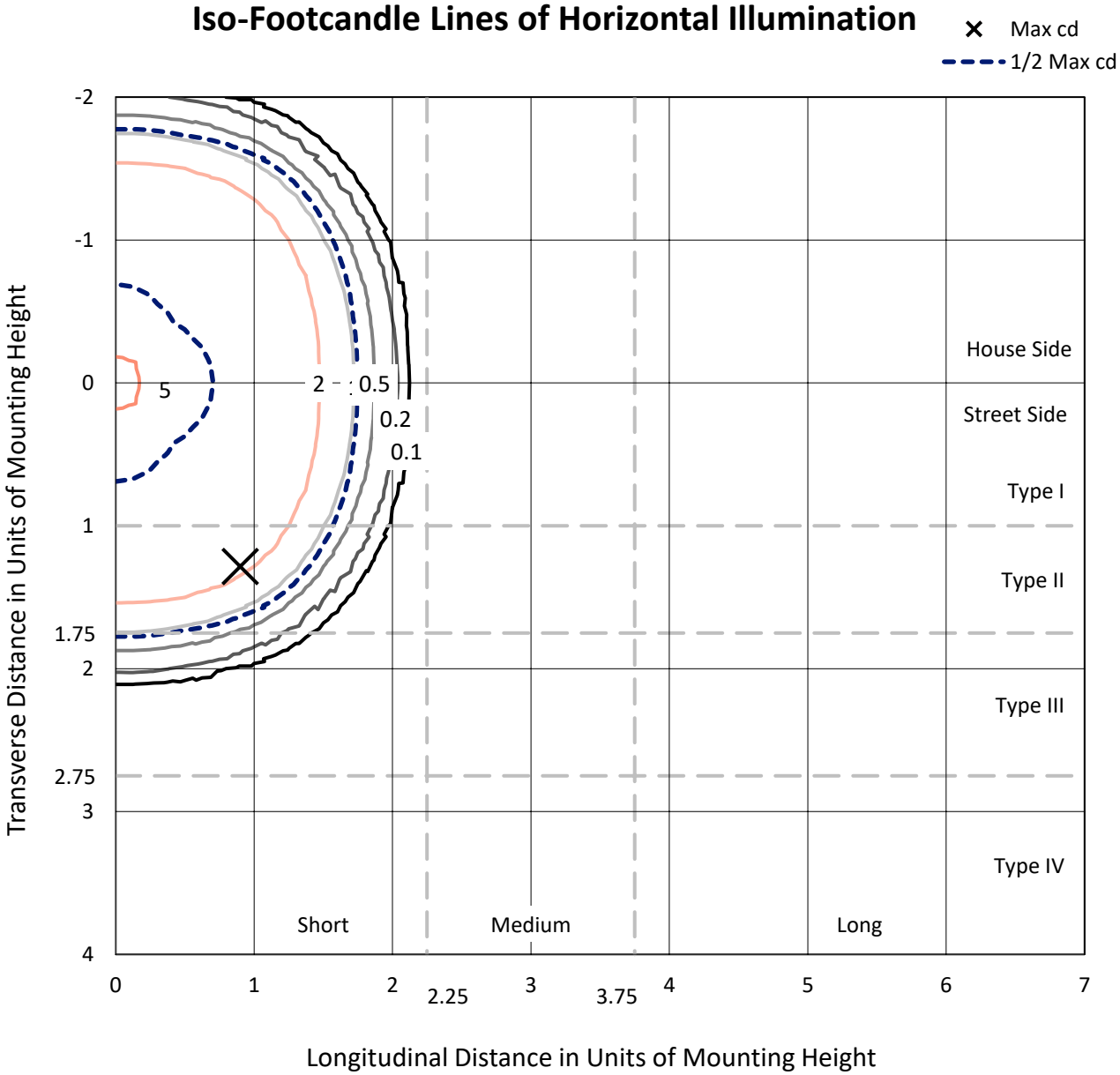
Scaled Data Report

REPORT NUMBER: P641423
CATALOG NUMBER: GWS-SA5F-830-U-5MQ-W-GRSBK

Iso-Footcandle Lines of Horizontal Illumination



Based on 25 foot mounting height. Maximum calculated value = 5.4 fc
Type V - Short - N/A

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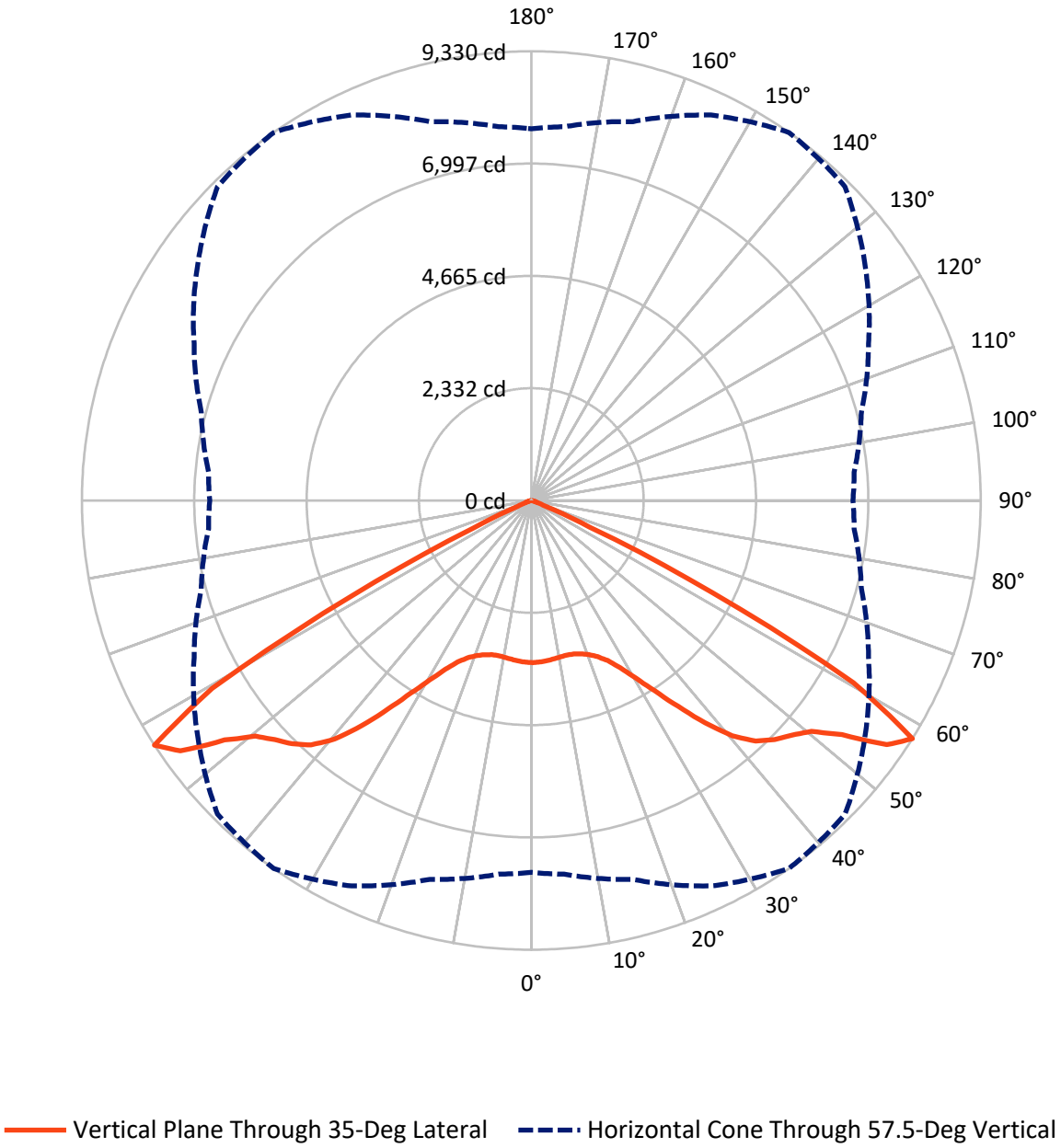
Luminous Intensity Polar Plot



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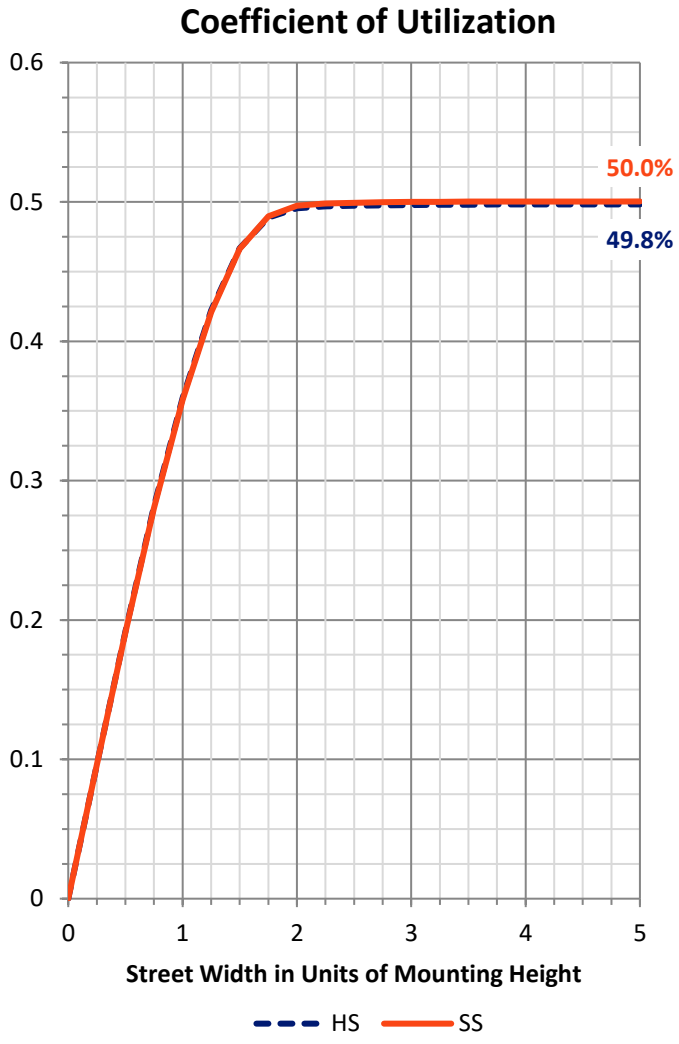
REPORT NUMBER: P641423
CATALOG NUMBER: GWS-SA5F-830-U-5MQ-W-GRSBK

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	10129.2	0.0	10129.2
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	10129.2	0.0	10129.2
	% Fixture	50.0	0.0	50.0
Total	Lumens	20258.3	0.0	20258.3
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	317.3	1.6
10°-20°	933.5	4.6
20°-30°	1687.3	8.3
30°-40°	3147.7	15.5
40°-50°	5280.4	26.1
50°-60°	6973.3	34.4
60°-70°	1851.9	9.1
70°-80°	65.8	0.3
80°-90°	1.2	0.0
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°	20258.3	100.0
0°-180°	20258.3	100.0



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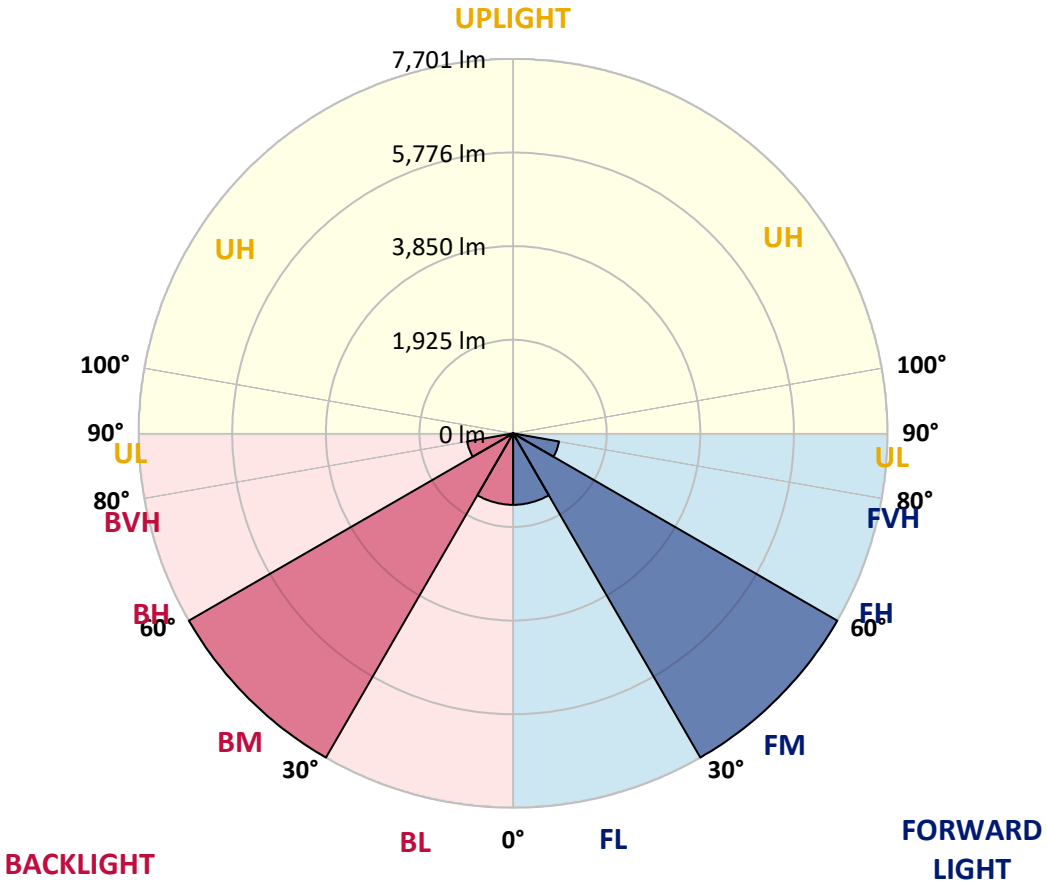
Scaled Data Report

REPORT NUMBER: P641423
CATALOG NUMBER: GWS-SA5F-830-U-5MQ-W-GRSBK

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	1469.0	7.3			
FM	(30°-60°)	7700.7	38.0			
FH	(60°-80°)	958.8	4.7			G1/1800
FVH	(80°-90°)	0.6	0.0			G0/10
BL	(0°-30°)	1469.0	7.3	B3/2500		
BM	(30°-60°)	7700.7	38.0	B4/8500		
BH	(60°-80°)	958.8	4.7	B2/1000		G1/1800
BVH	(80°-90°)	0.6	0.0			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B4-U0-G1
Type V Short



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REPORT NUMBER: P641423
CATALOG NUMBER: GWS-SA5F-830-U-5MQ-W-GRSBK

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	3368.1	3368.1	3368.1	3368.1	3368.1	3368.1	3368.1	3368.1	3368.1	3368.1	3368.1
2.5°	3344.4	3342.0	3351.5	3358.6	3358.6	3375.3	3370.5	3365.7	3361.0	3353.9	3370.5
5°	3339.6	3337.2	3344.4	3349.1	3344.4	3358.6	3349.1	3339.6	3334.8	3325.3	3344.4
7.5°	3318.2	3320.6	3325.3	3330.1	3323.0	3334.8	3323.0	3308.7	3296.8	3287.3	3303.9
10°	3284.9	3287.3	3292.1	3301.6	3303.9	3320.6	3303.9	3277.8	3261.2	3246.9	3263.5
12.5°	3268.3	3270.7	3277.8	3289.7	3292.1	3313.5	3292.1	3254.0	3230.3	3213.6	3230.3
15°	3273.0	3277.8	3287.3	3301.6	3306.3	3327.7	3299.2	3249.3	3216.0	3194.6	3208.9
17.5°	3289.7	3294.4	3308.7	3332.5	3349.1	3370.5	3334.8	3270.7	3225.5	3194.6	3208.9
20°	3311.1	3318.2	3342.0	3380.0	3415.7	3453.7	3408.5	3320.6	3261.2	3223.1	3235.0
22.5°	3370.5	3377.6	3410.9	3460.8	3520.2	3567.8	3513.1	3401.4	3320.6	3270.7	3282.6
25°	3491.7	3498.9	3541.6	3605.8	3681.9	3743.7	3674.8	3534.5	3429.9	3372.9	3377.6
27.5°	3681.9	3689.0	3738.9	3829.3	3931.5	4019.4	3919.6	3755.6	3636.7	3570.2	3570.2
30°	3922.0	3931.5	3998.0	4119.2	4278.5	4395.0	4259.5	4059.8	3907.7	3817.4	3819.7
32.5°	4231.0	4221.4	4316.5	4482.9	4708.7	4863.2	4663.6	4421.1	4233.3	4107.4	4119.2
35°	4627.9	4625.5	4732.5	4958.3	5253.0	5438.4	5200.7	4887.0	4661.2	4532.8	4535.2
37.5°	5138.9	5136.6	5260.2	5505.0	5859.2	6013.7	5747.4	5428.9	5186.5	5062.9	5077.1
40°	5737.9	5723.7	5833.0	6068.3	6422.5	6522.3	6232.3	5975.6	5742.7	5664.2	5702.3
42.5°	6308.4	6277.5	6341.7	6555.6	6829.0	6843.2	6624.5	6448.6	6289.4	6227.6	6251.4
45°	6767.1	6743.4	6802.8	6926.4	7083.3	7012.0	6907.4	6852.7	6724.4	6657.8	6679.2
47.5°	7109.4	7109.4	7180.7	7256.8	7280.6	7149.8	7166.5	7166.5	7038.1	6933.5	6907.4
50°	7404.2	7425.6	7532.5	7611.0	7532.5	7366.1	7461.2	7442.2	7180.7	6971.6	6916.9
52.5°	7874.8	7896.2	8060.2	8167.2	8079.2	7915.2	7927.1	7689.4	7304.3	7057.1	6971.6
55°	8374.0	8426.3	8663.9	8949.2	8951.6	8782.8	8469.0	8048.3	7580.1	7311.5	7223.5
57.5°	7720.3	7791.6	8145.8	8832.7	9329.5	9213.0	8464.3	7725.1	7092.8	6726.7	6676.8
60°	5312.5	5436.1	5790.2	6729.1	7687.0	7732.2	6848.0	6018.4	5293.4	4841.8	4851.3
62.5°	2243.8	2369.8	2569.5	3342.0	4221.4	4276.1	3848.3	3254.0	2662.2	2336.5	2386.4
65°	527.7	563.3	622.8	924.6	1340.6	1402.4	1293.1	1007.8	744.0	629.9	641.8
67.5°	230.6	235.3	223.4	237.7	294.7	301.9	292.4	256.7	242.4	247.2	247.2
70°	161.6	164.0	154.5	147.4	140.2	130.7	135.5	149.7	161.6	171.1	168.8
72.5°	99.8	102.2	104.6	104.6	97.5	87.9	92.7	102.2	104.6	107.0	104.6
75°	49.9	52.3	57.0	59.4	57.0	54.7	54.7	57.0	57.0	54.7	54.7
77.5°	9.5	11.9	16.6	19.0	19.0	19.0	19.0	19.0	21.4	19.0	19.0
80°	2.4	2.4	4.8	2.4	2.4	2.4	2.4	2.4	2.4	4.8	4.8
82.5°	2.4	2.4	2.4	2.4	0.0	0.0	2.4	2.4	2.4	2.4	2.4
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	2.4	2.4
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	2.4	2.4
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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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

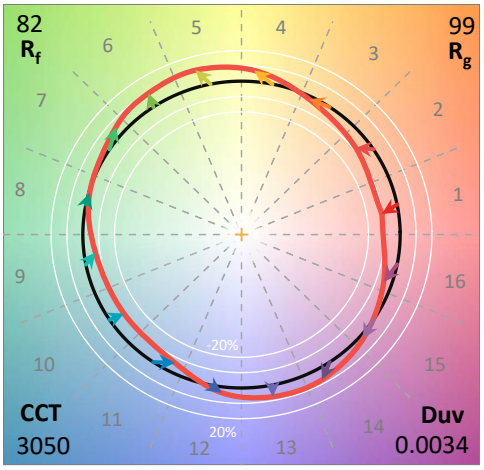
Test Information

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
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
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

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

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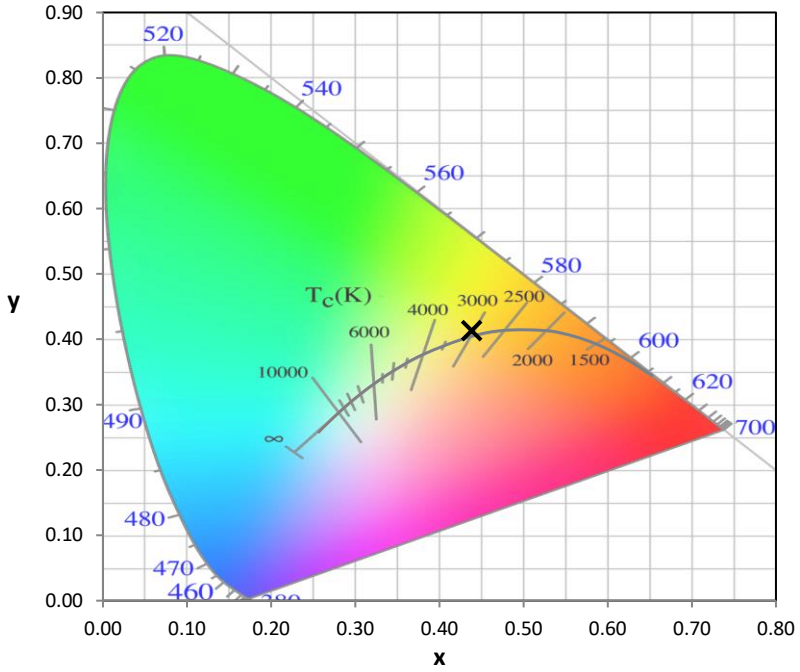
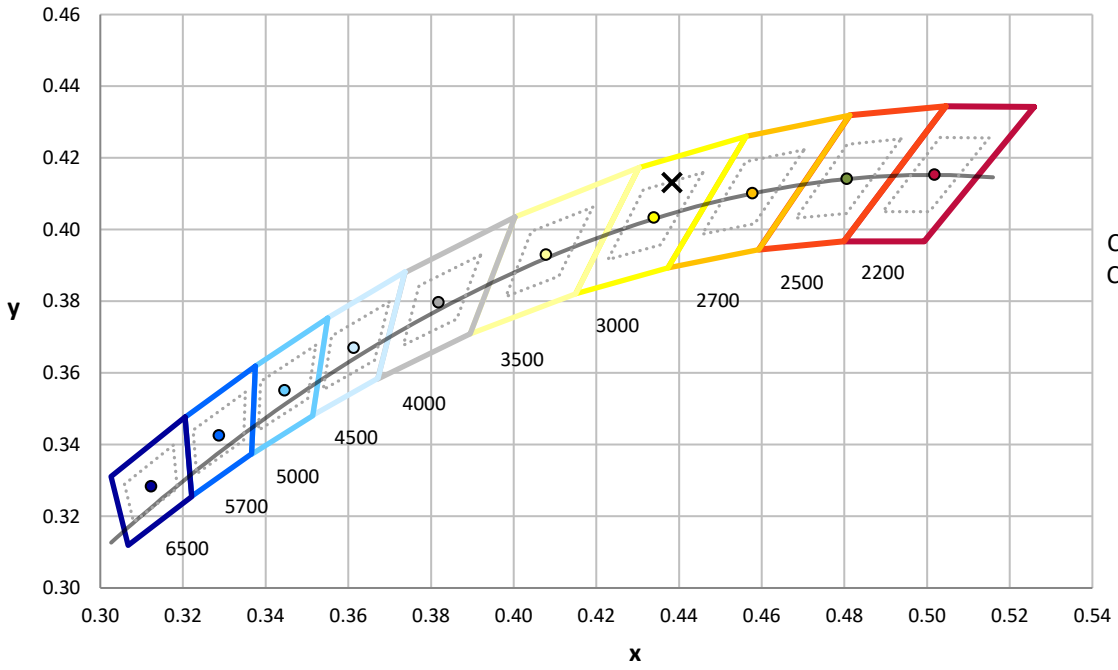
CIE 1931 Chromaticity Diagram



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

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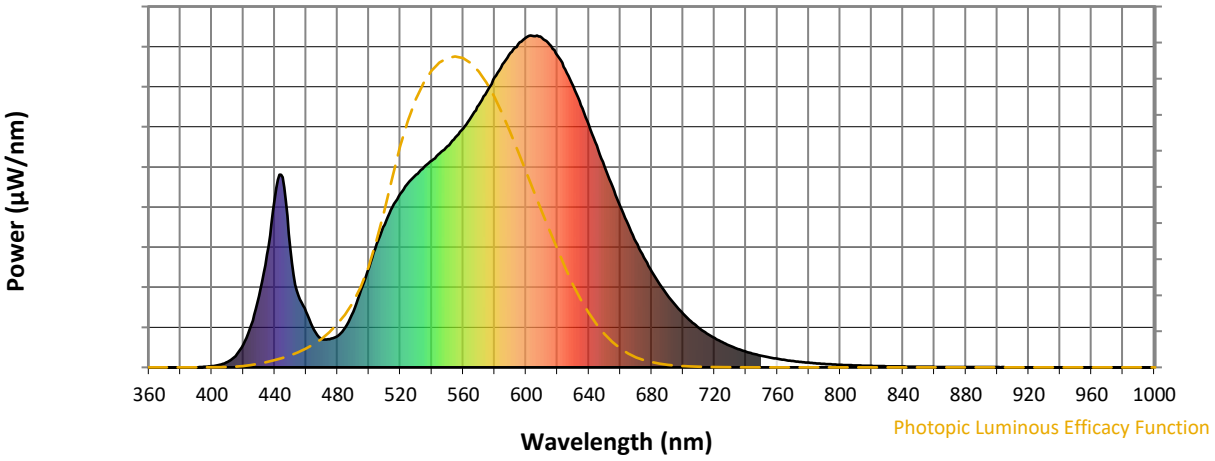
Photopic Flux vs. Wavelength

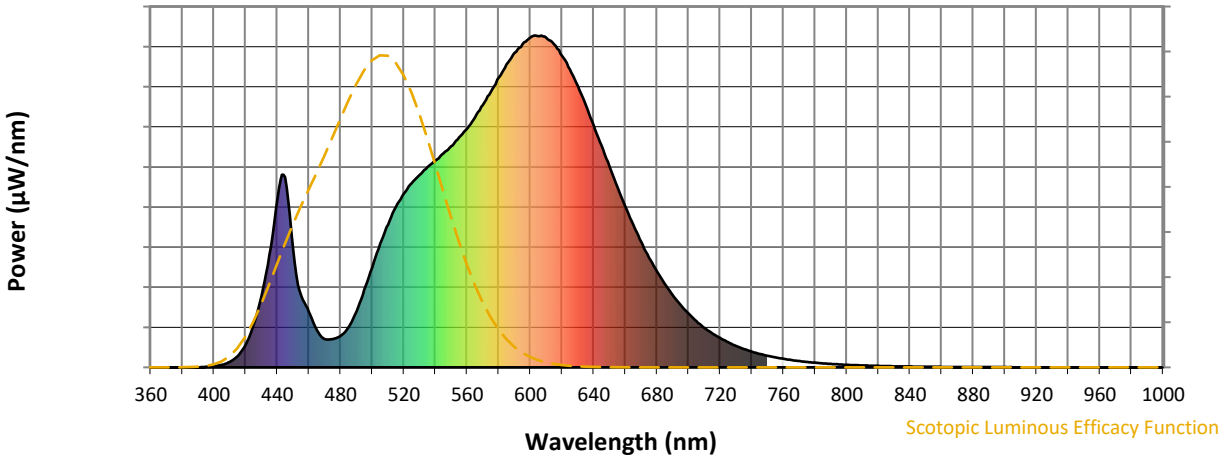


Photopic Lumens: NR

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

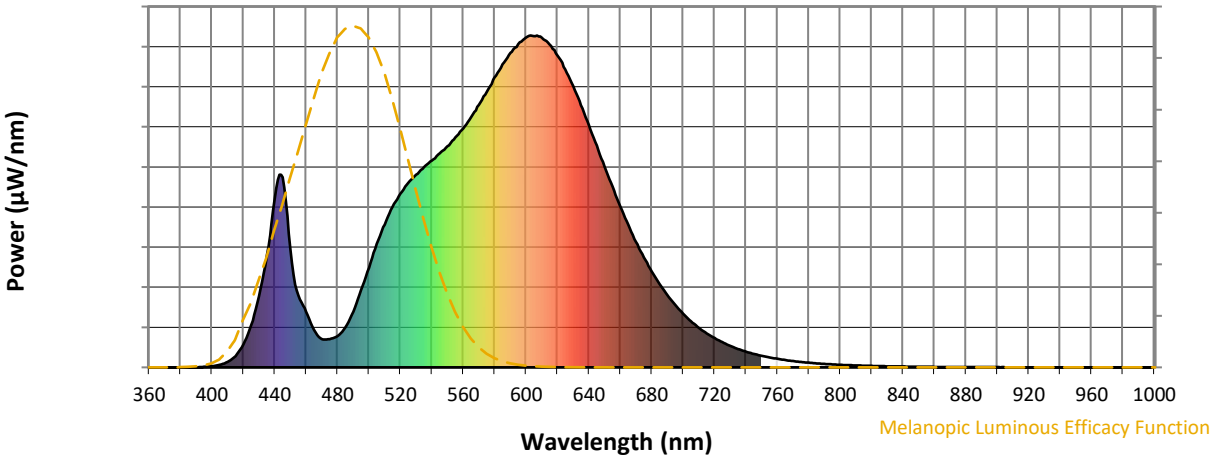


Scotopic Lumens: NR **S/P: 1.27**

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			

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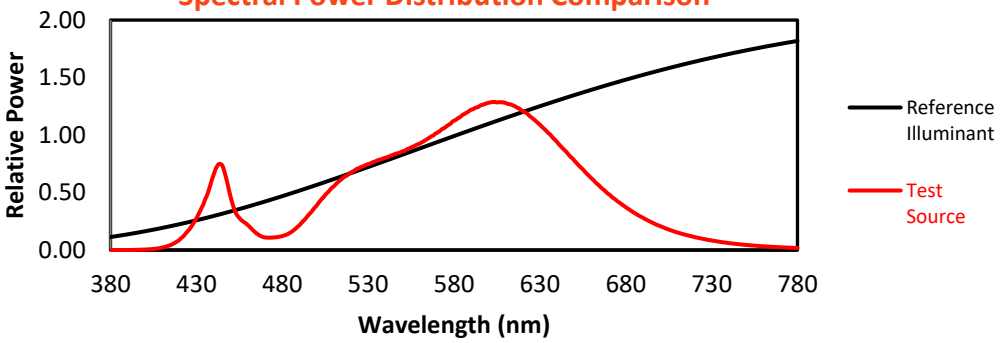
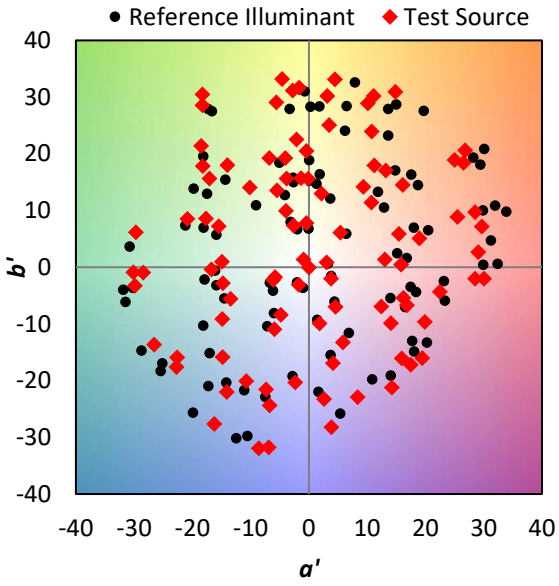
Summary

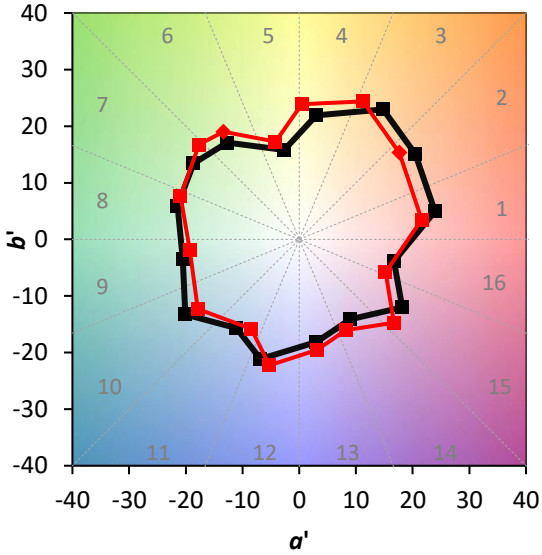
R_f = 81.5
R_g = 99.2
CIE R_a = 81.0
R_9 = 7.1

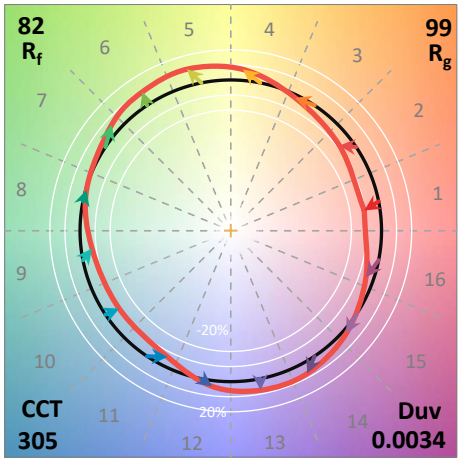
Spectral Power Distribution Comparison

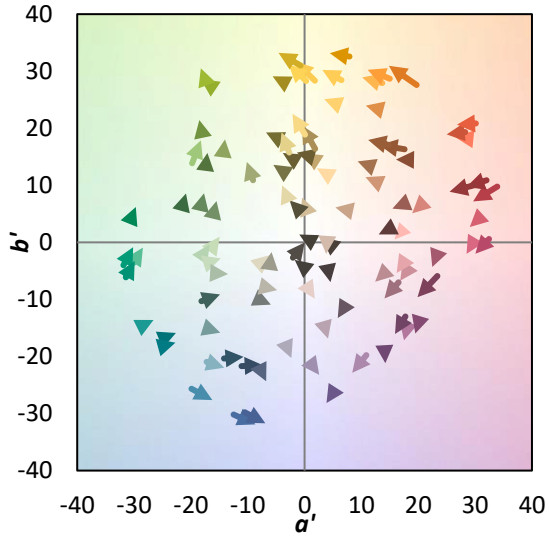


Color Vector Graphics









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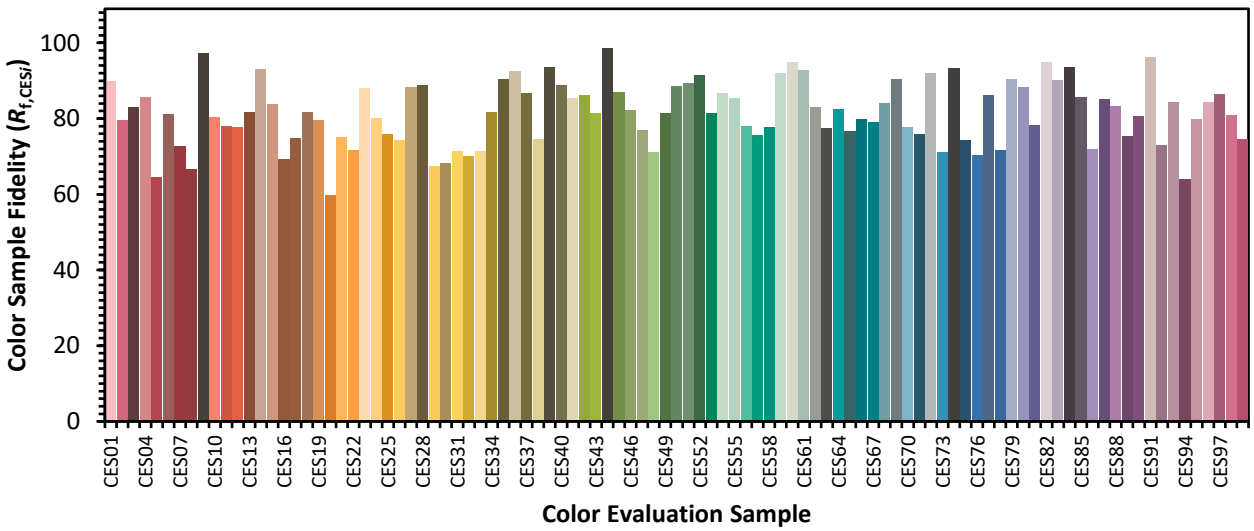
Individual Sample Fidelity Index ($R_{f,i}$)

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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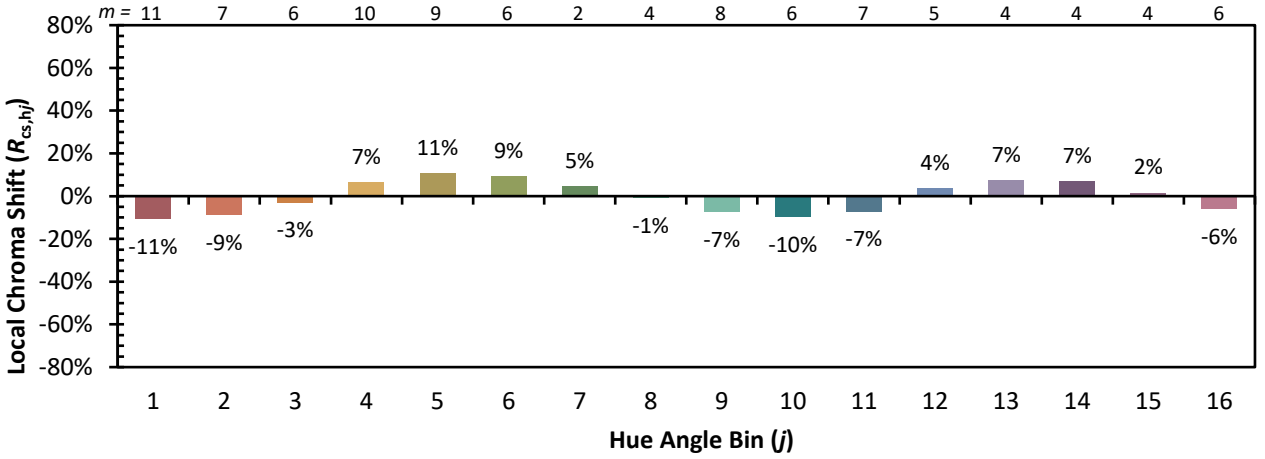
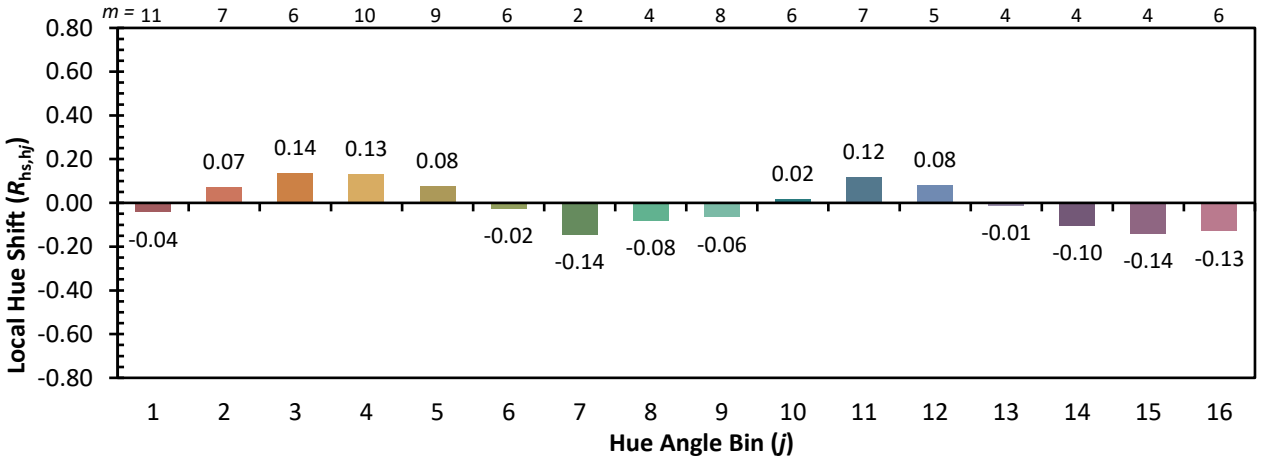
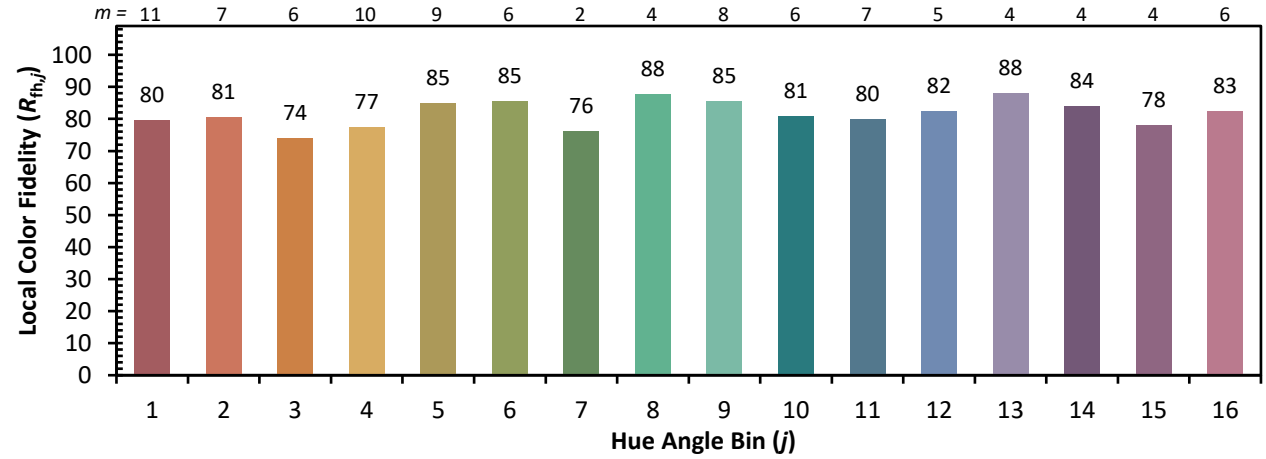
Color Rendition by Hue-Angle Bin







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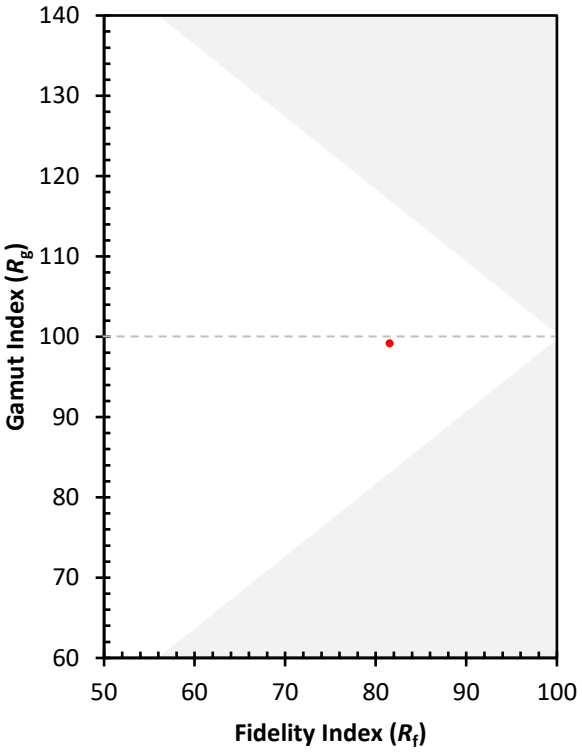
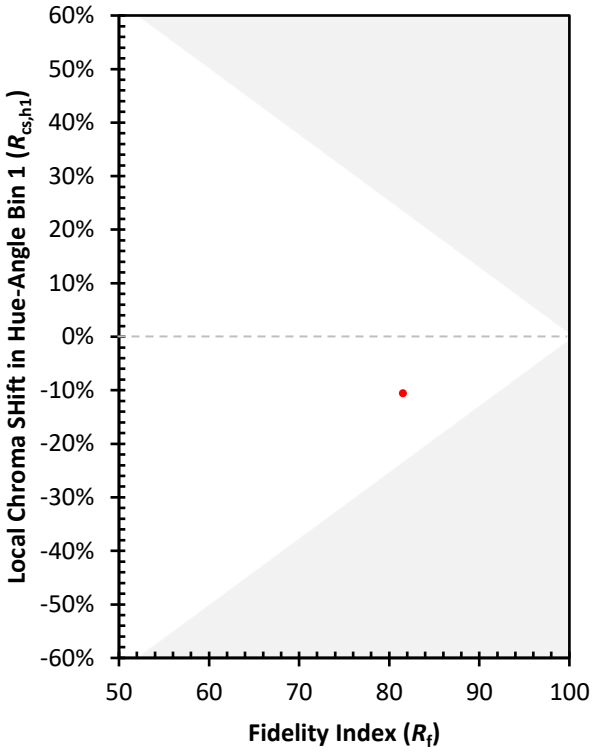
Measure Comparisons





(END OF REPORT)