

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: P640947

Luminaire Tested: GWS-SA5E-830-U-SL2-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P640947
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-27)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA5E-830-U-SL2-W
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND
TYPE II SPILL LIGHT ELIMINATOR OPTICS
Light Source: (80) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 29305.5 lumens
Efficiency: N/A
Efficacy: 108.7 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B3 - U0 - G4

Input Watts (W): 269.6
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



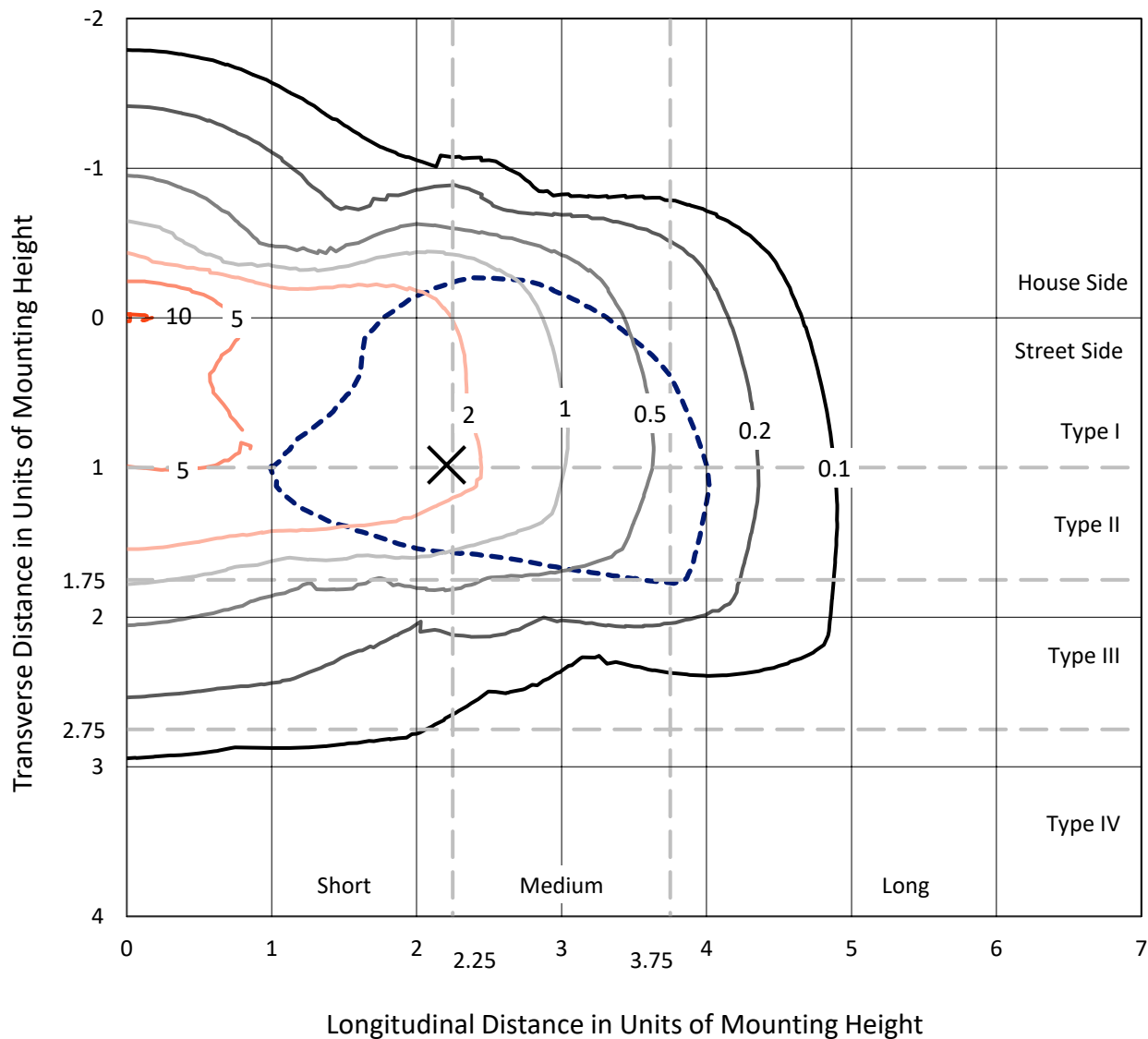
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Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

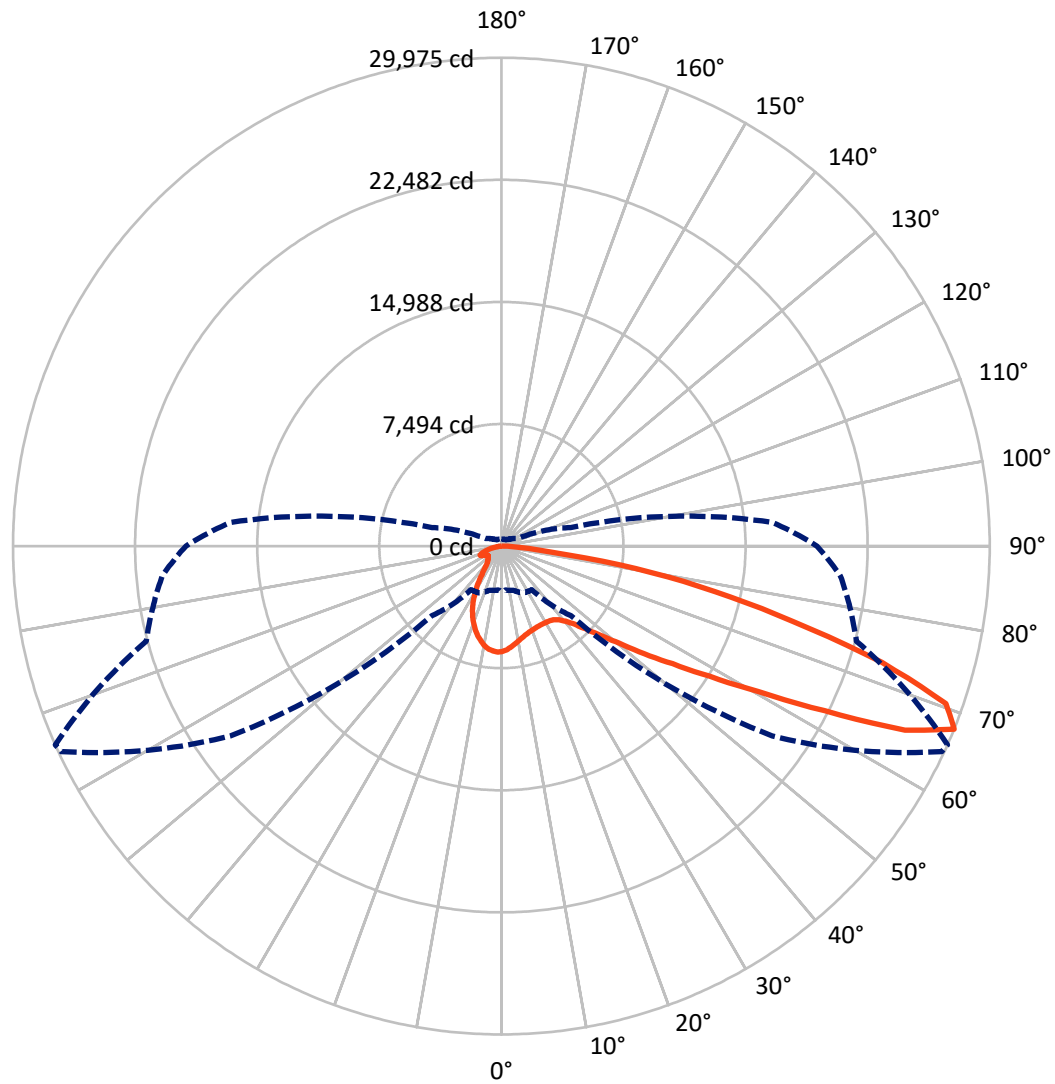


Based on 25 foot mounting height. Maximum calculated value = 10.4 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 66-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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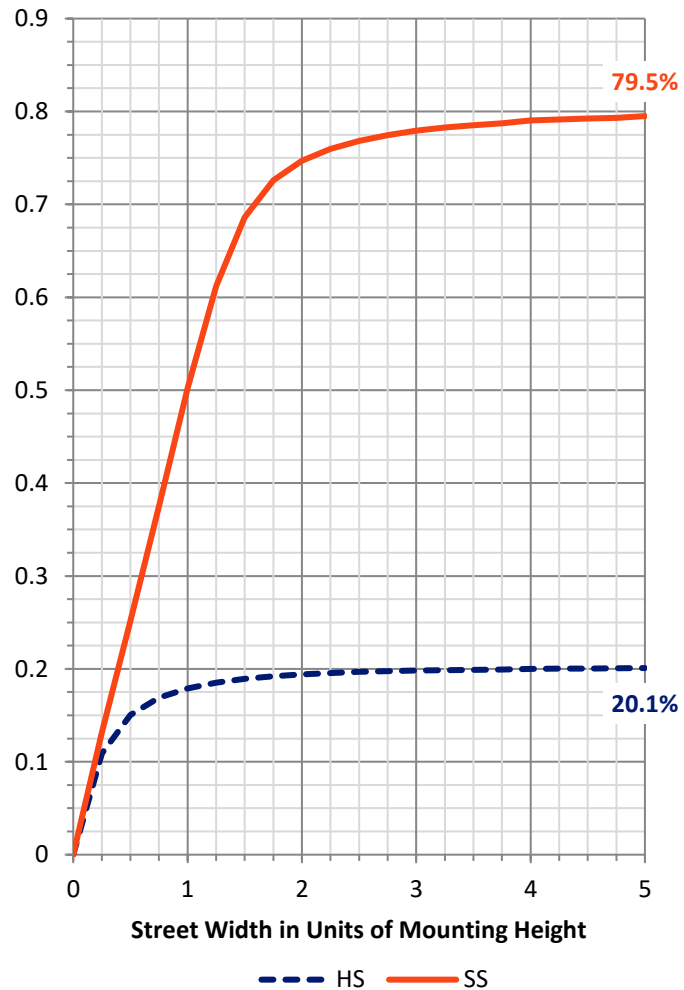
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	5946.8	0.0	5946.8
	% Fixture	20.3	0.0	20.3
Street Side	Lumens	23358.7	0.0	23358.7
	% Fixture	79.7	0.0	79.7
Total	Lumens	29305.5	0.0	29305.5
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	568.3	1.9
10°-20°	1396.7	4.8
20°-30°	1919.8	6.6
30°-40°	2624.7	9.0
40°-50°	3977.2	13.6
50°-60°	6182.6	21.1
60°-70°	7527.2	25.7
70°-80°	4585.2	15.6
80°-90°	523.7	1.8
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°	29305.5	100.0
0°-180°	29305.5	100.0

Coefficient of Utilization



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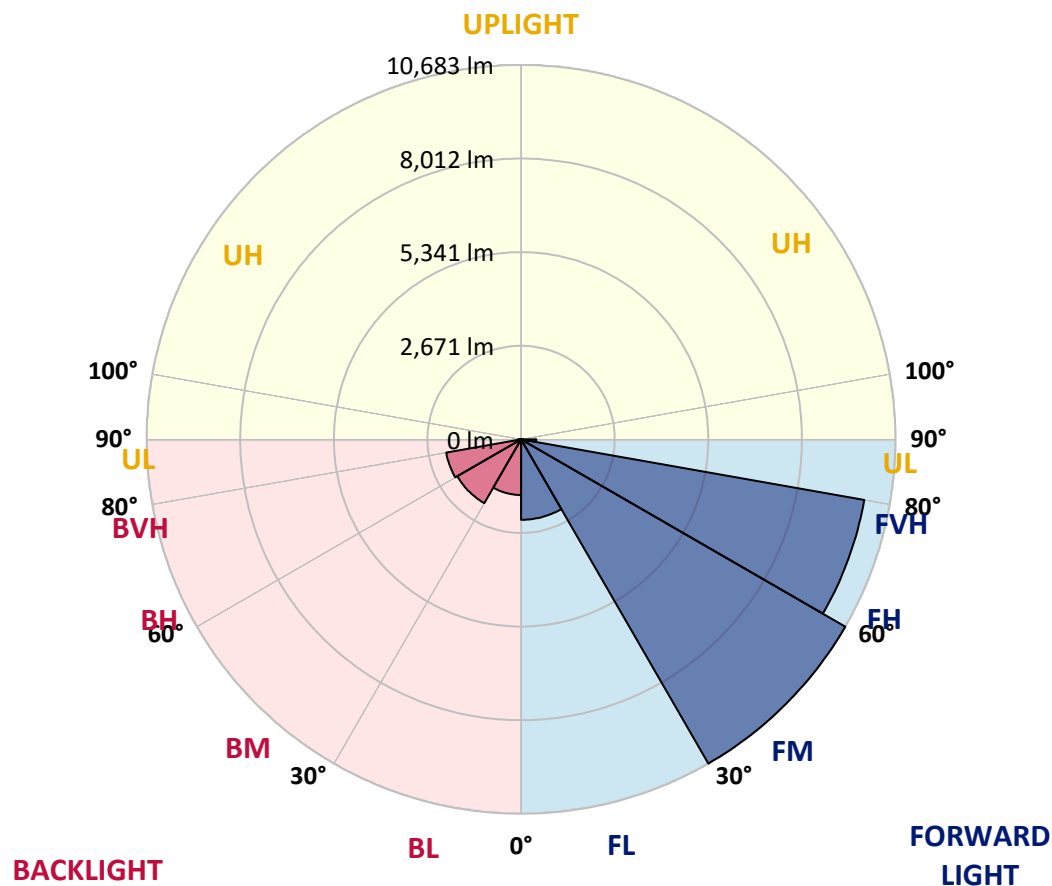
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2296.2	7.8			
FM	(30°-60°)	10683.0	36.5			
FH	(60°-80°)	9944.1	33.9			G4/12000
FVH	(80°-90°)	435.4	1.5			G3/500
BL	(0°-30°)	1588.7	5.4	B3/2500		
BM	(30°-60°)	2101.5	7.2	B2/2500		
BH	(60°-80°)	2168.3	7.4	B3/2500		G3/2500
BVH	(80°-90°)	88.3	0.3			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G4

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	66°	75°	85°
0°	6475.7	6475.7	6475.7	6475.7	6475.7	6475.7	6475.7	6475.7	6475.7	6475.7	6475.7
2.5°	6065.2	6086.6	6073.8	6155.0	6159.3	6261.9	6319.6	6368.8	6373.1	6437.2	6480.0
5°	5650.5	5663.3	5663.3	5740.2	5791.6	5928.4	6060.9	6202.0	6212.7	6366.7	6484.2
7.5°	5314.8	5327.6	5319.1	5421.7	5488.0	5639.8	5808.7	6024.6	6046.0	6294.0	6499.2
10°	5051.8	5047.6	5068.9	5163.0	5248.5	5430.3	5618.4	5864.2	5896.3	6210.6	6516.3
12.5°	4872.3	4876.5	4889.4	4987.7	5079.6	5259.2	5453.8	5721.0	5755.2	6114.4	6507.8
15°	4786.7	4778.2	4788.9	4878.7	4966.3	5124.5	5325.5	5601.3	5635.5	6028.9	6509.9
17.5°	4767.5	4761.1	4759.0	4823.1	4889.4	5036.9	5229.3	5509.4	5545.7	5973.3	6522.7
20°	4827.4	4818.8	4795.3	4823.1	4850.9	4974.9	5160.9	5443.1	5483.7	5936.9	6548.4
22.5°	4992.0	4977.0	4940.7	4906.5	4870.1	4945.0	5118.1	5393.9	5434.5	5913.4	6574.0
25°	5242.1	5229.3	5190.8	5113.8	4981.3	4968.5	5109.6	5372.5	5413.1	5896.3	6584.7
27.5°	5586.3	5567.1	5528.6	5417.4	5201.5	5056.1	5141.6	5370.4	5408.9	5877.1	6574.0
30°	5994.7	5981.8	5960.5	5825.8	5537.1	5242.1	5214.3	5387.5	5417.4	5866.4	6552.6
32.5°	6409.4	6396.6	6413.7	6349.5	5994.7	5550.0	5372.5	5434.5	5455.9	5864.2	6533.4
35°	6775.0	6790.0	6914.0	6924.6	6576.2	5966.9	5622.7	5543.6	5547.8	5907.0	6542.0
37.5°	7157.7	7215.4	7377.9	7516.8	7226.1	6518.4	5994.7	5748.8	5744.5	6016.0	6595.4
40°	7664.4	7690.0	7897.4	8158.2	7976.5	7275.3	6522.7	6084.4	6054.5	6238.4	6738.6
42.5°	8158.2	8220.2	8551.6	8850.9	8791.0	8128.3	7187.6	6586.9	6533.4	6631.7	7033.7
45°	8786.7	8846.6	9218.6	9603.4	9712.5	9092.5	8038.5	7300.9	7247.5	7223.9	7574.6
47.5°	9415.3	9477.3	9810.8	10366.7	10749.3	10298.2	9145.9	8243.7	8156.1	8064.1	8391.2
50°	9838.6	9911.3	10229.8	10896.9	11794.8	11803.3	10458.6	9479.4	9368.3	9222.9	9541.4
52.5°	9823.6	9870.7	10174.2	10943.9	12547.3	13532.9	12215.9	11052.9	10963.1	10646.7	10924.6
55°	9051.8	9122.4	9428.1	10390.2	12628.5	15172.6	14798.5	12908.6	12748.3	12181.7	12487.4
57.5°	7501.9	7561.7	7869.6	9056.1	11908.1	16012.8	18078.0	15273.1	15052.9	13853.6	14206.3
60°	5663.3	5590.6	5736.0	6775.0	10184.9	16034.2	20972.7	18480.0	18112.2	15640.8	15935.9
62.5°	4250.1	4177.4	4209.5	4502.4	6905.4	14738.6	22623.2	22866.9	22259.8	17659.0	17601.3
65°	3358.6	3318.0	3409.9	3610.9	4025.7	11223.9	22636.0	27610.9	27228.2	19997.9	19309.5
67.5°	2736.5	2710.9	2804.9	3176.9	3264.6	6031.0	20297.2	29825.8	29975.4	22559.1	20893.6
70°	2204.2	2165.7	2313.2	2802.8	3035.8	3649.4	14539.8	28697.0	28938.5	24085.5	20446.8
72.5°	1522.2	1524.3	1599.1	2270.4	2931.1	3151.3	8224.5	23895.3	24419.0	22702.3	17975.4
75°	1026.2	1034.7	1056.1	1498.7	2700.2	3057.2	4382.7	18090.9	18460.7	18764.3	14858.4
77.5°	620.0	624.3	673.4	906.5	1862.1	2854.1	2969.5	13113.8	13404.6	12369.9	9210.1
80°	359.2	374.1	419.0	607.2	1257.1	2144.3	2298.2	8040.6	8369.9	5498.7	2926.8
82.5°	158.2	168.9	228.8	352.8	733.3	1823.6	1793.7	3176.9	3129.9	1532.9	1015.5
85°	27.8	34.2	49.2	111.2	269.4	962.1	1391.8	1402.5	1319.1	581.5	421.2
87.5°	0.0	0.0	0.0	0.0	0.0	6.4	209.5	376.3	374.1	164.6	145.4
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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CATALOG NUMBER: GWS-SA5E-830-U-SL2-W

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	6475.7	6475.7	6475.7	6475.7	6475.7	6475.7	6475.7	6475.7	6475.7	6475.7	6475.7
2.5°	6507.8	6450.0	6501.3	6507.8	6497.1	6488.5	6424.4	6368.8	6362.4	6302.5	6302.5
5°	6531.3	6477.8	6503.5	6454.3	6377.3	6298.2	6161.4	6067.3	6024.6	5947.6	5947.6
7.5°	6563.3	6507.8	6477.8	6356.0	6176.4	6003.2	5783.0	5599.1	5524.3	5415.3	5411.0
10°	6593.3	6522.7	6420.1	6182.8	5896.3	5620.5	5299.8	5039.0	4861.6	4731.2	4731.2
12.5°	6591.1	6499.2	6296.1	5945.5	5550.0	5150.2	4722.6	4329.2	4094.1	3891.0	3878.1
15°	6586.9	6460.7	6137.9	5669.7	5145.9	4592.2	4010.7	3497.6	3149.1	2950.3	2933.2
17.5°	6582.6	6411.5	5960.5	5355.4	4654.2	3899.5	3132.0	2576.2	2285.4	2163.5	2167.8
20°	6582.6	6356.0	5770.2	4994.1	4087.7	3070.0	2298.2	1894.2	1821.5	1827.9	1834.3
22.5°	6563.3	6287.5	5558.5	4600.7	3457.0	2257.6	1695.4	1558.5	1597.0	1656.9	1665.4
25°	6518.4	6174.2	5312.7	4164.6	2706.6	1644.0	1383.2	1357.6	1428.1	1502.9	1524.3
27.5°	6447.9	6043.8	5036.9	3653.7	1992.5	1321.2	1216.5	1214.3	1269.9	1325.5	1344.7
30°	6373.1	5898.5	4746.1	3085.0	1443.1	1150.2	1109.6	1109.6	1137.4	1171.6	1167.3
32.5°	6285.4	5750.9	4434.0	2492.8	1175.8	1054.0	1041.2	1034.7	1039.0	1051.8	1051.8
35°	6210.6	5620.5	4113.3	1866.4	1054.0	1000.5	987.7	972.7	966.3	957.8	962.1
37.5°	6182.8	5517.9	3781.9	1406.7	994.1	962.1	940.7	919.3	904.3	900.1	897.9
40°	6227.7	5475.1	3450.6	1158.7	951.4	921.4	897.9	870.1	857.3	857.3	857.3
42.5°	6403.0	5507.2	3112.8	1047.6	921.4	887.2	853.0	827.4	823.1	827.4	829.5
45°	6723.7	5631.2	2762.2	992.0	895.8	853.0	812.4	793.2	793.2	797.4	797.4
47.5°	7296.6	5956.2	2415.8	957.8	870.1	825.2	782.5	763.2	761.1	765.4	765.4
50°	8288.6	6542.0	2103.7	934.3	850.9	803.8	761.1	735.4	729.0	726.9	726.9
52.5°	9539.3	7557.5	1904.9	917.2	827.4	780.3	737.6	703.4	690.5	684.1	684.1
55°	11050.8	8910.7	1904.9	904.3	797.4	752.5	703.4	669.2	649.9	641.4	641.4
57.5°	12763.2	10486.4	2234.1	893.6	773.9	720.5	667.0	632.8	611.4	598.6	598.6
60°	14505.6	12151.8	3048.6	878.7	752.5	679.9	626.4	594.3	566.5	551.6	549.4
62.5°	16312.1	13986.1	4121.9	887.2	737.6	641.4	583.6	547.3	523.8	508.8	506.7
65°	17966.9	15732.8	5060.4	953.5	739.7	607.2	534.5	502.4	483.2	463.9	461.8
67.5°	19371.5	16697.0	4401.9	1088.2	784.6	566.5	485.3	453.2	436.1	423.3	421.2
70°	18388.0	15226.1	2497.1	1171.6	846.6	523.8	429.7	408.3	391.2	382.7	380.5
72.5°	15724.2	12891.5	1669.7	1034.7	771.8	468.2	378.4	361.3	348.5	337.8	335.6
75°	12737.6	10223.4	1276.3	848.7	600.7	380.5	325.0	312.1	299.3	288.6	286.5
77.5°	7536.1	5907.0	940.7	671.3	423.3	297.2	269.4	258.7	245.9	237.3	235.2
80°	2405.1	2052.4	596.5	461.8	280.1	228.8	207.4	198.8	186.0	175.3	173.2
82.5°	917.2	793.2	316.4	235.2	186.0	156.1	139.0	130.4	121.9	111.2	109.0
85°	406.2	380.5	175.3	126.1	100.5	77.0	68.4	64.1	53.4	44.9	42.8
87.5°	143.2	143.2	74.8	36.3	21.4	10.7	6.4	2.1	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.

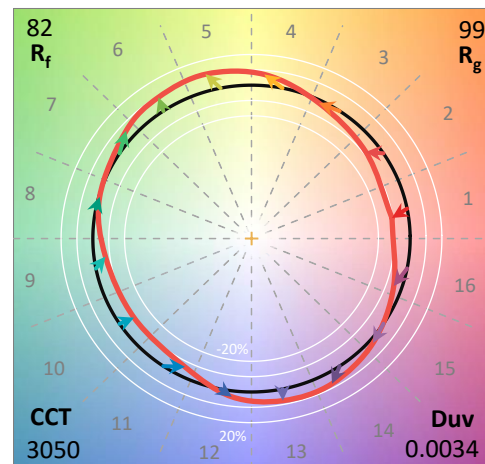
Test Information

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

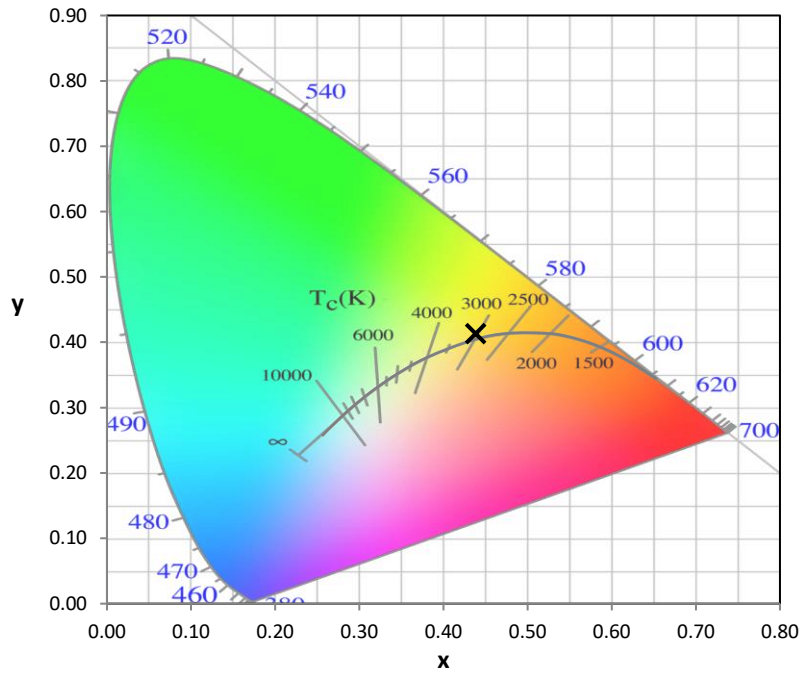
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

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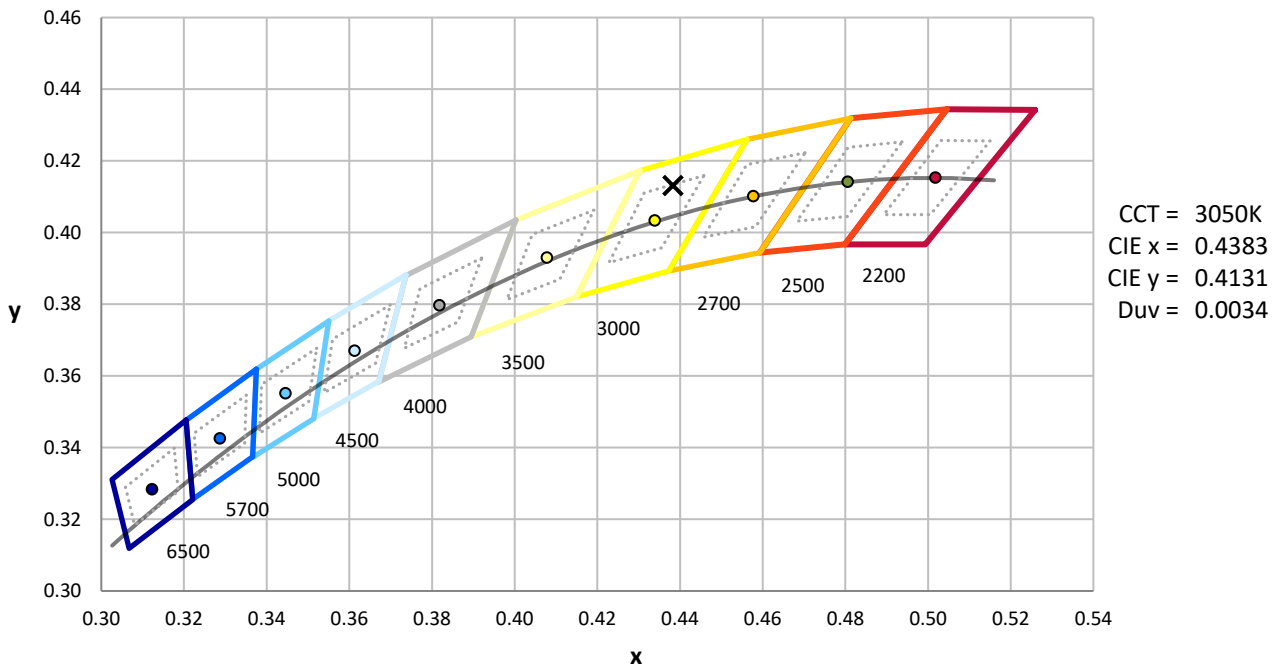
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

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CIE 1931 Chromaticity Diagram



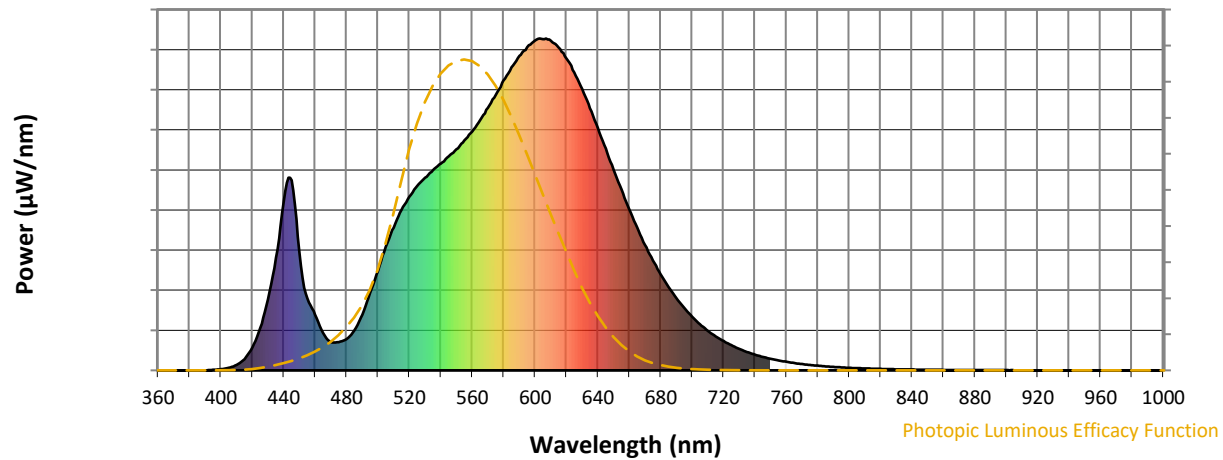
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

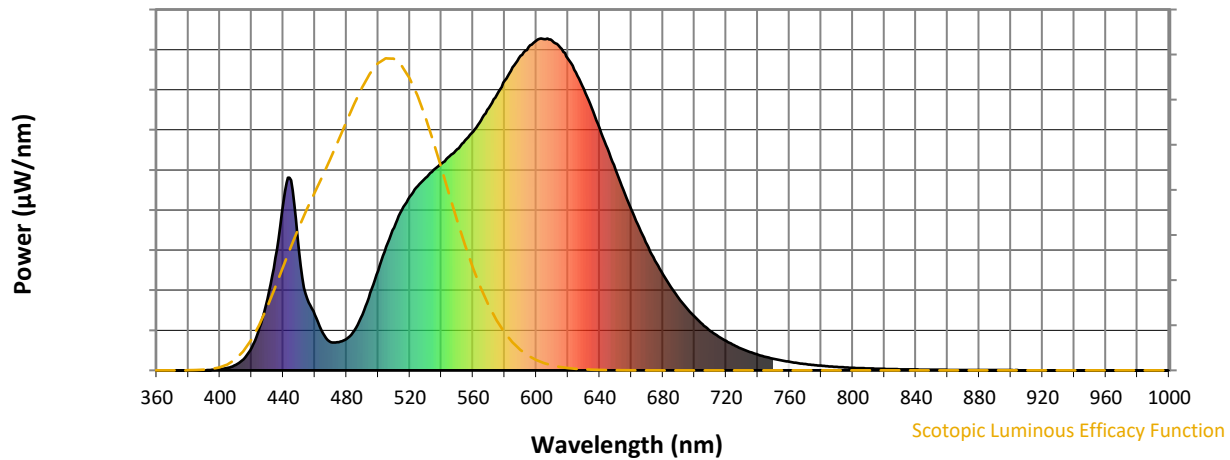


Photopic Lumens: NR

λ (nm)	Power 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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Scotopic Flux vs. Wavelength



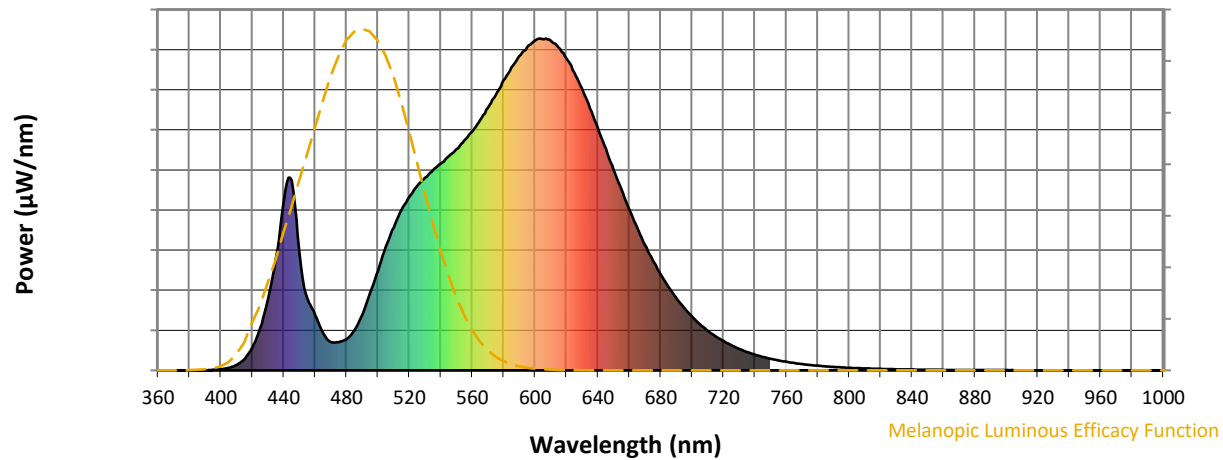
Scotopic Lumens: NR

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

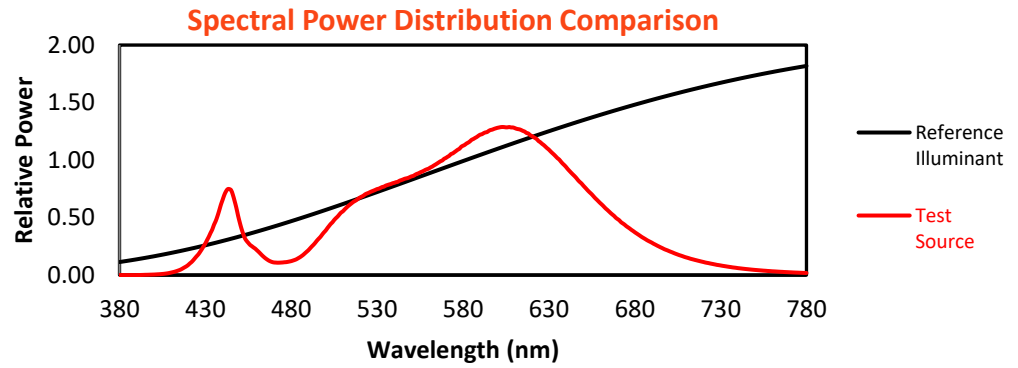
λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	168	NR	620	940	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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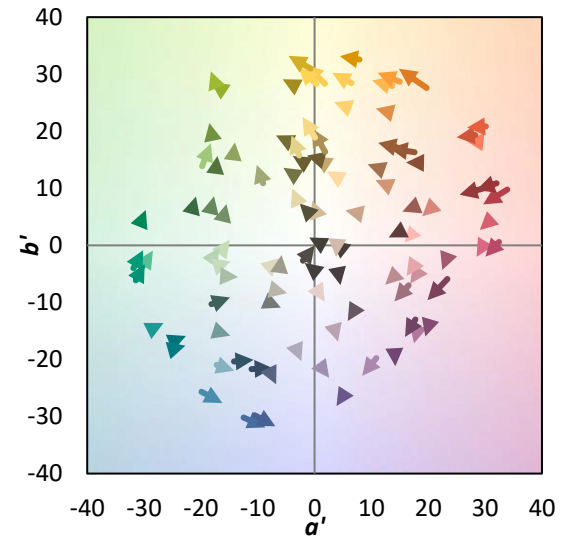
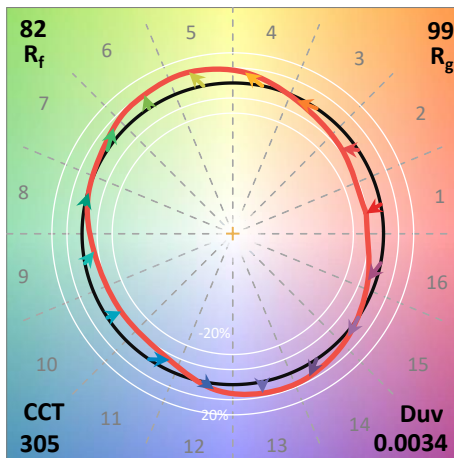
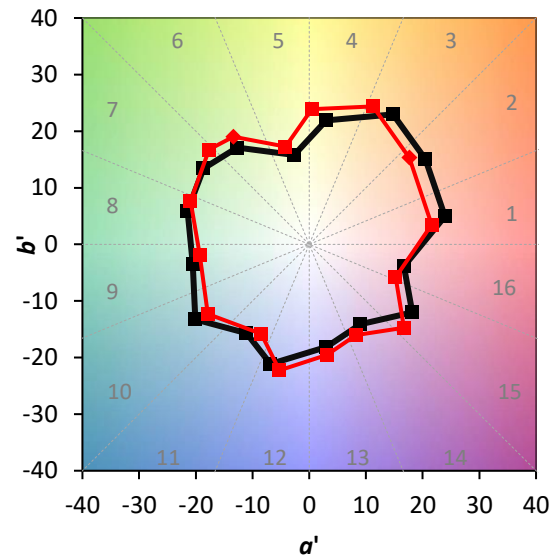
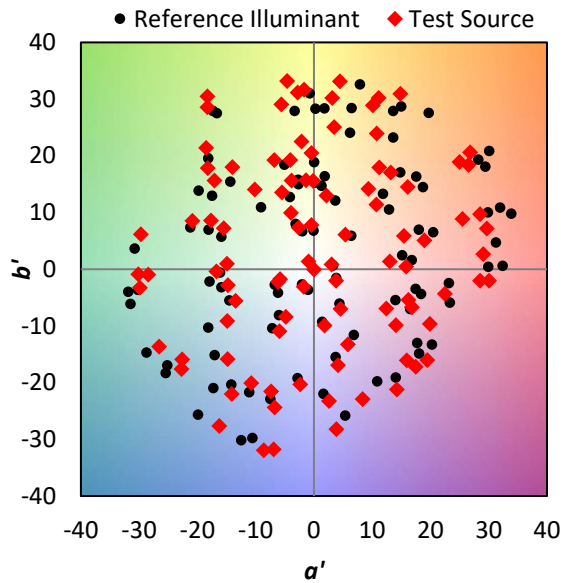
TM-30-18

Summary

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

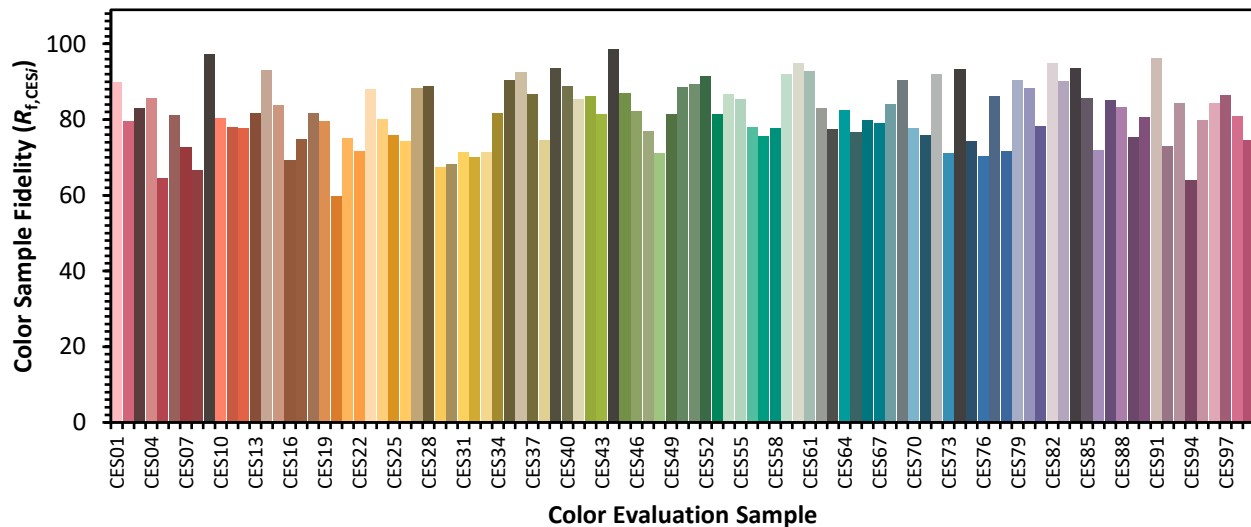


Color Vector Graphics

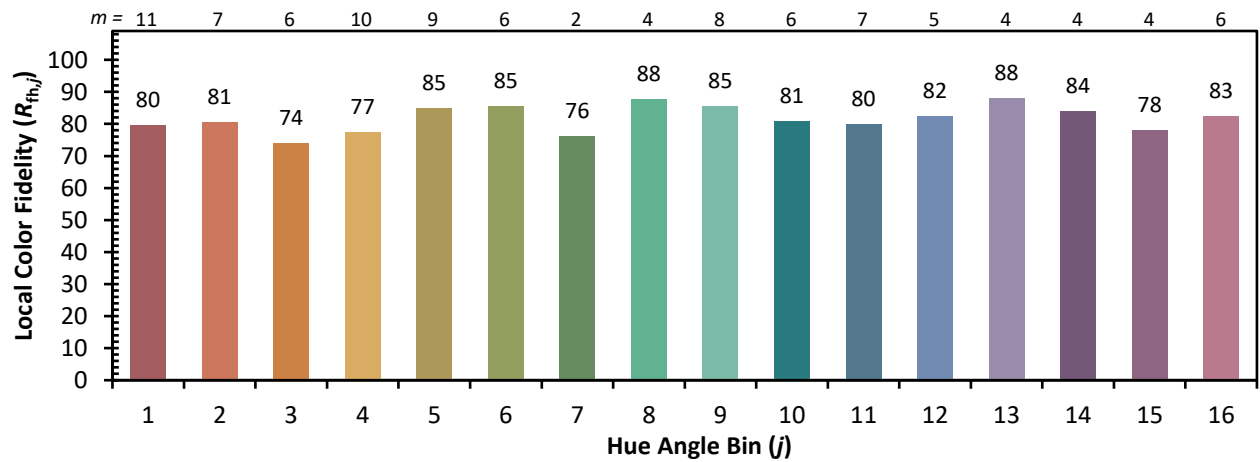
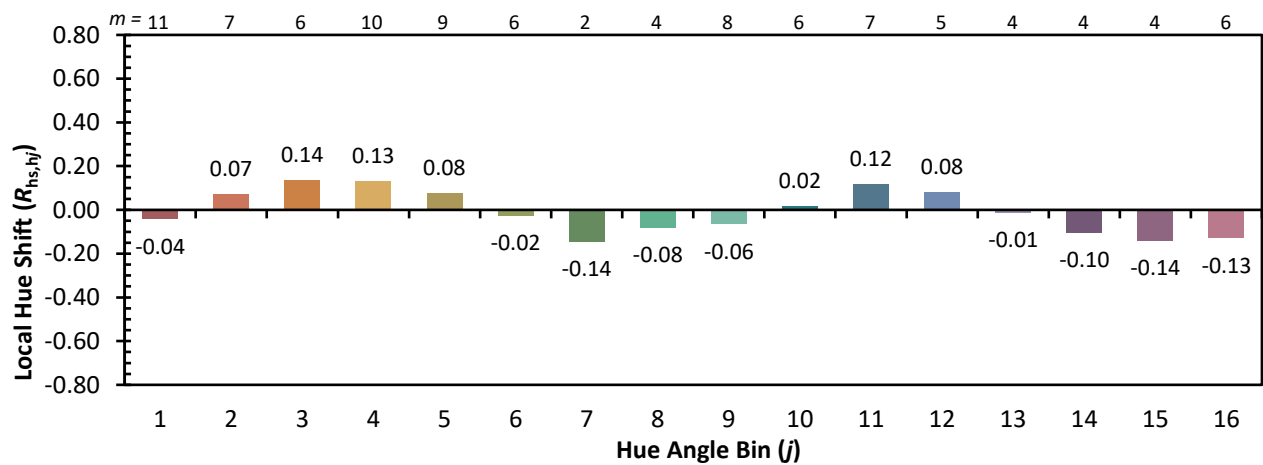
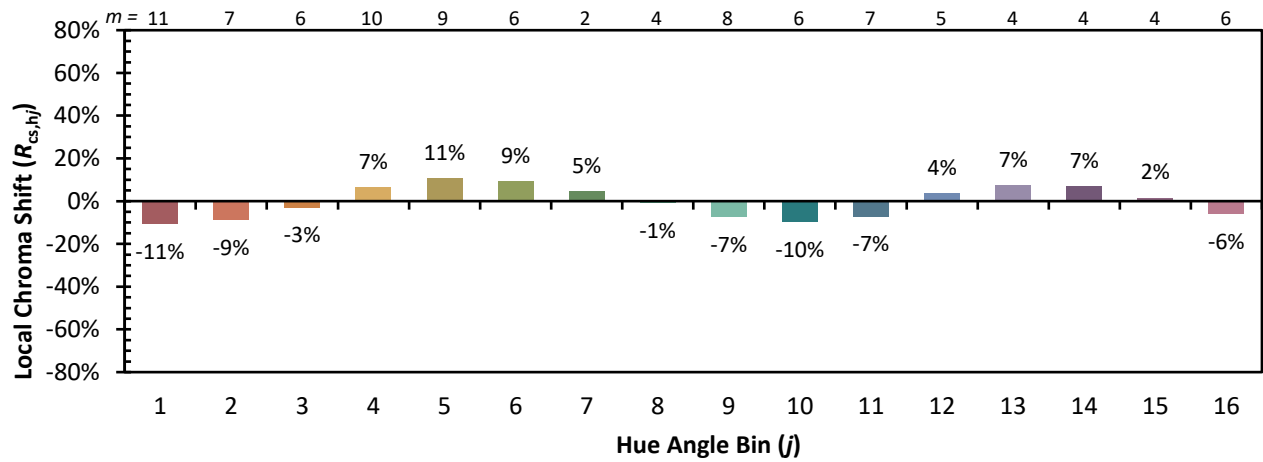


Individual Sample Fidelity Index ($R_{f,i}$)

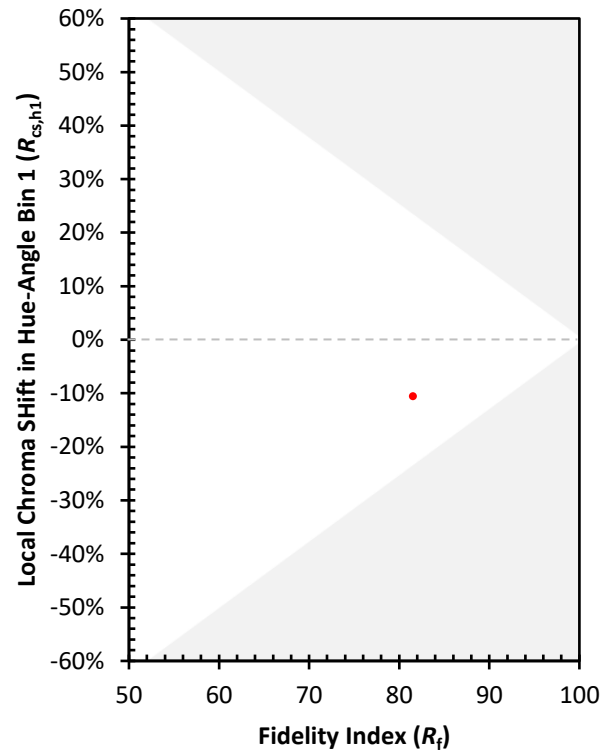
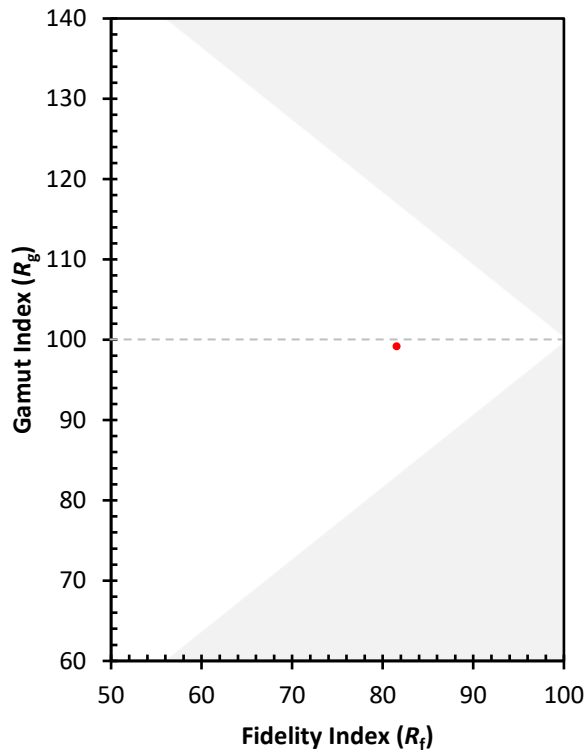
CES01 = 86	CES26 = 74	CES51 = 89	CES76 = 70
CES02 = 63	CES27 = 88	CES52 = 92	CES77 = 86
CES03 = 31	CES28 = 89	CES53 = 81	CES78 = 72
CES04 = 70	CES29 = 67	CES54 = 87	CES79 = 90
CES05 = 50	CES30 = 68	CES55 = 85	CES80 = 88
CES06 = 51	CES31 = 71	CES56 = 78	CES81 = 78
CES07 = 42	CES32 = 70	CES57 = 76	CES82 = 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)