

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: LUMARK

Report Number: P895750

Luminaire Tested: **CLCS30S-PC-4000K-80%**

Issue Date: 11/14/2024

Test Information

Test Method: LM-79-08
Report Number: P895750
Test Lab: INNOVATION CENTER(G2)
Issue Date: 11/14/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: CLCS30S-PC-4000K-80%
Description: LUMARK LARGE LED CANOPY 16000LM, 120W, PC 80 CRI 4000K FIXTURE @
80% OUTPUT
Light Source: 4000K CCT,80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

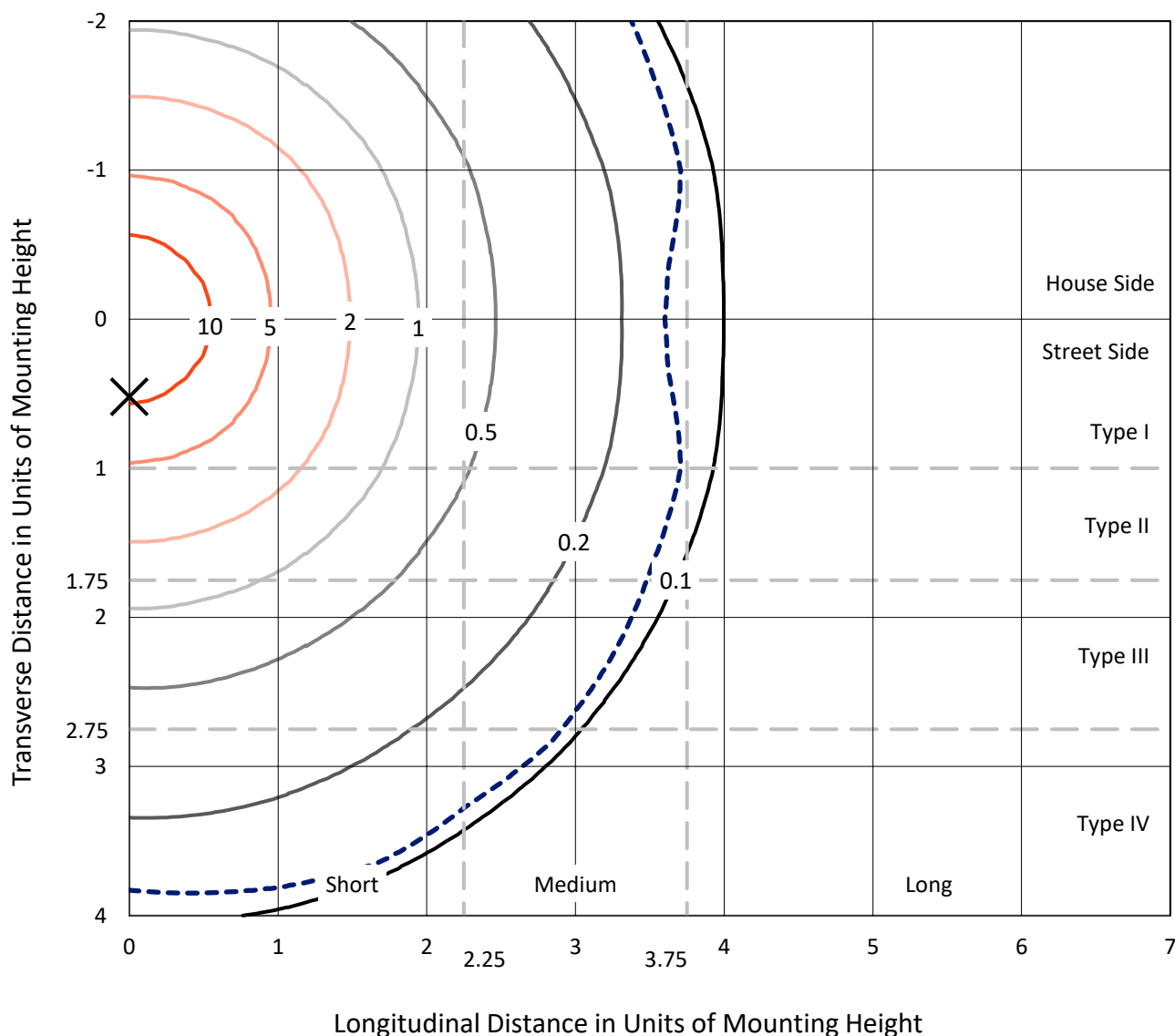
Lumens per Lamp: N/A
Luminaire Lumens: 14659.3 lumens
Efficiency: N/A
Efficacy: 150.2 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.12')
IES Classification: Type V - Short
BUG Rating: B3 - U3 - G3

Input Watts (W): 97.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.98
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT

REPORT NUMBER: P895750
 CATALOG NUMBER: CLCS30S-PC-4000K-80%

Iso-Footcandle Lines of Horizontal Illumination

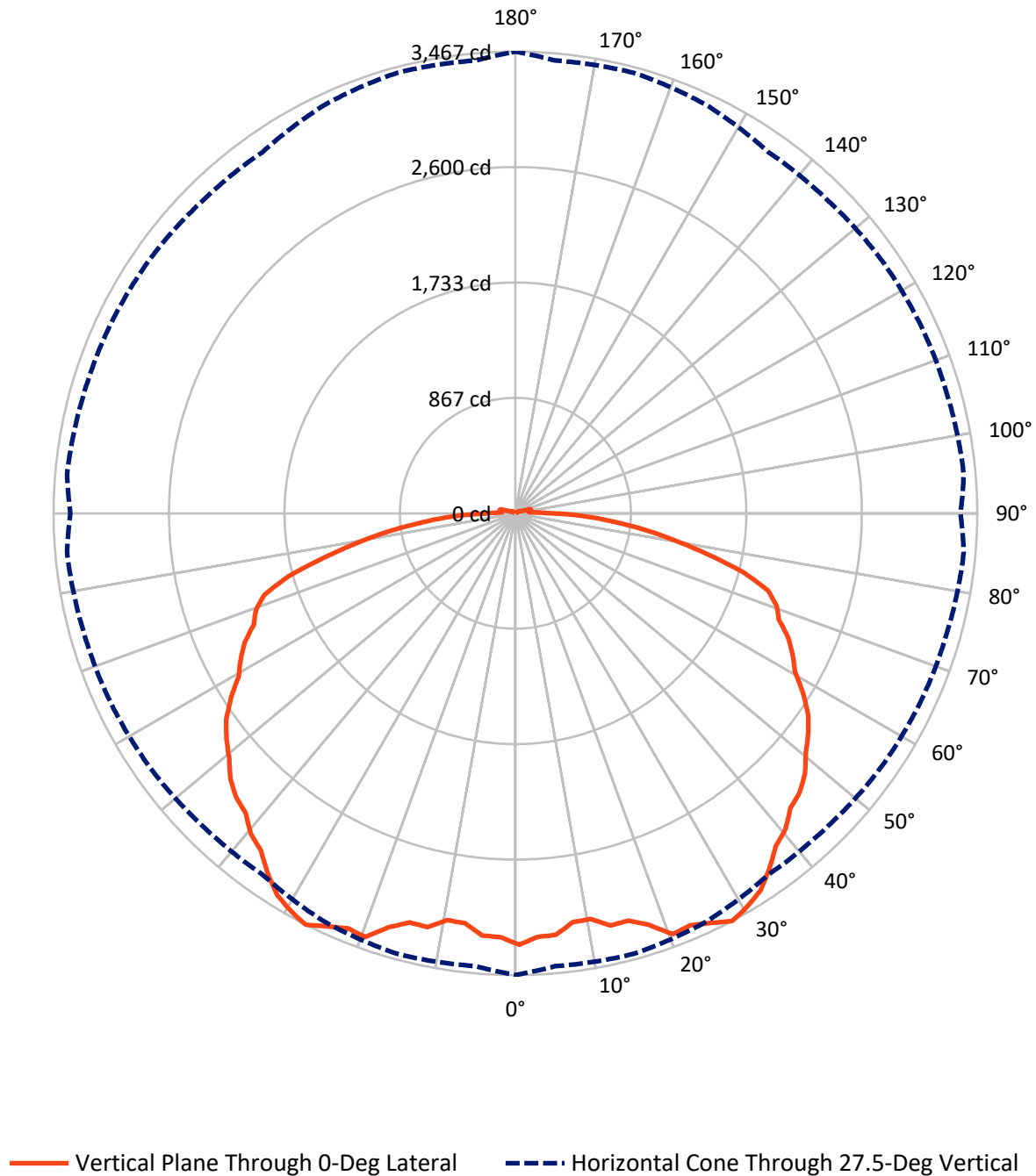
✕ Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 14.4 fc
 Type V - Short - N/A

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Luminous Intensity Polar Plot



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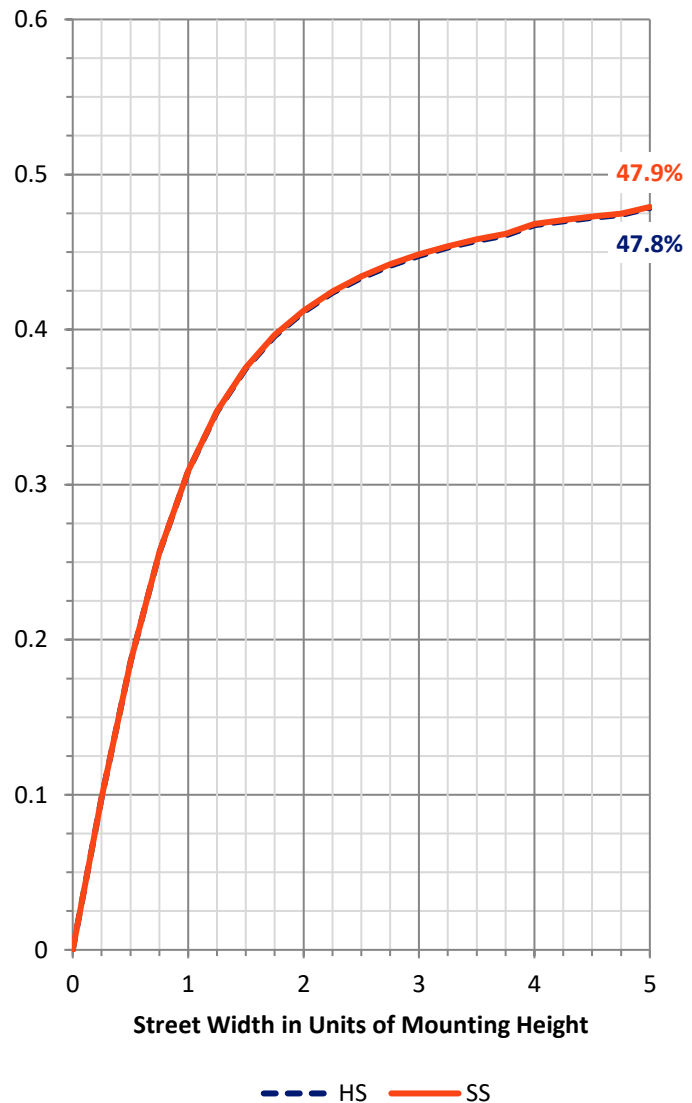
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	7207.5	122.2	7329.6
	% Fixture	49.2	0.8	50.0
Street Side	Lumens	7207.5	122.2	7329.6
	% Fixture	49.2	0.8	50.0
Total	Lumens	14414.9	244.4	14659.3
	% Fixture	98.3	1.7	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	293.5	2.0
10°-20°	897.2	6.1
20°-30°	1538.6	10.5
30°-40°	2021.6	13.8
40°-50°	2313.2	15.8
50°-60°	2419.2	16.5
60°-70°	2276.3	15.5
70°-80°	1838.5	12.5
80°-90°	816.9	5.6
90°-100°	137.2	0.9
100°-110°	72.2	0.5
110°-120°	24.3	0.2
120°-130°	8.4	0.1
130°-140°	2.1	0.0
140°-150°	0.1	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	14414.9	98.3
0°-180°	14659.3	100.0



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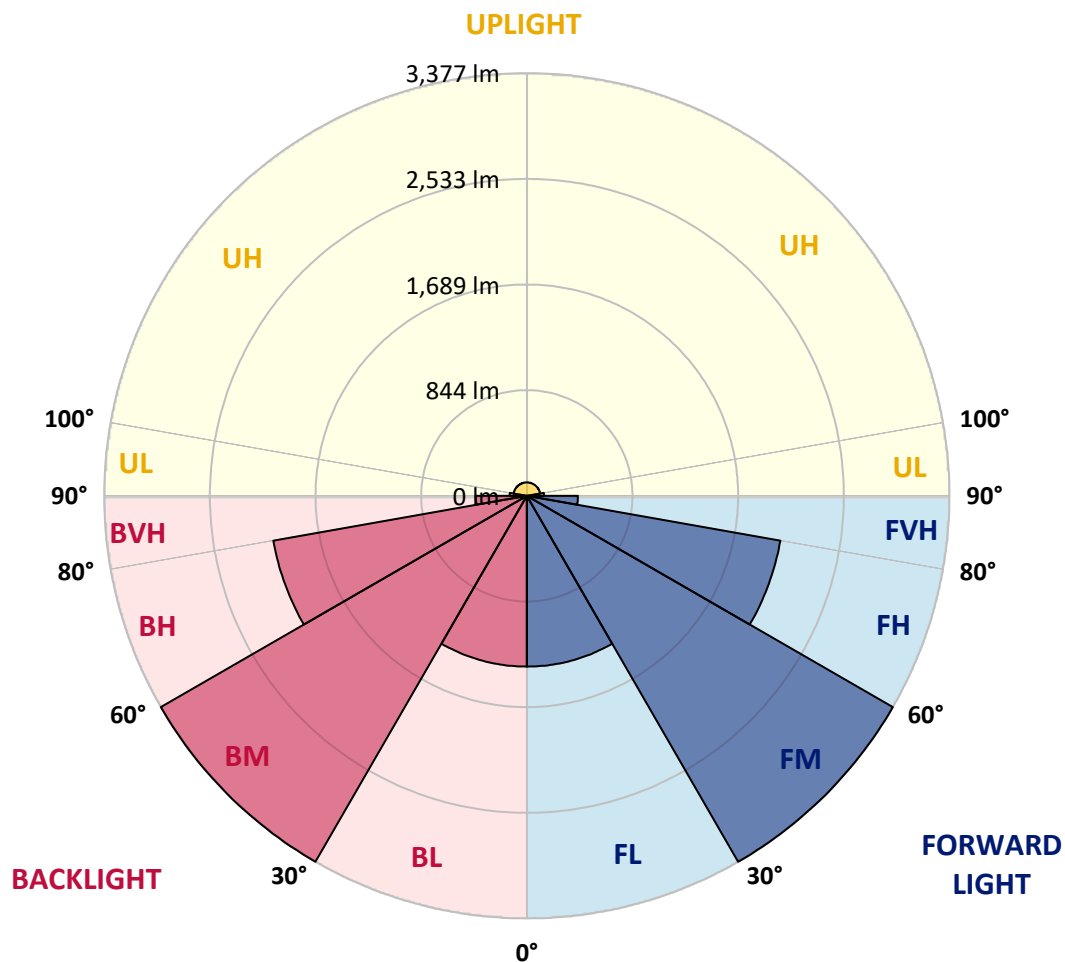
CATALOG NUMBER: CLCS30S-PC-4000K-80%

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1364.7	9.3			
FM	(30°-60°)	3377.0	23.0			
FH	(60°-80°)	2057.4	14.0			G2/5000
FVH	(80°-90°)	408.5	2.8			G3/500
BL	(0°-30°)	1364.7	9.3	B3/2500		
BM	(30°-60°)	3377.0	23.0	B3/5000		
BH	(60°-80°)	2057.4	14.0	B3/2500		G2/5000
BVH	(80°-90°)	408.5	2.8			G3/500
UL	(90°-100°)	137.2	0.9		U3/500	
UH	(100°-180°)	107.1	0.7		U3/500	

BUG Rating: B3-U3-G3

Type V Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	3239.2	3239.2	3239.2	3239.2	3239.2	3239.2	3239.2	3239.2	3239.2	3239.2	3239.2
2.5°	3184.5	3190.6	3196.8	3174.7	3165.0	3169.4	3157.1	3166.8	3174.7	3170.3	3170.3
5°	3179.2	3183.6	3178.3	3132.4	3100.6	3075.1	3054.8	3062.7	3058.3	3070.7	3074.2
7.5°	3099.7	3114.7	3143.0	3105.0	3055.7	3022.1	3014.2	3002.7	2962.9	2948.8	2940.0
10°	3097.0	3105.9	3135.9	3083.8	3040.6	3038.0	2986.8	2955.9	2940.9	2924.1	2912.7
12.5°	3175.6	3165.9	3127.9	3145.6	3139.4	3070.7	3052.1	3002.7	2990.3	2984.1	2969.1
15°	3173.0	3205.6	3225.1	3182.7	3142.1	3172.1	3188.9	3146.5	3121.8	3078.6	3071.5
17.5°	3248.8	3281.5	3230.4	3256.7	3225.1	3236.5	3217.1	3201.2	3195.0	3186.2	3187.1
20°	3374.2	3339.7	3296.5	3274.4	3218.0	3233.9	3267.3	3256.7	3248.0	3264.7	3254.1
22.5°	3360.0	3345.9	3285.0	3314.1	3215.4	3240.1	3267.3	3303.5	3276.2	3248.0	3225.1
25°	3407.7	3370.6	3365.3	3347.7	3285.9	3278.8	3310.6	3305.3	3310.6	3340.6	3325.6
27.5°	3466.8	3413.0	3424.4	3384.8	3310.6	3319.4	3341.5	3353.9	3361.8	3377.7	3340.6
30°	3427.9	3392.7	3398.0	3355.6	3334.4	3401.5	3286.8	3375.1	3347.7	3342.4	3352.1
32.5°	3376.8	3341.5	3353.0	3287.7	3334.4	3336.2	3280.6	3314.1	3287.7	3315.9	3301.8
35°	3280.6	3208.3	3265.6	3200.3	3275.3	3245.4	3245.4	3213.6	3183.6	3195.0	3162.4
37.5°	3173.0	3103.2	3172.1	3115.6	3168.6	3158.0	3166.8	3107.6	3104.1	3107.6	3099.7
40°	3120.0	3055.7	3098.8	3090.0	3093.5	3108.5	3060.9	3065.4	3039.8	3047.7	3016.8
42.5°	3026.5	2978.0	3047.7	3048.6	3090.0	3093.5	3051.2	3022.1	3017.7	2960.3	2969.1
45°	2990.3	2934.7	2970.0	3000.0	3037.1	3105.0	3033.6	3012.4	2966.5	2919.7	2903.0
47.5°	2924.1	2906.5	2920.6	2969.1	3001.8	3044.2	3019.5	2937.3	2883.6	2871.2	2867.7
50°	2825.3	2820.9	2845.6	2865.9	2889.8	2968.2	2938.2	2880.9	2820.9	2800.6	2812.1
52.5°	2751.2	2740.7	2734.5	2829.7	2813.0	2830.6	2868.6	2812.1	2767.9	2696.5	2730.1
55°	2665.6	2675.3	2660.3	2741.5	2760.0	2782.9	2757.3	2723.9	2663.0	2605.6	2616.2
57.5°	2544.8	2576.5	2602.0	2605.6	2681.5	2710.6	2682.4	2614.4	2528.0	2535.0	2535.9
60°	2409.8	2458.2	2473.2	2505.0	2574.8	2566.8	2587.0	2487.4	2454.7	2459.1	2458.2
62.5°	2335.6	2349.7	2364.7	2405.4	2449.4	2445.0	2467.1	2412.4	2366.5	2356.8	2369.2
65°	2250.0	2274.7	2267.6	2298.5	2304.7	2312.7	2344.4	2348.9	2284.4	2242.1	2216.5
67.5°	2132.6	2164.4	2189.2	2195.3	2209.5	2223.6	2203.3	2237.7	2149.4	2118.5	2117.6
70°	2079.8	2098.2	2101.7	2091.2	2078.0	2119.4	2086.7	2094.7	2090.3	2067.4	2051.5
72.5°	1981.8	2003.0	2014.4	1974.7	1954.4	1964.1	1982.7	1966.8	1988.0	1951.8	1929.7
75°	1764.7	1780.6	1805.3	1826.5	1799.1	1816.8	1811.5	1782.3	1768.2	1679.1	1667.7
77.5°	1468.2	1480.6	1534.4	1568.0	1579.5	1580.4	1538.9	1512.4	1483.2	1428.5	1423.2
80°	1197.4	1217.7	1247.7	1271.4	1316.5	1321.8	1311.2	1282.0	1252.0	1208.0	1201.8
82.5°	955.6	960.9	1006.8	1026.2	1031.5	1050.0	1037.7	1023.6	975.9	941.4	923.8
85°	695.3	702.4	713.9	750.8	795.0	819.7	758.8	725.3	678.5	653.8	650.3
87.5°	490.6	485.3	491.5	505.6	528.6	536.5	501.2	469.4	462.3	446.4	443.8
90°	239.2	240.0	255.8	279.7	293.8	310.6	289.4	265.6	257.6	239.2	237.4
92.5°	134.1	134.1	133.2	143.8	150.9	154.4	151.8	142.9	132.3	124.4	122.6
95°	99.7	100.5	98.8	97.0	93.5	87.3	94.4	97.9	98.8	97.9	96.1
97.5°	99.7	98.8	94.4	83.8	69.7	62.7	72.4	90.8	100.5	105.8	104.1
100°	106.7	106.7	95.3	83.8	63.6	62.7	66.2	87.3	105.0	118.2	116.4
102.5°	120.0	119.1	104.1	91.7	64.5	43.3	70.6	101.4	117.3	132.3	131.5
105°	117.3	112.0	95.3	68.0	34.4	25.6	39.7	73.3	96.1	113.8	115.6
107.5°	75.0	74.2	57.4	33.5	25.6	24.7	27.4	38.0	55.6	66.2	67.1
110°	43.3	42.4	37.1	30.0	24.7	20.3	25.6	31.8	38.8	43.3	43.3



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 CATALOG NUMBER: CLCS30S-PC-4000K-80%

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
112.5°	41.5	40.6	35.3	27.4	19.4	13.2	20.3	30.0	37.1	41.5	41.5
115°	36.2	35.3	30.9	22.1	14.1	9.7	15.0	24.7	31.8	38.0	38.8
117.5°	32.7	30.9	23.8	15.9	9.7	7.1	10.6	17.7	27.4	32.7	33.5
120°	23.8	23.0	17.7	12.4	7.1	5.3	7.9	13.2	20.3	27.4	27.4
122.5°	18.5	17.7	14.1	8.8	4.4	3.5	5.3	10.6	15.9	21.2	21.2
125°	15.0	14.1	10.6	7.1	3.5	1.8	4.4	7.9	13.2	17.7	17.7
127.5°	11.5	11.5	8.8	5.3	2.6	0.9	2.6	6.2	10.6	13.2	13.2
130°	8.8	8.8	7.1	4.4	1.8	0.9	1.8	4.4	7.1	8.8	9.7
132.5°	7.9	7.9	6.2	2.6	0.9	0.9	0.9	3.5	6.2	7.9	7.9
135°	5.3	4.4	1.8	0.9	0.9	0.9	0.9	0.9	3.5	6.2	6.2
137.5°	0.9	0.9	0.9	0.9	0.9	0.9	1.8	0.9	0.9	0.9	0.9
140°	0.9	0.9	0.9	0.9	1.8	1.8	1.8	0.9	0.9	0.9	0.9
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	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

Lumark

Report Number: SP1-2405-118-1

Test Date: 07/17/2024

Luminaire Tested: CLCS40S-3000K-HIGH

Data in this report applies to families of products including CLCS40S-3000K-HIGH

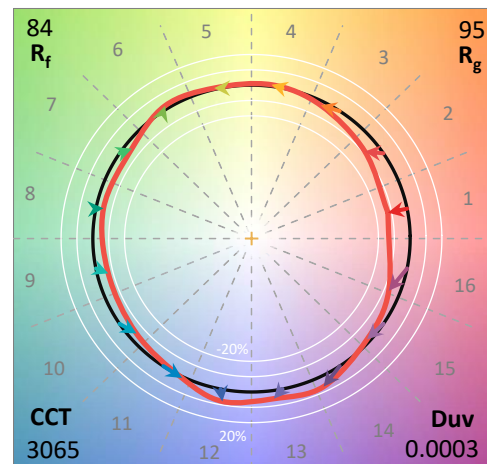
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2405-118-1
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 07/18/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Lumark
 Catalog Number: **CLCS40S-3000K-HIGH**
 Description: 120W LUMARK AP CANOPY SELECTABLE FIXTURE HIGHEST OUTPUT @3000K

Spectral Parameters

CCT (K): 3065
 CIE u' : 0.2482
 CIE v' : 0.5205
 Duv: 0.0003
 CIE x: 0.4328
 CIE y: 0.4033
 CIE z: 0.1639
 Peak Wavelength (nm): 601
 Dominant Wavelength (nm): 582
 Purity: 50.97738
 R_f: 83.6
 R_g: 95.1

CRI (Ra): 80.9
 R1: 78.9
 R2: 89.8
 R3: 96.2
 R4: 78.4
 R5: 79.1
 R6: 87.3
 R7: 81.8
 R8: 56.0
 R9: -0.8
 R10: 76.7
 R11: 77.3
 R12: 67.5
 R13: 81.4
 R14: 98.5
 R15: 71.1



Test Conditions

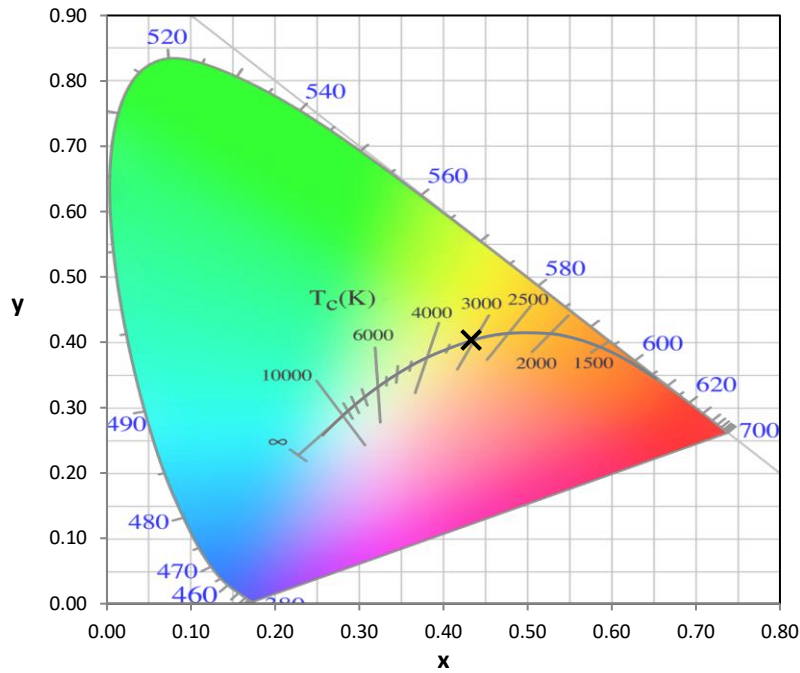
Stabilization Time: 60M
 Operation Time: 1H 60M
 Sphere Temperature (°C): 24.0

REPORT NUMBER: SP1-2405-118-1

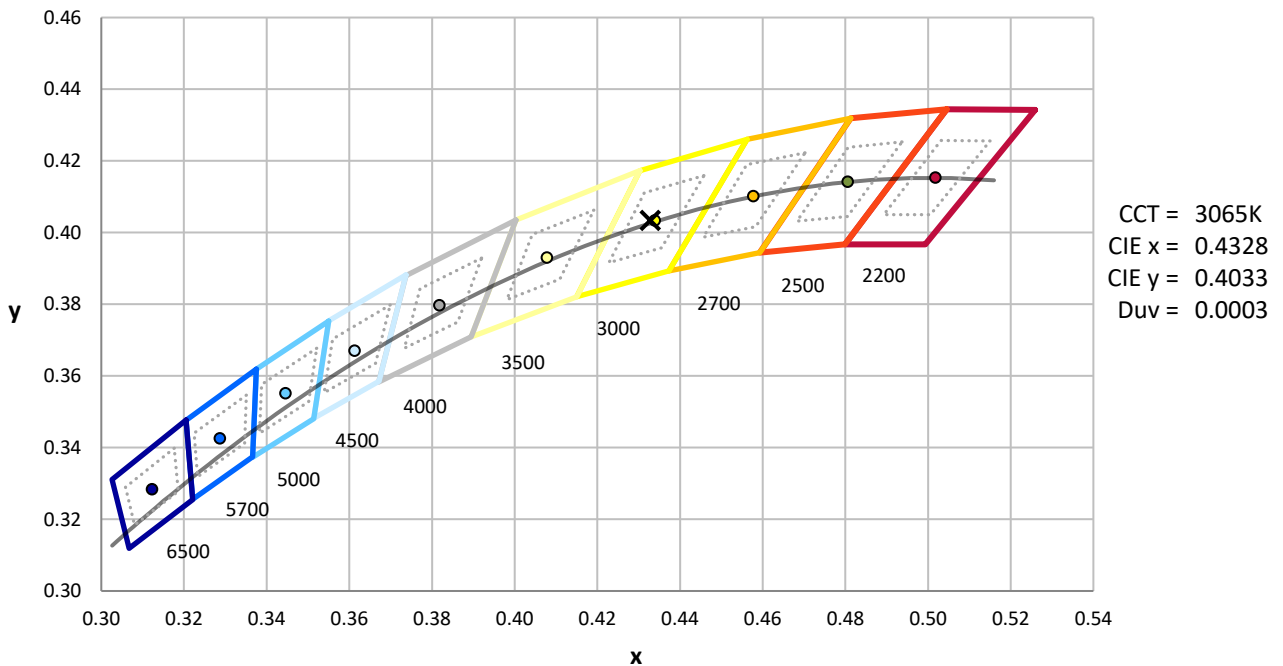
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

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CIE 1931 Chromaticity Diagram



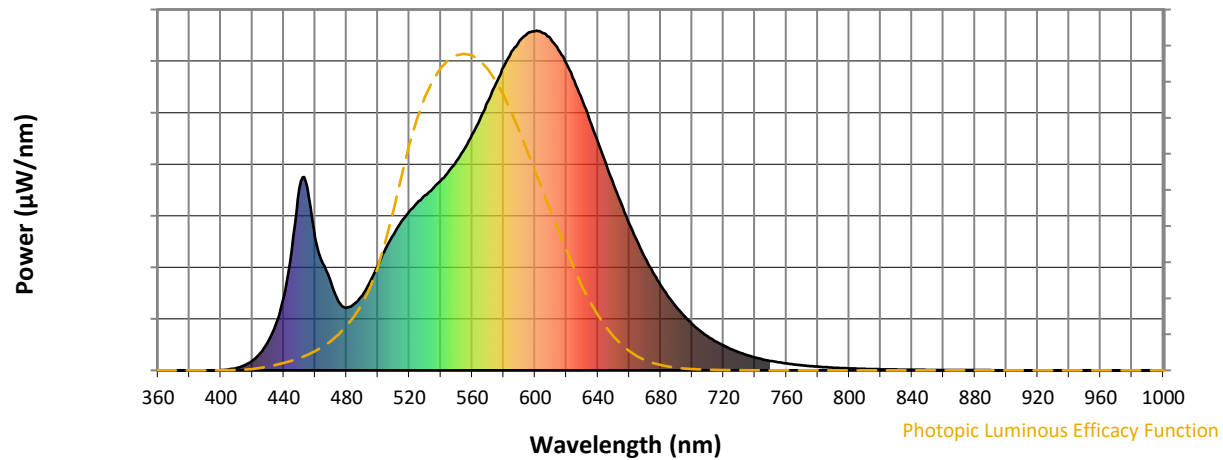
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

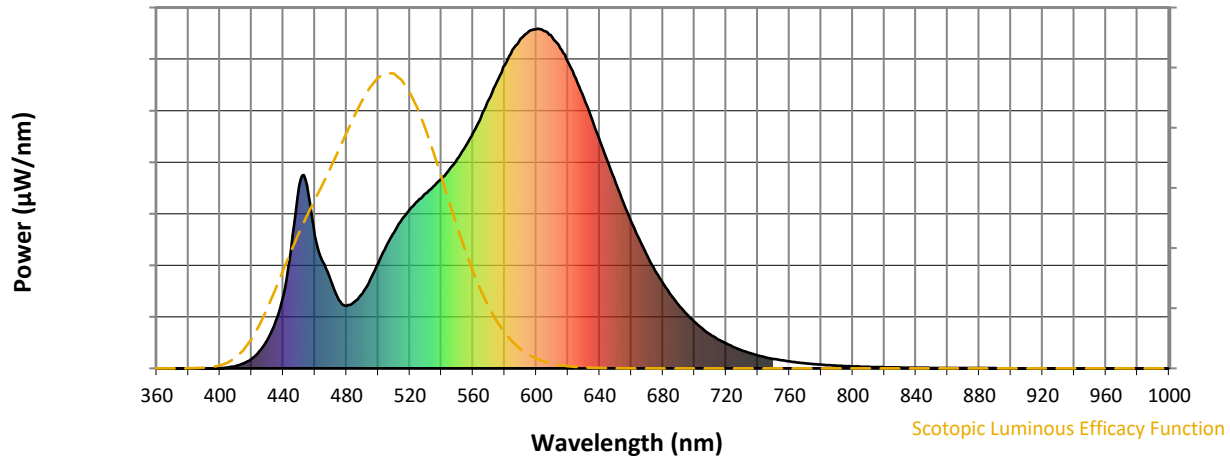


Photopic Lumens: NR

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	221	NR	620	902	NR	750	28	NR	880	1	NR
365	0	NR	495	261	NR	625	853	NR	755	24	NR	885	1	NR
370	0	NR	500	309	NR	630	796	NR	760	20	NR	890	1	NR
375	0	NR	505	359	NR	635	735	NR	765	17	NR	895	0	NR
380	0	NR	510	401	NR	640	673	NR	770	15	NR	900	0	NR
385	0	NR	515	438	NR	645	609	NR	775	13	NR	905	0	NR
390	0	NR	520	469	NR	650	547	NR	780	11	NR	910	0	NR
395	0	NR	525	493	NR	655	489	NR	785	9	NR	915	0	NR
400	1	NR	530	515	NR	660	432	NR	790	8	NR	920	0	NR
405	3	NR	535	536	NR	665	381	NR	795	7	NR	925	0	NR
410	7	NR	540	558	NR	670	331	NR	800	6	NR	930	0	NR
415	15	NR	545	586	NR	675	288	NR	805	5	NR	935	0	NR
420	28	NR	550	616	NR	680	251	NR	810	4	NR	940	0	NR
425	51	NR	555	652	NR	685	216	NR	815	4	NR	945	0	NR
430	84	NR	560	694	NR	690	187	NR	820	3	NR	950	0	NR
435	136	NR	565	740	NR	695	160	NR	825	3	NR	955	0	NR
440	215	NR	570	791	NR	700	137	NR	830	2	NR	960	0	NR
445	352	NR	575	843	NR	705	117	NR	835	2	NR	965	0	NR
450	536	NR	580	893	NR	710	100	NR	840	2	NR	970	0	NR
455	538	NR	585	938	NR	715	85	NR	845	2	NR	975	0	NR
460	391	NR	590	970	NR	720	73	NR	850	1	NR	980	0	NR
465	313	NR	595	991	NR	725	62	NR	855	1	NR	985	0	NR
470	259	NR	600	998	NR	730	53	NR	860	1	NR	990	0	NR
475	202	NR	605	993	NR	735	45	NR	865	1	NR	995	0	NR
480	184	NR	610	975	NR	740	38	NR	870	1	NR	1000	0	NR
485	196	NR	615	943	NR	745	32	NR	875	1	NR			

REPORT NUMBER: SP1-2405-118-1

Scotopic Flux vs. Wavelength



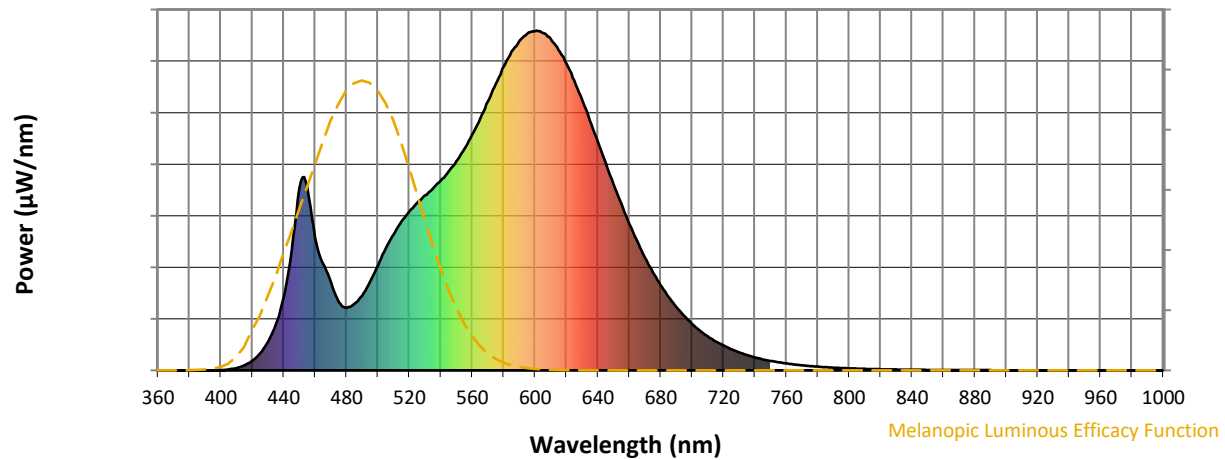
Scotopic Lumens: NR

S/P: 1.35

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	221	NR	620	902	NR	750	28	NR	880	1	NR
365	0	NR	495	261	NR	625	853	NR	755	24	NR	885	1	NR
370	0	NR	500	309	NR	630	796	NR	760	20	NR	890	1	NR
375	0	NR	505	359	NR	635	735	NR	765	17	NR	895	0	NR
380	0	NR	510	401	NR	640	673	NR	770	15	NR	900	0	NR
385	0	NR	515	438	NR	645	609	NR	775	13	NR	905	0	NR
390	0	NR	520	469	NR	650	547	NR	780	11	NR	910	0	NR
395	0	NR	525	493	NR	655	489	NR	785	9	NR	915	0	NR
400	1	NR	530	515	NR	660	432	NR	790	8	NR	920	0	NR
405	3	NR	535	536	NR	665	381	NR	795	7	NR	925	0	NR
410	7	NR	540	558	NR	670	331	NR	800	6	NR	930	0	NR
415	15	NR	545	586	NR	675	288	NR	805	5	NR	935	0	NR
420	28	NR	550	616	NR	680	251	NR	810	4	NR	940	0	NR
425	51	NR	555	652	NR	685	216	NR	815	4	NR	945	0	NR
430	84	NR	560	694	NR	690	187	NR	820	3	NR	950	0	NR
435	136	NR	565	740	NR	695	160	NR	825	3	NR	955	0	NR
440	215	NR	570	791	NR	700	137	NR	830	2	NR	960	0	NR
445	352	NR	575	843	NR	705	117	NR	835	2	NR	965	0	NR
450	536	NR	580	893	NR	710	100	NR	840	2	NR	970	0	NR
455	538	NR	585	938	NR	715	85	NR	845	2	NR	975	0	NR
460	391	NR	590	970	NR	720	73	NR	850	1	NR	980	0	NR
465	313	NR	595	991	NR	725	62	NR	855	1	NR	985	0	NR
470	259	NR	600	998	NR	730	53	NR	860	1	NR	990	0	NR
475	202	NR	605	993	NR	735	45	NR	865	1	NR	995	0	NR
480	184	NR	610	975	NR	740	38	NR	870	1	NR	1000	0	NR
485	196	NR	615	943	NR	745	32	NR	875	1	NR			

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Melanopic Flux vs. Wavelength


Melanopic Lumens: NR
M/P: 2.61

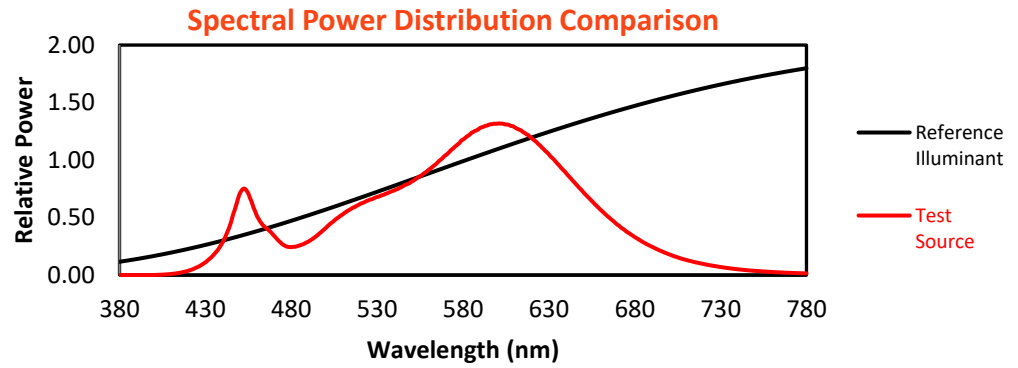
λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	221	NR	620	902	NR	750	28	NR	880	1	NR
365	0	NR	495	261	NR	625	853	NR	755	24	NR	885	1	NR
370	0	NR	500	309	NR	630	796	NR	760	20	NR	890	1	NR
375	0	NR	505	359	NR	635	735	NR	765	17	NR	895	0	NR
380	0	NR	510	401	NR	640	673	NR	770	15	NR	900	0	NR
385	0	NR	515	438	NR	645	609	NR	775	13	NR	905	0	NR
390	0	NR	520	469	NR	650	547	NR	780	11	NR	910	0	NR
395	0	NR	525	493	NR	655	489	NR	785	9	NR	915	0	NR
400	1	NR	530	515	NR	660	432	NR	790	8	NR	920	0	NR
405	3	NR	535	536	NR	665	381	NR	795	7	NR	925	0	NR
410	7	NR	540	558	NR	670	331	NR	800	6	NR	930	0	NR
415	15	NR	545	586	NR	675	288	NR	805	5	NR	935	0	NR
420	28	NR	550	616	NR	680	251	NR	810	4	NR	940	0	NR
425	51	NR	555	652	NR	685	216	NR	815	4	NR	945	0	NR
430	84	NR	560	694	NR	690	187	NR	820	3	NR	950	0	NR
435	136	NR	565	740	NR	695	160	NR	825	3	NR	955	0	NR
440	215	NR	570	791	NR	700	137	NR	830	2	NR	960	0	NR
445	352	NR	575	843	NR	705	117	NR	835	2	NR	965	0	NR
450	536	NR	580	893	NR	710	100	NR	840	2	NR	970	0	NR
455	538	NR	585	938	NR	715	85	NR	845	2	NR	975	0	NR
460	391	NR	590	970	NR	720	73	NR	850	1	NR	980	0	NR
465	313	NR	595	991	NR	725	62	NR	855	1	NR	985	0	NR
470	259	NR	600	998	NR	730	53	NR	860	1	NR	990	0	NR
475	202	NR	605	993	NR	735	45	NR	865	1	NR	995	0	NR
480	184	NR	610	975	NR	740	38	NR	870	1	NR	1000	0	NR
485	196	NR	615	943	NR	745	32	NR	875	1	NR			

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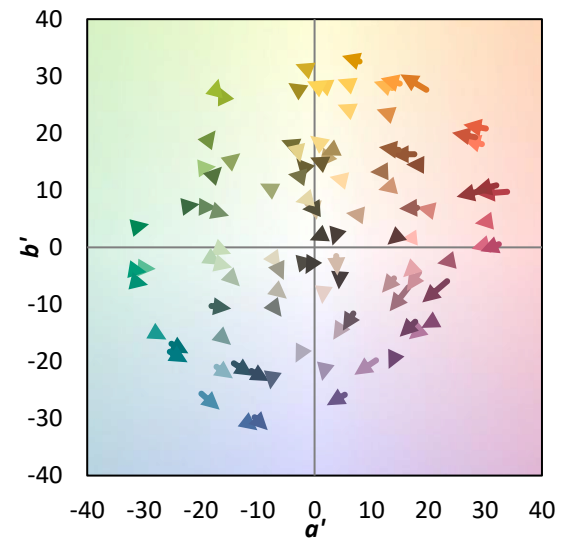
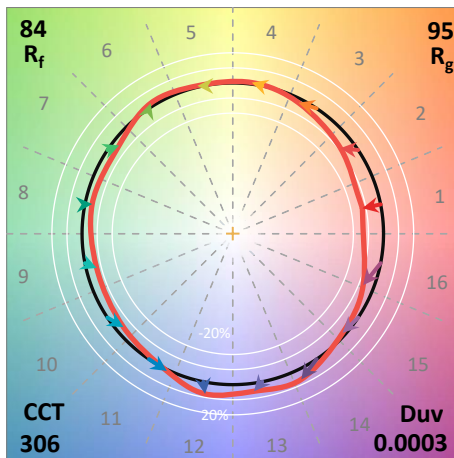
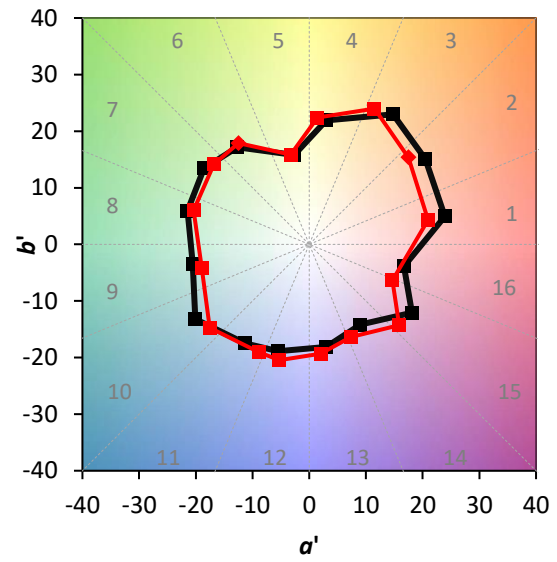
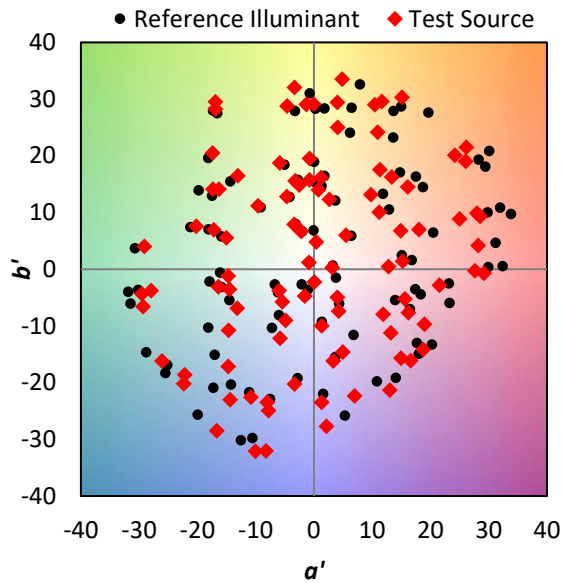
TM-30-18

Summary

$R_f = 83.6$
 $R_g = 95.1$
 $CIE R_a = 80.9$
 $R_g = -0.8$

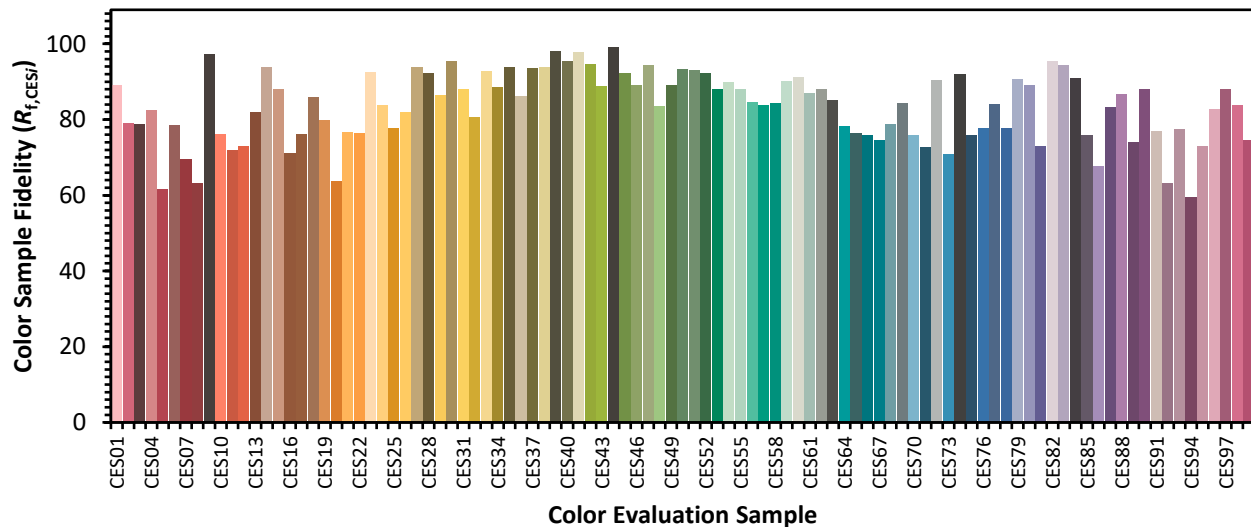


Color Vector Graphics

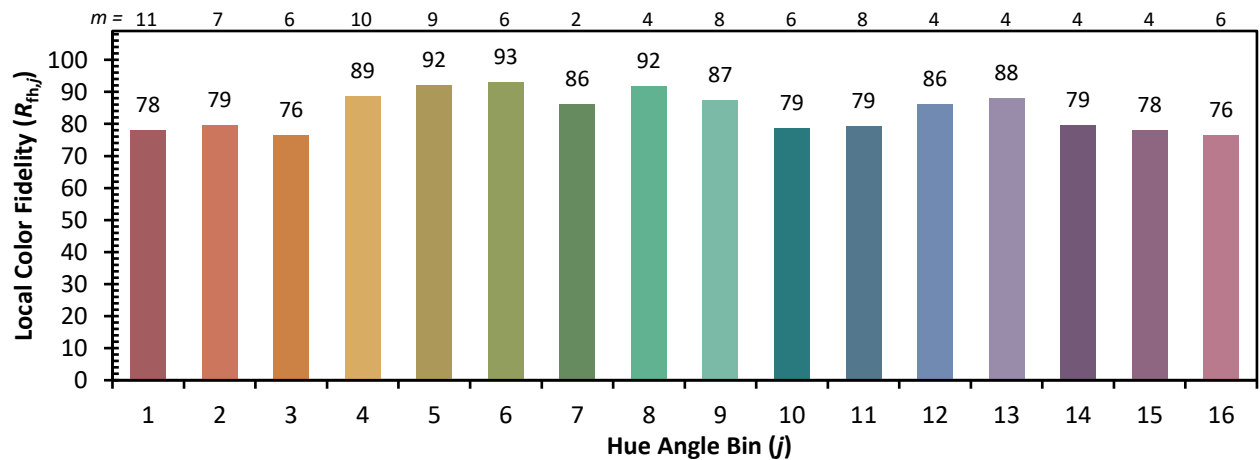
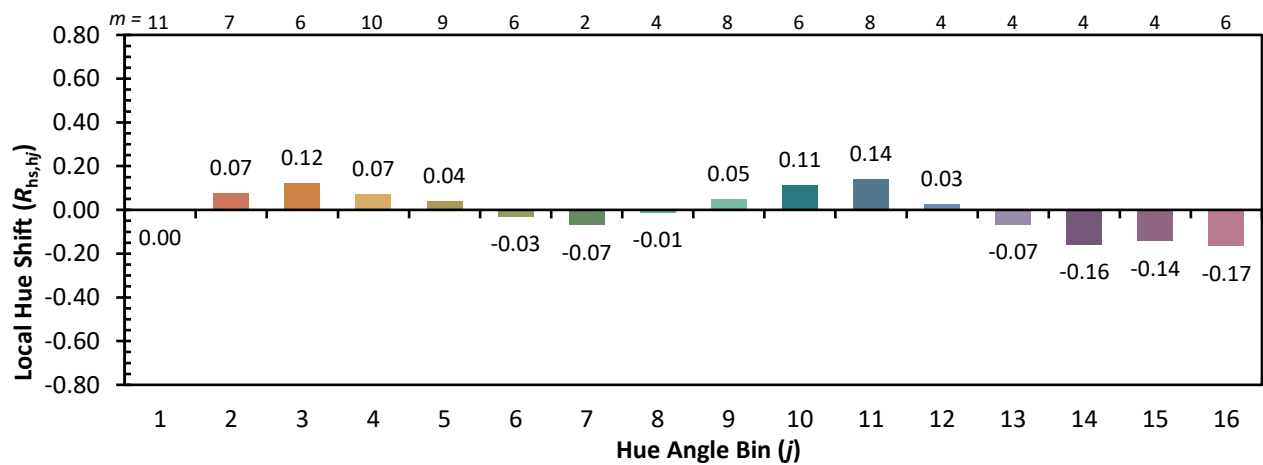
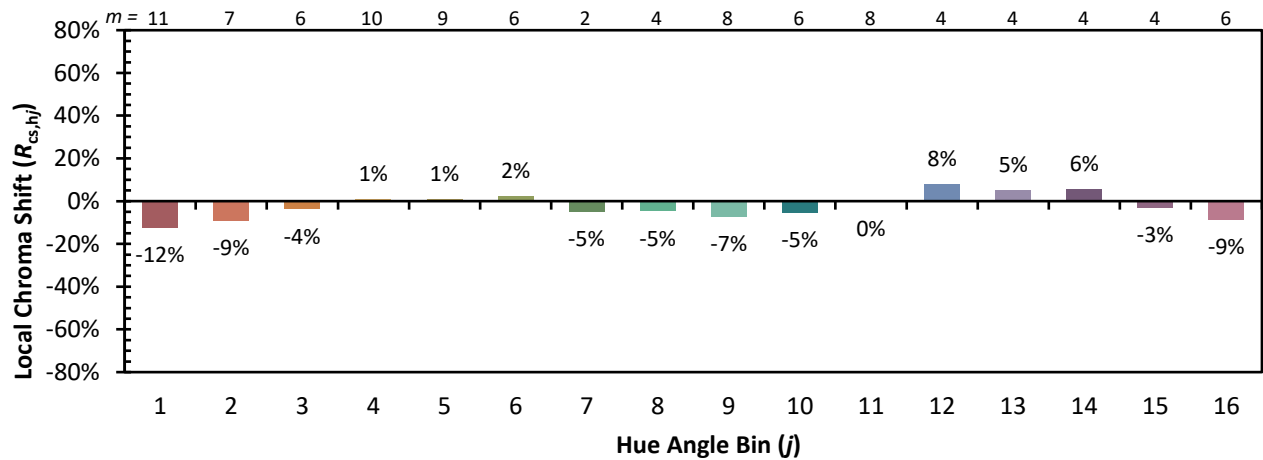


Individual Sample Fidelity Index ($R_{f,i}$)

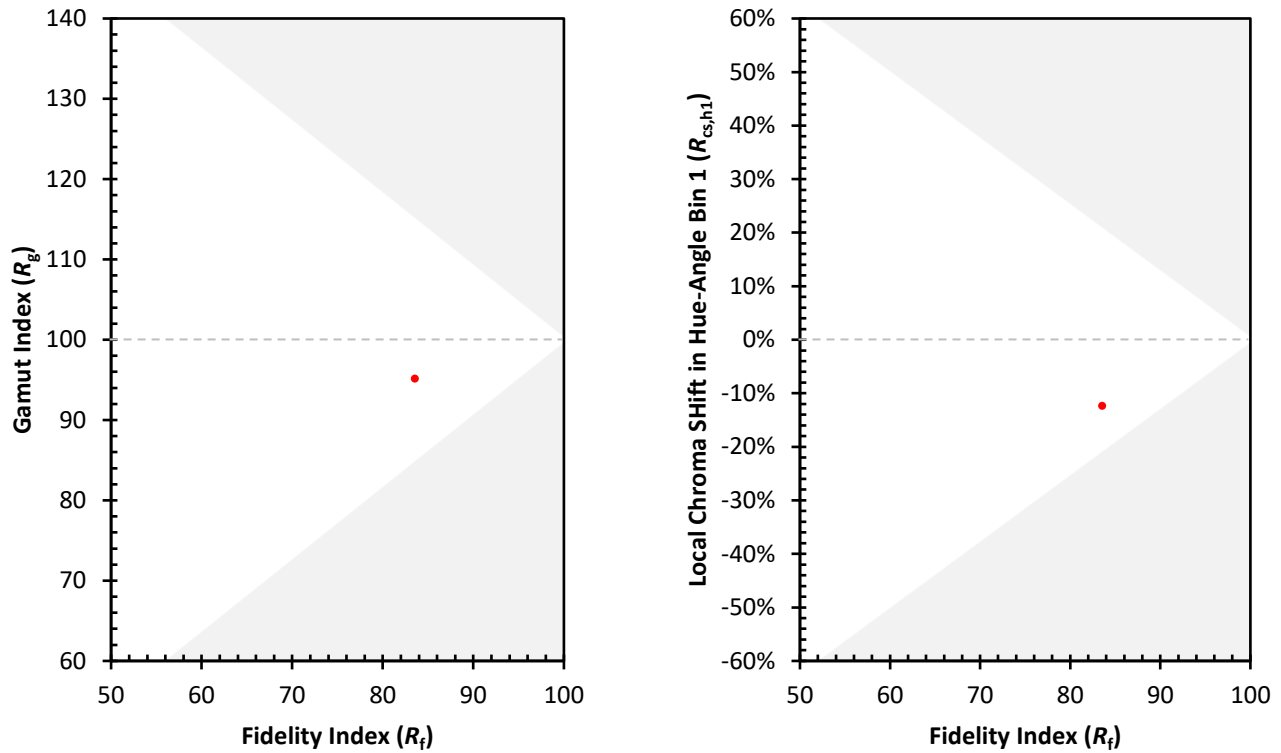
CES01 = 86	CES26 = 82	CES51 = 93	CES76 = 78
CES02 = 63	CES27 = 94	CES52 = 92	CES77 = 84
CES03 = 31	CES28 = 92	CES53 = 88	CES78 = 78
CES04 = 70	CES29 = 86	CES54 = 90	CES79 = 91
CES05 = 49	CES30 = 96	CES55 = 88	CES80 = 89
CES06 = 51	CES31 = 88	CES56 = 85	CES81 = 73
CES07 = 42	CES32 = 81	CES57 = 84	CES82 = 95
CES08 = 41	CES33 = 93	CES58 = 84	CES83 = 94
CES09 = 29	CES34 = 89	CES59 = 90	CES84 = 91
CES10 = 76	CES35 = 94	CES60 = 91	CES85 = 76
CES11 = 59	CES36 = 86	CES61 = 87	CES86 = 68
CES12 = 65	CES37 = 94	CES62 = 88	CES87 = 83
CES13 = 43	CES38 = 94	CES63 = 85	CES88 = 87
CES14 = 74	CES39 = 98	CES64 = 78	CES89 = 74
CES15 = 71	CES40 = 96	CES65 = 76	CES90 = 88
CES16 = 47	CES41 = 98	CES66 = 76	CES91 = 77
CES17 = 50	CES42 = 95	CES67 = 74	CES92 = 63
CES18 = 56	CES43 = 89	CES68 = 79	CES93 = 77
CES19 = 72	CES44 = 99	CES69 = 84	CES94 = 60
CES20 = 66	CES45 = 92	CES70 = 76	CES95 = 73
CES21 = 87	CES46 = 89	CES71 = 73	CES96 = 83
CES22 = 79	CES47 = 94	CES72 = 90	CES97 = 88
CES23 = 92	CES48 = 84	CES73 = 71	CES98 = 84
CES24 = 91	CES49 = 89	CES74 = 92	CES99 = 75
CES25 = 72	CES50 = 93	CES75 = 76	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)