

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: P895749

Luminaire Tested: **CLCS30S-PC-4000K-100%**

Issue Date: 11/14/2024

Test Information

Test Method: LM-79-08
Report Number: P895749
Test Lab: INNOVATION CENTER(G2)
Issue Date: 11/14/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: CLCS30S-PC-4000K-100%
Description: LUMARK LARGE LED CANOPY 16000LM, 120W, PC 80 CRI 4000K FIXTURE @
100% OUTPUT
Light Source: 4000K CCT,80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17658.7 lumens
Efficiency: N/A
Efficacy: 147.2 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): 120
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

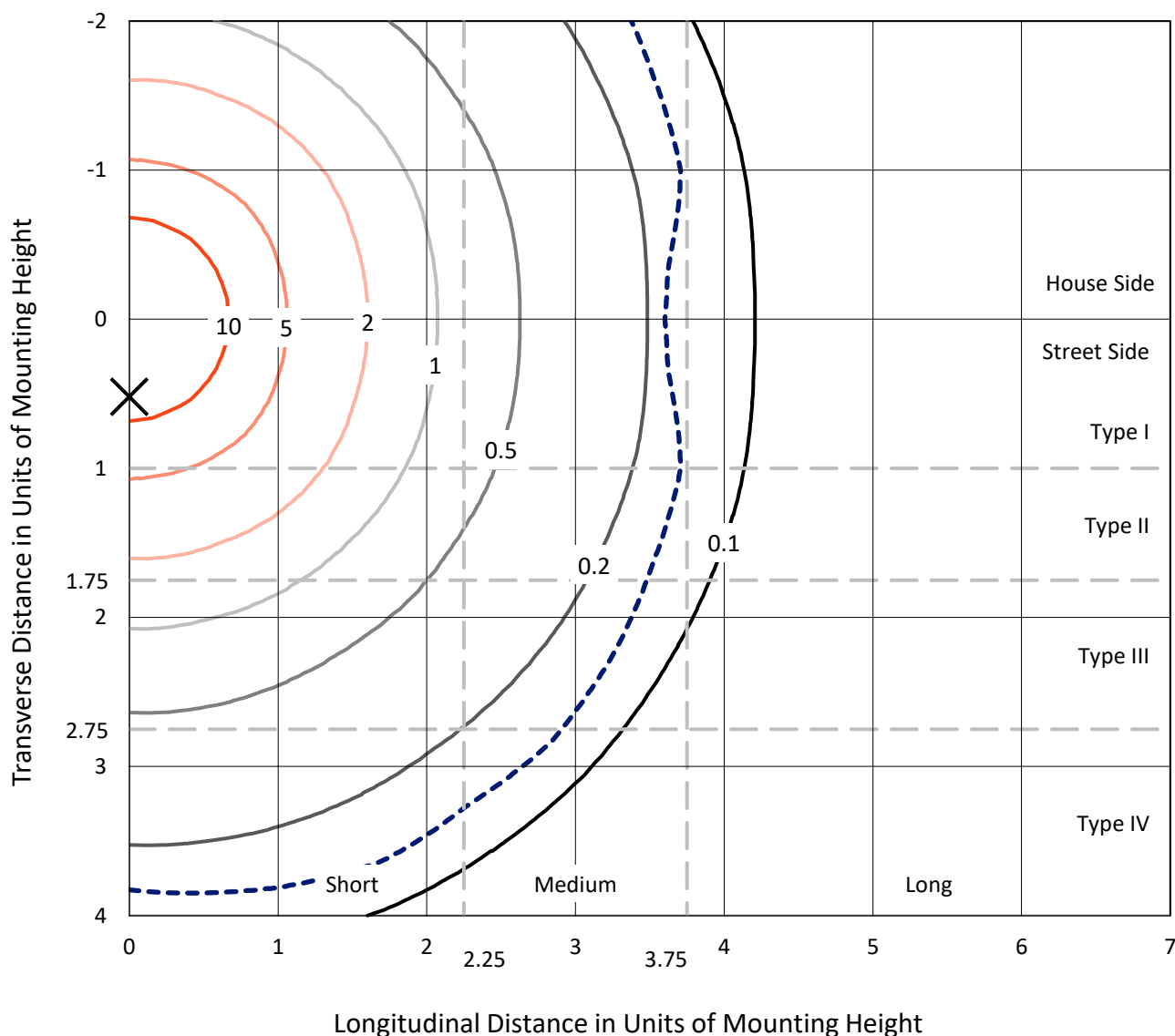
REPORT NUMBER: P895749

CATALOG NUMBER: CLCS30S-PC-4000K-100%

Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd

--- 1/2 Max cd

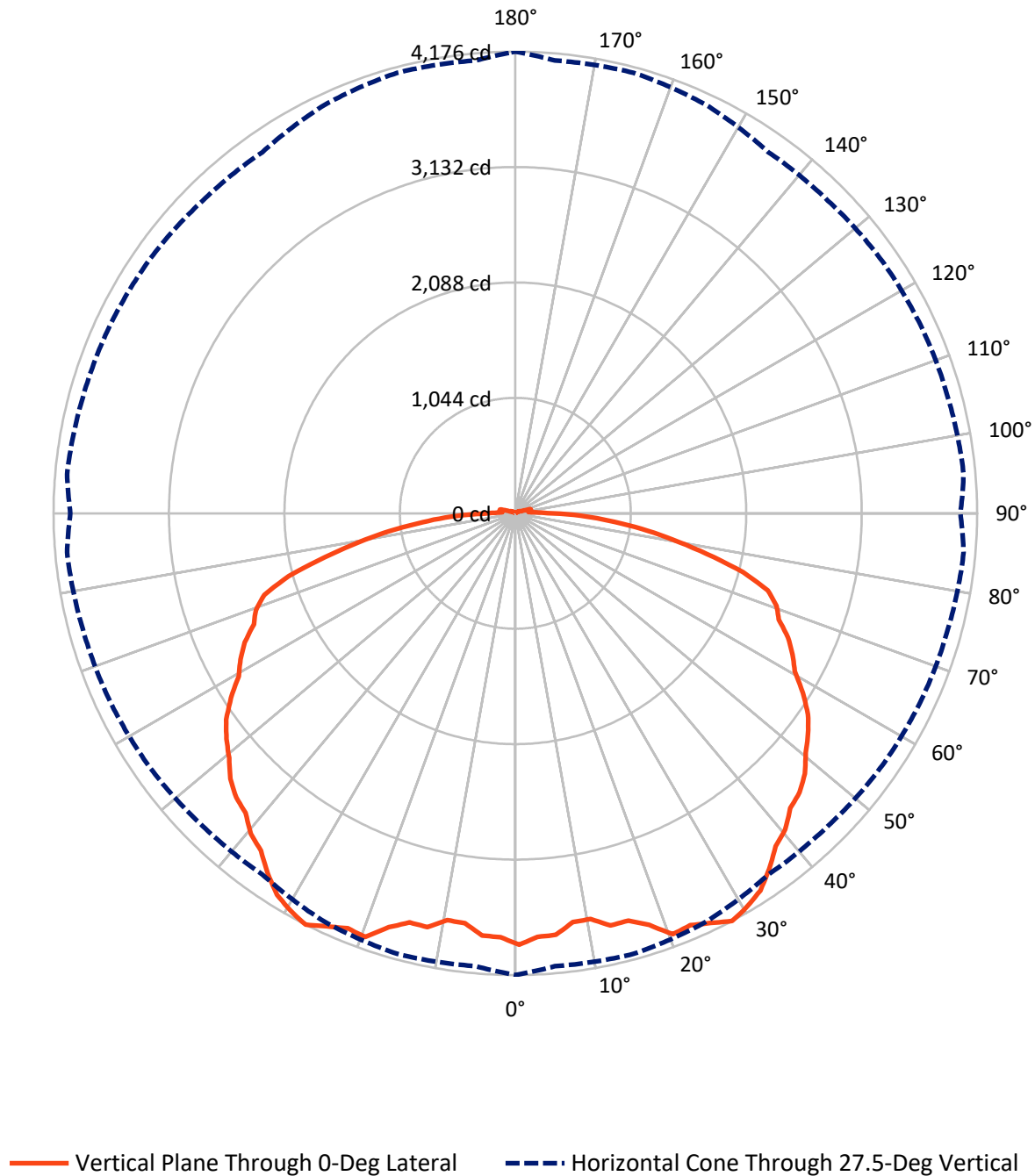


Based on 15 foot mounting height. Maximum calculated value = 17.3 fc

Type V - Short - N/A

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Luminous Intensity Polar Plot



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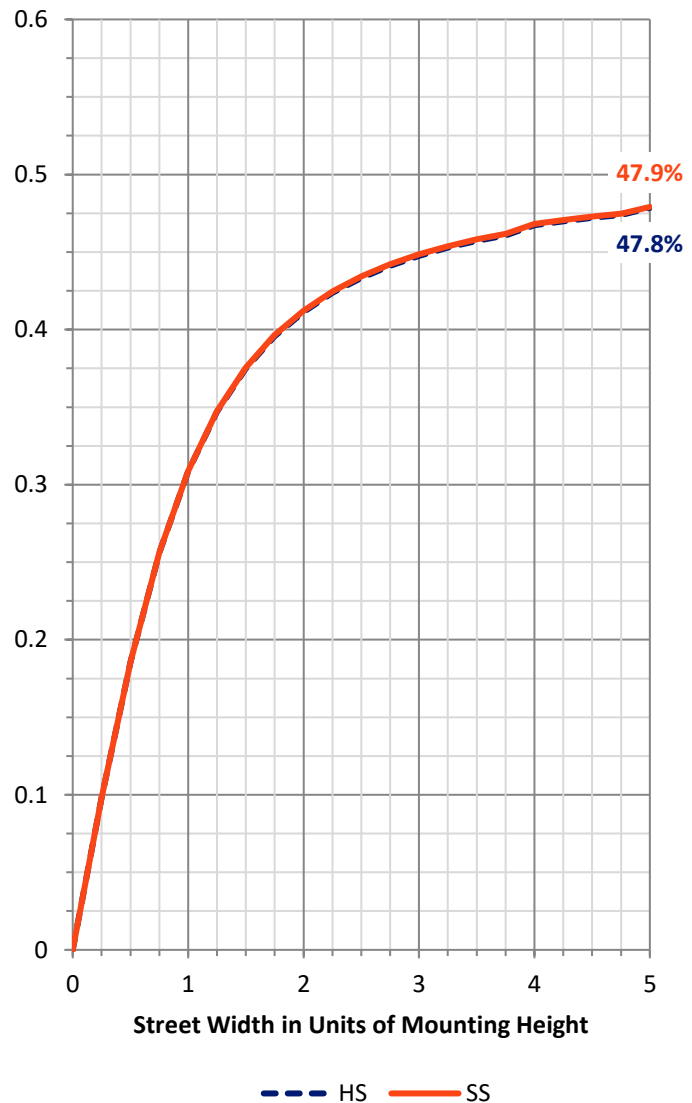
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	8682.2	147.2	8829.4
	% Fixture	49.2	0.8	50.0
Street Side	Lumens	8682.2	147.2	8829.4
	% Fixture	49.2	0.8	50.0
Total	Lumens	17364.4	294.4	17658.7
	% Fixture	98.3	1.7	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	353.6	2.0
10°-20°	1080.8	6.1
20°-30°	1853.4	10.5
30°-40°	2435.3	13.8
40°-50°	2786.5	15.8
50°-60°	2914.2	16.5
60°-70°	2742.0	15.5
70°-80°	2214.6	12.5
80°-90°	984.1	5.6
90°-100°	165.3	0.9
100°-110°	87.0	0.5
110°-120°	29.3	0.2
120°-130°	10.1	0.1
130°-140°	2.5	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°	17364.4	98.3
0°-180°	17658.7	100.0



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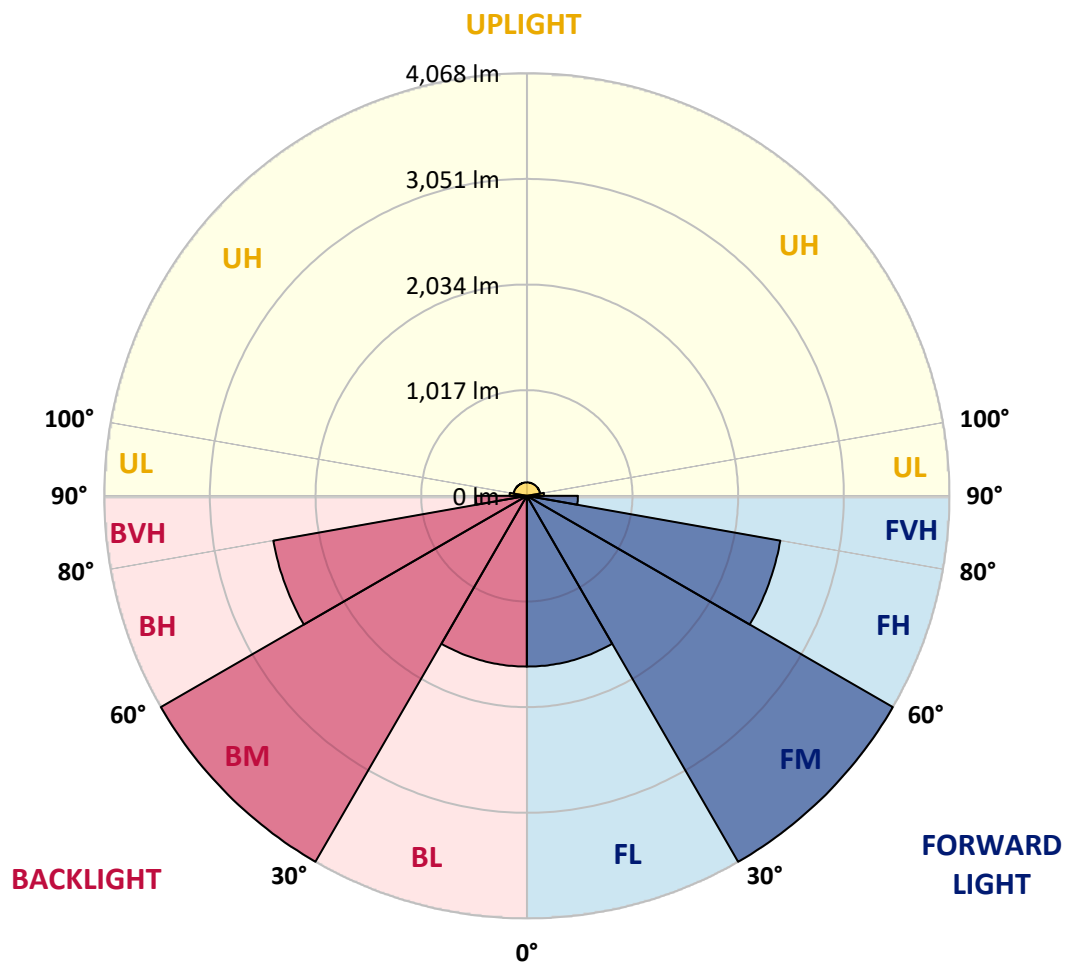
CATALOG NUMBER: CLCS30S-PC-4000K-100%

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1643.9	9.3			
FM	(30°-60°)	4068.0	23.0			
FH	(60°-80°)	2478.3	14.0			G2/5000
FVH	(80°-90°)	492.0	2.8			G3/500
BL	(0°-30°)	1643.9	9.3	B3/2500		
BM	(30°-60°)	4068.0	23.0	B3/5000		
BH	(60°-80°)	2478.3	14.0	B3/2500		G2/5000
BVH	(80°-90°)	492.0	2.8			G3/500
UL	(90°-100°)	165.3	0.9		U3/500	
UH	(100°-180°)	129.1	0.7		U3/500	

BUG Rating: B3-U3-G3

Type V Short



REPORT NUMBER: P895749

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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	3901.9	3901.9	3901.9	3901.9	3901.9	3901.9	3901.9	3901.9	3901.9	3901.9	3901.9
2.5°	3836.0	3843.5	3850.9	3824.3	3812.7	3818.0	3803.1	3814.8	3824.3	3819.0	3819.0
5°	3829.7	3835.0	3828.6	3773.3	3735.0	3704.2	3679.7	3689.3	3684.0	3698.9	3703.1
7.5°	3734.0	3752.0	3786.1	3740.4	3680.8	3640.4	3630.8	3617.0	3569.3	3552.3	3541.6
10°	3730.8	3741.4	3777.6	3714.8	3662.7	3659.5	3597.9	3560.8	3542.7	3522.5	3508.7
12.5°	3825.4	3813.7	3768.0	3789.3	3781.8	3698.9	3676.6	3617.0	3602.1	3594.7	3576.6
15°	3822.2	3861.5	3884.9	3833.9	3785.0	3821.2	3841.4	3790.3	3760.6	3708.5	3699.9
17.5°	3913.6	3952.9	3891.2	3923.1	3884.9	3898.7	3875.3	3856.1	3848.8	3838.2	3839.2
20°	4064.5	4023.1	3971.0	3944.4	3876.3	3895.5	3935.9	3923.1	3912.5	3932.7	3919.9
22.5°	4047.5	4030.5	3957.2	3992.2	3873.2	3902.9	3935.9	3979.5	3946.5	3912.5	3884.9
25°	4105.0	4060.3	4053.9	4032.7	3958.2	3949.7	3988.0	3981.6	3988.0	4024.1	4006.1
27.5°	4176.1	4111.3	4125.2	4077.3	3988.0	3998.6	4025.2	4040.1	4049.7	4068.8	4024.1
30°	4129.4	4086.9	4093.3	4042.2	4016.7	4097.5	3959.3	4065.6	4032.7	4026.3	4038.0
32.5°	4067.7	4025.2	4039.0	3960.3	4016.7	4018.8	3951.8	3992.2	3960.3	3994.4	3977.4
35°	3951.8	3864.7	3933.8	3855.2	3945.5	3909.3	3909.3	3871.0	3835.0	3848.8	3809.5
37.5°	3822.2	3738.2	3821.2	3753.1	3816.9	3804.1	3814.8	3743.5	3739.3	3743.5	3734.0
40°	3758.4	3680.8	3732.9	3722.3	3726.5	3744.6	3687.2	3692.5	3661.7	3671.2	3634.0
42.5°	3645.7	3587.2	3671.2	3672.3	3722.3	3726.5	3675.5	3640.4	3635.1	3566.1	3576.6
45°	3602.1	3535.2	3577.7	3613.8	3658.5	3740.4	3654.2	3628.7	3573.4	3517.2	3497.0
47.5°	3522.5	3501.2	3518.2	3576.6	3615.9	3667.0	3637.2	3538.4	3473.6	3458.7	3454.4
50°	3403.4	3398.1	3427.8	3452.3	3481.0	3575.5	3539.5	3470.4	3398.1	3373.6	3387.4
52.5°	3314.1	3301.3	3293.9	3408.7	3388.5	3409.8	3455.5	3387.4	3334.3	3248.3	3288.6
55°	3211.0	3222.7	3204.7	3302.4	3324.7	3352.4	3321.5	3281.2	3207.9	3138.7	3151.5
57.5°	3065.4	3103.7	3134.5	3138.7	3230.2	3265.3	3231.2	3149.4	3045.2	3053.7	3054.7
60°	2902.8	2961.3	2979.3	3017.5	3101.5	3092.0	3116.4	2996.4	2957.0	2962.3	2961.3
62.5°	2813.5	2830.5	2848.6	2897.5	2950.6	2945.3	2971.9	2906.0	2850.7	2839.0	2853.9
65°	2710.4	2740.1	2731.6	2768.8	2776.3	2785.8	2824.1	2829.4	2751.8	2700.9	2670.0
67.5°	2569.0	2607.3	2637.1	2644.5	2661.5	2678.5	2654.1	2695.6	2589.2	2552.0	2551.0
70°	2505.2	2527.6	2531.8	2519.1	2503.1	2553.1	2513.7	2523.3	2518.0	2490.3	2471.2
72.5°	2387.3	2412.8	2426.6	2378.8	2354.3	2366.0	2388.4	2369.2	2394.7	2351.2	2324.6
75°	2125.8	2144.9	2174.7	2200.2	2167.2	2188.5	2182.1	2147.0	2130.1	2022.7	2008.9
77.5°	1768.7	1783.6	1848.4	1888.7	1902.6	1903.6	1853.7	1821.8	1786.8	1720.8	1714.5
80°	1442.4	1466.8	1503.0	1531.7	1585.8	1592.2	1579.4	1544.4	1508.3	1455.1	1447.7
82.5°	1151.1	1157.5	1212.8	1236.2	1242.6	1264.9	1250.0	1233.0	1175.6	1134.1	1112.8
85°	837.6	846.1	859.9	904.5	957.7	987.5	914.1	873.7	817.4	787.6	783.3
87.5°	591.0	584.6	592.0	609.1	636.7	646.3	603.7	565.5	557.0	537.8	534.6
90°	288.0	289.1	308.2	337.0	354.0	374.2	348.7	319.9	310.4	288.0	285.9
92.5°	161.5	161.5	160.5	173.2	181.7	186.0	182.8	172.1	159.4	149.8	147.7
95°	120.1	121.2	119.1	117.0	112.7	105.3	113.8	118.0	119.1	118.0	115.9
97.5°	120.1	119.1	113.8	101.0	84.0	75.5	87.2	109.5	121.2	127.6	125.5
100°	128.7	128.7	114.8	101.0	76.6	75.5	79.7	105.3	126.5	142.5	140.4
102.5°	144.5	143.4	125.5	110.6	77.6	52.1	85.1	122.3	141.4	159.4	158.3
105°	141.4	135.0	114.8	81.9	41.5	30.8	47.8	88.3	115.9	137.2	139.3
107.5°	90.4	89.3	69.1	40.4	30.8	29.8	33.0	45.7	67.0	79.7	80.8
110°	52.1	51.0	44.7	36.2	29.8	24.5	30.8	38.3	46.8	52.1	52.1

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CATALOG NUMBER: CLCS30S-PC-4000K-100%

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
112.5°	50.0	48.9	42.5	33.0	23.4	15.9	24.5	36.2	44.7	50.0	50.0
115°	43.6	42.5	37.2	26.6	17.0	11.7	18.1	29.8	38.3	45.7	46.8
117.5°	39.3	37.2	28.7	19.1	11.7	8.5	12.8	21.3	33.0	39.3	40.4
120°	28.7	27.6	21.3	14.9	8.5	6.4	9.6	15.9	24.5	33.0	33.0
122.5°	22.3	21.3	17.0	10.6	5.3	4.3	6.4	12.8	19.1	25.5	25.5
125°	18.1	17.0	12.8	8.5	4.3	2.1	5.3	9.6	15.9	21.3	21.3
127.5°	13.8	13.8	10.6	6.4	3.2	1.1	3.2	7.4	12.8	15.9	15.9
130°	10.6	10.6	8.5	5.3	2.1	1.1	2.1	5.3	8.5	10.6	11.7
132.5°	9.6	9.6	7.4	3.2	1.1	1.1	1.1	4.3	7.4	9.6	9.6
135°	6.4	5.3	2.1	1.1	1.1	1.1	1.1	1.1	4.3	7.4	7.4
137.5°	1.1	1.1	1.1	1.1	1.1	1.1	2.1	1.1	1.1	1.1	1.1
140°	1.1	1.1	1.1	1.1	2.1	2.1	2.1	1.1	1.1	1.1	1.1
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

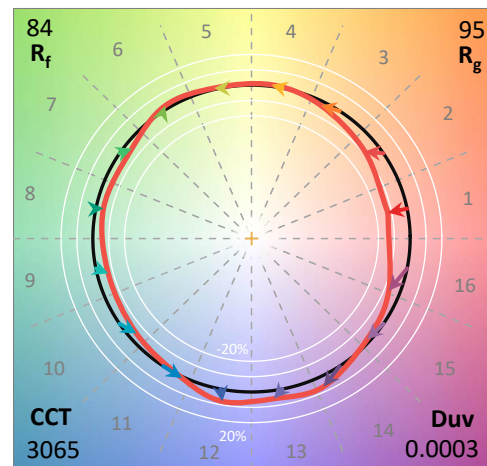
Test Information

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

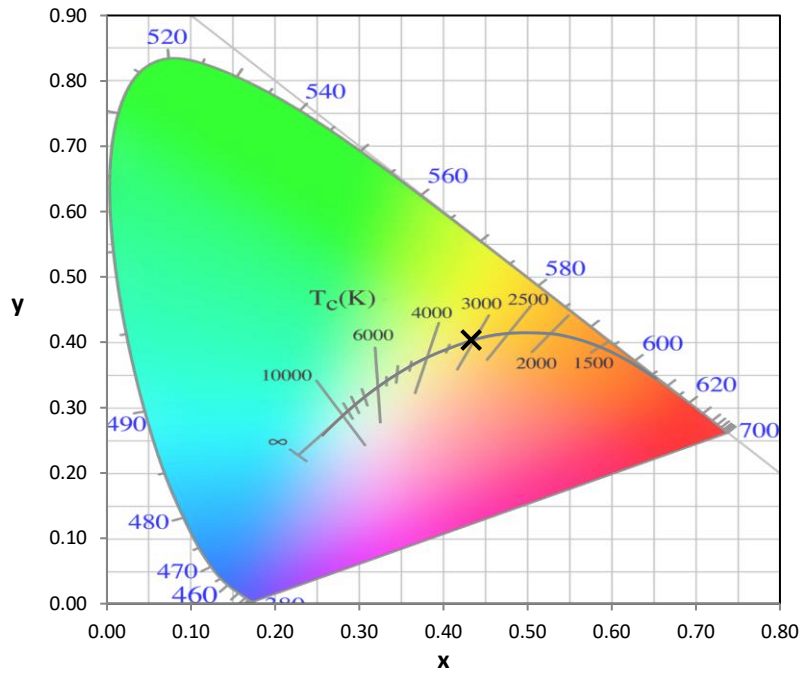
Stabilization Time: 60M
 Operation Time: 1H 60M
 Sphere Temperature (°C): 24.0

REPORT NUMBER: SP1-2405-118-1

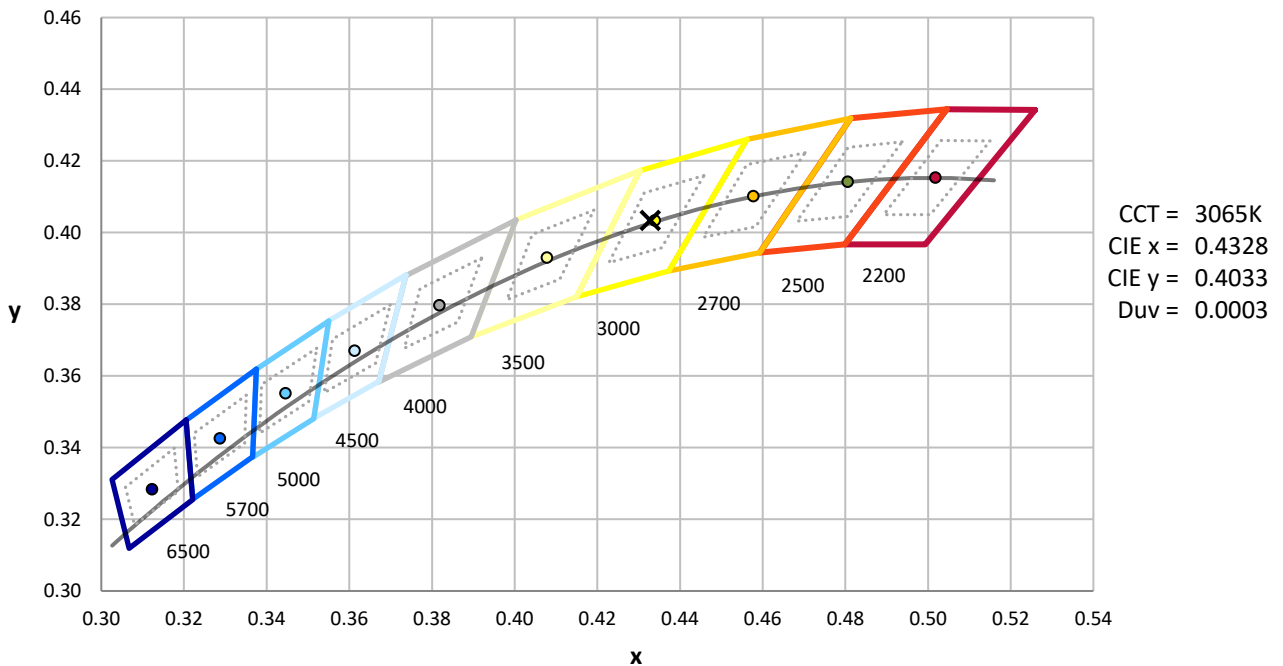
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

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CIE 1931 Chromaticity Diagram



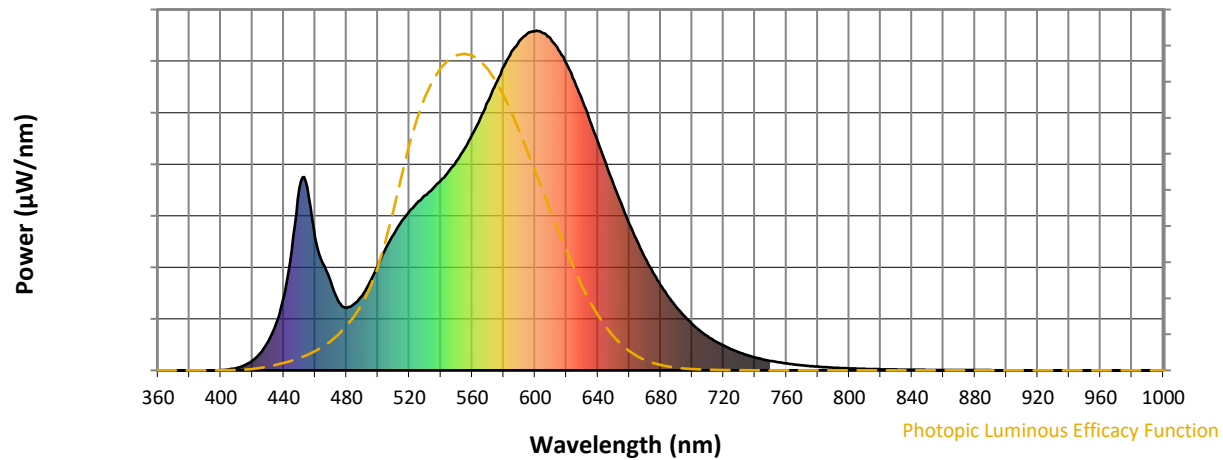
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

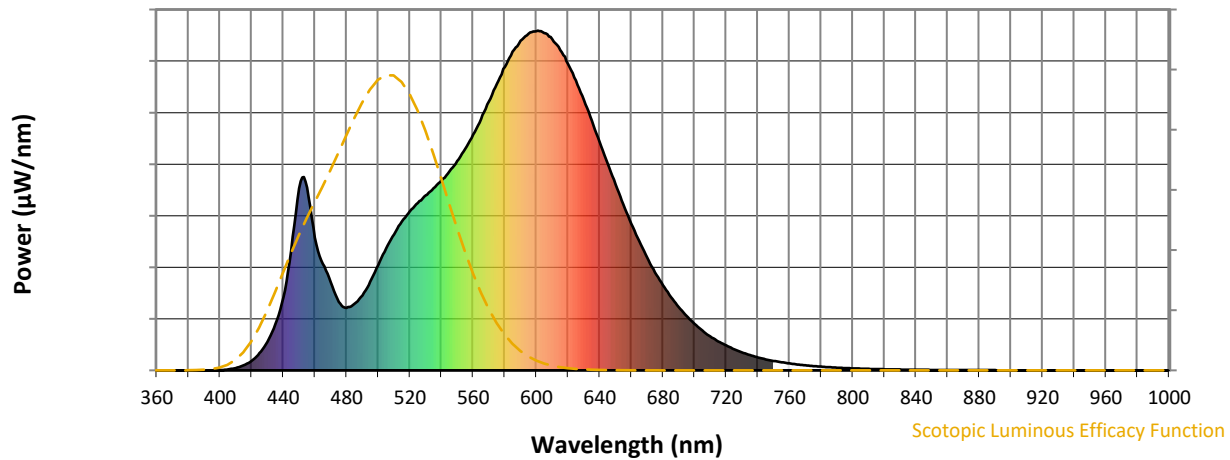


Photopic Lumens: NR

λ (nm)	Power 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	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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Scotopic Flux vs. Wavelength



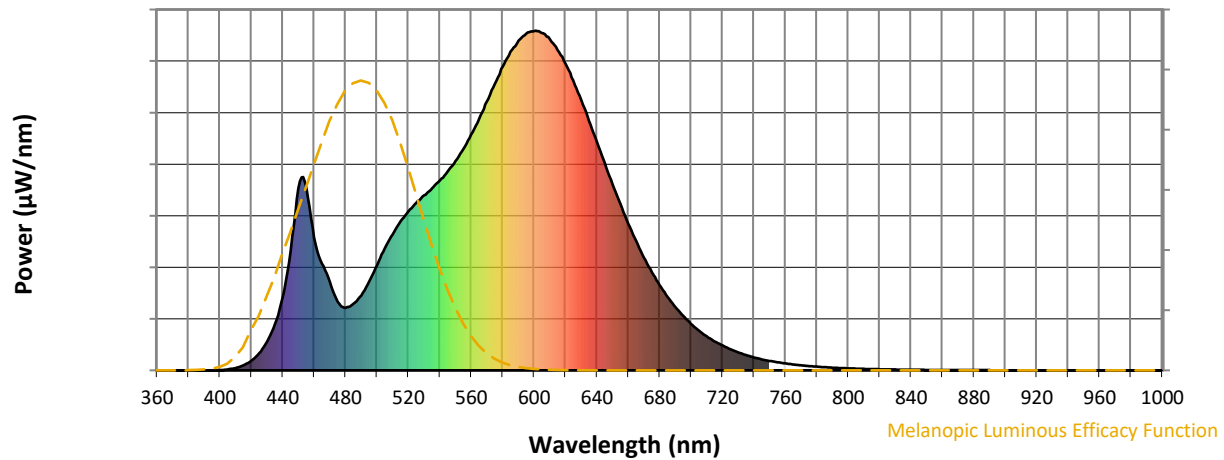
Scotopic Lumens: NR

S/P: 1.35

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	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

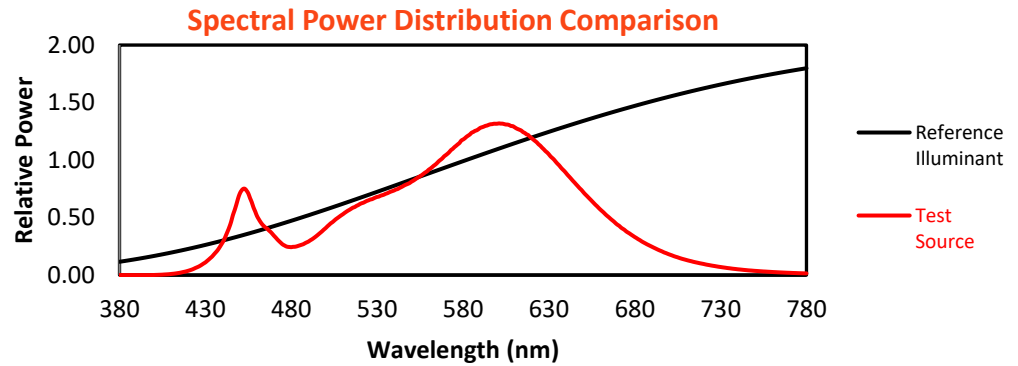
λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	221	NR	620	902	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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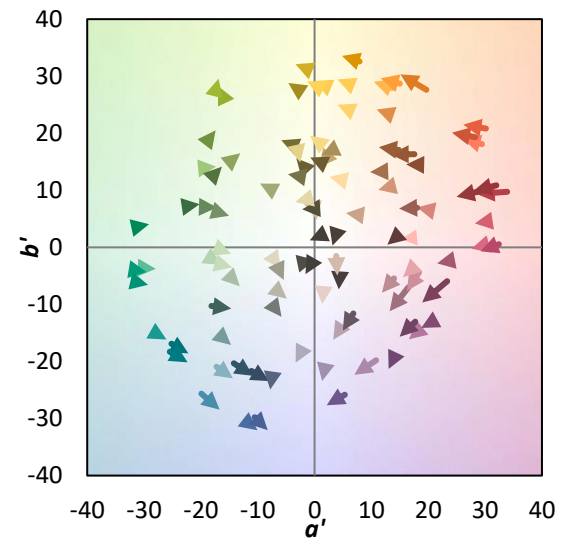
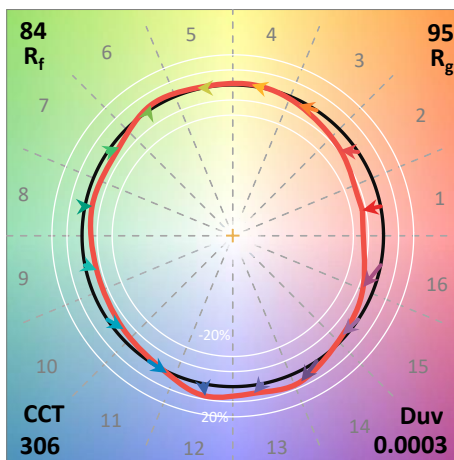
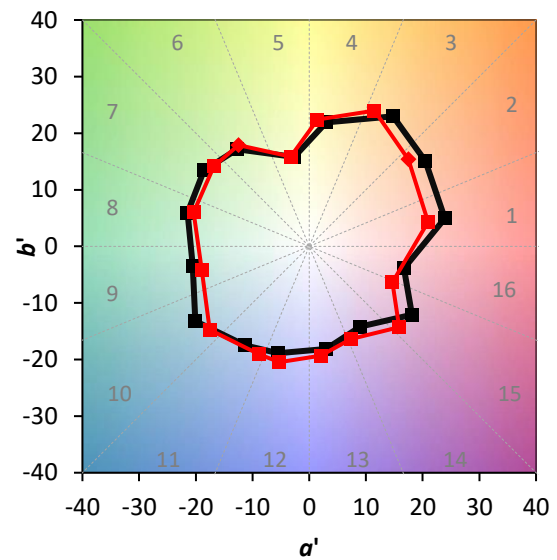
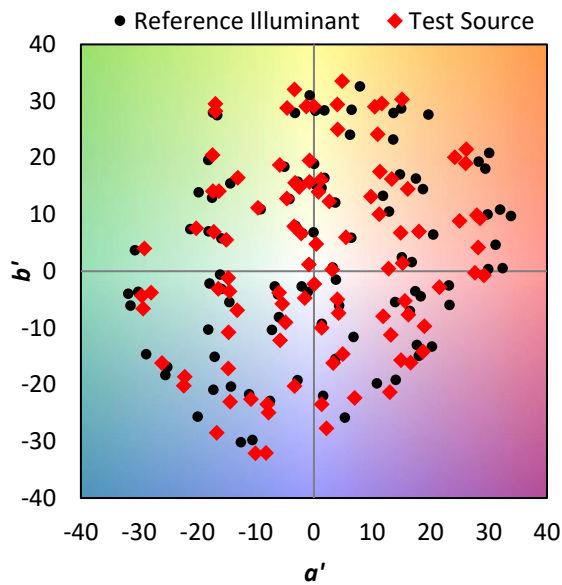
TM-30-18

Summary

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

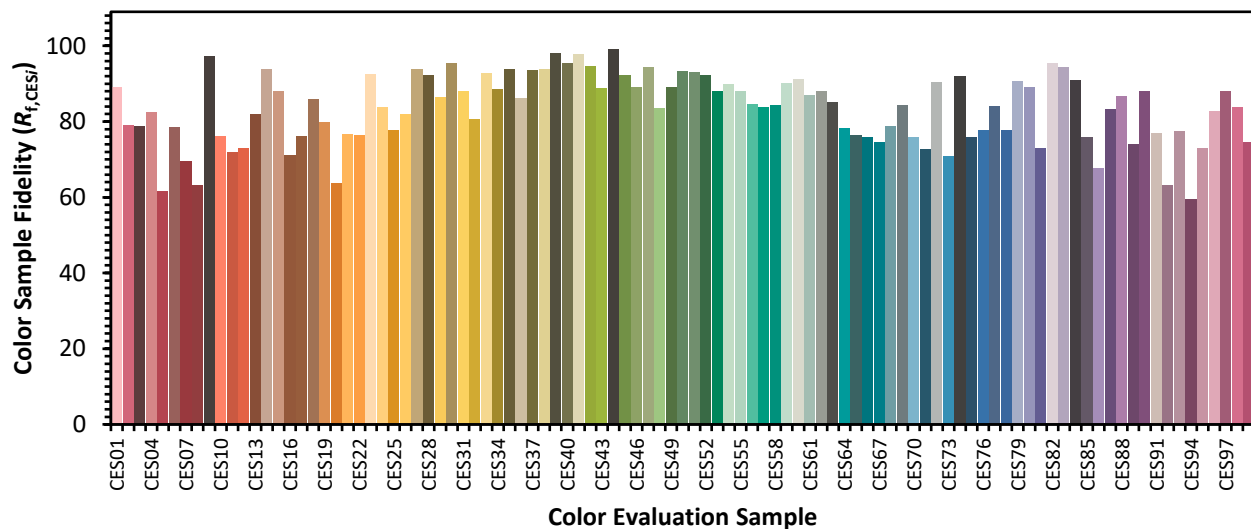


Color Vector Graphics

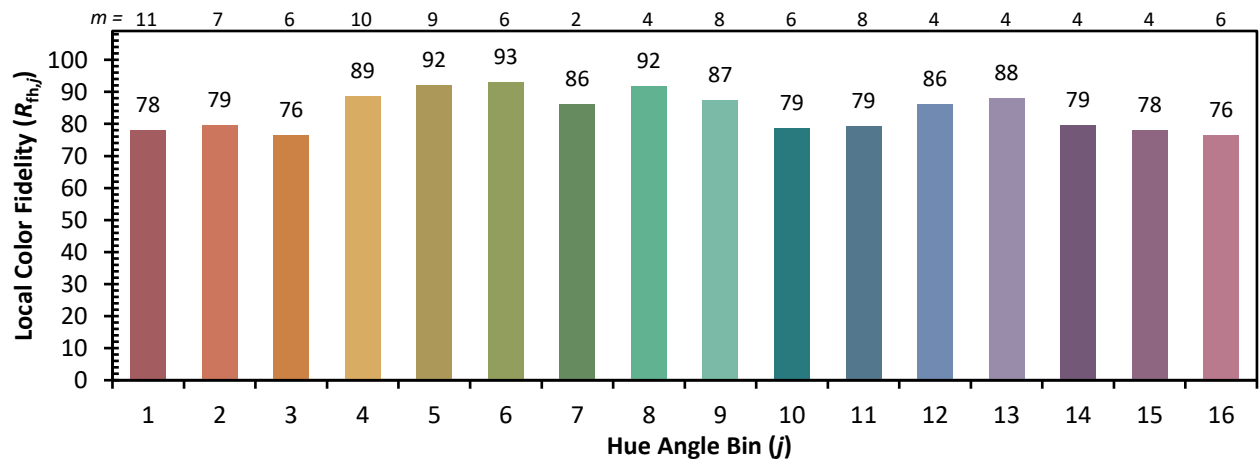
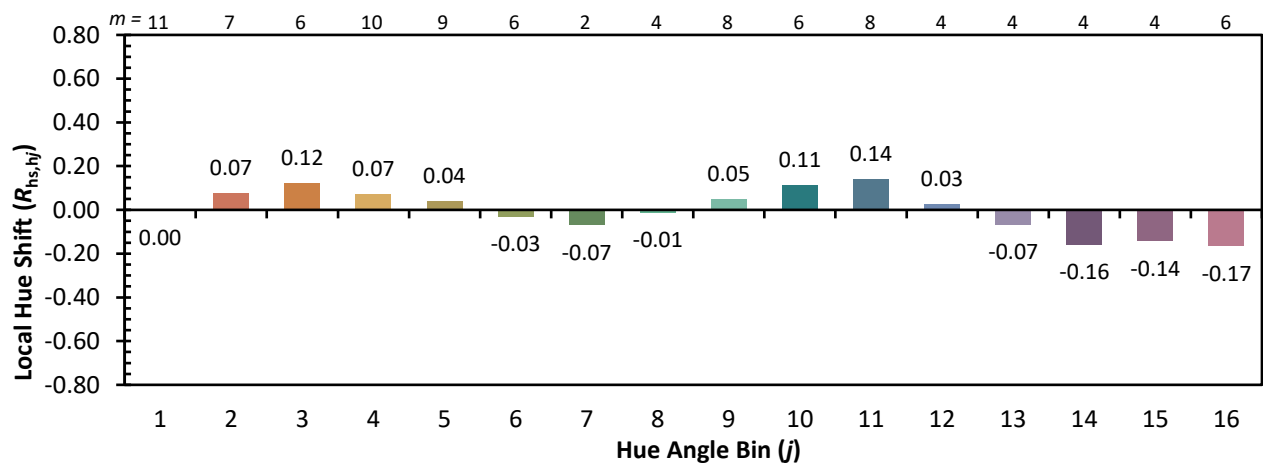
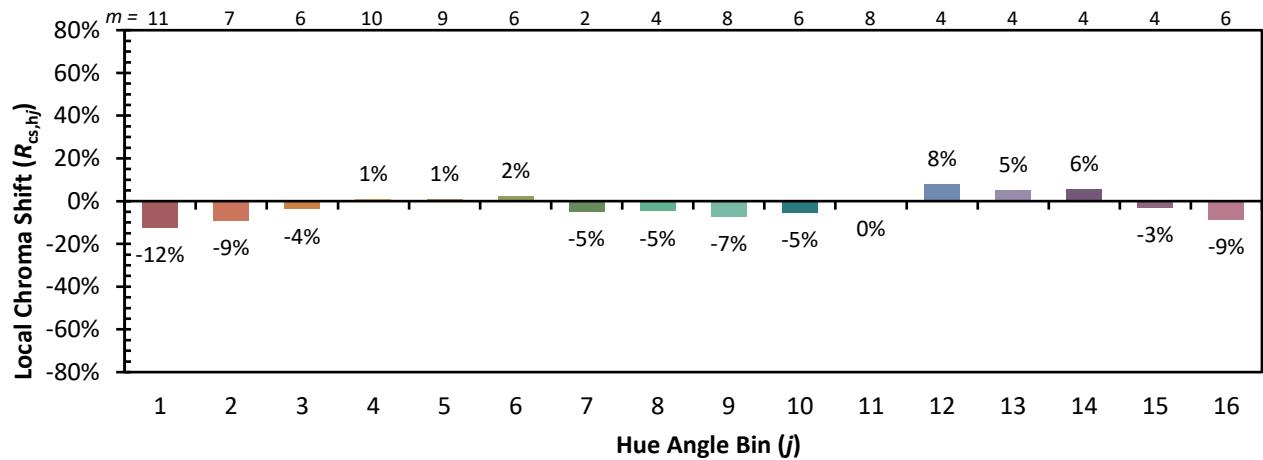


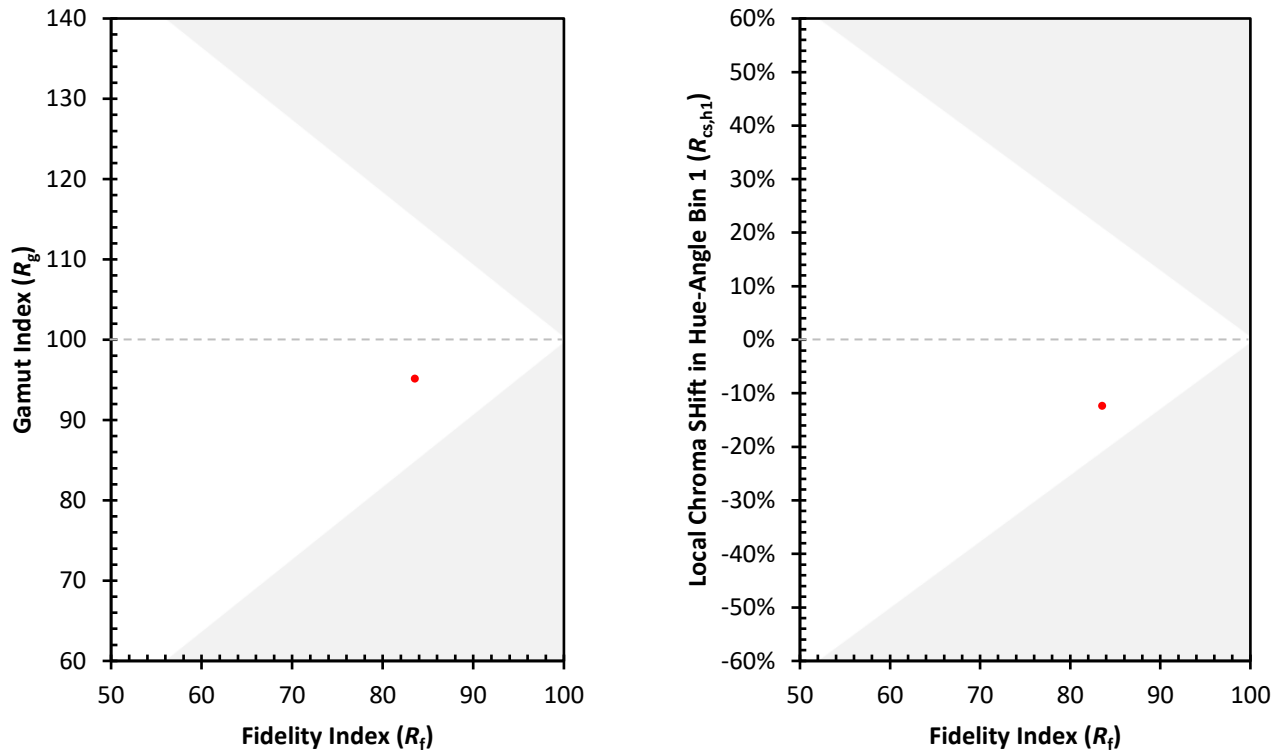
Individual Sample Fidelity Index ($R_{f,i}$)

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)