

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: FAIL-SAFE

Report Number: P1357493

Luminaire Tested: 8ASL4-20VHE-3-30-UNV

Issue Date: 2/17/2026

Test Information

Test Method: LM-79-2019
Report Number: P1357493
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2511-597-12)
Test Lab: INNOVATION CENTER
Issue Date: 2/17/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: 8ASL4-20VHE-3-30-UNV
Description: 8FT 2000 LUMEN PER FOOT 4ASL LED LUMINAIRE WITH OPL LENS AND 3000K LEDS 3 ROW
Light Source: -
Ballast/Driver: -

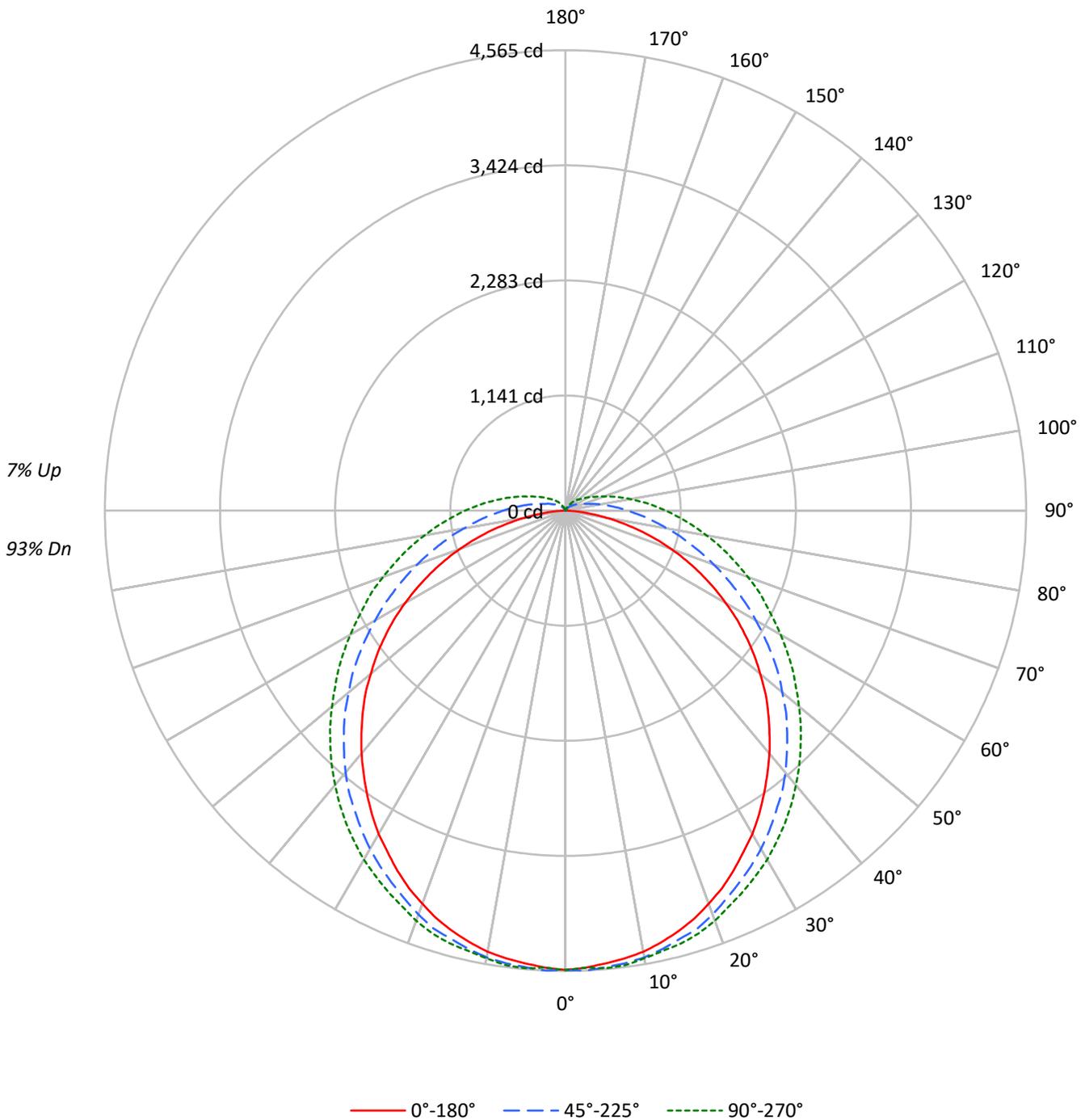
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15488.0 lumens
Efficiency: N/A
Efficacy: 115.2 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.3 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 7.98' x H: 0.1')
CIE Type: Direct

Input Watts (W): 134.4
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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CATALOG NUMBER: 8ASL4-20VHE-3-30-UNV

Luminous Intensity Polar Plot





TEST NUMBER: P1357493

CATALOG NUMBER: 8ASL4-20VHE-3-30-UNV

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	117	117	117	117	114	114	114	114	107	107	107	101	101	101	96	96	96	96	96	96	93
1	105	100	95	91	102	97	92	88	91	88	84	86	83	80	81	79	77	77	77	77	74
2	95	86	79	72	92	84	77	71	79	73	68	75	70	66	71	67	63	63	63	63	61
3	86	75	67	60	83	73	65	59	69	62	57	65	60	55	62	57	53	53	53	53	50
4	79	66	57	50	76	65	56	49	61	54	48	58	52	47	55	50	45	45	45	45	43
5	73	59	50	43	70	58	49	42	55	47	41	52	45	40	49	44	39	39	39	39	37
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	45	39	34	34	34	34	32
7	62	48	39	33	60	47	38	32	45	37	32	43	36	31	41	35	30	30	30	30	28
8	58	44	35	29	56	43	35	29	41	34	28	39	32	28	37	32	27	27	27	27	25
9	54	40	32	26	52	39	31	26	38	30	25	36	30	25	35	29	24	24	24	24	22
10	50	37	29	24	49	36	29	23	35	28	23	33	27	23	32	26	22	22	22	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	18435	18435	18435
5°	18292	18103	18013
10°	18211	17765	17558
15°	18031	17341	17172
20°	17780	16935	16736
25°	17486	16421	16240
30°	17175	15977	15822
35°	16784	15473	15355
40°	16430	15012	14864
45°	16051	14452	14371
50°	15617	13850	13859
55°	15153	13276	13398
60°	14542	12605	12931
65°	13762	11961	12543
70°	12765	11326	12240
75°	11296	10753	12031
80°	9042	10339	11942
85°	5742	10294	12120

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 16051 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	432.0	2.8
10°-20°	1240.2	8.0
20°-30°	1875.1	12.1
30°-40°	2270.5	14.7
40°-50°	2384.7	15.4
50°-60°	2224.8	14.4
60°-70°	1838.7	11.9
70°-80°	1323.9	8.5
80°-90°	822.7	5.3
90°-100°	482.0	3.1
100°-110°	275.8	1.8
110°-120°	155.7	1.0
120°-130°	89.6	0.6
130°-140°	48.3	0.3
140°-150°	20.3	0.1
150°-160°	3.8	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	3547.3	22.9
0°-40°	5817.8	37.6
0°-60°	10427.3	67.3
0°-90°	14412.6	93.1
90°-120°	913.5	5.9
90°-150°	1071.7	6.9
90°-180°	1075.0	6.9
0°-180°	15488.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4555	4555	4555	4555	4555	
5°	4508	4546	4546	4546	4555	428
15°	4318	4375	4394	4423	4442	1218
25°	3940	4006	4072	4129	4167	1815
35°	3428	3523	3637	3741	3788	2146
45°	2841	2945	3106	3239	3296	2192
55°	2188	2311	2500	2680	2746	1955
65°	1477	1619	1866	2102	2188	1462
75°	758	947	1278	1553	1667	801
85°	142	426	805	1089	1193	174
90°	0	256	616	881	994	6
95°	0	161	464	710	814	0
105°	0	57	256	445	521	0
115°	0	28	152	275	322	0
125°	0	19	95	180	208	0
135°	0	0	57	114	142	0
145°	0	0	28	66	76	0
155°	0	0	0	19	28	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P1357493

CATALOG NUMBER: 8ASL4-20VHE-3-30-UNV

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4555.2	4555.2	4555.2	4555.2	4555.2
2.5°	4536.3	4564.7	4564.7	4536.3	4536.3
5°	4507.9	4545.8	4545.8	4545.8	4555.2
7.5°	4479.5	4526.8	4526.8	4526.8	4545.8
10°	4441.6	4488.9	4498.4	4498.4	4507.9
12.5°	4384.8	4441.6	4451.1	4460.5	4470.0
15°	4318.5	4375.3	4394.2	4422.6	4441.6
17.5°	4242.7	4309.0	4346.9	4375.3	4394.2
20°	4148.0	4214.3	4261.6	4299.5	4327.9
22.5°	4053.3	4110.1	4166.9	4214.3	4242.7
25°	3939.7	4005.9	4072.2	4129.1	4166.9
27.5°	3816.5	3892.3	3977.5	4043.8	4081.7
30°	3702.9	3778.7	3873.4	3958.6	3996.5
32.5°	3570.3	3655.5	3759.7	3845.0	3892.3
35°	3428.3	3523.0	3636.6	3740.8	3788.1
37.5°	3286.2	3380.9	3523.0	3627.1	3674.5
40°	3144.1	3238.9	3390.4	3504.0	3551.4
42.5°	2992.6	3087.3	3248.3	3371.4	3428.3
45°	2841.1	2945.3	3106.3	3238.9	3295.7
47.5°	2689.6	2793.7	2964.2	3106.3	3163.1
50°	2519.1	2632.8	2803.2	2964.2	3021.0
52.5°	2358.1	2471.8	2661.2	2822.2	2879.0
55°	2187.6	2310.8	2500.2	2680.1	2746.4
57.5°	2017.2	2140.3	2339.2	2528.6	2604.3
60°	1837.2	1969.8	2178.2	2377.1	2462.3
62.5°	1657.3	1799.4	2026.7	2235.0	2320.2
65°	1477.4	1619.4	1865.7	2102.4	2187.6
67.5°	1297.4	1449.0	1714.1	1960.4	2064.5
70°	1117.5	1278.5	1562.6	1818.3	1922.5
72.5°	937.6	1108.0	1420.5	1685.7	1789.9
75°	757.6	947.0	1278.5	1553.1	1666.8
77.5°	577.7	795.5	1155.4	1430.0	1543.7
80°	416.7	662.9	1022.8	1306.9	1420.5
82.5°	265.2	530.3	909.2	1193.3	1306.9
85°	142.1	426.2	805.0	1089.1	1193.3
87.5°	47.4	331.5	700.8	984.9	1089.1
90°	0.0	255.7	615.6	880.7	994.4
92.5°	0.0	198.9	539.8	795.5	899.7
95°	0.0	161.0	464.0	710.3	814.4
97.5°	0.0	132.6	407.2	634.5	729.2
100°	0.0	104.2	350.4	568.2	653.5
102.5°	0.0	85.2	303.1	501.9	587.2
105°	0.0	56.8	255.7	445.1	520.9
107.5°	0.0	47.4	217.8	397.8	464.0
110°	0.0	37.9	198.9	340.9	407.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	28.4	179.9	303.1	369.3
115°	0.0	28.4	151.5	274.6	322.0
117.5°	0.0	28.4	132.6	246.2	293.6
120°	0.0	18.9	123.1	217.8	265.2
122.5°	0.0	18.9	104.2	198.9	236.8
125°	0.0	18.9	94.7	179.9	208.3
127.5°	0.0	9.5	85.2	161.0	189.4
130°	0.0	9.5	75.8	142.1	170.5
132.5°	0.0	9.5	66.3	132.6	161.0
135°	0.0	0.0	56.8	113.6	142.1
137.5°	0.0	0.0	47.4	104.2	123.1
140°	0.0	0.0	37.9	85.2	113.6
142.5°	0.0	0.0	28.4	75.8	94.7
145°	0.0	0.0	28.4	66.3	75.8
147.5°	0.0	0.0	18.9	47.4	66.3
150°	0.0	0.0	9.5	37.9	47.4
152.5°	0.0	0.0	0.0	28.4	37.9
155°	0.0	0.0	0.0	18.9	28.4
157.5°	0.0	0.0	0.0	0.0	9.5
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0



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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	19.47	21.01	19.94	21.47	21.95	21.54	23.08	22.01	23.54	24.02
	3H	20.97	22.37	21.45	22.84	23.36	24.02	25.43	24.51	25.89	26.42
	4H	21.45	22.78	21.95	23.26	23.80	25.24	26.57	25.74	27.05	27.59
	6H	21.72	22.96	22.24	23.46	24.01	26.52	27.76	27.03	28.25	28.81
	8H	21.78	22.96	22.30	23.48	24.04	27.19	28.38	27.72	28.90	29.46
	12H	21.79	22.93	22.32	23.44	24.03	27.93	29.07	28.47	29.59	30.18
4H	2H	20.36	21.69	20.86	22.17	22.71	21.97	23.31	22.48	23.79	24.33
	3H	22.09	23.23	22.61	23.75	24.31	24.68	25.82	25.20	26.34	26.90
	4H	22.70	23.74	23.23	24.27	24.86	26.07	27.10	26.60	27.64	28.23
	6H	23.09	24.01	23.65	24.57	25.18	27.54	28.46	28.09	29.02	29.62
	8H	23.19	24.05	23.75	24.61	25.23	28.31	29.18	28.87	29.74	30.36
	12H	23.23	24.02	23.81	24.61	25.23	29.19	29.97	29.77	30.56	31.18
8H	4H	23.39	24.25	23.95	24.81	25.43	26.28	27.14	26.84	27.71	28.33
	6H	23.97	24.70	24.56	25.30	25.93	27.92	28.65	28.51	29.26	29.88
	8H	24.15	24.81	24.75	25.42	26.06	28.84	29.50	29.44	30.11	30.75
	12H	24.26	24.85	24.87	25.46	26.16	29.89	30.48	30.50	31.09	31.79
12H	4H	23.59	24.37	24.17	24.96	25.58	26.29	27.07	26.87	27.66	28.29
	6H	24.27	24.93	24.87	25.54	26.18	27.96	28.62	28.56	29.23	29.87
	8H	24.55	25.14	25.15	25.74	26.44	28.94	29.53	29.55	30.13	30.84

LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

Fail-Safe

Report Number: SP1-2511-597-3

Test Date: 11/18/2025

Luminaire Tested: 4ASL-2-30-UNV-OPL-1_600mA

Data in this report applies to families of products including 4ASL

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2511-597-3
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 11/18/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Fail-Safe
 Catalog Number: **4ASL-2-30-UNV-OPL-1_600mA**
 Description: 2foot 4ASL LED LUMINAIRE WITH OPL LENS AND 3000K LEDs with 1 rows at 600mA

Spectral Parameters

CCT (K): 3005
 CIE u': 0.2513
 CIE v': 0.5178
 Duv: -0.0025
 CIE x: 0.4330
 CIE y: 0.3966
 CIE z: 0.1704
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 583
 Purity: 49.00645
 Rf: 90.1
 Rg: 103.3

CRI (Ra): 93.9
 R1: 96.5
 R2: 96.6
 R3: 95.5
 R4: 94.4
 R5: 96.0
 R6: 96.4
 R7: 91.7
 R8: 84.0
 R9: 62.0
 R10: 90.8
 R11: 94.1
 R12: 88.9
 R13: 96.4
 R14: 96.3
 R15: 91.9



Test Conditions

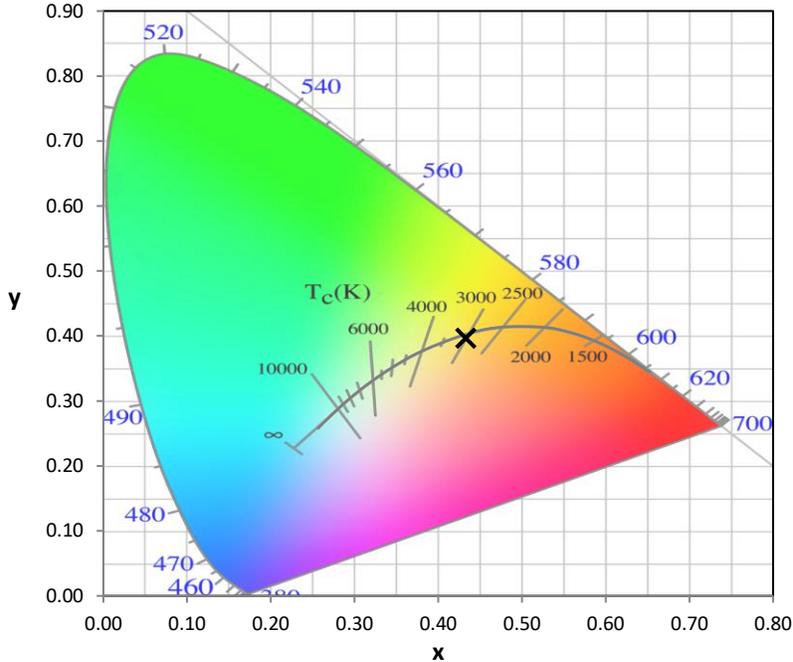
Stabilization Time: 32M
 Operation Time: 1H 32M
 Sphere Temperature (°C): 24.1

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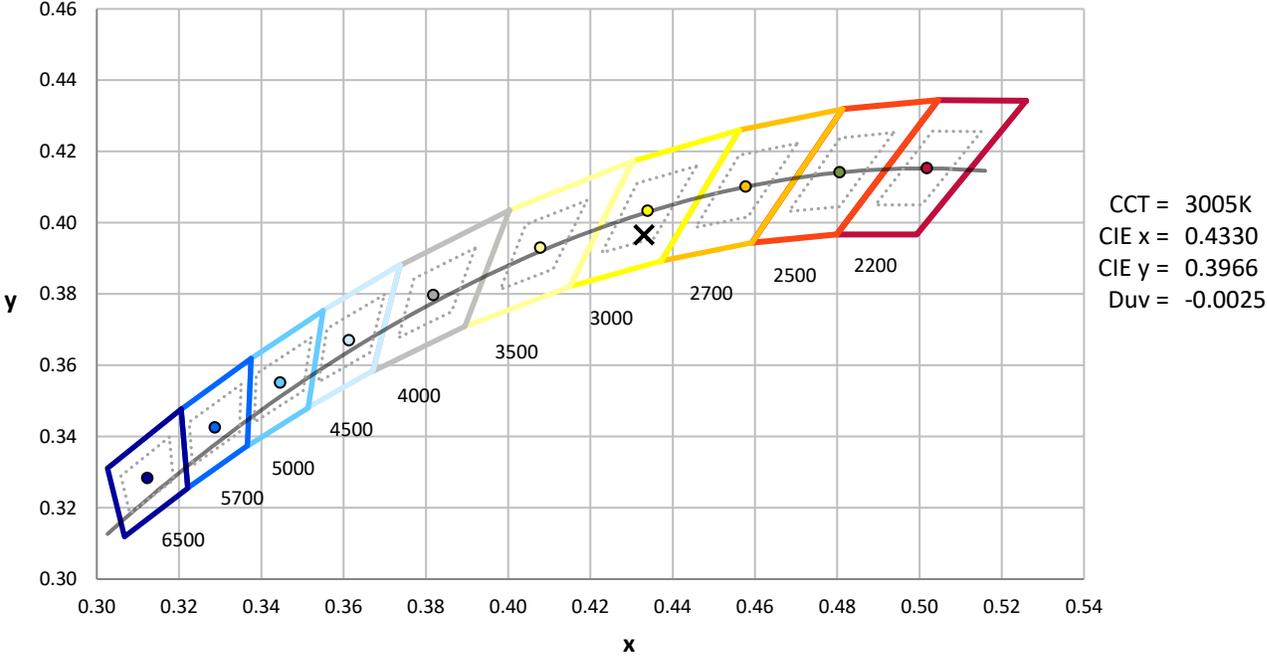
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	6/16/2025	12/16/2025
Power Meter	XITRON INXT2011004	10/21/2025	10/21/2026
AC Power Source	CHROMA 61603 IN0063	10/21/2025	10/21/2026
DC Power Source	AGILENT E3634A IN0208	10/21/2025	10/21/2026
Sphere Thermometer	ONSET IN0085	10/21/2025	10/21/2026
Room Thermometer	ONSET IN0046	10/21/2025	10/21/2026

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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

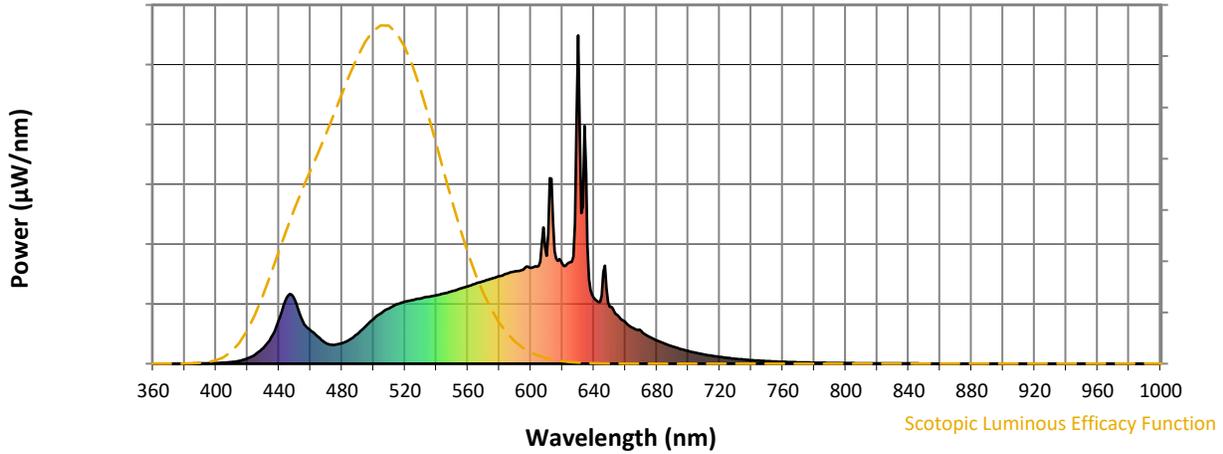


Photopic Lumens: NR

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	92	NR	620	304	NR	750	8	NR	880	0	NR
365	0	NR	495	114	NR	625	309	NR	755	7	NR	885	0	NR
370	0	NR	500	136	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	154	NR	635	582	NR	765	5	NR	895	0	NR
380	0	NR	510	169	NR	640	200	NR	770	4	NR	900	0	NR
385	0	NR	515	181	NR	645	207	NR	775	4	NR	905	0	NR
390	1	NR	520	189	NR	650	174	NR	780	3	NR	910	0	NR
395	1	NR	525	194	NR	655	148	NR	785	3	NR	915	0	NR
400	2	NR	530	199	NR	660	127	NR	790	2	NR	920	0	NR
405	3	NR	535	203	NR	665	108	NR	795	2	NR	925	0	NR
410	5	NR	540	208	NR	670	100	NR	800	2	NR	930	0	NR
415	9	NR	545	214	NR	675	83	NR	805	2	NR	935	0	NR
420	16	NR	550	221	NR	680	71	NR	810	1	NR	940	0	NR
425	28	NR	555	228	NR	685	61	NR	815	1	NR	945	0	NR
430	48	NR	560	236	NR	690	53	NR	820	1	NR	950	0	NR
435	80	NR	565	244	NR	695	45	NR	825	1	NR	955	0	NR
440	135	NR	570	251	NR	700	38	NR	830	1	NR	960	0	NR
445	202	NR	575	259	NR	705	33	NR	835	1	NR	965	0	NR
450	195	NR	580	266	NR	710	28	NR	840	1	NR	970	0	NR
455	130	NR	585	274	NR	715	24	NR	845	1	NR	975	0	NR
460	101	NR	590	281	NR	720	20	NR	850	0	NR	980	0	NR
465	82	NR	595	286	NR	725	17	NR	855	0	NR	985	0	NR
470	62	NR	600	292	NR	730	15	NR	860	0	NR	990	0	NR
475	58	NR	605	298	NR	735	13	NR	865	0	NR	995	0	NR
480	62	NR	610	328	NR	740	11	NR	870	0	NR	1000	0	NR
485	74	NR	615	342	NR	745	9	NR	875	0	NR			

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Scotopic Flux vs. Wavelength



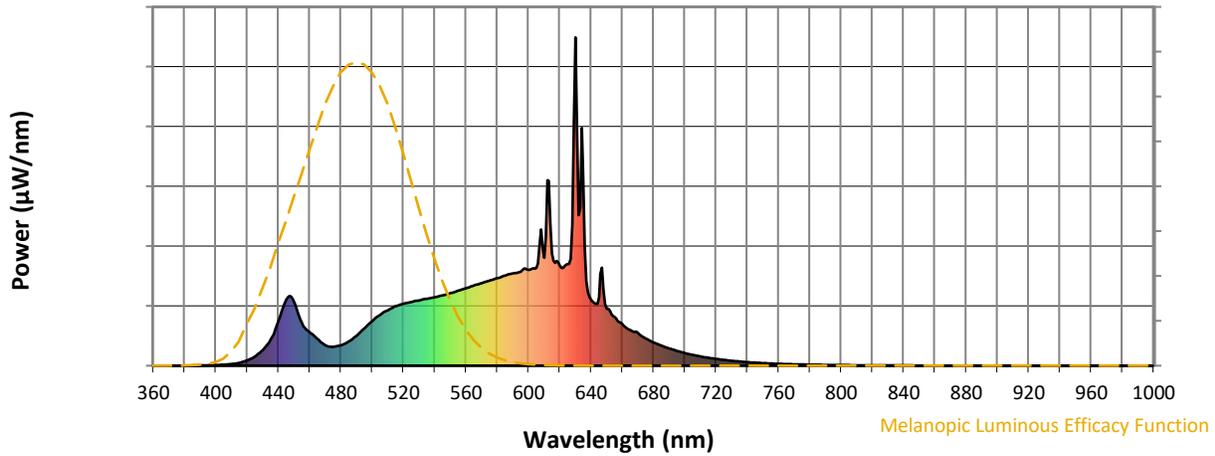
Scotopic Lumens: NR

S/P: 1.42

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	92	NR	620	304	NR	750	8	NR	880	0	NR
365	0	NR	495	114	NR	625	309	NR	755	7	NR	885	0	NR
370	0	NR	500	136	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	154	NR	635	582	NR	765	5	NR	895	0	NR
380	0	NR	510	169	NR	640	200	NR	770	4	NR	900	0	NR
385	0	NR	515	181	NR	645	207	NR	775	4	NR	905	0	NR
390	1	NR	520	189	NR	650	174	NR	780	3	NR	910	0	NR
395	1	NR	525	194	NR	655	148	NR	785	3	NR	915	0	NR
400	2	NR	530	199	NR	660	127	NR	790	2	NR	920	0	NR
405	3	NR	535	203	NR	665	108	NR	795	2	NR	925	0	NR
410	5	NR	540	208	NR	670	100	NR	800	2	NR	930	0	NR
415	9	NR	545	214	NR	675	83	NR	805	2	NR	935	0	NR
420	16	NR	550	221	NR	680	71	NR	810	1	NR	940	0	NR
425	28	NR	555	228	NR	685	61	NR	815	1	NR	945	0	NR
430	48	NR	560	236	NR	690	53	NR	820	1	NR	950	0	NR
435	80	NR	565	244	NR	695	45	NR	825	1	NR	955	0	NR
440	135	NR	570	251	NR	700	38	NR	830	1	NR	960	0	NR
445	202	NR	575	259	NR	705	33	NR	835	1	NR	965	0	NR
450	195	NR	580	266	NR	710	28	NR	840	1	NR	970	0	NR
455	130	NR	585	274	NR	715	24	NR	845	1	NR	975	0	NR
460	101	NR	590	281	NR	720	20	NR	850	0	NR	980	0	NR
465	82	NR	595	286	NR	725	17	NR	855	0	NR	985	0	NR
470	62	NR	600	292	NR	730	15	NR	860	0	NR	990	0	NR
475	58	NR	605	298	NR	735	13	NR	865	0	NR	995	0	NR
480	62	NR	610	328	NR	740	11	NR	870	0	NR	1000	0	NR
485	74	NR	615	342	NR	745	9	NR	875	0	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.76

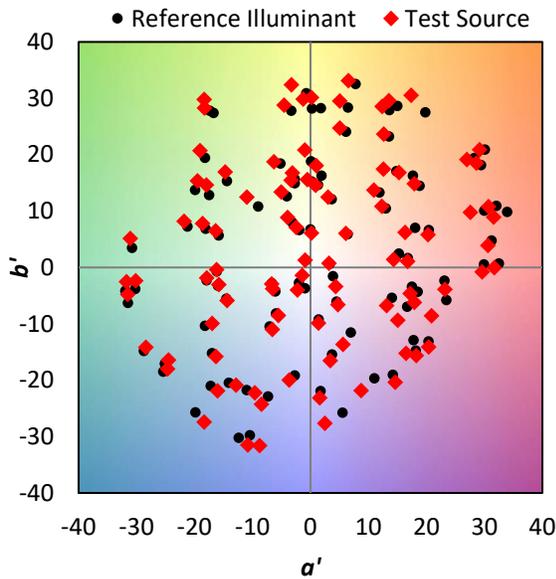
λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)	λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)	λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)	λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)	λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)
360	0	NR	490	92	NR	620	304	NR	750	8	NR	880	0	NR
365	0	NR	495	114	NR	625	309	NR	755	7	NR	885	0	NR
370	0	NR	500	136	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	154	NR	635	582	NR	765	5	NR	895	0	NR
380	0	NR	510	169	NR	640	200	NR	770	4	NR	900	0	NR
385	0	NR	515	181	NR	645	207	NR	775	4	NR	905	0	NR
390	1	NR	520	189	NR	650	174	NR	780	3	NR	910	0	NR
395	1	NR	525	194	NR	655	148	NR	785	3	NR	915	0	NR
400	2	NR	530	199	NR	660	127	NR	790	2	NR	920	0	NR
405	3	NR	535	203	NR	665	108	NR	795	2	NR	925	0	NR
410	5	NR	540	208	NR	670	100	NR	800	2	NR	930	0	NR
415	9	NR	545	214	NR	675	83	NR	805	2	NR	935	0	NR
420	16	NR	550	221	NR	680	71	NR	810	1	NR	940	0	NR
425	28	NR	555	228	NR	685	61	NR	815	1	NR	945	0	NR
430	48	NR	560	236	NR	690	53	NR	820	1	NR	950	0	NR
435	80	NR	565	244	NR	695	45	NR	825	1	NR	955	0	NR
440	135	NR	570	251	NR	700	38	NR	830	1	NR	960	0	NR
445	202	NR	575	259	NR	705	33	NR	835	1	NR	965	0	NR
450	195	NR	580	266	NR	710	28	NR	840	1	NR	970	0	NR
455	130	NR	585	274	NR	715	24	NR	845	1	NR	975	0	NR
460	101	NR	590	281	NR	720	20	NR	850	0	NR	980	0	NR
465	82	NR	595	286	NR	725	17	NR	855	0	NR	985	0	NR
470	62	NR	600	292	NR	730	15	NR	860	0	NR	990	0	NR
475	58	NR	605	298	NR	735	13	NR	865	0	NR	995	0	NR
480	62	NR	610	328	NR	740	11	NR	870	0	NR	1000	0	NR
485	74	NR	615	342	NR	745	9	NR	875	0	NR			

Summary

$R_f = 90.1$
 $R_g = 103.3$
 CIE $R_a = 93.9$
 $R_9 = 62.0$

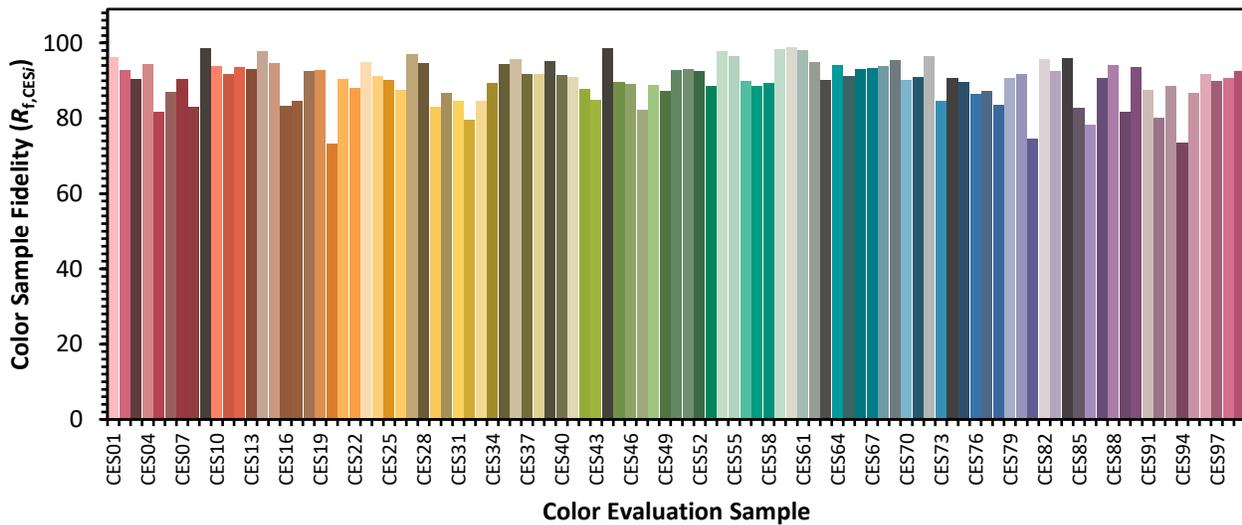


Color Vector Graphics



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

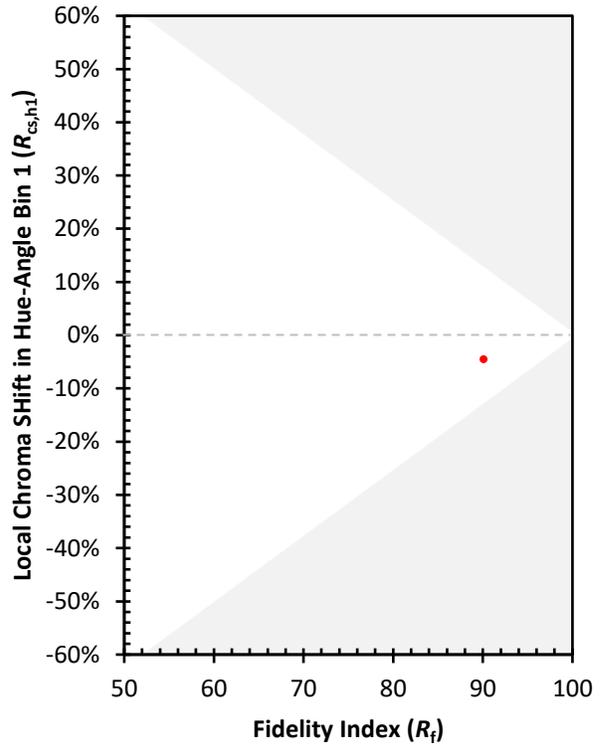
CES01 = 86	CES26 = 88	CES51 = 93	CES76 = 86
CES02 = 63	CES27 = 97	CES52 = 93	CES77 = 87
CES03 = 32	CES28 = 95	CES53 = 89	CES78 = 83
CES04 = 70	CES29 = 83	CES54 = 98	CES79 = 91
CES05 = 51	CES30 = 87	CES55 = 97	CES80 = 92
CES06 = 51	CES31 = 85	CES56 = 90	CES81 = 75
CES07 = 44	CES32 = 80	CES57 = 89	CES82 = 96
CES08 = 42	CES33 = 85	CES58 = 89	CES83 = 92
CES09 = 29	CES34 = 89	CES59 = 98	CES84 = 96
CES10 = 76	CES35 = 94	CES60 = 99	CES85 = 83
CES11 = 59	CES36 = 96	CES61 = 98	CES86 = 78
CES12 = 65	CES37 = 92	CES62 = 95	CES87 = 91
CES13 = 44	CES38 = 92	CES63 = 90	CES88 = 94
CES14 = 74	CES39 = 95	CES64 = 94	CES89 = 82
CES15 = 72	CES40 = 91	CES65 = 91	CES90 = 94
CES16 = 48	CES41 = 91	CES66 = 93	CES91 = 87
CES17 = 50	CES42 = 88	CES67 = 93	CES92 = 80
CES18 = 57	CES43 = 85	CES68 = 94	CES93 = 89
CES19 = 72	CES44 = 99	CES69 = 96	CES94 = 74
CES20 = 67	CES45 = 90	CES70 = 90	CES95 = 87
CES21 = 86	CES46 = 89	CES71 = 91	CES96 = 92
CES22 = 79	CES47 = 82	CES72 = 96	CES97 = 90
CES23 = 92	CES48 = 89	CES73 = 85	CES98 = 91
CES24 = 91	CES49 = 87	CES74 = 91	CES99 = 93
CES25 = 72	CES50 = 93	CES75 = 90	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)