

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: P1357053

Luminaire Tested: 3ASL4-30VHE-3-35-UNV

Issue Date: 2/17/2026

Test Information

Test Method: LM-79-2019
Report Number: P1357053
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: 3ASL4-30VHE-3-35-UNV
Description: 3FT 3000 LUMEN PER FOOT 4ASL LED LUMINAIRE WITH OPL LENS AND 3500K LEDS 3 ROW
Light Source: -
Ballast/Driver: -

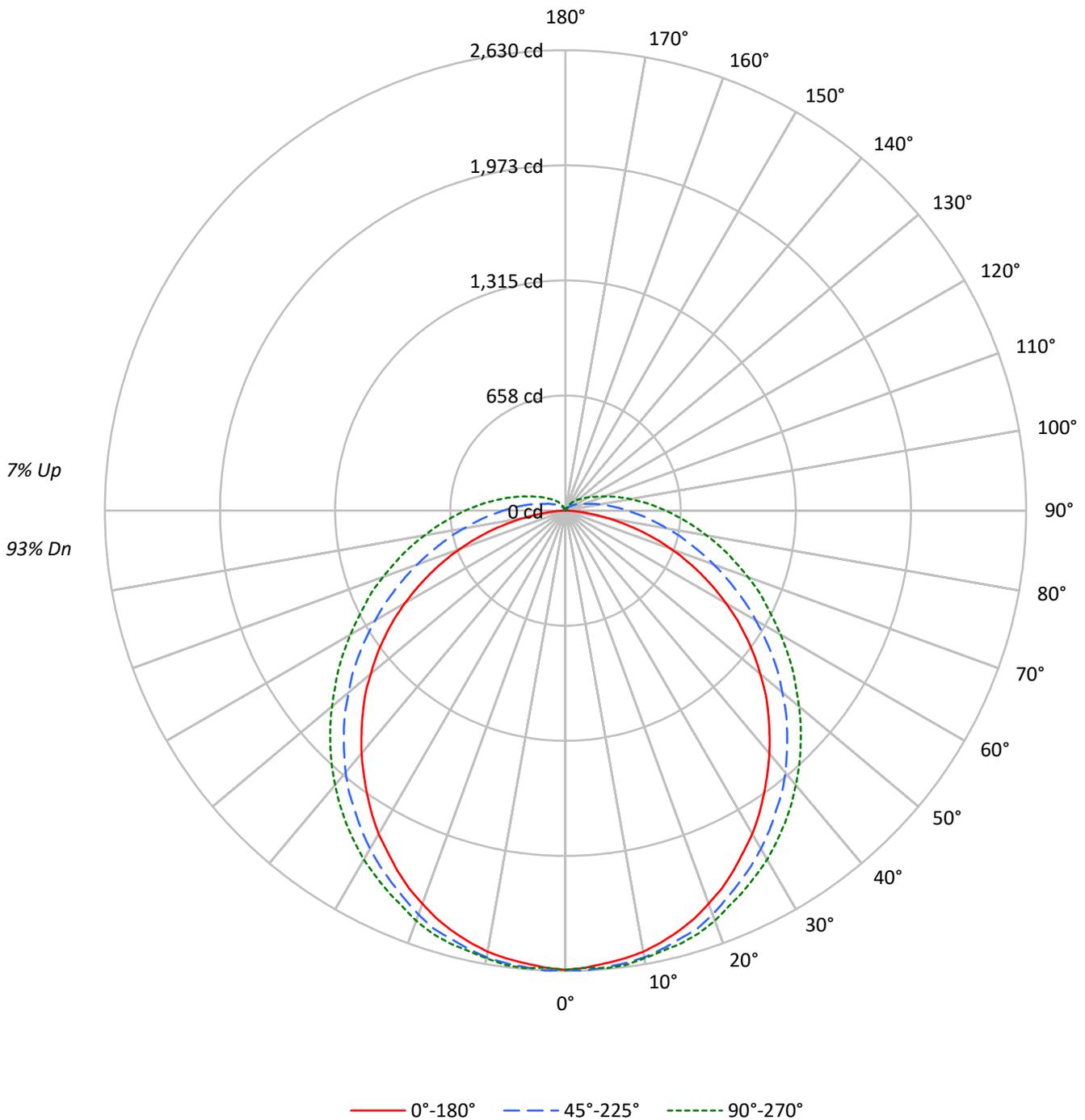
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8922.0 lumens
Efficiency: N/A
Efficacy: 113.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.3 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 2.98' x H: 0.1')
CIE Type: Direct

Input Watts (W): 78.9
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

TEST NUMBER: P1357053
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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				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°	28443	28443	28443
5°	28169	27893	27792
10°	27989	27337	27089
15°	27657	26651	26493
20°	27216	25994	25821
25°	26707	25173	25057
30°	26170	24458	24410
35°	25508	23651	23691
40°	24897	22912	22934
45°	24240	22020	22173
50°	23493	21063	21383
55°	22682	20147	20672
60°	21634	19082	19950
65°	20306	18052	19352
70°	18612	17032	18885
75°	16167	16090	18563
80°	12502	15366	18425
85°	7268	15143	18699

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 24240 cd/sqm



TEST NUMBER: P1357053
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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	248.8	2.8
10°-20°	714.4	8.0
20°-30°	1080.2	12.1
30°-40°	1307.9	14.7
40°-50°	1373.7	15.4
50°-60°	1281.6	14.4
60°-70°	1059.2	11.9
70°-80°	762.6	8.5
80°-90°	473.9	5.3
90°-100°	277.7	3.1
100°-110°	158.8	1.8
110°-120°	89.7	1.0
120°-130°	51.6	0.6
130°-140°	27.8	0.3
140°-150°	11.7	0.1
150°-160°	2.2	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	2043.5	22.9
0°-40°	3351.4	37.6
0°-60°	6006.7	67.3
0°-90°	8302.5	93.1
90°-120°	526.3	5.9
90°-150°	617.4	6.9
90°-180°	620.0	6.9
0°-180°	8922.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2624	2624	2624	2624	2624	
5°	2597	2619	2619	2619	2624	247
15°	2488	2520	2531	2548	2559	701
25°	2270	2308	2346	2379	2400	1045
35°	1975	2029	2095	2155	2182	1236
45°	1637	1697	1789	1866	1898	1263
55°	1260	1331	1440	1544	1582	1126
65°	851	933	1075	1211	1260	842
75°	436	546	736	895	960	462
85°	82	246	464	627	687	100
90°	0	147	355	507	573	4
95°	0	93	267	409	469	0
105°	0	33	147	256	300	0
115°	0	16	87	158	186	0
125°	0	11	55	104	120	0
135°	0	0	33	66	82	0
145°	0	0	16	38	44	0
155°	0	0	0	11	16	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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CATALOG NUMBER: 3ASL4-30VHE-3-35-UNV

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2624.1	2624.1	2624.1	2624.1	2624.1
2.5°	2613.2	2629.5	2629.5	2613.2	2613.2
5°	2596.8	2618.6	2618.6	2618.6	2624.1
7.5°	2580.4	2607.7	2607.7	2607.7	2618.6
10°	2558.6	2585.9	2591.3	2591.3	2596.8
12.5°	2525.9	2558.6	2564.1	2569.5	2575.0
15°	2487.7	2520.4	2531.3	2547.7	2558.6
17.5°	2444.0	2482.2	2504.1	2520.4	2531.3
20°	2389.5	2427.7	2455.0	2476.8	2493.1
22.5°	2334.9	2367.7	2400.4	2427.7	2444.0
25°	2269.5	2307.7	2345.9	2378.6	2400.4
27.5°	2198.6	2242.2	2291.3	2329.5	2351.3
30°	2133.1	2176.7	2231.3	2280.4	2302.2
32.5°	2056.7	2105.8	2165.8	2214.9	2242.2
35°	1974.9	2029.4	2094.9	2154.9	2182.2
37.5°	1893.0	1947.6	2029.4	2089.4	2116.7
40°	1811.2	1865.8	1953.1	2018.5	2045.8
42.5°	1723.9	1778.5	1871.2	1942.1	1974.9
45°	1636.6	1696.7	1789.4	1865.8	1898.5
47.5°	1549.4	1609.4	1707.6	1789.4	1822.1
50°	1451.2	1516.6	1614.8	1707.6	1740.3
52.5°	1358.4	1423.9	1533.0	1625.7	1658.5
55°	1260.2	1331.1	1440.2	1543.9	1582.1
57.5°	1162.0	1232.9	1347.5	1456.6	1500.3
60°	1058.4	1134.7	1254.8	1369.3	1418.4
62.5°	954.7	1036.5	1167.5	1287.5	1336.6
65°	851.1	932.9	1074.7	1211.1	1260.2
67.5°	747.4	834.7	987.4	1129.3	1189.3
70°	643.7	736.5	900.2	1047.4	1107.5
72.5°	540.1	638.3	818.3	971.1	1031.1
75°	436.4	545.5	736.5	894.7	960.2
77.5°	332.8	458.3	665.6	823.8	889.2
80°	240.0	381.9	589.2	752.9	818.3
82.5°	152.8	305.5	523.7	687.4	752.9
85°	81.8	245.5	463.7	627.4	687.4
87.5°	27.3	190.9	403.7	567.4	627.4
90°	0.0	147.3	354.6	507.4	572.8
92.5°	0.0	114.6	311.0	458.3	518.3
95°	0.0	92.7	267.3	409.2	469.2
97.5°	0.0	76.4	234.6	365.5	420.1
100°	0.0	60.0	201.9	327.3	376.4
102.5°	0.0	49.1	174.6	289.1	338.2
105°	0.0	32.7	147.3	256.4	300.1
107.5°	0.0	27.3	125.5	229.1	267.3
110°	0.0	21.8	114.6	196.4	234.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	16.4	103.7	174.6	212.8
115°	0.0	16.4	87.3	158.2	185.5
117.5°	0.0	16.4	76.4	141.8	169.1
120°	0.0	10.9	70.9	125.5	152.8
122.5°	0.0	10.9	60.0	114.6	136.4
125°	0.0	10.9	54.6	103.7	120.0
127.5°	0.0	5.5	49.1	92.7	109.1
130°	0.0	5.5	43.6	81.8	98.2
132.5°	0.0	5.5	38.2	76.4	92.7
135°	0.0	0.0	32.7	65.5	81.8
137.5°	0.0	0.0	27.3	60.0	70.9
140°	0.0	0.0	21.8	49.1	65.5
142.5°	0.0	0.0	16.4	43.6	54.6
145°	0.0	0.0	16.4	38.2	43.6
147.5°	0.0	0.0	10.9	27.3	38.2
150°	0.0	0.0	5.5	21.8	27.3
152.5°	0.0	0.0	0.0	16.4	21.8
155°	0.0	0.0	0.0	10.9	16.4
157.5°	0.0	0.0	0.0	0.0	5.5
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	20.95	22.49	21.42	22.95	23.43	22.95	24.49	23.42	24.95	25.43
	3H	22.45	23.86	22.93	24.32	24.85	25.40	26.81	25.88	27.27	27.80
	4H	22.93	24.26	23.43	24.75	25.28	26.59	27.92	27.09	28.40	28.94
	6H	23.21	24.45	23.72	24.94	25.50	27.83	29.07	28.34	29.56	30.12
	8H	23.26	24.45	23.79	24.97	25.53	28.46	29.65	28.99	30.17	30.73
	12H	23.27	24.41	23.81	24.93	25.52	29.15	30.29	29.68	30.80	31.39
4H	2H	21.83	23.16	22.33	23.64	24.18	23.39	24.72	23.89	25.20	25.74
	3H	23.56	24.70	24.08	25.22	25.78	26.06	27.20	26.58	27.72	28.29
	4H	24.17	25.20	24.70	25.74	26.33	27.42	28.46	27.96	29.00	29.59
	6H	24.56	25.48	25.12	26.04	26.65	28.85	29.77	29.41	30.33	30.94
	8H	24.66	25.52	25.22	26.08	26.70	29.59	30.45	30.15	31.02	31.63
	12H	24.70	25.49	25.29	26.08	26.70	30.40	31.19	30.98	31.78	32.40
8H	4H	24.84	25.70	25.40	26.27	26.88	27.64	28.50	28.20	29.07	29.69
	6H	25.42	26.15	26.01	26.75	27.38	29.24	29.97	29.83	30.57	31.20
	8H	25.60	26.26	26.21	26.88	27.51	30.12	30.78	30.72	31.39	32.03
	12H	25.72	26.31	26.32	26.91	27.61	31.12	31.71	31.72	32.31	33.01
12H	4H	25.03	25.81	25.61	26.40	27.03	27.65	28.43	28.23	29.02	29.65
	6H	25.71	26.37	26.31	26.98	27.62	29.28	29.94	29.88	30.55	31.19
	8H	25.99	26.58	26.59	27.18	27.89	30.23	30.82	30.83	31.42	32.12

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

Report Prepared for

Cooper Lighting Solutions

Fail-Safe

Report Number: SP1-2511-597-1

Test Date: 11/17/2025

Luminaire Tested: 4ASL-2-35-UNV-OPL-1_600mA

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

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2511-597-1
 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-2-35-UNV-OPL-1_600mA**
 Description: 2foot 4ASL LED LUMINAIRE WITH OPL LENS AND 3500K LEDs with 1 rows at 600mA

Spectral Parameters

CCT (K): 3487
 CIE u': 0.2366
 CIE v': 0.5099
 Duv: -0.0012
 CIE x: 0.4047
 CIE y: 0.3876
 CIE z: 0.2077
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 581
 Purity: 37.79273
 R_f: 90
 R_g: 102.4

CRI (Ra):	92.5		
R1:	94.7	R9:	61.3
R2:	94.3	R10:	85.5
R3:	92.9	R11:	93.7
R4:	93.3	R12:	80.8
R5:	93.9	R13:	94.3
R6:	93.4	R14:	95.1
R7:	92.5	R15:	90.9
R8:	85.2		



Test Conditions

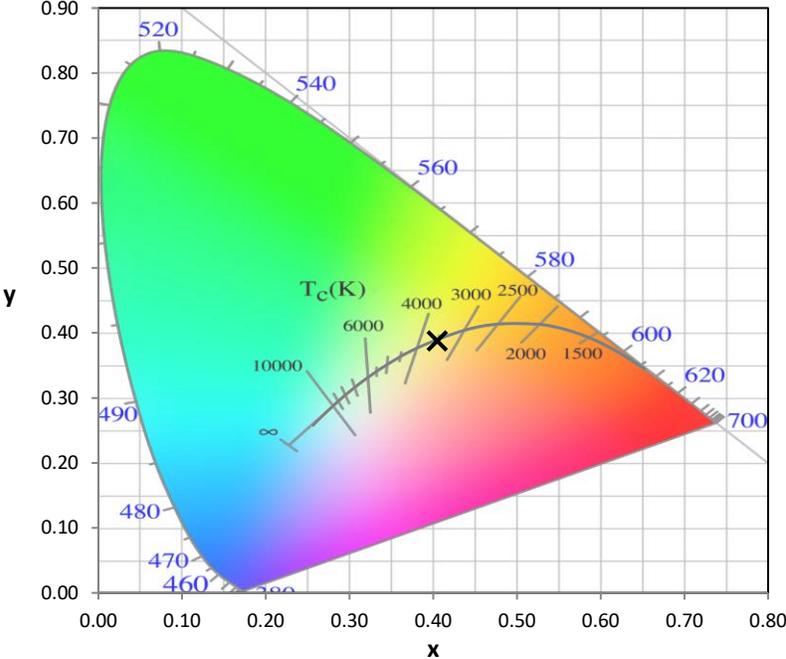
Stabilization Time: 31M
 Operation Time: 1H 31M
 Sphere Temperature (°C): 24.1

REPORT NUMBER: SP1-2511-597-1

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 3500K 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	122	NR	620	322	NR	750	8	NR	880	0	NR
365	0	NR	495	152	NR	625	323	NR	755	7	NR	885	0	NR
370	0	NR	500	180	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	205	NR	635	589	NR	765	5	NR	895	0	NR
380	0	NR	510	223	NR	640	210	NR	770	4	NR	900	0	NR
385	1	NR	515	238	NR	645	214	NR	775	4	NR	905	0	NR
390	1	NR	520	247	NR	650	181	NR	780	3	NR	910	0	NR
395	2	NR	525	252	NR	655	155	NR	785	3	NR	915	0	NR
400	3	NR	530	258	NR	660	133	NR	790	2	NR	920	0	NR
405	5	NR	535	262	NR	665	113	NR	795	2	NR	925	0	NR
410	7	NR	540	267	NR	670	104	NR	800	2	NR	930	0	NR
415	13	NR	545	271	NR	675	86	NR	805	2	NR	935	0	NR
420	24	NR	550	277	NR	680	74	NR	810	1	NR	940	0	NR
425	42	NR	555	284	NR	685	64	NR	815	1	NR	945	0	NR
430	72	NR	560	291	NR	690	55	NR	820	1	NR	950	0	NR
435	122	NR	565	296	NR	695	47	NR	825	1	NR	955	0	NR
440	207	NR	570	301	NR	700	40	NR	830	1	NR	960	0	NR
445	317	NR	575	306	NR	705	34	NR	835	1	NR	965	0	NR
450	304	NR	580	310	NR	710	29	NR	840	1	NR	970	0	NR
455	193	NR	585	315	NR	715	25	NR	845	1	NR	975	0	NR
460	149	NR	590	318	NR	720	21	NR	850	0	NR	980	0	NR
465	117	NR	595	320	NR	725	18	NR	855	0	NR	985	0	NR
470	85	NR	600	322	NR	730	15	NR	860	0	NR	990	0	NR
475	78	NR	605	325	NR	735	13	NR	865	0	NR	995	0	NR
480	84	NR	610	351	NR	740	11	NR	870	0	NR	1000	0	NR
485	98	NR	615	362	NR	745	10	NR	875	0	NR			

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Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.58

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	122	NR	620	322	NR	750	8	NR	880	0	NR
365	0	NR	495	152	NR	625	323	NR	755	7	NR	885	0	NR
370	0	NR	500	180	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	205	NR	635	589	NR	765	5	NR	895	0	NR
380	0	NR	510	223	NR	640	210	NR	770	4	NR	900	0	NR
385	1	NR	515	238	NR	645	214	NR	775	4	NR	905	0	NR
390	1	NR	520	247	NR	650	181	NR	780	3	NR	910	0	NR
395	2	NR	525	252	NR	655	155	NR	785	3	NR	915	0	NR
400	3	NR	530	258	NR	660	133	NR	790	2	NR	920	0	NR
405	5	NR	535	262	NR	665	113	NR	795	2	NR	925	0	NR
410	7	NR	540	267	NR	670	104	NR	800	2	NR	930	0	NR
415	13	NR	545	271	NR	675	86	NR	805	2	NR	935	0	NR
420	24	NR	550	277	NR	680	74	NR	810	1	NR	940	0	NR
425	42	NR	555	284	NR	685	64	NR	815	1	NR	945	0	NR
430	72	NR	560	291	NR	690	55	NR	820	1	NR	950	0	NR
435	122	NR	565	296	NR	695	47	NR	825	1	NR	955	0	NR
440	207	NR	570	301	NR	700	40	NR	830	1	NR	960	0	NR
445	317	NR	575	306	NR	705	34	NR	835	1	NR	965	0	NR
450	304	NR	580	310	NR	710	29	NR	840	1	NR	970	0	NR
455	193	NR	585	315	NR	715	25	NR	845	1	NR	975	0	NR
460	149	NR	590	318	NR	720	21	NR	850	0	NR	980	0	NR
465	117	NR	595	320	NR	725	18	NR	855	0	NR	985	0	NR
470	85	NR	600	322	NR	730	15	NR	860	0	NR	990	0	NR
475	78	NR	605	325	NR	735	13	NR	865	0	NR	995	0	NR
480	84	NR	610	351	NR	740	11	NR	870	0	NR	1000	0	NR
485	98	NR	615	362	NR	745	10	NR	875	0	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 3.15

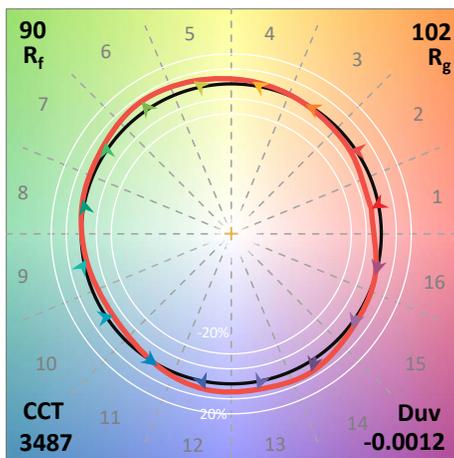
λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)	λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)	λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)	λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)	λ (nm)	Power W [^] /nm	Lumens (ϕ /nm)
360	0	NR	490	122	NR	620	322	NR	750	8	NR	880	0	NR
365	0	NR	495	152	NR	625	323	NR	755	7	NR	885	0	NR
370	0	NR	500	180	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	205	NR	635	589	NR	765	5	NR	895	0	NR
380	0	NR	510	223	NR	640	210	NR	770	4	NR	900	0	NR
385	1	NR	515	238	NR	645	214	NR	775	4	NR	905	0	NR
390	1	NR	520	247	NR	650	181	NR	780	3	NR	910	0	NR
395	2	NR	525	252	NR	655	155	NR	785	3	NR	915	0	NR
400	3	NR	530	258	NR	660	133	NR	790	2	NR	920	0	NR
405	5	NR	535	262	NR	665	113	NR	795	2	NR	925	0	NR
410	7	NR	540	267	NR	670	104	NR	800	2	NR	930	0	NR
415	13	NR	545	271	NR	675	86	NR	805	2	NR	935	0	NR
420	24	NR	550	277	NR	680	74	NR	810	1	NR	940	0	NR
425	42	NR	555	284	NR	685	64	NR	815	1	NR	945	0	NR
430	72	NR	560	291	NR	690	55	NR	820	1	NR	950	0	NR
435	122	NR	565	296	NR	695	47	NR	825	1	NR	955	0	NR
440	207	NR	570	301	NR	700	40	NR	830	1	NR	960	0	NR
445	317	NR	575	306	NR	705	34	NR	835	1	NR	965	0	NR
450	304	NR	580	310	NR	710	29	NR	840	1	NR	970	0	NR
455	193	NR	585	315	NR	715	25	NR	845	1	NR	975	0	NR
460	149	NR	590	318	NR	720	21	NR	850	0	NR	980	0	NR
465	117	NR	595	320	NR	725	18	NR	855	0	NR	985	0	NR
470	85	NR	600	322	NR	730	15	NR	860	0	NR	990	0	NR
475	78	NR	605	325	NR	735	13	NR	865	0	NR	995	0	NR
480	84	NR	610	351	NR	740	11	NR	870	0	NR	1000	0	NR
485	98	NR	615	362	NR	745	10	NR	875	0	NR			

Summary

$R_f = 90$
 $R_g = 102.4$
 CIE $R_a = 92.5$
 $R_9 = 61.3$



Color Vector Graphics

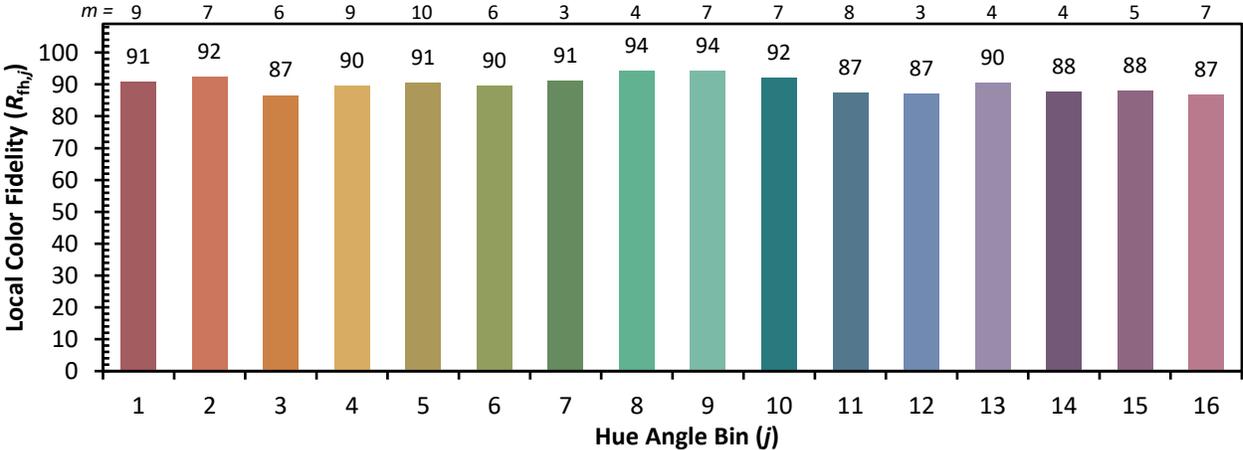
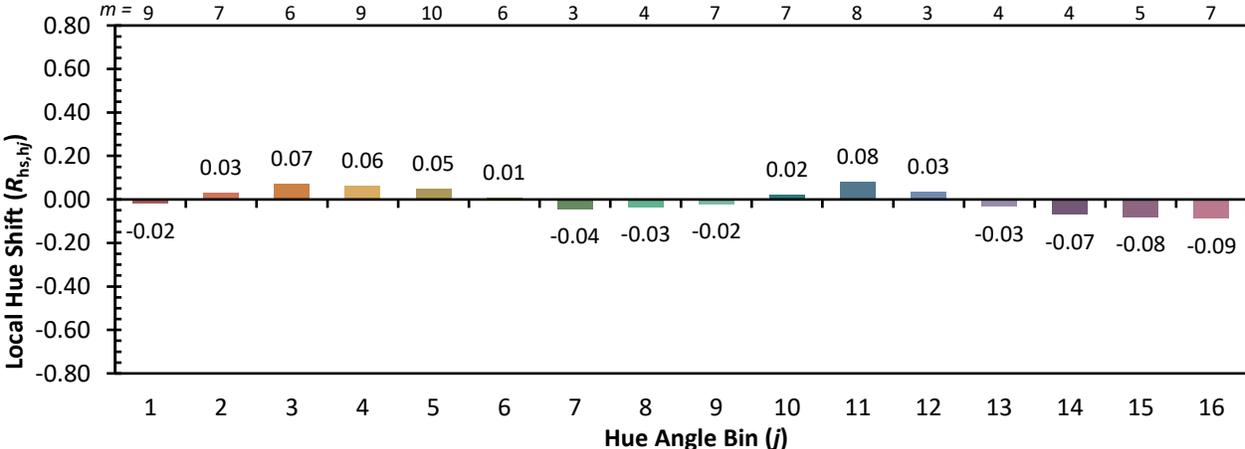
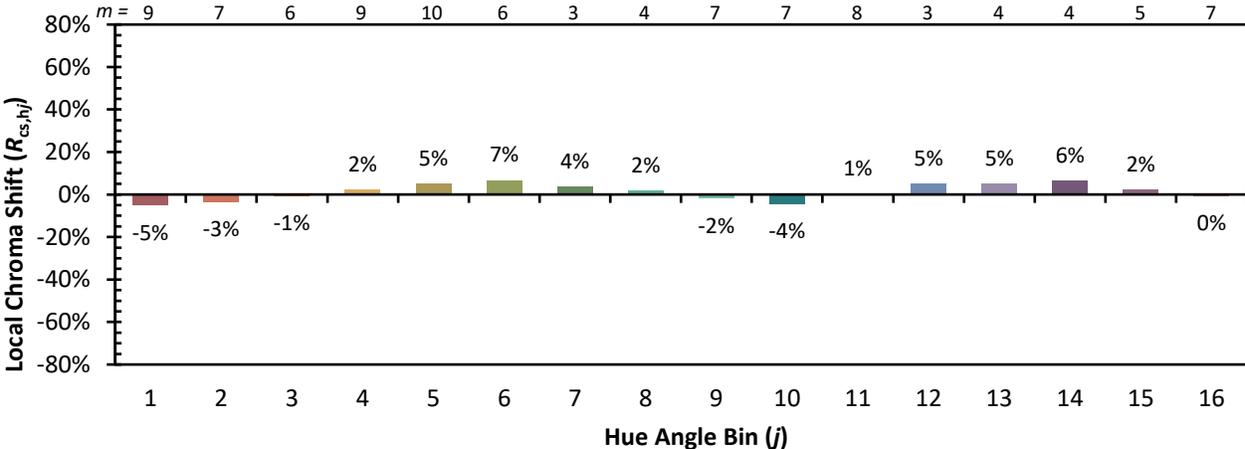


Individual Sample Fidelity Index ($R_{f,i}$)

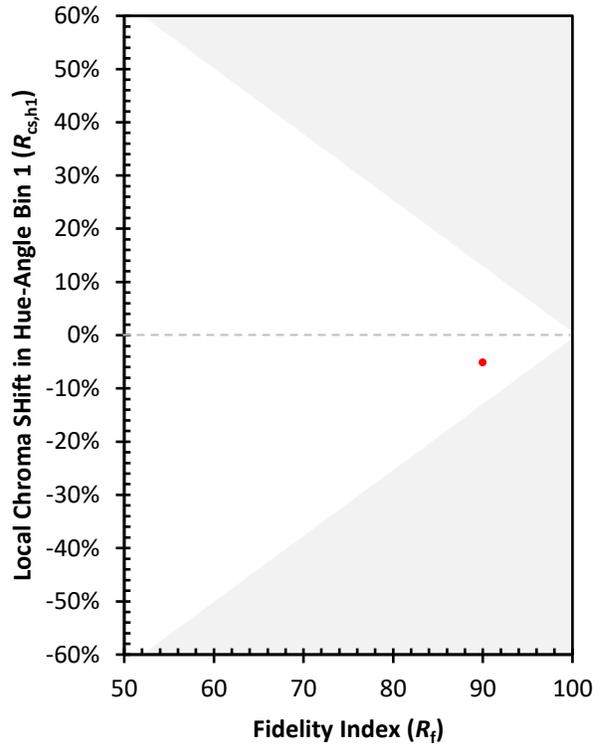
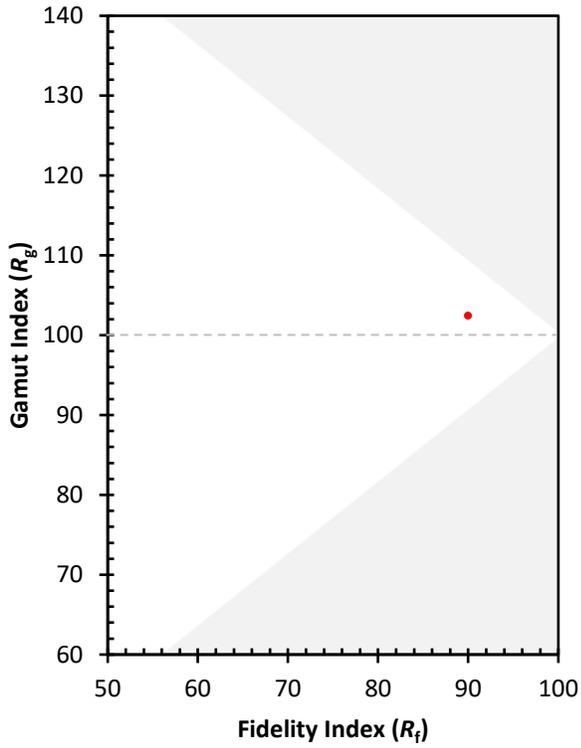
CES01 = 86	CES26 = 87	CES51 = 95	CES76 = 82
CES02 = 62	CES27 = 96	CES52 = 94	CES77 = 89
CES03 = 31	CES28 = 93	CES53 = 90	CES78 = 79
CES04 = 70	CES29 = 84	CES54 = 98	CES79 = 93
CES05 = 50	CES30 = 89	CES55 = 97	CES80 = 91
CES06 = 51	CES31 = 85	CES56 = 91	CES81 = 81
CES07 = 43	CES32 = 80	CES57 = 90	CES82 = 96
CES08 = 41	CES33 = 86	CES58 = 91	CES83 = 94
CES09 = 29	CES34 = 88	CES59 = 98	CES84 = 95
CES10 = 75	CES35 = 93	CES60 = 97	CES85 = 84
CES11 = 58	CES36 = 93	CES61 = 96	CES86 = 82
CES12 = 64	CES37 = 91	CES62 = 98	CES87 = 90
CES13 = 43	CES38 = 95	CES63 = 91	CES88 = 94
CES14 = 74	CES39 = 96	CES64 = 93	CES89 = 83
CES15 = 71	CES40 = 92	CES65 = 90	CES90 = 94
CES16 = 47	CES41 = 93	CES66 = 91	CES91 = 83
CES17 = 49	CES42 = 87	CES67 = 91	CES92 = 80
CES18 = 56	CES43 = 85	CES68 = 91	CES93 = 89
CES19 = 71	CES44 = 99	CES69 = 93	CES94 = 75
CES20 = 66	CES45 = 90	CES70 = 87	CES95 = 85
CES21 = 86	CES46 = 90	CES71 = 85	CES96 = 91
CES22 = 78	CES47 = 86	CES72 = 95	CES97 = 90
CES23 = 91	CES48 = 91	CES73 = 80	CES98 = 91
CES24 = 90	CES49 = 88	CES74 = 94	CES99 = 92
CES25 = 71	CES50 = 94	CES75 = 84	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)