

Classified
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: METALUX

Report Number: P981631

Luminaire Tested: **4WNLED-LD4-40SL-F-UNV-L835-CD1-U**

Issue Date: 04/17/2025

Test Information

Test Method: LM-79-08
Report Number: P981631
Test Lab: INNOVATION CENTER(P3)
Issue Date: 04/17/2025
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4WNLED-LD4-40SL-F-UNV-L835-CD1-U
Description: METALUX 4FT WNLED WRAPAROUND 4000LM PACKAGE 80CRI 3500K TROFFER
Light Source: 3500K CCT, 80+ CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

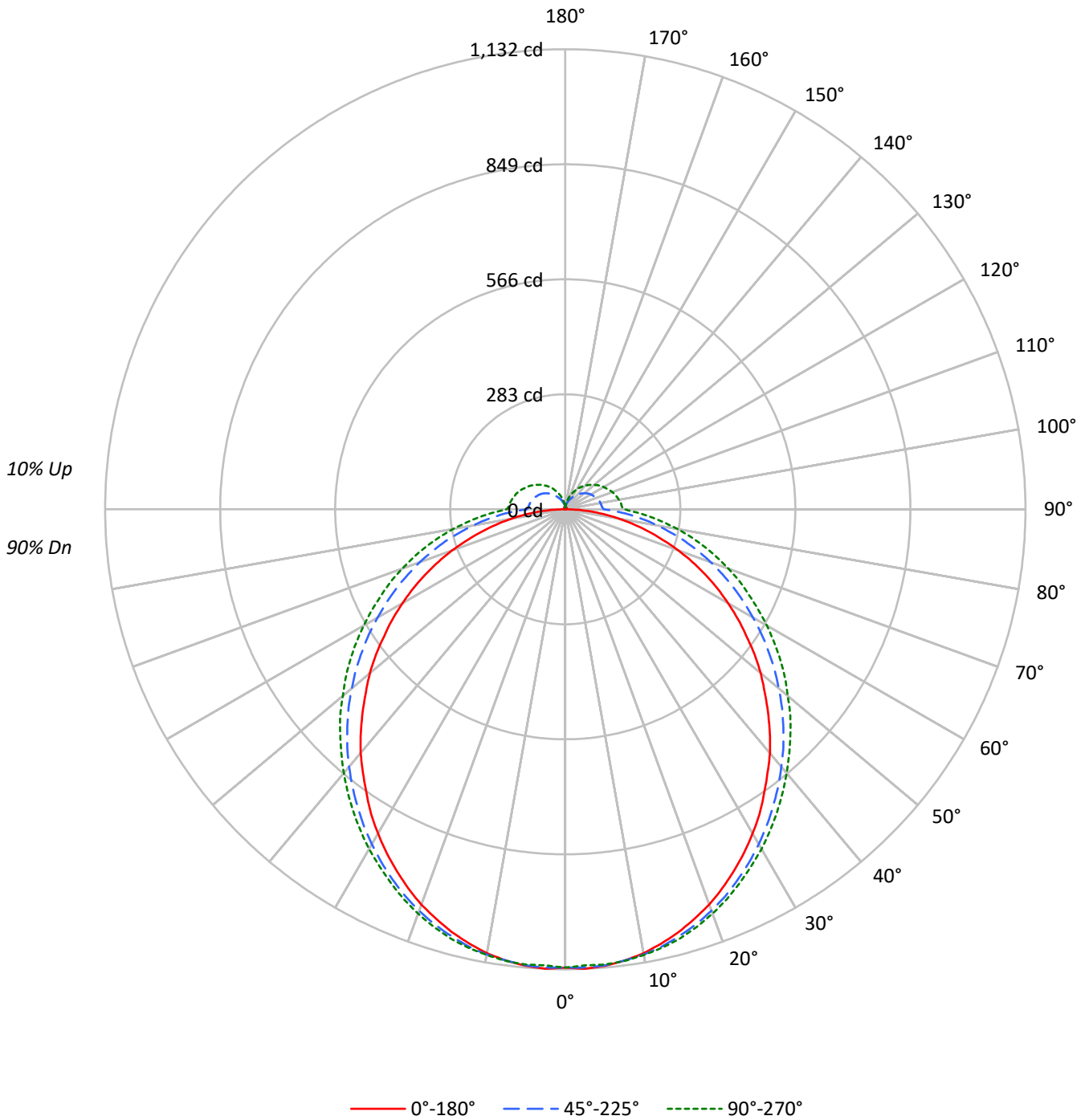
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3848.9 lumens
Efficiency: N/A
Efficacy: 125.8 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.75' x L: 4' x H: 0.17')
CIE Type: Direct

Input Watts (W): 30.6
Input Voltage (V): 120
Input Current (Ain): 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: 25 FT

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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	113	113	113	113	106	106	106	99	99	99	93	93	93	93	93	93	90
1	105	100	95	91	101	97	92	88	91	87	84	85	82	79	80	78	75	75	75	75	73
2	95	86	79	73	91	84	77	71	78	73	68	74	69	65	69	66	62	62	62	62	59
3	86	75	67	60	83	73	65	59	69	62	57	65	59	54	61	56	52	52	52	52	50
4	79	67	57	51	76	65	56	50	61	54	48	57	51	46	54	49	45	45	45	45	42
5	72	59	50	43	70	58	49	43	54	47	41	51	45	40	48	43	39	39	39	39	36
6	67	53	44	38	64	52	43	37	49	42	36	46	40	35	44	38	34	34	34	34	32
7	62	48	39	33	60	47	39	33	44	37	32	42	36	31	40	34	30	30	30	30	28
8	58	44	35	29	55	43	35	29	41	33	28	39	32	28	37	31	27	27	27	27	25
9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	28	24	24	24	24	22
10	50	37	29	24	49	36	29	24	35	28	23	33	27	22	32	26	22	22	22	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4045	4045	4045
5°	4046	3992	3972
10°	4012	3924	3904
15°	3956	3844	3832
20°	3894	3759	3740
25°	3812	3661	3640
30°	3728	3559	3545
35°	3629	3453	3444
40°	3544	3349	3346
45°	3433	3243	3251
50°	3337	3130	3153
55°	3211	3015	3066
60°	3095	2892	2968
65°	2960	2771	2868
70°	2787	2641	2781
75°	2561	2498	2682
80°	2276	2315	2559
85°	1796	2114	2432



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	106.9	2.8
10°-20°	306.1	8.0
20°-30°	461.3	12.0
30°-40°	554.4	14.4
40°-50°	579.9	15.1
50°-60°	539.8	14.0
60°-70°	445.2	11.6
70°-80°	312.8	8.1
80°-90°	165.2	4.3
90°-100°	89.4	2.3
100°-110°	81.2	2.1
110°-120°	69.5	1.8
120°-130°	55.0	1.4
130°-140°	39.2	1.0
140°-150°	24.6	0.6
150°-160°	12.8	0.3
160°-170°	4.7	0.1
170°-180°	0.8	0.0
0°-30°	874.3	22.7
0°-40°	1428.8	37.1
0°-60°	2548.5	66.2
0°-90°	3471.7	90.2
90°-120°	240.1	6.2
90°-150°	358.9	9.3
90°-180°	377.0	9.8
0°-180°	3848.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1128	1128	1128	1128	1128	
5°	1128	1121	1126	1126	1124	107
15°	1077	1075	1087	1093	1093	304
25°	982	987	1005	1014	1015	452
35°	853	866	891	905	909	534
45°	705	727	758	777	783	544
55°	544	573	610	635	646	488
65°	380	413	457	487	499	376
75°	214	254	306	341	354	226
85°	64	108	161	195	209	67
90°	2	44	94	131	144	5
95°	0	41	90	126	138	0
105°	1	39	85	117	129	1
115°	2	36	77	106	117	2
125°	3	31	68	93	102	3
135°	4	25	55	78	85	3
145°	4	19	40	59	66	3
155°	5	15	28	40	46	2
165°	6	11	16	22	26	2
175°	6	6	8	8	9	1
180°	5	5	5	5	5	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1127.5	1127.5	1127.5	1127.5	1127.5	1127.5	1127.5	1127.5	1127.5	1127.5	1127.5
2.5°	1131.7	1130.7	1128.5	1126.4	1125.3	1125.3	1124.2	1124.2	1124.2	1127.5	1128.5
5°	1127.5	1126.4	1124.2	1123.2	1122.1	1121.0	1121.0	1121.0	1122.1	1125.3	1126.4
7.5°	1119.9	1118.9	1116.7	1115.7	1114.6	1114.6	1114.6	1114.6	1115.7	1118.9	1119.9
10°	1109.2	1108.1	1106.0	1104.9	1104.9	1104.9	1104.9	1104.9	1107.1	1110.3	1112.4
12.5°	1094.2	1093.1	1092.1	1092.1	1091.0	1091.0	1092.1	1092.1	1094.2	1098.5	1101.7
15°	1077.0	1076.0	1074.9	1074.9	1074.9	1074.9	1076.0	1077.0	1080.3	1084.5	1086.7
17.5°	1056.7	1056.7	1055.6	1056.7	1056.7	1056.7	1057.7	1059.9	1062.0	1067.4	1070.6
20°	1035.2	1034.1	1033.1	1035.2	1035.2	1035.2	1036.3	1039.5	1042.7	1048.1	1051.3
22.5°	1009.5	1009.5	1009.5	1010.5	1011.6	1012.7	1013.7	1017.0	1021.3	1025.5	1029.8
25°	981.6	981.6	981.6	983.7	985.9	986.9	988.0	991.2	996.6	1000.9	1005.2
27.5°	952.6	952.6	952.6	953.7	956.9	958.0	960.1	964.4	969.8	974.1	979.4
30°	921.5	921.5	922.6	924.7	927.9	929.0	931.1	935.4	941.9	946.2	951.5
32.5°	889.3	888.2	889.3	892.5	895.7	899.0	900.0	905.4	911.8	917.2	922.6
35°	852.8	853.9	856.0	859.3	862.5	865.7	867.8	873.2	880.7	886.1	891.4
37.5°	817.4	818.5	820.6	824.9	829.2	832.4	835.7	840.0	848.5	853.9	860.3
40°	783.1	781.0	785.2	789.5	794.9	798.1	801.3	806.7	815.3	820.6	827.1
42.5°	744.5	744.5	747.7	754.1	759.5	762.7	765.9	772.4	781.0	787.4	793.8
45°	704.8	705.9	710.2	716.6	723.0	727.3	729.5	737.0	745.6	752.0	758.4
47.5°	665.1	667.2	671.5	679.0	685.5	689.8	691.9	700.5	709.1	716.6	723.0
50°	627.6	627.6	632.9	639.4	646.9	651.2	654.4	663.0	671.5	679.0	685.5
52.5°	586.8	586.8	592.2	600.7	607.2	612.5	615.8	625.4	634.0	641.5	649.0
55°	543.9	546.0	551.4	561.0	568.6	572.8	577.1	586.8	595.4	604.0	610.4
57.5°	504.2	505.3	511.7	520.3	528.9	533.2	538.5	547.1	556.8	566.4	572.8
60°	462.4	464.5	469.9	480.6	489.2	493.5	497.8	508.5	518.1	526.7	533.2
62.5°	421.6	422.7	430.2	439.8	448.4	453.8	459.1	468.8	478.4	487.0	495.6
65°	379.8	381.9	388.3	399.1	407.6	413.0	417.3	430.2	438.8	448.4	457.0
67.5°	337.9	340.1	347.6	358.3	368.0	373.3	377.6	389.4	400.1	409.8	418.4
70°	296.1	298.2	306.8	317.5	327.2	332.6	339.0	349.7	361.5	371.2	380.8
72.5°	253.2	256.4	263.9	275.7	288.6	293.9	299.3	312.2	322.9	333.6	342.2
75°	213.5	216.7	225.3	236.0	246.7	254.2	258.5	271.4	285.3	296.1	305.7
77.5°	173.8	177.0	185.6	197.4	209.2	215.6	222.1	233.9	245.7	256.4	267.1
80°	136.2	139.5	149.1	159.8	171.6	179.1	185.6	198.5	210.3	221.0	230.6
82.5°	99.8	103.0	112.6	124.4	137.3	143.7	150.2	162.0	174.9	185.6	196.3
85°	64.4	69.7	78.3	89.0	101.9	108.3	114.8	127.7	139.5	150.2	160.9
87.5°	31.1	35.4	45.1	56.9	68.7	76.2	81.5	93.3	106.2	115.9	126.6
90°	2.1	6.4	15.0	25.7	37.5	44.0	50.4	62.2	74.0	84.7	94.4
92.5°	0.0	4.3	12.9	23.6	35.4	41.8	47.2	59.0	70.8	81.5	91.2
95°	0.0	4.3	12.9	23.6	35.4	40.8	47.2	59.0	69.7	80.5	90.1
97.5°	1.1	4.3	12.9	23.6	34.3	40.8	46.1	57.9	68.7	79.4	89.0
100°	1.1	4.3	12.9	22.5	34.3	39.7	46.1	56.9	67.6	78.3	88.0
102.5°	1.1	4.3	12.9	22.5	34.3	39.7	45.1	55.8	66.5	77.2	86.9
105°	1.1	5.4	12.9	22.5	33.3	38.6	44.0	55.8	65.4	75.1	84.7
107.5°	1.1	5.4	12.9	22.5	33.3	38.6	44.0	54.7	64.4	74.0	82.6
110°	2.1	5.4	12.9	22.5	32.2	37.5	42.9	53.6	63.3	72.9	81.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	2.1	5.4	12.9	21.5	32.2	36.5	41.8	52.6	62.2	70.8	79.4
115°	2.1	5.4	12.9	21.5	31.1	36.5	40.8	51.5	60.1	69.7	77.2
117.5°	2.1	6.4	12.9	20.4	30.0	35.4	39.7	49.3	59.0	67.6	75.1
120°	3.2	6.4	11.8	20.4	29.0	34.3	38.6	48.3	56.9	65.4	72.9
122.5°	3.2	6.4	11.8	19.3	27.9	32.2	37.5	46.1	54.7	63.3	70.8
125°	3.2	6.4	11.8	18.2	26.8	31.1	35.4	44.0	52.6	60.1	67.6
127.5°	3.2	6.4	11.8	18.2	25.7	29.0	33.3	41.8	49.3	56.9	64.4
130°	3.2	6.4	10.7	17.2	23.6	27.9	31.1	39.7	46.1	53.6	61.1
132.5°	3.2	6.4	10.7	16.1	22.5	26.8	30.0	37.5	44.0	50.4	57.9
135°	4.3	6.4	10.7	16.1	21.5	24.7	27.9	34.3	40.8	47.2	54.7
137.5°	4.3	6.4	9.7	15.0	20.4	23.6	26.8	32.2	38.6	45.1	50.4
140°	4.3	6.4	9.7	13.9	19.3	22.5	24.7	30.0	36.5	41.8	47.2
142.5°	4.3	6.4	9.7	13.9	18.2	20.4	23.6	27.9	33.3	38.6	44.0
145°	4.3	6.4	9.7	12.9	17.2	19.3	21.5	26.8	31.1	35.4	39.7
147.5°	5.4	6.4	9.7	12.9	16.1	18.2	20.4	24.7	29.0	32.2	36.5
150°	5.4	6.4	8.6	11.8	15.0	17.2	19.3	22.5	26.8	30.0	33.3
152.5°	5.4	6.4	8.6	11.8	15.0	16.1	17.2	21.5	24.7	27.9	30.0
155°	5.4	6.4	8.6	10.7	13.9	15.0	16.1	19.3	22.5	24.7	27.9
157.5°	5.4	6.4	8.6	10.7	12.9	13.9	15.0	17.2	20.4	22.5	24.7
160°	5.4	6.4	8.6	9.7	11.8	12.9	13.9	16.1	18.2	20.4	21.5
162.5°	6.4	6.4	7.5	9.7	10.7	11.8	12.9	13.9	16.1	17.2	19.3
165°	6.4	6.4	7.5	8.6	9.7	10.7	10.7	12.9	13.9	15.0	16.1
167.5°	6.4	6.4	7.5	8.6	8.6	9.7	9.7	10.7	11.8	12.9	13.9
170°	6.4	6.4	6.4	7.5	8.6	8.6	8.6	9.7	10.7	10.7	11.8
172.5°	6.4	6.4	6.4	6.4	7.5	7.5	7.5	8.6	8.6	9.7	9.7
175°	6.4	6.4	6.4	6.4	6.4	6.4	7.5	7.5	7.5	7.5	7.5
177.5°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
180°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	1127.5	1127.5	1127.5	1127.5	1127.5	1127.5	1127.5	1127.5	1127.5	1127.5
2.5°	1129.6	1131.7	1130.7	1128.5	1128.5	1128.5	1127.5	1125.3	1124.2	1123.2
5°	1127.5	1129.6	1127.5	1126.4	1126.4	1126.4	1126.4	1125.3	1124.2	1124.2
7.5°	1122.1	1124.2	1123.2	1122.1	1122.1	1122.1	1122.1	1121.0	1121.0	1121.0
10°	1114.6	1117.8	1116.7	1115.7	1114.6	1115.7	1114.6	1114.6	1113.5	1113.5
12.5°	1102.8	1106.0	1106.0	1104.9	1104.9	1104.9	1104.9	1104.9	1103.9	1104.9
15°	1089.9	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1	1092.1	1093.1
17.5°	1073.8	1077.0	1078.1	1077.0	1078.1	1078.1	1078.1	1077.0	1077.0	1077.0
20°	1054.5	1057.7	1058.8	1057.7	1057.7	1057.7	1058.8	1058.8	1058.8	1058.8
22.5°	1033.1	1036.3	1036.3	1036.3	1037.3	1037.3	1037.3	1038.4	1038.4	1038.4
25°	1008.4	1011.6	1011.6	1012.7	1013.7	1013.7	1014.8	1014.8	1014.8	1014.8
27.5°	984.8	986.9	986.9	988.0	989.1	989.1	989.1	989.1	991.2	990.1
30°	956.9	959.0	960.1	962.2	962.2	963.3	963.3	964.4	965.5	965.5
32.5°	927.9	930.1	931.1	933.3	934.4	935.4	935.4	937.6	938.6	937.6
35°	896.8	899.0	902.2	903.2	905.4	905.4	907.5	907.5	909.7	908.6
37.5°	865.7	867.8	870.0	872.1	874.3	875.4	876.4	878.6	880.7	878.6
40°	832.4	835.7	838.9	841.0	842.1	844.2	844.2	847.5	849.6	847.5
42.5°	799.2	802.4	805.6	809.9	809.9	811.0	813.1	816.4	816.4	815.3
45°	764.9	767.0	772.4	775.6	776.7	777.7	779.9	781.0	783.1	783.1
47.5°	728.4	732.7	738.0	741.3	742.3	743.4	745.6	747.7	750.9	750.9
50°	691.9	697.3	699.4	704.8	706.9	708.0	711.2	713.4	715.5	714.4
52.5°	654.4	658.7	665.1	669.4	671.5	672.6	675.8	679.0	680.1	681.2
55°	616.8	622.2	628.6	632.9	635.1	637.2	639.4	641.5	644.7	645.8
57.5°	579.3	584.6	592.2	596.4	598.6	599.7	604.0	607.2	608.2	609.3
60°	540.7	547.1	554.6	558.9	561.0	564.3	565.3	570.7	571.8	572.8
62.5°	503.1	509.6	517.1	522.4	524.6	526.7	531.0	534.2	536.4	535.3
65°	465.6	472.0	479.5	484.9	487.0	490.2	493.5	496.7	498.8	498.8
67.5°	427.0	434.5	443.0	448.4	450.6	453.8	457.0	459.1	462.4	464.5
70°	389.4	398.0	405.5	410.9	413.0	416.2	419.4	424.8	424.8	427.0
72.5°	351.9	360.4	368.0	375.5	377.6	379.8	384.0	387.3	388.3	390.5
75°	315.4	324.0	331.5	336.8	341.1	343.3	347.6	349.7	351.9	354.0
77.5°	276.8	287.5	295.0	301.4	304.7	306.8	311.1	314.3	316.5	317.5
80°	240.3	248.9	256.4	262.8	266.0	269.3	273.5	275.7	278.9	280.0
82.5°	204.9	213.5	221.0	226.3	230.6	232.8	237.1	241.4	241.4	243.5
85°	169.5	178.1	185.6	192.0	195.2	198.5	201.7	206.0	207.0	209.2
87.5°	135.2	144.8	151.3	158.8	160.9	164.1	169.5	172.7	174.9	174.9
90°	104.1	112.6	120.1	127.7	130.9	133.0	138.4	141.6	143.7	143.7
92.5°	100.8	109.4	116.9	124.4	126.6	129.8	134.1	137.3	139.5	139.5
95°	99.8	108.3	115.9	122.3	125.5	127.7	133.0	135.2	137.3	138.4
97.5°	98.7	107.3	114.8	121.2	123.4	126.6	130.9	134.1	136.2	136.2
100°	96.5	105.1	112.6	119.1	122.3	124.4	128.7	131.9	133.0	134.1
102.5°	95.5	103.0	110.5	116.9	120.1	122.3	126.6	129.8	130.9	131.9
105°	93.3	101.9	108.3	114.8	116.9	120.1	123.4	126.6	128.7	128.7
107.5°	91.2	99.8	106.2	112.6	114.8	116.9	121.2	124.4	125.5	126.6
110°	89.0	97.6	104.1	109.4	112.6	114.8	118.0	121.2	122.3	123.4



TEST NUMBER: P981631

CATALOG NUMBER: 4WNLED-LD4-40SL-F-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	86.9	94.4	100.8	107.3	109.4	111.6	114.8	118.0	119.1	120.1
115°	84.7	92.3	98.7	104.1	106.2	108.3	111.6	114.8	115.9	116.9
117.5°	82.6	90.1	95.5	100.8	103.0	105.1	108.3	111.6	112.6	112.6
120°	80.5	86.9	93.3	97.6	99.8	101.9	105.1	107.3	109.4	109.4
122.5°	77.2	83.7	90.1	94.4	96.5	98.7	101.9	104.1	105.1	106.2
125°	75.1	81.5	86.9	91.2	93.3	95.5	97.6	99.8	100.8	101.9
127.5°	71.9	77.2	83.7	88.0	90.1	92.3	94.4	96.5	97.6	97.6
130°	67.6	74.0	79.4	84.7	86.9	88.0	91.2	92.3	93.3	93.3
132.5°	64.4	69.7	75.1	80.5	82.6	84.7	86.9	88.0	89.0	89.0
135°	60.1	65.4	70.8	76.2	78.3	80.5	82.6	83.7	84.7	84.7
137.5°	56.9	62.2	66.5	71.9	74.0	76.2	78.3	79.4	80.5	80.5
140°	52.6	56.9	62.2	67.6	69.7	70.8	74.0	75.1	76.2	76.2
142.5°	48.3	53.6	57.9	62.2	64.4	66.5	69.7	70.8	71.9	71.9
145°	45.1	49.3	52.6	56.9	59.0	61.1	64.4	66.5	66.5	66.5
147.5°	40.8	45.1	48.3	52.6	54.7	55.8	60.1	61.1	62.2	62.2
150°	37.5	40.8	44.0	47.2	49.3	51.5	54.7	56.9	56.9	56.9
152.5°	34.3	36.5	39.7	42.9	44.0	46.1	49.3	51.5	51.5	51.5
155°	30.0	33.3	35.4	37.5	39.7	40.8	44.0	46.1	46.1	46.1
157.5°	26.8	29.0	31.1	33.3	34.3	35.4	38.6	40.8	41.8	41.8
160°	23.6	25.7	26.8	29.0	30.0	31.1	32.2	35.4	36.5	36.5
162.5°	20.4	21.5	23.6	24.7	25.7	25.7	27.9	29.0	31.1	31.1
165°	17.2	18.2	19.3	20.4	21.5	21.5	22.5	24.7	25.7	25.7
167.5°	15.0	15.0	16.1	17.2	17.2	17.2	18.2	19.3	21.5	21.5
170°	11.8	12.9	12.9	12.9	13.9	13.9	13.9	15.0	16.1	17.2
172.5°	9.7	9.7	10.7	10.7	10.7	10.7	10.7	10.7	11.8	12.9
175°	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	8.6
177.5°	6.4	6.4	6.4	5.4	5.4	5.4	5.4	5.4	5.4	4.3
180°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP3-2508-516-10

Test Date: 09/05/2025

Luminaire Tested: 4WNLED-LD4-50SL-F-UNVL935-CD1-U

Data in this report applies to families of products including 4WNLED-LD4-50SL-F-UNVL935-CD1-U

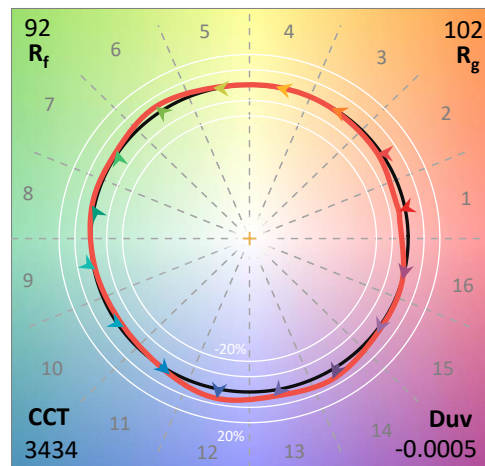
Test Information

Test Method: LM-79-2019
 Report Number: SP3-2508-516-10
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP3 - 3M SPHERE
 Measurement Geometry: 4π
 Issue Date: 09/05/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Metalux
 Catalog Number: **4WNLED-LD4-50SL-F-UNVL935-CD1-U**
 Description: 4FT WNLED 5000LM 935

Spectral Parameters

CCT (K): 3434
 CIE u': 0.2376
 CIE v': 0.5120
 Duv: -0.0005
 CIE x: 0.4085
 CIE y: 0.3912
 CIE z: 0.2002
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 581
 Purity: 40.03883
 Rf: 92.1
 Rg: 101.8

CRI (Ra):	95.1		
R1:	97.5	R9:	72.8
R2:	96.4	R10:	89.6
R3:	93.7	R11:	94.9
R4:	96.0	R12:	80.4
R5:	96.5	R13:	97.1
R6:	95.5	R14:	95.3
R7:	95.1	R15:	94.5
R8:	90.0		



Test Conditions

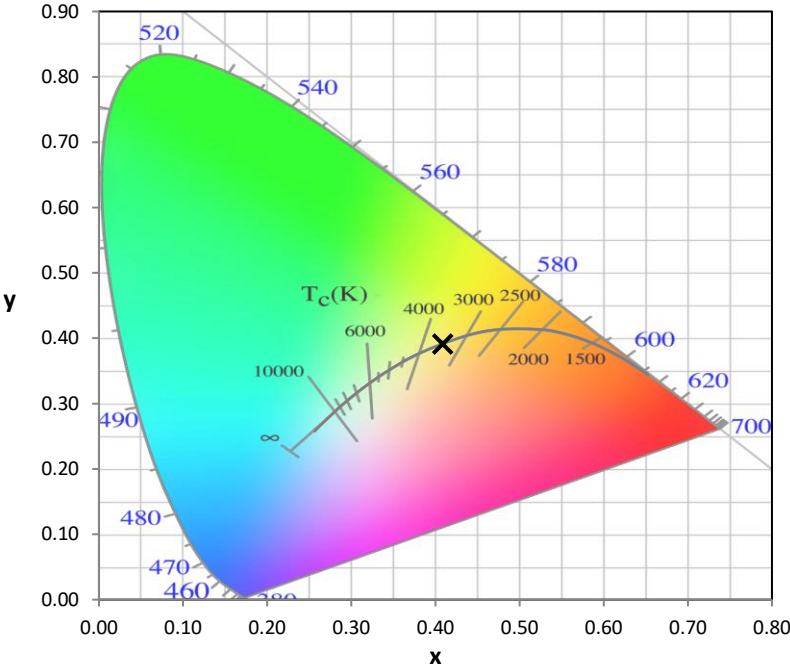
Stabilization Time: 24M
 Operation Time: 1H 24M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP3-2508-516-10

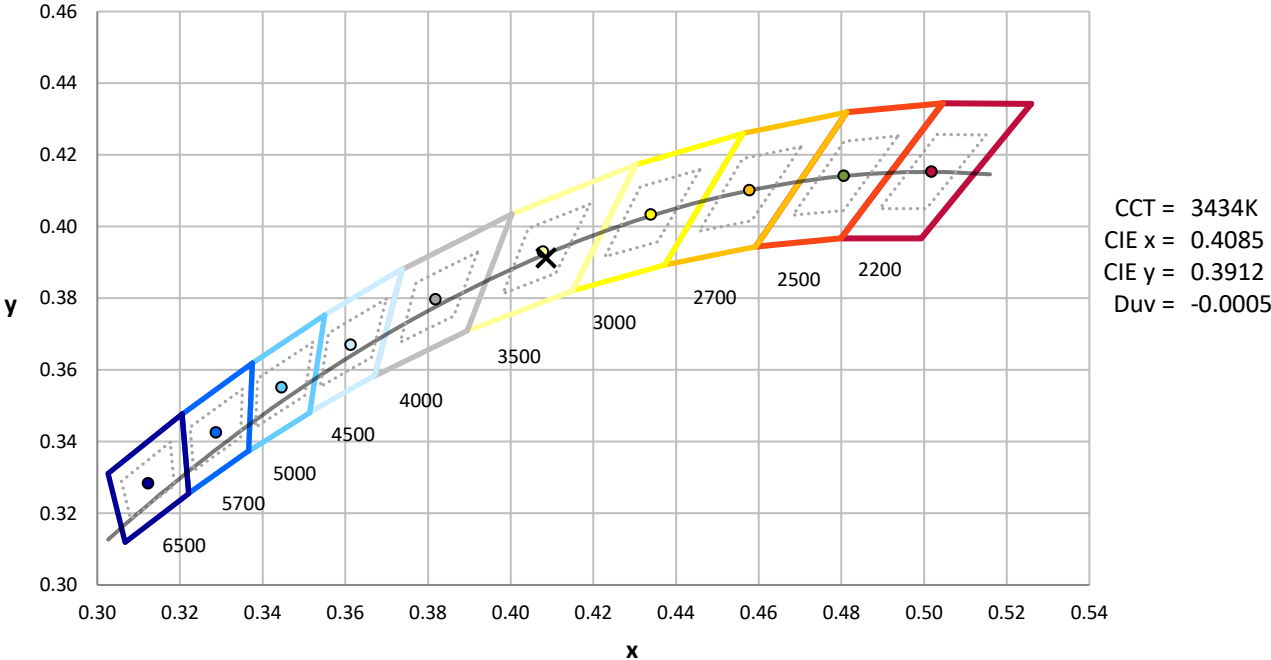
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	3M SPHERE IN02505	7/1/2025	1/1/2026
Power Meter	XITRON INXT2011006	1/20/2025	1/20/2026
AC Power Source	CHROMA 61604 IN6064A	10/22/2024	10/22/2025
DC Power Source	EYSIGHT N5770A IN0534	10/22/2024	10/22/2025
Sphere Thermometer	TANDD IN4036E	10/22/2024	10/22/2025

REPORT NUMBER: SP3-2508-516-10

CIE 1931 Chromaticity Diagram



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

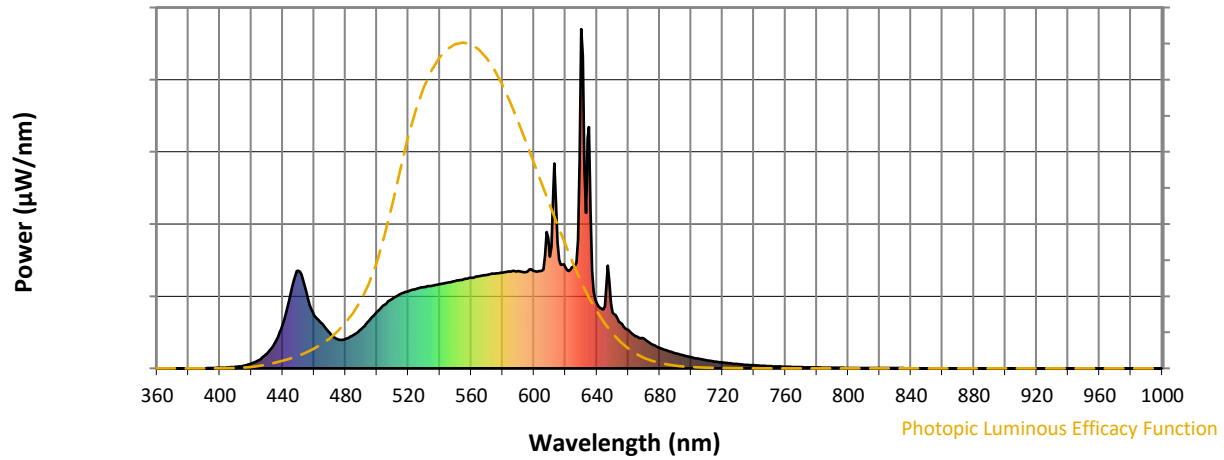


CCT = 3434K
 CIE x = 0.4085
 CIE y = 0.3912
 Duv = -0.0005

Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP3-2508-516-10

Photopic Flux vs. Wavelength

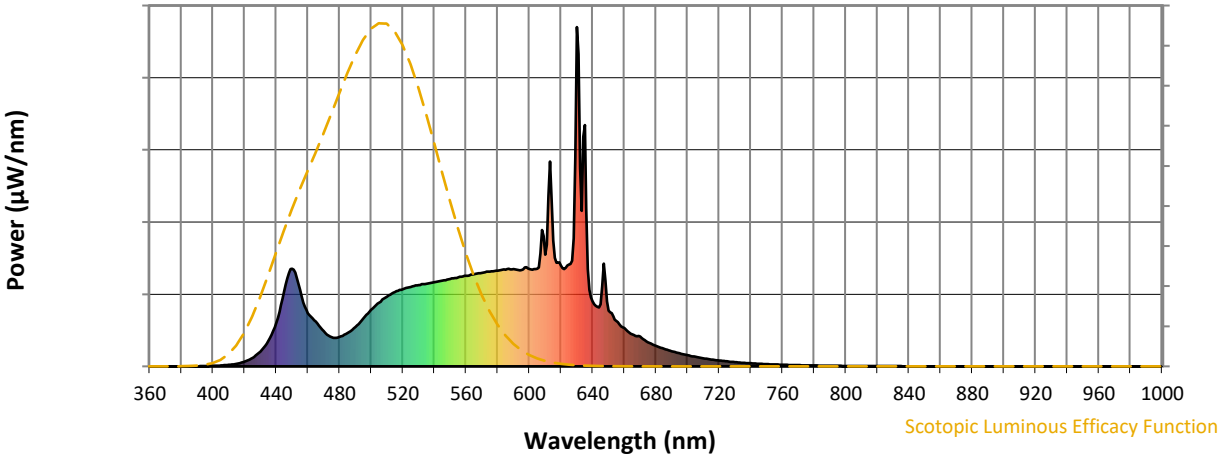


Photopic Lumens: NR

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	116	NR	620	297	NR	750	7	NR	880	0	NR
365	0	NR	495	140	NR	625	300	NR	755	6	NR	885	0	NR
370	0	NR	500	167	NR	630	1000	NR	760	5	NR	890	0	NR
375	0	NR	505	188	NR	635	711	NR	765	4	NR	895	0	NR
380	0	NR	510	205	NR	640	191	NR	770	3	NR	900	0	NR
385	0	NR	515	219	NR	645	183	NR	775	3	NR	905	0	NR
390	0	NR	520	227	NR	650	164	NR	780	3	NR	910	0	NR
395	1	NR	525	234	NR	655	134	NR	785	2	NR	915	0	NR
400	2	NR	530	239	NR	660	113	NR	790	2	NR	920	0	NR
405	3	NR	535	243	NR	665	94	NR	795	2	NR	925	0	NR
410	4	NR	540	248	NR	670	88	NR	800	1	NR	930	0	NR
415	8	NR	545	253	NR	675	71	NR	805	1	NR	935	0	NR
420	14	NR	550	258	NR	680	61	NR	810	1	NR	940	0	NR
425	25	NR	555	262	NR	685	52	NR	815	1	NR	945	0	NR
430	44	NR	560	267	NR	690	45	NR	820	1	NR	950	0	NR
435	75	NR	565	272	NR	695	38	NR	825	1	NR	955	0	NR
440	129	NR	570	276	NR	700	33	NR	830	1	NR	960	0	NR
445	221	NR	575	279	NR	705	28	NR	835	1	NR	965	0	NR
450	288	NR	580	282	NR	710	24	NR	840	0	NR	970	0	NR
455	225	NR	585	285	NR	715	20	NR	845	0	NR	975	0	NR
460	157	NR	590	286	NR	720	17	NR	850	0	NR	980	0	NR
465	132	NR	595	284	NR	725	15	NR	855	0	NR	985	0	NR
470	104	NR	600	286	NR	730	12	NR	860	0	NR	990	0	NR
475	85	NR	605	287	NR	735	11	NR	865	0	NR	995	0	NR
480	86	NR	610	329	NR	740	9	NR	870	0	NR	1000	0	NR
485	98	NR	615	371	NR	745	8	NR	875	0	NR			

REPORT NUMBER: SP3-2508-516-10

Scotopic Flux vs. Wavelength



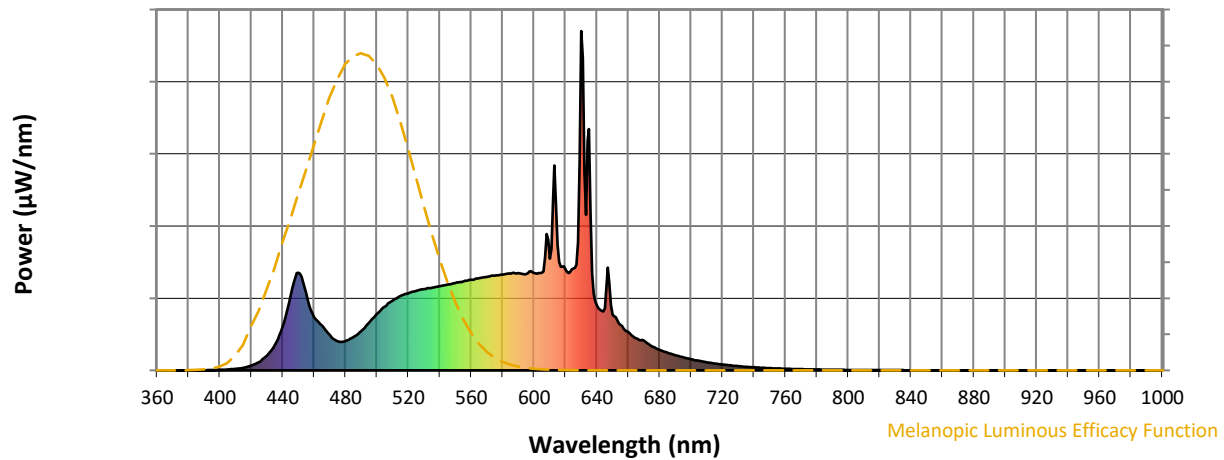
Scotopic Lumens: NR

S/P: 1.59

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	116	NR	620	297	NR	750	7	NR	880	0	NR
365	0	NR	495	140	NR	625	300	NR	755	6	NR	885	0	NR
370	0	NR	500	167	NR	630	1000	NR	760	5	NR	890	0	NR
375	0	NR	505	188	NR	635	711	NR	765	4	NR	895	0	NR
380	0	NR	510	205	NR	640	191	NR	770	3	NR	900	0	NR
385	0	NR	515	219	NR	645	183	NR	775	3	NR	905	0	NR
390	0	NR	520	227	NR	650	164	NR	780	3	NR	910	0	NR
395	1	NR	525	234	NR	655	134	NR	785	2	NR	915	0	NR
400	2	NR	530	239	NR	660	113	NR	790	2	NR	920	0	NR
405	3	NR	535	243	NR	665	94	NR	795	2	NR	925	0	NR
410	4	NR	540	248	NR	670	88	NR	800	1	NR	930	0	NR
415	8	NR	545	253	NR	675	71	NR	805	1	NR	935	0	NR
420	14	NR	550	258	NR	680	61	NR	810	1	NR	940	0	NR
425	25	NR	555	262	NR	685	52	NR	815	1	NR	945	0	NR
430	44	NR	560	267	NR	690	45	NR	820	1	NR	950	0	NR
435	75	NR	565	272	NR	695	38	NR	825	1	NR	955	0	NR
440	129	NR	570	276	NR	700	33	NR	830	1	NR	960	0	NR
445	221	NR	575	279	NR	705	28	NR	835	1	NR	965	0	NR
450	288	NR	580	282	NR	710	24	NR	840	0	NR	970	0	NR
455	225	NR	585	285	NR	715	20	NR	845	0	NR	975	0	NR
460	157	NR	590	286	NR	720	17	NR	850	0	NR	980	0	NR
465	132	NR	595	284	NR	725	15	NR	855	0	NR	985	0	NR
470	104	NR	600	286	NR	730	12	NR	860	0	NR	990	0	NR
475	85	NR	605	287	NR	735	11	NR	865	0	NR	995	0	NR
480	86	NR	610	329	NR	740	9	NR	870	0	NR	1000	0	NR
485	98	NR	615	371	NR	745	8	NR	875	0	NR			

REPORT NUMBER: SP3-2508-516-10

Melanopic Flux vs. Wavelength



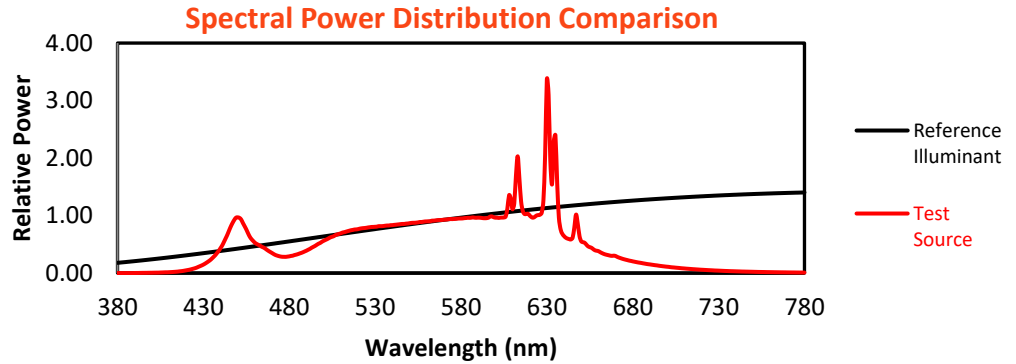
Melanopic Lumens: NR

M/P: 3.19

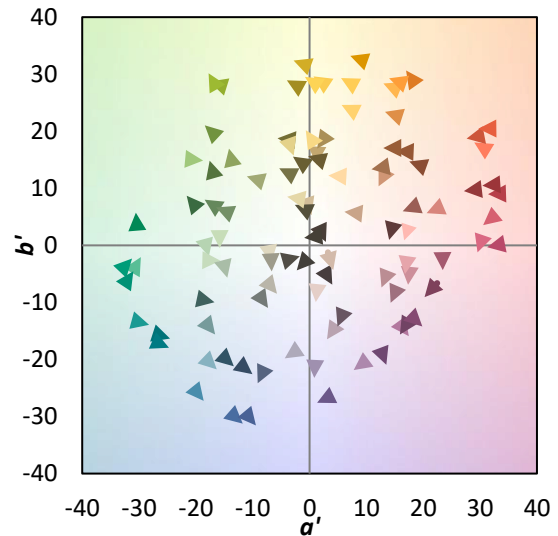
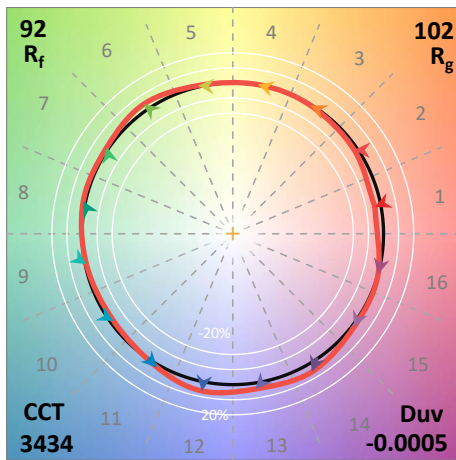
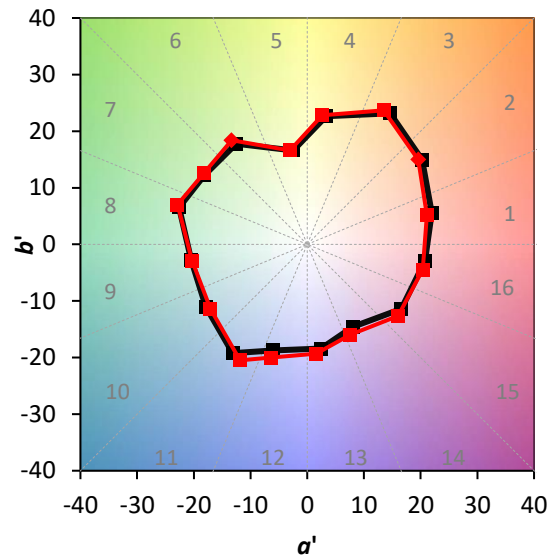
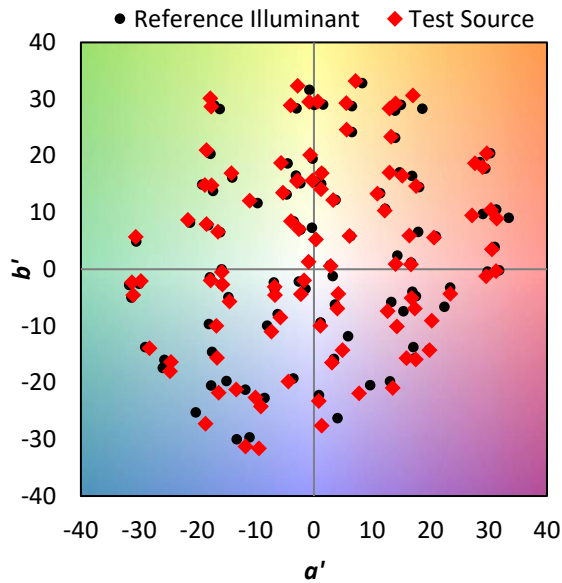
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	116	NR	620	297	NR	750	7	NR	880	0	NR
365	0	NR	495	140	NR	625	300	NR	755	6	NR	885	0	NR
370	0	NR	500	167	NR	630	1000	NR	760	5	NR	890	0	NR
375	0	NR	505	188	NR	635	711	NR	765	4	NR	895	0	NR
380	0	NR	510	205	NR	640	191	NR	770	3	NR	900	0	NR
385	0	NR	515	219	NR	645	183	NR	775	3	NR	905	0	NR
390	0	NR	520	227	NR	650	164	NR	780	3	NR	910	0	NR
395	1	NR	525	234	NR	655	134	NR	785	2	NR	915	0	NR
400	2	NR	530	239	NR	660	113	NR	790	2	NR	920	0	NR
405	3	NR	535	243	NR	665	94	NR	795	2	NR	925	0	NR
410	4	NR	540	248	NR	670	88	NR	800	1	NR	930	0	NR
415	8	NR	545	253	NR	675	71	NR	805	1	NR	935	0	NR
420	14	NR	550	258	NR	680	61	NR	810	1	NR	940	0	NR
425	25	NR	555	262	NR	685	52	NR	815	1	NR	945	0	NR
430	44	NR	560	267	NR	690	45	NR	820	1	NR	950	0	NR
435	75	NR	565	272	NR	695	38	NR	825	1	NR	955	0	NR
440	129	NR	570	276	NR	700	33	NR	830	1	NR	960	0	NR
445	221	NR	575	279	NR	705	28	NR	835	1	NR	965	0	NR
450	288	NR	580	282	NR	710	24	NR	840	0	NR	970	0	NR
455	225	NR	585	285	NR	715	20	NR	845	0	NR	975	0	NR
460	157	NR	590	286	NR	720	17	NR	850	0	NR	980	0	NR
465	132	NR	595	284	NR	725	15	NR	855	0	NR	985	0	NR
470	104	NR	600	286	NR	730	12	NR	860	0	NR	990	0	NR
475	85	NR	605	287	NR	735	11	NR	865	0	NR	995	0	NR
480	86	NR	610	329	NR	740	9	NR	870	0	NR	1000	0	NR
485	98	NR	615	371	NR	745	8	NR	875	0	NR			

Summary

$R_f = 92.1$
 $R_g = 101.8$
 $CIE R_a = 95.1$
 $R_9 = 72.8$

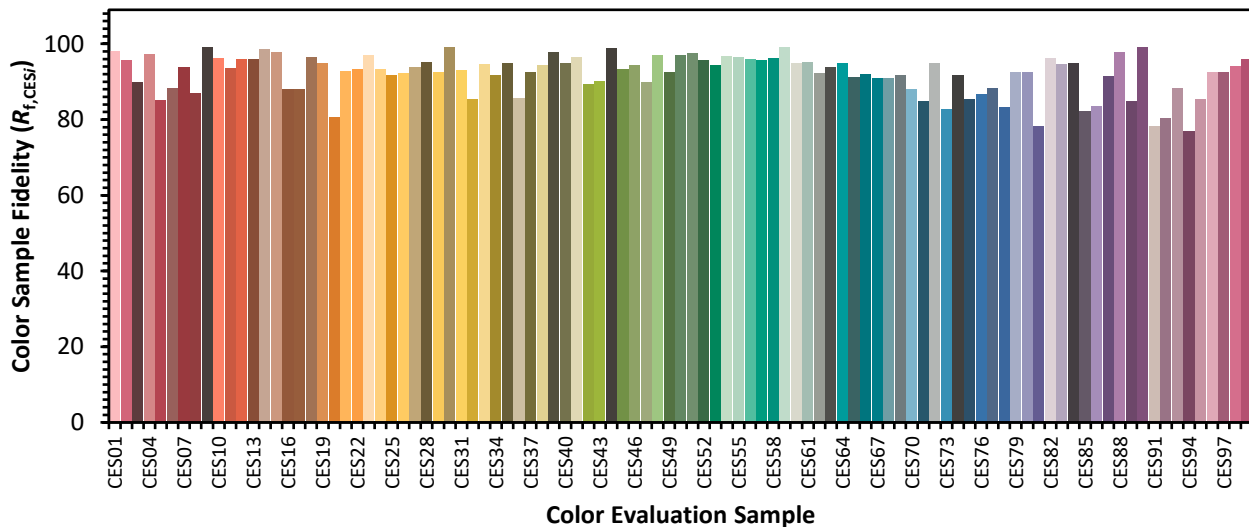


Color Vector Graphics

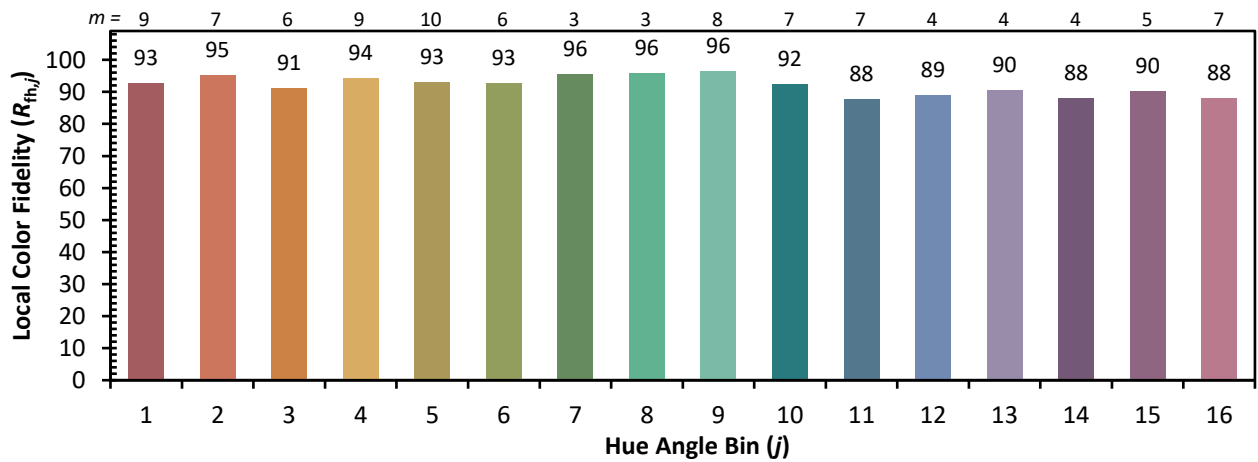
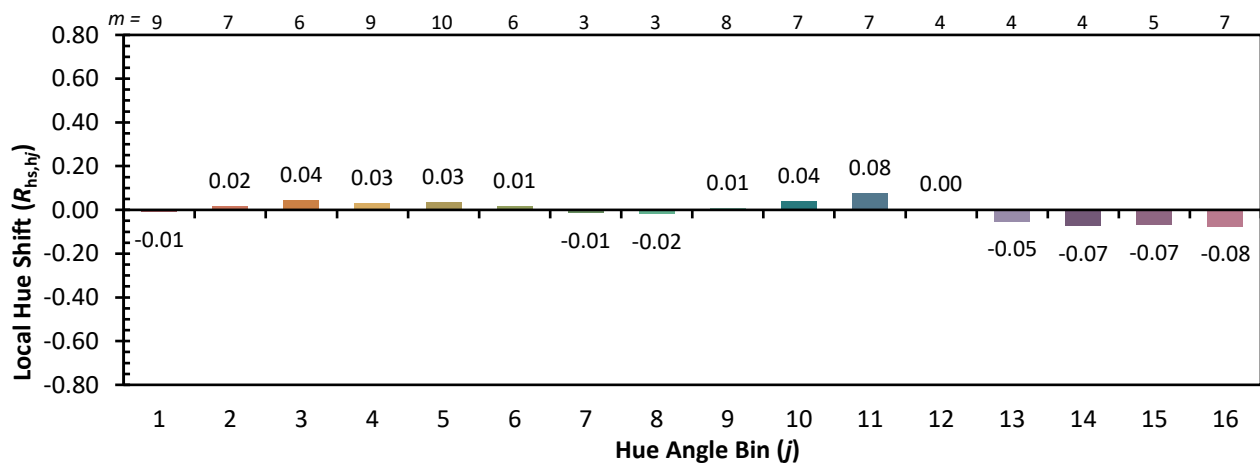
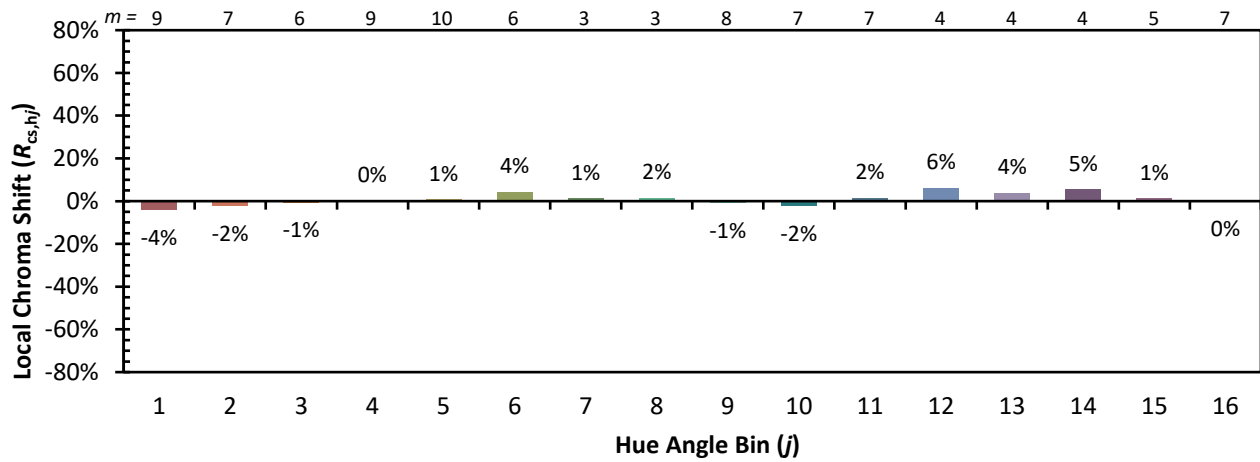


Individual Sample Fidelity Index ($R_{f,i}$)

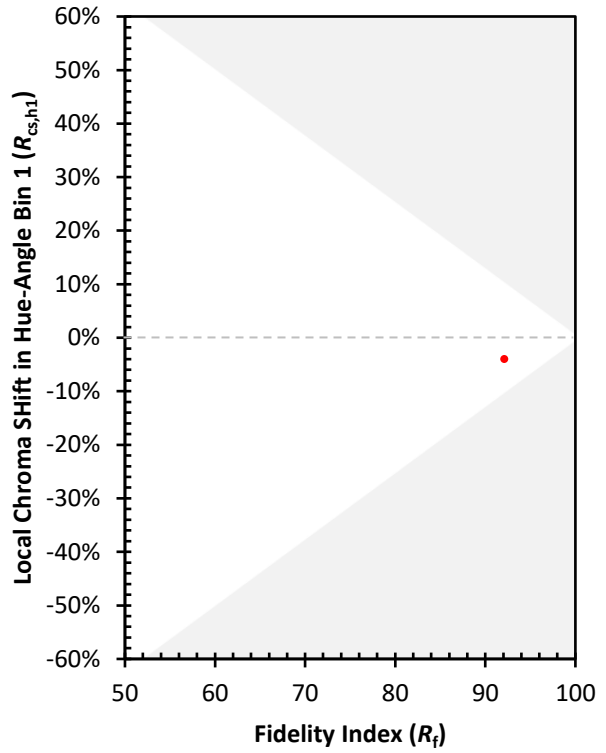
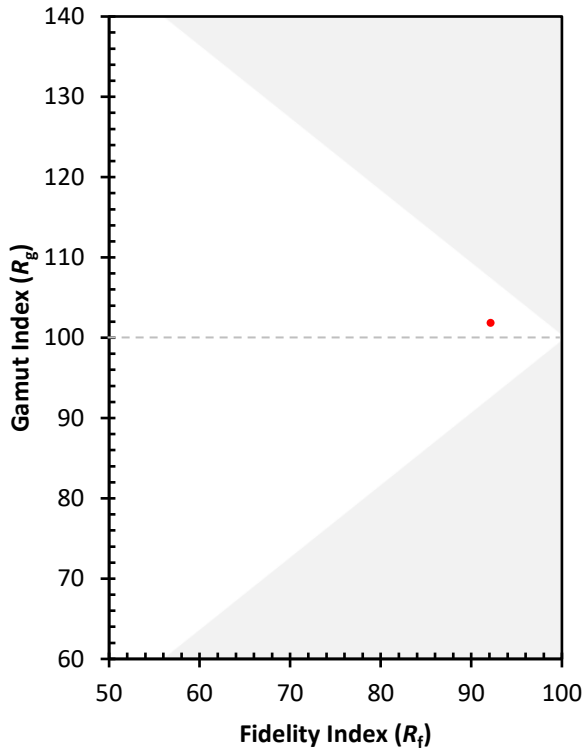
CES01 = 86	CES26 = 92	CES51 = 98	CES76 = 87
CES02 = 62	CES27 = 94	CES52 = 96	CES77 = 88
CES03 = 31	CES28 = 95	CES53 = 94	CES78 = 83
CES04 = 70	CES29 = 93	CES54 = 97	CES79 = 93
CES05 = 50	CES30 = 99	CES55 = 97	CES80 = 92
CES06 = 51	CES31 = 93	CES56 = 96	CES81 = 78
CES07 = 43	CES32 = 85	CES57 = 96	CES82 = 96
CES08 = 42	CES33 = 95	CES58 = 96	CES83 = 95
CES09 = 29	CES34 = 92	CES59 = 99	CES84 = 95
CES10 = 75	CES35 = 95	CES60 = 95	CES85 = 82
CES11 = 58	CES36 = 86	CES61 = 95	CES86 = 84
CES12 = 64	CES37 = 92	CES62 = 92	CES87 = 92
CES13 = 44	CES38 = 95	CES63 = 94	CES88 = 98
CES14 = 74	CES39 = 98	CES64 = 95	CES89 = 85
CES15 = 72	CES40 = 95	CES65 = 91	CES90 = 99
CES16 = 48	CES41 = 97	CES66 = 92	CES91 = 78
CES17 = 49	CES42 = 89	CES67 = 91	CES92 = 80
CES18 = 56	CES43 = 90	CES68 = 91	CES93 = 88
CES19 = 71	CES44 = 99	CES69 = 92	CES94 = 77
CES20 = 67	CES45 = 93	CES70 = 88	CES95 = 85
CES21 = 86	CES46 = 94	CES71 = 85	CES96 = 93
CES22 = 78	CES47 = 90	CES72 = 95	CES97 = 92
CES23 = 91	CES48 = 97	CES73 = 83	CES98 = 94
CES24 = 90	CES49 = 93	CES74 = 92	CES99 = 96
CES25 = 71	CES50 = 97	CES75 = 85	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)