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: P981639

Luminaire Tested: **4WNLED-LD4-40SL-F-UNV-L850-CD1-U**

Issue Date: 04/17/2025

Report Generated By 670245763 / DESKTOP-DVLU35A

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Scaled Data Report

Test Information

Test Method:	LM-79-08
Report Number:	P981639
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-L850-CD1-U
Description:	METALUX 4FT WNLED WRAPAROUND 4000LM PACKAGE 80CRI 5000K TROFFER
Light Source:	5000K CCT, 80+ CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	3927.8 lumens
Efficiency:	N/A
Efficacy:	128.4 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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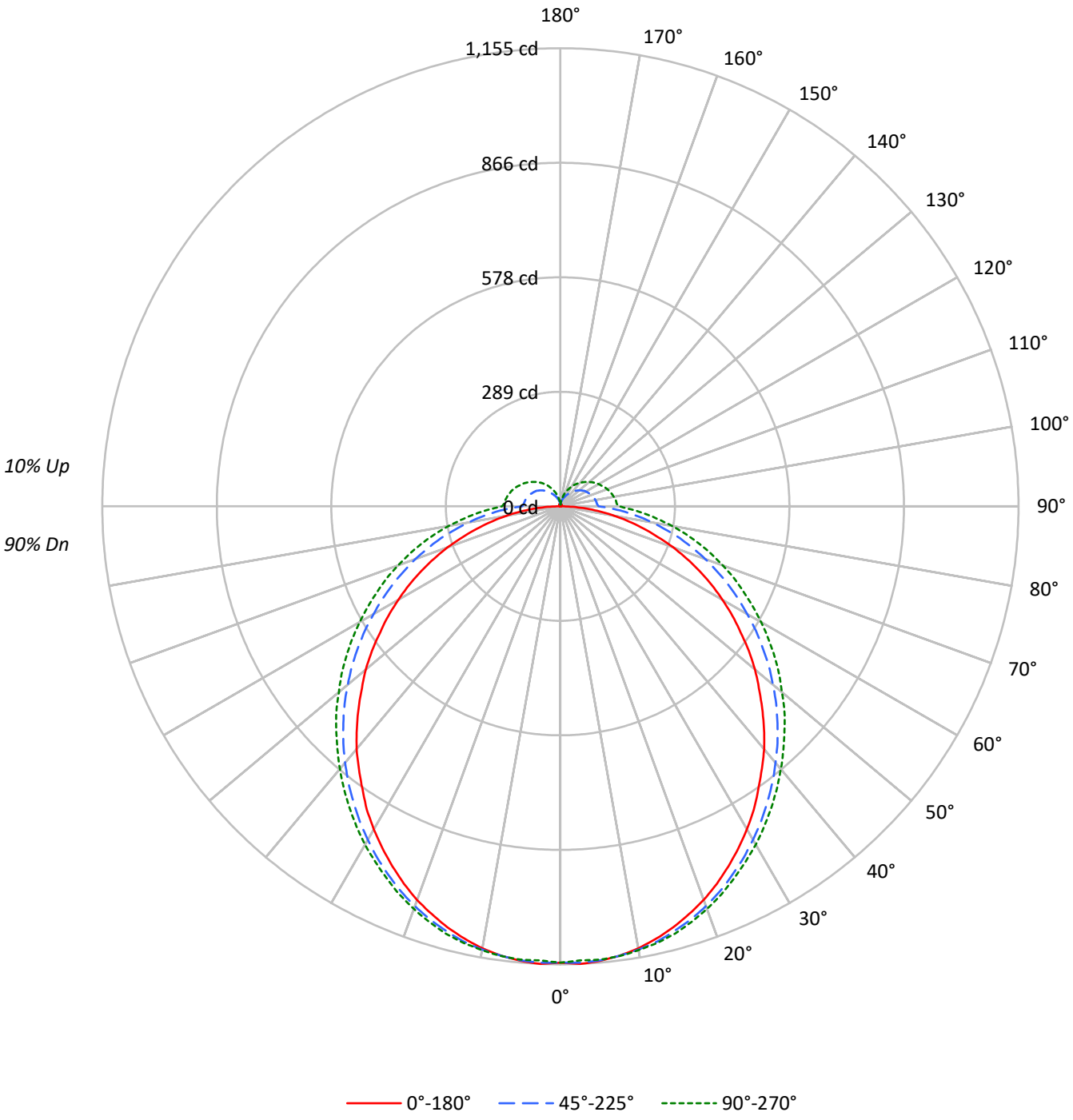
Luminous Intensity Polar Plot



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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	0
RCR																		
0	117	117	117	117	113	113	113	113	106	106	106	99	99	99	93	93	93	90
1	105	100	95	91	101	97	92	88	91	87	84	85	82	79	80	78	75	73
2	95	86	79	73	91	84	77	71	78	73	68	74	69	65	69	66	62	59
3	86	75	67	60	83	73	65	59	69	62	57	65	59	54	61	56	52	50
4	79	67	57	51	76	65	56	50	61	54	48	57	51	46	54	49	45	42
5	72	59	50	43	70	58	49	43	54	47	41	51	45	40	48	43	39	36
6	67	53	44	38	64	52	43	37	49	42	36	46	40	35	44	38	34	32
7	62	48	39	33	60	47	39	33	44	37	32	42	36	31	40	34	30	28
8	58	44	35	29	55	43	35	29	41	33	28	39	32	28	37	31	27	25
9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	28	24	22
10	50	37	29	24	49	36	29	24	35	28	23	33	27	22	32	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4128	4128	4128
5°	4129	4074	4053
10°	4094	4004	3984
15°	4038	3923	3911
20°	3973	3836	3817
25°	3890	3736	3715
30°	3805	3632	3618
35°	3704	3524	3515
40°	3617	3418	3414
45°	3504	3310	3318
50°	3406	3195	3217
55°	3277	3076	3129
60°	3158	2951	3029
65°	3020	2828	2927
70°	2845	2695	2838
75°	2614	2549	2738
80°	2323	2363	2611
85°	1832	2157	2482

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	109.1	2.8
10°-20°	312.4	8.0
20°-30°	470.8	12.0
30°-40°	565.8	14.4
40°-50°	591.8	15.1
50°-60°	550.9	14.0
60°-70°	454.3	11.6
70°-80°	319.2	8.1
80°-90°	168.5	4.3
90°-100°	91.3	2.3
100°-110°	82.8	2.1
110°-120°	70.9	1.8
120°-130°	56.2	1.4
130°-140°	40.0	1.0
140°-150°	25.1	0.6
150°-160°	13.0	0.3
160°-170°	4.8	0.1
170°-180°	0.8	0.0
0°-30°	892.3	22.7
0°-40°	1458.1	37.1
0°-60°	2600.8	66.2
0°-90°	3542.9	90.2
90°-120°	245.0	6.2
90°-150°	366.2	9.3
90°-180°	385.0	9.8
0°-180°	3927.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1151	1151	1151	1151	1151	
5°	1151	1144	1150	1150	1147	109
15°	1099	1097	1109	1116	1116	310
25°	1002	1007	1026	1034	1036	462
35°	870	884	910	924	927	545
45°	719	742	774	793	799	555
55°	555	585	623	648	659	497
65°	388	422	466	497	509	383
75°	218	260	312	348	361	231
85°	66	111	164	199	214	69
90°	2	45	96	134	147	5
95°	0	42	92	128	141	0
105°	1	39	86	119	131	1
115°	2	37	79	108	119	2
125°	3	32	69	95	104	3
135°	4	25	56	80	86	3
145°	4	20	40	60	68	3
155°	6	15	28	40	47	3
165°	7	11	16	22	26	2
175°	7	7	8	8	9	1
180°	6	6	6	6	6	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1150.6	1150.6	1150.6	1150.6	1150.6	1150.6	1150.6	1150.6	1150.6	1150.6	1150.6
2.5°	1155.0	1153.9	1151.7	1149.5	1148.4	1148.4	1147.3	1147.3	1147.3	1150.6	1151.7
5°	1150.6	1149.5	1147.3	1146.2	1145.1	1144.0	1144.0	1144.0	1145.1	1148.4	1149.5
7.5°	1142.9	1141.8	1139.6	1138.6	1137.5	1137.5	1137.5	1137.5	1138.6	1141.8	1142.9
10°	1132.0	1130.9	1128.7	1127.6	1127.6	1127.6	1127.6	1127.6	1129.8	1133.1	1135.3
12.5°	1116.7	1115.6	1114.5	1114.5	1113.4	1113.4	1114.5	1114.5	1116.7	1121.0	1124.3
15°	1099.1	1098.0	1096.9	1096.9	1096.9	1096.9	1098.0	1099.1	1102.4	1106.8	1109.0
17.5°	1078.3	1078.3	1077.2	1078.3	1078.3	1078.3	1079.4	1081.6	1083.8	1089.3	1092.6
20°	1056.4	1055.3	1054.3	1056.4	1056.4	1056.4	1057.5	1060.8	1064.1	1069.6	1072.9
22.5°	1030.2	1030.2	1030.2	1031.3	1032.4	1033.5	1034.5	1037.8	1042.2	1046.6	1051.0
25°	1001.7	1001.7	1001.7	1003.9	1006.1	1007.2	1008.3	1011.6	1017.0	1021.4	1025.8
27.5°	972.1	972.1	972.1	973.2	976.5	977.6	979.8	984.2	989.7	994.0	999.5
30°	940.4	940.4	941.5	943.7	947.0	948.1	950.3	954.6	961.2	965.6	971.1
32.5°	907.6	906.5	907.6	910.8	914.1	917.4	918.5	924.0	930.5	936.0	941.5
35°	870.3	871.4	873.6	876.9	880.2	883.5	885.7	891.1	898.8	904.3	909.7
37.5°	834.2	835.3	837.5	841.9	846.2	849.5	852.8	857.2	866.0	871.4	878.0
40°	799.2	797.0	801.4	805.7	811.2	814.5	817.8	823.3	832.0	837.5	844.1
42.5°	759.8	759.8	763.0	769.6	775.1	778.4	781.7	788.2	797.0	803.6	810.1
45°	719.3	720.4	724.7	731.3	737.9	742.2	744.4	752.1	760.9	767.4	774.0
47.5°	678.8	680.9	685.3	693.0	699.6	703.9	706.1	714.9	723.6	731.3	737.9
50°	640.4	640.4	645.9	652.5	660.1	664.5	667.8	676.6	685.3	693.0	699.6
52.5°	598.8	598.8	604.3	613.1	619.6	625.1	628.4	638.2	647.0	654.7	662.3
55°	555.0	557.2	562.7	572.6	580.2	584.6	589.0	598.8	607.6	616.4	622.9
57.5°	514.5	515.6	522.2	531.0	539.7	544.1	549.6	558.3	568.2	578.0	584.6
60°	471.8	474.0	479.5	490.5	499.2	503.6	508.0	518.9	528.8	537.5	544.1
62.5°	430.2	431.3	439.0	448.9	457.6	463.1	468.6	478.4	488.3	497.0	505.8
65°	387.5	389.7	396.3	407.3	416.0	421.5	425.9	439.0	447.8	457.6	466.4
67.5°	344.8	347.0	354.7	365.6	375.5	381.0	385.4	397.4	408.3	418.2	427.0
70°	302.2	304.3	313.1	324.0	333.9	339.4	345.9	356.9	368.9	378.8	388.6
72.5°	258.4	261.6	269.3	281.4	294.5	300.0	305.4	318.6	329.5	340.5	349.2
75°	217.9	221.1	229.9	240.8	251.8	259.5	263.8	277.0	291.2	302.2	312.0
77.5°	177.4	180.6	189.4	201.4	213.5	220.0	226.6	238.7	250.7	261.6	272.6
80°	139.0	142.3	152.2	163.1	175.2	182.8	189.4	202.5	214.6	225.5	235.4
82.5°	101.8	105.1	114.9	127.0	140.1	146.7	153.3	165.3	178.4	189.4	200.3
85°	65.7	71.2	79.9	90.9	104.0	110.6	117.1	130.3	142.3	153.3	164.2
87.5°	31.7	36.1	46.0	58.0	70.1	77.7	83.2	95.2	108.4	118.2	129.2
90°	2.2	6.6	15.3	26.3	38.3	44.9	51.5	63.5	75.5	86.5	96.3
92.5°	0.0	4.4	13.1	24.1	36.1	42.7	48.2	60.2	72.3	83.2	93.1
95°	0.0	4.4	13.1	24.1	36.1	41.6	48.2	60.2	71.2	82.1	92.0
97.5°	1.1	4.4	13.1	24.1	35.0	41.6	47.1	59.1	70.1	81.0	90.9
100°	1.1	4.4	13.1	23.0	35.0	40.5	47.1	58.0	69.0	79.9	89.8
102.5°	1.1	4.4	13.1	23.0	35.0	40.5	46.0	56.9	67.9	78.8	88.7
105°	1.1	5.5	13.1	23.0	33.9	39.4	44.9	56.9	66.8	76.6	86.5
107.5°	1.1	5.5	13.1	23.0	33.9	39.4	44.9	55.8	65.7	75.5	84.3
110°	2.2	5.5	13.1	23.0	32.8	38.3	43.8	54.7	64.6	74.4	83.2

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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	2.2	5.5	13.1	21.9	32.8	37.2	42.7	53.6	63.5	72.3	81.0
115°	2.2	5.5	13.1	21.9	31.7	37.2	41.6	52.5	61.3	71.2	78.8
117.5°	2.2	6.6	13.1	20.8	30.7	36.1	40.5	50.4	60.2	69.0	76.6
120°	3.3	6.6	12.0	20.8	29.6	35.0	39.4	49.3	58.0	66.8	74.4
122.5°	3.3	6.6	12.0	19.7	28.5	32.8	38.3	47.1	55.8	64.6	72.3
125°	3.3	6.6	12.0	18.6	27.4	31.7	36.1	44.9	53.6	61.3	69.0
127.5°	3.3	6.6	12.0	18.6	26.3	29.6	33.9	42.7	50.4	58.0	65.7
130°	3.3	6.6	10.9	17.5	24.1	28.5	31.7	40.5	47.1	54.7	62.4
132.5°	3.3	6.6	10.9	16.4	23.0	27.4	30.7	38.3	44.9	51.5	59.1
135°	4.4	6.6	10.9	16.4	21.9	25.2	28.5	35.0	41.6	48.2	55.8
137.5°	4.4	6.6	9.9	15.3	20.8	24.1	27.4	32.8	39.4	46.0	51.5
140°	4.4	6.6	9.9	14.2	19.7	23.0	25.2	30.7	37.2	42.7	48.2
142.5°	4.4	6.6	9.9	14.2	18.6	20.8	24.1	28.5	33.9	39.4	44.9
145°	4.4	6.6	9.9	13.1	17.5	19.7	21.9	27.4	31.7	36.1	40.5
147.5°	5.5	6.6	9.9	13.1	16.4	18.6	20.8	25.2	29.6	32.8	37.2
150°	5.5	6.6	8.8	12.0	15.3	17.5	19.7	23.0	27.4	30.7	33.9
152.5°	5.5	6.6	8.8	12.0	15.3	16.4	17.5	21.9	25.2	28.5	30.7
155°	5.5	6.6	8.8	10.9	14.2	15.3	16.4	19.7	23.0	25.2	28.5
157.5°	5.5	6.6	8.8	10.9	13.1	14.2	15.3	17.5	20.8	23.0	25.2
160°	5.5	6.6	8.8	9.9	12.0	13.1	14.2	16.4	18.6	20.8	21.9
162.5°	6.6	6.6	7.7	9.9	10.9	12.0	13.1	14.2	16.4	17.5	19.7
165°	6.6	6.6	7.7	8.8	9.9	10.9	10.9	13.1	14.2	15.3	16.4
167.5°	6.6	6.6	7.7	8.8	8.8	9.9	9.9	10.9	12.0	13.1	14.2
170°	6.6	6.6	6.6	7.7	8.8	8.8	8.8	9.9	10.9	10.9	12.0
172.5°	6.6	6.6	6.6	6.6	7.7	7.7	7.7	8.8	8.8	9.9	9.9
175°	6.6	6.6	6.6	6.6	6.6	6.6	7.7	7.7	7.7	7.7	7.7
177.5°	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
180°	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5

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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	1150.6	1150.6	1150.6	1150.6	1150.6	1150.6	1150.6	1150.6	1150.6	1150.6
2.5°	*1152.8*	*1155.0*	*1153.9*	*1151.7*	*1151.7*	*1151.7*	*1150.6*	*1148.4*	*1147.3*	*1146.2*
5°	1150.6	1152.8	1150.6	1149.5	1149.5	1149.5	1149.5	1148.4	1147.3	1147.3
7.5°	1145.1	1147.3	1146.2	1145.1	1145.1	1145.1	1145.1	1144.0	1144.0	1144.0
10°	1137.5	1140.7	1139.6	1138.6	1137.5	1138.6	1137.5	1137.5	1136.4	1136.4
12.5°	1125.4	1128.7	1128.7	1127.6	1127.6	1127.6	1127.6	1127.6	1126.5	1127.6
15°	1112.3	1115.6	1115.6	1115.6	1115.6	1115.6	1115.6	1115.6	1114.5	1115.6
17.5°	1095.9	1099.1	1100.2	1099.1	1100.2	1100.2	1100.2	1099.1	1099.1	1099.1
20°	1076.1	1079.4	1080.5	1079.4	1079.4	1079.4	1080.5	1080.5	1080.5	1080.5
22.5°	1054.3	1057.5	1057.5	1057.5	1058.6	1058.6	1058.6	1059.7	1059.7	1059.7
25°	1029.1	1032.4	1032.4	1033.5	1034.5	1034.5	1035.6	1035.6	1035.6	1035.6
27.5°	1005.0	1007.2	1007.2	1008.3	1009.4	1009.4	1009.4	1009.4	1011.6	1010.5
30°	976.5	978.7	979.8	982.0	982.0	983.1	983.1	984.2	985.3	985.3
32.5°	947.0	949.2	950.3	952.4	953.5	954.6	954.6	956.8	957.9	956.8
35°	915.2	917.4	920.7	921.8	924.0	924.0	926.2	926.2	928.4	927.3
37.5°	883.5	885.7	887.9	890.0	892.2	893.3	894.4	896.6	898.8	896.6
40°	849.5	852.8	856.1	858.3	859.4	861.6	861.6	864.9	867.1	864.9
42.5°	815.6	818.9	822.2	826.5	826.5	827.6	829.8	833.1	833.1	832.0
45°	780.6	782.8	788.2	791.5	792.6	793.7	795.9	797.0	799.2	799.2
47.5°	743.3	747.7	753.2	756.5	757.6	758.7	760.9	763.0	766.3	766.3
50°	706.1	711.6	713.8	719.3	721.4	722.5	725.8	728.0	730.2	729.1
52.5°	667.8	672.2	678.8	683.1	685.3	686.4	689.7	693.0	694.1	695.2
55°	629.5	635.0	641.5	645.9	648.1	650.3	652.5	654.7	658.0	659.0
57.5°	591.2	596.6	604.3	608.7	610.9	612.0	616.4	619.6	620.7	621.8
60°	551.8	558.3	566.0	570.4	572.6	575.8	576.9	582.4	583.5	584.6
62.5°	513.4	520.0	527.7	533.1	535.3	537.5	541.9	545.2	547.4	546.3
65°	475.1	481.7	489.4	494.8	497.0	500.3	503.6	506.9	509.1	509.1
67.5°	435.7	443.4	452.1	457.6	459.8	463.1	466.4	468.6	471.8	474.0
70°	397.4	406.2	413.8	419.3	421.5	424.8	428.1	433.5	433.5	435.7
72.5°	359.1	367.8	375.5	383.2	385.4	387.5	391.9	395.2	396.3	398.5
75°	321.9	330.6	338.3	343.8	348.1	350.3	354.7	356.9	359.1	361.3
77.5°	282.4	293.4	301.1	307.6	310.9	313.1	317.5	320.8	323.0	324.0
80°	245.2	254.0	261.6	268.2	271.5	274.8	279.2	281.4	284.6	285.7
82.5°	209.1	217.9	225.5	231.0	235.4	237.6	241.9	246.3	246.3	248.5
85°	173.0	181.7	189.4	196.0	199.2	202.5	205.8	210.2	211.3	213.5
87.5°	137.9	147.8	154.4	162.0	164.2	167.5	173.0	176.3	178.4	178.4
90°	106.2	114.9	122.6	130.3	133.6	135.8	141.2	144.5	146.7	146.7
92.5°	102.9	111.7	119.3	127.0	129.2	132.5	136.8	140.1	142.3	142.3
95°	101.8	110.6	118.2	124.8	128.1	130.3	135.8	137.9	140.1	141.2
97.5°	100.7	109.5	117.1	123.7	125.9	129.2	133.6	136.8	139.0	139.0
100°	98.5	107.3	114.9	121.5	124.8	127.0	131.4	134.7	135.8	136.8
102.5°	97.4	105.1	112.8	119.3	122.6	124.8	129.2	132.5	133.6	134.7
105°	95.2	104.0	110.6	117.1	119.3	122.6	125.9	129.2	131.4	131.4
107.5°	93.1	101.8	108.4	114.9	117.1	119.3	123.7	127.0	128.1	129.2
110°	90.9	99.6	106.2	111.7	114.9	117.1	120.4	123.7	124.8	125.9

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P981639
CATALOG NUMBER: 4WNLED-LD4-40SL-F-UNV-L850-CD1-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	88.7	96.3	102.9	109.5	111.7	113.9	117.1	120.4	121.5	122.6
115°	86.5	94.1	100.7	106.2	108.4	110.6	113.9	117.1	118.2	119.3
117.5°	84.3	92.0	97.4	102.9	105.1	107.3	110.6	113.9	114.9	114.9
120°	82.1	88.7	95.2	99.6	101.8	104.0	107.3	109.5	111.7	111.7
122.5°	78.8	85.4	92.0	96.3	98.5	100.7	104.0	106.2	107.3	108.4
125°	76.6	83.2	88.7	93.1	95.2	97.4	99.6	101.8	102.9	104.0
127.5°	73.3	78.8	85.4	89.8	92.0	94.1	96.3	98.5	99.6	99.6
130°	69.0	75.5	81.0	86.5	88.7	89.8	93.1	94.1	95.2	95.2
132.5°	65.7	71.2	76.6	82.1	84.3	86.5	88.7	89.8	90.9	90.9
135°	61.3	66.8	72.3	77.7	79.9	82.1	84.3	85.4	86.5	86.5
137.5°	58.0	63.5	67.9	73.3	75.5	77.7	79.9	81.0	82.1	82.1
140°	53.6	58.0	63.5	69.0	71.2	72.3	75.5	76.6	77.7	77.7
142.5°	49.3	54.7	59.1	63.5	65.7	67.9	71.2	72.3	73.3	73.3
145°	46.0	50.4	53.6	58.0	60.2	62.4	65.7	67.9	67.9	67.9
147.5°	41.6	46.0	49.3	53.6	55.8	56.9	61.3	62.4	63.5	63.5
150°	38.3	41.6	44.9	48.2	50.4	52.5	55.8	58.0	58.0	58.0
152.5°	35.0	37.2	40.5	43.8	44.9	47.1	50.4	52.5	52.5	52.5
155°	30.7	33.9	36.1	38.3	40.5	41.6	44.9	47.1	47.1	47.1
157.5°	27.4	29.6	31.7	33.9	35.0	36.1	39.4	41.6	42.7	42.7
160°	24.1	26.3	27.4	29.6	30.7	31.7	32.8	36.1	37.2	37.2
162.5°	20.8	21.9	24.1	25.2	26.3	26.3	28.5	29.6	31.7	31.7
165°	17.5	18.6	19.7	20.8	21.9	21.9	23.0	25.2	26.3	26.3
167.5°	15.3	15.3	16.4	17.5	17.5	17.5	18.6	19.7	21.9	21.9
170°	12.0	13.1	13.1	13.1	14.2	14.2	14.2	15.3	16.4	17.5
172.5°	9.9	9.9	10.9	10.9	10.9	10.9	10.9	10.9	12.0	13.1
175°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	8.8
177.5°	6.6	6.6	6.6	5.5	5.5	5.5	5.5	5.5	5.5	4.4
180°	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP3-2508-516-12

Test Date: 09/05/2025

Luminaire Tested: 4WNLED-LD4-50SL-F-UNVL950-CD1-U

Data in this report applies to families of products including 4WNLED-LD4-50SL-F-UNVL950-CD1-U

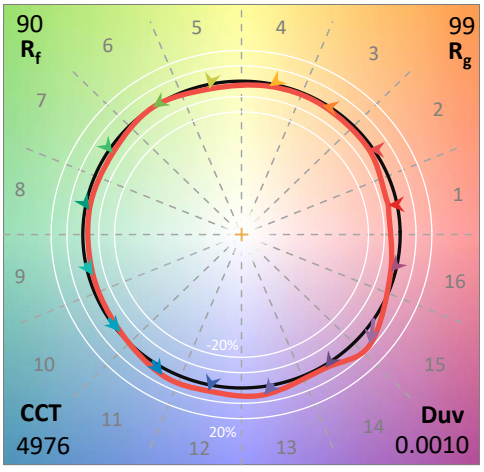
Report Generated By FNC07603 / LDUCLS01DT01661
Version: v7.05

Test Information

Test Method:	LM-79-2019
Report Number:	SP3-2508-516-12
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-UNVL950-CD1-U**
Description:	4FT WNLED 5000LM 950

Spectral Parameters

CCT (K):	4976	CRI (Ra):	93.2		
CIE u':	0.2110	R1:	94.3	R9:	68.0
CIE v':	0.4861	R2:	96.8	R10:	89.7
Duv:	0.0010	R3:	96.1	R11:	92.7
CIE x:	0.3460	R4:	92.1	R12:	64.5
CIE y:	0.3544	R5:	92.0	R13:	95.4
CIE z:	0.2997	R6:	92.6	R14:	97.5
Peak Wavelength (nm):	630	R7:	94.0	R15:	91.5
Dominant Wavelength (nm):	572	R8:	87.6		
Purity:	10.13443				
Rf:	89.8				
Rg:	98.7				



Test Conditions

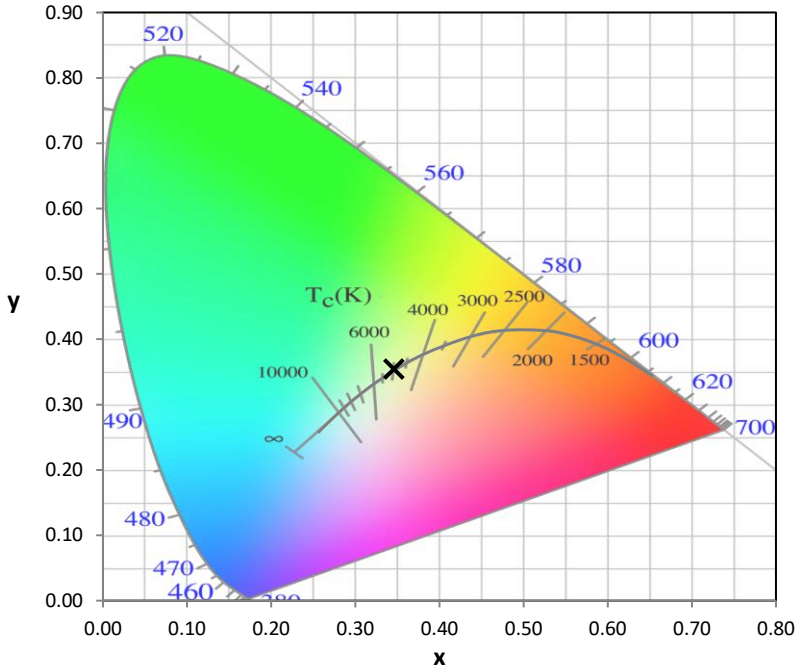
Stabilization Time:	20M
Operation Time:	1H 20M
Sphere Temperature (°C):	25.0

REPORT NUMBER: SP3-2508-516-12

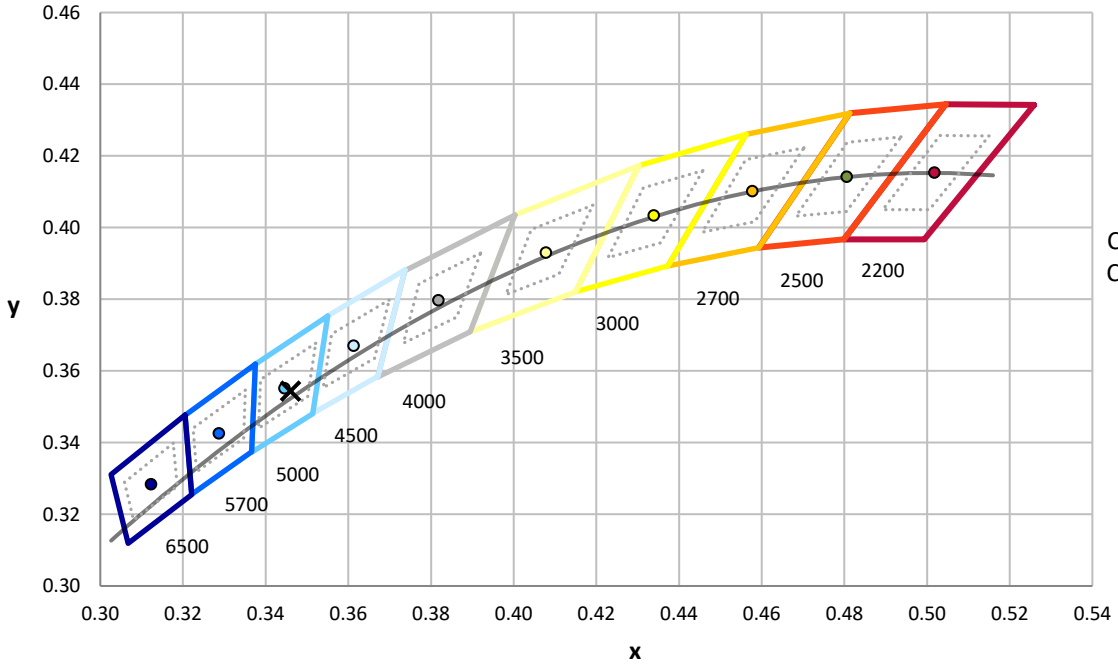
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	3M SPHERE IN02505	7/1/2025	1/1/2026
Power Meter	XITRON INXT2011006	1/20/2025	1/20/2026
AC Power Source	CHROMA 61604 IN6064A	10/22/2024	10/22/2025
DC Power Source	EYSIGHT N5770A IN0534	10/22/2024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

REPORT NUMBER: SP3-2508-516-12

CIE 1931 Chromaticity Diagram



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

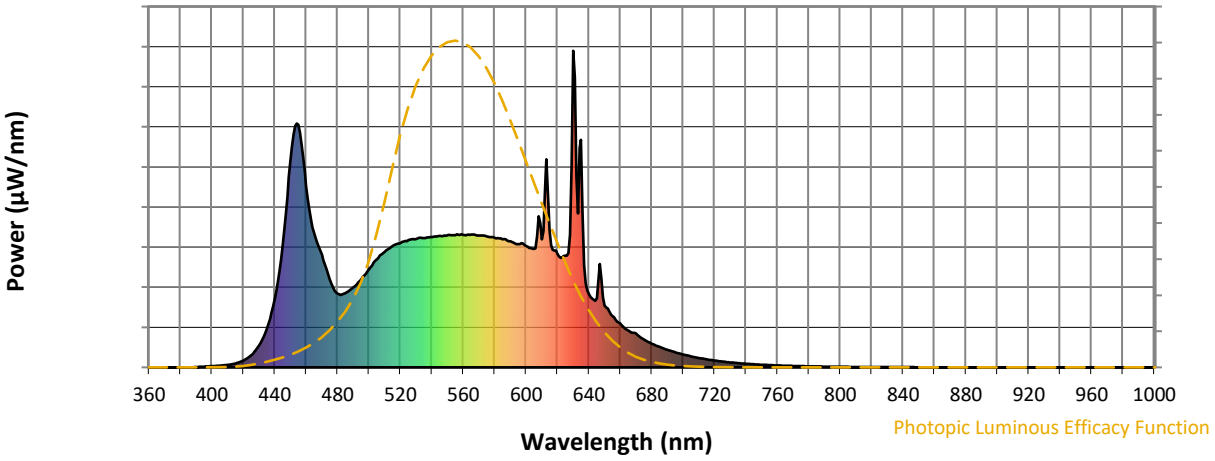


CCT = 4976K
CIE x = 0.3460
CIE y = 0.3544
Duv = 0.0010

Point lies inside the ANSI 5000K 4-step quadrangle

REPORT NUMBER: SP3-2508-516-12

Photopic Flux vs. Wavelength

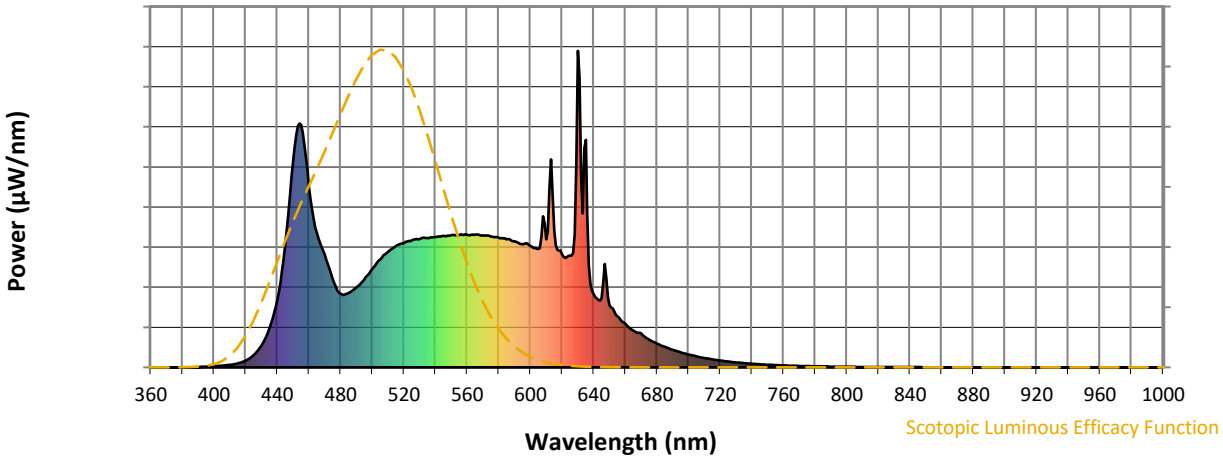


Photopic Lumens: NR

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	252	NR	620	358	NR	750	8	NR	880	0	NR
365	0	NR	495	277	NR	625	353	NR	755	7	NR	885	0	NR
370	0	NR	500	310	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	341	NR	635	719	NR	765	5	NR	895	0	NR
380	0	NR	510	365	NR	640	231	NR	770	4	NR	900	0	NR
385	0	NR	515	383	NR	645	218	NR	775	4	NR	905	0	NR
390	1	NR	520	393	NR	650	195	NR	780	3	NR	910	0	NR
395	2	NR	525	401	NR	655	162	NR	785	3	NR	915	0	NR
400	4	NR	530	406	NR	660	138	NR	790	2	NR	920	0	NR
405	5	NR	535	409	NR	665	116	NR	795	2	NR	925	0	NR
410	8	NR	540	411	NR	670	107	NR	800	2	NR	930	0	NR
415	12	NR	545	415	NR	675	88	NR	805	2	NR	935	0	NR
420	22	NR	550	417	NR	680	75	NR	810	1	NR	940	0	NR
425	38	NR	555	418	NR	685	65	NR	815	1	NR	945	0	NR
430	68	NR	560	419	NR	690	56	NR	820	1	NR	950	0	NR
435	123	NR	565	420	NR	695	48	NR	825	1	NR	955	0	NR
440	215	NR	570	416	NR	700	41	NR	830	1	NR	960	0	NR
445	384	NR	575	414	NR	705	35	NR	835	1	NR	965	0	NR
450	651	NR	580	409	NR	710	30	NR	840	1	NR	970	0	NR
455	767	NR	585	405	NR	715	25	NR	845	1	NR	975	0	NR
460	573	NR	590	398	NR	720	22	NR	850	0	NR	980	0	NR
465	426	NR	595	389	NR	725	18	NR	855	0	NR	985	0	NR
470	355	NR	600	383	NR	730	16	NR	860	0	NR	990	0	NR
475	278	NR	605	374	NR	735	13	NR	865	0	NR	995	0	NR
480	232	NR	610	404	NR	740	11	NR	870	0	NR	1000	0	NR
485	234	NR	615	433	NR	745	10	NR	875	0	NR			

REPORT NUMBER: SP3-2508-516-12

Scotopic Flux vs. Wavelength

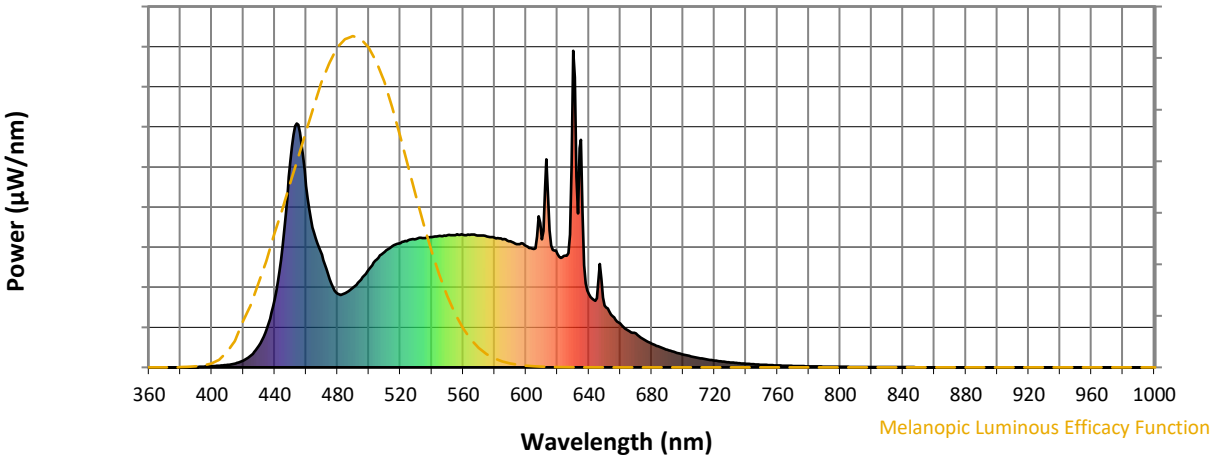


Scotopic Lumens: NR **S/P: 2.07**

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	252	NR	620	358	NR	750	8	NR	880	0	NR
365	0	NR	495	277	NR	625	353	NR	755	7	NR	885	0	NR
370	0	NR	500	310	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	341	NR	635	719	NR	765	5	NR	895	0	NR
380	0	NR	510	365	NR	640	231	NR	770	4	NR	900	0	NR
385	0	NR	515	383	NR	645	218	NR	775	4	NR	905	0	NR
390	1	NR	520	393	NR	650	195	NR	780	3	NR	910	0	NR
395	2	NR	525	401	NR	655	162	NR	785	3	NR	915	0	NR
400	4	NR	530	406	NR	660	138	NR	790	2	NR	920	0	NR
405	5	NR	535	409	NR	665	116	NR	795	2	NR	925	0	NR
410	8	NR	540	411	NR	670	107	NR	800	2	NR	930	0	NR
415	12	NR	545	415	NR	675	88	NR	805	2	NR	935	0	NR
420	22	NR	550	417	NR	680	75	NR	810	1	NR	940	0	NR
425	38	NR	555	418	NR	685	65	NR	815	1	NR	945	0	NR
430	68	NR	560	419	NR	690	56	NR	820	1	NR	950	0	NR
435	123	NR	565	420	NR	695	48	NR	825	1	NR	955	0	NR
440	215	NR	570	416	NR	700	41	NR	830	1	NR	960	0	NR
445	384	NR	575	414	NR	705	35	NR	835	1	NR	965	0	NR
450	651	NR	580	409	NR	710	30	NR	840	1	NR	970	0	NR
455	767	NR	585	405	NR	715	25	NR	845	1	NR	975	0	NR
460	573	NR	590	398	NR	720	22	NR	850	0	NR	980	0	NR
465	426	NR	595	389	NR	725	18	NR	855	0	NR	985	0	NR
470	355	NR	600	383	NR	730	16	NR	860	0	NR	990	0	NR
475	278	NR	605	374	NR	735	13	NR	865	0	NR	995	0	NR
480	232	NR	610	404	NR	740	11	NR	870	0	NR	1000	0	NR
485	234	NR	615	433	NR	745	10	NR	875	0	NR			

REPORT NUMBER: SP3-2508-516-12

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 4.5**

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	252	NR	620	358	NR	750	8	NR	880	0	NR
365	0	NR	495	277	NR	625	353	NR	755	7	NR	885	0	NR
370	0	NR	500	310	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	341	NR	635	719	NR	765	5	NR	895	0	NR
380	0	NR	510	365	NR	640	231	NR	770	4	NR	900	0	NR
385	0	NR	515	383	NR	645	218	NR	775	4	NR	905	0	NR
390	1	NR	520	393	NR	650	195	NR	780	3	NR	910	0	NR
395	2	NR	525	401	NR	655	162	NR	785	3	NR	915	0	NR
400	4	NR	530	406	NR	660	138	NR	790	2	NR	920	0	NR
405	5	NR	535	409	NR	665	116	NR	795	2	NR	925	0	NR
410	8	NR	540	411	NR	670	107	NR	800	2	NR	930	0	NR
415	12	NR	545	415	NR	675	88	NR	805	2	NR	935	0	NR
420	22	NR	550	417	NR	680	75	NR	810	1	NR	940	0	NR
425	38	NR	555	418	NR	685	65	NR	815	1	NR	945	0	NR
430	68	NR	560	419	NR	690	56	NR	820	1	NR	950	0	NR
435	123	NR	565	420	NR	695	48	NR	825	1	NR	955	0	NR
440	215	NR	570	416	NR	700	41	NR	830	1	NR	960	0	NR
445	384	NR	575	414	NR	705	35	NR	835	1	NR	965	0	NR
450	651	NR	580	409	NR	710	30	NR	840	1	NR	970	0	NR
455	767	NR	585	405	NR	715	25	NR	845	1	NR	975	0	NR
460	573	NR	590	398	NR	720	22	NR	850	0	NR	980	0	NR
465	426	NR	595	389	NR	725	18	NR	855	0	NR	985	0	NR
470	355	NR	600	383	NR	730	16	NR	860	0	NR	990	0	NR
475	278	NR	605	374	NR	735	13	NR	865	0	NR	995	0	NR
480	232	NR	610	404	NR	740	11	NR	870	0	NR	1000	0	NR
485	234	NR	615	433	NR	745	10	NR	875	0	NR			

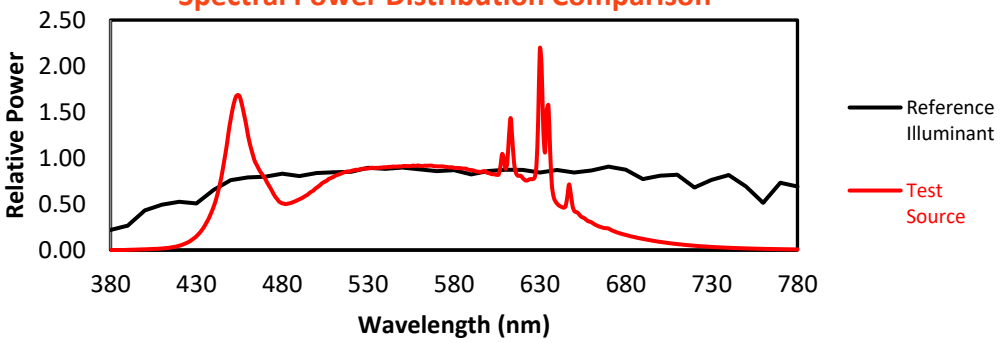
REPORT NUMBER: SP3-2508-516-12

TM-30-18

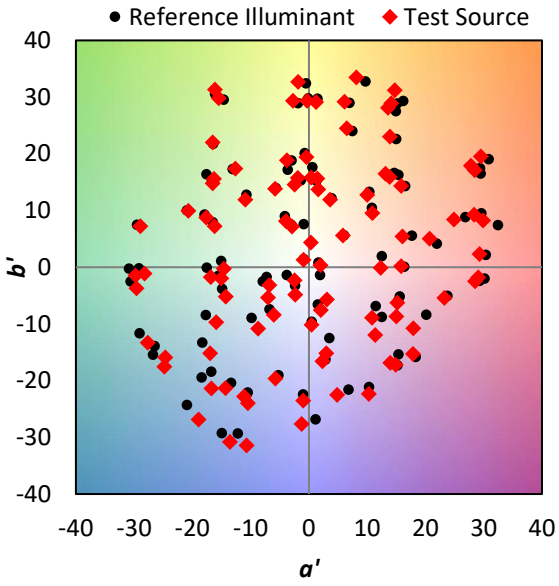
Summary

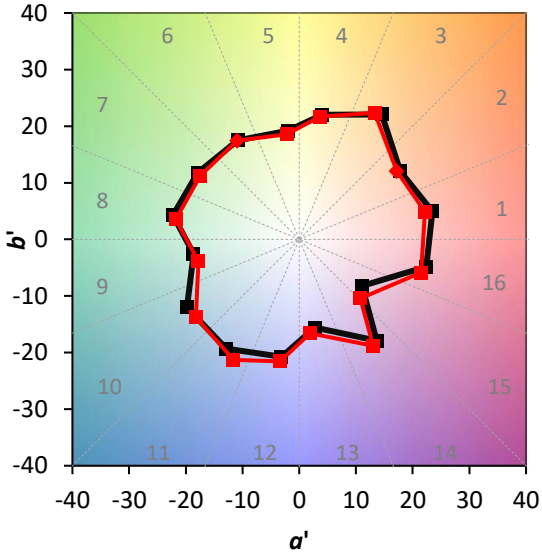
R_f = 89.8
R_g = 98.7
CIE R_a = 93.2
R_9 = 68.0

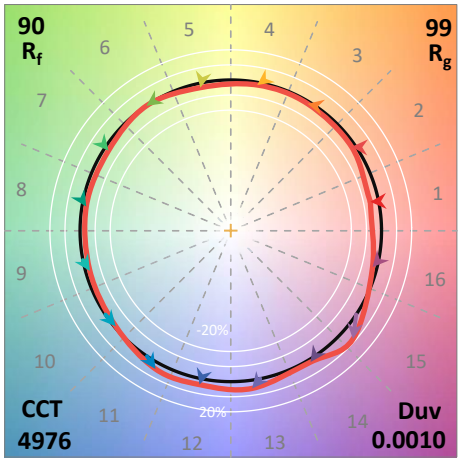
Spectral Power Distribution Comparison

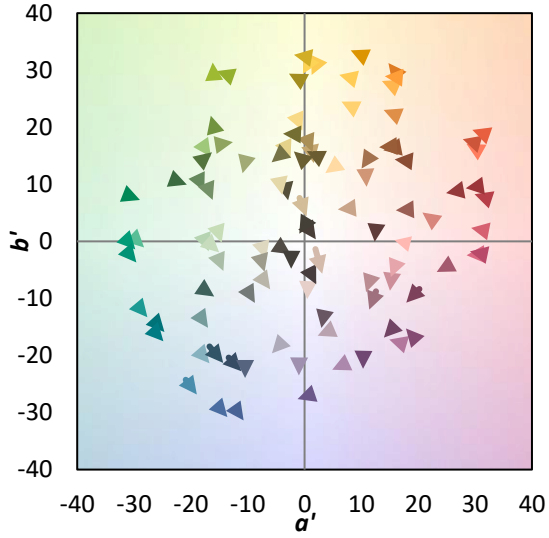


Color Vector Graphics







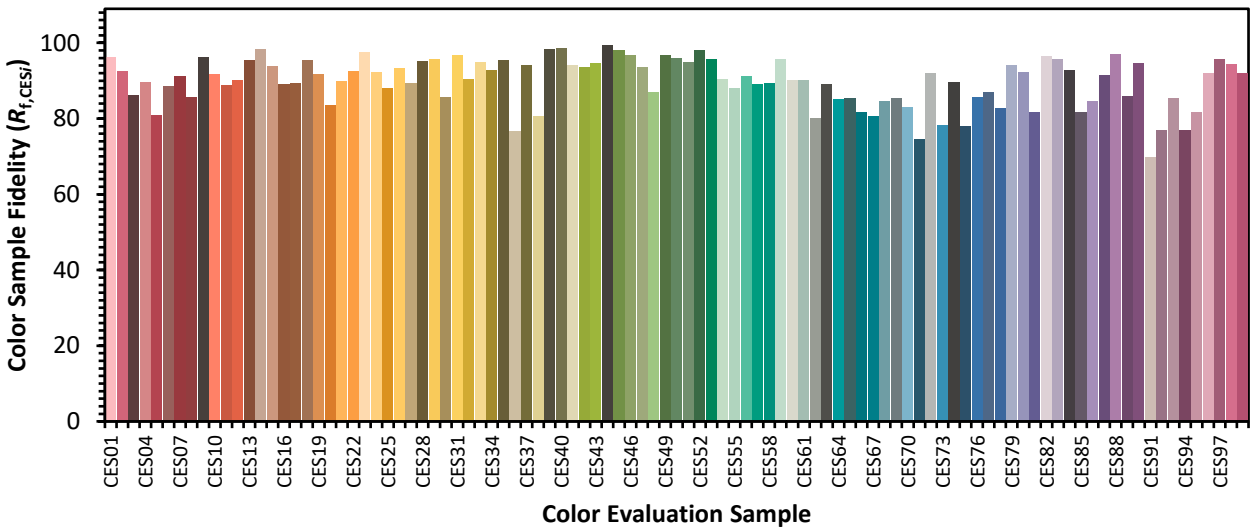


REPORT NUMBER: SP3-2508-516-12

TM-30-18

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

CES01 = 85	CES26 = 93	CES51 = 95	CES76 = 86
CES02 = 61	CES27 = 89	CES52 = 98	CES77 = 87
CES03 = 31	CES28 = 95	CES53 = 96	CES78 = 83
CES04 = 69	CES29 = 96	CES54 = 90	CES79 = 94
CES05 = 48	CES30 = 86	CES55 = 88	CES80 = 92
CES06 = 50	CES31 = 97	CES56 = 91	CES81 = 82
CES07 = 41	CES32 = 90	CES57 = 89	CES82 = 96
CES08 = 40	CES33 = 95	CES58 = 89	CES83 = 96
CES09 = 29	CES34 = 93	CES59 = 96	CES84 = 93
CES10 = 73	CES35 = 95	CES60 = 90	CES85 = 82
CES11 = 56	CES36 = 77	CES61 = 90	CES86 = 85
CES12 = 62	CES37 = 94	CES62 = 80	CES87 = 92
CES13 = 42	CES38 = 81	CES63 = 89	CES88 = 97
CES14 = 74	CES39 = 98	CES64 = 85	CES89 = 86
CES15 = 71	CES40 = 99	CES65 = 85	CES90 = 95
CES16 = 46	CES41 = 94	CES66 = 82	CES91 = 70
CES17 = 48	CES42 = 94	CES67 = 81	CES92 = 77
CES18 = 56	CES43 = 95	CES68 = 85	CES93 = 85
CES19 = 70	CES44 = 99	CES69 = 85	CES94 = 77
CES20 = 65	CES45 = 98	CES70 = 83	CES95 = 82
CES21 = 85	CES46 = 97	CES71 = 75	CES96 = 92
CES22 = 77	CES47 = 94	CES72 = 92	CES97 = 96
CES23 = 91	CES48 = 87	CES73 = 78	CES98 = 94
CES24 = 90	CES49 = 97	CES74 = 90	CES99 = 92
CES25 = 70	CES50 = 96	CES75 = 78	



REPORT NUMBER: SP3-2508-516-12

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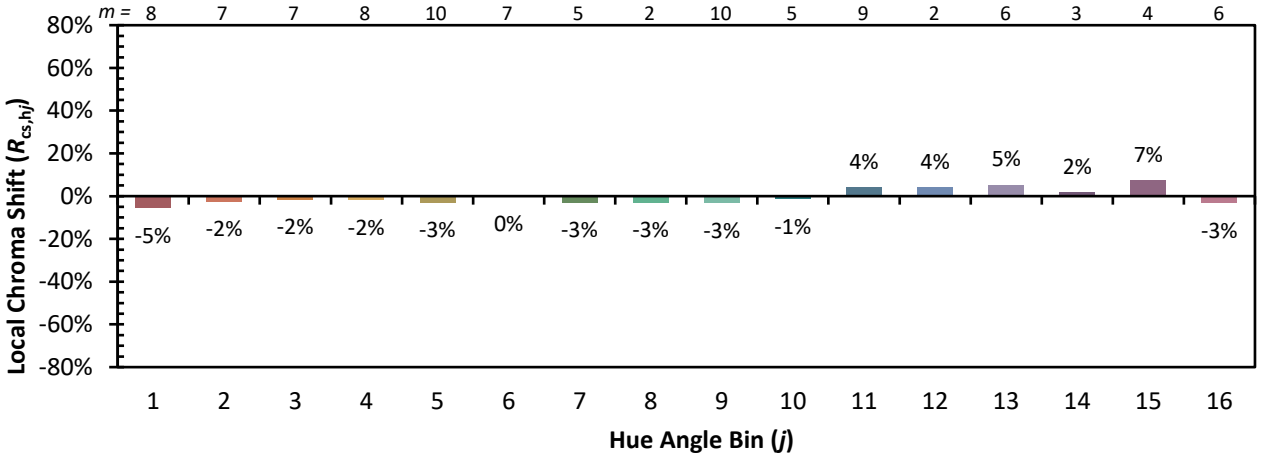
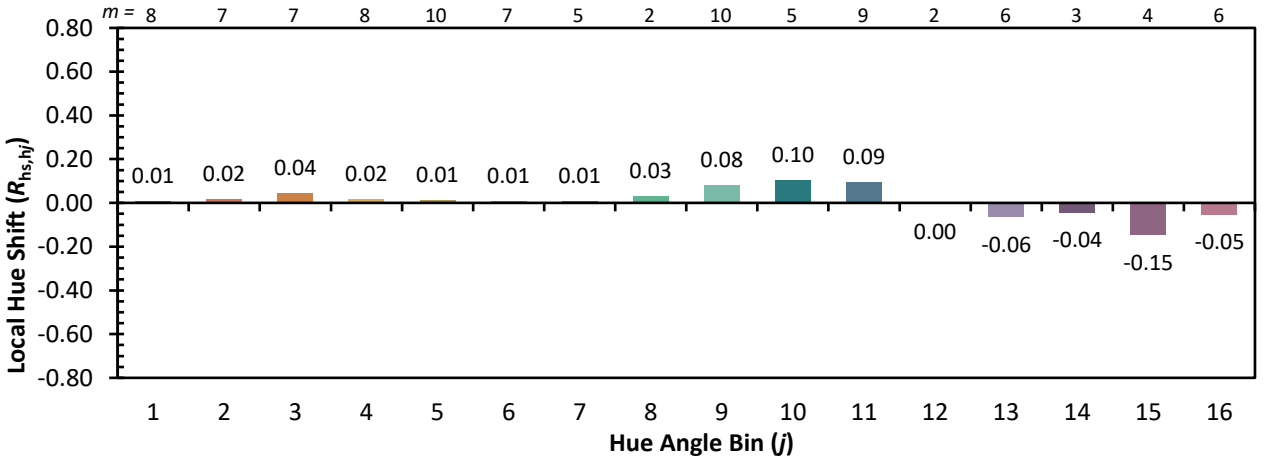
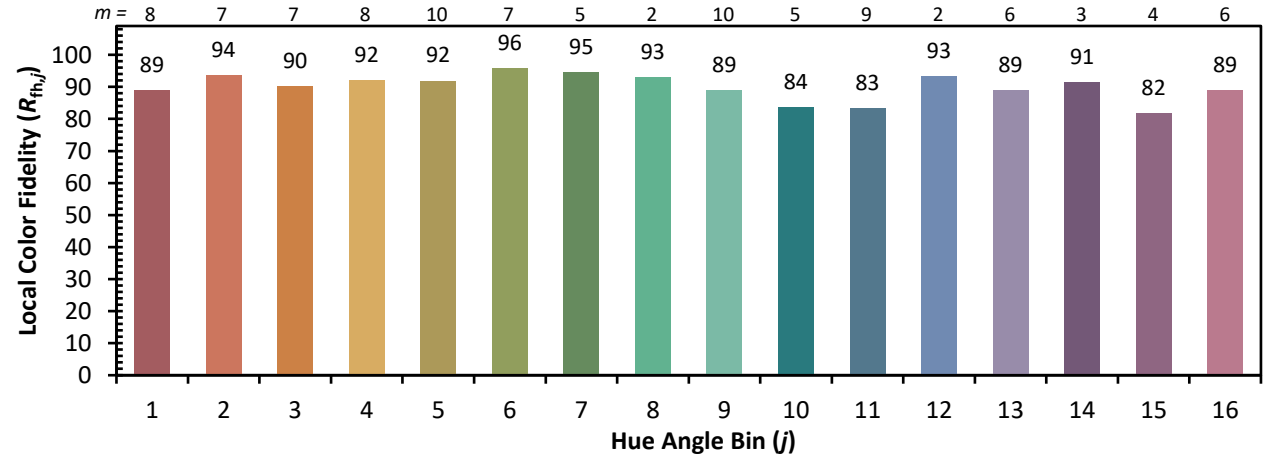
Color Rendition by Hue-Angle Bin







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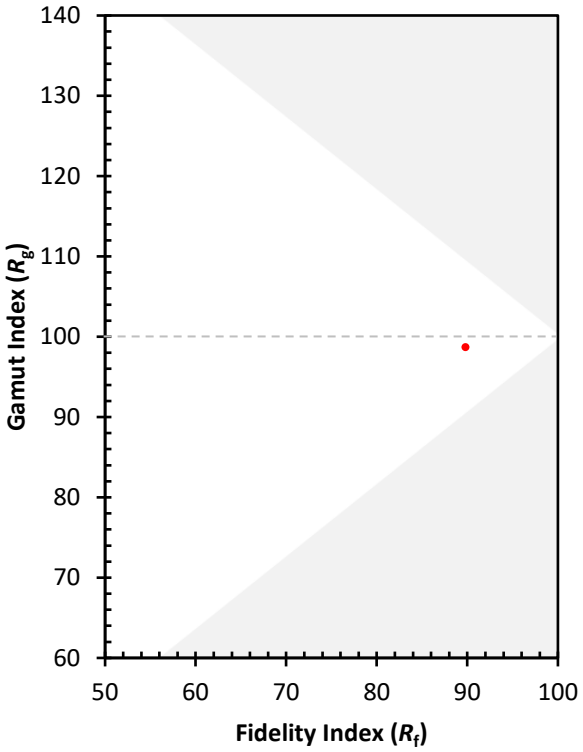
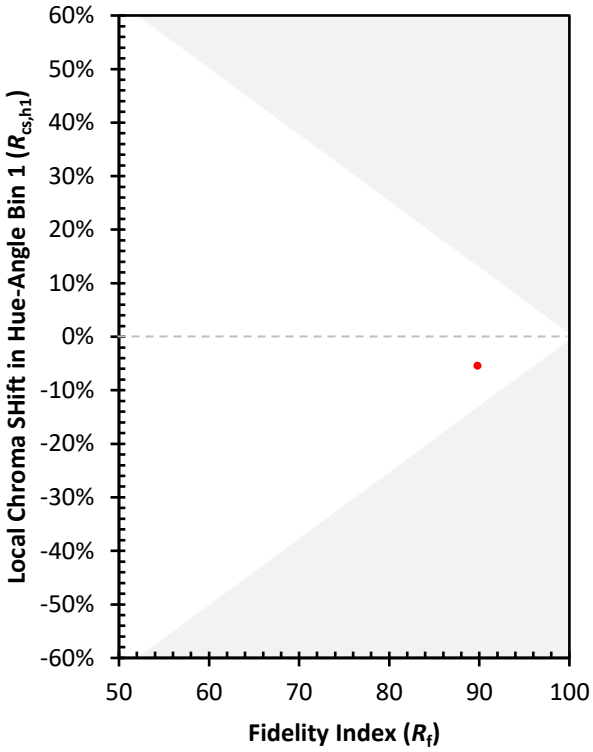
Measure Comparisons





(END OF REPORT)