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: P981637

Luminaire Tested: **2WNLED-LD4-28SL-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:	P981637
Test Lab:	INNOVATION CENTER(P3)
Issue Date:	04/17/2025
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	METALUX
Catalog Number:	2WNLED-LD4-28SL-F-UNV-L850-CD1-U
Description:	METALUX 2FT WNLED WRAPAROUND 2800LM PACKAGE 80CRI 5000K TROFFER
Light Source:	5000K CCT, 80+ CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	2763.9 lumens
Efficiency:	N/A
Efficacy:	119.6 lumens/watt
Spacing Criteria (0/90/45):	1.22 / 1.27 / 1.38
Luminous Opening:	Rectangular w/ Sides (W: 0.75' x L: 2' x H: 0.17')
CIE Type:	Direct

Input Watts (W):	23.1
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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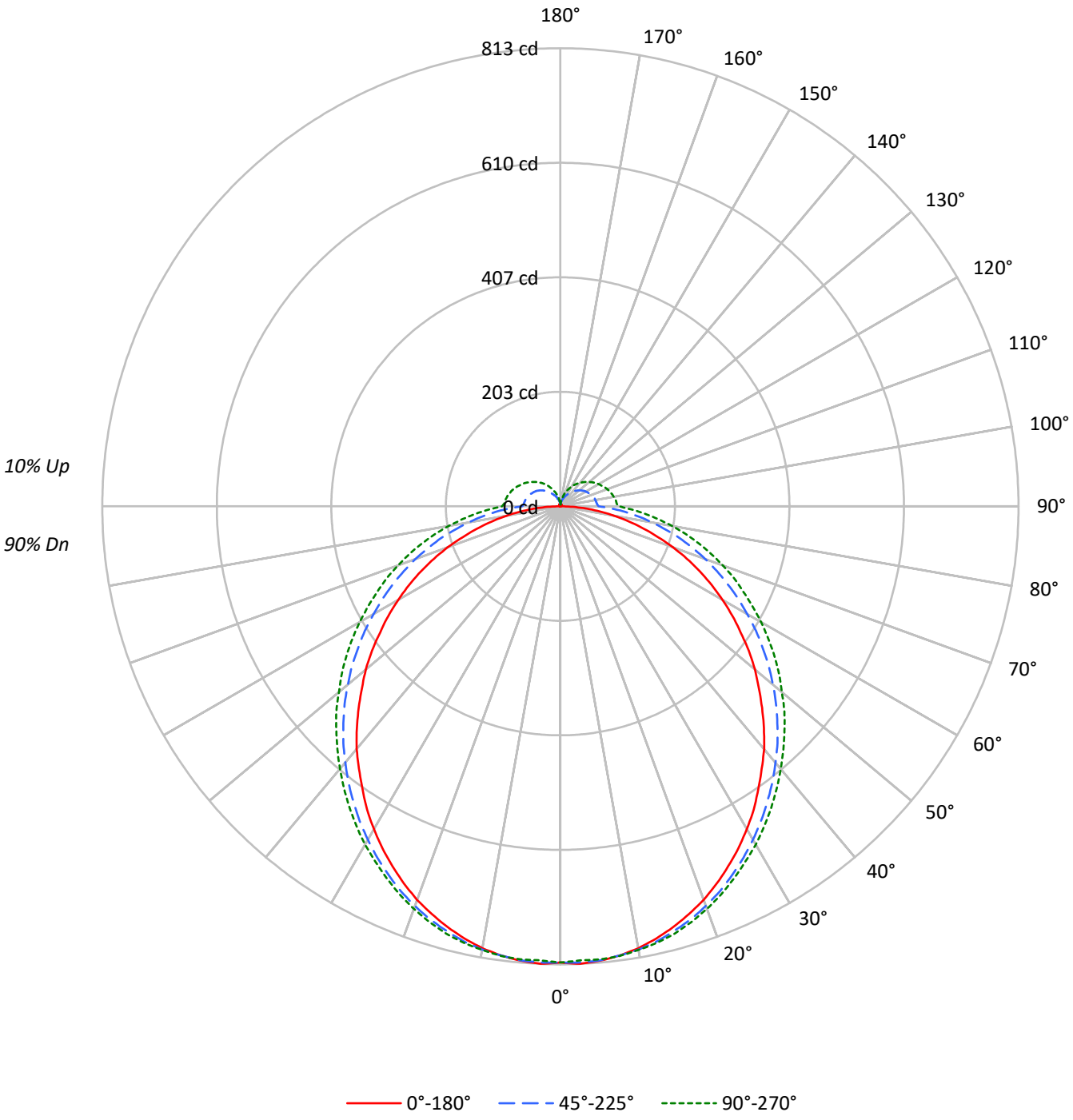
Luminous Intensity Polar Plot



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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°	5810	5810	5810
5°	5790	5719	5704
10°	5720	5607	5607
15°	5620	5480	5504
20°	5510	5344	5371
25°	5372	5192	5228
30°	5231	5034	5091
35°	5069	4871	4946
40°	4924	4709	4805
45°	4741	4545	4670
50°	4577	4370	4529
55°	4367	4190	4403
60°	4164	3999	4263
65°	3928	3808	4119
70°	3629	3601	3994
75°	3242	3369	3852
80°	2744	3075	3676
85°	1948	2743	3493

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	76.8	2.8
10°-20°	219.8	8.0
20°-30°	331.3	12.0
30°-40°	398.1	14.4
40°-50°	416.5	15.1
50°-60°	387.6	14.0
60°-70°	319.7	11.6
70°-80°	224.6	8.1
80°-90°	118.6	4.3
90°-100°	64.2	2.3
100°-110°	58.3	2.1
110°-120°	49.9	1.8
120°-130°	39.5	1.4
130°-140°	28.2	1.0
140°-150°	17.6	0.6
150°-160°	9.2	0.3
160°-170°	3.4	0.1
170°-180°	0.6	0.0
0°-30°	627.9	22.7
0°-40°	1026.0	37.1
0°-60°	1830.1	66.2
0°-90°	2493.0	90.2
90°-120°	172.4	6.2
90°-150°	257.7	9.3
90°-180°	271.0	9.8
0°-180°	2763.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	810	810	810	810	810	
5°	810	805	809	809	807	77
15°	773	772	780	785	785	218
25°	705	709	722	728	729	325
35°	612	622	640	650	652	384
45°	506	522	545	558	562	391
55°	391	411	438	456	464	350
65°	273	297	328	350	358	270
75°	153	183	220	245	254	162
85°	46	78	116	140	150	48
90°	2	32	68	94	103	3
95°	0	29	65	90	99	0
105°	1	28	61	84	92	1
115°	2	26	56	76	84	2
125°	2	22	48	67	73	2
135°	3	18	39	56	61	2
145°	3	14	28	42	48	2
155°	4	11	20	28	33	2
165°	5	8	12	15	18	1
175°	5	5	5	5	6	0
180°	4	4	4	4	4	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	809.6	809.6	809.6	809.6	809.6	809.6	809.6	809.6	809.6	809.6	809.6
2.5°	812.7	811.9	810.4	808.9	808.1	808.1	807.3	807.3	807.3	809.6	810.4
5°	809.6	808.9	807.3	806.6	805.8	805.0	805.0	805.0	805.8	808.1	808.9
7.5°	804.2	803.5	801.9	801.2	800.4	800.4	800.4	800.4	801.2	803.5	804.2
10°	796.5	795.8	794.2	793.5	793.5	793.5	793.5	793.5	795.0	797.3	798.8
12.5°	785.8	785.0	784.2	784.2	783.4	783.4	784.2	784.2	785.8	788.8	791.1
15°	773.4	772.7	771.9	771.9	771.9	771.9	772.7	773.4	775.7	778.8	780.4
17.5°	758.8	758.8	758.0	758.8	758.8	758.8	759.6	761.1	762.6	766.5	768.8
20°	743.4	742.6	741.8	743.4	743.4	743.4	744.2	746.5	748.8	752.6	754.9
22.5°	724.9	724.9	724.9	725.7	726.4	727.2	728.0	730.3	733.4	736.5	739.5
25°	704.9	704.9	704.9	706.4	707.9	708.7	709.5	711.8	715.7	718.7	721.8
27.5°	684.1	684.1	684.1	684.8	687.1	687.9	689.5	692.5	696.4	699.5	703.3
30°	661.7	661.7	662.5	664.0	666.3	667.1	668.7	671.7	676.4	679.4	683.3
32.5°	638.6	637.8	638.6	640.9	643.2	645.5	646.3	650.2	654.8	658.6	662.5
35°	612.4	613.2	614.7	617.0	619.4	621.7	623.2	627.1	632.5	636.3	640.2
37.5°	587.0	587.8	589.3	592.4	595.5	597.8	600.1	603.2	609.3	613.2	617.8
40°	562.4	560.8	563.9	567.0	570.8	573.1	575.4	579.3	585.5	589.3	593.9
42.5°	534.6	534.6	536.9	541.6	545.4	547.7	550.0	554.6	560.8	565.4	570.1
45°	506.1	506.9	510.0	514.6	519.2	522.3	523.8	529.2	535.4	540.0	544.6
47.5°	477.6	479.2	482.2	487.6	492.3	495.3	496.9	503.0	509.2	514.6	519.2
50°	450.7	450.7	454.5	459.1	464.5	467.6	469.9	476.1	482.2	487.6	492.3
52.5°	421.4	421.4	425.2	431.4	436.0	439.9	442.2	449.1	455.3	460.7	466.1
55°	390.6	392.1	396.0	402.9	408.3	411.4	414.4	421.4	427.5	433.7	438.3
57.5°	362.1	362.8	367.5	373.6	379.8	382.9	386.7	392.9	399.8	406.7	411.4
60°	332.0	333.6	337.4	345.1	351.3	354.4	357.4	365.1	372.1	378.2	382.9
62.5°	302.7	303.5	308.9	315.8	322.0	325.9	329.7	336.6	343.6	349.7	355.9
65°	272.7	274.2	278.9	286.6	292.7	296.6	299.7	308.9	315.1	322.0	328.2
67.5°	242.7	244.2	249.6	257.3	264.2	268.1	271.2	279.6	287.3	294.3	300.4
70°	212.6	214.2	220.3	228.0	235.0	238.8	243.4	251.1	259.6	266.5	273.5
72.5°	181.8	184.1	189.5	198.0	207.2	211.1	214.9	224.2	231.9	239.6	245.7
75°	153.3	155.6	161.8	169.5	177.2	182.6	185.7	194.9	204.9	212.6	219.5
77.5°	124.8	127.1	133.3	141.7	150.2	154.8	159.5	167.9	176.4	184.1	191.8
80°	97.8	100.1	107.1	114.8	123.3	128.6	133.3	142.5	151.0	158.7	165.6
82.5°	71.6	74.0	80.9	89.4	98.6	103.2	107.8	116.3	125.6	133.3	141.0
85°	46.2	50.1	56.2	63.9	73.2	77.8	82.4	91.7	100.1	107.8	115.6
87.5°	22.3	25.4	32.4	40.8	49.3	54.7	58.5	67.0	76.3	83.2	90.9
90°	1.5	4.6	10.8	18.5	27.0	31.6	36.2	44.7	53.2	60.9	67.8
92.5°	0.0	3.1	9.2	16.9	25.4	30.0	33.9	42.4	50.8	58.5	65.5
95°	0.0	3.1	9.2	16.9	25.4	29.3	33.9	42.4	50.1	57.8	64.7
97.5°	0.8	3.1	9.2	16.9	24.7	29.3	33.1	41.6	49.3	57.0	63.9
100°	0.8	3.1	9.2	16.2	24.7	28.5	33.1	40.8	48.5	56.2	63.2
102.5°	0.8	3.1	9.2	16.2	24.7	28.5	32.4	40.1	47.8	55.5	62.4
105°	0.8	3.9	9.2	16.2	23.9	27.7	31.6	40.1	47.0	53.9	60.9
107.5°	0.8	3.9	9.2	16.2	23.9	27.7	31.6	39.3	46.2	53.2	59.3
110°	1.5	3.9	9.2	16.2	23.1	27.0	30.8	38.5	45.5	52.4	58.5

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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	*1.5*	3.9	9.2	15.4	23.1	26.2	30.0	37.7	44.7	50.8	57.0
115°	*1.5*	3.9	9.2	15.4	22.3	26.2	29.3	37.0	43.1	50.1	55.5
117.5°	*1.5*	4.6	9.2	14.6	21.6	25.4	28.5	35.4	42.4	48.5	53.9
120°	*2.3*	4.6	8.5	14.6	20.8	24.7	27.7	34.7	40.8	47.0	52.4
122.5°	*2.3*	4.6	8.5	13.9	20.0	23.1	27.0	33.1	39.3	45.5	50.8
125°	*2.3*	4.6	8.5	13.1	19.3	22.3	25.4	31.6	37.7	43.1	48.5
127.5°	*2.3*	4.6	8.5	13.1	18.5	20.8	23.9	30.0	35.4	40.8	46.2
130°	*2.3*	4.6	7.7	12.3	16.9	20.0	22.3	28.5	33.1	38.5	43.9
132.5°	*2.3*	4.6	7.7	11.6	16.2	19.3	21.6	27.0	31.6	36.2	41.6
135°	*3.1*	4.6	7.7	11.6	15.4	17.7	20.0	24.7	29.3	33.9	39.3
137.5°	*3.1*	4.6	6.9	10.8	14.6	16.9	19.3	23.1	27.7	32.4	36.2
140°	*3.1*	4.6	6.9	10.0	13.9	16.2	17.7	21.6	26.2	30.0	33.9
142.5°	*3.1*	4.6	6.9	10.0	13.1	14.6	16.9	20.0	23.9	27.7	31.6
145°	*3.1*	4.6	6.9	9.2	12.3	13.9	15.4	19.3	22.3	25.4	28.5
147.5°	*3.9*	4.6	6.9	9.2	11.6	13.1	14.6	17.7	20.8	23.1	26.2
150°	*3.9*	4.6	6.2	8.5	10.8	12.3	13.9	16.2	19.3	21.6	23.9
152.5°	*3.9*	4.6	6.2	8.5	10.8	11.6	12.3	15.4	17.7	20.0	21.6
155°	*3.9*	4.6	6.2	7.7	10.0	10.8	11.6	13.9	16.2	17.7	20.0
157.5°	*3.9*	4.6	6.2	7.7	9.2	10.0	10.8	12.3	14.6	16.2	17.7
160°	*3.9*	4.6	6.2	6.9	8.5	9.2	10.0	11.6	13.1	14.6	15.4
162.5°	*4.6*	4.6	5.4	6.9	7.7	8.5	9.2	10.0	11.6	12.3	13.9
165°	*4.6*	4.6	5.4	6.2	6.9	7.7	7.7	9.2	10.0	10.8	11.6
167.5°	*4.6*	4.6	5.4	6.2	6.2	6.9	6.9	7.7	8.5	9.2	10.0
170°	*4.6*	4.6	4.6	5.4	6.2	6.2	6.2	6.9	7.7	7.7	8.5
172.5°	*4.6*	4.6	4.6	4.6	5.4	5.4	5.4	6.2	6.2	6.9	6.9
175°	*4.6*	4.6	4.6	4.6	4.6	4.6	5.4	5.4	5.4	5.4	5.4
177.5°	*4.6*	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
180°	*3.9*	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9

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	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	809.6	809.6	809.6	809.6	809.6	809.6	809.6	809.6	809.6	809.6
2.5°	*811.2*	*812.7*	*811.9*	*810.4*	*810.4*	*810.4*	*809.6*	*808.1*	*807.3*	*806.6*
5°	809.6	811.2	809.6	808.9	808.9	808.9	808.9	808.1	807.3	807.3
7.5°	805.8	807.3	806.6	805.8	805.8	805.8	805.8	805.0	805.0	805.0
10°	800.4	802.7	801.9	801.2	800.4	801.2	800.4	800.4	799.6	799.6
12.5°	791.9	794.2	794.2	793.5	793.5	793.5	793.5	793.5	792.7	793.5
15°	782.7	785.0	785.0	785.0	785.0	785.0	785.0	785.0	784.2	785.0
17.5°	771.1	773.4	774.2	773.4	774.2	774.2	774.2	773.4	773.4	773.4
20°	757.2	759.6	760.3	759.6	759.6	759.6	760.3	760.3	760.3	760.3
22.5°	741.8	744.2	744.2	744.2	744.9	744.9	744.9	745.7	745.7	745.7
25°	724.1	726.4	726.4	727.2	728.0	728.0	728.7	728.7	728.7	728.7
27.5°	707.2	708.7	708.7	709.5	710.3	710.3	710.3	710.3	711.8	711.0
30°	687.1	688.7	689.5	691.0	691.0	691.8	691.8	692.5	693.3	693.3
32.5°	666.3	667.9	668.7	670.2	671.0	671.7	671.7	673.3	674.1	673.3
35°	644.0	645.5	647.9	648.6	650.2	650.2	651.7	651.7	653.3	652.5
37.5°	621.7	623.2	624.8	626.3	627.8	628.6	629.4	630.9	632.5	630.9
40°	597.8	600.1	602.4	604.0	604.7	606.3	606.3	608.6	610.1	608.6
42.5°	573.9	576.2	578.5	581.6	581.6	582.4	583.9	586.2	586.2	585.5
45°	549.3	550.8	554.6	557.0	557.7	558.5	560.0	560.8	562.4	562.4
47.5°	523.1	526.1	530.0	532.3	533.1	533.8	535.4	536.9	539.2	539.2
50°	496.9	500.7	502.3	506.1	507.7	508.4	510.7	512.3	513.8	513.1
52.5°	469.9	473.0	477.6	480.7	482.2	483.0	485.3	487.6	488.4	489.2
55°	442.9	446.8	451.4	454.5	456.0	457.6	459.1	460.7	463.0	463.7
57.5°	416.0	419.8	425.2	428.3	429.9	430.6	433.7	436.0	436.8	437.6
60°	388.3	392.9	398.3	401.4	402.9	405.2	406.0	409.8	410.6	411.4
62.5°	361.3	365.9	371.3	375.2	376.7	378.2	381.3	383.6	385.2	384.4
65°	334.3	339.0	344.3	348.2	349.7	352.0	354.4	356.7	358.2	358.2
67.5°	306.6	312.0	318.2	322.0	323.5	325.9	328.2	329.7	332.0	333.6
70°	279.6	285.8	291.2	295.0	296.6	298.9	301.2	305.1	305.1	306.6
72.5°	252.7	258.8	264.2	269.6	271.2	272.7	275.8	278.1	278.9	280.4
75°	226.5	232.6	238.0	241.9	245.0	246.5	249.6	251.1	252.7	254.2
77.5°	198.7	206.5	211.8	216.5	218.8	220.3	223.4	225.7	227.3	228.0
80°	172.6	178.7	184.1	188.7	191.0	193.4	196.4	198.0	200.3	201.1
82.5°	147.1	153.3	158.7	162.5	165.6	167.2	170.2	173.3	173.3	174.9
85°	121.7	127.9	133.3	137.9	140.2	142.5	144.8	147.9	148.7	150.2
87.5°	97.1	104.0	108.6	114.0	115.6	117.9	121.7	124.0	125.6	125.6
90°	74.7	80.9	86.3	91.7	94.0	95.5	99.4	101.7	103.2	103.2
92.5°	72.4	78.6	84.0	89.4	90.9	93.2	96.3	98.6	100.1	100.1
95°	71.6	77.8	83.2	87.8	90.1	91.7	95.5	97.1	98.6	99.4
97.5°	70.9	77.0	82.4	87.0	88.6	90.9	94.0	96.3	97.8	97.8
100°	69.3	75.5	80.9	85.5	87.8	89.4	92.4	94.8	95.5	96.3
102.5°	68.6	74.0	79.3	84.0	86.3	87.8	90.9	93.2	94.0	94.8
105°	67.0	73.2	77.8	82.4	84.0	86.3	88.6	90.9	92.4	92.4
107.5°	65.5	71.6	76.3	80.9	82.4	84.0	87.0	89.4	90.1	90.9
110°	63.9	70.1	74.7	78.6	80.9	82.4	84.7	87.0	87.8	88.6

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

Scaled Data Report

TEST NUMBER: P981637
CATALOG NUMBER: 2WNLED-LD4-28SL-F-UNV-L850-CD1-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	62.4	67.8	72.4	77.0	78.6	80.1	82.4	84.7	85.5	86.3
115°	60.9	66.2	70.9	74.7	76.3	77.8	80.1	82.4	83.2	84.0
117.5°	59.3	64.7	68.6	72.4	74.0	75.5	77.8	80.1	80.9	80.9
120°	57.8	62.4	67.0	70.1	71.6	73.2	75.5	77.0	78.6	78.6
122.5°	55.5	60.1	64.7	67.8	69.3	70.9	73.2	74.7	75.5	76.3
125°	53.9	58.5	62.4	65.5	67.0	68.6	70.1	71.6	72.4	73.2
127.5°	51.6	55.5	60.1	63.2	64.7	66.2	67.8	69.3	70.1	70.1
130°	48.5	53.2	57.0	60.9	62.4	63.2	65.5	66.2	67.0	67.0
132.5°	46.2	50.1	53.9	57.8	59.3	60.9	62.4	63.2	63.9	63.9
135°	43.1	47.0	50.8	54.7	56.2	57.8	59.3	60.1	60.9	60.9
137.5°	40.8	44.7	47.8	51.6	53.2	54.7	56.2	57.0	57.8	57.8
140°	37.7	40.8	44.7	48.5	50.1	50.8	53.2	53.9	54.7	54.7
142.5°	34.7	38.5	41.6	44.7	46.2	47.8	50.1	50.8	51.6	51.6
145°	32.4	35.4	37.7	40.8	42.4	43.9	46.2	47.8	47.8	47.8
147.5°	29.3	32.4	34.7	37.7	39.3	40.1	43.1	43.9	44.7	44.7
150°	27.0	29.3	31.6	33.9	35.4	37.0	39.3	40.8	40.8	40.8
152.5°	24.7	26.2	28.5	30.8	31.6	33.1	35.4	37.0	37.0	37.0
155°	21.6	23.9	25.4	27.0	28.5	29.3	31.6	33.1	33.1	33.1
157.5°	19.3	20.8	22.3	23.9	24.7	25.4	27.7	29.3	30.0	30.0
160°	16.9	18.5	19.3	20.8	21.6	22.3	23.1	25.4	26.2	26.2
162.5°	14.6	15.4	16.9	17.7	18.5	18.5	20.0	20.8	22.3	22.3
165°	12.3	13.1	13.9	14.6	15.4	15.4	16.2	17.7	18.5	18.5
167.5°	10.8	10.8	11.6	12.3	12.3	12.3	13.1	13.9	15.4	15.4
170°	8.5	9.2	9.2	9.2	10.0	10.0	10.0	10.8	11.6	12.3
172.5°	6.9	6.9	7.7	7.7	7.7	7.7	7.7	7.7	8.5	9.2
175°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	6.2
177.5°	4.6	4.6	4.6	3.9	3.9	3.9	3.9	3.9	3.9	3.1
180°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9

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

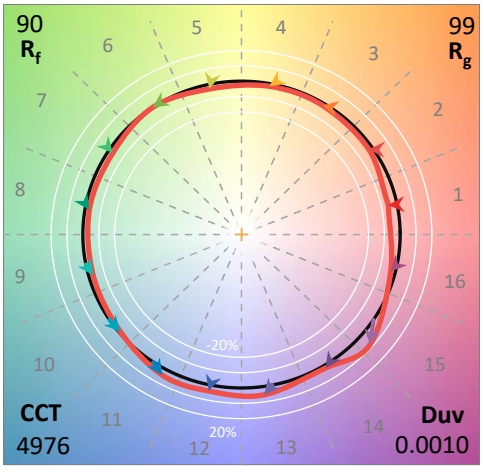
Report Generated By FNC07603 / LDUCLS01DT01661
Version: v7.05

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

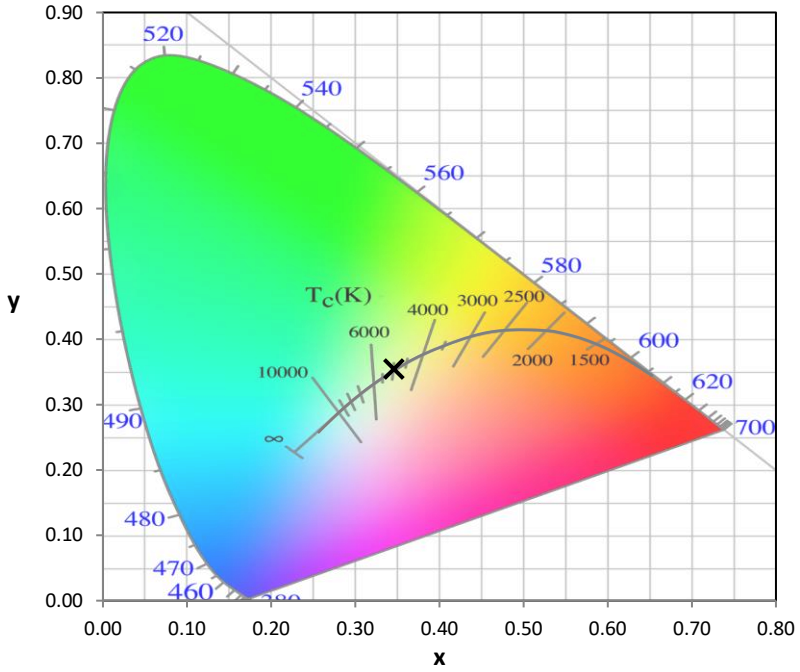
Stabilization Time:	20M
Operation Time:	1H 20M
Sphere Temperature (°C):	25.0

REPORT NUMBER: SP3-2508-516-12

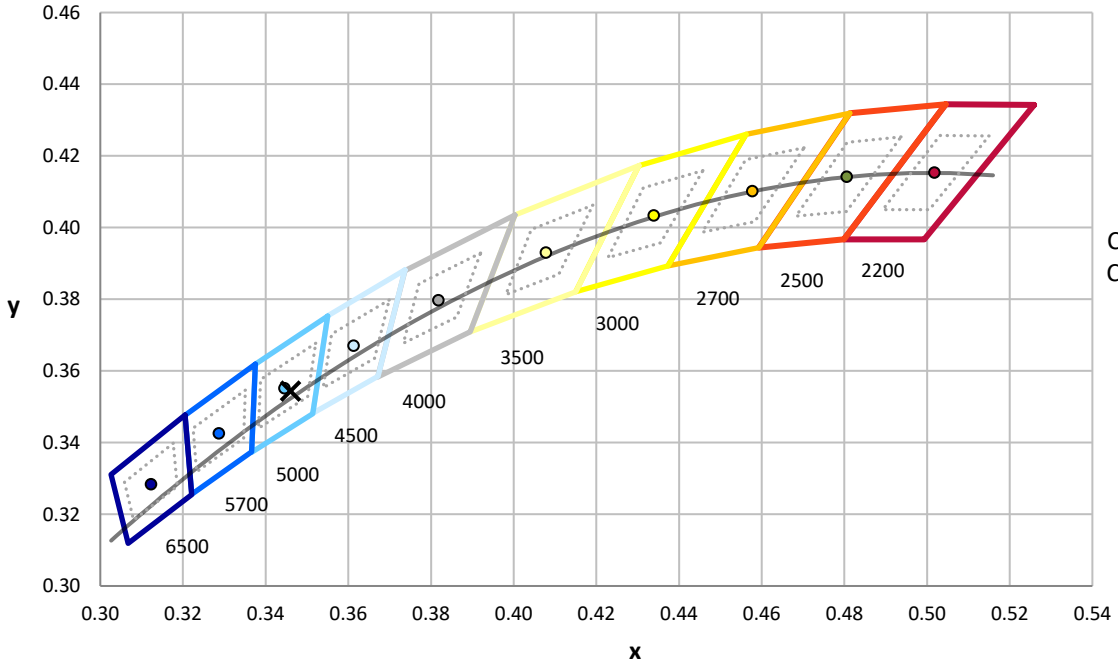
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	3M SPHERE IN02505	7/1/2025	1/1/2026
Power Meter	XITRON INXT2011006	1/20/2025	1/20/2026
AC Power Source	CHROMA 61604 IN6064A	10/22/2024	10/22/2025
DC Power Source	EYSIGHT N5770A IN0534	10/22/2024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

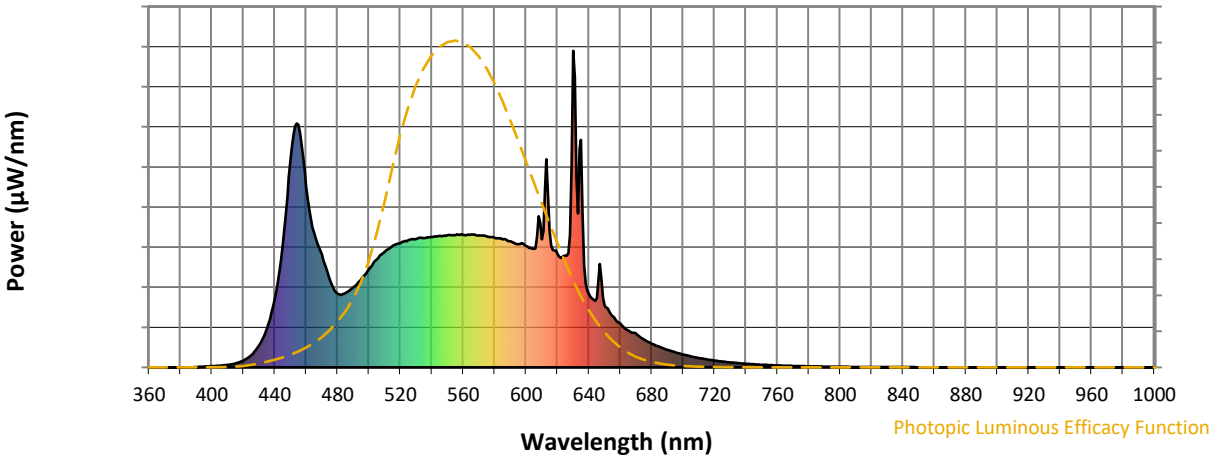


CCT = 4976K
CIE x = 0.3460
CIE y = 0.3544
Duv = 0.0010

Point lies inside the ANSI 5000K 4-step quadrangle

REPORT NUMBER: SP3-2508-516-12

Photopic Flux vs. Wavelength

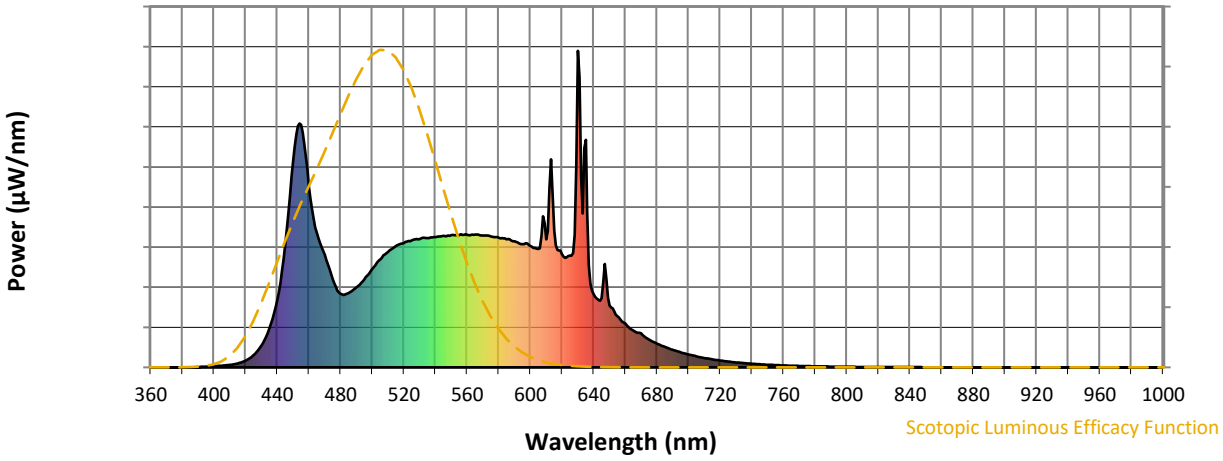


Photopic Lumens: NR

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

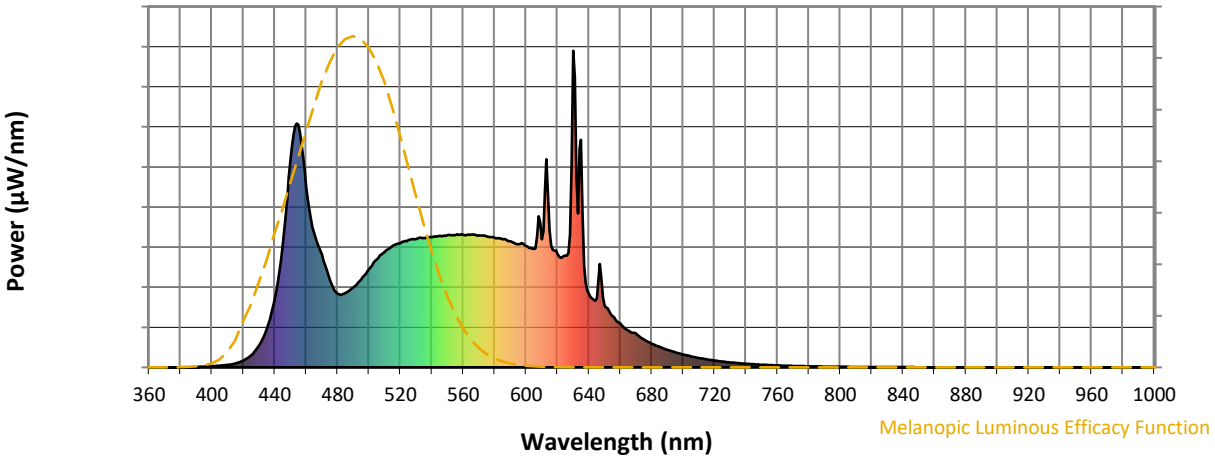


Scotopic Lumens: NR **S/P: 2.07**

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			

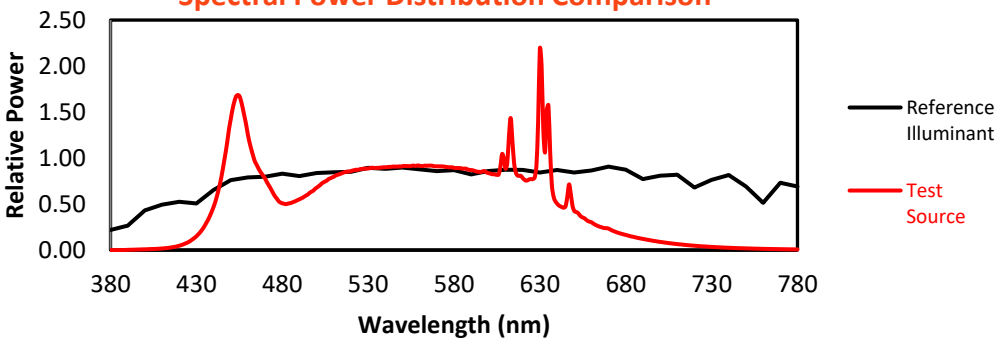
REPORT NUMBER: SP3-2508-516-12

TM-30-18

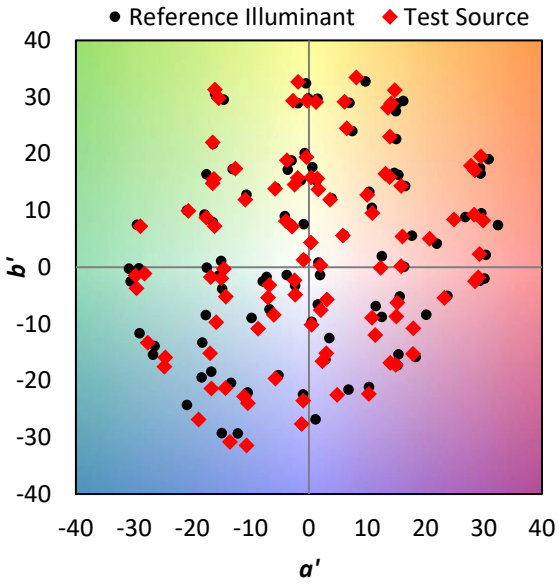
Summary

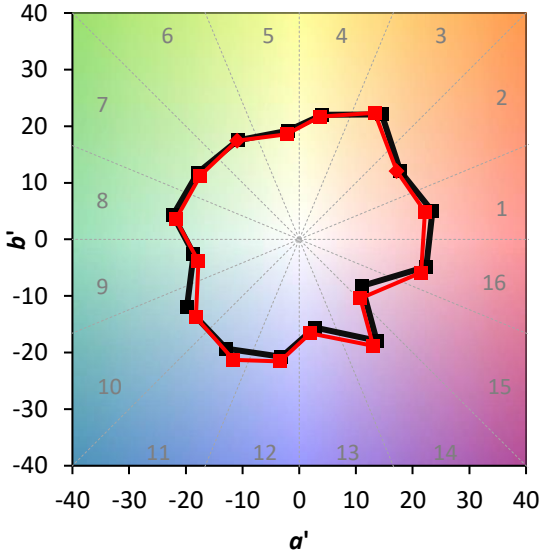
R_f = 89.8
R_g = 98.7
CIE R_a = 93.2
R_9 = 68.0

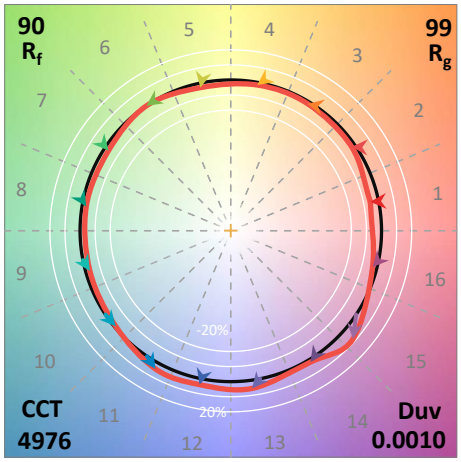
Spectral Power Distribution Comparison

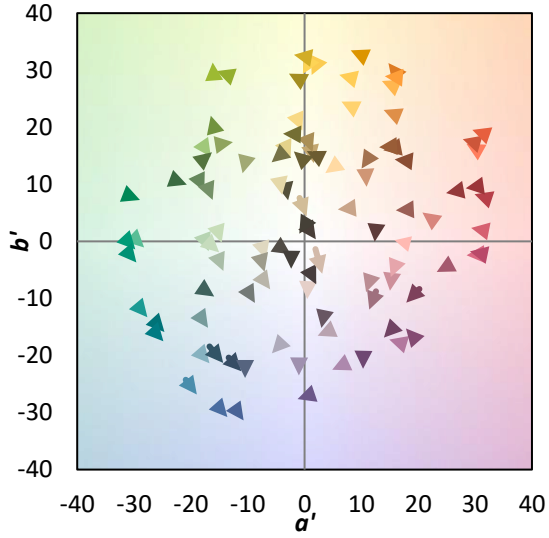


Color Vector Graphics







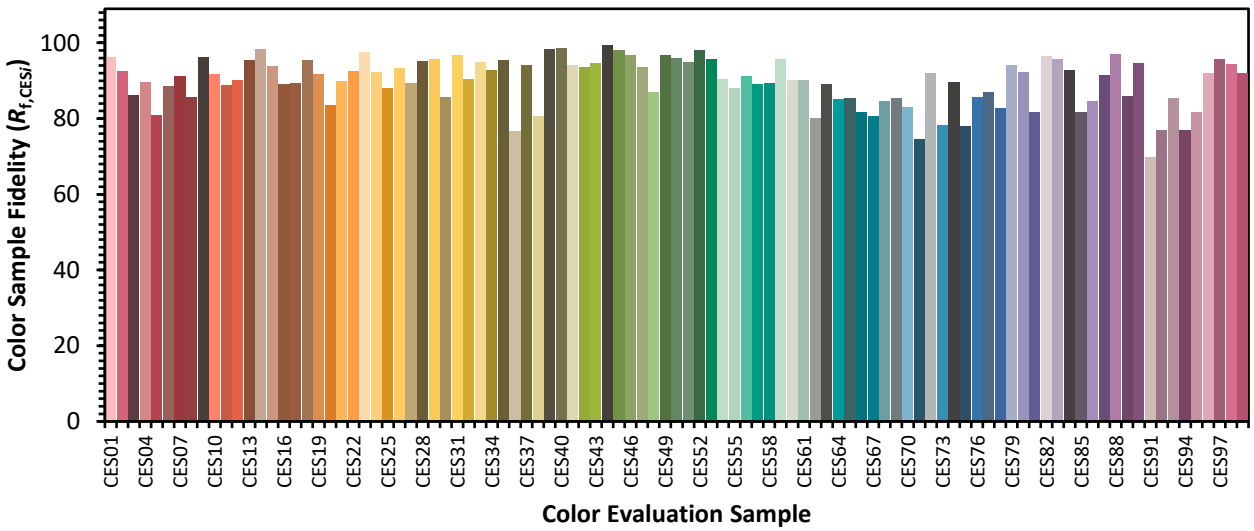


REPORT NUMBER: SP3-2508-516-12

TM-30-18

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

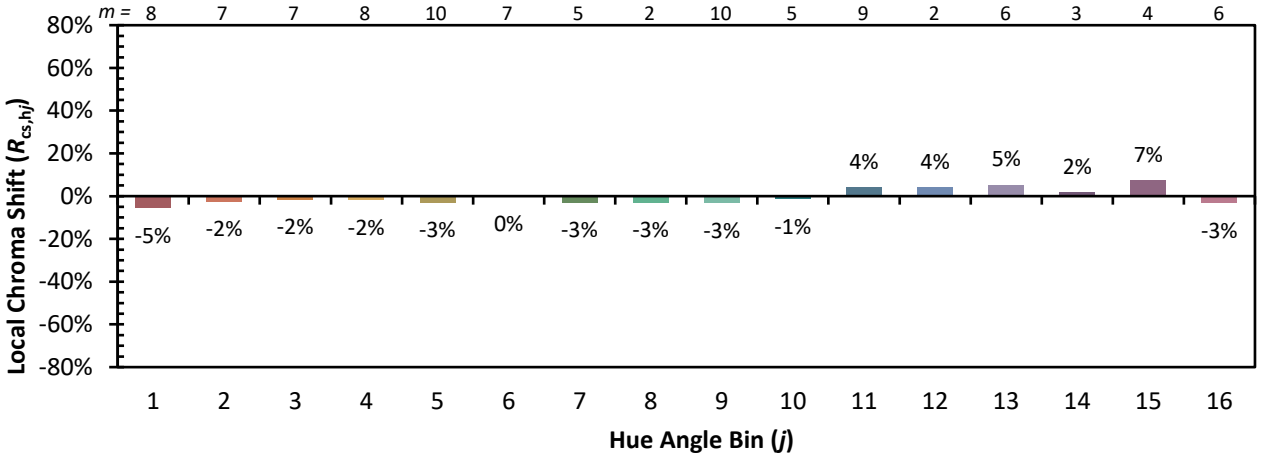
CES01 = 85	CES26 = 93	CES51 = 95	CES76 = 86
CES02 = 61	CES27 = 89	CES52 = 98	CES77 = 87
CES03 = 31	CES28 = 95	CES53 = 96	CES78 = 83
CES04 = 69	CES29 = 96	CES54 = 90	CES79 = 94
CES05 = 48	CES30 = 86	CES55 = 88	CES80 = 92
CES06 = 50	CES31 = 97	CES56 = 91	CES81 = 82
CES07 = 41	CES32 = 90	CES57 = 89	CES82 = 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	

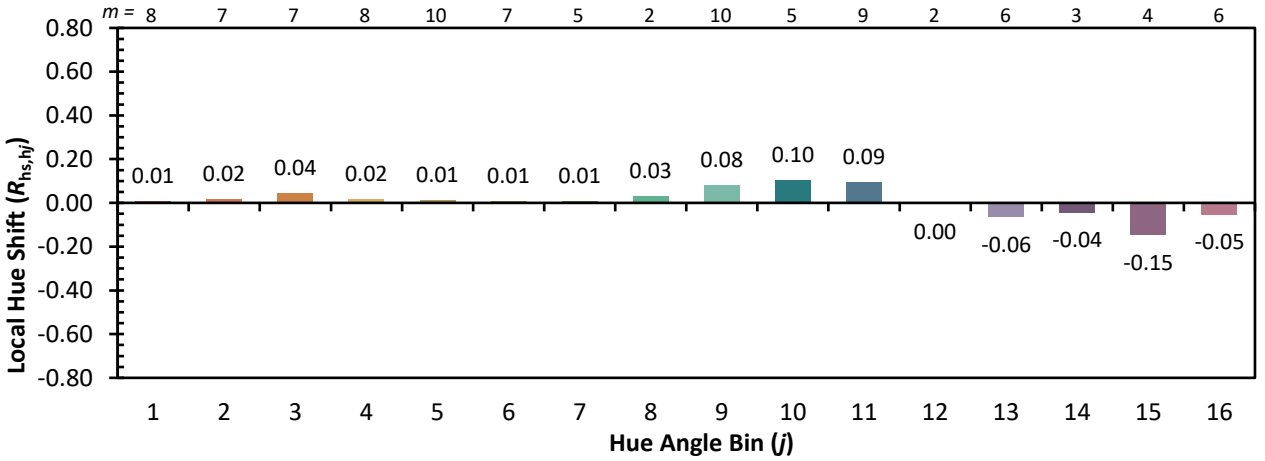


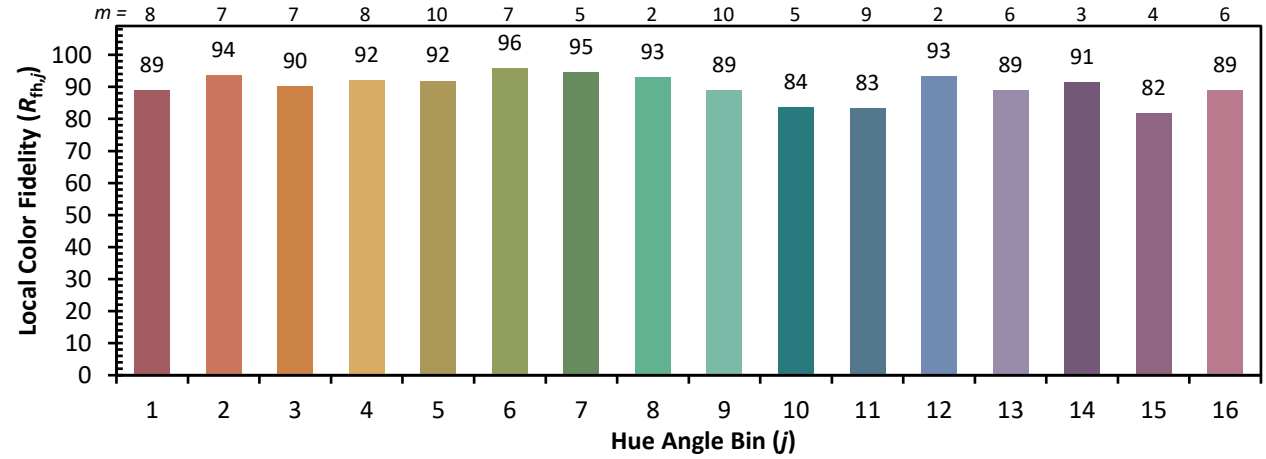
REPORT NUMBER: SP3-2508-516-12

TM-30-18

Color Rendition by Hue-Angle Bin







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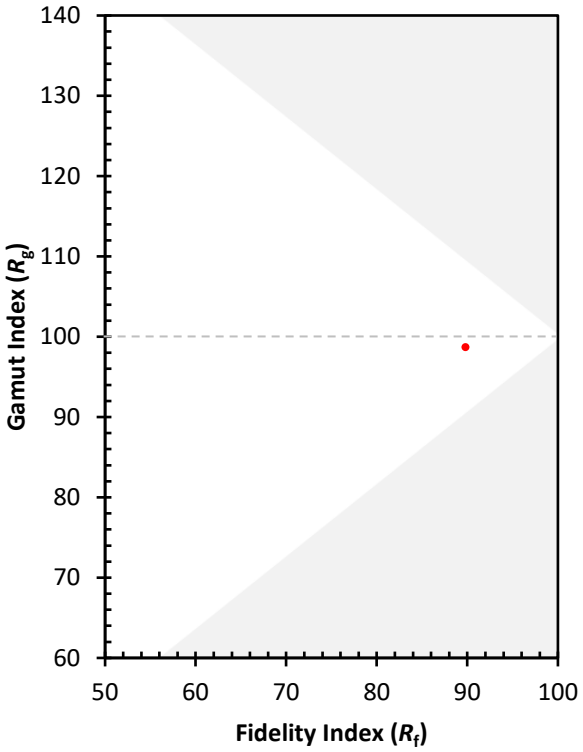
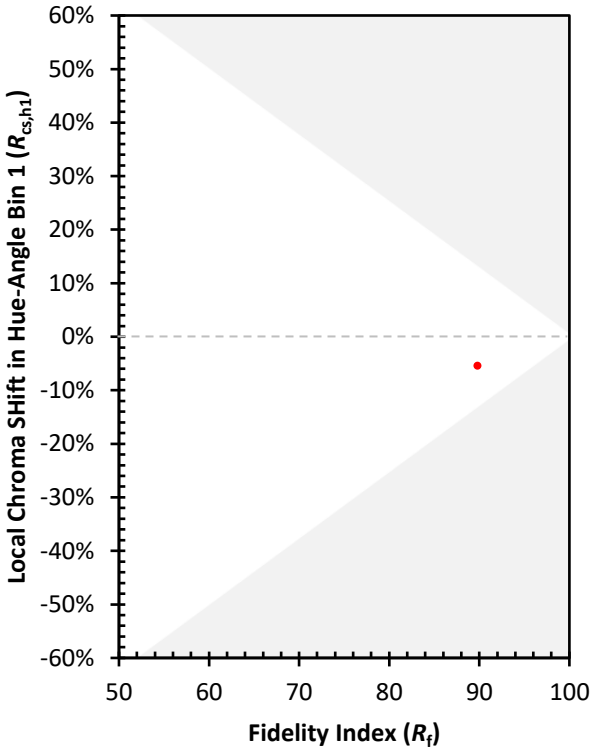
Measure Comparisons





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