

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: P588648

Luminaire Tested: **FM19WRCCR-4000K**

Issue Date: 12/1/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P588648  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( MXL1053-19A)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 12/1/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: FM19WRCCR-4000K  
Description: FM WR CCT SELECT  
Light Source: (1) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

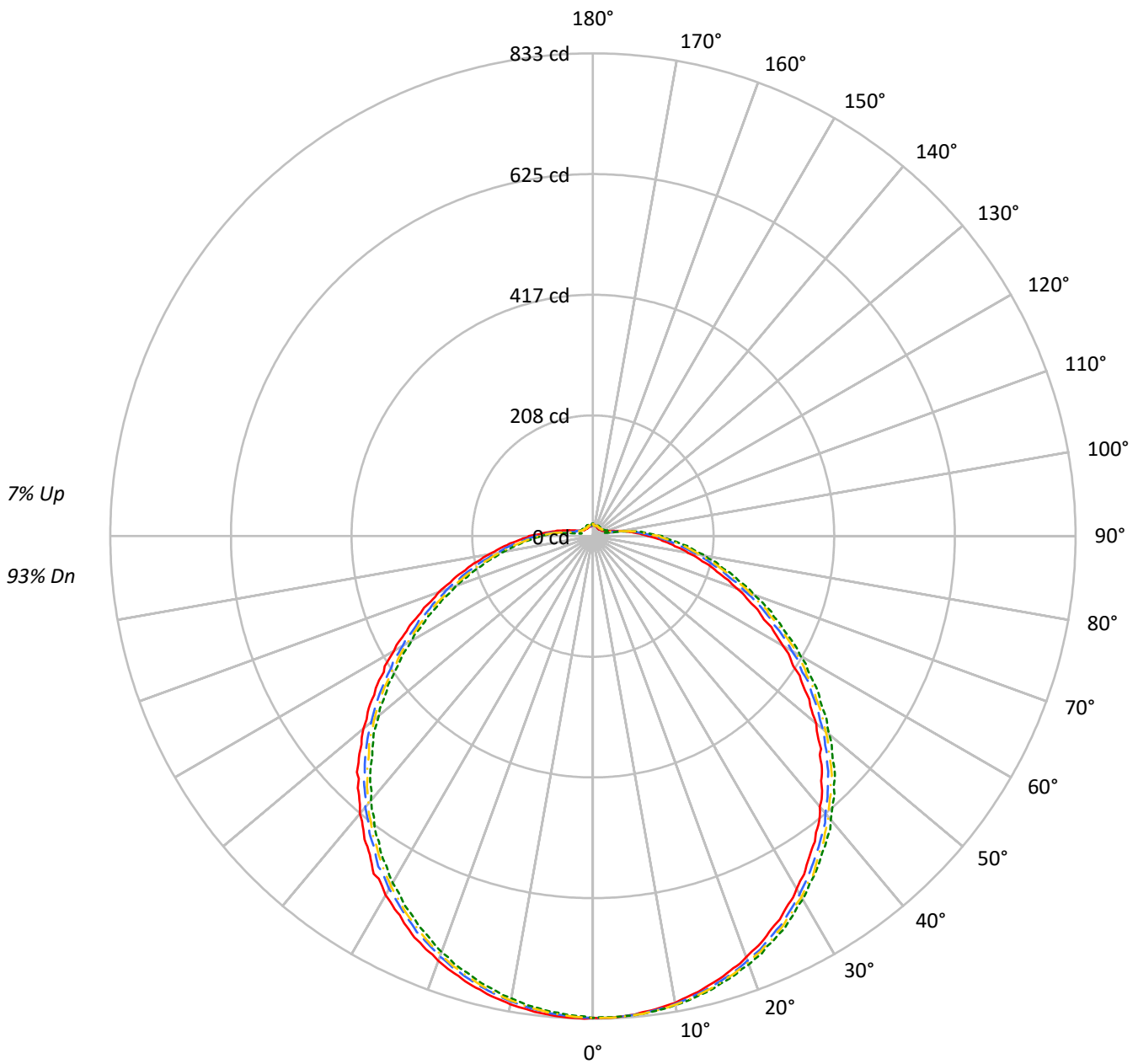
Lumens per Lamp: N/A  
Luminaire Lumens: 2806.0 lumens  
Efficiency: N/A  
Efficacy: 99.5 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.26 / 1.39  
Luminous Opening: Vertical Cylinder (Dia: 1.58m x H: 0.38m)  
CIE Type: Direct

Input Watts (W): 28.2  
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: 24 FT



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### Luminous Intensity Polar Plot



— 0°-180°    - - 45°-225°    - - - 90°-270°    - · - 135°-315°



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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	93	88	91	88	84	86	83	81	82	79	77	77	77	77	74
2	95	86	79	73	92	84	77	71	79	73	69	75	70	66	71	67	63	63	63	63	61
3	87	75	67	60	83	73	65	59	69	62	57	66	60	55	62	57	53	53	53	53	51
4	79	67	57	50	76	65	56	50	61	54	48	58	52	47	55	50	45	45	45	45	43
5	73	59	50	43	70	58	49	43	55	47	41	52	46	40	50	44	39	39	39	39	37
6	67	53	44	38	65	52	43	37	49	42	36	47	40	35	45	39	34	34	34	34	32
7	62	48	39	33	60	47	39	33	45	37	32	43	36	31	41	35	31	31	31	31	28
8	58	44	35	29	56	43	35	29	41	34	28	39	33	28	38	32	27	27	27	27	25
9	54	40	32	26	52	39	31	26	38	31	26	36	30	25	35	29	25	25	25	25	23
10	51	37	29	24	49	36	29	24	35	28	23	34	27	23	32	26	22	22	22	22	20

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	424	424	424	424
5°	413	414	414	411
10°	402	404	403	398
15°	389	394	392	385
20°	377	384	381	373
25°	365	373	369	358
30°	351	362	358	345
35°	337	350	344	330
40°	322	338	331	315
45°	308	326	318	297
50°	292	309	300	280
55°	271	294	282	260
60°	252	275	264	240
65°	232	259	245	220
70°	213	238	228	203
75°	197	224	209	182
80°	178	211	196	168
85°	167	196	185	156



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	78.7	2.8
10°-20°	225.8	8.0
20°-30°	343.3	12.2
30°-40°	416.3	14.8
40°-50°	435.9	15.5
50°-60°	401.3	14.3
60°-70°	326.7	11.6
70°-80°	235.5	8.4
80°-90°	149.2	5.3
90°-100°	78.7	2.8
100°-110°	33.2	1.2
110°-120°	22.7	0.8
120°-130°	17.5	0.6
130°-140°	14.1	0.5
140°-150°	11.3	0.4
150°-160°	8.6	0.3
160°-170°	5.3	0.2
170°-180°	1.8	0.1
0°-30°	647.8	23.1
0°-40°	1064.1	37.9
0°-60°	1901.3	67.8
0°-90°	2612.8	93.1
90°-120°	134.6	4.8
90°-150°	177.5	6.3
90°-180°	193.0	6.9
0°-180°	2806.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	832	832	832	832	832	
5°	829	830	830	824	829	79
15°	798	808	804	790	798	225
25°	741	758	750	729	741	342
35°	659	683	671	644	659	413
45°	558	591	576	538	558	430
55°	440	476	458	422	440	394
65°	320	356	337	303	320	318
75°	215	245	228	199	215	227
85°	129	152	143	121	129	113
90°	95	119	110	89	95	53
95°	70	84	77	57	70	54
105°	35	22	38	22	35	38
115°	21	24	22	23	21	21
125°	18	21	18	21	18	16
135°	16	19	17	20	16	12
145°	16	20	16	20	16	10
155°	17	20	17	21	17	8
165°	18	20	17	20	18	5
175°	20	20	20	21	20	2
180°	21	21	21	21	21	



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**CANDELA DISTRIBUTION (FULL):**

	0°	90°	180°	270°	360°
0°	831.5	831.5	831.5	831.5	831.5
1°	832.4	830.4	833.0	829.1	832.4
2°	832.0	830.8	832.4	828.7	832.0
3°	830.8	830.6	832.0	827.2	830.8
4°	829.9	830.2	831.0	825.0	829.9
5°	828.7	829.7	829.7	824.2	828.7
6°	826.1	828.7	828.6	821.6	826.1
7°	824.9	827.3	827.2	819.1	824.9
8°	822.5	826.0	824.5	817.2	822.5
9°	819.8	824.3	822.8	813.3	819.8
10°	817.9	821.8	820.3	809.9	817.9
11°	813.8	819.8	816.9	807.4	813.8
12°	810.2	817.2	814.3	802.8	810.2
13°	807.4	813.6	811.0	798.5	807.4
14°	802.6	811.3	806.6	795.2	802.6
15°	798.5	807.7	803.5	789.6	798.5
16°	794.8	803.0	799.6	784.5	794.8
17°	789.3	799.9	793.8	780.6	789.3
18°	784.2	795.9	790.1	775.6	784.2
19°	780.1	790.1	785.0	768.3	780.1
20°	773.0	786.6	780.0	764.0	773.0
21°	767.1	781.5	773.4	757.6	767.1
22°	762.5	777.5	769.0	749.6	762.5
23°	756.2	769.0	762.8	743.0	756.2
24°	748.1	764.7	758.0	737.5	748.1
25°	741.0	758.4	750.0	728.6	741.0
26°	735.9	753.9	743.2	721.3	735.9
27°	726.7	745.3	734.2	715.4	726.7
28°	719.0	738.5	729.0	705.5	719.0
29°	713.1	729.6	721.5	697.6	713.1
30°	703.1	724.1	715.6	691.1	703.1
31°	694.4	716.4	705.5	682.6	694.4
32°	688.1	706.5	697.3	671.8	688.1
33°	677.1	700.2	695.2	664.9	677.1
34°	668.0	691.9	682.3	655.6	668.0
35°	658.8	683.4	671.2	643.7	658.8
36°	651.8	673.9	662.3	636.7	651.8
37°	639.9	667.2	655.3	626.6	639.9
38°	632.4	657.9	643.3	614.2	632.4
39°	622.5	650.7	633.3	606.4	622.5
40°	609.5	638.8	625.9	595.8	609.5
41°	601.7	628.9	613.1	582.5	601.7
42°	591.2	618.9	603.0	574.4	591.2
43°	577.6	611.3	594.9	563.7	577.6
44°	569.3	598.3	581.7	552.4	569.3



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**CANDELA DISTRIBUTION (continued):**

	0°	90°	180°	270°	360°
45°	558.3	590.6	576.1	538.3	558.3
46°	544.0	579.8	562.6	529.5	544.0
47°	538.6	566.1	551.3	518.2	538.6
48°	524.0	555.0	537.3	509.3	524.0
49°	512.2	546.2	528.7	494.4	512.2
50°	503.3	532.1	517.0	482.5	503.3
51°	488.5	520.7	502.2	473.2	488.5
52°	476.5	511.8	493.5	458.2	476.5
53°	467.4	497.2	481.4	446.0	467.4
54°	452.2	485.4	466.6	437.0	452.2
55°	439.8	476.4	457.5	421.6	439.8
56°	430.8	464.5	445.3	409.3	430.8
57°	412.4	449.4	430.3	397.3	412.4
58°	403.0	437.6	424.0	387.9	403.0
59°	393.8	428.3	409.2	372.9	393.8
60°	379.1	413.2	396.8	361.0	379.1
61°	366.9	404.1	387.7	352.4	366.9
62°	354.8	392.0	372.7	337.3	354.8
63°	346.0	377.1	360.7	325.6	346.0
64°	328.4	365.0	351.8	317.2	328.4
65°	319.8	356.2	336.8	302.9	319.8
66°	311.2	341.4	325.2	291.7	311.2
67°	297.0	335.6	316.8	283.4	297.0
68°	285.9	320.9	302.4	269.7	285.9
69°	277.4	309.4	291.2	259.1	277.4
70°	264.2	295.4	283.0	251.3	264.2
71°	253.5	287.1	272.0	241.0	253.5
72°	245.4	276.3	258.7	228.2	245.4
73°	232.7	262.7	250.9	220.8	232.7
74°	222.6	255.0	240.8	210.8	222.6
75°	215.3	244.8	228.1	199.0	215.3
76°	205.8	231.9	220.8	192.0	205.8
77°	193.6	224.5	211.1	182.9	193.6
78°	186.9	217.2	199.1	172.1	186.9
79°	177.8	202.7	192.3	165.3	177.8
80°	167.0	198.0	183.1	157.1	167.0
81°	160.5	186.3	172.2	147.1	160.5
82°	152.3	177.0	165.5	141.4	152.3
83°	142.5	170.5	157.1	133.6	142.5
84°	136.8	164.1	149.1	126.6	136.8
85°	129.2	151.5	143.1	121.0	129.2
86°	120.6	145.4	133.3	112.8	120.6
87°	117.1	135.7	126.3	106.1	117.1
88°	108.8	128.1	120.8	101.6	108.8
89°	102.3	122.6	112.2	94.1	102.3



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**CANDELA DISTRIBUTION (continued):**

	0°	90°	180°	270°	360°
90°	94.7	119.2	110.4	88.6	94.7
91°	90.4	106.7	100.8	84.3	90.4
92°	84.6	102.0	93.0	77.6	84.6
93°	80.7	94.3	87.5	72.1	80.7
94°	75.0	88.3	83.2	67.0	75.0
95°	70.0	84.0	76.9	57.1	70.0
96°	66.7	77.2	71.7	48.5	66.7
97°	61.4	65.9	67.0	42.6	61.4
98°	57.3	59.2	64.0	35.6	57.3
99°	54.5	50.1	60.8	28.8	54.5
100°	50.5	43.7	54.8	25.8	50.5
101°	46.4	35.2	51.8	23.2	46.4
102°	43.8	29.5	47.5	20.6	43.8
103°	40.6	25.5	44.3	20.1	40.6
104°	37.2	23.3	42.0	19.9	37.2
105°	35.3	21.6	38.4	22.2	35.3
106°	32.8	21.3	36.5	23.6	32.8
107°	30.2	22.2	33.9	25.0	30.2
108°	28.6	24.7	31.2	26.0	28.6
109°	27.1	26.1	29.4	26.1	27.1
110°	25.4	26.8	28.0	25.4	25.4
111°	24.6	27.1	26.5	24.6	24.6
112°	23.3	26.0	25.7	24.3	23.3
113°	22.4	25.4	24.6	23.8	22.4
114°	21.8	24.4	23.1	22.9	21.8
115°	21.0	23.6	22.1	22.9	21.0
116°	20.1	23.3	21.6	22.4	20.1
117°	19.8	22.9	21.0	22.2	19.8
118°	19.2	22.5	20.7	22.1	19.2
119°	19.0	22.0	20.3	21.8	19.0
120°	18.7	21.6	19.8	21.8	18.7
121°	18.5	21.3	19.2	21.4	18.5
122°	18.4	21.3	19.0	21.4	18.4
123°	18.0	21.0	18.5	21.3	18.0
124°	18.0	20.9	18.7	21.0	18.0
125°	17.9	20.7	18.2	21.0	17.9
126°	17.6	20.3	18.2	21.0	17.6
127°	17.4	20.1	18.2	20.9	17.4
128°	17.4	20.1	18.0	20.7	17.4
129°	17.3	19.9	17.9	20.7	17.3
130°	16.9	20.1	17.7	20.3	16.9
131°	16.8	19.8	17.6	20.2	16.8
132°	16.6	19.5	17.4	20.1	16.6
133°	16.3	19.8	17.3	20.2	16.3
134°	16.1	19.6	17.3	20.1	16.1





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**CANDELA DISTRIBUTION (continued):**

	0°	90°	180°	270°	360°
135°	15.7	19.2	17.1	20.1	15.7
136°	15.7	19.5	17.1	20.1	15.7
137°	15.9	19.5	16.9	20.1	15.9
138°	15.9	19.2	16.9	19.9	15.9
139°	15.7	19.2	16.8	19.9	15.7
140°	15.5	19.1	16.9	19.9	15.5
141°	15.5	19.2	16.9	19.9	15.5
142°	15.5	19.2	16.6	20.1	15.5
143°	15.5	19.2	16.5	20.1	15.5
144°	15.4	19.5	16.3	19.9	15.4
145°	15.5	19.5	16.3	20.1	15.5
146°	15.5	19.5	16.6	20.1	15.5
147°	15.7	19.6	16.5	20.2	15.7
148°	15.9	19.6	16.5	20.2	15.9
149°	16.1	19.8	16.5	20.3	16.1
150°	16.1	19.8	16.6	20.1	16.1
151°	15.9	19.9	16.5	20.6	15.9
152°	16.3	19.9	16.6	20.3	16.3
153°	16.5	19.8	16.8	20.3	16.5
154°	16.6	19.9	16.9	20.3	16.6
155°	17.1	20.1	17.1	20.7	17.1
156°	17.3	20.2	17.4	20.9	17.3
157°	17.3	20.3	17.4	20.6	17.3
158°	17.7	20.6	17.6	20.7	17.7
159°	17.9	20.7	17.7	21.0	17.9
160°	17.9	20.6	17.7	20.7	17.9
161°	17.7	20.9	17.7	20.7	17.7
162°	18.0	20.3	17.6	20.6	18.0
163°	18.2	20.2	17.4	19.9	18.2
164°	18.0	20.1	17.3	19.9	18.0
165°	17.7	19.6	17.1	19.6	17.7
166°	17.9	19.5	17.1	19.2	17.9
167°	18.0	19.2	17.3	19.0	18.0
168°	18.0	18.7	16.9	18.8	18.0
169°	18.2	18.5	16.9	18.5	18.2
170°	17.9	18.4	16.8	18.4	17.9
171°	18.4	17.9	16.9	18.5	18.4
172°	18.7	17.7	17.1	19.1	18.7
173°	19.2	18.4	17.7	19.5	19.2
174°	20.1	18.8	18.7	19.9	20.1
175°	20.1	19.5	19.5	20.6	20.1
176°	20.3	19.8	19.6	20.9	20.3
177°	20.9	20.2	19.9	21.2	20.9
178°	20.9	20.7	20.2	21.4	20.9
179°	20.7	21.0	20.6	21.4	20.7



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**CANDELA DISTRIBUTION (continued):**

	0°	90°	180°	270°	360°
180°	20.8	20.8	20.8	20.8	20.8

(END OF REPORT)