

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: P588654

Luminaire Tested: **FM9WRCCR-4000K**

Issue Date: 12/1/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P588654  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( MXL1053-9A)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 12/1/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: FM9WRCCR-4000K  
Description: FM WR CCT SELECT  
Light Source: (1) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

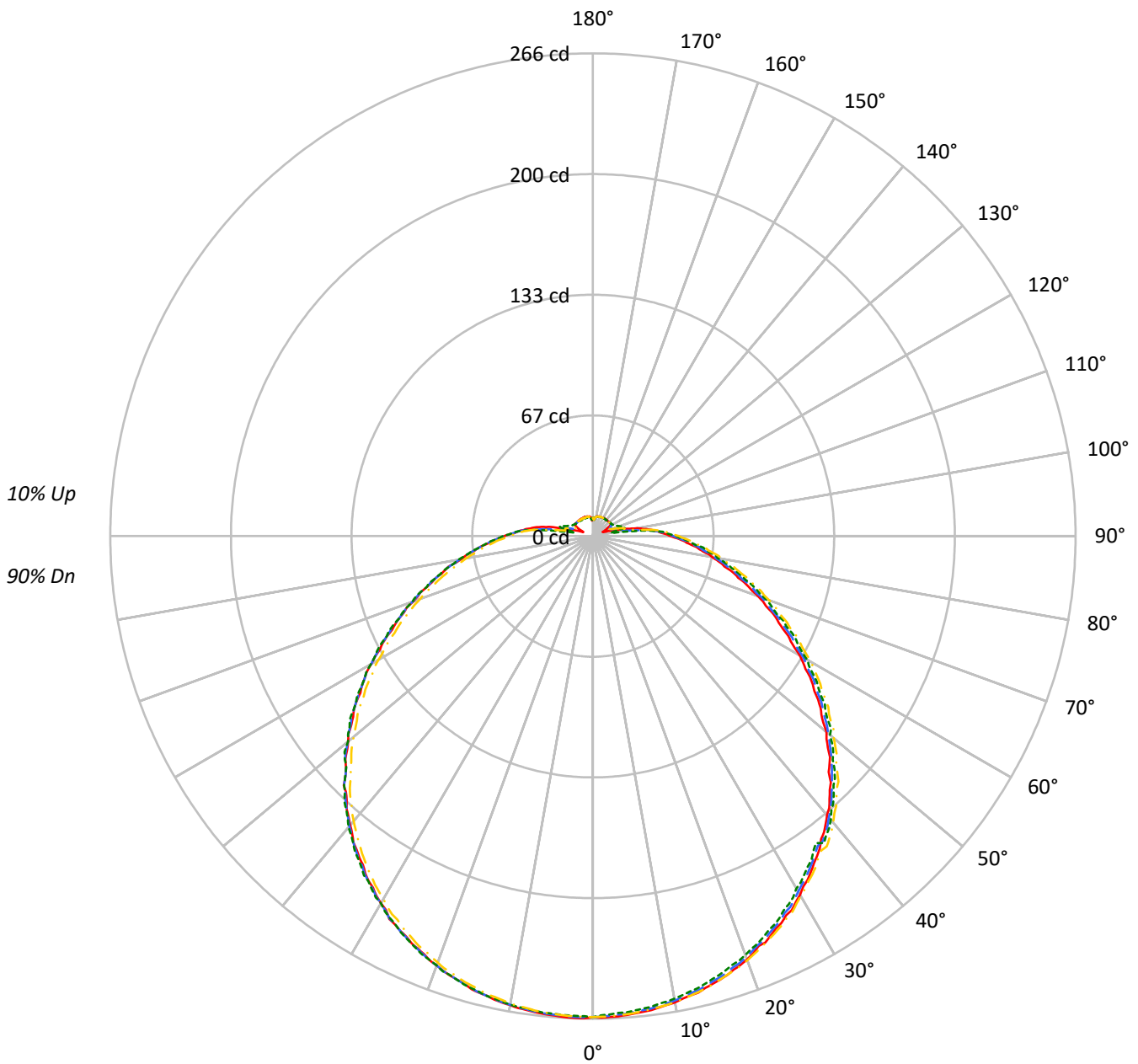
Lumens per Lamp: N/A  
Luminaire Lumens: 1005.0 lumens  
Efficiency: N/A  
Efficacy: 101.5 lumens/watt  
Spacing Criteria (0/90/45): 1.29 / 1.29 / 1.42  
Luminous Opening: Vertical Cylinder (Dia: 0.75m x H: 0.25m)  
CIE Type: Direct

Input Watts (W): 9.9  
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



TEST NUMBER: P588654  
CATALOG NUMBER: FM9WRCCR-4000K

### Luminous Intensity Polar Plot



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



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CATALOG NUMBER: FM9WRCCR-4000K

**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	104	98	93	89	100	95	90	86	89	85	82	83	80	77	78	76	73	78	76	73	70
2	94	85	77	70	90	82	75	69	76	71	66	72	67	63	67	63	60	67	63	60	57
3	85	74	65	58	82	71	63	56	67	60	54	63	57	52	59	54	50	59	54	50	47
4	78	65	55	48	74	63	54	47	59	52	46	55	49	44	52	47	42	52	47	42	40
5	71	58	48	41	68	56	47	40	53	45	39	50	43	38	47	41	36	47	41	36	34
6	66	52	42	36	63	50	41	35	47	40	34	45	38	33	42	36	32	42	36	32	29
7	61	47	38	31	58	45	37	31	43	35	30	41	34	29	38	33	28	38	33	28	26
8	56	43	34	28	54	41	33	27	39	32	27	37	31	26	35	29	25	35	29	25	23
9	53	39	31	25	51	38	30	25	36	29	24	34	28	23	33	27	23	33	27	23	21
10	49	36	28	22	48	35	27	22	33	26	22	32	25	21	30	25	20	30	25	20	19

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

	0°	90°	180°	270°
0°	600	600	600	600
5°	579	575	581	579
10°	558	554	561	561
15°	537	532	544	543
20°	518	513	525	525
25°	498	493	508	509
30°	479	471	490	490
35°	459	451	471	474
40°	437	444	453	456
45°	413	424	436	436
50°	393	399	412	412
55°	366	377	391	391
60°	344	356	368	368
65°	317	330	342	348
70°	296	309	322	323
75°	274	288	304	304
80°	255	267	283	288
85°	241	253	271	271



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	25.1	2.5
10°-20°	72.4	7.2
20°-30°	111.0	11.0
30°-40°	136.7	13.6
40°-50°	146.5	14.6
50°-60°	139.1	13.8
60°-70°	118.5	11.8
70°-80°	91.4	9.1
80°-90°	64.0	6.4
90°-100°	37.3	3.7
100°-110°	16.4	1.6
110°-120°	10.7	1.1
120°-130°	10.6	1.1
130°-140°	8.9	0.9
140°-150°	7.1	0.7
150°-160°	5.2	0.5
160°-170°	3.1	0.3
170°-180°	1.0	0.1
0°-30°	208.5	20.7
0°-40°	345.2	34.3
0°-60°	630.8	62.8
0°-90°	904.8	90.0
90°-120°	64.3	6.4
90°-150°	90.9	9.0
90°-180°	100.0	10.0
0°-180°	1005.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	265	265	265	265	265	
5°	264	262	265	264	264	25
15°	255	253	258	258	255	72
25°	239	236	244	244	239	110
35°	215	212	221	222	215	135
45°	184	189	194	194	184	143
55°	149	154	159	159	149	134
65°	113	118	122	124	113	113
75°	81	85	90	90	81	86
85°	54	57	61	61	54	47
90°	43	46	49	50	43	24
95°	34	33	38	37	34	26
105°	13	18	16	18	13	15
115°	7	14	7	14	7	7
125°	12	12	12	12	12	10
135°	12	12	12	11	12	9
145°	12	12	11	11	12	7
155°	11	12	11	11	11	5
165°	11	11	11	11	11	3
175°	9	9	10	9	9	1
180°	10	10	10	10	10	



TEST NUMBER: P588654

CATALOG NUMBER: FM9WRCCR-4000K

**CANDELA DISTRIBUTION (FULL):**

	0°	90°	180°	270°	360°
0°	265.1	265.1	265.1	265.1	265.1
1°	265.5	264.1	265.8	264.6	265.5
2°	265.2	263.8	265.8	264.6	265.2
3°	265.0	263.2	265.6	264.5	265.0
4°	264.6	263.1	265.3	264.3	264.6
5°	264.1	262.5	265.0	264.1	264.1
6°	263.6	261.8	264.7	264.0	263.6
7°	263.2	261.4	264.3	263.6	263.2
8°	262.3	260.4	263.7	262.9	262.3
9°	261.6	259.7	263.3	262.7	261.6
10°	261.0	258.9	262.5	262.2	261.0
11°	259.7	257.8	261.9	261.4	259.7
12°	258.8	256.6	261.2	260.6	258.8
13°	258.2	255.8	260.0	260.1	258.2
14°	256.6	254.5	259.4	258.9	256.6
15°	255.4	253.0	258.5	258.0	255.4
16°	254.3	251.8	256.7	257.1	254.3
17°	253.0	250.2	255.6	255.8	253.0
18°	251.2	248.5	254.7	254.5	251.2
19°	250.0	247.5	253.4	253.7	250.0
20°	248.4	245.7	251.8	251.8	248.4
21°	246.3	243.6	250.6	250.4	246.3
22°	243.7	242.3	248.5	249.4	243.7
23°	243.3	240.2	246.9	247.6	243.3
24°	240.9	237.9	245.7	245.8	240.9
25°	238.7	236.4	243.5	244.2	238.7
26°	237.2	234.4	242.1	242.4	237.2
27°	234.5	231.5	240.2	240.0	234.5
28°	233.5	229.8	239.0	238.4	233.5
29°	230.6	227.7	235.4	236.5	230.6
30°	228.3	224.3	233.6	233.6	228.3
31°	225.2	222.5	231.5	232.3	225.2
32°	223.4	219.9	228.6	229.8	223.4
33°	220.7	217.4	226.8	227.0	220.7
34°	217.7	215.3	224.3	225.6	217.7
35°	215.3	211.9	221.0	222.5	215.3
36°	212.7	209.2	219.1	220.0	212.7
37°	209.1	211.8	216.4	217.8	209.1
38°	207.0	208.9	214.3	214.6	207.0
39°	203.9	207.0	210.9	211.8	203.9
40°	200.7	204.0	208.0	209.5	200.7
41°	198.6	200.4	205.2	206.0	198.6
42°	194.8	197.9	202.7	203.0	194.8
43°	191.4	194.6	199.0	200.7	191.4
44°	188.8	190.9	195.9	196.9	188.8



TEST NUMBER: P588654

CATALOG NUMBER: FM9WRCCR-4000K

**CANDELA DISTRIBUTION (continued):**

	0°	90°	180°	270°	360°
45°	183.8	188.6	194.2	193.9	183.8
46°	181.2	185.1	189.4	189.7	181.2
47°	178.6	180.8	186.1	185.7	178.6
48°	174.3	178.3	183.6	183.9	174.3
49°	170.5	174.9	179.4	181.4	170.5
50°	168.0	170.5	176.1	176.2	168.0
51°	163.3	168.9	173.4	173.6	163.3
52°	159.8	164.2	169.0	170.2	159.8
53°	157.1	160.4	165.5	167.6	157.1
54°	153.4	158.0	162.7	163.2	153.4
55°	149.0	153.6	159.2	159.3	149.0
56°	146.1	149.9	154.6	156.6	146.1
57°	142.7	147.2	151.8	152.1	142.7
58°	138.2	142.8	148.4	148.5	138.2
59°	135.2	139.0	145.5	145.7	135.2
60°	131.7	136.3	141.1	141.2	131.7
61°	127.2	132.0	137.4	137.5	127.2
62°	123.5	128.3	132.9	134.7	123.5
63°	120.9	125.6	130.1	131.2	120.9
64°	116.5	122.2	126.5	126.5	116.5
65°	113.1	117.7	122.0	124.1	113.1
66°	110.4	115.0	119.3	120.4	110.4
67°	107.1	110.4	115.9	116.1	107.1
68°	102.8	107.3	112.4	113.4	102.8
69°	100.4	104.6	109.8	109.8	100.4
70°	96.9	101.2	105.4	105.8	96.9
71°	92.9	97.2	102.1	103.5	92.9
72°	90.2	94.6	99.7	99.9	90.2
73°	87.2	91.5	95.4	95.7	87.2
74°	83.3	87.4	92.1	94.1	83.3
75°	81.1	85.2	89.9	89.9	81.1
76°	78.0	82.0	86.0	86.9	78.0
77°	74.4	78.5	83.6	84.4	74.4
78°	72.5	76.3	81.4	80.7	72.5
79°	69.5	73.2	76.9	77.7	69.5
80°	66.7	69.8	74.0	75.4	66.7
81°	64.7	68.6	71.7	71.9	64.7
82°	61.5	65.0	69.1	69.1	61.5
83°	59.1	62.4	65.6	67.0	59.1
84°	57.1	61.2	63.7	63.5	57.1
85°	54.2	57.1	61.0	61.0	54.2
86°	51.8	54.8	57.9	58.9	51.8
87°	50.1	52.8	55.9	56.6	50.1
88°	47.5	50.3	53.4	53.4	47.5
89°	45.1	47.7	50.6	51.2	45.1



TEST NUMBER: P588654

CATALOG NUMBER: FM9WRCCR-4000K

**CANDELA DISTRIBUTION (continued):**

	0°	90°	180°	270°	360°
90°	42.7	46.0	48.8	49.6	42.7
91°	41.1	43.4	46.6	46.7	41.1
92°	39.2	41.2	43.8	44.5	39.2
93°	37.2	39.9	42.1	42.8	37.2
94°	36.0	36.9	40.5	40.2	36.0
95°	33.9	33.3	38.4	37.0	33.9
96°	32.6	29.3	37.1	33.2	32.6
97°	30.7	22.8	34.7	25.5	30.7
98°	28.4	15.9	33.2	19.7	28.4
99°	26.8	11.9	31.4	15.6	26.8
100°	24.7	10.1	28.9	12.1	24.7
101°	21.7	10.1	26.2	10.1	21.7
102°	19.6	11.7	24.4	10.6	19.6
103°	17.8	14.6	20.7	13.1	17.8
104°	14.9	17.4	18.4	16.5	14.9
105°	13.0	18.3	15.5	18.4	13.0
106°	11.9	17.9	13.8	19.1	11.9
107°	10.3	17.3	11.6	18.0	10.3
108°	9.1	16.8	10.4	17.7	9.1
109°	7.6	16.4	8.6	17.0	7.6
110°	6.7	15.6	7.3	16.1	6.7
111°	6.2	15.3	6.2	15.3	6.2
112°	5.9	14.9	5.8	15.0	5.9
113°	5.8	14.4	5.7	14.7	5.8
114°	6.3	14.0	6.2	14.3	6.3
115°	7.1	13.8	6.7	14.0	7.1
116°	7.9	13.7	7.5	13.5	7.9
117°	8.5	13.3	8.8	13.3	8.5
118°	9.1	13.0	9.4	12.8	9.1
119°	10.1	12.8	10.1	12.5	10.1
120°	10.4	12.6	10.6	12.5	10.4
121°	10.9	12.4	11.3	12.2	10.9
122°	11.3	12.4	11.6	12.0	11.3
123°	11.7	12.2	11.9	12.0	11.7
124°	11.9	12.1	11.9	11.7	11.9
125°	12.0	12.1	11.9	11.7	12.0
126°	12.0	12.1	12.0	11.5	12.0
127°	12.0	11.9	11.6	11.5	12.0
128°	12.0	11.9	11.7	11.5	12.0
129°	11.9	11.9	11.6	11.5	11.9
130°	11.9	11.9	11.6	11.3	11.9
131°	11.9	11.9	11.5	11.3	11.9
132°	11.9	11.7	11.7	11.3	11.9
133°	11.9	11.6	11.6	11.3	11.9
134°	11.9	11.6	11.6	11.3	11.9





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**CANDELA DISTRIBUTION (continued):**

	0°	90°	180°	270°	360°
135°	11.6	11.5	11.5	11.2	11.6
136°	11.7	11.6	11.6	11.2	11.7
137°	11.6	11.6	11.5	11.1	11.6
138°	11.6	11.6	11.5	11.1	11.6
139°	11.6	11.5	11.5	11.0	11.6
140°	11.5	11.5	11.5	11.1	11.5
141°	11.7	11.3	11.6	11.0	11.7
142°	11.5	11.5	11.5	10.7	11.5
143°	11.7	11.5	11.5	11.0	11.7
144°	11.6	11.5	11.6	10.9	11.6
145°	11.6	11.5	11.3	10.9	11.6
146°	11.5	11.5	11.3	10.7	11.5
147°	11.3	11.5	11.6	10.7	11.3
148°	11.6	11.5	11.3	10.9	11.6
149°	11.6	11.5	11.3	10.7	11.6
150°	11.6	11.5	11.3	10.9	11.6
151°	11.6	11.5	11.3	10.7	11.6
152°	11.5	11.6	11.5	10.9	11.5
153°	11.5	11.5	11.3	10.7	11.5
154°	11.3	11.3	11.5	10.7	11.3
155°	11.3	11.5	11.3	10.7	11.3
156°	11.5	11.5	11.5	10.9	11.5
157°	11.3	11.3	11.5	10.6	11.3
158°	11.3	11.3	11.5	10.9	11.3
159°	11.3	11.1	11.2	10.7	11.3
160°	11.2	11.3	11.3	10.9	11.2
161°	11.3	11.2	11.3	10.7	11.3
162°	11.3	11.1	11.2	10.7	11.3
163°	11.1	11.0	11.3	10.7	11.1
164°	11.2	11.1	11.2	10.7	11.2
165°	11.2	11.0	11.2	10.7	11.2
166°	11.1	11.0	11.0	10.9	11.1
167°	11.0	11.0	11.0	10.6	11.0
168°	11.0	10.9	11.0	10.7	11.0
169°	11.1	10.9	11.0	10.7	11.1
170°	10.9	10.7	11.0	10.6	10.9
171°	10.7	10.6	10.7	10.6	10.7
172°	10.4	10.1	10.6	10.3	10.4
173°	10.0	9.8	10.4	10.1	10.0
174°	9.5	9.2	10.1	9.8	9.5
175°	9.4	9.1	9.7	9.1	9.4
176°	9.1	8.9	9.1	8.9	9.1
177°	9.2	9.5	8.5	8.9	9.2
178°	10.0	10.3	8.8	8.9	10.0
179°	10.1	10.1	10.1	9.1	10.1



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**CANDELA DISTRIBUTION (continued):**

	0°	90°	180°	270°	360°
180°	10.1	10.1	10.1	10.1	10.1

(END OF REPORT)