

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: P588636

Luminaire Tested: **FM11WRCCR-4000K**

Issue Date: 12/1/2021

Test Information

Test Method: LM-79-08
Report Number: P588636
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (MXL1053-11A)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 12/1/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: FM11WRCCR-4000K
Description: FM WR CCT SELECT
Light Source: (1) 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

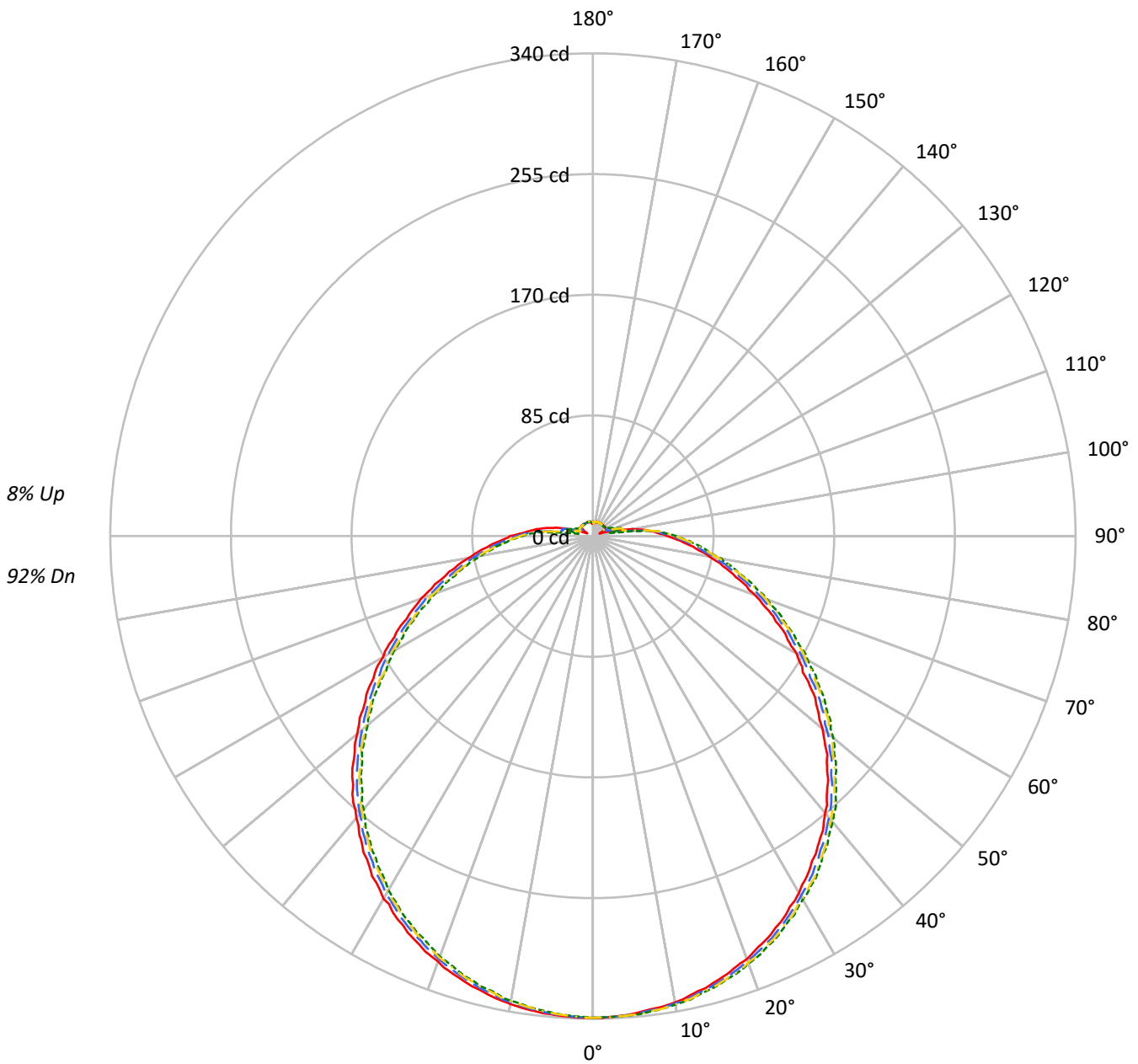
Lumens per Lamp: N/A
Luminaire Lumens: 1225.0 lumens
Efficiency: N/A
Efficacy: 102.1 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.28 / 1.4
Luminous Opening: Vertical Cylinder (Dia: 0.92m x H: 0.25m)
CIE Type: Direct

Input Watts (W): 12
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: P588636
CATALOG NUMBER: FM11WRCCR-4000K

Luminous Intensity Polar Plot



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



TEST NUMBER: P588636

CATALOG NUMBER: FM11WRCCR-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	100	100	100	94	94	94	94	94	94	92
1	105	99	94	89	101	96	91	87	90	86	83	85	81	79	80	77	75	80	77	75	72
2	94	85	77	71	91	82	75	70	77	72	67	73	68	64	69	65	61	69	65	61	58
3	86	74	65	58	82	72	64	57	68	61	55	64	58	53	60	55	51	60	55	51	48
4	78	65	56	49	75	63	55	48	60	52	47	56	50	45	53	48	43	53	48	43	41
5	72	58	49	42	69	57	48	41	53	46	40	51	44	39	48	42	38	48	42	38	35
6	66	52	43	36	64	51	42	36	48	40	35	46	39	34	43	37	33	43	37	33	31
7	61	47	38	32	59	46	37	31	44	36	31	42	35	30	39	34	29	39	34	29	27
8	57	43	34	28	55	42	34	28	40	33	27	38	31	27	36	30	26	36	30	26	24
9	53	39	31	25	51	38	31	25	37	30	24	35	29	24	33	28	23	33	28	23	21
10	50	36	28	23	48	35	28	23	34	27	22	32	26	22	31	25	21	31	25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	514	514	514	514
5°	498	500	499	497
10°	484	486	485	482
15°	468	473	471	466
20°	454	459	457	451
25°	438	446	444	435
30°	423	431	430	420
35°	407	417	413	403
40°	390	403	397	385
45°	371	384	381	366
50°	352	369	361	346
55°	331	351	344	325
60°	314	330	323	307
65°	292	312	307	284
70°	276	297	292	268
75°	259	279	274	250
80°	245	270	261	235
85°	234	261	253	224



TEST NUMBER: P588636
 CATALOG NUMBER: FM11WRCCR-4000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.1	2.6
10°-20°	92.4	7.5
20°-30°	141.2	11.5
30°-40°	172.4	14.1
40°-50°	182.5	14.9
50°-60°	171.0	14.0
60°-70°	144.6	11.8
70°-80°	110.6	9.0
80°-90°	76.0	6.2
90°-100°	41.6	3.4
100°-110°	18.4	1.5
110°-120°	9.8	0.8
120°-130°	9.2	0.8
130°-140°	8.0	0.7
140°-150°	6.5	0.5
150°-160°	4.8	0.4
160°-170°	3.0	0.2
170°-180°	0.9	0.1
0°-30°	265.6	21.7
0°-40°	438.1	35.8
0°-60°	791.5	64.6
0°-90°	1122.7	91.6
90°-120°	69.9	5.7
90°-150°	93.6	7.6
90°-180°	102.0	8.3
0°-180°	1225.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	339	339	339	339	339	
5°	338	338	338	337	338	32
15°	326	329	328	325	326	92
25°	304	310	308	302	304	140
35°	274	280	278	271	274	171
45°	233	242	240	230	233	180
55°	188	199	195	184	188	168
65°	142	152	149	138	142	142
75°	102	110	108	98	102	108
85°	67	75	72	64	67	58
90°	53	59	58	50	53	29
95°	40	41	44	30	40	31
105°	14	21	20	19	14	16
115°	7	13	5	13	7	7
125°	11	11	10	10	11	10
135°	10	10	10	10	10	8
145°	10	10	10	10	10	7
155°	10	11	10	10	10	5
165°	10	10	10	10	10	3
175°	9	9	9	9	9	1
180°	10	10	10	10	10	



TEST NUMBER: P588636

CATALOG NUMBER: FM11WRCCR-4000K

CANDELA DISTRIBUTION (FULL):

	0°	90°	180°	270°	360°
0°	339.3	339.3	339.3	339.3	339.3
1°	339.6	338.9	339.4	338.7	339.6
2°	339.0	339.0	339.3	338.5	339.0
3°	338.6	338.9	338.9	338.0	338.6
4°	338.2	338.6	338.6	337.6	338.2
5°	337.6	338.5	338.2	336.8	337.6
6°	336.6	338.2	337.9	336.0	336.6
7°	335.8	337.2	337.1	335.4	335.8
8°	335.4	336.8	336.5	334.3	335.4
9°	334.5	336.0	335.7	333.1	334.5
10°	333.5	335.1	334.6	332.4	333.5
11°	332.4	334.2	333.6	331.3	332.4
12°	330.6	333.5	332.6	329.0	330.6
13°	329.0	331.6	331.0	327.7	329.0
14°	328.1	330.3	329.5	326.7	328.1
15°	326.1	329.3	328.4	324.6	326.1
16°	324.5	327.7	326.6	323.2	324.5
17°	322.8	325.8	324.9	321.3	322.8
18°	320.5	324.7	323.2	318.8	320.5
19°	318.5	322.9	321.6	316.9	318.5
20°	317.1	320.5	318.9	315.1	317.1
21°	314.4	318.9	317.3	312.4	314.4
22°	311.8	316.9	315.5	309.8	311.8
23°	309.9	314.1	312.6	307.2	309.9
24°	307.6	312.4	310.5	305.4	307.6
25°	304.3	309.8	308.3	302.2	304.3
26°	302.3	306.9	305.0	300.0	302.3
27°	299.4	304.1	303.0	297.3	299.4
28°	295.6	302.2	300.1	293.5	295.6
29°	293.5	298.5	296.4	291.0	293.5
30°	290.3	295.6	295.0	288.0	290.3
31°	286.3	293.5	291.0	283.7	286.3
32°	283.7	290.2	288.0	280.3	283.7
33°	280.3	288.0	285.7	277.7	280.3
34°	276.1	283.9	281.2	273.5	276.1
35°	273.5	280.5	277.7	270.8	273.5
36°	269.7	276.1	275.2	266.8	269.7
37°	266.1	274.1	270.6	263.2	266.1
38°	263.2	269.4	267.1	260.1	263.2
39°	258.6	265.9	262.4	255.2	258.6
40°	254.5	262.9	259.2	251.3	254.5
41°	251.3	258.9	255.2	248.2	251.3
42°	246.2	256.0	252.4	242.8	246.2
43°	242.1	250.7	248.4	238.9	242.1
44°	238.7	246.7	243.0	235.5	238.7



TEST NUMBER: P588636

CATALOG NUMBER: FM11WRCCR-4000K

CANDELA DISTRIBUTION (continued):

	0°	90°	180°	270°	360°
45°	233.3	241.5	239.8	230.2	233.3
46°	229.0	238.3	235.5	225.7	229.0
47°	225.7	234.0	230.1	222.5	225.7
48°	220.1	228.7	225.7	216.8	220.1
49°	215.6	225.5	222.1	212.0	215.6
50°	211.2	221.0	216.7	207.2	211.2
51°	205.3	215.4	212.1	203.7	205.3
52°	201.7	213.0	208.5	198.0	201.7
53°	197.0	207.0	202.7	194.5	197.0
54°	193.6	202.6	198.3	189.8	193.6
55°	187.6	199.0	194.7	184.0	187.6
56°	182.9	193.3	190.3	179.5	182.9
57°	176.3	188.6	184.3	173.5	176.3
58°	173.8	185.1	181.1	170.2	173.8
59°	169.2	179.2	176.6	165.6	169.2
60°	165.8	174.6	170.6	162.0	165.8
61°	159.8	171.2	167.4	156.4	159.8
62°	155.5	165.4	162.7	151.8	155.5
63°	152.3	160.9	156.9	148.5	152.3
64°	147.9	157.3	153.9	143.9	147.9
65°	142.2	151.8	149.3	138.4	142.2
66°	139.1	147.2	143.8	135.3	139.1
67°	134.6	144.1	140.6	130.8	134.6
68°	129.3	139.6	136.2	125.5	129.3
69°	126.1	134.3	132.0	122.4	126.1
70°	121.6	130.9	128.8	118.2	121.6
71°	116.5	127.0	123.7	113.2	116.5
72°	113.7	121.5	119.5	110.0	113.7
73°	109.5	118.4	116.4	105.8	109.5
74°	104.7	114.3	111.1	101.0	104.7
75°	101.7	109.5	107.5	98.2	101.7
76°	98.0	105.2	104.5	94.4	98.0
77°	94.1	102.4	99.7	90.9	94.1
78°	91.3	98.7	96.8	88.3	91.3
79°	86.8	93.9	93.1	83.6	86.8
80°	83.3	92.0	88.8	80.0	83.3
81°	80.8	86.9	85.2	77.8	80.8
82°	76.4	83.0	82.3	73.3	76.4
83°	73.2	80.5	79.0	70.1	73.2
84°	70.9	77.9	74.7	68.0	70.9
85°	67.0	74.7	72.2	64.1	67.0
86°	63.9	70.6	69.2	60.9	63.9
87°	61.4	68.3	65.3	58.7	61.4
88°	58.0	64.1	62.8	55.8	58.0
89°	55.1	61.0	59.9	52.3	55.1



TEST NUMBER: P588636

CATALOG NUMBER: FM11WRCCR-4000K

CANDELA DISTRIBUTION (continued):

	0°	90°	180°	270°	360°
90°	52.6	58.8	58.4	49.7	52.6
91°	50.5	55.8	54.1	47.7	50.5
92°	47.4	52.2	51.3	44.7	47.4
93°	45.1	49.7	48.2	41.6	45.1
94°	43.3	47.4	46.4	37.8	43.3
95°	40.4	41.1	44.0	29.6	40.4
96°	38.7	33.5	41.9	24.2	38.7
97°	36.3	27.8	40.1	18.0	36.3
98°	33.1	19.5	37.4	12.2	33.1
99°	30.5	14.9	35.0	10.5	30.5
100°	28.2	12.6	33.2	10.2	28.2
101°	24.6	11.9	30.5	12.9	24.6
102°	21.6	14.4	27.9	14.9	21.6
103°	19.7	16.6	26.3	18.3	19.7
104°	16.7	19.8	22.7	19.4	16.7
105°	13.6	20.9	20.5	18.6	13.6
106°	11.9	20.5	18.4	17.7	11.9
107°	9.9	19.4	15.4	17.0	9.9
108°	7.9	18.1	13.3	16.3	7.9
109°	6.9	17.8	11.9	15.5	6.9
110°	5.8	16.7	9.9	15.1	5.8
111°	5.0	15.9	7.8	14.4	5.0
112°	5.0	15.4	6.9	13.8	5.0
113°	5.5	14.8	5.7	13.4	5.5
114°	6.4	14.1	4.7	13.1	6.4
115°	6.9	13.4	4.6	12.9	6.9
116°	7.8	13.1	4.3	12.3	7.8
117°	8.6	12.6	5.0	11.8	8.6
118°	9.1	12.3	5.4	11.6	9.1
119°	9.9	12.0	5.8	11.3	9.9
120°	10.4	11.5	6.9	11.1	10.4
121°	10.5	11.5	7.5	10.9	10.5
122°	10.7	11.1	8.0	10.8	10.7
123°	10.8	10.9	8.0	10.4	10.8
124°	10.7	10.8	9.1	10.5	10.7
125°	10.7	10.7	9.6	10.4	10.7
126°	10.7	10.4	10.1	10.5	10.7
127°	10.5	10.4	10.5	10.5	10.5
128°	10.5	10.4	10.7	10.2	10.5
129°	10.5	10.4	10.7	10.4	10.5
130°	10.5	10.2	10.7	10.4	10.5
131°	10.7	10.1	10.7	10.2	10.7
132°	10.5	10.2	10.7	10.5	10.5
133°	10.4	10.4	10.5	10.4	10.4
134°	10.2	10.4	10.7	10.1	10.2



TEST NUMBER: P588636

CATALOG NUMBER: FM11WRCCR-4000K

CANDELA DISTRIBUTION (continued):

	0°	90°	180°	270°	360°
135°	10.5	10.2	10.5	10.1	10.5
136°	10.4	10.1	10.5	10.4	10.4
137°	10.4	10.2	10.5	10.2	10.4
138°	10.5	10.2	10.4	10.1	10.5
139°	10.4	10.1	10.5	10.1	10.4
140°	10.4	10.1	10.7	10.2	10.4
141°	10.4	10.2	10.7	10.2	10.4
142°	10.4	9.9	10.4	10.1	10.4
143°	10.1	10.1	10.5	10.2	10.1
144°	10.4	10.2	10.7	10.2	10.4
145°	10.2	10.4	10.4	10.2	10.2
146°	10.4	10.4	10.5	10.2	10.4
147°	10.5	10.2	10.4	10.2	10.5
148°	10.5	10.4	10.5	10.1	10.5
149°	10.5	10.5	10.2	10.4	10.5
150°	10.4	10.5	10.4	10.2	10.4
151°	10.5	10.2	10.4	10.1	10.5
152°	10.4	10.5	10.2	10.1	10.4
153°	10.5	10.4	10.4	10.1	10.5
154°	10.5	10.5	10.5	10.2	10.5
155°	10.4	10.7	10.5	10.2	10.4
156°	10.2	10.7	10.4	10.4	10.2
157°	10.4	10.2	10.4	10.4	10.4
158°	10.5	10.5	10.5	10.5	10.5
159°	10.2	10.5	10.2	10.4	10.2
160°	10.4	10.5	10.4	10.4	10.4
161°	10.2	10.7	10.4	10.5	10.2
162°	10.2	10.5	10.2	10.7	10.2
163°	10.4	10.7	10.2	10.7	10.4
164°	10.5	10.7	10.2	10.5	10.5
165°	10.5	10.5	10.1	10.5	10.5
166°	10.7	10.7	9.9	10.5	10.7
167°	10.4	10.5	10.1	10.5	10.4
168°	10.2	10.7	10.1	10.5	10.2
169°	9.8	10.7	10.5	10.4	9.8
170°	9.9	10.4	10.5	9.8	9.9
171°	9.6	10.2	9.9	9.8	9.6
172°	9.3	10.1	9.9	9.4	9.3
173°	9.1	9.8	9.9	9.1	9.1
174°	8.9	9.4	9.3	8.9	8.9
175°	8.7	9.1	9.3	8.7	8.7
176°	9.4	9.1	9.0	9.0	9.4
177°	10.1	9.0	8.6	10.1	10.1
178°	10.2	10.1	9.1	10.2	10.2
179°	10.4	10.2	9.9	10.2	10.4



TEST NUMBER: P588636

CATALOG NUMBER: FM11WRCCR-4000K

CANDELA DISTRIBUTION (continued):

	0°	90°	180°	270°	360°
180°	10.2	10.2	10.2	10.2	10.2

(END OF REPORT)