

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: FAIL-SAFE

Report Number: P545984

Luminaire Tested: **FMR-12-4-LD4-1LO-50-UNV-81-85-EDD**

Issue Date: 6/15/2021

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



**Test Information**

Test Method: LM-79-08  
Report Number: P545984  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 6/15/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FMR-12-4-LD4-1LO-50-UNV-81-85-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

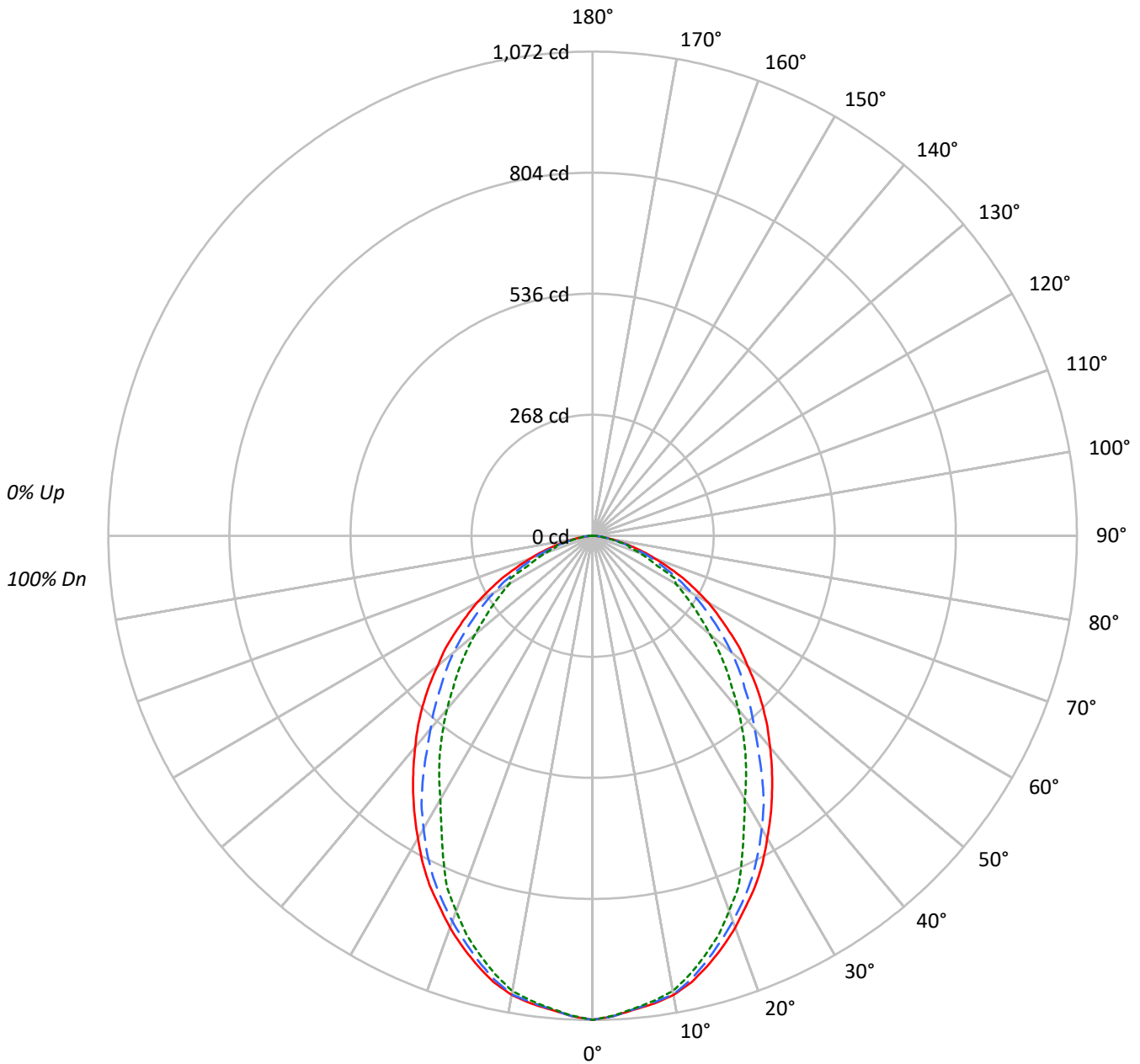
Lumens per Lamp: N/A  
Luminaire Lumens: 2104.0 lumens  
Efficiency: N/A  
Efficacy: 89.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 23.4  
Input Voltage (V): NR  
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									
RC	80									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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																			

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

	0°	45°	90°
0°	2884	2884	2884
5°	2845	2841	2838
10°	2820	2817	2796
15°	2744	2717	2679
20°	2643	2601	2530
25°	2535	2480	2325
30°	2402	2325	2094
35°	2275	2149	1938
40°	2146	1959	1763
45°	2023	1811	1594
50°	1873	1680	1421
55°	1732	1523	1273
60°	1587	1361	1140
65°	1396	1191	1010
70°	1150	1043	858
75°	915	799	837
80°	614	576	538
85°	383	460	534



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	99.8	4.7
10°-20°	273.8	13.0
20°-30°	379.1	18.0
30°-40°	404.2	19.2
40°-50°	368.7	17.5
50°-60°	288.9	13.7
60°-70°	188.3	8.9
70°-80°	83.4	4.0
80°-90°	17.9	0.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	752.6	35.8
0°-40°	1156.8	55.0
0°-60°	1814.4	86.2
0°-90°	2104.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2104.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1072	1072	1072	1072	1072	
5°	1053	1052	1052	1051	1051	100
15°	985	985	975	965	962	277
25°	854	849	835	805	783	392
35°	693	688	654	605	590	433
45°	532	520	476	436	419	409
55°	369	358	325	286	271	331
65°	219	207	187	191	159	216
75°	88	82	77	73	80	94
85°	12	14	15	16	17	17
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1071.7	1071.7	1071.7	1071.7	1071.7
2.5°	1064.3	1064.3	1064.3	1063.1	1063.1
5°	1053.2	1051.9	1051.9	1050.7	1050.7
7.5°	1044.5	1043.3	1042.0	1040.8	1038.3
10°	1032.1	1032.1	1030.9	1024.7	1023.4
12.5°	1012.3	1011.0	1006.1	997.4	994.9
15°	985.0	985.0	975.1	965.2	961.5
17.5°	955.3	954.0	941.7	931.7	926.8
20°	923.1	920.6	908.2	892.1	883.4
22.5°	887.1	887.1	872.3	851.2	842.5
25°	853.7	848.7	835.1	805.4	783.1
27.5°	815.3	807.8	793.0	750.8	724.8
30°	773.1	769.4	748.4	693.8	674.0
32.5°	733.5	727.3	705.0	648.0	631.9
35°	692.6	687.7	654.2	604.6	589.8
37.5°	651.7	645.5	603.4	563.8	545.2
40°	610.8	603.4	557.6	521.6	501.8
42.5°	572.4	562.5	517.9	479.5	457.2
45°	531.5	520.4	475.8	436.1	418.8
47.5°	490.7	480.7	439.9	399.0	379.1
50°	447.3	438.6	401.4	360.6	339.5
52.5°	411.4	397.7	361.8	320.9	303.6
55°	369.2	358.1	324.6	286.2	271.3
57.5°	330.8	319.7	288.7	252.8	240.4
60°	294.9	278.8	252.8	221.8	211.9
62.5°	255.2	242.8	220.5	194.5	206.9
65°	219.3	206.9	187.1	190.8	158.6
67.5°	179.7	173.5	156.1	138.8	133.8
70°	146.2	138.8	132.6	114.0	109.0
72.5°	116.5	109.0	100.4	90.4	86.7
75°	88.0	81.8	76.8	73.1	80.5
77.5°	60.7	58.2	54.5	50.8	49.6
80°	39.6	38.4	37.2	35.9	34.7
82.5°	23.5	23.5	23.5	23.5	23.5
85°	12.4	13.6	14.9	16.1	17.3
87.5°	7.4	7.4	8.7	9.9	11.2
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By 670246072 / DESKTOP-MV3F9LC







— 0°-180°    - - 45°-225°    - - - - 90°-270°







(END OF REPORT)