

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: P546179

Luminaire Tested: **FMR-12-4-LD4-2HI-50-UNV-81-88-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: P546179  
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-LD4-2HI-50-UNV-81-88-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

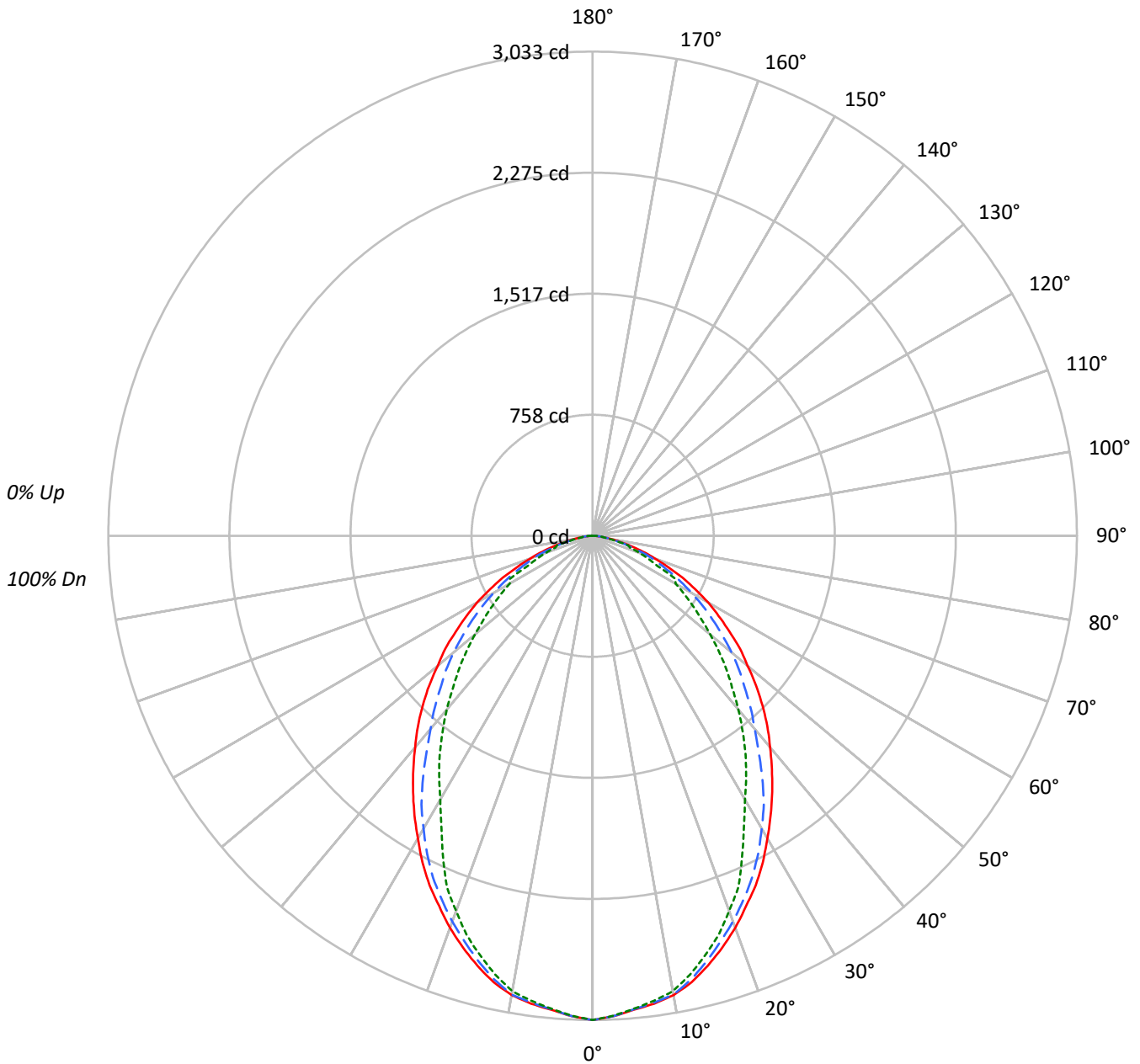
Lumens per Lamp: N/A  
Luminaire Lumens: 5955.0 lumens  
Efficiency: N/A  
Efficacy: 68.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
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°	8163	8163	8163
5°	8052	8042	8033
10°	7982	7973	7915
15°	7767	7689	7581
20°	7482	7361	7160
25°	7174	7018	6581
30°	6800	6582	5928
35°	6440	6083	5483
40°	6073	5544	4989
45°	5725	5125	4511
50°	5300	4757	4023
55°	4903	4311	3603
60°	4492	3850	3228
65°	3952	3372	2858
70°	3256	2952	2428
75°	2589	2260	2370
80°	1739	1630	1522
85°	1084	1300	1516



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	282.4	4.7
10°-20°	774.9	13.0
20°-30°	1072.8	18.0
30°-40°	1144.0	19.2
40°-50°	1043.6	17.5
50°-60°	817.6	13.7
60°-70°	532.9	8.9
70°-80°	236.1	4.0
80°-90°	50.7	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°	2130.2	35.8
0°-40°	3274.1	55.0
0°-60°	5135.4	86.2
0°-90°	5955.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5955.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3033	3033	3033	3033	3033	
5°	2981	2977	2977	2974	2974	283
15°	2788	2788	2760	2732	2721	784
25°	2416	2402	2364	2279	2216	1109
35°	1960	1946	1852	1711	1669	1226
45°	1504	1473	1347	1234	1185	1159
55°	1045	1014	919	810	768	937
65°	621	586	530	540	449	612
75°	249	231	217	207	228	267
85°	35	39	42	46	49	49
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3033.4	3033.4	3033.4	3033.4	3033.4
2.5°	3012.4	3012.4	3012.4	3008.8	3008.8
5°	2980.8	2977.3	2977.3	2973.8	2973.8
7.5°	2956.2	2952.7	2949.2	2945.7	2938.7
10°	2921.2	2921.2	2917.7	2900.1	2896.6
12.5°	2865.1	2861.6	2847.5	2823.0	2816.0
15°	2787.9	2787.9	2759.9	2731.8	2721.3
17.5°	2703.8	2700.2	2665.2	2637.1	2623.1
20°	2612.6	2605.6	2570.5	2524.9	2500.4
22.5°	2510.9	2510.9	2468.8	2409.2	2384.6
25°	2416.2	2402.2	2363.6	2279.4	2216.3
27.5°	2307.5	2286.4	2244.4	2125.1	2051.5
30°	2188.3	2177.7	2118.1	1963.8	1907.7
32.5°	2076.0	2058.5	1995.4	1834.1	1788.5
35°	1960.3	1946.3	1851.6	1711.3	1669.2
37.5°	1844.6	1827.1	1707.8	1595.6	1543.0
40°	1728.9	1707.8	1578.1	1476.4	1420.3
42.5°	1620.1	1592.1	1465.8	1357.1	1294.0
45°	1504.4	1472.9	1346.6	1234.4	1185.3
47.5°	1388.7	1360.6	1244.9	1129.2	1073.1
50°	1266.0	1241.4	1136.2	1020.5	960.9
52.5°	1164.3	1125.7	1024.0	908.3	859.2
55°	1045.0	1013.5	918.8	810.1	768.0
57.5°	936.3	904.8	817.1	715.4	680.3
60°	834.6	789.0	715.4	627.7	599.7
62.5°	722.4	687.3	624.2	550.6	585.6
65°	620.7	585.6	529.5	540.0	448.9
67.5°	508.5	491.0	441.9	392.8	378.7
70°	413.8	392.8	375.2	322.6	308.6
72.5°	329.6	308.6	284.1	256.0	245.5
75°	249.0	231.4	217.4	206.9	227.9
77.5°	171.8	164.8	154.3	143.8	140.3
80°	112.2	108.7	105.2	101.7	98.2
82.5°	66.6	66.6	66.6	66.6	66.6
85°	35.1	38.6	42.1	45.6	49.1
87.5°	21.0	21.0	24.5	28.1	31.6
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)