

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: P547111

Luminaire Tested: **FMR-24-4-LD4-3LO-40-UNV-82-84-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: P547111  
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-24-4-LD4-3LO-40-UNV-82-84-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

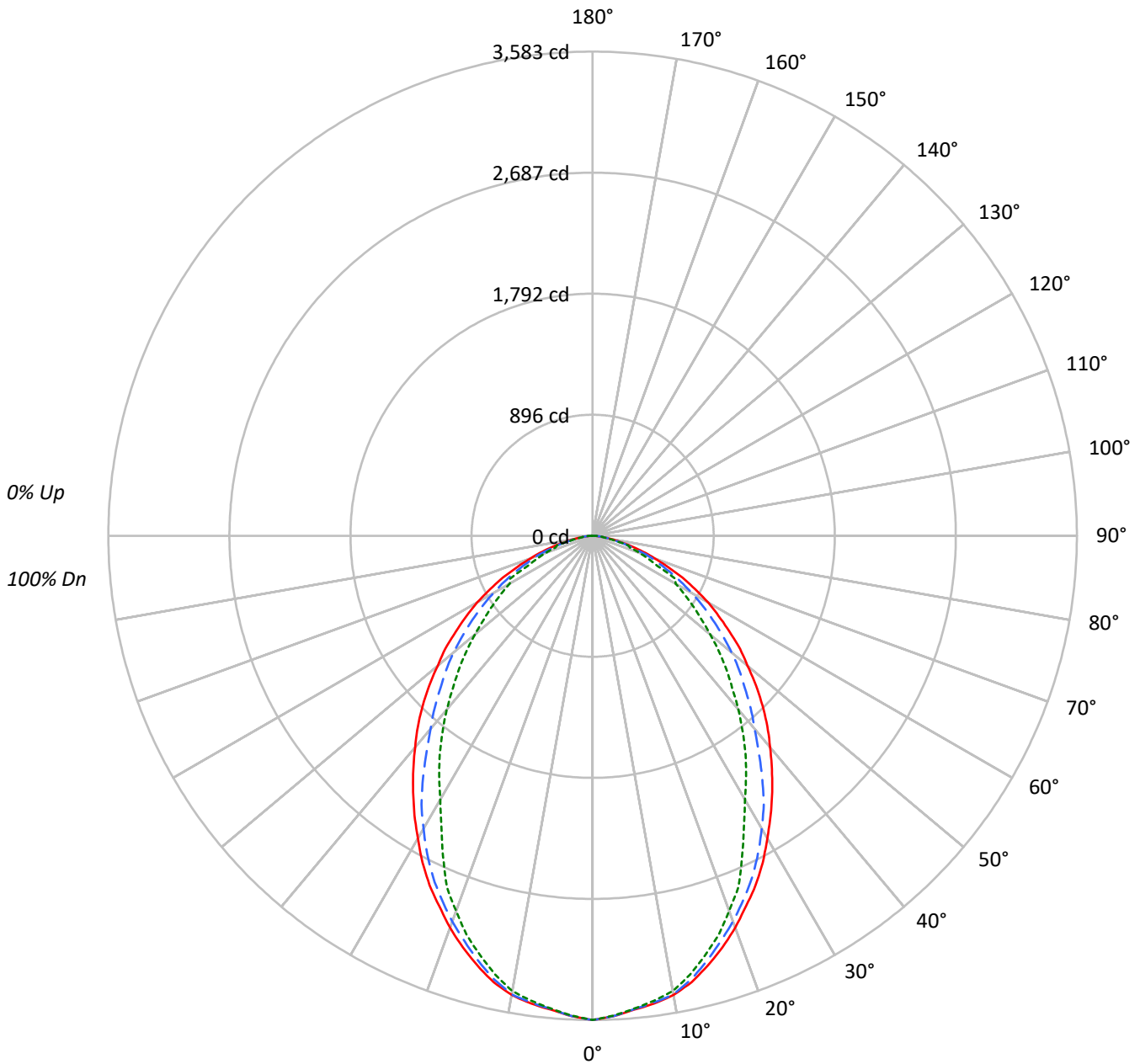
Lumens per Lamp: N/A  
Luminaire Lumens: 7034.0 lumens  
Efficiency: N/A  
Efficacy: 100.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 70.2  
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°	4821	4821	4821
5°	4755	4750	4744
10°	4714	4708	4675
15°	4587	4541	4478
20°	4419	4347	4229
25°	4237	4145	3886
30°	4016	3887	3501
35°	3803	3592	3239
40°	3587	3274	2947
45°	3381	3027	2664
50°	3130	2809	2376
55°	2896	2546	2128
60°	2653	2274	1906
65°	2334	1991	1688
70°	1923	1744	1434
75°	1529	1335	1399
80°	1027	963	899
85°	639	767	895



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	333.5	4.7
10°-20°	915.4	13.0
20°-30°	1267.2	18.0
30°-40°	1351.2	19.2
40°-50°	1232.7	17.5
50°-60°	965.7	13.7
60°-70°	629.4	8.9
70°-80°	278.9	4.0
80°-90°	59.9	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°	2516.1	35.8
0°-40°	3867.4	55.0
0°-60°	6065.8	86.2
0°-90°	7034.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7034.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3583	3583	3583	3583	3583	
5°	3521	3517	3517	3513	3513	334
15°	3293	3293	3260	3227	3214	926
25°	2854	2837	2792	2692	2618	1310
35°	2316	2299	2187	2021	1972	1448
45°	1777	1740	1591	1458	1400	1369
55°	1234	1197	1085	957	907	1107
65°	733	692	626	638	530	723
75°	294	273	257	244	269	315
85°	41	46	50	54	58	57
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3583.0	3583.0	3583.0	3583.0	3583.0
2.5°	3558.2	3558.2	3558.2	3554.0	3554.0
5°	3520.9	3516.8	3516.8	3512.6	3512.6
7.5°	3491.9	3487.8	3483.6	3479.5	3471.2
10°	3450.5	3450.5	3446.3	3425.6	3421.5
12.5°	3384.2	3380.1	3363.5	3334.5	3326.2
15°	3293.1	3293.1	3259.9	3226.8	3214.4
17.5°	3193.7	3189.5	3148.1	3115.0	3098.4
20°	3086.0	3077.7	3036.3	2982.4	2953.4
22.5°	2965.8	2965.8	2916.1	2845.7	2816.7
25°	2854.0	2837.4	2791.9	2692.4	2617.9
27.5°	2725.6	2700.7	2651.0	2510.2	2423.2
30°	2584.7	2572.3	2501.9	2319.6	2253.4
32.5°	2452.2	2431.5	2356.9	2166.4	2112.5
35°	2315.5	2298.9	2187.1	2021.4	1971.7
37.5°	2178.8	2158.1	2017.3	1884.7	1822.6
40°	2042.1	2017.3	1864.0	1743.9	1677.6
42.5°	1913.7	1880.6	1731.5	1603.0	1528.5
45°	1777.0	1739.7	1590.6	1458.1	1400.1
47.5°	1640.3	1607.2	1470.5	1333.8	1267.5
50°	1495.3	1466.3	1342.1	1205.4	1135.0
52.5°	1375.2	1329.7	1209.5	1072.8	1014.8
55°	1234.4	1197.1	1085.3	956.9	907.1
57.5°	1106.0	1068.7	965.1	845.0	803.6
60°	985.8	932.0	845.0	741.5	708.3
62.5°	853.3	811.9	737.3	650.3	691.8
65°	733.2	691.8	625.5	637.9	530.2
67.5°	600.6	579.9	521.9	463.9	447.4
70°	488.8	463.9	443.2	381.1	364.5
72.5°	389.4	364.5	335.5	302.4	290.0
75°	294.1	273.4	256.8	244.4	269.2
77.5°	203.0	194.7	182.3	169.8	165.7
80°	132.6	128.4	124.3	120.1	116.0
82.5°	78.7	78.7	78.7	78.7	78.7
85°	41.4	45.6	49.7	53.8	58.0
87.5°	24.9	24.9	29.0	33.1	37.3
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)