

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: P547537

Luminaire Tested: **FMR-24-4-LD4-4STD-50-UNV-93-86-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: P547537  
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-LD4-4STD-50-UNV-93-86-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

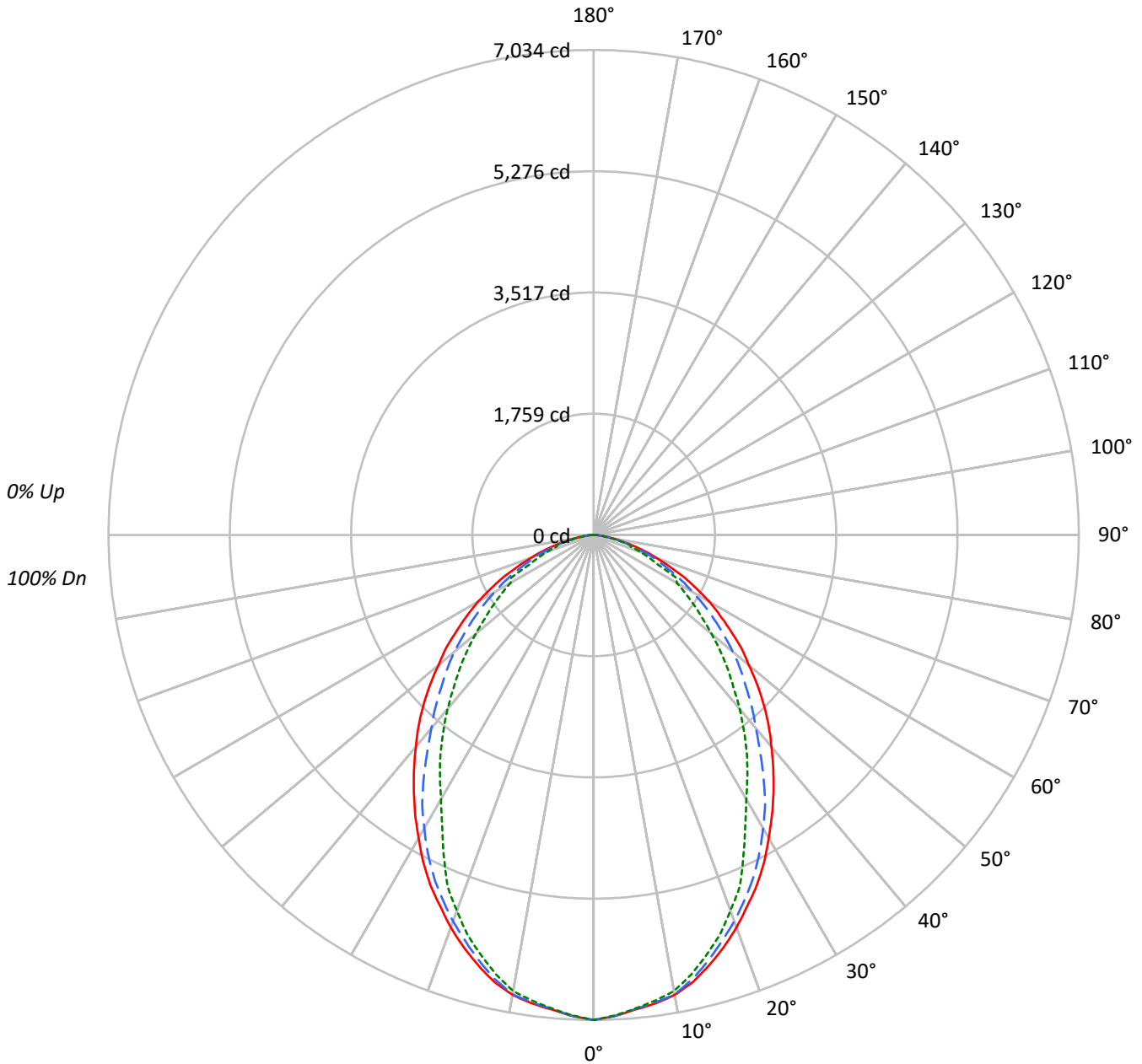
Lumens per Lamp: N/A  
Luminaire Lumens: 13809.0 lumens  
Efficiency: N/A  
Efficacy: 103.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 133.2  
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°	9464	9464	9464
5°	9336	9325	9314
10°	9255	9244	9177
15°	9005	8915	8790
20°	8675	8535	8302
25°	8318	8137	7630
30°	7884	7631	6873
35°	7466	7053	6358
40°	7041	6427	5785
45°	6638	5942	5230
50°	6145	5515	4664
55°	5685	4998	4178
60°	5208	4464	3742
65°	4583	3909	3314
70°	3775	3423	2815
75°	3002	2621	2748
80°	2016	1891	1764
85°	1255	1507	1757



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	654.8	4.7
10°-20°	1797.0	13.0
20°-30°	2487.8	18.0
30°-40°	2652.7	19.2
40°-50°	2420.1	17.5
50°-60°	1895.9	13.7
60°-70°	1235.7	8.9
70°-80°	547.5	4.0
80°-90°	117.5	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°	4939.6	35.8
0°-40°	7592.3	55.0
0°-60°	11908.3	86.2
0°-90°	13809.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13809.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7034	7034	7034	7034	7034	
5°	6912	6904	6904	6896	6896	656
15°	6465	6465	6400	6335	6310	1817
25°	5603	5570	5481	5286	5139	2572
35°	4546	4513	4294	3968	3871	2842
45°	3489	3415	3123	2862	2749	2687
55°	2423	2350	2131	1878	1781	2174
65°	1439	1358	1228	1252	1041	1418
75°	577	537	504	480	529	619
85°	81	90	98	106	114	113
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7034.1	7034.1	7034.1	7034.1	7034.1
2.5°	6985.3	6985.3	6985.3	6977.2	6977.2
5°	6912.1	6904.0	6904.0	6895.9	6895.9
7.5°	6855.2	6847.1	6839.0	6830.8	6814.6
10°	6773.9	6773.9	6765.8	6725.1	6717.0
12.5°	6643.8	6635.7	6603.1	6546.2	6529.9
15°	6464.9	6464.9	6399.8	6334.8	6310.4
17.5°	6269.7	6261.6	6180.3	6115.2	6082.7
20°	6058.3	6042.0	5960.7	5855.0	5798.1
22.5°	5822.5	5822.5	5724.9	5586.6	5529.7
25°	5602.9	5570.4	5480.9	5285.8	5139.4
27.5°	5350.8	5302.0	5204.4	4928.0	4757.2
30°	5074.3	5049.9	4911.7	4553.9	4423.8
32.5°	4814.1	4773.4	4627.1	4253.0	4147.3
35°	4545.7	4513.2	4293.7	3968.4	3870.8
37.5°	4277.4	4236.7	3960.3	3700.0	3578.0
40°	4009.0	3960.3	3659.4	3423.5	3293.4
42.5°	3757.0	3691.9	3399.1	3147.1	3000.7
45°	3488.6	3415.4	3122.7	2862.4	2748.6
47.5°	3220.2	3155.2	2886.8	2618.5	2488.4
50°	2935.6	2878.7	2634.7	2366.4	2228.1
52.5°	2699.8	2610.3	2374.5	2106.2	1992.3
55°	2423.3	2350.1	2130.6	1878.5	1780.9
57.5°	2171.2	2098.0	1894.7	1658.9	1577.6
60°	1935.4	1829.7	1658.9	1455.6	1390.6
62.5°	1675.2	1593.9	1447.5	1276.7	1358.0
65°	1439.4	1358.0	1227.9	1252.3	1040.9
67.5°	1179.1	1138.5	1024.6	910.8	878.2
70°	959.6	910.8	870.1	748.1	715.6
72.5°	764.4	715.6	658.7	593.6	569.2
75°	577.4	536.7	504.2	479.8	528.6
77.5°	398.5	382.2	357.8	333.4	325.3
80°	260.2	252.1	244.0	235.8	227.7
82.5°	154.5	154.5	154.5	154.5	154.5
85°	81.3	89.5	97.6	105.7	113.8
87.5°	48.8	48.8	56.9	65.1	73.2
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)