

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: P547087

Luminaire Tested: **FMR-24-4-LD4-3LO-35-UNV-93-84-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: P547087  
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-35-UNV-93-84-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

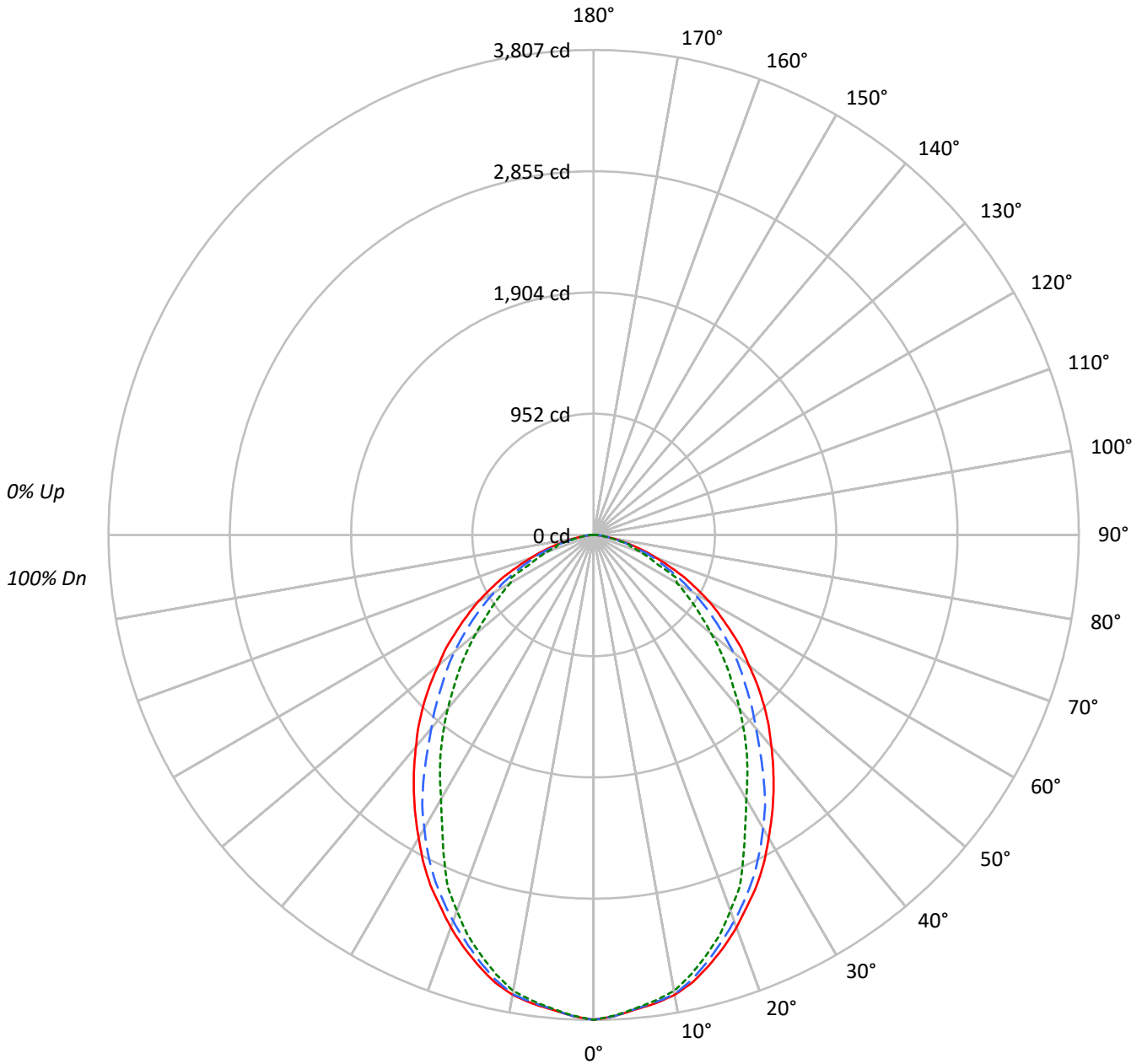
Lumens per Lamp: N/A  
Luminaire Lumens: 7473.0 lumens  
Efficiency: N/A  
Efficacy: 106.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	5122	5122	5122
5°	5052	5046	5040
10°	5008	5002	4966
15°	4873	4824	4757
20°	4694	4619	4493
25°	4501	4403	4129
30°	4266	4130	3719
35°	4041	3817	3441
40°	3811	3478	3130
45°	3592	3216	2830
50°	3325	2984	2524
55°	3076	2705	2261
60°	2819	2416	2025
65°	2480	2116	1793
70°	2043	1852	1524
75°	1625	1418	1487
80°	1091	1023	955
85°	679	815	951



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	354.3	4.7
10°-20°	972.5	13.0
20°-30°	1346.3	18.0
30°-40°	1435.6	19.2
40°-50°	1309.7	17.5
50°-60°	1026.0	13.7
60°-70°	668.7	8.9
70°-80°	296.3	4.0
80°-90°	63.6	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°	2673.2	35.8
0°-40°	4108.7	55.0
0°-60°	6444.4	86.2
0°-90°	7473.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7473.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3807	3807	3807	3807	3807	
5°	3741	3736	3736	3732	3732	355
15°	3499	3499	3463	3428	3415	984
25°	3032	3014	2966	2860	2781	1392
35°	2460	2442	2324	2148	2095	1538
45°	1888	1848	1690	1549	1488	1454
55°	1311	1272	1153	1017	964	1176
65°	779	735	664	678	563	768
75°	312	290	273	260	286	335
85°	44	48	53	57	62	61
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3806.6	3806.6	3806.6	3806.6	3806.6
2.5°	3780.2	3780.2	3780.2	3775.8	3775.8
5°	3740.6	3736.2	3736.2	3731.8	3731.8
7.5°	3709.8	3705.4	3701.0	3696.6	3687.8
10°	3665.8	3665.8	3661.4	3639.4	3635.0
12.5°	3595.4	3591.0	3573.4	3542.6	3533.8
15°	3498.6	3498.6	3463.4	3428.2	3415.0
17.5°	3393.0	3388.6	3344.6	3309.4	3291.8
20°	3278.6	3269.8	3225.7	3168.5	3137.7
22.5°	3150.9	3150.9	3098.1	3023.3	2992.5
25°	3032.1	3014.5	2966.1	2860.5	2781.3
27.5°	2895.7	2869.3	2816.5	2666.9	2574.4
30°	2746.1	2732.9	2658.1	2464.4	2394.0
32.5°	2605.2	2583.2	2504.0	2301.6	2244.4
35°	2460.0	2442.4	2323.6	2147.6	2094.8
37.5°	2314.8	2292.8	2143.2	2002.3	1936.3
40°	2169.6	2143.2	1980.3	1852.7	1782.3
42.5°	2033.1	1997.9	1839.5	1703.1	1623.9
45°	1887.9	1848.3	1689.9	1549.1	1487.5
47.5°	1742.7	1707.5	1562.3	1417.0	1346.6
50°	1588.7	1557.9	1425.8	1280.6	1205.8
52.5°	1461.0	1412.6	1285.0	1139.8	1078.2
55°	1311.4	1271.8	1153.0	1016.6	963.8
57.5°	1175.0	1135.4	1025.4	897.8	853.7
60°	1047.4	990.2	897.8	787.7	752.5
62.5°	906.6	862.5	783.3	690.9	734.9
65°	778.9	734.9	664.5	677.7	563.3
67.5°	638.1	616.1	554.5	492.9	475.3
70°	519.3	492.9	470.9	404.9	387.3
72.5°	413.7	387.3	356.5	321.3	308.1
75°	312.5	290.4	272.8	259.6	286.0
77.5°	215.6	206.8	193.6	180.4	176.0
80°	140.8	136.4	132.0	127.6	123.2
82.5°	83.6	83.6	83.6	83.6	83.6
85°	44.0	48.4	52.8	57.2	61.6
87.5°	26.4	26.4	30.8	35.2	39.6
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)