

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: P547315

Luminaire Tested: **FMR-24-4-LD4-4HI-40-UNV-93-88-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: P547315  
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-LD4-4HI-40-UNV-93-88-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

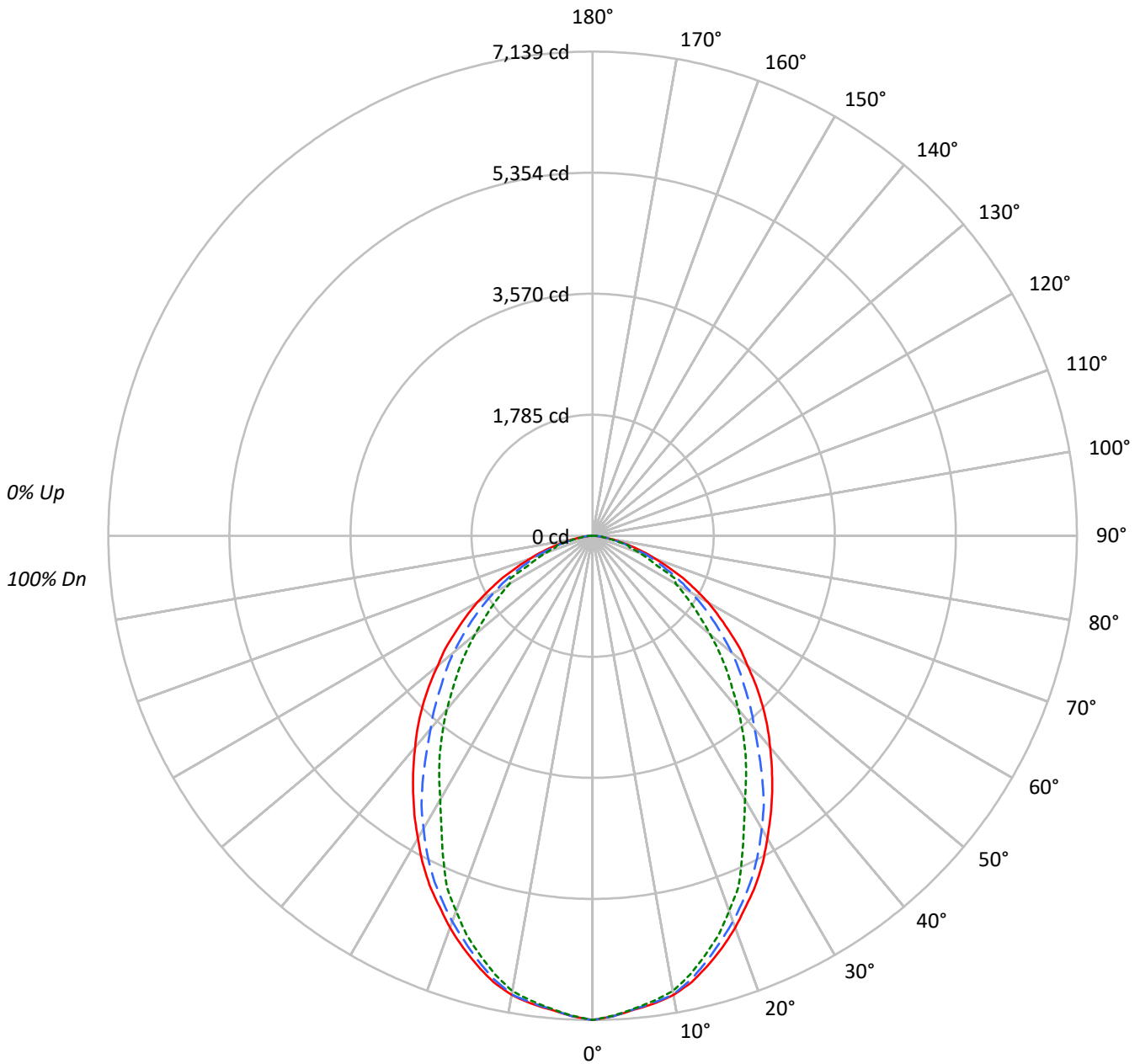
Lumens per Lamp: N/A  
Luminaire Lumens: 14015.0 lumens  
Efficiency: N/A  
Efficacy: 81.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 172.8  
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				20				20	
RC	80				70				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				100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87				87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75				75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65				65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56				56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50				50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44				44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40				40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36				36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33				33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30				30

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

	0°	45°	90°
0°	9606	9606	9606
5°	9475	9464	9453
10°	9393	9382	9314
15°	9140	9048	8921
20°	8804	8662	8426
25°	8442	8258	7744
30°	8001	7745	6976
35°	7578	7158	6453
40°	7146	6523	5871
45°	6737	6030	5308
50°	6237	5597	4734
55°	5769	5072	4240
60°	5286	4531	3798
65°	4651	3968	3363
70°	3831	3474	2857
75°	3046	2660	2789
80°	2046	1918	1791
85°	1274	1528	1783



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	664.5	4.7
10°-20°	1823.8	13.0
20°-30°	2524.9	18.0
30°-40°	2692.3	19.2
40°-50°	2456.2	17.5
50°-60°	1924.2	13.7
60°-70°	1254.1	8.9
70°-80°	555.6	4.0
80°-90°	119.3	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°	5013.3	35.8
0°-40°	7705.6	55.0
0°-60°	12086.0	86.2
0°-90°	14015.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14015.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7139	7139	7139	7139	7139	
5°	7015	7007	7007	6999	6999	666
15°	6561	6561	6495	6429	6404	1845
25°	5686	5654	5563	5365	5216	2611
35°	4614	4580	4358	4028	3928	2884
45°	3541	3466	3169	2905	2790	2727
55°	2460	2385	2162	1906	1808	2206
65°	1461	1378	1246	1271	1056	1440
75°	586	545	512	487	536	628
85°	82	91	99	107	116	114
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7139.1	7139.1	7139.1	7139.1	7139.1
2.5°	7089.5	7089.5	7089.5	7081.3	7081.3
5°	7015.3	7007.0	7007.0	6998.7	6998.7
7.5°	6957.5	6949.2	6941.0	6932.7	6916.2
10°	6875.0	6875.0	6866.7	6825.4	6817.2
12.5°	6742.9	6734.6	6701.6	6643.9	6627.4
15°	6561.3	6561.3	6495.3	6429.3	6404.5
17.5°	6363.2	6355.0	6272.5	6206.4	6173.4
20°	6148.7	6132.2	6049.6	5942.3	5884.6
22.5°	5909.3	5909.3	5810.3	5670.0	5612.2
25°	5686.5	5653.5	5562.7	5364.6	5216.0
27.5°	5430.6	5381.1	5282.1	5001.5	4828.1
30°	5150.0	5125.3	4985.0	4621.8	4489.8
32.5°	4885.9	4844.7	4696.1	4316.4	4209.2
35°	4613.6	4580.5	4357.7	4027.6	3928.5
37.5°	4341.2	4299.9	4019.3	3755.2	3631.4
40°	4068.8	4019.3	3714.0	3474.6	3342.6
42.5°	3813.0	3747.0	3449.9	3194.0	3045.4
45°	3540.6	3466.4	3169.2	2905.1	2789.6
47.5°	3268.3	3202.3	2929.9	2657.5	2525.5
50°	2979.4	2921.6	2674.1	2401.7	2261.4
52.5°	2740.1	2649.3	2409.9	2137.6	2022.0
55°	2459.5	2385.2	2162.3	1906.5	1807.5
57.5°	2203.6	2129.3	1923.0	1683.7	1601.1
60°	1964.3	1857.0	1683.7	1477.3	1411.3
62.5°	1700.2	1617.6	1469.1	1295.8	1378.3
65°	1460.8	1378.3	1246.2	1271.0	1056.4
67.5°	1196.7	1155.5	1039.9	924.4	891.4
70°	973.9	924.4	883.1	759.3	726.3
72.5°	775.8	726.3	668.5	602.5	577.7
75°	586.0	544.7	511.7	486.9	536.5
77.5°	404.4	387.9	363.1	338.4	330.1
80°	264.1	255.9	247.6	239.3	231.1
82.5°	156.8	156.8	156.8	156.8	156.8
85°	82.5	90.8	99.0	107.3	115.5
87.5°	49.5	49.5	57.8	66.0	74.3
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)