

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: P547462

Luminaire Tested: **FMR-24-4-LD4-4STD-35-UNV-81-97-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: P547462  
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-35-UNV-81-97-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

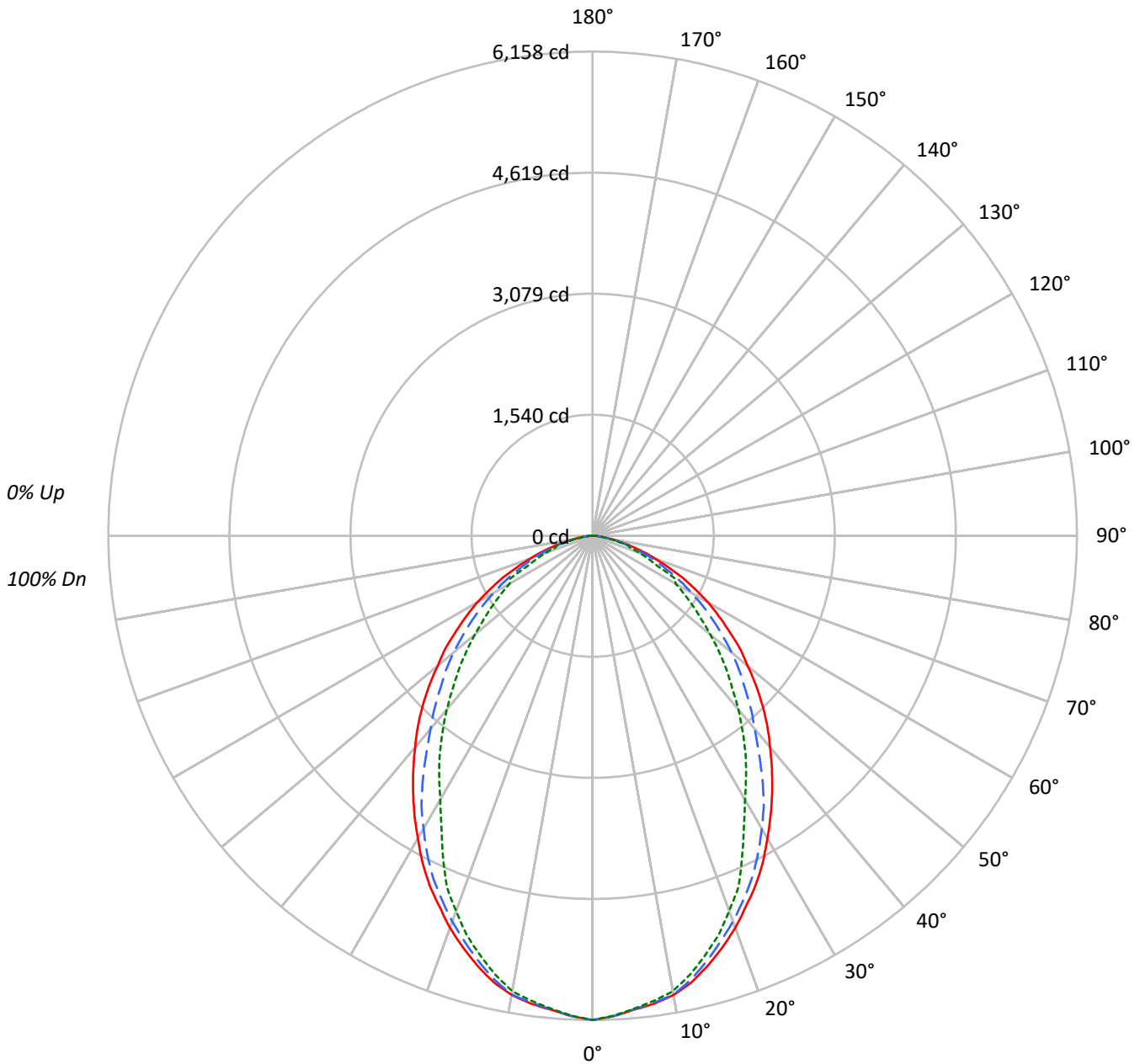
Lumens per Lamp: N/A  
Luminaire Lumens: 12090.0 lumens  
Efficiency: N/A  
Efficacy: 90.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	8286	8286	8286
5°	8174	8164	8154
10°	8103	8093	8035
15°	7884	7805	7696
20°	7595	7472	7268
25°	7282	7124	6680
30°	6902	6681	6017
35°	6537	6175	5566
40°	6165	5627	5065
45°	5812	5202	4579
50°	5380	4829	4083
55°	4977	4376	3658
60°	4560	3908	3276
65°	4012	3423	2901
70°	3305	2997	2465
75°	2628	2295	2406
80°	1765	1655	1544
85°	1099	1318	1539



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	573.3	4.7
10°-20°	1573.3	13.0
20°-30°	2178.1	18.0
30°-40°	2322.5	19.2
40°-50°	2118.8	17.5
50°-60°	1659.9	13.7
60°-70°	1081.8	8.9
70°-80°	479.3	4.0
80°-90°	102.9	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°	4324.7	35.8
0°-40°	6647.2	55.0
0°-60°	10425.9	86.2
0°-90°	12090.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12090.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6158	6158	6158	6158	6158	
5°	6052	6045	6045	6038	6038	574
15°	5660	5660	5603	5546	5525	1591
25°	4905	4877	4799	4628	4500	2252
35°	3980	3951	3759	3474	3389	2488
45°	3054	2990	2734	2506	2406	2353
55°	2122	2058	1865	1645	1559	1903
65°	1260	1189	1075	1096	911	1242
75°	506	470	441	420	463	542
85°	71	78	85	93	100	99
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6158.5	6158.5	6158.5	6158.5	6158.5
2.5°	6115.8	6115.8	6115.8	6108.6	6108.6
5°	6051.7	6044.6	6044.6	6037.5	6037.5
7.5°	6001.9	5994.7	5987.6	5980.5	5966.3
10°	5930.7	5930.7	5923.5	5887.9	5880.8
12.5°	5816.7	5809.6	5781.1	5731.3	5717.1
15°	5660.1	5660.1	5603.2	5546.2	5524.8
17.5°	5489.2	5482.1	5410.9	5354.0	5325.5
20°	5304.1	5289.9	5218.7	5126.1	5076.3
22.5°	5097.7	5097.7	5012.2	4891.2	4841.4
25°	4905.4	4877.0	4798.6	4627.8	4499.6
27.5°	4684.7	4642.0	4556.6	4314.5	4165.0
30°	4442.7	4421.3	4300.3	3987.0	3873.1
32.5°	4214.8	4179.2	4051.1	3723.6	3631.0
35°	3979.9	3951.4	3759.2	3474.4	3388.9
37.5°	3744.9	3709.3	3467.3	3239.4	3132.6
40°	3510.0	3467.3	3203.8	2997.4	2883.5
42.5°	3289.3	3232.3	2976.0	2755.3	2627.1
45°	3054.3	2990.2	2733.9	2506.1	2406.4
47.5°	2819.4	2762.4	2527.5	2292.5	2178.6
50°	2570.2	2520.4	2306.8	2071.8	1950.8
52.5°	2363.7	2285.4	2078.9	1844.0	1744.3
55°	2121.7	2057.6	1865.3	1644.6	1559.2
57.5°	1900.9	1836.9	1658.9	1452.4	1381.2
60°	1694.5	1601.9	1452.4	1274.4	1217.5
62.5°	1466.6	1395.4	1267.3	1117.8	1189.0
65°	1260.2	1189.0	1075.1	1096.4	911.3
67.5°	1032.3	996.7	897.1	797.4	768.9
70°	840.1	797.4	761.8	655.0	626.5
72.5°	669.2	626.5	576.7	519.7	498.4
75°	505.5	469.9	441.4	420.1	462.8
77.5°	348.9	334.6	313.3	291.9	284.8
80°	227.8	220.7	213.6	206.5	199.3
82.5°	135.3	135.3	135.3	135.3	135.3
85°	71.2	78.3	85.4	92.6	99.7
87.5°	42.7	42.7	49.8	57.0	64.1
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)