

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: P547458

Luminaire Tested: **FMR-24-4-LD4-4STD-35-UNV-81-87-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: P547458  
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-81-87-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

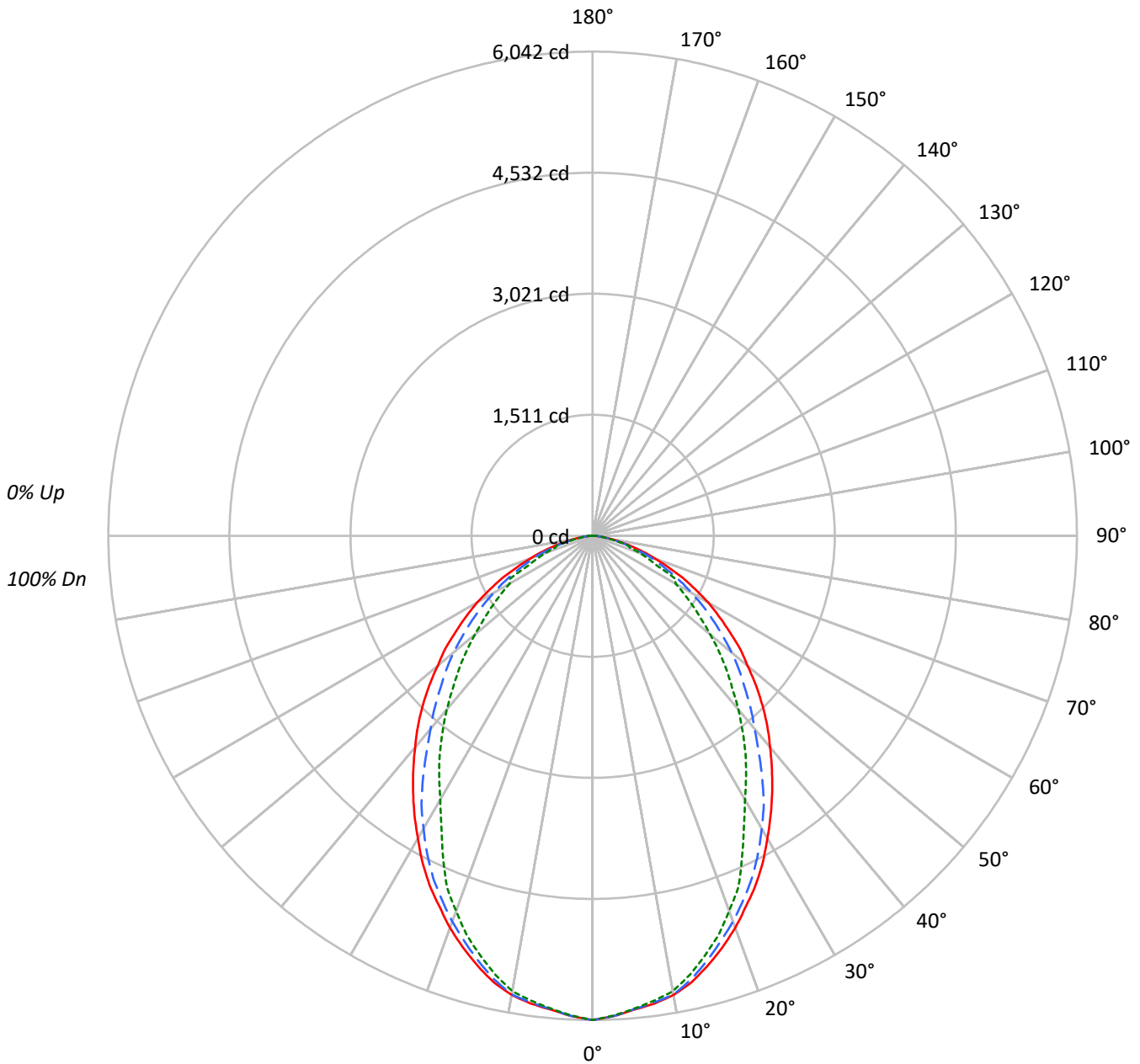
Lumens per Lamp: N/A  
Luminaire Lumens: 11862.0 lumens  
Efficiency: N/A  
Efficacy: 89.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	8130	8130	8130
5°	8019	8010	8001
10°	7950	7940	7883
15°	7736	7658	7551
20°	7451	7331	7131
25°	7145	6990	6554
30°	6772	6555	5904
35°	6414	6058	5461
40°	6049	5521	4969
45°	5702	5104	4493
50°	5278	4738	4006
55°	4883	4293	3589
60°	4474	3835	3214
65°	3936	3358	2847
70°	3243	2940	2418
75°	2578	2252	2360
80°	1732	1624	1516
85°	1079	1294	1510



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	562.5	4.7
10°-20°	1543.6	13.0
20°-30°	2137.0	18.0
30°-40°	2278.7	19.2
40°-50°	2078.8	17.5
50°-60°	1628.6	13.7
60°-70°	1061.5	8.9
70°-80°	470.3	4.0
80°-90°	101.0	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°	4243.1	35.8
0°-40°	6521.8	55.0
0°-60°	10229.3	86.2
0°-90°	11862.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11862.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6042	6042	6042	6042	6042	
5°	5938	5931	5931	5924	5924	564
15°	5553	5553	5498	5442	5421	1561
25°	4813	4785	4708	4540	4415	2210
35°	3905	3877	3688	3409	3325	2441
45°	2997	2934	2682	2459	2361	2308
55°	2082	2019	1830	1614	1530	1867
65°	1236	1167	1055	1076	894	1218
75°	496	461	433	412	454	532
85°	70	77	84	91	98	97
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6042.3	6042.3	6042.3	6042.3	6042.3
2.5°	6000.4	6000.4	6000.4	5993.4	5993.4
5°	5937.6	5930.6	5930.6	5923.6	5923.6
7.5°	5888.7	5881.7	5874.7	5867.7	5853.7
10°	5818.8	5818.8	5811.8	5776.9	5769.9
12.5°	5707.0	5700.1	5672.1	5623.2	5609.3
15°	5553.4	5553.4	5497.5	5441.6	5420.6
17.5°	5385.7	5378.7	5308.9	5253.0	5225.1
20°	5204.1	5190.1	5120.3	5029.5	4980.6
22.5°	5001.5	5001.5	4917.7	4798.9	4750.1
25°	4812.9	4785.0	4708.1	4540.5	4414.8
27.5°	4596.4	4554.5	4470.6	4233.1	4086.4
30°	4358.9	4337.9	4219.2	3911.8	3800.0
32.5°	4135.3	4100.4	3974.7	3653.3	3562.5
35°	3904.8	3876.9	3688.3	3408.9	3325.0
37.5°	3674.3	3639.4	3401.9	3178.3	3073.6
40°	3443.8	3401.9	3143.4	2940.8	2829.1
42.5°	3227.2	3171.4	2919.9	2703.3	2577.6
45°	2996.7	2933.9	2682.4	2458.8	2361.1
47.5°	2766.2	2710.3	2479.8	2249.3	2137.5
50°	2521.7	2472.8	2263.3	2032.7	1914.0
52.5°	2319.1	2242.3	2039.7	1809.2	1711.4
55°	2081.6	2018.8	1830.2	1613.6	1529.8
57.5°	1865.1	1802.2	1627.6	1425.0	1355.2
60°	1662.5	1571.7	1425.0	1250.4	1194.5
62.5°	1439.0	1369.1	1243.4	1096.7	1166.6
65°	1236.4	1166.6	1054.8	1075.7	894.1
67.5°	1012.9	978.0	880.2	782.4	754.4
70°	824.3	782.4	747.4	642.7	614.7
72.5°	656.6	614.7	565.8	509.9	489.0
75°	496.0	461.0	433.1	412.1	454.0
77.5°	342.3	328.3	307.4	286.4	279.4
80°	223.5	216.5	209.6	202.6	195.6
82.5°	132.7	132.7	132.7	132.7	132.7
85°	69.9	76.8	83.8	90.8	97.8
87.5°	41.9	41.9	48.9	55.9	62.9
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)