

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: P546979

Luminaire Tested: **FMR-24-4-LD4-3HI-35-UNV-81-88-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: P546979  
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-LD4-3HI-35-UNV-81-88-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

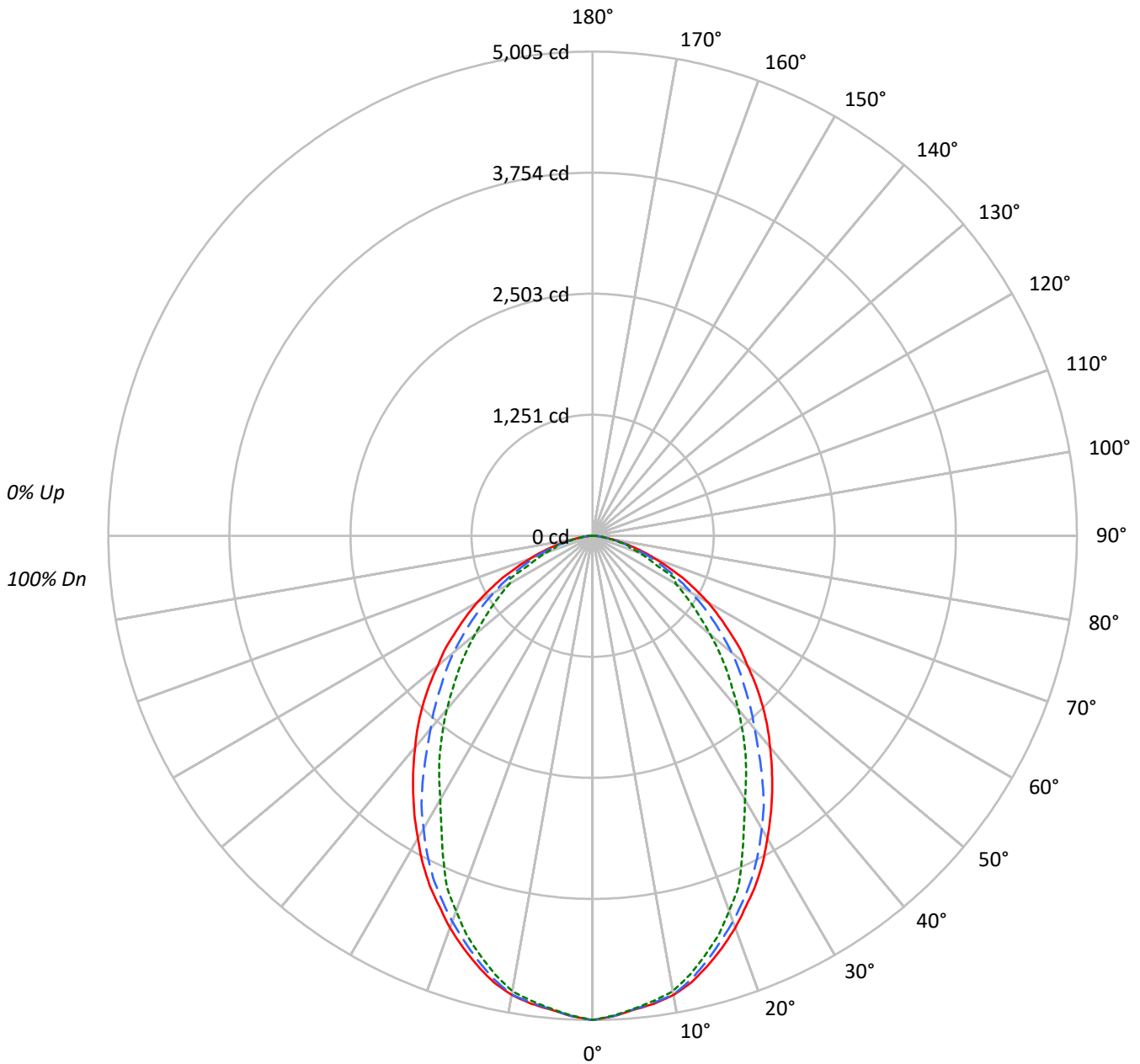
Lumens per Lamp: N/A  
Luminaire Lumens: 9826.0 lumens  
Efficiency: N/A  
Efficacy: 75.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 129.6  
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°	6734	6734	6734
5°	6643	6635	6627
10°	6585	6578	6530
15°	6408	6343	6255
20°	6173	6073	5907
25°	5919	5790	5429
30°	5610	5430	4891
35°	5313	5018	4524
40°	5011	4574	4116
45°	4724	4228	3722
50°	4373	3924	3319
55°	4045	3556	2973
60°	3706	3176	2663
65°	3261	2782	2358
70°	2686	2436	2003
75°	2136	1865	1955
80°	1435	1345	1255
85°	894	1071	1250



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	465.9	4.7
10°-20°	1278.7	13.0
20°-30°	1770.2	18.0
30°-40°	1887.6	19.2
40°-50°	1722.0	17.5
50°-60°	1349.1	13.7
60°-70°	879.3	8.9
70°-80°	389.5	4.0
80°-90°	83.6	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°	3514.8	35.8
0°-40°	5402.4	55.0
0°-60°	8473.6	86.2
0°-90°	9826.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9826.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5005	5005	5005	5005	5005	
5°	4918	4913	4913	4907	4907	467
15°	4600	4600	4554	4508	4490	1293
25°	3987	3964	3900	3761	3657	1830
35°	3235	3212	3055	2824	2754	2022
45°	2482	2430	2222	2037	1956	1912
55°	1724	1672	1516	1337	1267	1547
65°	1024	966	874	891	741	1009
75°	411	382	359	341	376	440
85°	58	64	69	75	81	80
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5005.2	5005.2	5005.2	5005.2	5005.2
2.5°	4970.5	4970.5	4970.5	4964.7	4964.7
5°	4918.4	4912.7	4912.7	4906.9	4906.9
7.5°	4877.9	4872.1	4866.4	4860.6	4849.0
10°	4820.1	4820.1	4814.3	4785.4	4779.6
12.5°	4727.5	4721.7	4698.6	4658.0	4646.5
15°	4600.2	4600.2	4553.9	4507.6	4490.2
17.5°	4461.3	4455.5	4397.7	4351.4	4328.2
20°	4310.9	4299.3	4241.4	4166.2	4125.7
22.5°	4143.1	4143.1	4073.6	3975.3	3934.7
25°	3986.8	3963.7	3900.0	3761.2	3657.0
27.5°	3807.4	3772.7	3703.3	3506.6	3385.0
30°	3610.7	3593.4	3495.0	3240.4	3147.8
32.5°	3425.5	3396.6	3292.5	3026.3	2951.1
35°	3234.6	3211.5	3055.2	2823.8	2754.3
37.5°	3043.6	3014.7	2818.0	2632.8	2546.0
40°	2852.7	2818.0	2603.9	2436.1	2343.5
42.5°	2673.3	2627.0	2418.7	2239.3	2135.2
45°	2482.4	2430.3	2222.0	2036.8	1955.8
47.5°	2291.4	2245.1	2054.2	1863.2	1770.6
50°	2088.9	2048.4	1874.8	1683.8	1585.5
52.5°	1921.1	1857.4	1689.6	1498.7	1417.7
55°	1724.3	1672.3	1516.0	1336.7	1267.2
57.5°	1545.0	1492.9	1348.2	1180.4	1122.6
60°	1377.2	1301.9	1180.4	1035.8	989.5
62.5°	1192.0	1134.1	1030.0	908.5	966.3
65°	1024.2	966.3	873.7	891.1	740.7
67.5°	839.0	810.1	729.1	648.1	624.9
70°	682.8	648.1	619.1	532.3	509.2
72.5°	543.9	509.2	468.7	422.4	405.0
75°	410.8	381.9	358.8	341.4	376.1
77.5°	283.5	272.0	254.6	237.2	231.5
80°	185.2	179.4	173.6	167.8	162.0
82.5°	109.9	109.9	109.9	109.9	109.9
85°	57.9	63.7	69.4	75.2	81.0
87.5°	34.7	34.7	40.5	46.3	52.1
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)