

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: P547019

Luminaire Tested: **FMR-24-4-LD4-3HI-40-UNV-82-88-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: P547019  
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-40-UNV-82-88-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC 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**

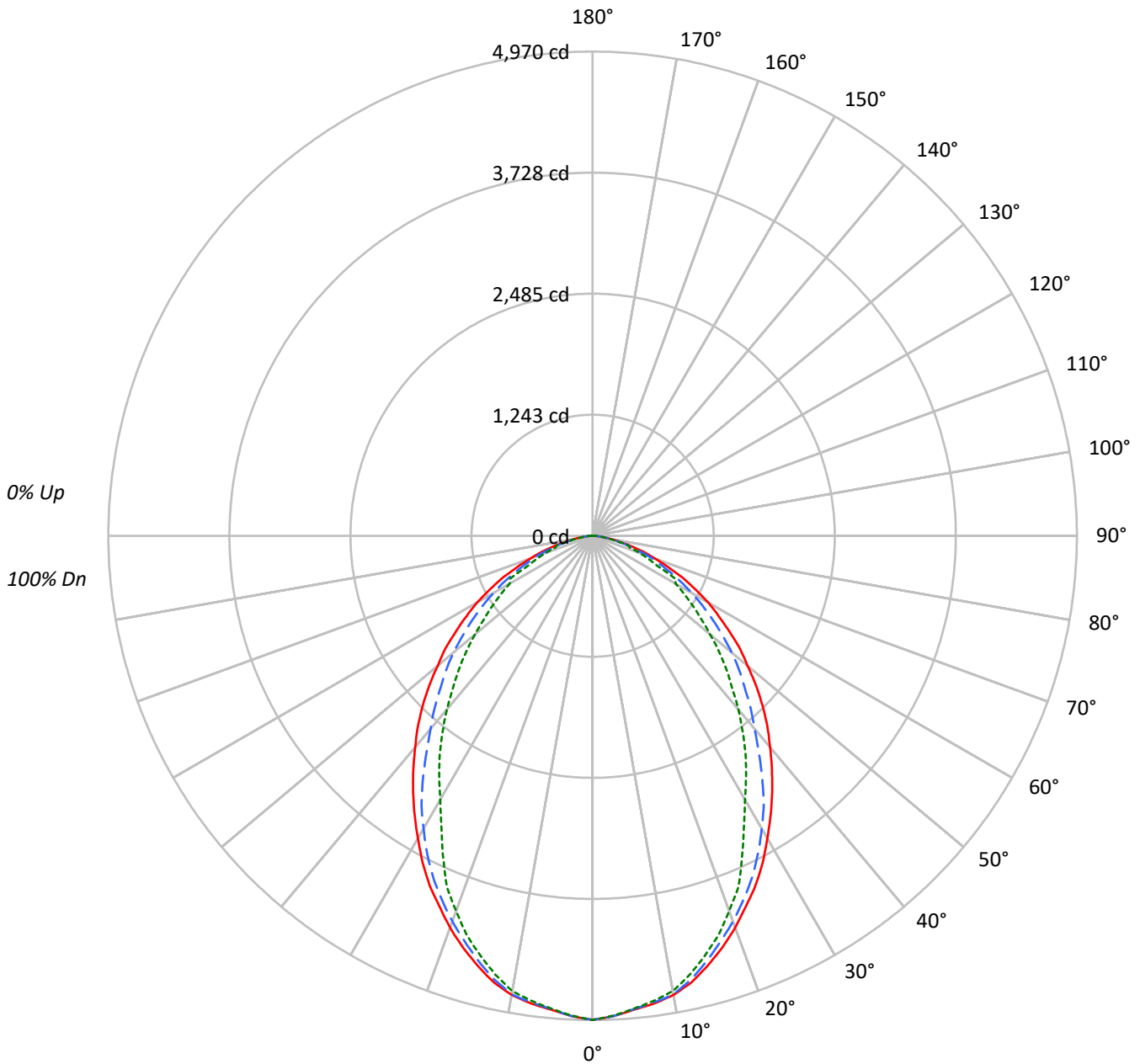
Lumens per Lamp: N/A  
Luminaire Lumens: 9756.0 lumens  
Efficiency: N/A  
Efficacy: 75.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	6687	6687	6687
5°	6596	6588	6580
10°	6538	6531	6484
15°	6362	6298	6210
20°	6129	6030	5865
25°	5877	5749	5391
30°	5570	5391	4856
35°	5275	4983	4492
40°	4975	4541	4087
45°	4690	4198	3695
50°	4341	3896	3295
55°	4016	3531	2951
60°	3680	3154	2644
65°	3238	2762	2341
70°	2667	2418	1989
75°	2120	1852	1941
80°	1424	1336	1247
85°	888	1064	1241



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	462.6	4.7
10°-20°	1269.6	13.0
20°-30°	1757.6	18.0
30°-40°	1874.1	19.2
40°-50°	1709.8	17.5
50°-60°	1339.5	13.7
60°-70°	873.0	8.9
70°-80°	386.8	4.0
80°-90°	83.1	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°	3489.8	35.8
0°-40°	5364.0	55.0
0°-60°	8413.2	86.2
0°-90°	9756.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9756.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4970	4970	4970	4970	4970	
5°	4883	4878	4878	4872	4872	464
15°	4567	4567	4522	4476	4458	1284
25°	3958	3935	3872	3734	3631	1817
35°	3212	3189	3034	2804	2735	2008
45°	2465	2413	2206	2022	1942	1899
55°	1712	1660	1505	1327	1258	1536
65°	1017	959	868	885	735	1002
75°	408	379	356	339	373	437
85°	58	63	69	75	80	80
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4969.6	4969.6	4969.6	4969.6	4969.6
2.5°	4935.1	4935.1	4935.1	4929.4	4929.4
5°	4883.4	4877.7	4877.7	4871.9	4871.9
7.5°	4843.2	4837.4	4831.7	4825.9	4814.5
10°	4785.7	4785.7	4780.0	4751.3	4745.5
12.5°	4693.8	4688.1	4665.1	4624.9	4613.4
15°	4567.4	4567.4	4521.5	4475.5	4458.3
17.5°	4429.5	4423.8	4366.3	4320.4	4297.4
20°	4280.2	4268.7	4211.2	4136.5	4096.3
22.5°	4113.5	4113.5	4044.6	3946.9	3906.7
25°	3958.4	3935.4	3872.2	3734.4	3631.0
27.5°	3780.3	3745.9	3676.9	3481.6	3360.9
30°	3585.0	3567.8	3470.1	3217.3	3125.4
32.5°	3401.1	3372.4	3269.0	3004.7	2930.0
35°	3211.6	3188.6	3033.5	2803.6	2734.7
37.5°	3022.0	2993.2	2797.9	2614.1	2527.9
40°	2832.4	2797.9	2585.3	2418.7	2326.8
42.5°	2654.3	2608.3	2401.5	2223.4	2120.0
45°	2464.7	2413.0	2206.1	2022.3	1941.9
47.5°	2275.1	2229.1	2039.5	1849.9	1758.0
50°	2074.0	2033.8	1861.4	1671.8	1574.2
52.5°	1907.4	1844.2	1677.6	1488.0	1407.6
55°	1712.1	1660.4	1505.2	1327.1	1258.2
57.5°	1534.0	1482.3	1338.6	1172.0	1114.6
60°	1367.4	1292.7	1172.0	1028.4	982.4
62.5°	1183.5	1126.1	1022.6	902.0	959.4
65°	1016.9	959.4	867.5	884.8	735.4
67.5°	833.1	804.3	723.9	643.5	620.5
70°	677.9	643.5	614.7	528.6	505.6
72.5°	540.0	505.6	465.4	419.4	402.2
75°	407.9	379.2	356.2	339.0	373.4
77.5°	281.5	270.0	252.8	235.6	229.8
80°	183.8	178.1	172.4	166.6	160.9
82.5°	109.2	109.2	109.2	109.2	109.2
85°	57.5	63.2	68.9	74.7	80.4
87.5°	34.5	34.5	40.2	46.0	51.7
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)