

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: P547220

Luminaire Tested: **FMR-24-4-LD4-3STD-40-UNV-93-94-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: P547220  
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-LD4-3STD-40-UNV-93-94-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187  
CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT  
LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

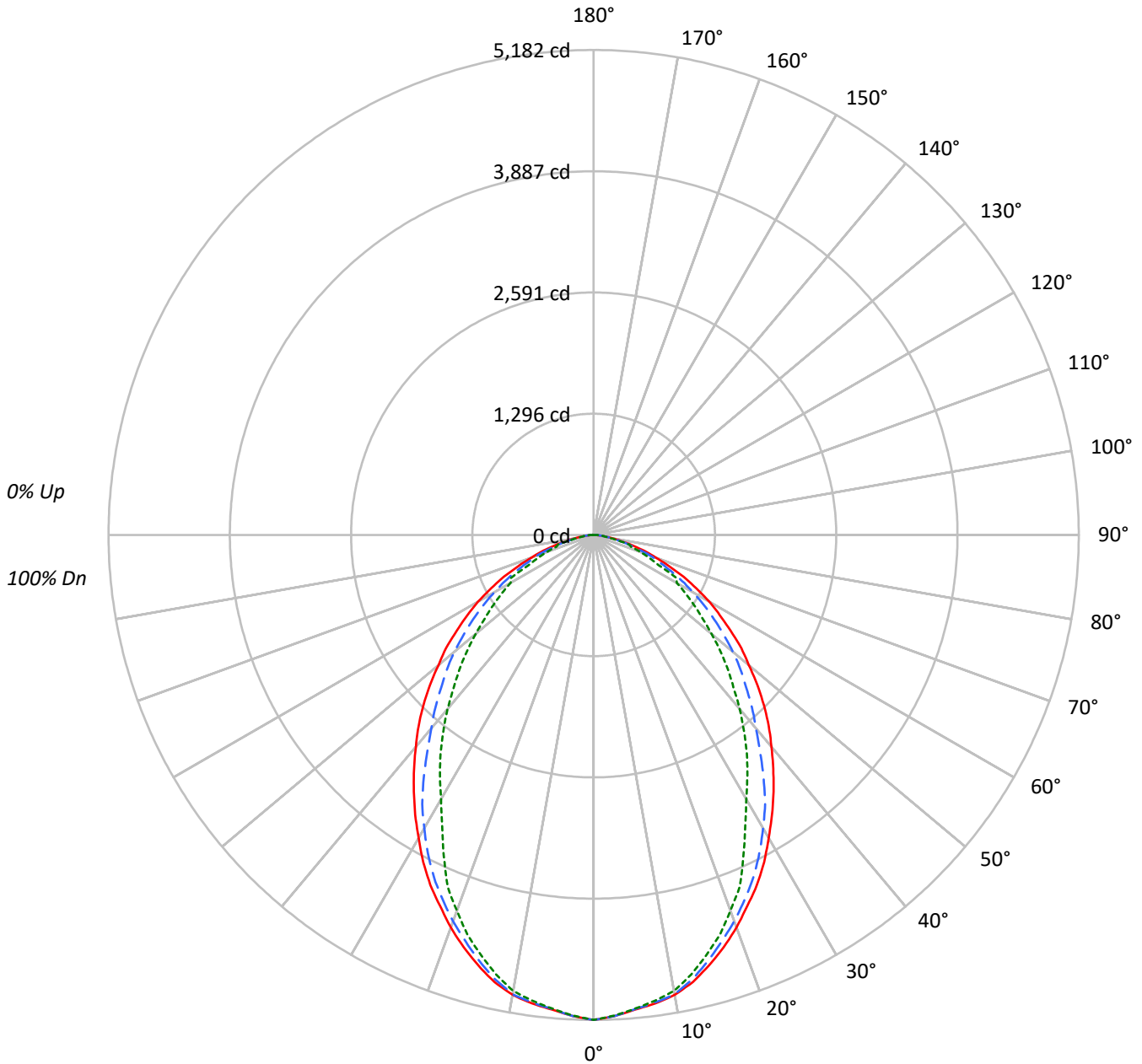
Lumens per Lamp: N/A  
Luminaire Lumens: 10173.0 lumens  
Efficiency: N/A  
Efficacy: 101.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 99.9  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	6972	6972	6972
5°	6878	6869	6861
10°	6818	6810	6761
15°	6634	6567	6476
20°	6390	6287	6116
25°	6128	5994	5621
30°	5808	5622	5063
35°	5501	5196	4684
40°	5187	4735	4261
45°	4890	4377	3853
50°	4527	4063	3436
55°	4188	3682	3078
60°	3837	3289	2757
65°	3376	2880	2441
70°	2781	2522	2074
75°	2211	1931	2024
80°	1485	1392	1299
85°	925	1110	1295



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	482.4	4.7
10°-20°	1323.8	13.0
20°-30°	1832.8	18.0
30°-40°	1954.3	19.2
40°-50°	1782.8	17.5
50°-60°	1396.7	13.7
60°-70°	910.3	8.9
70°-80°	403.3	4.0
80°-90°	86.6	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°	3639.0	35.8
0°-40°	5593.2	55.0
0°-60°	8772.8	86.2
0°-90°	10173.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10173.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5182	5182	5182	5182	5182	
5°	5092	5086	5086	5080	5080	483
15°	4763	4763	4715	4667	4649	1339
25°	4128	4104	4038	3894	3786	1895
35°	3349	3325	3163	2924	2852	2094
45°	2570	2516	2300	2109	2025	1980
55°	1785	1731	1570	1384	1312	1601
65°	1060	1000	905	923	767	1045
75°	425	395	371	354	389	456
85°	60	66	72	78	84	83
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5182.0	5182.0	5182.0	5182.0	5182.0
2.5°	5146.0	5146.0	5146.0	5140.1	5140.1
5°	5092.1	5086.1	5086.1	5080.1	5080.1
7.5°	5050.2	5044.2	5038.2	5032.2	5020.2
10°	4990.3	4990.3	4984.3	4954.3	4948.4
12.5°	4894.4	4888.4	4864.5	4822.5	4810.6
15°	4762.6	4762.6	4714.7	4666.8	4648.8
17.5°	4618.9	4612.9	4553.0	4505.0	4481.1
20°	4463.1	4451.1	4391.2	4313.3	4271.4
22.5°	4289.4	4289.4	4217.5	4115.6	4073.7
25°	4127.6	4103.7	4037.8	3894.0	3786.1
27.5°	3941.9	3906.0	3834.1	3630.4	3504.6
30°	3738.2	3720.2	3618.4	3354.8	3259.0
32.5°	3546.5	3516.6	3408.7	3133.2	3055.3
35°	3348.8	3324.9	3163.1	2923.5	2851.6
37.5°	3151.1	3121.2	2917.5	2725.8	2635.9
40°	2953.4	2917.5	2695.8	2522.1	2426.2
42.5°	2767.7	2719.8	2504.1	2318.4	2210.6
45°	2570.0	2516.1	2300.4	2108.7	2024.9
47.5°	2372.3	2324.4	2126.7	1929.0	1833.2
50°	2162.7	2120.7	1941.0	1743.3	1641.5
52.5°	1988.9	1923.0	1749.3	1551.6	1467.7
55°	1785.2	1731.3	1569.6	1383.9	1312.0
57.5°	1599.5	1545.6	1395.8	1222.1	1162.2
60°	1425.8	1347.9	1222.1	1072.3	1024.4
62.5°	1234.1	1174.2	1066.4	940.5	1000.5
65°	1060.4	1000.5	904.6	922.6	766.8
67.5°	868.7	838.7	754.8	671.0	647.0
70°	706.9	671.0	641.0	551.1	527.2
72.5°	563.1	527.2	485.2	437.3	419.4
75°	425.3	395.4	371.4	353.5	389.4
77.5°	293.5	281.6	263.6	245.6	239.6
80°	191.7	185.7	179.7	173.7	167.7
82.5°	113.8	113.8	113.8	113.8	113.8
85°	59.9	65.9	71.9	77.9	83.9
87.5°	35.9	35.9	41.9	47.9	53.9
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)