

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: P546855

Luminaire Tested: **FMR-24-4-LD4-2LO-50-UNV-82-84-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: P546855  
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-LD4-2LO-50-UNV-82-84-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

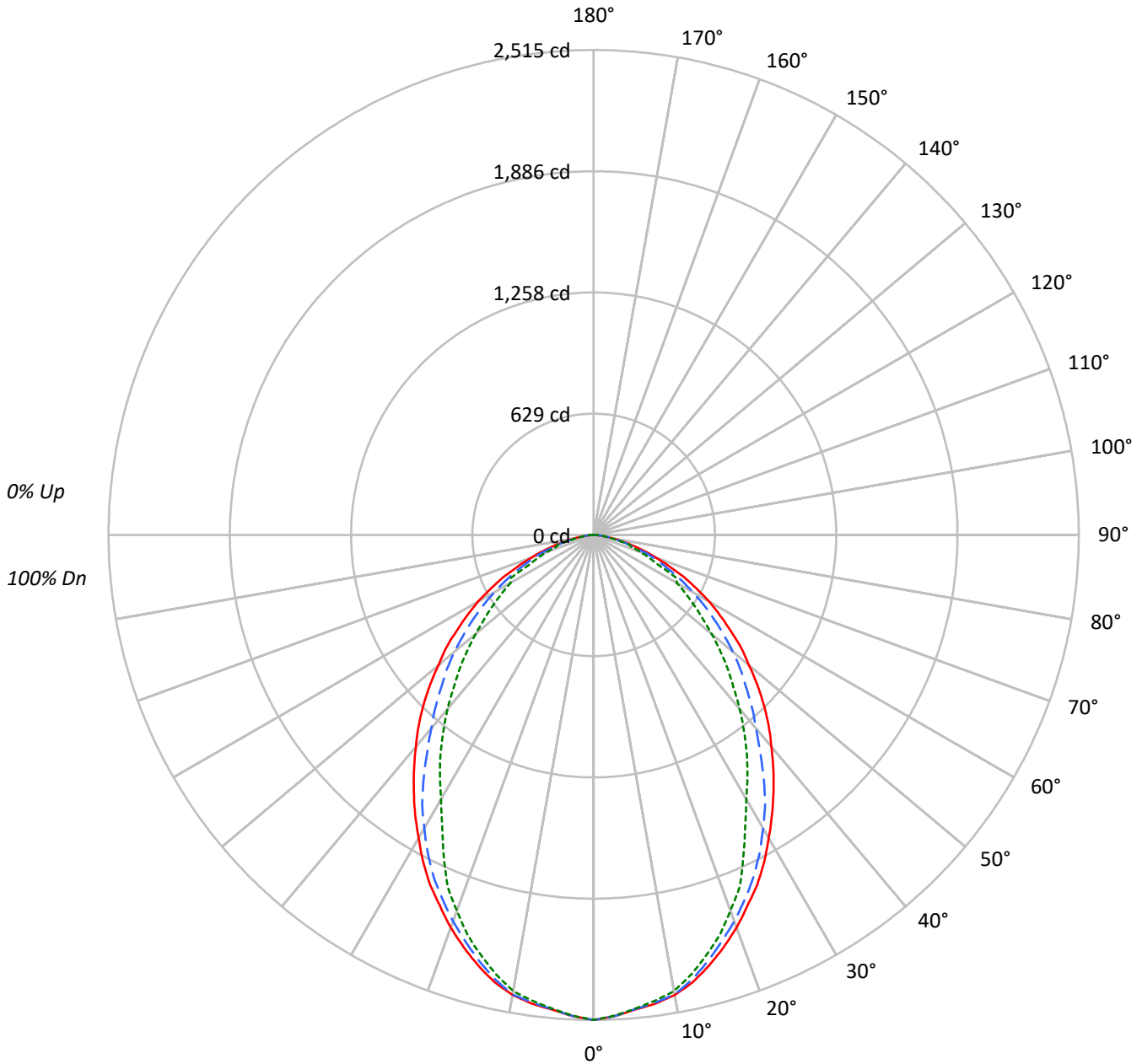
Lumens per Lamp: N/A  
Luminaire Lumens: 4938.0 lumens  
Efficiency: N/A  
Efficacy: 105.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.8  
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°	3384	3384	3384
5°	3338	3334	3331
10°	3309	3305	3282
15°	3220	3188	3143
20°	3102	3052	2969
25°	2975	2910	2728
30°	2819	2729	2458
35°	2670	2522	2274
40°	2518	2298	2069
45°	2374	2125	1870
50°	2197	1972	1668
55°	2033	1787	1494
60°	1862	1596	1338
65°	1639	1398	1185
70°	1350	1224	1007
75°	1074	937	983
80°	721	676	631
85°	449	539	628



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	234.1	4.7
10°-20°	642.6	13.0
20°-30°	889.6	18.0
30°-40°	948.6	19.2
40°-50°	865.4	17.5
50°-60°	678.0	13.7
60°-70°	441.9	8.9
70°-80°	195.8	4.0
80°-90°	42.0	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°	1766.4	35.8
0°-40°	2715.0	55.0
0°-60°	4258.3	86.2
0°-90°	4938.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4938.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2515	2515	2515	2515	2515	
5°	2472	2469	2469	2466	2466	235
15°	2312	2312	2288	2265	2256	650
25°	2004	1992	1960	1890	1838	920
35°	1626	1614	1535	1419	1384	1016
45°	1248	1221	1117	1024	983	961
55°	867	840	762	672	637	777
65°	515	486	439	448	372	507
75°	206	192	180	172	189	221
85°	29	32	35	38	41	40
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2515.4	2515.4	2515.4	2515.4	2515.4
2.5°	2497.9	2497.9	2497.9	2495.0	2495.0
5°	2471.7	2468.8	2468.8	2465.9	2465.9
7.5°	2451.4	2448.5	2445.6	2442.7	2436.8
10°	2422.3	2422.3	2419.4	2404.9	2401.9
12.5°	2375.8	2372.9	2361.2	2340.9	2335.1
15°	2311.8	2311.8	2288.5	2265.3	2256.5
17.5°	2242.0	2239.1	2210.0	2186.8	2175.1
20°	2166.4	2160.6	2131.5	2093.7	2073.3
22.5°	2082.1	2082.1	2047.2	1997.7	1977.4
25°	2003.6	1991.9	1959.9	1890.1	1837.8
27.5°	1913.4	1896.0	1861.1	1762.2	1701.1
30°	1814.5	1805.8	1756.4	1628.4	1581.9
32.5°	1721.5	1706.9	1654.6	1520.8	1483.0
35°	1625.5	1613.9	1535.4	1419.1	1384.2
37.5°	1529.6	1515.0	1416.2	1323.1	1279.5
40°	1433.6	1416.2	1308.6	1224.2	1177.7
42.5°	1343.5	1320.2	1215.5	1125.4	1073.0
45°	1247.5	1221.3	1116.6	1023.6	982.9
47.5°	1151.5	1128.3	1032.3	936.4	889.8
50°	1049.8	1029.4	942.2	846.2	796.8
52.5°	965.4	933.4	849.1	753.2	712.4
55°	866.6	840.4	761.9	671.7	636.8
57.5°	776.4	750.2	677.5	593.2	564.1
60°	692.1	654.3	593.2	520.5	497.3
62.5°	599.0	570.0	517.6	456.5	485.6
65°	514.7	485.6	439.1	447.8	372.2
67.5°	421.6	407.1	366.4	325.7	314.1
70°	343.1	325.7	311.1	267.5	255.9
72.5°	273.3	255.9	235.5	212.3	203.6
75°	206.5	191.9	180.3	171.6	189.0
77.5°	142.5	136.7	127.9	119.2	116.3
80°	93.1	90.1	87.2	84.3	81.4
82.5°	55.3	55.3	55.3	55.3	55.3
85°	29.1	32.0	34.9	37.8	40.7
87.5°	17.4	17.4	20.4	23.3	26.2
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)