

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: P546312

Luminaire Tested: **FMR-12-4-LD4-2STD-35-UNV-82-85-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: P546312  
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-12-4-LD4-2STD-35-UNV-82-85-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

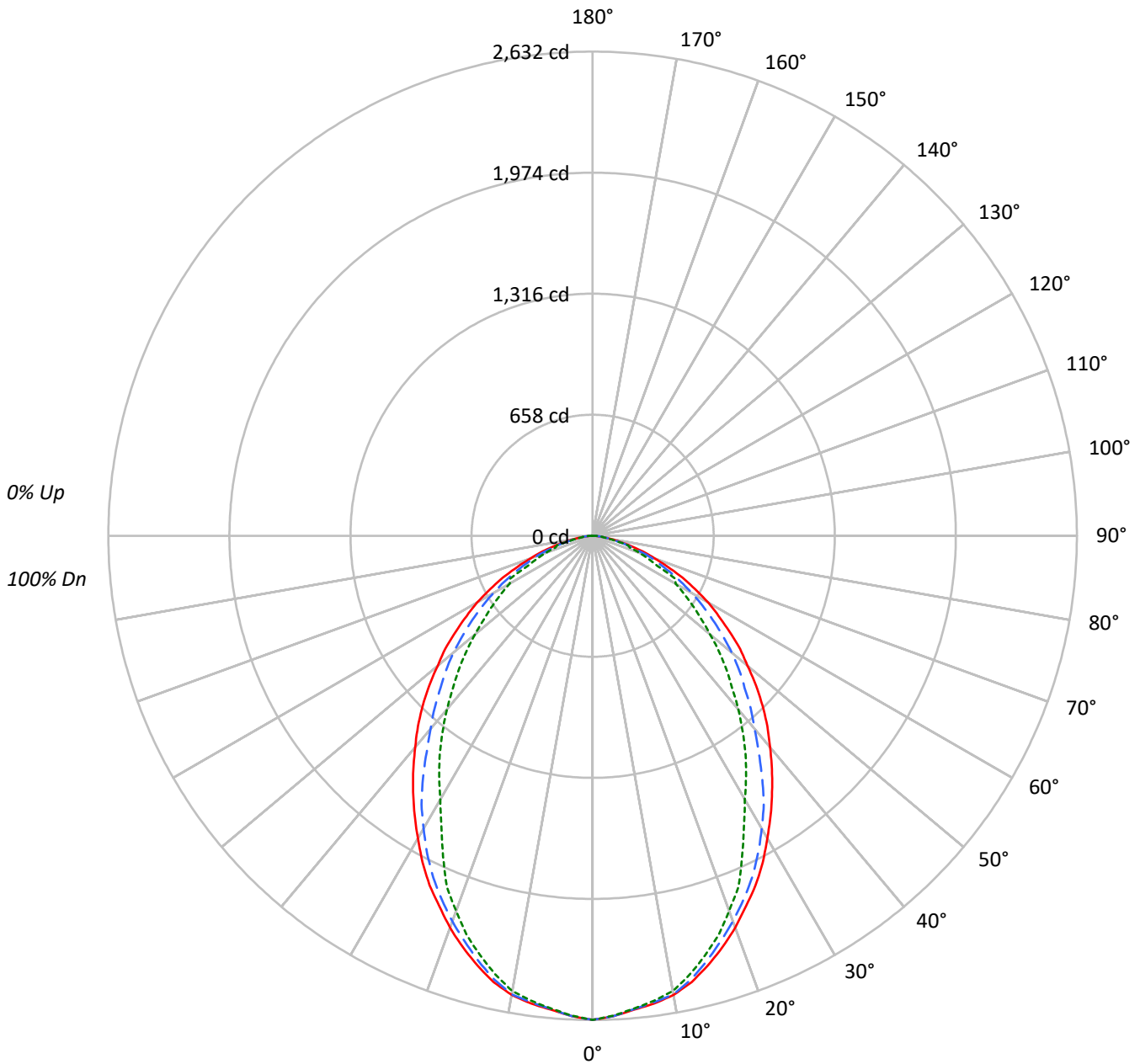
Lumens per Lamp: N/A  
Luminaire Lumens: 5166.0 lumens  
Efficiency: N/A  
Efficacy: 77.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 66.6  
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°	7081	7081	7081
5°	6985	6977	6969
10°	6924	6916	6866
15°	6738	6670	6577
20°	6490	6386	6212
25°	6224	6088	5709
30°	5899	5710	5142
35°	5587	5277	4757
40°	5269	4809	4328
45°	4967	4446	3913
50°	4598	4127	3490
55°	4253	3740	3126
60°	3897	3340	2800
65°	3429	2925	2479
70°	2825	2561	2106
75°	2246	1961	2056
80°	1508	1415	1320
85°	939	1127	1315



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	245.0	4.7
10°-20°	672.3	13.0
20°-30°	930.7	18.0
30°-40°	992.4	19.2
40°-50°	905.4	17.5
50°-60°	709.3	13.7
60°-70°	462.3	8.9
70°-80°	204.8	4.0
80°-90°	44.0	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°	1847.9	35.8
0°-40°	2840.3	55.0
0°-60°	4455.0	86.2
0°-90°	5166.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5166.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2632	2632	2632	2632	2632	
5°	2586	2583	2583	2580	2580	245
15°	2418	2418	2394	2370	2361	680
25°	2096	2084	2050	1977	1923	962
35°	1701	1688	1606	1485	1448	1063
45°	1305	1278	1168	1071	1028	1005
55°	907	879	797	703	666	813
65°	538	508	459	468	389	531
75°	216	201	189	180	198	232
85°	30	34	36	40	43	42
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2631.5	2631.5	2631.5	2631.5	2631.5
2.5°	2613.2	2613.2	2613.2	2610.2	2610.2
5°	2585.9	2582.8	2582.8	2579.8	2579.8
7.5°	2564.6	2561.5	2558.5	2555.4	2549.4
10°	2534.1	2534.1	2531.1	2515.9	2512.8
12.5°	2485.5	2482.4	2470.3	2449.0	2442.9
15°	2418.5	2418.5	2394.2	2369.9	2360.7
17.5°	2345.5	2342.5	2312.1	2287.7	2275.6
20°	2266.4	2260.3	2229.9	2190.4	2169.1
22.5°	2178.2	2178.2	2141.7	2090.0	2068.7
25°	2096.1	2083.9	2050.4	1977.4	1922.7
27.5°	2001.8	1983.5	1947.0	1843.6	1779.7
30°	1898.3	1889.2	1837.5	1703.6	1654.9
32.5°	1801.0	1785.8	1731.0	1591.1	1551.5
35°	1700.6	1688.4	1606.3	1484.6	1448.1
37.5°	1600.2	1585.0	1481.5	1384.2	1338.6
40°	1499.8	1481.5	1369.0	1280.8	1232.1
42.5°	1405.5	1381.2	1271.6	1177.3	1122.6
45°	1305.1	1277.7	1168.2	1070.8	1028.3
47.5°	1204.7	1180.4	1080.0	979.6	930.9
50°	1098.2	1076.9	985.7	885.3	833.6
52.5°	1010.0	976.5	888.3	787.9	745.3
55°	906.6	879.2	797.1	702.7	666.2
57.5°	812.3	784.9	708.8	620.6	590.2
60°	724.0	684.5	620.6	544.6	520.2
62.5°	626.7	596.3	541.5	477.6	508.0
65°	538.5	508.0	459.4	468.5	389.4
67.5°	441.1	425.9	383.3	340.7	328.6
70°	359.0	340.7	325.5	279.9	267.7
72.5°	286.0	267.7	246.4	222.1	213.0
75°	216.0	200.8	188.6	179.5	197.7
77.5°	149.1	143.0	133.9	124.7	121.7
80°	97.3	94.3	91.3	88.2	85.2
82.5°	57.8	57.8	57.8	57.8	57.8
85°	30.4	33.5	36.5	39.5	42.6
87.5°	18.3	18.3	21.3	24.3	27.4
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)