

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: P546222

Luminaire Tested: **FMR-12-4-LD4-2LO-35-UNV-82-97-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: P546222  
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-LD4-2LO-35-UNV-82-97-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

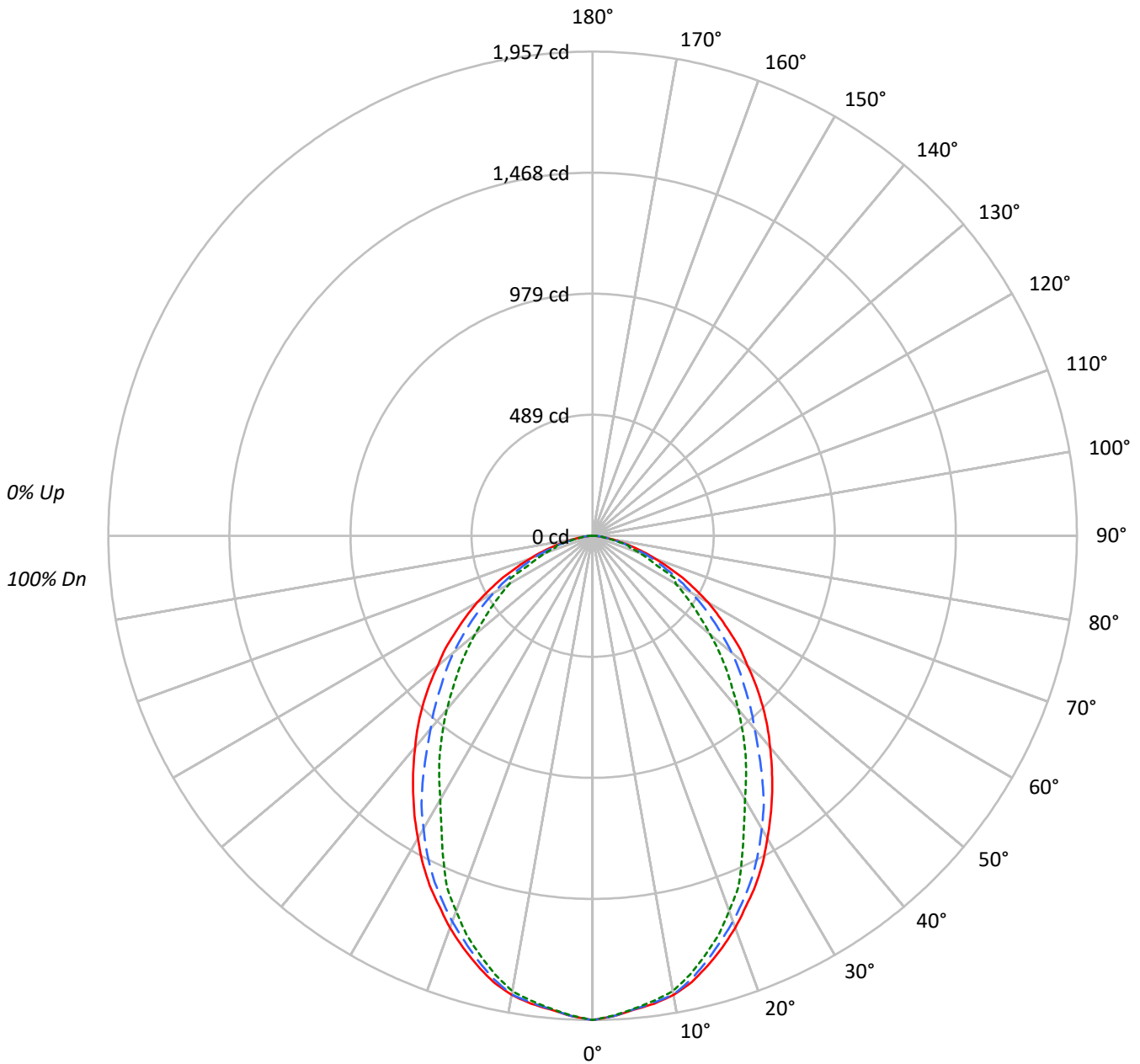
Lumens per Lamp: N/A  
Luminaire Lumens: 3842.1 lumens  
Efficiency: N/A  
Efficacy: 82.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	5267	5267	5267
5°	5195	5189	5183
10°	5150	5144	5106
15°	5011	4961	4891
20°	4827	4749	4620
25°	4629	4528	4246
30°	4387	4246	3824
35°	4155	3924	3538
40°	3918	3576	3219
45°	3694	3306	2910
50°	3419	3069	2595
55°	3163	2781	2325
60°	2898	2484	2082
65°	2550	2175	1844
70°	2101	1905	1566
75°	1670	1459	1529
80°	1122	1052	982
85°	698	840	979



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	182.2	4.7
10°-20°	500.0	13.0
20°-30°	692.2	18.0
30°-40°	738.1	19.2
40°-50°	673.3	17.5
50°-60°	527.5	13.7
60°-70°	343.8	8.9
70°-80°	152.3	4.0
80°-90°	32.7	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°	1374.3	35.8
0°-40°	2112.4	55.0
0°-60°	3313.2	86.2
0°-90°	3842.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3842.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1957	1957	1957	1957	1957	
5°	1923	1921	1921	1919	1919	183
15°	1799	1799	1781	1762	1756	506
25°	1559	1550	1525	1471	1430	716
35°	1265	1256	1195	1104	1077	791
45°	971	950	869	796	765	748
55°	674	654	593	523	496	605
65°	400	378	342	348	290	395
75°	161	149	140	134	147	172
85°	23	25	27	29	32	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1957.1	1957.1	1957.1	1957.1	1957.1
2.5°	1943.5	1943.5	1943.5	1941.2	1941.2
5°	1923.1	1920.9	1920.9	1918.6	1918.6
7.5°	1907.3	1905.0	1902.8	1900.5	1896.0
10°	1884.7	1884.7	1882.4	1871.1	1868.8
12.5°	1848.5	1846.2	1837.2	1821.3	1816.8
15°	1798.7	1798.7	1780.6	1762.5	1755.7
17.5°	1744.4	1742.1	1719.5	1701.4	1692.4
20°	1685.6	1681.0	1658.4	1629.0	1613.2
22.5°	1620.0	1620.0	1592.8	1554.3	1538.5
25°	1558.9	1549.8	1524.9	1470.6	1429.9
27.5°	1488.7	1475.2	1448.0	1371.1	1323.6
30°	1411.8	1405.0	1366.6	1267.0	1230.8
32.5°	1339.4	1328.1	1287.4	1183.3	1153.9
35°	1264.7	1255.7	1194.6	1104.1	1077.0
37.5°	1190.1	1178.8	1101.8	1029.4	995.5
40°	1115.4	1101.8	1018.1	952.5	916.3
42.5°	1045.3	1027.2	945.7	875.6	834.9
45°	970.6	950.3	868.8	796.4	764.7
47.5°	896.0	877.9	803.2	728.5	692.3
50°	816.8	800.9	733.1	658.4	619.9
52.5°	751.2	726.3	660.7	586.0	554.3
55°	674.2	653.9	592.8	522.6	495.5
57.5°	604.1	583.7	527.2	461.6	438.9
60°	538.5	509.1	461.6	405.0	386.9
62.5°	466.1	443.5	402.7	355.2	377.8
65°	400.5	377.8	341.6	348.4	289.6
67.5°	328.1	316.8	285.1	253.4	244.4
70°	267.0	253.4	242.1	208.2	199.1
72.5°	212.7	199.1	183.3	165.2	158.4
75°	160.6	149.3	140.3	133.5	147.1
77.5°	110.9	106.3	99.6	92.8	90.5
80°	72.4	70.1	67.9	65.6	63.4
82.5°	43.0	43.0	43.0	43.0	43.0
85°	22.6	24.9	27.2	29.4	31.7
87.5°	13.6	13.6	15.8	18.1	20.4
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)