

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: P545897

Luminaire Tested: **FMR-12-4-LD4-1HI-50-UNV-82-86-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: P545897  
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-LD4-1HI-50-UNV-82-86-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

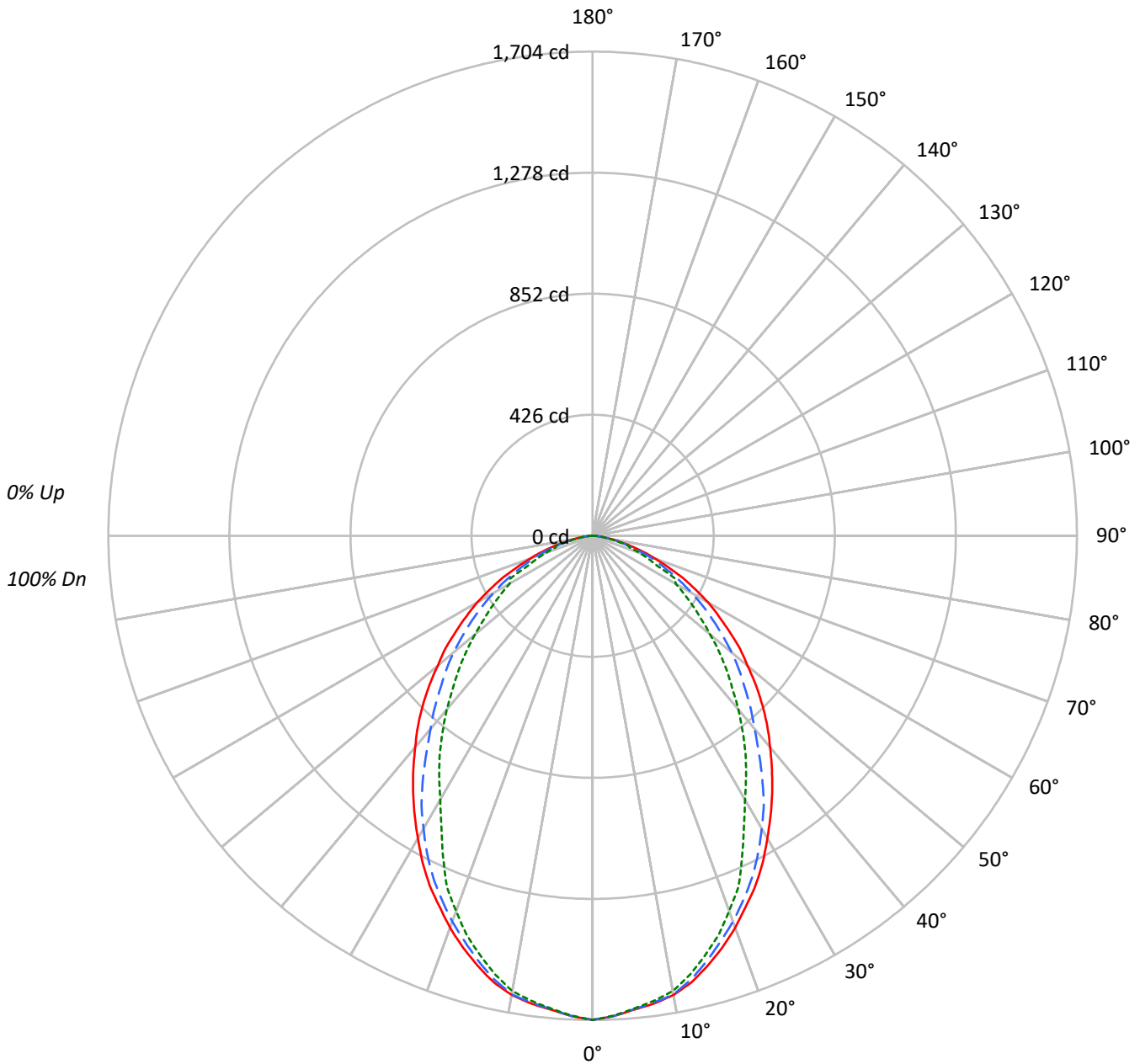
Lumens per Lamp: N/A  
Luminaire Lumens: 3345.0 lumens  
Efficiency: N/A  
Efficacy: 77.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.2  
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°	4585	4585	4585
5°	4523	4518	4512
10°	4484	4478	4446
15°	4363	4319	4259
20°	4202	4135	4022
25°	4030	3942	3696
30°	3819	3697	3330
35°	3617	3417	3080
40°	3411	3114	2803
45°	3216	2879	2534
50°	2977	2672	2259
55°	2754	2421	2024
60°	2523	2162	1813
65°	2220	1894	1605
70°	1828	1659	1364
75°	1455	1269	1331
80°	976	916	855
85°	608	729	852



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	158.6	4.7
10°-20°	435.3	13.0
20°-30°	602.6	18.0
30°-40°	642.6	19.2
40°-50°	586.2	17.5
50°-60°	459.2	13.7
60°-70°	299.3	8.9
70°-80°	132.6	4.0
80°-90°	28.5	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°	1196.5	35.8
0°-40°	1839.1	55.0
0°-60°	2884.6	86.2
0°-90°	3345.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3345.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1704	1704	1704	1704	1704	
5°	1674	1672	1672	1670	1670	159
15°	1566	1566	1550	1534	1529	440
25°	1357	1349	1328	1280	1245	623
35°	1101	1093	1040	961	938	688
45°	845	827	756	693	666	651
55°	587	569	516	455	431	526
65°	349	329	297	303	252	344
75°	140	130	122	116	128	150
85°	20	22	24	26	28	27
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1703.9	1703.9	1703.9	1703.9	1703.9
2.5°	1692.1	1692.1	1692.1	1690.1	1690.1
5°	1674.4	1672.4	1672.4	1670.4	1670.4
7.5°	1660.6	1658.6	1656.6	1654.7	1650.7
10°	1640.9	1640.9	1638.9	1629.0	1627.1
12.5°	1609.3	1607.4	1599.5	1585.7	1581.8
15°	1566.0	1566.0	1550.3	1534.5	1528.6
17.5°	1518.7	1516.8	1497.1	1481.3	1473.4
20°	1467.5	1463.6	1443.9	1418.3	1404.5
22.5°	1410.4	1410.4	1386.8	1353.3	1339.5
25°	1357.2	1349.3	1327.7	1280.4	1244.9
27.5°	1296.1	1284.3	1260.7	1193.7	1152.3
30°	1229.2	1223.3	1189.8	1103.1	1071.6
32.5°	1166.1	1156.3	1120.8	1030.2	1004.6
35°	1101.1	1093.3	1040.1	961.3	937.6
37.5°	1036.1	1026.3	959.3	896.3	866.7
40°	971.1	959.3	886.4	829.3	797.8
42.5°	910.1	894.3	823.4	762.3	726.9
45°	845.1	827.3	756.4	693.4	665.8
47.5°	780.1	764.3	699.3	634.3	602.8
50°	711.1	697.3	638.2	573.2	539.7
52.5°	654.0	632.3	575.2	510.2	482.6
55°	587.0	569.3	516.1	455.0	431.4
57.5°	525.9	508.2	459.0	401.8	382.1
60°	468.8	443.2	401.8	352.6	336.8
62.5°	405.8	386.1	350.6	309.3	329.0
65°	348.7	329.0	297.4	303.4	252.1
67.5°	285.6	275.8	248.2	220.6	212.7
70°	232.4	220.6	210.8	181.2	173.3
72.5°	185.2	173.3	159.6	143.8	137.9
75°	139.9	130.0	122.1	116.2	128.0
77.5°	96.5	92.6	86.7	80.8	78.8
80°	63.0	61.1	59.1	57.1	55.2
82.5°	37.4	37.4	37.4	37.4	37.4
85°	19.7	21.7	23.6	25.6	27.6
87.5°	11.8	11.8	13.8	15.8	17.7
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)