

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: P545849

Luminaire Tested: **FMR-12-4-LD4-1HI-40-UNV-80-86-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: P545849  
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-40-UNV-80-86-EDD  
Description: 1X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

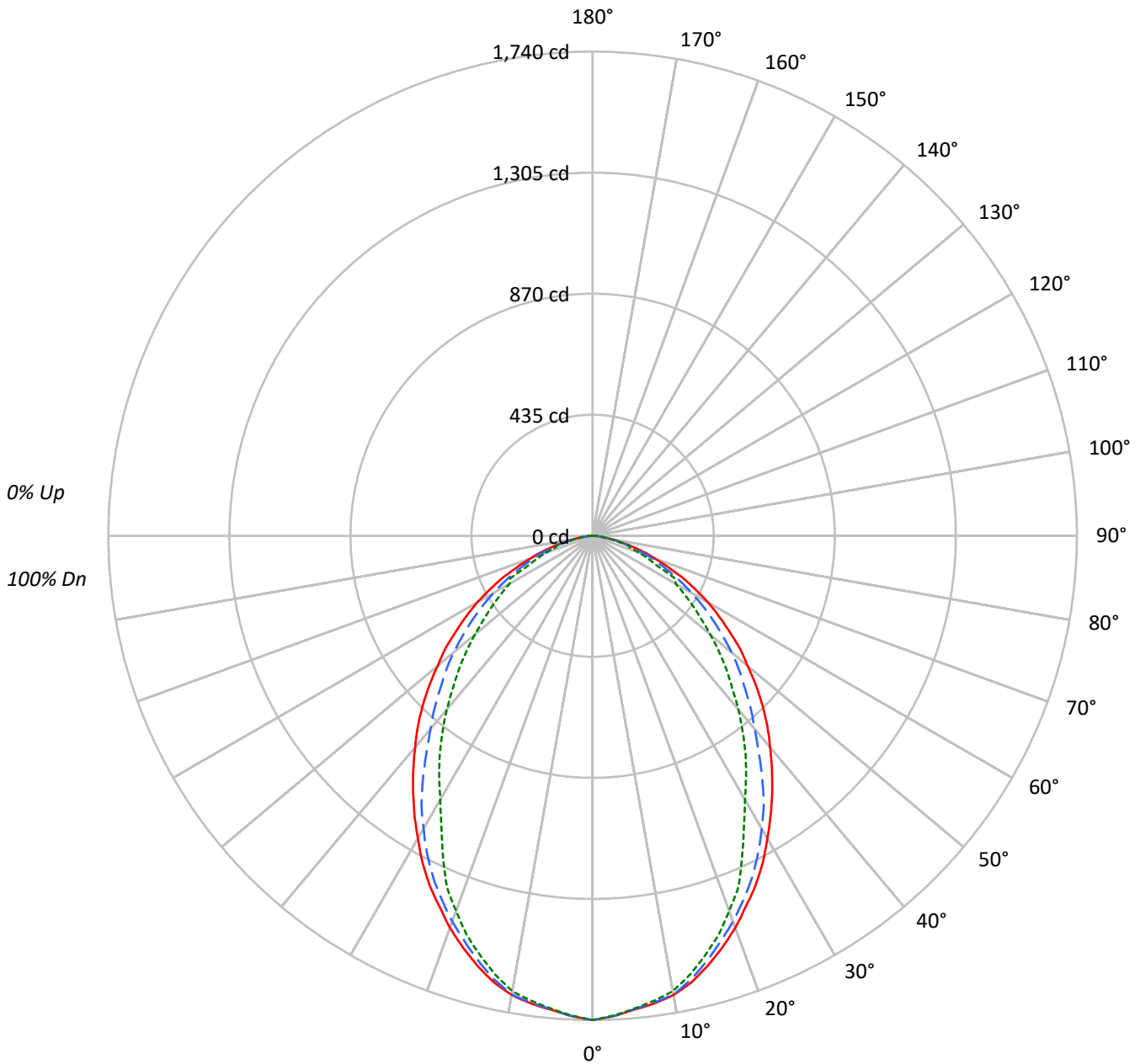
Lumens per Lamp: N/A  
Luminaire Lumens: 3416.0 lumens  
Efficiency: N/A  
Efficacy: 79.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	4683	4683	4683
5°	4619	4613	4608
10°	4579	4573	4540
15°	4455	4411	4349
20°	4292	4222	4107
25°	4115	4026	3775
30°	3901	3775	3400
35°	3694	3489	3145
40°	3484	3180	2862
45°	3284	2940	2587
50°	3040	2729	2308
55°	2813	2472	2067
60°	2577	2209	1851
65°	2267	1934	1640
70°	1868	1693	1393
75°	1485	1297	1360
80°	998	934	872
85°	621	744	871



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	162.0	4.7
10°-20°	444.5	13.0
20°-30°	615.4	18.0
30°-40°	656.2	19.2
40°-50°	598.7	17.5
50°-60°	469.0	13.7
60°-70°	305.7	8.9
70°-80°	135.4	4.0
80°-90°	29.1	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°	1221.9	35.8
0°-40°	1878.2	55.0
0°-60°	2945.8	86.2
0°-90°	3416.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3416.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1740	1740	1740	1740	1740	
5°	1710	1708	1708	1706	1706	162
15°	1599	1599	1583	1567	1561	450
25°	1386	1378	1356	1308	1271	636
35°	1124	1116	1062	982	958	703
45°	863	845	772	708	680	665
55°	600	581	527	465	440	538
65°	356	336	304	310	258	351
75°	143	133	125	119	131	153
85°	20	22	24	26	28	28
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1740.1	1740.1	1740.1	1740.1	1740.1
2.5°	1728.0	1728.0	1728.0	1726.0	1726.0
5°	1709.9	1707.9	1707.9	1705.9	1705.9
7.5°	1695.8	1693.8	1691.8	1689.8	1685.8
10°	1675.7	1675.7	1673.7	1663.6	1661.6
12.5°	1643.5	1641.5	1633.4	1619.4	1615.3
15°	1599.3	1599.3	1583.2	1567.1	1561.0
17.5°	1551.0	1549.0	1528.8	1512.7	1504.7
20°	1498.7	1494.6	1474.5	1448.4	1434.3
22.5°	1440.3	1440.3	1416.2	1382.0	1367.9
25°	1386.0	1378.0	1355.8	1307.6	1271.4
27.5°	1323.7	1311.6	1287.4	1219.1	1176.8
30°	1255.3	1249.2	1215.0	1126.5	1094.3
32.5°	1190.9	1180.8	1144.6	1052.1	1025.9
35°	1124.5	1116.5	1062.1	981.7	957.5
37.5°	1058.1	1048.1	979.7	915.3	885.1
40°	991.7	979.7	905.2	846.9	814.7
42.5°	929.4	913.3	840.9	778.5	742.3
45°	863.0	844.9	772.5	708.1	679.9
47.5°	796.6	780.5	714.1	647.7	615.6
50°	726.2	712.1	651.8	585.4	551.2
52.5°	667.9	645.7	587.4	521.0	492.9
55°	599.5	581.4	527.0	464.7	440.5
57.5°	537.1	519.0	468.7	410.4	390.3
60°	478.8	452.6	410.4	360.1	344.0
62.5°	414.4	394.3	358.1	315.8	335.9
65°	356.1	335.9	303.8	309.8	257.5
67.5°	291.7	281.6	253.5	225.3	217.3
70°	237.4	225.3	215.2	185.1	177.0
72.5°	189.1	177.0	162.9	146.8	140.8
75°	142.8	132.8	124.7	118.7	130.8
77.5°	98.6	94.5	88.5	82.5	80.5
80°	64.4	62.4	60.3	58.3	56.3
82.5°	38.2	38.2	38.2	38.2	38.2
85°	20.1	22.1	24.1	26.2	28.2
87.5°	12.1	12.1	14.1	16.1	18.1
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)