

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: P545867

Luminaire Tested: **FMR-12-4-LD4-1HI-40-UNV-82-88-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: P545867  
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-82-88-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

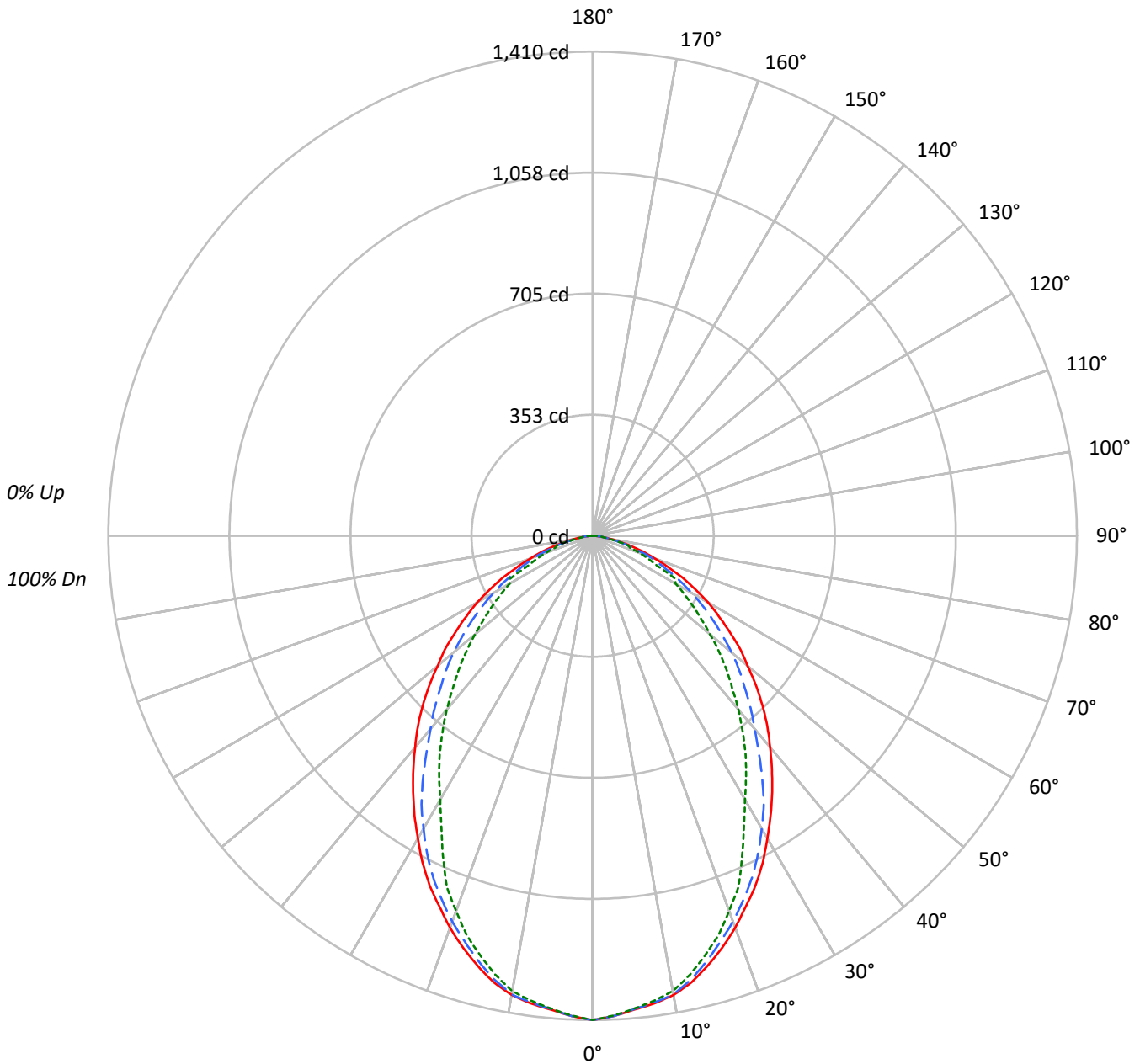
Lumens per Lamp: N/A  
Luminaire Lumens: 2768.0 lumens  
Efficiency: N/A  
Efficacy: 64.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	3794	3794	3794
5°	3743	3738	3734
10°	3710	3706	3679
15°	3610	3574	3524
20°	3478	3422	3328
25°	3335	3262	3059
30°	3160	3059	2755
35°	2993	2827	2549
40°	2823	2577	2319
45°	2661	2382	2097
50°	2463	2211	1870
55°	2279	2004	1675
60°	2088	1790	1500
65°	1837	1567	1328
70°	1513	1372	1128
75°	1203	1051	1102
80°	809	758	707
85°	503	605	704



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	131.3	4.7
10°-20°	360.2	13.0
20°-30°	498.7	18.0
30°-40°	531.7	19.2
40°-50°	485.1	17.5
50°-60°	380.0	13.7
60°-70°	247.7	8.9
70°-80°	109.7	4.0
80°-90°	23.6	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°	990.1	35.8
0°-40°	1521.9	55.0
0°-60°	2387.0	86.2
0°-90°	2768.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2768.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1410	1410	1410	1410	1410	
5°	1386	1384	1384	1382	1382	132
15°	1296	1296	1283	1270	1265	364
25°	1123	1117	1099	1060	1030	516
35°	911	905	861	796	776	570
45°	699	685	626	574	551	539
55°	486	471	427	376	357	436
65°	288	272	246	251	209	284
75°	116	108	101	96	106	124
85°	16	18	20	21	23	23
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1410.0	1410.0	1410.0	1410.0	1410.0
2.5°	1400.2	1400.2	1400.2	1398.6	1398.6
5°	1385.5	1383.9	1383.9	1382.3	1382.3
7.5°	1374.1	1372.5	1370.9	1369.2	1366.0
10°	1357.8	1357.8	1356.2	1348.0	1346.4
12.5°	1331.7	1330.1	1323.6	1312.2	1308.9
15°	1295.9	1295.9	1282.8	1269.8	1264.9
17.5°	1256.8	1255.1	1238.8	1225.8	1219.3
20°	1214.4	1211.1	1194.8	1173.6	1162.2
22.5°	1167.1	1167.1	1147.5	1119.8	1108.4
25°	1123.1	1116.6	1098.6	1059.5	1030.2
27.5°	1072.6	1062.8	1043.2	987.8	953.6
30°	1017.1	1012.3	984.5	912.8	886.7
32.5°	965.0	956.8	927.5	852.5	831.3
35°	911.2	904.7	860.7	795.5	775.9
37.5°	857.4	849.2	793.8	741.7	717.2
40°	803.6	793.8	733.5	686.2	660.2
42.5°	753.1	740.0	681.4	630.8	601.5
45°	699.3	684.6	625.9	573.8	551.0
47.5°	645.5	632.5	578.7	524.9	498.8
50°	588.4	577.0	528.1	474.3	446.6
52.5°	541.2	523.2	476.0	422.2	399.4
55°	485.8	471.1	427.1	376.5	357.0
57.5°	435.2	420.5	379.8	332.5	316.2
60°	387.9	366.8	332.5	291.8	278.7
62.5°	335.8	319.5	290.1	255.9	272.2
65°	288.5	272.2	246.1	251.0	208.6
67.5°	236.4	228.2	205.4	182.6	176.0
70°	192.3	182.6	174.4	150.0	143.4
72.5°	153.2	143.4	132.0	119.0	114.1
75°	115.7	107.6	101.1	96.2	106.0
77.5°	79.9	76.6	71.7	66.8	65.2
80°	52.2	50.5	48.9	47.3	45.6
82.5°	31.0	31.0	31.0	31.0	31.0
85°	16.3	17.9	19.6	21.2	22.8
87.5°	9.8	9.8	11.4	13.0	14.7
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)