

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: P546070

Luminaire Tested: **FMR-12-4-LD4-1STD-40-UNV-93-97-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: P546070  
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-LD4-1STD-40-UNV-93-97-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

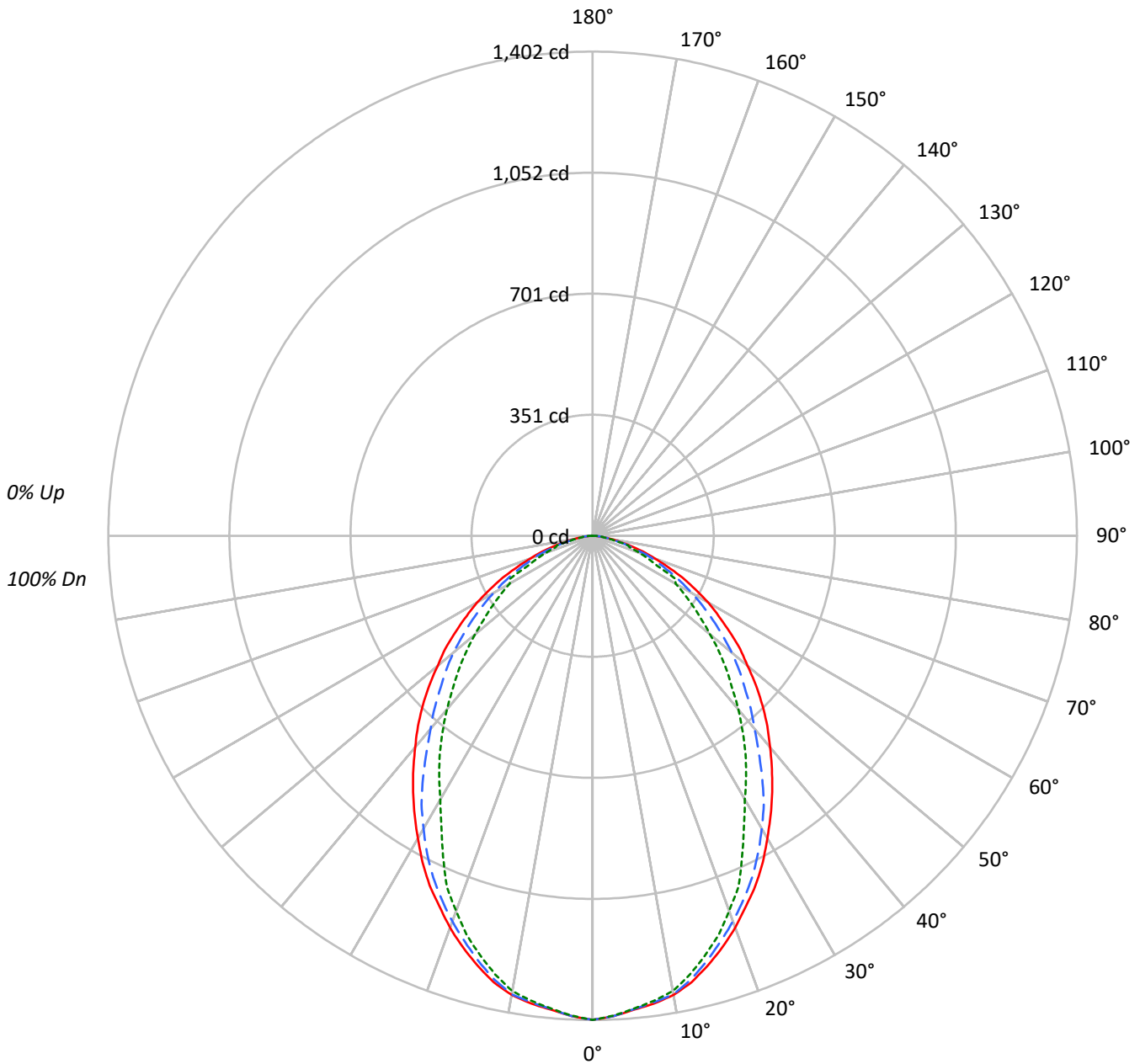
Lumens per Lamp: N/A  
Luminaire Lumens: 2752.0 lumens  
Efficiency: N/A  
Efficacy: 82.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
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°	3772	3772	3772
5°	3721	3717	3712
10°	3689	3684	3658
15°	3589	3553	3504
20°	3458	3402	3309
25°	3315	3243	3041
30°	3142	3042	2739
35°	2976	2811	2534
40°	2807	2562	2305
45°	2646	2368	2085
50°	2449	2198	1859
55°	2266	1992	1665
60°	2076	1779	1491
65°	1826	1558	1321
70°	1504	1364	1122
75°	1197	1045	1095
80°	804	753	704
85°	500	599	701



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	130.5	4.7
10°-20°	358.1	13.0
20°-30°	495.8	18.0
30°-40°	528.7	19.2
40°-50°	482.3	17.5
50°-60°	377.8	13.7
60°-70°	246.2	8.9
70°-80°	109.1	4.0
80°-90°	23.4	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°	984.4	35.8
0°-40°	1513.1	55.0
0°-60°	2373.2	86.2
0°-90°	2752.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2752.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1402	1402	1402	1402	1402	
5°	1378	1376	1376	1374	1374	131
15°	1288	1288	1275	1262	1258	362
25°	1117	1110	1092	1053	1024	513
35°	906	899	856	791	771	566
45°	695	681	622	570	548	536
55°	483	468	425	374	355	433
65°	287	271	245	250	207	283
75°	115	107	100	96	105	123
85°	16	18	19	21	23	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1401.8	1401.8	1401.8	1401.8	1401.8
2.5°	1392.1	1392.1	1392.1	1390.5	1390.5
5°	1377.5	1375.9	1375.9	1374.3	1374.3
7.5°	1366.2	1364.6	1362.9	1361.3	1358.1
10°	1350.0	1350.0	1348.4	1340.2	1338.6
12.5°	1324.0	1322.4	1315.9	1304.6	1301.4
15°	1288.4	1288.4	1275.4	1262.5	1257.6
17.5°	1249.5	1247.9	1231.7	1218.7	1212.2
20°	1207.4	1204.1	1187.9	1166.8	1155.5
22.5°	1160.4	1160.4	1140.9	1113.4	1102.0
25°	1116.6	1110.1	1092.3	1053.4	1024.2
27.5°	1066.4	1056.6	1037.2	982.1	948.1
30°	1011.3	1006.4	978.9	907.5	881.6
32.5°	959.4	951.3	922.1	847.6	826.5
35°	905.9	899.4	855.7	790.9	771.4
37.5°	852.4	844.3	789.2	737.4	713.1
40°	799.0	789.2	729.3	682.3	656.3
42.5°	748.7	735.8	677.4	627.2	598.0
45°	695.2	680.7	622.3	570.5	547.8
47.5°	641.8	628.8	575.3	521.8	495.9
50°	585.0	573.7	525.1	471.6	444.0
52.5°	538.0	520.2	473.2	419.7	397.1
55°	482.9	468.4	424.6	374.4	354.9
57.5°	432.7	418.1	377.6	330.6	314.4
60°	385.7	364.6	330.6	290.1	277.1
62.5°	333.8	317.6	288.5	254.4	270.6
65°	286.8	270.6	244.7	249.6	207.4
67.5°	235.0	226.9	204.2	181.5	175.0
70°	191.2	181.5	173.4	149.1	142.6
72.5°	152.3	142.6	131.3	118.3	113.4
75°	115.1	107.0	100.5	95.6	105.3
77.5°	79.4	76.2	71.3	66.4	64.8
80°	51.9	50.2	48.6	47.0	45.4
82.5°	30.8	30.8	30.8	30.8	30.8
85°	16.2	17.8	19.4	21.1	22.7
87.5°	9.7	9.7	11.3	13.0	14.6
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)