

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: P546031

Luminaire Tested: **FMR-12-4-LD4-1STD-35-UNV-93-84-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: P546031  
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-35-UNV-93-84-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

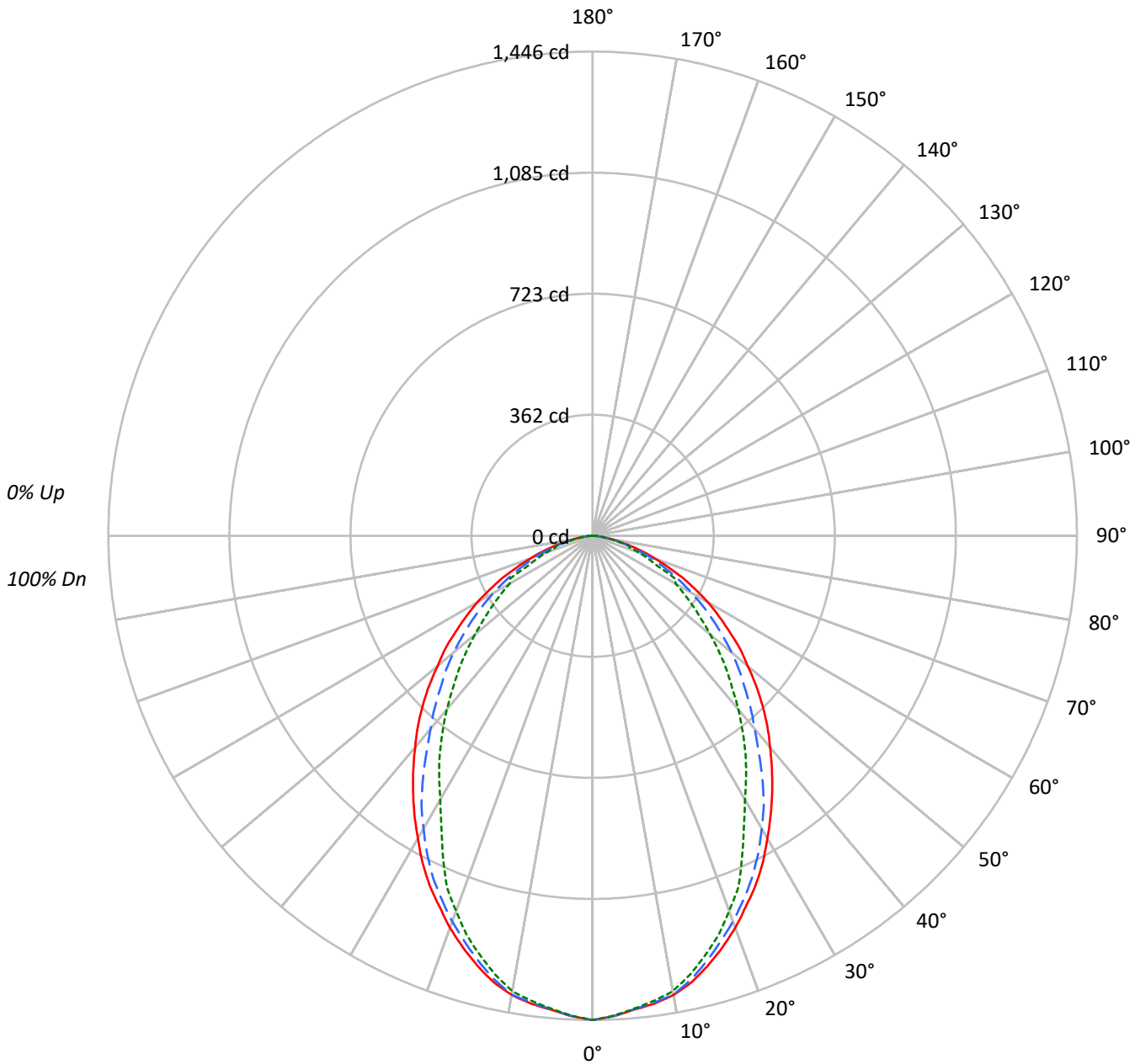
Lumens per Lamp: N/A  
Luminaire Lumens: 2839.0 lumens  
Efficiency: N/A  
Efficacy: 85.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	3891	3891	3891
5°	3839	3834	3830
10°	3805	3801	3773
15°	3703	3665	3614
20°	3567	3509	3414
25°	3420	3346	3137
30°	3242	3138	2826
35°	3070	2900	2614
40°	2895	2643	2379
45°	2729	2443	2151
50°	2527	2268	1918
55°	2337	2055	1718
60°	2141	1836	1539
65°	1884	1607	1363
70°	1552	1408	1157
75°	1234	1078	1130
80°	829	778	725
85°	516	621	722



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	134.6	4.7
10°-20°	369.4	13.0
20°-30°	511.5	18.0
30°-40°	545.4	19.2
40°-50°	497.5	17.5
50°-60°	389.8	13.7
60°-70°	254.1	8.9
70°-80°	112.5	4.0
80°-90°	24.2	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°	1015.5	35.8
0°-40°	1560.9	55.0
0°-60°	2448.2	86.2
0°-90°	2839.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2839.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1446	1446	1446	1446	1446	
5°	1421	1419	1419	1418	1418	135
15°	1329	1329	1316	1302	1297	374
25°	1152	1145	1127	1087	1057	529
35°	935	928	883	816	796	584
45°	717	702	642	588	565	552
55°	498	483	438	386	366	447
65°	296	279	252	258	214	292
75°	119	110	104	99	109	127
85°	17	18	20	22	23	23
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1446.1	1446.1	1446.1	1446.1	1446.1
2.5°	1436.1	1436.1	1436.1	1434.4	1434.4
5°	1421.1	1419.4	1419.4	1417.7	1417.7
7.5°	1409.4	1407.7	1406.0	1404.4	1401.0
10°	1392.6	1392.6	1391.0	1382.6	1380.9
12.5°	1365.9	1364.2	1357.5	1345.8	1342.5
15°	1329.1	1329.1	1315.7	1302.4	1297.4
17.5°	1289.0	1287.3	1270.6	1257.2	1250.5
20°	1245.5	1242.2	1225.5	1203.7	1192.0
22.5°	1197.0	1197.0	1177.0	1148.6	1136.9
25°	1151.9	1145.2	1126.8	1086.7	1056.6
27.5°	1100.1	1090.0	1070.0	1013.1	978.0
30°	1043.2	1038.2	1009.8	936.2	909.5
32.5°	989.7	981.4	951.3	874.4	852.6
35°	934.6	927.9	882.7	815.9	795.8
37.5°	879.4	871.0	814.2	760.7	735.6
40°	824.2	814.2	752.3	703.8	677.1
42.5°	772.4	759.0	698.8	647.0	616.9
45°	717.2	702.2	642.0	588.5	565.1
47.5°	662.1	648.7	593.5	538.3	511.6
50°	603.5	591.8	541.7	486.5	458.1
52.5°	555.1	536.7	488.2	433.0	409.6
55°	498.2	483.2	438.0	386.2	366.1
57.5°	446.4	431.3	389.5	341.1	324.3
60°	397.9	376.2	341.1	299.3	285.9
62.5°	344.4	327.7	297.6	262.5	279.2
65°	295.9	279.2	252.4	257.5	214.0
67.5°	242.4	234.1	210.7	187.2	180.6
70°	197.3	187.2	178.9	153.8	147.1
72.5°	157.2	147.1	135.4	122.0	117.0
75°	118.7	110.3	103.7	98.6	108.7
77.5°	81.9	78.6	73.6	68.5	66.9
80°	53.5	51.8	50.2	48.5	46.8
82.5°	31.8	31.8	31.8	31.8	31.8
85°	16.7	18.4	20.1	21.7	23.4
87.5°	10.0	10.0	11.7	13.4	15.0
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)