

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: P545985

Luminaire Tested: **FMR-12-4-LD4-1LO-50-UNV-81-86-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: P545985  
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-LD4-1LO-50-UNV-81-86-EDD  
Description: 1X4 FMR TROFFER WITH .156 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**

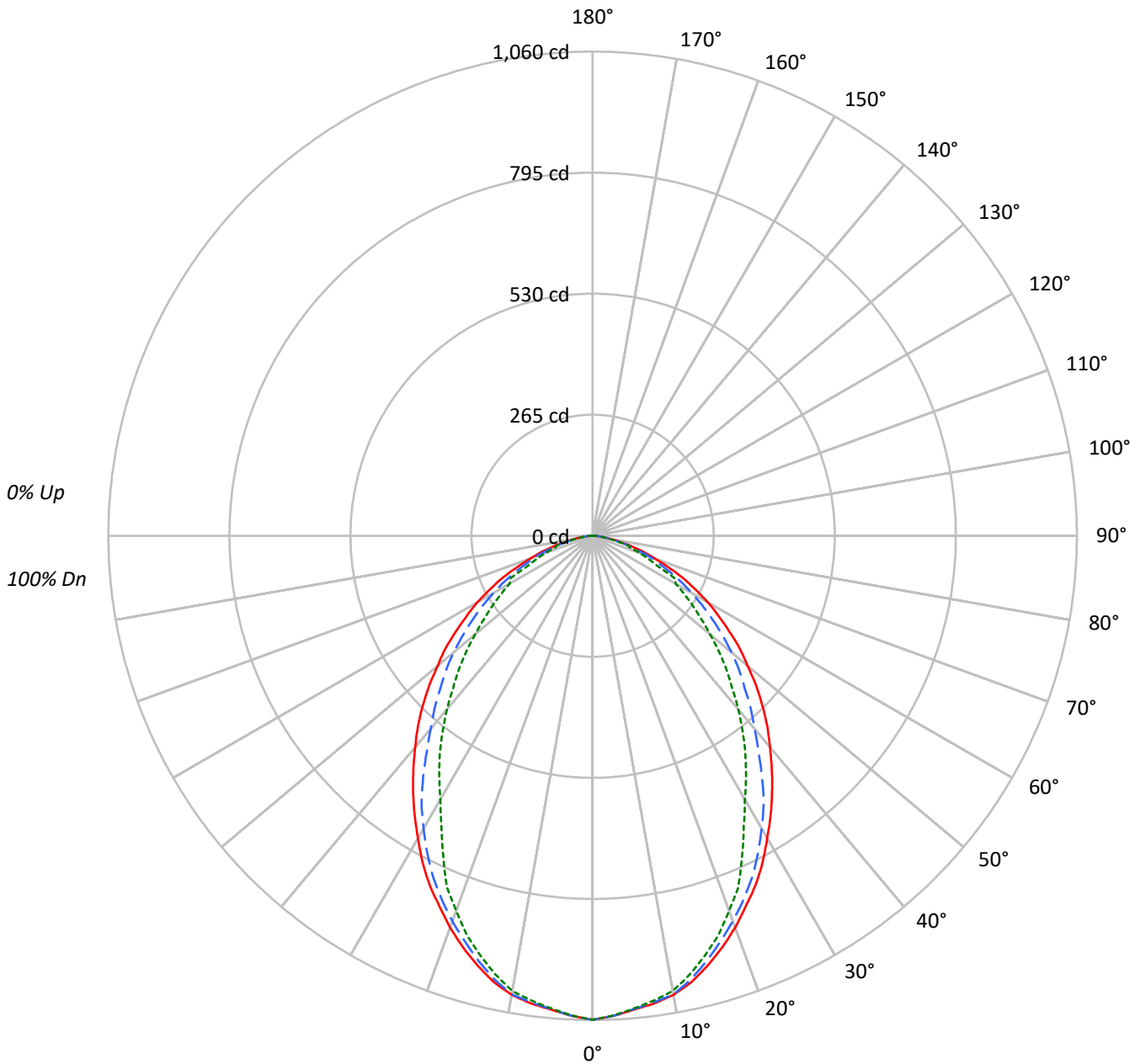
Lumens per Lamp: N/A  
Luminaire Lumens: 2080.0 lumens  
Efficiency: N/A  
Efficacy: 88.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 23.4  
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°	2851	2851	2851
5°	2813	2809	2806
10°	2788	2785	2765
15°	2713	2686	2648
20°	2613	2571	2501
25°	2506	2451	2298
30°	2375	2299	2070
35°	2249	2124	1915
40°	2121	1936	1743
45°	2000	1790	1576
50°	1851	1662	1405
55°	1712	1506	1258
60°	1569	1345	1128
65°	1380	1178	998
70°	1137	1031	848
75°	905	789	828
80°	607	569	532
85°	377	454	528



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	98.6	4.7
10°-20°	270.7	13.0
20°-30°	374.7	18.0
30°-40°	399.6	19.2
40°-50°	364.5	17.5
50°-60°	285.6	13.7
60°-70°	186.1	8.9
70°-80°	82.5	4.0
80°-90°	17.7	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°	744.0	35.8
0°-40°	1143.6	55.0
0°-60°	1793.7	86.2
0°-90°	2080.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2080.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1060	1060	1060	1060	1060	
5°	1041	1040	1040	1039	1039	99
15°	974	974	964	954	950	274
25°	844	839	826	796	774	387
35°	685	680	647	598	583	428
45°	526	514	470	431	414	405
55°	365	354	321	283	268	327
65°	217	205	185	189	157	214
75°	87	81	76	72	80	93
85°	12	14	15	16	17	17
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1059.5	1059.5	1059.5	1059.5	1059.5
2.5°	1052.2	1052.2	1052.2	1051.0	1051.0
5°	1041.2	1039.9	1039.9	1038.7	1038.7
7.5°	1032.6	1031.4	1030.1	1028.9	1026.5
10°	1020.3	1020.3	1019.1	1013.0	1011.8
12.5°	1000.7	999.5	994.6	986.0	983.6
15°	973.8	973.8	964.0	954.2	950.5
17.5°	944.4	943.2	930.9	921.1	916.2
20°	912.5	910.1	897.8	881.9	873.3
22.5°	877.0	877.0	862.3	841.5	832.9
25°	843.9	839.0	825.6	796.2	774.1
27.5°	806.0	798.6	783.9	742.3	716.6
30°	764.3	760.7	739.8	685.9	666.3
32.5°	725.1	719.0	697.0	640.6	624.7
35°	684.7	679.8	646.7	597.7	583.0
37.5°	644.3	638.2	596.5	557.3	538.9
40°	603.9	596.5	551.2	515.7	496.1
42.5°	565.9	556.1	512.0	474.0	452.0
45°	525.5	514.5	470.4	431.2	414.0
47.5°	485.1	475.3	434.8	394.4	374.8
50°	442.2	433.6	396.9	356.4	335.6
52.5°	406.7	393.2	357.7	317.2	300.1
55°	365.0	354.0	320.9	282.9	268.2
57.5°	327.0	316.0	285.4	249.9	237.6
60°	291.5	275.6	249.9	219.3	209.5
62.5°	252.3	240.1	218.0	192.3	204.6
65°	216.8	204.6	185.0	188.6	156.8
67.5°	177.6	171.5	154.3	137.2	132.3
70°	144.5	137.2	131.1	112.7	107.8
72.5°	115.1	107.8	99.2	89.4	85.7
75°	87.0	80.8	75.9	72.3	79.6
77.5°	60.0	57.6	53.9	50.2	49.0
80°	39.2	38.0	36.7	35.5	34.3
82.5°	23.3	23.3	23.3	23.3	23.3
85°	12.2	13.5	14.7	15.9	17.1
87.5°	7.3	7.3	8.6	9.8	11.0
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)