

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: P546059

Luminaire Tested: **FMR-12-4-LD4-1STD-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: P546059  
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-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**

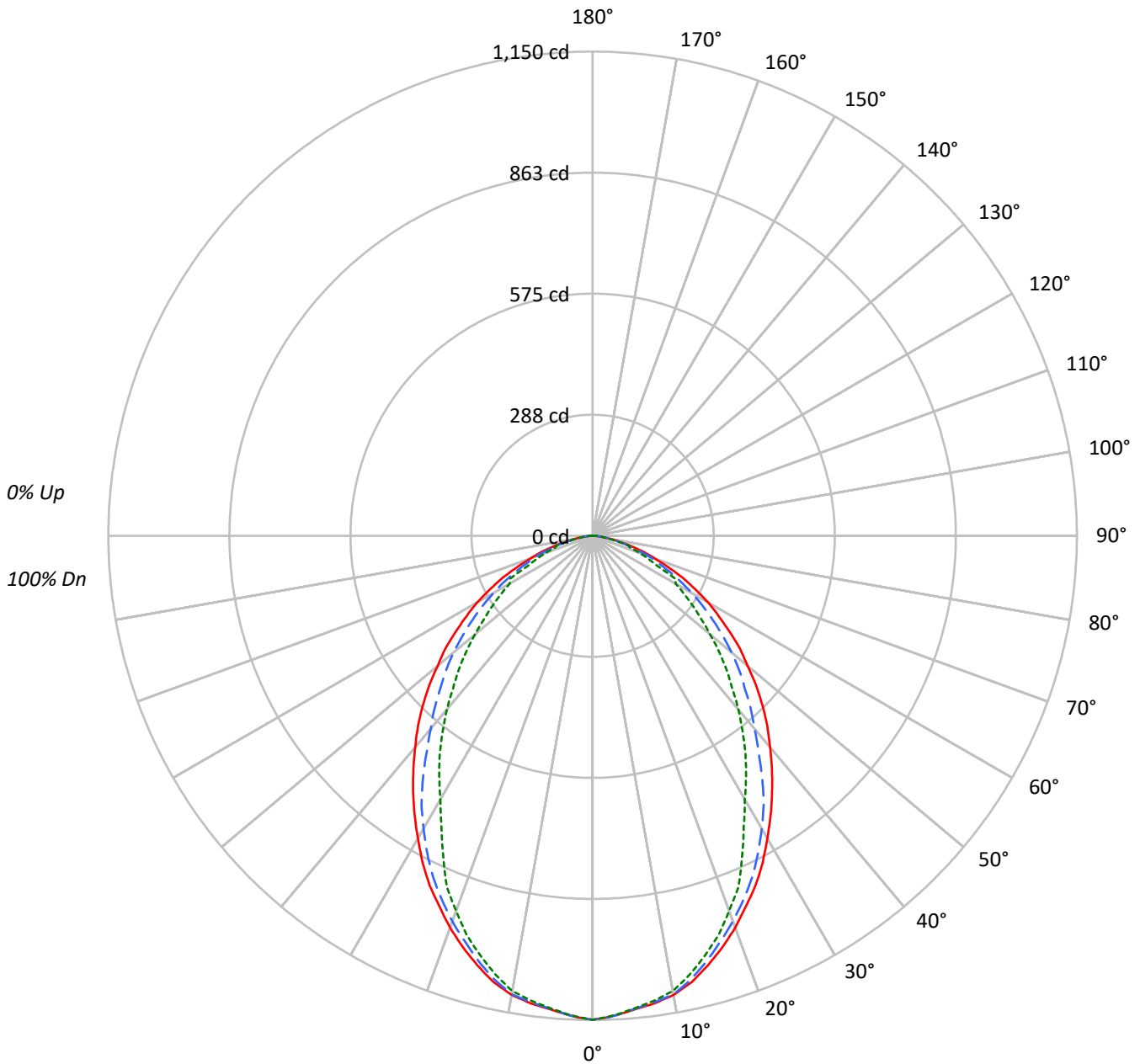
Lumens per Lamp: N/A  
Luminaire Lumens: 2257.0 lumens  
Efficiency: N/A  
Efficacy: 67.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	3094	3094	3094
5°	3052	3048	3045
10°	3025	3022	3000
15°	2944	2914	2873
20°	2836	2790	2714
25°	2719	2660	2494
30°	2577	2495	2247
35°	2441	2305	2078
40°	2302	2101	1891
45°	2170	1942	1709
50°	2009	1803	1525
55°	1858	1634	1366
60°	1702	1459	1223
65°	1498	1278	1083
70°	1234	1119	921
75°	981	857	898
80°	659	618	576
85°	411	491	574



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	107.0	4.7
10°-20°	293.7	13.0
20°-30°	406.6	18.0
30°-40°	433.6	19.2
40°-50°	395.5	17.5
50°-60°	309.9	13.7
60°-70°	202.0	8.9
70°-80°	89.5	4.0
80°-90°	19.2	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°	807.3	35.8
0°-40°	1240.9	55.0
0°-60°	1946.3	86.2
0°-90°	2257.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2257.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1150	1150	1150	1150	1150	
5°	1130	1128	1128	1127	1127	107
15°	1057	1057	1046	1035	1031	297
25°	916	910	896	864	840	420
35°	743	738	702	649	633	464
45°	570	558	510	468	449	439
55°	396	384	348	307	291	355
65°	235	222	201	205	170	232
75°	94	88	82	78	86	101
85°	13	15	16	17	19	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1149.7	1149.7	1149.7	1149.7	1149.7
2.5°	1141.7	1141.7	1141.7	1140.4	1140.4
5°	1129.7	1128.4	1128.4	1127.1	1127.1
7.5°	1120.4	1119.1	1117.8	1116.5	1113.8
10°	1107.2	1107.2	1105.8	1099.2	1097.9
12.5°	1085.9	1084.6	1079.2	1069.9	1067.3
15°	1056.6	1056.6	1046.0	1035.4	1031.4
17.5°	1024.7	1023.4	1010.1	999.5	994.2
20°	990.2	987.5	974.2	957.0	947.7
22.5°	951.6	951.6	935.7	913.1	903.8
25°	915.8	910.4	895.8	863.9	840.0
27.5°	874.6	866.6	850.6	805.4	777.5
30°	829.4	825.4	802.8	744.3	723.0
32.5°	786.8	780.2	756.3	695.1	677.8
35°	743.0	737.7	701.8	648.6	632.7
37.5°	699.1	692.5	647.3	604.7	584.8
40°	655.3	647.3	598.1	559.6	538.3
42.5°	614.1	603.4	555.6	514.4	490.4
45°	570.2	558.2	510.4	467.8	449.2
47.5°	526.3	515.7	471.8	428.0	406.7
50°	479.8	470.5	430.6	386.8	364.2
52.5°	441.3	426.6	388.1	344.2	325.6
55°	396.1	384.1	348.2	307.0	291.1
57.5°	354.9	342.9	309.7	271.1	257.8
60°	316.3	299.1	271.1	237.9	227.3
62.5°	273.8	260.5	236.6	208.7	222.0
65°	235.3	222.0	200.7	204.7	170.1
67.5°	192.7	186.1	167.5	148.9	143.5
70°	156.8	148.9	142.2	122.3	117.0
72.5°	124.9	117.0	107.7	97.0	93.0
75°	94.4	87.7	82.4	78.4	86.4
77.5°	65.1	62.5	58.5	54.5	53.2
80°	42.5	41.2	39.9	38.5	37.2
82.5°	25.3	25.3	25.3	25.3	25.3
85°	13.3	14.6	15.9	17.3	18.6
87.5°	8.0	8.0	9.3	10.6	12.0
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)