

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: P545954

Luminaire Tested: **FMR-12-4-LD4-1LO-40-UNV-81-87-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: P545954  
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-40-UNV-81-87-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

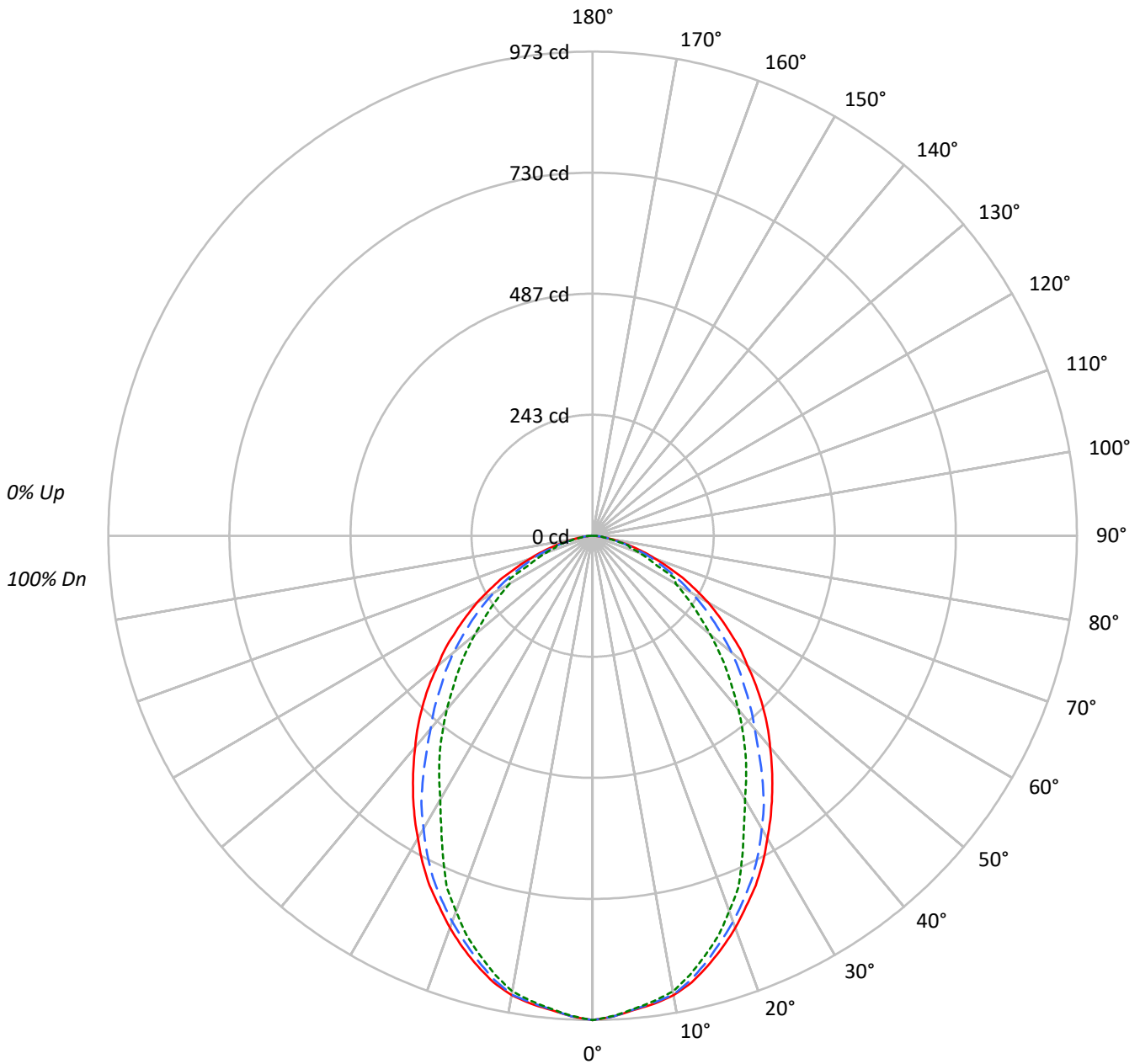
Lumens per Lamp: N/A  
Luminaire Lumens: 1911.0 lumens  
Efficiency: N/A  
Efficacy: 81.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	2619	2619	2619
5°	2584	2581	2578
10°	2561	2558	2540
15°	2493	2467	2433
20°	2401	2362	2298
25°	2302	2252	2112
30°	2182	2112	1902
35°	2067	1952	1760
40°	1949	1779	1601
45°	1837	1644	1448
50°	1701	1526	1291
55°	1574	1383	1156
60°	1441	1236	1035
65°	1268	1082	917
70°	1045	947	779
75°	831	726	760
80°	558	524	488
85°	349	417	488



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	90.6	4.7
10°-20°	248.7	13.0
20°-30°	344.3	18.0
30°-40°	367.1	19.2
40°-50°	334.9	17.5
50°-60°	262.4	13.7
60°-70°	171.0	8.9
70°-80°	75.8	4.0
80°-90°	16.3	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°	683.6	35.8
0°-40°	1050.7	55.0
0°-60°	1648.0	86.2
0°-90°	1911.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1911.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	973	973	973	973	973	
5°	957	955	955	954	954	91
15°	895	895	886	877	873	252
25°	775	771	758	732	711	356
35°	629	625	594	549	536	393
45°	483	473	432	396	380	372
55°	335	325	295	260	246	301
65°	199	188	170	173	144	196
75°	80	74	70	66	73	86
85°	11	12	14	15	16	16
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	973.4	973.4	973.4	973.4	973.4
2.5°	966.7	966.7	966.7	965.6	965.6
5°	956.6	955.4	955.4	954.3	954.3
7.5°	948.7	947.6	946.4	945.3	943.1
10°	937.4	937.4	936.3	930.7	929.5
12.5°	919.4	918.3	913.8	905.9	903.7
15°	894.7	894.7	885.7	876.7	873.3
17.5°	867.7	866.5	855.3	846.3	841.8
20°	838.4	836.1	824.9	810.3	802.4
22.5°	805.8	805.8	792.3	773.1	765.2
25°	775.4	770.9	758.5	731.5	711.2
27.5°	740.5	733.7	720.2	682.0	658.3
30°	702.2	698.8	679.7	630.2	612.2
32.5°	666.2	660.6	640.3	588.6	573.9
35°	629.1	624.6	594.2	549.2	535.7
37.5°	591.9	586.3	548.1	512.0	495.2
40°	554.8	548.1	506.4	473.8	455.8
42.5°	519.9	510.9	470.4	435.5	415.3
45°	482.8	472.7	432.1	396.1	380.4
47.5°	445.6	436.6	399.5	362.4	344.4
50°	406.3	398.4	364.6	327.5	308.3
52.5°	373.6	361.2	328.6	291.5	275.7
55°	335.4	325.2	294.8	260.0	246.5
57.5°	300.5	290.3	262.2	229.6	218.3
60°	267.8	253.2	229.6	201.4	192.4
62.5°	231.8	220.6	200.3	176.7	187.9
65°	199.2	187.9	169.9	173.3	144.0
67.5°	163.2	157.6	141.8	126.0	121.5
70°	132.8	126.0	120.4	103.5	99.0
72.5°	105.8	99.0	91.2	82.2	78.8
75°	79.9	74.3	69.8	66.4	73.1
77.5°	55.1	52.9	49.5	46.1	45.0
80°	36.0	34.9	33.8	32.6	31.5
82.5°	21.4	21.4	21.4	21.4	21.4
85°	11.3	12.4	13.5	14.6	15.8
87.5°	6.8	6.8	7.9	9.0	10.1
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)