

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: P546027

Luminaire Tested: **FMR-12-4-LD4-1STD-35-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: P546027  
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-82-88-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

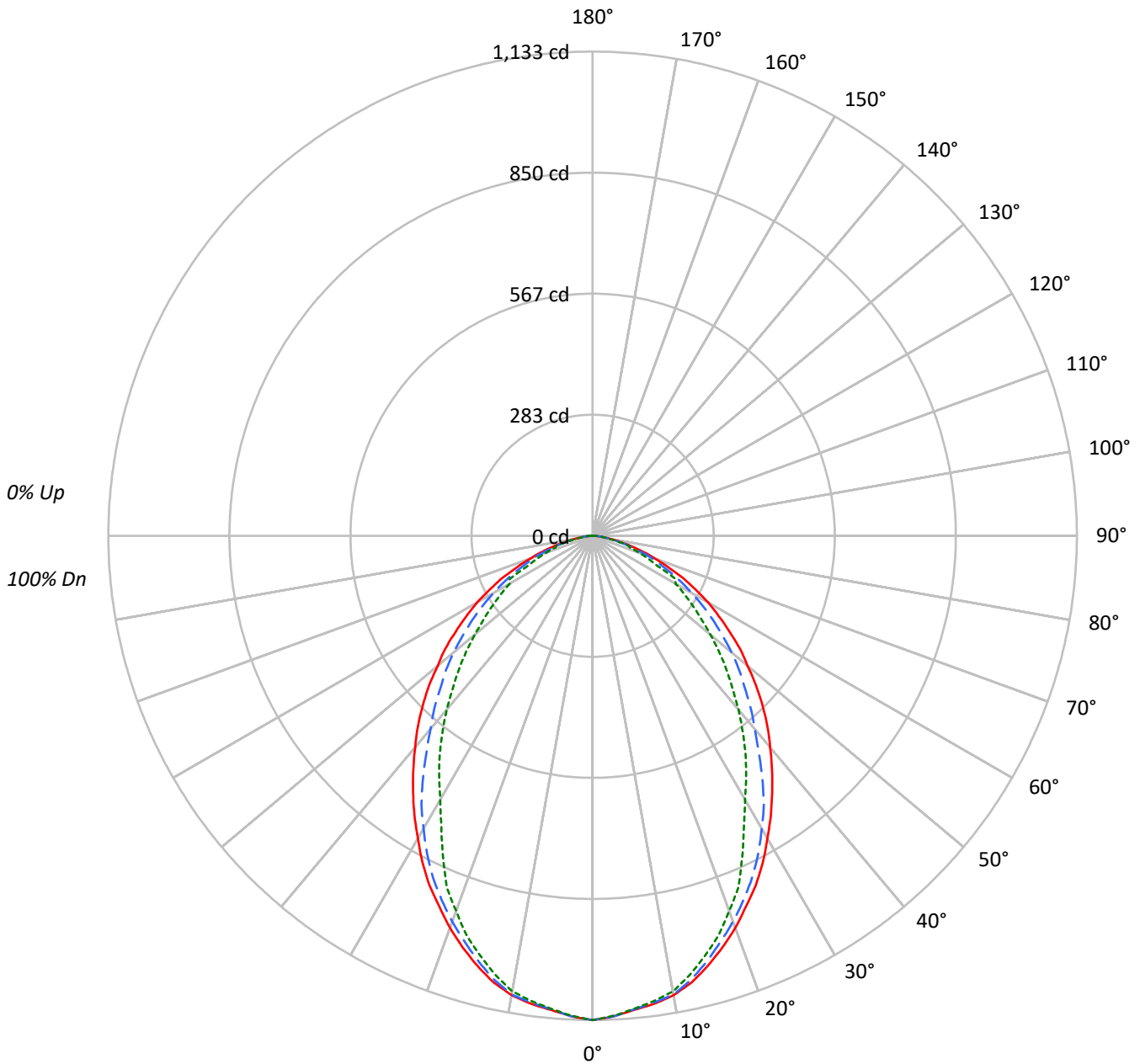
Lumens per Lamp: N/A  
Luminaire Lumens: 2225.0 lumens  
Efficiency: N/A  
Efficacy: 66.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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				20				20	
RC	80				70				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				100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87				87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75				75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65				65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56				56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50				50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44				44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40				40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36				36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33				33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30				30

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3050	3050	3050
5°	3008	3005	3001
10°	2983	2979	2957
15°	2902	2873	2833
20°	2796	2750	2675
25°	2681	2622	2459
30°	2541	2459	2215
35°	2406	2273	2049
40°	2269	2071	1864
45°	2139	1915	1686
50°	1980	1777	1503
55°	1832	1611	1346
60°	1678	1439	1206
65°	1477	1260	1068
70°	1216	1103	907
75°	967	844	886
80°	649	609	569
85°	404	485	565



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	105.5	4.7
10°-20°	289.5	13.0
20°-30°	400.9	18.0
30°-40°	427.4	19.2
40°-50°	389.9	17.5
50°-60°	305.5	13.7
60°-70°	199.1	8.9
70°-80°	88.2	4.0
80°-90°	18.9	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°	795.9	35.8
0°-40°	1223.3	55.0
0°-60°	1918.8	86.2
0°-90°	2225.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2225.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1133	1133	1133	1133	1133	
5°	1114	1112	1112	1111	1111	106
15°	1042	1042	1031	1021	1017	293
25°	903	898	883	852	828	414
35°	732	727	692	639	624	458
45°	562	550	503	461	443	433
55°	390	379	343	303	287	350
65°	232	219	198	202	168	229
75°	93	86	81	77	85	100
85°	13	14	16	17	18	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1133.4	1133.4	1133.4	1133.4	1133.4
2.5°	1125.5	1125.5	1125.5	1124.2	1124.2
5°	1113.7	1112.4	1112.4	1111.1	1111.1
7.5°	1104.6	1103.2	1101.9	1100.6	1098.0
10°	1091.5	1091.5	1090.1	1083.6	1082.3
12.5°	1070.5	1069.2	1063.9	1054.8	1052.1
15°	1041.7	1041.7	1031.2	1020.7	1016.8
17.5°	1010.2	1008.9	995.8	985.3	980.1
20°	976.2	973.5	960.4	943.4	934.2
22.5°	938.2	938.2	922.4	900.2	891.0
25°	902.8	897.5	883.1	851.7	828.1
27.5°	862.2	854.3	838.6	794.0	766.5
30°	817.6	813.7	791.4	733.8	712.8
32.5°	775.7	769.1	745.5	685.3	668.2
35°	732.4	727.2	691.8	639.4	623.7
37.5°	689.2	682.7	638.1	596.2	576.5
40°	646.0	638.1	589.6	551.6	530.7
42.5°	605.3	594.9	547.7	507.1	483.5
45°	562.1	550.3	503.1	461.2	442.9
47.5°	518.9	508.4	465.1	421.9	400.9
50°	473.0	463.8	424.5	381.3	359.0
52.5°	435.0	420.6	382.6	339.4	321.0
55°	390.5	378.7	343.3	302.7	286.9
57.5°	349.8	338.1	305.3	267.3	254.2
60°	311.8	294.8	267.3	234.5	224.1
62.5°	269.9	256.8	233.2	205.7	218.8
65°	231.9	218.8	197.9	201.8	167.7
67.5°	190.0	183.4	165.1	146.8	141.5
70°	154.6	146.8	140.2	120.5	115.3
72.5°	123.2	115.3	106.1	95.6	91.7
75°	93.0	86.5	81.2	77.3	85.2
77.5°	64.2	61.6	57.7	53.7	52.4
80°	41.9	40.6	39.3	38.0	36.7
82.5°	24.9	24.9	24.9	24.9	24.9
85°	13.1	14.4	15.7	17.0	18.3
87.5°	7.9	7.9	9.2	10.5	11.8
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)