

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: P546139

Luminaire Tested: **FMR-12-4-LD4-2HI-40-UNV-80-88-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: P546139  
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-LD4-2HI-40-UNV-80-88-EDD  
Description: 1X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC 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**

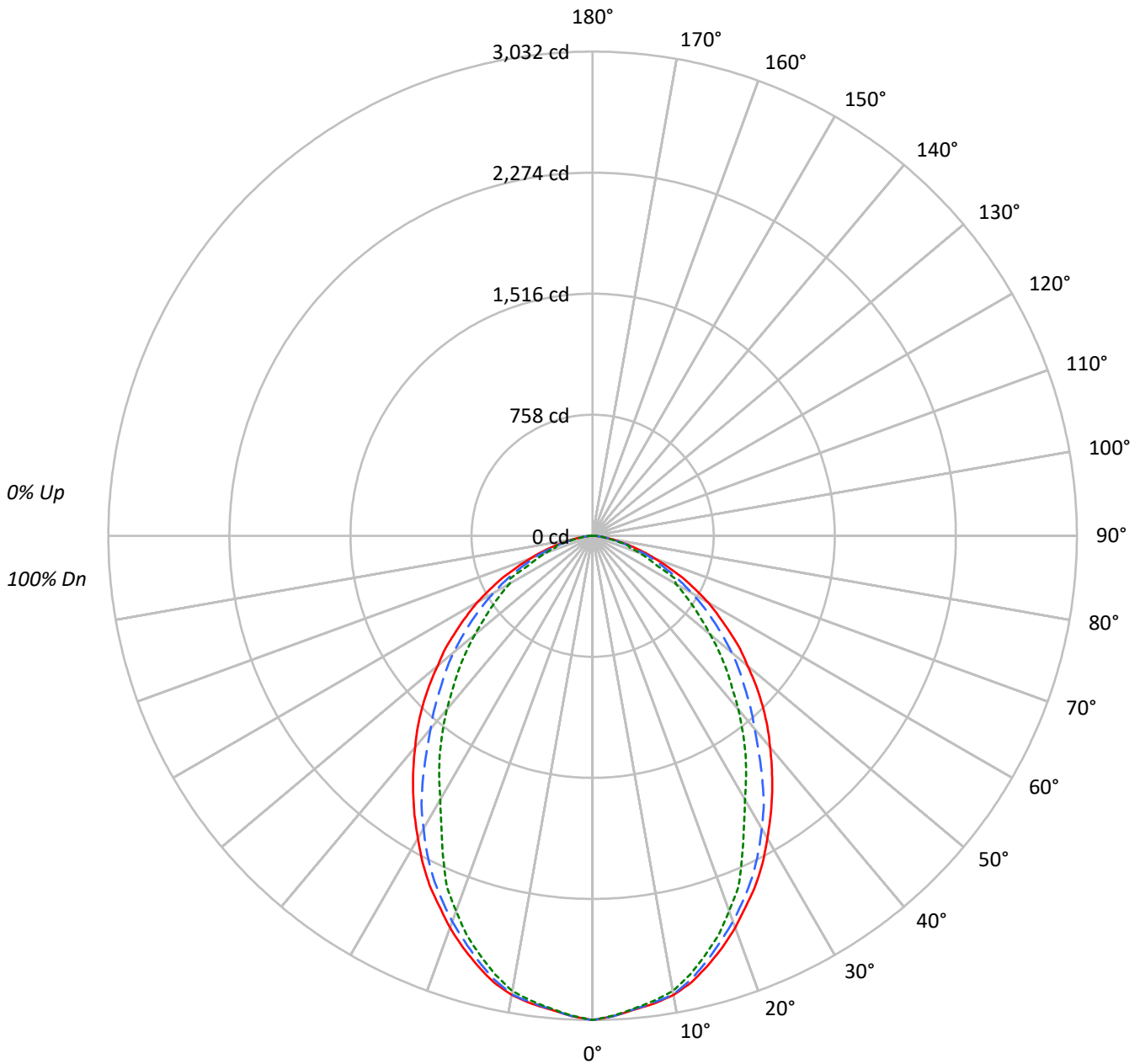
Lumens per Lamp: N/A  
Luminaire Lumens: 5952.0 lumens  
Efficiency: N/A  
Efficacy: 68.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
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°	8159	8159	8159
5°	8048	8038	8029
10°	7978	7968	7911
15°	7763	7685	7577
20°	7478	7357	7157
25°	7171	7014	6577
30°	6796	6578	5925
35°	6436	6080	5481
40°	6070	5541	4986
45°	5723	5122	4509
50°	5297	4754	4021
55°	4900	4308	3601
60°	4490	3848	3226
65°	3950	3370	2856
70°	3254	2950	2426
75°	2588	2259	2368
80°	1739	1630	1520
85°	1084	1300	1516



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	282.2	4.7
10°-20°	774.5	13.0
20°-30°	1072.3	18.0
30°-40°	1143.4	19.2
40°-50°	1043.1	17.5
50°-60°	817.2	13.7
60°-70°	532.6	8.9
70°-80°	236.0	4.0
80°-90°	50.7	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°	2129.1	35.8
0°-40°	3272.5	55.0
0°-60°	5132.8	86.2
0°-90°	5952.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5952.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3032	3032	3032	3032	3032	
5°	2979	2976	2976	2972	2972	283
15°	2786	2786	2758	2730	2720	783
25°	2415	2401	2362	2278	2215	1109
35°	1959	1945	1851	1710	1668	1225
45°	1504	1472	1346	1234	1185	1158
55°	1044	1013	918	810	768	937
65°	620	585	529	540	449	611
75°	249	231	217	207	228	267
85°	35	39	42	46	49	49
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3031.9	3031.9	3031.9	3031.9	3031.9
2.5°	3010.8	3010.8	3010.8	3007.3	3007.3
5°	2979.3	2975.8	2975.8	2972.3	2972.3
7.5°	2954.8	2951.3	2947.7	2944.2	2937.2
10°	2919.7	2919.7	2916.2	2898.7	2895.2
12.5°	2863.6	2860.1	2846.1	2821.6	2814.6
15°	2786.5	2786.5	2758.5	2730.4	2719.9
17.5°	2702.4	2698.9	2663.8	2635.8	2621.8
20°	2611.3	2604.3	2569.2	2523.6	2499.1
22.5°	2509.6	2509.6	2467.6	2408.0	2383.4
25°	2415.0	2401.0	2362.4	2278.3	2215.2
27.5°	2306.3	2285.3	2243.2	2124.1	2050.5
30°	2187.2	2176.6	2117.1	1962.8	1906.7
32.5°	2075.0	2057.5	1994.4	1833.1	1787.6
35°	1959.3	1945.3	1850.7	1710.5	1668.4
37.5°	1843.7	1826.1	1707.0	1594.8	1542.2
40°	1728.0	1707.0	1577.3	1475.6	1419.5
42.5°	1619.3	1591.3	1465.1	1356.5	1293.4
45°	1503.7	1472.1	1345.9	1233.8	1184.7
47.5°	1388.0	1360.0	1244.3	1128.6	1072.5
50°	1265.3	1240.8	1135.6	1020.0	960.4
52.5°	1163.7	1125.1	1023.5	907.8	858.7
55°	1044.5	1013.0	918.3	809.7	767.6
57.5°	935.8	904.3	816.7	715.0	680.0
60°	834.2	788.6	715.0	627.4	599.4
62.5°	722.0	687.0	623.9	550.3	585.3
65°	620.4	585.3	529.3	539.8	448.6
67.5°	508.2	490.7	441.6	392.6	378.5
70°	413.6	392.6	375.0	322.5	308.4
72.5°	329.5	308.4	283.9	255.9	245.4
75°	248.9	231.3	217.3	206.8	227.8
77.5°	171.7	164.7	154.2	143.7	140.2
80°	112.2	108.7	105.2	101.6	98.1
82.5°	66.6	66.6	66.6	66.6	66.6
85°	35.1	38.6	42.1	45.6	49.1
87.5°	21.0	21.0	24.5	28.0	31.5
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)