

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: P546135

Luminaire Tested: **FMR-12-4-LD4-2HI-40-UNV-80-84-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: P546135  
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-80-84-EDD  
Description: 1X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

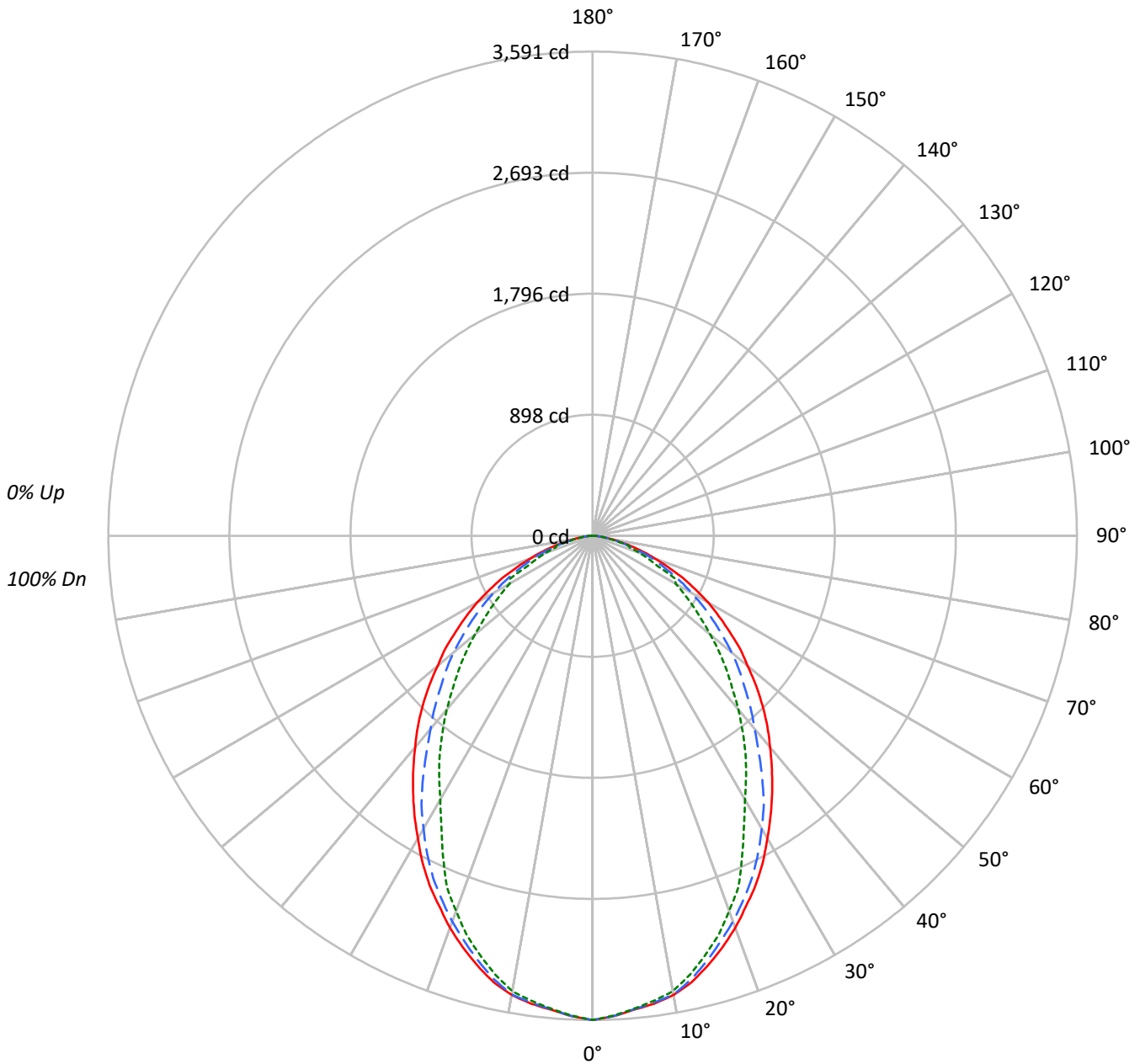
Lumens per Lamp: N/A  
Luminaire Lumens: 7050.0 lumens  
Efficiency: N/A  
Efficacy: 81.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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			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°	9664	9664	9664
5°	9532	9521	9510
10°	9450	9439	9371
15°	9195	9102	8975
20°	8857	8715	8477
25°	8493	8308	7790
30°	8050	7792	7018
35°	7624	7201	6492
40°	7190	6563	5906
45°	6778	6067	5340
50°	6274	5631	4762
55°	5804	5103	4266
60°	5318	4558	3821
65°	4679	3992	3384
70°	3854	3495	2874
75°	3065	2676	2806
80°	2060	1929	1801
85°	1281	1538	1794



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	334.3	4.7
10°-20°	917.4	13.0
20°-30°	1270.1	18.0
30°-40°	1354.3	19.2
40°-50°	1235.5	17.5
50°-60°	967.9	13.7
60°-70°	630.9	8.9
70°-80°	279.5	4.0
80°-90°	60.0	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°	2521.8	35.8
0°-40°	3876.2	55.0
0°-60°	6079.6	86.2
0°-90°	7050.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7050.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3591	3591	3591	3591	3591	
5°	3529	3525	3525	3521	3521	335
15°	3301	3301	3267	3234	3222	928
25°	2860	2844	2798	2699	2624	1313
35°	2321	2304	2192	2026	1976	1451
45°	1781	1744	1594	1461	1403	1372
55°	1237	1200	1088	959	909	1110
65°	735	693	627	639	531	724
75°	295	274	257	245	270	316
85°	42	46	50	54	58	58
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3591.2	3591.2	3591.2	3591.2	3591.2
2.5°	3566.3	3566.3	3566.3	3562.1	3562.1
5°	3528.9	3524.7	3524.7	3520.6	3520.6
7.5°	3499.8	3495.7	3491.5	3487.4	3479.1
10°	3458.3	3458.3	3454.2	3433.4	3429.3
12.5°	3391.9	3387.7	3371.1	3342.1	3333.8
15°	3300.6	3300.6	3267.3	3234.1	3221.7
17.5°	3200.9	3196.8	3155.3	3122.0	3105.4
20°	3093.0	3084.7	3043.2	2989.2	2960.1
22.5°	2972.6	2972.6	2922.8	2852.2	2823.1
25°	2860.5	2843.9	2798.2	2698.6	2623.8
27.5°	2731.8	2706.9	2657.1	2515.9	2428.7
30°	2590.6	2578.2	2507.6	2324.9	2258.5
32.5°	2457.8	2437.0	2362.3	2171.3	2117.3
35°	2320.8	2304.2	2192.1	2026.0	1976.2
37.5°	2183.8	2163.0	2021.9	1889.0	1826.7
40°	2046.8	2021.9	1868.2	1747.8	1681.4
42.5°	1918.1	1884.8	1735.4	1606.7	1532.0
45°	1781.1	1743.7	1594.2	1461.4	1403.3
47.5°	1644.1	1610.8	1473.8	1336.8	1270.4
50°	1498.7	1469.7	1345.1	1208.1	1137.6
52.5°	1378.3	1332.7	1212.3	1075.3	1017.2
55°	1237.2	1199.8	1087.7	959.0	909.2
57.5°	1108.5	1071.1	967.3	846.9	805.4
60°	988.1	934.1	846.9	743.1	709.9
62.5°	855.2	813.7	739.0	651.8	693.3
65°	734.8	693.3	626.9	639.4	531.4
67.5°	602.0	581.2	523.1	465.0	448.4
70°	489.9	465.0	444.2	382.0	365.3
72.5°	390.3	365.3	336.3	303.1	290.6
75°	294.8	274.0	257.4	244.9	269.9
77.5°	203.4	195.1	182.7	170.2	166.1
80°	132.9	128.7	124.5	120.4	116.2
82.5°	78.9	78.9	78.9	78.9	78.9
85°	41.5	45.7	49.8	54.0	58.1
87.5°	24.9	24.9	29.1	33.2	37.4
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)