

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: P547125

Luminaire Tested: **FMR-24-4-LD4-3LO-40-UNV-93-96-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: P547125  
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-24-4-LD4-3LO-40-UNV-93-96-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

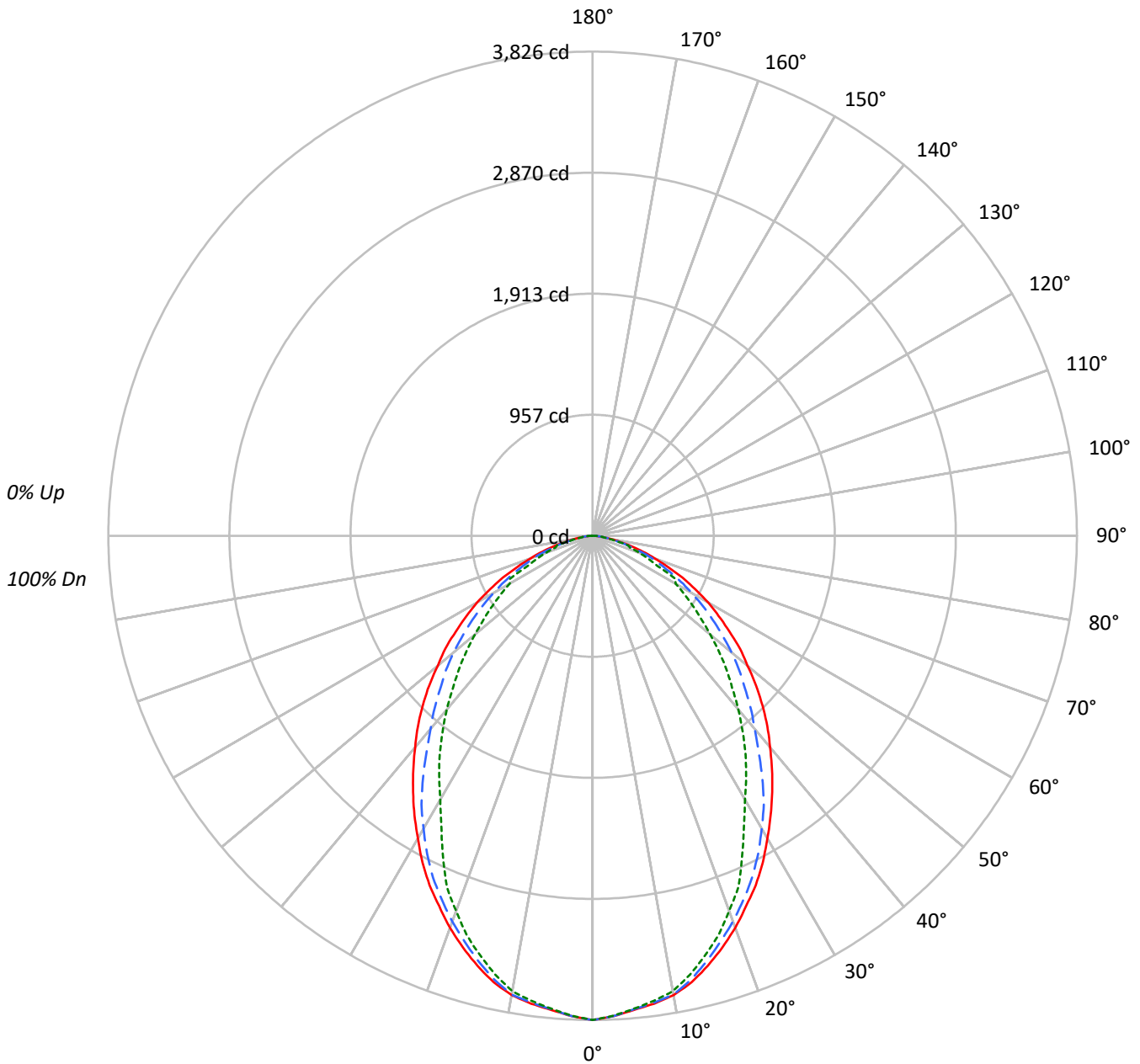
Lumens per Lamp: N/A  
Luminaire Lumens: 7512.0 lumens  
Efficiency: N/A  
Efficacy: 107.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 70.2  
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°	5149	5149	5149
5°	5079	5073	5067
10°	5035	5028	4992
15°	4899	4850	4782
20°	4719	4643	4516
25°	4525	4426	4151
30°	4289	4151	3739
35°	4062	3836	3459
40°	3831	3496	3147
45°	3611	3232	2845
50°	3343	3000	2537
55°	3092	2719	2273
60°	2833	2428	2036
65°	2493	2127	1803
70°	2054	1862	1531
75°	1633	1426	1495
80°	1097	1028	960
85°	682	820	956



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	356.2	4.7
10°-20°	977.6	13.0
20°-30°	1353.4	18.0
30°-40°	1443.1	19.2
40°-50°	1316.5	17.5
50°-60°	1031.4	13.7
60°-70°	672.2	8.9
70°-80°	297.8	4.0
80°-90°	64.0	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°	2687.1	35.8
0°-40°	4130.2	55.0
0°-60°	6478.1	86.2
0°-90°	7512.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7512.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3826	3826	3826	3826	3826	
5°	3760	3756	3756	3751	3751	357
15°	3517	3517	3482	3446	3433	989
25°	3048	3030	2982	2875	2796	1399
35°	2473	2455	2336	2159	2106	1546
45°	1898	1858	1699	1557	1495	1462
55°	1318	1278	1159	1022	969	1182
65°	783	739	668	681	566	772
75°	314	292	274	261	288	337
85°	44	49	53	58	62	61
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3826.5	3826.5	3826.5	3826.5	3826.5
2.5°	3800.0	3800.0	3800.0	3795.5	3795.5
5°	3760.2	3755.7	3755.7	3751.3	3751.3
7.5°	3729.2	3724.8	3720.3	3715.9	3707.1
10°	3685.0	3685.0	3680.5	3658.4	3654.0
12.5°	3614.2	3609.8	3592.1	3561.1	3552.2
15°	3516.9	3516.9	3481.5	3446.1	3432.8
17.5°	3410.7	3406.3	3362.0	3326.6	3308.9
20°	3295.7	3286.8	3242.6	3185.1	3154.1
22.5°	3167.4	3167.4	3114.3	3039.1	3008.1
25°	3047.9	3030.2	2981.6	2875.4	2795.8
27.5°	2910.8	2884.3	2831.2	2680.8	2587.9
30°	2760.4	2747.1	2671.9	2477.3	2406.5
32.5°	2618.8	2596.7	2517.1	2313.6	2256.1
35°	2472.9	2455.2	2335.7	2158.8	2105.7
37.5°	2326.9	2304.8	2154.3	2012.8	1946.4
40°	2180.9	2154.3	1990.7	1862.4	1791.6
42.5°	2043.8	2008.4	1849.1	1712.0	1632.4
45°	1897.8	1858.0	1698.7	1557.1	1495.2
47.5°	1751.8	1716.4	1570.4	1424.4	1353.7
50°	1597.0	1566.0	1433.3	1287.3	1212.1
52.5°	1468.7	1420.0	1291.7	1145.7	1083.8
55°	1318.3	1278.5	1159.0	1021.9	968.8
57.5°	1181.1	1141.3	1030.7	902.4	858.2
60°	1052.8	995.3	902.4	791.8	756.5
62.5°	911.3	867.0	787.4	694.5	738.8
65°	783.0	738.8	668.0	681.3	566.2
67.5°	641.4	619.3	557.4	495.5	477.8
70°	522.0	495.5	473.3	407.0	389.3
72.5°	415.8	389.3	358.3	322.9	309.7
75°	314.1	292.0	274.3	261.0	287.5
77.5°	216.8	207.9	194.6	181.4	176.9
80°	141.6	137.1	132.7	128.3	123.9
82.5°	84.1	84.1	84.1	84.1	84.1
85°	44.2	48.7	53.1	57.5	61.9
87.5°	26.5	26.5	31.0	35.4	39.8
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)