

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: P547271

Luminaire Tested: **FMR-24-4-LD4-4HI-35-UNV-82-84-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: P547271  
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-LD4-4HI-35-UNV-82-84-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

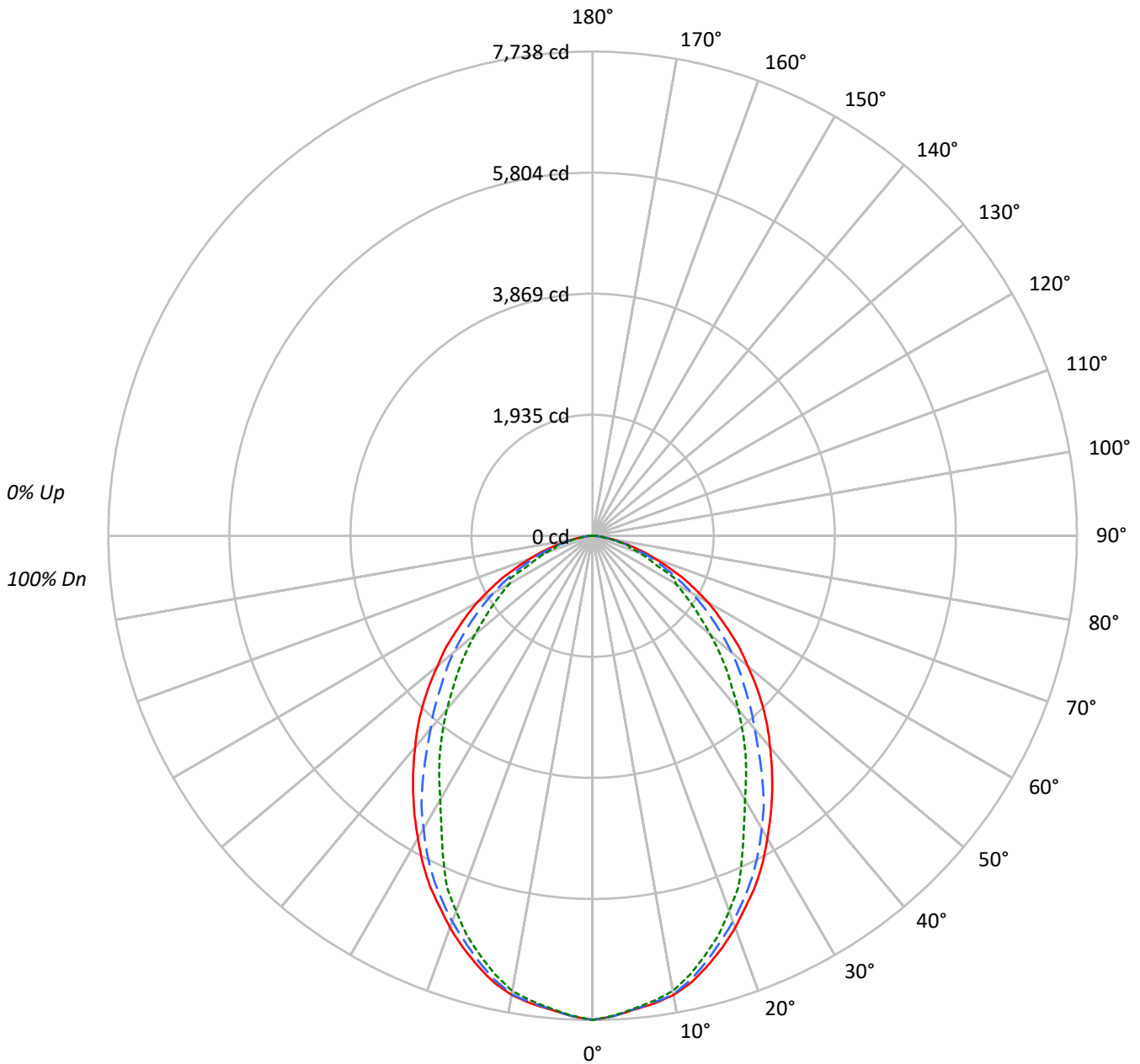
Lumens per Lamp: N/A  
Luminaire Lumens: 15190.0 lumens  
Efficiency: N/A  
Efficacy: 87.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 172.8  
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									
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°	10411	10411	10411
5°	10269	10257	10245
10°	10180	10168	10095
15°	9906	9806	9669
20°	9542	9388	9132
25°	9150	8951	8393
30°	8672	8394	7560
35°	8213	7758	6994
40°	7746	7070	6363
45°	7302	6536	5753
50°	6759	6067	5130
55°	6253	5498	4595
60°	5729	4910	4116
65°	5041	4300	3645
70°	4152	3765	3097
75°	3302	2883	3022
80°	2218	2080	1941
85°	1382	1656	1933



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	720.3	4.7
10°-20°	1976.7	13.0
20°-30°	2736.6	18.0
30°-40°	2918.0	19.2
40°-50°	2662.1	17.5
50°-60°	2085.5	13.7
60°-70°	1359.3	8.9
70°-80°	602.2	4.0
80°-90°	129.3	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°	5433.6	35.8
0°-40°	8351.6	55.0
0°-60°	13099.3	86.2
0°-90°	15190.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15190.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7738	7738	7738	7738	7738	
5°	7603	7594	7594	7586	7586	722
15°	7111	7111	7040	6968	6942	1999
25°	6163	6128	6029	5814	5653	2830
35°	5000	4965	4723	4365	4258	3126
45°	3838	3757	3435	3149	3024	2956
55°	2666	2585	2344	2066	1959	2391
65°	1583	1494	1351	1378	1145	1560
75°	635	590	555	528	581	681
85°	90	98	107	116	125	124
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7737.6	7737.6	7737.6	7737.6	7737.6
2.5°	7683.9	7683.9	7683.9	7675.0	7675.0
5°	7603.4	7594.5	7594.5	7585.5	7585.5
7.5°	7540.8	7531.8	7522.9	7514.0	7496.1
10°	7451.3	7451.3	7442.4	7397.7	7388.7
12.5°	7308.2	7299.3	7263.5	7200.9	7183.0
15°	7111.4	7111.4	7039.9	6968.3	6941.5
17.5°	6896.7	6887.8	6798.3	6726.8	6691.0
20°	6664.2	6646.3	6556.8	6440.5	6377.9
22.5°	6404.8	6404.8	6297.4	6145.3	6082.7
25°	6163.2	6127.5	6029.1	5814.4	5653.4
27.5°	5885.9	5832.3	5724.9	5420.8	5232.9
30°	5581.8	5555.0	5402.9	5009.3	4866.2
32.5°	5295.5	5250.8	5089.8	4678.3	4562.0
35°	5000.4	4964.6	4723.1	4365.2	4257.9
37.5°	4705.2	4660.4	4356.3	4070.1	3935.9
40°	4410.0	4356.3	4025.3	3765.9	3622.8
42.5°	4132.7	4061.1	3739.1	3461.8	3300.8
45°	3837.5	3757.0	3435.0	3148.7	3023.5
47.5°	3542.3	3470.7	3175.5	2880.3	2737.2
50°	3229.2	3166.6	2898.2	2603.0	2451.0
52.5°	2969.8	2871.4	2612.0	2316.8	2191.6
55°	2665.7	2585.2	2343.6	2066.3	1959.0
57.5°	2388.4	2307.9	2084.2	1824.8	1735.4
60°	2129.0	2012.7	1824.8	1601.2	1529.6
62.5°	1842.7	1753.3	1592.2	1404.4	1493.8
65°	1583.3	1493.8	1350.7	1377.6	1145.0
67.5°	1297.1	1252.3	1127.1	1001.9	966.1
70°	1055.5	1001.9	957.1	823.0	787.2
72.5°	840.8	787.2	724.6	653.0	626.2
75°	635.1	590.4	554.6	527.8	581.4
77.5°	438.3	420.4	393.6	366.8	357.8
80°	286.2	277.3	268.4	259.4	250.5
82.5°	170.0	170.0	170.0	170.0	170.0
85°	89.5	98.4	107.3	116.3	125.2
87.5°	53.7	53.7	62.6	71.6	80.5
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)