

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: P547211

Luminaire Tested: **FMR-24-4-LD4-3STD-40-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: P547211  
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-LD4-3STD-40-UNV-82-88-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC 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**

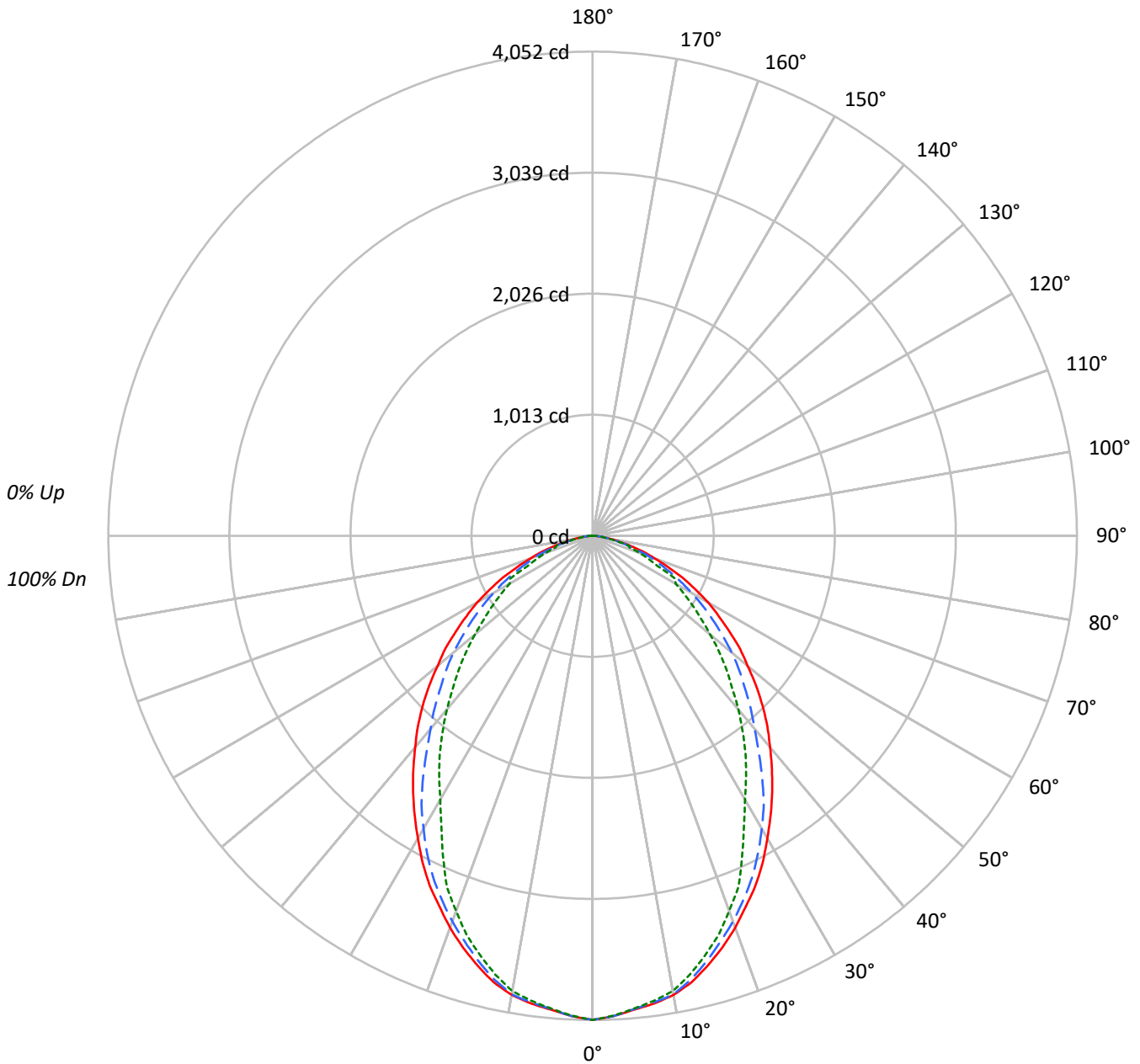
Lumens per Lamp: N/A  
Luminaire Lumens: 7954.0 lumens  
Efficiency: N/A  
Efficacy: 79.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 99.9  
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°	5452	5452	5452
5°	5377	5371	5365
10°	5331	5324	5286
15°	5187	5135	5063
20°	4997	4916	4782
25°	4791	4687	4395
30°	4541	4395	3959
35°	4301	4062	3662
40°	4056	3702	3332
45°	3824	3423	3013
50°	3539	3177	2686
55°	3274	2879	2406
60°	3000	2571	2155
65°	2640	2252	1909
70°	2174	1972	1622
75°	1729	1510	1583
80°	1161	1089	1017
85°	722	868	1013



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	377.2	4.7
10°-20°	1035.1	13.0
20°-30°	1433.0	18.0
30°-40°	1528.0	19.2
40°-50°	1394.0	17.5
50°-60°	1092.1	13.7
60°-70°	711.8	8.9
70°-80°	315.3	4.0
80°-90°	67.7	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°	2845.2	35.8
0°-40°	4373.2	55.0
0°-60°	6859.2	86.2
0°-90°	7954.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7954.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4052	4052	4052	4052	4052	
5°	3981	3977	3977	3972	3972	378
15°	3724	3724	3686	3649	3635	1047
25°	3227	3208	3157	3045	2960	1482
35°	2618	2600	2473	2286	2230	1637
45°	2009	1967	1799	1649	1583	1548
55°	1396	1354	1227	1082	1026	1252
65°	829	782	707	721	600	817
75°	333	309	290	276	304	356
85°	47	52	56	61	66	65
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4051.7	4051.7	4051.7	4051.7	4051.7
2.5°	4023.6	4023.6	4023.6	4018.9	4018.9
5°	3981.4	3976.7	3976.7	3972.0	3972.0
7.5°	3948.6	3943.9	3939.2	3934.6	3925.2
10°	3901.8	3901.8	3897.1	3873.7	3869.0
12.5°	3826.8	3822.1	3803.4	3770.6	3761.3
15°	3723.8	3723.8	3686.3	3648.8	3634.8
17.5°	3611.4	3606.7	3559.8	3522.4	3503.6
20°	3489.6	3480.2	3433.4	3372.5	3339.7
22.5°	3353.7	3353.7	3297.5	3217.9	3185.1
25°	3227.3	3208.5	3157.0	3044.6	2960.3
27.5°	3082.1	3054.0	2997.8	2838.5	2740.1
30°	2922.8	2908.8	2829.1	2623.0	2548.1
32.5°	2772.9	2749.5	2665.2	2449.7	2388.8
35°	2618.4	2599.6	2473.2	2285.8	2229.6
37.5°	2463.8	2440.4	2281.1	2131.2	2061.0
40°	2309.2	2281.1	2107.8	1972.0	1897.0
42.5°	2164.0	2126.5	1957.9	1812.7	1728.4
45°	2009.4	1967.3	1798.7	1648.8	1583.2
47.5°	1854.9	1817.4	1662.8	1508.2	1433.3
50°	1690.9	1658.1	1517.6	1363.0	1283.4
52.5°	1555.1	1503.6	1367.7	1213.2	1147.6
55°	1395.8	1353.7	1227.2	1082.0	1025.8
57.5°	1250.6	1208.5	1091.4	955.5	908.7
60°	1114.8	1053.9	955.5	838.4	801.0
62.5°	964.9	918.1	833.8	735.4	782.2
65°	829.1	782.2	707.3	721.3	599.6
67.5°	679.2	655.8	590.2	524.6	505.9
70°	552.7	524.6	501.2	430.9	412.2
72.5°	440.3	412.2	379.4	341.9	327.9
75°	332.6	309.1	290.4	276.4	304.5
77.5°	229.5	220.1	206.1	192.0	187.4
80°	149.9	145.2	140.5	135.8	131.2
82.5°	89.0	89.0	89.0	89.0	89.0
85°	46.8	51.5	56.2	60.9	65.6
87.5°	28.1	28.1	32.8	37.5	42.2
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)