

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: P547106

Luminaire Tested: **FMR-24-4-LD4-3LO-40-UNV-81-87-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: P547106  
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-81-87-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

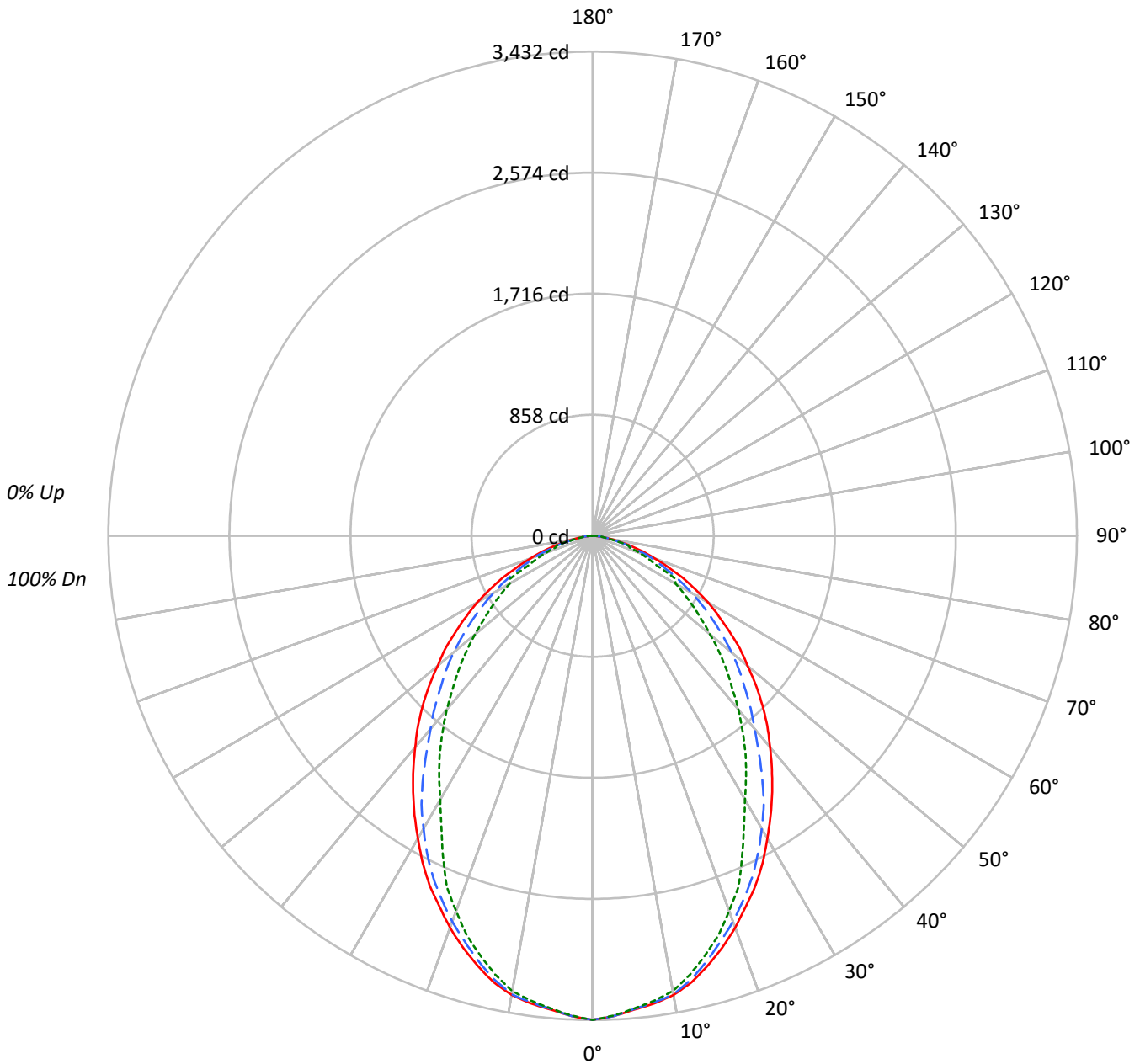
Lumens per Lamp: N/A  
Luminaire Lumens: 6737.0 lumens  
Efficiency: N/A  
Efficacy: 96.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 70.2  
Input Voltage (V): NR  
Input Current (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°	4617	4617	4617
5°	4555	4549	4544
10°	4515	4510	4477
15°	4393	4349	4288
20°	4232	4164	4050
25°	4058	3970	3722
30°	3846	3723	3353
35°	3643	3441	3102
40°	3435	3136	2822
45°	3239	2899	2552
50°	2998	2691	2275
55°	2773	2438	2038
60°	2541	2178	1826
65°	2236	1907	1617
70°	1841	1670	1373
75°	1464	1279	1341
80°	984	922	861
85°	613	735	857



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	319.4	4.7
10°-20°	876.7	13.0
20°-30°	1213.7	18.0
30°-40°	1294.2	19.2
40°-50°	1180.7	17.5
50°-60°	925.0	13.7
60°-70°	602.8	8.9
70°-80°	267.1	4.0
80°-90°	57.3	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°	2409.9	35.8
0°-40°	3704.1	55.0
0°-60°	5809.7	86.2
0°-90°	6737.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6737.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3432	3432	3432	3432	3432	
5°	3372	3368	3368	3364	3364	320
15°	3154	3154	3122	3090	3079	887
25°	2734	2718	2674	2579	2507	1255
35°	2218	2202	2095	1936	1888	1386
45°	1702	1666	1524	1396	1341	1311
55°	1182	1147	1039	916	869	1060
65°	702	662	599	611	508	692
75°	282	262	246	234	258	302
85°	40	44	48	52	56	55
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3431.7	3431.7	3431.7	3431.7	3431.7
2.5°	3407.9	3407.9	3407.9	3404.0	3404.0
5°	3372.2	3368.3	3368.3	3364.3	3364.3
7.5°	3344.5	3340.5	3336.5	3332.6	3324.6
10°	3304.8	3304.8	3300.8	3281.0	3277.0
12.5°	3241.3	3237.3	3221.5	3193.7	3185.8
15°	3154.0	3154.0	3122.3	3090.5	3078.6
17.5°	3058.8	3054.8	3015.2	2983.4	2967.6
20°	2955.7	2947.7	2908.1	2856.5	2828.7
22.5°	2840.6	2840.6	2793.0	2725.6	2697.8
25°	2733.5	2717.6	2674.0	2578.8	2507.4
27.5°	2610.5	2586.7	2539.1	2404.2	2320.9
30°	2475.6	2463.7	2396.3	2221.7	2158.2
32.5°	2348.7	2328.8	2257.4	2074.9	2023.3
35°	2217.7	2201.9	2094.7	1936.1	1888.4
37.5°	2086.8	2067.0	1932.1	1805.1	1745.6
40°	1955.9	1932.1	1785.3	1670.2	1606.8
42.5°	1832.9	1801.2	1658.3	1535.4	1463.9
45°	1702.0	1666.3	1523.5	1396.5	1341.0
47.5°	1571.1	1539.3	1408.4	1277.5	1214.0
50°	1432.2	1404.4	1285.4	1154.5	1087.0
52.5°	1317.2	1273.5	1158.5	1027.5	972.0
55°	1182.3	1146.6	1039.4	916.5	868.8
57.5°	1059.3	1023.6	924.4	809.3	769.7
60°	944.2	892.6	809.3	710.2	678.4
62.5°	817.3	777.6	706.2	622.9	662.5
65°	702.2	662.5	599.1	611.0	507.8
67.5°	575.3	555.4	499.9	444.3	428.5
70°	468.1	444.3	424.5	365.0	349.1
72.5°	372.9	349.1	321.4	289.6	277.7
75°	281.7	261.8	246.0	234.1	257.9
77.5°	194.4	186.5	174.6	162.7	158.7
80°	127.0	123.0	119.0	115.1	111.1
82.5°	75.4	75.4	75.4	75.4	75.4
85°	39.7	43.6	47.6	51.6	55.5
87.5°	23.8	23.8	27.8	31.7	35.7
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)