

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: P547091

Luminaire Tested: **FMR-24-4-LD4-3LO-35-UNV-93-88-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: P547091  
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-35-UNV-93-88-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

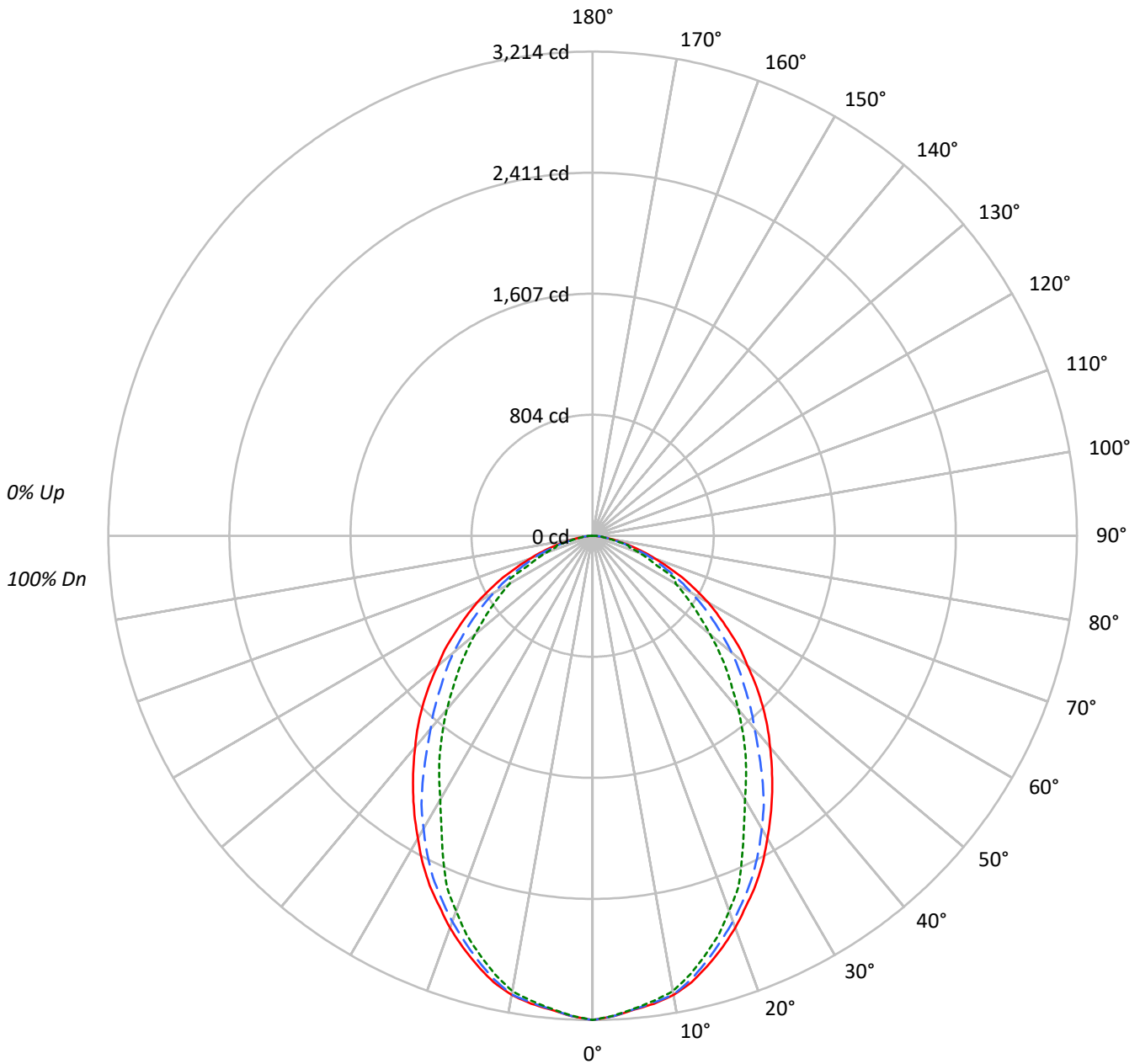
Lumens per Lamp: N/A  
Luminaire Lumens: 6310.0 lumens  
Efficiency: N/A  
Efficacy: 89.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	4325	4325	4325
5°	4266	4261	4256
10°	4229	4224	4193
15°	4115	4074	4017
20°	3964	3900	3794
25°	3801	3718	3486
30°	3602	3487	3141
35°	3412	3223	2905
40°	3218	2937	2643
45°	3033	2715	2390
50°	2808	2520	2131
55°	2597	2284	1909
60°	2380	2040	1710
65°	2094	1786	1514
70°	1725	1564	1286
75°	1371	1198	1255
80°	921	864	806
85°	574	689	803



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	299.2	4.7
10°-20°	821.1	13.0
20°-30°	1136.8	18.0
30°-40°	1212.2	19.2
40°-50°	1105.8	17.5
50°-60°	866.3	13.7
60°-70°	564.6	8.9
70°-80°	250.2	4.0
80°-90°	53.7	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°	2257.1	35.8
0°-40°	3469.3	55.0
0°-60°	5441.5	86.2
0°-90°	6310.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6310.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3214	3214	3214	3214	3214	
5°	3158	3155	3155	3151	3151	300
15°	2954	2954	2924	2895	2884	830
25°	2560	2545	2504	2415	2348	1175
35°	2077	2062	1962	1813	1769	1299
45°	1594	1561	1427	1308	1256	1228
55°	1107	1074	974	858	814	993
65°	658	621	561	572	476	648
75°	264	245	230	219	242	283
85°	37	41	45	48	52	52
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3214.2	3214.2	3214.2	3214.2	3214.2
2.5°	3191.9	3191.9	3191.9	3188.2	3188.2
5°	3158.5	3154.8	3154.8	3151.1	3151.1
7.5°	3132.5	3128.8	3125.0	3121.3	3113.9
10°	3095.3	3095.3	3091.6	3073.0	3069.3
12.5°	3035.9	3032.2	3017.3	2991.3	2983.8
15°	2954.1	2954.1	2924.4	2894.7	2883.5
17.5°	2864.9	2861.2	2824.1	2794.3	2779.5
20°	2768.3	2760.9	2723.7	2675.4	2649.4
22.5°	2660.6	2660.6	2616.0	2552.8	2526.8
25°	2560.2	2545.4	2504.5	2415.3	2348.4
27.5°	2445.0	2422.7	2378.2	2251.8	2173.8
30°	2318.7	2307.6	2244.4	2080.9	2021.4
32.5°	2199.8	2181.2	2114.3	1943.4	1895.1
35°	2077.2	2062.3	1962.0	1813.3	1768.8
37.5°	1954.5	1936.0	1809.6	1690.7	1635.0
40°	1831.9	1809.6	1672.1	1564.4	1504.9
42.5°	1716.7	1687.0	1553.2	1438.0	1371.2
45°	1594.1	1560.7	1426.9	1308.0	1256.0
47.5°	1471.5	1441.8	1319.1	1196.5	1137.1
50°	1341.4	1315.4	1203.9	1081.3	1018.1
52.5°	1233.7	1192.8	1085.0	962.4	910.4
55°	1107.3	1073.9	973.6	858.4	813.8
57.5°	992.1	958.7	865.8	758.0	720.9
60°	884.4	836.1	758.0	665.1	635.4
62.5°	765.5	728.3	661.4	583.4	620.6
65°	657.7	620.6	561.1	572.2	475.6
67.5°	538.8	520.2	468.2	416.2	401.3
70°	438.5	416.2	397.6	341.9	327.0
72.5°	349.3	327.0	301.0	271.3	260.1
75°	263.8	245.2	230.4	219.2	241.5
77.5°	182.1	174.6	163.5	152.4	148.6
80°	118.9	115.2	111.5	107.8	104.0
82.5°	70.6	70.6	70.6	70.6	70.6
85°	37.2	40.9	44.6	48.3	52.0
87.5°	22.3	22.3	26.0	29.7	33.4
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)