

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: P546866

Luminaire Tested: **FMR-24-4-LD4-2LO-50-UNV-93-87-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: P546866  
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-LD4-2LO-50-UNV-93-87-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

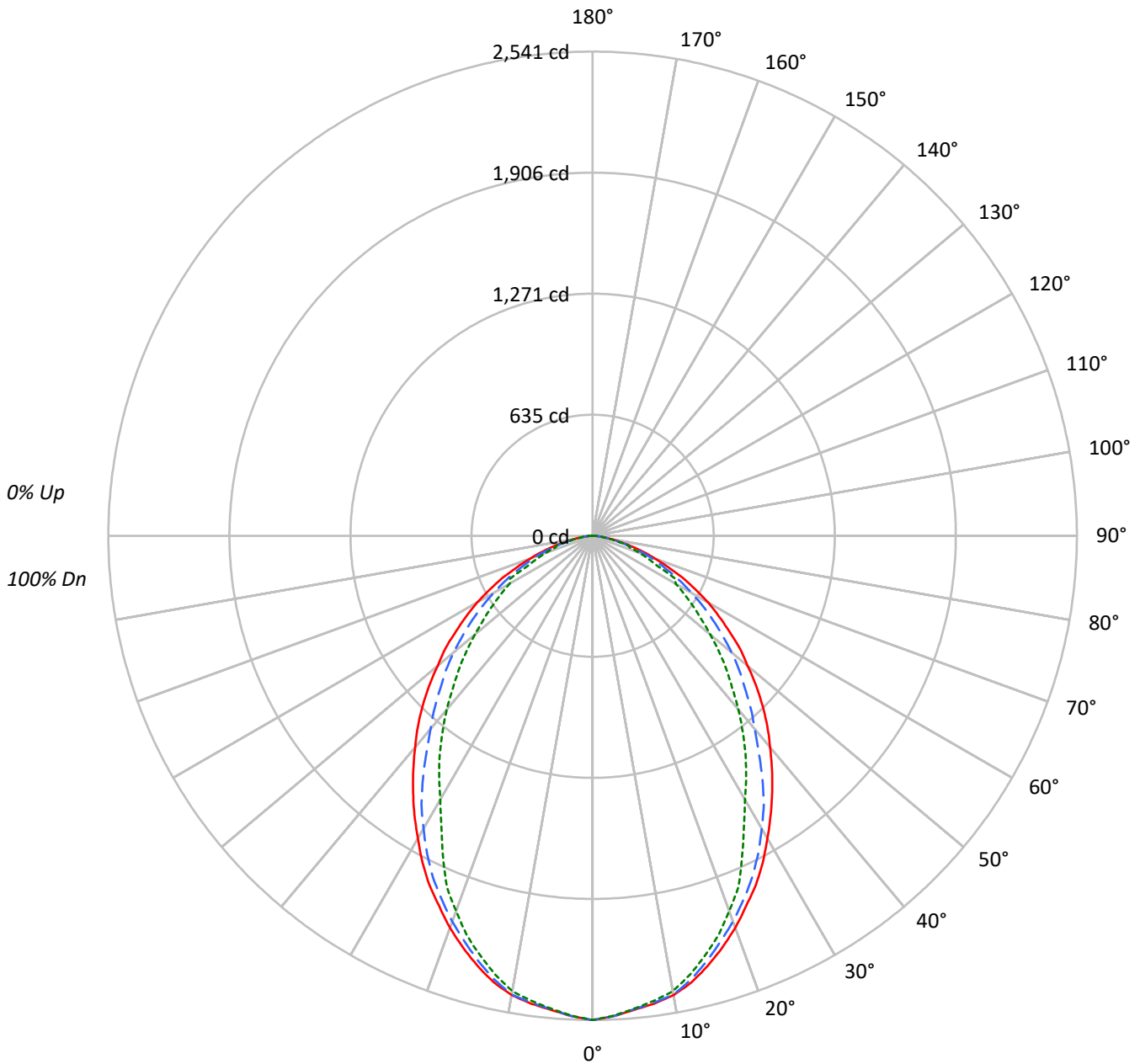
Lumens per Lamp: N/A  
Luminaire Lumens: 4989.0 lumens  
Efficiency: N/A  
Efficacy: 106.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.8  
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°	3419	3419	3419
5°	3373	3369	3365
10°	3344	3340	3315
15°	3254	3221	3176
20°	3134	3083	2999
25°	3005	2940	2757
30°	2848	2757	2483
35°	2698	2548	2297
40°	2544	2322	2090
45°	2398	2147	1889
50°	2220	1993	1685
55°	2054	1806	1509
60°	1882	1613	1352
65°	1656	1412	1197
70°	1364	1237	1017
75°	1084	947	993
80°	728	683	638
85°	454	545	634



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	236.6	4.7
10°-20°	649.2	13.0
20°-30°	898.8	18.0
30°-40°	958.4	19.2
40°-50°	874.3	17.5
50°-60°	685.0	13.7
60°-70°	446.4	8.9
70°-80°	197.8	4.0
80°-90°	42.5	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°	1784.6	35.8
0°-40°	2743.0	55.0
0°-60°	4302.3	86.2
0°-90°	4989.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4989.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2541	2541	2541	2541	2541	
5°	2497	2494	2494	2491	2491	237
15°	2336	2336	2312	2289	2280	657
25°	2024	2012	1980	1910	1857	929
35°	1642	1631	1551	1434	1398	1027
45°	1260	1234	1128	1034	993	971
55°	876	849	770	679	643	785
65°	520	491	444	452	376	512
75°	209	194	182	173	191	224
85°	29	32	35	38	41	41
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2541.3	2541.3	2541.3	2541.3	2541.3
2.5°	2523.7	2523.7	2523.7	2520.8	2520.8
5°	2497.3	2494.3	2494.3	2491.4	2491.4
7.5°	2476.7	2473.8	2470.8	2467.9	2462.0
10°	2447.3	2447.3	2444.4	2429.7	2426.7
12.5°	2400.3	2397.4	2385.6	2365.1	2359.2
15°	2335.7	2335.7	2312.2	2288.7	2279.9
17.5°	2265.2	2262.2	2232.8	2209.3	2197.6
20°	2188.8	2182.9	2153.5	2115.3	2094.8
22.5°	2103.6	2103.6	2068.3	2018.4	1997.8
25°	2024.3	2012.5	1980.2	1909.7	1856.8
27.5°	1933.2	1915.5	1880.3	1780.4	1718.7
30°	1833.3	1824.5	1774.5	1645.3	1598.2
32.5°	1739.3	1724.6	1671.7	1536.5	1498.4
35°	1642.3	1630.6	1551.2	1433.7	1398.5
37.5°	1545.4	1530.7	1430.8	1336.8	1292.7
40°	1448.4	1430.8	1322.1	1236.9	1189.9
42.5°	1357.3	1333.8	1228.1	1137.0	1084.1
45°	1260.4	1233.9	1128.2	1034.2	993.0
47.5°	1163.4	1139.9	1043.0	946.0	899.0
50°	1060.6	1040.0	951.9	854.9	805.0
52.5°	975.4	943.1	857.9	760.9	719.8
55°	875.5	849.1	769.7	678.7	643.4
57.5°	784.4	758.0	684.5	599.3	570.0
60°	699.2	661.0	599.3	525.9	502.4
62.5°	605.2	575.8	523.0	461.3	490.6
65°	520.0	490.6	443.6	452.4	376.1
67.5°	426.0	411.3	370.2	329.1	317.3
70°	346.7	329.1	314.4	270.3	258.5
72.5°	276.2	258.5	238.0	214.5	205.7
75°	208.6	193.9	182.2	173.3	191.0
77.5°	144.0	138.1	129.3	120.5	117.5
80°	94.0	91.1	88.1	85.2	82.3
82.5°	55.8	55.8	55.8	55.8	55.8
85°	29.4	32.3	35.3	38.2	41.1
87.5°	17.6	17.6	20.6	23.5	26.4
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)