

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: P546826

Luminaire Tested: **FMR-24-4-LD4-2LO-40-UNV-82-87-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: P546826  
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-40-UNV-82-87-EDD  
Description: 2X4 FMR TROFFER WITH .187 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**

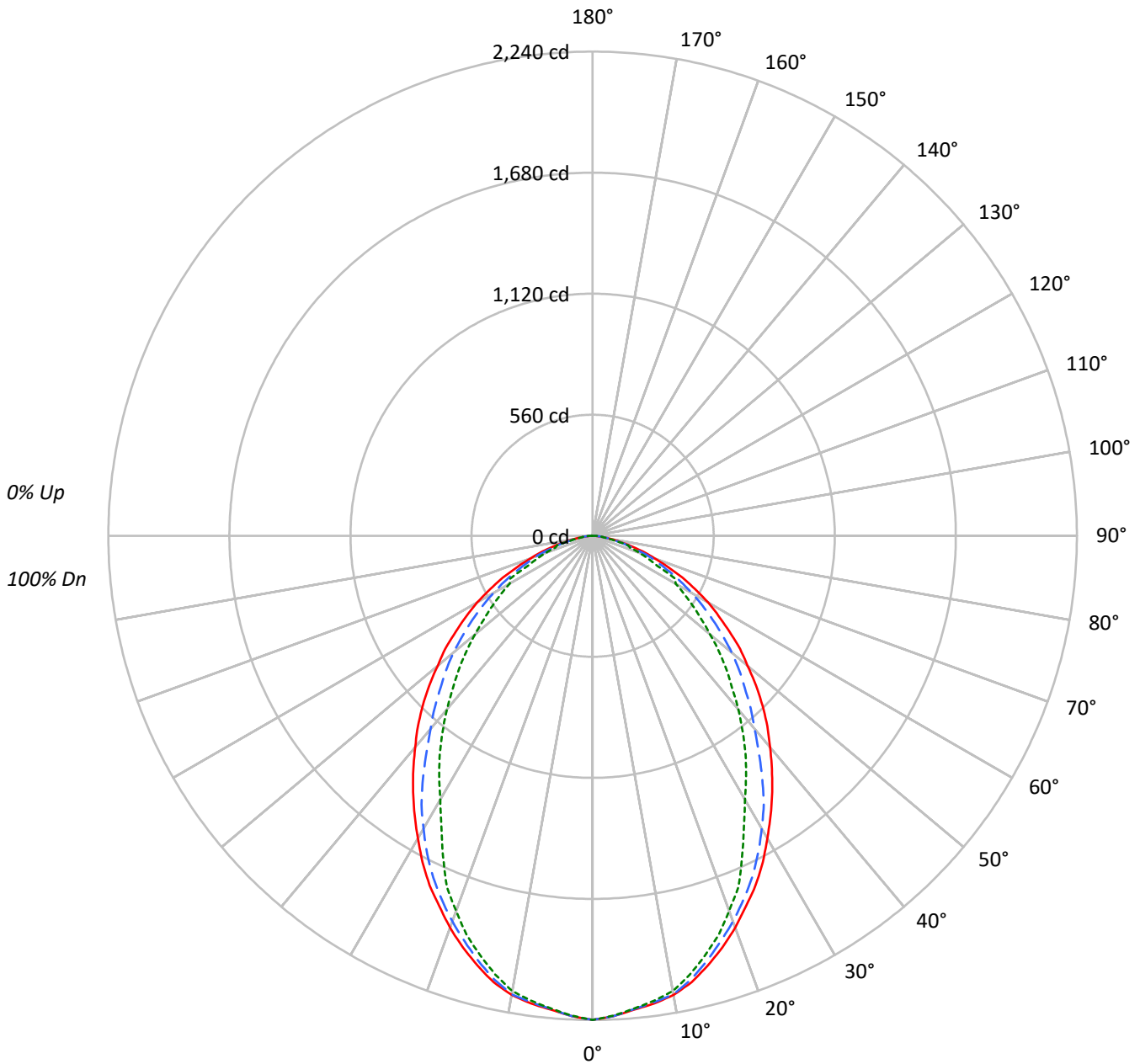
Lumens per Lamp: N/A  
Luminaire Lumens: 4397.0 lumens  
Efficiency: N/A  
Efficacy: 94.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	3014	3014	3014
5°	2973	2969	2966
10°	2947	2943	2922
15°	2867	2839	2799
20°	2762	2718	2643
25°	2649	2591	2430
30°	2510	2430	2188
35°	2377	2246	2024
40°	2242	2047	1842
45°	2114	1892	1665
50°	1957	1756	1485
55°	1810	1591	1330
60°	1658	1421	1192
65°	1459	1245	1055
70°	1202	1090	897
75°	955	834	875
80°	642	602	562
85°	400	480	560



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	208.5	4.7
10°-20°	572.2	13.0
20°-30°	792.2	18.0
30°-40°	844.7	19.2
40°-50°	770.6	17.5
50°-60°	603.7	13.7
60°-70°	393.5	8.9
70°-80°	174.3	4.0
80°-90°	37.4	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°	1572.8	35.8
0°-40°	2417.5	55.0
0°-60°	3791.8	86.2
0°-90°	4397.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4397.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2240	2240	2240	2240	2240	
5°	2201	2198	2198	2196	2196	209
15°	2058	2058	2038	2017	2009	579
25°	1784	1774	1745	1683	1636	819
35°	1447	1437	1367	1264	1232	905
45°	1111	1088	994	911	875	856
55°	772	748	678	598	567	692
65°	458	432	391	399	331	452
75°	184	171	160	153	168	197
85°	26	28	31	34	36	36
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2239.8	2239.8	2239.8	2239.8	2239.8
2.5°	2224.2	2224.2	2224.2	2221.6	2221.6
5°	2200.9	2198.3	2198.3	2195.8	2195.8
7.5°	2182.8	2180.2	2177.6	2175.0	2169.9
10°	2156.9	2156.9	2154.3	2141.4	2138.8
12.5°	2115.5	2112.9	2102.5	2084.4	2079.2
15°	2058.5	2058.5	2037.8	2017.1	2009.3
17.5°	1996.4	1993.8	1967.9	1947.2	1936.8
20°	1929.1	1923.9	1898.0	1864.3	1846.2
22.5°	1854.0	1854.0	1822.9	1778.9	1760.7
25°	1784.1	1773.7	1745.2	1683.1	1636.5
27.5°	1703.8	1688.2	1657.2	1569.1	1514.8
30°	1615.7	1608.0	1564.0	1450.0	1408.6
32.5°	1532.9	1519.9	1473.3	1354.2	1320.6
35°	1447.4	1437.1	1367.2	1263.6	1232.5
37.5°	1362.0	1349.0	1261.0	1178.1	1139.3
40°	1276.5	1261.0	1165.2	1090.1	1048.7
42.5°	1196.3	1175.6	1082.3	1002.1	955.5
45°	1110.8	1087.5	994.3	911.4	875.2
47.5°	1025.4	1004.7	919.2	833.8	792.3
50°	934.7	916.6	838.9	753.5	709.5
52.5°	859.7	831.2	756.1	670.6	634.4
55°	771.6	748.3	678.4	598.1	567.1
57.5°	691.4	668.0	603.3	528.2	502.3
60°	616.3	582.6	528.2	463.5	442.8
62.5°	533.4	507.5	460.9	406.5	432.4
65°	458.3	432.4	391.0	398.8	331.4
67.5°	375.5	362.5	326.3	290.0	279.6
70°	305.5	290.0	277.1	238.2	227.9
72.5°	243.4	227.9	209.7	189.0	181.3
75°	183.8	170.9	160.5	152.8	168.3
77.5°	126.9	121.7	113.9	106.2	103.6
80°	82.9	80.3	77.7	75.1	72.5
82.5°	49.2	49.2	49.2	49.2	49.2
85°	25.9	28.5	31.1	33.7	36.3
87.5°	15.5	15.5	18.1	20.7	23.3
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)