

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: P546234

Luminaire Tested: **FMR-12-4-LD4-2LO-40-UNV-80-87-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: P546234  
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-12-4-LD4-2LO-40-UNV-80-87-EDD  
Description: 1X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC 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**

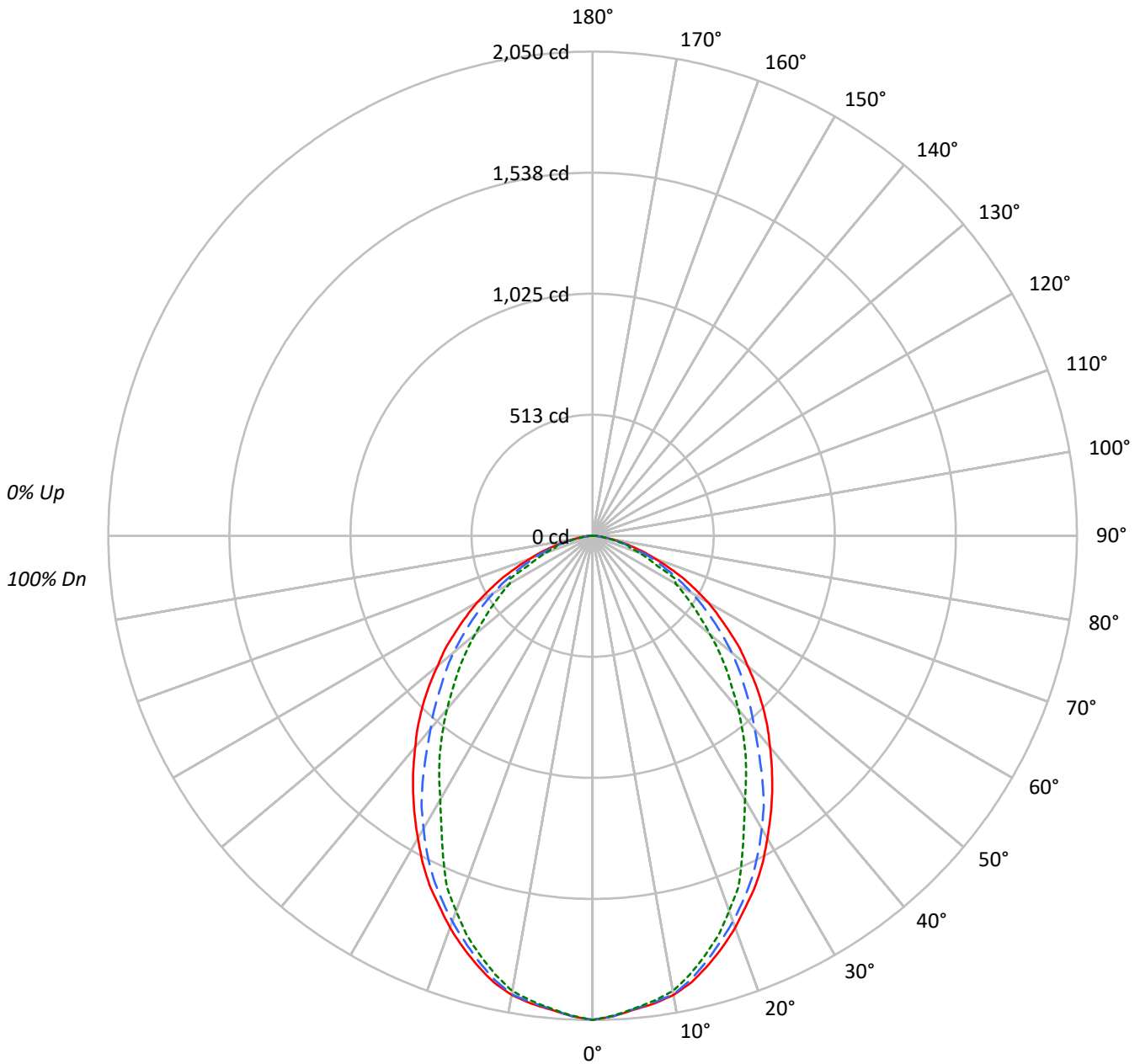
Lumens per Lamp: N/A  
Luminaire Lumens: 4024.0 lumens  
Efficiency: N/A  
Efficacy: 86.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	5516	5516	5516
5°	5441	5435	5428
10°	5394	5387	5349
15°	5248	5195	5123
20°	5056	4974	4838
25°	4848	4742	4447
30°	4595	4447	4006
35°	4352	4110	3706
40°	4104	3746	3371
45°	3869	3463	3048
50°	3581	3214	2718
55°	3313	2913	2435
60°	3035	2602	2181
65°	2670	2278	1931
70°	2200	1995	1640
75°	1749	1527	1601
80°	1175	1102	1029
85°	732	877	1025



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	190.8	4.7
10°-20°	523.7	13.0
20°-30°	725.0	18.0
30°-40°	773.0	19.2
40°-50°	705.2	17.5
50°-60°	552.5	13.7
60°-70°	360.1	8.9
70°-80°	159.5	4.0
80°-90°	34.2	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°	1439.4	35.8
0°-40°	2212.4	55.0
0°-60°	3470.1	86.2
0°-90°	4024.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4024.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2050	2050	2050	2050	2050	
5°	2014	2012	2012	2010	2010	191
15°	1884	1884	1865	1846	1839	530
25°	1633	1623	1597	1540	1498	750
35°	1325	1315	1251	1156	1128	828
45°	1017	995	910	834	801	783
55°	706	685	621	547	519	633
65°	419	396	358	365	303	413
75°	168	156	147	140	154	180
85°	24	26	28	31	33	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2049.8	2049.8	2049.8	2049.8	2049.8
2.5°	2035.6	2035.6	2035.6	2033.2	2033.2
5°	2014.2	2011.9	2011.9	2009.5	2009.5
7.5°	1997.6	1995.3	1992.9	1990.5	1985.8
10°	1973.9	1973.9	1971.6	1959.7	1957.4
12.5°	1936.0	1933.7	1924.2	1907.6	1902.9
15°	1883.9	1883.9	1864.9	1846.0	1838.9
17.5°	1827.0	1824.7	1801.0	1782.0	1772.5
20°	1765.4	1760.7	1737.0	1706.2	1689.6
22.5°	1696.7	1696.7	1668.3	1628.0	1611.4
25°	1632.7	1623.2	1597.2	1540.3	1497.6
27.5°	1559.2	1545.0	1516.6	1436.0	1386.3
30°	1478.7	1471.6	1431.3	1327.0	1289.1
32.5°	1402.8	1391.0	1348.3	1239.3	1208.5
35°	1324.7	1315.2	1251.2	1156.4	1128.0
37.5°	1246.5	1234.6	1154.0	1078.2	1042.7
40°	1168.3	1154.0	1066.4	997.6	959.7
42.5°	1094.8	1075.8	990.5	917.1	874.4
45°	1016.6	995.3	910.0	834.1	801.0
47.5°	938.4	919.4	841.2	763.0	725.1
50°	855.5	838.9	767.8	689.6	649.3
52.5°	786.7	760.7	691.9	613.7	580.6
55°	706.2	684.8	620.9	547.4	519.0
57.5°	632.7	611.4	552.1	483.4	459.7
60°	564.0	533.2	483.4	424.2	405.2
62.5°	488.2	464.5	421.8	372.0	395.7
65°	419.4	395.7	357.8	364.9	303.3
67.5°	343.6	331.8	298.6	265.4	255.9
70°	279.6	265.4	253.6	218.0	208.5
72.5°	222.7	208.5	191.9	173.0	165.9
75°	168.2	156.4	146.9	139.8	154.0
77.5°	116.1	111.4	104.3	97.2	94.8
80°	75.8	73.5	71.1	68.7	66.4
82.5°	45.0	45.0	45.0	45.0	45.0
85°	23.7	26.1	28.4	30.8	33.2
87.5°	14.2	14.2	16.6	19.0	21.3
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)