

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: P546457

Luminaire Tested: **FMR-24-4-LD4-1HI-40-UNV-80-86-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: P546457  
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-LD4-1HI-40-UNV-80-86-EDD  
Description: 2X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

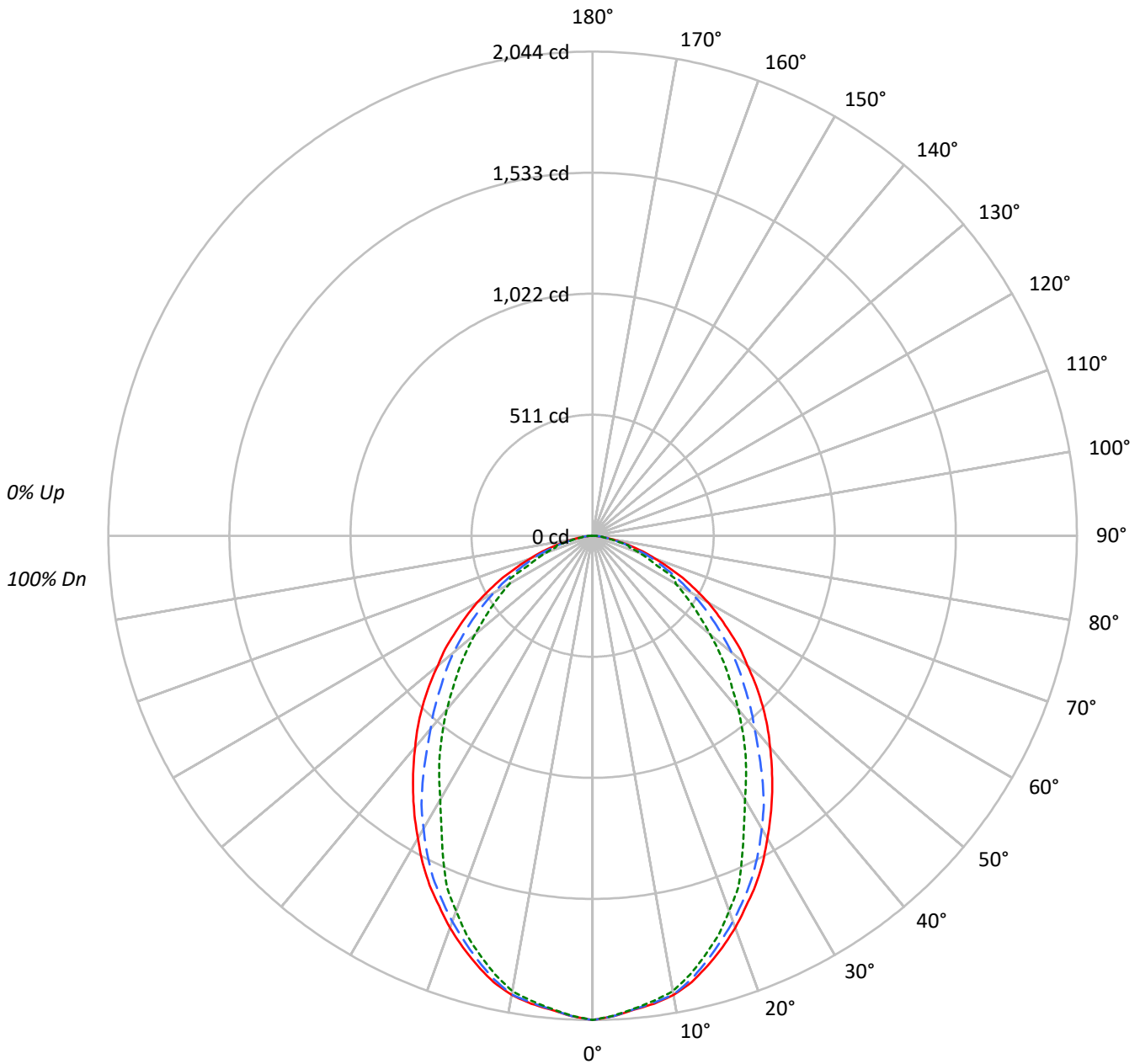
Lumens per Lamp: N/A  
Luminaire Lumens: 4013.0 lumens  
Efficiency: N/A  
Efficacy: 92.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.2  
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°	2750	2750	2750
5°	2713	2710	2707
10°	2689	2686	2667
15°	2617	2591	2554
20°	2521	2480	2413
25°	2417	2365	2217
30°	2291	2218	1997
35°	2170	2050	1848
40°	2046	1868	1681
45°	1929	1727	1520
50°	1786	1603	1355
55°	1652	1453	1214
60°	1513	1297	1087
65°	1332	1136	963
70°	1097	995	818
75°	872	762	799
80°	586	549	513
85°	364	438	511



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	190.3	4.7
10°-20°	522.2	13.0
20°-30°	723.0	18.0
30°-40°	770.9	19.2
40°-50°	703.3	17.5
50°-60°	551.0	13.7
60°-70°	359.1	8.9
70°-80°	159.1	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°	1435.5	35.8
0°-40°	2206.4	55.0
0°-60°	3460.7	86.2
0°-90°	4013.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4013.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2044	2044	2044	2044	2044	
5°	2009	2006	2006	2004	2004	191
15°	1879	1879	1860	1841	1834	528
25°	1628	1619	1593	1536	1494	748
35°	1321	1312	1248	1153	1125	826
45°	1014	992	908	832	799	781
55°	704	683	619	546	518	632
65°	418	395	357	364	302	412
75°	168	156	146	139	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°	2044.2	2044.2	2044.2	2044.2	2044.2
2.5°	2030.0	2030.0	2030.0	2027.6	2027.6
5°	2008.7	2006.4	2006.4	2004.0	2004.0
7.5°	1992.2	1989.8	1987.5	1985.1	1980.4
10°	1968.5	1968.5	1966.2	1954.4	1952.0
12.5°	1930.7	1928.4	1918.9	1902.4	1897.7
15°	1878.7	1878.7	1859.8	1840.9	1833.8
17.5°	1822.0	1819.7	1796.0	1777.1	1767.7
20°	1760.6	1755.9	1732.2	1701.5	1685.0
22.5°	1692.1	1692.1	1663.7	1623.5	1607.0
25°	1628.2	1618.8	1592.8	1536.1	1493.5
27.5°	1555.0	1540.8	1512.4	1432.1	1382.5
30°	1474.6	1467.5	1427.4	1323.4	1285.6
32.5°	1399.0	1387.2	1344.7	1236.0	1205.2
35°	1321.0	1311.6	1247.8	1153.2	1124.9
37.5°	1243.0	1231.2	1150.9	1075.3	1039.8
40°	1165.1	1150.9	1063.4	994.9	957.1
42.5°	1091.8	1072.9	987.8	914.6	872.0
45°	1013.8	992.5	907.5	831.8	798.8
47.5°	935.8	916.9	838.9	761.0	723.1
50°	853.1	836.6	765.7	687.7	647.5
52.5°	784.6	758.6	690.1	612.1	579.0
55°	704.2	683.0	619.2	545.9	517.5
57.5°	631.0	609.7	550.6	482.1	458.5
60°	562.4	531.7	482.1	423.0	404.1
62.5°	486.8	463.2	420.6	371.0	394.7
65°	418.3	394.7	356.8	363.9	302.5
67.5°	342.7	330.8	297.8	264.7	255.2
70°	278.9	264.7	252.9	217.4	208.0
72.5°	222.1	208.0	191.4	172.5	165.4
75°	167.8	156.0	146.5	139.4	153.6
77.5°	115.8	111.1	104.0	96.9	94.5
80°	75.6	73.3	70.9	68.5	66.2
82.5°	44.9	44.9	44.9	44.9	44.9
85°	23.6	26.0	28.4	30.7	33.1
87.5°	14.2	14.2	16.5	18.9	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)