

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: P546479

Luminaire Tested: **FMR-24-4-LD4-1HI-40-UNV-93-84-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: P546479  
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-93-84-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

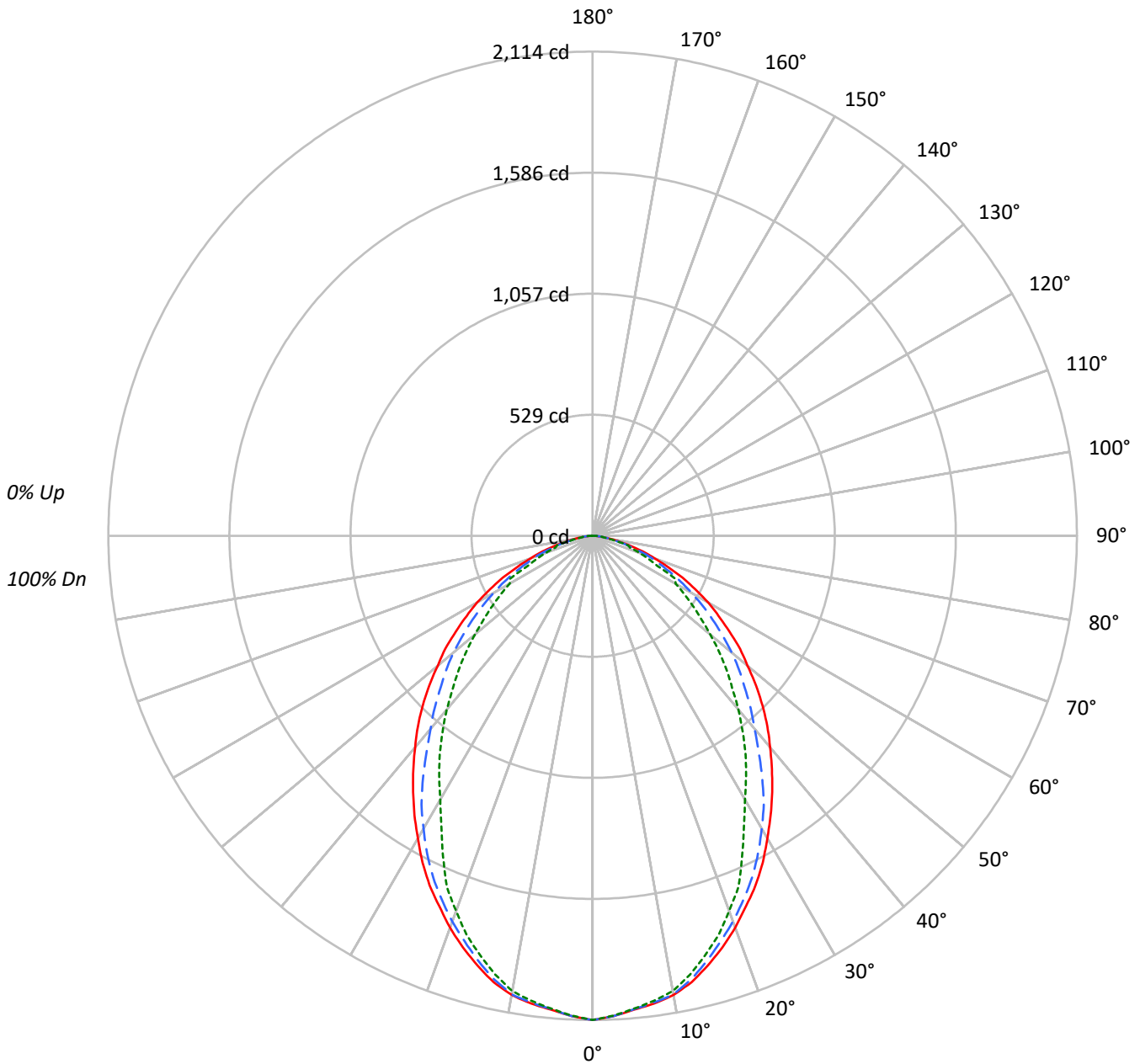
Lumens per Lamp: N/A  
Luminaire Lumens: 4150.0 lumens  
Efficiency: N/A  
Efficacy: 96.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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				20				20	
RC	80				70				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				100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87				87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75				75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65				65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56				56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50				50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44				44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40				40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36				36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33				33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30				30

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2844	2844	2844
5°	2806	2802	2799
10°	2781	2778	2758
15°	2706	2679	2642
20°	2607	2565	2495
25°	2500	2445	2293
30°	2369	2293	2066
35°	2244	2120	1911
40°	2116	1932	1738
45°	1995	1786	1572
50°	1847	1657	1402
55°	1708	1502	1255
60°	1565	1342	1125
65°	1377	1175	996
70°	1135	1029	846
75°	902	788	826
80°	606	568	530
85°	377	452	528



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	196.8	4.7
10°-20°	540.0	13.0
20°-30°	747.7	18.0
30°-40°	797.2	19.2
40°-50°	727.3	17.5
50°-60°	569.8	13.7
60°-70°	371.4	8.9
70°-80°	164.5	4.0
80°-90°	35.3	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°	1484.5	35.8
0°-40°	2281.7	55.0
0°-60°	3578.8	86.2
0°-90°	4150.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4150.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2114	2114	2114	2114	2114	
5°	2077	2075	2075	2072	2072	197
15°	1943	1943	1923	1904	1896	546
25°	1684	1674	1647	1588	1544	773
35°	1366	1356	1290	1193	1163	854
45°	1048	1026	938	860	826	808
55°	728	706	640	564	535	653
65°	433	408	369	376	313	426
75°	174	161	152	144	159	186
85°	24	27	29	32	34	34
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2114.0	2114.0	2114.0	2114.0	2114.0
2.5°	2099.3	2099.3	2099.3	2096.8	2096.8
5°	2077.3	2074.9	2074.9	2072.4	2072.4
7.5°	2060.2	2057.7	2055.3	2052.9	2048.0
10°	2035.8	2035.8	2033.3	2021.1	2018.6
12.5°	1996.6	1994.2	1984.4	1967.3	1962.4
15°	1942.9	1942.9	1923.3	1903.8	1896.4
17.5°	1884.2	1881.8	1857.3	1837.8	1828.0
20°	1820.7	1815.8	1791.4	1759.6	1742.5
22.5°	1749.8	1749.8	1720.5	1678.9	1661.8
25°	1683.8	1674.1	1647.2	1588.5	1544.5
27.5°	1608.1	1593.4	1564.1	1481.0	1429.7
30°	1525.0	1517.6	1476.1	1368.6	1329.5
32.5°	1446.8	1434.6	1390.6	1278.1	1246.4
35°	1366.1	1356.4	1290.4	1192.6	1163.3
37.5°	1285.5	1273.3	1190.2	1112.0	1075.3
40°	1204.8	1190.2	1099.7	1028.9	989.8
42.5°	1129.1	1109.5	1021.5	945.8	901.8
45°	1048.4	1026.4	938.4	860.2	826.0
47.5°	967.8	948.2	867.6	786.9	747.8
50°	882.2	865.1	791.8	711.2	669.6
52.5°	811.4	784.5	713.6	633.0	598.8
55°	728.3	706.3	640.3	564.5	535.2
57.5°	652.5	630.5	569.4	498.6	474.1
60°	581.6	549.9	498.6	437.5	417.9
62.5°	503.4	479.0	435.0	383.7	408.1
65°	432.6	408.1	369.0	376.4	312.8
67.5°	354.4	342.1	307.9	273.7	263.9
70°	288.4	273.7	261.5	224.8	215.1
72.5°	229.7	215.1	198.0	178.4	171.1
75°	173.5	161.3	151.5	144.2	158.9
77.5°	119.8	114.9	107.5	100.2	97.8
80°	78.2	75.8	73.3	70.9	68.4
82.5°	46.4	46.4	46.4	46.4	46.4
85°	24.4	26.9	29.3	31.8	34.2
87.5°	14.7	14.7	17.1	19.6	22.0
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)