

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: P546245

Luminaire Tested: **FMR-12-4-LD4-2LO-40-UNV-81-96-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: P546245  
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-81-96-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

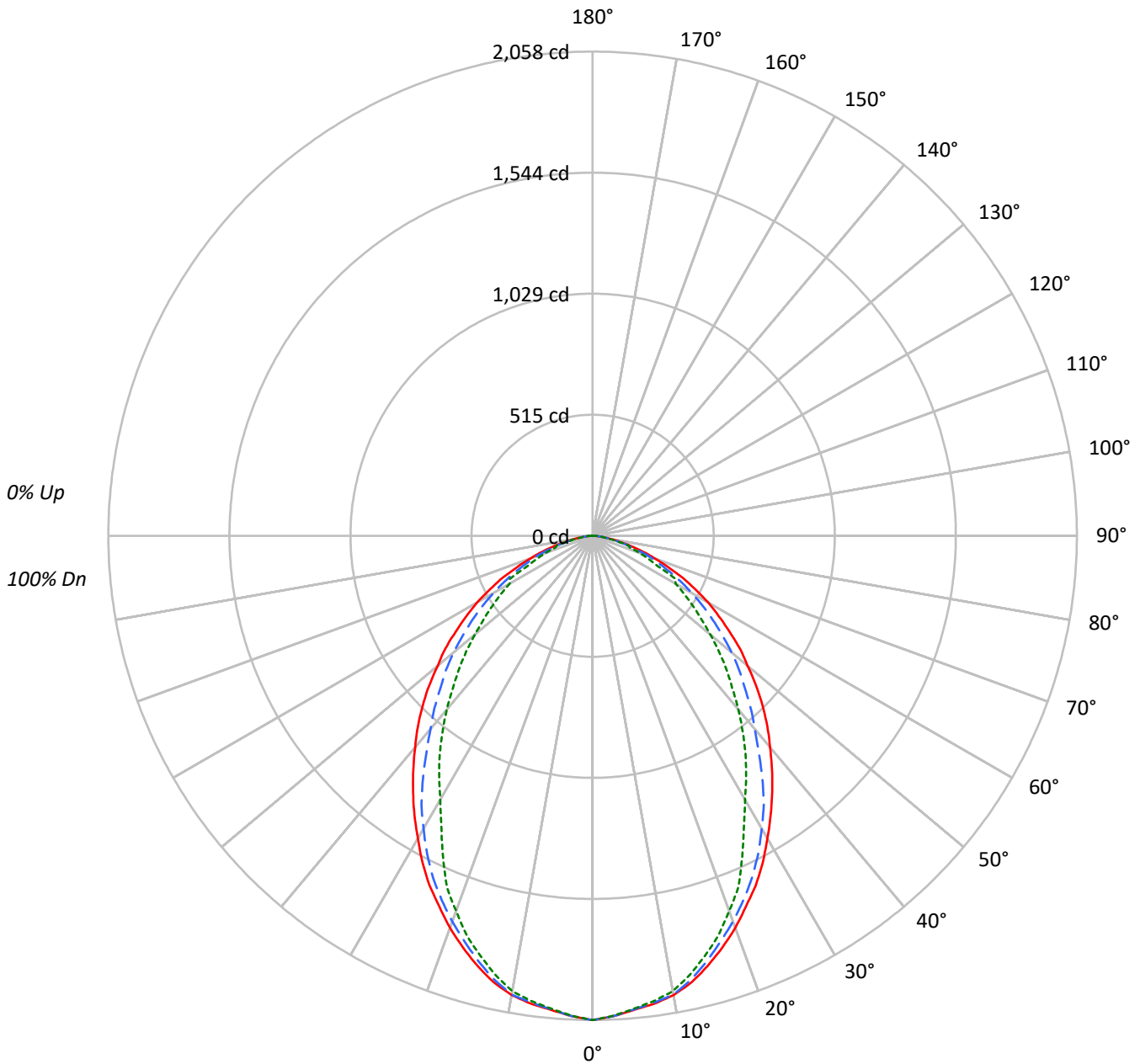
Lumens per Lamp: N/A  
Luminaire Lumens: 4041.0 lumens  
Efficiency: N/A  
Efficacy: 86.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	5539	5539	5539
5°	5464	5458	5451
10°	5417	5410	5371
15°	5271	5217	5144
20°	5077	4995	4859
25°	4868	4762	4466
30°	4614	4466	4023
35°	4370	4128	3721
40°	4121	3762	3386
45°	3885	3478	3061
50°	3597	3228	2730
55°	3327	2925	2445
60°	3048	2613	2190
65°	2682	2288	1940
70°	2209	2003	1648
75°	1757	1534	1608
80°	1181	1106	1032
85°	735	883	1028



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	191.6	4.7
10°-20°	525.9	13.0
20°-30°	728.0	18.0
30°-40°	776.3	19.2
40°-50°	708.2	17.5
50°-60°	554.8	13.7
60°-70°	361.6	8.9
70°-80°	160.2	4.0
80°-90°	34.4	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°	1445.5	35.8
0°-40°	2221.8	55.0
0°-60°	3484.8	86.2
0°-90°	4041.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4041.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2058	2058	2058	2058	2058	
5°	2023	2020	2020	2018	2018	192
15°	1892	1892	1873	1854	1847	532
25°	1640	1630	1604	1547	1504	753
35°	1330	1321	1256	1161	1133	832
45°	1021	1000	914	838	804	786
55°	709	688	624	550	521	636
65°	421	397	359	366	305	415
75°	169	157	148	140	155	181
85°	24	26	29	31	33	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2058.4	2058.4	2058.4	2058.4	2058.4
2.5°	2044.2	2044.2	2044.2	2041.8	2041.8
5°	2022.7	2020.4	2020.4	2018.0	2018.0
7.5°	2006.1	2003.7	2001.3	1998.9	1994.2
10°	1982.3	1982.3	1979.9	1968.0	1965.6
12.5°	1944.2	1941.8	1932.3	1915.7	1910.9
15°	1891.9	1891.9	1872.8	1853.8	1846.6
17.5°	1834.7	1832.4	1808.6	1789.5	1780.0
20°	1772.9	1768.1	1744.3	1713.4	1696.7
22.5°	1703.9	1703.9	1675.3	1634.8	1618.2
25°	1639.6	1630.1	1603.9	1546.8	1504.0
27.5°	1565.8	1551.6	1523.0	1442.1	1392.1
30°	1484.9	1477.8	1437.3	1332.6	1294.6
32.5°	1408.8	1396.9	1354.0	1244.6	1213.6
35°	1330.2	1320.7	1256.5	1161.3	1132.7
37.5°	1251.7	1239.8	1158.9	1082.8	1047.1
40°	1173.2	1158.9	1070.9	1001.8	963.8
42.5°	1099.4	1080.4	994.7	920.9	878.1
45°	1020.9	999.5	913.8	837.7	804.3
47.5°	942.4	923.3	844.8	766.3	728.2
50°	859.1	842.4	771.0	692.5	652.0
52.5°	790.1	763.9	694.9	616.3	583.0
55°	709.1	687.7	623.5	549.7	521.2
57.5°	635.4	614.0	554.5	485.5	461.7
60°	566.4	535.4	485.5	426.0	406.9
62.5°	490.2	466.4	423.6	373.6	397.4
65°	421.2	397.4	359.3	366.5	304.6
67.5°	345.1	333.2	299.8	266.5	257.0
70°	280.8	266.5	254.6	218.9	209.4
72.5°	223.7	209.4	192.8	173.7	166.6
75°	169.0	157.1	147.5	140.4	154.7
77.5°	116.6	111.8	104.7	97.6	95.2
80°	76.2	73.8	71.4	69.0	66.6
82.5°	45.2	45.2	45.2	45.2	45.2
85°	23.8	26.2	28.6	30.9	33.3
87.5°	14.3	14.3	16.7	19.0	21.4
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)