

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: P545921

Luminaire Tested: **FMR-12-4-LD4-1LO-35-UNV-81-86-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: P545921  
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-LD4-1LO-35-UNV-81-86-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

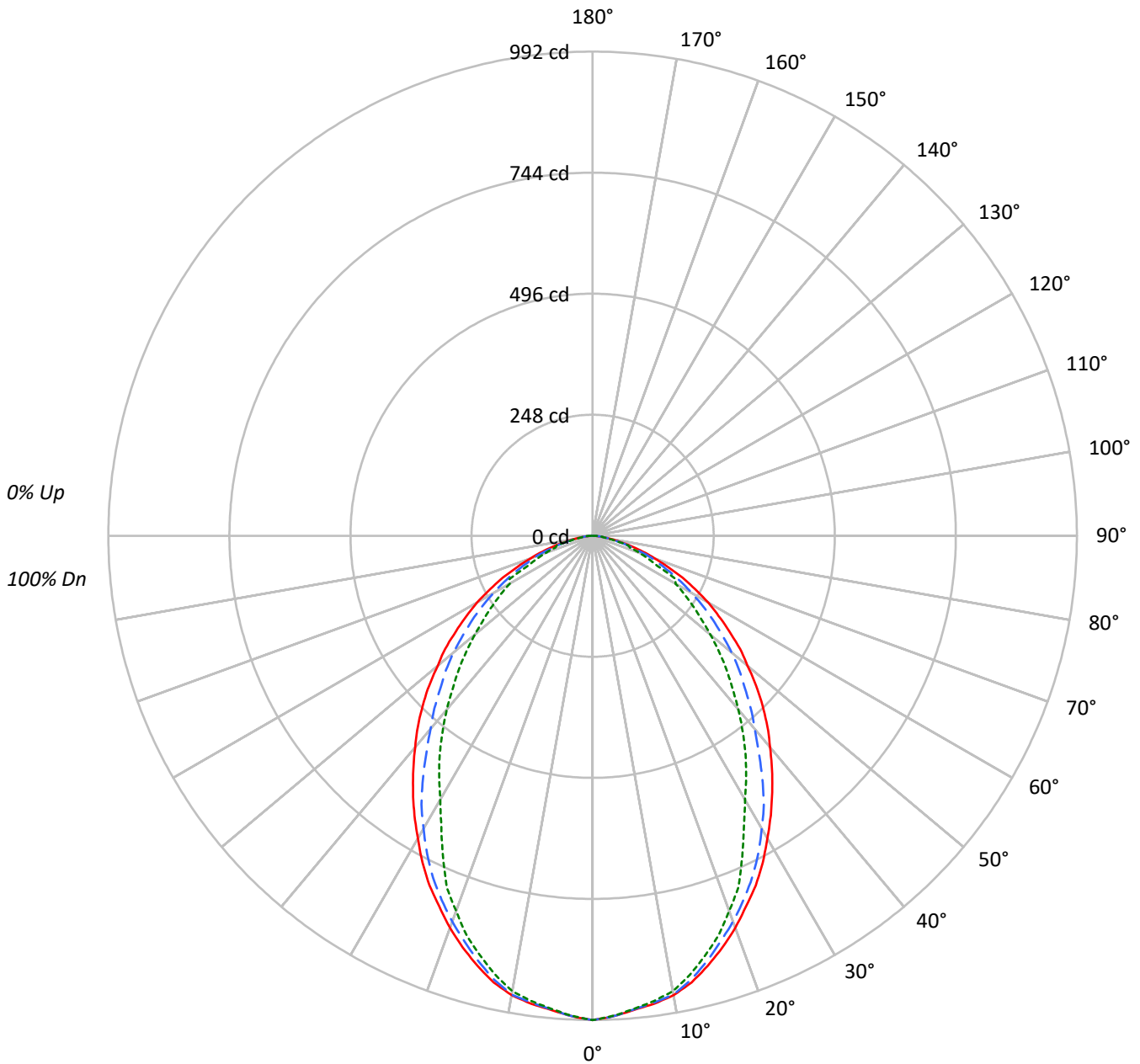
Lumens per Lamp: N/A  
Luminaire Lumens: 1948.0 lumens  
Efficiency: N/A  
Efficacy: 83.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 23.4  
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°	2670	2670	2670
5°	2634	2631	2628
10°	2611	2608	2589
15°	2541	2515	2480
20°	2447	2408	2342
25°	2347	2296	2153
30°	2224	2153	1939
35°	2107	1990	1794
40°	1987	1813	1632
45°	1873	1676	1475
50°	1734	1556	1316
55°	1604	1410	1179
60°	1469	1259	1056
65°	1293	1103	935
70°	1065	965	794
75°	846	739	776
80°	569	533	497
85°	355	426	497



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	92.4	4.7
10°-20°	253.5	13.0
20°-30°	351.0	18.0
30°-40°	374.2	19.2
40°-50°	341.4	17.5
50°-60°	267.5	13.7
60°-70°	174.3	8.9
70°-80°	77.2	4.0
80°-90°	16.6	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°	696.8	35.8
0°-40°	1071.0	55.0
0°-60°	1679.9	86.2
0°-90°	1948.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1948.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	992	992	992	992	992	
5°	975	974	974	973	973	93
15°	912	912	903	894	890	256
25°	790	786	773	746	725	363
35°	641	637	606	560	546	401
45°	492	482	440	404	388	379
55°	342	332	301	265	251	307
65°	203	192	173	177	147	200
75°	81	76	71	68	75	87
85°	12	13	14	15	16	16
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	992.3	992.3	992.3	992.3	992.3
2.5°	985.4	985.4	985.4	984.3	984.3
5°	975.1	973.9	973.9	972.8	972.8
7.5°	967.0	965.9	964.8	963.6	961.3
10°	955.6	955.6	954.4	948.7	947.5
12.5°	937.2	936.1	931.5	923.5	921.2
15°	912.0	912.0	902.8	893.6	890.2
17.5°	884.5	883.3	871.8	862.7	858.1
20°	854.6	852.3	840.9	825.9	817.9
22.5°	821.4	821.4	807.6	788.1	780.1
25°	790.4	785.8	773.2	745.6	725.0
27.5°	754.8	747.9	734.2	695.2	671.1
30°	715.8	712.4	692.9	642.4	624.0
32.5°	679.1	673.4	652.7	600.0	585.0
35°	641.3	636.7	605.7	559.8	546.0
37.5°	603.4	597.7	558.7	522.0	504.7
40°	565.5	558.7	516.2	483.0	464.6
42.5°	530.0	520.8	479.5	443.9	423.3
45°	492.1	481.8	440.5	403.8	387.7
47.5°	454.3	445.1	407.2	369.4	351.0
50°	414.1	406.1	371.7	333.8	314.3
52.5°	380.9	368.2	335.0	297.1	281.1
55°	341.9	331.5	300.6	265.0	251.2
57.5°	306.3	296.0	267.3	234.0	222.5
60°	273.0	258.1	234.0	205.3	196.2
62.5°	236.3	224.8	204.2	180.1	191.6
65°	203.0	191.6	173.2	176.7	146.8
67.5°	166.3	160.6	144.5	128.5	123.9
70°	135.4	128.5	122.7	105.5	100.9
72.5°	107.8	100.9	92.9	83.7	80.3
75°	81.4	75.7	71.1	67.7	74.6
77.5°	56.2	53.9	50.5	47.0	45.9
80°	36.7	35.6	34.4	33.3	32.1
82.5°	21.8	21.8	21.8	21.8	21.8
85°	11.5	12.6	13.8	14.9	16.1
87.5°	6.9	6.9	8.0	9.2	10.3
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)