

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: P545911

Luminaire Tested: **FMR-12-4-LD4-1LO-35-UNV-80-84-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: P545911  
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-80-84-EDD  
Description: 1X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

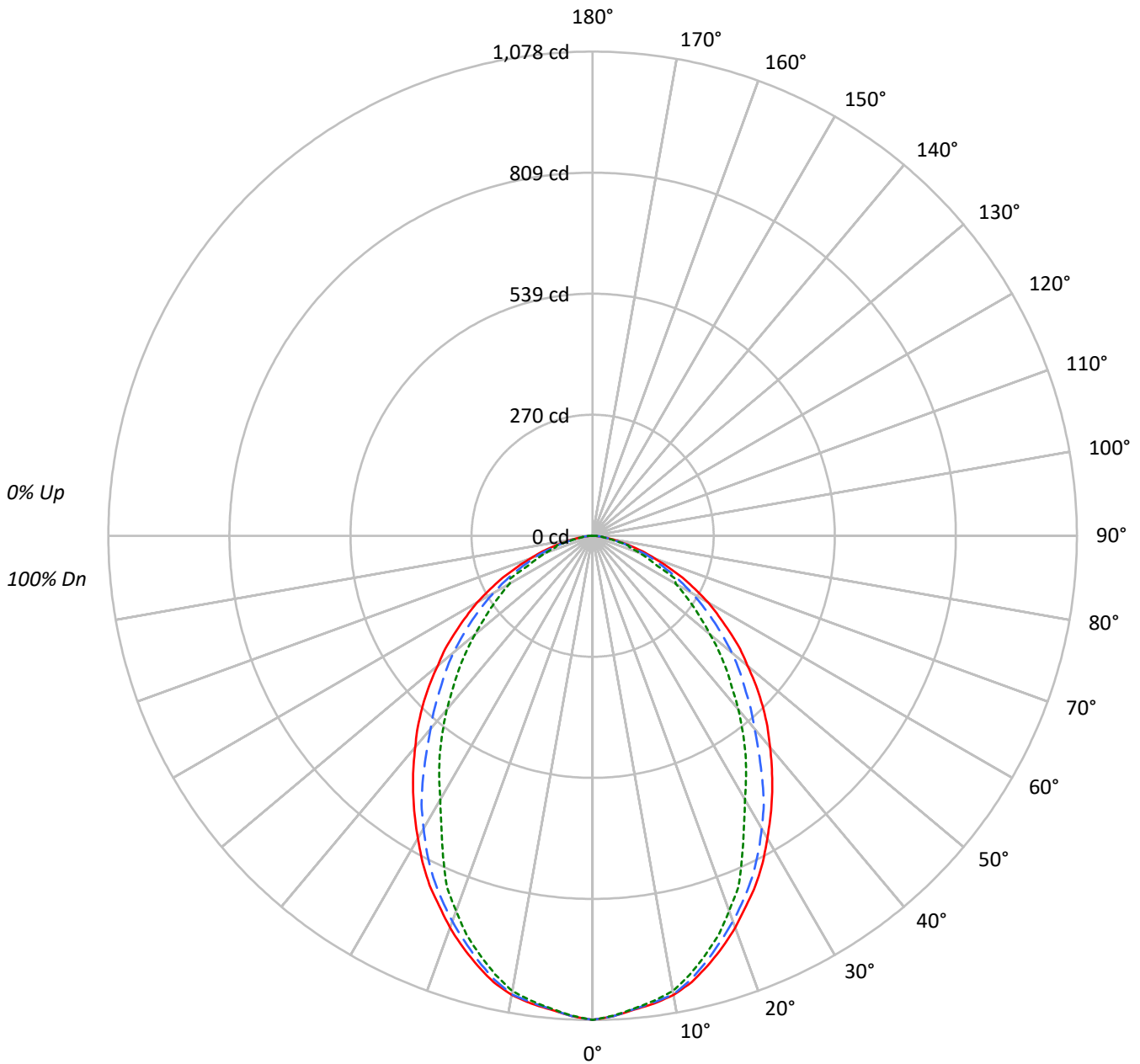
Lumens per Lamp: N/A  
Luminaire Lumens: 2116.0 lumens  
Efficiency: N/A  
Efficacy: 90.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	2901	2901	2901
5°	2861	2858	2854
10°	2836	2833	2813
15°	2760	2732	2694
20°	2658	2616	2544
25°	2549	2494	2338
30°	2416	2339	2106
35°	2288	2161	1948
40°	2158	1970	1773
45°	2034	1821	1603
50°	1883	1690	1429
55°	1742	1532	1280
60°	1596	1368	1147
65°	1405	1198	1016
70°	1157	1049	863
75°	920	804	842
80°	618	580	541
85°	386	463	537



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	100.3	4.7
10°-20°	275.4	13.0
20°-30°	381.2	18.0
30°-40°	406.5	19.2
40°-50°	370.8	17.5
50°-60°	290.5	13.7
60°-70°	189.4	8.9
70°-80°	83.9	4.0
80°-90°	18.0	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°	756.9	35.8
0°-40°	1163.4	55.0
0°-60°	1824.7	86.2
0°-90°	2116.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2116.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1078	1078	1078	1078	1078	
5°	1059	1058	1058	1057	1057	101
15°	991	991	981	971	967	278
25°	859	854	840	810	788	394
35°	697	692	658	608	593	435
45°	535	523	478	439	421	412
55°	371	360	326	288	273	333
65°	221	208	188	192	160	217
75°	88	82	77	74	81	95
85°	12	14	15	16	17	17
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1077.9	1077.9	1077.9	1077.9	1077.9
2.5°	1070.4	1070.4	1070.4	1069.1	1069.1
5°	1059.2	1057.9	1057.9	1056.7	1056.7
7.5°	1050.4	1049.2	1048.0	1046.7	1044.2
10°	1038.0	1038.0	1036.7	1030.5	1029.3
12.5°	1018.1	1016.8	1011.8	1003.1	1000.6
15°	990.6	990.6	980.7	970.7	967.0
17.5°	960.7	959.5	947.0	937.1	932.1
20°	928.3	925.8	913.4	897.2	888.5
22.5°	892.2	892.2	877.2	856.1	847.3
25°	858.6	853.6	839.9	810.0	787.5
27.5°	819.9	812.4	797.5	755.1	729.0
30°	777.6	773.8	752.6	697.8	677.9
32.5°	737.7	731.5	709.0	651.7	635.5
35°	696.6	691.6	657.9	608.1	593.1
37.5°	655.4	649.2	606.8	567.0	548.3
40°	614.3	606.8	560.7	524.6	504.7
42.5°	575.7	565.7	520.9	482.2	459.8
45°	534.6	523.4	478.5	438.6	421.2
47.5°	493.4	483.5	442.4	401.2	381.3
50°	449.8	441.1	403.7	362.6	341.4
52.5°	413.7	400.0	363.9	322.7	305.3
55°	371.3	360.1	326.5	287.8	272.9
57.5°	332.7	321.5	290.3	254.2	241.7
60°	296.6	280.4	254.2	223.0	213.1
62.5°	256.7	244.2	221.8	195.6	208.1
65°	220.6	208.1	188.2	191.9	159.5
67.5°	180.7	174.5	157.0	139.6	134.6
70°	147.0	139.6	133.3	114.6	109.7
72.5°	117.1	109.7	100.9	91.0	87.2
75°	88.5	82.2	77.3	73.5	81.0
77.5°	61.1	58.6	54.8	51.1	49.8
80°	39.9	38.6	37.4	36.1	34.9
82.5°	23.7	23.7	23.7	23.7	23.7
85°	12.5	13.7	15.0	16.2	17.4
87.5°	7.5	7.5	8.7	10.0	11.2
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)