

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: P546133

Luminaire Tested: **FMR-12-4-LD4-2HI-35-UNV-93-96-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: P546133  
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-LD4-2HI-35-UNV-93-96-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

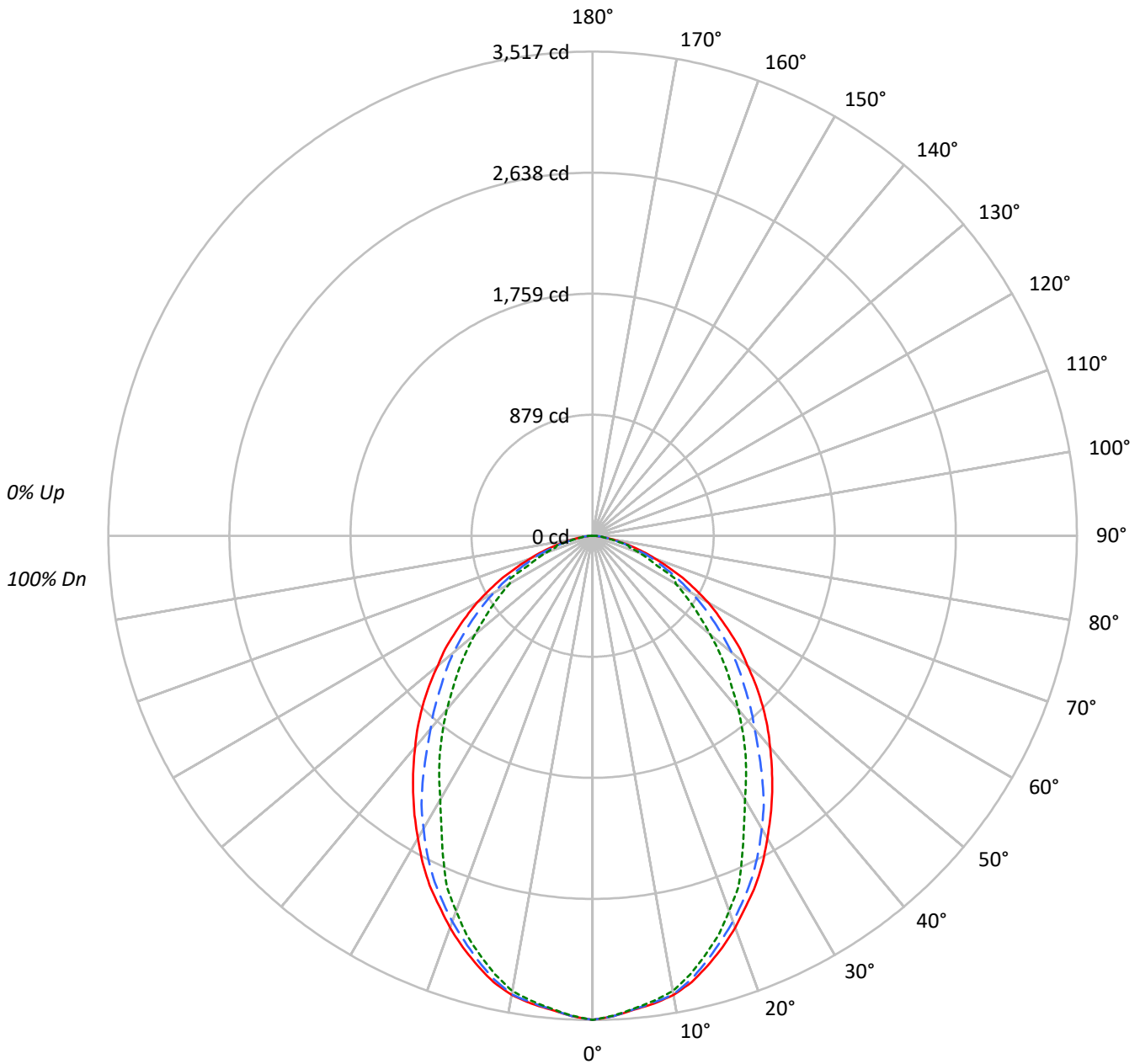
Lumens per Lamp: N/A  
Luminaire Lumens: 6904.0 lumens  
Efficiency: N/A  
Efficacy: 79.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
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°	9464	9464	9464
5°	9335	9324	9313
10°	9254	9243	9176
15°	9005	8914	8790
20°	8674	8534	8301
25°	8317	8136	7629
30°	7883	7631	6872
35°	7466	7052	6358
40°	7041	6427	5784
45°	6638	5941	5230
50°	6144	5515	4664
55°	5684	4997	4177
60°	5208	4464	3742
65°	4582	3909	3314
70°	3774	3423	2815
75°	3002	2621	2748
80°	2016	1891	1764
85°	1257	1507	1757



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	327.4	4.7
10°-20°	898.4	13.0
20°-30°	1243.8	18.0
30°-40°	1326.3	19.2
40°-50°	1209.9	17.5
50°-60°	947.9	13.7
60°-70°	617.8	8.9
70°-80°	273.7	4.0
80°-90°	58.8	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°	2469.6	35.8
0°-40°	3795.9	55.0
0°-60°	5953.7	86.2
0°-90°	6904.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6904.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3517	3517	3517	3517	3517	
5°	3456	3452	3452	3448	3448	328
15°	3232	3232	3200	3167	3155	909
25°	2801	2785	2740	2643	2570	1286
35°	2273	2256	2147	1984	1935	1421
45°	1744	1708	1561	1431	1374	1344
55°	1212	1175	1065	939	890	1087
65°	720	679	614	626	520	709
75°	289	268	252	240	264	309
85°	41	45	49	53	57	56
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3516.8	3516.8	3516.8	3516.8	3516.8
2.5°	3492.4	3492.4	3492.4	3488.3	3488.3
5°	3455.8	3451.8	3451.8	3447.7	3447.7
7.5°	3427.4	3423.3	3419.2	3415.2	3407.0
10°	3386.7	3386.7	3382.6	3362.3	3358.2
12.5°	3321.7	3317.6	3301.3	3272.9	3264.7
15°	3232.2	3232.2	3199.7	3167.2	3155.0
17.5°	3134.6	3130.6	3089.9	3057.4	3041.1
20°	3028.9	3020.8	2980.1	2927.3	2898.8
22.5°	2911.0	2911.0	2862.2	2793.1	2764.7
25°	2801.2	2785.0	2740.3	2642.7	2569.5
27.5°	2675.2	2650.8	2602.0	2463.8	2378.4
30°	2537.0	2524.8	2455.7	2276.8	2211.7
32.5°	2406.9	2386.5	2313.4	2126.3	2073.5
35°	2272.7	2256.4	2146.7	1984.0	1935.3
37.5°	2138.5	2118.2	1980.0	1849.9	1788.9
40°	2004.4	1980.0	1829.6	1711.6	1646.6
42.5°	1878.3	1845.8	1699.5	1573.4	1500.2
45°	1744.2	1707.6	1561.2	1431.1	1374.2
47.5°	1610.0	1577.5	1443.3	1309.1	1244.1
50°	1467.7	1439.2	1317.3	1183.1	1114.0
52.5°	1349.8	1305.1	1187.2	1053.0	996.1
55°	1211.6	1175.0	1065.2	939.2	890.4
57.5°	1085.5	1048.9	947.3	829.4	788.7
60°	967.6	914.8	829.4	727.8	695.2
62.5°	837.5	796.9	723.7	638.3	679.0
65°	719.6	679.0	613.9	626.1	520.4
67.5°	589.5	569.2	512.3	455.4	439.1
70°	479.7	455.4	435.0	374.0	357.8
72.5°	382.2	357.8	329.3	296.8	284.6
75°	288.7	268.3	252.1	239.9	264.3
77.5°	199.2	191.1	178.9	166.7	162.6
80°	130.1	126.0	122.0	117.9	113.8
82.5°	77.2	77.2	77.2	77.2	77.2
85°	40.7	44.7	48.8	52.9	56.9
87.5°	24.4	24.4	28.5	32.5	36.6
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)