

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: P546191

Luminaire Tested: **FMR-12-4-LD4-2HI-50-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: P546191  
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-50-UNV-93-84-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

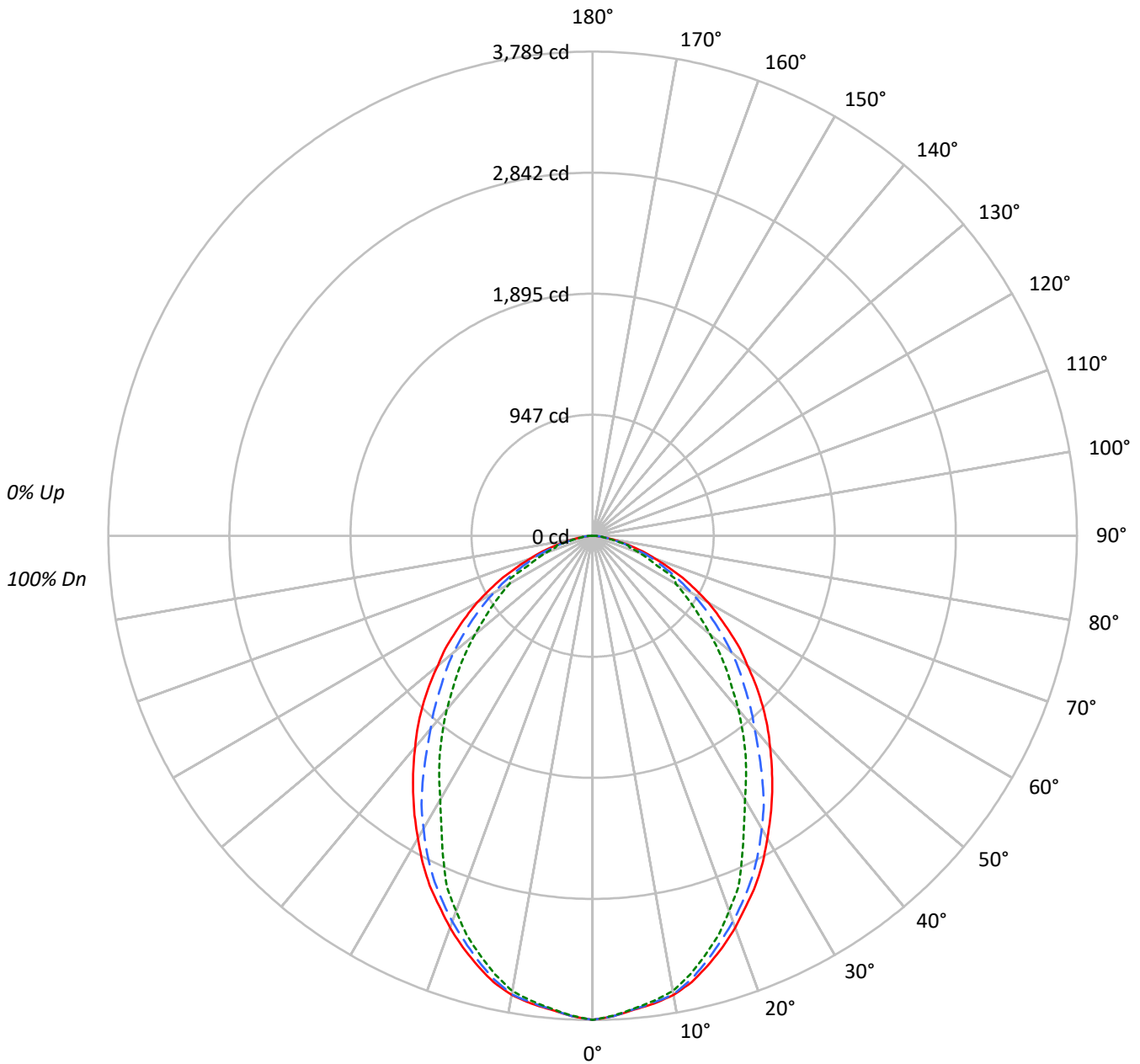
Lumens per Lamp: N/A  
Luminaire Lumens: 7438.0 lumens  
Efficiency: N/A  
Efficacy: 86.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	10196	10196	10196
5°	10057	10045	10034
10°	9970	9958	9886
15°	9701	9604	9469
20°	9345	9194	8943
25°	8961	8766	8219
30°	8493	8221	7404
35°	8044	7597	6849
40°	7586	6924	6232
45°	7151	6401	5634
50°	6620	5941	5025
55°	6124	5384	4500
60°	5611	4809	4031
65°	4937	4211	3570
70°	4067	3688	3033
75°	3234	2824	2960
80°	2173	2036	1900
85°	1352	1624	1893



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	352.7	4.7
10°-20°	967.9	13.0
20°-30°	1340.0	18.0
30°-40°	1428.9	19.2
40°-50°	1303.5	17.5
50°-60°	1021.2	13.7
60°-70°	665.6	8.9
70°-80°	294.9	4.0
80°-90°	63.3	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°	2660.6	35.8
0°-40°	4089.5	55.0
0°-60°	6414.2	86.2
0°-90°	7438.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7438.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3789	3789	3789	3789	3789	
5°	3723	3719	3719	3714	3714	353
15°	3482	3482	3447	3412	3399	979
25°	3018	3000	2952	2847	2768	1386
35°	2448	2431	2313	2138	2085	1531
45°	1879	1840	1682	1542	1480	1447
55°	1305	1266	1148	1012	959	1171
65°	775	732	661	674	561	764
75°	311	289	272	258	285	333
85°	44	48	53	57	61	61
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3788.8	3788.8	3788.8	3788.8	3788.8
2.5°	3762.5	3762.5	3762.5	3758.2	3758.2
5°	3723.1	3718.7	3718.7	3714.4	3714.4
7.5°	3692.5	3688.1	3683.7	3679.3	3670.6
10°	3648.7	3648.7	3644.3	3622.4	3618.0
12.5°	3578.6	3574.2	3556.7	3526.0	3517.2
15°	3482.2	3482.2	3447.2	3412.1	3399.0
17.5°	3377.1	3372.7	3328.9	3293.9	3276.3
20°	3263.2	3254.4	3210.6	3153.7	3123.0
22.5°	3136.2	3136.2	3083.6	3009.2	2978.5
25°	3017.9	3000.4	2952.2	2847.1	2768.2
27.5°	2882.1	2855.8	2803.3	2654.4	2562.4
30°	2733.2	2720.1	2645.6	2452.9	2382.8
32.5°	2593.0	2571.1	2492.3	2290.8	2233.9
35°	2448.5	2431.0	2312.7	2137.5	2084.9
37.5°	2304.0	2282.1	2133.1	1993.0	1927.3
40°	2159.4	2133.1	1971.1	1844.0	1774.0
42.5°	2023.6	1988.6	1830.9	1695.1	1616.3
45°	1879.1	1839.7	1682.0	1541.8	1480.5
47.5°	1734.5	1699.5	1554.9	1410.4	1340.3
50°	1581.2	1550.6	1419.2	1274.6	1200.2
52.5°	1454.2	1406.0	1279.0	1134.5	1073.1
55°	1305.3	1265.9	1147.6	1011.8	959.2
57.5°	1169.5	1130.1	1020.6	893.5	849.7
60°	1042.5	985.5	893.5	784.0	749.0
62.5°	902.3	858.5	779.7	687.7	731.5
65°	775.3	731.5	661.4	674.5	560.7
67.5°	635.1	613.2	551.9	490.6	473.1
70°	516.9	490.6	468.7	403.0	385.5
72.5°	411.7	385.5	354.8	319.7	306.6
75°	311.0	289.1	271.6	258.4	284.7
77.5°	214.6	205.9	192.7	179.6	175.2
80°	140.2	135.8	131.4	127.0	122.6
82.5°	83.2	83.2	83.2	83.2	83.2
85°	43.8	48.2	52.6	56.9	61.3
87.5°	26.3	26.3	30.7	35.0	39.4
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)