

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: P546157

Luminaire Tested: **FMR-12-4-LD4-2HI-40-UNV-82-96-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: P546157  
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-40-UNV-82-96-EDD  
Description: 1X4 FMR TROFFER WITH .187 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**

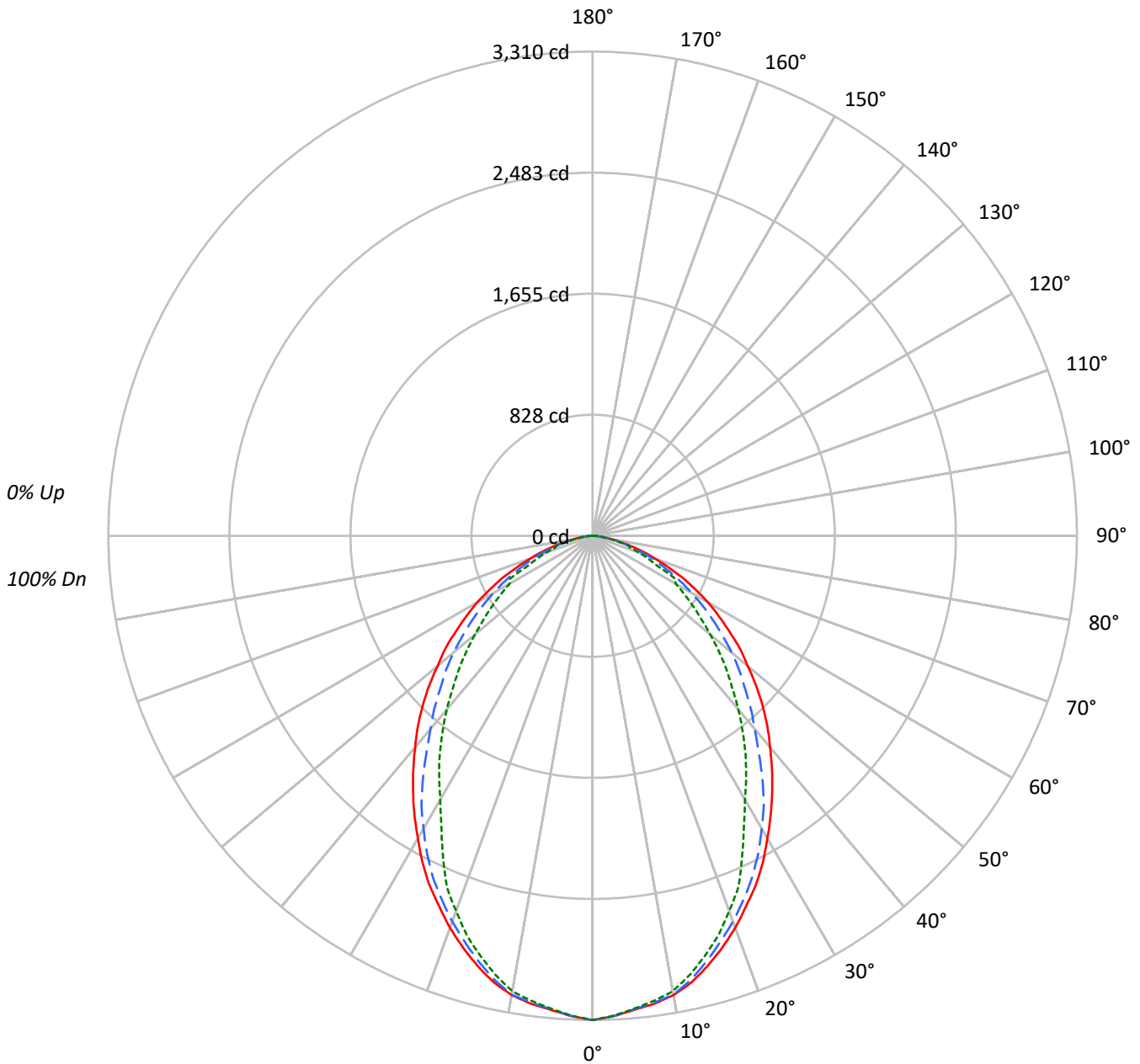
Lumens per Lamp: N/A  
Luminaire Lumens: 6499.0 lumens  
Efficiency: N/A  
Efficacy: 75.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	8908	8908	8908
5°	8787	8777	8767
10°	8711	8701	8638
15°	8476	8391	8274
20°	8165	8033	7814
25°	7829	7659	7182
30°	7421	7183	6469
35°	7028	6638	5984
40°	6628	6050	5445
45°	6248	5593	4923
50°	5784	5191	4390
55°	5351	4704	3932
60°	4902	4202	3522
65°	4313	3680	3119
70°	3553	3222	2650
75°	2825	2467	2587
80°	1898	1779	1661
85°	1183	1417	1655



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	308.2	4.7
10°-20°	845.7	13.0
20°-30°	1170.9	18.0
30°-40°	1248.5	19.2
40°-50°	1139.0	17.5
50°-60°	892.3	13.7
60°-70°	581.5	8.9
70°-80°	257.7	4.0
80°-90°	55.3	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°	2324.8	35.8
0°-40°	3573.2	55.0
0°-60°	5604.5	86.2
0°-90°	6499.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6499.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3310	3310	3310	3310	3310	
5°	3253	3249	3249	3245	3245	309
15°	3043	3043	3012	2981	2970	855
25°	2637	2622	2580	2488	2419	1211
35°	2139	2124	2021	1868	1822	1338
45°	1642	1607	1470	1347	1294	1265
55°	1140	1106	1003	884	838	1023
65°	677	639	578	589	490	668
75°	272	253	237	226	249	291
85°	38	42	46	50	54	53
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3310.5	3310.5	3310.5	3310.5	3310.5
2.5°	3287.5	3287.5	3287.5	3283.7	3283.7
5°	3253.1	3249.3	3249.3	3245.4	3245.4
7.5°	3226.3	3222.5	3218.7	3214.8	3207.2
10°	3188.0	3188.0	3184.2	3165.1	3161.2
12.5°	3126.8	3123.0	3107.7	3080.9	3073.2
15°	3042.6	3042.6	3012.0	2981.4	2969.9
17.5°	2950.7	2946.9	2908.7	2878.0	2862.7
20°	2851.2	2843.6	2805.3	2755.6	2728.8
22.5°	2740.3	2740.3	2694.3	2629.3	2602.5
25°	2636.9	2621.6	2579.5	2487.7	2418.8
27.5°	2518.3	2495.3	2449.4	2319.3	2238.9
30°	2388.2	2376.7	2311.6	2143.2	2082.0
32.5°	2265.7	2246.5	2177.7	2001.6	1951.9
35°	2139.4	2124.1	2020.7	1867.7	1821.7
37.5°	2013.1	1994.0	1863.8	1741.4	1684.0
40°	1886.8	1863.8	1722.2	1611.2	1550.0
42.5°	1768.2	1737.5	1599.8	1481.1	1412.2
45°	1641.9	1607.4	1469.6	1347.2	1293.6
47.5°	1515.6	1484.9	1358.6	1232.3	1171.1
50°	1381.6	1354.8	1240.0	1113.7	1048.6
52.5°	1270.6	1228.5	1117.5	991.2	937.7
55°	1140.5	1106.1	1002.7	884.1	838.2
57.5°	1021.9	987.4	891.7	780.7	742.5
60°	910.9	861.1	780.7	685.1	654.4
62.5°	788.4	750.1	681.2	600.9	639.1
65°	677.4	639.1	577.9	589.4	489.9
67.5°	554.9	535.8	482.2	428.6	413.3
70°	451.6	428.6	409.5	352.1	336.8
72.5°	359.8	336.8	310.0	279.4	267.9
75°	271.7	252.6	237.3	225.8	248.8
77.5°	187.5	179.9	168.4	156.9	153.1
80°	122.5	118.6	114.8	111.0	107.2
82.5°	72.7	72.7	72.7	72.7	72.7
85°	38.3	42.1	45.9	49.8	53.6
87.5°	23.0	23.0	26.8	30.6	34.4
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)