

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: P546162

Luminaire Tested: **FMR-12-4-LD4-2HI-40-UNV-93-87-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: P546162  
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-93-87-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

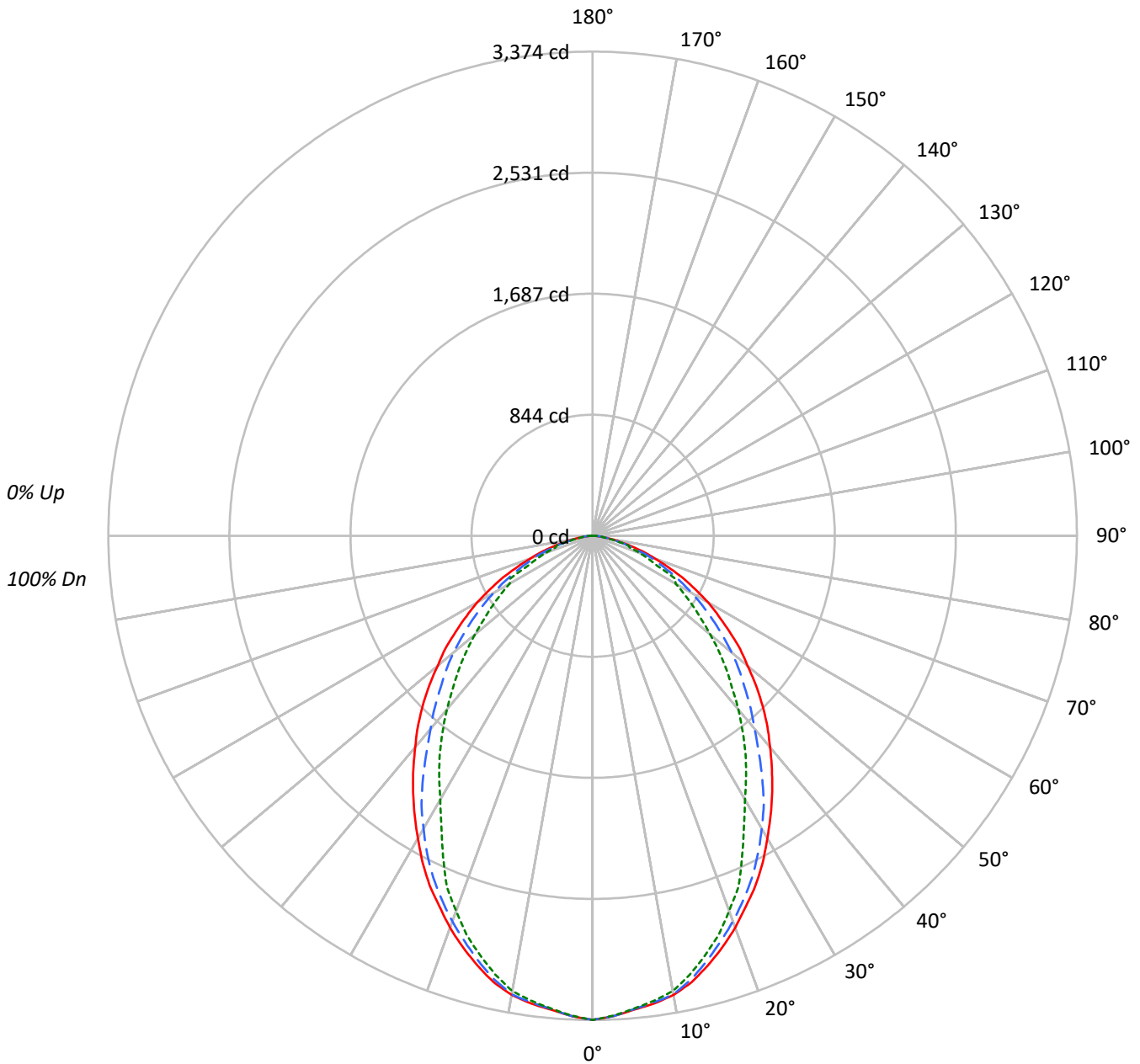
Lumens per Lamp: N/A  
Luminaire Lumens: 6623.0 lumens  
Efficiency: N/A  
Efficacy: 76.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	9079	9079	9079
5°	8955	8945	8934
10°	8878	8867	8803
15°	8638	8551	8432
20°	8321	8187	7963
25°	7979	7805	7319
30°	7562	7320	6593
35°	7162	6765	6099
40°	6754	6165	5549
45°	6368	5700	5017
50°	5894	5290	4474
55°	5453	4794	4007
60°	4996	4282	3589
65°	4395	3750	3179
70°	3621	3283	2700
75°	2879	2514	2636
80°	1934	1813	1692
85°	1204	1445	1686



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	314.0	4.7
10°-20°	861.9	13.0
20°-30°	1193.2	18.0
30°-40°	1272.3	19.2
40°-50°	1160.7	17.5
50°-60°	909.3	13.7
60°-70°	592.6	8.9
70°-80°	262.6	4.0
80°-90°	56.4	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°	2369.1	35.8
0°-40°	3641.4	55.0
0°-60°	5711.4	86.2
0°-90°	6623.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6623.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3374	3374	3374	3374	3374	
5°	3315	3311	3311	3307	3307	315
15°	3101	3101	3070	3038	3027	872
25°	2687	2672	2629	2535	2465	1234
35°	2180	2165	2059	1903	1856	1363
45°	1673	1638	1498	1373	1318	1289
55°	1162	1127	1022	901	854	1042
65°	690	651	589	601	499	680
75°	277	257	242	230	254	297
85°	39	43	47	51	55	54
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3373.7	3373.7	3373.7	3373.7	3373.7
2.5°	3350.3	3350.3	3350.3	3346.4	3346.4
5°	3315.2	3311.3	3311.3	3307.4	3307.4
7.5°	3287.9	3284.0	3280.1	3276.2	3268.4
10°	3248.9	3248.9	3245.0	3225.5	3221.6
12.5°	3186.5	3182.6	3167.0	3139.7	3131.9
15°	3100.7	3100.7	3069.5	3038.3	3026.6
17.5°	3007.0	3003.1	2964.1	2932.9	2917.3
20°	2905.6	2897.8	2858.8	2808.1	2780.8
22.5°	2792.5	2792.5	2745.7	2679.4	2652.1
25°	2687.2	2671.6	2628.7	2535.1	2464.9
27.5°	2566.3	2542.9	2496.1	2363.5	2281.6
30°	2433.7	2422.0	2355.7	2184.1	2121.7
32.5°	2308.9	2289.4	2219.2	2039.8	1989.1
35°	2180.2	2164.6	2059.3	1903.3	1856.5
37.5°	2051.5	2032.0	1899.4	1774.6	1716.1
40°	1922.8	1899.4	1755.1	1642.0	1579.6
42.5°	1801.9	1770.7	1630.3	1509.4	1439.2
45°	1673.2	1638.1	1497.7	1372.9	1318.3
47.5°	1544.5	1513.3	1384.6	1255.9	1193.5
50°	1408.0	1380.7	1263.7	1135.0	1068.7
52.5°	1294.9	1252.0	1138.9	1010.2	955.5
55°	1162.3	1127.2	1021.9	900.9	854.1
57.5°	1041.4	1006.3	908.7	795.6	756.6
60°	928.2	877.5	795.6	698.1	666.9
62.5°	803.4	764.4	694.2	612.3	651.3
65°	690.3	651.3	588.9	600.6	499.2
67.5°	565.5	546.0	491.4	436.8	421.2
70°	460.2	436.8	417.3	358.8	343.2
72.5°	366.6	343.2	315.9	284.7	273.0
75°	276.9	257.4	241.8	230.1	253.5
77.5°	191.1	183.3	171.6	159.9	156.0
80°	124.8	120.9	117.0	113.1	109.2
82.5°	74.1	74.1	74.1	74.1	74.1
85°	39.0	42.9	46.8	50.7	54.6
87.5°	23.4	23.4	27.3	31.2	35.1
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)