

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: P546130

Luminaire Tested: **FMR-12-4-LD4-2HI-35-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: P546130  
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-93-87-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

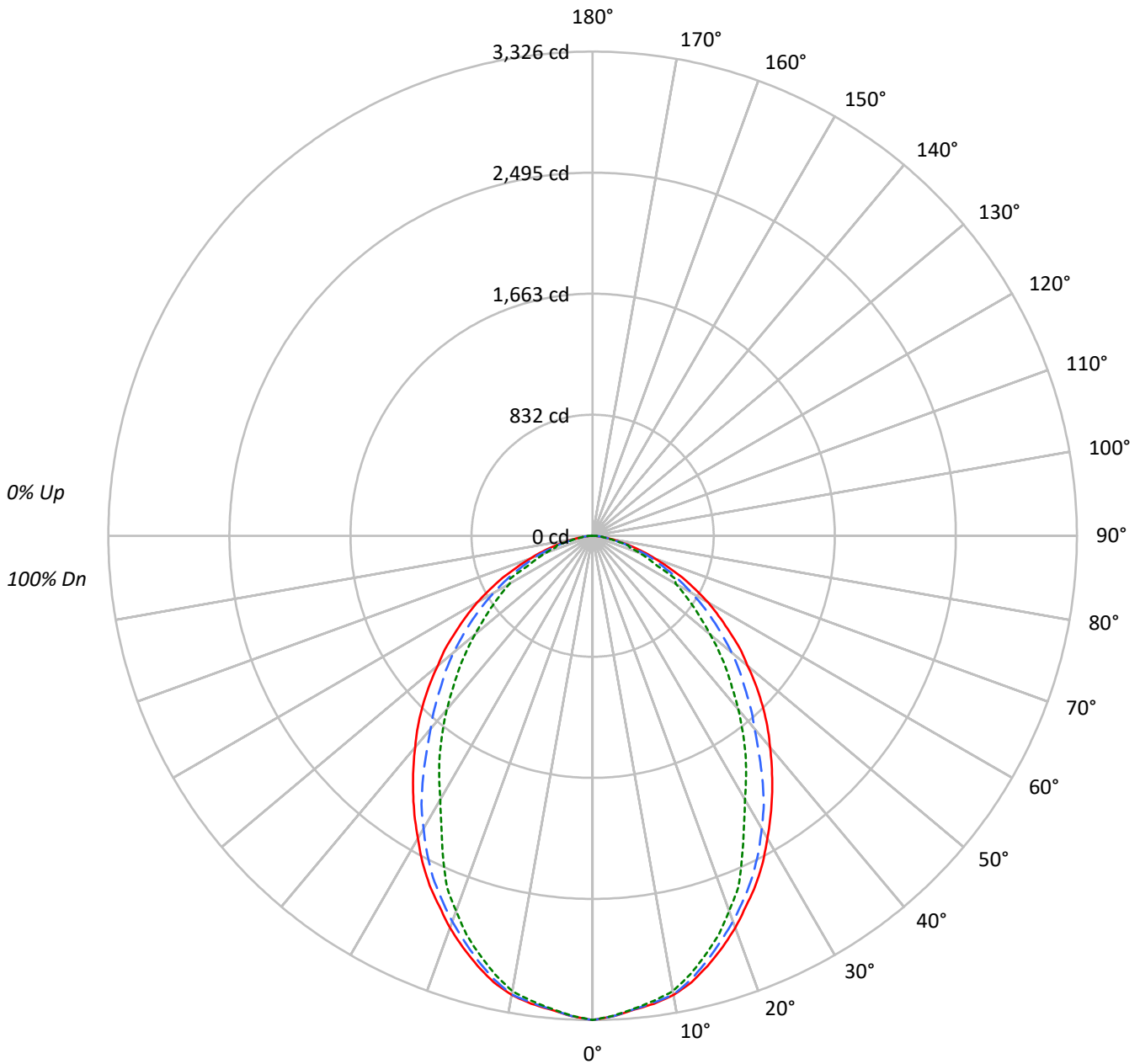
Lumens per Lamp: N/A  
Luminaire Lumens: 6530.0 lumens  
Efficiency: N/A  
Efficacy: 75.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	8951	8951	8951
5°	8829	8819	8809
10°	8753	8742	8679
15°	8517	8431	8313
20°	8204	8072	7852
25°	7867	7695	7216
30°	7456	7217	6500
35°	7062	6670	6013
40°	6660	6079	5471
45°	6278	5619	4947
50°	5812	5216	4411
55°	5376	4727	3951
60°	4926	4222	3539
65°	4334	3698	3134
70°	3570	3238	2662
75°	2838	2479	2599
80°	1908	1788	1669
85°	1189	1423	1661



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	309.6	4.7
10°-20°	849.8	13.0
20°-30°	1176.4	18.0
30°-40°	1254.4	19.2
40°-50°	1144.4	17.5
50°-60°	896.5	13.7
60°-70°	584.3	8.9
70°-80°	258.9	4.0
80°-90°	55.6	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°	2335.8	35.8
0°-40°	3590.3	55.0
0°-60°	5631.2	86.2
0°-90°	6530.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6530.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3326	3326	3326	3326	3326	
5°	3269	3265	3265	3261	3261	310
15°	3057	3057	3026	2996	2984	859
25°	2650	2634	2592	2500	2430	1216
35°	2150	2134	2030	1877	1830	1344
45°	1650	1615	1477	1354	1300	1271
55°	1146	1111	1008	888	842	1028
65°	681	642	581	592	492	671
75°	273	254	238	227	250	293
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°	3326.3	3326.3	3326.3	3326.3	3326.3
2.5°	3303.2	3303.2	3303.2	3299.4	3299.4
5°	3268.6	3264.8	3264.8	3260.9	3260.9
7.5°	3241.7	3237.8	3234.0	3230.2	3222.5
10°	3203.2	3203.2	3199.4	3180.2	3176.3
12.5°	3141.7	3137.9	3122.5	3095.6	3087.9
15°	3057.1	3057.1	3026.4	2995.6	2984.1
17.5°	2964.8	2961.0	2922.5	2891.8	2876.4
20°	2864.8	2857.2	2818.7	2768.7	2741.8
22.5°	2753.3	2753.3	2707.2	2641.8	2614.9
25°	2649.5	2634.1	2591.8	2499.5	2430.3
27.5°	2530.3	2507.2	2461.1	2330.3	2249.6
30°	2399.5	2388.0	2322.6	2153.4	2091.9
32.5°	2276.5	2257.3	2188.0	2011.2	1961.2
35°	2149.6	2134.2	2030.4	1876.6	1830.4
37.5°	2022.7	2003.5	1872.7	1749.7	1692.0
40°	1895.8	1872.7	1730.4	1618.9	1557.4
42.5°	1776.6	1745.8	1607.4	1488.2	1419.0
45°	1649.7	1615.1	1476.6	1353.6	1299.8
47.5°	1522.8	1492.0	1365.1	1238.2	1176.7
50°	1388.2	1361.3	1245.9	1119.0	1053.6
52.5°	1276.7	1234.4	1122.9	996.0	942.1
55°	1145.9	1111.3	1007.5	888.3	842.1
57.5°	1026.7	992.1	896.0	784.5	746.0
60°	915.2	865.2	784.5	688.3	657.6
62.5°	792.2	753.7	684.5	603.7	642.2
65°	680.6	642.2	580.7	592.2	492.2
67.5°	557.6	538.4	484.5	430.7	415.3
70°	453.8	430.7	411.5	353.8	338.4
72.5°	361.5	338.4	311.5	280.7	269.2
75°	273.0	253.8	238.4	226.9	250.0
77.5°	188.4	180.7	169.2	157.7	153.8
80°	123.1	119.2	115.4	111.5	107.7
82.5°	73.1	73.1	73.1	73.1	73.1
85°	38.5	42.3	46.1	50.0	53.8
87.5°	23.1	23.1	26.9	30.8	34.6
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)