

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: P546152

Luminaire Tested: **FMR-12-4-LD4-2HI-40-UNV-82-85-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: P546152  
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-82-85-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

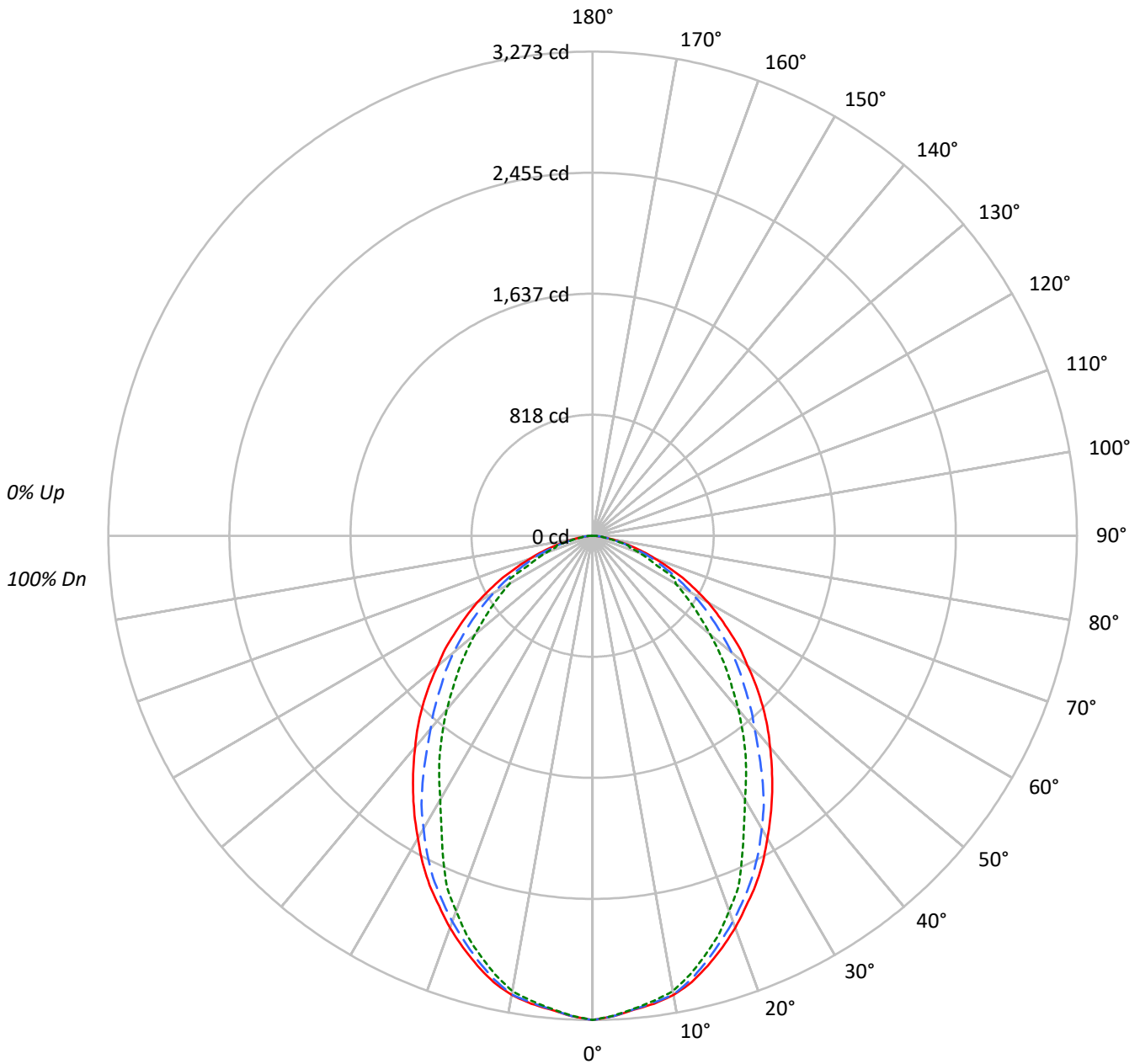
Lumens per Lamp: N/A  
Luminaire Lumens: 6426.0 lumens  
Efficiency: N/A  
Efficacy: 74.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	8808	8808	8808
5°	8689	8679	8668
10°	8613	8603	8541
15°	8381	8297	8181
20°	8073	7943	7726
25°	7742	7573	7101
30°	7337	7102	6397
35°	6949	6564	5917
40°	6554	5982	5384
45°	6178	5530	4868
50°	5719	5133	4341
55°	5291	4652	3888
60°	4847	4155	3483
65°	4265	3638	3084
70°	3513	3186	2620
75°	2794	2439	2558
80°	1877	1759	1643
85°	1167	1402	1636



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	304.7	4.7
10°-20°	836.2	13.0
20°-30°	1157.7	18.0
30°-40°	1234.4	19.2
40°-50°	1126.2	17.5
50°-60°	882.3	13.7
60°-70°	575.0	8.9
70°-80°	254.8	4.0
80°-90°	54.7	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°	2298.6	35.8
0°-40°	3533.1	55.0
0°-60°	5541.5	86.2
0°-90°	6426.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6426.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3273	3273	3273	3273	3273	
5°	3217	3213	3213	3209	3209	305
15°	3008	3008	2978	2948	2936	846
25°	2607	2592	2550	2460	2392	1197
35°	2115	2100	1998	1847	1801	1322
45°	1623	1589	1453	1332	1279	1250
55°	1128	1094	992	874	829	1011
65°	670	632	571	583	484	660
75°	269	250	235	223	246	288
85°	38	42	45	49	53	52
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3273.3	3273.3	3273.3	3273.3	3273.3
2.5°	3250.6	3250.6	3250.6	3246.8	3246.8
5°	3216.6	3212.8	3212.8	3209.0	3209.0
7.5°	3190.1	3186.3	3182.5	3178.7	3171.1
10°	3152.2	3152.2	3148.4	3129.5	3125.7
12.5°	3091.7	3087.9	3072.8	3046.3	3038.7
15°	3008.4	3008.4	2978.2	2947.9	2936.5
17.5°	2917.6	2913.8	2876.0	2845.7	2830.6
20°	2819.2	2811.6	2773.8	2724.6	2698.1
22.5°	2709.5	2709.5	2664.1	2599.7	2573.2
25°	2607.3	2592.2	2550.5	2459.7	2391.6
27.5°	2490.0	2467.3	2421.9	2293.2	2213.7
30°	2361.3	2350.0	2285.6	2119.1	2058.6
32.5°	2240.2	2221.3	2153.2	1979.1	1929.9
35°	2115.4	2100.2	1998.0	1846.7	1801.3
37.5°	1990.5	1971.6	1842.9	1721.8	1665.0
40°	1865.6	1842.9	1702.9	1593.1	1532.6
42.5°	1748.3	1718.0	1581.8	1464.5	1396.4
45°	1623.4	1589.4	1453.1	1332.0	1279.1
47.5°	1498.5	1468.3	1343.4	1218.5	1158.0
50°	1366.1	1339.6	1226.1	1101.2	1036.9
52.5°	1256.3	1214.7	1105.0	980.1	927.1
55°	1127.7	1093.6	991.5	874.1	828.7
57.5°	1010.4	976.3	881.7	772.0	734.1
60°	900.6	851.4	772.0	677.4	647.1
62.5°	779.5	741.7	673.6	594.1	632.0
65°	669.8	632.0	571.4	582.8	484.4
67.5°	548.7	529.8	476.8	423.8	408.7
70°	446.5	423.8	404.9	348.1	333.0
72.5°	355.7	333.0	306.5	276.2	264.9
75°	268.7	249.8	234.6	223.3	246.0
77.5°	185.4	177.9	166.5	155.2	151.4
80°	121.1	117.3	113.5	109.7	106.0
82.5°	71.9	71.9	71.9	71.9	71.9
85°	37.8	41.6	45.4	49.2	53.0
87.5°	22.7	22.7	26.5	30.3	34.1
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)