

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: P546339

Luminaire Tested: **FMR-12-4-LD4-2STD-40-UNV-81-88-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: P546339  
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-LD4-2STD-40-UNV-81-88-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

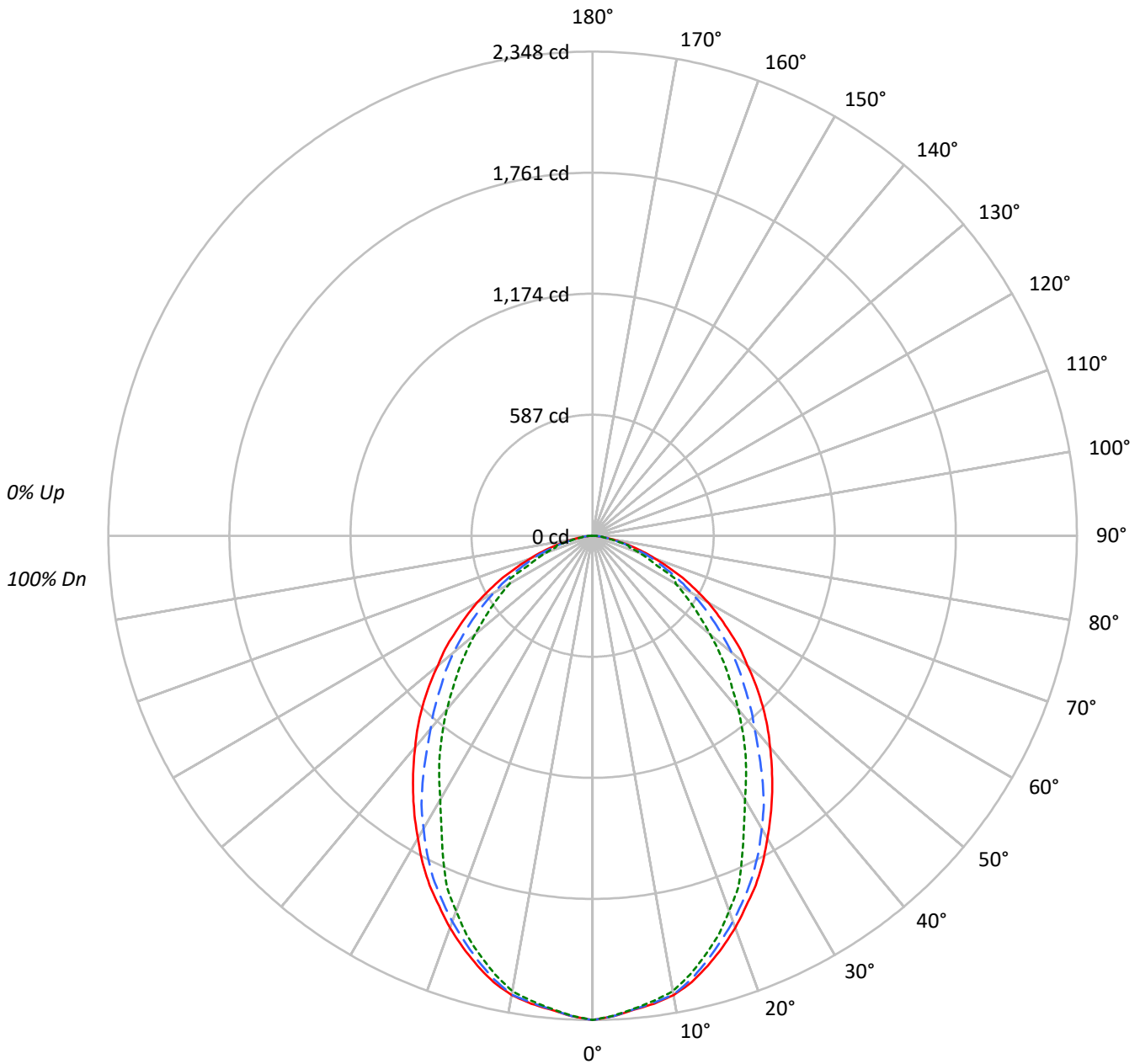
Lumens per Lamp: N/A  
Luminaire Lumens: 4610.0 lumens  
Efficiency: N/A  
Efficacy: 69.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 66.6  
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°	6319	6319	6319
5°	6233	6226	6219
10°	6179	6172	6127
15°	6013	5952	5869
20°	5792	5698	5543
25°	5554	5433	5094
30°	5264	5095	4589
35°	4985	4709	4245
40°	4702	4291	3862
45°	4432	3967	3492
50°	4103	3682	3114
55°	3795	3337	2789
60°	3477	2981	2498
65°	3060	2610	2213
70°	2520	2286	1880
75°	2004	1750	1835
80°	1347	1261	1178
85°	837	1007	1173



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	218.6	4.7
10°-20°	599.9	13.0
20°-30°	830.5	18.0
30°-40°	885.6	19.2
40°-50°	807.9	17.5
50°-60°	632.9	13.7
60°-70°	412.5	8.9
70°-80°	182.8	4.0
80°-90°	39.2	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°	1649.0	35.8
0°-40°	2534.6	55.0
0°-60°	3975.5	86.2
0°-90°	4610.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4610.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2348	2348	2348	2348	2348	
5°	2308	2305	2305	2302	2302	219
15°	2158	2158	2136	2115	2107	607
25°	1870	1860	1830	1765	1716	859
35°	1518	1507	1433	1325	1292	949
45°	1165	1140	1042	956	918	897
55°	809	785	711	627	594	726
65°	480	453	410	418	348	474
75°	193	179	168	160	176	207
85°	27	30	33	35	38	38
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2348.3	2348.3	2348.3	2348.3	2348.3
2.5°	2332.0	2332.0	2332.0	2329.3	2329.3
5°	2307.6	2304.8	2304.8	2302.1	2302.1
7.5°	2288.5	2285.8	2283.1	2280.4	2275.0
10°	2261.4	2261.4	2258.7	2245.1	2242.4
12.5°	2218.0	2215.2	2204.4	2185.4	2180.0
15°	2158.2	2158.2	2136.5	2114.8	2106.7
17.5°	2093.1	2090.4	2063.2	2041.5	2030.6
20°	2022.5	2017.1	1989.9	1954.6	1935.6
22.5°	1943.8	1943.8	1911.2	1865.0	1846.0
25°	1870.5	1859.6	1829.8	1764.6	1715.7
27.5°	1786.3	1770.0	1737.5	1645.1	1588.1
30°	1694.0	1685.9	1639.7	1520.3	1476.8
32.5°	1607.1	1593.6	1544.7	1419.8	1384.5
35°	1517.6	1506.7	1433.4	1324.8	1292.2
37.5°	1428.0	1414.4	1322.1	1235.2	1194.5
40°	1338.4	1322.1	1221.6	1142.9	1099.5
42.5°	1254.2	1232.5	1134.8	1050.6	1001.7
45°	1164.6	1140.2	1042.5	955.6	917.6
47.5°	1075.0	1053.3	963.7	874.2	830.7
50°	980.0	961.0	879.6	790.0	743.8
52.5°	901.3	871.4	792.7	703.1	665.1
55°	809.0	784.6	711.3	627.1	594.5
57.5°	724.8	700.4	632.5	553.8	526.7
60°	646.1	610.8	553.8	485.9	464.2
62.5°	559.2	532.1	483.2	426.2	453.4
65°	480.5	453.4	409.9	418.1	347.5
67.5°	393.6	380.1	342.1	304.1	293.2
70°	320.3	304.1	290.5	249.8	238.9
72.5°	255.2	238.9	219.9	198.2	190.0
75°	192.7	179.2	168.3	160.2	176.5
77.5°	133.0	127.6	119.4	111.3	108.6
80°	86.9	84.2	81.4	78.7	76.0
82.5°	51.6	51.6	51.6	51.6	51.6
85°	27.1	29.9	32.6	35.3	38.0
87.5°	16.3	16.3	19.0	21.7	24.4
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)