

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: P546815

Luminaire Tested: **FMR-24-4-LD4-2LO-40-UNV-81-84-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: P546815  
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-24-4-LD4-2LO-40-UNV-81-84-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

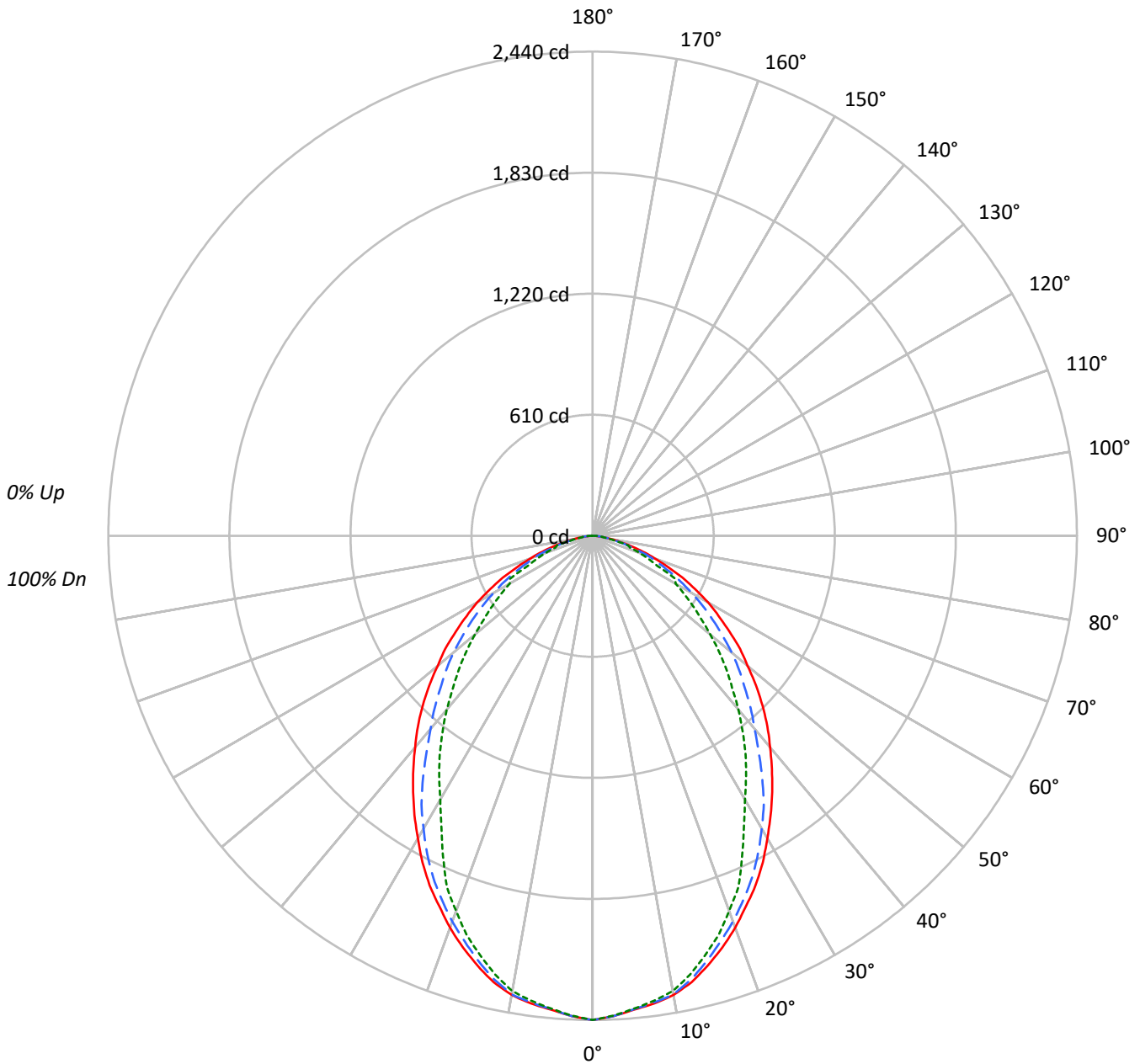
Lumens per Lamp: N/A  
Luminaire Lumens: 4790.0 lumens  
Efficiency: N/A  
Efficacy: 102.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.8  
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°	3283	3283	3283
5°	3238	3234	3231
10°	3210	3206	3183
15°	3124	3092	3049
20°	3009	2960	2880
25°	2885	2822	2647
30°	2735	2647	2384
35°	2590	2446	2205
40°	2442	2229	2007
45°	2303	2061	1814
50°	2132	1913	1618
55°	1972	1734	1449
60°	1806	1548	1298
65°	1590	1356	1150
70°	1310	1187	976
75°	1041	909	953
80°	700	656	612
85°	435	522	610



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	227.1	4.7
10°-20°	623.3	13.0
20°-30°	863.0	18.0
30°-40°	920.2	19.2
40°-50°	839.5	17.5
50°-60°	657.6	13.7
60°-70°	428.6	8.9
70°-80°	189.9	4.0
80°-90°	40.8	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°	1713.4	35.8
0°-40°	2633.6	55.0
0°-60°	4130.7	86.2
0°-90°	4790.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4790.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2440	2440	2440	2440	2440	
5°	2398	2395	2395	2392	2392	228
15°	2242	2242	2220	2197	2189	630
25°	1944	1932	1901	1834	1783	892
35°	1577	1566	1489	1376	1343	986
45°	1210	1185	1083	993	953	932
55°	841	815	739	652	618	754
65°	499	471	426	434	361	492
75°	200	186	175	166	183	215
85°	28	31	34	37	40	39
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2440.0	2440.0	2440.0	2440.0	2440.0
2.5°	2423.0	2423.0	2423.0	2420.2	2420.2
5°	2397.7	2394.8	2394.8	2392.0	2392.0
7.5°	2377.9	2375.1	2372.3	2369.4	2363.8
10°	2349.7	2349.7	2346.9	2332.8	2330.0
12.5°	2304.6	2301.7	2290.5	2270.7	2265.1
15°	2242.5	2242.5	2219.9	2197.4	2188.9
17.5°	2174.8	2172.0	2143.8	2121.2	2109.9
20°	2101.5	2095.8	2067.6	2031.0	2011.2
22.5°	2019.7	2019.7	1985.8	1937.9	1918.1
25°	1943.5	1932.2	1901.2	1833.5	1782.7
27.5°	1856.1	1839.1	1805.3	1709.4	1650.1
30°	1760.2	1751.7	1703.7	1579.6	1534.5
32.5°	1669.9	1655.8	1605.0	1475.3	1438.6
35°	1576.8	1565.5	1489.4	1376.5	1342.7
37.5°	1483.7	1469.6	1373.7	1283.4	1241.1
40°	1390.6	1373.7	1269.3	1187.5	1142.4
42.5°	1303.2	1280.6	1179.1	1091.6	1040.9
45°	1210.1	1184.7	1083.2	992.9	953.4
47.5°	1117.0	1094.5	1001.4	908.3	863.2
50°	1018.3	998.6	913.9	820.8	772.9
52.5°	936.5	905.5	823.7	730.6	691.1
55°	840.6	815.2	739.0	651.6	617.7
57.5°	753.1	727.8	657.2	575.4	547.2
60°	671.3	634.7	575.4	504.9	482.4
62.5°	581.1	552.9	502.1	442.9	471.1
65°	499.3	471.1	425.9	434.4	361.1
67.5°	409.0	394.9	355.4	315.9	304.6
70°	332.9	315.9	301.8	259.5	248.2
72.5°	265.2	248.2	228.5	205.9	197.5
75°	200.3	186.2	174.9	166.4	183.3
77.5°	138.2	132.6	124.1	115.7	112.8
80°	90.3	87.4	84.6	81.8	79.0
82.5°	53.6	53.6	53.6	53.6	53.6
85°	28.2	31.0	33.8	36.7	39.5
87.5°	16.9	16.9	19.7	22.6	25.4
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)