

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: P545898

Luminaire Tested: **FMR-12-4-LD4-1HI-50-UNV-82-87-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: P545898  
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-LD4-1HI-50-UNV-82-87-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

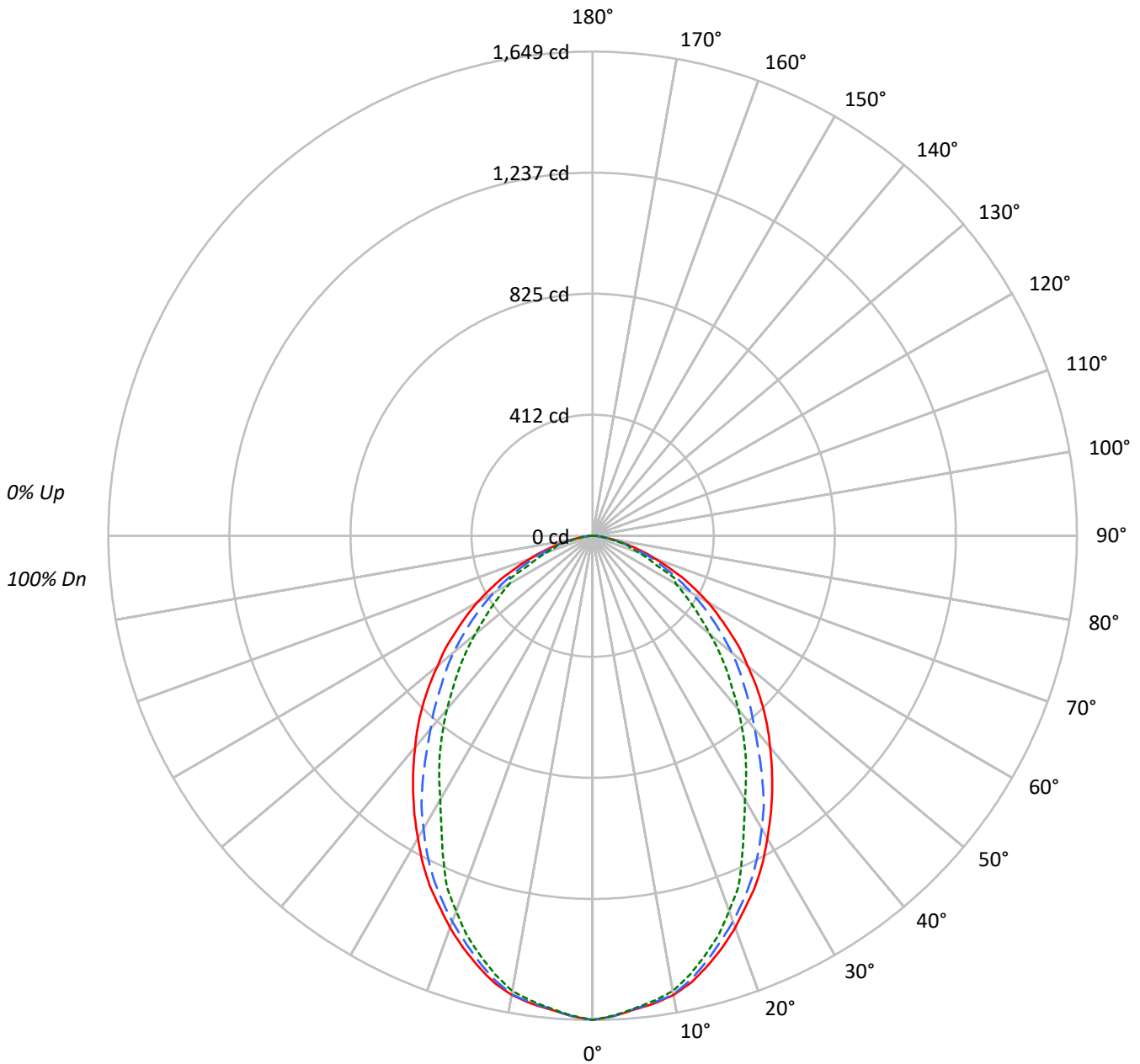
Lumens per Lamp: N/A  
Luminaire Lumens: 3237.0 lumens  
Efficiency: N/A  
Efficacy: 74.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.2  
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°	4437	4437	4437
5°	4377	4372	4367
10°	4339	4334	4302
15°	4222	4179	4121
20°	4067	4001	3892
25°	3900	3815	3577
30°	3696	3578	3222
35°	3501	3306	2981
40°	3301	3013	2712
45°	3112	2786	2452
50°	2881	2586	2187
55°	2665	2343	1959
60°	2442	2093	1755
65°	2148	1833	1554
70°	1769	1605	1319
75°	1407	1229	1288
80°	945	886	828
85°	590	707	824



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	153.5	4.7
10°-20°	421.2	13.0
20°-30°	583.2	18.0
30°-40°	621.8	19.2
40°-50°	567.3	17.5
50°-60°	444.4	13.7
60°-70°	289.7	8.9
70°-80°	128.3	4.0
80°-90°	27.5	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°	1157.9	35.8
0°-40°	1779.7	55.0
0°-60°	2791.5	86.2
0°-90°	3237.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3237.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1649	1649	1649	1649	1649	
5°	1620	1618	1618	1616	1616	154
15°	1515	1515	1500	1485	1479	426
25°	1313	1306	1285	1239	1205	603
35°	1066	1058	1006	930	907	666
45°	818	801	732	671	644	630
55°	568	551	499	440	418	510
65°	337	318	288	294	244	333
75°	135	126	118	112	124	145
85°	19	21	23	25	27	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1648.9	1648.9	1648.9	1648.9	1648.9
2.5°	1637.4	1637.4	1637.4	1635.5	1635.5
5°	1620.3	1618.4	1618.4	1616.5	1616.5
7.5°	1606.9	1605.0	1603.1	1601.2	1597.4
10°	1587.9	1587.9	1586.0	1576.4	1574.5
12.5°	1557.4	1555.5	1547.9	1534.5	1530.7
15°	1515.4	1515.4	1500.2	1484.9	1479.2
17.5°	1469.7	1467.8	1448.7	1433.5	1425.9
20°	1420.1	1416.3	1397.3	1372.5	1359.1
22.5°	1364.9	1364.9	1342.0	1309.6	1296.2
25°	1313.4	1305.8	1284.8	1239.0	1204.7
27.5°	1254.3	1242.9	1220.0	1155.2	1115.1
30°	1189.5	1183.8	1151.4	1067.5	1037.0
32.5°	1128.5	1119.0	1084.6	997.0	972.2
35°	1065.6	1058.0	1006.5	930.2	907.4
37.5°	1002.7	993.1	928.3	867.3	838.7
40°	939.8	928.3	857.8	802.5	772.0
42.5°	880.7	865.4	796.8	737.7	703.4
45°	817.8	800.6	732.0	671.0	644.3
47.5°	754.9	739.6	676.7	613.8	583.3
50°	688.1	674.8	617.6	554.7	522.3
52.5°	632.9	611.9	556.6	493.7	467.0
55°	568.1	550.9	499.4	440.3	417.5
57.5°	509.0	491.8	444.2	388.9	369.8
60°	453.7	428.9	388.9	341.2	326.0
62.5°	392.7	373.6	339.3	299.3	318.3
65°	337.4	318.3	287.8	293.6	244.0
67.5°	276.4	266.9	240.2	213.5	205.9
70°	224.9	213.5	204.0	175.4	167.7
72.5°	179.2	167.7	154.4	139.2	133.4
75°	135.3	125.8	118.2	112.5	123.9
77.5°	93.4	89.6	83.9	78.2	76.2
80°	61.0	59.1	57.2	55.3	53.4
82.5°	36.2	36.2	36.2	36.2	36.2
85°	19.1	21.0	22.9	24.8	26.7
87.5°	11.4	11.4	13.3	15.2	17.2
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)