

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: P545827

Luminaire Tested: **FMR-12-4-LD4-1HI-35-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: P545827  
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-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

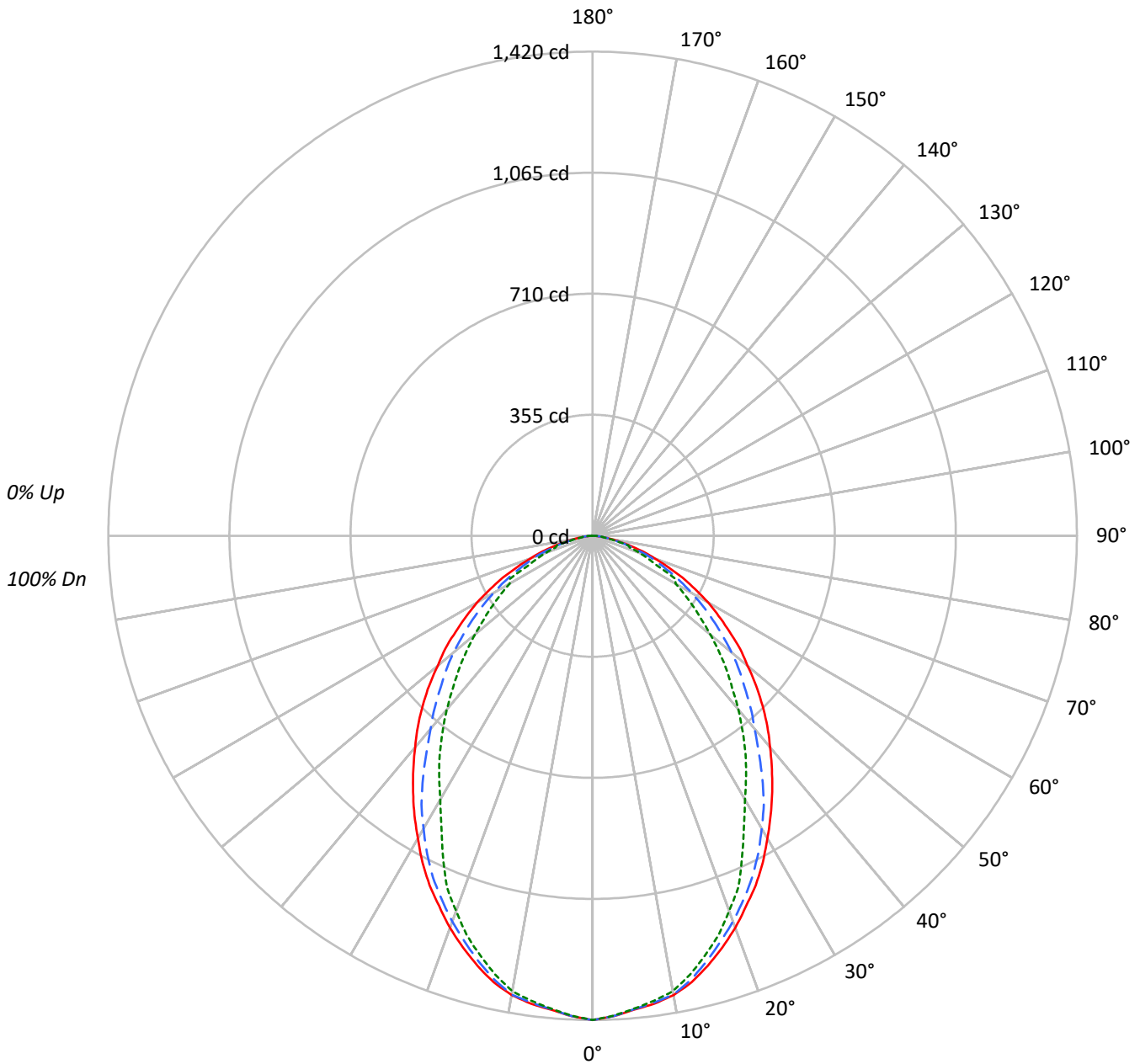
Lumens per Lamp: N/A  
Luminaire Lumens: 2788.0 lumens  
Efficiency: N/A  
Efficacy: 64.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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			100																
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87			87																
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75			75																
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65			65																
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56			56																
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50			50																
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44			44																
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40			40																
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36			36																
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33			33																
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30			30																

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3822	3822	3822
5°	3770	3765	3761
10°	3737	3733	3706
15°	3636	3600	3549
20°	3503	3446	3352
25°	3359	3286	3081
30°	3183	3081	2775
35°	3015	2848	2567
40°	2843	2595	2336
45°	2680	2399	2112
50°	2481	2227	1883
55°	2296	2018	1687
60°	2103	1802	1511
65°	1850	1578	1338
70°	1524	1382	1137
75°	1212	1058	1109
80°	814	764	713
85°	506	608	710



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	132.2	4.7
10°-20°	362.8	13.0
20°-30°	502.3	18.0
30°-40°	535.6	19.2
40°-50°	488.6	17.5
50°-60°	382.8	13.7
60°-70°	249.5	8.9
70°-80°	110.5	4.0
80°-90°	23.7	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°	997.3	35.8
0°-40°	1532.9	55.0
0°-60°	2404.3	86.2
0°-90°	2788.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2788.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1420	1420	1420	1420	1420	
5°	1396	1394	1394	1392	1392	132
15°	1305	1305	1292	1279	1274	367
25°	1131	1125	1107	1067	1038	519
35°	918	911	867	801	782	574
45°	704	690	630	578	555	543
55°	489	474	430	379	360	439
65°	291	274	248	253	210	286
75°	117	108	102	97	107	125
85°	16	18	20	21	23	23
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1420.2	1420.2	1420.2	1420.2	1420.2
2.5°	1410.3	1410.3	1410.3	1408.7	1408.7
5°	1395.5	1393.9	1393.9	1392.3	1392.3
7.5°	1384.1	1382.4	1380.8	1379.1	1375.8
10°	1367.6	1367.6	1366.0	1357.8	1356.1
12.5°	1341.4	1339.7	1333.2	1321.7	1318.4
15°	1305.2	1305.2	1292.1	1279.0	1274.0
17.5°	1265.8	1264.2	1247.8	1234.6	1228.1
20°	1223.2	1219.9	1203.5	1182.1	1170.6
22.5°	1175.5	1175.5	1155.8	1127.9	1116.4
25°	1131.2	1124.6	1106.6	1067.2	1037.6
27.5°	1080.3	1070.5	1050.8	994.9	960.5
30°	1024.5	1019.6	991.7	919.4	893.1
32.5°	972.0	963.7	934.2	858.7	837.3
35°	917.8	911.2	866.9	801.2	781.5
37.5°	863.6	855.4	799.6	747.0	722.4
40°	809.4	799.6	738.8	691.2	664.9
42.5°	758.5	745.4	686.3	635.4	605.8
45°	704.3	689.6	630.5	577.9	554.9
47.5°	650.2	637.0	582.8	528.7	502.4
50°	592.7	581.2	531.9	477.8	449.9
52.5°	545.1	527.0	479.4	425.2	402.2
55°	489.3	474.5	430.2	379.3	359.6
57.5°	438.4	423.6	382.5	334.9	318.5
60°	390.8	369.4	334.9	293.9	280.8
62.5°	338.2	321.8	292.2	257.8	274.2
65°	290.6	274.2	247.9	252.8	210.2
67.5°	238.1	229.9	206.9	183.9	177.3
70°	193.7	183.9	175.7	151.0	144.5
72.5°	154.3	144.5	133.0	119.9	114.9
75°	116.6	108.4	101.8	96.9	106.7
77.5°	80.4	77.2	72.2	67.3	65.7
80°	52.5	50.9	49.3	47.6	46.0
82.5°	31.2	31.2	31.2	31.2	31.2
85°	16.4	18.1	19.7	21.3	23.0
87.5°	9.9	9.9	11.5	13.1	14.8
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)