

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: P546065

Luminaire Tested: **FMR-12-4-LD4-1STD-40-UNV-93-86-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: P546065  
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-LD4-1STD-40-UNV-93-86-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

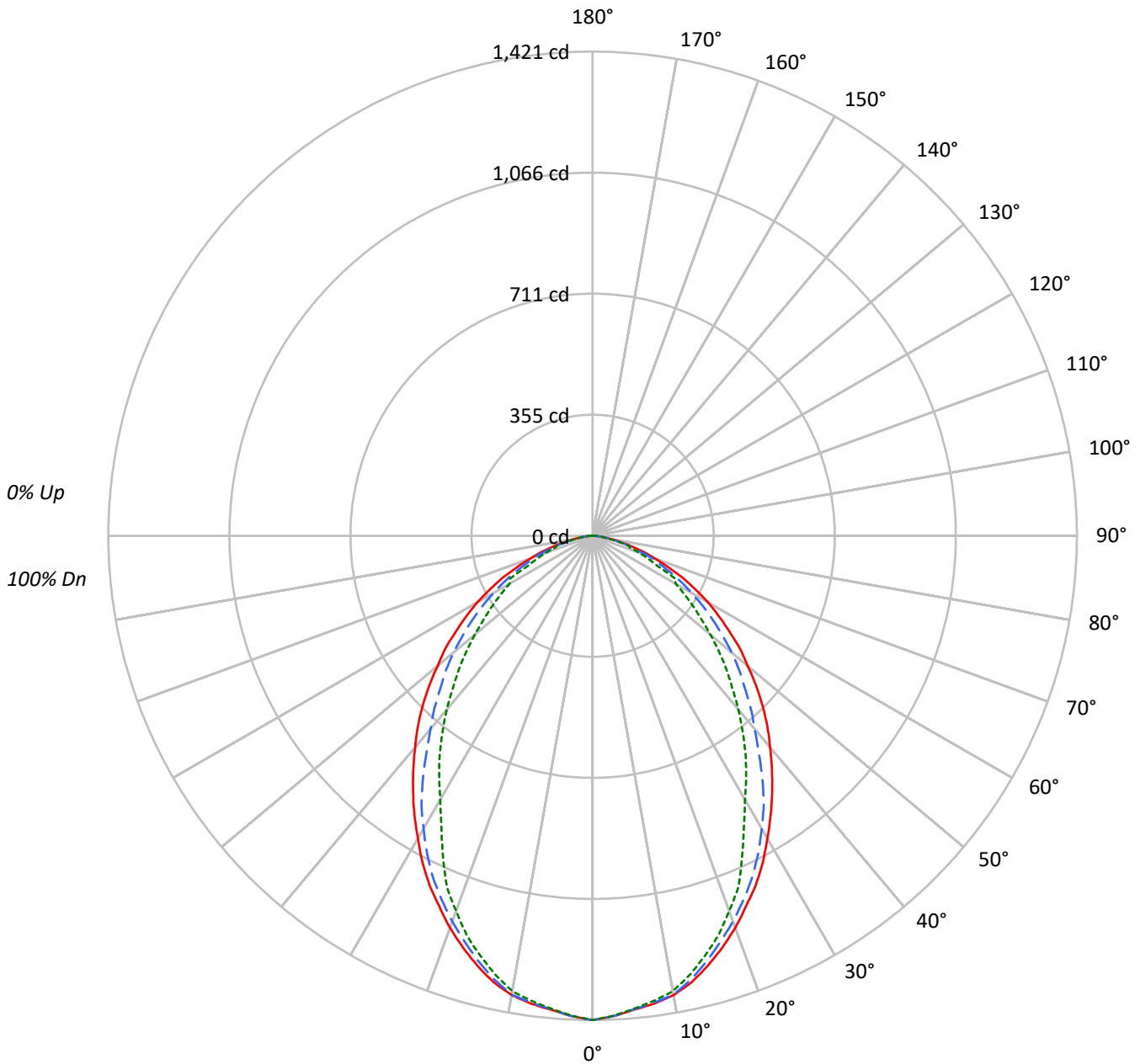
Lumens per Lamp: N/A  
Luminaire Lumens: 2790.0 lumens  
Efficiency: N/A  
Efficacy: 83.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
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°	3824	3824	3824
5°	3772	3768	3764
10°	3740	3735	3708
15°	3639	3602	3552
20°	3505	3449	3355
25°	3361	3288	3083
30°	3186	3084	2777
35°	3017	2850	2569
40°	2845	2597	2337
45°	2682	2401	2113
50°	2483	2228	1885
55°	2297	2020	1688
60°	2104	1804	1512
65°	1852	1580	1339
70°	1526	1383	1138
75°	1213	1059	1110
80°	815	764	713
85°	506	608	710



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	132.3	4.7
10°-20°	363.1	13.0
20°-30°	502.6	18.0
30°-40°	536.0	19.2
40°-50°	489.0	17.5
50°-60°	383.1	13.7
60°-70°	249.7	8.9
70°-80°	110.6	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°	998.0	35.8
0°-40°	1534.0	55.0
0°-60°	2406.0	86.2
0°-90°	2790.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2790.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1421	1421	1421	1421	1421	
5°	1396	1395	1395	1393	1393	133
15°	1306	1306	1293	1280	1275	367
25°	1132	1126	1107	1068	1038	520
35°	918	912	868	802	782	574
45°	705	690	631	578	555	543
55°	490	475	430	380	360	439
65°	291	274	248	253	210	287
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°	1421.2	1421.2	1421.2	1421.2	1421.2
2.5°	1411.3	1411.3	1411.3	1409.7	1409.7
5°	1396.5	1394.9	1394.9	1393.3	1393.3
7.5°	1385.0	1383.4	1381.8	1380.1	1376.8
10°	1368.6	1368.6	1367.0	1358.8	1357.1
12.5°	1342.3	1340.7	1334.1	1322.6	1319.3
15°	1306.2	1306.2	1293.0	1279.9	1275.0
17.5°	1266.7	1265.1	1248.7	1235.5	1229.0
20°	1224.0	1220.7	1204.3	1183.0	1171.5
22.5°	1176.4	1176.4	1156.7	1128.7	1117.2
25°	1132.0	1125.5	1107.4	1067.9	1038.4
27.5°	1081.1	1071.2	1051.5	995.7	961.2
30°	1025.2	1020.3	992.4	920.1	893.8
32.5°	972.7	964.4	934.9	859.3	837.9
35°	918.4	911.9	867.5	801.8	782.1
37.5°	864.2	856.0	800.1	747.6	722.9
40°	810.0	800.1	739.3	691.7	665.4
42.5°	759.1	745.9	686.8	635.8	606.3
45°	704.8	690.1	630.9	578.3	555.3
47.5°	650.6	637.5	583.3	529.0	502.8
50°	593.1	581.6	532.3	478.1	450.2
52.5°	545.5	527.4	479.8	425.5	402.5
55°	489.6	474.8	430.5	379.5	359.8
57.5°	438.7	423.9	382.8	335.2	318.7
60°	391.0	369.7	335.2	294.1	281.0
62.5°	338.5	322.0	292.5	257.9	274.4
65°	290.8	274.4	248.1	253.0	210.3
67.5°	238.2	230.0	207.0	184.0	177.4
70°	193.9	184.0	175.8	151.2	144.6
72.5°	154.4	144.6	133.1	119.9	115.0
75°	116.7	108.4	101.9	96.9	106.8
77.5°	80.5	77.2	72.3	67.4	65.7
80°	52.6	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	21.4	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)