

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: P546014

Luminaire Tested: **FMR-12-4-LD4-1STD-35-UNV-80-97-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: P546014  
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-35-UNV-80-97-EDD  
Description: 1X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

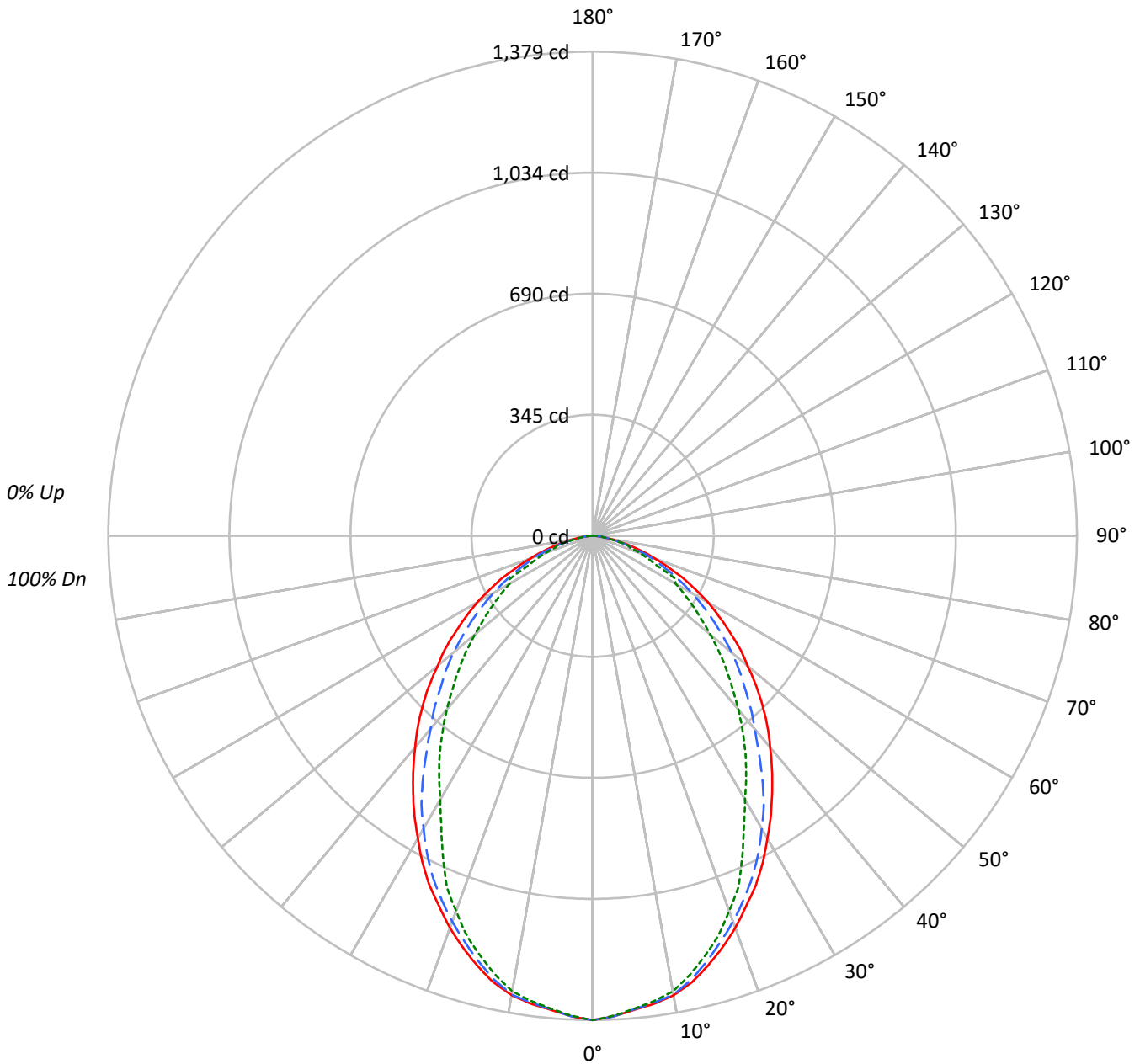
Lumens per Lamp: N/A  
Luminaire Lumens: 2708.0 lumens  
Efficiency: N/A  
Efficacy: 81.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	3712	3712	3712
5°	3662	3657	3653
10°	3630	3625	3599
15°	3532	3496	3448
20°	3402	3347	3256
25°	3263	3191	2993
30°	3092	2993	2696
35°	2928	2766	2494
40°	2762	2521	2269
45°	2603	2331	2051
50°	2410	2163	1829
55°	2229	1960	1638
60°	2042	1751	1468
65°	1798	1533	1300
70°	1481	1342	1104
75°	1177	1028	1078
80°	790	741	693
85°	491	590	689



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	128.4	4.7
10°-20°	352.4	13.0
20°-30°	487.9	18.0
30°-40°	520.2	19.2
40°-50°	474.6	17.5
50°-60°	371.8	13.7
60°-70°	242.3	8.9
70°-80°	107.4	4.0
80°-90°	23.0	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°	968.7	35.8
0°-40°	1488.9	55.0
0°-60°	2335.3	86.2
0°-90°	2708.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2708.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1379	1379	1379	1379	1379	
5°	1356	1354	1354	1352	1352	129
15°	1268	1268	1255	1242	1238	356
25°	1099	1092	1075	1037	1008	504
35°	891	885	842	778	759	557
45°	684	670	612	561	539	527
55°	475	461	418	368	349	426
65°	282	266	241	246	204	278
75°	113	105	99	94	104	121
85°	16	18	19	21	22	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1379.4	1379.4	1379.4	1379.4	1379.4
2.5°	1369.9	1369.9	1369.9	1368.3	1368.3
5°	1355.5	1353.9	1353.9	1352.3	1352.3
7.5°	1344.3	1342.7	1341.1	1339.6	1336.4
10°	1328.4	1328.4	1326.8	1318.8	1317.2
12.5°	1302.9	1301.3	1294.9	1283.7	1280.5
15°	1267.8	1267.8	1255.0	1242.3	1237.5
17.5°	1229.5	1227.9	1212.0	1199.2	1192.8
20°	1188.1	1184.9	1168.9	1148.2	1137.0
22.5°	1141.8	1141.8	1122.7	1095.6	1084.4
25°	1098.8	1092.4	1074.8	1036.6	1007.9
27.5°	1049.3	1039.7	1020.6	966.4	932.9
30°	995.1	990.3	963.2	893.0	867.5
32.5°	944.1	936.1	907.4	834.0	813.3
35°	891.4	885.1	842.0	778.2	759.1
37.5°	838.8	830.8	776.6	725.6	701.7
40°	786.2	776.6	717.6	671.4	645.9
42.5°	736.8	724.0	666.6	617.2	588.4
45°	684.1	669.8	612.4	561.3	539.0
47.5°	631.5	618.7	566.1	513.5	488.0
50°	575.7	564.5	516.7	464.1	436.9
52.5°	529.4	511.9	465.7	413.0	390.7
55°	475.2	460.9	417.8	368.4	349.2
57.5°	425.8	411.4	371.6	325.3	309.4
60°	379.5	358.8	325.3	285.5	272.7
62.5°	328.5	312.6	283.9	250.4	266.3
65°	282.3	266.3	240.8	245.6	204.1
67.5°	231.2	223.3	200.9	178.6	172.2
70°	188.2	178.6	170.6	146.7	140.3
72.5°	149.9	140.3	129.2	116.4	111.6
75°	113.2	105.3	98.9	94.1	103.7
77.5°	78.1	75.0	70.2	65.4	63.8
80°	51.0	49.4	47.8	46.2	44.7
82.5°	30.3	30.3	30.3	30.3	30.3
85°	15.9	17.5	19.1	20.7	22.3
87.5°	9.6	9.6	11.2	12.8	14.4
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)