

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: P546037

Luminaire Tested: **FMR-12-4-LD4-1STD-35-UNV-93-96-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: P546037  
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-93-96-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

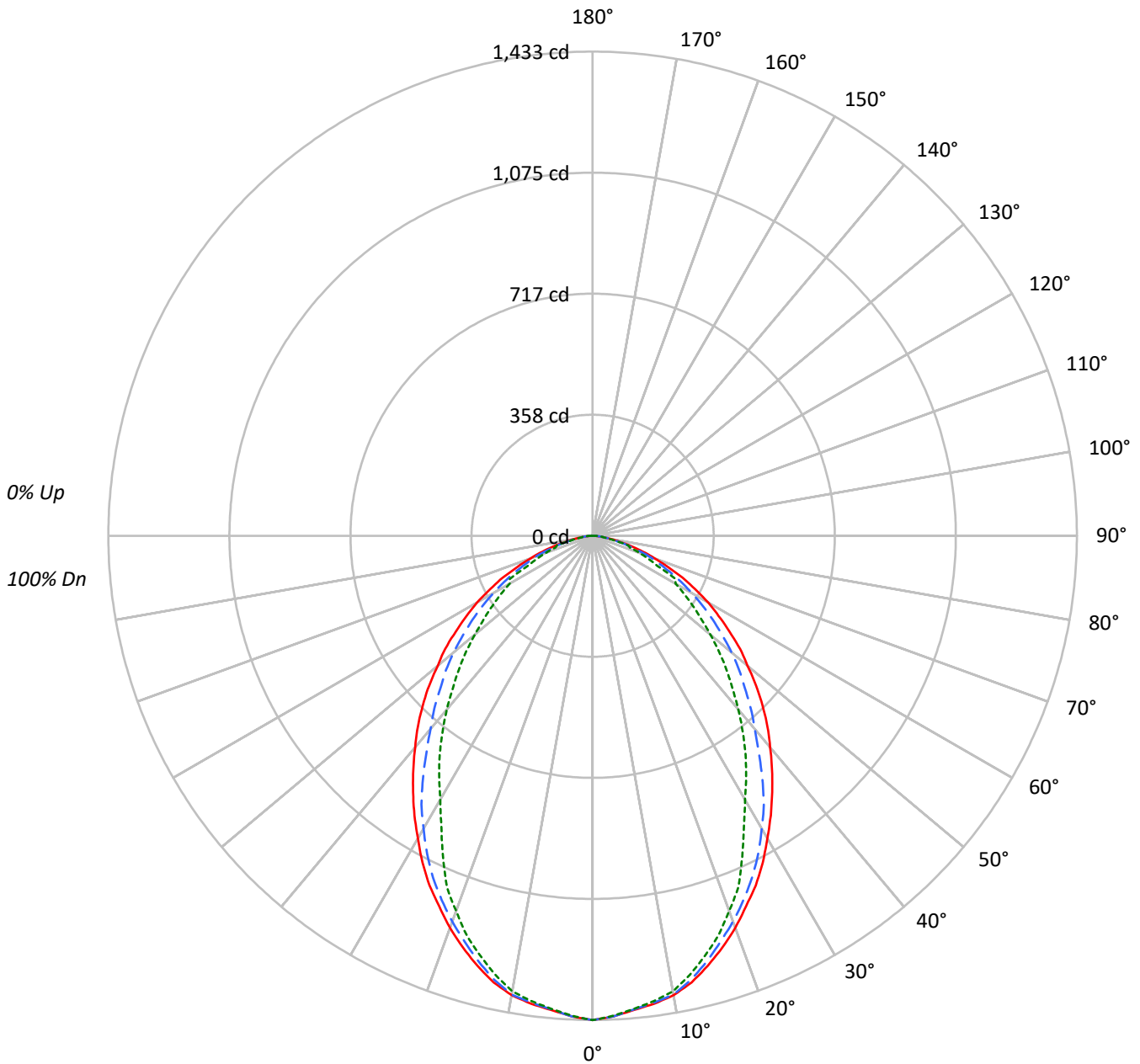
Lumens per Lamp: N/A  
Luminaire Lumens: 2814.0 lumens  
Efficiency: N/A  
Efficacy: 84.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	3857	3857	3857
5°	3805	3800	3796
10°	3772	3767	3740
15°	3670	3633	3582
20°	3535	3479	3383
25°	3390	3316	3110
30°	3213	3110	2801
35°	3043	2874	2591
40°	2870	2620	2357
45°	2705	2422	2132
50°	2504	2248	1901
55°	2317	2037	1703
60°	2123	1820	1525
65°	1868	1593	1351
70°	1538	1395	1147
75°	1224	1068	1120
80°	821	770	719
85°	513	614	716



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	133.4	4.7
10°-20°	366.2	13.0
20°-30°	507.0	18.0
30°-40°	540.6	19.2
40°-50°	493.2	17.5
50°-60°	386.4	13.7
60°-70°	251.8	8.9
70°-80°	111.6	4.0
80°-90°	24.0	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°	1006.6	35.8
0°-40°	1547.2	55.0
0°-60°	2426.7	86.2
0°-90°	2814.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2814.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1433	1433	1433	1433	1433	
5°	1409	1407	1407	1405	1405	134
15°	1317	1317	1304	1291	1286	370
25°	1142	1135	1117	1077	1047	524
35°	926	920	875	809	789	579
45°	711	696	636	583	560	548
55°	494	479	434	383	363	443
65°	293	277	250	255	212	289
75°	118	109	103	98	108	126
85°	17	18	20	22	23	23
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1433.4	1433.4	1433.4	1433.4	1433.4
2.5°	1423.5	1423.5	1423.5	1421.8	1421.8
5°	1408.6	1406.9	1406.9	1405.2	1405.2
7.5°	1397.0	1395.3	1393.6	1392.0	1388.7
10°	1380.4	1380.4	1378.7	1370.4	1368.8
12.5°	1353.9	1352.2	1345.6	1334.0	1330.7
15°	1317.4	1317.4	1304.2	1290.9	1285.9
17.5°	1277.6	1276.0	1259.4	1246.2	1239.5
20°	1234.6	1231.2	1214.7	1193.1	1181.5
22.5°	1186.5	1186.5	1166.6	1138.4	1126.8
25°	1141.8	1135.1	1116.9	1077.1	1047.3
27.5°	1090.4	1080.4	1060.6	1004.2	969.4
30°	1034.0	1029.1	1000.9	928.0	901.5
32.5°	981.0	972.7	942.9	866.7	845.1
35°	926.3	919.7	875.0	808.7	788.8
37.5°	871.6	863.4	807.0	754.0	729.1
40°	817.0	807.0	745.7	697.7	671.1
42.5°	765.6	752.3	692.7	641.3	611.5
45°	710.9	696.0	636.3	583.3	560.1
47.5°	656.2	643.0	588.3	533.6	507.1
50°	598.2	586.6	536.9	482.2	454.1
52.5°	550.2	531.9	483.9	429.2	406.0
55°	493.8	478.9	434.2	382.8	362.9
57.5°	442.5	427.5	386.1	338.1	321.5
60°	394.4	372.9	338.1	296.6	283.4
62.5°	341.4	324.8	295.0	260.2	276.7
65°	293.3	276.7	250.2	255.2	212.1
67.5°	240.3	232.0	208.8	185.6	179.0
70°	195.5	185.6	177.3	152.5	145.8
72.5°	155.8	145.8	134.2	121.0	116.0
75°	117.7	109.4	102.7	97.8	107.7
77.5°	81.2	77.9	72.9	67.9	66.3
80°	53.0	51.4	49.7	48.1	46.4
82.5°	31.5	31.5	31.5	31.5	31.5
85°	16.6	18.2	19.9	21.5	23.2
87.5°	9.9	9.9	11.6	13.3	14.9
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)