

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: P546039

Luminaire Tested: **FMR-12-4-LD4-1STD-40-UNV-80-84-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: P546039  
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-80-84-EDD  
Description: 1X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

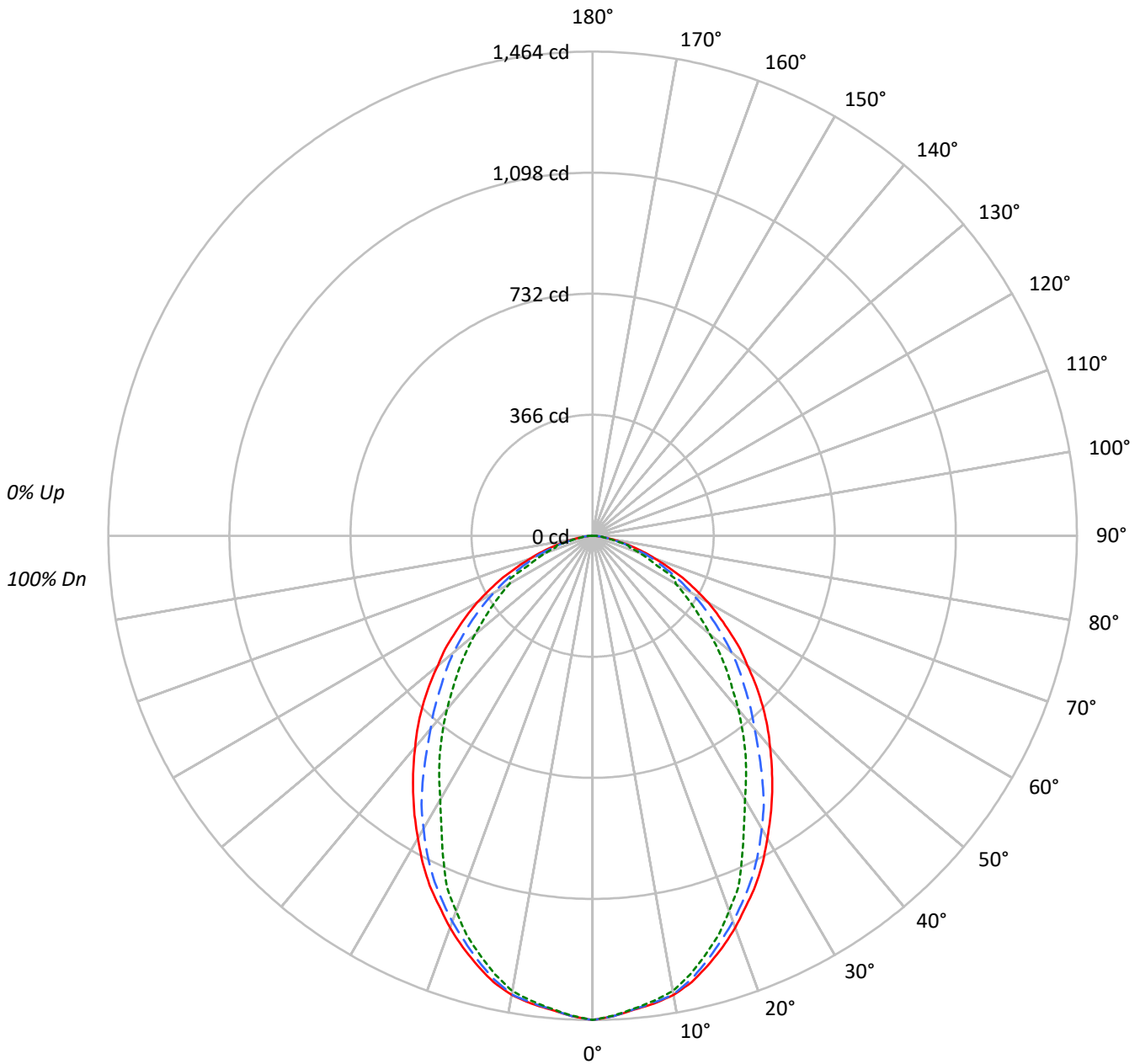
Lumens per Lamp: N/A  
Luminaire Lumens: 2874.0 lumens  
Efficiency: N/A  
Efficacy: 86.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
Input Voltage (V): NR  
Input Current (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°	3940	3940	3940
5°	3886	3881	3877
10°	3852	3848	3820
15°	3748	3711	3659
20°	3611	3553	3456
25°	3462	3387	3176
30°	3282	3176	2861
35°	3108	2936	2646
40°	2931	2675	2408
45°	2763	2473	2177
50°	2558	2296	1941
55°	2366	2080	1739
60°	2168	1858	1558
65°	1908	1628	1379
70°	1571	1425	1172
75°	1250	1091	1144
80°	840	787	735
85°	522	627	732



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	136.3	4.7
10°-20°	374.0	13.0
20°-30°	517.8	18.0
30°-40°	552.1	19.2
40°-50°	503.7	17.5
50°-60°	394.6	13.7
60°-70°	257.2	8.9
70°-80°	113.9	4.0
80°-90°	24.5	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°	1028.1	35.8
0°-40°	1580.2	55.0
0°-60°	2478.4	86.2
0°-90°	2874.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2874.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1464	1464	1464	1464	1464	
5°	1439	1437	1437	1435	1435	137
15°	1346	1346	1332	1318	1313	378
25°	1166	1159	1141	1100	1070	535
35°	946	939	894	826	806	591
45°	726	711	650	596	572	559
55°	504	489	443	391	371	452
65°	300	283	256	261	217	295
75°	120	112	105	100	110	129
85°	17	19	20	22	24	23
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1464.0	1464.0	1464.0	1464.0	1464.0
2.5°	1453.8	1453.8	1453.8	1452.1	1452.1
5°	1438.6	1436.9	1436.9	1435.2	1435.2
7.5°	1426.7	1425.1	1423.4	1421.7	1418.3
10°	1409.8	1409.8	1408.1	1399.7	1398.0
12.5°	1382.7	1381.0	1374.3	1362.4	1359.0
15°	1345.5	1345.5	1332.0	1318.4	1313.3
17.5°	1304.9	1303.2	1286.3	1272.7	1266.0
20°	1260.9	1257.5	1240.6	1218.6	1206.7
22.5°	1211.8	1211.8	1191.5	1162.7	1150.9
25°	1166.1	1159.3	1140.7	1100.1	1069.6
27.5°	1113.6	1103.5	1083.2	1025.6	990.1
30°	1056.1	1051.0	1022.2	947.8	920.7
32.5°	1001.9	993.5	963.0	885.2	863.2
35°	946.1	939.3	893.6	825.9	805.6
37.5°	890.2	881.8	824.2	770.1	744.7
40°	834.4	824.2	761.6	712.5	685.4
42.5°	781.9	768.4	707.4	655.0	624.5
45°	726.1	710.8	649.9	595.7	572.1
47.5°	670.2	656.7	600.8	545.0	517.9
50°	611.0	599.1	548.4	492.5	463.7
52.5°	561.9	543.3	494.2	438.3	414.7
55°	504.4	489.1	443.4	391.0	370.6
57.5°	451.9	436.7	394.3	345.3	328.3
60°	402.8	380.8	345.3	303.0	289.4
62.5°	348.6	331.7	301.3	265.7	282.6
65°	299.6	282.6	255.6	260.6	216.6
67.5°	245.4	236.9	213.2	189.6	182.8
70°	199.7	189.6	181.1	155.7	148.9
72.5°	159.1	148.9	137.1	123.5	118.5
75°	120.2	111.7	104.9	99.9	110.0
77.5°	82.9	79.5	74.5	69.4	67.7
80°	54.2	52.5	50.8	49.1	47.4
82.5°	32.2	32.2	32.2	32.2	32.2
85°	16.9	18.6	20.3	22.0	23.7
87.5°	10.2	10.2	11.8	13.5	15.2
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)