

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: P546553

Luminaire Tested: **FMR-24-4-LD4-1LO-50-UNV-80-86-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: P546553  
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-24-4-LD4-1LO-50-UNV-80-86-EDD  
Description: 2X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

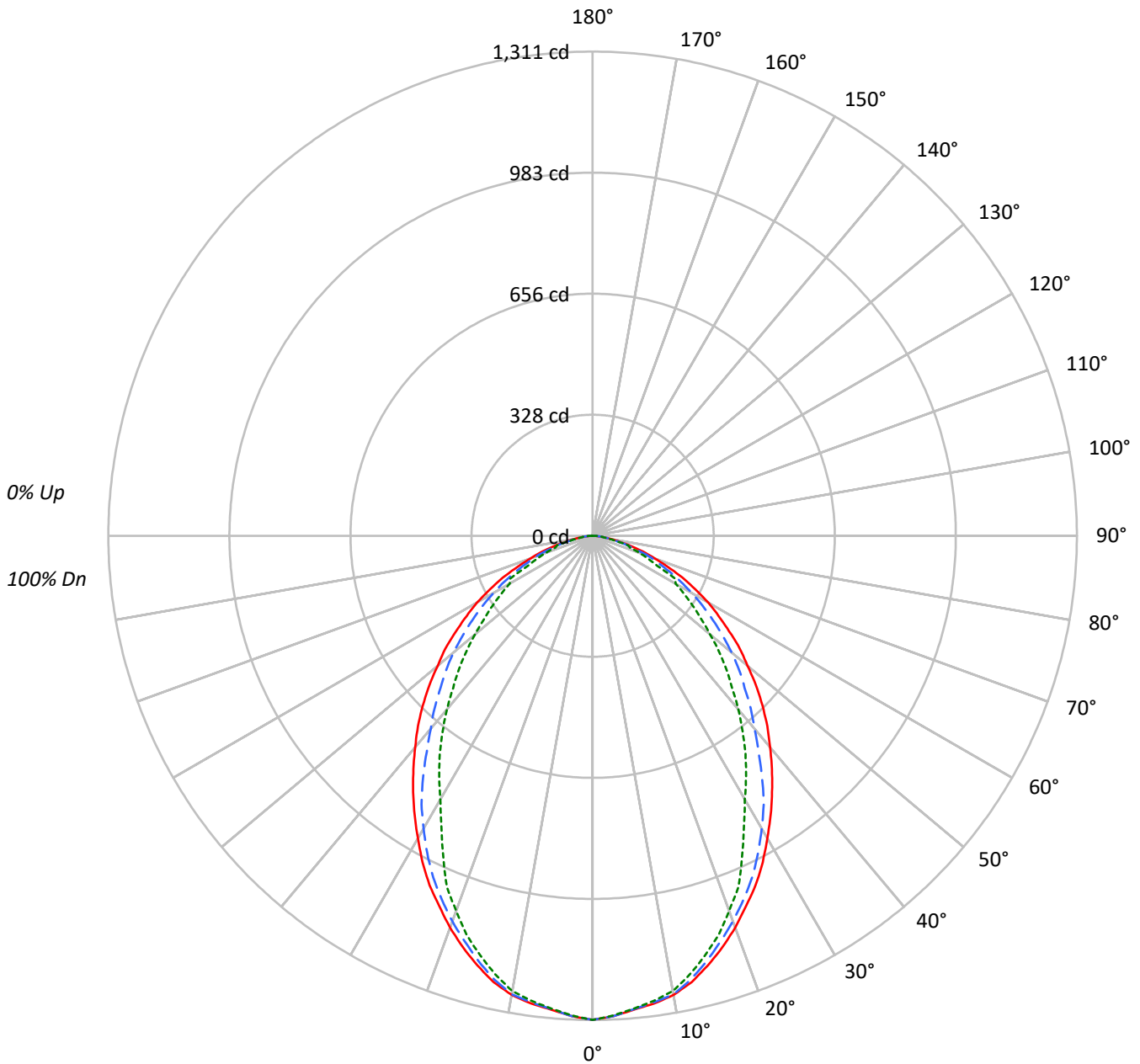
Lumens per Lamp: N/A  
Luminaire Lumens: 2573.0 lumens  
Efficiency: N/A  
Efficacy: 110.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 23.4  
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°	1764	1764	1764
5°	1739	1737	1735
10°	1724	1722	1710
15°	1678	1661	1638
20°	1616	1590	1547
25°	1550	1516	1422
30°	1469	1422	1281
35°	1391	1314	1185
40°	1312	1198	1078
45°	1237	1107	974
50°	1145	1028	869
55°	1059	931	778
60°	970	832	697
65°	854	728	617
70°	703	638	524
75°	559	488	512
80°	376	353	329
85°	235	281	327



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	122.0	4.7
10°-20°	334.8	13.0
20°-30°	463.5	18.0
30°-40°	494.3	19.2
40°-50°	450.9	17.5
50°-60°	353.3	13.7
60°-70°	230.2	8.9
70°-80°	102.0	4.0
80°-90°	21.9	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°	920.4	35.8
0°-40°	1414.7	55.0
0°-60°	2218.8	86.2
0°-90°	2573.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2573.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1311	1311	1311	1311	1311	
5°	1288	1286	1286	1285	1285	122
15°	1205	1205	1192	1180	1176	339
25°	1044	1038	1021	985	958	479
35°	847	841	800	739	721	530
45°	650	636	582	533	512	501
55°	452	438	397	350	332	405
65°	268	253	229	233	194	264
75°	108	100	94	89	98	115
85°	15	17	18	20	21	21
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1310.7	1310.7	1310.7	1310.7	1310.7
2.5°	1301.6	1301.6	1301.6	1300.0	1300.0
5°	1287.9	1286.4	1286.4	1284.9	1284.9
7.5°	1277.3	1275.8	1274.3	1272.8	1269.7
10°	1262.2	1262.2	1260.7	1253.1	1251.6
12.5°	1237.9	1236.4	1230.3	1219.7	1216.7
15°	1204.6	1204.6	1192.5	1180.3	1175.8
17.5°	1168.2	1166.7	1151.6	1139.4	1133.4
20°	1128.8	1125.8	1110.6	1090.9	1080.3
22.5°	1084.9	1084.9	1066.7	1040.9	1030.3
25°	1044.0	1037.9	1021.2	984.9	957.6
27.5°	997.0	987.9	969.7	918.2	886.4
30°	945.5	940.9	915.2	848.5	824.3
32.5°	897.0	889.4	862.2	792.5	772.8
35°	847.0	840.9	800.0	739.4	721.2
37.5°	797.0	789.4	737.9	689.4	666.7
40°	747.0	737.9	681.8	637.9	613.7
42.5°	700.0	687.9	633.4	586.4	559.1
45°	650.0	636.4	581.8	533.4	512.1
47.5°	600.0	587.9	537.9	487.9	463.7
50°	547.0	536.4	490.9	440.9	415.2
52.5°	503.0	486.4	442.4	392.4	371.2
55°	451.5	437.9	397.0	350.0	331.8
57.5°	404.6	390.9	353.0	309.1	293.9
60°	360.6	340.9	309.1	271.2	259.1
62.5°	312.1	297.0	269.7	237.9	253.0
65°	268.2	253.0	228.8	233.3	193.9
67.5°	219.7	212.1	190.9	169.7	163.6
70°	178.8	169.7	162.1	139.4	133.3
72.5°	142.4	133.3	122.7	110.6	106.1
75°	107.6	100.0	93.9	89.4	98.5
77.5°	74.2	71.2	66.7	62.1	60.6
80°	48.5	47.0	45.5	43.9	42.4
82.5°	28.8	28.8	28.8	28.8	28.8
85°	15.2	16.7	18.2	19.7	21.2
87.5°	9.1	9.1	10.6	12.1	13.6
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)