

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: P545866

Luminaire Tested: **FMR-12-4-LD4-1HI-40-UNV-82-87-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: P545866  
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-LD4-1HI-40-UNV-82-87-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

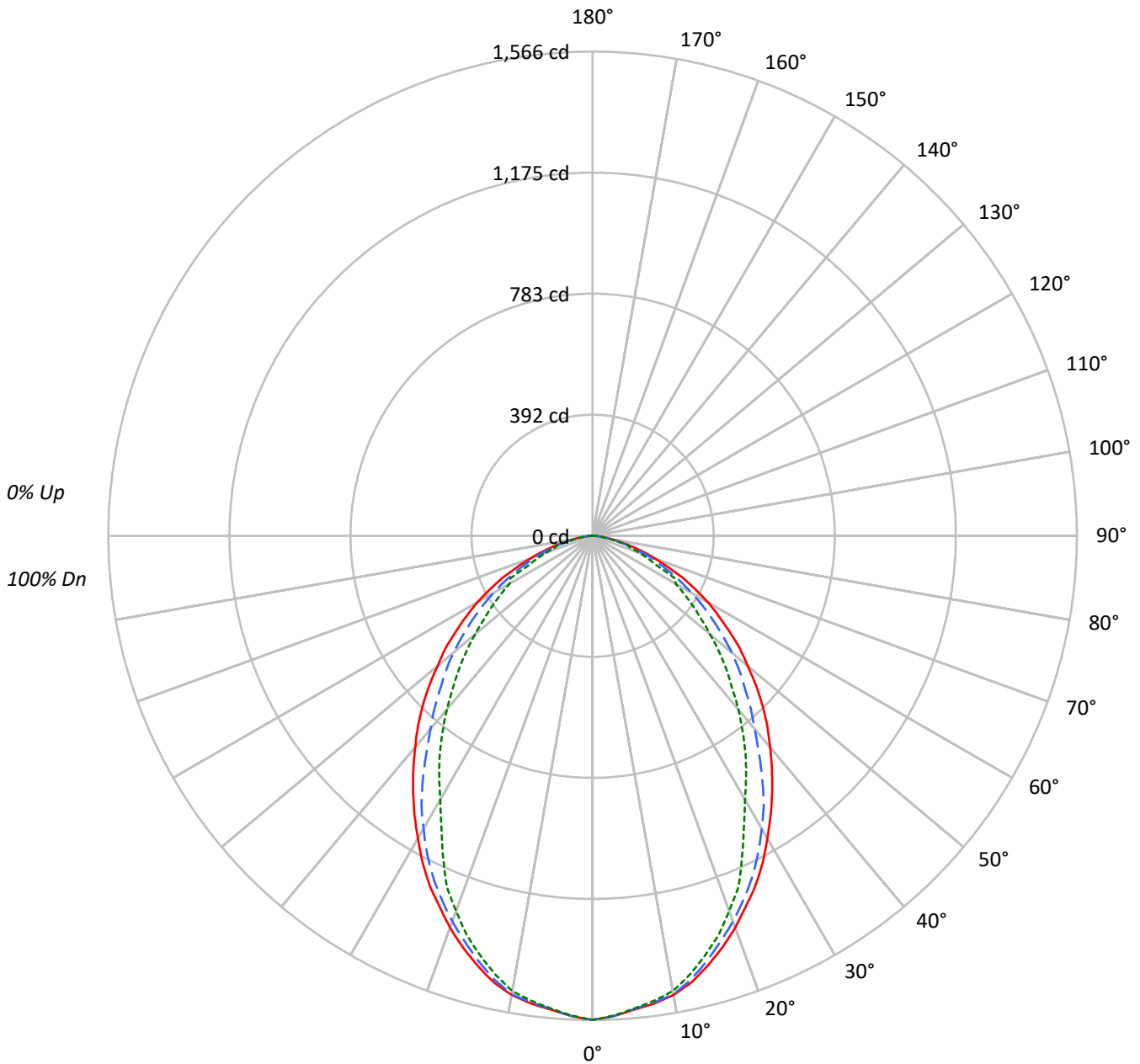
Lumens per Lamp: N/A  
Luminaire Lumens: 3074.0 lumens  
Efficiency: N/A  
Efficacy: 71.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.2  
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°	4214	4214	4214
5°	4156	4152	4147
10°	4120	4115	4086
15°	4009	3969	3913
20°	3862	3800	3696
25°	3703	3623	3397
30°	3510	3397	3060
35°	3324	3140	2831
40°	3135	2862	2575
45°	2955	2645	2329
50°	2736	2455	2076
55°	2531	2225	1860
60°	2319	1988	1666
65°	2040	1740	1475
70°	1681	1524	1253
75°	1336	1167	1224
80°	897	841	786
85°	559	670	781



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	145.8	4.7
10°-20°	400.0	13.0
20°-30°	553.8	18.0
30°-40°	590.5	19.2
40°-50°	538.7	17.5
50°-60°	422.1	13.7
60°-70°	275.1	8.9
70°-80°	121.9	4.0
80°-90°	26.2	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°	1099.6	35.8
0°-40°	1690.1	55.0
0°-60°	2650.9	86.2
0°-90°	3074.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3074.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1566	1566	1566	1566	1566	
5°	1539	1537	1537	1535	1535	146
15°	1439	1439	1425	1410	1405	405
25°	1247	1240	1220	1177	1144	573
35°	1012	1005	956	883	862	633
45°	777	760	695	637	612	598
55°	540	523	474	418	396	484
65°	320	302	273	279	232	316
75°	128	120	112	107	118	138
85°	18	20	22	24	25	25
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1565.9	1565.9	1565.9	1565.9	1565.9
2.5°	1555.0	1555.0	1555.0	1553.2	1553.2
5°	1538.7	1536.9	1536.9	1535.1	1535.1
7.5°	1526.0	1524.2	1522.4	1520.6	1517.0
10°	1507.9	1507.9	1506.1	1497.1	1495.3
12.5°	1479.0	1477.2	1469.9	1457.2	1453.6
15°	1439.1	1439.1	1424.7	1410.2	1404.7
17.5°	1395.7	1393.9	1375.8	1361.3	1354.1
20°	1348.6	1345.0	1326.9	1303.4	1290.7
22.5°	1296.1	1296.1	1274.4	1243.6	1231.0
25°	1247.3	1240.0	1220.1	1176.7	1144.1
27.5°	1191.1	1180.3	1158.6	1097.0	1059.0
30°	1129.6	1124.2	1093.4	1013.7	984.8
32.5°	1071.7	1062.6	1030.0	946.8	923.2
35°	1011.9	1004.7	955.8	883.4	861.7
37.5°	952.2	943.1	881.6	823.7	796.5
40°	892.4	881.6	814.6	762.1	733.1
42.5°	836.3	821.8	756.7	700.6	668.0
45°	776.6	760.3	695.1	637.2	611.9
47.5°	716.9	702.4	642.6	582.9	553.9
50°	653.5	640.8	586.5	526.8	496.0
52.5°	601.0	581.1	528.6	468.9	443.5
55°	539.5	523.2	474.3	418.2	396.4
57.5°	483.3	467.0	421.8	369.3	351.2
60°	430.8	407.3	369.3	324.0	309.6
62.5°	372.9	354.8	322.2	284.2	302.3
65°	320.4	302.3	273.3	278.8	231.7
67.5°	262.5	253.4	228.1	202.7	195.5
70°	213.6	202.7	193.7	166.5	159.3
72.5°	170.2	159.3	146.6	132.1	126.7
75°	128.5	119.5	112.2	106.8	117.7
77.5°	88.7	85.1	79.7	74.2	72.4
80°	57.9	56.1	54.3	52.5	50.7
82.5°	34.4	34.4	34.4	34.4	34.4
85°	18.1	19.9	21.7	23.5	25.3
87.5°	10.9	10.9	12.7	14.5	16.3
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)