

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: P545863

Luminaire Tested: **FMR-12-4-LD4-1HI-40-UNV-82-84-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: P545863  
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-82-84-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC 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**

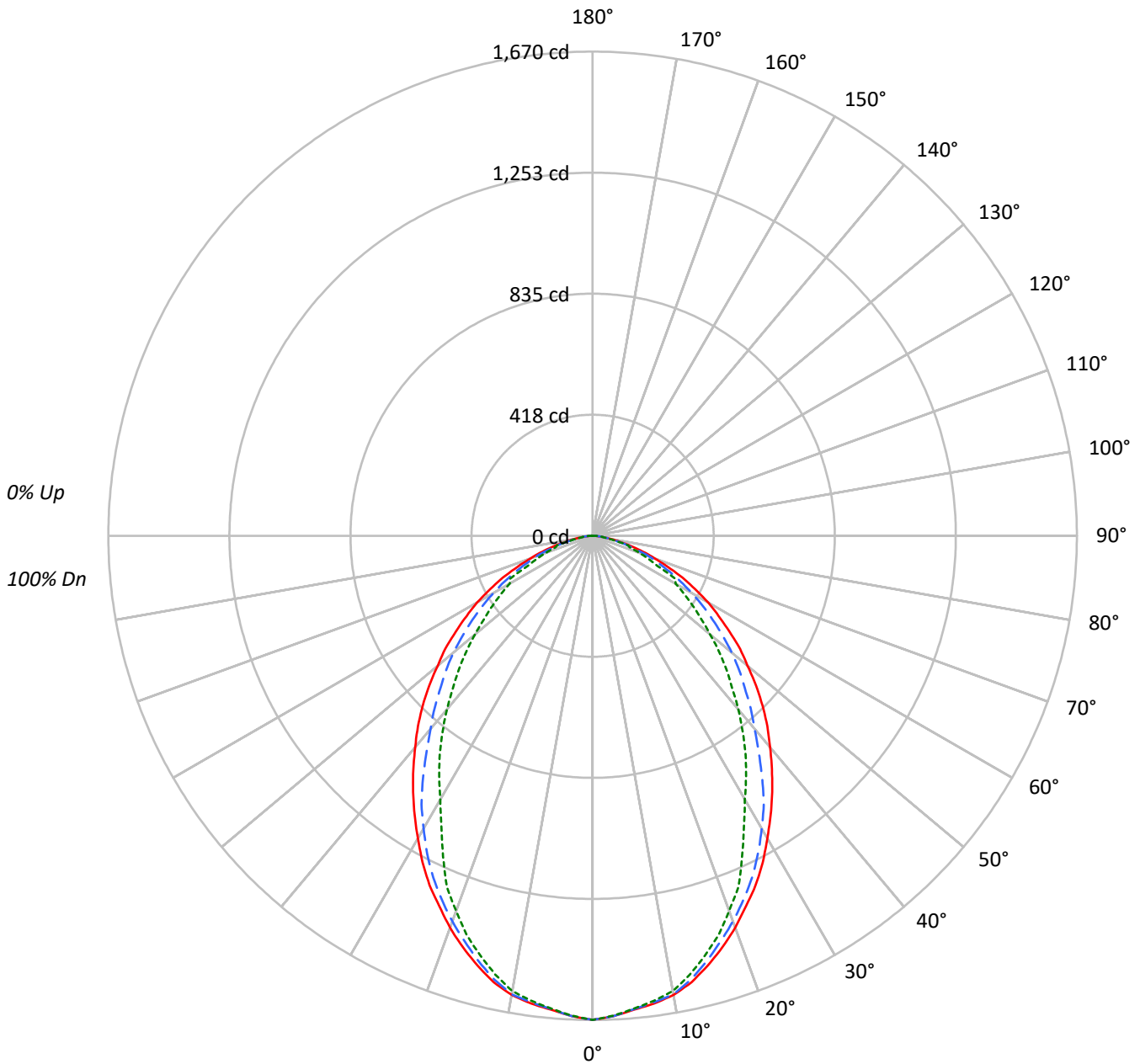
Lumens per Lamp: N/A  
Luminaire Lumens: 3278.0 lumens  
Efficiency: N/A  
Efficacy: 75.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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				20				20	
RC	80				70				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				100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87				87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75				75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65				65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56				56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50				50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44				44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40				40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36				36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33				33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30				30

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	4493	4493	4493
5°	4432	4427	4422
10°	4394	4389	4357
15°	4275	4232	4173
20°	4118	4052	3942
25°	3949	3863	3622
30°	3743	3623	3263
35°	3545	3348	3019
40°	3343	3052	2746
45°	3151	2821	2483
50°	2918	2618	2214
55°	2699	2373	1984
60°	2472	2119	1777
65°	2176	1856	1573
70°	1792	1625	1337
75°	1425	1245	1305
80°	958	897	838
85°	596	716	834



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	155.4	4.7
10°-20°	426.6	13.0
20°-30°	590.6	18.0
30°-40°	629.7	19.2
40°-50°	574.5	17.5
50°-60°	450.1	13.7
60°-70°	293.3	8.9
70°-80°	130.0	4.0
80°-90°	27.9	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°	1172.6	35.8
0°-40°	1802.3	55.0
0°-60°	2826.8	86.2
0°-90°	3278.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3278.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1670	1670	1670	1670	1670	
5°	1641	1639	1639	1637	1637	156
15°	1535	1535	1519	1504	1498	431
25°	1330	1322	1301	1255	1220	611
35°	1079	1071	1019	942	919	675
45°	828	811	741	680	652	638
55°	575	558	506	446	423	516
65°	342	322	292	297	247	337
75°	137	127	120	114	126	147
85°	19	21	23	25	27	27
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1669.8	1669.8	1669.8	1669.8	1669.8
2.5°	1658.2	1658.2	1658.2	1656.3	1656.3
5°	1640.8	1638.9	1638.9	1637.0	1637.0
7.5°	1627.3	1625.4	1623.4	1621.5	1617.6
10°	1608.0	1608.0	1606.1	1596.4	1594.5
12.5°	1577.1	1575.2	1567.5	1553.9	1550.1
15°	1534.6	1534.6	1519.2	1503.8	1498.0
17.5°	1488.3	1486.4	1467.1	1451.6	1443.9
20°	1438.1	1434.3	1415.0	1389.9	1376.4
22.5°	1382.1	1382.1	1359.0	1326.2	1312.7
25°	1330.0	1322.3	1301.1	1254.7	1220.0
27.5°	1270.2	1258.6	1235.4	1169.8	1129.3
30°	1204.6	1198.8	1165.9	1081.0	1050.1
32.5°	1142.8	1133.1	1098.4	1009.6	984.5
35°	1079.1	1071.4	1019.2	942.0	918.9
37.5°	1015.4	1005.7	940.1	878.3	849.4
40°	951.7	940.1	868.7	812.7	781.8
42.5°	891.8	876.4	806.9	747.1	712.3
45°	828.1	810.8	741.3	679.5	652.5
47.5°	764.4	749.0	685.3	621.6	590.7
50°	696.9	683.4	625.4	561.7	528.9
52.5°	640.9	619.6	563.7	500.0	472.9
55°	575.3	557.9	505.8	445.9	422.8
57.5°	515.4	498.0	449.8	393.8	374.5
60°	459.4	434.3	393.8	345.5	330.1
62.5°	397.7	378.4	343.6	303.1	322.4
65°	341.7	322.4	291.5	297.3	247.1
67.5°	279.9	270.3	243.2	216.2	208.5
70°	227.8	216.2	206.5	177.6	169.9
72.5°	181.5	169.9	156.4	140.9	135.1
75°	137.1	127.4	119.7	113.9	125.5
77.5°	94.6	90.7	84.9	79.1	77.2
80°	61.8	59.8	57.9	56.0	54.1
82.5°	36.7	36.7	36.7	36.7	36.7
85°	19.3	21.2	23.2	25.1	27.0
87.5°	11.6	11.6	13.5	15.4	17.4
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)