

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: P545869

Luminaire Tested: **FMR-12-4-LD4-1HI-40-UNV-82-96-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: P545869  
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-82-96-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

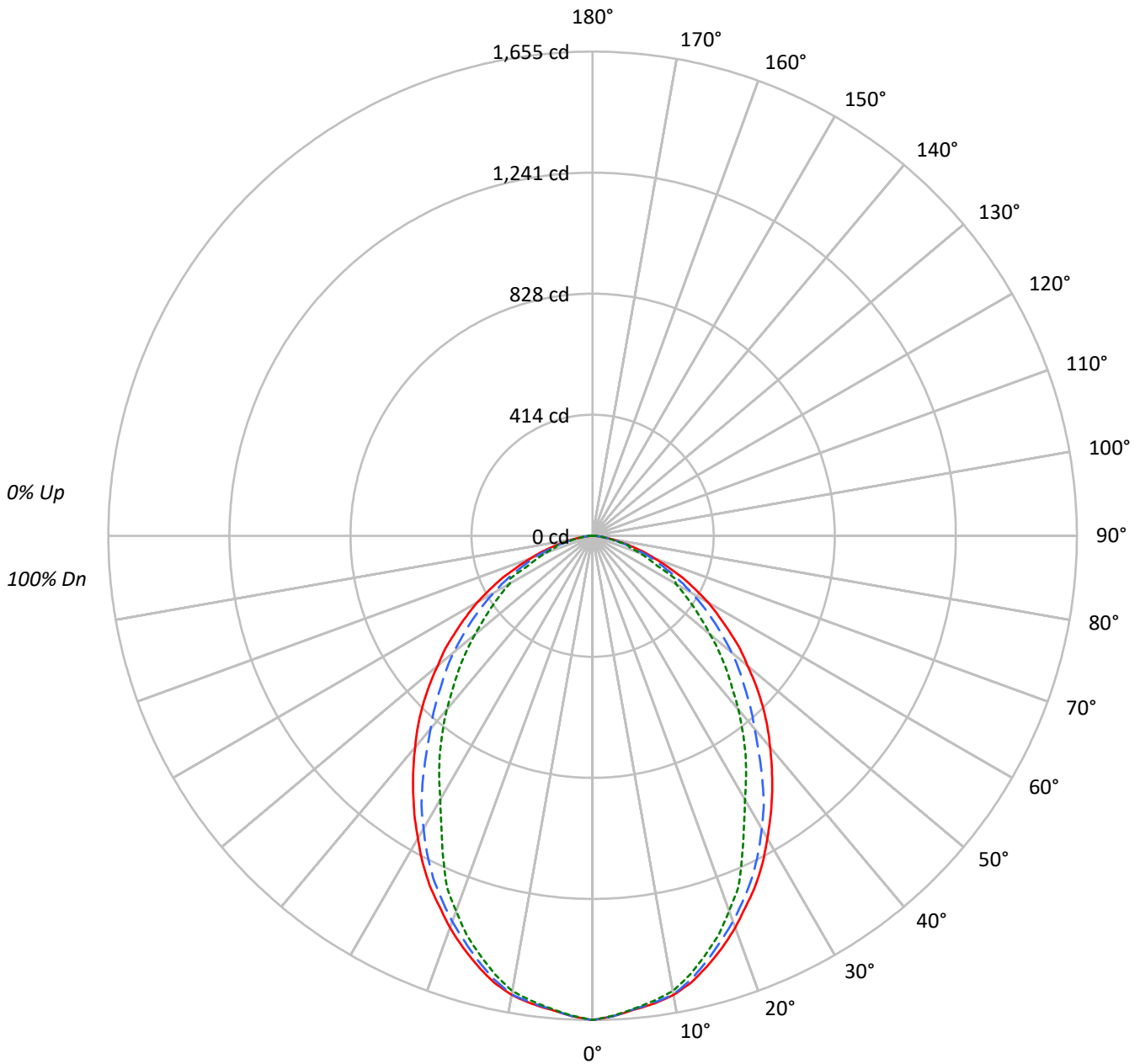
Lumens per Lamp: N/A  
Luminaire Lumens: 3249.0 lumens  
Efficiency: N/A  
Efficacy: 75.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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				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°	4454	4454	4454
5°	4393	4388	4383
10°	4355	4350	4318
15°	4238	4195	4136
20°	4082	4016	3907
25°	3914	3829	3590
30°	3710	3591	3234
35°	3513	3319	2992
40°	3314	3025	2722
45°	3124	2796	2461
50°	2892	2595	2195
55°	2675	2352	1966
60°	2451	2101	1761
65°	2157	1840	1559
70°	1777	1611	1325
75°	1412	1233	1293
80°	948	890	831
85°	590	710	827



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	154.1	4.7
10°-20°	422.8	13.0
20°-30°	585.3	18.0
30°-40°	624.1	19.2
40°-50°	569.4	17.5
50°-60°	446.1	13.7
60°-70°	290.7	8.9
70°-80°	128.8	4.0
80°-90°	27.7	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°	1162.2	35.8
0°-40°	1786.3	55.0
0°-60°	2801.8	86.2
0°-90°	3249.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3249.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1655	1655	1655	1655	1655	
5°	1626	1624	1624	1622	1622	154
15°	1521	1521	1506	1490	1485	428
25°	1318	1311	1290	1244	1209	605
35°	1070	1062	1010	934	911	669
45°	821	804	735	674	647	632
55°	570	553	501	442	419	511
65°	339	320	289	295	245	334
75°	136	126	119	113	124	146
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°	1655.0	1655.0	1655.0	1655.0	1655.0
2.5°	1643.5	1643.5	1643.5	1641.6	1641.6
5°	1626.3	1624.4	1624.4	1622.5	1622.5
7.5°	1612.9	1611.0	1609.1	1607.2	1603.3
10°	1593.8	1593.8	1591.9	1582.3	1580.4
12.5°	1563.2	1561.2	1553.6	1540.2	1536.4
15°	1521.1	1521.1	1505.8	1490.5	1484.7
17.5°	1475.1	1473.2	1454.1	1438.8	1431.1
20°	1425.4	1421.6	1402.4	1377.6	1364.2
22.5°	1369.9	1369.9	1347.0	1314.4	1301.0
25°	1318.3	1310.6	1289.6	1243.6	1209.2
27.5°	1258.9	1247.5	1224.5	1159.5	1119.3
30°	1193.9	1188.2	1155.6	1071.4	1040.8
32.5°	1132.7	1123.1	1088.7	1000.7	975.8
35°	1069.5	1061.9	1010.2	933.7	910.7
37.5°	1006.4	996.8	931.8	870.5	841.8
40°	943.3	931.8	861.0	805.5	774.9
42.5°	883.9	868.6	799.8	740.4	706.0
45°	820.8	803.6	734.7	673.5	646.7
47.5°	757.7	742.4	679.2	616.1	585.5
50°	690.7	677.3	619.9	556.8	524.2
52.5°	635.2	614.2	558.7	495.5	468.8
55°	570.2	552.9	501.3	442.0	419.0
57.5°	510.8	493.6	445.8	390.3	371.2
60°	455.4	430.5	390.3	342.5	327.2
62.5°	394.1	375.0	340.6	300.4	319.5
65°	338.7	319.5	288.9	294.6	244.9
67.5°	277.4	267.9	241.1	214.3	206.6
70°	225.8	214.3	204.7	176.0	168.4
72.5°	179.8	168.4	155.0	139.7	133.9
75°	135.8	126.3	118.6	112.9	124.4
77.5°	93.8	89.9	84.2	78.4	76.5
80°	61.2	59.3	57.4	55.5	53.6
82.5°	36.4	36.4	36.4	36.4	36.4
85°	19.1	21.0	23.0	24.9	26.8
87.5°	11.5	11.5	13.4	15.3	17.2
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)