

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: P545001

Luminaire Tested: **FMR-12-1-LD4-2HI-40-UNV-82-86-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: P545001  
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-12-1-LD4-2HI-40-UNV-82-86-EDD  
Description: 1X1 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

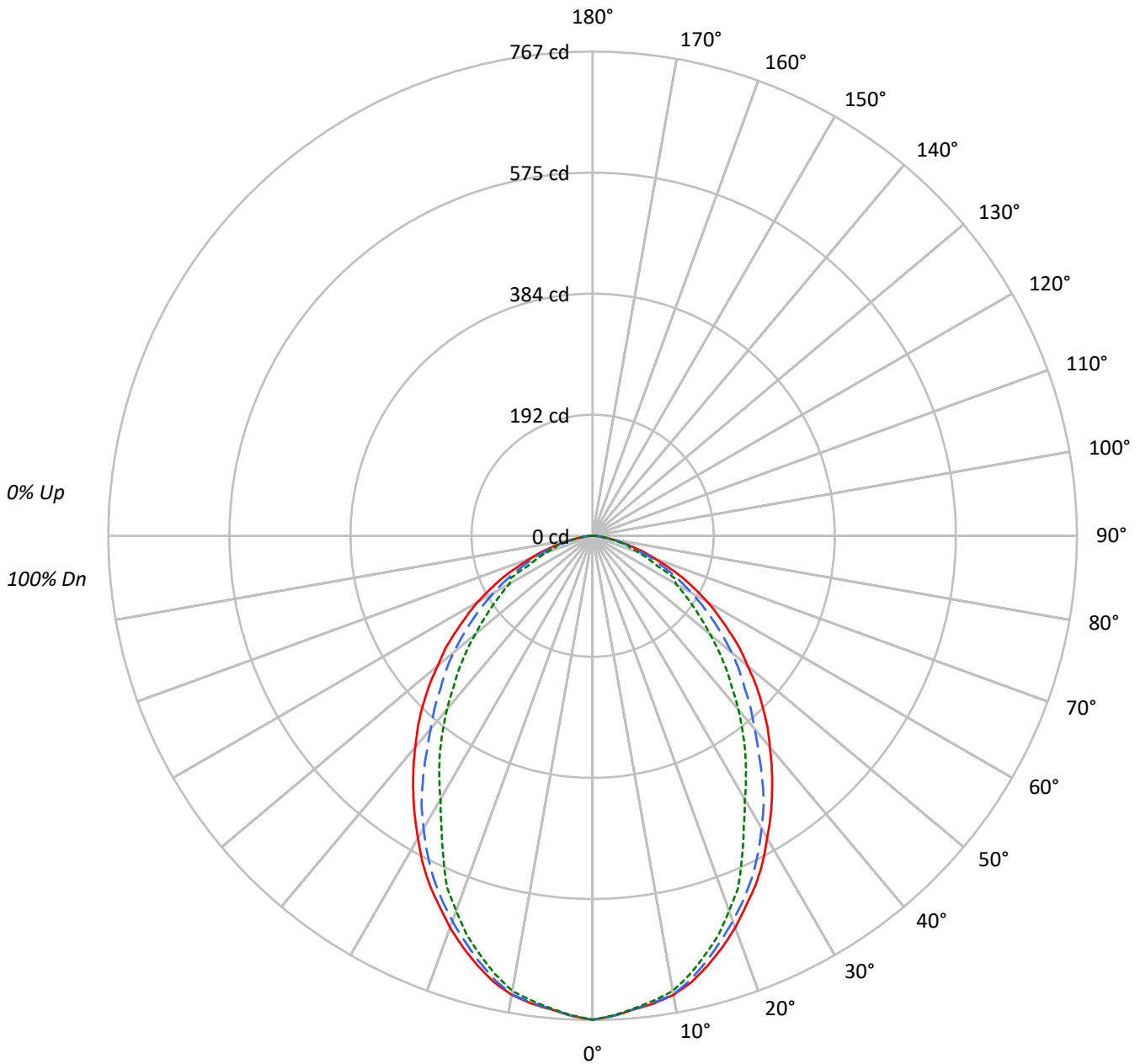
Lumens per Lamp: N/A  
Luminaire Lumens: 1505.0 lumens  
Efficiency: N/A  
Efficacy: 69.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
CIE Type: Direct

Input Watts (W): 21.6  
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°	8252	8252	8252
5°	8139	8130	8121
10°	8070	8060	8002
15°	7852	7773	7663
20°	7564	7441	7238
25°	7252	7094	6652
30°	6873	6653	5992
35°	6510	6150	5544
40°	6139	5604	5043
45°	5788	5180	4561
50°	5357	4809	4066
55°	4956	4358	3643
60°	4540	3892	3264
65°	3996	3408	2888
70°	3292	2984	2455
75°	2616	2283	2396
80°	1760	1649	1537
85°	1099	1309	1531



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	71.4	4.7
10°-20°	195.8	13.0
20°-30°	271.1	18.0
30°-40°	289.1	19.2
40°-50°	263.8	17.5
50°-60°	206.6	13.7
60°-70°	134.7	8.9
70°-80°	59.7	4.0
80°-90°	12.8	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°	538.4	35.8
0°-40°	827.5	55.0
0°-60°	1297.8	86.2
0°-90°	1505.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1505.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	767	767	767	767	767	
5°	753	752	752	752	752	72
15°	705	705	698	690	688	198
25°	611	607	597	576	560	280
35°	495	492	468	432	422	310
45°	380	372	340	312	300	293
55°	264	256	232	205	194	237
65°	157	148	134	136	113	155
75°	63	58	55	52	58	67
85°	9	10	11	12	12	12
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	766.6	766.6	766.6	766.6	766.6
2.5°	761.3	761.3	761.3	760.4	760.4
5°	753.3	752.4	752.4	751.6	751.6
7.5°	747.1	746.2	745.4	744.5	742.7
10°	738.3	738.3	737.4	732.9	732.1
12.5°	724.1	723.2	719.7	713.5	711.7
15°	704.6	704.6	697.5	690.4	687.7
17.5°	683.3	682.4	673.6	666.5	662.9
20°	660.3	658.5	649.6	638.1	631.9
22.5°	634.6	634.6	623.9	608.9	602.7
25°	610.6	607.1	597.3	576.1	560.1
27.5°	583.2	577.9	567.2	537.1	518.5
30°	553.0	550.4	535.3	496.3	482.1
32.5°	524.7	520.2	504.3	463.5	452.0
35°	495.4	491.9	468.0	432.5	421.9
37.5°	466.2	461.7	431.6	403.3	390.0
40°	436.9	431.6	398.8	373.1	358.9
42.5°	409.5	402.4	370.5	343.0	327.0
45°	380.2	372.2	340.3	312.0	299.6
47.5°	351.0	343.9	314.6	285.4	271.2
50°	319.9	313.7	287.2	257.9	242.8
52.5°	294.2	284.5	258.8	229.5	217.1
55°	264.1	256.1	232.2	204.7	194.1
57.5°	236.6	228.7	206.5	180.8	171.9
60°	210.9	199.4	180.8	158.6	151.6
62.5°	182.6	173.7	157.8	139.1	148.0
65°	156.9	148.0	133.8	136.5	113.4
67.5°	128.5	124.1	111.7	99.3	95.7
70°	104.6	99.3	94.8	81.5	78.0
72.5°	83.3	78.0	71.8	64.7	62.0
75°	62.9	58.5	54.9	52.3	57.6
77.5°	43.4	41.7	39.0	36.3	35.5
80°	28.4	27.5	26.6	25.7	24.8
82.5°	16.8	16.8	16.8	16.8	16.8
85°	8.9	9.7	10.6	11.5	12.4
87.5°	5.3	5.3	6.2	7.1	8.0
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)