

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: P545441

Luminaire Tested: **FMR-12-2-LD4-1STD-35-UNV-81-86-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: P545441  
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-12-2-LD4-1STD-35-UNV-81-86-EDD  
Description: 1X2 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

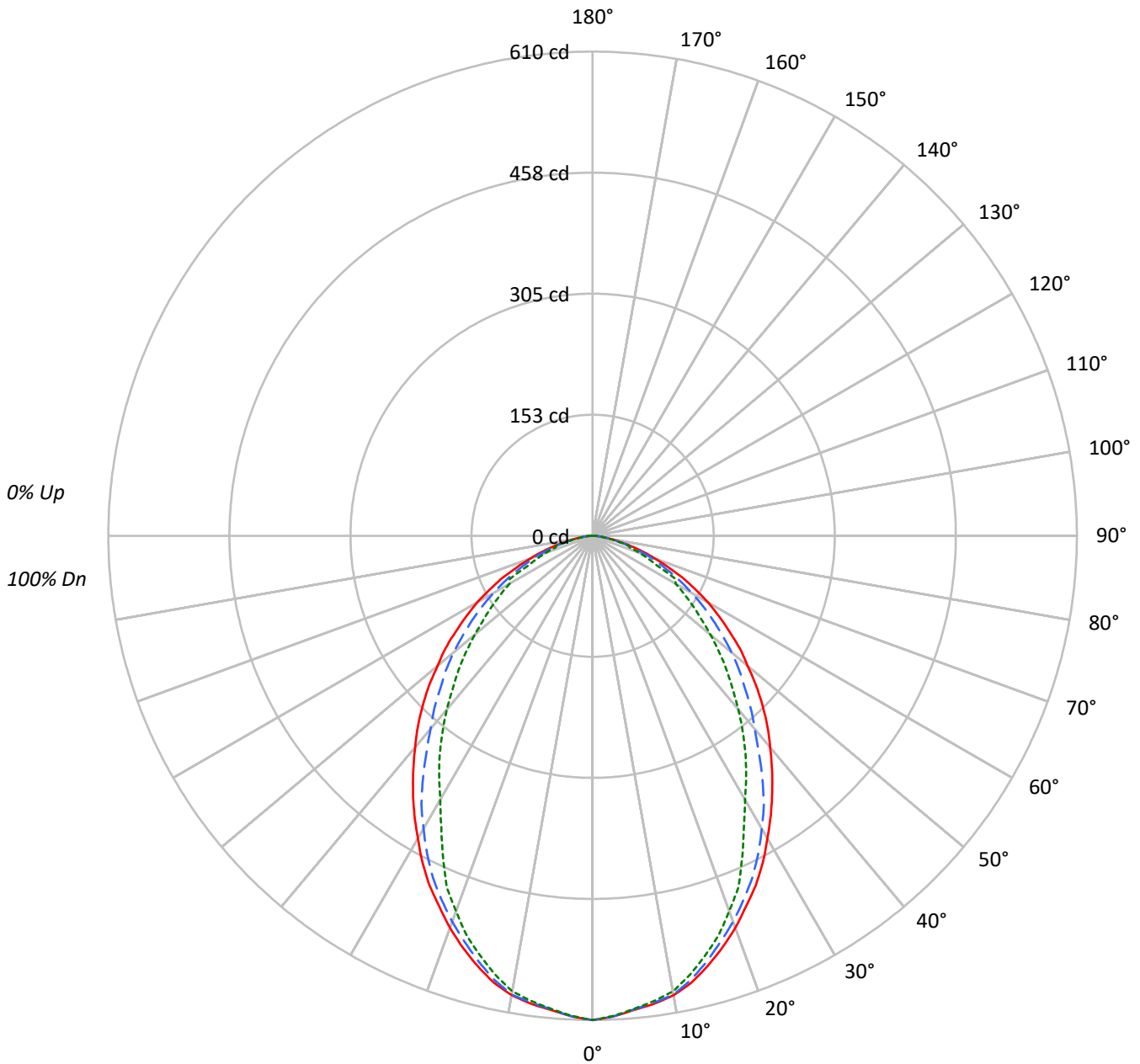
Lumens per Lamp: N/A  
Luminaire Lumens: 1198.0 lumens  
Efficiency: N/A  
Efficacy: 72.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')  
CIE Type: Direct

Input Watts (W): 16.6  
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°	3284	3284	3284
5°	3240	3236	3232
10°	3212	3208	3184
15°	3125	3093	3051
20°	3010	2962	2881
25°	2887	2824	2648
30°	2736	2648	2385
35°	2591	2447	2206
40°	2444	2231	2007
45°	2304	2062	1815
50°	2133	1914	1618
55°	1972	1734	1450
60°	1807	1549	1298
65°	1591	1356	1150
70°	1309	1188	977
75°	1042	909	954
80°	700	657	614
85°	438	525	611



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	56.8	4.7
10°-20°	155.9	13.0
20°-30°	215.8	18.0
30°-40°	230.1	19.2
40°-50°	210.0	17.5
50°-60°	164.5	13.7
60°-70°	107.2	8.9
70°-80°	47.5	4.0
80°-90°	10.2	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°	428.5	35.8
0°-40°	658.7	55.0
0°-60°	1033.1	86.2
0°-90°	1198.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1198.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	610	610	610	610	610	
5°	600	599	599	598	598	57
15°	561	561	555	550	548	158
25°	486	483	476	459	446	223
35°	394	392	372	344	336	247
45°	303	296	271	248	238	233
55°	210	204	185	163	154	189
65°	125	118	106	109	90	123
75°	50	47	44	42	46	54
85°	7	8	8	9	10	10
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	610.2	610.2	610.2	610.2	610.2
2.5°	606.0	606.0	606.0	605.3	605.3
5°	599.7	599.0	599.0	598.3	598.3
7.5°	594.7	594.0	593.3	592.6	591.2
10°	587.7	587.7	587.0	583.4	582.7
12.5°	576.4	575.7	572.9	567.9	566.5
15°	560.9	560.9	555.2	549.6	547.5
17.5°	543.9	543.2	536.2	530.5	527.7
20°	525.6	524.2	517.1	507.9	503.0
22.5°	505.1	505.1	496.7	484.7	479.7
25°	486.1	483.3	475.5	458.6	445.9
27.5°	464.2	460.0	451.5	427.5	412.7
30°	440.2	438.1	426.1	395.1	383.8
32.5°	417.6	414.1	401.4	369.0	359.8
35°	394.4	391.5	372.5	344.3	335.8
37.5°	371.1	367.6	343.6	321.0	310.4
40°	347.8	343.6	317.5	297.0	285.7
42.5°	325.9	320.3	294.9	273.0	260.3
45°	302.7	296.3	270.9	248.3	238.5
47.5°	279.4	273.7	250.4	227.2	215.9
50°	254.7	249.7	228.6	205.3	193.3
52.5°	234.2	226.5	206.0	182.7	172.8
55°	210.2	203.9	184.8	163.0	154.5
57.5°	188.4	182.0	164.4	143.9	136.9
60°	167.9	158.7	143.9	126.3	120.6
62.5°	145.3	138.3	125.6	110.8	117.8
65°	124.9	117.8	106.5	108.6	90.3
67.5°	102.3	98.8	88.9	79.0	76.2
70°	83.2	79.0	75.5	64.9	62.1
72.5°	66.3	62.1	57.1	51.5	49.4
75°	50.1	46.6	43.7	41.6	45.9
77.5°	34.6	33.2	31.0	28.9	28.2
80°	22.6	21.9	21.2	20.5	19.8
82.5°	13.4	13.4	13.4	13.4	13.4
85°	7.1	7.8	8.5	9.2	9.9
87.5°	4.2	4.2	4.9	5.6	6.3
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)