

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: P547178

Luminaire Tested: **FMR-24-4-LD4-3STD-35-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: P547178  
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-24-4-LD4-3STD-35-UNV-82-87-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

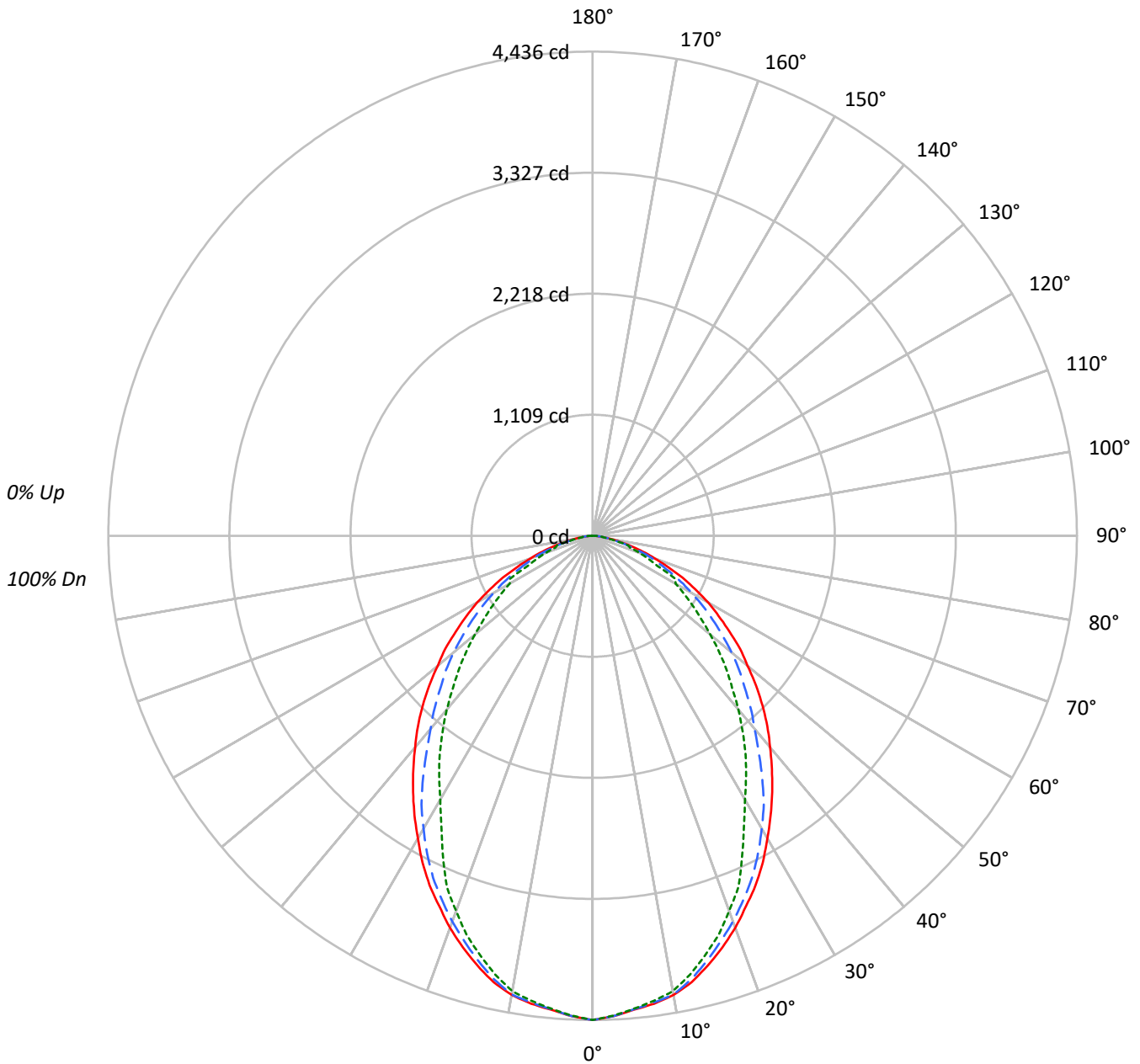
Lumens per Lamp: N/A  
Luminaire Lumens: 8709.0 lumens  
Efficiency: N/A  
Efficacy: 87.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 99.9  
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°	5969	5969	5969
5°	5888	5881	5874
10°	5837	5830	5788
15°	5679	5622	5544
20°	5471	5383	5236
25°	5246	5132	4812
30°	4972	4813	4335
35°	4709	4448	4010
40°	4441	4054	3648
45°	4187	3747	3299
50°	3875	3478	2941
55°	3585	3152	2635
60°	3285	2815	2360
65°	2890	2465	2090
70°	2381	2159	1775
75°	1893	1653	1733
80°	1272	1192	1113
85°	792	949	1108



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	413.0	4.7
10°-20°	1133.3	13.0
20°-30°	1569.0	18.0
30°-40°	1673.0	19.2
40°-50°	1526.3	17.5
50°-60°	1195.7	13.7
60°-70°	779.3	8.9
70°-80°	345.3	4.0
80°-90°	74.1	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°	3115.3	35.8
0°-40°	4788.3	55.0
0°-60°	7510.3	86.2
0°-90°	8709.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8709.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4436	4436	4436	4436	4436	
5°	4359	4354	4354	4349	4349	414
15°	4077	4077	4036	3995	3980	1146
25°	3534	3513	3457	3334	3241	1622
35°	2867	2846	2708	2503	2441	1792
45°	2200	2154	1969	1805	1734	1695
55°	1528	1482	1344	1185	1123	1371
65°	908	856	774	790	656	895
75°	364	338	318	303	333	390
85°	51	56	62	67	72	71
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4436.2	4436.2	4436.2	4436.2	4436.2
2.5°	4405.5	4405.5	4405.5	4400.3	4400.3
5°	4359.3	4354.2	4354.2	4349.1	4349.1
7.5°	4323.4	4318.3	4313.2	4308.0	4297.8
10°	4272.1	4272.1	4267.0	4241.4	4236.2
12.5°	4190.1	4184.9	4164.4	4128.5	4118.3
15°	4077.2	4077.2	4036.2	3995.2	3979.8
17.5°	3954.2	3949.0	3897.7	3856.7	3836.2
20°	3820.8	3810.6	3759.3	3692.6	3656.7
22.5°	3672.1	3672.1	3610.5	3523.4	3487.5
25°	3533.6	3513.1	3456.7	3333.6	3241.3
27.5°	3374.6	3343.9	3282.3	3107.9	3000.2
30°	3200.3	3184.9	3097.7	2872.0	2790.0
32.5°	3036.1	3010.5	2918.2	2682.3	2615.6
35°	2866.9	2846.4	2707.9	2502.8	2441.2
37.5°	2697.6	2672.0	2497.6	2333.5	2256.6
40°	2528.4	2497.6	2307.9	2159.1	2077.1
42.5°	2369.4	2328.4	2143.8	1984.8	1892.5
45°	2200.2	2154.0	1969.4	1805.3	1733.5
47.5°	2030.9	1989.9	1820.7	1651.4	1569.4
50°	1851.4	1815.5	1661.7	1492.4	1405.2
52.5°	1702.7	1646.3	1497.6	1328.3	1256.5
55°	1528.3	1482.2	1343.7	1184.7	1123.2
57.5°	1369.3	1323.2	1195.0	1046.2	995.0
60°	1220.6	1153.9	1046.2	918.0	877.0
62.5°	1056.5	1005.2	912.9	805.2	856.5
65°	907.8	856.5	774.4	789.8	656.5
67.5°	743.6	718.0	646.2	574.4	553.9
70°	605.2	574.4	548.8	471.8	451.3
72.5°	482.1	451.3	415.4	374.4	359.0
75°	364.1	338.5	318.0	302.6	333.4
77.5°	251.3	241.0	225.7	210.3	205.1
80°	164.1	159.0	153.9	148.7	143.6
82.5°	97.4	97.4	97.4	97.4	97.4
85°	51.3	56.4	61.5	66.7	71.8
87.5°	30.8	30.8	35.9	41.0	46.2
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)