

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: P546986

Luminaire Tested: **FMR-24-4-LD4-3HI-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: P546986  
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-LD4-3HI-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**

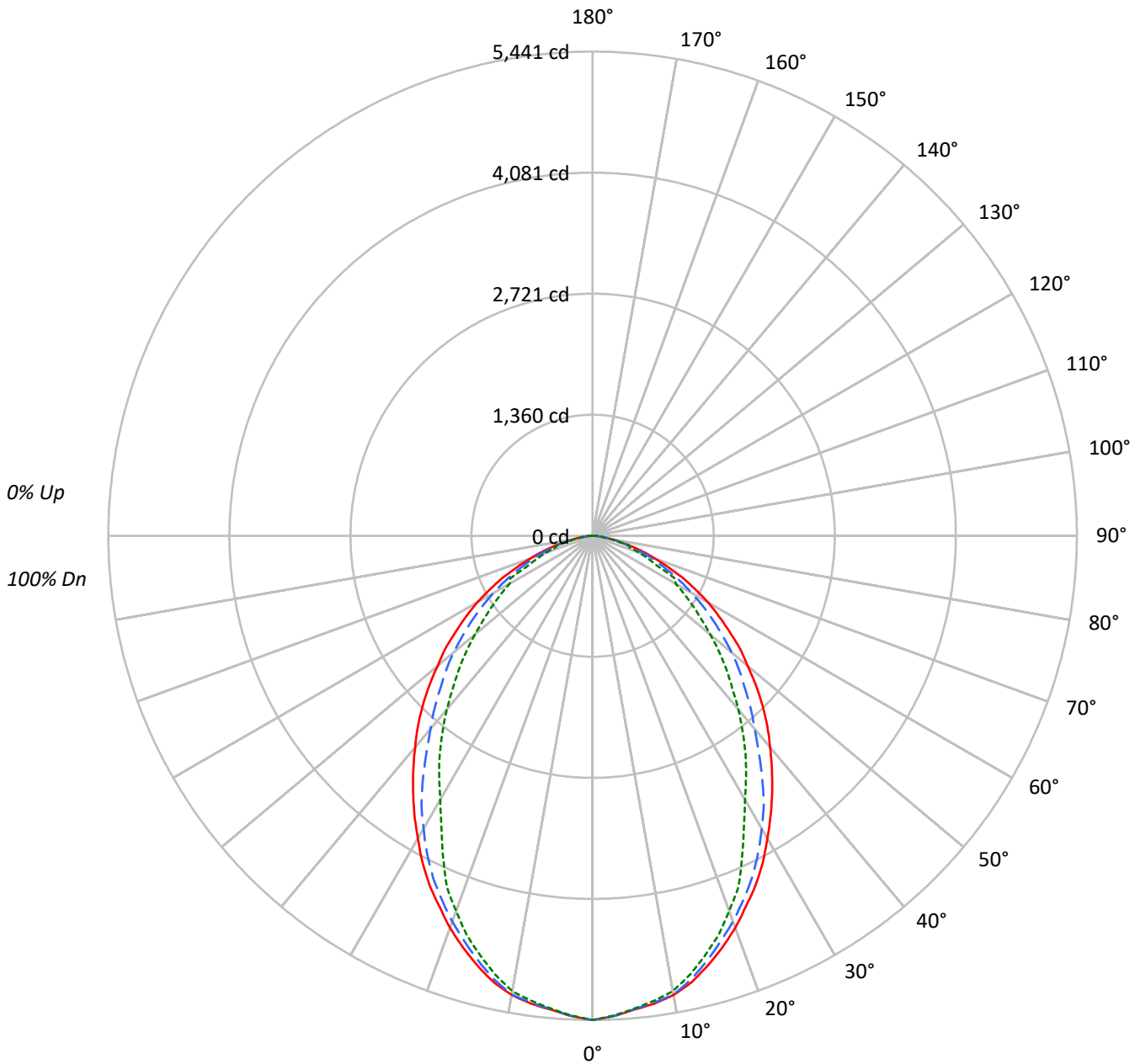
Lumens per Lamp: N/A  
Luminaire Lumens: 10682.0 lumens  
Efficiency: N/A  
Efficacy: 82.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 129.6  
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									
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°	7321	7321	7321
5°	7222	7213	7205
10°	7159	7151	7099
15°	6966	6896	6800
20°	6710	6602	6422
25°	6434	6294	5902
30°	6098	5903	5317
35°	5776	5456	4918
40°	5447	4972	4475
45°	5135	4596	4046
50°	4753	4266	3608
55°	4397	3866	3232
60°	4029	3453	2895
65°	3545	3024	2564
70°	2920	2648	2178
75°	2322	2027	2126
80°	1560	1462	1364
85°	971	1166	1360



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	506.5	4.7
10°-20°	1390.1	13.0
20°-30°	1924.5	18.0
30°-40°	2052.0	19.2
40°-50°	1872.0	17.5
50°-60°	1466.6	13.7
60°-70°	955.9	8.9
70°-80°	423.5	4.0
80°-90°	90.9	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°	3821.0	35.8
0°-40°	5873.1	55.0
0°-60°	9211.7	86.2
0°-90°	10682.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10682.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5441	5441	5441	5441	5441	
5°	5347	5341	5341	5334	5334	508
15°	5001	5001	4951	4900	4881	1406
25°	4334	4309	4240	4089	3976	1990
35°	3516	3491	3321	3070	2994	2198
45°	2699	2642	2416	2214	2126	2079
55°	1875	1818	1648	1453	1378	1681
65°	1113	1050	950	969	805	1097
75°	447	415	390	371	409	479
85°	63	69	76	82	88	87
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5441.3	5441.3	5441.3	5441.3	5441.3
2.5°	5403.5	5403.5	5403.5	5397.2	5397.2
5°	5346.9	5340.6	5340.6	5334.3	5334.3
7.5°	5302.9	5296.6	5290.3	5284.0	5271.4
10°	5240.0	5240.0	5233.7	5202.2	5195.9
12.5°	5139.3	5133.0	5107.9	5063.8	5051.3
15°	5000.9	5000.9	4950.6	4900.3	4881.4
17.5°	4850.0	4843.7	4780.8	4730.4	4705.3
20°	4686.4	4673.8	4610.9	4529.1	4485.1
22.5°	4504.0	4504.0	4428.5	4321.6	4277.5
25°	4334.1	4309.0	4239.8	4088.8	3975.6
27.5°	4139.1	4101.4	4025.9	3812.0	3679.9
30°	3925.3	3906.4	3799.5	3522.7	3422.0
32.5°	3724.0	3692.5	3579.3	3289.9	3208.1
35°	3516.4	3491.2	3321.4	3069.8	2994.3
37.5°	3308.8	3277.3	3063.5	2862.2	2767.8
40°	3101.2	3063.5	2830.7	2648.3	2547.6
42.5°	2906.2	2855.9	2629.4	2434.4	2321.2
45°	2698.6	2642.0	2415.5	2214.3	2126.2
47.5°	2491.0	2440.7	2233.1	2025.5	1924.9
50°	2270.9	2226.8	2038.1	1830.5	1723.6
52.5°	2088.4	2019.2	1836.8	1629.2	1541.2
55°	1874.6	1817.9	1648.1	1453.1	1377.6
57.5°	1679.6	1622.9	1465.7	1283.3	1220.4
60°	1497.1	1415.4	1283.3	1126.0	1075.7
62.5°	1295.8	1232.9	1119.7	987.6	1050.5
65°	1113.4	1050.5	949.9	968.7	805.2
67.5°	912.1	880.7	792.6	704.5	679.4
70°	742.3	704.5	673.1	578.7	553.6
72.5°	591.3	553.6	509.5	459.2	440.3
75°	446.6	415.2	390.0	371.1	408.9
77.5°	308.2	295.7	276.8	257.9	251.6
80°	201.3	195.0	188.7	182.4	176.1
82.5°	119.5	119.5	119.5	119.5	119.5
85°	62.9	69.2	75.5	81.8	88.1
87.5°	37.7	37.7	44.0	50.3	56.6
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)