

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: P547045

Luminaire Tested: **FMR-24-4-LD4-3HI-50-UNV-81-96-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: P547045  
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-50-UNV-81-96-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

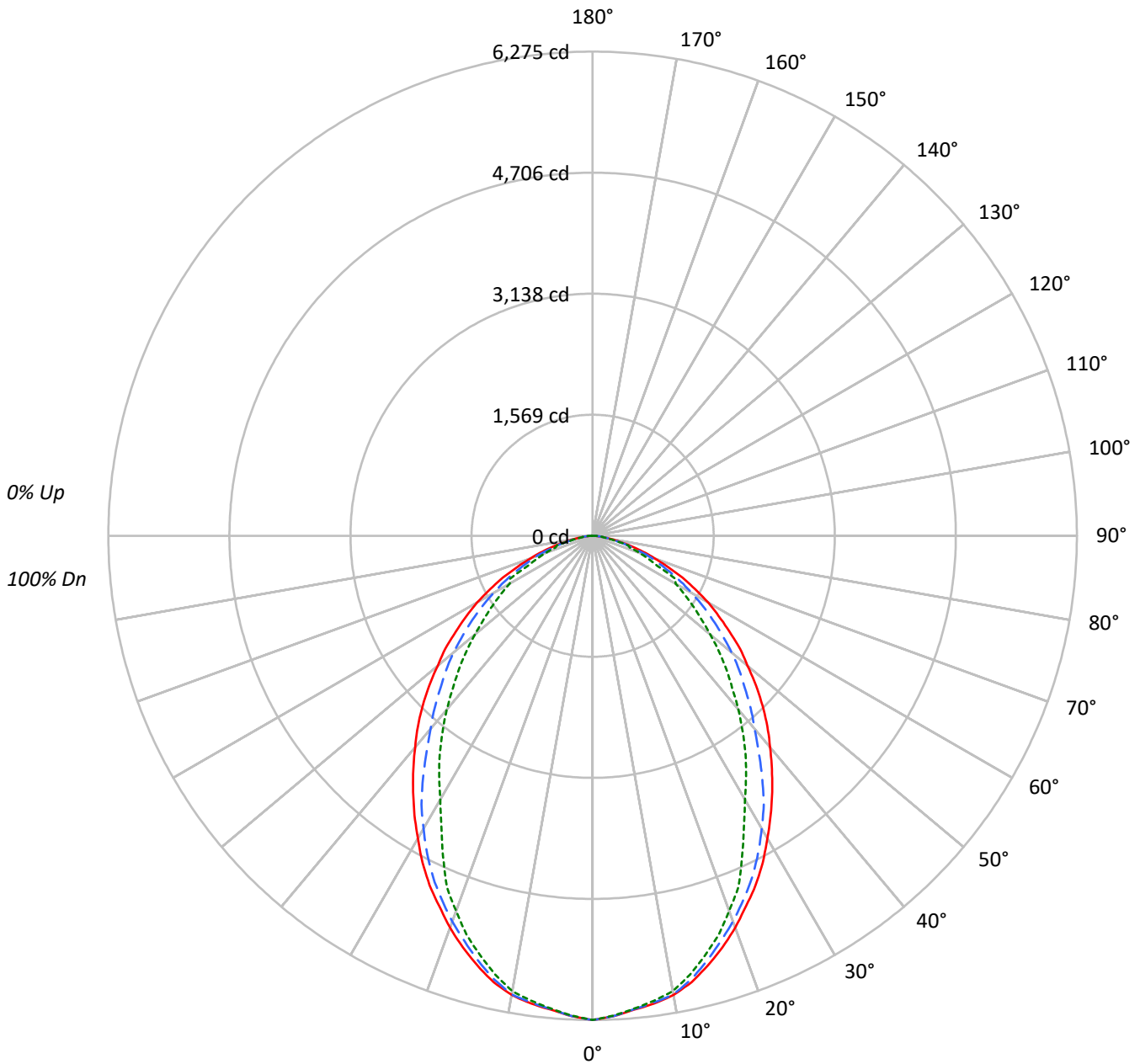
Lumens per Lamp: N/A  
Luminaire Lumens: 12319.0 lumens  
Efficiency: N/A  
Efficacy: 95.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	8443	8443	8443
5°	8328	8319	8309
10°	8256	8246	8187
15°	8034	7953	7842
20°	7739	7614	7406
25°	7420	7259	6807
30°	7033	6808	6131
35°	6661	6292	5672
40°	6282	5734	5161
45°	5922	5301	4666
50°	5482	4920	4161
55°	5071	4459	3727
60°	4646	3982	3338
65°	4088	3487	2956
70°	3367	3054	2511
75°	2678	2338	2451
80°	1798	1686	1574
85°	1119	1345	1568



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	584.1	4.7
10°-20°	1603.1	13.0
20°-30°	2219.4	18.0
30°-40°	2366.5	19.2
40°-50°	2158.9	17.5
50°-60°	1691.4	13.7
60°-70°	1102.3	8.9
70°-80°	488.4	4.0
80°-90°	104.8	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°	4406.6	35.8
0°-40°	6773.1	55.0
0°-60°	10623.4	86.2
0°-90°	12319.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12319.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6275	6275	6275	6275	6275	
5°	6166	6159	6159	6152	6152	585
15°	5767	5767	5709	5651	5630	1621
25°	4998	4969	4890	4715	4585	2295
35°	4055	4026	3830	3540	3453	2535
45°	3112	3047	2786	2554	2452	2397
55°	2162	2096	1901	1676	1589	1939
65°	1284	1212	1095	1117	929	1265
75°	515	479	450	428	472	552
85°	72	80	87	94	102	101
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6275.1	6275.1	6275.1	6275.1	6275.1
2.5°	6231.6	6231.6	6231.6	6224.4	6224.4
5°	6166.3	6159.1	6159.1	6151.8	6151.8
7.5°	6115.5	6108.3	6101.0	6093.8	6079.3
10°	6043.0	6043.0	6035.7	5999.5	5992.2
12.5°	5926.9	5919.7	5890.6	5839.9	5825.4
15°	5767.3	5767.3	5709.3	5651.2	5629.5
17.5°	5593.2	5586.0	5513.4	5455.4	5426.4
20°	5404.6	5390.1	5317.5	5223.2	5172.5
22.5°	5194.2	5194.2	5107.2	4983.8	4933.1
25°	4998.3	4969.3	4889.5	4715.4	4584.8
27.5°	4773.5	4729.9	4642.9	4396.2	4243.9
30°	4526.8	4505.0	4381.7	4062.5	3946.4
32.5°	4294.7	4258.4	4127.8	3794.1	3699.8
35°	4055.3	4026.2	3830.4	3540.2	3453.1
37.5°	3815.9	3779.6	3532.9	3300.8	3192.0
40°	3576.5	3532.9	3264.5	3054.1	2938.1
42.5°	3351.6	3293.5	3032.4	2807.5	2676.9
45°	3112.2	3046.9	2785.7	2553.6	2452.0
47.5°	2872.8	2814.7	2575.3	2335.9	2219.9
50°	2618.9	2568.1	2350.5	2111.1	1987.7
52.5°	2408.5	2328.7	2118.3	1878.9	1777.4
55°	2161.8	2096.5	1900.7	1675.8	1588.7
57.5°	1936.9	1871.7	1690.3	1479.9	1407.4
60°	1726.6	1632.3	1479.9	1298.6	1240.5
62.5°	1494.4	1421.9	1291.3	1139.0	1211.5
65°	1284.0	1211.5	1095.4	1117.2	928.6
67.5°	1051.9	1015.6	914.1	812.5	783.5
70°	856.0	812.5	776.2	667.4	638.4
72.5°	681.9	638.4	587.6	529.6	507.8
75°	515.1	478.8	449.8	428.0	471.5
77.5°	355.5	341.0	319.2	297.4	290.2
80°	232.1	224.9	217.6	210.4	203.1
82.5°	137.8	137.8	137.8	137.8	137.8
85°	72.5	79.8	87.1	94.3	101.6
87.5°	43.5	43.5	50.8	58.0	65.3
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)