

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: P547291

Luminaire Tested: **FMR-24-4-LD4-4HI-40-UNV-80-88-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: P547291  
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-LD4-4HI-40-UNV-80-88-EDD  
Description: 2X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

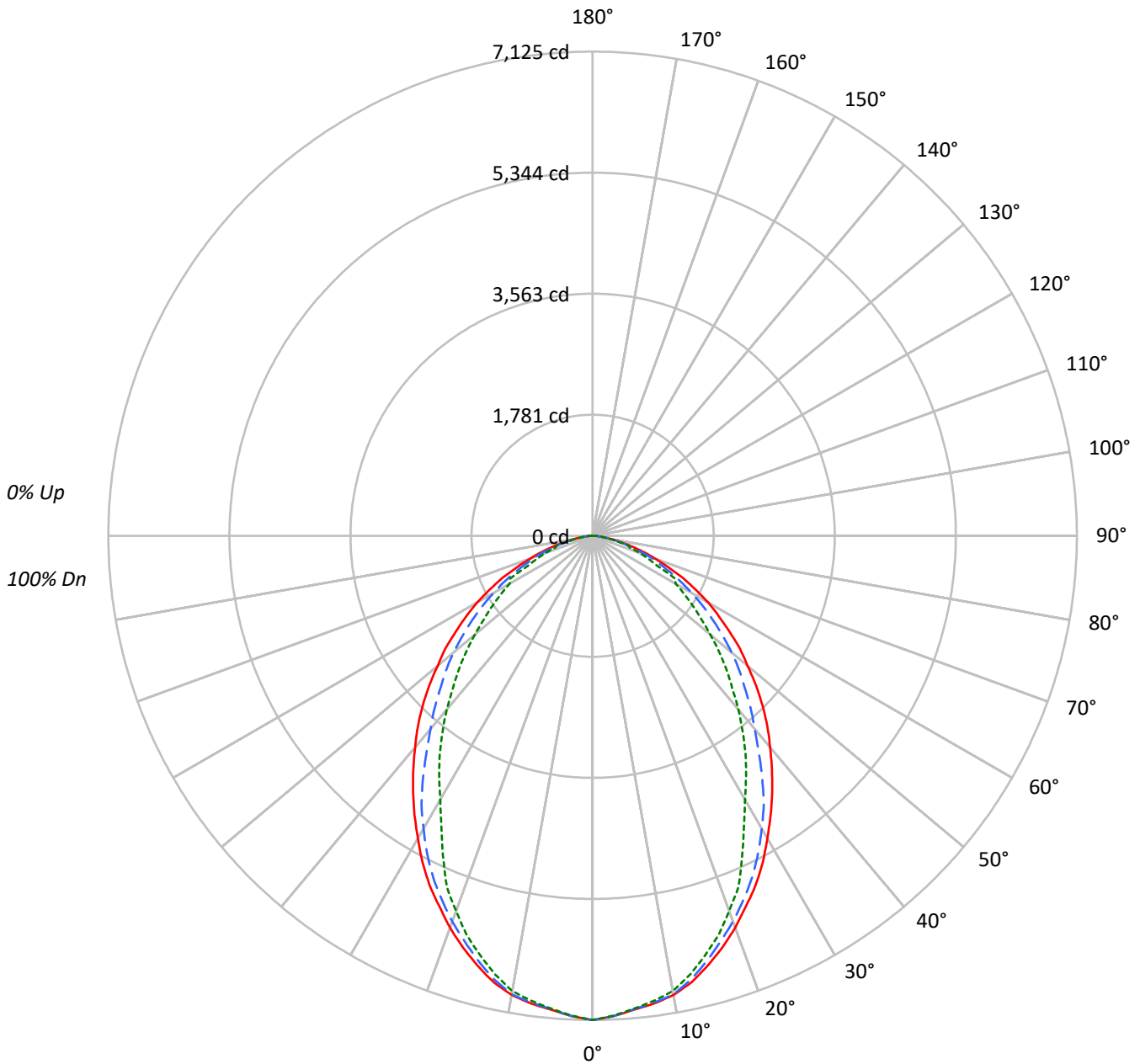
Lumens per Lamp: N/A  
Luminaire Lumens: 13987.0 lumens  
Efficiency: N/A  
Efficacy: 80.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 172.8  
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°	9586	9586	9586
5°	9456	9445	9434
10°	9374	9363	9295
15°	9121	9030	8903
20°	8786	8645	8409
25°	8425	8242	7728
30°	7985	7729	6962
35°	7563	7143	6440
40°	7132	6510	5859
45°	6724	6018	5297
50°	6224	5586	4724
55°	5758	5062	4231
60°	5275	4522	3790
65°	4642	3960	3357
70°	3823	3467	2851
75°	3040	2655	2783
80°	2042	1915	1787
85°	1272	1525	1780



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	663.2	4.7
10°-20°	1820.2	13.0
20°-30°	2519.9	18.0
30°-40°	2686.9	19.2
40°-50°	2451.3	17.5
50°-60°	1920.4	13.7
60°-70°	1251.6	8.9
70°-80°	554.5	4.0
80°-90°	119.1	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°	5003.3	35.8
0°-40°	7690.2	55.0
0°-60°	12061.8	86.2
0°-90°	13987.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13987.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7125	7125	7125	7125	7125	
5°	7001	6993	6993	6985	6985	665
15°	6548	6548	6482	6416	6392	1841
25°	5675	5642	5552	5354	5206	2605
35°	4604	4571	4349	4020	3921	2879
45°	3534	3459	3163	2899	2784	2722
55°	2455	2380	2158	1903	1804	2202
65°	1458	1376	1244	1268	1054	1437
75°	585	544	511	486	535	627
85°	82	91	99	107	115	114
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7124.8	7124.8	7124.8	7124.8	7124.8
2.5°	7075.4	7075.4	7075.4	7067.1	7067.1
5°	7001.2	6993.0	6993.0	6984.8	6984.8
7.5°	6943.6	6935.3	6927.1	6918.9	6902.4
10°	6861.2	6861.2	6853.0	6811.8	6803.6
12.5°	6729.4	6721.2	6688.2	6630.6	6614.1
15°	6548.2	6548.2	6482.3	6416.4	6391.7
17.5°	6350.5	6342.3	6259.9	6194.0	6161.1
20°	6136.4	6119.9	6037.5	5930.5	5872.8
22.5°	5897.5	5897.5	5798.7	5658.6	5601.0
25°	5675.1	5642.2	5551.6	5353.9	5205.6
27.5°	5419.8	5370.4	5271.5	4991.5	4818.5
30°	5139.7	5115.0	4975.0	4612.6	4480.8
32.5°	4876.2	4835.0	4686.7	4307.8	4200.7
35°	4604.3	4571.4	4349.0	4019.5	3920.7
37.5°	4332.5	4291.3	4011.3	3747.7	3624.2
40°	4060.7	4011.3	3706.5	3467.7	3335.9
42.5°	3805.4	3739.5	3443.0	3187.6	3039.4
45°	3533.6	3459.4	3162.9	2899.3	2784.0
47.5°	3261.8	3195.9	2924.0	2652.2	2520.4
50°	2973.5	2915.8	2668.7	2396.9	2256.9
52.5°	2734.6	2644.0	2405.1	2133.3	2018.0
55°	2454.6	2380.4	2158.0	1902.7	1803.8
57.5°	2199.2	2125.1	1919.2	1680.3	1597.9
60°	1960.3	1853.3	1680.3	1474.4	1408.5
62.5°	1696.8	1614.4	1466.1	1293.2	1375.5
65°	1457.9	1375.5	1243.7	1268.5	1054.3
67.5°	1194.3	1153.1	1037.8	922.5	889.6
70°	971.9	922.5	881.3	757.8	724.8
72.5°	774.3	724.8	667.2	601.3	576.6
75°	584.8	543.6	510.7	486.0	535.4
77.5°	403.6	387.1	362.4	337.7	329.5
80°	263.6	255.3	247.1	238.9	230.6
82.5°	156.5	156.5	156.5	156.5	156.5
85°	82.4	90.6	98.8	107.1	115.3
87.5°	49.4	49.4	57.7	65.9	74.1
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)