

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: P546987

Luminaire Tested: **FMR-24-4-LD4-3HI-35-UNV-82-88-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: P546987  
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-82-88-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

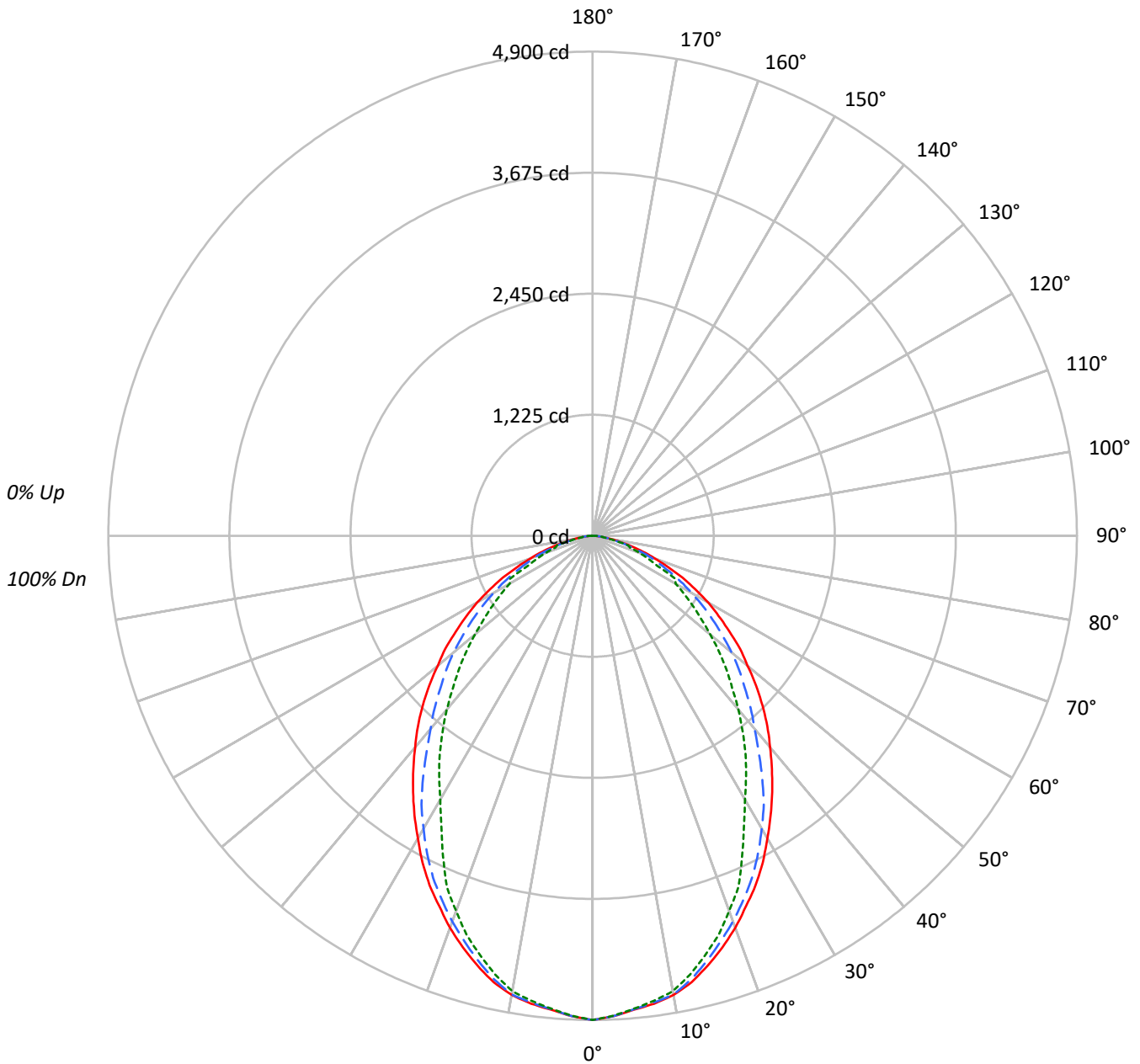
Lumens per Lamp: N/A  
Luminaire Lumens: 9620.0 lumens  
Efficiency: N/A  
Efficacy: 74.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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				20				
RC	80				70				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°	6593	6593	6593
5°	6504	6496	6488
10°	6447	6440	6393
15°	6273	6210	6124
20°	6043	5946	5783
25°	5795	5669	5315
30°	5492	5316	4788
35°	5202	4913	4429
40°	4905	4478	4030
45°	4624	4139	3643
50°	4281	3842	3249
55°	3960	3482	2910
60°	3628	3110	2607
65°	3192	2723	2309
70°	2630	2385	1961
75°	2091	1826	1914
80°	1405	1317	1229
85°	875	1050	1224



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	456.2	4.7
10°-20°	1251.9	13.0
20°-30°	1733.1	18.0
30°-40°	1848.0	19.2
40°-50°	1685.9	17.5
50°-60°	1320.8	13.7
60°-70°	860.8	8.9
70°-80°	381.4	4.0
80°-90°	81.9	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°	3441.1	35.8
0°-40°	5289.2	55.0
0°-60°	8295.9	86.2
0°-90°	9620.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9620.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4900	4900	4900	4900	4900	
5°	4815	4810	4810	4804	4804	457
15°	4504	4504	4458	4413	4396	1266
25°	3903	3881	3818	3682	3580	1792
35°	3167	3144	2991	2765	2697	1980
45°	2430	2379	2175	1994	1915	1872
55°	1688	1637	1484	1309	1241	1514
65°	1003	946	855	872	725	988
75°	402	374	351	334	368	431
85°	57	62	68	74	79	79
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4900.3	4900.3	4900.3	4900.3	4900.3
2.5°	4866.3	4866.3	4866.3	4860.6	4860.6
5°	4815.3	4809.7	4809.7	4804.0	4804.0
7.5°	4775.7	4770.0	4764.3	4758.7	4747.3
10°	4719.0	4719.0	4713.4	4685.0	4679.4
12.5°	4628.4	4622.7	4600.0	4560.4	4549.1
15°	4503.7	4503.7	4458.4	4413.1	4396.1
17.5°	4367.8	4362.1	4305.5	4260.1	4237.5
20°	4220.5	4209.2	4152.5	4078.9	4039.2
22.5°	4056.2	4056.2	3988.2	3891.9	3852.3
25°	3903.2	3880.6	3818.3	3682.3	3580.3
27.5°	3727.6	3693.6	3625.7	3433.0	3314.1
30°	3535.0	3518.0	3421.7	3172.4	3081.8
32.5°	3353.7	3325.4	3223.4	2962.8	2889.2
35°	3166.8	3144.1	2991.2	2764.6	2696.6
37.5°	2979.8	2951.5	2758.9	2577.6	2492.6
40°	2792.9	2758.9	2549.3	2385.0	2294.4
42.5°	2617.3	2571.9	2368.0	2192.4	2090.4
45°	2430.3	2379.3	2175.4	1994.1	1914.8
47.5°	2243.4	2198.1	2011.1	1824.2	1733.5
50°	2045.1	2005.4	1835.5	1648.5	1552.2
52.5°	1880.8	1818.5	1654.2	1467.3	1387.9
55°	1688.2	1637.2	1484.3	1308.6	1240.7
57.5°	1512.6	1461.6	1320.0	1155.7	1099.0
60°	1348.3	1274.6	1155.7	1014.1	968.7
62.5°	1167.0	1110.4	1008.4	889.4	946.1
65°	1002.7	946.1	855.4	872.4	725.1
67.5°	821.4	793.1	713.8	634.5	611.8
70°	668.5	634.5	606.2	521.2	498.5
72.5°	532.5	498.5	458.9	413.6	396.6
75°	402.2	373.9	351.2	334.2	368.2
77.5°	277.6	266.3	249.3	232.3	226.6
80°	181.3	175.6	170.0	164.3	158.6
82.5°	107.6	107.6	107.6	107.6	107.6
85°	56.7	62.3	68.0	73.6	79.3
87.5°	34.0	34.0	39.7	45.3	51.0
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)