

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: P546995

Luminaire Tested: **FMR-24-4-LD4-3HI-35-UNV-93-88-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: P546995  
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-93-88-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS 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**

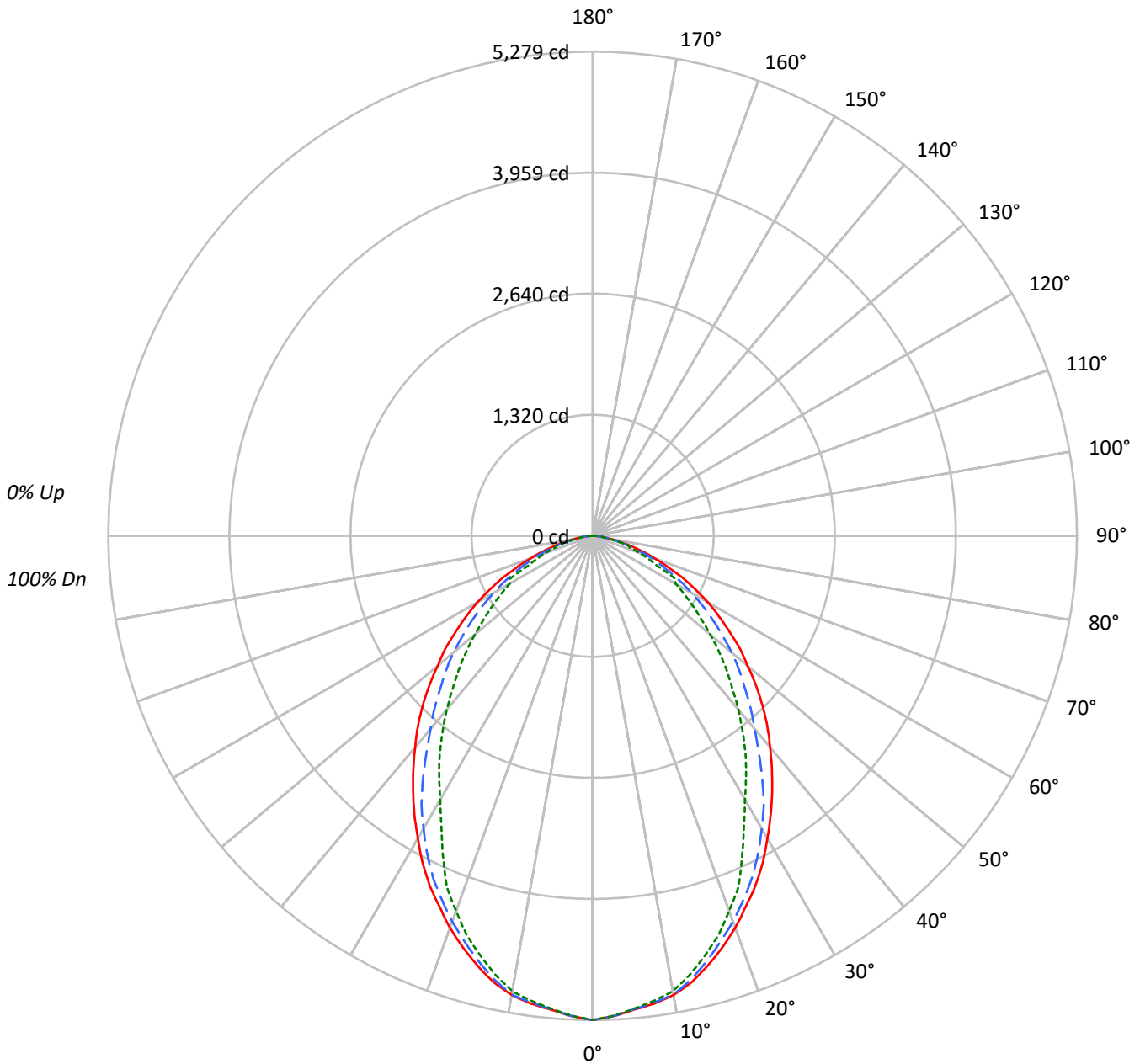
Lumens per Lamp: N/A  
Luminaire Lumens: 10364.0 lumens  
Efficiency: N/A  
Efficacy: 80.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	7103	7103	7103
5°	7007	6998	6990
10°	6946	6938	6888
15°	6759	6691	6597
20°	6510	6406	6231
25°	6243	6107	5726
30°	5917	5727	5158
35°	5604	5293	4772
40°	5285	4824	4341
45°	4982	4459	3925
50°	4612	4139	3500
55°	4267	3751	3135
60°	3909	3351	2809
65°	3439	2934	2487
70°	2833	2569	2113
75°	2253	1967	2062
80°	1513	1419	1324
85°	942	1130	1318



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	491.4	4.7
10°-20°	1348.7	13.0
20°-30°	1867.2	18.0
30°-40°	1990.9	19.2
40°-50°	1816.3	17.5
50°-60°	1422.9	13.7
60°-70°	927.4	8.9
70°-80°	410.9	4.0
80°-90°	88.2	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°	3707.3	35.8
0°-40°	5698.2	55.0
0°-60°	8937.5	86.2
0°-90°	10364.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10364.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5279	5279	5279	5279	5279	
5°	5188	5182	5182	5176	5176	492
15°	4852	4852	4803	4754	4736	1364
25°	4205	4181	4114	3967	3857	1931
35°	3412	3387	3222	2978	2905	2133
45°	2618	2563	2344	2148	2063	2017
55°	1819	1764	1599	1410	1337	1631
65°	1080	1019	922	940	781	1065
75°	433	403	378	360	397	464
85°	61	67	73	79	85	85
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5279.3	5279.3	5279.3	5279.3	5279.3
2.5°	5242.7	5242.7	5242.7	5236.6	5236.6
5°	5187.7	5181.6	5181.6	5175.5	5175.5
7.5°	5145.0	5138.9	5132.8	5126.7	5114.5
10°	5084.0	5084.0	5077.9	5047.4	5041.3
12.5°	4986.3	4980.2	4955.8	4913.1	4900.9
15°	4852.1	4852.1	4803.2	4754.4	4736.1
17.5°	4705.6	4699.5	4638.4	4589.6	4565.2
20°	4546.9	4534.7	4473.7	4394.3	4351.6
22.5°	4369.9	4369.9	4296.7	4192.9	4150.2
25°	4205.1	4180.7	4113.6	3967.1	3857.2
27.5°	4015.9	3979.3	3906.1	3698.5	3570.4
30°	3808.4	3790.1	3686.3	3417.8	3320.2
32.5°	3613.1	3582.6	3472.7	3192.0	3112.6
35°	3411.7	3387.3	3222.5	2978.4	2905.1
37.5°	3210.3	3179.8	2972.3	2777.0	2685.4
40°	3008.9	2972.3	2746.4	2569.5	2471.8
42.5°	2819.7	2770.9	2551.1	2361.9	2252.1
45°	2618.3	2563.4	2343.6	2148.3	2062.9
47.5°	2416.9	2368.0	2166.6	1965.2	1867.6
50°	2203.3	2160.5	1977.4	1776.0	1672.3
52.5°	2026.3	1959.1	1782.1	1580.7	1495.3
55°	1818.8	1763.8	1599.0	1409.8	1336.6
57.5°	1629.6	1574.6	1422.0	1245.1	1184.0
60°	1452.6	1373.2	1245.1	1092.5	1043.7
62.5°	1257.3	1196.2	1086.4	958.2	1019.2
65°	1080.3	1019.2	921.6	939.9	781.2
67.5°	885.0	854.5	769.0	683.6	659.1
70°	720.2	683.6	653.0	561.5	537.1
72.5°	573.7	537.1	494.4	445.5	427.2
75°	433.3	402.8	378.4	360.1	396.7
77.5°	299.1	286.9	268.5	250.2	244.1
80°	195.3	189.2	183.1	177.0	170.9
82.5°	116.0	116.0	116.0	116.0	116.0
85°	61.0	67.1	73.2	79.3	85.4
87.5°	36.6	36.6	42.7	48.8	54.9
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)