

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: P547365

Luminaire Tested: **FMR-24-4-LD4-4LO-35-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: P547365  
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-LD4-4LO-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

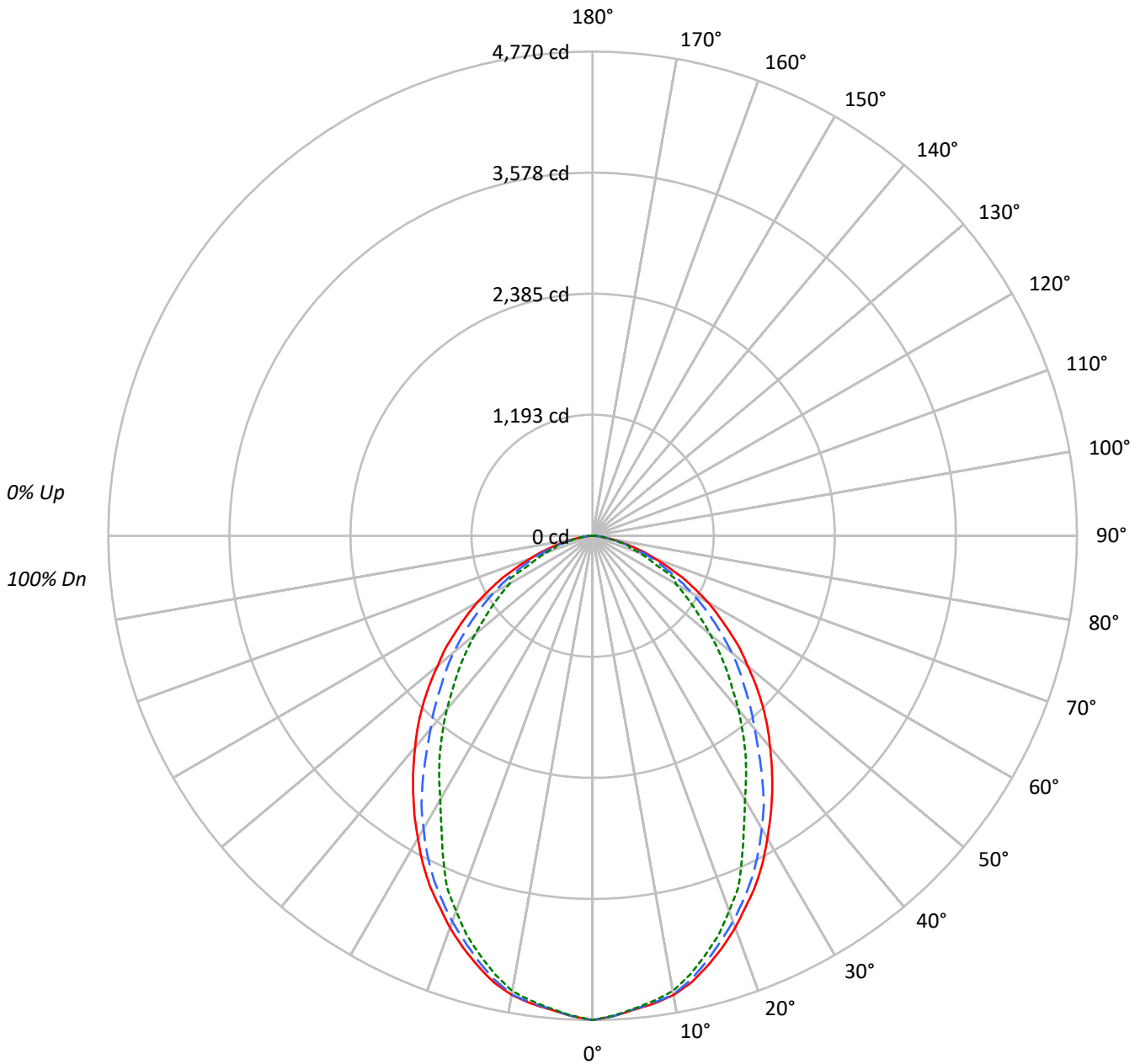
Lumens per Lamp: N/A  
Luminaire Lumens: 9364.0 lumens  
Efficiency: N/A  
Efficacy: 100.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 93.6  
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°	6418	6418	6418
5°	6331	6323	6316
10°	6276	6268	6223
15°	6107	6045	5961
20°	5882	5787	5630
25°	5641	5518	5174
30°	5346	5175	4661
35°	5063	4782	4311
40°	4775	4358	3923
45°	4501	4029	3546
50°	4167	3740	3163
55°	3855	3389	2833
60°	3532	3027	2538
65°	3107	2651	2247
70°	2560	2321	1909
75°	2035	1777	1863
80°	1368	1282	1196
85°	851	1022	1192



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	444.0	4.7
10°-20°	1218.6	13.0
20°-30°	1687.0	18.0
30°-40°	1798.8	19.2
40°-50°	1641.1	17.5
50°-60°	1285.6	13.7
60°-70°	837.9	8.9
70°-80°	371.2	4.0
80°-90°	79.7	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°	3349.6	35.8
0°-40°	5148.4	55.0
0°-60°	8075.1	86.2
0°-90°	9364.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9364.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4770	4770	4770	4770	4770	
5°	4687	4682	4682	4676	4676	445
15°	4384	4384	4340	4296	4279	1232
25°	3799	3777	3717	3584	3485	1744
35°	3082	3060	2912	2691	2625	1927
45°	2366	2316	2118	1941	1864	1822
55°	1643	1594	1445	1274	1208	1474
65°	976	921	833	849	706	962
75°	392	364	342	325	358	420
85°	55	61	66	72	77	76
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4769.9	4769.9	4769.9	4769.9	4769.9
2.5°	4736.8	4736.8	4736.8	4731.3	4731.3
5°	4687.2	4681.7	4681.7	4676.2	4676.2
7.5°	4648.6	4643.1	4637.6	4632.0	4621.0
10°	4593.4	4593.4	4587.9	4560.4	4554.8
12.5°	4505.2	4499.7	4477.6	4439.0	4428.0
15°	4383.9	4383.9	4339.8	4295.7	4279.1
17.5°	4251.5	4246.0	4190.9	4146.8	4124.7
20°	4108.2	4097.1	4042.0	3970.3	3931.7
22.5°	3948.3	3948.3	3882.1	3788.3	3749.7
25°	3799.4	3777.3	3716.7	3584.3	3485.1
27.5°	3628.4	3595.3	3529.2	3341.7	3225.9
30°	3440.9	3424.4	3330.7	3088.0	2999.8
32.5°	3264.5	3236.9	3137.7	2884.0	2812.3
35°	3082.5	3060.5	2911.6	2691.0	2624.8
37.5°	2900.5	2873.0	2685.5	2509.0	2426.3
40°	2718.6	2685.5	2481.4	2321.5	2233.3
42.5°	2547.6	2503.5	2305.0	2134.0	2034.8
45°	2365.6	2316.0	2117.5	1941.0	1863.8
47.5°	2183.7	2139.6	1957.6	1775.6	1687.4
50°	1990.7	1952.1	1786.6	1604.7	1510.9
52.5°	1830.8	1770.1	1610.2	1428.2	1351.0
55°	1643.3	1593.6	1444.8	1273.8	1207.6
57.5°	1472.3	1422.7	1284.8	1124.9	1069.8
60°	1312.4	1240.7	1124.9	987.1	943.0
62.5°	1136.0	1080.8	981.6	865.7	920.9
65°	976.0	920.9	832.7	849.2	705.8
67.5°	799.6	772.0	694.8	617.6	595.5
70°	650.7	617.6	590.0	507.3	485.3
72.5°	518.3	485.3	446.7	402.5	386.0
75°	391.5	363.9	341.9	325.3	358.4
77.5°	270.2	259.2	242.6	226.1	220.6
80°	176.5	170.9	165.4	159.9	154.4
82.5°	104.8	104.8	104.8	104.8	104.8
85°	55.1	60.7	66.2	71.7	77.2
87.5°	33.1	33.1	38.6	44.1	49.6
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)