

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: P547505

Luminaire Tested: **FMR-24-4-LD4-4STD-40-UNV-93-86-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: P547505  
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-LD4-4STD-40-UNV-93-86-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

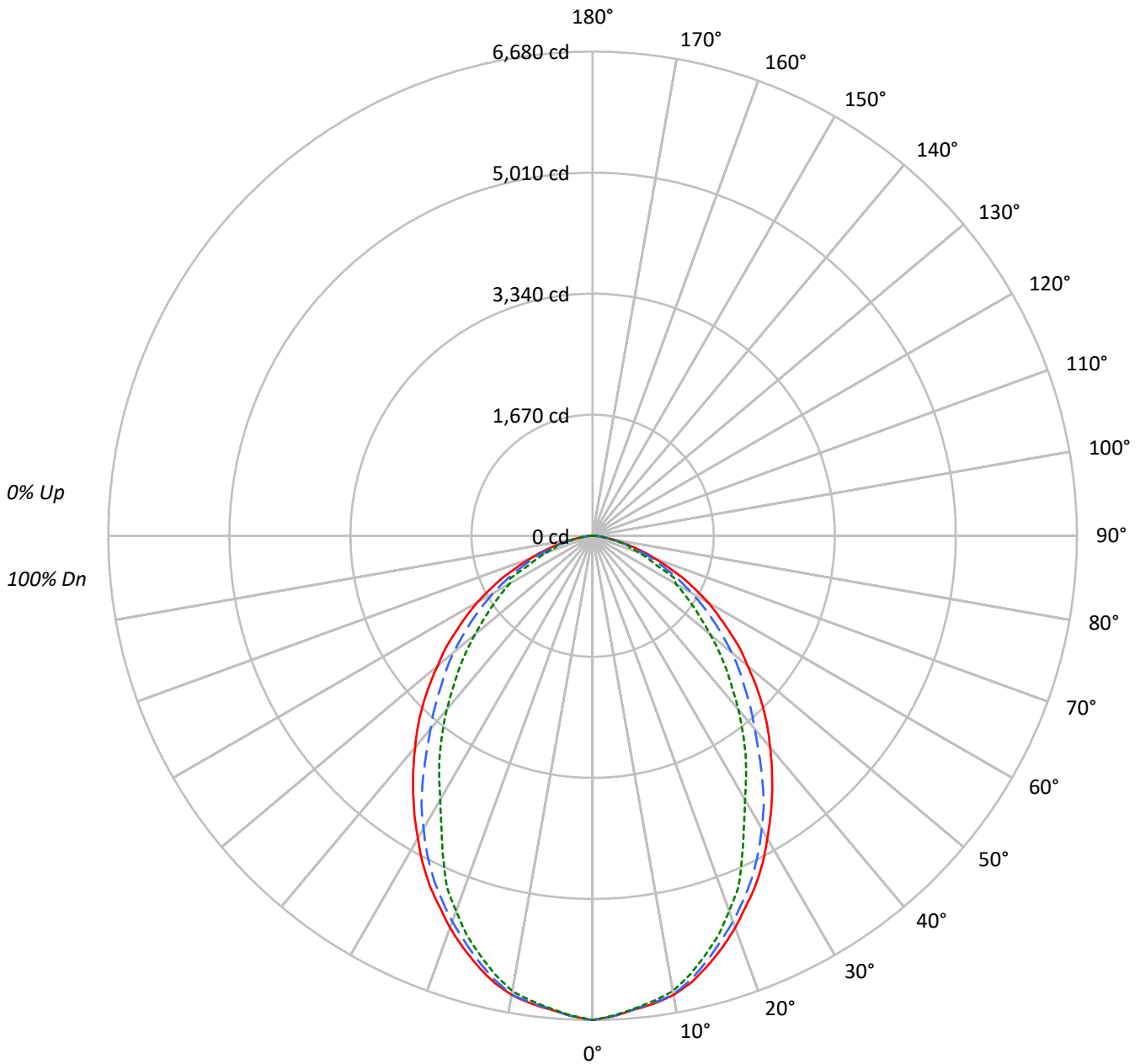
Lumens per Lamp: N/A  
Luminaire Lumens: 13114.0 lumens  
Efficiency: N/A  
Efficacy: 98.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 133.2  
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°	8988	8988	8988
5°	8866	8855	8845
10°	8789	8778	8715
15°	8552	8466	8348
20°	8238	8105	7884
25°	7899	7727	7246
30°	7487	7247	6527
35°	7091	6698	6038
40°	6687	6104	5494
45°	6304	5643	4967
50°	5836	5237	4429
55°	5399	4746	3967
60°	4946	4239	3554
65°	4352	3713	3147
70°	3585	3251	2674
75°	2850	2489	2610
80°	1915	1795	1675
85°	1192	1431	1669



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	621.8	4.7
10°-20°	1706.5	13.0
20°-30°	2362.6	18.0
30°-40°	2519.2	19.2
40°-50°	2298.3	17.5
50°-60°	1800.5	13.7
60°-70°	1173.5	8.9
70°-80°	519.9	4.0
80°-90°	111.6	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°	4691.0	35.8
0°-40°	7210.2	55.0
0°-60°	11309.0	86.2
0°-90°	13114.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13114.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6680	6680	6680	6680	6680	
5°	6564	6556	6556	6549	6549	623
15°	6140	6140	6078	6016	5993	1726
25°	5321	5290	5205	5020	4881	2443
35°	4317	4286	4078	3769	3676	2699
45°	3313	3244	2966	2718	2610	2552
55°	2301	2232	2023	1784	1691	2064
65°	1367	1290	1166	1189	988	1347
75°	548	510	479	456	502	588
85°	77	85	93	100	108	107
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6680.1	6680.1	6680.1	6680.1	6680.1
2.5°	6633.8	6633.8	6633.8	6626.0	6626.0
5°	6564.3	6556.5	6556.5	6548.8	6548.8
7.5°	6510.2	6502.5	6494.8	6487.0	6471.6
10°	6433.0	6433.0	6425.2	6386.6	6378.9
12.5°	6309.4	6301.7	6270.8	6216.7	6201.3
15°	6139.5	6139.5	6077.7	6015.9	5992.8
17.5°	5954.2	5946.4	5869.2	5807.4	5776.5
20°	5753.4	5737.9	5660.7	5560.3	5506.3
22.5°	5529.4	5529.4	5436.7	5305.5	5251.4
25°	5320.9	5290.0	5205.1	5019.7	4880.7
27.5°	5081.5	5035.2	4942.5	4679.9	4517.8
30°	4818.9	4795.8	4664.5	4324.7	4201.1
32.5°	4571.8	4533.2	4394.2	4038.9	3938.6
35°	4317.0	4286.1	4077.6	3768.7	3676.0
37.5°	4062.1	4023.5	3760.9	3513.8	3398.0
40°	3807.3	3760.9	3475.2	3251.2	3127.7
42.5°	3567.9	3506.1	3228.1	2988.7	2849.7
45°	3313.0	3243.5	2965.5	2718.4	2610.3
47.5°	3058.2	2996.4	2741.5	2486.7	2363.1
50°	2787.9	2733.8	2502.1	2247.3	2116.0
52.5°	2563.9	2479.0	2255.0	2000.2	1892.1
55°	2301.4	2231.8	2023.3	1783.9	1691.3
57.5°	2061.9	1992.4	1799.4	1575.4	1498.2
60°	1838.0	1737.6	1575.4	1382.4	1320.6
62.5°	1590.9	1513.6	1374.6	1212.5	1289.7
65°	1366.9	1289.7	1166.1	1189.3	988.5
67.5°	1119.8	1081.2	973.1	864.9	834.0
70°	911.3	864.9	826.3	710.5	679.6
72.5°	725.9	679.6	625.5	563.8	540.6
75°	548.3	509.7	478.8	455.6	502.0
77.5°	378.4	363.0	339.8	316.6	308.9
80°	247.1	239.4	231.7	224.0	216.2
82.5°	146.7	146.7	146.7	146.7	146.7
85°	77.2	84.9	92.7	100.4	108.1
87.5°	46.3	46.3	54.1	61.8	69.5
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)