

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: P547432

Luminaire Tested: **FMR-24-4-LD4-4LO-50-UNV-82-85-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: P547432  
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-50-UNV-82-85-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

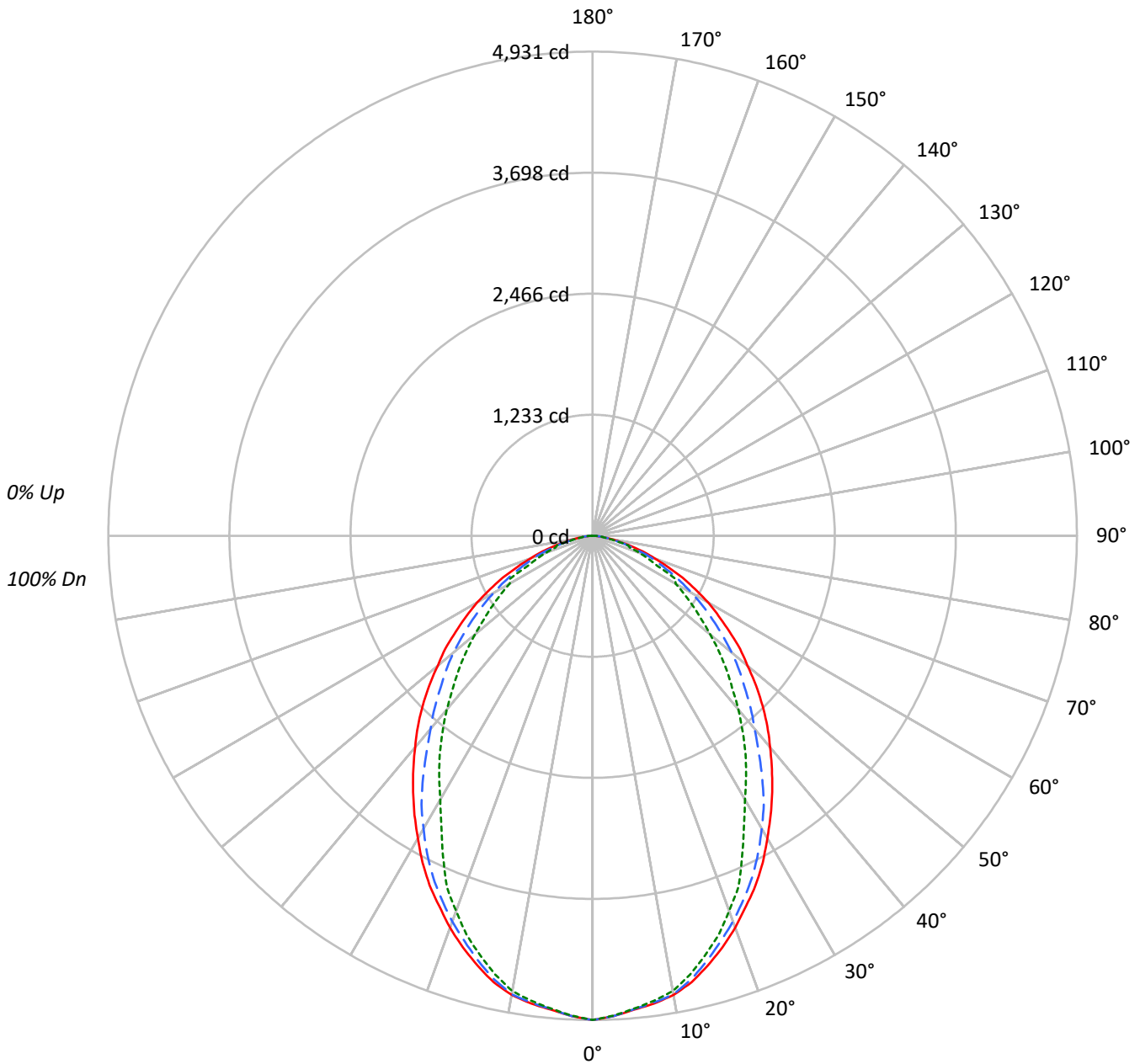
Lumens per Lamp: N/A  
Luminaire Lumens: 9680.0 lumens  
Efficiency: N/A  
Efficacy: 103.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 93.6  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	6634	6634	6634
5°	6544	6537	6529
10°	6487	6480	6433
15°	6313	6249	6162
20°	6081	5983	5820
25°	5831	5704	5349
30°	5526	5349	4818
35°	5234	4944	4457
40°	4936	4506	4055
45°	4653	4165	3666
50°	4308	3866	3269
55°	3985	3503	2928
60°	3651	3129	2623
65°	3212	2741	2323
70°	2646	2399	1973
75°	2104	1837	1926
80°	1413	1325	1237
85°	880	1056	1232



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	459.0	4.7
10°-20°	1259.7	13.0
20°-30°	1743.9	18.0
30°-40°	1859.5	19.2
40°-50°	1696.5	17.5
50°-60°	1329.0	13.7
60°-70°	866.2	8.9
70°-80°	383.7	4.0
80°-90°	82.4	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°	3462.6	35.8
0°-40°	5322.2	55.0
0°-60°	8347.6	86.2
0°-90°	9680.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9680.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4931	4931	4931	4931	4931	
5°	4845	4840	4840	4834	4834	460
15°	4532	4532	4486	4441	4424	1274
25°	3928	3905	3842	3705	3603	1803
35°	3186	3164	3010	2782	2713	1992
45°	2446	2394	2189	2006	1927	1884
55°	1699	1647	1494	1317	1248	1524
65°	1009	952	861	878	730	994
75°	405	376	353	336	370	434
85°	57	63	68	74	80	79
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4930.9	4930.9	4930.9	4930.9	4930.9
2.5°	4896.7	4896.7	4896.7	4891.0	4891.0
5°	4845.4	4839.7	4839.7	4834.0	4834.0
7.5°	4805.5	4799.8	4794.1	4788.4	4777.0
10°	4748.4	4748.4	4742.7	4714.2	4708.5
12.5°	4657.2	4651.5	4628.7	4588.8	4577.4
15°	4531.8	4531.8	4486.2	4440.6	4423.5
17.5°	4395.0	4389.3	4332.3	4286.7	4263.9
20°	4246.8	4235.4	4178.4	4104.3	4064.4
22.5°	4081.5	4081.5	4013.1	3916.2	3876.3
25°	3927.6	3904.8	3842.1	3705.3	3602.7
27.5°	3750.9	3716.7	3648.3	3454.5	3334.7
30°	3557.1	3540.0	3443.1	3192.2	3101.0
32.5°	3374.6	3346.1	3243.5	2981.3	2907.2
35°	3186.5	3163.7	3009.8	2781.8	2713.4
37.5°	2998.4	2969.9	2776.1	2593.7	2508.2
40°	2810.3	2776.1	2565.2	2399.9	2308.7
42.5°	2633.6	2588.0	2382.8	2206.1	2103.5
45°	2445.5	2394.2	2189.0	2006.5	1926.7
47.5°	2257.4	2211.8	2023.6	1835.5	1744.3
50°	2057.9	2017.9	1846.9	1658.8	1561.9
52.5°	1892.5	1829.8	1664.5	1476.4	1396.6
55°	1698.7	1647.4	1493.5	1316.8	1248.4
57.5°	1522.0	1470.7	1328.2	1162.9	1105.9
60°	1356.7	1282.6	1162.9	1020.4	974.8
62.5°	1174.3	1117.3	1014.7	895.0	952.0
65°	1009.0	952.0	860.8	877.9	729.7
67.5°	826.6	798.1	718.3	638.4	615.6
70°	672.6	638.4	609.9	524.4	501.6
72.5°	535.8	501.6	461.7	416.1	399.0
75°	404.7	376.2	353.4	336.3	370.5
77.5°	279.3	267.9	250.8	233.7	228.0
80°	182.4	176.7	171.0	165.3	159.6
82.5°	108.3	108.3	108.3	108.3	108.3
85°	57.0	62.7	68.4	74.1	79.8
87.5°	34.2	34.2	39.9	45.6	51.3
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)