

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: P547203

Luminaire Tested: **FMR-24-4-LD4-3STD-40-UNV-81-88-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: P547203  
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-LD4-3STD-40-UNV-81-88-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

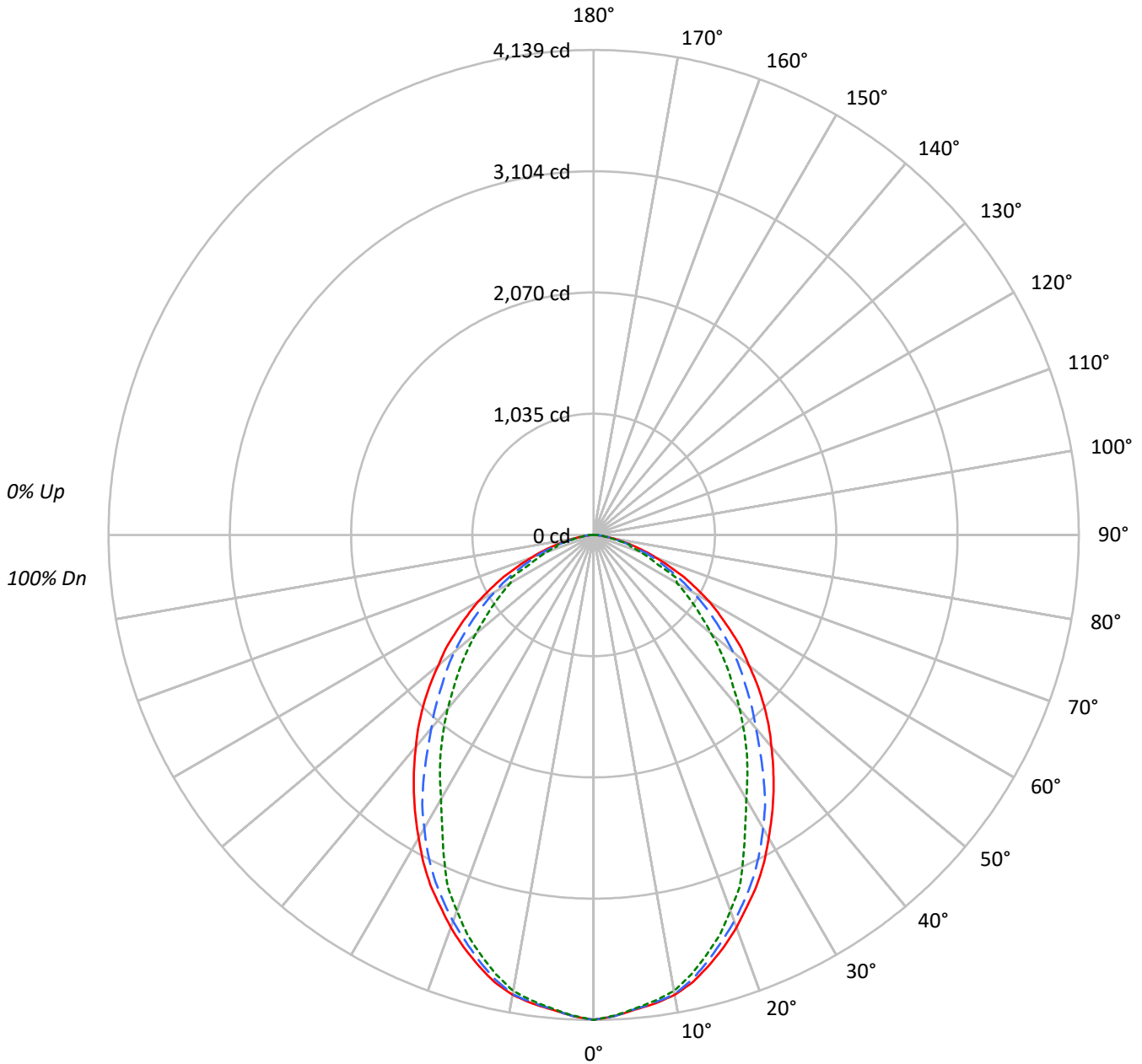
Lumens per Lamp: N/A  
Luminaire Lumens: 8125.0 lumens  
Efficiency: N/A  
Efficacy: 81.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 99.9  
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°	5569	5569	5569
5°	5493	5487	5480
10°	5445	5439	5400
15°	5299	5245	5172
20°	5104	5022	4885
25°	4894	4788	4489
30°	4639	4490	4044
35°	4393	4150	3741
40°	4143	3782	3404
45°	3906	3496	3077
50°	3616	3245	2744
55°	3345	2941	2458
60°	3064	2627	2202
65°	2696	2300	1950
70°	2221	2014	1657
75°	1766	1542	1617
80°	1186	1112	1038
85°	738	886	1034



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	385.3	4.7
10°-20°	1057.3	13.0
20°-30°	1463.8	18.0
30°-40°	1560.8	19.2
40°-50°	1423.9	17.5
50°-60°	1115.5	13.7
60°-70°	727.1	8.9
70°-80°	322.1	4.0
80°-90°	69.2	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°	2906.4	35.8
0°-40°	4467.2	55.0
0°-60°	7006.7	86.2
0°-90°	8125.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8125.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4139	4139	4139	4139	4139	
5°	4067	4062	4062	4057	4057	386
15°	3804	3804	3766	3727	3713	1069
25°	3297	3278	3225	3110	3024	1513
35°	2675	2656	2526	2335	2278	1672
45°	2053	2010	1837	1684	1617	1581
55°	1426	1383	1254	1105	1048	1279
65°	847	799	722	737	612	835
75°	340	316	297	282	311	364
85°	48	53	57	62	67	66
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4138.8	4138.8	4138.8	4138.8	4138.8
2.5°	4110.1	4110.1	4110.1	4105.3	4105.3
5°	4067.0	4062.2	4062.2	4057.4	4057.4
7.5°	4033.5	4028.7	4023.9	4019.1	4009.6
10°	3985.7	3985.7	3980.9	3956.9	3952.2
12.5°	3909.1	3904.3	3885.2	3851.7	3842.1
15°	3803.8	3803.8	3765.6	3727.3	3712.9
17.5°	3689.0	3684.2	3636.4	3598.1	3579.0
20°	3564.6	3555.0	3507.2	3445.0	3411.5
22.5°	3425.8	3425.8	3368.4	3287.1	3253.6
25°	3296.7	3277.5	3224.9	3110.1	3023.9
27.5°	3148.3	3119.6	3062.2	2899.5	2799.1
30°	2985.7	2971.3	2890.0	2679.4	2602.9
32.5°	2832.5	2808.6	2722.5	2502.4	2440.2
35°	2674.6	2655.5	2526.3	2334.9	2277.5
37.5°	2516.8	2492.8	2330.1	2177.0	2105.3
40°	2358.9	2330.1	2153.1	2014.4	1937.8
42.5°	2210.5	2172.3	2000.0	1851.7	1765.6
45°	2052.6	2009.6	1837.3	1684.2	1617.2
47.5°	1894.7	1856.5	1698.6	1540.7	1464.1
50°	1727.3	1693.8	1550.2	1392.3	1311.0
52.5°	1588.5	1535.9	1397.1	1239.2	1172.3
55°	1425.8	1382.8	1253.6	1105.3	1047.8
57.5°	1277.5	1234.5	1114.8	976.1	928.2
60°	1138.8	1076.6	976.1	856.5	818.2
62.5°	985.6	937.8	851.7	751.2	799.0
65°	846.9	799.0	722.5	736.8	612.4
67.5°	693.8	669.9	602.9	535.9	516.7
70°	564.6	535.9	512.0	440.2	421.1
72.5°	449.8	421.1	387.6	349.3	334.9
75°	339.7	315.8	296.7	282.3	311.0
77.5°	234.5	224.9	210.5	196.2	191.4
80°	153.1	148.3	143.5	138.8	134.0
82.5°	90.9	90.9	90.9	90.9	90.9
85°	47.8	52.6	57.4	62.2	67.0
87.5°	28.7	28.7	33.5	38.3	43.1
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)