

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: P547170

Luminaire Tested: **FMR-24-4-LD4-3STD-35-UNV-81-87-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: P547170  
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-35-UNV-81-87-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

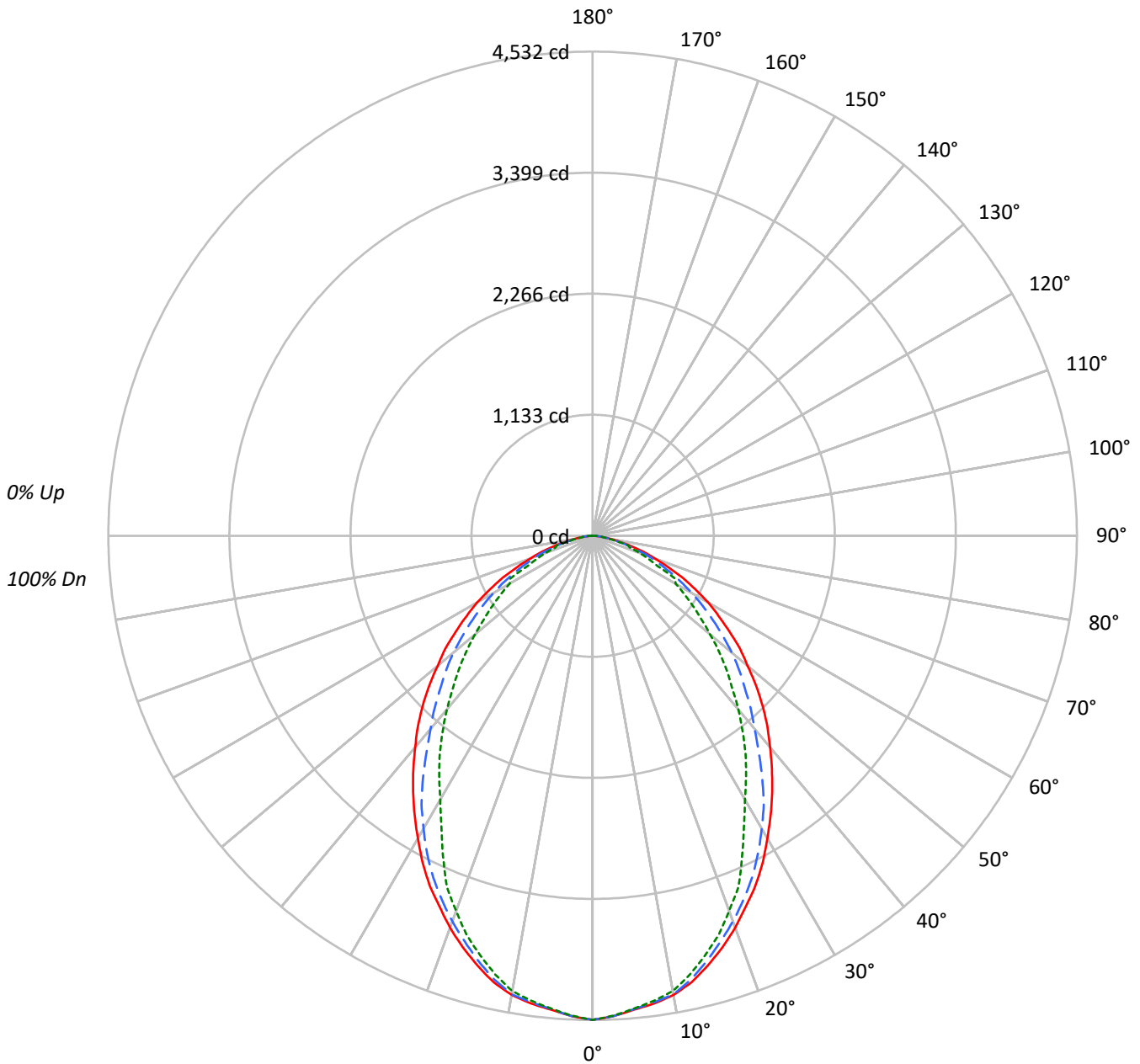
Lumens per Lamp: N/A  
Luminaire Lumens: 8896.0 lumens  
Efficiency: N/A  
Efficacy: 89.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	6097	6097	6097
5°	6014	6007	6000
10°	5962	5955	5912
15°	5801	5743	5663
20°	5588	5498	5348
25°	5359	5242	4915
30°	5079	4916	4428
35°	4810	4543	4096
40°	4536	4141	3727
45°	4276	3828	3369
50°	3959	3553	3005
55°	3662	3220	2691
60°	3355	2876	2411
65°	2952	2518	2135
70°	2432	2205	1814
75°	1934	1688	1770
80°	1299	1218	1137
85°	809	971	1132



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	421.8	4.7
10°-20°	1157.7	13.0
20°-30°	1602.7	18.0
30°-40°	1708.9	19.2
40°-50°	1559.1	17.5
50°-60°	1221.4	13.7
60°-70°	796.0	8.9
70°-80°	352.7	4.0
80°-90°	75.7	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°	3182.2	35.8
0°-40°	4891.1	55.0
0°-60°	7671.6	86.2
0°-90°	8896.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8896.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4532	4532	4532	4532	4532	
5°	4453	4448	4448	4442	4442	423
15°	4165	4165	4123	4081	4065	1171
25°	3610	3588	3531	3405	3311	1657
35°	2928	2908	2766	2556	2494	1831
45°	2247	2200	2012	1844	1771	1731
55°	1561	1514	1372	1210	1147	1400
65°	927	875	791	807	671	914
75°	372	346	325	309	340	399
85°	52	58	63	68	73	73
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4531.5	4531.5	4531.5	4531.5	4531.5
2.5°	4500.1	4500.1	4500.1	4494.8	4494.8
5°	4452.9	4447.7	4447.7	4442.4	4442.4
7.5°	4416.3	4411.0	4405.8	4400.5	4390.1
10°	4363.9	4363.9	4358.6	4332.4	4327.2
12.5°	4280.0	4274.8	4253.9	4217.2	4206.7
15°	4164.8	4164.8	4122.9	4081.0	4065.3
17.5°	4039.1	4033.8	3981.4	3939.5	3918.6
20°	3902.9	3892.4	3840.0	3771.9	3735.2
22.5°	3750.9	3750.9	3688.1	3599.0	3562.3
25°	3609.5	3588.5	3530.9	3405.2	3310.9
27.5°	3447.1	3415.7	3352.8	3174.7	3064.7
30°	3269.0	3253.3	3164.2	2933.7	2849.9
32.5°	3101.3	3075.1	2980.8	2739.9	2671.8
35°	2928.5	2907.5	2766.1	2556.5	2493.6
37.5°	2755.6	2729.4	2551.3	2383.6	2305.0
40°	2582.7	2551.3	2357.4	2205.5	2121.7
42.5°	2420.3	2378.4	2189.8	2027.4	1933.1
45°	2247.4	2200.3	2011.7	1844.0	1770.7
47.5°	2074.5	2032.6	1859.8	1686.9	1603.1
50°	1891.2	1854.5	1697.3	1524.5	1435.4
52.5°	1739.3	1681.6	1529.7	1356.8	1283.5
55°	1561.1	1514.0	1372.5	1210.1	1147.3
57.5°	1398.7	1351.6	1220.6	1068.7	1016.3
60°	1246.8	1178.7	1068.7	937.7	895.8
62.5°	1079.2	1026.8	932.5	822.5	874.9
65°	927.3	874.9	791.0	806.8	670.6
67.5°	759.6	733.4	660.1	586.7	565.8
70°	618.2	586.7	560.5	482.0	461.0
72.5°	492.4	461.0	424.3	382.4	366.7
75°	372.0	345.8	324.8	309.1	340.5
77.5°	256.7	246.2	230.5	214.8	209.5
80°	167.6	162.4	157.2	151.9	146.7
82.5°	99.5	99.5	99.5	99.5	99.5
85°	52.4	57.6	62.9	68.1	73.3
87.5°	31.4	31.4	36.7	41.9	47.1
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)