

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: P547209

Luminaire Tested: **FMR-24-4-LD4-3STD-40-UNV-82-86-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: P547209  
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-82-86-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC 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**

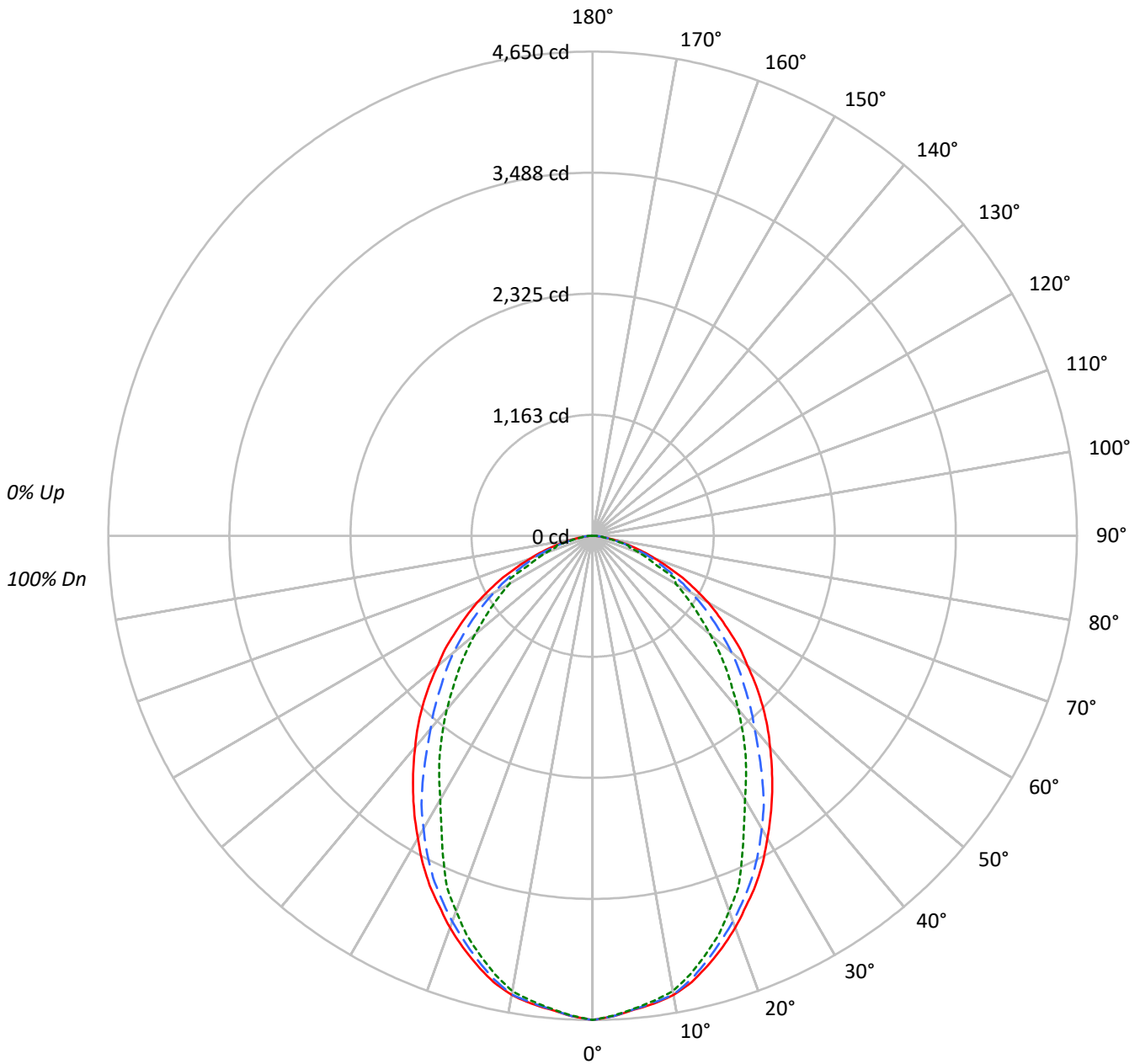
Lumens per Lamp: N/A  
Luminaire Lumens: 9129.0 lumens  
Efficiency: N/A  
Efficacy: 91.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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				20				20	
RC	80				70				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				100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87				87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75				75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65				65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56				56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50				50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44				44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40				40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36				36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33				33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30				30

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	6257	6257	6257
5°	6172	6165	6157
10°	6118	6111	6067
15°	5953	5893	5811
20°	5735	5642	5488
25°	5499	5379	5044
30°	5212	5045	4544
35°	4936	4662	4203
40°	4655	4249	3824
45°	4388	3928	3458
50°	4062	3646	3083
55°	3758	3304	2762
60°	3443	2951	2474
65°	3029	2585	2191
70°	2496	2263	1861
75°	1984	1733	1816
80°	1333	1250	1166
85°	831	996	1162



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	432.9	4.7
10°-20°	1188.0	13.0
20°-30°	1644.7	18.0
30°-40°	1753.7	19.2
40°-50°	1599.9	17.5
50°-60°	1253.4	13.7
60°-70°	816.9	8.9
70°-80°	361.9	4.0
80°-90°	77.7	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°	3265.5	35.8
0°-40°	5019.2	55.0
0°-60°	7872.5	86.2
0°-90°	9129.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9129.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4650	4650	4650	4650	4650	
5°	4570	4564	4564	4559	4559	434
15°	4274	4274	4231	4188	4172	1202
25°	3704	3682	3623	3494	3398	1701
35°	3005	2984	2838	2624	2559	1879
45°	2306	2258	2064	1892	1817	1777
55°	1602	1554	1408	1242	1177	1437
65°	952	898	812	828	688	938
75°	382	355	333	317	349	409
85°	54	59	64	70	75	75
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4650.2	4650.2	4650.2	4650.2	4650.2
2.5°	4617.9	4617.9	4617.9	4612.6	4612.6
5°	4569.6	4564.2	4564.2	4558.8	4558.8
7.5°	4531.9	4526.5	4521.2	4515.8	4505.0
10°	4478.2	4478.2	4472.8	4445.9	4440.5
12.5°	4392.1	4386.8	4365.3	4327.6	4316.9
15°	4273.9	4273.9	4230.9	4187.9	4171.7
17.5°	4144.9	4139.5	4085.7	4042.7	4021.2
20°	4005.1	3994.3	3940.6	3870.7	3833.0
22.5°	3849.2	3849.2	3784.7	3693.3	3655.6
25°	3704.0	3682.5	3623.4	3494.4	3397.6
27.5°	3537.4	3505.1	3440.6	3257.8	3144.9
30°	3354.6	3338.5	3247.1	3010.5	2924.5
32.5°	3182.6	3155.7	3058.9	2811.6	2741.7
35°	3005.2	2983.6	2838.5	2623.5	2558.9
37.5°	2827.7	2800.9	2618.1	2446.1	2365.4
40°	2650.3	2618.1	2419.2	2263.3	2177.3
42.5°	2483.7	2440.7	2247.1	2080.5	1983.7
45°	2306.3	2257.9	2064.4	1892.3	1817.1
47.5°	2128.9	2085.9	1908.5	1731.1	1645.0
50°	1940.7	1903.1	1741.8	1564.4	1473.0
52.5°	1784.8	1725.7	1569.8	1392.4	1317.1
55°	1602.0	1553.6	1408.5	1241.8	1177.3
57.5°	1435.4	1387.0	1252.6	1096.7	1042.9
60°	1279.5	1209.6	1096.7	962.3	919.3
62.5°	1107.4	1053.7	956.9	844.0	897.8
65°	951.5	897.8	811.8	827.9	688.1
67.5°	779.5	752.6	677.4	602.1	580.6
70°	634.4	602.1	575.2	494.6	473.1
72.5°	505.3	473.1	435.5	392.4	376.3
75°	381.7	354.8	333.3	317.2	349.4
77.5°	263.4	252.7	236.5	220.4	215.0
80°	172.0	166.7	161.3	155.9	150.5
82.5°	102.1	102.1	102.1	102.1	102.1
85°	53.8	59.1	64.5	69.9	75.3
87.5°	32.3	32.3	37.6	43.0	48.4
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)