

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: P547013

Luminaire Tested: **FMR-24-4-LD4-3HI-40-UNV-81-96-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: P547013  
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-LD4-3HI-40-UNV-81-96-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

**Summary**

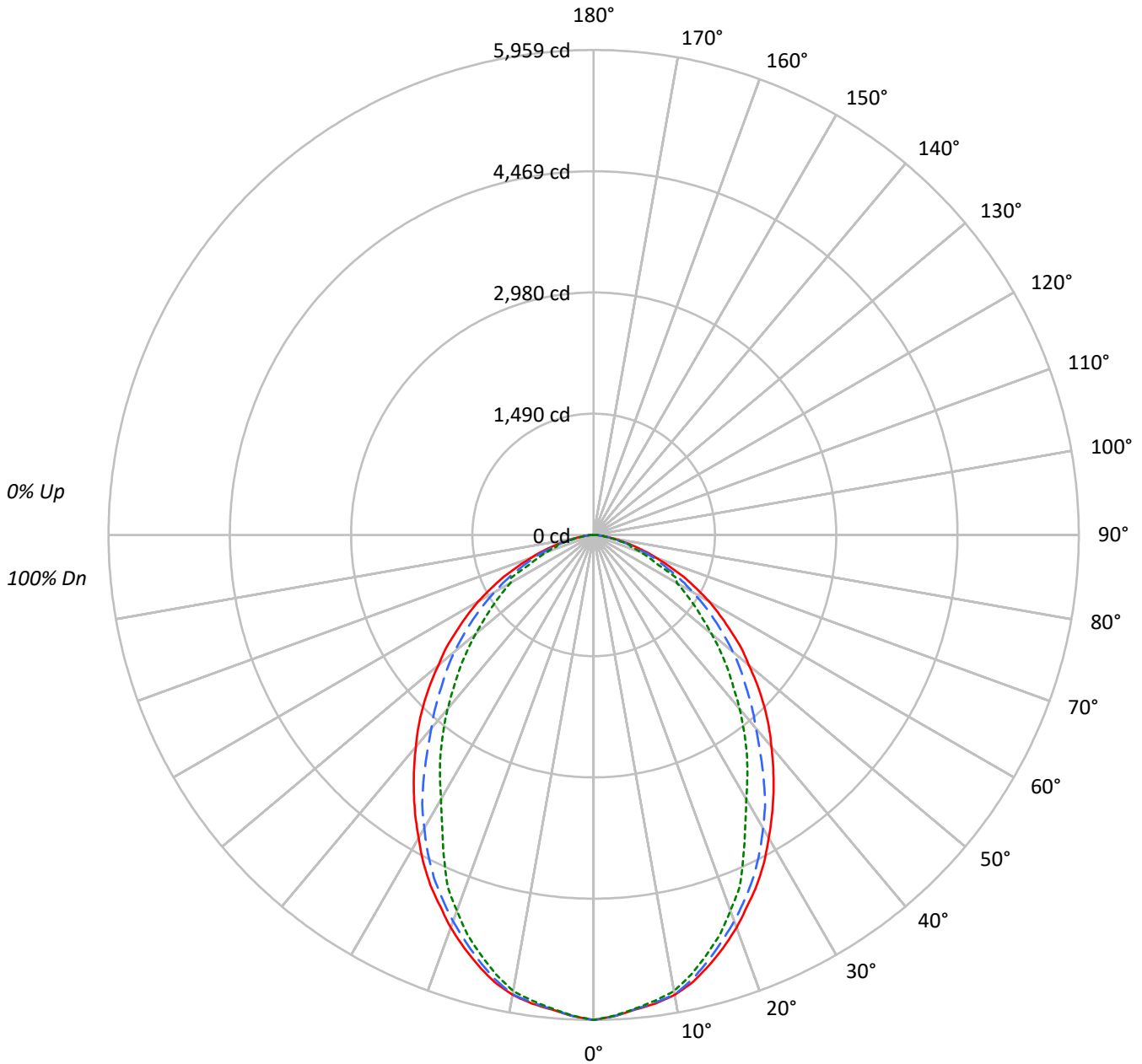
Lumens per Lamp: N/A  
Luminaire Lumens: 11699.0 lumens  
Efficiency: N/A  
Efficacy: 90.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 129.6  
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°	8018	8018	8018
5°	7909	7900	7891
10°	7841	7831	7775
15°	7629	7552	7447
20°	7349	7231	7033
25°	7047	6894	6464
30°	6679	6465	5823
35°	6326	5975	5386
40°	5966	5445	4901
45°	5624	5034	4431
50°	5206	4672	3951
55°	4816	4234	3539
60°	4412	3782	3170
65°	3882	3312	2807
70°	3198	2900	2385
75°	2543	2220	2328
80°	1709	1602	1495
85°	1064	1277	1490



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	554.7	4.7
10°-20°	1522.4	13.0
20°-30°	2107.7	18.0
30°-40°	2247.4	19.2
40°-50°	2050.3	17.5
50°-60°	1606.2	13.7
60°-70°	1046.9	8.9
70°-80°	463.8	4.0
80°-90°	99.6	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°	4184.8	35.8
0°-40°	6432.2	55.0
0°-60°	10088.7	86.2
0°-90°	11699.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11699.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5959	5959	5959	5959	5959	
5°	5856	5849	5849	5842	5842	556
15°	5477	5477	5422	5367	5346	1540
25°	4747	4719	4643	4478	4354	2179
35°	3851	3824	3638	3362	3279	2408
45°	2956	2894	2646	2425	2329	2277
55°	2053	1991	1805	1591	1509	1841
65°	1219	1150	1040	1061	882	1202
75°	489	455	427	406	448	524
85°	69	76	83	90	96	96
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5959.3	5959.3	5959.3	5959.3	5959.3
2.5°	5918.0	5918.0	5918.0	5911.1	5911.1
5°	5856.0	5849.1	5849.1	5842.2	5842.2
7.5°	5807.7	5800.9	5794.0	5787.1	5773.3
10°	5738.9	5738.9	5732.0	5697.5	5690.6
12.5°	5628.6	5621.7	5594.2	5546.0	5532.2
15°	5477.1	5477.1	5421.9	5366.8	5346.2
17.5°	5311.7	5304.8	5235.9	5180.8	5153.3
20°	5132.6	5118.8	5049.9	4960.4	4912.1
22.5°	4932.8	4932.8	4850.1	4733.0	4684.8
25°	4746.8	4719.2	4643.4	4478.1	4354.1
27.5°	4533.2	4491.9	4409.2	4175.0	4030.3
30°	4299.0	4278.3	4161.2	3858.1	3747.8
32.5°	4078.5	4044.1	3920.1	3603.1	3513.6
35°	3851.2	3823.6	3637.6	3362.0	3279.3
37.5°	3623.8	3589.4	3355.1	3134.7	3031.3
40°	3396.5	3355.1	3100.2	2900.4	2790.2
42.5°	3182.9	3127.8	2879.8	2666.2	2542.2
45°	2955.5	2893.5	2645.5	2425.1	2328.6
47.5°	2728.2	2673.1	2445.7	2218.4	2108.2
50°	2487.1	2438.8	2232.2	2004.8	1887.7
52.5°	2287.3	2211.5	2011.7	1784.3	1687.9
55°	2053.0	1991.0	1805.0	1591.4	1508.8
57.5°	1839.5	1777.5	1605.2	1405.4	1336.5
60°	1639.7	1550.1	1405.4	1233.2	1178.1
62.5°	1419.2	1350.3	1226.3	1081.6	1150.5
65°	1219.4	1150.5	1040.3	1061.0	881.8
67.5°	999.0	964.5	868.1	771.6	744.1
70°	812.9	771.6	737.2	633.8	606.3
72.5°	647.6	606.3	558.0	502.9	482.3
75°	489.1	454.7	427.1	406.5	447.8
77.5°	337.6	323.8	303.1	282.5	275.6
80°	220.5	213.6	206.7	199.8	192.9
82.5°	130.9	130.9	130.9	130.9	130.9
85°	68.9	75.8	82.7	89.6	96.5
87.5°	41.3	41.3	48.2	55.1	62.0
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)