

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: P547103

Luminaire Tested: **FMR-24-4-LD4-3LO-40-UNV-81-84-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: P547103  
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-LD4-3LO-40-UNV-81-84-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

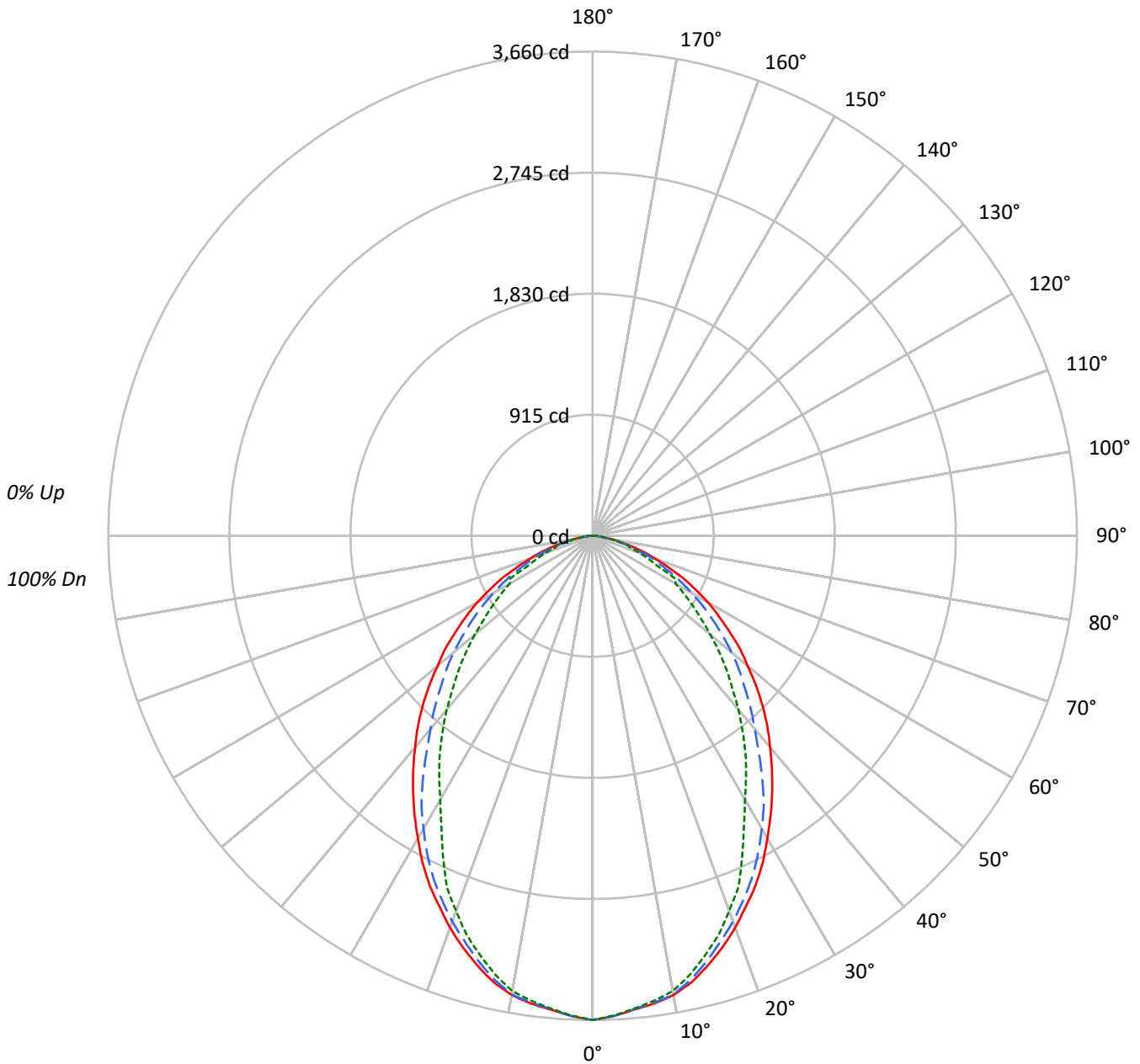
Lumens per Lamp: N/A  
Luminaire Lumens: 7185.0 lumens  
Efficiency: N/A  
Efficacy: 102.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 70.2  
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°	4924	4924	4924
5°	4858	4852	4846
10°	4815	4810	4775
15°	4686	4638	4574
20°	4513	4441	4320
25°	4328	4234	3970
30°	4102	3970	3576
35°	3885	3669	3308
40°	3664	3344	3010
45°	3454	3092	2721
50°	3197	2870	2427
55°	2958	2601	2174
60°	2710	2323	1947
65°	2384	2034	1724
70°	1964	1781	1465
75°	1562	1364	1430
80°	1049	983	918
85°	653	784	914



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	340.7	4.7
10°-20°	935.0	13.0
20°-30°	1294.4	18.0
30°-40°	1380.3	19.2
40°-50°	1259.2	17.5
50°-60°	986.5	13.7
60°-70°	642.9	8.9
70°-80°	284.8	4.0
80°-90°	61.2	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°	2570.1	35.8
0°-40°	3950.4	55.0
0°-60°	6196.1	86.2
0°-90°	7185.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7185.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3660	3660	3660	3660	3660	
5°	3596	3592	3592	3588	3588	341
15°	3364	3364	3330	3296	3283	946
25°	2915	2898	2852	2750	2674	1338
35°	2365	2348	2234	2065	2014	1479
45°	1815	1777	1625	1489	1430	1398
55°	1261	1223	1109	977	927	1131
65°	749	707	639	652	542	738
75°	300	279	262	250	275	322
85°	42	46	51	55	59	59
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3659.9	3659.9	3659.9	3659.9	3659.9
2.5°	3634.6	3634.6	3634.6	3630.3	3630.3
5°	3596.5	3592.2	3592.2	3588.0	3588.0
7.5°	3566.9	3562.6	3558.4	3554.2	3545.7
10°	3524.5	3524.5	3520.3	3499.2	3494.9
12.5°	3456.8	3452.6	3435.7	3406.1	3397.6
15°	3363.8	3363.8	3329.9	3296.1	3283.4
17.5°	3262.2	3258.0	3215.7	3181.8	3164.9
20°	3152.2	3143.7	3101.4	3046.4	3016.8
22.5°	3029.5	3029.5	2978.7	2906.8	2877.2
25°	2915.3	2898.3	2851.8	2750.2	2674.1
27.5°	2784.1	2758.7	2707.9	2564.1	2475.2
30°	2640.2	2627.5	2555.6	2369.4	2301.7
32.5°	2504.8	2483.7	2407.5	2212.9	2157.9
35°	2365.2	2348.3	2234.0	2064.8	2014.0
37.5°	2225.6	2204.4	2060.6	1925.2	1861.7
40°	2086.0	2060.6	1904.0	1781.3	1713.6
42.5°	1954.8	1920.9	1768.6	1637.5	1561.3
45°	1815.2	1777.1	1624.8	1489.4	1430.1
47.5°	1675.5	1641.7	1502.1	1362.4	1294.7
50°	1527.4	1497.8	1370.9	1231.3	1159.3
52.5°	1404.7	1358.2	1235.5	1095.9	1036.6
55°	1260.9	1222.8	1108.6	977.4	926.6
57.5°	1129.7	1091.6	985.9	863.2	820.8
60°	1007.0	952.0	863.2	757.4	723.5
62.5°	871.6	829.3	753.1	664.3	706.6
65°	748.9	706.6	638.9	651.6	541.6
67.5°	613.5	592.4	533.1	473.9	457.0
70°	499.3	473.9	452.7	389.3	372.3
72.5°	397.7	372.3	342.7	308.9	296.2
75°	300.4	279.3	262.3	249.6	275.0
77.5°	207.3	198.9	186.2	173.5	169.2
80°	135.4	131.2	126.9	122.7	118.5
82.5°	80.4	80.4	80.4	80.4	80.4
85°	42.3	46.5	50.8	55.0	59.2
87.5°	25.4	25.4	29.6	33.8	38.1
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)