

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: P547404

Luminaire Tested: **FMR-24-4-LD4-4LO-40-UNV-82-94-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: P547404  
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-LD4-4LO-40-UNV-82-94-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

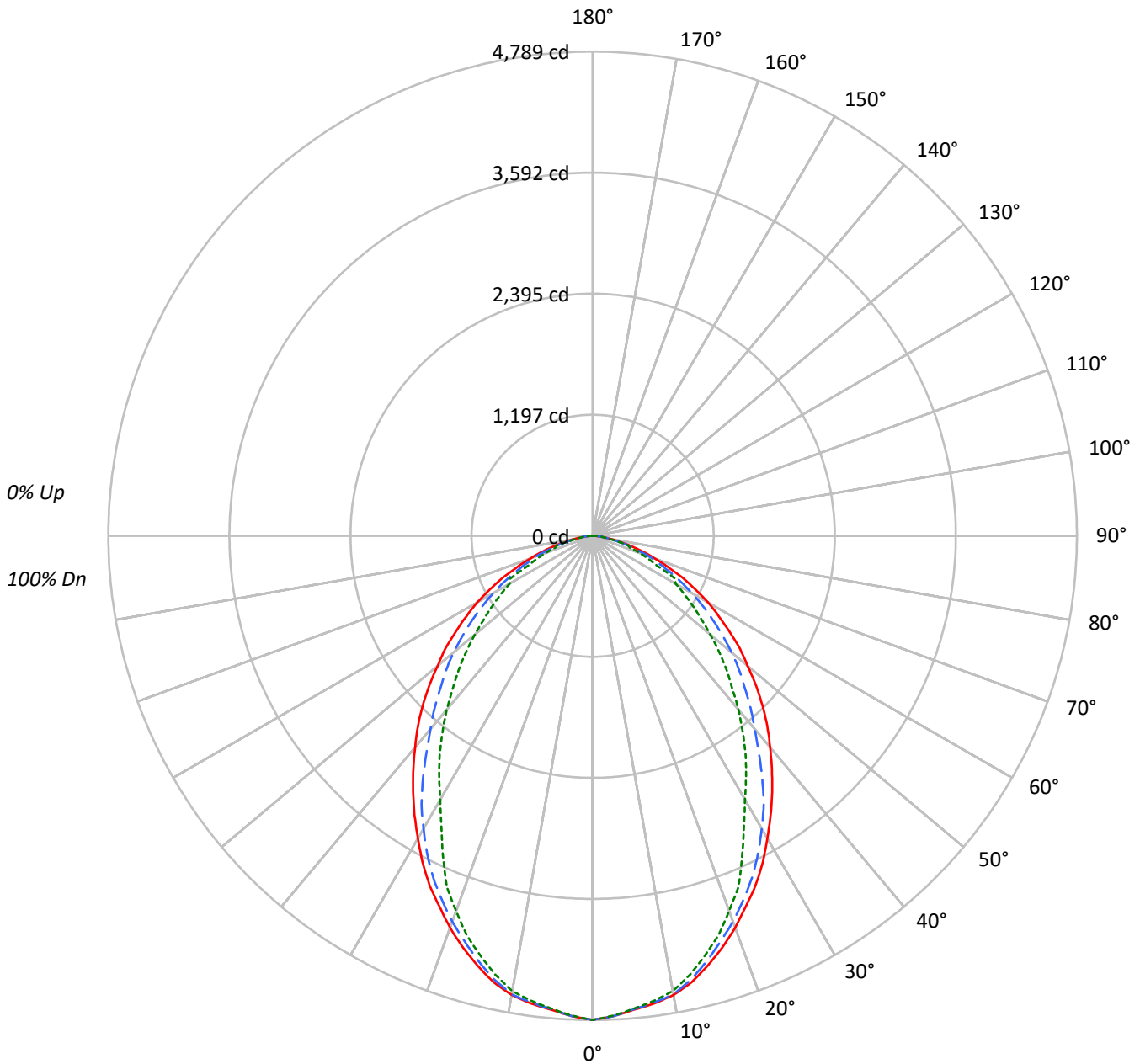
Lumens per Lamp: N/A  
Luminaire Lumens: 9401.0 lumens  
Efficiency: N/A  
Efficacy: 100.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 93.6  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	6443	6443	6443
5°	6356	6348	6341
10°	6301	6293	6248
15°	6131	6069	5984
20°	5905	5810	5652
25°	5663	5539	5194
30°	5367	5195	4679
35°	5083	4801	4328
40°	4794	4376	3938
45°	4519	4045	3561
50°	4183	3755	3175
55°	3870	3403	2844
60°	3546	3039	2548
65°	3120	2662	2256
70°	2570	2330	1917
75°	2044	1784	1870
80°	1373	1287	1201
85°	855	1025	1196



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	445.8	4.7
10°-20°	1223.4	13.0
20°-30°	1693.7	18.0
30°-40°	1805.9	19.2
40°-50°	1647.6	17.5
50°-60°	1290.7	13.7
60°-70°	841.2	8.9
70°-80°	372.7	4.0
80°-90°	80.0	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°	3362.8	35.8
0°-40°	5168.8	55.0
0°-60°	8107.0	86.2
0°-90°	9401.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9401.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4789	4789	4789	4789	4789	
5°	4706	4700	4700	4695	4695	447
15°	4401	4401	4357	4313	4296	1237
25°	3814	3792	3731	3598	3499	1751
35°	3095	3072	2923	2702	2635	1935
45°	2375	2325	2126	1949	1871	1829
55°	1650	1600	1450	1279	1212	1480
65°	980	924	836	853	709	966
75°	393	365	343	327	360	421
85°	55	61	66	72	78	77
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4788.7	4788.7	4788.7	4788.7	4788.7
2.5°	4755.5	4755.5	4755.5	4750.0	4750.0
5°	4705.7	4700.2	4700.2	4694.6	4694.6
7.5°	4666.9	4661.4	4655.9	4650.3	4639.3
10°	4611.6	4611.6	4606.1	4578.4	4572.8
12.5°	4523.0	4517.5	4495.3	4456.6	4445.5
15°	4401.2	4401.2	4356.9	4312.6	4296.0
17.5°	4268.3	4262.8	4207.5	4163.2	4141.0
20°	4124.4	4113.3	4058.0	3986.0	3947.3
22.5°	3963.9	3963.9	3897.4	3803.3	3764.6
25°	3814.4	3792.2	3731.3	3598.5	3498.8
27.5°	3642.8	3609.6	3543.1	3354.9	3238.6
30°	3454.5	3437.9	3343.8	3100.2	3011.6
32.5°	3277.4	3249.7	3150.1	2895.4	2823.4
35°	3094.7	3072.5	2923.1	2701.6	2635.2
37.5°	2912.0	2884.3	2696.1	2518.9	2435.9
40°	2729.3	2696.1	2491.3	2330.7	2242.1
42.5°	2557.7	2513.4	2314.1	2142.5	2042.8
45°	2375.0	2325.2	2125.9	1948.7	1871.2
47.5°	2192.3	2148.0	1965.3	1782.6	1694.1
50°	1998.5	1959.8	1793.7	1611.0	1516.9
52.5°	1838.0	1777.1	1616.5	1433.9	1356.3
55°	1649.8	1599.9	1450.5	1278.8	1212.4
57.5°	1478.1	1428.3	1289.9	1129.4	1074.0
60°	1317.6	1245.6	1129.4	991.0	946.7
62.5°	1140.4	1085.1	985.4	869.2	924.5
65°	979.9	924.5	836.0	852.6	708.6
67.5°	802.7	775.1	697.6	620.0	597.9
70°	653.3	620.0	592.4	509.3	487.2
72.5°	520.4	487.2	448.4	404.1	387.5
75°	393.1	365.4	343.2	326.6	359.8
77.5°	271.3	260.2	243.6	227.0	221.4
80°	177.2	171.6	166.1	160.5	155.0
82.5°	105.2	105.2	105.2	105.2	105.2
85°	55.4	60.9	66.4	72.0	77.5
87.5°	33.2	33.2	38.8	44.3	49.8
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)