

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: P546141

Luminaire Tested: **FMR-12-4-LD4-2HI-40-UNV-80-96-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: P546141  
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-12-4-LD4-2HI-40-UNV-80-96-EDD  
Description: 1X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC 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**

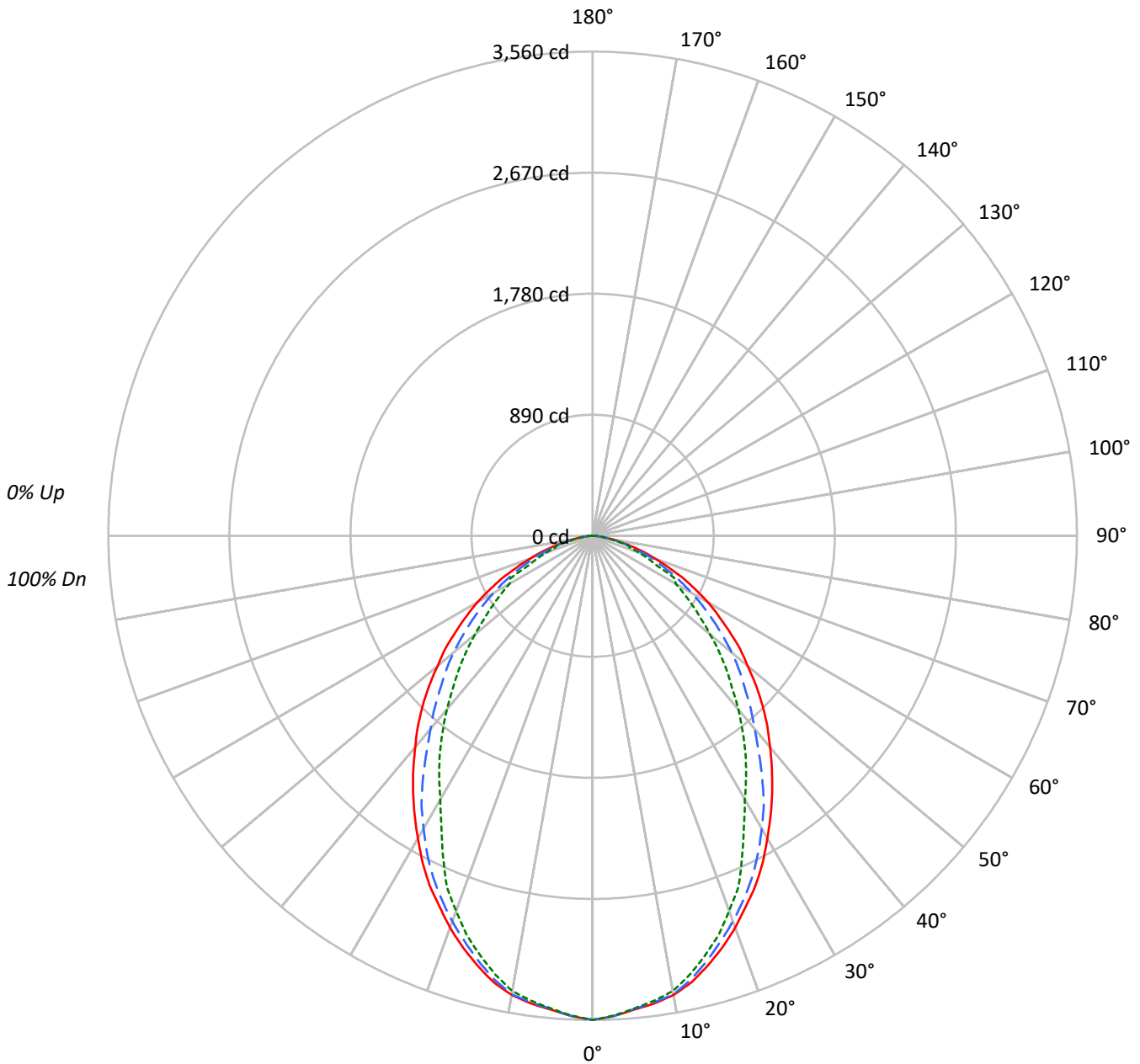
Lumens per Lamp: N/A  
Luminaire Lumens: 6988.0 lumens  
Efficiency: N/A  
Efficacy: 80.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
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°	9579	9579	9579
5°	9449	9438	9426
10°	9367	9356	9288
15°	9114	9022	8896
20°	8779	8638	8402
25°	8418	8235	7722
30°	7979	7723	6956
35°	7557	7138	6435
40°	7127	6505	5854
45°	6718	6014	5293
50°	6219	5582	4720
55°	5753	5058	4228
60°	5271	4518	3787
65°	4638	3957	3354
70°	3821	3464	2849
75°	3038	2652	2781
80°	2041	1914	1785
85°	1272	1525	1778



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	331.3	4.7
10°-20°	909.4	13.0
20°-30°	1259.0	18.0
30°-40°	1342.4	19.2
40°-50°	1224.7	17.5
50°-60°	959.4	13.7
60°-70°	625.3	8.9
70°-80°	277.0	4.0
80°-90°	59.5	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°	2499.7	35.8
0°-40°	3842.1	55.0
0°-60°	6026.2	86.2
0°-90°	6988.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6988.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3560	3560	3560	3560	3560	
5°	3498	3494	3494	3490	3490	332
15°	3272	3272	3239	3206	3193	920
25°	2835	2819	2774	2675	2601	1302
35°	2300	2284	2173	2008	1959	1438
45°	1765	1728	1580	1448	1391	1360
55°	1226	1189	1078	951	901	1100
65°	728	687	621	634	527	718
75°	292	272	255	243	268	313
85°	41	45	49	54	58	57
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3559.6	3559.6	3559.6	3559.6	3559.6
2.5°	3534.9	3534.9	3534.9	3530.8	3530.8
5°	3497.9	3493.8	3493.8	3489.6	3489.6
7.5°	3469.1	3464.9	3460.8	3456.7	3448.5
10°	3427.9	3427.9	3423.8	3403.2	3399.1
12.5°	3362.1	3358.0	3341.5	3312.7	3304.5
15°	3271.5	3271.5	3238.6	3205.7	3193.3
17.5°	3172.8	3168.7	3127.5	3094.6	3078.1
20°	3065.8	3057.5	3016.4	2962.9	2934.1
22.5°	2946.4	2946.4	2897.1	2827.1	2798.3
25°	2835.3	2818.9	2773.6	2674.8	2600.8
27.5°	2707.8	2683.1	2633.7	2493.8	2407.4
30°	2567.8	2555.5	2485.5	2304.5	2238.6
32.5°	2436.2	2415.6	2341.5	2152.2	2098.7
35°	2300.4	2283.9	2172.8	2008.2	1958.8
37.5°	2164.6	2144.0	2004.1	1872.4	1810.7
40°	2028.8	2004.1	1851.8	1732.5	1666.6
42.5°	1901.2	1868.3	1720.1	1592.6	1518.5
45°	1765.4	1728.4	1580.2	1448.5	1390.9
47.5°	1629.6	1596.7	1460.9	1325.1	1259.2
50°	1485.6	1456.8	1333.3	1197.5	1127.5
52.5°	1366.2	1321.0	1201.6	1065.8	1008.2
55°	1226.3	1189.3	1078.2	950.6	901.2
57.5°	1098.7	1061.7	958.8	839.5	798.3
60°	979.4	925.9	839.5	736.6	703.7
62.5°	847.7	806.6	732.5	646.1	687.2
65°	728.4	687.2	621.4	633.7	526.7
67.5°	596.7	576.1	518.5	460.9	444.4
70°	485.6	460.9	440.3	378.6	362.1
72.5°	386.8	362.1	333.3	300.4	288.1
75°	292.2	271.6	255.1	242.8	267.5
77.5°	201.6	193.4	181.1	168.7	164.6
80°	131.7	127.6	123.5	119.3	115.2
82.5°	78.2	78.2	78.2	78.2	78.2
85°	41.2	45.3	49.4	53.5	57.6
87.5°	24.7	24.7	28.8	32.9	37.0
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)