

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: P546176

Luminaire Tested: **FMR-12-4-LD4-2HI-50-UNV-81-85-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: P546176  
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-50-UNV-81-85-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

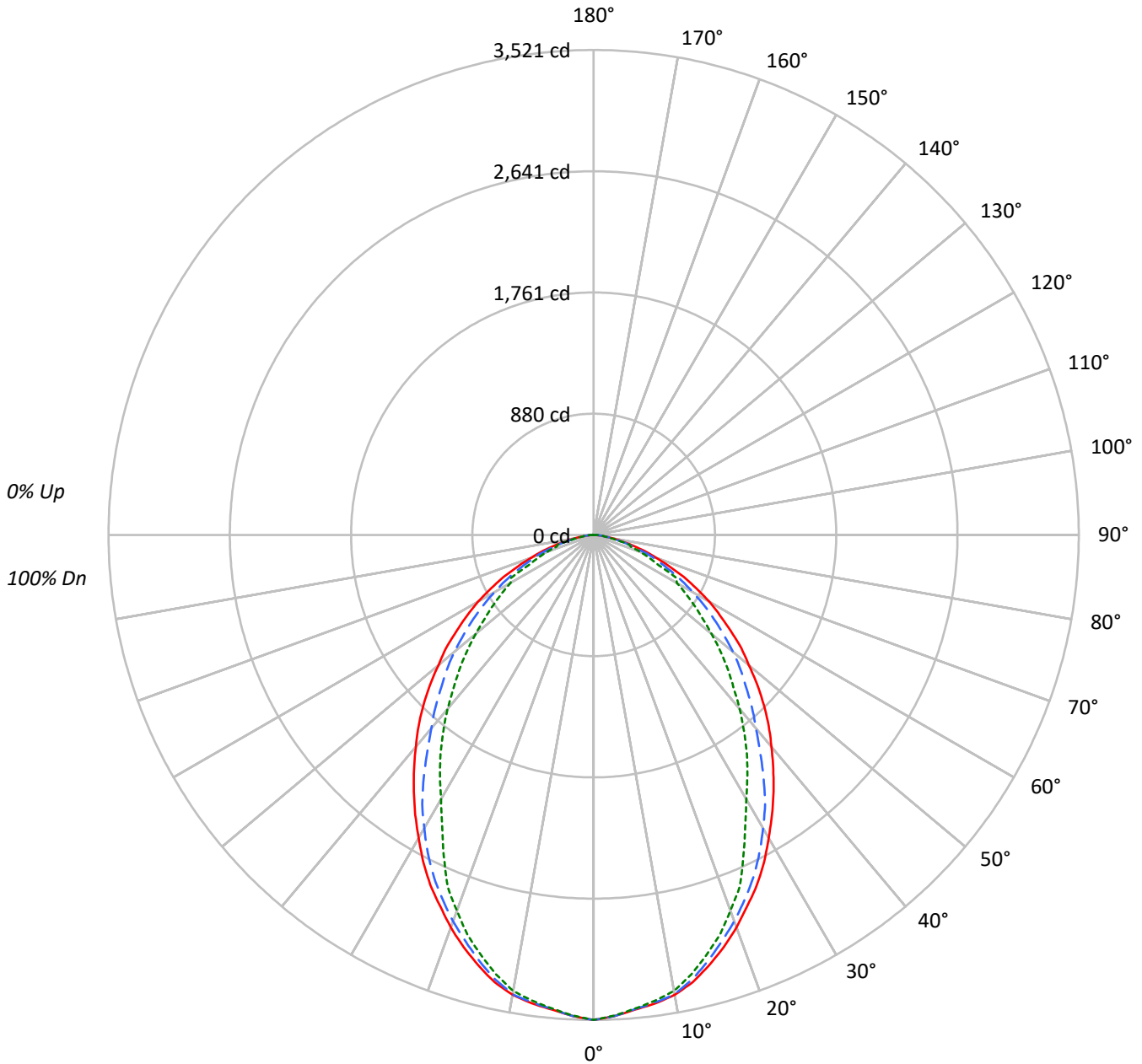
Lumens per Lamp: N/A  
Luminaire Lumens: 6912.0 lumens  
Efficiency: N/A  
Efficacy: 80.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	9475	9475	9475
5°	9346	9335	9324
10°	9265	9254	9187
15°	9015	8924	8800
20°	8684	8544	8311
25°	8327	8146	7638
30°	7892	7639	6880
35°	7475	7060	6365
40°	7049	6434	5791
45°	6645	5948	5236
50°	6152	5521	4669
55°	5691	5003	4182
60°	5214	4469	3746
65°	4588	3913	3317
70°	3779	3426	2818
75°	3005	2624	2751
80°	2019	1892	1767
85°	1257	1507	1760



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	327.7	4.7
10°-20°	899.5	13.0
20°-30°	1245.3	18.0
30°-40°	1327.8	19.2
40°-50°	1211.4	17.5
50°-60°	949.0	13.7
60°-70°	618.5	8.9
70°-80°	274.0	4.0
80°-90°	58.8	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°	2472.5	35.8
0°-40°	3800.3	55.0
0°-60°	5960.6	86.2
0°-90°	6912.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6912.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3521	3521	3521	3521	3521	
5°	3460	3456	3456	3452	3452	328
15°	3236	3236	3203	3171	3159	910
25°	2804	2788	2743	2646	2572	1288
35°	2275	2259	2149	1986	1938	1422
45°	1746	1710	1563	1433	1376	1345
55°	1213	1176	1066	940	891	1088
65°	720	680	615	627	521	710
75°	289	269	252	240	265	310
85°	41	45	49	53	57	56
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3520.9	3520.9	3520.9	3520.9	3520.9
2.5°	3496.5	3496.5	3496.5	3492.4	3492.4
5°	3459.8	3455.8	3455.8	3451.7	3451.7
7.5°	3431.3	3427.3	3423.2	3419.1	3411.0
10°	3390.6	3390.6	3386.6	3366.2	3362.1
12.5°	3325.5	3321.4	3305.2	3276.7	3268.5
15°	3236.0	3236.0	3203.4	3170.8	3158.6
17.5°	3138.3	3134.2	3093.5	3060.9	3044.6
20°	3032.4	3024.3	2983.6	2930.7	2902.2
22.5°	2914.4	2914.4	2865.5	2796.4	2767.9
25°	2804.5	2788.2	2743.4	2645.7	2572.5
27.5°	2678.3	2653.9	2605.0	2466.7	2381.2
30°	2539.9	2527.7	2458.5	2279.4	2214.3
32.5°	2409.7	2389.3	2316.0	2128.8	2075.9
35°	2275.3	2259.1	2149.2	1986.3	1937.5
37.5°	2141.0	2120.7	1982.3	1852.0	1791.0
40°	2006.7	1982.3	1831.7	1713.6	1648.5
42.5°	1880.5	1848.0	1701.4	1575.2	1502.0
45°	1746.2	1709.6	1563.0	1432.8	1375.8
47.5°	1611.9	1579.3	1445.0	1310.7	1245.5
50°	1469.4	1440.9	1318.8	1184.5	1115.3
52.5°	1351.4	1306.6	1188.6	1054.2	997.2
55°	1213.0	1176.3	1066.4	940.3	891.4
57.5°	1086.8	1050.2	948.4	830.4	789.7
60°	968.8	915.8	830.4	728.6	696.0
62.5°	838.5	797.8	724.5	639.0	679.8
65°	720.5	679.8	614.6	626.8	521.0
67.5°	590.2	569.9	512.9	455.9	439.6
70°	480.3	455.9	435.5	374.5	358.2
72.5°	382.6	358.2	329.7	297.1	284.9
75°	289.0	268.6	252.4	240.2	264.6
77.5°	199.4	191.3	179.1	166.9	162.8
80°	130.3	126.2	122.1	118.0	114.0
82.5°	77.3	77.3	77.3	77.3	77.3
85°	40.7	44.8	48.8	52.9	57.0
87.5°	24.4	24.4	28.5	32.6	36.6
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)