

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: P546136

Luminaire Tested: **FMR-12-4-LD4-2HI-40-UNV-80-85-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: P546136  
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-80-85-EDD  
Description: 1X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

**Summary**

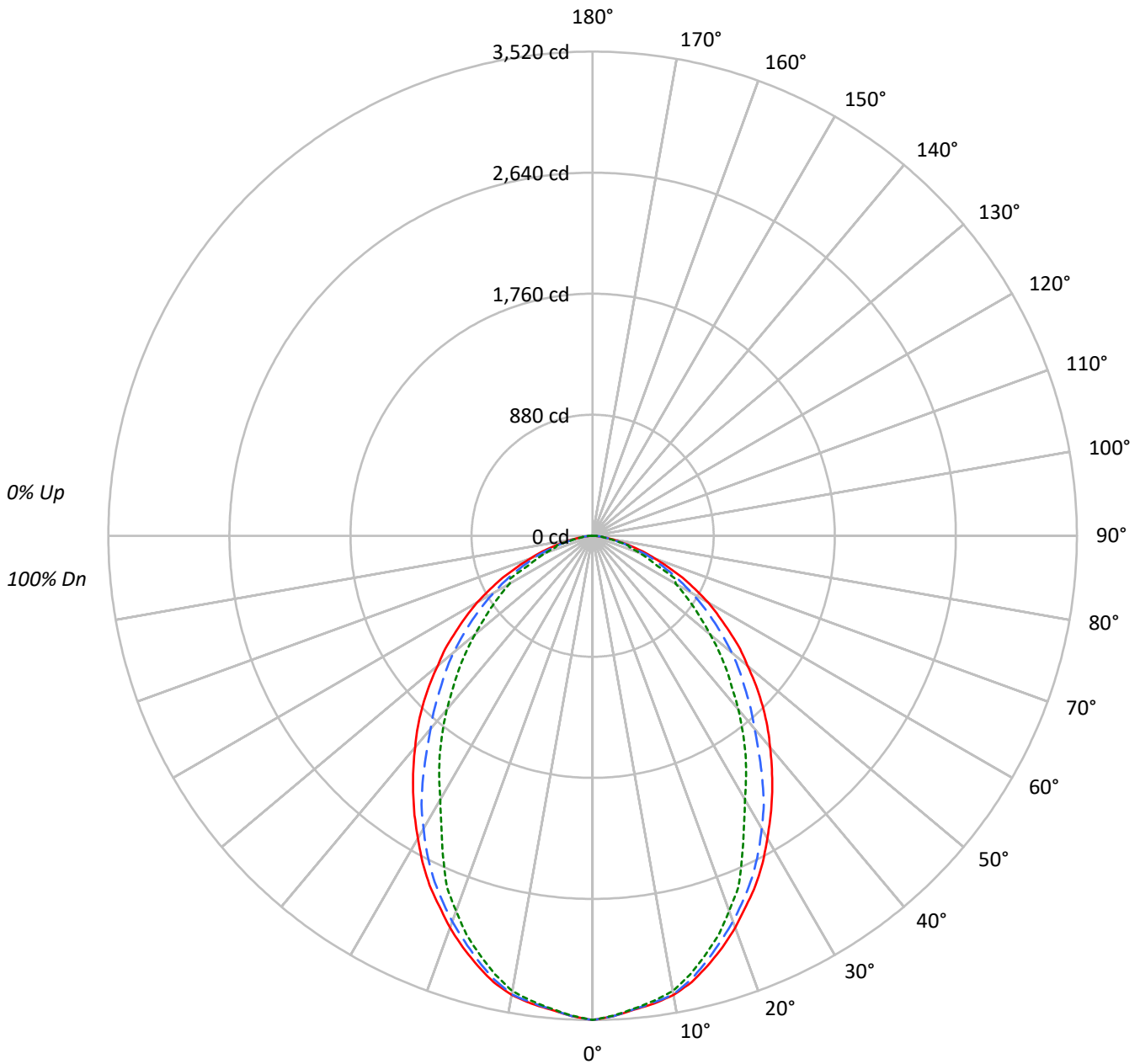
Lumens per Lamp: N/A  
Luminaire Lumens: 6910.0 lumens  
Efficiency: N/A  
Efficacy: 80.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	9472	9472	9472
5°	9343	9332	9321
10°	9262	9251	9184
15°	9012	8922	8797
20°	8682	8541	8308
25°	8325	8143	7636
30°	7890	7637	6878
35°	7473	7058	6363
40°	7047	6432	5789
45°	6643	5947	5234
50°	6150	5519	4668
55°	5689	5002	4181
60°	5212	4468	3745
65°	4586	3912	3317
70°	3778	3426	2817
75°	3004	2623	2750
80°	2018	1892	1765
85°	1257	1507	1760



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	327.7	4.7
10°-20°	899.2	13.0
20°-30°	1244.9	18.0
30°-40°	1327.4	19.2
40°-50°	1211.0	17.5
50°-60°	948.7	13.7
60°-70°	618.3	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°	2471.8	35.8
0°-40°	3799.2	55.0
0°-60°	5958.9	86.2
0°-90°	6910.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6910.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3520	3520	3520	3520	3520	
5°	3459	3455	3455	3451	3451	328
15°	3235	3235	3202	3170	3158	909
25°	2804	2787	2743	2645	2572	1287
35°	2275	2258	2148	1986	1937	1422
45°	1746	1709	1563	1432	1375	1345
55°	1213	1176	1066	940	891	1088
65°	720	680	614	627	521	710
75°	289	269	252	240	264	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°	3519.9	3519.9	3519.9	3519.9	3519.9
2.5°	3495.4	3495.4	3495.4	3491.4	3491.4
5°	3458.8	3454.8	3454.8	3450.7	3450.7
7.5°	3430.3	3426.3	3422.2	3418.1	3410.0
10°	3389.6	3389.6	3385.6	3365.2	3361.2
12.5°	3324.5	3320.5	3304.2	3275.7	3267.6
15°	3235.0	3235.0	3202.5	3169.9	3157.7
17.5°	3137.4	3133.3	3092.6	3060.0	3043.8
20°	3031.6	3023.4	2982.7	2929.8	2901.3
22.5°	2913.6	2913.6	2864.7	2795.5	2767.1
25°	2803.7	2787.4	2742.6	2645.0	2571.7
27.5°	2677.5	2653.1	2604.3	2465.9	2380.5
30°	2539.2	2527.0	2457.8	2278.8	2213.6
32.5°	2409.0	2388.6	2315.4	2128.2	2075.3
35°	2274.7	2258.4	2148.5	1985.8	1936.9
37.5°	2140.4	2120.1	1981.7	1851.5	1790.4
40°	2006.1	1981.7	1831.1	1713.1	1648.0
42.5°	1880.0	1847.4	1700.9	1574.8	1501.5
45°	1745.7	1709.1	1562.6	1432.4	1375.4
47.5°	1611.4	1578.9	1444.6	1310.3	1245.2
50°	1469.0	1440.5	1318.4	1184.1	1115.0
52.5°	1351.0	1306.2	1188.2	1053.9	997.0
55°	1212.6	1176.0	1066.1	940.0	891.2
57.5°	1086.5	1049.9	948.1	830.1	789.4
60°	968.5	915.6	830.1	728.4	695.8
62.5°	838.3	797.6	724.3	638.9	679.6
65°	720.2	679.6	614.4	626.7	520.9
67.5°	590.0	569.7	512.7	455.8	439.5
70°	480.2	455.8	435.4	374.4	358.1
72.5°	382.5	358.1	329.6	297.1	284.8
75°	288.9	268.6	252.3	240.1	264.5
77.5°	199.4	191.3	179.0	166.8	162.8
80°	130.2	126.1	122.1	118.0	113.9
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)