

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: P546148

Luminaire Tested: **FMR-12-4-LD4-2HI-40-UNV-81-94-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: P546148  
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-81-94-EDD  
Description: 1X4 FMR TROFFER WITH .156 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**

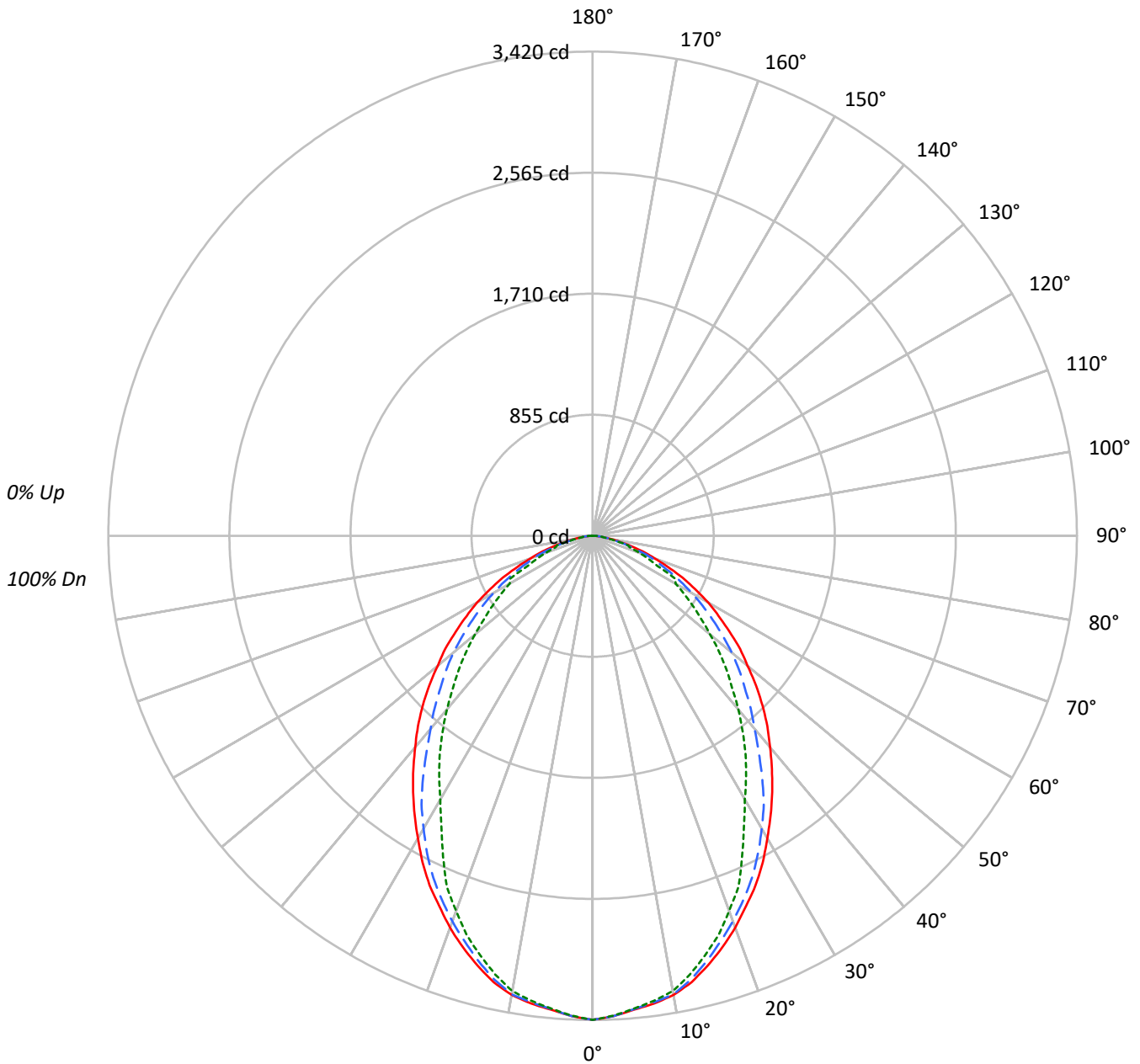
Lumens per Lamp: N/A  
Luminaire Lumens: 6713.0 lumens  
Efficiency: N/A  
Efficacy: 77.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	9202	9202	9202
5°	9077	9066	9055
10°	8998	8987	8922
15°	8756	8668	8546
20°	8434	8298	8072
25°	8087	7911	7418
30°	7665	7419	6682
35°	7259	6857	6182
40°	6846	6249	5624
45°	6454	5777	5085
50°	5974	5362	4535
55°	5527	4859	4061
60°	5064	4341	3638
65°	4455	3801	3222
70°	3670	3328	2737
75°	2918	2548	2672
80°	1960	1838	1715
85°	1220	1463	1707



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	318.3	4.7
10°-20°	873.6	13.0
20°-30°	1209.4	18.0
30°-40°	1289.6	19.2
40°-50°	1176.5	17.5
50°-60°	921.7	13.7
60°-70°	600.7	8.9
70°-80°	266.1	4.0
80°-90°	57.1	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°	2401.3	35.8
0°-40°	3690.9	55.0
0°-60°	5789.0	86.2
0°-90°	6713.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6713.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3420	3420	3420	3420	3420	
5°	3360	3356	3356	3352	3352	319
15°	3143	3143	3111	3080	3068	884
25°	2724	2708	2664	2570	2498	1250
35°	2210	2194	2087	1929	1882	1382
45°	1696	1660	1518	1392	1336	1306
55°	1178	1142	1036	913	866	1057
65°	700	660	597	609	506	690
75°	281	261	245	233	257	301
85°	40	44	47	51	55	55
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3419.5	3419.5	3419.5	3419.5	3419.5
2.5°	3395.8	3395.8	3395.8	3391.8	3391.8
5°	3360.2	3356.3	3356.3	3352.3	3352.3
7.5°	3332.5	3328.6	3324.6	3320.7	3312.8
10°	3293.0	3293.0	3289.1	3269.3	3265.3
12.5°	3229.8	3225.8	3210.0	3182.3	3174.4
15°	3142.8	3142.8	3111.2	3079.5	3067.7
17.5°	3047.9	3044.0	3004.4	2972.8	2957.0
20°	2945.1	2937.2	2897.7	2846.3	2818.6
22.5°	2830.5	2830.5	2783.0	2715.8	2688.2
25°	2723.8	2707.9	2664.5	2569.6	2498.4
27.5°	2601.2	2577.5	2530.0	2395.6	2312.6
30°	2466.8	2454.9	2387.7	2213.8	2150.5
32.5°	2340.3	2320.5	2249.4	2067.5	2016.1
35°	2209.8	2194.0	2087.3	1929.2	1881.7
37.5°	2079.4	2059.6	1925.2	1798.7	1739.4
40°	1948.9	1925.2	1778.9	1664.3	1601.0
42.5°	1826.4	1794.7	1652.4	1529.9	1458.7
45°	1695.9	1660.3	1518.0	1391.5	1336.2
47.5°	1565.5	1533.8	1403.4	1272.9	1209.7
50°	1427.1	1399.4	1280.8	1150.4	1083.2
52.5°	1312.5	1269.0	1154.3	1023.9	968.5
55°	1178.1	1142.5	1035.7	913.2	865.7
57.5°	1055.5	1019.9	921.1	806.5	766.9
60°	940.9	889.5	806.5	707.6	676.0
62.5°	814.4	774.8	703.7	620.7	660.2
65°	699.7	660.2	596.9	608.8	506.0
67.5°	573.2	553.4	498.1	442.8	426.9
70°	466.5	442.8	423.0	363.7	347.9
72.5°	371.6	347.9	320.2	288.6	276.7
75°	280.7	260.9	245.1	233.2	257.0
77.5°	193.7	185.8	173.9	162.1	158.1
80°	126.5	122.5	118.6	114.6	110.7
82.5°	75.1	75.1	75.1	75.1	75.1
85°	39.5	43.5	47.4	51.4	55.3
87.5°	23.7	23.7	27.7	31.6	35.6
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)