

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: P546921

Luminaire Tested: **FMR-24-4-LD4-2STD-40-UNV-82-86-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: P546921  
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-LD4-2STD-40-UNV-82-86-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

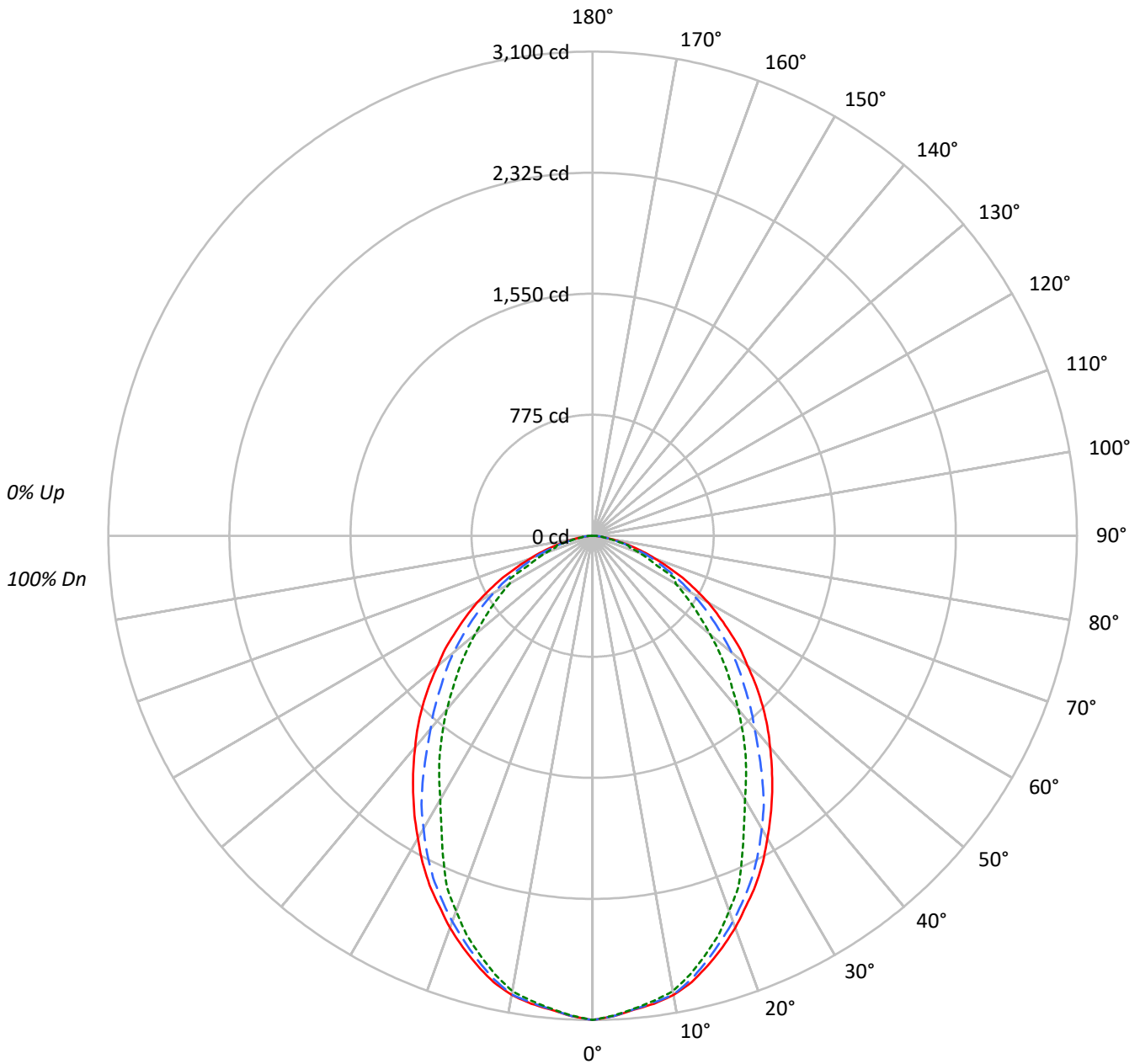
Lumens per Lamp: N/A  
Luminaire Lumens: 6086.0 lumens  
Efficiency: N/A  
Efficacy: 91.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 66.6  
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°	4171	4171	4171
5°	4115	4110	4105
10°	4079	4074	4045
15°	3969	3929	3874
20°	3823	3761	3659
25°	3666	3586	3363
30°	3475	3363	3029
35°	3291	3108	2802
40°	3103	2833	2549
45°	2926	2619	2305
50°	2708	2431	2056
55°	2505	2203	1841
60°	2295	1967	1649
65°	2020	1723	1460
70°	1664	1509	1241
75°	1323	1155	1211
80°	889	833	778
85°	553	664	775



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	288.6	4.7
10°-20°	792.0	13.0
20°-30°	1096.4	18.0
30°-40°	1169.1	19.2
40°-50°	1066.6	17.5
50°-60°	835.6	13.7
60°-70°	544.6	8.9
70°-80°	241.3	4.0
80°-90°	51.8	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°	2177.0	35.8
0°-40°	3346.1	55.0
0°-60°	5248.3	86.2
0°-90°	6086.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6086.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3100	3100	3100	3100	3100	
5°	3046	3043	3043	3039	3039	289
15°	2849	2849	2821	2792	2781	801
25°	2469	2455	2416	2330	2265	1134
35°	2003	1989	1892	1749	1706	1253
45°	1538	1505	1376	1262	1211	1184
55°	1068	1036	939	828	785	958
65°	634	598	541	552	459	625
75°	254	236	222	212	233	273
85°	36	39	43	47	50	50
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3100.1	3100.1	3100.1	3100.1	3100.1
2.5°	3078.6	3078.6	3078.6	3075.0	3075.0
5°	3046.4	3042.8	3042.8	3039.2	3039.2
7.5°	3021.3	3017.7	3014.1	3010.5	3003.4
10°	2985.4	2985.4	2981.9	2963.9	2960.4
12.5°	2928.1	2924.5	2910.2	2885.1	2877.9
15°	2849.2	2849.2	2820.6	2791.9	2781.2
17.5°	2763.2	2759.7	2723.8	2695.1	2680.8
20°	2670.1	2662.9	2627.0	2580.5	2555.4
22.5°	2566.1	2566.1	2523.1	2462.2	2437.1
25°	2469.3	2455.0	2415.6	2329.6	2265.1
27.5°	2358.2	2336.7	2293.7	2171.9	2096.6
30°	2236.4	2225.6	2164.7	2007.0	1949.7
32.5°	2121.7	2103.8	2039.3	1874.4	1827.8
35°	2003.4	1989.1	1892.3	1749.0	1706.0
37.5°	1885.2	1867.2	1745.4	1630.7	1576.9
40°	1766.9	1745.4	1612.8	1508.8	1451.5
42.5°	1655.8	1627.1	1498.1	1387.0	1322.5
45°	1537.5	1505.3	1376.2	1261.6	1211.4
47.5°	1419.2	1390.6	1272.3	1154.0	1096.7
50°	1293.8	1268.7	1161.2	1042.9	982.0
52.5°	1189.9	1150.5	1046.5	928.2	878.1
55°	1068.0	1035.8	939.0	827.9	784.9
57.5°	956.9	924.7	835.1	731.1	695.3
60°	853.0	806.4	731.1	641.5	612.9
62.5°	738.3	702.5	637.9	562.7	598.5
65°	634.4	598.5	541.2	551.9	458.7
67.5°	519.7	501.8	451.6	401.4	387.1
70°	422.9	401.4	383.5	329.7	315.4
72.5°	336.9	315.4	290.3	261.6	250.9
75°	254.5	236.5	222.2	211.5	233.0
77.5°	175.6	168.4	157.7	146.9	143.4
80°	114.7	111.1	107.5	103.9	100.4
82.5°	68.1	68.1	68.1	68.1	68.1
85°	35.8	39.4	43.0	46.6	50.2
87.5°	21.5	21.5	25.1	28.7	32.3
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)