

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: P589128

Luminaire Tested: **FMR-24-2-LD4-2LO-40-UNV-82-87-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589128  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FMR-24-2-LD4-2LO-40-UNV-82-87-EDD  
Description: 2X2 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

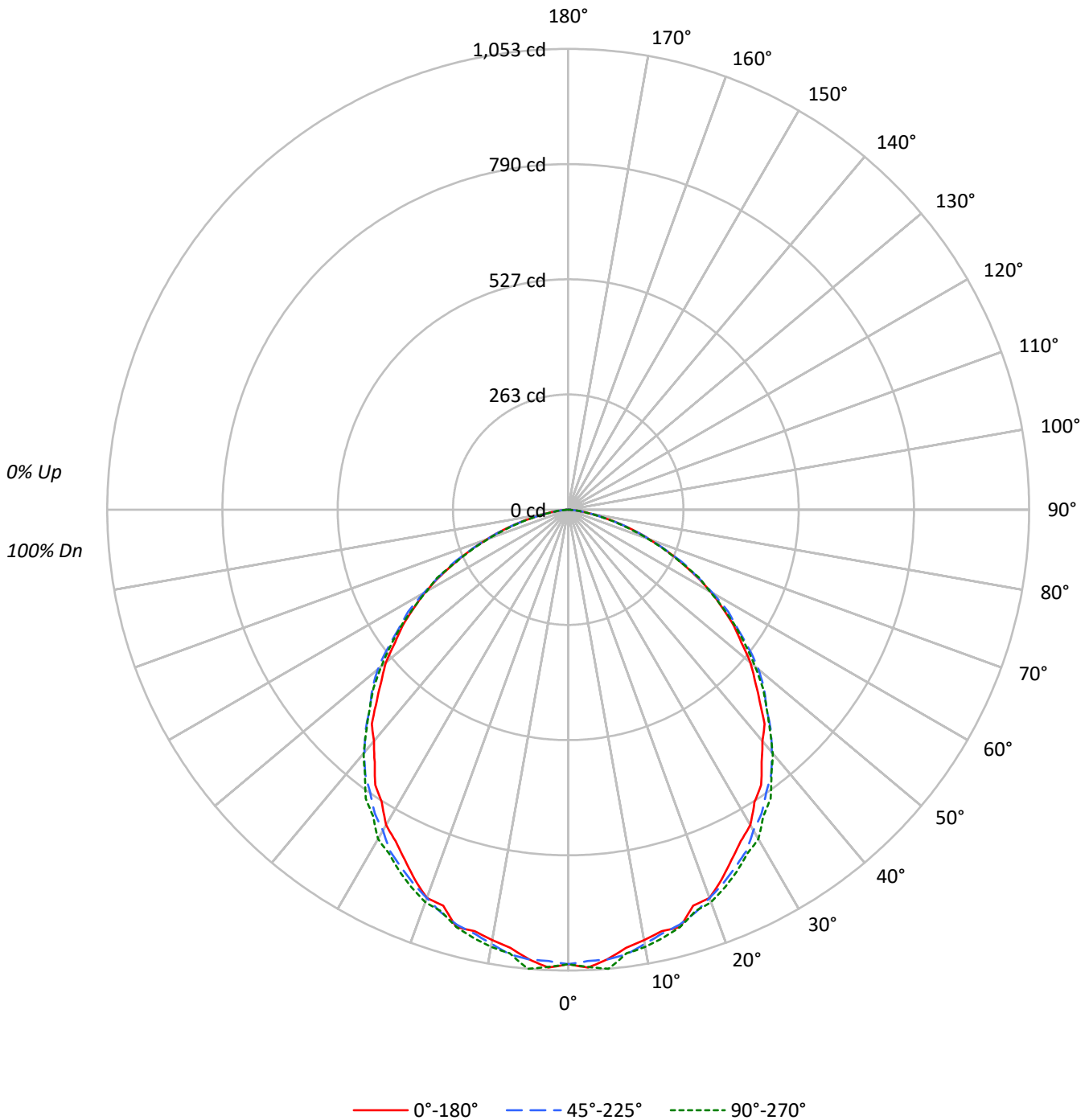
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2617.0 lumens  
Efficiency: N/A  
Efficacy: 111.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
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

TEST NUMBER: P589128

CATALOG NUMBER: FMR-24-2-LD4-2LO-40-UNV-82-87-EDD

### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20																		
RC	80									70									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	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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86																												
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73																												
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62																												
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53																												
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46																												
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41																												
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36																												
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32																												
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29																												
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26																												

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2794	2794	2794
5°	2785	2786	2845
10°	2728	2752	2772
15°	2750	2735	2751
20°	2704	2704	2733
25°	2621	2678	2707
30°	2585	2630	2700
35°	2524	2590	2648
40°	2426	2542	2553
45°	2352	2436	2439
50°	2275	2377	2332
55°	2168	2210	2194
60°	2027	2047	2010
65°	1807	1854	1794
70°	1551	1556	1513
75°	1228	1225	1178
80°	823	800	769
85°	448	442	414



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	97.7	3.7
10°-20°	276.8	10.6
20°-30°	414.7	15.8
30°-40°	491.5	18.8
40°-50°	492.5	18.8
50°-60°	418.0	16.0
60°-70°	281.8	10.8
70°-80°	123.8	4.7
80°-90°	20.1	0.8
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°	789.2	30.2
0°-40°	1280.8	48.9
0°-60°	2191.2	83.7
0°-90°	2617.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2617.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1038	1038	1038	1038	1038	
5°	1031	1029	1031	1028	1053	97
15°	987	976	982	987	987	275
25°	883	887	902	914	912	408
35°	768	770	788	807	806	477
45°	618	630	640	656	641	478
55°	462	459	471	468	468	411
65°	284	280	291	280	282	282
75°	118	116	118	110	113	127
85°	14	14	14	14	13	21
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1038.4	1038.4	1038.4	1038.4	1038.4
2.5°	1047.3	1039.4	1032.1	1040.6	1045.9
5°	1031.0	1028.6	1031.4	1028.3	1053.1
7.5°	1009.8	1019.1	1024.4	1021.1	1022.5
10°	998.5	995.3	1007.3	1015.6	1014.4
12.5°	986.5	991.3	992.0	1001.0	1001.8
15°	987.1	975.7	981.8	986.9	987.3
17.5°	948.8	961.1	965.3	977.0	962.5
20°	944.1	935.1	944.1	956.0	954.2
22.5°	915.3	905.2	924.5	935.1	934.5
25°	882.6	887.4	901.9	913.7	911.8
27.5°	853.9	859.5	880.2	896.4	885.9
30°	831.8	828.9	846.4	860.9	868.9
32.5°	792.2	802.4	822.8	837.1	829.5
35°	768.2	770.5	788.3	806.6	806.0
37.5°	726.2	736.8	761.9	767.0	762.3
40°	690.5	701.0	723.7	729.2	726.9
42.5°	664.0	665.9	685.4	691.7	681.6
45°	618.1	629.6	640.0	656.5	641.0
47.5°	578.9	584.3	606.8	611.2	603.0
50°	543.4	545.3	567.9	562.4	557.1
52.5°	498.7	506.6	519.4	518.3	512.0
55°	462.0	458.9	471.0	467.8	467.6
57.5°	417.9	423.3	433.2	428.1	419.9
60°	376.6	376.7	380.4	374.6	373.5
62.5°	330.6	332.2	333.0	325.9	337.5
65°	283.8	280.1	291.1	279.9	281.8
67.5°	240.8	242.7	241.6	234.6	237.3
70°	197.1	199.5	197.8	189.8	192.3
72.5°	157.1	154.2	156.1	146.1	150.7
75°	118.1	115.7	117.8	109.5	113.3
77.5°	80.4	82.3	81.0	76.6	79.1
80°	53.1	51.6	51.6	49.1	49.6
82.5°	31.0	29.5	29.1	28.3	29.5
85°	14.5	14.1	14.3	13.9	13.4
87.5°	5.2	5.4	5.4	5.1	4.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)