

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: P589135

Luminaire Tested: **FMR-24-2-LD4-2LO-40-UNV-93-86-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589135  
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-93-86-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

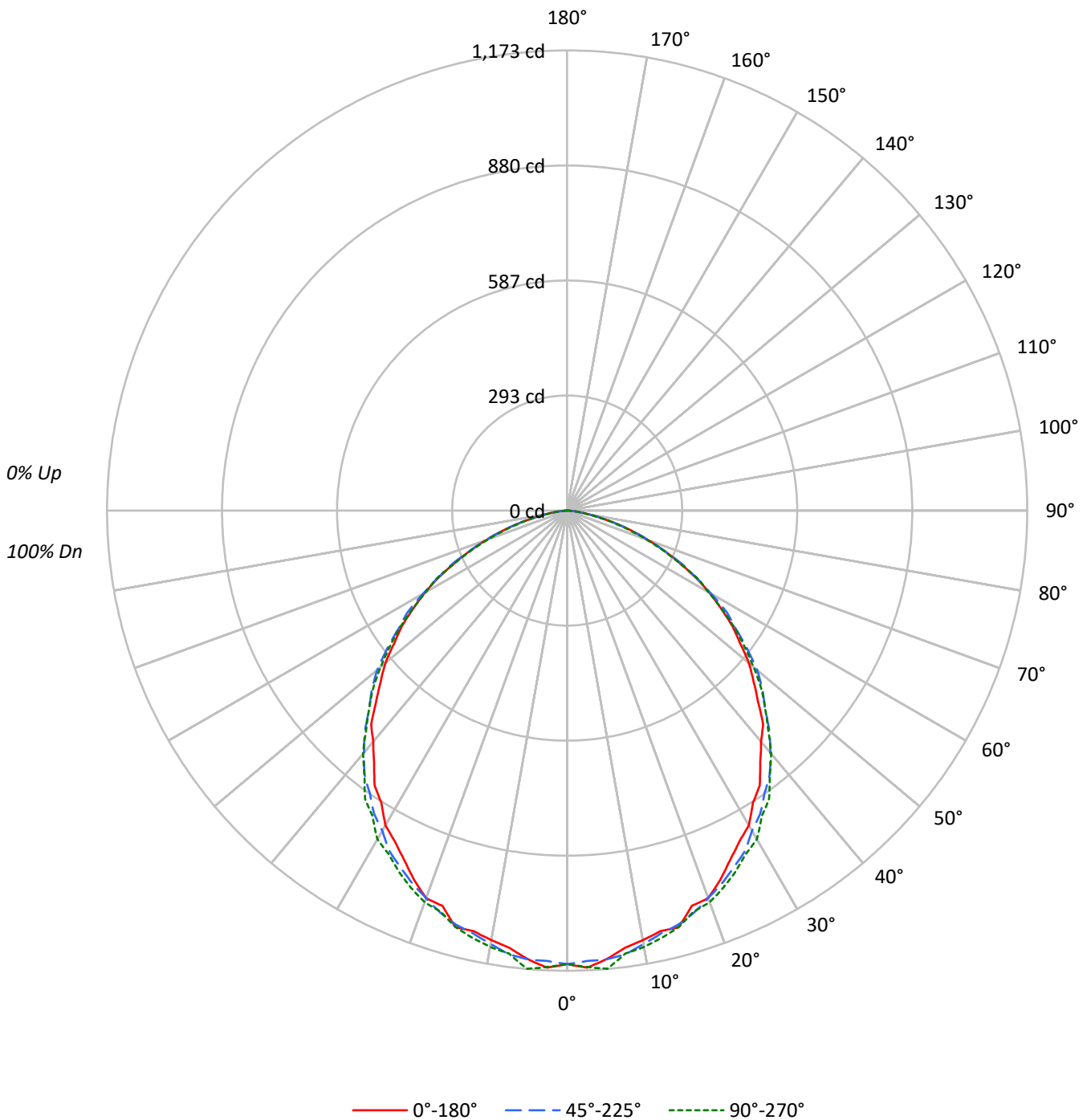
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2914.0 lumens  
Efficiency: N/A  
Efficacy: 124.5 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

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### Luminous Intensity Polar Plot





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

RF	20				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	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°	3111	3111	3111
5°	3101	3102	3167
10°	3038	3065	3086
15°	3062	3046	3063
20°	3011	3011	3043
25°	2918	2982	3015
30°	2878	2928	3006
35°	2810	2884	2948
40°	2701	2831	2843
45°	2619	2712	2716
50°	2533	2647	2597
55°	2413	2460	2443
60°	2257	2279	2238
65°	2012	2064	1998
70°	1726	1733	1685
75°	1367	1364	1311
80°	916	891	855
85°	497	494	460



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	108.8	3.7
10°-20°	308.2	10.6
20°-30°	461.8	15.8
30°-40°	547.3	18.8
40°-50°	548.3	18.8
50°-60°	465.4	16.0
60°-70°	313.8	10.8
70°-80°	137.9	4.7
80°-90°	22.4	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°	878.8	30.2
0°-40°	1426.1	48.9
0°-60°	2439.9	83.7
0°-90°	2914.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2914.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1156	1156	1156	1156	1156	
5°	1148	1145	1148	1145	1173	108
15°	1099	1086	1093	1099	1099	306
25°	983	988	1004	1017	1015	454
35°	855	858	878	898	898	531
45°	688	701	713	731	714	532
55°	514	511	524	521	521	458
65°	316	312	324	312	314	314
75°	132	129	131	122	126	141
85°	16	16	16	16	15	23
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1156.2	1156.2	1156.2	1156.2	1156.2
2.5°	1166.2	1157.4	1149.2	1158.7	1164.6
5°	1148.0	1145.3	1148.4	1145.0	1172.6
7.5°	1124.4	1134.7	1140.7	1136.9	1138.6
10°	1111.9	1108.3	1121.6	1130.8	1129.5
12.5°	1098.4	1103.8	1104.5	1114.6	1115.4
15°	1099.2	1086.5	1093.2	1098.9	1099.3
17.5°	1056.5	1070.2	1074.8	1087.8	1071.7
20°	1051.3	1041.3	1051.3	1064.5	1062.5
22.5°	1019.2	1008.0	1029.5	1041.3	1040.5
25°	982.7	988.1	1004.2	1017.4	1015.3
27.5°	950.8	957.1	980.0	998.1	986.5
30°	926.2	923.0	942.4	958.6	967.5
32.5°	882.1	893.5	916.2	932.1	923.6
35°	855.4	857.9	877.8	898.1	897.5
37.5°	808.7	820.5	848.4	854.1	848.8
40°	768.8	780.6	805.8	812.0	809.4
42.5°	739.4	741.5	763.1	770.2	759.0
45°	688.2	701.0	712.7	731.0	713.7
47.5°	644.6	650.6	675.7	680.6	671.5
50°	605.0	607.1	632.4	626.2	620.3
52.5°	555.3	564.1	578.3	577.1	570.1
55°	514.4	511.0	524.4	520.9	520.7
57.5°	465.3	471.3	482.3	476.7	467.6
60°	419.3	419.5	423.5	417.1	415.9
62.5°	368.1	369.9	370.8	362.9	375.7
65°	316.0	311.9	324.1	311.7	313.8
67.5°	268.1	270.2	269.0	261.2	264.2
70°	219.4	222.1	220.2	211.4	214.1
72.5°	175.0	171.7	173.8	162.7	167.8
75°	131.5	128.8	131.2	122.0	126.1
77.5°	89.6	91.7	90.2	85.2	88.1
80°	59.1	57.5	57.5	54.6	55.2
82.5°	34.5	32.8	32.4	31.5	32.8
85°	16.1	15.7	16.0	15.5	14.9
87.5°	5.8	6.0	6.0	5.7	5.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)