

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: P589641

Luminaire Tested: **FMR-24-2-LD4-4HI-50-UNV-82-88-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589641  
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-LD4-4HI-50-UNV-82-88-EDD  
Description: 2X2 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

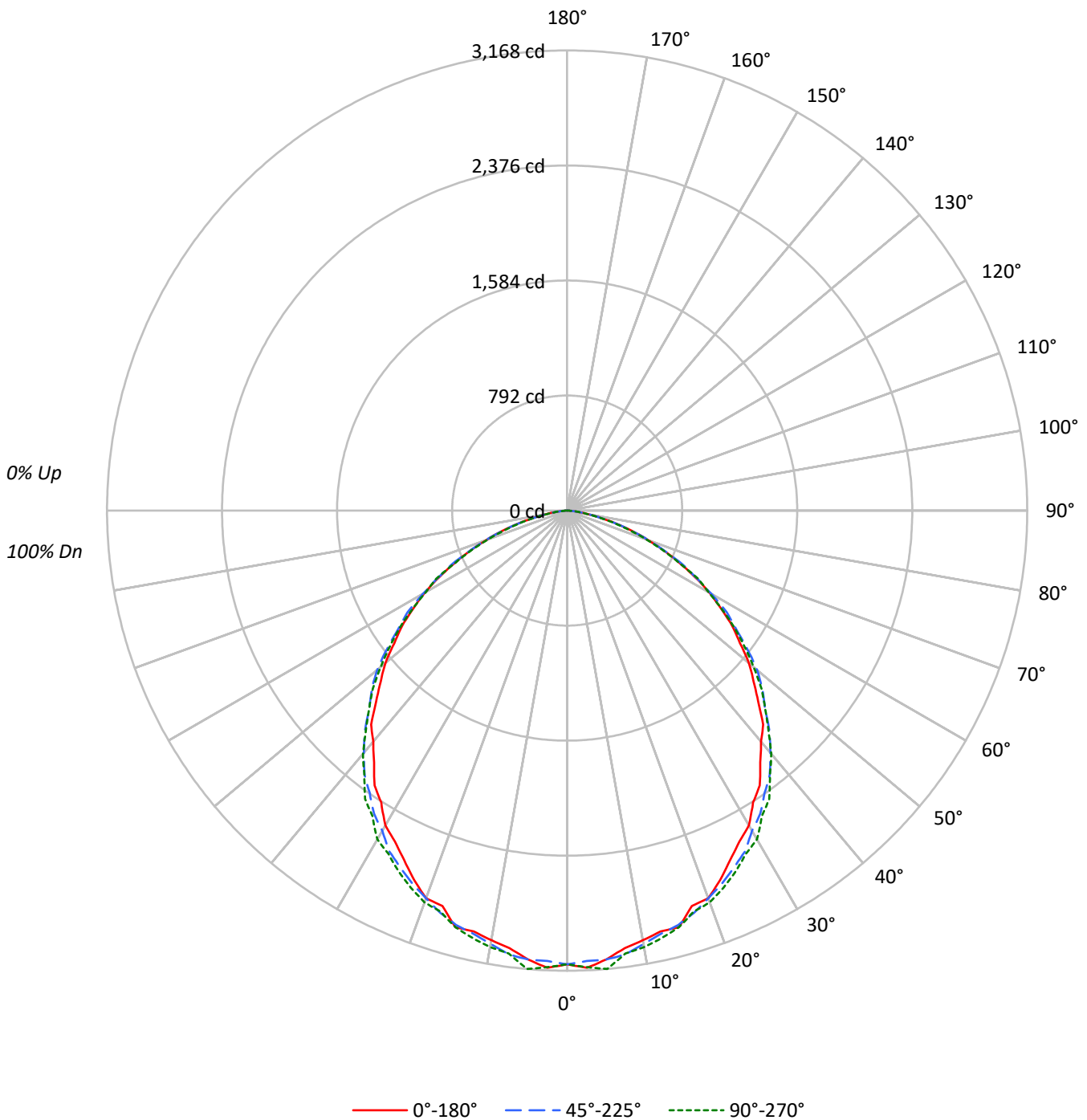
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7872.0 lumens  
Efficiency: N/A  
Efficacy: 91.1 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): 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

TEST NUMBER: P589641

CATALOG NUMBER: FMR-24-2-LD4-4HI-50-UNV-82-88-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P589641

CATALOG NUMBER: FMR-24-2-LD4-4HI-50-UNV-82-88-EDD

**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°	8405	8405	8405
5°	8377	8380	8557
10°	8207	8279	8337
15°	8272	8227	8274
20°	8133	8133	8219
25°	7883	8055	8144
30°	7774	7911	8121
35°	7591	7790	7965
40°	7296	7647	7681
45°	7075	7327	7338
50°	6843	7152	7015
55°	6520	6647	6599
60°	6097	6157	6047
65°	5436	5575	5398
70°	4664	4680	4550
75°	3694	3686	3543
80°	2475	2407	2312
85°	1346	1334	1244



TEST NUMBER: P589641

CATALOG NUMBER: FMR-24-2-LD4-4HI-50-UNV-82-88-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	293.8	3.7
10°-20°	832.7	10.6
20°-30°	1247.5	15.8
30°-40°	1478.6	18.8
40°-50°	1481.3	18.8
50°-60°	1257.4	16.0
60°-70°	847.7	10.8
70°-80°	372.5	4.7
80°-90°	60.5	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°	2374.0	30.2
0°-40°	3852.6	48.9
0°-60°	6591.3	83.7
0°-90°	7872.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7872.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3123	3123	3123	3123	3123	
5°	3101	3094	3102	3093	3168	292
15°	2969	2935	2953	2969	2970	827
25°	2655	2669	2713	2748	2743	1227
35°	2311	2318	2371	2426	2424	1435
45°	1859	1894	1925	1975	1928	1438
55°	1390	1380	1417	1407	1407	1236
65°	854	842	876	842	848	849
75°	355	348	354	330	341	381
85°	44	42	43	42	40	63
90°	0	0	0	0	0	



TEST NUMBER: P589641

CATALOG NUMBER: FMR-24-2-LD4-4HI-50-UNV-82-88-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3123.4	3123.4	3123.4	3123.4	3123.4
2.5°	3150.4	3126.6	3104.5	3130.3	3146.0
5°	3101.2	3094.0	3102.4	3093.2	3167.8
7.5°	3037.5	3065.3	3081.5	3071.4	3075.8
10°	3003.6	2994.0	3029.8	3054.9	3051.2
12.5°	2967.3	2981.9	2983.9	3010.9	3013.3
15°	2969.4	2935.1	2953.2	2968.6	2969.8
17.5°	2854.0	2891.1	2903.6	2938.7	2895.2
20°	2839.9	2812.9	2839.9	2875.8	2870.2
22.5°	2753.2	2723.0	2781.0	2812.9	2810.9
25°	2654.8	2669.3	2712.9	2748.4	2742.7
27.5°	2568.5	2585.4	2647.5	2696.3	2664.9
30°	2502.0	2493.5	2545.9	2589.5	2613.7
32.5°	2383.0	2413.6	2474.9	2518.1	2495.1
35°	2310.8	2317.7	2371.3	2426.1	2424.5
37.5°	2184.6	2216.4	2291.8	2307.2	2293.1
40°	2076.9	2108.8	2176.9	2193.4	2186.6
42.5°	1997.5	2003.1	2061.6	2080.5	2050.3
45°	1859.1	1893.8	1925.3	1974.9	1928.1
47.5°	1741.4	1757.5	1825.2	1838.6	1814.0
50°	1634.5	1640.1	1708.3	1691.8	1675.6
52.5°	1500.2	1524.0	1562.3	1559.1	1540.1
55°	1389.7	1380.4	1416.7	1407.0	1406.6
57.5°	1257.0	1273.2	1303.0	1287.7	1263.1
60°	1132.8	1133.2	1144.1	1126.8	1123.5
62.5°	994.5	999.3	1001.7	980.4	1015.1
65°	853.7	842.5	875.5	842.1	847.7
67.5°	724.3	729.9	726.7	705.7	713.8
70°	592.8	600.1	594.8	571.0	578.3
72.5°	472.6	463.8	469.4	439.6	453.3
75°	355.3	348.0	354.5	329.5	340.8
77.5°	242.0	247.6	243.6	230.3	237.9
80°	159.7	155.3	155.3	147.6	149.2
82.5°	93.2	88.7	87.5	85.1	88.7
85°	43.6	42.3	43.2	41.9	40.3
87.5°	15.7	16.1	16.1	15.3	14.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)