

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: P589648

Luminaire Tested: **FMR-24-2-LD4-4HI-50-UNV-93-87-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589648  
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-93-87-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

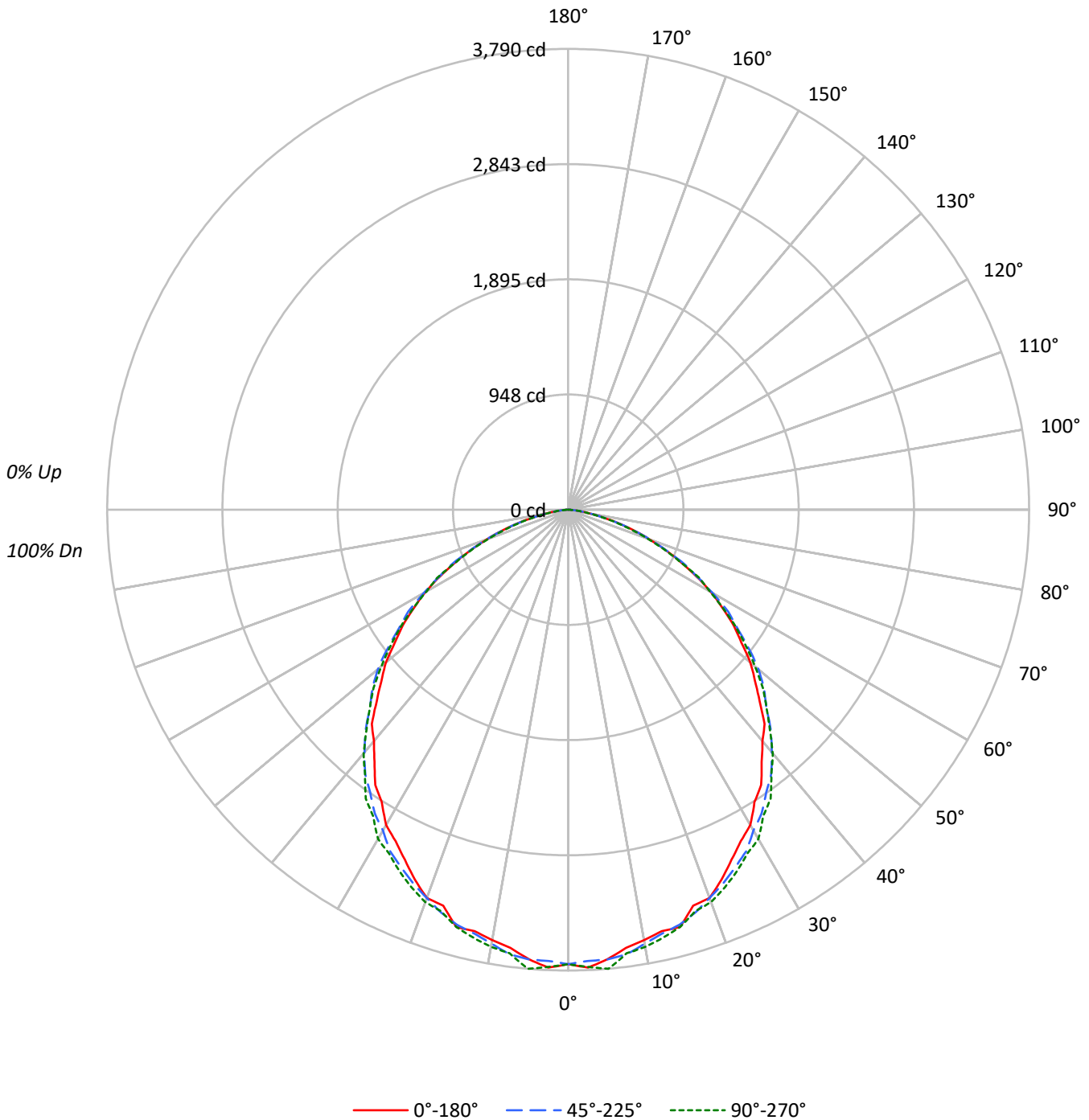
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9419.0 lumens  
Efficiency: N/A  
Efficacy: 109.0 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

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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	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					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°	10057	10057	10057
5°	10024	10027	10239
10°	9820	9906	9976
15°	9898	9844	9899
20°	9731	9731	9834
25°	9432	9638	9744
30°	9302	9465	9717
35°	9083	9321	9530
40°	8729	9150	9191
45°	8466	8767	8780
50°	8187	8557	8393
55°	7801	7953	7896
60°	7295	7367	7235
65°	6504	6670	6458
70°	5581	5600	5445
75°	4420	4409	4239
80°	2961	2879	2766
85°	1609	1593	1491



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	351.5	3.7
10°-20°	996.3	10.6
20°-30°	1492.7	15.8
30°-40°	1769.1	18.8
40°-50°	1772.4	18.8
50°-60°	1504.5	16.0
60°-70°	1014.3	10.8
70°-80°	445.7	4.7
80°-90°	72.4	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°	2840.5	30.2
0°-40°	4609.7	48.9
0°-60°	7886.6	83.7
0°-90°	9419.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9419.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3737	3737	3737	3737	3737	
5°	3711	3702	3712	3701	3790	350
15°	3553	3512	3534	3552	3553	990
25°	3176	3194	3246	3288	3282	1469
35°	2765	2773	2837	2903	2901	1717
45°	2224	2266	2304	2363	2307	1721
55°	1663	1652	1695	1684	1683	1479
65°	1022	1008	1048	1008	1014	1016
75°	425	416	424	394	408	456
85°	52	51	52	50	48	76
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3737.2	3737.2	3737.2	3737.2	3737.2
2.5°	3769.6	3741.1	3714.5	3745.4	3764.2
5°	3710.7	3702.0	3712.1	3701.0	3790.3
7.5°	3634.4	3667.7	3687.0	3675.0	3680.3
10°	3593.9	3582.3	3625.3	3655.2	3650.8
12.5°	3550.5	3567.9	3570.3	3602.6	3605.5
15°	3552.9	3511.9	3533.6	3551.9	3553.4
17.5°	3414.9	3459.3	3474.2	3516.2	3464.1
20°	3398.0	3365.7	3398.0	3440.9	3434.2
22.5°	3294.3	3258.1	3327.6	3365.7	3363.3
25°	3176.5	3193.9	3246.0	3288.5	3281.7
27.5°	3073.3	3093.5	3167.8	3226.2	3188.6
30°	2993.6	2983.5	3046.2	3098.3	3127.3
32.5°	2851.3	2888.0	2961.3	3012.9	2985.4
35°	2764.9	2773.1	2837.3	2902.9	2901.0
37.5°	2613.9	2652.0	2742.2	2760.6	2743.7
40°	2485.0	2523.2	2604.7	2624.5	2616.3
42.5°	2390.0	2396.7	2466.7	2489.4	2453.2
45°	2224.5	2266.0	2303.6	2363.0	2307.0
47.5°	2083.6	2102.9	2183.9	2199.9	2170.4
50°	1955.7	1962.5	2044.0	2024.2	2004.9
52.5°	1795.0	1823.5	1869.3	1865.5	1842.8
55°	1662.8	1651.7	1695.1	1683.6	1683.1
57.5°	1504.1	1523.4	1559.1	1540.7	1511.3
60°	1355.4	1355.9	1368.9	1348.2	1344.3
62.5°	1189.9	1195.7	1198.6	1173.0	1214.5
65°	1021.5	1008.0	1047.6	1007.5	1014.3
67.5°	866.6	873.4	869.5	844.4	854.1
70°	709.3	718.0	711.7	683.3	692.0
72.5°	565.5	554.9	561.7	526.0	542.4
75°	425.1	416.4	424.1	394.2	407.7
77.5°	289.5	296.3	291.5	275.5	284.7
80°	191.1	185.8	185.8	176.6	178.5
82.5°	111.5	106.2	104.7	101.8	106.2
85°	52.1	50.7	51.6	50.2	48.3
87.5°	18.8	19.3	19.3	18.3	17.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)