

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: P546120

Luminaire Tested: **FMR-12-4-LD4-2HI-35-UNV-82-85-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: P546120  
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-12-4-LD4-2HI-35-UNV-82-85-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

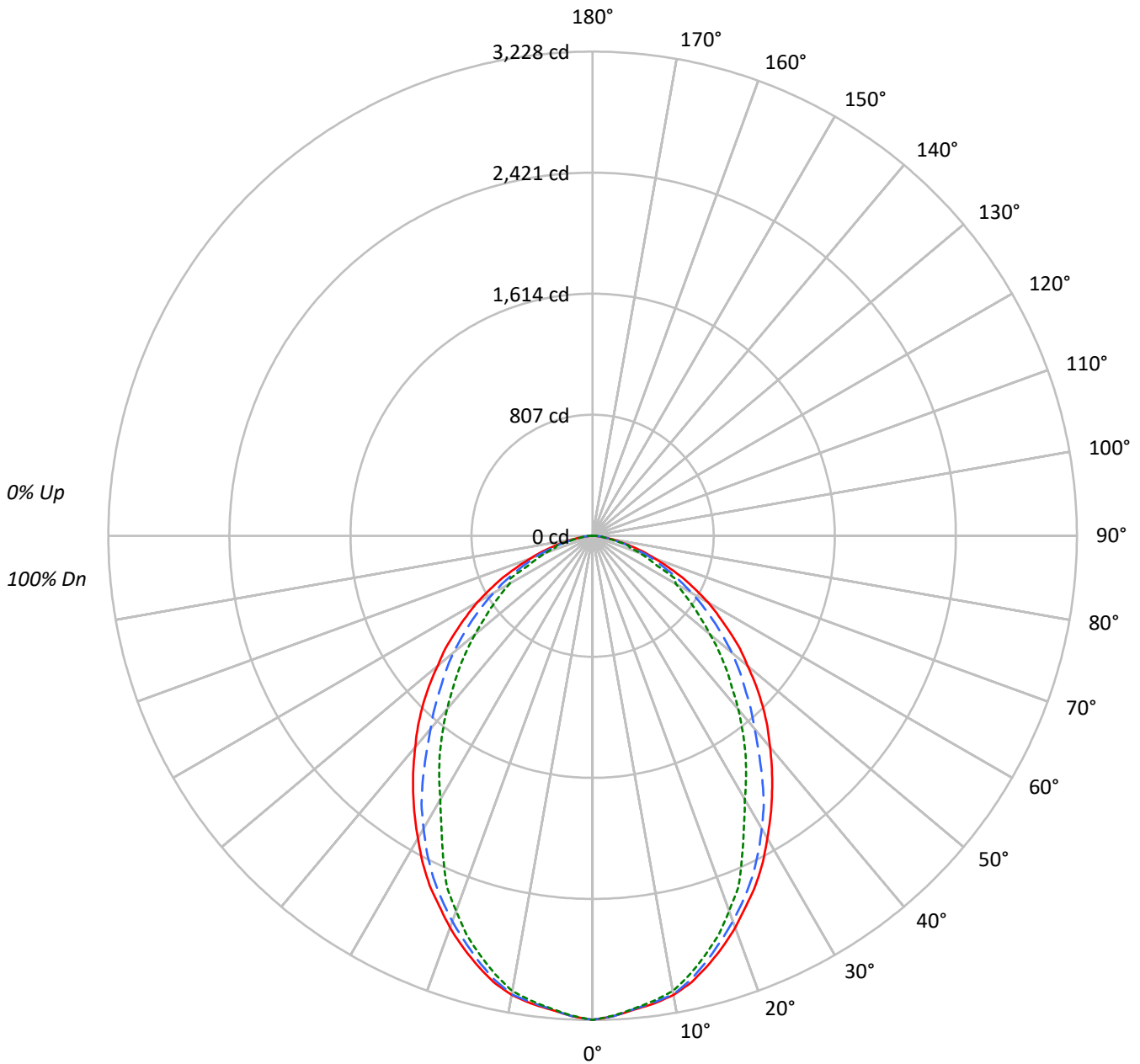
Lumens per Lamp: N/A  
Luminaire Lumens: 6336.0 lumens  
Efficiency: N/A  
Efficacy: 73.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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									
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°	8685	8685	8685
5°	8567	8557	8547
10°	8493	8482	8422
15°	8264	8181	8066
20°	7960	7832	7618
25°	7633	7467	7002
30°	7235	7003	6307
35°	6852	6472	5834
40°	6462	5898	5308
45°	6092	5453	4799
50°	5639	5061	4280
55°	5217	4586	3833
60°	4779	4097	3434
65°	4205	3587	3041
70°	3464	3141	2583
75°	2754	2405	2521
80°	1850	1734	1619
85°	1152	1383	1612



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	300.4	4.7
10°-20°	824.5	13.0
20°-30°	1141.5	18.0
30°-40°	1217.2	19.2
40°-50°	1110.4	17.5
50°-60°	869.9	13.7
60°-70°	567.0	8.9
70°-80°	251.2	4.0
80°-90°	53.9	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°	2266.4	35.8
0°-40°	3483.6	55.0
0°-60°	5463.9	86.2
0°-90°	6336.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6336.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3228	3228	3228	3228	3228	
5°	3172	3168	3168	3164	3164	301
15°	2966	2966	2936	2907	2895	834
25°	2571	2556	2515	2425	2358	1180
35°	2086	2071	1970	1821	1776	1304
45°	1601	1567	1433	1313	1261	1233
55°	1112	1078	978	862	817	997
65°	660	623	563	575	478	651
75°	265	246	231	220	242	284
85°	37	41	45	48	52	52
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3227.5	3227.5	3227.5	3227.5	3227.5
2.5°	3205.1	3205.1	3205.1	3201.4	3201.4
5°	3171.5	3167.8	3167.8	3164.0	3164.0
7.5°	3145.4	3141.7	3137.9	3134.2	3126.7
10°	3108.1	3108.1	3104.3	3085.7	3082.0
12.5°	3048.4	3044.6	3029.7	3003.6	2996.1
15°	2966.3	2966.3	2936.4	2906.6	2895.4
17.5°	2876.7	2873.0	2835.7	2805.9	2790.9
20°	2779.7	2772.3	2735.0	2686.5	2660.3
22.5°	2671.5	2671.5	2626.8	2563.3	2537.2
25°	2570.8	2555.9	2514.8	2425.3	2358.1
27.5°	2455.1	2432.7	2388.0	2261.1	2182.7
30°	2328.3	2317.1	2253.6	2089.5	2029.8
32.5°	2208.9	2190.2	2123.0	1951.4	1902.9
35°	2085.7	2070.8	1970.1	1820.8	1776.0
37.5°	1962.6	1943.9	1817.1	1697.7	1641.7
40°	1839.5	1817.1	1679.0	1570.8	1511.1
42.5°	1723.8	1694.0	1559.6	1444.0	1376.8
45°	1600.7	1567.1	1432.8	1313.4	1261.1
47.5°	1477.5	1447.7	1324.6	1201.4	1141.7
50°	1347.0	1320.8	1208.9	1085.8	1022.3
52.5°	1238.8	1197.7	1089.5	966.4	914.1
55°	1111.9	1078.3	977.6	861.9	817.1
57.5°	996.2	962.6	869.4	761.2	723.8
60°	888.0	839.5	761.2	667.9	638.0
62.5°	768.6	731.3	664.2	585.8	623.1
65°	660.4	623.1	563.4	574.6	477.6
67.5°	541.0	522.4	470.1	417.9	403.0
70°	440.3	417.9	399.2	343.3	328.3
72.5°	350.7	328.3	302.2	272.4	261.2
75°	264.9	246.3	231.3	220.1	242.5
77.5°	182.8	175.4	164.2	153.0	149.2
80°	119.4	115.7	111.9	108.2	104.5
82.5°	70.9	70.9	70.9	70.9	70.9
85°	37.3	41.0	44.8	48.5	52.2
87.5°	22.4	22.4	26.1	29.8	33.6
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)