

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: P546153

Luminaire Tested: **FMR-12-4-LD4-2HI-40-UNV-82-86-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: P546153  
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-40-UNV-82-86-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

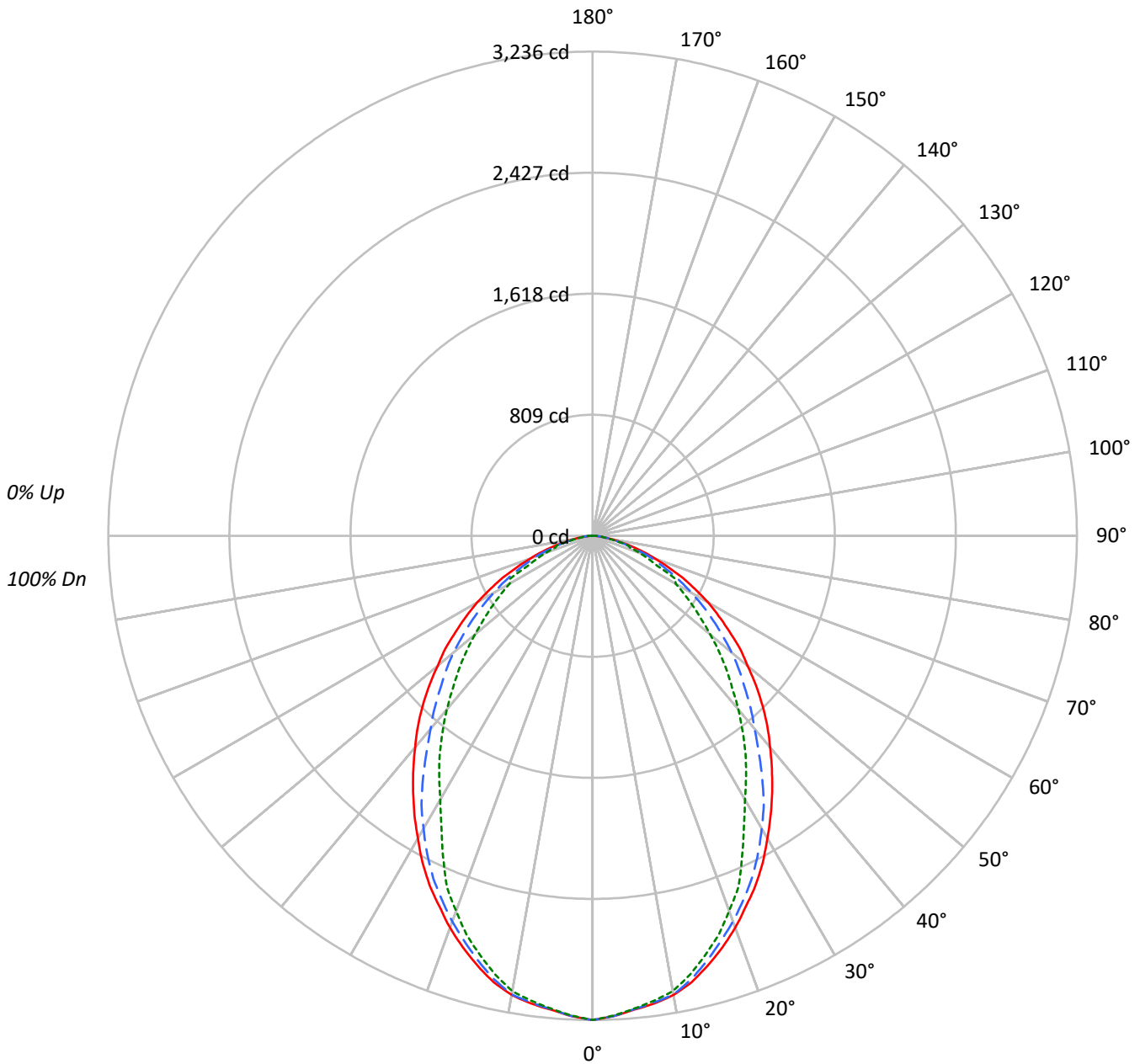
Lumens per Lamp: N/A  
Luminaire Lumens: 6353.0 lumens  
Efficiency: N/A  
Efficacy: 73.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	8708	8708	8708
5°	8590	8580	8570
10°	8516	8505	8444
15°	8286	8203	8088
20°	7982	7853	7639
25°	7654	7487	7020
30°	7254	7022	6324
35°	6870	6489	5850
40°	6479	5914	5323
45°	6108	5467	4812
50°	5654	5074	4291
55°	5231	4599	3844
60°	4792	4108	3443
65°	4216	3597	3049
70°	3474	3150	2590
75°	2761	2412	2529
80°	1855	1739	1624
85°	1155	1386	1618



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	301.2	4.7
10°-20°	826.7	13.0
20°-30°	1144.6	18.0
30°-40°	1220.4	19.2
40°-50°	1113.4	17.5
50°-60°	872.2	13.7
60°-70°	568.5	8.9
70°-80°	251.9	4.0
80°-90°	54.1	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°	2272.5	35.8
0°-40°	3493.0	55.0
0°-60°	5478.6	86.2
0°-90°	6353.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6353.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3236	3236	3236	3236	3236	
5°	3180	3176	3176	3172	3172	302
15°	2974	2974	2944	2914	2903	836
25°	2578	2563	2522	2432	2364	1183
35°	2091	2076	1975	1826	1781	1307
45°	1605	1571	1437	1317	1264	1236
55°	1115	1081	980	864	819	1000
65°	662	625	565	576	479	653
75°	266	247	232	221	243	285
85°	37	41	45	49	52	52
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3236.1	3236.1	3236.1	3236.1	3236.1
2.5°	3213.7	3213.7	3213.7	3209.9	3209.9
5°	3180.0	3176.3	3176.3	3172.5	3172.5
7.5°	3153.8	3150.1	3146.3	3142.6	3135.1
10°	3116.4	3116.4	3112.7	3094.0	3090.2
12.5°	3056.6	3052.8	3037.9	3011.7	3004.2
15°	2974.2	2974.2	2944.3	2914.4	2903.2
17.5°	2884.5	2880.7	2843.3	2813.4	2798.4
20°	2787.2	2779.7	2742.3	2693.7	2667.5
22.5°	2678.7	2678.7	2633.8	2570.2	2544.0
25°	2577.7	2562.7	2521.6	2431.8	2364.4
27.5°	2461.7	2439.3	2394.4	2267.2	2188.6
30°	2334.5	2323.3	2259.7	2095.1	2035.2
32.5°	2214.8	2196.1	2128.7	1956.6	1908.0
35°	2091.3	2076.4	1975.4	1825.7	1780.8
37.5°	1967.9	1949.2	1822.0	1702.2	1646.1
40°	1844.4	1822.0	1683.5	1575.0	1515.2
42.5°	1728.4	1698.5	1563.8	1447.8	1380.5
45°	1605.0	1571.3	1436.6	1316.9	1264.5
47.5°	1481.5	1451.6	1328.1	1204.7	1144.8
50°	1350.6	1324.4	1212.1	1088.7	1025.1
52.5°	1242.1	1200.9	1092.4	969.0	916.6
55°	1114.9	1081.2	980.2	864.2	819.3
57.5°	998.9	965.2	871.7	763.2	725.8
60°	890.4	841.8	763.2	669.7	639.7
62.5°	770.7	733.3	665.9	587.4	624.8
65°	662.2	624.8	564.9	576.1	478.9
67.5°	542.5	523.8	471.4	419.0	404.0
70°	441.5	419.0	400.3	344.2	329.2
72.5°	351.7	329.2	303.0	273.1	261.9
75°	265.6	246.9	232.0	220.7	243.2
77.5°	183.3	175.8	164.6	153.4	149.6
80°	119.7	116.0	112.2	108.5	104.8
82.5°	71.1	71.1	71.1	71.1	71.1
85°	37.4	41.2	44.9	48.6	52.4
87.5°	22.4	22.4	26.2	29.9	33.7
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)