

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: P547300

Luminaire Tested: **FMR-24-4-LD4-4HI-40-UNV-81-94-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: P547300  
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-24-4-LD4-4HI-40-UNV-81-94-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

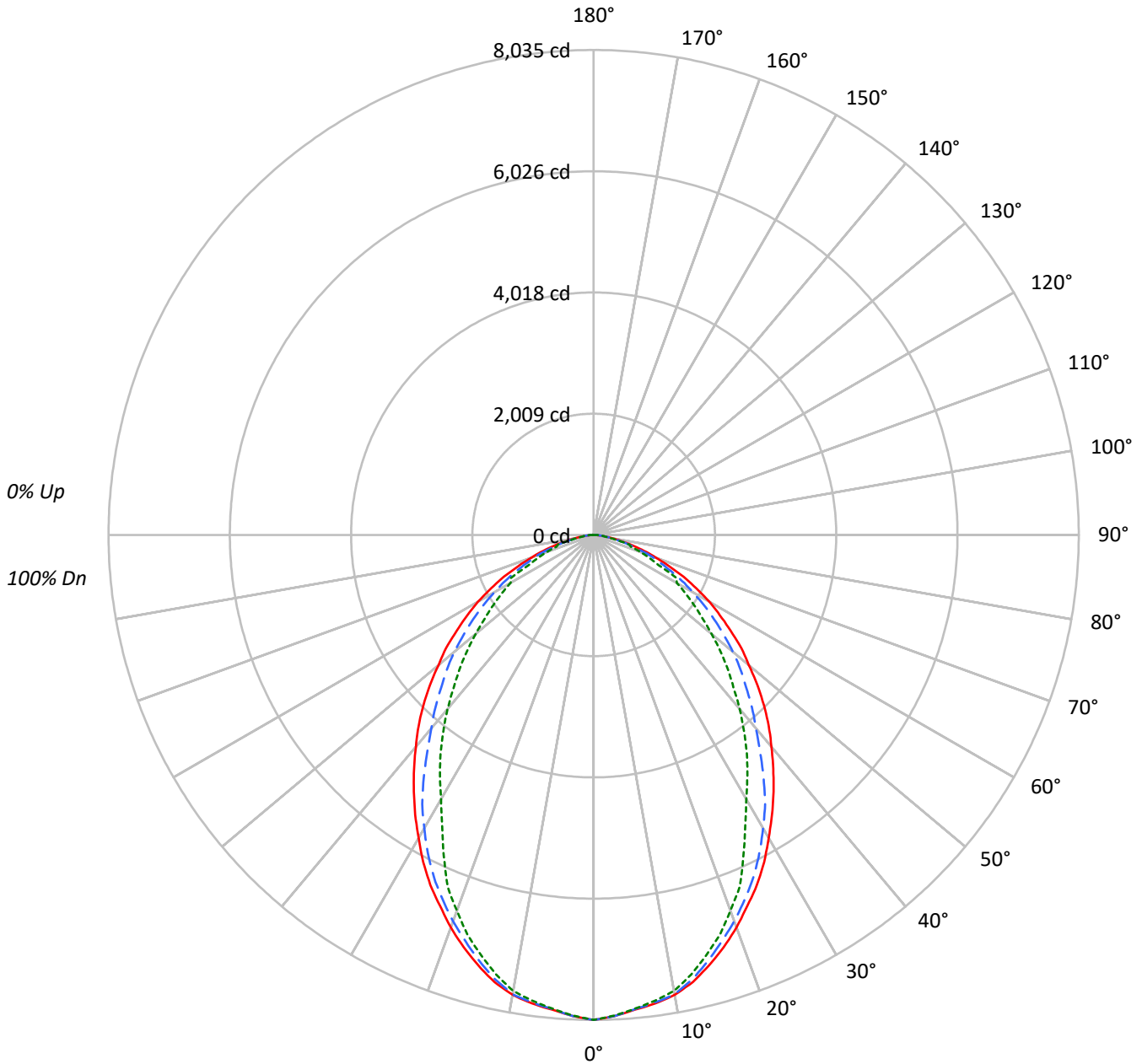
Lumens per Lamp: N/A  
Luminaire Lumens: 15774.0 lumens  
Efficiency: N/A  
Efficacy: 91.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 172.8  
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°	10811	10811	10811
5°	10664	10652	10639
10°	10572	10559	10483
15°	10287	10183	10041
20°	9909	9749	9483
25°	9502	9295	8716
30°	9006	8717	7851
35°	8529	8056	7263
40°	8043	7342	6608
45°	7583	6787	5974
50°	7019	6300	5328
55°	6493	5709	4772
60°	5949	5099	4274
65°	5235	4466	3785
70°	4312	3910	3216
75°	3428	2994	3139
80°	2304	2159	2015
85°	1434	1721	2007



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	748.0	4.7
10°-20°	2052.7	13.0
20°-30°	2841.8	18.0
30°-40°	3030.2	19.2
40°-50°	2764.4	17.5
50°-60°	2165.7	13.7
60°-70°	1411.5	8.9
70°-80°	625.4	4.0
80°-90°	134.3	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°	5642.5	35.8
0°-40°	8672.7	55.0
0°-60°	13602.9	86.2
0°-90°	15774.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15774.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8035	8035	8035	8035	8035	
5°	7896	7886	7886	7877	7877	749
15°	7385	7385	7310	7236	7208	2076
25°	6400	6363	6261	6038	5871	2938
35°	5193	5155	4905	4533	4422	3246
45°	3985	3901	3567	3270	3140	3070
55°	2768	2684	2434	2146	2034	2483
65°	1644	1551	1403	1430	1189	1620
75°	660	613	576	548	604	707
85°	93	102	112	121	130	129
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8035.1	8035.1	8035.1	8035.1	8035.1
2.5°	7979.3	7979.3	7979.3	7970.0	7970.0
5°	7895.7	7886.4	7886.4	7877.2	7877.2
7.5°	7830.7	7821.4	7812.1	7802.8	7784.3
10°	7737.8	7737.8	7728.5	7682.1	7672.8
12.5°	7589.2	7579.9	7542.7	7477.7	7459.1
15°	7384.8	7384.8	7310.5	7236.2	7208.3
17.5°	7161.9	7152.6	7059.7	6985.4	6948.2
20°	6920.4	6901.8	6808.9	6688.1	6623.1
22.5°	6651.0	6651.0	6539.5	6381.6	6316.6
25°	6400.2	6363.0	6260.8	6037.9	5870.7
27.5°	6112.2	6056.5	5945.0	5629.2	5434.1
30°	5796.4	5768.5	5610.6	5201.9	5053.3
32.5°	5499.1	5452.7	5285.5	4858.2	4737.4
35°	5192.6	5155.4	4904.6	4533.1	4421.6
37.5°	4886.1	4839.6	4523.8	4226.5	4087.2
40°	4579.5	4523.8	4180.1	3910.7	3762.1
42.5°	4291.6	4217.2	3882.8	3594.9	3427.7
45°	3985.0	3901.4	3567.0	3269.8	3139.7
47.5°	3678.5	3604.2	3297.6	2991.1	2842.5
50°	3353.4	3288.3	3009.7	2703.1	2545.2
52.5°	3084.0	2981.8	2712.4	2405.9	2275.8
55°	2768.1	2684.5	2433.7	2145.8	2034.3
57.5°	2480.2	2396.6	2164.4	1895.0	1802.1
60°	2210.8	2090.0	1895.0	1662.7	1588.4
62.5°	1913.6	1820.7	1653.5	1458.4	1551.3
65°	1644.2	1551.3	1402.7	1430.5	1189.0
67.5°	1346.9	1300.5	1170.4	1040.4	1003.2
70°	1096.1	1040.4	993.9	854.6	817.4
72.5°	873.2	817.4	752.4	678.1	650.2
75°	659.5	613.1	575.9	548.1	603.8
77.5°	455.2	436.6	408.7	380.9	371.6
80°	297.3	288.0	278.7	269.4	260.1
82.5°	176.5	176.5	176.5	176.5	176.5
85°	92.9	102.2	111.5	120.8	130.0
87.5°	55.7	55.7	65.0	74.3	83.6
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)