

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: P547280

Luminaire Tested: **FMR-24-4-LD4-4HI-35-UNV-93-85-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: P547280  
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-35-UNV-93-85-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS 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**

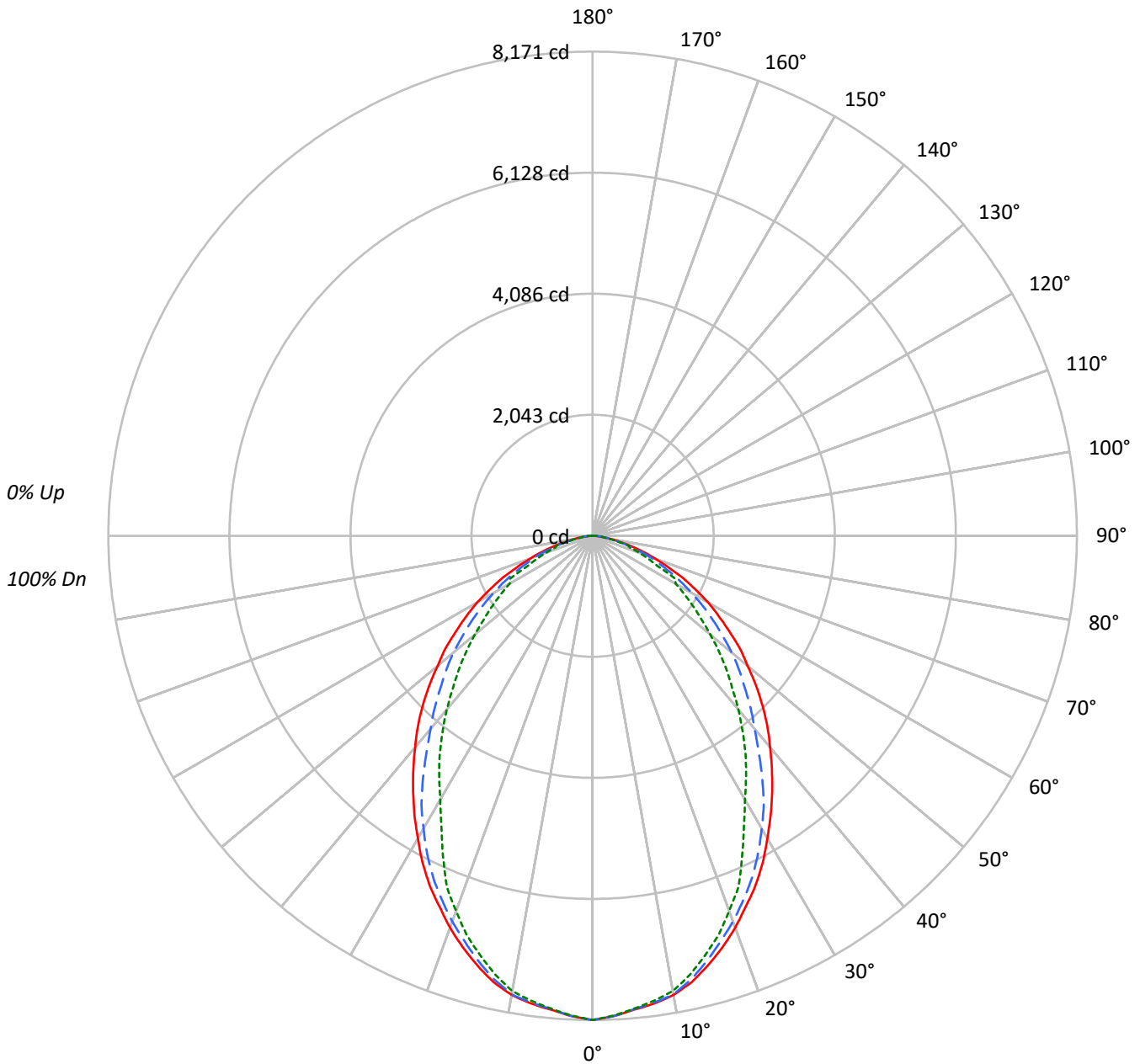
Lumens per Lamp: N/A  
Luminaire Lumens: 16041.0 lumens  
Efficiency: N/A  
Efficacy: 92.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	10994	10994	10994
5°	10845	10832	10819
10°	10751	10738	10660
15°	10461	10356	10211
20°	10077	9914	9644
25°	9662	9452	8863
30°	9158	8864	7984
35°	8673	8192	7386
40°	8180	7466	6720
45°	7711	6902	6075
50°	7138	6406	5418
55°	6603	5806	4853
60°	6050	5186	4347
65°	5323	4541	3849
70°	4385	3976	3270
75°	3487	3045	3192
80°	2342	2196	2049
85°	1459	1751	2041



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	760.6	4.7
10°-20°	2087.4	13.0
20°-30°	2889.9	18.0
30°-40°	3081.5	19.2
40°-50°	2811.2	17.5
50°-60°	2202.4	13.7
60°-70°	1435.4	8.9
70°-80°	636.0	4.0
80°-90°	136.5	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°	5738.0	35.8
0°-40°	8819.5	55.0
0°-60°	13833.1	86.2
0°-90°	16041.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	16041.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8171	8171	8171	8171	8171	
5°	8029	8020	8020	8010	8010	762
15°	7510	7510	7434	7359	7330	2111
25°	6508	6471	6367	6140	5970	2988
35°	5280	5243	4988	4610	4496	3301
45°	4052	3968	3627	3325	3193	3122
55°	2815	2730	2475	2182	2069	2525
65°	1672	1578	1426	1455	1209	1648
75°	671	624	586	557	614	719
85°	94	104	113	123	132	131
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8171.1	8171.1	8171.1	8171.1	8171.1
2.5°	8114.4	8114.4	8114.4	8104.9	8104.9
5°	8029.4	8019.9	8019.9	8010.5	8010.5
7.5°	7963.3	7953.8	7944.4	7934.9	7916.0
10°	7868.8	7868.8	7859.3	7812.1	7802.7
12.5°	7717.6	7708.2	7670.4	7604.3	7585.4
15°	7509.8	7509.8	7434.3	7358.7	7330.3
17.5°	7283.1	7273.7	7179.2	7103.6	7065.9
20°	7037.5	7018.6	6924.2	6801.4	6735.2
22.5°	6763.6	6763.6	6650.2	6489.6	6423.5
25°	6508.5	6470.7	6366.8	6140.1	5970.1
27.5°	6215.7	6159.0	6045.6	5724.5	5526.1
30°	5894.5	5866.2	5705.6	5289.9	5138.8
32.5°	5592.2	5545.0	5375.0	4940.4	4817.6
35°	5280.5	5242.7	4987.7	4609.8	4496.5
37.5°	4968.8	4921.5	4600.4	4298.1	4156.4
40°	4657.0	4600.4	4250.8	3976.9	3825.8
42.5°	4364.2	4288.6	3948.6	3655.7	3485.7
45°	4052.5	3967.5	3627.4	3325.1	3192.9
47.5°	3740.7	3665.2	3353.4	3041.7	2890.6
50°	3410.1	3344.0	3060.6	2748.9	2588.3
52.5°	3136.2	3032.3	2758.3	2446.6	2314.3
55°	2815.0	2730.0	2474.9	2182.1	2068.7
57.5°	2522.2	2437.2	2201.0	1927.1	1832.6
60°	2248.2	2125.4	1927.1	1690.9	1615.3
62.5°	1945.9	1851.5	1681.4	1483.1	1577.5
65°	1672.0	1577.5	1426.4	1454.7	1209.1
67.5°	1369.7	1322.5	1190.2	1058.0	1020.2
70°	1114.7	1058.0	1010.8	869.1	831.3
72.5°	888.0	831.3	765.2	689.6	661.2
75°	670.7	623.5	585.7	557.3	614.0
77.5°	462.9	444.0	415.6	387.3	377.9
80°	302.3	292.8	283.4	273.9	264.5
82.5°	179.5	179.5	179.5	179.5	179.5
85°	94.5	103.9	113.4	122.8	132.2
87.5°	56.7	56.7	66.1	75.6	85.0
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)