

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: P546773

Luminaire Tested: **FMR-24-4-LD4-2HI-50-UNV-93-96-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: P546773  
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-LD4-2HI-50-UNV-93-96-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

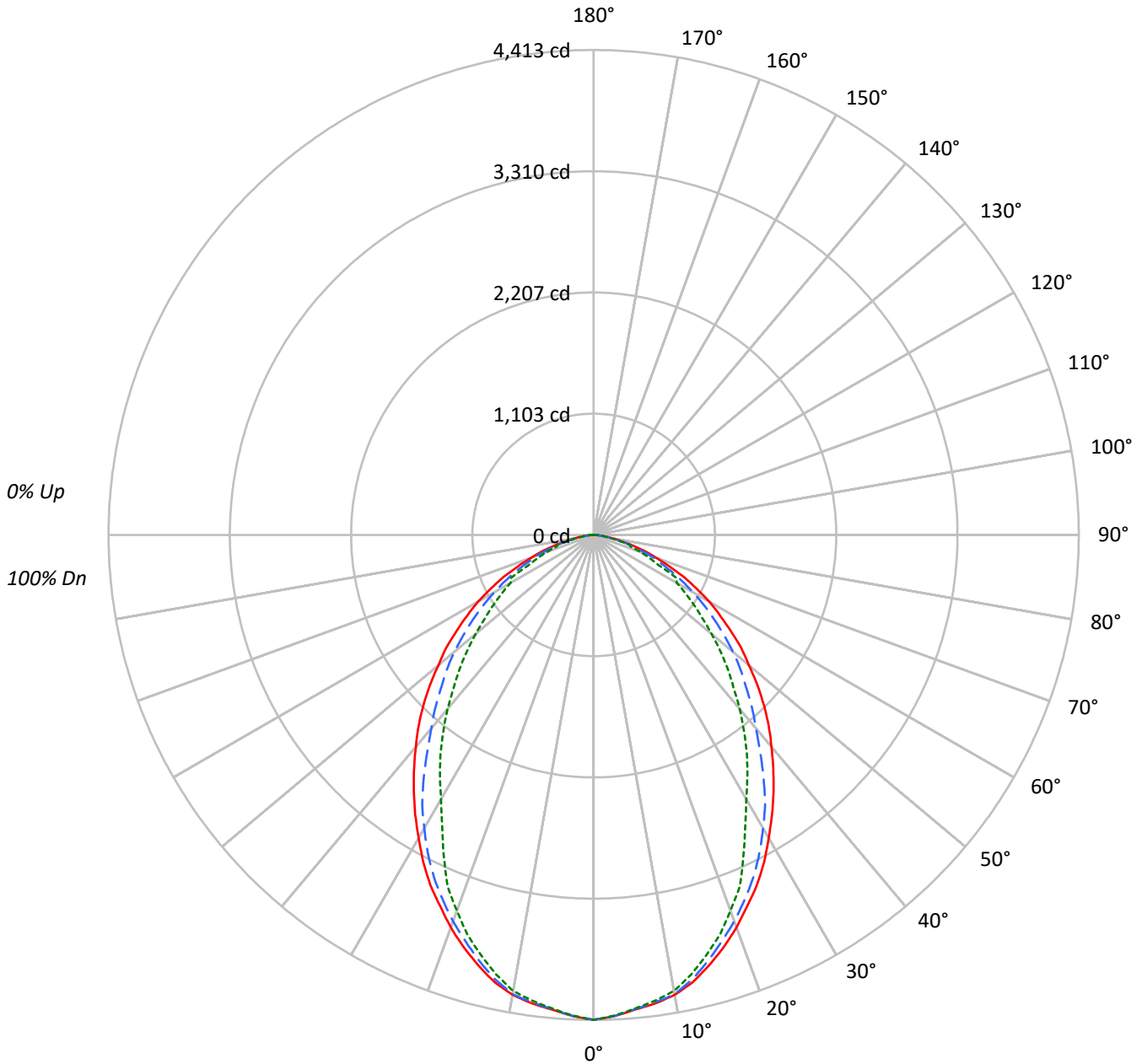
Lumens per Lamp: N/A  
Luminaire Lumens: 8663.0 lumens  
Efficiency: N/A  
Efficacy: 100.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	5937	5937	5937
5°	5857	5850	5843
10°	5806	5799	5757
15°	5649	5593	5514
20°	5442	5354	5208
25°	5218	5105	4787
30°	4946	4787	4312
35°	4684	4424	3989
40°	4418	4032	3629
45°	4164	3728	3281
50°	3855	3460	2926
55°	3566	3135	2621
60°	3267	2801	2348
65°	2875	2452	2079
70°	2368	2148	1766
75°	1883	1644	1724
80°	1265	1185	1106
85°	787	945	1102



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	410.8	4.7
10°-20°	1127.3	13.0
20°-30°	1560.7	18.0
30°-40°	1664.2	19.2
40°-50°	1518.2	17.5
50°-60°	1189.4	13.7
60°-70°	775.2	8.9
70°-80°	343.4	4.0
80°-90°	73.7	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°	3098.8	35.8
0°-40°	4763.0	55.0
0°-60°	7470.6	86.2
0°-90°	8663.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8663.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4413	4413	4413	4413	4413	
5°	4336	4331	4331	4326	4326	412
15°	4056	4056	4015	3974	3959	1140
25°	3515	3494	3438	3316	3224	1614
35°	2852	2831	2694	2490	2428	1783
45°	2189	2143	1959	1796	1724	1686
55°	1520	1474	1337	1178	1117	1364
65°	903	852	770	786	653	890
75°	362	337	316	301	332	388
85°	51	56	61	66	71	71
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4412.8	4412.8	4412.8	4412.8	4412.8
2.5°	4382.2	4382.2	4382.2	4377.1	4377.1
5°	4336.3	4331.2	4331.2	4326.1	4326.1
7.5°	4300.6	4295.5	4290.4	4285.3	4275.1
10°	4249.6	4249.6	4244.5	4219.0	4213.9
12.5°	4167.9	4162.8	4142.4	4106.7	4096.5
15°	4055.7	4055.7	4014.9	3974.1	3958.8
17.5°	3933.3	3928.2	3877.2	3836.3	3815.9
20°	3800.6	3790.4	3739.4	3673.1	3637.4
22.5°	3652.7	3652.7	3591.5	3504.7	3469.0
25°	3514.9	3494.5	3438.4	3316.0	3224.2
27.5°	3356.8	3326.2	3265.0	3091.5	2984.4
30°	3183.3	3168.0	3081.3	2856.9	2775.2
32.5°	3020.1	2994.6	2902.8	2668.1	2601.8
35°	2851.8	2831.3	2693.6	2489.5	2428.3
37.5°	2683.4	2657.9	2484.4	2321.2	2244.7
40°	2515.1	2484.4	2295.7	2147.7	2066.1
42.5°	2356.9	2316.1	2132.4	1974.3	1882.5
45°	2188.6	2142.6	1959.0	1795.7	1724.3
47.5°	2020.2	1979.4	1811.0	1642.7	1561.1
50°	1841.6	1805.9	1652.9	1484.5	1397.8
52.5°	1693.7	1637.6	1489.6	1321.3	1249.9
55°	1520.3	1474.3	1336.6	1178.5	1117.2
57.5°	1362.1	1316.2	1188.7	1040.7	989.7
60°	1214.2	1147.8	1040.7	913.2	872.4
62.5°	1050.9	999.9	908.1	800.9	852.0
65°	903.0	852.0	770.3	785.6	653.0
67.5°	739.7	714.2	642.8	571.4	551.0
70°	602.0	571.4	545.9	469.3	448.9
72.5°	479.5	448.9	413.2	372.4	357.1
75°	362.2	336.7	316.3	301.0	331.6
77.5°	250.0	239.8	224.5	209.2	204.1
80°	163.2	158.1	153.0	147.9	142.8
82.5°	96.9	96.9	96.9	96.9	96.9
85°	51.0	56.1	61.2	66.3	71.4
87.5°	30.6	30.6	35.7	40.8	45.9
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)