

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: P546836

Luminaire Tested: **FMR-24-4-LD4-2LO-40-UNV-93-94-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: P546836  
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-LD4-2LO-40-UNV-93-94-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS 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**

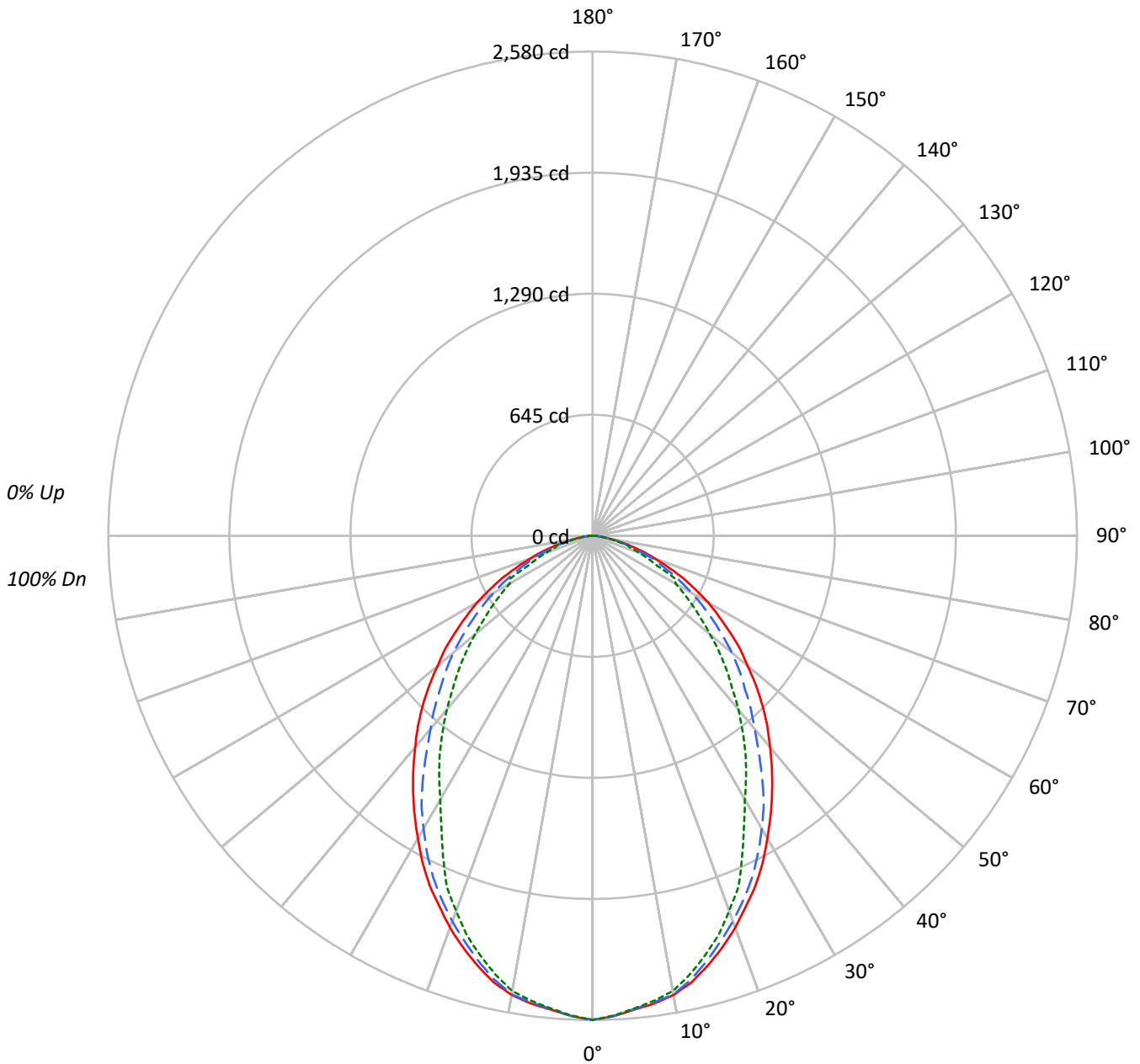
Lumens per Lamp: N/A  
Luminaire Lumens: 5064.0 lumens  
Efficiency: N/A  
Efficacy: 108.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.8  
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°	3471	3471	3471
5°	3424	3420	3415
10°	3394	3390	3365
15°	3302	3269	3223
20°	3181	3130	3045
25°	3050	2984	2798
30°	2891	2798	2520
35°	2738	2586	2332
40°	2582	2357	2121
45°	2434	2179	1918
50°	2253	2022	1710
55°	2085	1833	1532
60°	1910	1637	1372
65°	1680	1434	1215
70°	1384	1255	1032
75°	1101	961	1007
80°	739	693	647
85°	460	553	644



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	240.1	4.7
10°-20°	659.0	13.0
20°-30°	912.3	18.0
30°-40°	972.8	19.2
40°-50°	887.5	17.5
50°-60°	695.3	13.7
60°-70°	453.1	8.9
70°-80°	200.8	4.0
80°-90°	43.1	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°	1811.4	35.8
0°-40°	2784.2	55.0
0°-60°	4367.0	86.2
0°-90°	5064.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5064.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2580	2580	2580	2580	2580	
5°	2535	2532	2532	2529	2529	241
15°	2371	2371	2347	2323	2314	666
25°	2055	2043	2010	1938	1885	943
35°	1667	1655	1575	1455	1420	1042
45°	1279	1252	1145	1050	1008	985
55°	889	862	781	689	653	797
65°	528	498	450	459	382	520
75°	212	197	185	176	194	227
85°	30	33	36	39	42	41
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2579.5	2579.5	2579.5	2579.5	2579.5
2.5°	2561.6	2561.6	2561.6	2558.7	2558.7
5°	2534.8	2531.8	2531.8	2528.8	2528.8
7.5°	2513.9	2510.9	2508.0	2505.0	2499.0
10°	2484.1	2484.1	2481.1	2466.2	2463.2
12.5°	2436.4	2433.4	2421.5	2400.6	2394.6
15°	2370.8	2370.8	2346.9	2323.1	2314.1
17.5°	2299.2	2296.2	2266.4	2242.6	2230.6
20°	2221.7	2215.7	2185.9	2147.1	2126.3
22.5°	2135.2	2135.2	2099.4	2048.7	2027.8
25°	2054.7	2042.8	2009.9	1938.4	1884.7
27.5°	1962.2	1944.3	1908.6	1807.2	1744.5
30°	1860.8	1851.9	1801.2	1670.0	1622.3
32.5°	1765.4	1750.5	1696.8	1559.6	1520.9
35°	1667.0	1655.1	1574.6	1455.3	1419.5
37.5°	1568.6	1553.7	1452.3	1356.9	1312.1
40°	1470.2	1452.3	1342.0	1255.5	1207.8
42.5°	1377.7	1353.9	1246.5	1154.1	1100.4
45°	1279.3	1252.5	1145.1	1049.7	1008.0
47.5°	1180.9	1157.1	1058.7	960.2	912.5
50°	1076.5	1055.7	966.2	867.8	817.1
52.5°	990.1	957.3	870.8	772.4	730.6
55°	888.7	861.8	781.3	688.9	653.1
57.5°	796.2	769.4	694.8	608.4	578.5
60°	709.7	671.0	608.4	533.8	509.9
62.5°	614.3	584.5	530.8	468.2	498.0
65°	527.8	498.0	450.3	459.2	381.7
67.5°	432.4	417.5	375.7	334.0	322.1
70°	351.9	334.0	319.1	274.4	262.4
72.5°	280.3	262.4	241.6	217.7	208.7
75°	211.7	196.8	184.9	175.9	193.8
77.5°	146.1	140.2	131.2	122.3	119.3
80°	95.4	92.4	89.5	86.5	83.5
82.5°	56.7	56.7	56.7	56.7	56.7
85°	29.8	32.8	35.8	38.8	41.7
87.5°	17.9	17.9	20.9	23.9	26.8
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)