

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: P547413

Luminaire Tested: **FMR-24-4-LD4-4LO-40-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: P547413  
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-LD4-4LO-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

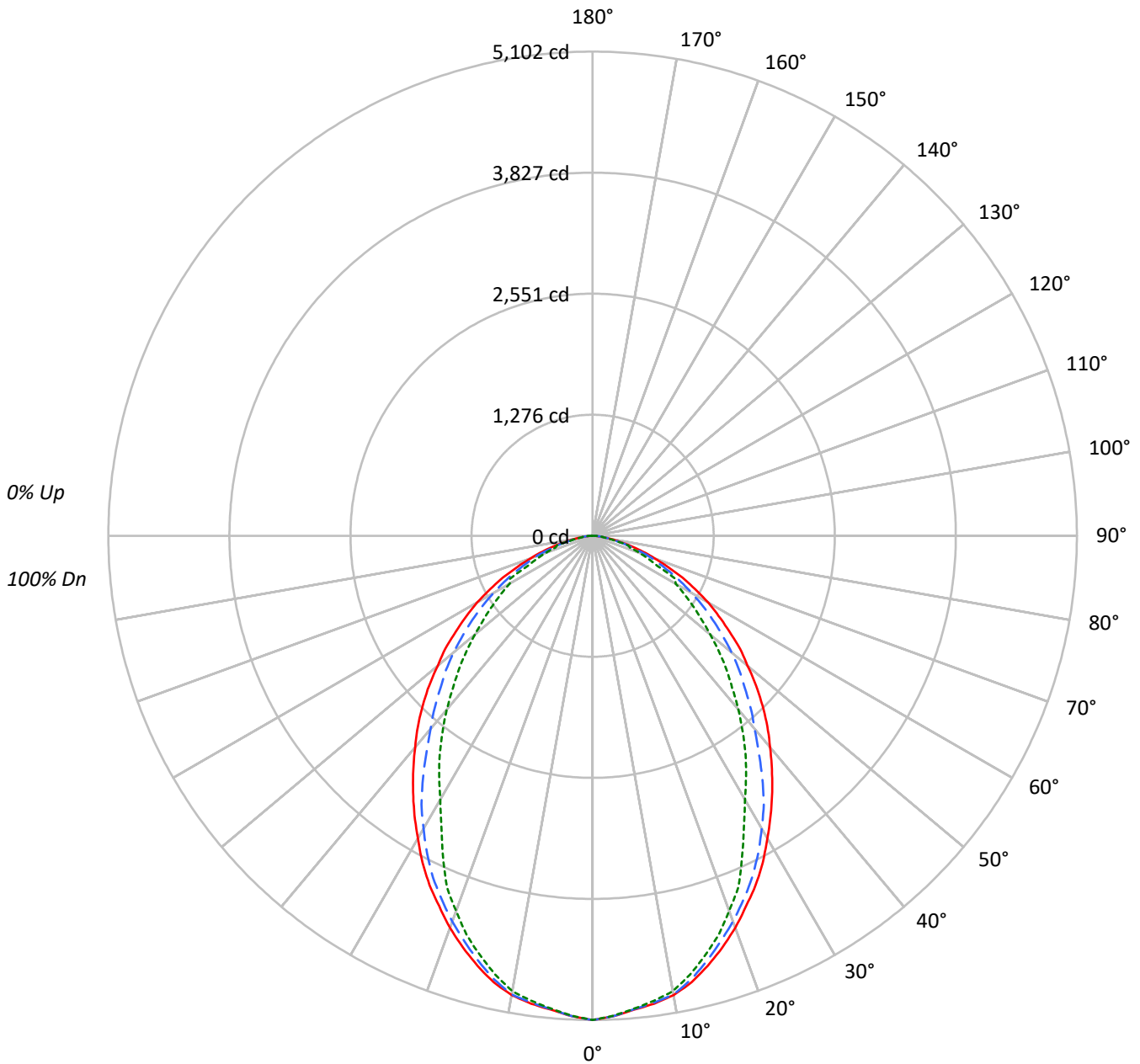
Lumens per Lamp: N/A  
Luminaire Lumens: 10017.0 lumens  
Efficiency: N/A  
Efficacy: 107.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 93.6  
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°	6865	6865	6865
5°	6772	6764	6756
10°	6713	6705	6657
15°	6532	6467	6376
20°	6293	6191	6022
25°	6034	5902	5535
30°	5719	5535	4986
35°	5416	5116	4612
40°	5108	4662	4196
45°	4815	4310	3794
50°	4457	4001	3383
55°	4124	3625	3031
60°	3778	3238	2714
65°	3324	2836	2404
70°	2738	2483	2042
75°	2177	1901	1993
80°	1463	1371	1280
85°	911	1093	1275



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	475.0	4.7
10°-20°	1303.5	13.0
20°-30°	1804.7	18.0
30°-40°	1924.3	19.2
40°-50°	1755.5	17.5
50°-60°	1375.3	13.7
60°-70°	896.4	8.9
70°-80°	397.1	4.0
80°-90°	85.3	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°	3583.2	35.8
0°-40°	5507.5	55.0
0°-60°	8638.3	86.2
0°-90°	10017.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10017.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5102	5102	5102	5102	5102	
5°	5014	5008	5008	5002	5002	476
15°	4690	4690	4642	4595	4578	1318
25°	4064	4041	3976	3834	3728	1866
35°	3298	3274	3115	2879	2808	2062
45°	2531	2478	2265	2076	1994	1949
55°	1758	1705	1546	1363	1292	1577
65°	1044	985	891	908	755	1029
75°	419	389	366	348	383	449
85°	59	65	71	77	83	82
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5102.5	5102.5	5102.5	5102.5	5102.5
2.5°	5067.1	5067.1	5067.1	5061.2	5061.2
5°	5014.0	5008.1	5008.1	5002.2	5002.2
7.5°	4972.8	4966.9	4961.0	4955.1	4943.3
10°	4913.8	4913.8	4907.9	4878.4	4872.5
12.5°	4819.4	4813.5	4789.9	4748.6	4736.8
15°	4689.6	4689.6	4642.4	4595.2	4577.5
17.5°	4548.0	4542.1	4483.1	4436.0	4412.4
20°	4394.7	4382.9	4323.9	4247.2	4205.9
22.5°	4223.6	4223.6	4152.8	4052.5	4011.2
25°	4064.3	4040.7	3975.8	3834.3	3728.1
27.5°	3881.5	3846.1	3775.3	3574.7	3450.8
30°	3680.9	3663.2	3562.9	3303.4	3209.0
32.5°	3492.1	3462.6	3356.5	3085.1	3008.4
35°	3297.5	3273.9	3114.6	2878.7	2807.9
37.5°	3102.8	3073.3	2872.8	2684.0	2595.5
40°	2908.1	2872.8	2654.5	2483.4	2389.0
42.5°	2725.3	2678.1	2465.7	2282.9	2176.7
45°	2530.6	2477.5	2265.2	2076.4	1993.8
47.5°	2336.0	2288.8	2094.1	1899.4	1805.1
50°	2129.5	2088.2	1911.2	1716.6	1616.3
52.5°	1958.4	1893.5	1722.5	1527.8	1445.2
55°	1757.9	1704.8	1545.5	1362.6	1291.9
57.5°	1575.0	1521.9	1374.4	1203.4	1144.4
60°	1403.9	1327.2	1203.4	1055.9	1008.7
62.5°	1215.2	1156.2	1050.0	926.1	985.1
65°	1044.1	985.1	890.7	908.4	755.1
67.5°	855.3	825.8	743.3	660.7	637.1
70°	696.1	660.7	631.2	542.7	519.1
72.5°	554.5	519.1	477.8	430.6	412.9
75°	418.8	389.3	365.7	348.0	383.4
77.5°	289.0	277.2	259.6	241.9	236.0
80°	188.8	182.9	177.0	171.1	165.2
82.5°	112.1	112.1	112.1	112.1	112.1
85°	59.0	64.9	70.8	76.7	82.6
87.5°	35.4	35.4	41.3	47.2	53.1
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)