

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: P547428

Luminaire Tested: **FMR-24-4-LD4-4LO-50-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: P547428  
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-50-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 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

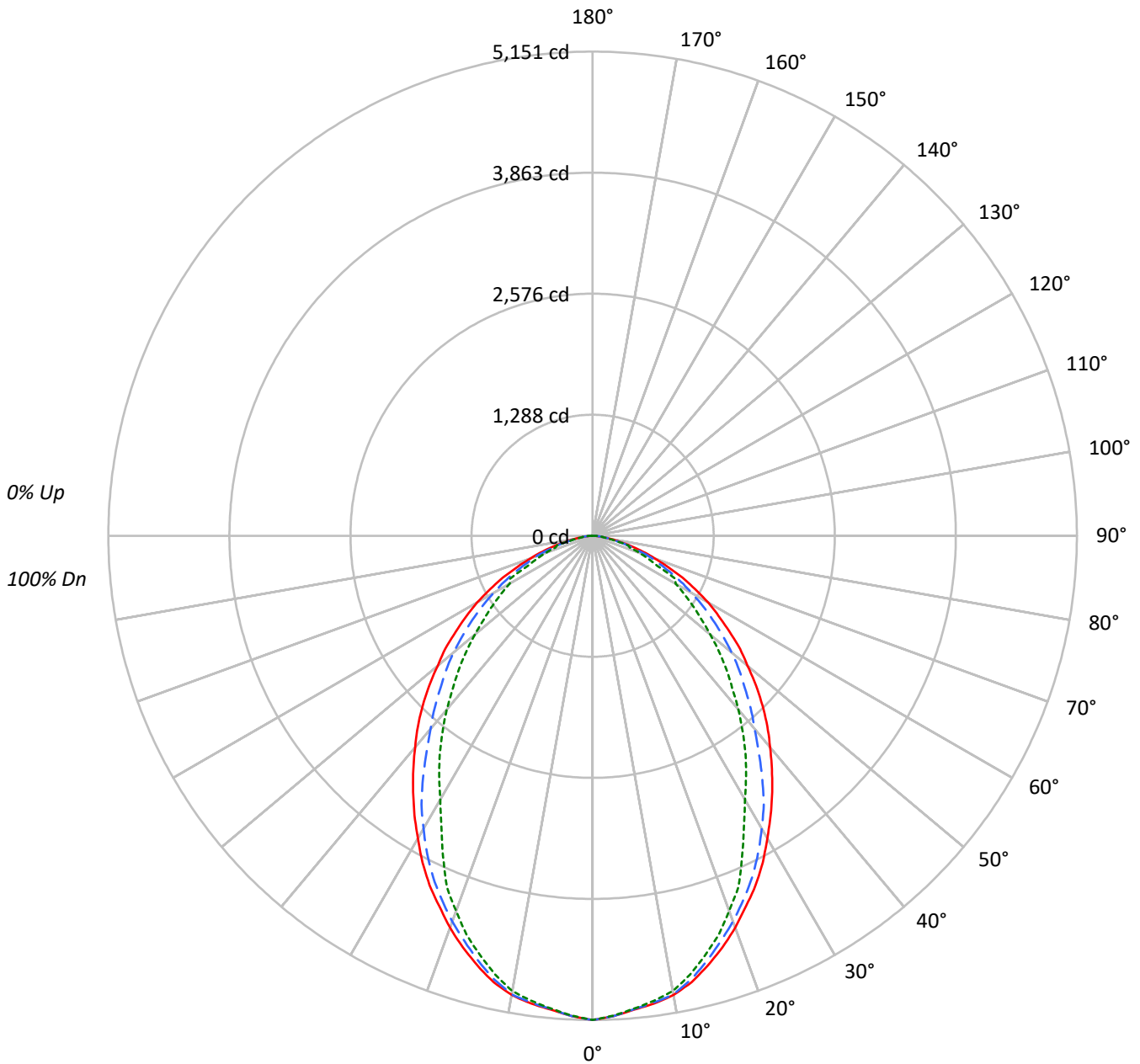
Lumens per Lamp: N/A  
Luminaire Lumens: 10112.0 lumens  
Efficiency: N/A  
Efficacy: 108.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 93.6  
Input Voltage (V): NR  
Input Current (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°	6930	6930	6930
5°	6836	6828	6820
10°	6777	6769	6720
15°	6594	6528	6437
20°	6352	6250	6079
25°	6091	5958	5587
30°	5773	5588	5033
35°	5468	5164	4656
40°	5156	4707	4236
45°	4861	4351	3830
50°	4500	4039	3415
55°	4163	3660	3059
60°	3814	3269	2740
65°	3356	2863	2427
70°	2764	2507	2061
75°	2198	1919	2012
80°	1477	1384	1292
85°	919	1104	1288



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	479.5	4.7
10°-20°	1315.9	13.0
20°-30°	1821.8	18.0
30°-40°	1942.5	19.2
40°-50°	1772.2	17.5
50°-60°	1388.3	13.7
60°-70°	904.9	8.9
70°-80°	400.9	4.0
80°-90°	86.1	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°	3617.1	35.8
0°-40°	5559.7	55.0
0°-60°	8720.2	86.2
0°-90°	10112.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10112.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5151	5151	5151	5151	5151	
5°	5062	5056	5056	5050	5050	480
15°	4734	4734	4686	4639	4621	1331
25°	4103	4079	4014	3871	3763	1884
35°	3329	3305	3144	2906	2834	2081
45°	2555	2501	2287	2096	2013	1968
55°	1774	1721	1560	1376	1304	1592
65°	1054	994	899	917	762	1039
75°	423	393	369	351	387	453
85°	60	66	72	77	83	83
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5150.9	5150.9	5150.9	5150.9	5150.9
2.5°	5115.2	5115.2	5115.2	5109.2	5109.2
5°	5061.6	5055.6	5055.6	5049.7	5049.7
7.5°	5019.9	5014.0	5008.0	5002.0	4990.1
10°	4960.4	4960.4	4954.4	4924.6	4918.7
12.5°	4865.1	4859.1	4835.3	4793.6	4781.7
15°	4734.1	4734.1	4686.4	4638.8	4620.9
17.5°	4591.2	4585.2	4525.7	4478.0	4454.2
20°	4436.3	4424.4	4364.9	4287.5	4245.8
22.5°	4263.6	4263.6	4192.2	4091.0	4049.3
25°	4102.9	4079.1	4013.5	3870.6	3763.4
27.5°	3918.3	3882.5	3811.1	3608.6	3483.6
30°	3715.8	3697.9	3596.7	3334.7	3239.4
32.5°	3525.3	3495.5	3388.3	3114.4	3037.0
35°	3328.7	3304.9	3144.1	2906.0	2834.5
37.5°	3132.2	3102.5	2900.0	2709.4	2620.1
40°	2935.7	2900.0	2679.7	2507.0	2411.7
42.5°	2751.1	2703.5	2489.1	2304.5	2197.3
45°	2554.6	2501.0	2286.7	2096.1	2012.7
47.5°	2358.1	2310.5	2114.0	1917.5	1822.2
50°	2149.7	2108.0	1929.4	1732.9	1631.6
52.5°	1977.0	1911.5	1738.8	1542.3	1458.9
55°	1774.5	1720.9	1560.2	1375.6	1304.1
57.5°	1589.9	1536.3	1387.5	1214.8	1155.2
60°	1417.2	1339.8	1214.8	1065.9	1018.3
62.5°	1226.7	1167.1	1060.0	934.9	994.5
65°	1054.0	994.5	899.2	917.0	762.2
67.5°	863.4	833.7	750.3	666.9	643.1
70°	702.7	666.9	637.2	547.8	524.0
72.5°	559.8	524.0	482.3	434.7	416.8
75°	422.8	393.0	369.2	351.3	387.1
77.5°	291.8	279.9	262.0	244.1	238.2
80°	190.6	184.6	178.6	172.7	166.7
82.5°	113.1	113.1	113.1	113.1	113.1
85°	59.5	65.5	71.5	77.4	83.4
87.5°	35.7	35.7	41.7	47.6	53.6
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)