

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: P547254

Luminaire Tested: **FMR-24-4-LD4-3STD-50-UNV-93-97-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: P547254  
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-LD4-3STD-50-UNV-93-97-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

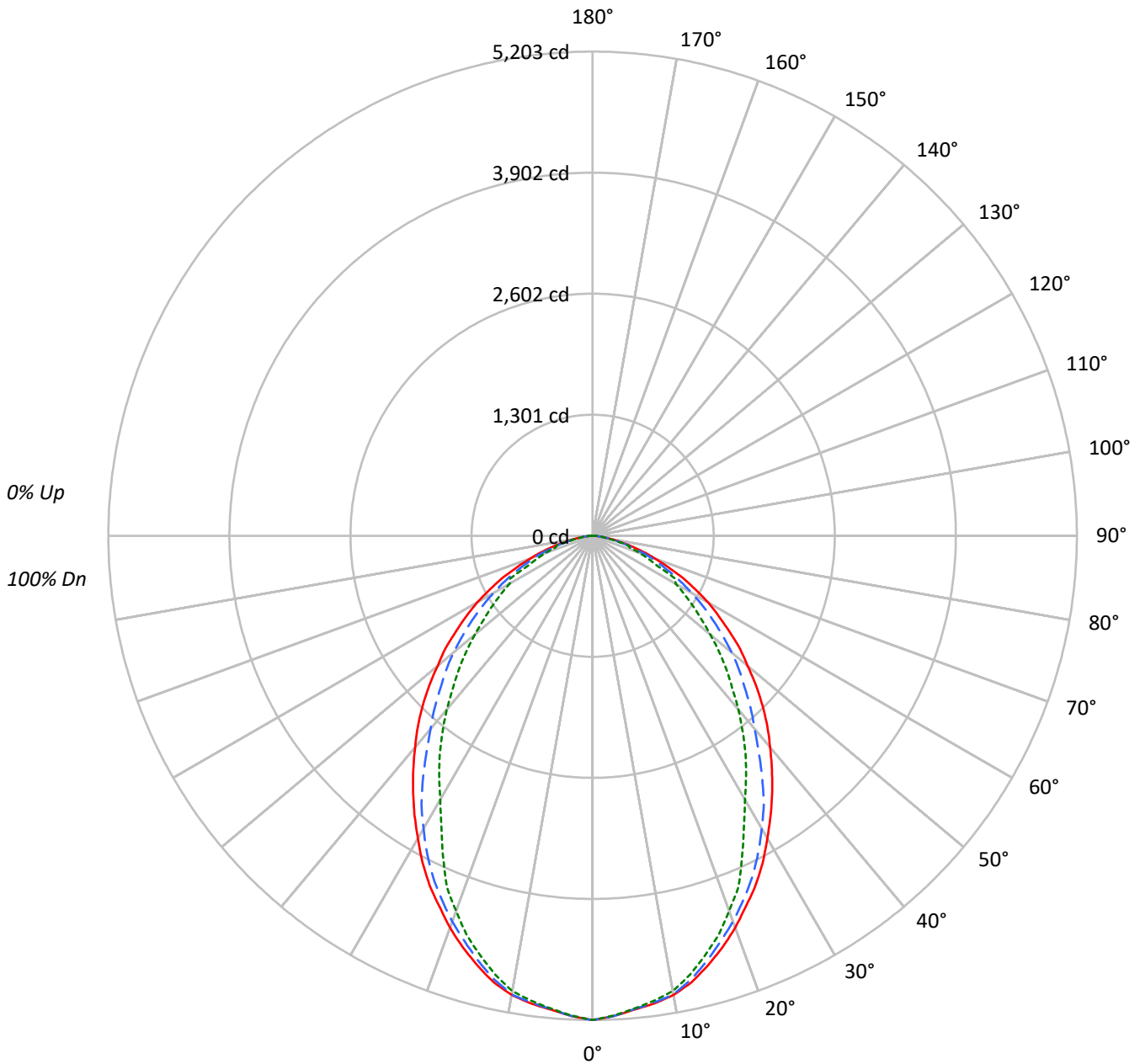
Lumens per Lamp: N/A  
Luminaire Lumens: 10214.0 lumens  
Efficiency: N/A  
Efficacy: 102.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 99.9  
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				20				20	
RC	80				70				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				100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87				87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75				75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65				65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56				56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50				50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44				44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40				40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36				36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33				33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30				30

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	7000	7000	7000
5°	6905	6897	6889
10°	6845	6837	6788
15°	6661	6594	6502
20°	6416	6313	6141
25°	6153	6019	5643
30°	5831	5644	5084
35°	5523	5217	4703
40°	5208	4754	4279
45°	4910	4395	3868
50°	4545	4079	3450
55°	4205	3697	3090
60°	3852	3302	2768
65°	3389	2891	2451
70°	2792	2532	2082
75°	2220	1939	2033
80°	1492	1398	1305
85°	928	1115	1300



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	484.3	4.7
10°-20°	1329.2	13.0
20°-30°	1840.1	18.0
30°-40°	1962.1	19.2
40°-50°	1790.0	17.5
50°-60°	1402.3	13.7
60°-70°	914.0	8.9
70°-80°	404.9	4.0
80°-90°	86.9	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°	3653.6	35.8
0°-40°	5615.8	55.0
0°-60°	8808.1	86.2
0°-90°	10214.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10214.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5203	5203	5203	5203	5203	
5°	5113	5107	5107	5101	5101	485
15°	4782	4782	4734	4686	4668	1344
25°	4144	4120	4054	3910	3801	1903
35°	3362	3338	3176	2935	2863	2102
45°	2580	2526	2310	2117	2033	1988
55°	1792	1738	1576	1389	1317	1608
65°	1065	1004	908	926	770	1049
75°	427	397	373	355	391	458
85°	60	66	72	78	84	83
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5202.9	5202.9	5202.9	5202.9	5202.9
2.5°	5166.8	5166.8	5166.8	5160.8	5160.8
5°	5112.7	5106.6	5106.6	5100.6	5100.6
7.5°	5070.5	5064.5	5058.5	5052.5	5040.5
10°	5010.4	5010.4	5004.4	4974.3	4968.3
12.5°	4914.2	4908.1	4884.1	4842.0	4830.0
15°	4781.8	4781.8	4733.7	4685.6	4667.6
17.5°	4637.5	4631.5	4571.3	4523.2	4499.1
20°	4481.1	4469.1	4408.9	4330.7	4288.6
22.5°	4306.7	4306.7	4234.5	4132.2	4090.1
25°	4144.3	4120.2	4054.0	3909.7	3801.4
27.5°	3957.8	3921.7	3849.5	3645.0	3518.7
30°	3753.3	3735.2	3633.0	3368.3	3272.1
32.5°	3560.8	3530.7	3422.5	3145.8	3067.6
35°	3362.3	3338.3	3175.9	2935.3	2863.1
37.5°	3163.8	3133.8	2929.2	2736.8	2646.5
40°	2965.3	2929.2	2706.7	2532.3	2436.0
42.5°	2778.9	2730.8	2514.2	2327.8	2219.5
45°	2580.4	2526.3	2309.7	2117.2	2033.0
47.5°	2381.9	2333.8	2135.3	1936.8	1840.6
50°	2171.4	2129.3	1948.8	1750.3	1648.1
52.5°	1996.9	1930.8	1756.3	1557.9	1473.6
55°	1792.4	1738.3	1575.9	1389.4	1317.3
57.5°	1606.0	1551.8	1401.5	1227.0	1166.9
60°	1431.5	1353.3	1227.0	1076.7	1028.5
62.5°	1239.1	1178.9	1070.6	944.3	1004.5
65°	1064.6	1004.5	908.2	926.3	769.9
67.5°	872.2	842.1	757.9	673.7	649.6
70°	709.8	673.7	643.6	553.4	529.3
72.5°	565.4	529.3	487.2	439.1	421.0
75°	427.1	397.0	372.9	354.9	391.0
77.5°	294.7	282.7	264.7	246.6	240.6
80°	192.5	186.5	180.4	174.4	168.4
82.5°	114.3	114.3	114.3	114.3	114.3
85°	60.1	66.2	72.2	78.2	84.2
87.5°	36.1	36.1	42.1	48.1	54.1
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)