

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: P547541

Luminaire Tested: **FMR-24-4-LD4-4STD-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: P547541  
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-LD4-4STD-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**

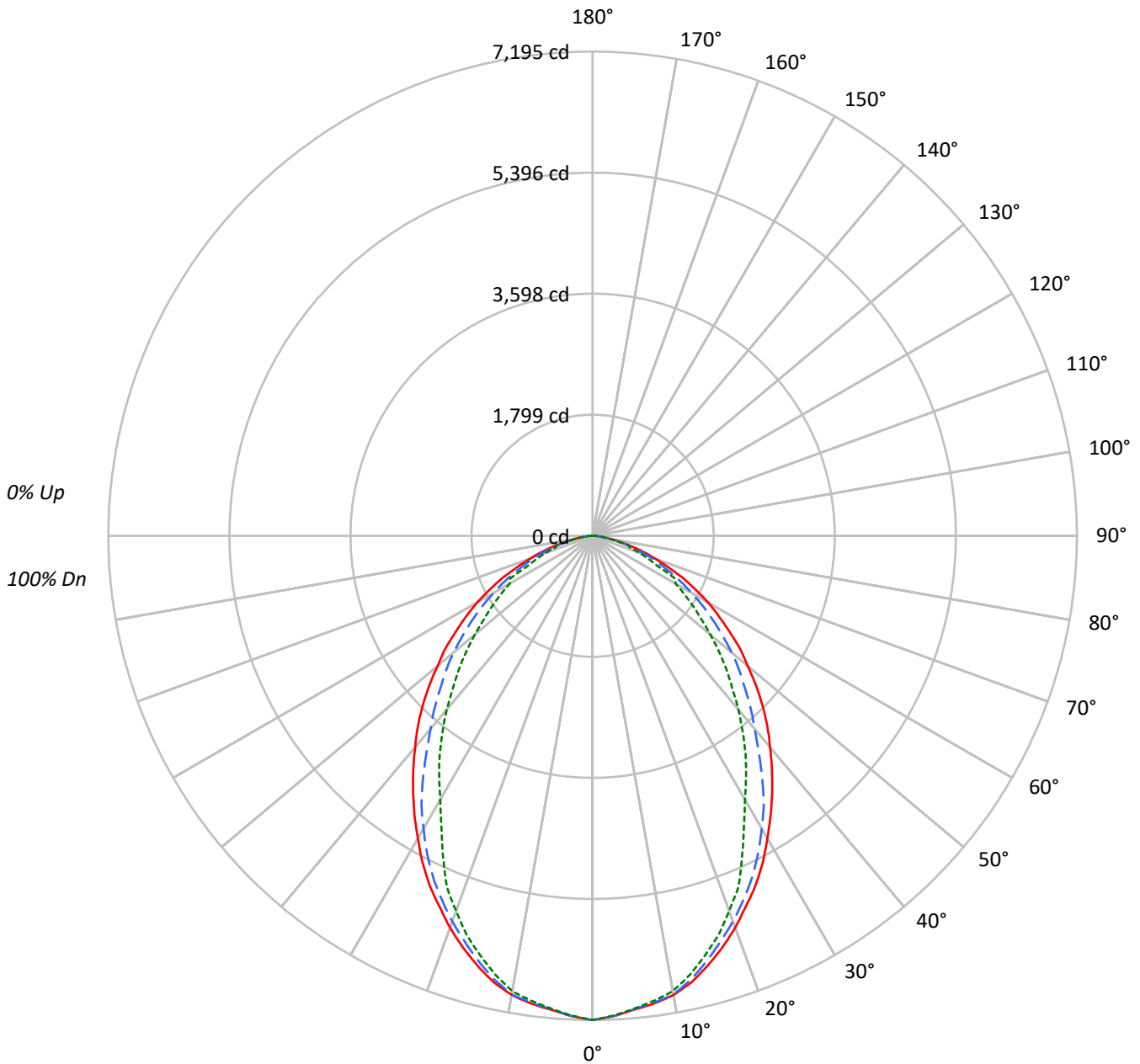
Lumens per Lamp: N/A  
Luminaire Lumens: 14125.0 lumens  
Efficiency: N/A  
Efficacy: 106.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 133.2  
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				
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	100	100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30

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

	0°	45°	90°
0°	9681	9681	9681
5°	9549	9538	9527
10°	9467	9455	9387
15°	9211	9119	8991
20°	8873	8730	8492
25°	8508	8323	7804
30°	8064	7806	7030
35°	7637	7214	6503
40°	7203	6574	5917
45°	6790	6078	5350
50°	6285	5641	4771
55°	5815	5112	4273
60°	5327	4566	3828
65°	4687	3999	3390
70°	3861	3501	2880
75°	3070	2681	2811
80°	2063	1933	1805
85°	1284	1541	1798



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	669.8	4.7
10°-20°	1838.1	13.0
20°-30°	2544.7	18.0
30°-40°	2713.4	19.2
40°-50°	2475.4	17.5
50°-60°	1939.3	13.7
60°-70°	1263.9	8.9
70°-80°	560.0	4.0
80°-90°	120.2	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°	5052.6	35.8
0°-40°	7766.1	55.0
0°-60°	12180.8	86.2
0°-90°	14125.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14125.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7195	7195	7195	7195	7195	
5°	7070	7062	7062	7054	7054	671
15°	6613	6613	6546	6480	6455	1859
25°	5731	5698	5606	5407	5257	2631
35°	4650	4616	4392	4059	3959	2907
45°	3568	3494	3194	2928	2812	2749
55°	2479	2404	2179	1922	1822	2223
65°	1472	1389	1256	1281	1065	1451
75°	591	549	516	491	541	633
85°	83	92	100	108	116	115
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7195.1	7195.1	7195.1	7195.1	7195.1
2.5°	7145.2	7145.2	7145.2	7136.9	7136.9
5°	7070.3	7062.0	7062.0	7053.7	7053.7
7.5°	7012.1	7003.8	6995.5	6987.1	6970.5
10°	6928.9	6928.9	6920.6	6879.0	6870.7
12.5°	6795.8	6787.5	6754.2	6696.0	6679.4
15°	6612.8	6612.8	6546.3	6479.7	6454.8
17.5°	6413.2	6404.9	6321.7	6255.2	6221.9
20°	6196.9	6180.3	6097.1	5989.0	5930.7
22.5°	5955.7	5955.7	5855.9	5714.5	5656.3
25°	5731.1	5697.8	5606.3	5406.7	5257.0
27.5°	5473.3	5423.3	5323.5	5040.7	4866.0
30°	5190.4	5165.5	5024.1	4658.1	4525.0
32.5°	4924.3	4882.7	4733.0	4350.3	4242.2
35°	4649.8	4616.5	4391.9	4059.2	3959.4
37.5°	4375.3	4333.7	4050.9	3784.7	3659.9
40°	4100.8	4050.9	3743.1	3501.9	3368.8
42.5°	3842.9	3776.4	3476.9	3219.1	3069.3
45°	3568.4	3493.6	3194.1	2927.9	2811.5
47.5°	3293.9	3227.4	2952.9	2678.4	2545.3
50°	3002.8	2944.6	2695.0	2420.5	2279.1
52.5°	2761.6	2670.1	2428.9	2154.4	2037.9
55°	2478.8	2403.9	2179.3	1921.5	1821.6
57.5°	2220.9	2146.0	1938.1	1696.9	1613.7
60°	1979.7	1871.6	1696.9	1488.9	1422.4
62.5°	1713.5	1630.3	1480.6	1305.9	1389.1
65°	1472.3	1389.1	1256.0	1281.0	1064.7
67.5°	1206.1	1164.5	1048.1	931.6	898.3
70°	981.5	931.6	890.0	765.3	732.0
72.5°	781.9	732.0	673.8	607.2	582.3
75°	590.6	549.0	515.7	490.8	540.7
77.5°	407.6	390.9	366.0	341.0	332.7
80°	266.2	257.9	249.5	241.2	232.9
82.5°	158.0	158.0	158.0	158.0	158.0
85°	83.2	91.5	99.8	108.1	116.5
87.5°	49.9	49.9	58.2	66.5	74.9
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)