

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: P547157

Luminaire Tested: **FMR-24-4-LD4-3LO-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: P547157  
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-LD4-3LO-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**

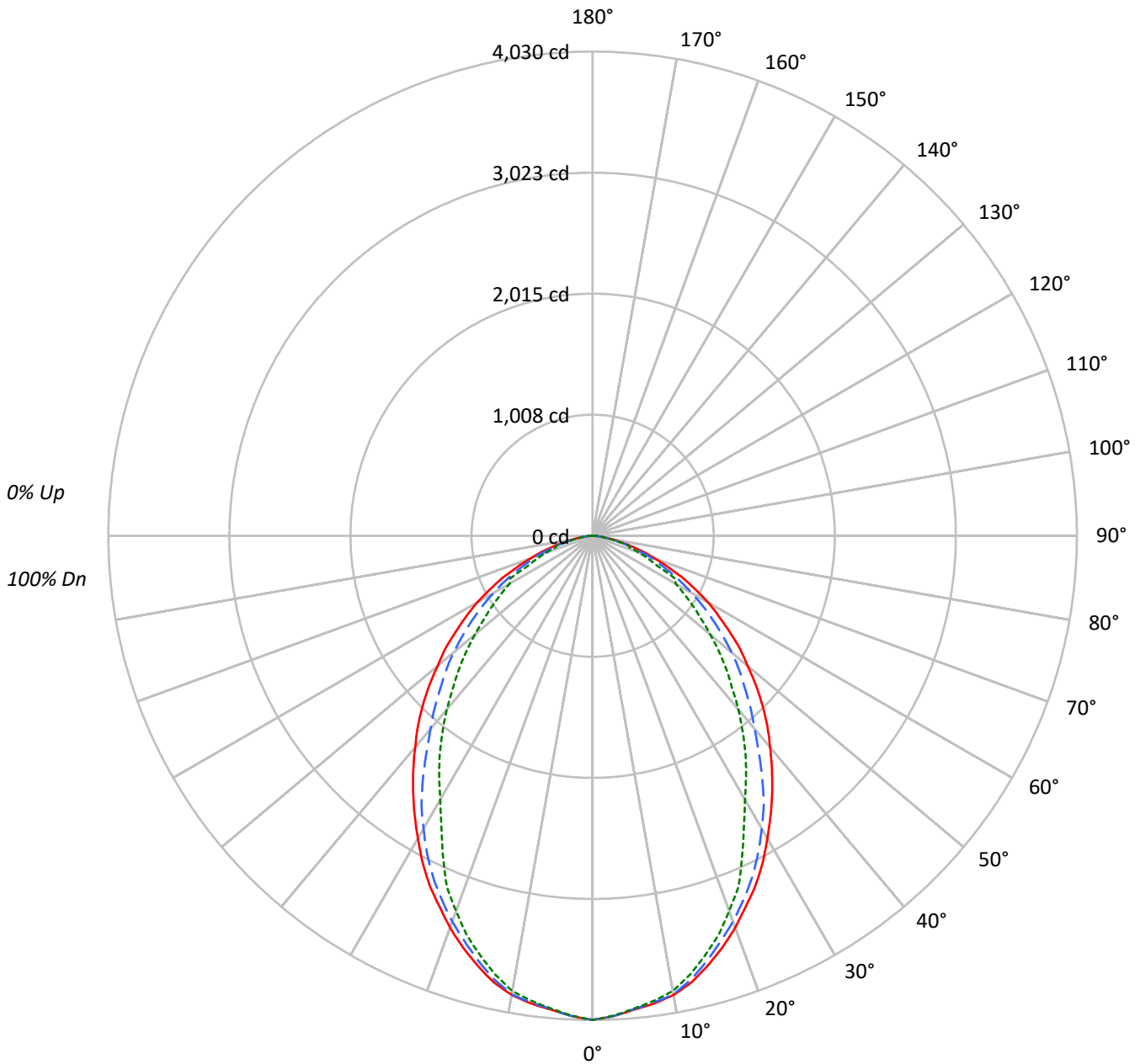
Lumens per Lamp: N/A  
Luminaire Lumens: 7911.0 lumens  
Efficiency: N/A  
Efficacy: 112.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 70.2  
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									
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°	5422	5422	5422
5°	5348	5342	5336
10°	5302	5296	5257
15°	5159	5107	5036
20°	4969	4889	4756
25°	4765	4661	4371
30°	4516	4372	3937
35°	4278	4040	3642
40°	4034	3682	3314
45°	3803	3404	2996
50°	3520	3159	2672
55°	3257	2863	2393
60°	2984	2558	2144
65°	2625	2240	1898
70°	2162	1961	1613
75°	1720	1501	1574
80°	1155	1083	1010
85°	719	863	1007



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	375.1	4.7
10°-20°	1029.5	13.0
20°-30°	1425.2	18.0
30°-40°	1519.7	19.2
40°-50°	1386.4	17.5
50°-60°	1086.2	13.7
60°-70°	707.9	8.9
70°-80°	313.6	4.0
80°-90°	67.3	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°	2829.8	35.8
0°-40°	4349.5	55.0
0°-60°	6822.1	86.2
0°-90°	7911.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7911.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4030	4030	4030	4030	4030	
5°	3960	3955	3955	3951	3951	376
15°	3704	3704	3666	3629	3615	1041
25°	3210	3191	3140	3028	2944	1474
35°	2604	2586	2460	2273	2218	1628
45°	1999	1957	1789	1640	1575	1539
55°	1388	1346	1221	1076	1020	1245
65°	825	778	704	717	596	813
75°	331	308	289	275	303	355
85°	47	51	56	61	65	65
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4029.8	4029.8	4029.8	4029.8	4029.8
2.5°	4001.8	4001.8	4001.8	3997.1	3997.1
5°	3959.9	3955.2	3955.2	3950.6	3950.6
7.5°	3927.3	3922.6	3917.9	3913.3	3904.0
10°	3880.7	3880.7	3876.0	3852.7	3848.1
12.5°	3806.1	3801.5	3782.8	3750.2	3740.9
15°	3703.7	3703.7	3666.4	3629.1	3615.1
17.5°	3591.8	3587.2	3540.6	3503.3	3484.7
20°	3470.7	3461.4	3414.8	3354.2	3321.6
22.5°	3335.6	3335.6	3279.7	3200.5	3167.9
25°	3209.8	3191.2	3139.9	3028.1	2944.3
27.5°	3065.4	3037.5	2981.6	2823.2	2725.3
30°	2907.0	2893.0	2813.8	2608.9	2534.3
32.5°	2757.9	2734.6	2650.8	2436.5	2375.9
35°	2604.2	2585.6	2459.8	2273.4	2217.5
37.5°	2450.5	2427.2	2268.8	2119.7	2049.8
40°	2296.7	2268.8	2096.4	1961.3	1886.8
42.5°	2152.3	2115.0	1947.3	1802.9	1719.1
45°	1998.6	1956.6	1788.9	1639.9	1574.6
47.5°	1844.8	1807.6	1653.8	1500.1	1425.6
50°	1681.8	1649.2	1509.4	1355.7	1276.5
52.5°	1546.7	1495.4	1360.3	1206.6	1141.4
55°	1388.3	1346.4	1220.6	1076.2	1020.3
57.5°	1243.9	1201.9	1085.5	950.4	903.8
60°	1108.8	1048.2	950.4	833.9	796.6
62.5°	959.7	913.1	829.2	731.4	778.0
65°	824.6	778.0	703.5	717.4	596.3
67.5°	675.5	652.2	587.0	521.8	503.1
70°	549.7	521.8	498.5	428.6	410.0
72.5°	437.9	410.0	377.4	340.1	326.1
75°	330.8	307.5	288.8	274.9	302.8
77.5°	228.3	219.0	205.0	191.0	186.3
80°	149.1	144.4	139.8	135.1	130.4
82.5°	88.5	88.5	88.5	88.5	88.5
85°	46.6	51.2	55.9	60.6	65.2
87.5°	28.0	28.0	32.6	37.3	41.9
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)