

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: P547368

Luminaire Tested: **FMR-24-4-LD4-4LO-35-UNV-82-85-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: P547368  
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-35-UNV-82-85-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

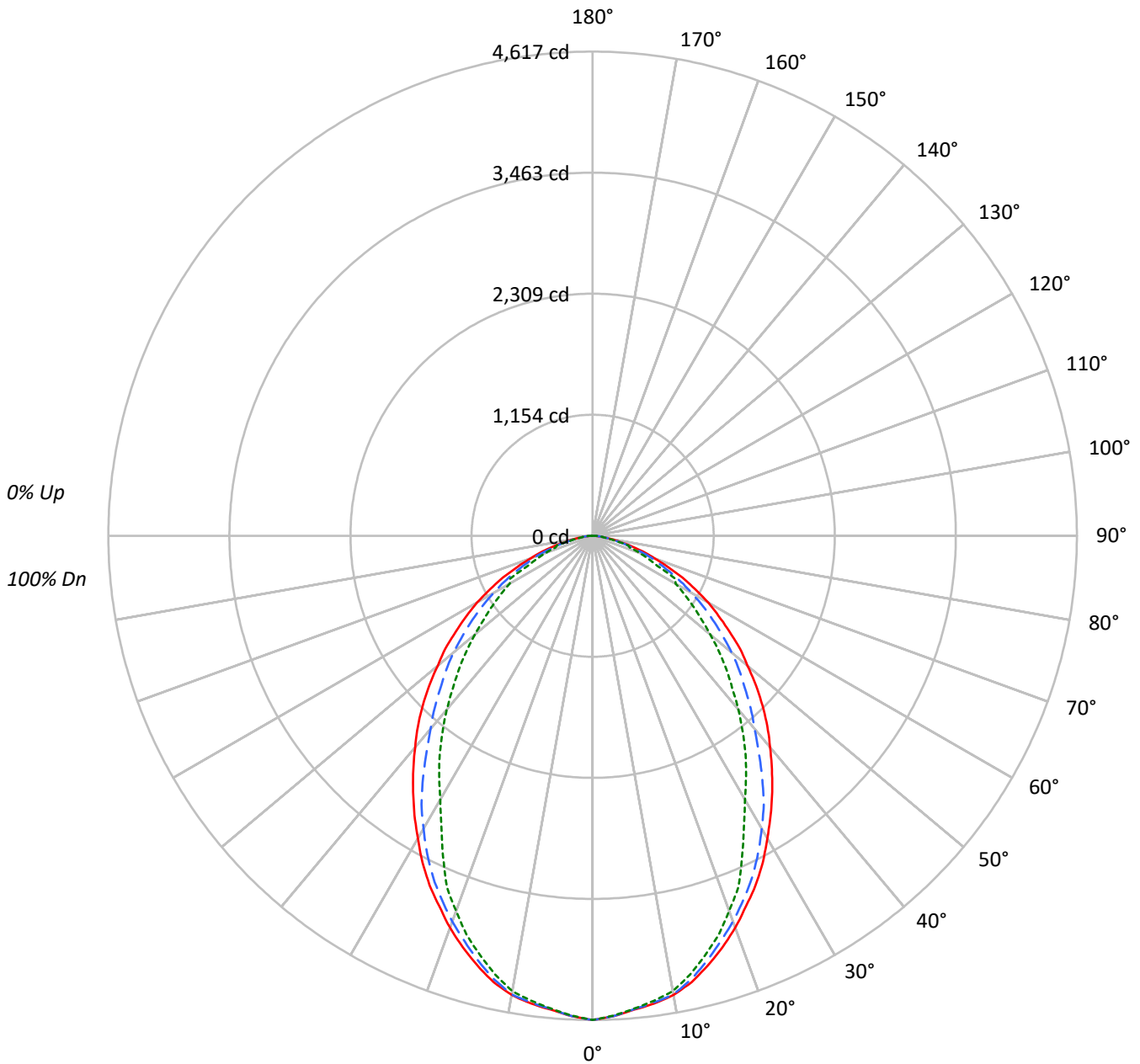
Lumens per Lamp: N/A  
Luminaire Lumens: 9064.0 lumens  
Efficiency: N/A  
Efficacy: 96.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	6212	6212	6212
5°	6128	6121	6113
10°	6075	6067	6024
15°	5911	5851	5770
20°	5694	5602	5449
25°	5460	5341	5008
30°	5175	5009	4511
35°	4901	4629	4173
40°	4622	4219	3797
45°	4357	3900	3433
50°	4033	3620	3061
55°	3731	3281	2742
60°	3419	2930	2456
65°	3008	2566	2175
70°	2478	2247	1848
75°	1970	1720	1803
80°	1323	1241	1158
85°	824	990	1153



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	429.8	4.7
10°-20°	1179.5	13.0
20°-30°	1633.0	18.0
30°-40°	1741.2	19.2
40°-50°	1588.5	17.5
50°-60°	1244.5	13.7
60°-70°	811.1	8.9
70°-80°	359.3	4.0
80°-90°	77.1	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°	3242.3	35.8
0°-40°	4983.5	55.0
0°-60°	7816.4	86.2
0°-90°	9064.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9064.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4617	4617	4617	4617	4617	
5°	4537	4532	4532	4526	4526	431
15°	4243	4243	4201	4158	4142	1193
25°	3678	3656	3598	3470	3373	1688
35°	2984	2962	2818	2605	2541	1865
45°	2290	2242	2050	1879	1804	1764
55°	1591	1543	1398	1233	1169	1427
65°	945	891	806	822	683	931
75°	379	352	331	315	347	406
85°	53	59	64	69	75	74
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4617.1	4617.1	4617.1	4617.1	4617.1
2.5°	4585.1	4585.1	4585.1	4579.7	4579.7
5°	4537.0	4531.7	4531.7	4526.3	4526.3
7.5°	4499.7	4494.3	4489.0	4483.6	4473.0
10°	4446.3	4446.3	4440.9	4414.2	4408.9
12.5°	4360.9	4355.5	4334.2	4296.8	4286.1
15°	4243.4	4243.4	4200.7	4158.0	4142.0
17.5°	4115.3	4110.0	4056.6	4013.9	3992.6
20°	3976.6	3965.9	3912.5	3843.1	3805.8
22.5°	3821.8	3821.8	3757.7	3667.0	3629.6
25°	3677.7	3656.3	3597.6	3469.5	3373.4
27.5°	3512.2	3480.2	3416.1	3234.6	3122.5
30°	3330.7	3314.7	3223.9	2989.1	2903.7
32.5°	3159.9	3133.2	3037.1	2791.6	2722.2
35°	2983.8	2962.4	2818.3	2604.8	2540.7
37.5°	2807.6	2780.9	2599.4	2428.6	2348.6
40°	2631.5	2599.4	2401.9	2247.2	2161.8
42.5°	2466.0	2423.3	2231.1	2065.7	1969.6
45°	2289.9	2241.8	2049.7	1878.9	1804.1
47.5°	2113.7	2071.0	1894.9	1718.7	1633.3
50°	1926.9	1889.5	1729.4	1553.3	1462.5
52.5°	1772.1	1713.4	1558.6	1382.5	1307.7
55°	1590.6	1542.6	1398.5	1233.0	1168.9
57.5°	1425.2	1377.1	1243.7	1088.9	1035.5
60°	1270.4	1201.0	1088.9	955.4	912.7
62.5°	1099.6	1046.2	950.1	838.0	891.4
65°	944.8	891.4	806.0	822.0	683.2
67.5°	774.0	747.3	672.5	597.8	576.5
70°	629.8	597.8	571.1	491.1	469.7
72.5°	501.7	469.7	432.4	389.6	373.6
75°	379.0	352.3	330.9	314.9	346.9
77.5°	261.5	250.9	234.9	218.8	213.5
80°	170.8	165.5	160.1	154.8	149.5
82.5°	101.4	101.4	101.4	101.4	101.4
85°	53.4	58.7	64.1	69.4	74.7
87.5°	32.0	32.0	37.4	42.7	48.0
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)