

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: P547043

Luminaire Tested: **FMR-24-4-LD4-3HI-50-UNV-81-88-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: P547043  
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-LD4-3HI-50-UNV-81-88-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

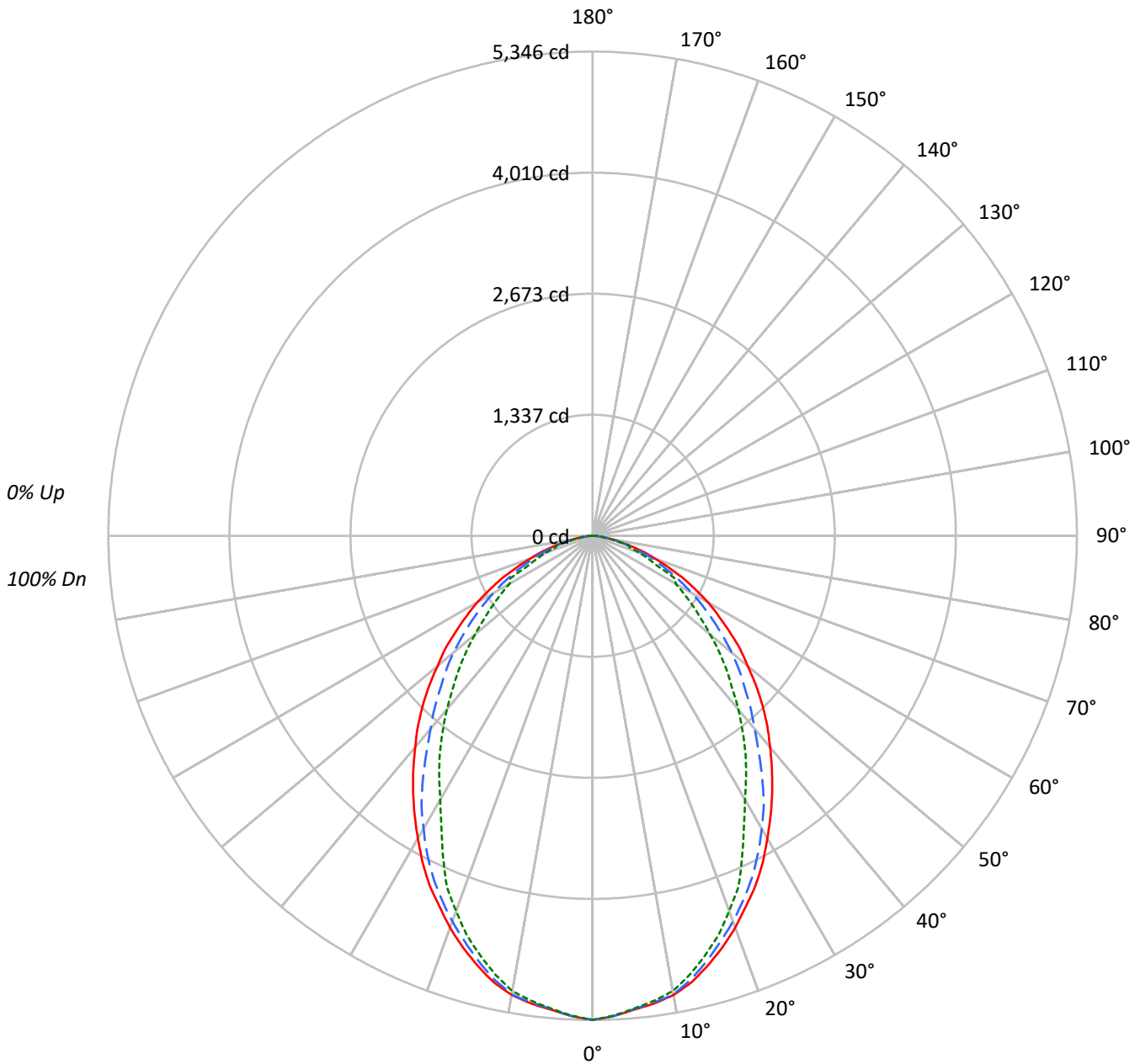
Lumens per Lamp: N/A  
Luminaire Lumens: 10494.0 lumens  
Efficiency: N/A  
Efficacy: 81.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 129.6  
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°	7192	7192	7192
5°	7095	7086	7078
10°	7033	7025	6974
15°	6843	6775	6680
20°	6592	6486	6309
25°	6321	6184	5798
30°	5991	5799	5223
35°	5674	5359	4832
40°	5351	4884	4396
45°	5045	4515	3975
50°	4670	4191	3544
55°	4320	3798	3175
60°	3958	3393	2844
65°	3482	2971	2518
70°	2869	2601	2139
75°	2281	1992	2088
80°	1533	1437	1340
85°	954	1145	1335



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	497.6	4.7
10°-20°	1365.6	13.0
20°-30°	1890.6	18.0
30°-40°	2015.9	19.2
40°-50°	1839.1	17.5
50°-60°	1440.8	13.7
60°-70°	939.0	8.9
70°-80°	416.0	4.0
80°-90°	89.3	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°	3753.8	35.8
0°-40°	5769.7	55.0
0°-60°	9049.6	86.2
0°-90°	10494.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10494.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5346	5346	5346	5346	5346	
5°	5253	5247	5247	5240	5240	499
15°	4913	4913	4864	4814	4796	1381
25°	4258	4233	4165	4017	3906	1955
35°	3454	3430	3263	3016	2942	2160
45°	2651	2596	2373	2175	2089	2042
55°	1842	1786	1619	1428	1353	1652
65°	1094	1032	933	952	791	1078
75°	439	408	383	365	402	470
85°	62	68	74	80	86	86
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5345.5	5345.5	5345.5	5345.5	5345.5
2.5°	5308.4	5308.4	5308.4	5302.2	5302.2
5°	5252.8	5246.6	5246.6	5240.4	5240.4
7.5°	5209.5	5203.4	5197.2	5191.0	5178.6
10°	5147.8	5147.8	5141.6	5110.7	5104.5
12.5°	5048.9	5042.7	5018.0	4974.7	4962.4
15°	4912.9	4912.9	4863.5	4814.0	4795.5
17.5°	4764.6	4758.4	4696.6	4647.2	4622.5
20°	4603.9	4591.6	4529.8	4449.4	4406.2
22.5°	4424.7	4424.7	4350.6	4245.5	4202.2
25°	4257.9	4233.1	4165.2	4016.9	3905.6
27.5°	4066.3	4029.2	3955.1	3744.9	3615.2
30°	3856.2	3837.6	3732.6	3460.7	3361.8
32.5°	3658.4	3627.5	3516.3	3232.0	3151.7
35°	3454.5	3429.8	3262.9	3015.7	2941.6
37.5°	3250.6	3219.7	3009.5	2811.8	2719.1
40°	3046.6	3009.5	2780.9	2601.7	2502.8
42.5°	2855.1	2805.6	2583.1	2391.6	2280.3
45°	2651.1	2595.5	2373.0	2175.3	2088.8
47.5°	2447.2	2397.8	2193.8	1989.9	1891.0
50°	2230.9	2187.6	2002.2	1798.3	1693.3
52.5°	2051.7	1983.7	1804.5	1600.6	1514.0
55°	1841.6	1786.0	1619.1	1427.5	1353.4
57.5°	1650.0	1594.4	1439.9	1260.7	1198.9
60°	1470.8	1390.4	1260.7	1106.2	1056.7
62.5°	1273.0	1211.2	1100.0	970.2	1032.0
65°	1093.8	1032.0	933.1	951.7	791.0
67.5°	896.1	865.2	778.7	692.1	667.4
70°	729.2	692.1	661.2	568.5	543.8
72.5°	580.9	543.8	500.6	451.1	432.6
75°	438.8	407.9	383.1	364.6	401.7
77.5°	302.8	290.4	271.9	253.4	247.2
80°	197.8	191.6	185.4	179.2	173.0
82.5°	117.4	117.4	117.4	117.4	117.4
85°	61.8	68.0	74.2	80.3	86.5
87.5°	37.1	37.1	43.3	49.4	55.6
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)