

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: P546978

Luminaire Tested: **FMR-24-4-LD4-3HI-35-UNV-81-87-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: P546978  
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-35-UNV-81-87-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

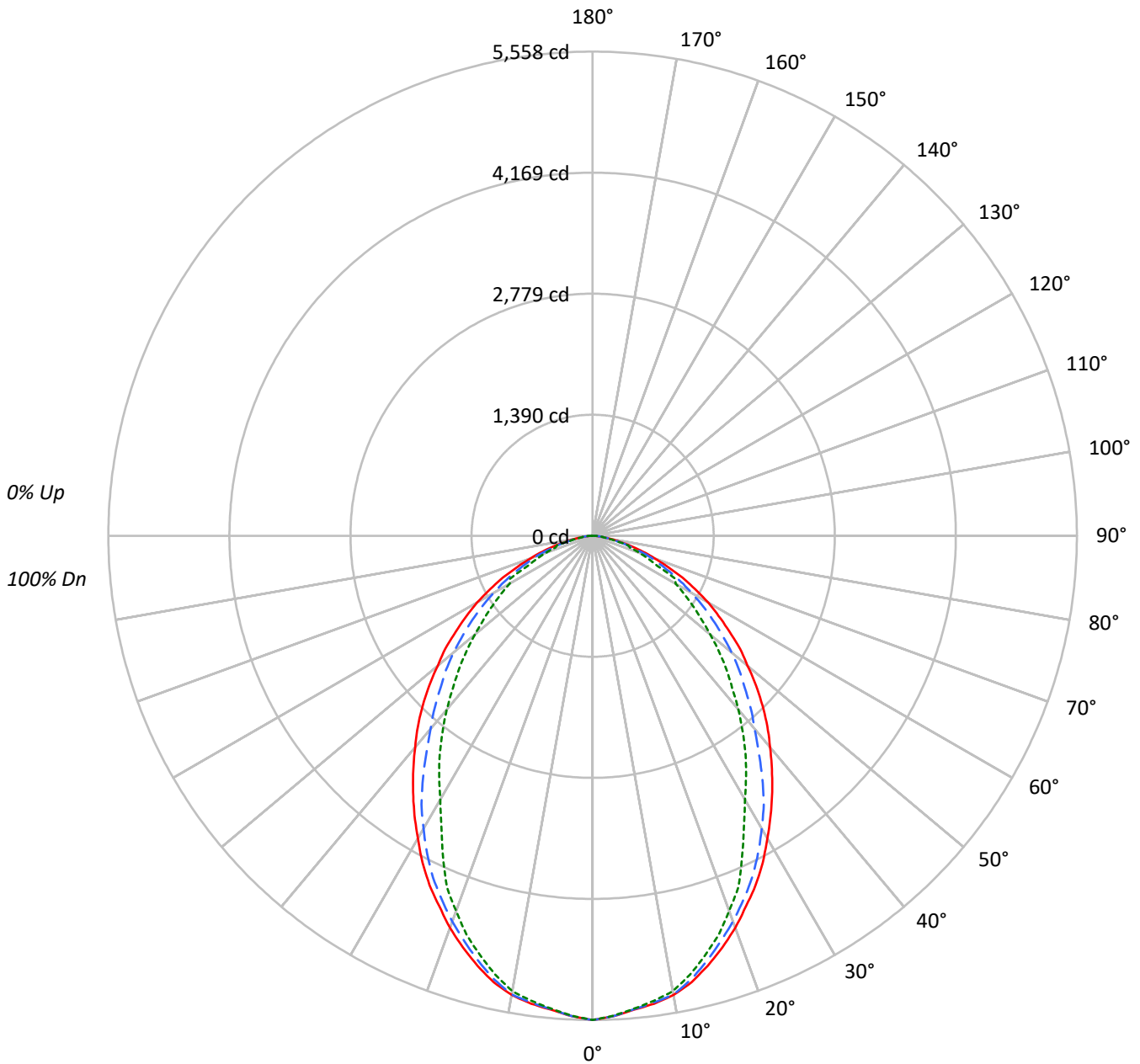
Lumens per Lamp: N/A  
Luminaire Lumens: 10912.0 lumens  
Efficiency: N/A  
Efficacy: 84.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	7479	7479	7479
5°	7377	7368	7360
10°	7313	7304	7252
15°	7116	7044	6946
20°	6855	6744	6560
25°	6573	6430	6029
30°	6230	6030	5431
35°	5900	5573	5024
40°	5564	5079	4571
45°	5245	4695	4133
50°	4856	4358	3686
55°	4492	3949	3301
60°	4116	3528	2957
65°	3621	3089	2619
70°	2983	2705	2225
75°	2372	2071	2171
80°	1593	1494	1394
85°	993	1190	1389



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	517.4	4.7
10°-20°	1420.0	13.0
20°-30°	1965.9	18.0
30°-40°	2096.2	19.2
40°-50°	1912.4	17.5
50°-60°	1498.2	13.7
60°-70°	976.4	8.9
70°-80°	432.6	4.0
80°-90°	92.9	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°	3903.3	35.8
0°-40°	5999.5	55.0
0°-60°	9410.1	86.2
0°-90°	10912.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10912.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5558	5558	5558	5558	5558	
5°	5462	5456	5456	5449	5449	518
15°	5109	5109	5057	5006	4986	1436
25°	4428	4402	4331	4177	4061	2033
35°	3592	3566	3393	3136	3059	2246
45°	2757	2699	2468	2262	2172	2123
55°	1915	1857	1684	1484	1407	1718
65°	1137	1073	970	990	822	1121
75°	456	424	398	379	418	489
85°	64	71	77	84	90	89
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5558.4	5558.4	5558.4	5558.4	5558.4
2.5°	5519.9	5519.9	5519.9	5513.4	5513.4
5°	5462.0	5455.6	5455.6	5449.2	5449.2
7.5°	5417.1	5410.6	5404.2	5397.8	5384.9
10°	5352.8	5352.8	5346.4	5314.2	5307.8
12.5°	5250.0	5243.6	5217.9	5172.9	5160.0
15°	5108.6	5108.6	5057.2	5005.8	4986.5
17.5°	4954.4	4948.0	4883.7	4832.3	4806.6
20°	4787.3	4774.5	4710.2	4626.7	4581.7
22.5°	4601.0	4601.0	4523.9	4414.6	4369.6
25°	4427.5	4401.8	4331.1	4176.9	4061.2
27.5°	4228.3	4189.7	4112.6	3894.1	3759.2
30°	4009.8	3990.5	3881.3	3598.5	3495.7
32.5°	3804.1	3772.0	3656.4	3360.8	3277.2
35°	3592.1	3566.4	3392.9	3135.9	3058.7
37.5°	3380.0	3347.9	3129.4	2923.8	2827.4
40°	3168.0	3129.4	2891.7	2705.3	2602.5
42.5°	2968.8	2917.4	2686.0	2486.8	2371.2
45°	2756.7	2698.9	2467.6	2261.9	2172.0
47.5°	2544.7	2493.3	2281.2	2069.1	1966.3
50°	2319.8	2274.8	2082.0	1869.9	1760.7
52.5°	2133.4	2062.7	1876.4	1664.3	1574.4
55°	1914.9	1857.1	1683.6	1484.4	1407.3
57.5°	1715.7	1657.9	1497.2	1310.9	1246.6
60°	1529.4	1445.8	1310.9	1150.2	1098.8
62.5°	1323.7	1259.5	1143.8	1008.9	1073.1
65°	1137.4	1073.1	970.3	989.6	822.5
67.5°	931.8	899.6	809.7	719.7	694.0
70°	758.3	719.7	687.6	591.2	565.5
72.5°	604.0	565.5	520.5	469.1	449.8
75°	456.2	424.1	398.4	379.1	417.7
77.5°	314.9	302.0	282.7	263.5	257.0
80°	205.6	199.2	192.8	186.4	179.9
82.5°	122.1	122.1	122.1	122.1	122.1
85°	64.3	70.7	77.1	83.5	90.0
87.5°	38.6	38.6	45.0	51.4	57.8
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)