

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: P546723

Luminaire Tested: **FMR-24-4-LD4-2HI-40-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: P546723  
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-LD4-2HI-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

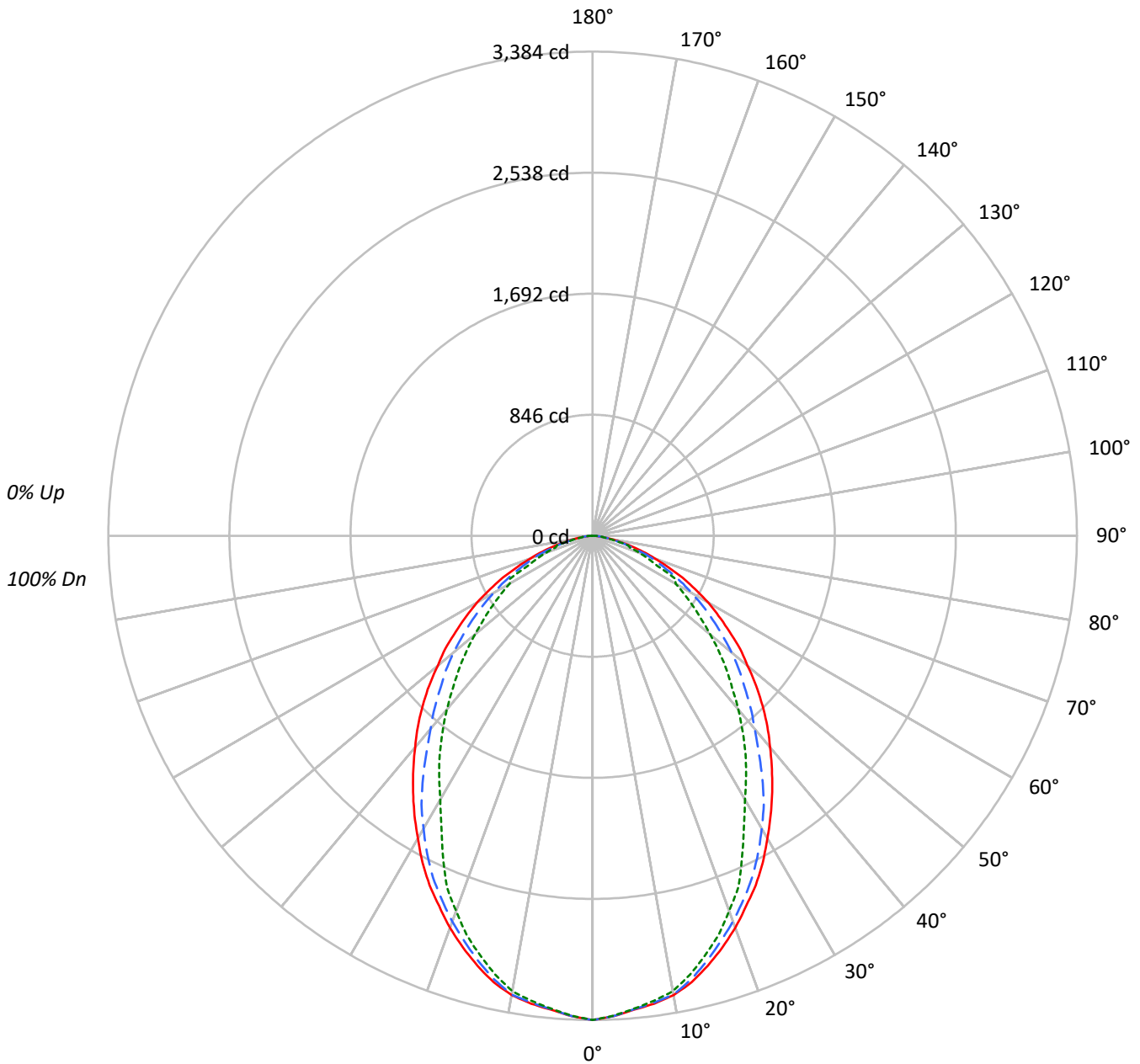
Lumens per Lamp: N/A  
Luminaire Lumens: 6644.0 lumens  
Efficiency: N/A  
Efficacy: 76.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
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°	4554	4554	4554
5°	4492	4487	4481
10°	4453	4448	4415
15°	4333	4289	4229
20°	4174	4106	3994
25°	4002	3915	3671
30°	3793	3672	3307
35°	3592	3393	3059
40°	3388	3093	2783
45°	3194	2859	2516
50°	2956	2654	2244
55°	2735	2405	2010
60°	2506	2148	1800
65°	2205	1881	1594
70°	1816	1647	1354
75°	1444	1261	1322
80°	970	910	849
85°	604	726	846



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	315.0	4.7
10°-20°	864.6	13.0
20°-30°	1197.0	18.0
30°-40°	1276.3	19.2
40°-50°	1164.4	17.5
50°-60°	912.2	13.7
60°-70°	594.5	8.9
70°-80°	263.4	4.0
80°-90°	56.6	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°	2376.6	35.8
0°-40°	3652.9	55.0
0°-60°	5729.5	86.2
0°-90°	6644.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6644.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3384	3384	3384	3384	3384	
5°	3326	3322	3322	3318	3318	316
15°	3110	3110	3079	3048	3036	874
25°	2696	2680	2637	2543	2473	1238
35°	2187	2172	2066	1909	1862	1367
45°	1678	1643	1502	1377	1322	1293
55°	1166	1131	1025	904	857	1046
65°	692	653	591	602	501	682
75°	278	258	243	231	254	298
85°	39	43	47	51	55	54
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3384.4	3384.4	3384.4	3384.4	3384.4
2.5°	3360.9	3360.9	3360.9	3357.0	3357.0
5°	3325.7	3321.8	3321.8	3317.9	3317.9
7.5°	3298.3	3294.4	3290.5	3286.6	3278.7
10°	3259.2	3259.2	3255.3	3235.7	3231.8
12.5°	3196.6	3192.6	3177.0	3149.6	3141.8
15°	3110.5	3110.5	3079.2	3047.9	3036.1
17.5°	3016.6	3012.7	2973.5	2942.2	2926.6
20°	2914.9	2907.0	2867.9	2817.0	2789.7
22.5°	2801.4	2801.4	2754.4	2687.9	2660.5
25°	2695.8	2680.1	2637.1	2543.2	2472.7
27.5°	2574.5	2551.0	2504.0	2371.0	2288.8
30°	2441.4	2429.7	2363.2	2191.0	2128.4
32.5°	2316.2	2296.7	2226.2	2046.3	1995.4
35°	2187.1	2171.5	2065.8	1909.3	1862.4
37.5°	2058.0	2038.4	1905.4	1780.2	1721.5
40°	1928.9	1905.4	1760.7	1647.2	1584.6
42.5°	1807.6	1776.3	1635.5	1514.2	1443.7
45°	1678.5	1643.3	1502.4	1377.2	1322.4
47.5°	1549.4	1518.1	1389.0	1259.8	1197.2
50°	1412.4	1385.0	1267.7	1138.6	1072.0
52.5°	1299.0	1255.9	1142.5	1013.4	958.6
55°	1165.9	1130.7	1025.1	903.8	856.9
57.5°	1044.7	1009.4	911.6	798.2	759.0
60°	931.2	880.3	798.2	700.3	669.0
62.5°	806.0	766.9	696.4	614.3	653.4
65°	692.5	653.4	590.8	602.5	500.8
67.5°	567.3	547.8	493.0	438.2	422.6
70°	461.7	438.2	418.6	360.0	344.3
72.5°	367.8	344.3	316.9	285.6	273.9
75°	277.8	258.2	242.6	230.8	254.3
77.5°	191.7	183.9	172.2	160.4	156.5
80°	125.2	121.3	117.4	113.5	109.6
82.5°	74.3	74.3	74.3	74.3	74.3
85°	39.1	43.0	47.0	50.9	54.8
87.5°	23.5	23.5	27.4	31.3	35.2
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)