

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: P547024

Luminaire Tested: **FMR-24-4-LD4-3HI-40-UNV-93-85-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: P547024  
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-40-UNV-93-85-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

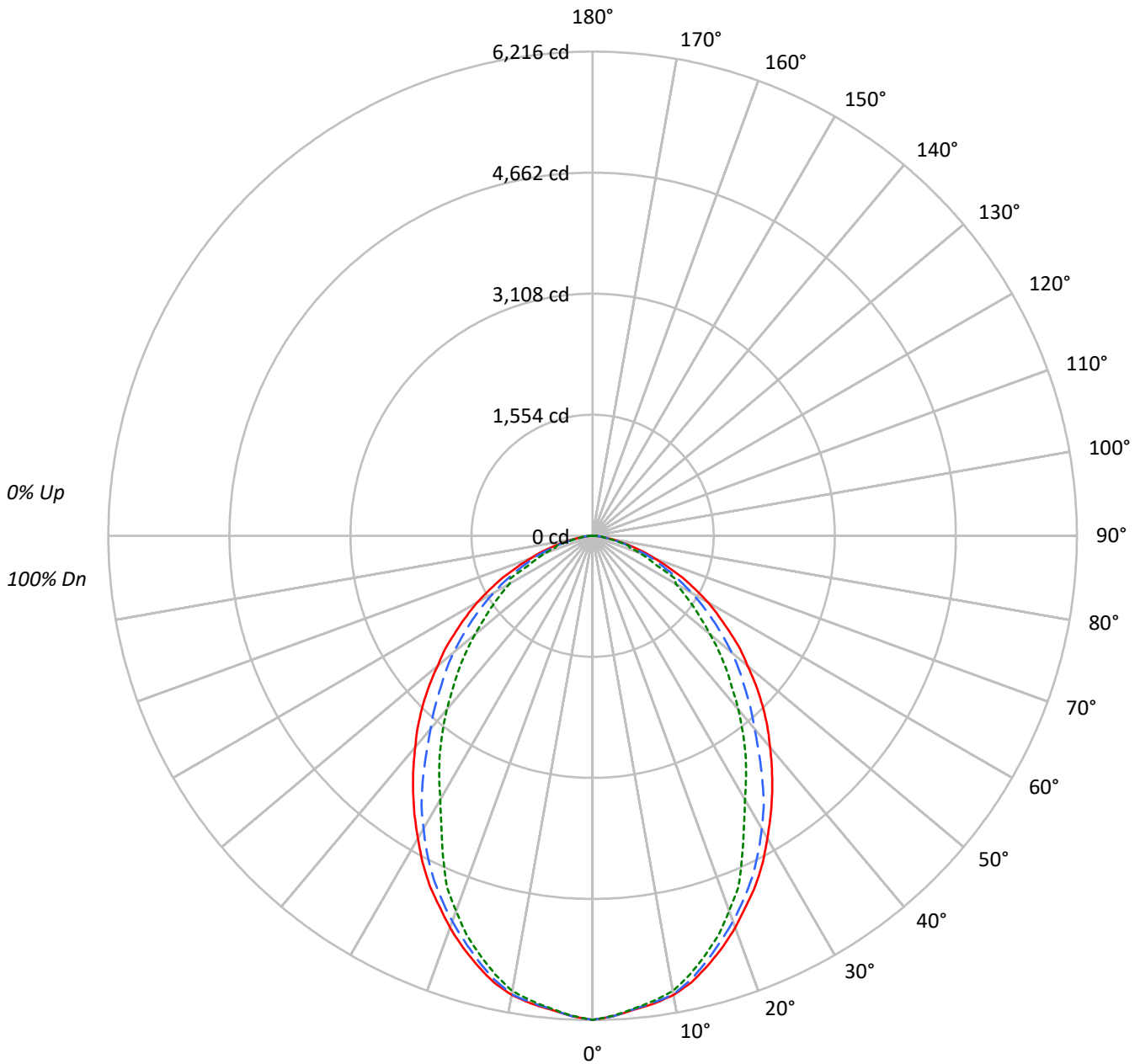
Lumens per Lamp: N/A  
Luminaire Lumens: 12202.0 lumens  
Efficiency: N/A  
Efficacy: 94.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	8363	8363	8363
5°	8249	8240	8230
10°	8178	8168	8109
15°	7957	7877	7767
20°	7665	7542	7336
25°	7350	7190	6742
30°	6966	6743	6073
35°	6598	6232	5618
40°	6222	5679	5112
45°	5866	5250	4621
50°	5430	4873	4121
55°	5023	4416	3691
60°	4602	3945	3306
65°	4049	3454	2928
70°	3336	3025	2487
75°	2652	2316	2428
80°	1781	1671	1559
85°	1110	1331	1553



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	578.6	4.7
10°-20°	1587.9	13.0
20°-30°	2198.3	18.0
30°-40°	2344.0	19.2
40°-50°	2138.4	17.5
50°-60°	1675.3	13.7
60°-70°	1091.9	8.9
70°-80°	483.7	4.0
80°-90°	103.9	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°	4364.8	35.8
0°-40°	6708.8	55.0
0°-60°	10522.5	86.2
0°-90°	12202.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12202.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6216	6216	6216	6216	6216	
5°	6108	6101	6101	6093	6093	580
15°	5712	5712	5655	5598	5576	1606
25°	4951	4922	4843	4671	4541	2273
35°	4017	3988	3794	3507	3420	2511
45°	3083	3018	2759	2529	2429	2375
55°	2141	2077	1883	1660	1574	1921
65°	1272	1200	1085	1107	920	1253
75°	510	474	446	424	467	547
85°	72	79	86	93	101	100
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6215.5	6215.5	6215.5	6215.5	6215.5
2.5°	6172.4	6172.4	6172.4	6165.2	6165.2
5°	6107.8	6100.6	6100.6	6093.4	6093.4
7.5°	6057.5	6050.3	6043.1	6035.9	6021.5
10°	5985.6	5985.6	5978.4	5942.5	5935.3
12.5°	5870.6	5863.4	5834.7	5784.4	5770.0
15°	5712.5	5712.5	5655.1	5597.6	5576.0
17.5°	5540.1	5532.9	5461.0	5403.6	5374.8
20°	5353.3	5338.9	5267.0	5173.6	5123.3
22.5°	5144.9	5144.9	5058.7	4936.5	4886.2
25°	4950.9	4922.1	4843.1	4670.6	4541.3
27.5°	4728.1	4685.0	4598.8	4354.5	4203.6
30°	4483.8	4462.3	4340.1	4023.9	3909.0
32.5°	4253.9	4217.9	4088.6	3758.1	3664.7
35°	4016.7	3988.0	3794.0	3506.6	3420.3
37.5°	3779.6	3743.7	3499.4	3269.4	3161.7
40°	3542.5	3499.4	3233.5	3025.1	2910.2
42.5°	3319.7	3262.3	3003.6	2780.8	2651.5
45°	3082.6	3017.9	2759.3	2529.3	2428.7
47.5°	2845.5	2788.0	2550.9	2313.8	2198.8
50°	2594.0	2543.7	2328.1	2091.0	1968.9
52.5°	2385.6	2306.6	2098.2	1861.1	1760.5
55°	2141.3	2076.6	1882.6	1659.9	1573.6
57.5°	1918.6	1853.9	1674.2	1465.9	1394.0
60°	1710.2	1616.8	1465.9	1286.2	1228.7
62.5°	1480.2	1408.4	1279.0	1128.1	1200.0
65°	1271.8	1200.0	1085.0	1106.6	919.8
67.5°	1041.9	1006.0	905.4	804.8	776.0
70°	847.9	804.8	768.9	661.1	632.3
72.5°	675.4	632.3	582.0	524.5	503.0
75°	510.2	474.2	445.5	423.9	467.1
77.5°	352.1	337.7	316.2	294.6	287.4
80°	229.9	222.8	215.6	208.4	201.2
82.5°	136.5	136.5	136.5	136.5	136.5
85°	71.9	79.0	86.2	93.4	100.6
87.5°	43.1	43.1	50.3	57.5	64.7
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)