

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: P547317

Luminaire Tested: **FMR-24-4-LD4-4HI-40-UNV-93-96-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: P547317  
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-LD4-4HI-40-UNV-93-96-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

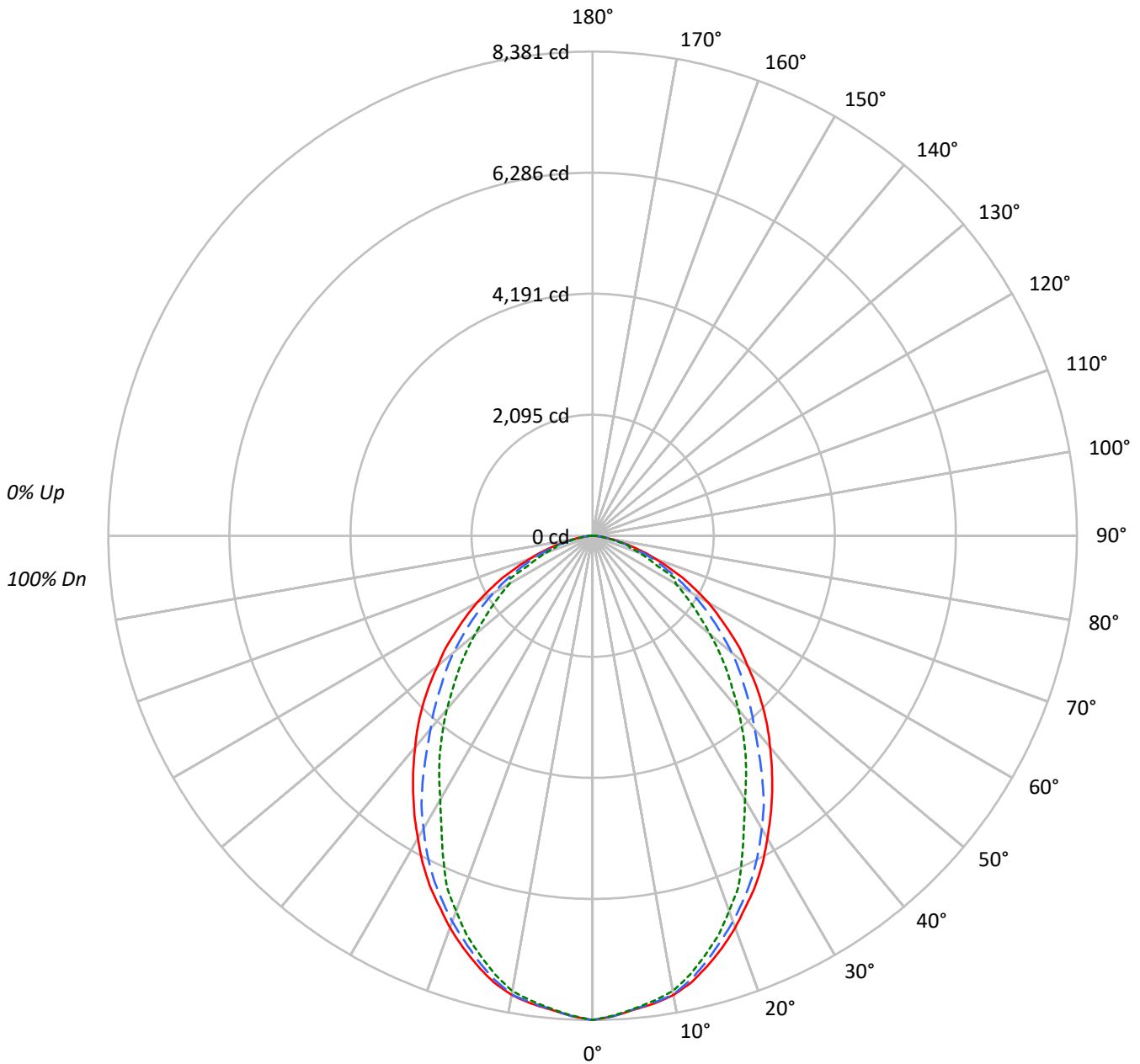
Lumens per Lamp: N/A  
Luminaire Lumens: 16453.0 lumens  
Efficiency: N/A  
Efficacy: 95.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 172.8  
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					20					
RC	80					70					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				100				
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87				87				
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75				75				
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65				65				
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56				56				
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50				50				
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44				44				
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40				40				
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36				36				
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33				33				
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30				30				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	11276	11276	11276
5°	11123	11110	11097
10°	11027	11014	10934
15°	10729	10622	10473
20°	10335	10169	9891
25°	9911	9695	9091
30°	9393	9092	8189
35°	8896	8403	7575
40°	8390	7658	6892
45°	7909	7080	6232
50°	7321	6571	5557
55°	6773	5955	4978
60°	6205	5319	4458
65°	5460	4658	3948
70°	4498	4078	3354
75°	3576	3123	3274
80°	2402	2252	2102
85°	1496	1795	2093



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	780.2	4.7
10°-20°	2141.1	13.0
20°-30°	2964.2	18.0
30°-40°	3160.7	19.2
40°-50°	2883.4	17.5
50°-60°	2258.9	13.7
60°-70°	1472.3	8.9
70°-80°	652.3	4.0
80°-90°	140.0	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°	5885.4	35.8
0°-40°	9046.0	55.0
0°-60°	14188.4	86.2
0°-90°	16453.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	16453.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8381	8381	8381	8381	8381	
5°	8236	8226	8226	8216	8216	782
15°	7703	7703	7625	7548	7519	2165
25°	6676	6637	6530	6298	6123	3065
35°	5416	5377	5116	4728	4612	3386
45°	4157	4069	3721	3410	3275	3202
55°	2887	2800	2538	2238	2122	2590
65°	1715	1618	1463	1492	1240	1690
75°	688	640	601	572	630	737
85°	97	107	116	126	136	134
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8380.9	8380.9	8380.9	8380.9	8380.9
2.5°	8322.8	8322.8	8322.8	8313.1	8313.1
5°	8235.6	8225.9	8225.9	8216.2	8216.2
7.5°	8167.8	8158.1	8148.4	8138.7	8119.3
10°	8070.9	8070.9	8061.2	8012.8	8003.1
12.5°	7915.9	7906.2	7867.4	7799.6	7780.2
15°	7702.7	7702.7	7625.2	7547.7	7518.6
17.5°	7470.2	7460.5	7363.6	7286.1	7247.3
20°	7218.3	7198.9	7102.0	6976.0	6908.2
22.5°	6937.3	6937.3	6821.0	6656.3	6588.5
25°	6675.7	6636.9	6530.3	6297.8	6123.4
27.5°	6375.3	6317.2	6200.9	5871.5	5668.0
30°	6045.9	6016.8	5852.1	5425.8	5270.8
32.5°	5735.9	5687.4	5513.0	5067.3	4941.4
35°	5416.1	5377.4	5115.8	4728.2	4611.9
37.5°	5096.4	5047.9	4718.5	4408.5	4263.1
40°	4776.7	4718.5	4360.0	4079.0	3924.0
42.5°	4476.3	4398.8	4050.0	3749.6	3575.2
45°	4156.6	4069.4	3720.6	3410.5	3274.9
47.5°	3836.8	3759.3	3439.6	3119.8	2964.8
50°	3497.7	3429.9	3139.2	2819.5	2654.8
52.5°	3216.7	3110.2	2829.2	2509.4	2373.8
55°	2887.3	2800.1	2538.5	2238.1	2121.9
57.5°	2586.9	2499.7	2257.5	1976.5	1879.7
60°	2306.0	2180.0	1976.5	1734.3	1656.8
62.5°	1995.9	1899.0	1724.6	1521.2	1618.1
65°	1714.9	1618.1	1463.0	1492.1	1240.2
67.5°	1404.9	1356.5	1220.8	1085.2	1046.4
70°	1143.3	1085.2	1036.7	891.4	852.6
72.5°	910.8	852.6	784.8	707.3	678.2
75°	687.9	639.5	600.7	571.6	629.8
77.5°	474.8	455.4	426.3	397.2	387.6
80°	310.0	300.4	290.7	281.0	271.3
82.5°	184.1	184.1	184.1	184.1	184.1
85°	96.9	106.6	116.3	126.0	135.6
87.5°	58.1	58.1	67.8	77.5	87.2
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)