

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: P547219

Luminaire Tested: **FMR-24-4-LD4-3STD-40-UNV-93-88-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: P547219  
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-LD4-3STD-40-UNV-93-88-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS 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**

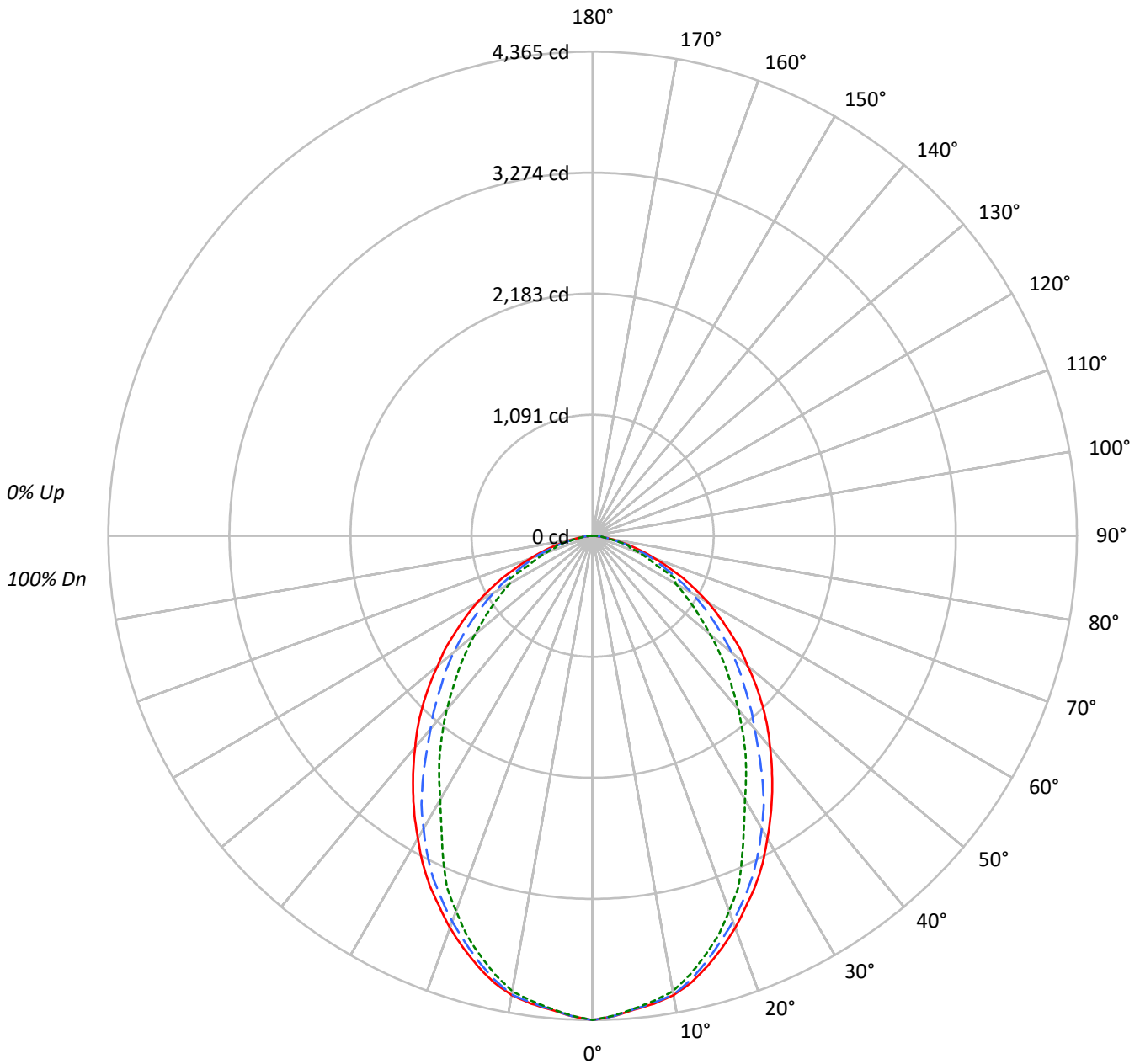
Lumens per Lamp: N/A  
Luminaire Lumens: 8570.0 lumens  
Efficiency: N/A  
Efficacy: 85.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 99.9  
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°	5874	5874	5874
5°	5794	5787	5780
10°	5744	5737	5695
15°	5589	5533	5455
20°	5383	5297	5152
25°	5162	5050	4735
30°	4893	4736	4265
35°	4634	4377	3946
40°	4370	3989	3590
45°	4120	3688	3246
50°	3814	3423	2894
55°	3528	3102	2593
60°	3232	2770	2322
65°	2844	2426	2057
70°	2343	2124	1747
75°	1863	1627	1705
80°	1251	1173	1095
85°	780	936	1091



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	406.4	4.7
10°-20°	1115.2	13.0
20°-30°	1544.0	18.0
30°-40°	1646.3	19.2
40°-50°	1501.9	17.5
50°-60°	1176.6	13.7
60°-70°	766.9	8.9
70°-80°	339.8	4.0
80°-90°	73.0	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°	3065.6	35.8
0°-40°	4711.9	55.0
0°-60°	7390.4	86.2
0°-90°	8570.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8570.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4365	4365	4365	4365	4365	
5°	4290	4285	4285	4280	4280	407
15°	4012	4012	3972	3931	3916	1128
25°	3477	3457	3402	3280	3190	1596
35°	2821	2801	2665	2463	2402	1764
45°	2165	2120	1938	1776	1706	1668
55°	1504	1458	1322	1166	1105	1349
65°	893	843	762	777	646	880
75°	358	333	313	298	328	384
85°	50	56	61	66	71	70
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4365.4	4365.4	4365.4	4365.4	4365.4
2.5°	4335.2	4335.2	4335.2	4330.1	4330.1
5°	4289.7	4284.7	4284.7	4279.6	4279.6
7.5°	4254.4	4249.4	4244.3	4239.3	4229.2
10°	4203.9	4203.9	4198.9	4173.7	4168.6
12.5°	4123.2	4118.2	4098.0	4062.6	4052.5
15°	4012.2	4012.2	3971.8	3931.4	3916.3
17.5°	3891.0	3886.0	3835.5	3795.2	3775.0
20°	3759.8	3749.7	3699.3	3633.7	3598.3
22.5°	3613.5	3613.5	3552.9	3467.1	3431.8
25°	3477.2	3457.0	3401.5	3280.4	3189.5
27.5°	3320.8	3290.5	3229.9	3058.3	2952.4
30°	3149.2	3134.0	3048.2	2826.2	2745.4
32.5°	2987.7	2962.4	2871.6	2639.5	2573.8
35°	2821.1	2800.9	2664.7	2462.8	2402.3
37.5°	2654.6	2629.4	2457.8	2296.3	2220.6
40°	2488.1	2457.8	2271.0	2124.7	2043.9
42.5°	2331.6	2291.2	2109.5	1953.1	1862.3
45°	2165.1	2119.6	1938.0	1776.5	1705.8
47.5°	1998.5	1958.1	1791.6	1625.1	1544.3
50°	1821.9	1786.6	1635.1	1468.6	1382.8
52.5°	1675.5	1620.0	1473.7	1307.1	1236.5
55°	1503.9	1458.5	1322.2	1165.8	1105.2
57.5°	1347.5	1302.1	1175.9	1029.5	979.1
60°	1201.1	1135.5	1029.5	903.4	863.0
62.5°	1039.6	989.2	898.3	792.3	842.8
65°	893.3	842.8	762.1	777.2	646.0
67.5°	731.8	706.5	635.9	565.2	545.0
70°	595.5	565.2	540.0	464.3	444.1
72.5°	474.4	444.1	408.8	368.4	353.3
75°	358.3	333.1	312.9	297.8	328.0
77.5°	247.3	237.2	222.1	206.9	201.9
80°	161.5	156.4	151.4	146.4	141.3
82.5°	95.9	95.9	95.9	95.9	95.9
85°	50.5	55.5	60.6	65.6	70.7
87.5°	30.3	30.3	35.3	40.4	45.4
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)