

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: P547312

Luminaire Tested: **FMR-24-4-LD4-4HI-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: P547312  
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-93-85-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**

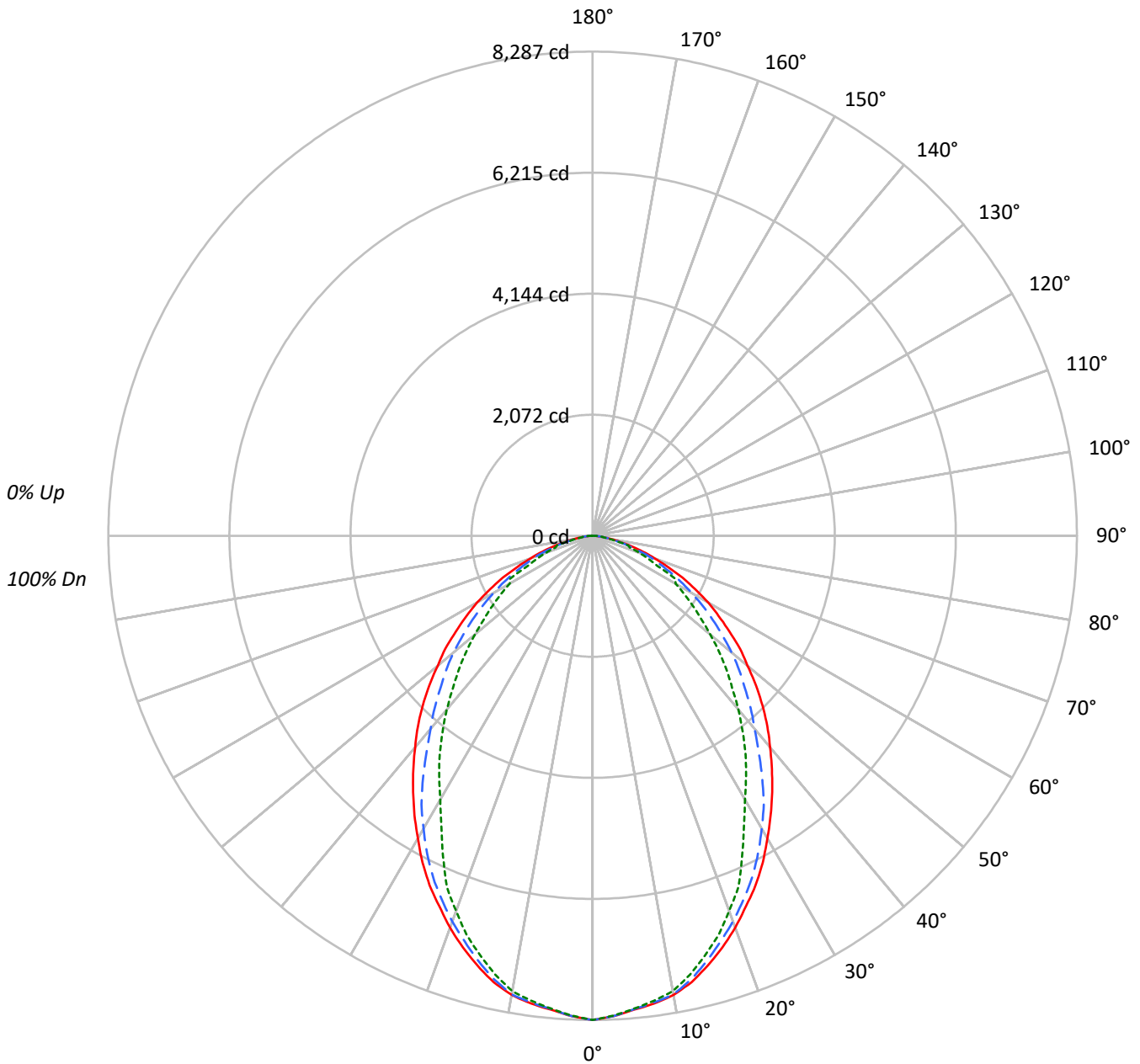
Lumens per Lamp: N/A  
Luminaire Lumens: 16269.0 lumens  
Efficiency: N/A  
Efficacy: 94.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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									
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°	11150	11150	11150
5°	10999	10986	10973
10°	10903	10890	10812
15°	10610	10503	10356
20°	10220	10055	9781
25°	9800	9586	8989
30°	9288	8990	8097
35°	8797	8309	7491
40°	8296	7572	6815
45°	7821	7000	6162
50°	7240	6498	5495
55°	6697	5888	4922
60°	6136	5259	4409
65°	5399	4606	3904
70°	4447	4033	3317
75°	3536	3088	3237
80°	2376	2227	2079
85°	1479	1775	2070



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	771.4	4.7
10°-20°	2117.1	13.0
20°-30°	2931.0	18.0
30°-40°	3125.3	19.2
40°-50°	2851.2	17.5
50°-60°	2233.7	13.7
60°-70°	1455.8	8.9
70°-80°	645.0	4.0
80°-90°	138.5	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°	5819.5	35.8
0°-40°	8944.9	55.0
0°-60°	14029.7	86.2
0°-90°	16269.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	16269.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8287	8287	8287	8287	8287	
5°	8144	8134	8134	8124	8124	773
15°	7617	7617	7540	7463	7434	2141
25°	6601	6563	6457	6227	6055	3031
35°	5356	5317	5059	4675	4560	3348
45°	4110	4024	3679	3372	3238	3166
55°	2855	2769	2510	2213	2098	2561
65°	1696	1600	1447	1475	1226	1671
75°	680	632	594	565	623	729
85°	96	105	115	124	134	133
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8287.2	8287.2	8287.2	8287.2	8287.2
2.5°	8229.7	8229.7	8229.7	8220.1	8220.1
5°	8143.5	8133.9	8133.9	8124.3	8124.3
7.5°	8076.4	8066.9	8057.3	8047.7	8028.5
10°	7980.6	7980.6	7971.1	7923.1	7913.6
12.5°	7827.3	7817.8	7779.4	7712.4	7693.2
15°	7616.6	7616.6	7539.9	7463.3	7434.5
17.5°	7386.6	7377.1	7281.2	7204.6	7166.3
20°	7137.5	7118.4	7022.6	6898.0	6831.0
22.5°	6859.7	6859.7	6744.7	6581.9	6514.8
25°	6601.0	6562.7	6457.3	6227.4	6054.9
27.5°	6304.0	6246.5	6131.6	5805.8	5604.6
30°	5978.3	5949.5	5786.7	5365.1	5211.8
32.5°	5671.7	5623.8	5451.4	5010.6	4886.1
35°	5355.6	5317.2	5058.6	4675.3	4560.4
37.5°	5039.4	4991.5	4665.7	4359.2	4215.5
40°	4723.2	4665.7	4311.3	4033.4	3880.1
42.5°	4426.2	4349.6	4004.7	3707.7	3535.2
45°	4110.1	4023.8	3678.9	3372.4	3238.2
47.5°	3793.9	3717.3	3401.1	3085.0	2931.7
50°	3458.6	3391.5	3104.1	2788.0	2625.1
52.5°	3180.8	3075.4	2797.5	2481.4	2347.2
55°	2855.0	2768.8	2510.1	2213.1	2098.1
57.5°	2558.0	2471.8	2232.3	1954.4	1858.6
60°	2280.2	2155.6	1954.4	1714.9	1638.3
62.5°	1973.6	1877.8	1705.3	1504.2	1600.0
65°	1695.8	1600.0	1446.7	1475.4	1226.3
67.5°	1389.2	1341.3	1207.2	1073.0	1034.7
70°	1130.5	1073.0	1025.1	881.4	843.1
72.5°	900.6	843.1	776.0	699.4	670.6
75°	680.2	632.3	594.0	565.3	622.7
77.5°	469.4	450.3	421.5	392.8	383.2
80°	306.6	297.0	287.4	277.8	268.3
82.5°	182.0	182.0	182.0	182.0	182.0
85°	95.8	105.4	115.0	124.5	134.1
87.5°	57.5	57.5	67.1	76.6	86.2
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)