

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: P547301

Luminaire Tested: **FMR-24-4-LD4-4HI-40-UNV-81-96-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: P547301  
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-81-96-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC 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**

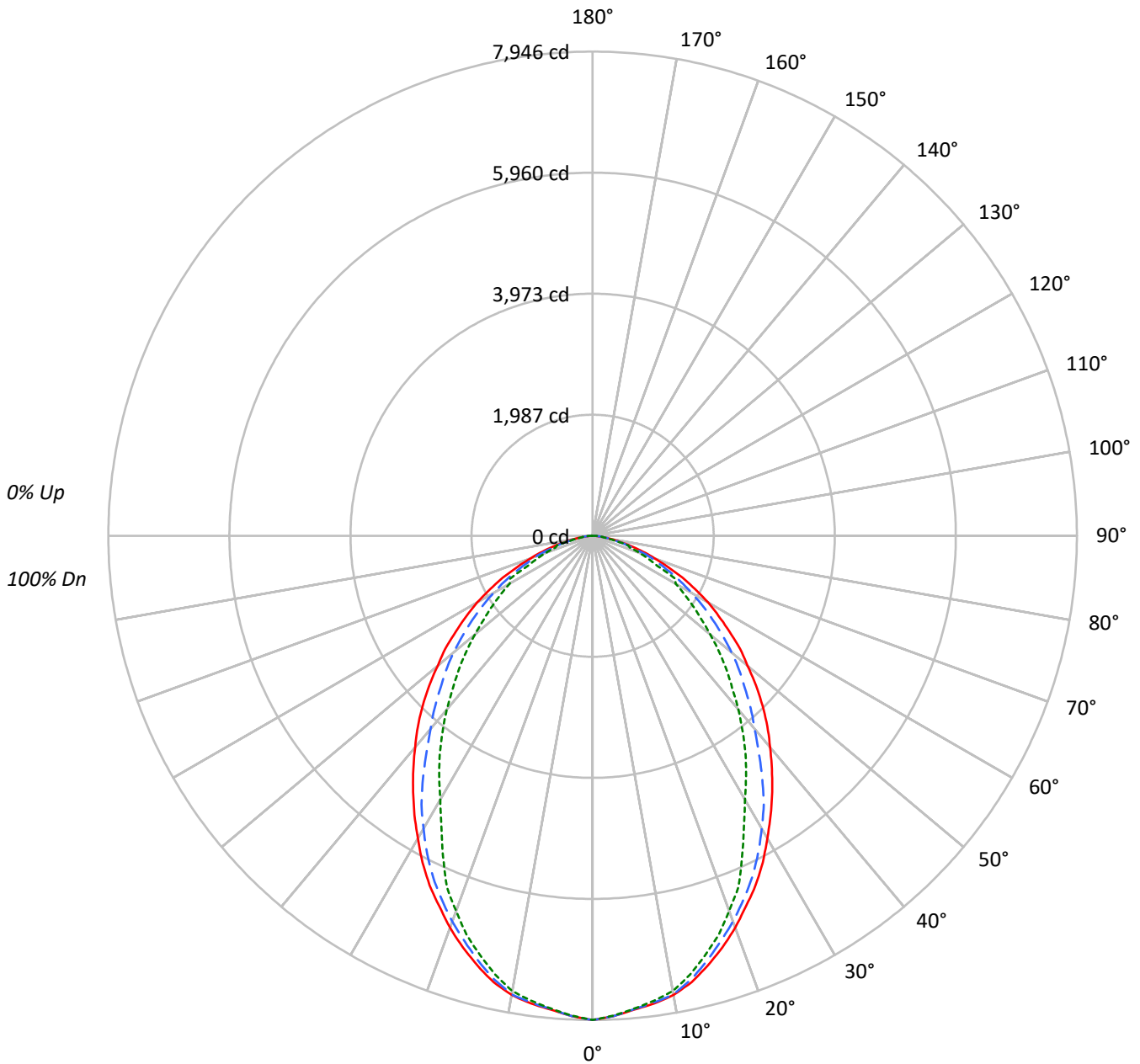
Lumens per Lamp: N/A  
Luminaire Lumens: 15599.0 lumens  
Efficiency: N/A  
Efficacy: 90.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	10691	10691	10691
5°	10546	10533	10521
10°	10455	10442	10367
15°	10173	10070	9930
20°	9799	9641	9378
25°	9396	9192	8619
30°	8906	8620	7764
35°	8434	7967	7182
40°	7954	7260	6534
45°	7499	6712	5908
50°	6942	6230	5269
55°	6421	5646	4719
60°	5883	5043	4227
65°	5176	4416	3743
70°	4264	3867	3180
75°	3391	2961	3104
80°	2278	2135	1993
85°	1419	1701	1985



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	739.7	4.7
10°-20°	2029.9	13.0
20°-30°	2810.3	18.0
30°-40°	2996.6	19.2
40°-50°	2733.8	17.5
50°-60°	2141.7	13.7
60°-70°	1395.8	8.9
70°-80°	618.4	4.0
80°-90°	132.8	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°	5579.9	35.8
0°-40°	8576.5	55.0
0°-60°	13452.0	86.2
0°-90°	15599.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15599.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7946	7946	7946	7946	7946	
5°	7808	7799	7799	7790	7790	741
15°	7303	7303	7229	7156	7128	2053
25°	6329	6292	6191	5971	5806	2906
35°	5135	5098	4850	4483	4373	3210
45°	3941	3858	3527	3234	3105	3036
55°	2737	2655	2407	2122	2012	2455
65°	1626	1534	1387	1415	1176	1602
75°	652	606	570	542	597	699
85°	92	101	110	119	129	127
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7945.9	7945.9	7945.9	7945.9	7945.9
2.5°	7890.8	7890.8	7890.8	7881.6	7881.6
5°	7808.1	7798.9	7798.9	7789.8	7789.8
7.5°	7743.8	7734.6	7725.5	7716.3	7697.9
10°	7652.0	7652.0	7642.8	7596.9	7587.7
12.5°	7505.0	7495.8	7459.1	7394.8	7376.4
15°	7302.9	7302.9	7229.4	7155.9	7128.4
17.5°	7082.4	7073.2	6981.4	6907.9	6871.2
20°	6843.6	6825.2	6733.4	6613.9	6549.6
22.5°	6577.2	6577.2	6467.0	6310.8	6246.5
25°	6329.2	6292.4	6191.4	5970.9	5805.6
27.5°	6044.4	5989.3	5879.1	5566.7	5373.8
30°	5732.1	5704.5	5548.4	5144.2	4997.2
32.5°	5438.1	5392.2	5226.9	4804.3	4684.9
35°	5135.0	5098.3	4850.2	4482.8	4372.6
37.5°	4831.9	4785.9	4473.6	4179.6	4041.9
40°	4528.7	4473.6	4133.7	3867.3	3720.3
42.5°	4243.9	4170.5	3839.8	3555.0	3389.6
45°	3940.8	3858.1	3527.4	3233.5	3104.9
47.5°	3637.7	3564.2	3261.0	2957.9	2810.9
50°	3316.2	3251.9	2976.3	2673.1	2517.0
52.5°	3049.8	2948.7	2682.3	2379.2	2250.6
55°	2737.4	2654.8	2406.7	2122.0	2011.7
57.5°	2452.7	2370.0	2140.3	1874.0	1782.1
60°	2186.3	2066.9	1874.0	1644.3	1570.8
62.5°	1892.3	1800.5	1635.1	1442.2	1534.1
65°	1625.9	1534.1	1387.1	1414.6	1175.8
67.5°	1332.0	1286.0	1157.4	1028.8	992.1
70°	1084.0	1028.8	982.9	845.1	808.4
72.5°	863.5	808.4	744.1	670.6	643.0
75°	652.2	606.3	569.5	542.0	597.1
77.5°	450.1	431.7	404.2	376.6	367.4
80°	294.0	284.8	275.6	266.4	257.2
82.5°	174.5	174.5	174.5	174.5	174.5
85°	91.9	101.0	110.2	119.4	128.6
87.5°	55.1	55.1	64.3	73.5	82.7
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)