

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: P547167

Luminaire Tested: **FMR-24-4-LD4-3STD-35-UNV-81-84-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: P547167  
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-35-UNV-81-84-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

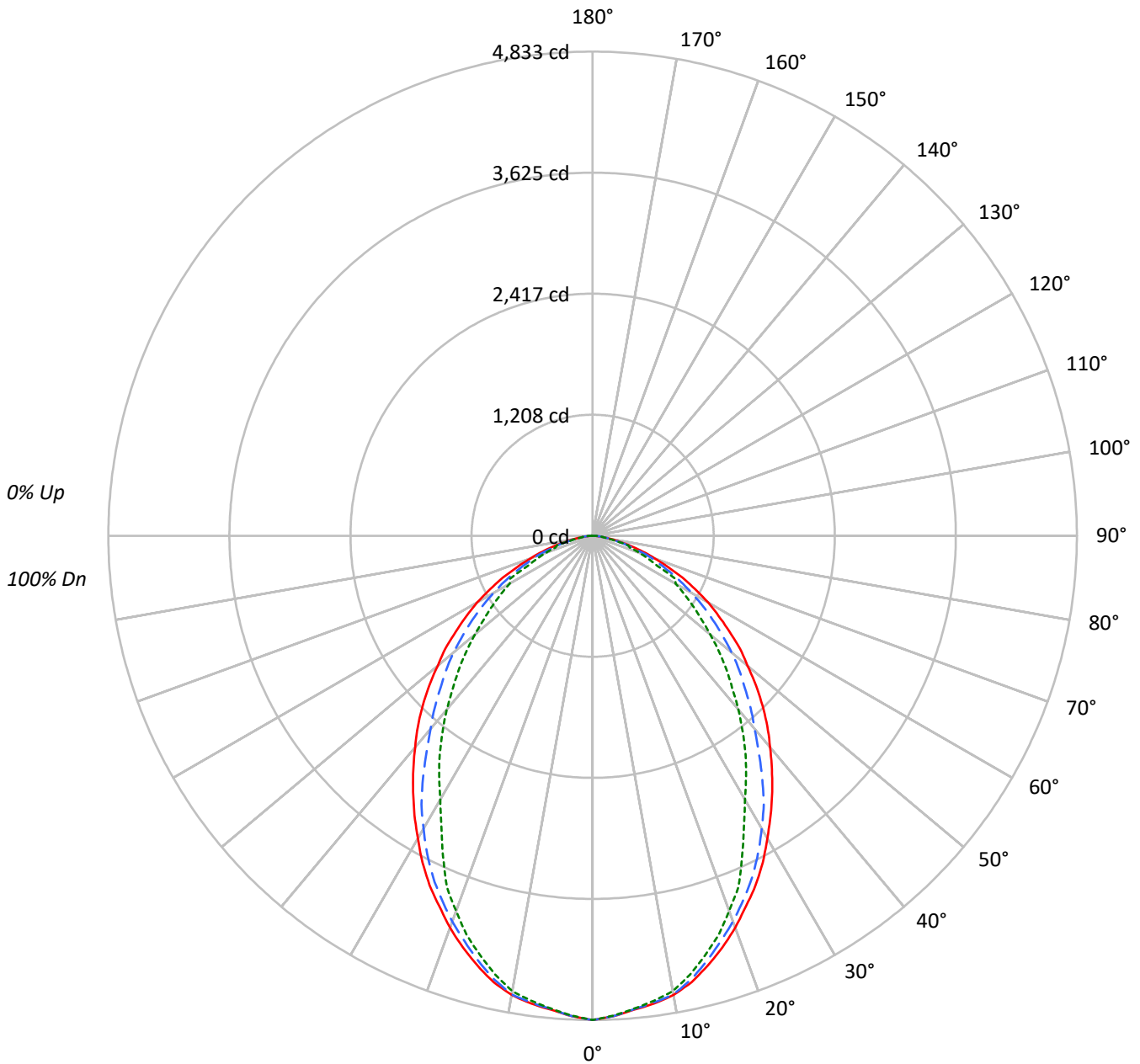
Lumens per Lamp: N/A  
Luminaire Lumens: 9488.0 lumens  
Efficiency: N/A  
Efficacy: 95.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	6503	6503	6503
5°	6415	6407	6399
10°	6359	6351	6305
15°	6187	6125	6040
20°	5960	5864	5704
25°	5715	5591	5242
30°	5417	5243	4722
35°	5130	4846	4368
40°	4838	4416	3975
45°	4561	4082	3593
50°	4222	3789	3204
55°	3906	3434	2870
60°	3578	3067	2571
65°	3149	2686	2277
70°	2594	2352	1934
75°	2062	1801	1888
80°	1385	1299	1212
85°	863	1034	1207



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	449.9	4.7
10°-20°	1234.7	13.0
20°-30°	1709.3	18.0
30°-40°	1822.7	19.2
40°-50°	1662.8	17.5
50°-60°	1302.7	13.7
60°-70°	849.0	8.9
70°-80°	376.2	4.0
80°-90°	80.8	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°	3393.9	35.8
0°-40°	5216.6	55.0
0°-60°	8182.0	86.2
0°-90°	9488.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9488.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4833	4833	4833	4833	4833	
5°	4749	4744	4744	4738	4738	451
15°	4442	4442	4397	4352	4336	1249
25°	3850	3827	3766	3632	3531	1767
35°	3123	3101	2950	2727	2660	1953
45°	2397	2347	2146	1967	1888	1846
55°	1665	1615	1464	1291	1224	1493
65°	989	933	844	860	715	975
75°	397	369	346	330	363	425
85°	56	62	67	73	78	78
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4833.1	4833.1	4833.1	4833.1	4833.1
2.5°	4799.5	4799.5	4799.5	4793.9	4793.9
5°	4749.3	4743.7	4743.7	4738.1	4738.1
7.5°	4710.1	4704.6	4699.0	4693.4	4682.2
10°	4654.3	4654.3	4648.7	4620.7	4615.2
12.5°	4564.9	4559.3	4536.9	4497.8	4486.6
15°	4441.9	4441.9	4397.2	4352.5	4335.8
17.5°	4307.8	4302.3	4246.4	4201.7	4179.3
20°	4162.6	4151.4	4095.5	4022.9	3983.8
22.5°	4000.5	4000.5	3933.5	3838.5	3799.4
25°	3849.7	3827.3	3765.9	3631.8	3531.2
27.5°	3676.5	3643.0	3575.9	3385.9	3268.6
30°	3486.5	3469.7	3374.8	3128.9	3039.5
32.5°	3307.7	3279.8	3179.2	2922.2	2849.6
35°	3123.3	3101.0	2950.1	2726.6	2659.6
37.5°	2938.9	2911.0	2721.0	2542.2	2458.4
40°	2754.6	2721.0	2514.3	2352.3	2262.9
42.5°	2581.4	2536.7	2335.5	2162.3	2061.7
45°	2397.0	2346.7	2145.5	1966.7	1888.5
47.5°	2212.6	2167.9	1983.5	1799.1	1709.7
50°	2017.0	1977.9	1810.3	1625.9	1530.9
52.5°	1855.0	1793.5	1631.5	1447.1	1368.9
55°	1665.0	1614.7	1463.9	1290.7	1223.6
57.5°	1491.8	1441.5	1301.9	1139.8	1083.9
60°	1329.8	1257.2	1139.8	1000.1	955.4
62.5°	1151.0	1095.1	994.5	877.2	933.1
65°	989.0	933.1	843.7	860.5	715.2
67.5°	810.2	782.2	704.0	625.8	603.4
70°	659.3	625.8	597.8	514.0	491.7
72.5°	525.2	491.7	452.6	407.9	391.1
75°	396.7	368.8	346.4	329.7	363.2
77.5°	273.8	262.6	245.8	229.1	223.5
80°	178.8	173.2	167.6	162.0	156.4
82.5°	106.2	106.2	106.2	106.2	106.2
85°	55.9	61.5	67.0	72.6	78.2
87.5°	33.5	33.5	39.1	44.7	50.3
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)