

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: P547174

Luminaire Tested: **FMR-24-4-LD4-3STD-35-UNV-81-97-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: P547174  
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-81-97-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

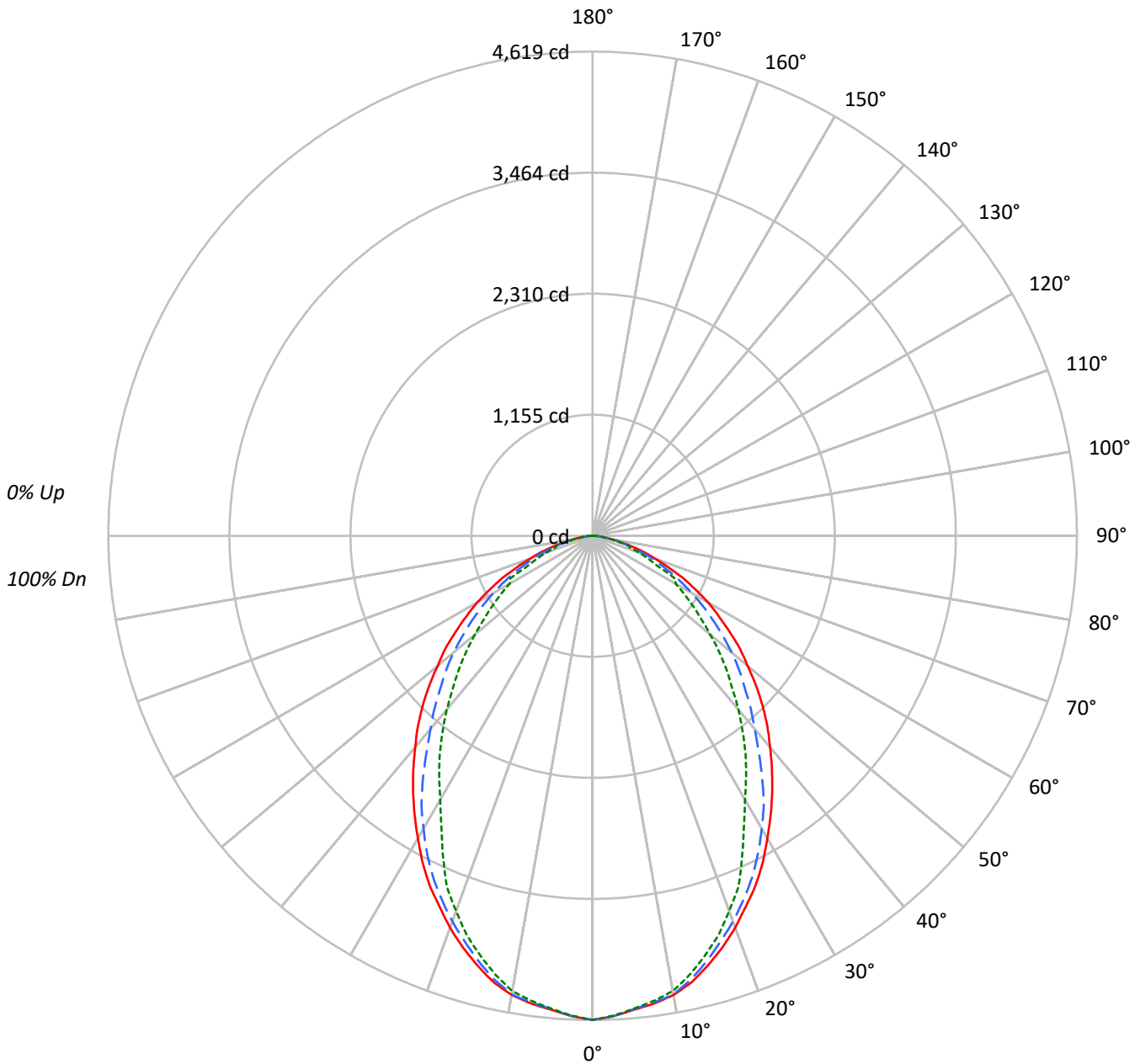
Lumens per Lamp: N/A  
Luminaire Lumens: 9067.0 lumens  
Efficiency: N/A  
Efficacy: 90.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	6214	6214	6214
5°	6130	6123	6115
10°	6077	6069	6026
15°	5913	5853	5772
20°	5696	5604	5451
25°	5462	5343	5010
30°	5176	5010	4513
35°	4902	4631	4175
40°	4623	4220	3798
45°	4359	3901	3434
50°	4035	3621	3062
55°	3733	3282	2743
60°	3420	2931	2457
65°	3009	2567	2176
70°	2479	2247	1849
75°	1971	1721	1804
80°	1324	1241	1158
85°	824	990	1155



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	429.9	4.7
10°-20°	1179.9	13.0
20°-30°	1633.5	18.0
30°-40°	1741.8	19.2
40°-50°	1589.0	17.5
50°-60°	1244.9	13.7
60°-70°	811.3	8.9
70°-80°	359.5	4.0
80°-90°	77.2	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°	3243.3	35.8
0°-40°	4985.1	55.0
0°-60°	7819.0	86.2
0°-90°	9067.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9067.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4619	4619	4619	4619	4619	
5°	4538	4533	4533	4528	4528	431
15°	4245	4245	4202	4159	4143	1193
25°	3679	3658	3599	3471	3374	1689
35°	2985	2963	2819	2606	2542	1866
45°	2291	2243	2050	1880	1805	1764
55°	1591	1543	1399	1233	1169	1427
65°	945	892	806	822	683	931
75°	379	352	331	315	347	406
85°	53	59	64	69	75	74
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4618.6	4618.6	4618.6	4618.6	4618.6
2.5°	4586.6	4586.6	4586.6	4581.2	4581.2
5°	4538.5	4533.2	4533.2	4527.8	4527.8
7.5°	4501.1	4495.8	4490.5	4485.1	4474.4
10°	4447.7	4447.7	4442.4	4415.7	4410.4
12.5°	4362.3	4357.0	4335.6	4298.2	4287.6
15°	4244.8	4244.8	4202.1	4159.4	4143.4
17.5°	4116.7	4111.4	4058.0	4015.3	3993.9
20°	3977.9	3967.2	3913.8	3844.4	3807.0
22.5°	3823.0	3823.0	3759.0	3668.2	3630.8
25°	3678.9	3657.5	3598.8	3470.6	3374.5
27.5°	3513.3	3481.3	3417.2	3235.7	3123.6
30°	3331.8	3315.8	3225.0	2990.1	2904.7
32.5°	3160.9	3134.2	3038.1	2792.5	2723.1
35°	2984.7	2963.4	2819.2	2605.6	2541.6
37.5°	2808.5	2781.8	2600.3	2429.4	2349.4
40°	2632.3	2600.3	2402.7	2247.9	2162.5
42.5°	2466.8	2424.1	2231.9	2066.4	1970.3
45°	2290.6	2242.6	2050.3	1879.5	1804.7
47.5°	2114.4	2071.7	1895.5	1719.3	1633.9
50°	1927.5	1890.2	1730.0	1553.8	1463.0
52.5°	1772.7	1714.0	1559.1	1382.9	1308.2
55°	1591.2	1543.1	1398.9	1233.4	1169.3
57.5°	1425.6	1377.6	1244.1	1089.2	1035.8
60°	1270.8	1201.4	1089.2	955.8	913.0
62.5°	1099.9	1046.5	950.4	838.3	891.7
65°	945.1	891.7	806.3	822.3	683.4
67.5°	774.2	747.5	672.8	598.0	576.7
70°	630.1	598.0	571.3	491.2	469.9
72.5°	501.9	469.9	432.5	389.8	373.8
75°	379.1	352.4	331.0	315.0	347.1
77.5°	261.6	251.0	234.9	218.9	213.6
80°	170.9	165.5	160.2	154.8	149.5
82.5°	101.4	101.4	101.4	101.4	101.4
85°	53.4	58.7	64.1	69.4	74.8
87.5°	32.0	32.0	37.4	42.7	48.1
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)