

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: P545969

Luminaire Tested: **FMR-12-4-LD4-1LO-40-UNV-93-86-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: P545969  
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-12-4-LD4-1LO-40-UNV-93-86-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

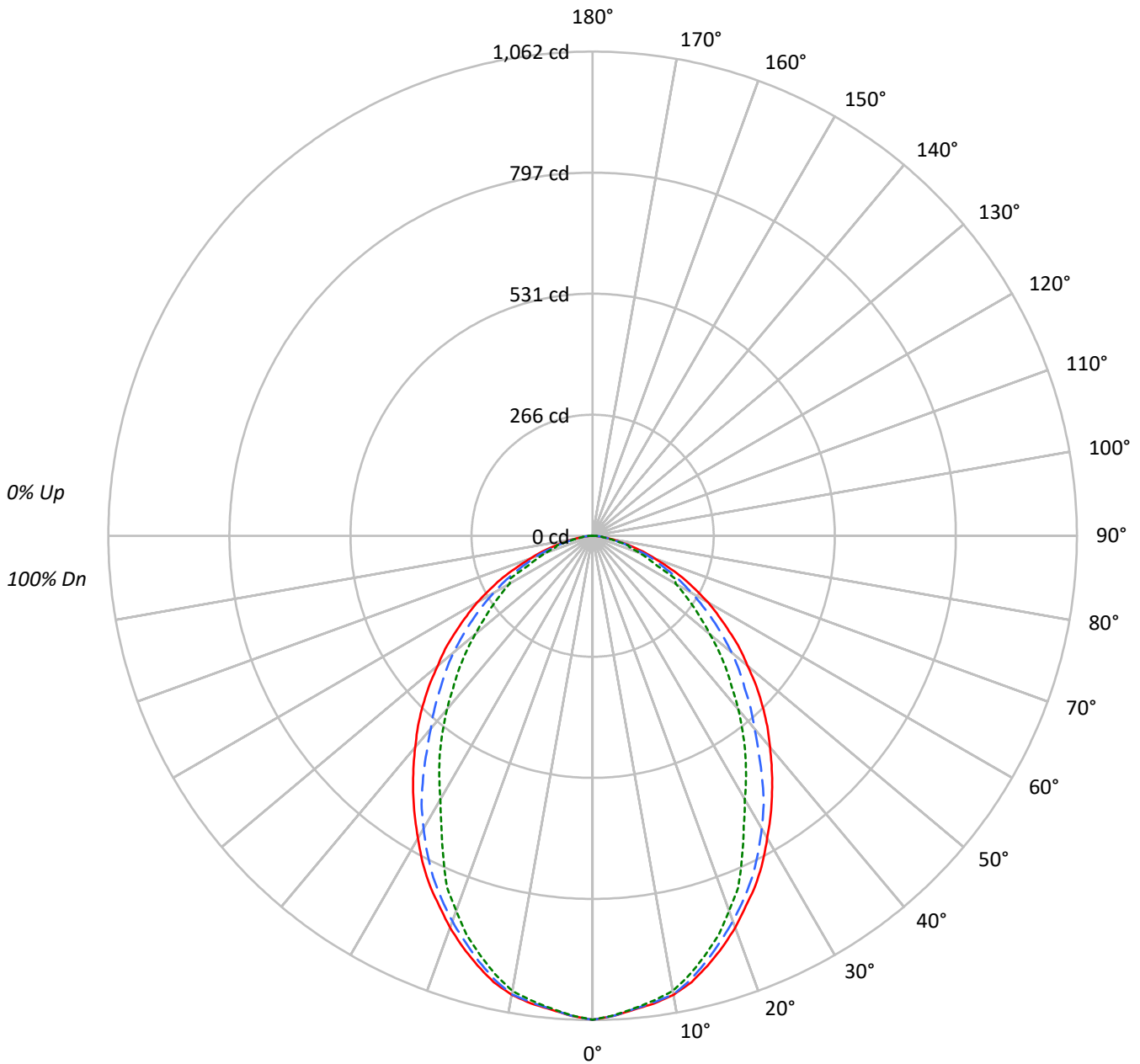
Lumens per Lamp: N/A  
Luminaire Lumens: 2084.0 lumens  
Efficiency: N/A  
Efficacy: 89.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 23.4  
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°	2857	2857	2857
5°	2818	2814	2811
10°	2793	2790	2770
15°	2718	2691	2653
20°	2618	2576	2506
25°	2511	2456	2303
30°	2380	2303	2074
35°	2254	2129	1919
40°	2125	1940	1746
45°	2004	1794	1579
50°	1855	1665	1408
55°	1716	1508	1261
60°	1572	1348	1130
65°	1383	1180	1000
70°	1139	1033	850
75°	906	791	830
80°	609	570	533
85°	380	454	531



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	98.8	4.7
10°-20°	271.2	13.0
20°-30°	375.5	18.0
30°-40°	400.3	19.2
40°-50°	365.2	17.5
50°-60°	286.1	13.7
60°-70°	186.5	8.9
70°-80°	82.6	4.0
80°-90°	17.7	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°	745.5	35.8
0°-40°	1145.8	55.0
0°-60°	1797.2	86.2
0°-90°	2084.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2084.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1062	1062	1062	1062	1062	
5°	1043	1042	1042	1041	1041	99
15°	976	976	966	956	952	274
25°	846	841	827	798	776	388
35°	686	681	648	599	584	429
45°	526	515	471	432	415	406
55°	366	355	322	284	269	328
65°	217	205	185	189	157	214
75°	87	81	76	72	80	93
85°	12	14	15	16	17	17
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1061.6	1061.6	1061.6	1061.6	1061.6
2.5°	1054.2	1054.2	1054.2	1053.0	1053.0
5°	1043.2	1041.9	1041.9	1040.7	1040.7
7.5°	1034.6	1033.3	1032.1	1030.9	1028.4
10°	1022.3	1022.3	1021.1	1014.9	1013.7
12.5°	1002.7	1001.4	996.5	987.9	985.5
15°	975.7	975.7	965.8	956.0	952.3
17.5°	946.2	945.0	932.7	922.9	918.0
20°	914.3	911.8	899.6	883.6	875.0
22.5°	878.7	878.7	864.0	843.1	834.5
25°	845.6	840.7	827.2	797.7	775.6
27.5°	807.5	800.2	785.4	743.7	717.9
30°	765.8	762.1	741.3	687.3	667.6
32.5°	726.5	720.4	698.3	641.8	625.9
35°	686.0	681.1	648.0	598.9	584.2
37.5°	645.5	639.4	597.7	558.4	540.0
40°	605.0	597.7	552.3	516.7	497.0
42.5°	567.0	557.2	513.0	474.9	452.9
45°	526.5	515.4	471.3	432.0	414.8
47.5°	486.0	476.2	435.7	395.2	375.5
50°	443.0	434.4	397.6	357.1	336.3
52.5°	407.4	393.9	358.4	317.9	300.7
55°	365.7	354.7	321.5	283.5	268.8
57.5°	327.7	316.6	285.9	250.4	238.1
60°	292.1	276.1	250.4	219.7	209.9
62.5°	252.8	240.5	218.4	192.7	204.9
65°	217.2	204.9	185.3	189.0	157.1
67.5°	177.9	171.8	154.6	137.5	132.5
70°	144.8	137.5	131.3	112.9	108.0
72.5°	115.4	108.0	99.4	89.6	85.9
75°	87.1	81.0	76.1	72.4	79.8
77.5°	60.1	57.7	54.0	50.3	49.1
80°	39.3	38.0	36.8	35.6	34.4
82.5°	23.3	23.3	23.3	23.3	23.3
85°	12.3	13.5	14.7	16.0	17.2
87.5°	7.4	7.4	8.6	9.8	11.0
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)