

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: P545935

Luminaire Tested: **FMR-12-4-LD4-1LO-35-UNV-93-84-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: P545935  
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-35-UNV-93-84-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS 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**

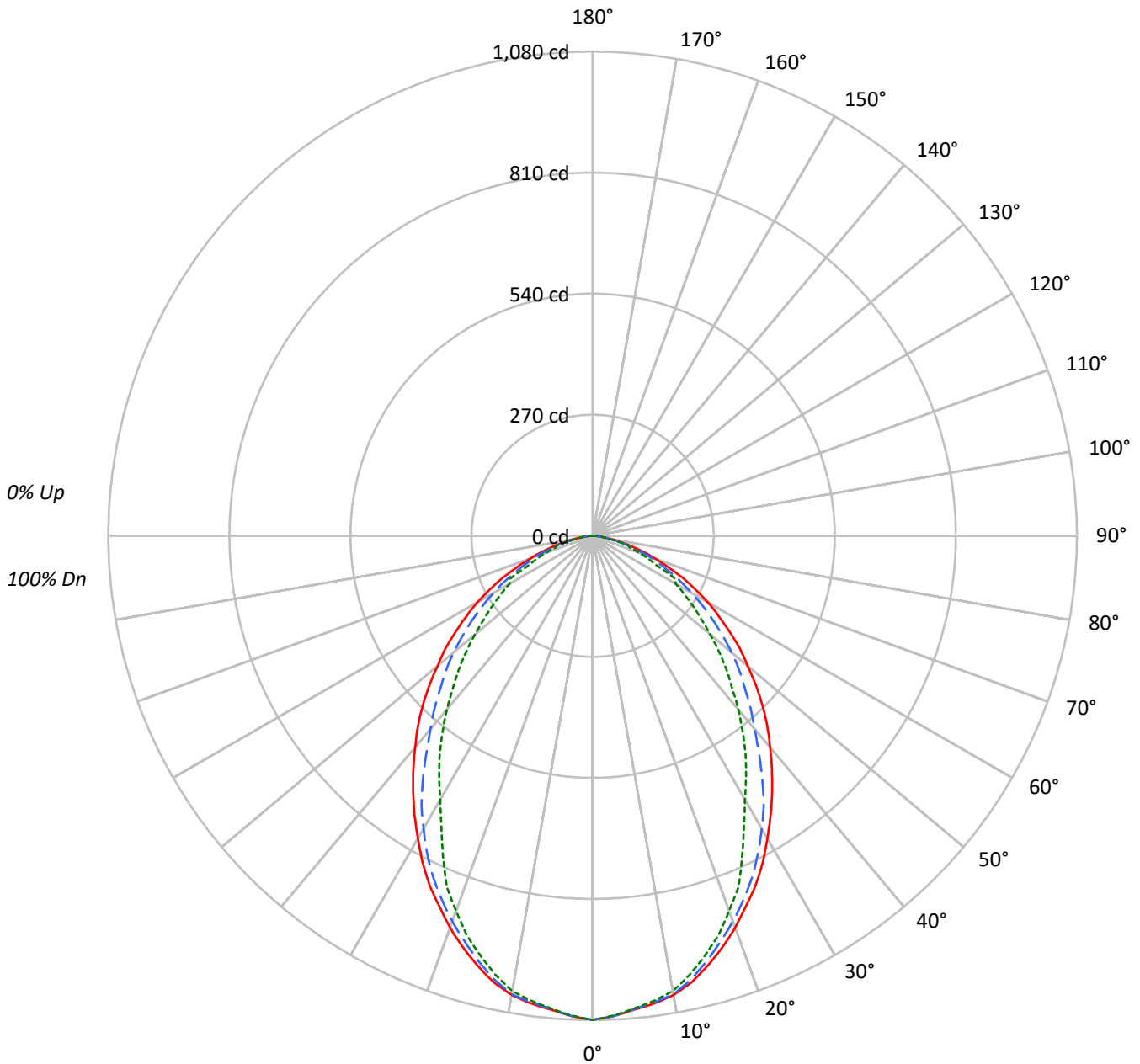
Lumens per Lamp: N/A  
Luminaire Lumens: 2120.0 lumens  
Efficiency: N/A  
Efficacy: 90.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 23.4  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	2906	2906	2906
5°	2867	2863	2860
10°	2842	2838	2818
15°	2765	2737	2699
20°	2664	2621	2549
25°	2554	2498	2343
30°	2421	2343	2110
35°	2293	2166	1952
40°	2162	1974	1776
45°	2038	1824	1606
50°	1887	1693	1432
55°	1745	1535	1283
60°	1599	1371	1149
65°	1407	1200	1018
70°	1159	1051	865
75°	921	805	843
80°	620	581	542
85°	386	463	540



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	100.5	4.7
10°-20°	275.9	13.0
20°-30°	381.9	18.0
30°-40°	407.3	19.2
40°-50°	371.5	17.5
50°-60°	291.1	13.7
60°-70°	189.7	8.9
70°-80°	84.1	4.0
80°-90°	18.0	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°	758.3	35.8
0°-40°	1165.6	55.0
0°-60°	1828.2	86.2
0°-90°	2120.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2120.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1080	1080	1080	1080	1080	
5°	1061	1060	1060	1059	1059	101
15°	992	992	982	972	969	279
25°	860	855	841	812	789	395
35°	698	693	659	609	594	436
45°	536	524	479	440	422	413
55°	372	361	327	288	273	334
65°	221	208	188	192	160	218
75°	89	82	77	74	81	95
85°	12	14	15	16	18	17
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1079.9	1079.9	1079.9	1079.9	1079.9
2.5°	1072.4	1072.4	1072.4	1071.2	1071.2
5°	1061.2	1059.9	1059.9	1058.7	1058.7
7.5°	1052.4	1051.2	1049.9	1048.7	1046.2
10°	1039.9	1039.9	1038.7	1032.5	1031.2
12.5°	1020.0	1018.7	1013.7	1005.0	1002.5
15°	992.5	992.5	982.5	972.5	968.8
17.5°	962.5	961.3	948.8	938.8	933.8
20°	930.1	927.6	915.1	898.9	890.1
22.5°	893.9	893.9	878.9	857.7	848.9
25°	860.2	855.2	841.4	811.5	789.0
27.5°	821.5	814.0	799.0	756.6	730.3
30°	779.0	775.3	754.1	699.1	679.2
32.5°	739.1	732.8	710.4	652.9	636.7
35°	697.9	692.9	659.2	609.2	594.3
37.5°	656.7	650.4	608.0	568.0	549.3
40°	615.5	608.0	561.8	525.6	505.6
42.5°	576.8	566.8	521.8	483.1	460.7
45°	535.6	524.3	479.4	439.5	422.0
47.5°	494.4	484.4	443.2	402.0	382.0
50°	450.7	441.9	404.5	363.3	342.1
52.5°	414.5	400.7	364.5	323.3	305.9
55°	372.0	360.8	327.1	288.4	273.4
57.5°	333.3	322.1	290.9	254.7	242.2
60°	297.1	280.9	254.7	223.5	213.5
62.5°	257.2	244.7	222.2	196.0	208.5
65°	221.0	208.5	188.5	192.3	159.8
67.5°	181.0	174.8	157.3	139.8	134.8
70°	147.3	139.8	133.6	114.9	109.9
72.5°	117.4	109.9	101.1	91.1	87.4
75°	88.6	82.4	77.4	73.7	81.1
77.5°	61.2	58.7	54.9	51.2	49.9
80°	40.0	38.7	37.5	36.2	35.0
82.5°	23.7	23.7	23.7	23.7	23.7
85°	12.5	13.7	15.0	16.2	17.5
87.5°	7.5	7.5	8.7	10.0	11.2
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)