

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: P546020

Luminaire Tested: **FMR-12-4-LD4-1STD-35-UNV-81-94-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: P546020  
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-LD4-1STD-35-UNV-81-94-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

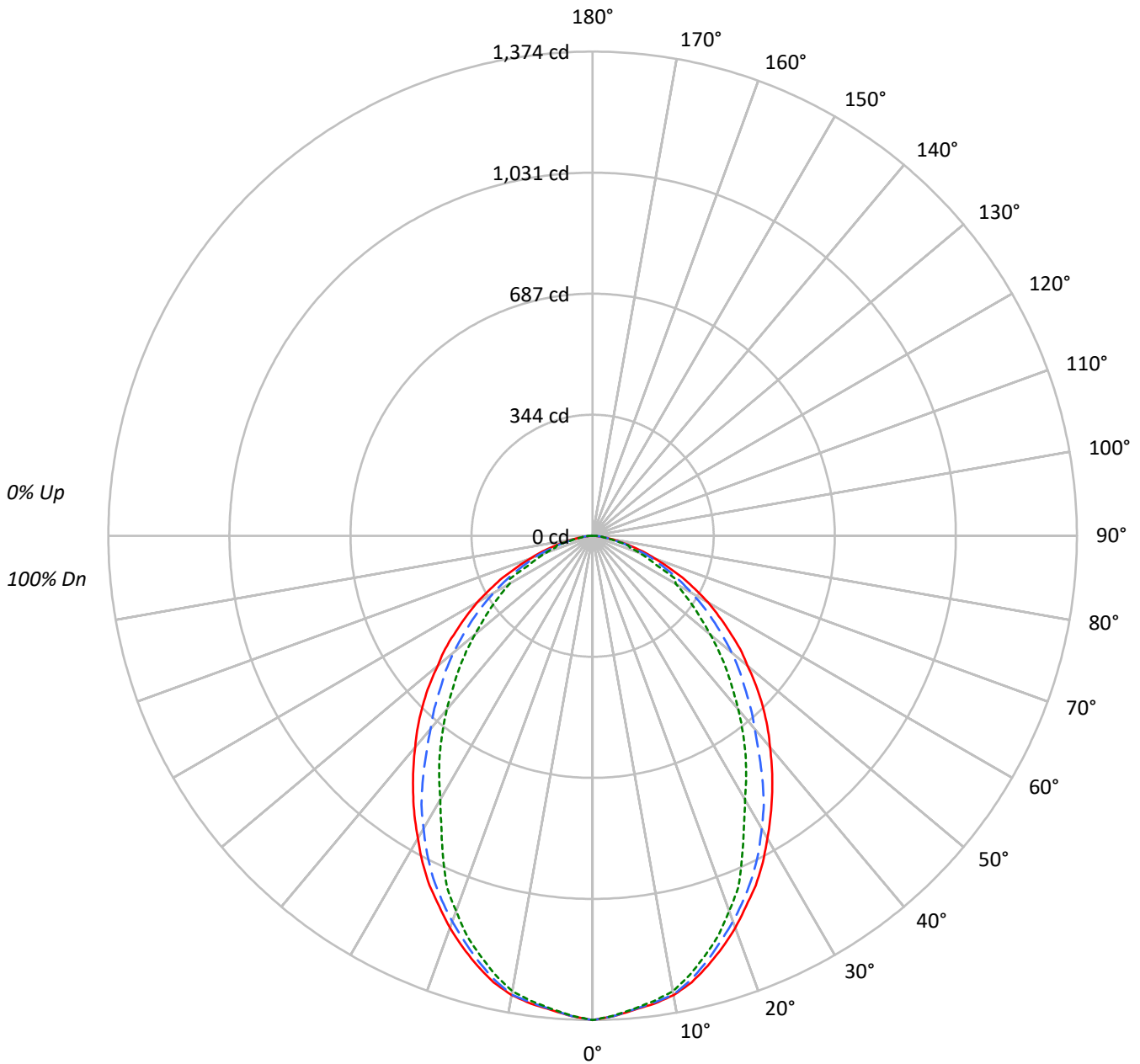
Lumens per Lamp: N/A  
Luminaire Lumens: 2698.0 lumens  
Efficiency: N/A  
Efficacy: 81.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
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°	3698	3698	3698
5°	3648	3644	3639
10°	3616	3612	3586
15°	3519	3483	3435
20°	3390	3335	3244
25°	3250	3180	2981
30°	3081	2982	2686
35°	2917	2756	2485
40°	2752	2512	2261
45°	2594	2322	2044
50°	2401	2155	1822
55°	2221	1953	1633
60°	2035	1744	1462
65°	1791	1528	1295
70°	1475	1338	1100
75°	1173	1024	1074
80°	787	739	690
85°	491	590	685



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	127.9	4.7
10°-20°	351.1	13.0
20°-30°	486.1	18.0
30°-40°	518.3	19.2
40°-50°	472.8	17.5
50°-60°	370.4	13.7
60°-70°	241.4	8.9
70°-80°	107.0	4.0
80°-90°	23.0	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°	965.1	35.8
0°-40°	1483.4	55.0
0°-60°	2326.6	86.2
0°-90°	2698.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2698.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1374	1374	1374	1374	1374	
5°	1350	1349	1349	1347	1347	128
15°	1263	1263	1250	1238	1233	355
25°	1095	1088	1071	1033	1004	503
35°	888	882	839	775	756	555
45°	682	667	610	559	537	525
55°	474	459	416	367	348	425
65°	281	265	240	245	203	277
75°	113	105	98	94	103	121
85°	16	18	19	21	22	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1374.3	1374.3	1374.3	1374.3	1374.3
2.5°	1364.8	1364.8	1364.8	1363.2	1363.2
5°	1350.5	1348.9	1348.9	1347.3	1347.3
7.5°	1339.4	1337.8	1336.2	1334.6	1331.4
10°	1323.5	1323.5	1321.9	1314.0	1312.4
12.5°	1298.1	1296.5	1290.1	1279.0	1275.8
15°	1263.1	1263.1	1250.4	1237.7	1232.9
17.5°	1225.0	1223.4	1207.5	1194.8	1188.4
20°	1183.7	1180.5	1164.6	1143.9	1132.8
22.5°	1137.6	1137.6	1118.5	1091.5	1080.4
25°	1094.7	1088.3	1070.9	1032.7	1004.1
27.5°	1045.4	1035.9	1016.8	962.8	929.5
30°	991.4	986.7	959.6	889.7	864.3
32.5°	940.6	932.6	904.0	831.0	810.3
35°	888.1	881.8	838.9	775.3	756.3
37.5°	835.7	827.8	773.8	722.9	699.1
40°	783.3	773.8	715.0	668.9	643.5
42.5°	734.0	721.3	664.1	614.9	586.3
45°	681.6	667.3	610.1	559.3	537.0
47.5°	629.2	616.5	564.0	511.6	486.2
50°	573.6	562.4	514.8	462.3	435.3
52.5°	527.5	510.0	463.9	411.5	389.3
55°	473.5	459.2	416.3	367.0	348.0
57.5°	424.2	409.9	370.2	324.1	308.2
60°	378.1	357.5	324.1	284.4	271.7
62.5°	327.3	311.4	282.8	249.4	265.3
65°	281.2	265.3	239.9	244.7	203.4
67.5°	230.4	222.4	200.2	177.9	171.6
70°	187.5	177.9	170.0	146.2	139.8
72.5°	149.3	139.8	128.7	116.0	111.2
75°	112.8	104.9	98.5	93.7	103.3
77.5°	77.9	74.7	69.9	65.1	63.6
80°	50.8	49.3	47.7	46.1	44.5
82.5°	30.2	30.2	30.2	30.2	30.2
85°	15.9	17.5	19.1	20.7	22.2
87.5°	9.5	9.5	11.1	12.7	14.3
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)