

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: P546033

Luminaire Tested: **FMR-12-4-LD4-1STD-35-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: P546033  
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-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

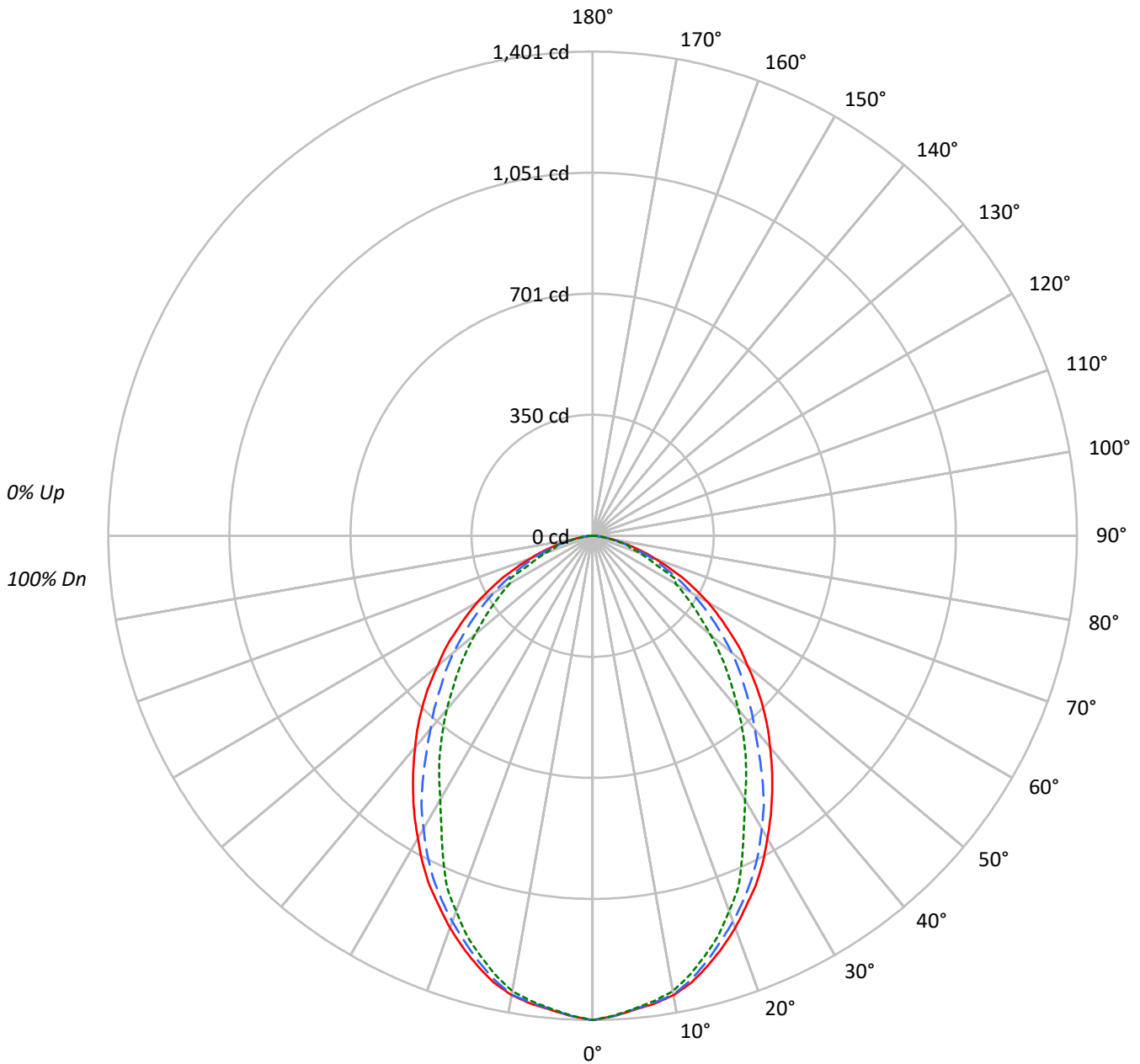
Lumens per Lamp: N/A  
Luminaire Lumens: 2751.0 lumens  
Efficiency: N/A  
Efficacy: 82.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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			100																
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87			87																
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75			75																
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65			65																
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56			56																
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50			50																
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44			44																
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40			40																
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36			36																
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33			33																
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30			30																

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3771	3771	3771
5°	3720	3715	3711
10°	3687	3683	3656
15°	3588	3552	3502
20°	3456	3401	3308
25°	3314	3242	3040
30°	3141	3040	2738
35°	2975	2810	2533
40°	2806	2561	2305
45°	2645	2367	2084
50°	2448	2197	1858
55°	2265	1991	1665
60°	2075	1779	1491
65°	1826	1557	1321
70°	1504	1364	1122
75°	1196	1044	1095
80°	803	753	704
85°	500	599	701



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	130.4	4.7
10°-20°	358.0	13.0
20°-30°	495.6	18.0
30°-40°	528.5	19.2
40°-50°	482.1	17.5
50°-60°	377.7	13.7
60°-70°	246.2	8.9
70°-80°	109.1	4.0
80°-90°	23.4	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°	984.1	35.8
0°-40°	1512.5	55.0
0°-60°	2372.4	86.2
0°-90°	2751.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2751.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1401	1401	1401	1401	1401	
5°	1377	1375	1375	1374	1374	131
15°	1288	1288	1275	1262	1257	362
25°	1116	1110	1092	1053	1024	512
35°	906	899	855	791	771	566
45°	695	680	622	570	548	535
55°	483	468	424	374	355	433
65°	287	270	245	250	207	283
75°	115	107	100	96	105	123
85°	16	18	19	21	23	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1401.3	1401.3	1401.3	1401.3	1401.3
2.5°	1391.6	1391.6	1391.6	1390.0	1390.0
5°	1377.0	1375.4	1375.4	1373.8	1373.8
7.5°	1365.7	1364.1	1362.4	1360.8	1357.6
10°	1349.5	1349.5	1347.9	1339.8	1338.1
12.5°	1323.6	1321.9	1315.5	1304.1	1300.9
15°	1287.9	1287.9	1275.0	1262.0	1257.1
17.5°	1249.0	1247.4	1231.2	1218.3	1211.8
20°	1206.9	1203.7	1187.5	1166.4	1155.1
22.5°	1159.9	1159.9	1140.5	1113.0	1101.6
25°	1116.2	1109.7	1091.9	1053.0	1023.9
27.5°	1066.0	1056.3	1036.8	981.7	947.7
30°	1010.9	1006.0	978.5	907.2	881.3
32.5°	959.1	951.0	921.8	847.3	826.2
35°	905.6	899.1	855.4	790.6	771.1
37.5°	852.1	844.0	789.0	737.1	712.8
40°	798.7	789.0	729.0	682.0	656.1
42.5°	748.5	735.5	677.2	627.0	597.8
45°	695.0	680.4	622.1	570.2	547.6
47.5°	641.5	628.6	575.1	521.6	495.7
50°	584.8	573.5	524.9	471.4	443.9
52.5°	537.8	520.0	473.0	419.6	396.9
55°	482.8	468.2	424.4	374.2	354.8
57.5°	432.5	418.0	377.5	330.5	314.3
60°	385.6	364.5	330.5	290.0	277.0
62.5°	333.7	317.5	288.4	254.3	270.5
65°	286.7	270.5	244.6	249.5	207.4
67.5°	234.9	226.8	204.1	181.4	175.0
70°	191.2	181.4	173.3	149.0	142.6
72.5°	152.3	142.6	131.2	118.3	113.4
75°	115.0	106.9	100.4	95.6	105.3
77.5°	79.4	76.1	71.3	66.4	64.8
80°	51.8	50.2	48.6	47.0	45.4
82.5°	30.8	30.8	30.8	30.8	30.8
85°	16.2	17.8	19.4	21.1	22.7
87.5°	9.7	9.7	11.3	13.0	14.6
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)