

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: P546060

Luminaire Tested: **FMR-12-4-LD4-1STD-40-UNV-82-94-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: P546060  
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-40-UNV-82-94-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

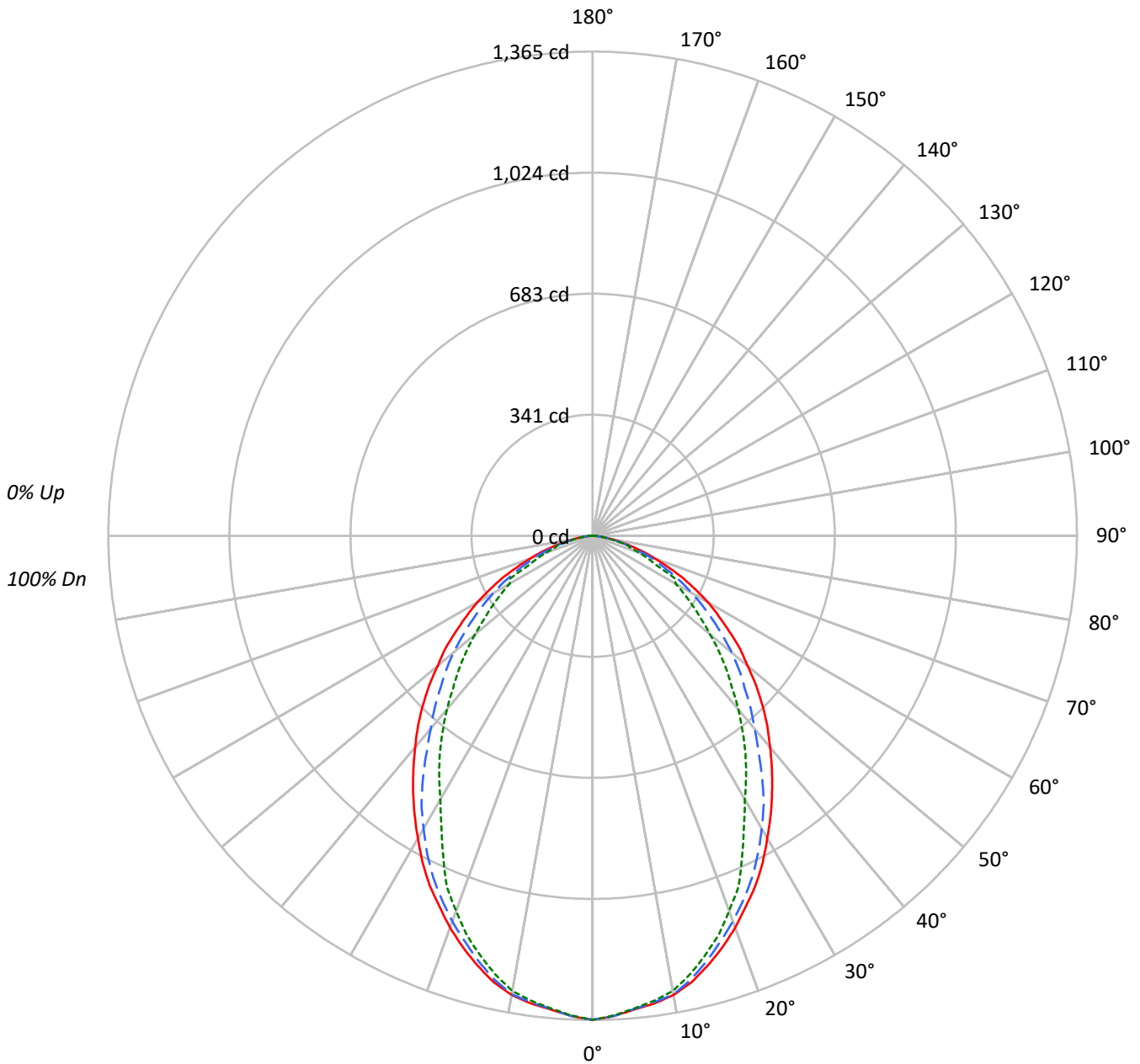
Lumens per Lamp: N/A  
Luminaire Lumens: 2679.0 lumens  
Efficiency: N/A  
Efficacy: 80.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	3672	3672	3672
5°	3622	3618	3614
10°	3591	3587	3561
15°	3494	3459	3411
20°	3366	3312	3221
25°	3227	3157	2961
30°	3059	2961	2667
35°	2897	2736	2467
40°	2732	2494	2244
45°	2576	2305	2029
50°	2384	2140	1810
55°	2206	1939	1621
60°	2021	1732	1452
65°	1778	1517	1286
70°	1465	1328	1092
75°	1164	1017	1066
80°	783	733	685
85°	488	584	682



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	127.0	4.7
10°-20°	348.6	13.0
20°-30°	482.6	18.0
30°-40°	514.6	19.2
40°-50°	469.5	17.5
50°-60°	367.8	13.7
60°-70°	239.7	8.9
70°-80°	106.2	4.0
80°-90°	22.8	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°	958.3	35.8
0°-40°	1472.9	55.0
0°-60°	2310.3	86.2
0°-90°	2679.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2679.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1365	1365	1365	1365	1365	
5°	1341	1339	1339	1338	1338	127
15°	1254	1254	1242	1229	1224	353
25°	1087	1081	1063	1026	997	499
35°	882	876	833	770	751	551
45°	677	663	606	555	533	521
55°	470	456	413	364	346	422
65°	279	264	238	243	202	275
75°	112	104	98	93	102	120
85°	16	17	19	20	22	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1364.6	1364.6	1364.6	1364.6	1364.6
2.5°	1355.2	1355.2	1355.2	1353.6	1353.6
5°	1341.0	1339.4	1339.4	1337.8	1337.8
7.5°	1329.9	1328.4	1326.8	1325.2	1322.1
10°	1314.2	1314.2	1312.6	1304.7	1303.1
12.5°	1288.9	1287.3	1281.0	1270.0	1266.8
15°	1254.2	1254.2	1241.6	1229.0	1224.2
17.5°	1216.3	1214.8	1199.0	1186.4	1180.1
20°	1175.3	1172.2	1156.4	1135.9	1124.8
22.5°	1129.6	1129.6	1110.6	1083.8	1072.8
25°	1087.0	1080.7	1063.3	1025.5	997.1
27.5°	1038.1	1028.6	1009.7	956.0	922.9
30°	984.4	979.7	952.9	883.5	858.2
32.5°	934.0	926.1	897.7	825.1	804.6
35°	881.9	875.6	833.0	769.9	751.0
37.5°	829.8	821.9	768.3	717.8	694.2
40°	777.8	768.3	709.9	664.2	638.9
42.5°	728.9	716.2	659.4	610.5	582.1
45°	676.8	662.6	605.8	555.3	533.2
47.5°	624.7	612.1	560.1	508.0	482.8
50°	569.5	558.5	511.2	459.1	432.3
52.5°	523.8	506.4	460.7	408.6	386.5
55°	470.1	455.9	413.3	364.4	345.5
57.5°	421.2	407.0	367.6	321.8	306.1
60°	375.5	355.0	321.8	282.4	269.8
62.5°	325.0	309.2	280.8	247.7	263.5
65°	279.2	263.5	238.2	243.0	201.9
67.5°	228.8	220.9	198.8	176.7	170.4
70°	186.2	176.7	168.8	145.1	138.8
72.5°	148.3	138.8	127.8	115.2	110.4
75°	112.0	104.1	97.8	93.1	102.5
77.5°	77.3	74.1	69.4	64.7	63.1
80°	50.5	48.9	47.3	45.8	44.2
82.5°	30.0	30.0	30.0	30.0	30.0
85°	15.8	17.4	18.9	20.5	22.1
87.5°	9.5	9.5	11.0	12.6	14.2
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)