

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: P546047

Luminaire Tested: **FMR-12-4-LD4-1STD-40-UNV-81-84-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: P546047  
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-81-84-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

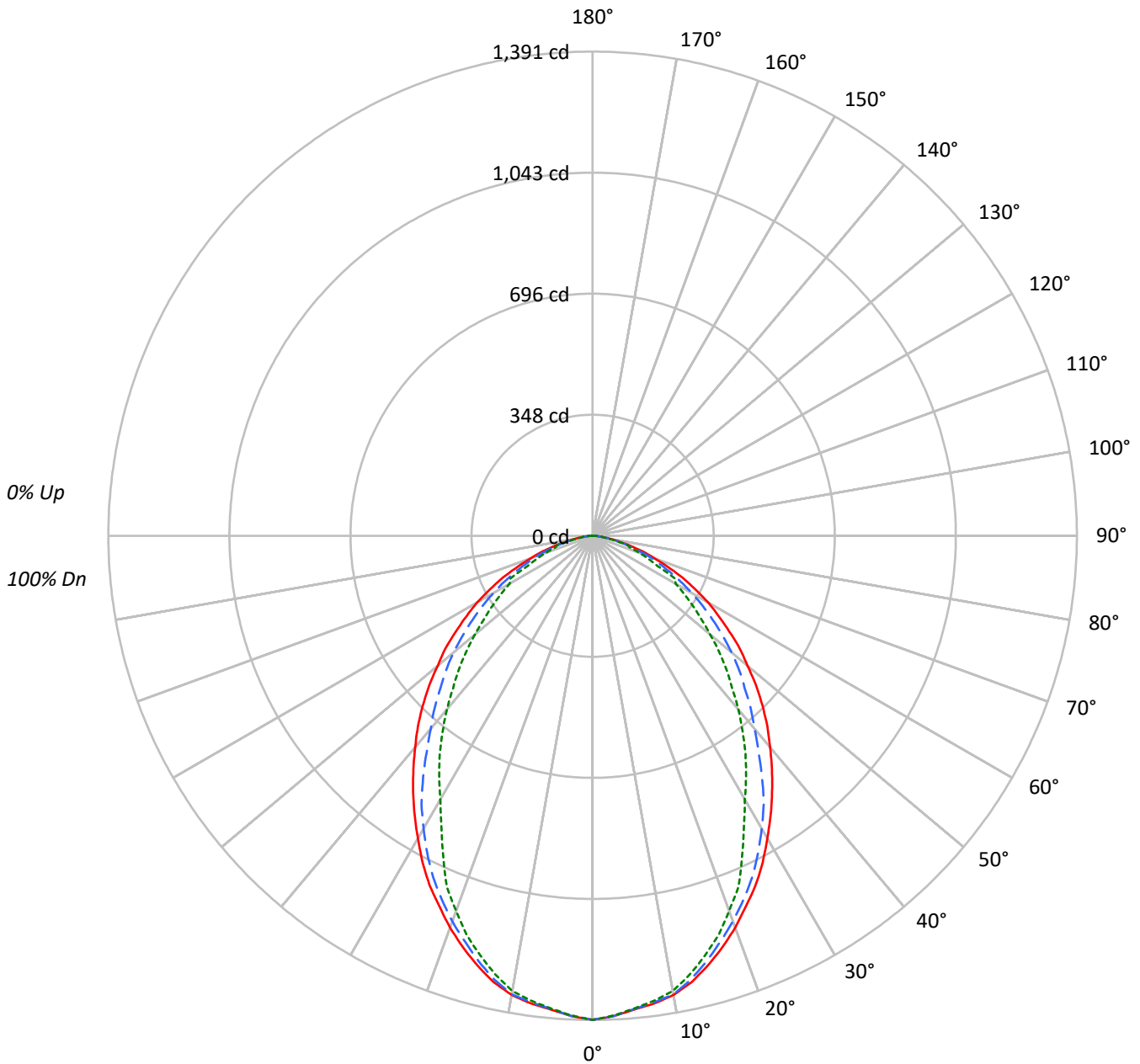
Lumens per Lamp: N/A  
Luminaire Lumens: 2730.0 lumens  
Efficiency: N/A  
Efficacy: 82.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	3742	3742	3742
5°	3691	3687	3683
10°	3659	3655	3628
15°	3561	3525	3475
20°	3430	3375	3283
25°	3289	3217	3017
30°	3117	3017	2718
35°	2952	2788	2514
40°	2784	2541	2287
45°	2625	2349	2068
50°	2430	2181	1844
55°	2248	1976	1652
60°	2059	1765	1480
65°	1812	1546	1310
70°	1493	1353	1113
75°	1186	1037	1087
80°	797	747	697
85°	497	596	695



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	129.4	4.7
10°-20°	355.3	13.0
20°-30°	491.8	18.0
30°-40°	524.4	19.2
40°-50°	478.4	17.5
50°-60°	374.8	13.7
60°-70°	244.3	8.9
70°-80°	108.2	4.0
80°-90°	23.2	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°	976.5	35.8
0°-40°	1501.0	55.0
0°-60°	2354.2	86.2
0°-90°	2730.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2730.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1391	1391	1391	1391	1391	
5°	1366	1365	1365	1363	1363	130
15°	1278	1278	1265	1252	1248	359
25°	1108	1101	1084	1045	1016	509
35°	899	892	849	784	765	562
45°	690	675	617	566	543	531
55°	479	465	421	371	352	430
65°	285	268	243	248	206	280
75°	114	106	100	95	104	122
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°	1390.6	1390.6	1390.6	1390.6	1390.6
2.5°	1381.0	1381.0	1381.0	1379.4	1379.4
5°	1366.5	1364.9	1364.9	1363.3	1363.3
7.5°	1355.3	1353.6	1352.0	1350.4	1347.2
10°	1339.2	1339.2	1337.6	1329.5	1327.9
12.5°	1313.5	1311.9	1305.4	1294.2	1291.0
15°	1278.1	1278.1	1265.2	1252.4	1247.5
17.5°	1239.5	1237.9	1221.8	1209.0	1202.5
20°	1197.7	1194.5	1178.4	1157.5	1146.3
22.5°	1151.1	1151.1	1131.8	1104.5	1093.2
25°	1107.7	1101.2	1083.6	1045.0	1016.0
27.5°	1057.8	1048.2	1028.9	974.2	940.5
30°	1003.2	998.4	971.0	900.3	874.6
32.5°	951.7	943.7	914.8	840.8	819.9
35°	898.7	892.3	848.8	784.5	765.2
37.5°	845.6	837.6	782.9	731.5	707.4
40°	792.6	782.9	723.4	676.8	651.1
42.5°	742.7	729.9	672.0	622.2	593.2
45°	689.7	675.2	617.3	565.9	543.4
47.5°	636.6	623.8	570.7	517.7	491.9
50°	580.4	569.1	520.9	467.8	440.5
52.5°	533.7	516.1	469.4	416.4	393.9
55°	479.1	464.6	421.2	371.4	352.1
57.5°	429.2	414.8	374.6	328.0	311.9
60°	382.6	361.7	328.0	287.8	274.9
62.5°	331.2	315.1	286.2	252.4	268.5
65°	284.6	268.5	242.8	247.6	205.8
67.5°	233.1	225.1	202.6	180.1	173.6
70°	189.7	180.1	172.0	147.9	141.5
72.5°	151.1	141.5	130.2	117.4	112.5
75°	114.1	106.1	99.7	94.9	104.5
77.5°	78.8	75.6	70.7	65.9	64.3
80°	51.4	49.8	48.2	46.6	45.0
82.5°	30.5	30.5	30.5	30.5	30.5
85°	16.1	17.7	19.3	20.9	22.5
87.5°	9.6	9.6	11.3	12.9	14.5
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)