

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: P545012

Luminaire Tested: **FMR-12-1-LD4-2HI-40-UNV-93-94-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: P545012  
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-12-1-LD4-2HI-40-UNV-93-94-EDD  
Description: 1X1 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS 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**

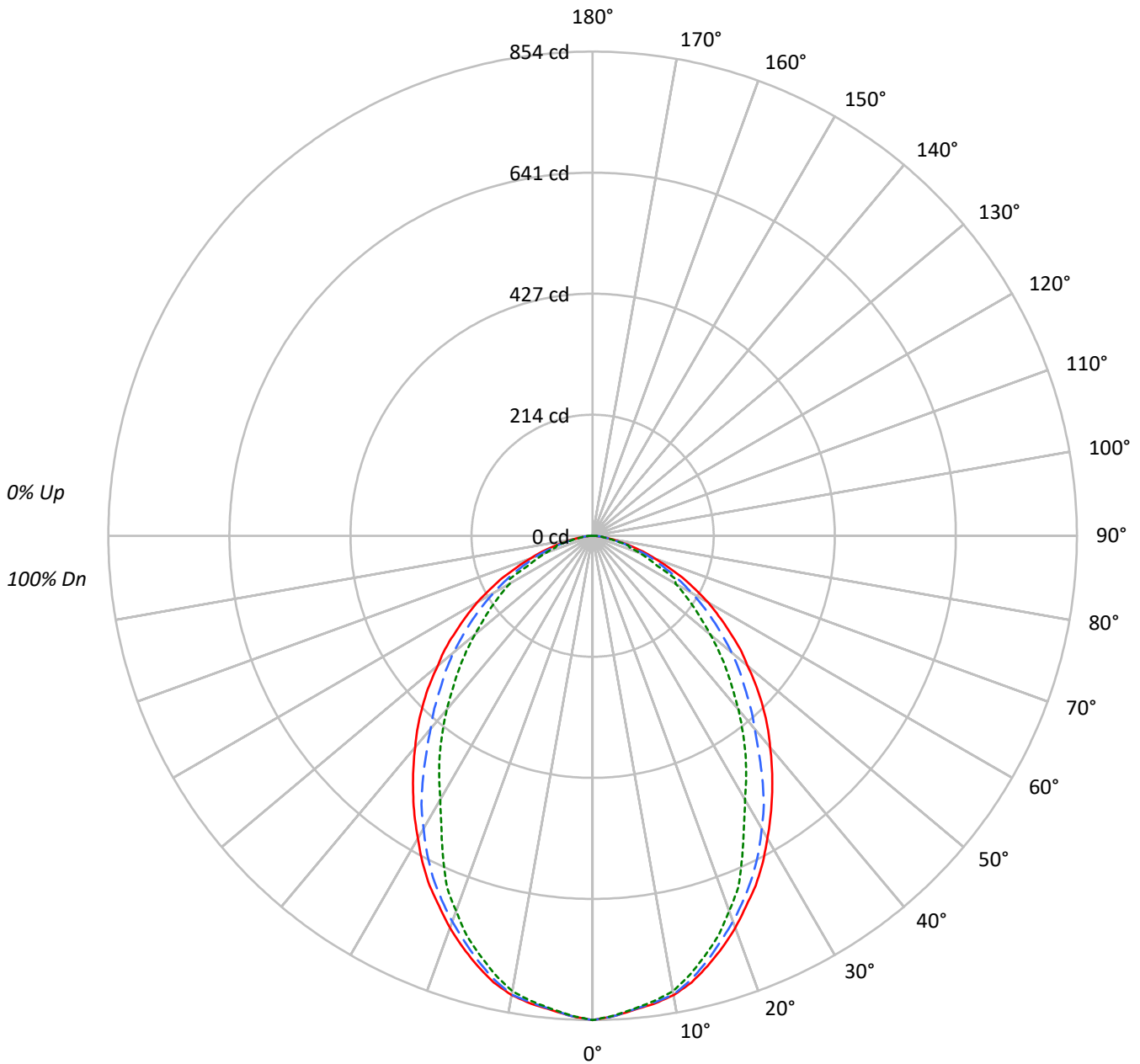
Lumens per Lamp: N/A  
Luminaire Lumens: 1677.0 lumens  
Efficiency: N/A  
Efficacy: 77.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
CIE Type: Direct

Input Watts (W): 21.6  
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°	9195	9195	9195
5°	9070	9059	9049
10°	8991	8981	8916
15°	8749	8661	8539
20°	8427	8292	8065
25°	8081	7905	7412
30°	7659	7414	6677
35°	7253	6851	6177
40°	6842	6244	5621
45°	6450	5772	5081
50°	5970	5359	4531
55°	5523	4855	4059
60°	5059	4338	3636
65°	4452	3798	3219
70°	3666	3327	2735
75°	2915	2545	2670
80°	1959	1835	1717
85°	1223	1470	1704



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	79.5	4.7
10°-20°	218.2	13.0
20°-30°	302.1	18.0
30°-40°	322.1	19.2
40°-50°	293.9	17.5
50°-60°	230.3	13.7
60°-70°	150.1	8.9
70°-80°	66.5	4.0
80°-90°	14.3	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°	599.9	35.8
0°-40°	922.0	55.0
0°-60°	1446.2	86.2
0°-90°	1677.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1677.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	854	854	854	854	854	
5°	839	838	838	838	838	80
15°	785	785	777	769	766	221
25°	680	676	666	642	624	312
35°	552	548	521	482	470	345
45°	424	415	379	348	334	326
55°	294	285	259	228	216	264
65°	175	165	149	152	126	172
75°	70	65	61	58	64	75
85°	10	11	12	13	14	14
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	854.2	854.2	854.2	854.2	854.2
2.5°	848.3	848.3	848.3	847.3	847.3
5°	839.4	838.4	838.4	837.5	837.5
7.5°	832.5	831.5	830.5	829.6	827.6
10°	822.6	822.6	821.7	816.7	815.7
12.5°	806.8	805.9	801.9	795.0	793.0
15°	785.1	785.1	777.2	769.3	766.3
17.5°	761.4	760.4	750.5	742.6	738.7
20°	735.7	733.8	723.9	711.0	704.1
22.5°	707.1	707.1	695.2	678.5	671.5
25°	680.4	676.5	665.6	641.9	624.1
27.5°	649.8	643.9	632.0	598.5	577.7
30°	616.2	613.3	596.5	553.0	537.2
32.5°	584.6	579.7	561.9	516.5	503.7
35°	552.0	548.1	521.4	481.9	470.1
37.5°	519.5	514.5	480.9	449.3	434.5
40°	486.9	480.9	444.4	415.8	400.0
42.5°	456.3	448.4	412.8	382.2	364.4
45°	423.7	414.8	379.2	347.6	333.8
47.5°	391.1	383.2	350.6	318.0	302.2
50°	356.5	349.6	320.0	287.4	270.6
52.5°	327.9	317.0	288.4	255.8	242.0
55°	294.3	285.4	258.7	228.1	216.3
57.5°	263.7	254.8	230.1	201.5	191.6
60°	235.0	222.2	201.5	176.8	168.9
62.5°	203.4	193.6	175.8	155.0	164.9
65°	174.8	164.9	149.1	152.1	126.4
67.5°	143.2	138.3	124.4	110.6	106.7
70°	116.5	110.6	105.7	90.9	86.9
72.5°	92.8	86.9	80.0	72.1	69.1
75°	70.1	65.2	61.2	58.3	64.2
77.5°	48.4	46.4	43.5	40.5	39.5
80°	31.6	30.6	29.6	28.6	27.7
82.5°	18.8	18.8	18.8	18.8	18.8
85°	9.9	10.9	11.9	12.8	13.8
87.5°	5.9	5.9	6.9	7.9	8.9
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)