

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: P545011

Luminaire Tested: **FMR-12-1-LD4-2HI-40-UNV-93-88-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: P545011  
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-93-88-EDD  
Description: 1X1 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

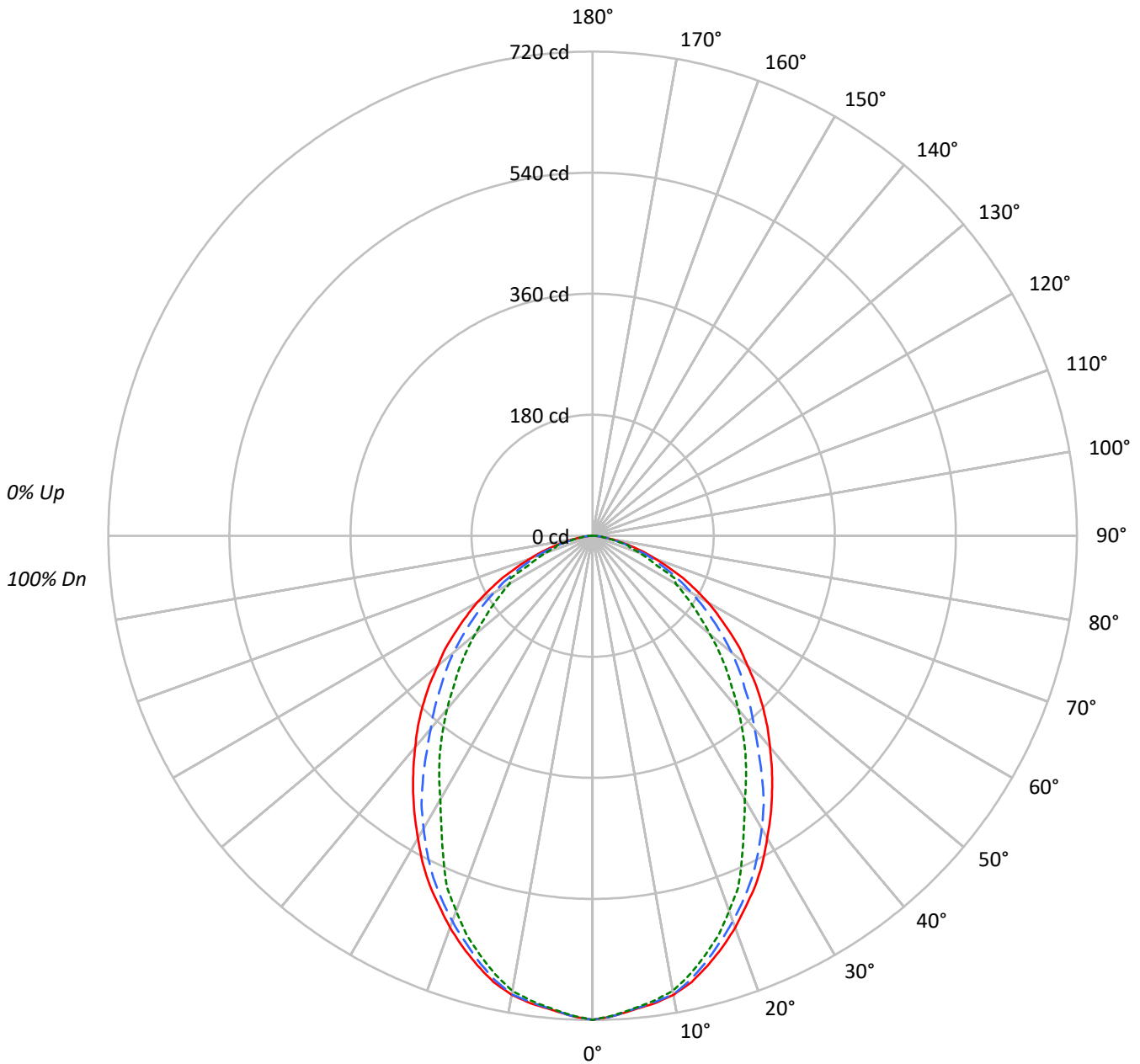
Lumens per Lamp: N/A  
Luminaire Lumens: 1413.0 lumens  
Efficiency: N/A  
Efficacy: 65.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
CIE Type: Direct

Input Watts (W): 21.6  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	7748	7748	7748
5°	7642	7633	7624
10°	7576	7567	7512
15°	7372	7298	7195
20°	7101	6986	6796
25°	6809	6660	6246
30°	6453	6247	5627
35°	6112	5773	5205
40°	5764	5261	4735
45°	5434	4864	4281
50°	5030	4515	3818
55°	4654	4091	3419
60°	4263	3653	3063
65°	3752	3199	2713
70°	3091	2801	2304
75°	2458	2146	2250
80°	1649	1550	1444
85°	1025	1235	1433



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	67.0	4.7
10°-20°	183.9	13.0
20°-30°	254.6	18.0
30°-40°	271.4	19.2
40°-50°	247.6	17.5
50°-60°	194.0	13.7
60°-70°	126.4	8.9
70°-80°	56.0	4.0
80°-90°	12.0	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°	505.4	35.8
0°-40°	776.9	55.0
0°-60°	1218.5	86.2
0°-90°	1413.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1413.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	720	720	720	720	720	
5°	707	706	706	706	706	67
15°	662	662	655	648	646	186
25°	573	570	561	541	526	263
35°	465	462	439	406	396	291
45°	357	350	320	293	281	275
55°	248	240	218	192	182	222
65°	147	139	126	128	106	145
75°	59	55	52	49	54	63
85°	8	9	10	11	12	12
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	719.8	719.8	719.8	719.8	719.8
2.5°	714.8	714.8	714.8	713.9	713.9
5°	707.3	706.4	706.4	705.6	705.6
7.5°	701.5	700.6	699.8	699.0	697.3
10°	693.1	693.1	692.3	688.1	687.3
12.5°	679.8	679.0	675.7	669.8	668.2
15°	661.5	661.5	654.9	648.2	645.7
17.5°	641.5	640.7	632.4	625.7	622.4
20°	619.9	618.2	609.9	599.1	593.3
22.5°	595.8	595.8	585.8	571.7	565.8
25°	573.3	570.0	560.8	540.9	525.9
27.5°	547.5	542.5	532.5	504.3	486.8
30°	519.2	516.7	502.6	466.0	452.7
32.5°	492.6	488.4	473.5	435.2	424.4
35°	465.1	461.8	439.3	406.1	396.1
37.5°	437.7	433.5	405.2	378.6	366.1
40°	410.2	405.2	374.4	350.3	337.0
42.5°	384.4	377.8	347.8	322.0	307.0
45°	357.0	349.5	319.5	292.9	281.2
47.5°	329.5	322.9	295.4	267.9	254.6
50°	300.4	294.6	269.6	242.1	228.0
52.5°	276.3	267.1	243.0	215.5	203.9
55°	248.0	240.5	218.0	192.2	182.2
57.5°	222.2	214.7	193.9	169.7	161.4
60°	198.0	187.2	169.7	148.9	142.3
62.5°	171.4	163.1	148.1	130.6	139.0
65°	147.3	139.0	125.6	128.1	106.5
67.5°	120.7	116.5	104.8	93.2	89.9
70°	98.2	93.2	89.0	76.6	73.2
72.5°	78.2	73.2	67.4	60.7	58.2
75°	59.1	54.9	51.6	49.1	54.1
77.5°	40.8	39.1	36.6	34.1	33.3
80°	26.6	25.8	25.0	24.1	23.3
82.5°	15.8	15.8	15.8	15.8	15.8
85°	8.3	9.2	10.0	10.8	11.6
87.5°	5.0	5.0	5.8	6.7	7.5
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)