

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: P547022

Luminaire Tested: **FMR-24-4-LD4-3HI-40-UNV-82-97-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: P547022  
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-24-4-LD4-3HI-40-UNV-82-97-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

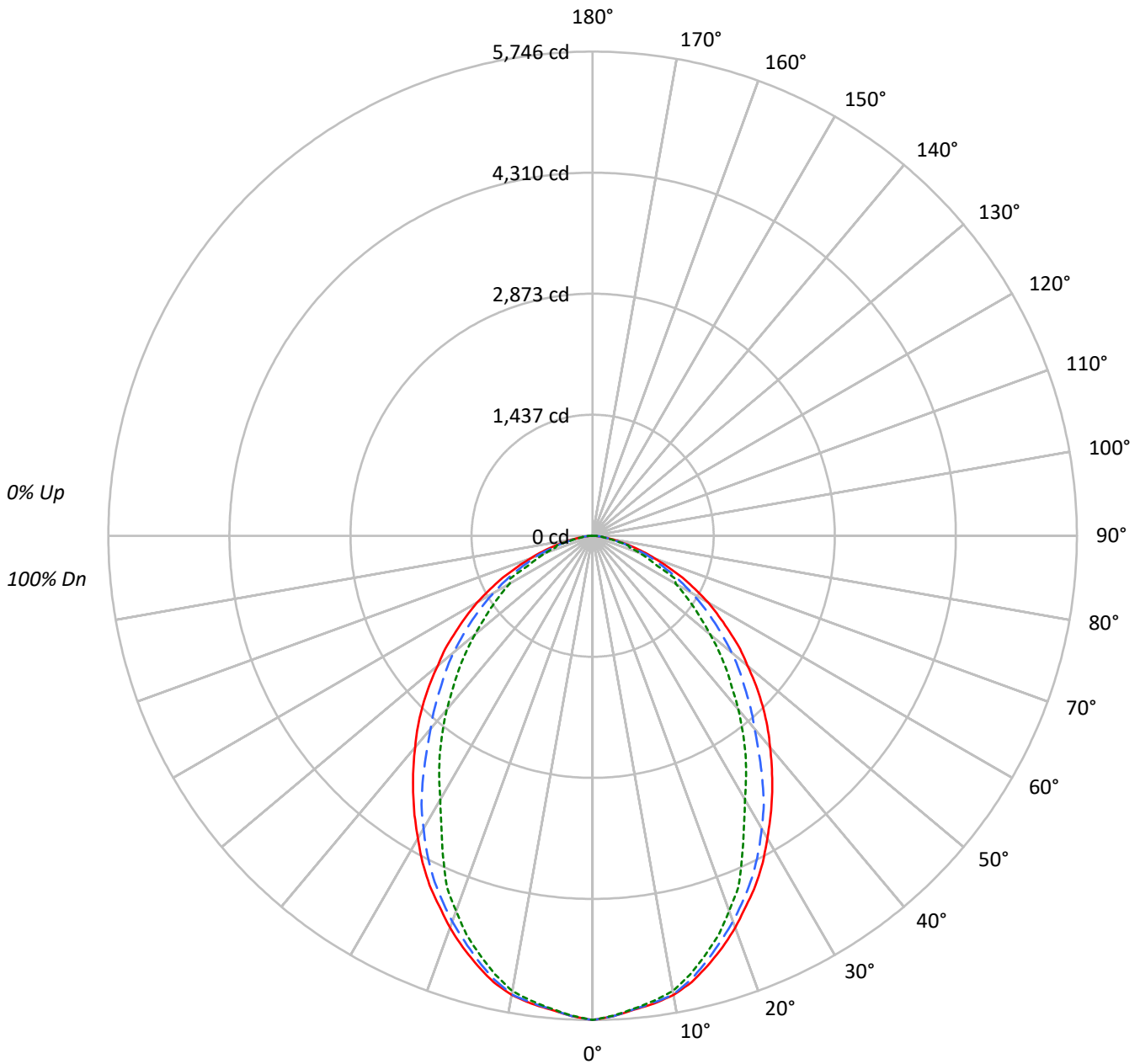
Lumens per Lamp: N/A  
Luminaire Lumens: 11280.0 lumens  
Efficiency: N/A  
Efficacy: 87.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 129.6  
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°	7731	7731	7731
5°	7626	7617	7608
10°	7560	7551	7496
15°	7356	7282	7180
20°	7086	6972	6781
25°	6795	6647	6232
30°	6440	6234	5614
35°	6099	5761	5194
40°	5752	5250	4725
45°	5422	4854	4272
50°	5020	4505	3810
55°	4643	4083	3412
60°	4254	3647	3057
65°	3743	3193	2707
70°	3083	2796	2300
75°	2452	2141	2245
80°	1647	1544	1441
85°	1025	1230	1436



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	534.9	4.7
10°-20°	1467.9	13.0
20°-30°	2032.2	18.0
30°-40°	2166.9	19.2
40°-50°	1976.9	17.5
50°-60°	1548.7	13.7
60°-70°	1009.4	8.9
70°-80°	447.2	4.0
80°-90°	96.0	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°	4034.9	35.8
0°-40°	6201.9	55.0
0°-60°	9727.4	86.2
0°-90°	11280.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11280.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5746	5746	5746	5746	5746	
5°	5646	5640	5640	5633	5633	536
15°	5281	5281	5228	5175	5155	1485
25°	4577	4550	4477	4318	4198	2101
35°	3713	3687	3507	3242	3162	2321
45°	2850	2790	2551	2338	2245	2195
55°	1980	1920	1740	1534	1455	1775
65°	1176	1109	1003	1023	850	1159
75°	472	438	412	392	432	505
85°	66	73	80	86	93	92
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5745.9	5745.9	5745.9	5745.9	5745.9
2.5°	5706.0	5706.0	5706.0	5699.4	5699.4
5°	5646.2	5639.6	5639.6	5633.0	5633.0
7.5°	5599.7	5593.1	5586.5	5579.8	5566.5
10°	5533.3	5533.3	5526.7	5493.5	5486.8
12.5°	5427.0	5420.4	5393.8	5347.3	5334.0
15°	5280.9	5280.9	5227.8	5174.6	5154.7
17.5°	5121.5	5114.8	5048.4	4995.3	4968.7
20°	4948.8	4935.5	4869.1	4782.7	4736.2
22.5°	4756.1	4756.1	4676.4	4563.5	4517.0
25°	4576.8	4550.2	4477.1	4317.7	4198.1
27.5°	4370.9	4331.0	4251.3	4025.4	3885.9
30°	4145.0	4125.1	4012.2	3719.9	3613.6
32.5°	3932.4	3899.2	3779.7	3474.1	3387.7
35°	3713.2	3686.7	3507.3	3241.6	3161.9
37.5°	3494.0	3460.8	3235.0	3022.4	2922.8
40°	3274.8	3235.0	2989.2	2796.6	2690.3
42.5°	3068.9	3015.8	2776.6	2570.7	2451.1
45°	2849.7	2789.9	2550.8	2338.2	2245.2
47.5°	2630.5	2577.3	2358.1	2138.9	2032.6
50°	2398.0	2351.5	2152.2	1933.0	1820.1
52.5°	2205.4	2132.3	1939.7	1720.4	1627.4
55°	1979.5	1919.7	1740.4	1534.4	1454.7
57.5°	1773.6	1713.8	1547.7	1355.1	1288.7
60°	1580.9	1494.6	1355.1	1189.0	1135.9
62.5°	1368.4	1302.0	1182.4	1042.9	1109.3
65°	1175.7	1109.3	1003.0	1023.0	850.3
67.5°	963.2	930.0	837.0	744.0	717.4
70°	783.8	744.0	710.8	611.1	584.6
72.5°	624.4	584.6	538.1	484.9	465.0
75°	471.6	438.4	411.8	391.9	431.8
77.5°	325.5	312.2	292.3	272.3	265.7
80°	212.6	205.9	199.3	192.6	186.0
82.5°	126.2	126.2	126.2	126.2	126.2
85°	66.4	73.1	79.7	86.4	93.0
87.5°	39.9	39.9	46.5	53.1	59.8
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)