

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: P547251

Luminaire Tested: **FMR-24-4-LD4-3STD-50-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: P547251  
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-LD4-3STD-50-UNV-93-88-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

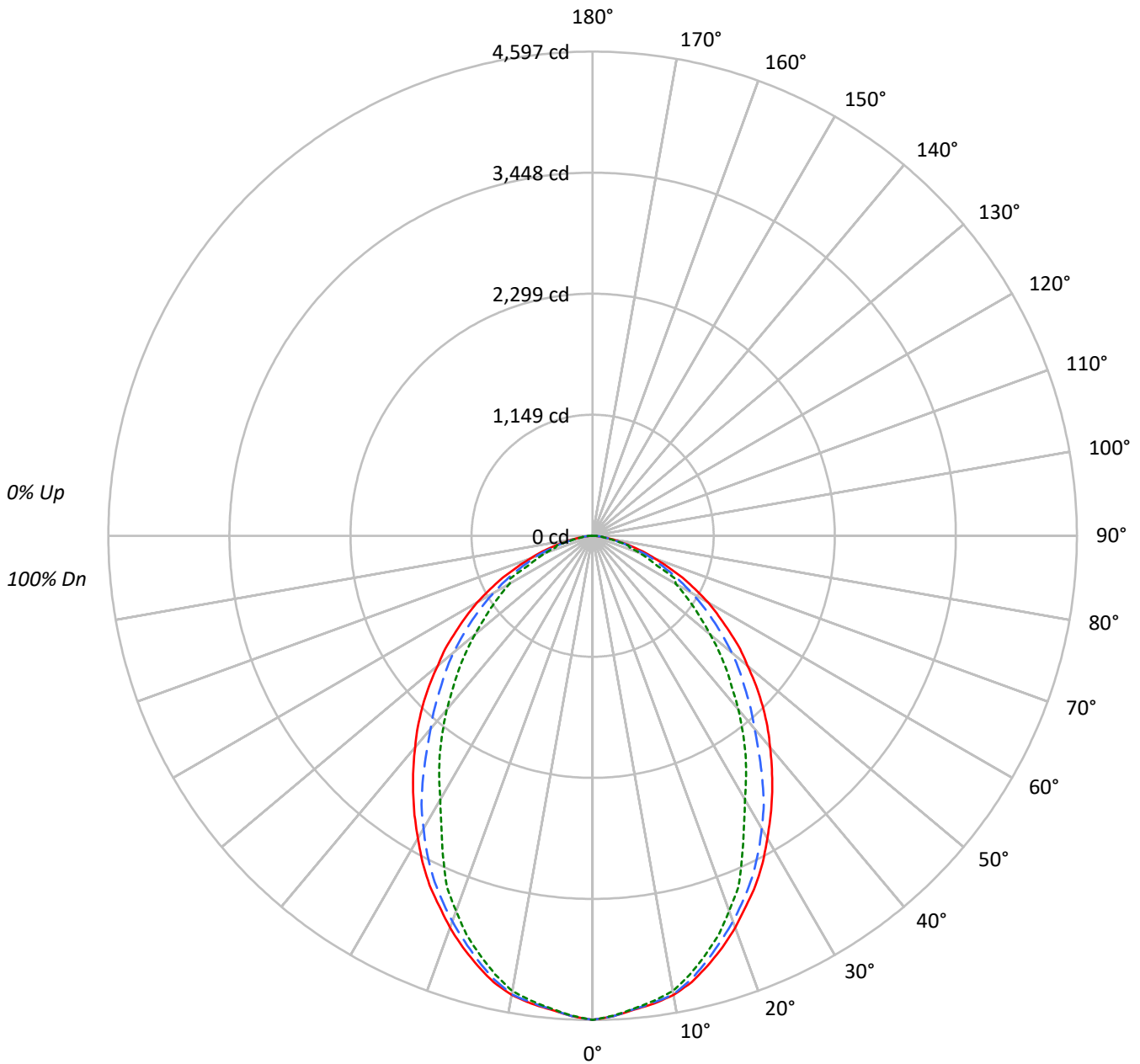
Lumens per Lamp: N/A  
Luminaire Lumens: 9024.0 lumens  
Efficiency: N/A  
Efficacy: 90.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 99.9  
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°	6185	6185	6185
5°	6101	6094	6086
10°	6048	6041	5997
15°	5885	5826	5744
20°	5669	5577	5425
25°	5436	5317	4986
30°	5152	4987	4491
35°	4879	4609	4155
40°	4602	4200	3780
45°	4338	3883	3418
50°	4016	3604	3048
55°	3715	3266	2730
60°	3404	2917	2445
65°	2995	2555	2166
70°	2467	2237	1840
75°	1961	1713	1796
80°	1318	1235	1153
85°	820	985	1149



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	427.9	4.7
10°-20°	1174.3	13.0
20°-30°	1625.8	18.0
30°-40°	1733.5	19.2
40°-50°	1581.5	17.5
50°-60°	1239.0	13.7
60°-70°	807.5	8.9
70°-80°	357.7	4.0
80°-90°	76.8	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°	3228.0	35.8
0°-40°	4961.5	55.0
0°-60°	7782.0	86.2
0°-90°	9024.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9024.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4597	4597	4597	4597	4597	
5°	4517	4512	4512	4506	4506	429
15°	4225	4225	4182	4140	4124	1188
25°	3661	3640	3582	3454	3358	1681
35°	2971	2949	2806	2593	2530	1857
45°	2280	2232	2041	1871	1796	1756
55°	1584	1536	1392	1228	1164	1420
65°	941	888	802	818	680	927
75°	377	351	330	314	345	404
85°	53	58	64	69	74	74
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4596.7	4596.7	4596.7	4596.7	4596.7
2.5°	4564.8	4564.8	4564.8	4559.5	4559.5
5°	4517.0	4511.7	4511.7	4506.4	4506.4
7.5°	4479.8	4474.5	4469.2	4463.9	4453.2
10°	4426.7	4426.7	4421.3	4394.8	4389.5
12.5°	4341.6	4336.3	4315.1	4277.9	4267.2
15°	4224.7	4224.7	4182.2	4139.7	4123.7
17.5°	4097.2	4091.9	4038.7	3996.2	3975.0
20°	3959.0	3948.4	3895.2	3826.2	3789.0
22.5°	3804.9	3804.9	3741.1	3650.8	3613.6
25°	3661.4	3640.2	3581.7	3454.2	3358.5
27.5°	3496.7	3464.8	3401.0	3220.4	3108.8
30°	3316.0	3300.1	3209.7	2975.9	2890.9
32.5°	3146.0	3119.4	3023.7	2779.3	2710.2
35°	2970.6	2949.3	2805.9	2593.3	2529.5
37.5°	2795.2	2768.7	2588.0	2417.9	2338.2
40°	2619.9	2588.0	2391.3	2237.2	2152.2
42.5°	2455.1	2412.6	2221.3	2056.6	1960.9
45°	2279.8	2231.9	2040.6	1870.6	1796.2
47.5°	2104.4	2061.9	1886.5	1711.1	1626.1
50°	1918.4	1881.2	1721.8	1546.4	1456.1
52.5°	1764.3	1705.8	1551.7	1376.4	1302.0
55°	1583.6	1535.8	1392.3	1227.6	1163.8
57.5°	1418.9	1371.0	1238.2	1084.1	1030.9
60°	1264.8	1195.7	1084.1	951.2	908.7
62.5°	1094.7	1041.6	945.9	834.3	887.5
65°	940.6	887.5	802.4	818.4	680.2
67.5°	770.5	744.0	669.6	595.2	573.9
70°	627.1	595.2	568.6	488.9	467.6
72.5°	499.5	467.6	430.4	387.9	372.0
75°	377.3	350.7	329.5	313.5	345.4
77.5°	260.4	249.8	233.8	217.9	212.6
80°	170.1	164.7	159.4	154.1	148.8
82.5°	101.0	101.0	101.0	101.0	101.0
85°	53.1	58.5	63.8	69.1	74.4
87.5°	31.9	31.9	37.2	42.5	47.8
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)