

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: P547189

Luminaire Tested: **FMR-24-4-LD4-3STD-35-UNV-93-96-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: P547189  
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-35-UNV-93-96-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

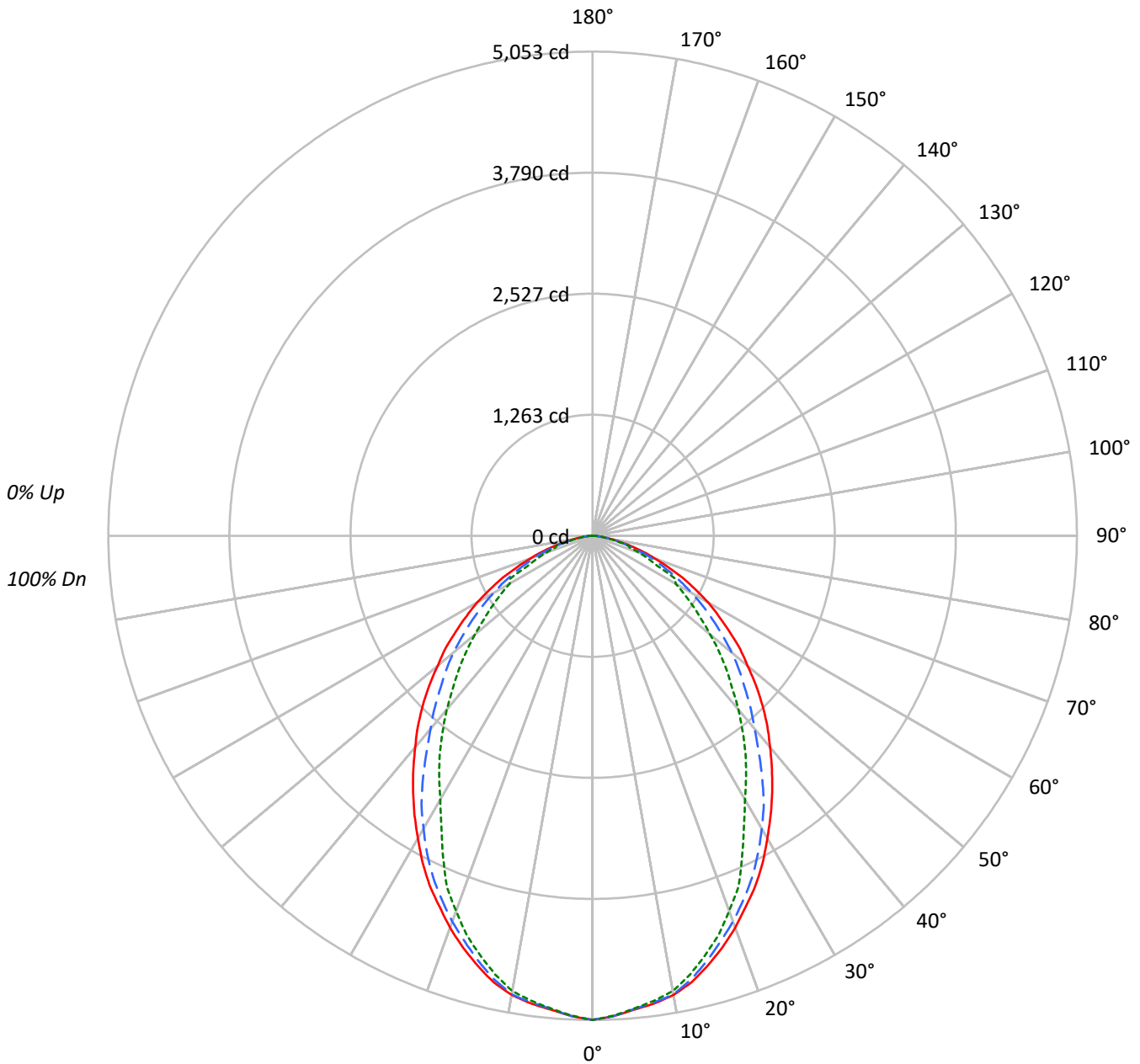
Lumens per Lamp: N/A  
Luminaire Lumens: 9919.0 lumens  
Efficiency: N/A  
Efficacy: 99.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 99.9  
Input Voltage (V): NR  
Input Current (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°	6798	6798	6798
5°	6706	6698	6690
10°	6648	6640	6592
15°	6468	6403	6314
20°	6231	6131	5963
25°	5975	5845	5480
30°	5663	5481	4937
35°	5363	5066	4567
40°	5058	4617	4155
45°	4768	4268	3757
50°	4414	3961	3350
55°	4083	3590	3001
60°	3741	3207	2688
65°	3292	2808	2380
70°	2712	2459	2022
75°	2156	1883	1974
80°	1448	1358	1268
85°	902	1082	1263



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	470.3	4.7
10°-20°	1290.8	13.0
20°-30°	1787.0	18.0
30°-40°	1905.5	19.2
40°-50°	1738.3	17.5
50°-60°	1361.9	13.7
60°-70°	887.6	8.9
70°-80°	393.2	4.0
80°-90°	84.4	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°	3548.1	35.8
0°-40°	5453.6	55.0
0°-60°	8553.8	86.2
0°-90°	9919.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9919.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5053	5053	5053	5053	5053	
5°	4965	4959	4959	4953	4953	471
15°	4644	4644	4597	4550	4533	1305
25°	4025	4001	3937	3797	3692	1848
35°	3265	3242	3084	2850	2780	2041
45°	2506	2453	2243	2056	1974	1930
55°	1741	1688	1530	1349	1279	1561
65°	1034	976	882	900	748	1019
75°	415	386	362	345	380	444
85°	58	64	70	76	82	81
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5052.6	5052.6	5052.6	5052.6	5052.6
2.5°	5017.6	5017.6	5017.6	5011.7	5011.7
5°	4965.0	4959.1	4959.1	4953.3	4953.3
7.5°	4924.1	4918.3	4912.4	4906.6	4894.9
10°	4865.7	4865.7	4859.8	4830.6	4824.8
12.5°	4772.2	4766.4	4743.0	4702.1	4690.5
15°	4643.7	4643.7	4597.0	4550.3	4532.7
17.5°	4503.5	4497.7	4439.3	4392.6	4369.2
20°	4351.7	4340.0	4281.6	4205.6	4164.7
22.5°	4182.3	4182.3	4112.2	4012.9	3972.0
25°	4024.6	4001.2	3936.9	3796.8	3691.6
27.5°	3843.5	3808.4	3738.3	3539.7	3417.1
30°	3644.9	3627.4	3528.1	3271.1	3177.6
32.5°	3458.0	3428.8	3323.6	3054.9	2979.0
35°	3265.2	3241.8	3084.1	2850.5	2780.4
37.5°	3072.5	3043.2	2844.6	2657.7	2570.1
40°	2879.7	2844.6	2628.5	2459.1	2365.7
42.5°	2698.6	2651.9	2441.6	2260.5	2155.4
45°	2505.9	2453.3	2243.0	2056.1	1974.3
47.5°	2313.1	2266.4	2073.6	1880.9	1787.4
50°	2108.7	2067.8	1892.5	1699.8	1600.5
52.5°	1939.3	1875.0	1705.6	1512.9	1431.1
55°	1740.7	1688.1	1530.4	1349.3	1279.2
57.5°	1559.6	1507.0	1361.0	1191.6	1133.2
60°	1390.2	1314.3	1191.6	1045.6	998.8
62.5°	1203.3	1144.9	1039.7	917.1	975.5
65°	1033.9	975.5	882.0	899.5	747.7
67.5°	847.0	817.8	736.0	654.2	630.8
70°	689.3	654.2	625.0	537.4	514.0
72.5°	549.1	514.0	473.1	426.4	408.9
75°	414.7	385.5	362.2	344.6	379.7
77.5°	286.2	274.5	257.0	239.5	233.6
80°	186.9	181.1	175.2	169.4	163.6
82.5°	111.0	111.0	111.0	111.0	111.0
85°	58.4	64.3	70.1	75.9	81.8
87.5°	35.0	35.0	40.9	46.7	52.6
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)