

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: P547172

Luminaire Tested: **FMR-24-4-LD4-3STD-35-UNV-81-94-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: P547172  
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-81-94-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

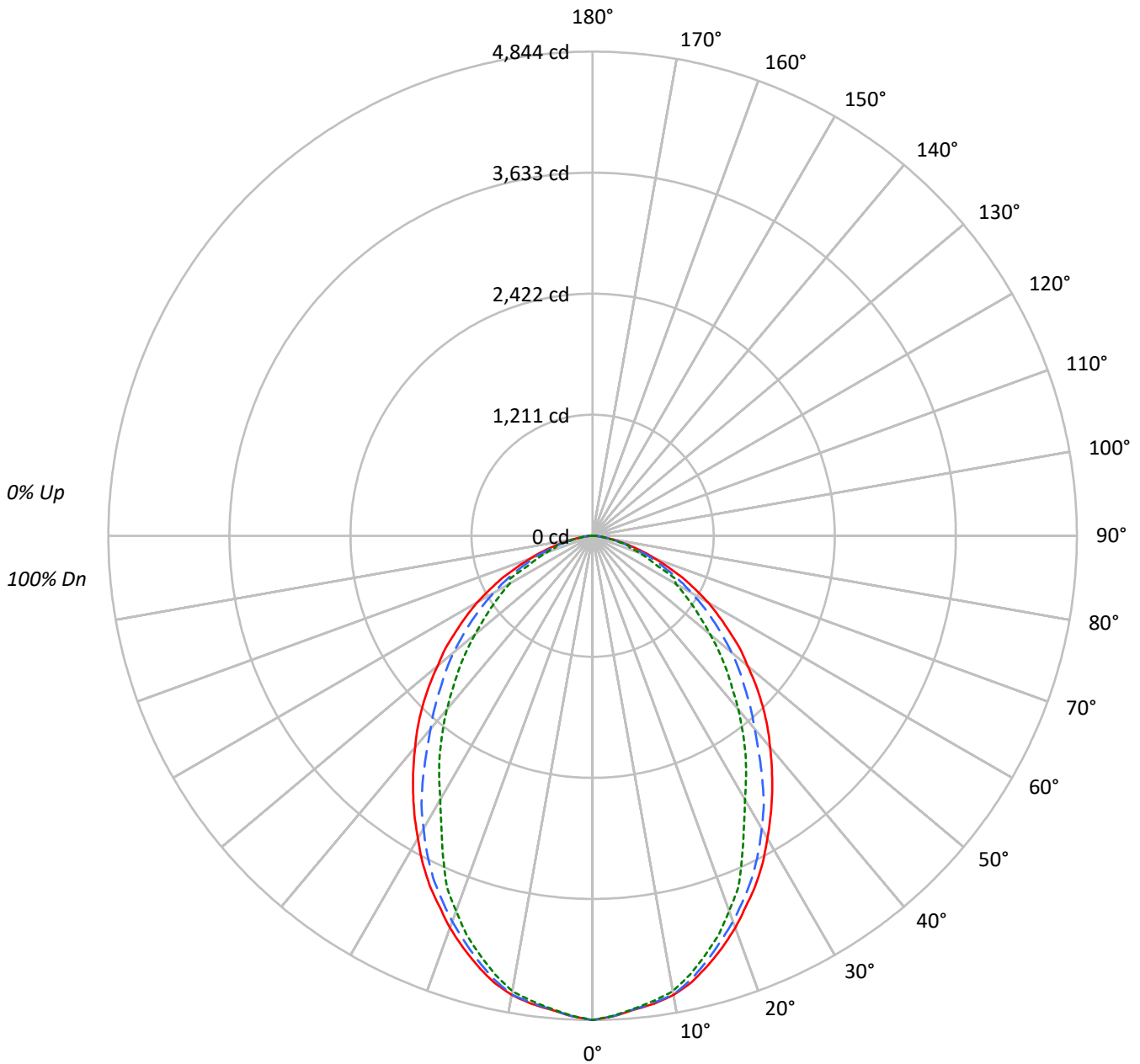
Lumens per Lamp: N/A  
Luminaire Lumens: 9510.0 lumens  
Efficiency: N/A  
Efficacy: 95.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	6518	6518	6518
5°	6429	6422	6414
10°	6374	6366	6320
15°	6202	6139	6053
20°	5974	5878	5717
25°	5728	5604	5255
30°	5429	5255	4733
35°	5142	4857	4379
40°	4849	4426	3984
45°	4571	4092	3602
50°	4232	3798	3212
55°	3915	3442	2877
60°	3587	3074	2577
65°	3156	2692	2282
70°	2600	2357	1939
75°	2067	1805	1892
80°	1389	1302	1215
85°	865	1037	1210



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	450.9	4.7
10°-20°	1237.6	13.0
20°-30°	1713.3	18.0
30°-40°	1826.9	19.2
40°-50°	1666.6	17.5
50°-60°	1305.7	13.7
60°-70°	851.0	8.9
70°-80°	377.0	4.0
80°-90°	80.9	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°	3401.8	35.8
0°-40°	5228.7	55.0
0°-60°	8201.1	86.2
0°-90°	9510.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9510.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4844	4844	4844	4844	4844	
5°	4760	4755	4755	4749	4749	452
15°	4452	4452	4407	4363	4346	1252
25°	3859	3836	3775	3640	3539	1771
35°	3131	3108	2957	2733	2666	1957
45°	2402	2352	2150	1971	1893	1851
55°	1669	1618	1467	1294	1226	1497
65°	991	935	846	862	717	977
75°	398	370	347	330	364	426
85°	56	62	67	73	78	78
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4844.3	4844.3	4844.3	4844.3	4844.3
2.5°	4810.7	4810.7	4810.7	4805.1	4805.1
5°	4760.3	4754.7	4754.7	4749.1	4749.1
7.5°	4721.1	4715.5	4709.9	4704.3	4693.1
10°	4665.1	4665.1	4659.5	4631.5	4625.9
12.5°	4575.5	4569.9	4547.5	4508.2	4497.0
15°	4452.2	4452.2	4407.4	4362.6	4345.8
17.5°	4317.8	4312.2	4256.2	4211.4	4189.0
20°	4172.2	4161.0	4105.0	4032.2	3993.0
22.5°	4009.8	4009.8	3942.6	3847.4	3808.2
25°	3858.6	3836.2	3774.6	3640.2	3539.4
27.5°	3685.0	3651.4	3584.2	3393.8	3276.2
30°	3494.6	3477.8	3382.6	3136.2	3046.6
32.5°	3315.4	3287.4	3186.6	2929.0	2856.2
35°	3130.6	3108.2	2957.0	2733.0	2665.7
37.5°	2945.8	2917.8	2727.4	2548.1	2464.1
40°	2761.0	2727.4	2520.1	2357.7	2268.1
42.5°	2587.3	2542.5	2340.9	2167.3	2066.5
45°	2402.5	2352.1	2150.5	1971.3	1892.9
47.5°	2217.7	2172.9	1988.1	1803.3	1713.7
50°	2021.7	1982.5	1814.5	1629.7	1534.5
52.5°	1859.3	1797.7	1635.3	1450.5	1372.1
55°	1668.9	1618.5	1467.3	1293.7	1226.5
57.5°	1495.3	1444.9	1304.9	1142.5	1086.5
60°	1332.9	1260.1	1142.5	1002.5	957.7
62.5°	1153.7	1097.7	996.9	879.2	935.3
65°	991.3	935.3	845.6	862.4	716.8
67.5°	812.0	784.0	705.6	627.2	604.8
70°	660.8	627.2	599.2	515.2	492.8
72.5°	526.4	492.8	453.6	408.8	392.0
75°	397.6	369.6	347.2	330.4	364.0
77.5°	274.4	263.2	246.4	229.6	224.0
80°	179.2	173.6	168.0	162.4	156.8
82.5°	106.4	106.4	106.4	106.4	106.4
85°	56.0	61.6	67.2	72.8	78.4
87.5°	33.6	33.6	39.2	44.8	50.4
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)