

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: P547399

Luminaire Tested: **FMR-24-4-LD4-4LO-40-UNV-82-84-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: P547399  
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-LD4-4LO-40-UNV-82-84-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

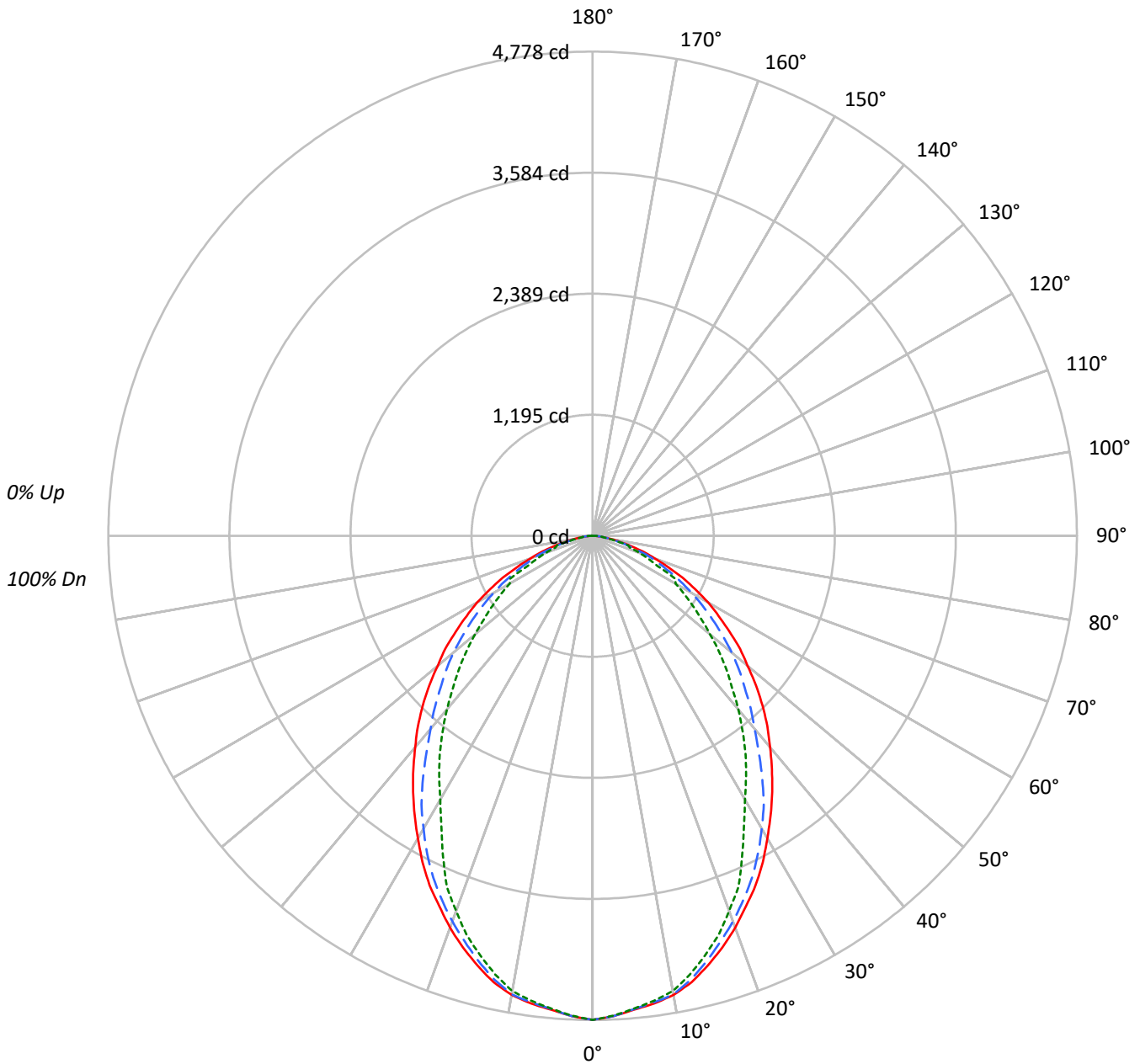
Lumens per Lamp: N/A  
Luminaire Lumens: 9379.0 lumens  
Efficiency: N/A  
Efficacy: 100.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 93.6  
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°	6428	6428	6428
5°	6341	6333	6326
10°	6286	6278	6233
15°	6116	6055	5970
20°	5892	5797	5639
25°	5650	5527	5182
30°	5355	5183	4668
35°	5071	4790	4318
40°	4783	4365	3929
45°	4509	4036	3552
50°	4174	3746	3168
55°	3861	3395	2837
60°	3537	3032	2542
65°	3112	2655	2251
70°	2564	2325	1912
75°	2038	1780	1866
80°	1369	1284	1198
85°	852	1024	1193



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	444.7	4.7
10°-20°	1220.5	13.0
20°-30°	1689.7	18.0
30°-40°	1801.7	19.2
40°-50°	1643.7	17.5
50°-60°	1287.7	13.7
60°-70°	839.3	8.9
70°-80°	371.8	4.0
80°-90°	79.8	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°	3354.9	35.8
0°-40°	5156.7	55.0
0°-60°	8088.1	86.2
0°-90°	9379.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9379.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4778	4778	4778	4778	4778	
5°	4695	4689	4689	4684	4684	446
15°	4391	4391	4347	4302	4286	1234
25°	3806	3783	3723	3590	3491	1747
35°	3087	3065	2916	2695	2629	1930
45°	2369	2320	2121	1944	1867	1825
55°	1646	1596	1447	1276	1210	1476
65°	978	922	834	851	707	963
75°	392	364	342	326	359	420
85°	55	61	66	72	77	77
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4777.5	4777.5	4777.5	4777.5	4777.5
2.5°	4744.4	4744.4	4744.4	4738.9	4738.9
5°	4694.7	4689.2	4689.2	4683.6	4683.6
7.5°	4656.0	4650.5	4645.0	4639.5	4628.4
10°	4600.8	4600.8	4595.3	4567.7	4562.1
12.5°	4512.4	4506.9	4484.8	4446.1	4435.1
15°	4390.9	4390.9	4346.7	4302.5	4286.0
17.5°	4258.4	4252.8	4197.6	4153.4	4131.3
20°	4114.8	4103.7	4048.5	3976.7	3938.0
22.5°	3954.6	3954.6	3888.3	3794.4	3755.8
25°	3805.5	3783.4	3722.6	3590.1	3490.6
27.5°	3634.2	3601.1	3534.8	3347.0	3231.1
30°	3446.5	3429.9	3336.0	3093.0	3004.6
32.5°	3269.7	3242.1	3142.7	2888.6	2816.8
35°	3087.4	3065.4	2916.2	2695.3	2629.0
37.5°	2905.2	2877.6	2689.8	2513.0	2430.2
40°	2722.9	2689.8	2485.4	2325.3	2236.9
42.5°	2551.7	2507.5	2308.7	2137.5	2038.0
45°	2369.4	2319.7	2120.9	1944.2	1866.8
47.5°	2187.2	2143.0	1960.7	1778.5	1690.1
50°	1993.9	1955.2	1789.5	1607.2	1513.3
52.5°	1833.7	1772.9	1612.8	1430.5	1353.2
55°	1645.9	1596.2	1447.1	1275.9	1209.6
57.5°	1474.7	1425.0	1286.9	1126.7	1071.5
60°	1314.5	1242.7	1126.7	988.6	944.5
62.5°	1137.8	1082.5	983.1	867.1	922.4
65°	977.6	922.4	834.0	850.6	707.0
67.5°	800.9	773.2	695.9	618.6	596.5
70°	651.7	618.6	591.0	508.1	486.0
72.5°	519.2	486.0	447.4	403.2	386.6
75°	392.1	364.5	342.4	325.9	359.0
77.5°	270.6	259.6	243.0	226.4	220.9
80°	176.7	171.2	165.7	160.2	154.6
82.5°	104.9	104.9	104.9	104.9	104.9
85°	55.2	60.8	66.3	71.8	77.3
87.5°	33.1	33.1	38.7	44.2	49.7
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)