

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: P546096

Luminaire Tested: **FMR-12-4-LD4-1STD-50-UNV-93-85-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: P546096  
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-12-4-LD4-1STD-50-UNV-93-85-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

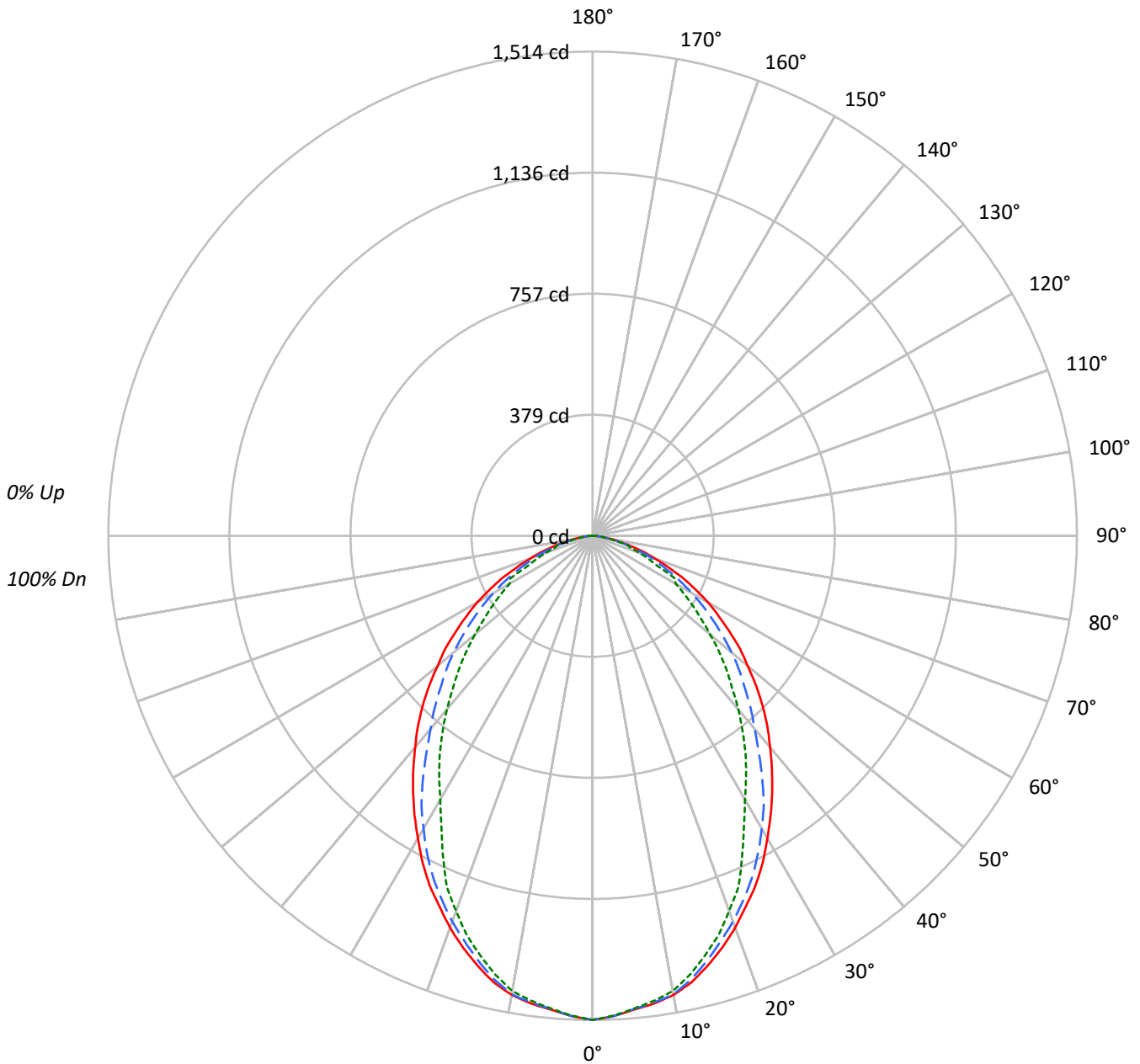
Lumens per Lamp: N/A  
Luminaire Lumens: 2972.0 lumens  
Efficiency: N/A  
Efficacy: 89.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
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°	4074	4074	4074
5°	4018	4014	4009
10°	3984	3979	3950
15°	3876	3837	3784
20°	3734	3674	3574
25°	3581	3502	3284
30°	3393	3285	2958
35°	3214	3036	2737
40°	3031	2767	2490
45°	2857	2558	2251
50°	2645	2374	2007
55°	2447	2151	1798
60°	2242	1921	1611
65°	1973	1683	1426
70°	1625	1474	1212
75°	1292	1128	1183
80°	868	814	759
85°	540	648	756



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	140.9	4.7
10°-20°	386.8	13.0
20°-30°	535.4	18.0
30°-40°	570.9	19.2
40°-50°	520.9	17.5
50°-60°	408.0	13.7
60°-70°	265.9	8.9
70°-80°	117.8	4.0
80°-90°	25.3	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°	1063.1	35.8
0°-40°	1634.0	55.0
0°-60°	2562.9	86.2
0°-90°	2972.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2972.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1514	1514	1514	1514	1514	
5°	1488	1486	1486	1484	1484	141
15°	1391	1391	1377	1363	1358	391
25°	1206	1199	1180	1138	1106	554
35°	978	971	924	854	833	612
45°	751	735	672	616	592	578
55°	522	506	458	404	383	468
65°	310	292	264	270	224	305
75°	124	116	108	103	114	133
85°	18	19	21	23	24	24
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1513.9	1513.9	1513.9	1513.9	1513.9
2.5°	1503.4	1503.4	1503.4	1501.6	1501.6
5°	1487.6	1485.9	1485.9	1484.1	1484.1
7.5°	1475.4	1473.6	1471.9	1470.1	1466.6
10°	1457.9	1457.9	1456.1	1447.4	1445.6
12.5°	1429.9	1428.1	1421.1	1408.9	1405.4
15°	1391.4	1391.4	1377.4	1363.4	1358.1
17.5°	1349.4	1347.6	1330.1	1316.1	1309.1
20°	1303.9	1300.4	1282.9	1260.1	1247.9
22.5°	1253.1	1253.1	1232.1	1202.4	1190.1
25°	1205.9	1198.9	1179.6	1137.6	1106.1
27.5°	1151.6	1141.1	1120.1	1060.6	1023.8
30°	1092.1	1086.9	1057.1	980.1	952.1
32.5°	1036.1	1027.3	995.8	915.3	892.6
35°	978.3	971.3	924.1	854.1	833.1
37.5°	920.6	911.8	852.3	796.3	770.1
40°	862.8	852.3	787.6	736.8	708.8
42.5°	808.6	794.6	731.6	677.3	645.8
45°	750.8	735.1	672.1	616.1	591.6
47.5°	693.1	679.1	621.3	563.6	535.6
50°	631.8	619.6	567.1	509.3	479.5
52.5°	581.1	561.8	511.0	453.3	428.8
55°	521.6	505.8	458.5	404.3	383.3
57.5°	467.3	451.5	407.8	357.0	339.5
60°	416.5	393.8	357.0	313.3	299.3
62.5°	360.5	343.0	311.5	274.8	292.3
65°	309.8	292.3	264.3	269.5	224.0
67.5°	253.8	245.0	220.5	196.0	189.0
70°	206.5	196.0	187.3	161.0	154.0
72.5°	164.5	154.0	141.8	127.8	122.5
75°	124.3	115.5	108.5	103.3	113.8
77.5°	85.8	82.3	77.0	71.8	70.0
80°	56.0	54.3	52.5	50.8	49.0
82.5°	33.3	33.3	33.3	33.3	33.3
85°	17.5	19.3	21.0	22.8	24.5
87.5°	10.5	10.5	12.3	14.0	15.8
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)