

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: P546336

Luminaire Tested: **FMR-12-4-LD4-2STD-40-UNV-81-85-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: P546336  
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-LD4-2STD-40-UNV-81-85-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

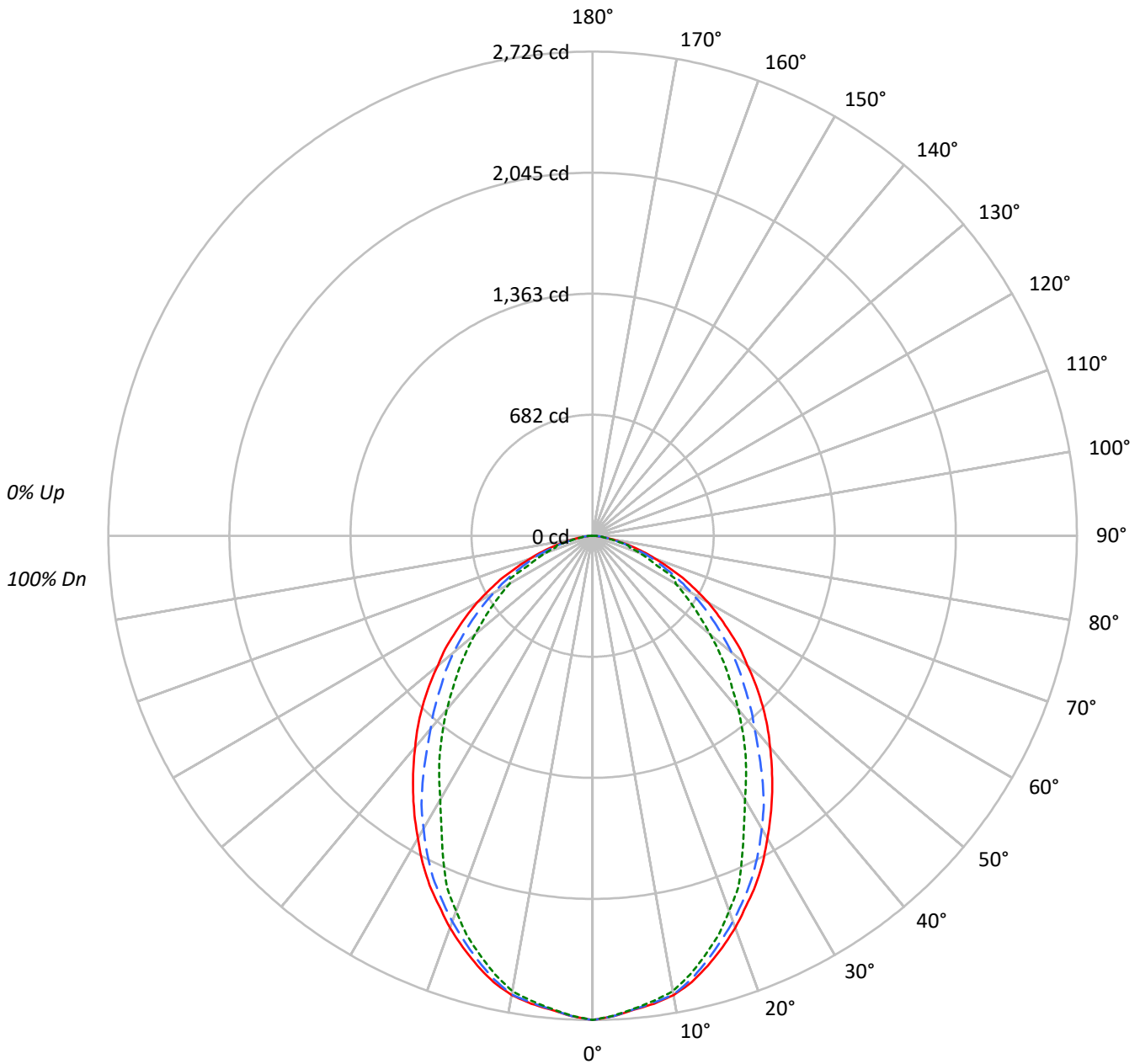
Lumens per Lamp: N/A  
Luminaire Lumens: 5352.0 lumens  
Efficiency: N/A  
Efficacy: 80.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 66.6  
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°	7336	7336	7336
5°	7237	7228	7220
10°	7174	7165	7113
15°	6980	6910	6813
20°	6724	6616	6435
25°	6448	6307	5914
30°	6111	5915	5327
35°	5788	5467	4928
40°	5458	4982	4484
45°	5146	4606	4054
50°	4763	4275	3615
55°	4406	3874	3238
60°	4037	3461	2900
65°	3552	3030	2569
70°	2926	2653	2183
75°	2327	2032	2130
80°	1564	1466	1367
85°	973	1167	1362



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	253.8	4.7
10°-20°	696.5	13.0
20°-30°	964.2	18.0
30°-40°	1028.1	19.2
40°-50°	938.0	17.5
50°-60°	734.8	13.7
60°-70°	478.9	8.9
70°-80°	212.2	4.0
80°-90°	45.6	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°	1914.4	35.8
0°-40°	2942.6	55.0
0°-60°	4615.4	86.2
0°-90°	5352.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5352.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2726	2726	2726	2726	2726	
5°	2679	2676	2676	2673	2673	254
15°	2506	2506	2480	2455	2446	704
25°	2172	2159	2124	2049	1992	997
35°	1762	1749	1664	1538	1500	1101
45°	1352	1324	1210	1109	1065	1042
55°	939	911	826	728	690	842
65°	558	526	476	485	403	550
75°	224	208	195	186	205	240
85°	32	35	38	41	44	44
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2726.2	2726.2	2726.2	2726.2	2726.2
2.5°	2707.3	2707.3	2707.3	2704.2	2704.2
5°	2679.0	2675.8	2675.8	2672.7	2672.7
7.5°	2656.9	2653.7	2650.6	2647.4	2641.1
10°	2625.4	2625.4	2622.2	2606.5	2603.3
12.5°	2575.0	2571.8	2559.2	2537.1	2530.8
15°	2505.6	2505.6	2480.4	2455.2	2445.7
17.5°	2430.0	2426.8	2395.3	2370.1	2357.5
20°	2348.0	2341.7	2310.2	2269.2	2247.2
22.5°	2256.6	2256.6	2218.8	2165.2	2143.2
25°	2171.5	2158.9	2124.3	2048.6	1991.9
27.5°	2073.8	2054.9	2017.1	1909.9	1843.8
30°	1966.7	1957.2	1903.6	1765.0	1714.5
32.5°	1865.8	1850.1	1793.3	1648.3	1607.4
35°	1761.8	1749.2	1664.1	1538.0	1500.2
37.5°	1657.8	1642.0	1534.9	1434.0	1386.8
40°	1553.8	1534.9	1418.3	1326.9	1276.4
42.5°	1456.1	1430.9	1317.4	1219.7	1163.0
45°	1352.1	1323.7	1210.3	1109.4	1065.3
47.5°	1248.1	1222.9	1118.9	1014.9	964.4
50°	1137.8	1115.7	1021.2	917.2	863.6
52.5°	1046.4	1011.7	920.3	816.3	772.2
55°	939.2	910.8	825.8	728.0	690.2
57.5°	841.5	813.1	734.4	643.0	611.4
60°	750.1	709.1	643.0	564.2	538.9
62.5°	649.3	617.7	561.0	494.8	526.3
65°	557.9	526.3	475.9	485.4	403.4
67.5°	457.0	441.2	397.1	353.0	340.4
70°	371.9	353.0	337.2	290.0	277.4
72.5°	296.3	277.4	255.3	230.1	220.6
75°	223.8	208.0	195.4	186.0	204.9
77.5°	154.4	148.1	138.7	129.2	126.1
80°	100.9	97.7	94.6	91.4	88.2
82.5°	59.9	59.9	59.9	59.9	59.9
85°	31.5	34.7	37.8	41.0	44.1
87.5°	18.9	18.9	22.1	25.2	28.4
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)