

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: P546315

Luminaire Tested: **FMR-12-4-LD4-2STD-35-UNV-82-88-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: P546315  
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-35-UNV-82-88-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

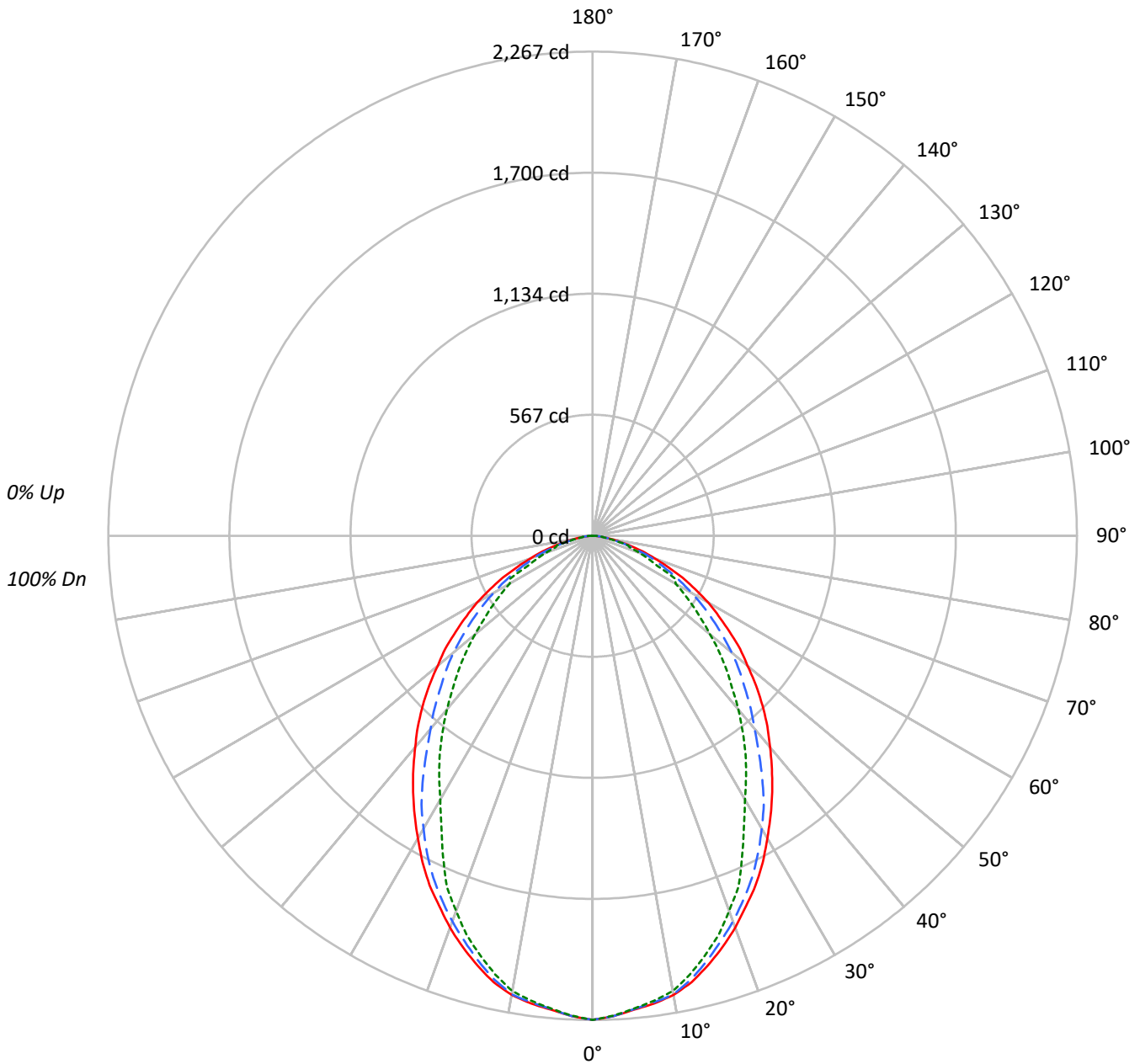
Lumens per Lamp: N/A  
Luminaire Lumens: 4450.0 lumens  
Efficiency: N/A  
Efficacy: 66.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	6100	6100	6100
5°	6017	6010	6003
10°	5965	5958	5915
15°	5804	5746	5665
20°	5591	5501	5350
25°	5361	5244	4918
30°	5081	4918	4430
35°	4812	4545	4098
40°	4538	4142	3728
45°	4278	3830	3371
50°	3960	3555	3006
55°	3664	3221	2692
60°	3357	2877	2412
65°	2953	2520	2136
70°	2433	2206	1814
75°	1935	1690	1771
80°	1300	1218	1137
85°	809	969	1133



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	211.0	4.7
10°-20°	579.1	13.0
20°-30°	801.7	18.0
30°-40°	854.8	19.2
40°-50°	779.9	17.5
50°-60°	611.0	13.7
60°-70°	398.2	8.9
70°-80°	176.4	4.0
80°-90°	37.9	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°	1591.8	35.8
0°-40°	2446.6	55.0
0°-60°	3837.5	86.2
0°-90°	4450.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4450.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2267	2267	2267	2267	2267	
5°	2228	2225	2225	2222	2222	211
15°	2083	2083	2062	2041	2034	586
25°	1806	1795	1766	1703	1656	829
35°	1465	1454	1384	1279	1247	916
45°	1124	1101	1006	922	886	866
55°	781	757	687	605	574	700
65°	464	438	396	404	335	457
75°	186	173	162	155	170	199
85°	26	29	31	34	37	36
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2266.8	2266.8	2266.8	2266.8	2266.8
2.5°	2251.0	2251.0	2251.0	2248.4	2248.4
5°	2227.5	2224.8	2224.8	2222.2	2222.2
7.5°	2209.1	2206.5	2203.9	2201.3	2196.0
10°	2182.9	2182.9	2180.3	2167.2	2164.6
12.5°	2141.0	2138.4	2127.9	2109.5	2104.3
15°	2083.3	2083.3	2062.4	2041.4	2033.5
17.5°	2020.4	2017.8	1991.6	1970.6	1960.2
20°	1952.3	1947.1	1920.9	1886.8	1868.4
22.5°	1876.3	1876.3	1844.9	1800.3	1782.0
25°	1805.6	1795.1	1766.2	1703.4	1656.2
27.5°	1724.3	1708.6	1677.1	1588.0	1533.0
30°	1635.2	1627.4	1582.8	1467.5	1425.6
32.5°	1551.4	1538.3	1491.1	1370.5	1336.5
35°	1464.9	1454.4	1383.6	1278.8	1247.4
37.5°	1378.4	1365.3	1276.2	1192.3	1153.0
40°	1291.9	1276.2	1179.2	1103.2	1061.3
42.5°	1210.7	1189.7	1095.4	1014.2	967.0
45°	1124.2	1100.6	1006.3	922.4	885.7
47.5°	1037.7	1016.8	930.3	843.8	801.9
50°	946.0	927.7	849.1	762.6	718.0
52.5°	870.0	841.2	765.2	678.7	642.0
55°	780.9	757.3	686.6	605.3	573.9
57.5°	699.7	676.1	610.6	534.6	508.4
60°	623.7	589.6	534.6	469.1	448.1
62.5°	539.8	513.6	466.5	411.4	437.6
65°	463.8	437.6	395.7	403.6	335.4
67.5°	380.0	366.9	330.2	293.5	283.0
70°	309.2	293.5	280.4	241.1	230.6
72.5°	246.3	230.6	212.3	191.3	183.4
75°	186.1	173.0	162.5	154.6	170.3
77.5°	128.4	123.2	115.3	107.4	104.8
80°	83.9	81.2	78.6	76.0	73.4
82.5°	49.8	49.8	49.8	49.8	49.8
85°	26.2	28.8	31.4	34.1	36.7
87.5°	15.7	15.7	18.3	21.0	23.6
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)