

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: P546240

Luminaire Tested: **FMR-12-4-LD4-2LO-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: P546240  
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-LD4-2LO-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**

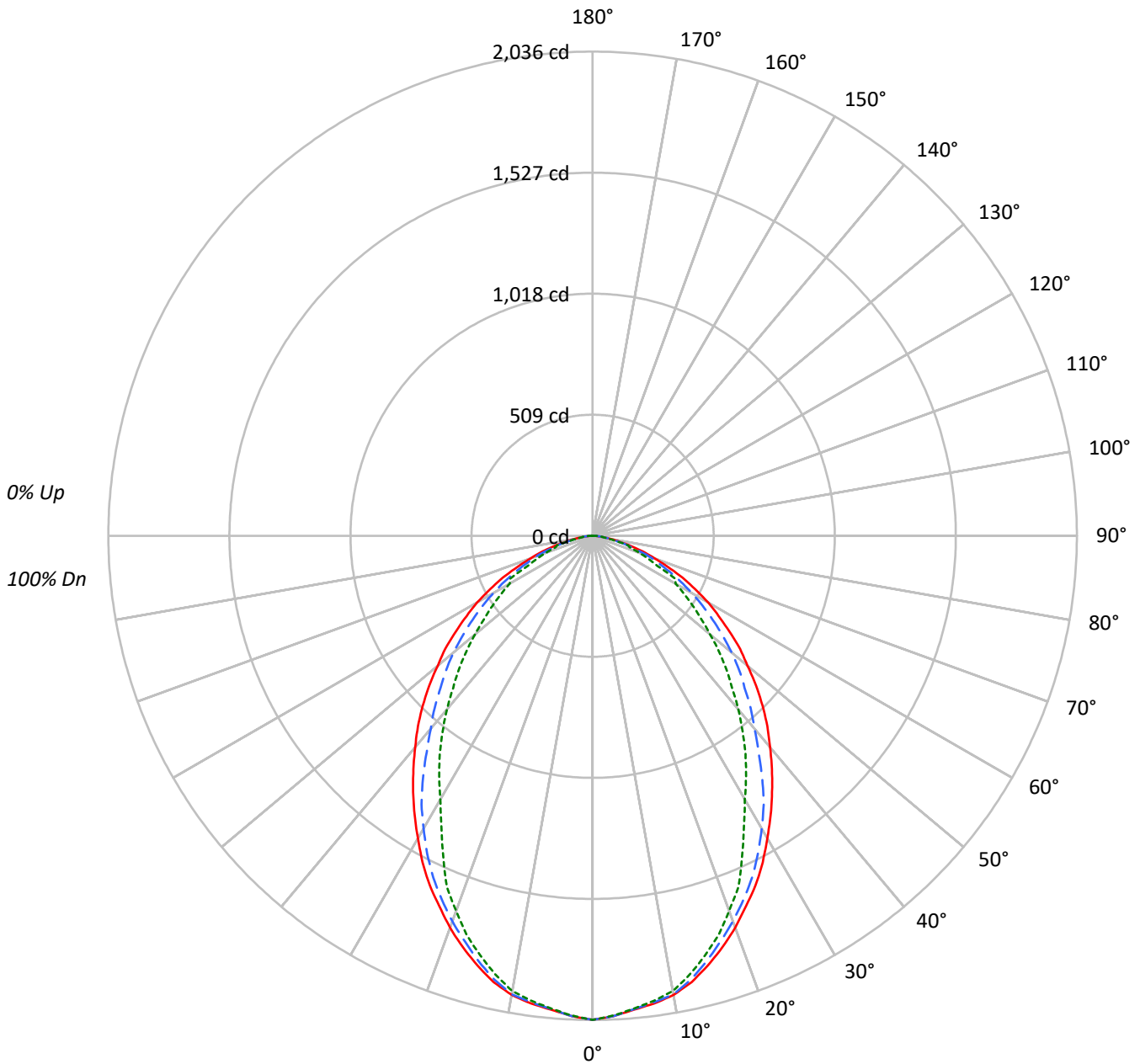
Lumens per Lamp: N/A  
Luminaire Lumens: 3996.0 lumens  
Efficiency: N/A  
Efficacy: 85.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.8  
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°	5477	5477	5477
5°	5403	5397	5390
10°	5356	5350	5311
15°	5212	5159	5087
20°	5020	4940	4805
25°	4814	4709	4416
30°	4563	4416	3978
35°	4321	4082	3680
40°	4075	3720	3348
45°	3842	3439	3027
50°	3556	3192	2699
55°	3290	2892	2418
60°	3014	2584	2166
65°	2652	2262	1918
70°	2185	1981	1629
75°	1737	1517	1591
80°	1167	1094	1021
85°	726	871	1016



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	189.5	4.7
10°-20°	520.0	13.0
20°-30°	719.9	18.0
30°-40°	767.6	19.2
40°-50°	700.3	17.5
50°-60°	548.6	13.7
60°-70°	357.6	8.9
70°-80°	158.4	4.0
80°-90°	34.0	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°	1429.4	35.8
0°-40°	2197.0	55.0
0°-60°	3446.0	86.2
0°-90°	3996.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3996.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2036	2036	2036	2036	2036	
5°	2000	1998	1998	1996	1996	190
15°	1871	1871	1852	1833	1826	526
25°	1621	1612	1586	1530	1487	744
35°	1315	1306	1242	1148	1120	822
45°	1010	988	904	828	795	778
55°	701	680	616	544	515	629
65°	416	393	355	362	301	410
75°	167	155	146	139	153	179
85°	24	26	28	31	33	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2035.5	2035.5	2035.5	2035.5	2035.5
2.5°	2021.4	2021.4	2021.4	2019.0	2019.0
5°	2000.2	1997.9	1997.9	1995.5	1995.5
7.5°	1983.7	1981.4	1979.0	1976.7	1972.0
10°	1960.2	1960.2	1957.9	1946.1	1943.7
12.5°	1922.6	1920.2	1910.8	1894.3	1889.6
15°	1870.8	1870.8	1852.0	1833.1	1826.1
17.5°	1814.3	1812.0	1788.4	1769.6	1760.2
20°	1753.1	1748.4	1724.9	1694.3	1677.8
22.5°	1684.9	1684.9	1656.6	1616.6	1600.2
25°	1621.3	1611.9	1586.0	1529.6	1487.2
27.5°	1548.4	1534.3	1506.0	1426.0	1376.6
30°	1468.4	1461.3	1421.3	1317.8	1280.1
32.5°	1393.1	1381.3	1339.0	1230.7	1200.1
35°	1315.4	1306.0	1242.5	1148.4	1120.1
37.5°	1237.8	1226.0	1146.0	1070.7	1035.4
40°	1160.1	1146.0	1058.9	990.7	953.0
42.5°	1087.2	1068.3	983.6	910.7	868.3
45°	1009.5	988.3	903.6	828.3	795.4
47.5°	931.9	913.0	835.4	757.7	720.1
50°	849.5	833.0	762.4	684.8	644.8
52.5°	781.3	755.4	687.1	609.5	576.5
55°	701.3	680.1	616.5	543.6	515.3
57.5°	628.3	607.1	548.3	480.1	456.5
60°	560.1	529.5	480.1	421.2	402.4
62.5°	484.8	461.2	418.9	369.5	393.0
65°	416.5	393.0	355.3	362.4	301.2
67.5°	341.2	329.4	296.5	263.6	254.1
70°	277.7	263.6	251.8	216.5	207.1
72.5°	221.2	207.1	190.6	171.8	164.7
75°	167.1	155.3	145.9	138.8	153.0
77.5°	115.3	110.6	103.5	96.5	94.1
80°	75.3	72.9	70.6	68.2	65.9
82.5°	44.7	44.7	44.7	44.7	44.7
85°	23.5	25.9	28.2	30.6	32.9
87.5°	14.1	14.1	16.5	18.8	21.2
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)