

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: P545824

Luminaire Tested: **FMR-12-4-LD4-1HI-35-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: P545824  
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-LD4-1HI-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

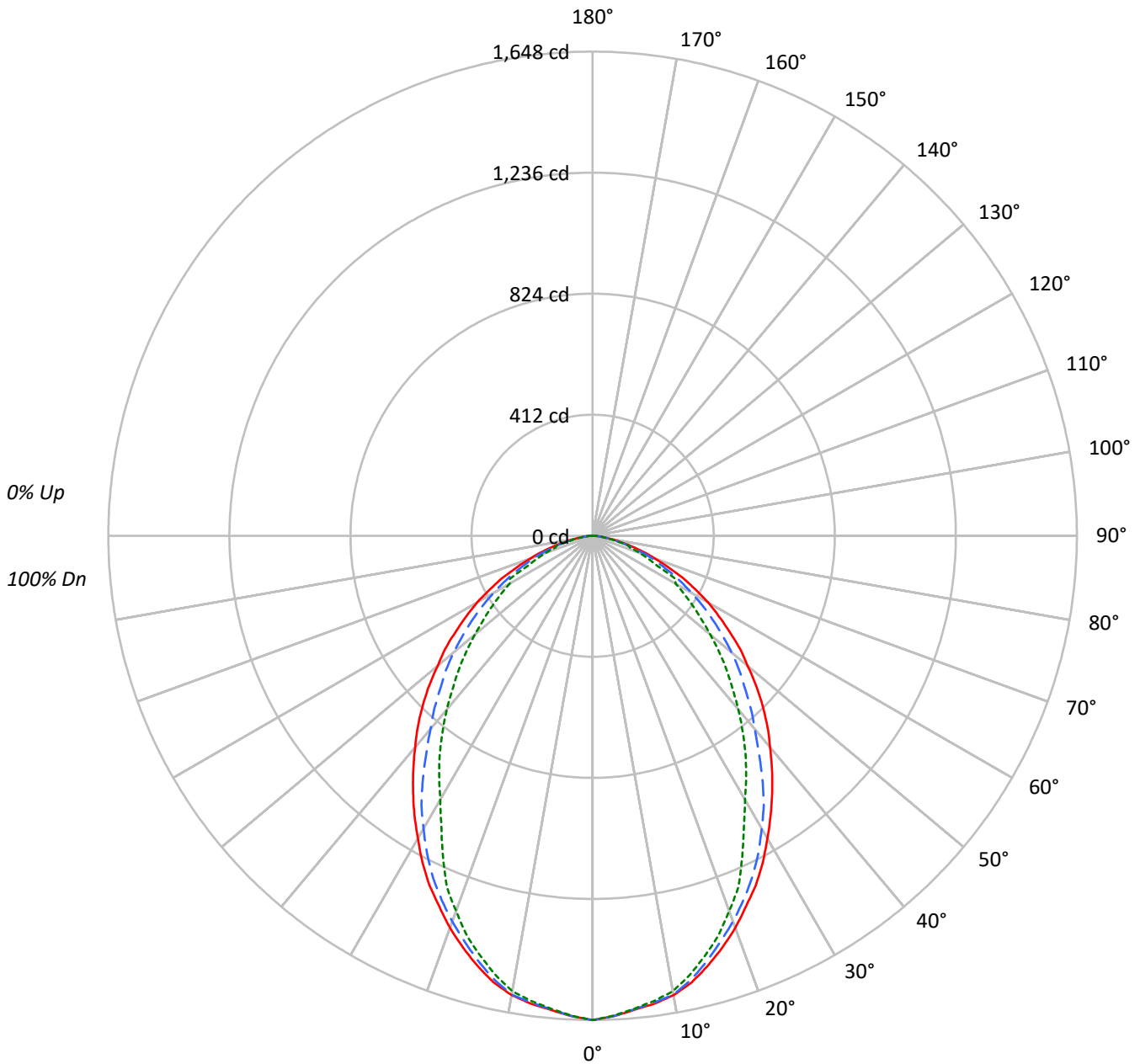
Lumens per Lamp: N/A  
Luminaire Lumens: 3236.0 lumens  
Efficiency: N/A  
Efficacy: 74.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.2  
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°	4436	4436	4436
5°	4375	4370	4365
10°	4338	4332	4301
15°	4221	4178	4120
20°	4066	4000	3891
25°	3899	3814	3576
30°	3695	3576	3221
35°	3500	3305	2980
40°	3300	3012	2711
45°	3111	2785	2451
50°	2880	2585	2186
55°	2664	2343	1958
60°	2441	2092	1754
65°	2148	1833	1553
70°	1769	1604	1319
75°	1407	1228	1288
80°	945	886	828
85°	590	707	824



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	153.4	4.7
10°-20°	421.1	13.0
20°-30°	583.0	18.0
30°-40°	621.6	19.2
40°-50°	567.1	17.5
50°-60°	444.3	13.7
60°-70°	289.6	8.9
70°-80°	128.3	4.0
80°-90°	27.5	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°	1157.5	35.8
0°-40°	1779.2	55.0
0°-60°	2790.6	86.2
0°-90°	3236.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3236.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1648	1648	1648	1648	1648	
5°	1620	1618	1618	1616	1616	154
15°	1515	1515	1500	1484	1479	426
25°	1313	1305	1284	1239	1204	603
35°	1065	1058	1006	930	907	666
45°	818	800	732	671	644	630
55°	568	551	499	440	417	509
65°	337	318	288	294	244	332
75°	135	126	118	112	124	145
85°	19	21	23	25	27	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1648.4	1648.4	1648.4	1648.4	1648.4
2.5°	1636.9	1636.9	1636.9	1635.0	1635.0
5°	1619.8	1617.9	1617.9	1616.0	1616.0
7.5°	1606.5	1604.5	1602.6	1600.7	1596.9
10°	1587.4	1587.4	1585.5	1576.0	1574.1
12.5°	1556.9	1555.0	1547.4	1534.0	1530.2
15°	1515.0	1515.0	1499.7	1484.5	1478.8
17.5°	1469.2	1467.3	1448.3	1433.0	1425.4
20°	1419.7	1415.9	1396.8	1372.1	1358.7
22.5°	1364.4	1364.4	1341.6	1309.2	1295.8
25°	1313.0	1305.4	1284.4	1238.7	1204.4
27.5°	1253.9	1242.5	1219.6	1154.8	1114.8
30°	1189.1	1183.4	1151.0	1067.2	1036.7
32.5°	1128.1	1118.6	1084.3	996.6	971.9
35°	1065.3	1057.6	1006.2	930.0	907.1
37.5°	1002.4	992.8	928.0	867.1	838.5
40°	939.5	928.0	857.5	802.3	771.8
42.5°	880.4	865.2	796.6	737.5	703.2
45°	817.5	800.4	731.8	670.8	644.1
47.5°	754.6	739.4	676.5	613.6	583.1
50°	687.9	674.6	617.4	554.5	522.1
52.5°	632.7	611.7	556.4	493.6	466.9
55°	567.9	550.7	499.3	440.2	417.3
57.5°	508.8	491.7	444.0	388.7	369.7
60°	453.5	428.8	388.7	341.1	325.9
62.5°	392.6	373.5	339.2	299.2	318.2
65°	337.3	318.2	287.8	293.5	243.9
67.5°	276.3	266.8	240.1	213.4	205.8
70°	224.9	213.4	203.9	175.3	167.7
72.5°	179.1	167.7	154.4	139.1	133.4
75°	135.3	125.8	118.1	112.4	123.9
77.5°	93.4	89.6	83.8	78.1	76.2
80°	61.0	59.1	57.2	55.3	53.4
82.5°	36.2	36.2	36.2	36.2	36.2
85°	19.1	21.0	22.9	24.8	26.7
87.5°	11.4	11.4	13.3	15.2	17.2
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)