

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: P545857

Luminaire Tested: **FMR-12-4-LD4-1HI-40-UNV-81-86-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: P545857  
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-40-UNV-81-86-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

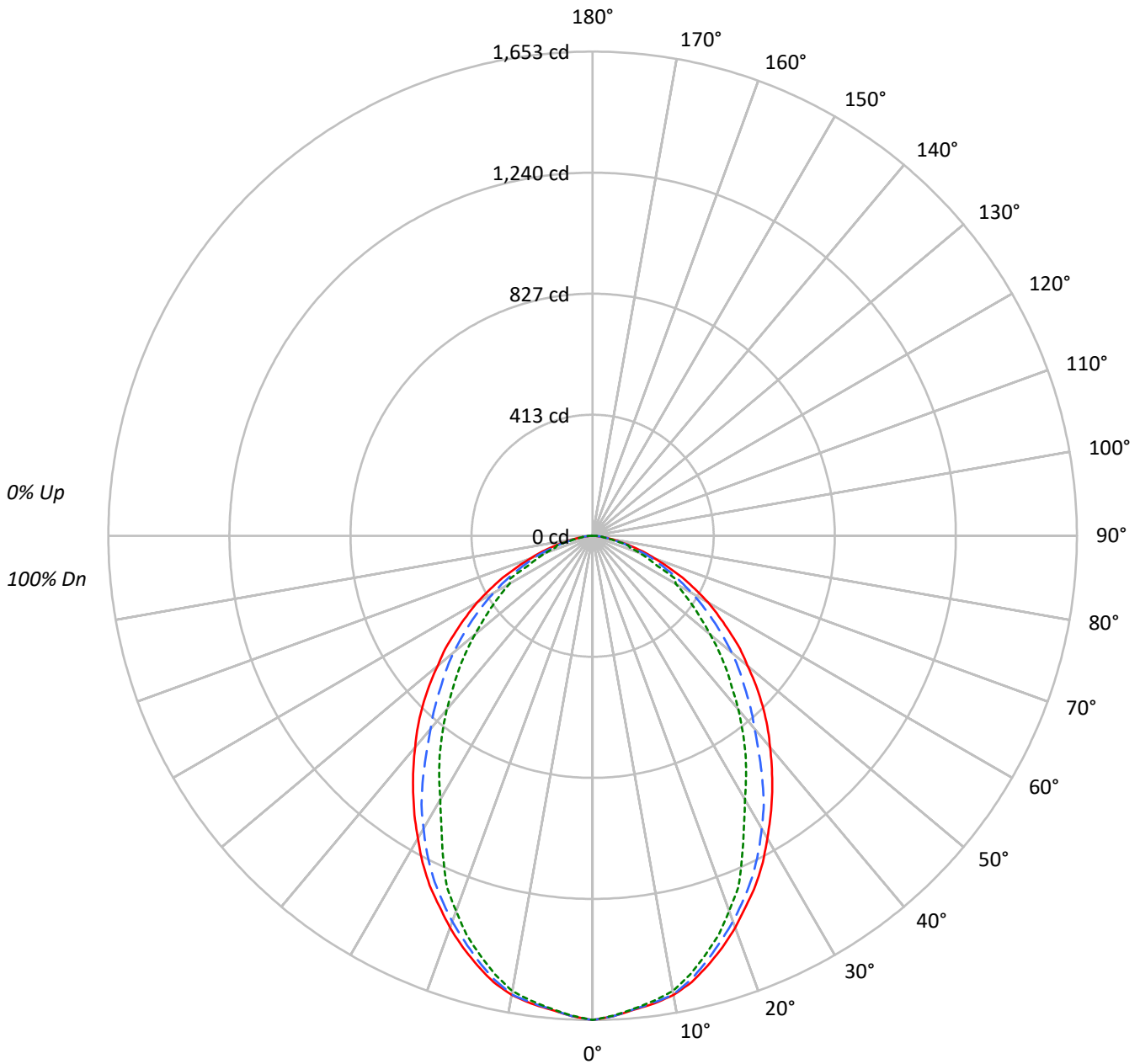
Lumens per Lamp: N/A  
Luminaire Lumens: 3245.0 lumens  
Efficiency: N/A  
Efficacy: 75.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	4448	4448	4448
5°	4388	4383	4377
10°	4350	4344	4313
15°	4232	4190	4131
20°	4077	4011	3902
25°	3909	3824	3586
30°	3705	3586	3230
35°	3509	3315	2988
40°	3309	3021	2719
45°	3120	2793	2458
50°	2888	2592	2192
55°	2672	2349	1963
60°	2448	2098	1759
65°	2153	1838	1557
70°	1774	1609	1323
75°	1411	1232	1291
80°	947	888	829
85°	590	707	827



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	153.9	4.7
10°-20°	422.3	13.0
20°-30°	584.6	18.0
30°-40°	623.4	19.2
40°-50°	568.7	17.5
50°-60°	445.5	13.7
60°-70°	290.4	8.9
70°-80°	128.6	4.0
80°-90°	27.6	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°	1160.8	35.8
0°-40°	1784.1	55.0
0°-60°	2798.3	86.2
0°-90°	3245.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3245.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1653	1653	1653	1653	1653	
5°	1624	1622	1622	1620	1620	154
15°	1519	1519	1504	1489	1483	427
25°	1317	1309	1288	1242	1208	604
35°	1068	1061	1009	932	910	668
45°	820	803	734	673	646	631
55°	570	552	501	441	418	511
65°	338	319	289	294	245	333
75°	136	126	118	113	124	145
85°	19	21	23	25	27	27
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1653.0	1653.0	1653.0	1653.0	1653.0
2.5°	1641.5	1641.5	1641.5	1639.6	1639.6
5°	1624.3	1622.4	1622.4	1620.5	1620.5
7.5°	1610.9	1609.0	1607.1	1605.2	1601.4
10°	1591.8	1591.8	1589.9	1580.3	1578.4
12.5°	1561.2	1559.3	1551.7	1538.3	1534.5
15°	1519.2	1519.2	1503.9	1488.6	1482.9
17.5°	1473.3	1471.4	1452.3	1437.0	1429.4
20°	1423.6	1419.8	1400.7	1375.9	1362.5
22.5°	1368.2	1368.2	1345.3	1312.8	1299.4
25°	1316.6	1309.0	1288.0	1242.1	1207.7
27.5°	1257.4	1245.9	1223.0	1158.0	1117.9
30°	1192.4	1186.7	1154.2	1070.1	1039.5
32.5°	1131.3	1121.7	1087.3	999.4	974.6
35°	1068.2	1060.6	1009.0	932.5	909.6
37.5°	1005.2	995.6	930.6	869.5	840.8
40°	942.1	930.6	859.9	804.5	773.9
42.5°	882.9	867.6	798.8	739.5	705.1
45°	819.8	802.6	733.8	672.6	645.9
47.5°	756.7	741.4	678.4	615.3	584.7
50°	689.8	676.5	619.1	556.1	523.6
52.5°	634.4	613.4	558.0	494.9	468.2
55°	569.5	552.3	500.7	441.4	418.5
57.5°	510.2	493.0	445.2	389.8	370.7
60°	454.8	430.0	389.8	342.1	326.8
62.5°	393.7	374.5	340.1	300.0	319.1
65°	338.2	319.1	288.6	294.3	244.6
67.5°	277.1	267.5	240.8	214.0	206.4
70°	225.5	214.0	204.5	175.8	168.2
72.5°	179.6	168.2	154.8	139.5	133.8
75°	135.7	126.1	118.5	112.7	124.2
77.5°	93.6	89.8	84.1	78.3	76.4
80°	61.1	59.2	57.3	55.4	53.5
82.5°	36.3	36.3	36.3	36.3	36.3
85°	19.1	21.0	22.9	24.8	26.8
87.5°	11.5	11.5	13.4	15.3	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)