

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: P546341

Luminaire Tested: **FMR-12-4-LD4-2STD-40-UNV-81-96-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: P546341  
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-81-96-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

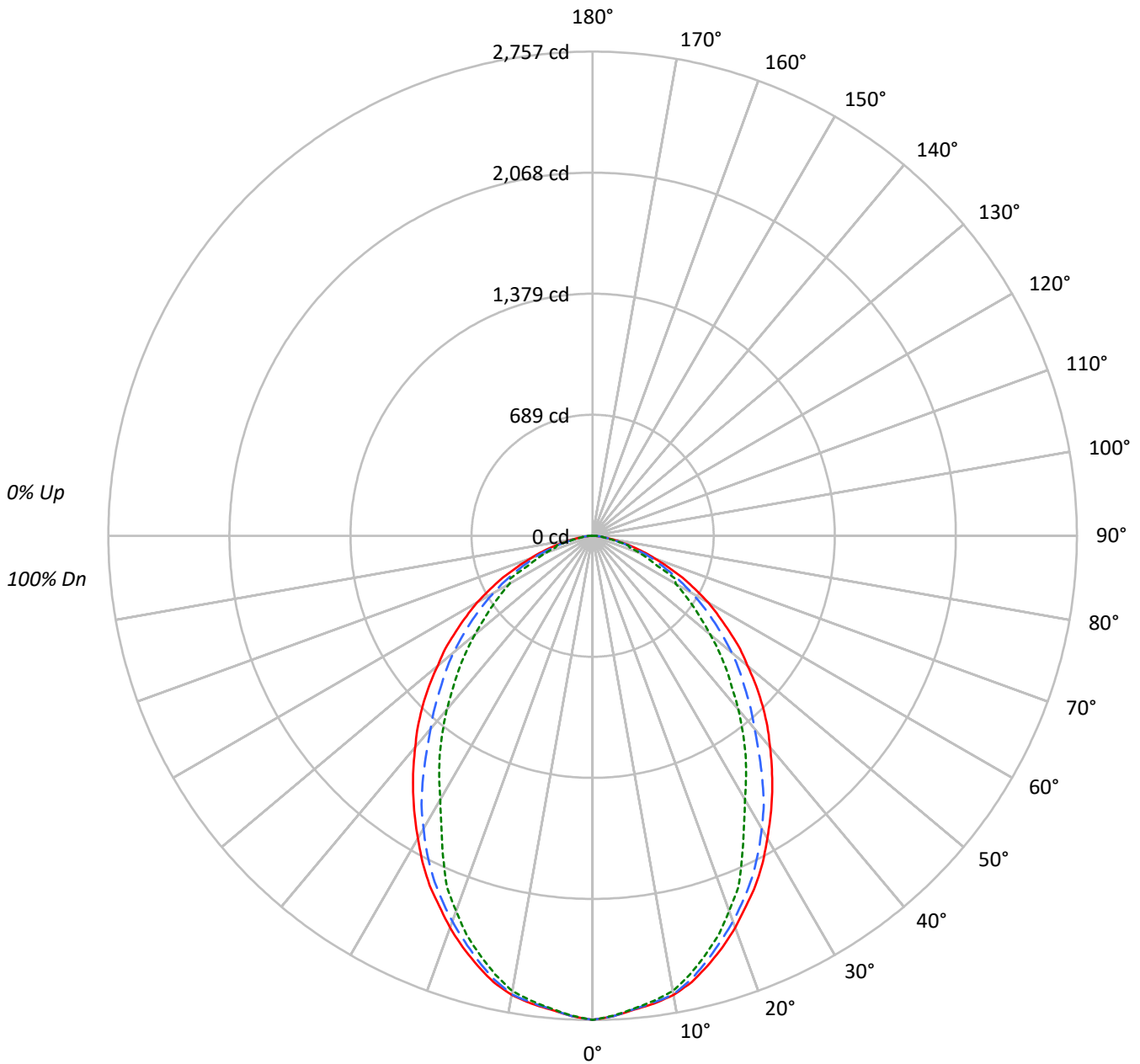
Lumens per Lamp: N/A  
Luminaire Lumens: 5412.0 lumens  
Efficiency: N/A  
Efficacy: 81.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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

TEST NUMBER: P546341

CATALOG NUMBER: FMR-12-4-LD4-2STD-40-UNV-81-96-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P546341

CATALOG NUMBER: FMR-12-4-LD4-2STD-40-UNV-81-96-EDD

**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°	7418	7418	7418
5°	7318	7309	7300
10°	7254	7245	7193
15°	7059	6988	6890
20°	6800	6690	6507
25°	6520	6378	5980
30°	6179	5982	5387
35°	5853	5528	4983
40°	5519	5038	4534
45°	5203	4657	4099
50°	4816	4323	3656
55°	4456	3917	3275
60°	4082	3499	2933
65°	3592	3064	2597
70°	2959	2683	2207
75°	2353	2054	2154
80°	1581	1481	1382
85°	985	1179	1377



TEST NUMBER: P546341

CATALOG NUMBER: FMR-12-4-LD4-2STD-40-UNV-81-96-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	256.6	4.7
10°-20°	704.3	13.0
20°-30°	975.0	18.0
30°-40°	1039.7	19.2
40°-50°	948.5	17.5
50°-60°	743.0	13.7
60°-70°	484.3	8.9
70°-80°	214.6	4.0
80°-90°	46.1	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°	1935.9	35.8
0°-40°	2975.6	55.0
0°-60°	4667.1	86.2
0°-90°	5412.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5412.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2757	2757	2757	2757	2757	
5°	2709	2706	2706	2703	2703	257
15°	2534	2534	2508	2483	2473	712
25°	2196	2183	2148	2072	2014	1008
35°	1782	1769	1683	1555	1517	1114
45°	1367	1339	1224	1122	1077	1053
55°	950	921	835	736	698	852
65°	564	532	481	491	408	556
75°	226	210	198	188	207	243
85°	32	35	38	41	45	44
90°	0	0	0	0	0	



TEST NUMBER: P546341

CATALOG NUMBER: FMR-12-4-LD4-2STD-40-UNV-81-96-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2756.8	2756.8	2756.8	2756.8	2756.8
2.5°	2737.7	2737.7	2737.7	2734.5	2734.5
5°	2709.0	2705.8	2705.8	2702.6	2702.6
7.5°	2686.7	2683.5	2680.3	2677.1	2670.8
10°	2654.8	2654.8	2651.6	2635.7	2632.5
12.5°	2603.8	2600.6	2587.9	2565.6	2559.2
15°	2533.7	2533.7	2508.2	2482.7	2473.2
17.5°	2457.2	2454.0	2422.2	2396.7	2383.9
20°	2374.4	2368.0	2336.1	2294.7	2272.4
22.5°	2281.9	2281.9	2243.7	2189.5	2167.2
25°	2195.9	2183.1	2148.1	2071.6	2014.2
27.5°	2097.1	2078.0	2039.7	1931.4	1864.4
30°	1988.7	1979.2	1925.0	1784.7	1733.8
32.5°	1886.7	1870.8	1813.4	1666.8	1625.4
35°	1781.6	1768.8	1682.8	1555.3	1517.0
37.5°	1676.4	1660.5	1552.1	1450.1	1402.3
40°	1571.2	1552.1	1434.2	1341.7	1290.8
42.5°	1472.4	1446.9	1332.2	1233.4	1176.0
45°	1367.2	1338.6	1223.8	1121.8	1077.2
47.5°	1262.1	1236.6	1131.4	1026.2	975.2
50°	1150.5	1128.2	1032.6	927.4	873.3
52.5°	1058.1	1023.0	930.6	825.4	780.8
55°	949.7	921.1	835.0	736.2	698.0
57.5°	850.9	822.3	742.6	650.2	618.3
60°	758.5	717.1	650.2	570.5	545.0
62.5°	656.5	624.7	567.3	500.4	532.2
65°	564.1	532.2	481.2	490.8	407.9
67.5°	462.1	446.2	401.6	356.9	344.2
70°	376.1	356.9	341.0	293.2	280.5
72.5°	299.6	280.5	258.2	232.7	223.1
75°	226.3	210.3	197.6	188.0	207.2
77.5°	156.2	149.8	140.2	130.7	127.5
80°	102.0	98.8	95.6	92.4	89.2
82.5°	60.6	60.6	60.6	60.6	60.6
85°	31.9	35.1	38.2	41.4	44.6
87.5°	19.1	19.1	22.3	25.5	28.7
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)