

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: P547311

Luminaire Tested: **FMR-24-4-LD4-4HI-40-UNV-93-84-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: P547311  
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-24-4-LD4-4HI-40-UNV-93-84-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

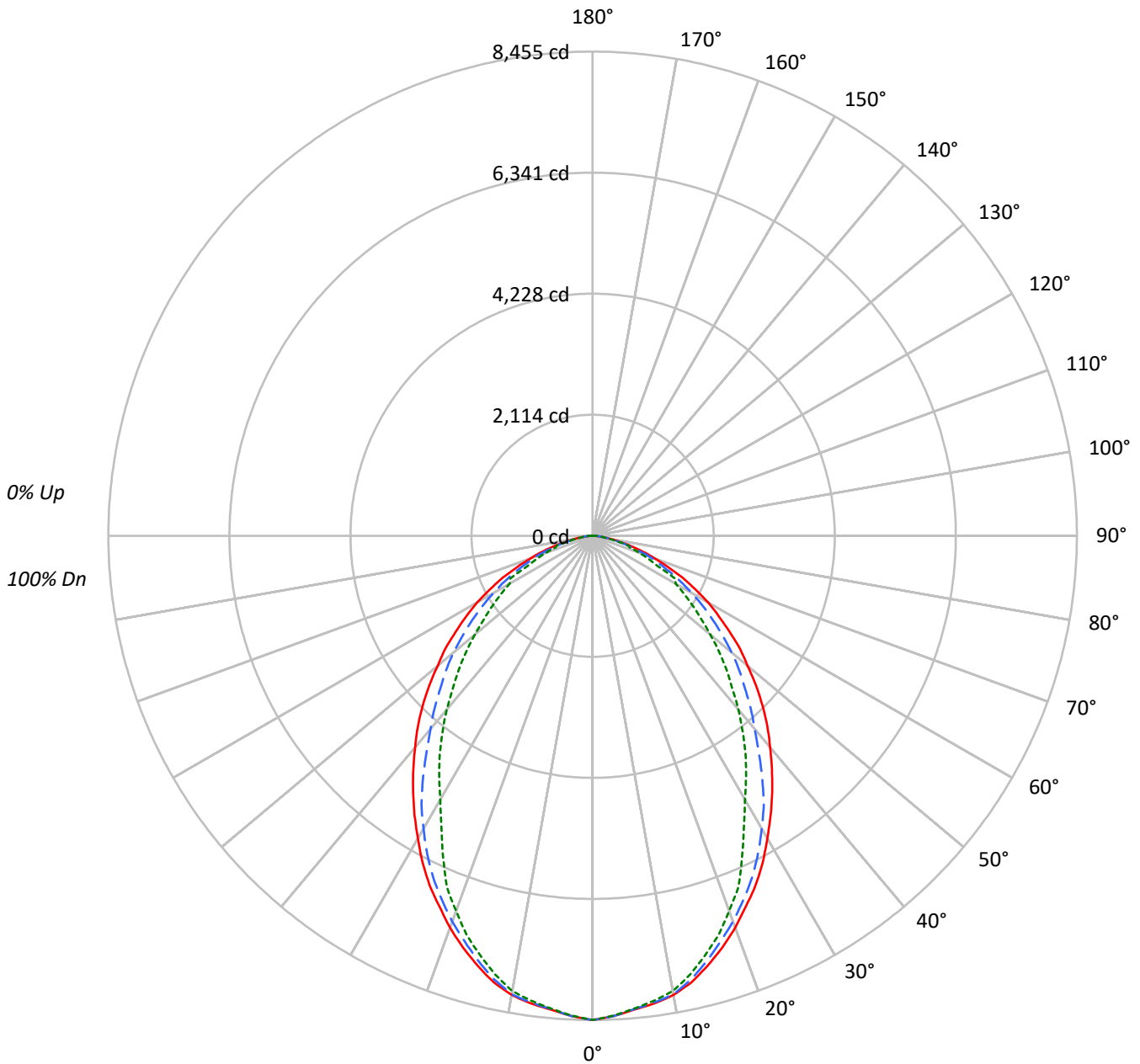
Lumens per Lamp: N/A  
Luminaire Lumens: 16598.0 lumens  
Efficiency: N/A  
Efficacy: 96.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 172.8  
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

TEST NUMBER: P547311

CATALOG NUMBER: FMR-24-4-LD4-4HI-40-UNV-93-84-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P547311

CATALOG NUMBER: FMR-24-4-LD4-4HI-40-UNV-93-84-EDD

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20					
RC	80					70					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°	11376	11376	11376
5°	11221	11208	11195
10°	11124	11111	11031
15°	10824	10715	10565
20°	10427	10259	9979
25°	9998	9780	9171
30°	9476	9172	8261
35°	8975	8477	7642
40°	8464	7726	6953
45°	7979	7142	6286
50°	7386	6629	5606
55°	6833	6007	5021
60°	6260	5366	4498
65°	5508	4699	3983
70°	4537	4115	3384
75°	3608	3150	3303
80°	2424	2272	2121
85°	1508	1811	2112



TEST NUMBER: P547311

CATALOG NUMBER: FMR-24-4-LD4-4HI-40-UNV-93-84-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	787.0	4.7
10°-20°	2159.9	13.0
20°-30°	2990.3	18.0
30°-40°	3188.5	19.2
40°-50°	2908.8	17.5
50°-60°	2278.9	13.7
60°-70°	1485.2	8.9
70°-80°	658.0	4.0
80°-90°	141.3	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°	5937.2	35.8
0°-40°	9125.7	55.0
0°-60°	14313.4	86.2
0°-90°	16598.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	16598.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8455	8455	8455	8455	8455	
5°	8308	8298	8298	8289	8289	789
15°	7771	7771	7692	7614	7585	2185
25°	6734	6695	6588	6353	6177	3092
35°	5464	5425	5161	4770	4653	3416
45°	4193	4105	3753	3441	3304	3230
55°	2913	2825	2561	2258	2141	2613
65°	1730	1632	1476	1505	1251	1705
75°	694	645	606	577	635	744
85°	98	108	117	127	137	136
90°	0	0	0	0	0	



TEST NUMBER: P547311

CATALOG NUMBER: FMR-24-4-LD4-4HI-40-UNV-93-84-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8454.8	8454.8	8454.8	8454.8	8454.8
2.5°	8396.2	8396.2	8396.2	8386.4	8386.4
5°	8308.2	8298.4	8298.4	8288.6	8288.6
7.5°	8239.8	8230.0	8220.2	8210.4	8190.9
10°	8142.0	8142.0	8132.2	8083.4	8073.6
12.5°	7985.6	7975.9	7936.8	7868.3	7848.8
15°	7770.6	7770.6	7692.4	7614.2	7584.9
17.5°	7536.0	7526.2	7428.5	7350.3	7311.2
20°	7281.9	7262.3	7164.6	7037.5	6969.1
22.5°	6998.4	6998.4	6881.1	6715.0	6646.5
25°	6734.5	6695.4	6587.9	6353.3	6177.4
27.5°	6431.5	6372.9	6255.6	5923.2	5718.0
30°	6099.2	6069.9	5903.7	5473.6	5317.2
32.5°	5786.4	5737.5	5561.6	5112.0	4984.9
35°	5463.9	5424.8	5160.8	4769.9	4652.6
37.5°	5141.3	5092.4	4760.1	4447.3	4300.7
40°	4818.7	4760.1	4398.5	4115.0	3958.6
42.5°	4515.7	4437.5	4085.7	3782.7	3606.7
45°	4193.2	4105.2	3753.3	3440.6	3303.7
47.5°	3870.6	3792.4	3469.9	3147.3	2990.9
50°	3528.5	3460.1	3166.9	2844.3	2678.2
52.5°	3245.1	3137.6	2854.1	2531.6	2394.7
55°	2912.8	2824.8	2560.9	2257.9	2140.6
57.5°	2609.7	2521.8	2277.4	1994.0	1896.2
60°	2326.3	2199.2	1994.0	1749.6	1671.4
62.5°	2013.5	1915.8	1739.8	1534.6	1632.3
65°	1730.1	1632.3	1475.9	1505.2	1251.1
67.5°	1417.3	1368.4	1231.6	1094.7	1055.6
70°	1153.4	1094.7	1045.9	899.2	860.1
72.5°	918.8	860.1	791.7	713.5	684.2
75°	694.0	645.1	606.0	576.7	635.3
77.5°	478.9	459.4	430.1	400.7	391.0
80°	312.8	303.0	293.2	283.5	273.7
82.5°	185.7	185.7	185.7	185.7	185.7
85°	97.7	107.5	117.3	127.1	136.8
87.5°	58.6	58.6	68.4	78.2	88.0
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)