

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: P546710

Luminaire Tested: **FMR-24-4-LD4-2HI-35-UNV-93-97-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: P546710  
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-LD4-2HI-35-UNV-93-97-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375  
CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT  
LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

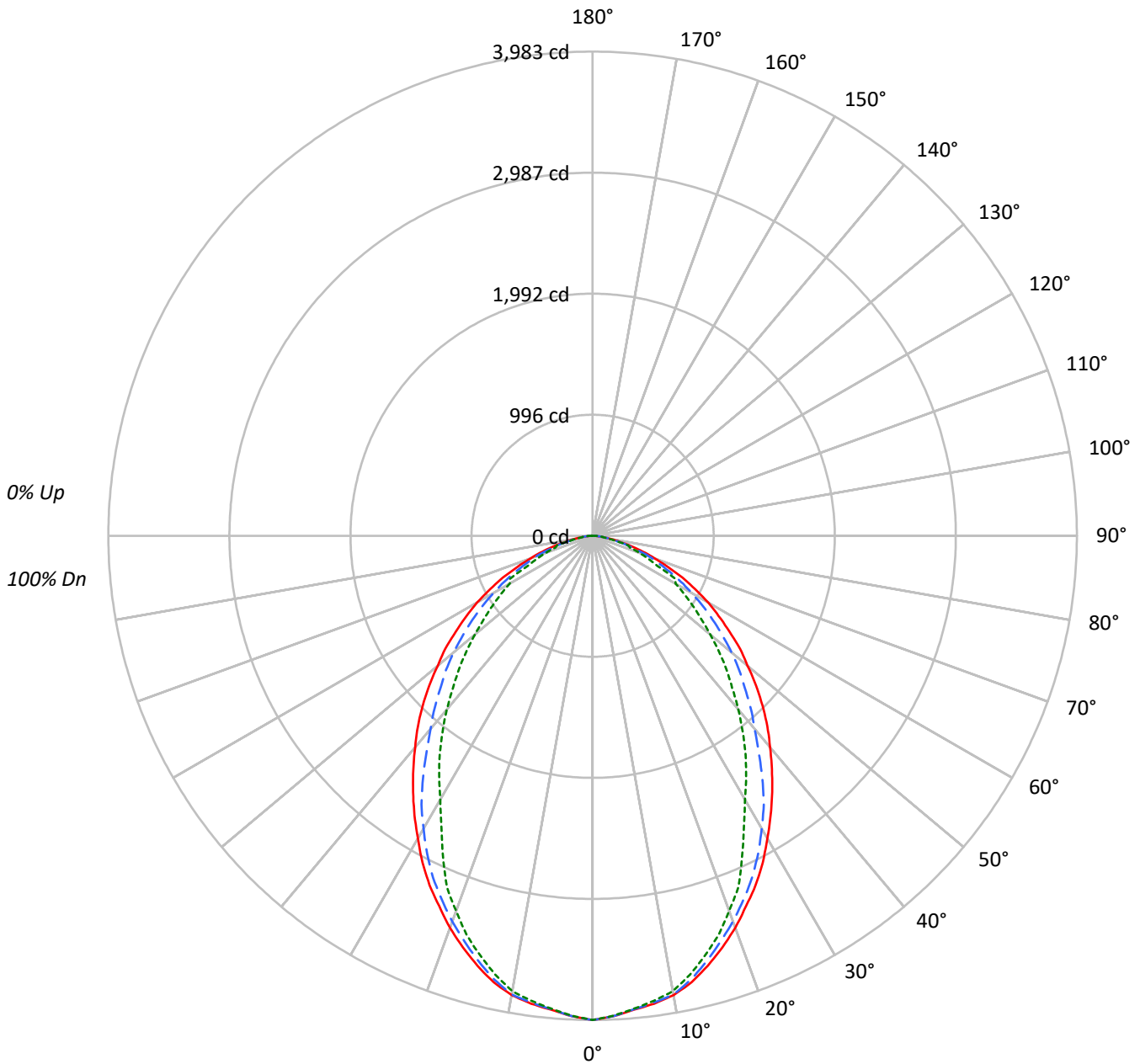
Lumens per Lamp: N/A  
Luminaire Lumens: 7820.0 lumens  
Efficiency: N/A  
Efficacy: 90.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
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: P546710

CATALOG NUMBER: FMR-24-4-LD4-2HI-35-UNV-93-97-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P546710

CATALOG NUMBER: FMR-24-4-LD4-2HI-35-UNV-93-97-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°	5360	5360	5360
5°	5287	5281	5274
10°	5241	5235	5197
15°	5100	5048	4978
20°	4912	4833	4701
25°	4710	4608	4321
30°	4465	4321	3892
35°	4228	3994	3600
40°	3988	3640	3276
45°	3759	3365	2962
50°	3480	3123	2641
55°	3219	2830	2366
60°	2949	2528	2119
65°	2595	2214	1877
70°	2138	1938	1594
75°	1700	1484	1556
80°	1142	1071	999
85°	712	854	996



TEST NUMBER: P546710

CATALOG NUMBER: FMR-24-4-LD4-2HI-35-UNV-93-97-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	370.8	4.7
10°-20°	1017.6	13.0
20°-30°	1408.8	18.0
30°-40°	1502.2	19.2
40°-50°	1370.5	17.5
50°-60°	1073.7	13.7
60°-70°	699.8	8.9
70°-80°	310.0	4.0
80°-90°	66.6	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°	2797.3	35.8
0°-40°	4299.5	55.0
0°-60°	6743.7	86.2
0°-90°	7820.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7820.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3983	3983	3983	3983	3983	
5°	3914	3910	3910	3905	3905	372
15°	3661	3661	3624	3587	3574	1029
25°	3173	3154	3104	2993	2910	1457
35°	2574	2556	2432	2247	2192	1609
45°	1976	1934	1768	1621	1556	1522
55°	1372	1331	1206	1064	1008	1231
65°	815	769	695	709	590	803
75°	327	304	286	272	299	350
85°	46	51	55	60	64	64
90°	0	0	0	0	0	



TEST NUMBER: P546710

CATALOG NUMBER: FMR-24-4-LD4-2HI-35-UNV-93-97-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3983.4	3983.4	3983.4	3983.4	3983.4
2.5°	3955.8	3955.8	3955.8	3951.2	3951.2
5°	3914.3	3909.7	3909.7	3905.1	3905.1
7.5°	3882.1	3877.5	3872.9	3868.3	3859.1
10°	3836.0	3836.0	3831.4	3808.4	3803.8
12.5°	3762.4	3757.8	3739.3	3707.1	3697.9
15°	3661.0	3661.0	3624.2	3587.4	3573.6
17.5°	3550.5	3545.9	3499.9	3463.0	3444.6
20°	3430.8	3421.6	3375.5	3315.7	3283.4
22.5°	3297.2	3297.2	3242.0	3163.7	3131.5
25°	3172.9	3154.5	3103.8	2993.3	2910.4
27.5°	3030.1	3002.5	2947.3	2790.7	2694.0
30°	2873.6	2859.8	2781.5	2578.9	2505.2
32.5°	2726.2	2703.2	2620.3	2408.5	2348.6
35°	2574.2	2555.8	2431.5	2247.3	2192.0
37.5°	2422.3	2399.3	2242.7	2095.3	2026.2
40°	2270.3	2242.7	2072.3	1938.7	1865.1
42.5°	2127.6	2090.7	1924.9	1782.2	1699.3
45°	1975.6	1934.1	1768.4	1621.0	1556.5
47.5°	1823.6	1786.8	1634.8	1482.8	1409.2
50°	1662.4	1630.2	1492.0	1340.1	1261.8
52.5°	1528.9	1478.2	1344.7	1192.7	1128.2
55°	1372.3	1330.9	1206.5	1063.8	1008.5
57.5°	1229.6	1188.1	1073.0	939.4	893.4
60°	1096.0	1036.1	939.4	824.3	787.5
62.5°	948.6	902.6	819.7	723.0	769.1
65°	815.1	769.1	695.4	709.2	589.5
67.5°	667.7	644.7	580.2	515.8	497.3
70°	543.4	515.8	492.7	423.7	405.2
72.5°	432.9	405.2	373.0	336.2	322.4
75°	327.0	303.9	285.5	271.7	299.3
77.5°	225.6	216.4	202.6	188.8	184.2
80°	147.4	142.8	138.2	133.5	128.9
82.5°	87.5	87.5	87.5	87.5	87.5
85°	46.1	50.7	55.3	59.9	64.5
87.5°	27.6	27.6	32.2	36.8	41.4
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)