

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: P547361

Luminaire Tested: **FMR-24-4-LD4-4LO-35-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: P547361  
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-LD4-4LO-35-UNV-81-86-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

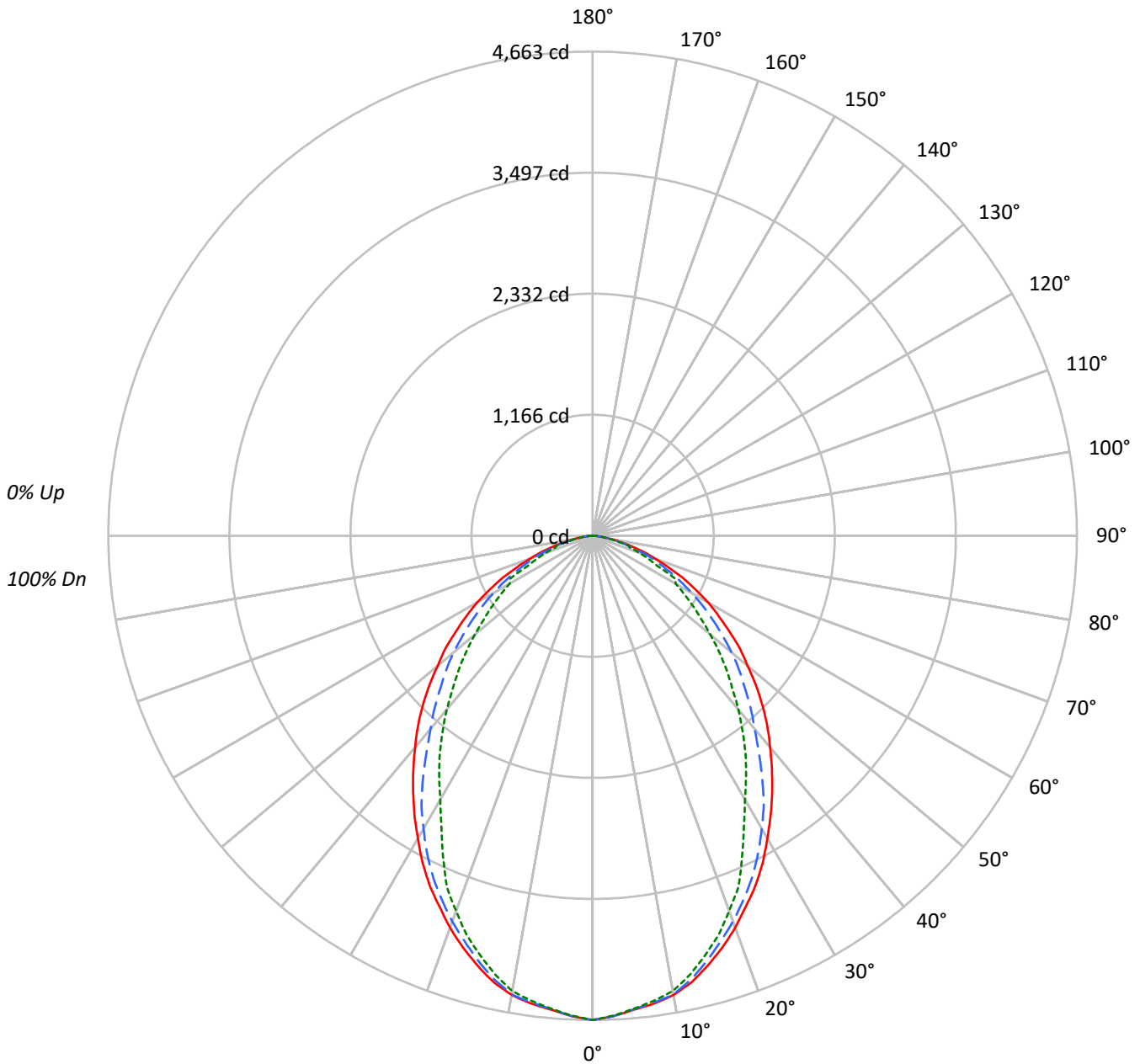
Lumens per Lamp: N/A  
Luminaire Lumens: 9154.0 lumens  
Efficiency: N/A  
Efficacy: 97.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 93.6  
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

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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°	6274	6274	6274
5°	6189	6181	6174
10°	6135	6128	6083
15°	5970	5910	5827
20°	5750	5658	5503
25°	5514	5394	5058
30°	5226	5059	4556
35°	4950	4675	4215
40°	4668	4261	3835
45°	4400	3939	3467
50°	4073	3656	3092
55°	3768	3313	2769
60°	3453	2959	2481
65°	3038	2592	2197
70°	2502	2269	1866
75°	1989	1737	1822
80°	1337	1253	1169
85°	832	999	1166



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	434.1	4.7
10°-20°	1191.2	13.0
20°-30°	1649.2	18.0
30°-40°	1758.5	19.2
40°-50°	1604.3	17.5
50°-60°	1256.8	13.7
60°-70°	819.1	8.9
70°-80°	362.9	4.0
80°-90°	77.9	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°	3274.5	35.8
0°-40°	5033.0	55.0
0°-60°	7894.1	86.2
0°-90°	9154.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9154.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4663	4663	4663	4663	4663	
5°	4582	4577	4577	4571	4571	435
15°	4286	4286	4242	4199	4183	1205
25°	3714	3693	3633	3504	3407	1705
35°	3013	2992	2846	2631	2566	1884
45°	2313	2264	2070	1898	1822	1781
55°	1606	1558	1412	1245	1181	1441
65°	954	900	814	830	690	940
75°	383	356	334	318	350	410
85°	54	59	65	70	76	75
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4662.9	4662.9	4662.9	4662.9	4662.9
2.5°	4630.6	4630.6	4630.6	4625.2	4625.2
5°	4582.1	4576.7	4576.7	4571.3	4571.3
7.5°	4544.3	4538.9	4533.5	4528.2	4517.4
10°	4490.4	4490.4	4485.0	4458.1	4452.7
12.5°	4404.2	4398.8	4377.2	4339.5	4328.7
15°	4285.6	4285.6	4242.5	4199.3	4183.2
17.5°	4156.2	4150.8	4096.9	4053.8	4032.2
20°	4016.0	4005.3	3951.4	3881.3	3843.5
22.5°	3859.7	3859.7	3795.0	3703.4	3665.7
25°	3714.2	3692.6	3633.3	3503.9	3406.9
27.5°	3547.1	3514.7	3450.0	3266.7	3153.5
30°	3363.8	3347.6	3256.0	3018.8	2932.5
32.5°	3191.3	3164.3	3067.3	2819.3	2749.2
35°	3013.4	2991.8	2846.3	2630.6	2566.0
37.5°	2835.5	2808.5	2625.3	2452.8	2371.9
40°	2657.6	2625.3	2425.8	2269.5	2183.2
42.5°	2490.5	2447.4	2253.3	2086.2	1989.2
45°	2312.6	2264.1	2070.0	1897.5	1822.0
47.5°	2134.7	2091.6	1913.7	1735.8	1649.5
50°	1946.0	1908.3	1746.6	1568.7	1477.0
52.5°	1789.7	1730.4	1574.1	1396.2	1320.7
55°	1606.4	1557.9	1412.4	1245.2	1180.6
57.5°	1439.3	1390.8	1256.0	1099.7	1045.8
60°	1283.0	1212.9	1099.7	964.9	921.8
62.5°	1110.5	1056.6	959.5	846.3	900.2
65°	954.1	900.2	814.0	830.2	690.0
67.5°	781.6	754.7	679.2	603.8	582.2
70°	636.1	603.8	576.8	495.9	474.4
72.5°	506.7	474.4	436.6	393.5	377.3
75°	382.7	355.8	334.2	318.0	350.4
77.5°	264.1	253.4	237.2	221.0	215.6
80°	172.5	167.1	161.7	156.3	150.9
82.5°	102.4	102.4	102.4	102.4	102.4
85°	53.9	59.3	64.7	70.1	75.5
87.5°	32.3	32.3	37.7	43.1	48.5
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)