

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: P547393

Luminaire Tested: **FMR-24-4-LD4-4LO-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: P547393  
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-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

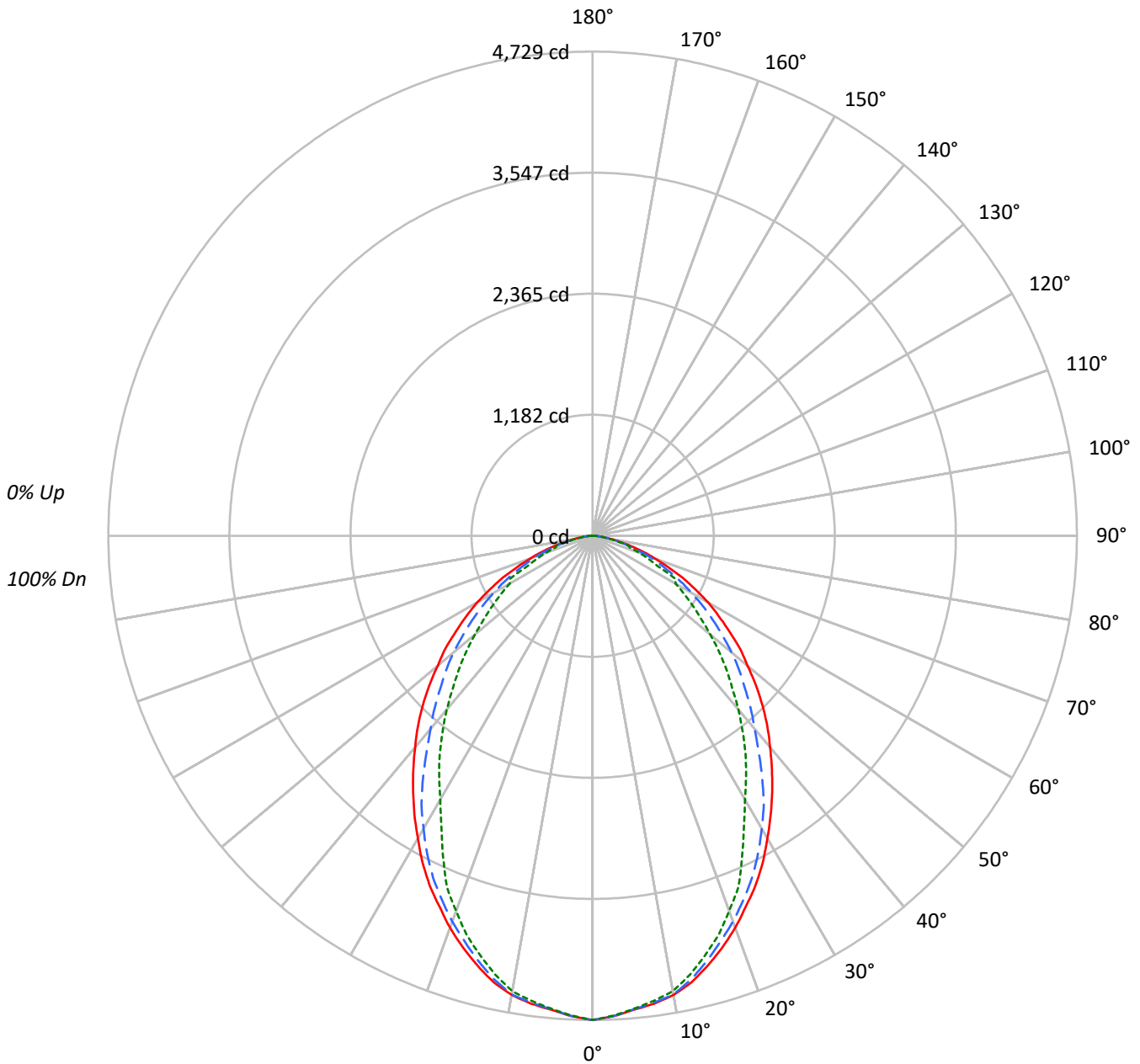
Lumens per Lamp: N/A  
Luminaire Lumens: 9284.0 lumens  
Efficiency: N/A  
Efficacy: 99.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	6363	6363	6363
5°	6277	6269	6262
10°	6222	6215	6170
15°	6054	5993	5910
20°	5832	5738	5581
25°	5592	5471	5130
30°	5300	5130	4621
35°	5020	4742	4275
40°	4734	4321	3889
45°	4463	3995	3516
50°	4131	3708	3136
55°	3822	3360	2809
60°	3502	3001	2516
65°	3081	2628	2228
70°	2538	2301	1893
75°	2018	1762	1848
80°	1356	1271	1186
85°	844	1013	1181



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	440.2	4.7
10°-20°	1208.1	13.0
20°-30°	1672.6	18.0
30°-40°	1783.5	19.2
40°-50°	1627.0	17.5
50°-60°	1274.7	13.7
60°-70°	830.8	8.9
70°-80°	368.1	4.0
80°-90°	79.0	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°	3321.0	35.8
0°-40°	5104.4	55.0
0°-60°	8006.1	86.2
0°-90°	9284.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9284.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4729	4729	4729	4729	4729	
5°	4647	4642	4642	4636	4636	441
15°	4346	4346	4303	4259	4243	1222
25°	3767	3745	3685	3554	3455	1729
35°	3056	3034	2887	2668	2602	1911
45°	2345	2296	2099	1924	1848	1807
55°	1629	1580	1432	1263	1197	1461
65°	968	913	826	842	700	954
75°	388	361	339	323	355	416
85°	55	60	66	71	76	76
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4729.1	4729.1	4729.1	4729.1	4729.1
2.5°	4696.3	4696.3	4696.3	4690.9	4690.9
5°	4647.1	4641.7	4641.7	4636.2	4636.2
7.5°	4608.9	4603.4	4597.9	4592.5	4581.5
10°	4554.2	4554.2	4548.7	4521.4	4515.9
12.5°	4466.7	4461.3	4439.4	4401.1	4390.2
15°	4346.4	4346.4	4302.7	4259.0	4242.6
17.5°	4215.2	4209.8	4155.1	4111.3	4089.5
20°	4073.1	4062.1	4007.5	3936.4	3898.1
22.5°	3914.5	3914.5	3848.9	3756.0	3717.7
25°	3766.9	3745.0	3684.9	3553.7	3455.3
27.5°	3597.4	3564.6	3499.0	3313.1	3198.3
30°	3411.5	3395.1	3302.2	3061.6	2974.2
32.5°	3236.6	3209.3	3110.8	2859.4	2788.3
35°	3056.2	3034.3	2886.7	2668.0	2602.4
37.5°	2875.8	2848.4	2662.5	2487.6	2405.6
40°	2695.3	2662.5	2460.2	2301.7	2214.2
42.5°	2525.9	2482.1	2285.3	2115.8	2017.4
45°	2345.4	2296.2	2099.4	1924.5	1847.9
47.5°	2165.0	2121.3	1940.9	1760.4	1673.0
50°	1973.7	1935.4	1771.4	1591.0	1498.0
52.5°	1815.1	1755.0	1596.4	1416.0	1339.5
55°	1629.2	1580.0	1432.4	1262.9	1197.3
57.5°	1459.7	1410.5	1273.9	1115.3	1060.6
60°	1301.2	1230.1	1115.3	978.6	934.9
62.5°	1126.2	1071.6	973.2	858.4	913.0
65°	967.7	913.0	825.6	842.0	699.8
67.5°	792.7	765.4	688.9	612.3	590.5
70°	645.1	612.3	585.0	503.0	481.1
72.5°	513.9	481.1	442.8	399.1	382.7
75°	388.2	360.8	339.0	322.6	355.4
77.5°	267.9	257.0	240.6	224.2	218.7
80°	175.0	169.5	164.0	158.5	153.1
82.5°	103.9	103.9	103.9	103.9	103.9
85°	54.7	60.1	65.6	71.1	76.5
87.5°	32.8	32.8	38.3	43.7	49.2
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)