

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: P547423

Luminaire Tested: **FMR-24-4-LD4-4LO-50-UNV-81-84-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: P547423  
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-50-UNV-81-84-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

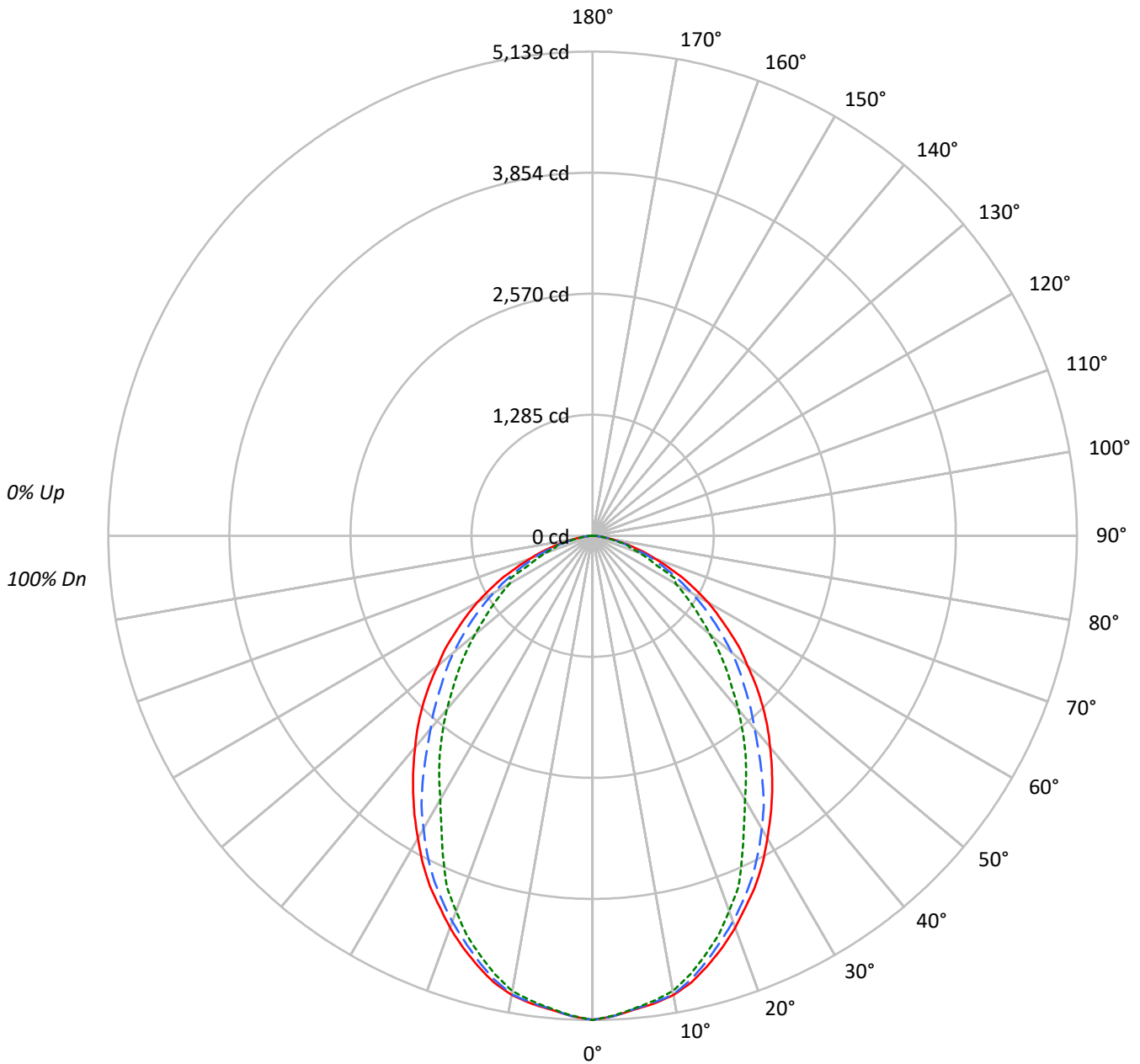
Lumens per Lamp: N/A  
Luminaire Lumens: 10088.0 lumens  
Efficiency: N/A  
Efficacy: 107.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 93.6  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	6914	6914	6914
5°	6820	6812	6804
10°	6761	6753	6704
15°	6579	6512	6422
20°	6337	6235	6065
25°	6077	5944	5574
30°	5759	5575	5021
35°	5455	5152	4645
40°	5144	4695	4226
45°	4849	4341	3821
50°	4489	4029	3407
55°	4153	3651	3052
60°	3805	3261	2734
65°	3348	2856	2421
70°	2758	2501	2057
75°	2193	1915	2007
80°	1473	1381	1289
85°	917	1101	1284



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	478.3	4.7
10°-20°	1312.8	13.0
20°-30°	1817.4	18.0
30°-40°	1937.9	19.2
40°-50°	1767.9	17.5
50°-60°	1385.1	13.7
60°-70°	902.7	8.9
70°-80°	399.9	4.0
80°-90°	85.9	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°	3608.6	35.8
0°-40°	5546.5	55.0
0°-60°	8699.5	86.2
0°-90°	10088.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10088.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5139	5139	5139	5139	5139	
5°	5050	5044	5044	5038	5038	479
15°	4723	4723	4675	4628	4610	1328
25°	4093	4069	4004	3861	3754	1879
35°	3321	3297	3137	2899	2828	2076
45°	2549	2495	2281	2091	2008	1963
55°	1770	1717	1556	1372	1301	1588
65°	1052	992	897	915	760	1036
75°	422	392	368	350	386	452
85°	59	65	71	77	83	82
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5138.7	5138.7	5138.7	5138.7	5138.7
2.5°	5103.0	5103.0	5103.0	5097.1	5097.1
5°	5049.6	5043.6	5043.6	5037.7	5037.7
7.5°	5008.0	5002.1	4996.1	4990.2	4978.3
10°	4948.6	4948.6	4942.6	4912.9	4907.0
12.5°	4853.5	4847.6	4823.8	4782.3	4770.4
15°	4722.8	4722.8	4675.3	4627.8	4610.0
17.5°	4580.3	4574.3	4514.9	4467.4	4443.6
20°	4425.8	4413.9	4354.5	4277.3	4235.7
22.5°	4253.5	4253.5	4182.2	4081.3	4039.7
25°	4093.1	4069.4	4004.0	3861.4	3754.5
27.5°	3909.0	3873.3	3802.0	3600.1	3475.3
30°	3707.0	3689.2	3588.2	3326.8	3231.7
32.5°	3516.9	3487.2	3380.2	3107.0	3029.7
35°	3320.8	3297.1	3136.7	2899.1	2827.8
37.5°	3124.8	3095.1	2893.1	2703.0	2613.9
40°	2928.8	2893.1	2673.3	2501.0	2406.0
42.5°	2744.6	2697.1	2483.2	2299.0	2192.1
45°	2548.6	2495.1	2281.2	2091.1	2008.0
47.5°	2352.5	2305.0	2108.9	1912.9	1817.8
50°	2144.6	2103.0	1924.8	1728.7	1627.7
52.5°	1972.3	1907.0	1734.7	1538.6	1455.5
55°	1770.3	1716.9	1556.5	1372.3	1301.0
57.5°	1586.2	1532.7	1384.2	1211.9	1152.5
60°	1413.9	1336.7	1211.9	1063.4	1015.9
62.5°	1223.8	1164.4	1057.4	932.7	992.1
65°	1051.5	992.1	897.0	914.9	760.4
67.5°	861.4	831.7	748.5	665.4	641.6
70°	701.0	665.4	635.7	546.5	522.8
72.5°	558.4	522.8	481.2	433.7	415.8
75°	421.8	392.1	368.3	350.5	386.1
77.5°	291.1	279.2	261.4	243.6	237.6
80°	190.1	184.2	178.2	172.3	166.3
82.5°	112.9	112.9	112.9	112.9	112.9
85°	59.4	65.3	71.3	77.2	83.2
87.5°	35.6	35.6	41.6	47.5	53.5
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)