

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: P547375

Luminaire Tested: **FMR-24-4-LD4-4LO-35-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: P547375  
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-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

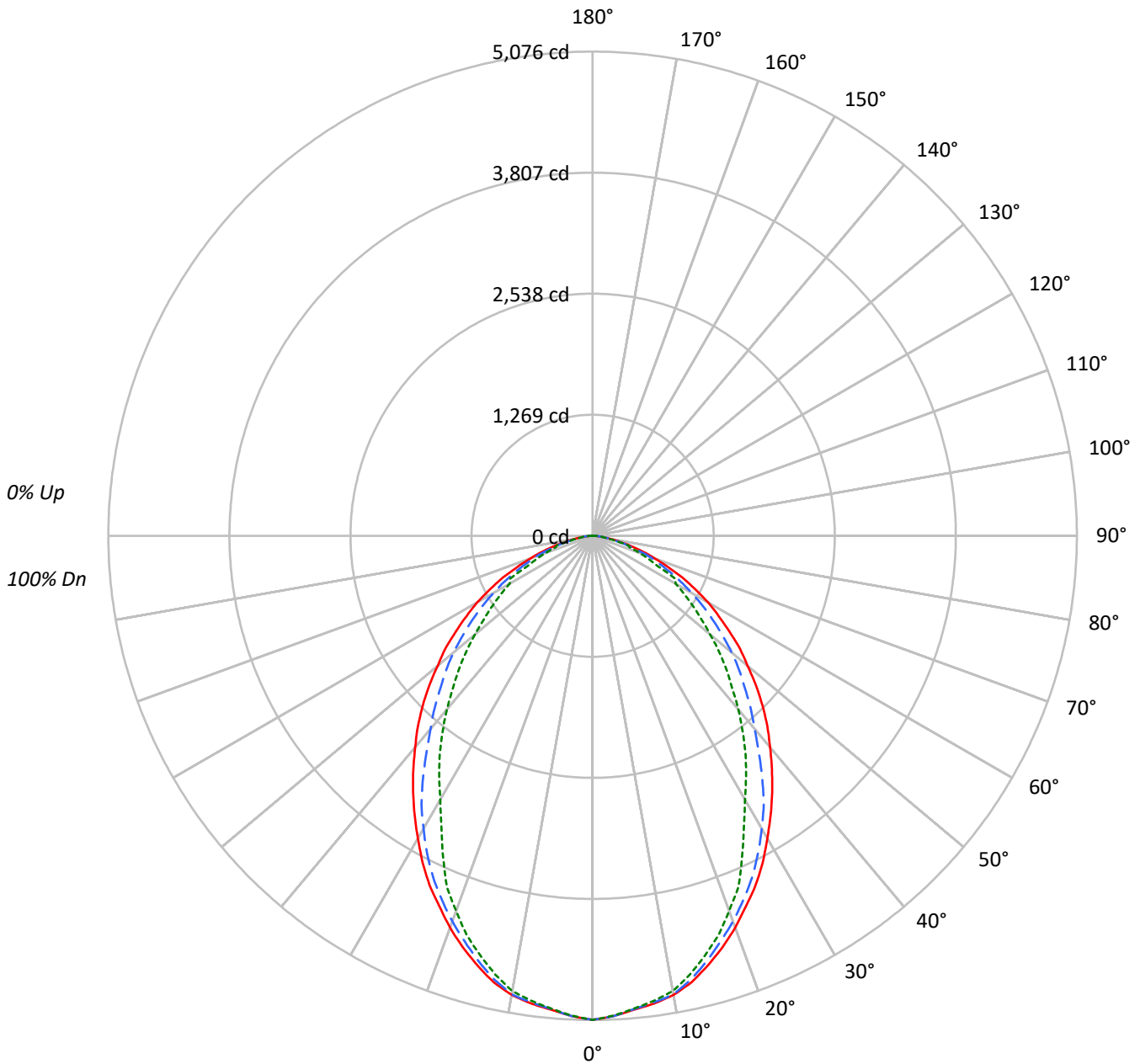
Lumens per Lamp: N/A  
Luminaire Lumens: 9964.0 lumens  
Efficiency: N/A  
Efficacy: 106.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	6829	6829	6829
5°	6736	6728	6720
10°	6678	6670	6622
15°	6498	6433	6343
20°	6259	6158	5990
25°	6002	5871	5505
30°	5688	5506	4959
35°	5388	5089	4588
40°	5081	4638	4174
45°	4790	4287	3774
50°	4434	3979	3365
55°	4102	3606	3014
60°	3758	3221	2700
65°	3307	2821	2391
70°	2724	2470	2031
75°	2166	1891	1983
80°	1455	1364	1273
85°	906	1087	1267



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	472.5	4.7
10°-20°	1296.6	13.0
20°-30°	1795.1	18.0
30°-40°	1914.1	19.2
40°-50°	1746.2	17.5
50°-60°	1368.0	13.7
60°-70°	891.6	8.9
70°-80°	395.0	4.0
80°-90°	84.8	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°	3564.2	35.8
0°-40°	5478.3	55.0
0°-60°	8592.6	86.2
0°-90°	9964.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9964.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5076	5076	5076	5076	5076	
5°	4988	4982	4982	4976	4976	473
15°	4665	4665	4618	4571	4553	1311
25°	4043	4019	3955	3814	3708	1856
35°	3280	3257	3098	2863	2793	2051
45°	2517	2464	2253	2065	1983	1939
55°	1749	1696	1537	1355	1285	1568
65°	1039	980	886	904	751	1024
75°	417	387	364	346	381	447
85°	59	64	70	76	82	81
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5075.5	5075.5	5075.5	5075.5	5075.5
2.5°	5040.3	5040.3	5040.3	5034.5	5034.5
5°	4987.5	4981.6	4981.6	4975.8	4975.8
7.5°	4946.4	4940.6	4934.7	4928.8	4917.1
10°	4887.8	4887.8	4881.9	4852.6	4846.7
12.5°	4793.9	4788.0	4764.5	4723.5	4711.7
15°	4664.8	4664.8	4617.9	4570.9	4553.3
17.5°	4524.0	4518.1	4459.4	4412.5	4389.0
20°	4371.4	4359.7	4301.0	4224.7	4183.6
22.5°	4201.2	4201.2	4130.8	4031.1	3990.0
25°	4042.8	4019.3	3954.8	3814.0	3708.4
27.5°	3860.9	3825.7	3755.3	3555.8	3432.6
30°	3661.4	3643.8	3544.1	3285.9	3192.0
32.5°	3473.7	3444.3	3338.7	3068.8	2992.5
35°	3280.0	3256.6	3098.1	2863.4	2793.0
37.5°	3086.4	3057.1	2857.6	2669.8	2581.8
40°	2892.8	2857.6	2640.4	2470.3	2376.4
42.5°	2710.9	2663.9	2452.7	2270.8	2165.2
45°	2517.2	2464.4	2253.2	2065.4	1983.3
47.5°	2323.6	2276.7	2083.0	1889.4	1795.5
50°	2118.2	2077.2	1901.1	1707.5	1607.7
52.5°	1948.1	1883.5	1713.4	1519.7	1437.6
55°	1748.6	1695.8	1537.3	1355.4	1285.0
57.5°	1566.7	1513.9	1367.2	1197.0	1138.3
60°	1396.5	1320.2	1197.0	1050.3	1003.4
62.5°	1208.7	1150.1	1044.4	921.2	979.9
65°	1038.6	979.9	886.0	903.6	751.1
67.5°	850.8	821.5	739.3	657.2	633.7
70°	692.4	657.2	627.8	539.8	516.4
72.5°	551.6	516.4	475.3	428.3	410.7
75°	416.6	387.3	363.8	346.2	381.4
77.5°	287.5	275.8	258.2	240.6	234.7
80°	187.8	181.9	176.0	170.2	164.3
82.5°	111.5	111.5	111.5	111.5	111.5
85°	58.7	64.5	70.4	76.3	82.1
87.5°	35.2	35.2	41.1	46.9	52.8
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)