

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: P546818

Luminaire Tested: **FMR-24-4-LD4-2LO-40-UNV-81-87-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: P546818  
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-LD4-2LO-40-UNV-81-87-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

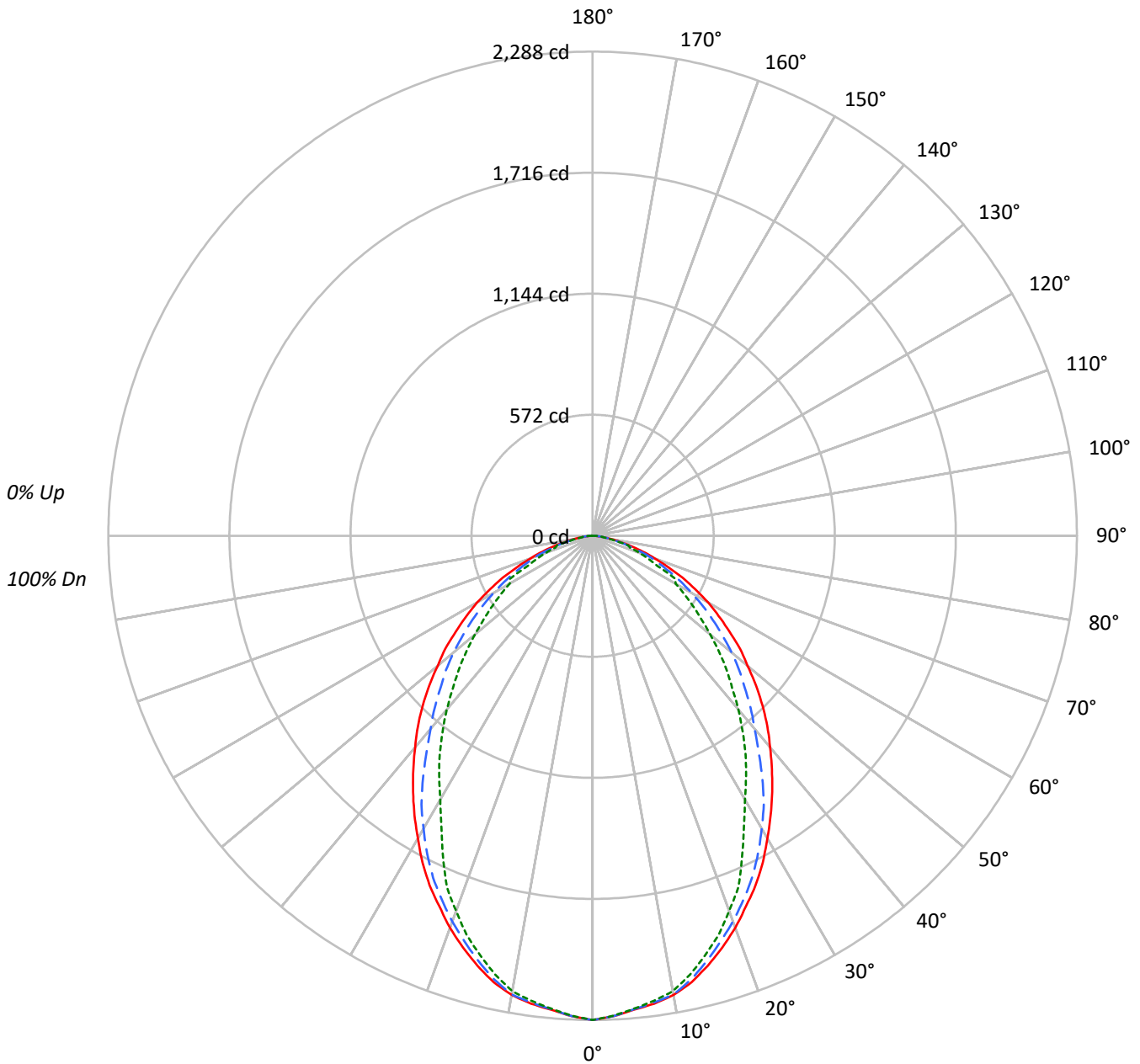
Lumens per Lamp: N/A  
Luminaire Lumens: 4492.0 lumens  
Efficiency: N/A  
Efficacy: 96.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.8  
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				20				20	
RC	80				70				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				100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87				87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75				75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65				65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56				56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50				50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44				44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40				40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36				36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33				33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30				30

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3079	3079	3079
5°	3037	3033	3030
10°	3011	3007	2985
15°	2929	2900	2859
20°	2822	2776	2701
25°	2706	2647	2482
30°	2565	2482	2236
35°	2429	2294	2068
40°	2291	2091	1882
45°	2159	1933	1701
50°	1999	1794	1517
55°	1849	1626	1359
60°	1694	1452	1217
65°	1491	1272	1078
70°	1228	1113	916
75°	976	853	894
80°	656	615	574
85°	409	489	571



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	213.0	4.7
10°-20°	584.6	13.0
20°-30°	809.3	18.0
30°-40°	862.9	19.2
40°-50°	787.2	17.5
50°-60°	616.7	13.7
60°-70°	402.0	8.9
70°-80°	178.1	4.0
80°-90°	38.2	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°	1606.8	35.8
0°-40°	2469.7	55.0
0°-60°	3873.7	86.2
0°-90°	4492.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4492.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2288	2288	2288	2288	2288	
5°	2248	2246	2246	2243	2243	213
15°	2103	2103	2082	2061	2053	591
25°	1823	1812	1783	1719	1672	837
35°	1479	1468	1397	1291	1259	924
45°	1135	1111	1016	931	894	874
55°	788	764	693	611	579	707
65°	468	442	399	407	339	461
75°	188	175	164	156	172	201
85°	26	29	32	34	37	37
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2288.2	2288.2	2288.2	2288.2	2288.2
2.5°	2272.3	2272.3	2272.3	2269.6	2269.6
5°	2248.5	2245.8	2245.8	2243.2	2243.2
7.5°	2230.0	2227.3	2224.7	2222.0	2216.7
10°	2203.5	2203.5	2200.9	2187.6	2185.0
12.5°	2161.2	2158.5	2148.0	2129.4	2124.2
15°	2103.0	2103.0	2081.8	2060.7	2052.7
17.5°	2039.5	2036.9	2010.4	1989.2	1978.7
20°	1970.7	1965.4	1939.0	1904.6	1886.1
22.5°	1894.0	1894.0	1862.3	1817.3	1798.8
25°	1822.6	1812.0	1782.9	1719.4	1671.8
27.5°	1740.6	1724.7	1693.0	1603.0	1547.5
30°	1650.7	1642.7	1597.7	1481.4	1439.0
32.5°	1566.0	1552.8	1505.2	1383.5	1349.1
35°	1478.7	1468.1	1396.7	1290.9	1259.2
37.5°	1391.4	1378.2	1288.2	1203.6	1163.9
40°	1304.1	1288.2	1190.4	1113.7	1071.3
42.5°	1222.1	1201.0	1105.7	1023.7	976.1
45°	1134.8	1111.0	1015.8	931.1	894.1
47.5°	1047.5	1026.4	939.1	851.8	809.5
50°	954.9	936.4	857.1	769.8	724.8
52.5°	878.2	849.1	772.4	685.1	648.1
55°	788.3	764.5	693.1	611.1	579.3
57.5°	706.3	682.5	616.3	539.6	513.2
60°	629.6	595.2	539.6	473.5	452.3
62.5°	544.9	518.5	470.9	415.3	441.8
65°	468.2	441.8	399.4	407.4	338.6
67.5°	383.6	370.3	333.3	296.3	285.7
70°	312.1	296.3	283.0	243.4	232.8
72.5°	248.7	232.8	214.3	193.1	185.2
75°	187.8	174.6	164.0	156.1	171.9
77.5°	129.6	124.3	116.4	108.5	105.8
80°	84.6	82.0	79.4	76.7	74.1
82.5°	50.3	50.3	50.3	50.3	50.3
85°	26.5	29.1	31.7	34.4	37.0
87.5°	15.9	15.9	18.5	21.2	23.8
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)