

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: P546668

Luminaire Tested: **FMR-24-4-LD4-1STD-50-UNV-82-94-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: P546668  
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-LD4-1STD-50-UNV-82-94-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

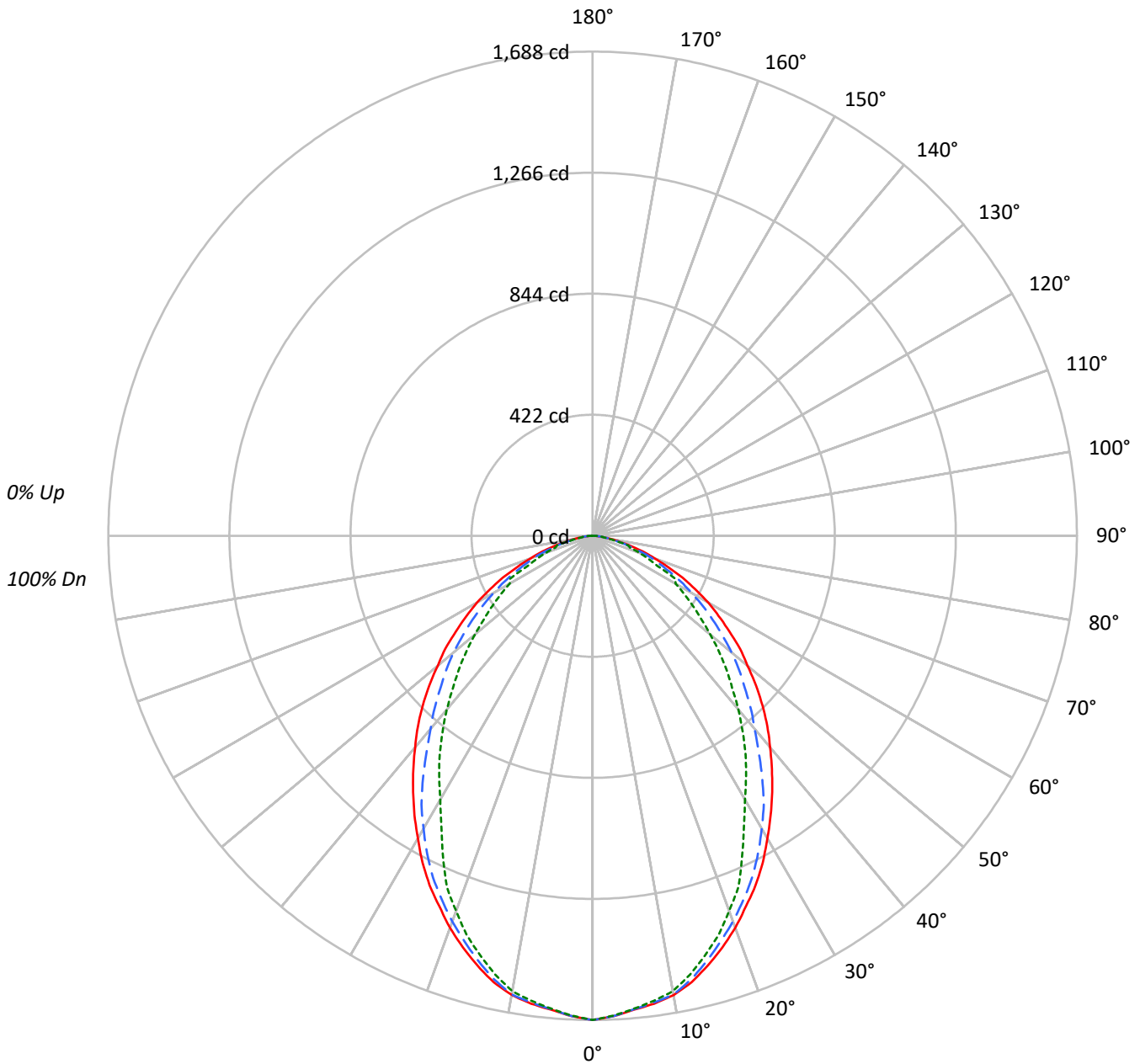
Lumens per Lamp: N/A  
Luminaire Lumens: 3314.0 lumens  
Efficiency: N/A  
Efficacy: 99.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
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°	2271	2271	2271
5°	2240	2238	2235
10°	2221	2218	2202
15°	2161	2139	2109
20°	2082	2048	1992
25°	1996	1953	1831
30°	1892	1831	1649
35°	1792	1692	1526
40°	1690	1542	1388
45°	1593	1426	1255
50°	1475	1324	1119
55°	1364	1199	1003
60°	1250	1071	898
65°	1100	938	795
70°	906	821	675
75°	721	629	660
80°	484	453	423
85°	301	361	421



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	157.1	4.7
10°-20°	431.3	13.0
20°-30°	597.0	18.0
30°-40°	636.6	19.2
40°-50°	580.8	17.5
50°-60°	455.0	13.7
60°-70°	296.5	8.9
70°-80°	131.4	4.0
80°-90°	28.2	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°	1185.4	35.8
0°-40°	1822.1	55.0
0°-60°	2857.9	86.2
0°-90°	3314.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3314.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1688	1688	1688	1688	1688	
5°	1659	1657	1657	1655	1655	157
15°	1552	1552	1536	1520	1514	436
25°	1345	1337	1315	1268	1233	617
35°	1091	1083	1030	952	929	682
45°	837	820	749	687	660	645
55°	582	564	511	451	427	522
65°	345	326	295	300	250	340
75°	139	129	121	115	127	149
85°	20	22	23	25	27	27
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1688.1	1688.1	1688.1	1688.1	1688.1
2.5°	1676.4	1676.4	1676.4	1674.4	1674.4
5°	1658.8	1656.9	1656.9	1654.9	1654.9
7.5°	1645.2	1643.2	1641.3	1639.3	1635.4
10°	1625.7	1625.7	1623.7	1613.9	1612.0
12.5°	1594.4	1592.5	1584.7	1571.0	1567.1
15°	1551.5	1551.5	1535.9	1520.3	1514.4
17.5°	1504.7	1502.7	1483.2	1467.6	1459.8
20°	1453.9	1450.0	1430.5	1405.1	1391.5
22.5°	1397.3	1397.3	1373.9	1340.7	1327.1
25°	1344.6	1336.8	1315.4	1268.5	1233.4
27.5°	1284.1	1272.4	1249.0	1182.7	1141.7
30°	1217.8	1211.9	1178.7	1092.9	1061.7
32.5°	1155.3	1145.6	1110.4	1020.7	995.3
35°	1090.9	1083.1	1030.4	952.4	928.9
37.5°	1026.5	1016.8	950.4	888.0	858.7
40°	962.1	950.4	878.2	821.6	790.4
42.5°	901.6	886.0	815.8	755.3	720.1
45°	837.2	819.7	749.4	687.0	659.6
47.5°	772.8	757.2	692.8	628.4	597.2
50°	704.5	690.9	632.3	567.9	534.7
52.5°	647.9	626.5	569.9	505.5	478.1
55°	581.6	564.0	511.3	450.8	427.4
57.5°	521.1	503.5	454.7	398.1	378.6
60°	464.5	439.1	398.1	349.3	333.7
62.5°	402.0	382.5	347.4	306.4	325.9
65°	345.4	325.9	294.7	300.5	249.8
67.5°	283.0	273.2	245.9	218.6	210.8
70°	230.3	218.6	208.8	179.5	171.7
72.5°	183.4	171.7	158.1	142.5	136.6
75°	138.6	128.8	121.0	115.1	126.9
77.5°	95.6	91.7	85.9	80.0	78.1
80°	62.5	60.5	58.5	56.6	54.6
82.5°	37.1	37.1	37.1	37.1	37.1
85°	19.5	21.5	23.4	25.4	27.3
87.5°	11.7	11.7	13.7	15.6	17.6
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)