

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: P546670

Luminaire Tested: **FMR-24-4-LD4-1STD-50-UNV-82-97-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: P546670  
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-82-97-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

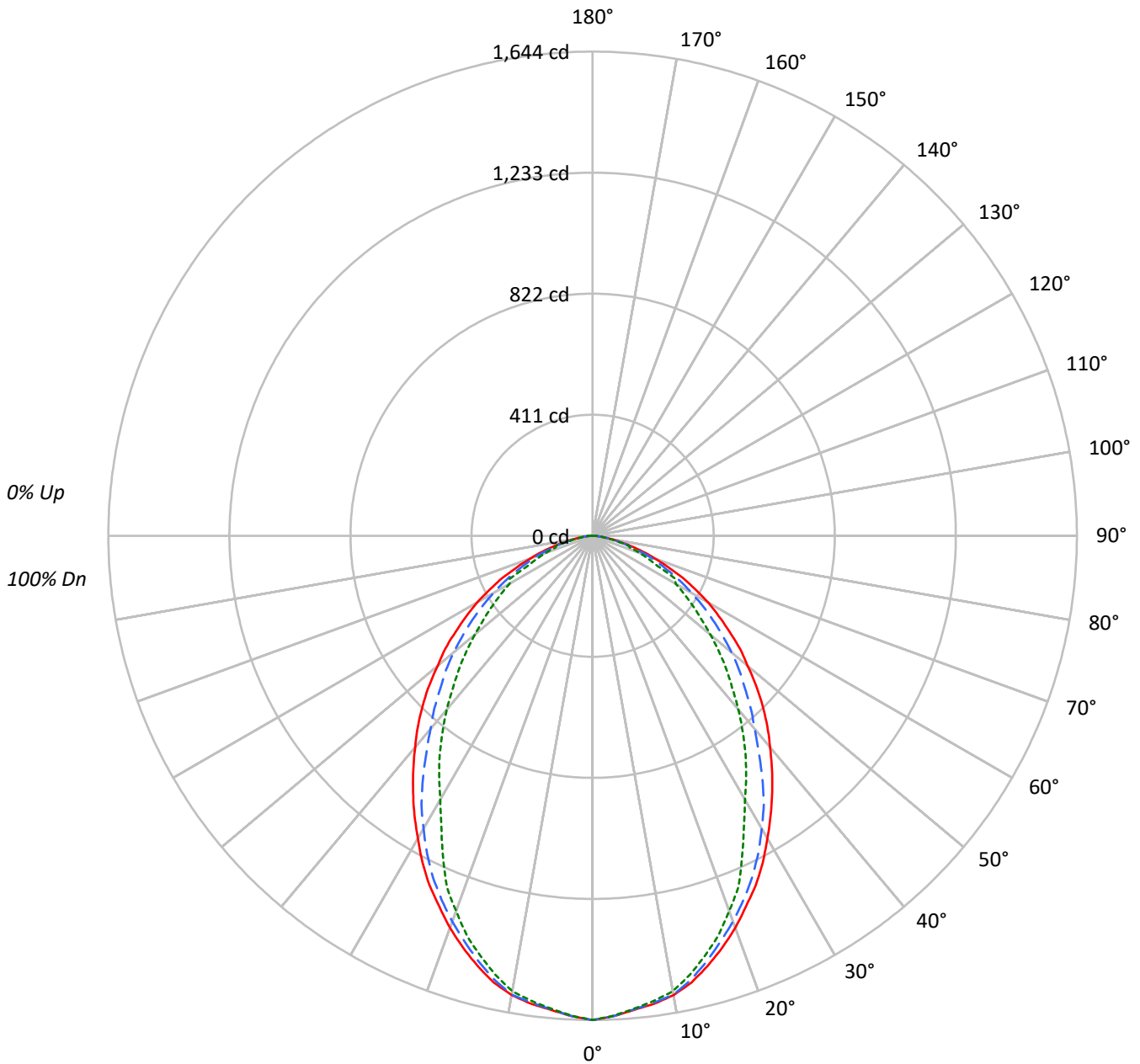
Lumens per Lamp: N/A  
Luminaire Lumens: 3228.0 lumens  
Efficiency: N/A  
Efficacy: 96.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	2212	2212	2212
5°	2182	2180	2177
10°	2163	2161	2145
15°	2105	2084	2055
20°	2028	1995	1941
25°	1944	1902	1784
30°	1843	1784	1607
35°	1745	1649	1486
40°	1646	1502	1352
45°	1552	1389	1223
50°	1436	1289	1090
55°	1329	1168	977
60°	1217	1044	875
65°	1071	914	775
70°	882	800	658
75°	702	613	643
80°	471	442	412
85°	293	352	411



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	153.1	4.7
10°-20°	420.1	13.0
20°-30°	581.6	18.0
30°-40°	620.1	19.2
40°-50°	565.7	17.5
50°-60°	443.2	13.7
60°-70°	288.9	8.9
70°-80°	128.0	4.0
80°-90°	27.5	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°	1154.7	35.8
0°-40°	1774.8	55.0
0°-60°	2783.7	86.2
0°-90°	3228.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3228.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1644	1644	1644	1644	1644	
5°	1616	1614	1614	1612	1612	153
15°	1511	1511	1496	1481	1475	425
25°	1310	1302	1281	1236	1201	601
35°	1063	1055	1004	928	905	664
45°	816	798	730	669	642	628
55°	566	549	498	439	416	508
65°	336	318	287	293	243	332
75°	135	126	118	112	124	145
85°	19	21	23	25	27	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1644.3	1644.3	1644.3	1644.3	1644.3
2.5°	1632.9	1632.9	1632.9	1631.0	1631.0
5°	1615.8	1613.9	1613.9	1612.0	1612.0
7.5°	1602.5	1600.6	1598.7	1596.8	1593.0
10°	1583.5	1583.5	1581.6	1572.1	1570.2
12.5°	1553.1	1551.2	1543.6	1530.2	1526.4
15°	1511.2	1511.2	1496.0	1480.8	1475.1
17.5°	1465.6	1463.7	1444.7	1429.5	1421.9
20°	1416.2	1412.4	1393.4	1368.7	1355.4
22.5°	1361.1	1361.1	1338.3	1305.9	1292.6
25°	1309.7	1302.1	1281.2	1235.6	1201.4
27.5°	1250.8	1239.4	1216.6	1152.0	1112.0
30°	1186.2	1180.5	1148.2	1064.5	1034.1
32.5°	1125.3	1115.8	1081.6	994.2	969.5
35°	1062.6	1055.0	1003.7	927.7	904.8
37.5°	999.9	990.4	925.8	864.9	836.4
40°	937.2	925.8	855.4	800.3	769.9
42.5°	878.2	863.0	794.6	735.7	701.4
45°	815.5	798.4	730.0	669.1	642.5
47.5°	752.8	737.6	674.8	612.1	581.7
50°	686.2	672.9	615.9	553.2	520.9
52.5°	631.1	610.2	555.1	492.3	465.7
55°	566.5	549.4	498.0	439.1	416.3
57.5°	507.5	490.4	442.9	387.8	368.8
60°	452.4	427.7	387.8	340.3	325.1
62.5°	391.6	372.6	338.4	298.4	317.5
65°	336.5	317.5	287.0	292.7	243.3
67.5°	275.6	266.1	239.5	212.9	205.3
70°	224.3	212.9	203.4	174.9	167.3
72.5°	178.7	167.3	154.0	138.8	133.1
75°	135.0	125.5	117.9	112.2	123.6
77.5°	93.1	89.3	83.6	77.9	76.0
80°	60.8	58.9	57.0	55.1	53.2
82.5°	36.1	36.1	36.1	36.1	36.1
85°	19.0	20.9	22.8	24.7	26.6
87.5°	11.4	11.4	13.3	15.2	17.1
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)