

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: P546660

Luminaire Tested: **FMR-24-4-LD4-1STD-50-UNV-81-94-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: P546660  
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-81-94-EDD  
Description: 2X4 FMR TROFFER WITH .156 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**

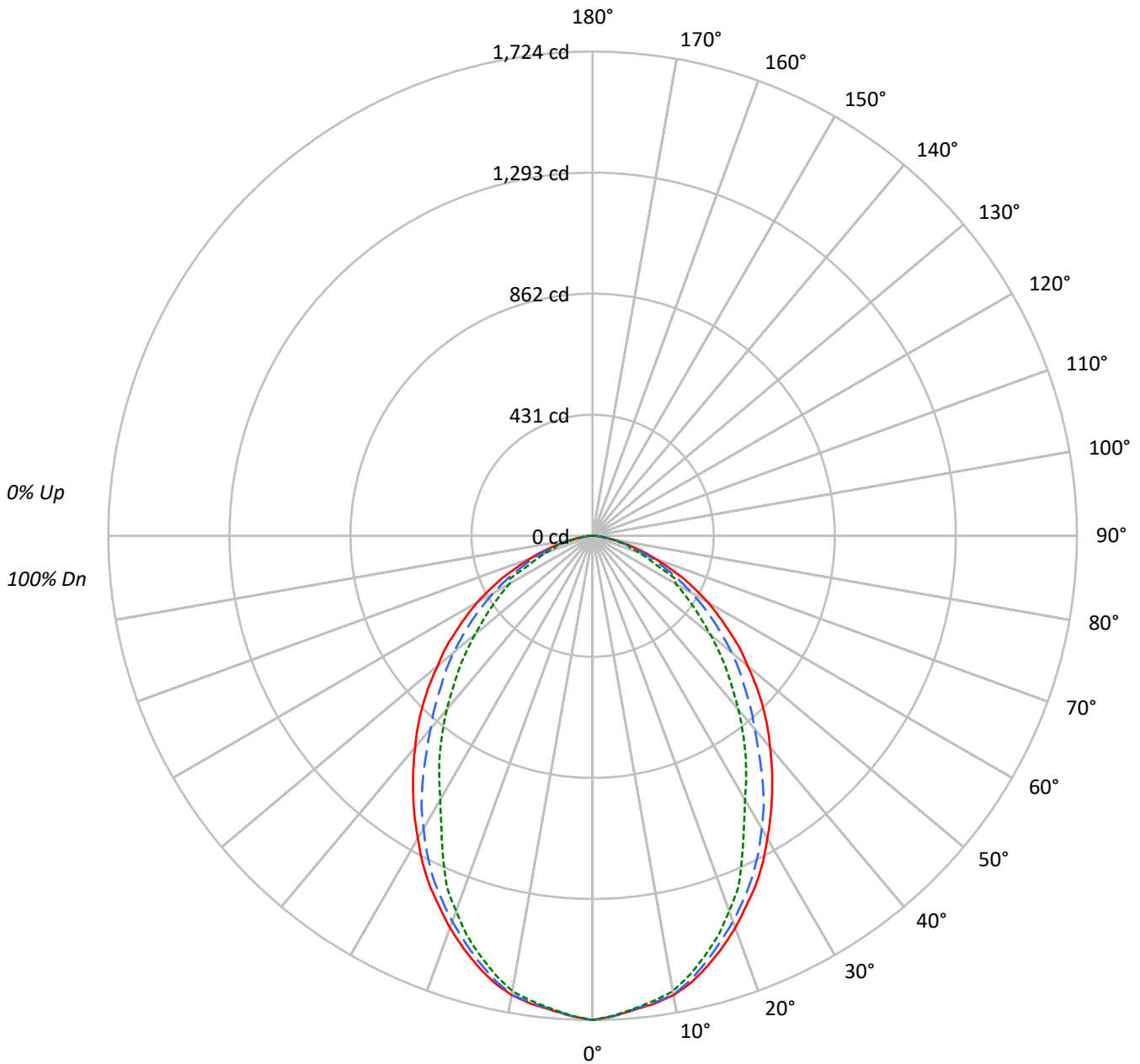
Lumens per Lamp: N/A  
Luminaire Lumens: 3385.0 lumens  
Efficiency: N/A  
Efficacy: 101.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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				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°	2320	2320	2320
5°	2289	2286	2283
10°	2269	2266	2250
15°	2207	2185	2155
20°	2126	2092	2035
25°	2039	1995	1870
30°	1933	1871	1685
35°	1830	1729	1558
40°	1726	1576	1418
45°	1627	1457	1282
50°	1506	1352	1143
55°	1393	1225	1024
60°	1277	1094	917
65°	1123	958	812
70°	925	839	690
75°	736	643	674
80°	494	463	432
85°	307	369	431



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	160.5	4.7
10°-20°	440.5	13.0
20°-30°	609.8	18.0
30°-40°	650.3	19.2
40°-50°	593.2	17.5
50°-60°	464.8	13.7
60°-70°	302.9	8.9
70°-80°	134.2	4.0
80°-90°	28.8	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°	1210.8	35.8
0°-40°	1861.1	55.0
0°-60°	2919.1	86.2
0°-90°	3385.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3385.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1724	1724	1724	1724	1724	
5°	1694	1692	1692	1690	1690	161
15°	1585	1585	1569	1553	1547	446
25°	1373	1366	1344	1296	1260	631
35°	1114	1106	1052	973	949	697
45°	855	837	766	702	674	659
55°	594	576	522	460	437	533
65°	353	333	301	307	255	348
75°	142	132	124	118	130	152
85°	20	22	24	26	28	28
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1724.3	1724.3	1724.3	1724.3	1724.3
2.5°	1712.3	1712.3	1712.3	1710.3	1710.3
5°	1694.4	1692.4	1692.4	1690.4	1690.4
7.5°	1680.4	1678.4	1676.4	1674.4	1670.5
10°	1660.5	1660.5	1658.5	1648.5	1646.5
12.5°	1628.6	1626.6	1618.6	1604.7	1600.7
15°	1584.7	1584.7	1568.8	1552.8	1546.9
17.5°	1536.9	1534.9	1515.0	1499.0	1491.0
20°	1485.1	1481.1	1461.1	1435.2	1421.3
22.5°	1427.3	1427.3	1403.3	1369.5	1355.5
25°	1373.4	1365.5	1343.5	1295.7	1259.8
27.5°	1311.6	1299.7	1275.8	1208.0	1166.1
30°	1243.9	1237.9	1204.0	1116.3	1084.4
32.5°	1180.1	1170.1	1134.2	1042.5	1016.6
35°	1114.3	1106.3	1052.5	972.8	948.8
37.5°	1048.5	1038.6	970.8	907.0	877.1
40°	982.7	970.8	897.0	839.2	807.3
42.5°	920.9	905.0	833.2	771.4	735.6
45°	855.2	837.2	765.5	701.7	673.8
47.5°	789.4	773.4	707.6	641.9	610.0
50°	719.6	705.7	645.9	580.1	546.2
52.5°	661.8	639.9	582.1	516.3	488.4
55°	594.0	576.1	522.3	460.5	436.6
57.5°	532.2	514.3	464.5	406.6	386.7
60°	474.4	448.5	406.6	356.8	340.9
62.5°	410.6	390.7	354.8	313.0	332.9
65°	352.8	332.9	301.0	307.0	255.2
67.5°	289.0	279.1	251.2	223.3	215.3
70°	235.2	223.3	213.3	183.4	175.4
72.5°	187.4	175.4	161.5	145.5	139.5
75°	141.5	131.6	123.6	117.6	129.6
77.5°	97.7	93.7	87.7	81.7	79.7
80°	63.8	61.8	59.8	57.8	55.8
82.5°	37.9	37.9	37.9	37.9	37.9
85°	19.9	21.9	23.9	25.9	27.9
87.5°	12.0	12.0	14.0	15.9	17.9
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)