

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: P589029

Luminaire Tested: **FMR-24-2-LD4-2HI-40-UNV-82-84-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589029  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FMR-24-2-LD4-2HI-40-UNV-82-84-EDD  
Description: 2X2 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

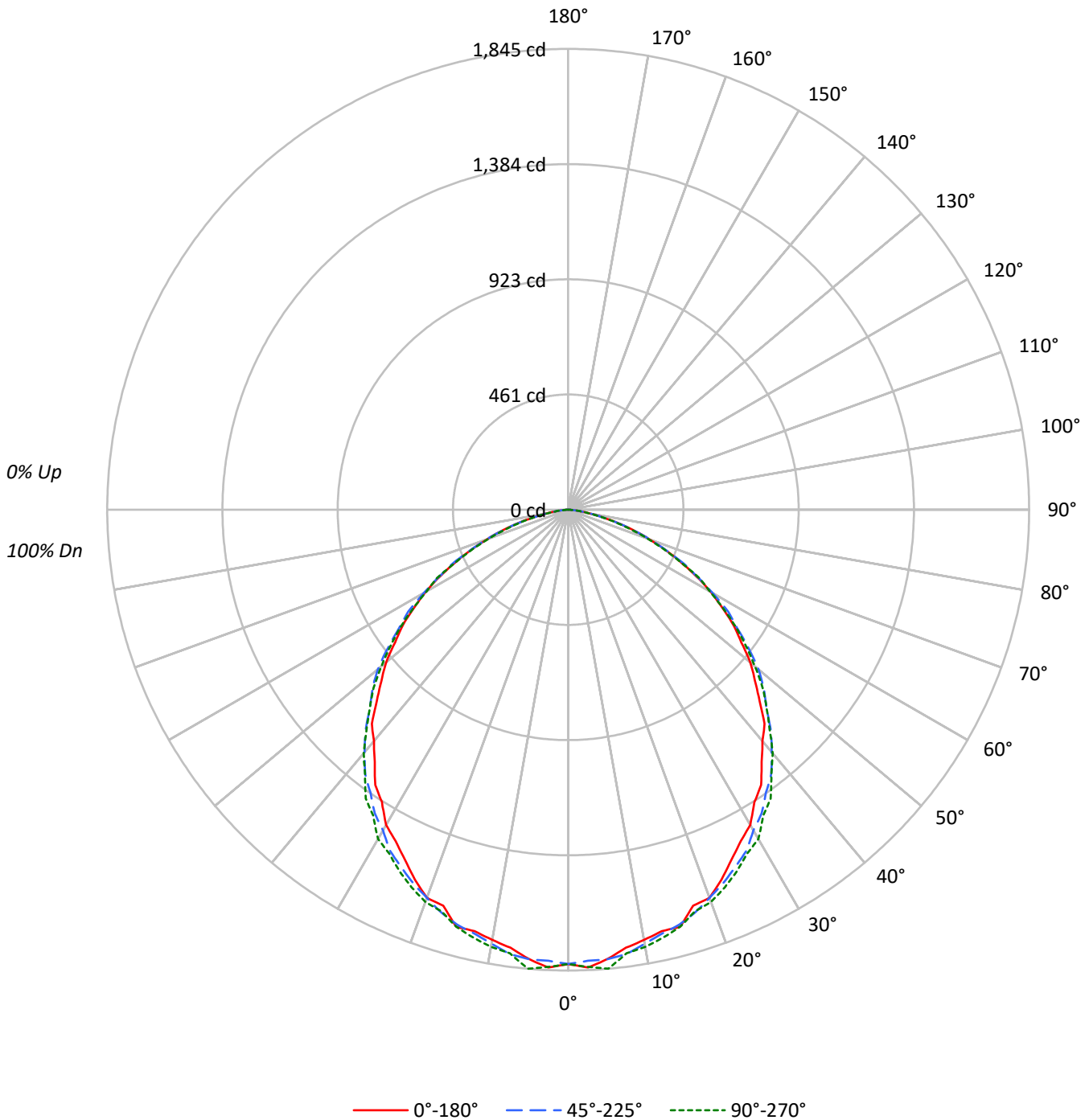
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4584.0 lumens  
Efficiency: N/A  
Efficacy: 106.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26

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

	0°	45°	90°
0°	4894	4894	4894
5°	4878	4880	4983
10°	4779	4821	4855
15°	4817	4791	4818
20°	4736	4736	4786
25°	4590	4691	4742
30°	4527	4607	4729
35°	4420	4536	4638
40°	4248	4453	4473
45°	4120	4266	4273
50°	3985	4165	4085
55°	3796	3871	3843
60°	3550	3585	3521
65°	3166	3246	3143
70°	2716	2725	2650
75°	2151	2146	2063
80°	1441	1401	1347
85°	784	775	726



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	171.1	3.7
10°-20°	484.9	10.6
20°-30°	726.4	15.8
30°-40°	861.0	18.8
40°-50°	862.6	18.8
50°-60°	732.2	16.0
60°-70°	493.6	10.8
70°-80°	216.9	4.7
80°-90°	35.3	0.8
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°	1382.4	30.2
0°-40°	2243.4	48.9
0°-60°	3838.2	83.7
0°-90°	4584.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4584.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1819	1819	1819	1819	1819	
5°	1806	1802	1807	1801	1845	170
15°	1729	1709	1720	1729	1729	482
25°	1546	1554	1580	1600	1597	715
35°	1346	1350	1381	1413	1412	835
45°	1083	1103	1121	1150	1123	837
55°	809	804	825	819	819	720
65°	497	491	510	490	494	494
75°	207	203	206	192	198	222
85°	25	25	25	24	24	37
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1818.8	1818.8	1818.8	1818.8	1818.8
2.5°	1834.5	1820.7	1807.8	1822.8	1832.0
5°	1805.9	1801.7	1806.6	1801.2	1844.6
7.5°	1768.8	1785.0	1794.4	1788.5	1791.1
10°	1749.1	1743.4	1764.3	1778.9	1776.8
12.5°	1727.9	1736.4	1737.6	1753.3	1754.7
15°	1729.1	1709.1	1719.7	1728.6	1729.3
17.5°	1661.9	1683.5	1690.8	1711.3	1685.9
20°	1653.7	1638.0	1653.7	1674.6	1671.3
22.5°	1603.2	1585.6	1619.4	1638.0	1636.8
25°	1545.9	1554.4	1579.8	1600.4	1597.1
27.5°	1495.7	1505.5	1541.7	1570.1	1551.8
30°	1456.9	1452.0	1482.5	1507.9	1522.0
32.5°	1387.7	1405.5	1441.2	1466.3	1452.9
35°	1345.6	1349.6	1380.8	1412.8	1411.8
37.5°	1272.1	1290.7	1334.6	1343.5	1335.3
40°	1209.4	1228.0	1267.7	1277.3	1273.3
42.5°	1163.1	1166.4	1200.5	1211.5	1193.9
45°	1082.6	1102.8	1121.1	1150.0	1122.8
47.5°	1014.0	1023.4	1062.9	1070.6	1056.3
50°	951.8	955.1	994.8	985.1	975.7
52.5°	873.6	887.5	909.8	907.9	896.8
55°	809.2	803.8	825.0	819.3	819.1
57.5°	732.0	741.4	758.8	749.8	735.5
60°	659.7	659.9	666.2	656.1	654.3
62.5°	579.1	581.9	583.3	570.9	591.1
65°	497.2	490.6	509.8	490.3	493.6
67.5°	421.8	425.1	423.2	411.0	415.7
70°	345.2	349.4	346.4	332.5	336.8
72.5°	275.2	270.1	273.4	256.0	264.0
75°	206.9	202.7	206.4	191.9	198.4
77.5°	140.9	144.2	141.8	134.1	138.6
80°	93.0	90.4	90.4	86.0	86.9
82.5°	54.2	51.7	51.0	49.6	51.7
85°	25.4	24.7	25.1	24.4	23.5
87.5°	9.2	9.4	9.4	8.9	8.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)