

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: P589703

Luminaire Tested: **FMR-24-2-LD4-4LO-40-UNV-82-86-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589703  
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-LD4-4LO-40-UNV-82-86-EDD  
Description: 2X2 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

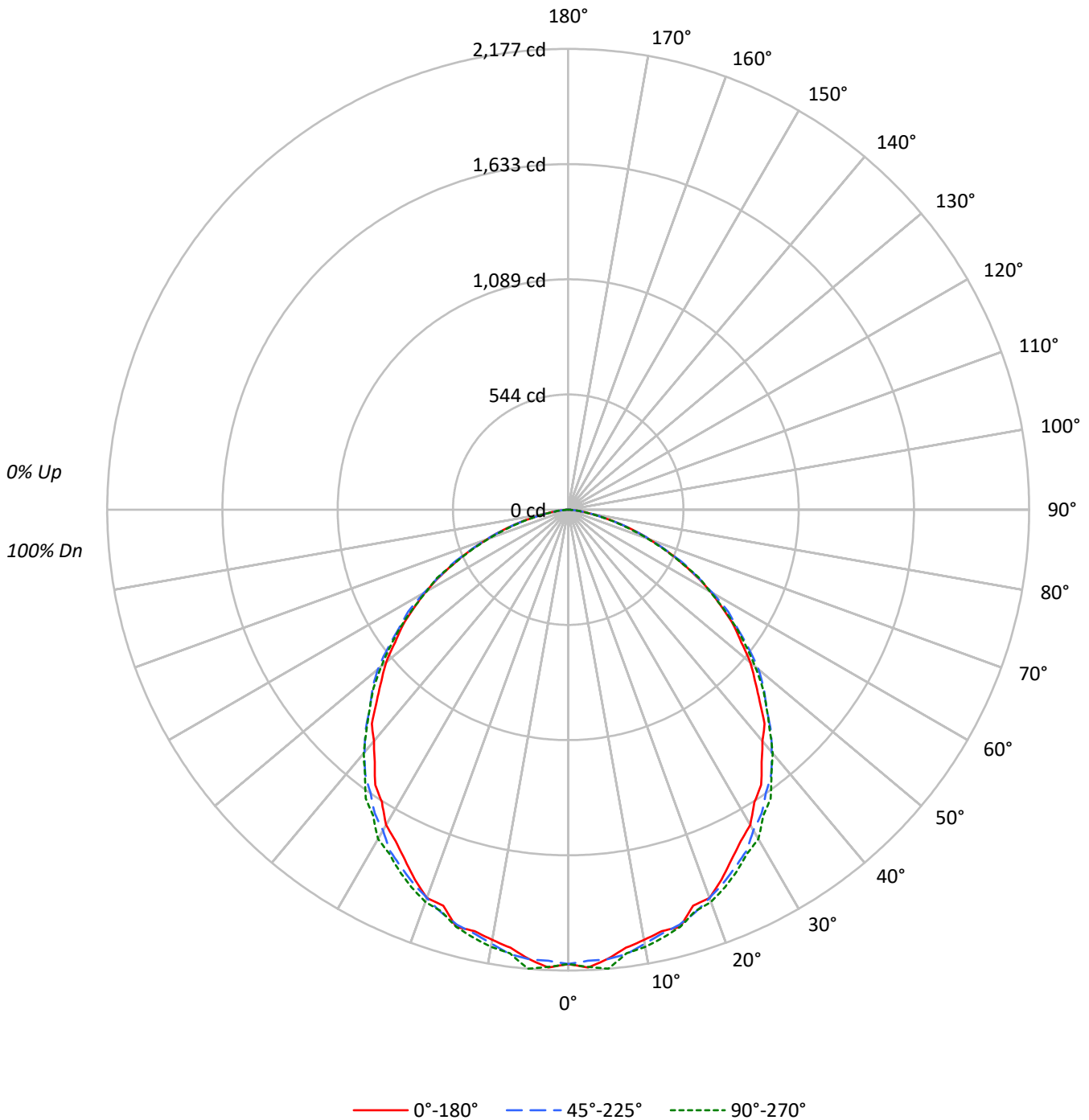
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5409.0 lumens  
Efficiency: N/A  
Efficacy: 115.6 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): 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	
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°	5775	5775	5775
5°	5756	5758	5880
10°	5640	5689	5729
15°	5684	5653	5685
20°	5588	5588	5647
25°	5416	5535	5596
30°	5342	5436	5580
35°	5216	5353	5473
40°	5013	5254	5278
45°	4861	5034	5042
50°	4702	4914	4820
55°	4480	4567	4534
60°	4189	4231	4155
65°	3735	3831	3709
70°	3205	3216	3127
75°	2538	2533	2435
80°	1700	1654	1588
85°	923	914	855



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	201.9	3.7
10°-20°	572.1	10.6
20°-30°	857.2	15.8
30°-40°	1016.0	18.8
40°-50°	1017.8	18.8
50°-60°	864.0	16.0
60°-70°	582.5	10.8
70°-80°	255.9	4.7
80°-90°	41.6	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°	1631.2	30.2
0°-40°	2647.2	48.9
0°-60°	4529.0	83.7
0°-90°	5409.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5409.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2146	2146	2146	2146	2146	
5°	2131	2126	2132	2125	2177	201
15°	2040	2017	2029	2040	2041	568
25°	1824	1834	1864	1888	1885	843
35°	1588	1592	1629	1667	1666	986
45°	1277	1301	1323	1357	1325	988
55°	955	948	974	967	966	849
65°	587	579	602	579	582	583
75°	244	239	244	226	234	262
85°	30	29	30	29	28	43
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2146.2	2146.2	2146.2	2146.2	2146.2
2.5°	2164.7	2148.4	2133.1	2150.9	2161.7
5°	2130.9	2125.9	2131.7	2125.4	2176.6
7.5°	2087.1	2106.3	2117.3	2110.4	2113.5
10°	2063.9	2057.2	2081.9	2099.0	2096.6
12.5°	2038.9	2048.9	2050.3	2068.8	2070.5
15°	2040.3	2016.7	2029.2	2039.7	2040.6
17.5°	1961.1	1986.5	1995.1	2019.2	1989.3
20°	1951.4	1932.8	1951.4	1976.0	1972.1
22.5°	1891.8	1871.0	1910.9	1932.8	1931.4
25°	1824.2	1834.1	1864.1	1888.4	1884.6
27.5°	1764.9	1776.5	1819.2	1852.7	1831.1
30°	1719.1	1713.3	1749.3	1779.3	1795.9
32.5°	1637.4	1658.5	1700.6	1730.2	1714.4
35°	1587.8	1592.5	1629.4	1667.0	1665.9
37.5°	1501.1	1523.0	1574.8	1585.3	1575.6
40°	1427.1	1449.0	1495.8	1507.2	1502.4
42.5°	1372.5	1376.4	1416.5	1429.6	1408.8
45°	1277.4	1301.3	1322.9	1357.0	1324.8
47.5°	1196.5	1207.6	1254.2	1263.3	1246.4
50°	1123.1	1127.0	1173.8	1162.4	1151.4
52.5°	1030.8	1047.2	1073.5	1071.3	1058.3
55°	954.9	948.5	973.5	966.8	966.5
57.5°	863.7	874.8	895.3	884.8	867.9
60°	778.4	778.7	786.1	774.2	772.0
62.5°	683.3	686.7	688.3	673.6	697.5
65°	586.6	578.9	601.6	578.6	582.5
67.5°	497.7	501.6	499.3	484.9	490.5
70°	407.3	412.3	408.7	392.4	397.4
72.5°	324.8	318.7	322.5	302.0	311.5
75°	244.1	239.1	243.6	226.4	234.2
77.5°	166.3	170.1	167.4	158.2	163.5
80°	109.7	106.7	106.7	101.4	102.5
82.5°	64.0	61.0	60.1	58.5	61.0
85°	29.9	29.1	29.6	28.8	27.7
87.5°	10.8	11.1	11.1	10.5	10.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)