

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: P589038

Luminaire Tested: **FMR-24-2-LD4-2HI-40-UNV-93-85-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589038  
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-93-85-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

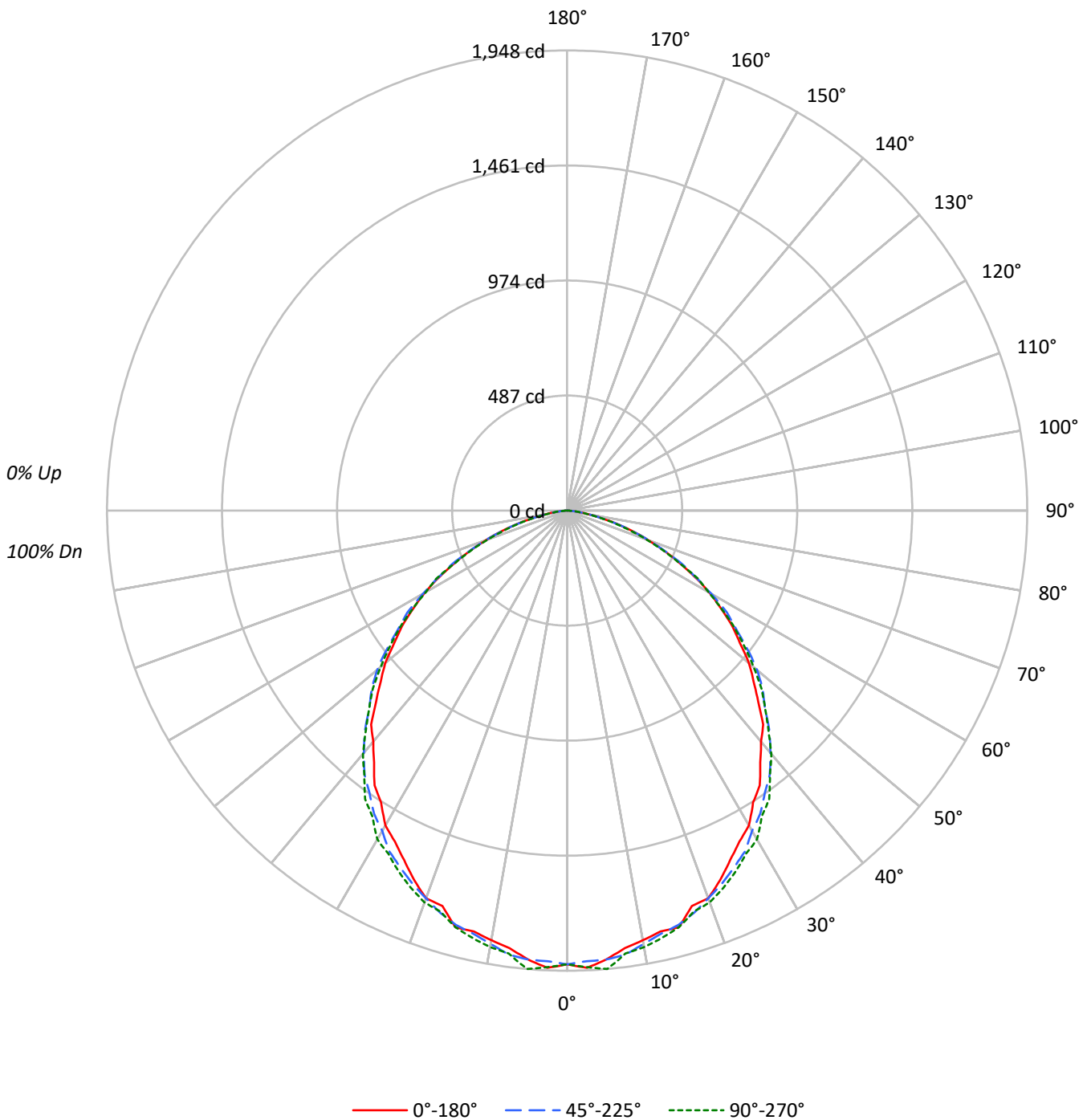
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4841.0 lumens  
Efficiency: N/A  
Efficacy: 112.1 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									
RC	80									70									30									10									0
RW	70	50	30	10	70	50	30	10	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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86						86													
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73						73													
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62						62													
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53						53													
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46						46													
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41						41													
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36						36													
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32						32													
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29						29													
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26						26													

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

	0°	45°	90°
0°	5169	5169	5169
5°	5152	5154	5262
10°	5047	5091	5127
15°	5087	5059	5088
20°	5001	5001	5054
25°	4847	4953	5008
30°	4781	4865	4994
35°	4668	4791	4898
40°	4487	4703	4724
45°	4351	4506	4512
50°	4208	4398	4314
55°	4009	4087	4058
60°	3749	3787	3718
65°	3343	3428	3319
70°	2869	2878	2798
75°	2272	2267	2179
80°	1522	1480	1423
85°	827	818	766



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	180.7	3.7
10°-20°	512.1	10.6
20°-30°	767.2	15.8
30°-40°	909.3	18.8
40°-50°	910.9	18.8
50°-60°	773.2	16.0
60°-70°	521.3	10.8
70°-80°	229.1	4.7
80°-90°	37.2	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°	1459.9	30.2
0°-40°	2369.2	48.9
0°-60°	4053.4	83.7
0°-90°	4841.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4841.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1921	1921	1921	1921	1921	
5°	1907	1903	1908	1902	1948	180
15°	1826	1805	1816	1826	1826	509
25°	1633	1642	1668	1690	1687	755
35°	1421	1425	1458	1492	1491	882
45°	1143	1165	1184	1214	1186	884
55°	855	849	871	865	865	760
65°	525	518	538	518	521	522
75°	218	214	218	203	210	234
85°	27	26	26	26	25	39
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1920.8	1920.8	1920.8	1920.8	1920.8
2.5°	1937.4	1922.8	1909.1	1925.0	1934.7
5°	1907.1	1902.7	1907.9	1902.2	1948.1
7.5°	1868.0	1885.1	1895.0	1888.8	1891.5
10°	1847.1	1841.2	1863.2	1878.6	1876.4
12.5°	1824.8	1833.7	1835.0	1851.6	1853.1
15°	1826.0	1805.0	1816.1	1825.6	1826.3
17.5°	1755.1	1777.9	1785.6	1807.2	1780.4
20°	1746.4	1729.8	1746.4	1768.5	1765.0
22.5°	1693.1	1674.5	1710.2	1729.8	1728.6
25°	1632.6	1641.5	1668.3	1690.1	1686.7
27.5°	1579.5	1589.9	1628.1	1658.2	1638.8
30°	1538.6	1533.4	1565.6	1592.4	1607.3
32.5°	1465.5	1484.3	1522.0	1548.5	1534.4
35°	1421.1	1425.3	1458.3	1492.0	1491.0
37.5°	1343.4	1363.0	1409.4	1418.8	1410.1
40°	1277.2	1296.8	1338.7	1348.9	1344.7
42.5°	1228.4	1231.8	1267.8	1279.4	1260.8
45°	1143.3	1164.6	1184.0	1214.5	1185.7
47.5°	1070.9	1080.8	1122.5	1130.6	1115.5
50°	1005.2	1008.6	1050.5	1040.4	1030.5
52.5°	922.6	937.2	960.8	958.8	947.1
55°	854.6	848.9	871.2	865.3	865.0
57.5°	773.0	782.9	801.3	791.9	776.7
60°	696.6	696.9	703.6	692.9	690.9
62.5°	611.6	614.6	616.0	602.9	624.2
65°	525.0	518.1	538.4	517.8	521.3
67.5°	445.4	448.9	446.9	434.0	439.0
70°	364.6	369.0	365.8	351.2	355.6
72.5°	290.7	285.2	288.7	270.3	278.8
75°	218.5	214.0	218.0	202.6	209.6
77.5°	148.8	152.3	149.8	141.6	146.3
80°	98.2	95.5	95.5	90.8	91.8
82.5°	57.3	54.6	53.8	52.3	54.6
85°	26.8	26.0	26.5	25.8	24.8
87.5°	9.7	9.9	9.9	9.4	8.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)