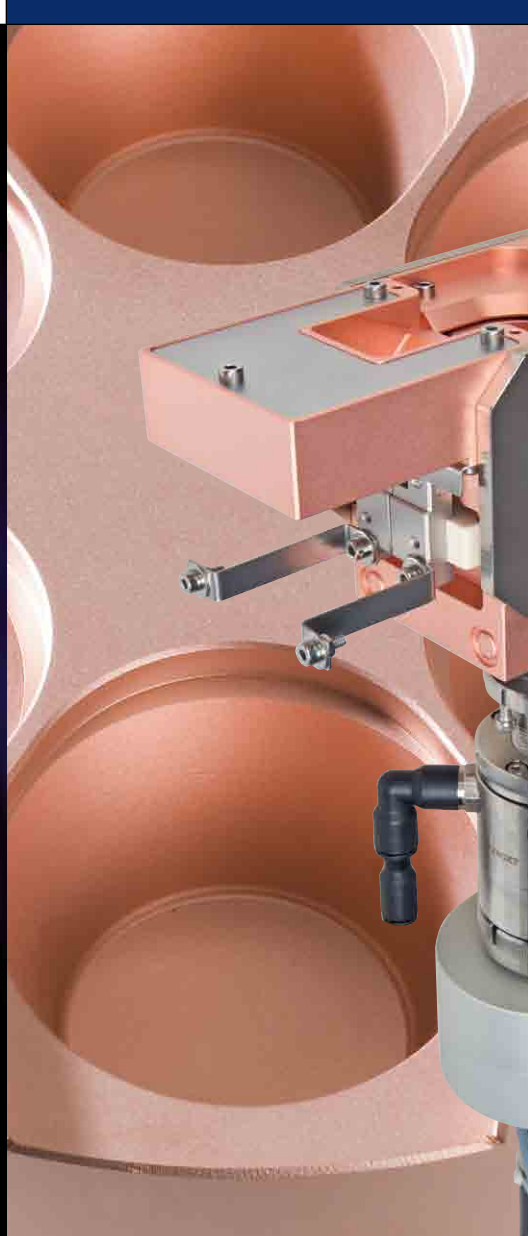




The EVM-4 multihearth electron beam evaporator is specifically designed for small vacuum chambers and effective material utilization. Typical applications are laboratory-scale evaporations with a variety of different materials or coatings for research and development applications. The source offers unique technical features to enhance the reliability and repeatability in small scale production and research and development vacuum coatings.

Designed to be versatile

The EV M-4 multihearth electron beam evaporator is used for optical, electronic and research and development deposition processes. Standard crucible sizes are 4 x 4 cm and 6 x 2 cm.



Small capacity Multi-Hearth E-Beam Source EV M-4

Advantages/Benefits

- Directly cooled crucibles
- Homogeneous material depletion
- Stable beam sweep at high beam deflection frequencies
- Eliminates water leakage into vacuum system
- No additional water feedthrough required
- Reduced maintenance and down-time
- Enhanced run-to-run repeatability
- Built-in hearth rotation with high positioning accuracy
- Non-interchangeable connections

Small capacity Multi-Hearth E-Beam Source EV M-4

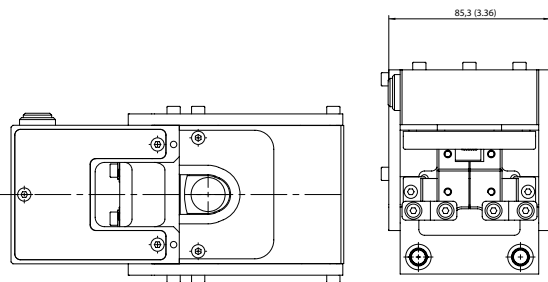
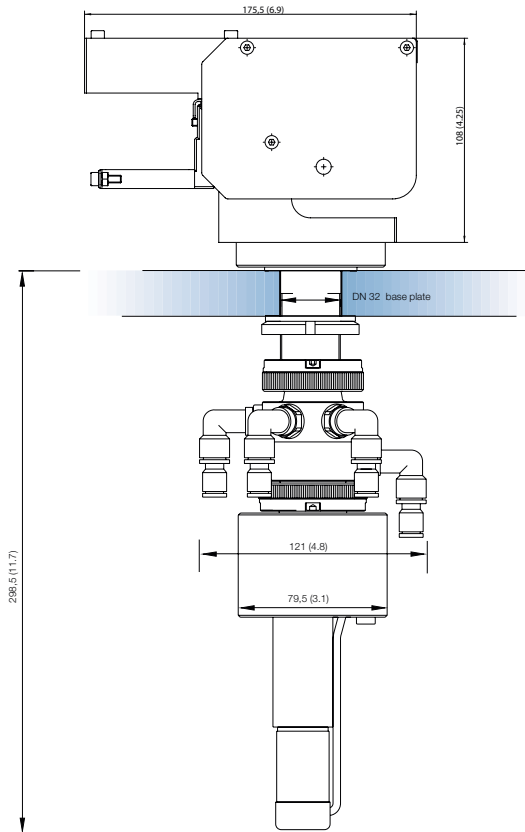
Features

- Small beam spot regardless of position in pocket
- Low inductance x- and y-coils with dynamic defocusing capability
- No dynamic water-vacuum interface
- Integrated coaxial water feedthrough or hearth & source body cooling
- Long filament lifetime
- Reproducible & quick filament fixture
- Hearth positioning using optical encoder
- Plug-in connector for magnet leads

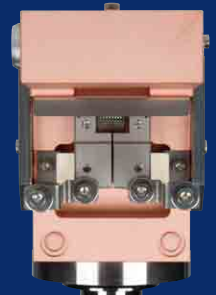
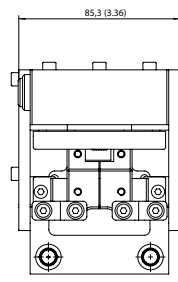
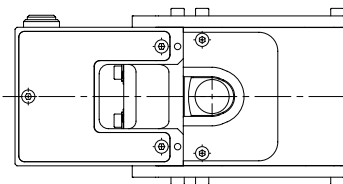
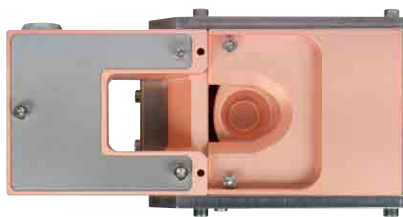
■ Technical Data EV M-4

Max. Power	3 kW
Acceleration Voltage	6–10 kV
Max. Filament Current	50 A @10 VAC
Primary Beam Deflection by permanent magnet	270 °
Bake Out Temperature	150 °C
X-Deflection	± 3 A (150 Hz)
Y-Deflection	± 3 A (150 Hz)
Spot Size Diameter < 5 mm with no or minimal variation between front- and back side of pocket	
Max. Evaporation Rate Depending on hearth configuration up to: Al > 1.500 Å/min @ 3 kW (250 mm source – substrate distance)	
Min. Base Pressure	10 ⁻⁸ mbar
Cooling Water Requirements	6 l/min
Mounting Requirements base plate hole	32 mm
Weight	9 kg (19,84 lb)
Part-No.	1-624000

Technical changes reserved.



Dimensions in mm (inches)



Applications

Especially designed for optical and electronic applications the EV M-4 will be installed in small production and research and development vacuum coating systems to produce high quality layers. For the EV M-4 we offer hearth assemblies with either 4 (4 ccm) or 6 (2 ccm) crucibles (pockets).

Simple to maintain

The EV M-4 has been designed for easy maintenance and service. Our newly designed crucible cover can be removed with only four screws allowing the crucible to be exchanged for cleaning or replacement in just a couple of minutes. Likewise, the cathode assembly is removed in seconds by removing only one screw. The filament may be exchanged in a few minutes outside of the vacuum chamber. The filament has a so called form fit and snaps right into two bores in the filament block. This way it aligns itself automatically. No further alignment is needed. One Beam Emitter includes a retainer, screwdriver and tweezers.

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