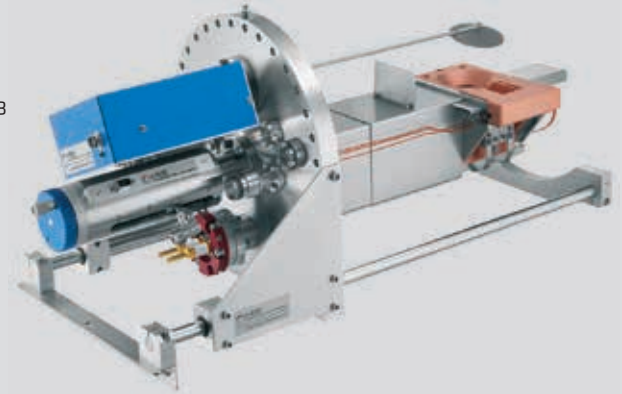


LINEAR MULTI-POCKET EVAPORATOR EBVM

- Full UHV compatibility by hermetic all-metal sealed design, low outgassing
- Up to 6 pockets, hearth capacities 8 or 15 cm³
- Reliable translation mechanism with manual or motorized actuation
- High frequency x-y-beam deflection system
- Bakeout temperature 200°C
- Easy installation with guide rod slide

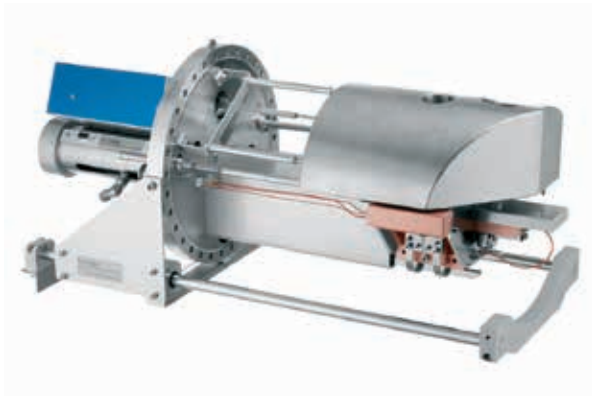


EBVM 250-4x8-S on DN250CF (O.D. 12") flange

With the EBVM series Dr. Eberl MBE-Komponenten GmbH offers a new range of multi-pocket electron beam evaporators for use in ultra-high vacuum (UHV) applications such as thin film growth of low vapor pressure metals or oxides.

The EBVM linear multi-pocket evaporators combine great flexibility in evaporating up to six different materials from a single source with a compact design based on a horizontal CF flange. All electrical and utility feedthroughs are included on this support flange, allowing easy integration into your UHV system. Hearths with capacities of 8 cm³ or 15 cm³ are available, suitable for commonly used crucible liners.

In addition, a customized water-cooled roof is available on request.



EBVM 250-4x8-S with water cooled roof and Soft-acting Linear Shutter

The EBVM can be optionally equipped with a linear shutter, actuated either manually, pneumatically or by our soft-acting linear drive unit LSM 40-100.

For the EBVM evaporators only UHV-grade materials are used. The electromagnetic deflection coils are manufactured from KAPTON™ (polyimide) isolated wires and nickel-plated magnetic steel. The permanent magnets are of a high temperature rare earth alloy and the multi-hearth crucible is manufactured from high purity OFHC (Oxygen-Free High Conductivity) copper. Individual water cooling circuits of both fixed and movable parts of the copper hearth assembly ensure cool operation and low outgassing even at high power operation.

The standard manual pocket translation can be upgraded with a motorized pocket indexing drive with position feedback for the drive controller.

The minimum flange to pocket centre distance is 250 mm depending on crucible number and size, and can be increased to adapt to your system.

We would be pleased to assist you in integrating the EBVM into your existing UHV system. Please do not hesitate to contact us for further information and advice to your particular application.

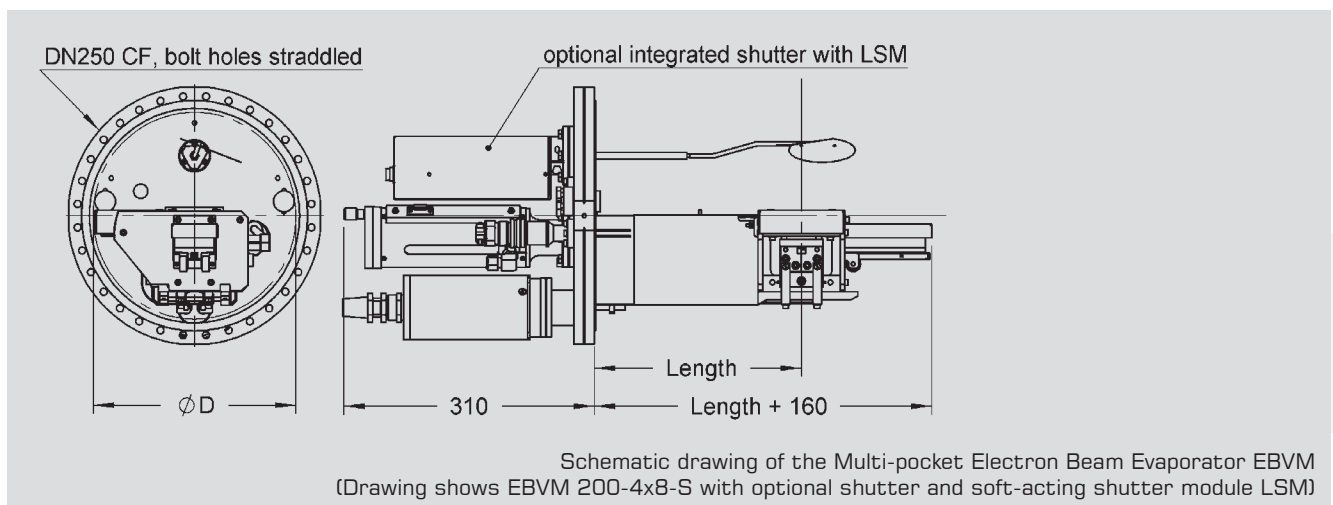
Applications

EBVM evaporators are designed for evaporation of low vapor pressure materials in UHV applications. They are frequently used for evaporation of refractory metals (Ta, Zr, Nb, W), as well as for high-rate evaporation of Al, semiconductors, or oxides.

The possibility of having up to six different evaporation materials in one source at the same time makes the EBVM also an ideal piece of equipment for thin film deposition of newly developed compounds and material systems, e.g. high-k materials or dielectrics.

Technical Data

| | |
|-----------------------------|---|
| Mounting flange | DN200CF (O.D. 10") or DN250CF (O.D. 12") |
| Dimensions in vacuum | minimum length 250 mm, ØD: 195 mm |
| Crucible capacities | 4 (or 6) x 8 cm ³ or 3 (or 6) x 15 cm ³ |
| Hearth dimensions (Øxdepth) | Ø 30 mm (15° taper) x 15 mm or Ø 37.8 mm (15° taper) x 17 mm |
| Filament type | short-legged coil of W wire, electron emitting filament |
| Bakeout temperature | max. 200°C (all air side connectors removed) |
| Operating pressure | 5×10^{-11} mbar 1×10^{-5} mbar |
| Acceleration voltage | 4 – 10 kV |
| Beam power | max. 6 kW (or 3 kW, depending on power supply) |
| Filament current | max. 50 A at 10 V (AC) |
| Spot size | 5 mm diameter, approx. |
| Primary beam deflection | 270° by permanent magnet system |
| Dynamic beam deflection | coils wound from KAPTON™- isolated wire; deflection frequency: max. 150 Hz; x-deflection current: ± 3 A max.; y-deflection current: ± 3 A max. |
| Water cooling | water flow rate 6 l/min at 3 bar; connectors Swagelok™ Ø 6 mm, Ø 8 mm (air side) |
| Options | integrated shutter (S) with manual push-pull action, pneumatic actuator, or soft-acting drive unit LSM 40-100; water-cooled roof (K); motorized pocket indexing drive (M) |



"Length" specifies the flange to pocket center distance (minimum 250 mm). The required clearance in the chamber is larger and depends on the model chosen.