

ELECTRON BEAM EVAPORATOR EBV 40A1

Description

The EBV 40A1 is designed for ultra-pure sub-monolayer and multilayer thin film growth by molecular beam epitaxy. Precisely controlled and monitored evaporation delivers deposition rates from as low as 1/10 monolayer per minute with full PID controlled flux regulation. Multi-channel water-cooling ensures ultra-low background pressure (typically in the 10^{-10} mbar range) during evaporation enabling growth of ultra-pure layers. The precisely defined evaporant beam means highly uniform deposition on the sample, the deposition area being determined by the distance from the source to the sample and the choice of one of the easily exchangeable exit apertures. The instrument is configured with choice of manual or automatic shutter.

Additional information

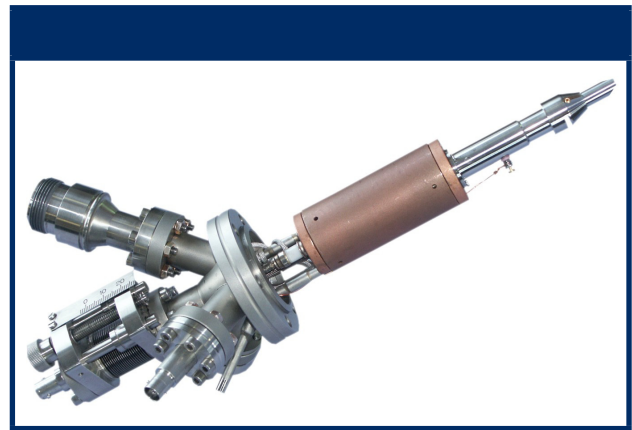
- Electron Evaporator mounts via DN 40CF flange, fully UHV-compatible, W/Th-filament for evaporation of rod material or from small conductable crucibles
- Power delivery of 50 W for high vapor pressure materials and up to 200 W for crucibles and thick wires
- Evaporation of W, Ta, Mo, Pt, Cr, Ti, Fe, etc. from wire and Ag, Au, Al, Ni, etc. from crucibles or wetted wire cages
- Deposition rate ca. 2 nm/min. for high temperature materials and 15-20 nm/min for high vapor pressure materials at 25-75 mm working distance
- Wire feed 25 mm
- Excellent water cooling by multiple water channels

- Knudsen cell type crucible made from stainless steel, molybdenum or tungsten.
- Full software control
- Flux regulation via ion current incl. electrode, feed-through, display unit and PID-regulator
- Integrated manual or electro-pneumatic shutter
- Rear-loading evaporant
- Choice of exit nozzle apertures
- Electron Beam Evaporator Power Supply EBV40APS
- Linear Shift (optional)

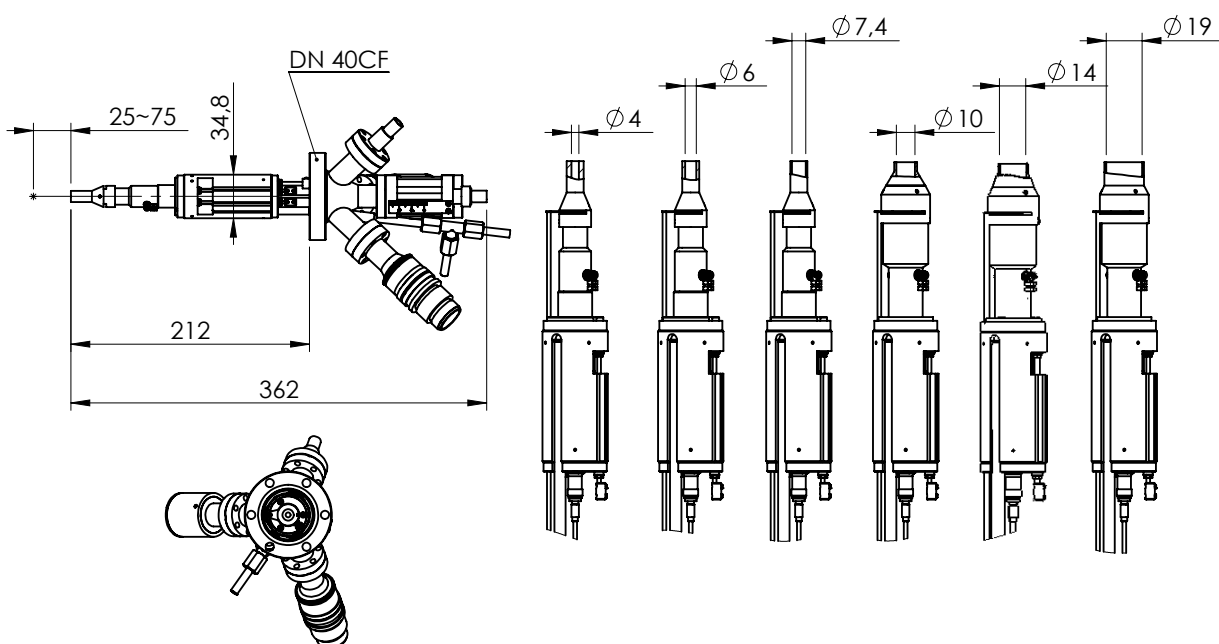
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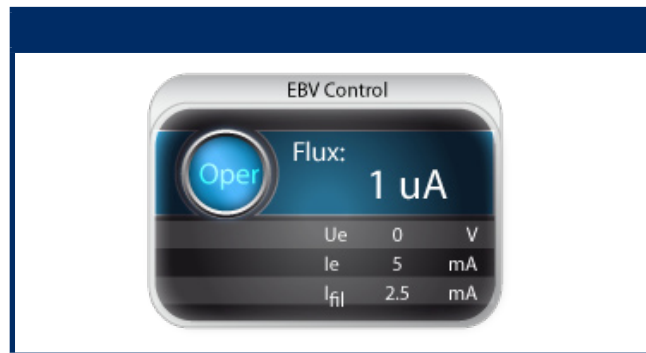
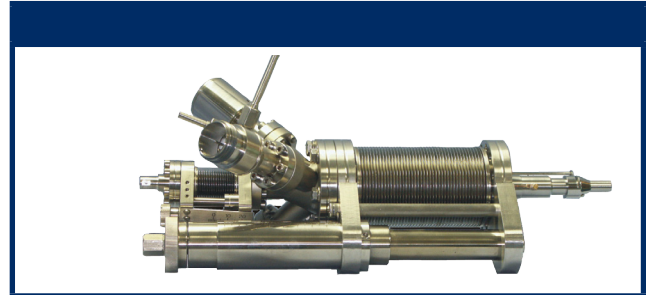
Dimensions and ranges shown in specifications and drawings can be customized on request.

For additional information about control and supply Please refer to chapter **H Electronics** and **I Software**



Description





Specification

Outlet beam diameter for evaporated material	4-19 mm
Temperature range for evaporated materials	160-2300°C (3300°C - when molybdenum connector used)
Electron energy	0-1500 eV (typically 600 - 800 eV), max emission current - 200 mA max power - 300 W
Range of the filament current	Typically 1,8 - 2,2 A: max 2,3 A
Evaporating rod diameter	option 1: 0,5 - 2,5 mm ; step 0,5mm option 2: 2 - 6 mm ; step 2 mm
Temperature monitor of the cooling cylinder	0 -100°C, temperature of water-cooled copper cylinder
Cooling system	Water flow > 0,5 l/min at temperature T=30°C on the end Max pressure - 6 bar
Insertion depth	min. 212 mm, OD: 34,8 mm
Mounting flange	DN 40 CF
Evaporating area	5 -20 mm
Fully bakeable	up to 250°C
Working distance	25 - 75 mm
Recomended distance between end of the evaporator and a sample	Approximately 70-75 mm
Ending nozzle	ID 4, ID 6, ID 7,4, ID10, ID14, ID19