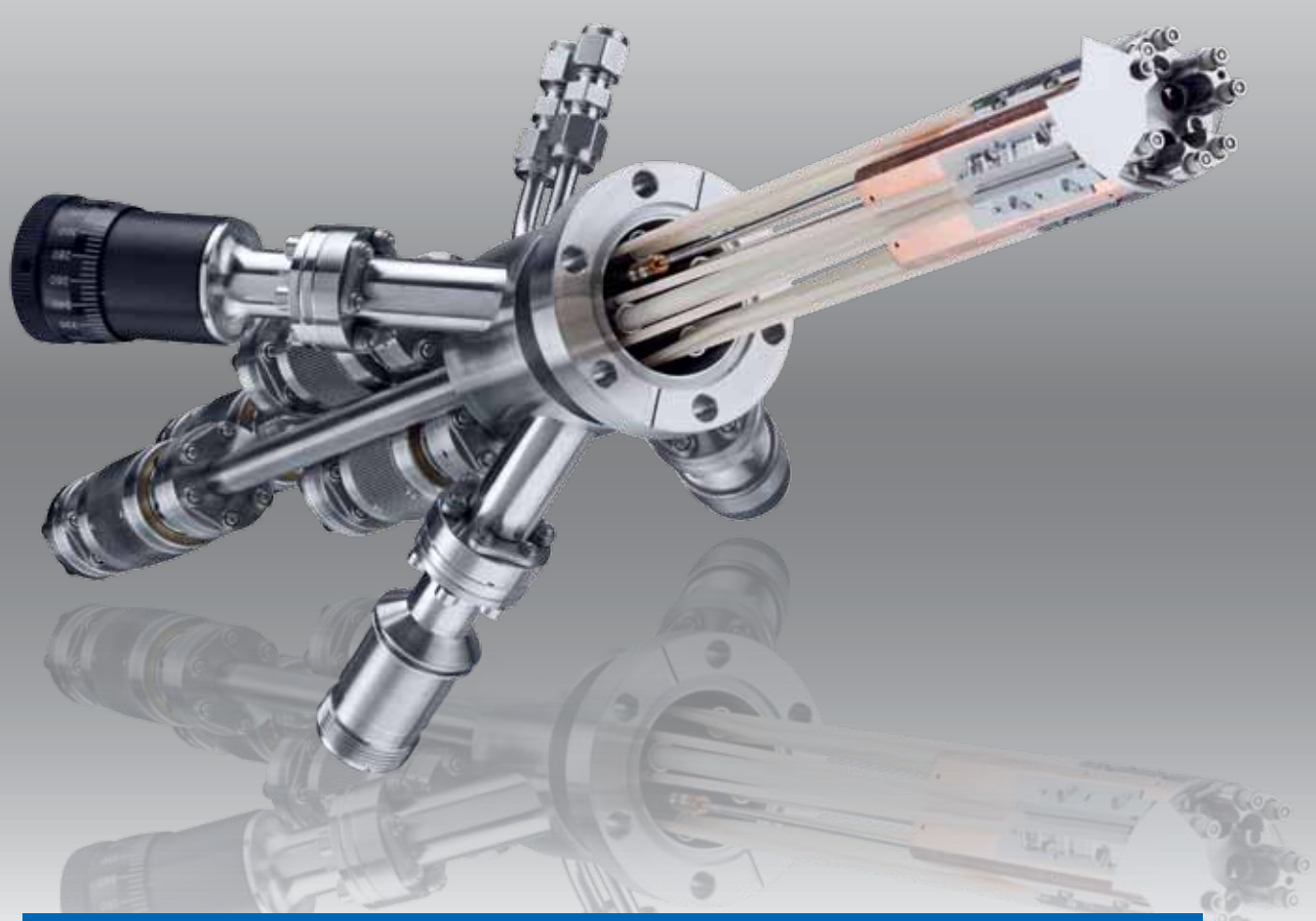
Components for Surface Analysis

EBE-4

Multi-pocket Electron Beam Evaporator

- Four Individual Pockets
- Internal Water Cooling
- Extremely High Power Densities
- Unique, High Reliability Design
- Temperatures Exceeding 3000 K
- Co-evaporation of up to 4 Species from Rods or Crucibles



SPECS®

Multi-pocket Electron Beam Evaporator

The SPECS EBE-4 is a combined multipocket mini e-beam evaporator which is capable of evaporating small quantities of almost any material. The material (either from crucible or rod form) is heated by eletron bombardment from a surrounding filament thereby allowing temperatures in excess of 3000K to be reached.

Up to 4 pockets can be fitted with a fixed-length holder or a linear drive which allows a rod feed of up to 25mm or can be upgraded by the user later on. All pockets may be used individually or in any combination for true co-evaporation. The instrument is therefore highly flexible and is well suited to a wide range of surface science applications.

Main Features:

- Mounting flange: 2.75" (NW 35 CF)
- Four individually equipped pockets
- Internal leak-safe water cooling
- In-vacuum length: 210 mm
- In-vacuum diameter: 34 mm
- Bakeout temperature: 200° C
- Max. rod diameter: 4 mm
- Up to 25 mm rod feed
- Crucible size: 0.07 cc
- Operating pressure: < 10^{-10} - 10^{-5} mbar
- Power supply with controller for simultaneous operation of up to all four pockets: 300 W

Configuration Options:

Feature/Pocket	1	2	3	4
Linear Motion Holder	✓	✓	✓	✓
Fixed Holder	✓	✓	✓	✓
Flux Electrode	✓	✓	✓	✓
Individual HV Connection	✓	✓	✓	✓
Crucible or Rod	✓	✓	✓	✓
Single Multiposition Shutter Serves all Pockets	✓	✓	✓	✓

Options:

- Linear motion holder (LMH) for rods and crucibles
- Fixed length holder (FLH) for crucibles
- Integrated multi-position manual shutter
- 0.07 cc crucibles from PGR, VC, Mo, Ta and W with or without lids
- Crucible inserts from BN and Al_2O_3 available
- Individual flux measurement electrode for each pocket
- Thermocouples on individual pockets on customer request available (compatibel only with fixed length holders and crucibles)
- PID controller for usage with thermocouple or flux measurement electrode

Design Features:

- Up to four individual movable rods or crucibles.
- The current linkage to each pocket is separately wired in vacuum for maximum reliability.
- Fixed thermocouples. Instrument may be used as a true e-beam heated effusion cell.
- Individual evaporation zones completely enclosed by a water-cooled copper shroud to suppress crosstalk between pockets.
- Replacement of single filaments from the filament assembly by using standard tungsten wire.
- Fine control of the electron emission current for improved operation at very low rates.
- Power supply allows controlled evaporation from up to four rods or crucibles simultaneously.

Applications:

Pt:	Thin films, surface science. From rod/crucible
Cr:	Metalizing, contacting. From rod - sublimes
Al_2O_3:	Optical films, oxide films. From crucible
C:	Doping, SEM sample preparation. From rod
Au, Ag:	Metalising, contacting. From crucible
Cu:	Surface science. From crucible
Nb:	From rod

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SPECS Surface Nano Analysis GmbH
Voltastrasse 5
13355 Berlin
Germany

Tel.: +49 30 46 78 24-0
Fax: +49 30 46 42 08-3
Email: support@specs.com
Web: www.specs.com

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Your Local Representative: