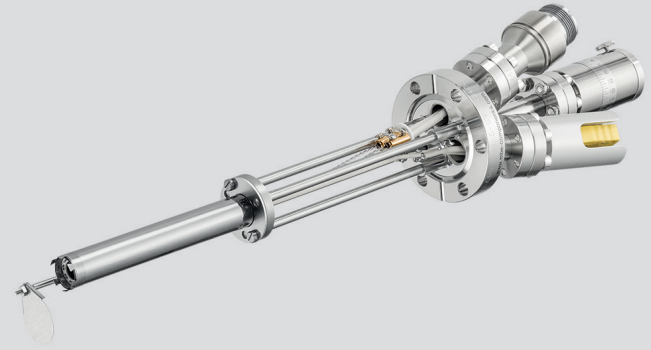
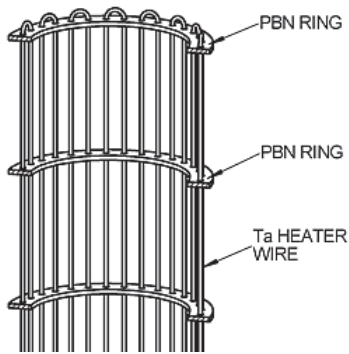


LOW TEMPERATURE EFFUSION CELL NTEZ

- Evaporation of metals, compounds and organic materials between 80°C and 800°C
- Crucible capacities from 2 to 60 cm³
- Reliable tantalum wire heating system
- Excellent temperature stability and controllability
- Optional on-flange integrated cooling shroud and shutter



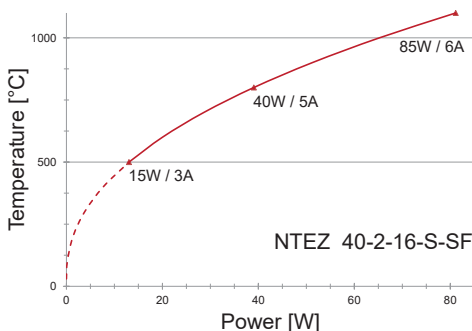
NTEZ 40-2-16-S on DN40CF (O.D. 2.75") flange



Schematic of the wire heating assembly



View onto standard filament



Power vs temperature diagram of NTEZ 40-2-16-S

The Low Temperature Effusion Cell NTEZ is designed for evaporation of materials with high vapor pressure, e.g. alkali metals or organic materials, that require an extremely good temperature regulation and reproducibility. NTEZ cells are typically used in the operating temperature range 80-800°C.

To achieve best temperature stability and controllability the complete heater, thermocouple and shielding construction of the NTEZ are optimized for low temperature operation.

The crucible is heated by a tantalum wire filament supported by PBN rings, as shown in the schematic and the photo on the left. This wire heater concept provides for excellent temperature uniformity within the crucible and effective heating even at the crucible lip. Different shapes of crucibles can be used.

Various heater filaments are available, meeting the differing requirements of the evaporation materials and applications. The photo on the left shows a view onto a mounted standard filament.

Standard crucible materials are PBN for metals and compounds, and quartz for organic materials. Other crucible materials are available upon request.

Typical values for power consumption are illustrated in the diagram on the bottom left.

Applications

The low temperature effusion cell NTEZ is recommended for materials with high vapor pressure, e.g. organic materials, or metals like As, Sb, Ba, Bi, K, Li, Mg, Ca, CdSe, etc., which are all evaporated or sublimated at temperatures below 1000°C.

The NTEZ is used for sample preparation, thin film growth and MBE applications.

The very compact model NTEZ 40-10-22-KS is, for example, particularly suited to material deposition on small samples in surface analysis systems.

NTEZ cells can be used both for growth and doping applications.

Technical Data

Mounting flange	DN40CF (O.D. 2.75") or DN63CF (O.D. 4.5")
Dimensions in vacuum	L= 180-400 mm / D= 16-57 mm
Filament type	Ta wire filament: standard (SF), hot lip (HL), dual (DF) filament
Thermocouple	NiCr/NiAl (type K), W5%Re/W26%Re (type C) on request
Bakeout temperature	max. 250°C
Outgassing temperature	max. 1100°C (short-time 1300 °C)*
Operating temperature	typically 80-800°C
	with PBN / Al ₂ O ₃ crucible max. 1100 °C (short-time 1300 °C)*
	with quartz crucible max. 800°C **
Cooling	integrated water cooling (K) or separate cooling shroud
Crucibles	2-60 cm ³ ; PBN, quartz, Al ₂ O ₃ (other materials on request)
Option	integrated rotary shutter (S) with Ta shutter plate

* limited by TC type K

** limited by crucible material

