ProE-Vap® 200 Delivery System

Effective delivery of solid materials

The ProE-Vap® 200 delivery system is designed for solid precursors used in Atomic Layer Deposition (ALD) and Chemical Vapor Deposition (CVD) processes. It provides a stable mass flux for a wide variety of solid materials used for current and future technology nodes. Solid precursors are difficult to deliver consistently into deposition chambers due to their low vapor pressure and limited thermal stability. The ProE-Vap system overcomes these problems and offers a solution that is unmatched in the industry.

The ProE-Vap delivery system allows for higher transport of solid precursors at lower temperatures more consistently than other vaporizers, thus reducing cost of ownership for ALD and CVD.

It minimizes chemical concentration drifts, allowing for higher wafer throughput with less tool downtime. The ProE-Vap has demonstrated high reliability and robust performance in high-volume manufacturing environments since 2008. It supports delivery of a variety of inorganic and transition metal precursors required in the fabrication of highly complex microelectronic device fabrication.

Available in multiple configurations for installation on different OEM tool sets.

APPLICATIONS

- Atomic layer deposition
  - Chemical vapor deposition
- High-κ capacitors and gate dielectrics
- Metal barriers and electrodes
- Fluorine-free tungsten (FFW)

FEATURES & BENEFITS

- Over seven times higher fill capacity than the ProE-Vap 100
  - Higher flux applications including batch furnaces
  - Less frequent source changes
- Innovative designed ampoule for solid precursor delivery
- Delivers higher mass flux at lower temperature than conventional vaporizers
- Supports pneumatic and manual valve options
- Outstanding overall performance with consistent flux over the vaporizer lifetime
- Proven for multiple solid precursors used in semiconductor applications and can be used for other emerging technologies, such as LED
- Enables efficient usage of precursor and minimizes decomposition from overheating
- Compatible with several OEM tools; supports developmental high volume wafer processing
- Reduces cost of ownership

SPECIFICATIONS

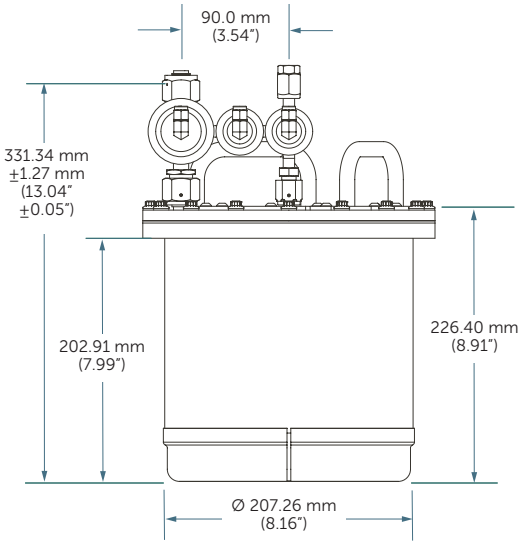
Performance Specifications

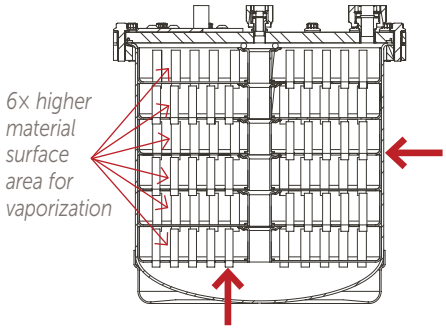
Maximum temperature	200°C (392°F)
Maximum pressure	100 psig at operating temperature

Facilities Specifications

Overall dimensions	331.34 mm H x Ø243.84 mm W (13.04" H x 9.60" W)	
Gas inlet	Location	Center axis
	Fitting type	¼" female VCR®
	Height	331.34 mm (13.04")
Gas outlet	Location	3.54" off center axis
	Fitting type	½" male VCR
	Height	328.31 mm (12.93")
	Material	316L SS
	Surface finish	≤10 Ra
Carrier gases include	UHP He (Helium) UHP Ar (Argon) UHP N_2 (Nitrogen)	
	Head Gas	5 psi He

DIMENSIONS





6x higher material surface area for vaporization

Tray allows for improved heat transfer to the material, resulting in better thermal uniformity

Carrier gas flow is directed across solid surface to increase pick-up rate of vaporizing material

FOR MORE INFORMATION

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