

# ProE-Vap<sup>®</sup> 100 Delivery System

*Effective delivery of solid materials*

The ProE-Vap<sup>®</sup> 100 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
- High- $\kappa$  capacitors and gate dielectrics
- Metal barriers and electrodes
- Fluorine-free tungsten (FFW)



## FEATURES & BENEFITS

- Innovative designed ampoule for solid precursor delivery
- Delivers higher mass flux at lower temperature
- 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

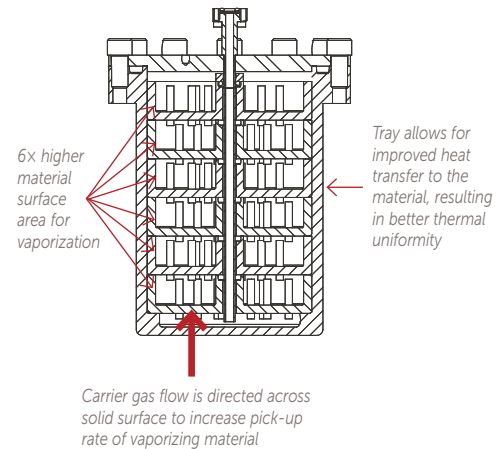
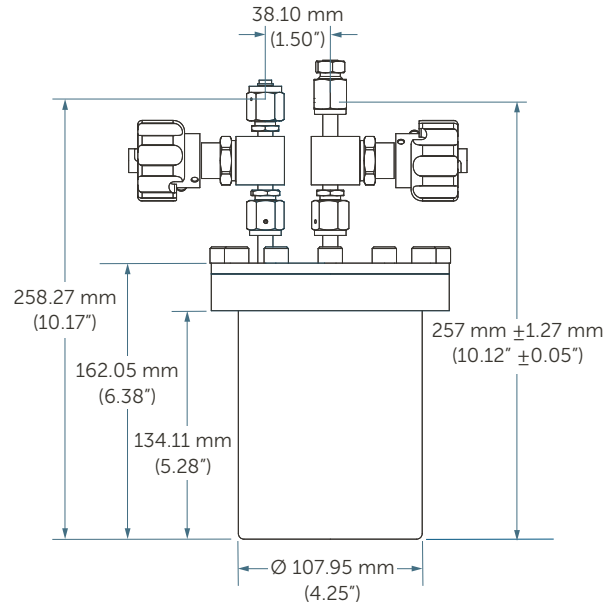
### Performance Specifications

<b>Maximum temperature</b>	200°C – 250°C (392°F – 482°F) depending on configuration
<b>Maximum pressure</b>	100 psig at operating temperature

### Facilities Specifications for Camp-003012 Configuration

<b>Overall dimensions</b>	258.27 mm H × Ø139.7 mm W (10.17" H × 5.5" W)	
<b>Gas inlet:</b>	Location	Center axis
	Fitting type	¼" female VCR®
	Height	257 mm (10.12")
<b>Gas outlet</b>	Location	1.5" off center axis
	Fitting type	¼" male VCR
	Height	258.27 mm (10.17")
	Material	316L SS
<b>Recommended carrier gases</b>	UHP He (Helium)	UHP Ar (Argon)
	UHP N <sub>2</sub> (Nitrogen)	
	Head Gas	5 psi He

## DIMENSIONS



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