

Direct Liquid Injection Vaporizer

VaporJet™

<https://www.cerestechnologies.com/en/our-products>

VaporJet™ is a proprietary vaporizer that atomizes the injected liquid/gas mixture and instantly evaporates the micro-droplets to produce a precise vapor concentration and mass flow rate of vapor to CVD processes. Direct Liquid Injection (DLI) of controlled amounts of a liquid and gas into the VaporJet™ produce the target ratio and flow rate of the vapor. The resulting vapor mixture is delivered directly to the reactor chamber. VaporJet™ is available in two sizes, with volume for phase change and thermal energy, and high vapor flow rate capacity to support a wide ranges of CVD processes. VaporJet™ features a proprietary atomizer at the inlet to produce micro droplets for instant phase change from liquid to vapor, using hot gas rather than hot surface to achieve vaporization.



VaporJet™5"

VaporJet™8"

Why choose VaporJet™?

- Vapor on demand with gentle vaporization
- Supports high temperature, pressure, and flow rate
- Simple, reliable, flexible, and serviceable.
- Supports most semiconductor liquid precursors

Applications

- CVD process tools with POU DLI vapor delivery on board
- High temperature and high flow rate vaporization, such as TEOS
- Supports single points of use, due to premixed liquid and carrier gas.

Features

- 3" diameter proprietary heat exchanger and micro droplet atomizer
- 5" and 8" models, with configurable port sizes and power input
- Vapor flow control by upstream LFC and MFC mixing and injection
- Fine droplet atomizer increases liquid surface area for rapid evaporation
- Hot gas provides the energy to evaporate the fine droplets
- Wet bulb depression of the droplet ensures evaporation without decomposition
- Evaporative lifetime of a droplet is roughly 12 microseconds
- No liquid carryover into the process.