

Candi™ Solvent

The Candi™ Solvent system is designed to provide end users with a **continuous supply of a very low vapor pressure liquid precursor** (<1 Torr) delivered at a **steady pressure**.

Applications

Typical applications: liquid precursor supply to direct liquid injection (DLI), on-board bubbler or vaporizer and on-board buffer canister. Varied examples of possible precursors:

- Gate oxide processes: PET, TBTDET, TDEAH, TEMA, HTB, etc.
- DRAM: TEMA, HyALDTM, ZyALDTM, etc.
- Barrier metals: TDMAT, TDEAT, TBTDET, etc.
- Ultra-low T SiN: AHEADTM, etc.

Operation

As with the standard Candi, pressurized helium is used to transfer a precursor from the shuttle drum to an internal process tank and from this process tank to the tool. The process tank allows for the **continuous dispensing of the chemical** during a shuttle drum change-out.

End users also **benefit** from the standard Candi features, such as the back-up distribution mode, the process tank level control and the empty shuttle drum detection technique for maximum chemical use, all of which ensure a reliable and cost saving distribution of the precursor to the process.

 **In addition to the standard Candi features**, the Candi Solvent™ includes a **solvent cleaning** method developed and validated specifically for viscous and highly reactive **very low vapor pressure precursors** as they require extremely long purges when using traditional gas compression and expansion cycles.

This solvent cleaning eliminates any risk of clogging, ensures a safe shuttle tank change-out, and prevents the contamination of a supplied precursor often very sensitive to air and moisture. The solvent can be supplied to the end user and recovered in a waste canister if necessary.

Qualification

The Candi™ Solvent is **qualified** by most **tool manufacturers** for 300-mm processes:

- Referenced on multiple OEMs platforms
- Pre-defined interfacing with multiple OEMs



Product description

Features

- Precise delivery pressure control (± 50 mbar) for the most demanding applications
- System adapts to any SEMI-compliant shuttle drum up to 20 L
- 8 L process tank
- 1.3 L solvent tank and 1.3 L waste tank integrated in the Candi™ system
- Patented back-up mode for improved reliability
- Smart Empty Control for maximal chemical usage
- Chemical purge sequence validated with live chemicals
- Solvent cleaning sequence validated with live chemicals
- PLC based technology with 12" color touch screen
- Ethernet communication port for SCADA monitoring
- Customized signal interface with tool manufacturers

Options

- On-board vacuum pump
- Pigtailed heating
- 20 L solvent tank in additional cabinet
- 20 L waste tank in additional cabinet
- Solvent distribution and recovery to the point of use
- Up to 2 on-board outlet processes
- 4 sticks Valves Manifold Box (VMB) for distribution to multiple points of use
- Degassing unit in additional cabinet
- Dual power supply
- Different communication protocols available
- Start-up and operator training

Reliability

- MTBF*: > 8,760 hours
 - Uptime: 99.98%
- *Mean Time Between Failures*

Safety features

- Liquid trap to contain liquid accidentally sent to the vent line
- Baratron® for high accuracy vacuum detector
- Fully automatic distribution and canister change-out sequences
- Easy to reach "Emergency Machine Off" button
- Standard exhaust flow alarm
- Fire and leak detection
- Individual pressure switch and relief valve on pressurized lines
- Timers for pressurization/depressurization of each tank, for process tank refill
- Precise alarm messages
- Reduced operator intervention
- Critical functions protected by multi-level password

Technical specifications

Utility requirements

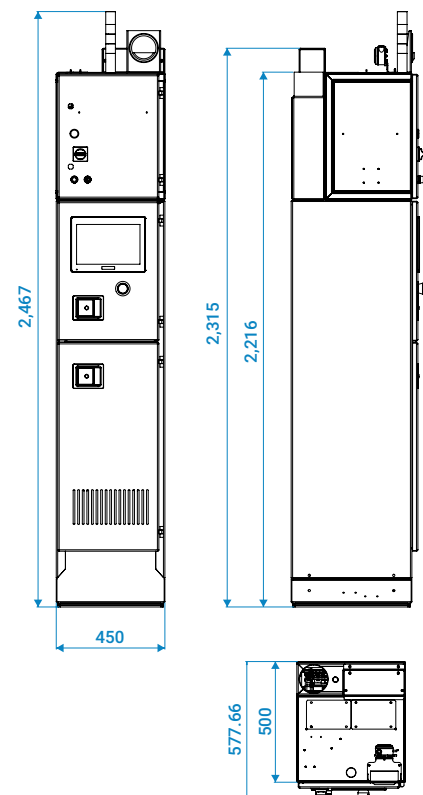
He	7 barg, UHP, 1 Nm ³ /h
N ₂	7 barg, UHP, 10 Nm ³ /h
Pneumatics	7 barg, 5 Nm ³ /h
Exhaust	200 Nm ³ /hr
Vacuum	< 2 Torr
Power	UPS, 110/240 VAC, 50/60 Hz, 1 kVA

Process data

Chemical maximum flow rate: 1 slpm when working at Candi™ maximum pressure of 5 barg.

Certifications

- CE Mark
- SEMI S2 certified
- ATEX zone 2 compliance for process compartment



Contacts

Air Liquide Electronics Systems

8, rue Méridiens – Sud Galaxie
38130 Echirolles – France
Phone: +33 (0)4 38 49 88 00
E-mail: frales-contact@airliquide.com
www.ales.airliquide.com

www.airliquide.com

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