

PCT Megasonic Cleaning Systems

PCT's unique transducer array design provides higher and more uniform energy than any other system

Contact PCT to learn which technologies and product configurations best meet your application needs.

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FAST • THOROUGH • MEGASONIC HYPERCLEAN

In every industry there's a leader. PCT's Megasonic cleaning system is the most advanced solution for achieving HyperClean™ substrates available today. In semiconductor, MEMs, optics, LED, storage media and solar, PCT set the standard for constant-temperature baths. PCT designed the Megasonic system with a combination of moving-beam and phase-shifting technology to make it the most efficient cleaning system available — more than 90% acoustical-energy efficient. HyperClean incorporates PCT's unique energy-transfer technology for superior submicron cleaning, reduced operating costs and high reliability.

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Unique Energy-Transfer Technology Improves Performance

PCT designed the HyperClean™ Megasonic Cleaning System using multiple-element transducer arrays to create a highly uniform moving beam that constantly scans the wafers. A fixed-position array of transducers is located on the outside of the vessel, below each cassette. Energy is multiplexed from transducer to transducer. Phase shifting ensures that the energy beam is highly uniform and that dead spots are eliminated.

High unit-area power densities (7 watts/cm²) are easily achieved in the liquid at relatively low power. This unique approach eliminates the need for transducer cooling present in competing systems while extending transducer life.

FEATURES

- Multiplexed or full-on systems
- Improved energy uniformity - no dead spots
- More than 90% acoustical-energy efficiency
- Uniform particle removal
- High-energy density with low-power output for extended transducer life
- The only high-purity heated quartz vessel available in the market
- Easy retrofit for existing wet stations
- Available for wafers up to 450 mm and larger
- Optional filtered / recirculating version
- Acid-, solvent-, and stripper-compatible tank materials and transducers available
- Manual and automatic standalone systems available
- Frequency Range 450 kHz – 2.2 MHz

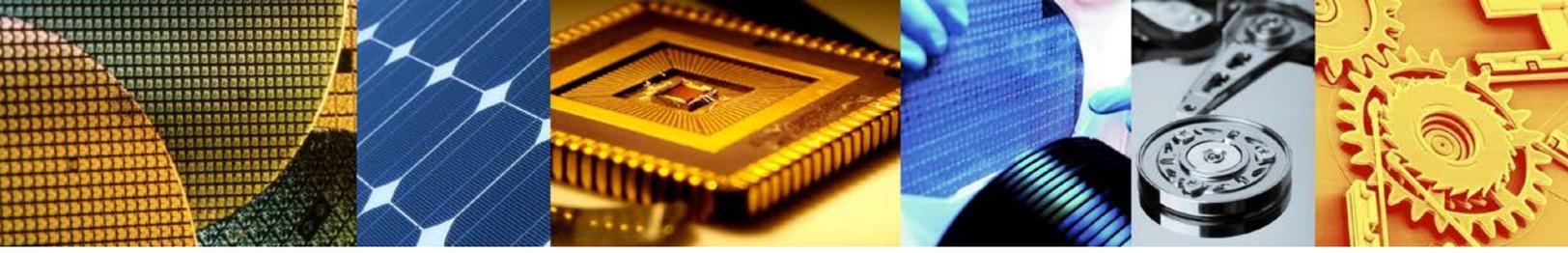
Multiplexing or Full-On Operation

PCT's unique technology allows complete control of the megasonic energy used in a process. Multiplexing provides auto-switching of individual transducers for higher energy density transmission to the substrate, resulting in more efficient cleaning, etching or mass transfer. Full-on functionality allows for maximum power usage.

Easy Retrofit To Existing Wet Stations

Megasonic systems from PCT can be easily installed in existing wet stations. Standard sizes or custom systems can also be designed and built into your process tool, including generator only replacement with our universal generator capability. The three different types of interfaces (RS232, digital I/O and SECS/GEM) allow for ease of integration, installation and adaptation to current facility requirements.





Proprietary Solid-State Power Supply & Control System Offer High Reliability and Precision

PCT's electronic control system is compact and can be located up to 12 feet (25 feet optional) from the bath. It features a wide frequency range, auto-tuning power supply and an advanced MPU controller. An operator control panel can be placed in a convenient location for status and control monitoring. Self-tuning smart electronics make matching transducers quick and easy — with the push of a single button. A single control unit can run two eight-inch arrays simultaneously. The system is equipped with RS232 and IEEE-422 ports to allow communication with host control. PCT's unique transducer array design provides higher energy efficiency than any other system.

PCT's Megasonic Cleaning System Options

- Transducer plates
- Custom transducer assemblies
- Quartz, stainless steel, or plastic tank materials
- QDR, recirculating or static
- Clean, rinse or resist strip applications

PCT Certifications

- ETL File No. 567511 per UL 3101-1 and CSA 1010.1
- CE EN 61010-1 European Safety Approval
- CE EN 55011 European EMI Approval
- CE EN 50082-2 European ESD, RF, and Transient Susceptibility Approval



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Specifications

Operating Frequency	600 kHz to 1 MHz at resonant levels
Operating Temperature	20° - 70° C
Power Requirements	200 – 230Vac 50/60 Hz Single phase, 10 amps for ambient temperature operation Optional single phase, 30 amps for elevated temperature operation

Materials of Construction

Tank	Quartz, Stainless Steel, Plastic or FM4910 compliant material
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