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RASIRC Introduces Next Generation Steamer UHP 125
Same performance with a package size reduction of 75%

San Diego, Calif. – SEMICON West 2007 – RASIRC™, the steam purification company, introduces its next generation of Steam Generation and Purification Equipment, the Steamer UHP 125. With a reduced footprint, it can directly replace torches, bubblers, and direct water injection systems in 6”, 8”, and 12” furnaces as well as in other applications where flow rates of up to 12.5 slm of pure water vapor are needed. This unique product has the ability to control flow into vacuum or atmospheric pressure systems. It generates Ultra High Purity steam from de-ionized water without hydrogen or oxygen. Its high flow capacity, small size, and wide range of operating pressures benefit any process that is sensitive to impurities in water vapor or require an improvement in performance, cost, or safety over their present systems.

This next generation design has a footprint of 12” length by 6” width for a steamer that is 65% smaller than RASIRC’s full-size steamer. At only 12” high the steamer is now small enough to fit on 6” diffusion furnace shelves and the purifier is integrated within the cabinet rather than being externally mounted. Volume is now 0.5 cu.ft., a reduction of 75%.

RASIRC’s Steamer UHP 125 is unique in that it provides ultra high purity steam and process control, yet is a safe, non-combustible system because it does not require hydrogen and oxygen to generate water vapor. Water contaminants, including dissolved gases, metallic impurities, and particles are removed, resulting in purity equal to or better than pyrolytic steam created by burning oxygen and hydrogen.

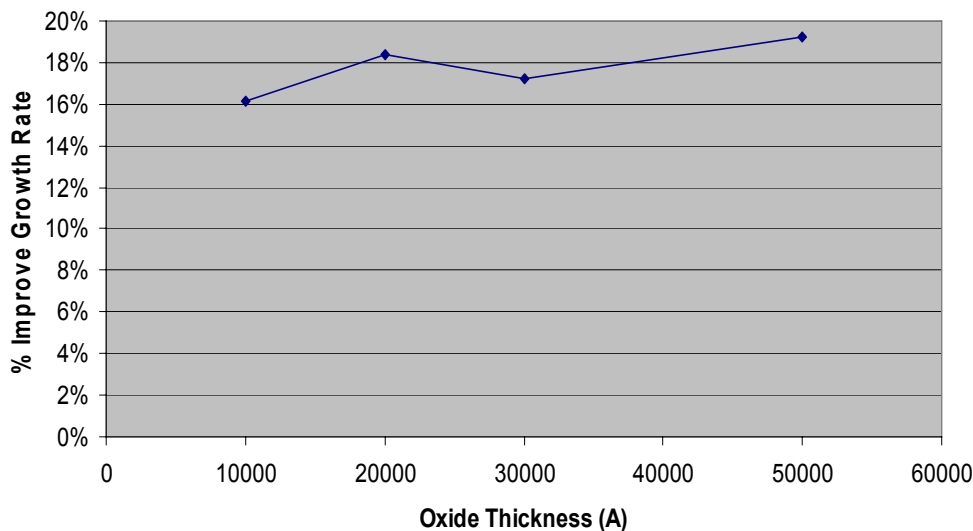
The Steamer uses de-ionized water, which is inexpensive and widely available. A highly flexible system, it automatically controls delivery pressure, temperature, and the directly related mass

flow rate so it can be adapted for many applications. It can be operated locally or remotely with an optional 0-5V, DeviceNet™, or Modbus™.

A non-porous hydrophilic membrane selectively allows water vapor and steam to pass through it. Membrane selectivity is significant, as water molecules can pass through it 1,000,000 times faster than nitrogen molecules. In the vapor or steam phase, all other molecules are greatly restricted, so contaminants in water such as dissolved gases, ions, total organic carbons (TOCs), particles, viruses, bacteria, pyrogens, and metals can be removed from the purified steam.

Data from tests done on water vapor purified using the Steamer UHP 125 system show reduction of 67 different metals to below detectable limits. Some contaminants have been verified to less than 0.0005 parts per billion. Nitrogen and CO₂ contaminants can also be eliminated. Because the Steamer works with water at low pressures, alternative high purity piping material such as quartz and fluoropolymers can be used in the delivery system.

RASIRC's Steamer has applications in the semiconductor, flat panel, solar, nanotechnology, power, and fuel cell industries. Water vapor is used with rapid thermal processing (RTP), atomic layer deposition (ALD), plasma stripping, immersion lithography, diffusion, wafer cleaning, and to control humidity in cleanrooms.



Growth rate of wet oxide comparing RASIRC Steamer to water bubbler.

The RASIRC Steamer has shown faster growth rates and better uniformity over torches, bubblers and direct liquid injection (DLI) systems by exclusively being able to deliver very high flow rates of 100% water vapor. In certain applications, such as thick oxide growth, overall process times have been reduced by almost 20%, freeing up an extra day of process time per week.

“Many customers want the purity of pyrolytic steam, but not the cost and complexity associated with burning hydrogen and oxygen,” said RASIRC founder and president Jeffrey Spiegelman.

“Our Steamer UHP 125 provides the safety and simplicity that users are accustomed to from using an MFC while delivering the purity and control of pyrolytic systems, and a maximum flow rate and operating range that is unequaled. It can be adapted for almost any water vapor application. As the need for ultra high purity steam increases, a stand-alone or sub-system solution will be needed to support the process tools, and the RASIRC’s steamers will be ready.”

About RASIRC

RASIRC develops products that purify and deliver ultra pure liquids and gases, with a primary focus on water vapor. While steam is used extensively in the semiconductor industry, RASIRC technology is the first to purify live steam to generate ultra high purity (UHP) steam. Starting with de-ionized water and using specialized membranes to reduce total metals to less than 10 parts per trillion, this technology reduces cost, improves yield, and dramatically improves safety.

The UHP steam generated by RASIRC products is of critical importance for many applications in the semiconductor, pharmaceutical, medical, biological, fuel cell, and power industries. For more information, contact Jeffrey Spiegelman at +1 858-259-1220, e-mail info@rasirc.com, or visit the website at www.rasirc.com.

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