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Photo available at

http://www.rasirc.com/news/downloads/photos/RASIRC_Steamer_Turbo.jpg

Datasheet available at

http://www.rasirc.com/resources/datasheets/datasheet_RASIRC_SteamerTurbo.pdf

RASIRC Introduces New Steamer Turbo with Integrated Hot Gas Blending
High velocity wet gas enables better uniformity for wafer cleaning and thermal oxidation

San Diego, Calif. – October 13, 2011 – RASIRC®, the steam purification company, announces the new Steamer Turbo for specialty applications in the semiconductor and photovoltaic industries. This is the first RASIRC steamer with integrated gas blending control, solving the common problem of condensation when blending steam with compressed gases. It delivers high flow rates of steam combined with nitrogen or oxygen, which can improve the uniformity of thermal oxide films and momentum for particle removal after condensation. [RASIRC products](#) deliver ultrapure water vapor for semiconductor, photovoltaics, nanotechnology, and other manufacturing applications.

“The Steamer Turbo demonstrates the continued advancement in RASIRC design capabilities by moving from a steam purification company to a provider of complete subsystem solutions. In this product, we integrate high flows of high temperature nitrogen with 50 slm of steam delivered repeatable to +/- 1%,” said Jeffrey Spiegelman, RASIRC founder and president. “Initial results indicate the ability to significantly reduce process times for thin thermal oxidations. Other emerging applications include wafer cleaning in semiconductor processing and inline oxidation and emitter drive-in for the solar industry.”

A variety of semiconductor and photovoltaic manufacturing processes require that water vapor be mixed with nitrogen or oxygen. To avoid condensation, the gases must be heated above the steam dewpoint, minimally 80°C or hotter, for those applications that need to impart more energy to the substrate upon contact. Without tight gas temperature control there is a serious risk

of premature condensation leading to contamination and film non-uniformities. The Steamer Turbo solves this problem by incorporating an integrated compressed gas control system that can deliver up to 100 slm of gas at 120°C. The control system includes a mass flow controller, regulator, filter, and in-line gas heater. The close coupling of the gas heater to the purified steam outlet ensures cleanliness and controls the temperature of the blended gas, thus virtually eliminating condensation.

Combining RASIRC patented steam purification technology with UHP steam generation and hot compressed gas enables a unique method to deliver both energy and ultrapure water through condensation at the wafer surface. The integration of hot compressed gas provides a sweep gas to move the condensed steam away from the wafer. This can enable new forms of wafer cleaning not possible before.

About RASIRC

RASIRC products purify and deliver ultrapure liquids and gases. RASIRC technology is the first to generate ultra high purity (UHP) steam from de-ionized water. It reduces cost, increases yield, and improves safety. RASIRC dryers, [humidifiers](#), and [steam generators](#) are of critical importance for many applications in the semiconductor, pharmaceutical, medical, biological, fuel cell, and power industries. Custom systems are available upon request. Call 858-259-1220, e-mail info@rasirc.com, or visit www.rasirc.com.

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