

**Microwave systems for advanced,  
low temp thermal processing of  
next generation semiconductors!**

**MICRO CURE**®

**Vacuum 3100**  
By Lambda Technologies

## Features

Advanced Variable Frequency Microwave (VFM) source provides uniform, Si wafer safe heating

Vacuum chamber with environmental controls

Agile control architecture for precise open or closed loop control of energy transfer

Flexible interface design for embedding into process tools or manufacturing cells

## Applications & Benefits

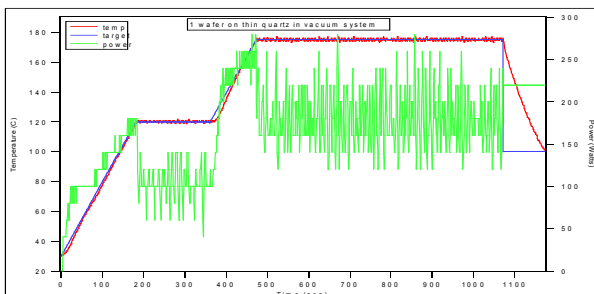
- Rapid and low temperature cure of passivation and dielectric coatings
- Faster thermal stabilization for Cu and H2 anneal processes
- Low-k dielectric annealing
- SiLK annealing
- Photoresist bake and reflow
- Radical Oxidation and nitridation
- Ultra Low Temperature LPCVD (Nitride)
- Ultra Thin Gate Dielectric
- Less time at temperature as well as selective heating work to reduce stress and provide for a wider range of material choices
- Reduced heating time also saves on an assemblies' valuable thermal budget allotment
- Less Work In Process (WIP) reduces loss incurred in cases when unscheduled production line stoppages occur
- VFM requires less energy and floor space



**MC3100 configured with 2KW HPA for higher power applications**

## About Lambda

Lambda Technologies has pioneered the application of Variable Frequency Microwave heating for materials processing. We develop and sell microwave process tools and provide microwave process development assistance.



**Precise Temp Control**

# Specifications

## Microwave Source Options\*

### C-Band

700 Watt, 5.8–7.0 GHz.  
2 K Watt, 7.9–8.7 GHz

*\*Other bands and power sources are available by request.*

### Controls

Embedded PC for Self Hosting

- GUI Control application with recipe generation and data logging.
- Application Programming Interface libraries and examples for remote control.
- TCP/IP & RS232 host interface.
- SECS / GEM (option).

### Standard Cavities

#### **General Material Processing:**

Dimensions 16"x14"x13" HWD  
Construction Aluminum  
Ports Std. 6" Cir., 3 sides.  
Door Manual front door, full opening.

#### **Vacuum and Controlled Atmosphere:**

Dimensions 16"x14"x13" HWD  
Construction Stainless, Electropolished  
Ports 2xCF40, 2xCF25, 3x 0.25" VCR  
Door Viton O-ring, manual operation.

### Sensors

#### **Standard:**

- Non-Contact IR Pyrometer  
(20 – 800 °C).

#### **Optional:**

- Fiber Optic Contact Probes  
(1 to 4 Channels, 20 – 275 °C)
- Thermocouple Controller  
(20 – 1000 °C, specify junction type).

### Electrical

700 Watt Systems:  
Three phase, 208VAC, 20 Amp  
2 K Watt Systems:  
Three phase, 208VAC, 50 Amp

Input frequency – 50/60 Hz

### Mechanical

Dimensions 74"Hx46"Lx40"D  
Weight 1070 lbf.  
Dual 19" Rank Mount Enclosure

### Environmental Specifications

#### **Operating temperature:**

90° F max. @ 85% humidity

#### **HPA Ventilation Requirements:**

2K Watt –

Factory ventilation system must ensure a minimum flow of 225 SCFM with a maximum pressure drop of 0.10 inches H2O. Minimum recommended duct diameter is 8", with large radius bends.

700W –

If connected to a factory ventilation system, the design must ensure a minimum flow of 120 SCFM with a maximum pressure drop of 0.10 inches H2O.

The vent system must convert from a 5" duct diameter to an 8" diameter as soon as possible. There should be no reductions in diameter along the length of vent pipe with no sharp bend radii and that bends of 45° or greater be limited in number.

#### **Acoustic Noise:**

68.5db maximum @ 1 meter from the front of the MicroCure.

#### **External Leakage of ionizing radiation:**

The MicroCure 3100 produces no ionizing radiation.

Process Gas Input:

Use only one of the following gasses:

Clean Dry Air (CDA)

Nitrogen

Argon

- 50 psi min. to 100 psi max.

#### **Vibration:**

Equipment does not generate nor requires isolation from excessive vibration.



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