

Plasma Etcher



The PE-2000 Plasma Etcher

The PE 2000 RF Plasma Etcher is specifically designed for reactive gas plasma etching and surface treatments. The unit is capable of 150 watts RF forward power at 13.56 MHz and up to four gas processing. The system is ideal for R&D applications where single sample processing is needed and total control of each process parameter is necessary. Processes such as photoresist strip, BPSG removal, oxide and nitride layer etch, surface treatment of plastics and plasma cleaning are typical applications.

Samples up to 6" diameter as well as irregular shaped substrates can be accommodated in the 200mm diameter vacuum chamber.

A fully manual control system coupled with digital readouts and integral matching network with switching type power generator offer a wide range of experimental etch parameters.

Special Features

- Manual controls, with digital readouts, make it possible to process in a wide range of vacuum pressure levels using an unlimited combination of reactive species including oxygen, fluorine and chlorine.
- A stainless steel gas system with three-position feed provides maximum etch uniformity and the best possible utilization of the reactive species. Includes a separate vent to atmosphere line.
- System is supplied with two manual gas channels, but up to four mass flow channels can be added.
- High etch rates at moderate power levels of 100 watts forward power can be achieved - greater than 200 Å/minute for oxide and 500Å/minute for nitride.
- Gas lines, fittings and stage assembly are all stainless steel construction and designed for corrosive applications. A Fomblin charged corrosive series rotary vane pump is included.
- Safety interlocks prevent mis-operation thereby protecting the user and the system.

Specifications

Vacuum Pump:	43l/min two stage direct drive corrosive series pump. System base pressure 20 millitorr; Typical operating pressure 50-200 millitorr	Gas Control:	Dual independent needle valves with safety interlocked solenoid
Vacuum Readout:	Capacitance manometer with digital front panel display in millitorr	Sample Table:	6" diameter stainless steel
Vacuum Chamber:	Quartz, 8" OD x 4" high	RF Readouts:	Digital front panel LCD meters for Forward and reflected power
RF Power:	User variable 0-150 watt; 13.56 MHz frequency; manual tune; air cooled; solid state design	DC Bias:	Digital/front panel LCD meter
Process Timer:	Auto-termination of etch up to 99:99:59	System Weight:	60 pounds (without rotary pump)
Input Power:	115/230 VA, 50/60 Hz, 10/5 amps	Warranty:	1 year on parts and labor
Dimensions:	20.25" W x 16" D x 15" H	Options:	Stainless steel chamber with viewports; Mass Flow Controller System up to four channels; Cold Cathode Gauge.
System Vent:	Independent interlocked solenoid with connection for dry nitrogen		
Gas Delivery:	Two channels independently controlled with precision needle valves and positive off solenoid valves. Normally closed solenoids eliminate any gas flow in the event of power loss		



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