

PlasmaSTAR® 200

A Unique Modular Approach to Barrel Plasma Processing

The PlasmaSTAR® Series of Plasma Processing Systems from Axic, Inc. defines a new concept in barrel plasma processing. The systems are based on a modular design concept. Starting with a universal base unit, multiple electrode modules are available for easy insertion into the base unit. You will find the ease of use, variety of plasma processes, serviceability and attractive pricing unsurpassed by any other plasma system on the market.

- ▲ Interchangeable Electrode Modules
- ▲ Multiple Electrode Configurations:
Cage, Tray, RIE, Downstream
- ▲ Proven Process Recipes
- ▲ Field Proven Components
- ▲ End-Point Detection (optional)
- ▲ Auto RF Matching
- ▲ Downstream Pressure Control (optional)
- ▲ Computer Controlled
- ▲ Touch Screen Operation
- ▲ Multiple Pumping Options



PlasmaSTAR® 200 prototype illustration.

SYSTEM DESCRIPTION

In the research, process development and production of plasma processing, the need for a highly versatile and reliable tool is always in considerable demand. With the ever changing requirements in plasma research, the system selected must be capable of offering the widest range of process parameters, highest degree of repeatability for verifying the process and easily modified for new process requirements. The PlasmaSTAR® series of dry process systems will satisfy the demanding requirements necessary to perform these tasks. The PlasmaSTAR® is a plasma tool used in research, process development and volume production for photo-resist stripping and descuming, isotropic and anisotropic etching, organic ashing, hybrid circuit cleaning, printed circuit board desmearing, failure analysis, surface treatment and modification of plastics, polymer deposition, and a wide range of other plasma applications.

The PlasmaSTAR® product line offers a uniquely new modular approach to barrel plasma systems. The PlasmaSTAR® will accommodate the processing of 200 mm or smaller substrates. (For single wafer RIE processing 300 mm wafers are readily processed) The selection of proven, quality components, modular subassemblies, versatile chamber-electrode design, compact size, automation and field proven process recipes will make the PlasmaSTAR® the "system of choice" for plasma process engineers.

APPLICATIONS

With the PlasmaSTAR®'s wide selection of chamber and electrode configurations the system is capable of satisfying a wide range of plasma processing conditions. These processes range from simple surface cleaning to sophisticated submicron RIE etching. Axic, Inc., in conjunction with our large customer base has developed proven process recipes guaranteeing your system is up and processing from the day you install the system. Only the highest quality sub components are used in the manufacturing of the PlasmaSTAR® system providing the highest up-time, reliability, repeatability and serviceability. Typical processes include:

- | | |
|-----------------------------------|---------------------------|
| ▲ Plasma Descuming | ▲ Passivation Etching |
| ▲ Photo-Resist Stripping | ▲ Polyimide Etching |
| ▲ Surface Treatment | ▲ Adhesion Promotion |
| ▲ Anisotropic & Isotropic Etching | ▲ Biomedical Applications |
| ▲ Failure Analysis Applications | ▲ Polymerization |
| ▲ Material Modification | ▲ Hybrid Cleaning |
| ▲ Package Cleaning | ▲ Pre-Bond Cleaning |

= AXIC =

*Specialized Thin Film Equipment
X-Ray, Laser and Plasma*

SPECIFICATIONS

The great success of the PlasmaSTAR® is due to its highly versatile design features. These features include a small footprint for table top or laminar flow installation and modular chamber and electrode configurations for a wide variety of plasma processes. In addition the touch screen computer control provides easy operating and multi-level recipe control, system operation and component control. Vacuum pumping options are available.

Base System

The universal base unit for all PlasmaSTAR® configurations contain all necessary valves, vacuum plumbing, RF power, RF matching, process gas control and system logic to provide a completely automated plasma processing system. The base unit is designed to accommodate a variety of chamber and electrode modules which are easily inserted into the base unit. Within a few minutes the system can be converted from a general barrel plasma processing system to a RIE, a Parallel Plate processing system, or a shelf cleaning system for hybrids.

Chamber/Electrode

The PlasmaSTAR® modular chamber and electrode assemblies are a unique feature of the system. The chamber is hard anodized aluminum. Several different electrode designs are available which include water cooled (temperature controlled) parallel plate electrodes for RIE and Planar processing, alternating tray electrodes for surface cleaning or treatment, downstream electrodes for minimizing ion damage and cage electrodes for general barrel plasma processing.

Plasma Sources

The system is provided with a 600 watt 13.56 MHz power supply. An auto matching network is supplied.

Process Pumping

The system is supplied with an optional mechanical pump or mechanical pump with roots blower. Various sizes of

pumps are available depending on the necessary vacuum processing levels. The pumps are supplied with a corrosive series (inert pump fluid) for oxygen or corrosive chemistry applications. Two MFC controlled gas lines are standard with up to 2 additional available. Downstream pressure control is an option.

Computer

A touch screen controlled pentium computer is provided with unlimited recipe storage. Multi-step processes are easily accommodated. Process conditions are continuously displayed. The unit is easily programmed and process protected. Process lots can be bar code read (optional).

Options

A wide selection of processing options are available for the Plasma-STAR® system increasing the system's capabilities.

Let us tell you more about the PlasmaSTAR® series of plasma processing systems by calling, e-mailing or faxing us. Please ask for our detailed pricing and specification sheet. We cordially invite you to either visit our applications laboratory or request a more detailed technical presentation on the PlasmaSTAR® series of systems.

DIMENSIONS

System - Width 35" x Depth 32" x Height 21"

Chamber (interior) Width 14.75" x Depth 17" x Height 12"

WEIGHT

150 lbs

UTILITIES

System	220 V 50/60 Hz, 15 Amps
Pump	220 V (current depends on pump selection)
H ₂ O	For Electrode Cooling (Electrode Dependent)
Air	For Valve Operation
N ₂	For chamber Vent
Gas	Process Gases



493 Gianni Street, Santa Clara, CA 95054
Tel: 800 • 4 • PLASMA Fax: 408 • 980 • 0524
E-Mail: postmaster@axic.com • www.axic.com