

# PRODUCTS

## Axic Multimode® HF-8

### A Unique Modular Approach to Barrel Plasma Processing

The MULTIMODE® Series of Plasma Processing Systems from Axic, Inc. defines a new concept in barrel plasma processing. The systems are based on a modular design starting with a universal base unit with multiple chamber and electrode modules 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 Chamber And Electrode Modules
- Variety Of Chamber Materials: SST, Al, Anodized Al
- Multiple Electrode Configurations: Cage, Tray, RIE, Downstream
- Proven Process Recipes
- Field Proven Components
- End-Point Detection
- Auto RF Matching
- Downstream Pressure Control
- Computer Controlled
- Multiple Pumping Options



AXIC MULTIMODE® HF-8 SYSTEM

### System Description

In the research and process development 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 MULTIMODE® series of dry process systems will satisfy the demanding requirements necessary to perform these tasks. The MULTIMODE® is a plasma tool used in research, process development or low volume production for photo-resist stripping and descumming, isotropic 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 MULTIMODE® product line offers a uniquely new modular approach to barrel plasma systems. The systems are available in two RF frequencies, the LF Model [30KHz] and the HF Model [13.56 MHz]. The LF/HF-8 will accommodate the processing of eight [8] inch or smaller substrates. The selection of proven, quality components, modular subassemblies, versatile chamber-electrode design, compact size, automation and field proven process recipes will make the LF-8/HF-8 the "system of choice" for most plasma process engineers.

### Applications

With the MULTIMODE'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 subcomponents are used in the manufacturing of the MULTIMODE® system providing the highest up-time, reliability, repeatability and serviceability. Typical processes include:

- Plasma Descum
- Photo-Resist Stripping
- Surface Treatment
- Anisotropic & Isotropic Etching
- Failure Analysis Applications
- Material Modification
- Passivation Etching
- Polyimide Etching
- Adhesion Promotion
- Biomedical Applications
- Polymerization
- Hybrid Cleaning

## Specifications

The great success of the MULTIMODE® 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 a selection of RF operating frequencies, process controllers, process gas control, and vacuum pumping options are available.

## Base System

The universal base unit for all MULTIMODE® configurations contain all necessary valves, vacuum plumbing, RF power, RP 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 an RIE or Parallel Plate processing system.

## Chamber/Electrode

The MULTIMODE®'s modular chamber and electrode assemblies are the most unique design feature of the system. Chambers are available in aluminum, anodized aluminum and stainless steel. The chambers are easily interchanged from one material to another. The process chamber consists of a tube and two [2] end-plates sealed to the tube via o-ring seals. 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 systems are available in two standard processing frequencies 30 KHz and 13.56 MHz. Each frequency has unique processing characteristics that allow the user to select the most appropriate frequency for their specific requirements. Available RF power ranges are from 150 Watts to 1250 Watts. Auto or manual matching networks are supplied where necessary.

## Process Pumping

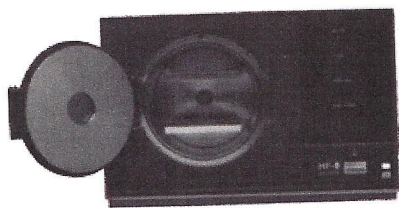
The systems are supplied with a mechanical pump or mechanical pump with roots blower with various sizes of these pumps available depending on the necessary vacuum processing levels. The pumps can be supplied in a corrosive series [inert fluid] for oxygen or corrosive chemistry applications. Downstream pressure control and mass flow control is also available for independent control of the process vacuum and process gas flow.

## Computer

An embedded computer with keyboard and display screen is provided for complete automation of the system. Unlimited recipe storage is provided with multilevel process steps. The system provides display of all operating parameters and can be easily programmed by the user.

## Options

A wide selection of processing options are available for the MULTIMODE® system further increasing the systems capabilities. Let us tell you more about the MULTIMODE® series of plasma processing systems by calling, writing or faxing us. Please ask for our detailed pricing and specification sheet. We cordially invite each of you to either visit our applications laboratory or request a more detailed technical presentation on the MULTIMODE® series of systems.



SST chamber and RIE electrodes

## Dimensions

System - Width 24.5" [62cm] x Depth 25" [63.5cm] x Height 15.5" [40cm]

## Weight

100 lbs [45kg]

## Utilities

System 110 V, 60 Hz, 15 Amps

220 V, 50 Hz, 7 Amps [Optional]

Pump	110V, 60Hz, 10Amps
H2O	For Electrode Cooling [Electrode Dependent]
Air	For Valve Operation
N2	For Chamber Vent
Gas	Process Gasses

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