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Microwave Power Generators and Components



ASTeX microwave power generators are at the heart of high performance materials processing systems for good reasons: outstanding versatility, unequaled reliability, and unbeatable performance. Our power generators are hard at work in semiconductor PECVD, etch, and stripping equipment; CVD diamond production systems; and in laboratory R&D environments. A leading innovator in the area of microwave processing, ASTeX works actively with its customers to solve demanding plasma applications and precision heating problems. Since 1987, ASTeX has set the standard for high quality plasma processing with rapid ignition, uniform plasma density, and low temperature operation.

ASTeX — the power behind your microwave process

Powerful Reasons to Use Microwave Plasma Sources



ASTeX microwave plasma sources provide clean, repeatable processes. Operating at lower ion energy , microwave plasma results in far less radiation damage to the substrate or thin film. The magnetic field associated with ECR (electron cyclotron resonance) sources sharply reduces interactions with the chamber wall. Electrodes are not necessary to introduce energy into the process, so contamination from the sputtering of those electrodes is avoided. Microwaves couple more efficiently into gases across a wide pressure range (0.1 - 100 Torr) leading to denser, more reactive plasmas. These features all add up to improved process control, improved repeatability, and a broader range of applications.

A Commitment to Excellence — Across the Board

At ASTeX, we deliver far more than microwave components: we deliver microwave process solutions. Our technical staff is committed to making your products, your processes, and your research a complete success. Our plasma physicists can provide solutions to complex material, physical, and process development problems, as well as technical support for your applications. Our microwave plasma source and system engineers can design and integrate ASTeX hardware to meet the most demanding requirements, from complex CVD diamond production systems to advanced applications - specific semiconductor systems.

Our commitment to outstanding performance and reliability of our systems mean that ASTeX takes you beyond customer satisfaction to a level of excellence that defines a new standard in the industry.

AX Series Power Generators — for the Edge in Performance

AX Series microwave power generators represent the ultimate in performance and reliability. Advanced feedback circuitry ensures regulation of less than 0.1% for line variations of ±10%, and ripple less than 1%. We precisely control output frequency to assure accurate power coupling to the source. Modular design and testing allow field replacement of components without replacing or retuning the entire system.



Microprocessor control (in available models) provides unparalleled flexibility and process control. ASTeX's advanced switching power supply design yield impressive reduction in size and weight. Finally, ASTeX puts a premium on operator and equipment safety. Safety interlock protect the user, while advanced fault detection circuitry protects the equipment.

GL Series — Combining the Science of Economics and High Technology

Simply stated, our GL Series linear microwave power generators are the best value on the market. These power generators are ideal for users who require precise control of a variable microwave power source at an economical prices. Modular design gives the user full access to system components for easy maintenance. User-definable protective features assure safe, reliable operation.

While these generators are attractively priced, they do not compromise on performance: regulation is 1% for a ±10% variation in line voltage, and ripple is as low as 2% of full power depending on the model chosen. The GL Series power generators are used throughout industry, in the manufacture of semiconductors as well as bulk heating applications, involving chemicals, polymers, and dielectric materials.

Selecting an ASTeX Microwave Generator to Fit Your Application

Model	Frequency	Rated Power Output	Ripple[1]	Regulation[2]	AC Power Line[3]
AX Series Microwave Generators					
AX2000	2450 MHz	1250 W	<1%	<0.5%	120 VAC 1 phase 240 VAC, 1 phase
AX2107	2450 MHz	700 W	<1%	<0.1%	208 VAC 1 phase 240 VAC 1 phase
AX2110	2450 MHz	1000 W	<1%	<0.1%	208 VAC 1 phase 240 VAC 1 phase
AX2115	2450 MHz	1500 W	<1%	<0.1%	208 VAC 3 phase
AX2050	2450 MHz	2500 W	<1%	<0.1%	208 VAC 3 phase
AX2040	2450 MHz	5000 W	<1%	<0.1%	208 VAC 3 phase
AX2500 SmartPower	2455 MHz	1800 W 3000 W 6000 W	±1%	0.1%	180 - 230 VAC 3 phase
GL Series Microwave Generators (other models available)					
GL139	2450 MHz	1250 W	Pulsed	<1.0%	208 VAC 1 phase 240 VAC, 1 phase
Tuners					
AX3040 Coaxial Slug Tuner	2450 MHz	250 W	N/A	N/A	N/A
AX3041 Precision 3-Stub Tuner	2450 MHz	5000 W	N/A	N/A	N/A

AX3060 SmartMatch	2450 MHz	12500/5000 W	N/A	N/A	N/A

[1]Maximum change in microwave power from set power

[2]Change in microwave power for ±10% change in rate line voltage

[3]Voltage shown is nominal; acceptable service may range from 187 to 229 V (for 208 V) and from 216 to 250 V (for 240 V)

ASTeX's highly trained sales force is poised to provide technology solutions for your applications needs in microwave processing. Please contact:

Applied Science and Technology, Inc. 35 Cabot Road, Woburn, MA 01801-1053 USA
(telephone: +1 781/933-5560; fax: +1 781/933-0750)
or e-mail to: sales@astex.com

For additional information on microwave processing, go to Microwave Plasma Sources and Systems .

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