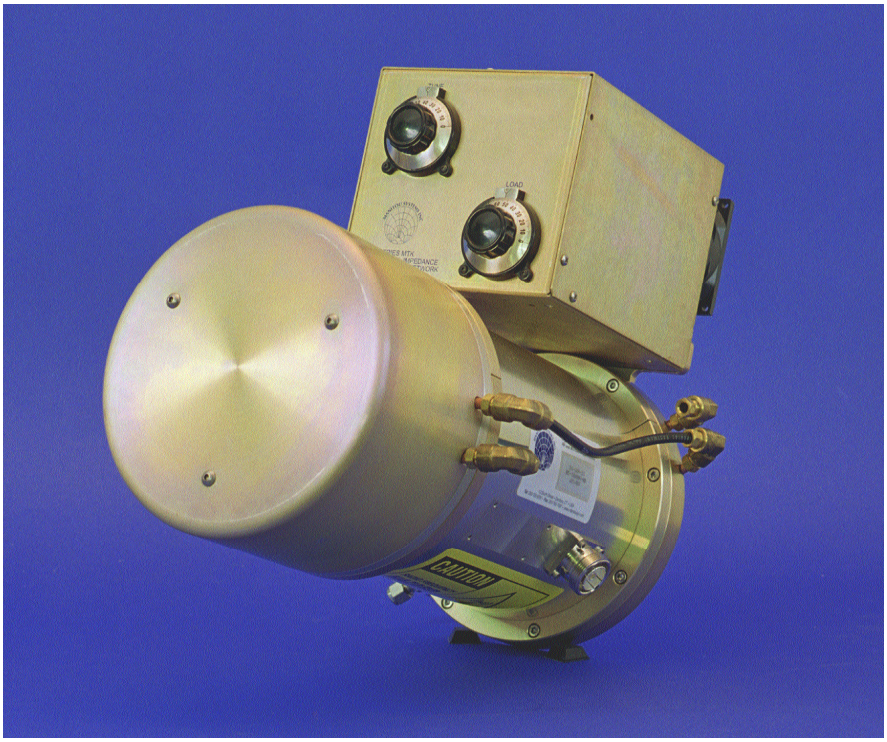
Delta Glow High Energy Plasma Source



Reduce contaminants to produce higher quality thin films

The Delta Glow family of high density plasma sources is designed to generate dense gas plasma for thin film deposition, etching, and material surface modification applications. Delta Glow significantly improves the quality of thin films by reducing contaminants and deposited film inclusions.

Eliminate oxygen contamination

Delta Glow reduces oxygen contamination that conventional techniques fail to detect and remove. When the Delta Glow high energy plasma source is used to clean a vacuum system, the bombardment of system surfaces with electrons and ions stimulates desorption of water bonded to system surfaces, resulting in a cleaner system with less film contamination during subsequent processing.

Reliable RF power system

RF power and process control is provided through the use of a high quality RF power system. The multi-featured 13.56 MHz RF generator includes process power ramping, timer and utilization of continuous or pulsed output waveforms.

Designed for easy processing and maintenance

The vacuum chamber interface is an industry standard KF50 type flange or custom interface plate. Process gas enters the reactor tube via a VCR fitting. A standard quartz reactor tube is the only consumable; however, aggressive fluorine-based processes may require the use of an optional alumina reactor tube.

Quality components built to last

Delta Glow's rugged construction enables use in most industrial environments. All mechanical components are constructed from chemically treated aluminum and stainless steel. RF components are 100% silver-plated for enhanced conductivity, and dielectric parts are manufactured from virgin grade PTFE and ceramics.

Applications

- Thin film chemical vapor deposition
- Vacuum chamber cleaning and conditioning
- Load lock vacuum chamber conditioning
- O^2 radical generation
- Reactive sputter deposition
- Plasma etching
- Plasma process chamber cleaning
- Polymer materials surface enhancements and modifications
- Pass through plasma processing
- Powder substrate surface treatments
- Production tool to ignite & test gaseous lamps
- Exhaust gas abatement

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Manitou Systems provides worldwide service and support

As a worldwide company, Manitou Systems provides global technical support. We have a worldwide network of dealers to respond quickly and efficiently to your needs, keeping your plasma source up and running at peak performance levels while minimizing down time.

Technical Specifications

Options

- Mass flow control kit
- Interlock sensors
- Non-standard operating frequency
- Custom reactor tube dimensions
- Custom reactor tube material
- OEM vacuum fittings
- Process gas/cooling water valve kit
- Source cluster mounting plate
- Spare parts kit
- Consumable spare parts kit
- RF power cables
- RF power generators

Model Specifications

DG 80
80 MHz, air-cooled, 20 mm dia. process tube

DG 300
13.56 MHz, air/water cooled, 50 mm dia. process tube

DG 600
13.56 MHz, air/water cooled, 150 mm dia. process tube

Specifications subject to change without notice.
Contact Manitou Systems for the latest specifications.
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General Specifications

Gas Conversion Efficiency
>90%

Source Circuit Topology
RF resonant cavity, inductively coupled

RF Input Power
Up to 1000 Watts (based on model)

RF Power Control
Forward power leveling or via real power

Impedance Matching
Variable – automatic or manual operation

Operating Frequency
10 to 80 MHz (based on model)

Source Cluster Operation
Via RF power splitter option

Cooling
Forced air & forced air/water

Reactor Tube Dimensions
20 to 150 mm (based on model)

Operating Pressure Range
1 micron to 10 Torr

Gas Input Fitting
VCR

Vacuum Interface
KF50

We look forward to meeting all your plasma processing needs.

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High-powered solutions for RF and microwave applications