

An abstract, flowing, blue and white shape, resembling a stylized 'V' or a liquid droplet, is the central focus of the slide. It has a glossy, translucent appearance with internal highlights and shadows. The background is a solid blue color with several faint, white, overlapping rectangular outlines of varying sizes, creating a sense of depth and modern design.

AutoGlow 1000 System

Overview

AutoGlow 1000 Plasma System



Background

- Glow Research started in 2007
- Have shipped over 170 systems worldwide
- Glow systems...offer more and cost less than our competition
- Products: GLOW Plasma System, AutoGlow, AutoGlow 200, AutoGlow 300, AutoGlow 300LF and the **AutoGlow 1000**.
- All plasma systems are CE certified and marked
- NRTL inspection and certification can be quoted
- All products/parts have engineering drawings and documentation to module and component level
- Manufacturing using a module approach
- Glow Research makes the entire system—RF generator, match network, software control system and chamber.

Background

- Final testing is separate from manufacturing
- All systems are leak checked with a helium leak detector in manufacturing
- Have detailed technical manuals and instructional videos for each system
- AutoGlow systems can operate at low wattage (10 watts) or as high as 600 watts. 1,000 watt option
- AutoGlow systems tune very fast and do not arc, spark or have tuning issues (we make our own tuning network)
- AutoGlow systems have diagnostics....to confirm all modules are working

AutoGlow 1000 System



AutoGlow 1000 is a computer controlled production plasma system

All AutoGlow Systems



AutoGlow reliability starts with the conductive coating of the cabinet metal prior to the powder coat. RF containment and RF reliability is the goal. The outside cabinet is bolted in close intervals for RF containment. Benefit = System always strikes a plasma! It is the little things that add up to make an excellent plasma system.

All AutoGlow Systems



Shown above are RF match modules. They are built, tested and put into inventory for fast systems delivery. The matching network can tune from as low as 20 watts or as high as 1,200 watts. RF power can be adjusted in one watt increments with the software control.

Applications for AutoGlow 1000

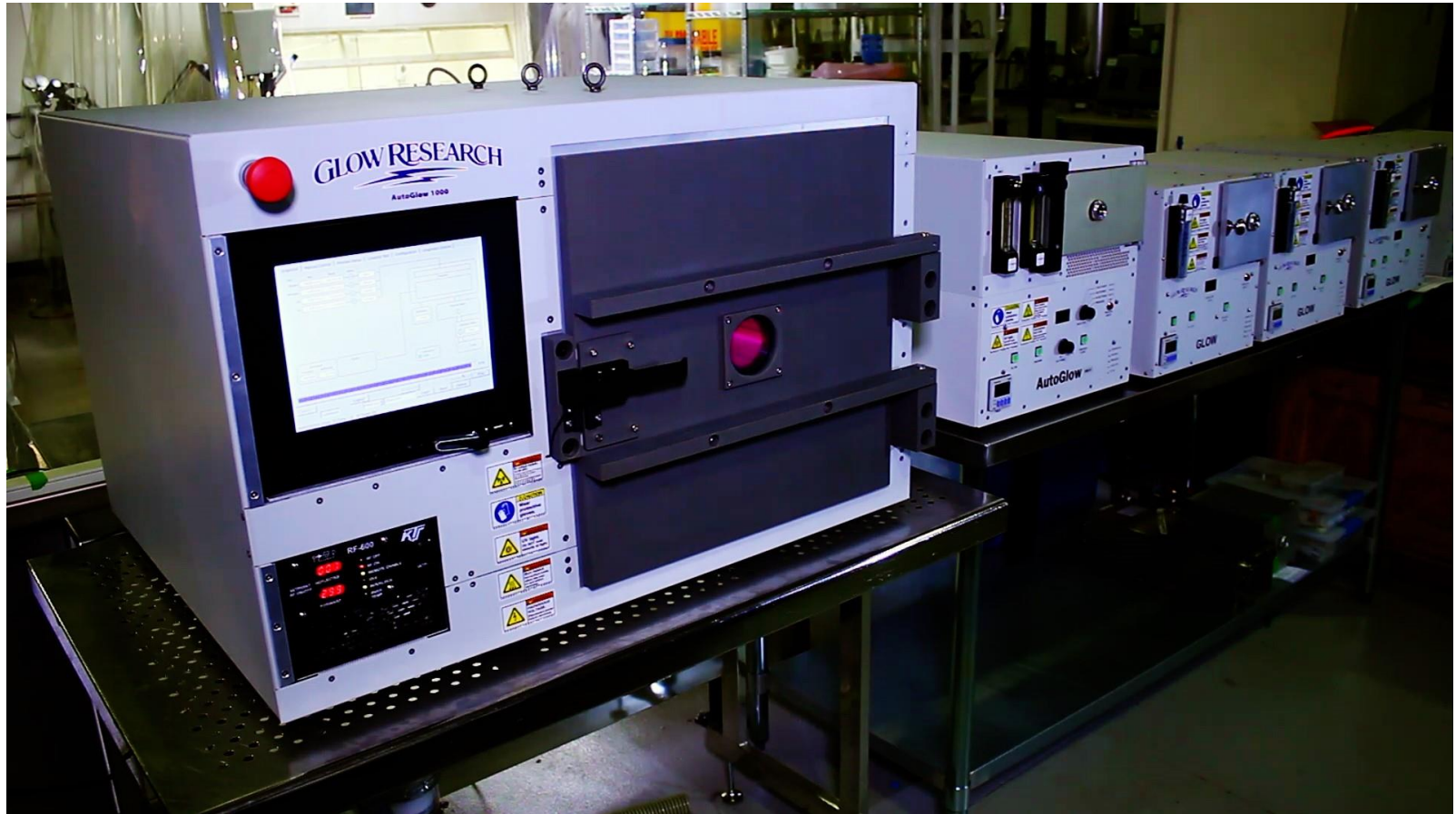
- Plasma cleaning
- Plasma Descum
- Plasma cleaning and treatment of Lead Frames
- BioChip channel clean and treatment
- PDMS applications (activation prior to bonding)
- Surface modification
- Etching Parylene
- Plasma clean prior to various bonding needs
- Plasma clean/treatment prior to wire bonding
- Cleaning prior to deposition
- Cleaning of medical devices
- Plasma cleaning of PC Boards
- Plasma Photoresist Removal (plasma strip)
- Plasma Etching

PLASMA SYSTEM FOR ANY SIZE: Showing the GLOW plasma system inside the chamber of the larger AutoGlow 1000. Customers can set up their process in the Glow Plasma systems, and then move to our larger plasma systems as their production needs require.



Scalability: Glow Research systems fit your budget, production and process needs.

Show below is the GLOW, AutoGlow 300LF and the AutoGlow 1000 plasma systems. From small chambers to large chamber systems.



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Glow Research systems fit your budget, production and process needs.

AutoGlow 1000 Plasma System



AutoGlow 1000 Features

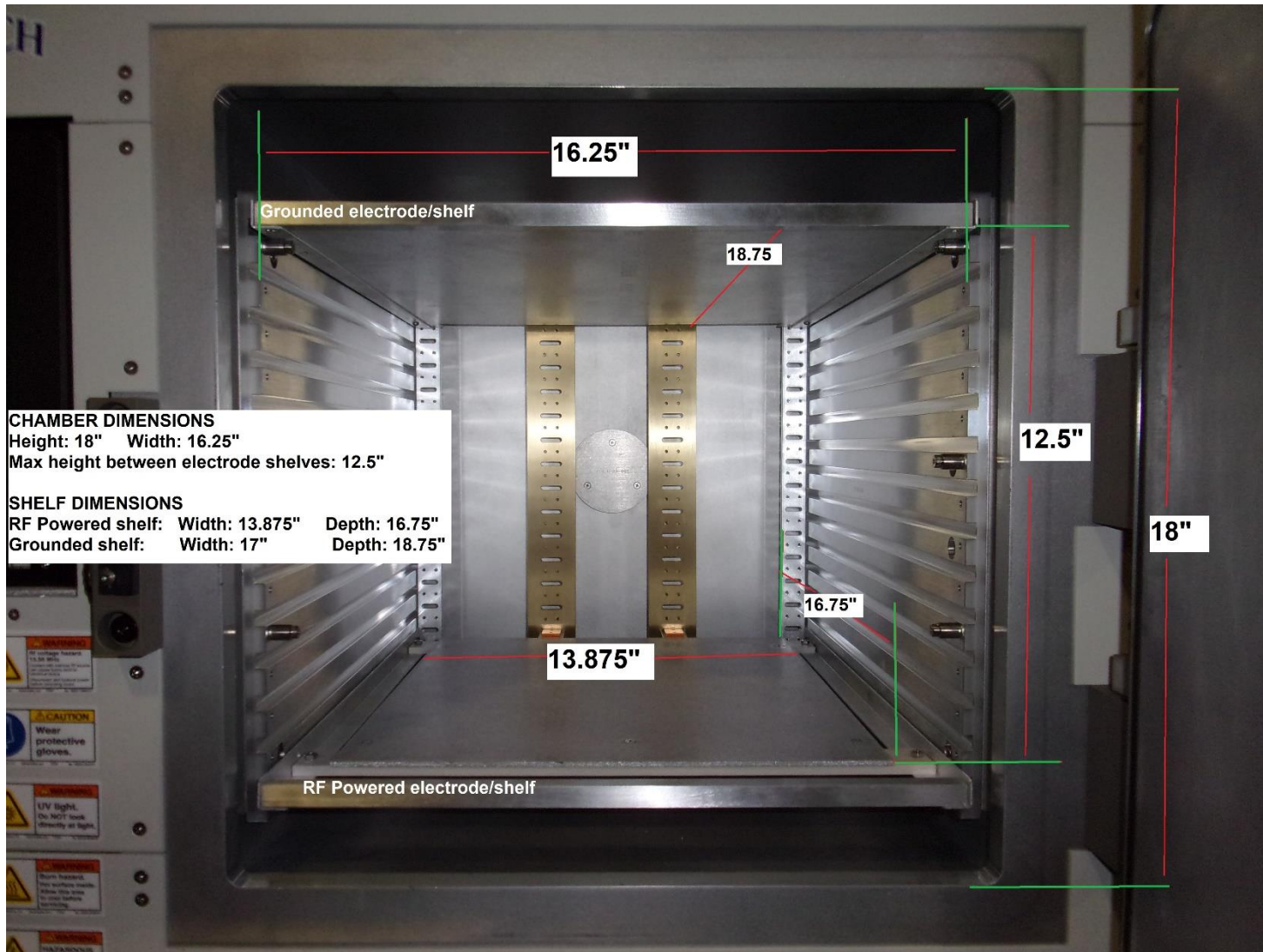
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- 30 to 600 watts (13.56 MHz) 30 watts for gentle processing—high power for more aggressive applications. Optional 1,000 watt RF generator.
- 13.56 MHz (high frequency) with auto-tune
- Can set power in one watt increments—the RF generator and match network are tuned to accomplish this
- Glow Research makes the entire system (RF generator, RF tuning network, software control system, chamber and gas delivery system)
- Automatic Tuning—very fast and with extremely low reflected power—very well designed tuning network
- Throttle valve for controlling chamber pressure independent from gas flow
- Genesis Software with diagnostics, lock outs, and advance control
- Choice of up to four Mass Flow Controllers
- Designed for ease of service—RF generator and the electronics/gas distribution modules slide out the front
- CE marked and certified

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AutoGlow 1000 Chamber

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AutoGlow 1000 Chamber

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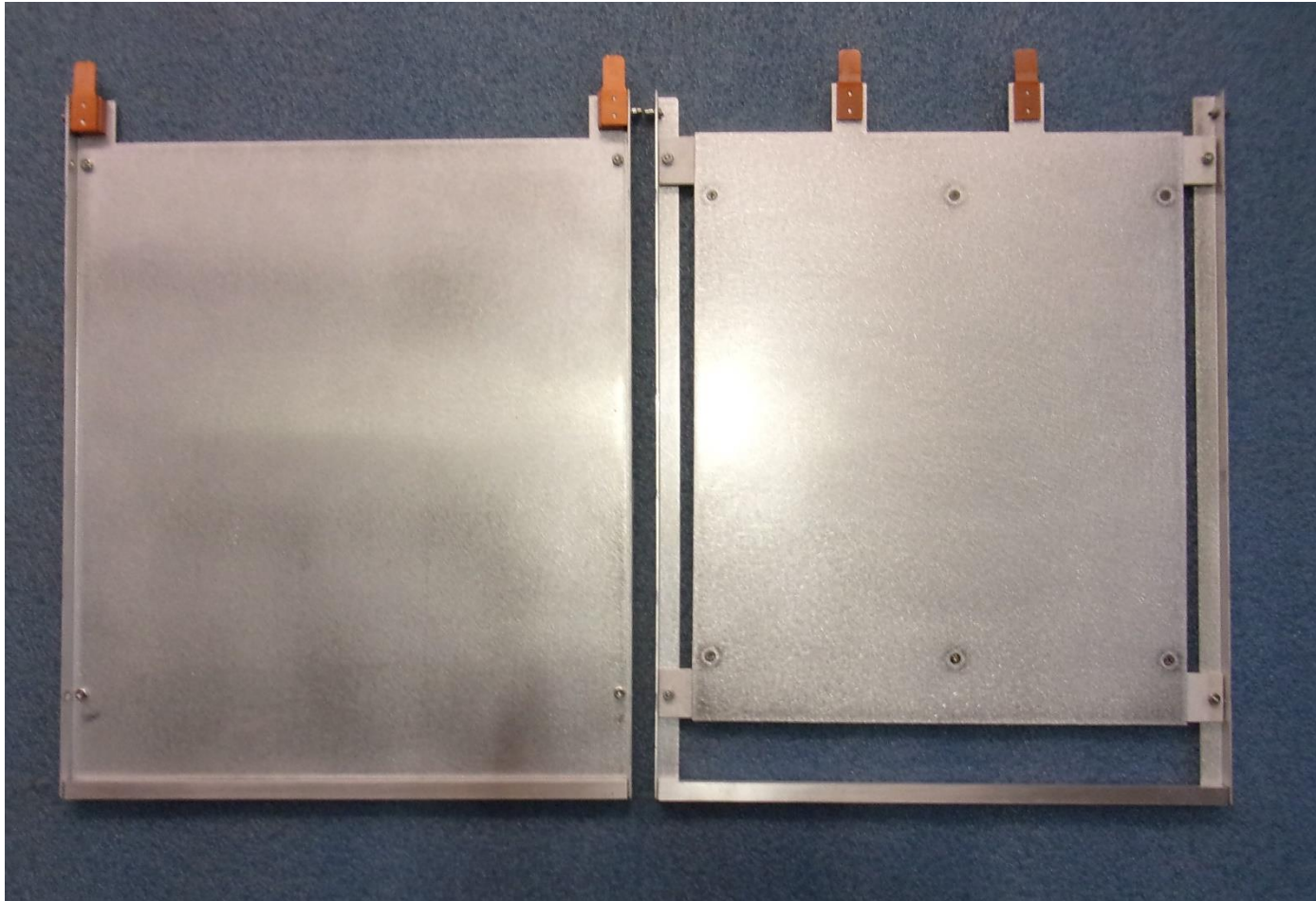
Nickel plated bus bars are an option

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Electrode Sample Shelves (removable)

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Ground Pictured to the Left

RF Powered Pictured to the Right

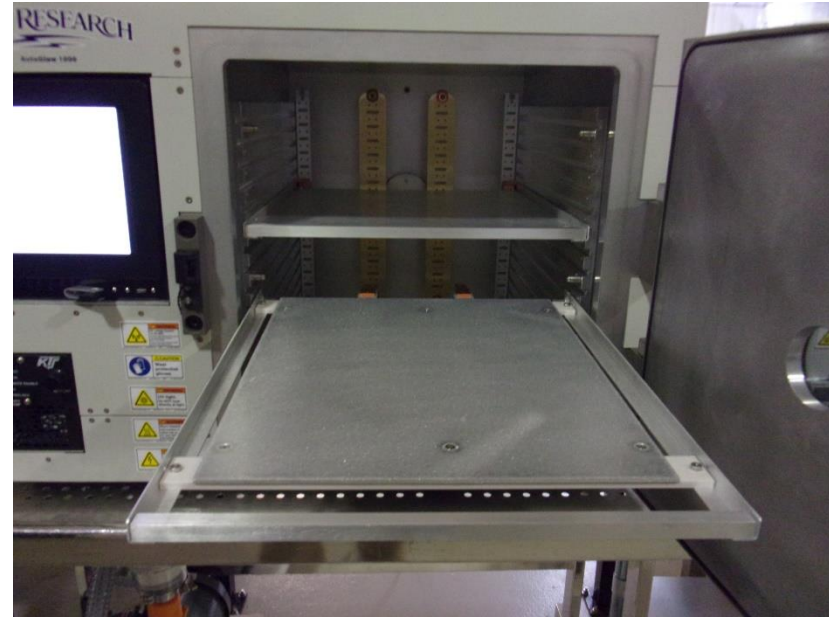
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AutoGlow 1000 Chamber

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Ground Electrode Shelf

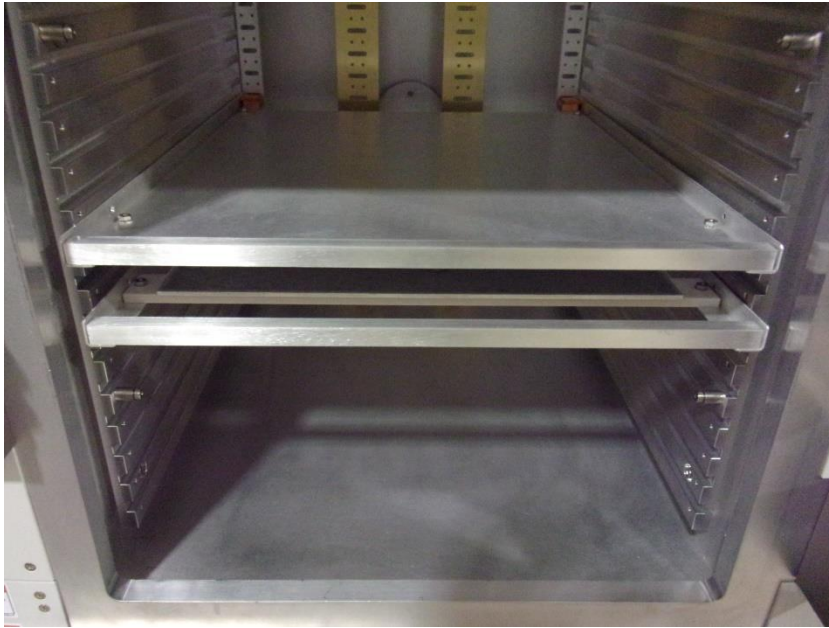


Powered Electrode Shelf

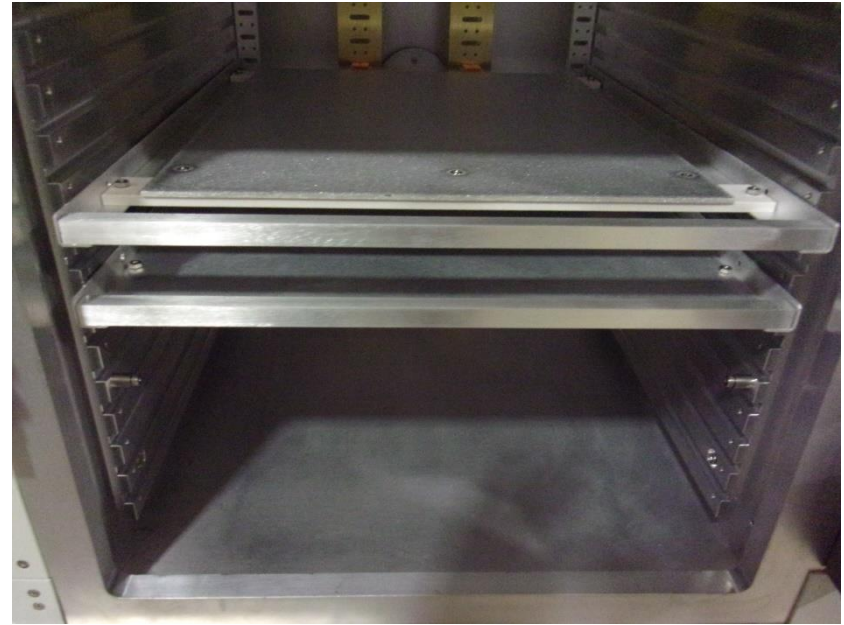
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Chamber Electrode Configurations

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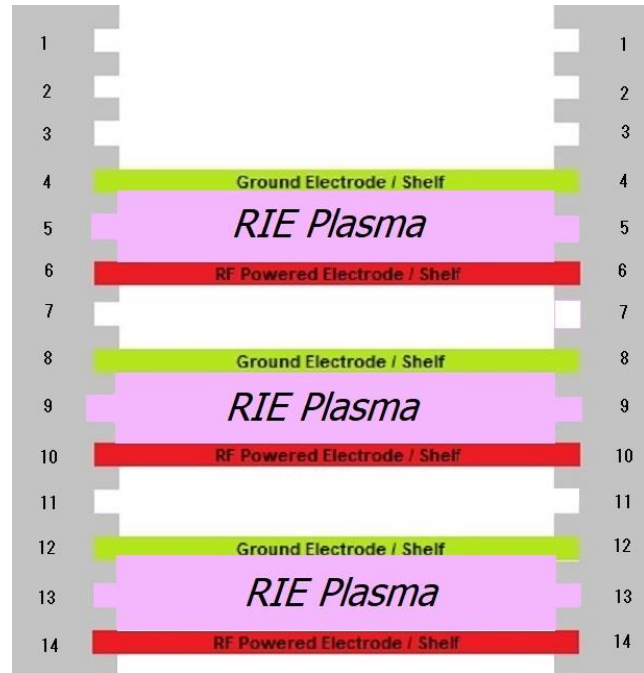
(above) Place Samples on the Bottom Powered Electrode Shelf for RIE Type Processing



(above) Place Samples on the Bottom Grounded Shelf for Plasma Processing

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Chamber Electrode Configurations

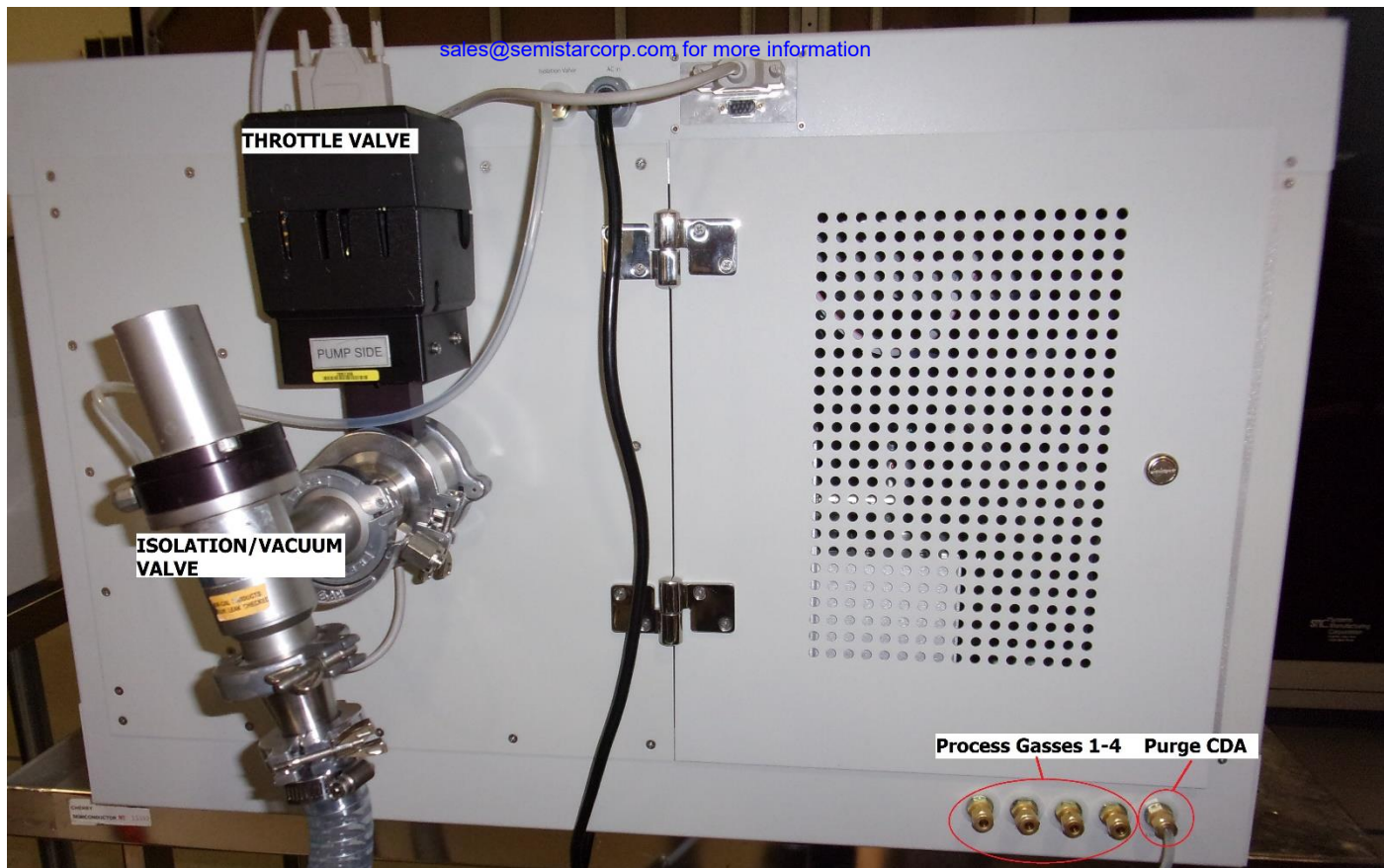


(above) Place Samples on the Bottom
Powered Electrode Shelves for RIE Type
Processing

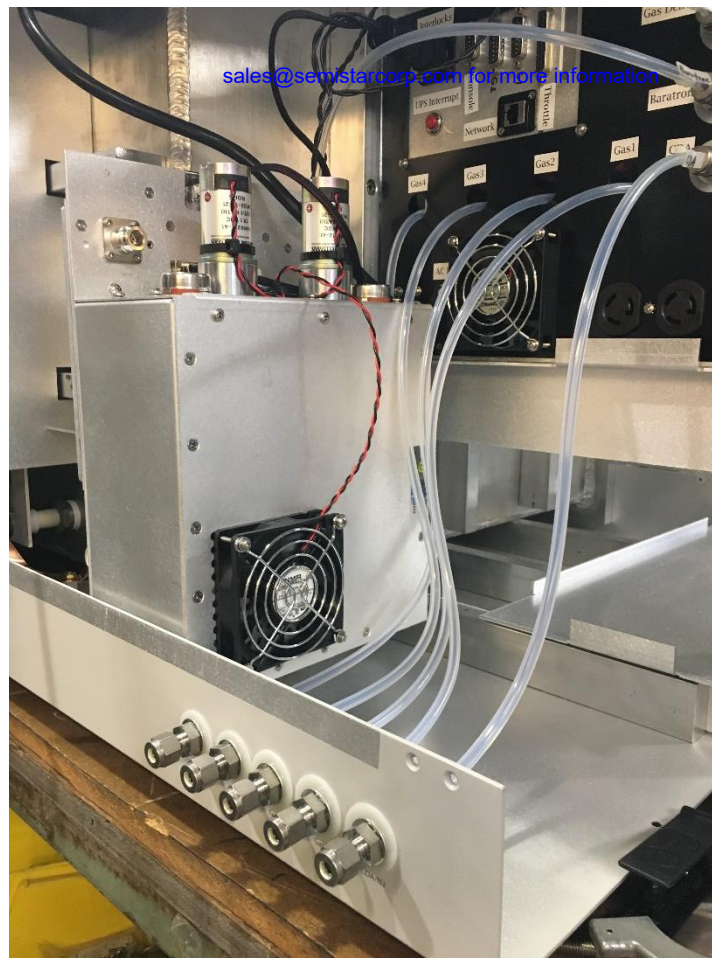
Chamber Electrode Configurations



(above) Place Samples on any shelf for Direct Plasma Processing for the maximum load capacity. Recommended for most plasma treatment applications.



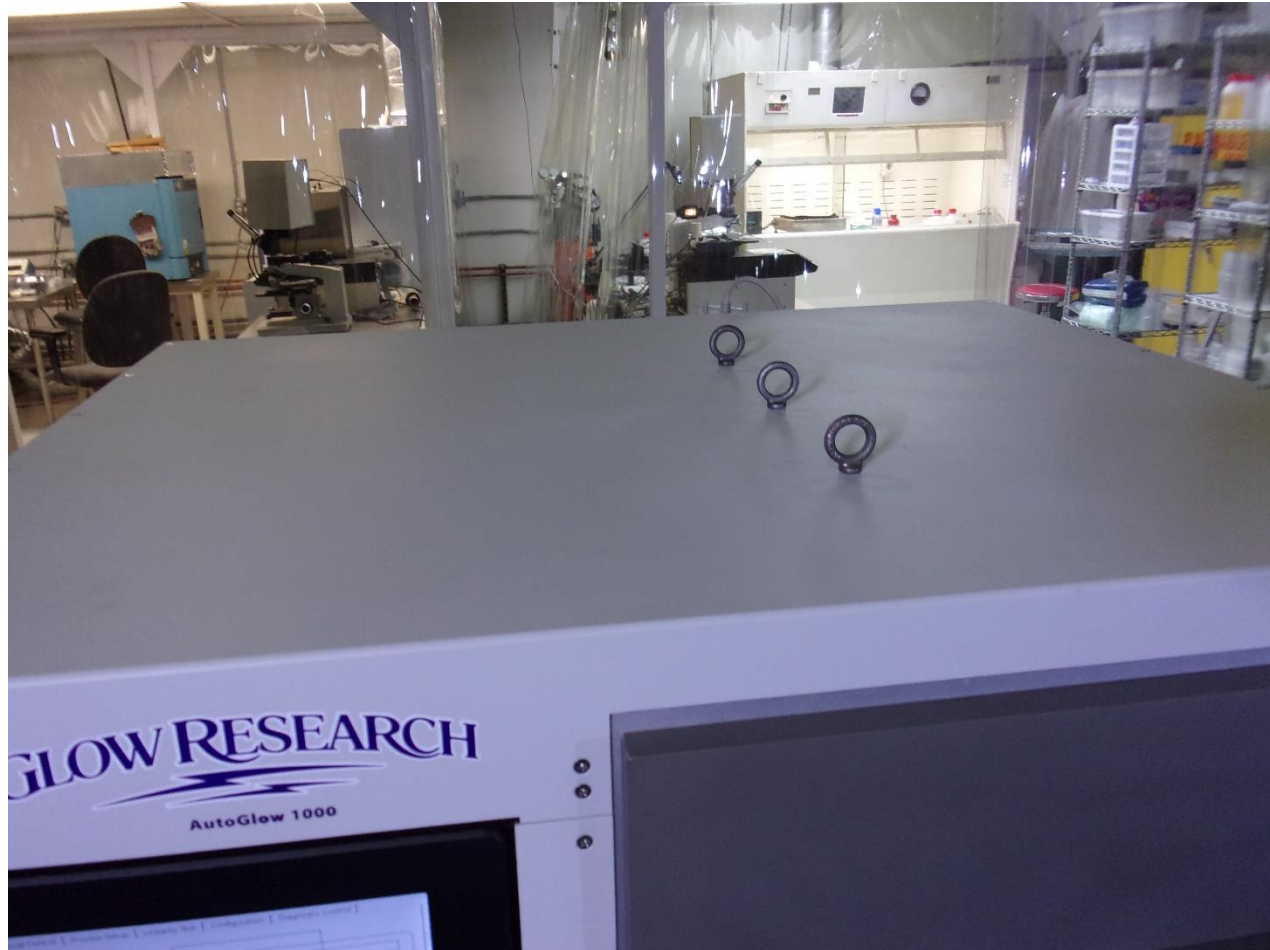
- The Throttle Valve allows for independent control of the process gas flow and the chamber pressure. Controlled by the system software
- The Isolation Valve is controlled by the software to open or close the line to the vacuum pump.
- Up to four Mass Flow Controllers for processing gases



- Stainless Steel Fittings are standard equipment

AutoGlow 1000

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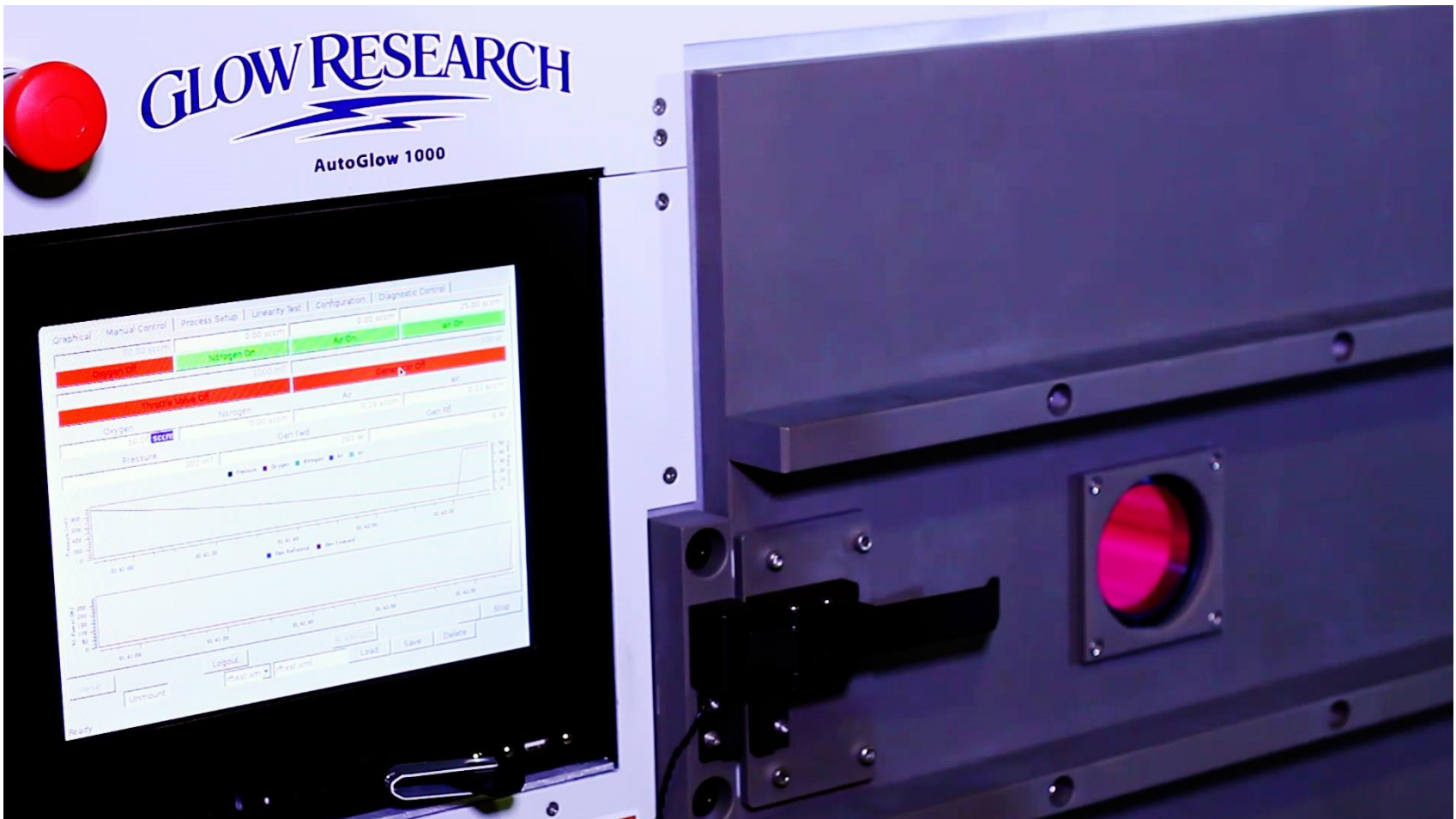


Reinforced lift points are included to help move the AutoGlow 1000

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AutoGlow 1000

Touch Screen Control

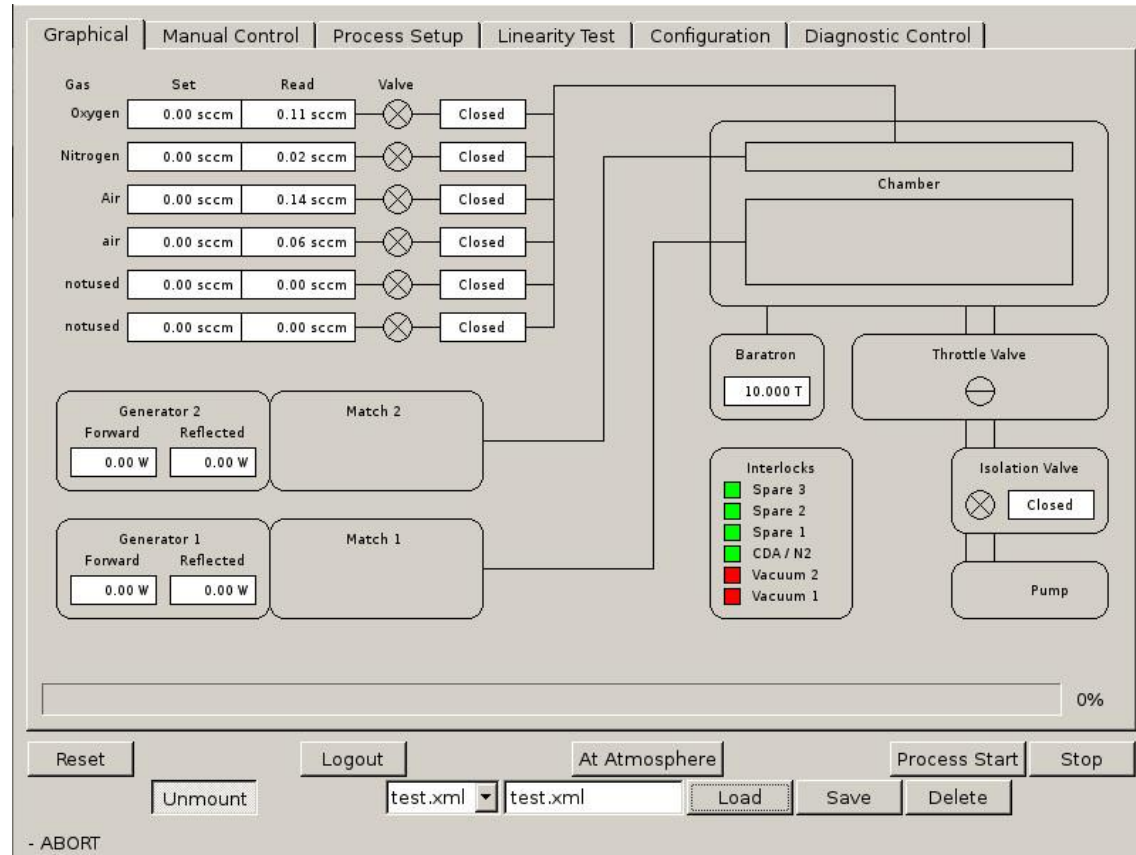


AutoGlow 1000 Software Display

The AutoGlow 1000 is controlled by the touch screen software control system. The Genesis Software features are:

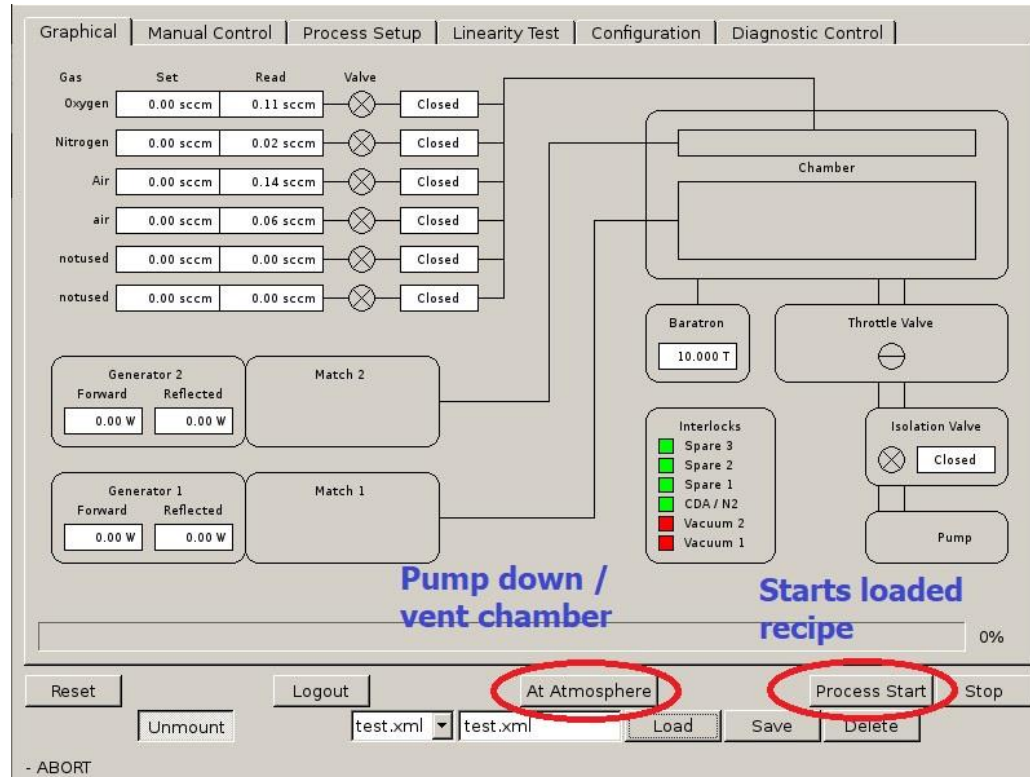
- System pre-process self-check (the software checks the MFC's, baratron, and pressure)
- You can have Multiple step recipes (up to 10)—very easy to configure
- The software has Adjustable gas stabilization times--and the software confirms MFC linearity
- Has Data logging, store/download historical records
- You can also Monitor RF on/off times during process and look at pressure curves during process
- The Software has been running in Customer locations for over 2 years
- System includes a butterfly throttle valve so you can control process gas flow independently from chamber pressure

AutoGlow 1000 Software Display



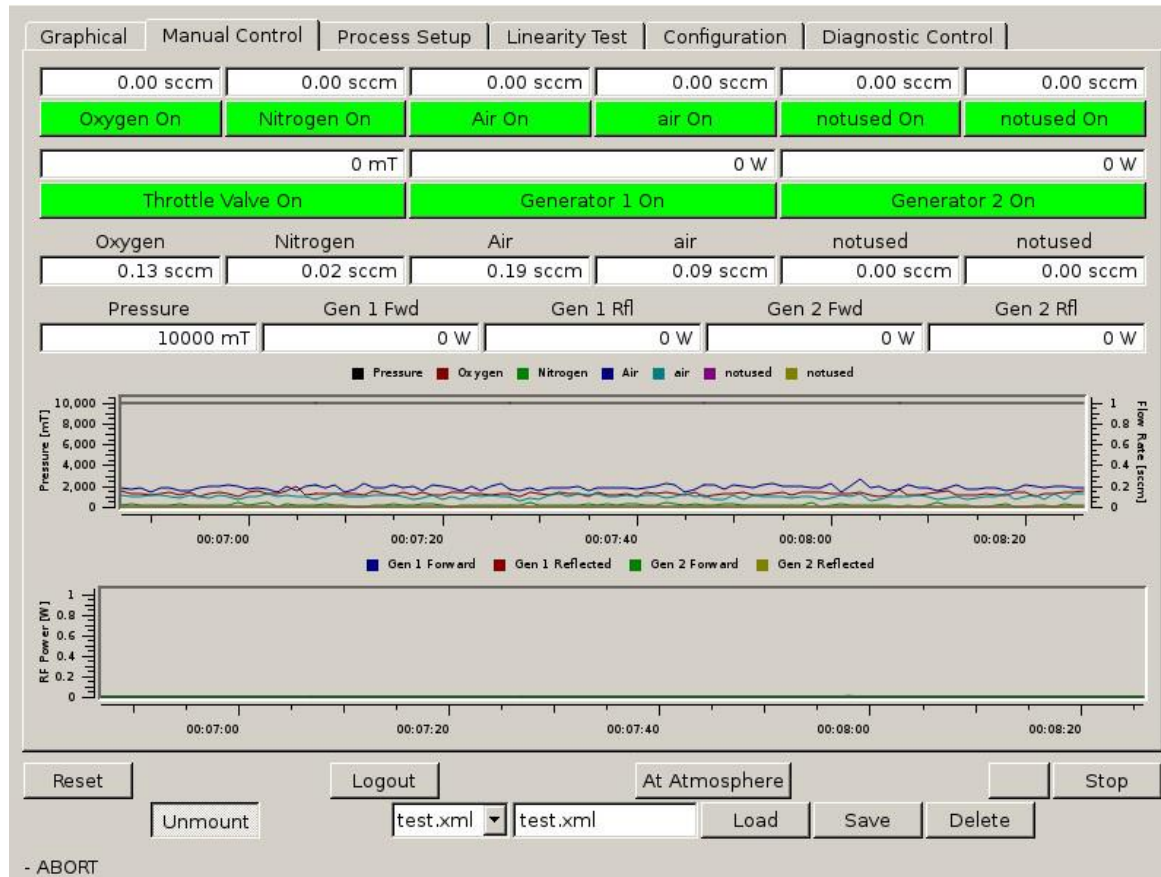
Graphical Display

AutoGlow 1000 Software Display



Easy to Use—Operator only needs to press two buttons to start the process. Operator would then press the Vacuum button to remove product from the chamber.

AutoGlow 1000 Software



The Manual Control Display

AutoGlow 1000 Software

Graphical | Manual Control | **Process Setup** | Linearity Test | Configuration | Diagnostic Control

Enable Pumpdown
Pre-Process ☐
Post-Process ☐

Base Pressure	Purge Duration	Cycles
500 mT	0 s	2
500 mT	0 s	1

☒ Step 1

Oxygen	Nitrogen	Air	air	notused	notused
0.00 sccm	50.00 sccm	100.00 sccm	0.00 sccm	0.00 sccm	0.00 sccm

Pressure	Settle	GEN 1	GEN 2	RF On	RF Off
500 mT	20 s	100 W	0 W	30 s	1 s

☐ Step 2

Oxygen	Nitrogen	Air	air	notused	notused
0.00 sccm	50.00 sccm	0.00 sccm	0.00 sccm	0.00 sccm	0.00 sccm

Pressure	Settle	GEN 1	GEN 2	RF On	RF Off
0 mT	15 s	200 W	0 W	180 s	1 s

☐ Step 3

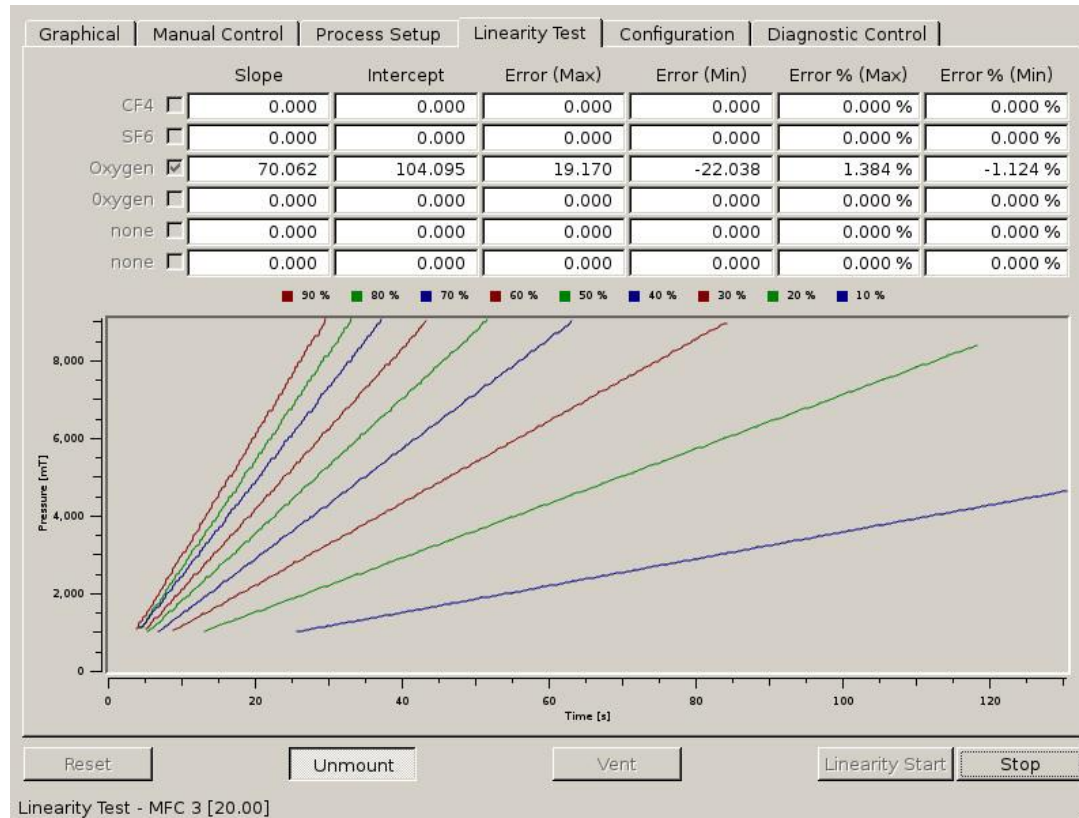
Reset Logout At Atmosphere Process Start Stop

Unmount test.xml test.xml Load Save Delete

- ABORT

Process Setup Display

AutoGlow 1000 Software



The Linearity Test Display

AutoGlow 1000 Software

Graphical

Manual Control

Process Setup

Linearity Test

Configuration

Diagnostic Control

Chamber Volume

0.00 L

Vent Time

99 s

	Range	Volts		Time	Error
Baratron	10000.00	10.00 V	Fault	☒ 15 s	15 %
Oxygen	250.00 sccm	5.00 V	Fault	☒ 5 s	10 %
Nitrogen	250.00 sccm	5.00 V	Fault	☒ 5 s	10 %
Air	250.00 sccm	5.00 V	Fault	☒ 5 s	10 %
air	250.00 sccm	5.00 V	Fault	☒ 5 s	10 %
notused	500.00 sccm	5.00 V	Fault	☐ 60 s	0 %
notused	500.00 sccm	5.00 V	Fault	☐ 0 s	0 %
Generator 1 Set	600 W	5.00 V			
Generator 1 Fwd	600 W	5.00 V	Fault	☒ 15 s	10 %
Generator 1 Rfl	600 W	5.00 V	Fault	☒ 15 s	10 %
Generator 2 Set	300 W	5.00 V			
Generator 2 Fwd	600 W	3.00 V	Fault	☒ 60 s	100 %
Generator 2 Rfl	300 W	5.00 V	Fault	☒ 15 s	100 %

Load

Save

Reset

Logout

At Atmosphere

Stop

Unmount

test.xml

test.xml

Load

Save

Delete

- ABORT

Configuration Display

AutoGlow 1000 Software

Graphical | Manual Control | Process Setup | Linearity Test | Configuration | Diagnostic Control

Interlock 1
On On On On Off Off **Purge On** **Isolation On**

Baratron
10.000 V

Power	Interlock	Setpoint	Foward	Reflected	RF On
On	Generator 1 Off	0.000 V	0.000 V	0.000 V	Generator 1 On
	Generator 2 Off	0.000 V	0.000 V	0.000 V	Generator 2 On

	Setpoint	Feedback	
Oxygen Set	0.000 V	0.002 V	Oxygen Valve On
Nitrogen Set	0.000 V	0.001 V	Nitrogen Valve On
Air Set	0.000 V	0.004 V	Air Valve On
air Set	0.000 V	0.002 V	air Valve On
notused Set	0.000 V	0.000 V	notused Valve On
notused Set	0.000 V	0.000 V	notused Valve On

Reset Logout At Atmosphere Stop

Unmount test.xml test.xml Load Save Delete

- ABORT

Diagnostic Display

We Ship Worldwide



- Shipping crates are certified for international shipment (shown above is a shipment holding two AutoGlow systems and two vacuum pumps)
- All systems are staged in a clean area, receive an IPA wipe down and are double bagged
- Testing Certificates and Final Testing Data are attached to system
- Systems conform to all international electrical standards and can operate in any location