PlasmaPro® 100 Estrelas
Deep Silicon Etch System
The PlasmaPro 100 Estrelas platform is designed to give total flexibility for Deep Silicon Etch (DSiE) applications - serving a diverse set of process requirements across the Micro Electro Mechanical Systems (MEMS), Advanced Packaging and Nanotechnology markets.

Emerging applications

Oxford Instruments Plasma Technology continues to provide technologies that address existing and emerging applications in the MEMS, Advanced Packaging and Nanotechnology markets. With a broad process and application portfolio, our technologies enable many of the applications identified today and those of tomorrow. The development of the PlasmaPro 100 Estrelas deep silicon etch technology from Oxford Instruments delivers industry leading process performance.
Supporting R&D and Production

Developed with both the research and production markets in mind, the PlasmaPro 100 Estrelas offers the ultimate in process flexibility. Nano and micro-structures may be realised as the hardware has been designed with the ability to support high performance Bosch™ and cryo DSIE technologies in the same chamber.

From smooth sidewall processes to high etch cavity etches and high aspect ratio processes to tapered via etches, the PlasmaPro 100 Estrelas has been designed to ensure that the wide range of applications in MEMS, advanced packaging and nanotechnology can be realised without the need to change chamber hardware.

The PlasmaPro 100 Estrelas may be configured with higher specification hardware options to support the future needs of advanced R&D and production users. These include an electrostatic chuck (also capable of clamping non-conductive substrates without back metallisation), higher capacity pumping and higher power generators. Clustering options for multiple chambers with vacuum cassette interface are available to meet high throughput requirements.
Superior technical capabilities

Compatible with 50mm to 200mm substrates, ensuring that you have the ability to develop devices that can be taken to production using the same chamber hardware.

- Mechanical or electrostatic clamping
- Heated liners
  - Improved reproducibility
  - Increased mean time between cleans (MTBC)
- Fast-acting close coupled MFCs with fast control (originally developed for ALD)
- Reduced chamber volume and high throughput pumping ensuring high gas conductance
- Higher flow MFCs and associated generators for high radical densities
- Auto match for process flexibility
- Sub-second Bosch switching times (patent pending)
- Low Cost of Ownership through optimised hardware and process control
- Low exposed area (<1%) end point capability

Plasma etch tool
Specifically designed for silicon etch
Single Wafer Loadlock

The PlasmaPro 100 Estrelas System loadlock has been ergonomically designed to allow quick and easy access for sample transfer.

Cluster platform

For the ultimate in throughput and productivity, the PlasmaPro 100 Estrelas etch is also available with low cost research or Brooks industry-leading transport modules

- Square or hexagonal standard chamber configurations
- 1 or 2 cassette load locks
- Through wall or ballroom options

Reliability and diagnostics

Fault and tool status diagnostics are achieved through the front end software. The system reports on the status of key components, leading to rapid and detailed fault identification.
System control

- Clear and simple to use software ensures ease of use for process operators, while retaining the full functionality for production facility managers and service staff.
- Fully SECS/GEM compatible
- The front end visual interface, which controls and monitors the process tool, is configured exactly for the customer’s system
- Process recipes are written, stored and recalled through the same software, allowing a comprehensive recipe library to be built
- Password controlled user login allows different levels of user access and tasks, from ‘one-button’ run operation to full system control
- Continuous system data logging (50 ms) ensures effective traceability of each wafer and process run

Global process support for the lifetime of the tool

The priorities of Oxford Instruments’ applications teams are:
- Fast turnaround of pre-sale development samples
- Effective post-sales support for the lifetime of the tool

To achieve this, we have dedicated applications laboratories in the UK, USA and Taiwan. With over 25 plasma systems in our labs, our engineers have the tools available to constantly be working on process and hardware developments.
Cost of ownership and customer support

We work with you to create the right system, process, and support package to meet your specific requirements. Our range of Flexible Support Agreements will be tailored to your needs.

This can include:

- Guaranteed response times for support engineer visits and technical hotline calls
- Choice of support coverage up to 24/7
- Scheduled preventative maintenance calls
- Managed spares inventory options, including customer dedicated stock, via our parts locations worldwide
- Preferential spare part pricing
- Process training
- Certified training courses for your own engineers in preventative maintenance and first level troubleshooting

Superior environmental efficiency

PlasmaPro 100 Estrelas has a low heat load and high energy efficiency.

The tool has efficient ergonomics and complies with Semi S2/S8 and cluster capability, making this a tool of choice.
PlasmaPro 100 Estrelas

Technical specifications

Load lock configuration

All dimensions in mm.

Layouts for cluster tool options available on request

Plasma Pro® NGP 100SE Information Sheet

System dimensions

The drawings in Figure 2, 3, 4 and 5 are for reference only. Dimensional drawings for a particular system can be obtained from Oxford Instruments Plasma Technology on request.

Front and side views

Figure 2 Front and side views of the PlasmaPro NGP100SE.

1654
740
2187
1842
2187

Load lock configuration

Visit www.oxford-instruments.com for more information

Oxford Instruments Plasma Technology

For more information please email: plasma@oxinst.com

UK
Yatton
Tel: +44 (0) 1934 837000

Germany
Wiesbaden
Tel: +49 (0) 6122 937 161

India
Mumbai
Tel: +91 22 4253 5100

Japan
Tokyo
Tel: +81 3 5245 3261

PR China
Beijing
Tel: +86 10 6518 8160/1/2
Shanghai
Tel: +86 21 6132 9688

Singapore
Tel: +65 6337 6848

Taiwan
Tel: +886 3 5788696

US, Canada & Latin America
Concord, MA
TOLLFREE: +1 800 447 4717

www.oxford-instruments.com

This publication is the copyright of Oxford Instruments Nanotechnology Tools Ltd and provides outline information only, which (unless agreed by the company in writing) may not be used, applied or reproduced for any purpose or form part of any order or contract or regarded as the representation relating to the products or services concerned. Oxford Instruments’ policy is one of continued improvement. The company reserves the right to alter without notice the specification, design or conditions of supply of any product or service. Oxford Instruments acknowledges all trademarks and registrations. © Oxford Instruments Nanotechnology Tools Ltd, 2014. All rights reserved. Ref: OIP1/Estrelas100/2014001.

Plasma Pro NGP 100SE IS V.1 Page 3 ©2011 Oxford Instruments Plasma Technology. All rights reserved.