



**ADVANCED
VACUUM**
A Plasma-Therm Company



Vision PECVD

Vision 410 PECVD

INNOVATION ♦ EXCELLENCE ♦ PARTNERSHIP
ENABLING SUSTAINABLE SUCCESS

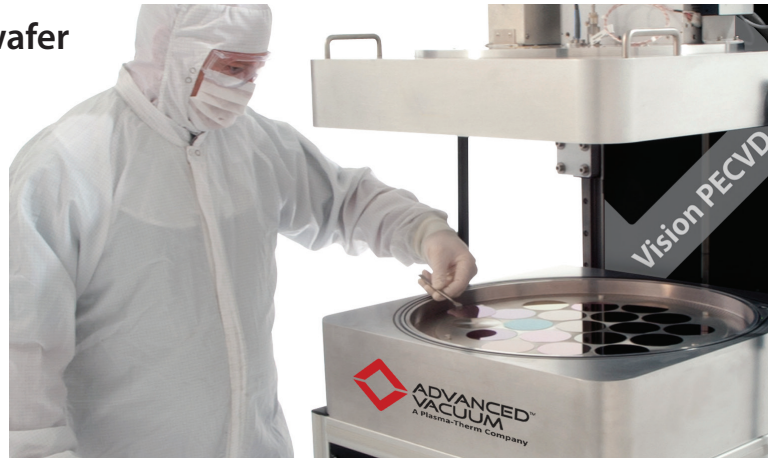
Advanced-Vacuum.com

Vision 410 PECVD – A Cost Effective Manufacturing Solution with High Reliability and Built-in Endpoint System

Multiple films can be deposited with excellent uniformity, film thickness, composition and stress control.

Maximized Productivity (lowest cost per wafer)

- ◆ Fast deposition rate
- ◆ Large batch sizes
- ◆ Low cost of ownership
- ◆ High degree of process control
- ◆ Flexible batch or single wafer processing on 406 mm electrode
- ◆ Films of SiO_2 , Si_3N_4 or SiO_xN_y , SiC , a-Si
- ◆ Low Stress SiO_2
- ◆ Index-adjusted SiO_xN_y



Vision 410 Plasma Enhanced Chemical Vapor Deposition (PECVD)



Vision 410 with control system and EndpointWorks® computers



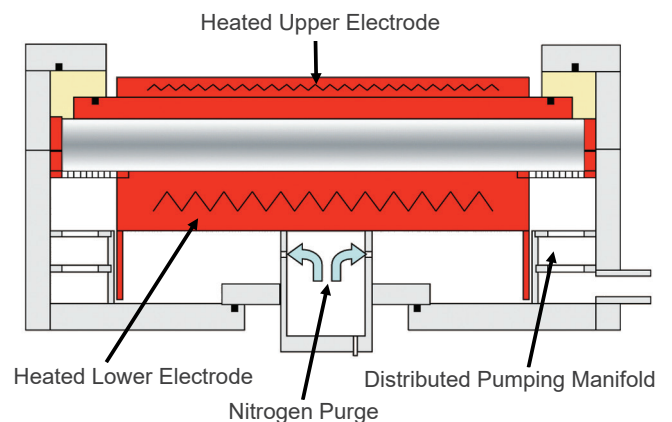
Proven Manual Load Systems with a Worldwide Installed Base

Superior Film Quality with Isothermal Heated Wall Technology

- ◆ Ideal for low automation manufacturing
- ◆ Small footprint minimizes cleanroom costs (<1.0 m²)
- ◆ Easy handling of non-standard substrates and carriers is ideal for R&D and special projects
- ◆ Reliable system performance using best of breed components

High Quality Films with Isothermal Plasma Process Reactor

- ◆ Low maintenance
 - ◆ Shorter clean cycles with small plasma volume
- ◆ Low particulates with better film adhesion to chamber walls and showerhead
 - ◆ Cleaner internal chamber components using nitrogen purge
- ◆ Enhanced uniformity with distributed gas injection and pumping manifold

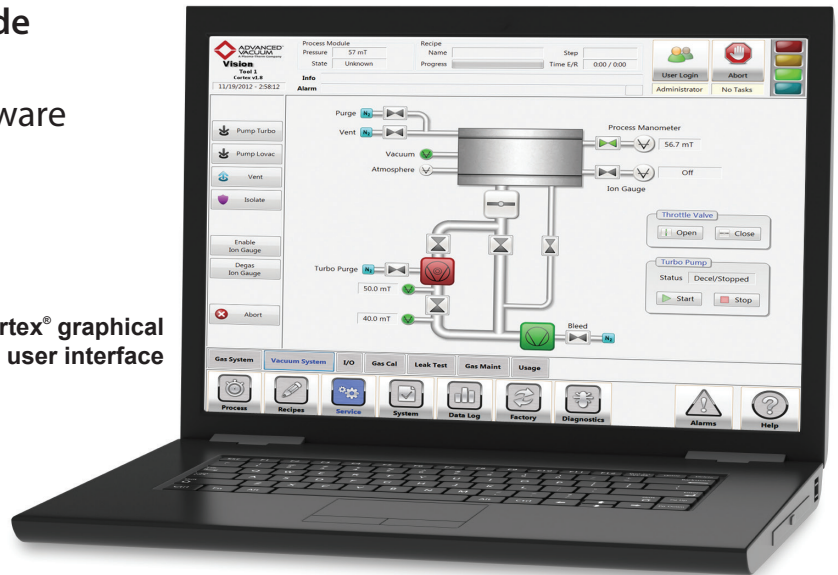


Cross section of isothermal plasma process reactor

Flexible Configuration Addresses a Wide Variety of Applications

- ◆ User-friendly, Windows-based Cortex® Software
- ◆ Strong data logging capability
- ◆ Maintenance I/O screen and maintenance
- ◆ Multiple user access levels
- ◆ Alarm history
- ◆ Integration with our proprietary endpoint software, EndpointWorks®

Cortex® graphical user interface



Advanced Process Control Ensures Quality Results Using Plasma-Therm's Unique EndpointWorks®

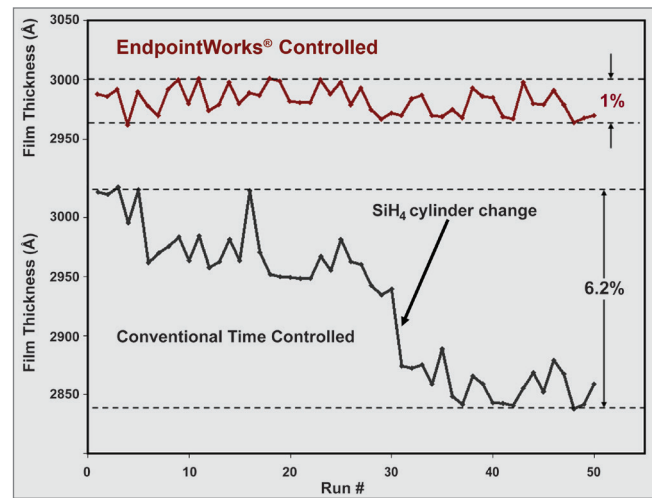
- ◆ Real time deposition rate monitoring (OEI)
 - ◆ ± 1% repeatability with real time thickness monitor
- ◆ Highly uniform within wafer and wafer-to-wafer films
 - ◆ ± 2.5% film thickness uniformity within wafer
 - ◆ ± 2.5% film thickness uniformity wafer-to-wafer
- ◆ Optimized in-situ plasma clean processes (OES)



EndpointWorks® graphical user interface

Process Control of Target Film Thickness

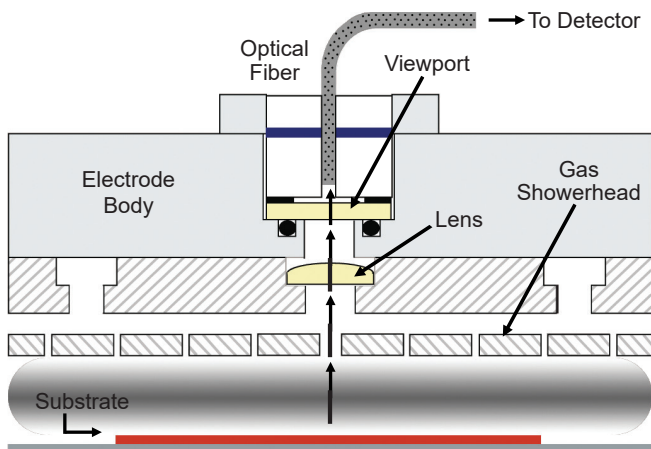
- ◆ Optical Emission Interferometry endpoint (OEI)
- ◆ Film thickness reproducibility demonstrated to compensate variability of production environment
- ◆ Data shows film thickness consistency even with source gas cylinder change



Run-to-run repeatability

Patented Endpoint System

- ◆ No alignment needed
- ◆ No laser to adjust
- ◆ Higher resolution of thin-films than laser
- ◆ Dual purpose: Optical Emission Interferometry (OEI) and Optical Emission Spectroscopy (OES)

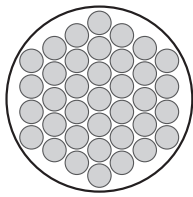


Cross section of OEI on PECVD chamber

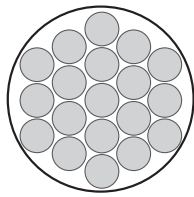
Vision 410 PECVD Specifications

Electrode Size	16" (406 mm) diameter
Electrode Temperature	80°C to 350°C
Upper Electrode RF Package	Dual range 60/600W, 13.56 MHz (optional 1,200W, 13.56 MHz)
Loading	Manual
Pumping	10,000 l/min Dry Backing Pump
Gas Lines	Up to 8 channels (6 channels included)
Control System	Cortex® on Windows™ 7
Endpoint Detection (optional)	Optical Emission Interferometry (OEI) / Optical Emission Spectroscopy (OES)
Power Requirements	380-415 V, 50 Hz 200-230 V, 50/60 Hz
Dimensions	Height 188.0 cm Depth 114.6 cm Width 66.7 cm
Certifications	CE, SEMI-2, S8
Factory Communications	SECS/GEM

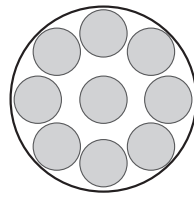
Flexible Substrate Loading Configurations



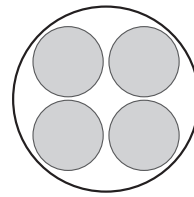
37 x 2"/50mm



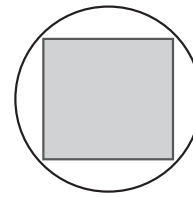
19 x 3"/75mm



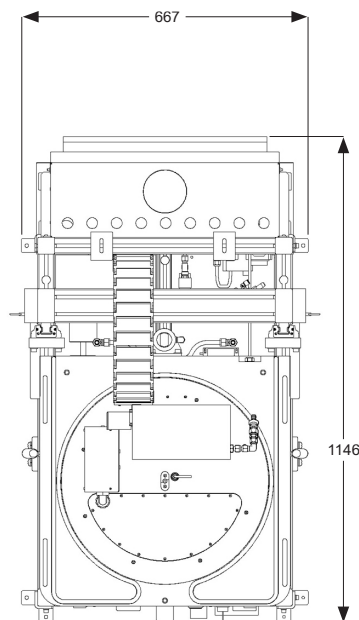
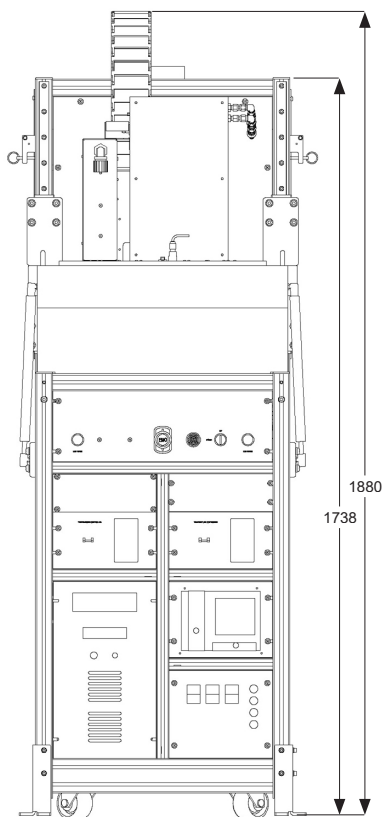
9 x 4"/100mm



4 x 6"/150mm



Ø 16" platen for custom sizes



Units: mm

