ASTEL Electronics and Industrial Automation – Semicon Synapsis Division

Proteus Loader

Macro and Micro Inspection Station for Silicon Wafers

Computer Controlled Inspection System with Thin Wafers Handling Capabilities

Semicon Synapsis

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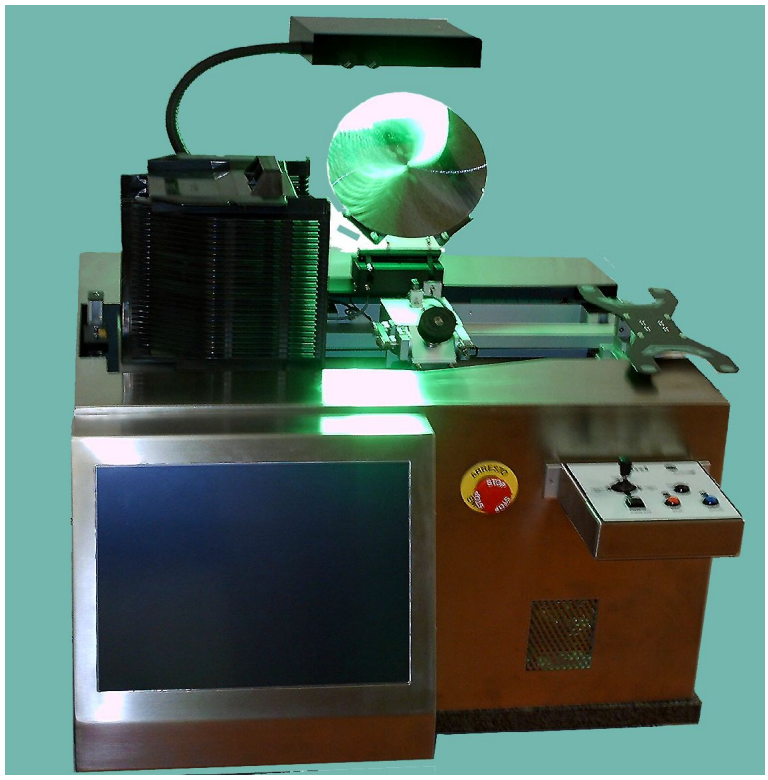
Technology for a Friendly Use



The new Proteus Inspection Loader is a tool dedicated to wafer micro and macro inspection tasks.

This equipment have been designed to fulfill the needs of short cycle times as well as the increasing difficulties due to thin wafers handling.

Such needs required a careful design, based on the state of the art technological solutions for both mechanics and control system.

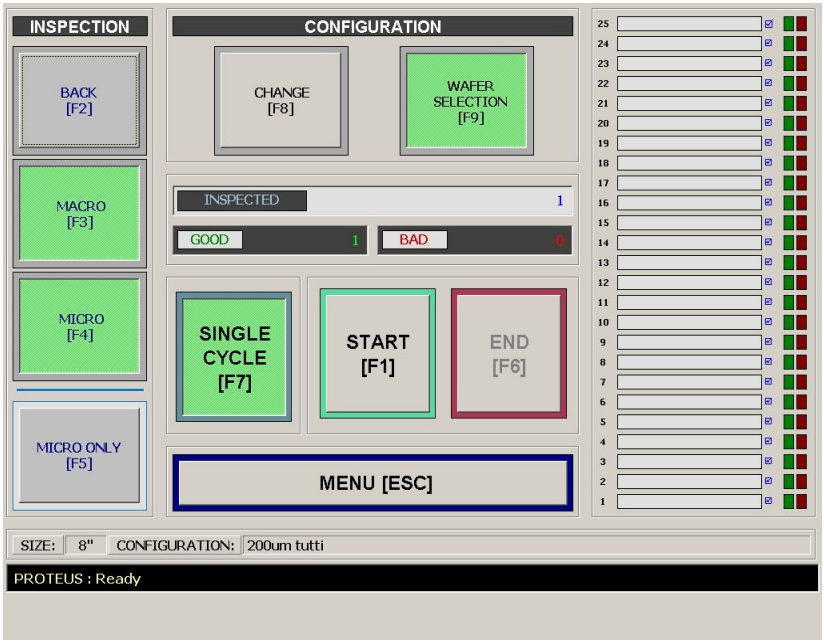
The Proteus Loader, in its fully equipped version, features micro and macro inspection capabilities, including a backside inspection with the full view of wafer bottom.

All the system is computer controlled, with a user friendly touch-screen interface for each machine function. Control software includes also a complete recipe management system, to easily recall recipes for any need of inspection to avoid the need of buttons and knobs.

It is possible to separately select each one of the inspection modes (Macro front, Macro Back, Micro) and wafer selection strategies (all, only specified wafers, random access).

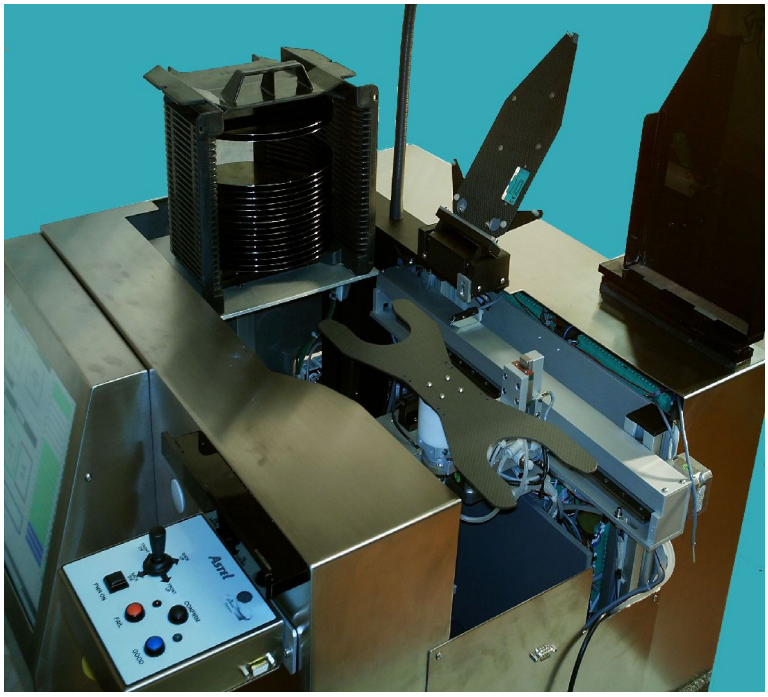
Computer control can be used also for additional tasks, such as data retrieval, image acquisition and management, statistical analysis.

Additional software modules can be customized on request. Please contact us for more details



Construction

Mechanics is enclosed in a stainless steel body to prevent contamination and electrostatic discharge generation, and is mounted on a granite base to give mass and stability for more precision and better vibration insulation.



Wafer handling is performed by carbon fiber end effectors, which ensure the best mechanical stability, are not subject to breaking and bending and in case of direct contact to the wafer give less possibilities of surface scratches.

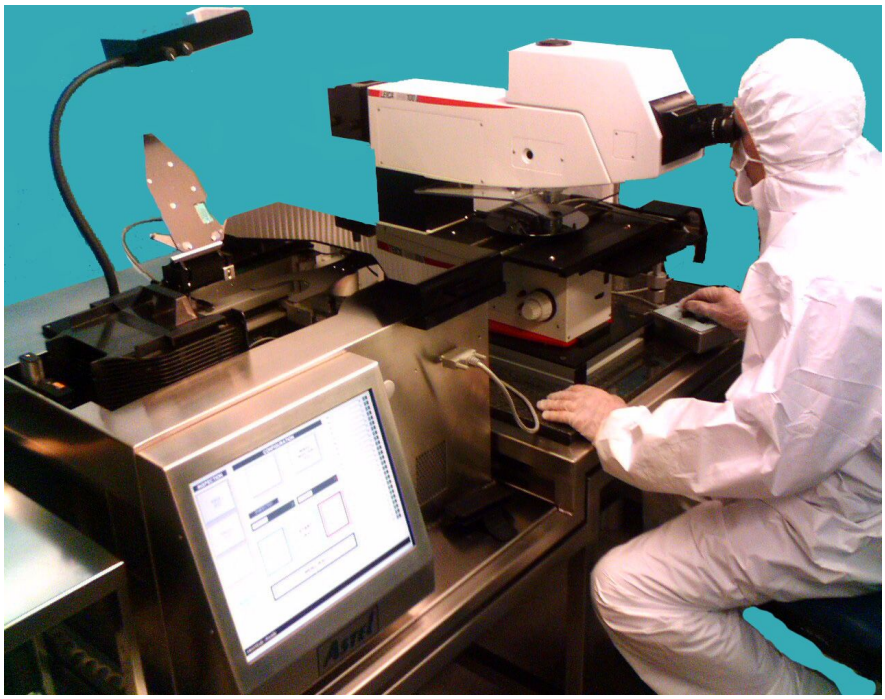
The backside inspection unit is based on a Bernoulli effect pad, which allows the complete view of the wafer bottom in a single operation.

Bernoulli pad can be used also to move thin wafers without stress or breakage danger, and the thin wafer version features a controlled flow adjustment and other special setup for the most critical applications.

Both front and back inspection have a joystick controlled tilt motion, to move the wafer to the best position to highlight the defects.

Solid state illuminators are available for macro and back inspection units, and can be defined for color and intensity according to inspection needs. Our standard illuminators are based on high intensity, pure green (525 nm) sources.

It is possible to interface almost any type of ispection microscope, mounting a special stage with the X axis featured by extended travel to directly pick the wafer, or by a special interface to shift the chuck to the loading position for the standard stages with central chuck.



Vibration insulated tables are available for optimal microscope interface.

Tables are stainless steel made and are featured by a two level construction, to allow the operator to access machine and microscope in the most comfortable and ergonomic way

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Proteus Microscope Loader and Inspection Station System Features and Installation Data

Footprint: W 800 x D 700 x H 650 (including Bernoulli unit in up position)

Voltage: 230 Vac 50 or 60 Hz, 700 VA

Nitrogen or clean air: 5 – 7 Kg/cm2

Vacuum: from -70 to -90 kPa – 20 l/min ca

Class 10 clean room compatible

Wafer thickness: 170 – 900 um (with thin wafer upgrade; standard 300 – 900 um)

Availabe versions:

Sigle size or multi size loader unit (6", 8" or 6-8")

Single size or multi size loader with front and back inspection

Single size or multi size loader with front and back inspection with thin wafers upgrade

Accessories:

Mechanical interface with chuck slider for microscopes with standard stages

X/Y mechanical stage (contact us for microscope details)

X/Y step motor motorized stage with control system (directly interfaced to machine controller, with joystick for manual drive – contact us for microscope details)

Stainless steel vibration insulated table, with two levels for optimized machine – microscope mounting 1600 W x 800 D x 800 H (custom versions available)

Front and back solid state illuminators (pure green 525 nm, other colors on request)

Customizable software modules for image acquisition and statistical control (contact us for details)

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