

H&L Instruments

Model 102C Edge Profile Comparator

- Reduce chipping and fracture
- Improve gripping by wafer handlers
- Increase yield
- Preserve valuable materials



for nondestructive inspection of your wafer edge

What does your wafer edge look like?

The H&L Instruments Model 102C Edge Profile Comparator lets you inspect the edges of your wafer to guard against chipping and mishandling by wafer handlers. By creating a shadow-edge profile image, this qualitative inspection instrument helps you verify compliance to specifications, without sacrificing the wafer.

The 102C magnifies the profile image 100 times and displays it on a 12" monitor. Precision fixturing for wafers from 1" to 300 mm allows you to rotate the wafer 360° and refocus as needed. By comparing the image with a template clamped to the monitor, you can compare your wafer against specifications such as SEMI M1 or M9. With the optional video processor, you can print the image for hard-copy documentation.

Help your wafer handler keep its grip

The shape and integrity of a wafer's edge play a part in its ability to survive the manufacturing process. Many wafer handling systems rely on a controlled wafer edge to provide repeatable, secure wafer transport. When a wafer's edge falls out of this control window, the handling system may lose its grip, causing wafer breakage or worse. During processes with rotation, such as chemical mechanical polishing and backside-lap processes, improved gripping avoids the catastrophic failure of wafers "jumping out of their pockets."

The 102C Edge Profiler lets you verify wafer-edge shape and integrity before manufacturing begins. By preventing chipped and "out-of-spec" wafers from entering the manufacturing flow, you can reduce wafer breakage, improve equipment uptime, and increase your line yield.

**Control of edge contour
Improves yield**

Control of edge contour can also improve your wafer's ability to yield active devices. The Model 102C identifies all common edge problems that affect yield.

Whether you need to inspect every wafer, or a statistical sample, control over the edge of your wafers provides significant processing benefits:

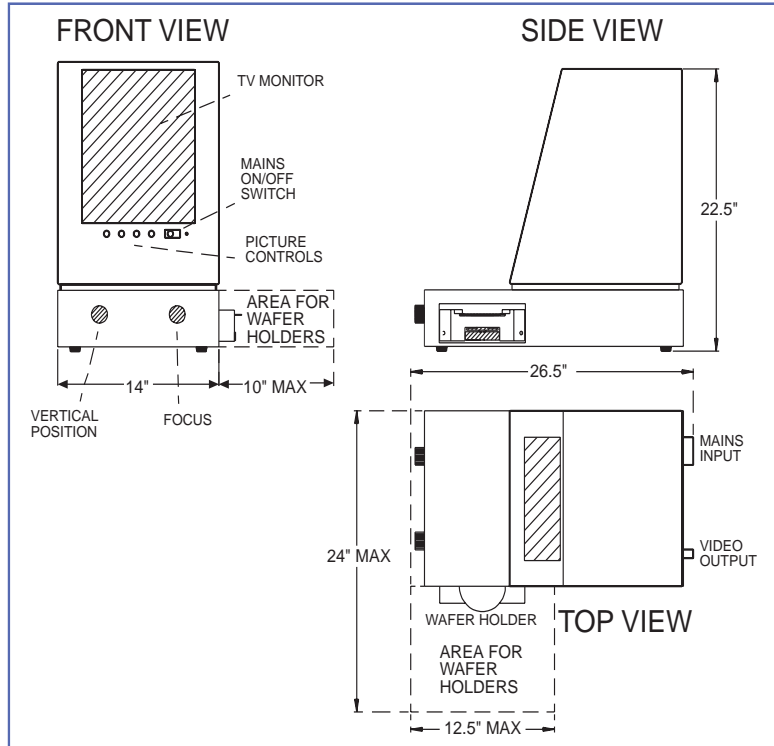
- reduces chipping and fracture
- reduces slip generation in furnace processes
- reduces particle generation
- reduces epitaxial edge crown
- reduces photoresist edge bead

Approved for testing to SEMI standards

The Model 102C is ideal for testing to ASTM F928 wafer test Method B. Many users prefer this method of edge inspection because the 102C is so easy to use. And, unlike other test methods, the wafer is completely usable after a shadow-image inspection. For large diameter silicon, GaAs and sapphire wafers, non-destructive testing preserves your valuable and hard to obtain material.

Inspect wafers and grinding wheels wafers from 1" to 300 mm

Built for production use by device manufacturers and wafer manufacturers alike, the Model 102C uses holders to change from one substrate to another. Holders are available for all wafer sizes as well as for many sizes of grinding and forming wheels. With the right holders, you can test all your materials with a single instrument.



Specifications

Dimensions:	22.5 × 24 (max) × 26.5 inches 572 × 610 (max) × 673 millimeters
Method of Inspection:	Shadow-profile image
Magnification:	100X (50X magnification is offered for thick wafers)
Monitor Size:	12" monochrome
Power Options:	120 VAC, 60 Hz, ½ Amp or 230 VAC, 50 Hz, ¼ Amp
No air or water required.	
Holder Material:	Delrin, with silicone rubber turntable (Teflon coating optional)
Holder Sizes Available:	All standard SEMI, DIN, and JEIDA sizes (Custom sizes available. Call H&L for details.)
Other Options Available:	Video processor for hard-copy print-out

Some of our customers:

IBM	MEMC	Sumitomo SITIX
Intel	Motorola	Texas Instruments
Lucent Technologies	SEH	TSK

Founded in 1979, H&L Instruments develops and manufactures electro-optical equipment for semiconductor materials processing, turbine engine maintenance, fiberoptic data communications, and medical research.

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