

2250 Large-Area Display Probing Station

Introduction

Large area, flat panel testing can be challenging at best if one does not have the proper equipment. Standard wafer level probers are often inadequate to meet the exacting demands of the application. The Model 2250 has been engineered specifically for large-area, flat panel type testing. In addition to independent platen X motion, a "track drive" for the manipulators has been added on each of the two platens, to provide increased flexibility of manipulator positioning. The speed of the probing application is greatly increased because of the extra axis of control. Individual probes or probe cards are also supported. Special manipulator "link arms" provide theta and planarity control of manipulator mounted probe cards. A fast pullout stage provides easy load and unload capability.

The Model 2250 large-area, flat panel probing station is one of a new series of *application specific* analysis tools from The Micromanipulator Company. It's designed to accommodate the needs of those performing diagnostic probing on flat panel display substrates or board-mounted delidded packaged devices.

Panels as large as 14" x 14" (35mm x 35mm) with larger sizes available, (contact factory) may be installed on the substrate mounts. Two 36" (91mm) long vacuum platens move independently to position manipulators and probes over the wide circuit board area. Additional "track drive" for manipulators provides further manipulator positional control.

Features:

- Independently movable 4" x 36" (100mm x 914mm) platens, with lock-down feature, for positioning manipulators over a wide area.
- Substrate mounts include ambient or thermal chucks or special fixturing as required.
- Accepts StereoZoom microscopes, high powered, compound microscopes (Mitutoyo, USMCO, MZ-II), or A-Zoom microscopes.
- Sealed bearings, debris trays and covers are supplied to meet most Clean Room applications.
- Stage features fast pullout load/unload feature.
- Features 1" x 1" (25mm x 25mm) X and Y fine microscope control for precision positioning. Gross microscope positioning provides for a full 15" x 24" (380mm x 610mm) viewing area.
- Multiple manipulators may be mounted to platen with thumbwheel controlled track drive providing precise Y direction positioning control. Manipulators may be configured to hold standard probes or probe cards.
- Model PLS-2250PC or PLX-2250PC link arms mount to manipulators and support probe cards with theta and planarity control. Links also available for Microwave Probe Heads.
- Magnetic or vacuum based manipulators (460 MT/VM or 560 MT/VM 90) are usable for additional probe capability.
- Vibration isolation air table is provided as the standard platform for the system.

- Massive microscope mount and boom assembly for maximum stability.
- Platen fine Z adjustment for elevating probes and substrate access.

Specifications

Platens

- Accepts multiple manipulators which may be conveniently positioned on track drive as desired.
- Stainless steel construction.
- Track drive provides quick and convenient manipulator positioning.

Lift Control

- Manual Z axis height variable 1.5"

Translation Control

- X; Manually positioned platen to work piece with thumbscrew locks.
- Y; Manually positioned manipulators with track drive and thumbscrew locks.

Substrate Support Options

- Four circuit board supports, utilizing vacuum hold down, rigidly accommodate variously shaped boards up to 14" x 14" (contact factory for larger sizes).
- Ambient or thermal vacuum chucks available to 14" x 14" size (contact factory for larger sizes).
- Special fixturing quoted per customer request.



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Specifications subject to change without notice.

Microscope and Post

Microscope Post

- Vertical positioning by focus mount.
- X-Y translation: 24" x 15" (61cm x 38cm) with fast manual, coarse positioning with lock down and fine 1" x 1" (25mm x 25mm) adjustment.
- Focus control, microscope specific.

Microscope Options

- EMZ StereoZoom.
- Mitutoyo FS-70.
- Thyaes Optem A-Zoom.
- U. S. Microscope Company US100.
- Other microscopes available per customer request.

Note: Video system recommended for ease of use.

Table

- 36" x 47" (91.5cm x 119cm) vibration isolation table.
- Vertical air suspension.
- Active servo-controlled automatic leveling system.

Manipulators

- Accepts standard vacuum or magnetic base manipulators (110/210, 250/350, 450/550, 2450/2550 MT or VM 90 type and WAVE MT, MAV or VM type).
- Accepts "track mount" manipulators model 600/460TRACK (left hand) and 700/460TRACK (right hand). At time of order, specify manipulators and position for factory mounting and adjustment of track drive.
- 600/700 manipulators accept theta/planarity links for probe cards (PLS-2250PC with straight attack angle, PLR-2250PC with 90 degree fold to right and PLL-2250PC with 90 degree fold to left). Links for Microwave Probe Heads also supported (PLS-2250MW, PLR-2250MW and PLL-2250MW). Probe card and microwave probe head specifications are required at time of order.

Dimensions and Finish

Size: 47" x 36" x 46" wide x deep x high (119cm x 91.5cm x 117cm)

Overall depth with microscope rear overhang is 46" (117 cm).

Finish: Grained black anodized aluminum for long life.

Weight: 700 lbs. (318 kg). (Floor loading estimates depending upon configuration.)

Facility Requirements

Power: 117V/60Hz standard, 220V/50Hz optional (2 amps).

Note: for power requirements for thermal chucks, see specific chuck type.

Air: Shop air: 80 psi (MIP).

Vacuum: 20" mercury required for manipulators and for circuit board supports.

Shipping Information

Two Cartons:

- Carton #1: Wood pallet base with 3-ply cardboard attached.
- Carton #2: Double wall carton on skid with 4" foam between inner and outer boxes.

Carton Sizes:

- Carton #1: 54" x 43" x 56" wide x deep x high (137cm x 109cm x 142cm).
- Carton #2: 37" x 39" x 32" (94cm x 99cm x 81cm) including 4" pallet.

Shipping Weight:

- Carton #1: 800 lbs. (363 kg).
- Carton #2: 125 lbs. (57 kg).