



OPTEK
OPERATIONS TECHNOLOGY INC

InnerVision™ 1272XA

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X-RAY INSPECTION AND MEASUREMENT SYSTEM

The OPTEK InnerVision is the world's first x-ray coordinate measuring machine. It measures and reports the positions of internal features such as coupon pads on inner layers of multi-layer printed circuit boards, reinforcements and fastener inserts in composite structures, and other such encapsulated or laminated features.

The images and measurements obtained by the InnerVision reveal and quantify offset, skew, stretch, shrink, and other distortions that may affect the location of internal details. The data provided allows fabrication processes such as lamination, molding, drilling, and machining to be controlled.

No-maintenance Precision Linear Motors position the stage accurately, quietly, and quickly. X-ray camera and Y-axis transport glide independently on friction free air-bearings and are close-looped to 1/10th micron precision scales. The InnerVision system is a unique combination of specialized real time x-ray imaging with automated positioning and precision video based metrology capabilities. The result is the most sophisticated x-ray inspection and measurement system available today.

FEATURES

- Advanced metrology software provides a powerful programming environment and a high degree of control flexibility.
- System has versatile video tools such as Line Width, Circle, Center-of-Mass, and Buffer that speed the measuring process.
- Transports are driven quietly on air bearings by sophisticated, no maintenance, linear motors which are close-looped to 1/10th micron precision scales.
- Microsoft Windows operating environment with on-line help to ease training. The Intel Quad-Core processor permits rapid feature detection and high-speed transport control.
- Network capability is standard. Electronic file or printout of dimensional data as well as images are available.
- The system reports position and size of features, allowing optimization of the user's fabrication process.
- System has the ability to download dimensional data for storage or further analysis.
- Tolerancing to Cartesian, as well as True Position, LMC, and MMC is provided.
- Programs can be automatically created from CAD data or by recording steps while manually measuring a part.
- Wide Format LCD Monitor for display of metrology data and x-ray image.
- Adjustable ergonomic workstation including a compact control panel and standard keyboard maximizes operator performance.
- Massive granite base and bridge for superior machine stability.
- Dual-Stage, Intensified x-ray camera provides brilliant video image.
- Programmable X-ray settings for illumination of sub-surface features.
- Enhanced video edge detection (VED) for selective feature detection.
- Electronically slaved x-ray source and power supply.

SPECIFICATIONS

Model	1272XA
X-Y Travel	1270 mm X 915 mm (50" X 36")
Machine Width	2.45 m (96")
Machine Depth	2.74 m (108")
Machine Height	1.83 m (72")
Overhangs	Up to 635 mm (25") for Adjustable Control Station at front. 280 mm (11") for optional color printer at right
Weight (approx.)	5443 kg (12,000 lbs)
Shipping Weight	Add 150 kg / (330 lbs) if palletized, or 240 kg / (550 lbs) if palletized & crated.
X-Y Stage Velocity	760 mm (30") per second
X-Y Stage Accuracy	$U_{95} = (5.0 + L/200) \mu\text{m}$ Applies to thermally stable system @ 20°C with a pixel value of 5 μm or less and 0.1 μm scales (included)
Environment	19° - 21°C (66°-70°F) Recommended temperature range. 18° - 23°C (65°-75°F) Suitable temperature range. 0.5°C (1°F)/Hr Maximum rate of change, 30% - 80% RH non-condensing
Computer	High performance Intel Quad Core processor. Contact factory for latest configuration.
Electrical	115 VAC 15 A 50/60 Hz or 220 VAC 8 A 50/60 Hz Single Phase
Training	Three to five days of on-site training by an OPTEK engineer (Quoted Separately)
Warranty	One Year Parts and Labor
Operations Technology Inc. is committed to continuous improvement. Specifications are subject to change	

OPTIONS

- A selection of high current Mini-focus x-ray sources up to 50kv provides the power to handle thicker, more dense materials.
- Micro-focus x-ray source with 60kv, 8 micron focal spot gives sharper imaging. Recommended for high magnification configurations.
- Pneumatic tooling clamps hold flat sample of various thicknesses.
- Color Printer provides archived x-ray images and measurement reports.
- File Conversion Utility allows import of CAD files.
- Third party software for optimization of multilayer circuit boards.

Consult the Factory for additional information on configuration or applications.