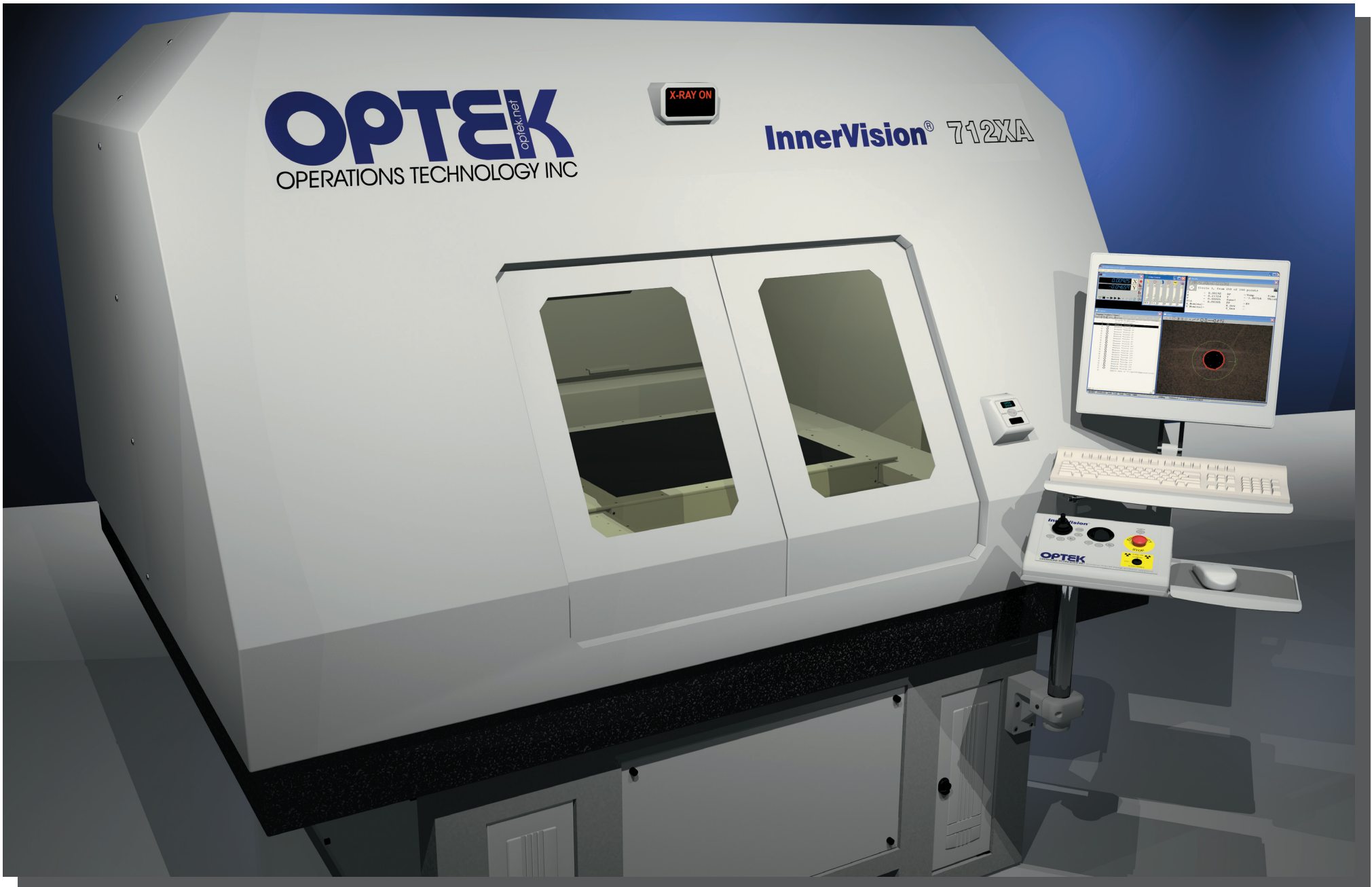


OPTEK
OPERATIONS TECHNOLOGY INC

X-RAY ON

InnerVision® 712XA



OPTEK
OPERATIONS TECHNOLOGY INC

InnerVision® XA

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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. The stage is close-looped to 1/10th micron linear scales for precise positioning. 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 programming flexibility.
- System has versatile video tools such as Line Width, Circle, Center-of-Mass, and Buffer that speed the measuring process.
- Transports driven quietly on precision linear ways and air bearings by sophisticated, no maintenance, balanced linear motors which are close-looped to .1 micron (.000004") precision scales.
- The Microsoft Windows environment is used with on-line help to ease training.
- The multi-tasking Intel Pentium series 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 is available for storage or further analysis.
- The system reports the position of features allowing optimization of the user's fabrication process.
- 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.
- Large (19") LCD color 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 cantilever for superior machine stability.
- High-resolution, intensified x-ray camera provides brilliant video image.
- Programmable x-ray voltage and current settings for illumination of sub-surface features.
- An array of image processing tools such as Offset, Gain, Integration, and Exposure.

SPECIFICATIONS

Model	712XA
X-Y Travel	710 mm X 660 mm (28" X 24")
Machine Width	2.21 m (87")
Machine Depth	1.96 m (77")
Machine Height	2.01 m (79")
Overhangs	Up to 635 mm (25") for Adjustable Control Station at front. 280 mm (11") for optional color printer at right
Weight (approx.)	2600 kg (5700 lbs)
Shipping Weight	Shipping Weight: add 100 kg (220 lbs) if palletized or 160 kg (350 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
Environment	20 \pm 0.5°C (67°-69°F) temperature range. 0.25°C (0.5°F)/Hr maximum rate of change. 30% - 80% RH non-condensing
Controller	High performance Pentium processor. Contact factory for latest configuration.
Utilities	115 VAC 15 A 50/60 Hz or 220 VAC 8 A 50/60 Hz Single Phase 85 L/m (3 CFM) dry air at 7 to 8.25 Bar (100-120 PSI)
Training	Three to five days on-site, by an OPTEK engineer (Quoted Separately)
Warranty	One Year Parts and labor
OPTEK is committed to continuous improvement. Specifications are subject to change.	

OPTIONS

- A selection of mini-focus and micro-focus x-ray sources are available to handle a variety of substrate compositions and thicknesses.
- Large area intensified camera offers high-sensitivity imaging for challenging applications.
- Pneumatic tooling clamps hold flat samples of various thicknesses.
- Dual Stage camera provides two distinctly different magnifications.
- Color Printer provides archived x-ray images and measurement reports.
- File Conversion Utilities import CAD files
- Multi-Layer Registration software for determining scaling and drill offset.

Consult the Factory for additional information on configuration or applications.