VIEW **Pinnacle™ 250**

A high throughput, high accuracy dimensional metrology system

Featuring:

250 x 150 x 100 mm (10 x 6 x 4 in.) measuring range

E_2 (XY plane) = $(1.5 + 5L/1000)$ µm

400 mm/sec stage X,Y velocity with frictionless linear motor drives

Sub-micron scale resolution

High-precision dual magnification optical system

Optional through-the-lens (TTL) laser with autofocus and scanning capabilities

Advanced image processing for high speed, accuracy and robustness

Subpixel accuracy of 1/10 to 1/50 pixel

Choice of powerful metrology software and data analysis tools

MTBF   8,000 hours

Optional ESD and Class 1000 clean room compatible

Photo Description: VIEW Pinnacle 250
The photo above displays the Pinnacle 250 model with VMS software, and optional Integrated workstation. Additional options are listed in the technical specifications and are not included in this photo.

PINNACLE

The VIEW Pinnacle™ 250 delivers unmatched accuracy and throughput, MTBF performance, and the lowest cost of ownership for an automated measuring system of its kind. Its exclusive multi-color Programmable Ring Light (PRL) allows use of red, green, blue, or white LED light to effortlessly image the toughest applications.

State-of-the-art linear motion control technology provides the fastest, most reliable, and maintenance-free platform available for high volume, high capacity operation in production environments ranging from clean rooms to factory floors.

Available optional software packages increase system versatility:

- CAD import (DXF/IGES) Software
- Form fitting and analysis Software
- Off-line Programming Software
- QC-Calc™ Statistical Process Control (SPC) — Real-time analysis and reporting software
- Elements™ CAD To Measure metrology software

Advanced metrology for leading technologies

Applications for Pinnacle include:

Semiconductor/Electronics
- BGA, µBGA, CSP, flip-chip, MCM, bump-on-die
- Lead frames, wire bonds, flex circuits, connectors
- SMT component placement
- Solder paste/Epoxy glue dot
- Chip carriers and trays
- Inkjet printer cartridges
- Fiber optic components and MEMs

Data Storage
- Suspensions
- Slider and Head Gimble Assemblies (HGA)
- Disk media substrates

Precision plastic molded and machined parts
- Dies and tooling
- Medical devices
- Fuel injection components
- Watch components

Technical Specifications - VIEW Pinnacle™ 250

◐ Standard ● Optional

Measuring Range	◐ 250 x 150 x 100 mm (10 x 6 x 4 in.)
Scale Resolution	◐ 0.1 µm (0.000004")
	● 0.05 µm (0.000002") Zero expansion material
Stage Drive System	◐ DC servo, frictionless linear motor drives on X and Y axes
	◐ DC servo, rotary motor drive on Z axis
Stage Drive Velocity	◐ XY: 400 mm/sec; Z: 100 mm/sec.
Stage Error Mapping	◐ Non-linear 2D error corrections in X-Y plane
Stage Load Capacity	◐ 25 kg (55 lbs) maximum load
Optical System	◐ Dual magnification, fixed lens optical system with 1X and 4X internal magnifications.

Objective Magnification	0.8x/3.2x	1x/4x	2.5x/10x	5x/20x	10x/40x	25x/100x
	●	●	◐	●	●	●
Working Distance	84 mm	34 mm	32 mm	33 mm	30 mm	13 mm
Field of View (mm)						
Low ◐	8.3 x 6.2	6.8 x 5.1	2.7 x 2.0	1.3 x 1.03	0.6 x 0.5	0.27 x 0.20
High ◐	1.9 x 1.4	1.5 x 1.2	0.64 x 0.48	0.32 x 0.24	0.15 x 0.11	0.06 x 0.05

Optical Accessories	● Ronchi Grid Projection
Illumination	◐ Programmable LED Illumination system for stage backlight and coaxial surface light
	● Multi-color (red, blue, green, and composed white) LED Illumination Programmable Ring Light (PRL)
	● VectorLight™ high-intensity programmable ringlight with white LEDs
Cameras	◐ Dual digital 1.4 megapixel monochrome cameras; 4:1 ratio
Image Processing	◐ Frame integration; 10:1 to 50:1 subpixeling
	● CiC - Continuous Image Capture integrated with stage motion for on-the-fly high speed measurement
Sensor Options	● Through-the-lens (TTL) laser autofocus and scanning sensor
	● SpectraProbe™ high resolution chromatic sensor
Controller	◐ Dedicated system controller with embedded Intel® 2.66 Ghz Quad CPU Processor and Windows® operating system
Operator Workstation	◐ Stand-alone Anthro Cart Operator workstation; 90 x 90 x 128 cm; 40 kg
	● Integrated adjustablesit / stand workstation arm, with independent height adjustment for monitor and keyboard that provides support for the flat panel display and peripherals
Display Monitors	● Single 20" LCD flat panel monitor, joystick, keyboard, and mouse
	● Dual 20" LCD flat panel monitors, joystick, keyboard, and mouse
Metrology Software	◐ VIEW Metrology Software (VMS)
	● Elements™ CAD to Measure metrology software
	● VMS Off-Line Workstation Software
Mechanical Options	● Certified calibration standards and accessories
	● Fixture kits
	● Rotary Indexers
MTBF	◐ ≥ 8,000 hours
Power Supply	◐ 115/230 VAC, 50/60 Hz, 700 W
Rated Environment	◐ 18-22°C, (65-71°F) 30-80% humidity (non-condensing); vibration <0.0015g below 15Hz
System Dimensions	(W x D x H) - 795 x 953 x 1750mm (31.5 x 37.5 x 69 in.)
Weight	**Crated:** 771 kg (1,700 lbs) **Uncrated:** 635 kg (1,400 lbs)

Measuring Accuracy at 20°C (68°F)

◐ E_2 (XY plane) = $(1.5 + 5L/1000)$ µm[1,2,3,4]

● E_2 (XY plane) = $(1.0 + 5L/1000)$ µm[1,2,3,4]

◐ E_1 (Z-axis) = $(1.4 + 5L/1000)$ µm[1,2,5]

Where L = measuring length in mm.
All specifications apply to a thermally stable machine and a certified artifact at 20°C.

1. Maximum rate of temperature change: 1° C / Hour.
2. Maximum vertical temperature gradient: 1° C / Meter
3. At rated velocity with evenly distributed load of 25KG.
4. X,Y area accuracy artifact: QVI grid reticle or QVI linescale in the standard measuring plane. Standard measuring plane is defined as within 25mm of the worktable surface.
5. Z axis accuracy artifact: QVI step gage, interferometer or master gage blocks.