

# EXCEL Serie



**Advanced Lighting**  
**High speed and Accuracy**  
**Powerful yet Easy-to-use Interface**  
**Designed to measure extra large parts**

PRECISION MEASUREMENT SYSTEMS

# EXCEL Serie

The Excel Measuring Centers™ employ new technologies to provide high speed and accuracy on reliable and affordable measurement systems.

The gantry style vision systems can accommodate large parts and fixtures of multiple parts while maintaining a relatively small footprint. "Monorail" linear way bearings, dual encoder servo control, and sophisticated electronics allow these systems to reach 20 in/sec.

With the advanced lighting, zoom control, and edge detection tools included in the latest Inspec Vision Metrology Software, The Excel Measuring Centers™ can handle the most demanding measurement applications.



1. XYZ Measuring volume  
600 x 600 x 150 mm\*  
900 x 1200 x 150 mm\*  
1200 x 1500 x 150 mm  
\* 300 mm optional

2. Multisensor system : video - touch probe  
with docking station (optional)  
Programmable and long life LEDs Lighting  
Programmable Zoom Lens

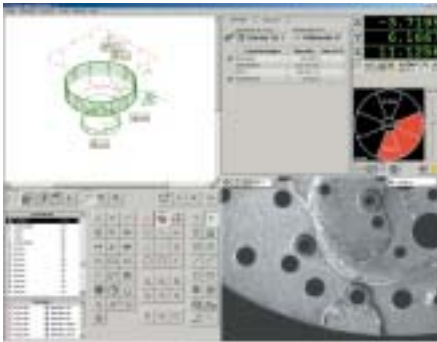
3. Gantry type measuring center with  
stationary table and moving bridge

4. Monorail Linear bearing design  
Dual encoders and high speed  
Servo Capstan Drives

5. Inspec Vision Metrology Software

6. Computer console  
included

# Feature Highlights



## Inspec Metrology Software

- Powerful Yet Easy-to-Use
- A single graphic user interface
- Adaptive vision tools
- High speed scanning
- Point and click programming



## Technologies

- USB 2.0 connection
- 3D measurement optical sensor - touch probe
- Windows 2000 or XP Pro
- DSP Technology and on-board memory
- Hi-Resolution B&W or color video



## Mechanics

- Gantry type measuring center with stationary granit table and moving bridge
- Monorail Design provides high accuracy, improves drive stiffness and minimizes maintenance



## Optics - Lighting features

- 12x motorized Zoom Lens, Magnification 7x to 800x
- 3 types of LEDs lighting systems : profile (Backlighting), surface (ring light) and Axial (Thru-the-lens)
- Programmable lighting (type, strength, direction, incidence), with automatic adjustment according to the zoom level
- Intuitive onscreen controls : ring, sector and segment selection

## Ring Light

- Standard, controls 2 rings, 8 sectors and 16 segments
- Optional, Macro Ring light to enhance difficult-to-see edges, controls 5 rings, 8 sectors and 40 segments



# Inspec vision

- Easy to Use Software
- Advanced focus routine
- Advanced LED Lighting
- Superior edge detection

**Summary Window**  
Configurable to display only the properties desired. Quick check for in or out of tolerance condition

**Large Schematic**  
Updates as features are measured

**DRO**  
Shows instant results for manual crosshair measurements

**Lighting control**  
Easy adjust all light sources to meet application needed

**Instruction List**  
Displays the measurement program and the constraints for fast and easy editing

**Large video Image**  
Displays live image, view measurements live, save image for reports

Property	Actual	Output
Area	10.000	
Perim	1.000	

X: -75.0485  
Y: 20.4360  
Z: 8.6397

**Inspec Vision™** for windows is a powerful 32-bit Metrology Software application. The software can utilize fast USB, plug and play communication between the measurement machine and computer. The system has been designed to be an integral component of your inspection and measurement lab.

**Inspec Vision™** seamlessly integrates Camera and Touch Probe. Add CMM capabilities to MicroVu vision systems.

**Inspec Vision™** for windows combined with technologically advanced staging, electronics and lighting, results in our most powerful measuring system. Inspec for windows makes it easy to measure parts, generate reports, gather data for SPC, check geometric tolerances and more. It provides you with state of the art vision processing tools, automated operational guidance, and a familiar Microsoft Windows user interface. Now you can measure your parts with ease and confidence.

# Feature Highlights

## METROLOGY

### Graphic user interface

To simplify the learning curve Inspec encompasses a familiar Windows interface with graphics, icons, color-coding and both visual and audio feedback.

### Programming

Teach-as-you-go programming means creating and editing measurement routines is as simple as pointing the mouse and clicking.

### Feature measurement icons

Icons are centrally located to expedite programming and editing. Choose from angle, arc, circle, ellipse, gap, line, o-ring, plane, point, rectangle, slot, spline and more.

### Constructions

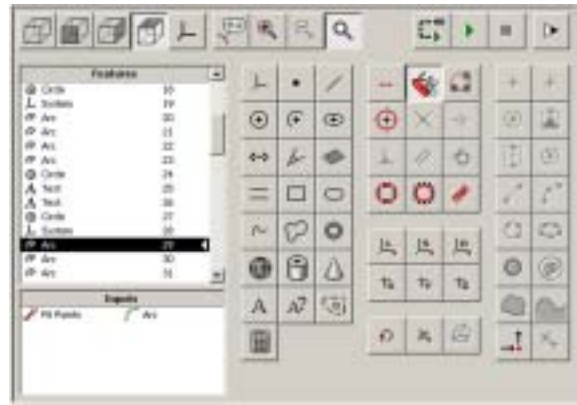
Create intersections, tangents, parallel and perpendicular lines and more. Inspec will only permit geometrically correct combinations. User configurable defaults are available for common construction.

### Tolerancing

Standard ANSI / ISO dimensioning and tolerancing is supported. Operators are immediately notified of an out of tolerance condition.

### File inputs and Outputs

A variety of file formats may be imported to speed up programming. Formats supported include DXF, Gerber, Excellon and IGES. Export data to a serial port, to a network location, or to the local hard drive. Use spreadsheets, databases, reports or SPC programs. Output to CAD for reverse engineering.



## CALIBRATION

Non-linear Calibration capability is included with Inspec Vision for Windows. The calibration routine uses a NIST traceable calibration grid.

## VISION

The edge detection tools accurately locate data points and geometric features from the video image of the part. The powerful, sub-pixel edge detection algorithms allow Inspec to reliably compute accurate measurements at a variety of magnifications. For visual inspection, images can also be captured and saved.

## TOUCH PROBE

Inspec provides intuitive probe assembly interface, automated docking in multi-port probe change rack, automated probe tip qualification including lobing, automated Z scale and Perpendicularity calibration, automatic approach vectoring and solution iteration, automatic retract and adjustable standoff distances.

## LIGHTING CONTROL

The advanced LED Lighting used on Micro-Vu's measuring stages is completely configurable. A simple software interface allows you to click and drag to set light level. The light settings for each tool are recalled during the measurement of the part as programmed.



# EXCEL

Model	4120	4220	5120	5220	6120	6220
X Y Z Measuring volume	600 x 600 x 150 mm <sup>(1)</sup>		900 x 1200 x 150 mm <sup>(1)</sup>		1200 x 1500 x 150 mm	
X Y Z Measuring volume	23,6" x 23,6" x 5,9" <sup>(1)</sup>		35,4" x 47,2" x 5,9" <sup>(1)</sup>		47,2" x 59" x 5,9"mm	
Scale resolution (µm)	0,5		0,5		0,5	
E <sub>2</sub> XY* (µm)	from 1,5 + 7L/1000					
E <sub>1</sub> Z* - optical (µm)	from 1,7 + 5L/1000					
E <sub>1</sub> Z* - touch probe (µm)	from 1 + 5L/1000					
XY speed	500 mm/s - 20"/s					
XY acceleration	1000 mm/s <sup>2</sup> - 40"/s <sup>2</sup>					
Z speed and acceleration	150 mm/s - 6"/s and 500 mm/s <sup>2</sup> - 20"/s <sup>2</sup>					

Mechanics	4120	4220	5120	5220	6120	6220
External dimensions (mm)	L 1675 x W 1200 x H 1600		L 2285 x W 1525 x H 1650		L 2590 x W 1855 x H 1725	
External dimensions (inch)	L 66" x W 47" x H 63"		L 90" x W 60" x H 65"		L 102" x W 73" x H 68"	
Weight (kg)	910 (2000 lb)		2 050 (4500 lb)		3 410 (7500 lb)	
Capacity (kg)	100 (220lb)					
Base Material	Granite					
Ways	Unique XY Monorail, Monorail Linear Z					
Motion control	Servo : CNC, Mouse and pendant control					

Optics - Computer	4120	4220	5120	5220	6120	6220
Video	Hi-Res B&W	Hi-Res color	Hi-Res B&W	Hi-Res color	Hi-Res B&W	Hi-Res color
Zoom and Magnification	12 : 1 programmable zoom / ~ 15x - 400x <sup>(2)</sup>					
Connection	USB 2.0					
Computer	2.8 GHz, 512 MB RAM, HD 80Go, CDR-RW, Windows 2000 or XP Pro					

Lighting	4120	4220	5120	5220	6120	6220
Illumination source	Red LEDs	White LEDs	Red LEDs	White LEDs	Red LEDs	White LEDs
Lighting	Surface, Profil and Axial					
Surface Lighting	Standard Ring Light (2 rings / 8 sectors) - Macro Ring Light ( 5 rings, 8 sectors)					

(1) Option Z : 300 mm - 11,8"

(2) Magnifications depends on monitor size and resolution

\* Accuracy calculated with L in mm, under the optimum conditions using the maximum zoom, on the basis of standard linked to COFRAC.



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