

Measurement & Inspection Solutions
for High-Precision Applications

Ergonomic

Precision **Accuracy**

Submicron Applications

MIRAGE®

Non-Contact Automatic 3-Axis
Vision and Laser Based Tabletop
Measurement System

PRECISION AND ACCURACY

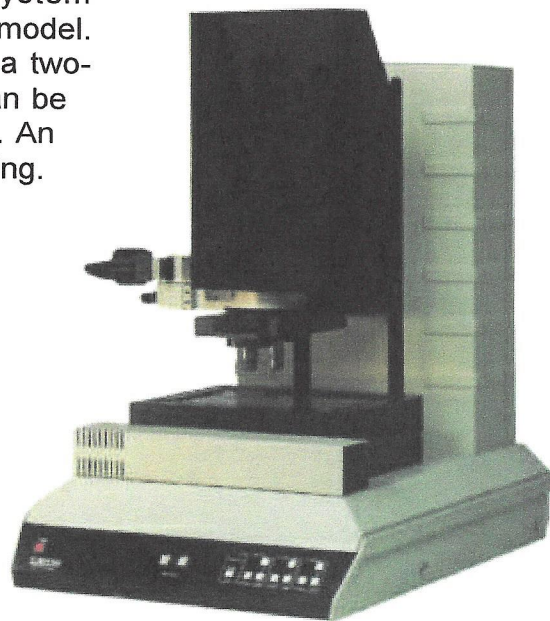
The Mirage® automatic vision and laser measurement system provides high accuracy measurement in a compact tabletop model. A typical configuration may include microscope optics using a two-position precision automatic lens shuttle. Laser auto focus can be added for high speed, on-the-fly focusing of the video image. An optional laser probe is available for ultra-precise Z-axis profiling.

FEATURES

- Micron-Scale Accuracy, Submicron Resolution
- JMAR VideoCMM® Software for Windows 7*
- Supports High Magnification Microscope Optics
- Automatic Two-Position Lens Shuttle (Optional)
- Three Channel Computer-Controlled Light Source
- Laser Auto Focus (Optional)
- Z-Axis Laser Probes (Optional)
- Integrated Active Air Isolation (Optional)
- Integrated Active Air Isolation

OPTIONS

Dual position automatic lens shuttle
Lens change speed: < 1 second
Lens repeatability: < 1 µm
Dynamic laser auto focus
High precision scanning laser probes
Working distance: 5 to 30 mm
Spot size: 1 to 15 µm
Resolution: .03 to 1 µm
Active air vibration isolation
Fiber optic ring light
Brightfield / Darkfield
Differential Interface Contrast (D.I.C.)



APPLICATIONS

High magnification platform stability, stage accuracy, and high resolution make the Mirage® the perfect choice for measurement and process control. This system is ideal for inspection of such parts and components as:

- ⊕ TAB-tape
- ⊕ Ball grid arrays (BGA)
- ⊕ Flex circuits
- ⊕ Head gimbal assemblies (HGA)
- ⊕ Lead frames
- ⊕ Sliders (pole tip and gap measurement)
- ⊕ Wire bonding (weld bonds or ball bonds)
- ⊕ Wire loop height
- ⊕ Wafer critical dimensions (CD)

PPL Pacific Precision
Laboratories, Inc.

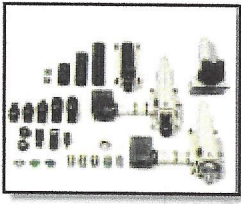
Formerly J-MAR Precision Systems

ISO 9001 Certified

www.ppli.com

*Windows XP is a trademark of Microsoft Corporation

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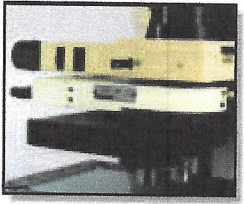


Optical Flexibility

- Micro or macro lenses
- Brightfield / Darkfield (Optional)
- Up to 100x objectives
- Effective magnification to 3000x

Laser Probe Mounted Next to Video (Optional)

- High resolution Z-axis profiling
- Single point and scanning applications
- Triangulation or active focus laser probes

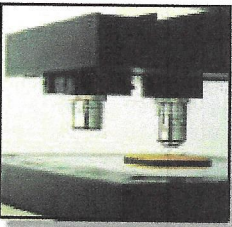


5 Position Turret

- High speed auto focus
- Computer controlled
- Computer programmable offsets

3-Light Lamp Source

- Digital computer control
- Independently controlled channels



Automatic Two-Position Lens Shuttle (Optional)

- Manual or computer controlled
- Supports micro or macro optics
- Supports ring light

Mechanical Specifications:

X-Y stage travel: 10" x 4"
Fine focus Z-axis travel: 2"
Manual Z-height adjust: 8"

Size: 22" x 30" x 33" LWH

Weight: 250 lbs (114 kg)

Electrical Specifications:

120vac / 220VAC compatibility
Max. Current: 20A

Optical: Supports major brands of optical systems

Micro or macro optics
Up to 3000x total magnification.

Passive Vibration Isolation

Illumination Sources:

3 Channel digital light control
Transmitted, incident and optional oblique lighting

Computer Hardware:

IBM Pentium class compatible PC
SVGA color monitor

Stage Resolution and Accuracy:

Resolution: $.1\mu\text{m}$
Repeatability: $< 1\mu\text{m}$
Accuracy: $3\mu\text{m}$ (see detailed specification)

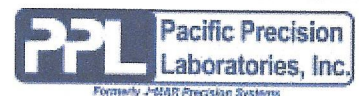
Accuracy: - in μm

$U1 = (2.0 + L/100)$ (XY Plane) $U2$ (Z Axis) $= (2.0 + L/20)$
Where L is the Length in mm.

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