

# MIRAGE®

## **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.

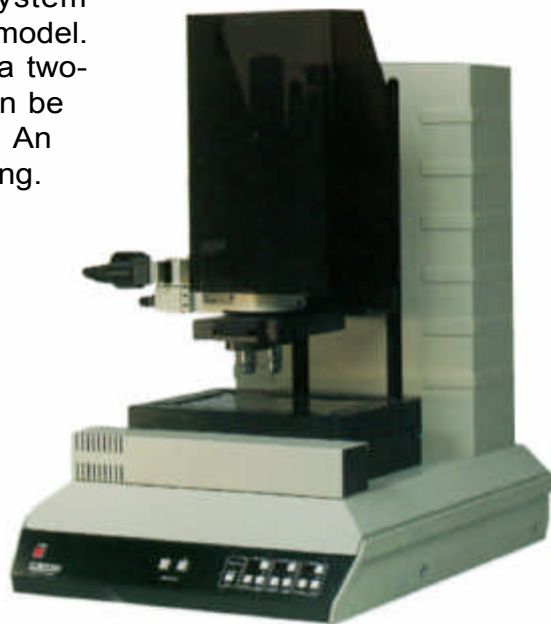
### **FEATURES**

- ⊕ Micron-Scale Accuracy, Submicron Resolution
- ⊕ JMAR VideoCMM® Software for Windows XP\*
- ⊕ 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)

### **OPTIONS**

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

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



### **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)



Formerly J-MAR Precision Systems

ISO 9001 Certified

[www.ppli.com](http://www.ppli.com)

## Measurement & Inspection Solutions for High-Precision Applications

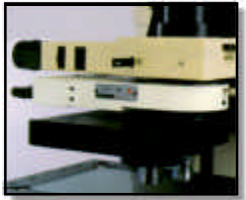


### Optical Flexibility

- 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



### Laser Auto Focus (Optional)

- High speed auto focus
- Manual or 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: .1µm  
Repeatability: < 1µm  
Accuracy: 3µm (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.

### Pacific Precision Laboratories, Inc. Main Office

9207 Eton Avenue  
Chatsworth, CA 91311 USA  
800-793-0179 or  
818-700-8977  
818-700-8984 (fax)  
E-Mail: sales@ppli.com

Contact PPL Main Office for USA and  
international locations and phone  
numbers.



ISO 9001 Certified

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Specifications subject to change without notice

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