



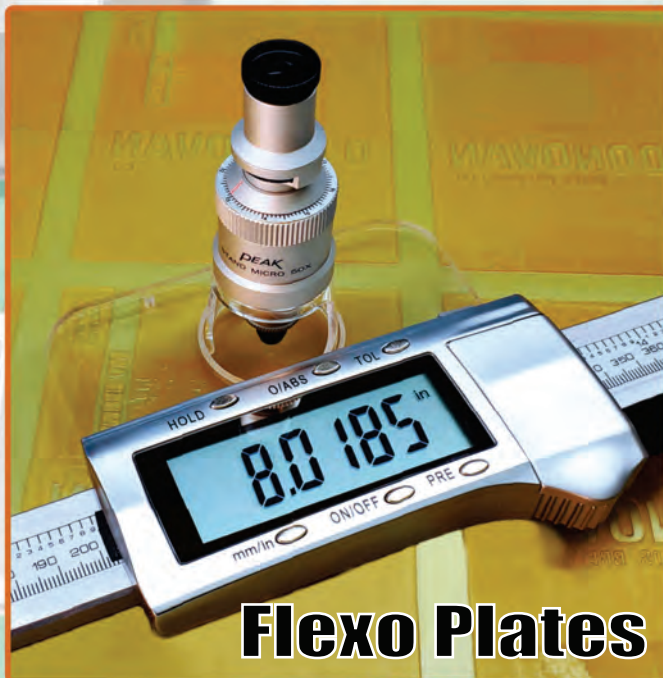
Precision Electronic Rulers

Measure Films, Plates, Dies, Prints, Circuit Boards & More
For Flexo, Offset, Screen, Wide Format, Electronics

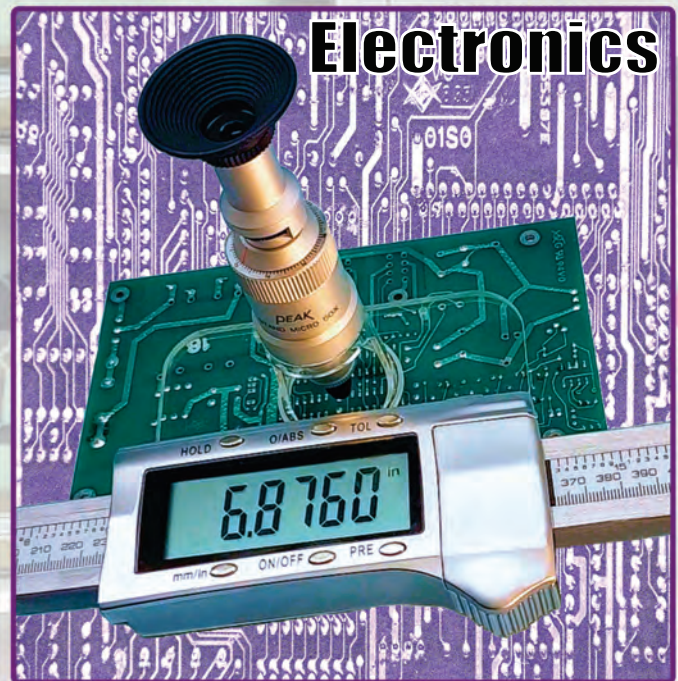
Instruction Manual



Labels



Flexo Plates



Electronics

Beta Precision Digital Electronic Rulers

Instruction Manual

TABLE OF CONTENTS

Brochure.....	page 1-2
Microscope Mounting.....	page 3
Basic Instructions.....	page 4
Display Diagram.....	page 5
Diagrams And Dimensions.....	pages 6-8
Questions and Answers.....	pages 9-10
Other Beta Industries Products.....	page 11



Precision Electronic Rulers

EXACT NON-CONTACT MEASUREMENT OF MATERIALS & STRETCH
Measure Films, Plates, Dies, Prints, Circuit Boards & More
For Flexo, Offset, Screen, Wide Format, Electronics

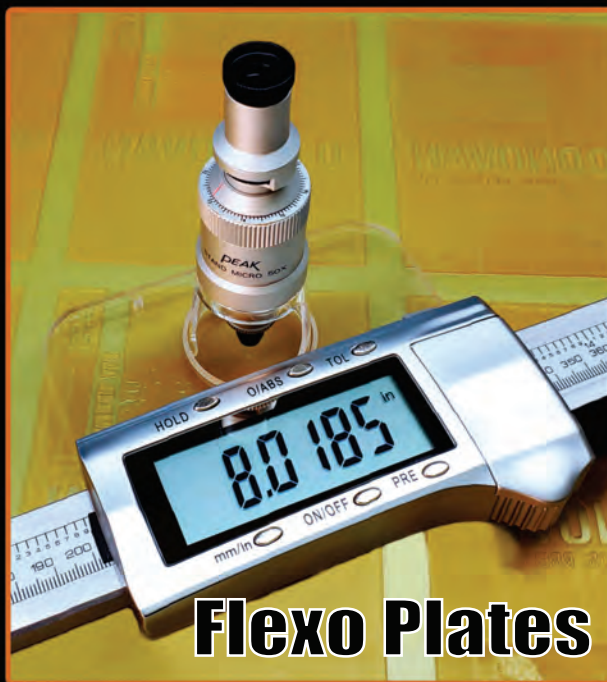


Labels

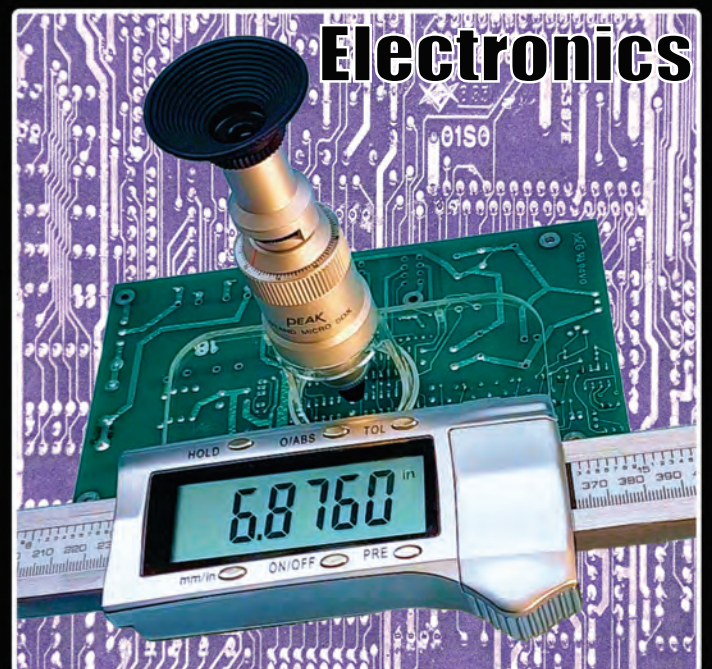
The Precision Digital Electronic Ruler's Non-Contact measurement system accommodates samples of any thickness in lengths up to 80 inches / 2000 mm. The digital readout displays absolute or incremental measurements with 0.0005" / 0.01mm resolution.



Printing



Flexo Plates



Electronics

MEASURE - VIEW - DOCUMENT

Materials Requiring Absolutely Precise Measurement

**Exact, Non-Contact, Measurement, of Large & Small Distances
For Films, Plates, Dies, Print, Circuit Boards & More
For Flexo, Offset, Screen, Gravure, Wide Format, Electronics**

BETA PRECISION DIGITAL ELECTRONIC RULERS FOR ANY MEDIUM

where precise, repeatable measurement is critical. A 50x microscope attached to a digital display traverses the area to be measured on a rugged steel beam. The operator selects inch or metric measurements with a resolution of either 0.0005 inches or 0.01mm.

For distances over 0.060 inches / 1.6 mm the operator places the microscope cross hairs over the start of the sample and zeros the digital display. The slide assembly is then moved to the opposite end of the sample and the fine-motion thumb roller is then used to place the cross hairs over the end of the sample.

- Large-format, high contrast LCD display shows the distance moved across the sample
- Display and measuring system are powered by the self-contained battery, eliminating cables and chargers
- Incremental measurements can be made by setting the zero anywhere along the sample.
- Rubber feet rest solidly on the work surface and support the microscope micrometer assembly above the sample
- The Ruler's stainless steel construction makes it appropriate for laboratory or production environments
- When very large samples are measured, the non-skid mounting feet are placed directly on the film, plate, or other substrates without damage.



FOLDING CARTON MEASUREMENTS

SIZES/ LENGTHS

- **16 inches / 406 mm**
- **24 inches / 610 mm**
- **30 inches / 762 mm**
- **40 inches / 1016 mm**
- **60 inches / 1524 mm**
- **80 inches / 2032 mm**

**All Rulers Come Standard with Peak
50X Microscopes Unless Otherwise
Specified or Requested**



Beta Precision Digital Electronic Ruler Microscope Assembly

The clear plastic plate attached to the digital readout has a large hole to carry the Beta DMR microscope.

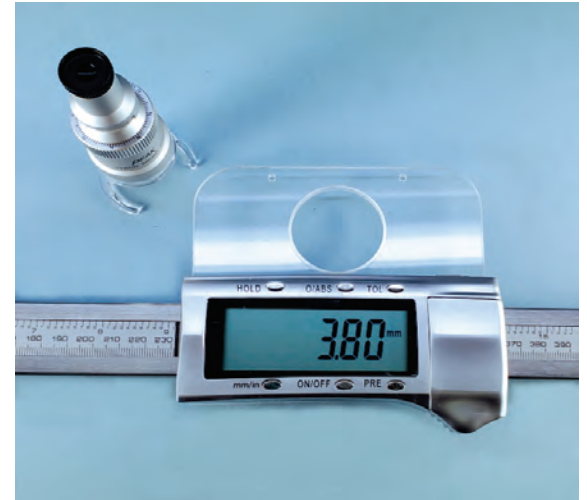
The inside edge of the mounting hole has a groove to match the base of the microscope.

Squeeze the plastic base of the microscope as shown.

Press one edge into the groove and then move the opposite edge into place. When properly seated, the microscope will be firmly held in place and will not fall out even if the assembly is inverted.

The microscope and digital readout should look like this after assembly.

To remove the microscope when storing the ruler, squeeze the base and lift the microscope out.

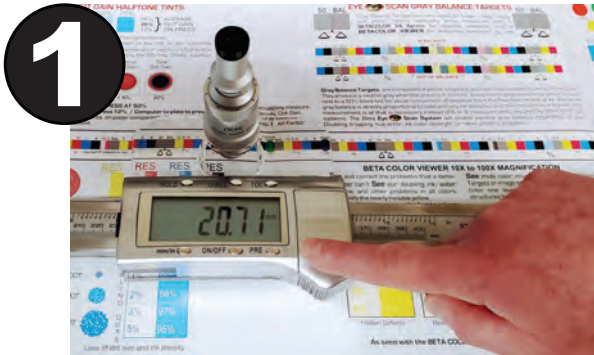


Beta Precision Digital Electronic Ruler Basic Instructions

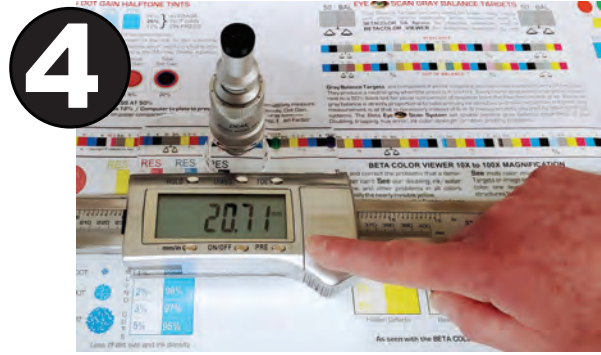


The Beta Precision Digital Electronic Ruler allows precise, non-contact measurements of large and small distances on films, plates, dies, prints, circuit boards and more.

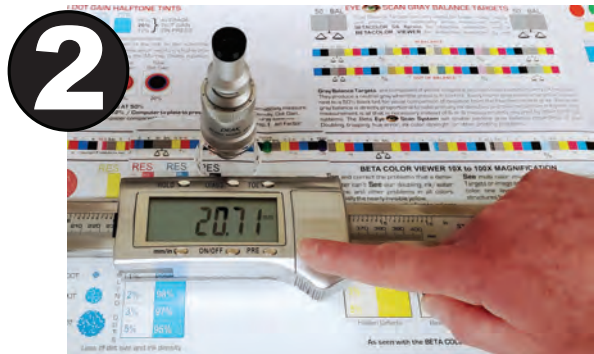
Narrow lines can be measured within the eyepiece of the 50x microscope, while the cross hair is used to locate larger details when sliding the readout.



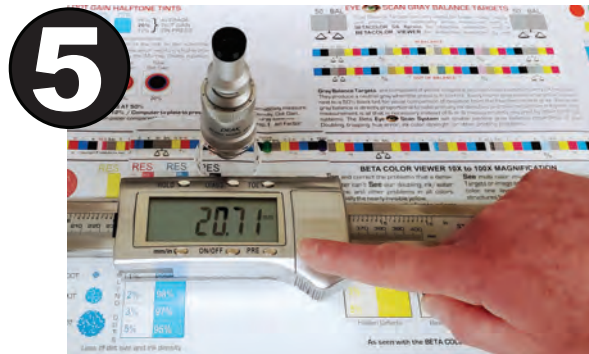
1 Press the ON/OFF button to activate the display.



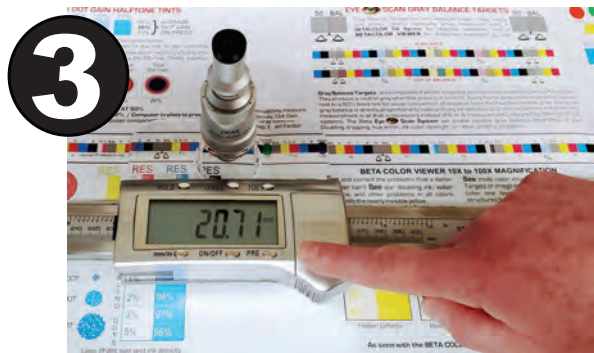
4 Bring the image into sharp focus by turning the large knurled ring.



2 Rotate the upper black ring to bring the reticle into sharp focus.



5 Turn the lower black ring to align the reticle to the image.



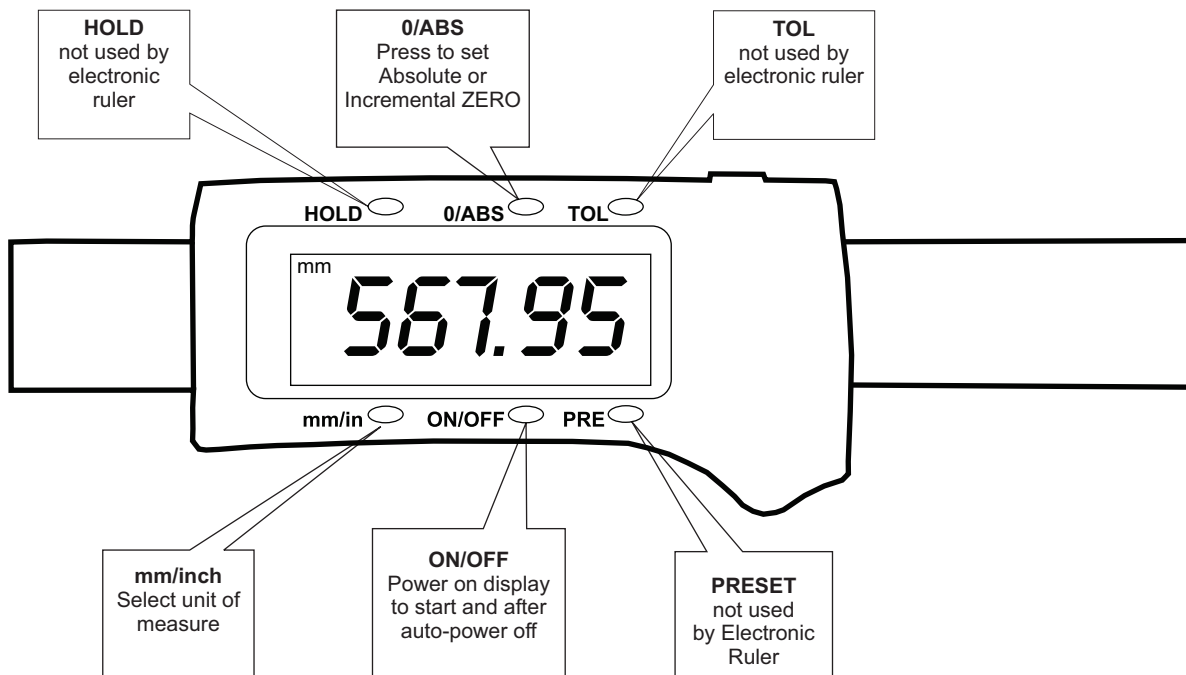
3 Slide the readout close to the end position and place in final position as shown.

Optional microscopes of 25x, 75x, and 100x are available.

Specify inch or metric reticles for the microscope to suit your needs. Contact us for further information

Precision Digital Electronic Ruler Display Functions

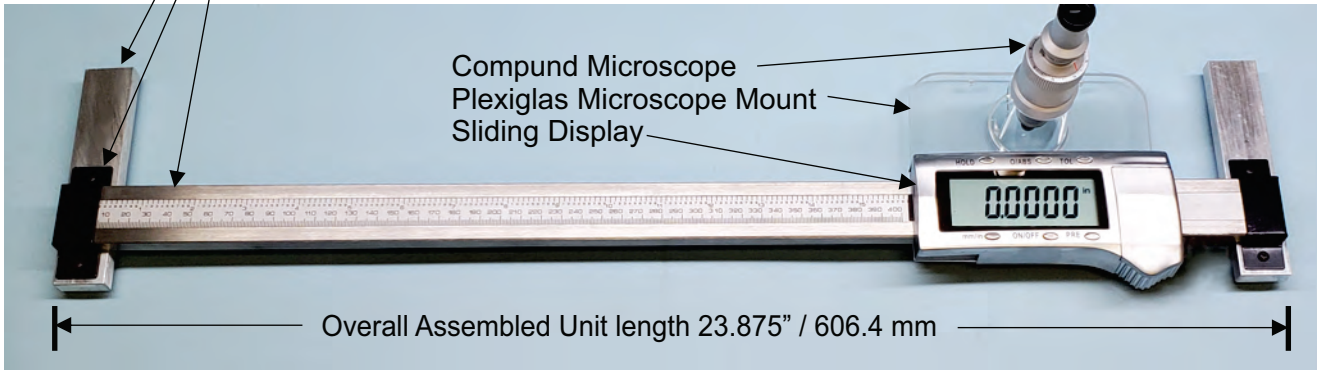
Your Beta Precision Digital Electronic Ruler will allow you to make highly accurate, non-contact measurements on many types of samples. **Films, plates, prints, electronic circuit boards**, and more can be easily measured without risk of damage to delicate samples. After mounting the microscope to the plexiglass plate follow the procedure outlined below to set up the electronic display.



- Set the beam of the Beta Precision Digital Electronic Ruler precisely parallel to the line or object being measured. Check that both ends of the object are at the same vertical position in the microscope eyepiece.
- Press the ON/OFF button and then the **mm/inch** button to select the proper unit of measure.
- Rotate the entire microscope body to align the crosshair to the 12, 3, 6, and 9 o'clock position. Rotate the black eyepiece focus ring to bring the scale into sharp focus.
- Bring the object into sharp focus by turning the large knurled ring on the body of the microscope. Align the microscope crosshair to the start position and press the **0/ABS** button until 0.00 appears in the display.
- Move the microscope and slide assembly to the end of the object. Remove your hand from the from the slide and check the focus. Carefully adjust the microscope focus if needed.
- Use the fine motion thumb roller to position the crosshair precisely over the end of the object.
- Read out the total length of the object on the display. The **mm/inch** button may be pressed to change the unit of measure.
- After all measurements are complete press the **ON/OFF** button to power down the display.

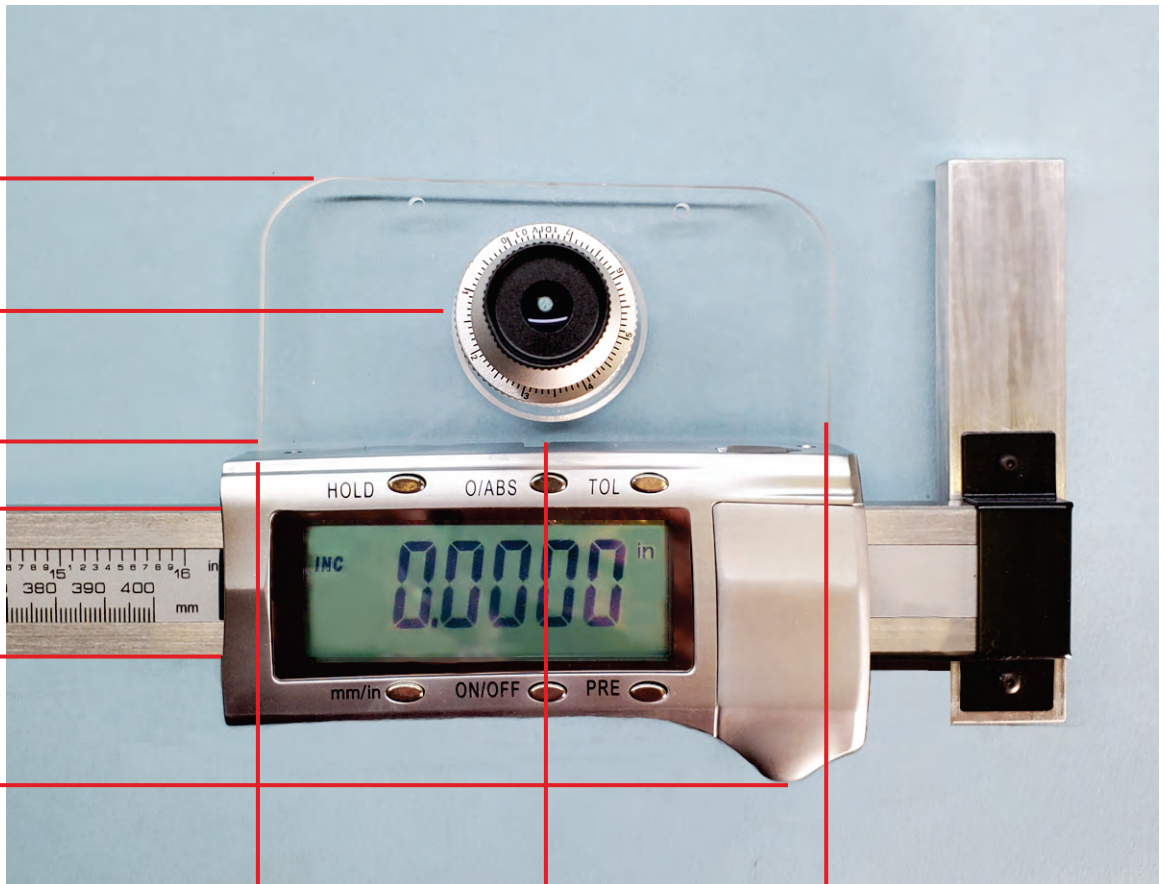
Beta Precision Digital Electronic Ruler 16" / 406 mm Unit Dimensions & Specifications

- Aluminum leg 1" x 3/8" x 4 3/4" (2.54 cm x 0.952 cm x 12.065 cm)
- Steel mounting strap .787" x 2.362" (1.998 cm x 5.999 cm)
- Measuring Beam 1.217" x .410" (nominal 31 mm x 10.5 mm)



Microscope and slide assembly shown at the extreme right end of travel on the beam with the standard black strap clamps and aluminum legs installed. The maximum displayed distance is 16.083". The display may be zeroed at any location and moved right or left from that location.

- Edge of microscope mounting plate 3.932" / 9.987 cm
- Centerline of microscope 2.750" / 6.985 cm
- Top edge of sliding display 1.650" / 4.191 cm
- Top edge of beam 1.217" / 3.09 cm
- Bottom edge of beam 0.000
- Bottom edge of display 1.008" / 2.56 cm



- Edge of plexiglas aligns with edge of sliding display 0.000
- Microscope centerline 2.413" / 6.129 cm
- Width of plexiglass and display 4.854" / 12.329 cm



Beta Precision Digital Electronic Ruler 16" / 406 mm Unit Dimensions & Specifications

Top of ocular at
normal focus
4.95" / 12.573 cm

Top of LCD display above
sample 1.430" / 3.63 cm

Top of Beam 1.038" / 2.636 cm

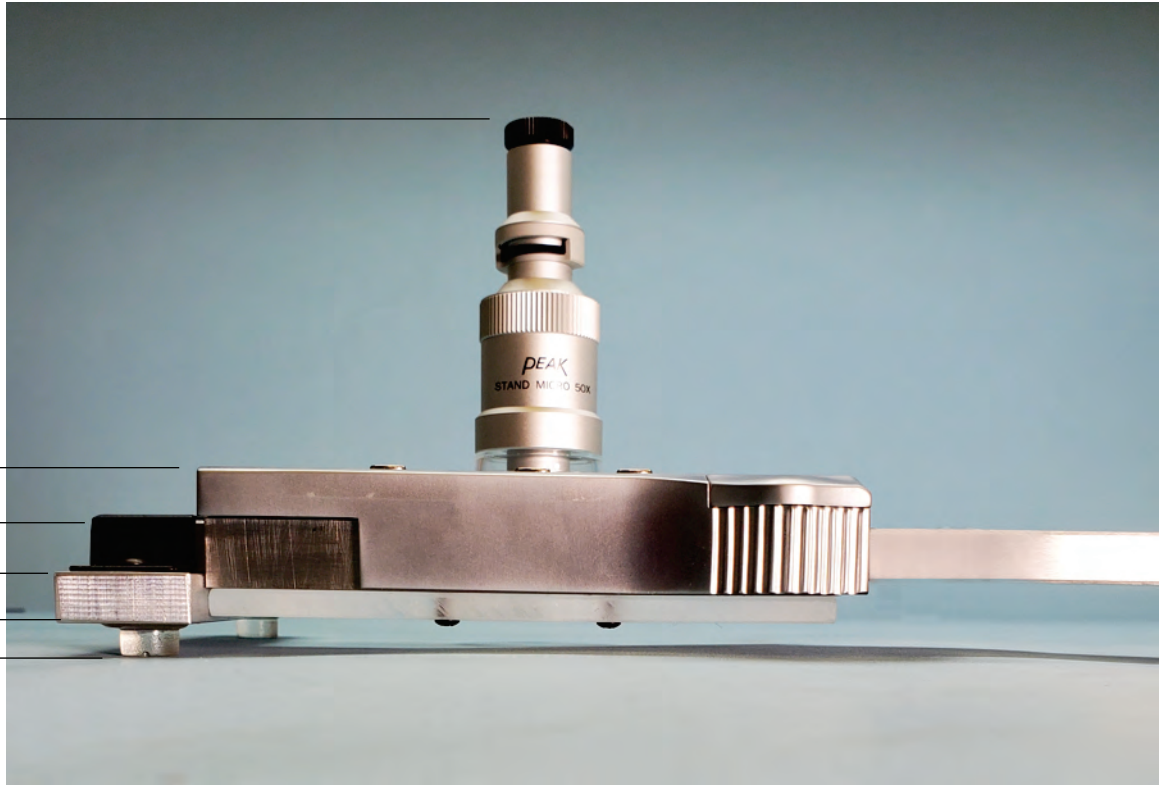
Alum. leg .625" / 1.587 cm

Rubber foot .250" / 0.635 cm

Sample plane 0.000

Not shown: - The distance
from the end of the
objective lens to the plane
of focus is approximately
0.48" / 1.219 cm

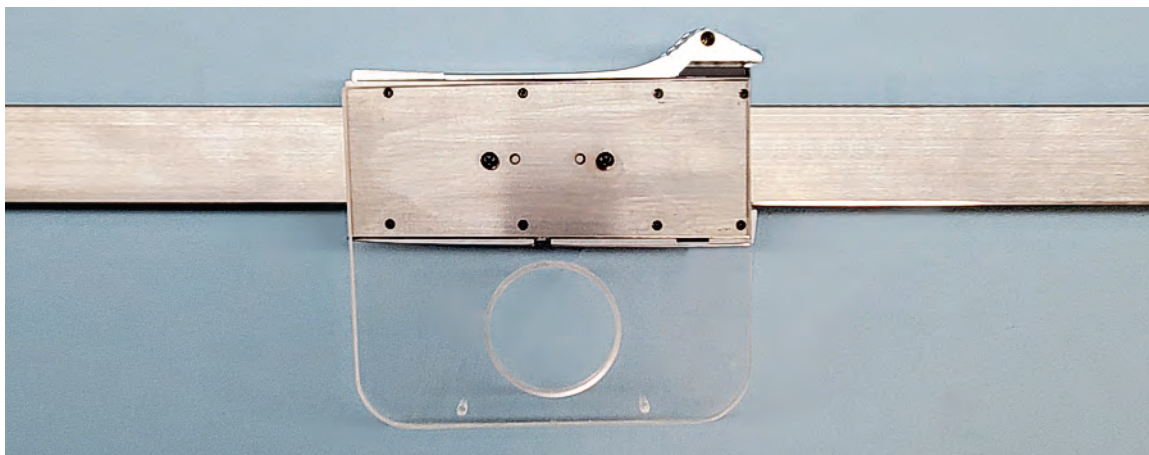
This will vary slightly
depending on the user's
vision and setting of the
main and reticle focus.



Microscope and slide assembly shown at the extreme left end of travel on the beam with the standard black strap clamps and aluminum legs installed.



Beta Precision Digital Electronic Ruler 16" / 406 mm Unit Dimensions & Specifications



Bottom view of the assembled slide and plexiglas microscope mounting plate. The microscope mounting plate hole is 1.564" / 3.972 cm with an internal groove to accept the 1.665" / 4.229 cm diameter microscope base.



Beta Precision Digital Electronic Ruler

Q&A

- **How do you arrange the sample for measurement of the width?**

The Electronic Ruler is placed directly on the sample, accurately perpendicular to the edge.

The near edge is sighted through the microscope, centering it on the vertical cross hair using the fine-motion roller. The display is then zeroed.

The display and microscope are then moved to the far edge of the sample. The edge is then sighted through the microscope, centering it on the vertical cross hair using the fine-motion roller. The exact distance traveled is displayed on the LCD.

- **What background do you recommended to use so that both edges of the sample are convenient and easy to see?**

You must do some testing using your sample and various backgrounds and lighting configurations. Sometimes a black background is useful with transparent samples.

- **What kind of maintenance do you recommend for the Beta Precision Digital Electronic Ruler?**

The button battery should be replaced every year. Contamination of the beam with dust or dirt should be removed with a dry cloth.

A clean cloth should be wetted with a few drops of light machine oil, and applied to the narrow edges of the beam every few months, depending on usage and ambient conditions.

- **Does Beta Precision Digital Electronic Ruler come with a Certificate of Calibration issued by a calibration service company when purchased?**

The PUBLISHED accuracy of a 610mm device is +/- 0.08mm (80 microns). Any device we ship will NOT have an error larger than that over any interval.

An individual device Certificate of Calibration is available at additional cost.

The Certificate of Calibration for the device that we ship to you will show the ACTUAL error over every 150mm. The ACTUAL error is usually significantly smaller than the PUBLISHED error.

The Certificate of Calibration for your specific device is created by an accredited Metrology Laboratory. Their credentials and test conditions are provided with the Certificate.

- The accuracy of the **Beta Precision Digital Electronic Ruler** is dependent upon the range of the device as shown below:

RANGE (inch/mm)	TOLERANCE (inch)	(mm)
16 / 406	+/-0.002	+/-0.05
24 / 610	+/-0.003	+/-0.08
30 / 762	+/-0.004	+/-0.10
32 / 813	+/-0.004	+/-0.10
36 / 914	+/-0.004	+/-0.10
40 / 1016	+/-0.005	+/-0.12
48 / 1219	+/-0.005	+/-0.12
60 / 1524	+/-0.006	+/-0.14
80 / 2032	+/-0.008	+/-0.20

- **The Beta Precision Digital Electronic Ruler consists of 3 components: the beam, the digital display, and the microscope. Which of these parts are calibrated and written on the calibration certificate?**

The Certificate of Calibration covers the beam and the digital display. The microscope is used only for sighting the edge of the sample.

- **When using the Beta Precision Digital Electronic Ruler to measure a thin plastic sheet, is there any ASTM testing standard code to be complied with?**

Compliance with any ASTM standard is solely the responsibility of the user. Good Manufacturing Practice should be employed regarding stabilized temperature, handling, and preparation of the sample.

- **What type of microscope do you recommend for ease of use and good accuracy?**

The lower the magnification of the microscope, the easier it is for the operator to keep the sample in good focus. The 25X microscope is very easy and comfortable to use.

One division on the internal reticle corresponds to 0.050mm.

Low magnification increases the uncertainty of the sighting of the edge of the sample.

- The 50X microscope allows better accuracy in sighting the edge of the sample and correspondingly more precise and repeatable measurements.

One division on the internal reticle corresponds to 0.020mm. This is the most commonly used microscope.

The 100x microscope has extremely limited depth of focus and is more difficult to use.

One division on the internal reticle corresponds to 0.005mm.

This is far greater than the accuracy of the **Beta Precision Digital Electronic Ruler** and does not produce better or more useful results.

Beta Quality Control Products



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PRECISION DIGITAL ELECTRONIC RULERS

Precise, non-contact, measurement of distances on films, plates, dies, electronics & prints. Electronic readout with .0005" resolution



BETA OPTICS & BETAMAG 12X WITH DUAL LED'S

Optics for Every Need & Budget, microscopes, loupes, and the well known BetaColor Viewer 3