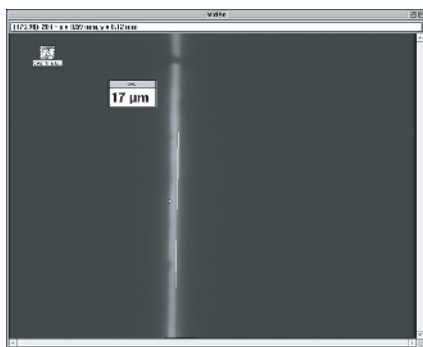


# Slots

A machine vision device  
to check openings of  
filters and screens.  
  
Designed for use by  
non-experts.



Video image of the Slot:  
SLOTS reads an opening  
of 17 µm.

- Bavurex
- Brillo
- Diffuso
- FireVision
- KitNum
- Profilo
- Recta
- SeamInspector
- Slots**
- WeldInspector

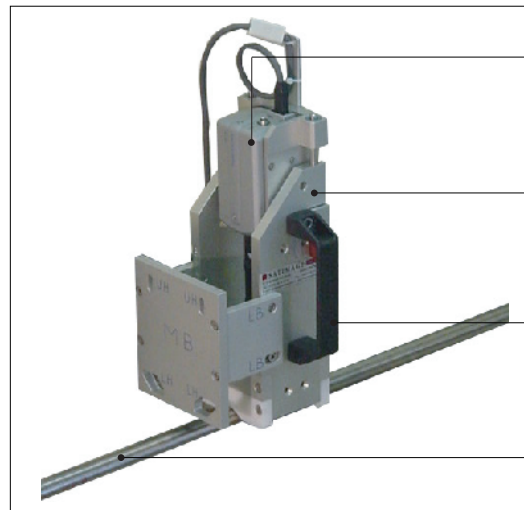


- Inspection of filter openings during manufacturing or on the finished product.
- Servo-control of wire winding.
- Checking report.
- Stats and history.

## General presentation

**Slots** is a machine vision system dedicated to the industries of fine filtration, intended to check the openings of filters and screens.

**Slots** is intended for use in the workshop: either to check finished products, or for on-line checking during the manufacturing of the filter. Operating **Slots** is simple, very fast and presents no risk of error.



**FireWire video camera**  
The FireWire (IEEE 1394) standard provides a digital video image: accurate, crisp and fast.

**Housing**  
Very robust housing in Aluminum. Protects the optics and camera.

**Handle**  
Used to translate SLOTS, in those installations where it is not fixed to a translation device nor to a manufacturing machine.

**Filter being checked**  
Here SLOTS is checking a very fine finished product.

**Slots's** components are: a robust and (upon request) watertight housing, specific software plugins, and FireVision, the software engine which powers all Satimage's machine vision systems. FireVision itself includes a FireWire video camera, a computer and SMI, the vision engine, a Smile platform-based software.

Depending on the specifics of the application, Satimage proposes various **Slots** models which work on different ranges of filter sizes and provide different accuracy levels

## Satimage's product line

Satimage's Machine Vision systems include two kinds of solutions.

- ▶ **Generic Measuring Machines.** They provide, in real time and with a high accuracy, some defined physical measurement. Numerous applications.
- ▶ **Dedicated Systems.** Designed up to the finest details with the help and for the purposes of their users. Devoted to some specific manufacturing process.

**Slots** is a solution dedicated to the filtering industry.

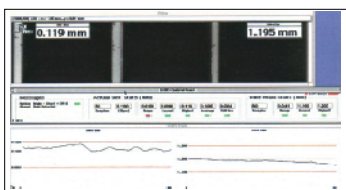
## Basic features

- ▶ **Reading** on the fly of openings of **filters and screens.**
- ▶ Check of **finished products**, production of a **control report.**
- ▶ **On-line continuous check** while winding.
- ▶ Check of the **wire width.**
- ▶ **Instantaneous value** and graphical display.
- ▶ **Statistics and archiving** of the readings.
- ▶ **Optional servo-control** of the winding machine for more constant slot size.

## Operation of Slots

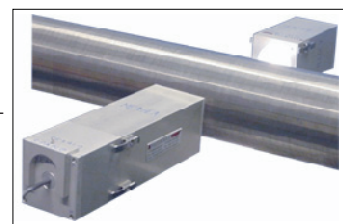
### On-line

When you install **Slots** on a winding machine you improve both the product's quality and the process' productivity.



When you start winding a new product, you shorten the phase of machine tuning, you get rid of multiple starts and of wasted products.

While winding, **Slots** will prevent any drift of the process.



Optionally, **Slots** helps producing the exact slot size all along the screen by adjusting continuously the winding/advance ratio to the actual wire width.

### On finished products

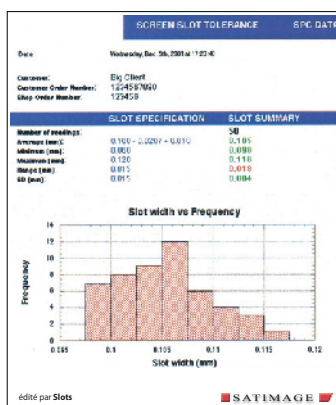
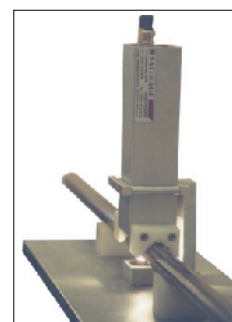
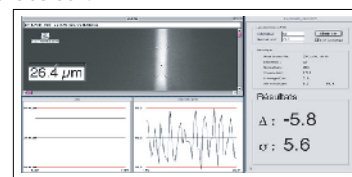
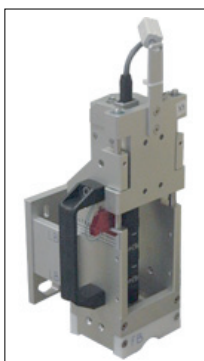
When you install **Slots** for inspecting finished products, you increase drastically the productivity and efficiency of the operators in charge of inspection.

As soon as it is positioned with respect to the screen - flat or cylindrical - **Slots** reads a series of slots with high accuracy and at an astounding speed, as the operator scans the slots along the screen.

Thanks to the control panel on the computer's monitor, the operator views every useful thing: the view of the slot, the slot size and the plot of the latest readings.

Within seconds **Slots** will read tenths of slots, and will supply all the required stats, under the most adapted form: table of the results, curves, histograms.

The **Slots** line also includes checking stations for finished products (particularly convenient for very fine, small-diameter screens). The operator places the finished products on two v-shaped supporting devices, and then they translate the product. The successive values that **Slots** reads are displayed on the monitor. Here, **Slots** is fixed and the product moves.



A few seconds after the inspection terminates, the control report that will be delivered together with the filter is ready.

## Performances

- ▶ **Slot size** from 0.2/1000 in to 20/1000 (5 to 500  $\mu\text{m}$ ) (depends on the model)
- ▶ **Shape of surface** flat or curved, all diameters (including concave)
- ▶ **Accuracy** from  $\pm 0.04/1000$  in to 0.2/1000 (1 to 5  $\mu\text{m}$ ) (depends on the model)
- ▶ **Cycle time** on finished products, 10 to 100 readings in less than 1 minute on line, e.g. 2 readings per inch when moving at 15 in/second

Fast, accurate, dependable and simple, **Slots** is the perfect device for the inspection of finished products or the on-line control of the slot size, directly in the workshop.

The vision engine analyzes in real-time the video flow captured by the measuring head, and produces results under the desired form: control panel, printed report, CD archiving, feedback to PLC.

On finished products, machine vision provides measurements without contact, accurate and reliable.

On line, you will check 100% of what you are producing, and you will be able to propose to your clients to attach the inspection report to every product you deliver.

## Architecture

- ▶ **Housing:** machined aluminium, with or without a moving device.
- ▶ **Optics:** diascopic lighting, halogen or power LED.
- ▶ **Video:** 100% digital, FireWire (IEEE 1394) standard.
- ▶ **Computer:** tower or laptop model (whichever preferred). Storage HD > 10 GB. CD burner included for archives. Powered by SMI, a Smile-platform based software.