

# LabSmith SVM340

## Synchronized Video Microscope

- ▶ High-sensitivity video output
- ▶ Synchronous pulsed fluorescence illuminator
- ▶ Motorized *x-y* traverse and focus
- ▶ Adaptable, customizable, and easy to interface
- ▶ Innovative software tailored for microfluidics



The SVM340 is a research-grade inverted fluorescence video microscope for microfluidics and microbiology. With a synchronously pulsed illuminator, sensitive camera, and powerful video analysis software, the SVM340 is a workhorse for microsystem research and methods development. With motorized traverse and focus and software-configurable image-based “soft triggers,” the SVM340 is perfect for  $\mu$ TAS prototypes and miniature process automation. The SVM340 is sized and priced to be dedicated to a single user or experiment—even in a crowded BSL-2 lab.

### Microfluidics, microbiology, and laboratory automation

Designed for research, the SVM340 microscope excels precisely where it counts: getting high-quality experimental data onto a hard drive.

- Sensitive 30 fps color or black & white video cameras support low-light imaging
- Synchronous pulsed illuminator fights blur and photo-bleaching
- Bottom up viewing and illumination and a motionless sample stage allow unhindered and unperturbed microsystem access
- Simple coordination with external apparatus

### Innovative software

- Losslessly record data to disk (640 x 480 pixels x 30 fps)
- Post-save and instantly replay what just happened so you never “just missed it”
- Trigger acquisition manually, by hardware, software, or real-time image processing
- Track and trigger by local intensity or color

Embed the SVM340 and automate your  $\mu$ TAS.

- Motorized focus and *x-y* traverse can be fully automated using LabView and simple software developers kit (C++)
- Standard composite and S-Video analog outputs and USB and RS232 digital ports simplify electronic interfacing
- Motionless sample stage simplifies physical interfacing

### Flexible and future proof

Need to switch between color and black & white cameras? Want to try different illuminator colors? Hungry for features and tweaks?

- Snap-in optics modules are customizable or preconfigured for one or more fluorophores
- The stage cover is machinable and easily swapped to support custom fixturing
- One-click firmware and software upgrades provide the latest features and capabilities

### in a right-sized package.

Forget about the huge microscope with the sign-up sheet. The SVM340 is compact (just 21 cm wide x 27 cm long x 9 cm tall) but scans up to 75 mm x 50 mm. With its size and price point, the SVM340 is ideal for dedicating to a single user or experiment.

### Applications

- $\mu$ TAS research and prototyping
- Gene and protein chip reading
- General miniature lab automation
- Closed-loop microsystem control
- Automated methods development
- Array assays
- Forensics
- Blood analysis



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# LabSmith SVM340: Specifications

## TRAVERSE

Motorized *x-y* traverse and focus are controlled through the software and/or the front panel.

Property	Range	Resolution
<i>x</i> -traverse	50 mm	10 $\mu$ m
<i>y</i> -traverse	75 mm	10 $\mu$ m
focus	8 mm	1 $\mu$ m

## SAMPLE STAGE

A fixed sample stage is attached to the top surface of the enclosure. Constructed of black Delrin with a stainless steel top plate, the sample stage can be removed and machined for custom applications.

- Dimensions:
  - Width: 140 mm (5.5")
  - Length: 200 mm (8.0")
  - Height: 13 mm (0.5")
  - Opening: 55 mm x 80 mm

## CAMERA MODULE

Snap-in module with CCD camera, optional fluorescence filter and threading for standard DIN microscope objective. Available modules:

- RS-170-BW: – High sensitivity analog black & white camera with 640 x 480 pixels, 600 lines of resolution, 30 frames per second
- RS-170-C: – Bayer-pattern analog color camera with 640 x 480 pixels, 490 lines of resolution, 30 frames per second, S-Video output

## OBJECTIVE

- 10X semi-plan (standard)
- 4X and 20X (optional)

## PHYSICAL

- Dimensions:
  - Width: 208 mm (8.2")
  - Length: 267 mm (10.5")
  - Height: 85 mm (3.3")
- Material: – Enclosure is constructed of black enamel-coated steel
- Weight: – 2.8 kg
- Power requirements: – Voltage 90–264 VAC, 47–63 Hz
  - Current 0.5 A

## ILLUMINATOR MODULE

Four-channel array of 24 high-brightness LEDs. Available modules:

- LED-B – 3 blue channels and one white channel
- LED-G – 3 green channels and one white channel
- LED-R – 3 red channels and one white channel
- LED-W – 4 white channels
- LED-X – one channel each of blue, green, red and white LEDs.

Custom modules also available.

Trigger output available for driving external LED or laser illuminator.

## CONTROL & ACQUISITION SOFTWARE

- Functions:
  - Illuminator control
  - *x-y* traverse, and focus control
  - Acquire and save videos and images
- LabVIEW™ drivers available
- Software developer's kit (C, C++) included
- Requirements:
  - PC-compatible computer
  - Windows 95, NT, Me, 2000, XP or later
  - PCI slot or USB2.0 port

## INPUTS & OUTPUTS

- Analog (camera dependent):
  - Composite video (NTSC)
  - S Video
- Digital (used for synchronization and coordination):
  - 4 programmable inputs
  - 3 programmable outputs
  - External LED/Laser illuminator trigger/driver
  - RS232 or USB control interface



Visit our website at [www.labsmith.com](http://www.labsmith.com) for information on the SVM340 and other LabSmith products.

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