

SMAS

Sperm Motility Analysis System

Much easy and much higher sperm analyzer by a 5 mega high resolution camera and original sperm identify algorithm will distinguish between motile and immotile spermatozoa. SMAS is the only Japanese CASA system for human and animal sperm's motility and concentration. Using SMAS will give you a great advantage in reducing measuring error's on semen examination.



*The microscope is optional.

Sperm Motility Analysis

Distinguishes between motile and immotile sperms
The system precisely measures total sperm count, concentration, and kinematic analysis in a short time.

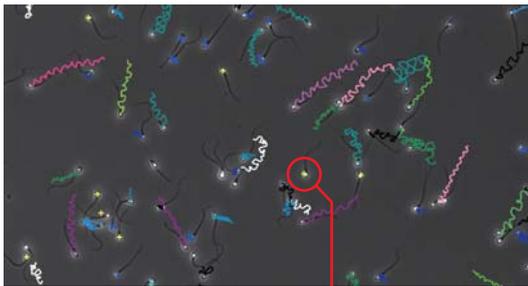
In recent years, it has become clear that sperm morphology and motility constitute an important aspect of infertility.

The Sperm Motility Analysis System (SMAS) automatically detects motile and immotile sperm and tracks motile sperm.

It precisely measures the number of moving sperm, their orbit, and many other items in a short time. Measurement results are displayed on-screen and can be presented in various output forms. SMAS is the only CASA system produced in Japan.

All hardware and software are developed by DITECT, a Japanese manufacturer. We can offer flexible services such as custom parameter setting and software upgrading. Also animal spermatozoa analysis for livestock reproduction is available.

Characteristics



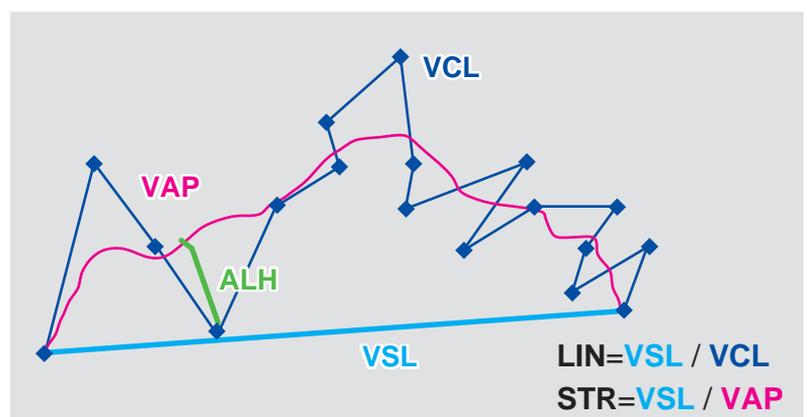
△sperm tracking image

* the yellow "+" indicates immotile sperm

- Motile & immotile sperm and measurement results can be confirmed in the image gained.
- With a high-resolution digital camera, the resolution is increased about four times compared to conventional products.
- About up to 5000 motile sperms (a semen about 400,000,000/ml concentration) can be measured in one field of view.
- Result data and traced image will be saved automatically after analyzing.
- Original sperm image and tracking image can be saved also.
- The analysis result can be displayed in classification of WHO measurement standard (1999/2010) ABCD.
- Traces are color-coded according to sperm velocity to facilitate visualization.
- Progressive sperm analyzable.
- Custom category classification / cut off filter available.
- Cost-less operation is possible by using MAKLER counting chamber.

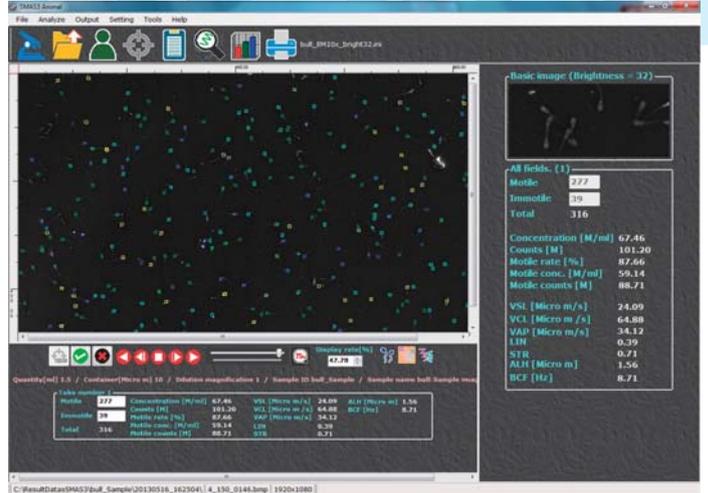
Analysis items

- Numbers of motile / immotile / analyzed sperm
- Concentration (mil/ml)
- Total count (concentration X semen volume) (mil)
- Motility rate (%)
- Motile concentration (mil/ml) and motile count (mil)
- Straight-line Velocity (VSL)($\mu\text{m}/\text{second}$)
- Curvilinear Velocity (VCL)($\mu\text{m}/\text{second}$)
- Average Path Velocity (VAP)($\mu\text{m}/\text{second}$)
- Linearity (LIN)(VSL/VCL)
- Straightness (STR) (VSL / VAP)
- Amplitude of lateral head displacement (ALH) (μm)
- Beat-cross Frequency (BCF) (Hz)



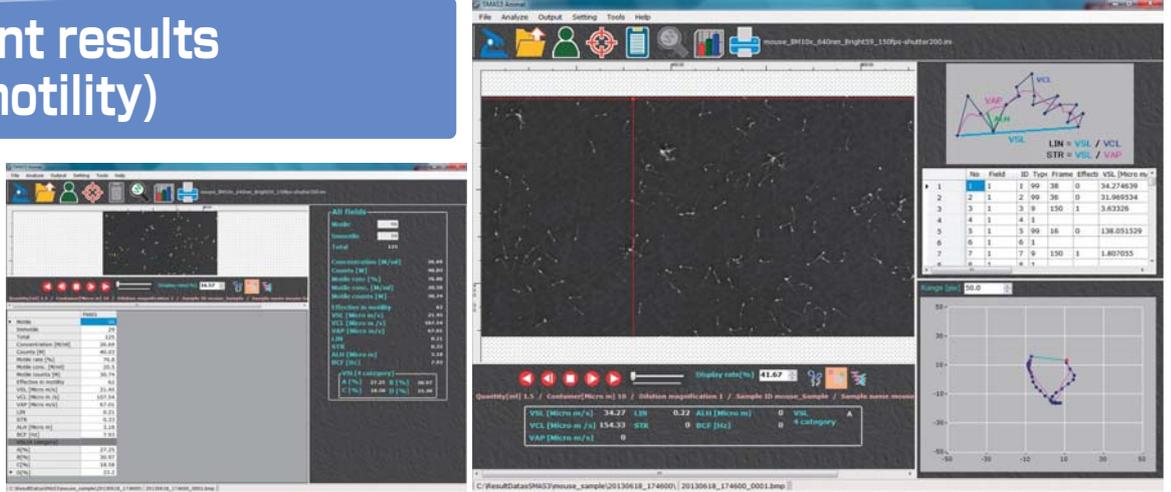
Tracking and measurement

The operation is very simple. The user must only set semen on a microscope and press the imaging button. The system performs automatic processing from imaging to measurement and displays the result immediately. With an original algorithm, the system distinguishes between motile and immotile sperm. It tracks all behavior of moving sperm for one second (standard) and calculates specified items. Each sample can be measured as many times as desired in order to correct the error of bias in the chamber.



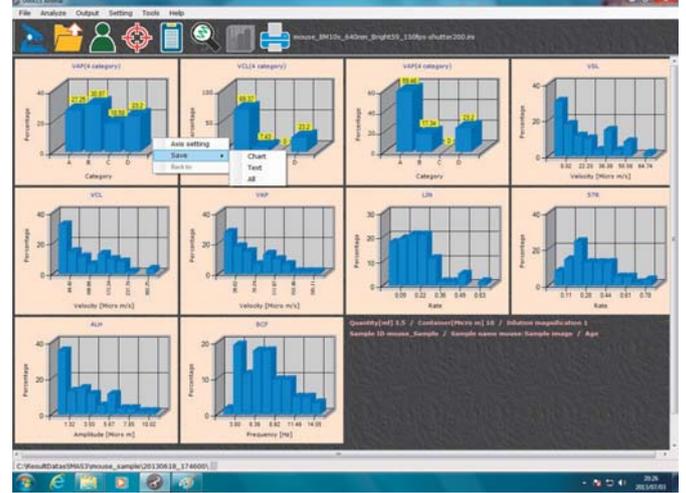
Measurement results (field and motility)

Immediately after imaging, the measurement results are displayed on the monitor screen as numerical data and image. It is now possible to improve the analysis of individual motility and to make a detailed measurement of each sperm.



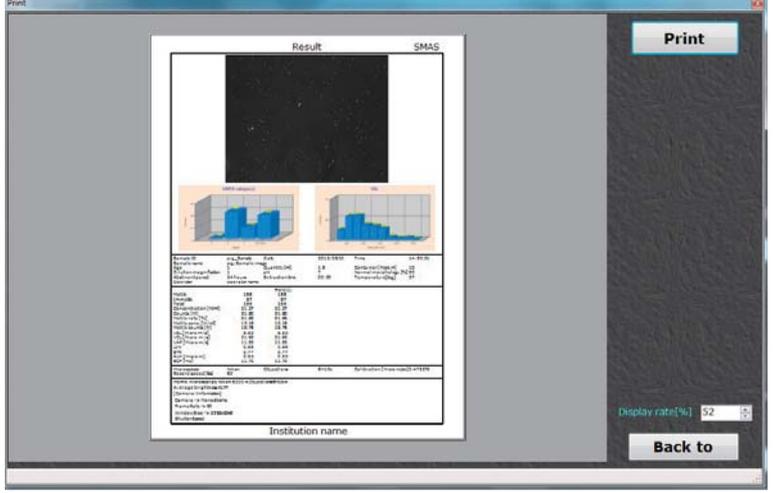
Analysis graph view

Based on the individual sperm trace data obtained, the system calculates count, concentration, and other analysis items. In addition, the system reports the motility results as a histogram and as WHO-compliant four - and three - stage graphs.



Reporting function

The measurement analysis results can be printed as a report data sheet. The report is from 30 printing items, including name / age / and sub information. Also one traced image, two graphs plotting the measurement result, and five sets of measurement results layout on A4 paper size.



Equipment configuration

Standard Configuration

- SMAS body(keyboard, mouse)
- 19-inch LCD display
- CMOS high-definition digital camera
- Sperm motion analysis software(pre-installed in the main body)
- Micrometer

Option

● Measurement chamber

A Makler counting chamber is available. At the customer's request, we can also offer other options, such as a 12µm disposable chamber.



● Microscope

The system uses a phase-contrast microscope. You can also use your own microscope if it can be connected to the camera. Low-cost microscopes are also available.



SPEC

Main body	CPU	Core2Duo 3.00GHz
	Memory	4.00GB
	HDD	2TB
	Optical drive	CD-RW, DVD-RW
	Outer dimensions(W × D × H)	350 × 310 × 95 mm
	Weight	Approx. 6.3kg
	Video capture	DPX-CLF400(PCI-Express × 4)
	Power consumption	115w
Monitor screen	Display	19-inch LCD
Camera	Imaging resolution	2592 × 2048 pixels

(Manufacturing authorization number / 13BZ006277)

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(Based on the Pharmaceutical Affairs Law issued by the Ministry of Health, Labour and Welfare of Japan.)

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