SCA®

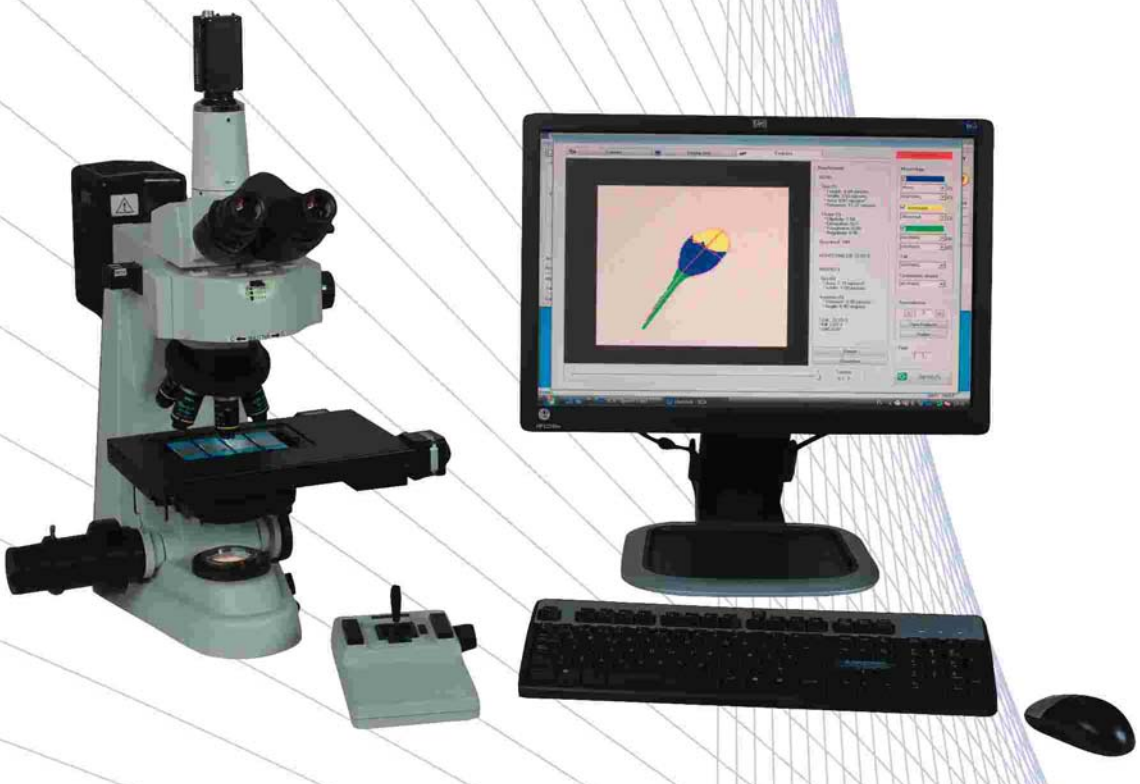
SPERM
CLASS
ANALYZER

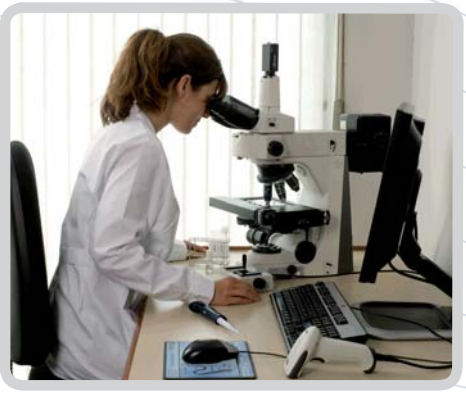
HUMAN

MICROPTIC

AUTOMATIC DIAGNOSTIC SYSTEMS

SPERM CLASS ANALYZER





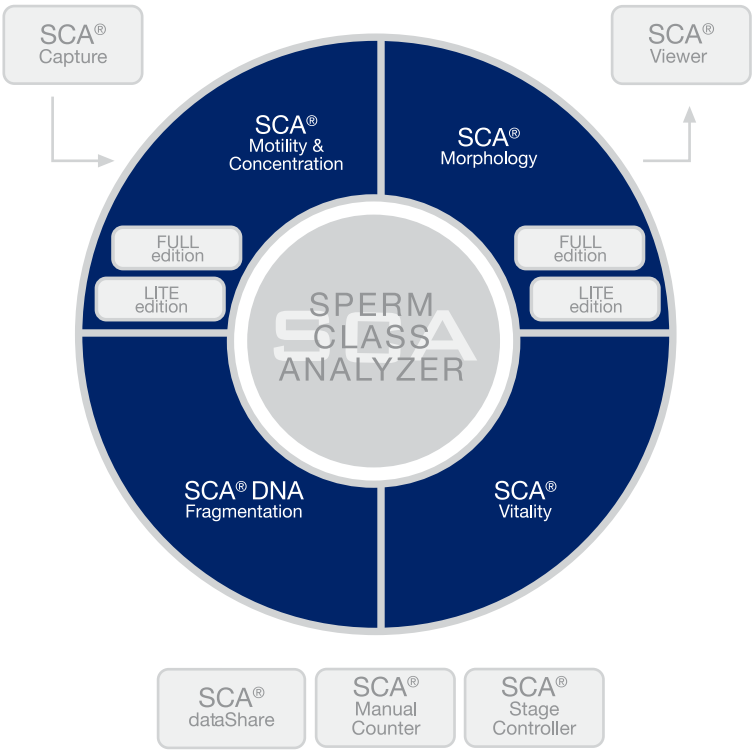
Sperm Class Analyzer® (SCA®) is a computer automated semen analysis system designed to provide objective quantitative analysis of human sperm samples following criteria established by the World Health Organization (W.H.O.). An integrated database enables management of **SCA®** semen analysis results in the clinical environment but there is also a detailed data output option more suited to research.

The automated image analysis of **SCA®** provides results with high precision, repeatability and objectivity not possible in manual semen analysis. All analyses are quick to perform and the results are easily managed and reported with the user friendly **SCA®** software.

The basic hardware components of the system are an optical microscope, digital camera and a computer with **SCA®** software installed. The versatility provided by this use of non-dedicated, standard laboratory equipment, together with the flexibility provided by the modular structure of the software make **SCA®** an efficient and economical system. This system setup allows the hardware components to be used for other laboratory investigations and the software modules can to be purchased or upgraded to match specific user requirements.

- Precise
- Efficient
- User-friendly
- Versatile

SCA® SOFTWARE



The **SCA® software** is comprised of a series of independent modules which means the system can be efficiently matched to suit user requirements.

The software is available in both FULL and LITE editions, with the ability to easily upgrade from LITE to FULL. There is also a Research edition available for both, human and animal species.

The available software modules include:

· Automated semen analysis: **SCA® Motility & Concentration**, **SCA® Morphology**, **SCA® DNA Fragmentation** and **SCA® Vitality.**

· Manual analysis: **SCA® Manual Counter.**

· Advanced facilities: **SCA® dataShare** and **SCA® Stage Controller.**

The **SCA®** application includes the optional use of an integrated database facility for easy access to results and reports stored for an individual patient or semen sample.

Data can be stored locally or on a server, allowing results and reports to be shared with other **SCA®** or imported to another database.

Customised reports can be created in a specified language and include images and graphics in addition to numerical data.

AUTOMATIC ANALYSIS

SCA® MOTILITY AND CONCENTRATION

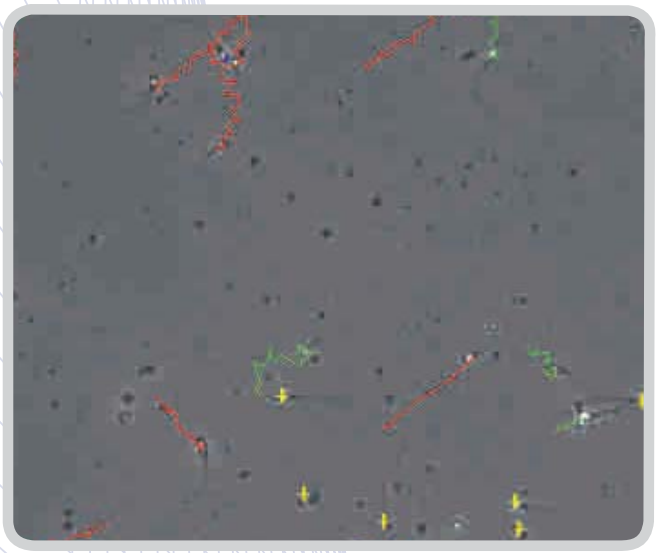
The **SCA® Motility & Concentration** module provides automated assessment of sperm concentration, W.H.O. motility classifications and CASA sperm motion parameters for a sample.

The software automatically identifies and measures the motion parameters of spermatozoa in microscope fields captured using a 10x objective and positive phase contrast. The software automatically calculates the sperm concentration and the percentage of sperm in the sample by motility classification: fast progressive, progressive, motile non progressive, non motile.

The automatic analysis results include the additional W.H.O. defined motion parameters of: VCL, VAP, VSL, STR, LIN, WOB, ALH, BCF.

According to W.H.O. protocol, analysis of 400 sperm is required, which typically means analysis of 2 to 3 captured fields capture. Analysis time is 1 second per field.

This **SCA®** module is available as FULL and LITE editions.



Motility and concentration analysis with 10x positive phase contrast.

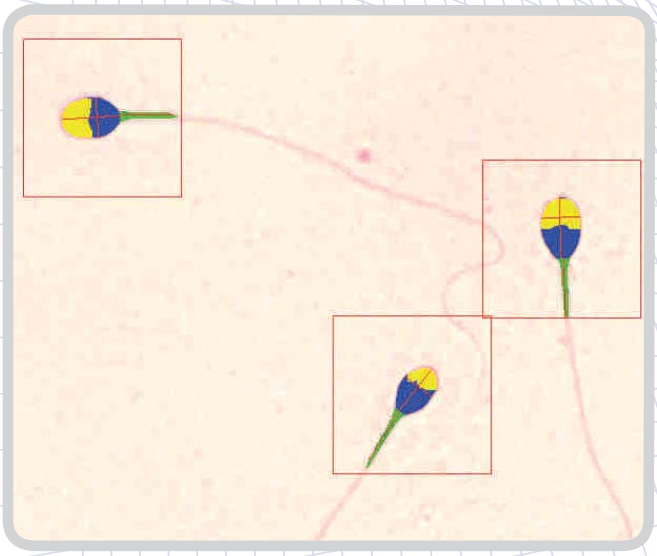
SCA® MORPHOLOGY

The **SCA® Morphology** module provides automatic assessment of normal and abnormal sperm morphology by W.H.O. criteria, as well as detailed sperm morphometry parameters for a sample.

The software automatically detects and analyses stained spermatozoa in captured fields using a 60x or 100x objective under brightfield illumination.

SCA® Morphology assesses the size and head shape, acrosome percentage and principal midpiece parametres. Tail anomalies can be analysed too.

This **SCA®** module is available as FULL and LITE editions.



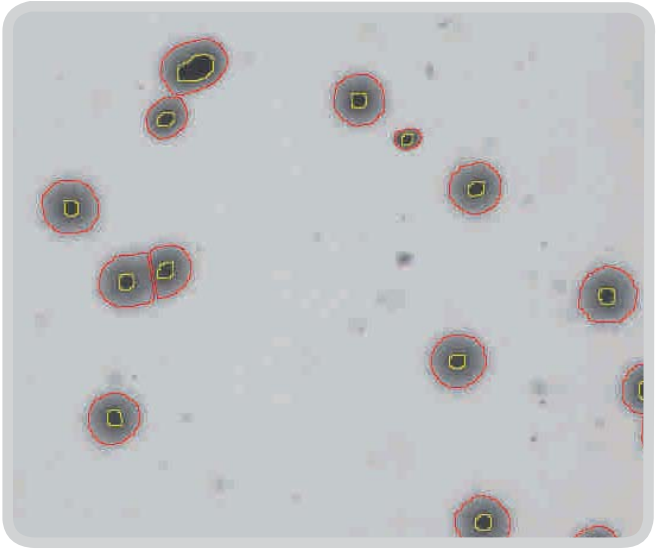
Morphology analysis with 100x brightfield. Sample stained with SpermBlue.

SCA® DNA FRAGMENTATION

The **SCA® DNA Fragmentation** module provides automated analysis of the percentage of DNA fragmentation in a sample, based on the sperm chromatin dispersion test.

Samples are treated with kits such as Halosperm® and **SCA® DNA Fragmentation** automatically detects spermatozoa in the captured images and classifies them as fragmented or non-fragmented according to whether sperm are seen with or without halo.

Depending on the kit used, the analysis is performed under brightfield or fluorescence microscopy. For kits where the halo is distinguishable from the core, the analysis results include the additional parameters of total, halo and core area. Analysis time is typically 1 second per field at 20x magnification.

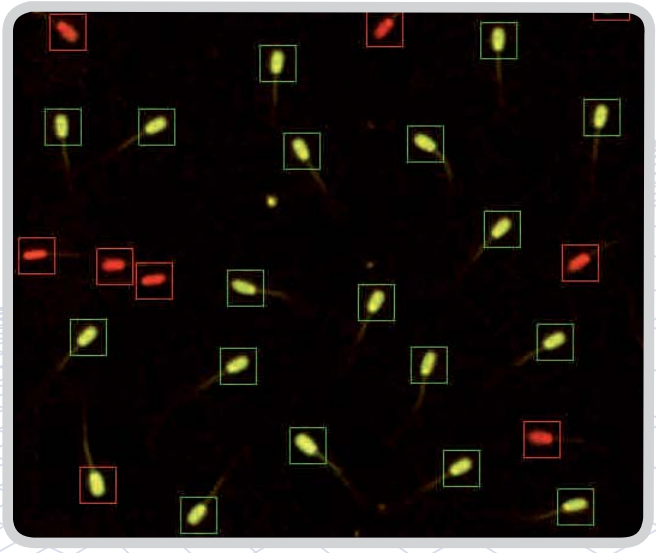


DNA Fragmentation analysis with 20x brightfield. Sample treated with Halosperm kit.

SCA® VITALITY

The **SCA® Vitality** module provides automatic analysis of the sperm viability. The analysis is performed under fluorescence microscopy for sperm samples treated with fluorochromes such as duoVital.

The module automatically identifies and classifies spermatozoa as live and dead. The analysis results include percentage live, percentage dead and concentration. Analysis time is typically 1 second per field at 20x magnification.



Vitality analysis with 20x fluorescence. Sample stained with duoVital kit.

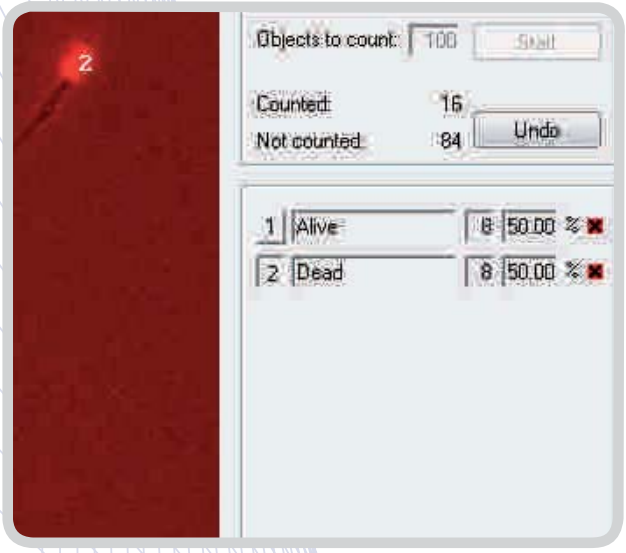
MANUAL ANALYSIS

MANUAL COUNTER

The **SCA® Manual Counter** module is a simple tool designed to facilitate manual cell counting for any biological sample imaged with the **SCA®** hardware.

The **SCA® Manual Counter** module contains default configurations for manual counting of motility, morphology, vitality and DNA fragmentation. The module also allows modification and inclusion of new configurations for counter keys and auxiliary sums to create customized counters.

The counter results can be stored in the **SCA®** database, together with patient data and results of other sample analyses.

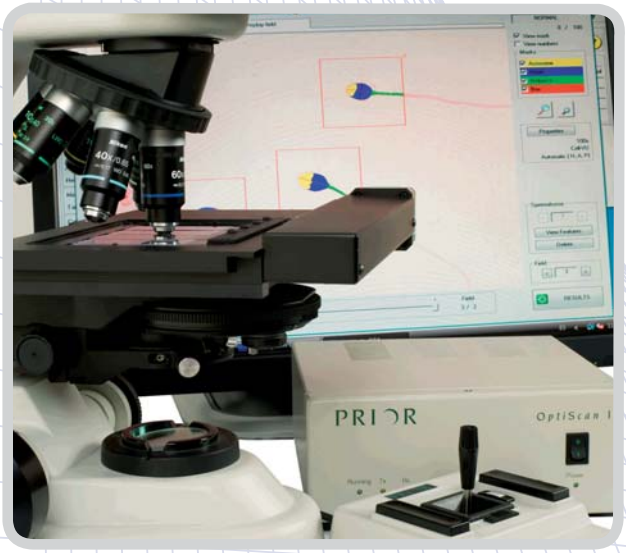


Example of the counter with the vitality configuration.

ADVANCED MODULES

MOTORIZED STAGE

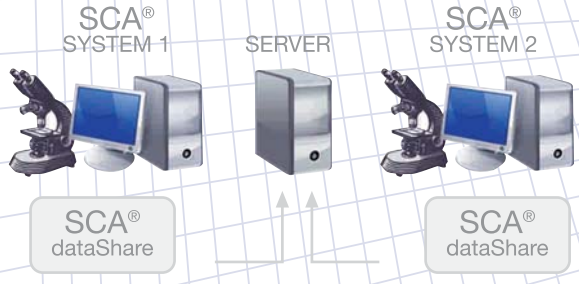
The **SCA® Stage Controller** is an extension module for **SCA®** systems that controls the Prior Optiscan® motorized microscope stage. This module controls microscope stage movement for field selection and image focus, enabling full automation of the analysis for the required number of spermatozoa.



Picture of the SCA® with motorized stage.

SHARE THE DATA

The **SCA® dataShare** module provides advanced data handling, allowing the **SCA®** database to be shared across several **SCA®** systems, or with an external hospital or clinic database.



SCA® CAPTURE / VIEWER

SCA® CAPTURE

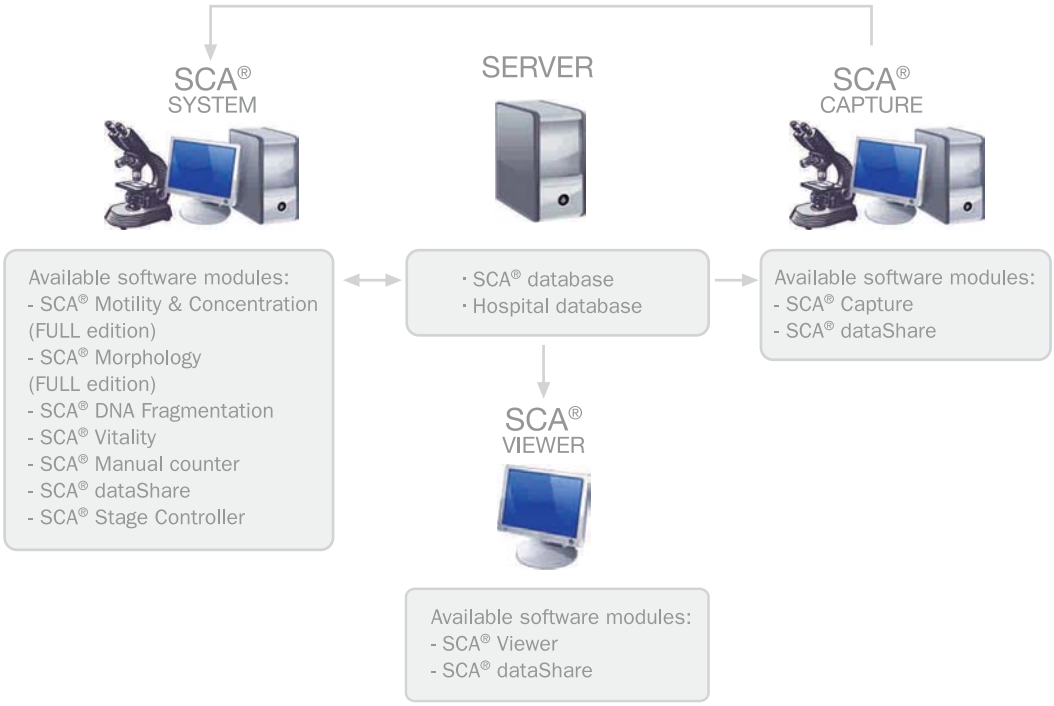
SCA® Capture is an ideal system for centres which need more than one **SCA®** CASA setup, or laboratories requiring analysis to be performed in multiple locations.

SCA® Capture provides the interesting potential for centralized analysis to be preformed for multi sited clinics. This arrangement would provide economical analysis with high quality assurance for all participating clinics.

SCA® VIEWER

SCA® Viewer is software useful to visualise the analysis results. Can be installed on any computer and has the same appearance that the **SCA®** modules.

With **SCA® Viewer**, the doctor can display the patient results in an interactive way, or send them by e-mail as required.



HEATING STAGES

Simple heating stage

Double heating stage

Portable heating stage

Heating stage for motorized stage

MINIMUM REQUIREMENTS

SCA®	SCA® MOTILITY AND CONCENTRATION	SCA® MORPHOLOGY	SCA® DNA FRAGMENTATION	SCA® VITALITY
COMPUTER	Desktop or Laptop | Operating System: Windows XP | Processor: Intel Pentium 4 or higher | RAM: 512 MB (1 GB recommended) | Graphic card: 128 MB settled at 1024x768 | Free space in the hard disk: 5 GB | CD-RW or DVD-ROM | free USB | Free FireWire or PCI Ports			
CAMERA	Basler Scout scA780-54fc			
CAMERA PROPERTIES	Digital FireWire | 782x582 Capture, minimum 25 frames per second	Colour or B/W Digital FireWire 782x582 Capture		Colour Digital FireWire 782x582 Capture High sensitivity
MICROSCOPE	Nikon, Olympus, Zeiss or Leica | Trinocular with C mount without intermediate lens | Phase contrast turret type			
OBJECTIVE	10x (positive phase contrast)	100x (oil immersion) 60x	20x	singleVital: 10x duoVital: 20x
OBSERVATION METHOD	Positive phase contrast	Brightfield	Brightfield or Fluorescence	Fluorescence
FILTER	Green Filter	Blue Filter	Green Filter Bandpass Filter (excitation 510-560, emission 590)	Bandpass Filter (excitation 450-490, emission 515)
DISPOSABLES: SLIDE / KIT / STAINING	Leja, Cell-VU, Makler	SpermBlue, Diff-Quik, Cell-VU Prestained slides, Stat III, Papanicolau, Shorr	Halosperm kit	With Motility: singleVital Kit With Vitality: duoVital Kit

España

ISO 9001 BUREAU VERITAS Certification

DISTRIBUTOR:

MICROPTIC

AUTOMATIC DIAGNOSTIC SYSTEMS

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