

## XS-500i



- \* Fluorescence flow cytometry for high quality analysis
- \* Excellent WBC differential
- \* Very low aspiration volume
- \* Compact
- \* Ready-to-use system with minimum maintenance

## XS-500i \* – Enter the world of Sysmex's 5-part differential analysis

The XS-series is a great addition to Sysmex's X-Class haematology analysers. Despite being the smallest, its quality is undiminished. Its fluorescence flow cytometry technology delivers extremely high quality all round. With a complete differential blood count for all white blood cell populations, and an excellent determination of red blood cells and platelets enhanced by hydrodynamic focusing. Haemoglobin measurements are equally impressive since the XS-series retains a dedicated haemoglobin channel.

One of the key distinctions of the XS-series is the aspiration volume of just 20µL, which will benefit those with neonatal and paediatric samples.

We have taken on board lessons learned with the other X-Class analysers to make your life in the laboratory easier. User maintenance has been reduced further – with minimal automatic shutdown time, and there's a new type of Sample Explorer to simplify sample management.

All XS-series analysers are specifically crafted for laboratories that, despite smaller throughputs, still need to deliver detailed, reliable and highly accurate results.

\*only available in certain countries

### Fluorescence flow cytometry can really help you

Fluorescence flow cytometry is used to analyse physiological and chemical properties of cells. It can also be used to analyse other biological particles in urinalysis analysers. It provides:

- \* Information about cell size and structure
- \* Information about a cell's interior

In flow cytometry, we examine cells and particles while they are flowing through a very narrow flow cell.

First a blood sample is aspirated and proportioned, then diluted to a pre-set ratio and labelled with a proprietary fluorescence marker that binds specifically to nucleic acids.

Next the sample is transported into the flow cell. The sample is illuminated by a semiconductor laser beam, which can separate the cells using three different signals:

- \* forward scattered light (forward scatter or FSC)
- \* side scattered light (side scatter or SSC)

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\* side fluorescence light (side fluorescence or SFL).



The intensity of the forward scatter indicates the cell volume. The side scatter provides information about the cell content, such as nucleus and granules. The side fluorescence indicates the amount of DNA and RNA present in the cell. Cells with similar physical and chemical properties form a cluster in a graph known as a scattergram.

The principle of fluorescence flow cytometry is used in different analysers for haematology and urinalysis. For blood cell counts we use fluorescence flow cytometry, e.g. for the WBC and differential, for NRBC counting and reticulocyte measurement.

In urinalysis analysers, fluorescence technology is also used for counting bacteria, red blood cells, white blood cells and other elements.

## Red blood cells, platelets, haemoglobin and haematocrit

The XS-500i may be compact, but it uses the same globally-renown detection technologies as Sysmex's larger analysers. And thanks to its absolute counting principle, you don't need to calibrate the particle counts yourself, which will save you a significant amount of time and effort.

### Red blood cells and platelets

For red blood cells and platelets, the XS-500i uses advanced sheath flow impedance technology. This hydrodynamic focusing is more precise than ordinary methods as it eliminates potential errors such as coincidence and recirculation. In practical terms, this lets you spot changes in red blood cell composition in the peripheral blood. This is the essential basis for screening and classifying anaemic forms of disease. And it works even for samples with extremely low or unusually high numbers of red cells and platelets.

### Haemoglobin

The XS-series uses Sysmex's cyanide-free SLS method for analysing haemoglobin. This correlates excellently with the reference method. Since haemoglobin is determined in a dedicated channel, interference with lipids or high concentrations of WBC is minimised.

### Haematocrit

The XS-500i measures haematocrit using a precise red blood cell count and volume detection. Using what is known as the 'cumulative pulse height' detection method, the pulses and the resulting cell volumes of a defined sample volume are added together to give a direct, extremely accurate haematocrit value.

## Just 20µL aspiration volume

The XS-500i requires just 20µL aspiration volume for the complete differential blood count. This is particularly beneficial in settings where you don't want to have to take large volumes of blood and so can increase patient comfort, such as in paediatric hospitals. It is also useful for microtubes: a special adapter is supplied for all XS instruments.

A novel blood sensor guarantees exactly 20µL aspiration volume is used each time, and so contributes to the reliability of the analysis results.

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## Easy to use

Sysmex instruments stand out in terms of quality, and in terms of ease of use. We know just how tough it is to work in a lab all day. So it's important to us that our devices make your life as easy as possible.

At the end of the day, you don't want to have to wait for a complicated shutdown process. Building on our knowledge from the XE- and XT-series, we have managed to reduce user maintenance for the XS-series even further. Now, all you need is a single push of the button to initiate your daily fully automatic shutdown. It takes just two to three minutes. And requires no additional reagent.

You will find other functions and the software menu structure intuitive and simpler to use than most other analysers.

Since the XS-500i uses the same reagents as larger X-Class systems, and its operation and user interface messages are very similar, it is excellent as a nightshift or backup solution. No extra training is required for those used to using the larger devices.

## Simplified reagent management

Thanks to the fine-tuned reagent management function on the XS-series you can now easily control and record all essential reagent handling steps.

A handheld bar code reader will save you time by collecting the necessary information from the reagent bar code. This includes reagent name, lot number, expiration date and package volume. For traceability, this information is stored with the user's log-on name so you can meet accreditation requirements.

The IPU reagent meter screen helps to check the analyser's reagent status as it displays the approximate remaining reagent volume.

## Adapt your analyser to fit your overall lab solution

Apart from the manual start button, your XS-500i is operated entirely via the Information Processing Unit (IPU). Based on Windows®, we have used our experience with other analysers to make this interface as intuitive as possible, with interactive menus and understandable icons.

The IPU database stores your patient data, test orders, quality control data and all analysis results. Since all the data management is performed on the IPU, you can easily integrate the XS-500i into your laboratory solution. Even if you're using your system offline and without the bar code system, you can still analyse samples selectively using the work list function.

## Sample Explorer

Up to 8,000 results can be stored centrally on the XS-500i, including all graphics. You can retrieve any sample you need at any time. Simply select from the comprehensive sorting and filtering criteria and various search functions. Processing status is available for all results too, which can be validated, printed out or transmitted to the LIS.

## Specifications



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#### Technologies

fluorescence flow cytometry: WBC DIFF, IG

DC sheath flow method: RBC, HCT, PLT

cyanide-free SLS method: HGB

#### Diagnostic parameters

WBC, RBC, HGB, HCT, MCV, MCH, MCHC, PLT, RDW-SD, RDW-CV, PDW, MPV, P-LCR, PCT, NEUT%, LYMPH%, MONO%, EO%, BASO%, NEUT#, LYMPH#, MONO#, EO#, BASO#

#### Research parameters

IG%, IG#, Other%, Other#

#### Throughput

up to 60 samples/hour

#### Aspiration volume

approx. 20 µL

(manual open/closed mode, capillary mode, sampler mode)

#### Data storage

up to 8,000 samples (incl. graphics);

up to 5,000 patients' information;

20 quality control files

#### Quality control

Xbar, Levey-Jennings, XbarM



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