SIEMENS

Sysmex CS-2500 System

Specification Sheet

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Excel with confidence in your hemostasis testing: Smartly designed technologies improve sample management, increase efficiency, and streamline lab workflow.

The Sysmex® CS-2500 System is a fully automated coagulation analyzer that employs smartly designed technologies such as assay-based preanalytical sample checks using PSI™ technology, automated mixing studies, automated platelet aggregation,* and clot waveform analysis† to improve sample management, increase efficiency, and streamline your lab's workflow. The system helps mid-sized to large coagulation laboratories achieve improved first-run accuracy by identifying and automatically managing potentially problematic test samples prior to analysis.

Reagent Test Menu

PT	Dade® Innovin,® Thromborel® S
APTT	Dade Actin,® Dade Actin FS, Dade Actin FSL, Pathromtin® SL
Fibrinogen	Dade Thrombin
Thrombin time	Test Thrombin, Thromboclotin®
Batroxobin time	Batroxobin
Factor deficiency	Factor II, V, VII, VIII, IX, X, XI, XII
Lupus anticoagulant	LA1 screening, LA2 confirmation
Protein C pathway	Protein C, ProC® Ac R, ProC Global, F V Leiden, INNOVANCE® Free PS Ag, Protein S Ac
Heparin	Berichrom® Heparin, INNOVANCE Heparin
Antithrombin III	Berichrom Antithrombin III (A), INNOVANCE Antithrombin
D-dimer	INNOVANCE D-Dimer
Von Willebrand factor	vWF Ag, INNOVANCE VWF Ac, BC von Willebrand Reagent
Chromogenic	Berichrom Factor VIII Chromogenic, Berichrom Factor XIII Chromogenic, Berichrom C1-Inhibitor, Berichrom α2-Antiplasmin, Berichrom Plasminogen, Berichrom Protein C

*Sysmex CE-marked application.
†Research use only.

Sysmex CS-2500 System Specifications

Measurement

Principle	Photo-optical, continuous, sequential: based on change in the transmitted light emitted from the sample with added reagent
Method/channels	Clotting (10 single channels), chromogenic, immunoassay, and aggregation methods
Measurement channels	10 wells (mixing function using stir bars, possible for 4 wells)
Source lamp	Halogen lamp for measurements at 340, 405, 575, 660, and 800 nm wavelengths
Analysis mode	Normal and micro-sample modes
Analysis method	Dilution analysis; multidilution analysis (MDA); automatic reanalysis (redilution analysis, reanalysis, reflex testing); mixing testing; platelet aggregation testing;* clot waveform analysis (CWA)†
Time resolution	Sampling can be performed for up to 1800 seconds, at intervals of 0.1 seconds
Measuring time	Up to 1800 seconds for each parameter
Incubation	10 wells
Number of user-definable (open) channels	80,000

Sample Handling

Type of sample	Primary tubes and/or sample cups
Sampling mechanism	Automated sample and standard predilution
Sample integrity check (PSI)	Assay-based qualitative check for hemolysis, lipemia, icterus, and proper fill of primary tube
Traceability of results	Operator name, test date and time, reagent lot information, reagent elapsed time onboard, HIL and sample-volume checks, test reaction position, testing and reagent table temperatures, test protocol number, dilution ratio, QC performed date, calibration curve identification, and maintenance and error logs
Carrier system	Continuous-access sample racks with 10-tube capacity
Maximum load	50 samples; 5 racks with 10 samples per rack
STAT sample loading	Five priority positions
Storage temperature	Room temperature
Racks	Five sample racks, continuous loading; various specific tube holders and adapters available
Handling	Flexible mix of various capped and/or uncapped sample tubes and 4 mL conical sample cups
Primary sample probe	Liquid-level sensing, crash protection, clog detection, liquid surface verification
Automatic sample predilution	Samples can be diluted (0 to 19:1 to 259) for multidilution analysis (MDA) and mixing tests and can be retained for auto repeat until results are available
Cap piercing	Pierces caps on primary tubes

For more information, please contact your Siemens representative or visit our website.

Reagent Handling

Reagent recognition	Internal reagent bar-code identification

Dispensing accuracy	Volume Dispensed	Reproducibility	Accuracy
Reagent probe	50 µL	CV 3% or less	48.0 ±3.0 µL
	100 µL	CV 1% or less	99.0 ±2.0 µL
Sample probe	10 µL	CV 5% or less	9.5 ±1.0 µL
	100 µL	CV 1% or less	98.5 ±2.0 µL

Volume	Reagent dispensing pipette: 20–200 µL Sample dispensing pipette: 20–250 µL (combined diluent and sample) Volumes aspirated of sample and diluent are in the range of 4–150 µL
Dispensing mechanism	Two probes: one heated for reagents and one for samples, controls, and calibrators Two catchers
Loading system	Manual placements of reagents, removable reagent trays
Reagents onboard	40 reagent/control positions and 5 buffer/rinse solution positions
Storage temperature	40 cooled reagent positions onboard at 10°C ±2°C
Handling	Flexible mix of reagent positions within the reagent table; various adapters available
Mixing position	Up to 10 positions available on the reagent table
Storage capacity onboard	1890 tests average; 3000 tests maximum
Onboard stability	System keeps reagents cooled 24 hours/day, 7 days/week; anti-evaporation caps support long onboard stability
Reagent inventory management	Tracks number of tests remaining, lot onboard stability, vial type, set date and time, and expiration date

Throughput‡ (tests/hour, approx.)

PT	180 (single-parameter analysis)
APTT	180 (single-parameter analysis)
PT/APTT	180 (simultaneous analysis)
PT/APTT/AT/DD	95 (simultaneous analysis)

Operation

Access mode	Continuous reagent-, consumable-, and sample-loading capability
Calibration	Two 12-point calibration curves with maximum of 5 repeated analyses per point and up to 10 calibration curves; one reagent lot group
Calibration curve	250 user-defined parameters. 12 points maximum
View calibration	Graphical display of calibration curves from up to 10 different reagent lots/parameters
Auto calibration/auto QC	User-defined time interval or with new reagent vial
Temperature control	Detector 37°C ±0.5°C, sample incubator 37°C ±1.0°C, reagent probe 37.5°C ±0.5°C
Sample and abnormal reaction monitoring	Coagulation curve abnormalities; overreaction to antigen; interfering assay-based HIL; sample volume check; analysis value error monitoring (checks for deviations based on mark limit values, report limits, and the results of repeated analyses)

Reaction Tubes

Type	Single reaction tubes
Loading	Automatic continuous access, 500 reaction tubes onboard
Reaction tube stirring	Yes

System Fluid

Cleaning and rinsing	Washing solutions onboard
System containers	20 L containers for water (rinse) and waste (optional)

Computer/Printer

Workstation	PC
Display	24″ wide-screen LCD display with touch operation
Printer	Graphic printer (optional)
Input devices	Multitouch-compatible display (optional with monitor arm), keyboard and mouse, 2-D bar-code reader
Data storage	About 10,000 samples with a maximum of 60 results per sample
Onboard maintenance logs	Scheduled and automatically monitored routine maintenance activities via software

Software

LIS interface	Sysmex CA-1000, CA-1500, and CS-2000*i*, CR-800, ASTM1381-95/1394-95, ASTM1381-02/1394-97
Host connection	Bidirectional RS-232C serial port or via Ethernet-TCP/IP
Operating system	Microsoft Windows 7-based
System documentation	Instruction manual and reference guide online

Power Supply

Operating voltage	Main unit: 100–240 V Pneumatic unit: 100–117 V/220–240 V
Power consumption	≤800 VA main unit; ≤280 VA pneumatic unit (processing)
Main frequency	50–60 Hz

Environmental Conditions

Operating temperature	15–30°C
Environmental humidity	30–85% (no condensation except on the reagent table)
Atmospheric pressure	70–106 kPa
Waste heat	Approx. 4000 BTU/h (1040 Kcal/h)
Noise level	60 dB or below (excluding sudden noise that stops within 5 seconds and alarms)

Dimensions

Main unit and cabinet	Approx. 775 (W) × 895 (D) × 685 (H) mm 30.6 (W) × 35.2 (D) × 27.0 (H) in.
Pneumatic unit	Approx. 280 (W) x 355 (D) x 400 (H) mm 11.1 (W) x 14.1 (D) x 15.7 (H) in.
Terminal (PC)	Approx. 338 (W) x 381 (D) x 100 (H) mm 13.3 (W) x 15.0 (D) x 3.95 (H) in.
Terminal (monitor)	Approx. 556 (W) x 122.5 (D) x 403.5 (H) mm 21.8 (W) x 4.8 (D) x 15.8 (H) in.

Weight

Main unit	Approx. 110 kg 242.5 lb
Pneumatic unit	Approx. 17 kg 37.5 lb
Terminal (PC)	Approx. 6.84 kg 15.08 lb
Terminal (monitor)	Approx. 5.6 kg 12.3 lb

Quality Control

X-control, Levey-Jennings control
Multi-rule monitoring (Westgard rule)
Maximum of 1200 plots × 750 files can be saved

Compliance

Safety standards (main unit)	IEC 61010-1:2001 (2nd Edition) IEC 61010-2-081:2001 + A1:2003 IEC 61010-2-101:2002 IEC 60825-1:1993 + A1:1997 + A2:2001 EN 61010-1:2001 (2nd Edition) EN 61010-2-081:2002 + A1:2003 EN 61010-2-101:2002 EN 60825-1:1994 + A2:2001 + A1:2002 UL 61010-1:2004 (2nd Edition) CAN/CSA-C22.2 No. 61010-1:2004 (2nd Edition) CAN/CSA-C22.2 No. 61010-2-081-04 (R09) CAN/CSA-C22.2 No. 61010-2-101-04 (R09) CAN/CSA-E60825-1-03
EMC standards	IEC 61326-1:2005 IEC 61326-2-6:2005 CISPR 11:2009/A1:2010 Group 1 Class A IEC 61000-3-2:2006/A1:2009/A2:2009 IEC 61000-3-3:2008 IEC 61326-1:2005 (Table 1) IEC 61326-2-6:2005 IEC 61000-4-2:2008 IEC 61000-4-3:2006/A1:2007/A2:2010 IEC 61000-4-4:2004/A1:2010 IEC 61000-4-5:2005 IEC 61000-4-6:2009 IEC 61000-4-8:2009 IEC 61000-4-11:2004

Ordering Information

Product Description	Catalog Number
Sysmex CS-2500 System	11239235
Sysmex CS-2500 System kit	11239260

*Sysmex CE-marked application.
†Research use only.
‡Throughput values were determined by the time to first result; processing capability varies depending on the reagent used. Throughput values stated above were determined using Siemens' study protocol with PT (Thromborel S Reagent), APTT (Pathrombin SL Reagent), INNOVANCE D-Dimer Reagent, and AT (INNOVANCE AT Reagent) test applications.

Product availability may vary from country to country and is subject to varying regulatory requirements. Please contact your local representative for availability.

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