Specification sheet

CN-6000 System

Where size, speed, intelligence, and flexibility combine to accelerate hemostasis workflows

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The CN-6000 Hemostasis System offers industry-leading throughput in the smallest footprint on the market.† With intelligent technology and AI-driven predictive analytics, the system streamlines workflow through improved sample and error management. The CN 6000 can even calculate the day's testing reagent requirements to reduce workflow interruptions. And for labs seeking to automate testing, the CN 6000 offers connectiviy to FlexLab X from Siemens Healthineers in various customized configurations, including single-discipline and multi-disciplinary configurations.

Reagent test menu	
PT	Dade Innovin, Thromborel S
APTT	Dade Actin, Dade Actin FS, Dade Actin FSL
Fibrinogen	Dade Thrombin
Thrombin time	Test thrombin
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, F V Leiden, Protein S Ac, INNOVANCE Free PS Ag
Anticoagulant therapy management	INNOVANCE Heparin (LMWH, UFH), INNOVANCE Anti-Xa (LMWH, UFH, apixaban
Antithrombin III	Berichrom Antithrombin III (A), INNOVANCE Antithrombin
D-dimer	INNOVANCE D-Dimer
Von Willebrand factor	vWF Ag, INNOVANCE VWF Ac, BC von Willebrand
Chromogenic	Factor VIII Chromogenic Assay, Berichrom F XIII§, Berichrom α2-Antiplasmin, Berichrom Plasminogen, Berichrom Protein C

Reagent names are abbreviated. Please refer to instrument-specific reagent application/reference guide for more information. Product availability varies by country.
†As of January 2024. CN-6000 System throughput: 450 PT/APTT. Footprint evaluated against systems in the same volume class as listed on https://www.captodayonline.com/ and in the COBAS T 511 and COBAS T 711 coagulation analyzers brochure, Roche, 2018, and sthemo 301 analyzer brochure, Stago, 2023. Throughput evaluated against systems in the same volume class as listed on https://www.captodayonline.com/ and in the COBAS T 511 and COBAS T 711 coagulation analyzers brochure, Roche, 2018.
§ Research use only.

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CN-6000 System specifications

Measurement	
Principle	Photo-optical, continuous, sequential based on change in the transmitted light emitted from the sample with added reagent
Method/ channels	**CN-6000** 26 single channels For clotting, chromogenic, immunoassay, and aggregation methods
Measurement channels	**CN-6000** 26 wells (mixing function using stir bars possible for 8 wells for aggregation methods)
Source lamp	LED lamp with 5-year lifespan for measurements at 340, 405, 575, 660, and 800 nm wavelengths. Measurement of up to five different wavelengths simultaneously. Flexible detection method switches between main and sub-wavelengths and makes light intensity adjustments for sample resulting, even with high hemolytic, icteric, or lipemic (HIL) interferences.
Analysis mode	64 aliquot positions onboard for normal and micro-sample modes, regardless of automation connectivity
Analysis method	Dilution analysis; multidilution analysis (MDA); automatic reanalysis (redilution analysis, reanalysis, reflex testing) from aliquot; mixing studies; 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 (automated stopping/extension)
Incubation	34 wells at 37.0 ±1.0°C
Number of user-definable (open) channels	80,000

Sample handling	
Type of sample	Primary tubes and/or secondary sample cups
Sampling mechanism	Automated sample and standard predilution. Up to 64 samples processed simultaneously.
Pre-analytical variables check (PSI technology)	Assay-based qualitative check for HIL and proper fill of primary tube. System detects interferences and makes automated actions based on predefined settings.
Traceability of results	Operator name, test date/time, reagent, washing solution/consumables lot information, reagent elapsed time onboard, HIL and sample-volume checks, test reaction position, testing and reagent table temperatures, test protocol number, test measurement time, dilution ratio, QC performed date/time, calibration curve identification, and maintenance/error logs
Carrier system	Four continuous-access sample racks with various specific tube holders and adapters available
Maximum load	24 samples when front-loading: 4 racks with 6 samples per rack; 120 samples with optional sampler: 20 racks with 6 samples per rack

Sample handling (continued)	
STAT sample loading	One priority position with cap piercing and bar-code identification. STAT samples supersede routine samples, also when connected to an automation track.
Storage temperature	Room temperature
Storage racks	Onboard, post-testing storage capacity of up to five sample racks
Handling	Flexible mix of various capped and/or uncapped sample tubes and 4 mL conical sample cup
Primary sample probe	Liquid-level sensing, crash protection, clog and bubble 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 tests
Cap piercing	Pierces caps on primary tubes; up to 120,000 times
Secure aliquot technology	One-time cap-piercing per sample tube; multiple tests taken from aliquot

Reagent handling			
Reagent recognition	Internal reagent identification via 1D and/or 2D bar code enables tracking of individual vials		
Dispensing accuracy	**Volume dispensed**	**Reproducibility**	**Accuracy**
Reagent probe	50 µL 100 µL	CV 3% or less CV 1% or less	48.0 ±3.0 µL 99.0 ±2.0 µL
Sample probe	10 µL 100 µL	CV 5% or less CV 1% or less	9.5 ±1.0 µL 98.5 ±2.0 µL
Volume	Reagent dispensing pipette: 20–200 µL Sample dispensing pipette: 20–250 µL (combined diluent and sample) Aspirated volumes of sample and diluent are in the range of 4–200 µL		
Dispensing mechanism	4 probes: 2 heated for reagents and 2 for samples, controls, and calibrators (aliquot and sample arm). 4 catchers for sample reaction tube transfers.		
Loading system	Manual placement of reagents; removable reagent trays		
Reagents onboard	38 tilted positions for reagents/controls/calibrators; 6 buffer solution positions		
Storage temperature	38 tilted reagent positions cooled to 4–12 ±2°C		
Handling	Flexible mix of reagent positions within the reagent table; various adapters available		
Mixing position	Up to seven positions available on the reagent table		
Storage capacity onboard	PT/APTT: 3000 tests; PT/APTT/Fib: >2700 tests		
Onboard stability	Continuous onboard refrigeration, anti-evaporation caps, optional reagent rack with automated reagent caps for selected reagents		
Reagent volume management	Tracks volume and informs operator of reagent levels, number of tests remaining, lot onboard stability, time elapsed after reagent set, vial type, reagent set date and time, calibration and control validity, and expiration date		
Reagent allocation planning	Software automatically predicts number of tests per day and per shift		

[§]*Research use only.*

Throughput** (tests/hour, approx.)	CN-6000
PT	450 (single-parameter analysis)
APTT	450 (single-parameter analysis)
PT/APTT	450 (simultaneous analysis)
PT/APTT/AT/DD	258 (simultaneous analysis) Numbers are for normal-mode processing

Operation	
Access mode	Continuous random access (samples, reaction tubes)
Calibration	2–12 point calibration curves with maximum of five repeated analyses per point, up to 10 calibration curves per lot; 10 reagent lot groups per assay
Calibration curve	250 user-defined parameters
View calibration	Graphical display of calibration curves from up to 10 different reagent lots/parameters
Auto calibration/ auto QC	User-defined by specified time, time interval, number of sample measurements, or new reagent vial. The number of QC analysis replications can be assigned per assay.
Temperature control	37 ±0.5°C for measuring channels, sample incubation area, and reagent probe
Sample and abnormal reaction monitoring	Coagulation curve abnormalities; overreaction to antigen excess; interfering assay-based HIL; sample volume check; analysis value error monitoring (checks for deviations, replication difference, MDA slope ratio, and results of repeated analyses)

Walk-away time	CN-6000
	Up to 7 hours

Automation connectivity	Point-in-space connectivity; single-discipline and multi-disciplinary automation is supported by Aptio Automation, FlexLab Automation, and other third-party solutions.

Reaction tubes	
Type	Single reaction tubes
Loading	Automatic continuous access; up to 1200 reaction tubes onboard. Waste capacity >1500 reaction tubes. Lot number tracking for reaction tubes.
Reaction tube stirring	Up to 40 reaction tubes, with stirrer bars onboard

System fluid	
Cleaning and rinsing	Washing solutions supplied externally; lot number tracking for washing solutions
System containers	20 L containers for water (rinse), and 10/20 L containers for waste (optional). Optional direct plumbing (water and waste). Optional connectivity to Millipore Elix Essential water purification systems.

Maintenance	
Hands-on time	Daily: 3–5 minutes Weekly: 5–10 minutes Monthly: <3 minutes
Onboard maintenance logs	Automatically logs scheduled routine maintenance activities. Notification and reporting via software.

Computer/printer	
Workstation	PC
Display	24" wide-screen LCD display with touch operation
Printer	Graphic printer (optional)
Input devices	Touchscreen, keyboard, mouse, 2D bar-code reader
Data storage	About 10,000 samples with a maximum of 60 results per sample

Software	
LIS interface	ASTM E1381-02, ASTM E1394-97, IEEE802.3
Host connection	Bidirectional RS-232C serial port or via Ethernet-TCP/IP
Operating system	MICROSOFT WINDOWS 10-based
Onboard help	Software-embedded instruction manual; error detection and guidance; application guide available online
Automatic system startup and backup	Yes
System security	Full audit trail, full user-/role-based access management, automatic screen lock, contactless smart card log-in

Power supply	
Operating voltage	Main unit: 100–240 V; Pneumatic unit: 100–117 V/220–240 V
Power consumption	Main unit: ≤1080 VA; Pneumatic unit (processing): ≤280 VA
Main frequency	50–60 Hz

Environmental conditions	
Operating temperature	15–30°C
Humidity	30–85% (no condensation except on the reagent table)
Atmospheric pressure	70–106 kPa
Waste heat	Approx. 4776 BTU/h (1204 Kcal/h)
Noise level	55 dB or less at standby; 65 dB or less during analysis (excluding sudden noise that stops within 5 seconds and alarms)

Dimensions	
Main unit (includes PC and monitor)	Approx. 720 (W) x 906 (D) x 1350 (H) mm
Pneumatic unit	Approx. 280 (W) x 355 (D) x 400 (H) mm
Optional sampler	Approx. 330 (W) x 1030 (D) x 830 (H) mm

Weight	
Main unit	Approx. 230 kg
Pneumatic unit	Approx. 17 kg
Optional sampler	Approx. 81 kg

Quality control
X-control, Levey-Jennings control, Westgard multi-rule monitoring. Up to 40 QC files. 50 charts and 1200 data plots per QC file.

Compliance
Safety standards
IEC 61010-2-081:2001+A 1, IEC 61010-2-101:2002, IEC 61010-1:2001, EN 61010-2-081:2002+A 1, EN 61010-2-101:2002, EN 61010-1:2001, IEC 61010-2-081:2015, IEC 61010-2-101:2015, IEC 61010-1:2010, IEC 62471:2006, IEC 62304:2006+A1:2015, EN 61010-1:2010, EN 61010-2-081:2015, EN 61010-2-101:2017, EN 62471:2008, EN 62304:2006+A1: 2015, UL 61010-1:2012, UL 61010-2-081:2015, UL 61010-2-101:2015, CAN/CSA-C22.2 NO. 61010-1-12, CAN/CSA-C22.2 NO. 61010-2-081:15, CAN/CSA-C22.2 NO. 61010-2-101:15, CAN/CSA-CE I/I EC 62304:14+A1:2018

EMC standards	IEC 61326-2-6:2012, EN 61326-2-6:2013

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Further information is available at www.siemens-healthineers.com.

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CN-6000 System refers to Automated Blood Coagulation Analyzer CN-6000.

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