

# VITROS® 4600 Chemistry System

Fast, accurate, comprehensive and efficient



# Pressures on your lab today require you and your team to do more with less

Improving patient care is your number one priority, and you need a system you can rely on to give your patients the best results possible. The VITROS 4600 Chemistry System provides a comprehensive chemistry menu for both routine and specialty testing.



## Efficiency

### Maximize user experience

96.5% of tests on VITROS systems provide results the first time without intervention or repeat testing - the highest in the industry.\*

With the lowest hands-on maintenance and service time, VITROS Chemistry Systems enable your lab to focus on supporting clinicians and patients.†



## Reliability

### Ready to go when you need it

VITROS systems have industry-leading analyzer uptime at 98%.‡

Further enhance uptime through E-Connectivity® Technology, QuidelOrtho's innovative monitoring software system.



## Confidence

### Accurate and efficient result reporting

VITROS® Intellicheck® Technology automatically checks for clots and bubbles and reports on diagnostic checks throughout the testing process.

VITROS® MicroSensor automates detection of HIT interferences without the need for manual inspection.

## VITROS 4600 system delivers

- High-quality chemistry analysis leveraging proven, easy-to-use, self-monitoring VITROS technologies
- Disposable, single-use tip design, which eliminates carryover
- Extended calibration times up to 6 months
- 20 open channels to further broaden esoteric testing
- User interface and reagent packaging standardized with other VITROS systems
- A broad menu of state-of-the-art assays
- Configurable reference ranges
- Adjustable thresholds for onboard inventories, calibration expirations and diluent volumes

\*Data on file. Compared to competitive systems assessed.

†Data on file. Maintenance and service claims based on publicly available data for select competitive systems.

‡Data on file. Uptime claim based on publicly available data for select competitive systems.



## Standardized user interface

The VITROS 4600 system features a standardized user interface, which simplifies operation and improves sample integrity traceability. If you plan on having more than one of the x600 systems in your lab or across your network, this standardized interface will streamline training and resource flexibility.

## Single-use tip design and configurable reference ranges

VITROS 4600 system features disposable, single-use tips, which eliminates carryover to improve result quality.

In addition, configurable reference ranges account for seven demographic attributes, which offers greater specificity to improve result evaluation and trending with peer groups.

## VITROS Automation Solutions

Automate non-value-added tasks of your pre-analytical, analytical and post-analytical processes. Optimize your employee resources, standardize your procedures and ensure consistency in processes and results.

- **Open**

An open architecture platform lets you connect only the pre- and post-analytical modules and analytical systems you need, when you need them.

- **Flexible**

Configure hardware and software to align with how your lab actually works. A compact track fits your space and your workflow.

- **Scalable**

Expand and adapt as test volume grows, lab demands change, or new technologies become available — all without expensive and time-consuming laboratory construction.



## #1 Again

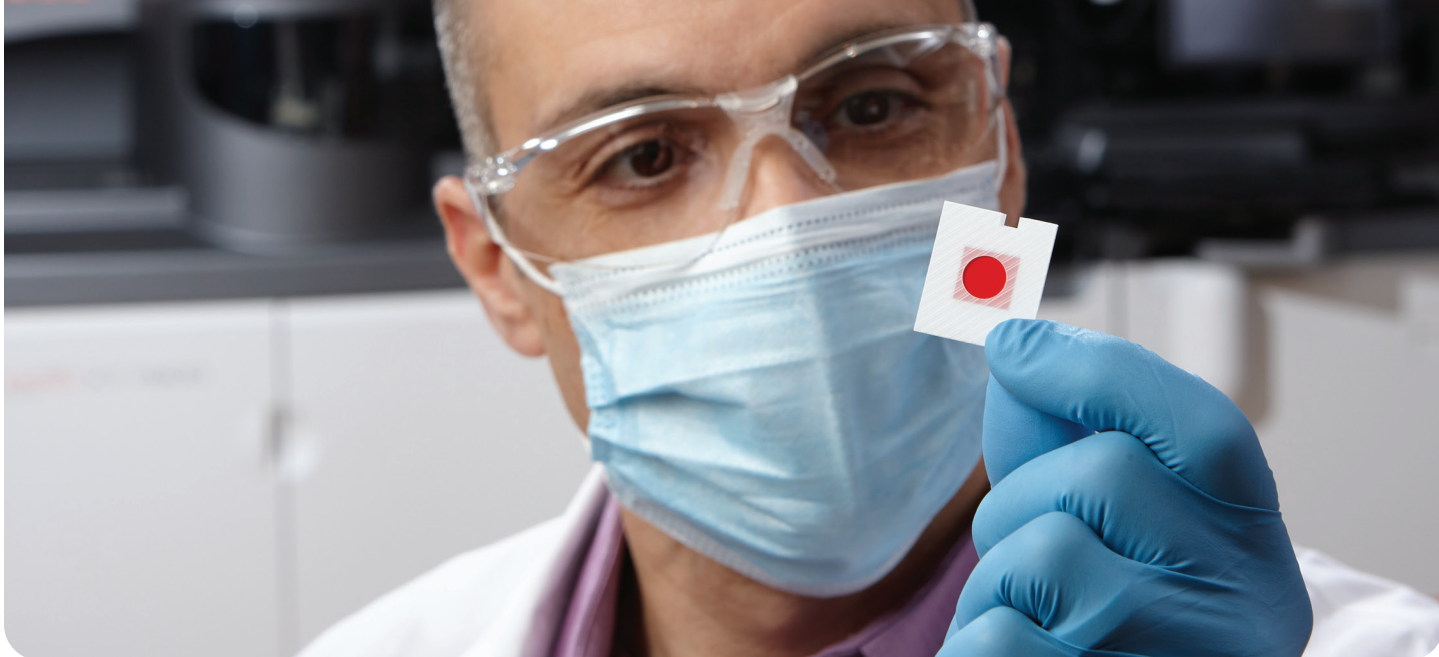
in Field Services  
and Technical Support

#1 since 2020

'24

IMV SERVICETRAK™  
CLINICAL LABORATORY  
AWARD WINNER





## Intelligent technologies

The VITROS 4600 system combines four high-quality proprietary technologies into a single system that is self-monitoring, highly efficient and easy to use.

Together these produce quality results with minimal staff interventions and reduced error potential. In addition, our disposable, single-use tips virtually eliminate sample and reagent carryover or cross-contamination.



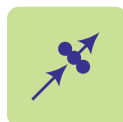
### VITROS® MicroSlide

Filters out proteins and lipids to minimize sample interferences.



### VITROS® MicroTip

Provides special chemistry menu offerings and user-defined assays.



### VITROS® MicroSensor

Detects endogenous interferences without the need for extra sample or reagent and with no effect on turnaround time (TAT).

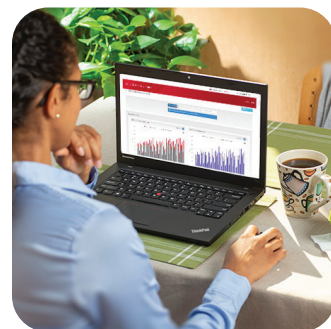


### VITROS® Intellicheck®

Uses an advanced algorithm that delivers real-time monitoring, checks for clots and bubbles, and fully documents sample traceability.

## VITROS® Performance Dashboard

- **Improve lab operations:** With the ability to monitor testing trends, you can adjust staffing and workflow according to your testing volumes.
- **Determine testing efficiency:** Quantify the number of samples processed the first time – even when interference is present – so you can spot negative trends right away.
- **Capture quality insights:** Have confidence in your results when you see the separation between positive and negative results with signal-to-cut-off values.





# Freedom to focus

QuidelOrthoCQ™ (Care Quotient) is the measure of our personal commitment to you and our approach to creating delightful customer experiences throughout your journey with us. We're always working to make our technologies easier to use, our equipment better maintained and every interaction more efficient. So, our customers always have the freedom to focus.

## The CQ philosophy: It all starts with you

QuidelOrthoCQ delivers world-class customer experiences through exceptional care, empathy and compassion. From consulting to engineering, customer communications to ordering, to packing and shipping, everything we do starts with you and what you need to run a high-performing lab.

- **Education and training tools** that empower your staff to get up to speed quickly and shorten the learning curve with our systems using a wide range of easily accessible resources
- **Insights and efficiencies** that enable teams to efficiently manage operations with system dashboards, customer portals, inventory management and ordering tools
- **Expert service and support** you can rely on from our team of ValuMetrix® Services consultants, clinical specialists, service technicians, customer service and account representatives
- **System health solutions** with connected smart tools and AI technology that maximize instrument performance, plus proactive cybersecurity that maintains and protects critical data

## Progress through partnership

With our expert teams, proven know-how and award-winning support, QuidelOrthoCQ gives you the freedom to focus with less time spent on tasks and troubleshooting, and more time for patient care. See how your business can run smarter, leaner and more efficiently with real-world product, service and customer experience solutions focused on you.



QuidelOrtho has been **#1** in customer satisfaction since 2018\*

QuidelOrthoCQ™ 

\*ServiceTrak™ Executive Summary Report. Integrated Systems 2023.

# The VITROS 4600 assay menu

Provides your lab the most comprehensive offerings to give your patients the highest quality results as efficiently as possible.

## Anemia

dTIBC  
Haptoglobin  
Iron  
Transferrin

## Bone Disease

Alkaline Phosphatase  
Calcium  
Phosphorus

## Cardiac

Apolipoprotein A1  
Apolipoprotein B  
Cholesterol  
CK  
CKMB  
D-Dimer\*  
Direct HDL  
Direct LDL  
Homocysteine  
LDHi  
Lp(a)\*  
Triglycerides

## Diabetes

β-Hydroxybutyrate\*  
BUN/Urea  
Creatinine  
Creatinine (enzymatic)\*  
Glucose  
Glycated Serum Protein\*  
HbA1c  
Microalbumin

## Drug of Abuse (Urine)

Amphetamines  
Barbiturates  
Benzodiazepines  
Buprenorphine / Suboxone\*  
Cocaine Metabolites  
Ecstasy\*  
Ethyl Glucuronide (ETG)\*†  
Fentanyl II\*  
Heroin Metabolite (6-AM)\*  
Hydrocodone\*  
Methadone  
Methadone Metabolite (EDDP)\*  
Opiates  
Oxycodone\*  
PCP  
Propoxyphene\*  
THC  
Tricyclic antidepressants\*

## General Chemistry

Amylase  
BUN/Urea  
Calcium  
CK  
Glucose  
Lactate  
LDH  
Lipase  
Magnesium  
Phosphorus  
Uric Acid

## Hepatic

Albumin  
Alkaline Phosphatase  
Alpha-1-antitrypsin  
ATL  
ALTV  
Ammonia  
AST  
BuBc  
Ceruloplasmin\*  
Cholinesterase  
GGT  
IgA  
IgG  
IgM  
Total Bilirubin  
Prealbumin

## Immunosuppressant Drugs

Cyclosporine\*  
Everolimus\*  
Mycophenolic Acid\*  
Tacrolimus\*

## Inflammatory

Alpha-1 Acid Glycoprotein\*  
Alpha-2 Macroglobulin\*  
ASO  
C3  
C4  
CRP  
hsCRP  
IgA  
IgG  
IgM  
Procalcitonin  
Wide-Range CRP\*

## Lipids

Apolipoprotein A1  
Apolipoprotein B  
Cholesterol  
Direct HDL  
Direct LDL  
Triglycerides

## Nutritional Assessment

Albumin  
dTIBC  
Iron  
Prealbumin  
Total Protein  
Transferrin

## Oncology

Beta 2 Microglobulin\*  
IgA  
IgG  
IgM  
Kappa Free Light Chain\*  
Lambda Free Light Chain\*

## Pancreatic

Amylase  
Lipase

## Renal

Albumin  
BUN/Urea  
Calcium  
Carbon Dioxide  
Chloride  
Creatinine  
Creatinine (enzymatic)\*  
Cystatin C\*  
Glucose  
Microalbumin  
Phosphorus  
Potassium  
Sodium  
Uric Acid  
Urine Protein

## Respiratory

Alpha 1-antitrypsin  
Caffeine  
Carbon Dioxide  
Chloride  
Potassium  
Sodium

## Spinal

Glucose (csf)  
Total Protein (csf)

## Therapeutic Drug Monitoring

Amikacin\*  
Caffeine  
Carbamazepine  
Digoxin\*  
Digoxin  
Gentamicin  
Lidocaine\*  
Lithium  
Methotrexate\*  
Phenobarbital  
Phenytoin  
Theophylline  
Tobramycin  
Valproic Acid  
Vancomycin

## Thyroid

Lactate

## Toxicology

Acetaminophen  
Alcohol  
Cholinesterase  
Salicylate

## Urine

Amylase  
BUN/Urea  
Calcium  
Chloride  
Creatinine  
Creatinine (enzymatic)\*  
Glucose  
Magnesium  
Microalbumin  
Phosphorus  
Potassium  
Protein  
Sodium  
Uric Acid

\*MicroTip Partnership Assays (MPAs).

Products are subject to local regulatory requirements and may not be available in all regions.

# VITROS 4600 Chemistry System Specifications

## Measurement principles

- Colorimetric/Rate
- Potentiometric (direct ISEs)
- Immuno-rate
- Turbidimetric

## Reagents

- No preparation\*, no mixing or reconstitution required for Integrated Reagent Packs, Electrolyte Reference Fluid (ERF), or Immuno-Wash Fluid (IWF)
- Onboard stability up to 35 days
- Shelf life stability up to 18 months from date of manufacture\*\*
- Onboard test capacity:
  - Up to 8,940 assays
  - 125 reagent/diluent positions: 89 MicroSlide Cartridges (18, 50, or 60 tests/cart); 36 MicroTip Packs (50, 75 or 100 tests/pack)

## User-defined channels

- 20 available (MicroTip)

## Consumables

- VersaTips, MicroTips and Cuvettes can be replenished without interrupting system operation. Reagents replenished without interrupting incubation
- Onboard capacity:
  - VersaTips: 2000
  - MicroTips: 384
  - Cuvettes: 348
  - ERF: 800 drops
  - IWF: 300 drops

## Calibration

- Up to 25 lots per assay with automatic lot switching
- MicroSlide and MicroTip assays stable up to lot change\*
- Random-access calibration
- Bar-coded calibrators for MicroSlide assays

## System startup

- 24-hour ready mode
- No manual primes, purges, washes or tubing maintenance
- No daily calibrations or calibration checks

## Time for single result

- Potentiometric: ~ 2.5 minutes
- Colorimetric: ~ 6 minutes
- Immuno-rate: ~ 9 minutes
- MicroTip: ~ 8-16 minutes
- Real-time results data stream to LIS available

## Throughput

- Maximum theoretical throughput is up to 845 tests per hour
- Actual throughput will vary by test mix and sample workflow

## Sample types

- Serum, Plasma, Urine, CSF, Whole Blood\*\*\*

## Sample volume

- Per assay: 2-17µL
- Dead volume: minimum 35µL

## Sample capacity

- Continuous load and unload
- 150 routine samples in Universal Sample Trays
- 10 samples in dedicated STAT lane Sample and Reagent Management Incorporating

## Intellicheck® Technology

- Single-use Tip Metering verifies sample aspiration and dispense, eliminates carryover and addresses cross-contamination concerns
- Clot, bubble, low and high viscosity, thin layer fluid and short sample detection
- Save-the-Sample Clot/Bubble Management
- Liquid level sensing
- MicroSlide and Cuvette Dispense Verification
- Reagent aspiration and dispense verifications
- Onboard IntelliReport provides complete traceability and documentation of result quality

## Sample containers

Universal Sample Trays accommodate:

- 5 mL, 7 mL, 10 mL collection tubes
- Micro-collection containers
- VITROS microsample cups and 0.5mL and 2.0mL cups

## Sample bar code identification

Autodiscriminates by simultaneously recognizing all standard symbologies:

- Code 128
- ISBT 128
- Code 39
- Codabar
- Interleaved 2 of 5

## Dilution capabilities

- Auto reflex dilution
- Operator requested dilution
- Off-board dilution calculation

## Automatic reflex testing

Based on user-configuration:

- Reflex to different assays
- Reflex to the same assay

## Operator interface

- Color-coded graphical user interface
- Ergonomic flat, low-glare, LCD, 17-inch touchscreen monitor
- Numeric keypad on monitor
- Detached keyboard for maximum flexibility
- Onboard documentation and animated Help (V-Docs)
- Onboard maintenance documentation

## Data storage

- Read/write disk drive for data input and archiving
- USB flash drive (memory stick) capabilities
- 10,000 sample programs
- 25,000 samples with ability to archive and retrieve through CD-ROM or USB flash drive

## System dimensions

- Width: 2.34 m/92.2 inches
- Depth: 0.84 m/33.4 inches
- Height: 1.33 m/52.5 inches
- Weight: 640 kg/1400 pounds

## Power

- Line Voltage: 1 dedicated 20 amp power line, nominal 200-240V AC
- Line Frequency: 47-63 Hz

## Environment:

- Operating temperature: 15°-30°C/59°-86°F
- Ambient relative humidity: 15%-75% RH
- Altitude: up to 2,439 m/8,000 ft
- Plumbing: No water or drain required; self-contained onboard waste management eliminates special requirements for off-board plumbing

## Communications:

Laboratory Information System (LIS):

- Bidirectional interface for ASTM and HL7 protocols
- Broadcast download and Host Query
- Results can be uploaded individually or as an entire sample or by group

Laboratory Automation System (LAS):

- AT ready at launch
- 1 LAS interface, point-in-space

Ports:

- RS 232 serial ports (for LIS and LAS)
- USB ports (for printers)
- Ethernet ports (for e-Connectivity,™ LIS)

## E-Connectivity® Technology interactive system management

- Using the facility's Internet connection or DSL, VPN establishes a secure connection between system and QuidelOrtho Technical Support to enhance troubleshooting and increase uptime
- Automatic two-way data exchange to automatically send and retrieve data
- Automatic download of system software updates
- Remote connectivity provides the ability to enable remote diagnostics and remote control operation
- Enhance uptime with predictive alerts

\* Except Caffeine

\*\* Gentamicin: 24 months; Caffeine: 36 months

\*\*\* For %Hemoglobin A1c

New QuidelOrtho branding may not be available in all markets, subject to country-specific regulatory approval. Please confirm with your local commercial team.



At QuidelOrtho, we transform diagnostic data into answers, understanding and action, illuminating the path forward for all. For more than 80 years, we've pursued the unknown with a passion and purpose to improve health. And we'll continue to transform the power of diagnostics into a healthier future for all.

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