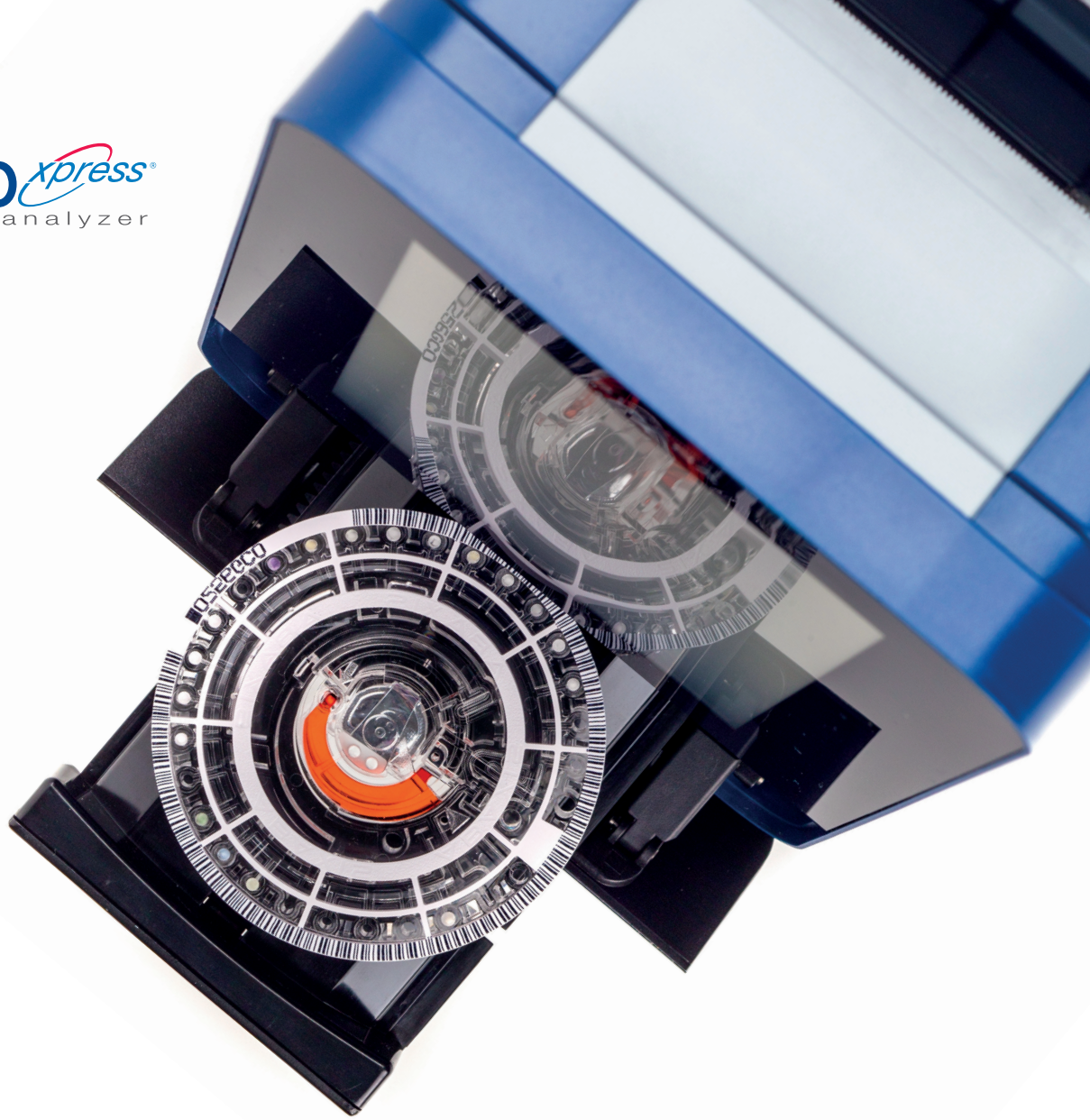


piccolo *xpress*[®]
chemistry analyzer



Faster Results - Better Care

Comprehensive blood chemistry results on-site in 12 minutes

ABAXIS now a part of **zoetis**



Global leadership – local expertise

Revolutionizing point-of-care diagnostics

The Piccolo Xpress® is an extremely easy-to-use and reliable blood analyzer – but inside that small instrument lies sophisticated technology.

The Piccolo Xpress® technology was originally developed for NASA by the scientists at the Oak Ridge National Laboratory. The mission was to develop a small, portable chemistry analyzer that was capable of performing multiple blood tests from a few drops of whole blood – in space. NASA needed a system that was easy enough to be used by almost anyone and small enough to fit seamlessly into every corner and counter space.

Abaxis acquired the technology and finalized the development of the Piccolo analyzer, which was FDA cleared for human use in 1995. After then, Abaxis built an industry-leading offering for the Human Health and Veterinary markets based on the ideas of simplicity, ease-of-use, reliability and cost-effectiveness. Zoetis acquired Abaxis in 2018 and is focused on driving new levels of efficiency, reliability and excellence for point-of-care diagnostics.

Medical professionals around the world have come to rely on the Piccolo Xpress for the rapid point of care diagnostic results they need to improve the care they provide for their patients.

It is our mission to help drive more efficient care for the world's populations through easy, accurate and fast diagnostic results at the point-of-care.





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ABAYIS

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piccolo *xpress*
chemistry analyzer

32.5 cm (12.80 in.)

21.0 cm (8.27 in.)

14.9 cm (5.87 in.)

What can you accomplish with your Piccolo Xpress?

Small on space – big on accuracy

Compact and portable, the Piccolo Xpress® is easy to incorporate into your practice. Your Piccolo lab could fit onto this page and allows you to perform routine blood tests in virtually any setting with the precision and accuracy of large laboratory analyzers.

- Small footprint: 32.5 x 14.9 x 21.0 cm
- Results measured on 9 different wavelengths
- Advanced technology uses centrifugal and capillary forces to mix and dilute reagents and sample in a self-contained, disposable disc
- Onboard intelligent Quality Control system (iQC®) ensures reliable results
- Each reagent disc is barcoded for automatic self-calibration

Easy operation – fast results

The Piccolo Xpress® is a fully automated system that delivers complete chemistry panel results in 3 easy steps and 12 minutes.

- Only 30 seconds hands-on time
- Walk-away operation
- No daily controls required
- iQC® system; comprehensive quality checks with every run
- No special operating skills required
- Small sample size (100 µl of whole blood, serum or plasma)
- Results are printed on a self-adhesive hard copy or via electronic transfer, allowing immediate access to critical information at the point-of-care
- Direct compatibility supported with USB peripherals including barcode readers, keyboards, personal computers, LIS, and printers
- Delivers on-site laboratory results for most common critical functions

Faster results - Better care

With the Piccolo Xpress® as the centerpiece of your clinical practice, you'll get lab-accurate diagnostic results on-site in twelve minutes - eliminating the time-consuming and often error-prone process of using the reference laboratory. In the span of a single patient visit, you can diagnose and deliver complete up-to-date treatment plans for your patients. By moving the diagnostics closer to the patient, new levels of efficiency are introduced to healthcare systems. Patient compliance increases and treatment plans are based on real-time diagnostic results - increasing satisfaction. Prescribed medications can be monitored and adjusted immediately. Clinical operations run more efficiently by eliminating the need for follow-up visits to review lab results.

Maximize efficiency

- Accomplish in one appointment what used to take two
- Optimize patient throughput
- Review lab results at patient's side

On-the-spot lab results

With the Piccolo Xpress® you can perform the most comprehensive pre-configured chemistry panels using only 100 µl of whole blood, serum, or plasma and get accurate results in 12 minutes.

- Onboard intelligent Quality Control (iQC®) complies with worldwide proficiency standard requirements (e.g. CLIA* standard of FDA) and ensures reliable results
- Results are printed on a self-adhesive hard copy or electronically transferred to a Laboratory Information System or Electronic Medical Records System

Enhance your clinical profitability

With on-the-spot chemistry testing, you can:

- Eliminate lab-follow-up visits and increase the speed of treatment planning
- Benefit economically - doing more with one patient visit than ever before
- Improve clinical staff efficiencies - in the time it takes to prepare labs for transport to the reference laboratory, your clinicians could already have finished results

*CLIA: Clinical Laboratory Improvement Amendments



Lab Accurate Results – anytime, anywhere

Blood chemistry diagnostics brought closer to the patient

Providing comprehensive care for large patient populations is complicated and costly. With the Piccolo Xpress® as an integral part of the healthcare continuum, lab-accurate general chemistry diagnostic results are brought closer to patient and help to improve the speed and efficacy of care planning and monitoring. Each patient can arrive for their appointment and leave with a complete treatment plan based upon up-to-the-minute lab results.

The Piccolo Xpress® workflow

Step 1: Add sample – 100 µl



Step 2: Insert disc



Step 3: Read results



From sample to results
in 3 steps and 12 minutes

A few drops of sample is all it takes

With only 4 drops of blood, the Piccolo Xpress® provides up to 14 lab-accurate general chemistry test results in less than 12 minutes. This small sample size allows for simple on-site blood collection and processing by most clinics and clinicians. It also facilitates rapid blood collection and diagnostic results for patients who have difficulty with larger blood draws, like premature infants and the elderly.

Cost-efficiency vs. the lab

Standard high-throughput laboratory analyzers are designed for batch running of patient samples. These batches are collected from the participating clinics and results are processed and sent back usually the next day. This process slows the delivery of treatment plans to the patients and causes additional burdens for the clinics for follow-up calls and visits. A Piccolo Xpress® primary care system empowers clinics to diagnose and treat in a single visit, accelerating care efficiency and patient compliance. Laboratory analyzers require frequent calibration and maintenance, which adds to their costs and downtime. The Piccolo Xpress® self-calibrates with every run and requires very little maintenance. Additionally, reference laboratories are often closed on nights and weekends, adding unnecessary time to treatment planning.

Vital chemistry information you need – on the spot

In many clinical situations and locations, it is difficult to transport blood samples to a laboratory for processing. In those instances, the Piccolo Xpress® is used to provide clinicians the information they need to make confident treatment decisions on-site with ease – anywhere, anytime. Whether in rural or hard-to-reach areas, remote islands, on the ocean or areas affected by natural disaster, the Piccolo Xpress® delivers comprehensive chemistry results in minutes – reliably and simply.

Superior clinical diagnostics you can rely on

Piccolo Xpress® reagent discs make testing easy

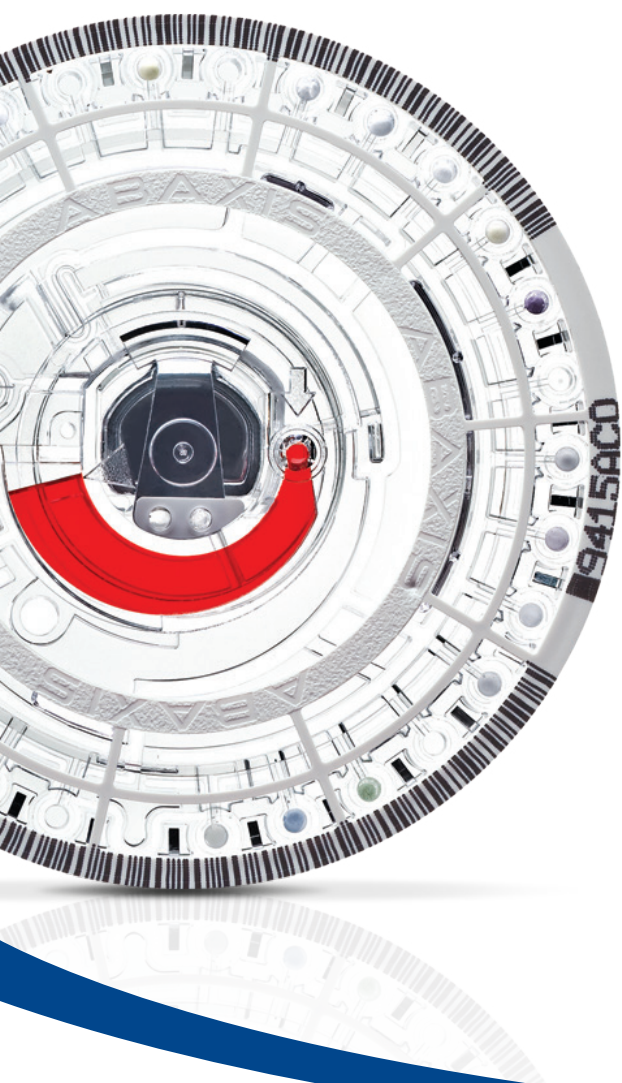
While you spend your valuable time on patient consultations, here is what the Piccolo Xpress® reagent disc can do for you:

It contains components that are integrated with the optical, electronic, and mechanical functions of the analyzer, and takes part in all phases of the blood analysis. A barcode encodes the type of the test panel, lot number, expiration date, and the reagent calibration factors. At the beginning of each test, the integrity of this information is verified by the use of a cyclic redundancy check (CRC). The disc works with the analyzer's optical and electronic components in the calibration of the signals and rigorous checks of system functioning. Microfluidics and mechanical functions are employed to measure and mix the sample and diluent, and deliver the precise mixture at exactly the right time to cuvettes located around the disc periphery.

The cuvettes have specialized functions:

- A minimum-absorbance cuvette is used in signal adjustments that optimize sensitivity
- A maximum-absorbance cuvette is used in quantifying the noise performance of the electronic components to ensure the accuracy of all readings
- 1 cuvette contains reagent beads for chemistry QC
- 2 cuvettes contain dye beads for instrument QC
- 1 "empty" cuvette fills with diluent only, as a control on the system cuvettes
- 21 cuvettes contain test-specific lyophilized reagent beads
- 2 cuvettes verify the presence of sufficient volume
- 1 cuvette verifies that diluted sample was delivered to all the reaction cuvettes
- The disc contains various reservoirs to isolate excess fluids

This self-calibration of the barcoded reagent disc eliminates time-consuming and error-prone manual calibrations.



iQC® Intelligent Quality Control on the Piccolo Xpress®

Quality check

Outcome / Benefit

Analyzer



Optics ▶

Validates the performance of the optical components during every run and guarantees most accurate measurements.

Temperature ▶

The temperature is controlled with heaters and fans to maintain the ideal reaction temperature of 37°C.

Hard-/Software ▶

Continuous testing of software and hardware features verifies consistent and optimal performance of the analyzer.

Reagents



Fluidics ▶

Metering and movement of fluids are controlled at all stages of the analysis to ensure the presence of sufficient sample and diluent in all reaction cuvettes.

Barcode ▶

Panel type, expiration date and reagent calibration factors are checked prior to every run. Time-consuming and error-prone reagent calibrations are not required.

Sample



Sample ▶

The analyzer evaluates the quality of the sample, and reports only valid results that are not influenced by interference (hemolysis, lipemia and icterus). Eliminates the need for visual evaluation of the sample for physical interference.

Chemistry (QC) ▶

Special QC reagent beads indicate any degradation of the analyte-specific reagents due to suboptimal storage conditions (moisture and temperature).

Chemistry ▶

The analyzer monitors the analyte-specific reactions and verifies that all measurements are within the expected range.

Confidence in every test result

Along with fully automated processing and onboard data handling, the Piccolo Xpress® incorporates a unique process called iQC® (intelligent Quality Control). This system checks the analyzer, the reagent disc, and the sample during every run to verify correct electronic and chemistry performance. iQC® automatically suppresses a single chemistry or the entire panel if it detects uncharacteristic performance, and

immediately alerts the operator. From the self-test at power-up to the recording and printing of patient results, the Piccolo Xpress® conducts multiple quality checks automatically, ensuring that the analyzer reports only accurate and reliable results. This may have beneficial impact on the frequency of external quality controls on the analyzer required by local regulations.

Piccolo Xpress® Panels

Analyte	General Chemistry 6	General Chemistry 13	Biochemistry Panel Plus	AmLyte 13	Basic Metabolic Panel	Basic Metabolic Panel Plus	Comprehensive Metabolic Panel	Electrolyte Panel	MetLyte 8 Panel	MetLyte Plus CRP	MetLac 12 Panel	Lipid Panel	Lipid Panel Plus	Hepatic Function Panel	Liver Panel Plus	Renal Function Panel	Kidney Check	
ALB	ALB	ALB	ALB			ALB				ALB			ALB	ALB	ALB		Albumin	
ALP	ALP	ALP				ALP							ALP	ALP			Alkaline Phosphatase	
ALT	ALT	ALT	ALT			ALT						ALT	ALT	ALT			Alanine-Aminotransferase	
AMY	AMY	AMY	AMY											AMY			Amylase	
AST	AST	AST	AST			AST						AST	AST	AST			Aspartate-Aminotransferase	
DBIL													DBIL				Direct Bilirubin	
BUN	BUN	BUN	BUN	BUN	BUN	BUN		BUN	BUN	BUN						BUN	BUN	Blood Urea Nitrogen
Ca	Ca	Ca	Ca	Ca	Ca	Ca				Ca						Ca		Total Calcium
CK			CK					CK	CK									Creatine Kinase
Cl ⁻				Cl ⁻	Cl ⁻	Cl ⁻	Cl ⁻	Cl ⁻	Cl ⁻	Cl ⁻						Cl ⁻		Chloride
CRE	CRE	CRE	CRE	CRE	CRE	CRE		CRE	CRE	CRE						CRE	CRE	Creatinine
CRP		CRP	CRP						CRP									C-reactive Protein
GGT	GGT	GGT												GGT				Gamma-Glutamyl-Transferase
GLU	GLU	GLU	GLU	GLU	GLU	GLU		GLU	GLU	GLU		GLU				GLU		Glucose
K ⁺			K ⁺	K ⁺	K ⁺	K ⁺	K ⁺	K ⁺	K ⁺	K ⁺						K ⁺		Potassium
LAC										LAC								Lactate
LDH					LDH													Lactate-Dehydrogenase
Mg					Mg					Mg								Magnesium
Na ⁺			Na ⁺	Na ⁺	Na ⁺	Na ⁺	Na ⁺	Na ⁺	Na ⁺	Na ⁺						Na ⁺		Sodium
PHOS											PHOS							Phosphorus
TBIL	TBIL		TBIL			TBIL								TBIL	TBIL			Total Bilirubin
tCO ₂				tCO ₂	tCO ₂	tCO ₂	tCO ₂	tCO ₂	tCO ₂	tCO ₂								Total Carbon Dioxide
TP	TP	TP				TP								TP	TP			Total Protein
UA	UA	UA																Uric Acid
CHOL											CHOL	CHOL						Cholesterol
CHOL/HDL*											CHOL/HDL*	CHOL/HDL*						Cholesterol/HDL*
HDL											HDL	HDL						High Density Lipo Protein
nHDL*											nHDL*	nHDL*						Non-HDL*
LDL*											LDL*	LDL*						Low Density Lipo Protein*
TRIG											TRIG	TRIG						Triglycerides
VLDL*											VLDL*	VLDL*						Very Low Density Lipo Protein*

*Calculated value

Abaxis Europe GmbH

Bunsenstr. 9-11
64347 Griesheim · Germany
Tel +49 6155 780 21 0
Fax +49 6155 780 21 111

Support: int.piccolosupport@zoetis.com
Orders: abu-orders@zoetis.com

Abaxis Inc.

3240 Whipple Road
Union City, CA 94587 · USA
Phone +1 800 822 2947
Fax 1 877 349 2087

Support: ab-picolotechsupport@zoetis.com
Orders: ab-picolocustomerservice@zoetis.com

www.abaxis.com