

ESEQuant TS2

Next-generation technology for point-of-need tests

The ESEQuant TS2 is a small, easy-to-use fluorescence measurement system for isothermal nucleic acid amplification and fluorescence analysis in other applications. The instrument is extremely sensitive, robust, and cost-effective. Utilizing a fluorescence detector based on modern microsystems technology and state-of-the-art light-emitting diode (LED) and filter technology, the sensitivity of the tube scanner is comparable to top-of-the-range commercial spectrophotometers.

Benefits of the ESEQuant TS2:

- Small, standalone instrument
- Customizable system with short time to market
- Simplified data input via state-of-the-art touchscreen
- Laboratory Information System (LIS) and Hospital Information System (HIS) connectivity
- Compliance with regulatory requirements

Short time to market

Start your R&D work with a starter kit, which is a fully developed isothermal amplification system from serial production. This enables you to save costs, speed up your R&D work, and shorten the time to market for your assays.

After the initial development phase, simply choose from a variety of options to make the tests easier and safer for your customers. When you have decided on the instrument configuration, we can easily customize the design of the graphical user interface (GUI), housing, workflow, and software according to your requirements.



ESEQuant TS2.



Table 1. Technical specifications of the ESEQuant TS2

Feature	Specifications
Housing	Holds up to 12 PCR tubes (200 µl)
	Portable device weighing approx. 4 kg (8.8 lb.)
	Small footprint of 230 x 200 x 138 mm (9.1 x 7.9 x 5.4 in.)
Optics	Multiple wavelengths for up to 6 dyes
	Internal calibration with standards
	Highly sensitive
Electronics	Interactive 17.8 cm (7 in.) touchscreen
	Heating/cooling system capable of attaining 15–95°C/4°C (59–203°F/39.2°F)
	Embedded PC
Software	Standalone operation
	Customizable GUI
	Preinstalled algorithms
Connectivity	LIS and HIS connectivity
	Ethernet and 4 USB ports
	Optional: WLAN and Bluetooth®
Optional accessories	Internal or external bar code reader
	Printer
	RFID reader

Technical overview of the ESEQuant TS2

Portable testing without an accessible lab is a challenge. Using the wealth of experience obtained from providing fluorescence detection technology to thousands of customers worldwide, the specialists at QIAGEN Lake Constance have developed a new generation tube scanner for point-of-need applications. The core of the tube scanner is the patent-protected, highly sensitive, miniaturized detector, just twice the size of a matchbox, which detects fluorescence markers. The combination of proven components and future-proofed technologies results in many benefits for you and your customers, such as user-friendly input and output of all relevant data via the touchscreen, bar codes, and RFID reader. In addition, the tube scanner provides LIS and HIS connectivity and enables connection to cloud-based applications.

The technical specifications of the ESEQuant TS2 are summarized in Table 1.

Advanced detection of multiple wavelengths

- Simultaneous fluorescence measurement of up to 6 dyes in up to 12 tubes (e.g., FAM™, TAMRA™, ROX™, Cy®3, and Cy5); other dyes and combinations available on request
- Measurement of up to 6 wavelengths in 12 tubes within 30 seconds

Powerful data processing

- Fully automated interpretation of results (Figure 1)
- Real-time detection of isothermal amplification (Figure 2)
- Results from individual reactions can be combined into one final result
- Printable one-click report

ESEQuant TS2 Studio Software

- Comprehensive development software for easy test method design (Figure 3)
- Easy result evaluation with graphical support (Figure 4)
- Various algorithms available
- The included Statistics Tool can process large data volumes

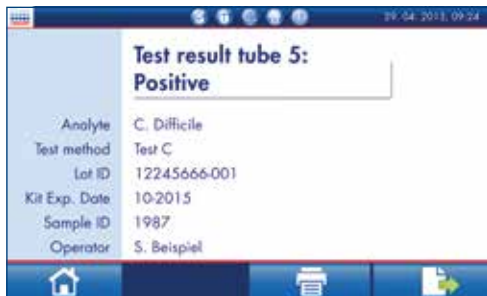


Figure 1. Comprehensive results are provided for each sample.



Figure 2. Real-time detection of isothermal amplification.

Applications

The portability and small footprint of the ESEQuant TS2 make it highly suited for molecular diagnostics applications at the point of care.

The ESEQuant TS2 can be used for:

- Isothermal real-time and end-point nucleic acid amplification and tests
- Tests performed in clinical chemistry and immunology
- Similar applications involving fluorescence detection
- Any other fluorescence tests in tube format with or without thermal control

Molecular diagnostics

The thermo-controlled instrument detects changes in fluorescence signal in up to 6 channels during isothermal amplification in real time. Using appropriate chemistry, DNA or RNA can be tested in just a few minutes, giving highly sensitive results.

Genetic testing

Using the ESEQuant TS2, genetic tests such as single nucleotide polymorphism (SNP) analysis can be carried out directly from unprocessed whole blood samples, providing significant time, cost, and labor savings.

Melting curve analysis

Melting curve analysis enables identification and differentiation of specific DNA products based on their melting temperature. The ESEQuant TS2 allows reliable and accurate discrimination of subtle sequence variations (Figure 5).

Immunodiagnosics and enzyme kinetics

Fluorescence detection plays an important role in immunodiagnosics and enzyme kinetics applications. In combination with QuantaRed™ Enhanced Chemifluorescent HRP Substrate, the ESEQuant TS2 demonstrates exceptional sensitivity with detection of as few as 2 attomoles (100 fg) of horseradish peroxidase (HRP) in less than 10 minutes. This makes the ESEQuant TS2 highly suitable for ELISA readout and quality control applications.



Figure 3. Comprehensive development software for easy test method design.

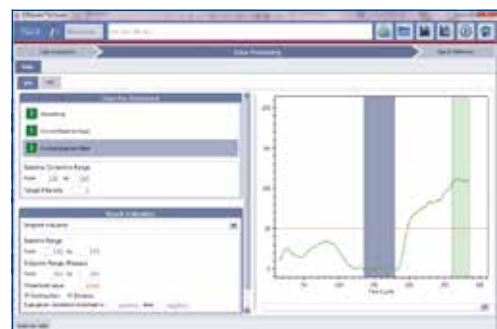


Figure 4. Easy result evaluation with graphical support in development software.

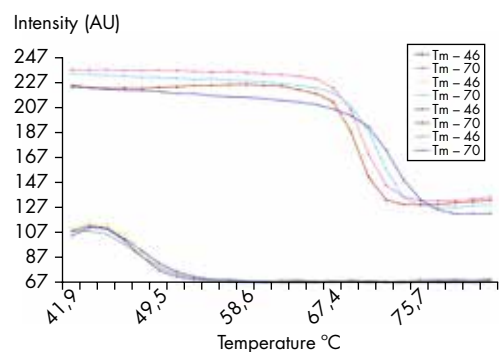
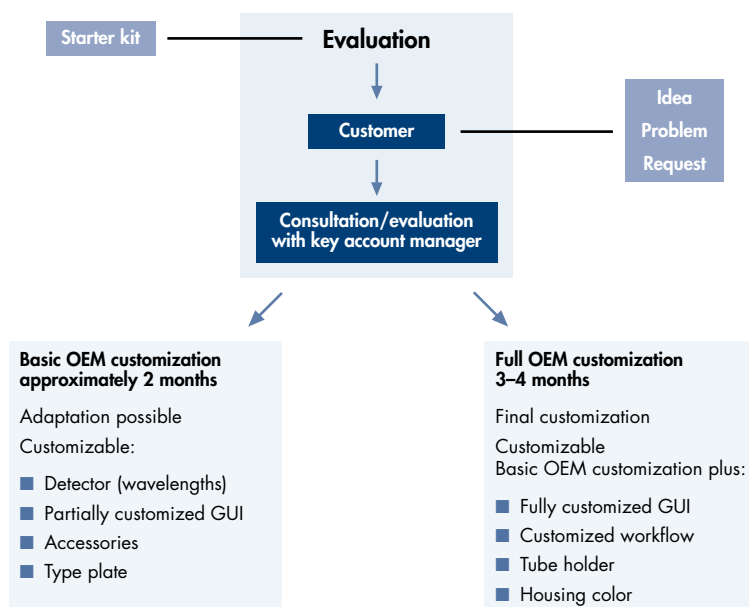


Figure 5. Dissociation characteristics determined by melting curve analysis.



Flexible options to meet your needs

Starter kits provide a convenient starting point for development of your OEM business-to-business solution. During the development process, you simply choose from basic OEM customization or full OEM customization (see flowchart).

Ordering Information

Product	Contents	Cat. no.
ESEQuant TS2.2*	For measurement of 2 wavelengths simultaneously; detection of FAM, SYBR® Green I, Alexa Fluor® 488, DyLight® 488, FITC, or similar and detection of ROX, Texas Red®, Alexa Fluor 568, DyLight 594, Killer Red, or similar	Inquire
ESEQuant TS2.4*	For measurement of 4 wavelengths simultaneously; wavelengths of ESEQuant TS2.2 plus detection of HEX™, JOE™, VIC®, TET™, Alexa Fluor 532, Cal Fluor® Gold 540, or similar and detection of Cy5, Alexa Fluor 633, Nile Blue, or similar	Inquire
ESEQuant TS2.6*	For measurement of 6 wavelengths simultaneously; wavelengths of ESEQuant TS2.4 plus detection of Alexa Fluor 350, Coumarin, DyLight 350, AMCA-X, Marina Blue®, or similar and detection of TAMRA, TRITC, Cy3.5, Rhodamine Red™-X, Alexa Fluor 568, or similar	Inquire
ESEQuant TS2.x*	Customized for other wavelengths	Inquire

* All starter kits include the ESEQuant TS2 with the selected wavelengths, tube holder for 12 tubes (200 µl standard PCR tubes), internal bar code reader, PC software, and power cord with worldwide plug.

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at www.qiagen.com or can be requested from QIAGEN Technical Services or your local distributor.

Visit www.qiagen.com/ESE and discover more!

Trademarks: QIAGEN® (QIAGEN Group); Alexa Fluor®, Marina Blue®, Rhodamine Red™, SYBR®, Texas Red® (Molecular Probes, Inc.); Bluetooth® (Bluetooth SIG, Inc.); Cal Fluor® (Biosearch Technologies, Inc.); Cy® (GE Healthcare); FAM™, HEX™, JOE™, ROX™, TAMRA™, TET™, VIC® (Life Technologies Corporation); DyLight®, QuantaRed™ (Thermo Fisher Scientific, Inc.).

1088210 10/2014 © 2014 QIAGEN, all rights reserved.

www.qiagen.com

Australia = 1-800-243-800
 Austria = 0800-281011
 Belgium = 0800-79612
 Brazil = 0800-557779
 Canada = 800-572-9613
 China = 800-988-0325
 Denmark = 80-885945

Finland = 0800-914416
 France = 01-60-920-930
 Germany = 02103-29-12000
 Hong Kong = 800 933 965
 India = 1-800-102-4114
 Ireland = 1800 555 049
 Italy = 800-787980

Japan = 03-6890-7300
 Korea (South) = 080-000-7145
 Luxembourg = 8002 2076
 Malaysia = 603-7981-5510
 Mexico = 01-800-7742-436
 The Netherlands = 0800-0229592
 Norway = 800-18859

Singapore = 1800-742-4368
 Spain = 91-630-7050
 Sweden = 020-790282
 Switzerland = 055-254-22-11
 Taiwan = 0800-665-957
 UK = 0808-234-3665
 USA = 800-426-8157

