

ESEQuant LR3

Next-generation technology for point-of-need tests

The ESEQuant LR3 is a highly sensitive, robust, and cost-effective fluorescence measurement system for rapid tests at the point of need. This flexible and reliable system, based on a ready-to-use concept, enables you to easily develop fluorescence or colorimetric tests. Starter kits are immediately available and can be rapidly adapted to various test strip or cassette formats. The powerful combination of fluorescence reader, state-of-the-art touchscreen, and comprehensive developer's Lateral Flow Studio Software provides an easy-to-customize and easy-to-operate lateral flow system.

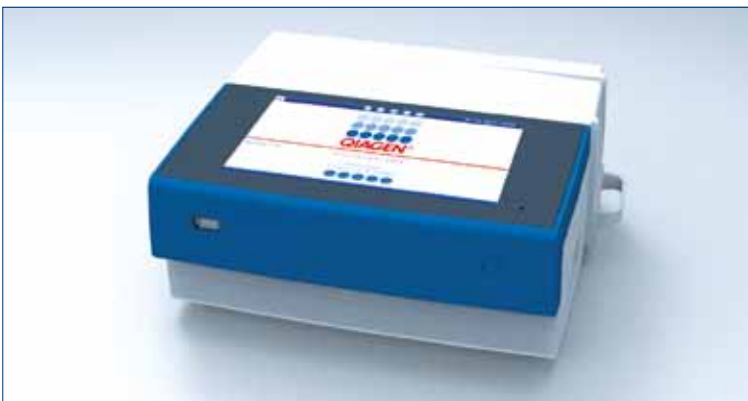
Benefits of the ESEQuant Lateral Flow System:

- Small, standalone instrument
- Customizable system with short time-to-market
- Simplified data input via state-of-the-art touchscreen
- LIS and HIS connectivity for easy integration
- Compliance with regulatory requirements

Short time-to-market

Most importantly, you start your R&D work with a starter kit, which is a fully developed lateral flow system. This means that you save costs, speed up your R&D work, and shorten the time-to-market for your rapid tests.

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) and housing according to your requirements. A complete technical documentation package for regulatory purposes is also available.



ESEQuant LR3.



Table 1. Technical specifications of the ESEQuant LR3

Feature	Specifications
Housing	Customizable for different cassette formats
	Portable device weighing <2 kg (4.4 lb.)
	Small footprint of 230 x 200 x 100 mm (9.1 x 7.9 x 3.9 in.)
Optics	Colorimetric or fluorescence detection
	Internal calibration with standards
	Highly sensitive
Electronics	Interactive 17.8 cm (7 in.) touchscreen
	Battery powered
	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 LR3

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

The technical specifications of the ESEQuant LR3 are summarized in Table 1.

Advanced multiplex detection

- Optical system can be easily configured for colorimetric or fluorescence detection
- Measurement of multiple lines detecting various signal generating reagents simultaneously (e.g., gold colloids, latex beads, and fluorescence dye)
- Parallel measurement of several test strips at the same time

Intuitive, easy-to-use operating software

- Customizable GUI
- Simple import of methods via bar code or RFID
- Flexible user access control (Figure 1)
- Walkaway operation

Powerful data processing

- Fully automated interpretation of results (Figure 2)
- Qualitative and quantitative output
- Printable one-click report
- Connectivity to LIS and HIS



Figure 1. The intuitive, easy-to-use software provides flexible user access.



Figure 2. Comprehensive results are provided for each sample.

Lateral Flow Studio Software — a new dimension in test development

Lateral Flow Studio Software is a unique and comprehensive tool for the development of lateral flow tests in conjunction with the ESEQuant LR3. A wide range of options enables the test developer to easily and quickly develop a quantitative lateral flow test.

This enables test manufacturers to:

- Save costs by using an all-in-one system
- Speed up the test development process
- Easily develop the next-generation lateral flow assay

Acquisition of test data

Lateral Flow Studio Software allows you to create method files to read and interpret your lateral flow assays. Methods contain information such as number of lines, position of lines, signal interpretation, calibration parameters, and calculation of final results. Each test line can be processed independently. Raw performance data can also be directly visualized. Through the inherent flexibility of the system, the manufacturer of rapid tests has full control of lot-specific method files (Figure 3). After completion, the method file can be easily transferred to the reader via USB, bar code, or RFID technologies.

Interpretation of results

Calibration curves can be determined either automatically or manually. The software also includes an automatic curve fitting function. Use of cutoffs enables semi-quantitative evaluation of the results, and logical combination of several parameter results leads to one final result (Figure 4).

Statistical evaluation

Lateral Flow Studio Software simplifies statistical evaluation by determining the verifiable reproducibility of the measurements (Figure 5). In addition, the software enables kinetic analysis and visualization of all off-line measured parameters. Desired standards can also be selected for test calibration.

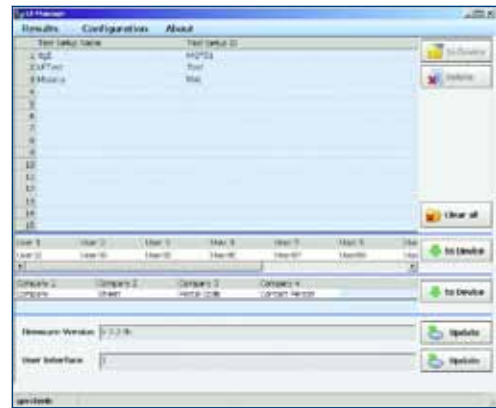


Figure 3. Comprehensive software gives you complete control.

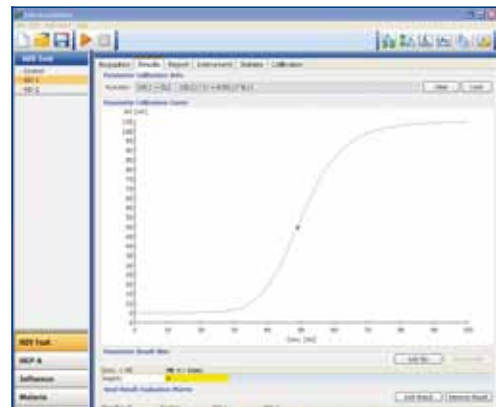


Figure 4. Lateral Flow Studio Software provides one overall result.

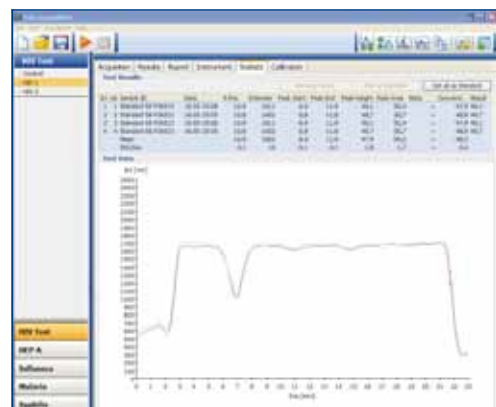
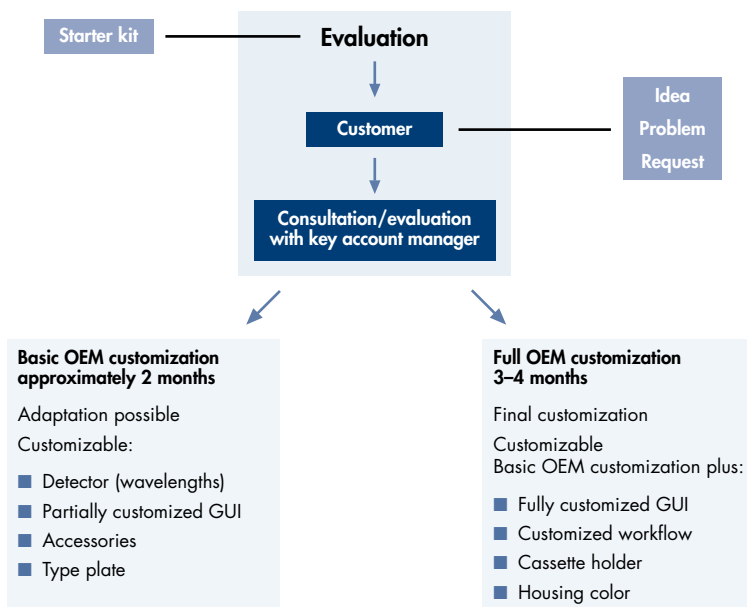


Figure 5. Simplified statistical evaluation.



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 LR3 Development Kit Gold*	1 ESEQuant LR3 instrument for colorimetric tests	Inquire
ESEQuant LR3 Evaluation Kit Gold*	3 ESEQuant LR3 instruments for colorimetric tests	Inquire
ESEQuant LR3 Development Kit Fluorescence*	1 ESEQuant LR3 instrument for fluorescence tests with up to 2 different wavelengths	Inquire
ESEQuant LR3 Evaluation Kit Fluorescence*	3 ESEQuant LR3 instruments for fluorescence tests with up to 2 different wavelengths	Inquire

* All starter kits include the ESEQuant LR3 with the selected wavelengths, universal strip holder, internal bar code reader, Lateral Flow Studio Software for the developer, 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!

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