

# QIAxpert® — Pure Revelation

Sample QC made easy

Gain true insight into your sample quality



QIAxpert



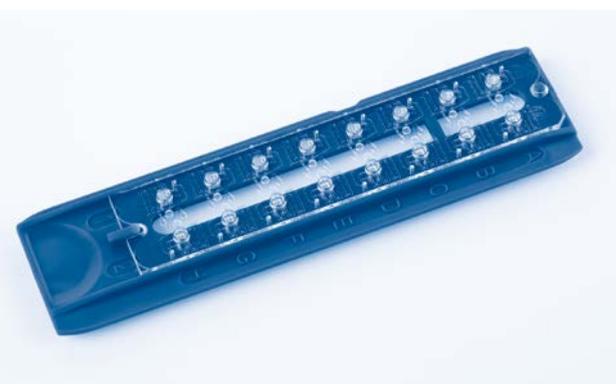
QIAxpert



Sample & Assay Technologies

# One small instrument for your lab – one giant impact on your work

QIAxpert is an innovative high-speed microfluidic UV/VIS spectrophotometer for accelerated DNA, RNA, and protein quantification and quality control. The benchtop system profiles sample content to differentiate DNA, RNA, protein, and sample impurities. QIAxpert is fast and easy to use, analyzing up to 16 samples within 2 minutes – just pipet your samples onto the QIAxpert Slide, place it into the reader, and select the pre-programmed method on the integrated touchscreen. QIAxpert is the right tool for any fast-paced lab performing nucleic acid quantification and quality control.

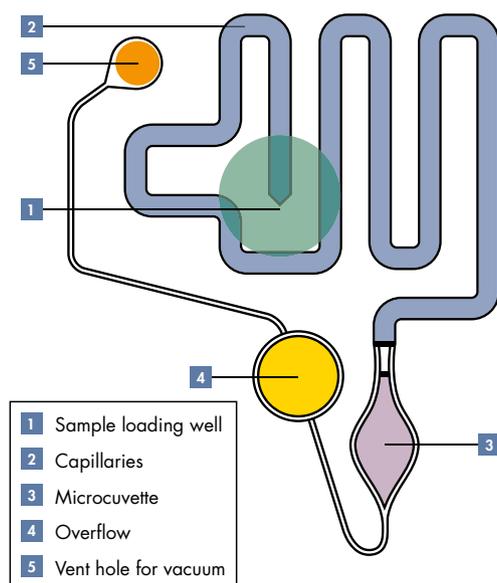


## With QIAxpert, you can:

- Measure up to 16 samples in less than 2 minutes
- Use spectral protocols to discriminate molecules of interest
- Quantify DNA, RNA, and contaminating fractions in a sample
- Rapidly design analyses via the intuitive, full-color touchscreen
- Generate full reports to view on any computer or smart device

## Flexibility and accuracy with QIAxpert Slides

QIAxpert uses disposable microfluidic slides to analyze up to 16 samples per run. Features of the on-board capillary channels enable easy sample loading with no cross-contamination, preserve samples, and prevent evaporation (Figure 1). Thus, samples can be loaded and left at room temperature for up to 2 hours prior to measurement. Unused positions can be used in later analyses. Advanced technical plastics allow high optical transmission over the full UV/VIS spectrum for highly accurate readings from just 2  $\mu$ l of sample.



**Figure 1. Microfluidic features of the QIAxpert Slide.**

Expert design of the QIAxpert Slide ensures clean sample loading, flexible use of sample positions, and preservation of samples for up to 2 hours.

## Fast results with the intuitive QIAxpert Software

QIAxpert Software was designed to fit a busy lab schedule. Beyond UV/VIS quantification at 260 and 280 nm wavelengths, QIAxpert Software performs spectral decomposition to selectively quantify DNA, RNA or protein in a sample. Experiment setup is quick and easy, and can be defined while the instrument reads samples. Finally, all results are exportable to a USB stick, network drive, or smart device via a QR code.

## Reading your samples has never been easier

In just a few simple steps, your samples are loaded into the QIAxpert and results are delivered on-screen and in exportable format (Figure 2).

1. Load up to 16 samples onto a QIAxpert Slide using a single or multi-channel pipet. Only 2  $\mu$ l of each sample is required.
2. Once loaded, samples can be held in the microfluidic capillaries of the QIAxpert Slide for up to 2 hours. This allows you to batch samples and minimize the time spent on the instrument.
3. Samples are measured immediately upon inserting the QIAxpert Slide into the instrument. Additional information and settings can be entered while QIAxpert reads the samples, thereby saving time. Experiment name and sample names can be entered manually or imported from a USB stick or the network.
4. The readout of 16 samples is completed within 2 minutes and results are displayed directly on the integrated screen. Quantification of nucleic acids and proteins can be done by traditional absorbance readings ( $A_{260}$  or  $A_{280}$ ) or using unique spectral content profiling protocols to specifically measure the molecule of interest.
5. Data are easily exported to a USB stick or networked device. A report can also be printed or displayed on your smartphone by scanning a displayed QR code.



**Figure 2. Sample QC made easy.** Streamlined workflow from sample loading to availability of insights into sample quality and quantity.

Watch our virtual demo at [www.qiagen.com/QIAxpertOnlineDemo!](http://www.qiagen.com/QIAxpertOnlineDemo!)

## Smart analysis protocols based on cutting-edge bioinformatics

The QIAxpert performs classic nucleic acid and protein quantification based on absorbance measurements. However, smart analysis protocols come pre-installed to specifically quantify specific analytes of interest (Figure 3). Based on top bioinformatics expertise and extensive sample testing, the spectral profiling protocols isolate information on the molecule of interest, subtracting other absorbing impurities and background turbidity.

**Figure 3. Traditional and smart analysis options.** The QIAxpert is flexible to meet your specific analysis needs. Traditional absorbance analysis as well as smart analysis based on spectral profiling maximize your insight into the composition of your samples.



### Quantification by UV absorbance

- Full UV/VIS spectral display (white curve)
- $A_{260}$  for DNA and RNA
- $A_{280}$  for proteins
- $A_{260}/A_{280}$  and  $A_{260}/A_{230}$  ratios



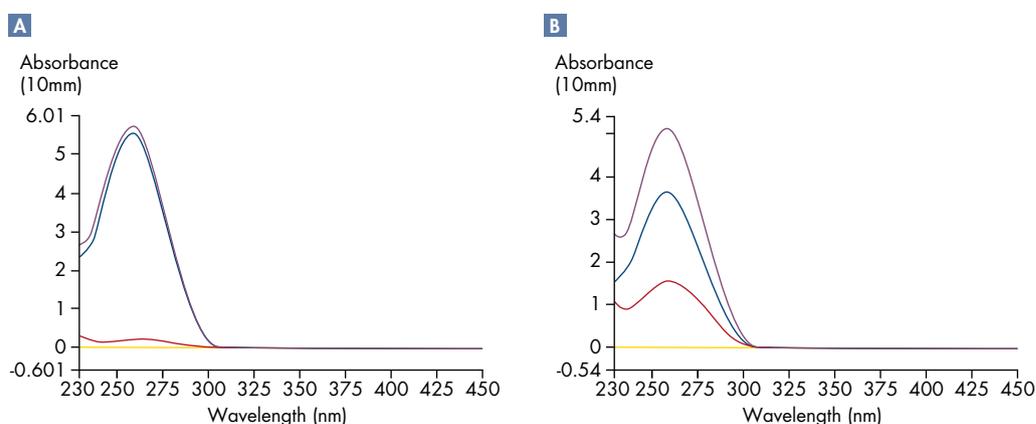
### Quantification by spectral profiling

- Full UV/VIS spectral display (white curve)
- Discrimination of DNA, RNA, or protein
- Subtraction of absorbing impurities
- Background check by turbidity detection

## Unique spectral content profiling

Advanced spectral protocols accurately quantify complex samples which may contain multiple UV/VIS absorbing chemicals. Intelligent software algorithms discriminate the contributions of specific components like DNA, RNA, and impurities to the overall measured spectrum (Figure 4). With specific insight into the quality and composition of samples, informed decisions can be made regarding their use in downstream applications for a more efficient workflow.

**Figure 4. Insights into quality and composition of samples.** Spectral content profiling discriminates components of complex samples. **A** A pure sample of RNA shows no significant contamination, evidenced by the simple spectrum. **B** A sample of RNA spiked with gDNA is accurately resolved into the contributing blue absorbance line for RNA and orange line for the spiked DNA.

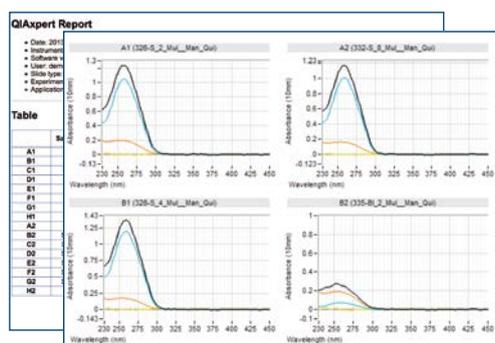


## Comprehensive data reports

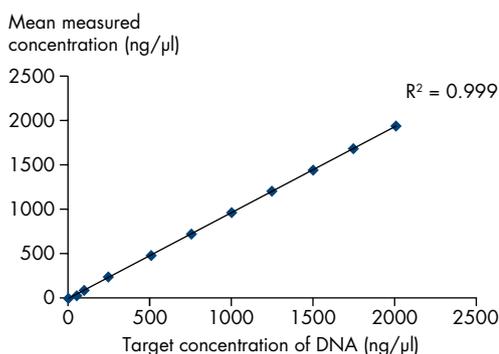
Results are available as HTML reports that can be opened in any browser. Additionally, tabular data are available in CVS, .xml, and .txt formats (Figure 5). To facilitate data analysis and sharing, the data are exportable to a USB stick, a networked drive, or a smart device via a QR code.

## High system linearity for best results

The QIAxpert exhibits excellent linearity so you are assured that quantifications are accurate and reliable. To assess the linearity of the system, pure gDNA was serially diluted to generate samples from 2000 to 2 ng. The resulting dilutions were then measured on the QIAxpert using 2  $\mu$ l for each of 5 replicates. The quantifications from the QIAxpert were plotted against the known concentration values. QIAxpert delivers exceptional linearity (with a regression coefficient of  $>0.999$ ) up to 2000 ng/ml or 40 OD ( $A_{260}$  10mm; Figure 6).



**Figure 5. Flexible report options to meet your needs.** Comprehensive reports of measurements are available in several formats for data analysis and sharing.



**Figure 6. Exceptional linearity of QIAxpert.** Quantifications of gDNA on the QIAxpert are in high concordance with actual concentrations.

## Proven reproducibility of measurements

To demonstrate the reproducibility of measurements with the QIAxpert, 10 ultrapure dsDNA samples were repeatedly quantified with the instrument. The sample concentrations spanned the complete dynamic range of the system and each sample was measured 10 times. Standard deviation (Std. Dev.) and coefficient of variation (CV) were calculated to illustrate the minimal variability from replicate to replicate (Table 1).

**Table 1. Representative samples demonstrating the high reproducibility of measurements**

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
Mean (ng/ $\mu$ l)	1949.4	961.6	475.9	92.7	45.0	2.7
Std. Dev.	6.5	3.1	1.6	0.2	0.8	0.2
CV (%)	0.33	0.32	0.33	0.25	1.72	7.57



## Instrument and slide specifications

### QIAxpert instrument specifications at a glance

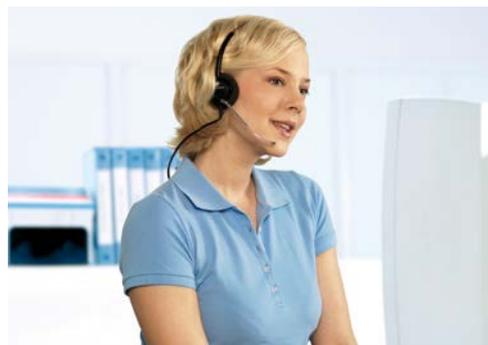
Specification	Details
Type	UV/VIS polychromatic system + reference channel
Optical principle	Ultrasensitive photodiode array spectrometer for UV-VIS range
Light source	Xenon flash lamp
Wavelength range	230–750 nm
Wavelength resolution	<3 nm
Wavelength accuracy	0.5 nm
Wavelength reproducibility	0.1 nm
Photometric range	0.0005–2.0 OD
Absorbance precision	0.003 OD
Data output	USB, TCP/IP, or QR code
No. of samples/run	1–16
Sample consumption	2 $\mu$ l
Measurement range (10 mm equivalent)	0.03–40 OD
Power supply	110–240 V, 50/60Hz (operating voltage 24 V DC)
Size	(W) 23 x (L) 30 x (H) 28 cm
Weight	9 kg

### QIAxpert Slide 40 specifications

Specification	Details
Number of measurement cuvettes	1 x 16 microcuvettes
Path length	0.5 mm
Recommended sample quantity	2 $\mu$ l
Sample residence time	2 h
Measurement range (OD 10 mm)	0.03–40 OD
DNA concentration range	1.5–2000 ng/ $\mu$ l dsDNA ( $A_{260}$ )

## Bringing you peace of mind

QIAGEN offers unrivaled instrument support and assures continued success with your QIAxpert system. You benefit from comprehensive instrument service that fully covers costs for labor, travel, and repair parts during the warranty period. We also offer Warranty PLUS extended warranties, giving you complete cost control and enhanced coverage through priority response time.



## Ordering Information

Product	Contents	Cat. no.
QIAxpert Instrument	QIAxpert instrument, including 1 year warranty on parts and labor	9002340
QIAxpert Slides 40	25 disposable microfluidic slides for analyzing up to 16 samples per run	990700
QIAxpert System	QIAxpert instrument with installation and startup training and 1 year warranty coverage including parts, labor, and shipping; repair by sending to a regional repair center.	9002368
QIAxpert System Full 2 Year Package	QIAxpert instrument with installation, startup training, and 2 years full warranty coverage*	9002364
QIAxpert System Full 3 Year Package	QIAxpert instrument with installation, startup training, and 3 years full warranty coverage*	9002367

\* Full warranty coverage: coverage of parts, labor, shipping; repair by sending to a regional repair center; loaner system provided within 2–3 working days. Please contact your local sales representative for other service options.

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](http://www.qiagen.com) or can be requested from QIAGEN Technical Services or your local distributor.

**Discover true insight into sample quality. Visit [www.qiagen.com/p/QIAxpert!](http://www.qiagen.com/p/QIAxpert!)**

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