Q

A faster, smaller, better way to qPCR

Portable & Compact

4.5 lbs

A qPCR cycler the size of a speaker!

Q is the most portable and compact cyler on the market occupying ¼ the size of current qPCR platforms. The small footprint is enabled by the unique rotary and magnetic induction technology.

5.1 in
5.9 in
6.4 in
4.7 in

Don't be fooled by it's small size. Big things are happening inside.

- Fixed optics & no moving parts
- Never needs optical alignment or calibration
- No reference dyes or cross talk compensation required
- Utilizes proprietary 0.1 ml 4-strip tubes & caps supporting volumes of 5 – 30 µl

- High speed centrifugation ensures sample spin down
- Prevents evaporation & condensation with pre-loaded oil in tubes

Scalable & Wireless

up to 10 cyclers

Flexibility from 48 to 480 samples

Each Q cycler can process up to 48 samples per run and up to 10 cyclers can be connected to a single computer wirelessly to provide the desired scalability.

Q's advanced data analysis software makes combining a single data set from multiple runs from multiple cylers seamlessly simple.
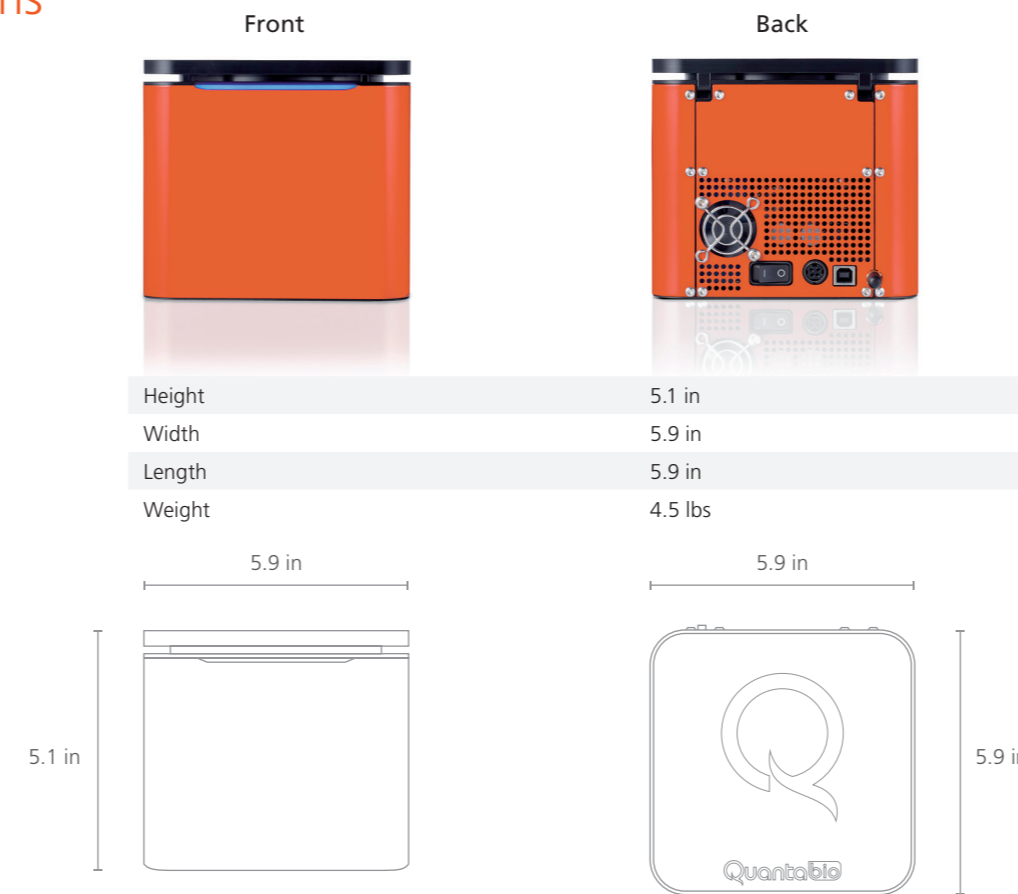
High reproducibility from thermal and optical performance ensures data from different runs and cyclers look like it was generated on the same instrument and the same run.

Lastly, anyone can setup and run the Q as it is plug-and-play right of the box.

Specifications

Front   Back

5.9 in   5.9 in
5.1 in   5.9 in

Physical

Height	5.1 in
Width	5.9 in
Length	5.9 in
Weight	4.5 lbs

Thermal Performance

Temperature Accuracy	±0.25°C
Temperature Uniformity	±0.05°C
Ramp Rates	Heating 4°C/s / Cooling 3°C/s
Temperature Input Range	40 – 99°C

Optical

Detectors	Photodiode per channel	
Excitation Sources	High power LED for each channel	
Channels	Green	Ex 465 nm	Em 510 nm
	Yellow	Ex 540 nm	Em 570 nm
	Orange	Ex 585 nm	Em 618 nm
	Red	Ex 635 nm	Em 675 nm
Acquisition Time	1 second	

Reaction Tubes

Samples per Instrument	48
Reaction Volume Range	5 – 30 µl

Operating Environment

Temperature	18 – 35°C
Relative Humidity	20 – 80%

Ultra-Fast Data Acquisition
35 cycles in 25 minutes

Unrivaled Performance
Detect two-fold differences in expression levels reproducibly between samples, runs and instruments

Portable & Compact
At 4.5 lbs & speaker-sized, transport without ever calibrating

Scalable & Wireless
Wirelessly connect & operate up to 10 instruments from one PC (48 samples/instrument)

Magnetic Induction Technology
Temperature accuracy of ± 0.25°C combined with ± 0.05°C well-to-well uniformity eliminates variability vs block-based cyclers

Description

Q uses a patented magnetic induction technology to rapidly heat samples coupled with fan forced air for cooling to acquire data in only 25 minutes. Available in 2 or 4 channel models, the robust optical system acquires all channels simultaneously and allows for running the fastest multiplexed assays.

Q's miniature speaker-size and 4.5 pound weight make it the most portable and versatile qPCR cycler on the market without ever needing to calibrate. Q also provides scalability as each instrument can process up to 48 samples per run and up to 10 Q's can be connected to a single computer wirelessly via bluetooth enabling up to 480 samples to be processed simultaneously.

A key difference is that Q incorporates a unique spinning aluminum rotor providing superior temperature uniformity of ± 0.05°C versus traditional block-based real time cyclers which rely on multiple peltier heating blocks that can create edge effects resulting in sample variation. Not only does the data give you superior reproducibility, repeatability but enables detection of 2-fold gene expression level differences as well as identification of difficult class IV SNP's requiring melt temperature resolutions of 0.1°C.
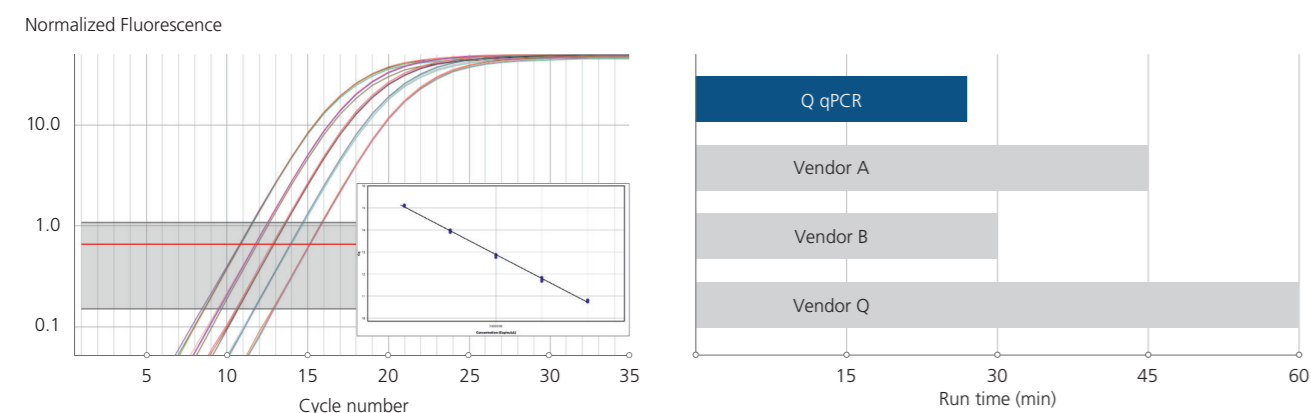
Who wouldn't want to take one for a spin?

Ultra-Fast Data Acquisition

25 mins

Generate high quality data, fast!

Q's speed is the fastest in the industry. Coupling speed with superior temperature uniformity means you don't sacrifice on the performance quality of your qPCR. Completing runs in as little as 25 minutes* is the new standard.
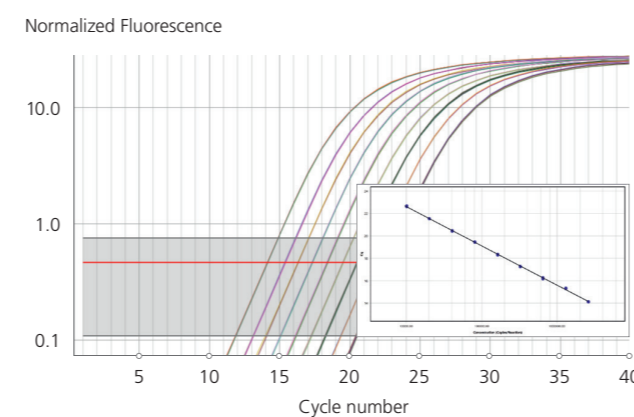
Normalized Fluorescence

1.1
5 point, 2x dilution series of Hepatitis B virus (HBV) cDNA template
Starting amount of 3E+06 copies (n = 4 each)
Efficiency = 90% (standard curve method); R^2 = 0.99
Time to complete run (including melt) = 26 min

*25 minute cycle times obtained with fast cycling master mixes and short amplicon assay designs targeting cDNA

Unrivaled Performance

Detect 2-fold Differences

Normalized Fluorescence

Confidently detect small differences.

Attributed to the high thermal uniformity and reproducibility, Q is able to reliably detect 2-fold differences in gene expression levels whether using standard curves for absolute quantification or relative quantification through REST.

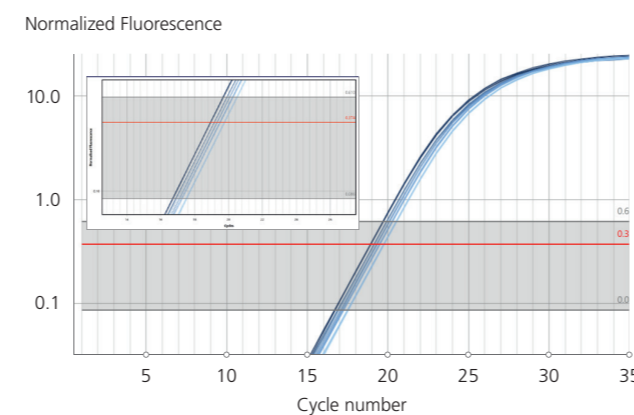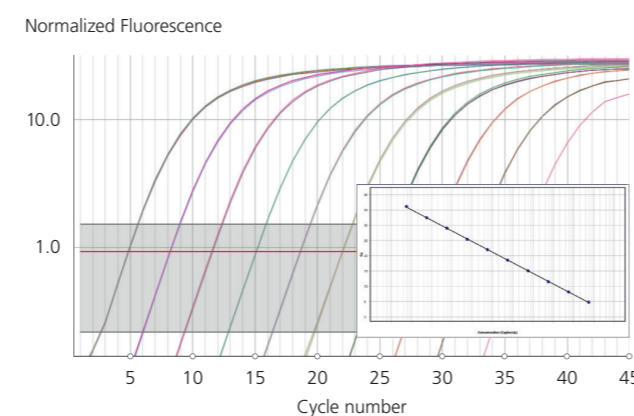**1.2**
Manganese superoxide dismutase gene (MnSOD)
Eight point, 2x dilution series of human genomic DNA (n = 4 each)
Efficiency = 98% (standard curve method)
R^2 = 1.00

Normalized Fluorescence

Q is also able to detect differences within a single cycle. As an example, the data shown (left) illustrates a 5 pg dilution series differentiated with 0.2 cycles between standards.

1.3
Five point dilution series of HBV plasmid cDNA template (n = 4 each)
5 picogram difference between standards
Efficiency = 98% (standard curve method)
R^2 = 0.99

Wide Linear Dynamic Range

Q provides ultra-sensitive detection down to single digit copies of DNA. Whether using absolute quantification for viral load detection or a standard curve to determine PCR efficiency, Q performs reliably across a wide dynamic range.

Normalized Fluorescence

1.4
10 point, 10x dilution series of Hepatitis B virus (HBV) cDNA template
Starting amount of 3E+09 copies (n = 3 each) over 10 logs
Efficiency = 95% (standard curve method)
R^2 = 0.99

ORDER INFO

Product Name	Quantabio Catalog Number	Size
Q 2-channel qPCR Instrument	95900-2C	1 instrument
Q 4-channel qPCR Instrument	95900-4C	1 instrument
Q Tubes & Caps (20 racks/box)	95910-20	1 box

Related Products

SYBR based qPCR

PerfeCTa® SYBR Green FastMix®	95072-012	10 x 1.25 ml
PerfeCTa SYBR Green FastMix	95072-05K	1 x 50 ml

Probe based qPCR

PerfeCTa qPCR FastMix II	95118-012	10 x 1.25 ml
PerfeCTa qPCR FastMix II	95118-05K	1 x 50 ml
Genotyping ToughMix®	95115-012	10 x 1.25 ml
Genotyping ToughMix	95115-05K	1 x 50 ml
PerfeCTa qPCR ToughMix	95112-012	10 x 1.25 ml
PerfeCTa qPCR ToughMix	95112-05K	1 x 50 ml

HRM

AccuMelt HRM SuperMix	95103-012	10 x 1.25 ml
AccuMelt HRM SuperMix	95103-05K	2 x 25 ml

PerfeCTa NGS Quant Kits

For Illumina	95145-500	500 x 20 µl rxns

Quantitative RT-qPCR

qScript® One-Step SYBR Green RT-qPCR Kit	95087-050	1 x 1.25 ml
qScript One-Step SYBR Green RT-qPCR Kit	95087-200	4 x 1.25 ml
qScript XLT One-Step RT qPCR ToughMix	95132-100	1 x 1 ml
qScript XLT One-Step RT qPCR ToughMix	95132-500	5 x 1 ml
qScript One-Step RT-qPCR Kit	95057-050	1 x 1.25 ml
qScript One-Step RT-qPCR Kit	95057-200	4 x 1.25 ml
UltraPlex One-Step ToughMix	95166-100	1 x 500 µl
UltraPlex One-Step ToughMix	95166-500	5 x 500 µl

Q Cycler does not require the use of reference dyes.