



**feel free
to explore**



qTOWERiris series
Real-time PCR thermal cycler

analytikjena
An Endress+Hauser Company

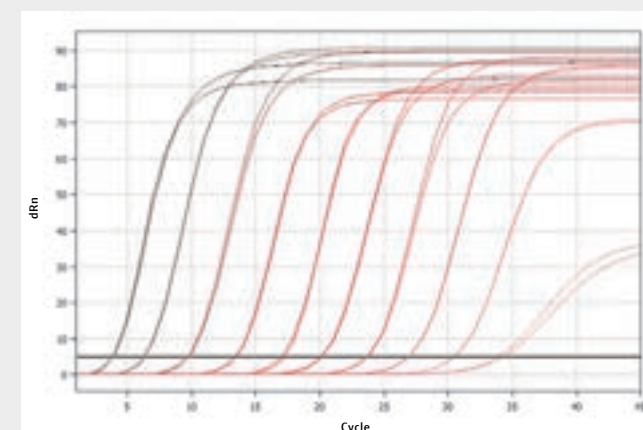
Perfectly equipped

Every expedition is dependent on the equipment it uses. The qTOWERiris is a truly open system capable of performing any task within the world of qPCR. The qTOWERiris puts all of Analytik Jena's qPCR experience to use and can empower your journey of discovery into the world of genetic information. You can select exactly what you need – no more, no less.

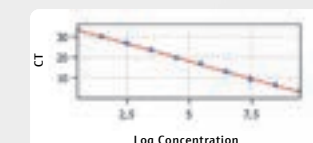
Precision

When it comes to temperature and readout accuracy, the real-time PCR Instrument qTOWERiris knows no ifs, ands, or buts – as well as no edge effects.

Dynamic range: Amplification curves of a ten-fold dilution series



Standard curve



An example amplification of synthetic DNA demonstrates linearity across 10 logarithmic steps, from 10^9 to 100 copies. The standard curve and PCR efficiency (100%) were automatically determined, as well as the coefficient of determination $R^2 > 0.999$.

Heating and cooling rates: Overshoot unnecessary

- The target temperature is reached precisely and quickly (high ramping rate)
- Prevents false amplification (artifacts)
- No excess temperature (overshoot or undershoot)

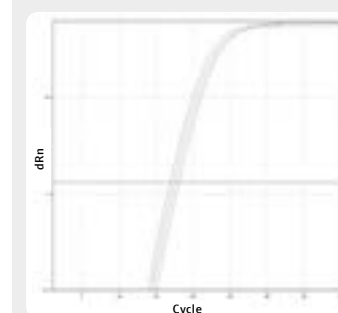
Readout results: Without edge effects

- Fiber optics moves forward column by column
- Each well is excited individually and detected from the same angle
- Homogeneous amplification plots without edge effects (compared to camera optics)

Heat conduction: Uniform for every well

- Gold-coated silver (for the 96 block)
- Top conductivity (twice as effective as aluminum)
- Homogeneous temperature distribution across the entire block
- Deviation of $\pm 0.15^\circ\text{C}$ (Market standard: up to $\pm 0.4^\circ\text{C}$)

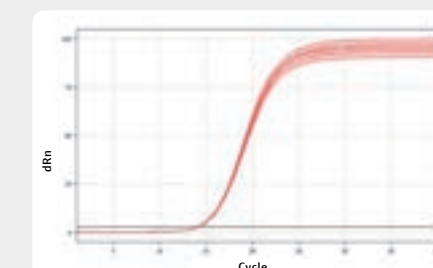
Fine Resolution: discrimination of 1.3-fold differences



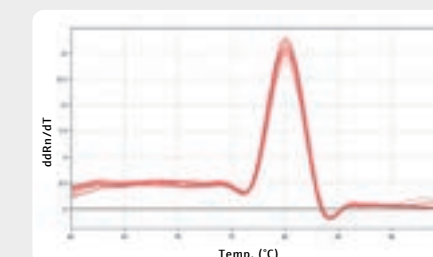
Logarithmic view

An example amplification of *E. coli* genomic DNA demonstrates the ability to reliably distinguish very small differences in template concentration. Even at 1.3-fold dilution steps, the system produces clearly separated amplification curves.

Homogeneity: uniform performance across all 96 wells



Linear view



Melting curve

Homogeneity across the 96-well block was assessed using amplification of an *E. coli*-specific target. Both linear amplification plots and melting curve analysis demonstrate uniform performance across all wells. A mean Ct value of 14.04 with a standard deviation of 0.04 highlights the system's uniformity and detection precision.

The entire spectrum

The complete spectrum
Clear signals from UV-A to near infrared (NIR), multiplexing for up to six targets simultaneously.

Unparalleled temperature homogeneity
 $\pm 0.15\text{ }^{\circ}\text{C}$ across the whole block (industry standard: up to $\pm 0.4\text{ }^{\circ}\text{C}$).

Freedom for research decisions
Free choice of consumables, reagents, and assays.

Applicative support
directly from the manufacturer.

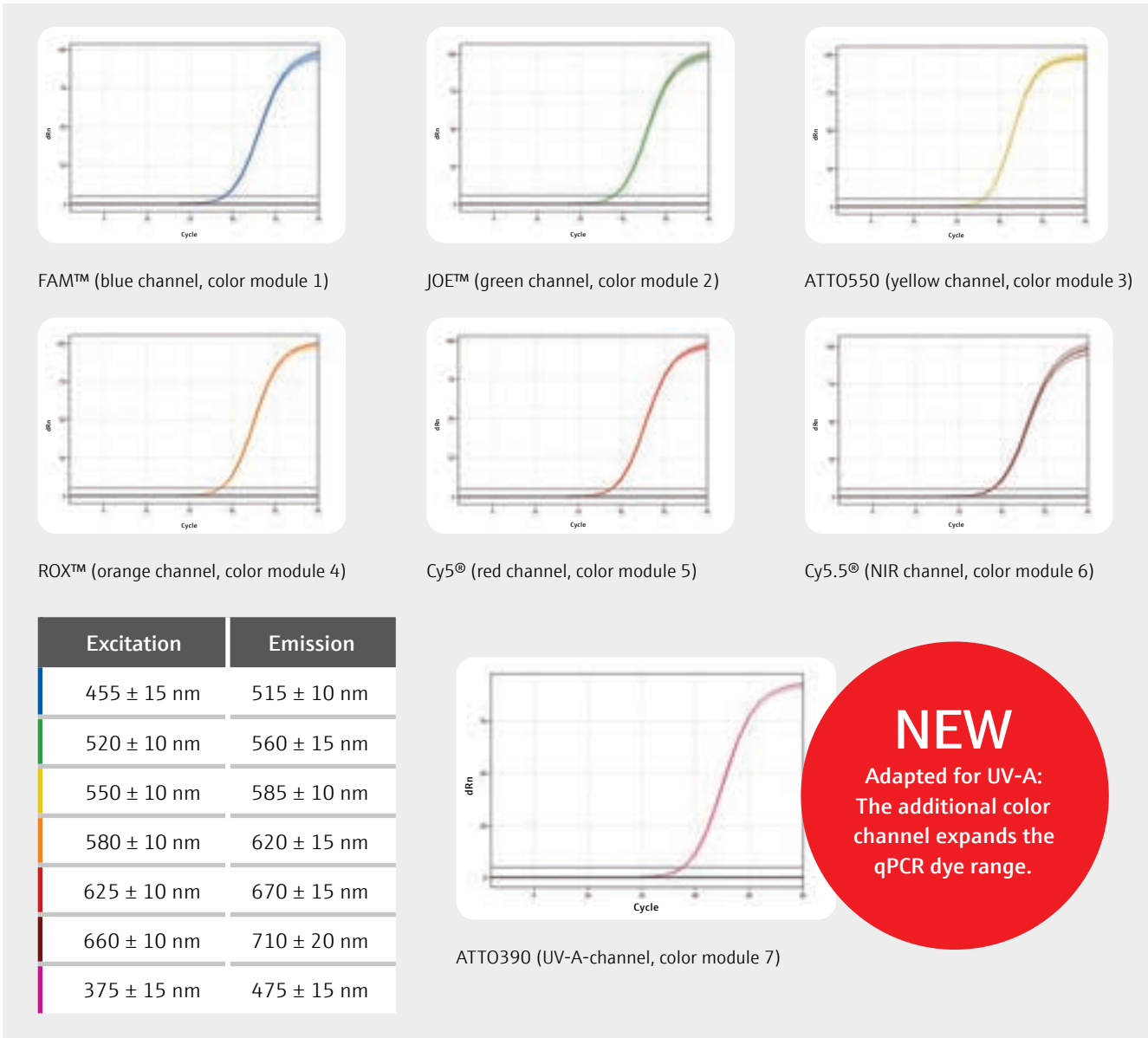
Free access to all data
All raw data are freely accessible, or processed as interpolated curves.

- Free choice of color modules**
- Individual color modules for amplification and detection of nucleic acids
 - Suitable for all commercially available dyes
 - One protein module

And in terms of noise
it's barely audible.

Clear signals across six channels

Multiplexing with the qTOWERiris allows for six targets in one go without crosstalk.



- Multiplexing: providing for clear signals**
- Choose from seven individually available color modules and a protein module
 - Can be expanded as needed
 - Spectral coverage from UV-A to NIR

- The dyes: Whatever the market has to offer**
- Compatibility with current and future dyes on the market
 - Recalibration not necessary for dye changes (but possible at any time)
 - Selective amplification for weaker signals (software gain settings)

Models and software

The qTOWERiris is available in three variants so far, freeing you of limitations in terms of consumables. You can operate up to four devices with a single PC. We have completely redesigned our software.

The equipment and consumables

- PC-controlled or as a stand-alone device (touch)
- 96-well silver block or 384-well aluminum block
- All models: either UV-ready or optional later upgrade to UV
- For all types of microplates (skirted, non-skirted, half-skirted)
- Suitable for 0.1 mL or 0.2 mL volumes

The software

- New, modular design for intuitive workflows
- Comprehensible PDF report for clear documentation
- Common analysis methods for reliable evaluation
- Advanced user management for secure access
- Optional FDA 21 CFR Part 11 module for compliance

NEW

- Excitation light source: 7-chip power LED including UV-A
- Optimized color modules
- Improved signaling algorithms

“ A bonus is the gain settings to enhance the signal depending on the dye. This saves us money in assay development, as well as the freedom to choose the plastic. qTOWERiris makes our work easier in every respect – and it’s super quiet too. ”

Maja Studencka-Turski

“ We tested the qTOWERiris in our lab. The device is easy to use, fast, the multiplexing works great, the curves are beautiful. And the print report is the icing on the cake. We are extremely satisfied. ”

Maja Studencka-Turski,
Scientific Lead, myPOLS Biotec,
Konstanz



PC-controlled | stand-alone device with touchscreen.

Technical data

	qTOWERiris qTOWERiris touch		qTOWERiris 384
Sample block capacity	Silver sample block with gold coating 96 wells suitable for 0.1 mL and 0.2 mL format consumables with optical sealing		Aluminum sample block with alloy 384-well microplates with optical sealing
Sample volume	5 – 100 µL		2 – 30 µL (5 – 20 µL recommended)
Heating	Max. 8 °C/s and Ø 7 °C/s		Max. 4 °C/s and Ø 3 °C/s
Cooling	Max. 5.5 °C/s and Ø 4.5 °C/s		Max. 2 °C/s and Ø 1.5 °C/s
Temperature setting range	4 °C to 99 °C		
Temperature uniformity	± 0.15 °C at 55 °C (after 15 s)		
Temperature control accuracy	± 0.1 °C		
Gradient	0.1 °C – 40 °C over 12 columns Linear Gradient Tool		0.1 °C – 24 °C over 24 columns Linear Gradient Tool
Light source	7-chip long-life power LED		
Optical detection	Highly sensitive PMT (Photo Multiplier Tube)		
Excitation/detection range	440 nm – 670 nm / 505 nm – 730 nm Incl. color module 7 (UV-A): 360 – 670 nm / 460 nm – 730 nm		
Multiplex capacity	Up to 6 targets, no passive reference necessary		
Filter configurations	Flexible filter configuration: 6 positions in the device		
Sensitivity	Detects 1 copy of target sequence		
Dynamic range	10 orders of magnitude		
Control and analysis software	PC- or touchscreen-based version		PC version
Connectivity	USB, Ethernet		
Footprint (W/D/H)	30.4 cm x 31.5 cm x 58.7 cm (12"x 12.4"x 23.1")		

→ We have been active in the market for three decades – with our brands Biometra for PCR technology and CyBio for liquid handling and automation. Researchers and everyday users from around the world rely on our products, application support, and service. We aim to support our customers in long-term partnerships.



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Subjects to changes in design and scope of delivery as well as further technical development.
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