

analytikjena
An Endress+Hauser Company

Feel free to
EXPLORE
qTOWERiris



Your Research. Your Data. Our Open System.

Perfectly equipped

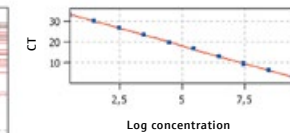
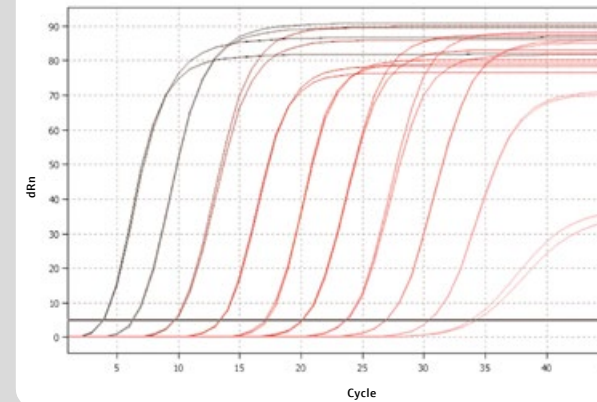
Every expedition is dependent on the equipment it uses. The qTOWERiris is a truly open system capable of performing any task within the world of qPCR. The qTOWERiris puts all of Analytik Jena's qPCR experience to use and can empower your journey of discovery into the world of genetic information. You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

Your Experiment. Your Insights. Our Open System.

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 10^0 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

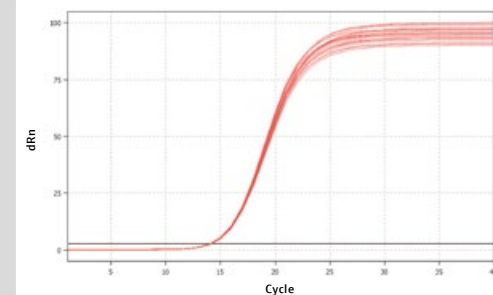
- The target temperature is reached precisely and quickly (high ramping rate)
- Prevents false amplification (artifacts)

Readout results: Without edge effects

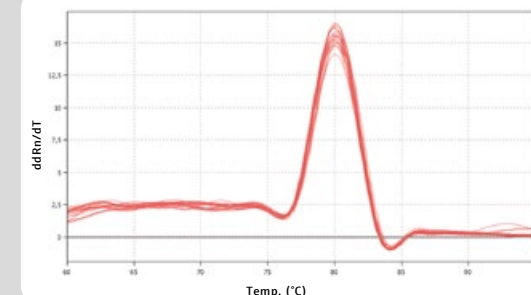
- Fiber optics moves forward column by column
- Each well is excited individually and detected from the same angle
- Homogeneous amplification plots without edge effects (compared to camera optics)

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 $\pm 0.4^\circ\text{C}$)



Linear view



Melting curve

Amplification of an *E.coli*-specific target sequence in 96 wells, the mean Ct value was automatically determined to be 14.04 with a standard deviation of 0.04.

The Entire Spectrum

Free access to all data

All raw data are freely accessible, or processed as interpolated curves

Applicative support

directly from the manufacturer

The complete spectrum

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

And in terms of noise
it's barely audible.

Unparalleled temperature homogeneity

± 0.15 °C across the whole block
(industry standard: up to ± 0.4 °C)

Freedom for research decisions

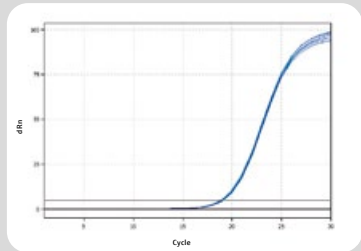
Free choice of consumables, reagents, and assays

Free choice of color modules

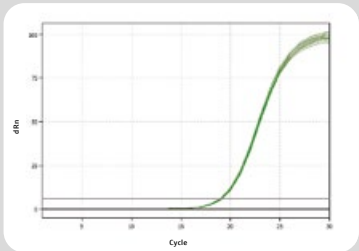
- Individual color modules for amplification and detection of nucleic acids
- Suitable for all commercially available dyes
- One protein module

Clear Signals Across Six Channels

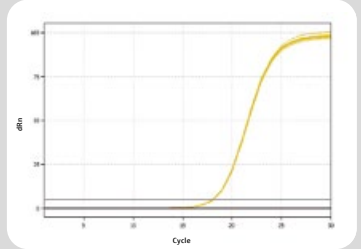
Multiplexing with the qTOWERiris allows for six targets in one go without crosstalk.



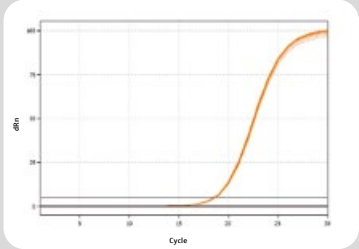
FAM™ (blue channel, color module 1)



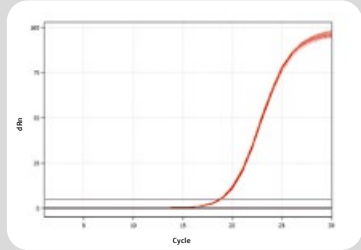
JOE™ (green channel, color module 2)



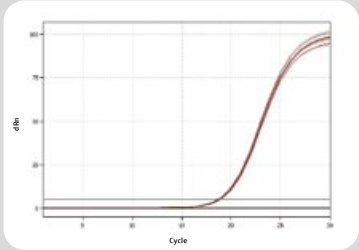
ATTO450 (yellow channel, color module 3)



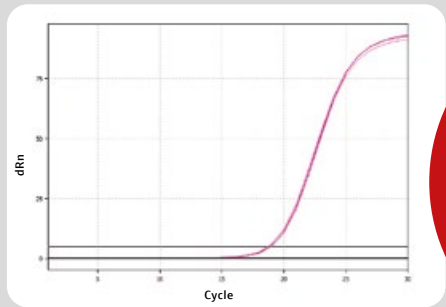
ROX™ (orange channel, color module 4)



Cy5® (red channel, color module 5)



Cy5.5® (NIR channel, color module 6)



ATTO390 (UV-A-channel, color module 7)

NEW

Adapted for UV-A:
The additional color
channel expands the
qPCR dye range.

Excitation	Emission
455 ± 15 nm	515 ± 10 nm
520 ± 10 nm	560 ± 15 nm
550 ± 10 nm	585 ± 10 nm
580 ± 10 nm	620 ± 15 nm
625 ± 10 nm	670 ± 15 nm
660 ± 10 nm	710 ± 20 nm
375 ± 15 nm	475 ± 15 nm

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)

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

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, which remains license-free.

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, license-free
- Comprehensible PDF report
- Uses common analysis methods

“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

NEW

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



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")	

Engage Your Curiosity.

Life Science Solutions provided by Analytik Jena

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.

Headquarters

Analytik Jena GmbH
Konrad-Zuse-Str. 1
07745 Jena · Germany

Phone +49 3641 77 70
Fax +49 3641 77 9279
info@analytik-jena.com
www.analytik-jena.com

Images: Analytik Jena GmbH+Co. KG
Subjects to changes in design and scope of delivery
as well as further technical development!



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