

Technical data



Real-time quantitative PCR qTOWER³



qTOWER³

- High-end real-time PCR thermal cycler
- Patented fiber optical system with 10 years long-term warranty
- Integrated real-time software with automated data evaluation and state-of-the-art analysis tools
- Multiplex analysis: system can be equipped with up to 6 excitation and emission filters
- PC or stand-alone control by 10" tablet (colored, touch)
- Optimized excitation of each single sample due to unique RGBW-LED's

Thermal block

Sample block	Silver sample block with gold-coating
Block capacity	96 Well á 0,2 ml for 96 x 0.2 ml Tubes, 96 Well Micorplates or 12x 8 Well Strips 0.2 ml
Sample size	10 – 80 µl
Block exchange	No
Number of blocks	1
Heating	Up to 8 °C/s (max.)
Cooling	Up to 6 °C/s (max.)
Tempering method	High-power peltier elements
Standby temperature	Yes, down to 3 °C
Temperature control mode	Block control
Adjustable temperature range	3 °C bis 99 °C
Temperature uniformity	55 °C ± 0.15 °C after 15 sec
Temperature control accuracy	± 0.1 °C
Gradient	Linear Gradient Tool
Max. / Min. Gradient	40 °C / 0.1 °C
Adjustable gradient range	12 columns from 4 °C to 99 °C

qTOWER³

Heated lid

Heated lid	Yes
Lid temperature	30 °C to 110 °C
Contact pressure	10 kg, automated

Control

Control	PC or stand-alone (optional)
Control and analysis software	qPCRsoft or qPCRsoft <i>touch</i>
Operating system	Windows 7 (32 bit) or higher
Minimum requirement PC	Intel Core 2 Duo, 2048 MB RAM, USB 2.0, display resolution min. 1280 x 1024 pixel
Display	Only qTOWER ³ <i>touch</i> : 10" tablet, colored, touch, WIN 8.1
Export function	Excel, *.csv, LIMS, qBase ⁺ , GeneIO, GenEx
Power fail function	Yes
Quick start function	Yes
Time inc/dec	±0.1 to 240 sec/cycle
Temperature inc/dec	±0.1 to 20 °C/cycle
Memory capacity	Not limited on PC or tablet

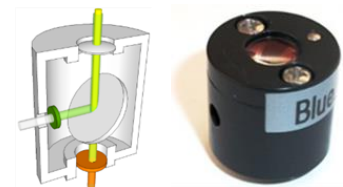
Features

- Absolute and relative quantification
- Delta-delta Ct-method
- Genotyping
- Allelic discrimination
- PCR efficiency
- Melting curve
- Multi-gene and multi-plate analysis
- MIQE compliant documentation

qTOWER³

Optics

Measuring principle	Fiber optic shuttle system with 8fold scanner and color modules for excitation and emission filters
Light source	4 longlife, high-power LED's (RGBW)
Detector	High sensitive CPM (C hannel P hoto M ultiplier)
Read out time	6 sec for 96 wells independent of the number of dyes
Wavelength range	Excitation: 470 nm - 660 nm; Emission: 520 nm - 705 nm
Color modules	<ul style="list-style-type: none"> ▪ 12 Color-, FRET- and Protein modules ▪ 6 positions inside device
Configuration	Free configuration in device
Upgradeability	Possible without service



Parameters color module

Name	Excitation	Emission	Example fluorescent dyes
Color module 1	470 nm	520 nm	FAM, SybrGreen, Alexa488
Color module 2	515 nm	545 nm	JOE, HEX, VIC, YakimaYellow, TET, Atto 520
Color module 3	535 nm	580 nm	TAMRA, DFO, Alexa546, NED, Cy3, Atto 565
Color module 4	565 nm	605 nm	ROX, TexasRed, Cy3.5, Atto 610
Color module 5	630 nm	670 nm	Cy5, Alexa633, Quasar670
Color module 6	660 nm	705 nm	Cy5.5, LightCycler Red
FRET module 1	470 nm	580 nm	FAM (Donor) / TAMRA (Akzeptor)
FRET module 2	470 nm	670 nm	FAM (Donor) / Cy5 (Akzeptor)
FRET module 3	470 nm	705 nm	FAM (Donor) / Cy5.5 (Akzeptor)
FRET module 4	515 nm	670 nm	JOE (Donor) / Cy5 (Akzeptor)
FRET module 5	470 nm	605 nm	FAM (Donor) / ROX (Akzeptor)
CM Protein 1	490 nm	580 nm	SYPRO Orange

qTOWER³

qPCR application

Sensitivity Detects 1 copy of target sequence in human genomic DNA

Dynamic range 10 orders of magnitude

Passive reference

- Not necessary, due to single excitation / detection of each well
- Optional available (software feature)

Multiplex analysis Up to 6fold

Dimensions

Weight Approx. 30 kg

Dimension (W x H x L) 275 mm x 585 mm x 275 mm

Recommended footprint 10 – 15 cm behind rear side of device

Additional technical data

Interface

- PC connection: USB
- Tablet: 2x USB for data transfer, barcode reader...

Fuses T 630 mA L 250 V; 2x TT 4 A H 250 V

Power supply 100 – 240 V

Power consumption Max. 850 W

Noise emission Max. 45 dB

Operation conditions 15 °C to 35 °C, 70% humidity, max. 2.000 m NN

Warranty

- 2 warranty on device system
- 10 years long-term warranty of high performance optics

Reference: td_qTOWER³_en_15-08-18.docx

This document is true and correct at the time of publication; the information within is subject to change. Other documents may supersede this document, including technical modifications and corrections.

Content may be used without written permission but with citation of source. © 2015 Analytik Jena AG



Publisher:

Analytik Jena AG
Konrad-Zuse-Straße 1
07745 Jena/ Germany

Phone +49 (0) 36 41 / 77-94 00
Fax +49 (0) 36 41 / 77-76 77 76

www.bio.analytik-jena.com
lifescience@analytik-jena.com