Technical Data

qTOWER³

Real-Time quantitative PCR

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General

- 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-LEDs

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 microplates or 12x 8 well strips 0.2 ml
Sample size	5 – 100 µl
Block exchange	No
Number of blocks	1
Heating	Max. 8 °C/sec and Ø 7 °C/sec
Cooling	Max. 6 °C/sec and Ø 5.5 °C/sec
Tempering method	High-power peltier elements
Standby temperature	Yes, down to 4 °C
Temperature control mode	Block control
Adjustable temperature range	4 °C to 99 °C
Temperature uniformity	55 ° ± 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: 4 °C - 99 °C

Heated lid

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

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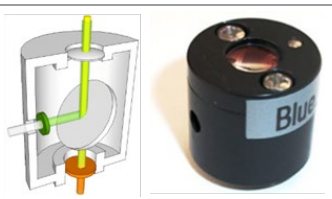
Control

Control	PC or stand-alone (optional)
Control and analysis software	qPCRsoft oder qPCRsoft *touch*
Operating system	Windows 7 or higher
Minimum requirement of PC	Intel Core 2 Duo, 2048 MB RAM, USB 2.0, Display resolution min. 1280 x 1024 pixel
Display	Only qTOWER³ (G) touch: 10" tablet, colored
Export function	Excel, *.csv, LIMS, qBase+, GenEIO, GenEx
Time inc/dec	±1 bis 240 sec/cycle
Temperature inc/dec	±0.1 bis 20°C/cycle
Memory capacity	Not limited on PC or tablet
Features	▪ Absolute and relative quantification ▪ Delta-delta Ct-method ▪ Genotyping ▪ Allel discrimination ▪ PCR efficiency ▪ Melting curve ▪ Multi-gene and multi-plate analysis ▪ MIQE compliant documentation

Optics

Measuring principle	Fibre optic shuttle system with 8fold scanner and color modules for excitation and emission filters
Light source	4 longlife, high-power LEDs (RGBW)
Detector	High sensitive PMT (Photo Multiplier Tube)
Read out time	6 sec for 96 wells independent of the number of dyes
Wavelenght range	Excitation: 470 nm - 630 nm; Emission: 520 nm - 705 nm
Color modules	▪ 12 Color-, FRET- and Protein modules ▪ 6 positions inside device
Configuration	Free configuration
Upgradability	Possible without service



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Parameters color modules

Name	Fluorescent dyes
Color module 1	FAM™, SYBR®Green, Alexa488®
Color module 2	JOE™, HEX™, VIC®, YakimaYellow®
Color module 3	TAMRA™, DFO™, Alexa546®
Color module 4	ROX™, TexasRed®, Cy3.5®
Color module 5	Cy5®, Alexa633®, Quasar670™
Color module 6	Cy5.5®
FRET module 1	FAM™ (Donor) / TAMRA™ (Akzeptor)
FRET module 2	FAM™ (Donor) / Cy5® (Akzeptor)
FRET module 3	FAM™ (Donor) / Cy5.5® (Akzeptor)
FRET module 4	JOE™ (Donor) / Cy5® (Akzeptor)
FRET module 5	FAM™ (Donor) / ROX™ (Akzeptor)
Color module protein 1	SYPRO® Orange

qPCR Application

Sensitivity	Detects 1 copy of target sequence
Dynamic range	10 orders of magnitude
Passive reference	▪ Not necessary, due to single excitation/detection of each well ▪ Optional available in software
Multiplex analyse	Up to 6fold

Dimensions

Weight	Approx. 30 kg
Dimemsions (W x H x L)	275 mm x 585 mm x 275 mm
Recommended footprint	275 mm x 595 mm x 285 mm

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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 H 250 V
Power supply	100 – 240 V
Power consumption	Max. 850 W
Noise emission	Max. 45 dB
Operation conditions	15 to 35, 70% humidity, max. 2,000 m NN
Warranty	▪ 2 years warranty on device system ▪ 10 years long-term warranty on high performance optics

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