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Technical data

qTOWER 2.0 / 2.2

- Excitation via 3 different colored LED lamps
- Integrated real-time software including automatic data analysis with different methods for quantification, expression ratios and PCR efficiency
- Multi-component analysis
- Equipped with up to 6 excitation and emission filters
- Sample consumption from 10 – 60µl

Optical system

Principle of measurement	Top-reading fluorescence detection via 8 light fiber cables with color modules for excitation and emission filters
Light source	3 different long-life LEDs
Detector	▪ CPM – channel photo multiplier ▪ Highly sensitive ▪ Decreased SNR
Number of color modules	▪ 10 available ▪ 6 positions inside device

Parameters color modules

Name	Excitation	Emission	Dyes (examples)
Color module 1	470 nm	520 nm	FAM, SybrGreen, Alexa488
Color module 2	515 nm	545 nm	JOE, HEX, VIC, YakimaYellow
Color module 3	535 nm	580 nm	TAMRA, DFO, Alexa546, NED
Color module 4	565 nm	605 nm	ROX, TexasRed, Cy3.5
Color module 5	630 nm	670 nm	Cy5, Alexa633, Quasar670
Color module 6	660 nm	705 nm	Cy5.5, LightCycler Red
FRET-Modul 1	470 nm	580 nm	FAM (Donor) / TAMRA (Akzeptor)
FRET-Modul 2	470 nm	670 nm	FAM (Donor) / Cy5 (Akzeptor)
FRET-Modul 3	470 nm	705 nm	FAM (Donor) / Cy5.5 (Akzeptor)
FRET-Modul 4	515 nm	670 nm	JOE (Donor) / Cy5 (Akzeptor)

Analytical parameter

Sensitivity	1 nM FAM in 30 µl sample volume
Read out time	6 sec for 96 wells independent of the number of spectral channels
Block capacity	96 well (96 well plate, 8 well stripes, single tubes)
Sample volume	10 – 60 µl
Sample capacity	96 in parallel

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Systen and application parameter rapidPCR	
Heating rate	5.5 °C/sec max.
Cooling rate	4 °C/sec max
Block homogeneity	± 0,15 °C bei 55°C ± 0,25 °C bei 72°C ± 0,50 °C bei 95°C
Control accuracy	± 0.1 °C
Block temperature	3 °C – 99 °C
Time inc/dec	Min 1 sec / cycle
Temperature inc/dec	Min 0.1 °C / cycle
Contact pressure	10 kg/plate, automatic
No. of programs	Not limited on PC
Run time	Approx. 60 min (application dependent)
Gradient (qTOWER 2.2)	Max. 40 °C gradient span
Lid	▪ Heated lid up to 110 °C (manual opening/closing) ▪ SPS technology
Other technical data	
Weight	25 kg
Dimensions (W x H x D)	275 mm x 585 mm x 275 mm
Power supply	100 – 240 V
PC-interface	USB port
Software	▪ qPCRsoft ▪ Control and evaluation software ▪ Absolute and relative quantification ▪ Delta-delta ct ▪ Allele discrimination ▪ PCR efficiency
Warranty	2 years warranty
Long time guaranty	10 years for optical compounds

Subject to changes in design and scope of delivery as well as further technical development!