

## qTOWER

- Combines advantages of rapidPCR and fast real-time fluorescence detection
- 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 4 excitation and emission filters
- Optimized for low sample consumption

### Optical system

<b>Principle of measurement</b>	Top-reading fluorescence detection via 8 light fiber cables with color modules for excitation and emission filters
<b>Light source</b>	High-power, long-life LED's
<b>Detector</b>	<ul style="list-style-type: none"> <li>▪ CPM – channel photo multiplier</li> <li>▪ Highly sensitive</li> <li>▪ Decreased SNR</li> </ul>
<b>Number of color modules</b>	<ul style="list-style-type: none"> <li>▪ 9 available</li> <li>▪ 4 positions inside device</li> </ul>

Parameters color modules			
Name	Excitation	Emission	Dyes
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
FRET 1	470 nm	580 nm	FAM (donor) / TAMRA (acceptor)
FRET 2	470 nm	670 nm	FAM (donor) / Cy5 (acceptor)
FRET 3	470 nm	705 nm	FAM (donor) / Cy5.5 (acceptor)
FRET 4	515 nm	670 nm	JOE (donor) / Cy5 (acceptor)

### Analytical parameter

<b>Sensitivity</b>	<ul style="list-style-type: none"> <li>▪ 1 nM FAM in minimal 15 µl PCR buffer (equals to 15 fmol FAM per well)</li> </ul>
<b>Read out time</b>	<ul style="list-style-type: none"> <li>▪ 4 sec for 96 wells independent of the number of spectral channels</li> </ul>
<b>Microplate format</b>	<ul style="list-style-type: none"> <li>▪ Ultrathin-walled 96 well microplate LP (low profile)</li> </ul>
<b>Sample volume</b>	5 – 20 µl
<b>Sample capacity</b>	96 in parallel

**qTOWER**

**System and application parameter rapidPCR**

<b>Heating rate</b>	12 °C/sec max, (0.1 to 12 °C/sec)
<b>Cooling rate</b>	8 °C/sec max, (0.1 to 8 °C/sec)
<b>Block homogeneity</b>	± 0.2 °C
<b>Control accuracy</b>	± 0.2 °C
<b>Block temperature</b>	4 °C – 105 °C
<b>Time inc/dec</b>	± 0.1 to 1 sec/cycle
<b>Temperature inc/dec</b>	± 0.1 to 1 °C/cycle
<b>Contact pressure</b>	60 kg/plate
<b>No. of programs</b>	Not limited on PC
<b>Run time</b>	20 – 40 min depending on the application
<b>Temperature control mode</b>	<ul style="list-style-type: none"> <li>▪ Block control</li> <li>▪ (simulated) Tube control</li> </ul>

**Lid**

- Heated sliding lid up to 120 °C (manual or motorized opening/closing)
- SPS technology
- Automated pressing onto plate

**Other technical data**

<b>Weight</b>	Approx. 10 kg
<b>Dimensions (W x H x D)</b>	240 mm x 430 mm x 255 mm
<b>Power supply</b>	100 – 240 V ± 15 % (47 – 63 Hz)
<b>PC-interface</b>	USB port
<b>Software</b>	<ul style="list-style-type: none"> <li>▪ qPCRsoft</li> <li>▪ Control and evaluation software</li> <li>▪ Absolute and relative quantification</li> <li>▪ Delta-delta ct</li> <li>▪ Allele discrimination</li> <li>▪ PCR efficiency</li> </ul>
<b>Warranty</b>	1 year warranty



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