

# qTOWER<sup>3</sup> 84 auto

## Real-time Quantitative PCR



## Technical Data

### qTOWER<sup>3</sup> 84 auto

#### General

- Automation-friendly design
  - Reduced footprint
  - Decoupled power module
- Achieving security and maximum configuration flexibility
  - Free accessibility of the microplate tray
  - Motorized drawer and plate lifter
  - Unique labware detection function
- Multiplex capabilities to fit all laboratory needs
- Patented fiber optical system with 10-year long-term warranty

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Sample block	Aluminium with special alloy coating
Block capacity	384 well microplates with optical foil (verified for automation processes, full-skirted)
Sample size	2 – 30 µL (5 – 20 µL recommended)
Block exchange	No
Number of blocks	1
Heating	Max. 4 °C/second
Cooling	Max. 2 °C/second
Block technology	High-power peltier elements
Standby temperature	Possible, down to 4 °C
Temperature control mode	<ul style="list-style-type: none"> <li>▪ Block Control</li> <li>▪ Tube Control</li> </ul>
Adjustable temperature range	4 °C to 99 °C
Temperature uniformity	55 °C ± 0.15 °C after 15 seconds
Temperature control accuracy	± 0.1 °C
Temperature increments	Min. 0.1 °C/cycle
Time increments	Min. 1 sec/cycle
Display	No
Software	PC control with qPCRsoft auto
Interfaces	USB or Ethernet for PC connection

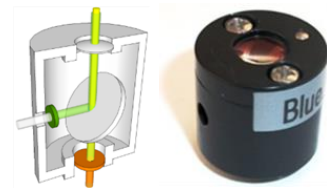
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Dimensions (W × H × L)	310 × 479 × 365 mm (Drawer closed) 310 × 479 × 477 mm (Drawer open)
Traveling distance of drawer	112 mm
Position tolerance of the sample plate when the drawer is moved out	± 0.15 mm
Noise emission	Ø 60 dB
Weight	Approx. 27 kg
Heated lid	Included, 30 °C to 110 °C
Contact pressure lid	30 kg, automated
Safety features	<ul style="list-style-type: none"> <li>▪ Sample chamber is monitored by sensors</li> <li>▪ Overheating protection in the heated lid</li> <li>▪ Interlock switch (drawer)</li> </ul>
Warranty	<ul style="list-style-type: none"> <li>▪ 2 years warranty on device system</li> <li>▪ 10-year long-term warranty on high performance optics</li> </ul>

## Optics

Measurement principle	Fiber optic shuttle system with 16 optical fibers
Light source	4 longlife, high-power LEDs (RGBW)
Detector	Highly sensitive PMT (Photo Multiplier Tube)
Readout time	6 seconds for 384 wells independent of the number of selected dyes
Wavelength range	Excitation: 450 nm - 635 nm; Emission: 512 nm - 730 nm
Color modules	<ul style="list-style-type: none"> <li>▪ 12 Color-, FRET- and Protein modules</li> <li>▪ 6 positions inside device</li> </ul>
Configuration	Preconfigured with four color modules
Upgradability	Possible with service



## qPCR Application

Sensitivity	1 nmol/L FAM in 10 µL sample volume
Dynamic range	10 orders of magnitude
Passive reference	<ul style="list-style-type: none"> <li>▪ Not necessary, due to single excitation/detection of each well</li> <li>▪ Optional within software</li> </ul>
Multiplex analysis	Up to 6-fold

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**Parameters color modules**

**Preinstalled color modules**

Name	Excitation	Emission	Examples of detectable fluorescent dyes
Color module 1	465 ± 15 nm	524 ± 12 nm	FAM <sup>TM</sup> , SYBR <sup>®</sup> Green, Alexa488 <sup>®</sup>
Color module 2	510 ± 15 nm	565 ± 15 nm	JOE <sup>TM</sup> , HEX <sup>TM</sup> , VIC <sup>®</sup> , YakimaYellow <sup>®</sup>
Color module 4	560 ± 15 nm	610 ± 15 nm	ROX <sup>TM</sup> , TexasRed <sup>®</sup> , Cy3.5 <sup>®</sup>
Color module 5	625 ± 10 nm	680 ± 15 nm	Cy5 <sup>®</sup> , Alexa633 <sup>®</sup> , Quasar670 <sup>TM</sup>

**Optional color modules**

Name	Excitation	Emission	Examples of detectable fluorescent dyes
Color module 3	530 ± 15 nm	585 ± 15 nm	TAMRA <sup>TM</sup> , DFO <sup>TM</sup> , Alexa546 <sup>®</sup>
Color module 6	625 ± 10 nm	710 ± 20 nm	Cy5.5 <sup>®</sup>
FRET module 1	465 ± 15 nm	585 ± 15 nm	FAM <sup>TM</sup> (Donor) / TAMRA <sup>TM</sup> (Acceptor)
FRET module 2	465 ± 15 nm	680 ± 15 nm	FAM <sup>TM</sup> (Donor) / Cy5 <sup>®</sup> (Acceptor)
FRET module 3	465 ± 15 nm	710 ± 20 nm	FAM <sup>TM</sup> (Donor) / Cy5.5 <sup>®</sup> (Acceptor)
FRET module 4	510 ± 15 nm	680 ± 15 nm	JOE <sup>TM</sup> (Donor) / Cy5 <sup>®</sup> (Acceptor)
FRET module 5	465 ± 15 nm	610 ± 15 nm	FAM <sup>TM</sup> (Donor) / ROX <sup>TM</sup> (Acceptor)
Color module protein 1	465 ± 15 nm	585 ± 15 nm	SYPRO <sup>®</sup> Orange

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## Power module qTOWER<sup>3</sup> 84 auto

Dimensions (W × H × L)	290 × 186 × 335 mm
Weight	Approx. 12 kg
Power supply	100 / 115 / 230 V
Max. Power	950 W
Frequency	50/60 Hz
Output ports Number (incl. designation)	3 (POWER, DATA 1, DATA 2)
Fuses	2 × 10 AT / 250 V
Protection type	IP 20
Protection class	I
Warranty	2 years warranty on device system

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