

# qTOWERiris / qTOWERiris touch / qTOWERiris 384 Real-time Quantitative PCR



## Technical Data

### qTOWERiris / qTOWERiris touch / qTOWERiris 384

#### General

- High-end real-time PCR thermal cycler available with innovative silver sample block in 96 well format or with a massive aluminum sample block in 384 well format
- Patented fiber optical system for optimized excitation of each single sample
- Extended wavelength range from UV-A to NIR (near-infrared) due to innovative LED light source
- Multiplex analysis: system can be equipped with up to 6 excitation and emission filters
- Intuitive PC-based real-time software with automated data evaluation and comprehensive analysis tools or stand-alone operation via a 10" color touch tablet (qTOWER iris touch only).

#### Thermal block

Parameter	96 Well System	384 Well System
Sample block	Silver sample block with gold coating	Aluminum sample block with alloy
Block capacity	96 wells suitable for 0.1 mL and 0.2 mL format consumables with optical sealing (microplates, tubes and stripes)	384-well microplates with optical sealing
Sample size	5 – 100 µL	2 – 30 µL (5 – 20 µL recommended)
Heating <sup>1</sup>	Max. 8 °C/s and Ø 7 °C/s	Max. 4 °C/s and Ø 3 °C/s
Cooling <sup>1</sup>	Max. 5.5 °C/s and Ø 4.5 °C/s	Max. 2 °C/s and Ø 1.5 °C/s
Temperature control	Peltier elements	
Standby temperature	down to 4 °C	
Adjustable temperature range	4 °C to 99 °C	
Temperature control mode	Block control and simulated tube control (STC)	
Temperature uniformity <sup>2</sup> (across the entire block)	± 0.15 °C at 55 °C ± 0.25 °C at 70 °C ± 0.50 °C at 95 °C	
Temperature control accuracy	± 0.1 °C	
Gradient	Gradient Tool	
Max./Min. Gradient	40 °C / 0.1 °C	24 °C / 0.1 °C
Adjustable gradient range	12 columns from 4 °C to 99 °C	24 columns from 4 °C to 99 °C

<sup>1</sup> measured at cavity wall of the block

<sup>2</sup> typical value after 15 sec

## Technical Data

### qTOWERiris / qTOWERiris touch / qTOWERiris 384

#### Heated lid

Parameter	96 Well System / 384 Well System
Heated lid	Yes
Lid temperature	30 °C to 110 °C
Contact pressure	Corresponds to 30 kg, automated

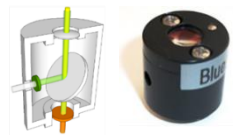
#### Control

Parameter	96 Well System	384 Well System
Control	PC or stand-alone (optional)	PC
Control and analysis software	qPCRsoft or qPCRsoft <i>touch</i>	qPCRsoft
Display	Only qTOWERiris touch: 10"tablet, colored	
Operating system	Windows 11	
Minimum requirement of PC	<ul style="list-style-type: none"> <li>▪ Processor: min. Intel Core i5 series, AMD Ryzen 5 series or similar</li> <li>▪ Memory (RAM): min. 8 GB RAM</li> <li>▪ Available hard disk space: min. 64 GB, Min.</li> <li>▪ USB 2.0</li> <li>▪ Display resolution: min. 1920 x 1080 px</li> <li>▪ Graphic card: compatible with Direct X 12 or later</li> </ul>	
Export function	Excel, *.csv, LIMS	
Features PC software	<ul style="list-style-type: none"> <li>▪ Absolute and relative quantification</li> <li>▪ Delta-delta Ct-method</li> <li>▪ Genotyping</li> <li>▪ Allele discrimination</li> <li>▪ PCR efficiency</li> <li>▪ Melting curve</li> <li>▪ Multi-gene and multi-plate analysis</li> <li>▪ MIQE compliant documentation</li> <li>▪ Optional software module supporting FDA 21 CFR Part 11 compliance</li> </ul>	

## Technical Data

### qTOWERiris / qTOWERiris touch / qTOWERiris 384

## Optics

Parameter	96 Well System	384 Well System
Measuring principle	Fiber optic shuttle system with 8-fold scanner and color modules for excitation and emission filters	Fiber optic shuttle system with 16-fold scanner and color modules for excitation and emission filters
Light source	7-chip multi-color power LED	
Detector	Highly sensitive PMT (Photo Multiplier Tube)	
Read out time	6 sec for 96 wells independent of the number of dyes (single plate readout)	6 sec for 384 wells independent of the number of dyes (single plate readout)
Excitation/detection range	440 nm - 670 nm / 505 nm - 730 nm Incl. color module 7 (UVA): 360-670 nm / 460 nm - 730 nm	
Color modules	<ul style="list-style-type: none"> <li>Up to 6 color modules can be used simultaneously (6-plex)</li> <li>8 modules for DNA- and protein analysis available</li> </ul> 	
Configuration	<ul style="list-style-type: none"> <li>Preconfigured with color module 1</li> <li>Free configuration and retrofitting possible</li> </ul>	

## Parameters color modules

Name	Excitation	Emission	Examples of compatible fluorescent dyes
Color module 1 for qTOWERiris Series (blue)	455 ± 15 nm	515 ± 10 nm	FAM™, SYBR®Green, ATTO425, Cyan500
Color module 2 for qTOWERiris Series (green)	520 ± 10 nm	560 ± 15 nm	JOE™, HEX™, VIC®, YakimaYellow®, TET™
Color module 3 for qTOWERiris Series (yellow)	550 ± 10 nm	585 ± 10 nm	TAMRA™, ATTO550
Color module 4 for qTOWERiris Series (orange)	580 ± 10 nm	620 ± 15 nm	ROX™, TexasRed®, Cy3.5®, ATTO590
Color module 5 for qTOWERiris Series (red)	625 ± 10 nm	670 ± 15 nm	Cy5®, ATTO633
Color module 6 for qTOWERiris Series (NIR1)	660 ± 10 nm	710 ± 20 nm	Cy5.5®, ATTO665
Color module 7 for qTOWERiris Series (UVA)	375 ± 15 nm	475 ± 15 nm	ATTO390, CPM, 1,8-ANS
Protein module 1	465 ± 15 nm	585 nm HP	SYPRO® Orange

## Technical Data

### qTOWERiris / qTOWERiris touch / qTOWERiris 384

## qPCR Application

Parameter	96 Well System / 384 Well System
Dynamic range	10 orders of magnitude
Sensitivity	Detects 1 copy of target sequence
Passive reference	Not necessary, due to single excitation/detection of each well, Option is available in software
Multiplex analysis	<ul style="list-style-type: none"> <li>▪ Up to 6-fold</li> <li>▪ Wide spectral range for reduced fluorescence crosstalk</li> </ul>

## Dimensions

Parameter	96 Well System / 384 Well System
Weight	Approx. 30 kg
Dimensions (W x D x H)	30.4 cm x 31.6 cm x 58.7 cm
Space requirement (W x D x H)	Open device: 30.4 cm x 47.7 cm x 61.3 cm

## Additional technical data

Parameter	96 Well System / 384 Well System
Interface	PC connection via Ethernet or USB
Fuses	2× 10 AT / 250 V
Line Voltage	100 V, 115 V and 230 V version
Power consumption	Max. 850 W
Operation conditions	15 to 35 °C, 70% humidity, max. 2,000 m NN
Warranty	10-year long-term warranty on high performance optics and hinges

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. ©Analytik Jena GmbH+Co. KG