Rapid Single Bacterial Cell Quantification

The QUANTOM Tx™ Microbial Cell Counter can automatically identify and count individual bacterial cells in minutes. Bacteria are an incredibly diverse group of organisms that come in a variety of shapes, sizes, and arrangements, making quantification a challenging feat. The ubiquitous colony counting method is a time-consuming, unreliable estimation at best and even expensive flow and laser scanning cytometers register each particle, single or clustered, as a single event. The QUANTOM Tx™ counts fluorescence-stained microbial cells through automated fluorescence imaging and analysis to produce accurate and objective bacterial cell counts.

QUANTOM™ Innovations for Increased Counting Accuracy

Uniform distribution and immobilization
The QUANTOM™ Cell Loading Buffer I immobilizes cells within the medium and the QUANTOM™ Centrifuge evenly distributes the cells along a single plane for accurate detection.

Bacteria-specific declustering algorithm
The QUANTOM Tx™ has a novel detection and declustering algorithm that can accurately count individual bacterial cells in the lightest clusters or the longest chains.

Counting with the QUANTOM Tx™

1. Mix cells with stain and loading buffer. Load into a counting slide.
2. Spin the slide in the QUANTOM™ Centrifuge.
3. Put the slide in the QUANTOM Tx™. Press Count.
4. Review data.
**Specifications**

**QUANTOM™ Microbial Cell Counter**

**Physical Characteristics**
- Instrument type: Benchtop bacterial cell counter
- Touchscreen: 10" capacitive touchscreen, 1280 x 800 pixels
- Dimensions: 43.3 x 31.0 x 22.5 cm (17.0 x 12.2 x 8.8 in)
- Weight: 10.8 kg (23.9 lb)

**Technical Specifications**
- Cell detection method: Automated fluorescence microscopy
- Processing time: ~ 10 seconds (to capture and analyze 10 images)
- Sample concentration range: 2 x 10^6 to 1 x 10^9 cells/mL (optimal: 1 x 10^6 to 5 x 10^8 cells/mL)
- Cell size range: 0.3-90 μm
- Sample volume: Loading volume: 5-6 μL, measuring volume: 0.09 μL (10 images)

**QUANTOM™ Centrifuge**

**Physical Characteristics**
- Instrument type: Benchtop centrifuge
- Dimensions: 21 x 21 x 22 cm (8.3 x 8.3 x 8.7 in)
- Weight: 5.64 kg (12.4 lb)

**Technical Specifications**
- Maximum capacity: Up to 8 QUANTOM™ M50 Cell Counting Slides
- Maximum RPM: 4,000
- Safety features: Safety lid locks, lid drop protection, automatic door release
- Electrical requirements: 110 V AC, 60 Hz, 1A or 220-240 V AC, 50/60 Hz, 0.5A

**QUANTOM™ M50 Cell Counting Slides**

**Physical Characteristics**
- Material: Poly(methyl methacrylate) (PMMA)
- Dimensions: 25 x 75 x 1.65 mm
- Chamber volume: 5-6 μL

**Ordering Information**

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<td>Q10002</td>
<td>QUANTOM™ Centrifuge</td>
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**TESTIMONIALS**

The QUANTOM™ is extremely user-friendly with a beautiful, intuitive interface. The entire process from start to finish is very quick, so we were able to gather a lot of data in a short amount of time. We mastered the staining protocol very quickly, and even the more inexperienced members of our research group were able to use the machine properly with ease. We were blown away by the quality of the images we received, even mixed cultures of bacteria gathered from various biological samples!

Laila Phillips
Small Hospital Division of Gastroenterology

Great results. I am very happy with the instrument. The instrument is very easy to use. The sample prep is quick and the replicates are pretty tight. I used it for counting very small cells, as well as bacteria that grow in chains or clusters and the software does a great job analyzing the image. I compared the results to other methods and the results are spot on. Overall, I am very happy with the purchase.

Violeta Medak
Leuko Biosciences

**Bacteria Validated on the QUANTOM™**

**Gram positive**

- Bacillus anthracis
- Bacillus subtilis
- Bacillus cereus
- Bacillus megaterium
- Mycobacterium avium

**Gram negative**

- Enterobacter aerogenes
- Pasteurella haemolytica
- Pasteurella multocida
- Pasteurella pneumotropica

This is a partial list of bacteria tested on the QUANTOM™.