rqmicro
rapid quantitative microbiology

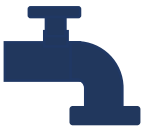
# rqmicro.COUNT

## Taking Control of Microbiological Water Analysis

Rapid analysis for reliable risk control and monitoring


- ***Legionella* Detection**
  Quantification of live *Legionella* within 2 hours for actionable results
- **Total Cell Count Analysis**
  Assessment of total microbiological load for effective process control in under 1 hour
- **Easy and Robust Platform**
  Standardized and automated sample preparation and analysis

# rqmicro.COUNT rapid assays for various applications

| | *Legionella* | Total Cell Count |
|---|---|---|
| **Water Utilities**  | • Control water reservoirs<br>• Monitor water treatment<br>• Expand your range of services<br><br>✓ Ensure water quality | • Surveil raw water<br>• Detect sudden contaminations<br>• Monitor effectiveness of water treatment measures<br><br>✓ Ensure water quality |
| **Industry**  | • Monitor process water<br>• Detect outbreaks<br>• Optimize water treatment<br><br>✓ Reduce health risks and avoid facility shut down | • Measure bacterial growth<br>• Ensure consistent quality<br>• Detect contamination<br><br>✓ Improve quality and risk control |
| **Facility Management**  | • Control water installations<br>• Find *Legionella* hotspots<br>• Evaluate success of disinfection measures<br><br>✓ Improve safety and service for your clients | • Control water treatment installations<br>• Identify contaminations<br><br>✓ Improve water quality and service for your clients |

*"The kit presents a new technology emerging in environmental monitoring of Legionella with faster time to result, matrix independence, and good sensitivity."*

*Inside Laboratory Management, AOAC International Jan/Feb 2021*

PERFORMANCE TESTED AOAC RESEARCH INSTITUTE LICENSE NUMBER 052002

License No.: 052002
for *L.p.* SG 1 Detect kit

# rqmicro.COUNT features

## Rapid & Reliable

- Automated immunomagnetic separation and flow cytometric analysis within 60 min
- Parallel processing of up to 4 samples
- Actionable data based on the analysis of single cells including viability assessment

## Convenient & Portable

- Weight: 12kg
- Portable device with small footprint: 24 x 22 cm
- Maintenance-free cartridge system
- No start-up/shutdown or cleaning cycles
- Self-calibrating optics
- Intuitive operation through a touch screen

## Consistent & Unbiased

- Cartridge system:
  - no sample cross contamination
  - standarized sample purification and analysis
- Predefined instrument settings and analysis protocols

| Product number | Product name |
|---|---|
| 1200 | rqmicro.COUNT |
| 31110 | *L.p.* SG 1 DETECT Kit (96 tests) |
| 31210 | *L.p.* SG 1-15 DETECT Kit (96 tests) |
| 30010 | Total Cell Count (TCC) (48 tests) |

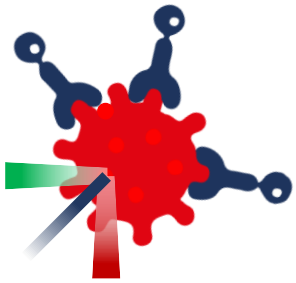
*Operators of water systems and water labs benefit from actionable results that enable effective microbiological hygiene management.*

***Legionella*** have been recognized as the largest health burden among water pathogens. **Total Cell Count** is an established parameter to assess the total microbiological load of drinking and process water.

rqmicro.COUNT enables the on-site and in-lab analysis of bacteria on a single-cell level. The system isolates target cells from samples using immunomagnetic separation and determines the cell concentration of viable cells using flow cytometry. Up to four samples can be processed in parallel. These high-end technologies have been limited to use in academic, research and development laboratories for the past 40 years and are now available for routine use.

## Science

rqmicro.COUNT technology has been developed after 12 years of research and development at rqmicro (**r**apid **q**uantitative **micro**biology) in collaboration with the Swiss Federal Institute of Technology (ETH) and Swiss Federal Institute of Aquatic Science and Technology (Eawag).After more than 100 years, analytical methods in water microbiology have seen little progress and are mainly based on cell cultivation. The method developed by rqmicro does not require cell cultivation due to the specific isolation of target cells and the high-performance optical detection. As a result, the method delivers results on single-cell level within hours instead of days.

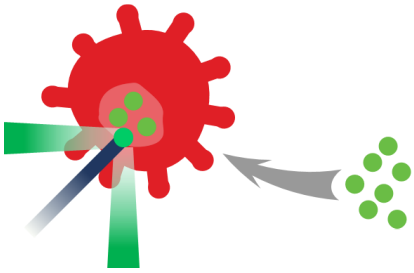


- rqmicro method for the quantification of intact *Legionella* cells

1. Specific labelling
   Magnetic particles and fluorescent dyes bind to target cells
2. Target cell isolation
   Automated isolation and concentration of cells on a single-use cartridge
3. Single-cell analysis
   Flow cytometric counting and live/dead analysis of cells

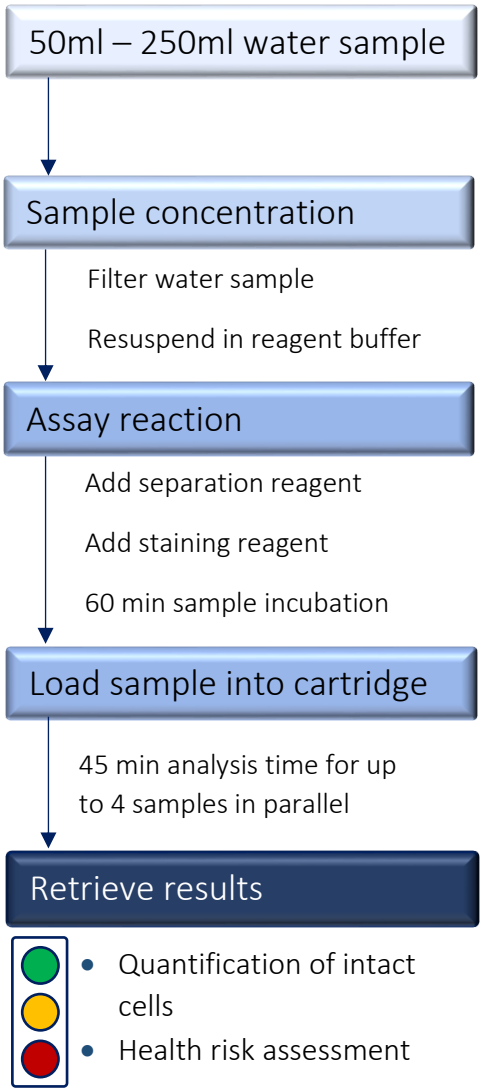
- rqmicro method for the total cell count measurement

1. Unspecific labelling
   Staining of bacterial cells with fluorescent dyes
2. Single-cell analysis
   Flow cytometric counting of cells



# Workflow per method

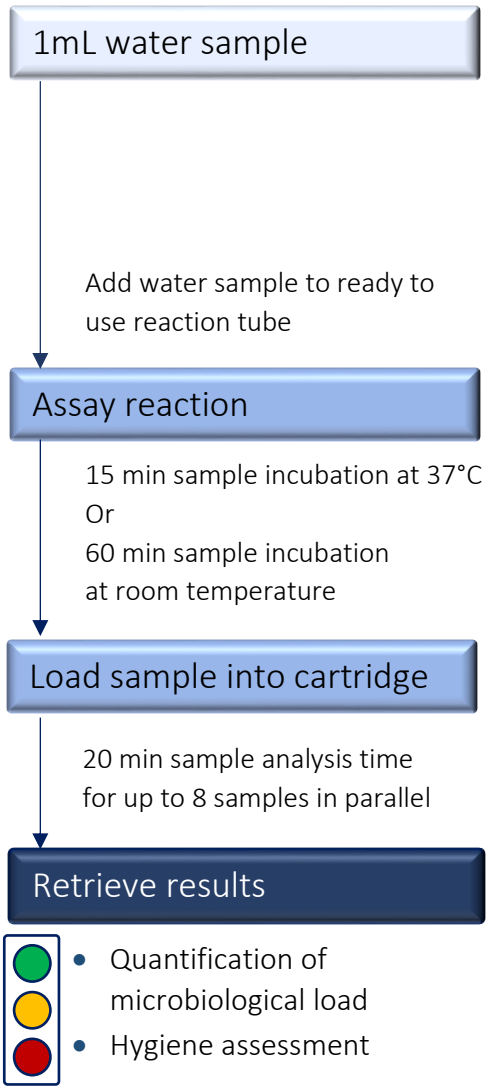
## *Legionella*




### Performance

- Detection: *Legionella pneumophila* SG 1 - 15
- Matrixes: Potable and industrial process water
- Quantitative working range: $10^2$ to $10^6$ cells in 100 ml
- Hands on time per sample: 10 min
- Time to result: 2 hours

## Total Cell Count




### Performance

- Detection: Total number of bacteria
- Matrixes: Potable and industrial process water
- Quantitative working range: $10^2$ to $10^7$ cells/ml
- Hands on time per sample: 2 min
- Time to result: 40 min

# MAKE WATER SAFE

*"The aim of rqmicro is to enable customers to take control over the microbiological situation in water systems. Reliable and quantitative data makes it possible to improve water management and risk control to make water safer and create value for the water industry."*

*Dr. Hans-Anton Keserue, CEO of rqmicro*

References


- Validation of the *Legionella pneumophila* SG1 DETECT Kit for Quantification of *Legionella pneumophila* Serogroup 1 Bacteria in Potable Waters, Process Waters and Surface Waters: AOAC Performance Tested Method SM 052002 (AOAC International, 2020)
- Aqua & Gas N° 6, 2020
- External Validation of rqmicro.COUNT for Bacterial Cell Count (White Paper; rqmicro, UKSH Kiel, 2020)
- *Legionellen*-Schnelltest kommt im Labor der Berliner Wasserbetriebe zum Einsatz (Aqua & Gas, No° 7/8, 2018)

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## Notes

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