



### BENTLEY BACTOCOUNT IBC-M TECHNICAL SPECIFICATIONS\*

Type of Samples	Milk of typical composition
<b>TOTAL BACTERIA APPLICATION</b>	2000 to 10+ million individual bacteria/ml
<b>Repeatability</b>	Range (µL) & Specifications 10-50, Sr ≤ 0.07 log 51-100, Sr ≤ 0.06 log 101-300, Sr ≤ 0.05 log >300, Sr ≤ 0.03 log
<b>Reproducibility</b>	10-50, Sr ≤ 0.14 log 51-100, Sr ≤ 0.12 log 101-300, Sr ≤ 0.10 log >300, Sr ≤ 0.06 log
<b>Accuracy</b>	Sy,x ≤ 0.30 log (ISO 4833, IDF 100B:1991 or AOAC 986.33) Cow: Sy,x = 0.167 (AIA) Sheep: Sy,x = 0.245 (AIA) Buffalo: Sy,x = 0.201 (AIA)

<b>SOMATIC CELLS APPLICATIONS</b>	
Measuring range:	0-10 000 000 somatic cells/ml
Accuracy (Cv):	≤ 10% (ISO 13366-1/IDF 148:2007)
Carry-Over:	≤ 1.0% (typically below 0.5%)
Repeatability (Cv):	SCC @ 500 000 cells/ml ≤ 2.0% SCC @ 300 000 cells/ml ≤ 2.5% SCC @ 100 000 cells/ml ≤ 3.5%
<b>Speed</b>	Analyzing time: < 1 minute Prep time: 15 seconds Incubation time: 1' (scc)/10' (ibc)
<b>Undiluted Work Factor</b>	10 – 100
<b>Power Supply</b>	115/220 VAC
<b>Dimensions</b>	Width: 58.0 cm Depth: 47.0 cm Height: 38.0 cm Weight: 30.0 kg
<b>Sample Temperature</b>	4 – 42° C

### SERVICE AND SUPPORT

Delivering a superior level of customer support has always been a top priority at Bentley Instruments. We understand the importance of making sure your laboratory is producing results, 24 hours a day, seven days a week.

Our experienced team of support staff provides onsite training, installation and support, as well as Internet-based remote control support to help you maintain the highest level of productivity.

\* Specifications are subject to change without notice.



Bentley Instruments, Inc.  
4004 Peavey Road  
Chaska, MN 55318 USA

Tel: 952-448-7600 Fax: 952-368-3355  
E-mail: Sales@BentleyInstruments.com  
www.BentleyInstruments.com

© 2012 Bentley Instruments Inc. All rights reserved.

## Real-Time and Highly Accurate Enumeration of Individual Bacteria and Somatic Cells in Raw Milk



**MICROVAL**

European validation and certification organisation

Validated to be at least equivalent to the EN-ISO 4833-1:2013 and 4833-2:2013 reference methods for the enumeration of microorganisms in raw cow milk (Certificate n° 2013LR44)

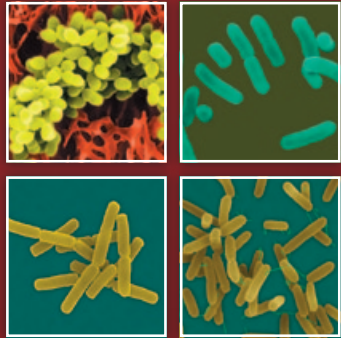
## BactoCount IBC-M

### THE MOST ACCURATE BACTERIA AND SOMATIC CELL COUNTER IN THE WORLD

The BactoCount IBC-M is a semi-automated instrument that uses a proprietary process based on flow cytometry (FCM) for the rapid and highly accurate enumeration of individual bacteria and somatic cells in raw milk.

The rapid test for bacteria and somatic cells makes it an ideal and unique solution for any processing plant or laboratory involved in the quality assessment of milk.

**ANALYTICAL INSTRUMENTS FOR THE DAIRY INDUSTRY**



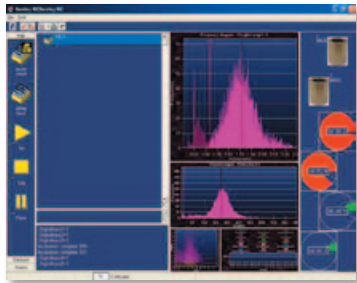


# Bentley BactoCount IBC-M Technology



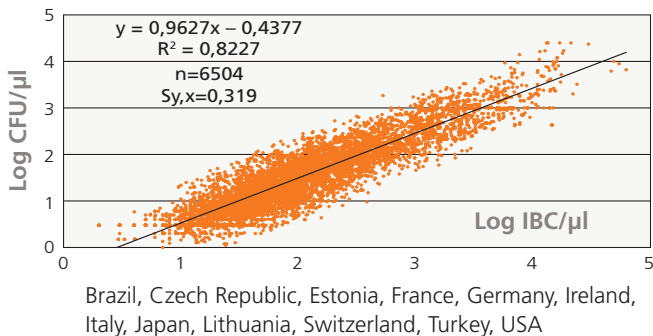
## THE BACTOCOUNT IBC-M CONSISTS OF THREE MAIN MODULES

- **COMPUTER:** A powerful external computer allows the IBC-M to run and monitor the instrument at all times. Diagnostic features have been integrated in the software to warn the operator if the instrument is not functioning properly. All the analysis and histogram data is saved in a database and can be recalled at any time.
- **INCUBATOR:** Incubation is performed in single-sample holders placed on a heater plate next to the analyzer. The milk and incubation reagents are dispensed in the sample holder and subjected to mechanical, chemical and heat treatments. During the incubation, the interfering components are removed and the bacteria DNA is labeled with a fluorescent marker. The incubation time of each sample is monitored automatically by the software and the operator is prompted to analyze the sample after completion of the incubation period.
- **COUNTER:** The flow cytometer includes a powerful solid state laser, flow cell, microscope, narrow band filter, and a highly sensitive photomultiplier. The principle of operation is described on the next page. The counting assembly is compact, completely closed and thermostated at 30° C to provide high stability.



## BACTOCOUNT 2011 "UNIVERSAL" CONVERSION EQUATION (vs. ISO 4833 Standard)

12 countries, 15 BactoCount, 9 years, 6504 samples



## PHARMACEUTICAL-GRADE CONSUMABLES

To ensure optimal quality, all chemicals are delivered ready to use from the manufacturer. This allows the IBC-M to consistently maintain the highest level of accuracy.

## COMPREHENSIVE DIAGNOSTICS

Designed as an Internet appliance, the instrument supports a long line of diagnostics variables, providing lab managers with a level of insight into the operation of the instrument not previously available.

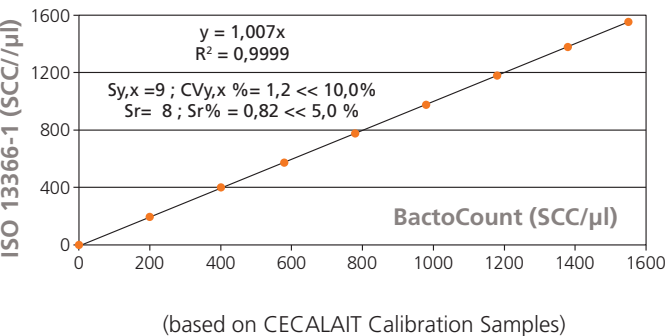
Equipped with the proper Internet connection, the instrument can even send an e-mail to a remote monitor, i.e., managers' home e-mails, cell phones, etc., or simply call home to the manufacturer.

## EVALUATED BY THE AIA (IT), CECALAIT (FR) REFERENCE LABORATORIES AND THE MRI MAX RUBNER-INSTITUT (DE)

The BactoCount IBC-M is based on the well-proven and worldwide-recognized technology of the IBC 50-150 models, which have been approved as an alternative method to the ISO 4833/IDF 100B:1991 standards for the rapid and accurate determination of the hygienic quality of cow, sheep, and buffalo raw milk for payment purposes. **The BactoCount method is now a standard in the Dairy Industry with several hundred units used worldwide by milk payment laboratories, dairy plants and National Reference Laboratories.**

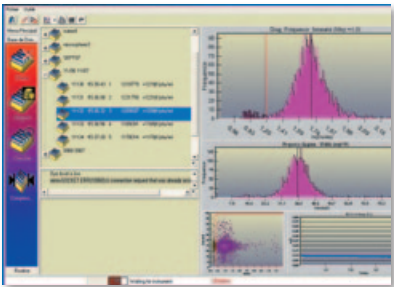
## SOMATIC CELLS ENUMERATION IN RAW MILK

BactoCount IBC-M vs. ISO 13366-1 Standard

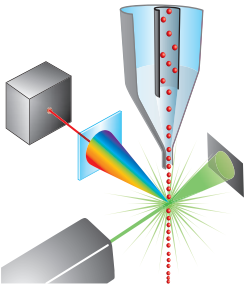


## BACTOCOUNT IBC-M TECHNICAL OVERVIEW & PRINCIPLE OF OPERATION

- **Bacteria Application:** An incubation reagent consisting of a clarification buffer, a proteolytic enzyme, and a fluorescent marker is added in order to lyse the somatic cells, solubilize the fat globules and proteins, permeabilize the bacteria and stain their DNA.
- The fluorescent marker intercalates rapidly and selectively into all the bacteria double-stranded nucleic acid.
- The mixture is sonicated manually during the incubation period to help the chemical breakdown of the interfering particles, disrupt the remaining bacteria colonies to improve the detection of individual bacteria, and reduce the background fluorescence.
- After the incubation period, a portion of the incubation mixture is transferred to the flow cytometer where the bacteria are aligned and exposed to an intense laser beam and fluoresce.
- The fluorescent signal is collected by the optics, filtered, and detected with a photomultiplier.
- The intensity and height of the fluorescent pulses are recorded and used as gating parameters.
- The sorted pulses (IBC) are then converted into Colony-Forming Units (CFU) after the application of a conversion equation.
- **Somatic Cells Application:** The principle of operation is similar for the somatic cells application, but a different chemistry is used and there is no sonication treatment.



IBC Standard Distribution



## FEATURES AND BENEFITS

- Proprietary robust flow cytometer built on well-proven technology
- Versatile: Bacteria and somatic cells enumeration on the same platform
- **Highly Accurate:** Can be used as an alternative method to the ISO 4833/AOAC 986.33 (Total Flora) and ISO 13366-1 (somatic cells) standards
- Rapid: Results available in 1' (somatic cells) and 10' (bacteria)
- Excellent instrument standardization and quality control with the IBC lyophilized bacteria standard
- Instrument pre-calibrated with a universal conversion equation
- Extensive Internet remote control capabilities
- Easy-to-use, low-maintenance design: Low cost of ownership

## APPLICATIONS AND VALUE

- Milk payment, screening and segregation
- Enable dairies to **comply with EU Commission Regulation (EC) n° 1662/2006** laying down specific hygiene rules for food of animal origin (total flora < 100 000 cfu/ml, SCC < 400 000 cells/ml)
- Real-time detection of milk tanker contamination before unloading
- Real-time detection of milk silo contamination before processing
- Segregation of the milk as a function of its quality
- Improve end-products consistency
- **FAST RETURN ON INVESTMENT**



IBC Standard