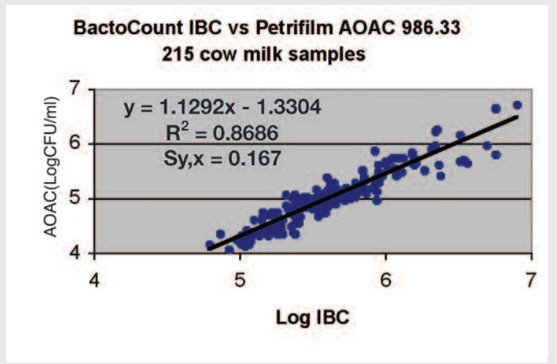
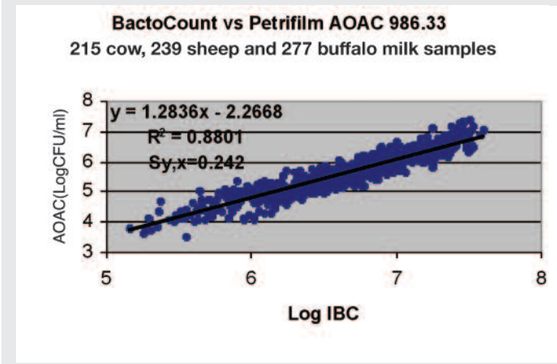
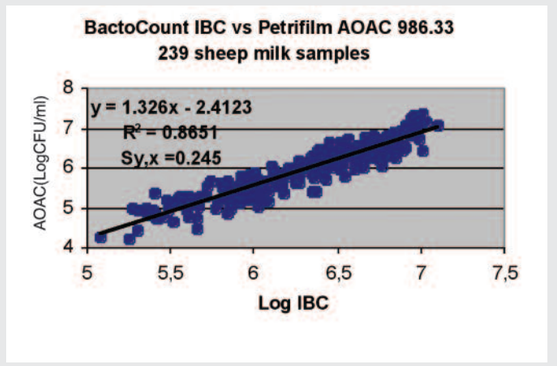
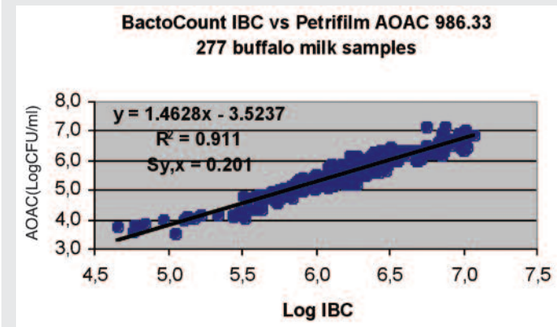
Regression Analysis & Specifications









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.

From onsite training and installation to long term technical support, our experienced staff of engineers is there to help you maintain the highest level of productivity.

BENTLEY INSTRUMENTS

Bentley Instruments, Inc. P.O. Box 150
Chaska, Minnesota 55318 USA
Tel: 952-448-7600 Fax: 952-368-3355
E-mail: Sales@BentleyInstruments.com www.Bentleyinstruments.com

BactoCount IBC-M Specifications*

Measurement Range:	2000 to 10+ million individual bacteria/ml
Repeatability:	(Range,Specifications,CECALAIT,AIA) 10-50, Sr ≤ 0.07 log 51-100, Sr ≤ 0.06 log 101-300, Sr ≤ 0.05 log >300, Sr ≤ 0.03 log
Reproducibility:	10-50 SR ≤ 0.14 log 51-100, SR ≤ 0.12 log 101-300 SR ≤ 0.10 log >300 SR ≤ 0.06 log
Accuracy:	Sy,x < 0.30 log (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)
Speed:	Analyzing time << 1 minute Prep time << 10 minutes
Work Factor:	< 100
Power Supply:	115/220 VAC
Dimensions:	Width: 58.0 cm Depth: 47.0 cm Height: 38.0 cm Weight: 30.0 kg
Fluid Use: Milk Intake:	Milk used 0.5 to 1cc
Sample Temperature:	4 - 42°C
Type of Samples:	Milk of typical composition

* Specifications subject to change without notice.

Bentley BactoCount IBC-M

Rapid & Accurate Enumeration of Individual Bacteria in Raw Milk

The BactoCount IBC-M is a semi-automated instrument that uses flow cytometry (FCM) for the rapid enumeration of individual bacteria in milk.

The rapid test for bacteria makes it an ideal solution for any processing plant or test laboratory involved in quality assessment on milk.

- **Analyzing time is less than one minute and sample preparation is completed in less than 10 minutes.**
- **Use of a standard computer offers flexible data output options.**
- **Easy operator assisted sample preparation.**
- **Low maintenance design.**

BENTLEY INSTRUMENTS

Analytical Instruments For The Dairy Industry

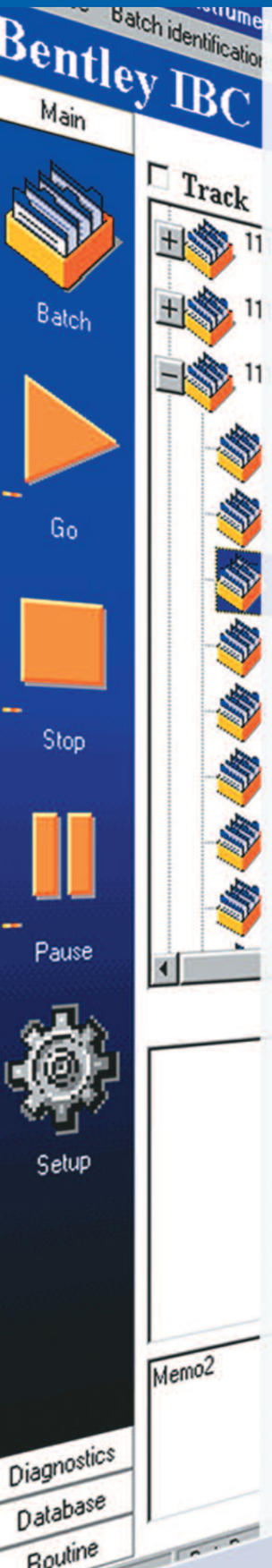
Evaluated by the CECALAIT and AIA reference laboratories.
The BactoCount IBC-M is based on the IBC 50-150 models which have been approved as an alternative method to the IDF 100B:1991 reference method for the rapid and accurate determination of the hygienic quality of cow, sheep and buffalo raw milk for payment purposes. The IBC meets AOAC 986.33.

Technical Overview & Principle of Operation

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

- An incubation reagent made up with 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 fluorescence 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 fluorescence signal is collected by the optics, filtered, and detected with a photomultiplier.
- The intensity and height of the fluorescence pulses are recorded and used as gating parameters.
- The sorted pulses are then translated into individual bacteria count after instrument calibration.

BactoCount IBC-M: Accurate Enumeration of Individual Bacteria in Milk



The BactoCount IBC-M consists of three main modules:

Computer

A powerful external computer allows the IBC-M to run, and monitors the instrument at all times. Diagnostic features have been integrated in the software to warn the operator if the instrument is not functioning normally. All the analysis and histogram data is saved in a database and can be recalled at anytime.

Incubator

Incubation is performed in single sample holders placed on a heater plate next to the analyzer. The milk and incubation reagent are dispensed in the sample holder and subjected to mechanical, chemical and heat treatment. During the incubation, the interfering components are removed and the bacteria DNA is labeled with a fluorescent marker.

Counter

The flow cytometer includes a powerful solid state laser, a flow cell, a microscope, a narrow band filter, and a highly sensitive photomultiplier. The laser excites the fluorescent marker intercalated into the bacteria DNA and the fluorescence pulses are collected with the optics, filtered with the narrow band filter, and detected with the photomultiplier. The intensity and width of the fluorescence pulses are recorded and used as gating parameters. The sorted pulses are then translated into individual bacteria count after instrument calibration. The counting assembly is compact, completely closed and thermostated at 30° C to provide a high stability.

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.

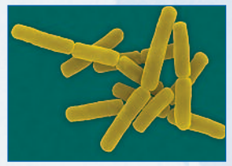
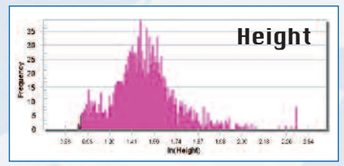
Comprehensive Diagnostics

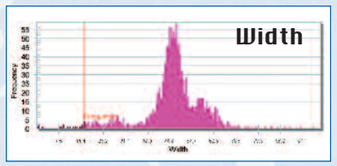
Designed as an internet appliance, the instrument supports a long line of diagnostics variables, providing lab managers with a level of insight into the operation of the instrument not previously available.

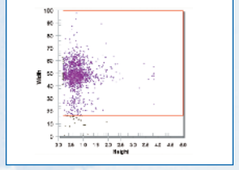
Equipped with the proper internet connection, the instrument can even send an e-mail to a remote monitor, i.e. managers' home e-mail, cell phones, ect., or simply call home to the manufacturer.

Typical peak, width and scatter distributions obtained with the BactoCount method of the predominant bacteria species used for the assessment of the hygienic quality of raw milk.

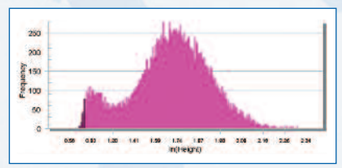
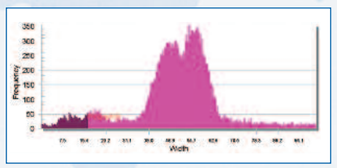
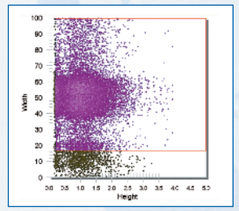
Bacillus Bacterium

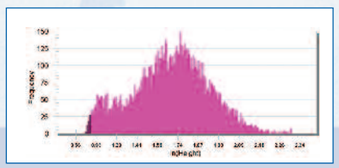
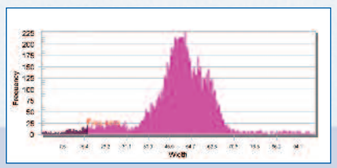
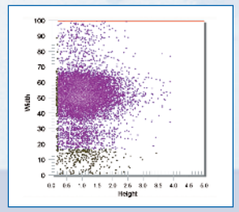




Lactobacillus Bacterium

Pseudomonas Bacterium

S Aureus Bacterium