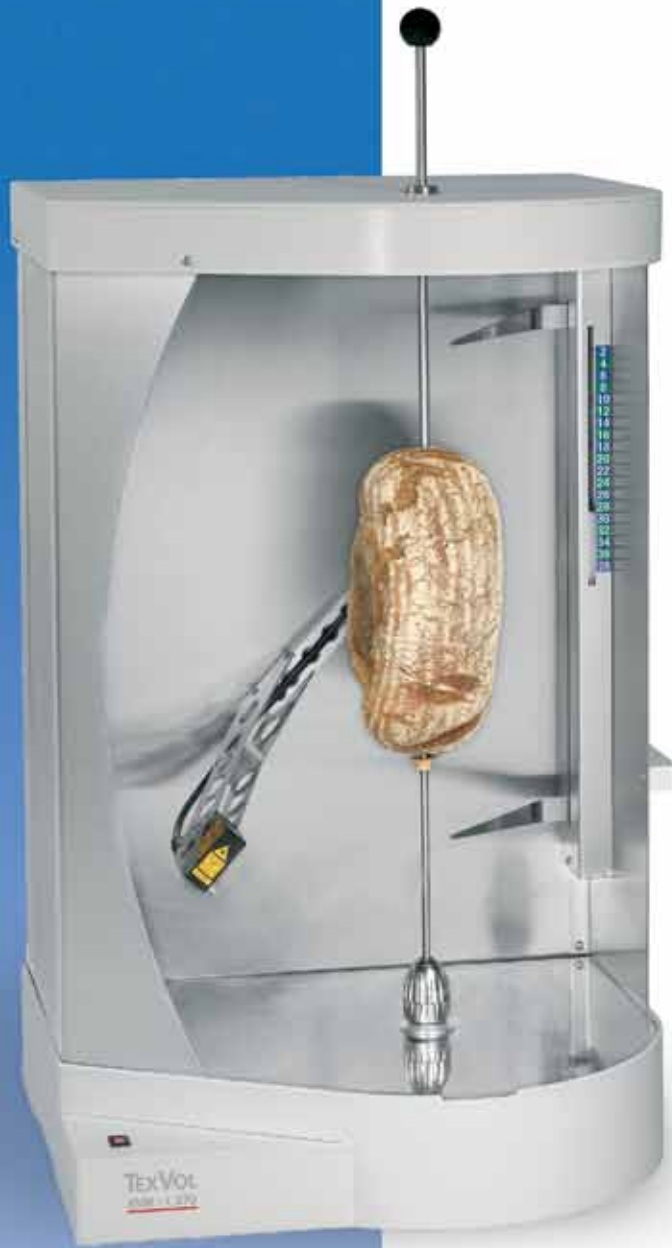


Volume Measurement

TexVol BVM-L Series

Accurate
Volume in
seconds





The BVM-L Series - save time and get reliable results

Ever since industrialized food production began, producers have worked hard to ensure efficiency without compromising product quality and uniformity. For the food industry, the globalization of both production and consumption creates an urgent problem: accurate analysis that is repeatable and applicable from one production location to the next.

Break the Habit

The time-honored seed displacement method creates verification problems not only between different production sites, but even within the single production site. Quite simply, the number of uncontrollable variables creates too large a margin of error. For major producers, this means a continuous and costly investment in standardization techniques. For their smaller-scale counterparts, it has often created a large and difficult hurdle to successful growth.

The BVM-L series of volume measuring instruments offers accurate, reproducible and rapid volume measurement of food products. It uses advanced laser topography technology, yet is very easy to use. In less than a minute it determines volume, length/height, width and depth.

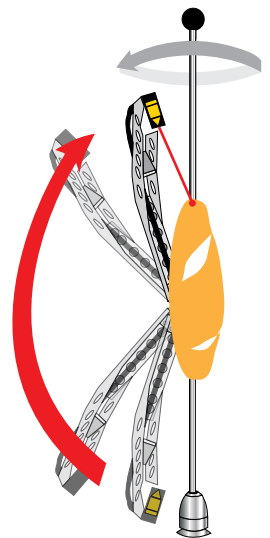


Using an optional load cell, weight and specific volume can also be measured. All the information is displayed on a computer screen together with a rotatable diagram of the product.

Laser topography

Laser topography is a recent development which allows much more accurate and rapid volume measurement than any other method. A laser sensor moves from the top to the bottom of the rotating product, constantly measuring the position of the product surface to generate a full 3D picture. The length/height, width and depth can then be calculated.

A basic laser topography analysis can be performed by simply moving the laser sensor up and down the product. While adequate when the product to be measured is cylindrical, food products with their irregular shapes require a slightly different approach. The BVM-L series uses a more advanced 360 degree measurement where the laser sensor moves not simply up and down, but in a half-circle around the product, measuring both from above and from below.





Snacks



Bread



Meatballs



Cheese



Chocolate



Cookies

Key features

Fast - Volume and size parameters can be determined in as little as 10 seconds. For higher accuracy analysis times of up to 60 seconds can be used.

Accurate and Reproducible - The BVM-L is the most accurate laser topography volume meter, and nearly an order of magnitude more accurate than seed displacement tests. Results are not influenced by the operator.

Easy to use - Just place your product and start the analysis. The user interface is intuitive and a short training is enough to get operators to confidently run the BVM.

Versatile - Analyze all types of dry food products, such as baked goods, extruded snackfoods, candy and more.

Data handling and analysis - The BVM-L saves the measurement data directly in database files for easy access or transfer to spreadsheet programs. Each analysis can be tagged with type of product and batch code, allowing for detailed analysis and follow-up of results. Results are presented in tables, and as a rotatable 3D graph of the product.

Robust - Suitable in laboratory or production environments.

How the instrument works

The sample is attached to a support shaft to ensure a stable position throughout the measurement. Analysis is then started using the VolCalc software, and the laser sensor will move in a half circle around the sample. After the measurement a 3D diagram is displaced. The results are shown in a table and is stored in a database.

The BVM can be equipped with a load cell and automatically give the weight of the product and the specific volume. When the BVM is not equipped with a load cell, the specific volume can be calculated automatically if the weight is entered into the VolCalc software before running a test.

How to analyze a sample

The software of BVM makes it easy to start an analysis.

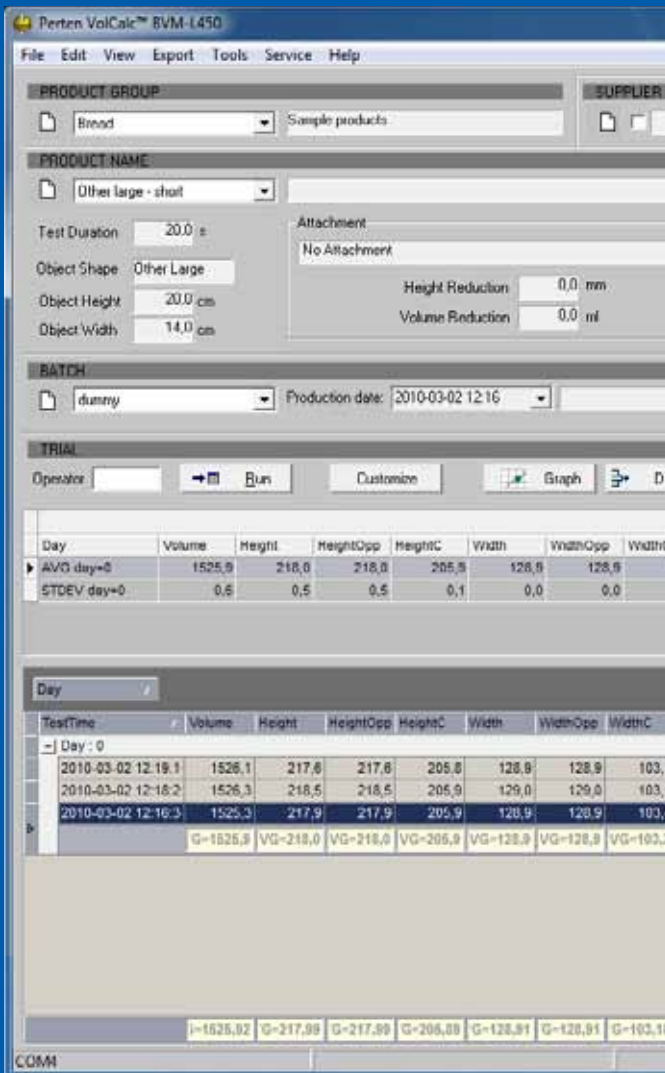
1. Select a Product Group
2. Select a Product Name
3. Select/Add a Batch.
4. Attach the product to the support shaft.
Weigh the product manually if wanted.
5. Run a test.
6. The diagram and the results are displayed on screen after the measurement. It is possible to rotate and zoom in and out the diagram.

How to view the results

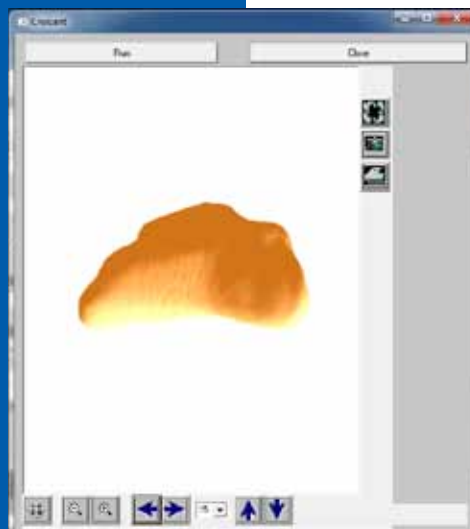
Statistics are automatically calculated for the results. Sort the results on the screen. Choose which results to be shown on screen by dragging them to and from the Customize box.

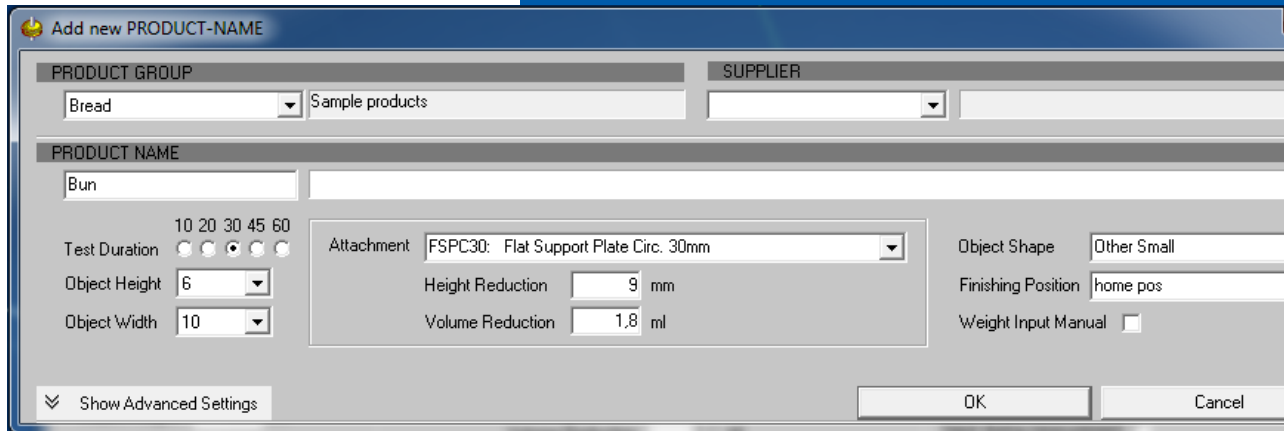
It is possible to add specific information to a batch by adding a comment. E.g. if different enzymes are used in the batches to the same Product name, it is possible to specify which enzyme that is used before starting the test. On trial level an extra input function allows for adding comments also to each individual sample.

For further processing of the data, you can transfer it to a spreadsheet software.



6.





Setting up new products

You can set up your own measurement profiles, with settings that give you the results you need from your samples.

Choose the desired test duration. The longer the test, the greater the accuracy, and it is possible to set the test to up to 60 seconds. However, a 20 second test duration is often sufficient.

Set the standard values of the results and the accepted variation. After the measurement the results that are different from the accepted variation is highlighted, thus giving a warning of an abnormal result.



The laser sensor will move in a half circle around the sample.

Attachments & Support shafts

In order to be able to get a reliable volume, the product has to be attached properly to the instrument. This is done by different attachments. The attachments are put on the support shafts. The instruments come with three support shafts in different length. Also custom made attachments and support shafts are available for specific needs.



Flat supports These are used for most products. They exist in many different sizes for smaller and larger products. The nails are either 10 or 20 mm in height.



Circular supports These are used for circular products and exist from a diameter of 30 mm to 280 mm for larger circular products like pizzas.



Hook attachments These are mostly used for smaller or thin products, like apple strudle and baguettes.

Adjustable attachments This is used for small products like cookies, pralines and candy. These are mostly used in the smaller sized instruments.

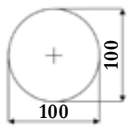


BVM Model range - select your model

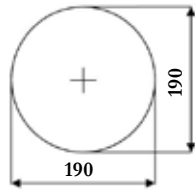
Product size Here is the maximum size of the products that can be measured in the different sized instruments.



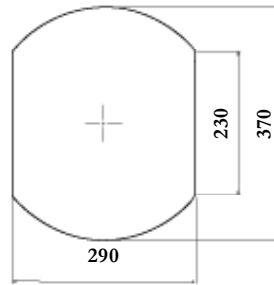
L100



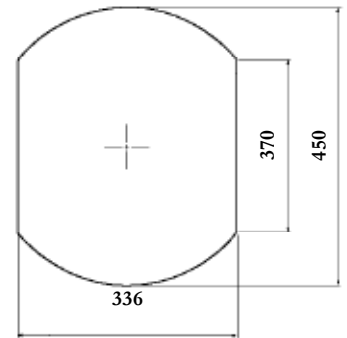
L190



L370



L450



Technical Specification

	BVM-L100 (LC)*	BVM-L190 (LC)*	BVM-L370 (LC)*	BVM-L450 (LC)*
Max height of product measured:	10 cm	19 cm	37 cm	45 cm
Max width of product to be measured:	10 cm in diameter	19 cm in diameter	28 cm in diameter	33 cm in diameter
Instrument dimensions (HxWxD):	47x36x36 cm	54x36x36 cm	78x51x45 cm	91x59x46 cm
Weight:	17 Kg	19 Kg	32 Kg	40 Kg
Voltage:	110-240V 50 - 60 Hz	110-240V 50 - 60 Hz	110-240V 50 - 60 Hz	110-240V 50 - 60 Hz
PC Interface:	1 RS 232 com port, 1 USB com port			

* LC = Load Cell. The BVM can be equipped with a load cell. Weigh products up to approx. 1 kg in BVM 100 & 190 and up to approx. 3 kg in BVM 370 and 450.

PC Requirements

Operating System: Windows 2000, XP, Vista, 7

Processor: 1.6 GHz

Memory: 512 Mb RAM

Hard Drive Space: 100+Mb

Volume Measuring Instruments

The BVM-L series is designed to provide fast, accurate, and reproducible measurement of volume. A laser sensor moves in a half circle around the rotating product. The length/height, width and depth are measured with all information displayed on a computer screen along with a 3D, rotatable diagram of the product. The instrument is also available with a load cell thereby providing product weight, specific volume, and density.



Users

Bakeries, Millers, Food companies, Food Ingredient Companies, Research Institutes, Universities, Baking Ingredients Manufacturers, Extrusion Manufacturing.

Features and Benefits

Fast - Simple measurement of volume, 10 - 60 s measuring times – with 20-30 seconds common.

Accurate and Reproducible - Nearly an order of magnitude more accurate than seed displacement tests.

Objective - not influenced by individual operators with transferable results.

Powerful - Comprehensive, but easy-to-use software - operate the instrument directly after installation, Creates a 3-D rotatable diagram.

Versatile - Determine volume, length/height, width, depth, specific volume and weight on many different product types.

Data handling - Save data directly in database files for easy access or transfer to spreadsheet programs.

Robust - Suitable in laboratory or the production environments

Non-contact measurement - Non-destructive measurement of many types of products including baked goods, pup loaves, candy, extruded snacks.

Applications

Process control: Ensure the same performance between different batches, shifts and factories.

Quality assurance and control: Verify raw material performance used and the final products specifications.

Research & Development: Identify differences of products due to different ingredients or production processes.

**Accurate volume
in seconds - save time
& get reliable results**



Volume Measurement

BVM



Bread



Cakes and Rolls



Cookies and Crackers



Mantou

Accurate Volume in Seconds



Official Method:
AACCI 10-14.01

Perten
INSTRUMENTS

Volume Measurement

Superior quality and value of bread and other bakery products is associated with higher volume and aerated crumb. The BVM uses fast, automated laser topography to provide an alternative to time-consuming and unreliable seed displacement methods. It maps height, length, width and volume, and produces a 3-dimensional rotatable product image. Product weight, specific volume and density can also be reported. The BVM provides accurate analysis that is repeatable and applicable from one production site to the next. The instrument is robust and easy to use for millers, bakeries, food companies, food ingredient suppliers, food research institutes and test kitchens.



Features and Benefits

Fast: 5 times faster than seed displacement test. 20-30 second measuring time is common.

Accurate and Reproducible: 5-10 times more accurate than seed displacement test.

Objective: Operator-independent measurement.

Powerful: Full dimensional analysis, user-defined parameters and calculations, flexible data reporting, easy transfer to spreadsheet programs.

Robust: Suitable for laboratory and production environments.

Non-contact operation: Non-destructive measurement.

Flexible: Three models to choose from to suit the size of your products.

Standard Method: Approved method for bread volume: AACCI/No.10-14.01.

Applications

Bakery products: Loaves, hearth breads, pan breads, hamburger buns, rolls, brotchen, muffins, cupcakes, sweet rolls and pastries, cookies, crackers, flat breads and steamed breads.

Quality Assurance and Control: Monitor bread making conditions, flour quality and ingredient performance. Take control of quality across different batches, shifts and production sites. Ensure product volume and packaging are matched.

Product and Process Development: Test kitchens, test bakeries and baking equipment suppliers: evaluate flour, ingredients, additives, improvers, processing equipment and methods.

Research and Development: Universities, food research institutes and food ingredient suppliers: research new ingredients, products and processes.

Accessories

The BVM is provided with a set of standard product mounts. Additional supports are available to suit a range of product shapes and sizes.

Technical Specification

Choose from three models (BVM 6610, BVM 6630, BVM 6640) to suit the size of your products.

Max. product size (HxWxD): 19x19x19 cm (BVM 6610), 37x28x28 cm (BVM 6630), 45x33x33 cm (BVM 6640)

Dimensions (HxWxD), Net Weight: 58x36x38 cm, 20 kg (BVM 6610), 78x51x44 cm, 32 kg (BVM 6630), 88x58x45 cm, 40 kg (BVM 6640)

Power Requirements: 110-240V, 50 - 60 Hz

Computer Requirements: PC with Windows, Vista or later operating system, DirectX 8 compatible 3D Graphics card, 1 RS 232 com port, 1 USB com port, 1.6 GHz CPU, 512 Mb RAM, hard disk space for data files (>100Mb recommended).