

# VolScan Profiler

**A REVOLUTION IN VOLUME MEASUREMENT**



**BAKERY PRODUCTS >>>**

**>>> PRODUCT SCANS**

**The VolScan Profiler is a benchtop laser-based scanner that measures the volume of bread and bakery products.**

This non-contact measurement system offers considerable advantages over contact and displacement techniques which purely measure volume. The rapid 3-dimensional digitisation of products enables the automatic calculation of several detailed dimension related parameters, the results of which may be mathematically manipulated for immediate use or future retrieval in a variety of data formats.

With the VolScan Profiler, manufacturers have a precise and fast method for the measurement of the volume of bakery products in order to be able to control and monitor the breadmaking conditions and ingredient performance.

- *Rapid and accurate volume measurement*
- *Typical test time less than 60 seconds*
- *Easy location of sample*
- *Weighs sample automatically*
- *Full dimensional analysis*
- *Allows full product or 'slice' analysis*
- *Simple calibration*
- *Spreadsheet archiving*
- *2D and 3D sample representations*
- *Language Editor*
- *Bar code scanner compatible*
- *Measurements are operator independent*

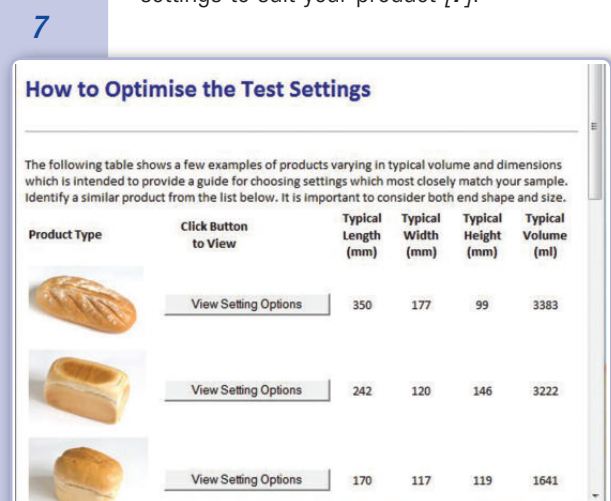
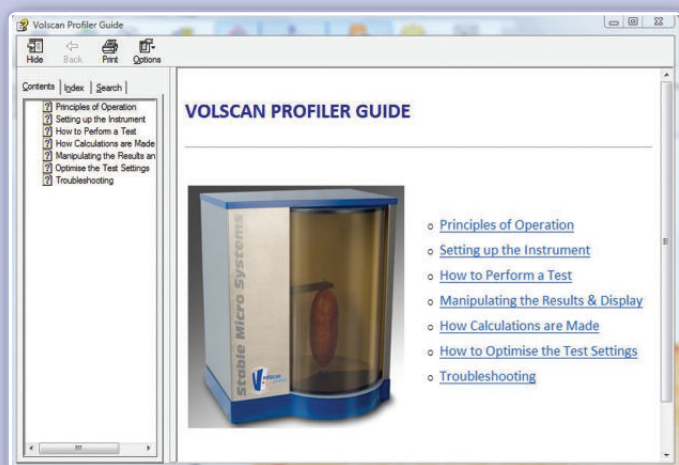
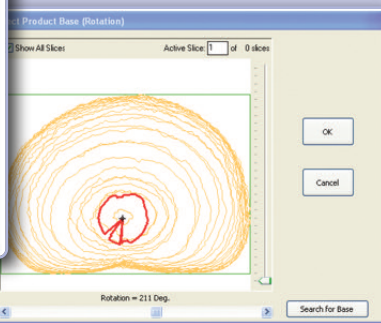
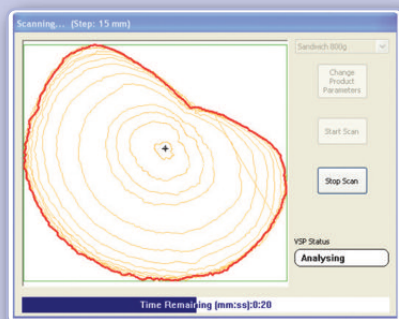
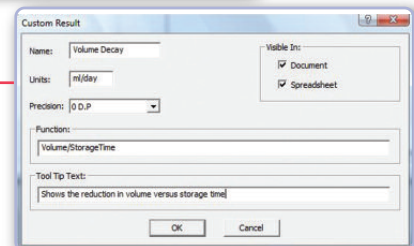
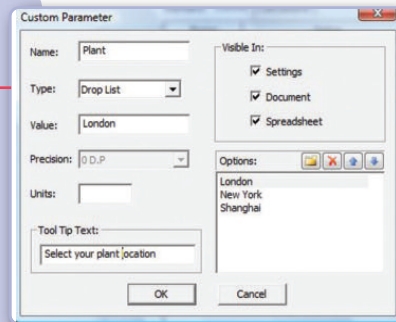
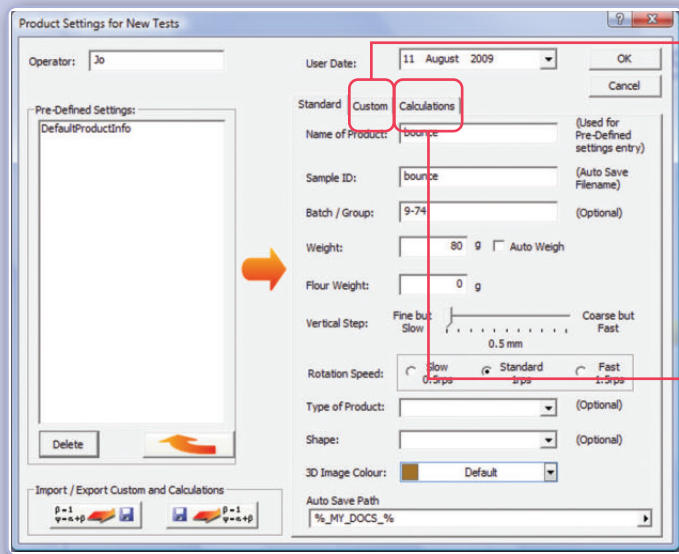
**[www.stablemicrosystems.com](http://www.stablemicrosystems.com)**

# THE VOLSCAN PROFILER

## How the VolScan Profiler test works

The product is mounted at each end or located by a suitable mounting device tailored to the specific product. Parameters entered into the software by the operator for each batch under test include: sample ID name, date, flour weight, bread type and batch code [1].

This assessment can be done rapidly, the results being obtained in a period ranging from a few seconds to a few minutes depending upon the chosen interval (0.5mm to 26mm) and the preferred precision [1].



Parameters and Calculations can be defined by the user, providing maximum flexibility of data reporting requirements [2/3].

The product is then automatically weighed and an eye-safe laser device scans vertically to measure the contours of the product at selectable intervals whilst the product rotates. Each interval consists of 400 data points providing a detailed profile of the product [4/5].

## Guidance

A full guide is available in Help file format [6] to assist in setting up and performing tests, explaining the calculations and advising on optimum test settings to suit your product [7].



## Data Analysis, manipulation and viewing options

Once the test is complete the following measurements can be quickly determined: volume, length, maximum width, maximum height, height at the maximum width and width at the maximum height [8].

These numbers are then further manipulated to automatically calculate and display the Specific Volume of the product based on the total weight ( $Volume/product\ weight$ ) and the volume yield of the bread based on the weight of the flour used ( $Volume/100g\ flour$ ).

The scanned data can be viewed in both 2D and 3D representations to allow comparisons with previous archived measurements. Within the 2D sectional view, additional automatic and manual measurements can be made on chosen intervals or 'slices' of the test data [9/10]. 3D views of the product are rotatable in all planes providing flexibility of viewing for visual comparison and presentation [11].

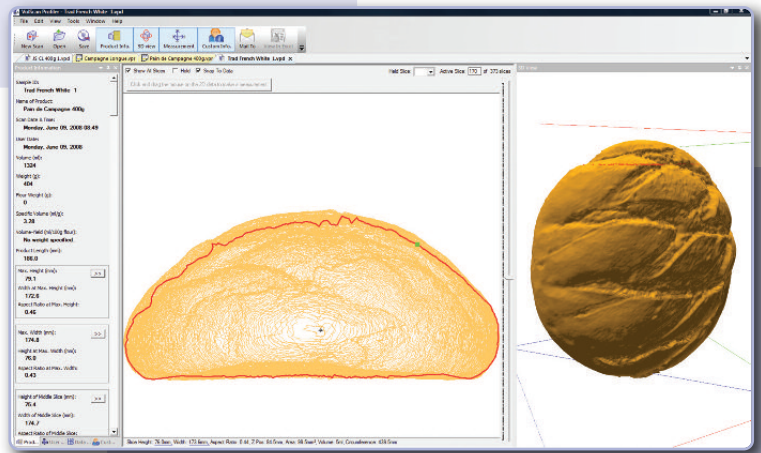
All data is saved in spreadsheet files for easy access and analysis [12]. This data can be viewed in or exported to Microsoft Excel.

Data can be sorted by any column header and statistics adjusted according to new data selection.

Results can be quickly emailed by clicking on the Mail To button [13] which automatically opens up a message window in Outlook and attaches the active window [14].

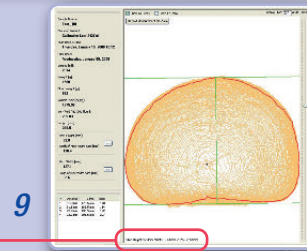
A Report template is available into which your data can be dropped and automatically positioned with test data fields or modified using full Report Editing tools and saved as a .pdf file [15].

Alternatively, images and data can be copied and pasted into other applications [16].

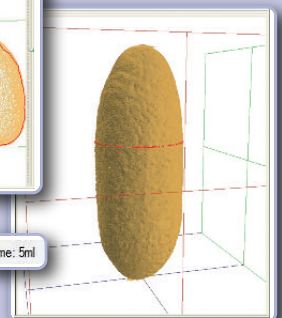


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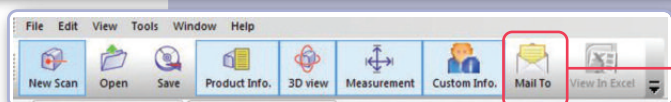
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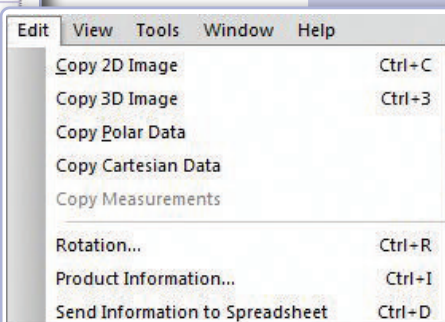
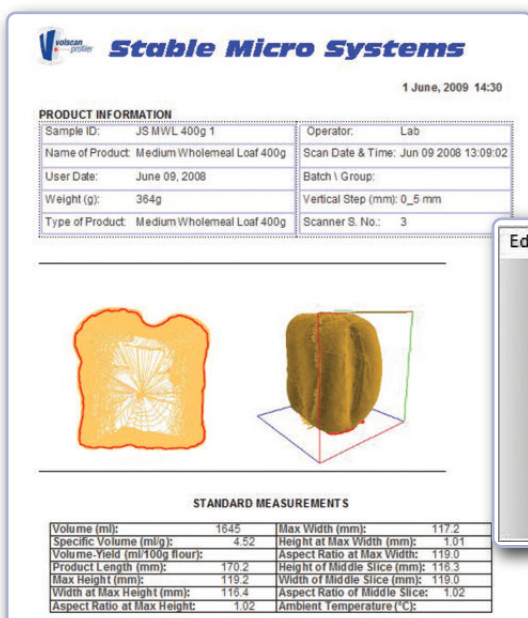
Slice Height: 73.1mm, Width: 188.5mm, Aspect Ratio: 0.39, Z Pos: 48.4mm, Area: 104.2mm², Volume: 5ml

<div><div><div>New Scan</div><div>Open</div><div>Save</div><div>Product Info</div><div>3D view</div><div>Measurement</div><div>Custom Info</div><div>Mail</div><div>View In Excel</div></div><div>Report TemplateTwisted Roll 1Twisted Roll 2Twisted Roll 3Twisted Roll 4Twisted Roll 5Twisted Roll 6Twisted Roll 7Twisted Roll 8Twisted Roll 9Twisted Roll 10Twisted Roll 11Twisted Roll 12Twisted Roll 13Twisted Roll 14Twisted Roll 15Twisted Roll 16Twisted Roll 17Twisted Roll 18Twisted Roll 19Twisted Roll 20Twisted Roll 21Twisted Roll 22Twisted Roll 23Twisted Roll 24Twisted Roll 25Twisted Roll 26Twisted Roll 27Twisted Roll 28Twisted Roll 29Twisted Roll 30Twisted Roll 31Twisted Roll 32Twisted Roll 33Twisted Roll 34Twisted Roll 35Twisted Roll 36Twisted Roll 37Twisted Roll 38Twisted Roll 39Twisted Roll 40Twisted Roll 41Twisted Roll 42Twisted Roll 43Twisted Roll 44Twisted Roll 45Twisted Roll 46Twisted Roll 47Twisted Roll 48Twisted Roll 49Twisted Roll 50Twisted Roll 51Twisted Roll 52Twisted Roll 53Twisted Roll 54Twisted Roll 55Twisted Roll 56Twisted Roll 57Twisted Roll 58Twisted Roll 59Twisted Roll 60Twisted Roll 61Twisted Roll 62Twisted Roll 63Twisted Roll 64Twisted Roll 65Twisted Roll 66Twisted Roll 67Twisted Roll 68Twisted Roll 69Twisted Roll 70Twisted Roll 71Twisted Roll 72Twisted Roll 73Twisted Roll 74Twisted Roll 75Twisted Roll 76Twisted Roll 77Twisted Roll 78Twisted Roll 79Twisted Roll 80Twisted Roll 81Twisted Roll 82Twisted Roll 83Twisted Roll 84Twisted Roll 85Twisted Roll 86Twisted Roll 87Twisted Roll 88Twisted Roll 89Twisted Roll 90Twisted Roll 91Twisted Roll 92Twisted Roll 93Twisted Roll 94Twisted Roll 95Twisted Roll 96Twisted Roll 97Twisted Roll 98Twisted Roll 99Twisted Roll 100</div></div>																						
Batch Group	Name of Product	Scan Date & Time	User Date	Volume (ml)	Weight (g)	Flour Weight (g)	Specific Volume (ml/g)	Volume-Yield (ml/100g flour)	Product Length (mm)	Max Height (mm)	Width at Max Height (mm)	Aspect Ratio at Max Height	Max Width (mm)	Height at Max Width (mm)	Aspect Ratio at Max Width	Height of Middle Slice (mm)	Width of Middle Slice (mm)	Aspect Ratio of Middle Slice	Type of Product	Shape	Vertical Step (mm)	Operator
1	Twisted Roll	Jul 31 2008 09:45:59	July 31, 2008	244	140	0	1.74	151.5	55.3	57.8	0.87	65.7	45.3	0.69	45.8	41.7	0.91	Twisted Roll	Oval	0.5	Lab	
2	Twisted Roll	Jul 31 2008 10:54:41	Jul 31, 2008	244	94	0	2.60	151.3	55.1	58.0	0.86	65.8	45.2	0.69	45.9	41.6	0.91	Twisted Roll	Oval	0.5	Lab	
3	Twisted Roll	Jul 31 2008 10:49:50	Jul 31, 2008	244	92	0	2.65	151.3	55.1	58.2	0.86	65.5	45.1	0.69	46.0	41.7	0.91	Twisted Roll	Oval	0.5	Lab	
Average				244	109	0	2.33	151.4	55.2	58.0	0.86	65.6	45.2	0.69	45.9	41.7	0.91					
S.D.				0.0	27.2	0.0	0.5	0.1	0.1	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0				
C.O.V. (%)					25.0		22.0	0.1	0.2	0.3	0.7	0.2	0.2	0.2	0.2	0.2	0.1	0.0				
7	Twisted Roll	Jul 31 2008 12:15:16	July 31, 2008	244	93	0	2.63	151.3	55.2	58.1	0.87	65.0	45.0	0.71	45.7	40.9	0.90	Twisted Roll	Oval	1.0	Lab	
8	Twisted Roll	Jul 31 2008 12:20:30	Jul 31, 2008	244	88	0	2.78	151.5	55.1	58.0	0.86	65.3	45.9	0.70	45.8	41.3	0.90	Twisted Roll	Oval	1.0	Lab	
9	Twisted Roll	Jul 31 2008 12:24:18	Jul 31, 2008	244	89	0	2.74	151.5	47.0	55.7	0.80	60.7	44.6	0.65	47.8	38.6	0.81	Twisted Roll	Oval	1.0	Lab	
Average				244	90	0	2.72	151.4	49.1	58.3	0.84	66.3	45.6	0.69	46.4	40.3	0.87					
S.D.				0.0	2.6	0.0	0.1	0.1	1.6	0.4	0.0	0.1	0.7	0.0	1.2	1.5	0.1					
C.O.V. (%)					2.9		2.9	0.1	3.7	0.6	4.5	2.1	1.5	4.7	2.6	3.6	0.0					
Average				244	99	0	2.52	151.4	49.6	56.1	0.85	66.0	45.4	0.69	46.2	41.0	0.89					
S.D.				0.0	20.1	0.0	0.4	0.1	1.3	0.3	0.0	1.4	0.5	0.0	0.8	1.2	0.0					
C.O.V. (%)					20.2		15.4	0.1	2.6	0.5	3.1	2.1	1.0	3.0	1.7	2.9	4.4					

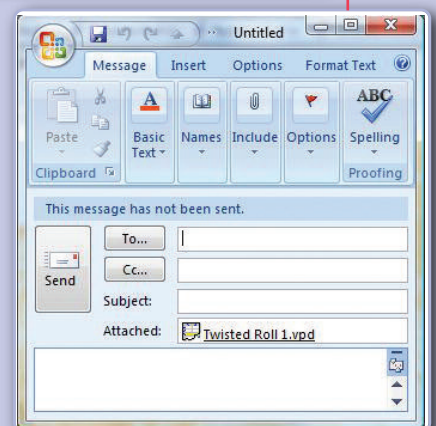


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## SPECIFICATIONS

### APPLICATION AREAS

- RESEARCH AND DEVELOPMENT
- QUALITY ASSURANCE
- PROCESS CONTROL
- ACADEMIC RESEARCH

for

- MILLERS
- BAKERIES
- FOOD INGREDIENT SUPPLIERS
- FOOD RESEARCH INSTITUTES
- UNIVERSITIES

### VOLSCAN TECHNICAL SUMMARY\*

#### Sample Dimensions

Max diameter:

VSP600

350mm

Max height:

600mm

Max sample weight:

3kg

#### Movement and Measurement

Variable scanning resolution

Minimum test time for 200mm high product)

28 seconds

Rotational speed options:

0.5 / 1.0 / 1.5rps

Data acquisition:

400 points per revolution

Vertical step size options:

0.05mm – 26mm

Measurement resolution:

1cm<sup>3</sup>

Sample weight accuracy:

±5g

#### Dimensions

Instrument weight

46kg

Overall height

873mm

Overall width

700mm

Overall depth

607mm

#### Mechanical

Simple calibration

Automatic weighing

Door interlocking mechanism for additional safety – tests cannot be started unless door is closed

Universal Product Support – alternative support solutions with user selected pin array (see panel)

#### Electrical

Operating temperature: 10° – 40°C (Non-condensing)

Internal temperature measurement recorded automatically

Universal mains input voltage: 100-240V AC 50/60Hz

Connectivity: USB

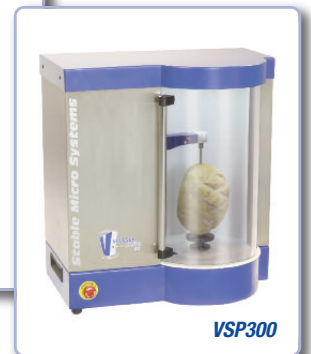
Laser line generator for optimal sample positioning

#### Optional Additions

Volume Verification Ball



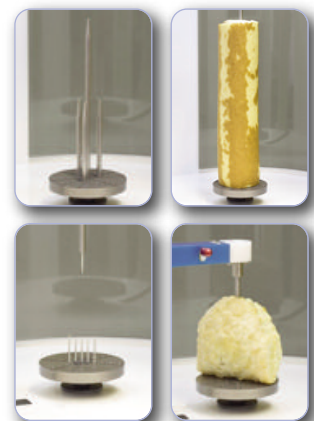
VSP600



VSP300

#### Universal Product Support

This accessory greatly extends the range of products which can be held within the instrument in order to be successfully tested. It provides a myriad of support solutions by presenting a 100mm diameter base with an array of pins of differing thicknesses and lengths.



### Typical PC Requirements

- 1.6GHz X86 processor
- 1 Gb memory
- 300 Mb free hard disk space
- OpenGL or DirectX 9.0c compatible graphics card
- Supported OS: Windows XP (SP3), Vista, Windows 7, Windows 8

The latest software versions are available to download free of charge from [www.stablemicrosystems.com](http://www.stablemicrosystems.com)

## Stable Micro Systems

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\*Stable Micro Systems Ltd reserves the right to alter product technical specifications at any point without prior notification.

SMS/VSP4/0814



The VolScan Profiler is complementary to Stable Micro Systems' wide range of texture analysis solutions which are developed and manufactured in-house and supported by a qualified technical applications team and international distribution network.

**keydiagnostics**

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