

# The Aber™ Lab Yeast Analyser 910



The new standard in LIVE  
yeast cell concentration  
measurement



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# THE LAB YEAST ANALYSER 910

*Ideal for yeast slurries  
and fermenter samples*



Aber Instruments has been at the forefront of on-line **viable** yeast measurement systems, enabling many brewers to automate yeast pitching and recovery systems and produce a more consistent fermentation performance. The Aber™ Lab Yeast Analyser or 'LYA' uses the same patented principle for samples off-line.

The 'LYA' is simple to use and allows a wide range of **viable** yeast concentrations to be measured instantly, by process operators or Laboratory staff, with high accuracy and repeatability. For most applications, the Aber™ Lab Yeast Analyser can free up time by eliminating time consuming dilution, manual counting under the microscope and the addition of dyes.

## Simple to use

The Lab Yeast Analyser is very easy to use. Just put an undiluted sample in the measuring chamber, press MEASURE and an accurate viable yeast concentration value is given after just 20 seconds. Important decisions on yeast pitching rates can be made without having to wait for laboratory results. A built in pump can then automatically remove the sample to waste.

## Diverse range of applications

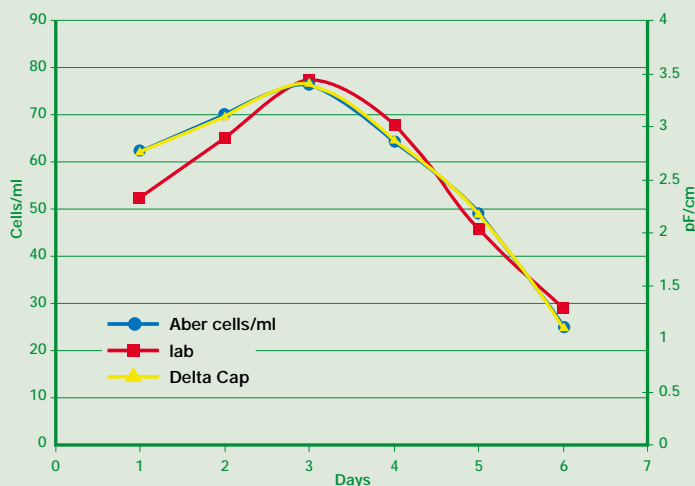
The LYA can be used on a wide range of applications within the brewery. The Model 910 instrument is ideal for direct viable cell concentration measurement of pitching slurries from the yeast storage vessels or yeast main. The instrument is also optimised for measuring the lower yeast cell concentrations in samples from the fermenters and propagators. Other applications are growing all the time. These include distilleries, wineries, yeast production plants and bakeries.

## Measures viable cells with increased accuracy

The Lab Yeast Analyser provides an accurate measurement of the viable yeast concentration over the wide range of yeast viabilities and trub content which can be encountered in brewing yeast. This is particularly important with the growth of high gravity brewing increasing the stress on the yeast during fermentation and producing lower viability yeast on recovery. Traditional staining methods for determining the percentage of dead yeast cells such as Methylene Blue are known to be prone to errors due to human subjectivity and are inaccurate if the viability falls much below 90%.

## Selectable units of measurement and yeast strain

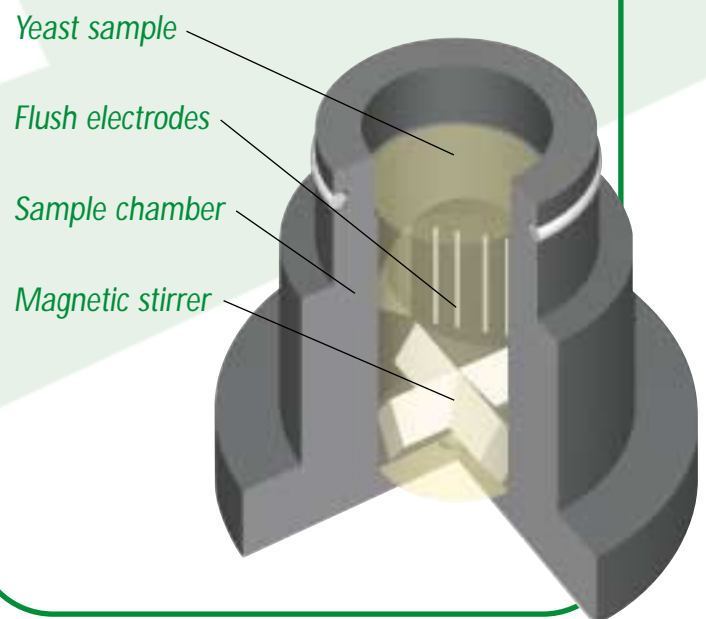
The Model 910 measurement units can be selected to suit the requirements of the user. Options include "% viable spun solids", "% viable g/l" or "viable cells/ml". Calibration factors for multiple yeast strains can be stored and accessed simply via the SELECT STRAIN key.



## How the Lab Yeast Analyser works

Cells with intact plasma membranes can be considered to act as tiny capacitors under the influence of an electric field. The non-conducting nature of the plasma membrane allows a build up of charge. The resulting capacitance can be measured; it is dependent upon the cell type and is proportional to the concentration of these viable cells. The four electrodes in the chamber of the Lab Yeast Analyser apply a radio frequency field to the sample. Electronic processing of the resulting signal produces an output which is a highly accurate measurement of the concentration of viable cells. The system is insensitive to non-viable cells, the wort and trub.

### Sample chamber for the Lab Yeast Analyser and the influence of the Radio Frequency electric field



## Comparison of the Lab Yeast Analyser with a traditional laboratory cell count for a lager fermentation

The LYA can be used for routine monitoring of fermentations but as the LYA measures live bio-volume, there can be some significant differences between a traditional cell count using the haemocytometer or the Coulter Counter and the instrument. This is normally more evident during the early phase of fermentation when the cells are budding and increasing in size. It is normally recommended that the LYA is typically calibrated against a cell count at the PEAK cell concentration.

**LABYEAST ANALYSER 910**

<b>Measurement Units</b>	Units can be selected to suit the requirements of the user. Options include: Viable cells/ml, Viable % spun solids, Viable g/l dry weight, capacitance value in pF/cm
<b>Cell Type</b>	Suitable for all yeast strains. Calibrations for each cell type stored in the memory.
<b>Conductivity Range</b>	The Model <b>910</b> can deal with a wide range of conductivities including 'acid washed' yeast. Range: 1 to 10mS/cm.
<b>Concentration Range</b>	10 x 10 <sup>6</sup> to 999 x 10 <sup>9</sup> viable cells/ml. 0.2 to 140 g/l dry weight. 0.1 to 70% spun solids by volume.
<b>Resolution</b>	Typically 0.1 g/l dry weight or 1x 10 <sup>5</sup> cells/ml to 1 x 10 <sup>6</sup> . (All resolution figures are cell size dependent).
<b>Sample Chamber</b>	The Model <b>910</b> has a temperature controlled 10ml sample chamber providing consistent measurements regardless of original sample temperature. The sample chamber is emptied with a peristaltic pump. No expensive/carcinogenic reagents are used and no pre-treatment or dilution of the sample is required.
<b>Dimensions</b>	350mm wide, 450mm deep, 200mm max. height.
<b>Weight</b>	5kg
<b>Mains Supply</b>	Nominally 110 to 230 volts 50/60 Hz.

**K E Y   B E N E F I T S**

**LABYEAST ANALYSER 910**

<b>Quick and Easy to Use</b>	The <b>910</b> can take less than 1 minute to measure a sample. It can be used by process operators, so LIVE yeast measurements can be provided at weekends and at night.
<b>Accurate and Reproducible</b>	Methylene Blue staining is known to be inaccurate and is interpreted differently by each operator. The <b>910</b> provides an accurate and reproducible live cell concentration.
<b>No Expensive Reagents</b>	Live cell measurement is provided without the errors of dilution and without additional cost of potentially carcinogenic reagents or cassettes.
<b>Measures True Live Bio-Volume</b>	The viable bio-volume, measured with the <b>910</b> , is considered by many leading brewers to be the best method for estimating consistent pitching rates that will provide a reproducible fermentation.



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