The SOLAAR software package for the Thermo Scientific iCE 3000 Series AA provides an excellent range of functionality and a full compliment of step-by-step Wizards. This makes running our AA instruments extremely easy - no matter what your level of experience.

SOLAAR Software for Thermo Scientific iCE 3000 Series AA Spectrometers

Easy to use Software for Refreshingly Different Atomic Absorption Spectrometers

The majority of the user interaction with an instrument is via a software package. It doesn't matter how intelligent or high-performing a piece of equipment is, if the software isn't intuitive and helpful, the user ends up frustrated, time-challenged and potentially with the wrong results.

Atomic Absorption Spectrometry, as a technology, is mature and has evolved significantly over the last 50 years. Unfortunately the same can't be said for some of the operating software supplied with this type of instrument. However, Thermo Scientific SOLAAR software is refreshingly different. This user-friendly, simple to understand, intuitive software package enables the user to get iCE 3000 Series AA instruments productive - fast.

From the beginning, users are guided through optimization procedures with the Wizards and can even have the system take control and do the work for them. During the analysis, a status bar informs the user of the progression of tasks and the clear instrument status window maintains a constant real-time visual display of the current instrument parameters. Results are displayed in a customizable window and extensive data manipulation tools are available. When ready, results can be exported in a variety of ways specific to the user's needs. Printed reports can also be customized with a company logo or picture.

Wizards make Tasks Simpler

SOLAAR software has an extensive set of Wizards which will aid any user, no matter what their level of expertise. Each Wizard is designed for a specific task or procedure and gives detailed step-by-step instructions on the actions needed and, where necessary, performs calculations and automatically provides the user with the next step.

As shown in Figure 1, there are a total of 11 Wizards to help get you productive fast.

The Wizards:

- Provide step- by-step guides for essential tasks
- Allow advanced facilities to be explored as experience grows
- Demonstrate the correct sequence of operations to successfully achieve the desired objective
- Provide an opportunity for independent user training and practice
- Don't limit functionality

Uncomplicated Method Creation

In order to carry out an analysis, the method must first be defined. The Method consists of the analysis technique (flame, furnace or vapor), the measurement mode (emission or absorption) and the sequence of actions to be carried out during the analysis, for example calibrations, sample blanks and QC standards. A wide range of other settings and parameters are also available to control and customize the way the analysis is carried out.

The SOLAAR Method Creation Wizard can help by leading you through the process of creating a Method and by making appropriate choices for some of the more specialized settings.

Effortless Analysis Set Up

The SOLAAR Analysis Wizard guides you through the process of setting up and running an analysis.

The SOLAAR Analysis Wizard prompts and helps you to:

- Choose the correct method for the analysis
- Set up the appropriate lamps
- Enter an analysis name, operator and description for the analysis
- Carry out the necessary safety procedures
- Perform the optimization procedures
- Prepare and load solutions, according to the Autosampler Loading Guide

These steps ensure that the analysis is carried out correctly first time, every time.

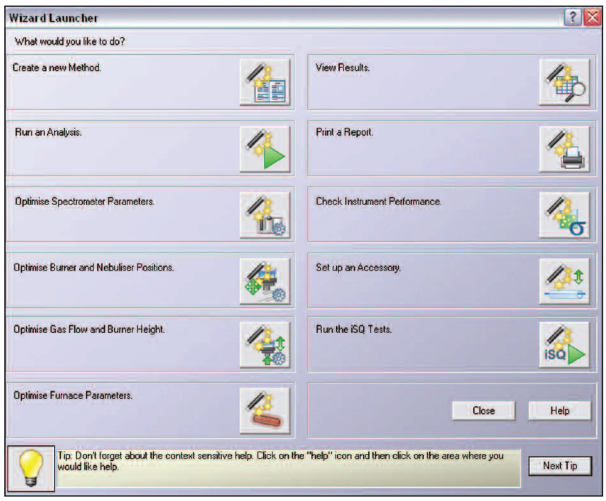

Figure 1. Wizard launcher window showing the 11 Wizards available

Straightforward Spectrometer Optimization

The Spectrometer Optimization Wizard will help you select the ideal measurement time, number of re-samples, lamp current, bandpass and wavelength for your flame analysis. These parameters are often confusing for users and the true benefit of successful spectrometer optimization is rarely realized. The Spectrometer Optimization Wizard will ask you to measure a typical sample solution, and based on the result will then suggest changes to the spectrometer parameters for improvement. When the optimum combination of parameters for your analysis has been determined, the Wizard will allow you to update your Method with these parameters.

Trouble-free Burner and Nebulizer Optimization

The initial set up of the burner and nebulizer prior to analysis are critical steps in obtaining good results. These steps are often overlooked, yet can have a dramatic effect on final results when optimized successfully. When a flame analysis is performed, the position of the burner and the nebulizer impact bead should be checked prior to taking any measurements. This Wizard will guide you through the procedure for optimizing the burner and impact bead position.

Automated Gas Flow and Burner Height Optimization

Optimizing the gas flow and burner height for your analysis couldn't be simpler with the SOLAAR software and iCE 3000 Series AA as it automatically finds the perfect gas flow and burner height for you. Simply follow the Wizard and your parameters will be optimized without you having to make any manual adjustments to the instrument – it's all automatic! Additionally, you can include these optimizations in your Method, so that the tests occur automatically each time the Method is run. Automated gas flow and burner height optimization results are displayed on real-time graphical displays by SOLAAR, as shown in Figures 2 and 3, making visualization of the optimized settings clear and simple.

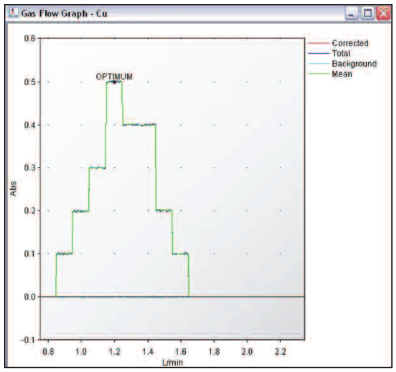

Figure 2. Graph of the gas flow optimization

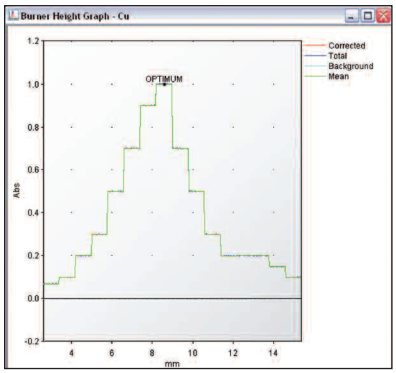

Figure 3. Graph of the burner height optimization

Easier Furnace Parameters Optimization

Furnace method development need not be a long, tedious and complicated process. SOLAAR's built-in Cookbook advises on suitable, element-specific matrix modifiers which would be appropriate for your analysis. The Optimize Furnace Parameters Wizard presents a simple procedure to follow to ensure your furnace method gives the correct results, first time. The final step in this Wizard is an automated ash/atomize temperature sequence which will present the ideal temperatures at which your analysis should be run. The results are displayed graphically, as shown in Figure 4.

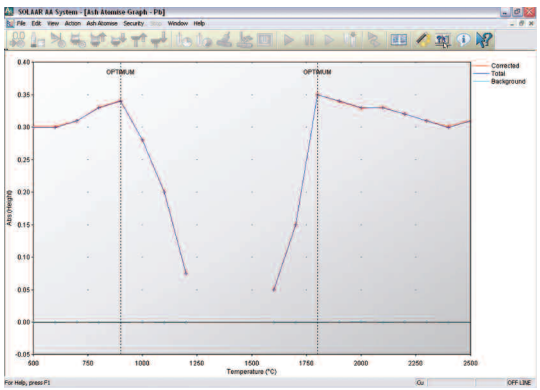

Figure 4. Ash/Atomize graph

Clearer, More Flexible Viewing of Results

Achieving good results is ultimately the aim of performing an analysis, so viewing the results you want, in a format you like, is essential.

When you perform an analysis using SOLAAR, the results are stored in a results database and a Results window is provided for viewing generated data. SOLAAR allows the selection of results for display by applying filters to the database and display options to the appearance of results, so finding and viewing a particular analysis is simple and flexible.

Undemanding Report Generation

SOLAAR provides great flexibility in choosing the information required in your printed report, allowing specific tailoring to your individual laboratory's requirements.

The SOLAAR Results Wizard prompts and helps you to:

- Enter text or have your own company logo or picture at the top of each printed page
- Choose the font size
- Select specific analysis details to display, such as sequence, method, samples and reagents
- The option to include many other user-specific details

Confidence in Method Performance

Taking the time to export data and manually work out detection limits and characteristic concentrations is not necessary with SOLAAR. Let the software tell you which solutions to run and do the calculations for you. It will save you time and reduce the potential for human error in mathematics, making the analytical process easier, whilst also improving confidence in instrument performance and the quality of data produced.

Easier Accessory Set Up

SOLAAR helps get the most from your accessory atom cells.

When an accessory atom cell is required for your analysis, the Accessory Wizard is there to help. An accessory atom cell (such as the flame heated 'T' cell used in vapor analyses, or the STAT tube used with flame analyses) is mounted directly onto the burner head. The position of the burner should be adjusted so that the atom cell is correctly aligned with the optical system of the spectrometer. The Accessory Wizard leads you through the quick and simple set-up process, providing greater confidence in your analysis.

Confidence in Spectrometer Performance

The SOLAAR iSQ Wizard uses the optional iSQ Module to perform a series of tests that check the performance of the spectrometer against the manufacturer's specification. They test all working components of the spectrometer optical system, and give you absolute confidence that it is working to specification.

The iSQ Wizard helps set up the instrument to automatically perform the required tests and displays a clear pass/fail result.

Feel Safe with Help Text and Cookbook

Help Text provides more information and hints on all aspects of SOLAAR software. Information on a topic you are looking at can be displayed directly by using the context sensitive function or a topic can be entered into the Index and all options will be offered.

Sometimes everyone needs a hint or advice on which direction to take for an analysis and, with SOLAAR, the Cookbook can be your partner in creating better AA methods by offering the benefit of decades of experience and research. For every element, Cookbook offers detailed information on the optimum instrument parameters, sample preparation, potential interferences, what you can do to improve your analysis and many more useful tips. This information can be used to ensure that you get the best results fast.

Improve Productivity with Automated Dual Analysis

Due to the design of the iCE 3500 there is no user involvement in switching methods from flame to furnace. As shown in Figure 5, setting up this sequence in the software is a simple 'drag and drop' of the methods you require, making multi-atomization source analyses simpler and more productive to run.

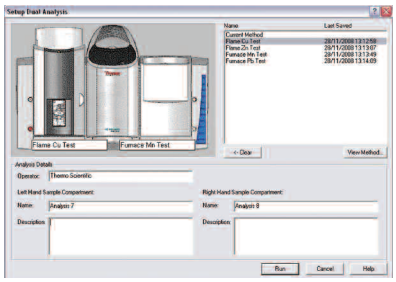

Figure 5. Dual analysis set up window

Simplified Record Keeping

Are you required to record the usage of hollow cathode lamps? By entering the serial number of the lamp in use, SOLAAR will record how long it has been lit for. Deuterium lamp usage is also displayed in the same window.

Saving money is always a factor in laboratories and SOLAAR's intelligent lamp switching function makes your lamps last longer by only lighting them when needed. This option will allow the system to automatically switch off lamps when not in use but is intelligent enough to turn them on in time to allow for a sufficient warm-up period prior to use.

Faster Navigation and Flexible Layout

It is always easier and quicker to have an icon available for a one click action, so SOLAAR icons can be chosen, changed and moved around to create your own customized toolbar. This means that you can always have your preferred options available whenever you log in.

Adapt your preferred viewing options by selecting the SOLAAR panes you want to see – view data on one large screen, or display multiple windows at the same time – it's up to you.

Summary

The Thermo Scientific SOLAAR software for the iCE 3000 Series Atomic Absorption Spectrometers truly can make life performing AA analysis easier. With its huge variety of visual options, extensive Wizards and massive functionality, it is suitable for anyone to use, no matter what their experience. It is user-friendly, simple to understand, easy to learn and offers the ability to greatly enhance confidence in the results produced with your AA.

Thermo Electron Manufacturing Ltd (Cambridge) is ISO Certified.

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