

CONTROL SYSTEM FOR CALIBRATION LABORATORIES



KEY FEATURES

- Comprehensive management of the operation of ionizing radiation calibration laboratories
- Unified solution for laboratories equipped with gamma, neutron and X-ray irradiators, as well as dosimeter calibrators, surface activity sources, and specialized irradiators
- Complies with the requirements of the EN ISO/IEC 17025 standard
- Archiving of parameters of ionizing radiation sources and automatic correction of their radiation values based on their half-life
- Procedures for the automated calibration of measuring instruments increase laboratory throughput and reduce error rates
- Centralized storage of all information in a single database and archiving of all performed calibrations
- Reading of measured values from calibrated instruments via digital communication interfaces

PURPOSE

We offer optimized solutions for two main types of laboratories:

- **National Metrology Institutes**, which mainly perform one-off testing and type approval of newly introduced measuring instruments in small quantities (a few units per month) – **CalControl software**
- **Instrument Manufacturers / Service Providers**, which handle adjustment and calibration of a limited range of instrument types in larger volumes (tens to hundreds per month) – **DARS software**

Our calibration laboratory management concept allows the technology and the instruments to be operated remotely from safe areas during the calibration process.

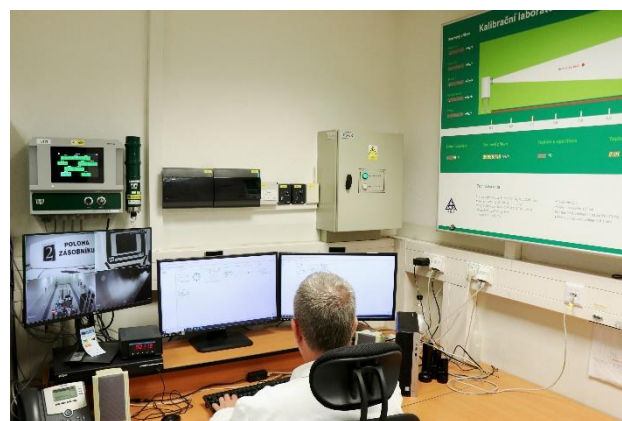
CALCONTROL

The CalControl software is the basic tool for the automated management of calibration laboratories. It enables straightforward irradiation of calibrated instruments and remote control of laboratory technology.

Depending on the type of laboratory, we offer several versions of the CalControl system.

CalControl G is designed for laboratories with a gamma irradiator and calibration bench. It features:

- Basic source inventory with calculation of current activity
- Setting the required dose rate or total dose
- Dose rate calculation for individual sources at a specified distance
- System status logging
- Optional support for user-defined measurement procedures



Automated calibration laboratory control workstation

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CalControl N is designed for laboratories with a neutron irradiator and calibration bench. It features:

- Basic source inventory with calculation of current activity and source emission
- Records of measurement points
- Setting the desired measurement point
- System status logging
- Optional support for user-defined measurement procedures

CalControl SC is designed for laboratories with portable surface contamination sources or point radiation sources. It features:

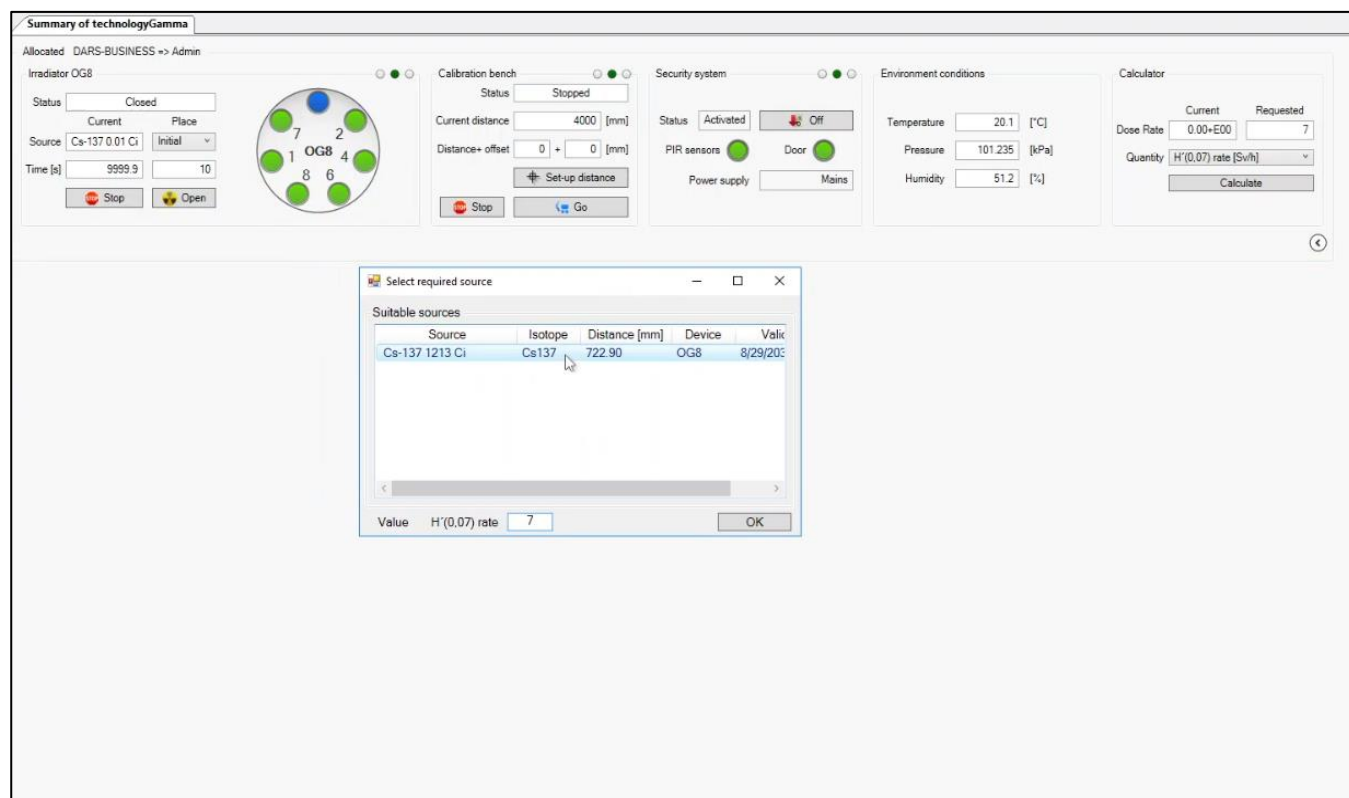
- Basic source inventory
- Calculation of the current activity or surface activity of sources
- Calculation of current surface emission

CalControl X is designed for laboratories equipped with an X-ray irradiator, energy filters and a calibration bench. It features:

- Records of measurement points (qualities)
- Setting of the desired quality
- System status logging
- Optional support for user-defined measurement procedures

CalControl HP is designed for laboratories that use gamma/beta dosimeter calibrators. It features:

- Gamma source inventory with calculation of current activity and Hp(10)
- Records of the Hp(0.07) measurement points for beta sources
- Setting of the measurement points Hp(10) and/or Hp(0.07)
- System status logging
- Optional support for user-defined measurement procedures



Control of laboratory technology using the CalControl G software and selection of the source for exposure

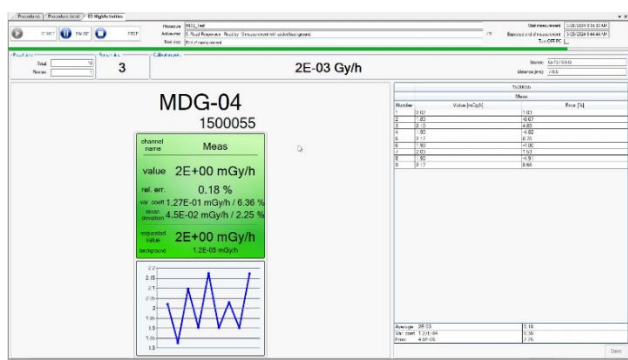
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DARS

The DARS Control System for Calibration Laboratories is designed for customers who perform a large number of calibrations on a limited number of instruments. It surpasses the capabilities of the CalControl software. The DARS archives data on calibrated instruments, stores the results of performed calibrations, and enables the printing of calibration reports.

We offer two versions of DARS: EASY and PROFESSIONAL. These versions differ in the level of calibration automation.

- The EASY version includes integrated, semi-automatic control of calibration laboratory technology. A metrologist configures and operates the system. Calibration results are stored in a database. The system automatically evaluates the calibration results and generates calibration reports. However, calibration methodologies cannot be saved.
- The PROFESSIONAL version is fully automatic. In this version, the metrologist independently creates calibration methodologies in advance, i.e., procedures for calibrating specific types of instruments. Based on these methodologies, automatic calibration of instruments can be initiated. The system automatically evaluates the calibration result and generates calibration reports, which are stored in a database.



Automatic device calibration using the DARS Professional software

The response of calibrated instruments can be read in three basic ways:

- By a camera focused on the display of the calibrated device. The image is transmitted to a monitor in the operator's room.
- Optionally, the response can be read via a counter, which counts the number of pulses from the detector over a defined time period.
- Optionally, it can be read via an intelligent interface, such as Ethernet, RS-485, or RS-232. In this case, the DARS system communicates directly with the instrument equipped with such an interface and retrieves its response.



Automatic data readout panel with various interfaces

A high level of automation implemented in the DARS system ensures easy repeatability of metrological activities, eliminates operator errors, and thereby guarantees high quality in the execution of these tasks.

The DARS application software operates within the Microsoft Windows operating system environment.

The functions of the DARS system include:

- Automated control of laboratory technology
- Record of all used ionizing radiation sources, including detailed metrological information and their certificate validity
- Automatic evaluation of calibration results
- Ability to create and store custom calibration procedures (PROFESSIONAL version only)
- Semi-automatic (EASY) or fully automatic (PROFESSIONAL) execution of calibrations
- Record of instruments and results of all performed calibrations
- Optional printing of calibration certificates
- System can be launched from multiple workstations simultaneously

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SYSTEM VERSIONS

Function	EASY	PROFESSIONAL
Laboratory technology control		
Laboratory technology manual control	YES	YES
Setting the required dose rate	YES	YES
Setting the defined dose irradiation	YES	YES
The possibility of reading the measurement values by a camera	YES	YES
The possibility of reading the measurement values by a counter	YES	YES
The possibility of reading the measurement values via an intelligent interface	NO	optional
Records of the ionizing radiation sources		
Saving the metrology data about sources	YES	YES
Records of surface activity sources	optional	YES
Records of the calibrated instruments		
Basic records	YES	NO
Expanded records	NO	YES
Calibrations		
The possibility to create and save calibration procedures	NO	YES
The possibility of automated calibration performance	YES	YES
Evaluation of the relative error	YES	YES
Evaluation of the variation coefficient	NO	YES
The possibility to calibrate multiple instruments at the same time	YES	YES
The printing of the calibration certificates	optional	optional
The printing of calibration validity sticker	optional	optional