BALTIC SCIENTIFIC INSTRUMENTS

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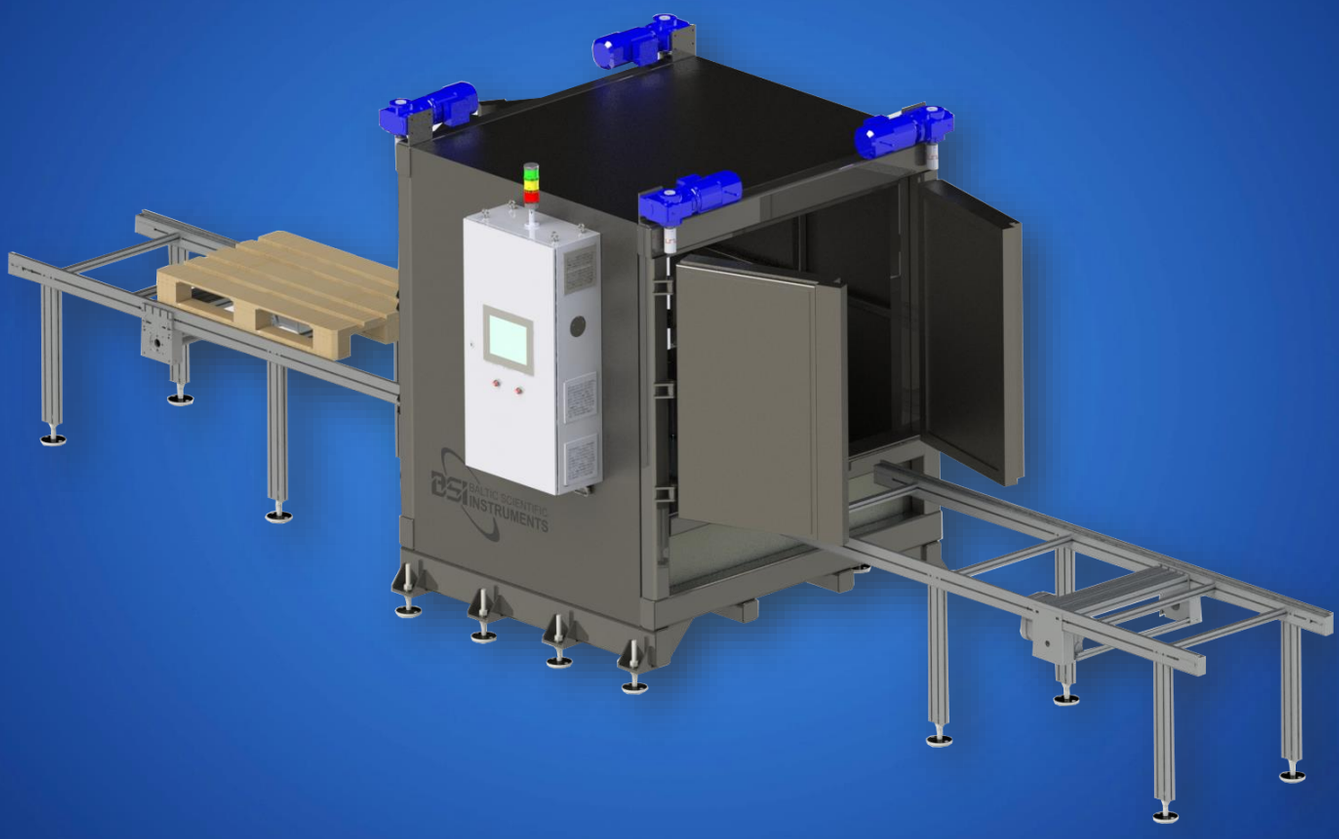

# Free Release Monitor HERCULES-FRM

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## APPLICATION

The HERCULES-FRM is designed for reliable free release measurements of objects, containers, tools, and materials in nuclear facilities and other radiation-controlled areas. The system ensures compliance with clearance criteria by detecting even low levels of radioactivity. Equipped with 16 (or more) plastic scintillators and advanced digital multichannel analyzers, the FRM provides precise, reproducible results and full remote-control capability. Analytical software supports preset measurement scenarios based on object type, geometry, and weight, ensuring high flexibility for different applications. All measurement results are stored in a database, enabling traceability, automated reporting, and long-term documentation. Objects can be loaded from the front or back using forklifts or cranes, making the system suitable for both small items and large containers. The stainless-steel chamber construction guarantees durability and easy decontamination in industrial environments.

## GENERAL

- Overall dimensions of the FRM: 5000x2300x2100mm (LxWxH)
- Overall weight of the FRM: 10000kg
- Operation temperature: +10…+35°C
- Ready to accommodate object with size 1.2m x 0.8m x 1.0m (L x W x H)
- Lead walls not less than 50mm thick
- Stain-less steel protection
- External and internal automatic conveyor
- Inbuilt scales

## Plastic scintillators (HPGe detectors optional)

- 16 or 24 or more plastic scintillators equipped with PMTs
- Energy range from 100 to 3000 keV
- Detection limit for Co-60 is less than 300 Bq

## Software

- Total activity calculation
- Visualization of measurement and diagnostic information
- Storage of measurement data, controlled parameters and fixed constants in internal memory
- Control of all mechanically movable mechanisms
- Control and reset of the FRM in case of failure of automation
- Self-diagnostics control
- Visual and audible alarm in case of failure or exceed of previously set levels
- Alarm in case of fixed level activity exceed for separately chosen radionuclide
- 3D visualization interface for measurement object monitoring and setting geometrical parameters in order to decrease measurement uncertainties
- Visualization of inhomogeneities in activity distribution
- Automatic change of measurement parameters depending on measurement geometry (Geometry must be set up preliminary)
- All software packages run under Windows operation system

## Control box

- Control box of the FRM includes the following components:
- Set of MCAs for reading and transforming signals from PMTs of plastic scintillators
- Set of power supplies for different modules of the FRM
- Set of controllers to manage all components of automation process
- Control panel with colour LCD display and touchscreen
- An emergency stop button is provided on the control box and the measuring chamber

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**Gamma-rays**