



B-RAD

HAND-HELD GAMMA SPECTROMETER AND DOSE RATE METER



Portable hi-res spectrometer



Works in extremely intense magnetic fields



Technology developed at CERN

Radio-isotope identification

Double display

Light and compact, ideal for radiation surveys

Built-in signal processing electronics

Extremely wide dynamic range

Carrying cross-body pouch

B-RAD is a hand-held device developed to perform gamma dose rate survey and spectrometry measurements, specifically designed to work in magnetic fields up to 3 T. For comparison, conventional devices fail to operate at intensities as low as 0.1 T.

Light and compact, **B-RAD** is ideal for radiation surveys and for local measurements of contamination or residual radioactivity in hot spots. The built-in software and algorithm allow performing accurate gamma spectrometry and dose rate measurement with a single instrument.

B-RAD employs a high sensitivity $\text{LaBr}_3(\text{Ce}^{3+})$ crystal directly coupled to a SiPM matrix. Its excellent scintillation properties, high energy resolution (3.3% FWHM at 662 keV) and fast response, together with the built-in pile-up and dead-time correction algorithms, allow the device to cover an extremely wide dose rate range (100 nSv/h to > 20 mSv/h).

This technology has been originally developed at CERN (*) and has become the standard for radiation surveys in the Large Hadron Collider (LHC) experiments. It is commercialized under an official license granted by CERN, with the “CERN Technology” label.

(*) Patent grant number: 9977134 (13 July 2017)
“Portable Radiation Detection Device for Operation in Intense Magnetic Fields”.



technology

TECHNICAL SPECIFICATIONS

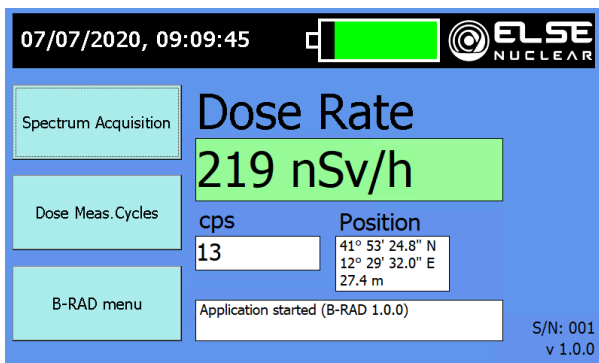
- Crystal: 0.6" × 0.6" LaBr₃(Ce³⁺)
- FWHM: 3.3% at 662 keV
- Dose rate range: 100 nSv/h ÷ > 20 mSv/h
- Sensitivity: 90 cps/μSv/h
- Energy range: 30 keV ÷ 2 MeV
- Temperature range: 0 ÷ 40 °C
- Battery life: up to 12 hours (in "power save mode")
- Dimensions:
 - Main unit: 156 x 191 x 92 mm
 - Probe: 180 x 50 mm (diameter)
- Weight: 2.3 kg

MAIN APPLICATIONS

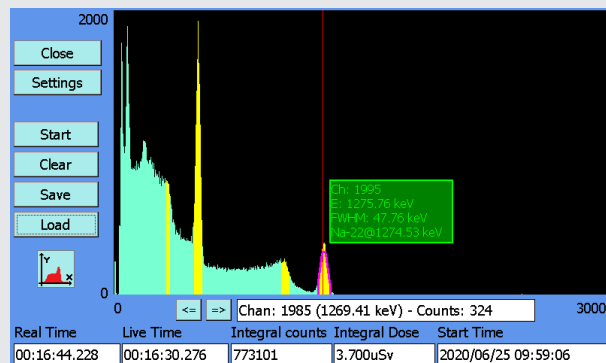
- Radiation surveys at particle accelerators
- Medical accelerators (electron linacs including Image Guided Radiation Therapy (IGRT) with MRI imaging, cyclotrons for radionuclide production and radiotherapy)
- Radiation measurements at medical PET/MRI scanners
- Radiation measurements in industrial applications, metal recycling and for fire brigade services
- Current and future technologies involving the need of measuring radioactivity in the potential presence of perturbing magnetic fields



*B-RAD main unit
with double display*



B-RAD software main panel



B-RAD spectrum panel

ACCESSORIES AVAILABLE UPON REQUEST

- GPS module
- Warranty extension from 12 months to 24 months

