

Bio-Scout detects Radioactivity in Foods

in supermarkets, at wholesalers, at producers, in restaurants, at home, in laboratories

SIMPLE

... Fill the sample into the beaker, placing it on the sampling desk and push the button

FAST

... After just 1 Minute, the result is presented by a RED – YELLOW – GREEN signal light

SAFE

... Limit monitoring with respect to the actual regulations (results in Bq/kg)

What's to do if RED is shown?

... Connect USB cable, transfer acquired data from the Bio-Scout to the PC and send them directly to a lab or an authority



Consumers around the world are afraid of possibly radioactive contaminated foods. Producers, traders and customers want to be sure that limits given by law will not be exceeded. The Bio-Scout offers the possibility for an immediate test on site without special skilled staff. The unit fits to any table and can be handled intuitively. The robust and ergonomic design allows easy cleaning if necessary. There is no need for shielding against background radiation by heavy lead or steel elements. The internal scale enables the direct calculation of the weight related activity including the sample density correction. A large Sodium Iodide (NaI) detector and the optimized sampling geometry in combination with an advanced spectrum analysis result in short sampling periods and a high sample throughput.

Technical Data:

Detector	NaI(Tl) 2" x 2"
Scale	max. 2.5kg
Sample beakers	Marinelli beaker
Meas. principle	Gamma-Spectroscopy
Analysis	Caesium, Iodine...
Detection limit Cs-137	100 Bq/kg (3σ)
<i>1min sampling, 0.1μSv/h background, 1kg/L</i>	
Control	
Button	„Start sampling“
Display (3x16)	Status, hints, results
Green Light	„Activity below limit“
Yellow Light	„Activity close to the limit“
Red Light	„Activity exceeds the limit“
Acoustic signal	80dB
USB interface	
Ambient conditions	5 ... 35°C, 0 ... 95%
Power supply	Wall adapter 15V/250mA
Dimensions	20cm/22cm/52cm (W/D/H)
Weight	approx. 5.5kg

Bio-Scout capabilities

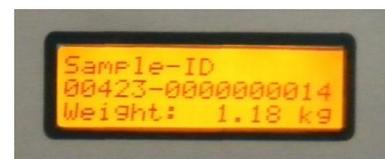
The Bio-Scout identifies six different nuclides which can be defined (including alert limits) by software by the super-wiser. After powering up the unit, a background measurement is performed to estimate the detection limits. If a significant increased background is detected, the unit should be placed elsewhere or the basic sample interval will be set to more than one minute. For most exact measurements it is required to use always a well-filled Marinelli beaker for each sample. This is important to realize the calibrated sample geometry and to apply the density calculation. If needed, also other geometries can be calibrated but this will affect the achievable detection limits. The integrated scale delivers the sample weight, to calculate the weight-based activity in Bq/kg. Furthermore, the density of the sample is calculated from the weight and the beaker volume. This is necessary to apply a density correction to the measurement.



Operation of the Bio-Scout

After pressing the button, the measurement will be started. All three lamps turn on for a short time. The display shows the remaining time to finish the sample. If no activity has been detected, the green lamp turns on, the buzzer gives a short beep and the unit is ready for the next sample.

If the detected activity is above the warn level or the alert limit, a second measurement will be started automatically. In that case, the sample interval will be increased to reduce the statistical fluctuations. If the result is still above the limits, either the red (if alert limit is exceeded) or the yellow lamp (if only warn level is exceeded) turn on. The buzzer signalizes the alert state by an interrupted sound signal. At the display appears a list of detected nuclides. The alert state must be confirmed by pressing the button to toggle the display to show the results for each single nuclide. The acquired spectrum will be saved at the internal non-volatile memory and labeled by a unique sample number (consists of serial number plus a 32bit number). The memory offers capacity for 70 spectra. Pressing the button for at least one second sets the unit back into the normal mode and the next measurement can be started. The results can be read from the display even if no alert or warning is present. To enter the result list output, the button must be pressed for at least one second. This is not possible if a sample is in progress.



Printer option

To ensure the correct assignment between sample and the saved spectrum, a printer can be connected to the unit. If an alert has been detected and a spectrum has been saved, the Bio-Scout prints a label with the unique sample number as text and as barcode. The spectrum of a sample can be found later easily using a barcode scanner.