LUNG COUNTER

LUNGS BURDEN ANALYSIS/COUNTING SYSTEM

Highly versatile scanning system for lungs

High efficiency detection equipment

Fast and simple measurement sequence

- Detectors: two 5″ x 4″ NaI(Tl) scintillators
- Compact MCA with 2048 channels
- Low-background lead shielding
- Efficiency curves evaluated by means of Monte Carlo calculations

The **LUNG COUNTER** monitor has been designed to perform high-efficiency, fast and reliable radiometric controls of human lungs.
The monitor is composed of:

- a mechanical support table, featuring up/down movement to align the detectors to the desired height
- two 5”×4” NaI(Tl) scintillators, mounted on a small rail allowing manual, independent, left/right movement of each detector
- a laptop with proprietary software managing the system
- a comfortable chair with armrests and footrest

The detectors include photomultiplier tubes, and they are coupled to independent electronic units providing high voltage to the PMTs, and dedicated MCA modules allowing on-line gamma spectrometry.
The system is controlled and managed by a proprietary software installed on a dedicated laptop.
The **LUNG COUNTER** software implements response function curves for each NaI(Tl) detector. These curves allow converting net counts rates acquired by the detectors (cps) in activity (Bq) homogeneously dispersed in the lungs, and to subsequently evaluate the committed effective dose (in Sv). The response curves are calculated by means of Monte Carlo simulations.

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TECHNICAL SPECIFICATIONS

Detection unit

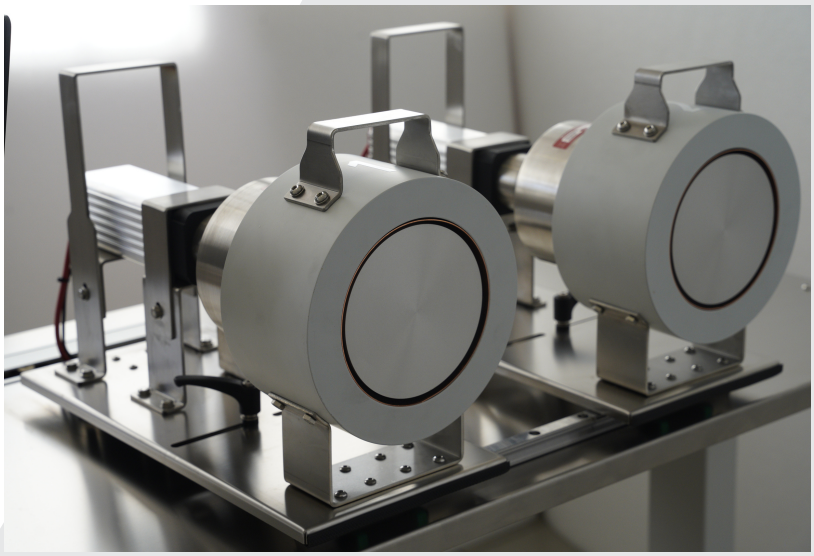
- Detector type: 5” × 4” NaI(Tl) cylindrical scintillator crystals coupled to PMT
- Number of units: 2
- Energy resolution (Cs-137): < 7%
- Energy range: 30 keV ÷ 3 MeV
- Compact MCA with 2048 channels
- Low-background lead shielding thickness: 50 mm rings with 1 mm thick Cu inserts
- Power supply: 230VAC, 50 Hz

Management software

- Efficiency curves evaluated by means of Monte Carlo calculations
- Direct evaluation of homogeneously dispersed activity (Bq) in lungs, following the IDEAS guidelines’ models
- Customizable activity limits
- Customizable isotope library with default built-in isotopes commonly found in workplaces
- Customizable analysis reports and printing options
- Good functioning verification

Mechanical characteristics

- Dimensions:
  - Table plane: 700 x 1200 mm
  - Table height: 1060 ÷ 1510 mm (incl. all components)
- Weight: approx. 110 kg



LUNG COUNTER detectors detail

ACCESSORIES AVAILABLE UPON REQUEST

LUNG COUNTER systems and software can be configured to meet specific requirements.
The customisation can be applied to the mechanical layout and/or to the measurement equipment.

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