NUVIATECH INSTRUMENTS

SPECIFICATION SHEET

CoMo-170 ZS

Handheld contamination monitor for high-sensitive measurement of α- and β-/γ-contaminations

The CoMo - 170 "ZS" version (ZivilSchutz = Civil Protection) has been developed and customized in close cooperation with the German Federal Office of Civil Protection and Disaster Assistance. The nuclear accidents in Chernobyl and Fukushima have shown that large geographic areas can get contaminated by radioactive substances. In order to check people and vehicles leaving the affected area, it is necessary to have mobile contamination monitors at hand, to check for α- and β-/γ- contaminations. The CoMo – 170ZS can also be used to monitor solid or liquid foods for potential contamination.

Benefits

- No gas-filled or gas flow proportional detector required
- 2 in 1 instrument: α- and β-/γ-contamination measurement with only one detector, no detector change required
- Large detection area allowing quick monitoring of large surfaces
- Combination of rugged design and high efficiency
- Ergonomic housing design, very light one hand instrument
- Possibility to subtract background to get net counts
- User-friendly menu structure, operation by means of 5 function buttons

Key figures

170 cm^2
➥ *detection area*

800 g
➥ *device*

~20 %
➥ *detection efficiency for 241Am*

Product description

- Innovative technology based on thin-layer plastic scintillation detector with ZnS coating
- Separation of α- and β-/γ-radiation by automatic count height analysis
- Simultaneous and selective α- and β-/γ-contamination measurement and indication
- Measuring system automatically detects and signals the presence of α-radiation
- High physical sensitivity (s. table for typical efficiencies)
- 170 cm² detector surface for effective measurement of larger areas
- The detector foil is mechanically protected by a fine-mesh honeycomb grid (high transparency)
- Battery-operated, 2 standard batteries AA mignon, 1.5 V, operation time approx. 25 h, battery compartment with reverse polarity protection within the handle
- Detector easily replaceable, integrated gasket between detector and housing
- Housing made of impact resistant material
- Large graphic LCD for displaying measuring values and parameters
- Automatic display-illumination in case of darkness
- µ-controller measuring electronics
- Measuring value displayed in cps either for α- and β-/γ-measurement, as an alternative: all values simultaneously

- Easy to read digital measuring values / in addition, an analogue bar graph can be activated - also in relation to alarm value
- In expert operating mode, the nuclide-related measurement in Bq or Bq/cm² can be activated
- Automatic self-test
- Settings and measuring value parameters protected by code
- Alarm threshold can be adjusted separately for α- and β-/γ-contaminations
- Acoustic alarm (approx. 80 dB in 30 cm distance), additional optical indication in display and red LED in foil-keyboard, vibration alarm in handle selectable
- Earphones connectable for acoustic count rate and alarms
- Operating temperature down to -20°C, display automatically adapts the frequency at low temperature
- USB-Interface (for connectivity with PC)
- Measuring value storage (750 data records)
- PC software for read out and further processing of measuring data
- PC software for PC-based parameterization of the contamination monitor or for special measurement tasks
- Firmware update via PC possible
- The scope of delivery includes the contamination monitor 170 ZS, a transportation and storage case with foam inlay, 1 pc. detector foil, 1 pc. screwdriver, 1 pair of batteries, 1 pc. earphone, 1 pc. data cable, CD with software for reading and processing the stored data and software to set-up the instrument and detailed, easy to understand manuals
- Detailed training materials on request

Product specifications

- Detector type: thin-layer plastic scintillation detector with ZnS coating, α- and β-/γ- separation by count height analysis, with aluminium Mylar foil and fine-mesh honeycomb grid with additional plastic cap for protection during transportation
- Detector size: 170 cm^2
- Background: α: approx.: 0.1 cps, β/γ: approx.: 9 – 13 cps
- Background subtraction: automatic background measurement and subtraction, background measurement time definable, net or gross measurement selectable
- Keyboard: foil keyboard, 5 function buttons
- Alarm: separately definable for each measurement mode, acoustic and optical alarm, acoustic alarm (approx. 80 dB in 30 cm distance), additional vibration alarm selectable, earphones connectable for acoustic count rate and alarms
- Measuring value display: in cps either for α- or β-/γ-measurement mode, alternative: both measurements simultaneously, in access protected expert operating mode also nuclide-related in Bq or Bq/cm^2 (based on key-nuclide)
- Measuring time: continuous measurement with automatic or definable smoothing
- Display: large-area, graphic LC-display 128 x 64 pixels, with illumination, automatically switched on via photocell (LDR), or definable illumination duration
- Power supply: 2 batteries (AA mignon LR 6) or corresponding rechargeable batteries (NiMH) approx. 25 h operation time, in battery compartment integrated reverse polarity protection
- Range of use: - 20°C till + 40°C, at approx. 90 % humidity (no condensation), IP 54
- Dimensions: 280 x 125 x 135 mm (L (with handle) x W x H)
- Weight: approx. 800 g
- Interfaces: USB-Interface (for connectivity with PC)

Radionuclide efficiency
Average values from measurements with 100 cm^2 sources

Am-241	Approx. 20%
U-238	Approx. 22%
Sr-90	Approx. 41%
Cs-137	Approx. 35%
I-131	Approx. 21%

Product applications

- Fire Brigades
- Civil and Disaster Protection
- Homeland Security
- Emergency Centers
- Military