



NUVIA
INSTRUMENTS
The new name of:
SEAMED

CoMo

PORTABLE CONTAMINATION MONITOR
FOR HIGHLY SENSITIVE MEASUREMENTS OF
 α - AND β -/ γ -CONTAMINATION



CoMo

Working with unsealed radioactive material can lead to contamination of people, structures, tools, etc.

As such checking for the presence of contamination needs to be carried out on personnel and equipment leaving control areas to ensure compliance with relevant limits. Mobile contamination monitors such as the CoMo-170 or CoMo-300 are used for direct and indirect contamination measurements.

In conjunction with task-specific accessories, these powerful measuring devices provide a complete solution for contamination control and clearance measurements.

BENEFITS

- No gas-filled or gas-flushed detector
- 2 in 1 instrument: α - and β -/ γ -contamination measurement with only one detector, no detector change required
- Large detector surface allows fast and effective monitoring of large areas
- Combination of robust design and high efficiency
- Very light device with ergonomic housing design allows one handed operation
- Optional setting allows measurement and subtraction of the background
- User-friendly menu structure operated by just 5 function keys
- Large number of accessories available

KEY FIGURES

20 %

Efficiency for Am-241

41 %

Efficiency for Sr-90

170 cm²

Detector area

800 g

Total weight

PRODUCT SPECS

- **Detector type:** thin-layer plastic scintillation detector with ZnS coating, α - and β - γ -separation via pulse height analysis; aluminum vapor-deposited Mylar film (2 x 2 μm) and close-meshed honeycomb grid, with plastic cap as transport protection
- **Detector size:**
CoMo-170: 170 cm^2
CoMo-300: 300 cm^2
- **Detector unit:** autonomous, easily exchangeable assembly, integrated in the bottom of the overall housing
- **Background:**
CoMo-170: α measuring mode: approx. 0.1 cps, β - γ measuring mode: approx. 15 - 20 cps
CoMo-300: α measuring mode: approx. 0.1 cps, β - γ measuring mode: approx. 20 - 30 cps
- **Background subtraction:** automatic background measurement and subtraction, background measuring time programmable, option of net or gross measurement
- **Measuring electronics:** μ -controller-based electronics
- **Keyboard:** membrane keyboard, 5 function keys
- **Alarm:** individually configurable for each type of measurement
visual warning, acoustic warning (approx. 80 dB at a distance of 30 cm), optional vibration alarm, earphones can be connected for audible feedback in noisy or sensitive environments
- **Nuclides:** 25 nuclides, preset calibration factors, user-specifically changeable, even double nuclides parameterizable, integrated auto-calibration function
- **Measuring time:** continuously in search mode or with user configurable measuring time
- **LC display:** large-area, graphic LC display 128 x 64 pixels, with illumination, automatically switched on via photocell (LDR), or illumination duration adjustable
- **Power supply:** 2 batteries (AA battery LR 6) or rechargeable batteries (NiMH), approx. 25 h operating time, can be recharged via charger or wall station, reverse polarity protection integrated in the battery compartment
- **Nominal operating range:** -10°C to $+40^\circ\text{C}$, up to approx. 90 % RF (non-condensing), IP 54, special version down to -20°C
- **Dimensions:**
CoMo-170: 280 x 125 x 135 mm (L (with handle) x W x H)
CoMo-300: 318 x 157 x 172 mm (L (with handle) x W x H)
- **Weight:**
CoMo-170: approx. 800 g (ready-to-use device including batteries)
CoMo-300: approx. 1,000 g (ready-to-use device including batteries)
- **Housing:** ergonomically shaped plastic housing
- **Interfaces:** USB interface (for connection with PC), battery charge/mains operation, external detectors, active wall station/smear test measurement system
- **Special versions:**
CoMo-170 ZS: developed and tailored to the tasks of civil protection
CoMo-170 D: with additional GM counter tube integrated into the front for measurement of the dose rate

PRODUCT APPLICATION

- **Nuclear technology**
- **Clearance measurements**
- **Research centers**
- **Nuclear medicine**
- **Civil protection**
- **Industry**



OPTIONS

- **Smear test station**

The smear test station is used to measure smear samples of various sizes (60, 120 mm, screening filters). A smear test factor can be taken into account.

- **Wall station**

The wall station allows you to reliably check hands time-controlled for contamination prior to picking up the monitor using a user configurable count time (e.g. 5 s). In addition, the internal batteries of the CoMo are charged in the station.

- **Floor measuring device for up to 3 CoMo**

Up to 3 CoMo systems can be integrated into a floor measuring system to monitor large floor areas. This makes it easy to carry out measurements indoors or outdoors.



EXTERNAL DETECTORS

A selection of special, external detectors expands the field of application of contamination monitors:

- **Dose rate probe**

The external dose rate probe turns the mobile contamination monitor into a flexible dose rate meter. A wide range of available detectors gives a broad dose rate range.

- **Pipe detector**

Designed for complete monitoring of pipe internals. The pipe detectors provide a complete picture of α - and β/γ -contaminations. Guide elements and optional collars ensure the detector is centralized within the pipe.

- **Pancake contamination probe**

The pancake contamination probe has the ideal size for finding hot spots or checking the interior of respirators for contamination.

- **Flat detector**

Areas that are inaccessible due to the housing height of the CoMo 170 can be easily monitored using the flat detector. Its robust design makes it very versatile.

- **Lantern detector**

The lantern detector with its 4 detector surfaces can be used to monitor storage chutes for contamination, for example, in fuel element transport containers.

- **Corner detector**

When carrying out clearance measurements, especially in the context of the decommissioning of nuclear facilities, it is helpful if the detector can be used for the measurement of corners.

- ✓ Our corner detector has no dead zone at the edge. This type of detector has also proved its worth in the clearance monitoring of corrugated sheets, e.g. paneling of ISO-containers.



CoMo-170 with PD-43 pipe probe



CoMo-170 with floor control device



Corner detector

Radionuclide efficiency

Average values from measurements with 100 cm² sources

Am-241 α	approx. 20%	K-40	approx. 30%
Au-198	approx. 23%	Lu-177	approx. 35%
C-14	approx. 13%	Ni-63	approx. 0.5%
Cl-36	approx. 37%	P-32	approx. 25%
Co-57	approx. 7.5%	P-33	approx. 12%
Co-58	approx. 8%	Pu-238 α	approx. 20%
Co-60	approx. 26%	Re-186	approx. 23%
Cr-51	approx. 0.9%	Ra-223	approx. 22%
Cs-137	approx. 35%	Re-188	approx. 13%
Er-169	approx. 25%	S-35	approx. 12%
F-18	approx. 18%	Se-75	approx. 7.5%
Fe-55	approx. 0.8%	Sn-113	approx. 8.5%
Fe-59	approx. 14%	Sr-89	approx. 27%
I-123	approx. 4%	Sr-90 / Y-90 (based on Sr-90)	approx. 42%
I-125	approx. 12%	Tc-99m	approx. 3%
I-129	approx. 3%	Tl-201	approx. 7%
I-131	approx. 21%	Tl-204	approx. 37%
In-111	approx. 10%	U-238 α	approx. 22%

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