



VF NUCLEAR



NUCLEAR POWER PLANTS



WASTE MANAGEMENT



CALIBRATION LABORATORIES



RESEARCH CENTRES



INDUSTRY & MANUFACTURING



NUCLEAR MEDICINE

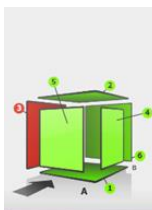


MCM-300

TOOLS AND MATERIALS CONTAMINATION MONITOR

MAIN ADVANTAGES

- 4π measurement geometry
- Easy installation, simple operation
- Identification of the person making the measurements
- Entry and exit door interlocking
- Exit door blocking system to prevent the release of contaminated materials
- Contamination evaluation using radionuclide vectors (fingerprints)
- Archiving of measurement results
- The option to connect a printer
- Mobile version with castor wheels available
- Displaying data and setting the monitor remotely from the host system



det.	n_{bg} [cps]	n_g [cps]	A_m [Bq / kg]	% of alarm [%]
1	492,65	490,11	49,82	16,61
2	538,77	538,37	10,12	3,37
3	527,94	1 790,53	1 684,94	561,65
4	532,81	533,00	13,62	4,54
5	514,45	514,05	12,01	4,00
6	520,79	519,74	11,42	3,81
Σ	3 127,41	4 385,79	325,79	108,60

An illustration of the measurement process

PURPOSE

The MCM-300 monitor, with plastic scintillation detectors, can be used in particular for objects contamination monitoring to prevent bringing out contaminated objects from radiation controlled areas, or for free release monitoring of material from decommissioned and dismantled nuclear facilities.

MCM-300 contains six high-volume plastic scintillation detectors, which are located in all six walls of the stainless steel measuring chamber. The measuring chamber with a volume of 300 dm³ is shielded by lead shielding, as standard 1 cm thick, optionally 2.5 or 5 cm.

The monitor has integrated weigh scale to enable the determination of the mass activity of measured objects.

The evaluation of the contamination of the measured objects is performed using radionuclide vectors (fingerprints), which are user-editable.

MCM-300 has entry and exit doors to the measuring chamber. The exit door cannot be opened unless the monitor evaluates that the inserted materials are not contaminated. Alternatively, the entrance door can be used as both an entrance and an exit door and the exit door can be permanently closed.

The evaluation is based on a comparison of the measured values against the threshold values defined for the selected radionuclide vector. If the measured value of the object activity is lower than the set free release (clearance) level, the exit door is unlocked and the item can be removed. Otherwise, the entry door stays locked, and the monitor alerts the operator that the object is contaminated.

It is possible to save and edit a total of five radionuclide vectors in the monitor. The touch screen allows control of the instrument and displaying the measurements results. The USB port is used to connect the monitor to a printer.

TOOLS AND MATERIALS CONTAMINATIONS MONITOR

SPECIFICATIONS

Detector type	plastic scintillator
Measuring chamber volume	300 dm ³
Measuring range (¹³⁷ Cs)	
for 10 mm shielding	120 Bq – 15 MBq
for 50 mm shielding	65 Bq – 15 MBq
Energy range	40 keV – 2 MeV
Pb shielding	10 mm (optional 25 or 50 mm)
Dimensions (W × H × D)	1045 × 1737 × 887 mm
Measurement chamber dimensions (W × H × D)	620 × 770 × 620 mm
Approximate weight	
for 10 mm shielding	1,050 kg
for 50 mm shielding	3,650 kg
Weight of measured material	from 0,5 to 60 kg
Power supply	100 - 240 V AC
Temperature range	from 0 to 45 °C
Humidity range	max. 90 % non-condensing
Displayed units	cps, Bq, Bq/kg
Communication interface	Ethernet
Printer interface	Mains + USB



ASU-50 Alarm Slave Unit

OPTIONAL FEATURES

-	ID card reader
50-A-0015260	Castor wheels (for 10 and 25mm shielding)
50-A-0015420	Castor wheels (for 50mm shielding)

RELATED PRODUCTS

SIM	Small Items Monitors
ASU-50	Alarm Slave Unit
HF	Hand-Foot Contamination Monitor
ExitScan-2	Personnel Exit Monitor
PAM-100	Portable Activity Meters
PAM-170	Portable Activity Meters
PAM-525	Portable Activity Meters
FCM-11	Frisking Contamination Monitor
SFP-100	Smart Frisking Probe



SIM-101 Small Items Monitor