

DoIMo SIM

Training set for simulation of Gamma dose and dose rate



The new training devices DoIMo SIM (dose and dose rate meter) and CoMo-170 SIM (contamination detection device) are designed for the practice-oriented training of radiation protection officers and first responders. The technically modified devices respond to radio waves (DoIMo SIM) or to magnetic fields (CoMo SIM) and can therefore be used for training scenarios even without radioactive sources.

Benefits

- Realistic display of measured values
- Display of large-area contamination (CoMo SIM) or large areas with increased dose rate (DoIMo SIM)
- No radioactive sources no radioactive sources needed
- Training in the fictitious mSv range without real dose exposure
- No handling permit required
- No transport of radioactive sources

Key figures

96,4 mSv/h

➔ Max. dose rate range DoIMo SIM

>3 Gamma

➔ Training sources can be used for the DoIMo SIM

>40 Meter

➔ Range of the DoIMo SIM radio source

Technical details DolMo SIM with RAD-SIM GS4-A Gamma simulation source

Technical data DolMo SIM: The DolMo SIM largely has the same features as a regular DolMo. Depending on the desired firmware version, it corresponds to the DolMo F or the DolMo I standard device for the fields of nuclear power and medicine.

Measuring and display range: up to 96.4 mSv/h, can only be used in combination with the RADSIM GS4-A Gamma simulation source. The measuring device is designed for training purposes only. The DolMo F SIM (version for fire department operations) features dose and dose rate warning thresholds according to the German Fire Department Regulations 500 (25 µSv/h, 1, 15, 100, 250 mSv). In the standard version, the warning thresholds can be set as needed.

Simulation source: The RADSIM GS4-A gamma simulation source has 9 factory set activity levels. At simulated activity level 9, an approximate distance of 50 m or 160 feet can be expected. The source features a selector switch for easy adjustment of the desired fictitious activity.

Level	Activity		Simulated reading at 6ft (1.8m)			
	Curies	MBq	R	Gy	Rem	Sv
1	0.00059	21.83	0.53µR	0.5µGy	50µR	0.5µSv
2	0.0119	440.30	0.0107mR	0.01mGy	1mR	0.01mSv
3	0.0357	1,320.90	0.032m	0.03mGy	3mR	0.03mSv
4	10.4	384,800.00	1R	9.33mGy	933mR	9.33mSv
5	20.8	769,600.00	2R	18.66mGy	1.87mR	18.66mSv
6	31.3	1,158,100.00	3R	27.0mGy	2.8mR	28.0mSv
7	52	1,924,000.00	5R	46.65mGy	4.63Rem	46.65mSv
8	104	3,848,000.00	10R	93.3mGy	9.33Rem	93.3mSv
9	208	7,696,000.00	20R	186.6mGy	18.6Rem	186.59mSv



DolMo SIM



Example: Hazard labels for radioactive substances

Proposals for training

Determine hazard zone – Place one or more radio sources in a damaged vehicle (possibly with real signage) or in a debris field and have the emergency services mark the restricted area (e.g. at 25 $\mu\text{Sv/h}$) around the vehicle or the debris field. Different distances can be achieved by shielding the radio source on one side with lead or steel plates.

Check transport packages – Prepare several packages with hazard labels for radioactive substances. Write down a transport index from 0.1 to 0.9 and a nuclide such as I-131 or Co-60. Position the RADSIM GS4-A Gamma simulation source behind the packages and change the position of the selector switch as desired. The trainee's task is to compare the different dose rate readings on the DoIMo SIM with the calculated value at a distance of 1 meter. If the measured value is below the calculated value (total transport index $\times 10 = \text{max. dose rate in } \mu\text{Sv/h}$ at a distance of one meter from the packages), it can be assumed that the shielding has not been damaged, e.g. after an accident.

Track down a lost source after a satellite crash, accident or act of war – Hide one or more radio sources in a thin-walled metal box or in a cardboard box and hide them in a debris field, wooded area or away from an accident site. Then select a low activity level to make the task more difficult.



Vehicle signage with orange warning sign and class 7 transport sign