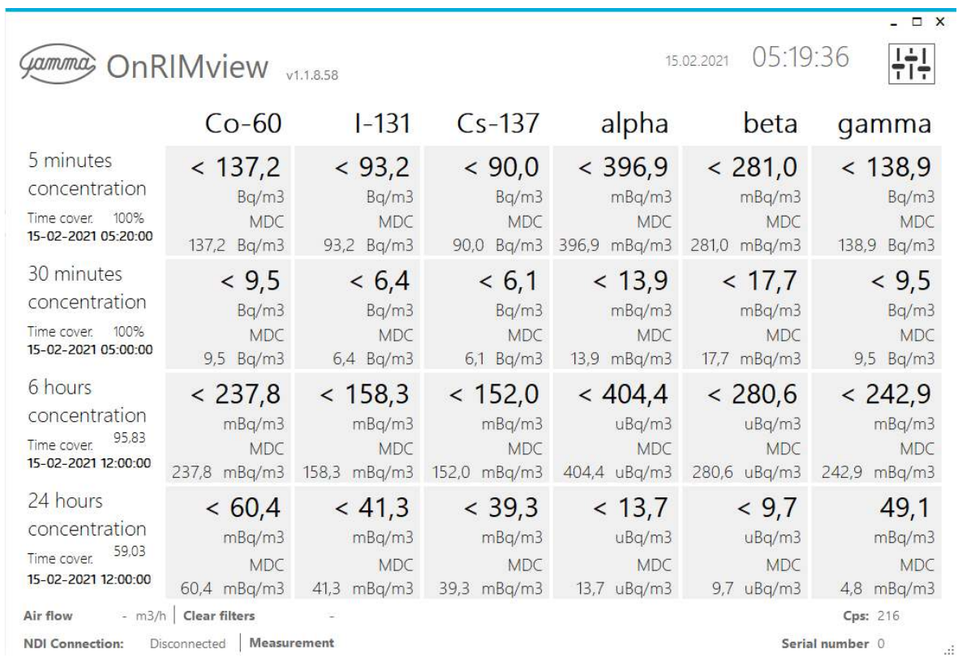
OnRIM Online Radioactive Aerosol and Iodine Monitoring Station

MAIN FEATURES

- Monitoring airborne radioactivity in the proximity of nuclear facilities, isotope laboratories
- Simultaneous alpha, beta, gamma measurement with spectrum stabilization
- Automatic changing of filter cartridges
- Connectivity with data acquisition units, monitoring networks
- Autonomous operation with low maintenance requirements
- Outdoor operation - IP66 protection, wide operational temperature range
- The operation is not affected by the temperature, or dust content of the inlet air

Ordering options:

- pre-heating, dehumidifier, cyclon for dust extraction, sampling unit for emission monitoring, local audible and visual alarm, display



The OnRIM Online Radioactive Aerosol and Iodine Monitoring Station is a highly sensitive device intended for measuring and creating reports and analysis about the environmental effects of radioactive releases in the surroundings of nuclear facilities, such as nuclear power plants, radiopharmaceutical and industrial isotope production companies, C-level isotope laboratories, as well as in case of nuclear accidents. The aerosol measurement system is designed to continuously monitor the concentration of I-131 bound to aerosols, and of elemental or organic forms of the radioactive iodine. The station can be configured to be deployed outdoors to perform immission measurements or to perform emission measurements when connected to a ventilation system.

Capabilities of the system: The system performs continuous air sampling according to the adjustable evaluation cycle time. The base measurement cycle time is 30 minutes. In case of a great increase in activity, alarms can be generated within the base cycle time. In every cycle it determines the isotope selective activity concentration for pre-defined nuclides at the sampling point. In basic construction the measurement system measures the I-131 activity concentration. Further measurement capacities can be added for additional isotopes (e.g. Cs-137). It determines the Cs-137 equivalent gamma, Am-241 equivalent alpha and the Sr-90 equivalent beta emitting isotopes in 30 minutes, 6 hours, daily and average concentrations. The system draws the air samples through a combined filter (aerosol, PACI, activated carbon), which absorbs >99% of the elementary, organic and aerosol form of radioiodines. The filter captures not only radioiodine but also other radioactive aerosol contaminants. The minimum detectable activity concentration for I-131 at 4 m3/h volume flow with 30 minutes measurement time is 3 Bq/m3, <0.1 Bq/m3 for a 6 hour measurement cycle and <0.01 Bq/m3 for a 24 hour measurement cycle. The instrument simultaneously and separately evaluates the absorbed alpha, beta and gamma activities using a scintillation detector. It is possible to retrospectively evaluate the recorded spectra. In case the filters are clogged, torn or need to be changed due to the high activity, the automated filter changer performs the filter replacement.
The system has a weatherproof design and a modular construction. It can be used as a mobile measurement device or can be mounted on a fixed stand and can be connected to external 230 V AC power supply. The station can be optionally equipped with a visual and audible alarm capable alarm unit.

Data acquisition: The average readings are saved every 30 minutes.

Data transfer: The device can accept connection requests through multiple communication interfaces (Ethernet, 3G/4G, LTE450). It is possible to query the measurement data and alarm signals from a remote data centre. The unit stores measured data and error messages - calculated over 30-minute backup periods - until data is transmitted.

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