NukAlert Automated Radiation Measurement Station
ARMS-2

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The NukAlert Automated Radiation Measurement Station (ARMS-2) is designed for mounting on the roof of a building. It contains dual radiation detectors, which provide concurrent 24/7 real-time cloud and ground radiation measurements. ARMS-2 can automatically shut off the air intake to a building's HVAC system when user-defined radiation levels are reached, protecting the building's occupants from radiation and preventing interior building contamination. ARMS-2 measures radiation from 1µR/hr to 700R/hr, with no saturation below 1,000R/hr. The radiation detecting device has been tested by Oak Ridge National Laboratory.

The automated station employs a radiation detector 1 meter above the surrounding terrain, providing an omnidirectional radiation measurement. A second detector, mounted in the system base, is shielded by a 2" thick lead collimator that restricts its response to a 90 degree cone straight above the station. The dual sensors provide simultaneous measurement of "cloud shine" and "ground shine" gamma radiation. By differentiating between airborne and settled radioactive hazards, the ARMS-2 gives the user additional guidance in the shelter in place vs evacuation decision. The "Cloud Shine" feature also enhances live radiation plume modeling. Multiple communication paths (Ethernet, Cell System, and WiFi) are incorporated into the ARMS-2 to enhance reliability through redundancy. The small wind profile and the weight of the lead blocker in the base of the ARMS-2 station allow it to be easily mounted on a rooftop without adhesives or attachments, greatly simplifying the installation.

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NüK⁕⁕ALERT™

The measured dose rate can be read as a BACnet analog value by compatible building control systems for alarming and automatic shutdown of building outside air intakes when radiation above a set threshold is detected. The NukAlert ARMS-2 is capable of sending radiation reports to multiple databases simultaneously, including FEMA's RadResponder Network and WebEOC. Additionally, the ARMS-2 can send email and text reports of radiation levels to multiple key personnel. The NukAlert ARMS-2 accomplishes Task 5.5 of the Rad Resilient City Initiative. The NukAlert ARMS-2 system can monitor real-time radiation at your location and remote sites without sending personnel outside to take measurements in times of high radioactivity. During a radiological event, if radiation is drawn in by the ventilation system, the shelter offered to people by a building can be compromised and the building may be rendered permanently uninhabitable by radioactive dust distributed in the duct-work.

ARMS-2 is ideal for schools, hospitals, data centers, EOCs, office buildings, and ALL critical infrastructure because it can protect buildings and their occupants, while simultaneously providing critical data to staff and emergency managers, in the event of a nuclear plant accident, dirty bomb, improvised nuclear device, or nuclear weapon detonation.

Specifications:
• Station base footprint: 48" X 48"
• Instrumentation post, 7" diameter X 60" height
• Station nominal weight: 100 pounds (UPS shippable - Easy assembly)
• Operating environment: -40°C to +65°C, 0 to 100% humidity
• Power requirement: Power Over Ethernet,   48VDC@ 1.0A max
• Radiation detection instruments: NukAlert-ER Geiger counter
• Measurement range: 1µR/hr to 700R/hr
• No saturation below 1,000R/hr
• Accuracy Cs137 ±20%
• Geiger system: Active electronic quenching
• High rate system: Time To First Count (TTFC)
• Geiger tube: Supplied with LND 7121 Geiger tube. Other tubes available as options
• Gamma Sensitivity: 18 counts/sec @ 1mR/hr (10µSv/hr)
• Background: <10 counts/minute (Shielded)
• Sudden radiation change response time accuracy: 2 seconds at 10mR/hr within ± 25%
• EMP Faraday shield
• 2" thick lead collimator for 90 degree cone "sky shine" measurement
• Dual "Sky Shine" and "Ground Shine" radiation measurement data streams
• Supplied with: 50' Outdoor Cat-5 cable and POE Injector/lightening arrestor
• Fiber optic interface available on request at no additional charge
• One year limited warranty
• Recalibration service and extended warranty available
• Radiation instrument accuracy type tested by Oak Ridge National Laboratory

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Features:

- ARMS-2 can initiate shut off of HVAC air intake through BACnet within 2 seconds to prevent distribution of radioactive contamination throughout a building\

- Simultaneous ground and "cloud shine" radiation measurements

- Sends real time radiation reports to FEMA's RadResponder Network, WebEOC, and multiple databases

- ARMS-2 can send email and text alerts of high radiation levels before closing HVAC air intake

- Can send multiple email and text alerts at user defined radiation levels

- Radiation measurement reports as often as every 60 seconds

- **Will not saturate (overload) and give false or no readings in high levels of radiation**

- Excellent linearity over 9 decades of radiation intensity
- **Redundant communications features:**
  Ethernet
  Cellular: 4G/ LTE
  •AT&T
  •Verizon
  • Sprint
  • T-Mobile
  Embedded GPS receiver
  VPN
  WiFi: 802.11b/g/n (upon request)