



F&J SPECIALTY PRODUCTS, INC.

The Nucleus of Quality Air Monitoring Programs

Air Sampling Instruments For Radiological Emergency Preparedness

The necessity of state-of-the-art air sampling and airflow calibration instruments for radiological emergency preparedness teams (REP), civil survey teams (CST) and radiological assistance program teams (RAP) is clearly established in today's terrorism sensitive environment.

Instruments need to be lightweight, reasonably small, simple to operate and to display accurate measurement values that are comparable to other measured results of different survey teams and in compliance with industry recognized standards.

F&J provides a variety of emergency response air sampling instruments that can be utilized by first responders or secondary responders to a dirty bomb terrorist event, a nuclear power plant accident event, or even a terrorist suitcase bomb detonation.

At some point in the event, there will be a need to monitor radioactivity levels of ambient air which emergency survey workers and the general public will be exposed to. Field samples preferably will be collected utilizing portable lightweight instruments. Subsequently, analysis of samples collected on particulate filter media or radioiodine collection cartridges will be made at a fixed station or mobile radio-analytical laboratory supporting field operations.

Accurate measurement of quantitative radiological pollutant levels in ambient air being breathed by emergency response teams is essential to ensure the health and safety of the REP, CST and RAP team members.

The F&J battery powered air sampler selection includes two levels of flow capacities. The ~40 LPM (1.4 CFM) maximum flow units range in weight from ~8 lbs to ~17 lbs. featuring lead acid batteries or NiMH batteries. Air samplers with lithium ion batteries are available with 40 LPM capacities and 75 LPM capacities.

For second level of flow capacity the instruments have a maximum flow of ~75 LPM (~2.65 CFM) and range in weight from ~10 lbs to 31 lbs. These emergency response air samplers feature primarily lithium ion and lead acid batteries. One design operates from AC power or external 12 VDC power and does not have an internal battery.

Operability includes, for most models, three power options:

- On-board batteries
- 12 VDC external source
- line power

These emergency response air samplers can be useful for REP, RAP and CST programs.

These high tech instruments provide several interesting and very useful automated features. The key features include the following:

- automatic flow control
- auto shut off on time or volume
- correction of flowrates and volumes to a reference temperature and pressure
- RS232 communications port
- Digital display with dimming feature to save battery life
- Long battery life
- Lightweight and packaged in small enclosure

There are two styles of enclosures utilized for the air samplers. The “ammo box” style is a waterproof enclosure that can be utilized as the storage and transportation container for the air sampler and the metal “instrument box” enclosure is designed primarily for indoor use or outdoor use in good weather.

The air sampling instruments in both types of enclosures offer the same advance technology features of automation and correction of flowrates and volumes to a reference temperature and pressure.

One of three different technologies of on-board batteries is utilized depending on the model. The available battery technologies are:

- Sealed lead acid battery
- Nickel metal hydride batteries and
- Lithium ion batteries

All instruments with on-board batteries possess a battery capacity indication gauge and an on-board charging system via line power input.

All units possess an RS232 communication port to interface with an optional flashcard data storage device.

Nominal 40 LPM Capacity

DF-40L-8



NiMH batteries
~ 8 lbs.
AC/DC/Battery

DF-40L-12



Lead Acid Battery
~17 lbs.
AC/DC/Battery

DF-AB-40L



NiMH batteries
~12 lbs.
AC/DC/Battery

DF-AB-40L-Li



Li-ion Battery
~12 lbs.
AC/DC/Battery

DF-40L-Li



Li-ion Battery
~12 lbs.
AC/DC/Battery

Nominal 75 LPM Capacity

The 75 LPM (~2.65 CFM) maximum flow capacity units range in weight from 10 lbs. to 31 lbs. featuring ~17 Ah lead acid batteries or 15.6 Ah Lithium ion batteries.

DF-AB-75L-AC



AC/DC
~ 17 lbs.

DF-AB-75L-Li



Lithium ion Battery
~ 21 lbs.
AC/DC/Battery

DF-75L-AC



AC/DC
~ 10 lbs.

DF-75L-Li



Li-ion Battery
~ 15 lbs.
AC/DC/Battery

The most recent innovation of emergency response air monitoring equipment introduced by F&J is the portable beta CAM product line.

The F&J emergency response CAMs are very useful for REP, RAP and CST teams to supplement other existing portable radiation detection instruments.

The CAMs can be utilized to determine if inhalation exposure risks are significant to emergency response personnel.

The lightweight CAMs display in North American or international engineering units, for flowrate, activity and concentration. The displayed values default to a Cs-137 equivalent. Provisions are available to select other isotopes for which a calibration has been determined.

RMDF-30L



Nominal 30 LPM

RMDF-60L



Nominal 60 LPM

Key features include:

- Audible alarm
- Visual alarm
- Standard 47 mm filter media holder
- Background correction
- Alarm set points for
 - Activity
 - Concentration
- Audible alarm reset button