RAID-XP

- The reliable CBRN Detector
New Dimension in NC Detection

The development of the very latest Bruker detection system stems from recognition that the security situation in recent years has changed considerably. Customers now acknowledge the existence of asymmetric threats and a new capability is required to reflect these changes.

It has been widely reported that there are many radiation sources worldwide that terrorists could use in combination with conventional explosives to produce a „dirty bomb“. Recent intelligence suggests that conventional explosives could also be used in conjunction with Chemical Warfare Agents (CWA’s).

In response to these threats Bruker has developed the highly sensitive RAID-XP. The innovative RAID-XP combines chemical and radiological detection into one system. The RAID-XP is extremely flexible and has been developed for military use, which includes the harsh naval environment as well as counter terrorism and civil defence applications. The state-of-the-art RAID-XP is a highly flexible instrument, both in terms of detection capabilities (N+C) and light-weight and portable design. It is based on the principle of ion mobility spectrometry.

![Diagram of Principle of Ion Mobility Spectrometry for C-Detection](image)

![Image of RAID-XP Detector](image)
Clear and Unambiguous Indication of Nuclear and Chemical Threats

The two display concept provides a clear and unambiguous indication of the NC threat assessment. A warning is given by acoustical and optical alarm. The RAID-XP has an internal memory for the results of the N and C sensors in combination with time and geographic location, which can be provided by a GPS receiver. The RAID-XP is able to identify, classify, quantify, and continuously monitor concentration levels of CWA’s specified.

The identity of substances detected is either indicated by class „G“, „H“ or „T“, or the specific agent or simulant identity is displayed.

For the detection and quantification of gamma radiation the actual gamma dose rate and the accumulated gamma dose are displayed. Warning thresholds can be set by the user for the gamma dose rate and the accumulated gamma dose.

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Technical Specifications

**Basic Unit**

**Weight**
6,7 kg (without battery)

**Size**
245 x 165 x 280 mm

**Power Supply**
External power supply, accumulator/battery
Low voltage DC power (10-30 V DC nominal)
Mains power supply: 230 V 50 Hz (110 V 60 Hz) AC 0,5 - max. 4A

**Battery**
Lithium MnO2 battery, non rechargeable (Weight: 3,3 kg),
Lithium Ion battery, rechargeable (Weight: 1,4 kg)

**Interface**
RS232 Interface GPS enabled

**Environmental Test**
Military hardened

**C-Detector** (List not exhaustive)

**Substances detectable**
CWA’s: GA, GB, GD, GF, VX, VXR, HD, HN, L, AC
Test substances: DPM (GSI), MSAL (HSI); Toxic Industrial Chemicals: CL2, Chloride (CLX), Cyanide (CY), SO2, Toluoldiisocyanate (TDI)

**Detection range**
Low ppb up to several ppm (substance specific)

**Temperature range**
-20° C ...+ 50°C

**Spare parts**
No requirement to change consumables when RAID-XP detects a challenge, any consumables used are kept to a minimum and have maximum life. Low-maintenance concept for the operator

**Radiation active source**
Ni-63 with 100 MBq activity

**γ-Radiation Detector**
Measurement ranges of the internal dose rate sensor:

- γ-radiation  > 70 keV
- γ-dose rate  0.5 μGy/h ... 20 Gy/h
- γ-dose  0 – 20 Gy

Adjustable thresholds for dose and dose rate.