CABV 31 Alpha and Beta Contamination Monitors for Clothes and Floors

Features
- Simultaneous control of alpha and beta contamination with automatic background subtraction
- Large 200 cm\(^2\) detection area gas flow probe
- Rugged entrance double grid
- Visual and audible alarms
- Separate displays of alpha and beta counting rates

Description
The CABV 31 allows for a fast and accurate monitoring of personnel clothes and objects at controlled area boundary. The CABV 31 is generally installed at a stationary location.

The instrument is composed of three sub-units:
- A case including measurement electronics, two alpha and beta both digital and graphic displays, good operation indicator lights and visual and audible contamination alarms.
- A disconnectable keyboard including a LCD display for entering parameters and controlling the system; the user-friendly dedicated software makes these operations very easy.
- A measurement probe equipped with a 200 cm\(^2\) gas flow proportional detector fitted with a 0.8 mg/cm\(^2\) Mylar\textsuperscript{®} window.

Specifications
**NUCLEAR**
- **INSTRUMENT** – Meets IEC 60325 recommendations.
- **DETECTOR** – Gas flow proportional detector, DPC 200-1.
  - Detector area: 200 cm\(^2\).
  - Window thickness: 0.8 mg/cm\(^2\).
  - Stainless steel grid transparency: 49%.
- **MEASUREMENT TIME** – 2 s.
- **GAMMA SENSITIVITY** – 40 c/s in \(\beta\) channel per \(\mu\)Sv/h (\(^{137}\)Cs).

<table>
<thead>
<tr>
<th>Nuclide</th>
<th>Emitter</th>
<th>Typical efficiency over (2\pi) (%)</th>
<th>Guaranteed efficiency over (2\pi) (%)</th>
<th>Response to activity (c/s)/Bq</th>
<th>MDA (Bq – Bq/cm(^2))</th>
</tr>
</thead>
<tbody>
<tr>
<td>(^{239})Pu</td>
<td>Alpha</td>
<td>22</td>
<td>19</td>
<td>0.11</td>
<td>18 – 0.089</td>
</tr>
<tr>
<td>(^{90})Sr + (^{90})Y</td>
<td>Beta</td>
<td>30</td>
<td>26</td>
<td>0.19</td>
<td>14 – 0.065</td>
</tr>
</tbody>
</table>

MDA: Background = 0.02 c/s (alpha) and 6.0 c/s (beta), measured in a 0.1 \(\mu\)Gy/h ambience.
Measuring time on source = 2 sec.
Statistic: false alarm = 5% and non detection = 5%.
CABV 31 Alpha and Beta Contamination Monitors for Clothes and Floors

ERGONOMICS
- **DISPLAY** – Red light “ALPHA CONTAMINATED”, red light “BETA CONTAMINATED”.
- Audible alarm in case of contamination; audible bip for each α pulse.
- Both digital and graphic fast display (2 s measurement time) of both α counting rate and β counting rate with background subtraction.
- **REMOTE ALARM OUTPUT** – Optional, for remote contamination alarm and out of order alarm via dry contacts.
- **OPERATION STATUS** – Three light indicators: green “OPERATING”, red “NO OPERATING”; yellow “WAIT”.
- Display of gas flow, high voltage, background defects.
- **CONFIGURATION/CONTROL** – Optional disconnectable keyboard with LCD and help messages:
  - One keyboard only for several instruments.
  - Selection of good operation thresholds (low and high background thresholds) and α and β contamination thresholds.

ELECTRICAL/GAS SUPPLY
- **POWER SUPPLY** – Mains 230 V/50 Hz; power consumption <250 mA; “MAINS” blue indicator light.
- **GAS TYPE** – Argon-methane 90/10, argon-methane 95/5, argon-CO₂ 90/10, etc.
- **GAS SUPPLY** – Pressure: One to eight bars; flow 1 L/h; flowmeter included; optional gas bottle pressure reducer.

MECHANICAL
- **BOX SIZE** – 230 x 360 x 180 mm (H x W x D).
- **TOTAL WEIGHT** (probe included) – 11.5 kg.
- **CONTROL KEYBOARD** – 145 x 80 x 35 mm (L x W x D).
- **CONTROL KEYBOARD WEIGHT** – 200 g.
- **PROBE** – 220 x 140 x 30/60 mm (L x W x D).
- **PROBE WEIGHT** – 1.2 kg.
- **PROBE CONNECTING CABLE** – 2 m length cable, at the end of a moving arm placed at 2.2 m height, including electrical conducting cables and gas feed pipe.

ENVIRONMENT
- **TEMPERATURE/HUMIDITY** – -10 to +45 °C.
- **RELATIVE HUMIDITY** – 30 to 80%.

ORDERING REFERENCES
- **CABV 31** – EM18452.
- **Options** –
  - PRESSURE REDUCER – EM18401.
  - CONTROL KEYBOARD – EM18450.
  - REMOTE ALARM OUTPUT – EM18449.
  - SPARE PROBE FOR CABV 31 – EM21244.