



ABPM 205L

Alpha Beta Particulate Monitor



Nuclear
Power



Healthcare



Homeland
Security
& Defense



Labs and
Education



Industrial and
Manufacturing

OVERVIEW

The ABPM 205L monitor forms part of the RAMSYS product line.

It has been developed to sample air extracted from ventilation ducts or stacks. A double silicon detector performs the gamma compensation and a radial fin grid limits the scattering of the alpha particles (static compensation) which facilitates the compensation of the radon and thoron solid progenies by the processing algorithms (dynamic compensation).

Operating costs are minimised by the autonomous operation through automatic filter advance management.

KEY FEATURES

- Static and dynamic compensation of the radon and thoron solid progenies
- Natural and artificial alpha volumetric activity indication
- On-line spectrometry
- Up to 6 months filter cassette autonomy

RELATED MONITORS

- ABPM 205M: mobile version

PHYSICAL CHARACTERISTICS

- Radiation detected: alpha, beta and gamma
- Detector: dual large area silicon
- Filter type: FSLW2 (MILLIPORE)
- Typical energy windows:
 - Alpha: 2 MeV to 10 MeV
 - Beta: 80 keV to 2.5 MeV
 - Gamma: 80 keV to 2.5 MeV
- Typical measurement range:
 - Alpha: 10^{-2} to $3.7 \cdot 10^{+6}$ Bq/m³ ($2.7 \cdot 10^{-13}$ to 10^{-4} μ Ci/cc)
 - Beta: 1 to $3.7 \cdot 10^{+6}$ Bq/m³ ($2.7 \cdot 10^{-11}$ to 10^{-4} μ Ci/cc)

ENVIRONMENTAL CHARACTERISTICS

- Long term temperature: +10°C to +40°C (+50°F to +104°F)
- Periodic temperature: -5°C to +55°C (+23°F to +131°F)
- MTBF: > 20 000 hours, with preventive maintenance

PNEUMATIC CHARACTERISTICS

- Standard flow rate: 35 l/min (1.24 scfm)
- Pressure drop: 100 to 350 mbar (1.45 to 5.07 psi)

MECHANICAL CHARACTERISTICS

- Dimensions: 862 mm x 597 mm x 360 mm (33.9 in x 23.5 in x 14.2 in)
- Weight: ~ 45 kg (~ 99 lb)
- Color: gray RAL 7030
- Inlet tube connection: \varnothing 25.4 mm OD (1 in)
- Outlet tube connection: \varnothing 12 mm OD (1/2 in)

ELECTRICAL CHARACTERISTICS

- Power supply: 230 Vac – 50 Hz or 120 Vac – 60 Hz
- Data link outputs: 1 RS232 and 2 isolated RS485
- Alarm relays: 3 SPDT relays
- I/O: 2 isolated analog outputs and 1 isolated analog input (0/4-20 mA)

SIGNALING (Applicable to LPDU only)

- Alphanumeric display: measurement, status...
- Sound alarm: buzzer 90 dBA at 1 meter
- Visual alarm: 3 lights (red, yellow, green)

REFERENCE STANDARDS

- Nuclear: IEC60761, IEC61172
- EMC: 2006/95/CE and 2004/108/CE, IEC61000-6-2 and IEC61000-6-4

VERSIONS

- 230 Vac or 120 Vac
- LPDU or LPU
- Pumping unit
- Monitor wall fixing plate

ACCESSORIES

- Calibration tools
- Software
- USB converters

> CHINA - SHANGHAI
T: +86 21 6180 6920

> FRANCE - LAMANON
T: +33 (0) 4 90 59 59 59 | E: marketing-fr@mirion.com

> GERMANY - MUNICH
T: +49 (0) 89515 13 0 | E: muc-info@mirion.com

> USA - SMYRNA, GEORGIA
T: +1 770 432 2744



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