



MIRION
TECHNOLOGIES

PREMIUM ANALYSE

β ionixTM

Portable tritium monitor

Portable tritium monitor for radioprotection, environmental monitoring, laboratory, decommissioning



CHARACTERISTICS

- **High performance**
 - Continuous measurement
 - Tritium detection from 12.5 kBq/m³
 - Response time under 60 seconds
- **Simple**
 - Easy maintenance
 - User-friendly interface
 - Easy and quick to set up
- **Reliable**
 - Precise and stable
 - Performance validated by the CTHIR laboratory
- **Easy to use**
 - Light and robust
 - Color touch screen, graphical display

DESCRIPTION

The portable monitor, β ionix is intended for the continuous tritium activity monitoring and other beta emitters in ambient air.

Thanks to its very high sensitivity, its user-friendliness and its reliability, the β ionix portable monitor ensures the radioprotection of your teams, on dismantling & construction jobs, process controls, premises monitoring...

Ready for use, the portable monitor offers the most advanced features, such as: graphical plotting, archiving of data, remote display of the alarms, data extraction via USB stick, etc.

The β ionix portable monitor can be found in 2 versions:

- A simple measurement with a single ionization chamber of 660 cc
- A real time gamma compensated version with 2 ionization chambers of 300 cc

FUNCTIONALITIES

- Digital display of volumetric activity
- Archiving of 32days of measurement
- Data extraction and software update via USB stick
- Possibility to monitor the flow with low-flow detection
- Graphical plotting of measurements and alarms from 8 minutes to 8 days
- Choice and ability to personalize units used (Bq/m³, Ci, RCA, LPCA, DAC...),
- Light and sound signals when pre-alarm (orange) and alarm (red) threshold are exceeded, as well as good operation default
- Weight: 6 kgs
- Delivered with an external 24V power supply
- 6 hours autonomy 2 hours to recharge the batteries
- In option: transport case, external beacon,...

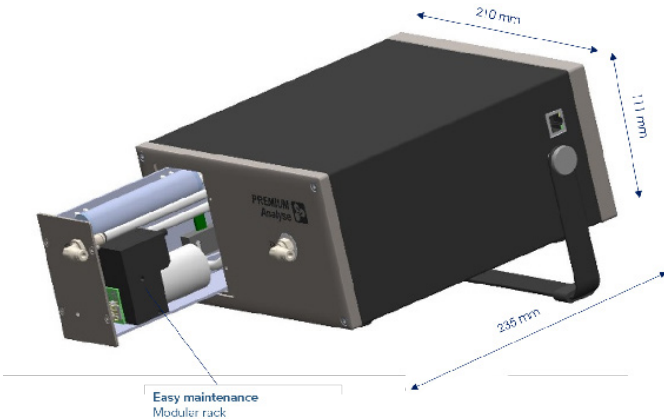


PERFORMANCES (For Tritium)

Measurement characteristics in laboratory conditions (given for tritium)	β IONIX 3 - MES Portable tritium monitor with manual gamma compensation	β IONIX 3 - CMP Portable tritium monitor with automatic gamma compensation
Measurement range	3 kBq/m³ to 3 TBq/m³ 82 nCi/m³ to 82 mCi/m³	6 kBq/m³ to 6 TBq/m³ 162 nCi/m³ to 162 Ci/m³
Limit of detection (2σ) = decision threshold	12,5 kBq/m³	30 kBq/m³
Limit of detection (4σ)	25 kBq/m³	60 kBq/m³
Precision	5% of the reading ± 12.5 kBq/m³	5% of the reading ± 30 kBq/m³
Maximum deviation	12,5 kBq/m³ / year	30 kBq/m³ / year
Noise (2σ)	± 12,5 kBq/m³	± 30 kBq/m³
Response time	< 60 sec at 90% of full scale	< 90 sec at 90% of full scale
Ionization chambers		
Volume	660 cc	2 x 300 cc
Nominal flow	4 L/m	2,5 L/m
Ionization voltage	160 VDC	

Operating conditions

- Use temperature: 0 to 40°C (32 to 104°F)
- Influence of temperature: 0.3% /°C for an ambient temperature variation < 3°C / hour
- Humidity: from 5 to 95% rel.
- Influence of humidity: ± 1 % of the reading from 10 to 90% relative humidity
- Atmospheric pressure influence: 0.1 %/mBar, hence ± 5 % of the reading from 930 to 1030 mbar



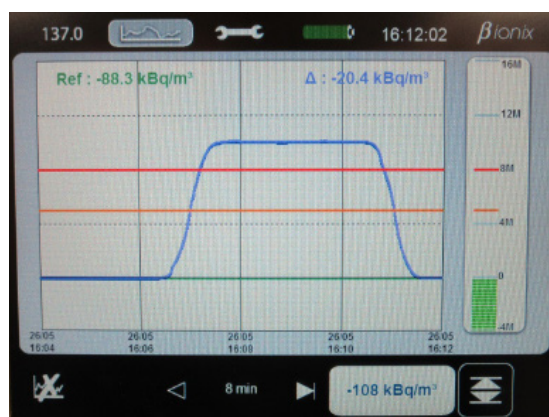
CALIBRATION AND RESPONSE TO TRITIUM

The tests performed in our calibration laboratory are based on the standard NF EN 60761-1 et -5. We can perform the following tests:

- An estimation of the limit of detection of the measurement chamber which is determined from the statistical fluctuation of the background noise level in a known environment
- The determination of the conversion coefficient (calibration factor) for tritium (Bq/m³)/fA using a standardized tritium gas source
- Verification of the response with a source of standardized tritium gas
- 3 points linearity verification
- Extended 7 points linearity test
- Verification of the limit of detection at 8 points
- Estimation of the measurement response time
- If necessary, a measure of the response to a ¹³³Ba source used as a reference for the conformity tests performed at the end of fabrication.



example of the response at 100 kBq/m³
B ionix 3 – MES



example of the response at 10 MBq/m³
B ionix 3 – CMP



Calibration reports available upon request



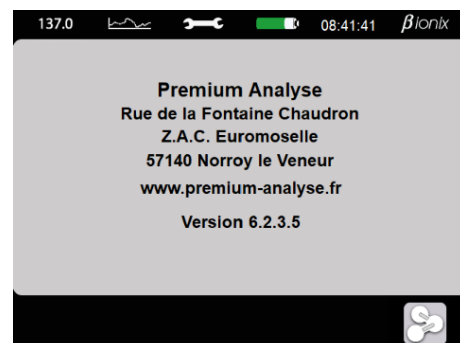
Mirion Technologies (PREMIUM Analyse) gas laboratory
based on the standard NF EN 60761-1 et -5

SERVICES

Our team is also capable of proposing accessories, allowing the handling and/or the use of the β ionix portable tritium monitor easier and more user friendly.

In addition to the calibration services, we are also capable to provide extra deliveries, such as:

- The training to use the devices
- The maintenance of the devices
- The training to maintain the devices
- The qualification of the devices to specific conditions (seismic spectrum,...)
- The engineering and design of custom made solutions for specific projects



ACCESSORIES AND PART NUMBERS

Device reference	
Portable tritium monitor with manual gamma compensation	B IONIX 3 - MES
Portable tritium monitor with automatic gamma compensation	B IONIX 3 - CMP

Spare parts	
12V pump	BT3 SP PPE MES/CMP
Table charger B IONIX 3	BT3 ACC CHT
USB stick for data extraction	BT3 ACC USB
Spare battery 10.8V - 8.7Ah	BT3 ACC BAT

Accessories	
Fixed remote alarm beacon	ACC BAL F
Portable remote alarm beacon	ACC BAL P
Transport case	BT3 ACC CASE
Shoulder strap	BT3 ACC STRAP
Rolling table for B IONIX	BT2 ACC TAB
Silicone hose 4x8 thickness 2mm L 5m	BT3 ACC TUY 05

Services	
Training for users	BT3 FMT USE
Annual maintenance flat fee	BT3 MNT ANN



CONTACT US

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