



PREMIUM ANALYSE

β ionix 3TM

Portable Tritium Monitor

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



FEATURES

- **High performance**
 - Continuous measurement
 - Response time under 60 seconds
 - Tritium detection from 12.5 kBq/m³ (0.33 μ Ci/m³)
- **Simple**
 - Easy maintenance
 - User-friendly interface
 - Easy and fast commissioning
- **Reliable**
 - Precise and stable
 - Performance validated by the CTHIR laboratory
- **Easy to use**
 - Light and rugged
 - Color touch screen, graphical display

DESCRIPTION

The portable monitor, B ionix has been designed for the continuous monitoring of tritium activity and other β emitters in gases.

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

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

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

- Simple measurement with a single ionization chamber of 660 cc
- Real time gamma compensated version with 2 ionization chambers of 300 cc

B IONIX 3 | PORTABLE TRITIUM MONITOR

FUNCTIONALITIES

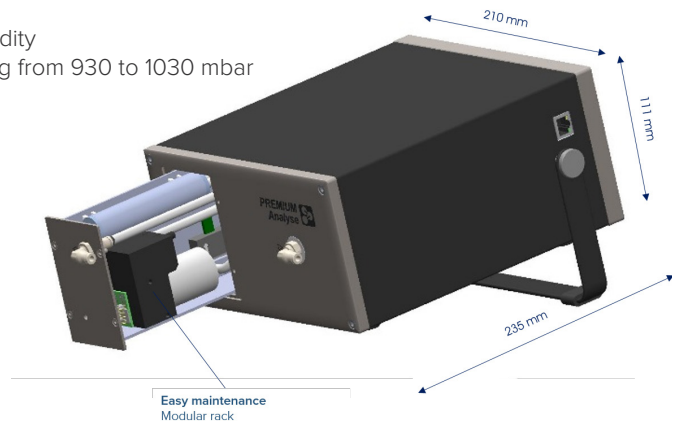
- 4 customizable alarm thresholds
- Digital display of volumetric activity
- Archiving of 32 days of measurements
- Data extraction and system update via USB stick
- Adjustment and monitoring of the flow rate with low flow detection possible
- Graphical plotting of measurements and alarm values from 8 minutes to 8 days
- Choice of volumetric activity among 15 units, with 4 customizable ones (Bq/m³, RCA, LPCA, Sv/m³...)
- Light and sound signals when pre-alarm (orange) and alarm (red) thresholds 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



Measurement characteristics in laboratory conditions (for tritium)	B IONIX 3 - MES Portable tritium monitor with manual gamma compensation	B IONIX 3 - CMP Portable tritium monitor with automatic gamma compensation
Measurement range	3 kBq/m ³ to 3 TBq/m ³ 82 nCi/m ³ to 82 Ci/m ³	6 kBq/m ³ to 6 TBq/m ³ 162 nCi/m ³ to 162 Ci/m ³
Limit of detection (2σ) = decision threshold	12.5 kBq/m ³ (0.33 μCi/m ³)	30 kBq/m ³ (0.81 μCi/m ³)
Limit of detection (4σ)	25 kBq/m ³ (0.67 μCi/m ³)	60 kBq/m ³ (1.62 μCi/m ³)
Precision	5% of the reading ± 12.5 kBq/m ³ ± 0.33 μCi/m ³	5% of the reading ± 30 kBq/m ³ ± 0.81 μCi/m ³
Maximum deviation	12.5 kBq/m ³ / year ± 0.33 μCi/m ³ / year	30 kBq/m ³ / year ± 0.81 μCi/m ³ / year
Noise (2σ)	± 12.5 kBq/m ³ ± 0.33 μCi/m ³	± 30 kBq/m ³ ± 0.81 μCi/m ³
Response time	< 60 sec at 90% of step	< 90 sec at 90% of step
Ionization chamber(s)		
Volume	660 cc	2 x 300 cc
Nominal flow	4 L/m	1 L/m
Ionization voltage	160 VDC	

Operating conditions:

- Use temperature: +0°C to +40°C (+32°F 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 and -5. 5. The following tests can be performed upon request:

- 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
- Measurement 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
 Volumetric activity measured



Example of the response at 10 MBq/m³
B IONIX 3 – CMP
 Volumetric activity measured

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B activity measurement
³H
²²²Rn
¹⁴C
 Tritium

always one idea ahead

Test report
B ionix 3 – CMP # 191

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Calibration reports available, gas calibration made upon request



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

B IONIX 3 | PORTABLE TRITIUM MONITOR

SERVICES

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

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

- The training on use the monitors
- The maintenance of monitors
- The training on maintenance the monitors
- The qualification of the devices to specific conditions (seismic spectrum...)
- 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 for B IONIX 3 - MES	BT3 SP PPE MES
12V pump for B IONIX 3 - CMP	BT3 SP PPE 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

Consumables	
Epoxy filter - 0.9μ (Pack of 5)	ACC FLT 5
Epoxy filter - 0.9μ (Pack of 100)	ACC FLT 100

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	BTI 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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