



PREMIUM ANALYSE

β ionix

Portable Tritium Monitor



FEATURES

- **High Performance:** sensitivity – limit of detection from $4 \text{ E-7 } \mu\text{Ci/cc}$ (2% DAC of H-3) response time under 60 seconds real time measurement
- **Simple:** intuitive user interface easy and quick to set up simple maintenance
- **Reliable:** Performance validated by the CTHIR Laboratory precise and stable
- **Easy-to-use:** color touch screen, graphical display light and robust

APPLICATIONS

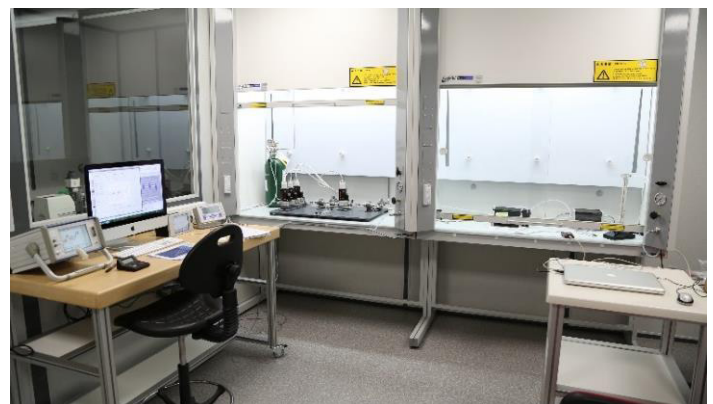
- Radioprotection
- Environmental Survey
- Laboratory
- Decommissioning

DESCRIPTION

The portable monitor, β ionix is intended for the real-time Tritium activity monitoring and other Beta emitters in ambient air.

Due to its very high sensitivity, its ergonomics and its reliability, the β ionix portable monitor provides the radiation levels to your teams on dismantling, construction, process controls, surveillance of premises etc.

Ready for use, the portable monitor offers the most advanced features, such as: graphical presentation, archiving of data, the postponement of the alarms, etc.



PREMIUM Analyse Laboratory based on the standard NF EN 60761-1 et -5

PERFORMANCES (for tritium)

	β ionix 3 - MES	β ionix 3 - CMP
	<i>Portable tritium monitor with manual gamma compensation</i>	<i>Portable tritium monitor with automatic gamma compensation</i>
Measurement range	2.5 kBq/m ³ to 2.5 TBq/m ³ 68 nCi/m ³ to 68 mCi/m ³	7 kBq/m ³ to 7 TBq/m ³ 190 nCi/m ³ to 190 Ci/m ³
Limit of detection	12.5 kBq/m ³	25 kBq/m ³
Precision	5 % of the reading ± 15 kBq/m ³ 25 kBq/m ³ / year	5 % of the reading ± 35 kBq/m ³ 25 kBq/m ³ / year
Stability	25 kBq/m ³ / year	50 kBq/m ³ / year
Zero offset	± 15 kBq/m ³	± 35 kBq/m ³
Noise	± 12.5 kBq/m ³	± 25 kBq/m ³
Response time	< 60 sec à 90 % of full scale 0.3 %/°C of the reading from 8 to 38 °C	< 75 sec à 90 % of full scale 0.3 %/°C of the reading from 8 to 38 °C
Influence of atmospheric pressure	0.1%/mBar, hence ± 5 % of the reading from 930 to 1030 mbar	0.1%/mBar, hence ± 5 % of the reading from 930 to 1030 mbar
Influence of humidity	± 1 % of the reading from 10 to 90 % relative humidity	± 1 % of the reading from 10 to 90 % relative humidity
Operation Temperature	5 to 40 °C	5 to 40 °C

GENERAL CHARACTERISTICS

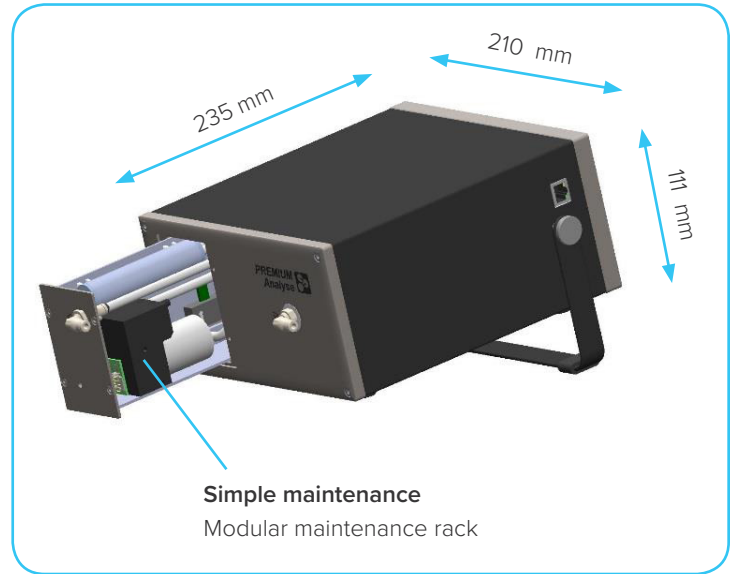
Humidity	from 5 to 95 % rel	from 5 to 95 % rel
Volume	660 cc	2 x 300 cc

IONIZATION CHAMBERS

Nominal flow rate	from 2 to 4 l/m	from 1.5 to 3 l/m
Standard coefficient of response	71 200 (Bq/m ³)/fA	151 560 (Bq/m ³)/fA
Ionization voltage	160 VDC	160 VDC

FUNCTIONS

- Manual gamma compensation or automatic compensation of gamma
- Choice and ability to personalize units used (Bq/m³, Ci, RCA, LPCA, DAC...)
- Programmable pre alarm and alarm levels
- Network communication by ModBus/TCP-IP
- Autonomy: 6 hours ; to recharge its batteries : 2 hours
- Weight: 6 kgs
- USB output - 32 days archive of all data with the ability to download to a spreadsheet package
- Graphical presentation giving historical data from the last 8 minutes up to the last 8 days



CALIBRATION AND RESPONSE TO TRITIUM

The tests are performed in our calibration laboratory based on the standard NF EN 60761-1 et -5

We can perform the following tests : Network communication by ModBus/TCP-IP

- 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.
- Verification of linearity at 3 points
- Extended linearity test at 7 points
- 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

Examples of the Response

β ionix 3 – MES



β ionix 3 – CMP



Volume activity measured 100 kBq/m³

REFERENCES

- Portable monitor without automatic compensation: BIONIX3 - M E S
With a single ionization chamber of 660 cc
- Portable monitor with automatic γ compensation: BIONIX3 - C M P
With 2 ionization chambers of 300 cc

ACCESSORIES

- External alarm beacon: BIS ACC -- BAL - P
- Transport case: BT3 ACC - CASE
- Shoulder strap: BT3 ACC - STRAP

SPARES

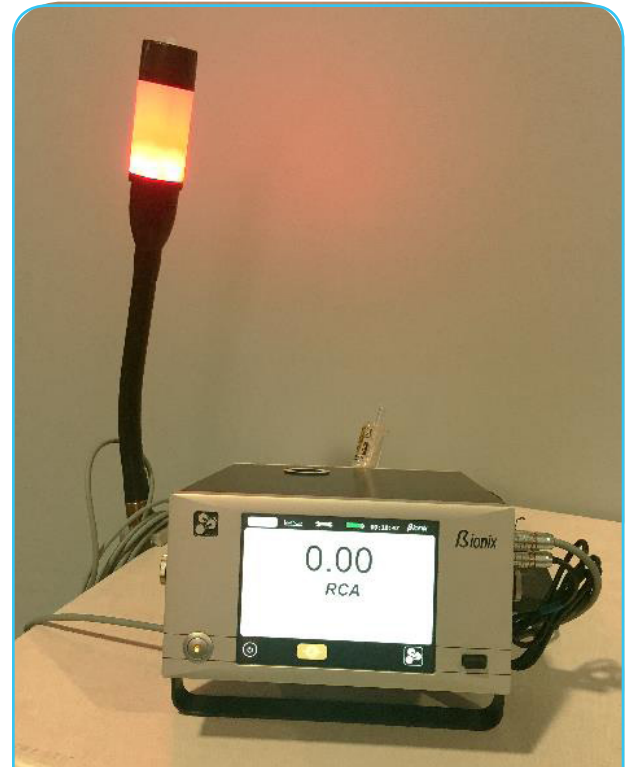
- Pump 12V for pump rack: SP - BTS - PPE
- Pump rack: SEP - BT3 - PPE
- Table charger for Bionix: BT3 ACC - CHT
- USB key for data recording: BT3 ACC - USB
- Battery 10.8V - 8.7AhL BT3 ACC - BAT

CONSUMMABLES

- Epoxy filter - 0.9 μ (lot de 5): BTI ACC - FLT1
- Epoxy Filter - 0.9 μ (lot de 100): BTI ACC - FLT100

SERVICES

- BETA IONIX – User training: B IONIX - FORMATION
- BETA IONIX – Annual maintenance: BT3 - MNT ANN
- BETA IONIX – Tritium gas calibration: Please ask



BIS ACC - BAL - P

External alarm beacon

The beacon can be positioned up to 10 meters away (or more if requested)