MIRION TECHNOLOGIES

PREMIUM ANALYSE

M ionix™

Mobile Tritium Detector

Mobile tritium detector for radioprotection, process control, environment monitoring, laboratory, decommissioning.

FEATURES

- **High-performance**
  - Self-checking
  - Continuous measurement
  - Response time under 3 min
  - Integrated light and sound alarms
  - Capability for automatic γ compensation
  - Detection of tritium from 10 kBq/m³ (0.27 µCi/m³)
- **Easy to use**
  - Ready to install
  - Minimal intervention
  - User-friendly interface
- **Mobile**
  - Lifting rings
  - Carrying handles
  - Rugged aluminum casing
  - Easily movable on various surfaces

DESCRIPTION

The mobile tritium detector M ionix is used for continuous measurement of tritium levels and other β emitter gases in ambient air.

Due to its very good sensibility, its user-friendliness and its reliability, the M ionix mobile detector ensures the radioprotection of your teams and premises, during construction, dismantling or as a temporary replacement of a fixed monitor.

The M ionix benefits from the most advanced technologies developed by Mirion Technologies (PREMIUM Analyse):

- HEPA filtration system,
- DT ionix 3 interface with digital touchscreen,
- Beta activity transmitter EXP40 with low noise preamplifier

Ready to use, the M ionix mobile detectors offer advanced functionalities such as: graphical plotting of data, data archiving, alarm carryover, data extraction via USB stick...

TECHNICAL CHARACTERISTICS

The mobile M ionix monitors are available in several versions:
The versions below are intented for continuous measurement of tritium activity and other β emitters in gases:

Measurement characteristics in laboratory conditions (for tritium)	**M IONIX 2 - XQS** **Tritium measurement with manual gamma compensation**	**M IONIX 2 - XCS** **Tritium measurement with automatic gamma compensation**
Measurement range	2.1 kBq/m³ to 2.1 GBq/m³ *54 nCi/m³ to 54 Ci/m³*	2.1 kBq/m³ to 2.1 GBq/m³ *54 nCi/m³ to 54 Ci/m³*
Limit of detection (2σ) **= decision threshold** **Limit of detection (4σ)**	10 kBq/m³ *(0.27 µCi/m³)* 20 kBq/m³ *(0.54 µCi/m³)*	15 kBq/m³ *(0.41 µCi/m³)* 30 kBq/m³ *(0.82 µCi/m³)*
Precision	5% of the measurement ± 10 kBq/m³ *± 0.27 µCi/m³*	5% of the measurement ± 15 kBq/m³ *± 0.41 µCi/m³*
Maximum deviation	10 kBq/m³ / year *0.27 µCi/m³ / year*	15 kBq/m³ / year *0.41 µCi/m³ / year*
Noise (2σ)	± 10 kBq/m³ *± 0.27 µCi/m³*	± 15 kBq/m³ *± 0.41 µCi/m³*
Response time	< 3 min at 90% of step	
Ionization chamber(s)		
Volume	4 200 cc	2 x 4 200 cc
Nominal flow	15 L/m	15 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 ambiant temperature < 3°C / hour
- Humidity: from 5 to 95% rel.
- Influence of humidity: ± 1 % of the measurement from 10 to 90% relative humidity
- Atmospheric pressure influence: 0.1%/mbar, hence ± 5% of the measurement from 930 to 1030 mbar

COMMON CHARACTERISTICS

Each unit integrates a DT ionix 3 digital touch interface allowing local viewing of data through an intuitive menu:

- 4 customizable alarm thresholds
- Digital display of volumetric activity
- Archiving of 32 days of measurement
- Data extraction and software update via USB
- 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 default operation

POSSIBLE CONFIGURATIONS

- Global characteristics:
  - Dimensions (with lights): W 600 x H 1000 x d 500 mm
  - Weight (approx.): 70 kg
  - Network: Ethernet Modbus connection via RJ45 connector
  - Alarms: 2 alarm outputs (24V / 80mA per signal)

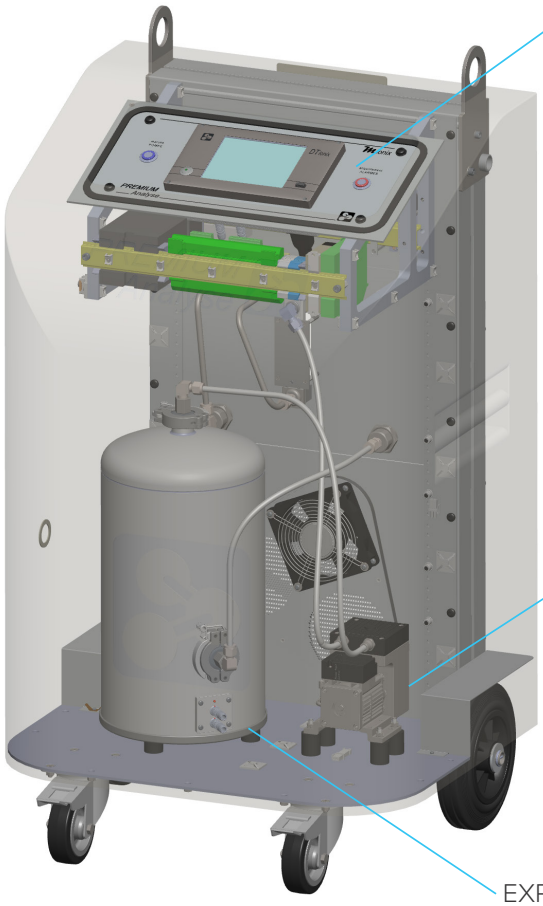
- Electrical characteristics:
  - Power supply: 85 - 264VAC, 50/60Hz
  - Max power: 120W
  - Electrical protection: 6A differential breaker with C curve

- Optional features:
  - Remote alarm beacon
  - Gas I/O via self-sealing Staubli connectors
  - Process output with dry-contacts, 4/20mA outputs...
  - Light and sound alarms

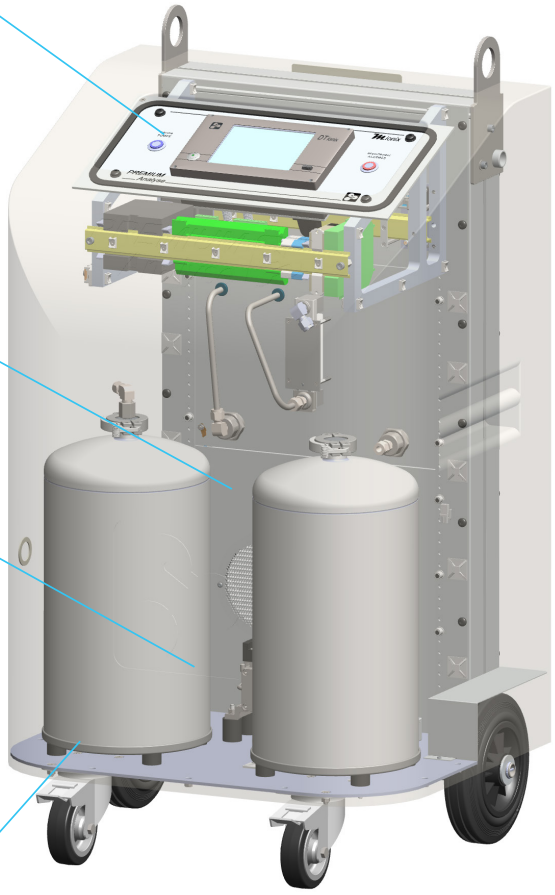
- Filtration:
  - "FXS": 20µ anti-dust filtration
  - "TXS": V.H.E HEPA filtration

- Measurement:
  - "XQS": With flowmeter and simple measurement
  - "XCS": With flowmeter and compensation chamber for automatic γ compensation

TXS Version



XQS Version



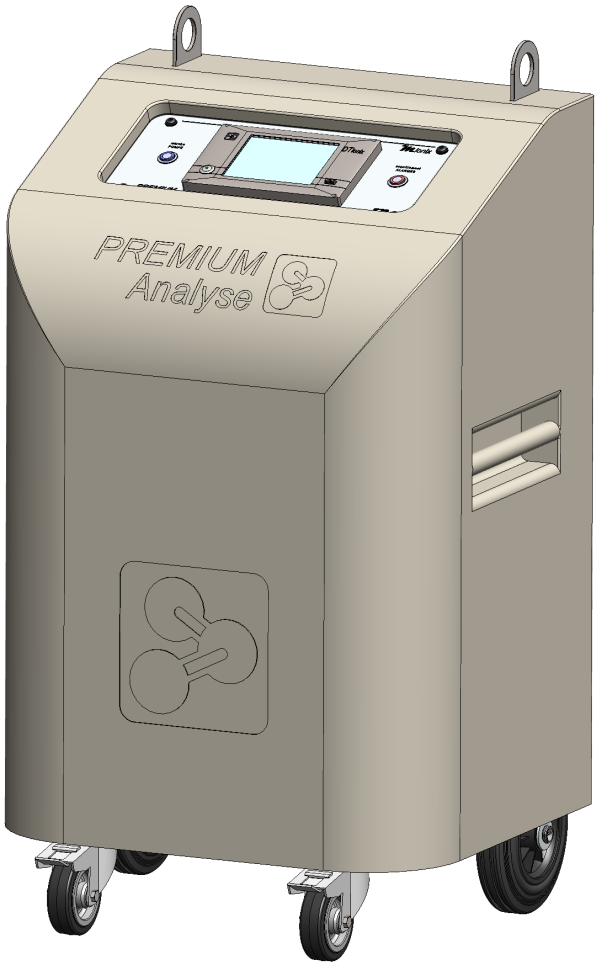
XCS Version

M IONIX | MOBILE TRITIUM MONITOR

MONITOR CONFIGURATION AND PART NUMBERS

	Monitor configuration & options	
Measurement		M IONIX 2 - XQS M IONIX 2 - XCS
Filtration	Anti-dust filter HEPA filter	M IONIX 2 - FXS M IONIX 2 - TXS
Measurement type	With flowmeter and direct measurement With flowmeter and compensation chamber	M IONIX 2 - XQS M IONIX 2 - XCS
Reference example	M ionix mobile tritium monitor with anti-dust filtration, pump, integrated flowmeter and compensatoin chamber	M IONIX 2 - FCS

Accessories	
Portable alarm beacon	ACC BAL P
Gas connector for 8 mm hose	ACC ARG S08
5 m sampling hose	MIX ACC TUY 05 S
10 m sampling hose	MIX ACC TUY 10 S



Consumables	
M ionix TGN micropump	MIX SP NMP 850
M ionix 2 pump	MX2 SP N838
Maintenance kit for M ionix 2 pump	SP KIT N838
Filtering unit 0.1 µ	SP 90F2005
Ceramic filtering unit 20 µ	SP 90F0007
Teflon filtering unit 2 µ	SP 90F0002
Viton o-ring type 26	SP 90F0040
Vlton o-ring type 36/44 FS/ FSS	SP 90F0048
VHE filtering unit	SP CFL THE
Ventilation filter	SP CFL D120
DT ionix axial fan	SP 412F
DT ionix axial fan mounted on support	SP 412F P
Case fan	SP 4314

CONTACT US

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PREMIUM Analyse
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