



PREMIUM ANALYSE™

HT ionix™

Tritium Bubblers



The HT IONIX tritium bubblers are designed for trapping tritium oxide (HTO) as well as gas (HT). This method has a proven efficiency for radioprotection purposes, environmental surveillance as well as stack release monitoring.

DESCRIPTION

The HT IONIX bubblers product range gathers several samplers designed for monitoring levels of atmospheric tritium both HTO (vapour) form and HT (gas).

The HT IONIX bubblers are suitable for all applications in stack and ventilation systems monitoring, surveillance of premises or even environmental monitoring.

These devices have been designed according to the requirements of the NF M60-312-1 and M60-822-1 standards.

Easy to use, light and rugged, these bubblers offer some of the most advanced features, such as:

- Reduced liquid volume
- Remote monitoring and control via Modbus
- Record of defects and measurement conditions

The HT IONIX bubblers can be easily and quickly converted into HC IONIX bubblers for sampling and trapping Carbon-14, thanks to a conversion kit available as an option.

FEATURES

✓ High trapping efficiency

- HTO & HT > 95%
- Trapping efficiency validated in laboratory

✓ Convenient

- Intuitive to use
- Limited liquid loss
- Quick and easy set up
- No outside condensation

✓ Easy maintenance

- Small footprint
- Stainless steel sampling circuit
- Light (weight < 15 kg) and rugged
- Only one annual maintenance required

✓ User-friendly

- Color touch screen
- Color identification of bottles

Specifications and Performance

MAIN CHARACTERISTICS

- The HT IONIX bubblers are available in two versions:
 - The HT IONIX 20 bubbler allows sampling of tritium oxide (HTO).
 - The HT IONIX 22 bubbler allows sampling of tritium oxide (HTO) as well as gas (HT) after catalytic oxidation in a furnace.

	HT IONIX 20	HT IONIX 22
Main characteristics		
Overall dimensions	L 410 x H 315 x D 340 mm	L 510 x H 315 x D 340 mm
Weight (empty)	< 12 kg	< 15 kg
Power supply	100-240 Vac 50-60 Hz	
Max power	240 W	530 W
Electrical protection	Fuses 2 A (220 V) & 10 A (24 V)	
Dry-contact outputs	6 outputs (flow, pump, cooling, electronic, proper functioning, status error)	7 outputs (flow, pump, cooling, electronic, proper functioning, status error, furnace)
Volume of bottles	125 mL	
Recommended liquid volume	100 mL demineralized water	
Sampling circuit	100% stainless steel	
Inlet filter	1 µm fiberglass	
Gas I/O	6 mm Swagelok double ring connectors	
Flow rate	Customizable from 50 cc/min to 850 cc/min (3 L/h to 51 L/h)	
Furnace temperature settings	N.A	Recommended 450 °C, max 500 °C

OPERATING CONDITIONS

- Use temperature: +2 °C to +48 °C (+35 °F to +118 °F)
- Storage temperature: -5 °C to +70 °C (+23 °F to +158 °F)
- Use pressure: 850 - 1 150 mbar abs
- Humidity: < 95% (without condensation)
- Protection level: IP40



HT IONIX 20

Two bottles HTO tritium sampler

HT IONIX™ TRITIUM BUBBLERS

FEATURES

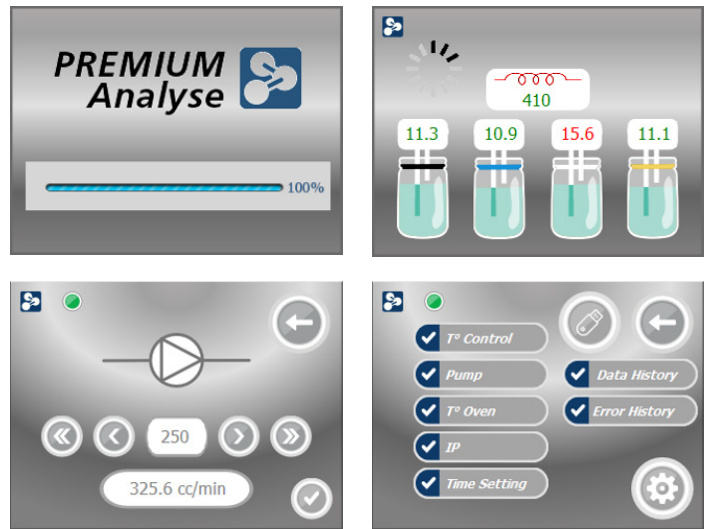
Gas sample circuit:

- Flow regulation based on pressure drop
- Sampling circuit 100% made in stainless steel
- Color identification of bottles to limit the risk of switching
- Installation and removal of bottles made easy thanks to a standard thread (GL 45)
- Filtration of particles up to 1 micron through a front mounted easily interchangeable filter
- Mass flowmeter, calibrated with a certified standard COFRAC flowmeter over the range of 50 to 850 cc/min (3 to 51 L/h)
- Relative Humidity Compensation system
 - No condensation outside of the bubbler
 - Reduced liquid losses in all bottles even on long measurement period (up to 1 month)
- Self-regulating catalytic oxidation furnace with durable catalyzer
- Reduced water sampling volume (from 60 mL) to limit the dilution of the sample

Electronic control:

- Color touch screen
 - Display of the sampling history, real-time errors, sampling status history,...
 - Display of operating and sampling data (standardized flowrate, sampling duration, volume sampled,...)
 - Ability to reset the duration and volume sampled before each new measurement campaign on the main screen.
- Light and sound alarm
- 4-20 mA input for external flowmeter
- Autotest at startup and permanent self-control
- Remote beacon connector (additional beacon required)
- Modbus Ethernet connection allowing remote visualization of faults and the status of operation as well as unit remote control
- Dry-contact outputs for the transmission of faults (flow, pump, furnace, cooling, electronic, general failure)

Delivered with power supply cable, glass bottles, conformity certificate, user and maintenance manual and Modbus registers.



Software interface



Back of the device

QUALIFICATIONS

- Tested in Mirion Technologies (Premium Analyse) tritium gas laboratory
- CE conformity
- Test reports available on request.



HT IONIX™ TRITIUM BUBBLERS

REFERENCES

HTO tritium bubbler	HT IONIX 20
HTO + HT tritium bubbler	HT IONIX 22

ACCESSORIES

125 mL conversion kit (4 bottles)	HTI ACC 4F 125
Rolling table for 1 bubbler	HTI ACC TR1
Carrying basket for 8 bottles 250 mL	HTI ACC PT250
Clamp alarm beacon	ACC BAL P
Fixed alarm beacon	ACC BAL F
Transport case with foam block	HTI ACC PEL
Rinsing or decontamination system	HTI ACC SRD

CONSUMABLES

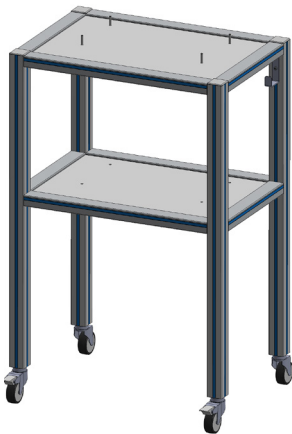
Inlet sampling filter (pack of 100)	HTI SP FPR
RHCS fan	HTI SP VHR
RHCS fan filter (pack of 12)	HTI SP FHR
Case fan	HTI SP VBT
Case fan filter (pack of 6)	HTI SP FBT
Pump	HTI SP PPE

SPARE PARTS

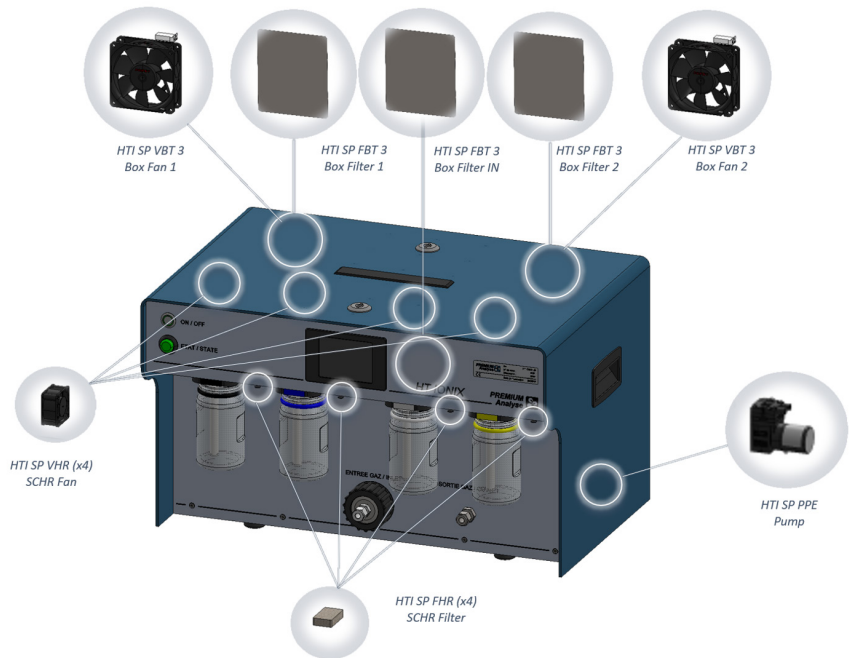
Pack of 4 125 mL bottles	HTI SP 4FL 125
Pack of 4 250 mL bottles	HTI SP 4FL 250
RHCS head	HTI SP SCHR 4
Oxidation furnace	HTI SP FOX
Diving tube for 125 mL bottle	HTI SP TP125 v3
PTH probe	HTI SP PTH
Flowmeter	HTI SP DEB 2
Gaskets kit (pack of 2)	HTI SP JNT
Power fuses (pack of 2)	HTI SP FUS 2A
Main board fuse	HTI SP FUS 10A
Touch screen assembly	HTI SP ECR
RHCS management card	SSP HTI GHR A1
System control card	SSP HTI EPE A3
NTC probe	HTI SP NTC 3

MAINTENANCE

Annual maintenance kit without pump (FPR + FHR + FBT 3)	HTI MNT KIT 3
Annual maintenance kit with pump (FPR + FHR + FBT 3 + PPE)	HTI MNT KIT PPE 3
Annual maintenance fee	HTI MNT ANN



Rolling table
HTI ACC TR1



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TECHNOLOGIES

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