MARC 7000 - TRITIUM SAMPLER

Vapour & Gas tritium monitoring, in compliance with NF M60-312-1 and NF M60-822-1 standards

The Marc 7000 tritium sampler is the perfect instrument for measuring low levels of tritium in air. Particular applications include sampling of air from stacks, hoods, rooms and the environment.

MARC 7000 - tritium sampler

OPERATING PRINCIPLE

The Marc 7000 is widely used and recognised within the international nuclear industry, and in particular, nuclear power plants, nuclear research centers, radioactive waste treatment facilities and isotope laboratories.

The bubbler has been specifically designed with efficient tritium capture in mind, using a series of four bottles, a cooling system and a catalytic furnace to collect both tritium vapour (HTO) and gaseous tritium (HT) or organically bound tritium (OBT).

The tritium activity is measured in the collected sample on a daily, weekly or monthly basis with a liquid scintillation counter and related to the sampled volume of air in order to calculate the tritium-in-air concentration. This gives an efficient way to monitor tritium levels with a much higher sensitivity than even the most sophisticated real-time tritium monitor.

EXTENDED FEATURES

- Air flow regulated in SLPH, adjustable from 10 to 50 SL/H
- Standard temperature adjustable from 0 to 25°C
- Real time air flow regulation
- Oxidation furnace temperature adjustable from 200 to 500°C
- Real time measurement and display of :
  - Air flow
  - Standard T°
  - Duration of sampling
  - Sampled volume
  - Cooling circuit T°
  - Furnace T°
- Duration and Volume reset function before new sampling
- Alarms report
- Record of the last 8 alarms with time stamp, downloadable via serial port

TRAPPING YIELD

- HTO : 99 % ± 7%
- Furnace efficiency : 98 % ± 11% (HT > HTO)

Test report from CEA Marcoule - June 2006

SDEC
SOLUTIONS TECHNOLOGIQUES POUR L'ENVIRONNEMENT

SDEC France
Z.I. de la Gare - B.P. 27 Tauxigny - 37310 REIGNAC SUR INDRE
Tél. 02 47 94 10 00 / Fax : 02 47 94 17 13
e-mail: info@sdec-france.com
Retrouvez nous sur : www.sdec-france.com

MARC 7000 - TRITIUM SAMPLER

Vapour & Gas tritium monitoring, in compliance with NF M60-312 and NF M60-822-1 standards

BENEFITS

- Reduced evaporation thanks to the cooling system (typical T° in bottles : 7°C), allowing weekly collection
- Flow rate regulated in SLPH (standard T° can be set from 0 to 25°C)
- Membran air pump (long life time)
- Inlet particle filter
- Aeraulic circuit made of stainless steel 316L
- Easy to use, with instant opening cabinet for retrieval of the 4 bubbling bottles
- Display of flow rate (SLPM) and sampled air volume in real time
- Alarms report
- Defect reporting function
- Low required space
- For atmospheric sampling on exhaust stack and in environment

MARC 7000 - Dynamic opening cabinet

SPECIAL FEATURES

- Air flow meter calibrated with COFRAC certified air flow calibrator
- Oxidation furnace regulated at 450°C with palladium on alumine catalyst
- Cooling system regulated for maintaining a temperature of 7°C in the bubbling bottles (at 20°C ambiant temperature)

MARC 7000 installed in emission monitoring

TECHNICAL SPECIFICATIONS

- **Dimensions:** W x H x D = 700 x 356 x 270 mm
- **Required space:** W x H x D = 1000 x 600 x 530 mm
- **Weight :** 29 kg
- **Power :** 700 Watts max
- **Power supply :** 230 V / 50 Hz IEC plug (or 120 V / 60 Hz IEC plug)
- **Inlet and outlet :** Ø 6,4 mm
- **Temp (Operating) :** +2°C to +45°C
- **Temp (Storage) :** -5°C to +70°C
- **Electrical protection :** differential circuit breaker (sensivity = 30mA)
- **Frame :** monocoque in aluminium alloy
- **Housing paint compliant with decontamination**
- **Glass bottles**
- **Delivered with power supply cable, four bottles with caps, calibration certificates and user guide in english**

Document BN-MARC7000-EN-2019-07

SOLUTIONS TECHNOLOGIQUES POUR L'ENVIRONNEMENT

SDEC France
Z.I. de la Gare - B.P. 27 Tauxigny - 37310 REIGNAC SUR INDRE
Tél. 02 47 94 10 00 / Fax : 02 47 94 17 13
e-mail: info@sdec-france.com
Retrouvez nous sur : www.sdec-france.com