



PREMIUM ANALYSE

DT D - IC500™

500 cc Tritium Detector

Ionization chamber for the detection and measurement of high activities for research application in laboratories and for the control of glovebox ambiance.



FEATURES

- **High-performance**
 - Continuous measurement
 - Wide measurement range
 - Response time under 60 seconds
- **Simple**
 - Easy maintenance
 - Quick and easy set up
- **Reliable**
 - Precise and stable

DESCRIPTION

The DT D - IC500 detector is a medium-sized ionization chamber (500 cc) allowing the measurement of high tritium activities in gases from 3.8 kBq/m^3 ($0.103 \text{ } \mu\text{Ci/m}^3$) to 3.8 TBq/m^3 (103 Ci/m^3).

This detector has been designed for civil and military research applications, as well as specific projects such as ITER where measurement of high activities is needed.

Due to its design, this detector is particularly not sensible to the marking effect, making it one of the best possible choice for the measurement of important activities.

Mounted on a leak-proof feedthroughs, it can be installed on glovebox outlet. It does not generally require an additional pump as it is usually mounted directly in the gas flow to be analyzed.

DT D - IC500 | 500 CC TRITIUM DETECTOR

GENERAL CHARACTERISTICS

- Dimensions $\varnothing 67 \times 157$ mm
- Weight 300 g
- Power-supply 9-36VDC, 300mA
- Radon compensation dynamic by digital filtration
Delivered with certificate of conformity

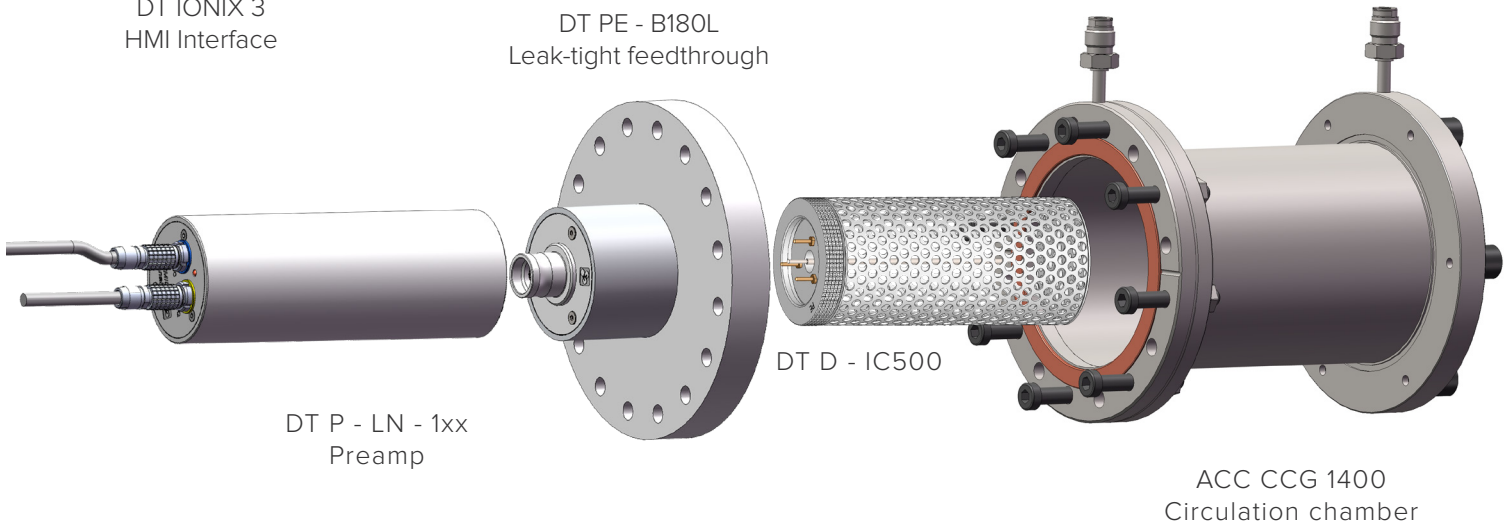
MOUNTING

- Mounting on leak-proof feedthroughs:
 - Flanged (ref: DT PE - B160L / DT PE - B180L)
 - Adjustable (ref: DT PE - BTE)
 - Straight (ref: DT PE - BTD)
- Integration in circulation chamber:
 - 1375cc (ref: ACC CCG 1400)

INTEGRATION OF MEASUREMENT CHANNEL DETECTOR



DT IONIX 3
HMI Interface



DT PE - B180L
Leak-tight feedthrough

DT P - LN - 1xx
Preamp

DT D - IC500

ACC CCG 1400
Circulation chamber

IONIZATION CHAMBER

- Materials 316L stainless steel - DELRIN - Brass
- Ionization volume 500 cc
- Circulation volume 1 400 cc (ACC CCG 1400)
- Nominal flow rate 6 000 cc/min
- Response coefficient 95 500 (Bq/m³)/fA
- Ionization voltage 160 VDC

OPERATING CONDITIONS

- Temperature of use: 0 to 40°C (32 to 104°F)
- Influence of temperature: 0.3% /°C for a variation of ambient temperature < 3°C / hour
- Humidity: from 5 to 95% rel.
- Influence of humidity: $\pm 1\%$ of measurement from 10 to 90% relative humidity
- Influence of atmospheric pressure: 0.1 %/mbar, hence $\pm 5\%$ of the measurement from 930 to 1030 mbar

PERFORMANCES (for tritium)

- Measurement range 3.8 kBq/m³ to 3.8 TBq/m³
103 nCi/m³ to 103 Ci/m³
- Limit of detection (2 σ) = decision threshold 15 kBq/m³ (0.41 μ Ci/m³)
- Limit of detection (4 σ) 30 kBq/m³ (0.81 μ Ci/m³)
- Precision 5% of measurement ± 15 kBq/m³
 ± 0.41 μ Ci/m³
- Maximum deviation 15 kBq/m³ / year (0.41 μ Ci/m³)
- Noise (2 σ) 15 kBq/m³ (0.41 μ Ci/m³)
- Response time < 60 sec at 90% of step

CONTACT US

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