



PREMIUM ANALYSE

DT D - MLB™

Tritium Detector

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



CHARACTERISTICS

- **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 - MLB detector is a small size ionization chamber (100cc) allowing the measurement of high tritium activities in gases from 21 kBq/m³ (0,57 µCi/m³) to 2,1 PBq/m³ (56,7 kCi/m³).

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

Because of the way it is built and designed, this detector is particularly not sensible to the marking effect, making it one of the best possible choice for the measurement of important activities.

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

*Device manufactured under exploitation licence for CEA patent - L26218
Device registered as dual-use n°1B231 regulation (CE) 428/2009 Appendix IV*

DT D - MLB | TRITIUM DETECTOR

GENERAL CHARACTERISTICS

- Dimensions Ø 43 x 100 mm
- Weight 30 g
- Power-supply 9-36VDC, 300mA
- Radon compensation dynamic by digital filtration
Delivered with certificate of conformity

MOUNTING

- Mounting on leak-tight feedthroughs:
 - Flanged (ref: DT PE - B160L / DT PE - B180L)
 - Adjustable (ref: DT PE - BTE)
 - Straight (ref: DT PE - BTD)
- Mounting in circulation chamber:
 - 380cc (ref: MLB ACC CC2)
 - 785cc (ref: ACC CCG 800)

PERFORMANCES (for tritium)

Preamp associated	DT P - LN - 1B8	DT P - LN - 1A7	DT P - LN - 196
Measurement range	21 kBq/m ³ to 21 TBq/m ³ 0.57 µCi/m ³ to 567 Ci/m ³	210 kBq/m ³ to 210 TBq/m ³ 5.67 µCi/m ³ to 5,67 kCi/m ³	2.1 MBq/m ³ to 2.1 PBq/m ³ 56.7 µCi/m ³ to 56,7 kCi/m ³
Limit of detection (2σ) = decision threshold	125 kBq/m ³ 3.38 µCi/m ³	125 kBq/m ³ 3.38 µCi/m ³	125 kBq/m ³ 3.38 µCi/m ³
Limit of detection (4σ)	250 kBq/m ³ 6,76 µCi/m ³	250 kBq/m ³ 6,76 µCi/m ³	250 kBq/m ³ 6,76 µCi/m ³
Precision	5% of measurement ± 125 kBq/m ³ ± 3.38 µCi/m ³	5% of measurement ± 125 kBq/m ³ ± 3.38 µCi/m ³	5% of measurement ± 125 kBq/m ³ ± 3.38 µCi/m ³
Maximum deviation	125 kBq/m ³ 3.38 µCi/m ³	125 kBq/m ³ 3.38 µCi/m ³	125 kBq/m ³ 3.38 µCi/m ³
Noise (2σ)	125 kBq/m ³ 3.38 µCi/m ³	125 kBq/m ³ 3.38 µCi/m ³	125 kBq/m ³ 3.38 µCi/m ³
Response time	< 60 sec for 90% of step	< 60 sec for 90% of step	< 60 sec for 90% of step

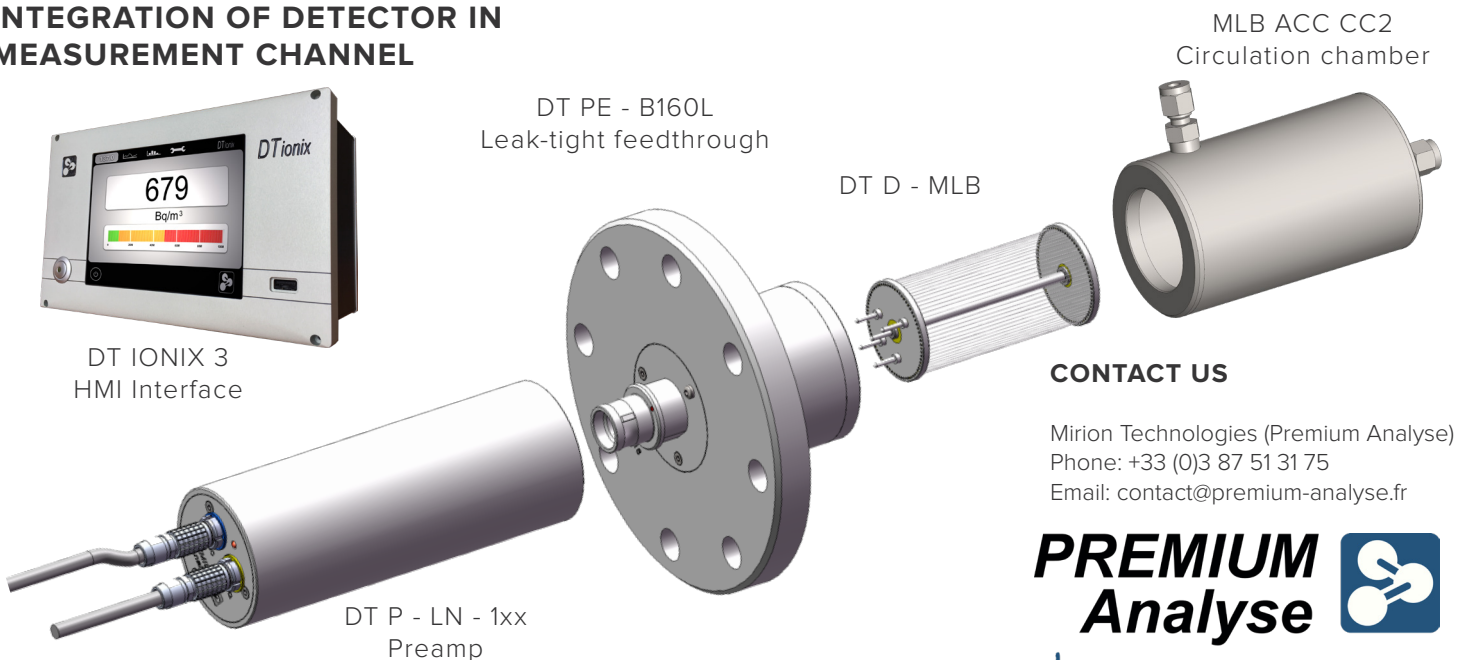
IONIZATION CHAMBER

- Materials 316L stainless steel - ceramic - Teflon
- Ionization volume 100 cc
- Circulation volume 380 cc (MLB ACC CC2)
- Nominal flow rate 2 500 cc/min
- Response coefficient 532 000(Bq/m³)/fA
- Tension d'ionisation 160 VDC

OPERATING CONDITIONS

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

INTEGRATION OF DETECTOR IN MEASUREMENT CHANNEL



CONTACT US

Mirion Technologies (Premium Analyse)
Phone: +33 (0)3 87 51 31 75
Email: contact@premium-analyse.fr

PREMIUM Analyse 

always one idea ahead