



PREMIUM ANALYSE

DT D - XPR80™

On-line Tritium Detector

8 L ionization chamber for use in the field or for radioprotection, environmental monitoring and process surveillance.



FEATURES

- **High performance**
 - Precise and stable
 - Continuous measurement
 - Tritium detection from 5 kBq/m³ (0.135 μCi/m³)
 - Response time under 90 seconds
- **Simple**
 - Easy maintenance
 - Accessible electronics
 - Direct in-line measurement
 - Quick and easy commissioning
- **Customizable**
 - Several configurations available
 - Several filtration systems available

DESCRIPTION

The DT D - XPR80 detector is a high-volume ionization chamber (8 000 cc) allowing for tritium activities in gases from 2 kBq/m³ to 2 GBq/m³.

The XPR80 is unique thanks to its compacity. It includes an interchangeable particles filter with a gas heating system preventing any condensation. It can be connected to a flange circulator allowing to generate a gas stream in the detector.

The XPR80 also has the advantage of having the preamplifier on the outside, allowing for easy potential maintenance operations.

Connected to a DT ionix 3 touchscreen Human Machine Interface that can be installed sever hundred meters away from the detector. It also benefits from the most advanced features such as data extraction via USB, Modbus communication dry contact outputs...

GENERAL CHARACTERISTICS

- Dimensions \varnothing 215 x 626 mm
- Weight 21 kg (with filter, no circulator)
- Installation direct on piping or with accessory support **XPR ACC FIX**
- Power-supply 9-36VDC, 300mA
- Power-supply connector baseplate LEMO EXG. 1B.302
- CAN connection baseplate LEMO EXG. 1B.304
- Gas connection flange DN 160 mm 8xM8 on 1198 mm diameter
- Radon compensation dynamic by digital filtration
- Delivered with certificate of conformity

IONIZATION CHAMBER

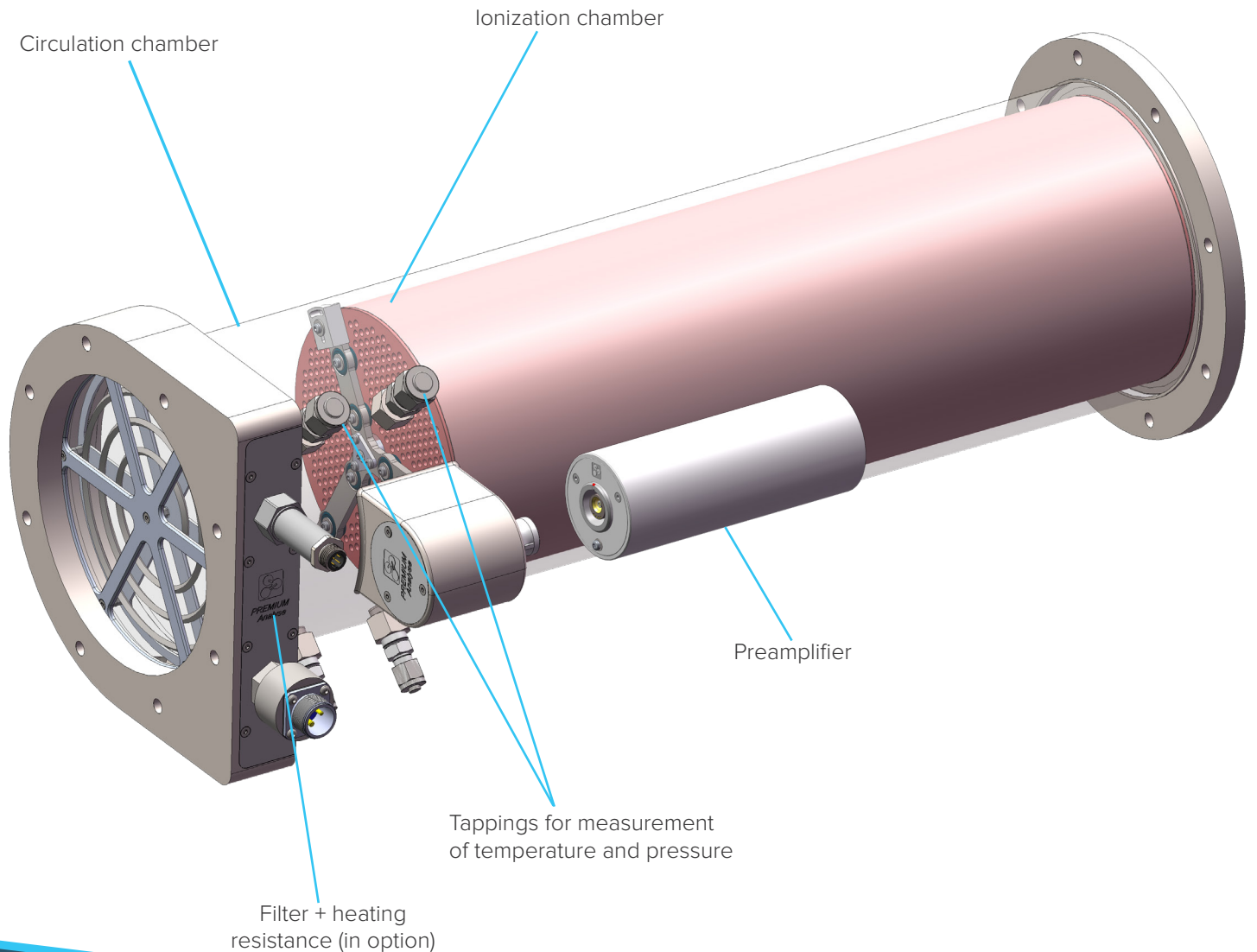
- Material INOX 304L electropolished
- Ionization volume 8 000 cc
- Circulation chamber volume 12 000 cc
- Nominal flow rate 70 L/min
- Response coefficient 5 050 (Bq/m³)/fA
- Ionization voltage 160 VDC

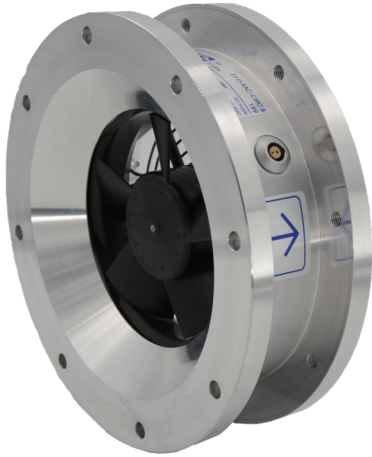
PERFORMANCES (For tritium)

- Measurement range 2 kBq/m³ to 2 GBq/m³
(54 nCi/m³ to 54 mCi/m³)
- Limit of detection (2 σ) = decision threshold 5 kBq/m³ (0.135 μ Ci/m³)
- Limit of detection (4 σ) 10 kBq/m³ (0.27 μ Ci/m³)
- Precision ₁₀₁ 5% of measurement \pm 5 kBq/m³
 \pm 0.135 μ Ci/m³
- Maximum deviation 5 kBq/m³ / year (0.135 μ Ci/m³)
- Noise (2 σ) 5 kBq/m³ (0.135 μ Ci/m³)
- Response time < 90 seconds at 90% of step

OPERATING CONDITIONS

- Temperature of use: +0°C to +40°C (+32°F 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% of relative humidity
- Influence of atmospheric pressure: 0.1 %/mbar, hence \pm 5 % of measurement from 930 to 1030 mbar





DT D - XAC - CIRCB

Flanged circulator, to be mounted after the ionization chamber
Nominal flow 60 L/min
Allows the creation of a gas glow



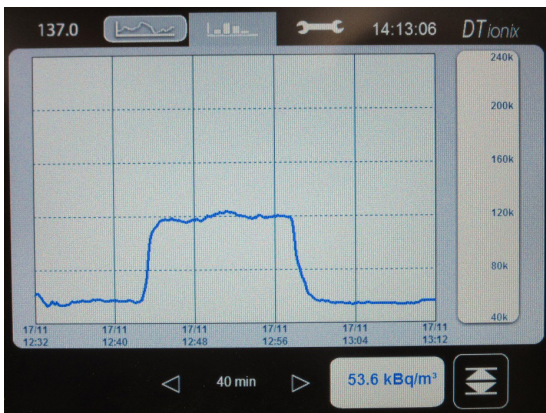
XPR ACC TFL CF4

Filter unit with heating resistance
400W power
Prevents the condensation of gas

GAS CALIBRATION

Due to our internal laboratory, we are able to calibrate all of our detectors thanks to standard gas samples generated.

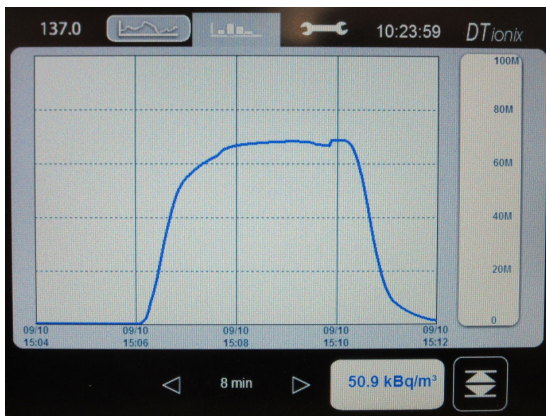
Tests are made according to NF EN 60761-1 and -5 standards.



Response to a 120 kBq/m³ injection



Response to a 2 MBq/m³ injection



Response to a 70 MBq/m³ injection

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Analyse**

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activity
measurement
⁸¹Kr ¹³³Xe
²²²Rn ¹⁴C
Tritium

Tritium calibration report

DT D – XPR 80 #XXX

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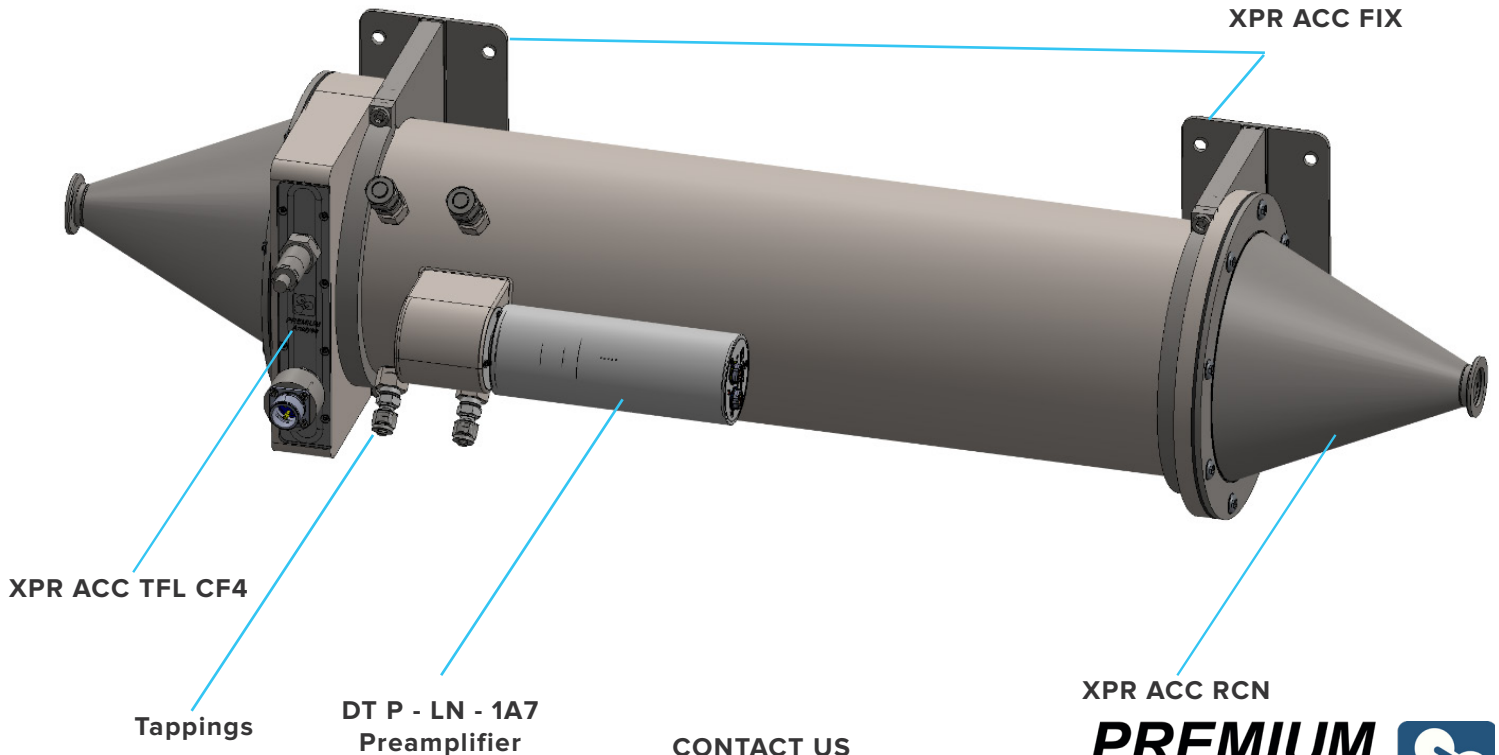
Calibration report

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DT D - XPR80 | ON-LINE TRITIUM DETECTOR

Reference	
Inline activity detector 4 tappings, aluminum filter	DT D XPR - 80 - FA0
Inline activity detector 4 tappings, heating filter, PT100 3 cables probe	DT D XPR - 80 - FC0
Inline activity detector 4 tappings, heating filter, PT100 4-20mA probe	DT D XPR - 80 - FCA
Inline activity detector 4 tappings with SWA 6-10mm connector, heating filter, PT100 4-20mA probe	DT D XPR - 80 - 018
Inline activity detector Heating filter, PT100 4-20mA probe	DT D XPR - 80 - 137

Accessories	
Flanged circulator 60 L/min	DT D - XAC - CIRCB
Ambiance circulator 60 L/min	DT D - XAC - CIRCA
Heating regulation box	DT D - XCE - 10100 - 000 - 018
Conical reducer	XPR ACC RCN
Installation system	XPR ACC FIX
Aluminum filter	XPR ACC TFA
Heating filter with PT100 probe	XPR ACC TFL CFG
Heating filter with 4-20mA probe	XPR ACC TFL CF4
Vertical mounting accessory for preamp	XPR ACC PLN FIX



CONTACT US

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XPR ACC RCN

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