

# TOR

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## Reflection & Transmission Tortuosity Meter



Mecanum's tortuosity meter is designed to measure the tortuosity ( $\alpha_{\infty}$ ) and the equivalent length  $Leq$  in transmission (low resistivity materials) or reflection (high resistivity materials). With the optional two-gas method, you can also measure the thermal characteristic length  $\Lambda'$  and viscous characteristic length  $\Lambda$ .

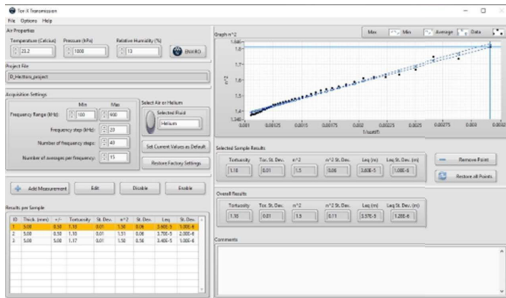
## SPECIFICATIONS

### Test Bench

- Transmission Test Bench
- Reflection Test Bench
- Two channels digital scope with integrated signal generator
- Wide band air-coupled ultrasound emitter and receiver with their signal conditioners
- High frequency high voltage power amplifier
- Works with 100 mm diameter circular samples and a maximal thickness of 25.4 mm

### TOR-X Software

- Two modules: transmission and reflection
- Automatically controls all measurement steps
- Optimized frequency dependant waveform generation and response windowing
- User friendly GUI with step by step procedure



## OPTIONAL ACCESSORIES

### Two-Gas Transmission Method

- Transmission Test Bench with pressurized enclosure
- Gas Control Unit
- Two-Gas Tor-X Transmission Software

### Sample Preparation & Measurement Help

- 100-mm slicer
- 100-mm circular cutter
- ENVIRO weather station

## TECHNICAL DATA

### Transmission Test Bench

- Dimensions: 254 (Ø) x 298 (H) mm (Two-gas option: 292 (Ø) x 446 (H) mm)
- Mass: 3 kg (Two gas option: 6 kg)

### Reflection Test Bench

- Dimensions: 305 (L) x 216 (W) x 215 (H) mm
- Mass: 2 kg

### DAQ

- 2 input channels, 500 MHz/channel scope
- 125 MSamples/sec Waveform Generator
- Communication: USB 2.0 Type A
- Gas control unit for two-gas option

### Wide Band Ultrasound Transducer

- Unfocused planar transducers
- Freq: 10 kHz – 5 MHz
- Q-Amp Signal conditioner for receptor
- V-Pole high voltage polarization supply (transmitter)

### High Frequency High Voltage Power Amplifier

- Output: 0 to ±150 VDC, 0 to ± 300 mA
- Input: 0 ±3 VDC
- Frequency: DC to 2.6 MHz
- Input Impedance: 50 Ω
- DC Voltage Gain: 50 V / V

## MEASURING RANGE

- Recommended first measurement frequency range (kHz): 100 to 900 by step of 50
- Maximal frequency range (kHz): 60 to 1000
- Min and max tortuosity: 1 to depends on material

## SPECIAL REQUIREMENT

Compressed Helium tank with its pressure regulator  
(Only for Two-Gas transmission method)

## WARRANTY & SUPPORT

All Mecanum characterization systems are covered by a one-year limited warranty and technical support. Valid only on manufacturing defects and does not cover damage due to abuse or improper use of the equipment.

Please note that the technical aspects of our equipment may be subject to change without notice