

45mm Full-waveform Triple Sonic Probe

This highly compact slimhole tool is designed specifically for geotechnical and mining applications. The probe acquires transit-time and full-waveform data simultaneously from a single transmitter and three receivers.

Principle of Measurement:

The piezoelectric transmitter is stimulated by a high-voltage pulse and radiates a high-frequency acoustic wave through the borehole fluid and formation to each receiver. An accurate quartz clock measures the first arrival transit time.

Compensated sonic mode: Three receivers are used. The probe measures the time of the first compressional arrival at each receiver. The difference in arrival times between each pair of receivers allows determination of formation velocity independent of the borehole fluid path.

Full-wave sonic mode: The probe records the full sonic wave-train at all receivers simultaneously. This can be displayed either as a variable-density log (VDL) or as a waveform (wiggle trace). The waveform data may be exported to packages such as WellCAD™ for calculation of compressional, shear and Stoneley velocities.

probe specification

> Features

- Short probe can be handled by single operator and easily transported
- Slim diameter for narrow boreholes
- Rigid construction for effective centralisation
- Down-hole digitisation of waveform data
- Detection gain and threshold under operator control.
- Detection point and wavelet display shown in realtime.

> Measurements

- Formation velocity (slowness)
- Time of first arrival (delta-t)
- Integrated transit time
- Full-waveform data from 3 receivers
- Shear and Stoneley velocities (requires additional interpretation software)
- Natural gamma

> Applications

Geotechnical/mining/water

- Fracture and permeability indication in hard rock
- Rock strength and elasticity
- Lithology identification
- Porosity
- Correction of seismic velocity

> Operating Conditions

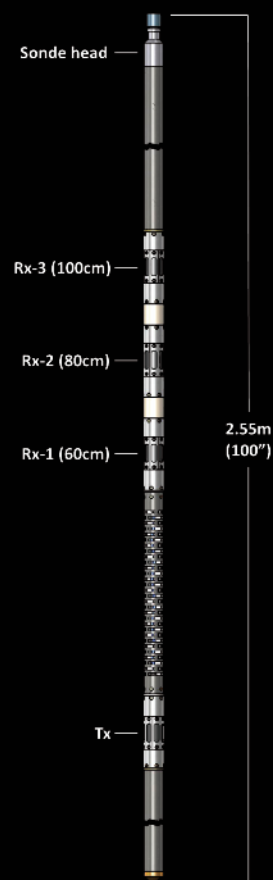
Borehole type:
Sonic: open-hole, water-filled
Centralisation: 2 essential

> Specifications

Diameter: 45mm
Weight: 8kg
Temperature: 0-70°C (extended ranges available)
Max. pressure: 20MPa

> Sales Information

Probe:	Full-waveform triple sonic probe with natural gamma
I013861	Gamma test blanket
I015464	Centraliser 42mm
I001796	Range 90-180mm (2 req)
I015096	Centraliser 42mm
	Range 70-110mm (2 req)
I001798	Centraliser 42mm
	Range 180-260mm (2 req)
I001800	Centraliser 42mm
	Range 260-342mm (2 req)



45mm full-wave triple sonic