

Slimhole Seismometer: Model F50-4.5

Slimhole seismometer for high-pressure environments, test holes and behind casing installation.

The F50-4.5 is a triaxial borehole seismometer that combines **robust construction** and a slim profile. Its primary use is for micro-earthquake detection and analysis in environments **up to 70 °C**, such as geothermal systems. The F50-4.5 is suitable for test well or behind casing installation. Typical design features include three elements wired in series to boost available output as well as sinker weights. An alternate model, the F41-15 offers a higher tilt tolerance in exchange for a higher corner frequency.

Features

- Fixed geophones
- Withstands up to 70 °C (with higher spec. models in development)
- Passive sensors
- For permanent or semi-permanent installations
- Custom versions can include magnetometers or other sensors



Geophone parameter

Geophone parameter	Specification
Sensor configuration	Triaxial, Orthogonal
Natural frequency	4.5 Hz
Operational temperature	-40 °C to +70 °C
Geophone tilt tolerance	± 5°
DC resistance	375 Ω (typically x3)
Sensitivity	0.288 V/cm/sec (typically x3)
Transduction constant	0.0149 √Rc V/cm/s (0.038 √Rc V/in/s)
Open circuit damping	0.6
Moving mass	11.3 g
Max coil excursion p-p	0.4 cm (0.16 in)

Housing parameter

Housing parameter	Standard model
Operational pressure	33.3 MPa (4,830 psi)
Outer diameter	50 mm (2.0 in)
Wall thickness	2.6 mm (0.1 in)
Height	650 mm (25.6 in)
Weight	8 kg (17.6 lbs)
Optional nose weight	Variable
Casing material	316L stainless steel

For more information, please email us at enquiries@iese.co.nz, phone +64 9 354 4224, or visit <http://www.iese.co.nz>.