

QL85-ABI-GR

High Temperature Acoustic Borehole Imager

08.02.2024



Cartridge

Diameter : 92 mm (3.6")
Apparent Length : 2.43m (95.7")
Weight : 58.9 kg (129.8 lb)
Borehole diameter : Variable depending on borehole conditions

Acoustic sensor

Diameter : 85 mm (3.4")
Measurement point : 0.25 m (9.8") - from acoustic head bottom
Apparent Length : 0.64 m (25.2")
Acoustic sensor : Fixed transducer and rotating focusing mirror
Focusing : Collimated acoustic beam
Frequency : 1.2 MHz
Acoustic beam width : 3 mm (0.12")
Rotation speed : Up to 6 revolutions per second
Azimuthal resolution : 72, 144, 288 user defined
Caliper resolution : 0.08 mm (0.003")

Gamma ray module

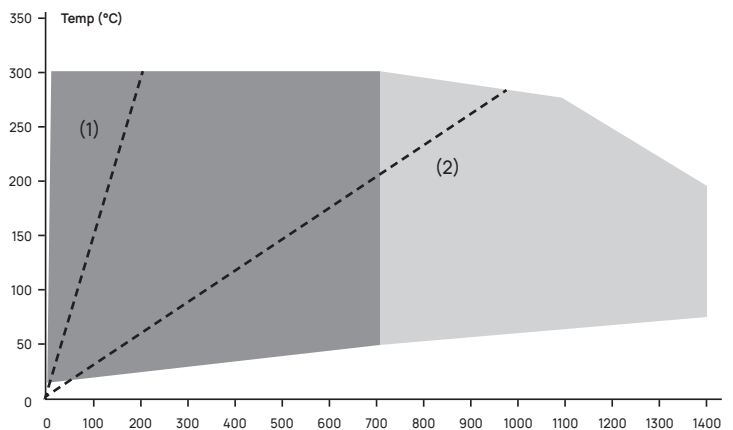
Scintillation NaI(Tl) crystal : 24 x 100 mm (1" x 4")

Orientation sensor

Orientation : 3 axis magnetometer, 3 accelerometers
Inclination accuracy : 0.5 degree
Azimuth accuracy : 1.2 degree



Figure2

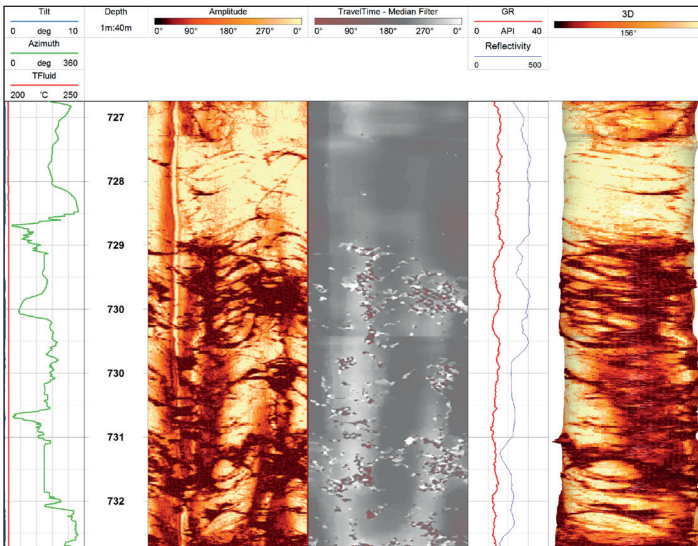


(1) Geothermal gradient - hot spot
 (2) Geothermal gradient - common

Figure1

Pressure (bar)

- Applicable for QL85-ABI with 85mm and 92mm pressure housing
- Applicable for QL85-ABI with 92mm pressure housing only



Open hole applications

- Detailed and oriented caliper and structural information
- Borehole deformation (stress field analysis)
- Fracture detection and evaluation
- Breakout analysis
- Lithology characterization (detection of thin beds, determination of bedding dip)
- Rock strength

Since the delivery of the first 2 systems to Sandia National Laboratories in 2005, the QL85-ABI-GR has been deployed successfully in several geothermal fields including Japan, Iceland, New Zealand, Kenya, Australia and China.

Publications

C.Massiot, D.D. McNamara, B.Lewis (2014) Processing and analysis of high temperature geothermal acoustic borehole image logs in the Taupo Volcanic Zone, New Zealand (Geothermics 53, 2015)

Wallis, McNamara, Rowland & Massiot (2012) « The Nature of Fracture Permeability in the Basement Greywacke at Kawerau Geothermal Field, New Zealand, Proceedings 37th Workshop on Geothermal Reservoir Engineering, Stanford University, January 30- February 1, 2012

Davatzes, N.C. and Hickman, S.H. (2010), "The Feedback Between Stress, Faulting, and Fluid Flow : Lessons from the Coso Geothermal Field, CA, USA", Proceedings World Geothermal Congress 2010, Bali, Indonesia.