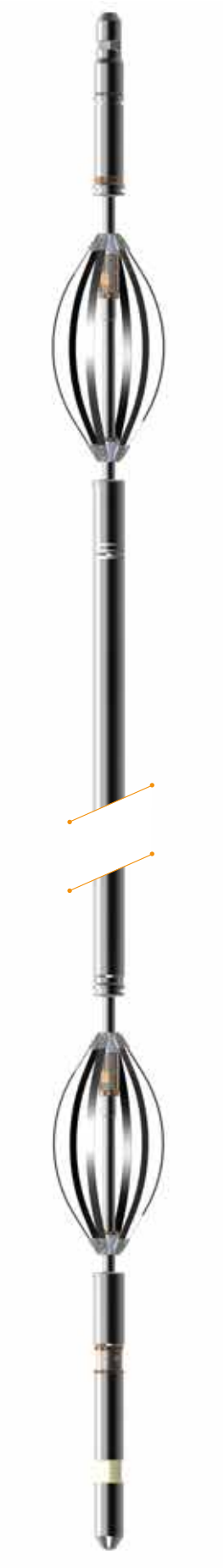


High Temperature Acoustic Borehole Imager

QL85 ABI™

Technical specifications

Diameter	85 mm (3 3/8")
Length	
with "inline" centralisers	5.2 m (205")
without "inline" centralisers	3.7 m (145")
Weight	150 kgs
Operational temp & pressure	See figure 1
Acoustic sensor	Fixed transducer and rotating focusing mirror
Focusing	Collimated acoustic beam
Frequency	1.2 MHz
Caliper resolution	0.08mm (0.003")
Deviation sensor	APS544-3 axis magnetometer - 3 axis accelerometer

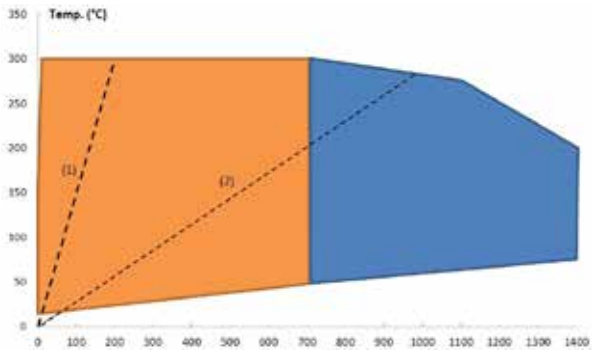
Operating conditions

Cable type	Multi conductor recommended
Compatibility SCOUT/OPAL	Scout / Opal (ALTIogger / Bbox)
Digital data transmission Telemetry	Variable baudrate telemetry according to cable length/type & surface system
Centralisation	Required
Borehole fluid	Water, water based mud, brine, oil (oil based mud not applicable)

Options

Centralisers	In-line 85 mm & 92 mm (OD versions)
Pressure housing	92 mm (OD version)
Fluid excluder (figure 2)	7.5" (OD version)

figure 2



(1) Geothermal gradient - hot spot

(2) Geothermal gradient - common

Pressure (bar)

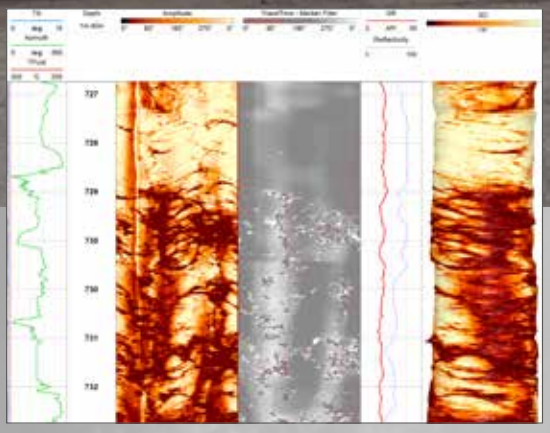
Applicable for QL85-ABI with 85mm and 92mm pressure housing

Applicable for QL85-ABI with 92mm pressure housing only

figure 1

Open hole

- 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 ABI85 has been deployed successfully in several geothermal fields including Iceland, New Zealand, Australia & Japan.

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 Permeablity 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.