

## TECHNICAL DATA SHEET

# ABI-43

## Acoustic Borehole Imager

The ABI-43 is an ultra-compact scanning solution for borehole casing and cement evaluation.\* This state-of-the-art technology provides 360° data coverage and 3D imaging of the casing/tubing wall ID/OD and thickness. Ultrasonic pulses are generated from within the 1 <sup>11</sup>/<sub>16</sub> (43mm) tool body and directed using a rotating internal mirror.

The ABI-43 emits an ultrasonic beam towards the formation, and records the amplitude and travel time of the reflected signal. The amplitude record is representative of the impedance contrast between casing and fluid. The travel time is used to determine accurate borehole diameter data, which makes the tool ideal for casing inspection. Sophisticated algorithms and real time processes are implemented to extend the tool's application for casing thickness measurement, corrosion evaluation and cement mapping (CADI). The CADI (Casing Amplitude Decay Index) represents a qualitative index related to the cement bonding.\*

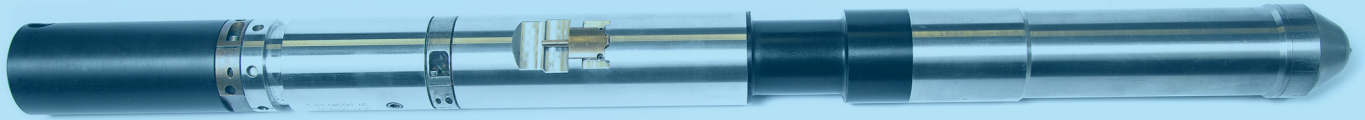
### APPLICATIONS:

- Inspection of casing to detect internal and external damage or deformation including scale, holes, wear and metal loss
- Accurate measurement of casing inside diameter and thickness
- Detection and monitoring of casing corrosion
- Cement evaluation including casing-to-cement bond condition\*

\*The ABI-43 is currently under development. READ Cased Hole and Advanced Logic Technology are working together to bring this technology to the oil and gas market. Originally pioneered for the mining industry, the tool is being rigorously tested and characterised as a cost-effective solution for downhole casing and cement evaluation for oilfield operations.

### BENEFITS

- Enhanced understanding of casing and cement properties\*
- Most compact tool of its kind currently available
- Deployable on Electric line and Tractor
- Suitable for all well deviations, including horizontal
- Comprehensive range of log analysis and report services available from READ



# Specifications

Temperature rating	170°C (338°F)
Pressure rating	10,000 psi (70 MPa)
Tool diameter	1 11/16 in (43 mm)
Tool length*	248 in (6.3 m)
Tool weight*	65 lb (29.5 Kg)
Logging Speed	Variable - 29.5 ft/min (9 m/min)**
Azimuthal Resolution	72-144-288 samples per revolution
Inclination Accuracy	±0.5°
Materials	Corrosion resistant throughout

\*Full toolstring including in-line centralizers, GR-CCL, DDS and acoustic head.  
 \*\*Acquisition parameters: 9 5/8 in casing with a 72 azimuthal resolution and 1 in vertical sampling rate.

## Ultrasonic Transducer

Acoustic sensor	Fixed transducer and rotating focusing mirror
Focusing	Collimated acoustic beam
Frequency	1.2 MHz - 0.5 MHz
Caliper resolution	0.08 mm (0.003 in)
Cable type	Mono, multi-conductor, coax

## Digital Data Transmission

Telemetry	Variable baudrate telemetry according to cable length/type and surface system
Logging speed	Variable function of resolution, wireline and surface system
Centralization	Required
Borehole fluid	Water, water based mud, brine, oil (oil based mud not applicable)