

# QL40-CAL

## 3 Arm Caliper

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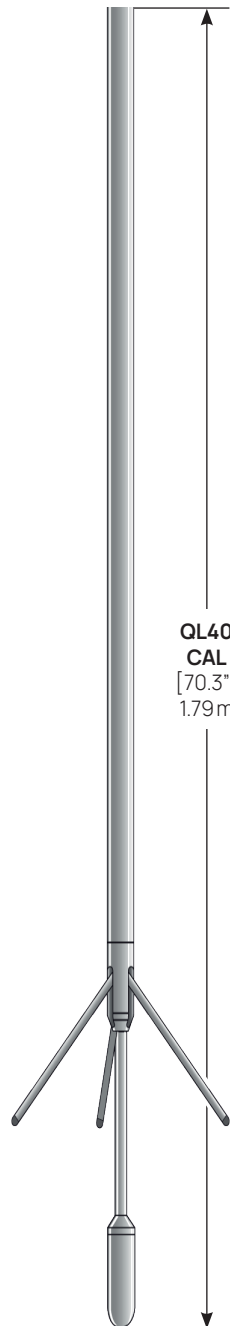
The QL40-CAL probe records a single continuous borehole diameter log by means of three mechanically coupled arms in contact with the borehole wall. The 3 arm caliper measurement is a useful log to determine the borehole or casing condition before running other probes. The QL40-CAL is supplied with two sets of arms. The standard arms are suitable for a borehole diameter ranging from 57mm (2") to 406mm (16"). The extension arms are suitable for borehole diameters up to 736mm (29"). The caliper arms can be unscrewed from their short pivot arms and may be replaced with ones of different length. The hardened arm wear tips can be unscrewed and are easily replaced.

Opening and closing of the caliper arms is surface controlled from the LoggerSuite application allowing the probe to be run into the borehole with the arms closed. Once positioned at the bottom of the borehole with caliper arms opened, the spring-loaded arms respond to borehole diameter variations as the probe is moved up the borehole.

The QL40-CAL is an inline sub. It can be combined with other logging tools of the QL (Quick Link) product line or can be operated as a standalone tool.

### Application

- Borehole diameter measurement
- Borehole volume calculation before borehole completion, cementation
- Fractures and cavities localization
- Rock integrity evaluation
- Environmental correction equations for other logs
- Log quality control



### Tool

**Diameter :** 40mm (1.6")  
**Length :** 1.79m (70.3")  
**Weight :** 10kg (22 lbs)  
**Temp :** 0 - 70°C (32 - 158°F)  
**Max. Pressure :** 200bar (2900psi)

### Sensor

**Standard arms :** 57mm to 406mm (2" to 16")  
**Extended arms :** up to 736mm (up to 29")  
**Accuracy :** 5mm (0.2")  
**Resolution :** 0.5mm  
 Easy exchangeable caliper arms and wear tips

### Operating conditions

**Cable type :** Mono, multi-conductor, coax  
**Compatibility :** Scout / Opal (ALTlogger / Bbox / Matrix)  
**Digital data transmission Telemetry :** Variable baudrate telemetry according to cable length/type & surface system  
**Logging speed :** 5-6m/min recommended  
**Borehole conditions :** Dry and fluid-filled boreholes  
 Open and cased borehole

# Principle of measurement

The caliper measurement is made with three arms attached to a mechanical assembly which drives a linear potentiometer. The DC output voltage from the wiper of the potentiometer is converted to a frequency linearly related to the borehole diameter. Digital control commands for opening and closing the arms are made via the LoggerSuite acquisition software interface. The caliper measurement can be scaled and calibrated in inches, centimeters or millimeters.

# Measurements features

Calibrated measurement of borehole diameter in inches, centimeters or millimeters

