

## ○ Focussed Electric Probe (Guardlog)

The focussed resistivity (LL3) measurement provides excellent vertical resolution and a reasonable depth of investigation. The guard log replaces the classic Elog in conditions of low mud resistivity and high formation resistivity.

### Principle of Measurement:

The probe includes a central current-source electrode between two guard electrodes, maintained at the same potential by internal electronics. Current from the centre electrode is constrained to a thin disk by the presence of the guards and returns to the cable armour above a 10m insulated section. The potential of the central electrode with respect to a surface voltage-reference stake and the measured current are combined by a down-hole microprocessor to calculate apparent formation resistivity.

## ○ probe specification

### > Features

- Good depth of penetration with excellent bed-boundary resolution
- Down-hole calibration check using internal resistor
- Digital down-hole measurement avoids errors due to cable effects in deeper boreholes
- Constant-power down-hole current source give 4 decades of measurement without range switching

### > Measurements

- Focussed resistivity
- Natural gamma

### > Applications

#### Water

- Determination of water quality
- Indication of permeable zones and porosity
- Minerals/Engineering
- Strata correlation between boreholes
- Indication of fractures and permeable zones
- Bed-boundary and thickness measurements
- Moisture determination in coal

### > Operating Conditions

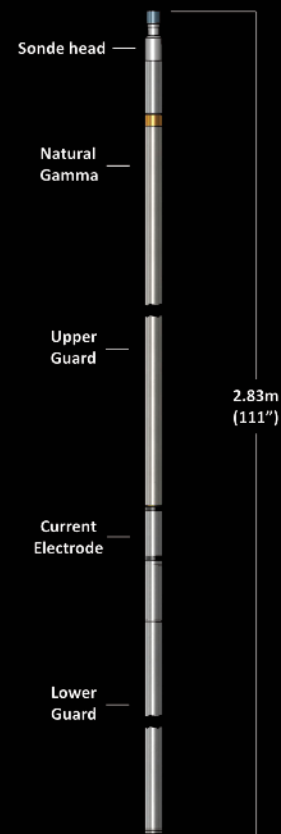
**Borehole type:** open-hole, water-filled  
**Centralisation:** standoff recommended  
 The logging cable armour should be insulated for 10m above probe head.

### > Specifications

**Diameter:** 38mm  
**Weight:** 8kg  
**Temperature:** 0-70°C (extended ranges available)  
**Max. pressure:** 20MPa  
**Measurement range:** 1 to 2,000 ohm-m

### > Sales Information

**Probe:**  
 I002078 Focussed electric probe includes natural gamma  
 I002721 Elog/glog test box (Mk2)  
 I015464 Gamma test blanket



Guard Log Sonde