

# Capacitance Array Tool (CAT)

Provides accurate fluid hold up across the entire wellbore

## Applications

- Phase identification in horizontal and highly deviated wells
- Calculation of the percentage of each phase present
- Plotting of phase composition along the wellbore
- Identification of water entry areas
- Changes in wellbore fluids with either time or different production rates

## Features and Benefits

- Combinable with other Sondex **Ultrawire™ production logging tools**
- Combinable with other tools of the Multiple Array Product Suite via Rotational Alignment Subs (RAS)
- Production Inclinometer Accelerometer (PIA) recommended
- 3D imaging of water holdup profile with MAPview software
- Array of 12 radial capacitance sensors
- Tool orientation determined by internal relative bearing sensor
- Collapsible bow-spring arms
- Memory and surface read out operations

Oil, gas, and water have different dielectric constants. The **Capacitance Array (CAT004)** Tool uses this property to identify fluid phases in high deviation and horizontal wells. Run centralised in the wellbore, the CAT is fully combinable with other **Ultrawire™ production logging tools**.

An array of 12 miniature sensors are mounted on the inside of a set of collapsible bowsprings and measure the capacitance of the surrounding fluid close to the well casing. All 12 values are simultaneously transmitted to the surface or into a memory section. Taking measurements in a single plane across the

diameter of the wellbore—rather than along it—results in an accurate cross-sectional plot of fluid phases. Combined with data from the Spinner Array Tool (SAT), Gas Array Tool (GAT) and the Resistance Array Tool (RAT), the tool allows quantitative estimates of the volumetric flow rate for each phase.



Specifications	
	CAT004
Temperature rating	350°F (177°C)
Pressure rating	15,000 psi (103.4 MPa)
Tool diameter	1 11/16 in. (43 mm)
Tool length	51.6 in. (1.310 m)
Tool weight	19.0 lb (8.62 kg)
Toolbus	Ultrawire production logging tool
Current consumption	25 mA
Maximum opening	7 inch casing
Number of sensors	12
Sensor measure point	18.1 in. (459.7 mm)
Relative bearing accuracy	5°
Relative bearing dev range	5° to 175°
Materials	Corrosion resistant throughout