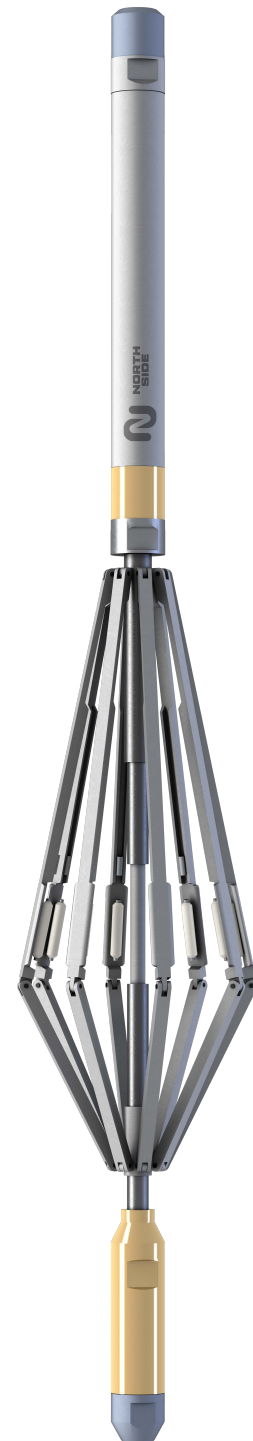# CAPACITANCE & HIGH-RESOLUTION TEMPERATURE ARRAY TOOL

The Capacitance & High-Resolution Temperature Array Tool (CAT&HR TAT) consists of 6 miniature sensors installed around the tool on self-centralized rigid arms facing fluid flow at 45° covering the entire cross-section of the wellbore. Each sensor includes capacitance and high-resolution temperature probes (2 in 1). Additionally, the tool is equipped with an accelerometer for sensors positioning and a caliper for arms opening confirmation. The tool is independently programmable for the duration of logging and fully compatible with other North Side PL tools and modules.

Applications

- Highly deviated or horizontal trajectories with segregated flow regimes
- Cross-sectional water hold-up profile determination
- Segmented production profile evaluation based on distributed HRT sensors and temperature modeling
- Wellbore and reservoir-oriented technology

Advantages

- The circumferential distribution of 6 sensors allows obtaining the data across the 360° of the wellbore
- Advanced rigidity of the tool due to the titanium shaft pulled through the tool and thick arms
- Combined Capacitance & HRT in one tool allows shorter string and complex data acquisition
- Build-in accelerometer

CAPACITANCE & HIGH-RESOLUTION TEMPERATURE ARRAY TOOL

Capacitance Array Module (6 sensors)	
Water cut	0-100%
Accuracy	±0.1%

HRT Array Module (6 sensors)	
Accuracy	0.1°C
Resolution	0.001°C
Response time	0.25 sec
Sensor type	Platinum / Exposed

Build-in Positioning Module (accelerometer)	
Axial rotation sensor	0-360°
Angle of inclination sensor	0-90°
Build-In Caliper	Yes

General Specifications	
Maximum operating pressure	14,500 PSI (100 MPa)
Maximum operating temperature	150°C (302°F)
Arms opening range	1.7-5.8 in
Tool length	3.8 ft (1.15 m)
Tool OD	1.65 in (42.0 mm)
Tool weight	17.6 lbs (8.0 kg)
Connections	15/16 SR
Surface read-out / Memory	Fully autonomous (memory mode)
Operational time	Over 100 hrs
H$_2$S resistance	6% standard (25% optional)