

## FUSION-ST ARRAY TOOL

The Capacitance, Resistivity, High-Resolution Fast Response Temperature & Thermal Flow Array Tool (FUSION-ST) 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 4 probes designed for ultimate spinnerless evaluation of well-reservoir performance in horizontal and highly deviated oil wells. Additionally, the tool is equipped with an accelerometer for sensors positioning and a XY caliper.

The tool is independently programmable for the duration of logging and fully compatible with other North Side PL tools and modules.

### Applications

- 3D fluid phase evaluation & mapping in highly deviated or horizontal trajectories with segregated flow regimes
- Spinnerless wellbore production profiling
- T-Flow reservoir flow profiling
- Water breakthrough determination

### 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
- Fusion of sensors allows shorter string and complex data acquisition in single run
- Build-in accelerometer
- Built-in caliper
- Light weight



# FUSION-ST ARRAY TOOL



<b>Capacitance Array (6 sensors)</b>	
Water cut	0-100%
Accuracy	±0.1%
<b>Resistivity Array (6 sensors)</b>	
Measurement error	Less than 1 ohm-m
<b>HRT Array (6 sensors)</b>	
Accuracy	0.1°C
Resolution	0.003°C
Response time	0.25 sec
Sensor type	Platinum / Exposed
<b>TFT Array (6 sensors)</b>	
Response time	0.25 sec
Sensor type	Platinum / Exposed
<b>Build-in Positioning (accelerometer)</b>	
Axial rotation sensor	0-360°
Angle of inclination sensor	0-90°
Build-In Caliper	Yes
<b>Build-in XY Caliper</b>	
Caliper measurement range	1.8-7 in (45-178 mm)
Measurement accuracy	0.12 in (3 mm)
Measurement resolution	0.02 in (0.5 mm)
Built-in rotation sensor	Yes (0-360°)
Built-in inclination sensor	Yes (0-180°)
<b>General Specifications</b>	
Maximum operating pressure	14,500 PSI (100 MPa)
Maximum operating temperature	150°C (302°F)
Tool OD	1.65 in (42.0 mm)
Tool length	5.1 ft (1.55 m)
Tool weight	24.3 lbs (11.0 kg)
Connections	15/16 SR
Surface read-out / Memory	Fully autonomous (memory mode)
Operational time	Over 100 hours
H <sub>2</sub> S resistance	6% standard (25% optional)