

Scientific Drilling's Vulcan™ FLS (Flow Logging System) 1.75 & 2.25 are extended duration, flasked system production logging tools.

This high-temperature system offers the following sensors:

- + Casing collar locator (CCL)
- + Gamma ray
- + Pressure
- + Temperature
- + Spinner flowmeter
- + Fluid capacitance
- + Tuning fork density (Vulcan FLS 1.75 only)

For more information on Scientific Drilling's range of cased hole services, contact your Scientific Drilling sales representative or visit:

<http://scientificdrilling.com/cased-hole-services>

GENERAL SPECIFICATIONS

MAXIMUM TEMPERATURE**	600°F (315°C)
MAXIMUM PRESSURE	16,000 psi (110,316 kPa)
MEMORY	Non-volatile, 48 MB
TEMPERATURE SENSOR ACCURACY/RESOLUTION	High-accuracy platinum resistance ±1.8°F (1°C) / 0.02°F (0.01°C)
PRESSURE SENSOR ACCURACY/RESOLUTION	High-accuracy quartz ±3.0 psi / 0.01 psi
FULLBORE SPINNER RESOLUTION, TYPE,	Minimum 0.1 rps with direction 4-Arm / 6-Arm
CONTINUOUS SPINNER RESOLUTION & OD RANGE	Minimum 0.1 rps with direction 1.75 - 3.5 in
GAMMA RAY CRYSTAL DETECTOR	Sodium iodide (NaI) scintillation
CASING COLLAR LOCATOR TYPE & MEASUREMENT FREQUENCY	Magnetic flux 50 samples per second
TUNING FORK DENSITY ACCURACY / RESOLUTION & RANGE	0.003 g/cc / ±0.003 g/cc 0.0 g/cc - 1.2 g/cc
CAPACITANCE RANGE	0 - 100% (Dependent on water hold-up)
TUNING FORK DENSITY & CAPACITANCE TEMPERATURE RATING	428°F (220°C)
CENTRALIZERS	Over-body or In-line
HOUSING DIAMETER	Medium: 1.75 in (44.4 mm) Large: 2.25 in (57.1 mm)

*Specifications are subject to change without notice **Max. temperature rating dependent on run duration

APPLICATIONS

- + HPHT multiphase flow profiling
- + HPHT leak detection
- + Geothermal flow profiling
- + Memory and real-time data acquisition

BENEFITS

- + High-endurance in hot wells
- + Slickline conveyance simplifies pressure control for safer operations
- + Cost-effective data acquisition
- + FIM option available
- + Reliable HPHT data acquisition on coiled tubing

