INSTRUMENTED EXPLORER

GR- DSCL-Deviation-Temperature tool to ensure well and cavity integrity

FLODIM
Challenging the limits

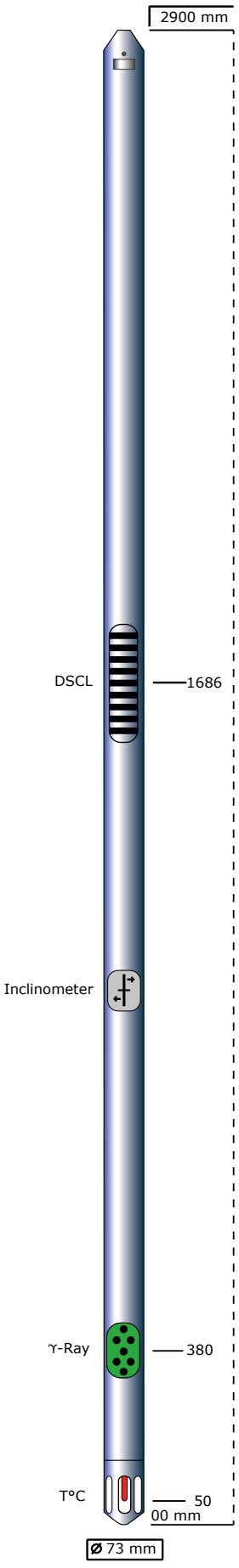
OPERATING PRINCIPLE:

The Instrumented Explorer is a 4-in-1 tool that incorporates critical sensors to guarantee well integrity and a subsequent wireline logging run or sonar survey. It allows precise depth correlation both in Open-Hole (Natural Gamma Ray) and Cased Hole (DSCL) configurations.

The Instrumented Explorer is the bodyguard of the Cavity suite; with the same shape and size as the standard 2"" 7/8 sonar tool, running the Instrumented Explorer is highly recommended before any sonar survey, as it detects any well or pipe irregularities in real time, mitigating the unwanted risk of instrument loss in the hole.

Among its main features, it incorporates:

- Precise Depth Correlation sensors for multiple-completion wells, detecting 2 (two) concentric tubing joints and the 3rd casing shoe
- Gamma-Ray sensor for precise depth-correlation with Open Hole Logs, main lithology determination, early-detection of cavity roof and insolubles top.
- Z-axis inclinometer indicates overall deviation to guarantee pipe verticality and well integrity
- High resolution temperature sensor can perform continuous or stationary logs, to detect borehole or formation fluid movement in wells and cavity roof.



APPLICATIONS

- Well & Cavity integrity
- Depth - Correlation Logs
- Perforation Location
- Cement/Hydraulic fracture treatment evaluation
- Locate lost circulation zones
- Fluid movement detection
- Brine & Potash Cavity access
- Casing Integrity

BENEFITS

- Well integrity verification
- Precise Depth Correlation in multiple completion well
- Leakage/channelling identification
- Cavity integrity
- Real-time, fast results
- Casing Integrity
- Continuous or instantaneous logging
- Fluid movement identification
- Smart-Cost Logging

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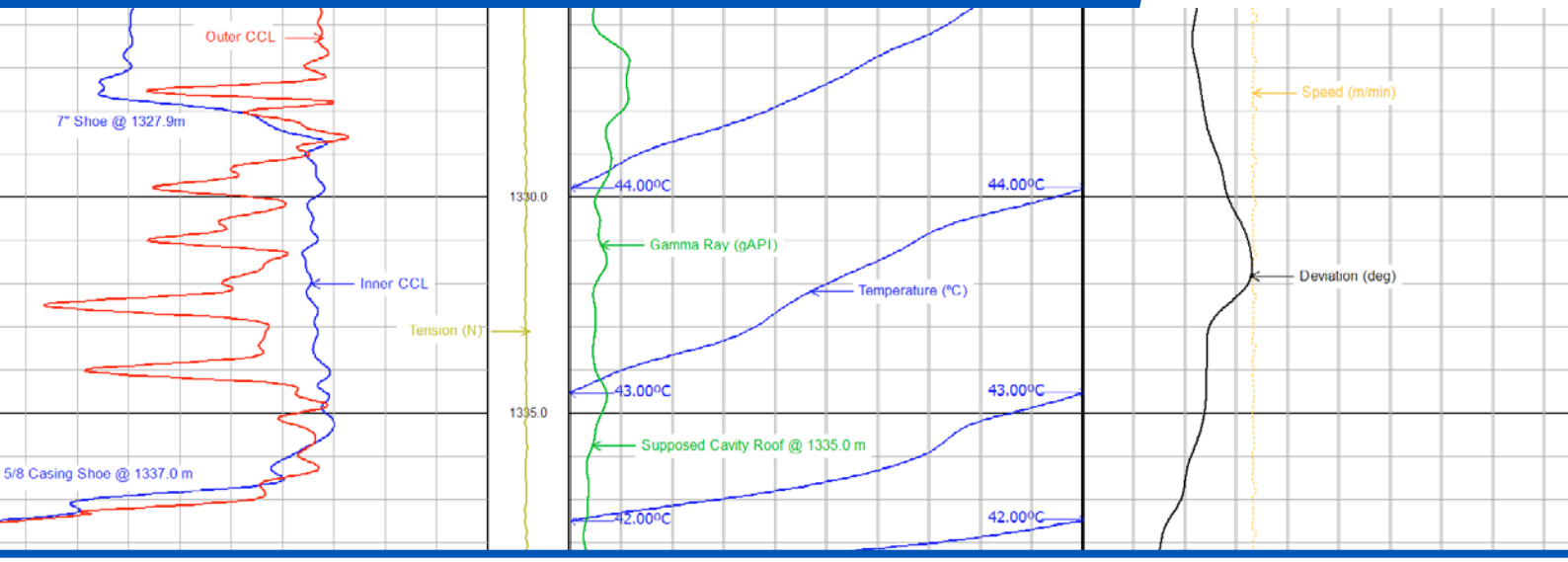

SPECIFICATIONS:

Technical Specifications	imperial	metric
Max OD	2 7/8"	73 mm
Length	114,17"	2,90 m
Weight	99 lbs	45 kg
Max Temp	158º F	70º C
Max Press	8.700 psi	600 bar

Measuring Parameters	imperial	metric
Min. Hole Diameter	4"	100 mm
Casing Diameter Range (recommended)	4" - 13 3/8"	101,6 - 340 mm
DSCL		Coil
DSCL Range		2 strings of casing, shoe of 3rd casing
DSCL Resolution	11,8"	300 mm
Natural Gamma Ray		1" x 4" NaI (Ti) scintillation crystal
GR Range	0 - 10 000 cps	0 - 3000 gAPI
GR Accuracy		+/- 3% of measured values
Deviation		none
Deviation Range		0-30 deg (*)
Deviation Accuracy		+/- 1º
Temperature		PT-100
Temperature Range		5-70ºC [41-158F]
Temperature accuracy		0.1ºC
Temperature resolution		0.01ºC

(*) Deviation >30deg possible with reduced accuracy

Logging Parameters	
Cable Compatibility	mono or multi-conductor (up to 4500m)
Logging Speed	10 m/min
Operating Voltage	90 - 150 VDC
Centralizers	none
Tool zero	Temperature Sensor (deadend 50mm)

Measuring Points (from tool zero)	
DSCL	1636mm
GR	331 mm
Temperature & Deviation	0 mm
Deadend	50mm