

# EnSight MWD™

LITE® POSITIVE PULSE

**On demand inclination and azimuth readings are an effective means of keeping the well bore vertical.** Timely information allows for changes to drilling parameters, and thus well bore deviation can be better controlled. Azimuth readings require the installation of the tool into a Non-Magnetic Drill Collar. The tool comes with rubber stabilizers which are easily sized on location to fit any collar I.D.

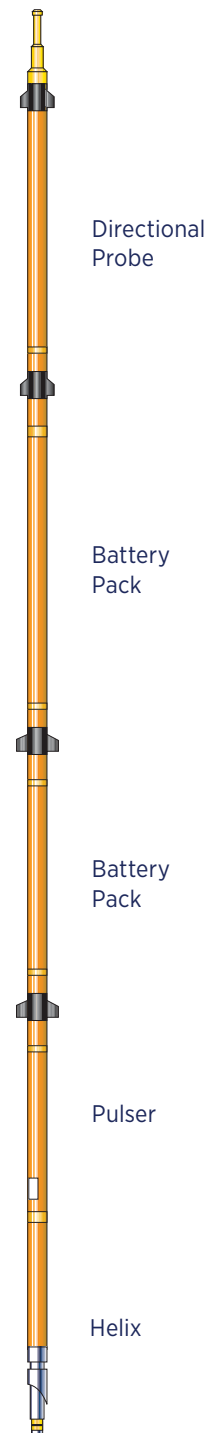
The bottom mount Pulser utilizes a high efficiency and high torque stepper motor design which also allows reliable service in high LCM situations. The Pulser seats into a muleshoe sleeve providing both the positive pulse and the retrievability.

A full color graphics 10.4" LCD Rig Floor Display which can be readily viewed in normal rig operating conditions operates on a Microsoft Windows-based platform. The Rig Floor Display also contains the necessary barriers and protection circuits for safe operation. Combined with touch screen capabilities and software, the system has proven to be reliable, efficient and easily configurable.



## BENEFITS

- Efficient, compact, low-maintenance
- Manufactured in Canada
- Rugged Design
- Modular for easy Assembly and Transportation
- MWD Retrievable (Optional Cutter Sub)
- Collar O.D. - 3.5" to 9.5"
- High torque/High Efficiency Stepper motor design
- Digital Signal Processing with adjustable pulse filters
- Improved control and flexible management of down-hole sensors
- Intelligent power management for maximum battery life
- Real-time and recorded shock and vibration data
- High quality data transmission and self correction to optimize drilling speed capability
- Ruggedized packaging, field proven to 175°C
- Optimized data management to exploit pulser bandwidth
- Feature rich acquisition software allowing full control of all aspects of the operation



## MWD LITE® POSITIVE PULSE SPECIFICATIONS

Telemetry	Positive Pulse
Operating Flow Rates	75 – 1200 gpm (280 – 4,500 L/m)
Electrical Power / Operating Time	Li Battery – 200 hrs (400 hrs with 2nd Pack)
Maximum Operating Temperature	302 °F (150 °C) 350 °C with Hi-Temp cells
Operating Pressure	Maximum 20,000 psi (138,000 Kpa)
Pressure Drop Across Tool	700 kpa @ 1,500L/m (700 kpa @ 1,500L/m)
Mud Weights	No restriction
Sand Content	<2%
Maximum LCM	40-50 ppb, any size, must pre-mix

## MWD LITE® DOWNHOLE PACKAGE

PARAMETER	RANGE	ACCURACY
Azimuth	0 – 360 Deg	± 2.0 Deg
Inclination	0 – 10 Deg	± 0.25 Deg
Magnetic Field	1 – 100 mT	0.200 mT
Dip	0 – 90 Deg	± 0.20 Deg
Temperature	0 – 200 Deg	± 2.0 Deg
Battery Voltage	0 – 40 VDC	± 0.5 VDC
Tool Length	10.5'-15' (3.2 – 4.6m)	

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