Eclipse MWD System

The Eclipse system marks a new generation of MWD performance and ease of use. Eclipse reinvents how MWD tools can work with - and without - field operators. The toolstring arrives at the wellsite collar loaded and BHA ready with no wellsite assembly. The system can be configured as either Mud Pulse, EM, or Dual Telemetry making it ready for any formation. Eclipse includes industry leading sensors and mechanical architecture to offer Survey, Drilling Dynamics, Gamma Ray, and Azimuthal Gamma on every run.

The Black Diamond commitment to customer success is demonstrated by an exemplary network of realtime operations monitoring and support personnel.

Features and Benefits

Reliable Operation

The Eclipse MWD collar is assembled in a controlled environment before rig deployment. Eliminating the need to pick up, laydown, or reconfigure MWD probes on location. Shipped in 'Sleep Mode' to conserve energy during transport with auto activation prior to drilling start.

Eclipse Connect

Allows programming the MWD from anywhere without the need to break connection; program the tool in the shop, field or slips. System is designed so anyone with a few minutes of training can program them without risking the tool's Integrity.

E-Chassis

Fully configurable transmission sequences allow for a critical steering data to aid accurate well placement. Configuration options include competitive MWD features such as advanced shock, vibration, and stick slip logging for drilling string feedback and Continuous Inclination and Azimuth for steering. All while allowing real time adaptation using both Flow and Rotation activated downlinking.

Azimuthal Gamma

The high-resolution API Gamma Ray measurements drive effective well placement, assessment of formation inclination/dipping beds, reservoir contact maximization and completions optimization. Azimuthal imaging exchanges geosteering confidence and certain reaction of formation change.

Eclipse Touch

The Eclipse Touch surface system is created specifically to unlock powerful surface features such as Pulse Overdrive, Rotation Based Telemetry, Babel Fish, and RSS support.

Eclipse MWD System - Specifications

Technical Specifications				
Collar O.D.	5.375 in.	6.5 in.	6.75 in.	8.0 in.
Tool Connections Upper	TBD	4 ½ in. IF BOX (4 ¼ ID)	4 ½ in. IF BOX (4 ¼ ID)	6 ⅝ in. REG BOX (4 ½ ID)
Flow Rate Range	100 - 400 usgpm	150 - 800 usgpm	150 - 800 usgpm	400 - 950 usgpm
Max. Dogleg Rotation	14°/ 100 ft	12°/ 100 ft	12°/ 100 ft	10°/ 100 ft
Max. Dogleg Sliding	22°/ 100 ft	20°/ 100 ft	20°/ 100 ft	18°/ 100 ft
Max. Mud Weight	18 ppg	Max. Pressure	15,000 psi	
Max. Temperature Operating	347 °F	Max. Sand	1.0 % at maximum fluid velocity	
Max. LCM Tolerance	40 ppb any type, thoroughly and evenly mixed, with use of surface drill pipe screens			

Sensor Specifications		
Directional	Tri-axial Magnetometers MEMS Accelerometers	
Measurement	Range	Accuracy
Inclination	0 - 180°	+/- 0.1°
Azimuth (10°-90° Inc)	0 - 360°	+/- 0.25°
Toolface - Gravity	0 - 360°	+/- 0.75°
Toolface - Magnetic	0 - 360°	+/- 0.75°
Dip Angle	-	+/-0.4°
Total Gravity Field	+/- 2g	+/- 2.5 mG
Total Magnetic Field	+/- 8 Gauss	+/- 300 nT
Total Magnetic Field	<10gRMS	+/- 0.2°
Continuous Azimuth	< 10gRMS	+/- 0.5°
Temperature	-32 - 380 °F	+/- 1°
Shock	1000g	0.5msec, half sine
Gamma	NaI Scintillation	
Parameter	Range	Accuracy
Gamma	0 - 600 API	+/- 3%
Resolution	1 API	

Tool Length	
Mud Pulse Only	20 ft
Dual Telemetry	30 ft

Surface System Specifications	
Rig Floor Display	Eclipse Touch
Pressure Transducer	4 - 20 mA, 0-5000 psi

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