

UltraFire High Temperature (185 °C) MWD & Motors

Introducing Black Diamond's UltraFire High Temperature MWD Tool and Mud Motors, setting the industry standard for cost-efficient, reliable, and resilient directional drilling operations in the most challenging environments. Engineered to thrive in extreme heat conditions up to 185°C, this cutting-edge technology ensures unparalleled performance, making it the go-to solution for operators pushing the boundaries of hot and harsh drilling environments. With a focus on reliability, ease of use, and optimized cost efficiency, our UltraFire High-Temperature MWD Tool and Mud Motors empower your operations with unwavering precision and durability, allowing you to conquer the hottest drilling challenges with confidence. Welcome to a new era of drilling excellence with Black Diamond.

Features and Benefits

UltraFire MWD

Robust Architecture

- Proven Tensor Elite platform, unrivaled ease of use and reliability in even the harshest of drilling environments.
- Short Module length, and simple rigsite assembly reduces impact on rig time and risk of operator error

High Accuracy Sensors

- Tri-axial MEMS Accelerometers and solid-state Magnetometers most accurate and stable directional measurements
- High frequency data sampling provides advanced shock, vibration, and stick-slip logging
- Continuous Inclination and Azimuth
- Gamma stability at high temperature and shock
- 24 MB memory recording logging, environmental and diagnostic data sets
- Flow/ Rotation activated downlinking

High Speed Pulser

- Rotary shear valve delivering pulse widths as short as 0.188 second
- Unmatched performance in high solids/ high LCM operations
- 8 MB memory tracks a full suite of diagnostic measurements
- Lower End designed to manage high flow/ high wash environments.

Market Leading Eclipse Touch Surface System

- Automatic application of 100+ filters
- Highly-intuitive user interface
- Fully configurable WITS In/ Out and a highly reliable wireless transmission system ensure data is easily shared.

Mud-Lubricated Motors

Proven Bearing Technology

- Custom Designed for mud lubricated applications
- Industry proven thrust and radial bearings
- Uniform load distribution
- Maximized WOB capacity

Configurable Bend Options

- 0-3° adjustable bend
- Fixed bend option for shorter bit-to-bend

High Temperature Elastomers

- Standard and high torque options
- Standard or Oil-Resistant options

Maxi-Torque Driveline

- Designed for high torque power sections

RSS Ready

- Pin Down mandrel & straight housing options
- Achieve high downhole RPM with RSS



UltraFire High Temperature MWD & Motor - Specifications

UltraFire MWD Technical & Environmental Specifications

Collar O.D.	4 ¾ in.	6 ½ in.	8 in.	9 ½ in.
Tool Connections	3 ½ in. IF	4 ½ in. IF	6 ⅝ in. REG	7 ⅝ in. REG
Flow Rate Range	100 - 400 usgpm	150 - 800 usgpm	400 - 1,200 usgpm	400 - 1,200 usgpm
Max. Dogleg Rotation	15°/ 100 ft	10°/ 100 ft	7°/ 100 ft	4°/ 100 ft
Max. Dogleg Sliding	30°/ 100 ft	21°/ 100 ft	14°/ 100 ft	7°/ 100 ft
Toolstring OD	1 ⅞ in.	Toolstring Length	25 ft	
Max. Pressure	20, 000 psi	Max. Sand	1.0 % at maximum fluid velocity	
Max. Temperature Operating	365 °F (185 °C)			
Max. LCM Tolerance*	60 ppb Medium Nut Plug, 20 ppb Cedar Fiber, thoroughly and evenly mixed			
Max. Vibration, 3-axes	25 g RMS	Max. Shock	1000 g 0.5 msec, half sine	

*Issues may occur at lower concentrations due to poor mixing, LCM combinations/ mud condition etc.

UltraFire MWD Sensor Specifications

Directional	Range	Accuracy	Gamma	
Inclination	0 - 180°	+/- 0.1°	Sensitivity	1.14 cps/ API
Azimuth (10° - 90° Inc)	0 - 360°	+/- 0.25°	Accuracy	+/- 5% to 150 °C
Toolface - Gravity	0 - 360°	+/- 0.75°		+/- 15% to 190 °C
Toolface - Magnetic	0 - 360°	+/- 0.75°		
Dip Angle	-90 - 90°	+/-0.4°		
Total Gravity Field	+/- 2 g	+/- 2.5 mg		
Total Magnetic Field	+/- 0.8 Gauss	+/- 300 nT		
Continuous Inclination	0 - 180°	+/- 0.2° <10 gRMS		
Continuous Azimuth	0 - 360°	+/- 0.5° <10 gRMS		

UltraFire M40 Motor Specifications

Power Section (in.)		5.0	5.25	5.5	6.5	6.62	6.75	6.75	7.0	7.25
Bearing Assembly OD (in.)		5.25		5.5	6.5			7.25		
Hole Size	Min (in.)	6.125	6.75	7.785	8.5	8.5		9.785		
	Max (in.)	7.785	7.785	9.785	9.785	9.785		9.785		
Flow Range (usgpm)		300 - 450			300 - 800					
Rev/ Gal Range		0.17 - 1.0			0.15 - 0.60					
Temperature Range		0 - 380 °F (-18 - 193 °C)			20 - 380 °F (-7 - 193 °C)					
Bit Box to Bend	Adjustable (in.)	50	53	N/A			57			
	Fixed (in.)	40	43	51			45			
Operating Capacity	WOB (klbs)	41	48.5	72			76.5			
	Bit Overpull (klbs)	41	48.5	72			76.5			
Static Capacity	WOB rerun (klbs)	181	231	358			355			
	Bit Overpull rerun (klbs)	127	169	222			319			
	Absolute Body Overpull (klbs)	424	440	524	545	539	539	659		
Lower Stabilization Options		Integrated Stab/ Sleeve Stab/ Slick Sleeve/ SATW								