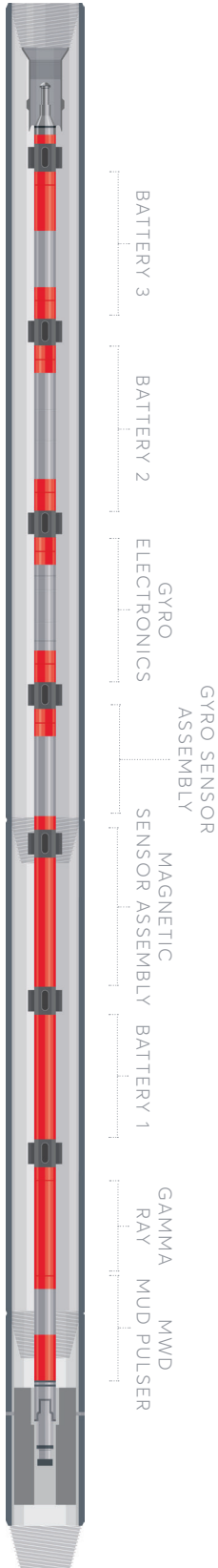


PRODUCT SPEC SHEET

GYROGUIDE DUAL SENSOR

Retrievable Mud Pulse GWD+MWD



MECHANICAL

Length*	43 ft	13.1 m
Tool OD	1 7/8 in	47.6 mm
Minimum Borehole Size	6 1/4 in	171.5 mm
Maximum Borehole Size	17.5 in	444.4 mm

TOOL SIZES VS. FLOW RATES

Tool Sizes (inches)	Flow Rate (gallons/minute)	Dogleg Severity
		sliding / rotating
4 3/4	100 - 400	28° / 12°
5 1/4	100 - 400	25° / 11°
6 1/2	120 - 475	20° / 10°
6 3/4	120 - 701	19° / 8°
8 1/2	400 - 800	12° / 7°

*Length accounts for a 3-lithium battery configuration; for a 4-lithium battery configuration the total length is 48 ft/14.6 m.

SENSOR & SYSTEM

Sensor Type	3-axis rate-gyro 3-axis accelerometer 3-axis magnetometer
Telemetry	MP
Total Survey Time ¹ (including transmission)	4 1/2 - 10 minutes
Frequency Range	0.33 - 1.33 Hz Field Programmable
Data Rates	0.5 - 1.3 bps

INSTRUMENT ACCURACY

Measurement	Range	Resolution	Accuracy
Gyro Inclination ²	0 - 180°	0.0269°	± 0.1°
Gyro Azimuth	0 - 360°	0.0879°	± 1.0°
Gyro Tool Face	0 - 360°	0.0879°	± 1.0°
Gravity Tool Face	-180 - +180°	1.42°	± 0.5°
Magnetic Inclination	0 - 180°	0.044°	± 0.1°
Magnetic Azimuth	0 - 360°	0.0879°	± 0.1°
Magnetic Tool Face	0 - 360°	1.42°	± 0.5°
Dip Angle	-90 - +90°	0.04°	± 0.15°
Magnetic Field (gauss)	0 - 1.2	0.00476°	± 0.0024
Gravity Total	-1.01 - +1.01	0.00476°	± 0.0016
Gamma (CPS)	0 - 255.5	0.25°	± 0.5 to 302°F

¹ Total Survey Time is dependent on accuracy requirements.

² Maximum GWD inclination is dependent on GWD gyro version and availability.

Specifications are subject to change based on wellbore conditions and drilling, surveying, and/or steering operations. Contact your Gyrodata representative for details. Updated December 2018. Copyright ©2012 Gyrodata, Inc.

ENVIRONMENTAL

Pressure	20,000 psi	138,000 kPa
Maximum Temperature (with no time constraints)	302°F	150°C
Lost Circulation Material	Fine.....	15 lbs/bbl
	Medium.....	10 lbs/bbl
	Course.....	8 lbs/bbl
Vibration Maximum Operating	sine vibration 8 g peak 50 - 800 hz	
Maximum Survival	sine vibration 15 g peak 50 - 800 hz	
Operating Time	180 hrs utilizing 3-4 lithium batteries (GWD dependent)	