



## MWD/Gamma Services

We ensure that our MWD tools are easily assembled in the field, making the configuration process seamless to operate in a variety of downhole conditions.

### Operating Environment

Maximum Working Pressure	20,000 PSI
Pulsation Dampeners	charged to proper specifications
Flow Range	100 - 1,000 GPM
Pressure Drop Across Tool	Approx. 160 PSI at 450 GPM w/water
Mud Type	Full range
Mud Pump	Duplex or triplex
Max L.C.M.	3/8" diameter
Sand Content	.25% max.
Temperature Range	175°C max.
Surface Mud Screen	Recommended
Float Valve	Required below probe

### System Operation

Toolface Update Rates	Selected from 14 to 28 seconds
MTF/GTF Crossover	Operator selectable
Survey Time	160 seconds
Battery Life	650 plus hours
Pulse Type	Positive
Survey Trigger	Stop and restart mud pumps
Down Link	Change mode of operation
Sensor Measurement Point	18' from bottom of UBHO

### Data Specifications

Parameters	Data Range	Resolution
Inclination	0 - 180	0.1
Azimuth	0 - 360	0.1
Magnetic Toolface	0 - 360	5.5
Gravity Toolface	0 - 360 +/- 180	5.5
Probe Temperature	0 - 350	1.5
Magnetic Dip	-90 - 90	0.1
Total Magnetic Field	0.0 - 1.0 gauss	100 gauss
Total Gravity	0.0 - 2.0 G's	0.1 G's

### Probe Dimensions

O.D.	Length	Weight
2.250" Centralizer	26 ft	150 lbs
1.875" Pressure Barrels		

### Gamma Ray Specifications

#### Performance

Sensitivity	1.7 counts per API
Accuracy	+/- 5% to 300°F +/- 10% to 350°F
Thin-bed Resolution	6.8"

(in 8" hole diameter, at 50% points)

#### Environmental

Survival Temperature	175°C
Max Heat / Cool Rate	5°F / minute
Vibration (3 axis) 50-300 Hz	30 G. RMS
Random Spectrum	
Shock (Z-axis)	500 G, 0.5 mS.
Shock (X or Y axis)	1000 G, 0.5 mS.