



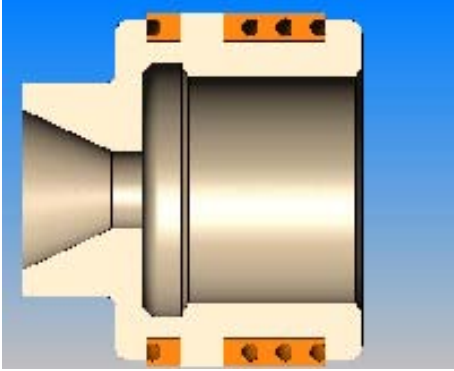

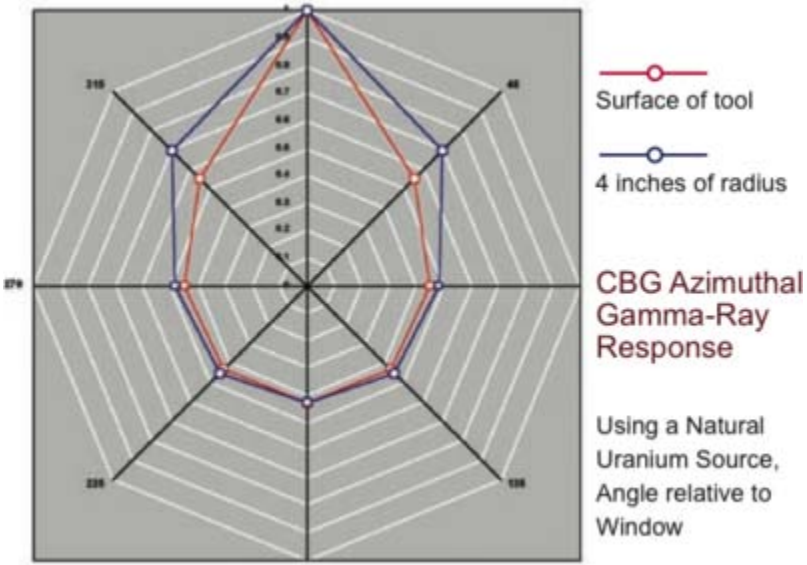
The low maintenance DrillRight MWD System is designed for simplicity of operation, assembly, and convenient transportation. Built to perform in difficult environments, the DrillRight MWD System can operate in temperatures up to 150°C (302°F) and pressures to 20,000 psi. The positive pulse, retrievable and re-seatable tool accommodates a number of probe configurations, ensuring top performance in a variety of flow ranges in collar sizes from 3 1/2" O.D. to 9 1/2" O.D.. This modularity, combined with the DrillRight MWD System's rugged and retrievable design, minimizes rig downtime and reduces financial risk.

DrillRight MWD System Specifications	
Sensor Resolution	± 0.1° Inclination (0° - 180°) ± 1.0° Azimuth (0° - 360°) ± 1.0° Toolface (0° - 360°)
Max. Operating Pressure	20,000 psi
Max. Operating Temperature	150°C / 302°F
Flow Rate	100 – 900 USGPM (drill collar I.D. dependent)
Collar Sizes	3 1/2", 4 3/4", 6 1/2", 8, 9 1/2"
Probe O.D.	1.88" (probe), 2.25" (centralizer)
Flow Switch	Electronic Vibration Sensed
Pulse	Positive Pulse
Pulse Size	Adjustable Width
Power	Lithium Battery – 200 to 400 hours continuous life depending upon tool configuration.
Tool Length	See chart below.
Shock	1000g @ 0.5mSec
Vibration	25g RMS, 0.5 Disp D.A.
LCM Capabilities	Ask your DRT Representative

DrillRight MWD System Specifications				
	Length	Weight (lb)	Cum. Length	Cum. Weight (lb)
Lower End	22.48"	8.8	22.48" (1.87')	8.8
Pulser Module	65.75"	36.4	88.23" (7.35')	45.2
Gamma Module	36.52"	15.0	124.75" (10.40')	60.2
Battery 1 Module	64.38"	22.0	189.13" (15.76')	82.2
Directional Module	61.00"	20.0	250.13" (20.84')	102.2
Battery 2 Module (opt)	64.38"	22.0	314.51" (26.21')	124.2
Dir. Survey Offset = 18.3' from bottom of tool.				
Gamma Ray Offset = 8.4' from bottom of tool.				



DrillRight has strived to offer MWD Performance above and beyond the standard specifications offered by the Pilot MWD System. To this end, DrillRight has modified certain components in the standard MWD tool to offer better performance.

<p>Modified Lower End Piston Cap</p> 	<p>There was a requirement to increase the amount of LCM that can be run in the mud system without altering the performance of the mud pulse tool.</p> <p>The piston cap in the lower end was modified to accept multiple polypaks. Through better centralization and additional plenum sleeve wiping, higher concentrations of LCM can now be run.</p>
<p>Modified Lower End Main Shaft</p> 	<p>Through experience, DrillRight found that LCM tended to congregate between the main shaft and the ID of the helix in the lower end. By reducing the shaft O.D. and removing the upsets in the I.D. of the helix, the flow area has been increased. The resultant area increase allows the fluid to maintain greater velocity and augments passage of the LCM out of the lower end of the MWD tool.</p>
<p>Focused Gamma Ray Capability</p>  <p>—○— Surface of tool</p> <p>—○— 4 inches of radius</p> <p>CBG Azimuthal Gamma-Ray Response</p> <p>Using a Natural Uranium Source, Angle relative to Window</p>	<p>DrillRight has been requested by several operators to provide focused Gamma Ray capabilities. DrillRight has purchased Focused Gamma Ray modules and is not able to offer this service along with standard Gamma Ray.</p>