Technical Data Reference

Newsco NVADER (Stand-Alone MWD)

About Newsco

Newsco's diverse directional drilling experience is a key driver for its success. Established in 1994, Newsco's technology has been proven in extreme drilling conditions on five continents and is trusted to exceed expectations in high temperature, LCM and high shock/vibration environments.

Newsco's core capabilities are born out of its internal R&D teams who are continually innovating to exceed the expectations of today's Exploration and Production companies.

About the NVADER

Newsco's commitment to technology has resulted in the patented Newsco NVADER MWD tool, created to provide operators with service flexibility. Unmanned offerings range from inclination only, to full directional survey with gamma and toolfaces for vertical correction. The NVADER tool is virtually immune to loss circulation material and operates in all hole sections.

All unmanned services can be monitored 24/7 by our remote operations center to ensure tool performance and data quality.

Coupled with Newsco's state of the art DRILL-WELL™ surface system, The Newsco NVADER becomes a powerful tool empowering operators to select a service and decreased their footprint on site.

Newsco NVADER Applications

- Stand alone Inclination and Azimuth surveys
- Extreme LCM tolerance
- Gamma Ray compatible
- Vertical correction
- Directional wells
- All directional well profiles
- Onshore & Offshore wells
- Performance drilling
- High loss wells

Features	Benefits
Industry leading precision	Ensures confident wellbore placement
LCM immunity	Maximizes on bottom drilling time
Remote steering and logging	Reduces cost and footprint on location
Stand alone survey and angle correction	Adds flexibility and avoids unnecessary trips
Wireline retrievable and re-seatable	Lowers insurance rates and increases operational savings

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Newsco **NVADER** (Stand Alone)

Tool Specifications		Imperial Units	SI Units
MWD Telemetry Type		Positive Pulse	
Wireline Retrievable / Re-Seatable		Yes / Yes	
Downlink Capable		Yes, Mud Flow Time Sequencing	
Programmable Modes of Operation		4 Static, 2 Dynamic	
Continuous INC Capable		Yes	
Survey Capability While Sliding, Rotating		Yes, No	
Tool Outside Diameter		1.88"	47.8 mm
Overall Length of Tool [i]	D&I Only	25'	7.62 m
	D&I + Gamma Ray	32'	9.75 m
Measurement Depths [ii]	D&I Only Electronics Sensor	8.75'	2.67 m
	D&I + GR Gamma Sensor	8.1'	2.47 m
	D&I + GR Electronics Sensor	12.1'	3.68 m
Flow Ranges	3 $^1/_2$ in.	75-165 gpm	0.28 - 0.625 m^3
	4 $^3/_4$ in.	100-300 gpm	0.37 -1.1 m^3
	6 $^3/_4$ in.	150-600 gpm	0.55 - 2.2 m^3
	8 in.	400-1,200 gpm	1,5 - 4,5 m^3
	9 $^5/_8$ in.	450-1,500 gpm	1.7 - 5.6 m^3
Pressure Drop	@ 250 gpm (0.9 m^3)	80 psi	550 kPa
	@ 500 gpm (1.9 m^3)	110 psi	750 kPa
	@ 1000 gpm (3.8 m^3)	220 psi	1,500 kPa
Gamma Ray Sensor Specifications			
Gamma Ray Detector Type		Telemetrix™ Ruggedized Chassis Mounted NaI Scintillation	
Gamma Measurement Range		0 to 500 cps	
Power Specifiactions			
Power Source		Lithium Thionyl Chloride Batteries	
Operating Time Per Battery Probe [iii]		> 400 Hours	
Vibration Sensor Specifications		**Imperial Units**	**SI Units**
Measurement Range (lateral)		± 50 g	500 m/s^2
Frequency Response		20 to 500 Hz	
Temperature Sensor Specifications		**Imperial Units**	**SI Units**
Measurement Range		32 to 302, [32 to 350] ℉ [ii]	0 to 150, [0 to 177] ℃ [ii]
Sensor Accuracy		± 5.0 ℉	± 2.5 ℃
Resolution		± 4.0 ℉	± 2.0 ℃
Transmission Time Specifications			
Pulse Length, s	0.2	0.4	0.6
Static Survey, s	45	90	135
Toolface, s	11	22	33
Gamma Ray, s	3	6	9
Toolface and Gamma Ray, s	8	16	24
Environmental Specifications		**Imperial Units**	**SI Units**
Maximum Vibration		20 g	200 m/s^2
Maximum Shock		500 g, 0.5ms 1/2 Sine	5,000 m/s^2 0.5ms 1/2 Sine
Operating Temperature Range		32 to 302, [32 to 350] ℉ [ii]	0 to 150, [0 to 177] ℃ [ii]
Maximum Operating Pressure		25,000 psi	172,000 kPa
Mud Sand Content		2%	
Maximum Bit Pressure Drop		No Limit	
Lost Circulation Material Size		All Types	
Lost Circulation Material Weight		100 ppb	285 kg/m^3
Surface Network Specifications			
Surface System Platform		Telemetrix DRILLWELL™ v2.60	
Remote Terminal Operating Temperature Range		-40 to 122 ℉	-40 to 50 ℃

[i] Toolstring will fit into one standard length (30') NMDC provided by Newsco.

[ii] Sensor depths measured from the UBHO set screw ports to the sensor point.

[iii] Battery Life is directly proportional to Pulse Timing used.

[iv] Indicates time with all checks and counts confirmed, data rate dependant.

[ii] Standard tool configuration 32 to 302 degF [0 to 150 degC], optional Newsco350HT rating 32 to 350 degF [0 to 177 degC].

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