

# SpectraView™ 675

## LWD Spectral/Azimuthal Gamma Ray



The SpectraView™ LWD Spectral/Azimuthal Gamma Ray (SAGR) tool detects, measures and records naturally occurring gamma radiation from surrounding formations during wellbore drilling operations.



The tool provides the high-resolution energy spectra, from which the potassium (K), uranium (U) and thorium (Th) components are calculated. SpectraView™ tool also delivers azimuthally-binned total Gamma Counts calibrated to an API standard.

The SpectraView™ tool incorporates a novel, proprietary sourceless gain stabilization/compensation technique. Also included are an integrated drilling dynamics/orientation package, providing vibration, shock, acceleration, RPM, magnetic toolface, and instantaneous collar motion trajectory within the borehole. The tool's compact size allows near-bit operation. The SpectraView™ tool is currently offered by PetroMar: A Nabors Company via "Service-company Agnostic" standalone battery/memory operation.

### PARAMETERS LOGGED

- Gamma Ray Energy Spectra
- K, U, and Th
- Total Gamma Ray Counts
- Azimuthally-binned total Gamma Ray Counts
- Orientation (azimuth, high-side)
- 3-axis Raw Acceleration
- 3-axis Vibration and Shock Statistics
- 2-axis Magnetometer
- Instantaneous RPM and Azimuth
- Instantaneous Collar Motion Trajectory
- PMT HV and Other Critical Voltages
- Real-time clock, temperature and internal diagnostics

### FEATURES

- Sourceless gain stabilization/compensation
- API calibrated
- User-configurable azimuthal binning
- 80 Mbps ethernet readout protocol

### APPLICATIONS

- Formation mineralogy and composition
- Total Organic Carbon (TOC) estimation via Uranium correlation
- Clay content and typing
- Bedding and structural orientation
- Geosteering and cross-well correlation (when integrated with real-time telemetry)
- Combined interpretation of SpectraView™ LWD SAGR with FracView® LWD BH Images and/or other FE measurements for improved geophysical assessment and optimal completion design based on low-cost acquisition of data while drilling with any mud type.

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### SpectraView™ 6.75 in. Specifications

MEASUREMENT PERFORMANCE				
PARAMETER	POTASSIUM	THORIUM	URANIUM	GR COUNTS
Measurement Range (*)	0 – 20%	0-300 ppm	0-300 ppm	0-1200 gAPI
Measurement Accuracy (**)	Larger of 0.2% weight-fraction or 5% of reading	Larger of 0.5 ppm or 5% of reading	Larger of 0.5 ppm or 5% of reading	Larger of 2 gAPI or 5% of reading
Repeatability/Precision (**)	0.25% weight-fraction rms	2.2 ppm rms	1.3 ppm rms	1.7% rms
Azimuthal GR	Binning GR counts into 2, 4, 8, or 16 bins			
Gain Stabilization/Compensation	Sourceless, using a proprietary gain compensation methodology			
Azimuth/High-side	Magnetometer/Accelerometer-based			
Aux. Measurements and Features	Sensor temperature, tool temperature lifetime histogram, tool shock and vibration histogram, supply voltage, supply current, PMT HV, critical local voltages			

(\*) based on typical concentrations observed

(\*\*) standard 100 gAPI shale (2% K, 12 ppm Th, 6 ppm U) using 20 second averaging window, homogeneous formation, centralized within borehole

MECHANICAL AND ENVIRONMENTAL	
Nominal Collar OD	6-3/4 in.
Maximum OD	7-1/4 in. (20,000 PSI version)
Minimum Mud Flow Channel ID	2.0 in. (20,000 PSI version)
Collar Length	5 ft
Top and Bottom Connection	NC50
Make-up Torque	30,000 ft-lbs
Maximum Dogleg Severity, Rotating	Up to 16° per 100 ft, depending on duration
Maximum Dogleg Severity, Sliding	20° per 100 ft
Maximum Operating Temperature	302°F (150 °C), HT version 347°F (175°C)
Maximum Operating Pressure	20,000 PSI, HP version 25,000 PSI