

# BlackStream EMS 5-in. Downhole Measurement Tool

The 5-in. BlackStream™ enhanced measurement system (EMS) tool utilizes the IntelliServ™ real-time data streaming configurations and is capable of an array of measurements, including multi-axis vibration, load, pressure, bending, and rotation. Our collar-based EMS tool can help us deliver custom solutions for drilling challenges such as stick-slip, whirl, and borehole quality to optimize drilling performance and reduce well delivery costs.

## General Specifications

Measurement Type	Range	Sensor Accuracy	Sensor Resolution
Lateral vibration (X-axis, Y-axis)	-120 to +120 g	1% FS	0.0042 g
Axial vibration (Z-axis)	-35 to +35 g	1% FS	0.0013 g
Torsional vibration	-5,000 to +5,000 rad/s <sup>2</sup>	1% FS	0.62 rad/s <sup>2</sup>
RPM	-1,200 to +1,200 RPM	5 RPM	0.05 RPM
Weight	-120 to +240 klb	2.5% FS	11.5 lb
Torque	-12 to +12 kft-lb	2% FS	1.9 ft-lb
Annular pressure	0 to +20,000 psi	0.4% FS	0.35 psi
Internal pressure	0 to +20,000 psi	0.4% FS	0.35 psi
Temperature	-40 to 302°F (-40 to 150°C)	5°F (3°C)	0.2°F (0.13°C)
Bending (2-axis)	-60 to +60 kft-lb	2% FS	2.0 ft-lb

## Operational Specifications

Max OD	5.125 in.
Pass through ID	1.75-in. tool has restricted ID
Length	14 ft with saver subs
Tool connection	XT38 box/NC38 pin
Material	Nonmagnetic
Rated temp	302°F (150°C)
Rated pressure	20,000 psi
Max dogleg	Rotating: 12°/100 ft Sliding: 25°/100 ft
Max tension	500 klb
Max torque	12 kft-lb
Battery life	400 hr
Memory life	350 hr continuous data (typical), 1.5 hr high-speed data (typical)
Data collection	Stats capture/record rate = 0.4 Hz
Burst data	Burst data record rate = 800 Hz, 10-sec. window every 15 min.
Pressure drop	See separate pressure drop chart
Max flow rate	400 gpm

