

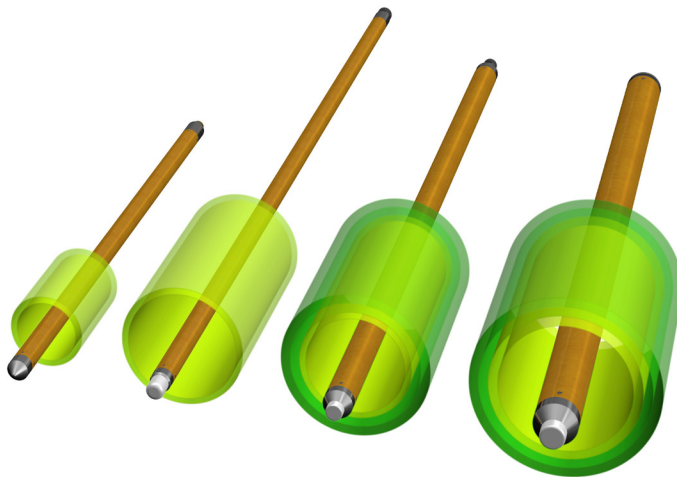
Javelin® Classic

World's First Small-Diameter NMR Wireline Logging Tool

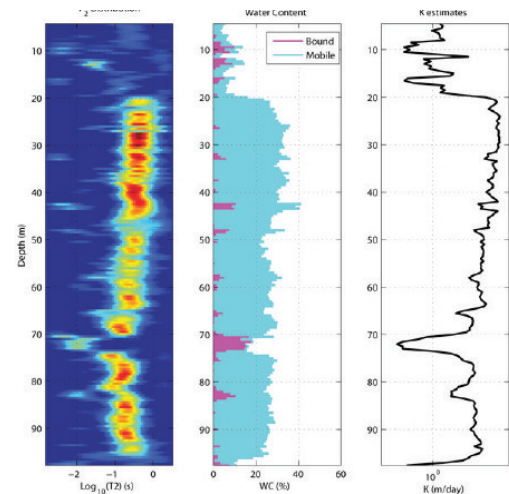
For environmental and shallow groundwater investigations

With over a decade of proven results in the field, Javelin Classic pioneered the break-through technology that brought magnetic resonance logging to groundwater resources and environmental sectors. Javelin provides unprecedented precision and detail for groundwater investigations, delivering high-value NMR logging in a flexible, compact and economical design.

- Porosity
 - Bound and mobile water content
 - Pore size distribution
 - Hydraulic conductivity

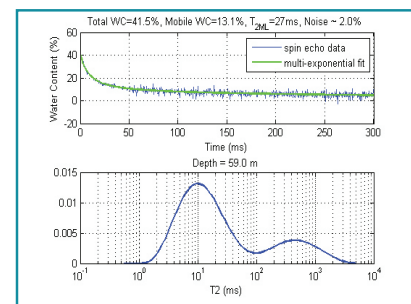


Javelin probes sample at two or four discrete diameters, shown here to scale



Applications

- Geotechnical site investigations
- Groundwater resource management
- Aquifer storage and recovery
- Environmental site characterization
- Mine water engineering
- Brine and leach mining



Javelin® Classic Magnetic Resonance Logging Tool

FEATURES

Sensitivity Outside the Disturbed Zone

Drilling disturbs the native formation around the borehole. Only Javelin provides deep view sensitivity, beyond the disturbed zone, in a discrete cylindrical shell. An NMR tool with shallow sensitivity may only measure the disturbed formation, rendering the data useless.

Multi-Frequency Multi-Shell Logging

Javelin performs measurements at multiple frequencies simultaneous to obtain sensitivity at up to four discrete diameters of investigation. Shells can be combined in post-processing to improve data quality or can be analyzed independently to assess radial variation.

Replacement for a Suite of Conventional Logs

Without the radioactive hazard of a neutron tool, Javelin accurately determines water content. Resistivity and gamma qualitatively indicate aquifer zones, but Javelin yields quantitative estimates of bound/mobile water fractions and reflects pore size distribution. A virtual flowmeter, Javelin predicts permeability at 50cm resolution, even through solid casing.

Minimally Invasive Logging

The JP238 probe is designed for compatibility with a direct push Geoprobe® system. Direct push deployment does not require installed casing and is ideal for minimal disturbance in sensitive environments.

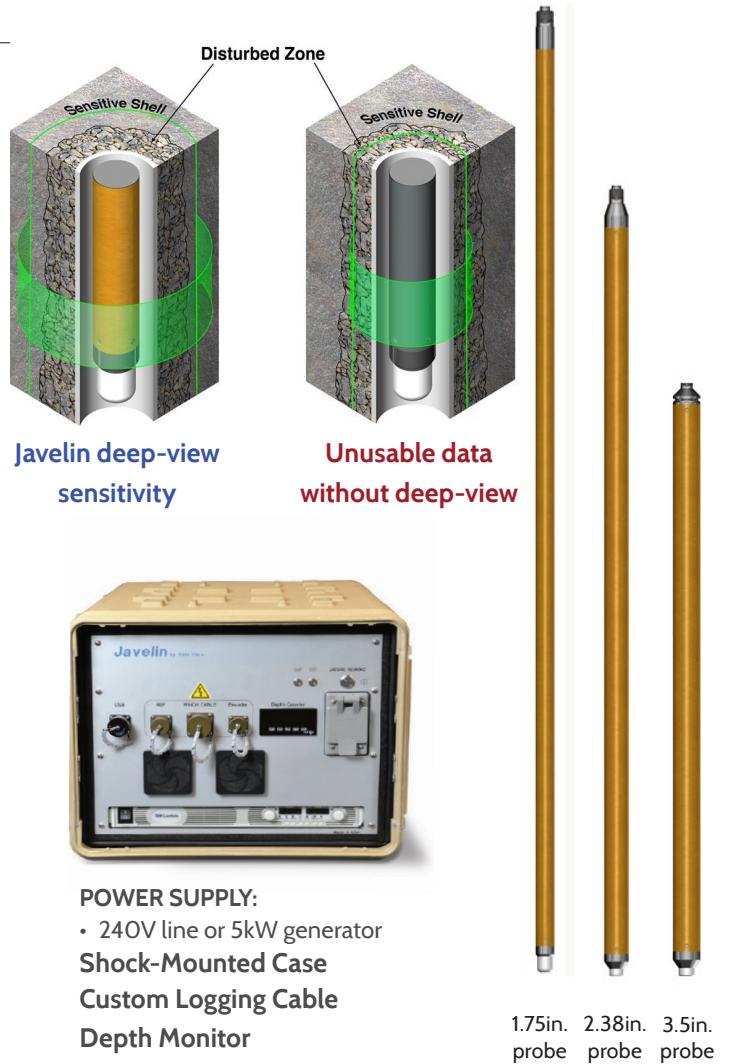
Automatic Adaptive Noise Cancellation

Javelin hardware and software architecture uses noise reference modules to cancel electromagnetic noise, improving data quality at sites close to buildings and infrastructure, including geotechnical projects.

SPECIFICATIONS

Javelin Probes	JP175A	JPY175B	JP175D	JP238F	JP350F
Diameter:	1.75in (44mm)	1.75in (44mm)	1.75in (44mm)	2.38in (61mm)	3.5in (89mm)
Length:	77.5in (197cm)	77.5in (197cm)	77.5in (197cm)	85in (216cm)	73in (185cm)
Weight:	18lb (8.16kg)	20lb (9.07kg)	17lb (7.71kg)	29lb (13.15kg)	55lb (24.94kg)
Sensitive Diameters:	F ₁ : 7in (18cm) F ₂ : 8in (20cm)	F ₁ : 9in (23cm) F ₂ : 10in (25cm)	F ₁ : 9in (23cm) F ₂ : 10in (25cm)	F ₁ : 8in (20cm) F ₂ : 9in (23cm) F ₃ : 10.5in (27cm) F ₄ : 12in (30cm)	F ₁ : 10.5in (27cm) F ₂ : 12in (30cm) F ₃ : 13.5in (34cm) F ₄ : 15in (38cm)
Vertical Resolution:	40in (100cm)	40in (100cm)	20in (50cm)	20in (50cm)	20in (50cm)
Echo Spacing:	700µs	1000µs	700µs	700µs	700µs
Max Logging Depth:	1600 ft/500m	1600 ft/500m	1600 ft/500m	1600 ft/500m	1600 ft/500m
Logging Speed:	15 m/hr	15 m/hr	15 m/hr	30 m/hr	60 m/hr

Protected by US Patents: US 10,162,026 B2; US 10,302,733 B2; US 8,816,684 B2; US 9,348,054 B2; US 9,588,068 B2. JAVELIN is a registered trademark of Vista Clara.



POWER SUPPLY:
• 240V line or 5kW generator
Shock-Mounted Case
Custom Logging Cable
Depth Monitor

1.75in. probe
2.38in. probe
3.5in. probe



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NMR Geophysics

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