

Delivers accurate compensated porosity measurements

Applications

- Determining porosity and lithology in open- and cased-hole wells
- Identifying gas via density porosity
- Defining shale volume
- Providing input for water-saturation calculations
- Enabling detailed well-to-well correlation
- Delineating the reservoir

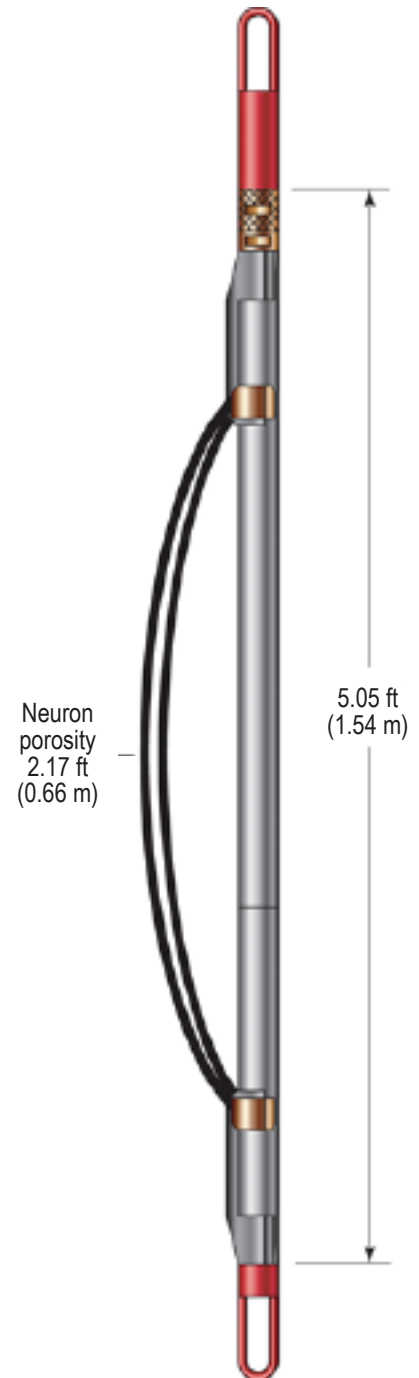
Tool Description

The Compact Dual Neutron (MDN) tool provides a borehole-compensated porosity measurement. With a complete set of environmental corrections applied automatically during data acquisition, the MDN tool is fully characterized for air- and mud-filled environments in both open- and cased-hole wells.

The MDN tool minimizes sensitivity to environmental effects across its broad operating range. The MDN tool delivers high-accuracy data recorded simultaneously in apparent limestone, sandstone, and dolomite porosity units with smaller borehole size corrections than conventionally sized tools.

Proprietary precision-enhanced neutron (PEN) processing is available. It improves statistical repeatability, logging speed, and the vertical resolution of the log.

The MDN tool typically runs with V-bow spring, which forces the tool against the borehole wall for maximum sensitivity. In oval boreholes, this double-spring eccentricizer aligns the Compact Photodensity (MPD) tool - normally placed below the MDN tool - along the short axis. Other ancillaries, such as the Compact V Caliper (MVC) tool, can enhance neutron and density data across a complete range of environments and applications.



Measurement

Data	Thermal neutron porosity (uncorrected, environmentally corrected, or PEN processed)
Logging Speed	Standard: 1,800 ft/hr (9 m/min) High resolution: 1,800 ft/hr (9 m/min) in PEN mode High speed: 3,600 ft/hr (18 /min) in PEN mode
Measurement range	-3 to 100 limestone porosity units
Measurement accuracy	Better than 0.5 at 20 pu
Vertical resolution	Standard Mode: 24 in. (610 mm) PEN mode: 12 in. (305 mm)
Depth of investigation	10 in. (260 mm) at 20 pu
Borehole fluids	WBB, OBM, Salt, Air (limited)

Mechanical

Maximum outer diameter	2.25 in. (57 mm)
Length	5.04 ft (1.54 m)
Weight (air)	51 lb (23 kg)
Maximum temperature	320° F (160° C)
Maximum pressure	15,000 psi (103 MPa)
Maximum borehole diameter	18 in. (457.2 mm)
Minimum borehole diameter	3 in. (76 mm)



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