## **Compact<sup>™</sup> Dual Neutron Tool**

Delivers accurate compensated porosity measurements

### **Applications**

- · Determining porosity and lithology in openhole 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

### Features and Benefits

- The tool delivers excellent porosity sensitivity using advances in modeling and detector technology.
- The system provides deatailed measurements in air- and mud-filled environments.
- The small diameter of the tool facilitates deployment in wireline or memory mode to mitigate the risk of bridging events and to reduce nonproductive time.

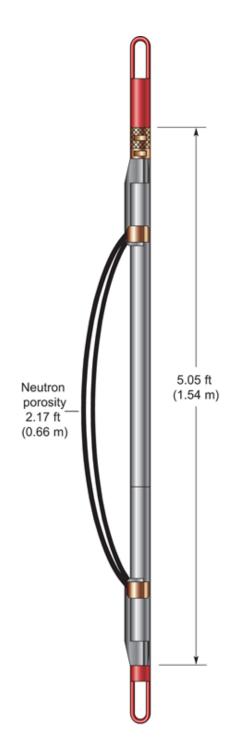
### **Tool Description**

The Weatherford 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 openhole 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 a V-bow spring, which forces the tool against the borehole wall for maximum sensitivity. In oval boreholes, this double-spring eccentralizer 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.



The Compact dual neutron (MDN) tool provides high-quality data in routine to extreme boreholes.



# **Compact<sup>™</sup> Dual Neutron Tool**

### Specifications

### 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 m/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	WBM , 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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