

# Compensated Neutron Tool™ (CNL)

The Compensated Neutron Tool measures the hydrogen content of the formation surrounding the wellbore. The hydrogen content is scaled in porosity units.

## Description

The CNL tool contains a neutron emitting source, which produces fast neutrons that bombard the formation. The emitted neutrons are slowed (or thermalized) by collision, mainly with hydrogen nuclei in the formation. Some of the slowed neutrons return to the tool where they are counted by two He3 detectors, spaced at different distances from the source. The dual outputs supply compensation for rugosity and borehole effects. Typical uses for the tool are:

- Porosity Measurement
- Lithological identification
- Clay analysis
- Gas detection

## Features

- Fully combinable with Sondex UltraWire™ tools.
- Can be run in both Open and Cased holes.
- Modelled for both AmBe and Cf neutron sources.

## Specification

<b>Temperature rating</b>	302°F (150°C)
<b>Pressure rating</b>	20kpsi (137.9MPa)
<b>Tool diameter</b>	3 <sup>3</sup> / <sub>8</sub> in (85.7mm)
<b>Tool length</b>	5.1ft (1.57m)
<b>Tool weight</b>	125lb (57kg)
<b>Max hole size</b>	16in (406mm)
<b>Accuracy</b>	+/- 2%
<b>Resolution</b>	2 ft (0.6 m)*
<b>Max logging speed</b>	2000 ft/hr (10m/min)

\*At recommended logging speed.

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