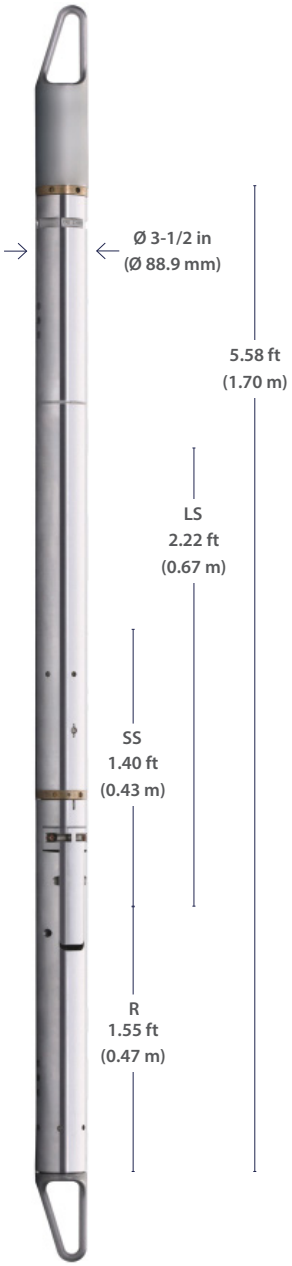
COMPENSATED NEUTRON LOGGING TOOL (CNLT)

The **Compensated Neutron Logging Tool (CNLT)** provides one of the primary porosity measurements used for hydrocarbon saturation calculations. When combined with other standard petrophysical measurements it also provides lithology indication—shale volume and formation gas identification.

The instrument uses an AmBe neutron source and dual thermal neutron detectors, providing a neutron porosity measurement which is compensated for borehole size and other environmental conditions.



CNLT

FEATURES

- Combinable with other Gallop tools
- Operates in both Open and Cased hole environments
- Compensated for borehole conditions, casing and cement corrections
- Determines porosity and lithology in zones of interest in combination with other porosity logs

APPLICATIONS

- Identification of formation porosity
- Gas detection and shale identification in combination with density tools

SOURCE SECTION

COMPENSATED NEUTRON LOGGING TOOL (CNLT)

SPECIFICATIONS

	CNLT
GENERAL SPECS	
Maximum Pressure	20,000 PSI (140 MPa)
Maximum Temperature	350 °F (175°C)
Maximum Hole Size	20 in (508 mm)
Minimum Hole Size	4.5 in (114.3 mm)
Diameter	3-1/2 in (88.9 mm)
Length	5.58 ft (1.70 m)
Weight	130 lbs (59 kg)
Max. Logging Speed	30 ft/min (9 m/min)
BOREHOLE CONDITIONS	
Borehole Fluids	Any
Tool Position	Eccentralized
HARDWARE FEATURES	
Voltage	220 Vac, 50 Hz
Current	50 mA
Source Type	5.92×10^{11} Bq (16 curie) neutron source
Sampling Rate	10, 20, 40 samples/m selectable
Sensor Type	He3 tube
MEASUREMENT	
Principle	Nuclear
Minimum	0 Pu
Maximum	85 Pu
Vertical Resolution	35 in (889 mm)
Depth of Investigation	6 in (152 mm) (Depending on H index)
Accuracy	0 - 10 Pu ± 1Pu; 10 - 30 Pu ±2%; 30 - 45 Pu ±5%
Primary Curves	Limestone, sandstone, dolomite porosity