

Natural Gamma Ray/Thermal Neutron/Caliper

Comprobe Inc.

1210+1203+1205

Measurement Parameters & Applications:

The combination Gamma Ray/Neutron/Caliper probe sometimes referred to as a “neutron-thermal neutron” tool uses a neutron emitting source and He-3 detector to measure “Hydrogen content” of material in its proximity. If the lithology is known, porosity can be derived from the Neutron response. In conjunction with the Gamma Ray and Caliper, lithology changes and borehole diameter can be determined. Neutron in conjunction with the Gamma Ray can be used to pick out saturated or perched layers, or separate radioactive sands from clays.

Operating Constraints:

Maximum pressure 5000 PSI
Operation temperature range 0 to 48.9 degrees C, 32 to 120 degrees F
Borehole constraints..... Open or cased hole

Dimensions:

Length..... 126 in., 320 cm
Diameter 1.25 in., 3.175 cm
Weight 18 lbs, 8.2 kg

Natural Gamma Ray Detector:

Sensor (Detector) type..... Sodium Iodide (NaI), 0.5 X 2.5 in., 12.7 X 63.5 mm,
(Diameter X Length)
Gamma Ray range..... 0 – 5,000 API

Neutron Detector:

Source activity and radioisotope..... 1000 mCi, Am²⁴¹ Be source
Sensor (Detector) type..... Helium-3 tube @ 4 atmospheres, sensitive to Thermal
energy Neutrons
Measurement range..... 0 – 2500 API units in fluid

Caliper Arm:

Caliper range..... 1.25 – 16 in., 3.175 - 40.6 cm