

SHP-280 Three-Inch Neutron Sphere



- The SHP-280 Three Inch Neutron Sphere uses a BF₃ tube to detect neutrons. This neutron detector is typically calibrated using an AmBe source, with exposure rates up to a few hundred mrem/hr. The detector is then exposed to a high intensity gamma field and its operating voltage is set to minimize gamma interference.
- This instrument's neutron energy response does not follow theoretical dose from neutrons over the complete energy range of interest. It over-responds to low energy neutrons and under-responds to high energy neutrons.
- The HP-280 is intended to be used for taking qualitative measurements. The HP-280 may be used to document dose rates only if correction factors are established. This can be done if the neutron energy spectrum has been well characterized and if a relationship has been established between the response of the SNRD and the response of SHP-280.
- When taking a measurement at a specific distance from a source, use the distance from the *center* of the detector to the surface of the source.