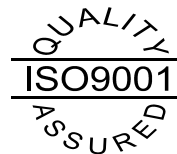


SERIES 200 High Sensitivity Large sample Calorimeter

Benefits

- Absolute measurement of sample thermal power
- Comprehensive User friendly windows based User Interface Software
- Reduced Criticality hazard as water is not used as a heat sink
- Measurement times with equilibrium sample power prediction of between 2-4 hours
- Total mass of Pu determined with error propagation when Pu isotopic data is provided on a file or 'on-line' from ANTECH Pu Gamma-ray Isotopic Measurement System
- Comprehensive and traceable electrical calibration capability reduces dependence on Pu standards
- Highly transportable trolley mounted system



Features

- True Isothermal 'Air Bath' Absolute Calorimetry Measurements
- Automatic software algorithms for equilibrium sample power prediction and measurement end point determination
- Automatic Plutonium and Americium decay correction
- Custom designs are available from ANTECH for different size and dimensions of sample containers and measurement sensitivities
- Software selectable redundant measurement sensors and operation modes to optimise accuracy or measurement time
- Sample lifting device with fail safe hoist
- Short delivery time of less than six months for custom designs

Description

The transportability of the instrument allows the user to move the calorimeter to the measurement site and thus limits the need to move special nuclear material. At the same time, instrument transportability does not compromise measurement accuracy. The design has application to a wide range of measurement requirements including international safeguards measurements, shipper-receiver difference measurements, in-plant accountability measurements and anomaly resolution in passive neutron coincidence counting or segmented gamma-ray scanning. The instrument also has a role in replacing a proportion of destructive assay.

The modular transportable design facilitates installation, maintenance and the use of the instrument in a variety of measurement applications. In the standard configuration, the calorimeter is capable of measuring plutonium bearing samples which can be contained in a cylindrical canister with internal dimensions 190.5mm (7.70in) in diameter and 355.6mm (14.0in) high. The calorimeter has a variable sample power measurement range from below 0.025 to 20 watts and an operating temperature range from 20 to 50 c.

Variations to the standard design for different requirements and for special sample types or sample packaging can be accommodated. In particular the measurement chamber volume may be reduced or increased in size and measurement precision and measurement time may be optimised for a specific limited sample power range. Smaller sample diameter custom systems achieve significantly better precision and accuracy at lower measurement powers (e.g. <10mW).

Specification

- Thermal power measurement accuracy better than 0.5% over the operating range and better than 0.2% at 1.0 Watts power (7.5" diameter sample)
- Variable Measurement Chambers operating temperature range from 20C to 50C
- Measurement range from 20mW to 50 Watts
- Instrument footprint 123cm x 69cm x 147cm (L x W x H), overall height of the removable hoist is 187cm
- Weight of trolley mounted version is approximately 300kg
- Power consumption 300-600 watts 110/230VAC
- Measurements approved for use by IAEA and WIPP