Beta-Ray Direct-Reading Particulate Instrument

YQ-1200

Overview



The YQ-1200 is a direct-reading instrument for particulate concentration in stationary-source exhaust. Used with a particulate-sampling main unit, it measures particulate concentration using beta rays and can also measure duct dynamic pressure, static pressure, temperature, moisture, velocity, particulate emission concentration and emission quantity. The brochure lists measurements at boilers and kilns in environmental protection, disease control, military, education and research.

Technical specifications

Parameter	Range / value	Resolution	Accuracy / error
Particulate concentration	(0-50)mg/m³	0.01mg/m³	±20%
Flue-gas temperature	(0-500)°C	0.1°C	±3°C
Duct heating temperature	(50-160)°C	1°C	±10°C
Filter-paper heating temperature	(50-160)°C	1°C	±5°C
Sampling-nozzle models	φ4.5, φ6, φ7, φ8, φ10, φ12		
Pitot tube coefficient	0.84±0.01		
Dimensions	(1750×170×80)mm		
Sampling-probe length	1.75m (customizable)		
Required port diameter	≥80mm		

Technical features

- Beta-ray absorption measurement, described as unaffected by particle size, shape and other chemical properties.
- Low detection limit, described as meeting monitoring requirements below 0.2mg/m³ for ultra-low particulate emissions.
- Temperature control along the sampling probe and at the sampling station to reduce particle losses.
- Specially treated sampling-path surfaces reduce particulate adhesion.
- Works with a particulate main unit for direct field readings of particulate and toxic/harmful gas concentrations.
- Calibration using an inert-material reference membrane.
- Isokinetic sampling matches sampling and duct flow velocities.

Standards listed in the brochure

- HJ/T 397-2007 - Technical specifications for monitoring stationary-source waste gas
- GB/T 16157 - Stationary-source exhaust: particulate determination and gaseous pollutant sampling
- DB 37/T 3785-2019 - Stationary-source waste gas: low-concentration particulate determination by beta-ray method

Standard accessories

- Beta-ray direct-reading particulate instrument
- Paper tape
- Signal cable

Optional accessories

- YQ-1220 integrated particulate and flue-gas analyzer

Source and review notes

• The brochure states that the device uses a low-activity C14 radioactive source; source use and management must be checked against the actual device documentation and applicable requirements.
• The brochure does not give a year for GB/T 16157; none has been added.
• Specifications and standards have not been independently verified.
• English translation has not received native-speaker technical review.