



به نام خدا

سنجده گردوغبار و میزان آلودگی هوا

بر مبنای تضعیف اشعه β



Overview:

HPM-1000 ambient particulate matter detector is using β ray attenuation counting principle. On the basis of products accuracy, stability, reliability and economy, a new generation of ambient particulate matter detector is introduced to measure PM2.5, PM10 and dust particles of other cutting size. It can be widely used in air quality monitoring, mobile ambient monitoring station and real-time respirable particles monitoring in industry, building, residential area, occupational disease research institute, indoor environment monitor, heavy metal analysis and etc.

Principle:

The main principle of this analyzer mainly uses enrichment technology of ambient particulate matter and β -ray attenuation method. The particulate matter smaller than $2.5 \mu\text{m}$ is automatically concentrated on rolling type filter film. The β ray produced by irradiator C14 passes through the filter film and is received by detector. The detector consists of photomultiplier, plastic scintillator and counter. As per the energy of received β ray, it can realize quantitative analysis of enrichment thickness and work out the PM2.5 concentration.

Specification:

Principle	β -ray attenuation method	
Parameters	Range	0~1 mg/m ³
	Radiation source	C14, activity <100 μCi
	Accuracy	$\leq 5\%$
	Resolution	0.005 mg/m ³
	Lower detection limit	0.01 mg/m ³
	Flow error	$\leq \pm 2\%$ (general setting 16.67 L/min)
	Flow stability of sampling	$\leq \pm 2\%$ flow of working point/24h
	Sampling period	$\leq 1\text{h}$ (time settable)
	Sampling flow	16.67 L/min (settable)
	Parallelism	$\leq 10\%$
	Filter paper	glass fibre, width: 40mm, service time 1 month (work period 1 hour)
	Communication	RS232

Filter paper	Data storage	Data of one year at least
Ports	Cutting head	Ambient temp. (-40-50) °C Ambient pressure (80-106)kPa
Work condition	Detector	Ambient temp. (5-40) °C pressure (80-106)kPa Humidity (≤90%)
Power supply	AC (220+22)V, (50+1)Hz	
Dimension & weight	479*520*396(L*W*H)	Detector 30kg Pump 8kg

- ❖ **Enrichment technology adopted**
- ❖ **PM10, PM2.5**
- ❖ **Simple but reliable mechanical driving structure and modularized design which ensure accurate and reliable measurement long service life**

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