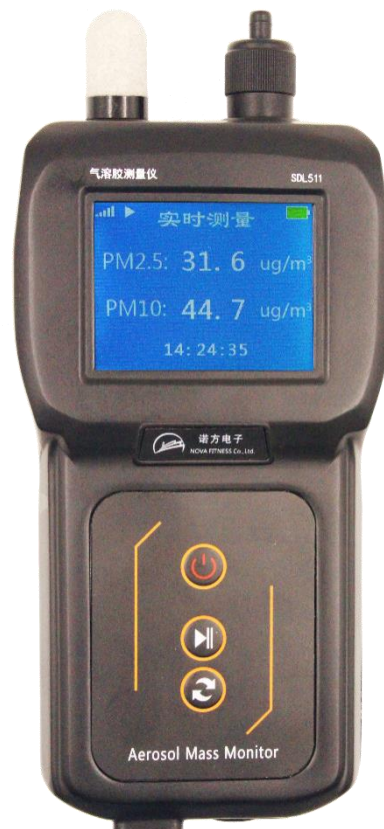


Aerosol Mass Monitor Specifications

Product model: SDL511

Version: V1.5



SHANDONG NOVA TECHNOLOGY Co.,Ltd.

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Overview

The SDL511 hand-held aerosol measuring instrument is developed based on the principle of laser detection, which can measure the concentration of PM2.5 and PM10 . By matching the 4G communication module and GPS positioning module, the real-time measured dust concentration and current location data can be uploaded to Cloud server for presentation and data analysis. The device can automatically enable the function of humidity calibration and automatic repair of sensor faults, which greatly improves the service life of sensors in harsh environments.

Features

- Accurate data: laser detection principle, industrial-grade laser light source;
- Stable flow rate: High-performance brushless vacuum sampling pump with stable flow rate, which can satisfy long-distance and high negative pressure sampling;
- Humidity calibration: built-in humidity monitoring module, using the humidity calibration formula to minimize the impact of humidity;
- Data calibration: online calibration;

- Fast response: data update frequency is 1Hz ;
- High resolution: the resolution of PM2.5/PM10 can reach 0.1 $\mu\text{g} / \text{m}^3$;
- Small maintenance: built-in four-core sensor, automatic fault repair and alarm, greatly reducing the maintenance workload;
- upload: optional 4G Internet access module, with GPS+ Beidou positioning module, to realize data upload cloud platform, which can be used for data analysis and display;
- Hose design: external hose can be connected to facilitate integrated testing.

Scope of application

It is suitable for on-line dust concentration detection of construction site dust, road dust, and environmental protection;

Suitable for industrial and occupational hygiene investigations, indoor air quality investigations, outdoor environmental monitoring, point source monitoring, engineering control evaluation, remote monitoring;

It is suitable for the purification effect test of indoor air purifiers, car air purifiers, and fresh air systems;

Home, office, club, classroom, hotel room, hospital ward, car, laboratory and other places.

Working principle

The SDL511 hand-held aerosol measuring instrument works on the principle of laser detection: a specific laser beam is generated by a dedicated laser module. When particles pass by, the signal will be detected by an ultra-sensitive digital circuit module. Through the signal data Perform intelligent identification and analysis to obtain the particle count and particle size, and obtain the particle size distribution and mass concentration conversion formula according to professional calibration technology, and finally obtain the mass concentration consistent with the official unit.

Technical indicators

No.	Project	Parameter	Remark
1	Measurement output	PM2.5+PM10	
2	Range	PM2.5 : 0.0-1999.9 $\mu\text{g}/\text{m}^3$ PM10 : 0.0-2999.9 $\mu\text{g}/\text{m}^3$	
3	power input	DC16.8V /1A charger	
4	rated power	5W	
5	sleep power	0.24W	
6	range of working	0-60 $^{\circ}\text{C}$	

	temperature		
7	humidity range	0-99%RH , no condensation	
8	working atmospheric pressure	86KPa~110KPa	
9	Response time	1S	
10	battery capacity	3400mAh	Can work more than 9 hours
11	communication	USB or IoT, Stored data can be accessed through the USB interface or Cloud platform export	
12	Counting efficiency	PM2.5 : 70%@0.3 μ m 98%@0.5 μ m PM10 : 70%@0.3 μ m 98%@0.5 μ m	@25 °C, 50%RH
13	Relative error	PM2.5 : \pm 10% and \pm 8 μ g/ m ³ maximum PM10 : \pm 15% and \pm 10 μ g/ m ³ maximum	@25 °C, 50%RH
14	Product Size	225x103x68mm	Includes sampling probe
15	life	3 years	below 40 °C

Operation Guide



- Gas sampling probe: collect the gas to be measured, and ensure that it is unobstructed when the instrument is working.
- Display screen: display PM2.5 concentration value, PM10 concentration value, concentration curve, electricity, time, temperature and humidity value, longitude and latitude,

network information and other data.


- Control panel:


Power key : press and hold this key for about two seconds to turn on the machine, after turning on the machine, press and hold this key for about two seconds to turn off the machine;



Switch key : used to switch the function of the instrument;



Pause / Run key : Used to pause / run the detection function of the instrument. 

The logo in the upper left corner of the display interface means that the device is connected to 4G , the device is connected to the Internet, and the measurement data is uploaded to the cloud server. 



【Interface 1】

After starting up, enter the measurement interface, where you can measure the concentration of PM2.5 and PM10 particles

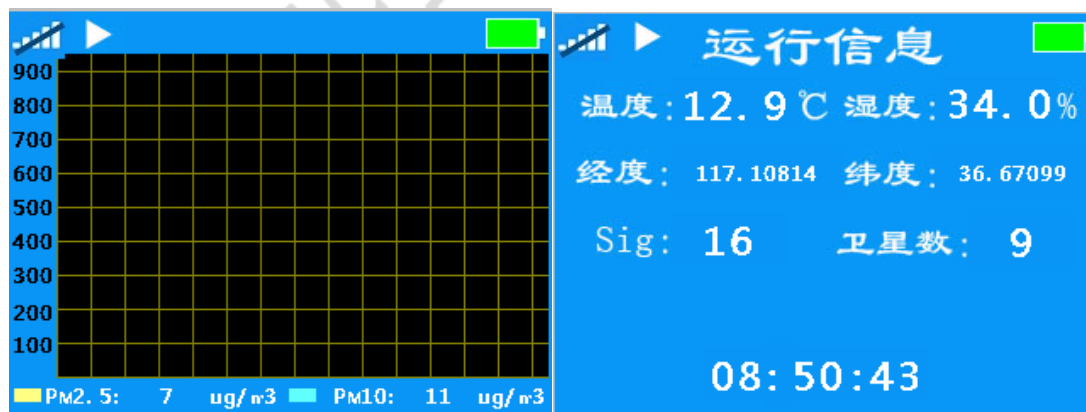
detection;



Press the "Pause / Run key" to pause or run the data acquisition function of the instrument.

【Interface 2】

Press the "Switch key" to switch to display the real-time particle concentration curve and other operating information of the equipment.



Data storage and export

SDL511 supports data storage and export functions. The stored data includes PM2.5 and PM10 . The device can export historical data through PC configuration software or cloud platform.

Data calibration

Online Calibration

Cloud data viewing

Users can query the real-time uploaded data and historical data of the device through the Nuofang cloud server and the QR code of the device (see the sticky note on the back of the device for the QR code). Both the PC terminal and the mobile terminal can realize the data viewing function.

Equipment maintenance

The cleanliness of the gas sampling probe affects the accuracy of the data. It is recommended to clean the gas sampling probe every 3-6 months. If the equipment works in a dirty environment for a long time, the cleaning time can be shortened according to the actual situation.

Gas sampling probe cleaning method is as follows:

Step 1: Rotate to the right to unscrew the gas sampling probe. The gas sampling probe is composed of three parts: air inlet, filter screen and black silicone sealing tube, all three parts can be disassembled, cleaned and replaced independently.



Step 2: Clean the air inlet with an awl needle to ensure that the air inlet is unobstructed and free of foreign objects.



Step 3: Use a long-handled brush to clean the surrounding and upper parts of the filter screen, and clean up the long-term accumulated dust, catkins and other foreign objects in the filter

screen. If the long-handled brush is not clean, then use a short-handled brush to carefully clean the remaining foreign matter on the filter.



Step 4: After cleaning the air inlet and the filter screen, assemble the gas sampling probe and reinstall it on the device. Pay special attention to ensure that the two ends of the black silicone sealing tube are tightly installed with the filter screen and the sensor inlet respectively.

Product specification



Packing List

SDL511 *1

Charger *1

Data cable *1 : used to export real-time data and historical data of the device

Long-handled brush *1 : used to roughly clean the dust, catkins and other foreign matter accumulated in the internal filter of the gas sampling probe for a long time

Short-handled brush *1 : used for finely cleaning the foreign matter remaining in the filter screen inside the sampling probe after cleaning with the long-handled brush

Awl needle *1 : Clean the gas sampling probe from the inside to the outside to avoid foreign matter blocking the air inlet and affecting the

measurement data

Manual *1

Warranty card *1

Certificate *1

Product Size

Main unit appearance size: 225*103*68 mm (including sampling probe)

Product packaging size: 345*268*120mm

Product weight

Host weight: 0.69kg

Total weight: 2.2kg

Contact

SHANDONG NOVA TECHNOLOGY Co.,Ltd.

TEL:+86-0531-82868288

FAX:+86-0531-82868198

WEB: www.sdnf.com