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LGT-580 Portable Laser Gas Analyzer

Product Overview

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The LGT-580 Portable Laser Gas Analyzer is composed of two parts: analyzer host and portable sampling pipe. The core module of the host employs high-precision Tunable Diode Laser Absorption Spectroscopy to fast analyze concentration of multiple gases including O₂, CO, NH₃, CO₂, CH₄, H₂O, HCl, HF, HCN, H₂S, etc. Generally, one single analyzer can only measure one kind of



| Advantages

- Humanization design of tracing pipe, fast disassembly and assembly
- Measurement data can be recorded in real time, which can be exported to USB flash disk through one click
- Equipped with color display screen and touch operation mode, easy for use
- Optical non-contact measurement with small drift and long service life
- Directly display sampling gas flow, convenient for regulation and check
- Adopting imported high-temperature diaphragm pump, the device runs stably
- With features of high integration, small size, light weight, convenient to carry
- Adopt high-precision TDLAS Technology with high measurement accuracy and fast response
- Adopt "single-line spectrum" technology and the measurement is free from cross interference of the background gases



| Working Principle

TDLAS

The Tunable Diode Laser Absorption Spectroscopy (TDLAS) utilizes the tunability of laser wavelength that the emission wavelength changes with working temperature and current. It can make the laser wavelength changes periodically in small range through periodic regulation of the current. In each period, "single-line absorption spectrum" data of the measured gas can be obtained. At present, TDLAS technology has developed into a gas detection technology with high sensitivity, high resolution, high selectivity and fast response, widely applied to fields including molecular spectrum research, industrial process monitoring and control, combustion process diagnosis and analysis, measurement of engine efficiency and vehicle exhaust , explosion detection, trace pollution gas monitoring in the atmosphere, etc.

The LGT series laser gas analyzer makes use of the tunability of semiconductor laser. It scans to obtain the specific absorption lines of the measured gas and gets its second harmonics. The measured gas concentration can be

| Features

High Selectivity

TDLAS is a kind of high-resolution spectrum technology. Due to the "fingerprint" characteristic of molecular spectrum, it is free from the interference of other gases, which makes it superior to other methods.

High Versatility

TDLAS is a general technology that can efficiently measure active molecules which have absorption in the infrared or near infrared. Also, the analyzer can be easily modified to measure other components by changing the laser device and standard gas.

High Sensitivity

TDLAS Technology owns features of fast response and high sensitivity. The temporal resolution can reach millisecond level if not losing sensitivity.

System Composition

Technical Index

Sampling Probe

 image.png

Technical Index (general configuration)



Pipeline length	2.5m
Filter element material	Stainless steel sintering
Power	220VAC±22V, 250W
Filter precision Primary filtering	≤20μm, secondary
filtering	≤5μm
Cable interface	Aviation quick plug
Probe rod material	316SS
Handle material	Polyamide

| Analyzer Host

The portable analyzer employs TDLAS Technology to measure gases including O₂, CO, NH₃, CO₂, CH₄, H₂O, HCl, HF, HCN and H₂S without cross interference of background components such as dust, moisture and other gases. The measuring cell adopts Longpath Multiple Reflection Technology. With low detection limit, it meets various index requirements of ultralow emission or comparison.



Technical Index (general configuration)

Linearity error	1%F.S.
Repeatability	≤1%
Span drift	1%F.S./half a year
Zero drift	1%F.S./half a year
Sampling flow	(3~5)L/min
Sampling method	High-temperature extraction
Maintenance period	≤2 times/year, clean optical window



Communication interface	1 Channel RS485
USB Output	1 Channel USB Port

Working Condition

Preheating time	≤30min
Power	220 (1±10%) VAC, 50Hz, 1kW
Ambient temperature	-20°C - 60°C
Dimension	470mm(W)x365mm(D)x190mm(H)
Weight	≤13kg

| Features

- Power-on self-test: automatically detect whether the indicators of each analysis module exceed the limit when power-on, to ensure that the data of the instrument is true and reliable
- Alarm management: When the temperature in the heating box exceeds the upper and lower limits, an alarm can be issued to prevent the temperature from being out of control and damaging the equipment
- Data query: filter and query historical minute data according to time period, enterprise, measurement point, and measurement mode, and export the report file in EXCEL format to flash/hard drive through external USB interface



| Applications

LGT-580 portable laser gas analyzer is widely used in various industries such as multi-level environmental monitoring stations, third-party testing agencies, online analytical instrument production/sales/operation and maintenance providers, coal-fired power plants, gas-fired power plants, cement plants, and steel plants. Environmental comparison and acceptance of flue gas emissions on occasions, emergency testing, instrument calibration, self-inspection of sewage companies, and some laboratory gas detection and analysis.

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