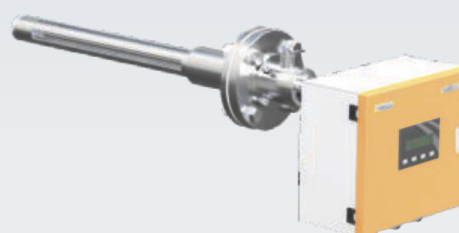
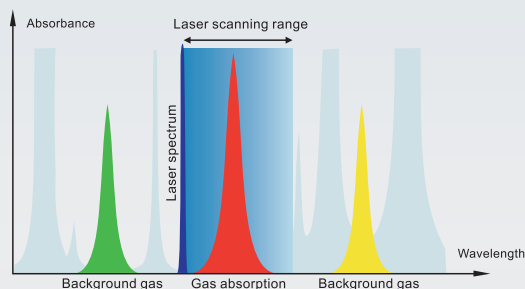


Overview

GALGT-3 laser gas analyzer is a high precise analyzer for gas measurement, developed based on tunable diode laser absorption spectroscopy. One-side mounting installation is much easier than cross-stack.

By using a tunable semiconductor laser, GALGT series laser gas analyzer scans the specific absorption lines of the measured gas (no background gas) to get the second harmonic of the gas. Through processing and analyzing the second harmonic and the broadening information of the gas, the concentration of the gas is obtained.



System Composition

Main functional modules of GALGT-3 includes transmitter, receiver, reference unit and measurement unit. The transmitter drives the tunable diode to emit laser of certain wavelengths, which passes through the gas cell, then reaches the receiver. The receiver performs signal processing to obtain second harmonic signal, then calculates the concentration according to the relationship between the second harmonic signal and the gas concentration.



Specification Parameter

| | | |
|-----------------|---------------------------|--|
| Principle | | TDLAS (tunable diode laser absorption spectroscopy) |
| Technical Index | Linearity Error | $\leq \pm 1\% \text{F.S.}$ |
| | Repeatability | $\leq 1\%$ |
| | Span Drift | $\leq \pm 1\% \text{F.S./half year}$ |
| | Zero Drift | $\leq \pm 1\% \text{F.S./half year}$ |
| | Maintenance Cycle | $\leq 2 \text{ times/year}$ (clean optical window) |
| | Calibration Cycle | $\leq 2 \text{ times/year}$ |
| | Response Time(T_{90}) | $\leq 1\text{s}$ |
| Signal I/O | Analog Output | $2 \times 4-20\text{mA}$ output (isolation, max load 750Ω) |
| | Analog Input | $2 \times 4-20\text{mA}$ input (temperature and pressure compensation) |
| | Relay Output | 2 (24V, 1A) |
| | Digital Output | RS485/RS232/GPRS |
| Work Condition | Power Supply | 24VDC or 220VAC |
| | Ambient Temperature | $-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$ |
| | Purge Gas | 0.3MPa ~ 0.8MPa industrial nitrogen, purification instrument air, etc. |
| Installation | Installation Method | In-situ installation |



Features

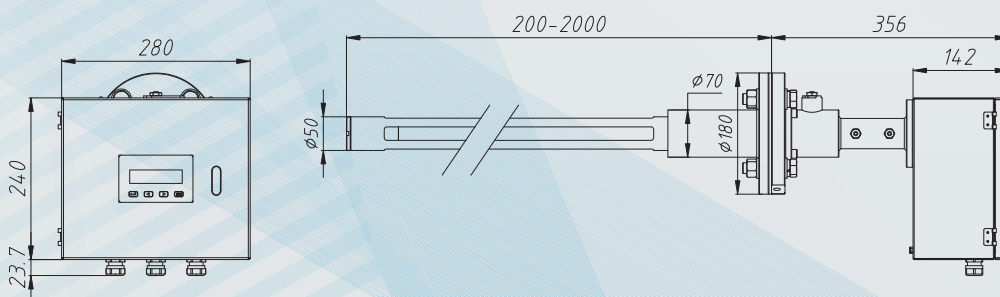
- Non-contact optical measurement, low drift and with long service life
- One-side installation, no complex optical path adjustment required
- Reference gas cell adopted; online calibration; no disassemble needed
- "Single line spectrum" technology, free from interference of background gas
- In-situ measurement, no sample conditioning required and avoiding the problems that sample is absorbed during conditioning process, blocking, unit damage and etc.
- Low maintenance cost

Technical Comparison

| | One-side mounting in-situ | Cross-stack in-situ | On-site extractive |
|------------------------------|---|---|--|
| Installation Way | One-side mounting in-situ | Cross-stack in-situ | Heat tracing extractive with high temperature |
| Measurement Accuracy | High accuracy, with temperature and pressure compensation | High accuracy, with temperature and pressure compensation | High accuracy, temperature and pressure are stable |
| Environmental Adaptability | High, can be used in harsh condition | High, can not be used in high dust occasion | High, filter dust when gas sampling |
| Site Installation Complexity | Easy, directly install and no need to adjust light path | Easy, need to adjust light path | Easy, only one sampling hole needs to be opened |
| Maintenance Convenience | Convenient, long period of maintenance | Convenient, long period of maintenance | Convenient, gas cell can be scrubbed |
| Calibration | Easy | Easy | A little complex |
| System Complexity | Easy | Easy | Complex |
| Response Time(T_{90}) | Very short, $\leq 1s$ | Very short, $\leq 1s$ | Short |

Dimension & Installation

1. 3.12 inch OLED display
2. Support analog input/output and digital input/output
3. One-side installation: only one hole required to be mounted
4. Built-in power supply converter: 220VAC or 24VDC is optional
5. Purge unit is installed nearby, providing stable purge flow and avoiding lens being polluted



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