



Cleanroom Monitoring Gas Sensing Solution

Cleanroom Monitoring Solutions

Cubic, a leading manufacturer of high-quality gas sensors and gas analyzers, is committed to delivering comprehensive, safe, and efficient solutions to the lithium battery, semiconductor, pharmaceutical, and panel industries. Guided by this mission, Cubic has developed its mature diverse technological platforms, and has accumulated complete gas sensing solutions for cleanroom environmental monitoring, production process quality control, and production safety monitoring.

Cubic Solutions in Three Core Application Scenarios

01

Environmental Air Quality Monitoring

Precisely monitor temperature, humidity, and airborne particles level, coupled with software for remote online monitoring, to ensure a stable production environment and product quality.

02

Production Process and Quality Control

During specific production process, such as ultra-high purity specialty gases as part of the production process for semiconductor manufacturing. it is crucial to control the trace amounts of water and oxygen in UHP bulk gases. Effective control is essential for ensuring the smooth operation of semiconductor manufacturing and the stability of product quality.

03

Production Safety Monitoring

Real-time monitoring of potentially harmful and flammable suspended particles & gases offers robust safety assurances for workers, effectively mitigating potential risks and ensuring a safer working environment.

Through the cutting-edge solutions, Cubic helps enterprises to achieve high-precision control, to guarantee both efficiency and safety of production processes.



Product Selection Table

The comprehensive selection table encompasses four industries. Whether you are a professional manufacturer in semiconductor field, a reliable supplier of lithium batteries, a cutting-edge pharmaceutical company, or a supplier of panel solutions, we present an extensive array of premier products and services tailored to meet your needs.

Navigate through our selection table, and uncover the perfect products and services that align with your unique requirements.

Product	Lithium-lon Battery	Semiconductor	Pharmaceutical	Flat Panel Display
28.3LPM Particle Counter OPC-6510 Series	✓	✓	√	✓
28.3LPM Particle Counter OPC-6511 Series	✓	✓	√	✓
2.83LPM Particle Counter OPC-6303 Series	✓	✓		
Humidity and Temperature Transmitter AM6108 Series	✓	✓	√	✓
Explosion-proof Particle Counter OPC-6303FB	✓			
NMP Gas Leakage Detector Gasboard-2063	✓			
Electrolyte Leakage Detector AM4210	✓			
Trace Moisture Sensor Gasboard-2520-H20		√	√	
Trace Oxygen Sensor Gasboard-2520-02		✓	√	

Lithium-Ion Battery Fabrication Monitoring Solution

• Environmental Air Quality Monitoring



2.83LPM Particle Counter OPC-6303 Series



28.3LPM Particle Counter OPC-6510 Series



28.3LPM Particle Counter OPC-6511 Series



Humidity and Temperature Transmitter AM6108 Series

Process & Safety Monitoring



Explosion-proof Particle Counter OPC-6303FB



NMP Gas Leakage Detector Gasboard-2063



Electrolyte Leakage Detector AM4210

Battery Thermal Runaway Monitoring



Automotive Thermal Runaway (TR) Sensor ATRS Series



Thermal Runaway (TR) Gas Analyzer LRGA-3100



Semiconductor Manufacturing Monitoring Solution

Environmental Air Quality Monitoring



2.83LPM Particle Counter OPC-6303 Series



28.3LPM Particle Counter OPC-6510 Series

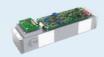


28.3LPM Particle Counter OPC-6511 Series

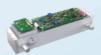


Humidity and Temperature Transmitter AM6108 Series

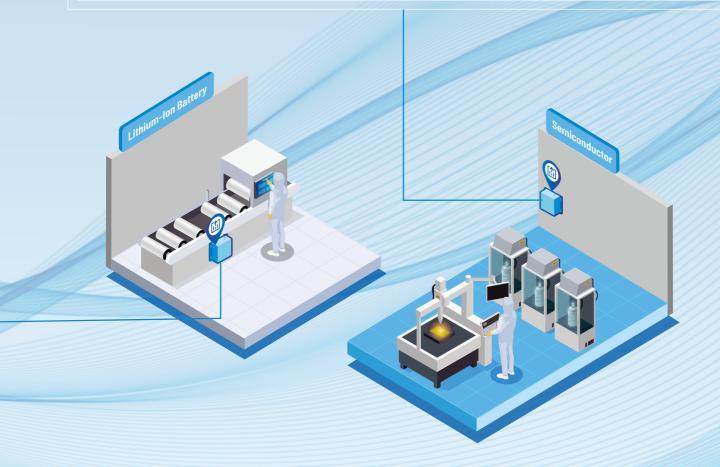
Process Monitoring



Trace Moisture Sensor Gasboard-2520-H20



Trace Oxygen Sensor Gasboard-2520-02



Pharmaceutical Manufacturing Monitoring Solution

Environmental Air Quality Monitoring



2.83LPM Particle Counter OPC-6510 Series

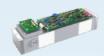


28.3LPM Particle Counter OPC-6511 Series

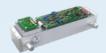


Humidity and Temperature Transmitter AM6108 Series

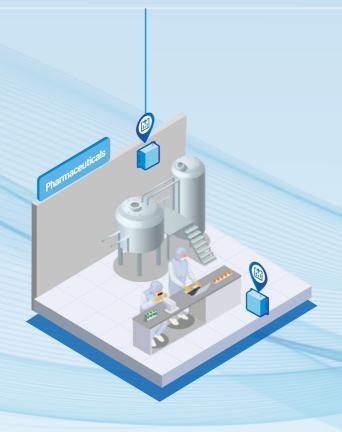
Process Monitoring



Trace Moisture Sensor Gasboard-2520-H20



Trace Oxygen Sensor Gasboard-2520-02





Flat Panel Display Manufacturing Monitoring Solution

Environmental Air Quality Monitoring



2.83LPM Particle Counter OPC-6510 Series



28.3LPM Particle Counter OPC-6511 Series



Humidity and Temperature Transmitter AM6108 Series



28.3LPM Particle Counter OPC-6510DS

Description

OPC-6510DS is a cleanroom airborne particle counter, which can accurately detect and calculate the number of different size particles in the air per unit volume. The device can simultaneously output the particle number of 5 channels of >0.3 μ m, >0.5 μ m, >1.0 μ m, >5.0 μ m, >10 μ m in pcs/28.3L or pcs/m³. The screen can realtime display the monitoring data, cleanroom IS014644-1 2015 grade and alarm once the particle quantity exceeds the set threshold. The touch screen also supports setting the output unit, display channel, concentration alarm threshold, coefficient, language, work time, etc.



OPC-6510DS

Features

- Real-time output measurements of 0.3μm, 0.5μm, 1.0μm, 5.0μm, 10μm in pcs/28.3L or pcs/m³.
- Sound and light alarm once particle quantity exceeds the set threshold.
- Calibration coefficient correction available against standard equipment.
- Real-time display ISO 14644-1 grade level.
- ModBus RTU and MQTT communication protocols available.

Working Principle	Light scattering
Measurement Range	0~1,000,000 pcs/ 28.3L
Output Channels	>0.3µm, >0.5µm, >1.0µm, >5.0µm, >10µm
Count Efficiency	50%@≥0.3μm, 100%@≥0.5μm Condition: 25±2°C, 50±10%RH
Data Refresh Time	1second
Working Condition	0°C ~ 45°C, 0 ~ 95%RH (Non-condensing)
Operating Voltage	DC 24V±15%
Average Operating Current	≤3A
Communication	RS485 Modbus RTU, RJ45 MQTT
Sampling Flow Rate	28.3L/min (1.0 CFM)
External Sampling Hose	Inner diameter: ∲10mm Length: ≤3m
Work Mode	Adjustable (Default: work 2 minutes and sleep 28 minutes)
Display	3.5-inch color touch screen

 $[\]hbox{\bf * For more information, please contact: sales@gassensor.com.cn}\\$



28.3LPM Particle Counter OPC-6510

Description

The cleanroom remote online particle counter OPC-6510 adopts the principle of light scattering, which can accurately detect and calculate the number of suspended particles of different particle sizes in the air per unit volume. The gas sampling rate of large flow can simultaneously output the particle number of 5 channels of >0.3 μ m, >0.5 μ m, >10 μ m, >5.0 μ m, >10 μ m.



OPC-6510

Features

- Output particle numbers in pcs/28.3L for 5 channels including >0.3μm, >0.5μm, >1.0μm, >5.0μm, >10μm.
- Built-in high power industrial grade linear laser, accurate identification.
- Built-in fan and flow sensor for constant stable sampling.
- ModBus RTU and MQTT communication protocols available.

Working Principle	Light scattering
Measurement Range	0~1,000,000 pcs/28.3L
Output Channels	>0.3µm, >0.5µm, >1.0µm, >5.0µm, >10µm
Count Efficiency	50%@≥0.3μm, 100%@≥0.5μm Condition: 25±2°C, 50±10%RH
Data Refresh Time	1second
Working Condition	0°C ~ 45°C, 0 ~ 95%RH (Non-condensing)
Operating Voltage	DC 24V±15%
Average Operating Current	≤3A
Communication	RS485 Modbus RTU, RJ45 MQTT
Sampling Flow Rate	28.3L/min (1.0 CFM)
External Sampling Hose	Inner diameter: ∲10mm Length: ≤3m
Work Mode	Adjustable (Default: work 2 minutes and sleep 28 minutes)

^{*} For more information, please contact: sales@gassensor.com.cn

28.3LPM Particle Counter OPC-6511DS

Description

Cubic handheld particle counter OPC-6511DS adopts the principle of light scattering with built-in unique laser diode, consistant RPM fan, and well-designed ultrasonic flow sensor, it is compliant to ISO 21501-4 requirement. Equipped with a high-capacity lithium battery and a user-friendly touch screen, the device displays monitoring data in real time, enabling efficient spot checking across multiple sites.



OPC-6511DS

Features

- 5-channel outputs 0.3μm, 0.5μm, 1.0μm, 5.0μm, 10μm in pcs/28.3LPM or pcs/m³.
- Sound and light alarm once particle quantity exceeds the set threshold.
- Calibration coefficient correction available against standard equipment.
- Real-time display ISO 14644-1 grade level.
- Built-in rechargeable Li-battery.
- ModBus RTU and MQTT communication protocols available.

Working Principle	Light scattering
Measurement Range	0~1,000,000 pcs/ 28.3L
Output Channels	>0.3µm, >0.5µm, >1.0µm, >5.0µm, >10µm
Count Efficiency	50%@≥0.3μm,100%@≥0.5μm Condition: 25±2°C,50±10%RH
Data Refresh Time	1second
Working Condition	0°C ~ 45°C, 0 ~ 95%RH (Non-condensing)
Operating Voltage	DC 24V±15%
Average Operating Current	≤3A
Battery Standby Time	>5h (Work 2 minutes and sleep 28 minutes)
Communication	RS485 Modbus RTU, RJ45 MQTT
Sampling Flow Rate	28.3L/min (1.0 CFM)
External Sampling Hose	Inner diameter: ∲10mm Length: ≤3m
Work Mode	Adjustable (Default: work 2 minutes and sleep 28 minutes)
Display	3.5-inch color touch screen

^{*} For more information, please contact: sales@gassensor.com.cn



2.83LPM Particle Counter OPC-6303DS

Description

OPC-6303DS is a 2.83LPM wall-mount aerosol particle counter with display, and adopts the principle of light scattering to accurately detect and calculate the number of suspended particles of different sizes in the air per unit volume. It can simultaneously output particle quantity in 6 channels of $0.3\mu m,\ 0.5\mu m,\ 1.0\mu m,\ 2.5\mu m,\ 5.0\mu m$ and $10\mu m$ in pcs/28.3L or pcs/m³. The screen can realtime display the monitoring data, cleanroom IS014644-1 2015 grade and alarm, once the particle quantity exceeds the set threshold. The touch screen also supports setting the output unit, display channel, concentration alarm threshold, coefficient, language, work time, etc.



OPC-6303DS

Features

- Output 0.3μm, 0.5μm, 1.0μm, 2.5μm, 5.0μm, 10μm particle number in pcs/m³, pcs/L or pcs/ft³.
- Calibration coefficient correction available against standard equipment.
- Constant flow sampling system to ensure stable sampling.
- Industrial grade laser with high reliability.
- Real-time display ISO 14644-1 grade level.
- ModBus RTU and MQTT communication protocols available.

Working Principle	Light scattering
Measurement Range	0~10,000,000pcs/L
Output Channels	>0.3µm, >0.5µm, >1.0µm, >2.5µm, >5.0µm, >10µm
Measurement Error	<100pcs/L: ±30pcs/L >100pcs/L: ±30% of reading Condition: 0°C ~ 40°C, 50+10%RH
Data Refresh Time	1second
Working Condition	-30°C ~ 70°C, 0 ~ 95%RH (Non-condensing)
Operating Voltage	DC 12-24V
Average Operating Current	≤1A
Communication	RS485 Modbus RTU, RJ45 MQTT, 4-20mA analog signal output
Sampling Flow Rate	2.83L/min (0.1CFM)
Work Mode	Adjustable (Default: work 1 minute and sleep 4 minutes)
Display	3.5-inch color touch screen

^{*} For more information, please contact: sales@gassensor.com.cn

Humidity and Temperature Transmitter AM6108B

Description

Wall mount humidity and temperature transmitter AM6108B offers real-time monitoring of cleanroom air quality, ensuring a stable production environment. It boasts dual communication capabilities, facilitating wired connections via RS-485 Modbus or BACnet protocols, as well as wireless connectivity options such as Wi-Fi and EnOcean, supporting flexible communication methods.

AM6108B can also detect CO₂, PM, and TVOC levels in the air. Furthermore, it can send out control signals along with measurement readings to the ventilation system, so fan and valve can be adjusted accordingly, to maintain optimal air quality for the cleanroom.



AM6108B

Features

- Modbus/BACnet protocol optional.
- IoT wireless monitoring available.
- HVAC system control function: 3 levels of wind speed and 4 working modes can be adjusted.
- Standard configuration: CO₂, PM, RH&T, VOC (Optional).
- Compatible with touch-screen operation, device ID and baud rate to be set via surface.
- OEM/ODM available (Sensor configuration, appearance design, PCBA design, software development etc.).

Working Principle	CO2: Non-dispersive infrared (NDIR) PM: Light scattering
Measurement Range	CO2: 0~5000ppm; PM2.5: 0~999µg/m³ Temperature: -10°C~50°C Relative humidity: 0%~95%RH
CO ₂ Accuracy	\pm (50ppm+5% of reading) / \pm (30ppm+3% of reading) is optional
PM Accuracy	PM2.5: 0~100µg/m³, ±10µg/m³; >100µg/m³, ±10% of reading (25°C±2°C, 50±10%RH)
Temperature Accuracy	±1°C (0°C ~50°C)
Humidity Accuracy	±8%RH
UIScreen	Touch screen
Output	Modbus-RTU or BACnet-MSTP or Wi-Fi
Power Supply	12VDC~24VDC
Working Condition	-10°C ~ 50°C, 0 ~ 95%RH (Non-condensing)
Storage Condition	-20°C ~ 60°C, 0~95%RH (Non-condensing)
Dimension	W86*H86*D25 (mm)

 $[\]hbox{\bf * For more information, please contact: sales@gassensor.com.cn}\\$



Explosion-proof Particle Counter OPC-6303FB

Description

Cubic explosion-proof particle counter OPC-6303FB adopts the principle of light scattering, which can accurately detect and calculate the number of suspended particles of different particle sizes in pcs/L for the 6 channels, including $0.3\mu m$, $0.5\mu m$, $1.0\mu m$, $2.5\mu m$, $5.0\mu m$ and $10\mu m$.

By integrating explosion-proof enclosure with particle counting capabilities, OPC-6303FB ensures precise measurement of airborne particle concentration in potentially explosive areas, thereby ensuring manufacturing safety.



OPC-6303FB

Features

- Output particle number (pcs/L) in 6 channels including 0.3μm, 0.5μm, 1.0μm, 2.5μm, 5.0μm, 10μm.
- High power industrial grade linear laser for accurate identification.
- Vehicle-grade constant current sampling structure fan for constant stable sampling flow.
- Wide working temperature -30°C~70°C.
- Suitable for areas with potentially explosive working environments.

Working Principle	Light scattering
Measurement Range	0~10,000,000pcs/L
Output Channels	>0.3µm, >0.5µm, >1.0µm, >2.5µm, >5.0µm, >10µm
Measurement Error	<100pcs/L: ±30pcs/L >100pcs/L: ±30% of reading Condition: 0°C ~ 40°C, 50+10%RH
Data Refresh Time	1second
Working Condition	-30°C ~ 70°C, 0 ~ 95%RH (Non-condensing)
Operating Voltage	DC 5V
Average Operating Current	<250mA
Communication	USB Uart_TTL
Sampling Flow Rate	1L/min
IP Protection	IP66
Explosive-proof Grade	Ex db eb IB T6 Gb, Ex db eb IIC T6 Gb, Ex tb IIIC T80°C Db
Dimension	W200*H200*D90(mm)

^{*} For more information, please contact: sales@gassensor.com.cn

NMP Gas Leakage Detector Gasboard-2063

Description

Cubic NMP gas leakage detector Gasboard-2063 is non-dispersive infrared (NDIR) technology-based detector which is specially designed to detect NMP in the manufacturing of Li-battery cells. The aluminum body structure, combined with a heat insulation block, undergoes dual thermal insulation pretreatment, ensuring long-term stability and low sensitivity degradation in high-temperature environments. The detector also boasts rapid response time, long lifespan, zero-point self-calibration, and maintenance-free operation. Compliant with Exd II CT3 explosion-proof certification, it is ideally suited for monitoring NMP gas leakage in coating and drying process of battery production.



Gasboard-2063

Features

- Fast response and high accuracy.
- High long-term stability.
- Self-calibration, maintenance-free.
- Long lifetime (>10 years).
- Strong resistance to poisoning.
- IExd II CT3 explosion-proof certification.

Working Principle	Non-dispersive infrared (NDIR)
Measurement Range	±5%LEL@15%LEL~50%LEL
Resolution	0.5% LEL
Warm-up Time	<30 minutes
Response Time (T90)	T90<30s @15%LEL~50%LEL
Working Conditions	Measured gas temperature: 0~160°C
Ambient Temperature and Humidity	0°C~60°C, less than 95%RH (Non-condensing)
Storage Conditions	-40°C~+85°C; 0~98%RH (Non-condensing)
Working Voltage	24V±10%
Working Current	Average working current <0.6A (@25°C, 24V DC)
Communication	DC4~20mA (Resistive load below 300 Ω), RS485 (Default baud rate 9600)
IP Protection	IP66
Dimension and Weight	L586*W186*H104(mm)/ Around 6Kg

 $[\]hbox{\bf * For more information, please contact: sales@gassensor.com.cn}\\$



Electrolyte Leakage Detector AM4210

Description

Cubic electrolyte leakage detector AM4210 is a handheld detector designed to detect leaks of DMC, EMC, EC, and other electrolytes during the manufacturing process of lithium batteries. With non-dispersive infrared (NDIR) technology, it can easily detect leakage points while providing real-time numerical and graphical data of the concentration. With the buttons on the device, users can easily adjust the detection sensitivity and switch between automatic and manual zeroing. Powered by a high-capacity lithium battery, it offers extended continuous working time and supports rechargeable use, making it a convenient and reliable tool for electrolyte leak detection.



AM4210

Features

- High selectivity for leakage and good repeatability.
- High detection accuracy can be guaranteed at all temperatures and ranges.
- Fast response time.
- Lithium battery powered, rechargeable.
- Fault self-diagnosis function.
- High reliability, long life (>10 years).

Working Principle	Non-dispersive infrared (NDIR)
Measurement Range	0~9999 ppm
Target Gas	DMC, EMC, EC and other electrolyte vapors
Sensitivity Levels	High, Medium, Low
Maximum Sensitivity	0.03 oz/year (1g/a), stationary: 0.1 oz/year (3g/a), in motion
Detection Feedback	Red Glowing LED, LCD Bar Graph, LCD Numbers, Buzzer
Response Time (T90)	<30 seconds (typical)
Warm-up Time	<12 seconds
Display Resolution	1ppm
Accuracy	± (5ppm+10% of reading)
Working Conditions	0°C~40°C, <75% RH (Non-condensing)
Power Aupply	5V DC±5%, 1A±5%
Battery Type	3.7 VDC 2450mAh, not replaceable
Battery Life	8 hours
Design Lifetime	10 years
Water Resistance	IP54
Dimension and Weight	L66*W194.5*35(mm)/ Around 360g
Product Standard	EN 14624

 $[\]hbox{\bf * For more information, please contact: sales@gassensor.com.cn}\\$

Trace Moisture Sensor Gasboard-2520-H20

Description

Gasboard-2520-H20 is TDLAS trace moisture sensor, designed for the measurement of trace moisture content in ultra-high purity gases for semiconductor industry manufacturing processes monitoring. With a long optical path for multiple light reflections, it can achieve ultra-low detection limit of 1 ppm and high resolution of 0.1 ppm in the low concentration range.

Gasboard-2520-H2O achieves high selectivity without the interference by humidity and other gases due to implementation of narrow-band laser spectrum absorption technology.



Gasboard-2520-H20

Features

- Tunable diode laser absorption spectroscopy (TDLAS) technology ensures high-precision and high-resolution trace moisture (H2O) measurement.
- Narrowband laser spectroscopic absorption technology realizes unique selectivity of trace moisture.
- Without interference by background gas.
- Long lifespan over 10 years.
- Modular design for easy integration.
- Multiple selectable ranges with digital full-range linearity output.

Working Principle	Tunable diode laser absorption spectroscopy (TDLAS)
Target Gas	Trace moisture (H2O)
Measurement Range	0~10ppm~1000ppm
Accuracy	±2% F.S.
Resolution	0.1ppm
Repeatability	≤1% FS
Response Time	T90<10s
Warming Up	<10s
Working Temperature	-10°C~50°C
Working Humidity	0~98%RH (Non-condensing)
Working Voltage	12V DC±10%
Working Current	<0.5A
Output	RS485/RS232
Design Lifetime	10 years
Storage Conditions	-40°C ~ 85°C; 0~98%RH (Non-condensing)

^{*} For more information, please contact: sales@gassensor.com.cn



Trace Oxygen Sensor Gasboard-2520-02

Description

Cubic Gasboard-2520-02 is a high-performance oxygen gas sensor developed for trace amounts of oxygen monitoring during semiconductor manufacturing process. Based on tunable diode laser absorption spectroscopy (TDLAS) technology, it achieves highly accurate oxygen measurement with a minimum detection limit of 1ppm and resolution of 0.1ppm.

For ultra-low concentration of oxygen monitoring during key manufacturing processes, it adopts narrow-band laser spectral absorption technology, which guarantees unique selectivity of oxygen gas, making it immune to interferences from other gases, water vapor, and dust. It enables reliable and credible trace amount of oxygen concentration monitoring to help operators control the purity of process gases.



Gasboard-2520-02

Features

- Tunable diode laser absorption spectroscopy (TDLAS) technology ensures high-precision and high-resolution
 02 measurement.
- Narrowband laser spectroscopic absorption technology realizes unique selectivity of oxygen gas.
- Fast response time < 10s.
- Long lifespan over 10 years.
- Modular design for easy integration.
- Multiple selectable ranges with digital full-range linearity output.

Working Principle	Tunable diode laser absorption spectroscopy (TDLAS)
Target Gas	Oxygen (O2)
Measurement Range	0~10ppm~10000ppm
Accuracy	±2% F.S.
Resolution	0.1ppm
Detection Limit	1ppm
Response Time	T90<10s
Working Temperature	-10°C ~ 50°C
Working Humidity	0~98%RH (Non-condensing)
Power Supply	12V DC±10%
Output	RS485/RS232
Design Lifetime	10 years
Storage Conditions	-40°C ~ 85°C; 0~98%RH (Non-condensing)
Dimension	90*70*278 (mm)

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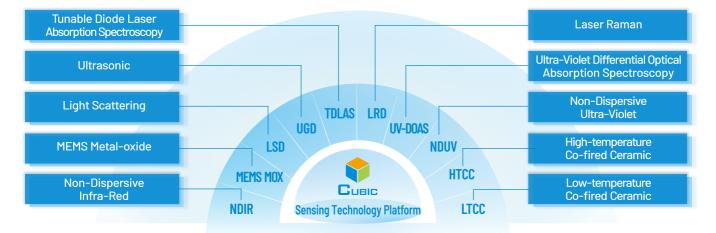
Cubic Introduction

Cubic Sensor and Instrument Co., Ltd. (hereinafter referred to as "Cubic") is a publicly listed company in SSE STAR Market (stock code:688665), specializing in smart gas sensors and superior gas analyzers. Set up in 2003, situated at "Optics Valley" of Wuhan, China, Cubic has established gas sensing technology platforms including optical technologies (NDIR, Ultraviolet, Light Scattering, Laser Raman), ultrasonic technology, MEMS metal oxide semiconductor (MOX) technology, electrochemical technology, ceramic thick-film technology based high temperature solid electrolyte technology and so on. At present, Cubic has obtained more than 100 patents home and aboard, with abundant products widely used in various fields of air quality, environmental monitoring, industrial processes, industrial safety monitoring, healthcare, smart metering and so on.









21 Years

Development and Application of NDIR Technology

16 Years

Development and Application of Ultrasonic Technology

14 Years

Development and Application of Light Scattering Technology

7 Years

Development and Application of MEMS Technologies



ISO 9001:2015



IATF 16949:2016



ISO 14001:2015



ISO 45001:2018

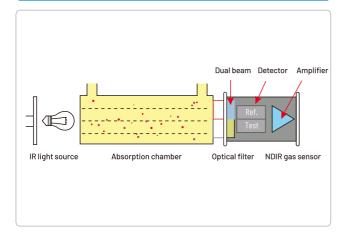


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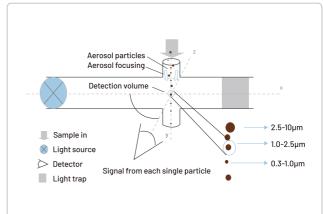


Core Technologies

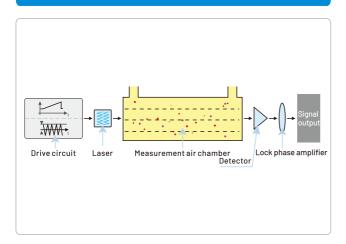
NDIR Gas Sensor Technology



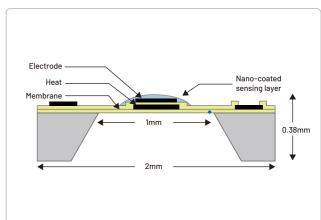
Ligh Scattering Particle Sensor Technology



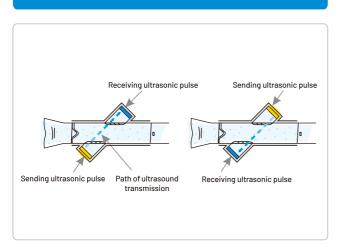
TDLAS Gas Sensor Technology



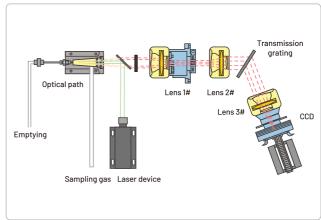
MOX Gas Sensor Technology



Ultrasonic Gas Sensor Technology



Laser Raman Gas Sensor Technology





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All products are in continuous development and therefore specifications may be subject to change without prior notice.