



Cubic Metabolism Analyzer

One-stop Metabolism Analyzer OEM&ODM Solution



Accurate Metabolic Assessment:
REE via indirect calorimetry



Innovative Gas Sensing:
TDLAS, NDIR, and Ultrasonic

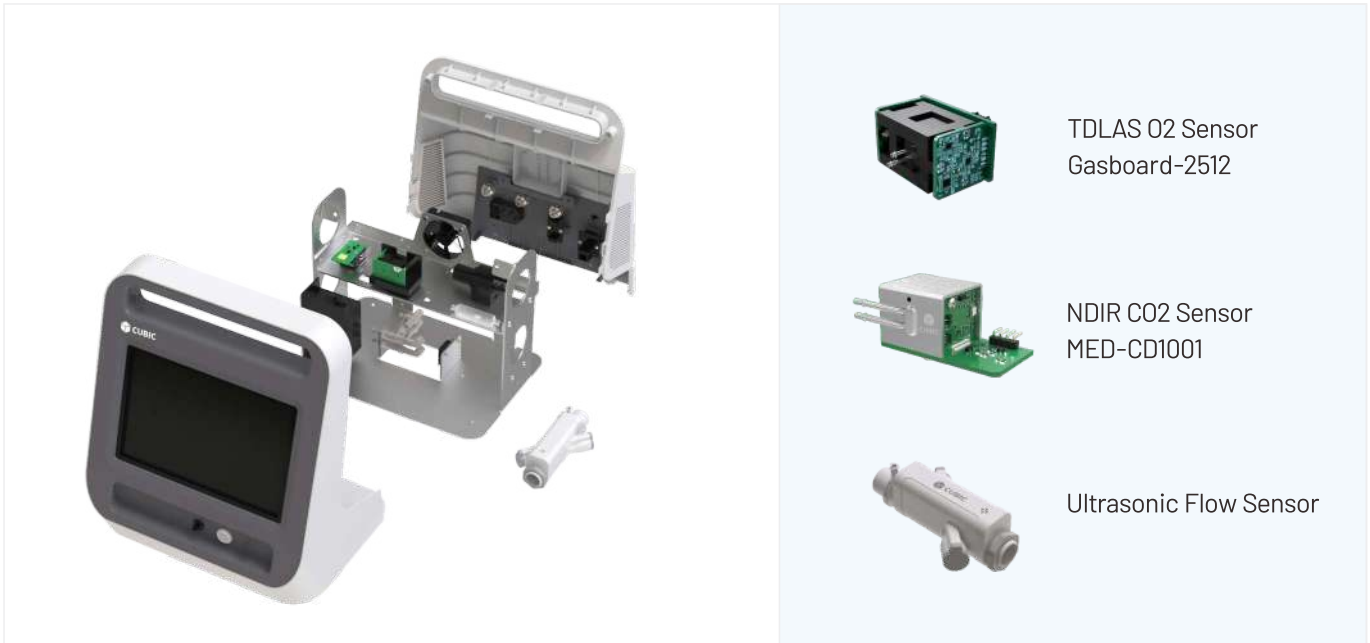


Customizable Solutions:
OEM/ODM Capabilities

Cubic Metabolism Analyzer

Cubic provides OEM/ODM metabolism analyzer solutions designed to deliver accurate and reliable metabolic assessment. The analyzer integrates Cubic mature gas sensing technology platforms: TDLAS for oxygen detection, NDIR for carbon dioxide measurement, and ultrasonic flow monitoring. Paired with self-developed operation software, Cubic metabolism analyzer ensures precise gas concentration and flow measurement.

Through advanced algorithms, the analyzer performs real-time calculation of key metabolic parameters including oxygen consumption (VO2), carbon dioxide production (VCO2), respiratory quotient (RQ), and resting energy expenditure (REE). Cubic metabolism analyzers support comprehensive evaluation of metabolic balance and energy utilization, enabling applications in clinical diagnostics, rehabilitation medicine, sports performance analysis, and nutritional management.



Features



Comprehensive Metabolic Evaluation

Evaluation of individual metabolism (REE) via indirect calorimetry.



High-Precision Sensors

Ultrasonic flow sensor, TDLAS O2 sensor, and NDIR CO2 sensor ensure precise measurement.



Standards Compliance

Fully aligned with ATS/ERS international guidelines.



User-Friendly Design

Adjustable height, swivel support, and 10.1" touchscreen for convenient operation.



Smart Software Platform

Intuitive interface with multilingual support and customizable options.



Assured Quality

Verified by CMA/CNAS accredited labs with full in-house production.

Application Fields

- | | | |
|----------------------------------|-----------------------------|------------------------|
| • Clinical Metabolism Assessment | • Rehabilitation Centre | • Research Institution |
| • Sports Club & Athlete Training | • Nutrition & Health Clinic | • Weight Management |

Specification

Functional Performance

V02/VC02 Range	10-1000 mL/min
V02/VC02 Accuracy	±3% or 5 mL/min, whichever is greater
RQ Detection Range	0-2.0
RQ Detection Accuracy	±4% or 0.04, whichever is greater
REE Detection Range	0-7200 kcal/day
REE Detection Accuracy	±3% or 36 kcal/day, whichever is greater
VE Detection Range	0-300 L/min
VE Detection Accuracy	±2% or 5.0 mL/min, whichever is greater

Flow Sensor

Measurement Principle	Ultrasonic
Flow Measurement Range	±16 L/s
Flow Accuracy	±2.5% or 0.17 L/s
Flow Resolution	5 mL/s
Volume Measurement Range	0-16 L
Volume Measurement Accuracy	±3% or ±0.05 L, whichever is greater
Capacity Resolution	1 mL
Breathing Resistance	< 0.15 kPa/L/s

O2 Sensor

Measurement Principle	TDLAS
O2 Measurement Range	0-100%
Measurement Accuracy	±1% FS
Resolution	0.01%
Response Time	< 200 ms@250 mL/min(T10~T90)

CO2 Sensor

Measurement Principle	NDIR
CO2 Measurement Range	0-10%
Measurement Accuracy	±0.1% vol@0-5% vol; ±3% of reading@5-10%
Resolution	0.01%
Response Time	< 200 ms @300 mL/min (T10-T90)

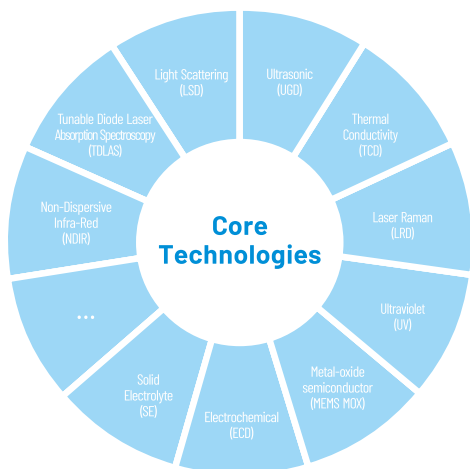
Basic Parameters

Power Supply	AC 100-240 V, 50 Hz, ≤60 W
Display	10.1-inch LCD touch screen
Dimensions	Main unit: 300×240×340 mm
Weight	≤ 5 kg
Working Conditions	5-40°C, 10%-90% RH (non-condensing), 85-106 kPa
Storage Conditions	-40-70°C, 10%-90% RH (non-condensing), 85-106 kPa

*For detailed specifications, please refer to the product datasheet.

For additional technical information, contact: +86-27-81628813 or sales@gassensor.com.cn

Sensing Technology Platforms



22 Years

22 years of development and application of NDIR technology

17 Years

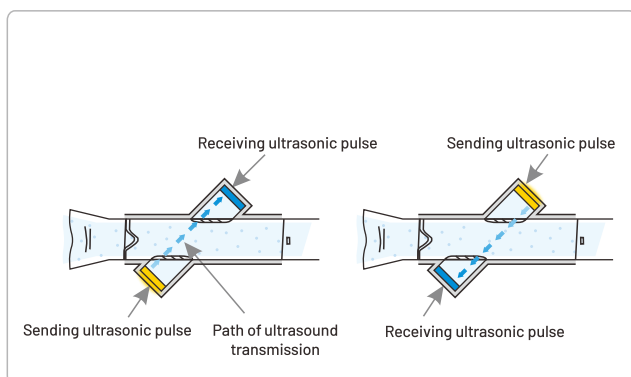
17 years of development and application of Ultrasonic technology

7 Years

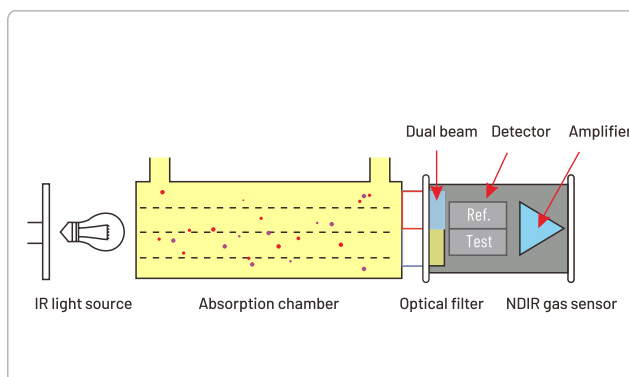
7 years of development and application of TDLAS technology

Core Technologies

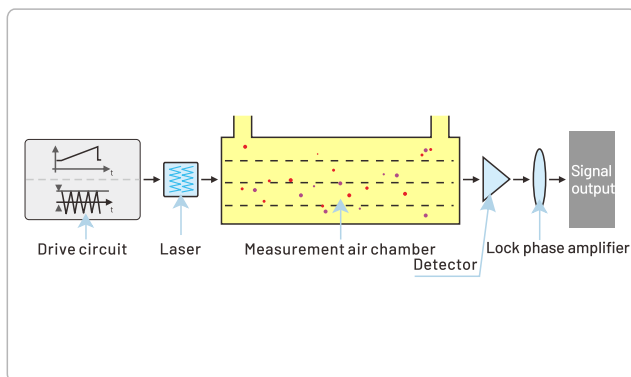
Ultrasonic Gas Sensor Technology



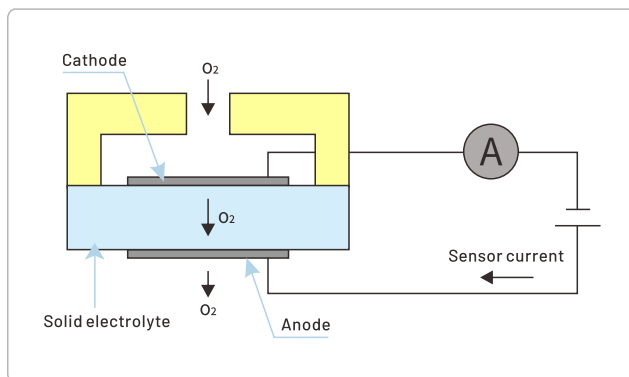
NDIR Gas Sensor Technology



TDLAS Gas Sensor Technology



Zirconia Gas Sensor Technology

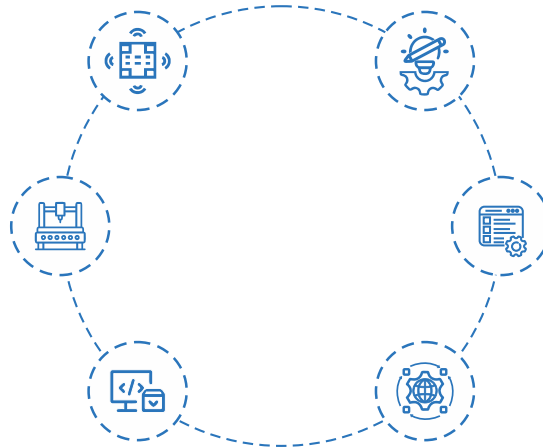


Cubic OEM/ODM Capabilities

In-House Development and Manufacturing

Mold Development

Software Development



Hardware/Structural Design

Prototype Testing and Validation

Supply Chain Integration

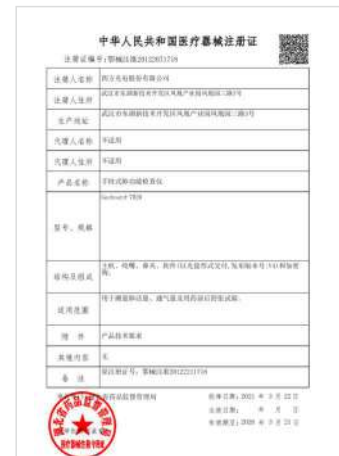
Cubic Medical Certifications



Class II Medical Device Operation Filing Certificate



Medical Device Production License



Medical Device Registration Certificate (Portable Spirometer)

About Cubic

Cubic, established in 2003 and headquartered in the "Optics Valley" of Wuhan, China, is a publicly listed company on the SSE STAR Market (stock code: 688665). Through over 20 years of continuous dedication in technical innovation, Cubic has leveraged its mature core gas sensing technology platforms, including optical technologies (NDIR, TDLAS, Ultraviolet, Light Scattering, Laser Raman), ultrasonic technology, MEMS metal oxide semiconductor (MOX), electrochemical, and ceramic thick-film high-temperature solid electrolyte technologies, to provide comprehensive gas measurement and analysis solutions across various industries. At present, Cubic has secured more than 100 patents domestically and internationally, with its products widely utilized in air quality monitoring, environmental monitoring, industrial processes, industrial safety, healthcare and medical applications, smart metering, and more.

Cubic, as an experienced OEM/ODM manufacturer, has delivered advanced gas sensing solutions for Pulmonary Function Testing, Cardiopulmonary Exercise Testing and Metabolism Assessment, Oxygen Therapy, and Ventilator & Anesthesia Monitoring systems by its mature technologies, including ultrasonic, NDIR, and TDLAS technologies.

As an integrated OEM/ODM provider, Cubic offers end-to-end capabilities throughout the entire product development cycle – from sensor solutions and hardware design to software development, mold development, prototype testing, and medical device manufacturing. Beyond customization, Cubic excels in mass production under strict quality control system, efficiently fulfilling diverse and large-scale requirements in the healthcare and medical sectors, with products exported to more than 80 countries and regions.

Cubic will continue to strengthen its capabilities in gas sensing technologies while maintaining its dedication to technical advancement and rigorous standards in providing the medical and healthcare industries with reliable, precise, and comprehensive integrated solutions.

Cubic At Glance

