

PRECISION IN EVERY DETAIL

CFA-1100

Fully automatic multichannel continuous flow analyser

Bring order to batch analysis.



SFA

Segmented flow analysis

CCD

Direct full-spectrum detection

XYZ

Automatic sampling platform

From specialist instruments to complete laboratory solutions.

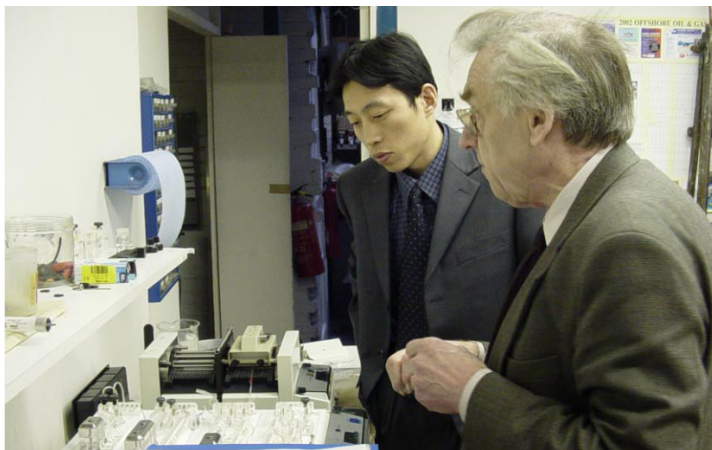
Product brochure · V0.0.7

01

TECHNOLOGY & HERITAGE

A foundation in continuous flow analysis.

The manufacturer's literature describes Beijing Realscience Technology Co., Ltd., located in Beijing's Zhongguancun Science Park, as specialising in continuous flow analysis, drawing on more than forty years of research by Dr. G. W. Moody at the University of Cambridge.



The company founder studying techniques in Dr. G. W. Moody's laboratory at the University of Cambridge



An early continuous flow analyser prototype developed by Dr. G. W. Moody at the University of Cambridge

Technology development

Drawing on research at leading universities in China and abroad, the manufacturer developed patented technologies including stripping distillation and bubble injection.

Team and service

Research, manufacturing, sales and technical service teams support the analytical-instrument sector with a technology-led, user-focused approach.

02

PRODUCT ADVANTAGES

Batch analysis starts with a coordinated workflow.

CFA-1100 is an integrated, fully automatic multichannel continuous flow analyser for laboratory testing using SFA segmented flow technology. It automates complex workflows and can be equipped with unattended operation and automatic dilution systems. A clear operating process helps reduce interference from complex sample constituents.

01

Segmented flow

SFA segmented flow technology supports rapid, accurate analysis of batch samples.

02

Bubble injection and segmentation

Proprietary bubble injection and segmentation technology promotes complete sample reactions and reduces interference between samples.

03

Online stripping distillation

Dedicated online stripping distillation technology rapidly distils and collects samples.

04

Programmed sampling and cleaning

The XYZ three-axis autosampler collects samples according to a programme and automatically cleans between injections.

05

Online sample preparation

Online preparation modules include high-temperature digestion, UV digestion, online distillation and membrane filtration.

06

Direct full-spectrum CCD

The multichannel direct full-spectrum CCD detector selects wavelengths without filters; the original literature emphasises sensitivity and stability.

07

Independent preparation channels

Independent membrane-filtration and distillation channels support combinations of detection modules.

08

Independent heating control

Independent heating and temperature-control modules meet the separate temperature requirements of different analytical procedures.

09

Simultaneous multichannel detection

Multiple channels can be measured simultaneously to improve batch throughput.

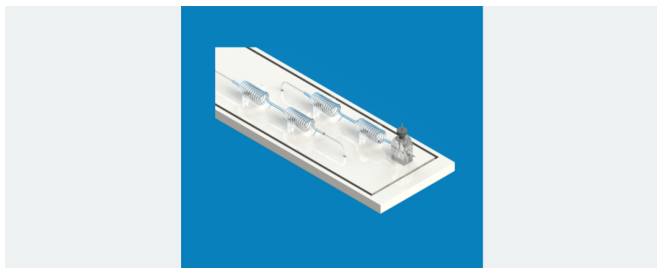
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Chinese-language workstation

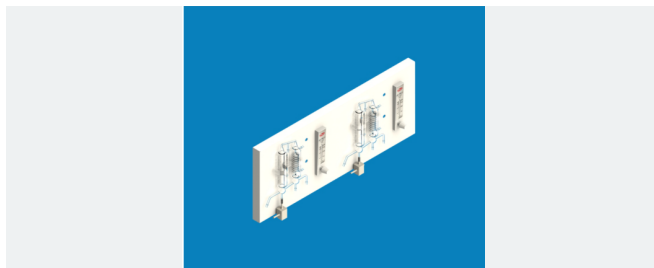
The fully automatic Chinese-language data workstation links instrument control, data acquisition, processing and reporting.

03

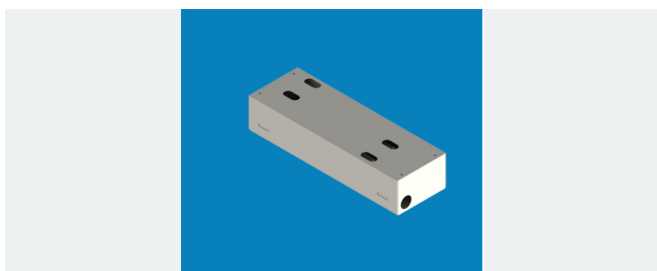
TECHNICAL PLATFORM

Six technical modules, each with a defined role.**Patented bubble segmentation**

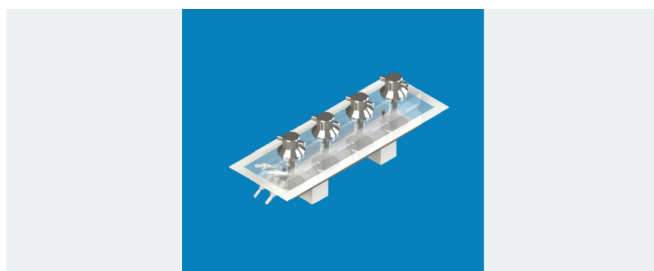
An adjustable bubble-injection vessel operates without compressed gas and helps prevent blocked tubing. Uniform bubbles efficiently separate flowing samples, reducing cross-interference caused by sample diffusion.

**Distillation and recovery unit**

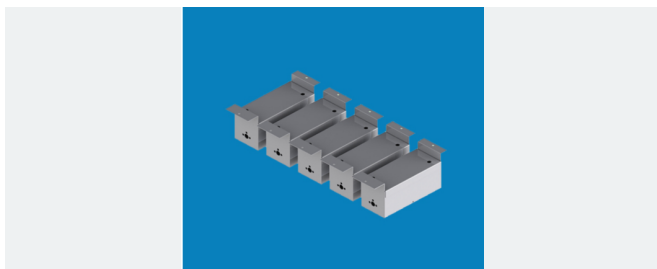
Highly turbid samples and samples containing suspended matter require distillation before colorimetric detection. Strong acids and alkalis can corrode tubing during distillation; a PEEK distillation unit extends service life and reduces operating costs.

**UV digestion**

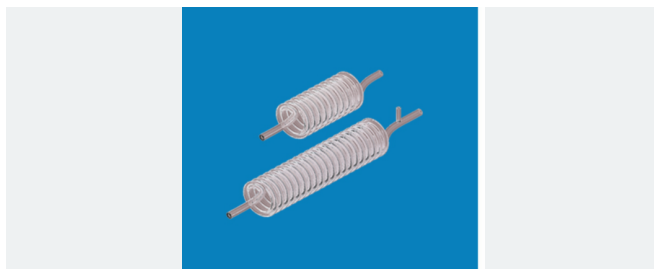
A specialised quartz UV digestion coil with a 2 mm internal diameter and a total length of 5 m or more provides effective UV transmission and sufficient digestion time, breaking chemical bonds in the target constituents under intense UV exposure.

**Membrane filtration**

A polymer membrane removes suspended particles, large organic molecules, colour and other interfering substances. It reduces the need for manual filtration and improves analytical accuracy.

**Online digestion**

Following online UV digestion, the sample undergoes online high-temperature digestion to further break strong chemical bonds and facilitate analysis of complex constituents.

**Mixing coil**

An inert glass mixing coil with a 2 mm internal diameter resists blockage by impurities. Wastewater samples can be injected directly; the coil provides good passage characteristics and chemical inertness.

04

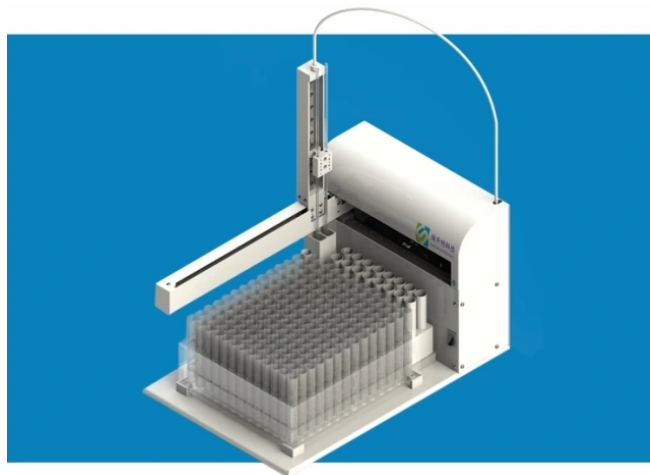
SYSTEM MODULES

Detection, sampling, analysis and delivery.



Direct full-spectrum digital CCD detector

- Software switches wavelengths without optical filters.
- Built-in mechanical grating for direct full-spectrum detection.
- High sensitivity and convenient maintenance.
- A choice of light sources.
- Flow cells in different specifications are available to match sensitivity requirements.



Fully automatic sampler

- XYZ three-axis robotic autosampler controlled by stepper motors.
- 10–40 standard positions and 180–540 sample positions.
- 1–999 s sampling time.
- Dual-needle sampling, with optional single- or triple-needle modes.
- Sampling needles are available in different materials.

04

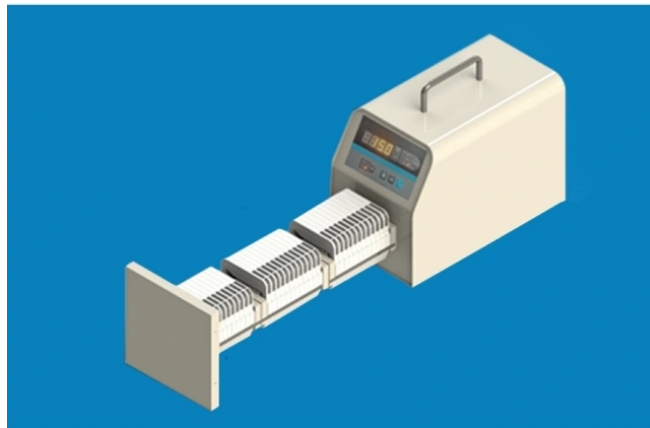
SYSTEM MODULES

Detection, sampling, analysis and delivery.



Analysis module

- Highly integrated, space-saving all-in-one design.
- Modular analytical procedures allow flexible combinations.
- Patented bubble injection and removal technology.
- A wide heating-temperature setting range accommodates method and standard requirements.
- Stable, comprehensive analytical methods improve data reliability.



Peristaltic pump

- Independent peristaltic pump and pump cassettes.
- Selectable number of channels.
- Adjustable speed from 0–100 with a resolution of 0.1 rpm.
- An integrated display shows operating parameters.
- Compatible with pump tubing in different materials.
- Manual or workstation control.

05

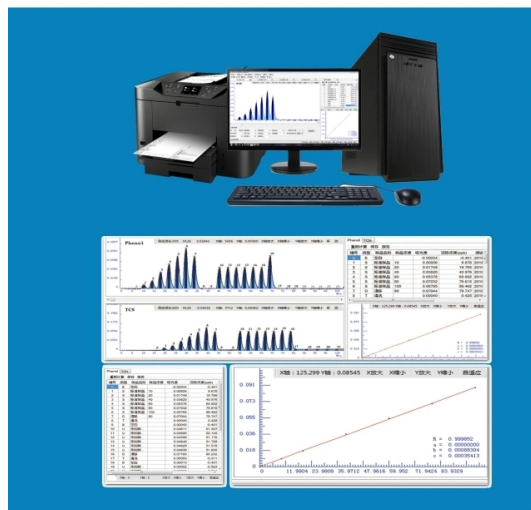
AUTOMATION & WORKSTATION

Automated operation linked to the data workstation.



Unattended-operation unit

- Network-based remote control supports instrument operations.
- Automatically performs startup, testing and shutdown.
- Automatically cleans the instrument after analysis to prevent cleaning from being overlooked.
- Clean tubing at the start of each day's work helps improve analytical accuracy.
- No dedicated operator is required for continuous supervision.
- Optional multichannel configurations include 6, 12 and 18 channels.



Workstation

- Multichannel data-processing system.
- Controls the autosampler and spectrometer, sets sample and instrument parameters, acquires and analyses data, and prints reports.
- Large-icon shortcuts provide convenient access to frequently used functions and method files, reducing repeated setup.
- Graphs, data tables, calibration curves and output parameters can be accessed at any time.
- Multiple report formats are available, including automatically generated PDF reports and EXCEL tables.

Methods, modules and workflows work together

Select automation to suit laboratory workflows and analytical methods. Confirm module channel counts and whole-system analytical capabilities against the actual configuration.

06

APPLICATIONS

Drinking water, surface water, seawater, wastewater and process water.



Drinking water

Surface water

Seawater

Wastewater

Process water

Analytes listed in the original literature

Total/free cyanide; total/volatile phenols; anionic synthetic detergents; total phosphorus; phosphate; total nitrogen; nitrate; nitrite; ammonia nitrogen; sulfide; permanganate index; cyanide species; silicate; TOC/DOC; total alkaloids; carbonate; bicarbonate; boron; borate; chlorine; chloride; fluorine; fluoride; methanol; formaldehyde; hydrazine; phenol; calcium; chromium; cobalt; copper; aluminium; iron; iodine; magnesium; zinc; lead; nickel; hardness; conductivity; volatile acids; urea; and other analytes.

This scope is based on S01, Page 6. Analytical performance and suitability depend on the method, sample matrix, preparation modules and actual configuration.

07

SPECIFICATIONS

Key configurations at a glance.

Check key parameters and configuration conditions by module, from the autosampler to the workstation.

Module / item	Value / configuration	Conditions / notes
Autosampler · standard positions	10–40	Depending on the selected configuration
Autosampler · sample positions	180–540	Depending on the selected configuration
Sampling time	1–999 s	Autosampler setting
Sampling-needle mode	Dual needle	Optional single- or triple-needle modes
Peristaltic-pump speed	0–100	Speed range stated in the source; resolution 0.1 rpm
UV digestion tube	Internal diameter 2 mm; length up to 5 m or more	Specialised quartz for the UV digestion module
Unattended-operation unit	Multichannel options including 6, 12 and 18 channels	Optional module configurations, not the whole-system detection-channel count
Workstation reports	PDF / EXCEL	As stated in the source: PDF reports and EXCEL tables

Coordinated configuration

Multichannel detection, automatic sampling, independent temperature control, online preparation and data processing can be combined to suit the application. Unattended-operation units offer configurations including 6, 12 and 18 channels.

08

QUALIFICATIONS & PATENTS

Manufacturer credentials underpin technical development.

The original brochure presents company credentials, technical certificates and related documents for Beijing Realscience Technology Co., Ltd. Certificate images retain the original holder, title and date information.



Refer to the original certificates

These documents relate to the manufacturer and scope identified in the source. Verify certificate status, applicable products and project requirements against the originals and supply documents.

09

PROJECT REFERENCES

Environmental and drinking-water testing projects.



Environmental monitoring centre

Anhui Provincial Environmental Monitoring Central Station

Customer profile: The station was independently established in April 1976 as a public-interest scientific institution for environmental monitoring. The original literature describes it as affiliated with the Anhui environmental protection authority, guided by the China National Environmental Monitoring Centre and classified as a first-level station in the national network.

Solution: The original literature states that the station purchased three Realscience flow analysers and used intensive river monitoring with unmanned boats to investigate pollution sources systematically.



Centre for disease control and prevention

Anyang Centre for Disease Control and Prevention

Customer profile: The original literature states that the centre was established in 2006 and serves as a teaching and internship base for Zhengzhou University, Xinxiang Medical University and Henan University of Chinese Medicine. It describes 3200 m² of laboratory space and a recognised rural drinking-water safety testing centre serving urban Anyang.

Solution: The centre purchased a Realscience continuous flow analyser for routine drinking-water analysis to assess hygiene and support drinking-water safety. The original account describes replacement of manual methods, faster sample analysis and improved work quality.

10

PROJECT REFERENCES

University research and third-party laboratories.



Hefei University of Technology · Universities and research institutes

Customer profile: Founded in 1945, Hefei University of Technology is described in the original literature as a national key university under the Ministry of Education and associated with the 211, 985 and Double First-Class initiatives. The source highlights the history and graduates of its School of Resources and Environmental Engineering.

Solution: In August 2016, the environmental engineering laboratory invited bids for environmental monitoring instruments and integrated analytical equipment to support academic facilities and student training. The original account reports recognition of the Realscience continuous flow analyser for convenient operation, automation and reduced preparation time.



Zhongce & Tongbiao Technical Inspection and Testing Company · Corporate and third-party laboratories

Customer profile: The original literature states that the company was established in 2015, is headquartered in Zhengzhou and has branches in Shaanxi, Yunnan, Shanxi, Guizhou and other regions. Its activities include food, agricultural products, livestock, water quality, cosmetics, environmental and public-health testing, feed and training.

Solution: In 2017, Tongbiao purchased environmental monitoring instruments and integrated analytical equipment for product development and environmental analysis. The source describes the Realscience continuous flow analyser as supporting batch testing, analytical efficiency and environmental-standard requirements.

Pre-prepared reagent packs

Reagent packs for flow analysis are supplied pre-prepared, so users do not need to formulate the reagents themselves, reducing preparation work.



Refer to the supplied instructions for supported tests and use.