

Main technical specifications

Ova and Parasites Special Test Mode:	Flotation Method and Sedimentation Method.
Iodine Staining Function:	Under Iodine staining mode, Analyzer can automatically add iodine staining solution to stain the sample, improve the detection rate of special Ova and Parasite.
Test Speed:	10 - 60 samples/hour, high speed and high efficiency.
Test Channel:	4-channel quartz flow cell.
Microscope:	high and low power objective lens, with functions of auto focus upon startup and one-push auto focus.
Camera:	5 mega-pixel HD CMOS camera.
Mixing Method:	mechanical rotation, with adjustable mixing speed.
Sample Collection Cup:	rotating screw cap for puncture sampling, industry-pioneered design of limited quantitative sampling; the large filter area realized by imported nylon filters both in the longitudinal direction and at the bottom.
Image Quantity:	more than 300 images, supporting multiple combinations and customized quantity of shooting fields.
Image Capture Mode:	multi-field layered scanning, up to 8 layers per field.
Communication:	duplex bidirectional communication to automatically detect colloidal gold items at multiple reaction times of the same sample by automatic code scanning enabled by the main machine.
Code Scanning:	automatic scanning by the main machine equipped with a built-in barcode scanner.
Colloidal Gold Test Items:	Up to 7 items can be tested at the same time.(Including Feces occult blood, Transferrin, Helicobacter pylori, Rotavirus, Adenovirus, Calprotectin, Lactoferrin.)
Colloidal Gold Reagent Card positions and loading:	6 positions for immunocolloidal gold detection items, with a maximum loading of 300 reagent cards.
Colloidal Gold Detection Function:	3 items with different reaction times detected simultaneously by the instrument between batches of samples, and different reaction times simultaneously set for multiple items according to the actual requirements of the items.
Consumables:	Sample collection cup, colloidal gold card, sample diluent, cleaning solution, concentrated cleaning solution and quality controls.
Quality Control:	built-in quality control module directly used for quality control.
Morphology QC:	supporting QCM of fecal formed elements from the same instrument manufacturer.
Colloidal Gold QC:	supporting fecal occult blood and transferrin QCM from the same instrument manufacturer.
Formed Element Tests:	Leukocyte, erythrocyte, pyocyte, fungus, fat globules, macrophage, lucidum spore, starch granule, epithelial cell, charcot-leyden crystal, calcium oxalate crystal, blood, egg of clonorchis, egg of ascaris lumbricoides, Trichuris trichiura , egg of tapeworm, egg of hookworm, egg of enterobius vermicularis, strongyloides stercoralis ,blastocystis hominis ,egg of schistosoma japonicum ,egg of fasciolopsis buski, trichomonas, egg of paragonimus westermani, amoeba, cryptosporidium, giardia lamblia.



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KU-F40
Fully Automated Feces Analyzer

- AI
- Iodine Staining Function
- High Speed and Efficiency
- Accurate and Comprehensive
- Security and Stability



KU-F40

Fully Automated Feces Analyzer



Test Items

- ◆ Microscopic examination: It can detect and confirm positive organic substances in fecal samples visible under the microscope. (including red blood cells, white blood cells, fat globules, various protozoa and worm eggs, etc.)
 - ◆ Physical examination: The samples can be photographed for automatic analysis of color, traits and other physical indicators.
 - ◆ Gastrointestinal Bleeding examination: Automatic qualitative detection and interpretation of feces occult blood, transferrin detection and other items using colloidal gold method.
 - ◆ Virology detection: Automatic qualitative detection and interpretation of rotavirus, adenovirus and other items using colloidal gold method.
 - ◆ Bacteriological examination: Automatic qualitative detection and interpretation of H. pylori using colloidal gold method.
 - ◆ Inflammatory Factor examination: Automatic qualitative detection and interpretation of calprotectin, lactoferrin and other items by colloidal gold method.
 - ◆ Various Items Combinations
 - * Microscopy+FOB
 - * Microscopy+FOB+TF
 - * Microscopy+FOB+TF+HP
 - * Microscopy+FOB+TF+Rotavirus+Adenovirus
 - * Microscopy+FOB+TF+Calprotectin+Lactoferrin
- Detection Method: General Test Mode and Ova and Parasites Special Test Mode. (Including Flotation method and Sedimentation method).



Ova and Parasites Special Test Mode

Floating Method & Sedimentation Method

This instrument is empowered with a special mode for the laboratory testing of Ova and Parasites in stool samples. This function works only through the patented technology of Zhuhai Keyu Biological Engineering Co., Ltd. (KEYU) and special sampling cups containing flotation solution.

The KEYU Analyzer will use the Flotation method and Sedimentation method for sample detection under the special test mode. Multiple sampling or single sampling is available for patients. After sampling with the sampling spoon, the samples can be stored in the flotation solution for up to 48 hours before submission for testing.

The instrument automatically rotates the sampling spoon in the sampling cup and mixes the samples well by centrifugation. After automatic filtration, the samples are in a static flotation state and the sampling needle aspirates the upper **flotation solution and sedimentation solution** for testing. Since there are no stool residues in the upper flotation solution, clear images can be captured. Moreover, because both Ova and Parasites are suspended in the upper flotation solution after centrifugation and mixing, the detection rate can be greatly boosted.

Compared with the conventional screening method, the detection rate of this technique is highly enhanced, and it can substitute the manual flotation method used in the special testing of Ova and Parasites in **CAP and ISO-15189** certified laboratories, consequently saving labor and improving efficiency.

In addition, the coincidence rate between the automatic centrifugal flotation technique adopted by this instrument and the manual flotation method can reach as high as more than 80%, and it has achieved excellent results in the Middle East, Europe, Africa, America, and South Asia.

Working Principle

- ◆ Physical Detection: Automatic photo retention of the sample trait map, automatic analysis through artificial intelligence; sample information is transmitted to the host by scanning the sample barcode with a built-in barcode scanner.
- ◆ Colloidal Gold Items Detection: The color image of the colloidal gold card is taken by the camera, and the rapid detection is carried out. Use machine vision technology to interpret the inspection results of each item.
- ◆ Morphological Detection: Through the microscope to enlarge the fecal formed elements and high-definition camera for automatic photo retention pictures, the use of digital imaging and artificial intelligence software technology, Automatic sieving of normal stool samples, positive sample transferred to auxiliary judgment.

Results need to be manually reviewed before sending the final report.

Product Performance Characteristics

Specimen Pre-processing

- ◆ High Degree of Automation. Automatically complete the process of injection, sweeping, science detection, dilution, mixing, aspiration, etc.
- ◆ Sample cups can be added without stopping the instrument.
- ◆ The sample location has a large capacity, which can load at least 50 samples and up to 130 samples with expansion plates at one time.
- ◆ Intelligent Dilution of Specimens by AI Algorithm, the industry leader.

New Special Sample Collection Cup

- ◆ Rotating threaded screw cap, puncture sampling, better airtightness, suitable for rail, airlock and other transportation methods.
- ◆ Limited quantitative sampling design, the industry initiative.
 - Function I : Avoid sampling too much, resulting in pictures too thick and too dark, to ensure picture clarity.
 - Function II : To avoid errors in results caused by too many stool sample that cannot be chromatographed when dripping samples to the colloidal gold card.
- ◆ Super large area over the longitudinal screen, organic components easier to filter, improve the detection rate.
- ◆ KU-CUP-002 Sample collection cups containing preservation solution. KU-CUP-004 Sample collection cups without preservation solution.





Microscopy Functions

- ◆ HD quartz flow counting cell, faster, true and efficient.
- ◆ 5 megapixel HD camera for clearer pictures.
- ◆ More pictures can be taken, up to 300 pictures can be set.
- ◆ Multi-layer scanning imaging technology, clearer and more three-dimensional cellular material, and in line with the clinical manual operation of the microscope fine-tuning habits.
- ◆ **Iodine Staining Function:** Under Iodine staining mode, Analyzer can automatically add iodine staining solution to stain the sample, improve the detection rate of special Ova and Parasite.

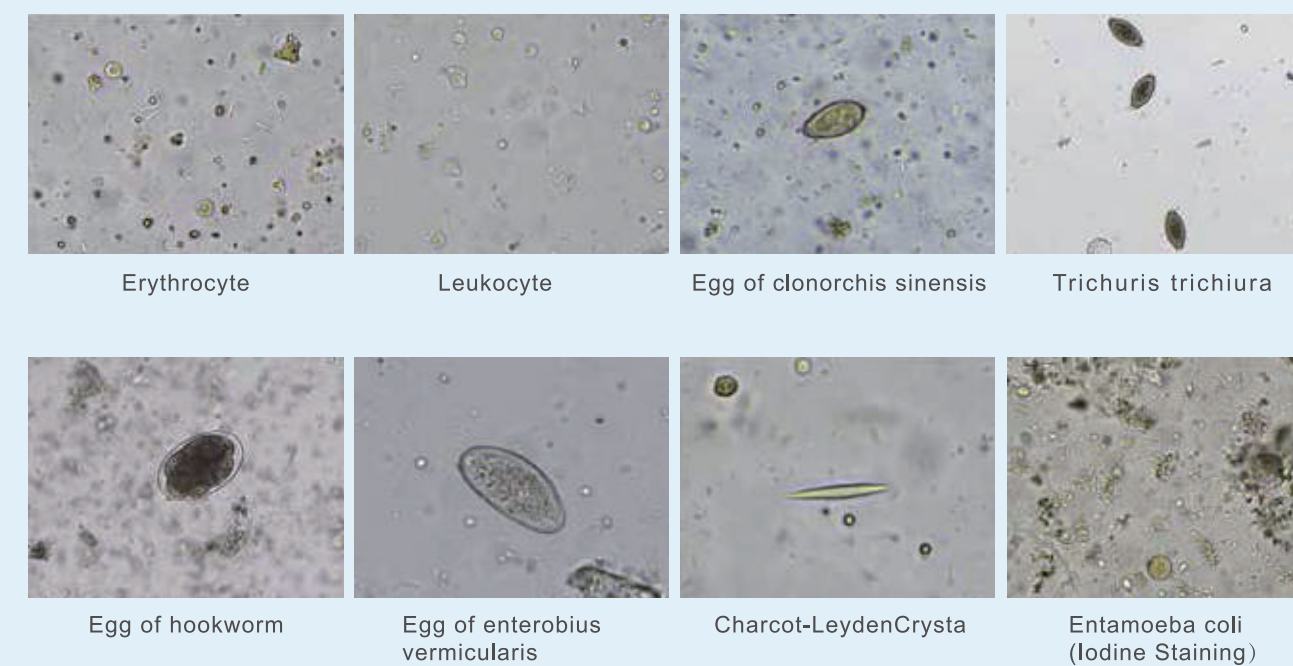
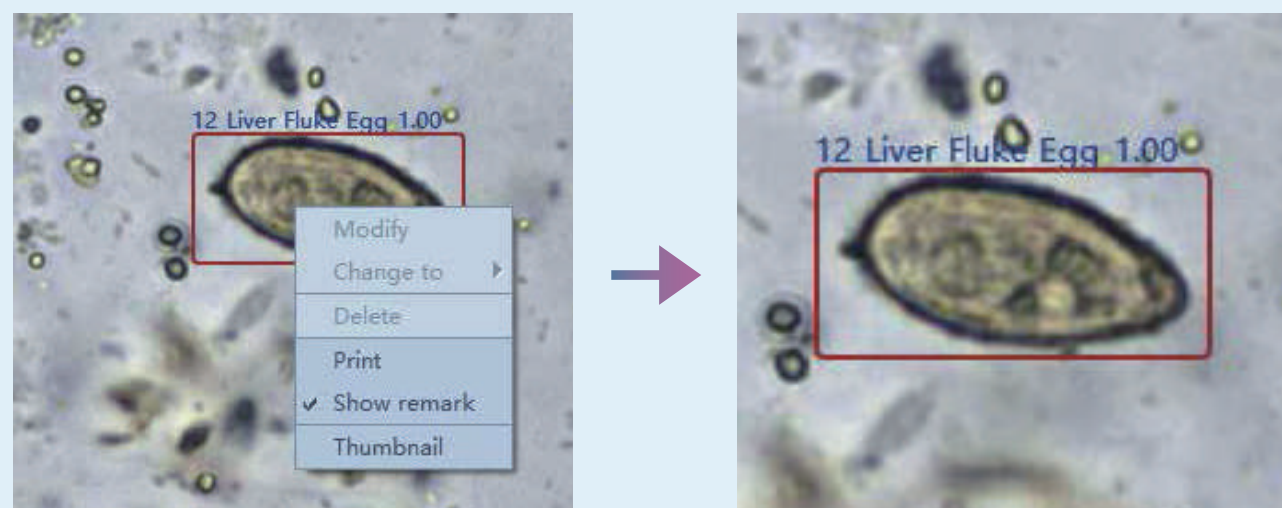


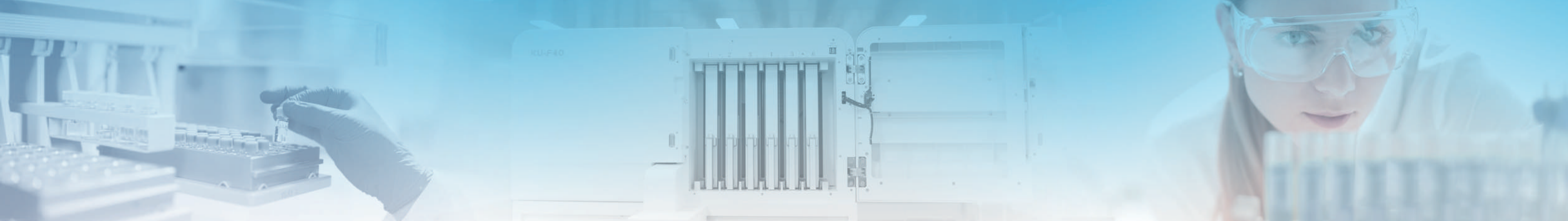
Set Test Items			
Test Item: <input checked="" type="checkbox"/> Formed Elements <input type="checkbox"/> Colloidal Gold			
Formed Elements Items		Colloidal Gold Items	
No.	Code	Name	Time
101	FOB	FOB	300
102	Rota	Rota	600
103	Ada	Ada	600
104	HP	HP	600
105	TF	TF	900
106	R/A	R/A	900
107	FC	FC	900

Immune Project Extension Functions

- ◆ Six reagent positions, can carry out more immune colloidal gold projects at the same time.
- ◆ Each reagent position can be loaded with 50 reagent cards, and a maximum of 300 reagent cards can be loaded at one time, which is efficient and convenient.
- ◆ Free combination of projects, in line with the actual needs of clinical departments, the industry's first.
- ◆ The reaction time of the project is set according to the actual clinical requirements of the project, avoiding false negatives or false positives, and the test results are more accurate, which is the first in the industry.

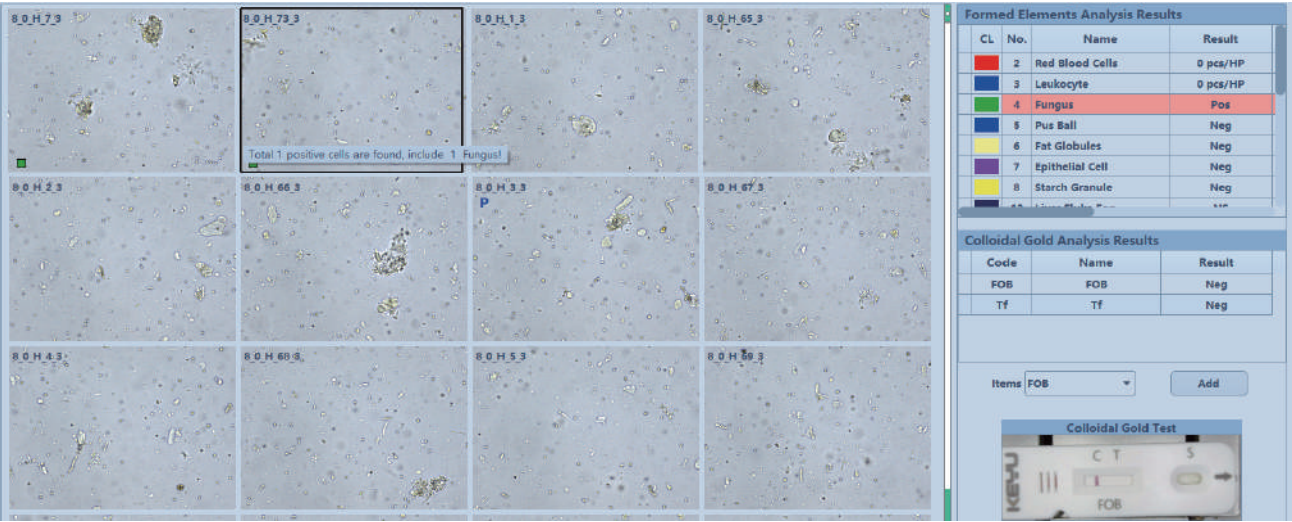
Auto-tracking function for tracking and shooting of insect eggs, industry leading. After the low magnification lens to shoot the eggs, the instrument locates it, and the high magnification lens to track this egg for shooting, the high magnification lens pictures to observe more clearly, the industry leader.





Software Functions

- ◆ New operation interface, simple and clear.
- ◆ The operation is more humane, easier to review. Automatic screening of pathological material images and priority sorting, photographed pathology has formed a score of pictures arranged in the front.
- ◆ The quality control interface of the software provides more comprehensive functions such as operation,recording, and query results.
- ◆ Automatic diagnosis of failure.
- ◆ Computer configuration and software are more advanced.
- ◆ Duplex bidirectional communication function, the instrument has a built-in code scanner, which can read the information directly by scanning the code independently.
- ◆ More powerful database, AI deep learning algorithm. Recognition is more accurate and easier.



KU-F40 Related Products Catalogs

Product Name	Specification	Purpose
Sample Diluent	20 L/bucket	Dilute and liquefy the sample to be tested.
Feces Analyzer Cleaning Solution	500mL/bucket	Clean the liquid circuit system of the feces analyzer.
Concentrated Cleaning Solution	100mL/bucket	Clean and daily maintain the liquid circuit systm of the feces analyzer.
Sample collection cup KU-CUP-004 (Without preservation solution)	1000 pcs/carton	Collect, transport and storage stool samples.
Sample collection cup KU-CUP-002 (With preservation solution)	600 pcs/carton	Collect, transport and storage stool samples.

Keyu Bio FOB Controls(Automatic Detection)

Product Name	Model		Specification	Number of tests	Packing specification	Purpose
FOB multi-level indefinite value controls	Level III-II	Negative controls/bottle Low value controls/bottle High value controls/bottle	3 mL/bottle 3 bottles/group	6 tests/group 60 tests/group	10 groups/box	For quality control

Keyu Bio Form Element Controls(Automatic Detection)

Product Name	Model and Name	Specification	Test No.	Purpose
Feces Fomed Element Controls	QC-I: Positive quality control for ascaris ova (fertilized)	1 ml/piece 1 piece/box	2 T/piece	For quality control
	QC-II: Positive quality control for whipworm eggs	1 ml/piece 1 piece/box	2 T/piece	
	QC-III: Positive quality control for liver fluke eggs	1 ml/piece 1 piece/box	2 T/piece	
	QC-IV: Quality control for red blood cell with certain concentration	(High value controls: 5ml/piece*2 Low value controls: 5ml/piece*2)/box	3 T/piece 6 T/box	
	QC-V: Positive control for Leukocyte	5 ml/piece 4 piece/box	3 T/piece 12 T/box	

Reagent Project

Name	Specification
Fecal Occult Blood Diagnostic Kit (Colloidal gold method)	20 TESTS/BAG
Transferrin Diagnostic Kit (Colloidal gold method)	20 TESTS/BAG
Rotavirus (RV) Group A Antigen Test Kit (Colloidal gold method)	20 TESTS/BAG
Rotavirus Group A/ Adenovirus Antigen 2in1 Test Kit (Colloidal gold method)	20 TESTS/BAG
H.Pylori Rapid Test Kit (Colloidal gold method)	20 TESTS/BAG
Calprotectin Test Kit (Colloidal gold method)	20 TESTS/BAG
Lactoferrin (LF) Test Kit (Colloidal Gold)	20 TESTS/BAG