AUS - 3600

Automatic Urine Analysis System

▸▸ Test items

Physical examination

Color, turbidity

Dry chemistry

Dry chemistry:(11/14 joint tests + 2 ratios):BLD
BIL,KET,GLU,PRO,NIT,LEU,pH,S-G,UBG,ASC,CRE,Ca,M
CA,ACR,UCa/Cr

Formed elements analysis

Red blood cell, leucocyte, cast, crystal, epithelial
cell, bacteria and other 31 formed elements.

▸▸ Test principle

Formed element analysis

Based on AI DeepCell engine and digital imaging, simulating the ophthalmoscopic recognition of doctors, AUS - 3600 can intelligently identify, classify , and automatically count the formed elements.

Dry chemistry test

With using reflection spectrophotometry principle to calculate the reflectivity,then identify the amount of biochemical elements in urine

▸▸ AI accurate reconigtion

| Red blood cell | Leucocyte | Hyaline cast | Cellular cast | Calcium oxalate crystal | Fungus |

▶▶ Product Features

Automatic operation during the whole process

"One press" operation can automatically complete urine sediment sampling, switch objective lens, positioning, focus and scan ; By simulating the action of the doctor ,the test of urine dry chemistry, formed elements, urine color and turbidity is fully automatic without manual intervention during the whole process. Three test modes are optional , dry chemistry mode / formed element mode / dry chemistry + formed element analysis modes can be switched and combined freely.

Three core technologies

i) AI DeepCell engine

Based on the patented AI DeepCell engine,Reetoo AUS - 3600 Automatic Urine Analysis System can get rid of the shackles of conventional image analysis and significantly increase the test accuracy of urinary formed elements to more than 90%. AI DeepCell engine will learn independently when using,so the recognition rate of complex formed elements will improve consistently.

ii) Formed elements recognition technology of mixed intelligent perception and convolutional neural network

The depth residual network with adaptive learning mechanism is used to obtain the characteristic parameters of formed elements, and the feature pyramid neural network is used to quantify the features in high and low dimensions, so as to further extract and learn the deep and shallow feature details. Finally, combined with classification convolutional neural network and regression convolutional neural network, the urine formed elements are automatically recognized, classified and counted.

iii) Multi-layer dynamic focus scanning

In order to solve the problem of some cell blurring due to cell layering in the same field of view, AUS - 3600 intelligently simulates the action of doctors rotating the fine focus spiral under the microscope, with the maximum number of three layers taken under each high-power field. At the same time, patented layered recognition technology is used to identify each layer through using a deep learning algorithm to intelligently identify the optimal image, so the recognition accuracy is greatly improved.

AI DeepCell engine

Formed elements recognition technology of mixed intelligent perception and convolutional neural network

Multi-layer dynamic focus scanning

High-resolution imaging

The 6.3 million pixel high-quality optical imaging system realizes automatic XY axis scanning ,automatic z-axis focusing, and automatic switching of 10X and 40X HD lenses
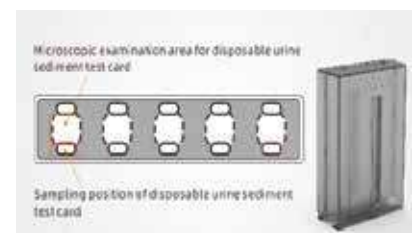

Rotary drum-shaped sampling device

The test strip is put into the test paper bin without considering the drection based on rotary drum-shaped sampling device, which intelligently identifies the test strip direction without manual intervention.

Disposable microscopic slide

The patented microscopic examination slide is formed by the superposition of carrier slide, sandwich slide and cover slide, which can support the simultaneous tests of 5 samples at a time, avoiding cross infection, ensuring biological safety and higher microscopic examination recognition rate.

Small and compact model

The world's smallest model provides solutions for microscopic inspection and dry chemistry test, which can save your experimental space and improve the detection efficiency of laboratory unit space.

Size: 670×615×530mm

G.W: about 74KG

NO.	Item	Feature
01	Test mode	Three test modes are optional, dry chemistry mode/formed elementmode/dry chemistry + formed element analysis mode (integrated analysis mode)
02	Testing speed	Dry chemistry mode:120T/H, formed element mode:100T/H, integratedanalysis mode:60T/H
03	Application scope	Physical tests for urine(color, turbidity), formed element analysis(red blood cell, leucocyte, cast, crystal, bacteria, and others, 37 species in total), dry chemistry analysis(11 /14 joint tests)
04	Sample size	A sample rack has 10 sample tube storage positions, and 5 rows ofsample racks can be loaded at most at one time
05	Strip hold capacity	≥100 pcs
06	Microscope chamber capacity	40 slides
07	Objective len	Low power lens: 10X; High power lens:40X
08	Low power lens (LP)	9 visual fields can be collected in 10X objective mode, which is mainlyused to test large cells such as cast and epithelial cell.
09	High power lens (HP)	In the 40X objective mode, 9 / 20 / 42 visual fields can be collected, and up to 3 tomograms can be taken in each image, which is mainly used to test small cells, like crystal
10	Carryover	Carry-over rate of formed elements ≤ 0.05%
11	Emergency room	Special emergency room is available, and emergency samples can betested on arrival
12	Sample processing	Automatically rotate the test tube to identify bar code information
13	Equipment parameter	Size: 670×615×530mm, G.W: about 74KG

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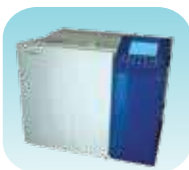
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