# FUS-100 Specification and Technical Parameter

## Item
- **RBC, WBC, WBCC, SQEP, NSE, HYAL, UNCC, BACT, SPRM, MUCS, CRYS, YST**

### Throughput
- 60 samples/h

### Sample Volume
- Minimum volume: 3mL non-centrifuged urine (Integrated system minimum volume: 5mL non-centrifuged urine); aspiration volume: about 1mL

### Test Principle
- Flow cytometry; High-speed, High-depth of Field Imaging Technique

### Workstation
- Quad-core processor, Windows operating system, Bi-directional to LIS/HIS.

### Data Storage
- Storage capacity $\geq 10,000$

### Connecting
- Available for connecting with DIRUI H-800 Automatic Urine Analyzer. Combined result printing.

### Printer
- Hp laser printer

## Equipment Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Technical requirement</th>
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</thead>
<tbody>
<tr>
<td>Maximum Relative Deviation of the Result Accuracy</td>
<td>$\leq 8.0%$</td>
</tr>
<tr>
<td>Repeatability of the Test Items</td>
<td>CV $\leq 10%$</td>
</tr>
<tr>
<td>Total Specificity (Automatic Identification)</td>
<td>$&gt; 80%$</td>
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<tr>
<td>Total Specificity (Manual Verification)</td>
<td>$&gt; 95%$</td>
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</tbody>
</table>

## Working Condition

<table>
<thead>
<tr>
<th>Supply Voltage</th>
<th>AC100V～240V,50/60 Hz</th>
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<tbody>
<tr>
<td>Environmental Temperature</td>
<td>10℃～30℃</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>20%～80%</td>
</tr>
<tr>
<td>Atmospheric Pressure</td>
<td>860hPa～1060hPa</td>
</tr>
</tbody>
</table>
Identify and classify by utilizing digital imaging technology, consistent with CLSI standards
- 810 frames of images for each sample
- Flow cytometry technology, without centrifugation and staining, contributes to cost-effective
- 12 categories of formed elements in urine can be identified accurately

Test Principle

Flow cytometry
Utilizing flat flow cytometry, the sample passes through the system encapsulated within a layer sheath fluid. The sheath flow technique ensures: 1. The sample is located at the ideal focal range of the microscope lens. 2. The sample is maintained as a single cell layer during the imaging process, ensuring there is no loss of data or inaccurate results due to cell overlap. 3. The sheath flow allows for sediment diffusion, effectively preventing formed element aggregation and further improving the formed element identification process.

High-speed, High-depth of Field Imaging Technique
Microscope imaging is illuminated by a high-speed flashing bulb (40 flashes per second). Illuminated sample images are captured by a high-definition CCD camera. 810 images of each sample are captured and analyzed by the sediment identification software.

Artificial Intelligence Identification Technique
Images of formed elements are processed by Dirui’s intelligent identification software. Once identified, element images are extracted and classified according to shape, texture, size, statistic, and frequency domain. Upon completion of identification the real images from the actual sample are provided to the user through an easy-to-use software interface. Real images for real results.