ES-4000
Electrolyte Analyzer
**Description**

- **7” Color touch screen, easy to operate**
- **High accurate and long life electrode and TCO2 sensor**
- **Programmable multi-format print-out**
- **Reagent pack, real time monitoring of reagent residual volume**
- **Up to 50,000 test results can be stored**
- **RS-232 port, supporting bar code reader and USB interface**
- **Sleep mode to reduce reagent consumption**
- **Option: Sample try**

**Parameter configuration**

<table>
<thead>
<tr>
<th>Model</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>K, Na, Cl, Li</td>
</tr>
<tr>
<td>H</td>
<td>K, Na, Cl, iCa, nCa, TCa, pH, Li</td>
</tr>
<tr>
<td>I</td>
<td>K, Na, Cl, iCa, nCa, TCa, pH, Li, TCO2, Ag</td>
</tr>
<tr>
<td>J</td>
<td>K, Na, Cl, Mg</td>
</tr>
<tr>
<td>K</td>
<td>K, Na, Cl, iCa, pH, Mg</td>
</tr>
<tr>
<td>L</td>
<td>K, Na, Cl, iCa, nCa, TCa, pH, Mg, TCO2, Ag</td>
</tr>
<tr>
<td>M</td>
<td>K, Na, Cl, iCa, nCa, TCa, pH, Li, Mg, TCO2, Ag</td>
</tr>
</tbody>
</table>
**Main Features**

*Human-machine interactive menu; Dynamic and real-time display of sample ID.*

*Liquid level automatic detection and alarming.*

*Real-time diagnostic of system working status.*

*Automatically detect and filter tiny bubbles to avoid clog and ensure accurate measurement.*

*Wave theory flushing method and direct flushing pipe method to avoid block and crossed contamination.*

*Automatic calibration and two-point correction to adjust slope and intercept; available to print-out QC graph and QC statistical parameters.*

*Power failure protection to avoid data losing. Data storage could be extended to more than 50000.*

*Supporting fuzzy query.*

*Supporting LIS software; upload data format is selectable; Supporting RTC Clock management.*

*Available to power off any time, therefore reduce reagent consumption, suitable for any hospitals.*

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**Specification**

Sample: serum, plasma, whole blood, cerebrospinal fluid and dilute urine.

Analysis Method: ion selective electrode (ISE)

Measuring speed: ≤ 25s

Sample volume: 60 - 300µl (item III to item XI)

Sample position: 39 positions (including 5 emergency and 2 QC)

Storage: up to 10000 test results

Printer: internal thermal printer

Interface: RS232 port

<table>
<thead>
<tr>
<th>Items</th>
<th>Measuring Range</th>
<th>Resolution</th>
<th>Measuring Precision (CV%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>K⁺</td>
<td>0.5 - 20.0 mmol/L</td>
<td>0.01 mmol/L</td>
<td>≤ 1.0%</td>
</tr>
<tr>
<td>Na⁺</td>
<td>15 - 200 mmol/L</td>
<td>0.1 mmol/L</td>
<td>≤ 1.0%</td>
</tr>
<tr>
<td>Cl⁻</td>
<td>15 - 200 mmol/L</td>
<td>0.1 mmol/L</td>
<td>≤ 1.0%</td>
</tr>
<tr>
<td>Ca²⁺</td>
<td>0.1 - 6.0 mmol/L</td>
<td>0.01 mmol/L</td>
<td>≤ 1.0%</td>
</tr>
<tr>
<td>Li⁺</td>
<td>0.1 - 5.0 mmol/L</td>
<td>0.01 mmol/L</td>
<td>≤ 2.0%</td>
</tr>
<tr>
<td>pH</td>
<td>4 - 9 pH</td>
<td>0.01 pH</td>
<td>≤ 0.5%</td>
</tr>
<tr>
<td>TCO₂</td>
<td>2.0 - 70.0 mmol/L</td>
<td>0.1 mmol/L</td>
<td>≤ 3.0%</td>
</tr>
</tbody>
</table>
Working environment

Temperature : 5 - 40°C  
Relative humidity : ≤ 80%  
Atmospheric pressure : 80 ~ 106 kPa  
Power supply : AC220V ± 22V, 50Hz ± 1Hz  
Power : ≤ 120W  
Dimension : 340mm x 200 x 380 mm  
Net weight : 6 kg

Optional items

Auto loader Sampler