

# USS-FX10001 Single-Channel Non-Contact Ultrasonic Homogenizer

## 01 INTENDED APPLICATIONS

|                                                                         |                                                                          |                                                                     |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------|
| <b>Microorganism lysis</b><br>Bacteria, viruses, spores and other cells | <b>DNA / protein extraction</b><br>Release of material from animal cells | <b>DNA / RNA shearing</b><br>Nucleic-acid and chromatin preparation |
| <b>Sample pretreatment</b><br>Sputum and gynecological samples          | <b>Emulsification</b><br>Oil-water mixtures                              | <b>Material dispersion</b><br>Small-volume material samples         |

## 02 TECHNICAL SPECIFICATIONS

|                                     |                                               |
|-------------------------------------|-----------------------------------------------|
| <b>Model</b>                        | USS-FX10001                                   |
| <b>Adapter input</b>                | 100-240 V AC, 50/60 Hz                        |
| <b>Adapter output</b>               | 12-24 V DC, adjustable                        |
| <b>Ultrasonic frequency / power</b> | 32 kHz / 20 W                                 |
| <b>Timer</b>                        | 1-999 s, adjustable                           |
| <b>Sample format</b>                | One 1.5-2.0 mL EP tube; minimum volume 0.5 mL |
| <b>Transducer</b>                   | Custom concave CTV33 PZT transducer           |
| <b>Dimensions</b>                   | 180 x 180 x 140 mm                            |

## 03 CONTROLS



Front view and controls

# Application Guide

**IMPORTANT** - These are starting times only. Adjust the time and voltage for the sample volume, concentration, viscosity, material and required result.

## 04 QUICK OPERATING PROCEDURE

|   |                    |                                                                          |
|---|--------------------|--------------------------------------------------------------------------|
| 1 | <b>Prepare</b>     | Fill and cap a 1.5-2.0 mL tube. Check that it is not cracked or leaking. |
| 2 | <b>Load</b>        | Place the tube upright in the port and close the cover.                  |
| 3 | <b>Set voltage</b> | Set the adapter to 12-24 V for the sample method.                        |
| 4 | <b>Set time</b>    | Use the time - / + buttons. Start with a short time.                     |
| 5 | <b>Run</b>         | Press START. Press STOP if the tube leaks, deforms or becomes too hot.   |
| 6 | <b>Finish</b>      | Wait until sonication stops, open the cover and remove the tube.         |

## 05 SUGGESTED PROCESSING TIMES

| Sample / process               | Starting time         | Note                                               |
|--------------------------------|-----------------------|----------------------------------------------------|
| Sputum lysis                   | About 10 s            | Check the sample before repeating.                 |
| Gynecological multiplex sample | About 10 s            | Adjust for the collection medium.                  |
| General cell disruption        | 30-45 s               | Usually completed within seconds.                  |
| Fungal disruption              | Several minutes total | Use short cycles and cool between cycles.          |
| Oil-water emulsification       | Test as needed        | Time depends on the oil-water ratio and viscosity. |
| Material dispersion            | Test as needed        | Time depends on the material and concentration.    |

## 06 VOLTAGE AND CYCLE SELECTION

### Set 12-24 V

Select the voltage for the sample. Higher voltage can cause more heating.

### Use short cycles

Check the result after each cycle. Cool the tube before repeating.

### Protect plastic tubes

Long sonication can heat or puncture an EP tube. Stop if the tube changes shape.

## 07 SUPPLIED ACCESSORIES



**Adjustable power adapter**  
Input: 100-240 V AC. Output: 12-24 V DC.



**Dedicated sample tubes (approx. 10)**  
1.5-2.0 mL tubes for stable positioning.

## 08 SAFETY, CLEANING AND TROUBLESHOOTING

### SAFETY

- Follow laboratory safety procedures.
- Keep the cover closed while the unit is running.
- Do not use a cracked, leaking or damaged tube.
- Keep the adapter dry. Do not open the adapter or unit.
- Disconnect power before cleaning or if heat, odor or noise is abnormal.

### CARE / QUICK CHECKS

**Will not start:** Check power, adapter output and that the timer is above 0 s.

**Weak result:** Check tube position and volume. Increase time or voltage slowly.

**Sample gets hot:** Use shorter cycles, cooling time or lower voltage.

**After use:** Disconnect power and wipe with a soft damp cloth. Do not pour liquid into the unit.