

# BLF22 Technical Note

## Sterilization & Care of Transonic® Laser Doppler Probes

The Probes may be sterilized by low temperature ( $\leq 65^{\circ}\text{C}$ ) ethylene oxide, STERRAD® or may be disinfected with 70% isopropyl alcohol.

### DO NOT STEAM STERILIZE!

The Probe cable contains very fine glass fibers and must be handled with care.

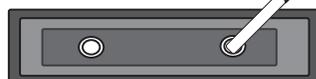
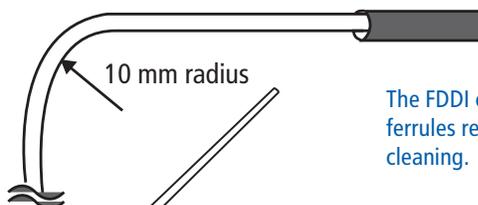
- Do not disconnect the Probe from the Monitor by pulling on the cable.
- Do not bend the Probe cable to a radius less than 10 mm.

After use, wash the Probe tip and cable thoroughly in warm, soapy water. Debris on the ends of the optical fibers can adversely affect readings. Remove any visible foreign material with a soft-bristled brush or cloth. The FDDI connector should not be immersed in water but may be surface washed as needed with alcohol wipes (70% isopropyl). Use a lint free swab on the ends of the optical fibers (the two white ceramic ferrules within the FDDI connector) to remove any accumulated matter. The Probe head and cable may be rinsed and wiped in 70% isopropyl alcohol before sterilization.

When not in use:

- Cover the Monitor's Probe port with the attached cap
- Cover the Probe connector with the attached cap

The Laser Doppler Probe cable should not be bent to a radius less than 10 mm.



Use a silk swab to clean the optical ports within the Monitor's Probe connector.

### MONITOR CARE

While the BLF21 & BLF22 are largely maintenance free, the Probe connections are sensitive to lint, dirt or other debris which can block the light path. Prior to each monitoring session, clean each of the two optical ports within the Monitor's Probe connector. Use the silk swab that is supplied with each Probe. Do not use cotton swabs or other lint producing cleaning materials. Moisten the swab with 70% isopropyl alcohol, insert into each port and gently rotate. The swab can be cleaned in 70% isopropyl alcohol and saved for future use.

### TROUBLESHOOTING LOW LIGHT

If the instrument should report zero flow and show too low received light (Red "L"), the Probe may have come loose from the tissue, it may be improperly connected to the Monitor, it may be dirty or one or both fibers may be broken. Check for good connections to the tissue and Monitor first. Next, clean the Probe tip as described above. If received light is still too low, clean the Monitor's Probe ports and the Probe's connector. If received light is still too low, try a spare Probe and contact your Transonic® representative for assistance.

The FDDI connector ferrules requires careful cleaning.



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## Probe Sterilization Using STERRAD®

### STERRAD® STERILIZATION

Transonic® Laser Doppler Probes are sterilizable with ethylene oxide (EO) or with STERRAD®, a rapid, low temperature, low moisture technology for instrument sterilization. Total process time is a little over one hour. The process requires no aeration, and there are no toxic residues or emissions.

Not to be confused with STERIS (a pressurized water sterilization system), STERRAD® was developed by Advanced Sterilization Products, a division of Johnson & Johnson. STERRAD® sterilization is particularly suited to the sterilization of heat and moisture sensitive instruments such as Transonic® Laser Doppler Probes since local temperatures do not exceed 50°C, and sterilization occurs in a low moisture environment. It offers a critical sterilization alternative to ethylene oxide for all Probes.

### TECHNOLOGY

STERRAD® technology utilizes a synergism between hydrogen peroxide and low temperature gas plasma for rapid inactivation of microorganisms and the removal of harmful residues. The patented system represents the first plasma sterilization technology to be successfully commercialized as a general purpose sterilization system.

### STERILIZATION PROCESS

- Prepare Transonic® Laser Doppler Probes for sterilization with STERRAD®: clean the Probes and wrap in commercially available, nonwoven polypropylene CSR wraps.
- The Probes are placed in the sterilization chamber; the chamber is closed, and a vacuum is drawn.
- An aqueous solution of hydrogen peroxide is injected and vaporized into the chamber so that the vapor surrounds the instruments.
- The pressure of the sterilization chamber is reduced and a low temperature gas plasma is generated by applying radio frequency energy to create an electrical field. This generates a gaseous plasma of ions, electrons and neutral atomic particles.
- In the plasma, the hydrogen peroxide vapor is broken apart into reactive species that collide/ react with and kill microorganisms. After the activated components react with the organisms or with each other, they lose their high energy and recombine to form oxygen, water, and other nontoxic by-products.
- At the completion of the process the radio frequency energy is turned off, the vacuum is released, and the chamber is returned to atmospheric pressure.
- The Probes are then ready for immediate use.



Transonic Systems Inc. is a global manufacturer of innovative biomedical measurement equipment. Founded in 1983, Transonic sells "gold standard" transit-time ultrasound flowmeters and monitors for surgical, hemodialysis, pediatric critical care, perfusion, interventional radiology and research applications. In addition, Transonic provides pressure and pressure volume systems, laser Doppler flowmeters and telemetry systems.

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