



UNIVERSAL PRECAUTIONS

Universal Precautions should be followed on all specimen samples, regardless of whether a sample is known to contain an infectious agent. Laboratories handling specimen samples are advised to comply with applicable parts of the following governmental and clinical standards, or their equivalent in the country of use:

- Centers for Disease Control (CDC), Universal Precautions for Prevention of Transmission of HIV and Other Bloodborne Infections, published 1987, updated 1996
- Clinical and Laboratory Standards Institute (CLSI), GP17-A2 Clinical Laboratory Safety; Approved Guideline - Second Edition, published 2004, ISBN 1-56238-530-5
- Clinical and Laboratory Standards Institute (CLSI), M29-A3 Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guideline, Third Edition, published 2005, ISBN 1-56238-5674
- Occupational Safety and Health Administration (OSHA), 29 CFR 1910.1030 Bloodborne Pathogens
- International Standards Organization (ISO) 15190:2003, Medical Laboratories – Requirements for Safety

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Warnings

For safety of operating personnel:

Make sure that the equipment is properly grounded. DO NOT operate if it is not properly grounded.

The unit is equipped with a power plug appropriate for the destination country. DO NOT, under any circumstances, remove the grounding prong from the power cord.

DO NOT attempt to operate the equipment with the safety cover in the OPEN position or without water in the acoustic assembly; the acoustic system will not work. If there is any indication that the Safety System is not functioning properly, DO NOT operate the equipment and contact Covaris immediately.

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

To prevent damage to the equipment:

The instruments are designed to operate in ambient laboratory conditions e.g., 19°C to 25°C (66°F to 77°F). DO NOT operate the instrument in a cold room environment; the system is designed to operate with a water bath and includes a solid state heater/chiller apparatus to control sample temperature.

NEVER run a method without water in the acoustic assembly; this could damage the transducer. The instrument is equipped with a water level sensor to protect the transducer. The system will not allow the acoustic wave treatment to start unless an adequate volume of water is detected.

AFA-grade water should be used to fill the water bath.

Empty the water bath and wipe it dry EVERY day with a lint-free cloth. DO NOT leave water in the water bath for an extended time as there is no water filtration or water cleaning system with the apparatus.

Do not employ isopropyl alcohol, ammonia-based or abrasive cleaners on the acoustic assembly, as these will damage the acrylic or transducer surfaces.

The Tube Holder should be stored in a dry place or in the M220 Accessories Storage Station when not in use.

Establish a standard of operation and periodically test equipment, as described in Appendix A of this manual.

DO NOT load third party hardware, software, or parts onto the system without consulting with Covaris.

SYSTEM SPECIFICATIONS

Model	M220
Treatment System:	Bench-top; high intensity acoustic transducer, temperature monitoring and controlling device, water bath with sample holder and safety enclosure
Treatment Power:	75 Watts Peak Incident Power 20 Watts Average Incident Power
Dimensions:	12" W x 17" D x 10" H (30cm x 43cm x 25cm)
Weight:	approximately 22 lbs. (10 Kg) (without computer)
Power Requirements:	100-240 VAC 500 VA, 50-60Hz
Ambient Temp. Range:	19°C to 25°C (66°F to 77°F)
Ambient Humidity Range:	30% to 70%
Regulatory Labeling:	CE, ETL Mark (for Product Safety), WEEE
Safety:	Complies with Low Voltage Directive 2006/95/EC. Certified to IEC/EN/ANSI/UL 61010-1:2004 and CAN/CSA C22.2 No. 61010-1:2004, 2nd Edition "Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use, Part 1: General Requirements"
EMC:	Complies with Class A Industrial/Scientific/Medical (ISM) equipment under EN 61326-1:2005, EN 61000-3-2:2004 and EN 61000-3-3:1995 for EU EMC Directive 2004/108/EC. Also FCC Part 15 Class A radio emissions requirements for the USA and ICES-003 Class A for Industry Canada.
Water Bath:	AFA-grade Water (Covaris pn 520101 or Highly Purified Water at least ASTM Type III or ISO grade 3)
Temperature:	Programmable +6.0 °C to +40.0 °C
Temperature Limits:	Soft limits +4.0 °C and +52.0 °C, Hard limits +2.0 °C and +42.0 °C
Computer:	Notebook computer supplied by Covaris.
Operating System:	Microsoft Windows 7
Application Software:	Covaris SonoLab 7
Data Input:	Keyboard, mouse
Chiller:	Solid state chiller for heating and cooling (built in)
Power:	0 - 48 Watts

