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Corning® LSE™ Digital Dry Bath Heater

Instruction Manual

CORNING

Model Nos.

6875-SB, 6885-DB, 6895-FB

6876-SB, 6886-DB, 6896-FB

6877-SB, 6887-DB, 6897-FB

6878-SB, 6888-DB, 6898-FB



About This Manual

This manual is designed to assist you in the optimal usage of your Corning LSE Digital Dry Bath Heater. The manual is available in English, French, German, Italian, Portuguese, and Spanish at www.corning.com/lifesciences.



Corning® LSE™ Digital Dry Bath Heaters – Single-, Dual-, and Four-block models

Instruction Manual

Corning® LSE™ Digital Dry Bath Heater

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Intended Use

Corning LSE Digital Dry Bath Heaters provide comprehensive designs for a wide variety of life science research applications. Excellent temperature control figures can deliver accurate and reliable experimental results from one experiment to another.

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

1.0 General Specifications

Temperature range	Ambient +5°C to 150°C
Temperature display resolution	0.1°C 4 digit LED
Temperature uniformity	±0.2°C (at 37°C in block)
Temperature accuracy	±0.3°C
Temperature controller	Microprocessor – user calibratable
Timer	1 to 99 hours 59 minutes or continuous in 1 minute increments
Operating altitude	Not to exceed 2,000 meters
Control	PI Microprocessor controller
I/O	USB unidirectional
Dimensions (W x D x H)	Single and dual block models: 8.3 x 12.4 x 4.7 in. (21 x 29 x 12 cm) Four block models: 8.3 x 16.3 x 4.7 in. (21 x 39 x 12 cm)
Weight	Single and dual block models: 7.0 lbs. (3.2 kg) Four block models: 9.6 lbs. (4.4 kg)
Electrical requirements	6875-SB: 115V, 50/60Hz, 1 A, fuse 1.6 AT 6876-SB: 230V, 50/60Hz, 0.5 A, fuse 1AT 6877-SB: 230V, 50/60Hz, 0.5 A, fuse 1AT (UK plug) 6878-SB: 100V, 50/60Hz, 1 A, fuse 1.6 AT 6885-DB: 115V, 50/60Hz, 1.9A, fuse 3.15AT 6886-DB: 230V, 50/60Hz, 0.95 A, fuse 1.6AT 6887-DB: 230V, 50/60Hz, 0.95 A, fuse 1.6AT (UK plug) 6888-DB: 100V, 50/60Hz, 1.9A, fuse 3.15AT 6895-FB: 115V, 50/60Hz, 3.73 A, fuse 5 AT 6896-FB: 230V, 50/60Hz, 1.86 A, fuse 3.15 AT 6897-FB: 230V, 50/60Hz, 1.86 A, fuse 3.15 (UK plug) 6898-FB: 100V, 50/60Hz, 3.73 A, fuse 5 AT

2.0 Safety Precautions



Do not use this product in an explosive environment.

Do not use in the presence of flammable or combustible material.

Do not heat substances that react violently when heated.

Do not touch block when hot or when unit is heating. Use block lifter.

Do not touch area around block or block well when unit is hot.

Do not spill liquids into the well area or into the unit side vent holes.

Connect unit only to a properly grounded outlet.



Caution: HOT surfaces that can burn or cause injury.

Use of this product in any manner not specified by the manufacturer or modification of the product may cause injury and/or may void the warranty.

3.0 Installation

Upon unpacking the Corning® LSE™ Digital Dry Bath Heater, inspect for damage. Shipping damage is the responsibility of the carrier. Inspect that the following are present: instruction manual, data logger software, line cord, block lifter, lid, USB cable.

Select a location that is dry and not subject to drafts or moving air from heating or air conditioning vents or air blown by other equipment. Place the unit on a flat, preferably non-flammable, surface. Allow sufficient room around the unit for access and cooling (six inches minimum on all sides is suggested). Plug the unit into a properly grounded outlet. Using the lifter, insert the block(s) into the well. The unit is now ready for use.

4.0 Controls

On/Off rocker switch, located on the back of the unit: Turns primary power on and off.

Start/Stop LED, red: Used to activate or stop the unit. Illuminates when unit is in heating mode; off in temperature set mode.

Time LED, green: Used to set or select Time mode. This LED light indicates running Time mode.

Heating LED, red: Illuminates when unit is in Heating mode and unit is applying heat to the block. This LED is on continuously during heat-up and cycles on and off when the unit is at the set temperature.

Temperature Up arrow key: Raises set temperature when unit is in Set mode.

Temperature Down arrow key: Lowers set temperature when unit is in Set mode

Timer Up arrow key: Raises set time when unit is in Set mode.

Timer Down arrow key: Lowers set time when unit is in Set mode.



5.0 Operation

1. Place the Corning® LSE™ Digital Dry Bath Heater on a sturdy and level surface in a safe, dry place away from laboratory traffic.
2. Ensure the AC power switch is **Off**, then plug the three-pronged power cord into a grounded three-prong AC outlet of the appropriate voltage (115V or 220V as indicated on the rating sticker near the AC cord on the back of the unit).
3. Select suitable module block(s) or appropriate water volume and put the block(s) into the Corning LSE Digital Dry Bath Heater.
4. Turn the AC power **On**.
5. Run temperature calibration procedure when using the instrument for the first time.
6. Press the **Temperature Up** or **Down** keys to adjust to the desired temperature.
7. Press the **Timer Up** or **Down** keys to adjust to the desired time.
8. Press the **Start/Stop** key to start heating.
9. If you need to reset the timer during heating, press the **Start/Stop** key to deactivate heating.
10. Press the **Start/Stop** key again to stop the unit.
11. If the lid is to be used, align the shaded area on the dry bath surface with the magnet of the lid to attach it to the housing. To remove the lid, press one hand firmly on the housing and use the other hand to pull the lid off. To use the lid, the tube should not exceed 25 mm above the heating block.

6.0 Calibration

Calibration allows the unit temperature display to be adjusted or matched to the temperature of a single sample or to a calibrated thermometer, thereby making an independent temperature measure of the block.

Corning LSE Digital Dry Bath Heaters are calibrated at the factory at 40°C using a standard small hole-pattern block. If you are using a block with a high heat loss rate, such as a block with large holes or a platform style block, you may choose to recalibrate the unit to your specific application.

Also, if you are using very loose or odd shaped vessels, the calibration function can help you match the display temperature to your actual sample temperature.

To calibrate the unit for a given block or sample, first turn the unit off using the **On/Off** switch. Then place a thermometer of known accuracy* into the block thermometer hole or a thermocouple or other sensor into your sample. Make sure there is a good fit between the thermometer and the block or good contact between any sensor and sample or sensor and block.

To calibrate the block or sample to the display:

1. Press and hold the **Start/Stop** key, then simultaneously power up the unit with the **On/Off** switch.
2. You should hear a “DU-DU-DU” sound from the dry bath and the display will have one segment flashing on the left and will show a set temperature, and the right will show adjt.
3. Use the **Temperature Up** and **Down** arrow keys to set the desired temperature at which you want to calibrate the unit. Then press the **Start** key.
4. Allow a minimum of 10 minutes (maximum 20 minutes) for the unit to heat up to your set temperature and to equilibrate at this temperature. The entire LED display will start flashing when equilibration is reached.
5. After the entire display has started flashing, read the thermometer (or sensor meter) and use the **Up** and **Down** arrow keys to adjust the display to the thermometer or sensor reading. Then press the **Start/Stop** key.
6. The unit will then begin to automatically adjust its operating temperature to your original set point with the recalibration factor included. Allow sufficient time for the unit to re-equilibrate, then compare the thermometer or sensor reading to the calibrated display again. They should closely match. If not, repeat the calibration procedure.

7.0 USB Interface

Corning® LSE™ Digital Dry Bath Heaters have a USB unidirectional data port. A cable and software are available which allow a user to use a desktop or laptop computer to record and/or print a record of the temperature profile produced by the dry bath.

*Thermometers used for calibration purposes should have a written calibration certificate and be traceable back to NIST or other certified body. General lab thermometers are often not accurate enough for calibration work.

8.0 Troubleshooting Guide

Problem	Solution
Display/LEDs do not light up	1. Check power cord and outlet. 2. Check On/Off switch. 3. Check fuse. 4. Contact Corning Life Sciences for service.
Unit not heating	1. Is set point below room temperature? 2. Is “Start” LED illuminated? 3. Press “Start” key. 4. Contact Corning Life Sciences for service.
Unit display overshoots	1. Normal operation. Display set point in heat-up overshoots on initial heat-up but block and sample do not overshoot (see Operation section).
Block or sample temperature not the same as display temperature	1. Is unit in heating mode? 2. Is unit sitting in a drafty area? 3. Check accuracy of thermometer. 4. Is thermometer making good contact? 5. Follow calibration procedure.

9.0 Service and Repair Information

If you have a question about the Corning® LSE™ Digital Dry Bath Heater or have a service inquiry, contact Corning Customer Service immediately at:

- ▶ 1.800.492.1110 (for toll-free calling within the U.S. and Canada)
- ▶ 1.978.442.2200 (outside the U.S.), or
- ▶ Contact your local Corning support office listed in the back of this manual.

Before returning any unit for service, a Return Authorization (RA) number must first be obtained. Equipment sent in without prior authorization will be returned at the customer's expense. When returning a unit to Corning for service, it should be sent in the original packaging. If this is not possible, be sure that the unit is sufficiently packed. Any damage resulting from improper packaging is the responsibility of the customer. A written explanation should accompany the unit along with the RA number.

10.0 Cleaning and Maintenance

Make sure that the Corning® LSE™ Digital Dry Bath Heater and block are cool and the power cord is disconnected before performing any cleaning or maintenance. Repair or maintenance should only be performed by an authorized service technician.

The dry bath may be cleaned with a moist cloth containing a mild soap solution. Do not immerse the dry bath in water or any liquid.

The blocks may also be cleaned in a mild soapy solution. Be sure that all items have thoroughly dried before attempting to connect the cord or use the unit.

Spills: In the event liquid is accidentally spilled into the bath or well area, disconnect the plug from the outlet and turn the unit upside down to minimize liquid contact with the internal components. Remove the bottom cover and inspect to assure liquid has not contacted heater elements, electronic controls, or connectors. Have a qualified service technician clean the unit and replace any damaged parts.

11.0 Equipment Disposal – European Regulations



According to Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE), the Corning LSE Digital Dry Bath Heater is marked with the crossed-out wheeled bin and must not be disposed of with domestic waste.

Consequently, the buyer shall follow the instructions for reuse and recycling of waste electronic and electrical equipment (WEEE) provided with the products and available at the following link: www.corning.com/weee

12.0 Appendix: Symbols and Conventions

The following chart is an illustrated glossary of the symbols that may be used in this manual or on the product.



CAUTION: This symbol refers you to important operating and maintenance (servicing) instructions within the product Instruction Manual. Failure to heed this information may present a risk of damage or injury to persons or equipment.



ATTENTION: Hot Surface.



Indicates disposal instruction.

DO NOT throw this unit into a municipal trash bin when this unit has reached the end of its lifetime. To ensure utmost protection of the global environment and minimize pollution, please recycle this unit.

13.0 Limited Warranty

Corning Incorporated (Corning) warrants that this product will be free from defects in material and workmanship for a period of three (3) years from date of purchase. This warranty is valid only if the product is used for its intended purpose and within the guidelines specified in the supplied instruction manual.

Should this product require service, contact Corning Customer Service department at 1.800.492.1110 or 978.492.1110 to receive a return authorization number and shipping instructions. Products received without proper authorization will be returned. All items returned for service should be sent postage prepaid in the original packaging or other suitable carton, and padded to avoid damage. Corning will not be responsible for damage incurred by improper packaging. Corning may elect for onsite service for larger equipment.

This warranty does not cover damage caused by accident, neglect, misuse, improper service, natural forces, or other causes not arising from defects in original material or workmanship. This warranty does not cover motor brushes, fuses, light bulbs, batteries, or damage to paint or finish. Claims for transit damage should be filed with the transportation carrier.

ALL WARRANTIES INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION OF 36 MONTHS FROM THE ORIGINAL DATE OF PURCHASE.

CORNING'S SOLE OBLIGATION UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT, AT CORNING'S DISCRETION, OF A DEFECTIVE PRODUCT. CORNING IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGE, COMMERCIAL LOSS, OR ANY OTHER DAMAGES RESULTING FROM THE USE OF THIS PRODUCT.

Some states do not allow limitation on the length of implied warranties or the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights. You may have other rights which vary from state to state.

No individual may accept for, or on behalf of Corning, any other obligation of liability, or extend the period of this warranty.

For your reference, make a note of the model and serial number, date of purchase, and supplier here.

Model No. _____ Serial No. _____

Date Purchased _____

Supplier _____

[illegible]

Register your product warranty online at
www.corning.com/lifesciences/warranty.

For more specific information on claims, visit the Certificates page at **www.corning.com/lifesciences**.

Warranty/Disclaimer: Unless otherwise specified, all products are for research use only. Not intended for use in diagnostic or therapeutic procedures. Corning Life Sciences makes no claims regarding the performance of these products for clinical or diagnostic applications.

For additional product or technical information, visit **www.corning.com/lifesciences** or call 800.492.1110. Outside the United States, call +1.978.442.2200 or contact your local Corning sales office.

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