

# Accublock Digital Dry Bath User Manual

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**D1301      D1301-230V**  
**D1302      D1302-230V**  
**D1304      D1304-230V**



***Intended use:***

Labnet International's single and dual Dry Bath Incubators 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.

***About This Manual***

This manual is designed to assist you in the optimal usage of your AccuBlock Digital Dry Bath. The manual is available in English, French, German, Italian, Portuguese, and Spanish on our website at: [www.labnetinternational.com](http://www.labnetinternational.com)

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***If the digital dry bath is used in a manner not specified by the manufacturer, the protection provided by the centrifuge may be impaired.***

# 1.0 Safety Precautions

Before using the **AccuBlock Digital Dry Bath** for the first time, please read this entire manual carefully. To guarantee problem free, safe operation, it is essential to observe the following points:

## 1.1 Operation 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 spill liquids into the well area or into the unit side vent holes
- Connect unit only to a properly grounded outlet



**Warning!** Do not touch area around block or block well when unit is hot. This can result in bodily injury, including burns.

**Warning!** Modification of this product or use of the product in any manner not specified by this instruction manual may cause injury and/or may void the warranty.

## 2.0 General Specifications

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

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 99hours59minutes 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)	D1301/D1302 8.3 x 11.4 x 4.7 in./21 x29 x 12cm D1304 8.3 x 15.3 x4.7 in./21 x 39 x 12 cm
Weight	D1301/D1302 7.0 lbs./3.2 kg D1304 9.6 lbs./4.4 kg

### 2.0 Electrical requirements:

D1301	115V	50/60Hz, 1 A, Fuse 1.6 AT
D1301-230V	230V	50/60Hz, 0.5 A, Fuse 1AT
D1302	115V	50/60Hz, 1.9A, Fuse 3.15AT
D1302-230V	230V	50/60Hz, 0.95 A, Fuse 1.6AT
D1304	115V	50/60Hz, 3.73 A, Fuse 5 AT
D1304-230V	230V	50/60Hz, 1.86 A, Fuse 3.15 AT

## 3.0 Getting Started

### 3.1 Unpacking

Upon unpacking the Dry Bath, inspect for damages. Shipping damage is the responsibility of the carrier.

Open the [AccuBlock Dry Bath](#) package and confirm that all items are included:

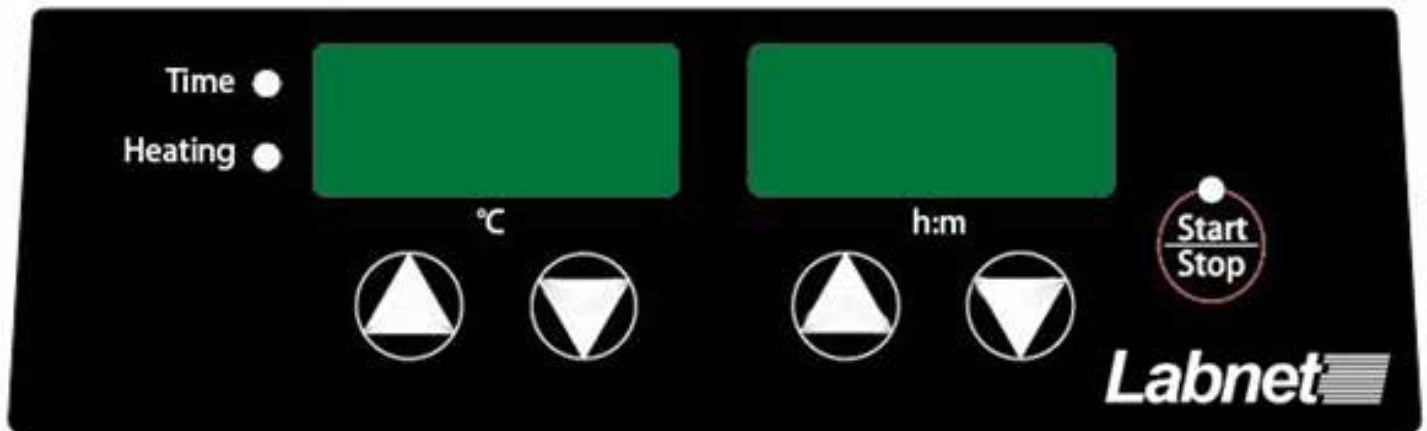
- **Dry Bath unit**
- **Data logger software**
- **Line cord**
- **Block Lifter**
- **Lid**
- **USB cable**

If there are any items missing, damaged, or not according to your order, please contact your distributor or sales representative immediately.

### 3.2 Initial Operation

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



### 4.1 Keypad Function

- **On/Off rocker switch.** Located on back of 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
- **“Heating” LED, red.** Illuminates when unit is in heating mode and unit is actually apply heat to the block. This LED is on continuously during heat-up and cycles and off when the unit is at set temperature.
- **“Time” LED, green -** Used to set or select time mode. This LED light indicates running Time Mode.
- **“TEMP-UP” arrow key.** Raises set temperature when unit is in set mode.
- **“TEMP-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.
- **To enter continous mode,** set the time to 00:00, hold the “Timer-DOWN” arrow key while pressing the “Start/Stop” key. Unit will display “Hold”.

## 5.0 Operation

1. Place Labnet Dry Bath Incubator on a sturdy and level surface in a safe, dry place, away from laboratory traffic.
2. Ensure that 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 it / them into the Labnet Dry Bath Incubator
4. Turn the AC power ON.
5. Run temperature calibration procedure when using the instrument for the first time.
6. Press  or  Key to adjust to the desired temperature.
7. Press  or  Key to adjust to the desired timer.
8. Press the  Key to start heating.
9. If to reset timer is required during heating, press  Key to deactivate heating.
10. Press  Key again to stop the unit.
11. If lid is to be used, aim the shaded area on the dry bath surface with the magnet of the lid and it will be attached to the housing. In order to remove the lid, press one hand firmly on the housing with another hand pulling the lid off. To use the lid, the tube should not be exceeding 25mm than 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 making an independent temperature measure of the block.

The Digital Dry Baths are calibrated at the factory at 37, 60, 90, 120, 140°C using a standard 20 x 13mm heating 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, use the following procedure:**

1. Press and hold the START/STOP key then simultaneously power up the unit with the ON/OFF switch.
2. You should hear a continuous beeping sound from the dry bath, release the button. The left display will show a set temperature and the right display will show Adjt.
3. Use the 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 time (up to 30 minutes) for the unit to heat up to your set temperature and to equilibrate at this temperature. Once the unit reaches equilibrium, the display will show the set temp, (e.g. setting 95 degrees, unit will show 95 when hitting equilibrium)
5. After the temperature 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 (not the difference). The display should then show the same temperature as the external thermometer. 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 re-calibration factor included. Allow sufficient time for the unit to re-equilibrate and then again compare the thermometer or sensor reading to the calibrated display. They should closely match. If not, repeat the calibration procedure.
7. Upon completion of the calibration procedure, turn unit off and on again to re-set desired time or continuous time.

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



## 7.0 USB Interface

The Digital Dry Baths have a USB unidirectional data port. A software and cable are available which allow a user to use a desk top or lap top computer to record and/or print a record of the temperature profile produced by the dry bath.

## 8.0 Troubleshooting Guide/Service

Problem Explanation	Solution
a) Display/LEDs do not light up	<ol style="list-style-type: none"> <li>1. Check power cord &amp; outlet</li> <li>2. Check ON/OFF switch</li> <li>3. Check fuse</li> <li>4. Call service</li> </ol>
b) Unit not heating	<ol style="list-style-type: none"> <li>1. Is set point below room temperature</li> <li>2. Is "START" LED illuminated</li> <li>3. Press "START" key</li> <li>4. Call service</li> </ol>
c) Unit display overshoots	Normal operation. Display set point in heat-up overshoots on initial heat-up but block and sample do not overshoot. See Operation section of this manual
d) Block or Sample temp not same as display temp	<ol style="list-style-type: none"> <li>1. Is unit in heating mode</li> <li>2. Is unit sitting in draft</li> <li>3. Check accuracy of thermometer</li> <li>4. Is thermometer making good contact</li> <li>5. Follow calibration procedure</li> </ol>
e) Factory Reset	User can long press two temperature buttons for factory reset; unit will display message once completed (if reset successfully, then display shows the version no back to normal heating mode and unit will reset to all calibration points set at the factory
f) Limit on Temperature Calibration	During temp calibration, user can only input $\pm 7^{\circ}\text{C}$ of the setting temp; the temp range for calibration is $0\sim 150^{\circ}\text{C}$ For example: During temp calibration, If user inputs the calibration at 100 degrees, then user cannot input the setting temp above $107^{\circ}$ or below $93^{\circ}$ .
g) Error 1	Displays when incorrect temperature calibration is entered
h) Error 2	In normal heating mode, if the stand-alone temp sensor identifies that the actual temp is $10^{\circ}$ higher than set temperature, the unit will display this error.
i) Error 3	If the set temp is lower than the chamber temp by $10^{\circ}$ , the unit will not function and display this error message.
j) Error 4	If the unit does not reach set temp in 2 hours, the unit will stop heating and display this error message.

## 8.1 Service

Should you have a question about the operation of the [Digital Dry Bath](#) or if service is required, contact Corning at 800-492-1110. Do not send in a unit for service without first calling to obtain a repair authorization number. Should the unit require return to Corning for service, it should be properly packed to avoid damage. Any damage resulting from improper packaging shall be the responsibility of the user.

## 9.0 Cleaning and Maintenance

*Make sure that the dry bath 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 qualified service technician clean the unit and replace any damaged parts.

## Appendix A

### 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), Prism R Refrigerated Centrifuge 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](http://www.corning.com/weee)

### Symbols and Conventions

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

	<p>The electrical warning indicates the presence of a potential hazard which could result in electrical shock.</p>
	<p>ATTENTION: Hot Surface!</p>
	<p>Indicates disposal instruction.</p> <p>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.</p>



## ***Limited Warranty***

Corning Incorporated (Corning) warrants that this product will be free from defects in material and workmanship for a period of two (2) 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 24 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 \_\_\_\_\_



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