**Manufacturer:**

Labnet

Product Name:

Labnet AccuBlock™ 24-Port Digital Dry Bath - 230V

Manufacturer Part Number:

D1301-230V-24

▶ Click here for more details on the Labnet AccuBlock™ 24-Port Digital Dry Bath - 230V



Labnet Accublock™ Digital Dry Bath

Instruction Manual

Catalog Numbers:

D1301, **D1301-230V**

D1302, D1302-230V

D1304, D1304-230V



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1.0 Introduction

Labnet single, dual, and quad Accublock™ Digital 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.

2.0 Safety Information

Before using the AccuBlock Digital Dry Bath for the first time, please read this entire manual carefully. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

2.1 Symbols and Conventions

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



The electrical warning indicates the presence of a potential hazard which could result in electrical shock.



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.

2.2 Operation Safety Precautions

To guarantee problem free, safe operation, it is essential to observe the following points.

- ▶ 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.

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3.0 Specifications

Temperature Range	Ambient +5°C to 150°C
Temperature Display	4-digit LED, accurate to 0.1°C
Temperature Uniformity	± 0.2°C (at 37°C in block)
Temperature Accuracy	± 0.3°C
Temperature Control	User calibratable microprocessor
Timer	1 minute to 99 hours 59 minutes, or continuous in 1-minute increments
Operating Altitude	Up to 2,000 meters
Dimensions (W x D x H)	
Single block	8.3 x 12.4 x 4.7 in. (21 x 31.5 x 12 cm)
Dual block	8.3 x 12.4 x 4.7 in. (21 x 31.5 x 12 cm)
Four block	8.3 x 16.3 x 4.7 in. (21 x 41.5 x 12 cm)
Weight	
Single block	7.0 lbs. (3.2 kg)
Dual block	7.0 lbs. (3.2 kg)
Four block	9.6 lbs. (4.4 kg)

3.1 Electrical requirements

Model	Cat. No.	Electrical requirements	Current, Fuse
Single block	D1301	115V, 50/60Hz	1 A, Fuse 1.6 AT
	D1301-230V	230V, 50/60Hz	0.5 A, Fuse 1AT
Dual block	D1302	115V, 50/60Hz	1.9A, Fuse 2.5AT
	D1302-230V	230V, 50/60Hz	0.95 A, Fuse 1.6AT
Four block	D1304	115V, 50/60Hz	3.73 A, Fuse 4 AT
	D1304-230V	230V, 50/60Hz	1.86 A, Fuse 2.5 AT

4.0 Package Contents

Description	Quantity
Dry Bath Unit	1 each
Data Logger Software	1 each
Line Cord	1 each
Block Lifter	1 each
Lid	1 each
USB Cable	1 each

5.0 Getting Started

5.1 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.

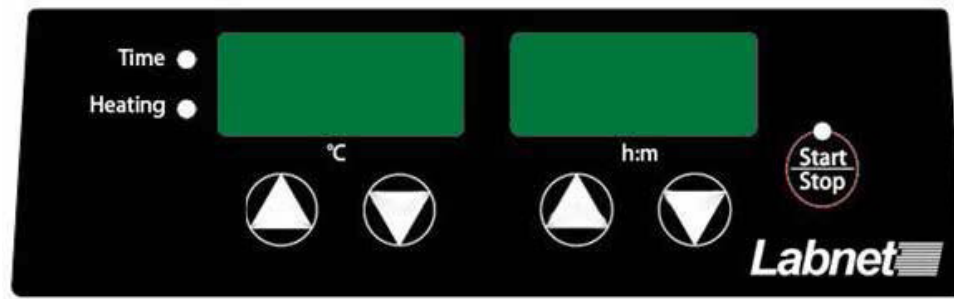
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5.2 Controls



- ▶ **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 continuous mode, set the time to 00:00, hold the Timer-DOWN arrow key while pressing the
- ▶ **Start/Stop key** – unit will display “Hold”

6.0 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 **Start/Stop** key to start heating.
9. If to reset timer is required during heating, press **Start/Stop** key to deactivate heating.
10. Press **Start/Stop** 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 25 mm than the heating block.

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7.0 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 13 mm 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 “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 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 10 or 20 minutes) for the unit to heat up to your set temperature and to equilibrate at this emperature. The entire LED display will start flashing when equilibration is reached.
5. After the entire display has started slashing, red the thermometer (or sensormeter) 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 re-calibration factor included. Allow sufficient time for the unit to reequilibrate and then again compare the thermometer or sensor reading to the calibrated display. They should closely match. If not, repeat the calibration procedure.

*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.

8.0 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 or the temperature profile produced by the dry bath.

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9.0 Troubleshooting Guide and Service

Problem Explanation	Solution
Display/LEDs do not light up	<ol style="list-style-type: none">1. Check power cord and outlet2. Check ON/OFF switch3. Check fuse4. Call service
Unit not heating	<ol style="list-style-type: none">1. Is set point below room temperature2. Is Start/Stop LED illuminated3. Press Start key4. Call service
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.
Block or sample temperature not same as display temperature	<ol style="list-style-type: none">1. Check is unit in heating mode2. Check is unit sitting in draft3. Check accuracy of thermometer4. Is thermometer making good contact5. Follow calibration procedure

10.0 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. |

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11.0 Equipment Disposal



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), this product 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

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.

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