



# Boekel 28L Wax Dispenser

**Models**  
**1456XL & 1456XL-2**

## Operating Instructions

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# 1. Safety

## **The following symbols marked on the equipment mean:**

Caution: Read these operating instructions fully before use and pay particular attention to sections containing this symbol.



Attention: Suivre attentivement les instructions avant l'usage et prêtez une attention particulière aux sections comportant ce symbole.

Caution: Surfaces can become hot during use.



Attention: Les surfaces peuvent devenir brûlantes pendant l'usage.

## **Always observe the following safety precautions:**

- Use only as specified by the operating instructions or the intrinsic protection may be impaired. After transport or storage in humid conditions, dry out the unit before connecting it to the supply voltage. During drying out the intrinsic protection may be impaired.
- Connect only to a power supply with a voltage corresponding to that on the serial number label.
- Connect only to a power supply that provides a safety ground terminal.
- Before moving, disconnect at the power supply socket.
- Do not check the temperature by touch, but instead use the temperature display.
- To reduce the risk of eye injury during high temperature operation, use safety goggles or spectacles.
- Do not touch surfaces that become hot during high temperature operation.
- Ensure that the operating temperature is less than the maximum operating temperature of your sample material.
- Ensure that the power switch is easily accessible during use.
- Possible hazards of explosion, implosion or release of possible toxic gases may arise from the heating of materials.
- This product must be used with an UL Listed / CSA Certified power supply cord set rated for a minimum temperature of 90°C.
- The responsible body shall be made aware that, if the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

## 2. Product Information

The Boekel Paraffin Wax Dispenser is designed to help meet the needs of today's histology labs by having 28 liters of molten paraffin wax available when required by user. The unit has a set temperature range of up to 65.0°C. The unit has a heated dispenser valve to ensure a consistent flow and precise control of flowing wax. The unit also features a rapid warm up and an advanced safety over-temperature cut-off.

## 3. Assembly

### 3.1 Unpacking

Remove packing materials carefully and retain for future shipment or storage of the unit. Inspect for damage. Report all shipping damage to the carrier immediately. Shipping damage is covered by the carrier and repair/replacement for shipping damages must be coordinated through the carrier. Complete and return the Warranty Registration Card. The shipment should contain:

- 28L Wax Dispenser
- Power Line Cord
- Operating Instructions
- Lid
- Warranty Card

### 3.2 Installation

Place the Wax Dispenser on a flat and stable surface, preferably away from drafts. Plug the power cord into a voltage source that matches the voltage listed on the serial number label on the rear of the unit. Ensure that the surface on which the unit is placed will withstand the radiated heat produced by typical laboratory equipment.

## 4. Operation

Caution: Ensure the reservoir is filled with a minimum of 2 cm of wax and a maximum of 2 cm below the top of the reservoir and the dispenser valve is positioned for "On Demand" dispensing before applying power. Use caution when filling the reservoir with wax to avoid overfilling the unit.



### 4.1 Operating the Device

To turn the device on, switch the power switch to the on (I) position. The wax dispenser will begin achieving the set temperature. The display will flash between the set temperature and the actual temperature. The word "HEATING" will be shown as it heats to achieve temperature, and

“HOLDING” will be shown when the unit has achieved temperature. To turn the wax dispenser off, switch the power switch to the off (O) position. The device will return to its previously set temperature upon restart.

#### 4.2 Changing Parameters

Press the “MODE” button to enter the settings menu. In all menus, the “SELECT” button confirms or enters the selection, while the “MODE/EXIT” button will exit the menu without saving. The Up and Down arrows are for changing values. The available functions are:

- a. SET TEMP: Use the arrows to increase or decrease the set temperature. Actual temperature is displayed for reference.
- b. HOTSTART: This mode is for setting up a future automatic start and stop time for heating. Use the arrows to cycle between “ON” and “OFF”. “ON TIME” and “OFF TIME” are separately configurable in the settings menu. **Please note that the HOTSTART will only work one time and default to OFF after operation; repeated operation, even with the same ON TIME and OFF TIME is not possible. HOTSTART must be re-enabled via this menu after each use if repeat operation is desired.**
- c. ON TIME: The time at which the device starts heating without user input.
- d. OFF TIME: The time at which the device ceases heating without user input.
- e. SETCLOCK: Used to set system time for coordination with HOTSTART functionality.

### 5. Fault Diagnosis

Symptom	Possible Cause	Action Required
1. Unit does not operate	<ol style="list-style-type: none"> <li>a. Unit not switched on</li> <li>b. Unit not plugged into power supply</li> <li>c. Fuses blown</li> </ol>	<ol style="list-style-type: none"> <li>a. Switch on</li> <li>b. Plug in, switch on</li> <li>c. Replace fuses per 8.2</li> </ol>
2. Temperature does not rise when expected	<ol style="list-style-type: none"> <li>a. Actual temperature is higher than set temperature</li> <li>b. Temperature control circuit fault</li> </ol>	<ol style="list-style-type: none"> <li>a. Check set temperature</li> <li>b. Have unit checked by competent person</li> </ol>
3. Temperature continues to rise when not expected	<ol style="list-style-type: none"> <li>a. Actual temperature is lower than set temperature</li> <li>b. Temperature control circuit fault</li> </ol>	<ol style="list-style-type: none"> <li>a. Check set temperature</li> <li>b. Have unit checked by competent person</li> </ol>

## 6. Technical Specifications

This equipment is intended for indoor use and will meet its performance figures within the ambient temperature range of 10°C to 28°C, with maximum relative humidity of 80% (non-condensing). Installation Category II (transient voltages). Pollution Degree 2 in accordance with IEC 664. Suitable for operation at altitudes of up to 6500 feet.

### Specifications:

Temperature Range:	(Ambient +5°C) to 65°C
Display Resolution:	0.1°C
Supply Voltage Range:	Model 1456XL: 120V ± 10%, 50/60 Hz, 6.5A Model 1456XL-2: 230V ± 10%, 50/60 Hz, 3.3A
Power Rating:	750W

## 7. Maintenance and Service

All Boekel laboratory products are designed to comply with IEC61010. No routine maintenance is required. There are no user serviceable parts in this product. There are no parts that are required to be examined or supplied by Boekel or our agent.

### 8.1 Cleaning

Disengage power cord prior to cleaning. If a spill occurs, use appropriate clean up procedures as required for radiation or biohazard control. The outer casing may be cleaned with water and a damp cloth. Do not submerge or immerse the wax dispenser in water. Before using any cleaning or decontamination method except those recommended by the manufacturer, users should check that the proposed method would not damage the equipment.

### 8.2 Replacement of Fuses

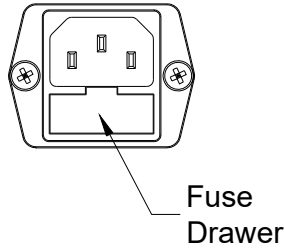
There are two supply fuses located in the fuse drawer. To change them:

- Turn power switch to the off position
- Disconnect the unit from the power supply
- Remove the line cord from the power entry module on the back of the unit
- Pull back on the fuse drawer (see sketch below)
- Check and replace with the correct fuses if necessary. The fuses should be 5mm x 20mm quick acting, rated 250V.

Model 1456XL (115 V AC): 8A

Model 1456XL-2 (230 V AC): 4A

- Push the fuse drawer back in. Reconnect unit to power supply.



## 8. Warranty

When used in laboratory conditions and according to these operating instructions, Boekel warrants this product to be free of defective material and workmanship for a period of two years from the date of manufacture. The liability of Boekel for any defective equipment during the warranty period shall be limited to the repair of such equipment or replacement thereof without charge for parts or labor.

## 9. Service

It is required to obtain a Returned Material Authorization (RMA) number before any Boekel products are returned for any reason. A Decontamination Certificate must be completed, signed by the user, and returned to Boekel Scientific prior to receiving the RMA number. Please be sure to mark the outside of the returned goods package with this RMA number to ensure prompt handling.

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