1-CUBE
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LABORATORY MASH BATH (MASHING BATH)

Application:

The Mash Bath (Mashing Bath) is a professional automated instrument designed for brewery and malting laboratories. It is used for precise determination of malt extract using standardized EBC and ASBC analytical methods.

This device fully complies with the following EBC and ASBC standards:

1. **CONGRESS Method:**
   The CONGRESS method produces wort from which relative densities are determined and extract percentages are calculated. At the same time, the resulting congress wort is used to determine a number of other analytical malt parameters, such as saccharification, wort filtration/flow-off, color, clarity, viscosity, pH, soluble nitrogen compounds, etc.
2. **HARTONG Methods (20, 45, 65, 80):**
   These methods are used to obtain worts whose extract values indicate extract yield at given temperatures. From the values of individual extracts, it is possible to determine the enzymatic activity developed during malting, assess the malt's amylolytic potential, and evaluate its proteolytic and cytolytic modification.
3. **ASBC Method:**
   The American standard for brewing analytics.
4. **Custom Profiles:**
   Possibility of programming specific temperature ramps via PC.

Main benefits and applications:

• **Full automation:** The Mash Bath automatically controls temperature curves and the mashing process.
• **Standardized methods:** Supports the CONGRESS, HARTONG (20, 45, 65, 80), and ASBC methods.
• **High accuracy and calibration capability:** Ideal for laboratories operating under ISO 9001/9002 quality systems.
• **Flexibility:** Allows setting custom profiles using the PROFILE and THERMOSTAT methods.
• **Decades of experience:** We have been manufacturing Mash Baths for over 25 years, producing more than 600 units during that time. Our Mash Baths are used by major companies such as Heineken, Asahi, Anheuser-Busch, Cargill, and Soufflet, as well as by small breweries and maltings.

Technical Data:

Parameter	Value / Specification
Temperature range	20 °C až 95 °C
Temperature setting accuracy	± 0,01 °C
Time setting accuracy	1 sec
Control accuracy	0,2 °C
Stirrer speed	Adjustable (0, 100, 200 rpm)
Sample capacity	Types R4 (4 samples), R8 (8 samples), R12 (12 samples)
Beaker and glass test tube volume	Beaker- 500ml, glass test tube- 100 ml
Display	LCD 4×20 characters, or 3.5″ color touchscreen
Signalization	Acoustic and optical
Power supply	230 V / 50 Hz (alternatively 110 V / 60 Hz on request)
Water supply connection	DN 15
Drain connection	DN 25
Adjustable parameters	Method selection, stirrer speed, temperature, time
Displayed data on the LCD	Selected method, target and actual temperature, time elapsed since start of test
Weight	Type R4-21 kg, Type R8-36 kg, Type R12-45 kg

Manufactured types:

Typ	Number of beakers	PC control capability (Monitoring)	Automatic refill with preheated distilled water
Standard R4	4	no	no
Standard R4 Monitoring	4	yes	no
Standard R8	8	no	no
Standard R8 Monitoring	8	yes	no
Automatic R8 Monitoring	8	yes	yes
Standard R12	12	no	no
Standard R12 Monitoring	12	yes	no
Automatic R12 Monitoring	12	yes	yes

Note: For an additional fee, all models can be equipped with a 3.5″ color touchscreen. This option must be specified when placing the order.

Scope of delivery:

• Mash Bath in the selected configuration.
• Beakers, stirrers, and glass test tubes.
• For models marked Monitoring, the delivery includes PC software and a USB/RS232 communication cable.

Frequently Asked Questions (FAQ):

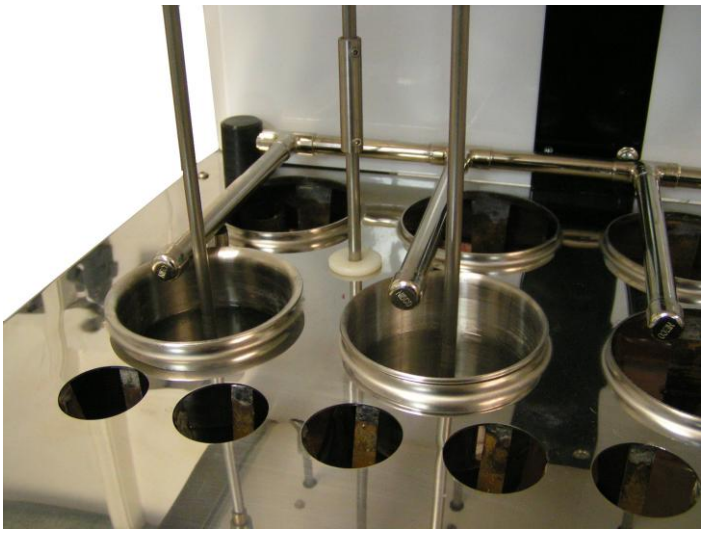
What is the 1-CUBE Mash Bath used for?
It is used for laboratory processing of malt samples to determine their quality and extract yield according to international EBC and ASBC standards.

Can the device be connected to a computer?
Yes. Models labeled “Monitoring” include PC software and an interface (RS232/USB) for controlling the Mash Bath from a computer, allowing real-time monitoring of the set temperature profiles.

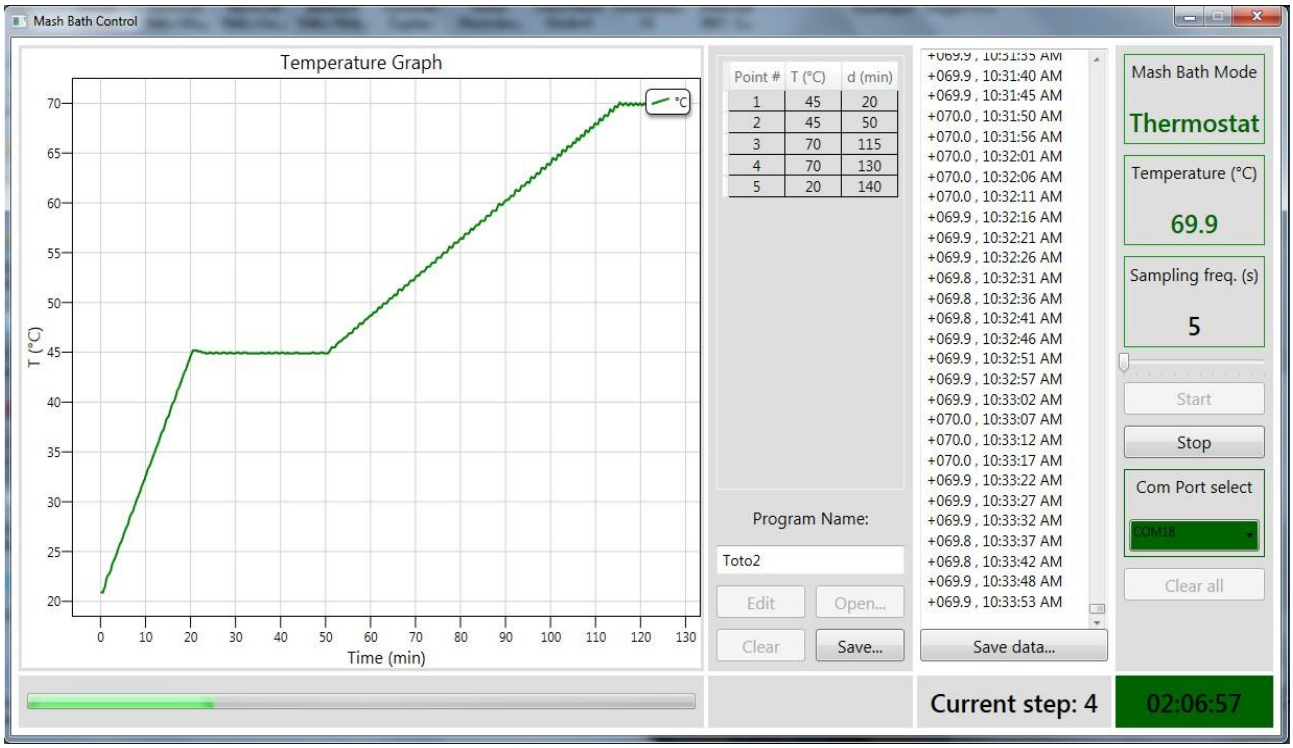
What is the capacity of the Mash Bath?
We manufacture models for 4, 8, or 12 stainless steel beakers with a volume of 500 ml each.

What is the difference between the Standard and Automatic versions?
The main difference lies in the level of automation for distilled water addition during the mashing process. While measurement methods run automatically on both versions, operator involvement differs:

- **Standard version:** Requires operator assistance. The device signals acoustically when it is necessary to manually add preheated distilled water to the beakers containing the mash, or to take a sample for the saccharification test. Distilled water is poured manually by the operator from test tubes placed in the Mash Bath, where it is preheated to the required temperature.
- **Automatic version:** Fully unattended in terms of distilled water addition. The device automatically dispenses preheated distilled water, eliminating the need for manual intervention during the method.



Detail of the automatic distilled water refill nozzle



Monitoring software: Allows setting a custom temperature profile on a PC, saving it for future use, and displaying or saving the actual temperature curves from the Mash Bath on the PC.