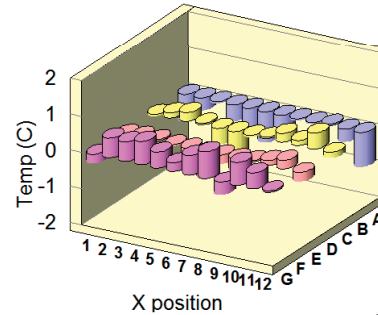
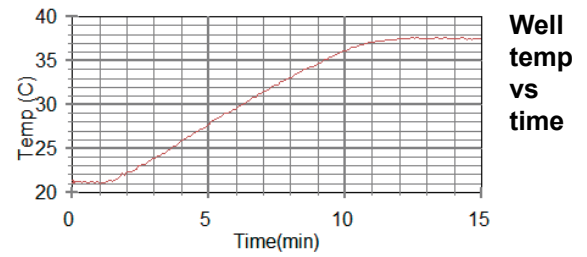


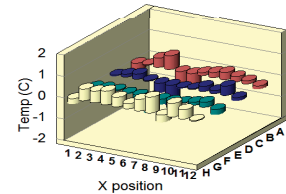
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# HWP-96 Well plate heater

## HWP-96 Well plate heater



Well temp error vs position



The **HWP-96 Well plate heater** is a low profile heater for 96 well (and some 384 well) plates. The unique design compensates for the greater heat losses from the edges of the well plate to give superior temperature uniformity in well temperatures throughout the well plate. The thermistor probe for temperature control is integrated into heater stage. A second connector allows a roaming probe to be used to monitor an individual well temperature.

The low thermal mass of the heater speeds up heating and reduces the amount of temperature overshoot. The heater plate is less than 4.5mm thick and adds only 1.5mm to the thickness of the well plate. This means that it can be used with readers which have limited clearance above the wells.

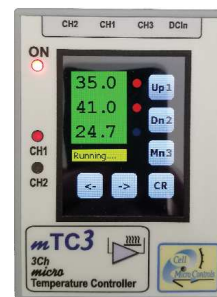
Well plates are held in position by tabs on the edge of the heater plate so that well plate will not slide when the heated stage is attached to a moveable stage. The stage is compatible with Costar, Falcon, Greiner and Nunc 96 well plates (call for other brands) and Greiner deep well type 384 well plates (call about others).

The stage is designed to be connected to the **mTCII /mTC3 micro-Temperature controllers**. One channel is used to regulate the temperature of the heated stage while the second channel can be used either for the roaming probe to monitor individual well temperatures or to control the well temperatures to allow more rapid heating of the wells.

## Performance

The unique design of the heater plate allows rapid and stable heating of the well plate. The top graph shows the well temperature versus time using a 96 well plate with all wells filled with water. The lower 3D graphs show the deviation from 37C versus well position for a Costar 96 well plate.

## mTC3 3Ch micro-Temp controller



- **Miniature low power** controller for heating small tissue baths, microscope stages, small animal heaters
- **3 independent channels**
- **Compatible with many low voltage heater elements**
- **USB/RS232** port for control, logging
- **2 heating modes, PWM or**

### analog

- Maintains **setpoint** and **parameters** in **EEPROM**
- **Firmware reprogrammable** - for upgrades, cus-

The **mTC3** micro-Temperature Controller is a multipurpose microcomputer based 3 channel temperature controller powerful enough to heat small tissue baths, microscope stages, small animal heaters or containers used in a laboratory. The **mTC3** uses state-of-the-art microcontrollers to provide a flexible instrument rather than a modular PID design where there is no control over the user interface and instrument function. The **mTC3** has two ways of driving heaters, with a **PWM** (pulse width modulated 2.5-20kHz) or an **analog** output for lower noise. In the **PWM** mode it can control currents up to 1.5Amps provided by a battery or 15V block type power supply.