MJ Mini™ Thermal Cycler and MiniOpticon™ Real-Time PCR System
Small on Size  
Big on Performance

The compact 48-well MJ Mini personal thermal cycler is a powerful small-capacity, high-performance cycler. Unlike other personal thermal cyclers, the MJ Mini cycler offers thermal gradient technology so you can optimize reactions for maximum efficiency and accurate quantitation. The MiniOpticon real-time PCR system, built on the MJ Mini cycler, is one of the smallest real-time detection systems available.

Now, the most advanced PCR techniques are available to the individual researcher — with the MJ Mini thermal cycler and the MiniOpticon real-time PCR system.

Maximize Reaction Efficiency and Increase Accuracy of Quantitation

Selecting the optimal annealing temperature for your oligo reduces amplification of nonspecific products. The MJ Mini cycler’s thermal gradient feature makes finding the optimal temperature easy, by allowing you to program a temperature gradient across the sample block for any incubation step. After analysis of PCR products, use the gradient calculator to see which temperature gave the best results. Simply enter the temperature range, and the calculator displays the exact temperature at which each sample was run. With thermal gradient technology, your PCR reactions can be optimized in a single experiment.
**MJ Mini Personal Thermal Cycler**

The innovative MJ Mini cycler offers outstanding thermal performance. Quick ramping and accurate temperatures ensure fast, reproducible runs; but more importantly, the MJ Mini cycler arrives at thermal uniformity remarkably fast, producing the precision needed for sensitive assays such as quantitative PCR.

The 48-well sample block is capped with an adjustable heated lid that accommodates both full-height and low-profile tubes and plates, so you can run low-volume reactions with minimal sample loss.

The MJ Mini cycler lets you:

- Choose the reaction vessels that best suit your application — 0.2 or 0.5 ml tubes, strip tubes, or 48-well PCR plates
- Save time by optimizing incubation temperatures in a single run using the thermal gradient feature
- Rapidly modify programs using textual and graphical display and editing options

**MiniOpticon Real-Time PCR System**

The MiniOpticon system is a compact two-color real-time PCR detection platform for the MJ Mini cycler. It’s one of the smallest and most portable systems available for real-time PCR applications and gel-free PCR analysis.

The MiniOpticon system uses an optical design in which samples are sequentially illuminated by a fixed array of 48 light-emitting diodes (LEDs), and emitted fluorescence is detected by one of two filtered photodiodes. This no-moving-parts design allows sensitive detection in a small yet robust package.

The MiniOpticon system lets you:

- Use the precise thermal control and temperature gradient of the MJ Mini cycler to perform accurate quantitative PCR
- Amplify up to 2 targets per well using a range of fluorophores
- Perform real-time PCR where you need it — the small size and portability let the system fit just about anywhere
- Get results quickly using built-in analysis tools for quantitative reverse transcription PCR (RT-PCR), relative gene-expression analysis, and allelic discrimination
- Expand throughput when you need to by connecting up to 4 instruments to a single computer

**Analysis of 48 replicate PCR samples spanning the cycler block reveals a variation less than 1%.** The high degree of uniformity, made possible by combining the innovative optical system of the MiniOpticon real-time PCR system with the high performance of the MJ Mini thermal cycler, ensures reliable and reproducible results from sample to sample and experiment to experiment.
**Specifications**

**MJ Mini Cycler Specifications**
- Sample capacity: 48 x 0.2 ml tubes, 48-well PCR plate, 6 x 8-tube strips, or 12 x 0.5 ml tubes
- Speed of ramping: Up to 2.5°C/sec
- Thermal range: 0–99°C, but no more than 30°C below ambient temperature
- Temperature accuracy: ±0.2°C of programmed target at 90°C, NIST-traceable
- Temperature uniformity: ±0.4°C well-to-well within 10 sec of arrival at 90°C
- Input range: 100–240 VAC, 50–60 Hz, 400 W maximum
- Dimensions (W x D x H): 19 x 32 x 20 cm (7.5 x 12.5 x 8")
- Weight: 4.1 kg (9.1 lb)
- Display: 64 x 128 LCD
- Ports: 2 USB
- Memory: 400 typical programs

**MiniOpticon System Specifications**
- Fuses: Two 6.3 A, 250 V, 5 x 20 mm
- Weight: 6.8 kg (15 lb)
- Dimensions (W x D x H): 18 x 32 x 33 cm (7 x 13 x 13")
- Excitation range: 470–500 nm

**Gradient Specifications**
- Gradient accuracy: ±0.4°C of programmable target at end rows within 10 sec, NIST-traceable
- Row uniformity: ±0.4°C well-to-well (within row) within 30 sec of reaching target temperature
- Calculator accuracy: ±0.4°C of actual row temperature
- Gradient range: 35–99°C
- Temperature differential range: 1–16°C

**Computer Specifications**
- Minimum specifications required for running a MiniOpticon system and Opticon Monitor™ software version 3.1
  - Operating system: Windows XP Professional
  - Processor speed: 1.5 GHz
  - Display: 1,024 x 768 screen resolution
  - Memory: 512 MB RAM
  - Storage: 20 GB hard drive

**Ordering Information**

<table>
<thead>
<tr>
<th>Catalog #</th>
<th>Description</th>
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<tbody>
<tr>
<td>PTC-1148</td>
<td>MJ Mini 48-Well Personal Thermal Cycler, with adjustable heated lid and PCR tubes, holds 48 x 0.2 ml tubes</td>
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<tr>
<td>MLL-4801</td>
<td>Multiplate™ Low-Profile 48-Well Unskirted PCR Plates, 8 x 6 format, natural color, thin-wall polypropylene, package of 50</td>
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<tr>
<td>TLS-0801</td>
<td>Low-Profile 0.2 ml 8-Tube Strips Without Caps, natural, 120 strips (960 tubes)</td>
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<tr>
<td>TCS-0801</td>
<td>Domed 8-Cap Strips, for 0.2 ml tubes and plates, natural, 120</td>
</tr>
<tr>
<td>TBI-0502</td>
<td>0.5 ml Tubes With Flat Caps, natural, 800 (8 bags of 100)</td>
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