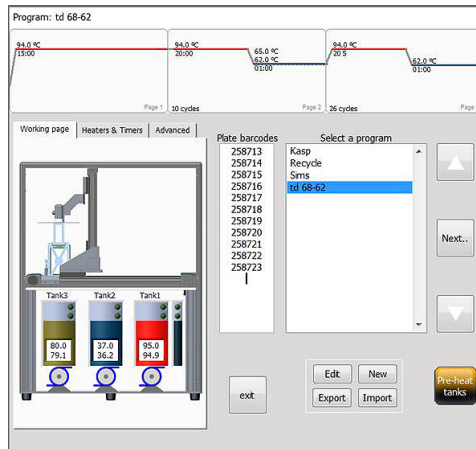




How does the Hydrocycler²™ work?

(For research use only. Not for use in diagnostic procedures.)

The Hydrocycler² thermal cycler uses three precise temperature controlled water baths to modulate the temperatures of the PCR reaction. A robotic arm is used to move plates between the three water baths, achieving a rapid thermal cycling profile. The result is higher throughput and higher data quality compared to standard thermal cyclers.



Where cooling and heating speeds in standard peltier-based thermal cyclers rely on ramping the temperature of a metal block up and down the Hydrocycler² only needs ~ three seconds to change to the next water bath. As shown below, this translates into 30% reduction in cycle time based on 35 cycles.

2-Stage PCR using KASP Chemistry

2-Stage PCR using Alternative Chemistry

Peltier PCR

15 min @ 95°C
10 cycles of:
 20 sec @ 95°C
 1 min @ 61-55°C

26 cycles of:
 20 sec @ 95°C
 1 min @ 55°C

Total: 2h 5min

Hydrocycler²

15 min @ 95°C
10 cycles of:
 20 sec @ 95°C
 1 min @ 61-55°C

26 cycles of:
 20 sec @ 95°C
 1 min @ 55°C

Total: 1h 10min

**55 min less,
 44% reduction in
 total time.**

Peltier PCR

15 min @ 95°C
35 cycles of:
 1 min @ 95°C
 1 min @ 58°C
 1 min @ 72°C

Total: 2h 45min

Hydrocycler²

15 min @ 95°C
35 cycles of:
 1 min @ 95°C
 1 min @ 58°C
 1 min @ 72°C

Total: 1h 55min

**50 min less,
 30% reduction
 in total time.**

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