# Hydrocycler²

LGC

## Hydrocycler²™ – Water bath thermal cycler for PCR

Combining throughput, efficiency and robust design, the Hydrocycler² offers an effective alternative to traditional Peltier-based thermal cyclers for high-throughput PCR.

**Water conducts heat -** Using water to conduct heat to a PCR sample offers multiple advantages including the ability to process many plates or arrays in parallel for high throughput with minimal variation in temperature from plate to plate or array to array.

**Fast cycling time -** In addition, cycling time is 40 % faster since there is no need to ramp temperatures up or down during the PCR cycle.

**Precise temperature control -** Plates and arrays automatically move from one temperature bath to another and the temperature of each bath can be precisely controlled.
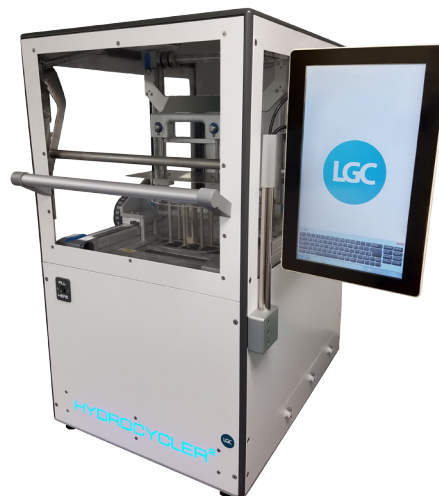
## Why choose the Hydrocycler²

### Increased throughput

- Ability to process more than 145,000 samples in an eight-hour day [1]
- Suitable for 96-, 384- and 1536-well plate formats and 384-well Nexar® or IntelliQube® Array Tape® with minimal system set up [2]

### Efficient amplification

- Circulation Jet ensures temperature uniformity in each tank for high PCR consistency and eliminates edge effect
- Multi-bath system delivers precise temperature control, enhances cycling time, and eliminates temperature fluctuations
- Minimal external heat generation eliminates the need for an air conditioned environment
- Compact footprint for placement on floor or lab benchtop with tank covers minimising water evaporation
- Optimised protocols for both plates and Array Tape

### Intuitive user interface

- Simple and intuitive user interface for easy use
- Optional barcode tracking with accompanying software
- Report generation and log file reviewer

### Chemistry

- Supports all common end-point PCR chemistries and protocols as well as emulsion PCR (ePCR)
- Provides uniform temperature across the entire plate or array for consistent reactions and accurate data

[1] Throughput is highly dependent on specific cycling conditions and chemistry selection. This estimate is based on 1536-plates and a standard KASP 36-cycle run totaling 1 hour 10 minutes.
[2] Plates must be sealed using water bath validated seals and sealers. For LGC 384- and 1536-well laser plates, the LGC Kube and Fusion³ sealers meet the necessary requirements

# Hydrocycler$^2$ specifications

| | |
|---|---|
| **INSTRUMENT DIMENSIONS** | Depth: 70.5 cm (27.8") <br> Width (without open screen): 55 cm (21.6"); Width (with open screen): 75 cm (29.5") <br> Height (door closed): 92 cm (36.2"); Height (door open): 130 cm (51.2") |
| **INSTRUMENT WEIGHT** | Without water: approx. 100 kg (220 lbs) <br> With water: approx. 150 kg (330 lbs) |
| **ELECTRICAL REQUIREMENTS** | 220 V, 13 A |
| **WATER REQUIREMENTS** | Reverse Osmosis (R.O.) Water: 48.5 L (12.8 gal) <br> Standard Minimum Grade <br> ASTM Standard (ISO 3696) Type III <br> ISO Standard Grade 3 <br> Clinical Laboratory Standards Institute (CLSI - CLRW) Type 3 <br> *Note: Commercial/industrial R.O. water systems typically meet these requirements* <br> Tank 1: 14 L (3.7 gal) <br> Tank 2: 14 L (3.7 gal) <br> Tank 3: 14 L (3.7 gal) <br> Tank 4 (fill tank): 6.5 L (1.7 gal) |
| **CAPACITY** | 96-, 384- or 1536-well plates – up to 16 plates <br> Array Tape - up to 50 arrays |
| **CERTIFICATIONS** | CE |

## Ordering information

| Catalog number | Description |
|---|---|
| KBS-0028-001 | Hydrocycler$^2$ PCR system (10-16 plates)* |
| KBS-0028-003 | 384-/1536-well plate weld seal basket (16 plates) |
| KBS-0028-002 | 96-well plate weld seal basket (10 plates) |
| KBS-0028-004 | 384-well LGC Douglas Scientific Array Tape basket (50 arrays) |
| KBS-0025-003 | 1-dimensional handheld barcode scanner |
| KBS-0900-176 | Hydrocycler$^2$ 12-month service contract |
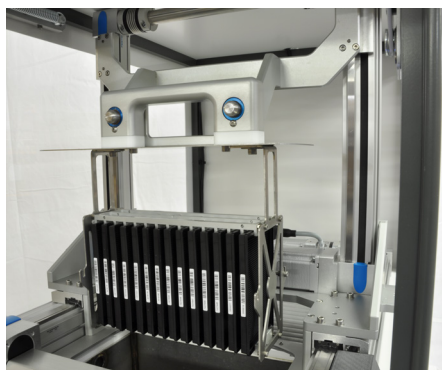


1536-well plate weld seal basket (16 plates)
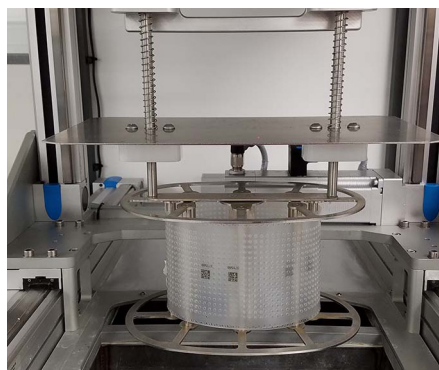


384-well Array Tape basket (50 arrays)
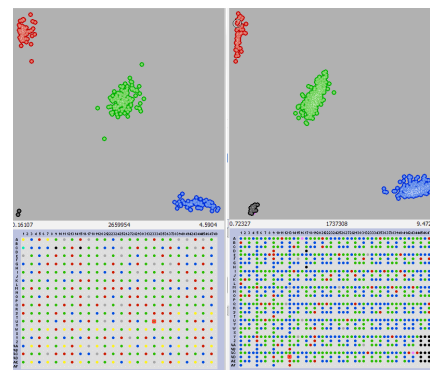


Data generated from the Hydrocycler$^2$ (left) demonstrates good clustering and 100 % concordance in the genotype calls when compared to data produced by the Hydrocycler 16.

*\* Hydrocycler$^2$ PCR system purchase includes one basket depending on microtitre plate or Array Tape format needed.*

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