



# omniPAGE Denaturing Gradient

The VS20WAVE-DGGE is a complete system for DNA mutation analysis. Using the innovative vertical screw-clamp technology of the VS20-WAVE system, the VS20WAVE-DGGE is fully equipped – with temperature control unit, stirrer, gradient mixer and casting accessories – to perform specific mutation analysis applications.

The powerful microprocessor-controlled PID temperature control unit enables various mutation detection techniques to be undertaken between ambient temperature and 70°C, while the simple four-screw design of the WAVE insert accelerates set up of denaturing PAGE gels.

The VS20-DGGE can be used to screen single-base pair changes in the following applications:

- Parallel Denaturing Gradient Gel Electrophoresis (DGGE)
- Constant Denaturing Gradient Gel Electrophoresis (CDGE)

A maximum 96-sample throughput allows detection of as many mutations within a couple hours, alleviating many of the bottlenecks associated with screening for DNA mutations.

The GM100 gradient mixer is supplied as standard to ensure efficient gradient formation by mixing and delivering high- and low-density denaturant solutions. The PP1 peristaltic pump is also recommended for delivery of linear and reproducible gradient gels.

## KEY FEATURES

- Maximum 96-sample throughput
- Four-screw vertical clamping technology accelerates set up
- Large format - 20x20cm glass plates for improved resolution
- 100ml gradient mixer, with valve-controlled 50ml reservoir and mixing chambers, makes two 1mm parallel denaturing gradient gels
- Microprocessor-controlled temperature control unit accurate to  $\pm 0.02^\circ\text{C}$



Casting process for DGGE gels

### Innovative Casting and Set-up Mechanism

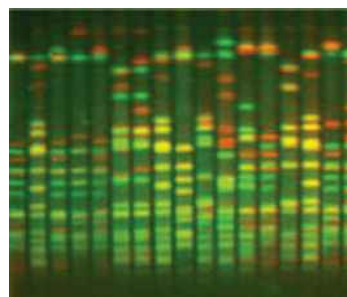
The VS20WAVE-DGGE utilises novel vertical screw clamp technology to assemble two vertical gels. This reduces the number of screws required for set up making casting assembly faster, while a built-in inner buffer chamber within the PAGE insert allows set-up to be completed without the inclusion of heavy top tanks or buffer chambers. A dual purpose PAGE insert eliminates the need for plate transfer, and is used with a cam casting base to guarantee efficient leak free casting.

### Precise thermal control

The redesigned VS20DGGE-TC temperature control unit combines buffer recirculation with a heat sensor and 1.4kW heating element to facilitate precise temperature control to within  $\pm 0.02^{\circ}\text{C}$ , allowing the gel temperature to be set to the melting temperature ( $T_m$ ) of the amplified DNA polymorphism or mutation of interest. Other benefits include: a conspicuous 4-digit 16mm LED panel to aid set-up; precise tuning to within  $0.1^{\circ}\text{C}$  resolution; an operating set point, plus three adjustable pre-set temperature values; and stirred buffer circulation for temperature stability and uniformity.

### Programmable power supply option

At 500V, 800mA and 300W outputs, the optional powerPRO500 power supply provides full flexibility for different mutation detection techniques.



TotalLab 1D / CLIQS – Multiplex Analysis

CLIQS 1D Pro is more advanced analysis software used primarily for band-pattern matching within individual DGGE, SSCP and RFLP gels that are important for cultivar experiments, evolutionary biology and population genetics. CLIQS 1D Pro has a powerful band matching feature, which is flexible and easy to use, while visual tools show the results of matching and identify similarities within an individual gel, including lane clustering via dendrograms. More info on our software range can be found on our website.



powerPRO500 power supply



CSL-DSTIR Magnetic Stirrer



PP1 Peristaltic Pump



WAVE electrophoresis insert and cam casting base

## TECHNICAL SPECIFICATIONS

### WAVE ELECTROPHORESIS INSERT AND TANK

Max. Number of Gels	2 per run
Plate Dimensions (W x H)	20x20cm
Active Gel Dimensions (W x H)	16 x 17.5cm
Spacer Thicknesses Buffer	0.75, 1, 1.5 and 2mm
Max. Sample Capacity	96 samples; 48 per gel
Standard Combs	2x 1mm 24-sample
Available Combs	1, 5, 10, 18MC, 24, 36MC, 48; as per VS20WAVE and MAXI units
Max. Buffer Volume	8.5L
Unit Dimensions (W x D x H)	40.5 x 17 x 44cm
Weight	8kg

### TEMPERATURE CONTROL UNIT

Temperature Control	PID
Operating Temperature Range	ambient – $100^{\circ}\text{C}$
Working Temperature Range (DGGE)	$45-70^{\circ}\text{C}$
Buffer Recirculation Mechanism	stirring
Temperature Uniformity/Stability at $37^{\circ}\text{C}$	$\pm 0.05/0.02^{\circ}\text{C}$
Setting/Display Resolution	$0.1^{\circ}\text{C}$
Safety	fluid-level float switch; isolated; IEC 1010 /CE4
Stored Temperature Values	3
Heater Power at 230V/110VAC	1.5/1.4kW
Electrical Power at 230V/100VAC	

### RECOMMENDED POWER SUPPLY

Voltage	500V Total
Current	800mA
Power	300W

### GRADIENT MIXER

Total Volume 100ml	100ml
Volume of Reservoir & Mixing Chambers	50ml
Internal Diameter of Outlet Port	2mm

## ORDERING INFORMATION

**VS20WAVE-DGGE\*** Complete Denaturing Gradient Gel Electrophoresis System, 20x20cm;  
includes: temperature control unit, cam casting base, glass plates with 1mm bonded spacers, 2x 24-sample combs and gradient mixer – 240 VAC version

**VS20WAVE-DGGETC\*** Temperature Control Unit

**CSL-GM100** Gradient Mixer, 100ml

**VS20WAVE-DGGEKIT\*** VS20-WAVE Package; includes VS20WAVE-DGGE, CSL-DSTIR, PP1, powerPRO500

**CSL-DSTIR\*** Magnetic Stirrer, 19 x 19cm

**PP1** Single Channel Peristaltic Pump (with silicon tubing)

**MU-S13** Silicon tube I.D.  $\frac{1}{32}$ ", 25 ft

**MU-S14** Silicon tube I.D.  $\frac{1}{16}$ ", 25 ft (for peristaltic pump)

**powerPRO500**

**CLIQS**

**CLIQS 1D Pro**

**powerPRO 500 Power Supply**, 500V, 800mA, 300W

**1D image analysis** with band pattern matching

**1D image analysis** with band pattern matching between different gels

\* For 110V units add \$ to the order code

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# omniPAGE Gradient Mixers

Ideal for Caesium, Sucrose and Gel gradients the Gradient Mixer series comprises two chambers - a reservoir and a mixing chamber with an interconnecting valve. A second valve regulates the output flow from the mixing chamber. All mixers have a flat base which allows them to be placed on a magnetic stirrer. A magnetic stirring bar can be placed directly in the mixing chamber to ensure a constant gradient. The support rod allows the mixer to be fixed to a retort stand for extra stability.

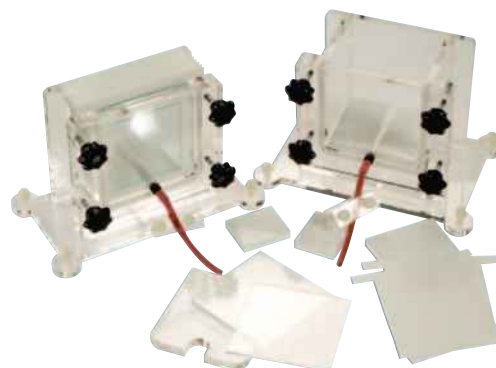


## KEY FEATURES

- Leak proof seals
- Easy to use
- Compatible with vertical gel chambers

## Multiple Gel Casters

Advance casting of multiple mini and maxi gels can help to achieve consistent results between runs. These multiple gel casting systems are tailored for use with omniPAGE mini and omniPAGE maxi vertical electrophoresis units: two models, 6 and 12 capacities. Fewer gels can be poured if required using the acrylic saver blocks supplied with each system. The fixed hinged clamps allows the gel sandwich to be adjusted to the correct pressure irrespective of the number or the thickness of gels being poured. Separation sheets allow the easy separation of the glass plates after pouring.



## microcapillary gel loading tips



Gel-Loading Pipette Tips are designed for sample loading of electrophoresis gels. They provide positive-displacement accuracy and reproducibility using most single channel air-displacement pipettors. They comprise three styles, each featuring a flexible, 33mm long, 5µl microcapillary tube sections:

- Round-shaft Tip, with 0.57mm OD tube end - these greatly improve loading techniques for 0.75, 1.0 and 1.5mm PAGE gels.
- Intermediate 0.37mm OD flat Tip is ideal for loading 0.4mm sequencing gels.
- Ultra-thin 0.17mm OD ultra-flat Tip is perfect for loading 0.2mm wedge-spacer gels.
- Other gel-loading tips are available, please visit the website

## KEY FEATURES

- Round and flat tip options to suit user preference
- Racks feature a patented lid-lock design for easy, one-hand operation
- Low-binding resin reduces sample loss and enhances sample delivery
- Compatible with most standard research laboratory pipettors
- Certified RNase, DNase, DNA, and PCR inhibitor-free
- All items packaged in multichannel-friendly, standard 96-tip racks



### ORDERING INFORMATION

#### GRADIENT MIXERS

CSL-GM15	15ml Gradient Mixer	CSL-GM100	100ml Gradient Mixer
CSL-GM25	25ml Gradient Mixer	CSL-GM500	500ml Gradient Mixer
CSL-GM50	50ml Gradient Mixer		

#### MULTI VERTICAL GEL CASTERS

CSL-6CAST	6 gel caster for 8 x 10cm or 10 x 10cm mini gels	CSL-12CAST	12 gel caster for 8 x 10cm or 10 x 10cm mini gels
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#### GEL LOADING TIPS, PACKAGING: 2 RACKS OF 96/PACK, 5 Pk/CASE

Part Number	Volume	Orifice Style	Tip Length	Outer Diameter	Part Number	Volume	Orifice Style	Tip Length	Outer Diameter
4817-00	10µl	Round	52mm	0.57mm	4847-00	200µl	Round	68mm	0.57mm
4817-0A	10µl	Flat	52mm	0.37mm	4837-00	200µl	Round	83mm	0.57mm
4817-0B	10µl	Flat	52mm	0.17mm	4837-0B	200µl	Flat	83mm	0.17mm

OTHER GEL LOADING TIPS AVAILABLE. PLEASE SEE WEB SITE.