

# DNA-View

## A Safer Electrophoresis Alternative

**Clarit-E<sup>®</sup>** *Clearly Better Resolution*



**Clarit-E<sup>®</sup>**

 **alpha laboratories**  
supplying quality to science

## Traditional Electrophoresis - Hazard and Efficiency Issues

Traditional electrophoresis methods use a combination of harmful UV light and toxic ethidium bromide to visualise DNA samples in a gel. Intense UV light such as that typically used in transilluminators, can cause skin burns and damage to eyes in a very short exposure time. In addition UV can cause cross-linking of DNA and mutagenesis, thereby reducing cloning efficiency. Ethidium bromide, though still one of the most widely used DNA stains for electrophoresis, is a known carcinogen and mutagen and should always be used with caution.

However these methods are tried and tested and give great results time after time and typically when something works well, it's natural to resist change - unless safety is at stake.

### A Safer Alternative

Blue LED lights can also be used to cause emission of fluorescence although the wavelength is different to UV, and fluorescence is never as strong as more traditional UV and stain combinations. But, with safe proprietary stains, and blue LED illumination, it is possible to visualise DNA gels, without the worry of handling harmful chemicals, or exposure to UV light. However DNA-VIEW also works well with traditional ethidium bromide and SYBR dyes.

## Introducing DNA-VIEW: Added Safety with Real-Time Size Fractionation

The DNA-VIEW Electrophoresis System uses a blue LED gel illuminator. What's more, it enables your samples to be seen separating in real time, and can even be used to simplify sample recovery by using a two-tier well approach.

Built around the versatile Clarit-E® Choice Horizontal Gel system, DNA-VIEW comprises a blue view base station which incorporates the blue LED illuminator and power supply. The base station exactly fits the Choice gel tank. This is supplied with a special lid incorporating a light filter and extractor fan to eliminate condensation, optimising visualisation and resolution during electrophoresis. For completeness, a selection of combs are included suitable for gel resolution or sample preparation.

### Using DNA-VIEW

Agarose gels are prepared as normal. Gels can be pre or post stained, or samples and markers can be directly mixed with the stain and loaded into the wells. DNA-VIEW is not recommended for gels of greater than 1% agarose.

See table 1 (DNA-VIEW stain compatibility) for recommendations for each type of stain. Please follow specific instructions provided with the stain for preparation of gels and buffer. It should be noted that some safe stains are prone to quenching of the fluorescence on exposure to light, which means they are only suitable for gel runs of 1 hour or less.

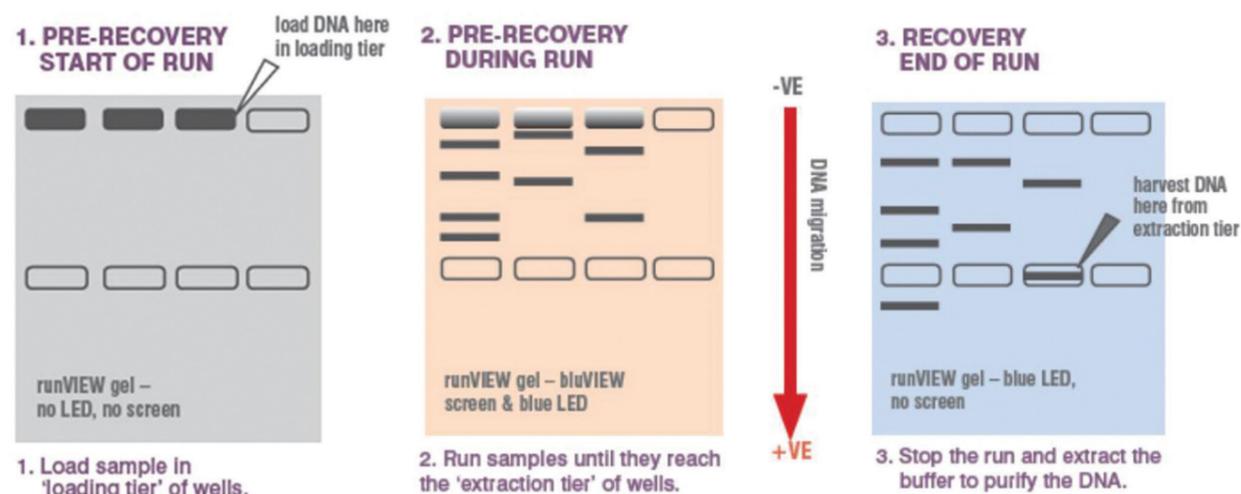
The lid is fitted and the connecting leads attached to the base station. Set the voltage and time, switch the unit on and leave it to run. After about 10 minutes, turn on the blue light. Bands of DNA starting to migrate across the gel can be seen.

## A Great New Tool for Gene Cloning

### See Samples Separate in Real-Time

For sample recovery, a second tier of wells are cast into the gel. These are not loaded with samples. Using the blue light illumination, you can track the progress of your samples. When the band of interest enters the second tier of wells, simply stop the run, remove the lid, and pipette out the sample from the well. The DNA sample then only requires a simple ethanol precipitation to make it ready for further digestion or ligation.

### Real-time size fractionation and recovery of nucleic acids



### Convenient

- Versatile, highly compact, self-contained system
- Integrated tank, power supply and gel illuminator - saves time and space
- Flexible high resolution system – for many different applications
- Complete ready-to-use system (excluding chemicals and reagents)

### Safe

- Safety for users – no dangerous UV
- Safety for samples – no mutagenesis of DNA/no compromise on cloning efficiency

### Efficient

- Real time visualisation of gel run – no over-runs
- Simplifies DNA elution – simple ethanol precipitation from buffer

### Cost Effective

- No need for expensive pre-made gels – lab cast gels work perfectly and save you money
- Current Choice gel tank users upgrade available
- Versatile
- Optional Gel Documentation System with 12.1 megapixel digital camera

### Applications

- Resolution of DNA samples
- Simple DNA recovery
- Track DNA without harmful UV
- Save on time-consuming gel elution techniques
- Teaching electrophoresis

**Table 1 DNA-View Stain Compatibility**

Nucleic Acid Stain	Relative Performance Between Stains	Staining Method		
		Gel Pre-Staining	Gel Post-Staining	Sample Staining
SYBR® Green I (DNA)	Higher Intensity Bands Observed	✓	✓	✓
SYBR® Green II (RNA)	Higher Intensity Bands Observed		✓	✓
SYBR® Gold	Higher Intensity Bands Observed	✓	✓	
Midori Green Direct	Higher Intensity Bands Observed			✓
Hydra Green™ Safe DNA Dye	Higher Intensity Bands Observed	✓	✓	
HD Green™ DNA Stain	Higher Intensity Bands Observed	✓	✓	
runSAFE	Higher Intensity Bands Observed			✓
SafeView DNA Stain	Compatible -Visible Bands Observed	✓		
SYBR® Safe	Compatible -Visible Bands Observed	✓	✓	
Midori Green	Compatible -Visible Bands Observed	✓	✓	
Midori Green Advanced	Compatible -Visible Bands Observed	✓	✓	
Ethidium Bromide	Faint Bands Observed*	✓	✓	
SERVA DNA Stain Clear G	Faint Bands Observed*	✓		
HealthView™	Faint Bands Observed*	✓	✓	
GelGreen™	Faint Bands Observed*	✓	✓	
GelRed™	Faint Bands Observed*	✓	✓	

\*Compared to the same gel on a UV Transilluminator

### Technical Information - DNA-View Viewing Dock and System

Blue Light	470nm	Timer	1-999 minutes with alarm
Voltage/Resolution	25-150V / 1V	Safety Device	No load detection
Current/Resolution	300mA / 1mA	Operating Temperature	Ambient to 40 C
Power	30W	Dimensions	293 x 220 x 80mm
Operating Mode	Constant Voltage	Rated Voltage	100-240V, 50/60Hz
Gel Dimensions (W x L)	15x7cm, 15x10cm, 15x15cm	bluView Lid Design	Orange (EtBr) or Amber (runSAFE & SYBR stains)
Built-in Extractor Fan	Powered by base unit	Unit Dimensions (W x D x H)	26.5 x 17.5 x 9cm
Buffer Volume	500ml		
Combs Included	2 x Comb 1 & 2 sample, 1mm thick 2 x Comb 4 & 16MC sample, 1mm thick 4 x Comb 20 & 28MC sample, 1mm thick 2 x Comb 4 sample 2 marker, 3mm thick 2 x Comb 6 sample 2 marker, 3mm thick		

# DNA-View

## Ordering Information

Catalogue Number	Description	Contents
EL1560	DNA-View System	15 x 7cm gel tray, 1 set of casting dams, 8 double-sided and 4 extra thick preparatory combs
EL1565	DNA-View System	15 x 10cm gel tray, 1 set of casting dams, 8 double-sided and 4 extra thick preparatory combs
EL1570	DNA-View System	15 x 15cm gel tray, 1 set of casting dams, 8 double-sided and 4 extra thick preparatory combs
EL1575	DNA-View System	15 x 7cm, 15 x 10cm and 15 x 15cm gel tray, 3 sets of casting dams, 8 double-sided and 4 extra thick preparatory combs
EL1555	DNA-View Base Station	Including bluView Lid
EL1580	DNA-View Gel Documentation Hood	With a 12.1MP Camera



*Choice Gel Tank with  
bluView Lid and Extractor Fan*