

## FlashGel® System

5 minute separation and recovery





FlashGel® Dock and Cassettes

## Fast analysis, recovery, and documentation of DNA and RNA

The FlashGel® System provides nearly instant results. Simply load samples, watch bands migrate and get data in as little as 2 minutes. Now the FlashGel® System has expanded to include DNA recovery and gel documentation. Say goodbye to gel preparation, band excision, purification, and UV light. Complete separation, recovery and documentation safely, at the bench, in minutes.

### 5 minute separation and recovery

- See bands in as little as 2 minutes
- Recover samples directly, without band excision or purification

### Real-time separation and documentation

- Watch band migration as it happens
- Photograph gels at the bench, without DNA damaging UV light

### Outstanding sensitivity and resolution

- 5–20 times more sensitive than EtBr; detect < 0.1 ng DNA or < 10 ng total RNA
- Clean, sharp separation and straight, uniform sample lanes

The FlashGel® System consists of enclosed, disposable, precast agarose gel cassettes and a combination electrophoresis and transilluminator unit.

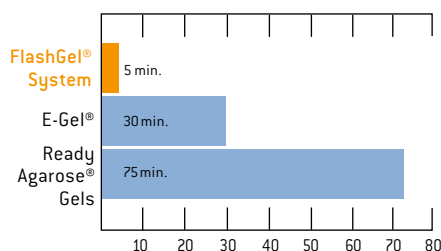
- **FlashGel® Cassettes** contain prestained agarose gels and buffer, minimizing user exposure to potentially mutagenic stains.
- **FlashGel® Dock** is an electrophoresis apparatus with a built-in visible light transilluminator that eliminates the need for UV light.
- **FlashGel® Camera** is a compact camera system designed to photograph FlashGel® Cassettes right at the bench.
- **FlashGel® Markers** are recommended for best performance.



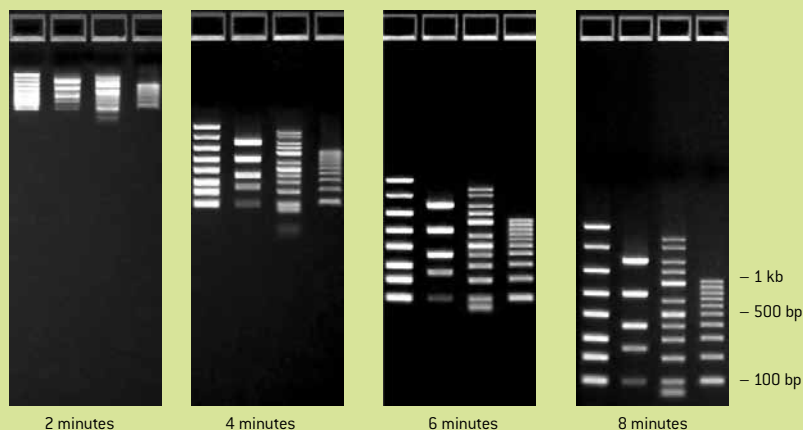
FlashGel® System

## FlashGel® System for DNA

The FlashGel® System enables high voltage separation of fragments >10 bp (275 V for 2 – 7 minutes). DNA separates in a fraction of the time required by competitor precast gel systems.



### Separation at various run times on the FlashGel® System



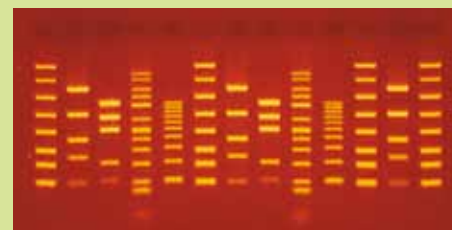
Markers run on a 1.2% FlashGel® Cassette, 12 + 1 well format, 275 V for times as shown.

Sample lanes from left to right: FlashGel® DNA Marker (100 bp – 4 Kb), FlashGel® QuantLadder, Lonza 50-2500 bp Marker, Lonza 100 bp Ladder. Lower voltage will improve separation of fragments >4Kb.

## Real time visualization

Built-in illumination allows you to view DNA under ambient light as it migrates through the gel. Stop the run when desired separation is reached (in as little as 2 minutes, depending upon fragment of interest). Safely view the cassette on the lighted dock without eye protection. DNA bands separated on FlashGel® Cassettes are also detectable by UV light. FlashGel® Cassettes may be photographed using the FlashGel® Camera or standard documentation systems.

DNA bands as viewed during a run on the FlashGel® Dock



## Exquisitely sensitive detection

The FlashGel® System is 5-20 times more sensitive than gels stained with ethidium bromide stain, and will detect <0.1 ng DNA/band. Reduce DNA concentration and overall sample volume to conserve precious samples and save money – without direct handling of hazardous staining solutions.

## The ideal sample screening tool

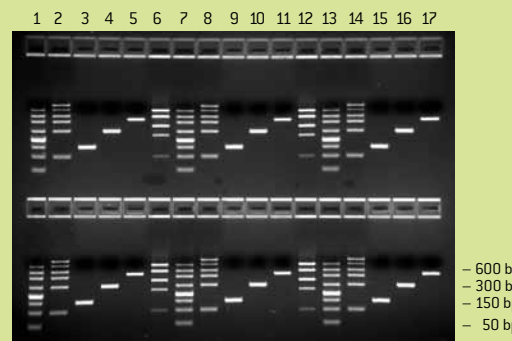
The FlashGel® System for DNA is the ideal sample screening tool for PCR or restriction fragments. Check up to 34 samples quickly, without the need to plan your day around agarose gels.

## Fast, simple procedure

The procedure is simple and takes just 5 minutes:

1. Flood wells with water
2. Insert cassette into dock
3. Load samples
4. Plug in and turn on light and voltage
5. Watch until desired separation is achieved
6. Photograph

FlashGel® DNA Cassette 2.2%, 16 + 1 well, double-tier

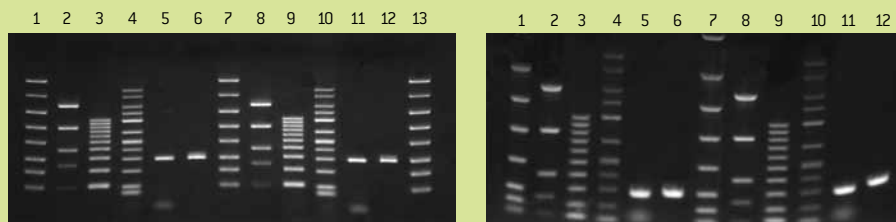


Cassette run at 250 V for 5 minutes. Lanes 1, 7 & 13: FlashGel® DNA Marker 50 bp–1.5 kb; Lanes 2, 8 & 14: FlashGel® DNA Marker 100 bp–3 kb; Lanes 6 & 12: FlashGel® QuantLadder; Lanes 3-5, 9-11 & 15-17: 8 ng loads of DNA fragments.

## Superior resolution

Resolve DNA fragments in less than 5 minutes, and see clean, sharp band separation and straight, uniform sample lanes.

Comparison of FlashGel® System and E-Gel® separations



1.2% FlashGel® DNA Cassette, 12 + 1 well format. 275 V, 7 minute run on the FlashGel® Dock.

1.2% E-Gel®, 12-well format. 30 minute run on the E-Gel® PowerBase v.4.

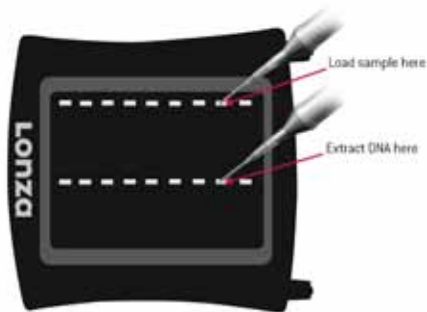
Lanes 1, 7 & 13: FlashGel® DNA Marker; Lanes 2 & 8: FlashGel® QuantLadder; Lanes 3 & 9: Lonza 100 bp Ladder; Lanes 4 & 10: Lonza 50-2,500 bp Marker; Lanes 5 & 11: 285 bp  $\beta$ -Actin PCR; Lanes 6 & 12: 294 bp Ambion control PCR. Samples diluted with 1X FlashGel® Loading Dye prior to loading. Dilutions and load volumes optimized for each sample in each gel system.



## Five minute DNA recovery

Direct DNA recovery using the FlashGel® System for Recovery eliminates agarose gel preparation, band excision, and purification. The system delivers highly efficient recovery, free from inhibitors and UV-induced damage, in a simple 5-10 minute protocol.

- Go from sample loading to recovery in just 5 minutes
- Recover samples directly from the cassette, without band excision or purification
- Visualize sample recovery without UV light
- Recover at 80 - 100% efficiency



## Fast, simple procedure

1. Load samples in top tier of wells
2. Run until samples reach the second tier of wells
3. Stop the run and add FlashGel® Recovery Buffer
4. Remove DNA from wells

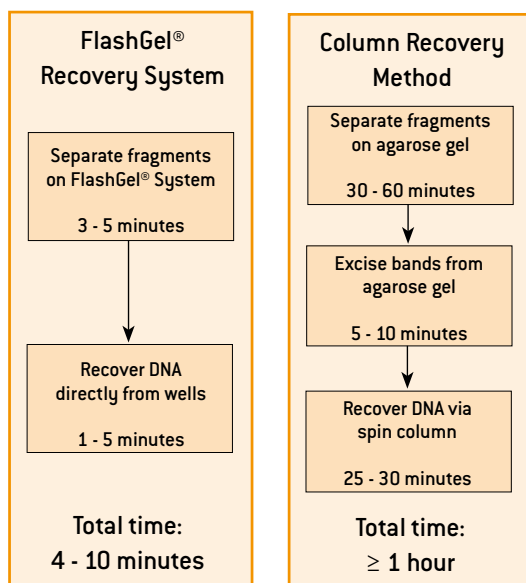
The FlashGel® Recovery System eliminates the need to cut away and then purify bands. As DNA migrates to the second tier of wells, it is free from the agarose matrix and easily extracted via pipette, with the aid of the FlashGel® Recovery Buffer.

## No DNA damaging UV or mutagenic stain exposure

Visible light from the compact FlashGel® Dock illuminates the recovery wells without damage to the DNA or hazard to the user. The proprietary stain in the FlashGel® Cassettes enables separation and recovery of very small quantities of DNA, and minimizes user exposure to stains.

## Efficient recovery, free from inhibitors

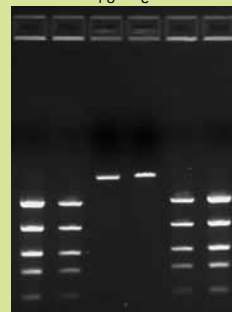
Samples are recovered at 80 - 100% efficiency, are free of inhibitors, and ready for subsequent re-amplification, cloning, sequencing or other techniques.



## Cloning and restriction with The FlashGel® System

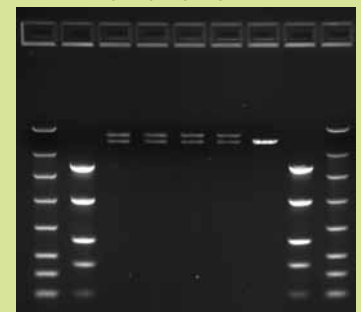
1. Recovered Samples

FG C



2. Plasmid Restriction Digests

FG1 FG2 C1 C2 V



Plasmid DNA [pBr322] was subjected to restriction enzyme double digestion using *Pst*I and *Bam*HI. Samples of the restricted DNA were separated and 3.2 kb fragments were recovered using the FlashGel® Recovery System (FG) or spin column kits (C1 and C2). Image 1 compares 5% of each recovered sample. Aliquots of the recovered samples were ligated into *Pst*I/*Bam*HI double digested pUC19 vector (V). Samples of the ligation reactions were transformed into *E.coli* competent cells. The number of colonies obtained with both samples were very similar. Image 2 shows examples of *Pst*I/*Bam*HI cut plasmid samples from two colonies from each sample. V shows a restricted sample of vector with no insert.

## Rapid, sensitive, convenient RNA analysis

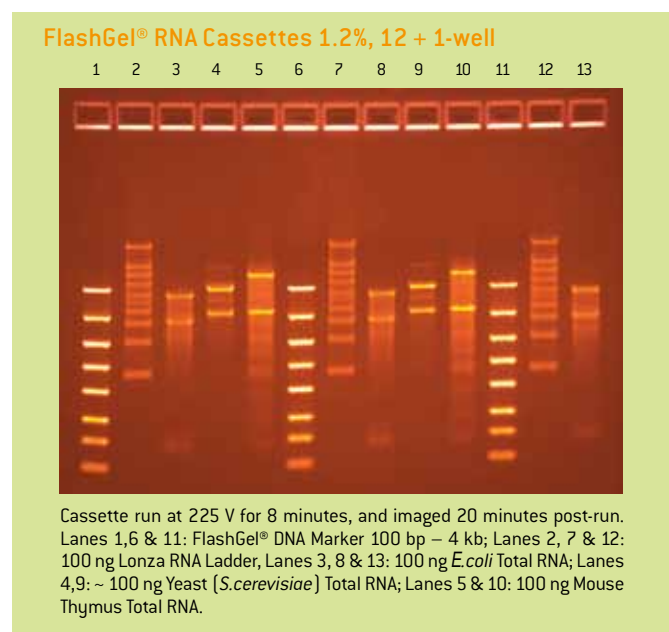
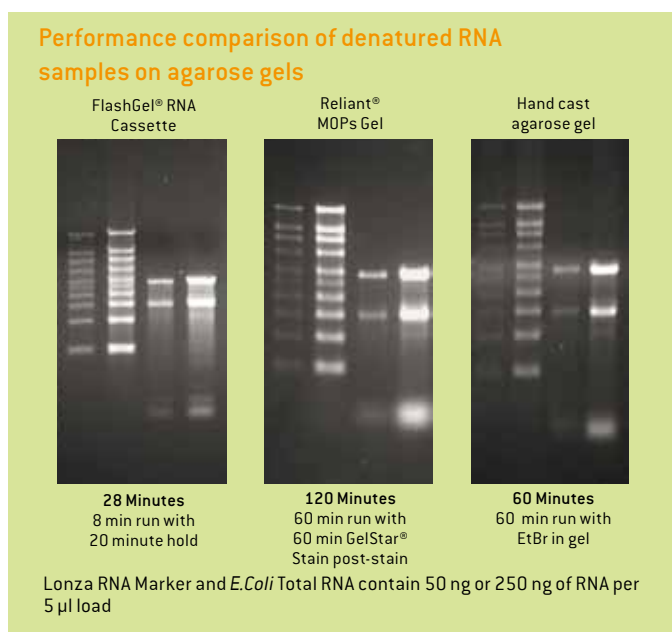
The FlashGel® System for RNA is optimized for the unique requirements of RNA, and is the ideal tool for rapid analysis of sample integrity. High quality, intact RNA is essential for consistent results in gene expression, Northern analysis, cDNA library construction and cDNA labeling for microarrays. Most protocols recommend checking RNA prior to downstream analysis.

The FlashGel® System completes RNA analysis in less than 30 minutes and requires < 10 ng total RNA for detection. The system is recommended for verification and analysis of total RNA, quick checks of native RNA and checking for RNA degradation and mRNA purity.

- Get results in 30 minutes or less
- Detect < 10 ng RNA per band
- Avoid hazardous reagents and contaminating RNases

## Rapid procedure

RNA fragments are analyzed on the FlashGel® System using the same fast and simple procedure used for DNA. Separation is complete in less than 8 minutes and RNA samples are ready for imaging within 10-20 minutes.



## Exquisitely sensitive detection

The FlashGel® System for RNA offers the detection sensitivity of a chip system, without the cost, and rivals the best RNA stains (SYBR® Green and GelStar® Stains), without direct handling of stain solutions. RNA quantities < 10 ng per band are clearly detected on the FlashGel® System, conserving precious RNA samples.

## Clean, enclosed system

FlashGel® RNA Cassettes fully enclose the gel, stain and running buffer, eliminating user exposure to hazardous reagents, and protecting samples from contaminating RNases. RNA cassettes are designed for performance and purity, and are guaranteed RNase-free. The FlashGel® Dock provides electrophoresis and visualization of both DNA and RNA cassettes.



The FlashGel® Camera

## Instant gel photos at the bench

Capture gel images from The FlashGel® System right at your benchtop with The FlashGel® Camera. This simple digital camera in an enclosed hood connects directly to your laptop or PC via USB cable.

- Sharp, clear, high-resolution images
- Simple user interface
- Small, compact design

Complete your gel run and capture your image in just 5 minutes. Now you can visualize band migration on The FlashGel® Dock or via image projected to your computer screen. Simply click a button to capture the desired image to a file.

### Camera Specifications

Hood dimensions:	10 cm (W) x 11 cm (L) x 16 cm (H)
Camera type:	Digital
Image file type:	.jpg, .tif, .bmp



## Ordering Information

### Specifications

Separation range	1.2% FlashGel® Cassettes	DNA: 50 bp – 10 kb RNA: 0.5 kb – 9 kb
	2.2% FlashGel® Cassettes	DNA: 10 bp – 1 kb
	Complete separation of fragments 10 bp – 4 kb in 5 -7 minutes. Separation of fragments > 4 kb will be improved by running longer, at lower voltage.	
Storage from date of Manufacture	DNA cassettes	Room temperature for 5 months
	RNA cassettes	Room temperature for 3 months
	Shelf life may be extended with refrigerated storage	
Well volume	12 + 1 well single-tier	≤ 5 µl
	16 + 1 well double-tier	≤ 5 µl
	8 + 1 well double-tier	≤ 12 µl
Gel size	70 mm (L) X 84 mm (W) X 2 mm (H)	
Cassette size	115 mm (L) X 107 mm (W) X 17 mm (H)	
Dock size	134 mm (L) X 120 mm (W) X 54 mm (H)	

Purchase components of the FlashGel® System separately, or as starter kits for DNA, RNA or recovery applications. FlashGel® Markers and other reagents are provided in convenient, ready-to-use formats, and are recommended for best performance.

## Ordering Information

Catalog No.	Product	Size/Format/Contents
<b>FlashGel® Dock</b>		
57025		For use with all FlashGel® Cassette types
<b>FlashGel® Camera</b>		
57040		Includes: Camera, hood enclosure, USB cable and software installation CD. For use with the FlashGel® Dock.
<b>FlashGel® System</b>		
57067		Includes: FlashGel® Dock; FlashGel® Camera; 9 pk FlashGel® DNA Cassettes (1.2%, 12 + 1 well); FlashGel® Loading Dye and FlashGel® DNA Marker.
<b>FlashGel® System for DNA</b>		
57023	FlashGel® DNA Cassette	1.2% agarose, 12 + 1 well single-tier, 9 pk
57029	FlashGel® DNA Cassette	1.2% agarose, 16 + 1 well double-tier (34-well), 9 pk
57031	FlashGel® DNA Cassette	2.2% agarose, 12 + 1 well single-tier, 9 pk
57032	FlashGel® DNA Cassette	2.2% agarose, 16 + 1 well double-tier (34-well), 9 pk
50462	FlashGel® Loading Dye	5 x 1 ml, 5X concentration
50473	FlashGel® DNA Marker, 100 bp - 4 kb	500 µl ready-to-load, band sizes: 100/200/300/500/800/1,500/2,000/4,000 bp Recommended for 1.2% Cassettes
57033	FlashGel® DNA Marker, 50 bp - 1.5 kb	500 µl ready-to-load, band sizes: 50/100/150/200/300/500/800/1,500 bp Recommended for 2.2% cassettes
57034	FlashGel® DNA Marker, 100 bp - 3 kb	500 µl ready-to-load, band sizes: 100/300/500/800/1,500/3,000 bp Recommended for double-tier cassettes
50475	FlashGel® QuantLadder	250 µl ready-to-load, band sizes: 100 bp (3 ng) / 250 bp (7.5 ng) / 400 bp (15 ng) / 800 bp (21 ng) / 1,500 bp (30 ng)
57026	FlashGel® DNA Starter Kit	Includes: FlashGel® Dock; 9 pk FlashGel® DNA Cassettes 1.2% agarose; 12 + 1 well; 1 ml FlashGel® Loading Dye and 150 µl FlashGel® DNA Marker 100 bp – 4 kb.
<b>FlashGel® System for Recovery</b>		
57051	FlashGel® Recovery Cassettes	1.2% agarose, 8 + 1 double-tier (18-well), 9 pk
57022	FlashGel® Recovery Cassettes	2.2% agarose, 8 + 1 double-tier (18-well), 9 pk
57060	FlashGel® Recovery Buffer	2 x 500 µl
50475	FlashGel® QuantLadder	250 µl ready-to-load, band sizes: 100 bp (3 ng) / 250 bp (7.5 ng) / 400 bp (15 ng) / 800 bp (21 ng) / 1,500 bp (30 ng)
57050	FlashGel® Recovery Starter Kit	Includes: 9 pk FlashGel® Recovery Cassettes; 1.2% agarose, 8 + 1 double-tier (18-well); FlashGel® Loading Dye; FlashGel® Recovery Buffer; FlashGel® QuantLadder; Visualization Glasses; Control Fragment.
<b>FlashGel® System for RNA</b>		
57027	FlashGel® RNA Cassette	1.2% agarose, 12 + 1 single-tier, 9 pk
57028	FlashGel® RNA Cassette	1.2% agarose, 16 + 1 double-tier (34-well), 9 pk
50571	Formaldehyde Sample Buffer	5 x 1 ml, RNA denaturing sample buffer (contains bromophenol blue and xylene cyanol)
50462	FlashGel® Loading Dye	5 x 1 ml, 5X concentration, RNA native sample buffer
50577	FlashGel® RNA Marker	50 µg, band sizes: 0.5/1/1.5/3/5/9 kb
51200	AccuGENE® Molecular Biology Water	1 L, for diluting samples and flooding sample wells, RNase-free
57024	FlashGel® RNA Starter Kit	Includes: 9 pk FlashGel® RNA Cassettes 1.2% agarose; 12 + 1 well; Formaldehyde Sample Buffer; FlashGel® RNA Marker; and AccuGENE® Molecular Biology Water.

## Contact Information

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