

## Robot-Compatibility of the E-Gel® 96 System: The key to high-throughput electrophoresis

**E**-Gel® bufferless, pre-cast agarose gels are designed for fast, convenient, and simple electrophoresis. The fully automated, robot-compatible E-Gel® 96 system allows you to take advantage of E-Gels® in a high-throughput manner to analyze over 20,000 samples per day.

### Designed for robotic flexibility

The E-Gel® 96 system consists of bases for loading and running the gel, analysis software, and pre-cast, 96-well gels. E-Gel® 96 gels and apparatus are compatible with a variety of liquid handling robots to accomplish your high-throughput agarose electrophoresis needs. Robotic platforms vary in the complexity of their programming requirements. However, the E-Gel® 96 system maintains standard SBS measurements, which facilitates straightforward, uncomplicated adaptation to most platforms. As an example, we have included the robotic parameters for the Biomek® FX Liquid Handling Workstation (Beckman Coulter, Inc., Fullerton, CA) in Table 1. Once you have defined your robot's parameters, you'll need to create a method that will pick up the loading tips, aliquot 20 µl of the diluted sample from a 96-well plate into the E-Gel® 96 wells, and finally dispense the tips into waste.

### Simple adaptation

Robotic handling of the E-Gel® 96 system requires coordination between the platform hardware, software and the E-Gel® 96 gel. Since instruments vary and different robots require their own specific parameters, the software program for your robot will require

**Table 2 – Parameters for using the E-Gel® 96 system on the Biomek® FX Liquid Handling Workstation**

Window Title	Enter
Instrument Setup	Select the mode for setting up the labware type and create new labware called E-Gel® 96 mother base
Basic information	Span: X = 12.776 and Y = 8.547 Height: 5.1
Wells 1	Well Offset: X = 1.3 cm and Y = 1.123 cm Well Count: X = 13 and Y = 8 Well Spacing: X = 0.9 cm and Y = 0.9 cm Maximum Volume = 20 µl
Edit Well configuration	Shape: Rectangle Upper: X = 0.43 cm and Y = 0.26 cm Lower: X = 0.43 cm and Y = 0.26 cm Height: 0.25 cm

*These parameters are guidelines. Since instruments vary, your robot's program may require slight modifications.*

some modification. The E-Gel® 96 system can be easily adapted to run on your robotic platform provided that: 1) the robotic platform includes a liquid handling component capable of directing between 4 and 96 channels, 2) the platform bed can accommodate the E-Gel® 96 mother base, daughter base, or holder, and 3) the software program enables editing of the x, y, and z coordinates and methodology for dispensing liquid.

### Successful high-throughput electrophoresis

The success of your high-throughput DNA electrophoresis depends upon your gel, your robotic platform, and the compatibility

of both. The E-Gel® 96 system is specifically designed for use on a variety of robotic platforms. Protocols for optimized parameters on a multitude of machines are available from Invitrogen. For additional information, including schematics of the E-Gel® 96 apparatus, please visit our website at [www.invitrogen.com/egels](http://www.invitrogen.com/egels).

\* Each E-Gel® 96 mother and daughter base is a self-contained base and power supply on which the E-Gel® 96 gel can be loaded and run. The mother base contains a power cord that plugs directly into any standard electrical outlet. The daughter bases connect to each other and to the mother base. Bases can be run simultaneously. The E-Gel® 96 holder is a base that can be used to keep the E-Gel® 96 gel in place while loading. It does not have a power supply.