Cat. #500 Manual

# EDGE™

Integrated Electrophoresis System



## Features:

- Integrated power supply: 100V or 150V selectable output for results in as little as 10 min.
- Safe, high-intensity blue LED illumination: 470 nm wavelength is optimized for SYBR® Safe and compatible with other popular nucleic acid stains.
- Convenient 10 x 7 cm gel tray with two dual-sided combs for up to 16 samples per gel
- Flexible gel volumes: 30-50 mL
- Built-in timer: 1-99 minutes
- Fan and ventilation system minimizes condensation during experiments
- Convenient hinged lid contains dual automatic power cutoff switches for safety
- Stainless steel and platinum electrodes are compatible with all standard electrophoresis buffers
- 17 x 17 x 15 cm

EDVOTEK®

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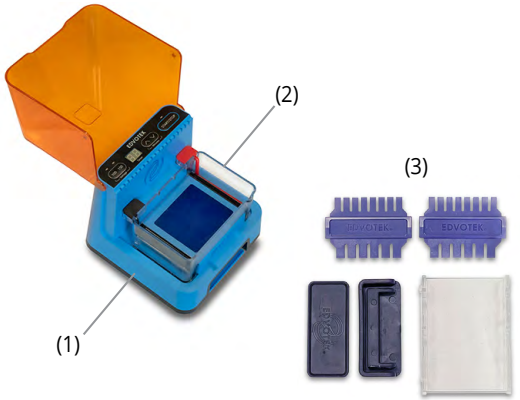
## Introduction:

The Edvotek® **EDGE™ Integrated Electrophoresis System** combines an electrophoresis apparatus, power supply, and blue light transilluminator into a single, user-friendly unit.

**Each EDGE™ Includes:**

(1) **EDGE™ base unit** with integrated 100V and 150V power supply, hinged lid, and blue light transilluminator.
(2) **EDGE™ buffer tank** with stainless steel and platinum electrodes.
(3) **EDGE™ accessories:** 10 x 7 cm gel tray, two dual-sided combs (6- and 8-well) and two casting endcaps.




The EDGE™ has been designed for safety and convenience. A hinged lid and dual safety cutoff switches help to prevent improper use and minimize the risk of electric shock. The blue light transilluminator allows users to monitor DNA migration throughout the experiment using SYBR® Safe or similar stains, without the hazards associated with UV light.

A built-in power supply allows users to select between 100V and 150V, producing results in as little as 10 minutes. The integrated timer can be set between 1 and 99 minutes to automatically turn off the power. Gels can be cast with one or two combs, providing up to 16 wells in a single run.

## Warnings:

- Use only appropriate electrophoresis buffers in the chamber. Improper buffers can lead to damage to the power supply and electrodes and can risk electric shock to the user.
- DO NOT open the outer housing of the EDGE, modify, or circumvent the safety features of the unit. This product should only be disassembled or serviced by properly trained professionals.
- While the light wavelengths emitted by this product do not require specialized eyewear, the blue light is high intensity. DO NOT stare at the blue lights for a long period without the orange lid in place.
- DO NOT submerge the outer housing of the EDGE™ or pour liquids onto the unit.
- Wear gloves and follow all manufacturer recommendations when working with DNA stains
- At all times, USE COMMON SENSE.

## User Maintenance:

Before cleaning your unit, ALWAYS disconnect the cord to prevent electric shock. The EDGE™ base can be cleaned by wiping with a lightly damp, soapy cloth. Care should be exercised to prevent water from running inside the unit. Do not use abrasive cleaners or strong solvents. The buffer chamber, tray, combs, and endcaps can be fully submerged to clean with mild detergent if necessary. Avoid direct contact with the positive and negative electrodes. Dry everything fully before storage.

In the unlikely event that you experience any problems with your unit that cannot easily be remedied, please contact EDVOTEK® to explain the problem and obtain a Return Goods Authorization #. After obtaining the RGA #, return the unit if necessary and include any details of the fault observed. Remember to return the unit in its original packing. EDVOTEK® accepts no responsibility for damage to units that are not properly packed for shipping.

## Instructions:

### CASTING AN AGAROSE GEL

*Note: Always follow the instructions for your experiment to determine the concentration of agarose required for your specific samples.*

1. **PREPARE** the agarose gel solution by combining agarose powder and electrophoresis buffer according to the recipe in your protocol and microwaving until fully dissolved. The EDGE™ is optimized for 30-50 mL gels.
2. **COOL** the agarose solution to 60 °C with careful swirling to promote even dissipation of heat.
3. While the agarose is cooling, **SEAL** the ends of the gel-casting tray with the rubber end caps. **PLACE** the comb(s) into the appropriate notch.
4. Follow the instructions provided with your experiment to **ADD** SYBR® Safe stain to the cooled agarose solution. ***Note: For general experiments we recommend a 1:10,000 to 1:20,000 dilution of SYBR® Safe.***
5. **POUR** the agarose solution into the gel-casting tray and wait until the gel has solidified. Most gels will be ready to use within 15 minutes.
6. **REMOVE** the end caps and comb from the tray. Take care when removing the comb to prevent damage to the wells. The gel is now ready to use.

### RUNNING AN AGAROSE GEL IN THE EDGE™

1. **PLACE** the gel (on the tray) into the electrophoresis chamber and ensure the chamber is placed firmly into the EDGE™ base. The chamber should sit firmly onto the base with both electrodes touching the metal contacts on the base. The electrophoresis chamber should sit flush against the bottom of the EDGE™ base unit.
2. **COVER** the gel with 1x electrophoresis buffer, being careful to not overfill the chamber. For best results the buffer should be approximately 0.5 cm above the surface of the gel. Ensure that the gel tray is aligned in the center of the chamber.
3. **LOAD** the DNA samples into the wells according to the experiment protocol.
4. **LOWER** the orange safety lid and check that is it tightly closed.
5. Using the arrow buttons, **ADJUST** the timer to reach the desired value. For most experiments we recommend not exceeding 30 minutes before checking on the progress of your samples.
6. **SELECT** the desired voltage, 100V or 150V using the voltage selector buttons. An orange LED will indicate which voltage has been selected.
7. **PRESS** the START/STOP button to begin the run. Bubbles will form near the electrodes. The power will not turn on if:
   - The cover is not correctly placed on the base
   - The electrodes in the chamber are not making contact with the EDGE™ base
   - The buffer in the chamber is incorrect or the buffer volume is too low.
8. At any time during the experiment, **PRESS** the ON/OFF paddle at the base of the EDGE™ to illuminate the gel using the blue LEDS.
9. After electrophoresis is complete, **PRESS** the START/STOP button to stop the current, document the results of the experiment, and then open the lid to dispose of the gel and electrophoresis buffer.

### DOCUMENTING YOUR RESULTS

At any point during or after the experiment has completed, the results can be documented by using a camera or smartphone to take an image through the orange safety lid. Dimming the lights in the room can increase the visibility of DNA if needed.

## Troubleshooting:

**The EDGE™ does not power on:**

- Check that the power cord is fully plugged into the EDGE™ base and that the cord and outlet are functional.
- Confirm that the power switch on the rear of the EDGE™ base is turned on.
- Inspect the fuse and replace if needed. The fuse is located directly under the power plug on the rear of the EDGE.

**The START/STOP indicator LED does not stay lit and/or the experiment does not run:**

- Ensure that the lid is fully closed.
- Press firmly on the electrophoresis tank to ensure that it is firmly seated and that both electrodes are making contact with the base.
- Check that the correct buffer has been used and that the gel is fully submerged in buffer.
- Ensure that the timer has not reached zero. Increase the remaining time and try running the experiment again.

**The gel tray will not fit into the chamber:**

- The tray is designed to fit only one way. Rotate the tray 180˚ and try again.
- The EDGE™ uses custom 10 x 7 cm trays that differ from existing Edvotek electrophoresis accessories. Please ensure that you are using the proper electrophoresis trays.

**No DNA bands are present on the gel:**

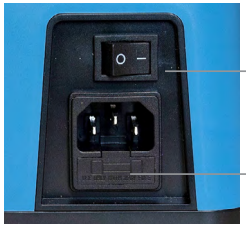
- Check that the blue light is turned on by pressing the paddle switch
- Ensure that SYBR® Safe, or comparable blue light-compatible, DNA stain was added to the gel. Consider a post-electrophoresis stain like EDVOTEK® FlashBlue™ stain.
- Verify that the gel has run properly. This can often be confirmed by the migration of a loading dye included in the experimental samples.

**The gel has run crooked, or the DNA samples are at an angle:**

- Ensure that the gel tray is aligned properly in the buffer chamber. The tray should sit flush against the bottom of the chamber and against one wall of the chamber to ensure it is straight.
- Check that the electrodes are intact and that there is no visible corrosion on either electrode.

## Specifications:

- LED Wavelength: 470 nm +/- 10 nM
- LED Life: 50,000 hours
- Input voltage: 100-240V AC, 50/60 hz
- Output voltage: Selectable at 100V or 150V DC
- Dimensions: 17 cm (w) x 17 cm (l) x 15 cm (h)
- Operating conditions: 4 °C to 37 °C, 75% maximum humidity




## Guarantee:

The unit is guaranteed against any defect in material or workmanship for three years. The warranty period is from the date of receipt, and within this period all defective parts will be replaced free of charge provided that the defect is not the result of misuse, accident or negligence. Servicing under this guarantee should be obtained from EDVOTEK®.

Notwithstanding, the description and specification(s) of the units contained in the User's Manual, EDVOTEK® hereby reserves the right to make such changes as it sees fit to the units or to any component of the units. This Manual has been prepared solely for the convenience of EDVOTEK® customers and nothing in this Instruction Book shall be taken as a warranty, condition or representation concerning the description, merchantability, fitness for purpose or otherwise of the units or components.

## Contact Information:

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