

**Consort**

Artistic in science



20-06

Product catalogue

# Electrophoresis Power Supplies



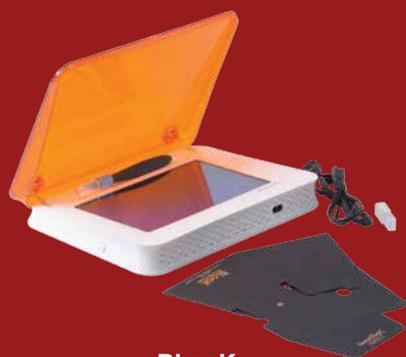
- On screen help in 4 languages
- Real Time Clock
- Various running modes:
  - Simple Mode
  - 9x9 Method Programming Mode
  - Voltage Ramp Mode
  - Timer Mode
- Constant voltage/Constant current/Constant power
- Automatic cross-over
- Automatic recovery after power failure
- Password protection
- Data-logging
- Remote control via open communication protocol
- Safety features:
  - Ground leakage detection
  - Overload protection
  - Smooth voltage rise
  - No load detection
  - Isolated USB communication
- Free software and firmware updates



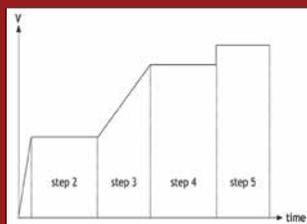
**EVS3100-SYS**



**EHCA1200-SYS**



**BLOOK**



**EHCA1200 Strips Sheets**

The EV1450 is a small power supply suitable for most smaller tanks and applications. EV1450 has a firmware upgrade capability so future improvements and features will always be available.

Moreover EV1450 has a continuous logging combined with a real time clock so it's possible to get an overview of previous runs, including possible down-times in case of mains power failures.

Consort Power Supplies are the most robust, long lasting and durable electrophoresis power supplies in the market.

<b>Power</b>	50 W
<b>Voltage</b>	400 V
<b>Current</b>	500 mA
<b>Outputs</b>	4
<b>Operating Modes</b>	4
	Simple Mode
	9x9 Method Programming Mode
	Voltage Ramp mode
	Timer Mode (time or Vh)

**USB interface**  
**Datalogging**  
**Real Time Clock**  
**Mutiple safety features**

<b>Warranty</b>	<b>36 months</b>
<b>Made in Belgium</b>	

Code	Description
<b>EV0220</b>	Power supply, 200 V, 200 mA, 20 W
<b>EHS3100-SYS</b>	Mini horizontal unit 7x8 cm
<b>EHCA1200-SYS</b>	Horizontal unit for cellulose acetate
<b>EHCA1200-ST</b>	Cellulose acetate strips, available in different sizes
<b>EHCA1200-SH</b>	Cellulose acetate sheets, available in different sizes
<b>BLOOK</b>	LED gel documentation table
→ Supplied with a european mains cord + USB cable	

<b>Power</b>	<b>50 W</b>
<b>Voltage</b>	<b>400 V</b>
<b>Current</b>	<b>500 mA</b>
<b>Outputs</b>	<b>4</b>
<b>Operating Modes</b>	<b>4</b> Simple Mode 9x9 Method Programming Mode Voltage Ramp mode Timer Mode (time or Vh)
<b>USB interface</b>	
<b>Datalogging</b>	
<b>Real Time Clock</b>	
<b>Multiple safety features</b>	
<b>Warranty</b>	36 months
<b>Made in Belgium</b>	



## ● Description

The EV1450 is a small power supply suitable for most smaller tanks and applications. The front panel and graphical display are designed for ease of use. The display provides all useful information during runs and will show an on screen help to guide the user in setting up the power supply. In Simple Mode you just have to set your power supply to the desired parameters and press run. EV1450 has a firmware upgrade capability so future improvements and features will always be available. Moreover EV1450 has a continuous logging combined with a real time clock so it's possible to get an overview of previous runs, including possible down-times in case of mains power failures. Consort Power Supplies are the most robust, long lasting and durable electrophoresis power supplies in the market.

## ● Features

**On screen help** in 4 languages to assist setting up the power supply parameters and solve errors.

**Firmware updates** allows for upgrades to the latest version via the USB interface. Feature requests can also be implemented via the firmware system.

**Real Time Clock** date and time are kept in a battery backup system and is used logging an electrophoresis run.

### Various running modes:

**Simple Mode:** just set voltage, current, power and time for a routine electrophoresis run.

**9x9 Method Programming Mode:** Up to 9 different programs, each with 9 steps, can be stored in the non-volatile memory. Each step is able to recall a next one, providing a flexible multiple step function for special techniques. Parameters of the running step can be changed temporarily without interrupting the run.

**Voltage Ramp Mode:** a linear voltage gradient for any step provided the limiting current or power is not attained.

**Timer Mode:** Timer or volt-hour controlled operation will automatically stop the run and sound an alarm.

**Automatic cross-over** Each model has constant voltage, constant current, constant power capabilities with automatic cross-over and shows which parameter is kept constant.

**Automatic recovery after power failure**

### Password protection

**Data-logging** Data logging of about 100 hours of runs are automatically stored. Data includes data/time, voltage, current, power and date/time of following events: start, stop, pause, program number, step, changes, mains failure and auto restart.

**Data Transfer** Free data acquisition software for PC can be downloaded from our website. It allows to visualize and examine the stored run details.

**Remote control** EV1450 can be controlled by a computer using special commands. These commands can be found in the support section of our website.

### Safety features:

**Ground leakage detection:** protection from potential shock hazard when a ground leakage path is detected.

**Overload protection:** full protection against any overload condition including accidental short circuit of the output.

**Smooth voltage rise:** high voltage cannot suddenly appear at the outputs but will increase smoothly up to the pre-set limits.

**No load detection:** prevents errors such as a bad or a dangling connection.

**Isolated communication:** Optically isolated USB input/output connection to prevent any high voltage on the communication lines.

## ● Specifications

<b>VOLTAGE</b>	0...400 V	<b>PROGRAMS</b>	9x9 set of parameters	<b>DATA-LOGGING</b>	3600 values
<b>CURRENT</b>	0...500 mA	<b>OUTPUTS</b>	4 in parallel, 4 mm sockets	<b>INTERVAL</b>	1...60 seconds
<b>POWER</b>	0...50 W	<b>MINIMUM LOAD</b>	30 Ω	<b>REAL TIME CLOCK</b>	✓
<b>PARAMETER RANGE</b>	1...100% of full scale	<b>GROUND LEAKAGE DETECTION</b>	✓	<b>AMBIENT TEMPERATURE</b>	0...40°C
<b>TIMER</b>	0...99:59 h	<b>OVERLOAD DETECTION</b>	✓	<b>RELATIVE HUMIDITY</b>	0...95%, non condensing
<b>VOLT-HOURS</b>	0...99.99 kWh	<b>COMPUTER CONTROL</b>	✓	<b>POWER REQUIREMENTS</b>	210-250 VAC, 50/60 Hz, 75 W 100-125 VAC, 50/60 Hz, 75 W
<b>SETUP RESOLUTION</b>	1 V, 1 mA, 1 W	<b>USB INTERFACE</b>	✓	<b>DIMENSIONS (WxDxH)</b>	24x20x13 cm
<b>MEASUREMENT RES.</b>		<b>PASSWORD</b>	✓	<b>WEIGHT</b>	3 kg
		<b>DISPLAY</b>	graphical		

- On screen help in 4 languages
- Real Time Clock
- Various running modes:
  - Simple Mode
  - 9x9 Method Programming Mode
  - Voltage Ramp Mode
  - Timer Mode
- Constant voltage/Constant current/Constant power
- Automatic cross-over
- Automatic recovery after power failure
- Password protection
- Data-logging
- Remote control via open communication protocol
- Safety features:
  - Ground leakage detection
  - Overload protection
  - Smooth voltage rise
  - No load detection
  - Isolated USB communication
- Free software and firmware updates



EV2000 series is a robust 150W power supply in a small housing and designed to be easy to use.

#### EV2310 (300V, 1000mA):

An excellent choice for blotting, multiple horizontal and vertical gels.

#### EV2650 (600V, 500mA):

All round power supply suitable for most tanks and applications.

#### EV2230 (1500V, 300mA):

Suitable for higher voltage applications

#### EV2320 (3000V, 150mA):

A high voltage power supply in a small form factor



**EVS3100-BLOT**



**EHS3660-SYS**

EV2000 series has a firmware upgrade capability. Moreover EV2000 series has a continuous logging combined with a real time clock. The complete EV series can keep its voltage constant at low currents without problem and will keep on functioning at low and high temperatures. Consort Power Supplies are the most robust, long lasting and durable electrophoresis power supplies in the market.

#### Specifications depending on model

Power	0-150 W
Voltage	0-300 V to 0-3000V
Current	0-150 mA to 0-1000mA
Outputs	4
Operating Modes	4
	Simple Mode
	9x9 Method Programming Mode
	Voltage Ramp mode
	Timer Mode (time or Vh)

USB interface  
 Datalogging  
 Real Time Clock  
 Multiple safety features

Warranty **36 months**  
 Made in Belgium

Code	Description
EV2310	Power supply, 300 V, 1000 mA, 150 W
EV2650	Power supply, 600 V, 500 mA, 150 W
EV2230	Power supply, 1500 V, 300 mA, 150 W
EV2320	Power supply, 3000 V, 150 mA, 150 W
EVS3100-BLOT	Mini Tank Blotter (10x10cm) with 4 cassettes
EHS3660-SYS	Maxi horizontal unit 23x25 cm
→ Supplied with a european mains cord + USB cable	

**Power** 150 W  
**Voltage** 300 V to 3000V (4 versions)  
**Current** 150 mA to 1000mA (4 versions)

**Outputs** 4  
**Operating Modes** 4  
 Simple Mode  
 9x9 Method Programming Mode  
 Voltage Ramp mode  
 Timer Mode (time or Vh)

**USB interface**  
**Datalogging**  
**Real Time Clock**  
**Multiple safety features**  
**Warranty** 36 months  
**Made in Belgium**



## ● Description

EV2000 series is a high-end mid-power range suitable for most applications such as larger tanks or multiple smaller tanks. A robust 150W power supply in a small housing and designed to be easy to use.

The EV2000 series contains 4 different version:

EV2310 (300V, 1000mA): an excellent choice for blotting, multiple horizontal and vertical gels.

EV2650 (600V, 500mA): our most popular all round power supply suitable for most tanks and applications

EV2230 (1500V, 300mA): suitable for higher voltage applications with a need for higher currents

EV2320 (3000V, 150mA): a high voltage power supply in a small form factor suitable for most high voltage applications

The front panel and graphical display are designed for ease of use. The display provides all useful information during runs and will show an on screen help to guide the user in setting up the power supply. In Simple Mode you just have to set your power supply to the desired parameters and press run.

EV2000 series has a firmware upgrade capability so future improvements and features will always be available.

Moreover EV2000 series has a continuous logging combined with a real time clock so it's possible to get an overview of previous runs, including possible down-times in case of mains power failures.

The complete EV series can keep it's voltage constant at low currents without problem and will keep on functioning at low and high temperatures.

Consort Power Supplies are the most robust, long lasting and durable electrophoresis power supplies in the market.

## ● Features

**On screen help** in 4 languages to assist setting up the power supply parameters and solve errors.

**Firmware updates** allows for upgrades to the latest version via the USB interface. Feature requests can also be implemented via the firmware system.

**Real Time Clock** date and time are kept in a battery backup system and is used logging an electrophoresis run.

### **Various running modes:**

**Simple Mode:** just set voltage, current, power and time for a routine electrophoresis run.

**9x9 Method Programming Mode:** Up to 9 different programs, each with 9 steps, can be stored in the non-volatile memory.

Each step is able to recall a next one, providing a flexible multiple step function for special techniques. Parameters of the running step can be changed temporarily without interrupting the run.

**Voltage Ramp Mode:** a linear voltage gradient for any step provided the limiting current or power is not attained.

**Timer Mode:** Timer or volt-hour controlled operation will automatically stop the run and sound an alarm.

**Automatic cross-over** Each model has constant voltage, constant current, constant power capabilities with automatic cross-over and shows which parameter is kept constant.

**Automatic recovery after power failure**

**Password protection**

**Data-logging** Data logging of about 100 hours of runs are automatically stored. Data includes data/time, voltage, current, power and date/time of following events: start, stop, pause, program number, step, changes, mains failure and auto restart.

**Data Transfer** Free data acquisition software for PC can be downloaded from our website. It allows to visualize and examine the stored run details.

**Remote control** EV2000 series can be controlled by a computer using special commands. These commands can be found in the support section of our website.

**Safety features:**

**Ground leakage detection:** protection from potential shock hazard when a ground leakage path is detected.

**Overload protection:** full protection against any overload condition including accidental short circuit of the output.

**Smooth voltage rise:** high voltage cannot suddenly appear at the outputs but will increase smoothly up to the pre-set limits.

**No load detection:** prevents errors such as a bad or a dangling connection.

**Isolated communication:** Optically isolated USB input/output connection to prevent any high voltage on the communication lines.

**Warranty** 3 year warranty on factory faults.

## ● Specifications

	EV2310	EV2650	EV2230	EV2320
<b>VOLTAGE</b>	0...300 V	0...600 V	0...1500 V	0...3000 V
<b>CURRENT</b>	0...1000 mA	0...500 mA	0...300 mA	0...150 mA
<b>POWER</b>	0...150 W	0...150 W	0...150 W	0...150 W
<b>PARAMETER RANGE</b>	1...100% of full scale			
<b>TIMER</b>	0...99:59 h	0...99:59 h	0...99:59 h	0...99:59 h
<b>VOLT-HOURS</b>	0...99.99 kWh	0...99.99 kWh	0...99.99 kWh	0...99.99 kWh
<b>DISPLAY</b>	graphical	graphical	graphical	graphical
<b>SETUP RESOLUTION</b>	1 V, 1 mA, 1 W			
<b>MEASUREMENT RESOLUTION</b>	1 V, 1 mA, 0.1 W	1 V, 0.1 mA, 0.1 W	1 V, 0.1 mA, 0.1 W	1 V, 1 mA, 0.1 W
<b>PROGRAMS</b>	9x9 set of parameters			
<b>OUTPUTS</b>	4 in parallel, 4 mm sockets			
<b>MINIMUM LOAD RESISTANCE</b>	10 Ω	30 Ω	300 Ω	600 Ω
<b>NO LOAD DETECTION</b>	✓	✓	✓	✓
<b>GROUND LEAKAGE DETECTION</b>	✓	✓	✓	✓
<b>OVERLOAD DETECTION</b>	✓	✓	✓	✓
<b>COMPUTER CONTROL</b>	✓	✓	✓	✓
<b>PASSWORD PROTECTION</b>	✓	✓	✓	✓
<b>DATA-LOGGING</b>	3600 values	3600 values	3600 values	3600 values
<b>INTERVAL</b>	1...60 seconds	1...60 seconds	1...60 seconds	1...60 seconds
<b>REAL TIME CLOCK</b>	✓	✓	✓	✓
<b>USB INTERFACE</b>	✓	✓	✓	✓
<b>AMBIENT TEMPERATURE</b>	0...40°C	0...40°C	0...40°C	0...40°C
<b>RELATIVE HUMIDITY</b>	0...95%, non condensing	0...95%, non condensing	0...95%, non condensing	0...95%, non condensing
<b>POWER REQUIREMENTS</b>	210-250 VAC, 50/60 Hz, 200 W 100-125 VAC, 50/60 Hz, 200 W	210-250 VAC, 50/60 Hz, 200 W 100-125 VAC, 50/60 Hz, 200 W	210-250 VAC, 50/60 Hz, 200 W 100-125 VAC, 50/60 Hz, 200 W	210-250 VAC, 50/60 Hz, 200 W 100-125 VAC, 50/60 Hz, 200 W
<b>DIMENSIONS (WxDxH)</b>	24x20x13 cm	24x20x13 cm	24x20x13 cm	24x20x13 cm
<b>WEIGHT</b>	6 kg	6 kg	6 kg	6 kg

- On screen help in 4 languages
- Real Time Clock
- Various running modes:
  - Simple Mode
  - 9x9 Method Programming Mode
  - Voltage Ramp Mode
  - Timer Mode
- Constant voltage/Constant current/Constant power
- Automatic cross-over
- Automatic recovery after power failure
- Password protection
- Data-logging
- Remote control via open communication protocol
- Safety features:
  - Ground leakage detection
  - Overload protection
  - Smooth voltage rise
  - No load detection
  - Isolated USB communication
  - IEF Mode (EV2330 and EV3620)
- Free software and firmware updates



EV3000 series contains 5 versions. The 3000V and 6000V version have a special low current mode for IEF applications. The IEF mode is for low current applications. The power supply can measure currents as low as 10 microAmps. All Consort power supplies can keep voltage constant at 0 current.

**EV3020 (300V, 2000mA):**

an excellent choice for blotting, multiple horizontal and vertical gels.

**EV3610 (600V, 1000mA):**

all round power supply suitable for most tanks and applications

**EV3150 (1200V, 500mA):**

suitable for higher voltage applications with a need for higher currents

**EV3330 (3000V, 300mA):**

high voltage with special low current mode (IEF-mode)

**EV3620 (6000V, 150mA):**

ultra high voltage with special low current mode (IEF-mode)

EV3000 series has a firmware upgrade capability and continuous logging with a real time clock. Consort Power Supplies are the most robust, long lasting and durable electrophoresis power supplies in the market.

### Specifications depending on model

Power	300 W
Voltage	0-300 V to 0-6000V
Current	0-150 mA to 0-2000mA
Outputs	4
Operating Modes	4
	Simple Mode
	9x9 Method Programming Mode
	Voltage Ramp mode
	Timer Mode (time or Vh)
	IEF Mode

- USB interface
- Datalogging
- Real Time Clock
- Multiple safety features
- Warranty **36 months**
- Made in Belgium



**EIEF1100-SYS**

Code	Description
<b>EV3020</b>	Power supply, 300 V, 2000 mA, 300 W
<b>EV3610</b>	Power supply, 600 V, 1000 mA, 300 W
<b>EV3150</b>	Power supply, 1200 V, 500 mA, 300 W
<b>EV3330</b>	Power supply, 3000 V, 300 mA, 300 W
<b>EV3620</b>	Power supply, 6000 V, 150 mA, 300 W
<b>ESEQ1200-SYS</b>	Sequencing unit 20x50 cm
<b>EIEF1100-SYS</b>	Isoelectric focusing system, 26x26 cm
→ Supplied with a european mains cord + USB cable	

**Power** 300 W  
**Voltage** 300 V to 1200V (3 versions)  
**Current** 500 mA to 2000mA (3 versions)

**Outputs** 4  
**Operating Modes** 4  
 Simple Mode  
 9x9 Method Programming Mode  
 Voltage Ramp mode  
 Timer Mode (time or Vh)

**USB interface**  
**Datalogging**  
**Real Time Clock**  
**Multiple safety features**  
**Warranty** 36 months  
**Made in Belgium**



## ● Description

The high-power high-end EV3000 power supply series has 5 versions. In the 300V to 1200V range we have 3 versions:

EV3020 (300V, 2000mA): an excellent choice for blotting, multiple horizontal and vertical gels.

EV3610 (600V, 1000mA): our most popular all round power supply suitable for most tanks and applications

EV3150 (1200V, 500mA): suitable for higher voltage applications with a need for higher currents

The front panel and graphical display are designed for ease of use. The display provides all useful information during runs and will show an on screen help to guide the user in setting up the power supply. In Simple Mode you just have to set your power supply to the desired parameters and press run.

EV3000 series has a firmware upgrade capability so future improvements and features will always be available.

Moreover EV3000 series has a continuous logging combined with a real time clock so it's possible to get an overview of previous runs, including possible down-times in case of mains power failures.

The complete EV series can keep it's voltage constant at low currents without problem and will keep on functioning at low and high temperatures.

Consort Power Supplies are the most robust, long lasting and durable electrophoresis power supplies in the market.

## ● Features

**On screen help** in 4 languages to assist setting up the power supply parameters and solve errors.

**Firmware updates** allows for upgrades to the latest version via the USB interface. Feature requests can also be implemented via the firmware system.

**Real Time Clock** date and time are kept in a battery backup system and is used logging an electrophoresis run.

### Various running modes:

**Simple Mode:** just set voltage, current, power and time for a routine electrophoresis run.

**9x9 Method Programming Mode:** Up to 9 different programs, each with 9 steps, can be stored in the non-volatile memory.

Each step is able to recall a next one, providing a flexible multiple step function for special techniques. Parameters of the running step can be changed temporarily without interrupting the run.

**Voltage Ramp Mode:** a linear voltage gradient for any step provided the limiting current or power is not attained.

**Timer Mode:** Timer or volt-hour controlled operation will automatically stop the run and sound an alarm.

**Automatic cross-over** Each model has constant voltage, constant current, constant power capabilities with automatic cross-over and shows which parameter is kept constant.

**Automatic recovery after power failure**

**Password protection**

**Data-logging** Data logging of about 100 hours of runs are automatically stored. Data includes data/time, voltage, current, power and date/time of following events: start, stop, pause, program number, step, changes, mains failure and auto restart.

**Data Transfer** Free data acquisition software for PC can be downloaded from our website. It allows to visualize and examine the stored run details.

**Remote control** EV3000 series can be controlled by a computer using special commands. These commands can be found in the support section of our website.

**Safety features:**

**Ground leakage detection:** protection from potential shock hazard when a ground leakage path is detected.

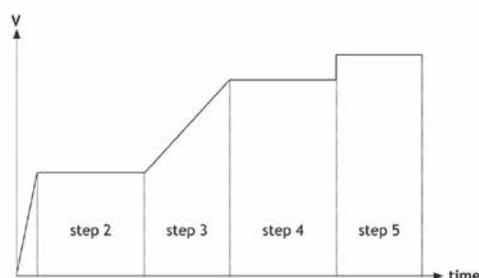
**Overload protection:** full protection against any overload condition including accidental short circuit of the output.

**Smooth voltage rise:** high voltage cannot suddenly appear at the outputs but will increase smoothly up to the pre-set limits.

**No load detection:** prevents errors such as a bad or a dangling connection.

**Isolated communication:** Optically isolated USB input/output connection to prevent any high voltage on the communication lines.

**Warranty** 3 year warranty on factory faults.



● Specifications

	EV3020	EV3610	EV3150
<b>VOLTAGE</b>	0...300 V	0...600 V	0...1200 V
<b>CURRENT</b>	0...2000 mA	0...1000 mA	0...500 mA
<b>POWER</b>	0...300 W	0...300 W	0...300 W
<b>PARAMETER RANGE</b>	1...100% of full scale	1...100% of full scale	1...100% of full scale
<b>TIMER</b>	0...99:59 h	0...99:59 h	0...99:59 h
<b>VOLT-HOURS</b>	0...99.99 kWh	0...99.99 kWh	0...99.99 kWh
<b>DISPLAY</b>	LCD, 2x16 characters	LCD, 2x16 characters	LCD, 2x16 characters
<b>RESOLUTION</b>	1 V, 1 mA, 1 W	1 V, 1 mA, 1 W	1 V, 1 mA, 1 W
<b>MEASUREMENT RESOLUTION</b>	1 V, 0.1 mA, 0.1 W	1 V, 0.1 mA, 0.1 W	1 V, 0.1 mA, 0.1 W
<b>PROGRAMS</b>	9x9 set of parameters	9x9 set of parameters	9x9 set of parameters
<b>OUTPUTS</b>	4 (4 mm sockets)	4 (4 mm sockets)	4 (4 mm sockets)
<b>MINIMUM LOAD RESISTANCE</b>	5 Ω	15 Ω	70 Ω
<b>NO LOAD DETECTION</b>	✓	✓	✓
<b>GROUND LEAKAGE DETECTION</b>	✓	✓	✓
<b>OVERLOAD DETECTION</b>	✓	✓	✓
<b>COMPUTER CONTROL</b>	✓	✓	✓
<b>PASSWORD PROTECTION</b>	✓	✓	✓
<b>DATA-LOGGING</b>	3600 values	3600 values	3600 values
<b>INTERVAL</b>	1...60 seconds	1...60 seconds	1...60 seconds
<b>USB INTERFACE</b>	✓	✓	✓
<b>AMBIENT TEMPERATURE</b>	0...40°C	0...40°C	0...40°C
<b>RELATIVE HUMIDITY</b>	0...95%, non condensing	0...95%, non condensing	0...95%, non condensing
<b>POWER REQUIREMENTS</b>	210...250 VAC, 50/60 Hz, 360 W 100...125 VAC, 50/60 Hz, 360 W	210...250 VAC, 50/60 Hz, 360 W 100...125 VAC, 50/60 Hz, 360 W	210...250 VAC, 50/60 Hz, 360 W 100...125 VAC, 50/60 Hz, 360 W
<b>DIMENSIONS (WxDxH)</b>	31x26x13 cm	31x26x13 cm	31x26x13 cm
<b>WEIGHT</b>	10 kg	10 kg	10 kg

**Power** 300 W  
**Voltage** 3000 V to 6000V (2 versions)  
**Current** 150 mA to 300mA (2 versions)

**Outputs** 4  
**Operating Modes** 5  
 Simple Mode  
 9x9 Method Programming Mode  
 Voltage Ramp mode  
 Timer Mode (time or Vh)  
 IEF Mode (ultra low current)

**USB interface**  
**Datalogging**  
**Real Time Clock**  
**Multiple safety features**  
**Warranty** 36 months  
**Made in Belgium**



## ● Description

The high-power high-end EV3000 power supply series has 5 versions. The 3000V and 6000V version have a special low current mode for IEF applications. The different IEF capable versions are:

EV3330 (3000V, 300mA): a high voltage power supply in a small form factor suitable for most high voltage applications  
 EV3620 (6000V, 150mA): a high voltage power supply in a small form factor suitable for most high voltage applications

The front panel and graphical display are designed for ease of use. The display provides all useful information during runs and will show an on screen help to guide the user in setting up the power supply. In Simple Mode you just have to set your power supply to the desired parameters and press run.

EV3000 series has a firmware upgrade capability so future improvements and features will always be available.

Moreover EV3000 series has a continuous logging combined with a real time clock so it's possible to get an overview of previous runs, including possible down-times in case of mains power failures.

Consort Power Supplies are the most robust, long lasting and durable electrophoresis power supplies in the market.

## ● Features

**On screen help** in 4 languages to assist setting up the power supply parameters and solve errors.

**Firmware updates** allows for upgrades to the latest version via the USB interface. Feature requests can also be implemented via the firmware system.

**Real Time Clock** date and time are kept in a battery backup system and is used logging an electrophoresis run.

### Various running modes:

**Simple Mode:** just set voltage, current, power and time for a routine electrophoresis run.

**9x9 Method Programming Mode:** Up to 9 different programs, each with 9 steps, can be stored in the non-volatile memory. Each step is able to recall a next one, providing a flexible multiple step function for special techniques. Parameters of the running step can be changed temporarily without interrupting the run.

**Voltage Ramp Mode:** a linear voltage gradient for any step provided the limiting current or power is not attained.

**Timer Mode:** Timer or volt-hour controlled operation will automatically stop the run and sound an alarm.

**IEF Mode:** special mode for low current applications such as IEF. The power supply can measure currents as low as 10 microAmps and can keep it's voltage constant at even 0 current.

**Automatic cross-over** Each model has constant voltage, constant current, constant power capabilities with automatic cross-over and shows which parameter is kept constant.

**Automatic recovery after power failure**

**Password protection**

**Data-logging** Data logging of about 100 hours of runs are automatically stored. Data includes data/time, voltage, current, power and date/time of following events: start, stop, pause, program number, step, changes, mains failure and auto restart.

**Data Transfer** Free data acquisition software for PC can be downloaded from our website. It allows to visualize and examine the stored run details.

**Remote control** EV3000 series can be controlled by a computer using special commands. These commands can be found in the support section of our website.

**Safety features:**

**Ground leakage detection:** protection from potential shock hazard when a ground leakage path is detected.

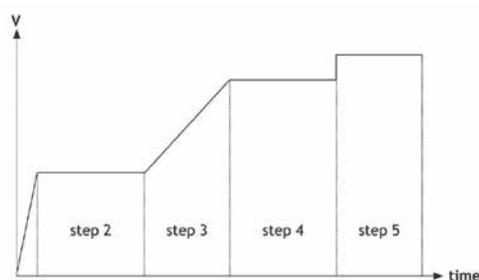
**Overload protection:** full protection against any overload condition including accidental short circuit of the output.

**Smooth voltage rise:** high voltage cannot suddenly appear at the outputs but will increase smoothly up to the pre-set limits.

**No load detection:** prevents errors such as a bad or a dangling connection.

**Isolated communication:** Optically isolated USB input/output connection to prevent any high voltage on the communication lines.

**Warranty** 3 year warranty on factory faults.



● Specifications

	EV3330	EV3620
<b>VOLTAGE</b>	0...3000 V	0...6000 V
<b>CURRENT</b>	0...300 mA	0...150 mA
<b>POWER</b>	0...300 W	0...300 W
<b>PARAMETER RANGE</b>	1...100% of full scale	1...100% of full scale
<b>TIMER</b>	0...99:59 h	0...99:59 h
<b>VOLT-HOURS</b>	0...99.99 kWh	0...99.99 kWh
<b>DISPLAY</b>	LCD, 2x16 characters	LCD, 2x16 characters
<b>RESOLUTION</b>	1 V, 1 mA, 1 W	1 V, 1 mA, 1 W
<b>MEASUREMENT RESOLUTION</b>	1 V, 0.1 mA, 0.1 W	1 V, 0.1 mA, 0.1 W
<b>RESOLUTION IEF MODE</b>	1 V, 0.01 mA, 0.01 W	1 V, 0.01 mA, 0.01 W
<b>PROGRAMS</b>	9x9 set of parameters	9x9 set of parameters
<b>OUTPUTS</b>	4 (4 mm sockets)	4 (2 mm sockets)
<b>MINIMUM LOAD RESISTANCE</b>	600 Ω	1200 Ω
<b>IEF MODE</b>	✓	✓
<b>NO LOAD DETECTION</b>	✓	✓
<b>GROUND LEAKAGE DETECTION</b>	✓	✓
<b>OVERLOAD DETECTION</b>	✓	✓
<b>COMPUTER CONTROL</b>	✓	✓
<b>PASSWORD PROTECTION</b>	✓	✓
<b>DATA-LOGGING</b>	3600 values	3600 values
<b>INTERVAL</b>	1...60 seconds	1...60 seconds
<b>USB INTERFACE</b>	✓	✓
<b>AMBIENT TEMPERATURE</b>	0...40°C	0...40°C
<b>RELATIVE HUMIDITY</b>	0...95%, non condensing	0...95%, non condensing
<b>POWER REQUIREMENTS</b>	210...250 VAC, 50/60 Hz, 360 W 100...125 VAC, 50/60 Hz, 360 W	210...250 VAC, 50/60 Hz, 360 W 100...125 VAC, 50/60 Hz, 360 W
<b>DIMENSIONS (WxDxH)</b>	31x26x13 cm	31x26x13 cm
<b>WEIGHT</b>	10 kg	10 kg

## ● Application guide

Recommended power supply	EV1450	EV2310	EV2650	EV2320	EV3020	EV3610	EV3150	EV3330	EV3620
<b>DNA SEQUENCING</b>								✓	✓
<b>FLAT BED ISOELECTRIC FOCUSING</b>							✓	✓	✓
<b>HORIZONTAL GEL</b>	✓	✓	✓	✓	✓	✓	✓	✓	
<b>LONG VERTICAL GEL</b>									✓
<b>VERTICAL GEL</b>	✓	✓	✓	✓	✓	✓	✓	✓	
<b>ELECTRO-ELUTION</b>	✓		✓	✓		✓	✓		
<b>WESTERN BLOTTING</b>					✓				
<b>SEMI-DRY BLOTTING</b>					✓				
<b>MINI WESTERN BLOTTING</b>		✓							
<b>MINI SEMI-DRY BLOTTING</b>		✓							

## ● Accessories

Code	Description
<b>E200</b>	Pair of adaptors, 4 mm plug to 2 mm socket
<b>E201</b>	Pair of cables M/F, 4+4 mm
<b>E204</b>	Pair of adaptors, 2 mm plug to 4 mm socket

## ● Ordering codes

Code	Description
<b>EV0220</b>	Power supply, 200 V, 200 mA, 20 W
<b>EV1450</b>	Power supply, 400 V, 500 mA, 50 W
<b>EV2310</b>	Power supply, 300 V, 1000 mA, 150 W
<b>EV2650</b>	Power supply, 600 V, 500 mA, 150 W
<b>EV2230</b>	Power supply, 1500 V, 300 mA, 150 W
<b>EV2320</b>	Power supply, 3000 V, 150 mA, 150 W
<b>EV3020</b>	Power supply, 300 V, 2000 mA, 300 W
<b>EV3610</b>	Power supply, 600 V, 1000 mA, 300 W
<b>EV3150</b>	Power supply, 1200 V, 500 mA, 300 W
<b>EV3330</b>	Power supply, 3000 V, 300 mA, 300 W
<b>EV3620</b>	Power supply, 6000 V, 150 mA, 300 W

### ➔ Supplied with a european mains cord + USB cable

(Add a US-sign for US plug 120 VAC versions, e.g.: EV2650-US, Add a UK-sign for UK plug versions, e.g.: EV2650-UK,

Add a CH-sign for Swiss plug versions, e.g.: EV2650-CH)

## ABSOLUTE READINGS

The instrument shows the actual value without compensating to a reference temperature.

## AC-ADAPTOR

An internationally approved mains-plug with built-in low voltage transformer for a safe supply of energy to instruments.

## ACCURACY

Maximum electronic error of the measured unit. The accuracy of an electrochemical determination such as pH, conductivity, dissolved oxygen & ion-selective measurements is mainly limited by the electrodes and calibration solutions.

## ALARM

An alert sounds or a relay is closed when readings stray outside pre-set limits.

## ALTERNATING DISPLAY

The meter can automatically scan all selected inputs for display or transmission to a computer or printer.

## AUTOMATIC CROSS-OVER

When the resistance of an electrophoresis apparatus changes during a run, the power supply is able to switch automatically between constant voltage, constant current and constant power.

## BATTERY CAPACITY

Percentage of remaining battery capacity.

## BAUD RATE

Communication speed, in bits/second (b/s), of the digital interface (RS232).

## BUFFER

A solution of buffered species where the pH tends to remain constant if diluted or concentrated.

Pre-programmed pH buffers: 1.68/ 2.00/ 4.00/ 4.01/ 6.87/ 7.00/ 9.18/ 9.21/ 10.01/ 12.00/ 12.45.

User specified pH buffers: special tables can be stored for future calibrations.

## CALIBRATION REMINDER

A timed calibration procedure facilitates considerably GLP management by prompting the user when his instrument needs to be recalibrated.

## CAPACITIVE COMPENSATION

The capacity of the electrode and its cable falsifies the measurement at very low conductivities. A capacity compensation allows to compensate for these errors.

## CELL

The 2-pole design is the most commonly used conductivity cell. The electrodes are made of platinised platinum. The cell must be replaced or re-platinised if the plates become fouled.

The 4-pole design reduces considerably the problems of polarisation and fouling. By utilising four electrodes, no current flows through the measuring circuit. The AC-current is only applied to the outer pair of rings allowing the inner pair of electrodes to measure the voltage without any polarisation effects.

## CELL CONSTANT

The cell constant (cm<sup>-1</sup>) of a conductivity electrode is determined by the length (cm) of the column of liquid between the plates divided by the area (cm<sup>2</sup>) of the plates.

## CONCENTRATION

Concentration measurement with an ion selective electrode requires a minimum of chemical know-how to make successful ion selective determinations.

## CONDUCTIVITY

The conductivity is a measure of the solution's ability to conduct electric current. The basic unit is Siemens/cm (S/cm). It is measured by an electrode consisting of two platinum plates to which an alternating potential is applied. The corresponding current is proportional to the conductivity of the ionic solution in which the electrode is dipped.

## DATA-ACQUISITION

Connect the instrument to a computer via an USB, RS232, RS485 interface for bi-directional communication capabilities. Most instruments require no special software and feature an advanced easy to use data acquisition fully compatible with spread-sheet.

## DATA-LOGGING

Stores automatically or manually the measured values (+ °C & time/date) in a built-in non-volatile memory.

## GLP

Good Laboratory Practices procedures help to increase accuracy through calibration reports.

## GROUND LEAKAGE

Leaking or dirty electrophoresis apparatus are dangerous, since the applied high voltage may result in an electric current flowing through the operator to the ground.

## IDENTIFICATION NUMBER

Several instruments connected to the same computer can easily be identified when specific numbers are allocated to them.

## INPUT

Several types of connectors are used according to the application. Check the specifications of meter-input and electrode-plug on their compatibility.

## ISO-pH

Zero-point of a pH electrode. A new pH electrode has an ISO-pH between 6.5

and 7.5 pH.

## MINIMUM/MAXIMUM MEMORY

Recalls the lowest/highest values ever measured since the last calibration.

## mV

Electrode potential is read in mV.

## ON/OFF CONTROL

Simple control system in which the relays are continuously closed when a pre-set level is exceeded.

## ORP

Oxido-Reduction-Potential (the reducing or oxidising capability of a solution).

## PASSWORD PROTECTION

For tamper-proof storage of parameters and data, a secret personal code protects the instrument against any undesired access.

## pH

The pH is a measurement for the acidity or alkalinity of a solution. In pure water the hydrogen ion (H<sup>+</sup>) and hydroxyl ion (OH<sup>-</sup>) concentrations are equal at 10<sup>-7</sup> M (25°C). To provide a convenient and effective means of defining acidity and alkalinity, the negative logarithm of hydrogen ion activity is used. The pH is calculated from the potential between a glass and a reference electrode (Nernst equation).

## PROPORTIONAL CONTROL

The control relay will pulse at a rate proportional to the regulation difference. When the difference is superior to a pre-set maximum value, the relay is continuously activated. However, when reaching a pre-set level the wait-time between the pulses will increase gradually in order to perform very accurate regulations.

## Pt100

Platinum resistance thermometer (100 Ω at 0°C). It requires a low resistance cable for highest accuracy.

## Pt1000

Platinum resistance thermometer (1000 Ω at 0°C). Less errors when using longer cables.

## QUALITY MANAGEMENT

Measuring equipment should be calibrated on a regular basis (GLP). The accuracy of measurements is only limited by the electrodes and calibration solutions. At any moment, a complete documentation about the electrodes and calibration solutions can be printed or sent to a computer. This includes meter settings, data about the last calibration and a comparison with the previous calibration. The use of certified calibration solutions is strongly recommended. For very accurate quality measurements fresh standard solutions should be used for each calibration.

## QUANTIFICATION OF VINCENT

The quantification of Vincent is a measurement for the energy stored in an organism. It expresses the maximum dissipation of energy by a chemical or biochemical reaction. The basic unit is Watt (W) but it is more convenient to use  $\mu\text{W}$  (micro-watt). It is calculated from the ORP, referenced against a hydrogen electrode, and the resistance.

## RANGE LOCK

Allows to lock the initial conductivity measuring range when titrating in order to avoid cross-over errors due to varying measuring frequencies and linearity errors of the conductivity cell.

## REAL TIME CLOCK

Shows time and date on the display.

## REDOX POTENTIAL

The potential developed by a metallic electrode when placed in a solution containing a species in two different oxidation states. It is usually measured by a combination platinum electrode.

## REFERENCE TEMPERATURE

Conductivity measurements are temperature dependent. Therefore, the readings should be referenced to a standard temperature.

## RESISTIVITY

Electrical resistivity is the reciprocal of Conductivity. The basic unit is Ohm.cm ( $\Omega\cdot\text{cm}$ ). While the ion concentration of a solution decreases, the resistivity rises up to a maximum of  $18.3\text{ M}\Omega\cdot\text{cm}$  (absolute pure water at  $25^\circ\text{C}$ ).

## RESOLUTION

Smallest possible reading of the measured unit. More sophisticated meters allow to select the desired resolution. Unlike other meters, the CONSORT models round off the last digit rather than simply truncating digits outside the display range.

## rH2

The rH2 is a measurement for the level of electronic exchanges between water and dissolved ions. It enables to study incomplete, indeterminate and very diluted aqueous redox solutions. It is defined as the negative logarithm of molecular hydrogen ion activity, calculated from the pH and the ORP referenced against a hydrogen electrode.

## RS232

Digital interface, transmits the displayed values and calibration data to a printer or computer.

## RS485

Allows to connect several process controllers for bi-directional communication with a computer. It allows multiple devices (up to 32) to communicate at half-duplex on a single

pair of wires, plus a ground wire, at distances up to 1200 meters.

## SALINITY

Salinity gives an indication of the salt content of sea water. It is calculated from the conductivity referred to  $15^\circ\text{C}$ . The salinity is the ratio between the total salt content (g) and the total weight of the sea water (kg). Hence salinity can be expressed in ppt (parts per thousand).

## SLOPE

Percentage which relates the actual behaviour of a pH electrode to the Nernst's law. A new electrode has a slope between 95 and 100 %.

## S/S RELAY

A solid-state relay contains no mechanical contacts. Long life, compact design and spark-free switching are its main advantages. It should not be used for controlling very low power loads, as the small leakage current can cause unwanted switching-on.

## STABILITY INDICATION

A decimal point flashes until the electrode output remains constant, then readings can be recorded.

## TDS

Total Dissolved Salts of a solution gives an indication of the total ion concentration. Due to ionic interactions within a solution, the salt concentration cannot easily be related to conductivity. As the dissolved solids are generally unknown, a TDS measurement is always referred to a solution of pure Sodium Chloride.

## TEMPERATURE COEFFICIENT

Each solution has its own temperature coefficient (%/K). As this coefficient also varies with temperature, a standard conductometer cannot achieve a precise temperature compensation over a wide span of temperatures. However, a research grade meter is able to plot special temperature curves for each individual type of solutions in its non-volatile memory. Specific temperature coefficients can also be entered for special applications. For standard applications, the non-linear function for natural waters (EN27888) is used.

## TEMPERATURE COMPENSATION

Corrects readings for variations in electrode response due to temperature effects.

## THERMOCOUPLE

Thermocouples basically consist of two dissimilar wires (each made of a different alloy). One end is twisted or soldered to form a measuring junction. The other end is connected to a thermometer and forms the reference junction. The signal is a small voltage ( $\mu\text{V}$ ) proportional to the temperature

gradient between the measuring and reference junctions. Thermocouple probes are ideal to cover greater lengths. They also have a great temperature range and can easily pass through e.g. oven doors. Response time is faster than with Pt100 probes. Accuracy, stability and repeatability are less than with Pt100 probes.

## USB

Universal Serial Bus is a standard designed to eliminate the guesswork in connecting peripherals to a computer.

## VOLT-HOUR INTEGRATOR

The distance at which molecules migrate in an electrophoresis apparatus depends on the applied voltage and run-time ( $\int V\cdot dt$ ). In order to achieve reproducible experiments, it is recommended to use a volt-hour integrator rather than a simple timer.

## ZERO POINT ( $E_0$ )

Standard pH meters assume a pH electrode to supply a zero potential at 7 pH. Electrodes for special applications (e.g. stomach pH measurements) may have a different zero point. An adjustable zero point correction feature will allow users to measure with these electrodes.

## **Art. 1**

Unless otherwise agreed in writing, the legal relationship between the parties is governed by the present general terms, of which the customer declares to have taken cognisance, and which prevail over the customer's possible terms of purchase.

## **Art. 2**

All quotations are without engagement. Prices do not include taxes. Any price stated is based at all times on the salaries, social charges and prices of materials obtaining on the date of the quotation. Official price modifications as arranged by legal dispositions automatically entail equivalent modifications of the prices stated in the contract. This proportional increase can also apply to part of the order or work.

## **Art. 3**

Transport or dispatch of our goods by any means of transport is at the consignee's risk, even with carriage paid.

## **Art. 4**

If our firm acts as an intermediary, the guarantee on the goods supplied by us is restricted to the guarantee given to us by the supplier or manufacturer. If the goods are subject to formal guarantee, defective, material will be repaired or replaced, but no claims for any other damage will be accepted.

## **Art. 5**

All invoices are payable cash on the address of the invoice unless otherwise stipulated in the documents committing the parties or unless an expiry date is stated on the Invoice.

## **Art. 6**

Contrary to art. 1583 of the Civil Code, any goods that are not paid in full remain our full property; in such case possible advance payments will serve as a compensation for costs and loss of profit.

## **Art. 7**

Bills in arrears entitle us to suspend any further deliveries or services without prior notice, such to prevent debts from further increasing.

## **Art. 8**

The supply of goods or services on a later date than the date stipulated for supply or service, if such is not caused by bad faith or a serious shortcoming of the supplier, shall never form a motive for suspending the order or the agreement, nor entitle the customer to claim any damages.

## **Art. 9**

If default is made in cash payment or if payment is not carried out on the expiry date stated, the amount of the invoice shall bear a conventional interest of 1.5% per month as from the day on which the invoice as remitted or as from the expiry date stated, such by right and without any formal notice. Each month started shall be charged as a full month.

## **Art. 10**

Moreover, by way of a fixed and irrevocable condition, the amount of the invoice shall be increased by 15% with a minimum of 200 EUR, by right and without formal notice, as a compensation for recovery costs of the claim (both staff and administration costs, management and follow-up of the file, influences on financial management, etc.), in application of art. 1147 C.C. and 1152 C.C. This compensation is due apart from the moratory interests, the recoverable procedure costs and the possible compensation for material damages and loss of profit. The parties thus agree that this compensation is fixed and that, contrary to art. 1231 C.C. It cannot be modified, even when the shortcoming is only partial.

## **Art. 11**

Cheques and bills of exchange are only accepted as payment after their repayment. Possible costs are at the expense of the purchaser or commissioner.

## **Art. 12**

The drawing and/or accepting bills of exchange or other transferable documents does not imply a novation or deviation from the general terms. The acceptance costs of bills of exchange are at the expense of the purchaser or commissioner.

## **Art. 13**

If one invoice remains unpaid on its expiry date, the balance due of any other invoices, even when not expired, are immediately recoverable by right.

## **Art. 14**

In the event of a dispute, only the courts of Turnhout, Belgium, shall have competence.

## **Art. 15**

Any complaints regarding the supply of the goods and services shall be made on termination and be confirmed by a motivated registered letter within 8 days of the date of supply. These complaints do not suspend the obligation of payment.

## **Art. 16**

Remarks and restrictions concerning the invoice and/or the general terms therein stated shall be transmitted to us by motivated registered letter within 8 days of date of invoice; for the settlement of disputes this period amounts to 30 days. If an order form is signed by a purchaser or commissioner, the regulations of the general terms stated on the order form shall apply.