Ettan IPGphor 3 Isoelectric Focusing System

ETTAN IPGPHOR 3

DOMINIQUE DUTSCHER SAS

The Ettan™ IPGphor™ 3 is a fully integrated isoelectric focusing (IEF) system optimized to deliver high throughput, speed, reproducibility, and high protein-loading capacity. This third generation instrument is optimized for easy handling of CyDye™ labeled proteins and other light-sensitive samples, and provides temperature control critical for reproducibility in 2-D DIGE (Difference Gel Electrophoresis) experiments.

The large alphanumeric graphical display accommodates up to four lines of text for fast and easy programming. Up to 10 protocols (nine steps each) can be saved, retrieved, and easily edited on the instrument. Any number of protocols can be stored on a connected PC running Ettan IPGphor 3 Control Software and uploaded to the instrument instantly. Increased safety features ensure safe high-voltage runs, and with total start/stop control from your PC, IEF runs have never been easier or more reproducible.

Features

The Ettan IPGphor 3 Isoelectric Focusing System includes the following features:

- Temperature control from 15°C to 31°C
- Integrated high-voltage DC power supply delivering up to 10 kV makes the unit space-saving
- Secure light protection during the run. Compatible with CyDye-labeled proteins and other light-sensitive stains.
- Programming from the control panel or in Ettan IPGphor 3 Control Software
- Use the IPGBox and IPGBox kit to rehydrate up to 12 Immobiline™ DryStrip gels or other IPG strips independently and at the same time
- Ettan IPGphor Manifolds for running up to 12 Immobiline DryStrips. Cup loading improves the focusing results, particularly for basic IPG strips. For larger sample volumes, the Ettan IPGphor Manifolds facilitate paper bridge loading and in-gel rehydration loading.



Fig 1. Ettan IPGphor 3 Isoelectric Focusing System.

Temperature Control

Temperature control is crucial for reproducibility. The Ettan IPGphor 3 maintains the programmed temperature precisely for the duration of the run, even for extended time periods and throughout the length of the IPG strips. In one test (using the ceramic manifold), it was set to 20°C: the temperature measured at the anode, cathode, and in the middle of the platform remained at 20°C for 19 h.

Manifolds

The Ettan IPGphor Manifolds are high-throughput accessories for first-dimension isoelectric focusing of proteins using IPG strips. These manifolds meet the increasingly stringent demands of proteomics research by ensuring high-resolution, micropreparative protein analysis.

Ettan IPGphor Manifold and Manifold Light simplify isoelectric focusing of multiple samples and reduce first-dimension hands-on time to a minimum. They significantly speed up the processing of micropreparative loads in first-dimension analysis.

Designed for maximum performance and flexibility, the manifolds can handle from 1 to 12 IPG strips simultaneously. Sample equilibration can also be performed in the same tray, saving substantial time.

The manifolds are also great for paper bridge loading. Up to 5 mg of protein can be loaded onto an Immobiline DryStrip gel using the paper bridge pads supplied with the manifolds.

Ettan IPGphor Manifold Light is constructed from a new leading-edge polymeric material and is ideal for routine general screening applications. It is easy to handle and is extremely robust.

The ceramic Ettan IPGphor Manifold exhibits exceptionally uniform thermal characteristics and is designed for the most stringent applications. The high heat conductivity of the ceramic material prevents any hot spots that can distort 2-D electrophoresis maps.

Programming

The Ettan IPGphor 3 control panel allows up to 10 user-defined IEF protocols, each with nine steps. Programmable functions include rehydration time, platform temperature, current limit, voltage limit for each step, voltage step or gradient, and step duration.

Ettan IPGphor 3 Control Software allows easy programming on a PC (Fig 2). Recommended run parameters are obtained by giving strip length and pH gradient. Protocols created are presented as graphs, stored, and loaded onto the Ettan IPGphor 3. The software records the run parameters over time and present data as graphs and log files. Data can be saved or exported to spreadsheet software. Ettan IPGphor 3 Control Software is a valuable aid in documenting results, optimizing run parameters, and ensuring GLP compliance.

Ettan IPGphor 3 Control Software can be used to control up to four Ettan IPGphor 3 units at one time, each running a different program. To control multiple units from one computer, an optional junction box is necessary.



Fig 2. Ettan IPGphor 3 Control Software allows easy programming and viewing of run data.

Specifications

Fig 2. System specifications

Electrode areas	Gold-plated copper
Capacity	Maximum of 12 strips: either up to 12 individual fixed-length strip holders, 7–24 cm, or in one manifold
Run voltage	10–10 000 V in 10-V steps
Run current	0–1.5 mA (1 µA/strip step)
Platform temperature	15°C to 31°C ± 1°C (internal Peltier cooling)
Temperature gradient	1°C/min
Control panel	7-key membrane keypad
Liquid crystal display (LCD)	4 lines, 24 characters per line
Programmable parameters	Rehydration time, platform temperature, maximum current per strip, voltage limit in each step, voltage step or gradient, and step duration User-controllable settings for the platform temperature, depending on use in rehydration mode or run mode
Programming capacity	10 protocols, with up to 9 steps each, on control unit. Unlimited number of protocols in Ettan IPGphor 3 Control Software
Serial port	RS232C, 1200 or 9600 baud, 8 data bits, 1 stop bit, no parity, no flow control. 9600 baud is mandatory for connection with PC. A USB-to-RS232 converter is available for users without an RS232 port on their PC
Operating temperature	15°C to 32°C
Operating relative humidity	0–70% noncondensing
Storage temperature	-25°C to 60°C
Power requirements	100–230 V ± 10%, 50–60 Hz, 230 VA
Dimensions (W × H × D)	278 × 160 × 471 mm
Weight	8.3 kg
Safety features	Automatic voltage cutoff when safety lid is opened

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Ordering information

Product	Code no.
Ettan IPGphor 3 Isoelectric Focusing Unit (includes cable, control software, and tutorial CD)	11003364
Ettan IPGphor Manifold, Complete	80649838
Ettan IPGphor Manifold Light , Complete	11002688
IPGBox	28933465
IPGBox kit	28933492
Immobiline Drystrip cover fluid	17133501
IPGPhor Manifold ceramic tray	80649857
Ettan IPGPhor Manifold Polymeric Tray	11002580
Immobiline DryStrip gels, 24 cm	
Immobiline DryStrip pH 3-5.6 NL, 24 cm	17600357
Immobiline DryStrip pH 5.3-6.5, 24 cm	17600362
Immobiline DryStrip pH 6.2-7.5, 24 cm	17600367
Immobiline DryStrip pH 7-11 NL, 24 cm	17600372
Immobiline DryStrip pH 3-11 NL, 24 cm	17600377
Immobiline DryStrip pH 3.5-4.5, 24 cm	17600238
Immobiline DryStrip pH 3-7 NL, 24 cm	17600243
Immobiline DryStrip pH 4-7, 24 cm	17600246
Immobiline DryStrip pH 6-9, 24 cm	17600247
Immobiline DryStrip pH 3-10 NL, 24 cm	17600245
Immobiline DryStrip pH 3-10, 24 cm	17600244
Immobiline DryStrip gels, 18 cm	
Immobiline DryStrip pH 3-5.6 NL, 18 cm	17600356
Immobiline DryStrip pH 5.3-6.5, 18 cm	17600361
Immobiline DryStrip pH 6.2-7.5, 18 cm	17600366
Immobiline DryStrip pH 7-11 NL, 18 cm	17600371
Immobiline DryStrip pH 3-11 NL, 18 cm	17600376
Immobiline DryStrip pH 4-7, 18 cm	17123301
Immobiline DryStrip pH 6-9, 18 cm	17600188
Immobiline DryStrip pH 6-11, 18 cm	17600197
Immobiline DryStrip pH 3-10 NL, 18 cm	17123501
Immobiline DryStrip pH 3-10, 18 cm	17123401

Product	Code no.
Immobiline DryStrip gels, 13 cm	
Immobiline DryStrip pH 3-5.6 NL, 13 cm	17600355
Immobiline DryStrip pH 5.3-6.5, 13 cm	17600360
Immobiline DryStrip pH 6.2-7.5, 13 cm	17600365
Immobiline DryStrip pH 7-11 NL, 13 cm	17600370
Immobiline DryStrip pH 3-11 NL, 13 cm	17600375
Immobiline DryStrip pH 4-7, 13 cm	17600113
Immobiline DryStrip pH 6-11, 13 cm	17600196
Immobiline DryStrip pH 3-10 NL, 13 cm	17600115
Immobiline DryStrip pH 3-10, 13 cm	17600114
Immobiline DryStrip gels, 11 cm	
Immobiline DryStrip pH 3-5.6 NL, 11 cm	17600354
Immobiline DryStrip pH 5.3-6.5, 11 cm	17600359
Immobiline DryStrip pH 6.2-7.5, 11 cm	17600364
Immobiline DryStrip pH 7-11 NL, 11 cm	17600369
Immobiline DryStrip pH 3-11 NL, 11 cm	17600374
Immobiline DryStrip pH 4-7, 11 cm	18101660
Immobiline DryStrip pH 6-11, 11 cm	17600195
Immobiline DryStrip pH 3-10, 11 cm	18101661
Immobiline DryStrip gels, 7 cm	
Immobiline DryStrip pH 3-5.6 NL, 7 cm	17600353
Immobiline DryStrip pH 5.3-6.5, 7 cm	17600358
Immobiline DryStrip pH 6.2-7.5, 7 cm	17600363
Immobiline DryStrip pH 7-11 NL, 7 cm	17600368
Immobiline DryStrip pH 3-11 NL, 7 cm	17600373
Immobiline DryStrip pH 4-7, 7 cm	17600110
Immobiline DryStrip pH 6-11, 7 cm	17600194
Immobiline DryStrip pH 3-10 NL, 7 cm	17600112
Immobiline DryStrip pH 3-10, 7 cm	17600111

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