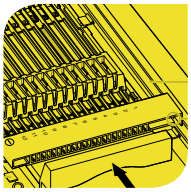


PROTEAN® i12™ IEF System

12 Lanes. Individual Control. Total Confidence.

BIO-RAD

PROTEAN® i12™ IEF System

With individual lane control, Bio-Rad's PROTEAN i12 IEF system is the only isoelectric focusing cell that can simultaneously run multiple lanes, each with a different sample, protocol, and pH gradient.

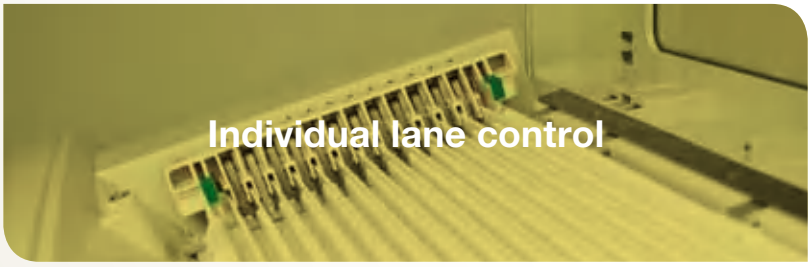
- Optimize your experiments in fewer runs
- Boost lab productivity by performing multiple experiments at once
- Obtain better quality data with less experimental risk — one irregular sample cannot compromise the entire run

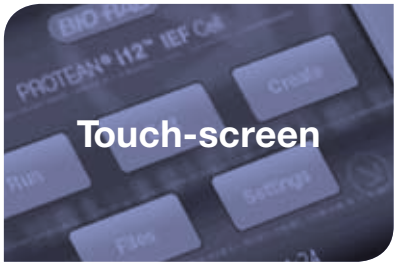
Individual lane control — optimization, efficiency, and confidence

- 12 individual, separately programmable power supplies make the PROTEAN i12 IEF system a unique problem solver
- Save time by optimizing as many as 12 conditions simultaneously. Investigate different samples, pH gradients, and protocols in the same run and get optimal results for each
- Use the system more efficiently because different experiments can now be run together
- Set a precise current limit for each lane and proceed with the confidence that each condition will be precisely met. The current you program is the current that is delivered, every time, regardless of the other samples in the run

Touch-screen — intuitive and easy to use interface

- Set up runs and create protocols effortlessly
- Convenient file organization and user-defined default parameters let you control the system
- USB port allows you to transfer and store data. Use Excel or the PROTEAN i12 Reporter web application for analysis





Web application — effortless data analysis and protocol creation

- Create graphs and reports using the PROTEAN i12 Reporter, a free web-based application for analyzing run data generated by the system
- Use the web application to create protocols and transfer them back into the instrument

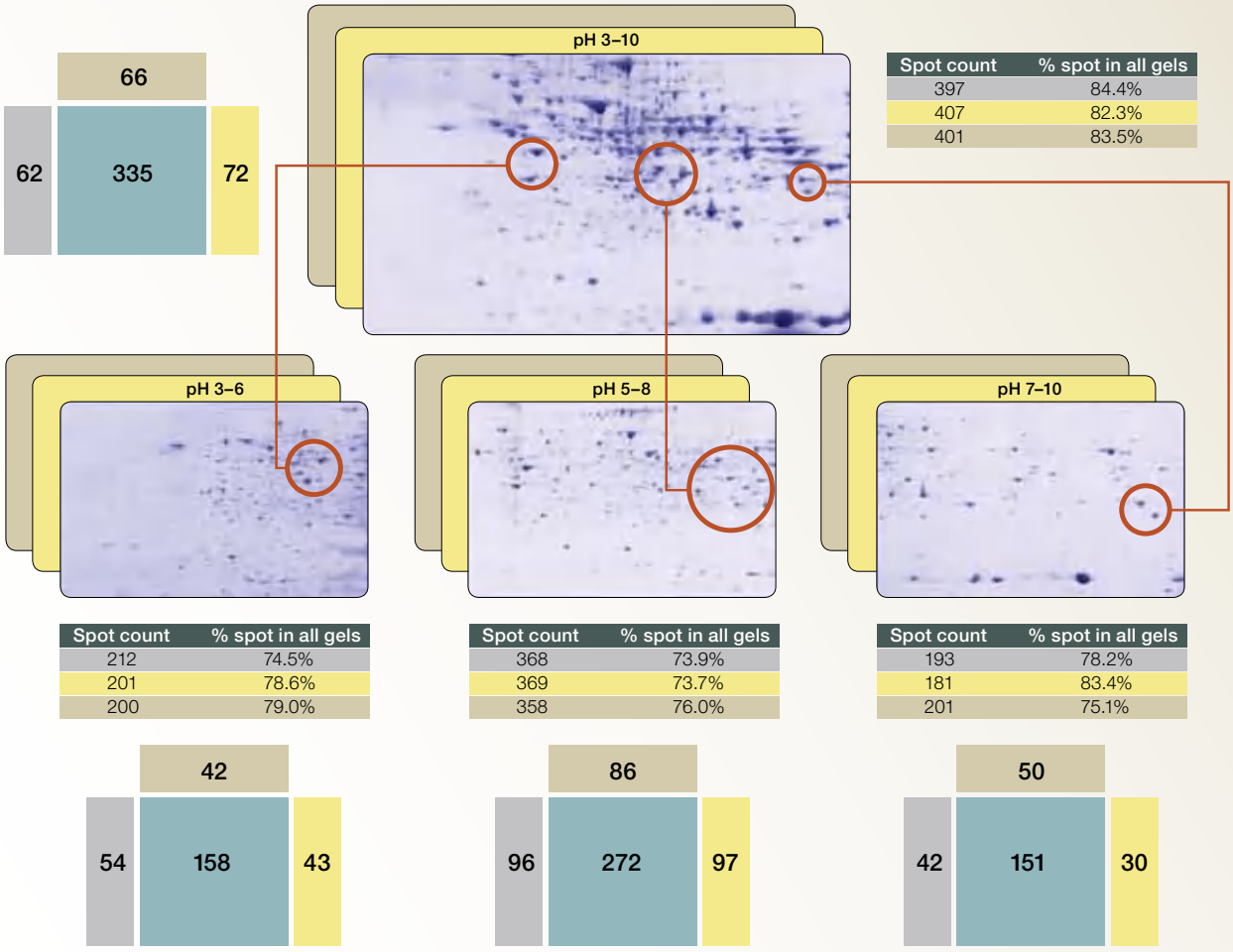
System flexibility — work the way you want

- Innovative tray and electrode design allows running strips gel side down or gel side up and loading with sample cups
- Electrodes snap in and out of all six tray sizes
- DIGE-compatible lid makes the system ideal for light sensitive dyes and labels

PROTEAN **i12 IEF** system — more data, more reliably in fewer runs

Achieve highly reproducible data and extended separation over multiple pH ranges

Data showing extended separation on multiple pH range IPG strips was generated in a single IEF run. Four different pH gradients and protocols were run simultaneously in triplicate to compare the separation capacity of the broad range pH 3–10 strip with the combination of the narrow range pH 3–6, pH 5–8, and pH 7–10 strips. The red circles highlight the increased resolution attainable with narrow range strips. Broad range separation can, therefore, be achieved with higher resolution on midi format gels without the need for multiple runs. The box diagrams display the number of spots found in all three replicates of each pH range, showing that a high level of reproducibility was realized among the gels.



A mouse liver sample was extracted in a urea-thiourea-CHAPS solution. The extract was run in a single PROTEAN i12 IEF cell run on twelve 11 cm ReadyStrip™ IPG strips simultaneously at each of the following pH ranges: 3–10, 3–6, 5–8, and 7–10. Each pH gradient was run in triplicate. The second dimension for each IPG strip was run in 8–16% gradient Criterion™ precast gels that were stained with Bio-Safe™ Coomassie stain. The above figure shows a representative gel image for each pH range along with the spot counts for each replicate. The box diagrams show the number of spots found in all three replicates.

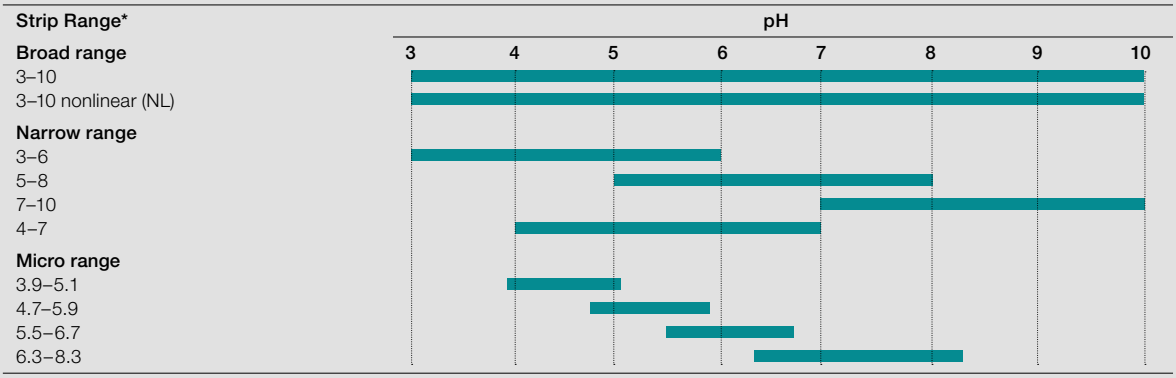
Key points of this experiment:

- Running different pH gradients and protocols in one run
- Achieving a high level of reproducibility between gels
- Running each pH gradient in triplicate
- Achieving extended separation with narrow-range strips

ReadyStrip IPG strips — a key component of the PROTEAN i12 IEF system

- Bio-Rad's high-quality ReadyStrip IPG strips come in five lengths (7 cm, 11 cm, 17 cm, 18 cm, and 24 cm) and ten pH ranges that cover broad, narrow, and micro ranges
- Narrow and micro pH ranges increase the number of centimeters per pH unit for enhanced resolution
- Tight gel-length tolerances guarantee pH consistency

ReadyStrip IPG strip pH ranges.

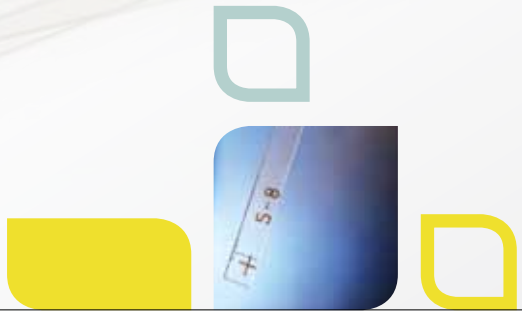


* Strips are designed with sufficient overlap to allow spot matching while limiting the extent of redundant data.

Specifications

Input power	100–240 VAC, 50/60 Hz
Fuse	Two 6.3-amp, time delay, 5 × 20 mm
Power input	IEC 60320 standard cord set with ground
Power output	
Voltage per lane	0, 50–10,000 V
Current per lane	0–100 µA, 1 µA intervals
Power	0–1 W per lane
Peltier platform	
Tray capacity	1 tray
Temperature	10–25°C ± 0.5°C @ max. ambient temperature 23°C 15–25°C ± 0.5°C @ max. ambient temperature 31°C
Focusing trays	
Material	Polycarbonate
IPG strip length	7, 11, 13, 17, 18, and 24 cm
Capacity	1–12 IPG strips per focusing tray
Maximum channel volume	7 cm: 7 ml; 11 cm: 10 ml; 13 cm: 11.2 ml; 17 cm: 14.2 ml; 18 cm: 15.2 ml; 24 cm: 20.2 ml
Rehydration/equilibration trays	
Material	Polystyrene
IPG strip length	7, 11, 13, 17, 18, and 24 cm
Capacity	1–12 IPG strips per tray
Maximum channel volume	7 cm: 6.8 ml; 11 cm: 9.6 ml; 13 cm: 10.5 ml; 17 cm: 14.2 ml: 18 cm: 16 ml; 24 cm: 19 ml

Environmental requirements	For indoor use only, at altitudes of up to 1829 m (6000 ft). Operates at 10–35°C ambient temperature, with maximum 90% relative humidity
Regulatory	
Safety	EN 61010-1, UL STD No. 61010A-1, CAN/CSA C22.2 No. 61010-1-04, IEC 61010-1
EMC	EN 61326 Class A Equipment for Measurement, Control, and Laboratory Use, General Requirements
Dimensions (W × D × H)	46 x 34.5 x 18.5 cm (18.1 × 13.6 × 7.3 in)
Weight	8.6 kg (19 lbs)
User Interface	
Display	QVGA resolution (320 × 240). Touch screen or mouse control
Programmable	Yes
Ramping	Step, linear, gradual, and hold voltage ramping used for each focusing step. Hold mode as a final step to prevent diffusion when focusing is complete
Protocol capacity	2 GB, storage of approximately 20,000 data and protocol files
Data collection	.DAT file format



Ordering Information

Catalog #	Description
164-6000	**PROTEAN i12 IEF Isoelectric System**, 90–240 VAC, includes basic unit, positive and negative electrode assemblies, 7 cm, 11 cm, and 17 cm focusing trays with IPG strip retainers, 1 pack each of 7 cm, 11 cm, and 17 cm rehydration/equilibration trays, 2 pairs of forceps, 2 packs electrode wicks for gel-side down and gel-side up applications, mineral oil, 2 cleaning brushes, cleaning concentrate, 2 USB flash drives, 3 styluses, pH 3–10 ReadyStrip™ IPG strips in 7 cm, 11 cm, and 17 cm lengths, rehydration sample buffer, and instruction manual. 13 cm, 18 cm, and 24 cm trays and cup loading accessories can be purchased separately
164-6001	**i12 IEF Isoelectric Focusing Cell**, includes basic unit, electrode assemblies, and 3 styluses. Focusing trays and other accessories sold separately.
164-6107	**i12 7 cm Focusing Tray**, pkg of 1, 7 cm focusing tray, holds up to twelve 7 cm IPG strips, includes 2 IPG strip retainers for gel-side down applications, for use with the PROTEAN i12 IEF system
164-6111	**i12 11 cm Focusing Tray**, pkg of 1, 11 cm focusing tray, holds up to twelve 11 cm IPG strips, includes 2 IPG strip retainers for gel-side down applications, for use with the PROTEAN i12 IEF system
164-6113	**i12 13 cm Focusing Tray**, pkg of 1, 13 cm focusing tray, holds up to twelve 13 cm IPG strips, includes 2 IPG strip retainers for gel-side down applications, for use with the PROTEAN i12 IEF system
164-6117	**i12 17 cm Focusing Tray**, pkg of 1, 17 cm focusing tray, holds up to twelve 17 cm IPG strips, includes 2 IPG strip retainers for gel-side down applications, for use with the PROTEAN i12 IEF system
164-6118	**i12 18 cm Focusing Tray**, pkg of 1, 18 cm focusing tray, holds up to twelve 18 cm IPG strips, includes 2 IPG strip retainers for gel-side down applications, for use with the PROTEAN i12 IEF system
164-6124	**i12 24 cm Focusing Tray**, pkg of 1, 24 cm focusing tray, holds up to twelve 24 cm IPG strips, includes 2 IPG strip retainers for gel-side down applications, for use with the PROTEAN i12 IEF system
165-4035	**i12 7 cm Rehydration/Equilibration Trays**, pkg of 25, 7 cm rehydration/equilibration trays, hold up to twelve 7 cm IPG strips, for use with the PROTEAN i12 IEF system
165-4025	**i12 11 cm Rehydration/Equilibration Trays**, pkg of 25, 11 cm rehydration/equilibration trays, hold up to twelve 11 cm IPG strips, for use with the PROTEAN i12 IEF system
164-6313	**i12 13 cm Rehydration/Equilibration Trays**, pkg of 25, 13 cm rehydration/equilibration trays, hold up to twelve 13 cm IPG strips, for use with the PROTEAN i12 IEF system
165-4015	**i12 17 cm Rehydration/Equilibration Trays**, pkg of 25, 17 cm rehydration/equilibration trays, hold up to twelve 17 cm IPG strips, for use with the PROTEAN i12 IEF system
165-4041	**i12 18 cm Rehydration/Equilibration Trays**, pkg of 25, 18 cm rehydration/equilibration trays, hold up to twelve 18 cm IPG strips, for use with the PROTEAN i12 IEF system
165-4043	**i12 24 cm Rehydration/Equilibration Trays**, pkg of 25, 24 cm rehydration/equilibration trays, hold up to twelve 24 cm IPG strips, for use with the PROTEAN i12 IEF system
164-6040	**IPG Strip Retainers**, pkg of 2, replacement IPG strip retainers for use with all sizes of PROTEAN i12 focusing trays
164-6020	**i12 Sample Cup Holder**, pkg of 1, 12-position sample cup holder, includes 25 disposable sample cups (#164-6021), for use with the PROTEAN i12 IEF system
164-6021	**i12 Sample Cups**, pkg of 25, disposable sample cups, for use with the PROTEAN i12 IEF system sample cup holder (#164-6020)
164-6030	**Gel-Side Up Electrode Wicks**, pkg of 100, precut electrode wicks, for use with the PROTEAN i12 IEF system for gel-side up applications
164-6031	**Gel-Side Down Electrode Wicks**, pkg of 500, precut electrode wicks, for use with the PROTEAN i12 IEF system for gel-side down applications
164-6012	**Negative Electrode Assembly**, pkg of 1, replacement negative electrode assembly, for use with the PROTEAN i12 IEF system, can be used with all sizes of i12 focusing trays
164-6011	**Positive Electrode Assembly**, pkg of 1, replacement positive electrode assembly, for use with the PROTEAN i12 IEF system, can be used with all sizes of i12 focusing trays
164-6010	**Electrode Assembly Pair**, pkg of 1 pair, positive and negative electrode assemblies, for use with the PROTEAN i12 IEF system, can be used with all sizes of i12 focusing trays
165-4072	**Cleaning Brushes**, pkg of 2, cleaning brushes
161-0722	**Cleaning Concentrate**, 1 kg, concentrated cleaning solution for use with the PROTEAN i12 IEF system
164-6060	**USB Flash Drives**, pkg of 2, 2 GB flash drives, compatible with the PROTEAN i12 IEF system, for transferring data from the PROTEAN i12 IEF system to a computer for data analysis
164-6050	**Stylus**, pkg of 3, for use on the PROTEAN i12 IEF system touch-screen user interface
163-2129	**Mineral Oil**, 500 ml
165-4070	**Forceps**, pkg of 1 pair, fine-tipped forceps for handling immobilized pH gradient (IPG) strips
163-2105	**ReadyPrep™ 2-D Starter Kit**, 2-D gel electrophoresis kit, includes protein sample and buffers for IPG strip rehydration, focusing, and transfer to second dimension (IPG strips not included)
161-0378	**Precision Plus Protein™ Standard Plugs**, pkg of 24, 1 mm thick agarose plugs containing 10 *Strep*-tagged recombinant proteins (10–250 kD), including three reference bands

ReadyStrip IPG Strips, 12 per package

pH Range	7 cm	11 cm	17 cm	18 cm	24 cm
pH 3–10	163-2000	163-2014	163-2007	163-2032	163-2042
pH 3–10 NL*	163-2002	163-2016	163-2009	163-2033	163-2043
pH 3–6	163-2003	163-2017	163-2010	163-2035	163-2045
pH 4–7	163-2001	163-2015	163-2008	163-2034	163-2044
pH 5–8	163-2004	163-2018	163-2011	163-2036	163-2046
pH 7–10	163-2005	163-2019	163-2012	163-2037	163-2047
pH 3.9–5.1	163-2028	163-2024	163-2020	163-2038	163-2048
pH 4.7–5.9	163-2029	163-2025	163-2021	163-2039	163-2049
pH 5.5–6.7	163-2030	163-2026	163-2022	163-2040	163-2050
pH 6.3–8.3	163-2031	163-2027	163-2023	163-2041	163-2051

* NL, nonlinear gradient.

BIO-RAD

Bio-Rad Laboratories, Inc.

Life Science Group

Web site *www.bio-rad.com* ***USA*** *800 424 6723* ***Australia*** *61 2 9914 2800* ***Austria*** *01 877 89 01* ***Belgium*** *09 385 55 11* ***Brazil*** *55 31 3689 6600* ***Canada*** *905 364 3435* ***China*** *86 21 6169 8500* ***Czech Republic*** *420 241 430 532* ***Denmark*** *44 52 10 00* ***Finland*** *09 804 22 00* ***France*** *01 47 95 69 65* ***Germany*** *089 31 884 0* ***Greece*** *30 210 777 4396* ***Hong Kong*** *852 2789 3300* ***Hungary*** *36 1 459 6100* ***India*** *91 124 4029300* ***Israel*** *03 963 6050* ***Italy*** *39 02 216091* ***Japan*** *03 6361 7000* ***Korea*** *82 2 3473 4460* ***Malaysia*** *60 3 2117 5260* ***Mexico*** *52 555 488 7670* ***The Netherlands*** *0318 540666* ***New Zealand*** *64 9 415 2280* ***Norway*** *23 38 41 30* ***Poland*** *48 22 331 99 99* ***Portugal*** *351 21 472 7700* ***Russia*** *7 495 721 14 04* ***Singapore*** *65 6415 3170* ***South Africa*** *27 861 246 723* ***Spain*** *34 91 590 5200* ***Sweden*** *08 555 12700* ***Switzerland*** *061 717 95 55* ***Taiwan*** *886 2 2578 7189* ***Thailand*** *66 2 6518311* ***United Kingdom*** *020 8328 2000*