

# PROTEAN Plus<sup>TM</sup> Dodeca<sup>TM</sup> Cell

12 High-Resolution 2nd Dimension Gels  
in an Incredible 6 Hours!

**BIO-RAD**

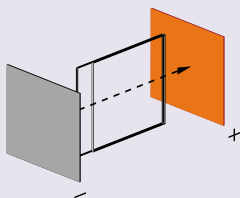
# 2nd Dimension Gels in only 6 Hours

## PROTEAN Plus Dodeca Cell

The PROTEAN Plus Dodeca cell runs up to 12 large-format PAGE gels in just 6 hours. Matching the 12-gel capacity of first-dimension runs in the PROTEAN IEF system, the PROTEAN Plus Dodeca cell is designed for high-throughput 2-D applications in a convenient format.

### Uniform Electrical Field for Straight Horizontal Results

The PROTEAN Plus plate electrodes (patent pending) create an optimally uniform electrical field, providing straight horizontal run results equal in performance to the PROTEAN II xi cell. Figure 1 demonstrates the uniformity of field, which is critical to reproducibility and accurate protein identification.



### Uniform Buffer Temperature for Reproducibility

The temperature of the running buffer remains constant ( $\pm 0.5^\circ\text{C}$ ) by recirculation of buffer from the top of the tank to the bottom (patent pending). This mechanism provides identical conditions for all 12 gel locations, maximizing reproducibility and eliminating variables that can cloud results (see Figure 2).

### High Resolution through Efficient Cooling

Cooling is provided by an external refrigerated circulator. The cooling/recirculation system facilitates efficient heat dissipation, for high-resolution results in only 6 hours!

*Buffer is drawn up through the lid manifold for recirculation to the bottom of the tank for even buffer temperatures — buffer surrounding the gels varies by less than  $1^\circ\text{C}$*

*Accommodates a variety of gel sizes including PROTEAN II Ready Gel® precast gels and PROTEAN Plus handcast gels (20 x 20.5 cm or 25 x 20.5 cm (W x L), and 1.0, 1.5, or 2.0 mm thick)*



*Accommodates IPG strips or tube gels up to 24 cm in length*

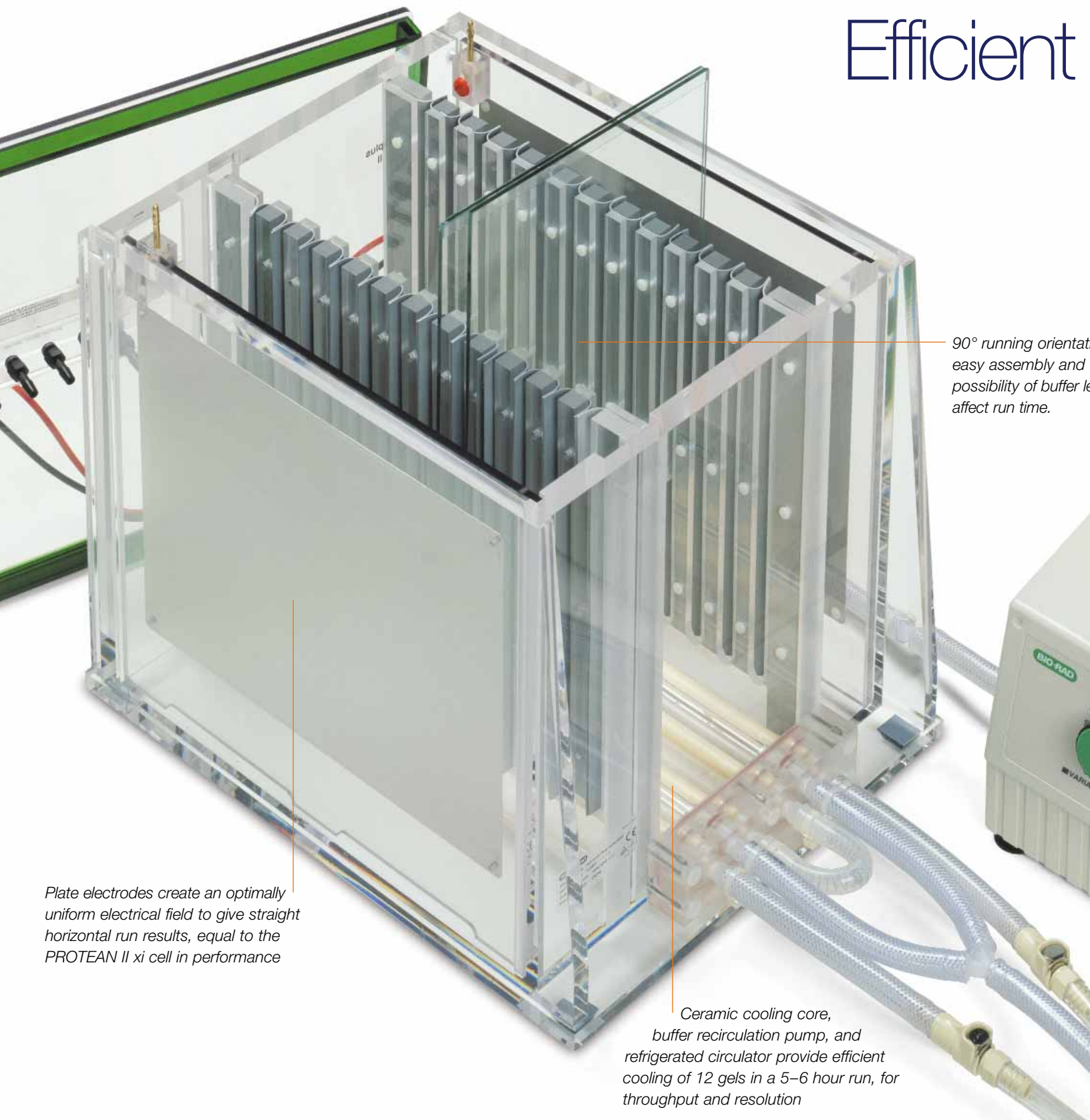
## Precast or Handcast? The Choice is Yours...



### Precast Gels

Use PROTEAN II Ready Gel precast gels for maximum convenience and reproducibility demanded by high-throughput labs. These gels can accommodate 17 or 18 cm IPG strips and are currently available in 4 different gel percentages, including gradients. Visit [discover.bio-rad.com](http://discover.bio-rad.com) for new sizes and types.

# Efficient



90° running orientation for easy assembly and possibility of buffer level to affect run time.

Plate electrodes create an optimally uniform electrical field to give straight horizontal run results, equal to the PROTEAN II xi cell in performance

Ceramic cooling core, buffer recirculation pump, and refrigerated circulator provide efficient cooling of 12 gels in a 5–6 hour run, for throughput and resolution



## PROTEAN Plus Multi-Casting Chamber

The chamber can cast up to 12 gels of 1.0, 1.5, or 2.0 mm thickness simultaneously, and holds both the 20 cm and 25 cm wide PROTEAN Plus hinged plates. Acrylic space fillers are used when fewer than 12-gels are cast, and a leveling bubble ensures level interfaces. Gradient gels are cast through a bottom filling port.

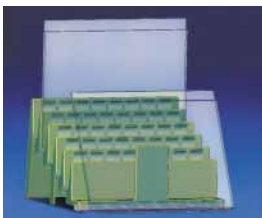
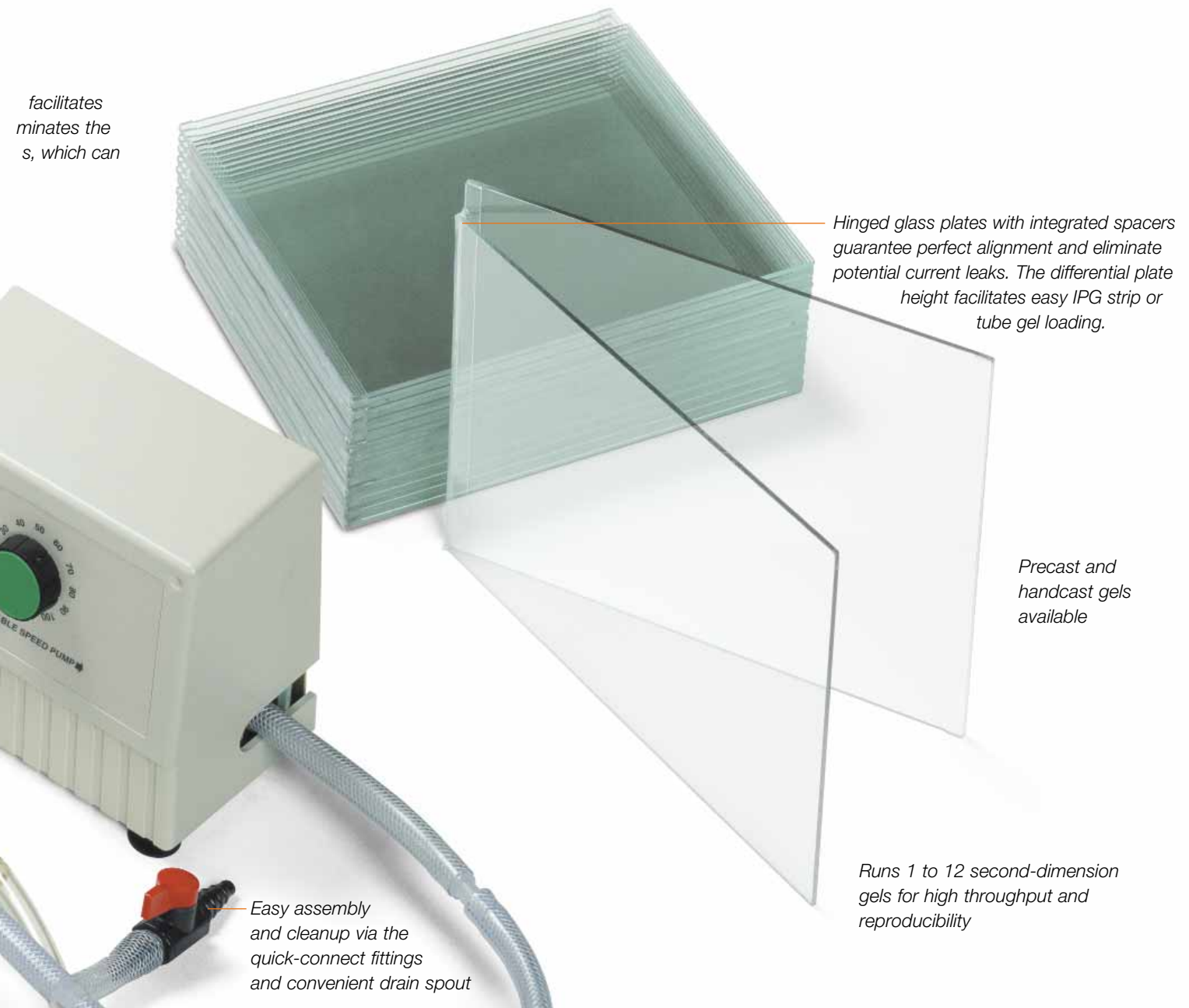


## Model 495 Gradient Former

The Model 495 gradient former allows you to pour linear, concave, or convex exponential acrylamide gradients. With a capacity of 100–1,500 ml, the gradient former can cast up to twelve 2.0 mm slab gels in the PROTEAN Plus multi-casting chamber.



# Cooling, Uniform Electrical Field, Wide Selection of Gel Sizes – and Handles as Well as It Runs



## **AnyGel™ Stand**

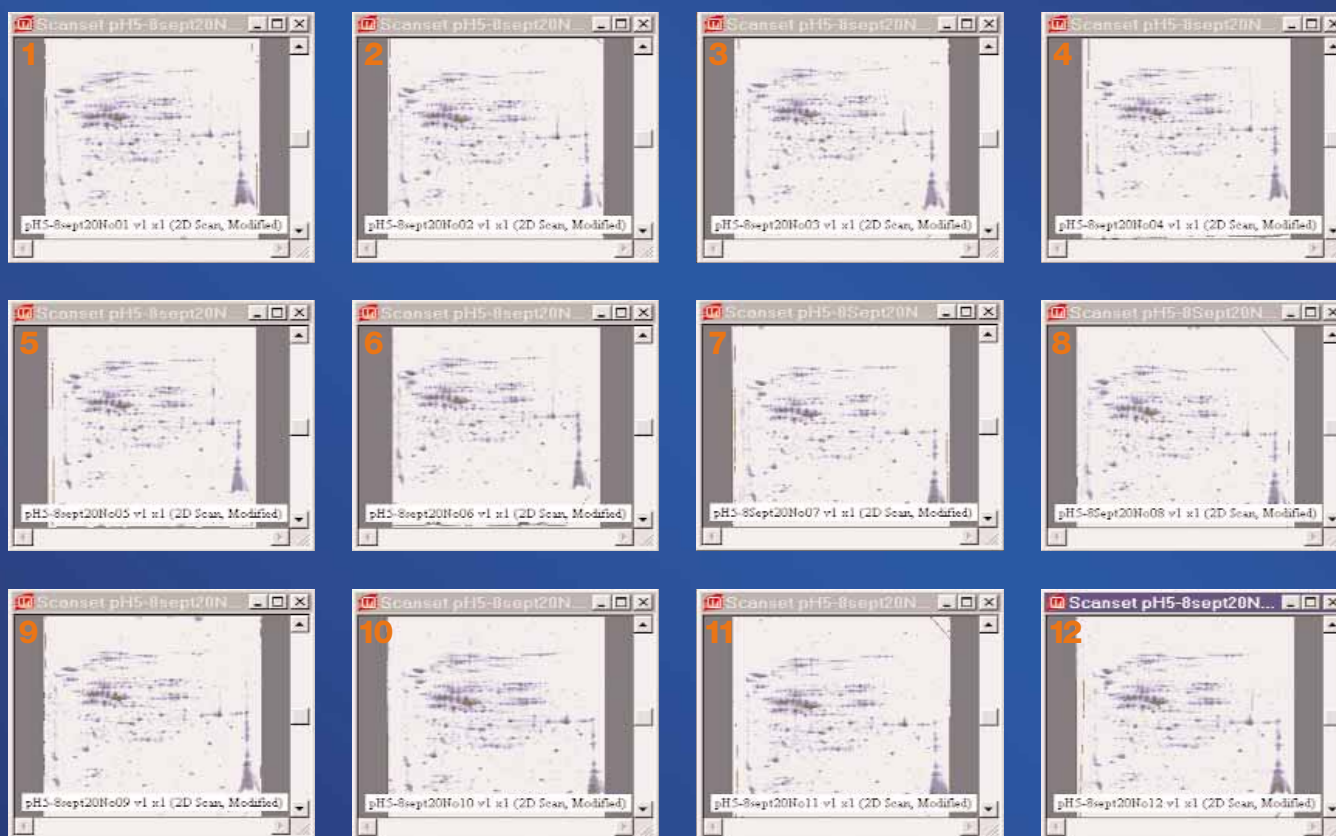
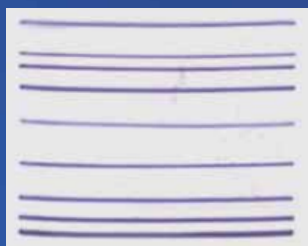
The AnyGel stand provides vertical stabilization and easy access to virtually any size slab gel cassette. The stand can optimally position gels while loading IPG strips onto the second dimension. It is also useful as a holding rack between gel processing procedures. The single-row format accommodates 1 large-format gel. A 6-row model for high-volume labs accommodates up to 6 large-format gels. A special clamping system secures gels vertically without excess pressure, and the 6-row format features escalating height positions to enhance the view and access to individual gels.

# High Throughput and Great Results from a Simple Package



**Fig. 1. Strict Analysis of Migration Uniformity**

An 8–16% gel was hand cast and an alcohol overlay was applied across the gel. Unstained broad range protein standards were suspended in agarose and layered across the entire length of the gel surface. The protein standards migrated for 6 hr at 200 V in the PROTEAN Plus Dodeca cell. Note the uniformity of migration across the width of the gel and the absence of “smiles,” demonstrating a uniform electrical field.



**Fig. 2. Reproducibility of 2-D PAGE in the PROTEAN Plus Dodeca Cell**

First dimension: 300 µg of *E. coli* lysate treated with RNase and DNase in 325 µl of rehydration buffer (0.1% Bio-Lyte® ampholytes) were loaded onto each of the 12 ReadyStrip™ IPG strips pH 5–8. The strips were focused for a total of

92,000 V-hrs on the PROTEAN IEF cell. Second dimension: Twelve 8–16% gels were run at 200 V constant for 6 hr in the PROTEAN Plus Dodeca cell. The reproducibility of the 2-D pattern across all 12 gels demonstrates a uniform buffer temperature throughout the cell.

## PROTEAN Plus Dodeca Cell Specifications

Number of gels	1 to 12 second-dimension gels
Typical running conditions	200 V constant for 5–6 hr, or 20–30 mA/gel constant for 7–16 hr depending on gel thickness
Recommended power supply	PowerPac™ 200 power supply (required for 5–6 hr runs)
Cooling (required)	Built-in ceramic cooling core, external buffer recirculation pump, and refrigerated circulator (circulator must be purchased separately; recommended flow rate 1 gal/min, recommended BTU removal rate 900 BTU/hr at 20°C)
Total buffer volume required	22.5 L for PROTEAN Plus plates 16.8 L for PROTEAN II Ready Gel precast gels
Dimensions	Tank: 39.5 x 34.5 x 34.5 cm (L x H x W) Pump: 19.5 x 12 x 17.5 cm (L x H x W)

## Ordering Information

Catalog # Description

### PROTEAN Plus Dodeca Cell\*

165-4150	PROTEAN Plus Dodeca Cell, 100/120 V, includes tank and lid, buffer recirculation pump with tubing, manifold extension tubing, instructions
165-4151	PROTEAN Plus Dodeca Cell, 220/240 V
165-4153	Replacement Tubing Kit
165-4154	Replacement Gasket Assembly
165-4155	Replacement Electrode Card, anode
165-4156	Replacement Electrode Card, cathode
165-4157	Replacement Lid
165-4166	Replacement Manifold Extension Tubing

### PowerPac 200 Power Supply

165-5052	PowerPac 200 Power Supply, 100/120 V
165-5053	PowerPac 200 Power Supply, 220/240 V

### PROTEAN Plus Multi-Casting Chamber

165-4160	PROTEAN Plus Multi-Casting Chamber, includes casting chamber, sealing plate, silicone gasket, tapered luer connector, leveling bubble, acrylic blocks, separation sheets, instructions (order hinged spacer plates and combs separately)
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### PROTEAN Plus Hinged Spacer Plates (gel dimensions)

165-4170	20 x 20.5 cm (W x L), 1.0 mm, 1
165-4171	20 x 20.5 cm (W x L), 1.5 mm, 1
165-4172	20 x 20.5 cm (W x L), 2.0 mm, 1
165-4173	25 x 20.5 cm (W x L), 1.0 mm, 1
165-4174	25 x 20.5 cm (W x L), 1.5 mm, 1
165-4175	25 x 20.5 cm (W x L), 2.0 mm, 1

### PROTEAN Plus Combs

165-4176	2-D with 1 reference well, 20 cm, 1.0 mm, 1
165-4177	2-D with 1 reference well, 20 cm, 1.5 mm, 1
165-4178	2-D with 1 reference well, 20 cm, 2.0 mm, 1
165-4179	2-D with 1 reference well, 25 cm, 1.0 mm, 1
165-4180	2-D with 1 reference well, 25 cm, 1.5 mm, 1
165-4181	2-D with 1 reference well, 25 cm, 2.0 mm, 1

### Model 495 Gradient Former

165-4121	Model 495 Gradient Former, 100–1,500 ml, includes body with valve stem and tubing connection kit
165-2005	Exponential Piston, for Model 495 (required to pour concave or convex exponential acrylamide gradients)
165-2008	Replacement Tubing Connection Kit, includes stopcock, tapered luer coupling, tubing (1/8 in ID, 3 ft), and Y-connector

### AnyGel Stand

165-4131	AnyGel Stand, single row, holds 1 large-format gel cassette
165-5131	AnyGel Stand, 6-row, holds 6 large-format gel cassettes

### PROTEAN II Ready Gel precast gels with IPG well — All gels are 18.3 x 19.3 cm (W x L)

161-1450	10% Tris-HCl gel, 4% stacking gel, 1.0 mm thick
161-1451	12% Tris-HCl gel, 4% stacking gel, 1.0 mm thick
161-1452	10–20% Tris-HCl gel, 4% stacking gel, 1.0 mm thick
161-1453	8–16% Tris-HCl gel, 4% stacking gel, 1.0 mm thick

### Premixed Electrophoresis Buffers

161-0755	10x Tris/Glycine/SDS, 6 x 1 L
161-0772	10x Tris/Glycine/SDS, 5 L
161-0757	10x Tris/Glycine, 6 x 1 L
161-0771	10x Tris/Glycine, 5 L

\*Order hinged spacer plates, combs, and multi-casting chamber separately.  
Coomassie is a trademark of Imperial Chemical Industries PLC.



The PROTEAN IEF cell and ReadyStrip IPG strips streamline handling and increase your resolving power in the first dimension. For more information, refer to the Bio-Rad Life Science catalog or visit us on the Web at [discover.bio-rad.com](http://discover.bio-rad.com).



The PROTEAN Plus Dodeca cell is part of the ProteomeWorks system, a global alliance between Bio-Rad Laboratories, Inc. (USA) and Micromass, Ltd. (UK), dedicated to furthering proteomics research.

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