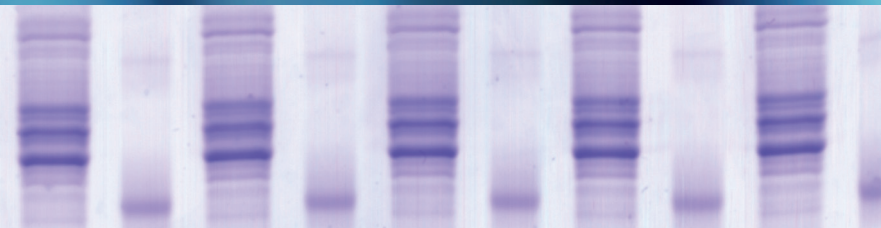


# SDS PAGE



## Reagents and Equipment

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SERVA Gels for Vertical SDS PAGE

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SERVA Gels for Horizontal SDS PAGE

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Gel Media and Electrophoresis Buffers

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SERVA Protein Standards

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SERVA Stains for SDS PAGE

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SDS PAGE Equipment

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# All you need for... SDS PAGE

Separation of proteins by SDS PAGE is like sieving proteins according to their size. The sieve is the polyacrylamide matrix where the acrylamide/Bis concentration determines the pore size of the sieve. The driving force is the electric field that moves the completely SDS covered and denatured

proteins to the anode. This results in separation of proteins according to their molecular weight.

Whether you use SERVA's precast vertical or horizontal gels or self-cast gels, SERVA offers a comprehensive product range for protein separation, staining and detection.

1

SERVA Gels for Vertical SDS PAGE

2

SERVA Gels for Horizontal SDS PAGE

3

Gel Media and Electrophoresis Buffers

4

SERVA Protein Standards

5

SERVA Stains for SDS PAGE

6

SDS PAGE Equipment

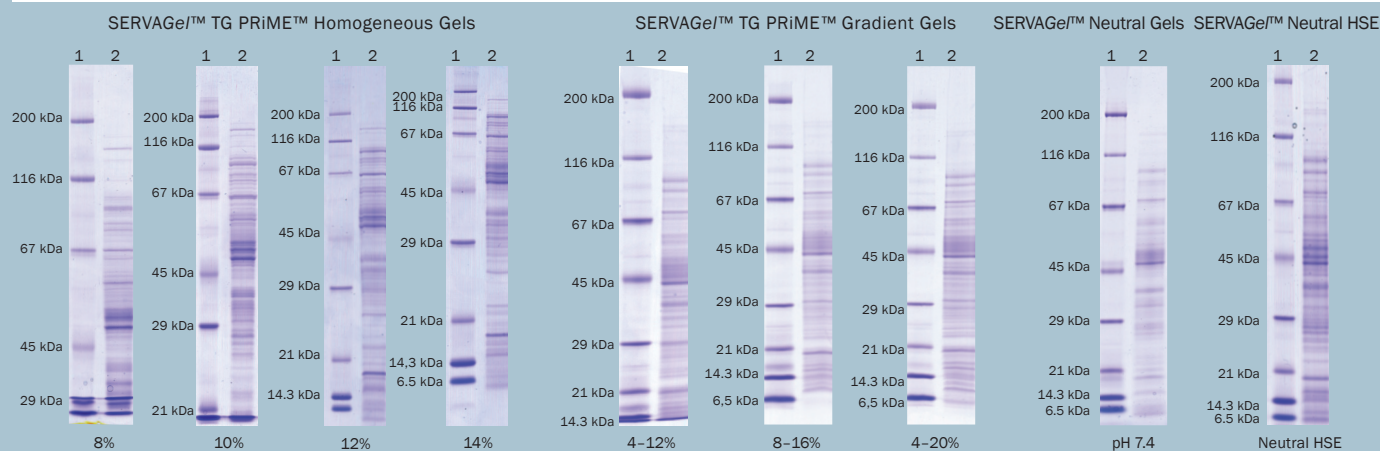


SERVA produces gels for more than 30 years – hard to find a place with more experience in manufacturing, developing and supporting the use of electrophoresis gels!

# SERVA Gels for Vertical SDS PAGE

- | SERVAGel™ TG PRiME™ - fast, high resolution, similar separation pattern as classical Tris/Glycine gels but long shelf life
- | SERVAGel™ Neutral pH 7.4 – high resolution separation of proteins from 5 - 200 kDa on one gel, long shelf life
- | SERVAGel™ Neutral HSE - high speed electrophoresis with high resolution, long shelf life

SERVAGel™	15 sample wells	12 sample wells	10 sample wells	2D well	Size
SERVAGel™ TG PRiME™ 8 %	43284.01	43260.01	43261.01	-	10 gels
SERVAGel™ TG PRiME™ 10 %	43285.01	43263.01	43264.01	-	10 gels
SERVAGel™ TG PRiME™ 12 %	43286.01	43266.01	43267.01	43268.01	10 gels
SERVAGel™ TG PRiME™ 14 %	43287.01	43269.01	43270.01	43271.01	10 gels
SERVAGel™ TG PRiME™ 4-12 %	43288.01	43273.01	43274.01	-	10 gels
SERVAGel™ TG PRiME™ 4-20 %	43289.01	43276.01	43277.01	-	10 gels
SERVAGel™ TG PRiME™ 8-16 %	43290.01	43279.01	43280.01	43281.01	10 gels
SERVAGel™ Neutral HSE	43249.01	43245.01	43246.01	43247.01	10 gels
SERVAGel™ Neutral pH 7.4	43256.01	43220.01	43222.01	-	10 gels



1 SERVA Unstained SDS PAGE Protein Marker (cat. no. 39215)    2 *E. coli* extract

- | Short set-up times, gels are ready-to-use
- | Casted in stable plastic cassettes (10 cm x 10 cm x 0.7 cm)
- | Separation distance: 7 cm



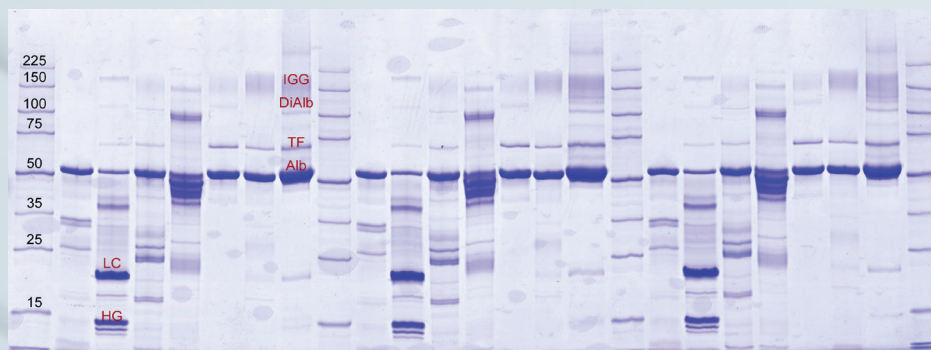
## SERVA Gels for Horizontal SDS PAGE

### SDS Gel Kits

SDS PAGE using flatbed (horizontal) electrophoresis units is a valuable alternative to mainly common vertical PAGE. The use of precast horizontal gels, as supplied with the SDS Gel Kits, results in lower buffer consumption, easy handling of the gels, most efficient temperature control and superb resolution.

| Gel format 250 x 125 mm, gel layer 0.43 mm

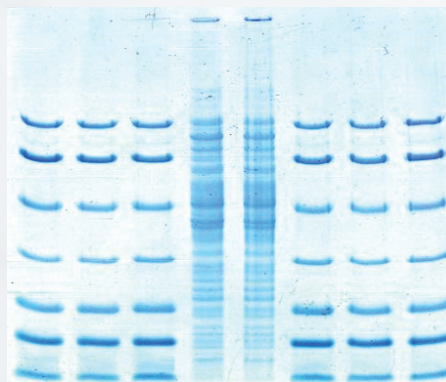
| Complete kit with 4 gels and buffers



Urinary proteins separated on SDS Gel 10 % 25 S

### SERVA SDS Gel 8-25 % Kit for PhastSystem™

For SDS PAGE in PhastGel™ format. The gel size of 50 mm x 42 mm x 0.43 mm is suitable for the horizontal, denaturing separation of proteins in the PhastSystem™. The gel matrix is cast on a carrier foil and covalently bonded to it for better handling of the gels. The complete kit contains 10 ready-to-use gels, 10 ml each of anode and cathode buffer and 20 electrode wicks.



Proteins (*E. coli* lysate, SERVA protein test mixture 6) separated on SDS Gel 8 % - 16 % for PhastSystem™.

Gel Kit	Slots	Cat. no.
SDS Gel Kit 10 %	25	43359.01
	52	43360.01
SDS Gel Kit 15 %	25	43361.01
	52	43362.01
SDS Urine Gel Kit	25	43391.01
SERVA SDS Gel 8 - 25 % Kit for PhastSystem™	-	43503.01

| High resolution 1D SDS PAGE

| SERVA SDS Gel Kit for PhastSystem

| HPE™ BlueHorizon™ flatbed system for all gel sizes including small PhastGels™

## 1D SDS Excellent Gel Kits

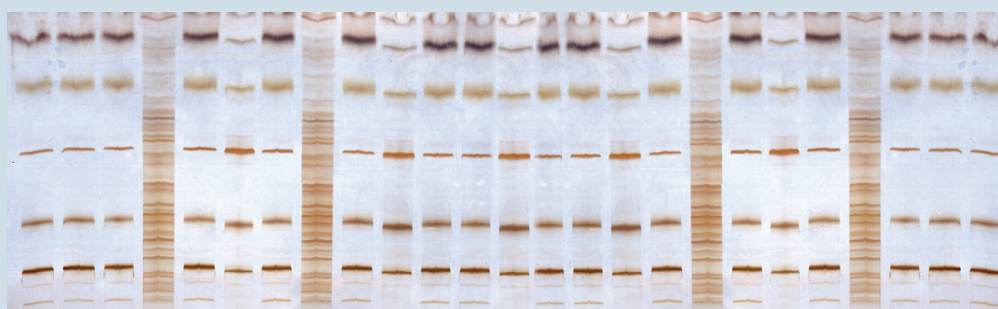
The ready-to-use 1D SDS Excellent Gel Kits are the ideal alternative for ExcelGel™ SDS gels from GE. The gels have been developed in Heidelberg in close co-operation with researchers formerly using GE's ExcelGel ensuring comparable results.

The thin gel layer and running conditions at temperature-controlled 15 °C enables high resolution of protein bands, fast staining/destaining properties and much easier handling compared to vertical PAGE. The backing film is available as standard, but also as a non-fluorescence (NF) version. Standard film-backed gels are recommended for Coomassie® or silver staining.

The NF gels are made for fluorescence detection of proteins, e.g. SERVA Lightning Red for pre-labelling of protein samples and immediate detection of separated protein bands after electrophoresis.

Gels can be run in horizontal electrophoresis systems like SERVA's HPE™ BlueHorizon flatbed device, and as well in a Multiphor II. One kit contains 4 precast gels (260 mm x 125 mm x 0.43 mm) with 25 sample wells each, SDS anode and cathode buffer (250 ml each) and 8 electrode wicks to be soaked with anode/cathode buffer prior to electrophoresis.

- | Replaces GE's ExcelGels
- | Gel format 260 mm x 125 mm, gel layer 0.43 mm
- | 25 sample wells, 15 µl each
- | Film backing available as non-fluorescent and standard



Proteins (*E. coli* lysate, protein standards) separated on 12.5 % 1D SDS Excellent gel.

Product	Slots	Qty.	Cat. no.
Excellent Gel Kit 12.5% for 1D SDS PAGE	25	1 kit	43421.01
Excellent Gel Kit 7.5 % for 1D SDS PAGE	25	1 kit	43422.01
Excellent Gel Kit NF 12.5 % for 1D SDS PAGE	25	1 kit	43423.01
Excellent Gel Kit NF 7.5 % for 1D SDS PAGE	25	1 kit	43424.01
Excellent Gel Kit 15 % for 1D SDS PAGE	25	1 kit	43425.01
Excellent Gel Kit NF 15 % for 1D SDS PAGE	25	1 kit	43426.01

ExcelGel™: trademark owned by GE

- | High resolution horizontal SDS PAGE
- | Easy handling, low buffer consumption, long shelf life
- | For further GE gels alternatives, please contact us by e-mail ([info@serva.de](mailto:info@serva.de)).

## Gel Media and Electrophoresis Buffers

For the perfect gel – buy directly from the manufacturer! For manufacturing of various polyacrylamide gels (e.g. SERVAGE™ TG PRiME precast vertical mini gels) SERVA has developed a pro-

found knowledge base in making acrylamide and buffer solutions. Today, due to ongoing optimisation processes SERVA offers ready-to-use Acrylamide/Bis and buffer solutions of highest quality.

Product	Size	Cat. no.
Acrylamide/Bis Solution, 29:1 (40 % w/v), 3.3 % C	500 ml	10680.01
	4x 500 ml	10680.02
	1 L	10680.03
Acrylamide/Bis Solution, 37.5:1 (40 % w/v), 2.6 % C	500 ml	10681.01
	4x 500 ml	10681.02
	1 L	10681.03
Acrylamide/Bis Solution, 29:1 (30 % w/v), 3.3 % C	500 ml	10687.01
	4x 500 ml	10687.02
	1 L	10687.03
Acrylamide/Bis Solution, 37.5:1 (30 % w/v), 2.6 % C	500 ml	10688.01
	4x 500 ml	10688.02
	1 L	10688.03
Acrylamide 4X solution (40 % w/v)	1 L	10677.01
N,N'-Methylene bisacrylamide 2X solution, 2 % (w/v)	1 L	29197.01
Acrylamide 2X, research grade	1 kg	10675.02
Acrylamide 4X, analytical grade	1 kg	10674.03
Ammoniumpersulfate (APS), electrophoresis grade	50 g	13376.01
	250 g	13376.02
N, N, N', N'- Tetramethyl-ethylenediamine, for electrophoresis	10 ml	35930.01
	25 ml	35930.02
Laemmli Buffer (10x), for SDS PAGE	2 L	42556.01
	10 L	42556.04
Laemmli Sample Buffer (2x), for SDS PAGE	20 ml	42526.01
	5x 20 ml	42526.02
SERVA Tris-Glycine/SDS sample buffer (2x)	20 ml	42527.01
SERVA Tris-Glycine/LDS sample buffer (4x)	10 ml	42525.01
SERVA Tris-Glycine/SDS electrophoresis buffer (10x)	1 L	42529.01
SERVA Tris-Tricine/SDS sample buffer (2x)	20 ml	42551.01
SERVA Tris-Tricine/SDS electrophoresis buffer (10x)	1 L	42552.01
SERVA Tris-Tricine/SDS electrophoresis buffer (20x)	1 L	42560.01
SDS Solution, 20 % electrophoresis grade	500 ml	20768.02
	1 L	20768.03

Ready-to-use solutions for saving time and work

Safe working, reduced health risk

Quality controlled for electrophoresis

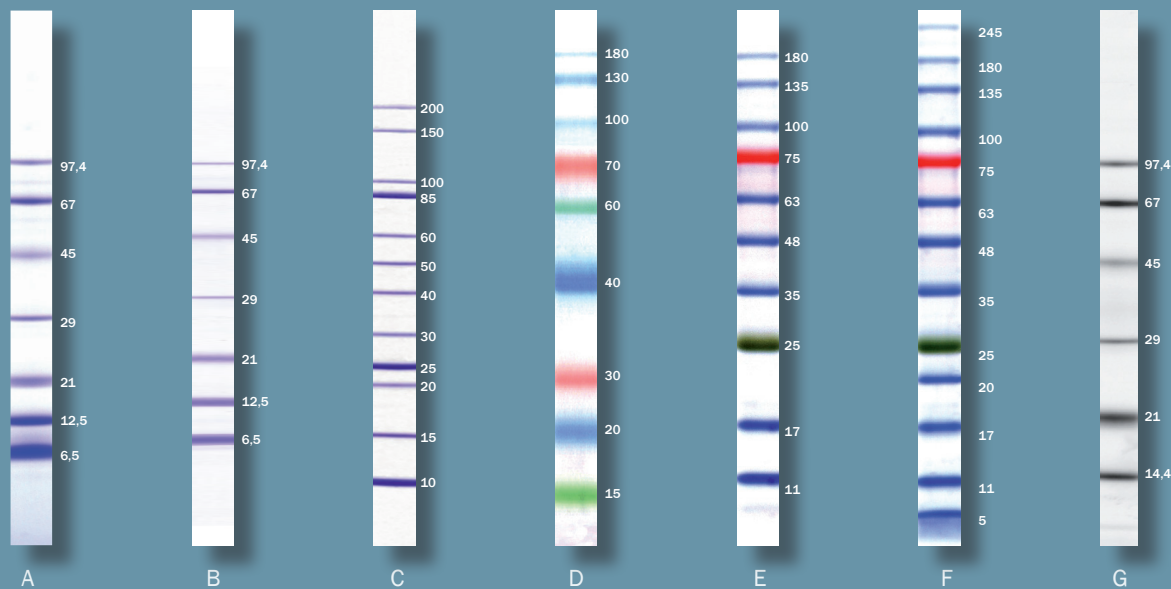


## Unstained protein standards

- To determine the molecular weight of proteins
- Natural and recombinant origin
- Ready-to-use or lyophilized

## Prestained protein standards

- For monitoring protein separation during SDS PAGE
- Verification of Western Blotting transfer efficiency
- Ready-to-use



Product	Size	Cat. no.
Protein Test Mixture 6 for SDS PAGE (A)	10 mg	39207.01
Protein Test Mixture 4 for SDS PAGE (29 - 97 kDa, not shown)	10 mg	39208.01
Protein Test Mixture 5 for SDS PAGE (6.5 - 29 kDa, not shown)	10 mg	39209.01
SERVA Unstained SDS PAGE Protein Marker 6.5 - 97 kDa, liquid mix (B)	500 µl	39214.01
SERVA Unstained Protein Standard IV (C)	500 µl	39250.01
SERVA Triple Color Protein Standard I (D)	500 µl	39251.01
SERVA Triple Color Protein Standard II (E)	500 µl	39257.01
SERVA Triple Color Protein Standard III (F)	500 µl	39258.01
SERVA Fluo-610 Standard I (G)	5 x 50 µl	39261.01

■ Triple Color Protein Standards are stable at 25 °C for up to two weeks

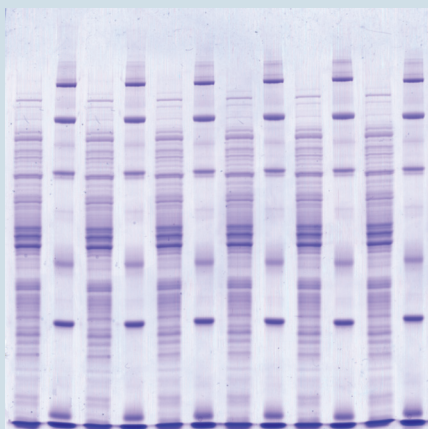
## SERVA Stains for SDS PAGE

To detect electrophoretically separated proteins, colorimetric staining methods are common. Coomassie® and silver are mainly used. The best

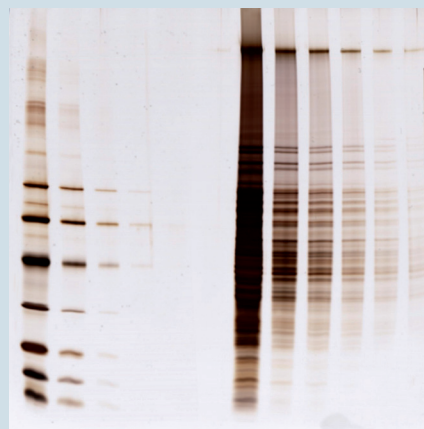
method for a specific application strongly depends on the detection limit, the compatibility with downstream applications and detection instruments.

### Selection guide for colorimetric staining kits

	Quick Coomassie® Stain	Silver Staining Kit SDS PAGE
Type of Stain	1-step, non-toxic colloidal Coomassie® G-250 stain	Fast, MS-compatible silver stain
Pre-Staining	-	-
Post-Staining	✓	✓
Sensitivity	5 ng	0.1 ng
Staining time	15 min	45 – 60 min
Quantification	✓	-
MS compatible	✓	✓
Re-usable	✓	-
No. of mini gels stained	40 - 120	25
Cat. no.	35081.01	35076.01



SDS electrophoresis on SERVAGE™ stained with Quick Coomassie® Stain



SDS electrophoresis on SERVAGE™ stained with Silver Staining Kit SDS PAGE

■ Quick Coomassie® – stain your gel in 15 min only

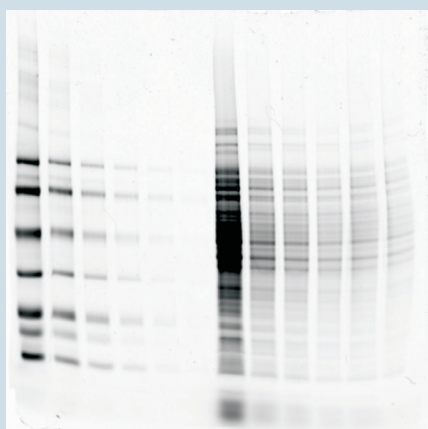
■ Silver Staining Kit – SDS PAGE - for high sensitive, MS compatible staining of SDS protein gels



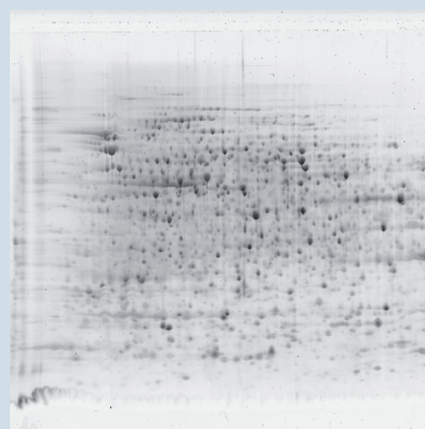
SERVA developed a range of easy-to-use, highly sensitive, fluorescence-dye based kits. The SERVA Lightning Red Kit is a rapid label of proteins prior to SDS PAGE, making any staining and washing steps unnecessary after electrophoresis.

#### Selection guide for fluorescence staining kits

	<b>SERVA PRiME™ Lightning Red</b>	<b>SERVA ProteinStain Fluo-R</b>	<b>SERVA Purple</b>	<b>SERVA Purple HiSens</b>
Type of Stain	Highly sensitive, fast, red fluorescent pre-stain	Highly sensitive red fluorescent stain	Highly sensitive, fast, red fluorescent stain	Highest sensitivity, fast, red fluorescent stain
Pre-Staining	✓	-	-	-
Post-Staining	-	✓	✓	✓
UV-Transilluminator	-	✓	-	-
Fluorescence imager/ Laser scanner	✓	✓	✓	✓
Excitation	530	473/488	405/500	405/500
Emission	610	610	610	610
Sensitivity	<0.5 ng	2 ng	0.05 ng	<20 pg
Staining time	30 min pre-staining	1 h mini gels, 6 h large gels	1 h – 1.5 h	1 h – 1.5 h
Quantification	✓	✓	✓	✓
WB/MS compatible	✓	✓	✓	✓
Quantity	1 kit	5 mg	5 ml / 25 ml	5 ml / 25 ml
Cat. no.	43402.01	35090.01	43386.03/43386.01	43408.01/43408.02



SDS electrophoresis on SERVAGE™ stained with SERVA Lightning Red



2D electrophoresis on a SERVA 2D HPE Large Gel 12.5 % flatbed gel stained with SERVA Purple

## SDS PAGE Equipment

### BlueVertical™ PRiME™ & TankBlotter

- Dual mini tank systems
- Accommodates 1 – 2 gels in cassettes with outer dimensions of 10 cm x 10 cm x 0.7 cm
- Leak-free inner core unit with a unique clamp system
- Unique, easy-to-handle blotting insert for tank blotting
- Gel Casting Stand for pouring two gels
- Quality designed and made in Germany



Product	Size	Cat. no.
BlueVertical™ PRiME™	1 unit	BV-104
BlueVertical™ PRiME™ TankBlot	1 unit	BV-104-TB
BlueVertical™ PRiME™ Casting Stand	1 unit	BV-104-CS
BlueVertical™ PRiME™ Blot Module	1 unit	BV-104-B

### HPE™ BlueHorizon™

- Highly sophisticated flatbed system for horizontal electrophoresis
- High capacity cooling plate for highest resolution and band sharpness
- Suitable for gels up to 260 mm x 205 mm
- For 1D and 2D SDS PAGE, for high voltage applications like IEF
- Wide range of horizontal precast gels available
- Platinised electrodes with variable spacing - depending on the application
- Samples easy to load, low buffer consumption
- Stackable, up to four units under the control of one power supply and one chiller
- Smart design – made in Germany



Product	Size	Cat. no.
HPE™ BlueHorizon™	1 unit	HPE-BH
HPE™ BlueHorizon™ System (including HPE™ BlueHorizon™, HPE™ Cooling Unit, BluePower™ 3000 HPE™ Power Supply)	1 system	HPE-BSYS

### BluePower™ Power Supply

- For vertical mini gel electrophoresis: BluePower™ 600 PRiME™ Power Supply (600 V, 1000 mA, 300 W)
- For horizontal electrophoresis: BluePower™ 3000 HPE™ Power Supply (3000 V, 200 mA, 300 W)
- Fully programmable (9 programmes with 9 steps each)
- 4x 2 outlets



Product	Size	Cat. no.
BluePower™ 600 PRiME™ Power Supply	1 unit	BP-600-PRI
BluePower™ 3000 HPE™ Power Supply	1 unit	BP-3000-HPE

## Digital Imaging and Analysis System L-340

- Fast and convenient gel documentation system
- Includes 1D analysis software LabImage L-340,
- Includes darkroom cabinet, UV filter, digital SLR camera & 1D analysis software LabImage L-340
- „Basic“ version without 1D analysis software L-340
- Optional available: UV-, white- and blue-light transilluminator, epi-white light
- Small footprint: 42 x 55 x 52 cm)



Product	Size	Cat. no.
Digital Imaging and Analysis System L-340	1 system	DIAS-III-L
Digital Imaging and Analysis System, basic	1 system	DIAS-III

## BIO-5000 Plus VIS Gel Scanner

- Leak-free holder for scanning wet electrophoresis gels in transmission mode
- Scanning of stained blot membranes in reflection mode
- CCD image sensor
- Resolution up to 4,800 dpi
- Dynamic range over approx. 3.7 O.D. units
- Auto-focus for highest image quality
- Easy-to-use scanning software
- Scanning area up to 216 mm x 254 mm



Product	Size	Cat. no.
BIO-5000 Plus VIS Gel Scanner	1 unit	BIO-5000P

## BIO-1000F Fluorescence Gel Scanner

- Detects 1 ng protein/band (for SERVA Lightning Red)
- Detects 0.04 ng DNA/band stained with EtBr-alternative fluorescent stain
- BlueLED illuminator with CCD image sensor
- Scanning area up to 127 mm x 178 mm



Product	Size	Cat. no.
BIO-1000 Fluorescence Gel Scanner	1 unit	Bio-1000F





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