biostep GmbH

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PCR
ELECTROPHORESIS
BIO-IMAGING

Catalogue 2007/2008

www.biostep.de

Licence agreement PCR

Trade marks

Notes

The illustrations in this catalogue frequently show accessories next to the described unit. In principle, the scope of supply corresponds only to the parts described in text and table.

All details in this catalogue are made according to best knowledge. We reserve the right to change technical features. Illustrations serve for the illustration. biostep is not responsible for any clerical, typographical or other errors or omissions.

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Vertical Electrophoresis Systems

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Laboratory Devices

Notes

Thermal Cyclers

Flex-Cycler

The Flex cycler fulfills all requirements of modern multi-functional thermal cyclers. Among others, 3 exchangeable dual blocks for 0.2 ml and 0.5 ml tubes are available.

The precise functioning enables fast and reproducible results. An extra large display and a user-friendly surface has especially been developed for the user.

Due to the automatic recognition of the current block, the manual input or justification is not necessary anymore.

Advantages

- exchangeable blocks, separately controllable
- simultaneous independent run of 2 different programs
- easy-to-use control software
  online upgrade possible
- also available with gradient block, temperature gradient of 30 °C

Temperature

Temperature range	4 °C - 99 °C
Temperature adjustment	0.1 °C
Block uniformity	±0.4 °C
Peltier technology	Yes
Block accuracy	±0.3 °C
Cooling at the end	Yes

Heating and cooling rate

Average	heating	4.0 °C/sec
	cooling	3.0 °C/sec

Heatable lid

Selectable lid temperature (adjustable contact pressure)	100 °C - 110 °C

External control

RS232 interface	Yes
Software update	Yes

Programming

Program labelling	Ja
Number of programs	99
Max. segments	5
Max. program steps	16

Miscellaneous

Dimensions L x W x H	300 x 280 x 380 mm
Net weight	10 kg

Description	Order No.
Thermal cycler Flex cycler without block	TC-FLEX
Interchangeable blocks	
Insert block for 60 x 0.5 ml	TCFLEX-A
Insert block for 96 x 0.2 ml	TCFLEX-B
Insert block for 96 x 0.2 ml with gradient function	TCFLEX-C
Insert block for microtiter plate 384well	TCFLEX-D
Dual block for 30 x 0.5 ml and 30 x 0.5 ml reaction tubes	TCFLEX-E
Dual block for 48 x 0.2 ml and 48 x 0.2 ml reaction tubes	TCFLEX-F
Dual block for 30 x 0.5ml and 48 x 0.2 ml reaction tubes	TCFLEX-G
Insitu block for 4 plates, without heated lid	TCFLEX-H

Consumables like PCR plates and PCR tubes starting from page 10

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Sample Concentrator

Basic unit and needles

Sample concentrators serve for an easy and time-saving evaporation of samples.

These units are a combination of a Dri-Block of the DB-3 series and a fully adjustable gas reservoir. For an accelerated evaporation, the samples are tempered from below and gased from above via hypodermic needles.

Due to a variety of exchangeable blocks for the thermostat, samples of various sizes can be evaporated in most different vessels.

Depending on the number of sample vessels, only the effectively needed positions in the gas chamber have to be fitted with needles. All other positions are automatically closed. The time-consuming closure of not required needles is not necessary anymore.

For obtaining a faster evaporation of the samples, it is possible to exactly adjust the gas chamber at the liquid level in the samples.

The compact construction of the sample concentrator enables it to be placed in a fume cupboard when toxic vapours have to be evaporated.

Sample concentrator

Dimensions L x W x H	27.9 x 33.0 x 53.0 cm

Consisting of:
- vertically adjustable concentrator gas chamber
- tripod

Necessary:
- Dri-Block heater of the series DB-3
- insert blocks for reaction vessels or tubes
- needles

Advantages

- fast evaporation because of simulaneous gas from above and temperation from below
- easy and correct adjustment of the vertically adjustable gas chamber
- fast and easy position of the needles
- only effectively required positions have to be fixed with needles
- high temperature stability and reproducibility
- high flexibility due to exchangeable blocks
- minimal heat-up times, minimal heat loss

Basic units

Model	Description	Order No.
SC-400	Basic unit suitable for all standards	FSC400D
SC-496	Basic unit suitable for all standards and 96well-plates	FSC496D

Needles

Description	Order No.
Needles, 76 mm long, 1 pack of 100 pieces	F7209
Needles, 127 mm long, 1 pack of 100 pieces	F7210
Needles, PTFE coated, 76 mm long, 1 pack of 100 pieces	FSC4NCS
Needles, PTFE coated, 127 mm long, 1 pack of 100 pieces	FSC4NCL

Sample Concentrator

Basic unit with Dri-Block heater

SC-3

Consisting of:
- basic unit SC-400
- Dri-Block heater DB-3
  (without blocks and needles)

Specifications
- temperature range +25 °C up to +100 °C
- analogue temperature setting by °C-scala
- 650 Watt heating power
- heat-up time at 30 °C
  - to 37 °C   8 min
  - to 56 °C   12 min
  - to max °C   18 min
- 137.9 mbar max. gas supply

SC-3A

Consisting of:
- basic unit SC-400
- Dri-block heater DB-3A
  (without blocks and needles)

Specifications
- temperature range +25 °C up to +200 °C
- analogue temperature setting by °C-scala
- 650 Watt heating power
- heat-up time at 30 °C
  - to 37 °C   8 min
  - to 56 °C   12 min
  - to max °C   30 min
- 137.9 mbar max. gas supply

SC-3D

Consisting of:
- basic unit SC-400
- Dri-block heater DB-3D
  (without blocks and needles)

Specifications
- temperature range +25 °C up to +200 °C
- digital temperature setting with LED-Display
- 650 Watt heating power
- heat-up time at 30 °C
  - to 37 °C   11 min
  - to 56 °C   15 min
  - to max °C   25 min
- 137.9 mbar max. gas supply
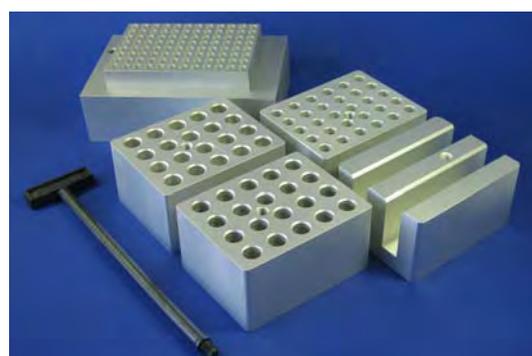
22 different insert blocks availavle

Sample concentrators

Model	Description	Order No.
SC-3	25 - 100 °C, analogue	SC-3
SC-3A	25 - 200 °C, analogue	SC-3A
SC-3D	25 - 200 °C, digital	SC-3D

*Insert blocks and needles not included. Insert blocks at page 9.

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Dri-Block Heaters

Analogue and digital Dri-Block heaters

Dri-Block heaters of the series DB of Techne serve for the incubation of samples into different reaction vessels as well as tubes and microcentrifuge tubes at defined temperatures.

The robust Dri-Block heaters are easy to work with. Due to different insert blocks, the Dri-Block heaters are flexibly applicable heating systems.

Advantages

- short heat-up time and loe heat loss
- equal temperature allocation in the blocks
- high temperature constancy and reproducibility
- high sample capacity at low required space
- 22 different blocks
- arbitrary combination of insert blocks for different sample tubes and vessels

Analogue systems

DB-2A, up to 100 °C
- suitable for taking one or two insert blocks
- temperature range: +25 °C up to +100 °C
- temperature setting: analogue by °C-scala
- including block lifter
- spacers are necessary when using only one block Order No. F4466

DB-3, up to 100 °C
- suitable for taking three insert blocks
- temperature range: +25 °C up to +100 °C
- temperature setting: analogue by °C-scala
- including block lifter

DB-3A, up to 200 °C
- suitable for taking three insert blocks
- temperature range: +25 °C to +200 °C
- temperature setting: analogue by °C-scala
- including block lifter

Digital systems

DB-2D, up to 100 °C
- suitable for taking one or two insert blocks
- temperature range: +25 °C up to +100 °C
- temperature setting: digital by LED-Display
- including block lifter
- spacers are necessary when using only one block Order No. F4466

DB-3D, up to 200 °C
- suitable for taking three insert blocks
- temperature range: +25 °C to +200 °C
- temperature setting: digital by LED-Display
- including block lifter

Dri-Block Heaters

Dri-Block heaters and insert blocks

Model	Description	Order No.
DB-2A	Dri-Block heater, 25 - 100 °C, for max. 2 blocks	FDB02AD
DB-2D	Dri-Block heater, 25 - 100 °C, for max. 2 blocks	FDB02DD
Spacer	2 spacers when using only one block	F4466
DB-3	Dri-Block heater, 25 - 100 °C, for 3 blocks	FDB03OD
DB-3A	Dri-Block heater, 25 - 200 °C, for 3 blocks	FDB03AD
DB-3D	Dri-Block heater, 25 - 200 °C, for 3 blocks	FDB03DD

Insert blocks for Dri-Block heaters

All insert blocks for Dri-Block heaters consist of a high-quality aluminium alloy. This assures a homogeneous and low loss heat transfer from the heater to the sample.

It is necessary to adjust the boreholes of the blocks to the form of the sample tubes and vessels for ensuring a heat transfer over the complete surface.

22 different aluminium insert blocks for different tubes, vessels and microcentrifuge tubes are available.

Description	Size in mm	Order No.
Block without borehole	95 x 76 x 51	F3501
Block for 30 tubes with 6 mm Ø	95 x 76 x 51	F3502
Block for 20 tubes with 10 mm Ø	95 x 76 x 51	F3503
Block for 20 tubes with 12 mm Ø	95 x 76 x 51	F3504
Block for 20 tubes with 13 mm Ø	95 x 76 x 51	F3505
Block for 12 tubes with 15 mm Ø	95 x 76 x 51	F3506
Block for 12 tubes with 16 mm Ø	95 x 76 x 51	F3507
Block for 8 tubes with 19 mm Ø	95 x 76 x 51	F3508
Block for 6 tubes with 25 mm Ø	95 x 76 x 51	F3509
Block for 10 mm cuvettes	95 x 76 x 51	F3510
Block with thermometer bore, for DB-3 series	95 x 225 x 51	F3512
Block with thermometer bore	95 x 76 x 51	F4460
Block for 10 x 9 mm Ø or 20 x 7 mm Ø tubes	95 x 76 x 51	F4461
Block for 6 tubes with 24 mm Ø	95 x 76 x 51	F4462
Block for 6 tubes with 26 mm Ø	95 x 76 x 51	F4463
Block for 20 x 1.5 ml tubes	95 x 76 x 51	F4464
Block for 20 x 1.5 ml tubes, blue	95 x 76 x 51	F4464/B
Block for 30 x 0.5 ml tubes	95 x 76 x 51	F4465
Block for 30 x 0.5 ml tubes, red	95 x 76 x 51	F4465/R
Block for 20 x 2.0 ml tubes	95 x 76 x 51	F4470
Block for 72 x 0.2 ml tubes	95 x 76 x 51	F4471
Block for 96 x 0.2 ml PCR-plate 96well	95 x 151 x 61	F4473
Block for 96 x 1.0 ml Porvair plate	95 x 151 x 61	F4474
Block for gelation timer	95 x 76 x 51	F4476

Other blocks on request.

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Dri-Block Heaters

Cooling and heating block

ThermoCell CHB-202

Based on its specifications, the cooling and heating block is suitable for each laboratory.

5 various insert blocks are available. They are easy to change, to clean and to sterilise.

Due to the large, clear and coloured display, temperature and time are excellent readable and easy-to-adjust.

The cooling and heating block CHB-202 has 5 program steps which can be proceeded subsequently.

Specifications

Temperature control range	0 °C to 100 °C
Adjustable time range	1 min to 99 hrs 59 min
Accuracy block temperature	$< \pm 0.5$ °C
Block homogeneity	$< \pm 0.5$ °C
Program steps	5
Heating/cooling	Peltier technology
Dimensions L x W x H	300 x 200 x 150 mm
Weight	3.3 kg
Calibrateable	Yes

Advantages

- temperature and time programming
- short heat-up and cooling times
- high temperature stability
- high temperature accuracy and reproducibility
- 5 interchangeable blocks
- water bath block available, size 115 x 73 x 38 mm
- large, coloured display
- lightweight and compact

Description	Order No.
ThermoCell CHB-202 without block	CHB-202
Interchangeable insert blocks	
Block for 40 x 1.5 ml tubes	HTB-A
Block for 54 x 0.5 ml tubes	HTB-B
Block for 96 x 0.2 ml tubes	HTB-C
Block for 15 mm Tubes	HTB-D
Water bath block, 115 x 73 x 38 mm	HTB-E

ThermoE

- portable unit
- peltier technology
- high temperature accuracy
- digital temperature display and control
- 5 interchangeable blocks
- temperature control range
  RT -5 °C to 4 °C; RT+5 °C to 100 °C
- heating rate max. 35 min (25 °C to 100 °C)
- cooling rate max. 20 min (20 °C to 4 °C)
- lightweight and compact, only approx. 2 kg

Description	Order No.
Basic unit with block for 24 x 1.5 ml tubes	HTME 510
Basic unit with block for 35 x 0.5 ml tubes	HTME 520
Basic unit with block for 96 x 0.2 ml tubes	HTME 530
Basic unit with block for 24 x 0.2 ml tubes	HTME 540
Basic unit with universal block for 36 x 0.2 ml, 15 x 0.5 ml and 8 x 1.5 ml tubes	HTME 550

Dri-Block Heaters

Cooling and heating block with mixing function

ThermoCell MB-102

The Thermocell Mixer is an allrounder. This unit combines heating and cooling functions with a mixing function.

5 various insert blocks are available. They are easy to change, to clean and to sterilise.

Due to the large, clear and coloured display, temperature, time as well as mixing speed are excellently readable and easy to adjust.

Specifications

Temperature control range	RT -14 °C to 100 °C
Adjustable time range	1 min to 99 hrs 59 min
Mixing speed	300 – 1500 rpm
Amplitude	3 mm
Accuracy block temperature	$< \pm 0.5$ °C (to 60 °C)
	$< \pm 1$ °C (over 60 °C)
Block homogeneity	$< \pm 0.5$ °C (to 60 °C)
	$< \pm 1$ °C (over 60 °C)
Heating/cooling	Peltier technology
Dimensions L x W x H	295 x 265 x 170 mm
Weight	8.5 kg
Calibrateable	Yes

Advantages

- temperature and time programming
- short heat-up and cooling times
- high temperature stability
- high temperature accuracy and reproducibility
- 5 interchangeable blocks,
  for 0.2 ml, 0.5 ml, 1.5 ml tubes and units with
  a diameter of 15 mm
- water bath block available, size 115 x 73 x 38 mm
- large, coloured display
- lightweight and compact

Description	Order No.
ThermoCell MB-102 without block	MB-102
Interchangeable blocks	
Block for 40 x 1.5 ml tubes	HTB-A
Block for 40 x 2.0 ml tubes	HTB-H
Block for 54 x 0.5 ml tubes	HTB-B
Block for 96 x 0.2 ml tubes	HTB-C
Block for 15 mm tubes	HTB-D
Water bath block, 115 x 73 x 38 mm	HTB-E

HTB-A

HTB-D

HTB-E

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Cell Culture

Biological stirrers

Biological stirrers of the MCS series of Techne are suitable even for ambitious cell cultures. These units distinguish by an exactly defined, very slow and gently stirring of the liquid cultures with slightest heat development. Units for cell culture vessels up to a volume of 5 liters are available.

MCS stirrers have been approved by their reliability in many cell culture laboratories.

Buttons on the stirrers avoid the slipping of the culture vessels which have been especially developed for the MCS series. This ensures that the stirrer rod will never touch the bottom or wall of the vessels.

MCS stirrers are also available for the cultivation of phatogenic cultures because the vessels can be airproof-sealed. They are autoclaveable.

Speed

Speed range	0 to 80 rpm
Exact speed accuracy	< 3 rpm
Softstart speed control	
- 20 sec acceleration	
- 20 sec deceleration	

Stirring with intervals

Operating interval	6 sec to 5 min
Pause intervall	2 min to 2 hrs

Drive

	Non-slip magnetic drive

Stirrer MCS-101L

Vessels per system	1
For vessel size	3000 and 5000 ml
Dimensions W x D x H	395 x 495 x 90 mm

Stirrer MCS-102L

Vessels per system	2
For vessel size	125, 250, 500 and 1000 ml
Dimensions W x D x H	140 x 400 x 90 mm

Stirrer MCS-104S

Vessels per system	4
For vessel size	125, 250 and 500 ml
Dimensions W x D x H	250 x 365 x 90 mm

Stirrer MCS-104L

Vessels per system	4
For vessel size	125, 250, 500 and 1000 ml
Dimensions W x D x H	395 x 495 x 90 mm

Stirrer MCS-104XL

Vessels per system	4
For vessel size	5000 ml
Dimensions W x D x H	530 x 595 x 90 mm

Biological stirrers

Model	Description	Order No.
MCS-101L	Stirrer for 1 culture vesel with min. 3 l and max. 5 l volume	FMCS101L
MCS-102L	Stirrer for 2 culture vessels with max. 1 l volume	FMCS102L
MCS-104S	Stirrer for 4 culture vessels with max. 500 ml volume	FMCS104S
MCS-104L	Stirrer for 4 culture vessels with max. 1 l volumen	FMCS104L
MCS-104XL	Stirrer for 4 culture vessels with 5 l volume	FMCS104XL

Cell Culture

Cell culture vessels

The slow circulation of the stirrer rod in the siliconised culture vessels serves for a passive movement of the cultivated cells which ensures a permanent supply of the cells with oxygen.

The accuracy of the stirrer rod avoids the appearance of shear forces and the associated damage of the living cells.

The stirrers are also available for the cultivation of phatogenic cultures because the vessels can be airproof-sealed and they are autoclaveable.
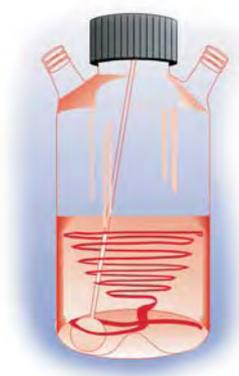
Cell culture vessels	125 ml	250 ml	500 ml	1000 ml	3000 ml	5000 ml	5000 ml
Gross volume in ml	250	500	1000	2000	6000	10000	10000
Nominal volume in ml	125	250	500	1000	3000	5000	5000
Working volume in ml	50-175	100-350	200-700	500-1500	1500-3500	2000-7000	2000-7000
Height in mm	145	170	205	263	284	365	365
Diameter in mm	65	80	100	140	215	240	240
Number of side necks	2	2	2	2	2	2	5

Cell culture vessels (complete*)

Description	Order No.
Nominal working volume 125 ml, 2 side necks	F7988
Nominal working volume 250 ml, 2 side necks	F7689
Nominal working volume 500 ml, 2 side necks	F7607
Nominal working volume 1000 ml, 2 side necks	F7608
Nominal working volume 3000 ml, 2 side necks	FA298
Nominal working volume 5000 ml, 2 side necks	FA709
Nominal working volume 5000 ml, 5 side necks	FA296

Cell culture vessel (only flask)

Description	Order No.
Nominal working volume 125 ml, 2 side necks	F7987
Nominal working volume 250 ml, 2 side necks	F7690
Nominal working volume 500 ml, 2 side necks	F7609
Nominal working volume 1000 ml, 2 side necks	F7610
Nominal working volume 3000 ml, 2 side necks	FA299
Nominal working volume 5000 ml, 2 side necks	FA710
Nominal working volume 5000 ml, 5 side necks	FA297

Stirrer rods

Description	Order No.
Stirrer rod for 125 ml flask	6007989
Stirrer rod for 250 ml flask	6007635
Stirrer rod for 500 ml flask	6007619
Stirrer rod for 1000 ml flask	6007620
Stirrer rod for 3000 ml flask	6100290
Stirrer rod for 5000 ml flask	6100289

* consisting of flask, stirrer rod, seal, sealing washer, flask cap adapter, flexible joint and caps

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Hybridisation Incubators

Hybrigene

The Hybrigene represents a flexibly applicable incubator. The unit is suitable for all blotting technologies, no matter if a sample is radioactively or colorimetrically marked.

The exact temperature control enables a high reproducibility of the results. Besides the incubation temperature, the rotation speed is also variable.

The Hybrigene belongs to the few incubators which can stack up to 3 ovens, saving valuable laboratory space. Therefore, it is especially applicable for labs with a high sample throughput.

A wide range of vessels and accessories is available.

Due to the optional fitting with a rocking platform, the hybridisation incubator is also useable for the staining and destaining of blots.

Temperature

Temperature range	10 °C over RT to 80 °C
Temperature stability	in the incubator ≤ ±1.0 °C
	in the tubes ±0.5 °C
Temperature setting	digital / 0.1 °C
Temperature display	LED display

Speed

Rotation speed	0.5 to 20 rpm
Rock frequency	0 to 125 opm

Capacity

Glass tubes FHB16	80 x 240 mm	4 pieces
Glass tubes FHB36	44 x 240 mm	4 pieces
Glass tubes FHB71	44 x 220 mm	12 pieces
Glass tubes FHB41	32 x 205 mm	16 pieces
15 ml tubes		64 pieces
50 ml tubes		32 pieces

Miscellaneous

Dimensions L x W x H	383 x 355 x 432 mm
Net weight	15 kg

Description	Order No.
Hybridisation incubator Hybrigene without glass tubes	FHB4DD
Glass tube 80 x 240 mm with end cap	FHB16
Glass tube 44 x 240 mm with screw-on cap	FHB36
Glass tube 44 x 220 mm without screw-on cap (tube holder FHB 70 required)	FHB71
Glass tube 32 x 205 mm with screw-on cap, pack of 4 (tube holder FHB 61 required)	FHB41
Rack for 3 glass tubes 80 x 220 mm or 44 x 220 mm each	FHTRACK
Tube holder for 4 glass tubes FHB41	FHB61
Tube holder for glass tube FHB71	FHB70
Tube holder for 16 x 15 ml tubes	F15ML4TH
Tube holder for 8 x 50 ml tubes	F50ML4TH
Rocking platform slow with rock frequency of 0 to 125 opm	FHB4/PLAT
Separation membranes 200 x 200 mm, pack of 5	FMEM2020
Complete kit for stacking 3 Hybrigene units	FHB4DSTK

Hybridisation Incubators

HB-1D

Blotting technologies based on radiactive or colorimetric samples are applicated in many fields in the molecular biology. The safety of the user should be first priority as the hybridisated samples are very harmful. Due to the high costs of hybridisation samples, it is preferable to use the samples again and to use minimal volumes.

The hybridisation incubator HB-1D of Techne protects the user against radiactive radiation and furthermore enables working with low buffer quantities. The precise temperature control makes the results reproduceable.

A wide range of accessories, e.g. rocking platforms and shelves, enables the use of the HB-1D as a shaker or a drying chamber for cell cultures.

Despite the large sample capacity, the HB-1D only requires a minimum space because of its small base plate compared to its volume.

Temperature

Temperature range	10 °C over RT to 100 °C	
Temperature stability	in the incubator	±0.5 °C
	in the tubes	±0.1 °C
Temperature setting		digital / 0.1 °C
Temperature display		LED display
Heat energy		750 W
Heat-up time 16 °C to 70 °C (in the tube)		35 min

Speed

Rotation speed	0.5 to 20 rpm
Rock frequency	0 to 125 opm

Capacity

Glass tube FHB12	80 x 220 mm	6 pieces
Glass tube FHB32	44 x 220 mm	6 pieces
Glass tube FHB41	32 x 205 mm	24 pieces
15 ml tubes		96 pieces
50 ml tubes		32 pieces
Shelves		3 pieces

Miscellaneous

Dimensions L x W x H	385 x 285 x 550 mm
Net weight	20 kg

Description	Order No.
Hybridisation incubator HB-1D without glass tubes	FHB1DE
Glass tube 80 x 220 mm with end cap	FHB12
Glass tube 44 x 220 mm with screw-on cap	FHB32
Glass tube 32 x 205 mm, pack of 4 (tube holder FHB43 required)	FHB41
Rack for 3 glass tubes 80 x 220 mm or 44 x 220 mm each	FHTRACK
Tube holder for 4 glass tubes FHB41	FHB43
Tube holder for 16 x 15 ml tubes	F15ML1TH
Tube holder for 8 x 50 ml tubes	F50ML1TH
Rocking platform slow with rock frequency of 0 to 125 opm	FHB1/PLAT
Separation membranes 200 x 200 mm, pack of 5	FMEM2020
Shelves made of stainless steel	FHBSH1

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Bath and Thermoregulators

Temperature controlled baths

Complete systems

The huge range of temperature controlled baths combined with a thermoregulator enables the user to select one of 20 different liquid baths, which is suitable for his applications.

5 stainless steel baths are available to be fitted with thermostats. 4 various clip-on thermoregulators with different technical specifications are offered. Many optional accessories like bath cover, variable shelves, thermometers and swimmers can be ordered.

It is also possible to control the thermostats of the TU-20 series externally via PC. The software Thermosoft will be delivered on request.

The complete system consists of:
- Thermostat
- Bath with bowl
- Bridge mounting plate

Analogue systems

Model	Temperature range**	Pump capacity	Bath capacity	Order No.
08/TE-10A	-20 °C to +95 °C	10 l / min	approx. 8 liter	F10A08E
12/TE-10A	-20 °C to +95 °C	10 l / min	approx. 12 liter	F10A12E
18/TE-10A	-20 °C to +95 °C	10 l / min	approx. 18 liter	F10A18E
26/TE-10A	-20 °C to +95 °C	10 l / min	approx. 26 liter	F10A26E
48/TE-10A	-20 °C to +95 °C	10 l / min	approx. 48 liter	F10A48E

Digital systems

Model	Temperature range**	Pump capacity	Bath capacity	Order No.
08/TE-10D	-40 °C to +120 °C	10 l / min	approx. 8 liter	F10D08E
12/TE-10D	-40 °C to +120 °C	10 l / min	approx. 12 liter	F10D12E
18/TE-10D	-40 °C to +120 °C	10 l / min	approx. 18 liter	F10D18E
26/TE-10D	-40 °C to +120 °C	10 l / min	approx. 26 liter	F10D26E
48/TE-10D	-40 °C to +120 °C	10 l / min	approx. 48 liter	F10D48E
08/TU-20D*	-40 °C to +200 °C	10 l / min	approx. 8 liter	F20D08E
12/TU-20D*	-40 °C to +200 °C	10 l / min	approx. 12 liter	F20D12E
18/TU-20D*	-40 °C to +200 °C	10 l / min	approx. 18 liter	F20D18E
26/TU-20D*	-40 °C to +200 °C	10 l / min	approx. 26 liter	F20D26E
48/TU-20D*	-40 °C to +200 °C	10 l / min	approx. 48 liter	F20D48E
08/TU-20HT*	-40 °C to +250 °C	10 l / min	approx. 8 liter	F20C08E
12/TU-20HT*	-40 °C to +250 °C	10 l / min	approx. 12 liter	F20C12E
18/TU-20HT*	-40 °C to +250 °C	10 l / min	approx. 18 liter	F20C18E
26/TU-20HT*	-40 °C to +250 °C	10 l / min	approx. 26 liter	F20C26E
48/TU-20HT*	-40 °C to +250 °C	10 l / min	approx. 48 liter	F20C48E

* With PC-interface RS232
**Refrigeration or cooling coil required for below ambient cooling.

Bath and Thermoregulators

Single modules and accessories

Thermoregulators

Model	Temperature range**	Temperature stability	Order No.
TE-10A	-20 °C to +95 °C	±0.010 °C	FTE10AEC
TE-10D	-40 °C to +120 °C	±0.010 °C	FTE10DEC
TU-20D*	-40 °C to +200 °C	±0.005 °C	FTU20DEC
TU-20HT*	-40 °C to +250 °C	±0.005 °C	FTU20HEC

Refrigeration or cooling coil required for below ambient cooling.

Unheated baths with bridge mounting plate

Description	Order No.
B-08, Bath with bowl, stainless steel, smoothy, approx. 8 liter	FBATH08
B-12, Bath with bowl, stainless steel, smoothy, approx. 12 liter	FBATH12
B-18, Bath with bowl, stainless steel, smoothy, approx. 18 liter	FBATH18
B-26, Bath with bowl, stainless steel, smoothy, approx. 26 liter	FBATH26
B-48, Bath with bowl, stainless steel, approx. 48 liter	FBATH48

Bath cover

Description	Order No.
Flat, for bath B-08	FFLAT08
Flat, for bath B-12	FFLAT12
Flat, for bath B-18 and B-26	FFLAT18
Flat, for bath B-48	FFLAT48
Gabled shaped, for bath B-08	FGABLE08
Gabled shaped, for bath B-12	FGABLE12
Gabled shaped, for bath B-18 and B-26	FGABLE18
Gabled shaped, for bath B-48	FGABLE48

Adjustable trays

Description	Order No.
For bath vessel B-08	FADJ08
For bath vessel B-12	FADJ12
For bath vessel B-18	FADJ18
For bath vessel B-26	FADJ26
For bath vessel B-48	FADJ48

Accessories

Description	Order No.
Cooling coil	FCC01
Polypropylene spheres (Ø 25 mm) 1 pack of 250 pieces, as swimming bath cover	F840D
Thermometer, - 50 °C to +50 °C	F6754
Thermometer, 0 °C to +105 °C	F6755
Thermometer, +30 °C to +220 °C	F6756
Software Thermosoft for TU-20D/HT, disk	FTUSOFT

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Bath and Thermoregulators

Cooling and heating bath

Cooling baths of the RB-series

Cooling baths of the RB series of Techne are completely cooled circulation systems with a built-in refrigeration machine.

The units are equipped with the latest micro-processor technology and PID control. Bath capacities of 5 liter, 12 liter and 22 liter are available.

The temperature control of the bath is carried out by one of three thermoregulators. The combination possibilites result in 9 refrigeration baths with various technical specifications.

In combination with the Thermostat TU-20D, the system possesses over a higher heat capacity and a PC-interface RS232.

The complete system consists of:
- Cooling bath
- Thermoregulator
- Bath link
- Cover

Capacity of 5 liter

Model	Temperature range	Order No.
RB-5A	without heat regulation	FRB5D
RB-5A/TE-10A	-20 °C to +95 °C	F10AR05E
RB-5A/TE-10D	-20 °C to +100 °C	F10DR05E
RB-5A/TU-20D*	-20 °C to +100 °C	F20DR05E

Capacity of 12 liter

Model	Temperature range	Order No.
RB-12A	without heat regulation	FRB12D
RB-12A/TE-10A	-35 °C to +95 °C	F10AR12E
RB-12A/TE-10D	-35 °C to +100 °C	F10DR12E
RB-12A/TU-20D*	-35 °C to +100 °C	F20DR12E

Capacity of 22 liter

Model	Temperature range	Order No.
RB-22A	without heat regulation	FRB22D
RB-22A/TE-10A	-20 °C to +95 °C	F10AR22E
RB-22A/TE-10D	-20 °C to +100 °C	F10DR22E
RB-22A/TU-20D*	-20 °C to +100 °C	F20DR22E

* Advanced high temp thermoregulator with PC-interface RS232

Bath

Ice bath

Ice bath and insert blocks

The ice bath developed by biostep is suitable for cooling sampled in any sample tubes.

Aluminium alloyed insert blocks are offered especially for the input of 1.5 ml and 2.0 ml reaction tubes into the ice bath. The boreholes of the blocks are exactly adjusted to the form of the reaction tubes for ensuring a safe cold transfer.

Short and long insert blocks are available and it is possible to hook in the blocks crossways or longways.

The bath consists of double-walled plastic, which cavity is filled with rigid foam. Consequently, a very well thermal insulation is obtained for a longer cooling of the samples without a further addition of ice.

At most, 7 short insert blocks (each 14 x 1.5/2.0 ml tubes) or 4 long input blocks (each 24 x 1.5/2.0 ml tubes) will fit into one ice bath.
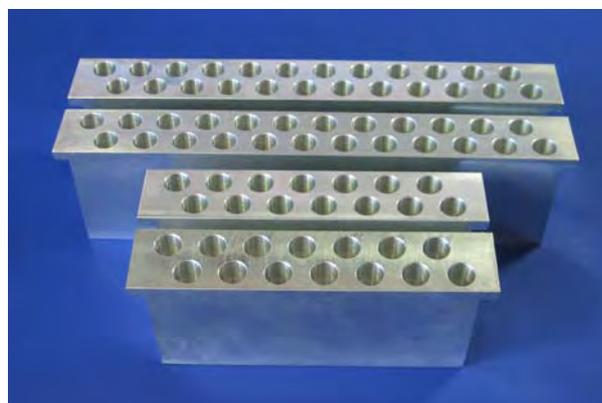
Ice bath

Description	Order No.
Ice bath 300 x 212 x 116 mm	FEISBAD

Insert blocks

Description	Order No.
Insert block short, for 14 x 1.5/2.0 ml tubes	FEINS14
Insert block long, for 24 x 1.5/2.0 ml tubes	FEINS24

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Gelation timer

The gelation timers of the GT series are used for the analysis of changeable viscosities of samples. Therefore, these measuring units are often used for quality tests of polymeres, laquers, adhesions and many other liquid multi-component systems.

The test results of the gelation timers are reproduceable with an error ratio of 2 %

The way of function of the units is easy. The gelation timer moves a plunger rhythmically up and down in the sample. Every up and down cycle takes a time interval of 0.1 min with the model GT-6; or 1.0 min with the model GT-5. These intervals are registered by a digital counter.

The counter and the motor are stopped by closing a switch in the gelation timer as soon as a defined viscosity of the sample is achieved. The measured running time of the unit describes the gelation time of the liquid sample.

Gelation timer GT-5

Max. time	9999 min
Steps	1 min
Dimensions L x W x H	119 x 69 x 94 mm
Length with plunger	269 mm
Reversal amplitude	13 mm
Accuracy of the gelation time determination	±2 %

Gelation timer GT-6

Max. time	999.9 min
Steps	0.1 min
Dimensions L x W x H	119 x 69 x 94 mm
Length with plunger	269 mm
Reversal amplitude	13 mm
Accuracy of the gelation time determination	±2 %

Accessories for GT-5 and GT-6

- plunger of stainless steel

Ø 16 mm	length 92 mm	weight 11.4 g
Ø 19 mm	length 80 mm	weight 11.4 g
Ø 22 mm	length 105 mm	weight 11.4 g

- disposable plunger of glass

Ø 22 mm	length 102 mm	weight 11.4 g

- adapter for glass plunger
- sample cups of aluminium

Ø 46 mm	height 79 mm

Gelation timers

Description	Order No.
Gelation timer GT-5 (9999 min, steps 1 min)	FGT5
Gelation timer GT-6 (999.9 min, steps 0.1 min)	FGT6

Accessories

Description	Order No.
Plunger, 22 mm, 1 piece	F0985
Plunger, 19 mm, 1 piece	F0979
Plunger, 16 mm, 1 piece	F0982
Disposable glass plunger, pack of 100 pieces	F1794
Glass plunger adapter, 1 piece	F1795
Sample cups, pack of 230 pieces	F7846

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Industrial Analytics

Density gradient column

Density gradient columns of the DC series are used for the determination of the specific density of various solid bodies. The main application field of these columns is the analysis of plastics.

The test principle is uncomplicated. The temperateable, graduated column is filled with a liquid mix, so that a density gradient can occur. The accordingly filling device for the development of the gradient is optionally available.

To measure the gradient, calibrated floats of which the specific density is known, are put into the column. The positions of the floats in relation to the density are stated in a graph.

Every solid body, which is given to the gradient column for measurement, will be positioned relatively to the floats. In the graph, the specific density is readable by means of the position of the sample in the gradient.

DC-1

Housing L x W x H	305 x 305 x 982 mm
Column	approx. 54 x 851 mm

DC-2

Housing L x W x H	305 x 305 x 982 mm
Column	approx. 54 x 851 mm

DC-3

Housing L x W x H	305 x 305 x 982 mm
Column	approx. 54 x 851 mm

Recommended liquid systems

System	g/ml
Methanol-Benzyl Alcohol	0.80 to 0.92
Isopropanol-Water	0.79 to 1.00
Isopropanol-Diethylene Glycol	0.79 to 1.11
Ethanol-Carbon Tetrachloride	0.79 to 1.59
Ethanol-Water	0.79 to 1.00
Toluene-Carbontetrachloride	0.87 to 1.59
Water-Sodium Bromide	1.00 to 1.41
Water-Calcium Nitrate	1.00 to 1.60
Zinc Chloride-Ethanol-Water	0.80 to 1.70
Carbon Tetrachloride-1.3Dibromopropane	1.60 to 1.99
1.3Dibromopropane-Ethylene Bromide	1.99 to 2.18
Ethylene Bromide-Bromoform	2.18 to 2.89
Carbon Tetrachloride-Bromoform	1.60 to 2.89
Tetrachloroethylene-Bromoform	1.55 to 2.70

Density gradient columns

Description	Order No.
Density gradient column DC-1 (single column)	FJD3D
Density gradient column DC-2 (double column)	FJD4D
Density gradient column DC-3 (triple column)	FJD5D

Accessories

Description	Order No.
Gradient filling device	F200T
Gradient clearing device	F885D
Calibrated floaters*	FF001
Set of 8 calibrated floaters* (0.79 g/ml to 2.70 g/ml available)	FF002

*Indicate size

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Centrifuges

Microliter centrifuges

An advantage for the daily routine use in laboratories are these micro centrifuges. Both models have a brushless and maintenance-free motor, a clear structured user interface and an easy to clean interior.

Because of the powerful motor and the short speed up and braking time, almost no heat is given into the engine. A continuous flow of ambient air through the rotor chamber keeps the rotor and samples cool. For applications requiring subambient temperatures, the spectrafuges 7M and 16M can be operated in a cold room.

The runnig time can be selected by a timer, between 1 to 60 minutes at the spectrafuge 7M and between 1 to 30 minutes at the spectrafuge 16M. Furthermore, a permanent action of the centrifuge is possible.

Spectrafuge 7M

- for 1.5 ml and 2.0 ml tubes
- rotor for 12 x 1.5ml/2.0ml included in delivery
- with adapter also suitable for 0.2 and 0.5 ml tubes

Spectrafuge 16M

- for 1.5 ml and 2.0 ml tubes
- rotor for 12 x 1.5ml/2.0ml included in delivery
- with adapter also suitable for 0.2 and 0.5 ml tubes

Specifications

Max. speed	10000 rpm
RZB	7176 x g
Max. capacity	12 x 1.5 ml/2.0 ml tubes
	12 x 0.5 ml tubes
Timer	1 and 60 min
Acceleration to max. speed	20 sec
Deceleration from max. speed	20 sec
Dimensions L x W x H	210 x 226 x 193 mm
Weight	3.2 kg

Specifications

Max. speed	14000 rpm
RZB	16000 x g
Max. capacity	18 x 1.5 ml/2.0 ml tubes
	18 x 0.2 ml tubes
	18 x 0.5 ml tubes
Timer	1 and 30 min
Acceleration to max. speed	10 sec
Deceleration from max. speed	9 sec
Dimensions L x W x H	200 x 220 x 180 mm
Weight	5 kg

Spectrafuge 7M

Description	Order No.
Spectrafuge 7M with rotor, grey	FSPEK7M
Adapter for 0.2 ml tubes, 6 pieces	FAD02
Adapter for 0.5 ml tubes, 6 pieces	FAD05

Spectrafuge 16M*

Description	Order No.
Spectrafuge 16M with Rotor, grey	FSPEK16M
Adapter for 0.2 ml tubes, 6 pieces	FAD02
Adapter for 0.5 ml tubes, 6 pieces	FAD05
Adapter for 0.2 ml 8er Tube Strips	FAD02STR

* available in blue (B), mint (T), purple (P) and red (R)

Mixer

Vortex Mixer

The Vortex Mixer is a small, solid sample mixer for the own laboratory table. It has been developed especially for mixing micro samples in a circular movement.

The shaking frequency is continuously adjustable between 0 and 3000 rpm. Two modes of operation can be selected. "Touch" control allows the Vortex Mixer to be activated only when needed by depressing the sample head. When set to "on" the unit will operate continuously until switched to the off position.

A heavy duty construction ensures a long lifetime, and combined with the rubber feet, keeps the unit stable and prevents "walking".

Due to many accessories, the mixer represents a flexibly applicable unit.

Specifications

Shaking frequency	0 - 3000 rpm
Operational mode	continuously and standby
Dimensions L x W x H	155 x 120 x 130 mm
Weight	3 kg

Vortex Mixer

Description	Order No.
Vortex Mixer	FVORTEXE

Accessories

Description	Order No.
Shaking head attachment flat	FVORSAFL
Shaking head attachment for 60 x 1.5/2.0 ml tubes	FVORSA60
Shaking head attachment for 1 microtiter plate	FVORSAMP
Shaking adapter for 12 x 1.5/2.0 ml tubes, held horizontally	FVORAD12
Shaking adapter for 4 x 15 ml centrifugal tubes, held horizontally	FVORAD04
Shaking adapter for 2 x 50 ml centrifugal tubes, held horizontally	FVORAD02

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Spectrophotometers

UV/VIS spectrophotometer

These spectrophotometers have been developed especially for molecular biological applications. They analyse the samples in a wavelength range from 320 to 1000 nm or from 198 to 1000 nm.

The spectrophotometers are easy to handle and suitable for the routine use in laboratories. The units are also proved in education by their easy menu-managed operation.

VIS Spectrophotometer 6300

- for routine use in the visual range of 320 to 1000 nm
- large LCD display for simultaneous display of wavelength and measuring data
- easy applicance due to foil keyboard
- measurement of absorbance, transmission and concentration
- selectable units
- including 1 cuvette holder for rectangle cuvettes
- with wolfram lamp
- by interface and analogue output also suitable for kinetics
- with the use of a path length cuvette application also in the chromatography possible

UV/VIS Spectrophotometer Genova

- for the qualitative determination of geonomic and proteonomic samples
- wavelength in the range of 198 to 1000 nm
- integrated purity scan mode, ideal for quality assignation of Oligonucleotides, DNA or RNA samples
- possible calculation of ratios 260/280 and 260/230
- different measuring methods for quantification of proteins: Bradford, Lowry, Biuret, Biccinchonic and direct UV-assignation
- with Xenon flash lamp, 5 x higher illumination as standard UV lamps
- autonomous calibration of the wavelength
- by interface and analogue output also suitable for kinetics
- with the use of a path length cuvette application also in the chromatography possible

Specifications

Wavelength range	320 - 1000 nm
Resolution	1 nm
Accuracy	±2 nm
Bandwidth	8 nm
Measuring range	0 to 199.9 %T
	-0.3 to 1.999 A
	-300 to 1999 C
Absorbance	0.1% T; 0.001 A; 0.1 to 1C
Units	ppm; mg/l; g/l; M; %, none
Photometric accuracy	1 %/h after heat-up
Stray light	0.5 % Tnbsp
Height of the optical path	15 mm
Light source	Wolfram lamp
Outputs	bidirect. RS232
	analogue 0 - 1999 mV
Dimensions L x W x H	365 x 272 x 160 mm
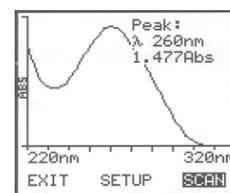
Specifications

Wavelength range	198 - 1000 nm
Resolution	1 nm
Accuracy	±2 nm
Bandwidth	5 nm typical at 270 nm
Measuring range	0 to199.9% T
	-0.3 to 9999 A
	-300 to 1999 C
Absorbance	0.1% T, 0.001 A; 0.001
	0.01; 0.1; 1 C
Units	ppm; mg/l; g/l; M; %, none
	mg/ml; μg/ml; ng/ml
Photometric accuracy	0.002 A/h after 30 min heat-up time
Stray light	0.5 % Tnbsp
Height of the optical path	15 mm
Light source	pulsed Xenon Lamp
Outputs	bidirect. RS232
	analogue 0 - 1999 mV
Dimensions L x W x H	365 x 272 x 160 mm

Description	Order No.
Spectrophotometer 6300, with cuvette holder for rectangle cuvettes	SPEC 100
Spectrophotometer Genova, with cuvette holder for rectangle cuvettes	SPEC 200

Accessories for Spectrophotometers

Disposable and reusable cuvettes

Cuvettes of optical glass and optical special glass are offered for the analysis in the visible spectral range. Quartz glass cuvettes are also available for the use in the UV and IR range.

All cuvettes are coloured marked. The colour code is the indication for the particular spectral range, in which the window of the cuvette has its transmission.

Transmission of the cuvettes:

Glass material	Colour code	Range
Optical glass	yellow	360 - 2500 nm
Optical special glass	green	320 - 2500 nm
UV quartz glass	blue	200 - 2500 nm
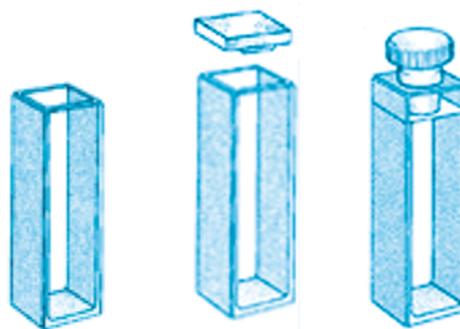
Cuvettes excluding cover, light path 10 mm

Description	Colour Code	External size (H x W x D in mm)	Internal width (mm)	Volume (ml)	Order No.
Macro cuvette J103	yellow	45 x 12.5 x 12.5	9.5	3.5	J103GE

Cuvettes including cover, light path 10 mm

Description	Colour Code	External size (H x W x D in mm)	Internal width (mm)	Volume (ml)	Order No.
Macro cuvette J100	green	45 x 12.5 x 12.5	9.5	3.5	J100GR
Macro cuvette J100	blue	45 x 12.5 x 12.5	9.5	3.5	J100BL
Semi-micro cuvette J104	green	45 x 12.5 x 12.5	4.0	1.5	J104GR
Semi-micro cuvette J104	blue	45 x 12.5 x 12.5	4.0	1.5	J104BL
Micro cuvette J104.2	green	45 x 12.5 x 12.5	2.0	0.7	J124GR
Micro cuvette J104.2	blue	45 x 12.5 x 12.5	2.0	0.7	J124BL

Cuvettes including plug, light path 10 mm

Description	Colour Code	External size (H x W x D in mm)	Internal width (mm)	Volume (ml)	Order No.
Macro cuvette J110	green	46 x 12.5 x 12.5	9.5	3.5	J110GR
Macro cuvette J110	blue	46 x 12.5 x 12.5	9.5	3.5	J110BL
Semi-micro cuvette J114	green	46 x 12.5 x 12.5	4.0	1.5	J114GR
Semi-micro cuvette J114	blue	46 x 12.5 x 12.5	4.0	1.5	J114BL
Micro cuvette J115	green	40 x 12.5 x 12.5	2.0	0.4	J115GR
Micro cuvette J115	blue	40 x 12.5 x 12.5	2.0	0.4	J115BL

Rectangle cuvettes, disposable

- made of optic polystyrene
- dimensions: 10 x 10 x 45 mm
- suitable for all applications, like kinetic measurings and pigment analysis
- gap width 10 mm
- in styroform boxes à 100 pieces

Description	Quantity	Order No.
Semi-micro cuvette 0.5 - 2 ml	10 boxes with 100 pieces	01-13-101
Macro cuvette 2 - 4 ml	10 boxes with 100 pieces	01-13-201

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UV-Decontamination

PCR cabinet

An important aspect during the PCR is the risk of contamination of the reaction mix with already amplificated material. Therefore, the sample preparation for the PCR is often made in a UV-clean room.

The PCR cabinet is a low cost alternative to a clean room. Through the short wave UV-radiation in the working cover, all DNA molecules are degraded within a short time and are consequently unusable for any following applications. As the radiation intensity is quite high, only a short time of radiation for items located in the cover is enough for clearly reducing or even completely eliminating the risk.

An integrated white light provides the user with good visibility when working within the cabinet.

The PCR cabinet features an integrated timer with which the radiation constancy can be pre-selected. Safety interlooks in the door interrupt the radiation as soon as the door is opened for ensuring the safety of the user against short wave radiation.

The cabinet consists of 10 mm strong optical acryl also acts as an efficient shield of Beta radioactive emmisions and can therefore be used as a safety cabinet.

The PCR cabinet will be delivered together with the safety tray RPP-TY6854 which serves as base plate.

Specifications

Dimensions L x W x H	560 x 420 x 770 mm
White light	15 Watt
UV-light	15 Watt
Weight	19 kg

Description	Order No.
PCR cabinet incl. 1 safety tray RPP-TY6854 with sheeting	GLE-UVSC

Safety Tray

- consists of rigid PVC
- anti-static and non-porous
- provides clearly defined work area
- for most harzardous spillages
- stabile edges and rounded corners for easy cleaning
- suitable for PCR cabinet

- disposable APET liners available

Description	Order No.
Safety tray, 680 x 540 mm, yellow	RPP-TY6854
Safety tray, 680 x 540 mm, white	RPP-TW6854
APET liners, 680 x 540 mm, white, 1 pack of 25 pieces	RPP-TL6854

UV-Decontamination

Crosslinkers

In laboratories, the UV-crosslinking of DNA and RNA on nylon or nitrocellulose membranes has compete with the linking of the samples in vacuum ovens.

Within only few seconds, nucleic acids are bound to membrans by UV-radiation. This is a very time-saving working method in comparison to usual linking. The microprocessor-controlled UV-crosslinker has been developed especially for such applications.

Besides crosslinking of DNA and RNA on membranes for Southern and Northern blotting, dot and slot blotting and colony or plaque lifting, this unit is also suitable for other applications like nicking of stained DNA in agarose gels, gene mapping for creating cleavage inhibiting thymine dimers, screening of RecA mutations and ultraviolet sterilisation of PCR equipment.

The UV-crosslinker is equipped with an integrated keyboard and a large, easy-to-read LED display. There are 9 presets for energy exposure and 9 presets for time exposure as well as manual user selection in either units. The crosslinker has 5 UV-tubes with 8 Watt each in the wavelengths 254, 312 or 365 nm.

For assuring the reproducibility of the results, the unit is fitted with a feedback system which compensates radiation variations.

Safety is a major consideration and therefore, the door of the crosslinker is safety interlocked against opening during operation and the observation window in the door is UV-blocking.

Radiation characteristics

UV-wavelength	254 / 312 / 365 nm
5 UV-tubes	8 Watt each
Max. UV-radiation energy	0 to 9.999 Joule
(2 ranges)	0 to 99.99 Joule
Max. radiation time	999.9 min

Miscellaneous

External dimensions L x W x H	350 x 350 x 300 mm
Internal dimensions L x W x H	300 x 270 x 140 mm
Net weight	9 kg

Programming

Radiation energy	9 selectable radiation intensities additionally also freely-selectable
Radiation time	9 selectable radiation intensities additionally also freely-selectable

Crosslinker

Description	Order No.
Crosslinker, 254 nm	FCROSSLP254
Crosslinker, 312 nm	FCROSSLP312
Crosslinker, 365 nm	FCROSSLP365

Blotting membrans on page 116

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Notes

Electrophoresis

Electrophoresis

Electrophoresis Systems/Sequencing Units

Horizontal Electrophoresis Systems
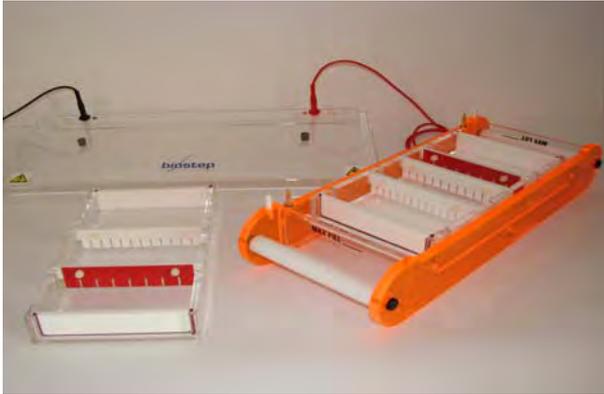
- for the separation of DNA and RNA
- time-saving casting system directly in the tank
- application of different sizes of UV-transparent gel trays in one tank possible
- combs are height adjustable, coloured and multichannel pipette compatible
- optional available with cooling
- easy-to-use
- non-skidding gel tanks
- safety lid with integrated non-corroding, gold-plated connections

Vertical Electrophoresis Systems
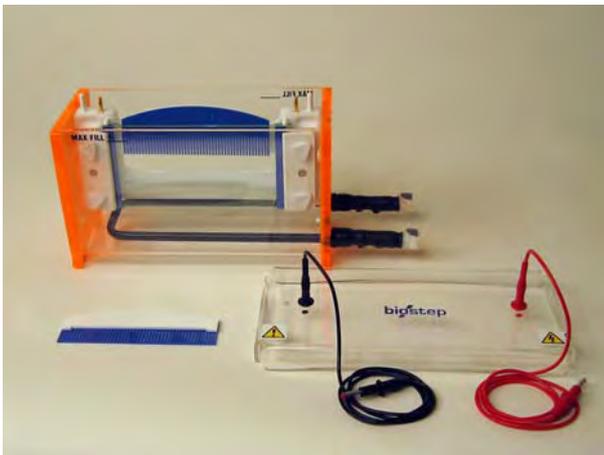
- for protein separations
- exchangeable, isolated platinum electrodes
- constant gel runnings, excellent separation
- wide range of coloured combs and spacers
- blotting and capillary modules available
- optional with cooling
- minimal expenditure of time, as no transfer of plates is necessary
- high rate of replication
- maximal range of applications by combination as a modular system
- safety lid with integrated non-corroding, gold plated connections

Sequencing Units

- ideal for a multiplicity of large-sized gel applications
- available in 2 sizes: 20 x 50 cm and 33 x 45 cm
- no lane distortion due to an integated aluminium heat sink plate
- homogeneous heat distribution
- wide range of combs
- safety lid with integrated connections
- higher resolution and faster running speed due to an optionally available ventilator

Horizontal Electrophoresis Systems

Fast Mini Gel Unit H1-SET

- ideal for routine electrophoresis, for example practical courses
- gel casting directly in the unit
- UV-transparent tank
- can be placed on UV transilluminator for a visual analysis

- gel size   10 x 8 cm
- max. sample capacity   40
- buffer volume   50 ml
- unit dimensions (W x L x H)   13.5 x 15 x 3 cm
- typical voltage   50 V
- typical current   50 mA
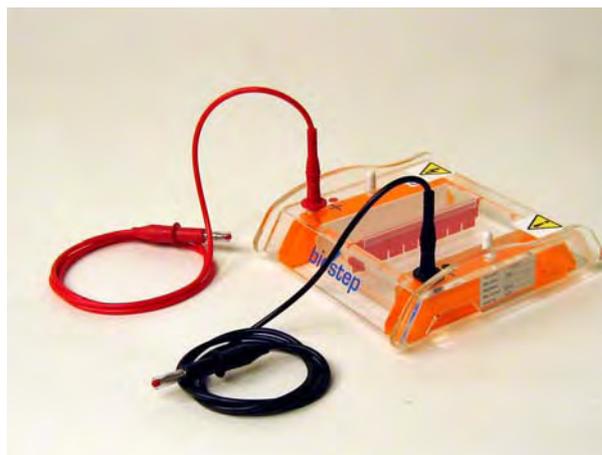
Electrophoresis chamber

Description	Order No.
Fast Mini Gel Unit H1-SET	H1-SET
including 2 combs (1.5 mm thick, 8 samples), 2 gel casting gates	

Accessories

Description		Order No.
Gel casting gates, 2 pieces/package		H1-CG

Comb/thickness	1 mm	1.5 mm
Reference comb	H1-C1-1D	H1-C1.5-1D
4 samples	H1-C1-4	H1-C1.5-4
8 samples	H1-C1-8	H1-C1.5-8
12 samples	H1-C1-12	H1-C1.5-12
16 samples	H1-C1-16	H1-C1.5-16
20 samples	H1-C1-20MC*	H1-C1.5-20MC*

* multichannel pipette compatible

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Horizontal Electrophoresis Systems

Mini Gel Unit HU6
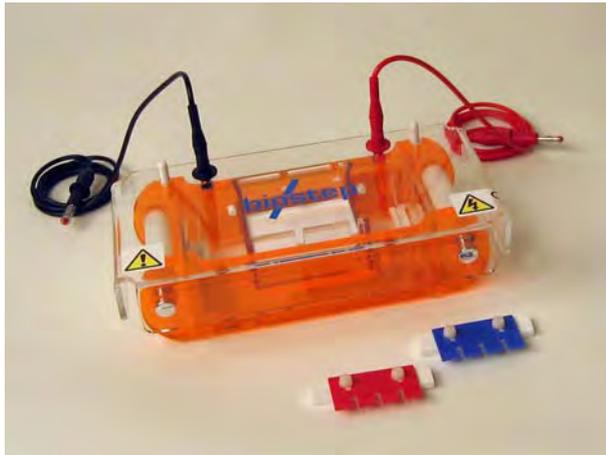
- ideal for routine electrophoresis
- in-tank casting without the need for tape is possible
- removable UV-transparent casting tray
- additional gels can be casted externally
- 2 comb slots

- gel size   6 x 7.5 cm
- max. sample capacity   32
- buffer volume   325 ml
- unit dimensions (W x L x H)   13 x 24 x 6.5 cm
- typical voltage   100 V
- typical current   75 mA

Electrophoresis chamber

Description	Order No.
Mini Gel Unit HU6 including 1 UV-transparent gel casting tray, 2 combs (1 mm thick, 8 samples), coloured loading strips	HU6

Accessories

Descriptions	Order No.
UV-transparent gel casting tray	HU6-UT
External casting unit for 3 gel casting trays	HU6-CU
Silicone casting gates, 2 pieces/package	HU6-SCG

Combs/thickness	1 mm	1.5 mm	2 mm
4 samples	HU6-C1-4	HU6-C1.5-4	HU6-C2-4
8 samples	HU6-C1-8	HU6-C1.5-8	HU6-C2-8
12 samples	HU6-C1-12MC*	HU6-C1.5-12MC*	HU6-C2-12MC*
16 samples	HU6-C1-16	HU6-C1.5-16	HU6-C2-16
6/12 samples	HU6-C1-6/12MC*	HU6-C1.5-6/12MC*	HU6-C2-6/12MC*

* multichannel pipette compatible

Gel casting for Mini series

in-tank casting
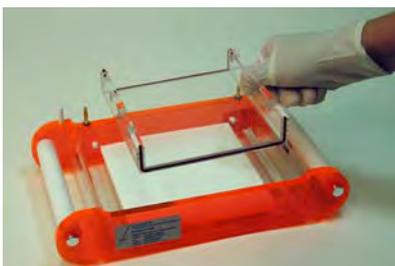
with silicone gaskets
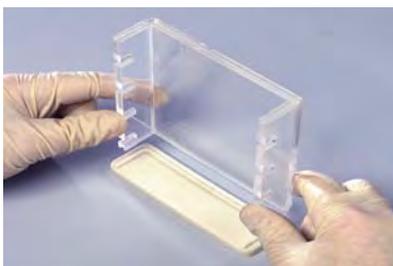
in a mutiple unit
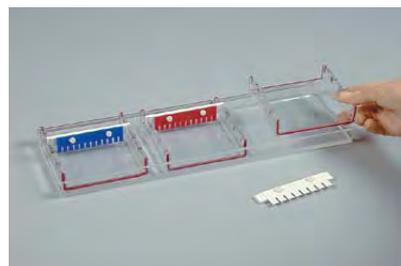
Horizontal Electrophoresis Systems

Mini Plus Gel Unit HU10

- ideal for fast routine electrophoresis
- in-tank casting without the need for tape is possible
- removable UV-transparent casting tray
- additional gels can be casted externally
- 4 comb slots

- gel size   10 x 11.5 cm
- max. sample capacity   80
- buffer volume   450 ml
- unit dimensions (W x L x H)   16.5 x 23 x 6.5 cm
- typical voltage   150 V
- typical current   100 mA
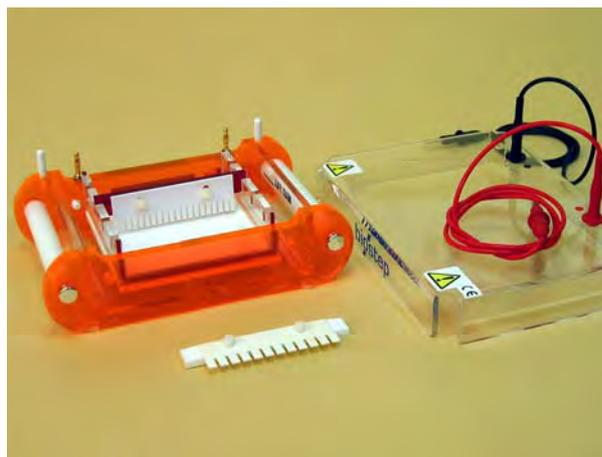
Electrophoresis chamber

Description	Order No.
Mini Plus Gel Unit HU10 including 1 UV-transparent gel casting tray 2 combs (1 mm thick, 16 samples), coloured loading strips	HU10

Accessories

Description	Order No.
UV-transparent gel casting tray	HU10-UT
External casting unit for 3 gel casting trays	HU10-CU
Silicone casting gates, 2 pieces/package	HU10-SCG

Combs/thickness	1 mm	1.5 mm	2 mm
4 samples	HU10-C1-4	HU10-C1.5-4	HU10-C2-4
8 samples	HU10-C1-8	HU10-C1.5-8	HU10-C2-8
10 samples	HU10-C1-10MC*	HU10-C1.5-10MC*	HU10-C2-10MC*
12 samples	HU10-C1-12	HU10-C1.5-12	HU10-C2-12
16 samples	HU10-C1-16	HU10-C1.5-16	HU10-C2-16
20 samples	HU10-C1-20MC*	HU10-C1.5-20MC*	HU10-C2-20MC*
10/20 samples	HU10-C1-10/20MC*	HU10-C1.5-10/20MC*	HU10-C2-10/20MC*

* multichannel pipette compatible

Gel casting for Mini Plus series

in-tank casting

with silicone gaskets

in a mutiple unit

biostep reserves the right to change technical features without notice.

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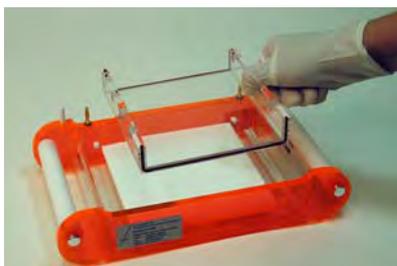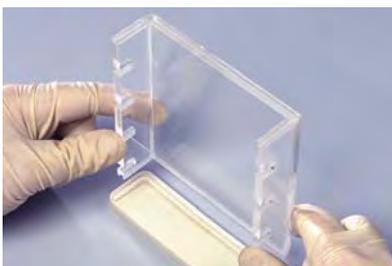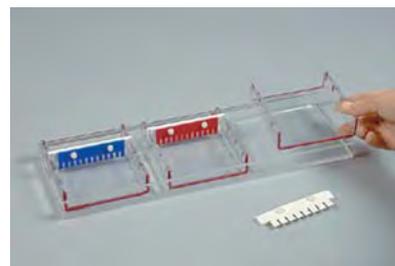
Horizontal Electrophoresis Systems

Wide Mini Gel Unit HU10W
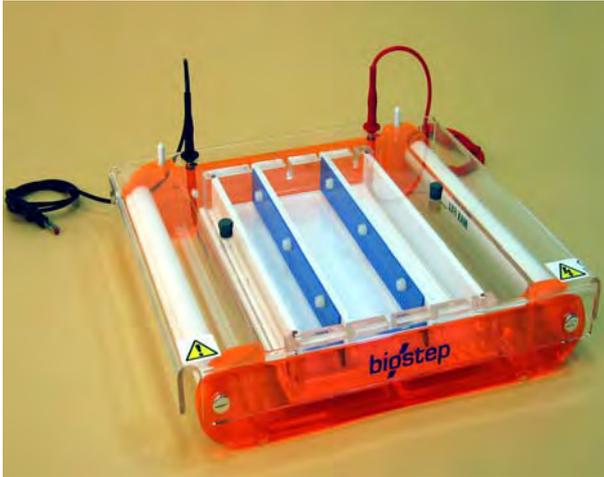
Example

- ideal for fast routine electrophoresis
- removable UV-transparent casting tray
- gel casting with gel casting gates
- 4 comb slots

• gel size	14.4 x 10.2 cm
• max. sample capacity	80
• buffer volume	400 ml
• unit dimensions (W x L x H)	20 x 25 x 6.5 cm
• typical voltage	150 V
• typical current	100 mA

Electrophoresis chamber

Description	Order No.
Wide Mini Gel Uni HU10W	HU10W
including 1 UV-transparent gel casting tray with gel casting gates, 2 combs (1 mm thick, 20 samples), coloured loading strips	

Accessories

Description	Order No.
UV-transparent gel casting tray	HU10W-UT
Gel casting gates, 2 pieces/package	HU10W-CG

Comb/thickness	1 mm	1.5 mm	2 mm
4 samples	HU10W-C1-4	HU10W-C1.5-4	HU10W-C2-4
8 samples	HU10W-C1-8MC*	HU10W-C1.5-8MC*	HU10W-C2-8MC*
10 samples	HU10W-C1-10	HU10W-C1.5-10	HU10W-C2-10
12 samples	HU10W-C1-12	HU10W-C1.5-12	HU10W-C2-12
16 samples	HU10W-C1-16MC*	HU10W-C1.5-16MC*	HU10W-C2-16MC*
20 samples	HU10W-C1-20	HU10W-C1.5-20	HU10W-C2-20

* multichannel pipette compatible

Gel casting for Wide Mini series

- with gel casting gates

Horizontal Electrophoresis Systems

Midi Gel Unit HU13

- for analytical and preparative analysis of nucleic acids
- in-tank casting without the need for tape is possible
- removable UV-transparent gel casting tray
- additional gels can be casted externally
- 4 comb slots
- buffer recirculation ports

• gel size	12.8 x 15 cm
• max. sample capacity	112
• buffer volume	900 ml
• unit dimensions (W x L x H)	20 x 32 x 7 cm
• typical voltage	150 V
• typical current	100 mA
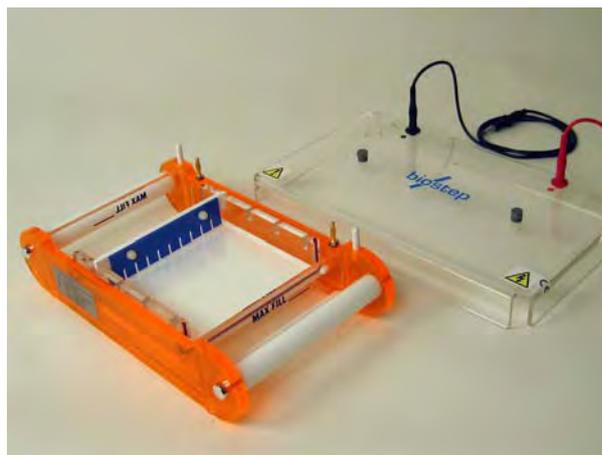
Electrophoresis chamber

Description	Order No.
Midi Gel Unit HU13	HU13
including	
1 UV-transparent gel casting tray,	
2 combs (1 mm thick, 16 samples),	
recirculation ports,	
coloured loading strips	

Accessories

Description	Order No.
UV-transparent gel casting tray	HU13-UT
External casting unit for 2 gel casting trays	HU13-CU
Silicone casting gates, 2 pieces/package	HU13-SCG

Comb/thickness	1 mm	1.5 mm	2 mm
10 samples	HU13-C1-10	HU13-C1.5-10	HU13-C2-10
12 samples	HU13-C1-12MC*	HU13-C1.5-12MC*	HU13-C2-12MC*
16 samples	HU13-C1-16	HU13-C1.5-16	HU13-C2-16
20 samples	HU13-C1-20	HU13-C1.5-20	HU13-C2-20
24 samples	HU13-C1-24	HU13-C1.5-24	HU13-C2-24
28 samples	HU13-C1-28MC*	HU13-C1.5-28MC*	HU13-C2-28MC*
14/28 samples	HU13-C1-14/28MC*	HU13-C1.5-14/28MC*	HU13-C2-14/28MC*

*   multichannel pipette compatible

Gel casting for Midi series

in-tank casting
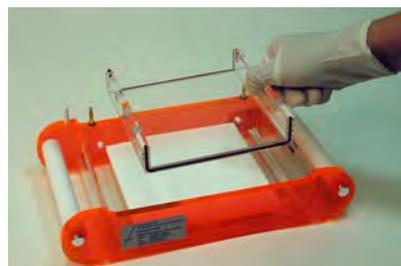
with silicone gaskets
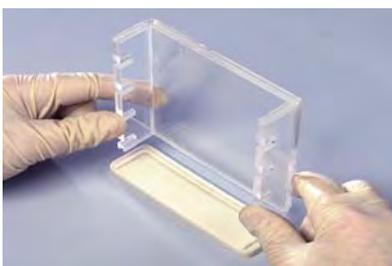
in a mutiple unit
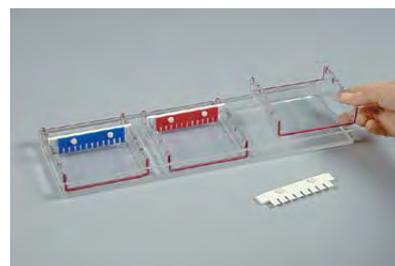
Horizontal Electrophoresis Systems

Wide Midi Gel Unit HU13W
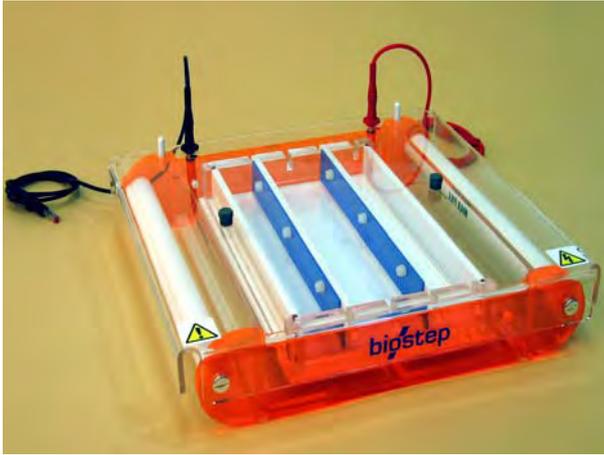
Example

- for analytical and preparative analysis of nucleic acids
- high flexibility by using different sized trays in one tank
- removable UV-transparent casting tray
- gel casting with gel casting gates
- 4 comb slots

• gel size	23 x 14 cm or 23 x 10 cm
• max. sample capacity	200
• buffer volume	800 ml
• unit dimensions (W x L x H)	30 x 30 x 6.5 cm
• typical voltage	150 V
• typical current	100 mA

Electrophoresis chamber

Description	Order No.
Wide Midi Gel Unit HU13W including 1 UV-transparent gel casting tray 23 x 14 cm with gel casting gates, 2 combs (1 mm thick, 25 samples), recirculation ports, coloured loading strips	HU13W

Accessories

Description	Order No.
UV-transparent gel casting tray 23 x 14 cm, 4 comb slots	HU13W-UT14
UV-transparent gel casting tray 23 x 10 cm, 4 comb slots	HU13W-UT10
Gel casting gates, 2 pieces/package	HU13W-CG

Combs/thickness	1 mm	1.5 mm	2 mm
12 samples	HU13W-C1-12MC*	HU13W-C1.5-12MC*	HU13W-C2-12MC*
16 samples	HU13W-C1-16	HU13W-C1.5-16	HU13W-C2-16
20 samples	HU13W-C1-20	HU13W-C1.5-20	HU13W-C2-20
25 samples	HU13W-C1-25MC*	HU13W-C1.5-25MC*	HU13W-C2-25MC*
28 samples	HU13W-C1-28	HU13W-C1.5-28	HU13W-C2-28
40 samples	HU13W-C1-40	HU13W-C1.5-40	HU13W-C2-40
50 samples	HU13W-C1-50MC*	HU13W-C1.5-50MC*	HU13W-C2-50MC*

* multichannel pipette compatible

Gel casting for Wide Midi series

- with gel casting gates

Horizontal Electrophoresis Systems

Long Midi Gel Unit HU13L

- for analytical and preparative analysis of nucleic acids
- removable UV-transparent casting tray
- gel casting with gel casting gates
- 6 comb slots

- gel size   13 x 25 cm
- max. sample capacity   112
- unit dimensions (W x L x H) 18 x 46 x 8 cm
- typical voltage   250 V
- typical current   200 mA
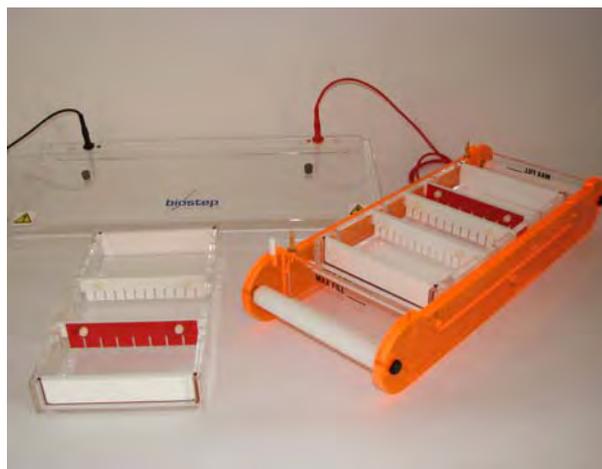
Electrophoresis chamber

Description	Order No.
Long Midi Gel Unit HU13L including 1 UV-transparent gel casting tray with gel casting gates, 2 combs (1 mm thick, 14 samples), recirculation ports, coloured loading strips	HU13L

Accessories

Description	Order No.
UV-transparent gel casting tray 13 x 25 cm	HU13L-UT
gel casting gates, 2 pieces/package	HU13L-CG

Combs/thickness	1 mm	1.5 mm	2 mm
8 samples	HU13L-C1-8	HU13L-C1.5-8	HU13L-C2-8
10 samples	HU13L-C1-10	HU13L-C1.5-10	HU13L-C2-10
12 samples	HU13L-C1-12	HU13L-C1.5-12	HU13L-C2-12
14 samples	HU13L-C1-14MC*	HU13L-C1.5-14MC*	HU13L-C2-14MC*
16 samples	HU13L-C1-16	HU13L-C1.5-16	HU13L-C2-16
20 samples	HU13L-C1-20	HU13L-C1.5-20	HU13L-C2-20
24 samples	HU13L-C1-24	HU13L-C1.5-24	HU13L-C2-24
28 samples	HU13L-C1-28MC*	HU13L-C1.5-28MC*	HU13L-C2-28MC*

* multichannel pipette compatible

Gel casting for Long Midi series

- with gel casting gates

Horizontal Electrophoresis Systems

Maxi Gel Unit HU20

Example

- for analytical and preparative analysis of nucleic acids
- also available with cooling (CHU20)
- removable UV-transparent casting tray
- buffer recirculation ports as standard
- gel casting with gel casting gates
- 4 comb slots

• gel size	20 x 20 cm
• max. sample capacity	160
• buffer volume	2.2 litres
• unit dimensions (W x L x H)	27 x 47.5 x 8 cm
• typical voltage	250 V
• typical current	200 mA

Electrophoresis chamber

Description	Order No.
Maxi Gel Unit HU20 including 1 UV-transparent gel casting tray, 2 combs (1 mm thick, 16 samples), recirculation ports, 2 gel casting gates	HU20
Maxi Gel Unit, cooled version CHU20 including 1 UV-transparent gel casting tray, 2 combs (1mm thick, 16 samples), recirculation ports, 2 gel casting gates	CHU20

Accessories

Description		Order No.	
UV-transparent gel casting tray		HU20-UT	
Gel casting gates, 2 pieces/package		HU20-CG	
Combs/thickness	**1 mm**	**1.5 mm**	**2 mm**
16 samples	HU20-C1-16	HU20-C1.5-16	HU20-C2-16
20 samples	HU20-C1-20MC*	HU20-C1.5-20MC*	HU20-C2-20MC*
28 samples	HU20-C1-28	HU20-C1.5-28	HU20-C2-28
40 samples	HU20-C1-40MC*	HU20-C1.5-40MC*	HU20-C2-40MC*
21/42 samples	HU20-C1-21/42MC*	HU20-C1.5-21/42MC*	HU20-C2-21/42MC*

*   multichannel pipette compatible

Gel casting for Maxi series

- with gel casting gates

Horizontal Electrophoresis Systems

Maxi Plus Gel Unit HU25

- for analytical and preparative analysis of nucleic acids
- also available with cooling (CHU25)
- removable UV-transparent casting tray
- buffer recirculation ports
- gel casting with gel casting gates
- 12 comb slots

• gel size	25 x 30 cm
• max. sample capacity	624
• buffer volume	3 litres
• unit dimensions (W x L x H)	33 x 56 x 9 cm
• typical voltage	300 V
• typical current	250 mA

Example

Electrophoresis chamber

Description	Order No.
Maxi Plus Gel Unit HU25 including 1 UV-transparent gel casting tray, 6 combs (1 mm thick, 26 samples), recirculation ports, 2 gel casting gates	HU25
Maxi Plus Gel Unit, cooled version CHU25 including 1 UV-transparent gel casting tray, 6 combs (1 mm thick, 26 samples), recirculation ports, 2 gel casting gates	CHU25

Accessories

Description			Order No.
UV-transparent gel casting tray			HU25-UT
Gel casting gates, 2 pieces/package			HU25-CG

Combs/thickness	1 mm	1.5 mm	2 mm
26 samples	HU25-C1-26MC*	HU25-C1.5-26MC*	HU25-C2-26MC*
52 samples	HU25-C1-52MC*	HU25-C1.5-52MC*	HU25-C2-52MC*
26/52 samples	HU25-C1-26/52MC*	HU25-C1.5-26/52MC*	HU25-C2-26/52MC*

* multichannel pipette compatible

Gel casting for Maxi Plus series

- with gel casting gatess

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Horizontal Electrophoresis Systems

Multi Gel Unit FU100

- high flexibility by using different sized trays in one tank
- gel casting with gel casting gates
- comb slots: 4 or 8
- gel sizes
  7 x 7 cm with 4 slots for:
  2 x 1 mm or 2 x 1.5 / 2 mm combs
  7 x 10 cm with 8 slots for:
  4 x 1 mm or 4 x 1.5 / 2 mm combs
- 32 or 64 max. sample capacity depends on size of tray
- 350 ml buffer volume

Electrophoresis chamber

Description	Order No.
Multi Gel Unit FU120 for 2 gel sizes including 2 UV-transparent gel casting trays: 7 x 7 cm, 7 x 10 cm, gel casting gates, 2 combs (1 mm thick, 15 samples), coloured loading strips	FU120
Multi Gel Unit FU101 for 7 x 7 cm gels including 1 UV-transparent gel casting tray 7 x 7 cm, gel casting gates, 2 combs (1 mm thick, 15 samples), coloured loading strips	FU101
Multi Gel Unit FU102 for 7 x 10 cm gels including 1 UV-transparent gel casting tray 7 x 10 cm, gel casting gates, 2 combs (1 mm thick, 15 samples), coloured loading strips	FU102

Accessories

Description	Order No.
UV-transparent gel casting tray 7 x 7 cm incl. gel casting gates	FU1-UT7
UV-transparent gel casting tray 7 x 10 cm incl. gel casting gates	FU1-UT10
Gel casting gates, 2 pieces/package	FU1-CG

Combs/thickness	1 mm	1.5 mm	2 mm
1 sample	FU1-C1-1	FU1-C1.5-1	FU1-C2-1
2 samples	FU1-C1-2	FU1-C1.5-2	FU1-C2-2
4 samples	FU1-C1-4	FU1-C1.5-4	FU1-C2-4
8 samples	FU1-C1-8	FU1-C1.5-8	FU1-C2-8
10 samples	FU1-C1-10	FU1-C1.5-10	FU1-C2-10
12 samples	FU1-C1-12	FU1-C1.5-12	FU1-C2-12
15 samples	FU1-C1-15	FU1-C1.5-15	FU1-C2-15
16 samples	FU1-C1-16MC*	FU1-C1.5-16MC*	FU1-C2-16MC*

* multichannel pipette compatible

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Horizontal Electrophoresis Systems

Multi Gel Unit FU200

- high flexibility by using different sized trays in one tank
- gel casting with gel casting gates
- comb slots: 4, 6 or 8
- gel sizes
    - **10 x 7 cm** with 4 slots for:
        - 2 x 1 mm or 2 x 1.5 / 2 mm combs
    - **10 x 10 cm** with 6 slots for:
        - 3 x 1 mm or 3 x 1.5 / 2 mm combs
    - **10 x 15 cm** with 8 slots for:
        - 4 x 1 mm or 4 x 1.5 / 2 mm combs
- 40, 60 or 80 max. sample capacity depends on size of tray
- 650 ml buffer volume

Electrophoresis chamber

Description	Order No.
Multi Gel Unit FU230 for 3 gel sizes including 3 UV-transparent gel casting trays: 10 x 7 cm, 10 x 10 cm, 10 x 15 cm, gel casting gates, 2 combs (1 mm thick, 15 samples), coloured loading strips	FU230
Multi Gel Unit FU201 for 10 x 7 cm gels including 1 UV-transparent gel casting tray 10 x 7 cm, gel casting gates, 2 combs (1 mm thick, 15 samples), coloured loading strips	FU201
Multi Gel Unit FU202 for 10 x 10 cm gels including 1 UV-transparent gel casting tray 10 x 10 cm, gel casting gates, 2 combs (1 mm thick, 15 samples), coloured loading strips	FU202
Multi Gel Unit FU203 for 10 x 15 cm gels including 1 UV-transparent gel casting tray 10 x 15 cm, gel casting gates, 2 combs (1 mm thick, 15 samples), coloured loading strips	FU203

Accessories

Description	Order No.
UV-transparent gel casting tray 10 x 7 cm incl. gel casting gates	FU2-UT7
UV-transparent gel casting tray 10 x 10 cm incl. gel casting gates	FU2-UT10
UV-transparent gel casting tray 10 x 15 cm incl. gel casting gates	FU2-UT15
Gel casting gates, 2 pieces/package	FU2-CG

Combs/thickness	1 mm	1.5 mm	2 mm
1 sample	FU2-C1-1	FU2-C1.5-1	FU2-C2-1
2 samples	FU2-C1-2	FU2-C1.5-2	FU2-C2-2
4 samples	FU2-C1-4	FU2-C1.5-4	FU2-C2-4
8 samples	FU2-C1-8	FU2-C1.5-8	FU2-C2-8
10 samples	FU2-C1-10	FU2-C1.5-10	FU2-C2-10
12 samples	FU2-C1-12	FU2-C1.5-12	FU2-C2-12
15 samples	FU2-C1-15	FU2-C1.5-15	FU2-C2-15
16 samples	FU2-C1-16MC*	FU2-C1.5-16MC*	FU2-C2-16MC*
20 samples	FU2-C1-20	FU2-C1.5-20	FU2-C2-20

* multichannel pipette compatible

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Horizontal Electrophoresis Systems

Multi Gel Unit FU300

- high flexibility by using different sized trays in one tank
- gel casting with gel casting gates
- gel sizes
    15 x 7 cm with 4 slots for:
        2 x 1 mm or 2 x 1.5 / 2 mm combs
    15 x 10 cm with 6 slots for:
        3 x 1 mm or 3 x 1.5 / 2 mm combs
    15 x 15 cm with 8 slots for:
        4 x 1 mm or 4 x 1.5 / 2 mm combs
    15 x 20 cm with 12 slots for:
        6 x 1 mm or 6 x 1.5 / 2 mm combs
- 60, 90, 120 or 180 max. sample capacity depends on size of tray
- 950 ml buffer volume

Electrophoresis chamber

Description	Order No.
Multi Gel Unit FU340 for 4 gel sizes including 4 UV-transparent gel casting trays: 15 x 7 cm, 15 x 10 cm, 15 x 15 cm, 15 x 20 cm, gel casting gates, 2 combs (1 mm thick, 15 samples), coloured loading strips	FU340
Multi Gel Unit FU301 for 15 x 7 cm gels including 1 UV-transparent gel casting tray 15 x 7 cm, gel casting gates, 2 combs (1 mm thick, 15 samples), coloured loading strips	FU301
Multi Gel Unit FU302 for 15 x 10 cm gels including 1 UV-transparent gel casting tray 15 x 10 cm, gel casting gates, 2 combs (1 mm thick, 15 samples), coloured loading strips	FU302
Multi Gel Unit FU303 for 15 x 15 cm gels including 1 UV-transparent gel casting tray 15 x 15 cm, gel casting gates, 2 combs (1 mm thick, 15 samples), coloured loading strips	FU303
Multi Gel Unit FU304 for 15 x 20 cm gels including 1 UV-transparent gel casting tray 15 x 20 cm, gel casting gates, 2 combs (1 mm thick, 15 samples), coloured loading strips	FU304

Horizontal Electrophoresis Systems

Multi Gel Unit FU 300

Accessories

Descriptions			Order No.
UV-transparent gel casting tray 15 x 7 cm incl. gel casting gates			FU3-UT7
UV-transparent gel casting tray 15 x 10 cm incl. gel casting gates			FU3-UT10
UV-transparent gel casting tray 15 x 15 cm incl. gel casting gates			FU3-UT15
UV-transparent gel casting tray 15 x 20 cm incl. gel casting gates			FU3-UT20
Gel casting gates, 2 pieces/package			FU3-CG

Combs/thickness	1 mm	1.5 mm	2 mm
1 sample	FU3-C1-1	FU3-C1.5-1	FU3-C2-1
2 samples	FU3-C1-2	FU3-C1.5-2	FU3-C2-2
4 samples	FU3-C1-4	FU3-C1.5-4	FU3-C2-4
10 samples	FU3-C1-10	FU3-C1.5-10	FU3-C2-10
15 samples	FU3-C1-15	FU3-C1.5-15	FU3-C2-15
16 samples	FU3-C1-16MC*	FU3-C1.5-16MC*	FU3-C2-16MC*
20 samples	FU3-C1-20	FU3-C1.5-20	FU3-C2-20
25 samples	FU3-C1-25	FU3-C1.5-25	FU3-C2-25
30 samples	FU3-C1-30MC*	FU3-C1.5-30MC*	FU3-C2-30MC*

* multichannel comptible

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Horizontal Electrophoresis Systems

Specifications of combs
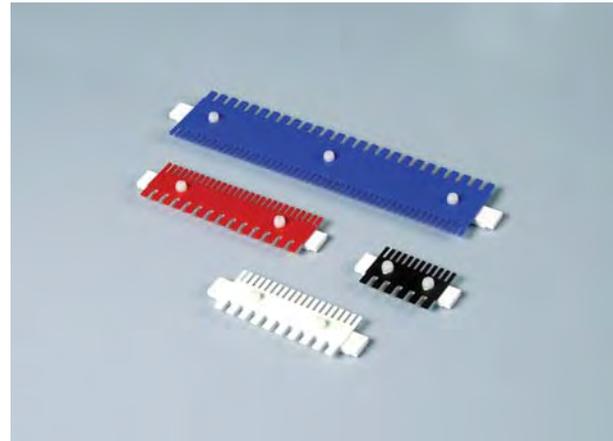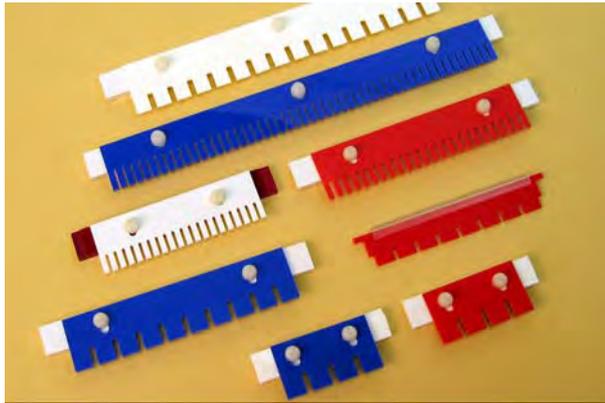
- combs are colour-coded to their thickness
  - 1.00 mm - white
  - 1.50 mm - red
  - 2.00 mm - blue

- all double-sided combs are multichannel pipette compatible

Order No.	Thickness (mm)	Samples	Max. sample volume per well for a 5 mm deep gel (µl)
for H1-SET			
H1-C1-1D	1	1	345
H1-C1-4	1	4	100
H1-C1-8	1	8	45
H1-C1-12	1	12	27
H1-C1-16	1	16	18
H1-C1-20MC*	1	20	12
H1-C1.5-1D	1.5	1	515
H1-C1.5-4	1.5	4	150
H1-C1.5-8	1.5	8	65
H1-C1.5-12	1.5	12	40
H1-C1.5-16	1.5	16	27
H1-C1.5-20MC*	1.5	20	18
for HU6			
HU6-C1-4	1	4	45
HU6-C1-8	1	8	20
HU6-C1-12MC*	1	12	11
HU6-C1-16	1	16	10
HU6-C1-6/12MC**	1	6/12	22/11
HU6-C1.5-4	1.5	4	70
HU6-C1.5-8	1.5	8	30
HU6-C1.5-12MC*	1.5	12	17
HU6-C1.5-16	1.5	16	15
HU6-C1.5-6/12MC**	1.5	6/12	32,5/16,5
HU6-C2-4	2	4	90
HU6-C2-8	2	8	40
HU6-C2-12MC*	2	12	22
HU6-C2-16	2	16	20
HU6-C2-6/12MC**	2	6/12	43/21.5

Order No.	Thickness (mm)	Samples	Max. sample volume per well for a 5 mm deep gel (µl)
for HU10			
HU10-C1-4	1	4	80
HU10-C1-8	1	8	40
HU10-C1-10MC*	1	10	30
HU10-C1-12	1	12	25
HU10-C1-16	1	16	15
HU10-C1-20MC*	1	20	12
HU10-C1-10/20MC**	1	10/20	22/11
HU10-C1.5-4	1.5	4	125
HU10-C1.5-8	1.5	8	60
HU10-C1.5-10MC*	1.5	10	45
HU10-C1.5-12	1.5	12	35
HU10-C1.5-16	1.5	16	25
HU10-C1.5-20MC*	1.5	20	20
HU10-C1.5-10/20MC**	1.5	10/20	32.5/16.5
HU10-C2-4	2	4	160
HU10-C2-8	2	8	80
HU10-C2-10MC*	2	10	60
HU10-C2-12	2	12	50
HU10-C2-16	2	16	30
HU10-C2-20MC*	2	20	25
HU10-C2-10/20MC**	2	10/20	43/21.5
for HU10W			
HU10W-C1-4	1	4	142
HU10W-C1-8MC*	1	8	67
HU10W-C1-10	1	10	52
HU10W-C1-12	1	12	40
HU10W-C1-16MC*	1	16	30
HU10W-C1-20	1	20	22
HU10W-C1.5-4	1.5	4	213
HU10W-C1.5-8MC*	1.5	8	100
HU10W-C1.5-10	1.5	10	77
HU10W-C1.5-12	1.5	12	61
HU10W-C1.5-16MC*	1.5	16	44
HU10W-C1.5-20	1.5	20	32.5
HU10W-C2-4	2	4	284

* multichannel pipette compatible
** multichannel pipette compatible and double-sided useable

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Horizontal Electrophoresis Systems

Specifications of combs

for HU10W

Order No.	Thickness (mm)	Samples	Max. sample volume per well for a 5 mm deep gel (µl)
HU10W-C2-4	2	4	284
HU10W-C2-8MC*	2	8	133
HU10W-C2-10	2	10	103
HU10W-C2-12	2	12	81
HU10W-C2-16MC*	2	16	59
HU10W-C2-20	2	20	43

for HU13

Order No.	Thickness (mm)	Samples	Max. sample volume per well for a 5 mm deep gel (µl)
HU13-C1-10	1	10	40
HU13-C1-12MC*	1	12	35
HU13-C1-16	1	16	25
HU13-C1-20	1	20	17
HU13-C1-24	1	24	13
HU13-C1-28MC*	1	28	13
HU13-C1-14/28MC**	1	14/28	22/11
HU13-C1.5-10	1.5	10	60
HU13-C1.5-12MC*	1.5	12	50
HU13-C1.5-16	1.5	16	35
HU13-C1.5-20	1.5	20	25
HU13-C1.5-24	1.5	24	20
HU13-C1.5-28MC*	1.5	28	20
HU13-C1.5-14/28MC**	1.5	14/28	32.5/16.5
HU13-C2-10	2	10	85
HU13-C2-12MC*	2	12	70
HU13-C2-16	2	16	50
HU13-C2-20	2	20	35
HU13-C2-24	2	24	25
HU13-C2-28MC*	2	28	25
HU13-C2-14/28MC**	2	14/28	43/21.5

for HU13W

Order No.	Thickness (mm)	Samples	Max. sample volume per well for a 5 mm deep gel (µl)
HU13W-C1-12MC*	1	12	72
HU13W-C1-16	1	16	52
HU13W-C1-20	1	20	40
HU13W-C1-25	1	25	30
HU13W-C1-28	1	28	26
HU13W-C1-40	1	40	17
HU13W-C1-50MC*	1	50	15
HU13W-C1.5-12MC*	1.5	12	108
HU13W-C1.5-16	1.5	16	78
HU13W-C1.5-20	1.5	20	60
HU13W-C1.5-25	1.5	25	45
HU13W-C1.5-28	1.5	28	39
HU13W-C1.5-40	1.5	40	25
HU13W-C1.5-50MC*	1.5	50	23
HU13W-C2-12MC*	2	12	144
HU13W-C2-16	2	16	104
HU13W-C2-20	2	20	80
HU13W-C2-25	2	25	60
HU13W-C2-28	2	28	52
HU13W-C2-40	2	40	34
HU13W-C2-50MC*	2	50	30

for HU13L

Order No.	Thickness (mm)	Samples	Max. sample volume per well for a 5 mm deep gel (µl)
HU13L-C1-8	1	8	59
HU13L-C1-10	1	10	44
HU13L-C1-12	1	12	37
HU13L-C1-14MC*	1	14	30
HU13L-C1-16	1	16	25
HU13L-C1-20	1	20	18
HU13L-C1-24	1	24	14
HU13L-C1-28MC*	1	28	11
HU13L-C1.5-8	1.5	8	89
HU13L-C1.5-10	1.5	10	66
HU13L-C1.5-12	1.5	12	55
HU13L-C1.5-14MC*	1.5	14	45
HU13L-C1.5-16	1.5	16	38
HU13L-C1.5-20	1.5	20	28
HU13L-C1.5-24	1.5	24	21
HU13L-C1.5-28MC*	1.5	28	16
HU13L-C2-8	2	8	119
HU13L-C2-10	2	10	88
HU13L-C2-12	2	12	73
HU13L-C2-14MC*	2	14	60
HU13L-C2-16	2	16	51
HU13L-C2-20	2	20	37
HU13L-C2-24	2	24	28
HU13L-C2-28MC*	2	28	21

for HU20/CHU20

Order No.	Thickness (mm)	Samples	Max. sample volume per well for a 5 mm deep gel (µl)
HU20-C1-16	1	16	35
HU20-C1-20MC*	1	20	30
HU20-C1-28	1	28	20
HU20-C1-40MC*	1	40	13
HU20-C1-21/42MC**	1	21/42	22/11
HU20-C1.5-16	1.5	16	55
HU20-C1.5-20MC*	1.5	20	45
HU20-C1.5-28	1.5	28	30
HU20-C1.5-40MC*	1.5	40	19
HU20-C1.5-21/42MC**	1.5	21/42	32.5/16.5
HU20-C2-16	2	16	75
HU20-C2-20MC*	2	20	60
HU20-C2-28	2	28	40
HU20-C2-40MC*	2	40	25
HU20-C2-21/42MC**	2	21/42	43/21.5

for HU25/CHU25

Order No.	Thickness (mm)	Samples	Max. sample volume per well for a 5 mm deep gel (µl)
HU25-C1-26MC*	1	26	30
HU25-C1-52MC*	1	52	13
HU25-C1-26/52MC**	1	26/52	22/11
HU25-C1.5-26MC*	1.5	26	45
HU25-C1.5-52MC*	1.5	52	20
HU25-C1.5-26/52MC**	1.5	26/52	32.5/16.5
HU25-C2-26MC*	2	26	60
HU25-C2-52MC*	2	52	25
HU25-C2-26/52MC**	2	26/52	43/21.5

* multichannel pipette compatible
** multichannel pipette compatible and double- sided useable

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Horizontal Electrophoresis Systems

Specifications of combs

for FU100

Order No.	Thickness (mm)	Samples	Max. sample volume per well for a 5 mm deep gel (µl)
FU1-C1-1	1	1	300
FU1-C1-2	1	2	150
FU1-C1-4	1	4	60
FU1-C1-8	1	8	27.5
FU1-C1-10	1	10	20
FU1-C1-12	1	12	15
FU1-C1-15	1	15	10
FU1-C1-16MC*	1	16	8
FU1-C1.5-1	1.5	1	450
FU1-C1.5-2	1.5	2	225
FU1-C1.5-4	1.5	4	90
FU1-C1.5-8	1.5	8	41.25
FU1-C1.5-10	1.5	10	30
FU1-C1.5-12	1.5	12	22.5
FU1-C1.5-15	1.5	15	15
FU1-C1.5-16MC*	1.5	16	12
FU1-C2-1	2	1	600
FU1-C2-2	2	2	300
FU1-C2-4	2	4	120
FU1-C2-8	2	8	55
FU1-C2-10	2	10	40
FU1-C2-12	2	12	30
FU1-C2-15	2	15	20
FU1-C2-16MC*	2	16	16

for FU200

Order No.	Thickness (mm)	Samples	Max. sample volume per well for a 5 mm deep gel (µl)
FU2-C1-1	1	1	430
FU2-C1-2	1	2	220
FU2-C1-4	1	4	100
FU2-C1-8	1	8	45
FU2-C1-10	1	10	35
FU2-C1-12	1	12	27.5
FU2-C1-15	1	15	20
FU2-C1-16MC*	1	16	17.5
FU2-C1-20	1	20	12.5
FU2-C1.5-1	1.5	1	645
FU2-C1.5-2	1.5	2	330
FU2-C1.5-4	1.5	4	150
FU2-C1.5-8	1.5	8	67.5
FU2-C1.5-10	1.5	10	52.5
FU2-C1.5-12	1.5	12	41.25
FU2-C1.5-15	1.5	15	30
FU2-C1.5-16MC*	1.5	16	26.25
FU2-C1.5-20	1.5	20	18.75
FU2-C2-1	2	1	860
FU2-C2-2	2	2	440
FU2-C2-4	2	4	200
FU2-C2-8	2	8	90
FU2-C2-10	2	10	70
FU2-C2-12	2	12	55
FU2-C2-15	2	15	40
FU2-C2-16MC*	2	16	35
FU2-C2-20	2	20	25

for FU300

Order No.	Thickness (mm)	Samples	Max. sample volume per well for a 5 mm deep gel (µl)
FU3-C1-1	1	1	700
FU3-C1-2	1	2	340
FU3-C1-4	1	4	165
FU3-C1-8	1	8	70
FU3-C1-10	1	10	64
FU3-C1-12	1	12	40
FU3-C1-15	1	15	35
FU3-C1-16MC*	1	16	32
FU3-C1-20	1	20	29.5
FU3-C1-25	1	25	20
FU3-C1-30MC*	1	30	12.5
FU3-C1.5-1	1.5	1	1050
FU3-C1.5-2	1.5	2	510
FU3-C1.5-4	1.5	4	247.5
FU3-C1.5-8	1.5	8	105
FU3-C1.5-10	1.5	10	96
FU3-C1.5-12	1.5	12	60
FU3-C1.5-15	1.5	15	52.5
FU3-C1.5-16MC*	1.5	16	48
FU3-C1.5-20	1.5	20	44.25
FU3-C1.5-25	1.5	25	30
FU3-C1.5-30MC*	1.5	30	18.75
FU3-C2-1	2	1	1400
FU3-C2-2	2	2	680
FU3-C2-4	2	4	330
FU3-C2-8	2	8	140
FU3-C2-10	2	10	128
FU3-C2-12	2	12	80
FU3-C2-15	2	15	70
FU3-C2-16MC*	2	16	64
FU3-C2-20	2	20	59
FU3-C2-25	2	25	40
FU3-C2-30MC*	2	30	25

* multichannel pipette compatible
** multichannel pipette compatible and double- sided useable

Horizontal Electrophoresis Systems

Units for IEF and Comet Assay

IEF Unit Horizon Plus

- flexible system for a wide range of horizontal electrophoresis applications up to 1500 V
- suitable for 1D, 2D electrophoresis and IEF
- integrated cooling coil under large cooled ceramic top plate
- printed grid allows accurate measurement of sample migration
- variable space between electrodes
- compatible with different gel sizes
- cooling with chiller or water connection

- gel size   max. 25 x 25 cm
- buffer volume (each outer tank)   275 ml
- unit dimensions (W x L x H)   43 x 46 x 11.5 cm
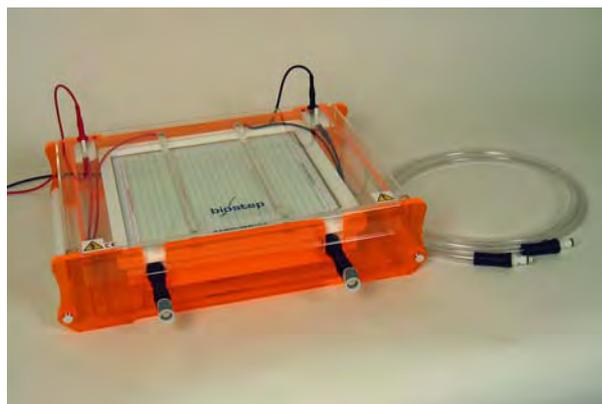
Description	Order No.
Horizon Plus	HUHP-SY
including running tank with safety lid and electrodes, ceramic cooling plate, glass electrode frame	

Comet Assay Unit

- simultaneous separation of many DNA samples in one or more agarose coats
- available in four different sizes
- minimise exposure to light and reduce background DNA damage
- use of agarose-coated object holders as sample-holders
- optional cooling avoids an exceeding heating of the buffer during the electrophoresis
- buffer volume: approx. 700 ml

Description	Order No.
Electrophoresis Unit CometPlus for 10 object holders	HUCA-S10
Electrophoresis Unit CometPlus for 20 object holders	HUCA-S20
Electrophoresis Unit CometPlus for 40 object holders	HUCA-S40
Electrophoresis Unit CometPlus for 80 object holders	HUCA-S80

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Horizontal Electrophoresis Systems

MicroGel Unit
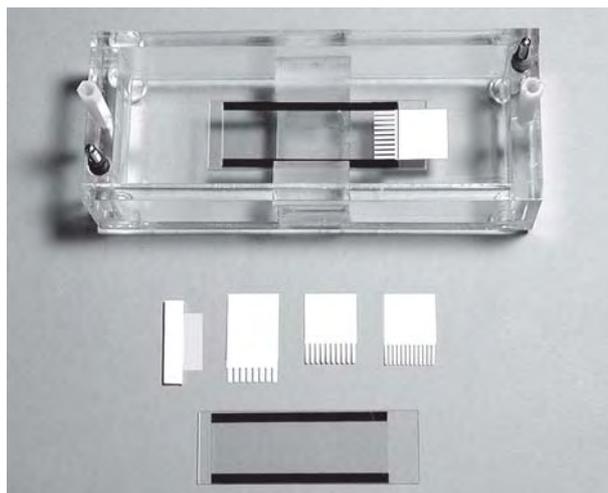
- for rapid high resolution DNA electrophoresis
- pre-cast gels available

|	
• resolution	10 bp
• sample volume	$0.2\,\mu l$ to $0.5\,\mu l$
• running distance	5.5 cm
• running time	4 minutes at 400 V

Electrophoresis chamber

Description	Order No.
MicroGel Unit	70-90-100
including gel tank, 10 unfilled cassettes, 5 combs with 8, 10 and 12 samples each, 2 casting combs, 100 μl 48mer and 100 μl 50mer	

Accessories

Description	Quantity	Order No.
Unfilled cassettes	1 pack of 25 pieces	70-90-211
Unfilled cassettes	1 pack of 100 pieces	70-90-212
Casting comb	1 pack of 2 pieces	70-90-301
Membrane comb, 6 samples	1 pack of 10 pieces	70-90-302
Membrane comb, 8 samples	1 pack of 10 pieces	70-90-303
Membrane comb, 10 samples	1 pack of 10 pieces	70-90-304
Membrane comb, 12 samples	1 pack of 10 pieces	70-90-305

Accessories for Horizontal Systems

Gel Levelling Table, Gel Scoops, Fluorescent Ruler, Gel Trays

Gel levelling table

- size: 30 x 20 cm
- with adjustable feet for levelling gel casting trays
- level bubble integrated in the centre

Order No.
GLT - 3020

Gel scoops

- UV-transparent material
- designed to facilitate the transfer of gels
- eliminates the possibility of tearing

Description	Order No.
for 6 cm wide gels	HU6-GS
for 10 cm wide gels	HU10-GS
for 13 cm wide gels	HU13-GS
for 20 cm wide gels	HU20-GS
for 25 cm wide gels	HU25-GS
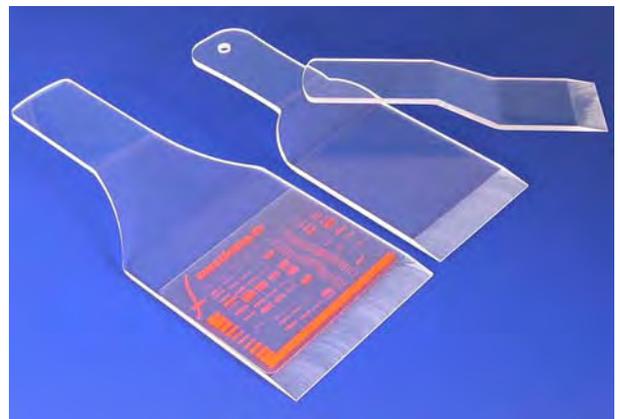
Fluorescent ruler, 23 cm/9 Inch

- fluorescent excitation with wavelengths
  254 nm, 312 nm, 365 nm and 480 nm

Order No.
GLE-FR, 1 pack of 2 pieces
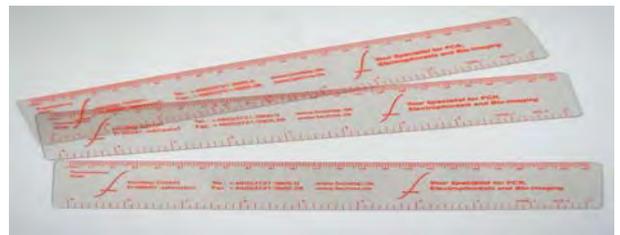
Gel casting trays as costum-made product

- low cost gel casting trays for systems of different manufacturers
- prices on request

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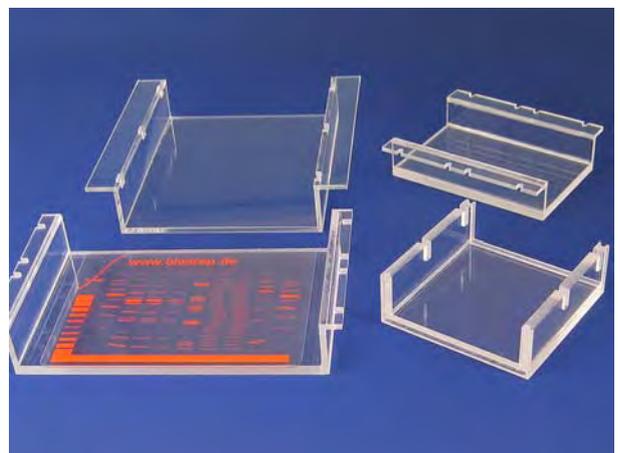
Vertical Electrophoresis Systems

Mini Protein Unit TV100
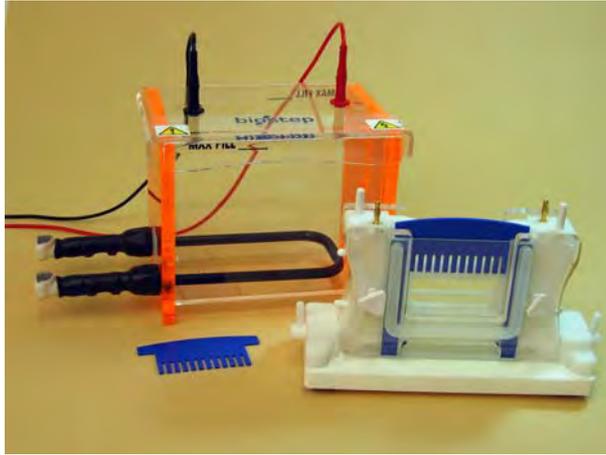
Example

- simultaneous run of 2 gels
- 2 mm thick glass plates
- optionally coolable
- no glass plates transfer necessary
- blotting and capillary module available
- easy to use with pre-cast gels (on page 128)

|	
• gel size	7.6 x 8.5 cm
• max. sample capacity	2 x 20
• buffer volume (inner)	400 ml
• buffer volume (outer)	1200 ml
• dimensions (W x L x H)	20 x 15.5 x 14.5 cm
• typical voltage	150 - 225 V
• typical current	25 - 45 mA (1 gel)
	50 - 85 mA (2 gels)

Electrophoresis chamber

Description	Order No.
Mini Gel Unit TV100 for using pre-cast gels only including tank and gel running module	TV100
Mini Gel Unit TV100 with casting base including casting base for 2 gels, 2 x 2 mm thick glass plates with fixed spacers 1 mm thick, 2 x 2 mm thick notched glass plates, 1 dummy glass plate, 2 combs (1 mm thick, 12 samples)	TV100Y
Mini Gel Unit TV100 with casting base, cooled version including casting base for 2 gels, 2 x 2 mm thick glass plates with fixed spacers 1 mm thick, 2 x 2 mm thick notched glass plates, 1 dummy-plate, 2 combs (1 mm thick, 12 samples)	TV100YK

Accessories

Description	Order No.
Casting base for 2 gels	TV100-CB
Dummy plate	TV100-DP
Glass plate, notched, 2 mm thick, 2 pieces/package	TV100-NG
Glass plate, plain, 2 mm thick, 2 pieces/package	TV100-PG
Glass plate with 0.75 mm fixed spacers, 2 mm thick, 2 pieces/package	TV100-PGS0,75
Glass plate with 1.00 mm fixed spacers, 2 mm thick, 2 pieces/package	TV100-PGS1
Glass plate with 1.50 mm fixed spacers, 2 mm thick, 2 pieces/package	TV100-PGS1.5
Glass plate with 2.00 mm fixed spacers, 2 mm thick, 2 pieces/package	TV100-PGS2
Spacer, 12 x 100 mm, 4 different thicknesses, 2 pieces/package	TV100-S**
Electroblotting module	TV100-EBGRM

Combs/thickness	0.75 mm	1 mm	1.5 mm	2 mm
Reference comb	V10-C0.75-1D	V10-C1-1D	V10-C1.5-1D	V10-C2-1D
8 samples	V10-C0.75-8MC*	V10-C1-8MC*	V10-C1.5-8MC*	V10-C2-8MC*
10 samples	V10-C0.75-10	V10-C1-10	V10-C1.5-10	V10-C2-10
12 samples	V10-C0.75-12	V10-C1-12	V10-C1.5-12	V10-C2-12
16 samples	V10-C0.75-16MC*	V10-C1-16MC*	V10-C1.5-16MC*	V10-C2-16MC*
20 samples	V10-C0.75-20	V10-C1-20	V10-C1.5-20	V10-C2-20

* multichannel pipette compatible
** please declare the thickness of spacers (0.75 mm, 1 mm, 1.5 mm, 2 mm)

# Vertical Electrophoresis Systems

Maxi Protein Unit TV400

- simultaneous run of 2 gels
- 4 mm thick glass plates
- optionally coolable
- no glass plates transfer necessary
- blotting and capillary module available

- gel size   16.5 x 17.5 cm
- max. sample capacity   2 x 48
- buffer volume (inner)   650 ml
- buffer volume (outer)   3500 ml
- dimensions (W x L x H)   28.5 x 28.5 x 16.5 cm
- typical voltage   90 - 120 V (stacking gel)
                            120 - 180 V (resolving gel)
- typical current   20 - 30 mA per gel

Electrophoresis chamber

Description	Order No.
Maxi Gel Unit TV400 with casting base	TV400Y
including casting base for 2 gels, 2 x 4 mm thick glass plates with fixed spacers 1 mm thick, 2 x 4 mm thick notched glass plates, 1 dummy plate, 2 combs (1 mm thick, 24 samples)	
Maxi Gel Unit TV400 with casting base, cooled version	TV400YK
including casting base for 2 gels, 2 x 4 mm thick glass plates with fixed spacers 1 mm thick, 2 x 4 mm thick notched glass plates, 1 dummy plate, 2 combs (1 mm thick, 24 samples)	

Accessories

Description	Order No.
Casting base for 2 gels	TV400-CB
Dummy plate	TV400-DP
Glass plate, notched, 4 mm thick, 2 pieces/package	TV400-NG
Glass plate, plain, 4 mm thick, 2 pieces/package	TV400-PG
Glass plate with 0.75 mm fixed spacers, 4 mm thick, 2 pieces/package	TV400-PGS0,75
Glass plate with 1,00 mm fixed spacers, 4 mm thick, 2 pieces/package	TV400-PGS1
Glass plate with 1.50 mm fixed spacers, 4 mm thick, 2 pieces/package	TV400-PGS1.5
Glass plate with 2,00 mm fixed spacers, 4 mm thick, 2 pieces/package	TV400-PGS2
Spacer, 20 x 200 mm, 4 different thicknesses, 2 pieces/package	TV400-S**
Electroblotting module	TV400-EBGRM

Combs/thickness	0.25 mm	0.35 mm
24 samples	V20-C0.25-24	V20-C0.35-24
36 samples	V20-C0.25-36MC*	V20-C0.35-36MC*

Combs/thickness	0.75 mm	1 mm	1.5 mm	2 mm
Reference comb	V20-C0.75-1D	V20-C1-1D	V20-C1.5-1D	V20-C2-1D
10 samples	V20-C0.75-10	V20-C1-10	V20-C1.5-10	V20-C2-10
18 samples	V20-C0.75-18MC*	V20-C1-18MC*	V20-C1.5-18MC*	V20-C2-18MC*
24 samples	V20-C0.75-24	V20-C1-24	V20-C1.5-24	V20-C2-24
36 samples	V20-C0.75-36MC*	V20-C1-36MC*	V20-C1.5-36MC*	V20-C2-36MC*
48 samples	V20-C0.75-48	V20-C1-48	V20-C1.5-48	V20-C2-48

* multichannel pipette compatible
** please declare the thickness of the spacers (0.75 mm, 1 mm, 1.5 mm, 2 mm)

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Vertical Electrophoresis Systems

Mini Wide Protein Unit TV200

- simultaneous run of 2 gels
- 4 mm thick glass plates
- optionally coolable
- no glass plates transfer necessary
- blotting module available

- gel size
- max. sample capacity
- buffer volume (inner)
- buffer volume (outer)
- dimensions (W x L x H)
- typical voltage
- typical current

18.5 x 8.5 cm
2 x 48
270 ml
2000 ml
14 x 31 x 14.5 cm
150 - 225 V
55 - 85 mA (1 gel)
110 - 160 mA (2 gels)

Electrophoresis chamber

Description	Order No.
Mini Wide Gel Unit TV200 including 2 x 4 mm thick glass plates with fixed spacers 1 mm thick, 2 x 4 mm thick notched glass plates, 1 dummy plate, 2 combs (1 mm thick, 24 samples)	TV200
Mini Wide Gel Unit TV200 cooled version including casting base for 2 gels, 2 x 4 mm thick plates with fixed spacers 1 mm thick, 2 x 4 mm thick notched glass plates, 1 dummy plate, 2 combs (1 mm thick, 24 samples)	TV200K
Mini Wide Gel Unit TV200Y with casting base including casting base for 2 gels, 2 x 4 mm thick plates with fixed spacers 1 mm thick, 2 x 4 mm thick notched glass plates, 1 dummy plate, 2 combs (1 mm thick, 24 samples)	TV200Y
Mini Wide Gel Unit TV200Y with casting base cooled version including casting base for 2 gels, 2 x 4 mm thick plates with fixed spacers 1 mm thick, 2 x 4 mm thick notched glass plates, 1 dummy plate, 2 combs (1 mm thick, 24 samples)	TV200YK

Vertical Electrophoresis Systems

Mini Wide Protein Unit TV200

Accessories

Description	Order No.
Casting base	TV200-CB
Dummy plate	TV200-DP
Glass plate, notched, 4 mm thick, 2 pieces/package	TV200-NG
Glass plate, plain, 4 mm thick, 2 pieces/package	TV200-PG
Glass plate with 0.75 mm fixed spacer, 4 mm thick, 2 pieces/package	TV200-PGS0,75
Glass plate with 1,00 mm fixed spacer, 4 mm thick, 2 pieces/package	TV200-PGS1
Glass plate with 1.50 mm fixed spacer, 4 mm thick, 2 pieces/package	TV200-PGS1.5
Glass plate with 2,00 mm fixed spacer, 4 mm thick, 2 pieces/package	TV200-PGS2
Spacer, 20 x 100 mm, 0.75 mm thick, 2 pieces/package	TV200-S0,75
Spacer, 20 x 100 mm, 1.00 mm thick, 2 pieces/package	TV200-S1
Spacer, 20 x 100 mm, 1.50 mm thick, 2 pieces/package	TV200-S1.5
Spacer, 20 x 100 mm, 2.00 mm thick, 2 pieces/package	TV200-S2
Electroblotting module	TV200-EBGRM

Combs/thickness	0.25 mm		0.35 mm	
24 samples	V20-C0.25-24		V20-C0.35-24	
36 samples	V20-C0.25-36MC*		V20-C0.35-36MC*	

Thickness	0.75 mm	1 mm	1.5 mm	2 mm
Reference comb	V20-C0.75-1D	V20-C1-1D	V20-C1.5-1D	V20-C2-1D
10 samples	V20-C0.75-10	V20-C1-10	V20-C1.5-10	V20-C2-10
18 samples	V20-C0.75-18MC*	V20-C1-18MC*	V20-C1.5-18MC*	V20-C2-18MC*
24 samples	V20-C0.75-24	V20-C1-24	V20-C1.5-24	V20-C2-24
36 samples	V20-C0.75-36MC*	V20-C1-36MC*	V20-C1.5-36MC*	V20-C2-36MC*
48 samples	V20-C0.75-48	V20-C1-48	V20-C1.5-48	V20-C2-48

Sharkstooth/thickness	0.25 mm	0.35 mm
24 samples	SC2-M0.25-24	SC2-M0.35-24
30 samples	SC2-M0.25-30MC*	SC2-M0.35-30MC*
36 samples	SC2-M0.25-36	SC2-M0.35-36
48 samples	SC2-M0.25-48	SC2-M0.35-48

* multichannel pipette compatible

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Vertical Electrophoresis Systems

Blotting and Capillary module

Electroblotting module for 2 gels

- for blotting nucleic acids and proteins
- in Mini, Mini Wide and Maxi sizes available
- Mini module fits in all systems based on TV100
- Mini Wide module fits in all systems based on TV200
- Maxi module fits in all systems based on TV400

Description	Order No.
Mini Blotting Module including 2 compression cassettes, 4 pads	TV100-EBGRM
Mini Wide Blotting Module including 2 compression cassettes, 4 pads	TV200-EBGRM
Maxi Blotting Module including 2 compression cassettes, 4 pads	TV400-EBGRM

Capillary module for 10 gels

- capillary module for IEF applications
- in Mini and Maxi sizes available
- capillaries with 1 mm or 4 mm internal diameter
- Mini module fits in all systems based on TV100 unit
- Maxi module fits in all systems based on TV400 unit

Description	Order No.
Mini Capillary Module for 10 gels including 10 capillaries (80 mm long, 1 mm diameter)	TV100-CAPGRM
Maxi Capillary Module for 10 gels including 10 capillaries (170 mm long, 1 mm diameter)	TV400-CAPGRM

Vertical Electrophoresis Systems

Blotting and Capillary system

Electroblotting system for 2 gels

- blotting system with cooled tank
- for blotting nucleic acids and proteins
- in Mini, Mini Wide and Maxi sizes available
- compatible with electrophoresis chambers of TV series

The articles on this page are not longer available.
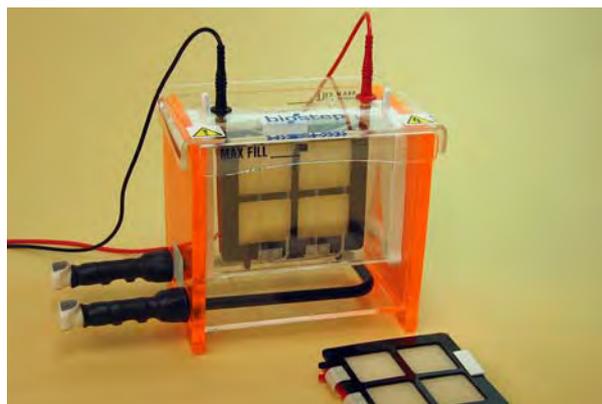
| Description	Order No.
Mini Electroblotting System for 10 x 10 cm gels including electrophoresis tank of TV100 series cooled version and lid, blotting module for 2 gels, 2 compression cassettes and pads	TV100K-EB
Mini Electroblotting System for 20 x 10 cm gels including electrophoresis tank of TV200 series cooled version and lid, blotting module for 2 gels, 2 compression cassettes and pads	TV200K-EB
Mini Electroblotting System for 20 x 20 cm gels including electrophoresis tank of TV400 series cooled version and lid, blotting module for 2 gels, 2 compression cassettes and pads	TV400K-EB

The articles on this page are not longer available.

### Modular blotting system

- for electrophoresis and the blotting nucleic acids and proteins
- combination of vertical electrophoresis tank, gel running and blotting module
- in Mini, Mini Wide and Maxi sizes available
- compatible with electrophoresis chambers of TV seriess
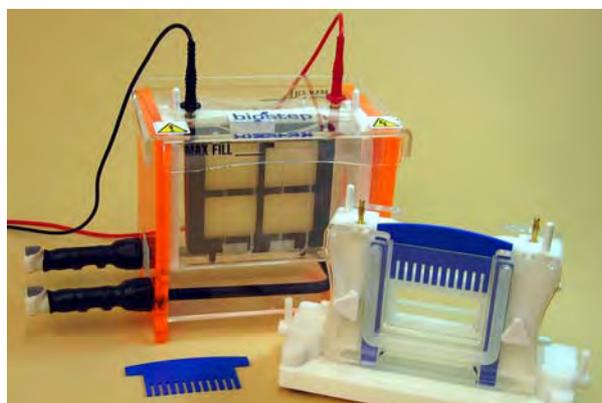
Description	Order No.
Mini Electroblotting System for 10 x 10 cm gels including Mini protein chamber TV100YK, blotting module for 2 gels, 2 compression cassettes and pads	TV100YK-EBSYS
Mini Wide Electroblotting System for 20 x 10 cm gels including Mini Wide protein chamber TV200YK, blotting module for 2 gels, 2 compression cassettes and pads	TV200YK-EBSYS
Maxi Electroblotting System for 20 x 20 cm gels including Maxi protein chamber TV400YK, blotting module for 2 gels, 2 compression cassettes and pads	TV400YK-EBSYS

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Vertical Electrophoresis Systems

Modular System
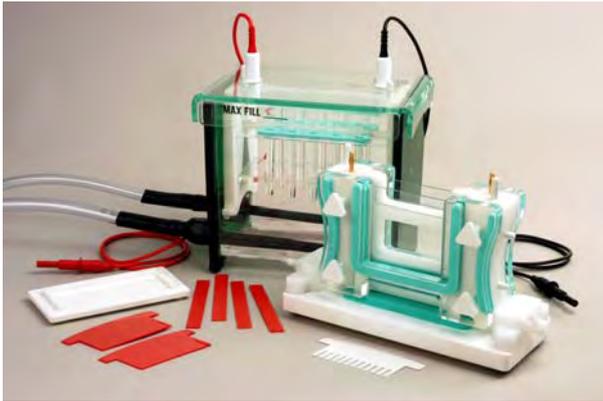
2D System

- separation of proteins in the first and second dimension in one system
- combination of vertical electrophoresis tank, gel running and capillary module
- in Mini and Maxi sizes available

Description	Order No.
Mini 2D Modular System including Mini protein chamber TV100YK, Mini capillary module, 2 x 2D-combs (1.5 mm thick), 4 x 2D spacer (1.5 mm thick), 1 gel extraction platform, 10 capillaries (80 mm long, 1 mm internal diameter), 10 blanking ports	TV100YK-2DSYS
Maxi 2D Modular System including Maxi protein chamber TV400YK, Maxi capillary module, 2 x 2D-combs (1.5 mm thick), 4 x 2D spacer (1.5 mm thick), 1 gel extraction platform, 10 capillaries (170 mm long, 1 mm internal diameter), 10 blanking ports	TV400YK-2DSYS

2D System with blotting module

- complete electrophoresis system for IEF, 1D/2D gel electrophoresis and electroblotting
- maximal applications by combination of vertical electrophoresis chambers, gel running and blotting module
- in Mini and Maxi sizes available
- high resolution due to an integrated cooling coil

Description	Order No.
Complete Mini Modular System including Mini protein chamber TV100YK, Mini capillary module, electro blotting module, 2 x 2D combs (1.5 mm thick), 4 x 2D spacer (1.5 mm thick), 1 gel extraction platform, 10 capillaries (80 mm long, 1 mm internal diameter), 10 blanking ports	TV100YK-MODSYS
Complete Maxi Modular System including Maxi protein chamber TV400YK, Maxi capillary module, electro blotting module, 2 x 2D combs (1.5 mm thick), 4 x 2D spacer (1.5 mm thick), 1 gel extraction platform, 10 capillaries (170 mm long, 1 mm internal diameter), 10 blanking ports	TV400YK-MODSYS

Vertical Electrophoresis Systems

Manual Sequencing Units

Sequencing unit TVS1000

- for DNA sequencing and protein electrophoresis
- integrated heavy duty aluminium back plate
- homogeneous heat distribution
- no lane distortion
- an optional ventilator enables gels to run at higher speeds

- gel size   16 x 47.5 cm
- max. sample capacity   48
- buffer volume (inner)   750 ml
- buffer volume (outer)   750 ml
- dimensions (W x D x H)   47 x 20.5 x 59 cm

Example

Sequencing chamber

Description	Order No.
Manual Sequencing Unit for 16 x 47,5 cm gels	TVS1000
including 2 notched glass plates , 2 plain glass plates, 1 set spacer (0.35 mm thick), 1 sharkstooth comb (48 samples, 0.35 mm thick)	

Accessories

Description	Order No.
Glass plate, notched, 2 pieces/package	TVS1000-NG
Glass plate, plain, 2 pieces/package	TVS1000-PG
Spacer 20 x 500 mm, in 6 different thicknesses, 2 pieces/package	TVS1000-S**

Combs/thickness	0.25 mm	0.35 mm
24 samples	V20-C0.25-24	V20-C0.35-24
36 samples	V20-C0.25-36MC*	V20-C0.35-36MC*

Thickness	0.75 mm	1 mm	1.5 mm	2 mm
Reference comb	V20-C0.75-1D	V20-C1-1D	V20-C1.5-1D	V20-C2-1D
10 samples	V20-C0.75-10	V20-C1-10	V20-C1.5-10	V20-C2-10
18 samples	V20-C0.75-18MC*	V20-C1-18MC*	V20-C1.5-18MC*	V20-C2-18MC*
24 samples	V20-C0.75-24	V20-C1-24	V20-C1.5-24	V20-C2-24
36 samples	V20-C0.75-36MC*	V20-C1-36MC*	V20-C1.5-36MC*	V20-C2-36MC*
48 samples	V20-C0.75-48	V20-C1-48	V20-C1.5-48	V20-C2-48

Sharkstooth/thickness	0.25 mm	0.35 mm
24 samples	SC2-M0.25-24	SC2-M0.35-24
30 samples	SC2-M0.25-30MC*	SC2-M0.35-30MC*
36 samples	SC2-M0.25-36	SC2-M0.35-36
48 samples	SC2-M0.25-48	SC2-M0.35-48

** please declare the thickness of the spacers (0.25mm, 0.35mm, 0.75 mm, 1 mm, 1.5 mm, 2 mm)

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Vertical Electrophoresis Systems

Manual Sequencing Units

Example

Sequencing unit TVS1400

- for DNA sequencing and protein electrophoresis
- integrated heavy duty aluminium back plate
- homogeneous heat distribution
- no lane distortion
- an optional ventilator enables gels to run at higher speeds

• gel size	29 x 38,5 cm
• max. sample capacity	96
• buffer volume (inner)	1200 ml
• buffer volume (outer)	1200 ml
• dimensions (W x D x H)	63 x 21.5 x 50 cm

Sequencing chamber

Description	Order No.
Manual Sequencing Unit for 29 x 38,5 cm gels	TVS1400
including 2 notched glass plates , 2 plain glass plates, 1 set spacer (0.35 mm thick), 1 sharkstooth comb (48 samples, 0.35 mm thick)	

Accessories for TVS1400

Description	Order No.
Glass plate, notched, 2 pieces/package	TVS1400-NG
Glass plate, plain, 2 pieces/package	TVS1400-PG
Spacer, 0.25 mm thick, 20 x 410 mm, 2 pieces/package	TVS1400-S0,25
Spacer, 0.35 mm thick, 20 x 410 mm, 2 pieces/package	TVS1400-S0,35
Spacer, 0.75 mm thick, 20 x 410 mm, 2 pieces/package	TVS1400-S0,75
Spacer, 1.00 mm thick, 20 x 410 mm, 2 pieces/package	TVS1400-S1
Spacer, 1.50 mm thick, 20 x 410 mm, 2 pieces/package	TVS1400-S1.5
Spacer, 2.00 mm thick, 20 x 410 mm, 2 pieces/package	TVS1400-S2

Combs/thickness	0.25 mm	0.35 mm
40 samples	V33-C0.25-40	V33-C0.35-40
60 samples	V33-C0.25-60MC*	V33-C0.35-60MC*
80 samples	V33-C0.25-80	V33-C0.35-80

Sharkstooth/thickness	0.25 mm	0.35 mm
48 samples	SC33-M0.25-48	SC33-M0.35-48
60 samples	SC33-M0.25-60MC*	SC33-M0.35-60MC*
96 samples	SC33-M0.25-96	SC33-M0.35-96

*   multichannel pipette compatible

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Vertical Electrophoresis Systems

Specifications of combs

10 cm combs for: TV100-series, V10-CDC

Order No.	Thickness (mm)	Samples	Sample volume (µl)
V10-C0.75-1D	0,75	1	525
V10-C0.75-8MC	0,75	8	45
V10-C0.75-10	0,75	10	30
V10-C0.75-12	0,75	12	28
V10-C0.75-16MC	0,75	16	18
V10-C0.75-20	0,75	20	15
V10-C1-1D	1	1	700
V10-C1-8MC	1	8	60
V10-C1-10	1	10	40
V10-C1-12	1	12	37
V10-C1-16MC	1	16	25
V10-C1-20	1	20	20
V10-C1.5-1D	1.5	1	1050
V10-C1.5-8MC	1.5	8	90
V10-C1.5-10	1.5	10	60
V10-C1.5-12	1.5	12	56
V10-C1.5-16MC	1.5	16	37
V10-C1.5-20	1.5	20	30
V10-C2-1D	2	1	1400
V10-C2-8MC	2	8	120
V10-C2-10	2	10	80
V10-C2-12	2	12	75
V10-C2-16MC	2	16	50
V10-C2-20	2	20	40

20 cm combs for: TV200-series, TV400-series, TVS1000, V10-WCDC, V20-CDC, V20-HCDC, SEQ-2050

Order No.	Thickness (mm)	Samples	Sample volume (µl)
V20-C0.25-24	0,25	24	11
V20-C0.25-36MC	0,25	36	6
V20-C0.35-24	0,35	24	16
V20-C0.35-36MC	0,35	36	8
V20-C0.75-1D	0,75	1	1140
V20-C0.75-10	0,75	10	82
V20-C0.75-18MC	0,75	18	45
V20-C0.75-24	0,75	24	35
V20-C0.75-36MC	0,75	36	18
V20-C0.75-48	0,75	48	17
V20-C1-1D	1	1	1528
V20-C1-10	1	10	110
V20-C1-18MC	1	18	60
V20-C1-24	1	24	47
V10-C1-36MC	1	36	25
V20-C1-48	1	48	23
V20-C1.5-1D	1.5	1	2280
V20-C1.5-10	1.5	10	165
V20-C1.5-18MC	1.5	18	90
V20-C1.5-24	1.5	24	71
V20-C1.5-36MC	1.5	36	37
V20-C1.5-48	1.5	48	35
V20-C2-1D	2	1	3040
V20-C2-10	2	10	220
V20-C2-18MC	2	18	120
V20-C2-24	2	24	95
V20-C2-36MC	2	36	50
V20-C2-48	2	48	47

33 cm combs for: TVS1400, SEQ-3341

Order No.	Thickness (mm)	Samples	Sample volume (µl)
V33-C0.25-40	0,25	40	5
V33-C0.25-60MC	0,25	60	2,5
V33-C0.25-80	0,25	80	2,5
V33-C0.35-40	0,35	40	7
V33-C0.35-60MC	0,35	60	3,5
V33-C0.35-80	0,35	80	4

20 cm sharkstooth combs for TV200-series, TVS1000, V10-WCDC, V20-CDC, V20-HCDC, SEQ-2050

Order No.	Thickness (mm)	Samples	Sample volume (µl)
SC2-M0.25-24	0,25	24	7
SC2-M0.25-30MC	0,25	30	5
SC2-M0.25-36	0,25	36	5
SC2-M0.25-48	0,25	48	3
SC2-M0.35-24	0,35	24	9
SC2-M0.35-30MC	0,35	30	7
SC2-M0.35-36	0,35	36	7
SC2-M0.35-48	0,35	48	5

33 cm sharkstooth combs for: TVS1400, SEQ-3341

Order No.	Thickness (mm)	Samples	Sample volume (µl)
SC33-M0.25-48	0,25	48	7
SC33-M0.25-60MC	0,25	60	5
SC33-M0.25-96	0,25	96	3
SC33-M0.35-48	0,35	48	7
SC33-M0.35-60MC	0,35	60	7
SC33-M0.35-96	0,35	96	5

*   multichannel pipette compatible

- combs are colour-coded to their thickness

  0.75 mm - black   1.50 mm - red

  1.00 mm - white   2.00 mm - blue

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Accessories for Electrophoresis
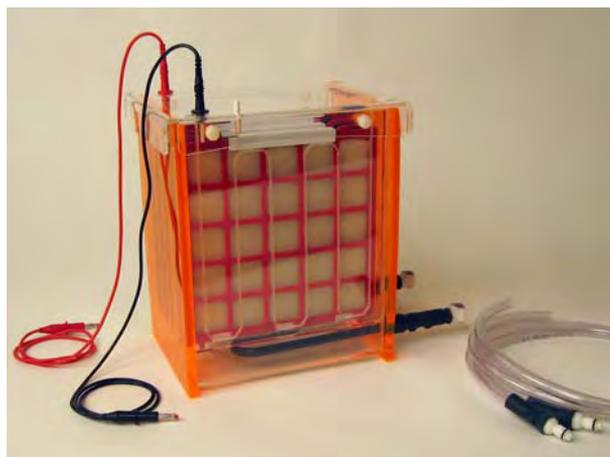
Blotters

Electroblotters

- for safe and easy transfer of proteins and nucleic acids
- internal cooling coil
- safety lid with integral power leads
- gold plated terminal with stainless steel washers to resist corrosion
- one-piece hinged cassettes
- open square grid design for a maximum area for transfer
- max. buffer volume TVB-100-K: 1800 ml
- max. buffer volume TVB-400-K: 5400 ml

Description	Order No.
10 x 10 cm Electroblotter for 4 blots including 4 compression cassettes, 8 pads	TV-100-EBK
20 x 20 cm Electroblotter for 4 blots including 4 compression cassettes, 8 pads	TV-400-EBK

Semi Dry Blotter

- fast transfer time
- corrosion-free electrodes from stainless steel and platinised titanium
- low buffer volume
- large active transfer area
- low heat production and less band distortion

Description	Order No.
Semi Dry Blotter, 10 x 10 cm	V10-SDB
Semi Dry Blotter, 20 x 20 cm	V20-SDB

Blotting membranes on pages 61 and 116
Blotting paper on pages 61 and 116

Accessories for Electrophoresis

Blotters, Membranes, Paper

Dot and Slot Blotter

- for DNA, RNA filter blot hybridisations and immunological screening applications
- alpha-numeric sample identification
- from high density acrylic
- easy-to-use
- precision lapped mating surfaces for uniform filter contact

Description	Order No.
48well Dot Blotter, 3 x 16 array, dots: Ø 3 mm	DHM-48
96well Dot Blotter, 8 x 12 array, dots: Ø 3 mm	DHM-96
24well Slot Blotter, 2 x 12 array, slots: 0.5 x 6 mm	SHM-24
48well Slot Blotter, 3 x 16 array, slots: 0.5 x 6 mm	SHM-48

Blotting membrane MTrans A (Nitrocellulose)

- for Western, Southern and Northern blotting
- pure nitrocellulose
- binding interaction: hydrophobic and electrostatic
- pore size: 0.20 μm
- recommended for protein transfer
- low background
- high sensitivity

Blotting membrane MTrans B (PVDF)

- for Western blotting
- polyvinylidene fluoride
- binding interaction: hydrophobic
- pore size: 0.45 μm
- low background
- highest sensitivity
- high tensile strength

Description	Quantity	Order No.
MTrans A, 0.3 x 3 m roll	1 piece	01-14-101
MTrans A, 0.3 x 3 m roll	1 pack of 5 pieces	01-14-151
MTrans B, 0.3 x 3 m roll	1 piece	01-14-102
MTrans B, 0.3 x 3 m roll	1 pack of 5 pieces	01-14-153

Membranes for drying

Description	Quantity	Order No.
Cellophane membrane, 30 x 30 cm	1 pack of 50 pieces	90-90-401
Cellophane membrane, 30 x 30 cm	1 pack of 100 pieces	90-90-402
Cellophane membrane, 35 x 45 cm	1 pack of 50 pieces	90-90-403
Cellophane membrane, 35 x 45 cm	1 pack of 100 pieces	90-90-404

Blotting paper

Description	Quantity	Order No.
Filter paper for Western blotting, 76 x 101 mm*	1 pack of 50 pieces	90-90-601

* more sizes on request

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Accessories for Electrophoresis

Gradient Mixers, Gel Dryer

Gradient Mixer

- for preparation of polyacrylamide gel gradients or centrifugation gradients
- made of robust acrylic block
- in 5 different sizes available

Description	Order No.
Gradient mixer, 15 ml	GM15
Gradient mixer, 25 ml	GM25
Gradient mixer, 50 ml	GM50
Gradient mixer, 100 ml	GM100
Gradient mixer, 500 ml	GM500

Gel Dryer

- even heat distribution via an 800 W heating membrane
- dries sequencing gels up to 40 x 50 cm in less than 30 minutes
- accurate temperature control up to 90 °C
- clear silicone rubber overlay sheet
- 5 hour timer for heating
- connection to vacuum pump possible
- 5 hour timer for vacuum pump

Describtion	Order No.
45 x 34 cm Gel Dryer	GD-4534
including stainless steel screen, mylar sheet, porous polyethylene sheet, clear rubber overlay sheet	
50 x 40 cm Gel Dryer	GD-5040
including stainless steel screen, mylar sheet, porous polyethylene sheet, clear rubber overlay sheet	

Accessories for Electrophoresis

Glass Plate Racks, Plate Separators, Clips

Glass plate racks

- for safe drying and storage of glass plates
- in Mini and Maxi sizes
- made of robust plastics
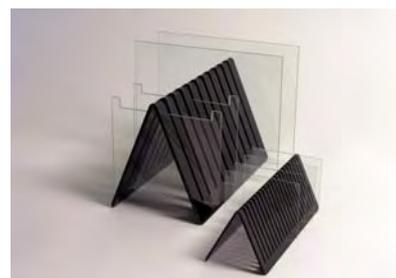
Description	Order No.
Mini glass plate rack for up to 20 plates, 2 mm thickness	GLE-MGR
Maxi glass plate rack for up to 10 plates, 4 mm thickness	GLE-LGR

Plate separator and Wedge holder

- for rapid separation of glass plates after electrophoresis
- suitable for all vertical electrophoresis systems and manual sequencing units
- prevent glass plates from damage during separation

Description	Order No.
Plate separator, 4 pieces/package	90-90-108
Wedge holder	90-90-109

Clips

- made of stainless steel
- suitable for fixing glass plate sandwiches
- two different sizes available
- solid and long durable

Description	Quantity	Order No.
3 cm stainless steel clips, max. opening 12 mm	1 pack of 40 pieces	90-90-302
5 cm stainless steel clips, max. opening 20 mm	1 pack of 16 pieces	90-90-303

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Accessories for Electrophoresis

Sample pickers

Spot picker

- suitable for clean removal of spots from electrophoresis gels
- one-hand operation
- no use of scalpels or blades necessary anymore
- sample release by pushing a button
- optional with changeable tips

Spot picker standard

Description	Quantity	Order No.
2D gel spot picker with 1.5 mm diameter	1 piece	99-90-099
2D gel spot picker with 3.0 mm diameter	1 piece	99-90-100
2D gel spot picker with 5.0 mm diameter	1 piece	99-90-101

Spot picker for changeable tips

Description	Quantity	Order No.
2D gel spot picker* PLUS for changeable tips with 1.5 mm diameter	1 piece	99-90-102
2D gel spot picker* PLUS for changeable tips with 3.0 mm diameter	1 piece	99-90-103
8x spot picker* for tips with 1.5 mm diameter	1 piece	99-90-402
8x spot picker* for tips with 3.0 mm diameter	1 piece	99-90-403

*changeable tips are not included in the shipment

Accessories for spot picker

Description	Quantity	Order No.
Filter tips with 1.5 mm diameter	10 racks à 96 piece	99-90-106
Filter tips with 3.0 mm diameter	10 racks à 96 piece	99-90-107
Tips with 1.5 mm diameter	10 racks à 96 piece	99-90-206
Tips with 3.0 mm diameter	10 racks à 96 piece	99-90-207

Accessories for Electrophoresis

Sample pickers

Band picker

- suitable for clean removal of 1D bands from electrophoresis gels
- one-hand operation
- no use of scalpels or blades necessary anymore
- sample release by pushing a button

Description	Quantity	Order No.
Band picker, 5.0 x 1.5 mm	1 piece	99-90-111

Disposable tips for band picking

- suitable for clean removal of bands from agarose gels
- tips fit most of 1000 μl pipettes
- avoid cross contaminations between samples
- one-hand operation

Pipettes on pages 110-111
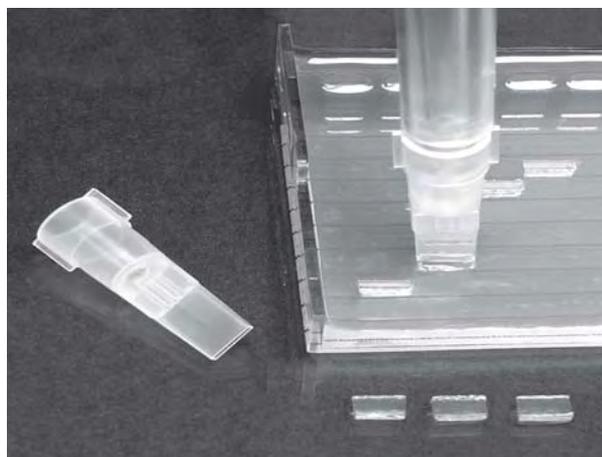
Description	Quantity	Order No.
Tips, 6.5 x 1 mm	1 pack of 250 pieces	99-90-306
Tips, 4.0 x 1 mm	1 pack of 250 pieces	99-90-307

Lane picker

- suitable for clean simultaneous removal of 40 bands à 1 x 5 mm of a 1D polyacrylamid gel
- exact same gel sizes
- more consistent and reliable analysis of mass spectrometer analysis

Description	Quantity	Order No.
Lane picker including 10 x disposable lanepicker, 1 mount for disposable lanepicker, 1 pair of angled forceps	1 piece	99-90-115

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Power Supplies

PS Series

PS 304

300 V, 400 mA, 120 W
dimensions (W x T x H): 17 x 24 x 7 cm

PS 305

300 V, 500 mA, 150 W
dimensions (W x T x H): 17 x 24 x 7 cm

PS 503

500 V, 300 mA, 150 W
dimensions (W x T x H): 17 x 24 x 7 cm
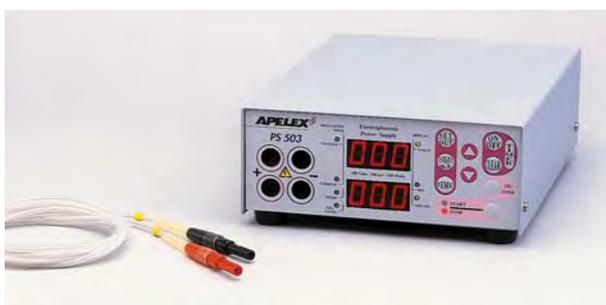
PS 608

600 V, 800 mA, 300 W
dimensions (W x T x H): 27 x 34 x 11 cm

PS 1006

1000 V, 600 mA, 300 W
dimensions (W x T x H): 27 x 34 x 11 cm

PS 202

200 V, 2000 mA, 300 W
dimensions (W x T x H): 27 x 34 x 11 cm

PS 3003

3000 V, 300 mA, 300 W
dimensions (W x T x H): 27 x 34 x 11 cm

PS 9009 TX

3000 V, 300 mA, 300 W
dimensions (W x T x H): 27 x 34 x 11 cm

Power Supplies

PS Series

	PS 304	PS 305	PS 503	PS 608	PS 1006	PS 202	PS 3003	PS 9009 TX
Max. voltage V	300	300	500	600	1000	200	3000	3000
Max. current mA	400	500	300	800	600	2000	300	300
Max. power W	120	150	150	300	300	300	300	300
Const. voltage and current	X	X	X	X	X	X	X	X
Timer/Gel Saver		X/X	X/X	X	X	X		X/X
Integrator								X
Programmable								X
RS232 connection								X
Tactile buttons	X	X	X	X	X	X	X	X

Applications

	PS 304	PS 305	PS 503	PS 608	PS 1006	PS 202	PS 3003	PS 9009 TX
DNA/RNA agarose gels	☑	☑	☑	☑	☐	☐	☐	☐
RFLP and DNA fragments	☑	☑	☑	☑	☐	☑	☐	☐
PCR Screening	☑	☑	☑	☑	☐	☐	☐	☐
DNA-Sequencing							☑	☑
IEF								☑
Protein EP	☐	☐	☑	☑	☑		☐	☐
Preparative gels			☑	☑	☑		☐	☐
Semidry Blot	☐	☑	☐	☑	☐	☑		
Western Blot	☐	☑	☐	☑	☑	☑		

☑ optimal   ☐ possible

Power Supplies

Standard Power Supplies

- microprocessor controlled
- constant voltage or current
- program storage up to 10 methods
- alarm at the end of program
- timer: 1 - 999 mins
- LCD display
- no load detect
- leaking detect
- auto cut-off function

more features for model GN343 and GN541
- programmable
- 30 programmed files

Voltage	Current	Power	Outputs	Order No.
250 V	700 mA	150 W	4	GN242
300 V	700 mA	150 W	4	GN342
300 V	3000 mA	300 W	4	GN343
500 V	600 mA	300 W	4	GN541

Comfort Power Supplies

- fully programmable
- timer
- constant voltage, current or power possible
- overload and short circuit protection
- LCD display
- linear gradient of voltage in each level programmable (condition: neither voltage nor power are reaching their maximum)
- current parameters can be adjusted at any time
- RS232 port for saving the data
- automatic restart after power failure
- up to 9 methods programmable
- automatic cross-over

Voltage	Current	Power	Outputs	Order No.
400 V	300 mA	50 W	3	EV243
300 V	1000 mA	150 W	4	EV231
600 V	500 mA	150 W	4	EV265
300 V	2000 mA	300 W	4	EV202
600 V	1000 mA	300 W	4	EV261
1200 V	500 mA	300 W	4	EV215
3000 V	150 mA	150 W	4	EV232
3000 V	300 mA	300 W	4	EV233
6000 V	150 mA	300 W	4	EV262

Accessories for Automated Sequencing Units

Suitable for ABI PRISM™ 377

GELCO® Glass plates

Order No.	Description	Quantity
10-10-101	12 cm Borosilicate glass plate, front	1 piece
10-10-128	12 cm Borosilicate „Step" glass plate, front*	1 piece
10-10-102	12 cm Borosilicate glass plate, rear	1 piece
10-10-110	24 cm Borosilicate glass plate, front	1 piece
10-10-129	24 cm Borosilicate „Step" glass plate, front*	1 piece
10-10-111	24 cm Borosilicate glass plate, rear	1 piece
10-10-104	36 cm Borosilicate glass plate, front	1 piece
10-10-127	36 cm Borosilicate „Step" glass plate, front*	1 piece
10-10-105	36 cm Borosilicate glass plate, rear	1 piece
10-10-107	48 cm Borosilicate glass plate, front	1 piece
10-10-126	48 cm Borosilicate „Step" glass plate, front*	1 piece
10-10-108	48 cm Borosilicate glass plate, rear	1 piece

* for 96well Upgrade

GELCO® Spacers

Order No.	Description	Quantity
10-12-101	Spacer, mylar, 12 cm long, 0.2 mm thick	1 package of 2 pieces
10-12-102	Spacer, mylar, 36 cm long, 0.2 mm thick	1 package of 2 pieces
10-12-103	Spacer, mylar, 48 cm long, 0.2 mm thick	1 package of 2 pieces

GELCO® Sharkstooth combs (numbered wells)
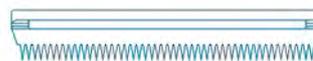
Order No.	Description	Quantity
10-11-100	24well sharkstooth, mylar, 0.2 mm thick	1 piece
10-11-101	32well sharkstooth, mylar, 0.2 mm thick	1 piece
10-11-102	36well sharkstooth, mylar, 0.2 mm thick	1 piece
10-11-103	48well sharkstooth, mylar, 0.2 mm thick	1 piece
10-11-117	48well sharkstooth, mylar, 0.2 mm thick*	1 piece
10-11-118	48well sharkstooth, mylar, 0.3 mm thick*	1 piece
10-11-129	48well sharkstooth, mylar, 0.4 mm thick*	1 piece
10-11-104	64well sharkstooth, mylar, 0.2 mm thick	1 piece
10-11-135	64well sharkstooth, mylar, 0.2 mm thick*	1 piece
10-11-141	64well sharkstooth, mylar, 0.3 mm thick*	1 piece
10-11-170	64well sharkstooth, mylar, 0.4 mm thick*	1 piece

ABI PRISM™ is a registered trademark of Perkin Elmer Corporation.

Accessories for Automated Sequencing Units

Suitable for ABI PRISM™ 377

GELCO® Sharkstooth combs (numbered wells)
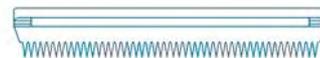
Order No.	Description	Quantity
10-11-105	72well sharkstooth, mylar, 0.2 mm thick	1 piece
10-11-158	74well sharkstooth, mylar, 0.2 mm thick*	1 piece
10-11-142	74well sharkstooth, mylar, 0.3 mm thick*	1 piece
10-11-172	74well sharkstooth, mylar, 0.4 mm thick*	1 piece
10-11-159	80well sharkstooth, mylar, 0.2 mm thick*	1 piece
10-11-144	80well sharkstooth, mylar, 0.3 mm thick*	1 piece
10-11-171	80well sharkstooth, mylar, 0.4 mm thick*	1 piece
10-11-216	96well sharkstooth, mylar, 0.2 mm thick	1 piece
10-11-106	96well sharkstooth, mylar, 0.2 mm thick*	1 piece
10-11-145	96well sharkstooth, mylar, 0.3 mm thick*	1 piece
10-11-160	96well sharkstooth, mylar, 0.4 mm thick*	1 piece

* for 96well upgrade

GELCO® Rectangle combs
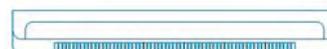
Order No.	Description	Quantity
10-11-189	24well rectangle comb, mylar, 0.2 mm thick	1 piece
10-11-164	34well rectangle comb, mylar, 0.2 mm thick	1 piece
10-11-165	48well rectangle comb, mylar, 0.2 mm thick	1 piece
10-11-166	64well rectangle comb, mylar, 0.2 mm thick	1 piece
10-11-191	72well rectangle comb, mylar, 0.2 mm thick	1 piece

GELCO® Casting combs

Order No.	Description	Quantity
10-11-119	Straight Edge, mylar, 5.5 mm deep, 0.2 mm thick	1 piece
10-11-147	Straight Edge, mylar, 5.8 mm deep, 0.2 mm thick	1 piece
10-11-149	Straight Edge, mylar, 6.0 mm deep, 0.2 mm thick	1 piece
10-11-120	Straight Edge, mylar, 6.3 mm deep, 0.2 mm thick	1 piece
10-11-121	Straight Edge, mylar, 7.3 mm deep, 0.2 mm thick	1 piece
10-11-150	Straight Edge, mylar, 7.3 mm deep, 0.4 mm thick	1 piece

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Suitable for ABI PRISM™ 377

GELCO® Special combs

Order No.	Description	Quantity
10-11-167	48well high volume sharkstooth, 0.2 mm thick	1 piece
10-11-125	64well high volume sharkstooth, 0.2 mm thick	1 piece
10-11-126	72well high volume sharkstooth, 0.2 mm thick	1 piece
10-11-168	96well high volume sharkstooth, 0.2 mm thick*	1 piece
10-11-161	96well high volume sharkstooth, 0.3 mm thick*	1 piece
10-11-169	96well high volume sharkstooth, 0.4 mm thick*	1 piece
10-11-127	48well extra long sharkstooth, 0.2 mm thick	1 piece
10-11-128	64well extra long sharkstooth, 0.2 mm thick	1 piece
10-11-217	96well extra long sharkstooth, 0.2 mm thick	1 piece
10-11-130	32well sharkgum, 0.2 mm thick	1 piece
10-11-131	36well sharkgum, 0.2 mm thick	1 piece
10-11-132	48well sharkgum, 0.2 mm thick	1 piece
10-11-133	64well sharkgum, 0.2 mm thick	1 piece
10-11-173	64well sharkgum, 0.2 mm thick*	1 piece
10-11-174	64well sharkgum, 0.3 mm thick*	1 piece
10-11-175	64well sharkgum, 0.4 mm thick*	1 piece
10-11-134	72well sharkgum, 0.2 mm thick	1 piece
10-11-176	96well sharkgum, 0.2 mm thick*	1 piece
10-11-177	96well sharkgum, 0.3 mm thick*	1 piece
10-11-178	96well sharkgum, 0.4 mm thick*	1 piece

for 96well upgrade

ABI PRISM™ is a registered trademark of Perkin Elmer Corporation.

Note: About special combs

High Volume Combs
- provide more space within each lane for loading samples

Extra Long Combs
- have teeth which extend 2.0 mm longer than standard teeth, providing more room of the gel to load samples

Sharksgum Combs
- have square bottom teeth but are actually used as a typical sharkstooth comb

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Accessories for Automated Sequencing Units

Suitable for ABI PRISM™ 373 and 373 STRETCH

GELCO® Glass plates

Order No.	Description	Quantity
10-10-119	12 cm Borosilicate glass plate, front	1 piece
10-10-120	12 cm Borosilicate glass plate, rear	1 piece
10-10-112	24 cm Borosilicate glass plate, front	1 piece
10-10-113	24 cm Borosilicate glass plate, rear	1 piece
10-10-116	48 cm Borosilicate glass plate, front	1 piece
10-10-117	48 cm Borosilicate glass plate, rear	1 piece

GELCO® Spacers

Order No.	Description	Quantity
10-12-104	Spacer, mylar, 12 cm long, 0.3 mm stark	1 package of 2 pieces
10-12-105	Spacer, mylar, 12 cm long, 0.4 mm thick	1 package of 2 pieces
10-12-106	Spacer, mylar, 34 cm long, 0.3 mm thick	1 package of 2 pieces
10-12-107	Spacer, mylar, 34 cm long, 0.4 mm thick	1 package of 2 pieces
10-12-108	Spacer, mylar, 48 cm long, 0.3 mm thick	1 package of 2 pieces
10-12-109	Spacer, mylar, 48 cm long, 0.4 mm thick	1 package of 2 pieces

GELCO® Standard combs
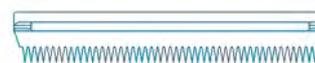
Order No.	Description	Quantity
10-11-151	24well sharkstooth, mylar, 0.3 mm thick	1 piece
10-11-152	24well sharkstooth, mylar, 0.4 mm thick	1 piece
10-11-107	32well sharkstooth, mylar, 0.3 mm thick	1 piece
10-11-108	32well sharkstooth, mylar, 0.4 mm thick	1 piece
10-11-109	36well sharkstooth, mylar, 0.3 mm thick	1 piece
10-11-110	36well sharkstooth, mylar, 0.4 mm thick	1 piece
10-11-111	48well sharkstooth, mylar, 0.3 mm thick	1 piece
10-11-112	48well sharkstooth, mylar, 0.4 mm thick	1 piece
10-11-113	64well sharkstooth, mylar, 0.3 mm thick	1 piece
10-11-114	64well sharkstooth, mylar, 0.4 mm thick	1 piece
10-11-115	72well sharkstooth, mylar, 0.3 mm thick	1 piece
10-11-116	72well sharkstooth, mylar, 0.4 mm thick	1 piece
10-11-162	96well sharkstooth, mylar, 0.3 mm thick	1 piece
10-11-163	96well sharkstooth, mylar, 0.4 mm thick	1 piece

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Accessories for Automated Sequencing Units

Suitable for ABI PRISM™ 373 and 373 STRETCH

GELCO® Rectangle combs

Order No.	Description	Quantity
10-11-181	24well rectangle comb, mylar, 0.3 mm thick	1 piece
10-11-182	24well rectangle comb, mylar, 0.4 mm thick	1 piece
10-11-153	34well rectangle comb, mylar, 0.3 mm thick	1 piece
10-11-154	34well rectangle comb, mylar, 0.4 mm thick	1 piece
10-11-155	48well rectangle comb, mylar, 0.3 mm thick	1 piece
10-11-156	48well rectangle comb, mylar, 0.4 mm thick	1 piece
10-11-185	64well rectangle comb, mylar, 0.3 mm thick	1 piece
10-11-186	64well rectangle comb, mylar, 0.4 mm thick	1 piece
10-11-187	72well rectangle comb, mylar, 0.3 mm thick	1 piece
10-11-188	72well rectangle comb, mylar, 0.4 mm thick	1 piece

GELCO® Casting combs

Order No.	Description	Quantity
10-11-122	Straight Edge, mylar, 5.5 mm deep, 0.4 mm thick	1 piece
10-11-179	Straight Edge, mylar, 5.8 mm deep, 0.4 mm thick	1 piece
10-11-124	Straight Edge, mylar, 6.0 mm deep, 0.4 mm thick	1 piece
10-11-123	Straight Edge, mylar, 6.3 mm deep, 0.4 mm thick	1 piece

GELCO® Special combs

Order No.	Description	Quantity
10-11-192	48well high volume sharkstooth, 0.3 mm thick	1 piece
10-11-157	48well high volume sharkstooth, 0.4 mm thick	1 piece
10-11-193	64well high volume sharkstooth, 0.3 mm thick	1 piece
10-11-140	64well high volume sharkstooth, 0.4 mm thick	1 piece
10-11-194	72well high volume sharkstooth, 0.3 mm thick	1 piece
10-11-195	72well high volume sharkstooth, 0.4 mm thick	1 piece
10-11-202	48well extra long sharkstooth, 0.4 mm thick	1 piece
10-11-203	64well extra long sharkstooth, 0.3 mm thick	1 piece
10-11-143	64well extra long sharkstooth, 0.4 mm thick	1 piece
10-11-204	96well extra long sharkstooth, 0.3 mm thick	1 piece
10-11-205	96well extra long sharkstooth, 0.4 mm thick	1 piece

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Accessories for Automated Sequencing Units

Suitable for ABI PRISM™ 373 and 373 STRETCH

GELCO® Special combs

Order No.	Description	Quantity
10-11-206	32well sharkgum, 0.3 mm thick	1 piece
10-11-207	32well sharkgum, 0.4 mm thick	1 piece
10-11-208	36well sharkgum, 0.3 mm thick	1 piece
10-11-146	36well sharkgum, 0.4 mm thick	1 piece
10-11-209	48well sharkgum, 0.3 mm thick	1 piece
10-11-210	48well sharkgum, 0.4 mm thick	1 piece
10-11-211	64well sharkgum, 0.3 mm thick	1 piece
10-11-148	64well sharkgum, 0.4 mm thick	1 piece
10-11-212	72well sharkgum, 0.3 mm thick	1 piece
10-11-213	72well sharkgum, 0.4 mm thick	1 piece
10-11-214	96well sharkgum, 0.3 mm thick	1 piece
10-11-215	96well sharkgum, 0.4 mm thick	1 piece

ABI PRISM™ is a registered trademark of Perkin Elmer Corporation.

Note: About special combs

High Volume Combs
- provide more space within each lane for loading samples

Extra Long Combs
- have teeth which extend 2.0 mm longer than standard teeth, providing more room of the gel to load samples

Sharksgum Combs
- have square bottom teeth but are actually used as a typical sharkstooth comb

biostep reserves the right to change technical features without notice.

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Accessories for Automated Sequencing Units

Suitable for ABI PRISM™ 310

GELCO® Capillaries

Order No.	Description	Quantity
10-14-101	Capillary, 47 cm long	1 package of 5 pieces
10-14-102	Capillary, 61 cm long	1 package of 2 pieces

ABI PRISM™ is a registered trademark of Perkin Elmer Corporation.

Suitable for ABI PRISM™ 310/3100/3130/3130XL/3730/3730XL

GELCO® Reagents

Order No.	Description
10-80-401	ROX Ladder, 50 - 1000bp, 800 assays
10-80-403	ROX Ladder, 50 - 500bp, 800 assays

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96well plates on page 102 and following

384well plates on page 105

Suitable for ALFexpress™ Sequencing Systems

GELCO® Glass Plates

Order No.	Description	Quantity
30-10-101	Glass plate, standard, semi-circular notched, 293 x 318 x 3 mm	1 piece
30-10-102	Glass plate, standard, semi-circular notched, 174 x 318 x 3 mm	1 piece

ABI PRISM™ is a registered trademark of Perkin Elmer Corporation.

Accessories for Automated Sequencing Units

Suitable for LI-COR® sequencing systems

GELCO® Glass plates for dual system 4300
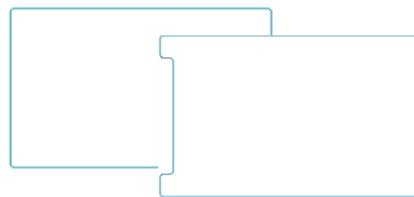
Order No.	Description	Quantity
60-10-099	18 x 25 cm Borosilicate glass plate, front	1 piece
60-10-100	18 x 25 cm Borosilicate glass plate, rear	1 piece
60-10-101	25 x 25 cm Borosilicate glass plate, front	1 piece
60-10-102	25 x 25 cm Borosilicate glass plate, rear	1 piece
60-10-104	41 x 25 cm Borosilicate glass plate, front	1 piece
60-10-105	41 x 25 cm Borosilicate glass plate, rear	1 piece
60-10-107	66 x 25 cm Borosilicate glass plate, front	1 piece
60-10-108	66 x 25 cm Borosilicate glass plate, rear	1 piece
60-10-121	18 cm Trough Borosilicate glass plate*	1 piece
60-10-122	25 cm Trough Borosilicate glass plate*	1 piece
60-10-123	41 cm Trough Borosilicate glass plate*	1 piece
60-10-124	66 cm Trough Borosilicate glass plate*	1 piece

* for 96well upgrade

GELCO® Glass plates for dual system 4200

Order No.	Description	Quantity
60-10-210	18 x 25 cm Starphire® PLUS** glass plate, front	1 piece
60-10-211	18 x 25 cm Starphire® PLUS** glass plate, rear	1 piece
60-10-201	25 x 25 cm Starphire® PLUS** glass plate, front	1 piece
60-10-202	25 x 25 cm Starphire® PLUS** glass plate, rear	1 piece
60-10-204	41 x 25 cm Starphire® PLUS** glass plate, front	1 piece
60-10-205	41 x 25 cm Starphire® PLUS** glass plate, rear	1 piece
60-10-207	66 x 25 cm Starphire® PLUS** glass plate, front	1 piece
60-10-208	66 x 25 cm Starphire® PLUS** glass plate, rear	1 piece

** much stronger

GELCO® Glass plates for monolaser systems 4200 and 4000

Order No.	Description	Quantity
60-10-111	25 x 25 cm glass plate, front	1 piece
60-10-112	25 x 25 cm glass plate, rear	1 piece
60-10-133	33 x 25 cm glass plate, front	1 piece
60-10-134	33 x 25 cm glass plate, rear	1 piece
60-10-114	41 x 25 cm glass plate, front	1 piece
60-10-115	41 x 25 cm glass plate, rear	1 piece
60-10-117	66 x 25 cm glass plate, front	1 piece
60-10-118	66 x 25 cm glass plate, rear	1 piece

LI-COR® is a registered trademark of LI-COR Inc. USA.
Starphire® is a registered trademark of PPG Industries Inc.

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Accessories for Automated Sequencing Units

Suitable for LI-COR® sequencing systems

GELCO® Spacers

Order No.	Description	Quantity
60-12-097	Spacer, mylar, 18 cm long, 0.20 mm thick	1 package of 4 pieces
60-12-098	Spacer, mylar, 18 cm long, 0.25 mm thick	1 package of 4 pieces
60-12-099	Spacer, mylar, 18 cm long, 0.40 mm thick	1 package of 4 pieces
60-12-101	Spacer, mylar, 25 cm long, 0.20 mm thick	1 package of 4 pieces
60-12-105	Spacer, mylar, 25 cm long, 0.25 mm thick	1 package of 4 pieces
60-12-106	Spacer, mylar, 25 cm long, 0.40 mm thick	1 package of 4 pieces
60-12-102	Spacer, mylar, 41 cm long, 0.20 mm thick	1 package of 4 pieces
60-12-108	Spacer, mylar, 41 cm long, 0.25 mm thick	1 package of 4 pieces
60-12-109	Spacer, mylar, 41 cm long, 0.40 mm thick	1 package of 4 pieces
60-12-103	Spacer, mylar, 66 cm long, 0.20 mm thick	1 package of 4 pieces
60-12-111	Spacer, mylar, 66 cm long, 0.25 mm thick	1 package of 4 pieces
60-12-112	Spacer, mylar, 66 cm long, 0.40 mm thick	1 package of 4 pieces

GELCO® Sharkstooth combs
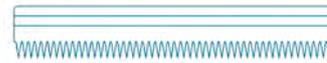
Order No.	Description	Quantity
60-11-096	24well sharkstooth, mylar, 0.20 mm thick	1 piece
60-11-097	24well sharkstooth, mylar, 0.25 mm thick	1 piece
60-11-098	24well sharkstooth, mylar, 0.40 mm thick	1 piece
60-11-101	32well sharkstooth, mylar, 0.20 mm thick	1 piece
60-11-099	32well sharkstooth, mylar, 0.25 mm thick	1 piece
60-11-100	32well sharkstooth, mylar, 0.40 mm thick	1 piece
60-11-102	36well sharkstooth, mylar, 0.20 mm thick	1 piece
60-11-111	36well sharkstooth, mylar, 0.25 mm thick	1 piece
60-11-112	36well sharkstooth, mylar, 0.40 mm thick	1 piece
60-11-103	48well sharkstooth, mylar, 0.20 mm thick	1 piece
60-11-114	48well sharkstooth, mylar, 0.25 mm thick	1 piece
60-11-115	48well sharkstooth, mylar, 0.40 mm thick	1 piece
60-11-105	64well sharkstooth, mylar, 0.20 mm thick	1 piece
60-11-117	64well sharkstooth, mylar, 0.25 mm thick	1 piece
60-11-118	64well sharkstooth, mylar, 0.40 mm thick	1 piece
60-11-106	72well sharkstooth, mylar, 0.20 mm thick	1 piece
60-11-120	72well sharkstooth, mylar, 0.25 mm thick	1 piece
60-11-121	72well sharkstooth, mylar, 0.40 mm thick	1 piece
60-11-123	96well sharkstooth, mylar, 0.20 mm thick	1 piece
60-11-124	96well sharkstooth, mylar, 0.25 mm thick	1 piece
60-11-125	96well sharkstooth, mylar, 0.40 mm thick	1 piece

GELCO® Rectangle combs

Order No.	Description	Quantity
60-11-141	24well rectangle comb, mylar, 0.20 mm thick	1 piece
60-11-142	24well rectangle comb, mylar, 0.25 mm thick	1 piece
60-11-143	24well rectangle comb, mylar, 0.40 mm thick	1 piece

LI-COR® is a registered trademark of LI-COR Inc. USA.

Accessories for Automated Sequencing Units

Suitable for LI-COR® sequencing systems

GELCO® Rectangle combs

Order No.	Description	Quantity
60-11-107	34well rectangle comb, mylar, 0.20 mm thick	1 piece
60-11-147	34well rectangle comb, mylar, 0.25 mm thick	1 piece
60-11-148	34well rectangle comb, mylar, 0.40 mm thick	1 piece
60-11-108	48well rectangle comb, mylar, 0.20 mm thick	1 piece
60-11-149	48well rectangle comb, mylar, 0.25 mm thick	1 piece
60-11-150	48well rectangle comb, mylar, 0.40 mm thick	1 piece
60-11-156	50well rectangle comb, mylar, 0.20 mm thick	1 piece
60-11-157	50well rectangle comb, mylar, 0.25 mm thick	1 piece
60-11-158	50well rectangle comb, mylar, 0.40 mm thick	1 piece
60-11-109	64well rectangle comb, mylar, 0.20 mm thick	1 piece
60-11-151	64well rectangle comb, mylar, 0.25 mm thick	1 piece
60-11-152	64well rectangle comb, mylar, 0.40 mm thick	1 piece
60-11-159	66well rectangle comb, mylar, 0.20 mm thick	1 piece
60-11-160	66well rectangle comb, mylar, 0.25 mm thick	1 piece
60-11-161	66well rectangle comb, mylar, 0.40 mm thick	1 piece
60-11-153	72well rectangle comb, mylar, 0.20 mm thick	1 piece
60-11-154	72well rectangle comb, mylar, 0.25 mm thick	1 piece
60-11-155	72well rectangle comb, mylar, 0.40 mm thick	1 piece

GELCO® Sharkgum combs

Order No.	Description	Quantity
60-11-129	32well sharkgum, 0.20 mm thick	1 piece
60-11-130	36well sharkgum, 0.20 mm thick	1 piece
60-11-131	48well sharkgum, 0.20 mm thick	1 piece
60-11-132	64well sharkgum, 0.20 mm thick	1 piece
60-11-133	72well sharkgum, 0.20 mm thick	1 piece
60-11-126	96well sharkgum, 0.20 mm thick	1 piece
60-11-127	96well sharkgum, 0.40 mm thick	1 piece

GELCO® Casting combs

Order No.	Description	Quantity
60-11-128	Casting comb, 0.25 mm thick	1 piece

LI-COR® is a registered trademark of LI-COR Inc. USA.

Note: About special combs

Sharksgum Combs
- have square bottom teeth but are actually used as a typical sharkstooth comb

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Accessories for Manual Sequencing Units

Suitable for BIO-RAD™ Sequi-Gen™ & Sequi-Gen™ II

GELCO® Glass plates

Order No.	Description	Quantity
20-20-101	Glass plate, 38 x 30 cm (outer)	1 package of 2 pieces
20-20-102	Glass plate, 21 x 40 cm (outer)	1 package of 2 pieces
20-20-103	Glass plate, 21 x 50 cm (outer)	1 package of 2 pieces
20-20-104	Glass plate, 38 x 50 cm (outer)	1 package of 2 pieces

GELCO® Spacers

Order No.	Description	Quantity
20-22-101	Spacer, 30 cm long, 0.40 mm thick	1 package. of 2 pieces
20-22-102	Spacer, 30 cm long, 0.35 mm thick	1 package. of 2 pieces
20-22-103	Spacer, 30 cm long, 0.25 mm thick	1 package. of 2 pieces
20-22-104	Spacer, 40 cm long, 0.40 mm thick	1 package. of 2 pieces
20-22-105	Spacer, 40 cm long, 0.35 mm thick	1 package. of 2 pieces
20-22-106	Spacer, 40 cm long, 0.25 mm thick	1 package. of 2 pieces
20-22-107	Spacer, 50 cm long, 0.40 mm thick	1 package. of 2 pieces
20-22-108	Spacer, 50 cm long, 0.35 mm thick	1 package. of 2 pieces
20-22-109	Spacer, 50 cm long, 0.25 mm thick	1 package. of 2 pieces

GELCO® Sharkstooth combs (multichannel compatible)
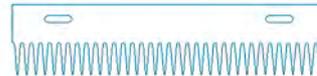
Order No.	Width	Wells	Material	Thickness	Tooth Depth	Pt. to Pt.	Quantity
29-21-102	15 cm	33	mylar	0.35 mm	10 mm	4.50 mm	1 piece
29-21-103	15 cm	33	mylar	0.25 mm	10 mm	4.50 mm	1 piece
29-21-105	15 cm	33	mylar	0.35 mm	15 mm	4.50 mm	1 piece
29-21-106	15 cm	33	mylar	0.25 mm	15 mm	4.50 mm	1 piece
29-21-108	15 cm	50	mylar	0.35 mm	10 mm	3.00 mm	1 piece
29-21-109	15 cm	50	mylar	0.25 mm	10 mm	3.00 mm	1 piece
29-21-111	15 cm	50	mylar	0.35 mm	15 mm	3.00 mm	1 piece
29-21-112	15 cm	50	mylar	0.25 mm	15 mm	3.00 mm	1 piece
29-21-114	15 cm	67	mylar	0.35 mm	10 mm	2.25 mm	1 piece
29-21-115	15 cm	67	mylar	0.25 mm	10 mm	2.25 mm	1 piece
29-21-117	15 cm	67	mylar	0.35 mm	15 mm	2.25 mm	1 piece
29-21-118	15 cm	67	mylar	0.25 mm	15 mm	2.25 mm	1 piece

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Accessories for Manual Sequencing Units

Suitable for BIO-RAD™ Sequi-Gen™ & Sequi-Gen™ II

GELCO® Sharkstooth combs (multichannel compatible)

Order No.	Width	Wells	Material	Thickness	Tooth Depth	Pt. to Pt.	Quantity
29-21-120	30 cm	67	mylar	0.35 mm	10 mm	4.50 mm	1 piece
29-21-121	30 cm	67	mylar	0.25 mm	10 mm	4.50 mm	1 piece
29-21-123	30 cm	67	mylar	0.35 mm	15 mm	4.50 mm	1 piece
29-21-124	30 cm	67	mylar	0.25 mm	15 mm	4.50 mm	1 piece
29-21-126	30 cm	101	mylar	0.35 mm	10 mm	3.00 mm	1 piece
29-21-127	30 cm	101	mylar	0.25 mm	10 mm	3.00 mm	1 piece
29-21-129	30 cm	101	mylar	0.35 mm	15 mm	3.00 mm	1 piece
29-21-130	30 cm	101	mylar	0.25 mm	15 mm	3.00 mm	1 piece
29-21-132	30 cm	135	mylar	0.35 mm	10 mm	2.25 mm	1 piece
29-21-133	30 cm	135	mylar	0.25 mm	10 mm	2.25 mm	1 piece
29-21-135	30 cm	135	mylar	0.35 mm	15 mm	2.25 mm	1 piece
29-21-136	30 cm	135	mylar	0.25 mm	15 mm	2.25 mm	1 piece

GELCO® Rectangle combs

Order No.	Width	Wells	Material	Thickness	Tooth Depth	Pt. to Pt.	Quantity
29-21-171	15 cm	30	mylar	1.00 mm	9.1 mm	4.72 mm	1 piece
29-21-173	15 cm	40	mylar	0.35 mm	6.3 mm	3.50 mm	1 piece
29-21-174	30 cm	30	mylar	0.20 mm	9.1 mm	9.70 mm	1 piece
29-21-175	30 cm	30	mylar	0.35 mm	9.1 mm	9.70 mm	1 piece
29-21-176	30 cm	32	mylar	0.20 mm	9.1 mm	9.09 mm	1 piece
29-21-177	30 cm	32	mylar	0.35 mm	9.1 mm	9.09 mm	1 piece
29-21-178	30 cm	40	mylar	0.20 mm	9.1 mm	7.26 mm	1 piece
29-21-179	30 cm	40	mylar	0.35 mm	9.1 mm	7.26 mm	1 piece
29-21-180	30 cm	42	mylar	0.20 mm	8.5 mm	6.90 mm	1 piece
29-21-181	30 cm	42	mylar	0.35 mm	8.5 mm	6.90 mm	1 piece
29-21-182	30 cm	48	mylar	0.20 mm	9.0 mm	6.04 mm	1 piece
29-21-183	30 cm	48	mylar	0.35 mm	9.0 mm	6.04 mm	1 piece
29-21-184	30 cm	64	mylar	0.20 mm	9.1 mm	4.50 mm	1 piece
29-21-185	30 cm	64	mylar	0.35 mm	9.1 mm	4.50 mm	1 piece

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Accessories for Manual Sequencing Units

Suitable for GIBCO BRL™ S2 & S 2001

GELCO® Glass plates
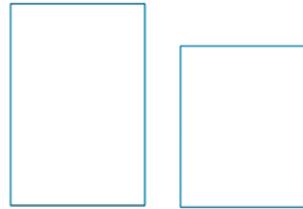
Order No.	Description	Quantity
40-20-101	Glass plate, 39.4 x 33.3 cm (short)	1 package of 2 pieces
40-20-102	Glass plate, 41.9 x 33.3 cm (long)	1 package of 2 pieces
40-20-103	Package of glass plates, consisting of: 1 piece 39.4 x 33.3 cm and 1 piece 41.9 x 33.3 cm	1 package

GELCO® Spacers incl. 12 foam blocks

Order No.	Description	Quantity
40-22-101	Spacer, 41.7 cm long, 0.40 mm thick	1 package of 2 pieces
40-22-102	Spacer, 41.7 cm long, 0.35 mm thick	1 package of 2 pieces
40-22-103	Spacer, 41.7 cm long, 0.25 mm thick	1 package of 2 pieces

GELCO® Sharkstooth combs (not multichannel compatible)

Order No.	Width	Wells	Material	Thickness	Tooth Depth	Pt. to Pt.	Quantity
49-21-137	14 cm	25	Vinyl	0.40 mm	10 mm	5.70 mm	1 package of 2 pieces
49-21-139	14 cm	38	Vinyl	0.40 mm	10 mm	3.70 mm	1 package of 2 pieces
49-21-141	14 cm	50	Vinyl	0.40 mm	10 mm	2.80 mm	1 package of 2 pieces

GELCO® Sharkstooth combs (multichannel compatible)

Order No.	Width	Wells	Material	Thickness	Tooth Depth	Pt. to Pt.	Quantity
49-21-102	15 cm	33	mylar	0.35 mm	10 mm	4.50 mm	1 piece
49-21-103	15 cm	33	mylar	0.25 mm	10 mm	4.50 mm	1 piece
49-21-105	15 cm	33	mylar	0.35 mm	15 mm	4.50 mm	1 piece
49-21-106	15 cm	33	mylar	0.25 mm	15 mm	4.50 mm	1 piece
49-21-108	15 cm	50	mylar	0.35 mm	10 mm	3.00 mm	1 piece
49-21-109	15 cm	50	mylar	0.25 mm	10 mm	3.00 mm	1 piece
49-21-111	15 cm	50	mylar	0.35 mm	15 mm	3.00 mm	1 piece
49-21-112	15 cm	50	mylar	0.25 mm	15 mm	3.00 mm	1 piece
49-21-114	15 cm	67	mylar	0.35 mm	10 mm	2.25 mm	1 piece
49-21-115	15 cm	67	mylar	0.25 mm	10 mm	2.25 mm	1 piece
49-21-117	15 cm	67	mylar	0.35 mm	15 mm	2.25 mm	1 piece
49-21-118	15 cm	67	mylar	0.25 mm	15 mm	2.25 mm	1 piece

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Accessories for Manual Sequencing Units

Suitable for GIBCO BRL™ S2 & S 2001

GELCO® **Sharkstooth combs** (multichannel compatible)

Order No.	Width	Wells	Material	Thickness	Tooth Depth	Pt. to Pt.	Quantity
49-21-120	30 cm	67	mylar	0.35 mm	10 mm	4.50 mm	1 piece
49-21-121	30 cm	67	mylar	0.25 mm	10 mm	4.50 mm	1 piece
49-21-123	30 cm	67	mylar	0.35 mm	15 mm	4.50 mm	1 piece
49-21-124	30 cm	67	mylar	0.25 mm	15 mm	4.50 mm	1 piece
49-21-126	30 cm	101	mylar	0.35 mm	10 mm	3.00 mm	1 piece
49-21-127	30 cm	101	mylar	0.25 mm	10 mm	3.00 mm	1 piece
49-21-129	30 cm	101	mylar	0.35 mm	15 mm	3.00 mm	1 piece
49-21-130	30 cm	101	mylar	0.25 mm	15 mm	3.00 mm	1 piece
49-21-132	30 cm	135	mylar	0.35 mm	10 mm	2.25 mm	1 piece
49-21-133	30 cm	135	mylar	0.25 mm	10 mm	2.25 mm	1 piece
49-21-135	30 cm	135	mylar	0.35 mm	15 mm	2.25 mm	1 piece
49-21-136	30 cm	135	mylar	0.25 mm	15 mm	2.25 mm	1 piece

GELCO® **Rectangle combs**

Order No.	Width	Wells	Material	Thickness	Tooth Depth	Pt. to Pt.	Quantity
49-21-171	15 cm	30	mylar	1.00 mm	9.1 mm	4.72 mm	1 piece
49-21-173	15 cm	40	mylar	0.35 mm	6.3 mm	3.50 mm	1 piece
49-21-174	30 cm	30	mylar	0.20 mm	9.1 mm	9.70 mm	1 piece
49-21-175	30 cm	30	mylar	0.35 mm	9.1 mm	9.70 mm	1 piece
49-21-176	30 cm	32	mylar	0.20 mm	9.1 mm	9.09 mm	1 piece
49-21-177	30 cm	32	mylar	0.35 mm	9.1 mm	9.09 mm	1 piece
49-21-178	30 cm	40	mylar	0.20 mm	9.1 mm	7.26 mm	1 piece
49-21-179	30 cm	40	mylar	0.35 mm	9.1 mm	7.26 mm	1 piece
49-21-180	30 cm	42	mylar	0.20 mm	8.5 mm	6.90 mm	1 piece
49-21-181	30 cm	42	mylar	0.35 mm	8.5 mm	6.90 mm	1 piece
49-21-182	30 cm	48	mylar	0.20 mm	9.0 mm	6.04 mm	1 piece
49-21-183	30 cm	48	mylar	0.35 mm	9.0 mm	6.04 mm	1 piece
49-21-184	30 cm	64	mylar	0.20 mm	9.1 mm	4.50 mm	1 piece
49-21-185	30 cm	64	mylar	0.35 mm	9.1 mm	4.50 mm	1 piece

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Accessories for Manual Sequencing Units

Suitable for GIBCO BRL™ SA 32

GELCO® Glass plates

Order No.	Description	Quantity
40-20-107	Glass plate, 33.8 x 19.7 cm (short)	1 package of 2 pieces
40-20-108	Glass plate, 36.2 x 19.7 cm (long)	1 package of 2 pieces
40-20-109	Package of glass plates, consisting of: 1 pieces 33.8 x 19.7 cm and 1 pieces 36.2 x 19.7 cm	1 package

GELCO® Spacers incl. 12 foam blocks

Order No.	Description	Quantity
40-22-104	Spacer, 35.8 cm long, 0.40 mm thick	1 package of 2 pieces
40-22-105	Spacer, 35.8 cm long, 0.35 mm thick	1 package of 2 pieces
40-22-106	Spacer, 35.8 cm long, 0.25 mm thick	1 package of 2 pieces

GELCO® Sharkstooth combs (not multichannel compatible)

Order No.	Width	Wells	Material	Thickness	Tooth Depth	Pt. to Pt.	Quantity
49-21-137	14 cm	25	Vinyl	0.40 mm	10 mm	5.70 mm	1 package of 2 pieces
49-21-139	14 cm	38	Vinyl	0.40 mm	10 mm	3.70 mm	1 package of 2 pieces
49-21-141	14 cm	50	Vinyl	0.40 mm	10 mm	2.80 mm	1 package of 2 pieces

GELCO® Sharkstooth combs (multichannel compatible)

Order No.	Width	Wells	Material	Thickness	Tooth Depth	Pt. to Pt.	Quantity
49-21-102	15 cm	33	mylar	0.35 mm	10 mm	4.50 mm	1 piece
49-21-103	15 cm	33	mylar	0.25 mm	10 mm	4.50 mm	1 piece
49-21-105	15 cm	33	mylar	0.35 mm	15 mm	4.50 mm	1 piece
49-21-106	15 cm	33	mylar	0.25 mm	15 mm	4.50 mm	1 piece
49-21-108	15 cm	50	mylar	0.35 mm	10 mm	3.00 mm	1 piece
49-21-109	15 cm	50	mylar	0.25 mm	10 mm	3.00 mm	1 piece
49-21-111	15 cm	50	mylar	0.35 mm	15 mm	3.00 mm	1 piece
49-21-112	15 cm	50	mylar	0.25 mm	15 mm	3.00 mm	1 piece
49-21-114	15 cm	67	mylar	0.35 mm	10 mm	2.25 mm	1 piece
49-21-115	15 cm	67	mylar	0.25 mm	10 mm	2.25 mm	1 piece
49-21-117	15 cm	67	mylar	0.35 mm	15 mm	2.25 mm	1 piece
49-21-118	15 cm	67	mylar	0.25 mm	15 mm	2.25 mm	1 piece

GELCO® Rectangle combs

Order No.	Width	Wells	Material	Thickness	Tooth Depth	Pt. to Pt.	1 piece
49-21-171	15 cm	30	mylar	1.00 mm	9.1 mm	4.72 mm	1 piece
49-21-173	15 cm	40	mylar	0.35 mm	6.3 mm	3.50 mm	1 piece

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Accessories for Manual Sequencing Units

Suitable for HOEFER™ SQ3

GELCO® Glass plates
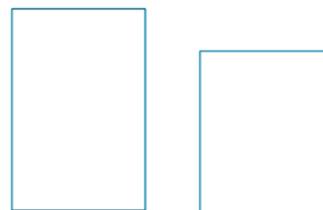
Order No.	Description	Quantity
30-20-101	Glass plate, 39.4 x 33.3 cm (short)	1 package of 2 pieces
30-20-102	Glass plate, 41.9 x 33.3 cm (long)	1 package of 2 pieces
30-20-103	Package of glass plates, consisting of: 1 piece 39.4 x 33.3 cm and 1 piece 41.9 x 33.3 cm	1 package

GELCO® Spacers

Order No.	Description	Quantity
30-22-101	Spacer, 41.7 cm long, 0.40 mm thick	1 package of 2 pieces
30-22-102	Spacer, 41.7 cm long, 0.35 mm thick	1 package of 2 pieces
30-22-103	Spacer, 41.7 cm long, 0.25 mm thick	1 package of 2 pieces

GELCO® Sharkstooth combs (not multichannel compatible)

Order No.	Width	Wells	Material	Thickness	Tooth Depth	Pt. to Pt.	Quantity
39-21-137	14 cm	25	Vinyl	0.40 mm	10 mm	5.70 mm	2 pieces
39-21-139	14 cm	38	Vinyl	0.40 mm	10 mm	3.70 mm	2 pieces
39-21-141	14 cm	50	Vinyl	0.40 mm	10 mm	2.80 mm	2 pieces

GELCO® Sharkstooth combs (multichannel compatible)

Order No.	Width	Wells	Material	Thickness	Tooth Depth	pt. to pt	Quantity
39-21-102	15 cm	33	mylar	0.35 mm	10 mm	4.50 mm	1 piece
39-21-103	15 cm	33	mylar	0.25 mm	10 mm	4.50 mm	1 piece
39-21-105	15 cm	33	mylar	0.35 mm	15 mm	4.50 mm	1 piece
39-21-106	15 cm	33	mylar	0.25 mm	15 mm	4.50 mm	1 piece
39-21-108	15 cm	50	mylar	0.35 mm	10 mm	3.00 mm	1 piece
39-21-109	15 cm	50	mylar	0.25 mm	10 mm	3.00 mm	1 piece
39-21-111	15 cm	50	mylar	0.35 mm	15 mm	3.00 mm	1 piece
39-21-112	15 cm	50	mylar	0.25 mm	15 mm	3.00 mm	1 piece
39-21-114	15 cm	67	mylar	0.35 mm	10 mm	2.25 mm	1 piece
39-21-115	15 cm	67	mylar	0.25 mm	10 mm	2.25 mm	1 piece
39-21-117	15 cm	67	mylar	0.35 mm	15 mm	2.25 mm	1 piece
39-21-118	15 cm	67	mylar	0.25 mm	15 mm	2.25 mm	1 piece

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Accessories for Manual Sequencing Units

Suitable for HOEFER™ SQ3

GELCO® Rectangle combs

Order No.	Width	Wells	Material	Thickness	Tooth Depth	Pt. to Pt.	Quantity
39-21-171	15 cm	30	mylar	1.00 mm	9.1 mm	4.72 mm	1 piece
39-21-173	15 cm	40	mylar	0.35 mm	6.3 mm	3.50 mm	1 piece
39-21-174	30 cm	30	mylar	0.20 mm	9.1 mm	9.70 mm	1 piece
39-21-175	30 cm	30	mylar	0.35 mm	9.1 mm	9.70 mm	1 piece
39-21-176	30 cm	32	mylar	0.20 mm	9.1 mm	9.09 mm	1 piece
39-21-177	30 cm	32	mylar	0.35 mm	9.1 mm	9.09 mm	1 piece
39-21-178	30 cm	40	mylar	0.20 mm	9.1 mm	7.26 mm	1 piece
39-21-179	30 cm	40	mylar	0.35 mm	9.1 mm	7.26 mm	1 piece
39-21-180	30 cm	42	mylar	0.20 mm	8.5 mm	6.90 mm	1 piece
39-21-181	30 cm	42	mylar	0.35 mm	8.5 mm	6.90 mm	1 piece
39-21-182	30 cm	48	mylar	0.20 mm	9.0 mm	6.04 mm	1 piece
39-21-183	30 cm	48	mylar	0.35 mm	9.0 mm	6.04 mm	1 piece
39-21-184	30 cm	64	mylar	0.20 mm	9.1 mm	4.50 mm	1 piece
39-21-185	30 cm	64	mylar	0.35 mm	9.1 mm	4.50 mm	1 piece

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Accessories for Protein Electrophoresis

Suitable for BIO-RAD™ MINI-Protean™ II

GELCO® Glass plates
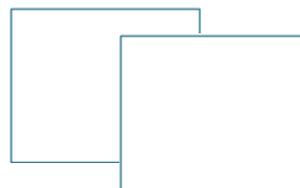
Order No.	Description	Quantity
20-30-101	Glass plate, 7.3 x 10.2 cm (inner)	1 package of 10 pieces
20-30-102	Glass plate, 8.3 x 10.2 cm (outer)	1 package of 10 pieces
20-30-103	Package of glass plates, consisting of: 10 pieces 7.3 x 10.2 cm (inner) und 10 pieces 8.3 x 10.2 cm (outer)	1 package

GELCO® Special glass plates

Order No.	Description	Quantity
20-30-121	Glass plate, 7.3 x 10.2 cm (inner), 2 mm thick	1 package of 10 pieces
20-30-122	Glass plate, 8.3 x 10.2 cm (outer), 2 mm thick	1 package of 10 pieces

GELCO® Spacers

Order No.	Description	Quantity
20-32-101	Spacer, 8.8 cm long, 0.75 mm thick	1 package of 4 pieces
20-32-102	Spacer, 8.8 cm long, 1.00 mm thick	1 package of 4 pieces
20-32-103	Spacer, 8.8 cm long, 1.50 mm thick	1 package of 4 pieces

GELCO® Combs

Order No.	Description	Quantity
20-31-099	1well reference teflon comb, 0.75 mm thick	1 piece
20-31-100	1well reference teflon comb, 1.00 mm thick	1 piece
20-31-101	1well reference teflon comb, 1.50 mm thick	1 piece
20-31-102	5well teflon comb, 0.75 mm thick	1 piece
20-31-103	5well teflon comb, 1.00 mm thick	1 piece
20-31-104	5well teflon comb, 1.50 mm thick	1 piece
20-31-105	10well teflon comb, 0.75 mm thick	1 piece
20-31-106	10well teflon comb, 1.00 mm thick	1 piece
20-31-107	10well teflon comb, 1.50 mm thick	1 piece
20-31-108	15well teflon comb, 0.75 mm thick	1 piece
20-31-109	15well teflon comb, 1.00 mm thick	1 piece
20-31-110	15well teflon comb, 1.50 mm thick	1 piece
20-31-111	20well teflon comb, 0.75 mm thick	1 piece
20-31-112	20well teflon comb, 1.00 mm thick	1 piece
20-31-113	20well teflon comb, 1.50 mm thick	1 piece

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Accessories for Protein Electrophoresis

Suitable for BIO-RAD™ Mini-PROTEAN™ III

GELCO® Glass Plates

Order No.	Description	Quantity
20-30-114	Glass plate, 10.1 x 7.3 cm (inner)	1 package of 5 pieces
20-30-115	Glass plate, 10.1 x 8.3 cm (outer) with 0.50 mm spacer	1 package of 5 pieces
20-30-116	Glass plate, 10.1 x 8.3 cm (outer) with 0.75 mm spacer	1 package of 5 pieces
20-30-117	Glass plate, 10.1 x 8.3 cm (outer) with 1.00 mm spacer	1 package of 5 pieces
20-30-118	Glass plate, 10.1 x 8.3 cm (outer) with 1.50 mm spacer	1 package of 5 pieces

GELCO® Combs

Order No.	Description	Quantity
20-31-201	Reference comb, 0.75 mm thick	1 package of 2 pieces
20-31-204	5well comb, 0.75 mm thick	1 package of 2 pieces
20-31-205	5well comb, 1.00 mm thick	1 package of 2 pieces
20-31-206	5well comb, 1.50 mm thick	1 package of 2 pieces
20-31-207	9well comb, 0.75 mm thick	1 package of 2 pieces
20-31-208	9well comb, 1.00 mm thick	1 package of 2 pieces
20-31-209	9well comb, 1.50 mm thick	1 package of 2 pieces
20-31-211	10well comb, 0.75 mm thick	1 package of 2 pieces
20-31-212	10well comb, 1.00 mm thick	1 package of 2 pieces
20-31-213	10well comb, 1.50 mm thick	1 package of 2 pieces
20-31-215	15well comb, 0.75 mm thick	1 package of 2 pieces
20-31-216	15well comb, 1.00 mm thick	1 package of 2 pieces
20-31-217	15well comb, 1.50 mm thick	1 package of 2 pieces

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Accessories for Protein Electrophoresis

Suitable for BIO-RAD™ PROTEAN™ II

GELCO® Glass plates
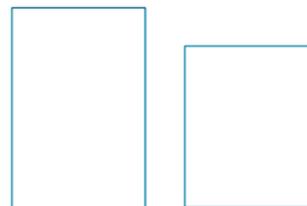
Order No.	Description	Quantity
20-30-104	Glass plate, 16 x 20 cm (inner)	1 package of 2 pieces
20-30-105	Glass plate, 18.3 x 20 cm (outer)	1 package of 2 pieces
20-30-106	Package of glass plates, consisting of: 2 pieces 16 x 20 cm (inner) und 2 pieces 18.3 x 20 cm (outer)	1 package
20-30-107	Glass plate, 20 x 20 cm (inner)	1 package of 2 pieces
20-30-108	Glass plate, 22.3 x 20 cm (outer)	1 package of 2 pieces
20-30-109	Package of glass plates, consisting of: 2 pieces 20 x 20 cm (inner) und 2 pieces 22.3 x 20 cm (outer)	1 package

GELCO® Spacers

Order No.	Description	Quantity
20-32-104	Spacer, 18.3 cm long, 0.75 mm thick	1 package of 4 pieces
20-32-105	Spacer, 18.3 cm long, 1.00 mm thick	1 package of 4 pieces
20-32-106	Spacer, 18.3 cm long, 1.50 mm thick	1 package of 4 pieces
20-32-107	Spacer, 22.3 cm long, 0.75 mm thick	1 package of 4 pieces
20-32-108	Spacer, 22.3 cm long, 1.00 mm thick	1 package of 4 pieces
20-32-109	Spacer, 22.3 cm long, 1.50 mm thick	1 package of 4 pieces
20-32-108 S	2D spacer, 22.3 cm long, 1.00 mm thick	1 package of 4 pieces
20-32-109 S	2D spacer, 22.3 cm long, 1.50 mm thick	1 package of 4 pieces

GELCO® Combs

Order No.	Description	Quantity
20-31-132	2well reference teflon comb, 0.75 mm thick	1 piece
20-31-133	2well reference teflon comb, 1.00 mm thick	1 piece
20-31-134	2well reference teflon comb, 1.50 mm thick	1 piece
20-31-114	10well teflon comb, 0.75 mm thick	1 piece
20-31-115	10well teflon comb, 1.00 mm thick	1 piece
20-31-116	10well teflon comb, 1.50 mm thick	1 piece
20-31-117	15well teflon comb, 0.75 mm thick	1 piece
20-31-118	15well teflon comb, 1.00 mm thick	1 piece
20-31-119	15well teflon comb, 1.50 mm thick	1 piece
20-31-124	18well teflon comb, 0.75 mm thick	1 piece
20-31-125	18well teflon comb, 1.00 mm thick	1 piece
20-31-126	18well teflon comb, 1.50 mm thick	1 piece

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Accessories for Protein Electrophoresis

Suitable for BIO-RAD™ PROTEAN™ II

GELCO® Combs

Order No.	Description	Quantity
20-31-120	20well teflon comb, 0.75 mm thick	1 piece
20-31-127	20well teflon comb, 1.00 mm thick	1 piece
20-31-121	20well teflon comb, 1.50 mm thick	1 piece
20-31-122	25well teflon comb, 0.75 mm thick	1 piece
20-31-128	25well teflon comb, 1.00 mm thick	1 piece
20-31-123	25well teflon comb, 1.50 mm thick	1 piece
20-31-129	30well teflon comb, 0.75 mm thick	1 piece
20-31-130	30well teflon comb, 1.00 mm thick	1 piece
20-31-131	30well teflon comb, 1.50 mm thick	1 piece

Suitable for BIO-RAD™ PROTEAN™ Plus Dodeca™

GELCO® Glass cassettes

Order No.	Description	Quantity
20-30-151	Glass cassette 18 x 20.5 cm with spacer 1 mm thick	1 piece
20-30-152	Glass cassette 18 x 20.5 cm with spacer 1.5 mm thick	1 piece
20-30-131	Glass cassette 20 x 20.5 cm with spacer 1 mm thick	1 piece
20-30-132	Glass cassette 20 x 20.5 cm with spacer 1.5 mm thick	1 piece
20-30-141	Glass cassette 25 x 20.5 cm with spacer 1 mm thick	1 piece
20-30-142	Glass cassette 25 x 20.5 cm with spacer 1.5 mm thick	1 piece
20-30-251	Package of glass plates 18 x 20.5 cm consisting of: 1 x Borosilicate glass plain and 1 x Borosilicate glass with spacer 1 mm thick	1 package
20-30-252	Package of glass plates 18 x 20.5 cm with Spacer 1.5 mm thick 1 x Borosilicate glass plain and 1 x Borosilicate glass with spacer 1.5 mm thick	1 package
20-30-231	Package of glass plates 20 x 20.5 cm consisting of: 1 x Borosilicate glass plain and 1 x Borosilicate glass with spacer 1 mm thick	1 package
20-30-232	Package of glass plates 20 x 20.5 cm consisting of: 1 x Borosilicate glass plain and 1 x Borosilicate glass with spacer 1.5 mm thick	1 package
20-30-241	Package of glass plates 25 x 20.5 cm consisting of: 1 x Borosilicate glass plain and 1 x Borosilicate glass with spacer 1 mm thick	1 package
20-30-242	Package of glass plates 25 x 20.5 cm consisting of: 1 x Borosilicate glass plain and 1 x Borosilicate glass with spacer 1.5 mm thick	1 package

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Accessories for Protein Electrophoresis

Suitable for HOEFER™ Mini-VE

GELCO® Glass plates

Order No.	Description	Quantity
30-30-103	Glass plate, 10.6 x 10.2 cm, outer	1 Pckg. of 5 pieces
30-30-104	Alumina plate, 10.6 x 10.2 cm, notched	1 Pckg. of 5 pieces
30-30-104G	Glass plate, 10.6 x 10.2 cm, notched	1 Pckg. of 5 pieces

GELCO® Spacers

Order No.	Description	Quantity
30-32-104	Flat spacer, 10.6 cm long, 0.75 mm thick	1 Pckg. of 2 pieces
30-32-105	Flat spacer, 10.6 cm long, 1.00 mm thick	1 Pckg. of 2 pieces
30-32-106	Flat spacer, 10.6 cm long, 1.50 mm thick	1 Pckg. of 2 pieces
30-32-104T	T-spacer, 10.6 cm long, 0.75 mm thick	1 Pckg. of 2 pieces
30-32-105T	T-spacer, 10.6 cm long, 1.00 mm thick	1 Pckg. of 2 pieces
30-32-106T	T-spacer, 10.6 cm long, 1.50 mm thick	1 Pckg. of 2 pieces

GELCO® Combs

Order No.	Description	Quantity
30-31-201	1well reference teflon comb, 1.50 mm thick	1 piece
30-31-202	5well teflon comb, 0.75 mm thick	1 piece
30-31-203	5well teflon comb, 1.00 mm thick	1 piece
30-31-204	5well teflon comb, 1.50 mm thick	1 piece
30-31-205	10well teflon comb, 0.75 mm thick	1 piece
30-31-206	10well teflon comb, 1.00 mm thick	1 piece
30-31-207	10well teflon comb, 1.50 mm thick	1 piece
30-31-208	15well teflon comb, 0.75 mm thick	1 piece
30-31-209	15well teflon comb, 1.00 mm thick	1 piece
30-31-210	15well teflon comb, 1.50 mm thick	1 piece
30-31-211	20well teflon comb, 0.75 mm thick	1 piece
30-31-212	20well teflon comb, 1.00 mm thick	1 piece
30-31-213	20well teflon comb, 1.50 mm thick	1 piece

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Accessories for Protein Electrophoresis

Suitable for HOEFER™ SE250

GELCO® Glass plates
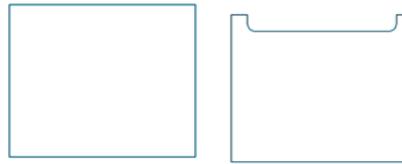
Order No.	Description	Quantity
30-30-101	Glass plate, 8.3 x 10.2 cm, outer	1 package of 10 pieces
30-30-102	Alumina plate, 8.3 x 10.2 cm, notched	1 package of 10 pieces
30-30-102G	Glass plate, 8.3 x 10.2 cm, notched	1 package of 10 pieces

GELCO® Spacers

Order No.	Description	Quantity
30-32-101	Flat spacer, 8.3 cm long, 0.75 mm thick	1 package of 2 pieces
30-32-102	Flat spacer, 8.3 cm long, 1.00 mm thick	1 package of 2 pieces
30-32-103	Flat spacer, 8.3 cm long, 1.50 mm thick	1 package of 2 pieces
30-32-101T	T-spacer, 8.3 cm long, 0.75 mm thick	1 package of 2 pieces
30-32-102T	T-spacer, 8.3 cm long, 1.00 mm thick	1 package of 2 pieces
30-32-103T	T-spacer, 8.3 cm long, 1.50 mm thick	1 package of 2 pieces

GELCO® Combs
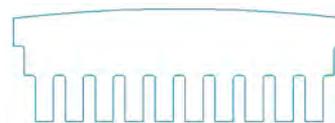
Order No.	Description	Quantity
30-31-101	1well reference teflon comb, 1.50 mm thick	1 piece
30-31-102	5well teflon comb, 0.75 mm thick	1 piece
30-31-103	5well teflon comb, 1.00 mm thick	1 piece
30-31-104	5well teflon comb, 1.50 mm thick	1 piece
30-31-105	10well teflon comb, 0.75 mm thick	1 piece
30-31-106	10well teflon comb, 1.00 mm thick	1 piece
30-31-107	10well teflon comb, 1.50 mm thick	1 piece
30-31-108	15well teflon comb, 0.75 mm thick	1 piece
30-31-109	15well teflon comb, 1.00 mm thick	1 piece
30-31-110	15well teflon comb, 1.50 mm thick	1 piece
30-31-111	20well teflon comb, 0.75 mm thick	1 piece
30-31-112	20well teflon comb, 1.00 mm thick	1 piece
30-31-113	20well teflon comb, 1.50 mm thick	1 piece

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Accessories for Protein Electrophoresis

Suitable for HOEFER™ SE260

GELCO® Glass plates

Order No.	Description	Quantity
30-30-103	Glass plate, 10.6 x 10.2 cm, outer	1 Pckg. of 5 pieces
30-30-104	Alumina plate, 10.6 x 10.2 cm, notched	1 Pckg. of 5 pieces
30-30-104G	Glass plate, 10.6 x 10.2 cm, notched	1 Pckg. of 5 pieces

GELCO® Spacers

Order No.	Description	Quantity
30-32-104	Flat spacer, 10.6 cm long, 0.75 mm thick	1 Pckg. of 2 pieces
30-32-105	Flat spacer, 10.6 cm long, 1.00 mm thick	1 Pckg. of 2 pieces
30-32-106	Flat spacer, 10.6 cm long, 1.50 mm thick	1 Pckg. of 2 pieces
30-32-104T	T-spacer, 10.6 cm long, 0.75 mm thick	1 Pckg. of 2 pieces
30-32-105T	T-spacer, 10.6 cm long, 1.00 mm thick	1 Pckg. of 2 pieces
30-32-106T	T-spacer, 10.6 cm long, 1.50 mm thick	1 Pckg. of 2 pieces

GELCO® Combs

Order No.	Description	Quantity
30-31-201	1well reference teflon comb, 1.50 mm thick	1 piece
30-31-202	5well teflon comb, 0.75 mm thick	1 piece
30-31-203	5well teflon comb, 1.00 mm thick	1 piece
30-31-204	5well teflon comb, 1.50 mm thick	1 piece
30-31-205	10well teflon comb, 0.75 mm thick	1 piece
30-31-206	10well teflon comb, 1.00 mm thick	1 piece
30-31-207	10well teflon comb, 1.50 mm thick	1 piece
30-31-208	15well teflon comb, 0.75 mm thick	1 piece
30-31-209	15well teflon comb, 1.00 mm thick	1 piece
30-31-210	15well teflon comb, 1.50 mm thick	1 piece
30-31-211	20well teflon comb, 0.75 mm thick	1 piece
30-31-212	20well teflon comb, 1.00 mm thick	1 piece
30-31-213	20well teflon comb, 1.50 mm thick	1 piece

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Accessories for Protein Electrophoresis

Suitable for HOEFER™ SE280

GELCO® Glass plates

Order No.	Description	Quantity
30-30-105	Glass plate, 12 x 10.2 cm, outer	1 package of 5 pieces
30-30-106	Alumina plate, 12 x 10.2 cm, notched	1 package of 2 pieces
30-30-106G	Glass plate, 12 x 10.2 cm, notched	1 package of 2 pieces

GELCO® Spacers

Order No.	Description	Quantity
30-32-107	Flat spacer, 12 cm long, 0.75 mm thick	1 package of 2 pieces
30-32-108	Flat spacer, 12 cm long, 1.00 mm thick	1 package of 2 pieces
30-32-109	Flat spacer, 12 cm long, 1.50 mm thick	1 package of 2 pieces

GELCO® Combs

Order No.	Description	Quantity
30-31-301	1well reference teflon comb, 1.50 mm thick	1 piece
30-31-302	5well teflon comb, 0.75 mm thick	1 piece
30-31-303	5well teflon comb, 1.00 mm thick	1 piece
30-31-304	5well teflon comb, 1.50 mm thick	1 piece
30-31-305	10well teflon comb, 0.75 mm thick	1 piece
30-31-306	10well teflon comb, 1.00 mm thick	1 piece
30-31-307	10well teflon comb, 1.50 mm thick	1 piece
30-31-308	15well teflon comb, 0.75 mm thick	1 piece
30-31-309	15well teflon comb, 1.00 mm thick	1 piece
30-31-310	15well teflon comb, 1.50 mm thick	1 piece
30-31-311	20well teflon comb, 0.75 mm thick	1 piece
30-31-312	20well teflon comb, 1.00 mm thick	1 piece
30-31-313	20well teflon comb, 1.50 mm thick	1 piece

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Accessories for Protein Electrophoresis

Suitable for HOEFER™ SE400/SE600

GELCO® Glass plates
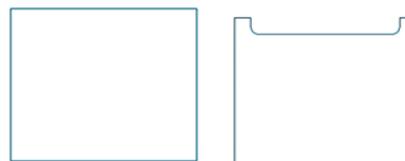
Order No.	Description	Quantity
30-30-107	Glass plate, 18 x 16 cm, outer	1 package of 2 pieces
30-30-108	Glass plate, 18 x 16 cm, notched divider	1 piece

GELCO® Spacers

Order No.	Description	Quantity
30-32-110	Flat spacer, 16 cm long, 0.75 mm thick	1 package of 2 pieces
30-32-111	Flat spacer, 16 cm long, 1.00 mm thick	1 package of 2 pieces
30-32-112	Flat spacer, 16 cm long, 1.50 mm thick	1 package of 2 pieces

GELCO® Combs

Order No.	Description	Quantity
30-31-114	10well teflon comb, 0.75 mm thick	1 piece
30-31-115	10well teflon comb, 1.00 mm thick	1 piece
30-31-116	10well teflon comb, 1.50 mm thick	1 piece
30-31-117	15well teflon comb, 0.75 mm thick	1 piece
30-31-118	15well teflon comb, 1.00 mm thick	1 piece
30-31-119	15well teflon comb, 1.50 mm thick	1 piece
30-31-120	20well teflon comb, 0.75 mm thick	1 piece
30-31-127	20well teflon comb, 1.00 mm thick	1 piece
30-31-121	20well teflon comb, 1.50 mm thick	1 piece
30-31-122	25well teflon comb, 0.75 mm thick	1 piece
30-31-128	25well teflon comb, 1.00 mm thick	1 piece
30-31-123	25well teflon comb, 1.50 mm thick	1 piece
30-31-124	29well teflon comb, 0.75 mm thick	1 piece
30-31-125	29well teflon comb, 1.00 mm thick	1 piece
30-31-126	29well teflon comb, 1.50 mm thick	1 piece

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Accessories for Protein Electrophoresis

Suitable for HOEFER™ SE640 DEMI

GELCO® Glass plates

Order No.	Description	Quantity
30-30-109	Glass plate, 18 x 8.3 cm, outer	1 package of 2 pieces
30-30-110	Glass plate, 18 x 8.3 cm, notched divider	1 piece

Suitable for HOEFER™ SE660

GELCO® Glass plates

Order No.	Description	Quantity
30-30-111	Glass plate, 18 x 24.4 cm, outer	1 package of 2 pieces
30-30-112	Glass plate, 18 x 24.4 cm, notched divider	1 piece

GELCO® Spacers

Order No.	Description	Quantity
30-32-116	Flat spacer, 24.4 cm long, 0.75 mm thick	1 package of 2 pieces
30-32-117	Flat spacer, 24.4 cm long, 1.00 mm thick	1 package of 2 pieces
30-32-118	Flat spacer, 24.4 cm long, 1.50 mm thick	1 package of 2 pieces

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Accessories for Protein Electrophoresis

Suitable for HOEFER™ DALT Vertical system

GELCO® Glass cassettes

Best.-Nr.	Beschreibung	Quantity
30-30-201	Glass cassette 23 x 20 cm with spacer 1.0 mm thick	1 piece
30-30-202	Glass cassette 23 x 20 cm with spacer 1.5 mm thick	1 piece

Suitable for HOEFER™ Ettan DALT II, DALT*six and* DALT*twelve*

GELCO® Glass cassettes

Order No.	Description	Quantity
30-30-211	Glass cassette for 26 x 20 cm gels with spacer 1.0 mm thick	1 piece
30-30-212	Glass cassette for 26 x 20 cm gels with spacer 1.5 mm thick	1 piece
30-30-214	Package of glass plates 26 x 20 cm consisting of: 1 x Borosilicate glass plain and 1 x Borosilicate glass with spacer 1.0 mm thick	1 package
30-30-215	Package of glass plates 26 x 20 cm consisting of: 1 x Borosilicate glass plain and 1 x Borosilicate glass with spacer 1.5 mm thick	1 package

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Suitable for SIGMA™ with fixed height

GELCO® Glass plates

Order No.	Description	Quantity
35-30-101	Glass plate, 8 x 10 cm, plain	1 piece
35-30-102	Glass plate, 8 x 10 cm, notched	1 piece
35-30-103	Package of glass plates consisting of: 1 piece 8 x 10 cm plain and 1 piece 8 x 10 cm notched	1 package

Sigma™ ist ein eingetragenes Warenzeichen von Sigma Chemie

Suitable for DESAGA™

GELCO® Glass plates

Order No.	Description	Quantity
45-30-101	Glass plate, notched, 11 x 25 x 0.4 cm	1 piece
45-30-102	Glass plate with 3 holes, 10.8 x 24.9 x 0.3 cm	1 piece

Desaga™ is a registered trademark of Desaga GmbH Wiesloch.

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Accessories for Protein Electrophoresis

Suitable for BIOMETRA™ Minigel and Minigel Twin

GELCO® Glass plates

Order No.	Description	Quantity
50-30-101	Glass plate, 10.5 x 9.8 cm with spacer 0.6 mm thick	1 piece
50-30-102	Glass plate, 10.5 x 9.8 cm with spacer 1.0 mm thick	1 piece
50-30-103	Glass plate, 10.5 x 9.8 cm, notched	1 piece

GELCO® Combs

Order No.	Description	Quantity
50-31-100	1well reference teflon comb, 1.00 mm thick	1 piece
50-31-103	5well teflon comb, 1.00 mm thick	1 piece
50-31-106	10well teflon comb, 1.00 mm thick	1 piece
50-31-109	15well teflon comb, 1.00 mm thick	1 piece
50-31-112	20well teflon comb, 1.00 mm thick	1 piece

Suitable for BIOMETRA™ Multigel

GELCO® Glass plates

Order No.	Description	Quantity
50-30-111	Glass plate, 14.8 x 9.3 cm with spacer 0.6 mm thick	1 piece
50-30-112	Glass plate, 14.8 x 9.3 cm with spacer 1.0 mm thick	1 piece
50-30-113	Glass plate, 14.8 x 9.3 cm, notched	1 piece

Suitable for BIOMETRA™ Multigel-Long

GELCO® Glass plates

Order No.	Description	Quantity
50-30-121	Glass plate, 14.8 x 14.3 cm with spacer 0.6 mm thick	1 piece
50-30-122	Glass plate, 14.8 x 14.3 cm with spacer 1.0 mm thick	1 piece
50-30-123	Glass plate, 14.8 x 14.3 cm, notched	1 piece

Suitable for BIOMETRA™ Maxigel

GELCO® Glass plates

Order No.	Description	Quantity
50-30-131	Glass plate, 20.8 x 20.2 cm with spacer 1 mm thick	1 piece
50-30-132	Glass plate, 20.8 x 20.2 cm with spacer 2 mm thick	1 piece
50-30-133	Glass plate, 20.8 x 20.2 cm, notched	1 piece

Biometra® is a registered trademark of Biometra biomedizinische Analytik GmbH.

Consumables

PCR Tubes

Thin walled reaction tubes

PCR tubes 0.2 ml

- ✓ ideal suitable for PCR
- ✓ available with flat or domed cap
- ✓ free from DNase and RNase
- ✓ cleanroom produced

Description	Quantity	Order No.
0.2 ml tubes, flat cap*	1 pack of 1000 pieces	01-01-101
0.2 ml tubes, flat cap, assorted colours	1 pack of 1000 pieces	01-01-102
0.2 ml tubes, domed cap*	1 pack of 1000 pieces	01-01-104
0.2 ml tubes, domed cap, assorted colours	1 pack of 1000 pieces	01-01-105

PCR tubes 0.5 ml

- ✓ ideal suitable for PCR
- ✓ available with flat or domed cap
- ✓ free from DNase and RNase
- ✓ cleanroom produced

Description	Quantity	Order No.
0.5 ml tubes, flat cap*	1 pack of 1000 pieces	01-01-201
0.5 ml tubes, flat cap, assorted colours	1 pack of 1000 pieces	01-01-202
0.5 ml tubes, domed cap*	1 pack of 1000 pieces	01-01-204
0.5 ml tubes, domed cap, assorted colours	1 pack of 1000 pieces	01-01-205

Tubes strips 0.2 ml

- ✓ ideal suitable for PCR
- ✓ free from DNase and RNase
- ✓ suitable for all current thermal cycler blocks
- ✓ cleanroom produced

Description	Quantity	Order No.
Strips of 8 tubes*	250 strips	01-01-301
Strips of 8 tubes with cap strips, domed*	250 strips tubes and 250 strips caps	01-01-302
Strips of 8 tubes with cap strips, flat*	250 strips tubes and 250 strips caps	01-01-304
Strips of 12 tubes	10 x 8 strips	01-01-311
Strips of 12 tubes with cap strips, domed	10 x 8 strips tubes and 8 strips caps	01-01-312
Strips of 12 tubes with cap strips, flat	10 x 8 strips tubes and 8 strips caps	01-01-313

* For tubes in a special colour add the order number with the right letter (A, B, G, P, R, Y stands for Amber, Blue, Green, Purple, Red, Yellow).

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PCR Tubes

Thin walled reaction tubes

Tubes strips 0.2 ml, Low Profile

- ✓ ideal suitable for PCR

- ✓ suitable for all current thermal cycler blocks

- ✓ Low Profile to reduce dead space and increase PCR efficiency

- ✓ free from DNase and RNase

- ✓ cleanroom produced

Description	Quantity	Order No.
Strips of 8 tubes*	250 strips tubes	01-01-401
Strips of 8 tubes with cap strips, domed*	250 strips tubes and 250 strips caps	01-01-402
Strips of 8 tubes with cap strips, flat*	250 strips tubes and 250 strips caps	01-01-403
Strips of 12 tubes*	10 x 8 strips tubes	01-01-411
Strips of 12 tubes with cap strips, domed*	10 x 8 strips tubes and 8 strips caps	01-01-412
Strips of 12 tubes with cap strips, flat*	10 x 8 strips tubes and 8 strips caps	01-01-413

Cap strips

- ✓ suitable for PCR plates, strips of 8 tubes and strips of 12 tubes standard and Low Profile

- ✓ available with flat or domed cap

- ✓ free from DNase and RNase

- ✓ cleanroom produced
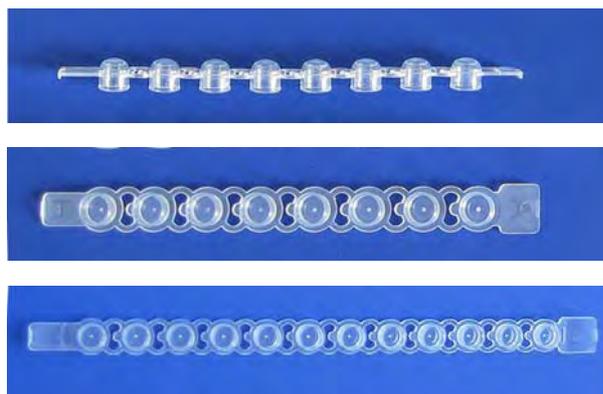
Description	Quantity	Order No.
Cap strips of 8, domed*	250 stripes caps	01-01-501
Cap strips of 8, flat*	250 stripes caps	01-01-502
Cap strips of 8, domed*	10 x 12 stripes caps	01-01-511
Cap strips of 8, flat*	10 x 12 stripes caps	01-01-522
Cap strips of 12, domed	10 x 8 stripes caps	01-01-503
Cap strips of 12, flat	10 x 8 stripes caps	01-01-504
Cap strips of 12, domed	25 x 8 stripes caps	01-01-505
Cap strips of 12, flat	25 x 8 stripes caps	01-01-506

Tubes strips 0.2 ml and cap strips for QPCR

Description	Quantity	Order No.
0.2 ml strips of 8 tubes, white	10 x 12 stripes tubes	01-01-601
Cap strips of 8, flat, ultra clear	120 stripes caps	01-01-602

* For tubes in a special colour add the order number with the right letter (A, B, G, P, R, Y stands for Amber, Blue, Green, Purple, Red, Yellow).

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PCR Plates

Thermo-Fast® 96well PCR plates

Non Skirted
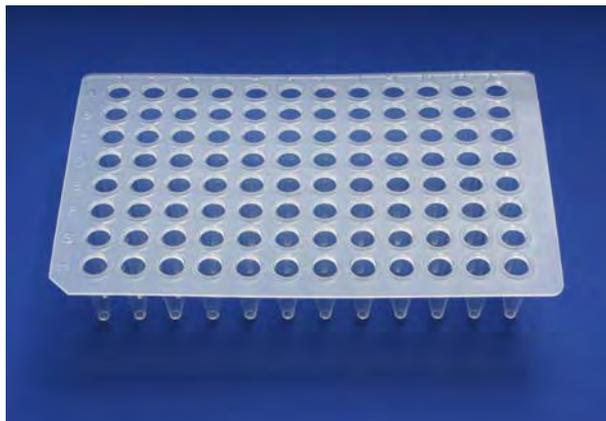
✓ thin walled for fast transfer of the temperature
✓ alphanumeric grid referencing
✓ virgin polypropylene
✓ free from DNase and RNase
✓ free of pyrogene and metal
✓ also used for ABI sequencing units
   (ABI PRISM® 310, 3100, 3700 and 3730, 3130XL and 3730 XL)

Suitable for the following thermal cyclers:

Techne	Touchgene Gradient, Flexigene, Genius, TC-412, TC-512
Biometra	Uno, Uno II, T1 thermal cycler, TRobot TGradient
Bio-Rad	iCycler™
Eppendorf	Mastercycler Gradient®
ThermoHybaid	PCR Express and Px2, MultiBlock System mbs®, Touchdown, Omnigene, Omn-E
MJ Research™	PTC-200 DNA Engine™, PTC-225 DNA Tetrad™, PTC-100™ 96well Block
peqlab; MWG	Primus 96
ABI	GeneAmp® 2700, GeneAmp® 9600, GeneAmp® 9700
Stratagene	Robocycler

Suitable for the following QPCR thermal cyclerss:

ABI	Gene Amp® 7500, PRISM® 7000, PRISM® 7700
Bio-Rad	iCycler™

Description	Quantity	Order No.
Thermo-Fast® 96well plate, clear*	1 pack of 25 pieces	01-03-101
Thermo-Fast® 96well plate, white	1 pack of 25 pieces	01-03-102
Thermo-Fast® 96well plate, black	1 pack of 25 pieces	01-03-103

Semi Skirted
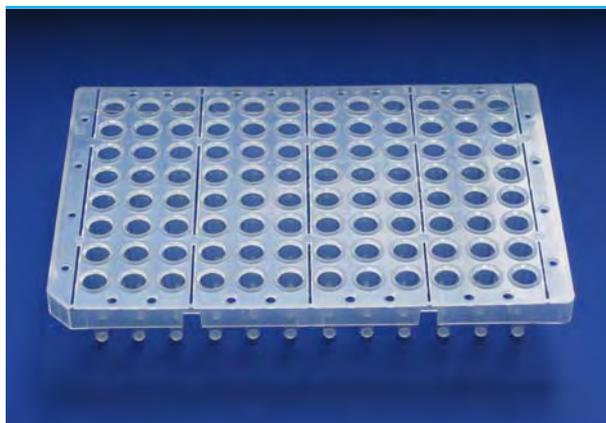
✓ middle high frame for a better stability
✓ virgin polypropylene
✓ thin walled for fast transfer of the temperature
✓ free from DNase and RNase
✓ free of pyrogene and metal

Suitable for the following thermal cyclers:

Techne	Touchgene Gradient, Flexigene, Genius, TC-412, TC-512
Biometra	Uno, Uno II, T1 thermal cycler TGradient, TRobot
Bio-Rad	iCycler™
Eppendorf	Mastercycler Gradient®
ThermoHybaid	PCR Express and Px2, MultiBlock System mbs® Touchdown, Omnigene, Omn-E
MJ Research™	PTC-200 DNA Engine™ PTC-225 DNA Tetrad™ PTC-100™ 96well Block
peqlab; MWG	Primus 96
ABI	GeneAmp® 2700, GeneAmp® 9600, GeneAmp® 9700

Suitable for the following QPCR thermal cyclers:

ABI	Gene Amp® 7500, PRISM® 7000, PRISM® 7700
Bio-Rad	iCycler™

Description	Quantity	Order No.
Thermo-Fast® 96well plate, clear*	1 pack of 25 pieces	01-03-111
Thermo-Fast® 96well plate, white	1 pack of 25 pieces	01-03-112
Thermo-Fast® 96well plate, black	1 pack of 25 pieces	01-03-113

* For PCR plates in a special colour add the order number with the right letter (A, B, G, P, R, Y stands for Amber, Blue, Green, Purple, Red, Yellow).

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PCR Plates

Thermo-Fast® 96well PCR plates

Rigid Semi Skirted

Suitable for the following thermal cyclers:

Techne	Touchgene Gradient, Flexigene, Genius, TC-412, TC-512
Biometra	Uno, Uno II, T1 thermal cycler, TRobot, TGradient,
Bio-Rad	iCycler™
Eppendorf	Mastercycler Gradient®
ThermoHybaid	PCR Express and Px2, MultiBlock System mbs®, Touchdown, Omnigene, Omn-E
MJ Research™	PTC-200 DNA Engine™, PTC-225 DNA Tetrad™, PTC-100™ and 96well Block
peqlab; MWG	Primus 96
ABI	GeneAmp® 2700, GeneAmp® 9600, GeneAmp® 9700

Suitable for the following QPCR thermal cyclers:

ABI	Gene Amp® 7500, PRISM® 7000, PRISM® 7700
Bio-Rad	iCycler™
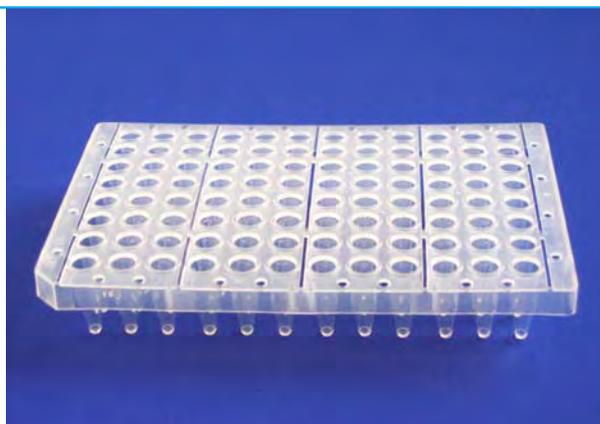
✓ strengthened skirt for increased rigidity
✓ special raised rim for roboter arms
✓ virgin polypropylenee
✓ thin walled for fast transfer of the temperature
✓ free from DNase and RNase
✓ pyrogene and metal free

Description	Quantity	Order No.
Thermo-Fast® 96well plate, clear*	1 pack of 25 pieces	01-03-121
Thermo-Fast® 96well plate, white	1 pack of 25 pieces	01-03-122
Thermo-Fast® 96well plate, black	1 pack of 25 pieces	01-03-123

Detection

Suitable for the following thermal cyclers:

ABI	GeneAmp® 2700, GeneAmp® 9600, GeneAmp® 9700

Suitable for the following QPCR thermal cyclers:

ABI	Gene Amp® 7500, PRISM® 7000, PRISM® 7700
Bio-Rad	iCycler™

Suitable for the following sequencing units:

ABI	ABI PRISM® 310, ABI PRISM® 3100 ABI PRISM® 3700, ABI PRISM® 3730 3130XL and 3730 XL
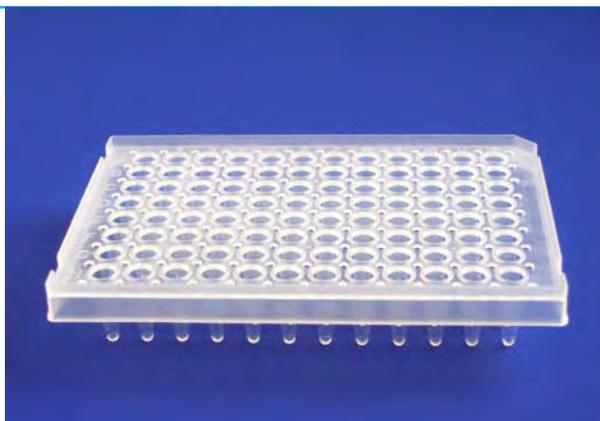
✓ special raised rim for roboter arms
✓ virgin polypropylenee
✓ thin walled for fast transfer of the temperature
✓ free from DNase and RNase
✓ free of pyrogene and metal

Description	Quantity	Order No.
Thermo-Fast® 96well plate, clear*	1 pack of 25 pieces	01-03-131
Thermo-Fast® 96well plate, white	1 pack of 25 pieces	01-03-132
Thermo-Fast® 96well plate, black	1 pack of 25 pieces	01-03-133

* For PCR plates in a special colour add the order number with the right letter (A, B, G, P, R, Y stands for Amber, Blue, Green, Purple, Red, Yellow).

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PCR Plates

Thermo-Fast® 96well PCR plates

Non Skirted (Low Profile)

✓ virgin polypropylenee
✓ decreased dead space by shorter wells
✓ thin- walled for fast transfer of the temperature
✓ free from DNase and RNase
✓ free of pyrogene and metal

Suitable for the following thermal cyclers:

Techne	Touchgene Gradient, Flexigene, Genius, TC-412, TC-512
Biometra	Uno, Uno II, T1 thermal cycler, TRobot TGradient
Bio-Rad	iCycler™
Eppendorf	Mastercycler Gradient®
ThermoHybaid	PCR Express and Px2, MultiBlock System mbs®, Touchdown, Omnigene, Omn-E
MJ Research™	PTC-200 DNA Engine™, PTC-225 DNA Tetrad™, PTC-100™ 96well Block
peqlab; MWG	Primus 96
Stratagene	Robocycler

Suitable for the following QPCR thermal cyclers:

Techne	Quantica®
MJ Research™	DNA engine opticon™
Bio-Rad	iCycler™

Description	Quantity	Order No.
Thermo-Fast® 96well plate, clear*	1 pack of 25 pieces	01-03-201
Thermo-Fast® 96well plate, white	1 pack of 25 pieces	01-03-202
Thermo-Fast® 96well plate, black	1 pack of 25 pieces	01-03-203

Skirted (Low Profile)
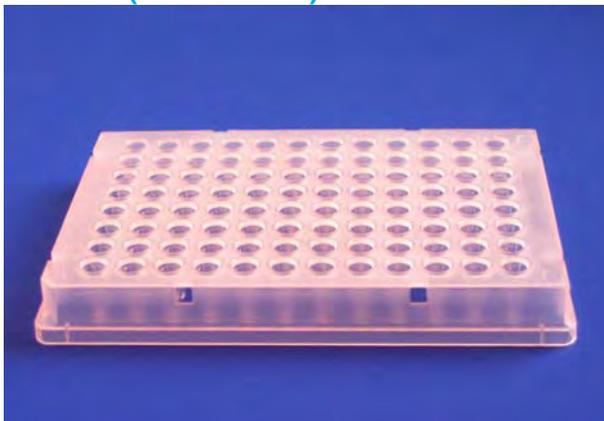
✓ rugged, full skirt surround
✓ virgin polypropylenee
✓ decreased dead space by shorter wells
✓ thin- walled for fast transfer of the temperature
✓ free from DNase and RNase
✓ free of pyrogene and metal

Suitable for the following thermal cyclers:

Techne	Touchgene Gradient, Flexigene, Genius, TC-412, TC-512
Biometra	Uno, T1 thermal cycler, TRobot TGradient
Eppendorf	Mastercycler Gradient®
ThermoHybaid	PCR Express and Px2, MultiBlock System mbs®, Touchdown, Omnigene, Omn-E
MJ Research™	PTC-200 DNA Engine™, PTC-225 DNA Tetrad™, PTC-100™ 96well Block
peqlab; MWG	Primus 96

Suitable for the following QPCR thermal cyclers:

MJ Research™	DNA engine opticon™
Bio-Rad	iCycler™

Description	Quantity	Order No.
Thermo-Fast® 96well plate, clear	1 pack of 25 pieces	01-03-211
Thermo-Fast® 96well plate, white	1 pack of 25 pieces	01-03-212
Thermo-Fast® 96well plate, black	1 pack of 25 pieces	01-03-213

* For tubes in a special colour add the order number with the right letter (A, B, G, P, R, Y stands for Amber, Blue, Green, Purple, Red, Yellow).

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PCR Plates

Thermo-Fast® 96well and 384well PCR plates

Rigid Skirted (Low Profile)

Suitable for the following thermal cyclers:

Techne	Genius
Biometra	Uno, TRobot
Eppendorf	Mastercycler Gradient®
	Mastercycler EP Gradient
ThermoHybaid	PCR Express, Px2 and PXE
	MultiBlock System mbs®,
MJ Research™	PTC-200 DNA Engine™,
	PTC-225 DNA Tetrad™,
	PTC-100 96well Block
peqlab; MWG	Primus 96

Suitable for the following QPCR thermal cyclers:

MJ research	DNA engine opticon™
Bio-Rad	iCycler™
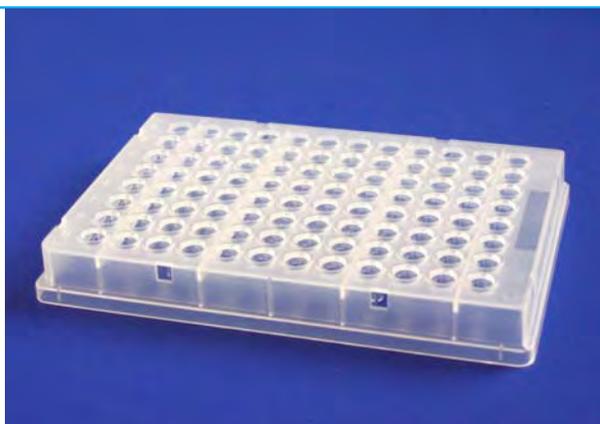
✓ strengthened skirt for increased rigidity
✓ virgin polypropylene
✓ decreased dead space by shorter wells
✓ thin- walled for fast transfer of the temperature
✓ free from DNase and RNase
✓ free of pyrogene and metal

Description	Quantity	Order No.
Thermo-Fast® 96well plate, clear*	1 pack of 50 pieces	01-03-221
Thermo-Fast® 96well plate, white	1 pack of 50 pieces	01-03-222
Thermo-Fast® 96well plate, black	1 pack of 50 pieces	01-03-223

384well PCR-platen

Suitable for the following thermal cyclers:

Techne	Touchgene Gradient, Flexigene
	TC-412, TC-512
Biometra	Uno II, T1 thermal cycler, TRobot
Bio-Rad	iCycler™
Eppendorf	Mastercycler Gradient®
ThermoHybaid	PCR Express and Px2,
	MultiBlock System mbs®,
	Touchdown, Omnigene, Omn-E
MJ Research™	PTC-200 DNA Engine™,
	PTC-225 DNA Tetrad™,
peqlab; MWG	Primus 384
ABI	GeneAmp® 9700
Stratagene	Robocycler

Suitable for the following QPCR thermal cyclers:

ABI	PRISM® 7900HT

Suitable for the following sequencing units:

ABI	ABI PRISM® 3700
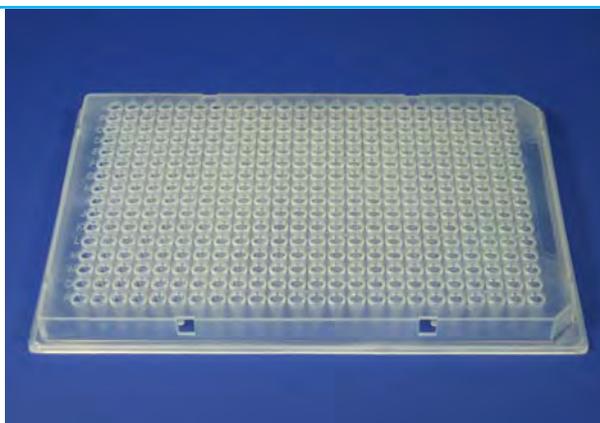
✓ virgin polypropylene
✓ thin walled for fast transfer of the temperature
✓ alphanumeric grid referencing
✓ free from DNase and RNase
✓ free of pyrogene and metal

Description	Quantity	Order No.
Thermo-Fast® 384well plate, clear*	1 pack of 50 pieces	01-03-401
Thermo-Fast® 384well plate, white	1 pack of 50 pieces	01-03-402
Thermo-Fast® 384well plate, black	1 pack of 50 pieces	01-03-403

* For tubes in a special colour add the order number with the right letter (A, B, G, P, R, Y stands for Amber, Blue, Green, Purple, Red, Yellow).

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Accessories for PCR Plates

PCR thermo sealer

Thermo Sealer

The thermo sealer is a compact and portable unit for manual sealing of PCR and sample plates.

The sealing of the single wells enables the amplification of DNA into a thermal cycling block without the otherwise necessary lamination of the samples with oil.

The heat sealing of the sample plates with the corresponding foils is a cheap alternative for avoiding the leakage of samples by spilling or evaporating during a longtime storage or transport. Due to this, the possibility of cross contamination of different samples is nearly impossible.

For safety, the heating plate is coated with teflon. An internal temperature control avoids an overheating of the unit.

3 different plate carriers are available for sealing different PCR and sample plates at high temperatures. No additional plate carrier is necessary for deep well plates.

Thermo sealer and plate carriers

Description	Order No.
Thermo Sealer, manual	FHSEALSD
Plate carrier for 96well PCR plates	FHSH096
Plate carrier for 384well PCR plates	FHSH384
Plate carrier for microtiter plates, format standard	FHSHSTD
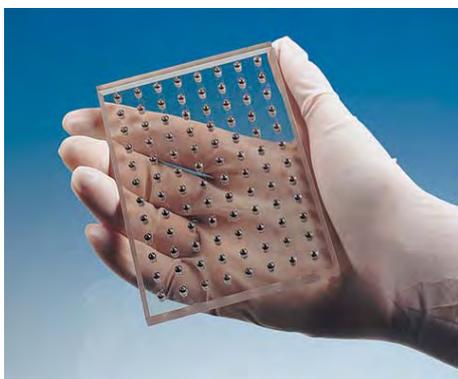
Pierce plate

The Pierce plate 96well supports the puncture of heat-sealed foils for having access to the samples.

Description	Order No.
Pierce plate	FFPIRC

Accessories for PCR Plates

Foils and accessories

Foils for thermo sealer

Diverse foils with different characteristics are available for sealing PCR plates of polypropylene (PP), polyethylene (PE) or polystyrene (PS).

The type of foil is based on the material of the plate that has to be sealed and on the application of the user.
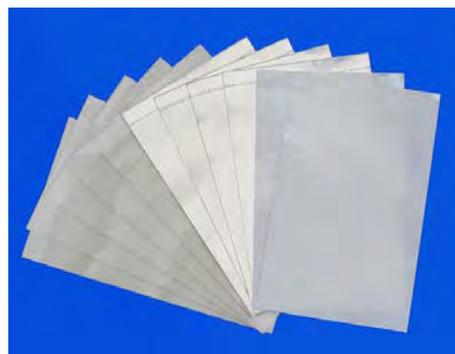
ThermoSeal™, -80 °C to +120 °C
- ✓ foil of metal with high thermal and mechanic stability
- ✓ used for long-term storage
- ✓ difficult to pierce
- ✓ peeling by using the foil stripper

ClearSeal™Strong, -80 °C to +120 °C
- ✓ transparent foil of polyester with high thermal and mechanic stability
- ✓ impossible to pierce or to peel

EasyPierce™Strong, -20 °C to +120 °C
- ✓ metal foil, after heat sealing easy to remove
- ✓ easy to pierce

EasyPeel™, -200 °C to +90 °C
- ✓ metal foil, after heat sealing easy to remove
- ✓ difficult to pierce

ClearSeal™, -80 °C to +120 °C
- ✓ metal foil, after heat sealing easy to remove
- ✓ low temperature durability
- ✓ suitable for QPCR

EasyPierce™, -80 °C to +80 °C
- ✓ metal foil, after heat sealing easy to remove
- ✓ easy to pierce

Foils

Model	Material to be sealed	Quantity	Order No.
Thermo-Seal™	PP	1 pack of 100 pieces	FSHF01
ClearSeal™Strong	PP	1 pack of 100 pieces	FSHF02
EasyPierce™Strong	PP	1 pack of 100 pieces	FSHF03
EasyPeel™	PP	1 pack of 100 pieces	FSHF04
ClearSeal™	PP and PS	1 pack of 100 pieces	FSHF05
EasyPierce™	PP, PS and PE	1 pack of 100 pieces	FSHF06

Foil stripper

Tool for removal of peelable seals, provides complete access to the plate.

Description	Order No.
Foil stripper	FFSTRP

Accessories for PCR Plates

Adhesive foils and thermo mats

Adhesive foils

As an alternative for sealing microtiter and PCR plates with a thermo sealer, there are adhesive foils available.

Due to their high durability against temperature, 3 of the offered foil types are especially suitable for sealing PCR plates.

The adhesive foil 01-05-201 is also useable in realtime cyclers because of its absolute transparency.

Adhesive foils for PCR plates

Description	Quantity	Order No.
Adhesive aluminium foil, temperature resistant from -70 °C to 150 °C	1 pack of 100 sheets	01-05-101
Adhesive transparent foil, temperature resistant from -20 °C to 120 °C	1 pack of 100 sheets	01-05-102

Adhesive foils for PCR plates (QPCR)

Description	Quantity	Order No.
Adhesive transparent foil, temperature resistant from -40 °C to 120 °C	1 pack of 50 sheets	01-05-201

Adhesive foils for microtiter plates

Description	Quantity	Order No.
Adhesive transparent foil temperature resistant from -40 °C to 80 °C	1 pack of 100 sheets	01-05-103

Thermo mats

For closing of PCR plates, thermo mats in the formats 96well and 384well are available.

The mats of plastic are reuseable and autoclavable.

Description	Quantity	Order No.
Thermo mat 96well	1 pack of 5 pieces	01-07-101
Thermo mat 384well	1 pack of 5 pieces	01-07-102

Reaction Tubes

Centrifuge tubes

Micro centrifuge tubes

- ✓ tubes of polypropylene (PP)
- ✓ with writing area on the side and a writeable cap
- ✓ with graduation
- ✓ autoclavable
- ✓ free of RNase, DNase, pyrogene and metal

Description	Quantity	Order No.
0.5 ml tubes, with cap, clear	1 pack of 1000 pieces	01-08-094
0.5 ml tubes, with cap, clear, sterile	1 pack of 1000 pieces	01-08-099
1.5 ml tubes, with cap, clear	1 pack of 500 pieces	01-08-100
1.5 ml tubes, with cap, clear	1 pack of 1000 pieces	01-08-103
1.5 ml tubes, with cap, clear, sterile	1 pack of 1000 pieces	01-08-107
2.0 ml tubes, with cap, clear	1 pack of 1000 pieces	01-08-201
2.0 ml tubes, with cap, clear, sterile	1 pack of 1000 pieces	01-08-205

Centrifuge tubes

- ✓ high transparent polypropylene (PP)
- ✓ tubes with the volumes 15 ml and 50 ml
- ✓ 50 ml tubes with or without skirt available
- ✓ with blue screw cap
- ✓ good visible graduation and writing area
- ✓ sterile

Description	Quantity	Order No.
15 ml centrifuge tubes, sterile	1 pack of 500 pieces	01-08-302
50 ml centrifuge tubes, sterile	1 pack of 500 pieces	01-08-402
50 ml centrifuge tubes, sterile with skirt	1 pack of 450 pieces	01-08-403

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Digital Micropipettes

Fixed and variable volumes

Pipet4u

- ✓ high operating comfort
- ✓ approved push-button mechanism
- ✓ easy-to read display with large numbers
- ✓ smooth one hand operation
- ✓ 2-stepped function of the pipette, blow-out system
- ✓ maximum of precision and accuracy
- ✓ safe counter mechanism (counter-click) preventing accidental volume changes during pipetting
- ✓ simple maintenance and calibration
- ✓ recalibration with the provided universal tool

Single channel pipettes - fixed volume

Description	Order No.
Micro pipette 5 μl	PIPET-F30
Micro pipette 10 μl	PIPET-F31
Micro pipette 20 μl	PIPET-F32
Micro pipette 25 μl	PIPET-F33
Micro pipette 50 μl	PIPET-F34
Micro pipette 100 μl	PIPET-F35
Micro pipette 200 μl	PIPET-F36
Micro pipette 250 μl	PIPET-F37
Micro pipette 500 μl	PIPET-F38
Micro pipette 1000 μl	PIPET-F39
Micro pipette 2000 μl	PIPET-F40
Micro pipette 2500 μl	PIPET-F41
Micro pipette 5000 μl	PIPET-F42

Single channel pipettes - variable volume

Micro pipette from 0.5 to 10 μl	PIPET-D10
Micro pipette from 2 to 20 μl	PIPET-D11
Micro pipette from 5 to 50 μl	PIPET-D12
Micro pipette from 10 to 100 μl	PIPET-D13
Micro pipette from 20 to 200 μl	PIPET-D14
Micro pipette from 50 to 200 μl	PIPET-D15
Micro pipette from 100 to 1000 μl	PIPET-D16
Micro pipette from 200 to 1000 μl	PIPET-D17
Micro pipette from 500 to 5000 μl	PIPET-D18

8 channel pipettes - variable volume

8 channel pipette from 0.5 to 10 μl	PIPET-M60
8 channel pipette from 5 to 50 μl	PIPET-M61
8 channel pipette from 30 to 300 μl	PIPET-M62

Pipette racks

Description	Order No.
Pipette rack for 4 micro pipettes	PIPET-R10
Pipette rack for 6 micro pipettes	PIPET-R20

Digital Micropipettes

Fixed and variable volumes

Adjustment

Pipet4u micropipettes are adjusted for the delivery (Ex) of its nominal volume (or selected volume, in the case of a variable volume model), for the standard reference temperature of 20 °C, a relative air humidity of 50 % and a barometic pressure (1.01bar), using grade 3 water as defined in ISO 3696.

Standards

International Organization for Standardization	ISO 8655, part 1-6
European Commitee for Standardization	CEN EN ISO 8655
German Institut for Standarization	DIN 12950
General safety rules according to	IEC 61010-1
Elektro magnetic compatibility according to	IEC 61326-1
Marking and design according to	IEC 60073
Conformity testing according to	DIN 12600

Autoclavability

We recommend these pipettes to be autoclaved using the following specifications:
Temperature: 120°C/250° Fahrenheit
Pressure: 1.05 bar/15 psig (pounds)
Time: ten minutes or less
NOTE: Excessive heat and/or time in the autoclave can cause warping!
Gas sterilization with ethylene oxide or formaldehyde is possible. We recommend allowing an appropriate aeration time suited to the particular application before reusing the item. Chemical disinfectants which are commonly used (quaternary ammonium compounds or formalin) can be used without problems. Dry heat sterilisation is not recommended.

Specifications - single channel pipettes, fixed volume

Order No.	Volume in μl	Adjustment levels in μl	Testing volume in μl	Accuracy % +/-	Precision % +/-
PIPET-F30	5	—	5	1.3	1.1
PIPET-F31	10	—	10	0.8	0.6
PIPET-F32	20	—	20	0.6	0.3
PIPET-F33	25	—	25	0.5	0.3
PIPET-F34	50	—	50	0.5	0.3
PIPET-F35	100	—	100	0.5	0.2
PIPET-F36	200	—	200	0.4	0.2
PIPET-F37	250	—	250	0.4	0.2
PIPET-F38	500	—	500	0.3	0.2
PIPET-F39	1000	—	1000	0.3	0.2

Specifications - single channel pipettes, variable volume

Order No.	Volume in μl	Adjustment levels in μl	Testing volume in μl	Accuracy % +/-	Precision % +/-
PIPET-D10	0.5 - 10	0.1	1	2.5	1.5
			5	1.5	0.8
			10	1.0	0.4
PIPET-D11	2 - 20	0.1	2	2.5	1.5
			10	1.2	0.6
			20	1.0	0.3
PIPET-D12	5 - 50	0.5	5	2.0	1.5
			25	1.0	0.8
			50	0.6	0.3
PIPET-D13	10 - 100	1	10	2.0	1.5
			50	1.0	0.3
			100	0.8	0.2
PIPET-D14	20 - 200	1	20	2.5	0.7
			100	1.0	0.3
			200	0.6	0.2
PIPET-D15	50 - 200	1	50	1.0	0.4
			100	1.0	0.3
			200	0.6	0.2
PIPET-D16	100 - 1000	5	100	2.0	0.6
			500	0.9	0.2
			1000	0.6	0.2
PIPET-D17	200 - 1000	5	200	0.9	0.3
			500	0.9	0.2
			1000	0.6	0.2

Specifications - 8 channel pipettes

Order No.	Volume in μl	Adjustment levels in μl	Testing volume in μl	Accuracy % +/-	Precision % +/-
PIPET-M60	0.5 - 10	0.1	10	1.5	1.5
			5	2.5	2.5
			1	3.4	3.4
PIPET-M61	5 - 50	0.5	50	1.0	0.7
			25	1.4	1.0
			5	2.9	2.0
PIPET-M62	30 - 300	1.0	300	0.8	0.25
			150	1.0	0.40
			30	1.5	0.75

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Pipette Tips

Standard tips

biostep universal tips are engineered for a wide variety of pipettes and are ideal for laboratories with multiple brands of pipettes – even multi channel pipettes. The universal tips feature the universal grip design, using flexible materials with a series of bands and supports producing a positive seal. biostep tips have thin walls and a small surface area at the tip, greatly minimizing the possibility of the tip retaining template droplets.

In addition, the small surface area reduces the touch-off angle between the outer tip wall and the receiving sample tubes. This reduced touch-off angle virtually eliminates the potential of capillary retention between the tip orifice and tubes wall. All tips are provided with calibration lines at specific volumes, acting as visual checks to minimize any risk of errors during sample aspiration.

0.1 to 10 µl, natural

pipet4u digital micro pipettes
Gilson Pipetman P-2/P-10
Eppendorf Reference/Research
Labsystems Finn pipettes
Biohit Proline pipettes
Nichiryo pipettes
Oxford Benchmate pipettes
Rainin EDP-2 pipettes
HTL pipettes
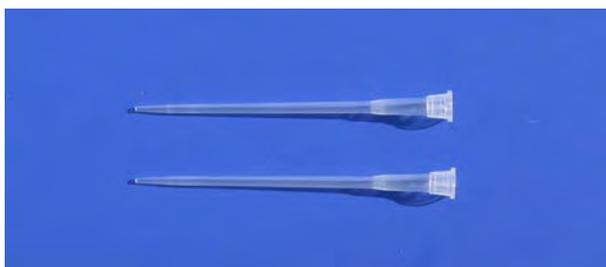
0.5 to 10 µl, natural

pipet4u digital micro pipettes
Gilson pipettes
Eppendorf Reference/Research
Nichiryo pipettes
Oxford Benchmate pipettes
Socorex pipettes
Labsystems Finn pipettes
HTL pipettes

200 µl, natural and yellow

pipet4u digital micro pipettes
Eppendorf Reference/Research
Gilson pipettes
Brand pipettes
Labsystems Finn pipettes
Biohit Proline pipettes
Socorex pipettes
Nichiryo pipettes
MLA pipettes
Costar pipettes
Oxford Benchmate pipettes
Rainin EDP-2 pipettes
HTL pipettes
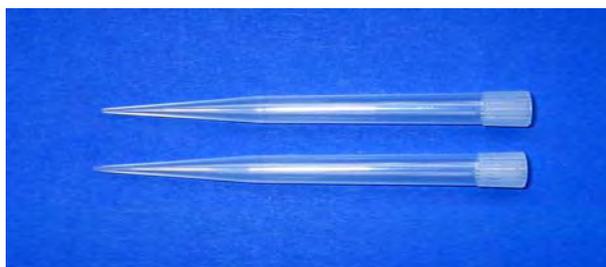
300 µl, natural

pipet4u digital micro pipettes
Eppendorf Reference/Research
Gilson pipettes
Brand pipettes
Labsystems Finn pipettes
Biohit Proline pipettes
Oxford Benchmate pipettes

Pipette Tips

Standard tips

100 to 1000 µl, natural and blue

pipet4u digitale micro pipettes
Eppendorf Reference/Research
Gilson pipettes
Brand pipettes
Labsystems Finn pipettes
Biohit Proline pipettes
Socorex pipettes
Nichiryo pipettes
MLA pipettes
Costar pipettes
Oxford Benchmate pipettes
HTL-pipettes
Rainin EDP-2 pipettes
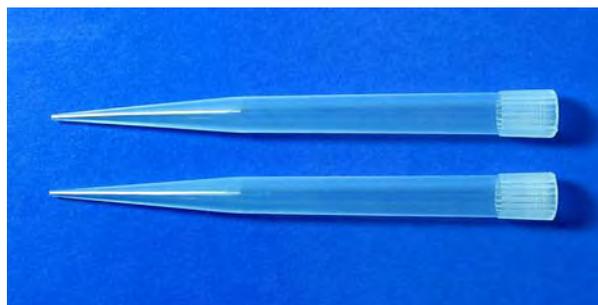
Tips in bags, non-sterile

Description	Colour	Quantity	Order No.
0.1 - 10 µl	natural	1 bag with 1000 pieces	01-10-101
0.5 - 10 µl	natural	1 bag with 1000 pieces	01-10-111
200 µl	natural	1 bag with 1000 pieces	01-10-121
200 µl	yellow	1 bag with 1000 pieces	01-10-131
300 µl	natural	1 bag with 1000 pieces	01-10-151
1000 µl. long shank	natural	2 bags with 500 pieces	01-10-161
1000 µl, long shank	blue	2 bags with 500 pieces	01-10-171
1000 µl, long shank	blue	1 bag with 1000 pieces	01-10-191

Tips in racks, non-sterile

Description	Colour	Quantity	Order No.
0.1 - 10 µl	natural	10 racks with 96 pieces	01-10-102
0.5 - 10 µl	natural	10 racks with 96 pieces	01-10-112
200 µl	natural	10 racks with 96 pieces	01-10-122
200 µl	yellow	10 racks with 96 pieces	01-10-132
300 µl	natural	10 racks with 96 pieces	01-10-152
1000 µl, long shank	natural	10 racks with 96 pieces	01-10-162
1000 µl, long shank	blue	10 racks with 96 pieces	01-10-172
1000 µl, long shank	blue	10 racks with 60 pieces	01-10-192

Tips in racks, sterile

Description	Colour	Quantity	Order No.
0.1 - 10 µl	natural	10 racks with 96 pieces	01-10-202
0.5 - 10 µl	natural	10 racks with 96 pieces	01-10-212
200 µl	natural	10 racks with 96 pieces	01-10-222
300 µl	natural	10 racks with 96 pieces	01-10-228
1000 µl, long shank	natural	10 racks with 96 pieces	01-10-232
1000 µl, short shank	blue	10 racks with 60 pieces	01-10-242

Pipette Tips

Filter tips

The modern precision filter tips from virgin polyethylene are arranged with micropore filters. Adapted for applications like PCR and sequencing as well as for working with radioactive and infectious materials.

All filter tips are autoclavable and cleanroom produced. Because of their universal fitting, the filter tips are useable for almost all micro pipettes.

For example:

- pipet4u digital micro pipettes
- Gilson Pipetman P-2/P-10
- Eppendorf Reference pipettes
- Eppendorf Research pipettes
- Labsystems Finn pipettes
- Biohit Proline pipettes
- Nichiryo pipettes
- Oxford Benchmate pipettes
- Rainin EDP-2 pipettes
- HTL pipettes

Filter tips in bags, non-sterile

Description	Colour	Quantity	Order No.
0.1 - 10 μl	natural	5 bags with 1000 pieces	01-11-101
0.5 - 10 μl	natural	5 bags with 1000 pieces	01-11-111
20 μl	natural	5 bags with 1000 pieces	01-11-121
30 μl	natural	5 bags with 1000 pieces	01-11-131
50 μl	natural	5 bags with 1000 pieces	01-11-141
100 μl	natural	5 bags with 1000 pieces	01-11-151
200 μl	natural	5 bags with 1000 pieces	01-11-161
230 μl	natural	5 bags with 1000 pieces	01-11-171
1000 μl, long shank	natural	10 bags with 500 pieces	01-11-181
1000 μl, short shank	blue	5 bags with 1000 pieces	01-11-191

Filter tips in racks, sterile

Description	Colour	Quantity	Order No.
0.1 - 10 μl	natural	10 racks with 96 pieces	01-11-202
0.5 - 10 μl	natural	10 racks with 96 pieces	01-11-212
0.5 - 20 μl	natural	10 racks with 96 pieces	01-11-206
20 μl	natural	10 racks with 96 pieces	01-11-222
30 μl	natural	10 racks with 96 pieces	01-11-232
50 μl	natural	10 racks with 96 pieces	01-11-242
100 μl	natural	10 racks with 96 pieces	01-11-252
200 μl	natural	10 racks with 96 pieces	01-11-262
230 μl	natural	10 racks with 96 pieces	01-11-272
1000 μl, long shank	natural	10 racks with 96 pieces	01-11-282
1000 μl, short shank	blue	10 racks with 60 pieces	01-11-292

Pipette Tips

Tips and filter tips Ultra Low Retention (ULR)

✓ newly developed polymer
✓ super slick surface
✓ up to 15 % fewer loss of the reagents
✓ no retention inside the filter tip
✓ precise transmission of the fluid by an optimal surface
✓ more exactly results after critical applications
   for example QPCR
✓ free from DNase, RNase and pyrogene
✓ available as standard or filter tip
✓ suitable for most micro pipettes
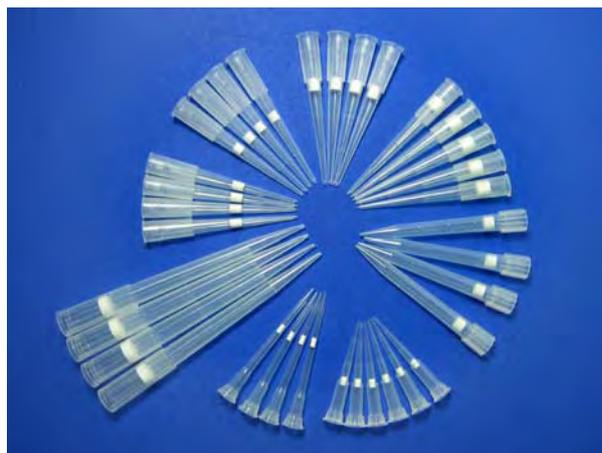
ULR tips in bags, non-sterile

Description	Colour	Quantity	Order No.
0.1 - 10 μl	natural	1 bag with 1000 pieces	01-10-401
0.5 - 10 μl	natural	1 bag with 1000 pieces	01-10-411
200 μl	natural	1 bag with 1000 pieces	01-10-421
1000 μl, long shank	natural	2 bags with 500 pieces	01-10-431

ULR tips in racks, non-sterile

Description	Colour	Quantity	Order No.
0.1 - 10 μl	natural	10 racks with 96 pieces	01-10-451
0.5 - 10 μl	natural	10 racks with 96 pieces	01-10-461
200 μl	natural	10 racks with 96 pieces	01-10-471
1000 μl, long shank	natural	10 racks with 96 pieces	01-10-481

ULR tips in racks, sterile

Description	Colour	Quantity	Order No.
0.1 - 10 μl	natural	10 racks with 96 pieces	01-10-402
0.5 - 10 μl	natural	10 racks with 96 pieces	01-10-412
200 μl	natural	10 racks with 96 pieces	01-10-422
1000 μl, long shank	natural	10 racks with 96 pieces	01-10-432

ULR filter tips in racks, sterile

Description	Colour	Quantity	Order No.
0.1 - 10 μl	natural	10 racks with 96 pieces	01-11-502
0.5 - 10 μl	natural	10 racks with 96 pieces	01-11-512
0.5 - 20 μl	natural	10 racks with 96 pieces	01-11-522
20 μl	natural	10 racks with 96 pieces	01-11-532
30 μl	natural	10 racks with 96 pieces	01-11-542
50 μl	natural	10 racks with 96 pieces	01-11-552
100 μl	natural	10 racks with 96 pieces	01-11-562
200 μl	natural	10 racks with 96 pieces	01-11-572
1000 μl, long shank	natural	10 racks with 96 pieces	01-11-582

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Membranes

Blotting membranes

- high sensitivity and low background for enhanced detection and resolution
- intrinsically hydrophyllic for easy wetting
- superior performance with radioactive and non-radioactive detection systems

MTrans A (Nitrocellulose)

✓ for Western-Blotting, additional also southern- and northern-blotting

✓ pure nitrocellulose

✓ binding interaction hydrophobic and electrostatic

✓ pore size 0.10 μm

✓ recommended for protein transfer

✓ low background

✓ high sensitivity

MTrans B (PVDF)

✓ for Western blotting

✓ polyvinylidene fluoride

✓ binding interaction hydrophobic

✓ pore size 0.45 μm

✓ low background

✓ highest sensitivity

✓ high tensile strength

Blotting membranes

Description	Quantity	Order No.
MTrans A, 0.3 x 3 m roll	1 piece	01-14-101
MTrans A, 0.3 x 3 m roll	5 pieces	01-14-151
MTrans B, 0.3 x 3 m roll	1 piece	01-14-102
MTrans B, 0.3 x 3 m roll	5 pieces	01-14-152

Membranes for drying

Description	Quantity	Order No.
Cellophane membrane, 30 x 30 cm	1 pack of 50 pieces	90-90-401
Cellophane membrane, 30 x 30 cm	1 pack of 100 pieces	90-90-402
Cellophane membrane, 35 x 45 cm	1 pack of 50 pieces	90-90-403
Cellophane membrane, 35 x 45 cm	1 pack of 100 pieces	90-90-404

Blotting paper

Description	Quantity	Order No.
Filter paper for Western blot, 76 x 101 mm*	1 pack of 50 pieces	90-90-601

* more sizes on request

Labels

Labels for 0.5 ml up to 2.0 ml tubes

Tough-Tag™ spots

Tough-Tag™ spots are pre-cut, peel-off dots made of polyvinyl for labelling microcentrifuge and test tubes. Tough-Tag™ spots are ideal for labelling test tubes from 0.5 ml to 2.0 ml. They are highly durable and resistant against chemicals

Tough-Tag™ spots are available in two different sizes and five different colours. All spots are inert against most organic solutions and acids. They also withstand boiling water baths and normal or cryogenic freezing conditions without peeling from the tubes cover.

Description	Quantity	Order No.
Tough-Tag™ spots Ø 9.5 mm, white	1 pack of 1000 pieces	TSPOTSW
Tough-Tag™ spots Ø 9.5 mm, red	1 pack of 1000 pieces	TSPOTSR
Tough-Tag™ spots Ø 9.5 mm, yellow	1 pack of 1000 pieces	TSPOTSY
Tough-Tag™ spots Ø 9.5 mm, blue	1 pack of 1000 pieces	TSPOTSB
Tough-Tag™ spots Ø 9.5 mm, green	1 pack of 1000 pieces	TSPOTSG
Tough-Tag™ spots Ø 12.5 mm, white	1 pack of 1000 pieces	TSPOT50W
Tough-Tag™ spots Ø 12.5 mm, red	1 pack of 1000 pieces	TSPOT50R
Tough-Tag™ spots Ø 12.5 mm, yellow	1 pack of 1000 pieces	TSPOT50Y
Tough-Tag™ spots Ø 12.5 mm, blue	1 pack of 1000 pieces	TSPOT50B
Tough-Tag™ spots Ø 12.5 mm, green	1 pack of 1000 pieces	TSPOT50G

Laser Tough-Tag™ spots

Laser Tough-Tag™ spots are pre-cut, peel-off dots made of polyvinyl for labelling microcentrifuge and test tubes. The adjusted format of the spots enables an easy labelling in a laser or inkjet printer.

Laser Tough-Tag™ spots are ideal for labelling test tubes from 0.5 ml to 2.0 ml and available in 2 sizes. All spots are inert against most organic solutions and acids. They also endure boiling water baths and normal or cryogenic freezing conditions without peeling from the tubes cover.

Description	Quantity	Order No.
Laser Tough-Tag™ spots Ø 9.5 mm, white 20 sheets with 192 pieces each	1 pack of 3840 pieces	SPOT1000
Laser Tough-Tag™ spots Ø 12.5 mm, white 20 sheets with 192 pieces each	1 pack of 3840 pieces	SPOT2000

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Labels

Labels for reaction tubes

Tough-Tag™ labels are pre-cut, peel-off sheets made of polyvinyl for labelling reaction and test tubes.

They are very durable, chemically resistant and adhere to all common plastics. They withstand autoclavation, boiling water baths and cryogenic freezing down to -20 °C without peeling from the tubes.

Microcentrifuge tubes with Tough-Tag™ labels are thin enough to be placed in a rotor, without constricting the functionality of the centrifuge.

Tough-Tag™ labels are available in two different sizes and six different colours. Large Tough-Tag™ labels are suitable for labelling test tubes from 1.5 ml to 2.0 ml, small Tough-Tag™ labels are ideal for labelling 0.5 ml tubes.

Description	Quantity	Order No.
Tough-Tag™ labels large, natural	1 pack of 1000 pieces	TTLC1000
Tough-Tag™ labels large, white	1 pack of 1000 pieces	TTLW1000
Tough-Tag™ labels large, red	1 pack of 1000 pieces	TTLR1000
Tough-Tag™ labels large, yellow	1 pack of 1000 pieces	TTLY1000
Tough-Tag™ labels large, blue	1 pack of 1000 pieces	TTLB1000
Tough-Tag™ labels large, green	1 pack of 1000 pieces	TTLG1000
Tough-Tag™ labels small, natural	1 pack of 1000 pieces	TTSC1000
Tough-Tag™ labels small, white	1 pack of 1000 pieces	TTSW1000
Tough-Tag™ labels small, red	1 pack of 1000 pieces	TTSR1000
Tough-Tag™ labels small, yellow	1 pack of 1000 pieces	TTSY1000
Tough-Tag™ labels small, blue	1 pack of 1000 pieces	TTSB1000
Tough-Tag™ labels small, green	1 pack of 1000 pieces	TTSG1000

Laser Tough-Tag™ labels

Laser Tough-Tag™ labels are pre-cut, peel-off sheets for labelling reaction tubes, test tubes and glass vials.

The format of the labels is optimised for all printers. They are available in 3 sizes.

Description	Quantity	Order No.
Laser Tough-Tag™ labels, white 37.0 x 18.5 mm 25 sheets with 60 pieces each	1 pack of 1500 pieces	TTGP1050
Laser Tough-Tag™ labels, white 31.5 x 12.5 mm 25 sheets with 85 pieces each	1 pack of 2125 pieces	TTLW2016
Laser Tough-Tag™ labels, white 23.5 x 12.5 mm 25 sheets with 119 pieces each	1 pack of 2975 pieces	TTSW2240

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Labels

Labels for cryogenic tubes and test tubes

Tough-Tag™ cryo labels

Tough-Tag™ cryo labels are pre-cut, peel-off sheets made of polyvinyl for labelling cryo tubes and test tubes.

Tough-Tag™ cryo labels are highly durable, chemical inactive and adhere to all common plastics and other materials. They withstand conventional freezing and cyrogenic liquid storage down to -196 °C for both vapour and liquid phase nitrogen.

Tough-Tag™ cryo labels are also suitable for labelling tubes which are always under high temperature conditions. Furthermore, they adhere while the tubes are in boiling hot water baths.

Tough-Tag™ cryo labels are available in 2 sizes. Labels with the size 32.5 x 12.5 mm are suitable for labelling 1.5 ml tubes, too.

Description	Quantity	Order No.
Tough-Tag™ cryo labels, 32.5 x 12.5 mm	1 pack of 1000 pieces	CRY1000
Tough-Tag™ cryo labels, 38.0 x 19.0 mm	1 pack of 1000 pieces	CRY2000

Laser Tough-Tag™ cryo labels

Laser Tough-Tag™ Cryo labels are pre-cut, peel off labels for labelling cryo tubes and test tubes for cryogenic storage.

The format of the labels is optimised for all printers. They are available in 3 sizes.
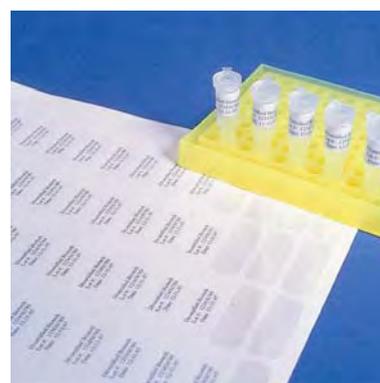
Description	Quantity	Order No.
Laser Tough-Tag™ Cryo labels, white 38.0 x 19.0 mm 20 sheets with 60 labels each	1 pack of 1200 pieces	LCRY1200
Laser Tough-Tag™ Cryo labels, white 32.5 x 12.5 mm 20 sheets with 85 labels each	1 pack of 1700 pieces	LCRY1700
Laser Tough-Tag™ Cryo labels, white 24.0 x 12.5 mm 20 sheets with 119 labels each	1 pack of 2380 pieces	LCRY2380

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Accessories for Microtiter Plates

Microplate holder
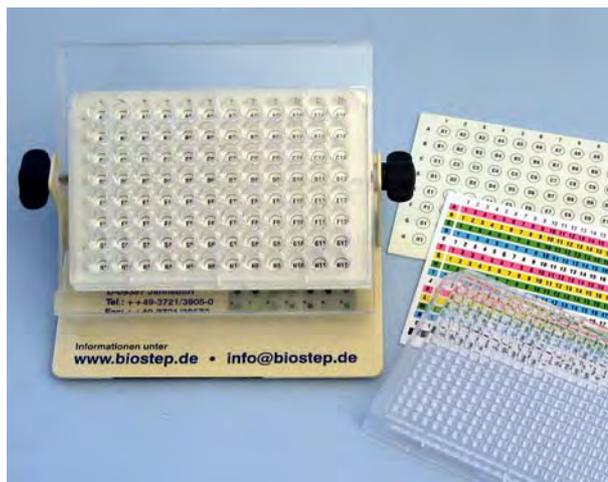
The microplate holder facilitates the pipetting of samples into one microtiter plate. This is placed on an acrylic holder, which is infinitely adjustable.

The mechanical stop of the acrylic holder guarantees a stable position of the plate.

Diverse templates are available for different microtiter plate formats. They are directly placed under the microtiter plate. When pipetting, each well can exactly be identified and easier assigned.

The advantages of the microplate holder are the ergonomic optimised seat position of the user (individually adjustable position of the acrylic holder) and the minor error ratio due to the use of templates.

Microplate holder

Description	Quantity	Order No.
Microplate holder incl. 1 x pipetting template in 96well-grid	1 piece	LB01-P1020

Accessories

Description	Quantity	Order No.
Pipetting template in 24well-grid	1 pack of 5 pieces	LB01-P0024
Pipetting template in 48well-grid	1 pack of 5 pieces	LB01-P0048
Pipetting template in 96well-grid	1 pack of 5 pieces	LB01-P0096
Pipetting template in 384well-grid	1 pack of 5 pieces	LB01-P0384

Pre-cast Gels, Reagents

Pre-cast Gels

For the protein electrophoresis

Tris/Glycin gels (Laemmli gels)

Tris-Glycin gels are suitable for general protein analysis. All gels have a stacking gel and do not contain SDS. By choosing the appropriate running and sample buffer (with or without SDS), native or denature conditions during the electrophoresis can be created. A wide spectrum enables the selection of the gel which complies to the applications.

For reaching an optimal seperation, it is necessary to apply max 0.5 μg protein per band (approx. 5 - 10 μg per lane in total) at the following staining with e.g. Coomassie™ or AmphiBlue®.

The durability of the gels depends on the polyacrylamid concentration: the lower the concentration, the longer the durability. According to the type of gel it lasts 6 - 10 weeks.

Specifications
- polyacrylamide pre-cast gel
- in disposable plastic cassettes 10 x 10 cm
- gel size 8.0 x 6.5 cm
- 1 or 1.5 mm thickness
- 10, 12 or 15 lanes
- homogeneous gels:
  4 %, 6 %, 8 %, 10 %, 12 %, 14 %, 16 % and 18 %
- gradient gels
  4 - 12 %, 4 - 20 %, 8 - 16 % and 10 - 20 %

Suitable for the following chambers
Minigel electrophoresis units of:
- biostep
- Novex
- Serva
- Biometra
- Hoefer and others

Well volume

Thickness 1.0 mm	10 wells	25 μl
	12 wells	20 μl
	15 wells	15 μl
Thickness 1.5 mm	10 wells	37 μl
	12 wells	30 μl
	15 wells	22 μl

4 % Tris/Glycin gels, ideal separation 100 - 400 kDa

Description	Thickness	Wells	Quantity	Order No.
TG 04110	1.0 mm	10	10 gels	95-50-101
TG 04112	1.0 mm	12	10 gels	95-50-102
TG 04115	1.0 mm	15	10 gels	95-50-103
TG 04510	1.5 mm	10	10 gels	95-50-104
TG 04512	1.5 mm	12	10 gels	95-50-105
TG 04515	1.5 mm	15	10 gels	95-50-106

6 % Tris/Glycin gels, ideal separation 60 - 300 kDa

Description	Thickness	Wells	Quantity	Order No.
TG 06110	1.0 mm	10	10 gels	95-50-111
TG 06112	1.0 mm	12	10 gels	95-50-112
TG 06115	1.0 mm	15	10 gels	95-50-113
TG 06510	1.5 mm	10	10 gels	95-50-114
TG 06512	1.5 mm	12	10 gels	95-50-115
TG 06515	1.5 mm	15	10 gels	95-50-116

Pre-cast buffer on page 129

Pre-cast Gels

For the protein electrophoresis

8 % Tris/Glycin gels, ideal separation 40 - 250 kDa

Description	Thickness	Wells	Quantity	Order No.
TG 08110	1.0 mm	10	10 gels	95-50-121
TG 08112	1.0 mm	12	10 gels	95-50-122
TG 08115	1.0 mm	15	10 gels	95-50-123
TG 08510	1.5 mm	10	10 gels	95-50-124
TG 08512	1.5 mm	12	10 gels	95-50-125
TG 08515	1.5 mm	15	10 gels	95-50-126

10 % Tris/Glycin gel, ideal separation 30 - 200 kDa

Description	Thickness	Wells	Quantity	Order No.
TG 10110	1.0 mm	10	10 gels	95-50-131
TG 10112	1.0 mm	12	10 gels	95-50-132
TG 10115	1.0 mm	15	10 gels	95-50-133
TG 10510	1.5 mm	10	10 gels	95-50-134
TG 10512	1.5 mm	12	10 gels	95-50-135
TG 10515	1.5 mm	15	10 gels	95-50-136

12 % Tris/Glycin gel, ideal separation 15 - 120 kDa

Description	Thickness	Wells	Quantity	Order No.
TG 12110	1.0 mm	10	10 gels	95-50-141
TG 12112	1.0 mm	12	10 gels	95-50-142
TG 12115	1.0 mm	15	10 gels	95-50-143
TG 12510	1.5 mm	10	10 gels	95-50-144
TG 12512	1.5 mm	12	10 gels	95-50-145
TG 12515	1.5 mm	15	10 gels	95-50-146

14 % Tris/Glycin gel, ideal separation 6 - 80 kDa

Description	Thickness	Wells	Quantity	Order No.
TG 14110	1.0 mm	10	10 gels	95-50-151
TG 14112	1.0 mm	12	10 gels	95-50-152
TG 14115	1.0 mm	15	10 gels	95-50-153
TG 14510	1.5 mm	10	10 gels	95-50-154
TG 14512	1.5 mm	12	10 gels	95-50-155
TG 14515	1.5 mm	15	10 gels	95-50-156

16 % Tris/Glycin gel, ideal separation 5 - 60 kDa

Description	Thickness	Wells	Quantity	Order No.
TG 16110	1.0 mm	10	10 gels	95-50-161
TG 16112	1.0 mm	12	10 gels	95-50-162
TG 16115	1.0 mm	15	10 gels	95-50-163
TG 16510	1.5 mm	10	10 gels	95-50-164
TG 16512	1.5 mm	12	10 gels	95-50-165
TG 16515	1.5 mm	15	10 gels	95-50-166

18 % Tris/Glycin gel, ideal separation 2 - 50 kDa

Description	Thickness	Wells	Quantity	Order No.
TG 18110	1.0 mm	10	10 gels	95-50-171
TG 18112	1.0 mm	12	10 gels	95-50-172
TG 18115	1.0 mm	15	10 gels	95-50-173
TG 18510	1.5 mm	10	10 gels	95-50-174
TG 18512	1.5 mm	12	10 gels	95-50-175
TG 18515	1.5 mm	15	10 gels	95-50-176

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Pre-cast Gels

For the protein electrophoresis

Tris/Glycin gradient gels
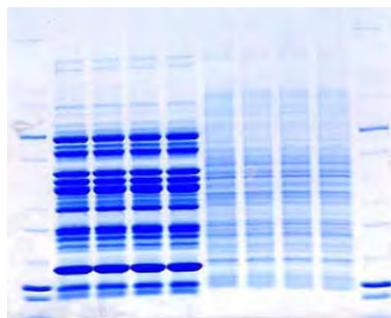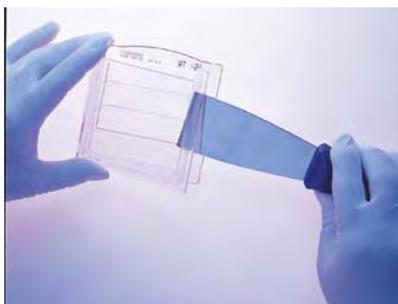
4 - 12 % Tris/Glycin gels, ideal separation 30 - 300 kDa

Description	Thickness	Wells	Quantity	Order No.
TG 41210	1.0 mm	10	10 gels	95-50-181
TG 41212	1.0 mm	12	10 gels	95-50-182
TG 41215	1.0 mm	15	10 gels	95-50-183
TG 41250	1.5 mm	10	10 gels	95-50-184
TG 41252	1.5 mm	12	10 gels	95-50-185
TG 41255	1.5 mm	15	10 gels	95-50-186

8 - 16 % Tris/Glycin gels, ideal separation 10 - 200 kDa

Description	Thickness	Wells	Quantity	Order No.
TG 81610	1.0 mm	10	10 gels	95-50-191
TG 81612	1.0 mm	12	10 gels	95-50-192
TG 81615	1.0 mm	15	10 gels	95-50-193
TG 81650	1.5 mm	10	10 gels	95-50-194
TG 81652	1.5 mm	12	10 gels	95-50-195
TG 81655	1.5 mm	15	10 gels	95-50-196

4 - 20 % Tris/Glycin gels, ideal separation 5 - 200 kDa

Description	Thickness	Wells	Quantity	Order No.
TG 42010	1.0 mm	10	10 gels	95-50-201
TG 42012	1.0 mm	12	10 gels	95-50-202
TG 42015	1.0 mm	15	10 gels	95-50-203
TG 42050	1.5 mm	10	10 gels	95-50-204
TG 42052	1.5 mm	12	10 gels	95-50-205
TG 42055	1.5 mm	15	10 gels	95-50-206

10 - 20 % Tris/Glycin gels, ideal separation 5 - 100 kDa

Description	Thickness	Wells	Quantity	Order No.
TG 12010	1.0 mm	10	10 gels	95-50-211
TG 12012	1.0 mm	12	10 gels	95-50-212
TG 12015	1.0 mm	15	10 gels	95-50-213
TG 12050	1.5 mm	10	10 gels	95-50-214
TG 12052	1.5 mm	12	10 gels	95-50-215
TG 12055	1.5 mm	15	10 gels	95-50-216

Pre-cast buffer on page 129

Pre-cast Gels

For the peptide electrophoresis

Tris-Tricin gels (Schaegger & von Jagow gels)

The following pre-cast gels come in a disposable plastic cassette of 10 x 10 cm and are suitable for most common minigel electrophoresis chambers.

All gels have a stacking gel and do not contain SDS. By choosing the appropriate running and sample buffer (with or without SDS), native or denature conditions during the electrophoresis can be created.
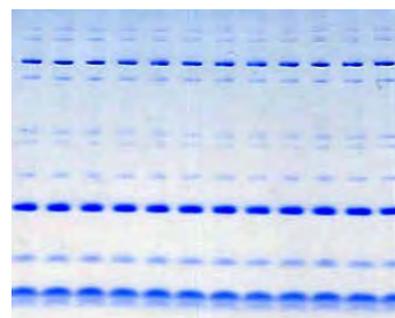
Specifications
- polyacrylamide pre-cast gel
- in disposable plastic cassettes 10 x 10 cm
- gel size 8.0 x 6.5 cm
- 1 mm thickness, 1.5 mm on request
- 10, 12 or 15 wells

Well volume

Thickness 1.0 mm	10 wells	25 μl
	12 wells	20 μl
	15 wells	15 μl
Thickness 1.5 mm	10 wells	37 μl
	12 wells	30 μl
	15 lanes	22 μl

Suitable for the following chambers

Minigel electrophoresis units of:
- biostep
- Novex
- Serva
- Biometra
- Hoefer and others

10 % Tricin gel, ideal separation 8 - 150 kDa

Description	Thickness	Wells	Quantity	Order No.
TR 10110	1.0 mm	10	10 gels	95-60-101
TR 10112	1.0 mm	12	10 gels	95-60-102
TR 10115	1.0 mm	15	10 gels	95-60-103

16 % Tricin gel, ideal separation 1 - 40 kDa

Description	Thickness	Wells	Quantity	Order No.
TR 16110	1.0 mm	10	10 gels	95-60-111
TR 16112	1.0 mm	12	10 gels	95-60-112
TR 16115	1.0 mm	15	10 gels	95-60-113

10 - 20 % Tricin gel, ideal separation 2 - 200 kDa

Description	Thickness	Wells	Quantity	Order No.
TR 12010	1.0 mm	10	10 gels	95-60-121
TR 12012	1.0 mm	12	10 gels	95-60-122
TR 12015	1.0 mm	15	10 gels	95-60-123

Pre-cast Gels

For electrophoresis of double-strand DNA

Tris-Borat-EDTA gels

The following pre-cast gels come in a disposable plastic cassette of 10 x 10 cm and are suitable for most common minigel electrophoresis chambers.

All gels have a stacking gel and do not contain SDS. By choosing the appropriate running and sample buffer (with or without SDS), native or denature conditions during the electrophoresis can be created.

Specifications
- polyacrylamide pre-cast gel
- in disposable plastic cassettes 10 x 10 cm
- gel size 8.0 x 6.5 cm
- 1 mm thickness, 1.5 mm on request
- 10, 12 or 15 wells
- well volume   on 10 lanes   25 μl
                    on 12 lanes   20 μl
                    on 15 lanes   15 μl

Suitable for the following chambers

Minigel electrophoresis units of:
- biostep
- Novex
- Serva
- Biometra
- Hoefer and others

6 % TBE gels, ideal separation 60 - 2500 base pairs

Description	Thickness	Wells	Quantity	Order No.
TB 06110	1.0 mm	10	10 gels	95-70-101
TB 06112	1.0 mm	12	10 gels	95-70-102
TB 06115	1.0 mm	15	10 gels	95-70-103

8 % TBE gels, ideal separation 40 - 2500 base pairs

Description	Thickness	Wells	Quantity	Order No.
TB 08110	1.0 mm	10	10 gels	95-70-111
TB 08112	1.0 mm	12	10 gels	95-70-112
TB 08115	1.0 mm	15	10 gels	95-70-113

10 % TBE gels, ideal separation 50 - 1500 base pairs

Description	Thickness	Wells	Quantity	Order No.
TB 10110	1.0 mm	10	10 gels	95-70-121
TB 10112	1.0 mm	12	10 gels	95-70-122
TB 10115	1.0 mm	15	10 gels	95-70-123

20 % TBE gels, ideal separation 10 - 900 base pairs

Description	Thickness	Wells	Quantity	Order No.
TB 20110	1.0 mm	10	10 gels	95-70-131
TB 20112	1.0 mm	12	10 gels	95-70-132
TB 20115	1.0 mm	15	10 gels	95-70-133

4 - 12 % TBE gels, ideal separation 60 - 2500 base pairs

Description	Thickness	Wells	Quantity	Order No.
TB 41210	1.0 mm	10	10 gels	95-70-141
TB 41212	1.0 mm	12	10 gels	95-70-142
TB 41215	1.0 mm	15	10 gels	95-70-143

4 - 20 % TBE gels, ideal separation 20 - 3000 base pairs

Description	Thickness	Wells	Quantity	Order No.
TB 42010	1.0 mm	10	10 gels	95-70-151
TB 42012	1.0 mm	12	10 gels	95-70-152
TB 42015	1.0 mm	15	10 gels	95-70-153

Pre-cast Gels

For electrophoresis of single-strand DNA and RNA

TBE/Urea gels

The following pre-cast gels come in a disposable plastic cassette of 10 x 10 cm and are suitable for most common minigel electrophoresis chambers.

All gels have a stacking gel and do not contain SDS. By choosing the appropriate running and sample buffer (with or without SDS), native or denature conditions during the electrophoresis can be created.
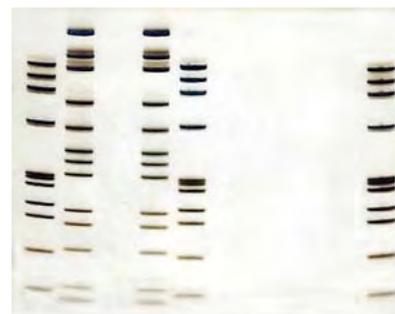
Specifications

- polyacrylamide pre-cast gel
- in disposable plastic cassettes 10 x 10 cm
- gel size 8.0 x 6.5 cm
- 1 mm thickness, 1.5 mm on request
- 10, 12 or 15 lanes
- well volume   on 10 lanes   25 μl
               on 12 lanes   20 μl
               on 15 lanes   15 μl

Suitable for the following chambers

Minigel electrophoresis units of:
- biostep
- Novex
- Serva
- Biometra
- Hoefer and others

6 % TBU gels, ideal separation 40 - 750 bases

Description	Thickness	Wells	Quantity	Order No.
TU 06110	1.0 mm	10	10 gels	95-70-161
TU 06112	1.0 mm	12	10 gels	95-70-162
TU 06115	1.0 mm	15	10 gels	95-70-163

10 % TBU gels, ideal separation 20 - 500 bases

Description	Thickness	Wells	Quantity	Order No.
TU 10110	1.0 mm	10	10 gels	95-70-171
TU 10112	1.0 mm	12	10 gels	95-70-172
TU 10115	1.0 mm	15	10 gels	95-70-173

15 % TBU gels, ideal separation 20 - 300 bases

Description	Thickness	Wells	Quantity	Order No.
TU 15110	1.0 mm	10	10 gels	95-70-181
TU 15112	1.0 mm	12	10 gels	95-70-182
TU 15115	1.0 mm	15	10 gels	95-70-183

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Pre-cast Gels

For the protein and DNA electrophoresis
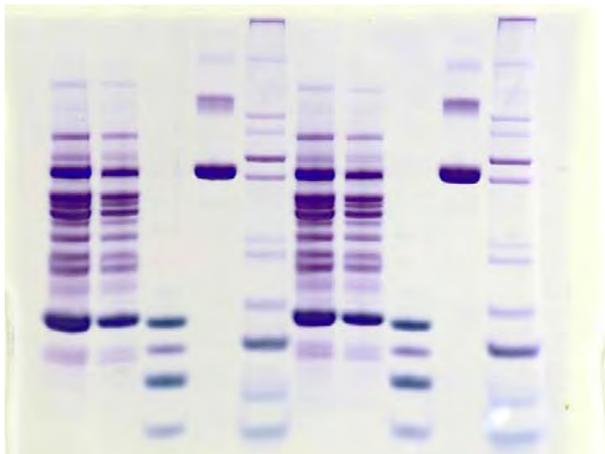
VarioGel®

VarioGel® is a pH-neutrale polyacrylamide pre-cast gel designed for the usage of the vertical SDS electrophoresis in format of 8.0 x 6.5 cm. The main use is carried out in the protein analysis and in the DNA separation.

VarioGel® is an alternative product to other available „long-shelf-life-gels".

VarioGel® does not need an antioxidant added to the run-buffer-solution for avoiding the reoxidation during the run, because it already exists in the buffer.

VarioGel® is not intended to substitude light basic pH-Tris/Glycin or Tricin gels. Certain applications just run better with light basic media than with neutral media.

Advantages

- universal gel for the protein analysis and DNA selection
- cost-saving
- easy-to-use
- precise results
- short running time
- optimal blotting
- long storage time
- possibility of using various buffer systems to optimate the selection of the best resolution in molecular sizes
- quality certificate on request

Specifications

- polyacrylamide pre-cast gel
- in disposable plastic cassettes 10 x 10 cm
- gel size 8.0 x 6.5 cm
- 1 mm thickness, 1.5 mm on request
- 10, 12 or 15 wells
- Well volume   on 10 wells $25\,\mu l$
                      on 12 wells $20\,\mu l$
                      on 15 wells $15\,\mu l$

Suitable for the following chambers

Minigel electrophoresis units of:

- biostep
- Novex
- Serva
- Biometra
- Hoefer and others

9 % VarioGel®, ideal for narrow MW sizes

Description	Thickness	Wells	Quantity	Order No.
VG 09110	1.0 mm	10	10 gels	95-80-101
VG 09112	1.0 mm	12	10 gels	95-80-102
VG 09115	1.0 mm	15	10 gels	95-80-103

4 - 12 % VarioGel®, ideal for broad MW sizes (2 - 250 kDa)

Description	Thickness	Wells	Quantity	Order No.
VG 41210	1.0 mm	10	10 gels	95-80-111
VG 41212	1.0 mm	12	10 gels	95-80-112
VG 41215	1.0 mm	15	10 gels	95-80-113

Pre-cast Buffer

For the electrophoresis

Pre-mixed buffer for Tris-Glycin gels

Description	Buffer	Concentration	Quantity	Order No.
Tris-Glycin-SDS				
TG 05001	Running buffer	10fold	500 ml	95-LF-105
TG 10001	Running buffer	10fold	1000 ml	95-LF-110
TG 50001	Running buffer	10fold	5000 ml	95-LF-115
TG 02002	Sample buffer	2fold	20 ml	95-PP-120
TG 05002	Sample buffer	2fold	50 ml	95-PP-125
Tris-Glycin-Nativ				
TG 05003	Running buffer	10fold	500 ml	95-LF-205
TG 10003	Running buffer	10fold	1000 ml	95-LF-210
TG 02004	Sample buffer	2fold	20 ml	95-PP-215
TG 05004	Sample buffer	2fold	50 ml	95-PP-220
Transfer buffer				
TG 05005		25fold	500 ml	95-TF-050
TG 10005		25fold	1000 ml	95-TF-100

Pre-mixed buffer for Tris-Tricin gels

Description	Buffer	Concentration	Quantity	Order No.
Tris-Tricin-SDS				
TR 05006	Running buffer	10fold	500 ml	95-LF-305
TR 10006	Running buffer	10fold	1000 ml	95-LF-310
TR 50006	Running buffer	10fold	5000 ml	95-LF-315
TR 02007	Sample buffer	2fold	20 ml	95-PP-320
TR 05007	Sample buffer	2fold	50 ml	95-PP-325
Transfer buffer				
TG 05005		25fold	500 ml	95-TF-050
TG 10005		25fold	1000 ml	95-TF-100

Pre-mixed buffer for Tris-Borat-EDTA gels

Description	Buffer	Concentration	Quantity	Order No.
Tris-Borat-EDTA				
TB 10060	Running buffer	5fold	1000 ml	95-LF-405
TB 01075	Sample buffer high density	5fold	10 ml	95-PP-410

Pre-mixed VarioGel® buffer solution

Description	Buffer	Concentration	Quantity	Order No.
Tricin/Tris/SDS				
VT 05508	Running buffer	20fold	500 ml	95-LF-505
VT 10508	Running buffer	20fold	1000 ml	95-LF-510
VT 50508	Running buffer	20fold	5000 ml	95-LF-515
MOPS/Tris/SDS				
VM 05509	Running buffer	20fold	500 ml	95-LF-520
VM 10509	Running buffer	20fold	1000 ml	95-LF-525
VM 50509	Running buffer	20fold	5000 ml	95-LF-530
Tris/HCl/SDS				
VP 02510	Sample buffer	2fold	20 ml	95-PP-502
VP 05510	Sample buffer	2fold	50 ml	95-PP-505
Transfer buffer				
TG 05005		25fold	500 ml	95-TF-050
TG 10005		25fold	1000 ml	95-TF-100

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Stains for the Protein Electrophoresis

New stains in the visible and fluorescent range

- for the staining of proteins in gels, AmphiGreen even on blots
- high sensitivity
- very stable binding between stains and proteins
- **completely reversible staining**
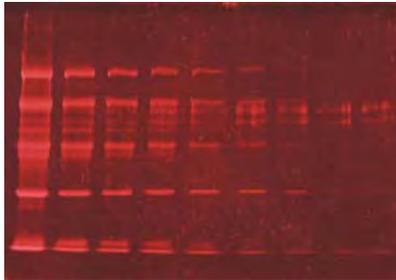
- fast destaining of the gels for the use in the later protein analysis
- ready-to-use solution, 1000 ml sufficient for 30 mini gels (5 x 8 cm, 1 mm thick)
- 3 times reusable

Visible range: AmphiBlue® Visopt

- for visible staining of proteins in gels
- excitation with white light (or white light plate or white top-light)
- proof sensitivity 3 - 5 ng/mm^2
- alternative to CoomassieBlue™

Fluorescent range: AmphiGreen® Fluo

- for fluorescence staining of proteins in gels or on blots
- excitation wavelength 365 nm
- emissions wavelength (Peak) 520 nm
- proof sensitivity 3 - 5 ng/mm^2
- very fast destaining - only 30 minutes

Fluorescent range: AmphiRed® Fluo

- for fluorescence staining of proteins in gels
- excitation wavelength 312 nm, 460 nm
- emissions wavelength (Peak) 630 nm
- proof sensitivity 1 - 3 ng/mm^2
- more sensitive as currently available products

Description	Quantity	Order No.
AmphiBlue Visopt	500 ml	LN03-K1015
AmphiBlue Visopt	1000 ml	LN03-K1020
AmphiGreen Fluo	500 ml	LN03-K1035
AmphiGreen Fluo	1000 ml	LN03-K1040
AmphiRed Fluo	500 ml	LN03-K1055
AmphiRed Fluo	1000 ml	LN03-K1060

UV-transparent staining and destaining tray
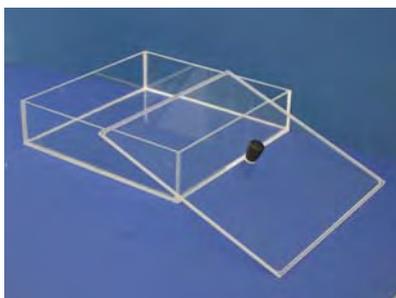
- simplifies the working steps at the destainging of the gels
- to be placed directly on the UV transilluminator
- UV-transparent base
- UV-non-transparent lid and sides
- suitable for the use on shakers
- internal dimensions (L x W x H) 210 x 210 x 50 mm
- more sizes on request

Description	Order No.
Destaining tray excl. lid	90-90-701
Destaining tray incl. lid	90-90-702

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Chemicals for Molecular Biology

Acrylamide/Bisacrylamide solutions, solutions for sequencing gels

Acrylamide solution

- solutions with various quantity rates of both components available
- wide area of applications
- free of DNases, RNases and Proteases

- Acrylamide-solution-Mix 19 : 1; suitable for DNA sequencing
- Acrylamide-solution-Mix 29 : 1 & 37.5 : 1; suitable for most selections of proteins, nucleic acids

Description	Quantity	Order No.
Acrylamide solution 40 %	250 ml	21-2000-02
Acrylamide solution 40 %	500 ml	21-2000-05
Acrylamide solution 40 %	1000 ml	21-2000-10
BisAcrylamide solution 2 %	500 ml	21-2500-05
BisAcrylamide solution 2 %	1000 ml	21-2500-10
Acrylamide/BisAcrylamide 30 % (37.5 : 1.0)	250 ml	21-2100-02
Acrylamide/BisAcrylamide 30 % (37.5 : 1.0)	500 ml	21-2100-05
Acrylamide/BisAcrylamide 30 % (37.5 : 1.0)	1000 ml	21-2100-10
Acrylamide/BisAcrylamide 30 % (19.0 : 1.0)	250 ml	21-2300-02
Acrylamide/BisAcrylamide 30 % (19.0 : 1.0)	500 ml	21-2300-05
Acrylamide/BisAcrylamide 30 % (19.0 : 1.0)	1000 ml	21-2300-10
Acrylamide/BisAcrylamide 30 % (29.0 : 1.0)	250 ml	21-2600-02
Acrylamide/BisAcrylamide 30 % (29.0 : 1.0)	500 ml	21-2600-05
Acrylamide/BisAcrylamide 30 % (29.0 : 1.0)	1000 ml	21-2600-10
Acrylamide/BisAcrylamide 40 % (19.0 : 1.0)	250 ml	21-2400-02
Acrylamide/BisAcrylamide 40 % (19.0 : 1.0)	500 ml	21-2400-05
Acrylamide/BisAcrylamide 40 % (19.0 : 1.0)	1000 ml	21-2400-10
Acrylamide/BisAcrylamide 40 % (29.0 : 1.0)	250 ml	21-3500-02
Acrylamide/BisAcrylamide 40 % (29.0 : 1.0)	500 ml	21-3500-05
Acrylamide/BisAcrylamide 40 % (29.0 : 1.0)	1000 ml	21-3500-10
Acrylamide/BisAcrylamide 40 % (37.5 : 1.0)	100 ml	21-3600-01
Acrylamide/BisAcrylamide 40 % (37.5 : 1.0)	250 ml	21-3600-02
Acrylamide/BisAcrylamide 40 % (37.5 : 1.0)	500 ml	21-3600-05
Acrylamide/BisAcrylamide 40 % (37.5 : 1.0)	1000 ml	21-3600-10

Solutions for sequencing gels

- ready-to-use solution for casting the gels for manual or automated sequencer
- crystal-clear gels without background fluorescence for reproduceable results
- created with clean water (Molecular Biology Grade, 18 MW) and ultrapure reagents
- cleaning by 0.45 μm glass fibre filter and nylon filter

Composition of manual sequencing gels

Acrylamide/Bisacrylamide 19.0 : 1.0
1 x TBE buffer
7M urea

Composition of automated sequencing gels

Acrylamide/Bisacrylamide 19.0 : 1.0
1 x TBE buffer
6M urea

Description	Quantity	Order No.
Sequencing gel 6.00 % (manual sequencing)	1000 ml	20-2700-10
Sequencing gel 8.00 % (manual sequencing)	1000 ml	20-2800-10
Sequencing gel 4.25 % (automated sequencing)	1000 ml	20-3100-10
Sequencing gel 4.50 % (automated sequencing)	1000 ml	20-3200-10
Sequencing gel 4.75 % (automated sequencing)	1000 ml	20-3300-10
Sequencing gel 6.00 % (automated sequencing)	1000 ml	20-3400-10

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Chemicals for Molecular Biology

Buffer, TEMED, APS, Denhardt's solution

Buffer solution

Description	pH (20 °C, H_2O)	Quantity	Order No.
10x Tris-acetate (TAE)	8.5 ± 0.2	500 ml	21-6010-05
10x Tris-acetate (TAE)	8.5 ± 0.2	1000 ml	21-6010-10
10x Tris-acetate (TAE)	8.5 ± 0.2	5000 ml	21-6010-50
50x Tris-acetate (TAE)	8.5 ± 0.2	500 ml	21-6001-05
50x Tris-acetate (TAE)	8.5 ± 0.2	1000 ml	21-6001-10
5x Tris-borate (TBE)	8.3 ± 0.2	1000 ml	21-6005-10
5x Tris-borate (TBE)	8.3 ± 0.2	5000 ml	21-6005-50PE
5x Tris-borate (TBE)	8.3 ± 0.2	5000 ml	21-6005-50CT
10x Tris-borate (TBE)	8.3 ± 0.2	500 ml	21-6000-05
10x Tris-borate (TBE)	8.3 ± 0.2	1000 ml	21-6000-10

Description	pH (20 °C)	Quantity	Order No.
	adjusted with HCL		
20x SSC	7.0 ± 0.2	500 ml	21-6500-05
20x SSC	7.0 ± 0.2	1000 ml	21-6500-10
	adjusted with NaOH		
20x SSPE	7.4 ± 0.2	500 ml	21-6600-05
20x SSPE	7.4 ± 0.2	1000 ml	21-6600-10

TEMED

Synonym	Tetramethylethylenediamine	Melting point	121 °C
Molecular weight	116.21 g/mol	Storage	2 - 8 °C
Purity	min. 99 %		

Description	Quantity	Order No.
TEMED	25 ml	21-3000-00
TEMED	100 ml	21-3000-01
TEMED	250 ml	21-3000-02
TEMED	500 ml	21-3000-05
TEMED	1000 ml	21-3000-10

APS

Synonym	Ammonium persulphate	Chloride, chlorat	max. 0.001 %
Molecular weight	228.20 g/mol	Heavy metals	max. 0.005 %
Purity	min. 98 %	Iron	max. 0.001 %
Free acid	max. 0.1 %	Manganese	max. 0.00005 %
Ash content	max. 0.05 %	Melting point	120 °C
pH (5 %, H_2O)	3.0 - 4.0 (20 °C)	Storage	room temperature

Description	Quantity	Order No.
APS	100 g	21-3001-01
APS	250 g	21-3001-02
APS	500 g	21-3001-05

Denhard's solution

Description	Quantity	Order No.
50x Denhardt's solution	5 ml	31-42-05
50x Denhardt's solution	10 ml	32-42-10

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Chemicals for Molecular Biology

Agaroses

Agarose Low EEO

Specifications

Gel temperature (1.5 %)	36 °C ± 1.5 °C
Gel strength (1 %)	≥ 1200 g/cm²
Gel strength (1.5 %)	≥ 2500 g/cm²
Electroendosmosis (EEO)	0,09 - 0,13
Moisture	≤ 7 %
Melting point	88 °C ± 1.5 °C
Sulphate concentration	≤ 0.20 %

Applications and hints

- preparative and analytic gels
- DNA/RNA separation (≥ 1000 bp)
- restrictions
- Southern and Northern blots
- suitable for all buffer systems at concentrations between 0.8 % and 2 %

Agarose Medium EEO

Specifications

Gel temperature (1.5 %)	36 °C ± 1.5 °C
Gel strength (1 %)	≥ 750 g/cm²
Gel strength (1.5 %)	≥ 2000 g/cm²
Electroendosmosis (EEO)	0,16 - 0,19
Moisture	≤ 7 %
Melting point	88 °C ± 1.5 °C
Sulphate concentration	≤ 0.25 %

Applications and hints

- electrophoresis of serum proteins
- immuno electrophoresis
- separation of nucleic acids

Agarose High EEO

Specifications

Gel temperature (1.5 %)	36 °C ± 1.5 °C
Gel strength (1 %)	≥ 750 g/cm²
Gel strength (1.5 %)	≥ 1000 g/cm²
Electroendosmosis (EEO)	0.23 - 0.26
Moisture	≤ 7 %
Melting point	88 °C ± 1.5 °C
Sulphate concentration	≤ 0.25 %

Applications and hints

- electrophoresis of serum proteins
- immuno electrophoresis
- counter immuno electrophoresis

Agarose Special EEO

Specifications

Gel temperature (1.5 %)	36 °C ± 1.5 °C
Gel strength (1 %)	≥ 700 g/cm²
Gel strength (1.5 %)	≥ 1100 g/cm²
Electroendosmosis (EEO)	≥ 0.3
Moisture	≤ 7 %
Melting point	88 °C ± 1.5 °C
Sulphate concentration	≤ 0.3 %

Applications and hints

- immuno electrophoresis
- counter immuno electrophoresis

Agarose IMG

Specifications

Gel temperature (1.5 %)	30 °C
Gel strength (1.5 %)	≥ 500 g/cm²
Gel strength (3 %)	≥ 1500 g/cm²
Electroendosmosis (EEO)	≤ 0.12
Moisture	≤ 7 %
Melting point (1.5 %)	≤ 70 °C
Sulphate concentration	≤ 0.11 %

Applications and hints

- analytic separation of DNA gels (≤ 1000 bp)
- clearing of PCR products, restricions
- mutation analysis
- blotting ≤ 600 bp
- very transparent, even at high gel concentrations
- use with all buffer systems

Agarose Low Melt Large DNA grade

Specifications

Gel temperature (1.5 %)	24 - 28 °C
Gel strength (1 %)	≥ 250 g/cm²
Electroendosmosis (EEO)	≤ 0,12
Moisture	≤ 7 %
Melting point (1.5 %)	65.5 °C
Sulphate concentration	≤ 0.1 %

Applications and hints

- high separation capacity for large DNA fragments (≥ 1000 bp)
- enzymatical manipulations (Verdau, Ligation, PCR) in the melted gel possible
- use in analytic and preparative fields

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Chemicals for Molecular Biology

Agaroses

Agarose Low Melt 3

Specifications

Gel temperature (1.5 %)	24 - 28 °C
Gel strength (1 %)	≥ 300 g/cm^2
Gel strength (1.5 %)	≥ 550 g/cm^2
Electroendosmosis (EEO)	≤ 0.12
Moisture	≤ 7 %
Melting point (1.5 %)	≤ 65.5 °C
Sulphate concentration	≤ 0.12 %

Applications and hints

- preparative electrophoresis of DNA, RNA and proteins
- viral plaque assay
- cell culture
- creation of high-percentage gels
- use with all buffer systems
- gentle winning of nucleic acids below the melting point

Agarose Low Melt 4

Specifications

Gel temperature (3 %)	24 - 31 °C
Gel strength (3 %)	≥ 500 g/cm^2
Gel strength (5 %)	≥ 1000 g/cm^2
Electroendosmosis (EEO)	≤ 0.12
Moisture	≤ 7 %
Melting point (3 %)	75 °C
Sulphate concentration	≤ 0.11 %

Applications and hints

- analytic separation of DNA (≤ 500 bp)
- capillary electrophoresis
- at 3% concentration, the resolution of the electrophoresis becomes comparable with an 8% polyacrylamide gel

Agarose Low Melt S

Specifications

Gel temperature (1.5 %)	17 °C
Gel strength (1 %)	≥ 100 g/cm^2
Gel strength (1.5 %)	≥ 350 g/cm^2
Electroendosmosis (EEO)	≤ 0.12
Moisture	≤ 7 %
Melting point (1.5 %)	60 °C
Sulphate concentration	≤ 0.3 %

Applications and hints

- capillary electrophoresis
- cloning of hybridoma and tissue culture cells
- viral plaque assay
- creation of high-percentage gels
- manipulations (Verdau, Ligation, PCR) in the melted gel possible
- gentle winning of nucleic acids below the melting point

Agarose MP

Specifications

pH (1 %)	5.0 - 6.0
Gel strength (1 %)	≥ 1800 g/cm^2
Gel strength (1.5 %)	≥ 3200 g/cm^2
Electroendosmosis (EEO)	≤ 0.12
Moisture	≤ 7 %
Melting point (1.5 %)	88 °C ± 1.5 °C
Sulphate concentration	≤ 0.12 %

Applications and hints

- separation of proteins and nucleic acids
- preparative separation, blotting
- easy to solute in the microwave
- use with all buffer systems

Agarose SMG

Specifications

Gel temperature (1.5 %)	36.5 °C
Gel strength (1.5 %)	≥ 2000 g/cm^2
Gel strength (4 %)	≥ 4250 g/cm^2
Electroendosmosis (EEO)	≤ 0,12
Moisture	≤ 7 %
Melting point (1.5 %)	≤ 89 °C
Sulphate concentration	≤ 0,11 %

Applications and hints

- analytic DNA/RNA gels with fragment sizes of 100 - 1000 bp (at a gel concentration of 2 - 5 %)
- blotting
- very transparent, even at high gel concentrations
- use with all buffer systems

Chemicals for Molecular Biology

Agaroses

Agaroses

Agarose	Quantity	Order No.
Agarose Low EEO	50 g	31-1000-00
Agarose Low EEO	100 g	31-1000-01
Agarose Low EEO	250 g	31-1000-02
Agarose Low EEO	500 g	31-1000-05
Agarose Low EEO	1000 g	31-1000-10
Agarose Medium EEO	50 g	31-1100-00
Agarose Medium EEO	100 g	31-1100-01
Agarose Medium EEO	250 g	31-1100-02
Agarose Medium EEO	500 g	31-1100-05
Agarose High EEO	50 g	31-1200-00
Agarose High EEO	100 g	31-1200-01
Agarose High EEO	250 g	31-1200-02
Agarose High EEO	500 g	31-1200-05
Agarose Special EEO	50 g	31-1300-00
Agarose Special EEO	100 g	31-1300-01
Agarose Special EEO	250 g	31-1300-02
Agarose Special EEO	500 g	31-1300-05
Agarose IMG	50 g	31-1400-00
Agarose IMG	100 g	31-1400-01
Agarose IMG	250 g	31-1400-02
Agarose Low Melt Large DNA grade	10 g	31-1501-01
Agarose Low Melt Large DNA grade	25 g	31-1501-02
Agarose Low Melt Large DNA grade	100 g	31-1500-01
Agarose Low Melt Large DNA grade	250 g	31-1500-02
Agarose Low Melt 3	10 g	31-1601-01
Agarose Low Melt 3	25 g	31-1601-02
Agarose Low Melt 3	100 g	31-1600-01
Agarose Low Melt 3	250 g	31-1600-02
Agarose Low Melt 4	10 g	31-1701-01
Agarose Low Melt 4	25 g	31-1701-02
Agarose Low Melt 4	100 g	31-1700-01
Agarose Low Melt 4	250 g	31-1700-02
Agarose Low Melt S	10 g	31-1801-01
Agarose Low Melt S	25 g	31-1801-02
Agarose Low Melt S	100 g	31-1800-01
Agarose Low Melt S	250 g	31-1800-02
Agarose MP	25 g	31-1900-00
Agarose MP	100 g	31-1900-01
Agarose MP	250 g	31-1900-02
Agarose MP	500 g	31-1900-05
Agarose MP	1000 g	31-1900-10
Agarose SMG	50 g	31-2000-00
Agarose SMG	100 g	31-2000-01
Agarose SMG	250 g	31-2000-02
Loading buffer DNA IV (for Agarose gels)	5 ml	31-2100-00
Loading buffer DNA IV (for Agarose gels)	10 ml	31-2100-01
Loading buffer DNA IV (for Agarose gels)	25 ml	31-2100-02

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PCR Reagents

Taq DNA polymerase

Taq polymerase represents a ultra-pure cleaned thermostable DNA polymerase expressed in *E. coli* .

The recombinant polymerase has a molecular weight of 94 kDa and is free from contaminating nucleases.

The *Taq* DNA polymerase is an optimatd product of Abgene® and licenced for PCR.

Applications
- amplification of DNA fragments with standard PCR

Specifications
- concentration 5 units/μl
- high processive 5´-> 3´ DNA polymerase
- 5´-> 3´ exonuclease activity
- only weak 3´-> 5´exonuclease activity
- free of nucleases

Unit definition
One unit of enzyme is defined as the amount that will incorporate 10 nmol of dNTPs into acid-insoluble material in 30 minutes at 74 °C.

Sope of supply

Enzyme

Taq DNA polymerase in a concentration of 5 units/μl

(in 100 mM KCl, 20 mM Tris-HCl (pH 8.0 at 25 °C), 0.1 mM EDTA, 1 mM DTT, 0,5 % (v/v) Tween 20, 0.5 % (v/v) Nonidet P40, 50 % (v/v) Glycerol)

Reaction Buffer (10x)

750 mM Tris-HCl (pH 8.8 at 25 °C),
200 mM $(NH_4)_2SO_4$,
0.1 % (v/v) Tween 20

Magnesiumchloride solution

25 mM $MgCl_2$

Storage conditions
Taq DNA-Polymerase should be stored at temperatures below 0 °C. Recommended at –20 °C, in a constant temperature freezer.

Description	Quantity	Order No.
Taq DNA polymerase	250 units	40-1000-01
Taq DNA polymerase	2500 units	40-1000-02

PCR oil

- free from RNase, DNase and proteases
- Density 0.84 g/ml

Description	Quantity	Order No.
PCR oil	30 ml	40-2000-01

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PCR Reagents

ThermoprimePlus *Taq* DNA polymerase

ThermoprimePlus *Taq* polymerase represents a ultra-pure cleaned thermostable DNA polymerase expressed in *E. coli* .

The gene of the ThermoprimePlus *Taq*-DNA-Polymerase was originally isolated from the thermophilic bacterium *Thermus aquaticus*. The recombinant polymerase with a molecular weight of 94 kDa has an increase thermostability, whereby it does not lose activity during the shipment.

ThermoprimePlus *Taq* polymerase is an optimatd product of Abgene® and licenced for PCR.

Applications

- amplification of DNA fragments with standard PCR

Specifications

- increase thermostability at DNA denaturing conditions
- higher long-time stability
- no activity loss during the shipment
- tested at amplifications of 12 kb DNA fragments
- no contaminating endo or exonucleases
- concentration 5 units/μl
- high processive 5´-> 3´DNA polymerase
- only weak 3´-> 5´exonuclease activity
- no 5´-> 3´ exonuclease activity

Unit definition

One unit of enzyme is defined as the amount that will incorporate 10 nmol of dNTPs into acid-insoluble material in 30 minutes at 74 °C.

Sope of supply

Enzyme

ThermoprimePlus *Taq* polymerase in a concentration of 5 units/μl

(in 100 mM KCl, 20 mM Tris-HCl (pH 8.0 at 25 °C), 0.1 mM EDTA, 1 mM DTT, 0.5 % (v/v) Tween 20, 0.5 % (v/v) Nonidet P40, 50 % (v/v) Glycerol)

Reaction buffer (10x)

750 mM Tris-HCl (pH 8.8 at 25 °C), 200 mM $(NH_4)_2SO_4$, 0.1 % (v/v) Tween 20

Magnesiumchloride solution

25 mM $MgCl_2$

Storage conditions

ThermoprimePlus *Taq* polymerase should be stored at temperatures below 0 °C. Recommended at –20 °C, in a constant temperature freezer.

Description	Quantity	Order No.
ThermoprimePlus DNA polymerase	250 units	40-1000-03
ThermoprimePlus DNA polymerase	2500 units	40-1000-04

Silicone oil

- free from RNase, DNase and proteases
- Density 1.061 g/ml

Description	Quantity	Order No.
Silicone oil	30 ml	40-2000-02

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PCR Reagents

PCR master mix

The PCR master mix contains thermo stable Thermo-primePlus DNA polymerase and is suitable for most PCR applications.

The ThermoprimePlus DNA polymerase made by Ab-gene® is a product licenced for PCR. The mastermix is available in at 1.1x or 2x concentration. The choise of the right master mix depends on the concentration of the templates used in PCR or on the concentration of the primers.

For a 50 μl core formulation, 45 μl of 1.1 x mastermix are used. The soluted primers are added to a volume of each 1 or 2 μl . It is not necessary to fill up the formulation with water to a final volume of 50 μl .

For a 50 μl core formulation, 25 μl of 2x mastermix are used. The 2x master mix is applied if the template or the primers are only available in a low concentration and shall not be diluted. It could be necessary to fill up formulation to 50 μl final volume.

Applications
- amplification of DNA fragments with standard PCR

Storage conditions
PCR master mixes should be stored at temperatures below 0 °C. Recommended at −20 °C, in a constant temperature freezer.

Composition*
- ThermoprimePlus DNA polymerase 0.025 units/μl (1.25 units in 50 μl formulation)
- 75 mM Tris-HCl (pH 8.8 at 25 °C)
- 20 mM $(NH_4)_2SO_4$
- 0.01 % (v/v) Tween 20
- 200 μM DATP, dCTP, dGTP, dTTP (pro nucleotide)
- 1.5 mM - 4.0 mM $MgCl_2$

*final concentration

Description	Quantity	Order No.
1.1x PCR master mix, 1.5mM $MgCl_2$	for 80 x 50 μl reactions	40-1101-15
1.1x PCR master mix, 1.5mM $MgCl_2$	for 800 x 50 μl reactions	40-1102-15
1.1x PCR master mix, 2.0mM $MgCl_2$	for 80 x 50 μl reactions	40-1101-20
1.1x PCR master mix, 2.0mM $MgCl_2$	for 800 x 50 μl reactions	40-1102-20
1.1x PCR master mix, 2.5mM $MgCl_2$	for 80 x 50 μl reactions	40-1101-25
1.1x PCR master mix, 2.5mM $MgCl_2$	for 800 x 50 μl reactions	40-1102-25
1.1x PCR master mix, 3.0mM $MgCl_2$	for 80 x 50 μl reactions	40-1101-30
1.1x PCR master mix, 3.0mM $MgCl_2$	for 800 x 50 μl reactions	40-1102-30
1.1x PCR master mix, 3.5mM $MgCl_2$	for 80 x 50 μl reactions	40-1101-35
1.1x PCR master mix, 3.5mM $MgCl_2$	for 800 x 50 μl reactions	40-1102-35
1.1x PCR master mix, 4.0mM $MgCl_2$	for 80 x 50 μl reactions	40-1101-40
1.1x PCR master mix, 4.0mM $MgCl_2$	for 800 x 50 μl reactions	40-1102-40
2x PCR master mix, 1.5mM $MgCl_2$	for 80 x 50 μl reactions	40-1201-15
2x PCR master mix, 1.5mM $MgCl_2$	for 800 x 50 μl reactions	40-1202-15
2x PCR master mix, 2.0mM $MgCl_2$	for 80 x 50 μl reactions	40-1201-20
2x PCR master mix, 2.0mM $MgCl_2$	for 800 x 50 μl reactions	40-1202-20
2x PCR master mix, 2.5mM $MgCl_2$	for 80 x 50 μl reactions	40-1201-25
2x PCR master mix, 2.5mM $MgCl_2$	for 800 x 50 μl reactions	40-1202-25
2x PCR master mix, 3.0mM $MgCl_2$	for 80 x 50 μl reactions	40-1201-30
2x PCR master mix, 3.0mM $MgCl_2$	for 800 x 50 μl reactions	40-1202-30
2x PCR master mix, 3.5mM $MgCl_2$	for 80 x 50 μl reactions	40-1201-35
2x PCR master mix, 3.5mM $MgCl_2$	for 800 x 50 μl reactions	40-1202-35
2x PCR master mix, 4.0mM $MgCl_2$	for 80 x 50 μl reactions	40-1201-40
2x PCR master mix, 4.0mM $MgCl_2$	for 800 x 50 μl reactions	40-1202-40

PCR Reagents

dNTP sets, dNTP mix, Magnesiumchloride, PCR water

dNTP sets

Each set contains a batch of four single filled 2'-desoxynucleosid-5´ triphosphate dATP, dCTP, dGTP and dTTP.

The desoxynucleotides are available in concentrations of either 10 mM or 100 mM.

Applications
- PCR
- RT PCR
- DNA labelling
- DNA sequencing
- site-directed mutagenesis

Storage conditions
dNTP sets should be stored at temperatures below 0 °C. Recommended at −20 °C, in a constant temperature freezer.

Description	Quantity	Order No.
dNTP set (10 mM)	4 x 0.50 ml (5 μmol ea. dNTP)	40-1300-01
dNTP set (100 mM)	4 x 0.25 ml (25 μmol ea. dNTP)	40-1300-02
dNTP set (100 mM)	16 x 0.25 ml (4 x 25 μmol ea. dNTP)	40-1300-03

dNTP mix

The dNTP mix contains a mix of all four 2'-Desoxynucleosid-5´-triphosphates dATP, dCTP, dGTP and dTTP with a total concentration of 20 mM. It is possible to directly give this mix into the PCR reaction.

For a 50 μl core formulation, 2 μl dNTP mixes shall be used, whereby a 200 μM concentration per dNTP occures.

Applications
- PCR
- RT PCR
- DNA labelling
- DNA sequencing
- site-directed mutagenesis

Storage Conditions
dNTP mix should be stored at temperatures below 0 °C. Recommended at −20 °C, in a constant temperature freezer.

Description	Quantity	Order No.
dNTP-Mix (20 mM)	1.0 ml (5 μmol je dNTP)	40-1300-04

Magnesium chloride

Magnesium chloride is applicable in the field of PCR. The solution should be stored at temperatures below 0 °C.

Recommended at −20 °C, in a constant temperature freezer.

Description	Quantity	Order No.
MgCl$_2$ (2.5 mM)	5 ml	40-1300-05

PCR water

PCR water is sterile, free of RNase andDNase and treated with DEPC.

No proteases traceable.

Description	Quantity	Order No.
PCR water	500 ml	21-9000-05
PCR water	1000 ml	21-9000-10

Molecular Weight Markers
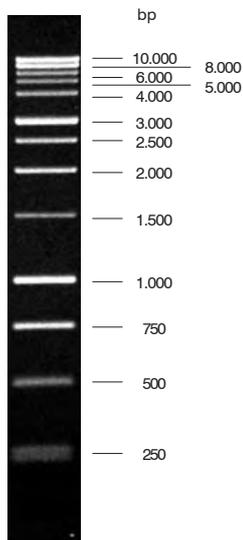
DNA ladders

1 kb DNA ladder

Description
Easy reference ladder with brigher bands at 1 kb and 3 kb.

Size range / number of bands
250 bp to 10,000 bp / 13

Concentration
100 μg/ml

Sope of supply
The 1 kb DNA ladder is shipped in TE buffer with an additional vial 6 x loading buffer. (Description on page 143)

Note
Typically, 5 μl of the ladder should be mixed with 1.5 μl of 6x loading buffer and made up to 10 μl for loading.

Storage Conditions
For routine use, the DNA ladder should be stored at 4 °C. For a longer storage, it is recommended to freeze it at −20 °C. The ladder can be shipped without refigeration.

Description	Quantity	Order No.
1 kb DNA ladder	50 μg (100 runs)	40-1400-01
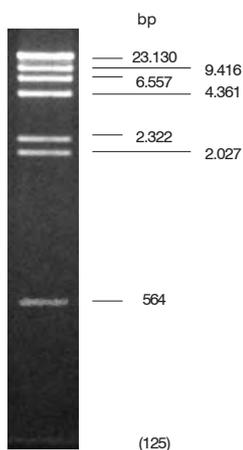
Lambda *Hind* III DNA ladder

Description
Lambda DNA *Hind* III digest

Size range / number of bands
125 bp - 23,130 bp / 8

Concentration
200 μg/ml

Sope of supply
The Lambda DNA *Hind* III digest. is supplied in loading buffer (10 mM Tris-HCl (pH 8.0), 20 mM NaCl, 10 mM EDTA, 5 % (v/v) Glycerol, 0.025 % (w/v) bromphenol blue) for an immediate use plus a separate vial of 6x loading buffer to add to the sample. (Description on page 143)

Note
Typically, 2 μl DNA ladder should be used for loading.

Storage Conditions
For routine use, the DNA ladder should be stored at 4 °C. For a longer storage, it is recommended to freeze it at −20 °C. The ladder can be shipped without refigeration

Description	Quantity	Order No.
Lambda *Hind* III	100 μg (250 runs)	40-1400-02

Molecular Weight Markers

DNA ladders

Lambda *Eco*R I/*Hind* III DNA ladder

Description

Lambda DNA *Eco*R I/*Hind* III digest.

Size range / number of bands

125 bp - 21,226 bp / 13

Concentration

200 μg/ml

Sope of supply

The Lambda *Eco*R I/*Hind* III-DNA ladder is supplied in loading buffer (10 mM Tris-HCl (pH 8.0), 20 mM NaCl, 10 mM EDTA, 5 % (v/v) Glycerol, 0.025 % (w/v) bromphenol blue) an immediate use plus a separate vial of 6 x loading buffer to add to the sample. (Description on page 143)

Note

Typically, 2 μl DNA ladder should be used for loading.

Storage Conditions

For routine use, the DNA ladder should be stored at 4 °C. For a longer storage, it is recommended to freeze it at −20 °C. The ladder will be shipped on ice.
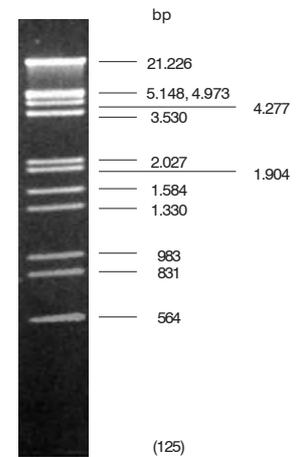
Descrption	Quantity	Order No.
Lambda *Eco*R I/*Hind* III	100 μg (250 runs)	40-1400-03

ØX174 RF *Hae* III DNA ladder

Description

ØX174 RF DNA *Hae* III digest

Size range / number of bands

72 bp - 1353 bp / 11

Concentration

250 μg/ml

Sope of supply

The ØX174 RF *Hae* III DNA ladder is supplied in TE buffer with a separate vial of 6x loading buffer. (Description on page 143)

Note

Typically, 2 μl DNA ladder should be mixed with 1.5 μl of 6x loading puffer and made up to 10 μl for loading.

Storage conditions

For routine use, the DNA ladder should be stored at 4 °C. For a longer storage, it is recommended to freeze it at −20 °C. The ladder will be shipped on ice.
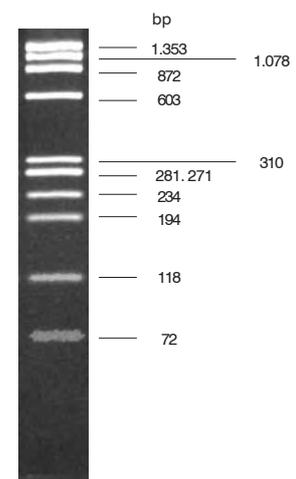
Description	Quantity	Order No.
ØX174 RF *Hae* III	50 μg (100 runs)	40-1400-04

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Molecular Weight Markers

DNA ladders


```
bp
1.057
770
        612
495
        392
345, 341
        335
297.291
210

162

(79)
```
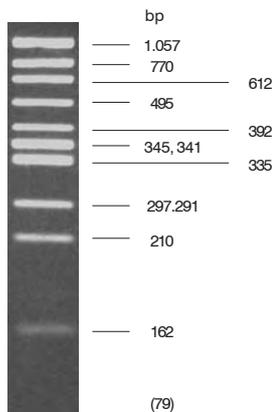
ØX174 RF *Hinc* II DNA ladder

Decription

ØX174 RF DNA *Hinc* II digest

Size range / number of bands

79 bp - 1,057 bp / 13

Concentration

250 µg/ml

Sope of supply

The ØX174 RF DNA *Hinc* II DNA ladder is supplied in TE buffer with a separate vial of 6x loading buffer. (Description on page 143)

Note

Typically, 2 µl DNA ladder should be mixed with 1.5 µl of 6x loading puffer and made up to 10 µl for loading.

Storage conditions

For routine use, the DNA ladder should be stored at 4 °C. For a longer storage, it is recommended to freeze it at −20 °C. The ladder will be shipped on ice.

Description	Quantity	Order No.
ØX174 RF DNA *Hinc* II	50 µg (100 runs)	40-1400-05


```
bp
726
        713
553
        500
427, 417, 413
311
249
200
151
        140
118
        100
82
        66

48, 42
40, 24
```
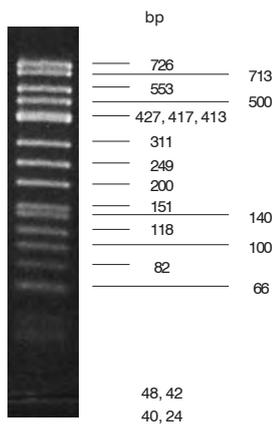
ØX174 RF *Hinf* I DNA ladder

Description

ØX174 RF DNA *Hinf* I digest

Size range / number of bands

24 bp - 726 bp / 20

Concentration

250 µg/ml

Sope of supply

The ØX174 RF DNA *Hinf* I DNA ladder is supplied in TE buffer with a separate vial of 6x loading buffer. (Description on page 143)

Note

Typically, 2 µl DNA ladder should be mixed with 1.5 µl of 6x loading puffer and made up to 10 µl for loading.

Storage Conditions

For routine use, the DNA ladder should be stored at 4 °C. For a longer storage, it is recommended to freeze it at −20 °C. The ladder will be shipped on ice.

Description	Quantity	Order No.
ØX174 RF DNA *Hinf* I	50 µg (100 runs)	40-1400-06

Molecular Weight Markers

DNA ladder, loading buffer

pBR322 *Msp* I DNA ladder

Description

pBR322 *Msp* I plasmid DNA digest

Size range / number of bands

9 - 622 bp / 21

Concentration

50 μg/ml

Sope of supply

The pBR322 *Msp* I DNA ladder iis supplied in TE buffer with a separate vial of 6x loading buffer. (Description on page 143)

Note

Typically, 2 μl DNA ladder should be mixed with 1.5 μl of 6x loading puffer and made up to 10 μl for loading.

Storage Conditions

For routine use, the DNA ladder should be stored at 4 °C. For a longer storage, it is recommended to freeze it at −20 °C. The ladder will be shipped on ice.

bp

622
527
404
307
242

(238, 217, 201. 190 ,180, 160, 147, 123, 110, 90, 76, 67, 34 26, 15, 9)
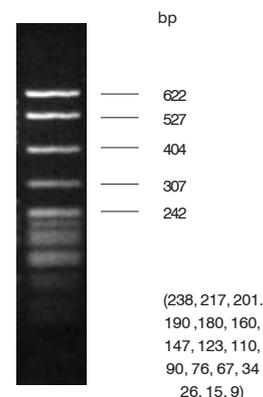
Description	Quantity	Order No.
pBR322 *Msp* I	50 μg (100 runs)	40-1400-07

Loading buffer for DNA ladders

(included in the scope of supply of DNA ladders)

Composition

15 % (w/v) Ficoll®400, 0.06 % (w/v) bromphenol blue, 0.06 % (w/v) Xylencyanol FF, 30 mM EDTA

Note

Add 1 volume of loading dye to buffer to 5 volumes of samples to be loaded onto the gel. Bromphenol blue and Xylencyanol migrate at approx. 300 bp and 4,000 bp respectively in 0.5 - 1.4 % agarose gel concentration with 0.5x TBE.

Storage Conditions

Loading buffer can be storaged at room temperature. The shipment will be made at ambient temperature.

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Notes

Bio-Imaging-Systems

Overview Imaging Systems
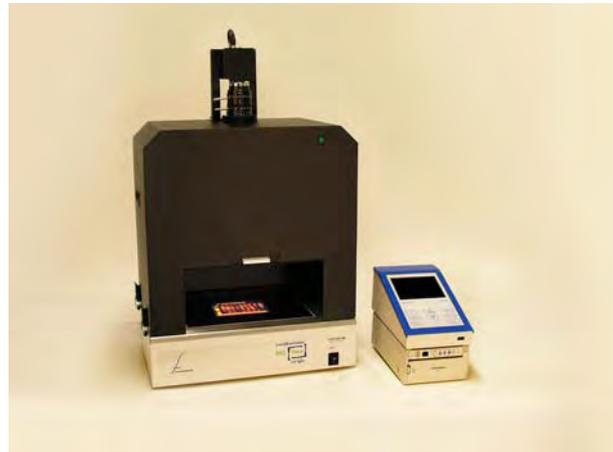
Overview Imaging Systems

Systems	Greyscale camera	Colour camera	Cooled camera	UV-fluorescence for gels	UV-fluorescence for TLC	VIS-fluorescence 470 - 620 nm	Chemiluminescence	Densitometry	Greyscales	Notes
Gerix 1010 Gerix 1020 Gerix 1030	x			x					256	Reasonably-priced system, easy-to-use, integrated overexposure control
Gerix 1040 Gerix 1050	x			x	x			x	256	Compact, PC-independent gel documentation, also suitable for preparative works
Felix 1010/2010 Felix 1020/2020 Felix 1030/2030		x		x					256, 24 Bit colour	Standard gel documentation based on high-resolution colour cameras, complete control via PC software
Felix 1040 Felix 2040		x		x	x			x	256, 24 Bit colour	PC-controlled gel documentation with comfortable dark hood incl. analysis software Gelix One®
Felix 1050 Felix 2050		x		x	x			x	256, 24 Bit colour	Professional PC-controlled gel documentation for analytical and preparative applications
Felix 5040 Felix 6040 Felix 7040	x			x	x			x	ext. 256 int. 1024	Efficient gel documentation for highest sensitivity and optimal quantification
Felix 5050 Felix 6050	x			x	x			x	ext. 256 int. 1024	High-End gel documentation for analytical and preparative applications
Chemi-BIS 1.6 Chemi-BIS 3.2 Chemi-BIS 6.0	x		x				x		65.536	Compact, ultra-sensitive chemiluminescence system
F-Chemi-BIS 1.6 F-Chemi-BIS 3.2 F-Chemi-BIS 6.0	x		x	x	x		x	x	65.536	High-Performance system with high sensitivity and huge application range
F-Chemi-BIS 1.6 Pro F-Chemi-BIS 3.2 Pro F-Chemi-BIS 6.0 Pro	x		x	x	x	x	x	x	65.536	Multi-Modal-High-End system for In-Vivo and In-Vitro applications
PowerScan 600 PowerScan 800 PowerScan 1000								x	65.536	Scanner systems (densitometer) for colorimetric marked samples e.g. Coomassie®Blue gels, SilverStain gels

Gel Documentation Systems

PC-independent systems

Gerix 1010

Example

Gerix 1010 is an easy-to-use imaging system for a simple gel documentation where no PC is needed for control.

Proteins and DNA/RNA samples can be recorded in a fast and efficient way. The exposed gels can be saved as digital image on a memory card and can be processed and evaluated on a PC afterwards.

The small transportable documentation system includes a set-top dark hood and a UV transilluminator. Gerix 1010 can also be placed on any other transilluminator with a maximum filter size of 23 x 30 cm.

The CCD camera guarantees a real live image for an easy positioning of the gels. The settings of the integration time for an optimal image acquisition are made by an external control unit with integrated LCD display

The image can be printed immediately on an optionally available thermal printer P93E.

Technical data

Basic system Gerix 1000

Camera	Sensitive CCD compact camera B8-437G
Resolution	752 x 582 pixel
Zoom objective	manual zoom objective 8 - 48 mm
Filter	1 filter (EtBr or optional)
Greyscales	8 Bit (256)
Max. integration time	10 sec
Control/Storage	Control unit with 5.6" LCD display, keyboard and memory card drive

Set-top dark hood DH-10   Dimensions (W x D) 30 x 25 cm

Transilluminator UST-20M-8K   Filter size 20 x 20 cm, wavelength 312 nm

Equipment

Basic equipment Gerix 1010

- basic system Gerix 1000 incl. camera B8-437G with zoom objective, filter and control unit
- set-top dark hood DH-10
- UV transilluminator UST-20M-8K with UV protection shield

Alternative equipment (see pages 181 - 225)

- filter for other fluorescence dyes
- transilluminators*
- UV conversion screens
- dark hoods incl. white and/or UV top-light
- b/w-thermal printer Mitsubishi P93E
- analysis software for 1D gels
- more accessories on request

*   Gerix 1010 is also compatible with all biostep transilluminators with a max. filter size of 23 x 30 cm

Description	Order No.
Gel documentation system Gerix 1010	BG51-A1010
Gel documentation system Gerix 1015, incl. printer P93E	BG51-A1015

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Gel Documentation Systems

PC-independent systems

Gerix 1020/Gerix 1030

The gel documentation systems Gerix 1020 and 1030 are based on the basic system Gerix 1000. They are equipped with the dark hoods DH-20 or DH-30 as well as appropriate transilluminators. There is no need for a PC as both systems are controlled via an external control unit. The settings of aperture, zoom and focus are manually made at the objective.

The systems differ in their max. detectable sample size. Gerix 1020 can expose samples with a size of max. 20 x 20 cm; Gerix 1030 samples of max. 23 x 30 cm.

Due to the equipment of the dark hoods with white top-light, the positioning of the gels is simplified and the application possibilities are widened.

The overexposure control integrated in the system guarantees optimally exposed images for a following correct quantification.

The transfer of the image data from Gerix to PC is made with the memory card.
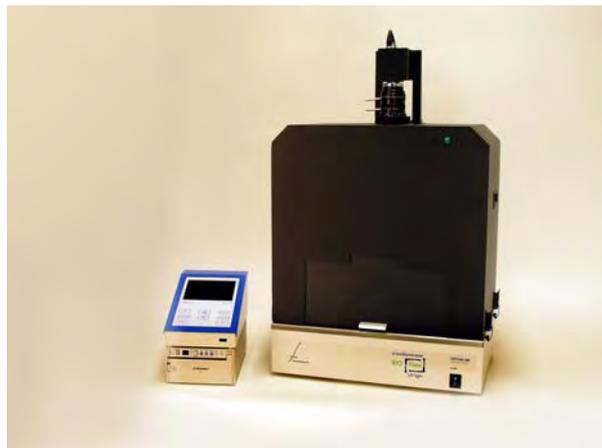
Example

Technical data

Basic system Gerix 1000	see page 148
Dark hood DH-20	Dark hood with sliding door and white top-light footprint (W x D) 32.5 x 32 cm max. sample size 20 x 20 cm
Dark hood DH-30	Dark hood with sliding door and white top-light footprint (W x D) 47 x 32 cm max. sample size 23 x 30 cm
Transilluminator UST-20M-8K	Filter size 20 x 20 cm, wavelength 312 nm
Transilluminator UXT-30M-15K	Filter size 23 x 30 cm, wavelength 312 nm

Equipment

Basic equipment Gerix 1020
- basic system Gerix 1000
- dark hood DH-20
- UV transilluminator UST-20M-8K

Basic equipment Gerix 1030
- basic system Gerix 1000
- dark hood DH-30
- UV transilluminator UXT-30M-15K

Alternative equipment (see pages 181 - 225)
- filter for other fluorescence dyes
- transilluminators*
- UV conversion screens
- dark hood s incl. white and/or UV top-light
- b/w-thermal printer Mitsubishi P93E
- analysis software for 1D gels
- more accessories on request

* Gerix 1020 and 1030 are alternatively compatible with transilluminators with 2 UV wavelengths, blue/monochromatic LEDs and whitelight

Description	Order No.
Gel documentation system Gerix 1020	BG51-A1120
Gel documentation system Gerix 1025, incl. printer P93E	BG51-A1125
Gel documentation system Gerix 1030	BG51-A1230
Gel documentation system Gerix 1035, incl. printer P93E	BG51-A1235

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Gel Documentation Systems

PC-independent systems

Gerix 1040

Gerix 1040, basing on the basic system Gerix 1000, is a comfortable documentation system with various application possibilities. The equipment with UV transilluminator, white top-light and white light transmission (UV conversion screen) enables fluorescence and white light acquisitions, such as gels, films, blots and Petri dishes.

The intensity switch 50/100 % on the transilluminator allows the change between preparative and analytic applications.

The dark hood is equipped with an automatic UV shut-off when open the door. Inspecting the gels under UV light can be realised with the preparativ function. If requested, a UV protection shield can be used in the dark hood DH-40.

Gerix 1040 does not need an additional PC for the acquisition and print-out of images. The control of the system and the overexposure control is made via the external control unit.

The optional thermal printer P93E can be put on the printer holder which is mounted on the dark hood. This is space-saving and convenient.

Technical data

Basic system Gerix 1000	
Camera	Sensitive CCD compact camera B8-437G
Resolution	752 x 582 pixel
Zoom Objective	manual zoom objective 8 - 48 mm
Filter	1 filter (EtBr or optional)
Greyscales	8 Bit (256)
max. integration time	10 sec
Control/Storage	Control unit with 5.6" LCD display, keyboard and memory card drive
Dark hood DH-40	Dark hood with white top-light and preparative function, footprint (W x D) 55 x 48 cm max. sample size 27 x 40 cm
Transilluminator UST-20M-8E	Filter size 20 x 20 cm, wavelength 312 nm, intensity switch 50/100 %

Equipment

Basic equipment Gerix 1040
- basic system Gerix 1000 incl. camera B8-437G with zoom objective, filter and control unit
- dark hood DH-40 with printer holder**
- UV transilluminator UST-20M-8E
- conversion screen WY-24

Alternative equipment (see pages 181 - 225)
- filter for other fluorescence dyes
- transilluminators*
- UV conversion screens
- dark hoods incl. UV top-light (TLC), filter wheel
- b/w-thermal printer Mitsubishi P93E
- analysis software for 1D gels
- more accessories on request

*   Gerix 1040 is also compatible with all biostep transilluminators with max. filter size 27 x 40 cm
** Printer holder is only included as part of the basic equipment at the system Gerix 1045

Description	Order No.
Gel documentation system Gerix 1040	BG51-A1340
Gel documentation system Gerix 1045, incl. printer P93E	BG51-A1345

Gel Documentation Systems

PC-independent systems

Gerix 1050

Gerix 1050 is an excellent documentation system, suitable for analytical and preparative tasks. Based on the basic system Gerix 1000, it is equipped with UV light (transilluminator 312 nm), white top-light and white light transmission (UV conversion screen).

The control of the camera and of the overexposure as well as the storage of the image data is realised by the external control unit.

In addition to the automated UV shut-off and the preparative function, the dark hood DH-50 contains a roll-out table for the transilluminator and a UV protection shield. This equipment eases the cutting of bands as well as the positioning and removing of gels considerably. Furthermore, the 10 stepped intensity setting of 10 - 100 % on the UV transilluminator is of high advantage.

If requested, the system can be equipped with UV top-light in two wavelengths (e.g. 254 nm, 365 nm) for TLC applications. The printer holder mounted on the side of the Dark hood provides space for the thermal printer P93E or another A6 printer.

Example

Technical data

Basic system Gerix 1000

Camera	Sensitive CCD compact camera B8-437G
Resolution	752 x 582 pixel
Zoom Objective	manual zoom objective 8 - 48 mm
Filter	1 filter (EtBr or optional)
Greyscales	8 Bit (256)
max. integration time	10 sec
Control/Storage	Control unit with 5.6" LCD display, keyboard and memory card drive

Dark hood DH-50

Dark hood with white top-light and preparative function, roll-out table for transilluminator, UV protection shield
case size (W x D) 55 x 48 cm
max. sample size 23 x 30 cm

Transilluminator UST-20M-8R

Filter size 20 x 20 cm, wavelength 312 nm, intensity setting 10 - 100%

Equipment

Basic equipment Gerix 1050
- basic system Gerix 1000 incl.
  camera B8-437G with zoom objective,
  filter and control unit
- dark hood DH-50 with printer holder**
- UV transilluminator UST-20M-8R
- conversion screen WY-24

Alternative equipment (see pages 181 - 225)
- filter for other fluorescence dyes
- transilluminators*
- UV conversion screens
- dark hoods incl. UV top-light (TLC), filter wheel
- b/w-thermal printer Mitsubishi P93E
- analysis software for 1D gels
- more accessories on request

*   Gerix 1050 is also compatible with all biostep transilluminators with a
     max. filter size of 23 x 30 cm, max. case size of 32.5 x 32.2 x 10.5 cm
** Printer holder is only included as part of the basic equipment at the system
     Gerix 1055

Description	Order No.
Gel documentation system Gerix 1050	BG51-A1450
Gel documentation system Gerix 1055, incl. printer P93E	BG51-A1455

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Gel Documentation Systems

PC-controlled systems

Felix 1010 / Felix 2010

Example

The PC-controlled gel documentation systems Felix 1010 and Felix 2010 are based on a digital camera. They are user-friendly and distinguish by their high resolution. The complete control of the camera and the motorzoom objective is realised via the biostep PC-software argusX1®. The program contains many functions for the image processing. An integrated data base serves for the clear administration of large data amounts.

Two digital camera models are available which differ in their resolution, sensitivity and equipment.

In addition to the transportable set-top dark hood, the systems consist of a UV transilluminator. In dependence on their application, they can also be place over any other transilluminator with a maximum filter size of 23 x 30 cm.

Felix 1010 and 2010 are optionally upgradable, e. g. with a PC, thermal printer P93DW and analysis software.

Minimum requirements for PC
- Pentium/Athlon 1.2 GHz, 256 MB, Win XP/2000
- 1 - 2 free USB 2.0 ports

Technical data

ImageSystem Felix 1000* / Felix 2000*	
Camera	Digital camera Felix 1000* bzw. Felix 2000*
Resolution	5 Mio. pixel
Zoom objective	motorzoom
Filter	1 filter (EtBr or optional)
Greyscales/Colour	8 Bit (256) / 24 Bit (16,7E6)
Max. integration time	10 sec at Felix 1000
	16 sec at Felix 2000
Control/Storage	Software** argusX1® /PC-interface (USB)
Set-top dark hood DH-10	Footprint (W x D) 30 x 25 cm
Transilluminator UST-20M-8K	Filter size 20 x 20 cm, wavelength 312 nm

Equipment

Basic equipment Felix 1010
- ImageSystem Felix 1000
- set-top dark hood DH-10
- UV transilluminator UST-20M-8K
  with UV protection shield

Basic equipment Felix 2010
- ImageSystem Felix 2000
- set-top dark hood DH-10
- UV transilluminator UST-20M-8K
  with UV protection shield

Alternative equipment (see pages 178 - 229)
- additional modules for acquisition software argusX1®
- transilluminators***
- UV conversion screens
- dark hoods incl. UV top-light (TLC), filter wheel
- PC systems or notebook
- b/w-thermal printer Mitsubishi P93DW
- analysis software for 1D, 2D gels
- more accessories on request

* Specifications on page 174
** Specifications on pages 176 - 179
*** The systems are compatible with transilluminators with max. filter size 23 x 30 cm

Description	Order No.
Gel documentation system Felix 1010	BG62-A2010
Gel documentation system Felix 2010	BG62-A2015
b/w-thermal printer Mitsubishi P93DW (specifications page 208)	CD02-D1315
PC-system Standard (specifications page 206)	CC01-A1040
1D analysis software GelixOne® 210 (specifications page 217)	BG02-A8010

Gel Documentation Systems

PC-controlled systems

Felix 1020/Felix 2020, Felix 1030/Felix 2030

The gel documentation systems Felix 1020/2020 and Felix 1030/2030 are based on the basic systems Felix 1000/2000. They are equipped with the dark hoods DH-20 or DH-30 as well as appropriate transilluminators.

Image acquisition, control of the cameras and image processing are realised via the biostep software argusX1®. In combination with argusX1®, the systems are efficient, easy-to-use and have all advantages of a digital camera.

The systems differ in their max. detectable sample size. Felix 1020/2020 can expose samples with a size of max. 20 x 20 cm, Felix 1030/2030 samples of max. 23 x 30 cm.

Due to the equipment of the dark hoods with white top-light, the positioning of the gels is simplified and the application possibilities are widened.

Example

Minimum requirements for PC
- Pentium/Athlon 1.2 GHz, 256 MB, Win XP/2000
- 1 - 2 free USB 2.0 ports

Technical data

ImageSystem Felix 1000	see pages 152, 174
ImageSystem Felix 2000	see pages 152, 174
Control/Storage	Software* argusX1® /PC-interface (USB)
Dark hood DH-20	Dark hood with sliding door and white top-light footprint (W x D) 32.5 x 32.0 cm max. sample size 20 x 20 cm
Dark hood DH-30	Dark hood with sliding door and white top-light footprint (W x D) 47 x 32 cm max. sample size 23 x 30 cm
Transilluminator UST-20M-8K	Filter size 20 x 20 cm, wavelength 312 nm
Transilluminator UXT-30M-15K	Filter size 23 x 30 cm, wavelength 312 nm

Equipment

Basic equipment Felix 1020/2020
- ImageSystem Felix 1000 or Felix 2000
- dark hood DH-20
- UV transilluminator UST-20M-8K

Basic equipment Felix 1030/2030
- ImageSystem Felix 1000 or Felix 2000
- dark hood DH-30
- UV transilluminator UXT-30M-15K

Alternative equipment (see pages 178 - 229)
- additional modules for acquisition software argusX1®
- transilluminators***
- UV conversion screens
- dark hoods incl. UV top-light (TLC), filter wheel
- PC systems or notebook
- b/w-thermal printer Mitsubishi P93DW
- analysis software for 1D, 2D gels
- more accessories on request

*   Specifications on pages 176 - 179
**   The systems are compatible with transilluminators with 2 UV wavelengths, blue, monochromatic LEDs and white light

Description	Order No.
Gel documentation system Felix 1020	BG62-A2120
Gel documentation system Felix 2020	BG62-A2125
Gel documentation system Felix 1030	BG62-A2230
Gel documentation system Felix 2030	BG62-A2235
1D analysis software GelixOne® 220 (specifications page 218)	BG02-A8120

Gel Documentation Systems

PC-controlled systems

Felix 1040/Felix 2040
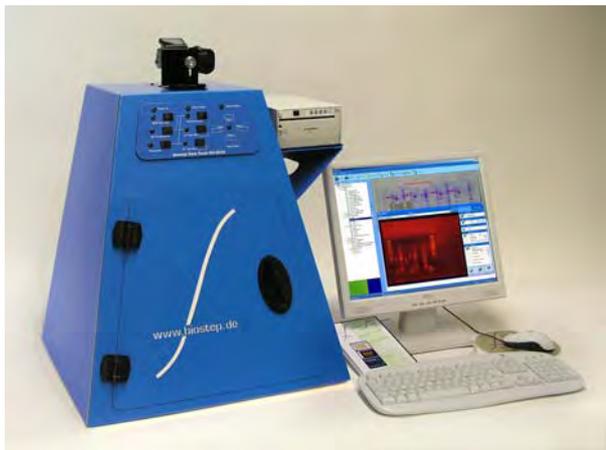
Example

Minimum requirements for PC
- Pentium/Athlon 1.2 GHz, 256 MB, Win XP/2000
- 1 - 2 free USB 2.0 ports

Felix 1040 and Felix 2040 are comfortable documentation systems with various application possibilities as well as a complete control of the camera and the motorzoom objective. The equipment with UV transilluminator, white top-light and white light transmission (UV conversion screen) enables fluorescence and white light acquisitions, such as gels, films, blots and Petri dishes.

The intensity switch 50/100% on the transilluminator allows the change between preparative and analytic applications.

The dark hood is equipped with an automatic UV shut-off when open the door. Inspecting the gels under UV light can be realised with the preparativ function. If requested, a UV protection shield can be used in the dark hood DH-40.

The gel documentation systems Felix 1040/Felix 2040 are equipped with the powerful software packages argusX1® incl. the additional module User administration and Gelix One® 220 (1D analysis).

Technical data

ImageSystem Felix 1000	see pages 152, 174
ImageSystem Felix 2000	see pages 152, 174
Control/Storage	Software* argusX1® /PC-interface (USB)
Dark hood DH-40	Dark hood mit white top-light and preparative function, footprint (W x D) 55 x 48 cm max. sample size 27 x 40 cm
Transilluminator UST-20M-8E	Filter size 20 x 20 cm, wavelength 312 nm, intensity switch 50/100 %

Equipment

Basic equipment Felix 1040/2040
- ImageSystem Felix 1000 or Felix 2000
- argusX1® additional module User administration*
- dark hood DH-40
- UV transilluminator UST-20M-8E
- conversion screen WY-24
- 1D analysis software Gelix One® 220**

Alternative equipment (see pages 178 - 229)
- additional modules for acquisition software argusX1®
- transilluminators***
- UV conversion screens
- dark hoods incl. UV top-light (TLC), filter wheel
- PC systems or notebook
- b/w-thermal printer Mitsubishi P93DW
- analysis software for 1D, 2D gels
- more accessories on request

* Specifications on pages 176 - 179
** Specifications on pages 216, 218
*** The systems are compatible with transilluminators with max. filter size 27 x 40 cm

Note:
Printer holder is only included free of charge when purchasing the printer P93DW, the PC/printerholder only when purchasing a PC-system Professional.

Description	Order No.
Gel documentation system Felix 1040	BG62-A2340
Gel documentation system Felix 2040	BG62-A2345
b/w-thermal printer Mitsubishi P93DW (Specifications page 208)	CD02-D1315
PC-system Standard (Specifications page 206)	CC01-A1040
UV protection shield for dark hood DH-40 (Specifications page 204)	BD05-M8020

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Gel Documentation Systems

PC-controlled systems

Felix 1050/Felix 2050

Felix 1050 and Felix 2050 are perfectly suitable for analytic and preparativ tasks. The systems are based on the basic systems Felix 1000/Felix 2000. They are equipped with UV light (transilluminator 312 nm), white top-light and white light transmission (UV conversion screen WY-24), the acquisition software argusX1® incl. the additional modules User administration and GLP as well as the 1D software Gelix One® 230.

In addition to the automated UV shut-off and the preparative function, the dark hood DH-50 contains a roll-out table for the transilluminator and a UV protection shield. This equipment eases the cutting of bands as well as the positioning and removing of gels considerably. Furthermore, the 10 stepped intensity setting of 10 - 100 % on the UV transilluminator is of high advantage.

If requested, the system can be equipped with UV top-light in two wavelengths (e.g. 254 nm, 365 nm) for TLC applications.

The key-independent remote control of the camera is made by the Control Panel CP-1 for minimizing any contamination of PC keyboard and PC mouse.

Example

Minimum requirements for PC
- Pentium/Athlon 1.2 GHz, 256 MB, Win XP/2000
- 1 - 2 free USB 2.0 ports

Technical data

ImageSystem Felix 1000	see pages 152, 174
ImageSystem Felix 2000	see pages 152, 174
Control/Storage	Software* argusX1® /PC-interface (USB)
Dark hood DH-50	Dark hood with white top-light and preparative function, roll-out table for transilluminator, UV protection shield, footprint (W x D) 55 x 48 cm max. sample size 23 x 30 cm
Transilluminator UST-20M-8R	Filter size 20 x 20 cm, wavelength 312 nm, intensity setting 10 - 100 %

Equipment

Basic equipment Felix 1050/2050
- ImageSystem Felix 1000 bzw. Felix 2000
- argusX1® additional modules User administration*, GLP*
- control Panel CP-1 for remote control*
- dark hood DH-50
- UV transilluminator UST-20M-8R
- conversion screen WY-24
- 1D analysis software Gelix One® 230**

Note:
Printer holder is only included free of charge when purchasing the printer P93DW, the PC/printerholder only when purchasing a PC-system Professional.

Alternative equipment (see pages 178 - 229)
- additional modules for acquisition software argusX1®
- transilluminators***
- UV conversion screens
- dark hoods incl. UV top-light (TLC), filter wheel
- PC systems or notebook
- b/w-thermal printer Mitsubishi P93DW
- analysis software for 1D, 2D gels
- more accessories on request

* Specifications on pages 176 - 179
** Specifications on pages 216, 219
*** The systems are compatible with all biostep transilluminators with max. filter size 23 x 30 cm, max. case size 32.5 x 32.2 x 10.5 cm

Description	Order No.
Gel documentation system Felix 1050	BG62-A2450
Gel documentation system Felix 2050	BG62-A2455
b/w-thermal printer Mitsubishi P93DW (Specifications page 208)	CD02-D1315
PC-system Professional I, Shuttle PC (Specifications page 206)	CC01-A1080
UV top-light Standard for dark hood DH-50 (Specifications page 205)	BD03-M7150

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Gel Documentation Systems

PC-controlled systems

Felix 5040/Felix 6040/Felix 7040

Example

Minimum requirements for PC
- Pentium/Athlon 1.2 GHz, 256 MB, Win XP/2000
- 1 free FireWire (IEEE1394) port

The gel documentation systems Felix 5040/6040/7040 are each equipped with high-performance, very sensitive Progressive-Scan-CCD cameras. Besides the gel documentation, the systems are also optimally suitable for quantitative applications due to their huge linear dynamic range (3.4 OD).

The equipment with UV transilluminator, white top-light and white light transmission (UV conversion screen) enables fluorescence as well as white light acquisitions in a large application range.

The functionality of the dark hood DH-40 and the transilluminator UST-20M-8E (intensity switch 50/100 %) allows the change between preparative and analytic applications.

The systeme Felix 5040/6040/7040 are equipped with the powerful acquisition software argusX1® incl. the additional module User administration and the 1D analysis software Gelix One® 220.

Technical data

ImageSystem Felix 5000	Resolution 1034 x 779 pixel, see page 175
ImageSystem Felix 6000	Resolution 1392 x 1040 pixel, see page 175
ImageSystem Felix 7000	Resolution 1628 x 1236 pixel, see page 175
Control/Storage	Software* argusX1® /PC-interface (FireWire)
Dark hood DH-40	Dark hood with white top-light and preparative function, footprint (W x D) 55 x 48 cm, max. sample size 27 x 40 cm
Transilluminator UST-20M-8E	Filter size 20 x 20 cm, wavelength 312 nm, Intensity switch 50/100 %

Equipment

Basic equipment 5040/6040/7040
- ImageSystem Felix 5000, Felix 6000 or Felix 7000
- argusX1® additional module User administration*
- dark hood DH-40
- UV transilluminator UST-20M-8E
- conversion screen WY-24
- 1D analysis software Gelix One® 220**

Alternative equipment (see pages 178 - 229)
- additional modules for acquisition software argusX1®
- transilluminators***
- UV conversion screens
- dark hoods incl. UV top-light (TLC), filter wheel
- PC systems or notebook
- b/w-thermal printer Mitsubishi P93DW
- analysis software for 1D, 2D gels
- more accessories on request

* Specifications on pages 176 - 179
** Specifications on pages 216, 218
*** The systems are compatible with all biostep transilluminators with max. filter size 27 x 40 cm

Note:
Printer holder is only included free of charge when purchasing the printer P93DW, the PC/printerholder only when purchasing a PC-System Professional.

Description	Order No.
Gel documentation system Felix 5040	BG62-A3540
Gel documentation system Felix 6040	BG62-A3640
Gel documentation system Felix 7040	BG62-A3740
b/w-thermal printer Mitsubishi P93DW (Specifications page 208)	CD02-D1315
PC-system Standard (Specifications page 206)	CC01-A1040

Gel Documentation Systems

PC-controlled systems

Felix 5050/Felix 6050/Felix 7050

The systems Felix 5050/6050/7050 are professional documentation and quantification systems, which distinguish in a highly comfortable handling, a great equipment and high-quality acquisitions.

Due to the newly developed Super Contrast transilluminator, different fluorescence stains can be exposed with an improved proof sensitivity and a brilliant signal contrast - without changing the filter.

The functionality of the dark hood DH-50 (roll-out table, UV protection shield) and of the transilluminator (intensity setting 10 - 100 %) allow a comfortable preparative work. The high resolution, the huge linear dynamic range and the excellent proof sensitivity are very advantageous for analytic applications.

The software packages argusX1® incl. the additional modules User administration and GLP as well as Gelix One® 230 are part of the systems.

If requested, the systems can be equipped with UV top-light in two wavelengths.

Example

Minimum requirements for PC
- Pentium/Athlon 1.2 GHz, 256 MB, Win XP/2000
- 1 free FireWire (IEEE1394) port

Technical data

ImageSystem Felix 5000	Resolution 1034 x 779 pixel, see page 175
ImageSystem Felix 6000	Resolution 1392 x 1040 pixel, see page 175
ImageSystem Felix 7000	Resolution 1628 x 1236 pixel, see page 175
Control/Storage	Software* argusX1®/PC-interface (FireWire)
Dark hood DH-50	Dark hood with white top-light and preparative function, roll-out table for transilluminator, UV protection shield footprint (W x D) 55 x 48 cm max. sample size 23 x 30 cm
Transilluminator UST-C20M-8R Super Contrast	Filter size 20 x 20 cm, wavelength 312 nm, intensity setting 10 - 100 %, see page 185

Equipment

Basic equipment Felix 5050/6050/7050
- ImageSystem Felix 5000, Felix 6000 or Felix 7000 incl. WP filter for Super Contrast transilluminators (1 filter for diverse fluorescence stains)
- argusX1® additional modules User admin.*, GLP*
- dark hood DH-50
- UV transilluminator UST-C20M-8R
- conversion screen WY-24
- 1D analysis software Gelix One® 230**
- band pickers 5,0 x 1,5 mm***

Note:
Printer holder is only included free of charge when purchasing the printer P93DW, the PC/printerholder only when purchasing a PC-system Professional.

Alternative equipment (see pages 178 - 229)
- additional modules for acquisition software argusX1®
- transilluminators***
- UV conversion screens
- dark hoods incl. UV top-light (TLC), filter wheel
- PC systems or notebook
- b/w-thermal printer Mitsubishi P93DW
- analysis software for 1D, 2D gels
- more accessories on request

*   Specifications on pages 176 - 179
**   Specifications on pages 216, 219
***   Specifications ob page 65
**** Systems are compatible with S-transilluminators with max. filter size 23 x 30 cm

Description	Order No.
Gel documentation system Felix 5050	BG62-A4550
Gel documentation system Felix 6050	BG62-A4650
Gel documentation system Felix 7050	BG62-A4750
b/w-thermal printer Mitsubishi P93DW (Specifications page 208)	CD02-D1315
PC-system Professional I, Shuttle PC (Specifications page 206)	CC01-A1080

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Chemiluminescence Systems

Overview and applications

General information about the product series ChemiBIS

The product series ChemiBIS consists of compact, easy-to-use and ultra-sensitive systems for the detection of bio-luminescence and chemiluminescence detection.

The great sensitivity results from the the high quantum efficiency in the camera chip, the liquid cooling down to -60 °C and the extremely light-intense objective (F0.95).

In addition, the binning increases the sensitivity, however, in direct connection with the decrease of the resolution. Binning of e.g. 4 x 4 increases the sensitivity by factor 16,

and reduces simultaneously the resolution by the same factor.

Due to the sensitivity of the systems, standard applications (e.g. ECL™) can be realised with short exposure times. The light-tight dark hood also allows measurements up to 24 hours.

Furthermore, the huge linear dynamic range (4.6 OD) and the greyscale graduation of 16 bit (65.536) are important features of the product series.

Cooling system „Deep Liquid Cooling"

Tempering of the camera down to approx. -60 °C below room temperature (ΔT -60 °C) needs a powerful cooling system. The product series ChemiBIS ist equipped with a newly developed liquid cooling technology.

This enables an effective reduction of the background for an excellent sensitivity.

Settings at the objective

All ChemiBIS, F-ChemiBIS and F-ChemiBIS Pro systems have light-intense fixed objectives.

The settings of aperture and focus are made manually at the standard models of each product series. For this purpose , the upper cover of the system has to be opened.

At the models with the additional name M (e.g. ChemiBIS 1.6M), all settings of aperture and focus are made by the PC software GelCapture. For realising the zoom function - which is not available at fixed objectives - the camera and objective are hight-adjustable with a motor. This function is also carried out by the software.

Application examples
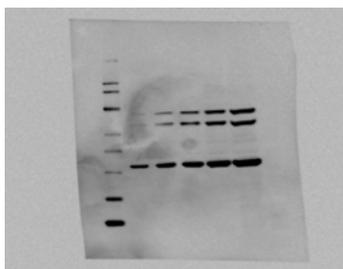
Chemiluminescence Blot
Chemiluminescence substrate: ECL™
Application: luminescence
Filter: none
Binning: 4 x 4
Exposure time: 10 sec
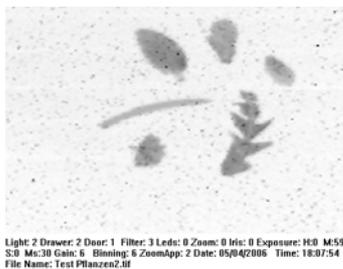
Bioluminescence of parts of plants
Chemiluminescence substrate: none
Application: luminescence
Filter: none
Binning: 6 x 6
Exposure time: 59 min
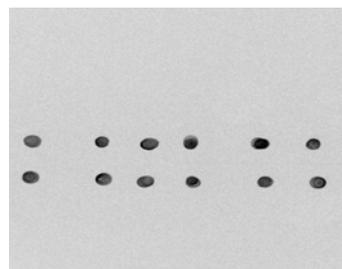
Chemiluminescence Blot
Chemil. Substrat: Super Signal® Pico
Application: luminescence
Filter: none
Binning: 2 x 2
Exposure time: 90 sec

Chemiluminescence Systems

Ultra-Sensitive-Imaging

ChemiBIS 1.6/ChemiBIS 1.6M

ChemiBIS 1.6 and ChemiBIS 1.6M are the introductory models of the product series ChemiBIS.

Both ultra-sensitive chemiluminescence systems have an optical resolution of 1536 x 1024 pixel (1,57 Mio). The difference is the manual or automated operation of the camera objective.

All commercially available chemiluminescence substrates can be detected with a high proof sensitivity.

The systems are equipped with the powerful acquisition software GelCapture and the 1D analysis software Gelix One® 230. Further software products for the analysis of 2D gels, arrays and Dot Blots are optionally available.

Minimum requirements for PC
- Pentium/Athlon 1.2 GHz, 512 MB, Win XP/2000
- 2 free USB 2.0 ports

Example

Technical data

Basic system ChemiBIS 1.6

Camera	Cooled, ultra-sensitive CCD camera
Active cooling	Liquid cooling technology down to ΔT -60 °C
Resolution	1.57 Mio. pixel, 1536 x 1024
Binning	1 x 1, 2 x 2, 3 x 3, 4 x 4, 5 x 5, 6 x 6, 7 x 7, 8 x 8
Quantum efficiency	approx. 90 %
Greyscales	16 Bit (65.536)
Dynamic range	4.6 OD
Integration time	0.01 sec up to 24 hrs

Objective for ChemiBIS 1.6	Fixed objective F0.95
	manual setting of aperture and focus
Objective for ChemiBIS 1.6M	Fixed objective F0.95
	PC-controlled setting of zoom, aperture, focus
Dark hood Smart Dark	Dark hood with drawer technology
	1 drawer Chemiluminescence
	max. sample size 21 x 26 cm
Illumination	White top-light
Control/Storage	Software GelCapture/PC-interface (USB)

Equipment

Basic equipment ChemiBIS 1.6
- camera 1.57 Mio. pixel with fixed objective F0.95
- cooling system „Deep Liquid Cooling" ΔT -60 °C
- dark hood „Smart Dark" incl. white top-light
- 1 drawer for Chemiluminescence
- control software GelCapture
- 1D analysis software Gelix One® 230*

*   Specifications on pages 216, 219

Basic equipment ChemiBIS 1.6M
equipment as ChemiBIS 1.6 **plus**
- motorised, PC-controlled setting of zoom, aperture, focus at the fixed objective F0.95
- complete control of the system via the user-friendly acquisition software GelCapture

Alternative equipment (see pages 206 - 229)
- PC-systems or Notebook
- b/w-thermal printer Mitsubishi P93DW
- analysis software for 1D, 2D gels
- more accessories on request

Description	Order No.
ChemiBIS 1.6	BG55-A2100
ChemiBIS 1.6M	BG55-A2150
PC-system Professional I, Shuttle PC (Specifications page 206)	CC01-A1080

Chemiluminescence Systems

Ultra-Sensitive-Imaging

ChemiBIS 3.2/ChemiBIS 3.2M

Example

ChemiBIS 3.2 and ChemiBIS 3.2M are the Master models of the product series ChemiBIS.

Both ultra-sensitive chemiluminescence systems have a CCD chip with 2148 x 1510 pixel (3.24 Mio). The difference is the manual or automated operation of the camera objective.

All commercially available chemiluminescence substrates can be detected with a high proof sensitivity and resolution.

For an enhancement of the sensitivity, a balanced use of the Binning function with the 3.24 Mio. pixel camera is possible.

Minimum requirements for PC
- Pentium/Athlon 1.2 GHz, 512 MB, Win XP/2000
- 2 freie USB 2.0 ports

Technical data

Basic system ChemiBIS 3.2

Camera	Cooled, ultra-sensitive CCD camera
Active cooling	Liquid cooling technology down to ΔT -60 °C
Resolution	3.24 Mio. pixel, 2184 x 1510
Binning	1 x 1, 2 x 2, 3 x 3, 4 x 4, 5 x 5, 6 x 6, 7 x 7, 8 x 8
Quantum efficiency	approx. 90 %
Greyscales	16 Bit (65.536)
Dynamic range	4.6 OD
Integration time	0.01 sec up to 24 hrs

Objective for ChemiBIS 3.2 — Fixed objective F0.95
    manual setting of aperture and focus

Objective for ChemiBIS 3.2M — Fixed objective F0.95
    PC-controlled setting of zoom, aperture, focus

Dark hood Smart Dark — Dark hood with drawer technology
1 drawer Chemiluminescence
max. sample size 21 x 26 cm

Illumination — White top-light

Control/Storage — Software GelCapture/PC-interface (USB)

Equipment

Basic equipment ChemiBIS 3.2
- camera 3.24 Mio. pixel with fixed objective F0.95
- cooling system „Deep Liquid Cooling" ΔT -60 °C
- dark hood „Smart Dark" incl. white top-light
- 1 drawer for Chemiluminescence
- control software GelCapture
- 1D analysis software Gelix One® 230*

* Specifications on pages 216, 219

Basic equipment ChemiBIS 3.2M
equipment as ChemiBIS 3.2 **plus**
- motorised, PC-controlled setting of zoom, aperture, focus at the fixed objective F0.95
- complete control of the system via the user-friendly acquisition software GelCapture

Alternative equipment (see pages 206 - 229)
- PC-systems or Notebook
- b/w-thermal printer Mitsubishi P93DW
- analysis software for 1D, 2D gels
- more accessories on request

Description	Order No.
ChemiBIS 3.2	BG55-A3100
ChemiBIS 3.2M	BG55-A3150
PC-system Professional I, Shuttle PC (Specifications page 206)	CC01-A1080

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Chemiluminescence Systems

Ultra-Sensitive-Imaging

ChemiBIS 6.0/ChemiBIS 6.0M

ChemiBIS 6.0 and ChemiBIS 6.0M are the Premium models of the product series ChemiBIS.

Both ultra-sensitive chemiluminescence systems have an optical resolution of 3072 x 2048 pixel (6.29 Mio). The difference is the manual or automated operation of the camera objective.

All commercially available chemiluminescence substrates can be detected with a high proof sensitivity and highest image quality.

6.29 Mio. pixel on the CCD chip allow the optimum use of the Binning function. This leads to an additional enhancement of the sensitivity.

Example

Minimum requirements for PC
- Pentium/Athlon 1.2 GHz, 512 MB, Win XP/2000
- 2 free USB 2.0 ports

Technical data

Basic system ChemiBIS 6.0

Camera	Cooled, ultra-sensitive CCD camera
Active cooling	Liquid cooling technology down to ΔT -60 °C
Resolution	6,29 Mio. pixel, 3072 x 2048
Binning	1 x 1, 2 x 2, 3 x 3, 4 x 4, 5 x 5, 6 x 6, 7 x 7, 8 x 8
Quantum efficiency	approx. 90 %
Greyscales	16 Bit (65.536)
Dynamic range	4.6 OD
Integration time	0.01 sec up to 24 hrs

Objective for ChemiBIS 6.0 — Fixed objective F1.2
manual setting of aperture and focus

Objective for ChemiBIS 6.0M — Fixed objective F1.2
PC-controlled setting of zoom, aperture, focus

Dark hood Smart Dark — Dark hood with drawer technology
1 drawer Chemiluminescence
max. sample size 21 x 26 cm

Illumination — White top-light
Control/Storage — Software GelCapture/PC-interface (USB)

Equipment

Basic equipment ChemiBIS 6.0
- camera 6.29 Mio. pixel with fixed objective F1.2
- cooling system „Deep Liquid Cooling" ΔT -60 °C
- dark hood „Smart Dark" incl. white top-light
- 1 drawer for Chemiluminescence
- control software GelCapture
- 1D analysis software Gelix One® 230*

* Specifications on pages 216, 219

Basic equipment ChemiBIS 6.0M
equipment as ChemiBIS 6.0 **plus**
- motorised, PC-controlled setting of zoom, aperture, focus at the fixed objective F1.2
- complete control of the system via the user-friendly acquisition software GelCapture

Alternative equipment (see pages 206 - 229)
- PC-systems or Notebook
- b/w-thermal printer Mitsubishi P93DW
- analysis software for 1D, 2D gels
- more accessories on request

Description	Order No.
ChemiBIS 6.0	BG55-A6100
ChemiBIS 6.0M	BG55-A6150
PC-system Professional I, Shuttle PC (Specifications page 206)	CC01-A1080

UV Fluorescence/Chemiluminescence Systems

Overview and applications

General information about the product series F-ChemiBIS

The product series F-ChemiBIS is structured on the product type ChemiBIS and contains all its technical features and equipments. Additionally, the F-ChemiBIS models are fitted with a motorised filter wheel, extended illumination functions for UV top-light, white light transmission, UV transmission (transilluminator) and 2 extra drawers for UV and white light applications.

Especially the extended illumination options in the UV and white light range increase the application spectrum. For

an automated selection of the correct illumination or the UV excitation wavelength for the respective sample type serve 3 drawers: Chemiluminescence, UV and White light.

The systems of the series F-ChemiBIS can be used for the following applications: Chemiluminescence; Bioluminescence; TLC; UV fluorescence e.g. for gels; densitometry for colorimetric coloured protein gels, blots, microtiter plates, Petri dishes, autogradiograms and others.

Control software GelCapture
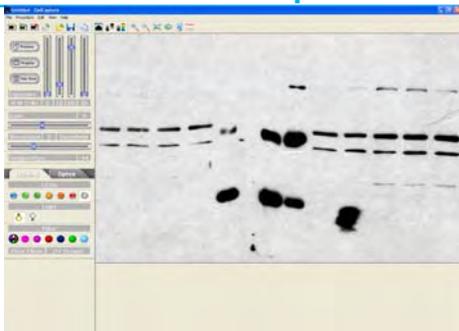
The complete control of the systems is realised via the intuitive software GelCapture in dependence on the equipment. Settings for different applications e.g. excitation wavelength, filter, Binning, exposure time can be saved in methods. This high level of automation reduces operating errors to a minimum and supports therefore a GLP conform way of working.

Dark hood with drawer technology

The drawer technology has 2 considerable advantages for the use of the system in the lab. First one: with the 3 drawers for Chemiluminescence, UV and White light, the system automatically recognizes the application which shall be processed and immediately adjusts the control functions (e.g. filter, excitation wavelengths) in the software to the respective application. The second advantage is the simple positioning of the samples as the drawers are independent from the system and therefore, placing the samples can comfortably be made on the laboratory bench.

Motorised filter wheel

The motorised filter wheel has 6 filter positions and is completely controlable by the PC software GelCapture.

5 positions are fitted with filters, one position is vacant for Chemiluminescence and white light applications.

The factory-made basic equipment contains two band pass filters 520 nm ± 30 nm, 580 nm ± 30 nm, a wide band filter 550 nm (green), a low pass filter (blue) as well as a high pass filter (red). On request, the filter wheel can also be equipped with filters for other fluorescence dyes.

Application examples

DNA gel marked with SYBR® Green
UV excitation wavelength: 312 nm
Application: UV transmission
Filter: band pass filter 520 nm
Binning: none
Exposure time: 3 sec
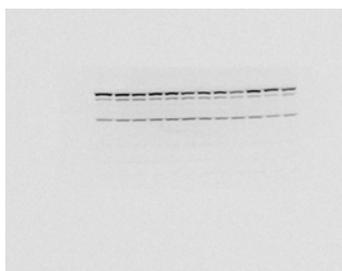
Chemiluminescence blot
Chemiluminescence substrate: ECL™
Application: lumineszenz
Filter: none
Binning: 2 x 2
Exposure time: 20 sec

Protein gel marked with Coomassie®Blue,
acquisition with white light transmission
Application: densitometry
Filter: none
Binning: none
Exposure time: 0.08 sec

UV Fluorescence/Chemiluminescence Systems

High-Performance-Imaging

F-ChemiBIS 1.6 / F-ChemiBIS 1.6M

F-ChemiBIS 1.6 and F-ChemiBIS 1.6M are the introductory models of the product series F-ChemiBIS.

Both powerful fluorescence/chemiluminescence systems have an optical resolution of 1536 x 1024 pixel (1.57 Mio). The difference is the manual or automated operation of the camera objective.

The comprehensive equipment with UV top-light/transmission as well as white top-light/transmission allows a variety of applications such as UV fluorescence of gels, blots, TLC plates and densitometry - in addition to a high-sensitive chemiluminescence detection.

The automated PC-control of the 6x filter wheel, the UV excitation wavelengths and the white light functions guarantees a comfortable operation.

Minimum requirements for PC
- Pentium/Athlon 1.2 GHz, 512 MB, Win XP/2000
- 2 free USB 2.0 ports

Example

Technical data

Basic system ChemiBIS 1.6	see page 159
Objective for F-ChemiBIS 1.6	Fixed objective F0.95 manual setting of aperture and focus
Objective for F-ChemiBIS 1.6M	Fixed objective F0.95 PC-controlled setting of zoom, aperture, focus
Dark hood Smart Dark	Dark hood with drawer technology 3 drawers: UV, White light, Chemiluminescence max. sample size 21 x 26 cm
Filter	motorised, PC-controlled filter wheel with 6 filter positions (5x full, 1x free) filter: 520 nm, 580 nm, blue, green, red
Illumination for documentation tasks	White light transmission, white light top-ligh
UV excitation wavelengths	UV transmission (transilluminator) 312 nm UV top-light 254 nm, 312 nm or 365 nm
Control/Storage	Software GelCapture/PC-interface (USB)

Equipment

Basic equipment F-ChemiBIS 1.6
- camera 1.57 Mio. pixel with fixed objective F0.95
- cooling system „Deep Liquid Cooling" ΔT - 60 °C
- dark hood „Smart Dark" incl. white top-light, white light transmission, UV top-light, UV transmission
- 3 drawers for UV, White light, Chemiluminescence
- motorised, PC-controlled filter wheel incl. 5 filters
- control software GelCapture
- 1D analysis software Gelix One® 230*

*   Specifications on pages 216, 219

Basic equipment F-ChemiBIS 1.6M
equipment as F-ChemiBIS 1.6 **plus**
- motorised, PC-controlled setting of zoom, aperture, focus at the fixed objective F0.95
- complete control of the system via the user-friendly acquisition software GelCapture

Alternative equipment (see pages 206 - 229)
- PC-systems or Notebook
- b/w-thermal printer Mitsubishi P93DW
- analysis software for 1D, 2D gels
- more accessories on request

Description	Order No.
F-ChemiBIS 1.6	BG55-A2200
F-ChemiBIS 1.6M	BG55-A2250
PC-system Professional II, Shuttle PC (Specifications page 206)	CC01-A1090

UV Fluorescence/Chemiluminescence Systems

High-Performance-Imaging

F-ChemiBIS 3.2/F-ChemiBIS 3.2M

Example

F-ChemiBIS 3.2 and F-ChemiBIS 3.2M are the Master models of the product series F-ChemiBIS.

Both powerful fluorescence/chemiluminescence systems have an optical resolution of 2148 x 1510 pixel (3.24 Mio). The difference is the manual or automated operation of the camera objective.

The comprehensive equipment with UV top-light/ transmission as well as white top-light/transmission allows a variety of applications such as UV fluorescence of gels, blots, TLC plates and densitometry - in addition to a high-sensitive chemiluminescence detection.

For an additional enhancement of the sensitivity at the chemiluminescence detection, a balanced use of the Binning function with the 3.24 Mio. pixel camera is possible.

Minimum requirements for PC
- Pentium/Athlon 1.2 GHz, 512 MB, Win XP/2000
- 2 free USB 2.0 ports

Technical data

Basic system ChemiBIS 3.2	see page 160
Objective for F-ChemiBIS 3.2	Fixed objective F0.95 manual setting of aperture and focus
Objective for F-ChemiBIS 3.2M	Fixed objective F0.95 PC-controlled setting of zoom, aperture, focus
Dark hood Smart Dark	Dark hood with drawer technology 3 drawers: UV, White light, Chemiluminescence max. sample size 21 x 26 cm
Filter	motorised, PC-controlled filter wheel with 6 filter positions (5x full, 1x free) filter: 520 nm, 580 nm, blue, green, red
Illumination for documentation tasks	White light transmission, white light top-ligh
UV excitation wavelengths	UV transmission (transilluminator) 312 nm UV top-light 254 nm, 312 nm or 365 nm
Control/Storage	Software GelCapture/PC-interface (USB)

Equipment

Basic equipment F-ChemiBIS 3.2
- camera 3.24 Mio. pixel with fixed objective F0.95
- cooling system „Deep Liquid Cooling" ∆T - 60 °C
- dark hood „Smart Dark" incl. white top-light, white light transmission, UV top-light, UV transmission
- 3 drawers for UV, White light, Chemiluminescence
- motorised, PC-controlled filter wheel incl. 5 filters
- control software GelCapture
- 1D analysis software Gelix One® 230*

* Specifications on pages 216, 219

Basic equipment F-ChemiBIS 3.2M
equipment as F-ChemiBIS 3.2 **plus**
- motorised, PC-controlled setting of zoom, aperture, focus at the fixed objective F0.95
- complete control of the system via the user-friendly acquisition software GelCapture

Alternative equipment (see pages 206 - 229)
- PC-systems or Notebook
- b/w-thermal printer Mitsubishi P93DW
- Analysis software for 1D, 2D gels
- more accessories on request

Description	Order No.
F-ChemiBIS 3.2	BG55-A3200
F-ChemiBIS 3.2M	BG55-A3250
PC-system Professional II, Shuttle PC (Specifications page 206)	CC01-A1090

UV Fluorescence/Chemiluminescence Systems

High-Performance-Imaging

F-ChemiBIS 6.0/F-ChemiBIS 6.0M

F-ChemiBIS 6.0 and F-ChemiBIS 6.0M are the Premium-models of the product series F-ChemiBIS.

Both powerful fluorescence/chemiluminescence systems have an optical resolution of 3072 x 2048 pixel (6.29 Mio). The difference is the manual or automated operation of the camera objective.

The comprehensive equipment with UV top-light/transmission as well as white top-light/transmission allows a variety of applications such as UV fluorescence of gels, blots, TLC plates and densitometry - in addition to a high-sensitive chemiluminescence detection.

6.29 Mio. pixel on the CCD chip allow the optimum use of the Binning function for Bioluminescence and Chemi-luminescence samples.

Minimum requirements for PC
- Pentium/Athlon 1.2 GHz, 512 MB, Win XP/2000
- 2 free USB 2.0 ports

Example

Technical data

Basic system ChemiBIS 6.0	see page 161
Objective für F-ChemiBIS 6.0	Fixed objective F1.2 manual setting of aperture and focus
Objective für F-ChemiBIS 6.0M	Fixed objective F1.2 PC-controlled setting of zoom, aperture, focus
Dark hood Smart Dark	Dark hood with drawer technology 3 drawers: UV, White light, Chemiluminescence max. sample size 21 x 26 cm
Filter	motorised, PC-controlled filter wheel with 6 filter positions (5x full, 1x free) filter: 520 nm, 580 nm, blue, green, red
Illumination for documentation tasks	White light transmission, white light top-ligh
UV excitation wavelengths	UV transmission (transilluminator) 312 nm UV top-light 254 nm, 312 nm or 365 nm
Control/Storage	Software GelCapture/PC-interface (USB)

Equipment

Basic equipment F-ChemiBIS 6.0
- camera 6.29 Mio. with fixed objective F1.2
- cooling system „Deep Liquid Cooling" ∆T - 60 °C
- dark hood „Smart Dark" incl. white top-light, white light transmission, UV top-light, UV transmission
- 3 drawers for UV, White light, Chemiluminescence
- motorised, PC-controlled filter wheel incl. 5 filters
- control software GelCapture
- 1D analysis software Gelix One® 230*

*   Specifications on pages 216, 219

Basic equipment F-ChemiBIS 6.0M
equipment as F-ChemiBIS 6.0 **plus**
- motorised, PC-controlled setting of zoom, aperture, focus at the fixed objective F1.2
- complete control of the system via the user-friendly acquisition software GelCapture

Alternative equipment (see pages 206 - 229)
- PC-systems or Notebook
- b/w-thermal printer Mitsubishi P93DW
- analysis software for 1D, 2D gels
- more accessories on request

Description	Order No.
F-ChemiBIS 6.0	BG55-A6200
F-ChemiBIS 6.0M	BG55-A6250
PC-system Professional II, Shuttle PC (Specifications page 206)	CC01-A1090

UV/VIS Fluoreszence/Chemiluminescence Systems

Overview and applications

General information about the product series F-ChemiBIS Pro

The product series F-ChemiBIS Pro is based on the product type F-ChemiBIS and includes all its technical features and equipment.

The F-ChemiBIS Pro models are supplementary equipped with 6 excitation wavelengths for fluorescence applications in the visible range (VIS fluorescence).

The systeme of the series F-ChemiBIS Pro can be used for the following applications: Chemiluminescence; Bioluminescence; TLC; UV fluorescence; VIS fluorescence for e.g. gels, blots; densitometry for colorimetric coloured protein gels, blots, microtiter plates, Petri dishes, autogradiograms and others.

VIS-fluorescence

Many fluorescence stains can only be excited in the visible range, e.g. eGFP, Ds-Red, Texas Red, Cy™ 3, Alexa Fluor® 488.

The UV excitation wavelengths 254 nm, 312 nm or 365 nm are not suitable for these stains. The required excitation wavelengths are between 450 nm up to 650 nm for most of these stains.

Due to this, the product series F-ChemiBIS Pro is equipped with UV excitation wavelengths as well as with 6 excitation wavelengths in the visible range. They are based on LED technology.

The control of the VIS excitation wavelengths is realised in an automated way by the software GelCapture.

The following wavelengths are available:
* 470 nm, min. 32 blue LEDs
* 500 nm, min. 28 green LEDs
* 525 nm, min. 28 green LEDs
* 568 nm, min. 28 green LEDs
* 588 nm, min. 28 orange LEDs
* 621 nm, min. 28 red LEDs

The wavelengths can be connected seperately or in combination with others, maximum all 6 wavelengths simultanously. This opportunity is very meaningful for several fluorescence stains. The best results are obtained for e.g. the stain Cy™ 5 by activating 568 nm and 621 nm LEDs. For the stain Cy™ 3, the activation of only one wavelength - 525 nm - is sufficient.

Application examples
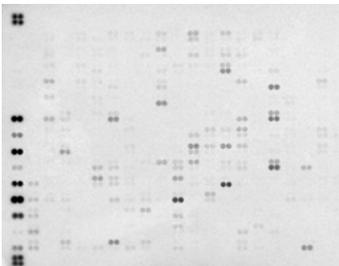
Array marked with Cy™ 3
VIS excitation wavelength: 525 nm
Application: VIS fluorescence
Filter: band pass filter 580 nm
Binning: none
Exposure time: 35 sec

Mouse Trypsin, GFP marked
VIS excitation wavelength: 470 nm
Application: VIS fluorescence
Filter: wide band filter 550 nm
Binning: 2 x 2
Exposure time: 4 min
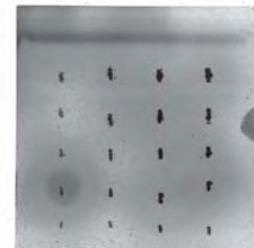
TLC plate
UV excitation wavelength: 254 nm
Application: UV top-light
Filter: UV bandpass filter
Binning: none
Exposure time: 2.4 sec
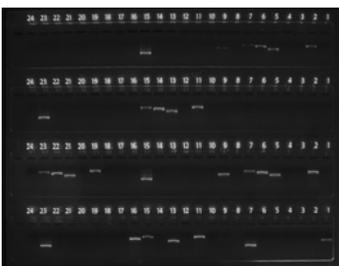
DNA pre-cast gel marked with EtBr
UV excitation wavelength: 312 nm
Application: UV transmission
Filter: band pass filter 580 nm
Binning: none
Exposure time: 1.8 sec
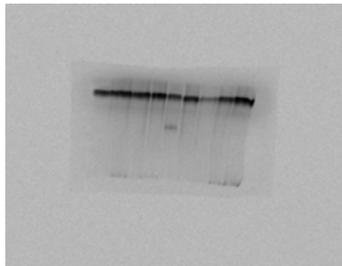
Chemiluminescence blot
Chemiluminescence substrate: CPD Star™
Application: luminescence
Filter: none
Binning: 4 x 4
Exposure time: 30 sec
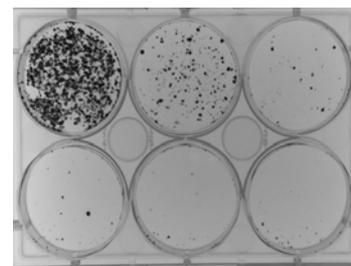
6well plate with bacteria colonies
Acquisition with white light transmission
Application: densitometry
Filter: none
Binning: none
Exposure time: 0.1 sec

UV/VIS Fluoreszence/Chemiluminescence Systems

Multi-Modal-Imaging

F-ChemiBIS 1.6 Pro / F-ChemiBIS 1.6M Pro

F-ChemiBIS 1.6 Pro and F-ChemiBIS 1.6M Pro are the introductory models of the product series F-ChemiBIS Pro.

Both highly-sensitive and comfortable Multi-Modal-Imaging systems have an optical resolution of 1536 x 1024 pixel (1.57 Mio). The difference is the manual or automated operation of the camera objective.

In addition to the UV top-light/UV transmission and white top-light/white light transmission, the equipment with 6 excitation wavelengths in the visible range extends the application possibilities to fluorescence stains which have their excitation outside the UV range.

The automated PC control of the 6x filter wheel, the UV/VIS excitation wavelengths as well as the white light functions guarantee a comfortable operation.

Minimum requirements for PC
- Pentium/Athlon 1.2 GHz, 512 MB, Win XP/2000
- 2 free USB 2.0 ports
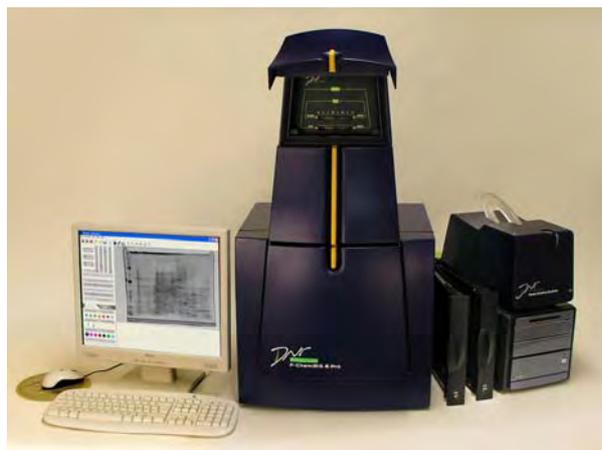
Example

Technical data

Basic system ChemiBIS 1.6	see page 159
Objective für F-ChemiBIS 1.6 Pro	Fixed objective F0.95 manual setting of aperture and focus
Objective für F-ChemiBIS 1.6M Pro	Fixed objective F0.95 PC-controlled setting of zoom, aperture, focus
Dark hood with drawer technology	3 drawers: UV, White light, Chemiluminescence max. sample size 21 x 26 cm
Filter	motorised, PC-controlled filter wheel with 6 filter positions (5x full, 1x free) filter: 520 nm, 580 nm, blue, green, red
Illumination for documentation tasks	White light transmission, white light top-ligh
UV excitation wavelengths	UV transmission (transilluminator) 312 nm UV top-light 254 nm, 312 nm or 365 nm
VIS excitation wavelengths (LED)	470 nm, 500 nm, 525 nm, 568 nm, 588 nm, 621 nm
Control/Storage	Software GelCapture/PC-interface (USB)

Equipment

Basic equipment F-ChemiBIS 1.6 Pro
- camera 1.57 Mio. pixel with fixed objective F0.95
- cooling system „Deep Liquid Cooling" ΔT - 60 °C
- dark hood „Smart Dark" incl. white top-light, white light transmission, UV top-light, UV transmission, monochromatic LED top-light in 6 wavelengths
- 3 drawers for UV, White light, Chemiluminescence
- motorised, PC-controlled filter wheel incl. 5 filters
- control software GelCapture
- 1D analysis software Gelix One® 230*

* Specifications on pages 216, 219

Basic equipment F-ChemiBIS 1.6M Pro
equipment as F-ChemiBIS 1.6 **plus**
- motorised, PC-controlled setting of zoom, aperture, focus at the fixed objective F0.95
- complete control of the system via the user-friendly acquisition software GelCapture

Alternative Equipment (see pages 181 - 229)
- filter for other fluorescence dyes
- PC-systems or Notebook
- b/w-thermal printer Mitsubishi P93DW
- analysis software for 1D, 2D gels
- more accessories on request

Description	Order No.
F-ChemiBIS 1.6 Pro	BG55-A2300
F-ChemiBIS 1.6M Pro	BG55-A2350
PC-system Professional II, Shuttle PC (Specifications page 206)	CC01-A1090

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UV/VIS Fluoreszence/Chemiluminescence Systems

Multi-Modal-Imaging

F-ChemiBIS 3.2 Pro/ F-Chemi-BIS 3.2M Pro
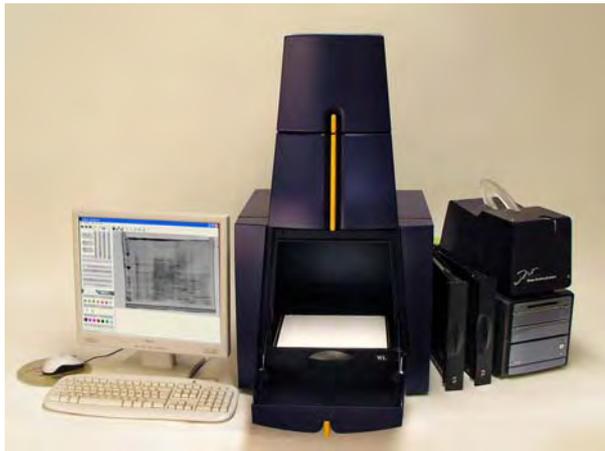
Example

F-ChemiBIS 3.2 Pro and F-ChemiBIS 3.2M Pro are the Master models of the product series F-ChemiBIS Pro.

Both highly-sensitive and comfortable Multi-Modal-Imaging systems have an optical resolution 2148 x 1510 pixel (3.24 Mio). The difference is the manual or automated operation of the camera objective.

In addition to the UV top-light/UV transmission and white top-light/white light transmission, the equipment with 6 excitation wavelengths in the visible range extends the application possibilities to fluorescence stains which have their excitation outside the UV range.

For an additional enhancement of the sensitivity at the chemiluminescence detection, a balanced use of the Binning function with the 3.24 Mio. pixel camera is possible.

Minimum requirements for PC
- Pentium/Athlon 1.2 GHz, 512 MB, Win XP/2000
- 2 free USB 2.0 ports

Technical data

Basic system ChemiBIS 3.2	see page 160
Objective for F-ChemiBIS 3.2 Pro	Fixed objective F0.95 manual setting of aperture and focus
Objective for F-ChemiBIS 3.2M Pro	Fixed objective F0.95 PC-controlled setting of zoom, aperture, focus
Dark hood with drawer technology	3 drawers: UV, White light, Chemiluminescence max. sample size 21 x 26 cm
Filter	motorised, PC-controlled filter wheel with 6 filter positions (5x full, 1x free) filter: 520 nm, 580 nm, blue, green, red
Illumination for documentation tasks	White light transmission, white light top-ligh
UV excitation wavelengths	UV transmission (transilluminator) 312 nm UV top-light 254 nm, 312 nm or 365 nm
VIS excitation wavelengths (LED)	470 nm, 500 nm, 525 nm, 568 nm, 588 nm, 621 nm
Control/Storage	Software GelCapture/PC-interface (USB)

Equipment

Basic equipment F-ChemiBIS 3.2 Pro
- camera 3.24 Mio. pixel with fixed objective F0.95
- cooling system „Deep Liquid Cooling" ∆T - 60 °C
- dark hood „Smart Dark" incl. white top-light, white light transmission, UV top-light, UV transmission, monochromatic LED top-light in 6 wavelengths
- 3 drawers for UV, White light, Chemiluminescence
- motorised, PC-controlled filter wheel incl. 5 filters
- control software GelCapture
- 1D analysis software Gelix One® 230*

* Specifications on pages 216, 219

Basic equipment F-ChemiBIS 3.2M Pro
equipment as F-ChemiBIS 3.2 **plus**
- motorised, PC-controlled setting of zoom, aperture, focus at the fixed objective F0.95
- complete control of the system via the user-friendly acquisition software GelCapture

Alternative equipment (see pages 181 - 229)
- filter for other fluorescence dyes
- PC-systems or Notebook
- b/w-thermal printer Mitsubishi P93DW
- analysis software for 1D, 2D gels
- more accessories on request

Description	Order No.
F-ChemiBIS 3.2 Pro	BG55-A3300
F-ChemiBIS 3.2M Pro	BG55-A3350
PC-system Professional II, Shuttle PC (Specifications page 206)	CC01-A1090

UV/VIS Fluoreszence/Chemiluminescence Systems

Multi-Modal-Imaging

F-ChemiBIS 6.0 Pro/ F-ChemiBIS 6.0M Pro

F-ChemiBIS 6.0 Pro and F-ChemiBIS 6.0M Pro are the Premium models of the product series F-ChemiBIS Pro.

Both highly-sensitive and comfortable Multi-Modal-Imaging systems have an optical resolution 3072 x 2048 pixel (6.29 Mio). The difference is the manual or automated operation of the camera objective.

In addition to the UV top-light/UV transmission and white top-light/white light transmission, the equipment with 6 excitation wavelengths in the visible range extends the application possibilities to fluorescence stains which have their excitation outside the UV range.

6.29 Mio. pixel on the CCD chip allow the optimum use of the Binning function for Bioluminescence and Chemi-luminescence samples.

Minimum requirements for PC
- Pentium/Athlon 1.2 GHz, 512 MB, Win XP/2000
- 2 free USB 2.0 ports

Example

Technical data

Basic system ChemiBIS 6.0	see page 161
Objective for F-ChemiBIS 6.0 Pro	Fixed objective F1.2 manual setting of aperture and focus
Objective for F-ChemiBIS 6.0M Pro	Fixed objective F1.2 PC-controlled setting of zoom, aperture, focus
Dark hood with drawer technology	3 drawers: UV, White light, Chemiluminescence max. sample size 21 x 26 cm
Filter	motorised, PC-controlled filter wheel with 6 filter positions (5x full, 1x free) filter: 520 nm, 580 nm, blue, green, red
Illumination for documentation tasks	White light transmission, white light top-ligh
UV excitation wavelengths	UV transmission (transilluminator) 312 nm UV top-light 254 nm, 312 nm or 365 nm
VIS excitation wavelengths (LED)	470 nm, 500 nm, 525 nm, 568 nm, 588 nm, 621 nm
Control/Storage	Software GelCapture/PC-interface (USB)

Equipment

Basic equipment F-ChemiBIS 6.0 Pro
- camera 6.29 Mio. pixel with fixed objective F0.95
- cooling system „Deep Liquid Cooling" ΔT - 60 °C
- dark hood „Smart Dark" incl. white top-light, white light transmission, UV top-light, UV transmission, monochromatic LED top-light in 6 wavelengths
- 3 drawers for UV, White light, Chemiluminescence
- motorised, PC-controlled filter wheel incl. 5 filters
- control software GelCapture
- 1D analysis software Gelix One® 230*

* Specifications on pages 216, 219

Basic equipment F-ChemiBIS 6.0M Pro
equipment as F-ChemiBIS 6.0 **plus**
- motorised, PC-controlled setting of zoom, aperture, focus at the fixed objective F1.2
- complete control of the system via the user-friendly acquisition software GelCapture

Alternative equipment (see pages 181 - 229)
- filter for other fluorescence dyes
- PC-systems or Notebook
- b/w-thermal printer Mitsubishi P93DW
- analysis software for 1D, 2D gels
- more accessories on request

Description	Order No.
F-ChemiBIS 6.0 Pro	BG55-A6300
F-ChemiBIS 6.0M Pro	BG55-A6350
PC-system Professional II, Shuttle PC (Specifications page 206)	CC01-A1090

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Scanner Systems

Densitometry

PowerScan 600

Example

The image acquisition system PowerScan 600 consists of a scanner with tranparency unit, control software and greyscale wedge for calibrating the system.

PowerScan 600 is a reasonably-priced documentation system for scanning Acrylamid gels and other colorimetrical marked transparent samples with a maximum size of 19 x 25 cm.

The scanner achieves an optical density of 3.0 OD in the transmission mode. In the reflexion mode, samples with a maximum size of 21.5 x 31 cm can be scanned.

Due to a sealing of the lower glass plate, the scanner is suited for the use of moist gels.

Minimum requirements for PC
- Pentium/Athlon 1.2 GHz, 256 MB, Win XP/2000
- 1 free USB 2.0 port

Technical data

Max. scan size	Transmittance: 19 x 25 cm
	Reflexion: 21.5 x 31 cm
Resolution in dpi	Optical: 4800 x 4800 dpi
	Interpolated: 9600 dpi
Resolution in μm	Optical: 5.29 x 5.29 μm
	Interpolated: 2.65 μm
Spectral range	430 - 745 nm
Max. dynamic range	65536 greyscales (16 Bit)
	281.5 E12 colours (48 Bit)
Max. optical density	3.0 OD
Control and calibration	PowerScan software with greyscale wedge
Suitable for moist gels	yes
Connection	USB 2.0
Dimensions (W x D x H)	30.0 x 50.5 x 10.7 cm
Weight	approx. 5.5 kg

Equipment

Basic equipment
- basic system PowerScan 600 (sealed for moist gels)
- transparency unit
- power supply, USB cable
- control software PowerScan*
- greyscale wedge 21 ranges, Standard**

Alternative equipment (see pages 206 - 229)
- PC-systems or Notebook
- colour sublimation printer Mitsubishi P900DW
- analysis software for 1D, 2D gels
- more accessories on request

* Specifications on page 215
** Specifications on page 211

Description	Order No.
PowerScan 600	BS01-C1510
Analysis software TotalLab TL100 (Specifications page 220)	BW01-A0100

Scanner Systems

Densitometry

PowerScan 800

The image acquisition system PowerScan 800 is a professional documentation system consisting of transparency scanner with high-quality optics, control software and greyscale wedge for calibrating the system.

Acrylamid gels and other colorimetrical marked transparent samples can be digitalised with the PowerScan 800 in a very high quality as well as a huge linearity range (max. 3.5 OD). Therefore, the system is especially qualified for applications with quantification requirements e.g. analysis of gels stained with Coomassie® Blue and AmphiBlue® Visopt (see page 130).

Due to a sealing of the upper and lower glass plates, the scanner is suited for the use of moist gels.

Example

Minimum requirements for PC
- Pentium/Athlon 1.2 GHz, 256 MB, Win XP/2000
- 1 free USB 2.0 port or
  1 free FireWire (IEEE1394) port

Technical data

Max. scan size	Transmittance: 17.5 x 24.0 cm Reflexion: 21.5 x 29.5 cm
Resolution in dpi	optical: 4800 x 9600 dpi interpolated: 19200 dpi
Resolution in μm	optical: 5.29 x 2.65 μm interpolated: 1.32 μm
Spectral range	415 - 765 nm
Max. dynamic range	65536 greyscales (16 Bit) 281.5 E12 colours (48 Bit)
Max. optical density	3.5 OD
Control and calibration	PowerScan software with greyscale wedge
Suitable for moist gels	yes
Connection	USB 2.0, FireWire (IEEE1394)
Dimensions (W x D x H)	29.0 x 51.0 x 12.8 cm
Weight	approx. 5.6 kg

Equipment

Basic equipment
- basic system PowerScan 800
  (sealed for moist gels)
- transparency unit
- power supply, USB cable, FireWire cable
- control software PowerScan*
- greyscale wedge 21 ranges, calibrated**

Alternative equipment (see pages 206 - 229)
- PC-systems or Notebook
- colour sublimation printer Mitsubishi P900DW
- analysis software for 1D, 2D gels
- more accessories on request

*   Specifications on page 215
**   Specifications on page 211

Description	Order No.
PowerScan 800	BS01-C1540
1D analysis software TotalLab TL120 (Specifications page 222)	BW01-A0300

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Scanner Systems

Densitometry

PowerScan 1000

Example

The image acquisition system PowerScan 1000 is a professional documentation system consisting of an A3-scanner with transparency unit, control software and greyscale wedge for calibrating the system.

The scanner distinguishes by a huge acquisition size. Thus, large templates like autoradiograms and coloured 2D protein gels can be scanned up to the format A3.

Another advantage of the PowerScan 1000 is the powerful cold cathode lamp. This guarantees a precise greyscales reproduction in a lage gradation range - also a very large sample size.

Due to a sealing of the upper and lower glass plates, the scanner is suited for the use of moist gels.

Minimum requirements for PC
- Pentium/Athlon 1.2 GHz, 256 MB, Win XP/2000
- 1 free USB 2.0 port

Technical data

Max. scan size	Transmittance: 29.5 x 42 cm Reflexion: 29.5 x 42 cm
Resolution in dpi	Optical: 1800 x 3600 dpi Interpolated: 19200 dpi
Resolution in μm	Optical: 14.11 x 7.06 μm Interpolated: 1.32 μm
Spectral range	415 - 765 nm
Max. dynamic range	65536 greyscales (16 Bit) 281.5 E12 colours (48 Bit)
Max. optical density	3.3 OD
Control and calibration	PowerScan software with greyscale wedge
Suitable for moist gels	yes
Connection	USB 2.0
Dimensions (W x D x H)	70 x 50 x 12 cm
Weight	approx. 15.5 kg

Equipment

Basic equipment
- basic system PowerScan 1000 (sealed for moist gels)
- transparency unit
- USB cable
- control software PowerScan*
- greyscale wedge 21 ranges, calibrated**

Alternative Equipment (see pages 206 - 229)
- PC-systems or Notebook
- colour sublimation printer Mitsubishi P900DW
- analysis software for 1D, 2D gels
- more accessories on request

* Specifications on page 215
** Specifications on page 211

Description	Order No.
PowerScan 1000	BS01-C1570
2D analysis software Phoretix 2D (Specifications page 226)	BW02-C0300

Bio-Imaging Components

ImageSystem Felix

Camera basic module ImageSystem Felix

The product description ImageSystem Felix characterises a construction kit for combining an individual PC controlled documentation system which is suitable for most different applications such as gel documentation, microscopy and macro acquisitions.

The ImageSystem Felix is based on diverse camera basic module which are delivered with the control software biostep argusX1®, that is based on a database. The single cameras differ in their image resolution, dynamic range and sensitivity.

Acquisition functions of the cameras, e.g. live image, exposure time, image resolution are made directly from the PC by the control software biostep argusX1® (page 176 - 179).

The components of the construction kit like cameras, transilluminators, dark hoods and printers are mentioned on the following pages. Due to the combination possibilities, a huge variety of different systems is suitable for applications in research, medicine, industry and education.

ImageSystem Felix 1000

Example: digital camera Felix 1000 incl. filters

Technical parameters of the camera

Chip	CCD-Chip
Resolution	5 Mio. Pixel
Grey scales	8 Bit (256)
Colours	24 Bit (16.7E6)
Zoom objective	motorzoom
Sensitivity factor	Standard
Max. exposure time	10 sec

Equipment basic package

- digital camera Felix 1000
- PC-controlled motorzoom objective
- objective adapter
- 1 close-up lens
- 1 filter (EtBr or optional, see page 181)
- control cable
- biostep control software argusX1® (Basic licence)

ImageSystem Felix 2000

Example: digital camera Felix 2000 incl. filters

Technical parameters of the camera

Chip	CCD-Chip
Resolution	5 Mio. Pixel
Greyscales	8 Bit (256)
Colours	24 Bit (16.7E6)
Zoom objective	motorzoom
Sensitivity factor	Professional
Max. exposure time	16 sec
Special equipment	system for noise reduction

Equipment basic package

- digital camera Felix 2000
- PC-controlled motorzoom objective
- objective adapter
- 1 close-up lens
- 1 filter (EtBr or optional, see page 181)
- control cable
- biostep control software argusX1® (Basic licence)

ImageSystem Felix

Camera basic module ImageSystem Felix

ImageSystem Felix 5000

Technical parameters of the camera

Chip	1/3" CCD
	Progressive Scan
Resolution	1034 x 779 Pixel
Grey scales	8 Bit (256) extern
	12 Bit (4096) intern
Zoom objective	6x zoom, F 1.0
Max. exposure time	65 sec

Equipment basic package

- Progressive-Scan camera Felix 5000
- manual zoom objective
- 1 close-up lens
- 1 filter (EtBr or optional, see page 181)
- control cable
- biostep control software argusX1® (basic licence)

Example: Progressive-Scan camera Felix 5000 incl. filters

ImageSystem Felix 6000

Technical parameters of the camera

Chip	1/2" CCD
	Progressive Scan
Resolution	1392 x 1040 Pixel
Grey scales	8 Bit (256) extern
	12 Bit (4096) intern
Zoom objective	6x zoom, F 1.0
Max. exposure time	65 sec

Equipment basic package

- Progressive-Scan camera Felix 6000
- manual zoom objective
- 1 close-up lens
- 1 filter (EtBr or optional, see page 181)
- control cable
- biostep control software argusX1® (basic licence)

ImageSystem Felix 7000

Technical parameters of the camera

Chip	1/1.8" CCD
	Progressive Scan
Resolution	1628 x 1236 Pixel
Grey scales	8 Bit (256) extern
	12 Bit (4096) intern
Zoom objective	6x zoom, F 1.0
Max. exposure time	65 sec

Equipment basic package

- Progressive-Scan camera Felix 7000
- manual zoom objective
- 1 close-up lens
- 1 filter (EtBr or optional, see page 181)
- control cable
- biostep control software argusX1® (basic licence)

ImageSystems

Description	Order No.
Basic package ImageSystem Felix 1000	BK05-O1100
Basic package ImageSystem Felix 2000	BK05-O1200
Basic package ImageSystem Felix 5000	BK05-O1500
Basic package ImageSystem Felix 6000	BK05-O1600
Basic package ImageSystem Felix 7000	BK05-O1700

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ImageSystem Felix

Control and documentation software biostep argusX1®

The biostep software argusX1® serves for the control of the ImageSystems Felix and also for the processing, archivation and administration of the exposed image data.

Due to the logical structure, the software enables a fast, comfortable and automated control of the system camera.

This advantage is mainly important for routine works and for users with minor experiences at the gel documentation.
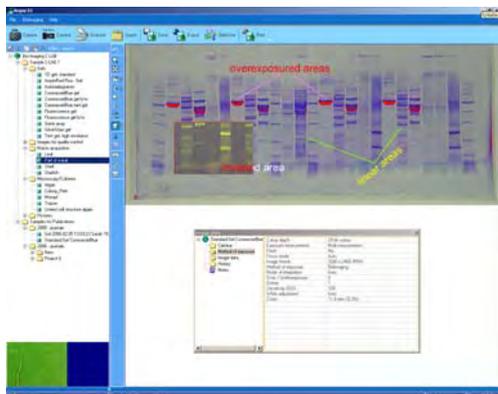
biostep argusX1®, representation of the camera control and the main functions

Control of the ImageSystems Felix 1000/2000
With the biostep software argusX1®, all essential functions of the system cameras Felix 1000/2000 can be directly controlled via PC: live-image, zoom, focus, exposure time (integration time), aperture, exposure automatic, white adjustment, ISO value, image resolution.
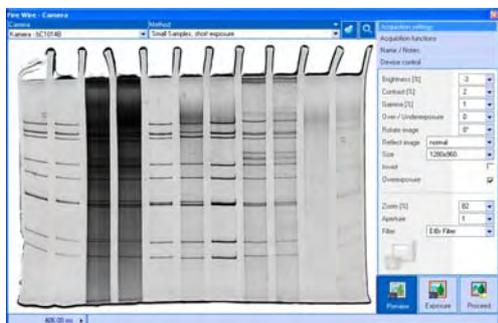
Control of the ImageSysteme Felix 5000/6000/7000
With the biostep software argusX1®, the following functions of the system cameras Felix 5000/6000/7000 can be directly controlled via PC: live-image, exposure time (integration time), brightness, contrast, gamma, amplification, exposure automatic, image resolution.

Software functions

Basic licence

- control of the acquisition parameters of system-compatible cameras
- automatisation of the image data by creating individual, reproduceable acquisition methods
- functional classification of the image acquisition into "Standard Mode" und "Professional Mode"
- automated name generation and numeration of the sample after the acquisition
- data export into other Windows applications
- import of image data in different formats
- quick print function
- integrated database for archiving the images
- comprehensive search functions according to different parameters, incl. full text search in notes
- functions for the image processing incl. Undo
- rotation in freely-definable angles and by 90°, 180°
- reflection in horizontal and vertical directions
- cropping of image areas
- various filter functions
- marking of the images with text, rectangle and lines
- memo function: input of a note for each image and printout of this note on a protocol
- image history for the documentation of the acquisition parameters for each image
- overexposure control
- selection of the user language in English or German, export format, export path, print fomat
- creation of individual print reports
- direct control of the camera memory card for downloading and deleting externally made images (only at ImageSystem Felix 1000/2000)
- control of the functions of a biostep transilluminator with PC-interface

Additional software modules*

- Module GLP
- Module User Administration
- Module Project Administration
- Module Time Lapse
- Module Control Panel CP-1
- Module High-Speed-Live-Image
- Module Multi-Camera
- Module Scanner Control
- Module Measuring Interface

ImageSystem Felix

Control and documentation software biostep argusX1®

Information about the most important functions

Acquisition method
Individual, application-dependent methods increase the automatisation of the image acquisition and lead to a simplification of use. All relevant functions for the image acquisition are included in the methods. Via mouse click, they are directly sent to the camera. The samples can therefore be exposed under reproduceable conditions.

Transilluminator control
The software argusX1® can control the functions of the biostep transilluminators, which are equipped with PC-interface. The following possibilities are available, depending on the configuration:

- switch on/off
- intensity control 10 - 100 %
- shift of the wavelengths
- activation of the acquisition
- print and save

Automated name creation of samples
Due to this function, errors at the name generation and numeration of the samples during the acquisition process can be avoided. Based on a basic name (individual text, date, time, user), the name is generated after the acquisition and numered automatically.

Despite the automated function, a manual input of a name is still possible .

Image history
All important acquisition parameters are saved for each image and are available for a later classification and quality evaluation of the image data.

The assessment of the reproducibility is therefore carried out with clear criteria.

Search functions
The integrated database in argusX1® serves for the administration of all saved images.

With the function "Filter/Search", it can comfortably be searched in the complete data stock.

Print reports
For printing the image data, 18 defined print reports are available. These reports differ in their layout and information about the image (e.g. acquisition parameters, user, memos).

If requested, it is possible to vary the reports in the enclosed form designer independently.

Selection of a saved method and functions for its administration

Temporal sequence of an automated device control

Specification of a basic name for the automated name generation

Information about the acquisition conditions (image history)

Definition of the search conditions
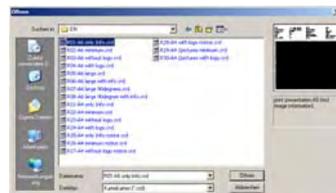
Creation and administration of print reports

argusX1®

Description	Order No.
biostep argusX1® basic licence	BG02-A7110
argusX1® network licence, 2 - 5 user	BG02-A7150
argusX1® network licence, 6 - 10 user	BG02-A7160
argusX1® network licence, 11 - 20 user	BG02-A7170

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ImageSystem Felix

Additional modules for control and documentation software argusX1®

Module User Administration
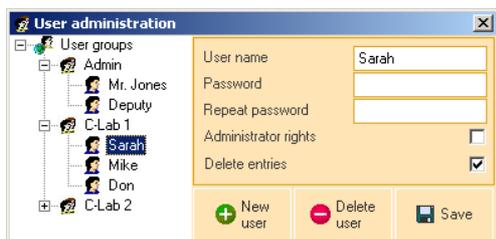
With the module **User Administration,** user profiles (name, password, entitlements) are produced and administered for the indiviual users. Additionally, each user can define and save its own progam settings (e.g. language, export path, export format, active project, default print report). For each image, the User Administration assigns an "owner" who has taken the the image.

In connection with the module GLP all single are steps for the image processing are saved.

Module GLP
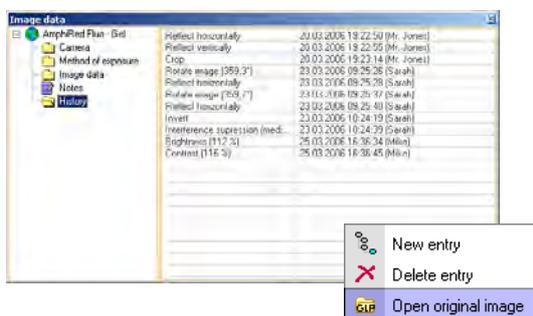
The module **GLP** is an internal protocol system, which comprehends and documents all essential processing steps and also contains a functionality for saving the raw data. A processing history is accessible for each image which shows the difference between the actual image and the original one. Date and time are recorded for each single processing step.

For comparison issues, the original image saved at the acquisition can be called any time.

In connection with the module User Administration, the user who has made the single processing steps is also recorded.

Module Project Administration
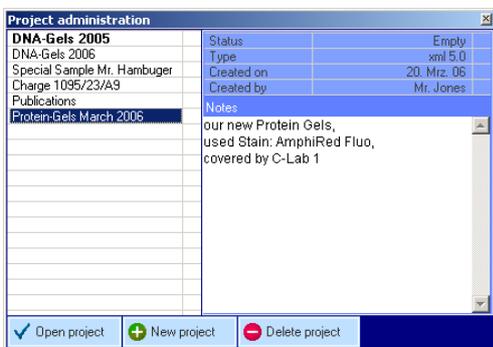
The registration of all exposed and imported images without application and time limit in a database leads to a large amount of data which is difficult to manage.

The module **Project Administration** enables the record and assignment of the image data in different databases. Automatically, a new database is created for each project.

These projects can be subject to temporal (e.g. all samples of the year 2006) and/or applicative criteria (e.g. experiment series, charges)

Module Time Lapse
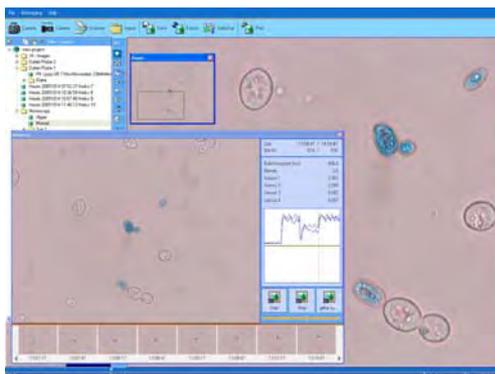
The module **Time Lapse** allows the opportunity of exposing images of a selected type (format, resolution) at definable times, in certain quantities or over a specific period of time.
These acquisitions can be assembled to a video sequence in the program and be viewed as scheme (summary) of a long observation period

Out of the video sequence, single or arbitrarily many acquisition can be selected, presented in high resolution, edited and exported. This reduces the personnel observation efforts essentially and automates the documentation possibilites.

ImageSystem Felix

Additional modules for control and documentation software argusX1®

Module Control Panel CP-1

The **Control Panel CP-1** for the keyboard-independent remote control of the camera avoids contaminations of fluorescence stains (e.g. EtBr) at the keyboard and PC-mouse. All necessary operating steps which have to be made with contaminated gloves or in connection with placing and moving the gel can be realised with the CP-1.

The functions of the CP-1 are adjusted to the exposure window of argusX1®. Due to this, the acquisition can be controlled with the CP-1 and essential steps for the image optimisation (e.g. inversion, overexposure control) can be realised.

Technical requirements: USB 2.0 port at the PC

Module High-Speed-Live-Image

The module **High-Speed-Live-Image** improves the positioning of the gels or samples for users who prefer a live-image without delay at the PC monitor (valid for the ImageSysteme Felix 1000 and Felix 2000). A data stream of approx. 20 images per second is achieved.

The delivery also includes an external USB grabber which will be installed between camera and PC.

Technical requirements: USB 2.0 port at the PC

Module Scanner Control

The module **Scanner Control** serves for the acquisition of transparent and reflectable templates of Twain-compatible scanners which are controllable with or without transparency unit.

For the automatisation of the image acquisition and simplification of the operation, application-dependent scan methods can be created and administered in this module. Therefore, it is guaranteed that the samples are scanned under reproducible conditions.

Module Multi-Camera

The module **Multi-Camera** offers the possibility for controlling up to four cameras from only one PC-terminal.

For example, a gel documentation system as well as a microscopy documentation system can be controlled with only one software.

Module Measuring Interface

The module **Measuring Interface** records states of operations as well as external process data (e.g. temperature, pressure, brightness) and connects these with image data. The delivery also includes an external USB measuring interface.

Technical requirements: USB 2.0 port at the PC

Additional Modules

Description	Order No.
Module User Administration	BG02-A7310
Module GLP, single version	BG02-A7520
Module GLP, network version	BG02-A7525
Module Project Administration	BG02-A7345
Module Time Lapse	BG02-A7805
Module Control Panel CP-1	BG02-A7850
Module High-Speed-Live-Image, incl. grabber box	BG02-A7740
Module Multi-Camera	BG02-A7760
Module Scanner Control	BG02-A7710
Module Measuring Interface	BG02-A7820

ImageSystem Felix

Microscopy

The technical features of the digital camera Felix 2000 predestine the same for teh high resolution photography at the microscope. The image information is directly digitalised on the CCD sensor at all digital cameras. The results of this technology are images with natural colours and which are true to detail.

A suitable and comfortabel control software is necessary for achieving the full functionality of the digital camera Felix 2000 at the microscope. The software biostep argusX1 meets these requirements by its functionality (pages 176 - 179).

Particularly the functions for the automated control eases the work at the microscope essentially and guarantees acquisitions of high quality:

- automated white adjustment for natural colours
- automated focussing for sharp and high-contrast acquisitions
- automated definition of the exposure parameters for acquisitions without overexposed (saturated) ranges

Examples of exposed microscopy images

A microscopy adaptor is required for mounting the camera Felix 2000 onto the microscope. For older microscopes adapters with a limited corrected optic (C-5060ADL) and for current microscopes adapters with an unlimited corrected optic (C-5060ADU) are offered.

Both adaptor types require a vacant C-Mount connection to the microscope.

Microscopy ImageSystem Felix 2000 ADU

Basic equipment

- digital camera Felix 2000
- biostep control software argusX1® (Basic licence)
- microscopy adapter C-3040ADU
- camera power supply
- control cable

Alternative equipment

- PC-systems or Notebook
- colour sublimation printer Mitsubishi P900DW
- argusX1 additional modules
- analysis software
- more accessories on request

Microscopy ImageSystem Felix 2000 ADL

Basic equipment

- digital camera Felix 2000
- biostep control software argusX1® (Basic licence)
- microscopy adapter C-3040ADL
- camera power supply
- control cable

Alternative equipment

- PC-systems or Notebook
- colour sublimation printer Mitsubishi P900DW
- argusX1 additional modules
- analysis software
- more accessories on request

Microscopy Systems

Description	Order No.
Microscopy ImageSystem Felix 2000 ADU	BK07-P1215
Microscopy ImageSystem Felix 2000 ADL	BK07-P1220

Filter

Filter, close-up lenses and filter wheels
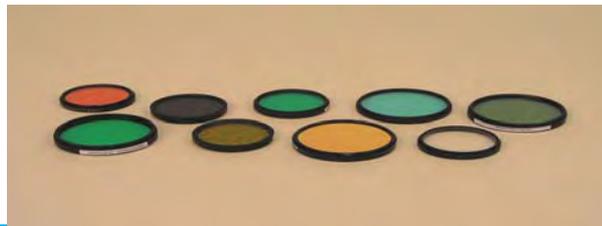
Spectral filters (Mounting sizes 43, 49, 55)

Description	Order No. *
EtBr filter 540/640, P575 nm	OF03-A0105
SYBR Green filter 495/580, P525 nm for use with UV transilluminators	OF03-A0140
SYBR Green filter 530/650, P545 nm for use with blue light transilluminators	OF03-A0150
SYBR Safe filter 515/600, P530 nm for use with UV transilluminators	OF03-A0165
SYBR Safe filter 520/640, P540 nm for use with blue light transilluminators	OF03-A0175
SP-filter, range 500 - 600 nm	OF03-A0210
MP-filter, range 520 - 620 nm	OF03-A0310
LP-filter, range 610 - 660 nm	OF03-A0410
WP-filter, range 420 - 850 nm for use with transilluminators Super Contrast**	OF03-A0510

Filters (Mounting sizes 43, 49, 55)

Description	Order No. *
Polarisation filter Circular	OF03-A2305
UV filter	OF03-A2245
Greyscale filter 30 %	OF03-A2130
Greyscale filter 50 %	OF03-A2150

Close-up lenses (Mounting sizes 43, 49, 55)

Description	Order No. *
Close-up lens 1: opt. acquisition distance approx. 1.00 to 0.33 m	OF01-A5010
Close-up lens 2: opt. acquisition distance approx. 0.50 to 0.25 m	OF01-A5020
Close-up lens 3: opt. acquisition distance approx. 0.33 to 0.20 m	OF01-A5030
Close-up lens 4: opt. acquisition distance approx. 0.25 to 0.16 m	OF01-A5040

Filter wheels for the dark hoods DH-40 and DH-50

Description	Order No.
Filter wheel with 4 positions (2 filter optional, 2 positions free)	BO11-K1010
Filter wheel with 4 positions (3 filter optional, 1 position free)	BO11-K1015

The filter wheels are only usable in combination with the Gerix & Felix systems.

Special versions

Special versions and designs are possible besides the standard product range in the section glass/filters, for example:

- production of individual filters
- glass cuttings in almost all arbitrary forms
- edge processing

*   please add the corresponding mounting size
** more details on pages 185, 187

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Transilluminators

General information

UV, Blue light, GreenLED, YellowLED, RedLED and Whitelight Transilluminators

The company biostep GmbH offers a huge model range of UV, blue, green, yellow, red and white light transilluminators based on the most modern technology.

All biostep transilluminators distinguish by their high quality, up-to-date control electronics and an excellent price-performance-ratio.

A special highlight are transilluminators with 10 steps intensity setting 10 - 100 % for an optimal adjustment of the UV intensity to the application (analytic, preparative) and the gel type.

Advantages of the biostep transilluminators

- uniform and flickerfree illumination
- high light intensity
- excellent proof sensitivity
- quiet, temperature-controlled ventilation (except K-Type)
- high-quality, compact construction
- great choice of filter sizes and versions
- 2 years guarantee, excl. illuminant and filters

Reasonably-priced versions for preparative works in the UV range

Preparative works: 365 nm

Suitable for the following fluorescence stains: **AmphiGreen®Fluo, DAPI, SYBR® Green, CHO, EBFP, Fluorescamine, GFP,...**

- 1 wavelength: **365 nm**
- compact dimensions in 2 case versions:
  S case (W x D x H): 325 x 322 x 105 mm
  X case (W x D x H): 478 x 322 x 135 mm
- filter lid made of stainless steel for a long life time
- incl. UV protection shield, infinitely adjustable

Description	Case	Filter size	Tubes	Order No.
UST-20L-8PA	S	20 x 20 cm	6 x 8 W	BU01-W7470
UST-30L-8PA	S	23 x 30 cm	8 x 8 W	BU01-W7475
UXT-20L-15PA	X	20 x 20 cm	4 x 15 W	BU13-W7665
UXT-30L-15PA	X	23 x 30 cm	6 x 15 W	BU13-W7670
UXT-40L-15PA	X	20 x 40 cm	4 x 15 W	BU13-W7675

Accessories

Description	Page
UV protection shield	199
UV tubes	199
UV conversion screens	197

UV Transilluminators

Versions for fluorescence quantification

1 Wavelength: 254 nm

Suitable for the following fluorescence stains: **Radiant Red, Hoechst Blue, Chemifluoreszenz, TLC Platten,...**

- homogeneous and flickerfree illumination due to high-quality reflector
- high UV intensity due to optimal quantity of tubes per filter size
- excellent proof sensitivity
- integrated, temperatur-controlled ventilation
- compact dimensions in 2 case versions:
  S case (W x D x H): 325 x 322 x 105 mm
  X case (W x D x H): 478 x 322 x 135 mm
- filter lid made of stainless steel for a high resistance and effective cleaning

- optional: UV protection shield

Description	Case	Filter size	Tubes	Order No.
E-Type: Basic equipment with intensity switch 50/100 %				
UST-15S-8E	S	15 x 15 cm	6 x 8 W	BU01-W0070
UST-20S-8E	S	20 x 20 cm	8 x 8 W	BU01-W0100
UST-30S-8E	S	23 x 30 cm	12 x 8 W	BU01-W0205
UXT-20S-8E	X	20 x 20 cm	8 x 8 W	BU11-W2005
UXT-30S-8E	X	23 x 30 cm	12 x 8 W	BU11-W2100
UXT-20S-15E	X	20 x 20 cm	6 x 15 W	BU13-W4005
UXT-30S-15E	X	23 x 30 cm	8 x 15 W	BU13-W4100
UXT-40S-15E	X	20 x 40 cm	6 x 15 W	BU13-W4140
UXT-47S-15E	X	27 x 40 cm	8 x 15 W	BU13-W4205
R-Type: Basic equipment with manual intensity setting 10 - 100 % in 10 steps				
UST-15S-8R	S	15 x 15 cm	6 x 8 W	BU01-W0270
UST-20S-8R	S	20 x 20 cm	8 x 8 W	BU01-W0300
UST-30S-8R	S	23 x 30 cm	12 x 8 W	BU01-W0405
UXT-20S-8R	X	20 x 20 cm	8 x 8 W	BU11-W2205
UXT-30S-8R	X	23 x 30 cm	12 x 8 W	BU11-W2300
UXT-20S-15R	X	20 x 20 cm	6 x 15 W	BU13-W4300
UXT-30S-15R	X	23 x 30 cm	8 x 15 W	BU13-W4405
UXT-40S-15R	X	20 x 40 cm	6 x 15 W	BU13-W4440
UXT-47S-15R	X	27 x 40 cm	8 x 15 W	BU13-W4500
PC-Type: Basic equipment with manual intensity setting 10 - 100 % and PC-control				
UST-15S-8PC	S	15 x 15 cm	6 x 8 W	BU01-W0470
UST-20S-8PC	S	20 x 20 cm	8 x 8 W	BU01-W0500
UST-30S-8PC	S	23 x 30 cm	12 x 8 W	BU01-W0505
UXT-20S-8PC	X	20 x 20 cm	8 x 8 W	BU11-W2405
UXT-30S-8PC	X	23 x 30 cm	12 x 8 W	BU11-W2500
UXT-20S-15PC	X	20 x 20 cm	6 x 15 W	BU13-W4605
UXT-30S-15PC	X	23 x 30 cm	8 x 15 W	BU13-W4700
UXT-40S-15PC	X	20 x 40 cm	6 x 15 W	BU13-W4740
UXT-47S-15PC	X	27 x 40 cm	8 x 15 W	BU13-W4805

Accessories

Description	Page
UV protection shield	199
UV tubes	199
UV conversion screens	197

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UV Transilluminators

Versions for fluorescence quantification

1 Wavelength: 312 nm

Suitable for the following fluorescence stains: **AmphiRed® Fluo, Ethidium Bromid, Fluorescein, SYBR Safe™, SYPRO® Orange, SYPRO® Red, SYPRO® Ruby, Texas Red®,...**

- homogeneous illumination due to high-quality reflector
- high UV intensity due to optimal quantity of tubes per filter size
- excellent proof sensitivity
- high-frequence operation system for a flicker-free illumination and elonged tube life time
- integrated, temperatur-controlled ventilation (except K-Type)
- compact dimensions in 2 case versions:
  S case (W x D x H): 325 x 322 x 105 mm
  X case (W x D x H): 478 x 322 x 135 mm
- filter lid made of stainless steel for a high resistance and effective cleaning

- optional: UV protection shield

Description	Case	Filter size	Tubes	Order No.
K-Type: Basic equipment				
UST-15M-8K	S	15 x 15 cm	4 x 8 W	BU01-W7033
UST-20M-8K	S	20 x 20 cm	6 x 8 W	BU01-W7063
UST-30M-8K	S	23 x 30 cm	8 x 8 W	BU01-W7123
UXT-20M-15K	X	20 x 20 cm	4 x 15 W	BU13-W7023
UXT-30M-15K	X	23 x 30 cm	6 x 15 W	BU13-W7163
UXT-40M-15K	X	20 x 40 cm	4 x 15 W	BU13-W7223
E-Type: Basic equipment with intensity switch 50/100 %				
UST-15M-8E	S	15 x 15 cm	6 x 8 W	BU01-W0080
UST-20M-8E	S	20 x 20 cm	8 x 8 W	BU01-W0110
UST-30M-8E	S	23 x 30 cm	12 x 8 W	BU01-W0215
UXT-20M-8E	X	20 x 20 cm	8 x 8 W	BU11-W2015
UXT-30M-8E	X	23 x 30 cm	12 x 8 W	BU11-W2110
UXT-20M-15E	X	20 x 20 cm	6 x 15 W	BU13-W4015
UXT-30M-15E	X	23 x 30 cm	8 x 15 W	BU13-W4110
UXT-40M-15E	X	20 x 40 cm	6 x 15 W	BU13-W4150
UXT-47M-15E	X	27 x 40 cm	8 x 15 W	BU13-W4215
R-Type: Basic equipment with manual intensity setting 10 - 100 % in 10 steps				
UST-15M-8R	S	15 x 15 cm	6 x 8 W	BU01-W0280
UST-20M-8R	S	20 x 20 cm	8 x 8 W	BU01-W0310
UST-30M-8R	S	23 x 30 cm	12 x 8 W	BU01-W0415
UXT-20M-8R	X	20 x 20 cm	8 x 8 W	BU11-W2215
UXT-30M-8R	X	23 x 30 cm	12 x 8 W	BU11-W2310
UXT-20M-15R	X	20 x 20 cm	6 x 15 W	BU13-W4310
UXT-30M-15R	X	23 x 30 cm	8 x 15 W	BU13-W4415
UXT-40M-15R	X	20 x 40 cm	6 x 15 W	BU13-W4450
UXT-47M-15R	X	27 x 40 cm	8 x 15 W	BU13-W4510
PC-Type: Basic equipment with manual intensity setting 10 - 100 % and PC-control				
UST-15M-8PC	S	15 x 15 cm	6 x 8 W	BU01-W0480
UST-20M-8PC	S	20 x 20 cm	8 x 8 W	BU01-W0510
UST-30M-8PC	S	23 x 30 cm	12 x 8 W	BU01-W0515
UXT-20M-8PC	X	20 x 20 cm	8 x 8 W	BU11-W2415
UXT-30M-8PC	X	23 x 30 cm	12 x 8 W	BU11-W2510
UXT-20M-15PC	X	20 x 20 cm	6 x 15 W	BU13-W4615
UXT-30M-15PC	X	23 x 30 cm	8 x 15 W	BU13-W4710
UXT-40M-15PC	X	20 x 40 cm	6 x 15 W	BU13-W4750
UXT-47M-15PC	X	27 x 40 cm	8 x 15 W	BU13-W4815

UV Transilluminators

Versions for fluorescence quantification - Super Contrast

1 Wavelength: 312 nm

Suitable for the following fluorescence stains: **all stain in the emission range of 420 - 850 nm and an excitation of the fluorescence with 312 nm**

- newly-developed filter glasses with a clear contrast enhancement for a better proof of weak sample signals and a higher contrast visualisation
- acquisition of diverse fluorescence stains with only 1 filter
- improved homogeneity of the illumination
- high UV intensity due to optimal quantity of tubes
- high-frequence operation system for a flicker-free illumination and elonged tube life time
- integrated, temperatur-controlled ventilation
- compact dimensions in 2 case versions:
  S case (W x D x H): 325 x 322 x 105 mm
  X case (W x D x H): 478 x 322 x 135 mm
- filter lid made of stainless steel for a high resistance and effective cleaning

- optional: UV protection shield

Description	Case	Filter size	Tubes	Order No.
E-Type: Basic equipment with intensity switch 50/100 %				
UST-C15M-8E	S	15 x 15 cm	6 x 8 W	BU01-W1135
UST-C20M-8E	S	20 x 20 cm	8 x 8 W	BU01-W1160
UST-C30M-8E	S	23 x 30 cm	12 x 8 W	BU01-W1210
UXT-C20M-8E	X	20 x 20 cm	8 x 8 W	BU11-W3030
UXT-C30M-8E	X	23 x 30 cm	12 x 8 W	BU11-W3145
UXT-C20M-15E	X	20 x 20 cm	6 x 15 W	BU13-W5040
UXT-C30M-15E	X	23 x 30 cm	8 x 15 W	BU13-W5115
UXT-C40M-15E	X	20 x 40 cm	6 x 15 W	BU13-W5150
UXT-C47M-15E	X	27 x 40 cm	8 x 15 W	BU13-W5215
R-Type: Basic equipment with manual intensity setting 10 - 100 % in 10 steps				
UST-C15M-8R	S	15 x 15 cm	6 x 8 W	BU01-W1330
UST-C20M-8R	S	20 x 20 cm	8 x 8 W	BU01-W1355
UST-C30M-8R	S	23 x 30 cm	12 x 8 W	BU01-W1415
UXT-C20M-8R	X	20 x 20 cm	8 x 8 W	BU11-W3230
UXT-C30M-8R	X	23 x 30 cm	12 x 8 W	BU11-W3345
UXT-C20M-15R	X	20 x 20 cm	6 x 15 W	BU13-W5320
UXT-C30M-15R	X	23 x 30 cm	8 x 15 W	BU13-W5425
UXT-C40M-15R	X	20 x 40 cm	6 x 15 W	BU13-W5460
UXT-C47M-15R	X	27 x 40 cm	8 x 15 W	BU13-W5520
PC-Type: Basic equipment with manual intensity setting 10 - 100 % and PC-control				
UST-C15M-8PC	S	15 x 15 cm	6 x 8 W	BU01-W1530
UST-C20M-8PC	S	20 x 20 cm	8 x 8 W	BU01-W1555
UST-C30M-8PC	S	23 x 30 cm	12 x 8 W	BU01-W1570
UXT-C20M-8PC	X	20 x 20 cm	8 x 8 W	BU11-W3430
UXT-C30M-8PC	X	23 x 30 cm	12 x 8 W	BU11-W3545
UXT-C20M-15PC	X	20 x 20 cm	6 x 15 W	BU13-W5625
UXT-C30M-15PC	X	23 x 30 cm	8 x 15 W	BU13-W5720
UXT-C40M-15PC	X	20 x 40 cm	6 x 15 W	BU13-W5760
UXT-C47M-15PC	X	27 x 40 cm	8 x 15 W	BU13-W5825

Accessories

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UV Transilluminators

Versions for fluorescence quantification

1 Wavelength: 365 nm

Suitable for the following fluorescence stains: **Alexa Fluo 350®, AmphiGreen® Fluo, DAPI, EDANS, SYBR® Green, CHO, EBFP, Fluorescamine, GFP, Hoechst 33258, Q-Dot,...**

- homogeneous illumination due to high-quality reflector
- high UV intensity due to optimal quantity of tubes per filter size
- excellent proof sensitivity
- high-frequence operation system for a flicker-free illumination and elonged tube life time
- integrated, temperatur-controlled ventilation (except K-Type)
- compact dimensions in 2 case versions:
  S case (W x D x H): 325 x 322 x 105 mm
  X case (W x D x H): 478 x 322 x 135 mm
- filter lid made of stainless steel for a high resistance and effective cleaning

- optional: UV protection shield

Description	Case	Filter size	Tubes	Order No.
K-Type: Basic equipment				
UST-15L-8K	S	15 x 15 cm	4 x 8 W	BU01-W7043
UST-20L-8K	S	20 x 20 cm	6 x 8 W	BU01-W7073
UST-30L-8K	S	23 x 30 cm	8 x 8 W	BU01-W7133
UXT-20L-15K	X	20 x 20 cm	4 x 15 W	BU13-W7033
UXT-30L-15K	X	23 x 30 cm	6 x 15 W	BU13-W7173
UXT-40L-15K	X	20 x 40 cm	4 x 15 W	BU13-W7233
E-Type: Basic equipment with intensity switch 50/100 %				
UST-15L-8E	S	15 x 15 cm	6 x 8 W	BU01-W0090
UST-20L-8E	S	20 x 20 cm	8 x 8 W	BU01-W0120
UST-30L-8E	S	23 x 30 cm	12 x 8 W	BU01-W0225
UXT-20L-8E	X	20 x 20 cm	8 x 8 W	BU11-W2025
UXT-30L-8E	X	23 x 30 cm	12 x 8 W	BU11-W2120
UXT-20L-15E	X	20 x 20 cm	6 x 15 W	BU13-W4025
UXT-30L-15E	X	23 x 30 cm	8 x 15 W	BU13-W4120
UXT-40L-15E	X	20 x 40 cm	6 x 15 W	BU13-W4160
UXT-47L-15E	X	27 x 40 cm	8 x 15 W	BU13-W4225
R-Type: Basic equipment with manual intensity setting 10 - 100 % in 10 steps				
UST-15L-8R	S	15 x 15 cm	6 x 8 W	BU01-W0290
UST-20L-8R	S	20 x 20 cm	8 x 8 W	BU01-W0320
UST-30L-8R	S	23 x 30 cm	12 x 8 W	BU01-W0425
UXT-20L-8R	X	20 x 20 cm	8 x 8 W	BU11-W2225
UXT-30L-8R	X	23 x 30 cm	12 x 8 W	BU11-W2320
UXT-20L-15R	X	20 x 20 cm	6 x 15 W	BU13-W4320
UXT-30L-15R	X	23 x 30 cm	8 x 15 W	BU13-W4425
UXT-40L-15R	X	20 x 40 cm	6 x 15 W	BU13-W4460
UXT-47L-15R	X	27 x 40 cm	8 x 15 W	BU13-W4520
PC-Type: Basic equipment with manual intensity setting 10 - 100 % and PC-control				
UST-15L-8PC	S	15 x 15 cm	6 x 8 W	BU01-W0490
UST-20L-8PC	S	20 x 20 cm	8 x 8 W	BU01-W0520
UST-30L-8PC	S	23 x 30 cm	12 x 8 W	BU01-W0525
UXT-20L-8PC	X	20 x 20 cm	8 x 8 W	BU11-W2425
UXT-30L-8PC	X	23 x 30 cm	12 x 8 W	BU11-W2520
UXT-20L-15PC	X	20 x 20 cm	6 x 15 W	BU13-W4625
UXT-30L-15PC	X	23 x 30 cm	8 x 15 W	BU13-W4720
UXT-40L-15PC	X	20 x 40 cm	6 x 15 W	BU13-W4760
UXT-47L-15PC	X	27 x 40 cm	8 x 15 W	BU13-W4825

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UV Transilluminators

Versions for fluorescence quantification - Super Contrast

1 Wavelength: 365 nm

Suitable for the following fluorescence stains: **all stain in the emission range of 420 - 850 nm and an excitation of the fluorescence with 365 nm**

- newly-developed filter glasses with a clear contrast enhancement for a better proof of weak sample signals and a higher contrast visualisation
- acquisition of diverse fluorescence stains with only 1 filter
- improved homogeneity of the illumination
- high UV intensity due to optimal quantity of tubes
- high-frequence operation system for a flicker-free illumination and elonged tube life time
- integrated, temperatur-controlled ventilation
- compact dimensions in 2 case versions:
  S case (W x D x H): 325 x 322 x 105 mm
  X case (W x D x H): 478 x 322 x 135 mm
- filter lid made of stainless steel for a high resistance and effective cleaning

- optional: UV protection shield

Description	Case	Filter size	Tubes	Order No.
E-Type: Basic equipment with intensity switch 50/100 %				
UST-C15L-8E	S	15 x 15 cm	6 x 8 W	BU01-W1145
UST-C20L-8E	S	20 x 20 cm	8 x 8 W	BU01-W1170
UST-C30L-8E	S	23 x 30 cm	12 x 8 W	BU01-W1220
UXT-C20L-8E	X	20 x 20 cm	8 x 8 W	BU11-W3035
UXT-C30L-8E	X	23 x 30 cm	12 x 8 W	BU11-W3150
UXT-C20L-15E	X	20 x 20 cm	6 x 15 W	BU13-W5050
UXT-C30L-15E	X	23 x 30 cm	8 x 15 W	BU13-W5125
UXT-C40L-15E	X	20 x 40 cm	6 x 15 W	BU13-W5160
UXT-C47L-15E	X	27 x 40 cm	8 x 15 W	BU13-W5225
R-Type: Basic equipment with manual intensity setting 10 - 100 % in 10 steps				
UST-C15L-8R	S	15 x 15 cm	6 x 8 W	BU01-W1340
UST-C20L-8R	S	20 x 20 cm	8 x 8 W	BU01-W1365
UST-C30L-8R	S	23 x 30 cm	12 x 8 W	BU01-W1425
UXT-C20L-8R	X	20 x 20 cm	8 x 8 W	BU11-W3235
UXT-C30L-8R	X	23 x 30 cm	12 x 8 W	BU11-W3350
UXT-C20L-15R	X	20 x 20 cm	6 x 15 W	BU13-W5330
UXT-C30L-15R	X	23 x 30 cm	8 x 15 W	BU13-W5435
UXT-C40L-15R	X	20 x 40 cm	6 x 15 W	BU13-W5470
UXT-C47L-15R	X	27 x 40 cm	8 x 15 W	BU13-W5530
PC-Type: Basic equipment with manual intensity setting 10 - 100 % and PC-control				
UST-C15L-8PC	S	15 x 15 cm	6 x 8 W	BU01-W1540
UST-C20L-8PC	S	20 x 20 cm	8 x 8 W	BU01-W1565
UST-C30L-8PC	S	23 x 30 cm	12 x 8 W	BU01-W1580
UXT-C20L-8PC	X	20 x 20 cm	8 x 8 W	BU11-W3435
UXT-C30L-8PC	X	23 x 30 cm	12 x 8 W	BU11-W3550
UXT-C20L-15PC	X	20 x 20 cm	6 x 15 W	BU13-W5635
UXT-C30L-15PC	X	23 x 30 cm	8 x 15 W	BU13-W5730
UXT-C40L-15PC	X	20 x 40 cm	6 x 15 W	BU13-W5770
UXT-C47L-15PC	X	27 x 40 cm	8 x 15 W	BU13-W5835

Accessories

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UV Transilluminators

Versions for fluorescence quantification

2 Wavelengths: 254 and 312 nm

Suitable for the following fluorescence stains: **Radiant Red, Hoechst Blue, Chemifluoreszenz, TLC Platten,...
AmphiRed®Fluo, EtBr, Fluorescein, SYPRO® Orange, SYPRO® Ruby, Texas Red®,...**

- transilluminator with 2 UV wavelengths, each dual combination of the 3 UV wavelengths is possible
- homogeneous illumination due to high-quality reflector
- high-frequence operation system for a flicker-free illumination and elonged tube life time
- integrated, temperatur-controlled ventilation (except K-Type)
- compact dimensions in 2 case versions:
  S case (W x D x H): 325 x 322 x 105 mm
  X case (W x D x H): 478 x 322 x 135 mm
- filter lid made of stainless steel for a high resistance and effective cleaning
- optional: UV protection shield

Description	Case	Filter size	Tubes	Order No.
K-Type: Basic equipment				
USDT-20SM-8K	S	20 x 20 cm	4x8 / 4x8 W	BU02-W7130
USDT-30SM-8K	S	23 x 30 cm	6x8 / 6x8 W	BU02-W7245
UXDT-20SM-15K	X	20 x 20 cm	3x15 / 3x15 W	BU14-W7060
UXDT-30SM-15K	X	23 x 30 cm	4x15 / 4x15 W	BU14-W7135
UXDT-40SM-15K	X	20 x 40 cm	3x15 / 3x15 W	BU14-W7220
E-Type: Basic equipment with intensity switch 50/100 %				
USDT-20SM-8E	S	20 x 20 cm	4x8 / 4x8 W	BU02-W1150
USDT-30SM-8E	S	23 x 30 cm	6x8 / 6x8 W	BU02-W1255
UXDT-20SM-8E	X	20 x 20 cm	4x8 / 4x8 W	BU12-W3055
UXDT-30SM-8E	X	23 x 30 cm	6x8 / 6x8 W	BU12-W3150
UXDT-20SM-15E	X	20 x 20 cm	3x15 / 3x15 W	BU14-W5055
UXDT-30SM-15E	X	23 x 30 cm	4x15 / 4x15 W	BU14-W5150
UXDT-40SM-15E	X	20 x 40 cm	3x15 / 3x15 W	BU14-W5210
UXDT-47SM-15E	X	27 x 40 cm	4x15 / 4x15 W	BU14-W5255
R-Type: Basic equipment with manual intensity setting 10 - 100 % in 10 steps				
USDT-20SM-8R	S	20 x 20 cm	4x8 / 4x8 W	BU02-W1350
USDT-30SM-8R	S	23 x 30 cm	6x8 / 6x8 W	BU02-W1455
UXDT-20SM-8R	X	20 x 20 cm	4x8 / 4x8 W	BU12-W3255
UXDT-30SM-8R	X	23 x 30 cm	6x8 / 6x8 W	BU12-W3350
UXDT-20SM-15R	X	20 x 20 cm	3x15 / 3x15 W	BU14-W5350
UXDT-30SM-15R	X	23 x 30 cm	4x15 / 4x15 W	BU14-W5455
UXDT-40SM-15R	X	20 x 40 cm	3x15 / 3x15 W	BU14-W5505
UXDT-47SM-15R	X	27 x 40 cm	4x15 / 4x15 W	BU14-W5550
PC-Type: Basic equipment with manual intensity setting 10 - 100 % and PC-control				
USDT-20SM-8PC	S	20 x 20 cm	4x8 / 4x8 W	BU02-W1550
USDT-30SM-8PC	S	23 x 30 cm	6x8 / 6x8 W	BU02-W1555
UXDT-20SM-8PC	X	20 x 20 cm	4x8 / 4x8 W	BU12-W3455
UXDT-30SM-8PC	X	23 x 30 cm	6x8 / 6x8 W	BU12-W3550
UXDT-20SM-15PC	X	20 x 20 cm	3x15 / 3x15 W	BU14-W5655
UXDT-30SM-15PC	X	23 x 30 cm	4x15 / 4x15 W	BU14-W5750
UXDT-40SM-15PC	X	20 x 40 cm	3x15 / 3x15 W	BU14-W5810
UXDT-47SM-15PC	X	27 x 40 cm	4x15 / 4x15 W	BU14-W5855

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UV Transilluminators

Versions for fluorescence quantification

2 Wavelengths: 254 and 365 nm

Suitable for the following fluorescence stains: **Radiant Red, Hoechst Blue, Chemifluoreszenz, TLC Platten,...**
AmphiGreen® Fluo, DAPI, SYBR® Green, CHO, EBFP, Fluorescamine, GFP,...

- transilluminator with 2 UV wavelengths, each dual combination of the 3 UV wavelengths is possible
- homogeneous illumination due to high-quality reflector
- high-frequence operation system for a flicker-free illumination and elonged tube life time
- integrated, temperatur-controlled ventilation (except K-Type)
- compact dimensions in 2 case versions:
  S case (W x D x H): 325 x 322 x 105 mm
  X case (W x D x H): 478 x 322 x 135 mm
- filter lid made of stainless steel for a high resistance and effective cleaning

- optional: UV protection shield

Description	Case	Filter size	Tubes	Order No.
K-Type: Basic equipment				
USDT-20SL-8K	S	20 x 20 cm	4x8 / 4x8 W	BU02-W7140
USDT-30SL-8K	S	23 x 30 cm	6x8 / 6x8 W	BU02-W7255
UXDT-20SL-15K	X	20 x 20 cm	3x15 / 3x15 W	BU14-W7070
UXDT-30SL-15K	X	23 x 30 cm	4x15 / 4x15 W	BU14-W7145
UXDT-40SL-15K	X	20 x 40 cm	3x15 / 3x15 W	BU14-W7230
E-Type: Basic equipment with intensity switch 50/100 %				
USDT-20SL-8E	S	20 x 20 cm	4x8 / 4x8 W	BU02-W1160
USDT-30SL-8E	S	23 x 30 cm	6x8 / 6x8 W	BU02-W1265
UXDT-20SL-8E	X	20 x 20 cm	4x8 / 4x8 W	BU12-W3065
UXDT-30SL-8E	X	23 x 30 cm	6x8 / 6x8 W	BU12-W3160
UXDT-20SL-15E	X	20 x 20 cm	3x15 / 3x15 W	BU14-W5065
UXDT-30SL-15E	X	23 x 30 cm	4x15 / 4x15 W	BU14-W5160
UXDT-40SL-15E	X	20 x 40 cm	3x15 / 3x15 W	BU14-W5220
UXDT-47SL-15E	X	27 x 40 cm	4x15 / 4x15 W	BU14-W5265
R-Type: Basic equipment with manual intensity setting 10 - 100 % in 10 steps				
USDT-20SL-8R	S	20 x 20 cm	4x8 / 4x8 W	BU02-W1360
USDT-30SL-8R	S	23 x 30 cm	6x8 / 6x8 W	BU02-W1465
UXDT-20SL-8R	X	20 x 20 cm	4x8 / 4x8 W	BU12-W3265
UXDT-30SL-8R	X	23 x 30 cm	6x8 / 6x8 W	BU12-W3360
UXDT-20SL-15R	X	20 x 20 cm	3x15 / 3x15 W	BU14-W5360
UXDT-30SL-15R	X	23 x 30 cm	4x15 / 4x15 W	BU14-W5465
UXDT-40SL-15R	X	20 x 40 cm	3x15 / 3x15 W	BU14-W5515
UXDT-47SL-15R	X	27 x 40 cm	4x15 / 4x15 W	BU14-W5560
PC-Type: Basic equipment with manual intensity setting 10 - 100 % and PC-control				
USDT-20SL-8PC	S	20 x 20 cm	4x8 / 4x8 W	BU02-W1560
USDT-30SL-8PC	S	23 x 30 cm	6x8 / 6x8 W	BU02-W1565
UXDT-20SL-8PC	X	20 x 20 cm	4x8 / 4x8 W	BU12-W3465
UXDT-30SL-8PC	X	23 x 30 cm	6x8 / 6x8 W	BU12-W3560
UXDT-20SL-15PC	X	20 x 20 cm	3x15 / 3x15 W	BU14-W5665
UXDT-30SL-15PC	X	23 x 30 cm	4x15 / 4x15 W	BU14-W5760
UXDT-40SL-15PC	X	20 x 40 cm	3x15 / 3x15 W	BU14-W5820
UXDT-47SL-15PC	X	27 x 40 cm	4x15 / 4x15 W	BU14-W5865

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UV Transilluminators

Versions for fluorescence quantification

2 Wavelengths: 312 and 365 nm

Suitable for the following fluorescence stains: **AmphiRed® Fluo, EtBr, Fluorescein, SYPRO® Orange, Texas Red®,...
AmphiGreen® Fluo, DAPI, SYBR® Green, CHO, EBFP, Fluorescamine, GFP,...**

- transilluminator with 2 UV wavelengths, each dual combination of the 3 UV wavelengths is possible
- homogeneous illumination due to high-quality reflector
- high-frequence operation system for a flicker-free illumination and elonged tube life time
- integrated, temperatur-controlled ventilation (except K-Type)
- compact dimensions in 2 case versions:
  S case (W x D x H): 325 x 322 x 105 mm
  X case (W x D x H): 478 x 322 x 135 mm
- filter lid made of stainless steel for a high resistance and effective cleaning

- optional: UV protection shield

Example

Description	Case	Filter size	Tubes	Order No.
K-Type: Basic equipment				
USDT-20ML-8K	S	20 x 20 cm	4x8 / 4x8 W	BU02-W7150
USDT-30ML-8K	S	23 x 30 cm	6x8 / 6x8 W	BU02-W7265
UXDT-20ML-15K	X	20 x 20 cm	3x15 / 3x15 W	BU14-W7080
UXDT-30ML-15K	X	23 x 30 cm	4x15 / 4x15 W	BU14-W7155
UXDT-40ML-15K	X	20 x 40 cm	3x15 / 3x15 W	BU14-W7240
E-Type: Basic equipment with intensity switch 50/100 %				
USDT-20ML-8E	S	20 x 20 cm	4x8 / 4x8 W	BU02-W1170
USDT-30ML-8E	S	23 x 30 cm	6x8 / 6x8 W	BU02-W1275
UXDT-20ML-8E	X	20 x 20 cm	4x8 / 4x8 W	BU12-W3075
UXDT-30ML-8E	X	23 x 30 cm	6x8 / 6x8 W	BU12-W3170
UXDT-20ML-15E	X	20 x 20 cm	3x15 / 3x15 W	BU14-W5075
UXDT-30ML-15E	X	23 x 30 cm	4x15 / 4x15 W	BU14-W5170
UXDT-40ML-15E	X	20 x 40 cm	3x15 / 3x15 W	BU14-W5230
UXDT-47ML-15E	X	27 x 40 cm	4x15 / 4x15 W	BU14-W5275
R-Type: Basic equipment with manual intensity setting 10 - 100 % in 10 steps				
USDT-20ML-8R	S	20 x 20 cm	4x8 / 4x8 W	BU02-W1370
USDT-30ML-8R	S	23 x 30 cm	6x8 / 6x8 W	BU02-W1475
UXDT-20ML-8R	X	20 x 20 cm	4x8 / 4x8 W	BU12-W3275
UXDT-30ML-8R	X	23 x 30 cm	6x8 / 6x8 W	BU12-W3370
UXDT-20ML-15R	X	20 x 20 cm	3x15 / 3x15 W	BU14-W5370
UXDT-30ML-15R	X	23 x 30 cm	4x15 / 4x15 W	BU14-W5475
UXDT-40ML-15R	X	20 x 40 cm	3x15 / 3x15 W	BU14-W5525
UXDT-47ML-15R	X	27 x 40 cm	4x15 / 4x15 W	BU14-W5570
PC-Type: Basic equipment with manual intensity setting 10 - 100 % and PC-control				
USDT-20ML-8PC	S	20 x 20 cm	4x8 / 4x8 W	BU02-W1570
USDT-30ML-8PC	S	23 x 30 cm	6x8 / 6x8 W	BU02-W1575
UXDT-20ML-8PC	X	20 x 20 cm	4x8 / 4x8 W	BU12-W3475
UXDT-30ML-8PC	X	23 x 30 cm	6x8 / 6x8 W	BU12-W3570
UXDT-20ML-15PC	X	20 x 20 cm	3x15 / 3x15 W	BU14-W5675
UXDT-30ML-15PC	X	23 x 30 cm	4x15 / 4x15 W	BU14-W5770
UXDT-40ML-15PC	X	20 x 40 cm	3x15 / 3x15 W	BU14-W5830
UXDT-47ML-15PC	X	27 x 40 cm	4x15 / 4x15 W	BU14-W5875

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UV Transilluminators

Versions for quantification

2 Filters: UV and White light

for applications with **fluorescent stained and visibly stained gels**

- transilluminator with 2 filter sizes: UV and White light
- homogeneous illumination due to high-quality reflector
- high-frequence operation system for a flicker-free illumination and elonged tube life time
- integrated, temperatur-controlled ventilation (except K-Type)
- compact dimension:
  X case (W x D x H): 478 x 322 x 135 mm
- filter lid made of stainless steel for a high resistance and effective cleaning
- incl. UV protection shield, infinitely adjustable

Example

Description	Wavelength	Filter size	Tubes	Order No.
K-Type: Basic equipment				
UXFT-20SW-8K	254 nm/white light	ea. 20 x 20 cm	6x8 / 6x8 W	BU16-W6715
UXFT-20MW-8K	312 nm/white light	ea. 20 x 20 cm	6x8 / 6x8 W	BU16-W6725
UXFT-20LW-8K	365 nm/white light	ea. 20 x 20 cm	6x8 / 6x8 W	BU16-W6735
E-Type: Basic equipment with intensity switch 50/100 %				
UXFT-20SW-8E	254 nm/white light	ea. 20 x 20 cm	6x8 / 6x8 W	BU16-W6010
UXFT-20MW-8E	312 nm/white light	ea. 20 x 20 cm	6x8 / 6x8 W	BU16-W6020
UXFT-20LW-8E	365 nm/white light	ea. 20 x 20 cm	6x8 / 6x8 W	BU16-W6030
R-Type: Basic equipment with manual intensity setting 10 - 100 % in 10 steps				
UXFT-20SW-8R	254 nm/white light	ea. 20 x 20 cm	6x8 / 6x8 W	BU16-W6115
UXFT-20MW-8R	312 nm/white light	ea. 20 x 20 cm	6x8 / 6x8 W	BU16-W6125
UXFT-20LW-8R	365 nm/white light	ea. 20 x 20 cm	6x8 / 6x8 W	BU16-W6135
PC-Type: Basic equipment with manual intensity setting 10 - 100 % and PC-control				
UXFT-20SW-8PC	254 nm/white light	ea. 20 x 20 cm	6x8 / 6x8 W	BU16-W6210
UXFT-20MW-8PC	312 nm/white light	ea. 20 x 20 cm	6x8 / 6x8 W	BU16-W6220
UXFT-20LW-8PC	365 nm/white light	ea. 20 x 20 cm	6x8 / 6x8 W	BU16-W6230

Accessories

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UV tubes	199
White light tubes	199

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BlueLED Transilluminators

Versions for fluorescence quantification

Peak of the excitation wavelength: 470 nm

Suitable for the following fluorescence stains: **AmphiRed® Fluo, Atto-Phos, ATTO-TAG™, CFP/YFP FRET, FITC, Fluorescein, GelStar®, GFP, SYBR® Gold, SYBR® Green, SYBR Safe™, SYPRO® Orange, SYPRO® Ruby,...**

Example

- excitation is made with a specific matrix of blue LEDs in high intensity
- peak of the excitation wavelength 470 nm
- excellent homogeneity
- compact dimensions in 2 case versions:
  S case (W x D x H): 325 x 322 x 105 mm
  X case (W x D x H): 478 x 322 x 135 mm
- filter lid made of stainless steel for a high resistance and effective cleaning
- optional: blue light filter schield

Description	Case	Filter size	Light source	Order No.
E-Type: Basic equipment with intensity switch 50/100 %				
BST-20G-D2E	S	20 x 20 cm	LED Matrix 225	BU08-W8055
BST-30G-D4E	S	23 x 30 cm	LED Matrix 414	BU08-W8065
BXT-20G-D2E	X	20 x 20 cm	LED Matrix 225	BU18-W8050
BXT-30G-D4E	X	23 x 30 cm	LED Matrix 414	BU18-W8060
R-Type: Basic equipment with manual intensity setting 10 - 100 % in 10 steps				
BST-20G-D2R	S	20 x 20 cm	LED Matrix 225	BU08-W8155
BST-30G-D4R	S	23 x 30 cm	LED Matrix 414	BU08-W8165
BXT-20G-D2R	X	20 x 20 cm	LED Matrix 225	BU18-W8150
BXT-30G-D4R	X	23 x 30 cm	LED Matrix 414	BU18-W8160
PC-Type: Basic equipment with manual intensity setting 10 - 100 % and PC-control				
BST-20G-D2PC	S	20 x 20 cm	LED Matrix 225	BU08-W8235
BST-30G-D4PC	S	23 x 30 cm	LED Matrix 414	BU08-W8245
BXT-20G-D2PC	X	20 x 20 cm	LED Matrix 225	BU18-W8230
BXT-30G-D4PC	X	23 x 30 cm	LED Matrix 414	BU18-W8240

Accessories

Description	Page
Blue light filter schield	199

GreenLED Transilluminators

Versions for fluorescence quantification

Peak of the excitation wavelength: 525 nm

Suitable for the following fluorescence stains: **Alexa Fluor 532, Alexa Fluor 546, Cy 3, EtBr, GFP/ds-red,...**

- excitation is made with a specific matrix of green LEDs in high intensity
- peak of the excitation wavelength 525 nm
- excellent homogeneity
- compact dimensions in 2 case versions:
  S case (W x D x H): 325 x 322 x 105 mm
  X case (W x D x H): 478 x 322 x 135 mm
- filter lid made of stainless steel for a high resistance and effective cleaning

Description	Case	Filter size	Light source	Order No.
E-Type: Basic equipment with intensity switch 50/100 %				
GST-20H-D2E	S	20 x 20 cm	LED Matrix 225	BU24-W2105
GST-30H-D4E	S	23 x 30 cm	LED Matrix 414	BU24-W2140
GXT-20H-D2E	X	20 x 20 cm	LED Matrix 225	BU34-W2110
GXT-30H-D4E	X	23 x 30 cm	LED Matrix 414	BU34-W2135
R-Type: Basic equipment with manual intensity setting 10 - 100 % in 10 steps				
GST-20H-D2R	S	20 x 20 cm	LED Matrix 225	BU24-W2210
GST-30H-D4R	S	23 x 30 cm	LED Matrix 414	BU24-W2245
GXT-20H-D2R	X	20 x 20 cm	LED Matrix 225	BU34-W2215
GXT-30H-D4R	X	23 x 30 cm	LED Matrix 414	BU34-W2250
PC-Type: Basic equipment with manual intensity setting 10 - 100 % and PC-control				
GST-20H-D2PC	S	20 x 20 cm	LED Matrix 225	BU24-W2320
GST-30H-D4PC	S	23 x 30 cm	LED Matrix 414	BU24-W2355
GXT-20H-D2PC	X	20 x 20 cm	LED Matrix 225	BU34-W2325
GXT-30H-D4PC	X	23 x 30 cm	LED Matrix 414	BU34-W2330

Accessories

Description	
Filter schield	on request

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YellowLED Transilluminators

Versions for fluorescence quantification

Peak of the excitation wavelength: 595 nm

Suitable for the following fluorescence stains: **Alexa Fluor 594, Alexa Fluor 633, Cy 3.5,...**

- excitation is made with a specific matrix of yellow LEDs in high intensity
- peak of the excitation wavelength 595 nm
- excellent homogeneity
- compact dimensions in 2 case versions:
  S case (W x D x H): 325 x 322 x 105 mm
  X case (W x D x H): 478 x 322 x 135 mm
- filter lid made of stainless steel for a high resistance and effective cleaning

Description	Case	Filter size	Light source	Order No.
E-Type: Basic equipment with intensity switch 50/100 %				
YST-20P-D2E	S	20 x 20 cm	LED Matrix 225	BU26-W4040
YST-30P-D4E	S	23 x 30 cm	LED Matrix 414	BU26-W4055
YXT-20P-D2E	X	20 x 20 cm	LED Matrix 225	BU36-W4050
YXT-30P-D4E	X	23 x 30 cm	LED Matrix 414	BU36-W4065
R-Type: Basic equipment with manual intensity setting 10 - 100 % in 10 steps				
YST-20P-D2R	S	20 x 20 cm	LED Matrix 225	BU26-W4145
YST-30P-D4R	S	23 x 30 cm	LED Matrix 414	BU26-W4160
YXT-20P-D2R	X	20 x 20 cm	LED Matrix 225	BU36-W4155
YXT-30P-D4R	X	23 x 30 cm	LED Matrix 414	BU36-W4170
PC-Type: Basic equipment with manual intensity setting 10 - 100 % and PC-control				
YST-20P-D2PC	S	20 x 20 cm	LED Matrix 225	BU26-W4220
YST-30P-D4PC	S	23 x 30 cm	LED Matrix 414	BU26-W4235
YXT-20P-D2PC	X	20 x 20 cm	LED Matrix 225	BU36-W4230
YXT-30P-D4PC	X	23 x 30 cm	LED Matrix 414	BU36-W4225

Accessories

Description	
Filter schield	on request

RedLED Transilluminators

Versions for fluorescence quantification

Peak of the excitation wavelength: 625 nm

Suitable for the following fluorescence stains: **Alexa Fluor 633, Alexa Fluor 660, Cy 5, Cy 5.5,...**

- excitation is made with a specific matrix of red LEDs in high intensity
- peak of the excitation wavelength 625 nm
- excellent homogeneity
- compact dimensions in 2 case versions:
  S case (W x D x H): 325 x 322 x 105 mm
  X case (W x D x H): 478 x 322 x 135 mm
- filter lid made of stainless steel for a high resistance and effective cleaning

Description	Case	Filter size	Light source	Order No.
E-Type: Basic equipment with intensity switch 50/100 %				
RST-20U-D2E	S	20 x 20 cm	LED Matrix 225	BU28-W6110
RST-30U-D4E	S	23 x 30 cm	LED Matrix 414	BU28-W6145
RXT-20U-D2E	X	20 x 20 cm	LED Matrix 225	BU38-W6115
RXT-30U-D4E	X	23 x 30 cm	LED Matrix 414	BU38-W6140
R-Type: Basic equipment with manual intensity setting 10 - 100 % in 10 steps				
RST-20U-D2R	S	20 x 20 cm	LED Matrix 225	BU28-W6215
RST-30U-D4R	S	23 x 30 cm	LED Matrix 414	BU28-W6250
RXT-20U-D2R	X	20 x 20 cm	LED Matrix 225	BU38-W6220
RXT-30U-D4R	X	23 x 30 cm	LED Matrix 414	BU38-W6255
PC-Type: Basic equipment with manual intensity setting 10 - 100 % and PC-control				
RST-20U-D2PC	S	20 x 20 cm	LED Matrix 225	BU28-W6325
RST-30U-D4PC	S	23 x 30 cm	LED Matrix 414	BU28-W6360
RXT-20U-D2PC	X	20 x 20 cm	LED Matrix 225	BU38-W6330
RXT-30U-D4PC	X	23 x 30 cm	LED Matrix 414	BU38-W6325

Accessories

Description	
Filter schield	on request

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White light Transilluminators

Versions for quantification

White light applications

Suitable for the following applications: **AmphiBlue® Visopt, Autoradiogramme, Coomassie®Blue-Gele, SilverStain-Gele,...**

- homogeneous illumination due to high-quality reflector
- high white light intensity due to optimal quantity of tubes per filter size
- high-frequence operation system for a flicker-free illumination and elonged tube life time
- integrated, temperatur-controlled ventilation except K-Type
- compact dimensions in 2 case versions:
  S case (W x D x H): 325 x 322 x 105 mm
  X case (W x D x H): 478 x 322 x 135 mm
- filter lid made of stainless steel for a high resistance and effective cleaning

Description	Case	Filter size	Tubes	Order No.
K-Type: Basic equipment				
WST-20W-8K	S	20 x 20 cm	6 x 8 W	BU09-W9050
WST-30W-8K	S	23 x 30 cm	8 x 8 W	BU09-W9060
WXT-20W-15K	X	20 x 20 cm	4 x 15 W	BU19-W9055
WXT-30W-15K	X	23 x 30 cm	6 x 15 W	BU19-W9065
WXT-40W-15K	X	20 x 40 cm	4 x 15 W	BU19-W9075
E-Type: Basic equipment with intensity switch 50/100 %				
WST-20W-8E	S	20 x 20 cm	8 x 8 W	BU09-W9105
WST-30W-8E	S	23 x 30 cm	12 x 8 W	BU09-W9115
WXT-20W-8E	X	20 x 20 cm	8 x 8 W	BU19-W9100
WXT-30W-8E	X	23 x 30 cm	12 x 8 W	BU19-W9110
WXT-20W-15E	X	20 x 20 cm	6 x 15 W	BU19-W9400
WXT-30W-15E	X	23 x 30 cm	8 x 15 W	BU19-W9410
WXT-47W-15E	X	27 x 40 cm	8 x 15 W	BU19-W9420
R-Type: Basic equipment with manual intensity setting 10 - 100 % in 10 steps				
WST-20W-8R	S	20 x 20 cm	8 x 8 W	BU09-W9205
WST-30W-8R	S	23 x 30 cm	12 x 8 W	BU09-W9215
WXT-20W-8R	X	20 x 20 cm	8 x 8 W	BU19-W9200
WXT-30W-8R	X	23 x 30 cm	12 x 8 W	BU19-W9210
WXT-20W-15R	X	20 x 20 cm	6 x 15 W	BU19-W9500
WXT-30W-15R	X	23 x 30 cm	8 x 15 W	BU19-W9510
WXT-47W-15R	X	27 x 40 cm	8 x 15 W	BU19-W9520
PC-Type: Basic equipment with manual intensity setting 10 - 100 % and PC-control				
WST-20W-8PC	S	20 x 20 cm	8 x 8 W	BU09-W9355
WST-30W-8PC	S	23 x 30 cm	12 x 8 W	BU09-W9365
WXT-20W-8PC	X	20 x 20 cm	8 x 8 W	BU19-W9350
WXT-30W-8PC	X	23 x 30 cm	12 x 8 W	BU19-W9360
WXT-20W-15PC	X	20 x 20 cm	6 x 15 W	BU19-W9650
WXT-30W-15PC	X	23 x 30 cm	8 x 15 W	BU19-W9660
WXT-47W-15PC	X	27 x 40 cm	8 x 15 W	BU19-W9670

Accessories

Illumination Screens

Professional light boxes and UV conversion screens

Daylight light box

- alternative for white light transilluminators, but with a considerably lower light intensity
- flat, compact construction
- easy-to-use
- constant illumination
- cold athode lamp
- colour temperature approx. 5000 Kelvin
- 3 types with different sized illumination areas
- incl. power supply
- battery operation additionally possible at type WCP-10-4E and WCP-18-5E
- also usable in biostep dark hoods
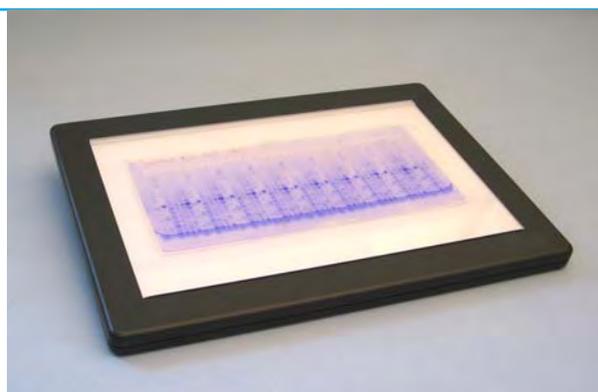
Example (delivery without gel)

Description	Filter size	Tubes	Case (W x D x H in mm)	Order No.
WCP-10-4E	10 x 12 cm	1 x 4,5 W	158 x 150 x 14	BU91-W1012
WCP-18-5E	18 x 13 cm	1 x 5,4 W	220 x 190 x 21	BU91-W1813
WCP-30-19E	30 x 20 cm	1 x 19 W	370 x 275 x 25	BU91-W3020

UV conversion screens

- convert UV radiation into visible light
- to be placed on a UV transilluminator, there is no need for an additional white light transilluminator
- suitable for the image acquisition of:
  Coomassie®Blue, AmphiBlue® gels (G, WY)
  SilverStain gels (B, WY)
  autoradiograms, other transparent templates (WY)
- 3 colour models:
  orange (G), blue (B) and white-yellow (WY)
- 3 different sizes
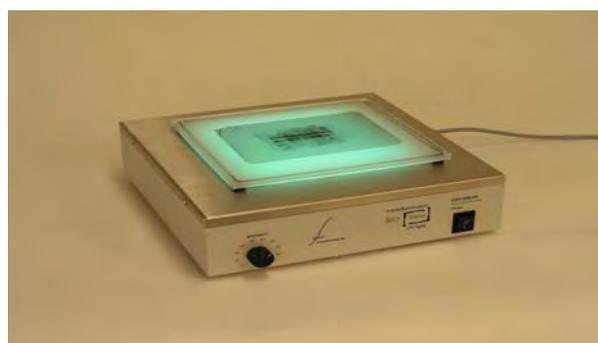
Example (delivery without transilluminator and gel)

Description	Dimensions (L x W)	Order No.
G: Emission 560 - 670 nm, peak 592 nm		
UV conversion screen G24	24 x 22 cm	BC01-S2422
UV conversion screen G32	32 x 27 cm	BC01-S3227
UV conversion screen G42	42 x 31 cm	BC01-S4231
B: Emission 410 - 560 nm, peak 441 nm		
UV conversion screen B24	24 x 22 cm	BC12-S2422
UV conversion screen B32	32 x 27 cm	BC12-S3227
UV conversion screen B42	42 x 31 cm	BC12-S4231
WY: Emission 390 - 650 nm, 1st peak 436 nm; 2nd peak 533 nm		
UV conversion screen WY24	24 x 22 cm	BC23-T2422
UV conversion screen WY32	32 x 27 cm	BC23-T3227
UV conversion screen WY42	42 x 31 cm	BC23-T4231

Accessories for Transilluminators

Preparative working plate, staining tray and gel scoops

Preparative working plate

- protection of a UV transilluminator against mechanical damages (e.g.scratches) when working preparatively with scalpell and spot/band pickers
- maintains the surface quality of the first-class and therefore expensive filter glass of the transilluminators for the fluorescence quantification
- to be placed on all biostep UV and LED transilluminators or transilluminators of other manufacturers
- UV-transparent material
- 3 different sizes

Staining and destaining tray, UV-transparent
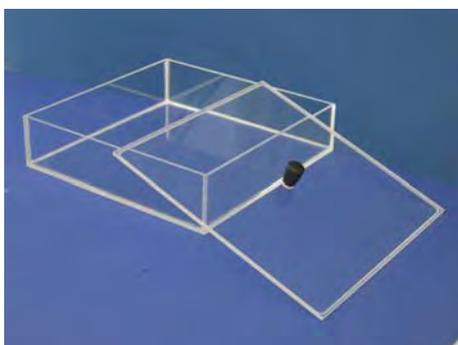
- simplifies the working steps when destaining the gels
- to be placed directly on the UV transilluminator
- UV-transparent base
- UV-non-tranparent lid and sides
- suitable for the use on shakers
- inner dimensions (L x W x H) 210 x 210 x 50 mm
- more sizes on request

Gel scoops
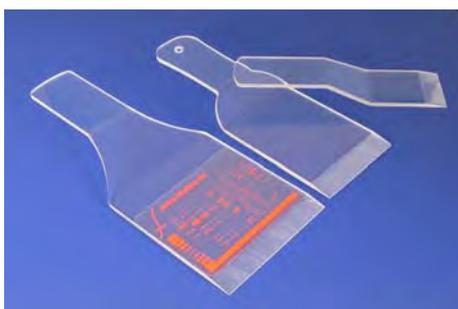
- for the safe transport of the gels
- minimises the risik of des Zerreißens
- UV-transparent material
- easy-to-use
- different sizes

Description	Order No.
Preparative working plate PP24 (24 x 22 cm)	BU53-W2422
Preparative working plate PP32 (32 x 27 cm)	BU53-W3227
Preparative working plate PP42 (42 x 31 cm)	BU53-W4231
Staining tray excl. lid	90-90-701
Staining tray incl. lid	90-90-702
Gel scoop for 10 cm wide gels	HU10-GS
Gel scoop for 20 cm wide gels	HU20-GS
Gel scoop for 25 cm wide gels	HU25-GS

Accessories for Transilluminators

Tubes, UV protection and filter shields

UV and white light tubes

Description	Order No.
8 Watt tube, 254 nm for UV transilluminators, short wave	BU55-W0103
8 Watt tube, 312 nm for UV transilluminators, mid wave	BU55-W0203
8 Watt tube, 365 nm for UV transilluminators, long wave	BU55-W0403
8 Watt tube WL for white light transilluminators	BU55-W0603
15 Watt tube, 254 nm for UV transilluminators, short wave	BU55-W0105
15 Watt tube, 312 nm for UV transilluminators, mid wave	BU55-W0205
15 Watt tube, 365 nm for UV transilluminators, long wave	BU55-W0405
15 Watt tube WL for white light transilluminators	BU55-W0605

Protection shields for UV transilluminators

For the protection against harmful UV radiation at the visual observation of the excited gel structure, it is necessary to use a UV protection shield. This shield is infinitely adjustable.

Description	Order No.
UV protection shield UV-LID-1A for S-case, 325 x 322 x 25 mm 2 sides blocking egdes	BU01-W8703
UV protection shield UV-LID-1B for S-case, 325 x 322 x 25 mm 4 sides blocking egdes	BU01-W8705
UV protection shield UV-LID-2A for X-case, 478 x 322 x 25 mm 2 sides blocking egdes	BU11-W8713
UV protection shield UV-LID-2B for X-case, 478 x 322 x 25 mm 4 sides blocking egdes	BU11-W8715

Filter schields for blue transilluminators

For the visual observation of the excited gel structure, a blue light filter shield is necessary. This filter shield is infinitely adjustable.

Description	Order No.
Blue light filter schield BF-LID-1 for S-case, 325 x 322 x 25 mm 4 sides blocking egdes	BU08-W8750
Blue light filter schield BF-LID-2 for X-Case, 478 x 322 x 25 mm 4 sides blocking egdes	BU18-W8760

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Accessories for Transilluminators

UV protection and UV measuring devices

UV safety goggles and UV full face protection

- UV safety goggles protect the eyes efficiently against harmful UV radiation
- suitable for working in UV light for short periods
- available in 2 models:
  with ear fram or elastic band

- UV full face protection protect the complete face against the harmful UV radiation
- suitable for working in UV light for longer periods

Description	Order No.
UV safety goggles with ear frame	BZ01-Q0110
UV safety goggles with elastic band	BZ01-Q0125
UV full face protection	BZ01-Q0140

UV measuring devices

- professional and user-friendly
- fast and precise registration of the UV parts in the light
- external UV sensor
- 2 or 3 measuring ranges
- LCD display
- battery status indication

Technical data measuring device for UVA-UVB

UV sensor spectra	290 - 390 nm
Measuring range I	0 - 1.999 mW/cm^2
Measuring range II	2.00 - 19.99 mW/cm^2
Measuring time	0.4 sec
Dimensions device (L x W x H)	200 x 68 x 30 mm
Dimensions sensor	68 x 60 x 27 mm
Weigth	approx. 220 g
Operating temperature	0 °C up to +50 °C

Technical data measuring device for UVC

UV sensor spectra	254 nm
Measuring range I	0 - 199.9 μW/cm^2
Measuring range II	0.20 - 1.999 mW/cm^2
Measuring range III	2.00 - 19.99 mW/cm^2
Measuring time	0.4 sec
Dimensions device (L x W x H)	218 x 72 x 32 mm
Dimensions sensor	Ø 38 x 25 mm
Weigth	approx. 335 g
Operating temperature	0 °C up to +50 °C

Description	Order No.
UV measuring device for UVA-UVB	BZ01-Q0510
UV measuring device for UVC	BZ01-Q0520

Tripod and Dark Hoods

Tripod and dark hoods for Imaging systems

The company biostep GmbH produces dark hoods in a wide model range and various equipment versions. Models for the simple documentation tasks as well as very comfortable models for analytical and preparative applications are available.

The dark hoods can be combined to individual systems with different biostep camera basic modules and transilluminators.

The upgrade of a camera system with one of the following dark hoods makes the documentation of UV excited samples independent from a dark room. Furthermore, the user is effectively protected against the harmful UV radiation while working.

Additionally, some hoods offer diverse top-light options which also enable the documentation of TLC, array and acrylamid templates.

The dark hoods DH-40 and DH-50 are upgradeable with comprehensive optional accessories, e.g. filter wheels, PC/printer holder, different excitation wavelengths for meeting your requirements.

Repro tripod DH-S2XA

- stable repro tripod with vertically adjustable camera work
- footprint (W x D) 50 x 40 cm,
  column height 75 cm
- base board with imprinted raster field
- camera mount is vertically adjustable with hand crank, camer arm is horizontally adjustable
- compatible with different camera types up to a max. weight of 3 kg

Dark hood DH-10

- set-top dark hood
- transportable hood to be placed on a template or on a transilluminator*
- compatible with many transilluminators of different brands/producers
- max. filter size of the transilluminator 23 x 30 cm
- cameras can be mounted with a max. weight of 1 kg at the bracketof the dark hood
- footprint (W x D) 30 x 25 cm,
  height without camera bracket 37 cm
- weight 1.5 kg

*Transilluminators with dimensions (WxDxH) 32.5 x 32.2 x 10.5 cm; corresponds to the series of biostep UST, USDT, UXFT, BST, GST, YST, RST, WST

Description	Order No.
Repro tripod DH-S2XA	BD01-M0110
Set-top dark hood DH-10	BD01-M0205

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Dark Hoods

Dark hoods for Imaging systems

Dark hood DH-20

- stationary dark hood with sliding door
- to be placed on any transilluminator* with the minimum dimensions of the footprint
- footprint (W x D) 32.5 x 32 cm, height without camera bracket 45 cm
- to be mounted with 4 hinges on the biostep transilluminator*
- max. filter size of the transilluminator 20 x 20 cm
- incl. white top-light
- optional: upgradeable with a filter slider

*Transilluminators with dimensions (WxDxH) 32.5 x 32.2 x 10.5 cm; corresponds to the series of biostep UST, USDT, UXFT, BST, GST, YST, RST, WST

Dark hood DH-30

- stationary dark hood with sliding door
- to be placed on any transilluminator* with the minimum dimensions of the footprint
- footprint (W x D) 47 x 32 cm, height without camera bracket 45 cm
- to be mounted with 4 hinges on the biostep transilluminator*
- max. filter size of the transilluminator 23 x 30 cm
- incl. white top-light
- optional: upgradeable with a filter slider

*Transilluminators with dimensions (WxDxH) 47,8 x 32,2 x 13,5 cm; corresponds to the series of biostep UXT, UXDT, BXT, GXT, YXT, RXT, WXT

Filter slider for dark hoods DH-20, DH-30
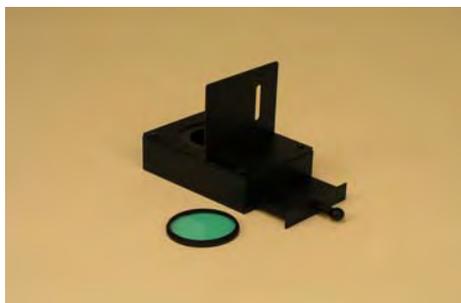
- filter slider for 1 filter position
- easy, manual changing of the filter at frequently changing applications
- diamter of the filter 55 mm
- delivery without filter, filter selection on page 181

Description	Order No.
Dark hood DH-20	BD01-M0320
Dark hood DH-30	BD01-M0350
Filter slider for 1 filter position (for DH-20, DH-30)	BO11-K1003

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Dark Hoods

Dark hoods for Imaging systems

Dark hood DH-40

- stationary dark hood with large door
- to be placed over an existing transilluminator*
- max. filter size of the transilluminator 27 x 40 cm
- footprint (W x D) 55 x 48 cm,
  height without camera bracket 59 cm
- incl. white top-light
- automatic UV cut-off when opening the door
- the preparative function enables the observation of
  the gels under UV light
- optional: upgradeable with UV protection shield, filter
  wheel, white light transmission and UV or blue top-
  light

Version for ImageSystem Felix 5000/6000/7000

- special holder for cameras with manual objective,
  height incl. camera holder 87 cm

* Use of all biostep transilluminators (UV, LED, white light) possible

Dark hood DH-50

- stationary dark hood with large door
- footprint (W x D) 55 x 48 cm
- incl. white top-light
- roll-out table for transilluminator*
- automatic UV cut-off when opening the door
- the preparative function enables the observation of
  the gels under UV light
- incl. UV protection shield, no need for an additional
  UV full face protection or UV safety goggles
- optional: upgradeable with filter wheel, white light
  transmission and UV or blue top-light

Version for ImageSystem Felix 1000/2000

- lockable camera cover with integrated 5.6" TFT-LCD-
  colour display for the representation of the live image
  of the camera,
  height incl. camera cover 73 cm

Version for ImageSystem Felix 5000/6000/7000

- special holder for cameras with manual objective,
  height incl. camera holder 88 cm

*Transilluminators with dimensions (WxDxH) 32.5 x 32.2 x 10.5 cm;
corresponds to the series of biostep UST, USDT, UXFT, BST, GST, YST, RST, WST

Delivery without transilluminator and gel

Description	Order No.
Dark hood DH-40	BD01-M0440
Dark hood DH-40 (Version for Felix 5000/6000/7000)	BD01-M0455
Dark hood DH-50 (Version for Felix 1000/2000)	BD01-M0470
Dark hood DH-50 (Version for Felix 5000/6000/7000)	BD01-M0485

biostep reserves the right to change technical features without notice.

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Accessories for Dark Hoods

Optional upgrade possibilities for the dark hoods DH-40, DH-50

Printer holder

- holder for Mitsubishi printer P93E or P93DW
- max. footprint for an alternative printer
  (W x D) 15.8 x 30 cm
- to be mounted on the side of the dark hood
- optional upgrade for dark hoods DH-40 and DH-50

PC/printer holder
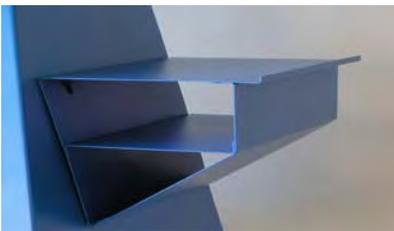
- holder for PC-system Professional (Shuttle PC) and
  Mitsubishi printer P93E or P93DW
- max. footprint for an alternative PC
  (W x D) 21.5 x 30 cm
- max. external dimensions for an alternative printer
  (W x D x H) 15.5 x 30 x 10 cm
- to be mounted on the side of the dark hood
- optional upgrade for dark hoods DH-40 and DH-50

Filter wheel

- manual filter wheel with 4 positions
- incl. 3 filter of your own choice (see page 181),
  1 position free for white light applications
- optional upgrade for dark hoods DH-40 and DH-50

UV protection shield

- UV protection shield made of 3 mm thick UV-non-
  transparent acryl
- mounted with 2 hinges in the dark hood
- setting of the movability of the shield:
  freely swinging or vibrating or adjusting in every
  position by 2 set-screws
- external dimensions (W_U x W_L x D x H):
  27.5 x 40.0 x 9.5 x 33.5 cm
- optional upgrade for dark hood DH-40

Camera cover withouth TFT display, lockable
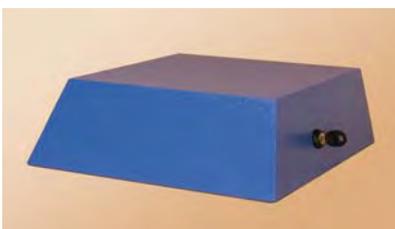
- lockable cover without TFT display for the
  ImageSystems Felix 1000/2000
- incl. 2 keys
- external dimensions (W x D x H) 30 x 30 x 12 cm
- optional upgrade for dark hood DH-40

Accessories for Dark Hoods

Optional upgrade possibilities for the dark hoods DH-40, DH-50

UV top-light Standard

- 2 sets with 4 x 8 Watt tubes for UV top-light in total, from two directions, complete with mounting, 4 UV tubes and UV filter glasses
- position in dark hood: 2 x 8 Watt right, 2 x 8 Watt left
- installation with 4 tubes at 1 UV wavelength or with 2 tubes at 2 UV wavelengths
- 254 nm, 312 nm, 365 nm available
- optional upgrade for dark hoods DH-40 and DH-50
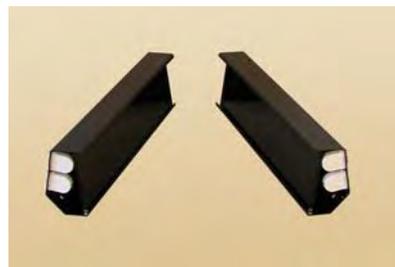
UV top-light Professional

- 4 sets with 6 x 8 Watt tubes for UV top-light in total, from four directions, complete with mounting, 6 UV tubes and UV filter glasses
- position in dark hood:
  2 x 8 Watt right, 2 x 8 Watt left
  1 x 8 Watt front, 1 x 8 Watt back
- installation with 6 tubes at 1 UV wavelength or with 4 tubes plus 2 tubes at 2 UV wavelengths
- 254 nm, 312 nm, 365 nm available
- optional upgrade for dark hoods DH-40 and DH-50

Blue top-light Standard

- 2 sets with 4 x 8 Watt tubes for blue top-light in total, from two directions, complete with mounting, 4 tubes at 450 nm and blue filter glasses
- position in dark hood:
  2 x 8 Watt right, 2 x 8 Watt left
- optional upgrade for dark hoods DH-40 and DH-50

White light transmission

- integrated, actively shining white light plate
- homogeneous illumination
- illumination size 18 x 13 cm
- optional upgrade for dark hoods DH-40 and DH-50

Blue top-light Professional

- 4 sets with 6 x 8 Watt tubes for blue top-light in total, from four directions, complete with mounting, 6 tubes at 450 nm and blue filter glasses
- position analogue UV top-light Professional

Description	Order No.
Printer holder	BD05-M8072
PC/printer holder	BD05-M8074
Filter wheel with 4 positions incl. 3 filter your choice	BO11-K1015
UV protection shield	BD05-M8020
Camera cover without TFT display, lockable	BD05-M8065
UV top-light Standard (please state requested wavelength/s)	BD03-M7150
UV top-light Professional (please state requested wavelength/s)	BD03-M7165
Blue top-light Standard	BD03-M7180
Blue top-light Professional	BD03-M7190
White light transmission	BD03-M7410

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Computer

PC systems

General information

The configurationen mentioned as follows are minimum requirements and are systematically adjusted to the current technical state. The PC-systems are high-quality products and are built according to stict quality standards. The current PC-equipment can be found under **www.biostep.net**.

PC-system Standard

Example

Technical data

- MidiTower ATX with brand mainboard and USB-front
- Prozessor AMD Sempron 64 2800+
- memory 512 MB DDR-RAM
- 80 GB U-DMA hard disk
- DVD-Dual-Multi writer
- graphic card 128 MB DDR-RAM
- network card 10/100 Mbit
- optical wheel mouse and keyboard
- OS Microsoft Windows XP Professional
- 19" TFT monitor

PC-system Professional I / II*

Example

Technical data

- Shuttle XPC with USB-front
- Prozessor AMD Sempron 3400+ (in Professional I)
  Prozessor AMD Athlon 64 3200+ (in Professional II*)
- memory 1024 MB DDR-RAM
- 250 GB U-DMA hard disk
- DVD Dual Multi writer
- graphic card 256 MB DDR-RAM
- network card 10/100 Mbit
- card reader
- optical wheel mouse and keyboard
- OS Microsoft Windows XP Professional
- 19" TFT monitor

* The system Professional II has no LPT-interface and is only equipped with PCI-Express-slots. Default PCI-cards are not supported.

PC-system Salino

Example

Technical data

- LCD-PC 17" XimFlex-571
- Prozessor Intel Pentium4 3,0 GHz
- memory 512 MB DDR-RAM
- 80 GB U-DMA hard disk
- Combo-Laufwerk DVD/CD-RW
- graphic card 128 MB shared
- network card 10/100 Mbit
- optical wheel mouse and keyboard
- OS Microsoft Windows XP Professional
- integrated 17" TFT monitor

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Computer

Notebook, Laboratory keyboard and PC-mouse

Notebook

Technical data

- current information about the type and equipment of the Notebook are listed on the Internet www.biostep.de

Example

Laboratory keyboard „Induproof"

- desinfectable
- no penetration of liquids, degree of protection IP68
- tactile feedback, therefore also suitable for longer data inputs
- great mechanical stability due to metal base plate
- chemically resistant to alkenes, oils, aliphatic alcohols, weak or thinned acids and lyes

Technical data

Dimensions (L x W x H)	387 x 150 x 24 mm
Weight	approx. 1115 g
No. of keys	105 short-stroke keys
Layout	US or German
Interface	PS/2 or USB

Example

Laboratory PC-mouse „Induproof"

- desinfectable
- no penetration of liquids, degree of protection IP68
- no contamination of mechanic parts due to optical sensing
- chemically resistant to alkenes, oils, aliphatic alcohols, weak or thinned acids and lyes

Technical data

Dimensions (L x W x H)	127 x 63 x 33 mm
No. of keys	2
Technical principle	optical sensing
Interface	PS/2 or USB

Example

Description	Order No.
PC-system Standard	CC01-A1040
PC-system Professional I - Shuttle PC	CC01-A1080
PC-system Professional II - Shuttle PC	CC01-A1090
PC-system Salino	CC01-A1070
Notebook	CC01-A1515
Laboratory keyboard „Induproof" (please state layout and interface)	BZ02-Q5030
Laboratory PC-mouse „Induproof"	BZ02-Q5045

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Printers

Thermal printer Mitsubishi

Black & white thermal printer Mitsubishi P93E and P93DW

The printers P93E and P93DW distinguish by their high-quality greyscale printouts, very short printing times and low consumption costs. Due to the roll-type-technology, the printers have a higher printing speed and reliability (no paper jams).

The difference between the printers is the way of control and data transfer. The P93E has a video (BAS)-interface, the P93DW a PC-interface (USB).

Printing process	thermal-sensitive, 256 greyscales
Resolution	325 dpi (12.8 dots/mm)
Connection for data transfer	BAS/FBAS (P93E), USB 2.0 (P93DW)
Printing speed	approx. 3.9 sec for image format „Normal"
Image format	7 different formate
Paper size	thermal paper roll, 110 mm wide
Costs per print (S-format 100 x 110 mm)	approx. 0.06 Euro (KB61B), approx. 0.10 Euro (K65HM)
Special feature	roll-type-technology
Dimension (W x H x D)	approx. 154 x 90 x 256 mm
Weight	approx. 2.8 kg

Colour thermal sublimation printer Mitsubishi CP900DW

The printer CP900DW is a digital colour printer for high-quality, photorealistic greyscaled and coloured printouts. The printing time is only 12 seconds per print.

The CP900DW is based on the roll-type-technology of Mitsubishi.

The printer has a standard USB-interface for the fast transfer of digitale image data.

Printing process	thermal -sublimation 16.7 Mio. colours, 256 greyscales
Resolution	325 dpi (12.8 dots/mm)
Connection for data transfer	USB 1.1
Printing speed	S-format: approx. 12 sec (Fast), approx. 20 sec (Fine)
	L-format: approx. 18 sec (Fast), approx. 32 sec (Fine)
Image format, printing range	S-format 100 x 75 mm, L-format 100 x 130 mm
Paper size	thermal paper roll, 110 mm wide
Costs per print (S-format100 x 105 mm)	approx. 0.06 Euro (b/w-paper KB61B)
	approx. 0.10 Euro (b/w-paper K65HM)
	approx. 0.47 Euro (colour paper CK900S)
Special feature	roll-type-technology, comprehensive paper options
Dimension (W x H x D)	approx. 280 x 150 x 400 mm
Weight	approx. 11 kg

Printer

Description	Order No.
Mitsubishi P93E	CD02-D1015
Mitsubishi P93DW	CD02-D1315
Mitsubishi CP900DW	CD02-D1725

Printers

Consumables for Mitsubishi printers

Paper for black and white printouts for P93E, P93DW and CP900DW

Description	Order No.
Thermal paper K61B Quality Standard Width 110 mm, length 21 m Packaging Unit: 4 rolls	CD80-E1061
Thermal paper K61B Quality High Density - higher contrast Width 110 mm, length 21 m Packaging Unit: 4 rolls	CD80-E1061
Thermal paper K91HG Quality High Glossy - high glossy Width 110 mm, length 18 m Packaging Unit: 4 rolls	CD80-E1091

Paper for colour printouts and ink sheet rolls for CP900DW

Description	Order No.
Paper set CK900S for approx. 200 printouts in S-format Packaging Unit: 1 roll of paper and 1 ink sheet roll	CD81-E2009
Paper set CK900L for approx. 130 printouts in L-format Packaging Unit: 1 roll of paper and 1 ink sheet roll	CD81-E2008
Paper set PKC900S for approx. 200 printouts in S-format Packaging Unit: 1 roll of paper and 1 ink sheet roll incl. cassette	CD81-E2017
Paper set PKC900L for approx. 130 printouts in L-format Packaging Unit: 1 roll of paper and 1 ink sheet roll incl. cassette	CD81-E2016
Paper set laminiert CK900S4P for approx. 130 printouts in S-format Packaging Unit: 1 roll of paper and 1 ink sheet roll with lamination	CD81-E2025
Paper set laminiert CK900L4P for approx. 90 printouts in L-format Packaging Unit: 1 roll of paper and 1 ink sheet roll with lamination	CD81-E2024
Paper set laminiert CK900S4P(HX)EU for approx. 130 printouts in S-format Packaging Unit: 1 roll of ID-paper and 1 ink sheet roll with lamination	CD81-E2033
Paper set laminiert CK900L4P(HX)EU for approx. 90 printouts in L-format Packaging Unit: 1 roll of ID-paper and 1 ink sheet roll with lamination	CD81-E2032

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Test Devices for Quality Control

Quality and parameter control of camera-based systems

Imager Test Device TD216
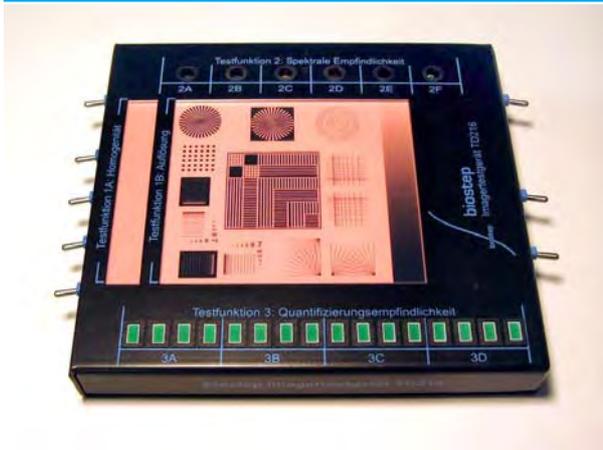
In the pharmaceutical industry as well as in clinical laboratories, quality assurance controls are carried out on the basis of defined SOP and GLP protocols. For these reasons it is necessary to subject the systems to a quality and parameter control periodically.

At the moment, mainly samples (e.g. gels, blots) are used for the same. The main problem of these media is the lacking reproducibility (depending on e.g. material charge, device technology, operator), their low durability and the additional temporal effort for the production of the same.

With the Imager Test Device TD216, an electronic tool is available for the first time that simplifies and standardises the process of the qualitys and parameter control.

Test sizes

The following features of a camera-based optical system can be tested using the TD216.

Resolution
With different geometric figures which are homogeneously illuminated with an electro-luminescent foil, substantial characteristics of the resolution, sharpness, distortion and homogeneity can be checked.

Spectral sensitivity
The test function spectral sensitivity has been mainly developed for the recognition of the filter characteristics which are used in the field of gel documentation and fluorescence applications. For this purpose, the wavelengths 468 nm, 565 nm, 590 nm, 700 nm, 940 nm and 390 up to 680 nm are emitted by the TD216.

Quantification sensitivity
With a high-precition resistance network in combination with a 16x LED row, a dynamic range of 2^{16} (65536) is realised. In an easy way, the proof limit, linearity and reproducibility of the measuring results of a Bio-Imaging system can be tested.

Advantages

- small, particularly flat form
- suitable with a variety of camera-based optical systems
- use of electronic quality components with a very low error tolerance
- high reproducibility of the camera tests
- activation or deactivation of single signal ranges
- network-independent test device, network connection possible
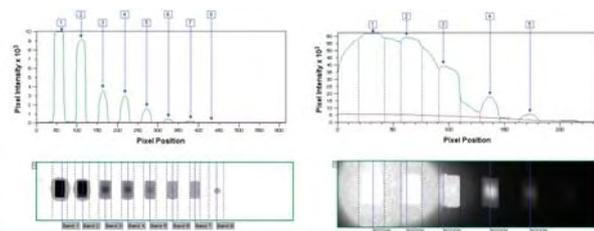
Both representations show the comparison of two chemiluminescence systems which were tested with the quantification function of the TD216. On the left hand, a correctly working system is shown. All bands are quantificable, there is no overexposure. On the right hand, a quantification of the bands 1, 2 and 3 is almost impossible due to the „bleeding of the CCD sensor". Weak bands between the "overexposing" bands 1 and 2 would not be detectable.

TD216

Description	Order No.
Imager test device TD216 incl. transport case and battery charger	BZ05-Q0525
Imager test device TD216 with certification protocol incl. transport case and battery charger	BZ05-Q0527

Test Devices for Quality Control

Quality and parameter control of camera-based systems

Test gel for fluorescence

- symbolised test gel for testing gel documentation and Bio-Imaging systems
- made of transparent materials with fluorescent lane and band structure
- fluorescence excitation with the following wavelengths: 254 nm, 312 nm, 365 nm, 480 nm
- dimensions (L x W): 130 x 100 mm

Test gel for chemiluminescence

- symbolised test gel for testing chemiluminescence systems
- made of transparent materials with phosphorescent lane and band structure
- luminescence time in dependence on the activation intensity approx. 5 - 20 min
- excitation of the gel with surrounding light or other light sources in the visible range
- dimensions (L x W): 130 x 100 mm

Greyscale wedge

- for measuring the density and the calibration of scanner-based and camera-based Bio-Imaging system
- calibration with 21 defined OD-values (Optical Density)
- dimensions (L x W) 190 x 25 mm

Advantages of the biostep greyscale wedges

- marking of the single greyscales with the corresponding OD values or calibrating numbers
- marking of the boundaries between the greyscale areas by thin lines
- sufficiently large protection area on each side of the greyscale wedge for avoiding unintentional touches of the greyscale areas

Technical data

Greyscale wedge, Standard
- density range 0.05 to 3.05 OD, progression 0.15 OD
- nominal allocation
- tolerance ± 0.03 OD

Greyscale wedge, calibrated
- density range 0.05 to 3.05 OD, progression 0.15 OD
- allocation of the must values (determined with a standardised method) to the greyscale areas
- tolerance ± 0.01 OD
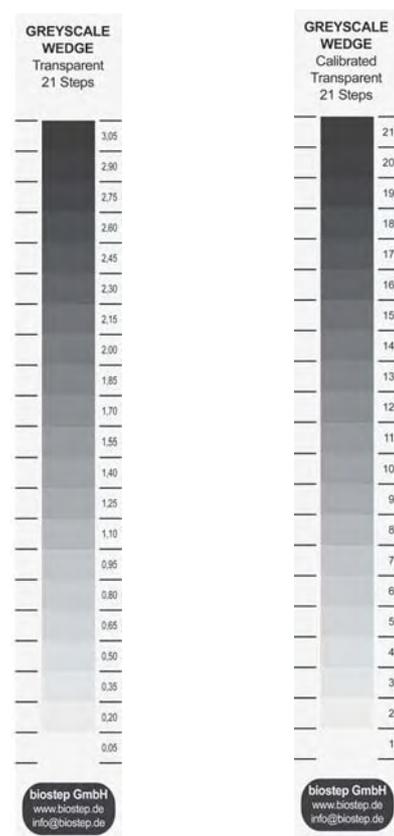
Description	Order No.
Test gel for fluorescence	BZ06-Q1005
Test gel for chemiluminescence	BZ06-Q1060
Greyscale wedge 21 steps, Standard	BZ06-Q3021
Greyscale wedge 21 steps, calibrated	BZ06-Q4021

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Notes

Bio-Imaging-Software

Acquisition and Control Software

Control and documentation software for cameras

argus X1®

The biostep software argusX1® serves for the control of the ImageSystems Felix and also for the processing, archivation and administration of the exposed image data. An essential prerequisite for these functions is the databas integrated in argusX1® including powerful search functions. In addition to the image data, all important acquisition parameters are saved for each image in the database and can therefore be used for a classification.

Furthermore, additional modules (e.g. Multi-Camera, Time Lapse, GLP) are available for more application and use requirements.

Due to the logical structure, the software enables a fast, comfortable and automated control of the system camera. This advantage is mainly important for routine works and for users with minor experiences at the gel documentation.
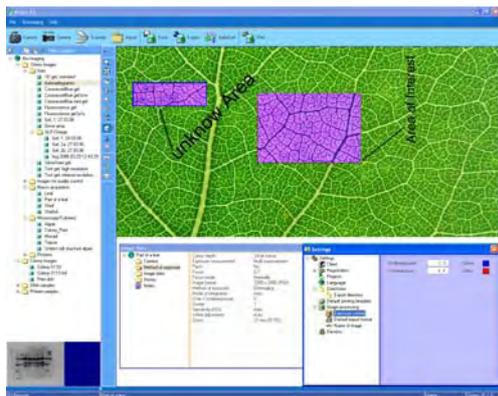
biostep argusX1® program overview with the main functions

Camera window for the ImageSystems Felix 1000/2000
Input of a sample name and memos after acquisition

Software functions (extract)**

Basic licence

- control of the acquisition parameters of system-compatible cameras
- automatisation of the image data by creating individual, reproduceable acquisition methods
- functional classification of the image acquisition into "Standard Mode" und "Professional Mode"
- automated name generation and numeration of the sample after the acquisition
- data export into other Windows applications
- import of image data in different formats
- quick print function
- integrated database for archiving the images
- comprehensive search functions according to different parameters, incl. full text search in notes
- functions for the image processing incl. Undo
- rotation in freely-definable angles and by 90°, 180°
- reflection in horizontal and vertical directions
- cropping of image areas
- various filter functions
- marking of the images with text, rectangle and lines
- memo function: input of a note for each image and printout of this note on a protocol
- image history for the documentation of the acquisition parameters for each image
- overexposure control
- selection of the user language in English or German, export format, export path, print fomat
- creation of individual print reports

System requirements (minimum requirements)
- OS Windows 2000 or XP
- PC with min. 700 MHz CPU
- memory 256 MB RAM
- graphic resolution 1024 x 768 Pixel, 32 Bit colours
- free hard disk memory at least 100 MB
- CD-ROM or DVD drive
- 1 free USB 2.0 - port or
  1 free FireWire (IEEE1394) - port
  for controlling the camera

Additional software modules*

- Module GLP
- Module User Administration
- Module Project Administration
- Module Time Lapse
- Module Control Panel CP-1
- Module High-Speed-Live-Image
- Module Multi-Camera
- Module Scanner Control
- Module Measuring Interface

* detailed information on pages 152 - 157, 174 - 175
** detailed information on pages 176 - 179

Description	Order No.
biostep argusX1® basic licence	BG02-A7110

Acquisition and Control Software

Control software for scanners

Phoretix PowerScan

The software Phoretix PowerScan serves for the acquisition of autoradiography, chemiluminescence films and colorimetric stained gels/blots with the systems PowerScan 600, 800 and 1000*.

Besides the functions for image processing, the decisive functionality for electrophoretical applications is the calibration of the scanner with a greyscale wedge**.

This guarantees an essentially higher comparison of the results at the quantification of gel acquisitions. The exposed images can be transferred to an appropriated 1D or 2D analysis software of Phoretix and be printed.

The PowerScan software is logically structured and enables therefore a fast and comfortable operation.

Software functions

- control of system-compatible scanners
- display of a preview image
- selection of the area to be scanned
- settings of the scan parameters
- function for the image optimisation
- acquisition of the scanned image by using the saved calibration function
- saturation display (overexposure control)
- import of uncompressed greyscale TIF files in 8 - 16 Bit
- comprehensive filter functions
- cropping of image areas
- rotation in freely-definable angles and by 90°, 180°
- reflection in horizontal and vertical directions
- intensity calibration with a greyscale wedge**
- histogram function for greyscale parts
- false colour representation, colour profiles: SilverStain, Coomassie®Blue, user-specific
- inverse representation
- marking possibilites in the image
- data export into other Windows applications
- print functions
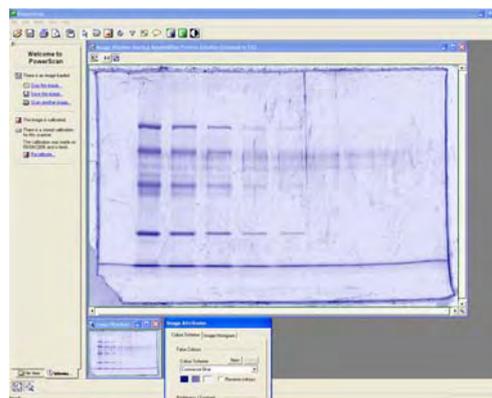
PowerScan program overview with the main functions
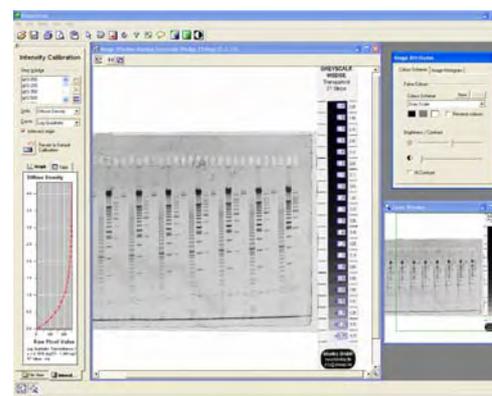
Intensity calibration with biostep greyscale wedge

System requirements (minimum requirements)
- OS Windows 2000 or XP
- PC with min. 700 MHz CPU
- memory 256 MB RAM
- graphic resolution 1024 x 768 Pixel, 32 Bit colours
- free hard disk memory at least 50 MB
- CD-ROM or DVD drive
- 1 free USB 2.0 - port or
  1 free FireWire (IEEE1394) - port
  for controlling the scanner
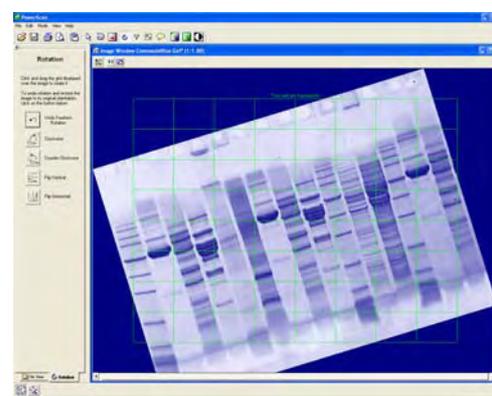
Rotation of an image by a freely-defineable angle

Description	Order No.
Phoretix PowerScan	BW04-G0220

1D Analysis Software

Comparison of the functions of Gelix One® 210, 220, 230

Gelix One® Overview

Function	Description	Gelix One® 210	Gelix One® 220	Gelix One® 230
Data import	JPG, PNG, 8 - 16 Bit TIF files	x	x	x
	Direct interface to argusX1®	x	x	x
Analysis	Fully automated lane detection		x	x
	Semi-automated lane detection		x	x
	Manual lane detection	x	x	x
	Manual lane adjustment	x	x	x
	Fully automated band detection		x	x
	Manual band detection	x	x	x
	Manual band adjustment	x	x	x
Background	None	x	x	x
detection	Rolling Ball		x	x
	Valley to Valley			x
	Elastic band		x	x
	Average value		x	x
	Manual basic line	x	x	x
Calculation	5 basic values for bands (volume, Rf, MW)	x	x	x
	15 calculation values for bands and lanes			x
MW-Standards	Molecular weight calibration	x	x	x
	Definition of own standards	x	x	x
	Export defaults		x	x
	Image assignation of MW standards to the gel			x
Quantification	Classification of absolute band values		x	x
	Applied amount per lane			x
	Average value of one group of bands			x
	Sum of the volume of a band group			x
Normalisation	Based on one band	x	x	x
	Based on one group of bands			x
	Based on one lane			x
Presentation	Histogram, lane profile	x	x	x
	Histogram with Multi-Lane view			x
	3D histogram (freely rotatable)			x
	3D gel presentation (freely rotatable)			x
Reports	Preset reports	x	x	x
	Export of the data table	x	x	x
	3D plot for gels			x
	PDF export of the report		x	x
	Export to other formats (RTF, XLS)			x
Additional modules	GLP			x
	RFLP			x

1D Analysis Software

Basic 1D software

Gelix One 210®

The product series Gelix One consists of 3 functionally graduated software solutions for the analysis of 1D gels. All Gelix One versions have a direct interface to argusX1 software. This enables a convenient and GLP-conform data transfer from the acquisition to the analysis software.

Gelix One 210 is an introductory software for the manual evaluation of 1D gels. It is mainly suitable for users with minor assay throughputs as well as for educational institutions.

The software is logically structured and can intuitively be operated. This aspect is supported by the possibility of choosing the user language English or German.

Especially for users with minor experience in the gel analysis, this basic software has been developed.
If required, it is possible to upgrade this software to the higher versions Gelix One 220 or 230.

*   detailled information on page 214
**   detailled information on page 216

Software functions (extract)**

Project manager

A new project is created for each analysis by a four-stepped Wizard. The first step includes the selection of the gel type, the second one the input of the project data, the

third one the import of the image file and the last fourth step is available for notes. The administration of all processed projects is organised in the project manager.
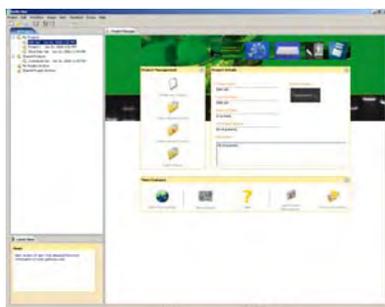
Main functions of the project manager
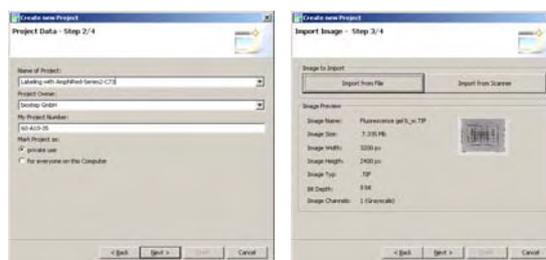
Wizard function for activation of a new project

Gel analysis

The single steps for evaluating the gels are logically structured in a workflow. This includes in Gelix One® 210 the lane detection, the background detection, the band detection and the molecular weight calibration.

In addition, a normalisation over the assignation of a value (e.g. 100 %) to a band is possible. The results of the analysis can be documented by means of a report.

Functions for the lane detection
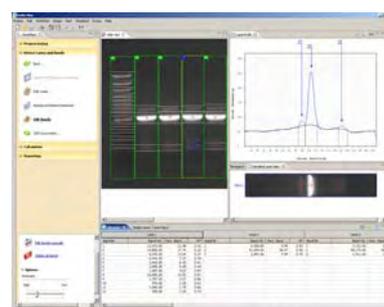
Functions for the band detection

Description	Order No.
Gelix One® 210, single licence	BG02-A8010
Gelix One® 210, multi licence	BG02-A8029

System requirements (minimum requirements) for Gelix One® 210, 220, 230

- OS Microsoft Windows 2000 or XP
- PC with minimum 1.0 GHz
- memory 512MB RAM
- 1 GB free hard disc space
- graphic resolution 1024 x 768 pixel, 32 Bit colour
- CD-ROM or DVD drive

1D Analysis Software

Standard 1D software

Gelix One 220®

The software Gelix One 220* includes all features of the version 210 und is additionally equipped with functions for semi-automatic analysis.

On the Basis of the powerful Gelix One algorithms, an automated lane and band detection as well as an automated background detection with the functions "Rolling Ball" and "Elastic Band" are possible.

Furthermore, convenient molecular weight and amount calibration as well as normalisation are available.

With these equipment characteristics, Gelix One 220 is the optimal software for users with medium assay throughput and routine works.

Gelix One is a powerful 1D analysis software with the possibility of upgrading it to the upper version Gelix 230.

Software functions (extract)**

Evaluation of gels with Distortion

Distortions in the gel could arise in different manners, for example through strong gradients in the electrophoresis chamber. With the algorithms for the detection of the lanes which are integrated in Gelix One, even distorted structures can be evaluated. Functions for the automated, semi-automated and manual lane detection as well as for the manual correction are available.
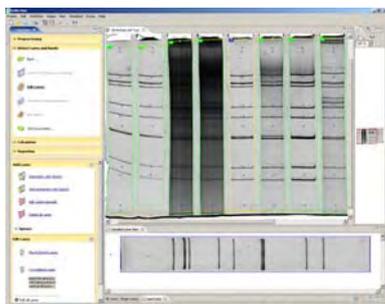
Lane detection on a gel with distortions on the egdes
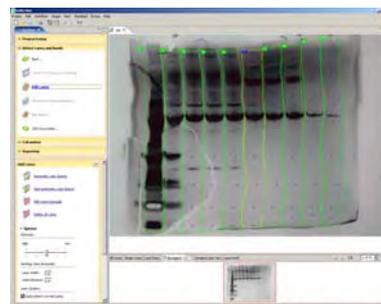
Lane detection on a gel with jagges

Molecular weight calibration

Molecular weights determination is realised on basis of default templates which are intuitively transferred to the gel. It is possible to calibrate one or several lanes on a gel with one molecular weight standard.

The available MW/pl standards are clearly administrated in a library. There is the possibility of creating new standards or editing existing ones.
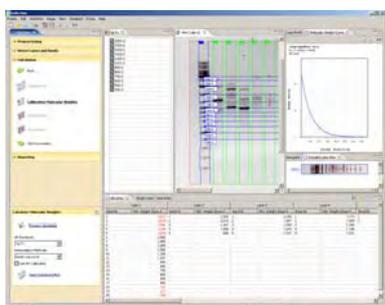
MW calibration of a gel
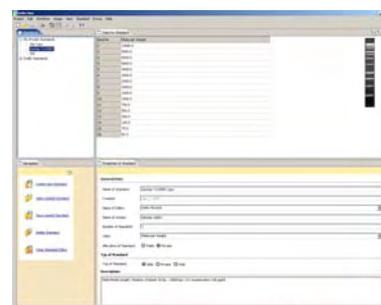
MW/pl standard libary

Description	Order No.
Gelix One® 220, single licence	BG02-A8120
Gelix One® 220, additional licence	BG02-A8122
Gelix One® 220, multi licence	BG02-A8139
Gelix One® 220, network licence	BG02-A8175

1D Analysis Software

Efficient 1D software incl. 3D module

Gelix One 230®

The software Gelix One 230* includes all features of the version 220 and is additionally equipped with functions for the automated analysis, quantification, normalisation as well as up-to-date visualisation technologies**.

The results of the evaluation can be presented in various ways. Especially the 3D gel presentation, 3D lane profiles and substantial possibilities of the report creation are nice features. The export into other Windows applications is carried out via clipboard or as saved file.

Particularly for applications in the production environment, parameters for lanes has been established

in addition to the important information about the bands (e.g. Rf value, MW values, volume, area). The quality factor for judging the quality of the analysis has been proved in practise. the quality factor to estimate the evaluation quality has proved.

Gelix One 230 is a professional evaluation software for 1D gels. Especially for users in science as well as in biotechnological and pharmaceutical production, this software is a premium choice. The possibility of upgrading the software with the modules GLP and RFLP supports the use of the software in the mentioned fields.

*   system requirements on page217
**   detailled information on page 216

Software functions (extract)**

Quantification and normalisation

The function of the amount calibration (quantification) calculates all unknown bands by the classification of the known amounts to one or several bands or of the applied amount per lane.
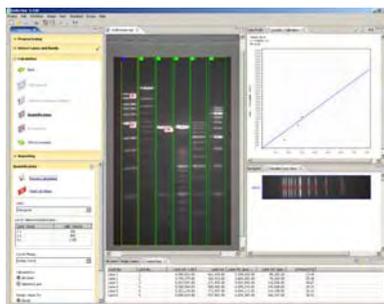
The normalisation is used for the relative comparison of bands on the basis of their volumes. For that purpose, values (e.g. 100 %) are assigned to single bands, groups of bands or single lanes.

Functions for quantification
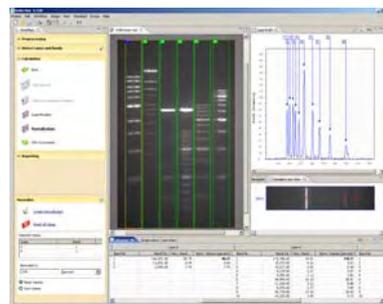
Functions for normalisation

3D representation

Functions for the 3D presentation of the complete gel and for the 3D lane profile are integrated in the software Gelix One 230. This functionality supports a further evaluation

and interpretation of the results. Furthermore, it is possible to export the 3D presentations into other Windows applications, e.g. PowerPoint.
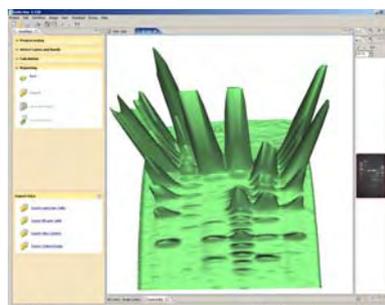
3D representation of a gel
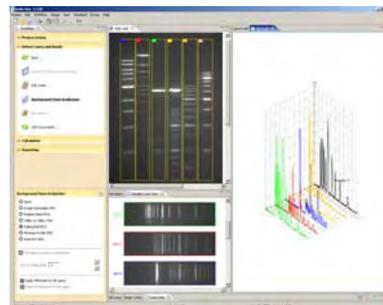
3D representation of the lane profiles of a gel

Description	Order No.
Gelix One® 230, single licence	BG02-A8230
Gelix One® 230, additional licence	BG02-A8232
Gelix One® 230, multi licence	BG02-A8249
Gelix One® 230, network licence	BG02-A8285
GLP-Module for Gelix One® 230	BG02-A8715
RFLP-Module for Gelix One® 230	BG02-A8745

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1D Analysis Software

Compact 1D software incl. various modules

Phoretix TotalLab TL100

TotalLab TL100 represents a powerful software for different applications.

Besides the module for one dimensional DNA/RNA and protein gels, TotalLab TL100 comprehends diverse modules for evaluating array, dot/blot, slot/blot images, for colony counting as well as a toolbox for TLC-plates, autoradiograms and unspecific structures.

The software is particularly suitable for users who like to cover as many applications as possible with only one software package at a reasonable price.

The functions of the software are logically structured in dependence on the application. Instructions and support for the individual evaluation steps enable the user a fast training in the program and a comfortable work.

Activation of the single modules of the „Control Center" of TotalLab TL100
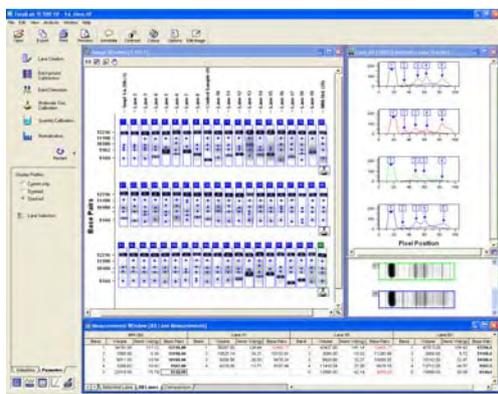
Evaluatio of a one-dimensional running gel with 3 start- and front areas

Software functions

General functions
- import of uncompressed greyscale TIF files in 8 - 6 Bit
- functions for image optimisation
- data export in other Windows applications
- marking and printing functions
- comprehensive possibilities for the representation of the evaluation results

Module for the evaluation of 1D electrophoresis gels
- fully automatic and manual lane detection
- export and import of lane templates
- function for equalisation of lanes and bands
- background subtraction by means of 3 automatic and 2 manual methods
- automatic and manual band detection
- molecular weight determination
- generation of lane reports
- function for the automated evaluation in one work step (lane/band detection, background subtraction)

Module for the analysis of DotBlots, SlotPlots, arrays and micro titre plats
- evaluation of grid structures up to 48 x 32
- definition, edition and administration of individual grids
- semiautomatic and manual grid adjustment
- background subtraction by means of 2 automatic and 2 manual methods
- automatic calculation of the spots
- normalisation
- presence/absence calculation and representation on freely definable threshold values

Module for the colony counting and for the detection of spots in 2D gels
- freely definable detection range in circle or rectangle format
- automated detection of colonies or spots
- various functions for editing
- automatic splitting function
- automatic calculation of the total number of spots or colonies

System requirements (minimum requirements)
- OS Microsoft Windows 2000/XP or Mac OS 10 incl. Microsoft Virtual PC for Mac version 7
- CPU with minimum 1.0 GHz
- memory 512 MB RAM
- min. 1 GB free hard disk space
- graphic resolution 1024 x 768 pixel, 32 Bit colours
- CD-ROM or DVD drive

Module for the evaluation of TLC plates, autoradiograms and unspecific structures
- freely definable lines as straight line, polyline, spline or freehand line
- freely definable areas as rectangle, polygon, ellipse and grid
- auto conture detection
- background subtraction by means of 4 methods

1D Analysis Software

Compact 1D software incl. various modules

Phoretix TotalLab TL100
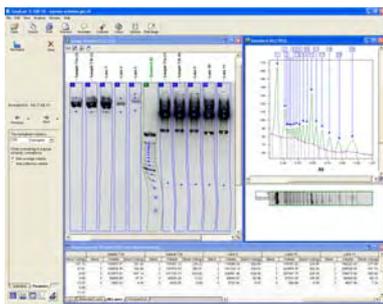
Evaluation of a 1D gel with strong distortions in the standard lane with the module "1D gel analysis"
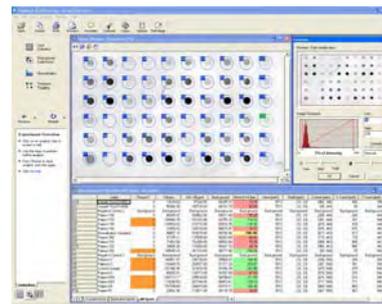
Evaluation of an array structure on a dot blot with the module "Array Analysis"
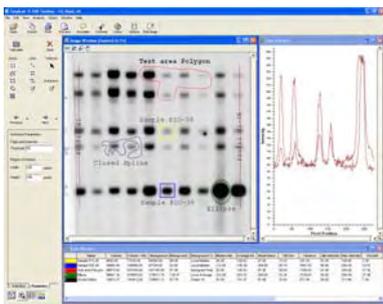
Example evaluation in the module "Analysis Toolbox"
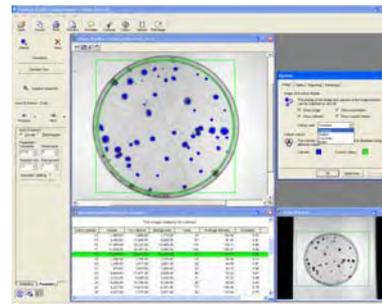
Determination of the total number of the colonies in a Petri dish with the module "Colony Counting"

Functions	TotalLab TL100 (1D module)	TotalLab TL120
Lane detection manual/automatically	yes	yes
Background subtraction	5 methods incl. Rolling Ball	7 methods incl. Rolling Ball plus manual basic line
Band detection	Automated or fixed width	automatied, fixed width or peak percentage
Snap-to-Peak detection	no	yes
Matching	no	yes, any reference lane
Rf-value correction	yes, via lane box with 2 lines	yes, flexible, many Rf-Lines
MW calibration	yes, via standard libary (edit) according to 2 methods	yes, via standard libary (edit) according to 3 methods
Quantification	assignment of real amounts to bands or collective volumes	assignment of real amounts to arbitrarly many bands in several quantities per lane
Reports	automated printout of the data of the lane	automated printout of the data of a gel and one/all lanes as well as the calibration function
Application profile of the software	routine 1D colony counting array evaluation, TLC, auto-radiography	routine 1D and high-throughput as well as optional connection to the database Phoretix TL120DM

Description	Order No.
Phoretix TotalLab TL100, single licence	BW01-A0100
Phoretix TotalLab TL100, additional licence	BW01-A0120
Phoretix TotalLab TL100, network basic licence, 3 user	BW01-A0150
Phoretix TotalLab TL100, network additional licence, 1 user	BW01-A0160

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1D Analysis Software

Professional 1D software

Phoretix TotalLab TL120

The Phoretix TL120 software serves for the GLP-conform evaluation of one-dimensional gels. The software can import TIF images from different instruments (CCD camera systems, scanners and imagers) in 8 - 16 Bit and can completely determine the gel data in a qualitative and quantitative way, even gels with an extremely distorted geometry.

For an automated evaluation of gel series, the user can create analysis protocols (templates) for every specific gel series in the software. This very efficient function enables an essential reduction of the evaluation times

and is particularly interesting for the work fields in the high throughput.

When developing Phoretix TL120, a special aspect was put on the ergonomic operating surface (among others by a navigation manager) for integrating the complex functionality of the software into a logical and easy-to-use structure.

The intuitive structure of the software, a internal learning aid and a detailed guidance enables a fast practise in the programme and a convenient operation for each user.
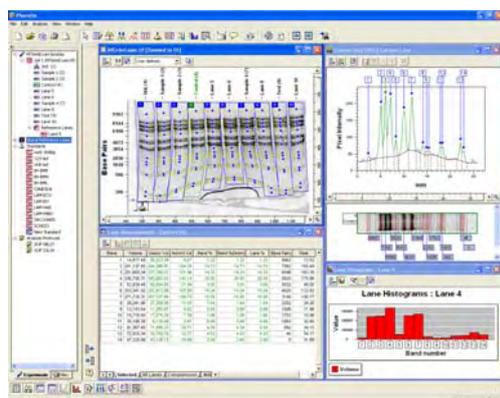
Phoretix TotalLab TL120 pgrogramme surface
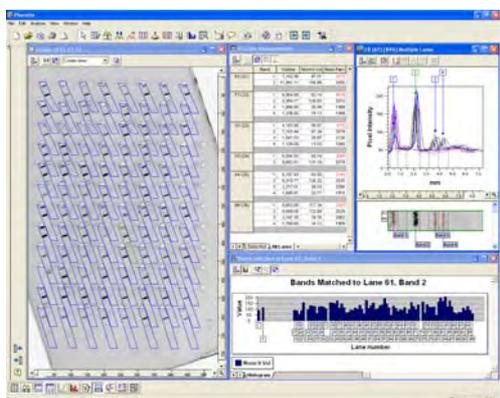
Example evaluation for a MADGE-gel

System requirements (minimum requirements)
- OS Microsoft Windows 2000/XP or
  Mac OS 10 incl. Microsoft Virtual PC for Mac version 7
- CPU with minimum 1.0 GHz
- memory 512 MB RAM
- min. 1 GB free hard disk space
- graphic resolution 1024 x 768 pixel, 32 Bit colours
- CD-ROM or DVD drive
- 1 free USB or LPT port for dongle

Software functions
- import of 8 - 16 Bit files as .gel, .img (Fuji format) and .tif (uncompressed greyscale TIF file)
- import of lane profiles as xml-file, Agilent csv, MegaBACE rsd and Beckman txt
- functions for image optimisation
- intensity calibration by means of greyscale wedge
- evaluation of 3 different types of gels: standard gel, sequencer gel, MADGE gel
- evaluation of gels with up to 10 start and front areas
- export and import of lane templates
- fully automated lane detection with adjustment of the lane width and the distortions in the gel
- functions for equalisation of lanes and bands
- manual detection of the lanes and correction of the lane geometry
- background subtraction by means of 5 automatic and 3 manual methods
- automatic and manual band detection
- automatic recognition of the band peaks by manual detection
- molecular weight determination with single or several standards
- Rf-value calibration (important for the comparison of different gels with one another)
- cross band comparison „Band Matching" (classification of comparable Bands, for example RFPL, dilution series)
- creation of dendrograms of the lanes using the methods „Neighbour Joining" and „UPGMA"
- function „Profile Deconvolution"
- quantification (allocation of real quantities of any bands, bands of one lane or to applied quantity per lane)
- normalisation according to 3 different methods
- markings
- export of the image and table data via clipboard, export of the protocols as rtf format
- file navigation and experiment navigation system
- storage of different analysis protocols (templates) for an automated evaluation of gel series
- interface for the Phoretix 1D database TL120DM

1D Analysis Software

Professional 1D software

Phoretix TotalLab TL120 - informations about important functions

Function "Gaussian approach"

Especially for tasks where an exact quantity calculation for bands and lanes is required, the function Gaussian approach is a very useful instrument for enabling the quantification of unspecifically separated bands.
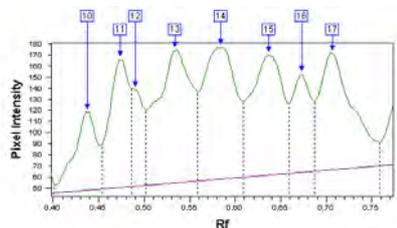
Lane profile before using the Gaussian approach function
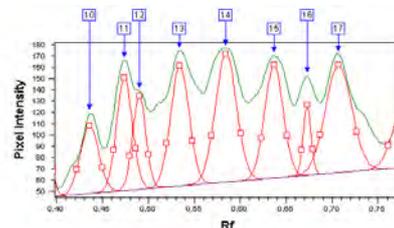
Use of the function Gaussian approach for calculating the volume allocation

Band matching and dendrogram representation

For the comparison of bands, TotalLab TL120 offers powerful and effective functions. The reference lane required for matching can be selected out of 3 options: a synthetic lane, a lane of an actual gel or a lane of any other experiment.

The calculation of the vector for the identification of the band match can be carried out on the basis of the geometrical position of the Rf-value or of the MW/pl-value. The results can be edited. The representation appears as an comparison table, matrix or dendrogram. That calculation bases on the algorithms "Neighbour Joining" or "UPGMA".

Band matching based on a synthetic lane
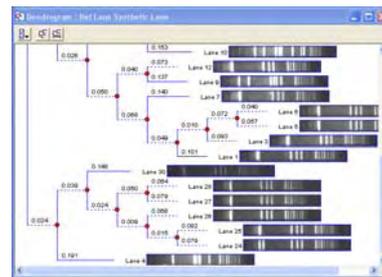
Dendrogram (extract) after „Neighbour Joining"

Representation of the results

All results of the complex evaluation functions can be displayed in different manners, e.g. data tables, matrix, histogram, 3D lane profile or graph.

The files can easily be exported via clipboard or as a saved data into other Windows applications.
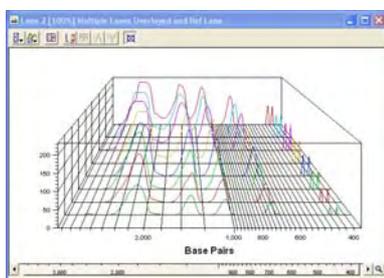
3D representation of the lane profiles of one gel
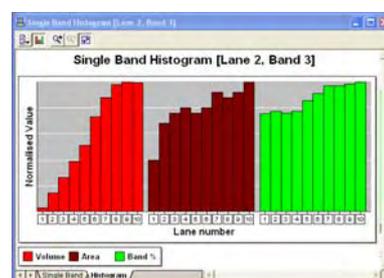
Histogram representation of selected Band attributes

Description	Order No.
Phoretix TotalLab TL120, single licence	BW01-A0300
Phoretix TotalLab TL120, additional licence	BW01-A0320
Phoretix TotalLab TL120, network basic licence, 3 users	BW01-A0350
Phoretix TotalLab TL120, network additional licence, 1 user	BW01-A0360

1D Analysis Software

Professional 1D software incl. database

Phoretix TotalLab TL120DM

The Phoretix TL120DM presents a combination of the software TL120 and a database for 1D gels. Consequently, it comprehend all features and functions of TL120.

Phoretix TL120DM serves for the GLP-conform archiving and the gel spread evaluation of one-dimensional gels as well as the comparison of the same. The software can analyse all lanes, gels and experiments (or subsets of them), which are saved in the database, according to freely definable and combinable parameters. It can search for band structures in dependence on the selected band characteristics (RFLP analysis) and acquire homologies. Moreover, the TL120DM software allows working with libraries (e.g. reference structures) and dendrograms (creation of relation trees).

Prerequisite for the work with the database is the previous evaluation of the 1D gels with the software Phoretix TL120. The software TL120DM is logically structured and offers various and effective functions for a convenient analysis.
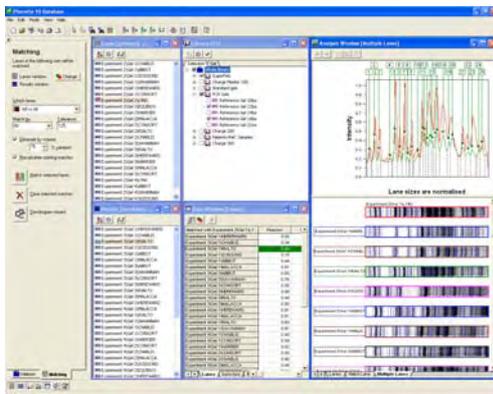
Phoretix TL120DM program surface
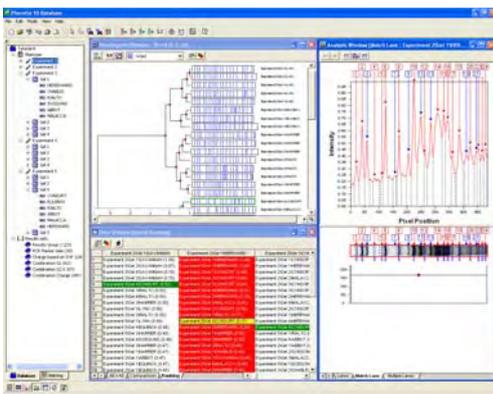
Example evaluation for a selected number of lanes of the complete stock of the database

System requirements (minimum requirements)
- OS Microsoft Windows 2000/XP or
  Mac OS 10 incl. Microsoft Virtual PC for Mac version 7
- CPU with minimum 1.0 GHz
- memory 512 MB RAM
- min. 1 GB free hard disk space
- graphic resolution 1024 x 768 pixel, 32 Bit colours
- CD-ROM or DVD drive
- 1 free USB or LPT port for dongle

Software functions

- all software functions of TL120
- direct data transfer from Phoretix TL120
- functions for image optimisation
- hierarchical archiving and administration of 1D experiments, gels and lanes in single or several databases (depended on application)
- efficient search functions according to different parameters in lanes (e.g. sample names, descriptions, notes, band positions, quantity criteria, Rf-values, molecular weights)
- creation of reference libraries (e.g. bacteria groups)
- comparison of the position of a band or its quantity characteristics; or the positions or quantity characteristics of a choice of bands or all bands in the lane according to definable criteria
- band matching acording to the criteria: geometric position, rf-value or MW/pl value
- different correlation coefficients for the analysis selectable (Dice, Pearson, Jaccard)
- setting of the comparison tolerance as a percentage and in the interactice visual mode by the user
- creation of dendrograms (Neighbour Joining, UPGMA, Single Linkage, Complete Linkage, Ward) based on the parameter-dependent comparison of freely definable lane groups
- Search for model lanes or reference structures (analog: "genetic fingerprint")
- freely selectable data subsets and combination of these subsets
- display of the search results in tabular form, as lane or as profile (densitogram)
- creation of user or application-dependent database field (e.g. for patient data)
- report function for a fast and clear output
- printing functions as well as GLP-conform report printouts (as analysis proof)
- export of the image and table data via clipboard, protocols as rft-format
- data navigation and function navigation system

1D Analysis Software

Professional 1D software incl. database

Phoretix TotalLab TL120DM - information about important functions

Powerful search criteria and statistic functions

Lanes can be searched for classical search functions (e.g. name, gel, experiment, date) and with band characteristics (position or/and quantity criteria) in the complete database or in various subsets. The single search results can be associated with others and evaluated statistically.

Search functions for gels/patients and their connection with analytical criteria
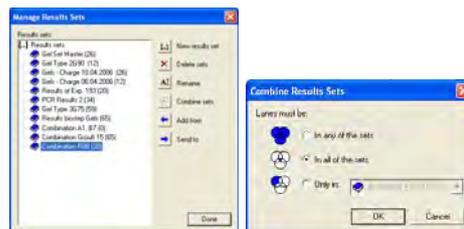
Connection with statistic functions of the previous search results

Band matching)

Band matching of a lane pool can be realised with various lanes, lanes from reference libraries or with itself. For achieving a correct comparison, all lanes are normalised and the tolerance process between start and front of the lane are defined as constant value or with a linear curve.
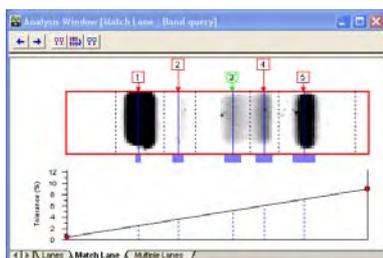
Adjustment of the comparison tolerance for the matching in the interactive visual mode
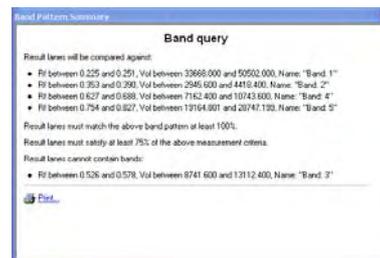
Summary of the selected match parameter

Presentation of the results

The results can be represented in various manners graphically or tabulary. Particulary useful are the profile overview of the created lanes, the comparison as well as the ranking table. 5 algorithms are available for the calculation and the representation of the dendrogram.

Dendogram on „UPGMA"

Representation of the Match results, calculated on the Pearson-coefficient

Description	Order No.
Phoretix TotalLab TL120DM, single licence	BW01-A0400
Phoretix TotalLab TL120DM, additional licence	BW01-A0420
Phoretix TotalLab TL120DM, network basic licence, 3 user	BW01-A0450
Phoretix TotalLab TL120DM, network additional licence 1 user	BW01-A0460

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2D Analysis Software

Standard 2D software

Phoretix 2D

The Phoretix 2D is a perfect entrance software for GLP-conform, semiautomatic evaluation of two-dimensional gels and gel series. The software can import TIF images from different instruments (CCD camera systems, scanners and imagers) in 8 - 16 Bit and can completely determine the gel data in a qualitative and quantitative way.

The main application field of the 2D software is the comparison of spots of different gels or the creation of average gels made of several similar gels as well as their evaluation and comparison.

When developing Phoretix TL120, a special aspect was put on the ergonomic operating surface (among others by a navigation manager) for integrating the complex functionality of the software into a logical and easy-to-use structure.

The intuitive structure of the software, a internal learning aid and a detailed guidance enables a fast practise in the programme and a convenient operation for each user.
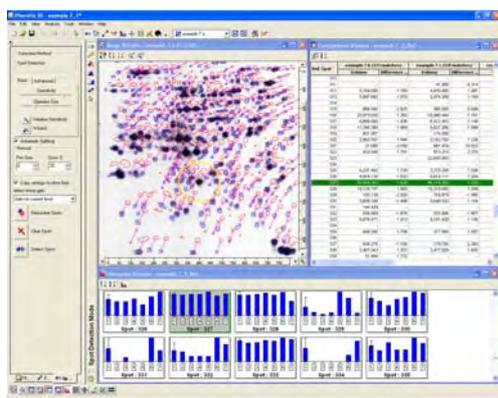
Phoretix 2D program overview
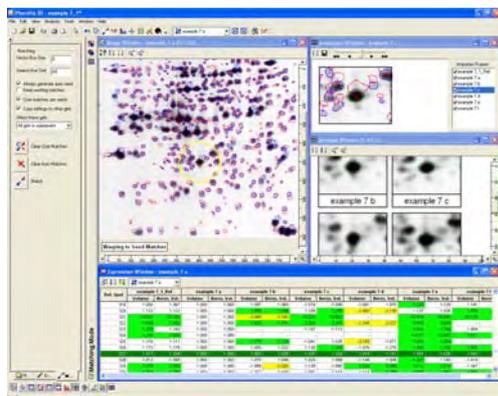
Use of the function warping for a better Erfassung of correlierender spots or spot pattern

System requirements (minimum requirements)
- OS Microsoft Windows 2000/XP or
  Mac OS 10 incl. Microsoft Virtual PC for Mac version 7
- CPU with minimum 1.0 GHz
- memory 512 MB RAM
- min. 1 GB free hard disk space
- graphic resolution 1024 x 768 pixel, 32 Bit colours
- CD-ROM or DVD drive
- 1 free USB or LPT port for dongle

Software Functions

- import of 8 - 16 Bit files as .gel, .img (Fuji format) and .tif (uncompressed greyscale TIF file)
- export/import of experiment files as xml files
- control of the saturation degree (overexposure control)
- intensity calibration by means of greyscale wedge
- functions for image optimisation
- definition of the AOIs
- semiautomatic spot detection with different user-defined settings for the sensitivity, spot size, automatic spot splitting etc.
- various functions for manual and semi-automatic spot post processing
- background subtraction according to different methods
- creation of average gels
- molecular weight and pl-value determination by 1D or 2D calibration
- free definition of reference gels
- automatic and manual matching
- immediate display of changes of the reference gel made by different tools, display of statistical distinctive features
- warping function for overlaying gels on the basis of defined spots/matches
- video animation of matched spots
- extensive histogram representations
- creation of 2D profiles
- normalisation of gels or individual spots on the basis of 5 different methods
- extensive filter function for evaluations
- difference analysis according to freely definable tresholds and selectable parameters (e.g. volume, nom. vol., area, volume/area, peak/area)
- internet data base connection, integrated HTML-Web-Page-Builder
- control of various 2D picking robots
- selectable printing functions as well as GLP-conform report printouts (evaluation proof)
- export of the image and table data (clipboard), protocols as rtf as well as the gel and spot data as XML format
- file navigation and experiment navigation system
- batch mode for the automated evaluation of gel series

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2D Analysis Software

Standard 2D software

Phoretix 2D - information about important functions

Semiautomatic spot detection

The spot detection can semiautomatically be carried out in an overview window. Versions of various parameterised spot detections are represented in 9 windows. With the selection of the best version, the calculation of 9 new detection representations takes place. The parameters are optimised in approx. in 3 - 5 passes. Several efficient editing functions are available for a manual post processing.
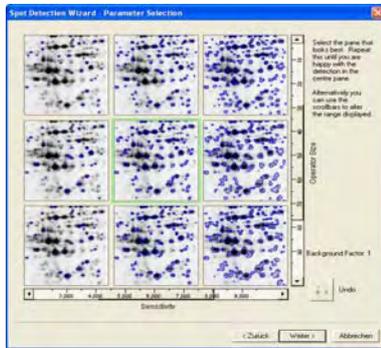
Assistant for the determination of the optional parameters for the spot detection, 1pass)
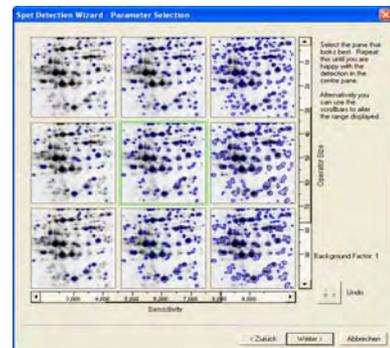
Calculation of parameters on the basis of the active version for the second pass

Filter functions

Especially at experiments with a many gels and/or many spots per gel, powerful filter functions are very important for achiving an effective result analysis. These functions can be carried out with absolute values and relative connections for one or several parameters. Filter sets can be saved for a later use.
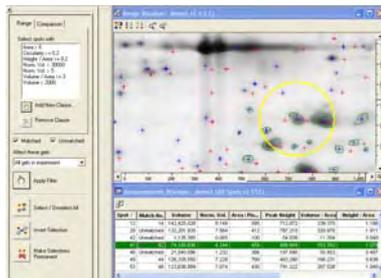
Application of a filter set with treshold values for various parameters
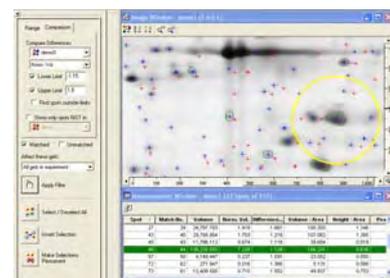
Filter sets with relative reference values for an expression analysis

Presentation of the results

The results of the complex evaluation functions can be presented in various manners, e.g. data table, difference presentation, animation, lane profile and graph. The export of the files is made via clipboard or as a saved file into other Windows applications.
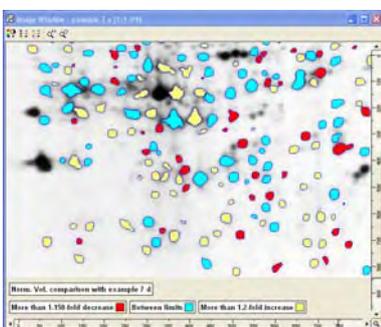
Difference display in dependence on the selected spot parameters and treshold values

Presentation of the expression files in a table

Description	Order No.
Phoretix 2D, single licence	BW02-C0300

2D Analysis Software

Professional 2D software

Phoretix Progenesis PG200

The Phoretix Progenesis PG200 software represents a professional and powerful software for automatic, GLP-conform evaluation of two-dimensional gels and gels series.

The software can import TIF images from different instruments (CCD camera systems, scanners and imagers) in 8 - 16 Bit and can completely determine the gel data in a qualitative and quantitative way using modern algorithms and visualisation techniques.

The main application field of the PG200 is the automated comparison of spots of differnt gels or the creation of average gels as well as their analysis and comparision using statistic functions.

When developing Phoretix PG200, a special aspect was put on the integrated wizard scenarios and a modern, ergonomic operating surface (among others by a navigation manager) for integrating the complex functionality of the software into a logical and easy-to-use structure.

The intuitive structure of the software, a internal learning aid and a detailed guidance enables a fast practise in the program and a convenient operation for each user.
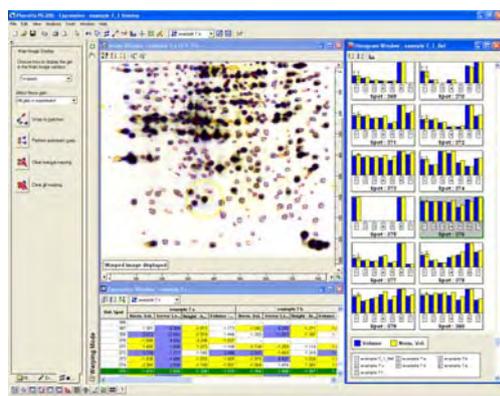
Phoretix Progenesis PG200 program overview
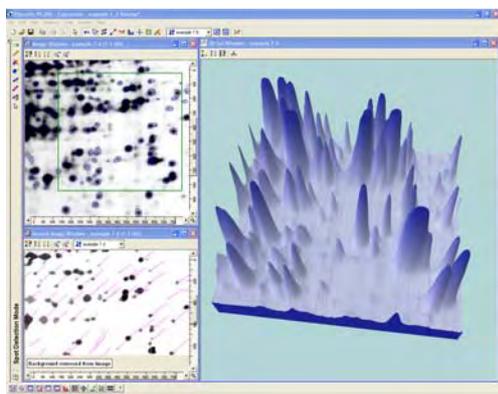
Optimation of the spot secession via 3D representation

Software functions

- wizard for an automated experiment creation and for the subsequent evaluation
- import of 8 - 16 Bit files as .gel., .mel., .img (fuji format) and .tif (uncompressed greyscale TIF files)
- export/import of experiment files as xml files
- control of the saturation degree (overexposure control)
- intensity calibration by means of greyscale wedge
- functions for image optimisation
- definition of the AOIs
- fully automated, optimised spot detection
- functions for the automated reduction of artefacts
- various functions for semiautomatic and manual spot post processing (editing)
- background subtraction according to 3 automatic methods with improved functionality, especially for spots with minor intensity
- automated creation of average gels
- molecular weight and pl value determination by 1D or 2D calibration
- free definition of reference gels
- fully automated matching functions with the possibility of manual editing
- effective warping function with modern visualisation instruments
- comprehensive filter and statistic functions, e.g. T-test, Paired t-test, ANOVA
- 3D representation of the complete gel incl. free modifications the viewing angle
- video animation of matched spots
- efficient normalisation functions
- various possibilities of the presentation of the results: histogram, expression table, profiles etc.
- difference and expression analysis
- internet data base connection, integrated HTML-Web-Page-Builder
- control of various 2D picking robots
- selectable printing functions as well as GLP-conform report printouts (evaluation proof)
- export of the image and table data (clipboard), protocols as rtf as well as the gel and spot data as XML format
- file navigation and experiment navigation system
- batch mode for the automated evaluation of gel series

System requirements (minimum requirements)
- OS Microsoft Windows 2000/XP
- CPU with minimum 2.0 GHz
- memory 1024 MB RAM
- min. 3 GB free hard disk space
- graphic resolution 1024 x 768 pixel, 32 Bit colours
- CD-ROM or DVD drive
- 1 free USB or LPT port for dongle

2D Analysis Software

Professional 2D software

Phoretix Progenesis PG200 - information about important functions

Wizard for automated experimentcreation

The combination of an automated experiment creation via a 12-stepped wizard function and the fully-automated evaluation is very time-efficient. The GLP-conform approach limits the influence of the user to a minimum and therefore, maloperations can be avoided. If required, the possibility of a manual editing is also available
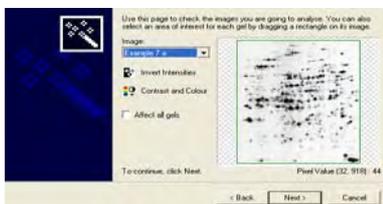
3 step: image optimisation
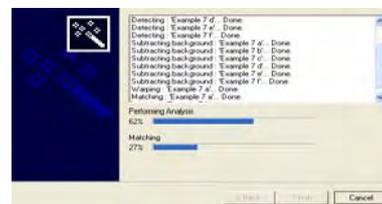
12 step: automated start of the analysis

Automated warping function

For a better visual registration of the correlative spots and spot patterns, warping functions are suitable aids. The software Progenesis PG200 distinguishes by effective automated warping functions.

Consequently, an automated calculation of the migration versions between the spots of the single gels as well as a contructive exactly graphical positioning takes place.
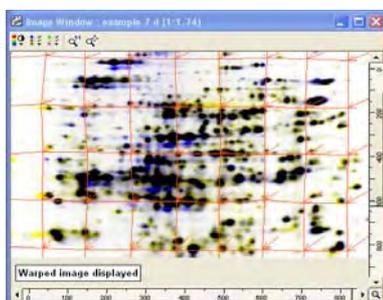
Exact positioning with the warping function
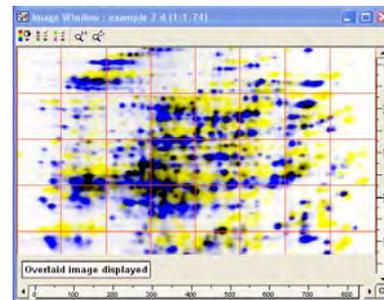
Identical gel extract without warping

3D animation

Phoretix PG200 includes functions for the 3D representation and 3D animation of the complete gel as well as selectable gel areas. By means of the animation, single or max. all gels of an experiment can be demonstrated in a 3D sequence as a video film.
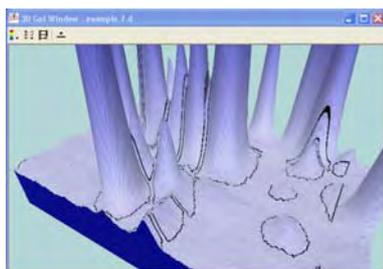
3D presentation of an gel extract
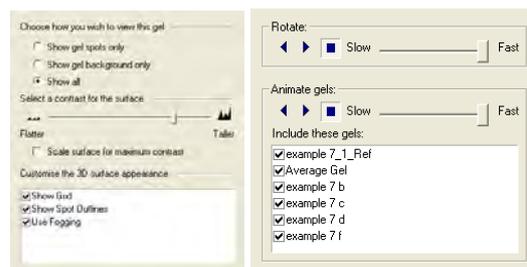
Settings for the 3D presentation

Optional Database (Progenesis DM Upgrade)

For an extended statistic and experiment overlapping analysis, a database based on oracle is available. The functionality of the software enables the evaluation of all experiments, gels, spots and proteins saved in the database according to definable and combinable parameters. This serves for the registration of characteristic spots/proteins, significant spot patterns and expression processes. The software is equipped with powerful search, analysis and statistic functions.

Description	Order No.
Phoretix Progenesis PG200, single licence	BW02-C0700
Phoretix Progenesis DM database upgrade	BW02-C0800
Phoretix Progenesis PG200, additional licence	BW02-C0720
Phoretix Progenesis PG200, network basic licence, 3 user	BW02-C0750
Phoretix Progenesis PG200, network additional licence, 1 user	BW02-C0760

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Notes

Radiation Protection

Radiometers

Beta-Gamma pocket radiometer SVS 3

Pocket radiometer SVS 3

- portable, battery-operated radiometer
- for the measurement of the photon dose of equivalent rate of Gamma radiation as well as for the qualitative proof Beta radiation
- small size and minimal weight
- presentation of the digital average value of the activated and integrated impulses in the counting tube
- two-stepped sensitivity calibration
- manual activation of the aperture
- measurement of Beta radiation at an energy value of 200 keV and Gamma radiation with opened aperture

Specifications

Measuring value

Photon dose equivalent rate μSv/h
Detection of Beta radiation

Measuring range

Range 1	0.01 - 19.99 μSv/h
Range 2	0.1 - 199.9 μSv/h

Energy range

γ-radiation	15 keV to 2 MeV
β-proof	> 200 keV

Instrinsic error at the reference conditions

in the measuring range 2

< 25 % referring to ^{60}Co

Radiation detector

Halogen-quenched Geiger-Mueller tube

Display possibilities

Measuring display	digital on display
Single impuls signals	acoustic
	visual with LED

Aperture

Fe

Operating parameters

Voltage	1.5 V
	(battery or accumulator, type R14)
Operating Lifetime	8 - 12 hours
	(according to radiation intensity)
	undervoltage display

Operating conditions

Temperature range	0 °C to 50 °C
Relative humidity	< 90 % at 30 °C
Overload capacity	10 times
Recovering time	< 30 sec

Miscellaneous

Weight	250 g
Dimensions (L x W x H)	145 x 80 x 40 mm

Fields of use

- Education
- Construction industry
- Research & Development
- Geology
- Waste disposal and rest substance utilization
- Nuclear power plants
- Enviromental protection

Description	Order No.
Radiometer SVS 3	RK01-E0010
incl. transport case with battery charger and accumulator	

Radiometers

Alpha-Beta-Gamma pocket radiometer SVS 5

- portable, battery-operated radiometer
- for the measurement of Alpha and Beta area activity as well as Gamma local dose activity
- small size and minimal weight
- presentation of the digital average value of the activated and integrated impulses in the counting tube
- two-stepped sensitivity calibration
- qualitative separation of Alpha, Beta and Gamma radiation due to a mechanical aperture
- measurement of Alpha-, Beta- and Gamma radiation at opened aperture
- complete protection of Beta radiation to 600 keV at closed aperture
- no influence of the aperture on Gamma radiation

Pocket radiometer SVS 5

Specifications

Measuring value

α- and β-radiation	area activity
γ-radiation	photon dose equivalent rate

Measuring range

α	0.01 - 199.9 Bq/cm^2
β	0.01 - 199.9 Bq/cm^2
γ	0.01 - 199.9 μSv/h

Energy range

γ-radiation	20 keV to 2 MeV
β-radiation	> 35 keV (suitable for ^{14}C)

Instrinsic error at the reference conditions
in the measuring range 2

α	< 25 % referred to ^{241}Am
β	< 25 % referred to ^{90}Sr
γ	< 25 % referred to ^{60}Co

Radiation detector

End window Geiger-Mueller tube (area mass density < 2 mg/cm^2), not energy compensated

Display possibilities

Measuring display	digital on display
Single implus signals	acoustic

visual with LED

Aperture

Synthetic material

Operating parameter

Voltage	1,5 V
	(battery or accumulator, type R14)
Operating lifetime	8 - 12 hours
	(according to radiation intensity)
	undervoltage display

Operationg conditions

Temperature range	0 °C to 50 °C
Relative humidity	< 90 % at 30 °C
Overload capacity	10-fach
Recovering time	< 30 sek

Miscellaneous

Weight	300 g
Dimensions (L x W x H)	145 x 80 x 40 mm

Fields of use

- Education
- Research & Development
- Isotope laboratories
- Nuclear medicine
- Reactor plants
- Enviromental protection

Description	Order No.
Radiometer SVS 5	RK01-E0030
incl. transport case with battery charger and accumulator	

Radiation Protection

Radiation safety cabinet, Safety tray
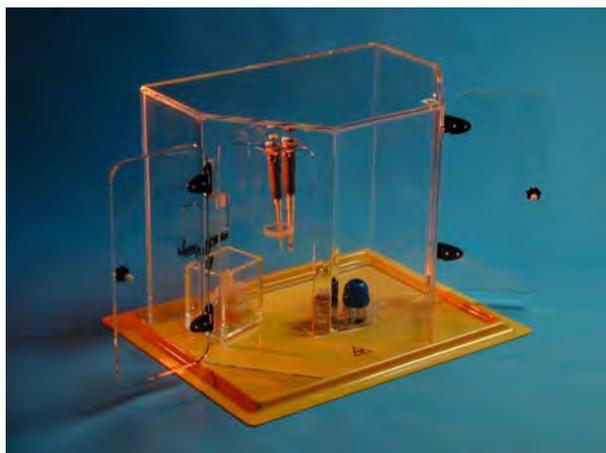
- complete protection of the user and his surroundings while working with Beta or Gamma radiation
- ergonomic design
- easy access to the interior due to of 2 large rotatable side doors
- compatible with safety tray RPP-TY6854, which serves as a base plate for the cabinet
- useable as fully enclosed workstation
- convenient for storage of radioactive material (only with closed doors)
- practical holder for 2 pipettes on the back board
- minimal opening at the back board for current entry

Cabinet for Beta radiation

Dimensions (L x W x H)
extern	500 x 570 x 390 mm
intern	490 x 550 x 370 mm
Material	10 mm acrylic

Description	Order No.
Radiation Safety Cabinet* for Beta radiation	RPP-C
Radiation Safety Cabinet* for Gamma radiation	RPP-GC

* safety tray not inclusive

Cabinet for Gamma radiation

Dimensions (L x W x H)
extern	500 x 570 x 390 mm
intern	488 x 546 x 366 mm
Material	12 mm lead acrylic

Safety tray

- consisting of solid PVC

- provides clearly defined work area

- safety tray RPP-TY6854 suitable for PCR cabinet (page 26) as well as for radiation safety cabinet (page 234)

- APET liners are available

Description/dimensions (L x W)	Order No.
460 x 260 mm	RPP-TY4626
540 x 340 mm	RPP-TY5434
570 x 540 mm	RPP-TY5754
680 x 540 mm	RPP-TY6854
700 x 460 mm	RPP-TY7046
1130 x 540 mm	RPP-TY11354

APET liners for safety trays

Description/dimensions (L x W)	Quantity	Order No.
460 x 260 mm	1 pack of 25 pieces	RPP-TL4626
540 x 340 mm	1 pack of 25 pieces	RPP-TL5434
570 x 540 mm	1 pack of 25 pieces	RPP-TL5754
680 x 540 mm	1 pack of 25 pieces	RPP-TL6854
700 x 460 mm	1 pack of 25 pieces	RPP-TL7046
1130 x 540 mm	1 pack of 25 pieces	RPP-TL11354

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Radiation Protection

Pipette shields, Hazard signs

Pipette shields

- hand protection when pipetting radioactive substances

- 10 mm thick acrylic for Beta radiators

- 12 mm thick lead acrylic for Gamma radiators

- available for Gilson® and Biohit® pipettes

Pipette shields for Beta radiation

Description, suitable for	Order No.
Biohit® pipette to 200 μl	RPP-PS200
Biohit® pipette 50 - 1000 μl	RPP-PS1000
Biohit® pipette 1000 - 5000 μl	RPP-PS5000
Gilson® pipette P20 and P100	RPP-PSG20/100
Gilson® pipette P200	RPP-PSG200
Gilson® pipette P1000	RPP-PSG1000

Pipette shields for Gamma radiation

Description, suitable for	Order No.
Biohit® pipette to 200 μl	RPP-GPS200
Biohit® pipette 50 - 1000 μl	RPP-GPS1000
Biohit® pipette 1000 - 5000 μl	RPP-GPS5000
Gilson® pipette P20 and P100	RPP-GPSG20/100
Gilson® pipette P200	RPP-GPSG200
Gilson® pipette P1000	RPP-GPSG1000

Biohit® is a registered trademark of Biohit OYJ.
Gilson® is a registered trademark of Gilson, Inc.

Hazard signs

- clearly visible even from a larger distance

- chemically resistent

- high adhesion

- suitable for out door applications

- several sizes available

Description	Quantity	Size	Order No.
Labels radioactive hazard symbol	1 pack of 25 pieces	25 x 25 mm	RPP-LAB25
Labels radioactive hazard symbol	1 pack of 25 pieces	50 x 50 mm	RPP-LAB50
Tape "Caution Radioactive Material"	1 roll	25 mm x 66 m	RPP-TAPE

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Radiation Protection

Shields
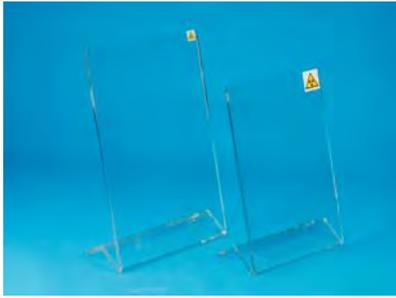
Fixed angle 15°

- for Beta radiators of 10 mm thick acrylic

- for Gamma radiators of 12 mm thick lead acrylic

- curved base models are compatible with safety trays (page 234)

- available as square or concave format

Square form, Beta radiation

Description shield size (H x W)	Base shape	Base size (T x W)	Order No.
450 x 300 mm	flat	300 x 300 mm	RPP-S15S
530 x 350 mm	flat	350 x 300 mm	RPP-S15L
450 x 300 mm	curved	150 x 300 mm	RPP-S15SC
530 x 350 mm	curved	150 x 350 mm	RPP-S15LC

Square form, Gamma radiation

Description shield size (H x W)	Base shape	Base size (T x W)	Order No.
450 x 300 mm	flat	300 x 300 mm	RPP-GS15S
530 x 350 mm	flat	350 x 300 mm	RPP-GS15L
450 x 300 mm	curved	150 x 300 mm	RPP-GS15SC
530 x 350 mm	curved	150 x 350 mm	RPP-GS15LC

Concave form, Beta radiation

Description shield size (H x W)	Base shape	Base size (T x W)	Order No.
450 x 300 mm	flat	300 x 300 mm	RPP-SH
450 x 300 mm	curved	150 x 300 mm	RPP-SHC

Concave form, Gamma radiation

Description shield size (H x W)	Base shape	Base size (T x W)	Order No.
450 x 300 mm	flat	300 x 300 mm	RPP-GSH
450 x 300 mm	curved	150 x 300 mm	RPP-GSHC

Radiation Protection

Shields

Adjustable angle

- easily adjustable from an upright position to having an angle of 15°

- for Beta radiators of 10 mm thick acrylic

- for Gamma radiators of 12 mm thick lead acrylic

- in wide or tall position useable

Description shield size (H x W)	Radiation	Order No.
540 x 350 mm	Beta	RPP-S015
540 x 350 mm	Gamma	RPP-GS015

Fixed angle 45°

- provide clear, non-distorted vision, reducing light images and shadows

- for Beta radiators of 10 mm thick acrylic

- for Gamma radiators of 12 mm thick lead acrylic

- shields with curved base usable with safety trays (page 234)

Shield for Beta radiation

Description shield size (H x W)	Base shape	Base size (T x W)	Order No.
450 x 300 mm	flat	300 x 300 mm	RPP-S45S
600 x 350 mm	flat	300 x 350 mm	RPP-S45L
450 x 300 mm	curved	150 x 300 mm	RPP-S45SC
600 x 350 mm	curved	150 x 350 mm	RPP-S45LC

Shield for Gamma radiation

Description shield size (H x W)	Base shape	Base size (T x W)	Order No.
450 x 300 mm	flat	300 x 300 mm	RPP-GS45S
600 x 350 mm	flat	300 x 350 mm	RPP-GS45L
450 x 300 mm	curved	150 x 300 mm	RPP-GS45SC
600 x 350 mm	curved	150 x 350 mm	RPP-GS45LC

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Radiation Protection

Storage boxes

- hinged lids for complete protection

- for Beta radiators of 10 mm thick acrylic

- for Gamma radiators of 12 mm thick lead acrylic

- available in 3 different sizes

- a lot of interchangeable inserts

Storage boxes

Description	Radiation	Dimensions inside (H x W x D)	Order No.
Mini	Beta	55 x 85 x 85 mm	RPP-B5
Midi	Beta	60 x 165 x 85 mm	RPP-B6
Midi	Gamma	60 x 165 x 85 mm	RPP-GB6
Maxi	Beta	140 x 280 x 165 mm	RPP-B14
Maxi	Gamma	140 x 280 x 165 mm	RPP-GB14

Inserts for storage boxes Mini

Description	Dimensions (H x W x D)	Order No.
for 16 x 1.5 ml tubes	40 x 80 x 80 mm	RPP-BI-16
for 20 x 0.5 ml tubes	40 x 80 x 80 mm	RPP-BI-20

Inserts for storage boxes Midi

Description	Dimensions (H x W x D)	Order No.
for 32 x 1.5 ml tubes	40 x 160 x 80 mm	RPP-BI-32
for 40 x 0.5 ml tubes	40 x 160 x 80 mm	RPP-BI-40
for 16 x 0.5 und 1.5 ml tubes	40 x 160 x 80 mm	RPP-BI-8
for 32 x 2.0 ml Cryotubes	40 x 160 x 80 mm	RPP-BI-9

Inserts for storage boxes Maxi

Description	Dimensions (H x W x D)	Order No.
for 15 x 15 ml centrifuge tubes	40 x 160 x 80 mm	RPP-BI-1
for 8 x 50 ml centrifuge tubes	40 x 160 x 80 mm	RPP-BI-2
for 8 x 20 ml scintillation vials	40 x 160 x 80 mm	RPP-BI-5
for 15 x 5 ml scintillation vials	40 x 160 x 80 mm	RPP-BI-6
for 8 x universals	40 x 160 x 80 mm	RPP-BI-7

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Radiation Protection

Waste bins, Safety bags

- container for Beta radiators of 10 mm thick acrylic

- container for Gamma radiators of 12 mm thick lead acrylic

- hinged lid and cushioned anti-slip feet

- wheels fitted to 47 l and 76 l models

Waste bins

Description	Capacity	Radiation	Dimensions inside (H x W x D)	Order No.
Container 12	1 l	Beta	130 x 100 x 80 mm	RPP-B12
Container 17	3,3 l	Beta	150 x 150 x 150 mm	RPP-B17
Container 17	3,3 l	Gamma	150 x 150 x 150 mm	RPP-GB17
Container 27	10 l	Beta	250 x 200 x 200 mm	RPP-B27
Container 27	10 l	Gamma	250 x 200 x 200 mm	RPP-GB27
Container 31	15 l	Beta	295 x 215 x 235 mm	RPP-B31
Container 40	20 l	Beta	380 x 215 x 235 mm	RPP-B40
Container 42	50 l	Beta	400 x 490 x 270 mm	RPP-B42
Container 42	50 l	Gamma	400 x 490 x 270 mm	RPP-GB42
Container 60	47 l	Beta	580 x 285 x 270 mm	RPP-B60W
Container 76	122 l	Beta	740 x 406 x 406 mm	RPP-B76W

Radiation safety bags

Description	Suitable for	Quantity	Dimensions inside (H x W x D)	Order No.
Bag 12	container 12	1 pack of 25 pieces	120 x 120 x 120 mm	RPP-BAG12
Bag 17	container 17	1 pack of 25 pieces	120 x 120 x 120 mm	RPP-BAG17
Bag 27	container 27	1 pack of 25 pieces	290 x 210 x 210 mm	RPP-BAG27
Bag 31	container 31	1 pack of 25 pieces	290 x 210 x 210 mm	RPP-BAG31
Bag 40	container 40	1 pack of 25 pieces	370 x 210 x 240 mm	RPP-BAG40
Bag 42	container 42	1 pack of 25 pieces	400 x 490 x 270 mm	RPP-BAG42
Bag 60	container 60	1 pack of 25 pieces	610 x 280 x 280 mm	RPP-BAG60
Bag 76	container 76	1 pack of 25 pieces	610 x 280 x 280 mm	RPP-BAG76

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