BIOTEC-FISCHER

General Catalog

Scientific Electrophoresis

Laboratory Equipment

Analysis Instruments

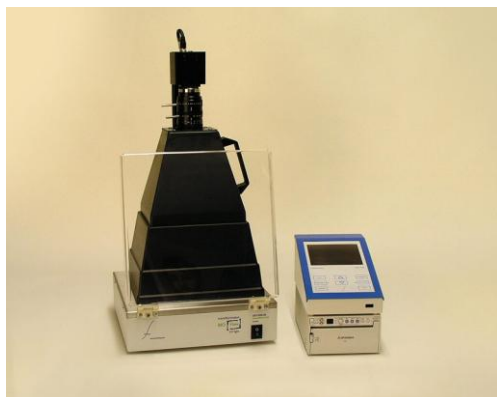Liquid Handling

2013/06

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PC independent Gel Documentation

Gerix 1010 / Gerix 1015

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 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.

142211-001	Gel Documentation system Gerix 1010 (CCD Camera, Dark Hood, UV-Transilluminator, Control unit)
142211-002	Gel Documentation system Gerix 1015 (CCD Camera, Dark Hood, UV-Transilluminator, Control unit, Video printer)

Gerix 1040 / Gerix 1045

Gerix 1040, based 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 preparative 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 spacesaving and convenient.

142214-001	Gel Documentation system Gerix 1040 (CCD Camera, Cabinet, UV-Transilluminator, Control unit)
142214-002	Gel Documentation system Gerix 1045 (CCD Camera, Cabinet, UV-Transilluminator, Control unit, Video Printer)

Gerix 1050 / Gerix 1055

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 camera and overexposure as well as storage of 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 UV protection shield. This equipment eases the cutting of bands as well as 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.

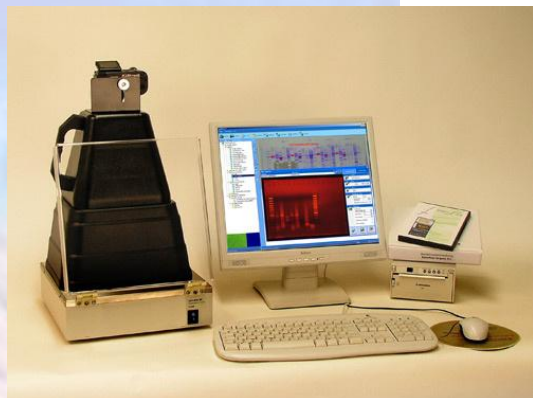|	
142215-001	Gel Documentation system Gerix 1050 (CCD Camera, Cabinet, UV-Transilluminator, Control unit)
142214-002	Gel Documentation system Gerix 1055 (CCD Camera, Cabinet, UV-Transilluminator, Control unit, Video Printer)

Felix 1010 / Felix 1015

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 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 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.

142111-001	Gel Documentation System Felix 1010 (Digital Camera, Dark-Hood, Capturing Software)
142111-002	Gel Documentation System Felix 1015 (Digital Camera, Dark-Hood, Capturing Software, UV-Transilluminator)

Felix 1040 / 1045

Felix 1040 and Felix 2040 are comfortable documentation systems with various application possibilities as well as a complete control of the camera and 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 preparative 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.

142113-001	Gel Documentation System Felix 1040 (Digital Camera, Cabinet, Capturing Software, UV-Transilluminator)
142113-002	Gel Documentation System Felix 1040 (Digital Camera, Cabinet, Capturing Software, UV-Transillum., Video Printer)

Felix 6050

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 transilluminator (intensity setting 10 - 100 %) allows a comfortable preparative work. The high resolution, the huge linear dynamic range and excellent proof sensitivity are very advantageous for analytic applications. The software packages argusX1® incl. the additional modules User administration and GLP are part of the systems. If requested, the systems can be equipped with UV top-light in two wavelengths.

142114-001	Gel Documentation System Felix 6050 (CCD Camera, Cabinet, Capturing Software, UV-Transilluminator)
142113-002	Gel Documentation System Felix 6050 (CCD Camera, Cabinet, Capturing Software, UV-Transillum., Video Printer)

Accessories for Gel Documentation Systems

Accessories for Gel Documentation

142030-001	Video Printer for Gerix Systems, P93-E
142031-001	Video Printer for Felix Systems, P93-DV
142090-001	Printer holder for Cabinet
142090-002	Printer and Shuttle PC holder for Cabinet
142090-003	UV-White light converter plate
142010-001	PC for Felix Gel Documentation Systems (ready to use installed)
142169-001	UV Top light expansion for 2 Wavelength
142169-002	Motorized Zoom Lense system for CCD Cameras on Cabinets
142169-003	Motorized Filter wheel with 5 position incl. Filter: EtBr, Sybr Green, Grey
142169-004	Motorized Filter wheel with 5 position incl. Filter: EtBr, Sybr Green
142169-011	Blue Top light expansion

Analysis Software

1D Analysis Software

The LabImage platform provides a comprehensive approach for all bio-imaging needs, including several applications with excellent analysis quality, data storage handling and licencing control, managed through a single user interface. The LabImage platform uses Java technology and has been based on the world's most widely used platform Eclipse, an open source project initiated by IBM. All present and future Bio-Imaging products are based on the LabImage platform, allowing for rapid development of standard modules as well as tailored-made solutions for individual customers. Due to its platform character, customers can benefit from lower costs and a faster time to market for their commercial projects.

142041-001	LabImage Pro
142041-002	LabImage Pro, 21 CFR Part 11
142044-001	Labimage Premium-A, Platform
142044-002	Labimage Premium-A, Platform, 21 CFR Part 11

2D Analysis Software

Delta2D combines fast visual analysis, exceptionally reliable spot matching and quantitation as well as versatile tools for sorting, filtering and annotating spot data in one easy to learn application. With Delta2D's unique combination of powerful features, e.g. the new SmartVectors™ Technology, and ease of use you will extract more information from your gels – in a fraction of the time needed by traditional packages. Statistical analysis becomes most reliable since you can easily achieve full expression profiles without missing values using our 100% Spot Matching approach.

142040-101	Delta 2D Analysis Software

PHERO-sub 0710-E

The PHERO-sub 0710 E is the smallest unit in the range, designed for low to medium numbers of samples. The small gel size maximises run economy but does not compromise versatility as two tray options are available – 7 x 7cm and 7 x 10cm, and combs ranging from preparative up to 16 samples. Simply by altering the gel tray or comb, this compact unit is capable of resolving up to 64 different samples, prepping 1ml of sample or separating sample bands over a distance of 9cm.

Typical Application:
Quick check of low to medium samples

111100-001	PHERO-sub 0710-E, complete system incl.
	1 x Gel Tray 70 x 70 mm, UV transparent
	1 x Casting Dams (2 pcs.)
	2 x Comb, 8 slots, 1.0 mm
	Loading guides, Platform, Cable set

111100-002	PHERO-sub 0710-E, complete system incl.
	1 x Gel Tray 70 x 100 mm, UV transparent
	1 x Casting Dams (2 pcs.)
	2 x Comb, 8 slots, 1.0 mm
	Loading guides, Platform, Cable set

111100-003	PHERO-sub 0710-E, complete system incl.
	1 x Gel Tray 70 x 70 mm, UV transparent
	1 x Gel Tray 70 x 100 mm, UV transparent
	1 x Casting Dams (2 pcs.)
	2 x Comb, 8 slots, 1.0 mm
	Loading guides, Platform, Cable set

Combs

Shape / Thickness	0.75 mm	1.0 mm	1.5 mm	2.0 mm
1 Slot, 1 Marker	111120-001	111121-001	111122-001	111123-001
2 Slots, 2 Marker	111120-002	111121-002	111122-002	111123-002
4 Slots, 2 Marker	111120-003	111121-003	111122-003	111123-003
8 Slots	111120-004	111121-004	111122-004	111123-004
8 Slots, Multichannel	111120-005	111121-005	111122-005	111123-005
10 Slots	111120-006	111121-006	111122-006	111123-006
12 Slots	111120-007	111121-007	111122-007	111123-007
16 Slots	111120-008	111121-008	111122-008	111123-008

Gel trays

111130-001	1 x Gel Tray 70 x 70 mm, UV transparent	111131-001	1 x Gel Tray 70 x 100 mm, UV transparent

Accessories

111140-001	Casting Stand	111440-002	Casting Dams, (2 pcs.)
111440-003	Loading Guides	111440-004	Viewing Platform
111440-005	Gel Scoop, 150 mm		

Horizontal Electrophoresis Systems

PHERO-sub 1008-E

The PHERO-sub 1008-E is a completely self contained system designed for quick checks of samples. Gel casting, running and analysis are all performed in the same ultra compact unit. Buffer and gel volumes have been kept to a minimum and the parallel electrode arrangement allows ultra efficient current transfer, enabling resolution to be completed within 30 minutes. The UV transparent base allows direct viewing on a UV Transilluminator with no need for time consuming transfer and potential gel damage. Dual comb slots allow the loading of up to 40 samples per gel while multichannel pipette compatible combs further enhance the speed and convenience.

Typical Application:
Quick check of low to medium samples

111200-001	PHERO-sub 1008-E, complete system incl.
	1 x Gel Tray 100 x 80 mm, UV transparent
	1 x Casting Dams (2 pcs.)
	2 x Comb, 8 slots, 1.5 mm
	Cable set

Combs

Shape / Thickness	0.75 mm	1.0 mm	1.5 mm	2.0 mm
1 Slot, 1 Marker	-	111220-001	111221-001	-
4 Slots	-	111220-002	111221-002	-
8 Slots	-	111220-003	111221-003	-
12 Slots	-	111220-004	111221-004	-
16 Slots	-	111220-005	111121-005	-
20 Slots, Multichannel	-	111220-006	111221-006	-

Accessories

111140-005	Gel Scoop, 70 mm

PHERO-sub 1010-E

With gel tray options of 10 x 7cm and 10 x 10cm, the PHERO-sub 1010-E has been designed for routine horizontal gel electrophoresis. Extending only the width of this unit allows more samples to be resolved per gel than the PHERO-sub 0710-E without a significant increase in buffer or gel volumes. A maximum of 100 samples per gel can be resolved making this unit ideal for those routinely checking medium numbers of samples over short to medium gel run lengths.

Typical Application:
Quick check of samples from PCR and cloning

111300-001	PHERO-sub 1010-E, complete system incl.	111300-002	PHERO-sub 1010-E, complete system incl.
	1 x Gel Tray 100 x 70 mm, UV transparent		1 x Gel Tray 100 x 100 mm, UV transparent
	1 x Casting Dams (2 pcs.)		1 x Casting Dams (2 pcs.)
	2 x Comb, 16 slots, 1.0 mm		2 x Comb, 16 slots, 1.0 mm
	Loading Guides, Viewing Platform, Cable set		Loading Guides, Viewing Platform, Cable set
111300-003	PHERO-sub 1010-E, complete system incl.		
	1 x Gel Tray 100 x 70 mm, UV transparent		
	1 x Gel Tray 100 x 100 mm, UV transparent		
	1 x Casting Dams (2 pcs.)		
	2 x Comb, 16 slots, 1.0 mm		
	Loading Guides, Viewing Platform, Cable set		

Combs

Shape / Thickness	0.75 mm	1.0 mm	1.5 mm	2.0 mm
1 Slot, 1 Marker	111320-001	111321-001	111322-001	111323-001
2 Slots, 2 Marker	111320-002	111321-002	111322-002	111323-002
4 Slots, 2 Marker	111320-003	111321-003	111322-003	111323-003
8 Slots	111320-004	111321-004	111322-004	111323-004
10 Slots, Multichannel	111320-005	111321-005	111322-005	111323-005
12 Slots	111320-006	111321-006	111322-006	111323-006
16 Slots	111320-007	111321-007	111322-007	111323-007
20 Slots, Multichannel	111320-008	111321-008	111322-008	111323-008
25 Slots	111320-009	111321-009	111322-009	111323-009

Gel Trays

111330-001	1 x Gel Tray 100 x 70 mm, UV transparent	111331-001	1 x Gel Tray 100 x 100 mm, UV transparent

Accessories

111340-001	Casting Stand	111340-002	Casting Dams, (2 pcs.)
111340-003	Loading Guides	111340-004	Viewing Platform
111340-005	Gel Scoop, 100 mm		

PHERO-sub 1515-E

The PHERO-sub 1515-E offers a wide degree of versatility. Three tray options are available - 15 x 7cm, 15 x 10cm and 15 x 15cm - allowing the choice of one, two or all three gel length options at the time of purchase. Further purchases of additional accessories are no longer required. Maximising comb and tray options allow up to 210 samples to be resolved per gel. The 15cm total run length allows restriction fragment or other close MW sample bands to be easily separated and identified. Speed loading is accomplished using 10, 14, 16, 18, 28 and 30 sample multi-channel pipette compatible combs.

Typical Application:
Ideal for restriction fragment analysis, sample prep or checking high quantity of samples

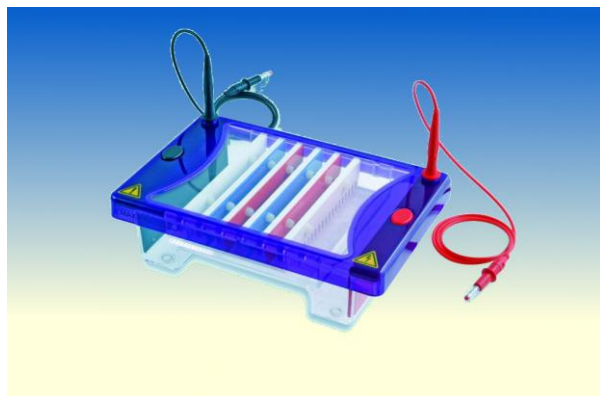|	
111400-001	PHERO-sub 1515-E, complete system incl. 1 x Gel Tray 150 x 70 mm, UV transparent 1 x Casting Dams (2 pcs.) 2 x Comb, 16 slots, 1.0 mm Loading Guides, Viewing Platform, Cable set
111400-002	PHERO-sub 1515-E, complete system incl. 1 x Gel Tray 150 x 100 mm, UV transparent 1 x Casting Dams (2 pcs.) 2 x Comb, 16 slots, 1.0 mm Loading Guides, Viewing Platform, Cable set
111400-003	PHERO-sub 1515-E, complete system incl. 1 x Gel Tray 150 x 150 mm, UV transparent 1 x Casting Dams (2 pcs.) 2 x Comb, 16 slots, 1.0 mm Loading Guides, Viewing Platform, Cable set
111400-004	PHERO-sub 1515-E, complete system incl. 1 x Gel Tray 150 x 70 mm, UV transparent 1 x Gel Tray 150 x 100 mm, UV transparent 1 x Gel Tray 150 x 150 mm, UV transparent 1 x Casting Dams (2 pcs.) 2 x Comb, 16 slots, 1.0 mm Loading Guides, Viewing Platform, Cable set

Combs

Shape / Thickness	0.75 mm	1.0 mm	1.5 mm	2.0 mm
1 Slot, 1 Marker	111420-001	111421-001	111422-001	111423-001
2 Slots, 2 Marker	111420-002	111421-002	111422-002	111423-002
4 Slots, 2 Marker	111420-003	111421-003	111422-003	111423-003
10 Slots	111420-004	111421-004	111422-004	111423-004
10 Slots, Multichannel	111420-005	111421-005	111422-005	111423-005
12 Slots	111420-006	111421-006	111422-006	111423-006
14 Slots, Multichannel	111420-007	111421-007	111422-007	111423-007
16 Slots	111420-008	111421-008	111422-008	111423-008
18 Slots, Multichannel	111420-009	111421-009	111422-009	111423-009
20 Slots	111420-010	111421-010	111422-010	111423-010
28 Slots, Multichannel	111420-011	111421-011	111422-011	111423-011
30 Slots, Multichannel	111420-012	111421-012	111422-012	111423-012
35 Slots	111420-013	111421-013	111422-013	111423-013

Gel Trays

111430-001	1 x Gel Tray 150 x 70 mm, UV transparent	111431-001	1 x Gel Tray 150 x 100 mm, UV transparent
111432-001	1 x Gel Tray 150 x 150 mm, UV transparent		

Accessories

111440-001	Casting Stand	111440-002	Casting Dams, (2 pcs.)
111440-003	Loading Guides	111440-004	Viewing Platform
111440-005	Gel Scoop, 100 mm		

PHERO-sub 2020-E

The PHERO-sub 2020-E is primarily designed for resolution of high numbers of samples such as from cloning or PCR. The PHERO-sub 2020-E allows ultra high-resolution separations over extended runs. Tray sizes correspond to standard blotter sizes. It also allows easy sample transfer onto a membrane for further analysis. Three tray sizes are available – 20 x 20cm, 20 x 25cm and a half-length 20 x 10cm. Multichannel pipette compatible combs up to 40 sample facilitate speed loading of up to 440 samples per gel. 50 sample combs allow maximum sample capacity of 550 samples per gel.

Typical Application:
Separation of high numbers of Samples from PCR or cloning

111500-001	PHERO-sub 2020-E, complete system incl.
	1 x Gel Tray 200 x 100 mm, UV transparent
	1 x Casting Dams (2 pcs.)
	2 x Comb, 16 slots, 1.0 mm
	Loading Guides, Viewing Platform, Cable set

111500-002	PHERO-sub 2020-E, complete system incl.
	1 x Gel Tray 200 x 200 mm, UV transparent
	1 x Casting Dams (2 pcs.)
	2 x Comb, 16 slots, 1.0 mm
	Loading Guides, Viewing Platform, Cable set

111500-003	PHERO-sub 2020-E, complete system incl.
	1 x Gel Tray 200 x 100 mm, UV transparent
	1 x Gel Tray 200 x 200 mm, UV transparent
	1 x Casting Dams (2 pcs.)
	2 x Comb, 16 slots, 1.0 mm
	Loading Guides, Viewing Platform, Cable set

111500-004	PHERO-sub 2020-E, complete system incl.
	1 x Gel Tray 200 x 250 mm, UV transparent
	1 x Casting Dams (2 pcs.)
	2 x Comb, 16 slots, 1.0 mm
	Loading Guides, Viewing Platform, Cable set

Combs

Shape / Thickness	0.75 mm	1.0 mm	1.5 mm	2.0 mm
1 Slot, 1 Marker	111520-001	111521-001	111522-001	111523-001
2 Slots, 2 Marker	111520-002	111521-002	111522-002	111523-002
4 Slots, 2 Marker	111520-003	111521-003	111522-003	111523-003
10 Slots	111520-004	111521-004	111522-004	111523-004
16 Slots	111520-005	111521-005	111522-005	111523-005
20 Slots, Multichannel	111520-006	111521-006	111522-006	111523-006
25 Slots	111520-007	111521-007	111522-007	111523-007
30 Slots	111520-008	111521-008	111522-008	111523-008
36 Slots	111520-009	111521-009	111522-009	111523-009
40 Slots, Multichannel	111520-010	111521-010	111522-010	111523-010
50 Slots	111520-011	111521-011	111522-011	111523-011

Gel Trays

111530-001	1 x Gel Tray 200 x 100 mm, UV transparent	111531-001	1 x Gel Tray 200 x 200 mm, UV transparent
111532-001	1 x Gel Tray 200 x 250 mm, UV transparent		

Accessories

111540-001	Casting Stand	111540-002	Casting Dams, (2 pcs.)
111540-003	Loading Guides	111540-004	Viewing Platform
111540-005	Gel Scoop, 100 mm		

Horizontal Electrophoresis Systems

PHERO-sub 2632-E

Designed for rapid screening of very large numbers of clonal or PCR samples, the PHERO-sub 2632-E horizontal gel unit has a 672 maximum sample capacity per gel. This allows loading and analysis of exactly seven 96 well format micro titre plates. The large gel run length of 32cm also allows resolution of samples over a long distance for separation of complex sample bands such as in restriction fragment analysis. The unit is available with a full length tray or with other tray length options of 16 or 24cm so that the user's exact requirements can be matched. In addition to options for single length gel trays, PHERO-sub 2632-E is available with all three gel tray lengths to provide the maximum in flexibility, versatility and value. Buffer recirculation ports are included as standard to allow enhanced resolution over extended runs while loading guides enhance well visibility for easy sample loading.

Typical Application:
Checking of very large numbers of samples or extended high resolution separations

111600-001	PHERO-sub 2632-E, complete system incl.
	1 x Gel Tray 260 x 160 mm, UV transparent
	1 x Casting Dams (2 pcs.)
	2 x Comb, 16 slots, 1.0 mm
	Loading Guides, Viewing Platform, Cable set

111600-002	PHERO-sub 2632-E, complete system incl.
	1 x Gel Tray 260 x 240 mm, UV transparent
	1 x Casting Dams (2 pcs.)
	2 x Comb, 16 slots, 1.0 mm
	Loading Guides, Viewing Platform, Cable set

111600-003	PHERO-sub 2632-E, complete system incl.
	1 x Gel Tray 260 x 320 mm, UV transparent
	1 x Casting Dams (2 pcs.)
	2 x Comb, 16 slots, 1.0 mm
	Loading Guides, Viewing Platform, Cable set

111600-004	PHERO-sub 2632-E, complete system incl.
	1 x Gel Tray 260 x 160 mm, UV transparent
	1 x Gel Tray 260 x 240 mm, UV transparent
	1 x Gel Tray 260 x 320 mm, UV transparent
	1 x Casting Dams (2 pcs.)
	2 x Comb, 16 slots, 1.0 mm
	Loading Guides, Viewing Platform, Cable set

Combs

Shape / Thickness	0.75 mm	1.0 mm	1.5 mm	2.0 mm
28 Slots, Multichannel	111620-001	111621-001	111622-001	111623-001
56 Slots, Multichannel	111620-002	111621-002	111622-002	111623-002

Gel Trays

111630-001	1 x Gel Tray 260 x 160 mm, UV transparent	111631-001	1 x Gel Tray 260 x 240 mm, UV transparent
111632-001	1 x Gel Tray 260 x 320 mm, UV transparent		

Accessories

111640-001	Casting Stand	111640-002	Casting Dams, (2 pcs.)
111640-003	Loading Guides	111640-004	Viewing Platform
111640-005	Gel Scoop, 100 mm		

PHERO-sub 96xx-M

The PHERO-sub 96xx-M Gel System is ideal for high throughput electrophoresis of PCR products or samples containing a small number of DNA bands. Its 10x12cm (W x L) gel dimensions and 96-well comb block format correspond to the standard microplate configuration. Two different types of combs are available: one which has 8 wells and an additional lane for DNA markers and one which has 8 wells and 2 additional lanes for markers. The offset layout of the wells allows a maximum run length of 1.8cm per well, resulting in improved separation. PHERO-sub 96xx-M can accommodate samples from a 96-well plate samples can be loaded directly using 8-channel pipettes. As with all PHERO-sub units, leak-proof casting is simplified using the supplied casting dams while their ultra-compact size minimises buffer usage and bench space requirements.

> **Typical Application:**
> Ideal for analysis of up to 96 PCR-fragment length polymorphisms loaded from 96-well microplates or thermal cycler blocks

111700-001	PHERO-sub 9600 M018 complete system incl.
	1 x Gel Tray, 100 x 120 mm, UV-transparent
	1 x Comb, 8x12 slots Multichannel, 1.0 mm
	  Comb with 1 marker lane
	1 x Gel casting aid
			111700-002	PHERO-sub 9615 M118 complete system incl.
				1 x Gel Tray, 100 x 120 mm, UV-transparent
				1 x Comb, 8x12 slots Multichannel, 1.5 mm
				  Comb with 1 marker lane
				1 x Gel casting aid

111700-003	PHERO-sub 9600 M218 complete system incl.
	1 x Gel Tray, 100 x 120 mm, UV-transparent
	1 x Comb, 8x12 slots Multichannel, 1.0 mm
	  Comb with 2 marker lane
	1 x Gel casting aid
			111700-004	PHERO-sub 9615 M218 complete system incl
				1 x Gel Tray, 100 x 120 mm, UV-transparent
				1 x Comb, 8x12 slots Multichannel, 1.5 mm
				  Comb with 2 marker lane
				1 x Gel casting aid

111800-001	PHERO-sub 9600 M036 complete system incl.
	1 x Gel Tray, 100 x 240 mm, UV-transparent
	1 x Comb, 8x12 slots Multichannel, 1.0 mm
	  Comb with 1 marker lane
	1 x Gel casting aid
			111800-002	PHERO-sub 9615 M136 complete system incl.
				1 x Gel Tray, 100 x 240 mm, UV-transparent
				1 x Comb, 8x12 slots Multichannel, 1.5 mm
				  Comb with 1 marker lane
				1 x Gel casting aid

111800-003	PHERO-sub 9600 M236 complete system incl.
	1 x Gel Tray, 100 x 240 mm, UV-transparent
	1 x Comb, 8x12 slots Multichannel, 1.0 mm
	  Comb with 2 marker lane
	1 x Gel casting aid
			111800-004	PHERO-sub 9615 M236 complete system incl
				1 x Gel Tray, 100 x 240 mm, UV-transparent
				1 x Comb, 8x12 slots Multichannel, 1.5 mm
				  Comb with 2 marker lane
				1 x Gel casting aid

PHERO-iefoc

Now equipped with rehydration and focusing trays, the redesigned PHERO-iefoc has been optimised to perform first-dimension isoelectric focusing (IEF) with IPG (immobilised pH gradient) strips quickly, easily and reproducibly. An ideal entry-level system for both inexperienced and occasional IEF users, the PHERO-iefoc is also versatile enough to meet the needs of laboratories with increased throughput requirements.

Features include:

• A high-capacity focusing tray that accommodates up to twelve IPG strips

• Adjustable 'pick-and-place' electrodes clip conveniently anywhere within the focusing tray to resolve IPG strips 7-24cm in length; colour-coded to prevent polarity reversal

• A cooling plate, manufactured from a special grade ceramic in a large 26x26cm surface area, facilitates effective heat dissipation and homogenous thermal control, particularly during high voltage IEF techniques

• An optional, but recommended recirculating chiller connects quickly and easily to the cooling plate via snap-lock connectors to maintain optimal operating temperatures for IPG strips (20°C) and precast gels (4°C)

• Rehydration tray allows convenient transfer of IPG strips to the focusing tray without time-consuming removal of residual rehydration buffer; also enables focusing tray to remain permanently in use for IEF to maximise throughput, and provides useful storage at -20°C for focused strips before second-dimension runs

• Electrode frame clips directly on to the cooling plate and includes adjustable electrodes to run horizontal precast IEF and PAGE gels

112110-001	PHERO-IEFOC 2626-E complete system incl. Tank body with lid, electrodes and cable

Accessories

112111-002	Anode electrode	112111-003	Cathode electrode
112111-004	Glass Cooling Plate	112111-005	Electrode frame
112111-006	Rehydration trays	112111-007	Focussing tray with adjustable electrodes

PHERO-sub 1515-RV

PHERO-sub 1515-RV is an innovative new system which can be used to maximise the efficiency of DNA recovery from EtBr and SYBR stained gels by minimising the number of steps involved in post-electrophoretic purification. PHERO-sub 1515-RV consists of a PHERO-sub 1515-E system with bluVIEW lid, containing an orange spectral emission filter within its viewing pane, and a base unit with integrated power supply and blue LED gel illuminator. Simple DNA recovery Using PHERO-sub 1515-RV is simple: first, cast a gel featuring two rows of wells with one matching pair of the preparatory combs supplied, before transferring the blue-light transparent gel tray to the PHERO-sub 1515-E tank located on the base unit. Add sufficient buffer just to cover the gel, and remove the combs to load the DNA samples into the upper row of wells ('Loading' tier). Replace the lid to connect the PHERO-sub 1515-E tank to the integrated power supply before applying the voltage and switching on the blue LED gel illuminator. Watch through the bluVIEW lid's viewing pane as the samples migrate in real-time to the second row of wells ('extraction' tier). Once the DNA bands of interest enter the 'extraction' tier, simply stop the power supply, remove the lid and harvest the DNA by pipette.

111400-101	PHERO-sub 1515-E, complete system incl. 1 x Gel Tray 150 x 70 mm, UV transparent 1 x Casting Dams (2 pcs.) 8 x Comb, double sided Loading Guides, Viewing Platform, Cable set		111400-102	PHERO-sub 1515-E, complete system incl. 1 x Gel Tray 150 x 100 mm, UV transparent 1 x Casting Dams (2 pcs.) 8 x Comb, double sided Loading Guides, Viewing Platform, Cable set
111400-103	PHERO-sub 1515-E, complete system incl. 1 x Gel Tray 150 x 150 mm, UV transparent 1 x Casting Dams (2 pcs.) 8 x Comb, double sided Loading Guides, Viewing Platform, Cable set		111400-104	PHERO-sub 1515-E, complete system incl. 1 x Gel Tray 150 x 70 mm, UV transparent 1 x Gel Tray 150 x 100 mm, UV transparent 1 x Gel Tray 150 x 150 mm, UV transparent 1 x Casting Dams (2 pcs.) 8 x Comb, double sided Loading Guides, Viewing Platform, Cable set
111490-101	RV-Base Station & Blue Light Lid			

1. PRE-RECOVERY START OF RUN

load DNA here in loading tier

runVIEW gel – no LED, no screen

1. Load sample in 'loading tier' of wells.

2. PRE-RECOVERY DURING RUN

-VE

DNA migration

+VE

runVIEW gel – bluVIEW screen & blue LED

2. Run samples until they reach the 'extraction tier' of wells.

3. RECOVERY END OF RUN

harvest DNA here from extraction tier

runVIEW gel – blue LED, no screen

3. Stop the run and extract the buffer to purify the DNA.

PHERO-Comet 10-E / 20-E / 30-E / 40-E

PHERO-Comet assay tanks are available in four slide formats to study single cell gel electrophoresis (SCGE), a technique made popular by drug toxicology and carcinogenesis studies for the detection and quantitation of DNA damage in cells. Each tank's robust construction from ebony acrylic ensures that cells remain free of exposure to background light and DNA damage during electrophoresis, while a cooled central platform provides a convenient surface for slide preparation and control of slide temperature during the assay. Following electrophoresis DNA damage may be measured using Comet Assay scoring software.

112210-001	PHERO-comet 10-E		112210-002	PHERO-comet 20-E
	Electrophoresis tank for 10 slides			Electrophoresis tank for 20 slides
112210-003	PHERO-comet 30-E		112210-004	PHERO-comet 40-E
	Elektrophoresis tank for 30 slides			Electrophoresis tank for 40 slides

The comet assay

Background: First introduced in 1981 to quantify double-stranded DNA breakages in single cells exposed to γ-irradiation, the Comet Assay (or SCGE) has since been adapted to analyse specific DNA lesions and repair processes.

Overview: Following genotoxic insult, such as ionizing radiation, the resultant strand breakage of supercoiled duplex DNA reduces the size of the large genomic DNA from which these strands are separated or drawn out by electrophoresis. The genomic DNA then takes on the appearance of a 'comet' as its negatively charged broken ends and fragments migrate towards the anode during electrophoresis.

Method: After exposure to a genotoxic insult cells are suspended within low melting point agarose and embedded within a thin layer of agarose on a microscope slide. Cellular protein is then removed by lysis in detergent, when DNA is allowed to unwind in alkaline conditions before electrophoresis. The DNA is electrophoresed, stained and then analysed using software.

Results: Microscopy imaging is used to measure DNA fluorescence upon staining. In DNA damaged cells the resultant image resembles a 'comet' with the cellular DNA separated into a head and tail. The head is mainly composed of intact genomic DNA, whereas any fragmented or damaged DNA is concentrated within and towards the tail.

PHERO-vert 1010-E

The preferred unit for routine mini protein electrophoresis, the PHERO-vert 1010-E is constructed using the latest injection moulding manufacturing techniques. This gives a high quality, low cost product with unsurpassed finish, durability and strength. The unit incorporates a sealing system which is compatible with all major types of 8 x 10cm and 10 x 10cm precast gel. Gel casting and running utilise the same insert, no transfer of glass plates during gel casting is necessary. The insert contains the option of sliding clamps or just one screw per clamping bar side allowing very rapid set up of both hand cast and precast gels. Ultra soft silicone seals and pressure bars which surround the glass plates guarantee leak proof gel casting. 2mm thick glass plates prevent breakage and have bonded spacers for convenience. Accessory electroblotting and tube gel modules are available which use the same outer tank and lid.

113100-001	PHERO-vert 1010-E, complete system incl.
	1 x Notched glass plates (2 pcs.)
	1 x Glass plates with Spacer, 1.0 mm (2 pcs.)
	1 x Dummy plate
	2 x Comb, 12 slots, 1.0 mm
	1 x Gel casting unit

113100-002	PHERO-vert 1010-E, complete system incl.
	1 x Notched glass plates (2 pcs.)
	1 x Glass plates with spacer, 1.0 mm (2 pcs.)
	2 x Comb, 12 slots, 1.0 mm
	1 x Blotting insert, 1 x dummy plate
	3 x Blotting cassettes, 6 x fibre pads

113100-003	PHERO-vert 1010-E, complete system incl.
	1 x Notched glass plates (2 pcs.)
	1 x Glass plates with spacer, 1.0 mm (2 pcs.)
	1 x Dummy plate
	2 x Comb, 12 slots, 1.0 mm
	1 x 2D insert

113100-004	PHERO-vert 1010-E, complete system incl.
	1 x Notched glass plates (2 pcs.)
	1 x Glass plates with spacer, 1.0 mm (2 pcs.)
	1 x Dummy plate
	2 x Comb, 12 slots, 1.0 mm
	1 x 2D insert, 1 x blotting insert
	3 x Blotting cassettes, 6 x fibre pads

Combs / Glass plates / Spacer

Shape / Thickness	0.75 mm	1.0 mm	1.5 mm	2.0 mm
1 Slot, 1 Marker	113121-001	113122-001	113123-001	113124-001
5 Slots	113121-002	113122-002	113123-002	113124-002
8 Slots, Multichannel	113121-003	113122-003	113123-003	113124-003
9 Slots	113121-004	113122-004	113123-004	113124-004
10 Slots	113121-005	113122-005	113123-005	113124-005
12 Slots	113121-006	113122-006	113123-006	113124-006
16 Slots, Multichannel	113121-007	113122-007	113123-007	113124-007
20 Slots	113121-008	113122-008	113123-008	113124-008
Glass Plates / Spacer	**0.75 mm**	**1.0 mm**	**1.5 mm**	**2.0 mm**
Glass plates with spacer	113140-003	113140-004	113140-005	113140-006
Plain glass plates	113140-001	113140-001	113140-001	113140-001
Notched glass plates with spacer	113141-003	113141-004	113141-005	113141-006
Notched plain glass plates	113141-001	113141-001	113141-001	113141-001
Spacer	113131-001	113132-001	113133-001	113134-001

Casting Tools

113152-001	External casting stand & base	113152-002	Casting stand for 6 gels
113152-003	Casting stand for 12 gels	113152-004	Casting stand for 24 gels
113190-001	Replacement rubber for casting stand		

Accessories

113170-001	Blotting insert with 3 x cassetes & 6 x fibre pads	113170-002	1 x Blotting Cassette
113170-003	6 x fibre pads	113180-001	1 x Capillary insert with 10 x glass tubes and caps
113180-002	10 x glass tubes for capillary insert	113180-002	10 x Caps for capillary insert

Vertical Electrophoresis Systems

PHERO-vert 2020-E

The preferred unit for maxi protein electrophoresis, the PHERO-vert 2020-E unit combines convenient ease of use features with high resolution separations. Simple set up using ultra soft silicone seals guarantees trouble free glass plate loading and gel casting. Dual gaskets on the gel running insert along with notched and plain glass plates ensure leak proof gel running. Rapid set up cooling retains resolution in extended separations and also saves on buffer volume without affecting run quality. 4mm thick glass plates reduce breakage and have bonded spacers for added convenience. A wide range of accessories is available allowing many techniques to be performed using the same unit. Prep combs can be used to maximize sample loading and recovery. Accessory electroblotting and tube gel modules are available which use the same outer tank and lid.

113200-001	PHERO-vert 2020-E, complete system incl.
	1 x Notched glass plates (2 pcs.)
	1 x Glass plates with spacher, 1.0 mm (2 pcs.)
	1 x Dummy plate
	2 x Comb, 24 slots, 1.0 mm
	1 x Gel casting unit
113200-003	PHERO-vert 2020-E, complete system incl.
	1 x Notched glass plates (2 pcs.)
	1 x Glass plates with spacher, 1.0 mm (2 pcs.)
	1 x Dummy plate
	2 x Comb, 24 slots, 1.0 mm
	1 x 2D insert

113200-002	PHERO-vert 2020-E, complete system incl.
	1 x Notched glass plates (2 pcs.)
	1 x Glass plates with spacher, 1.0 mm (2 pcs.)
	2 x Comb, 24 slots, 1.0 mm
	1 x Blotting insert, 1 x dummy plate
	3 x Blotting cassettes, 6 x fibre pads
113200-004	PHERO-vert 2020-E, complete system incl.
	1 x Notched glass plates (2 pcs.)
	1 x Glass plates with spacher, 1.0 mm (2 pcs.)
	1 x Dummy plate
	2 x Comb, 24 slots, 1.0 mm
	1 x 2D insert, 1 x blotting insert
	3 x Blotting Cassettes, 6 x fibre pads

Combs / Glass Plates / Spacer

Shape / Thickness	0.75 mm	1.0 mm	1.5 mm	2.0 mm
1 Slot, 1 Marker	113220-001	113221-001	113222-001	113223-001
5 Slots	113220-002	113221-002	113222-002	113223-002
10 Slots	113220-003	113221-003	113222-003	113223-003
18 Slots, Multichannel	113220-004	113221-004	113222-004	113223-004
24 Slots	113220-005	113221-005	113222-005	113223-005
30 Slots	113220-006	113221-006	113222-006	113223-006
36 Slots, Multichannel	113220-007	113221-007	113222-007	113223-007
48 Slots	113220-008	113221-008	113222-008	113223-008
GlasPlates / Spacer	0.75 mm	1.0 mm	1.5 mm	2.0 mm
Glass plates with spacer	113240-002	113240-003	113240-004	113240-005
Plain glass plates	113240-001	113240-001	113240-001	113240-001
Notched plain glass plates	113241-001	113241-001	113241-001	113241-001
Spacer	113230-001	113231-001	113232-001	113233-001

Casting Tools

113252-001	External casting stand & base		113290-001	Replacement rubber for casting stand

Accessories

113270-001	Blotting insert with 3 x cassetes & 6 x fibre pads		113270-002	1 x Blotting cassette
113270-003	6 x fibre pads		113280-001	1 x Capillary insert with 10 x glass tubes and caps
113280-002	10 x glass tubes for capillary insert		113280-002	10 x Caps for capillary insert

PHERO-seq 2050-E / 3345-E

Ideal for a variety of large format vertical gel applications, these units offer advanced features for enhancing gel resolution and ease of use, essential when handling gels of this size. Each unit contains ultra soft silicone seals for easy plate sealing and trouble free runs, even over extended run times. Resolution is enhanced by using an aluminium heat sink plate, essential for even sample migration. Added convenience is provided by a removable lower buffer tank and upper buffer drainage tap. Special buffer chambers allow either low buffer volumes to be used for economy or high buffer volumes to be used for extended runs. A wide range of interchangeable comb and spacer options allows a large number of techniques to be easily accomplished including DNA Sequencing, 2-D analysis, Micro-satellite analysis, DNA fingerprinting, Gel shift assays, Single-Strand Conformation Polymorphism (SSCP), Heteroduplex and Oligonucleotide analysis.

114100-001 PHERO-seq 2050-E, complete system incl.	114100-002 PHERO-seq 3345-E, complete system incl.
1 x Notched glass plates (2 pcs.)	1 x Notched glass plate (2 pcs.)
1 x Glass plate with spacer, 0.35 mm	1 x Glass plate with spacer, 0.35 mm
1 x Comb, 24 slots, 0.35 mm, Shark Tooth	1 x Comb, 48 slots, 0.35 mm, Shark Tooth

Combs / Glass Plates / Spacer PHERO-seq 2050-E

Shape / Thickness	0.25 mm	0.35 mm	1.0 mm	1.5 mm
24 Slots, Shark Tooth	114120-001	114121-001	114122-001	114123-001
48 Slots, Shark Tooth	114120-002	114121-002	114122-002	114123-002
Spacer	114130-001	114131-001	114132-001	114133-001
Glass Plates				
Notched glass plates	114140-001	114140-001	114140-001	114140-001
Plain glass plates	114140-002	114140-002	114140-002	114140-002

Combs / Glass Plates / Spacer PHERO-seq 3345-E

Shape / Thickness	0.25 mm	0.35 mm	1.0 mm	1.5 mm
24 Slots, Shark Tooth	114220-001	114221-001	114222-001	114223-001
48 Slots, Shark Tooth	114220-002	114221-002	114222-002	114223-002
Spacer	114230-001	114231-001	114232-001	114233-001
Glass Plates				
Notched glass plates	114240-001	114240-001	114240-001	114240-001
Plain glass plates	114240-002	114240-002	114240-002	114240-002

PHERO-DGGE

Denaturing Gradient Gel Electrophoresis (DGGE) is an important technique used in the search for mutations and DNA polymorphisms critical in genetic disorders and cancers, and to understand genetic diversity among species. The PHERO-DGGE is a flexible and customisable system that can perform several different mutation detection techniques. The PHERO-DGGE – a versatile single-unit solution for different single-base pair mutation detection methods. The newly designed PHERO-DGGE is a complete system for DNA mutation analysis. The new PHERO-DGGE is fully equipped with temperature control unit, stirrer, and gradient mixer and casting accessories to perform specific mutation analysis applications. A powerful microprocessor-controlled PID temperature control unit enables various mutation detection techniques to be undertaken between ambient temperature and 70°C. Accordingly, the new PHERO-DGGE can be used to screen single-base pair changes in the following applications:

•   Heteroduplex analysis (HA)
•   Parallel Denaturing Gradient Gel Electrophoresis (DGGE)
•   Constant Denaturing Gradient Gel Electrophoresis (CDGE)

The flexibility provided by the modular design of the PHERO-DGGE and its wide range of accessories enables laboratories to switch quickly and easily between different mutation detection techniques, thereby maximising throughput and screening efficiency. A maximum 96-sample throughput allows detection of as many mutations within a couple hours, alleviating many of the bottlenecks associated with screening for DNA mutations.

113300-001	PHERO-DGGE, complete system incl.
	1 x Notched glass plates (2 pcs.)
	1 x Glass plate with spacer, 1.0 mm
	1 x Comb, 24 slots, 1.0 mm
	1 x Temperature control unit
	1 x Gradient mixer & gel caster

Singel Components

113390-001	PHERO-DGGE-TCU, Temperature control unit.

PHERO-blot 1010-E / 2020-E

Designed primarily for wet electroblotting of proteins. Tank Sub Electroblotters offer a combination of increased capacity with economy saving features. Both units, PHERO-blot 1010-E and PHERO-blot 2020-E, have increased capacity over standard systems with up to five gel blot cassettes utilised at any one time. This is especially useful in high throughput laboratories. A uniform electric field is provided by a high intensity coiled electrode and ensures uniform transfer across the blot surface. The cassette's open architecture ensures the maximum blot area allows direct transfer of current. Its rigid construction ensures contact between the gel and membrane is retained throughout the blot and an even pressure is maintained. These units are compatible with magnetic stirrers to aid heat dispersal and prevent pH drifts in the buffer due to incomplete buffer mixing. Each system includes a cooling pack to further enhance transfer efficiency by removing excess heat. This also saves on buffer for added economy.

115100-001 PHERO-blot 1010-E, complete system incl. 5 x Blotting cassettes 5 x Fibre pads (2 pcs) 1 x Cooling pack	115100-002 PHERO-blot 2020-E, complete system incl. 5 x Blotting cassettes 5 x Fibre pads (2 pcs) 1 x Cooling pack

Accessories PHERO-blot 1010

115170-001 Blotting cassette incl. fibre pads 115170-003 Fibre pads (6 pcs.)	115170-002 Blotting cassette

Accessories PHERO-blot 2020

115270-001 Blotting cassette incl. fibre pads 115270-003 Fibre pads (6 pcs.)	115270-002 Blotting cassette

PHERO-mul 2050-E / 3345-E

These PHERO-multiblot Semi Dry Blotters offer rapid transfer times for DNA, RNA and protein blotting - typically 15 to 30 minutes. All units can be used for all types of blotting: western, southern and northern via uncomplicated buffer and set up procedures and are compatible with gel thicknesses from 0.25 up to 10mm without the need for additional equipment. Each unit is compatible with their respective PHERO-vert vertical gel system. Semi Dry Blotting has the added benefit of economic transfers due to very low buffer volumes – typically only a few millilitres of buffer are required per transfer. These PHERO-mul Semi-Dry Blotters utilise a screw down lid, which secures the blot sandwich and allows complete control of pressure ensuring even transfer. The electrodes, comprising platinum coated anode and stainless steel cathode, will exhibit practically no corrosion and so provide many years of trouble free use. Uniform heat dispersion across the blot sandwich ensures stable transfer times and no heat induced sample loss or transfer distortions.

116100-001 PHERO-mul 1010-E 116300-001 PHERO-mul 2050-E	116200-001 PHERO-mul 2020-E 116400-001 PHERO-mul 3345-E

Gradient Mixer

PHERO-grad

PHERO-grad gradient mixer is supplied as standard to ensure efficient gradient formation by mixing and delivering high- and low-density denaturant solutions. A flat-base design and support handle allows the PHERO-grad to be secured to a retort stand, enabling it to be easily mounted on a magnetic stirring plate, while the mixing chamber can accommodate a magnetic stirrer to form a linear gradient. A peristaltic pump is also recommended for delivery of linear and reproducible gradient gels.

127110-001	PHERO-grad 005, 2 x 5 ml
127130-001	PHERO-grad 020, 2 x 20 ml
127140-001	PHERO-grad 100, 2 x 100 ml
127170-001	PHERO-grad 1000, 2 x 1000 ml

127120-001	PHERO-grad 010, 2 x 10 ml
127140-001	PHERO-grad 040, 2 x 40 ml
127160-001	PHERO-grad 500, 2 x 500 ml

Gel Dryer

PHERO-temp 40 / PHERO-temp 60

The gel dryers of PHERO-temp range are special devices for effective, fast and gentle drying of your slab gels. They have been built for hard, routine use and a very long life-span. No modern electrophoresis laboratory should be without one. The PHERO-temp gel dryers are available in two different sizes for every application. The smallest model has a drying area of approx. 40 x 40 cm and the largest an area of approx. 40 x 60 cm. A special plastic frit is used as the support surface for gels. This material, in combination with the specially constructed metal surface, guarantees an even vacuum over the entire drying area. The electronically controlled temperature regulator avoids jumps in temperature. Warm-up is extremely steady and consistent. The drying temperature remains constant within very narrow limits. You can vary the temperature between +30 °C and +90°C. Over-heating safe-guards will protect your gels against excessively high temperatures. The PHERO-temp range have been tested by an independent institute and awarded the CE mark. They come with mains cable and operating instructions as standard. A timer (0-6 hours) built into the apparatus is available as an accessory. It also takes over the function of the on/off switch.

The two double-cylinder vacuum pumps CLAB-22 and N72612 are available to produce the necessary vacuum. The CLAB-22 has an inner lining of VA steel, whereas the inside of the N72612 is Teflon-coated. Both models are 100% oil and maintenance-free, extremely reliable and simple to operate. They maintain a constant vacuum during continuous operation.

132120-001	PHERO-temp 40, 40 x 4 cm

131230-001	PHERO-temp 60, 60 x 40 cm

Electrophoresis Power Supplies EV series

Electrophoresis power supplies EV series can be run either in manual mode or in automated mode by using up to 9 different programs. The manual mode allows to set voltage, current, power and time for a routine electrophoresis run. Parameters can be changed temporarily without interrupting the run.

Up to 9 different programs, each with 9 steps, of frequently used parameters can be stored in the non-volatile memory for future recall. Reads voltage in 1 V steps, current in 1 mA steps and power in 1 W steps. Each step is able to recall a next one, providing a flexible multiple step function for special techniques. Parameters of the running step can be changed temporarily without interrupting the run. The method mode also allows to program a linear voltage gradient for any step provided the limiting current or power is not attained. Timer or volt-hour controlled operation is a useful standard feature on all models. The built in microcomputer will automatically terminate the run and sound an alarm when the count down of the selected value is achieved. Each model has constant voltage, constant current, constant power capabilities with automatic cross-over and shows which parameter is kept constant. After a mains power failure the instrument will automatically continue the run for the remaining time. Up to 3600 output values (voltage, current and power, time or volthours) including program number and step can be stored. A free data acquisition software for PC can be downloaded from our website. This software allows to visualize and examine the stored run details via RS232. All power supplies can be controlled by a computer using special commands. The user is protected from potential shock hazard since the AC line is automatically disconnected from the high voltage transformer when a ground leakage path is detected. The instrument is fully protected against any overload condition including accidental short circuit of the output. The high voltage cannot suddenly appear at the outputs. It will always increase smoothly until one of the pre-set limits is reached.

Electrophoresis Power Supplies (230 VAC)

131200-001	Power supply EV245, 400V, 500mA, 50W	131200-002	Power supply EV231, 300V, 1000mA, 150W
131200-003	Power supply EV265, 600V, 500mA, 150W	131200-004	Power supply EV202, 300V, 2000mA, 300W
131200-005	Power supply EV261, 600V, 1000mA, 300W	131200-006	Power supply EV215, 1200V, 500mA, 300W
131200-007	Power supply EV232, 3000V, 150mA, 150W	131200-008	Power supply EV233, 3000V, 300mA, 300W
131200-009	Power supply EV262, 6000V, 150mA, 300W		

Electrophoresis Power Supplies (115 VAC)

131210-001	Power supply EV245$, 400V, 500mA, 50W	131210-002	Power supply EV231$, 300V, 1000mA, 150W
131210-003	Power supply EV265$, 600V, 500mA, 150W	131210-004	Power supply EV202$, 300V, 2000mA, 300W
131210-005	Power supply EV261$, 600V, 1000mA, 300W	131210-006	Power supply EV215$, 1200V, 500mA, 300W
131210-007	Power supply EV232$, 3000V, 150mA, 150W	131210-008	Power supply EV233$, 3000V, 300mA, 300W
131210-009	Power supply EV262$, 6000V, 150mA, 300W		

	EV245	EV231	EV265	EV202	EV261	EV215	EV232	EV233	EV262
PHERO-sub 0710-E	✓	✓							
PHERO-sub 1008-E	✓								
PHERO-sub 1010-E	✓	✓							
PHERO-sub 1515-E	✓	✓							
PHERO-sub 2020-E		✓	✓		✓				
PHERO-sub 2632-E			✓		✓	✓			
PHERO-vert 1010-E	✓	✓							
PHERO-vert 2020-E		✓	✓		✓				
PHERO-seq 2050-E							✓	✓	
PHERO-seq 3345-E							✓	✓	
PHERO-blot 1010-E				✓					
PHERO-blot 2020-E				✓					
PHERO mul 1010-E				✓					
PHERO-mul 2020-E				✓					
PHERO-mul 2050-E				✓					
PHERO-mul 3345-E				✓					

UV-Transilluminator

Spectroline UV-Transilluminator

- Available in your choice of fixed- or variable-intensity models
- Choose from various combinations of UV (312nm, 254nm and/or 365nm) as well as white light
- Variable-intensity UV transilluminators provide both the highest intensity and the longest sample-preparation time
- Unsurpassed UV intensity produces brilliant fluorescent response and the highest clarity
- Special diffusing screen ensures superior light distribution and eliminates confusing light striations
- Compatible with photo and electronic video documentation equipment

Spectroline Standard (365 nm)

151201-001	Spectroline TS-365R Wavelength: 365 nm Filter size: 15 x 15 cm Illumination: 6 x 15W (UV-A)	151201-002	Spectroline TC-365R Wavelength: 365 nm Filter size: 20 x 20 cm Illumination: 6 x 15W (UV-A)
151201-003	Spectroline TR-365R Wavelength: 365 nm Filter size: 23 x 33 cm Illumination: 6 x 15W (UV-A)	151201-004	Spectroline TL-365R Wavelength: 365 nm Filter size: 20 x 40 cm Illumination: 6 x 15W (UV-A)

Spectroline Standard (312 nm)

151202-001	Spectroline TS-312R Wavelength: 312 nm Filter size: 15 x 15 cm Illumination: 6 x 15W (UV-B)	151202-002	Spectroline TC-312R Wavelength: 312 nm Filter size: 20 x 20 cm Illumination: 6 x 15W (UV-B)
151202-003	Spectroline TR-312R Wavelength: 312 nm Filter size: 23 x 33 cm Illumination: 6 x 15W (UV-B)	151202-004	Spectroline TL-312R Wavelength: 312 nm Filter size: 20 x 40 cm Illumination: 6 x 15W (UV-B)

Spectroline Standard (254 nm)

151203-001	Spectroline TS-254R Wavelength: 254 nm Filter size: 15 x 15 cm Illumination: 6 x 15W (UV-C)	151203-002	Spectroline TC-254R Wavelength: 254 nm Filter size: 20 x 20 cm Illumination: 6 x 15W (UV-C)
151203-003	Spectroline TR-254R Wavelength: 254 nm Filter size: 23 x 33 cm Illumination: 6 x 15W (UV-C)	151203-004	Spectroline TL-254R Wavelength: 254 nm Filter size: 20 x 40 cm Illumination: 6 x 15W (UV-C)

Spectroline V Series

151205-001	Spectroline TVC-312R Wavelength: 312 nm Filter size: 20 x 20 cm Illumination: 6 x 15W (UV-B), variable intensity	151205-002	Spectroline TVR-312R Wavelength: 312 nm Filter size: 15 x 36 cm Illumination: 6 x 15W (UV-B), variable intensity
151205-003	Spectroline TVL-312R Wavelength: 312 nm Filter size: 20 x 40 cm Illumination: 6 x 15W (UV-B), variable intensity		

Spectroline Slimline Series

151211-001	Spectroline TE-365S Wavelength: 365 nm Filter size: 11 x 14 cm Illumination: 4 x 8W (UV-A)	151211-002	Spectroline TE-312S Wavelength: 312 nm Filter size: 11 x 14 cm Illumination: 4 x 8W (UV-B)
151213-001	Spectroline TE-254S Wavelength: 254 nm Filter size: 11 x 14 cm Illumination: 4 x 8W (UV-C)		

Spectroline Select Series

151222-001	Spectroline TS-312E Wavelength: 312 nm Filter size: 11 x 14 cm Illumination: 4 x 8W (UV-B)	151222-002	Spectroline TC-312E Wavelength: 312 nm Filter size: 11 x 14 cm Illumination: 4 x 8W (UV-B)
151222-003	Spectroline TI-312E Wavelength: 312 nm Filter size: 11 x 14 cm Illumination: 4 x 8W (UV-B)		

Spectroline Select Dual Series

151231-001	Spectroline TD-2020 Wavelength: 365/254 nm Filter size: 20 x 20 cm Illumination: 5 x 8W	151231-002	Spectroline T2120 Wavelength: 365/254 nm Filter size: 21 x 26 cm Illumination: 5 x 8W
151232-001	Spectroline TD-2000 Wavelength: 365/312 nm Filter size: 20 x 20 cm Illumination: 5 x 8W	151232-002	Spectroline T2100 Wavelength: 365/312 nm Filter size: 21 x 26 cm Illumination: 5 x 8W
151232-001	Spectroline TD-2010 Wavelength: 254/312 nm Filter size: 20 x 20 cm Illumination: 5 x 8W	151232-002	Spectroline T2110 Wavelength: 254/312 nm Filter size: 21 x 26 cm Illumination: 5 x 8W

Spectroline Replacement Tubes

151250-001	Replacement tube, 15W, 365 nm	151250-002	Replacement tube, 15W, 312 nm
151250-003	Replacement tube, 15W, 254 nm	151250-004	Replacement tube, 15W, white light

Spectroline Spare UV-blocking lid

151251-001	UV-blocking lid for Select and Slimline Series	151251-002	UV-blocking lid vor Standard series

Spectroline Spare UV-diffusing screen

151251-003	Diffusing screen for Select and Slimline Series	151251-004	Diffusing screen for Standard series

PHERO-lum UV-Transilluminators (made in Germany)

PHERO-lum UV-Transilluminators are designed to be used in routine lab. All products of PHERO-lum series offer stainless steel filter lid for robust daily work. There are 3 different sizes of housing available. Beam intensity of selected wavelength can be controlled by higher quantity of 8W UV-tubes or lower quantity of high power 15W UV-tubes. There is a wide range of different models available. PHERO-lum UV-Transilluminators offer following features:

- Low cost models (ON/OFF switch)
- Medium class models (50/100% intensity switch)
- High performance class models (10…100% variable intensity switch in 10 steps)

PHERO-lum E Series (50/100%) 254 nm

151411-101	PHERO-lum MS268E, 254nm, 21x26cm, 8x8W	151411-102	PHERO-lum SS158E, 254nm, 15x15cm, 6x8W
151411-103	PHERO-lum SS208E, 254nm, 20x20cm, 8x8W	151411-104	PHERO-lum SS308E, 254nm, 23x30cm, 12x8W
151411-105	PHERO-lum XS2015E, 254nm, 20x20cm, 6x15W	151411-106	PHERO-lum XS208E, 254nm, 20x20cm, 8x8W
151411-107	PHERO-lum XS3015E, 254nm, 23x30cm, 8x15W	151411-108	PHERO-lum XS308E, 254nm, 23x30cm, 12x8W
151411-109	PHERO-lum XS4015E, 254nm, 20x40cm, 6x15W	151411-110	PHERO-lum XS4715E, 254nm, 27x40cm, 8x15W

PHERO-lum R Series (10...100%) 254 nm

151411-201	PHERO-lum MS268R, 254nm, 21x26cm, 8x8W	151411-202	PHERO-lum SS158R, 254nm, 15x15cm, 6x8W
151411-203	PHERO-lum SS208R, 254nm, 20x20cm, 8x8W	151411-204	PHERO-lum SS308R, 254nm, 23x30cm, 12x8W
151411-205	PHERO-lum XS2015R, 254nm, 20x20cm, 6x15W	151411-206	PHERO-lum XS208R, 254nm, 20x20cm, 8x8W
151411-207	PHERO-lum XS3015R, 254nm, 23x30cm, 8x15W	151411-208	PHERO-lum XS308R, 254nm, 23x30cm, 12x8W
151411-209	PHERO-lum XS4015R, 254nm, 20x40cm, 6x15W	151411-210	PHERO-lum XS4715R, 254nm, 27x40cm, 8x15W

PHERO-lum K Series (ON/OFF) 312 nm

151412-001	PHERO-lum MM268K, 312nm, 21x26cm, 8x8W	151412-002	PHERO-lum SM158K, 312nm, 15x15cm, 4x8W
151412-003	PHERO-lum SM208K, 312nm, 20x20cm, 6x8W	151412-004	PHERO-lum SM308K, 312nm, 23x30cm, 8x8W
151412-005	PHERO-lum XM2015K, 312nm, 20x20cm, 4x15W	151412-206	PHERO-lum XM3015K, 312nm, 23x30cm, 6x15W
151412-207	PHERO-lum XM4015K, 312nm, 20x40cm, 4x15W		

PHERO-lum E Series (50/100%) 312 nm

151412-101	PHERO-lum MM268E, 312nm, 21x26cm, 8x8W	151412-102	PHERO-lum SM158E, 312nm, 15x15cm, 6x8W
151412-103	PHERO-lum SM208E, 312nm, 20x20cm, 8x8W	151412-104	PHERO-lum SM308E, 312nm, 23x30cm, 12x8W
151412-105	PHERO-lum XM2015E, 312nm, 20x20cm, 6x15W	151412-106	PHERO-lum XM208E, 312nm, 20x20cm, 8x8W
151412-107	PHERO-lum XM3015E, 312nm, 23x30cm, 8x15W	151412-108	PHERO-lum XM308E, 312nm, 23x30cm, 12x8W
151412-109	PHERO-lum XM4015E, 312nm, 20x40cm, 6x15W	151412-110	PHERO-lum XM4715E, 312nm, 27x40cm, 8x15W

PHERO-lum R Series (10...100%) 312 nm

151412-201	PHERO-lum MM268R, 312nm, 21x26cm, 8x8W	151412-202	PHERO-lum SM158R, 312nm, 15x15cm, 6x8W
151412-203	PHERO-lum SM208R, 312nm, 20x20cm, 8x8W	151412-204	PHERO-lum XM2015R, 312nm, 20x20cm, 6x15W

PHERO-lum P Series (ON/OFF) 365 nm Preparative

151413-001	PHERO-lum ML268P, 365nm, 21x26cm, 8x8W	151413-002	PHERO-lum SL208R, 365nm, 20x20cm, 6x8W
151413-003	PHERO-lum SL308P, 365nm, 23x30cm, 8x8W	151413-004	PHERO-lum XL2015R, 365nm, 20x20cm, 4x15W
151413-005	PHERO-lum XL3015P, 365nm, 23x30cm, 4x15W	151413-006	PHERO-lum XL4015R, 365nm, 20x40cm, 4x15W

PHERO-lum K Series (ON/OFF) 254/312 nm

151421-001	PHERO-lum SSM208K, 254/312nm, 20x20cm	151421-002	PHERO-lum SSM308K, 254/312nm, 23x30cm
151421-003	PHERO-lum SSM2015K, 254/312nm, 20x20cm	151421-004	PHERO-lum SSM3015K, 254/312nm, 23x30cm
151421-005	PHERO-lum SSM4015K, 254/312nm, 20x40cm		

PHERO-lum E Series (50/100%) 254/312 nm

151421-101	PHERO-lum SSM208E, 254/312nm, 20x20cm	151421-102	PHERO-lum SSM308E, 254/312nm, 23x30cm
151421-103	PHERO-lum SSM2015E, 254/312nm, 20x20cm	151421-104	PHERO-lum XSM208K, 254/312nm, 20x20cm
151421-105	PHERO-lum XSM3015K, 254/312nm, 23x30cm	151421-106	PHERO-lum XSM3015E, 254/312nm, 23x30cm
151421-107	PHERO-lum XSM4015K, 254/312nm, 20x40cm	151421-108	PHERO-lum XSM4715K, 254/312nm, 27x40cm

PHERO-lum K Series (ON/OFF) UV/white

151422-001	PHERO-lum XSW208K, 254nm/white, 20x20cm	151422-002	PHERO-lum XMW208K, 312nm/white, 20x20cm
151422-003	PHERO-lum XLW208K, 365nm/white, 20x20cm		

PHERO-lum E Series (50/100%) UV/white

151422-101	PHERO-lum XSW208E, 254nm/white, 20x20cm	151422-102	PHERO-lum XMW208E, 312nm/white, 20x20cm
151422-103	PHERO-lum XLW208E, 365nm/white, 20x20cm		

PHERO-lum R Series (10…100%) UV/white

151422-201	PHERO-lum XSW208R, 254nm/white, 20x20cm	151422-202	PHERO-lum XMW208R, 312nm/white, 20x20cm
151422-203	PHERO-lum XLW208R, 365nm/white, 20x20cm		

PHERO-lum Spare Parts

151491-001	UV-protection lid, 2 blocking edges, S Type housing	151491-002	UV-protection lid, 4 blocking edges, S Type housing
151491-003	UV-protection lid, 2 blocking edges, X Type housing	151491-004	UV-protection lid, 4 blocking edges, X Type housing
151491-005	UV-protection lid, 2 blocking edges, M Type housing	151491-006	UV-protection lid, 4 blocking edges, M Type housing
152251-101	Replacement tube, 365nm, 4W	152251-102	Replacement tube, 365nm, 6W
152251-103	Replacement tube, 365nm, 8W	152251-104	Replacement tube, 365nm, 4W BLB
152251-105	Replacement tube, 365nm, 6W BLB	152251-106	Replacement tube, 365nm, 4W BLB
152252-102	Replacement tube, 312nm, 6W	152252-103	Replacement tube, 312nm, 8W
152253-101	Replacement tube, 254nm, 4W	152253-102	Replacement tube, 254nm, 6W
152253-103	Replacement tube, 254nm, 8W		
152282-101	Replacement tube, 365nm, 15 W BLB	152282-102	Replacement tube, 365nm, 15 W
152282-103	Replacement tube, 312nm, 15 W	152282-104	Replacement tube, 254nm, 15 W

UV-Protection

Goggle & Face Shield

155200-001	UV-protection face-shield, transparent, colorless	155210-001	UV-protection goggles, transparent, colorless

Spectroline Hand Lamps

- A full range of models offering various combinations of UV wavelengths, intensities, sizes and wattages
- Corrosion-resistant, specular aluminum reflector optimizes UV irradiance.
- Unique LONGLIFE™ filter glass on short and medium wave lamps assures higher UV intensity and resists solarization longer.
- The versatile E-Series lamps are a key component of our CM Series and CC-80 UV viewing cabinets, the versatile E-Series lamps offer easy wavelength interchangeability, making these viewing systems ideal for numerous applications where a darkened environment is needed.
- All lamps come standard with attached convenient carrying handle.
- Accessories available include the SE-140 lamp stand

Spectroline EN Series

152201-001	EN 140-L, 1 x 4W, 365nm, Filter assembly	152201-002	EN 160-L, 1 x 6W, 365nm, Filter assembly
152201-004	EN 180-L, 1 x 8W, 365nm, Filter assembly	152201-005	EN 280-L, 2 x 8W, 365nm, Filter assembly

Spectroline EB Series

152202-002	EB 160-L, 1 x 6W, 312nm, Filter assembly	152202-004	EB 180-L, 1 x 8W, 312nm, Filter assembly
152202-005	EB 280-L, 2 x 8W, 312nm, Filter assembly		

Spectroline EF Series

152203-001	EF 140-L, 1 x 4W, 254nm, Filter assembly	152203-002	EF 160-L, 1 x 6W, 254nm, Filter assembly
152203-003	EF 260-L, 2 x 6W, 254nm, Filter assembly	152203-004	EF 180-L, 1 x 8W, 254nm, Filter assembly
152203-005	EF 280-L, 2 x 8W, 254nm, Filter assembly		

Spectroline ENF Series

152204-001	ENF 240-L, 2 x 4W, 365/254nm, Filter assembly	152204-002	ENF 260-L, 2 x 6W, 365/254nm, Filter assembly
152204-003	ENF 280-L, 2 x 8W, 365/254nm, Filter assembly		

Spectroline EBF Series

152205-002	EBF 260-L, 2 x 6W, 312/254nm, Filter assembly	152205-003	EBF 280-L, 2 x 8W, 312/254nm, Filter assembly

Spectroline ENB Series

152206-002	ENB 260-L, 2 x 6W, 312/365nm, Filter assembly	152206-003	ENB 280-L, 2 x 8W, 312/365nm, Filter assembly

Spectroline Hand Lamp Spare Parts

152251-001	Replacement tube, 4W, BL 365nm	152251-002	Replacement tube, 6W, BL 365nm
152251-003	Replacement tube, 8W, BL 365nm		
152252-002	Replacement tube, 6W, 312nm	152252-002	Replacement tube, 8W, 312nm
152253-001	Replacement tube, 4W, 254nm	152253-002	Replacement tube, 6W, 254nm
152253-003	Replacement tube, 8W, 254nm		

Spectrolinker XL-1000 / XLE 1000

Spectrolinker — the World's Most Advanced, Versatile and Accurate UV Crosslinker is Also the Easiest to Use!

The Spectrolinker was designed to be one of the most useful, multi-purpose instruments you can use in the lab. We built it with a "smart" microprocessor controller and unique true-UV-monitoring circuitry to enable you to get error-free results with greater speed, accuracy and safety than was previously possible. That's why we also eliminated the needlessly time-consuming adjustments, unnecessarily repetitive programming and unwarranted risk of sample damage you encounter with conventional crosslinkers and other UV equipment such as light boxes and transilluminators. Our ultimate goal is to make this revolutionary new instrument *your* most indispensable apparatus.
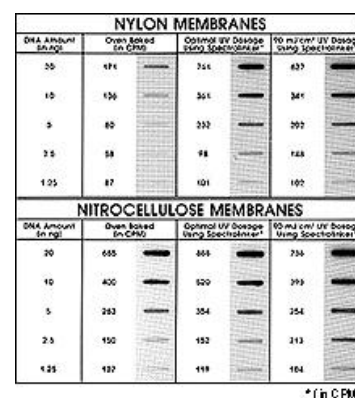
154201-001	XL 1000 A, 5 x 8W, 365nm		154202-001	XL 1000 B, 5 x 8W, 312nm
154203-001	XL 1000 5 x 8W, 254nm			
154211-001	XLE 1000 A, 5 x 8W, 365nm		154212-001	XLE 1000 B, 5 x 8W, 312nm
154213-001	XLE 1000 5 x 8W, 254nm			

- **Auto Repeat "Remembers" Previous Settings for Quick and Simple, One-Button Operation**
  You never have to enter the same numbers over and over. Just press "Start" to automatically repeat or to resume a user-interrupted operation. Should the door be opened during operation, the Spectrolinker alternately flashes "door" and the remaining time or energy. The "Reset" button cancels the latest settings.

- **Unparalleled Accuracy**
  Our state-of-the-art photo sensor provides true UV monitoring. Competitors' units employ inferior, bare photodiodes, which render them inaccurate by reading unwanted visible and infrared radiations. The Spectrolinker's exclusive, wavelength-specific, multi-stack UV photo sensor, which is factory-calibrated to NIST (NBS) specifications, provides the most precise UV-only dosage measurements. 254nm tubes are standard, with 312nm or 365nm tubes optional. Full-range-display resolution is accurate to ±5μW/cm2. EMI/RFI protection.

- **Super-Fast Crosslinking**
  Binds Samples in Under 30 Seconds. Vacuum-oven baking would take over two hours at 80°C. The Spectrolinker is over 240 times faster!

- **Safeguards Your Valuable Test Results and Optimizes Binding**
  After investing your valuable time and effort, the last thing you want is to have your improperly bound sample disappear during the wash cycle. No need to worry about that with the Spectrolinker! Just select the desired energy level and its unique true-UV-monitoring circuitry assures that the dosage you set is always precisely delivered. Even when the tubes age or if the AC-line power fluctuates, the crosslinker's automatic photoelectric feedback circuitry assures that your samples will be properly irradiated. And its "smart" microprocessor controller, large LED display and color-coded key pad reduce human error. An anodized-aluminum chamber prevents sample contamination due to rust.

- **Dramatically Enhances Hybridization-Signal Sensitivity as compared to conventional methods**
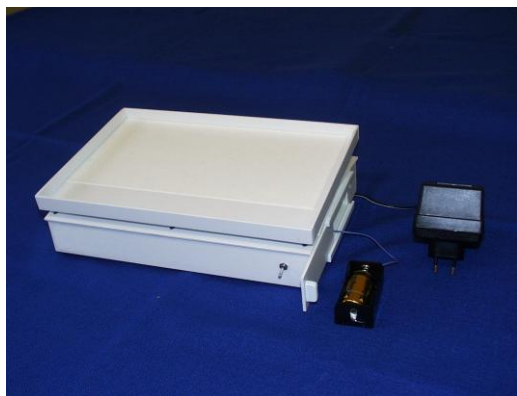

These autoradiograms demonstrate that UV crosslinking with the Spectrolinker (two right lanes) vastly improves DNA retention over conventional vacuum-oven baking (left lane) on both nylon and nitrocellulose membranes.

Tests were conducted at Cold Spring Harbor Laboratory (NY) to determine what effect, if any, different binding methods have on DNA retention. The autoradiographic results (on right) conclusively prove that UV irradiations with the Spectrolinker *significantly improves* retention over vacuum-oven baking. Three samples each of single-stranded, M13 DNA were applied in the amounts shown in the autoradiograms in GeneScreen[1] nylon and 0.45μm nitrocellulose[2] membranes by slot blotting. One membrane from each set of three was processed by vacuum baking for two hours at 80°C. The second and third membranes were UV irradiated by the Spectrolinker at 120mJ/cm^2 (optimal) and 90mJ/cm^2 dosages, respectively, and then hybridized to an RNA probe (in five-fold excess) according to Maniatis et al[3]. DNA retention was quantified as counts per minute (CPM) of the hybridized probe by an Ambis Radio-analytic Imaging System[4]

1. Manufactured by and Trademark of DuPont New England Nuclear, Boston, MA
2. Manufcatured by Schleicher & Schuell, Keene, NH
3. J. Sambrook, E.F. Fritsch, T. Maniatis, Molecular Cloning: A Laboratory Manual, Cold Spring Harbor Laboratory, 2nd Edition, 1989.
4. Manufactured by Ambis Systems, San Diego, CA
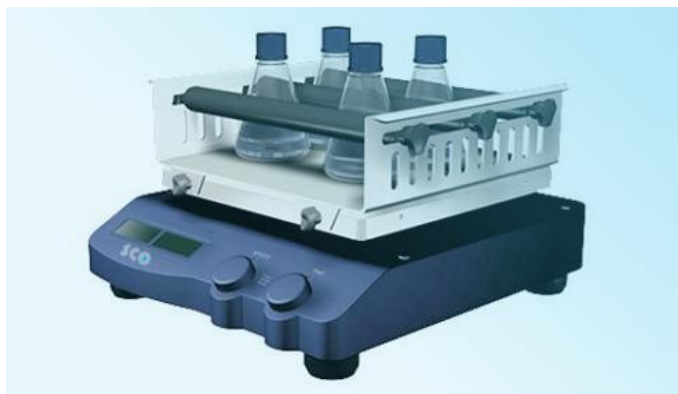
Shaker / Stirrer

PHERO-shaker mini

PHERO shaker mini is the ideal instrument to be used in your lab wherever you want. The table size of 29 x 19 cm offers the use for shaking of every standard sized gel. Because it comes with battery you can work independent from every power line. This gives the advantage of using this instrument inside of e.g. refridgerators or incubators.

135100-001	PHERO-shaker mini, 29 x 19 cm, 1.5V

SCO-shaker SO / SH

Heavey duty and compact, flat orbital / linear shaker with accurate motion. Speed and time control via digital display. Microprocessor driven with overload control. A big variety of accessories available for most user requirement. Easy to operate with high safety facilities.
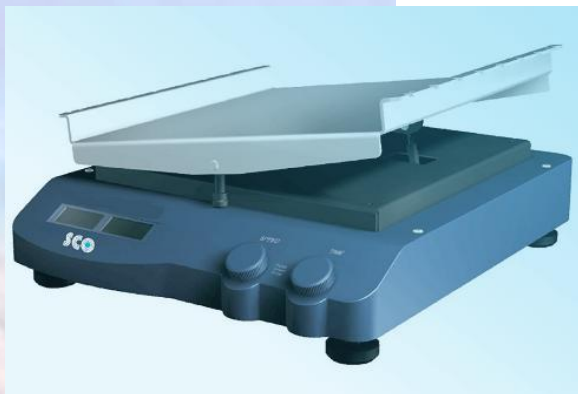
431200-001	PHERO-shaker SH-1, linear shaker	431200-002	PHERO-shaker SH-2, linear shaker
	4mm shaking distance		10 mm shaking distance
	100 – 350 rpm, LCD Display		100 – 350 rpm, LCD Display
	Max shaking weight: 2.5 kg		Max shaking weight: 7.5 kg
	Timer: 1…1199 min, LCD Display		Timer: 1…1199 min, LCD Display
431210-001	PHERO-shaker SO-1, orbital shaker	431210-002	PHERO-shaker SO-2, orbital shaker
	4mm shaking diameter		10 mm shaking diameter
	100 – 800 rpm, LCD Display		100 – 500 rpm, LCD Display
	Max shaking weight: 2.5 kg		Max shaking weight: 7.5 kg
	Timer: 1…1199 min, LCD Display		Timer: 1…1199 min, LCD Display

SCO-shaker SR1

Heavy duty and compact rocking shaker with accurate movement. Speed and time control via LCD digital display. Microprocessor driven with overload control. A big variety of accessories available for most user requirement. Easy to operate and high safety.

- Digital speed control and LCD display, speed and timer are shown simultaneously
- Wide range of platform accessories available for variable size vessels which holds vessels securely in place during mixing
- Smooth see-saw rocking action with angle 9°
- Built-in timer
- Timing and continuous operation modes

431230-001	PHERO-shaker SR1, see-saw rocking shaker Tile angle: +/- 9° Shaking speed: 0…70 rpm, LCD Display Timer: 1…1199 min/continous, LCD display Max. shaking weight: 10 kg	

SCO-Hot plate stirrer

- A heavy duty magnetic stirrer with modern design
- Stainless steel plates and hotplate porcelain enamel surface
- Variable speed of motor
- Powerful magnetic stirring drive with electronic speed control, constant speed even during changes in load
- High magnetic adhesion, prevent the stirrer bar escape
- Enclosed assembly (IP 42) and external brushless motor guarantees long service-free life-time
- Safe separate circuit with automatic stop of heating when the temperature exceeds over 350°C (SMH)
- Thermo sensor PT1000 optionally available (SMH)

431410-001 PHERO-stirr SM-135a Stainless steel plate Stirring up to 20 L capacity Max size stirring bar: 80 mm 1…1500 rpm stirring speed No heating unit	431410-002 PHERO-stirr SMH-135a Stainless steel plate Stirring up to 20 L capacity Max size stirring bar: 80 mm 1…1500 rpm stirring speed Heating: RT – 350°C, 500W, analog

SCO-Vortex Mixer

Universal shaker for test tubes and small vessels for continuous operation or automatic mode of operation by pressure on the top attachment. A big selection of attachments allows an extensive range of applications.

- Heavy duty vortex mixers suitable for touch or continuous operation
- Wide speed range: 0-2500 rpm/min, stepless adjustable.
- Various shaking applications with optional adapters (e.g. Eppendorf vessels)
- Adapters securely clicked onto appliance in any position
- Sturdy cast casing
- Specially designed silicone feet and steel base for excellent vibration damping
- Eccentric with oilless ball bearings

431410-001 PHERO-vort SM-135a	431410-002 PHERO-vort SMH-135a

Shaker / Stirrer

SCO-Hot plate stirrer

Digital Magnetic stirrer suitable for laboratory operation with new stiring technology. The instrument is heavey duty and easy to operate with glass ceramic working surface.

- **LCD Real-time display**

  Setting value and actual value can be displayed. Real-time monitoring of temperature and speed. The Model MSH-134d (LED) is equipped with digital temperature dispaly and analog speed control.

- **Extended application**

  PC can control and document all measuring values via RS232 interface. Parameter can be set to carry out safety monitoring.

- **Accurate temperature and speed control**

  The control technology effectively guarantees the temperature and speed precision.

- **Heating warning**

  The hotplate model has a residual heat warning function. LCD display would show "Hot" when plate temperature exceed over 50°C warning point.

- **Adjustable safety temperature**

  Unique safety temperature control system which has an adjustable temperature range of 100 - 580°C. System stops heating automatically once safety temperature is exeeded.

431400-001	PHERO-stirr SM-134d	431400-002	PHERO-stirr SMH-134d
	Ceramic plate		Ceramic heating plate
	Stirring up to 10 L capacity		Stirring up to 20 L capacity
	Max. size stirring bar: 80 mm		Max. size stirring bar: 80 mm
	1…1500 rpm stirring speed, LCD Display		1…1500 rpm stirring speed, LCD Display
	No heating unit		Heating: RT – 550°C, 500W, LCD Display
431400-003	PHERO-stirr SMH-134d (LED)		
	Ceramic heating plate		
	Stirring up to 20 L capacity		
	Max. size stirring bar: 80 mm		
	1…1500 rpm stirring speed		
	Heating: RT – 550°C, 500W, LED Display		

SCO-Microplate shaker

Compact, flat microplate shaker with accurate motion and speed control. The electronic keeps constant the set speed via rated/ actual speed comparison.

- Compact, universal small shaker suitable for 96 microtiter plates
- Supplied with intergrated but replaceable PS1.2 adapter
- Continuous operation
- Stepless speed regulation of motion
- External brushless motor reduces operating noises and increases motor life

431300-001	Microplate shaker SMP-1		
	Shaking diameter: 4.5 mm		
	Shaking speed: 0…1500 rpm		
	Max. shaking weight: 0.5 kg		

SCO-Dry Bath Incubator

- Temperature setting: analog
- Temperatur range: RT.. 105°C
- Temperature Accuracy: +/- 0.2°C
- Block Capacity: 3 Blocks

431100-001	Drybath DB005, 1 heating block	431101-001	Drybath DB006, 3 heating blocks

SCO-Water Bath

- Thermostatic water bath with microprocessor controller
- High effective circulation pumps grant homogenous temperature distribution in the bath tank
- Stainless steel bath tank and heavy duty construction
- Wide range of accessories and racks
- WB11 / WBD11 with 11 liter liquid volume
- WB22 / WBD22 with 22 liter liquid volume

431000-001	Waterbath WB11, analog temperature control	431001-001	Waterbath WB22, analog temperature control
431010-001	Waterbath WBD11, digital temperatrue control	431011-001	Waterbath WBD22, digital temperature control
431090-006	Lid for waterbath WB series		

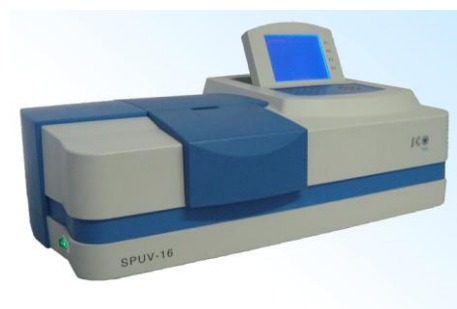## SCO UV/VIS Spectrophotometer
SPUV26

The SPUV-26 double beam UV/VIS spectrophotometer offers a high accuracy and reliability measurement to meet various application requirements. It can be used extensively for qualitative and quantitative analysis in such fields as biochemical research and   industry, pharmaceutical analysis and production, education, environmental protection, food industry, clinical examination, sanitation and anti-epidemic etc. The SPUV-26 UV/VIS double beam spectrophotometer is a scanning type with 4 measurement modes, wide range of wavelength: 190~1100nm, motorized 8-cell change and LCD display. Complete with 16 glass cells, 4 quartz cells, PC software.

- Wide wavelength range, satisfying requirements of various fields.
- Four options for spectral bandwidth selection, 5nm, 4nm, 2nm and 1nm, made according to customer's need and requirements of pharmacopoeia.
- Fully automated design, realising easy measurement.
- Optimized optics and large scale integrated circuits design, light source and receiver from well known manufacturer all add up to high performance and reliability.
- Rich measurement methods, wavelength scan, time scan, multi-wavelength determination, multi-order derivative determination, double-wavelength method and triple-wavelength method etc., meet different measurement requirements.
- Automatic 10mm 8-cell holder, changeable to automatic 5mm-50mm, 4-position cell holder for more choices.
- Data output via printer port.
- Parameters and data can be saved for user's convenience.
- PC controlled measurement can be achieved via USB port for more accurate and flexible requirements

440310-001	SPUV 26, UV/VIS Spectrophotometer, automatic		
	* Double Beam	* ~ 190 – 1100 nm	
	* Accuracy: ±0.3nm	* Reprod. <0.16 nm	
	* Accuracy: ±0.3%T	* Reprod <0.16%T	
	* Bandwidth: 2nm	* Modes: T,A,C,E	

SPUV/VIS 16

The UV/VIS Spectrophotometer presents a new generation of technology, which offers our clients high quality system at competitive price.

Technical features:
- Wide wavelength range, satisfying requirements of various fields
- The split- beam ratio monitoring system provides accurate measurements and enhances baseline stability.
- Five options for spectral bandwidth selection, 5nm, 4nm, 2nm, 1nm and 0.5nm, made according to customer's need the requirements of pharmacopoeia
- Fully automated design, realizing the simplest measurement.
- Rich measurement methods: wavelength scan, time scan, multi-wavelength determination, multi- order derivative determination, double-wavelength method, triple-wavelength method etc., meet different measurement requirements
- Automatic 10mm 8- cell holder, changeable to automatic 5mm- 50mm, 4-position cell holder for more choices.
- Data output can be obtained via printer port and RS-232 interface (RS485 and USB port optional)
- Parameters and data can be saved for user's convenience
- PC controlled measurement can be achieved for more accurate and flexible requirement.

440310-001	SPUV 16, UV/VIS Spectrophotometer, automatic		
	* Split Beam	* ~ 190 – 1100 nm	
	* Accuracy: ±0.3nm	* Reprod. <0.16 nm	
	* Accuracy: ±0.3%T	* Reprod <0.2%T	
	* Bandwidth: 2nm	* Modes: T,A,C,E	

SPUV 19

The UV/VIS Spectrophotometer present a new generation of technology, which offer high quality system at competitive price.

Technical features:

- Microprocessor control, 16×2 LCD display
- Auto zero and auto 100%T adjustment provided
- Calibration curve can be set up by either measuring or entering up to 10 standards or entering K and B factors directly via the keyboard
- Parameters can be saved for later use. Up to 10 calibration curves can be stored and edited for user's convenience
- Data can be printed on an optional desktop printer and downloaded to a PC through USB-port
- PC control provided for more accurate and flexible measurement requirements optional available
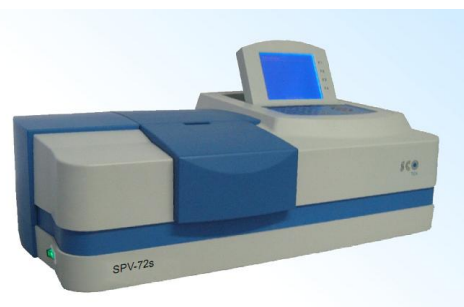- Auto-wavelength control optional available

440101-001	SPUV 19, UV/VIS Spectrophotometer	
	* Single Beam	* ~ 190 – 1100 nm
	* Accuracy: ±2nm	* Reprod. <1 nm
	* Accuracy: ±0.5%T	* Reprod <0.3%T
	* Bandwidth: 5nm	* Modes: T,A,C,E

SPV 72s

Our Spectrophotometer present a new generation of technology, which offers high quality system at competitive price. Model SPV-72s, visible single beam spectrophotometer, scanning type, 4 measurement modes. Operable wavelength range: 320~1100nm, 4-position manual cell holder up to 10cm cell, LCD display. Complete with 16 glass cells, 1 filter for calibration.
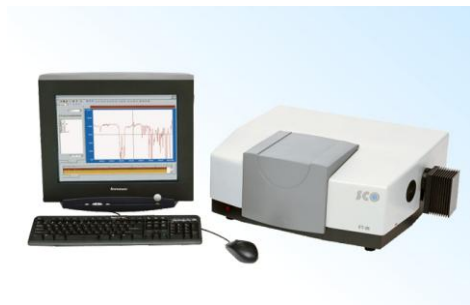
VIS Spectrophotometer (Single Beam) Features

- Single beam wavelength scanning in whole wavelength range of 320-1100nm.
- Three options for spectral bandwidth selection: 5nm, 2nm and 1nm, made according to customer's need and requirements of pharmacopoeia
- Manual 4-cell holder accomodates long path length cells up to 100nm.
- Optimised optics and electronics design, light source and detectors from the well known manufacturer ensure high performance and reliability.
- Rich measurement methods: wavelength scan, time scan, multi-wavelength determination, multi-order derivative determination, double-wavelength method and triple-wavelength method etc., meet different measurement requirement
- Data output can be obtained via a printer port and a USB-port (RS-485 optional)
- Parameters and data can be saved for user's convenience
- PC controlled measurement can be achieved for more accurate and flexible requirement

440110-001	SPUV 72s, VIS Spectrophotometer, automatic	
	* Single Beam	* ~ 320 – 1100 nm
	* Accuracy: ±0.5nm	* Reprod. <0.2 nm
	* Accuracy: ±0.5%T	* Reprod <0.2%T
	* Bandwidth: 2nm	* Modes: T,A,C,E

SCO FTIR Spectrophotometer

The Spectrophotometer present an updated technology, which offers high quality system at competitive price.

Unique cube-corner Michelson interferometer features not only small size and compact structure but also higher stability and low sensitivity to vibrations and thermal variations compared with conventional Michelson interferometers. Outside IR source design with easy replacement provides higher thermal stability. Stable interference is obtained without the need of dynamic adjustment. High intensity IR source adopts a reflex sphere to obtain even and stable IR radiation.

The application of programmable gain amplifier, high accuracy A/D converter and embedded computer improves the accuracy and reliability of the whole system. Fully sealed damp and dust-proof interferometer, adopting high performance, long lifetime sealing material and desiccator, ensures higher adaptability to the environment and increases accuracy and reliability in operation. High accuracy gold coated optics with less energy losses realise maximum energy efficiency and increase energy output.

Compatible PC control with user friendly, rich function software enables easy, convenient and flexible operation. Spectrum collect, spectrum conversion, spectrum processing, spectrum analyzing, and spectrum output function etc. can be performed. The instrument can be connected to PC via a USB port for automatic control and data communication, fully realising plug-and-play and raising the software flexibility. An optional external beam allows access to the widest variety of high sensitive peripheral sampling system, such as GC/IR interface and FTIR microscope. Various special IR libraries are available for routine search. Users can also add and maintain the libraries or set up new libraries by themselves.

The sampling compartment is wide enough for various accessories such as diffused/specular reflection, ATR, Liquid cell, Gas cell, and IR microscope etc. A PC controls the switch between internal and external light beams to enable the use of special IR accessories such as external IR microscope and GC/IR interface.

For liquid and powder sample analysis the ATR crystal sample holder is easy to operate and change. ZnSe, Ge and KRS-5 ATR crystals are available for choice.

Micro samples analysis, minimum sample size: 100μm (DTGS detector) and 20μm (MCT detector). Non-destructive sample analysis. Translucent sample analysis. Two measurement methods: transmission and reflection. Easy sample preparation.

It is a versatile diffuse reflectance and specular reflectance accessory. Diffuse reflection mode is used for transparent and powder sample analysis. Specular reflection mode is for measuring smooth reflective surface and coating surface. High light throughput, easy operation, no internal adjustment needed. Optical aberration compensation. Small light spot, able to measure micro samples. Variable angle of incidence. Fast change of powder cup.

441000-001	SCO SP-FTIR-1 Spectrometer	441000-002	SCO SP-FTIR-2 Spectrometer
	* Spectral range: 7800...400 cm^{-1}		* Spectral range: 7800...400 cm^{-1}
	* Resolution better 0.85cm^{-1}		* Resolution better 0.5cm^{-1}
	* Scanning Speed: 0.2 – 2.5 cm^{-1}/s		* Scanning Speed: 0.2 – 2.5 cm^{-1}/s
	* Beam splitted GE coated KBr		* Beam splitted GE coated KBr
	* IR Library: 11 IR Libraries (optional)		* IR Library: 11 IR Libraries (optional)

Pipettes, variable volume

923210-001	Standard Pipette **0.2 – 2 µl**
923210-002	Standard Pipette **0.5 – 10 µl**
923210-003	Standard Pipette **2.0 – 20 µl**
923210-004	Standard Pipette **10 – 100 µl**
923210-005	Standard Pipette **20 – 200 µl**
923210-006	Standard Pipette **100 – 1000 µl**
923210-007	Standard Pipette **1000 – 5000 µl**
923210-101	ECO Pipette **0.2 – 2 µl**
923210-102	ECO Pipette **0.5 – 10 µl**
923210-103	ECO Pipette **2.0 – 20 µl**
923210-104	ECO Pipette **10 – 100 µl**
923210-105	ECO Pipette **20 – 200 µl**
923210-106	ECO Pipette **100 – 1000 µl**
923210-107	ECO Pipette **1000 – 5000 µl**

Pipettes, fix volume

923110-001	Microliter pipette, **5µl** fix, tip ejector, Conformity certified
923110-002	Microliter pipette, **10µl** fix, tip ejector, Conformity certified
923110-003	Microliter pipette, **20µl** fix, tip ejector, Conformity certified
923110-004	Microliter pipette, **25µl** fix, tip ejector, Conformity certified
923110-005	Microliter pipette, **50µl** fix, tip ejector, Conformity certified
923110-006	Microliter pipette, **100µl** fix, tip ejector, Conformity certified
923110-007	Microliter pipette, **200µl** fix, tip ejector, Conformity certified
923110-008	Microliter pipette, **250µl** fix, tip ejector, Conformity certified
923110-009	Microliter pipette, **500µl** fix, tip ejector, Conformity certified
923110-010	Microliter pipette, **1000µl** fix, tip ejector, Conformity certified
923110-011	Microliter pipette, **5000µl** fix, tip ejector, Conformity certified

Pipette tips

923511-001	Pipette tips, PP, Neutral, 0.5 – 10 µl, 1000 pcs./bag, universal
923511-002	Pipette tips, PP, Yellow, 2.0 – 200 µl, 1000 pcs./bag, universal
923511-003	Pipette tips, PP, Blue, 100 – 1000 µl, 1000 pcs./bag, universal
923511-004	Pipette tips, PP, Neutral, 1000 – 5000 µl, 100 pcs./bag, Gilson, KB
923511-901	Pipette tip box, 0.5 – 20 µl, Neutral, 96 tips/box, autoclavable box
923511-902	Pipette tip box, 2.0 – 200 µl, Yellow, 96 tips/box, autoclavable box
923511-903	Pipette tip box, 100 – 1000 µl, Blue, 96 tips/box, autoclavable box

Space for your notes

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