

DALT

Large Format Vertical Electrophoresis System

Data File
2-D Electrophoresis

DALT is the premier large format vertical system for the second dimension in 2-D electrophoresis

DALT is an integrated system for reproducible high resolution, high throughput 2-D electrophoresis. The instrument and accessory modules are especially designed for multiple large format acrylamide gels. With a choice of slab gel thicknesses, it is equally suitable for analytical and micro-preparative applications. The system includes modules for casting, running and electrophoretic blotting of homogeneous and gradient acrylamide slab gels, 23 × 19 cm.

The core of the system is the compact DALT electrophoresis tank. The tank serves both for running up to ten polyacrylamide slab gels and for blotting five gels, under identical conditions.

The most reproducible 2-D analyses start with first dimension isoelectric focusing separations on immobilized pH gradient (IPG) gels. Choose either IPGphor™ or Multiphor® II IEF systems for running up to 12 pre-cast Immobiline® DryStrip IPG gels simultaneously. The 18-cm IPG strips fit easily into the gel cassette with room at both ends for second dimension standards.

The electrophoresis tank is efficiently cooled through a built-in heat exchanger and buffer circulation pump in combination with a MultiTemp® III thermostatic circulator. The EPS 2A200 Power Supply delivers closely controlled power, up to 2000 mA, to the unit in both separation and blotting modes. The careful control of temperature and power are essential to reproducible second dimension separations and blot transfers.

Large format slab gels are conveniently cast in hinged gel cassettes with permanently bonded spacers. The unique glass cassette construction allows fast casting set up.

The DALT multiple gel caster accepts up to 26 cassettes for casting multiple identical slab gels. It is easily connected to the DALT gradient maker for consistent acrylamide gradient SDS gels.

With the DALT blotting kit that fits into the DALT electrophoresis tank, the simultaneous electrophoretic transfer of up to five gels is highly uniform and reproducible.



The DALT multiple vertical slab electrophoresis tank with MultiTemp III thermostatic circulator and EPS 2A200 power supply.

- Gels are 23 × 19 cm (w × h) and either 1.0- or 1.5-mm thick.
- Up to 10 slab gels run simultaneously.
- Integral 20 liter/min pump and ceramic heat exchanger assure uniform gel temperatures.
- Gels simply “slide in” between flap seals to load into the electrophoresis tank.

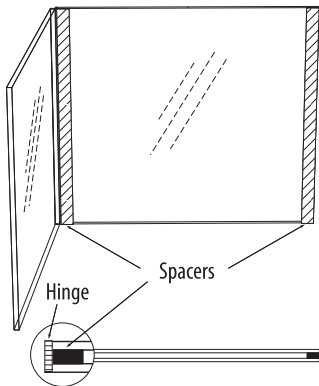


The DALT system includes instrument and accessory modules for simultaneously casting, running or blotting multiple acrylamide slab gels with high reproducibility

The DALT gel cassette

The slab gel cassette requires no assembly—just open and close it like a book. The two glass plates are attached along one edge by a flexible silicone rubber hinge and the spacers (1.0- or 1.5-mm thick) are permanently attached to one of the glass plates. No clamps or tape are required in the DALT multi-gel casting unit.

The 25 × 20 cm cassette produces a gel approximately 23 cm wide and 19 cm high, a width that easily accommodates an 18 cm IPG strip



with additional room for molecular weight markers and standards.

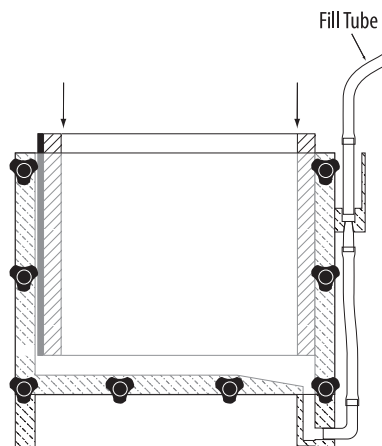
After separation, gels are removed simply by opening the “book” and lifting out the slab gel. The cassette is easily cleaned as a unit and is dishwasher-safe.

DALT Multiple Gel Caster

Casting large batches of large format slab gels simply and reproducibly introduces technical issues on a scale not encountered with conventional slab gel casting:

- acrylamide solutions shrink upon polymerization,
- acrylamide polymerization is an exothermic reaction which requires that gradient gels polymerize from the top down,
- acrylamide solution must not be allowed to polymerize in the gradient maker, tubing or pump.

The DALT Multiple Gel Caster has a unique design which effectively addresses these problems. Acrylamide is introduced into the casting unit through a hydrostatic balance chamber on the side of the casting unit. Before casting starts, the balance chamber is filled with a dense, non-polymerizing solution. After the gradient has been pumped in, the fill tubing is disconnected at the balance chamber, allowing the gradient maker to be cleaned without disturbing the gradient. The solution in the balance chamber flushes acrylamide out of the final segment of the filling tubing and provides compensating volume for the polymerization-induced shrinkage. The caster is easy to load and unload with a removable front wall.



DALT Gel Cassettes



Specifications

Glass cassette dimensions (w × h)	.....	25.5 × 20.4 cm
Slab gel dimensions	.....	1.0 mm × 23 × 19 cm
	.....	1.5 mm × 23 × 19 cm

DALT Gradient Maker with Peristaltic Pump



Specifications

Gradient maker	
Dimensions (h × w × d)	..... 54 × 19 × 18 cm
Maximum gradient volume	..... 2,200 ml
Weight	..... 5.5 kg
Pump	
Dimensions (h × w × d)	..... 13 × 26 × 27 cm
Pumping rate	..... 140-1,680 ml/min
Weight	..... 5.4 kg

DALT Multiple Gel Caster



Specifications

Gel capacity	
1.0 mm thick	..... 26 gels
1.5 mm thick	..... 23 gels
Acrylamide solution volume (total)	..... 1,800 ml
Dimensions (h × w × d)	..... 29 × 34 × 25 cm
Weight	..... 33.5 kg

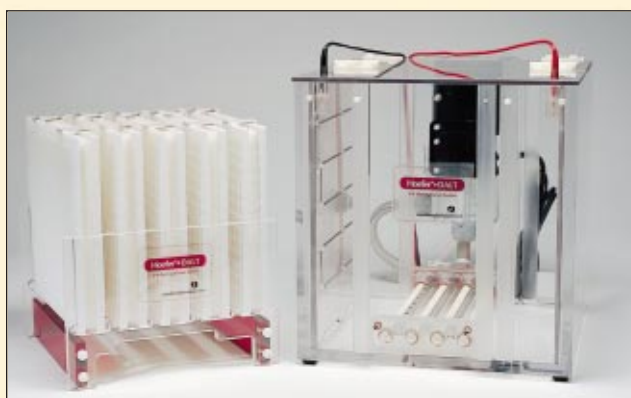
DALE Multiple Electrophoresis Tank



Specifications

Gel capacity, 1.0 or 1.5 mm thick	10
Electrophoresis buffer volume	20 liters
Blotting buffer volume	25 liters
Buffer circulation pump rate	20 liters/min
Dimensions (h × w × d)	38 × 47 × 33 cm
Weight	16.8 kg

DALE Blotting Kit



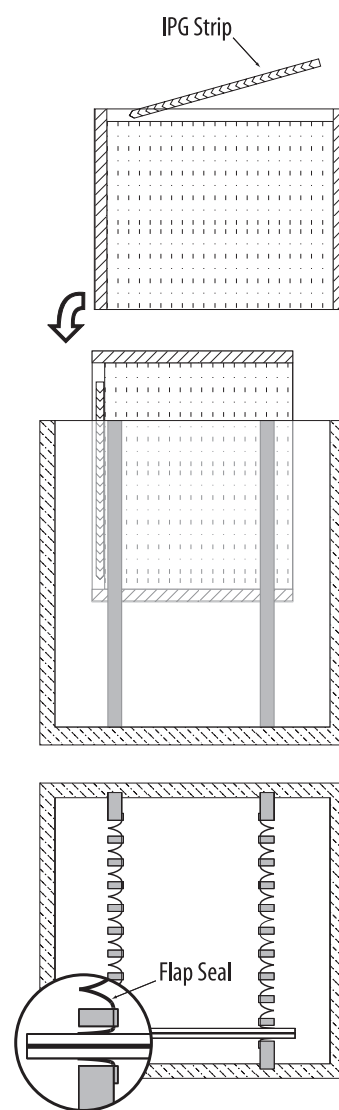
Specifications

Capacity	5 gels
Rack dimensions (h × w × d)	28 × 23 × 26 cm
Weight	3.2 kg

The DALE Electrophoresis Tank

“Vertical gel separation” takes on a new meaning in the DALE electrophoresis tank. After sealing the IPG strip on the top of the slab gel with agarose, the gel cassette is turned a quarter of a turn counter-clockwise and then inserted to the buffer-filled tank. There, separation takes place from left to right, not top to bottom.

The cassettes simply slide into the tank from the top and are held in place by silicone rubber flap seals. These seals provide a barrier between the anodic and cathodic chambers with or without a cassette. If the SDS equilibration buffer includes bromophenol blue, migration of the blue dye front can be easily observed through the transparent front of the electrophoresis tank as a confirmation that the cassettes were properly inserted.



The thick-walled acrylic construction of the tank readily withstands the weight of the large volume of buffer required. The tank can also be used to mix the electrophoresis buffer in place—fill with water, add the liquid and dry buffer reagents, then turn on the pump. The efficient circulation assures thorough mixing in just a few minutes. When thorough clean-up is required, the gel support rack and electrode panels are readily removable.

The DALE Blotting Kit

For electrophoretic blot transfers, the gel support rack can be quickly replaced by the blot transfer rack. The blotting adapter holds five plastic transfer cassettes. After the gel and the membrane are equilibrated in transfer buffer, the transfer “sandwich” is assembled in the transfer cassette which simply slides into guide slots in the transfer rack. The sinuous electrode pattern produces a uniform voltage field for even transfers.

DALT system companion products

PlusOne gel casting chemicals

We recommend the use of PlusOne® high quality reagents for gels, detergents and buffers for reproducible 2-D electrophoresis. See the Amersham Biosciences *BioDirectory '98* for a complete catalog of electrophoresis chemicals.

EPS 2A200 Power Supply

This power supply provides up to 2000 mA for multiple gel applications and both tank- and semi-dry electrophoretic blotting.

Automated Gel Stainer

This automated staining system eliminates the tedious work and imprecision of staining slab gels. Its pre-programmed or user-programmed protocols automatically control the entire staining process for improved sensitivity and reproducibility. For additional reproducibility and convenience of protein detection, use the PlusOne Silver Staining kits and Coomassie Blue R-350 tablets with the Automated Gel Stainer.

Ordering Information

80-6068-79	DALT Multiple Electrophoresis Tank with buffer circulation pump, 115 VAC
80-6068-98	DALT Multiple Electrophoresis Tank with buffer circulation pump, 230 VAC
80-6406-99	EPS 2A200 Power Supply, 200 V, 2,000 mA
80-6067-27	DALT Gel Cassette for 1.0 mm thick gel, 25 × 20 cm
80-6067-27	DALT Gel Cassette for 1.5 mm thick gel, 25 × 20 cm
80-6330-61	DALT Multiple Gel Caster (order gel cassettes separately)
80-6067-65	DALT Gradient Maker with peristaltic pump, 115 VAC
80-6067-65	DALT Gradient Maker with peristaltic pump, 230 VAC
80-6069-17	DALT Blotting Kit with rack, 5 transfer cassettes and sponges, blotting paper (50 pc)
80-6069-55	DALT Transfer Cassette with 2 sponges
80-6069-93	DALT Blotting Paper 24 × 20 cm (50/pkg)