

Phoenix Liquid Handling System

Fast ... Accurate ...

Compact ... Precise



The Phoenix is a multiposition, high-throughput liquid-handling platform used around the world that incorporates a space-saving design with flexible dispensing options. The competitively priced Phoenix provides increased efficiency and cost-effectiveness. It is designed to meet the demanding requirements of protein crystallography, high throughput screening and genomics laboratories. This unique instrument combines the precise low-volume dispensing capabilities of a syringe head with an on-the-fly non-contact nanodispenser.



Please note there is also a personal sized version of the Phoenix available: the “**Gryphon**” with 2 plate positions and optional dispensing heads for 96 or 384 flexible needles or for pipette tips. Further details upon request.



Protein Crystallography System

Ideal for Protein Crystallography

The Phoenix has found its widest use in the Protein Crystallography area, where its accuracy, speed and precision makes it the perfect instrument for doing sitting drop, hanging drop and microbatching. It takes less than 50 seconds to dispense the protein and the screen to the small wells or membranes. The speed of dispensing the screen and protein eliminates the problem of evaporation even when dispensing as little as 100 nanoliters. Both the 96 syringe head and the nanodispenser have a large volume range. The 96 syringes are equipped with flexible needles that will not be damaged in the event of a misplaced plate. The 96 head can dispense from 100 nanoliters to 1000 microliters and the nano dispenser has a range of 100 nanoliters to over 10 microliters. The precision and accuracy are found in the graphs that follow.

Quick Change Dispensing Heads

The Phoenix accomplishes fast, efficient liquid handling by moving air-tight seals inside 96 or 384 precision glass syringes arrayed in microplate spacing. The innovative design of the Phoenix dispensing head allows users to easily remove the entire syringe head for servicing or for changing to a different syringe style. An operator can change syringe heads in minutes, without the use of any tools. The removable head design enables users to optimize the configuration of the Phoenix for a specific application by installing the proper dispensing head. The 96-syringe head is available in 100, 250, 500, 1000 volumes with flexible needles - or choose the 384 head with flexible needles.

Nine Plate Position Deck

The Phoenix has nine assay positions: 6 source or destination plate positions, 2 reagent positions, 1 wash station position, and 1 nano wash station. All motion is verified through the use of encoders. The deck will accommodate deep well blocks as well as 96, 384, 1536, or 3456-well plates.



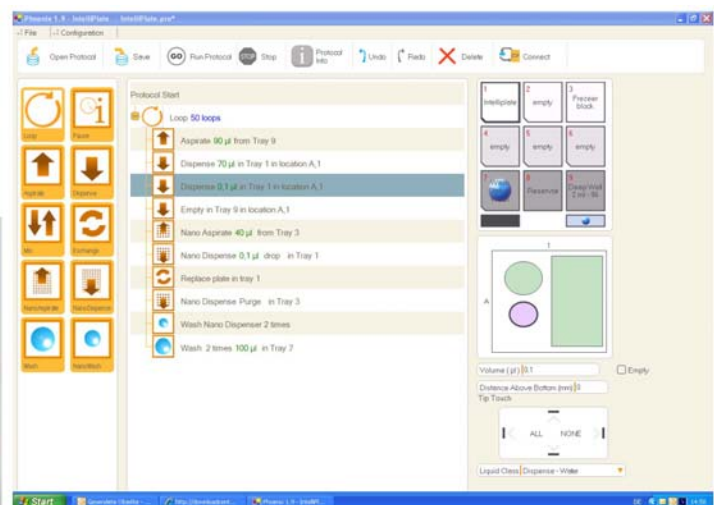
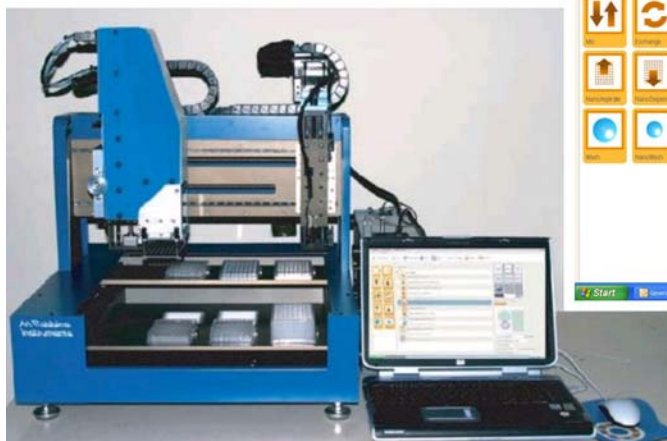
Specifications

Size: (w x d x h) 63,5 cm x 68,6 cm, x 73,6 cm
(25 x 27 x 29 inches)

Weight: 64,4 kg

Graphics-Based Drag-and-Drop Software

Easy-to-learn and easy-to-use graphical interface features drag-and-drop protocol creation and real time protocol validation. The Windows-based software allows for user control of all parameters to optimize sample dispensing. Plates can be easily selected from the plate library, or new plates can be quickly defined.



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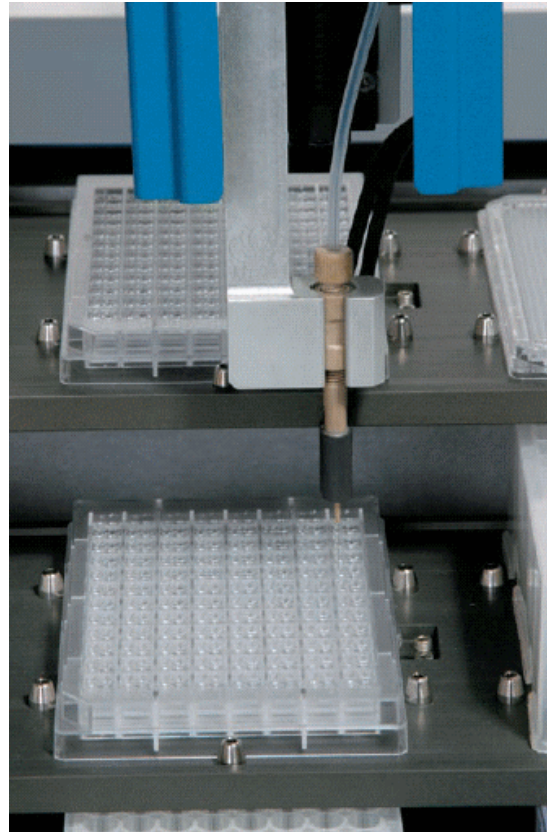
PHOENIX Protein Crystallography System

Washing

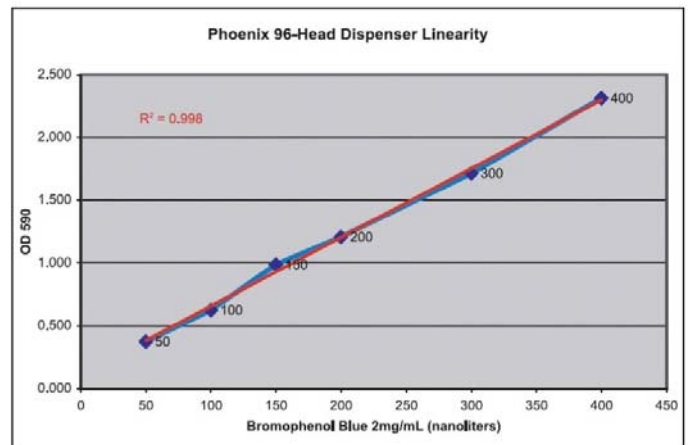
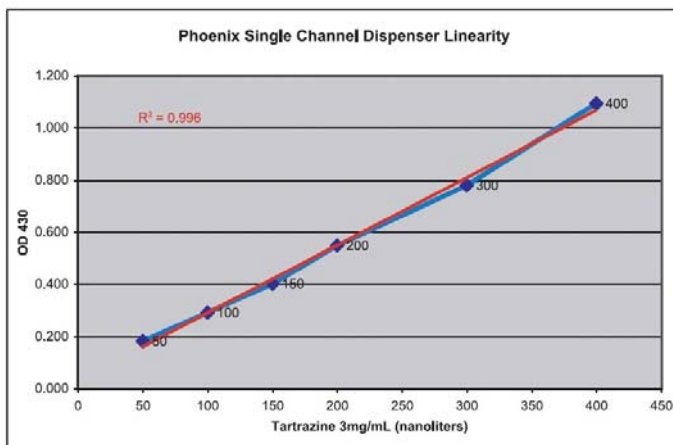
The Phoenix system includes computer controlled peristaltic pumps and wash reservoirs for the syringe head as well as the nanodispenser.

Fast, Accurate, Non-contact Dispensing

The optional non-contact dispensing head is capable of dispensing volumes down to 50 nL. With on-the-fly dispensing, a 96-well plate can be filled in as little as 20 seconds. The system uses self-contained air pressure and a vacuum pump to aspirate and dispense, so there is no dilution or contamination with system liquid, as is common with other dispensers. Samples can be recovered with no contamination with system liquid. The nanodispenser is now available in 1- and in 4-channel versions.



Phoenix with 100 μ L 96-Head with Flexible Needles and Single Channel Dispenser					
Dispense Volume nL	96 head dispenser (OD 590)	CV%	Nano dispenser (OD 430)	CV%	
400	2.312	4.28	1.095	3.25	
300	1.712	4.33	0.781	3.84	
200	1.206	4.82	0.550	3.61	
150	0.988	2.92	0.404	3.33	
100	0.623	3.09	0.292	3.83	
50	0.375	5.45	0.183	4.13	
0 (background)	0.068	1.91	0.072	1.67	





To order the **Phoenix System**, specify the Phoenix Base Module and the appropriate Phoenix Head Module(s), Phoenix Wash Module and/or a Phoenix Nano Module, depending on your requirements. All modules will be fully integrated and verified as an operational System.

The Phoenix Base Module consists of the Phoenix frame, plate platforms, motors, computer and software. This module provides drive connections and fittings for other modules used to configure a system to fit your needs.

To order, use the following catalogue number:

Description	Catalogue number
PHOENIX BASE MODULE	600-0000-00 (with desk top PC) 600-0000-01 (with laptop)

The Phoenix Head Module contains the dispensing syringes for a specific application. Phoenix head modules are easily removable and interchangeable. To order, use the following catalogue numbers:

Description	96-syringe Cat.-No.	384-syringe Cat.-No.
100 µl, FLEXIBLE SYRINGES, Nitinol	600-1010-00	600-1110-00
250 µl, FLEXIBLE SYRINGES, Nitinol	600-1011-00	NOT AVAILABLE
500 µl, FLEXIBLE SYRINGES, Nitinol	600-1012-00	NOT AVAILABLE
1 ml, FLEXIBLE SYRINGES, Nitinol	600-1013-00	NOT AVAILABLE

The Phoenix Wash Module contains the wash pumps, tubing and connectors and appropriate reservoir. If you require a wash module for your application, use the following catalogue numbers:

Description	96-syringe Cat.-No.	384-syringe Cat.-No.
PHOENIX WASH MODULE	600-2000-00	600-2100-00

The Phoenix Nano Module contains the mechanism for non-contact dispensing. If you require a nano module for your application, use the following catalogue numbers:

Description	1-Channel Cat.-No.	4-Channel Cat.-No.
PHOENIX NANO MODULE	600-3000-00	600-4000-00

New designs are being developed. Contact us for details. Prices upon request.

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