

Protein Crystallography

Gryphon



Protein Crystallography
Lipidic Cubic Phase Option

Crystal Phoenix



Protein Crystallography
HTS / Genomics

Scorpion



Screen Building
Combinatorial Compound Assays

CrysCamplus



Protein Crystal (UV) Imaging

CrysCamUV



Protein Crystal UV-Imaging

Plate hotel options for CrysCamUV



Plate Storage and Shuttle

Chemistry and general liquid handling

Phoenix



Organic Solvent Transfers
Enzyme Optimization

Scorpion (for Chemistry)



Synthetic Chemistry
HTS / Kinetics / LC-MS

Cobra



Biochemical Assays
PCR Master Mix

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Gryphon, Crystal Gryphon, Gryphon LCP and Crystal Gryphon LCP

Modular Liquid Handling Systems



Crystal Gryphon



Crystal Gryphon LCP

	Gryphon	Gryphon LCP	Crystal Gryphon	Crystal Gryphon LCP
LCP Dispenser	Upgradeable	✓	Upgradeable	✓
Nano Dispenser	Upgradeable	Upgradeable	✓	✓
XY Stage	✓	✓	✓	✓
Wash Module	✓	✓	✓	✓
96 Head: 100 µl	✓	✓	✓	✓
24 Head: 100, 250 µl	Optional	Optional	Optional	Optional
348 Head: 100 µl	Optional	Optional	Optional	Optional
96 Head: 250, 500, 1000 µl	Optional	Optional	Optional	Optional

“Gryphon” general features:

- No disposables, cutting operating costs
- The “All-In-One” Microdispenser enables screen and protein drop-setting in one protocol
- Modular design allows for custom set-ups
- Sitting and hanging drop vapour diffusion crystallization experiments
- Batch crystallization drops (under oil)
- Combines individual precipitant and protein solutions into crystallization trial wells
- X-Y stage with two plate positions and one wash station
- Low maintenance

96 Syringe Head*:

- 96 flexible Nitinol needles (memory metal)
- Dispensing accurate 100 nl to 100 µl volume with a CV of less than 5 %
- Aspiration from different deep well blocks (e. g. 1 ml and 2 ml)
- Aspiration from reservoir wells into crystallization wells of one crystallization plate
- 96 head is suitable for further volume options such as 250 µl, 500 µl or 1000 µl
- For dispensing buffers and additives

*= 24 Syringe Head and 384 Syringe Head are further options

Optional 24 syringe head:

- Set-up of optimization plates
- Suitable for work with deep-well, 24- and 48-well plates

Compatibility with Plates:

- Suitable for work with deep well, 96-, 384- and 1536-well plates
- Compatible with most crystallization plates with up to 5 crystallization wells and one reservoir well
- Common plates from several companies will be included in the software (ARI Intelli-Plates, Greiner, Swissci MRC, Corning, Molecular Dimension)
- Further plate definitions can be added in the software

Nano Protein Dispense Head (optional):

- Non-contact nano-dispenser for dispensing proteins
- Dispenses 50 nl up to 100 µl with a CV of less than 5 % (1-, 2- or 3-channels possible)
- Two options to aspirate/dispense: air backed and liquid backed
- Sample recovery possible to minimize total consumption of protein solutions
- Suitable for work with 24-, 48-, 96-, 384- and 1536-well plates

LCP (Lipidic Cubic Phase) module (optional):

- Matrix seeding and for highly viscous samples
- Syringe based lipidic cubic phase, bicelle dispenser
- Lipidic sponge-phase screen for membrane proteins
- Integrated LCP mixing station
- Dispensing 25 nl of viscous solutions with a CV < 5%
- Quick change syringe design makes loading the syringe easy
- Self-aligning syringe needle eliminates the need for constant calibration
- Aspirate from 0.2 ml tubes with an optionally added longer needle
- 8 tube positions for seeding applications
- 96-well sandwich plate ready to seal in less than 2 minutes

Software:

- “Easy-to-learn” and “easy-to-use” graphical interface
- Drag-and-drop protocol creation and real-time protocol validation
- Windows-based software
- Plates can be easily selected from the plate library, or new plates can be quickly defined

Specifications:

Dispense volumes:	96 Head:	100 nl to 100 µl
	Nano:	50 nl to 100 µl
	LCP:	25 nl to 2 µl
Size:	Base (w x h x d):	59 cm x 51 cm x 59 cm, 31 kg
	Wash (w x h x d):	17 cm x 33 cm x 36 cm, 2.5 kg
	Nano (w x h x d):	15 cm x 24 cm x 41 cm, 8.4 kg
Software:	Windows 10	
Prices:	Upon request	

Crystal Phoenix

High-throughput Liquid Handling Platform



Crystal Phoenix general features:

- No disposables, cutting operating costs.
- Designed to meet requirements of protein crystallography, high-throughput screening and genomics laboratories.
- Nine assay positions: 6 source or destination plate positions, 2 reagent positions, 1 wash station position.
- Windows-based drag-and-drop software.
- Closed-loop motion control on each axis: verification of task completion via encoders on each motor.
- Integrated wash-system with computer controlled peristaltic pumps and wash reservoirs for the 96-syringe head as well as the nano-dispenser.
- User-friendly software enables real-time protocol validation.
- Software has an integrated predefined plate library containing most commonly used microplates. New plates can be added easily to the software.

96-head Dispenser:

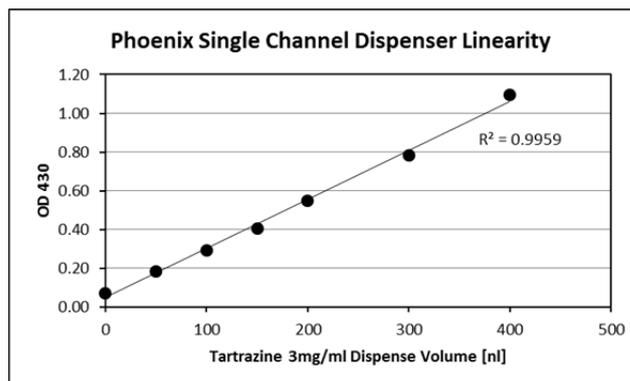
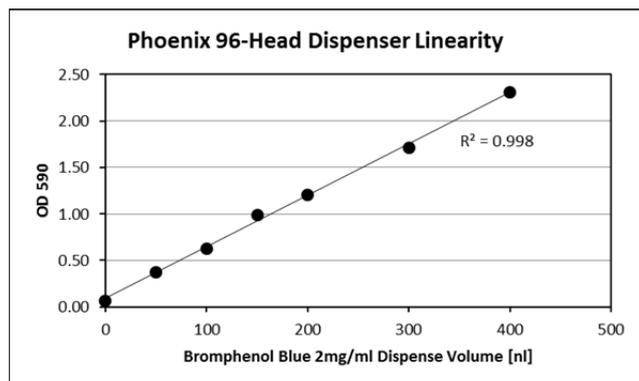
- 96- or 384-channel positive displacement syringe heads with flexible Nitinol-needles.
- Head volumes of 100, 250, 500, 1000 μ l available.
- Dispense head can be exchanged easily for servicing within minutes.
- Dispense volumes down to 100 nl with a CV < 5 %.

Single Channel Dispenser:

- Optional non-contact Nano-Head can accommodate 1-, 2-, 3-, or 4-channels to deliver volumes as low as 50 nl with a CV < 5 %.
- For set-up of sitting drops, hanging drops and microbatch reactions.
- < 50 sec. to dispense protein and screen to the small wells or hanging drop seals.
- The speed of dispensing the screen and protein eliminates the problem of evaporation even when dispensing as little as 100 nl.
- Gradient dispensing possible.
- Nano-dispenser can dispense viscous liquids up to 30 % glycol or 20 % PEG4000.

Dispensing accuracy of Phoenix with 100 µl 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



96-Head Dispenser



Single Channel Dispenser

Specifications:

Dispense volumes:	96 Heads:	100 nl to 100 µl
	Nano:	50 nl to 100 µl
Size:	Base (w x h x d):	63.5 cm x 73.6 cm x 68.6 cm / 64.4 kg
	Wash (w x h x d):	17 cm x 33 cm x 36 cm / 2.5 kg
	Nano (w x h x d):	15 cm x 24 cm x 41 cm / 8.4 kg
Electrical:	Base:	120/240 Vac, 3 A, 50/60 Hz
	Wash:	120/240 Vac, 2 A, 50/60 Hz
	Nano:	120/240 Vac, 1,5 A, 50/60 Hz

Cat. No. : 602-0001-10 → Crystal Phoenix with desktop computer

Cat. No. : 602-0001-11 → Crystal Phoenix with laptop

Digital Microscope for Protein Crystal Observation and Documentation



The CrysCam™ Digital Microscope allows you to capture the images of an entire plate with a click of the mouse. The stage and easy-to-use software automatically capture the image of each well and then moves to the next. With the small footprint, the device fits into a small space and can also be set up in a cold room. The CrysCam™ can be used to see crystals during crystallization, instead of looking through a microscope. The high resolution and precise X-Y stage easily mounts to the CrysCam™ base.

CrysCam™ features:

- Compatible with 96-well, 24-well Linbro and Terasaki plates (see adapters - overleaf).
- Reads a 96-well plate in less than three minutes.
- Can be used in a cold room at 4 °C.
- Quality par focal zoom lens with iris.
- Integrated cross polarization.
- 6.5 x zoom with 3.87 mm x 5.16 mm - 0.6 mm x 0.8 mm field of view.
- 3 Mpix CMOS, 8.38 mm sensor USB cameras.
- Modular and upgradeable components.
- Smooth large base platform with integrated LED lighting.
- Image acquisition and processing software.
- Easy-to-use Windows software (Windows.NET).
- Integrated scoring database for analysis of score in the software.
- Accurate and precise closed-loop control system.
- Predefined plate library makes choosing the right well location quick and easy.
- Stage resolution down to 0.0033 mm.
- Size: (w x h x d) 44.45 cm x 33.02 cm x 34.29 cm, 10.66 kg
- Users can upgrade their system to a *CrysCamplus*



Camera head

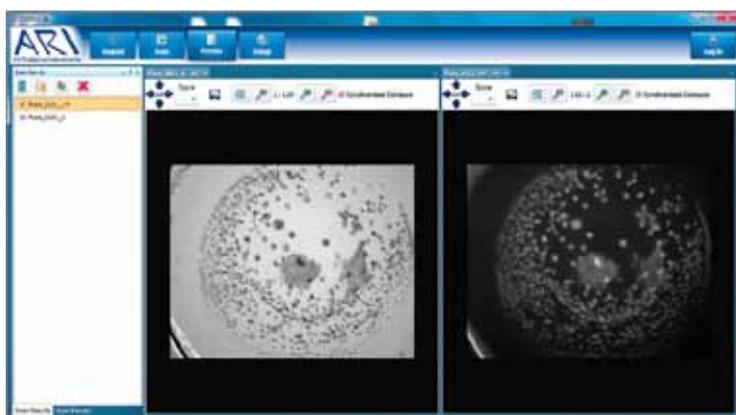
CrysCam^{plus}

NEW!

**Digital Microscope for Protein Crystal Observation and Documentation
with visible and UV-light**

CrysCam^{plus} features:

- Modular customized configurations.
- Available with 1 or 2 objectives: 5 x, 10 x, 15 x
- View both visual and UV-images for any well side-by-side.
- Monochromatic 6 Mpix camera.
- Compatible with polarization and fluorophores such as CY3 and GFP.
- Score and compare wells of interest.
- Compatible with all SBS format plates, LCP slides, Linbro, and VDX plates.
- Can be placed in a cold room.
- Any existing CrysCamTM can be upgraded to a CrysCam^{plus}.



- The software makes it quick and easy to compare UV and visible images or sets of images taken on different days.
- The magnification and position of the well in each viewing window can be synchronized for easy comparison.
- Multi-seat software licenses allow all users to view images from any computer.

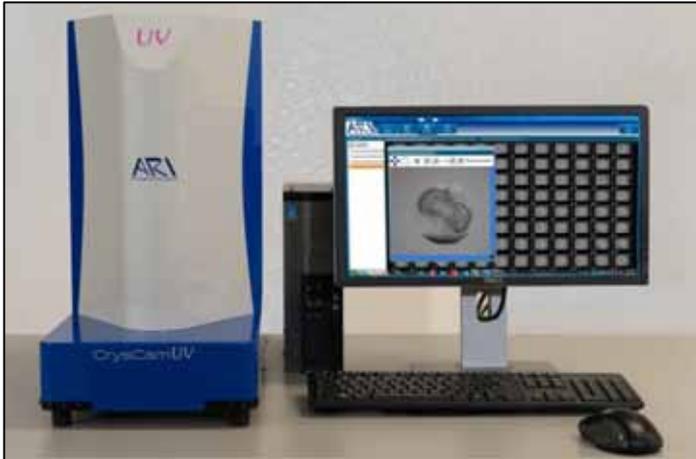
LCP Slide: 50 nl + 800 nl drop size

Ordering information:

- Cat. No.:** 610-1000-10 → CrysCamTM Digital Microscope System with **desktop** computer
- Cat. No.:** 610-1000-11 → CrysCamTM with same features as 610-1000-10, but with **laptop**
- Cat. No.:** 610-8000-10 → CrysCam^{plus} Digital Microscope System with **desktop** computer
- Cat. No.:** 610-8100-01 → Upgrade CrysCam^{plus} Digital Microscope System for existing CrysCamTM users
- Cat. No.:** 610-1001-01 → Plate Adapter for CrysCamTM – Linbro Plate
- Cat. No.:** 610-1001-02 → Plate Adapter for CrysCamTM – Q Plate
- Cat. No.:** 610-1001-03 → Plate Adapter for CrysCamTM – Terasaki Plate
- Cat. No.:** 25-1000-50 → Hood for CrysCamTM System (dust protection made from acryl)

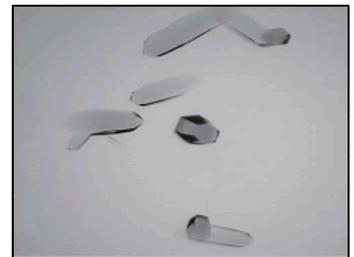
CrysCamUV

Protein crystallization imaging system with UV and visible light, and options for working with fluorophores



CrysCamUV features:

- Automatically scan the plate and capture visual and UV images and save for review at any time.
- Scan multiple wells in one run, possible to scan sub-wells.
- View both visual and UV image for any well side-by-side (see overleaf).
- Capture images with two different wavelengths in the UV-spectrum: 334 nm and 365 nm.
- Customized filter options for working with fluorophores available e. g. Texas Red or GFP
→ Please contact us for more information!
- The CrysCamUV can be used to capture crystal images in nano size drops.
- Ability to capture multiple slices and create a highly detailed image of the complete drop (see image below).
- Powered focus and zoom through the software control.
- Score and compare wells of interest.
- Software offers integrated database for analysis and score.
- Parfocal lens remains focused when zooming.
- Camera with a resolution of 2750 x 2205 (6.0 MPix) and sensor size of 2.54 cm.
- Digital image of 2.37 microns/pixel with a minimum zoom to 0.7 microns/pixel.
- Can flag wells of interest.
- Can view individual wells and sub-wells with or without a polarizer.
- Compatible with all plates in SBS-sized format and Linbro plates.
- Determine crystal X-Y-Z position for use with in-situ crystal diffraction.
- Filter removes UV reflections from plates.
- Integrated cooling function can set temperature of the camera down to -10 °C.
- Enclosure covers lens and plates to block stray light.
- Size: (w x h x d): 60.96 cm x 53 cm x 35.56 cm, 18 kg



Ordering information:

Cat. No.: 610-9000-10 → CrysCamUV with desktop computer and adapter for Linbro plates

Cat. No.: 610-9101-01 → Filter set for Texas Red Option on CrysCamUV

Cat. No.: 610-9101-02 → Filter set for GFP Option on CrysCamUV

Plate hotel options for the CrysCamUV



The **CrysCamUV (CCUV) with plate storage system** is for automated visible and ultraviolet (UV) imaging of protein crystallization plates with nanolitre volume drops in standard or low profile SBS-format, and Marienfeld/Hampton LCP sandwich glass. The system consists of the ARI CCUV integrated with a plate storage and shuttle system and has an integrated barcode reader linking date, well and camera details to images and plates. The CCUV with the integrated high capacity plate storage system has capacity for standard and/or low profile SBS-format plates and LCP sandwich glass plates or any combination of the three. Various hotel models can be specified, and are available with 42, 210 and 504 storage capacity.

Features of the combined system (preliminary data):

- The CCUV system supports user defined automated scheduling for plate inspection.
- ARI can also supply standard crystallization plates and with user defined preprinted bar code labels.
- The plate storage solution temperature control option maintains a constant temperature between 4 °C - 25 °C +/-0.5 °C and is configured to image sitting drop, hanging drop, and LCP sandwich plates (available for 42, 210 and 504 plate hotel).
- The CCUV with plate storage system uses best design practices and high precision motion components to minimize vibration and provide gentle plate handling and movement of plates between the imager and plate hotel.
- The plate hotels have rotary stacker movement and linear plate handling.
- Plate images can be managed by plate / bar code identification.
- The CCUV and storage system has a user-friendly interface and software to allow users to store, access and analyze crystallization experiment images remotely.
- The CCUV software includes a link to crystallization screen conditions that can be loaded and run on the user owned Scorpion Screen Builder (please ask for our separate flyer), with libraries of pre-loaded commercial screens.
- Administrator settings are password protected.
Plate images can be stored and identified by users.

Ordering information:

Cat. No.: 610-9110-11 → Plate hotel, 42 plates capacity

Cat. No.: 610-9110-10 → Plate hotel, 42 plates capacity, 4 - 25 °C temperature controlled

Cat. No.: 610-9110-21 → Plate hotel, 210 plates capacity

Cat. No.: 610-9110-20 → Plate hotel, 210 plates capacity, 4 - 25 °C temperature controlled

Cat. No.: 610-9110-31 → Plate hotel, 504 plates capacity

Cat. No.: 610-9110-30 → Plate hotel, 504 plates capacity, 4 - 25 °C temperature controlled

Scorpion

Screen Builder



1 ml Tip Test Data		
Reagent	Volume	CV
Water	1 µl	4.4 %
DMSO	1 µl	2.3 %
"	10 µl	2.5 %
DMSO 80 %	1 µl	5.0 %
Methanol	10 µl	3.9 %
Ethanol	10 µl	2.0 %
Isopropanol	10 µl	3.7 %
Glycerol 50 %	10 µl	2.1 %

Accessories included
2 x 50 ml tube racks à 8 x 50 ml tubes
2 x 15 ml tube racks à 24 x 15 ml tubes
2 x pipette tip racks
2 x 96 pipette tips 1000 µl, racked
2 x 96 pipette tips 200 µl, racked

Scorpion features:

- Extremely versatile work station can perform anything that can be done with hand-held pipettors, but with the speed, reliability and precision of an automated dispenser.
- High displacement speed gives the opportunity to perform a variety of different liquid handling applications including genomic methods such as PCR assays or complex grids and titrations.
- 3 dispense modes: Forward Mode, Sequential Mode, Reverse Mode.
- Compatible with 20 µl, 50 µl, 200 µl and 1000 µl pipette tips with dispensing down to 1 µl.
- Multiple tip sizes can be used in one protocol. Suitable pipette tips: ask for separate price list.
- Liquid transfers can be defined as volume, concentration or pH.
- Possibility to set up multiple plates with varying pH, different additives and varying concentration such as normalization of salt screens.
- The deck has 6 SBS-format positions and can accommodate 96 racked 15 ml tubes, deep well blocks, standard 96 and 24 well protein crystallization plates, as well as tip racks.
- Pipette head is designed to reach the bottom of tall tubes such as 15 ml or 50 ml tubes and deep well blocks.
- Re-array screens from 15 ml tubes into 96-well plates.
- Large database of screening reagents contains all the common commercial screens.
- Set-up 24-well protein crystallization plates with an optimized screen, and dispense the protein.
- Movement velocity of 2 meters / sec. with extreme accuracy.
- Intelligent motion control software optimizes dispense paths and volumes.
- Liquid level sensing allows the tip to follow liquid levels improving aspirate and dispense accuracies.
- Intuitive software allows for the easy design of n-dimension grids and assays.
- Easy set-up of user-defined and gradient screen plates using an innovative graphic software.
- Software graphically shows the content of each well.
- Possibility to import / export csv-files facilitates data transfer and the creation of custom screens.
- Positive air displacement pipette head and a vast reagent database with pre-defined settings make it easy to work with a wide range of fluid viscosities, such as 50 % PEG 20,000, 80 % Glycerol and DMSO.
- Environment: 4 °C to 70 °C, non condensing / (w x h x d): 48.3 cm x 69.8 cm x 48.3 cm

Cat. No.: 640-1000-10 → Scorpion with desktop computer

Scorpion Accessories:

Pipette Tips and Tip Rack

Pipette tips for the Scorpion for 50 µl, 200 µl and 1000 µl volume options. Tips are available sterile, non-sterile, with or without filter.



Cat. No.	Description
640-1300-00	1000 µl Pipette Tips, 1536/case
640-1300-01	200 µl Pipette Tips, 2304/case
640-1300-02	50 µl Pipette Tips, 2304/case
640-1301-00	1000 µl Pipette Tips with filter, 1536/case, sterile
640-1301-01	200 µl Pipette Tips with filter, 2304/case, sterile
640-1201-01	Pipette Tip Rack

Tubes and Tube Racks

Each rack is magnetically keyed to the Scorpion deck to ensure proper alignment.



Cat. No.	Description
640-1099-01	Tube Rack Inserts for 1,5 ml and 2,0 ml tubes (4 pieces)
640-1200-01	15 ml Tube Rack (for up to 24 x 15 ml tubes)
640-1200-02	50 ml Tube Rack (for up to 8 x 50 ml tubes)
640-1401-01	1.5 ml Microcentrifuge Tubes (PE, 100 pieces)
640-1400-01	15 ml Centrifuge Tubes (50 pieces)
640-1400-02	50 ml Centrifuge Tubes (50 pieces)

Spring Plate for Low Volume Optimization

Set up complete optimization plates on the Scorpion with the spring fixture. Ideal for setting up the Intelli-Plate 24-4 (Cat. No.: 102-0004-00) as scale-up optimization plate. Please contact us for further information on this application.



Cat. No.	Description
640-1206-01	Scorpion Low Volume Dispense Platform

Plate Adapter

Set up optimization directly into a Linbro plate with the Scorpion Plate Adapter-Linbro.



Cat. No.	Description
640-1205-01	Scorpion Plate Adapter-Linbro

For more information on Intelli-Plates and other Art Robbins Instruments accessories, please see pages 19 - 20 and ask for our separate price list.

Scorpion

for Chemistry



Deck of the Scorpion for Chemistry



Flow control to purge the Scorpion for Chemistry

Applications:

- High-Throughput Experimentation
- Reaction optimization
- Reaction miniaturization to screen conditions without wasting precious samples
- Long term scheduled reaction sampling for kinetic assays
- High-Throughput screening of ligands or substrates for reactions
- Preparation of LC-MS samples

Scorpion for Chemistry features:

- The speed and versatility of the Scorpion make it the ideal choice for synthetic chemists to automate High-Throughput Experimentation.
- 10-fold increase or more in the number of experiments that can be set up versus a manual workflow.
- Small footprint fits into standard sized fume hoods.
- Enclosed workspace and airflow system allow for an inert atmosphere to be created which makes it possible to use sensitive reagents with confidence.
- Liquid level sensing allows the tip to follow liquid levels improving aspirate and dispense accuracies.
- Single channel head and optimized dispense modes make it easy to work with a wide range of solutions.
- Intuitive and user friendly software makes setting up complex experiments a simple task.
- The open design of the workspace and powerful software allow the system to be configured for virtually any type of lab ware.
- The single channel head design allows the Scorpion to access any type of tube, vial or plate.
- The deck has up to 6 positions and can accommodate 96 racked 15 ml tubes, 24 racked 50 ml tubes, glass vials, dram tubes, deep well blocks or other multiwell plates in SBS-format, as well as tip racks.
- The Scorpion makes your work safer and limits lab personnel exposure to solvents.
- Multiple tip sizes can be used in one protocol. Suitable pipette tips: see separate price list.
- Environment: 4 °C to 70 °C, non condensing / (w x h x d): 48.3 cm x 69.8 cm x 48.3 cm

Cat. No.: 640-1000-20 → Scorpion for Chemistry with desktop computer

Phoenix

for the Chemical Research Laboratory



96 head with 1 ml syringes

Fields of application:

- Biofuel research
- Bacterial metabolic engineering
- Biocatalyst development
- Enzyme optimization

Accessories included:

- Desktop computer, mouse and mouse pad
- Multi-seat software license
- Syringe wash-system (optional)
- Four spare syringes

Phoenix features:

- **No disposables, cutting operating costs.**
- Ideal dispensing system to work with organic solvents such as Methyl Isobutyl Ketone (MIBK) and Butyl Acetate.
- Glass, stainless steel and a fluoropolymer are the only wettable surfaces.
- 96-head compatible with all commonly used chemicals (contact us for further information).
- Chemically resistant deck.
- Capacity for six blocks and/or tube racks plus three wash positions.
- Compact size allows to place the system in a fume hood.
- Closed-loop motion control on each axis: verification of task completion via encoders on each motor.
- Integrated wash-system with computer controlled peristaltic pumps and wash reservoirs.
- Windows-based drag-and-drop software.
- Choice of 96-head with 1 ml TCSS, widebore TCSS, or flexible needles. (please contact us for more information)
- Dispense head can be exchanged easily for servicing within minutes.
- Dispense volumes down to 1 μ l with a CV < 5 %.

Cat. No.: 600-0000-00 → Phoenix base module with desktop computer

Cat. No.: 600-1013-00 → 96 syringe head with 1 ml flexible needles

Further options and accessories upon request



COBRA

1- or 4-Channel Nano Dispenser



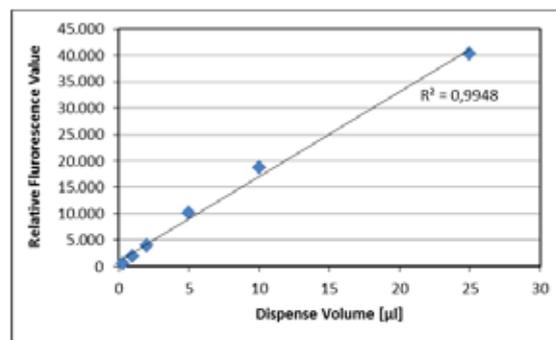
“Cobra 4-Channel“

Cobra features:

- Ideal for PCR Master Mix dispensing, biochemical assays and drug development.
- Low dead volume minimizes waste.
- Fast non-contact dispensing into 96-, 384- and 1536-well plates, deep well blocks and PCR plates.
- Suitable for cell dispensing into Terasaki plates (only 1-Channel System).
- Holds full-skirt and semi-skirted PCR plate adapters.
- Dispense 300 nl to 5 ml using 1 or 4 non-contact nano-dispensers.
- Dispense any volume, any well with up to 4 independent reagents in the same pass.
- Dispense gradients for direct dilutions.
- Easy-to-use, computer controlled “drag-and-drop” software.
- Mixed modes in one run are possible (switch between aspirate/dispense and bulk dispense).
- Aspirate from deep well blocks, 0.2 ml and 1.2 ml tubes.
- 2 position plate deck.
- Liquid level sensing for all reagent bottles.
- Can be integrated into automatic systems for storage of plates → ask for further information
- Integrated wash system.

Dispense Accuracy:

Cobra 4-Channel Nano Dispenser		
Dispense Volume μl	Relative Fluorescence Value	CV %
25	40300	2.9
10	18762	3.5
5	10126	3.3
2	4022	2.9
1	2008	3.2
0.3	589	6.1



Individual features and specifications of the different “Cobra” models:

“Cobra 1-Channel” (Cat. No.: 630-1000-10)

- Versatile 1-channel dispense head for small research labs.
- Ideal for PCR master mix set-ups, assay development and cell dispensing.
- Suitable for cell dispensing into Terasaki plates → [ask for our flyer on HLA-products!](#)
- Aspirate/Dispense mode allows minimal waste of valuable PCR reagents.
- Bulk dispense mode from reagent bottles to quickly fill many plates.
- Small space-saving footprint: (w x h x d) 35.5 x 40.6 x 50.8 cm; 21 kg

“Cobra 4-Channel” (Cat. No.: 630-1000-40)

- 4-channel dispense head for increased throughput.
- Dispense up to 4 separate reagents in the same pass.
- Aspirate/Dispense mode allows minimal waste of valuable reagents.
- Bulk dispense mode from reagent bottles to quickly dispense large volumes.
- Assign Aspirate/Dispense mode and Bulk-Dispense mode on per-channel basis.
- Bulk Dispense mode can be combined with Aspirate/Dispense mode to optimize performance.
- Mixed volumes for all channels are possible.
- Small space-saving footprint: (w x h x d) 35.5 x 40.6 x 50.8 cm; 26 kg

Accessories included:

- Computer, mouse and mouse pad
- Wash reservoir and pump
- Multi-seat software license
- Extra nozzle
- One wash/reagent bottle per channel

Please ask for our separate Accessories Price List including needles and plates.

Hood and Trolley for the “Phoenix” and “Gryphon”

- Panels and doors manufactured in clear plastic
- Frame in aluminum
- Opening with sleeve Ø 80 mm (right) for cables
- Front with door and extra reach-through opening
- Inclusive:
 - Ultra-sonic humidifier
 - Humidistat
 - Humidity sensor
- Optional:
 - Trolley: 4 adjustable rollers, base plate and 2 shelves
- Slight design changes possible



Cat. No.	Description
25-1000-01	Hood for the single-channel "Crystal Phoenix" or all "Gryphon" modular system combinations to assure constant humidity (attention: max. 70 %), without trolley base, exterior dimensions (w x h x d): 900 x 900 x 900 mm
25-1000-11	Hood for the four-channel "Crystal Phoenix" to assure constant humidity (attention: max. 70 %), without trolley base, exterior dimensions (w x h x d): 1200 x 900 x 900 mm
25-1000-02	Trolley, 4 adjustable rollers, base plate and 2 shelves dimensions (w x h x d): 900 x 900 x 900 mm
25-1000-12	Trolley, 4 adjustable rollers, base plate and 2 shelves dimensions (w x h x d): 1200 x 900 x 900 mm

Refurbished "Hydras"

Art Robbins Instruments still offers a full line of **reconditioned "Hydra" Instruments** to meet your needs for high-speed aspirating and dispensing of finite volumes at cost-effective prices. Each unit has been inspected and rebuilt by the original "Hydra" design and assembly team. All syringes have been refurbished to as-new condition. **A full one-year warranty** is offered on all units.

Refurbished Hydra features:

- 384- or 96-syringes
- Equipped with or without a wash module
- Equipped with or without a plate positioner
- Syringe sizes 100 µl, 290 µl, 580 µl or 1 ml
- Flexible Nitinol or PTFE coated stainless steel needle syringes



LCP Mixing Station for mixing of lipids and proteins

The stand-alone LCP (Lipidic Cubic Phase) Mixing Station is ideally suited for the mixing of viscous solutions often used for the crystallization of membrane proteins.

LCP Mixing Station Features:

- Accommodates different syringe types including Hamilton style and the Art Robbins Instruments LCP dispensing syringe.
- Any volume syringe can be used if both syringes are the same volume.
- Eliminates user-to-user and day-to-day variation in LCP set-ups.
- Elapsed mixing time is displayed.
- Quick and easy to load.
- Loading the syringe automatically sets the mixing stroke so that the mix volume is equal to the sample volume in the syringe.
- Audible alarm can be set to sound off after defined elapsed time.
- Easy to clean polished stainless steel mixing chamber.
- Compact size: (w x h x d) 34.3 cm x 13.9 cm x 11.4 cm
- **NEW! LCP Mixer/Dispenser Starter Kit** including LCP Mixing Station, the LCP Hand-Held Multi Volume Dispenser (see below), 10 μ l Syringe plus 3 x Needles, 2 x 100 μ l Syringe, 1 x LCP Coupling and Ferrule Mix, ARI-ARI syringe, and 1 x LCP and Ferrule Mix, ARI-Hamilton syringe.



Cat. No.	Description
620-4000-00	LCP Mixing Station
620-4250-00	LCP Mixer/Dispenser Starter Kit
	Accessories (also ask for our "Accessories Price List")
620-1300-01	ARI-Syringe Ferrule Assay with Coupling
620-1300-02	ARI-Hamilton Syringe Ferrule Assay with Coupling
620-1300-03	Hamilton-Hamilton Syringe Ferrule Assay with Coupling

LCP Hand-Held Multi Volume Dispenser

The LCP Hand-Held Dispenser can be used with syringes from different manufacturers such as Art Robbins Instruments or Hamilton.

The Dispenser allows setting up to 200 steps and can move 1, 2 or 3 steps per click.

The volume of the syringe can be divided into 50, 100 or 200 steps per dispense, e. g. for 10 μ l the dispense volume can be set to 50 nl, 100 nl or 200 nl.



Cat. No.	Description
620-4100-00	LCP Hand-Held Multi Volume Dispenser (syringe not included)
	Accessories
620-1005-03	LCP Syringe, 100 μ l, graduated
620-4101-00	LCP Syringe Assembly 10 μ l (no needle)
620-4102-00	Replacement needles for 10 μ l LCP Syringe (case 3)

Reconditioned Automatic Serum Dispenser

- Precision multichannel dispenser.
- Possible to add microliter volumes of serum to all wells simultaneously.
- Operation is completely automatic.
- Fixed array of glass syringes.
- Necessary volume can be easily selected.
- Easy operation through buttons or a convenient foot switch.
- Display shows remaining serum in the syringes and is automatically updated during the dispense.
- Remaining serum can be purged back into the tubes by pressing the "Empty" button to minimize dead volume.
- Wash function ensures clean syringes and eliminates cross contamination.
- Individual syringes can be easily removed for maintenance or repair.
- Comes complete with one dispensing head, matching tube rack, wash reservoir, foot switch and manual.
- Also available: replacement syringes, PTFE tips, serum tubes and further HLA requirements



Specifications:

Selectable parameters:

- Fill Volume
- Dispense Volume
- Wash Cycles

10 - 290 μ l in increments of 10 μ l
 0.5 - 9.5 μ l in increments of 0.5 μ l
 Continuous or 1 - 10 cycles

Dimensions (w x h x d):

23 cm x 43 cm x 31 cm

Weight:

16.4 kg

Automatic Typing Tray Oiler

- Predetermined volume of oil is dispensed into all wells of a typing tray in one step.
- Equipped with a head with stainless steel pins.
- Head moves into a reservoir of oil and then automatically moves and touches the wall of the typing tray wells delivering the oil in the self-refilling reservoir.
- Volumes between 1 μ l and 15 μ l can be selected through the depth of the pins that penetrate the oil.
- Easy operation through a switch in the front of the device.
- A removable clear acrylic cover protects the oil reservoir from contamination with dust.
- Operation in continuous mode is possible, dispensing oil every six seconds automatically.
- Interchangeable heads for **60, 72 and 96 well trays** are available.
- Heads are easily changed without tools by releasing two knurled screws.



Specifications:

Dimensions (w x h x d):

13 cm x 33 cm x 15 cm

Weight:

4.1 kg

Oil reservoir capacity:

approx. 500 ml for approx. 1,500 plates

“Phoenix”, “Gryphon” and “Hydra” Disposables

Art Robbins Instruments offers a complete line of **replacement syringes and syringe barrels** for your “Phoenix”, “Gryphon”, “Cobra” or “Hydra” instrument. Full syringes or barrels are available in all sizes (100 µl, 290 µl, 580 µl, or 1 ml) with either PTFE coated stainless steel or flexible Nitinol needles.

Replacement syringe = barrel, needle, plunger, PTFE tip
 Replacement barrel = barrel, needle, PTFE tip (no plunger)
TCSS = PTFE coated stainless steel; flexible = Nitinol



Description	Replacement syringe Cat. No.	Replacement barrel Cat. No.
100 µl, TCSS	102-9440-01	102-9450-01
100 µl, flexible	102-9440-04	102-9450-04
290 µl, TCSS	102-9440-00	102-9450-00
290 µl, flexible	102-9440-05	102-9450-05
290 µl, TCSS wide-bore	102-9350-00	102-9360-00
580 µl, TCSS	102-9470-00	102-9480-00
580 µl, flexible	102-9470-02	102-9480-02
580 µl, TCSS wide-bore	102-9350-01	102-9360-01
1 ml, TCSS	102-9470-01	102-9480-01
1 ml, flexible	102-9470-03	102-9480-03
1 ml, TCSS wide-bore	102-9350-02	102-9360-02
100 µl, TCSS (384)	102-9370-01	102-9380-01
100 µl, flexible (384)	102-9370-04	102-9380-04

Replacement **PTFE tips** are available to keep your syringes in proper condition for maximum efficiency.

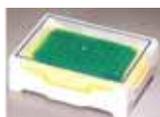
Cat. No.	Description	Qty.
105-9010-11	50 µl	100
105-9220-01	100 µl	100
105-9230-01	250 µl	100
105-9260-01	290 µl for wide-bore syringes	100
105-9240-01	580 µl	100
105-9270-01	580 µl for wide-bore syringes	100
105-9250-01	1 ml	100
105-9280-01	1 ml for wide-bore syringes	100
105-9320-01	100 µl (384)	400
105-9900-01	Plunger Tip Loading Tool (PTFE)	1

Cleaning wires are available to help maintain your syringes.

102-9490-00	For 290 µl, 580 µl and HLA syringes	10
102-9490-01	For all 100 µl and all flexible syringes	10
102-9490-02	For all wide-bore syringes	10

Replacement **Nano Needle** for “Phoenix” and “Gryphon” Nano Modules

600-3102-00	Nano Needle (new type)	1
600-3000-01	Nano Needle (old type)	1



Chilling block



Hanging drop tool and seals

600-4001-01	Chilling block (pink)	1
600-4001-02	Chilling block (yellow)	1
600-4002-00	Protein tubes, 0,2 ml	500/bag
600-4003-00	Wash reservoir	5/pack
600-4004-00	Hanging drop tool	1
600-4005-00	Smoked dispense plate	1
600-4006-00	Hanging drop seals	50/pack
600-4007-00	Zymit & EDTA Wash Solution Kit	1
600-4007-01	Micro 90 Cleaning Solution	1
600-3400-05	“Gryphon” Antimicrobial Tubing Kit	approx. 1 m
600-3400-06	“Phoenix” Antimicrobial Tubing Kit, for	approx. 1 m
	Head Pump	
600-3400-07	600-3400-06 for Nano Pump	approx. 1 m

Please also ask for our separate **Accessories Price List**.

“Intelli-Plates” for protein crystallography applications

- Molecular structural analysis
- Three-dimensional structure of proteins
- Structure based drug research



• **96-well “Intelli-Plate” (8 versions):**

- two crystallization wells (max. 4 µl and 10 µl) and optionally 100 µl or 300 µl reservoir
- three crystallization wells (1 µl) and 100 µl reservoir
- low profile and shallow well plates, now UV-compatible
- highly polished, flat crystallization area and 300 µl reservoir



• **48-well “Intelli-Plate” (2 versions):**

- for optimization with two wells (4 µl and 20 µl) and 500 µl reservoir
- for screening with three wells (4 µl) and 500 µl reservoir

• **24-well “Intelli-Plate”:**

- for “sitting drop”, with four wells (5 µl) and 650 µl reservoir

- All plates available with barcode
- Standard SBS microplate footprint
- Single packaged to prevent electrostatic charging of the plates



➔ **Art Robbins Instruments also offers a wide range of products for the HLA-Laboratory. Please ask for our separate price lists!**