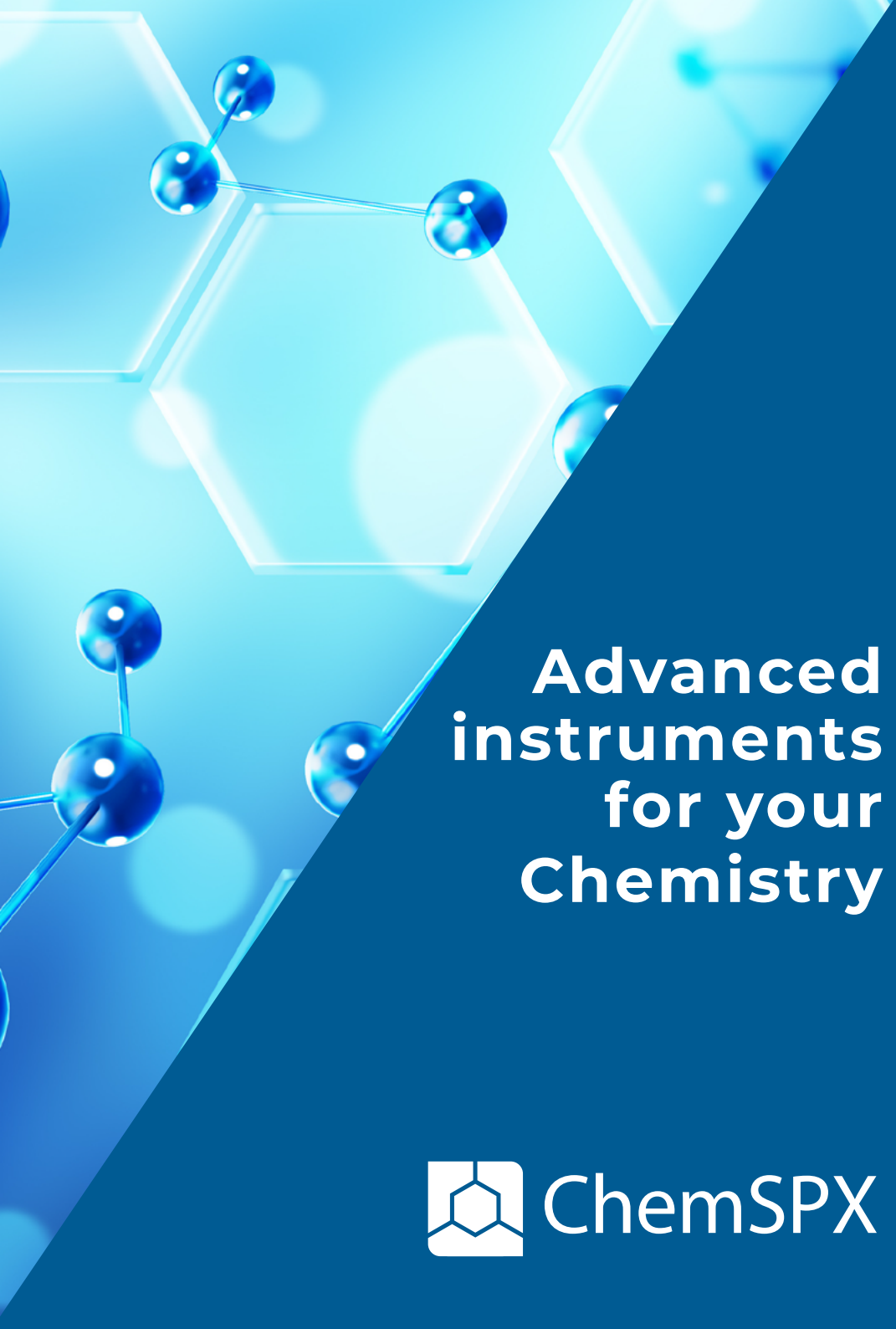


Advanced instruments for your Chemistry

ChemSPX

Foreword

ChemSPX is an exclusive distributor of high-end lab equipment in the field of Chemical Synthesis and Purification where the following Suppliers play the leading role:

Radleys provides innovative chemistry equipment for safer, cleaner, greener and more productive chemical research.

Particle Works produces platforms for nanoparticle generation and screening as an excellent method for vaccines, drugs and gene therapies or other APIs

Syrris is a world leader in flow chemistry and chemical scale-up solutions.

CEM is the leading provider of microwave instrumentation for synthetic chemistry.

Teledyne ISCO Chromatography product line includes (FLASH/PREP-LC and PREP-SFC) instruments and accessories for the purification of organic compounds in normal-phase and reversed-phase separations, and for bio-purification of proteins, peptides, and other biopolymers.
Teledyne ISCO Pumps These rugged, do-anything pumps solve your toughest fluid delivery problems, from micro-flow to scale-up and pilot plant, pumping corrosive liquids, and safe operation in explosive atmospheres

ThalesNano is widely recognized for its expertise in transforming chemical processes, with temperatures up to 450°C and pressures up to 200 bar, with both liquids, gasses (in situ made H2) and solids, to continuous flow operations.

ThermoFisher Scientific is known for its vast array of innovative products across all fields of science. We represent the handheld Raman division with a focus on the new PAT probe. With this collaboration a strong package is formed together with our chemical suppliers.

Lauda is the world's leading provider for high-precision temperature control for chemical processes.

Teledyne Hanson specializes in the design and manufacturing of dissolution testing, automated diffusion testing and disintegration instruments for the pharmaceutical industry.

All their products are designed to ensure your chemistry. We can deliver ready-made or custom made packages from synthesis to purification.

info@chemspx.com chemspx.com +31 (0)294-280599

Index

Our markets

Chemical industry

Pharmaceutical industry

Food - Feed - Beverages

Agriculture

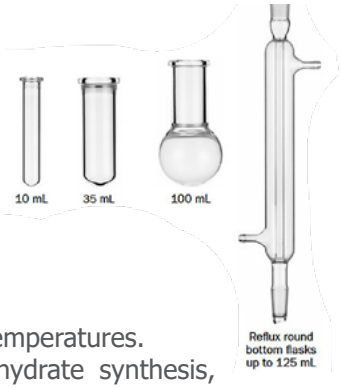
Environment

Energy resources

info@chemspx.com chemspx.com +31 (0)294-280599

Discover 2.0: The absolute best approach for Chemical Synthesis

- Pressurized vessel sizes for a single-mode microwave - 10ml, 35ml, 100ml
- IR Temperature Sensor for both glass and Teflon (iWave®)
- Vent and reseal technology for safe handling of over-pressurization (ActiVent)
- Variable speed magnetic stirring and rapid compressed air cooling
- Integrated camera to observe your reaction
- Upgrade options: Autosamplers - 12/48 positions; Gaseous Addition, Sub-ambient temperature, Flow cells



CoolMate Low temperature option

Performs reactions at sub-ambient temperatures. Reactions such as lithiation, carbohydrate synthesis, and other temperature-sensitive chemistries can benefit from the use of microwave energy.
Use the power of microwave energy to accelerate reactions even at temperatures as low as -80°C.

Gas Addition Kit

Specially designed for reactions involving gaseous reagents. Perform hydrogenations, carbonylations, or other reactions with gaseous reagents or use the vessel to ensure an inert atmosphere during microwave irradiation.
Allows you to purge the reaction vessel and back-fill with a gas.

During the reaction, the gas source is completely shut off from the microwave, ensuring your safety at all times.

Benchtop and Hotplate Tools

The range of benchtop and hotplate lab equipment has a whole range of benefits including high safety standards, productivity and cost effectiveness.

You'll find lab equipment that's suitable for the following applications:

- Refluxing
- Stirring
- Condensing
- Heating
- Cooling
- Distillation
- Parallel synthesis
- Inerting

Findenser Air Condenser™
Award-winning alternative to water-cooled condensers

Heat-On™ Block System
Safer alternative to oil baths

Cool-It™ Insulated Bowls
Safer and more efficient way of cooling

StarFish™ Work Station
Space saving multi-tasker that increases productivity and cuts costs

Mya 4 Reaction Station
Safer, cleaner, greener, more productive.

- 4 different zones, each with heating and active cooling
- Use one compact system for a range of experiments
- Precise temperature control
- Magnetic or optional overhead stirring
- Accepts a wide range of vessel sizes and styles
- Control your experiments and log results automatically
- Use Mya 4 with or without a chiller

Parallel Reaction Stations

The parallel reaction stations help you increase your productivity, save space and keep costs down, among many other benefits.
Radleys has parallel reaction stations for applications such as heating, cooling, condensing, work up, evaporation, inerting, filtration, heating, parallel synthesis, polymer research, process development, refluxing and stirring.

Carousel 12 Plus Reaction Station™

Simultaneous heating, stirring and reflux of multiple samples.

- Up to 12 tubes, in sizes ranging from 1 to 20 ml
- Removable Fluoropolymer insulation plate, saving up to 36% energy and preventing burns
- Integrated gas/vacuum manifold in the head to enable working under an inert atmosphere
- Integrated reflux head replaces the need for multiple condensers so refluxing in multiple positions is easy

Carousel 6 Plus Reaction Stations™

Simultaneous heating, stirring and reflux of multiple samples.

- Powerful, even stirring in all positions
- Can use up to six vessels simultaneously: 5 to 250 ml
- Round bottom flasks fit straight onto a Rotary evaporator to evaporate your samples directly
- Option for overhead stirring for viscous materials

Tornado™ Overhead Stirring System™

Stirring productivity increased by up to 600%.

- Integrates with Carousel 6 Plus to enable overhead mechanical stirring in all positions using a single overhead stirrer motor
- Compatible with all leading brands of overhead stirrer

Reactor-Ready™ Lab Reactor
100 ml to 5 litres

Swap reaction vessels in minutes!
Reactor-Ready is designed as a universal reactor work station with a range of easily interchangeable vessels from 100 ml to 5 litres which can be configured to suit the chemistry and scale needed for each project.
Easy to use, this one unique framework can replace many, saving money and fumehood space.

Reactor-Ready™ Pilot Lab Reactor
5 to 35 litres

Replace multiple reactor set-ups with a single, universal pilot scale system with interchangeable vessels that can be swapped in minutes

Check p20 & 21 of this brochure for our temperature control instruments

Reactor-Ready Filter Lab Reactor

Synthesise and filter in the same vessel!

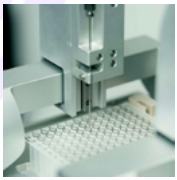
Stirred, temperature-controlled, contained filtrations

- Filter vessels are fully jacketed down to base for accurate temperature control
- Range of jacketed filter vessels in 1 and 2 litre volumes
- Filter assembly allows for efficient solid-liquid separation with minimal hold-up
- Unique filter support plate aligns the base with the vessel for tool-free assembly

Automated Library Synthesis (ALiS) System

The ALiS system enables high-throughput screening of Lipid Nanoparticle formulations and mRNA candidates in early-stage development.

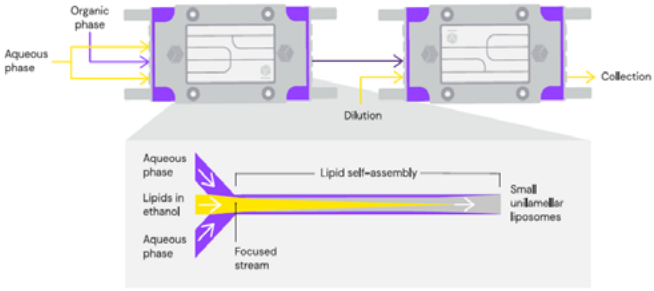
- High-throughput: Aspirate from and dispense in to sealed / covered 96 well plates
- Excellent encapsulation efficiency
- Process up to 96 samples in a typical working day
- Broad range of particle sizes: 40 – 800 nm
- Monodispersity: Excellent Poly Dispersity Index (PDI) < 0.2
- Automation: Walk away during experiments increasing laboratory efficiency
- Anti-dispersion Technology: Work with smaller reagent volumes
- Flexibility: Modify both process parameters and formulations for each experiment
- Scalability: Scale seamlessly to process & protocol optimization
- Cost Saving: Reduced reagent use and reusable chips



Automated Nanoparticle (ANP) System

The ANP system is designed for automation and acceleration of process development and initial production of larger samples of lipid nanoparticles.

- Monodispersity: Excellent PDI (< 0.2) and encapsulation efficiency
- Broad range of particle sizes: 40 – 800 nm
- Scalability: From 200 µl to continuous production
- Rapid optimization timeframes
- Highly reproducible
- Flexibility: Easy to set up and modify parameters
- Cost saving: Reduced reagent use and reusable chips
- No IP Licensing



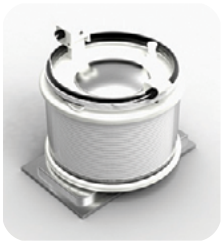
ASIA Modular Flow Chemistry

- Reactor temperature: -15°C to +250°C
- Liquid phase reactor volumes: 62.5 µl, 250 µl, 1 ml, 4 ml, 16 ml
- Solid phase reactor volumes: 0.7 ml, 2.4 ml, 5.6 ml, 12 ml
- Pressure: 0 – 20 bar (300 psi)
- Flow rate: 1 µl/min – 10 ml/min per pump
- Residence times: 1 second to several hours
- Rapid diffusional mixing
- Production volumes: mg to kg

Asia is a modular system. All modules can be acquired separately and arranged in any fashion to add new functionalities on an existing system. **Your system evolves with your needs!**

Glass Microreactors

Tube Reactors



Solid Phase Reactors

Asia Pressure Controller

The Asia pressure controller allows to set the back pressure of the system, which permits solvents to be heated up above the atmospheric boiling point and therefore enables to increase the reaction rates.

- Pressure range: 1 – 20 bar (maximal pressure depends on pressure of gas supply)
- Built-in pressure sensor with an accuracy of 0.1 bar
- Wetted materials: glass and PFA

Flow Synthesis
From Lab scale to Production Scale

Asia Syringe pump

The Asia syringe pump provides extremely smooth flow rates and was specifically designed for flow chemistry.

- Each pump module offers two independent flow channels with integrated pressure sensor
- Ultra-smooth flow rate is delivered by each channel of the syringe pump
- Four different syringe volumes for optimal flow rates
- Can operate at pressures up to 20 bar (300 psi)
- User-friendly: easy to operate and swap syringes
- Extremely chemically resistant: the wetted materials are PTFE and glass

Asia Chip Climate Controller

This module is compatible with a range of glass microreactors, which can be heated or cooled by the integrated Peltier system.

- Temperature range: -15 to 150°C
- Compatible chips: 62.5 µL, 250 µL, 1 mL and micromixer chips
- Wetted materials (microreactor): glass or quartz

Asia Photochemistry reactor

Access a host of novel continuous photochemistry applications with Asia Photochemistry Reactor.

- Increase the light intensity (up to 108 W) to reduce reaction times and increases production rates
- No external cooling required
- Select from a wide range of wavelengths
- Process parameters are monitored

ACCQPrep SFC - Supercritical fluid Chromatography

Green Preparative SFC: Chiral or Achiral Separations in a single, compact solution.
The only system enabling both bulk collection from stacked injections, and multi-sample, open access with an optional SFC AutoSampler (2×2 or 4×2).

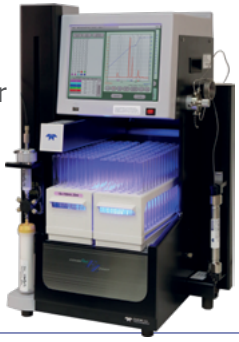
- Flow rates from 50 to 200 ml/min for use columns of 2 or 3 cm x 25 cm or less
- Liquid co-solvent pump with standard 4-solvent selection valve capable of composition from 5 to 70%
- Column oven with selection valve for up to six columns
- Autoinjector to enable multiple injections of a single sample or stacked injection workflow
- Choice of UV or UV-Vis (PDA) detectors.

CombiFlash® NEXTGEN 300+

RFID technology enables automated detection of columns and racks, adjusting flow rates for optimal results.

- Standard features include active solvent and waste level monitoring
- Flow rates range from 1 to 300 ml/min
- Operating pressure can reach up to 300 psi (20 bar)
- Detection options include UV, UV-VIS, ELSD, and MS
- Compact design to save lab space
- Default methods increase flow speed without sacrificing performance
- Greener approach with optimized gradients to conserve solvent

CombiFlash® EZ Prep



Streamline Flash and Preparative HPLC

- Up to 3500 psi (240 bar) and 200 ml/min
- Run Prep HPLC columns up to 50 mm in diameter
- Flash purification for 10 mg to 33 g
- UV, UV-VIS, ELSD and MS detection options available
- Switch between normal and reverse phase solvents automatically, without user interaction

Purification :
Flash & Prep chromatography

TELEDYNE ISCO
Everywhereyoulook™

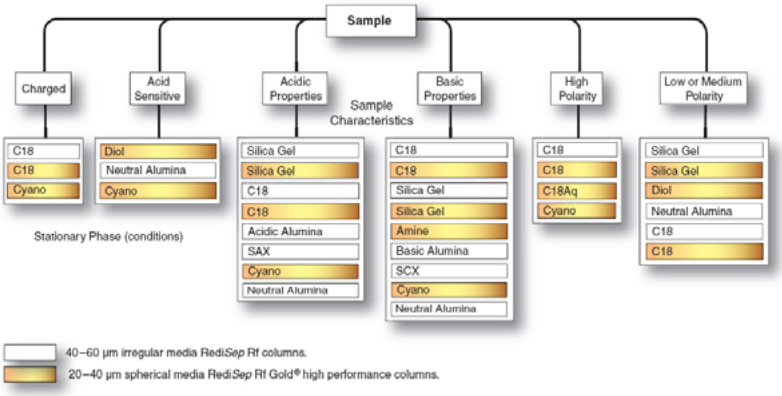
ACCQprep HP 150 Preparative HPLC

- Pressure range: Up to 6000 psi (413 bar)
- Flow rate range: 1 to 150 ml/min
- Detection options: UV, UV-VIS, ELSD, and MS
- Compatible with automation modules: auto injector, autosampler, and column selector module
- Automatic switching between normal and reversed phase solvents, no user interaction required

REDISEP Flash Chromatography Columns

Designed to consistently produce high purity compounds.
Easy purification and scale-up from milligram to kilogram.

- Patented packing technique providing reliable and reproducible columns
- Extra thick walls for safe and robust columns
- Easy to use luer lock fittings
- A broad versatility on column phases for each type of purification



Reaxus single head

M1 CLASS
3 MODELS: 10 ml/min - 40 ml/min - 100 ml/min
Up to 2.000 psi (10 ml/min)
Fluid path: Stainless steel

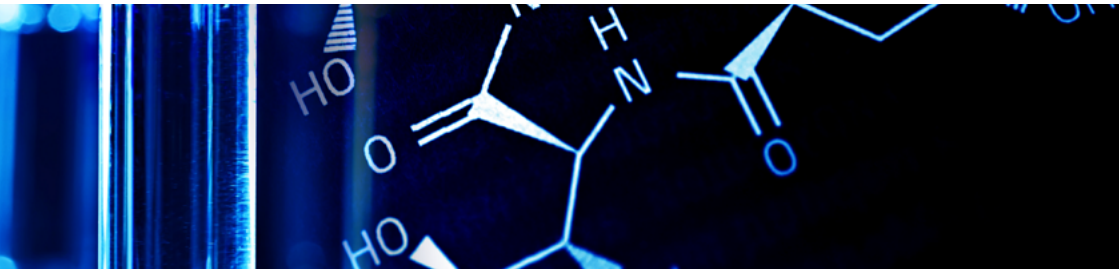
MX CLASS
3 MODELS: 10mL/min - 40mL/min - 200mL/min
Up to 5.000 psi (10mL/min)
Fluid path: Stainless steel

LS CLASS
3 MODELS: 10 ml/min - 40 ml/min - 100 ml/min
Up to 6.000 psi
Fluid path: Stainless steel or Hastelloy

Reaxus dual head

LD CLASS
3 MODELS: 12 ml/min - 36 ml/min - 100 ml/min
Up to 6.000 psi
Fluid path: Stainless steel or Hastelloy

PR CLASS
2 MODELS: 100 ml/min - 300 ml/min
Up to 4.000 psi
Fluid path: Stainless steel



TELEDYNE ISCO
Everywhereyoulook™

SyriXus Syringe Pumps

When reliability & accuracy are critical

Teledyne ISCO SyriXus precision syringe pumps offer precise flow and pressure control across a wide operating range. These pumps ensure accurate metering without pulsation or flow irregularities commonly found in other pump types.

They can handle a wide variety of fluids including:

- Aqueous and organic liquids
- Viscous fluids
- Corrosive solutions
- Slurries and pastes
- Heated fluids
- Precision fluid delivery
- Liquified gases
- Continuous flow mode is possible

65x

500xv

	Capacity	Flow* Range (mL/min)	Flow** Accuracy	Pressure Range (psi, bar)	Standard Pressure Accuracy	Standard Plumbing Ports	Dimensions	Continuous Flow Range (mL/min)	Higher Viscosity Materials
1000x	1015 mL	0.01–408	0.5% of Setpoint	10–2,000 0.7–137.9	0.5% FS	1/4" NPT	40.3x10.7x18.4 in 102x27x47 cm	0.01–265	
500x	507 mL	0.001–204	0.5% of Setpoint	10–5000 0.7–345	0.5% FS	1/8" NPT	40.3x10.7x18.4 in 102x27x47 cm	0.001–132	
500xv	507 mL	0.001–204	0.5% of Setpoint	10–5000 0.7–345	0.5% FS	3/8" NPT	40.3x10.7x18.4 in 102x27x47 cm	0.001–132	X
260x	266 mL	0.001–107	0.5% of Setpoint	10–9,500 0.7–655	0.5% FS	1/8" Valco	39.8x10.7x18.4 in 101x27x47 cm	0.001–70	
65x	68 mL	0.00001–25	0.3% of Setpoint	10–24,000 0.7–1,655	0.5% FS	1/4" F250C	39.8x10.7x18.4 in 101x27x47 cm	0.00001–16	

H-Genie

Safe and powerful hydrogen generator specifically for chemists!

- Expand chemistry in batch and flow with up to 100 Bar H_2, generated from water
- Accurately log how much hydrogen is used in your reaction
- Up to 1 L/min
- Simple and safe: click & go

Phoenix Flow Reactor

Multifunctional Module compatible with H-cube Pro™

- Fast: reactions in seconds
- Simple: 2 buttons and automated touchscreen
- Innovative: performs chemistry till 450°C
- Versatile: perform reactions in a loop homogeneously or use a range of different catalyst cartridges

The H-Genie® **combined with the Phoenix Flow Reactor™** is an **all-in-one flow chemistry setup** for catalyst testing, synthesis, optimization, and scale-up that is useable in any fume hood in any lab.

This combination offers you a wide temperature and pressure range. In combination with high pressure hydrogen generated safely without cylinders for your reactions, granting you the capability of synthesizing from milligrams to kilograms of product on the same system.

H-Cube MINI 2.00

Safe and affordable hydrogenation

- H_2 is generated in situ
- Hydrogenation without cylinders
- Fast catalysed reactions
- Easy to use
- Max 100°C / Max 100 bar

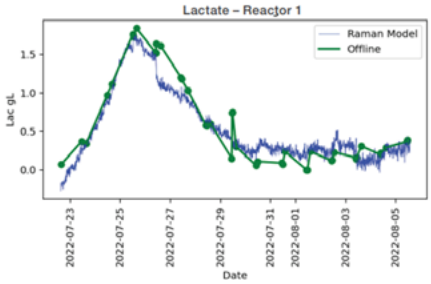
Ramina: Process Analyzer

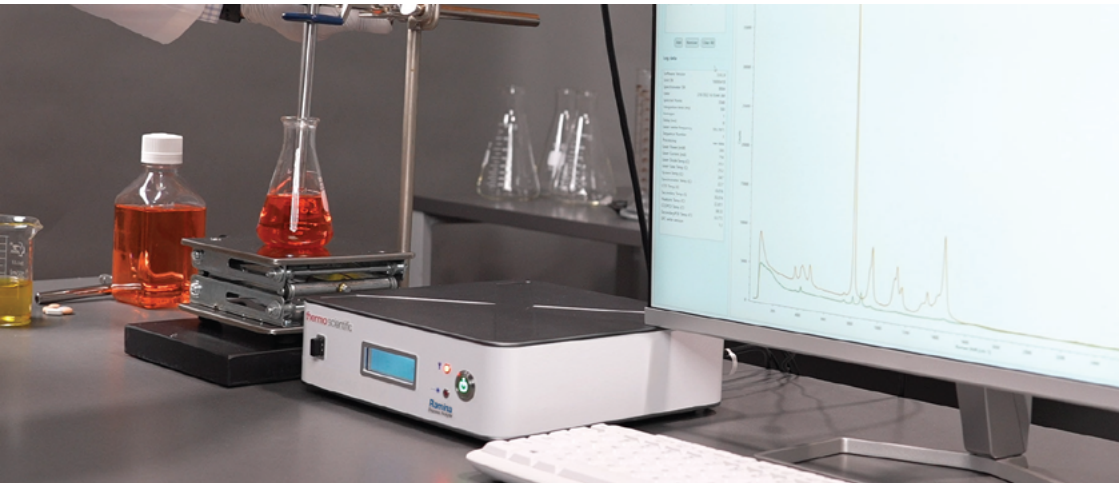
With this Raman spectroscopy, PAT probe scientists can make real-time measurements in reaction solutions or media, in a non-destructive and immediate manner. This enables scientists to make optimization decisions faster preventing potential loss of product.

To suit your applications needs, there are three different probes available to give the most accurate spectroscopic measurements,

- Fiberhead,
- Bioreactor Ball Probe,
- Process Ball Probe

The instrument comes with a factory calibration allowing for easy set-up within 15 minutes. Data is processed by easy-to-use software designed to simplify the necessary chemometrics.





PRO Circulation Thermostats

Compact circulation thermostats for professional temperature control thermostating from -90 to 250° C

- Thermostating from -90 to 250° C @ ±0.05° C
- Small heat transfer liquid volumes for quick temperature changes
- Hybrid cooling permits cooling using ambient air or cooling water

Variocool

Versatile for dissipating process heat in laboratories, mini plants and production facilities

The Variocool stands out due to its precise and flexible temperature control capabilities. It offers a wide temperature range, exceptional temperature stability, and high cooling and heating capacities.

- Variable process thermostats with cooling capacities from 1200 W to 10 kW
- Temperature range from -20 to 80 °C
- Space-saving design and versatile applications
- User-friendly operation with a color TFT display
- Standard USB interface and alarm contact, additional interfaces can be added for enhanced connectivity
- Integrated bypass and optional pumps for adjusting operating pressure and flow rate

Integral XT

High-performance process thermostats

The Integral XT process thermostats are a state-of-the-art solution for precise temperature control in professional environments

- Power options ranging from 1.5 to 18 kW,
- Wide temperature range (-90 to 320 °C)
- Advanced flow principle with cold oil superimposition
- Electronically controlled eight-stage LAUDA Variopump
- Seamless volume flow management
- Modular interface concept for integration
- Simple operation with TFT or touch display

Constant temperature equipment

ECO thermosats
From -50 to 200° C: Thermostats for economic temperature control in the lab

- Available in standard silver (LCD display) or gold (color TFT display)
- The circulation pump can be adjusted to six levels
- Cooling capacities of 180 to 700 watts (at 20°C) and minimum temperatures of -15 to -50° C
- Energy-saving LAUDA SmartCool system

LAUDA Ultracool
The next stage of Energy-Efficient Temperature control

Process circulation chiller with cooling capacity of up to 265 kW from -5 to 25° C for industrial applications

- Suitable for setup outdoors
- Ready-to-operate "Plug & Operate"
- Incl. cold water container, centrifugal pump and internal bypass
- Standard-issue temperature sensing prevents freezing of the heat exchanger
- Integrated pressure switches to protect the circuit against pressure that is too high or too low
- Chiller casing made of galvanized steel panels coated with epoxy resin protected against corrosion even in aggressive production environments

Dissolution testers

Choose between 6 or 8 vessels. The dissolution testers are versatile performance machines, built with the highest quality components and engineering for manual and automated dissolution testing.

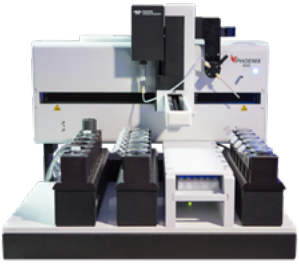
The **CD14 Comparative Dissolution** with 14 vessels allows testing of two different drugs at once.

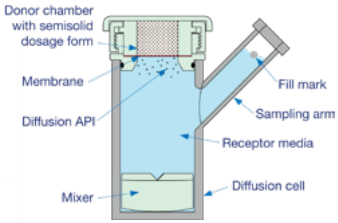
Manual Diffusion testers

The patented Phoenix™ range of dry-heat systems makes diffusion-cell testing faster, easier, and more economical. The Phoenix DB-6 manual sampling system offers six-cell manual sampling in a compact footprint with an advanced touch screen display.

Automated Diffusion testers

The Phoenix RDS Robotic Diffusion Station delivers fully automated sampling, collection, and media replace with the ability to run up to 24 cells at once from a single computer workstation.





Who are we?

Support and Product Xperts

ChemSPX is part of the Beun-de Ronde B.V. group, a leading supplier of laboratory equipment for more than 100 years.

Within this group, ChemSPX is active in the field of Chemical Synthesis. For instance, instrumentation for batch- and flow synthesis, prep- and flashchromatography and thermostats are advised and installed by our Xperts.

Through our experience, versatility and organizational strength, our organization distinguishes itself as a company where every employee maximizes customer satisfaction, personal results, teamwork and communication skills. These principles help us establish a long-term relationship with our customers.

Our Service

Our Support Engineers and Product Specialists support the whole process from advising, demonstrating developing the application, installing and maintaining your laboratory equipment.

1. Tailor-made installations of new equipment & training
2. Upgrades of existing equipment
3. Preventive maintenances with or without service contract
4. Technical support (hardware & software)
5. IQPQOQ + reporting
6. Validation & Calibration services
7. Omnium service contracts
8. Demo lab
9. Remote & application support

Next to ChemSPX, the BDR group holds:

BioSPX: Life Science – Part of BDR

SciSPX: Analysis simplified – Part of BDR

AddSPX: Element and Structure Analysis – Part of BDR

LabSPX: Instrument Support – Part of BDR

YOU MIGHT WANT TO KNOW MORE.

In that case, don't hesitate to contact us to make an appointment for a meeting, a product presentation, or any other question.

ChemSPX
Chemistry connects

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www.chemspx.com

QualityMasters CERTIFIED ISO 9001