

60
YEARS
KNAUER
1962-2022



Science with Passion



KNAUER OEM. The Original.

LIQUID CHROMATOGRAPHY SYSTEMS AND MODULES

HIGH-PRESSURE DOSING PUMPS

LC DETECTORS

MANUAL INJECTION AND AUTOSAMPLERS

HPLC VALVES

SOFTWARE

Your innovative solution.

Made in Germany since 1962.



Independent and family-owned

THE ORIGINAL

KNAUER is an independent, family owned, middle-sized company with

- Own hardware and software development
- Process-controlled development and manufacturing
- Dedicated OEM team to serve customers
- Development and manufacturing in Germany



German Chancellor Mrs. Angela Merkel visiting KNAUER production line on September 10, 2021

KNAUER was one of the first companies in Germany to develop devices for analytical liquid chromatography. With tremendous experience on how to make successful instrumentation, we are active in this field for decades. In addition to manufacturing our own brand, we also offer contract manufacturing and development. The company, with its advanced quality and environmental management, offers a comprehensive range of products for high-performance liquid chromatography.

As a producer of HPLC systems, KNAUER is the right partner for development and supply around all liquid chromatography fields. We develop innovative and individual solutions according to your specification.

KNAUER OEM. The Original.

For more information: www.knauer.net/oem



KNAUER Mechanical Shop in Berlin, Germany

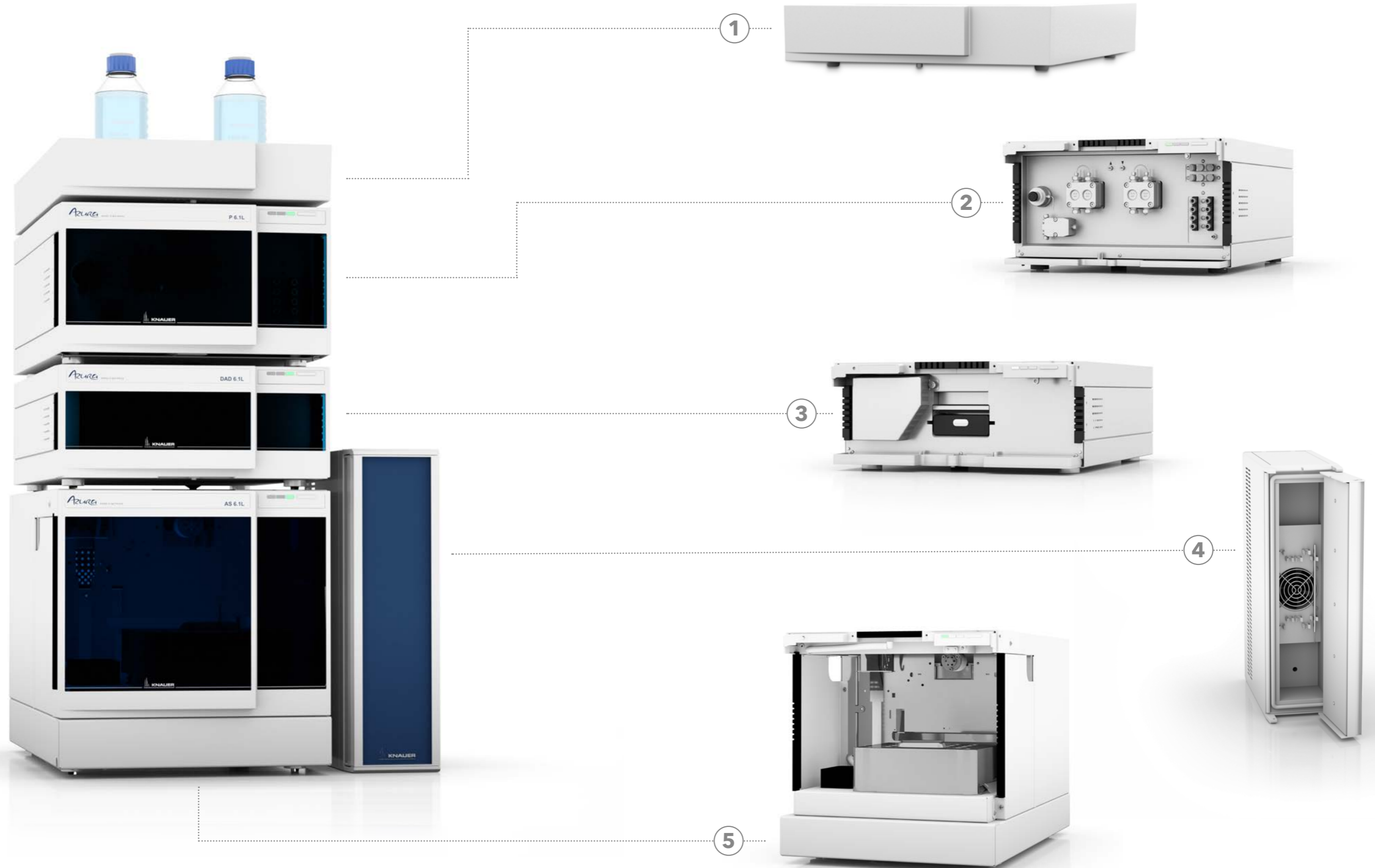
HOW TO GET YOUR INNOVATIVE SOLUTION

We develop and implement solutions to fulfill the requirements of you and your clients.

	OEM Partner	KNAUER Team
01 FIRST STEP	Defines the technical and functional requirements	Evaluates the demands and analyzes the feasibility of the concept
	Defines the design requirements	Review the design
	Engineering meeting between both parties	
02 SECOND STEP	Defines project scope and timeline	Evaluates project costs and timeline
	Both parties approve the customization level and requirements	
03 THIRD STEP	Shares process control and verification requirements	Evaluates the process and adapts in KNAUER if applicable
	Approves the performance and design specs	develops prototype according to the requirements
	Approves the prototype	Starts with pilot series
04 FOURTH STEP	Defines the documentation requirements	Provides all manuals and associated documents
	Defines Sales and service training levels	Provides all required sales & service trainings

MARKET LAUNCH

AZURA® SYSTEM



Typical analytical HPLC system configuration

1 ELUENT TRAY

Every system requires an eluent tray in a particular design or another. It might be a separate tray or an integrated tray part of the system box. You choose whatever form best fits your needs, and we put it into action. If you want your new product to have a look that complements your industrial design, we can help you select the best paint and design.

2 PUMP

You will tell us all about your pump's demands and requirements, as well as its function in the system, and we'll configure the finest solution for you.

On KNAUER portfolio:

- High-pressure metering pumps
- Analytical and preparative pumps
- Completely metal-free pumps for bioinert (FPLC) applications

Along with:

- Different kinds of pulse dampener
- Different kinds of dynamic and static mixers

Specifications - Pumps	
Pump head max. flow rate (ml/min)	5, 10, 50, 100, 250, 500, 1000
Pressure	400 bar metal free up to 1240 bar for UHPLC application
Piston seal washing	Passive (compact pumps), active (all other pumps)
Wetted materials	Aluminum oxide/Zirconium oxide, PEEK/PCTFE, Graphite Fiber Reinforced PTFE, FKM/FFKM, Ruby, Titanium, Stainless steel
Optional modules	Solvent selection valve: 3/2 solenoid valve, 24V, Base: PEEK, Seals: FFKM, 8.7 x 37 x 68.8 mm (WxDxL) Degasser: 2 & 4 channels, internal volume per chamber 285 µl LPG valve: 2/2 valve, FFPM, 24
Static mixer volume (µl)	50, 100, 200, 250, 400, 600 (Microfluidic mixing technology)
Dynamic mixer (ml)	1.740, 5.9 (using magnetic stirrer)
Control	LAN, RS-232, USB, Analog, Standalone, Mobile control
Supported by	ClarityChrom®, PurityChrom®, OpenLab CDS EZChrom Edition, Chromeleon™

3 DETECTOR

As our partner, you get the flexibility to choose between variable single and multi wavelength detectors. As well as diode array detectors to acquire a full UV spectrum.

On KNAUER portfolio:

- UV/VIS variable single wavelength detectors
- UV/VIS variable multi wavelength detectors
- Diode array detectors
- Conductivity and pH monitors/detectors
- Refractive index detectors
- Electrochemical, Fluorescence and light scattering detectors

Along with:

- Nano, Analytical, semi-preparative and preparative UV flow cells in different
 - path lengths
 - capillary connections
 - flow rate ranges
 - volumes
 - pressure ranges
 - materials

Specifications - UVD and DADs	
Light source	Deuterium lamp, High brightness deuterium lamp, halogen lamp All light sources hold an integrated GLP chip
Wavelength range (nm)	190-500 (1), 190-700 (2), 190-750 (4,5), 190-750/900 (depends on one or two lamp version) (3), 190-1000 (6)
Linearity	>2.0 AU @270 nm (1,2), >2.2 AU @270 nm (3), >2.0 AU @274 nm (4,5), >2.5 AU @274 nm (6)
Biocompatible version	all
Control	LAN, RS-232, Analog, Stand-alone, Mobile control
Supported by	OpenLab® EZChrom, ClarityChrom®, PurityChrom®, Chromeleon®
KNAUER Service tool	Available for all products
Operation temperature (°C)	4-40
Required ventilation power*	0.5W, 40x40 (x1)(1), 1W, 60x60(x1) (2,3), 1.9W, 60x60(x1)(4,5,6)
Supplements	User & Service manuals, Service notes, Service SOPs & videos, Device & Service communication protocol

4 COLUMN THERMOSTAT

Our forced air column thermostat with microprocessor-controlled Peltier element for heating and cooling in a range of 5-85°C is an attractive product for most HPLC applications.

On KNAUER portfolio:

- Column thermostat for up to 8 HPLC column

Along with:

- Pre-heater in 0.1- and 0.18-mm ID

5 AUTOSAMPLER/LIQUID HANDLER

If you have already decided for an automatic sampler, you are absolutely on the right place with us!

On KNAUER portfolio:

- Analytical autosampler in 1000 and 1240 bar
 - With cool/heat option
- Bio analytical autosampler in 345 bar
 - With cool/heat option
- Preparative autosampler in 200 bar for injections up to 10 ml
 - With cool/heat option
- Bio preparative autosampler in 200 bar
 - With cool/heat option

Do you require a more cost-effective sampling solution? Do you plan to use this solution as a base for other potential or already available applications? Follow us to the next page >>



Autosampler AS 6.1L



Liquid Handler LH 8.1

+ VALVES AND VALVE DRIVES

KNAUER valves are engineered for a wide range of chromatography and dosing applications. Versatility is ensured by the choice of various materials and dimensions, as well as by drivers for different software packages. The valves are driven either manually or automatically via an electric valve drive.



The Valve Unifier is an intelligent valve drive featuring LAN, USB, analog, CAN and RS-232 control choices, as well as RFID technology. Therefore, independent of the valve head design from analytical to preparative scale, only one valve drive is required, and this keeps your logistics highly cost-effective.

On KNAUER portfolio:

- Operated manually and electrically in different
 - Functionalities
 - Ports
 - Rotor and stator materials
 - Bore sizes
 - Back pressures
 - Capillary connections

Specifications

Valve scale	Analytical, Preparative
Valve function	Injection, column selection, fraction collection, other switching tasks
Max pressure (bar/psi)	1 240/18 000 depending on the valve design
Bore size (mm)	0.2 - 2.0
Capillary connection (inch)	1/16"; 1/8"
Stator material	Stainless steel, Stainless steel DLC, PEEK
Rotor material	Vespel, PEEK, PPS, POM



KNAUER Product Selection Guide

For more information on the KNAUER product portfolio visit:
www.knauer.net/psg



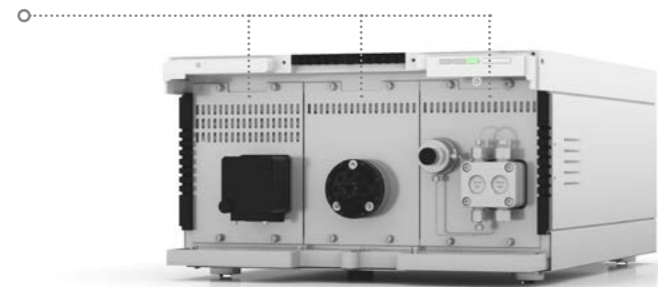
SAVE COSTS AND SPACE WITH THIS APPROACH

Less space, yet higher demand? The docking station would be the solution.

KNAUER LC module docking station can be configured with up to three plug-in modules in the left, middle and right position for chromatography applications and beyond. You can choose between pumps, valves, and detectors and the position of each.

You believe it is a fantastic idea, but you have not enough budget or qualified applications to occupy all three positions right now? Let one or two positions empty and fill in the modules later!

Freely combine pumps, valves and detectors in one housing



On KNAUER portfolio:

- More than 3700 available options with
 - Four modules
 - Column holder
 - Valve drive
 - Compact pump with different configurations and materials
 - Compact detector in normal and fiber optic version
 - Various positioning alternatives

CHOOSE YOUR SOFTWARE DRIVER

We provide you with drivers for several chromatographic data systems for our modular OEM platform. If you prefer to use your own software, we supply you with all the required communication protocols.

On KNAUER portfolio:

- Mobile Control (Chrom)
- OpenLAB® CDS EZChrom Edition
- ClarityChrom® CDS
- PurityChrom®
- Chromeleon™ 7.2 Drivers

KNAUER service tool, is available for a broad variety of OEM products for several purposes such as monitoring, adjusting, calibrating, diagnosing, and software upgrade.

MOBILE CONTROL

KNAUER's intuitive software for tablets, laptops, and PCs.

If you need a basic, easy-to-use, and cost-effective software for your LC system OR even if you are running a non-LC system, Mobile Control is the solution for you.

Pay only for what you need

Mobile Control features basic functions to operate AZURA devices and systems. Mobile Control can operate dedicated applications which do not require a highly developed and cost-intensive chromatographic Data System (CDS).

On KNAUER portfolio:

- Mobile control
- Mobile control Chrom



KNAUER Product Selection Guide
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PUMPS

You want to verify the compatibility of our product into your system, KNAUER will provide you with all step files for all required products.

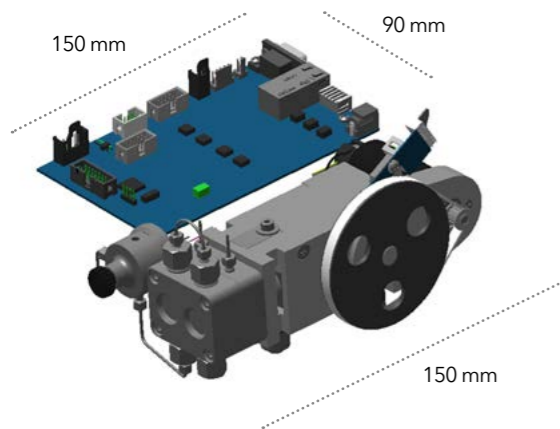
DOSING PUMP



COMPACT HIGH PRESSURE PUMP

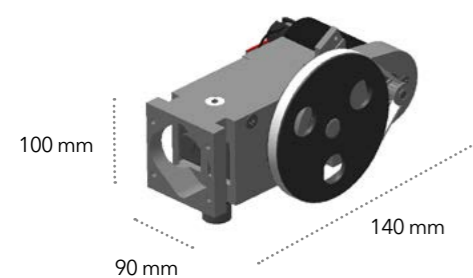
For LC and dosing applications

- Configurable with or without pressure sensor
- Stand-alone and integrated versions available
- Available with or without keypad



PUMP KIT WITH HORIZONTAL MAIN BOARD

(vertically positioned in original configuration)



PUMP DRIVE

The dimensions of this drive are the same in all analytical versions.

PREPARATIVE PUMP



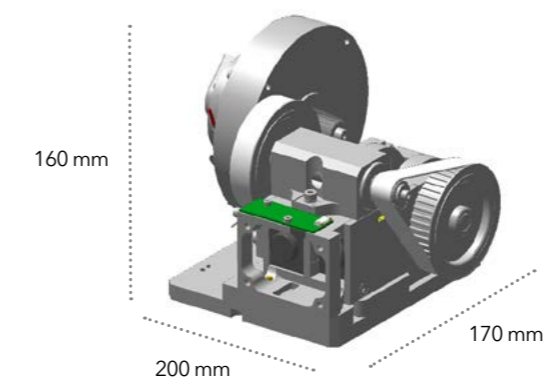
HIGH PRESSURE PREPARATIVE PUMP

L-size housing



HIGH PRESSURE DOSING PUMP

Preparative OEM version



PREPARATIVE PUMP DRIVE

Available in BlueShadow 80P and AZURA® P 2.1L

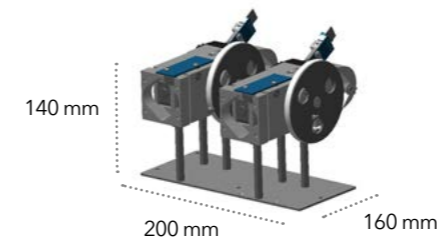


208 mm

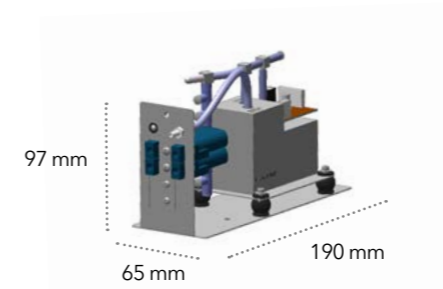
HIGH PRESSURE ANALYTICAL PUMP
L-size housing

361 mm

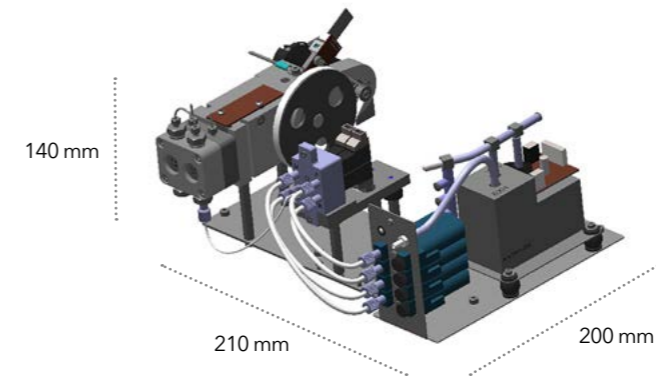
523 mm



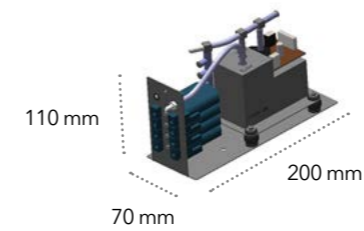
DOUBLE PUMP DRIVES (BINARY PUMP)



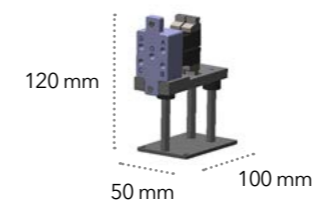
2-CHANNEL DEGASSER UNIT
(AVAILABLE IN BINARY PUMP)



COMPLETE PUMP KIT
(QUARTERNARY PUMP)
Excluding electronics

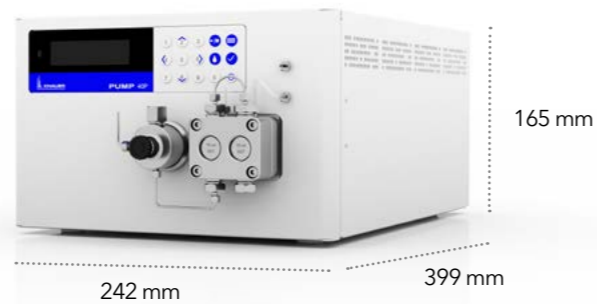


4-CHANNEL DEGASSER UNIT (QUARTERNARY PUMP)



LPG VALVE UNIT (QUARTERNARY PUMP)

HIGH PRESSURE DOSING PUMP
Analytical OEM version



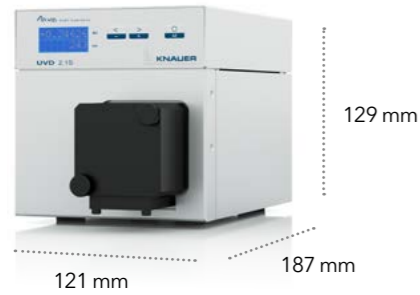
165 mm

242 mm

399 mm

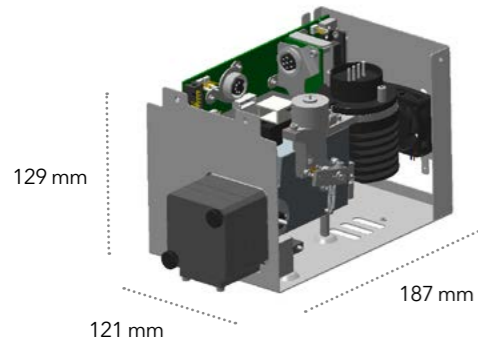
DETECTORS

Detector kits shall be considered with electronic components. Modification of any cable length is to be discussed.



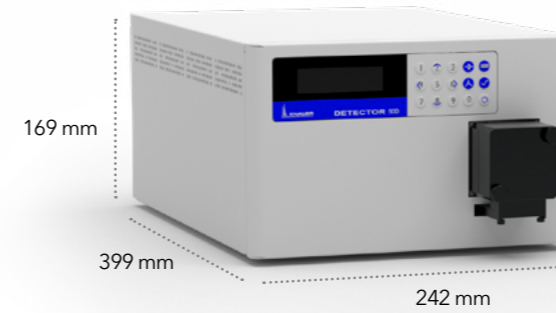
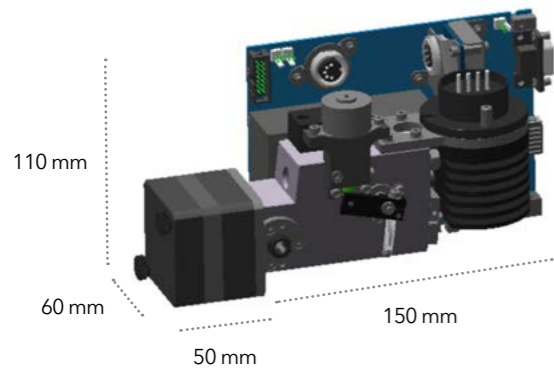
COMPACT VARIABLE SINGLE WAVELENGTH DETECTORS

Normal and fiber optic, stand-alone and integrated versions available.



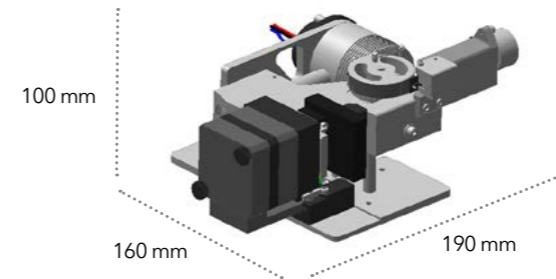
AS KIT TO INTEGRATE INTO THE CUSTOMER SYSTEM

Available as normal and slide-in module (for first option the conditions and requirements should be discussed).



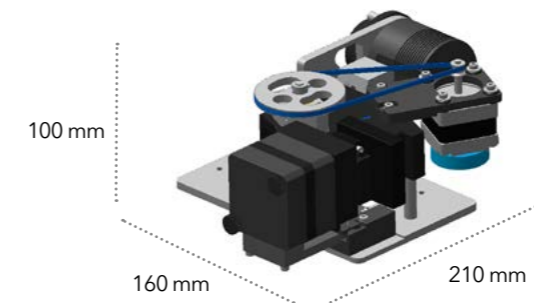
UV-VIS SINGLE/MULTI WAVELENGTH DETECTOR

Normal and fiber optic, stand-alone and integrated versions available.



SINGLE WAVELENGTH DETECTOR KIT

Detectors are available with electrical parts, the photo is just to show the optical bench dimension.



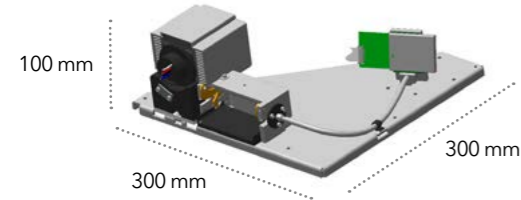
MULTI WAVELENGTH DETECTOR KIT

Detectors are available with electrical parts, the photo is just to show the optical bench dimension.

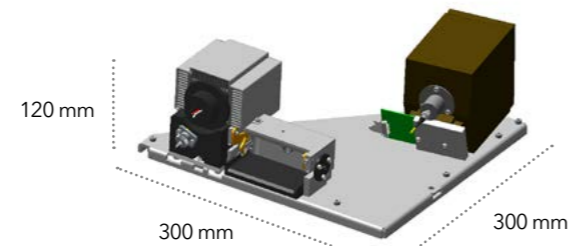
DETECTORS



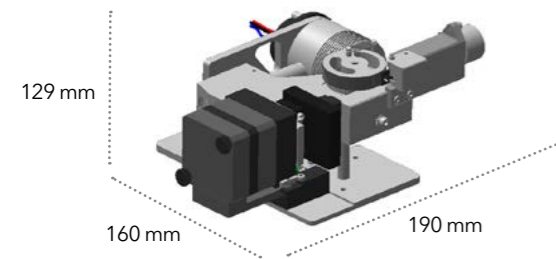
HIGH-END LC DETECTORS
L-size housing



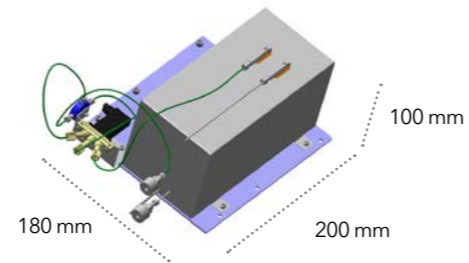
DAD/MWD 2.1L KIT



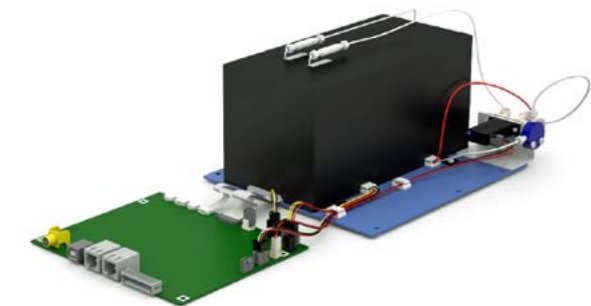
DAD 6.1L KIT



UVD 2.1L KIT

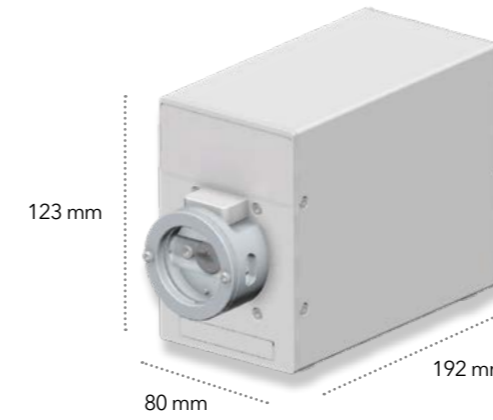


RID 2.1L KIT

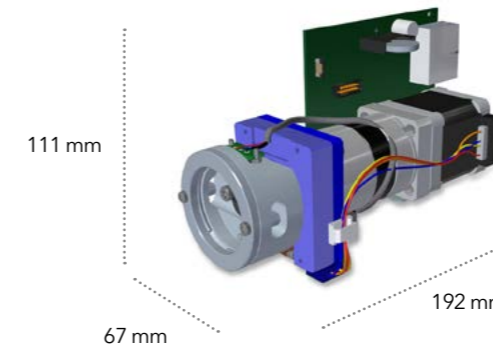


AZURA® RID 2.1L OEM KIT
Designed for OEM integration and business

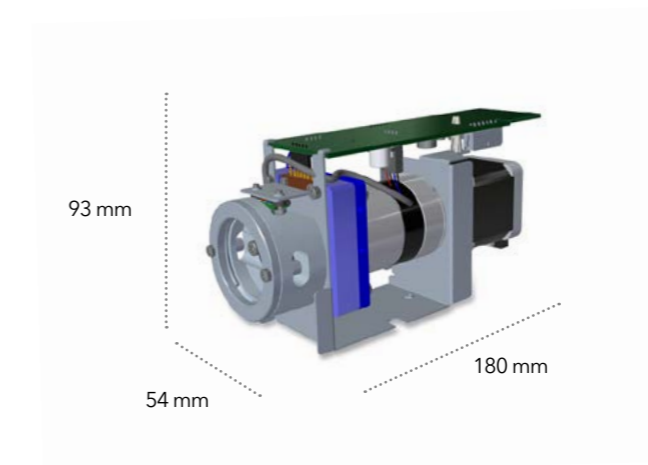
VALVE DRIVE



VALVE DRIVE W/O DISPLAY & KEYPAD

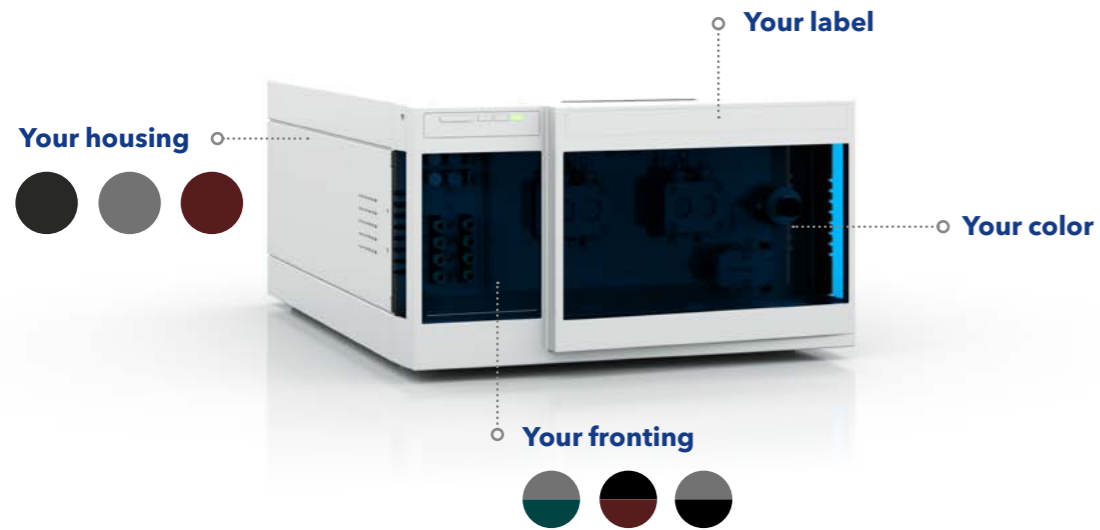


VALVE DRIVE WITH MOTOR CIRCUIT AND INTERFACE BOARDS



SLIDE-IN MODULE WITHOUT MAINBOARD

DESIGN YOUR PRODUCT



YOUR INDIVIDUAL BRANDING

Design your own front cover and present your own unique system. Most of our OEM partners are interested in a front cover that is

- lightweight
- neutral
- printable and color customizable with logos and scripts



DESIGN EXAMPLE
Dynamic Biosensors, Germany
 Protein purification system proFIRE®

LET'S LAUNCH TOGETHER



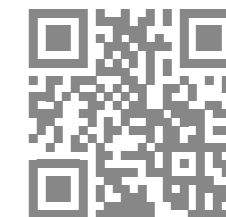
Elnaz Farzad, Global Sales Leader OEM (left) with Philipp Jänicke, Mechanical Manufacturing

Fulfilling a mission requires team work, long-term partnership and collaboration. We are proud to have business partners all over the world by integrating our technology into their business needs.

Whatever your plans are, adding your own LC system to your analysis instruments or choose from one of our state-of-the-art modules or accessories. You will find a good selection fulfilling various needs.

➤ GET IN TOUCH

oem@knauer.net
www.knauer.net/oem





KNAUER Product Selection Guide 2021/2022



OEM Customization Compendium



OEM Newsletter No. 01/2021



OEM Newsletter No. 02/2021



The purpose of this brochure is to provide you with an understanding of Knauer's OEM concept and walk you through initiating, developing, and completing an OEM project/product with all opportunities, resources, and alternatives we provide. Technical data or prices are subject to change without notice. Prices may vary by country and do not include taxes, customs duties or delivery. All trademarks are the property of their respective owners. Our general terms and conditions apply: www.knauer.net/terms

KNAUER is the proud winner of the German Innovation Award 2022 in the category of medium-sized businesses.

(U)HPLC • FPLC • SMB • Osmometry and units for the production of lipid nanoparticles (LNP)



Innovation

Own hardware and software development



Customized solutions

Pumps, detectors, valves and systems adapted to your needs



Made in Germany

Independent and family-owned since 1962

KNAUER Wissenschaftliche Geräte GmbH

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