



KONIK

Новая аналитическая система для ВЭЖХ KONIK 550

KONIK HPLC 550 A 1



ОБЗОР

- Введение
- Система 550 для ВЭЖХ
- Модульная конструкция KONIK
- Насосы, дегазаторы, детекторы, инжекторы, колонки, программное обеспечение
- Дополнительные принадлежности
- Заключение

KONIK HPLC 550 A 2



ВВЕДЕНИЕ

- ВЭЖХ — исключительно универсальный метод, получивший широкое признание в аналитической химии.
- Фирма KONIK занимается разработкой и производством и продажей всего необходимого для ВЭЖХ:
 - насосы, дегазаторы, детекторы, инжекторы, колонки, программное обеспечение и дополнительные принадлежности
 - цель этой презентации — показать свойства и преимущества системы KONIK 550 для ВЭЖХ, всего соединенного с ней оборудования и дополнительных принадлежностей.

KONIK HPLC 550 A 3





Возможность различных сочетаний отдельных модулей для ВЭЖХ в соответствии с потребностями заказчика

Для всех модулей предоставляется документация по всем стадиям квалификации.

KONIK HPLC 550 A 4



Система 550 для ВЭЖХ

- Изократическое элюирование, работа с высоким и низким давлением
- Устройство переключения между колонками
- Ручные или автоматические системы ввода пробы
- По желанию поставляется колоночный термостат
- Обращенные фазы (C8, C18)
- Среднеполярные фазы (NH₂, CN)
- Нормальная фаза (Si)
- Ионная хроматография
- Биохроматография (титан, керамика, ПЭЭК)
- Гель-проникающая хроматография/гель-фильтрация



KONIK HPLC 550 A 5

KONIK[®]
KROM+MASS

Система для ВЭЖХ KONIK 550(расширенная)



KONIK HPLC 550 A 6





- Поддон для бутылок, вмещающий до 6 бутылок по 1 л

KONIK HPLC 550 A 7



Контрольный блок для системы ВЭЖХ 550

- Возможно подключение 1, 2 или 3 компонентов по желанию заказчика — у вас есть выбор!
- 4 клапана для насоса KONIK
- 4-канальный вакуумный блок дегазации (с мембраной из аморфного фтористого полимера, 2-канала для полупрепаративной хроматографии)
- Интерфейсная плата для управления прибором и регистрации данных с помощью внешних устройств (аналоговая, 4 канала)

KONIK HPLC 550 A 8





Контрольный блок для системы KONIK 550

KONIK HPLC 550 A 9



KONIKTECHPROD.INFO



KONIK HPLC 550 System Controller

Technical Document
Note Reference:
LCSCON550_LEA_E051005
Product Reference: KNK-059-400

EUROPE (Barcelona, Spain):
sales@konik-group.com
AMERICA (Miami, USA):
miami@konik-group.com

additional information at
www.konikgroup.com

'The new KONIK 550 System Controller is adaptable to the requirements of the customer because it can be optionally equipped with a low pressure gradient (LPG) module, a degasser module and an interface module.'

'Maximum flexibility in a minimum amount of space i what makes the KONIK 550 System Controller truly exceptional'

The combination of the KONIK HPLC 550 System Controller (equipped with the LPG module) with the KONIK HPLC 550 Pump provides for a quaternary LPG system. The maximum flow rate per channel, depending on the pump head, can reach up to 50 ml/min. The valve block, made of highly resistant PEEK, is controlled by the KONIK HPLC 550 Pump and delivers gradient mixtures of the highest precision over the entire flow range.

An optional integrated degasser module provides outstanding performance through its use of a newly developed micro vacuum pump while taking up only a minimum of space. The gas diffusion rate has been improved by a factor of 200-300 times, thanks to a new amorphous fluoro-polymer rather than a regular Teflon membrane. Excellent chemical and physical stability parameters, as well as the reduction of the internal chamber volume to less than 0.5 ml, are convincing features. The KONIK HPLC 550 Degasser Module is available for maximum flow rates of either 10 ml/min or 50 ml/min.

In order to maintain the flexibility of being able to integrate additional HPLC components outside of the KONIK HPLC 550 series, the KONIK HPLC 550 System Controller can optionally be equipped with an interface module. The interface module enables highly precise data acquisition and provides for the control of non-KONIK devices over analog and relay outputs.



KONIK HPLC 550 A SYSTEM CONTROLLER > p 1

KONIKTECHPROD.INFO



Technical Data KONIK HPLC 550 System Controller



Power Supply via KONIK HPLC 550 Pump
Dimensions/Weight 226 x 135 x 390 mm (W x H x D)/ 4.8 kg.

LPG MODULE

Number of Eluents up to 4
Gradient Range / Progression / Accuracy 0-100% / 1% increments / $\pm 0.5\%$
Gradient Reproducibility RSD better than 1%
Max. Flow per Channel 50 ml/min
Control by KONIK HPLC 550 Pump or through KONIKROM® HPLC software

DEGASSER MODULE

Maximum Flow Rate analytical: up to 10 ml/min, semi-preparative: up to 50 ml/min
Number of Channels analytical: 4, semi-preparative: 2
Degassing Method gas permeation through Teflon® AF amorphous fluoropolymer membrane
Degassing Efficiency < 0.5 ppm residual dissolved O₂ at 1 ml/min
Dead Volume analytical: 480 µl per channel, semi-preparative: 7.7 ml per channel
Solvent Applicability universal, except fluorinated hydrocarbons
Wetted Materials PEEK, Tefzel®, Teflon® AF
Vacuum Chamber polypropylene and stainless steel
Vacuum Pump micro vacuum pump with variable reluctance sleeping motor >6.2 kPa : 400 cycles/min; < 6.2 kPa : 60 cycles/min

INTERFACE MODULE

Analog Inputs 4 x multiplexed, bipolar, differential, 24-bit resolution, maximum input range: $\pm 2.56V$, programmable by software (same setting for all channels), data acquisition rate: 1Hz - 10 Hz
Analog Outputs a 4 x single ended unipolar, output range: 0 to +10 V, 12-bit resolution, 2.5 mV steps
Digital Inputs 4 inputs, grounded contact or TTL/CMOS or TTL/Open collector compatible
Digital Outputs 4 outputs, single pole double throw (SPDT) electromechanical relays

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KONIK HPLC 550 A SYSTEM CONTROLLER > p 2

KONIK HPLC 550 A 10



НАСОС ДЛЯ СИСТЕМЫ ВЭЖХ KONIK 550

- Насос для аналитической и полупрепаративной ВЭЖХ
- Головки 10 и 50 мл из нерж. стали, титана или с керамическим покрытием
- С системой обратной промывки поршня
- Возможность создания кватернарного градиента низкого давления при использовании контрольного блока KONIK
- Возможность работы с градиентом низкого давления при использовании второго насоса 550 для ВЭЖХ
- Возможно использование статической камеры смешения

KONIK HPLC 550 A 11



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KONIK HPLC 550 Pump

Technical Document
Note Reference:
LCSPLUMP_LEA_ED051005
Product Reference: KNK-059-100

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“A unique combination of performance, versatility, reliability and flexibility”

The KONIK HPLC 550 Pump offers many valuable features. The new, optimized drive mechanism guarantees reliability and a long lifespan; our improved pump heads are optionally equipped with either stainless steel or titanium inlays.

Positioned behind the side-swinging door on the front panel on which the integrated display and touchpad are located, the pump (either 10 or 50 ml) is well-protected from external influences yet remains entirely accessible. The pump also offers a very low residual pulsation and exceptional flow rate accuracy and precision.

The KONIK HPLC 550 PUMP can be supplemented with the KONIK low pressure gradient module to achieve a quaternary. The addition of a second KONIK HPLC 550 PUMP enables a high pressure gradient system (maximum quaternary). The eight programmable event outputs can be used for extensive switching tasks. Due to the outstanding flow consistency, high working pressure, optional complete biocompatibility, and enormous versatility, this pump is also very suitable for tasks outside the range of HPLC.

The pump demonstrates its flexibility by being controllable through KONIKROM® HPLC software as well as from the integrated touchpad or through an open communication protocol.



KONIK HPLC 550 A PUMP > p.1

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Technical Data KONIK HPLC 550 A Pump

‘The new KONIK HPLC 550 PUMP offers many valuable features. The new optimized drive mechanism guarantees reliability and a long lifespan; the improved pump heads are optionally equipped with either stainless steel or titanium inlays ‘

Delivery System

Double piston pump (one working piston, one auxiliary) with electronic residual pulsation absorption.

Pump Heads

10 and 50 ml/min with stainless steel or with titanium inlays

Maximum Delivery Pressure

10 ml/min pump head: 400 bar

50 ml/min pump head: 150 bar

Flow Range

10 ml/min pump head: 0.001 to 9,999 ml/min

50 ml/min pump head: 0.01 to 49.99 ml/min

Flow Rate Accuracy

deviation $\leq 0.5\%$ measured at 1 ml/min

Flow Rate Precision

RSD $\leq 0.1\%$, measured at 1 ml/min

System Protection

Soft start, P_{min} and P_{max} are programmable.

Control

RS-232, remote control strip, touchpad, as well as KONIKROM® HPLC software

Programming

maximum 20 programs + 10 links (to programs) and 1 wake up program

GLP Function

detailed report

Firmware Update

downloadable by a service technician

Display

LCD, 2 lines, 24 characters each

Power Supply

voltage range: 90-260 V, 47-63 Hz

Dimensions / Weight

226 x 135 x 390 mm (W x H x D) / 5.3 kg

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KONIK HPLC 550 A PUMP > p.2

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Насос KONIK 550 для ВЭЖХ



Правильность регулировки подачи: погрешность $< 0.5 \%$

Точность регулировки подачи: погрешность $< 0.1 \%$

Остаточная пульсация $< 0.5 \%$

KONIK HPLC 550 A 13



УФ-ДЕТЕКТОР KONIK 604 ДЛЯ ВЭЖХ

- УФ-спектрофотометр с дейтериевой лампой, диапазон длин волн 190 — 520 нм
- Многоволновой детектор на основе технологии PDA
- Измерение при 4 разных длинах волн одновременно
- Функция сканирования во время работы (частота сканирования 10/сек.)
- **Шум <0,01 мОЕ (10 мкОЕ)**
- **Дрейф <0,3 мОЕ/час (500 мкОЕ/час)**
- Кюветы для аналитической и препаративной хроматографии, из нержавеющей стали или ПЭЭК

KONIK HPLC 550 A 15



ДЕТЕКТОР KONIK PDA 280/281

- 1024 диода (0,8 нм на диод)
- Модуль освещения с одной дейтериевой лампой (190-740 нм)
- Модуль освещения с двумя лампами: вольфрамовой и дейтериевой (400-1020 нм), возможный диапазон 190-1020 нм
- Трехмерные хроматограммы
- Двух- и трехмерные графики
- Чистота пиков, библиотека спектров
- Шум <0,01 мОЕ (10 мкОЕ)
- Дрейф <0,3 мОЕ/час (500 мкОЕ/час)
- Проточные кюветы для аналитической и препаративной хроматографии из нержавеющей стали или ПЭЭК

KONIK HPLC 550 A 16



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KONIK HPLC 280/281 PDA Detector

Technical Document
Note Reference:
LCSDET280281_LEA_ED051011
Product Reference:
KNK-059-280 and KNK-059-281

EUROPE (Barcelona, Spain):
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AMERICA (Miami, USA):
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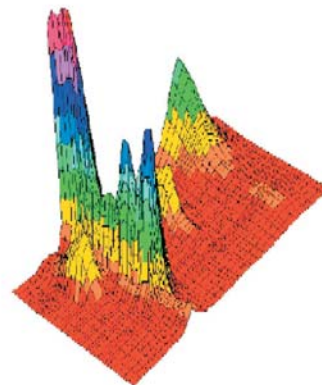
The KONIK HPLC 280 and 281 PDA Detectors are based on advanced fiber optics technology. It combines excellent technical specifications with outstanding operability.

No other instrument of this kind provides such a wide wavelength range (when equipped with deuterium and tungsten-halogen lamp) matched with high light source intensity up to the NIR range. The detector has a very high resolution at 0.8 nm per pixel and operates with an impressive wavelength accuracy of <0.5 nm and a wavelength reproducibility (precision) of <0.1 nm. The KONIK PDA 280/281 Detectors deliver the best results in terms of sensitivity, noise and drift.

Due to its unique design the KONIK PDA 280/281 Detectors have no delicate moving parts to break down, operate without a reference channel or special "see through" lamps, and does not require a time consuming cold-start calibration. The instruments are completely controlled by the KONIKROM™ software. Its Ethernet interface provides for easy and secure connection to a common TCP/IP network or directly to a PC, enabling the highest possible data rates.

The KONIK PDA 280/281 Detectors can simultaneously acquire up to four chromatograms and perform spectra scans at a maximum rate of 10 per second (the scan range can be selected from 190 - 1,020 nm).

' The KONIK PDA 280 and 281 detectors are based on advanced fiber optics technology combining excellent technical specifications with outstanding operability '



KONIK HPLC PDA 280/281 DETECTORS > p 1

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Technical Data KONIK HPLC 280/281 PDA Detectors

In conjunction with the KONIKROM™ Chromatography Software these Diode Array Detectors offer features like 2-D and 3-D chromatograms, spectra libraries, peak purity tests, and more. The detectors provide two adjustable software-controlled analog outputs for the support of preparative applications.

The variety of available flow cells and the option to easily extend the fiber optics for positioning the cell outside the housing, make this detector highly flexible.

Technical Data. Detection :

Detector Type	diode array detector
Number of diodes	1,024 (0.8 nm/diode)
Wavelength Range	(UV/VIS/NIR) 190 - 1,020 nm (Model UV 280)
Wavelength Range	(UV) 190 - 600 nm (Model UV 281)
Wavelength Accuracy	≤ 0.4 nm
Wavelength Precision	≤ 0.1 nm
Lamp	Model 280: deuterium and tungsten-halogen Model 281: deuterium
Noise	(ASTM E1657-94) ≤ 1 x 10 ⁻⁶ AU
Drift	(ASTM E1657-94) ≤ 5 x 10 ⁻⁴ AU/h
Linearity	0 - 2.0 AU

Technical Parameters :

Digital Control and Output	Ethernet
Analog Output	2 x ± 10 V (scalable)
Wavelength Verification	optional with holmium oxide filter cell
Power Supply voltage range	115/230 V, 50-60 Hz, 100 W
Dimensions	226 x 185 x 390 mm (W x H x D)
Weight	8.5 kg

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KONIK HPLC PDA 280/281 DETECTORS > p 2

KONIK HPLC 550 A 17





KONIK HPLC 550 A 18



KONIK РОВОКРОМ® в режиме ВЭЖХ



KONIK ROVOKROM®

- Высокопроизводительный модуль, прост в эксплуатации, со всеми основными и дополнительными функциями:
- Возможность частичного заполнения петли и образования производных
- 105 флаконов x 1,8 мл для дополнительных жидкостей, по желанию поддоны на 171 флаконов по 0,8 мл или 32 по 6, 10 или 20 мл.
- Объем вводимой пробы 0,1 — 500 мкл
- По желанию: охлаждение и подогрев поддона для проб (5-70°C)

KONIK HPLC 550 A 19



КОЛОНОЧНЫЙ ТЕРМОСТАТ KONIK 550 ДЛЯ ВЭЖХ



KONIK HPLC 550 A 20

- Функции нагрева и охлаждения
- Диапазон температур 5-85оС
- Точность поддержания температуры $\pm 0,2$ оС
- Стабильность температуры $\pm 0,1$ оС
- Встроенный детектор утечки
- До 5 аналитических колонок



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KONIK HPLC 550 Column Oven

Technical Document
Note Reference:
LCSOVEN_LEA_LE051006
Product Reference:
KNK-059-585

EUROPE (Barcelona, Spain):
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www.konik-group.com

KONIK HPLC 550 Column Oven has been specially designed for the use in chemical and biological routine analysis, including research laboratories. Its areas of application range from analytical to preparative HPLC.

A stable column temperature not only improves the reproducibility, but rather considerably improves the resolution of certain HPLC methods as well.

The reliable control of the temperature, which covers a range of 5-85°C has been realized with the use of a microprocessor controlled Peltier element. The measurement of the temperature is carried out with high accuracy using Double Reference Sensor Technology.

The powerful interior fan provides for 2-way air circulation and a perfectly even distribution of the thermostatted air in the column compartment, enabling quick ramping of the temperature.



KONIK HPLC 550 COLUMN OVEN > p.1

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Technical Data KONIK HPLC 550 Column Oven

The remote keypad enables access to all the thermostat's functions and displays target and actual temperature in increments of 0.1°C.

The KONIK HPLC 550 Column Oven can hold up to 4 liquid chromatography columns with a maximum length of 350 mm each. The maximum inner diameter of the HPLC columns is 20 mm.

In addition to the standard temperature adjustment, it is possible to program temperature gradients with up to 99 steps to optimize an analysis.

The temperature can either be controlled with the supplied control panel or externally with a PC. Gradients can be conveniently programmed with our chromatography software KONIKROM®.

Technical Data :

Heating and Cooling System
Microprocessor controlled, Peltier element for heating and cooling. Fan supported 2-way air circulation.
Column Compartment
Interior: Thermally insulated
Columns: analytical and preparative columns up to 20 mm ID and 350 mm length; maximum of 4 columns.
Dimensions (interior): 90 x 390 x 47 mm (W x H x D)
Injection Valve: optional with an integrated 6-port / 2-channel injection valve (SS or PEEK)
Temperature Control
Temperature Range: 5 - 85°C
Accuracy: ± 1.0/2°C
Stability: ± 0.1°C
Heating/Cooling Rate: 2°C/min
Technical Parameters
Power Supply voltage range: 90 - 230 V, 50 - 60 Hz, 100 W
LC Display: target/actual temperature (simultaneously)
Temperature Adjustment: with the included keyboard or via RS-232
Operation: manually or software-controlled
Programming: temperature gradient (99 steps or linear)
Leak Detector: adjustable sensitivity; acoustic signal; turn-off switch
Safety: self-check and auto-calibration at power-on; selectable turn-off temperature.
Dimensions / Weight
150 x 470 x 300 mm (W x H x D) / 8,4 kg

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KONIK HPLC 550 COLUMN OVEN > p.2

KONIK HPLC 550 A 21



ПРИНАДЛЕЖНОСТИ ДЛЯ ВЭЖХ

- Капилляры, трубки
- Втулки, кольца, уплотнительные прокладки
- Петли для проб, камеры смешения
- Шприцы
- **Все, что нужно для успешного применения ВЭЖХ!**

KONIK HPLC 550 A 22



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KONIK HPLC 550 A Compact HPLC System

Technical Document
Note Reference:
LCS_LEA_E051011
Product Reference:
KNK-059-000

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**' The modular
design enables
you to build
exceptionally
compact yet
complete HPLC
systems '**



KONIK HPLC 550 A instrument combines three decades of experience in designing and manufacturing HPLC systems with the most up-to-date technology, resulting in one of the most compact HPLC systems on the market with many ingenious design features.

- Compact HPLC System
- Modules can also be used stand-alone
- Excellent performance
- Easy to use
- GLP features
- Best price/performance

KONIK HPLC 550 A SYSTEM > p.1

Заключение

KONIK 550 — очень универсальная модульная система для ВЭЖХ. Вертикальная конструкция позволяет совместить привлекательный вид с практичностью и простотой в работе, а также добиться высокой производительности.

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Система для ВЭЖХ KONIK 550 может использоваться (и уже используется) в фармацевтической и пищевой промышленности, а также в лабораториях по исследованию проб из окружающей среды. Система KONIK 550, изготовленная по заказу, позволяет даже определять полимеры.

Политика компании KONIK -- в поиске индивидуальных решений для каждого заказчика. Это одна из сильных сторон компаний средних размеров, отличающая их от "крупных игроков".



KONIK HPLC 550 A 24

