

# OPSIS LiquidLINE KjelROC Distillation Unit

Distillation System with Unique Level  
of Serviceability and Automation



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# WHY KJELROC DISTILLATION UNIT?

In many tests there is a need to separate the substance of interest from the rest of the sample prior to analysis. e.g. SO<sub>2</sub> in food/wine and free fatty acids. Here a steam distillation often is the best solution and with the KjelROC Distillation Unit the control of the process is optimised.

OP SIS LiquidLINE and the KjelROC Distillation unit brings;

- Unique Level of Servicability with OP SIS LiquidLINE maintenance program and state-of-the-art service systems.
- Easily expandable system, possible to easily upgrade to a full KjelROC Analyzer.
- Complete Automatic System including Ethernet communication for simplified set-up and traceability.

## EXPANDABLE SYSTEM, LOWERS COSTS WHEN LAB REQUIREMENTS INCREASE

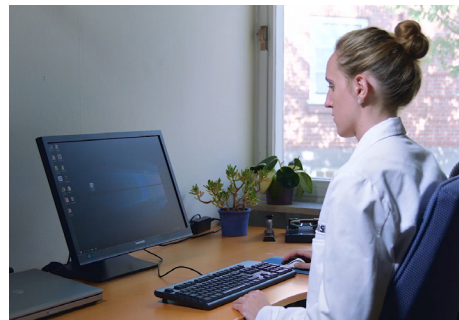
- The KjelROC Distillation Unit can easily be upgraded to a full KjelROC Analyzer at a later stage. This saves considerable cost in case you later require a full system.
- The KjelROC Distillation Unit and the KjelROC Analyzer share similar User Interfaces, which makes it easy for an operator to handle both systems.



UPGRADE YOUR DISTILLATION SYSTEM TO AN ANALYZER AT A LATER STAGE

## AUTOMATION AND TRACEABILITY INCREASES EFFICIENCY AND REDUCES COSTS

- Complete automation, including automatic addition of water and alkali
- Possibility to connect external Titrator
- OPSIS LiquidLINE LabConnect software simplifies registration and handling of results\*



LABCONNECT SOFTWARE FACILITATES ADMINISTRATION

## CHEMICAL RESISTANCE

- The OPSIS LiquidLINE BlackLINE coating\*\* provides unique corrosion protection
- OPSIS LiquidLINE service system, including an application Laboratory in Sweden

\* Included with KjelROC Auto Distillation Unit

\*\* OPSIS LiquidLINE BlackLINE coating is taken from latest development in Swedish corrosion technology. Similar coating is used in trucks and cars from Volvo and Scania.



PROTECTION WITH BLACKLINE AS WELL AS PTFE COATING AROUND SENSITIVE PARTS. POLYPROPYLENE SPLASHHEAD OPTIONAL.

# BENEFITS

After more than 25 years of experience within analysis, we will now raise the standard for Quality Instruments, Information Exchange and Analysis in samples like Food, Forage and Liquids. The KjelROC is prepared for the future with several new, unique, benefits.

## EXPANDABLE SYSTEM

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The KjelROC Distillation Unit is designed for easy expansion to a full KjelROC Analyzer system.

- Possible to upgrade from Manual Distillation to Automatic Distillation (KD-200 to KD-210).
- Possible to upgrade from Automatic Distillation to Analyzer (KD-210 to KD-310), adding the titration module.
- Possible to upgrade from Analyzer to an Autosampler (KD-310 to KD-625)



## FULL AUTOMATION

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The KjelROC Distillation Unit is a fully automatic system that requires no manual intervention.

- User defined automatic addition of Water and Alkali
- User defined addition of Receiver Solution (only KD-210)
- Possibility to connect to external titrator, for both Colorimetric and pH titration
- Steam Generator can be regulated, from 10 to 100%.
- User defined behaviour with programmable delay and selection of tube drain.
- Retrieve log files for easy maintenance support, which lowers maintenance costs.



## UNIQUE LEVEL OF SERVICEABILITY

The KjelROC Distillation Unit has the latest, state-of-the-art, service system. This can make considerable cost savings for maintenance.

- Unique system that allows individual test of every component in the instrument via a Service menu. Saves time when identifying a component failure.
- Follow lifetime of internal components by Instrument Log file and recommend exchange of components prior to possible breakdown
- Fluoropolymer coating in sensitive areas to protect against Alkali
- Distillation Log files makes it easy to send service information back to OPSIS LiquidLINE technical support. Saves time when identifying application or instrument issues.
- Automatic self test with recommendations for user actions and complete cleaning programs for daily maintenance
- Dedicated Managers menu to perform QC operations



A UNIQUE SYSTEM ALLOWS INDIVIDUAL TEST OF EVERY COMPONENT IN THE INSTRUMENT, WHICH REDUCES MAINTENANCE COSTS

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## ISO 17025 PREPARED WITH ADAPTIVE WORKFLOW

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Traceability of data files, QR component codes and user access levels to make it easy to implement ISO 17025. Use your existing Lab procedures or use our ready to use programs. The instrument is fully flexible to adapt to your demands which reduces integration costs.

- The KjelROC Analyzer can easily be qualified for your laboratory. Additional Installation, Operational and Performance Qualification documents can be purchased
- OPSIS Component traceability program allows tracking of components. It is also possible for a service engineer to retrieve lifetime status of main components.
- The KjelROC offers different access levels and menus according to GLP requirements. A dedicated menu allows the Lab manager to further control settings of the instrument such as Factory defaults and Time&Date.
- An extensive set-up of User Protection safety systems is included in the KjelROC Distillation Unit. Sensors will, for example, detect if tube is missing or if protection door is open. Automatic Tube Draining eliminates the need for handling hot reagents after distillation. Several other systems are also monitoring the operator activities.

## CONNECT YOUR LABORATORY\*

Connect the KjelROC Distillation Unit Auto to your Laboratory information flow. The LabConnect software is delivered together with all KjelROC KD-210 Auto Distillation units.

- Complete solution to register your weights and analyse your results, including direct import from connected balance and/or barcode scanner.
- Export your data to other LIMS systems or save in Excel, .CSV or PDF format
- Trusted IT security. No data is exchanged on the internet (no external cloud servers)

LabConnect software can also be upgraded with the LabConnect LIMS license

- Sample registration and Report modules
- One software for all your Protein, Moisture, Ash, Fiber and Fat analyses. The LabConnect LIMS will even work with instruments from other brands.
- User Management and Traceability of your data. Compliant with FDA Title 21 CFR Part 11



THE LABCONNECT SOFTWARE ALLOWS FOR EASY CONNECTIVITY TO YOUR LABORATORY



THE KJELROC DISTILLATION UNIT AUTO IS PROVIDED WITH A DEDICATED RECEIVER VESSEL, FOR EASIER USE TOGETHER WITH EXTERNAL TITRATORS

## EASY CONNECTION TO EXTERNAL TITRATORS\*

All KjelROC Distillation units can be connected to an external titrator. Additionally, the KjelROC KD-210 Auto Distillation unit has a dedicated receiver vessel to provide an easy set-up.

- Receiver vessel with dedicated locations for stirrer, pH electrode, receiver solution and distillate addition
- Compatible with all major Titrator manufacturers. Dedicated cable connection provided\*

\* LabConnect software and Dedicated Receiver vessel are only delivered together with KjelROCKD-210 Auto Distillation unit

## KJELROC MANUAL DISTILLATION UNIT, KD-200-C1/C2

Technical Data	
Distillation Speed	40 ml/min at 230V
Measuring range	0.1 - 200 mgN
Reproducibility (RSD)	<1 %
Recovery	>99.5% (1-200 mgN)
Operating Temperature	5°C - 40°C, max 80 % relative humidity
Power Supply	190-240 VAC, 50-60 Hz, 10A, max 2200 W
Cooling Water Consumption	1,75 l/min at 20°C
Steamgen. water Consumption	approx. 200 ml/analysis
Dimensions (WxHxD)	430 x 700 x 330 mm, 30 kg
Graphics Display	7" 800x480 colour touchscreen
Safety	Safety sensors (Tube in Place-, Protection door- and Service door), Steam Generator sensors, Drip Tray, Tank level detectors, Maintenance warning systems
Electronic Steam Regulation	10-100%
Distillation Head	Easily exchangeable Splashhead with only one tube connector made of glass for high precision (B1) or PP Plastic for durability (B2).
Password Protection	Three Levels with separate Managers Menu
Reagent Level Warning	4 x RJ-11 (External tank levels), OPSIS LiquidLINE flexible level detectors - adaptable for different reagent tanks (optional accessory)
Data Communication	Ethernet (RJ-45) interface. Possible to use with Wireless communication
Automatic Distillation	Programs for automatic control of cooling water, dilution water and sodium hydroxide. Program to control distillation process. Automatic Tube drain included.
Future Expansion	All KjelROC Units from OPSIS LiquidLINE are expandable, which means that it is possible to upgrade a Distillation Unit to an Analyzer and Sampler system.
Programs	Standard Method, Special Method with traceability and Auto Clean. User-configured five program buttons directly accessible from main menu.
Daily Maintenance	Manual and Automatic Cleaning programs

## KJELROC AUTO DISTILLATION UNIT, KD-210-C1/C2

In addition to the features in the KjelROC Manual Distillation Unit

Advanced Features	Pump and Programs for automatic addition of receiver solution Enhanced water valve with extra protection
Titration and Receiver vessel	Two possibilities: Fixed Titration vessel (possible to mount stirrer) for easy titration with external titrator or Receiver vessel using standard Conical Flask
Included Software	OPIS Labconnect Standard software (can later be upgraded to LabConnect LIMS)

*Specifications subject to change without notice*

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