

# OPSIS LiquidLINE KjelROC Analyzer

High Precision Kjeldahl System  
with Smart Connectivity



# WHY KJELROC ANALYZER?

OPSIS LiquidLINE brings innovation to an established market

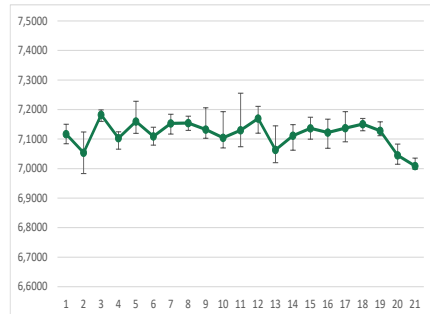
- Unique accuracy with OPSIS LiquidLINE Predictive Titration \*
- Integrated workflow with OPSIS LiquidLINE LabConnect Software
- High Chemical Resistance with the unique OPSIS LiquidLINE BlackLINE coating and plastic material in critical areas

\* Patent Pending



## UNIQUE ANALYTICAL PRECISION

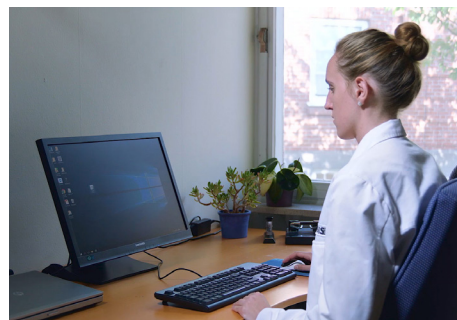
- Unique OPSIS LiquidLINE Predictive Titration technology
- Colorimetric Titration
- Proven Relative Standard Deviation 0.75%



AN ANALYTICAL INSTRUMENT WITH HIGH PRECISION

## CONNECT YOUR LABORATORY

- OPSIS LiquidLINE connectivity solution, LabConnect software, makes your work with KjellROC easy, smart and effective
- LabConnect software simplifies exchanging of data between your instrument, balances and the rest of the laboratory
- LabConnect LIMS license is an upgrade that provides you with a complete LIMS solution\*



LABCONNECT SOFTWARE FACILITATES ADMINISTRATION

## CHEMICAL RESISTANCE AND UPGRADES

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

\* LabConnect LIMS upgrade is an additional license, not included in delivery

\*\* 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 30 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.

## HIGH PRECISION TITRATION SYSTEM

The KjelROC is designed for colorimetric titration and fully complies to standards issued by organisations such as AOAC, IDF and ISO. A unique Titration system, OPSIS LiquidLINE Predictive Titration\*, lowers the Relative Standard Deviation which directly transforms to more precise results. A large burette with automatic refill during analysis will also secure a wide analysis range.

- OPSIS LiquidLINE unique Predictive Titration\* lowers the relative standard deviation and simplifies the use of different indicators
- Burette with a resolution of 1.95 µl/step gives unmatched precision
- Easy exchangeable Glass Splashhead for high precision or Polypropylene Splashhead for high volume analyses
- Unique Steam Stirrer function ensure safe distillation to avoid dangerous exothermic reactions
- PTFE tubes limit air bubbles

\* Patent Pending



Representantes / Distribuidores Exclusivos

 Argentina

Tel: (+54 11) 5352 2500

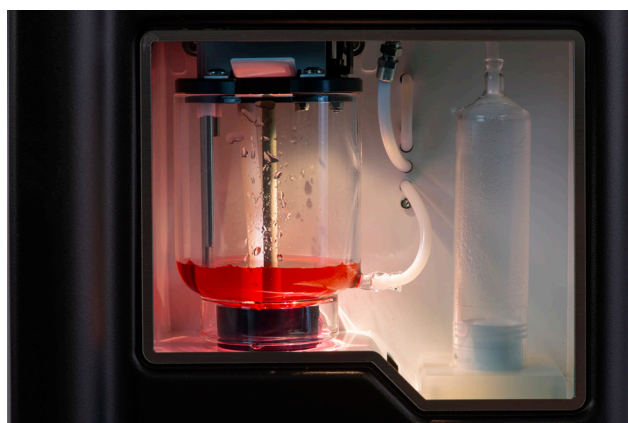
Email: [info@dastecsrl.com.ar](mailto:info@dastecsrl.com.ar)

Web: [www.dastecsrl.com.ar](http://www.dastecsrl.com.ar)

 Uruguay [www.dastecsrl.com.uy](http://www.dastecsrl.com.uy)

 Paraguay [www.dastecsrl.com.py](http://www.dastecsrl.com.py)

THE UNIQUE PREDICTIVE TITRATION  
SYSTEM LOWERS THE RELATIVE  
STANDARD DEVIATION AND THE  
50 ML BURETTE WITH AUTOMATIC  
REFILL MAKES IT EASY TO CHANGE  
BETWEEN HIGH AND LOW PROTEIN  
ANALYSIS



## CONNECT YOUR LABORATORY

Connect the KjelROC Analyzer to your Laboratory information flow. The LabConnect software is delivered together with all KjelROC Analyzers

- Complete solution to register your weights and analyse your results, including direct import from connected balance and/or barcode scanner.
- Send weights and retrieve results between KjelROC Analyzer, PC, iPad or iPhone. Export 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 OPSIS LIQUIDLINE LABCONNECT SOFTWARE



Labconnect standard software is a solution delivered together with all OPSIS LiquidLINE KjelROCs, SoxROCs and FiberROCs

- Registration of weights, analysis results and export of data
- Automatic import from your balance or barcode scanner

Labconnect LIMS license is an upgrade that allows expansion to a complete Laboratory Information Management System (LIMS)

- Sample registration and reporting
- A software for all your protein, fiber and fat analyses
- Compliance with FDA Title 21 CFR Part

## ADAPTIVE WORKFLOW AND GLP REQUIREMENTS

---

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.

- With our adaptive workflow you are always in control, for example handling express samples with no previous weight entry, weight entry via touch screen or weight entry from an external device. Any combination is possible.
- The KjellROC Analyzer can easily be qualified for your laboratory. Additional Installation, Operational and Performance Qualification documents can be purchased
- Easy check and adjustment of all components in your KjellROC, using the Managers and Service menus
- Automatic self test with recommendations for user actions and complete cleaning programs for daily maintenance
- The KjellROC offers different access levels and menus according to GLP requirements
- An extensive set-up of User Protection safety systems is included in the KjellROC



AN OVERVIEW OF THE WHOLE RACK WITHOUT POP-UP DIALOGUES - AN INSTRUMENT WITH THE USER IN MIND.

## ISO 17025 PREPARED

---

Traceability of data files and user access levels make it easy to implement ISO 17025.

- OPSIS Component traceability program allows tracking of components. It is also possible for a service engineer to retrieve lifetime status of main components
- The User ID is included in weight entry and analysis log file to ensure traceable events. Data remains intact, and traceable, from PC to instrument and back
- Dedicated Managers menu to perform QC operations such as Burette test



## OPSIS LIQUIDLINE MAINTENANCE PROGRAM

---

OPSIS LiquidLINE designed for your maximum safety, with several safety sensors inside. Easy diagnostics in software which reduces risk for downtime of instrument.

- Unique system that allows Individual test of every component in the instrument via a Service menu
- Follow lifetime of internal components by Instrument Log file
- Fluoropolymer coating in sensitive areas to protect against Alkali
- Automatic self test with recommendations for user actions and complete cleaning programs for daily maintenance

# KJELROC ANALYZER, KD-310-C1/C2

Analytical Data	
Titration System	Colorimetric Titration. Unique Predictive Titration system automatically adjust titration speed on the actual distance from the end point. Steam stirrer function ensure safe distillation to avoid dangerous exothermic reactions. PTFE tubing used throughout to eliminate formation of air bubbles between burette-titration vessel.
Sampler System	It is possible to install the KjelROC Analyzer with an optional Sampler system
Measuring Range w/o burette refill	0,1 - 225 mg N
Recovery	> 99.5% (1-200 mg N)
Burette volume	Interchangeable burette 50 ml (automatic refill during analysis)
Dosing accuracy	1.95 µl/step
Accuracy/Precision %rsd	0.75% at N levels 1 - 225 mg
Distillation Speed	40 ml/min at 230V
Start time for Analysis	Instant start of analysis, no delay between analyses
Distillation Time	3.5 - 4 min (10 mgN), 5-5.5 min (225 mgN)
Technical Data	
Operating Temperature	5°C - 40°C, max 80 % relative humidity
Power Supply	190-240 VAC, 50-60 Hz, 10A
Power consumption	max 2200 W
Cooling Water consumption	1,75 l/min at 20° C
Steamgen. water consumption	approx. 200 ml/analysis
Dimensions (WxHxD) and Weight	430 x 700 x 330 mm, 30 kg
Graphics Display	7" 800x480 color touchscreen
Safety	Safety sensors (Tube in place-, Protection- and Service door), Steam generator sensors, Cooling water Measurement, 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 Polypropylene for durability (B2).
Password Protection	Three Levels with separate Managers menu
Included Software	OP SIS Labconnect Standard software (can later be upgraded to LabConnect LIMS). OP SIS LiquidLINE Transfer Utility supplied for iPhone and iPad. Well documented open transfer protocols and example code for Excel spreadsheet provided.
Communication	Ethernet (RJ-45) interface. Included KjelROC router for wireless, 802.11 b/g.
Reagent Level Warning Data	4 x RJ-11 (external tank levels), 1 x RJ-11 (titration tank), OP SIS LiquidLINE flexible level detectors (optional accessory)
Automatic Distillation and Titration	Programs for automatic control of cooling water, dilution water, sodium hydroxide and receiver solution as well as automatic emptying of tube and titration vessel. Automatic control of water cooling, selectable delay times and cleaning program.
Programs	Up to 64 customized programs
Manual Control	Possibility to bypass automatic titration system to allow for manual titration.
Daily Maintenance	Manual and automatic cleaning programs

Opsis AB, Box 244  
SE-244 02 Furulund Sweden  
Telephone +46 46 72 25 00  
Telefax +46 46 72 25 01  
E-mail info@opsis.se  
www.liquidline.se



Representantes / Distribuidores Exclusivos

 Argentina

Tel: (+54 11) 5352 2500

Email: info@dastecsrl.com.ar

Web: [www.dastecsrl.com.ar](http://www.dastecsrl.com.ar)

 Uruguay [www.dastecsrl.com.uy](http://www.dastecsrl.com.uy)

 Paraguay [www.dastecsrl.com.py](http://www.dastecsrl.com.py)