Lab Solutions

VELP SCIENTIFICA

UDK

Distillation Units Series

A Full Range of Solutions for Kjeldahl Distillation

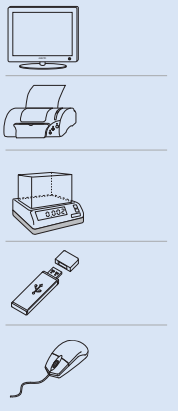
Lab Solutions

UDK Distillation Units Series

UDK Distillation Units

VELP Scientifica is pleased to announce its fourth generation of Distillation Units. Unparalleled technology along with premium materials for high-quality products and extremely reliable results in terms of the quantification of nitrogen and protein in different samples.

Can be connected to



Corrosion-Resistant Technopolymer Housing with a smooth and unjointed surface for a longer life span and to facilitate cleaning.

Limited Consumption of energy (steam generator with low thermal dispersion) and of cooling water (from only 0.5 l/min).

High Performance, maintenance-free, accurate and precise.

Safe operating conditions, no risk of contact with chemical substances.

Color Touch Screen to simplify use and readability (3.5" on UDK 139 & UDK 149; 6" on UDK 159).

Officially approved colorimetric titration simplifies validation (AOAC recommended). Automatic titration for faster results.

Foods are all substances that supply energy and the components essential for growth and preservation of the vital functions when ingested. Their compositions must be defined in terms of proteins, carbohydrates and fats for their nutritional content, in conformity with international standards.

The innovative equipment manufactured by VELP Scientifica provides substantial assistance to food and feed specialists involved in production and research.

UDK series

Features and Benefits

- Intuitive
- Extremely Precise
- Versatile
- Eco-friendly
- Compact
- Innovative

GLP Good Laboratory Practices

AOAC DIN EPA ISO

Accurate nitrogen and protein determination in absolute safety.

VELP Solution for KJELDAHL Analysis

SAMPLE

1 DIGESTION
- DKL Series/DK Series DIGESTERS
- JP RECIRCULATING WATER PUMP
- SMS SCRUBBER

2 DISTILLATION with Steam Generator
- UDK Series DISTILLATION UNITS

3 TITRATION
- PREDISPOSITION FOR CONNECTION TO THE MOST IMPORTANT AUTO-TITRATOR UDK 149 and INTEGRATED TITRATION SYSTEM UDK 159

NITROGEN mg (Protein %)

TEMS™ SAVING

TEMS technology saves
Time, Energy, Money and Space

- Time Saving: Fast and frequent analyses; no heating delay between runs.
- Energy Saving: Cooling water consumption starting from only 0.5 l/min; excellent insulation of internal parts.
- Money Saving: Cost reduction is substantial, in line with reduced power consumption.
- Space Saving: The extremely compact footprint saves useful laboratory bench space.

All the UDK Series Distillation Units accept different kinds of test tubes: straight tubes (100, 250, 400 ml and 1 liter) or Kjeldahl balloon (500 ml).
Each unit comes ready to use and is supplied with 250 ml test tube, 250 ml collecting flask, pincer, set of inlet and outlet tubes.
Optional accessories such as test tubes, test tube spacer, test tube connection, connection cables and IQ/OQ/PQ manual are available on request.

UDK 129 - Distillation Unit

The UDK 129 is the entry level model for accurate and precise nitrogen and protein determination according to the Kjeldahl Method (TKN).
This unit is the ideal solution for basic needs with foregoing the same key components and benefits of the more advanced models.

Features and Benefits
- Automatic NaOH addition
- Delay time (Devarda alloy analysis)
- Alkali resistant technopolymer housing

- Selectable distillation time
- LCD display
- Safety lever and sensors to protect the user

UDK 129

UDK 139 - Semi-Automatic Distillation Unit

The UDK 139 is the semi-automatic model offering greater automation and a wider range of programming options.

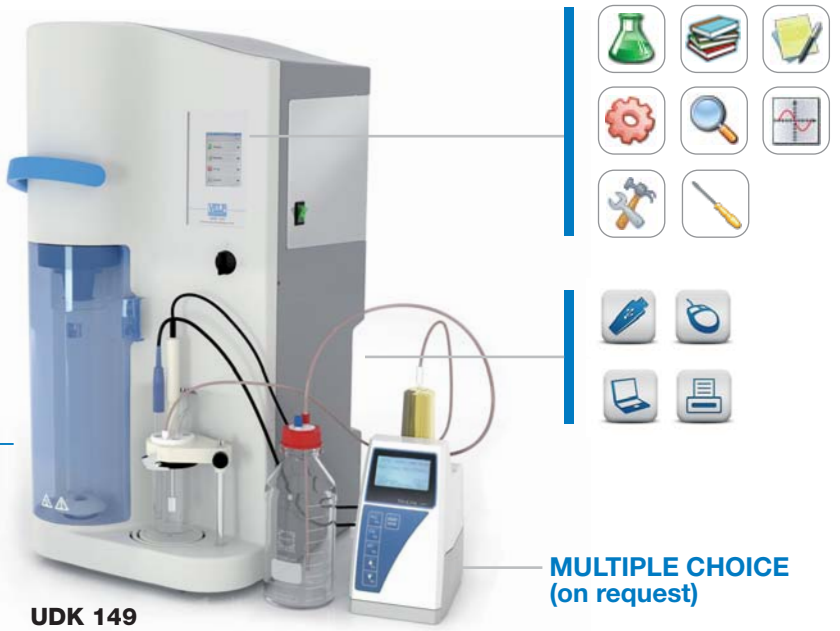
Features and Benefits
- Automatic NaOH and H_2O addition
- Steam regulation (10-100%)
- Delay time (Devarda alloy analysis)
- 10-program library
- Alkali resistant technopolymer housing
- Reagent level warning

- Selectable distillation time
- Distillation residues removal
- 3.5” color touch screen
- 2 x USB ports
- Language selection
- Safety lever and sensors to protect the user

UDK 139

UDK 149 - Automatic Distillation Unit, with Titrator Connection

The UDK 149 is a more flexible solution for laboratories using Kjeldahl distillation.
Fully automatic, it can be easily connected to a large choice of external titrators.



UDK 149

Features and Benefits

- Automatic NaOH, H_2O and H_3BO_3 addition
- Steam regulation (10-100%)
- Delay time (Devarda alloy analysis)
- Automatic titration vessel washing
- Washing and blank analysis
- 20-program library
- Alkali resistant technopolymer housing
- Reagent level warning
- Selectable distillation time
- Distillation and titration residues removal
- Distillation in series
- Archive for on-board data storage
- 3.5" color touch screen
- Ethernet, 2 x USB ports, RS232 and TTL
- Language selection
- Safety lever and sensors to protect the user
- Several external titrators supported

UDK 159 - Automatic Distillation & Titration System

The UDK 159 is the top of the range solution to quantify the nitrogen/protein content of the sample.
It combines all the advantages of a fully automatic distillation with the added benefits of integrated colorimetric titration (AOAC approved) for a high-performance all-in-one system.

UDK 159

Features and Benefits

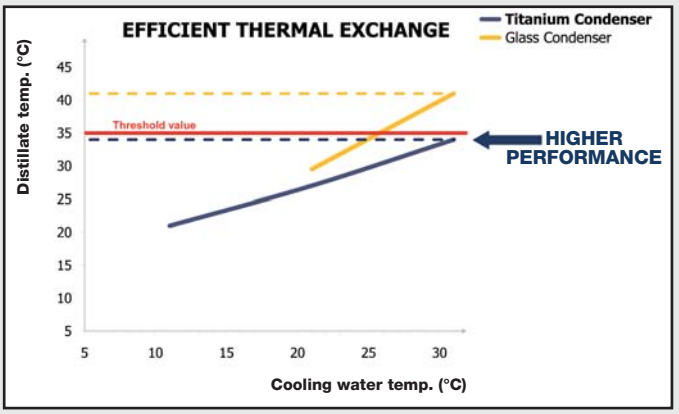
- Automatic NaOH, H_2O and H_3BO_3 addition
- Steam regulation (10-100%)
- Delay time (Devarda alloy analysis)
- Washing and blank analysis
- Automatic titration vessel washing
- Interchangeable burette (25 or 50 ml) with 2ul precision
- 54-program library (30 pre-defined + 24 customizable)
- Alkali resistant technopolymer housing
- Reagent level warning
- Distillation and titration residues removal
- Distillation in series
- Reporting
- Archive for on-board data storage
- 6" color touch screen
- Ethernet, 2 x USB ports and RS232
- Balance
- Electronic user guide
- Language selection
- Safety lever and sensors to protect the user

Patented Steam Generator

- **Safe Working Conditions**
  A thermostat ensures the correct functioning of the steam generator, a safety thermostat eliminates risks for the operator
- **Non-Pressurized**
  No chance of leaks occuring even after an intensive use, completely maintenance-free
- **Extremely Reliable**
  The high level of precision and accuracy ensure correct and detailed results
- **Deionized Water**
  The use of deionized water prevents misleading results (no nitrogen in deionized water) and the formation of limescale

Titanium Condenser (Patent Pending)

- **Efficient Thermal Exchange**
  Distillate temperature always below the threshold value
- **Limited Water Consumption**
  From only 0.5 l/min at 15°C (1 l/min. at 30°C)
- **No Nitrogen Loss, Precise Results**
  Cost reduction thanks to high performance, minimal consumption and no external chiller
- **Minimal Maintenance**
  Easy to disassemble and clean



*** Tap water flow rate 1 l/min**

Technopolymer Splash Head

- **Long-Life**
  The best and most durable solution when a large number of samples are processed
- **High Chemical Resistance**
  Highly resistant to alkaling and chemical solutions, used during steam distillation
- **No Risk of Breakage**
  Ensures safe working conditions in the laboratory
- **Maintenance-free and Easy to Replace**
  No maintenance required, extremely easy to replace when necessary

Technopolymer Housing

- **High Durability**
  Unique structure able to resist to chemical attacks for unprecedented resistance
- **Long-Life**
  Extremely compact and robust, designed to last
- **Space Saving**
  Narrow footprint for optimum use of the lab bench
- **Safety Lever, Protective Door and Service Door**
  Improved safety and comfort

Fields of Application
The UDK Series is equipped for a variety of applications including the determination of protein, nitrogen, phenols, or volatile fatty acids according to official methods AOAC, EPA, DIN and ISO.

Food, feed and beverage industry

Environment industry

Pharmaceutical and chemical industry

Instrument	Power supply	Code No
UDK 129	230 V / 50 - 60 Hz	F30200120
UDK 129	115 V / 50 - 60 Hz	F30210120
UDK 139	230 V / 50 - 60 Hz	F30200130
UDK 149	230 V / 50 - 60 Hz	F30200140
UDK 159	230 V / 50 - 60 Hz	F30200150

Supplied with

A00001080
Test tube
ø 42x300 mm

10001106
Collecting flask
250 ml

10000247
Princer for test tubes

Inlet tube and discharge tube are supplied with the intrument

Optional Accessories	Code No
Test tube Ø 80x300 mm for alcohol determination	A00001083
Test tube Ø 48x260 mm	A00001088
Test tube Ø 42x300 mm 250 ml, 3 pcs/box	A00000144
Test tube Ø 26x300 mm 100 ml, 6 pcs/box	A00000146
Test tube Ø 50x300 mm 400 ml	A00000185
Spacer for test tube Ø 48x260 mm	A00000206
Test tube connection Ø 26 mm, Ø 48 mm and 500 ml Kjeldahl balloon	A00000043
Printer	A00001009
Printer Adapter USB-RS232	A00000195
Titrator Titroline Easy K for UDK 149	R30800194
Different titrator connection cables available on request for UDK 149	
Syringe 50 ml volume for UDK 159 burette	A00000066
IQ/OQ/PQ UDK 129 Manual	A00000205
IQ/OQ/PQ UDK 139 Manual	A00000204
IQ/OQ/PQ UDK 149 Manual	A00000203
IQ/OQ/PQ UDK 159 Manual	A00000202

Description	UDK 129	UDK 139	UDK 149	UDK 159
Performance				
Analysis Time	5 min to collect 100 ml of distillate	4 min to collect 100 ml of distillate	3 min to collect 100 ml of distillate	from 4 min (titration included)
Reproducibility (RSD)	≤ 1%	≤ 1%	≤ 1%	≤ 1%
Recovery (at nitrogen level between 1-200 mg)	≥ 99.5%	≥ 99.5%	≥ 99.5%	≥ 99.5%
Detection Limit	≥ 0.1 mg N	≥ 0.1 mg N	≥ 0.1 mg N	≥ 0.1 mg N
Automatic Sodium Hydroxide Addition	■	■	■	■
Automatic Dilution Water Addition		■	■	■
Automatic Boric Acid Addition			■	■
Selectable Distillation Time	■	■	■	not necessary with titration
Distillation Residues Removal		■	■	■
Steam Flow Regulation (10-100%)		■	■	■
Delay Time (Devarda Alloy Analysis)	■	■	■	■
Distillation in Series			■	■
Limited Water Consumption	■	■	■	■
Display	LCD	3.5” color touch screen	3.5” color touch screen	6” color touch screen
Programs	1	10	20	54
Language Selection		■	■	■
Archive (on-board data storage)			■	■
Password (user/super user)			■	■
Titration				
Titration Residues Removal			■	■
Automatic Titration Vessel Washing			■	■
Interchangeable Burette				■
Connection				
Mouse		■	■	■
Printer		■	■	■
PC (for data storage)			■	■
Pen Drive (for data transfer)			■	■
Balance				■
General Features				
Overall Dimensions in mm (in) (WxHxD)	385x780x416 (15.2x30.7x16.4)	385x780x416 (15.2x30.7x16.4)	385x780x416 (15.2x30.7x16.4)	385x780x416 (15.2x30.7x16.4)
Overall Weight in kg (lb)	24 (52.9)	26 (57.3)	27 (59.5)	31 (68.3)
Power Supply	230 V / 115 V	230 V	230 V	230 V
Power	2100 W / 1700 W	2100 W	2100 W	2200 W

Your authorized agent:

We reserve the right to make technical alternations
We do not assume liability for errors in printing, typing or transmission

Constant Commitment to Knowledge Development

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ISO 9001
ISO 14001
OHSAS 18001

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