VELP SCIENTIFICA
Lab Solutions

# NDA 701 Dumas Nitrogen Analyzer

Food&Feed Line

## Analysis in a flash with the new VELP Nitrogen/Protein Analyzer

- Fully Automated: totally unsupervised and independent of user's capabilities
- Flexible and Versatile: optimal for several sorts of sample
- High Productivity: non-stop performance
- Moderate Running Costs


NDA 701 is the innovative VELP Scientifica solution for nitrogen/protein determination, using the Dumas method (also known as combustion method) and offering **excellent performance** on both solid and liquid samples.

NDA 701 is revolutionary in terms of savings, thanks to **TEMS™** technology:

**T**ime Saving - Unparalleled technology, results in 3-4 minutes

**E**nergy Saving - Excellent engineering, low consumption.

**M**oney Saving - Limited cost per analysis, less gas and reagents used (**LoGas™** and **DriStep™**).

**S**pace Saving - Just one slim unit required for the whole analysis.

NDA 701 is **designed to last** and **to operate continuously, even 24/7,** requiring **minimal maintenance** and working completely in **safe conditions**, without the use of hazardous chemicals.
The **optimization of the consumables lifespan** combined with the **their rapid replacement** enhance the benefits of this revolutionary unit, able to perform **extremely accurate analyses**, with a **very low detection limit** (0.003 mgN) and a **superlative precision**. The low RSD% shows the analysis reliability, underlining the **great reproducibility** and the **quality of results**.

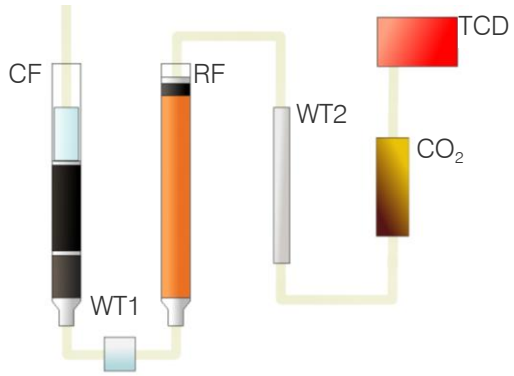
NDA 701 is completely controlled and operated by the **DUMASoft™ Software**, with most important information seen at a glance!

The instrument includes an **autosampler** that can manage up to 30 samples (stackable to 116) both solids and liquids loaded in tin capsules in a completely automatic way and a **kit of consumables** for up to 1000 analyses, being **immediately ready to use**.

VELP SCIENTIFICA

In the **Dumas combustion method,** the encapsulated sample is burnt at a high temperature, in the presence of catalysts in a controlled oxygen atmosphere. The combustion gas, $CO_2$, $H_2O$, $NO_x$, passes through the reduction furnace where $NO_x$ are reduced to $N_2$. The $H_2O$ and $CO_2$ are separated and the elemental nitrogen is measured with a Thermal Conductivity Detector (TCD). The whole procedure takes from 3 to 4 minutes.
The samples need to be suitably homogenized, in order to maximize results' precision and to analyze a representative part.

## NDA 701 Analysis Flowpath




CF = Combustion Reactor
WT1 = Water Trap (Physical)
RF = Reduction Reactor
WT2 = Water Trap (Chemical)
$CO_2$ = $CO_2$ Auto-regenerating Traps
TCD = Thermal Conductivity Detector

## Industry – Application Fields:

- **Food, Feed** and **Beverage** industries - cereals, dairy products, meat, fish, animal feed, infant food, drinks, etc.
- **Environmental** and **Agriculture** industries - organic matters, soils, water, leaves, etc.
- **Pharmaceutical** and **Chemical** industries - plastics, oils, petroleum, etc.

| Technical Data | Description |
|---|---|
| Method of analysis: | Dumas method / Combustion |
| Detector: | Innovative autocalibrating TCD (no reference gas required) |
| Sample weight: | up to 1g |
| Autosampler capacity: | up to 4 discs, 30 positions each |
| Reproducibility (RSD): | < 0.5% for EDTA standards approx. 100 mg (9.57% N) |
| Recovery : | > 99.5% |
| Detection range: | 0.1 - 200 mg N |
| Detection limit: | 0.003 mgN absolute |
| Combustion temperature: | 1030 °C / 1886 °F |
| Helium (He): | purity 99.999% (grade 5.0) |
| Oxygen ($O_2$): | purity 99.999% (grade 5.0) |
| Compressed air or Nitrogen ($N_2$): | purity 99.6 % (oil and water free) |
| Helium (He) pressure: | 2 bar |
| Oxygen ($O_2$) pressure: | 2.5 bar |
| Compressed air or Nitrogen ($N_2$) pressure: | 3 bar |
| Interfaces: | USB, RS232 |
| Power: | 1400 W |
| Power supply: | 230 V / 50-60 Hz |
| Weight: | 54 kg / 119 lb |
| Dimensions (WxHxD): | 655x510x410 mm (655x690x410 mm including autosampler)<br>25.8x20.1x16.1 in (25.8x27.0x16.1 in including autosampler) |
| **Ordering information**<br>Code No | **Description** |
| F30800070 | NDA 701 Dumas Nitrogen Analyzer |