

# NDA 701 Dumas Nitrogen Analyzer

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:

**Time Saving** - Unparalleled technology, results in 3-4 minutes

**Energy Saving** - Excellent engineering, low consumption.

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

**Space 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**.

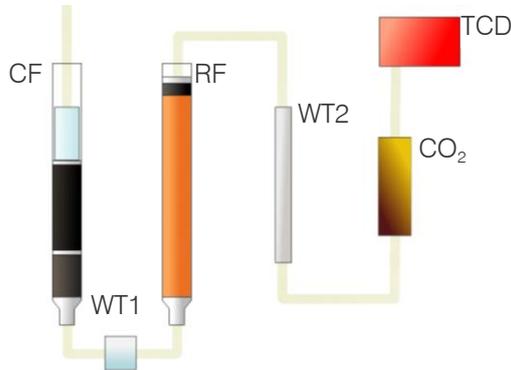
NDA 701 is completely controlled and operated by the **DUMASoft™ Software**, with most important information seen at a glance!

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**.

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<sub>2</sub>, H<sub>2</sub>O, NO<sub>x</sub>, passes through the reduction furnace where NO<sub>x</sub> are reduced to N<sub>2</sub>. The H<sub>2</sub>O and CO<sub>2</sub> 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<sub>2</sub> = CO<sub>2</sub> 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 <sub>2</sub> ):	purity 99.999% (grade 5.0)
Compressed air or Nitrogen (N <sub>2</sub> ):	purity 99.6 % (oil and water free)
Helium (He) pressure:	2 bar
Oxygen (O <sub>2</sub> ) pressure:	2.5 bar
Compressed air or Nitrogen (N <sub>2</sub> ) 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) 25.8x20.1x16.1 in (25.8x27.0x16.1 in including autosampler)
Ordering information	Description
Code No	
F30800070	NDA 701 Dumas Nitrogen Analyzer

Your authorized agent:

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



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