CHIMICA CENTRO
ADDED VALUE LAB SOLUTIONS

CN 802

Carbon / Nitrogen Analyzer

Highly sensitive combustion analyzer for a wide range of applications from micro to macro sample weights.

velp®

Driven by curiosity

CN 802
C/N Analyzer

The CN 802 elemental analyzer is a versatile, cloud-enabled, and fully automated solution designed for the determination of Carbon and Nitrogen across a wide range of applications. The CN 802 delivers high performance with both solid and liquid samples, operating in compliance with international standards such as AOAC, AACC, ASBC, ISO, DIN, IFFO, OIV, ASTM, and EPA.

Fast & Efficient Operation

- Carbon and Nitrogen analysis in just 3–5 minutes, streamlining your workflow
- Automatic leak test per zone for faster, safer operation
- DriStep™ water trap reduces maintenance and lowers cost-per-analysis
- 30-position autosampler, expandable with 3 additional discs for increased throughput

Flexible for Solid and Liquid Samples

- Automatic determination of TC, TOC (after acidification), TN, and C/N ratio
- Suitable for solid, liquid, and doughy samples up to 1 g
- Optional dedicated accessories for liquids analysis
- Works with Helium and Argon as carrier gases

Precision You Can Trust

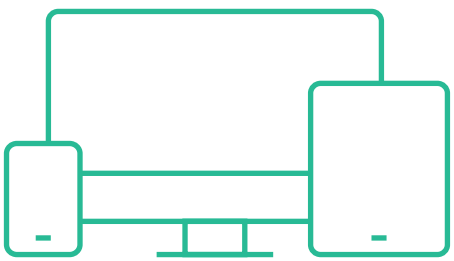
- HighSensIR™ NDIR detector ensures accurate Carbon measurement
- LoGas™ Thermal Conductivity Detector (TCD) delivers high sensitivity for Nitrogen
- Detects even trace levels with exceptional limits of detection (LOD)

Smart, Connected & Safe

- User-friendly CNSoft™ software with full instrument safety control
- Connected to the Velp Ermes Cloud Platform for remote monitoring and support

C 12.011 N 14.007

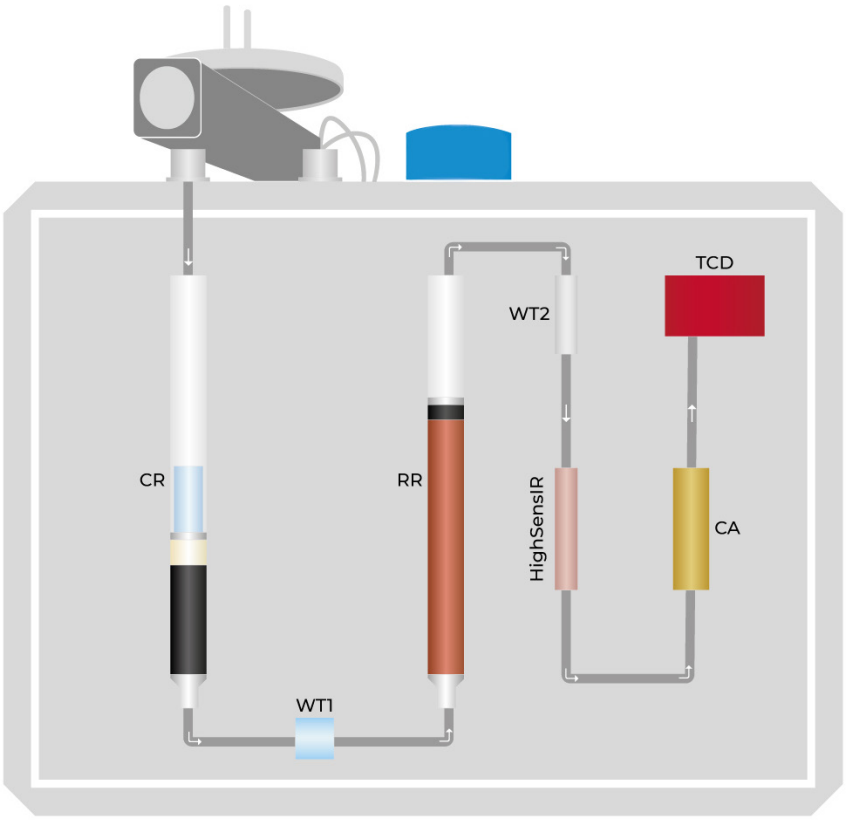
Velp Ermes Connection



Connect the CN 802 Carbon/Nitrogen Analyzer to the exclusive Velp Ermes Cloud Platform to improve your laboratory experience. The Velp Ermes Cloud Platform connection will unburden you from tedious tasks improving your lab productivity.

- Enhanced service support
- Real time monitor and control of the instrument from PC, smartphone and tablet whenever you want, wherever you are
- Immediate alert and notification with the possibility to stop the instrument for maximum safety
- Regular software updates will guarantee the best performance and new features with just one-click

CN 802
Analysis Process



- **CR** (Combustion Reactor) Allows complete combustion at 1100 °C to convert all the sample into its elemental substances.
- **WT1** (Physical Water Trap) The maintenance-free DriStep™ cooler permits 99% of water to be removed.
- **RR** (Reduction Reactor) Enables the elimination of unwanted compounds and oxygen, transforming NOx into N_2.
- **WT2** (Chemical Water Trap) Eliminates the residual water.
- **HighSensIR** (Non-Dispersive Infrared Detector) Accurately measures the CO_2 concentration that the instrument is able to convert in Carbon quantity.
- **CA** (CO_2 Adsorbers) Used to trap all the CO_2. Auto-regenerating, maintenance-free system.
- **TCD** (Innovative TCD) LoGas™ determines Nitrogen content without the need for a reference gas. Maintenance-free.

Fields of Application

The CN 802 is extremely versatile, being suitable for Carbon and Nitrogen determination in several kinds of sample, in accordance with official AOAC, AACC, ASBC, ISO, ASTM, EPA, DIN and OIV methods.

Environmental & Agro

Soils, Plants, Fertilizers, Waste, Wastewater, Water, Sludges, Sediments

Chemical & Petrochemical

Rubber, Plastic, Lubricants, Petroleum products, Coal fuels, Coke

Food, Feed & Beverage

Meat, Fish, Poultry, Cereals, Bakery products, Milk, Dairy, Oils, Fats, Brewery, Oils Seeds, Pet food

Pharmaceutical & Life Science

Pharmaceutical products, Vaccines, Active ingredients

Optional Accessories

1000 analyses kit	A00000194
2000 analyses kit	A00000270
4000 analyses kit	A00000271
Disc 2 for Autosampler	A00000199
Disc 3 for Autosampler	A00000200
Disc 4 for Autosampler	A00000201
Disc 1 for capsules for Autosampler	A00000390
Disc 2 for capsules for Autosampler	A00000420
Pre-packed combustion reactor	A00000158
Pre-packed reduction reactor	A00000226
Quartz reactor tube	A00000162
Metal reactor tube	A00000321
Cleaning kit for metallic ash collector	A00000353
Ceramic ash collector	A00000198
Metallic ash collector	A00000322
Quartz ash collector	A00000161
Anhydrone, 454g	A00000225
Super-Absorbent Powder, 10g	A00000317
Quartz wool, 50g	A00000154
Vcopper High Reduction Efficiency, 470g	A00000240
Copper oxide, 50g	A00000157
Velpcatalyst with inert layer, 36g	A00000320
EDTA Certified, 100 gr	A00000149
Oat meal, 30g	A00000235
Tin Foil Cups, 150pcs	A00000153
Tin Foils 50x50mm, 450 pcs	A00000260
Mold for tin foils 50x50mm	A00000262
Tin foil cup closing device	A00000217
Tin capsules 6x18mm, 100 pcs	A00000482
Tin capsules 8x22mm, 100 pcs	A00000483
Manual dosing liquids samples kit	A00000486
Kit for TOC/sample preparation	TA00000378
Silver Foil 35x35mm, 100 pcs	A00000371
High temperature sealing grease	A00000236
IQ/OQ/PQ CN Manual	A00000370
21 CFR part 11 package for Elemental Analyzers	A00000455
Velp Ermes 1 Year Connection	E00010012
Velp Ermes 3 Year Connection	E00010036

Instrument - Code

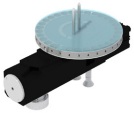
CN 802	230 V / 50-60 Hz	**F30800090**

Supplied with

The CN 802 is supplied with all necessary parts to perform up to 1000* analyses (inclusive of catalysts, copper, quartz wool, reagents and seals). In addition it contains chemicals and small consumables spares for maintenance.

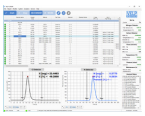
A00000193
Start-up kit

40001693
USB cable for PC, 5m

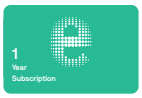


40003062
Autosampler with disc 1

10003926
RS232 Cable for balance



40002622
CNSoft™ Software



E00010012
Velp Ermes 1 Year Connection

Use Genuine Velp consumables and accessories to get the best performance from your CN 802

GLP Good Laboratory Practice

AOAC	AACC	ASBC
ISO	DIM	IFFO
OIV	ASIM	EPA

21 CFR Part 11 Compliance

The CN 802 Elemental Analyzer is fully compliant with FDA's Code of Federal Regulations Title 21 Part 11 that defines the requirements for using electronic records and electronic signatures on computerized systems.

- Track and record of settings and any changes to settings with the system log function running permanently, serving as an audit trail
- Track who performs any operation as analysis results are automatically signed with the user information. Each user has a unique identification and electronic signature
- Ensure the quality and incorruptibility of recorded data with backup procedures. Exported files are protected from unwanted or improper alteration
- Ensure the right delegation of responsibilities at the right level with the user management system with three access levels

CNSoft™ Software

The CNSoft™ software is the powerful Velp solution that controls and operates the CN 802 analyzer. The CNSoft™ comes with a user-friendly interface that displays all relevant information at a glance: results, database and instrument conditions. It is possible to choose from a rich library of pre-installed methods and create customized ones.

Before the Analysis

1

- Create or choose a calibration curve for C and N
- Fill in the required data (sample name, analysis type, weight...)
- Select a method and calibration curve

During the Analysis

2

- Monitor of the working parameters
- Realtime graph of C and N peaks
- Immediate readout of the results in mg and % of C and N, % protein

After the Analysis

3

- Multiple data comparison in graph
- Data export in .xls, .txt and .csv to PC or LIMS
- Create, print and download reports of single or multiple analyses
- If necessary, set the instrument in Stand-by mode or Sleeping mode
- Short statistical analysis in one click

Technical Data

	CN 802
Method of analysis	Carbon/Nitrogen determination according to combustion method
Analysis time	3/5 minutes
Detector	N= TCD (Thermal Conductivity Detector) C= HighSensIR Detector (Non-Dispersive Infrared)
Sample weight	Up to 1 g
Autosampler type	Electronic
Autosampler capacity	Up to 4 discs, 30 positions each (up to 117 samples)
Precision	≤ 0,2 % for EDTA Standard (Helium 5.0, 5-digit balance)
Recovery	> 99.5%
Detection range	C: ppm up to 150 mg abs. (or 100 %) N: ppm up to 200 mg abs. (or 100 %)
Combustion temperature	1100 °C 2012 °F
Carrier gas	Helium or Argon (grade 4.5)
Combustion gas	Oxygen (grade 4.5)
Connectivity	Ermes Cloud Platform via Wi-Fi or LAN connected to a PC
21 CFR Part 11 Compliance	Yes, optional package available
Interfaces	USB
Official references	ISO 10694; EN 16168; EN 15936; ISO 20236; AOAC 993.13; ISO 20620; ISO 13878; EN 13654-2, EPA Method 440.0, etc.
Weight	54 kg 119 lb
Dimensions (WXHXD)	655x510x410 mm (H 690 mm with autosampler) 25.8x20.1x16.1 in (H 27.0 in with autosampler)

Service & Support

Velp products are designed by our engineers to resist years of laboratory use.

Our products are manufactured with premium materials to guarantee the best performance with maximum safety.

According to our experience, a proper and regular maintenance is necessary to ensure the highest performance of analytical instrument. Velp Service Department and Velp Official Partners are always ready to offer you maintenance and service support tailored to your needs.

Get the support you need choosing the options:

- Help-desk and Remote support
- Technical Assistance
- Analytical Support

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

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