



Analytical Instruments
Raised To Excellence

LABSOLUTIONS

CN 802

Carbon / Nitrogen Analyzer

Elemental Analyzer for a Wide
Range of Applications



CN 802 Carbon / Nitrogen Analyzer

The CN 802 combustion elemental analyzers is a versatile, cloud-enabled and fully automatic solution for carbon and nitrogen determination in a wide range of applications. The CN 802 offers high performance on both solid and liquid sample, working in accordance to international standards such as AOAC, AACC, ASBC, ISO, DIN, IFFO, OIV.

RAPID C/N DETERMINATION

The CN 802 performs analysis of both Carbon and Nitrogen in just 3-4 minutes. The quick start and sleeping mode ensure fast operation set up with possibility of leak test per zone.

FLEXIBLE

Fully automatic determination of TC, TOC (after acidification), TIC, TN and Carbon/Nitrogen Ratio on solid and liquid samples.

PRECISE

The NDIR (Non Dispersive Infrared) detector and LoGas™ TCD (Thermal Conductivity Detector) designed by VELP guarantees unmatched precision and unrivaled LOD.

EFFICIENT

The fully automatic and reliable combustion method of CN 802 together with DriStep™ water trap guarantee moderate cost. The 30-positions disc autosampler expandable with extra 3 discs ensures maximum productivity and uptime.

VERSATILE

The CN 802 works with solid, liquid and doughy samples of up to 1 gram. Seamless carrier gas selection between Helium and Argon without hardware changes.

SMART & SAFE

The CN 802 is easy to use thanks to the user-friendly CNSoft™ software which is equipped with maximum safety control of the instrument. VELP Ermes connection will deliver a new user experience and smart workflows.



CARBON & NITROGEN

CARBON DETECTOR

NDIR - NON DISPERSIVE INFRARED DETECTOR

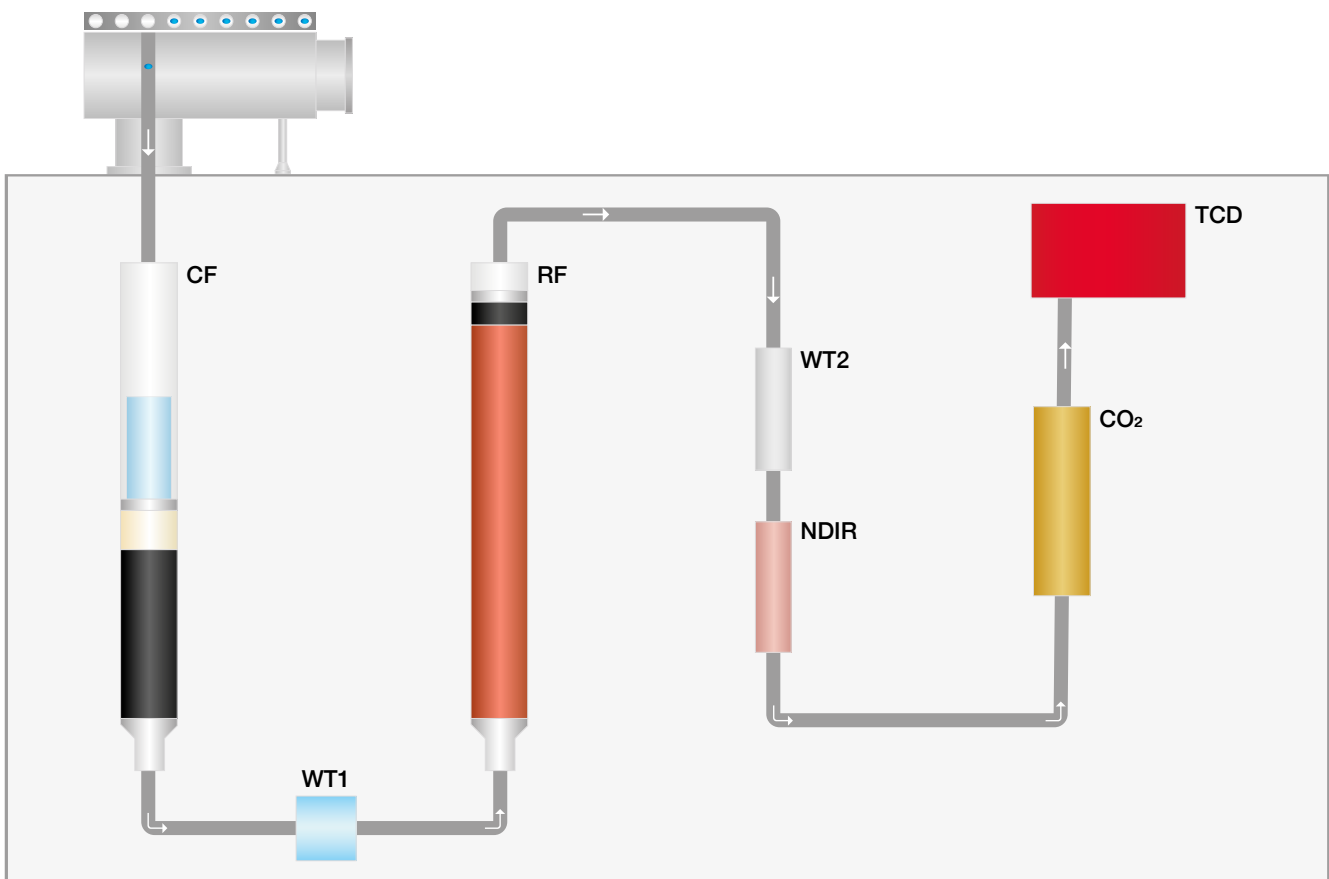
- Selective detector reading only Carbon content
- Maintenance free
- High Accuracy and Precision
- LOD: 0,01 mgC

NITROGEN DETECTOR

TCD – THERMAL CONDUCTIVITY DETECTOR

- Low gas consumption
- No reference gas required
- Long life span
- LOD: 0.001 mgN (He) – 0.01 (Ar)

CN 802 Analysis Process



- **CF** (Combustion Reactor) Allows combustion at 1030 °C in order to break all of the sample into its elemental substances.
- **WT1** (Physical Water Trap) The maintenance-free DriStep™ cooler permits 99% of water to be removed.
- **RF** (Reduction Reactor) Enables the elimination of unwanted compounds and oxygen, transforming NOx into N₂.
- **WT2** (Chemical Water Trap) Eliminates the residual water.
- **NDIR** (Non Dispersive Infrared Detector) Accurately measures the CO₂ concentration that the instrument is able to convert in carbon quantity.
- **CO₂** (CO₂ Regenerating Adsorbers) Used to get rid of all the CO₂. Auto-regenerating, maintenance-free system.
- **TCD** (Innovative TCD) LoGas™ determines nitrogen content without the need for a reference gas. Maintenance-free.

ERMES CONNECTION



Monitor and manage multiple instruments and consumables 24/7 from your pc, tablet or smartphone with VELP Ermes. Realtime visualization of your analysis and of your instrument working conditions.

Receive immediate event and alert notifications based on your setting within the platform and via email. VELP Ermes guarantees peace of mind and total control of your VELP instruments thanks to the remote stop of the instrument.

ermes enabled

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
Tin foil cup closing device	A00000217
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
Rice Flour, 30g	A00000235
Tin Foil Cups, 150pcs	A00000153
Tin Foils 50x50mm, 450 pcs	A00000260
Quartz reactor tube	A00000162
Quartz ash collector	A00000161
Metal reactor tube	A00000321
Metallic ash collector	A00000322
Cleaning kit for metallic ash collector	A00000353
Ceramic ash collector	A00000198
Anhydrone, 454g	A00000225
High temperature sealing grease	A00000236
Pre-packed combustion reactor	A00000158
Pre-packed reduction reactor	A00000226
Mold for tin foils 50x50mm	A00000262
CN IQ/OQ/PQ Manual	A00000370
VELP Ermes 1 Year Connection	E00001012
VELP Ermes 3 Year Connection	E00001013

GLP Good Laboratory Practice

AOAC	AACC	ASBC
ISO	DIN	IFFO
		OIV

INSTRUMENTS

CN 802

230 V / 50-60 Hz

F30800090

SUPPLIED WITH



A00000193
Start-up kit



40001065
Autosampler
with disc 1



40002622
CNSoft™
Software



40001693
USB cable for
PC, 5m



10003926
RS232 Cable
for balance

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.

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



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, DIN and OIV methods.

AGRONOMY INDUSTRY



ENVIRONMENTAL INDUSTRY



PHARMACEUTICAL AND CHEMICAL INDUSTRY



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.

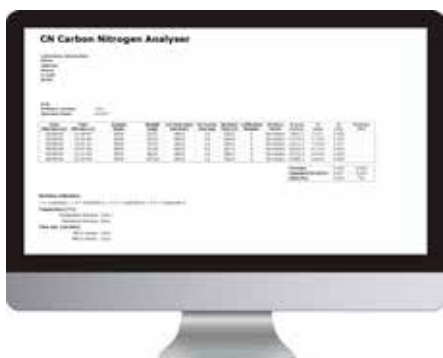


1 BEFORE THE ANALYSIS

- 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

2 DURING THE ANALYSIS

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



3 AFTER THE ANALYSIS

- 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 analysis
- If necessary set the instrument in Stand-by mode or Sleeping mode

APPLICATIONS

AGRONOMY

- SOILS
DIN EN 16168, DIN EN 10694
- PLANTS, LEAVES, ROOTS, FRUIT
- HUMUS
- ALGAE
- FERTILIZERS

ENVIROMENTAL

- SLUDGE
- SEDIMENTS
- WASTES
- SEWAGE

PHARMA & CHEMICAL

- COKE
- GRAPHENE
- RUBBER
- POLYMERS
- TYRES
- METAL POWDER
- GUN POWDER

FOOD, FEED, BEVERAGE

- HUMAN FOOD
- ANIMAL FEED
- PETFOODS
- MILLED PRODUCT
- BEER, JUICE
- MILK
- WINE, SOFT DRINKS

TECHNICAL DATA

	CN 802
METHOD OF ANALYSIS	Combustion method
DETECTOR	N = TCD (Thermal Conductivity Detector) C = NDIR (Non Dispersive Infrared Detector)
CARRIER GAS	Helium and Argon
SAMPLE WEIGHT	Up to 1 g
NITROGEN MEASURING RANGE	ppm - 200 mgN
CARBON MEASURING RANGE	ppm - 150 mgC
ANALYSIS TIME	2-5 min
AUTOSAMPLER CAPACITY	Up to 4 discs, 30 positions each
AUTOSAMPLER TYPE	Pneumatic
REPRODUCIBILITY (RSD)	< 0.5% for EDTA standards approx. 100 mg
RECOVERY	> 99.5%
NITROGEN DETECTION LIMIT	0.001 mgN (He); 0.01 mgN (Ar);
CARBON DETECTION LIMIT	0.01 mgC
COMBUSTION TEMPERATURE	1030 °C / 1886 °F
HELIUM (He) / ARGON (Ar)	purity 99.999% (grade 5.0)
OXYGEN (O ₂)	purity 99.999% (grade 5.0)
CARRIER GAS PRESSURE	2 bar
OXYGEN (O ₂) PRESSURE	2 bar
CONNECTIVITY	Cloud via LAN or Wi-Fi
INTERFACES	USB, RS232, Ermes cloud platform
POWER	1400 W
POWER SUPPLY	230 V / 50 - 60 Hz
WEIGHT	54 kg 119 lb
DIMENSIONS (WxHxD)	655 x 690 x 410 mm 25.8 x 27.0 x 16.1 in (including autosampler)



SERVICE & SUPPORT

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

At VELP we manufacture our products with premium materials to guarantee the best performance with maximum safety.

As any analytical instrument, proper and regular maintenance is necessary to insure high performance

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:

- Installation
- Preventive Maintenance
- Help-desk and Remote support
- On-site technical assistance
- Analytical and calibration support



VELP Official Partner

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

DESIGNED AND MANUFACTURED IN ITALY



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