# 836 Series

## Oxygen/Nitrogen/Hydrogen by Inert Gas Fusion


















LECO

EMPOWERING RESULTS

# 836 Series

## Oxygen/Nitrogen/Hydrogen by Inert Gas Fusion

The ONH836 Oxygen/Nitrogen/Hydrogen family of Elemental Analyzers is designed for the simultaneous wide-range measurement of oxygen, nitrogen, and hydrogen content of inorganic materials, ferrous and nonferrous alloys, and refractory materials using the inert gas fusion technique.

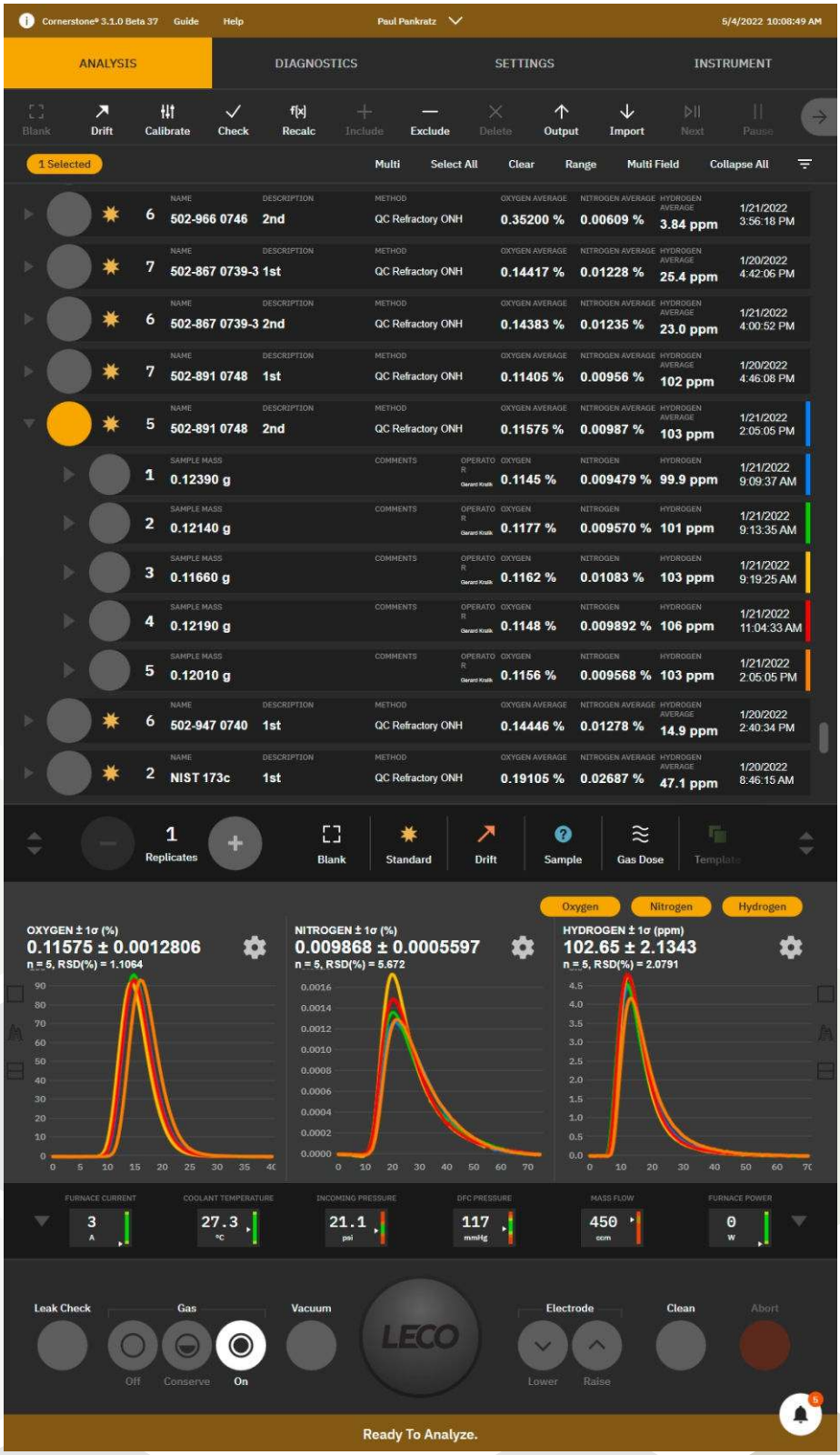
These instruments feature our Cornerstone® brand software, designed specifically for touch-screen operation. Developed by combining long-term research with customer feedback, this easy-to-use software gives you complete access to instrument control, analysis settings, diagnostics, reporting, and more—without sacrificing valuable bench space.






# User-Friendly *Cornerstone* Brand Software

LECO's exclusive *Cornerstone* brand software with touch interface enables the user to have complete access to analysis control, method settings, diagnostics, reporting, and more in a highly organized and immersive environment. Designed through a collaboration of customer feedback and innovative engineering, *Cornerstone* allows the user to conduct all of their day-to-day operations within a single analysis screen designed for speed and ease of use. Our innovative grouping of sample data into sets and replicates simplifies the data output and automatically calculates relevant statistics, alleviating the need for additional data processing.



# Software Features & Benefits

*Cornerstone* brand software is divided into four main sections—Analysis, Diagnostics, Settings, and Instrument—for simplified navigation and organization. Toolbars, sliders, and drop-down menus make it easy to set parameters for calibration and data processing. The software also includes real-time ambient monitors, with fully animated system diagrams. Advanced diagnostic features include a thorough digital on-board manual, maintenance animations, photo illustrations, and screen captures that quickly provide the direction needed without having to refer to multiple manuals. *Cornerstone* also supports extended data archiving and flexible reporting capabilities.



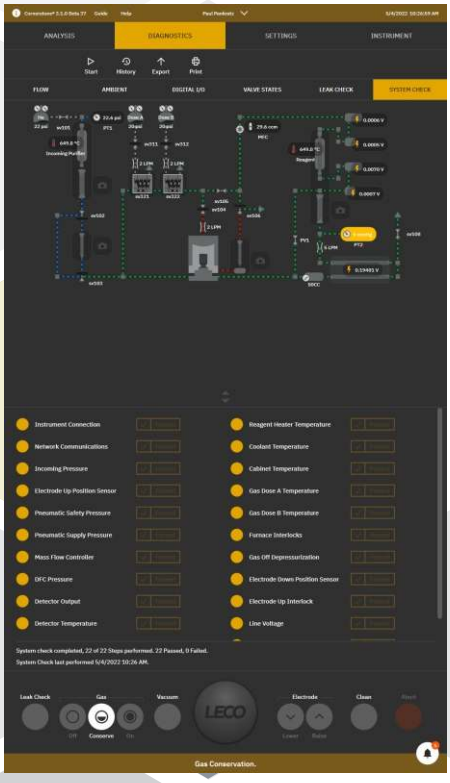


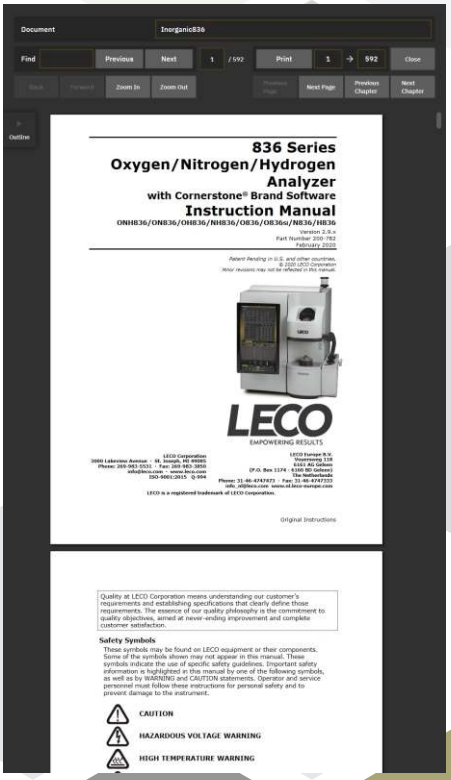










# Instrument Highlights and Features

## Features and Benefits

- Patented detection system for true simultaneous ONH analysis. One sample and one crucible per analysis with no carrier gas changeovers
- LED light ring illuminates the furnace area
- Quick-removal finish scrubber features automatic bypass valve
- Patented Dynamic Flow Compensation ensures stable flow to the TC detector with high oxygen scrubbing
- Non-touch interface systems also available




***Shown with touch-screen monitor.***




***Shown with optional autocleaner and stand-alone touch-screen monitor.***



## *High-Efficiency Cooling System*

- Reduces or eliminates the need for external cooling
- Dual DC cooling fans provide consistent cooling regardless of line voltage or frequency
- Novel electrode design increases heat transfer efficiency

## *Optional Automation*

- Available autocleaner minimizes the need for manual cleaning between analyses
- Optional 20-sample batch or 100-sample process loaders available
- High-velocity vacuum cleaner design keeps dust and soot to a minimum






## *Improved Detector Design*

- Thermostatic construction provides increased protection from ambient temperature fluctuations
- Optimized emitter control and detection circuitry improves the IR cell lifetime and long-term stability, resulting in superior accuracy and precision
- Oxygen determination with both $CO_2$ and CO detectors for complete gas characterization and expanded range

## *Three Stage Incoming Gas Purification*

- Trace amounts of $H_2O$, $O_2$, CO, or $CO_2$ in an inert carrier gas can cause analytical problems, so carrier gas scrubbing is key to optimal analytical performance
- Heated copper will remove $O_2$ and convert CO to $CO_2$ for subsequent removal
- LECOSORB® will remove $CO_2$ and Anhydrone will remove $H_2O$
- A final OMI® purifier stage simultaneously removes oxygen, water vapor, CO, $CO_2$, most sulfur compounds, most halogen compounds, alcohols, and phenols to less than 10 ppb



# *Special Purpose Derivatives*

## *H836EN*

- Hydrogen by inert gas fusion with thermal conductivity detection; optimized for low level hydrogen analysis and hydrogen speciation
- EN sample drop, upper electrode, and crucibles are designed to support larger low-level samples like aluminum slugs or depleted uranium pellets
- Software support for stepped temperature furnace profiles supporting the speciation of surface and bulk hydrogen of aluminum
- High precision analysis of low-level hydrogen in ferrous, titanium, and other alloy types are also supported







## *O836Si*

- Oxygen by inert gas fusion with infrared detection; optimized for low level oxygen analysis and oxygen speciation
- Si specific sample drop mechanism and inner/outer crucibles designed to support silicon wafer analysis where sample drop orientation and consistent heat delivery is critical
- Multiple IR cell detection system, incorporating two $CO_2$ and one CO detector, measures both CO and $CO_2$ from the sample to insure complete recovery and high sensitivity
- High precision analysis of low-level oxygen in copper, ferrous, and other alloy types are also supported

## *Glove Box Special Order Systems*

- ONH by inert gas fusion systems with the furnace separated from the detection system are available by request for an additional fee
- Build minimizes the components placed in the glovebox, minimizing exposure and enhancing access for operation and maintenance within the glovebox
- Optional bulkhead connectors rated for radioactive service are available
- Please contact your local LECO Sales Representative or reach out to us at www.leco.com for more details

## Models

| | |
|---|---|
| ONH836 Oxygen/Nitrogen/Hydrogen | N836 Nitrogen |
| ON836 Oxygen/Nitrogen | H836 Hydrogen |
| OH836 Oxygen/Hydrogen | H836EN Hydrogen |
| NH836 Nitrogen/Hydrogen | O836Si Oxygen in Silicon |
| O836 Oxygen | |

## Options

| | |
|---|---|
| SmartLine® Remote Diagnostics | Liquid-to-Liquid Heat Exchanger |
| Recirculating Chiller | Power Purifier |
| Sample Autoloader | Printer |
| Interfaced Balance Kit | |

*NOTE: Multiple configurations of options are available. Please contact your local LECO Sales Engineer for more details.*

## LECO—Your source for total analytical solutions



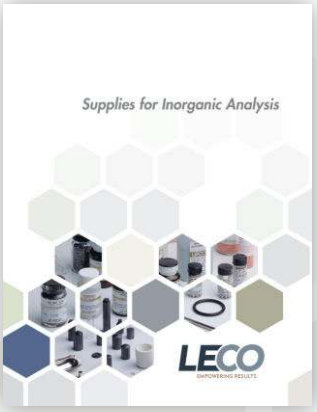

### CS844 Series: Carbon/Sulfur by Combustion

- Carbon and sulfur determination by combustion infrared detection
- Quick, accurate, and affordable determination for both production control and research
- Calibration, analysis, evaluation, and diagnostic functions accessible via user-friendly *Cornerstone* brand software




### GDS900 Atomic Emission Spectrometers

- Spectral range from 120 to 800 nm
- Continuous profile of concentration/thickness
- Large, dynamic range with concentrations from ppm to 100% by weight
- Short analysis time (minutes)




### Inorganic Consumables

Get the best results from your LECO instrument by using genuine LECO consumables. Visit www.leco.com for featured items, specials, and ordering information. (Form number 203-959)

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**LECO Corporation**
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