

# *Corporate Product Overview*



**LECO**  
EMPOWERING RESULTS

## Carbon | Sulfur



### 844/744 Series

- Quick, accurate carbon and sulfur determination by combustion infrared detection
- Expanded range and increased precision for the most demanding applications
- Calibration, analysis, evaluation, and diagnostic functions accessible via user-friendly software
- Rapid sample combustion with our high-efficiency induction furnaces
- Autocleaner available
- Compatible with SmartLine® Remote Diagnostics
- Optional 10- and 60-position autoloaders
- CORNERSTONE® Mobile option provides access to data, plots, and instrument status from your smartphone, tablet, or desktop computer

## Oxygen | Nitrogen | Hydrogen



### 836/736 Series

- Oxygen, nitrogen, and hydrogen by inert gas fusion
- Fast, simultaneous measurement of oxygen, nitrogen, and hydrogen
- State-of-the-art infrared and thermal conductivity detectors with no moving parts and no manual adjustments
- EN variants for large sample applications like elemental determination in uranium oxide and aluminium
- Optional 20-position autoloader and Autocleaner available
- Compatible with SmartLine Remote Diagnostics
- Cornerstone Mobile option provides access to data, plots, and instrument status from your smartphone, tablet, or desktop computer

## Carbon | Water



### RC612

- Fast, reliable carbon and water determination for a wide variety of organic and inorganic materials
- State-of-the-art furnace control system allows temperature ramping from ambient to 1,100°C
- High-efficiency afterburner ensures complete combustion of organic compounds when ramping
- Simplified furnace design eases maintenance and increases safety
- Increased flexibility by reacting in an inert atmosphere or combusting in an oxidising atmosphere
- Optional non-sequential 50-sample autoloader available
- Compatible with SmartLine Remote Diagnostics

## Hydrogen



### DH603

- Residual and diffusible hydrogen determination by hot extraction
- Optional diffusible sample piercer
- State-of-the-art thermal conductivity detector with no moving parts and no manual adjustments
- Innovative chassis architecture improves reliability and service-ability
- Larger combustion tube to accommodate larger samples
- Compatible with SmartLine Remote Diagnostics

## Glow Discharge AES



### Glow Discharge Atomic Emission Spectrometers

- Bulk elemental analysis only, or bulk analysis and compositional depth profiling (CDP) models available
- Spectral range from 120 to 800 nm (configuration dependent)
- Continuous profile of concentration / thickness
- Wide dynamic range with concentrations from ppm to 100% by weight
- Short analysis time (within minutes)
- Choice of RF or DC lamps for both conductive and non-conductive samples
- Easy-to-use software
- Compatible with SmartLine Remote Diagnostics

# Organic

## Calorimetry



### AC600

- Accurate and precise calorific measurements in as little as five minutes
- Ergonomic vessel and prep station design for convenient operator handling and ease-of-use
- Meets or exceeds ASTM and ISO requirements
- 6,000 to 15,000 BTU/lb range for 1 gram sample
- Intuitive software
- Compatible with SmartLine Remote Diagnostics

## Thermogravimetric Moisture



### TGM800

- High precision, automated thermogravimetric moisture determination, which utilises a direct method for replacing tedious loss-on-drying techniques
- Measure up to 16 samples at a time with drying time end-point recognition
- Intuitive Cornerstone brand software with flexible method settings and touch-screen operation
- Precise oven temperature ramping and set point control up to 150 °C
- Remote access through Cornerstone Mobile provides access to data, plots, and instrument status from smartphone, tablet, or desktop computer

## Thermogravimetric Analysis



### TGA801

- Automated thermogravimetric analysis batch of up to 19 samples
- Determines multiple constituents such as moisture/ash, volatile content, and LOI from a single sample in various organic, inorganic, and synthetic materials
- Optimised analysis time using automatic end point recognition based upon sample mass constancy
- Cornerstone brand software with touch-screen interface promotes an ergonomic workspace and optimised workflow
- Remote access through Cornerstone Mobile provides access to data, plots, and instrument status from smartphone, tablet, or desktop computer

## Sulfur | Carbon



### 832 Series

- Simple, fast, accurate sulfur/carbon determination in organic materials
- High-efficiency furnace with intelligent control lowers operating costs and optimises furnace reliability
- Individual wide-range IR detection
- Operator-centered design with touch-screen Cornerstone brand software promotes an ergonomic workspace and optimised workflow
- Optional Performance Package (P) and Dual-Range (DR) 832 model also available
- Cornerstone Mobile option provides access to data, plots, and instrument status notifications from your smartphone, tablet, or desktop computer

## Carbon | Hydrogen | Nitrogen | Sulfur



### 628 Series

- Determines carbon, hydrogen, and nitrogen/protein in various organic samples in as little as 3.5 minutes
- Flexible sulfur module configurations for added versatility
- Dual-stage furnace system operates with pure oxygen at high temperatures for complete combustion of samples, without the need for additional metal oxidising reagents
- Low-maintenance autoloader with capacity for up to 120 samples
- Sulfur add-on module available with optional expanded 50-position autoloader
- Complies with AOAC, ASTM, ISO, AACC, AOCS, and ASBC methods of analysis
- Compatible with SmartLine Remote Diagnostics

## Carbon | Nitrogen | Protein (Dumas)



### 828 Series

- Rapid analysis cycle times as fast as 2.8 minutes with macro sample mass capabilities
- A reduction reagent tube lifetime of 4,000 samples extends instrument uptime and lowers operating costs
- Dual-stage reagent-free furnace with exclusive oxygen furnace enables application versatility using macro sample mass
- Cornerstone brand software with touch-screen interface promotes an ergonomic workspace and optimised workflow
- Remote access through Cornerstone Mobile provides access to data, plots, and instrument status from smartphone, tablet, or desktop computer

## Carbon | Nitrogen (Protein) | Sulfur



### 928 Series

- Rapid determination of macro sample sizes (up to 3 grams) in as little as 5.3 minutes
- Extended reagent lifetimes maximise lab efficiency and lowers operating costs
- Rugged design meets the demands of difficult applications
- Operator-centered design with touch-screen Cornerstone brand software promotes an ergonomic workspace and optimised workflow
- Cornerstone Mobile option provides access to data, plots, and instrument status notifications from your smartphone, tablet, or desktop computer
- Complies with AOAC, AACC, AOCS, and ASBC methods of analysis

# Separation Science

GC-MS

GCxGC-MS

GCxGC

High Resolution GC-MS



## PEGASUS® BT GC-TOFMS

- Industry-leading sensitivity helps you find and quantify an unlimited number of analytes, while proprietary deconvolution algorithms yield clean, high quality spectra
- A complete historical record of all components for each sample is retained for future data mining
- The tried-and-tested reliability and durability of our Pegasus brand in a convenient benchtop unit

## Pegasus BT 4D GCxGC-TOFMS

- Enhanced sensitivity by coupling our benchtop Pegasus BT with our high performance GCxGC thermal modulation system
- Ability to interrogate challenging samples where the best sensitivity is needed
- Unique and powerful ChromaTOF® brand software simplifies quantitation and analyte identification with features such as Non Target Deconvolution® (NTD®), Target Analyte Find, library searches, and more
- StayClean® ion source eliminates the need for source cleaning

## GCxGC

- Ideal for quality control, production, and research
- Enhanced chromatographic separation power is excellent for petroleum, flavor, and fragrance applications
- Easy-to-use ChromaTOF brand software simplifies component identification
- Available with either FID or ECD

## Pegasus GC-HRT GC-TOFMS

- The highest performance TOF mass spectrometer for the GCMS market
- Folded Flight Path® (FFP®) technology allows users to achieve resolutions of up to 50,000
- Employs ChromaTOF software with automated High Resolution Deconvolution® (HRD®) and formula generation for seamless identification of unknowns, plus compatibility with standard GCMS libraries
- Spectral Analysis Toolkit harnesses the power of Mass Defect, Van Krevelen, and RDBE plots to take your unknown analysis to a new level
- 1 ppm mass accuracy identifies unique molecular formula
- Encoded Frequent Pushing® (EFP®) contributes to increased sensitivity, expanded dynamic range, and much more

## Pegasus GC-HRT 4D GCxGC-TOFMS

- Combining the highest performance GCxGC and TOF on the market gives users an unprecedented ability to interrogate complex samples
- Find more analytes than ever before and identify components with the ultimate confidence
- With mass accuracies of 1 ppm and peak capacities at least two times greater than anywhere else in the marketplace
- The industry's most established GCxGC systems; thermal modulation with liquid nitrogen or cryogen-free versions
- Chemical Ionisation source (HR-CI) provides the same mass accuracy and high resolution on pseudo-molecular ions which complements the traditional Electron Ionisation source (HR-EI) to provide comprehensive characterisation of unknowns
- Integrated software platform acquires data, controls all hardware, and analyses and reports results with a high level of automation; tailored to get the most out of HR data

# Metallography

Sectioning

Mounting

Grinding | Polishing



## SX100M Series

- SX100M Series
- Radial arm for manual section at user-friendly working height
- Integrated 6.6 gallon recirculating tank
- Sloped floor for efficient coolant flow and minimal debris build-up
- Convenient easy-to-operate panel
- Electronic mechanical braking system

## MSX Series

- Manual control and automatic oscillation or pulse sectioning
- Flexible model configurations with blades up to 17 in (432 mm)
- Optional integrated X- and Y-tables for parallel sections
- Optional filter bag kit available for ferrous environments
- Side access ports to cut variable-length specimens
- Rugged steel design
- Recirculation tank included

## MX Series

- Novel solid steel crossbar closure design is durable, easy to clean, avoids jamming, and allows for quick, one-handed operation
- Create fully customisable methods or use a IECO-developed method to fit your exact needs
- Variable modes for mounting delicate samples using all common types of mounting materials
- Reduce mounting bottlenecks and increase throughput with full size dual mount capability in 1.25 inch, 1.50 inch, and 30 mm mold size

## PX400/500

- Intuitive, touch-screen software simplifies your grinding/polishing process
- Spiral bowl design prevents drain clogs
- Up to five programmable metered fluid dispensers to meet every polishing objective
- Rugged components withstand any environment
- Available fixed and individual sample method models available

## PX300

- Ideal for low- or medium-volume laboratories
- Manual control of wheel speed, water spigot, and timer
- Water faucet with adjustable flow is flexible for ease of bowl cleaning
- Solid and compact with a durable aluminium frame design

Image Analysis & Management

Automatic | Manual Hardness Testing



## Macro Digital Microscope

- Self-contained, full HD (1080p) digital microscope and measurement system that operates without a PC
- The system offers powerful image processing and control
- Deliveris full HD live image quality at 60 frames-per-second
- Solution for quality control, testing, rework, assembly, inspection, and documentation

## IA44/PAX-it™ 2 Image Management System

- Full image analysis system with electronic filing system
- Search, sort, and organise images according to descriptive fields
- An ideal solution for measuring, archiving, and image analysis of materials
- Auto stage capability for higher throughput

## LM Series

- Analog and digital models
- Touch-screen capability on LM810 models
- Easily-centered optics
- Auto turret
- All models conform to ASTM specifications
- LV Series macro testers also available

## LV Series

- Macroindentation, Knoop, Brinell, and Vickers capabilities
- Touch-screen capability on LV810 models
- Auto turret
- High-quality, reliable testers
- Available in manual and semi-automatic
- All models conform to ASTM specifications

## LR Series Rockwell-Type

- Load Cell technology
- Highly accurate, reliable results
- Traditional Rockwell-type units available
- Conforms to ASTM specifications

## AMH55 Hardness Testing System

- Cornerstone brand software for increased usability, simplified reporting, and streamlined analysis times
- Unique patented trace function
- Advanced image-recognition technology
- Measures impressions with various surface conditions, including scratched, etched, or unevenly illuminated surfaces
- Available in Automatic, Semi-Automatic, and Lite configurations

# Let Us Empower Your Results.

The one thing all laboratories need to be successful is results they feel confident in. Since 1936, millions of samples worldwide have been analysed using LECO instruments for elemental analysis, gas chromatography, hardness testing, and more. We work with our customers to find the right solution for the type of sample analysis they are doing, helping them to achieve data that is clear, consistent, and accurate. But our commitment to the customer doesn't end when our instruments are delivered.

LECO is dedicated to enhancing the user experience long after the sale by offering thorough training on our instruments and technology, accessibility to instrument service programs that keep your instruments in top working order, and access to friendly service and support to ensure you are getting the most out of your purchase – support that will empower your laboratory for success.



**1936:** Carl Schultz founds the Laboratory Equipment Company, and introduces the first rapid carbon-determinator for the steel industry.



**1973:** LECO introduces the industry's first line of complete solutions for metallographic analysis.



**1979:** The SC-32, the industry's first automated sulfur analyser, replaces the tedious ESCHA wet chemistry method.



**1997:** The PEGASUS® GC-TOFMS, one of the first time-of-flight mass spectrometers in the marketplace, is released by LECO.



**2006:** LECO unveils its Global Support Center, a 50,000 square foot service and training facility.



**2012:** LECO opens the Elizabeth S. Warren Technical Centre, dedicated to the research and development of innovative instrumentation and equipment for the separation science product line.



**2016:** LECO Celebrates 80 years of innovation by introducing the Pegasus BT, a new benchtop GC-TOFMS.



**1967:** LECO's first international presence is established with the formation of the Export Division in Germany.



**1976:** LECO's first protein determinator, the NP-28, is introduced to the organic and food markets.



**1983:** The TGA Moisture/Ash series is introduced. The Carl E. Schultz Technical Center opens as a state-of-the-art Research and Development center.



**2000:** LECO introduces the TC-600 and CS-600 series, the first instruments of their kind with built-in Windows®-based software.



**2011:** CORNERSTONE® platform is launched, providing faster, more intuitive operation, including touch-screen capabilities, for new LECO analytical products.



**2014:** Cornerstone Mobile, an optional remote viewing feature, is introduced, allowing users to view data for select instruments, plots, and instrument status from a Smartphone, tablet, or desktop computer.



**2018:** Continued growth and expansion sparks the opening of the new Robert J. Warren Customer Experience Center, a 64,000 sq foot facility with multiple laboratories ideal for customer demonstrations and presentations.

## LECO subsidiaries span the globe so we can be there when you need us.

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