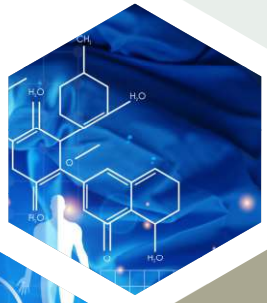
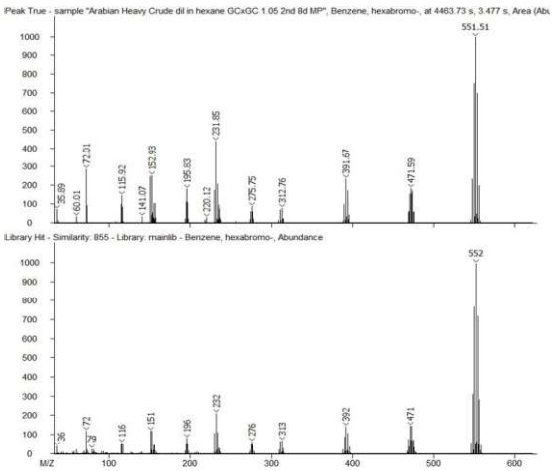
PEGASUS® BTX Series



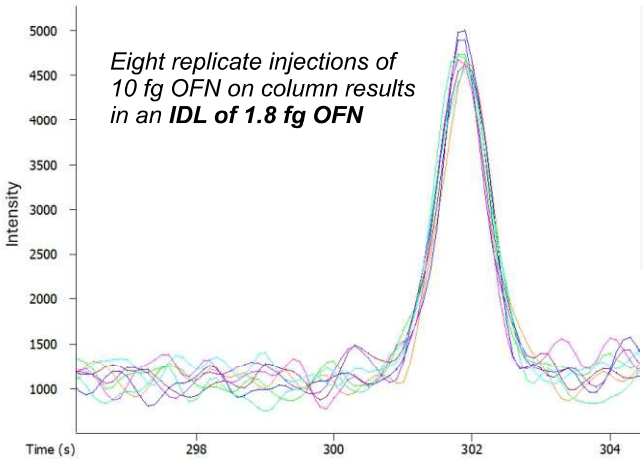
LECO

EMPOWERING RESULTS

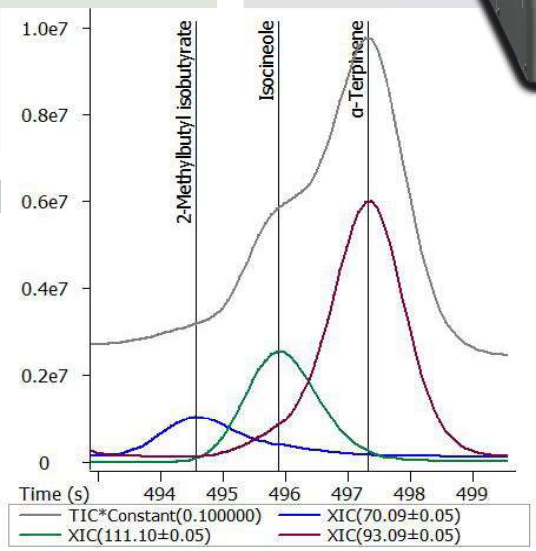
Get More with Time-of-Flight (TOF)



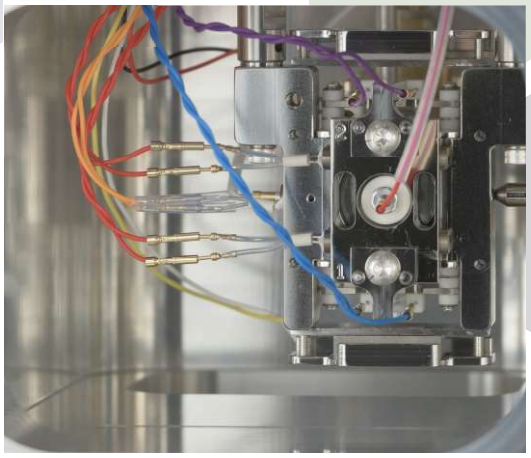
See Everything, All the Time
Collect full mass range data, even when performing targeted analyses. Never miss another clue.



Sensitivity in Spades
Trace-level detection with helium or hydrogen carrier gases—no analytes escape detection.



Advanced Deconvolution Algorithms
Even in the densest of matrices, uncovering analytes is easier than ever with the help of clean spectra.



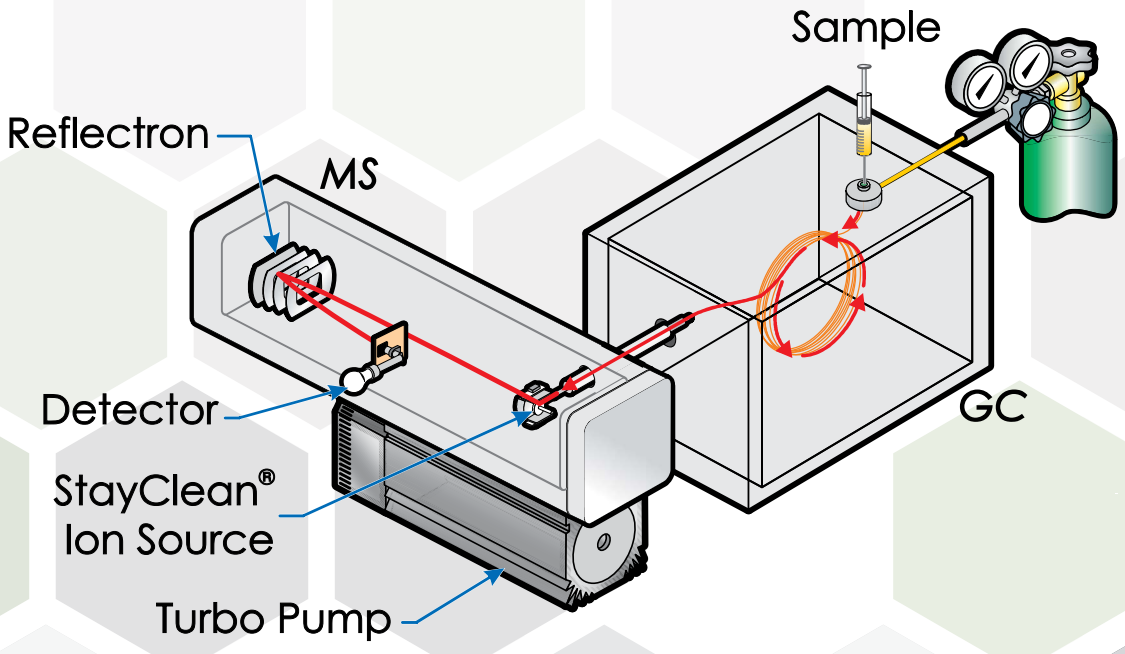
Say Farewell to Source Cleaning
Keep your lab running with the StayClean® ion source, which requires no cleaning, even after sustained heavy matrix exposure.

PEGASUS BTX

Specifications

Ionization Source	Electron Ionization (*StayClean* direct extraction, open style)
Detector	Scintillator—Photomultiplier tube with extended lifetime
Mass Analyzer	Time-of-Flight mass analyzer with dual-stage single reflectron
Mass Range	10–1500 m/z
Mass Resolution	>1100 at m/z 219
Spectral Acquisition Rate	1–500 spectra/second— up to 35,000 transients/second
IDL	<4 fg for 8 replicates of 10 fg OFN injected
Precision	<5% RSD for 15 injections of 100 fg OFN
Linear Dynamic Range	5 orders of magnitude

Pegasus BTX Simplified Flow



Modulate your GC-MS Experience

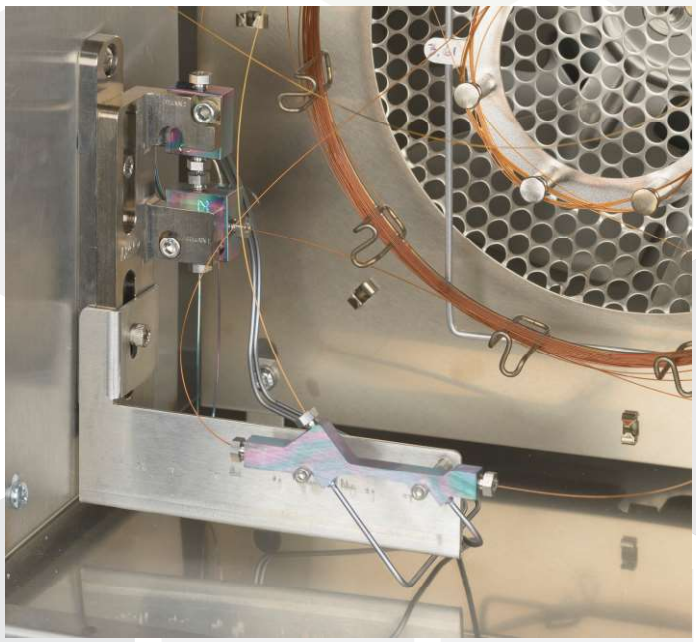
The Pegasus BTX is capable of full-spectrum acquisition at rates up to 500 Hz, making it the ideal detector for comprehensive multidimensional chromatography separations (GCxGC). For over 20 years, LECO has been developing hardware and software to deliver a seamless, single-vendor solution for end-to-end GCxGC support. Now, labs can choose from a variety of modulator technologies to harness the superior chromatographic resolution offered by GCxGC.

QuadJet™ Thermal Modulation

The *QuadJet* is the premier GCxGC modulator. Dual-Stage cryogenic focusing delivers a substantial sensitivity boost over traditional one-dimensional GC. Independent temperature control zones for modulator and secondary column oven unlock optimized chromatographic resolution. Flexible cooling gas options make the *QuadJet* a fit for any lab demanding the utmost in GCxGC performance.

Paradigm™ Flow Modulator with *Shift™ Flow Splitter*

The *Paradigm* brings GCxGC to labs in a low-cost, consumable-free, easy-to-operate package. Innovative flow control solutions permit method development without tedious capillary restrictor changes. Novel splitter design delivers aligned TOFMS and FID signals in ChromaTOF® software. An excellent solution for deciphering and quantitating complex volatile organic mixtures.

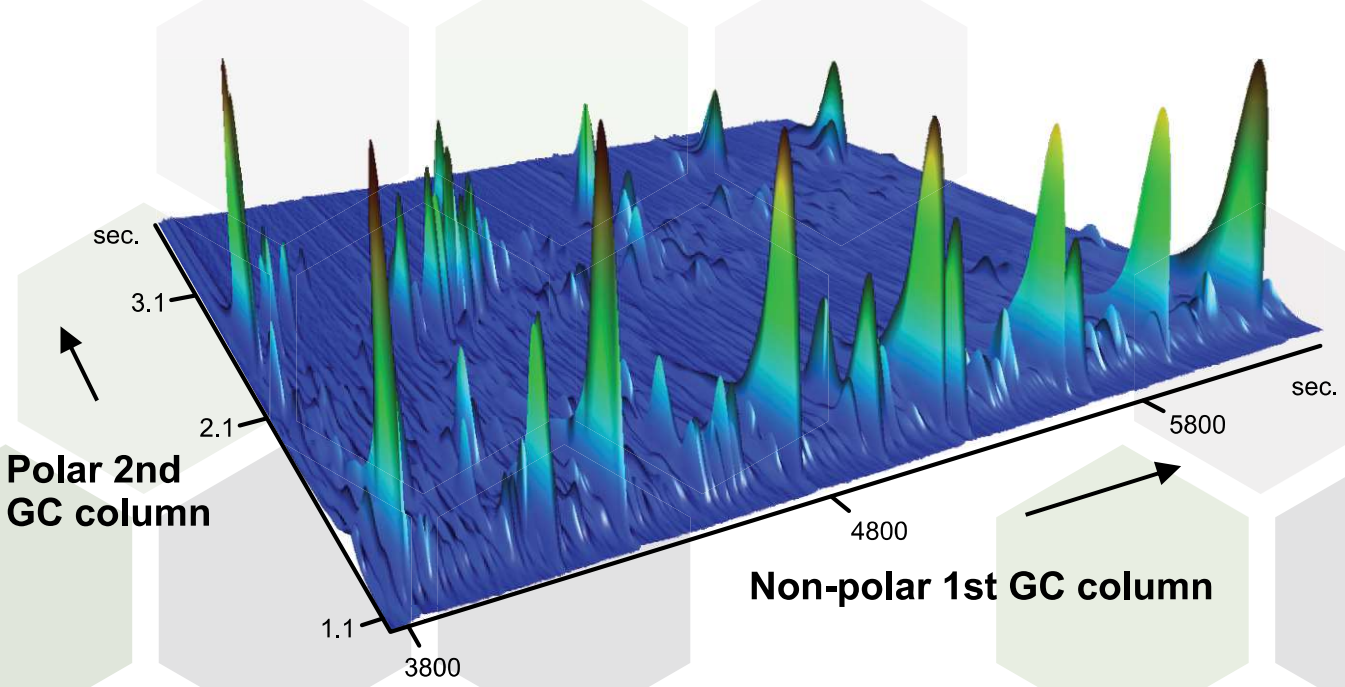


Modulators for Every Workflow

Modulator Comparison

	QuadJet LN_2	*QuadJet* CF	*Paradigm/Shift*
Modulator Type	Thermal	Thermal	Differential Flow
Chromatographic Resolution	Excellent (avg FWHM 50–100 ms)	Excellent (avg FWHM 50–100 ms)	Good (avg FWHM 100–250 ms)
Volatility Range	C4 (Butane)— column set limit	C8 (Octane)— column set limit	C1 (methane)— column set limit
IDL with BTX	<1 fg OFN IDL (8 replicates of 5 fg OFN)	<1 fg OFN IDL (8 replicates of 5 fg OFN)	<5 pg OFN IDL (8 replicates of 10 pg OFN)
Key Features	Market-leading GCxGC performance	Consumable-free thermal modulation performance and sensitivity	Optimized flow modulation GCxGC, lowest upfront and lifetime costs

Comprehensive Two-Dimensional Gas Chromatography (GCxGC) reveals hundreds, or even thousands, of analytes that would coelute in traditional one-dimensional chromatography.



Sample Introduction to Accommodate Any Sample Type

GC-MS demands greater sample introduction flexibility than perhaps any other analytical technique. LECO's array of configurable autosamplers is ready to work with any sample—be it solid, liquid, or gas.

Supported Techniques

L-PAL Robotic Autosamplers

- Liquid
- Headspace
- SPME and SPME Arrow
- ITEX

GL Sciences Optic-4

- Pyrolysis
- Thermal Desorption

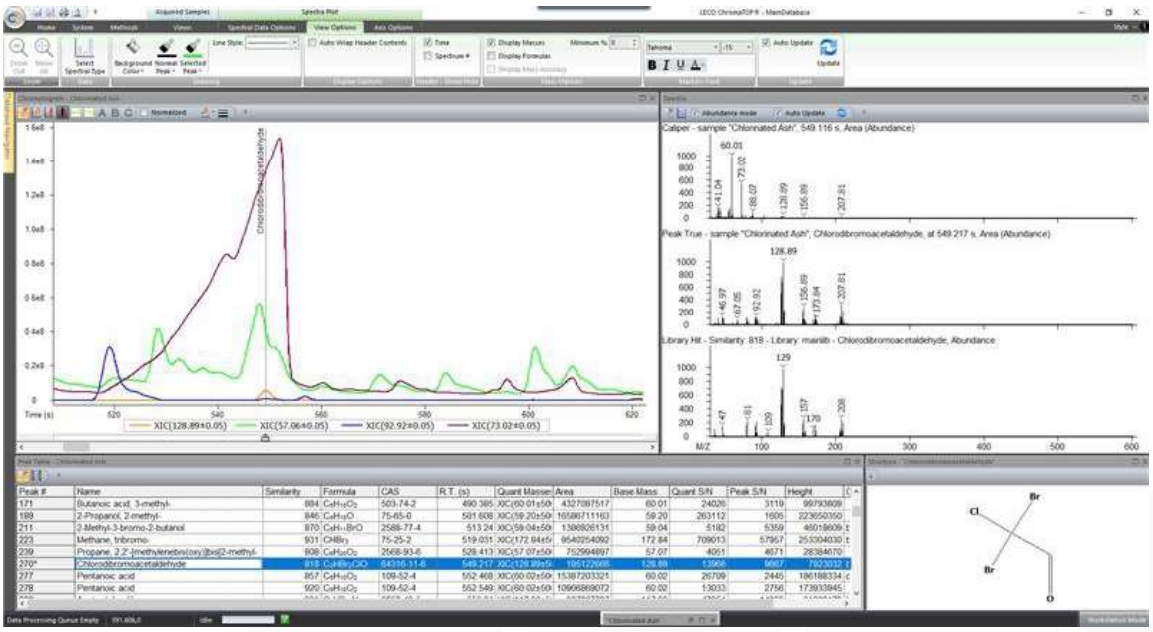
Agilent Liquid Autosamplers

Autosampler Solutions and Specialty Chromatography Accessories

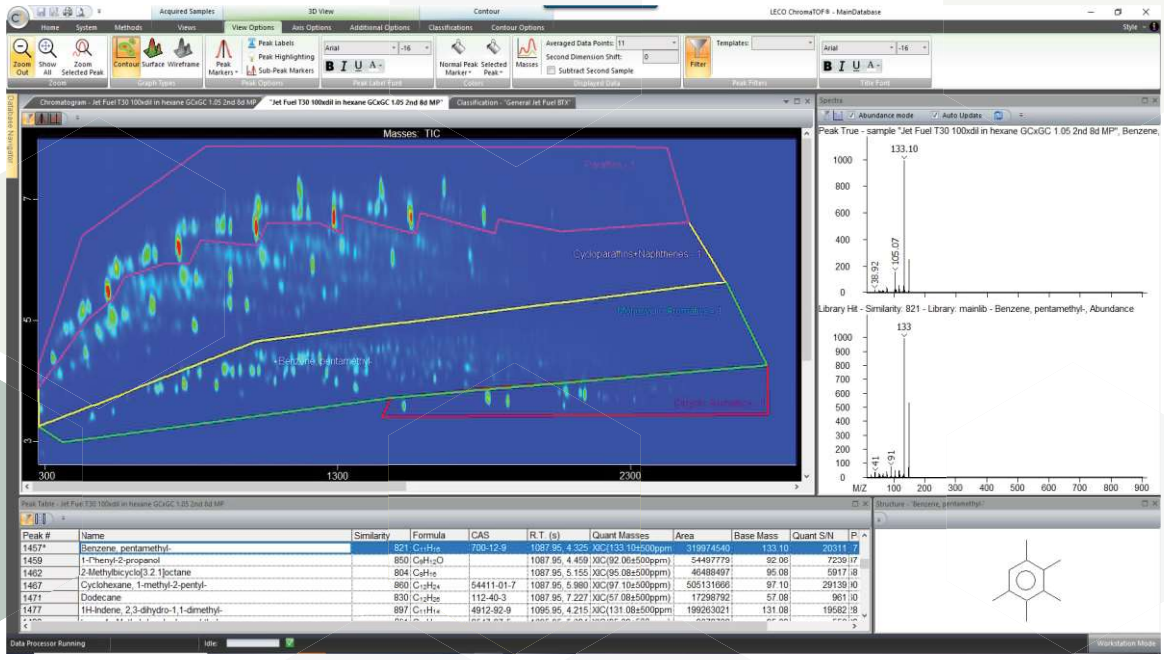
LECO *L-PAL* Derivatizer Preconfigured L-PAL for performing one or two-step derivatizations in 1.5 mL vials. Comes with all necessary hardware plus sample prep, GC, and MS methods.
LECO L-PAL Dilutor Preconfigured *L-PAL* for automated preparation of analytical standards. Comes with all necessary hardware plus scripts for building standards and calibration curves.
GL Sciences Phaser Pro Olfactory port attachment for simultaneous MS identification and sensory notation. Available with or without Voicegram software interface kit.
GL Sciences Cryotrap Available as a standalone unit or in conjunction with other GL Sciences equipment, this cryogen-cooled trap features rapid heating for the narrowest possible peaks.

ChromaTOF® Software

ChromaTOF was developed specifically to uncover the deepest insights from LECO TOFMS data—since 1996, hardware and software have co-evolved to create the ultimate user experience across all our GC-MS and GCxGC platforms.



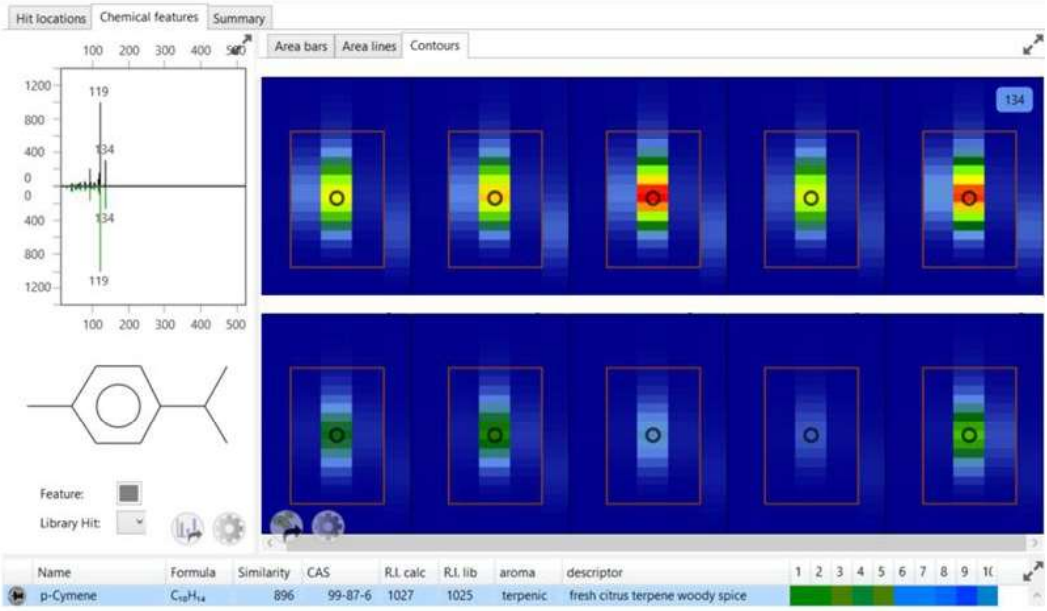
- Advanced Deconvolution algorithms reveal myriad analytes with high-quality spectra
- Peak table filtering based on metadata, elemental composition, and more
- Easy, accurate quantitation in complex matrices with Target Analyte Find
- Database file storage platform is fully 21 CFR Part 11 compliant



- Native control for all GCxGC modulators—from method development to data processing
- Easy group-type quantitation for GCxGC contour plot regions
- Powerful 2D and 3D tools for visual data investigation and report generation
- Novel alignment algorithms synthesize multidimensional TOFMS and GC detector data (i.e. FID)

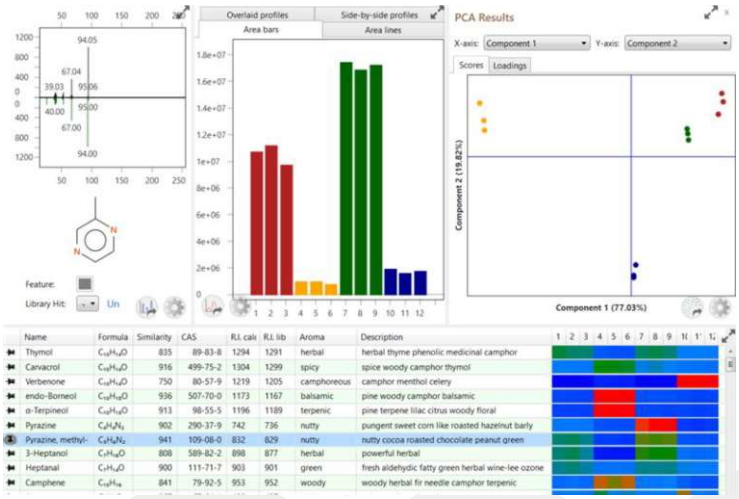
Make the Complex Simple with ChromaTOF SYNC and ChromaTOF TILE

Sync and Tile were developed to help users quickly distill accurate, actionable results from complex GC-MS data sets. Integrated visualization and statistical tools make interpretation a breeze—whether analyzing a few samples or thousands.



ChromaTOF Tile is the ultimate tool for rapid GCxGC sample and series comparison. Chemical differentiators are clearly defined for the analyst, aiding workflows including:

- Quality control (i.e. product failure analysis, raw material screening)
- Biomarker discovery
- Differentiating sources or treatment groups



ChromaTOF Sync is an advanced peak finding tool for sample sets. Chemical information from each sample is leveraged to deliver a comprehensive peak table, aiding workflows including:

- Process monitoring (i.e. aging or reaction monitoring experiments)
- Identifying significant chemical trends or shifts
- Correlating chemical changes with experimental variables

LECO Corporation
3000 Lakeview Avenue | St. Joseph, MI 49085 | 800-292-6141 | Phone: 269-985-5496
info@leco.com | www.leco.com | ISO-9001:2015 Certified | LECO is a registered trademark of LECO Corporation.

EMPOWERING RESULTS

Form No. 209-309 4/24-REV0