





### **Build Your Confidence Further**

#### **Industry Advantages**

Mass Resolution up to 50,000 gives you the capability to distinguish compounds in coeluting peaks

 ppm mass accuracy reduces molecular possibilities by a factor of 3 versus industry standards

Shorten your identification time with the industry's best deconvolution for both EI and CI data

#### **Driven by Fundamental Technologies**

Folded Flight Path® (FFP®) enables high resolution analysis with selectable 20 or 40 meter long flight paths

High Resolution Deconvolution® (HRD®) uses a statistical approach to deconvolute analytes to the limits of mathematics

KADAS®, a novel data acquisition system, is based on ion statistics and ensures a high level of TOF data quality

New Encoded Frequent Pushing® (EFP®) allows increased sensitivity













#### Leading to Benefits

Identify compounds via library searches, combined with accurate masses on molecular and fragment ions

Create and use accurate mass spectral databases to enhance the quality of your hits

Mass defect plots allow you to quickly focus on compounds of interest

Monitor, regulate, use, and setup instrument with automated software tools

Multi-Mode Source™ (MMS™) combines EI, Positive Chemical Ionization CI, and Electron Capture Negative Ionization (ECNI)

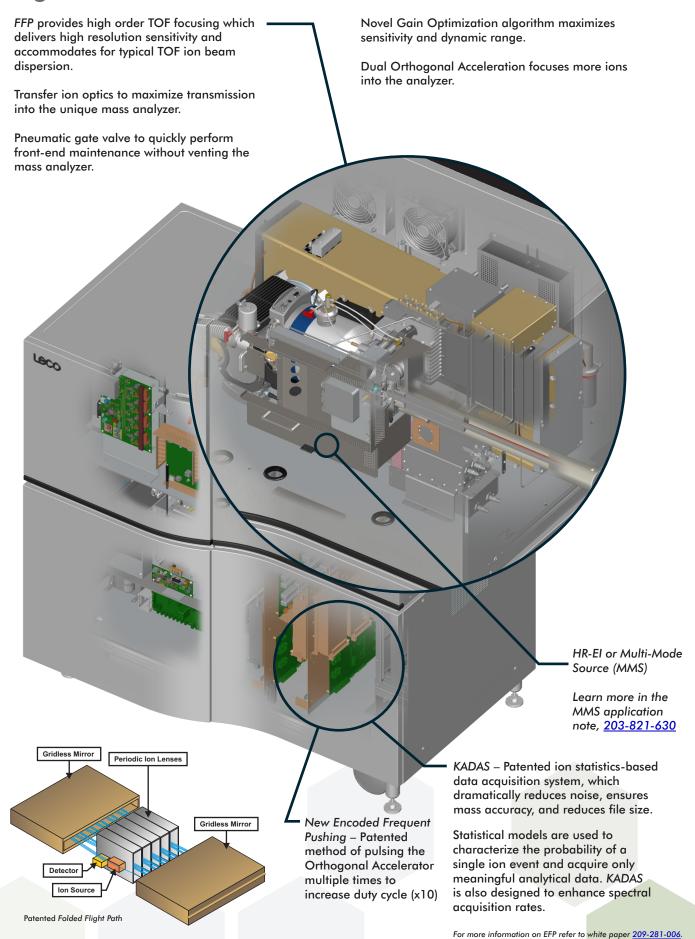
Standard He and H<sub>2</sub> carrier gas support

Automated tuning and instrument setup

Unparalleled sensitivity in a high resolution GC-TOFMS system



# Pegasus GC-HRT\* Hardware



# Pegasus GC-HRT<sup>+</sup> Software

### Identification Grading System™ (IGS™)

Increase confidence in your identification challenges with intuitive ChromaTOF® brand software. LECO's *Identification Grading System (IGS)* feature eases data review by allowing users to quickly see, justify, have confidence in, and report on which chemicals are in a particular sample. This in turn allows a user to make confident decisions on what to do next.

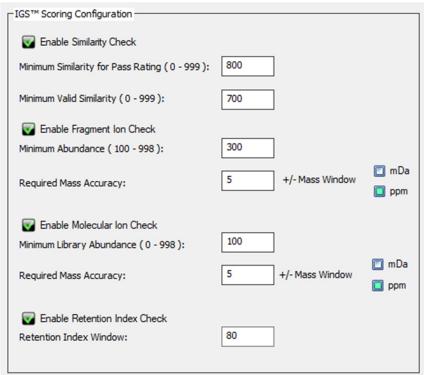
### **Stop Guessing What is in Your Sample: KNOW**

The IGS uses all the available chemical information generated from the Pegasus GC-HRT<sup>+</sup> to add confidence to your unknown unknown identification process.

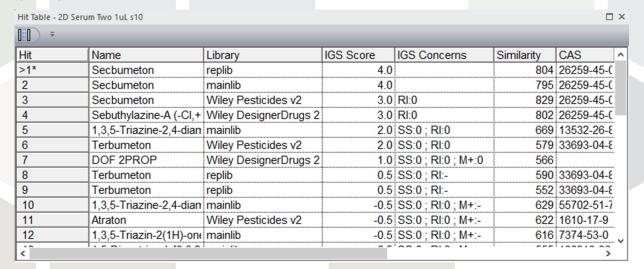
- The IGS gives a grade to a particular identification based on 4 criteria:
  - 1. Presence and accurate mass of a molecular ion
  - 2. Presence and good correlation of a spectral similarity score from a curated library
  - 3. Accurate masses of sensible potential formulae of fragmented ions corresponding to a spectral library hit
  - 4. Matching retention index from the library hit

The higher the value of the grade the more confident you can be in your identification.

### How IGS is set up and used in the software

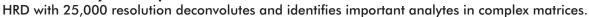


Inside of LECO's ChromaTOF software, the hit table which links directly to an individual deconvolution result. The highest IGS score is used to prioritize this table. The top hit goes into a full summary of all identification results. This table can use multiple libraries (as shown, even user created libraries) and each individual result can be analyzed and compared by the operator.

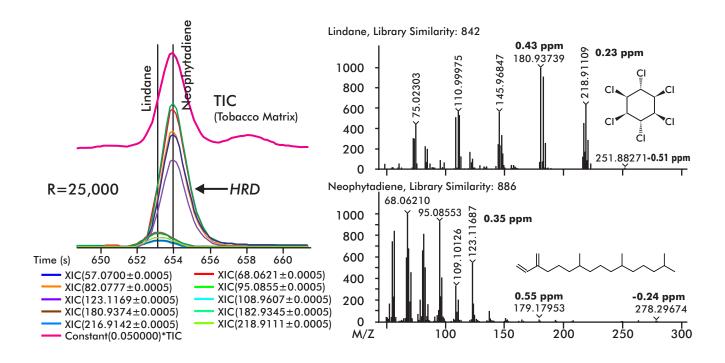


## High Resolution Deconvolution (HRD)

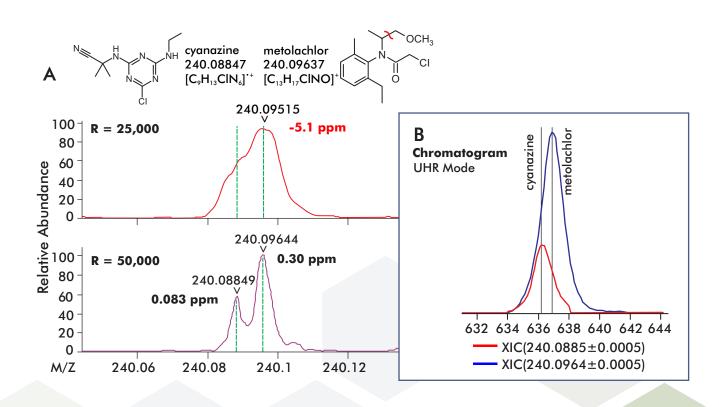






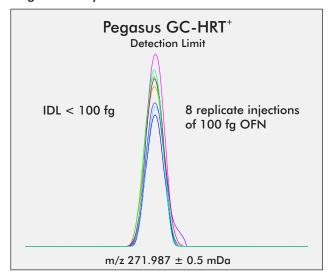


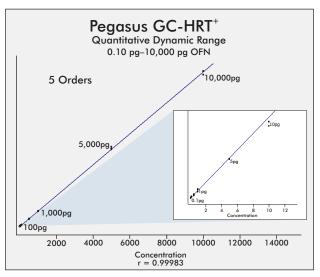
In cases where ambiguity exists, Ultra High Resolution mode and HRD will pull apart highly isobaric ions. In the example below, the required mass resolution is greater than 40,000.



### **Enhanced Sensitivity**

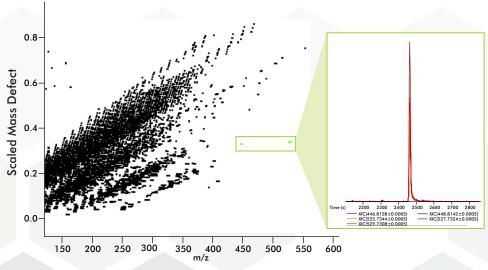
Find and quantify an unlimited number of analytes—in every run, every time. No need for additional targeted analyses.

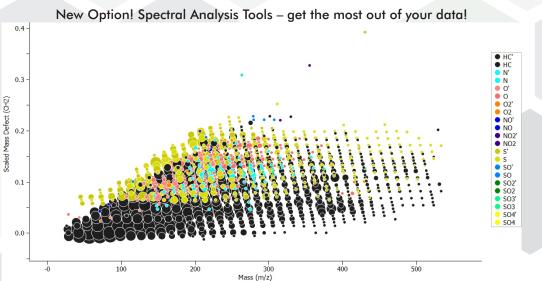




# Mass Defect Plot for Discovery of Unknown Compounds

Easily identify compounds with chemically scaled mass defect plots. From Kendrick to halogen, you can choose your mass defect scale.





### Identify More With Confidence

Unknowns don't stand a chance when you have the leader in GC-MS in your corner. LECO products deliver the separation, accuracy, resolving power, deconvolution, and speed to characterize the most complex matrices.

Do you know what is in your sample? With our solutions, you'll have all the advantages you need to see the complete picture

Pegasus GC-HRT

**Deconvolution | Sensitivity** 

Productivity | Reproducibility

Accurate Mass | Structural Interpretation

### Life Sciences and Chemical Analysis Solutions

Every day around the world, LECO instruments continuously perform analyses for today's most complex applications. Whether you are analyzing samples in the food, flavor/fragrance, petroleum, environmental, forensics, or life science (metabolomics) industries, we have an instrument configuration to meet your needs.



#### Pegasus BTX GC-TOFMS

- Single-femtogram sensitivity illuminates a myriad of trace level analytes
- Revolutionary StayClean® Ion Source design eliminates the need for source cleaning, even after sustained matrix exposure
- · Advanced deconvolution algorithm yields clean
- El spectra with excellent commercial library matching
- Innovative detector mechanism delivers unparallelled performance, backed by two-year warranty
- Time-of-flight MS collects all mass fragments, all the time—ensuring maximum chemical insights from critical samples

#### Pegasus BTX 4D GCxGC-TOFMS

- Comprehensive multidimensional chromatography exponentially increases chromatographic resolution, discovering more analytes and improving identification confidence
- QuadJet<sup>™</sup> Thermal Modulator delivers 5 to 10X sensitivity gain and optimized chromatographic control—available with LN<sub>2</sub> or cryogen-free packages
- Paradigm™ Flow Modulator delivers affordable, robust, simple GCxGC-MS for any sample
- Shift™ Flow Splitter maintains constant split ratio between MS and FID for optimized quantitative capabilities
- Powerful ChromaTOF® Software easily surfaces critical insights from complex GCxGC data



### QuadJet™ SD / Paradigm™ SD

- Enhanced separating power for complex sample analysis
- Easy-to-use ChromaTOF-based software provides acquisition processing and reporting functionality within a single package
- Classification software feature simplifies component identification
- · Available cryogen-free modulator eliminates the need for LN, dewars



**Technical Research Center** 



Robert J Warren Customer Experience Center



**Global Support Center** 

### A Commitment to Quality and Service

LECO instruments are noted for superior precision, speed, and ease-of-use. We are an international company with over 25 subsidiaries worldwide. Our global network of sales/support is dedicated to customer service and satisfaction, and our commitment to quality is further underscored with ISO-9001:2015 certification. We conform to CE quality and safety specifications, fully testing our instruments at our on-site Compliance Testing Center.

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