

# The Refinery Systems Division



Refinery Systems, a division of Core Laboratories, provides octane and diesel equipment and services for laboratory and on-line applications. Refinery Systems is the largest worldwide distributor for Waukesha® octane and cetane rating engines, parts, and service.

## **The COMOC-V On-Line Octane Analysis System**

The new COMOC-V™ system automatically measures the quality of in-line blended gasoline in conjunction with ASTM research- and motor-method engines. The COMOC-V system is network-based and is capable of handling up to eight engines and three in-line blenders simultaneously.

## **The IOAS Integrated Octane Analysis System**

The IOAS™ system, when used in conjunction with ASTM research- and motor-method engines, automatically determines octane quality of in-line blended gasolines. The IOAS embeds the octane analyzer into the refinery's blending system. Up to eight engines on four blenders can be handled by the IOAS system.

## **The VOLRAC Vapor-to-Liquid Ratio Analyzer**

The VOLRAC™ analyzer provides automatic measurement of the vapor-over-liquid (V/L) ratio of in-line blended gasolines.

## **The Model 8200 On-Line Octane Analyzer**

This stand-alone analyzer is designed for on-line, continuous octane analysis. The Model 8200 incorporates features of our industry-standard octane analyzer systems.

## **The LabCON-V Laboratory Octane Analyzer**

The LabCON-V™ analyzer, when working in tandem with a CFR® knock test engine, accurately and repeatably determines the research or motor octane number of finished gasolines and gasoline components. The LabCON-V analyzer enhances production efficiency, has minimal calibration requirements, and is easy to maintain.

## **The Intake Air Refrigeration (IAR) Unit**

The IAR™ unit is an electromechanical cooling system that replaces the ice tower used with ASTM research- and motor-method CFR test engines. The IAR unit provides filtered, chilled, and dehumidified air to either laboratory or on-line CFR engines. It eliminates the need for an ice machine and physical handling of ice. In addition, the system handles the fuel chilling requirements for laboratory engines by circulating available coolant throughout the carburetor cooling equipment.



## **The Reference Fuel Dispensing System**

The Reference Fuel Dispensing System is used for blending primary or secondary reference fuels and standardization fuels. The system pumps these materials from storage containers to burettes mounted on a dispensing panel in the engine laboratory. Burettes manufactured to ASTM design specifications feature automatic-zero and expanded calibration increments for precise fuel volume measurements. Flow-restricted, dripless-spout dispensing valves give optimum blend accuracy with inherent handling safety. Safety is further enhanced through the use of a foot-operated switch on the reference fuel pumps. The system comes complete with a burette panel, burettes, a fuel pump panel, a foot switch, drum probes, and fitting assemblies.

## Other Laboratory Applications

Refinery Systems offers equipment designed to optimize the efficiency and accuracy of your octane analysis laboratory processes. Our durable devices can assist your personnel in gasoline analysis, sample organization, and engine maintenance while enhancing safety.

*The Dilute Antiknock Compound Blending Hood* is used for handling, dispensing, and storing the liters of dilute antiknock compounds required by laboratories for research- and motor-method octane ratings. The blending hood supplies ventilation for fume removal from the hood enclosure and the storage cabinet.

*The Water-Cooled Exhaust System* enables easy removal for engine maintenance.

*The Sample Recovery System* collects and pumps excess fuel away from one or more CFR engines.

*The CR Converter Retrofit* replaces old-style converters and is impervious to wear.

*The Lead-In-Gasoline Analyzer Kit* tests for trace amounts of lead in unleaded gasoline.

*The Lead-In-Air Kit* tests for organic lead in confined spaces.

## Services and Support

*Training Classes* offered on research- and motor-method testing, cetane testing, and octane analysis systems operation, troubleshooting, and maintenance.

*Complete Auditing Services* can be provided for your laboratory and in-line testing processes to eliminate discrepancies and verify quality control procedures.

*Refinery Systems Engineering Services* can offer custom support, ranging from laboratory design to specialized electronics and software.

*The Refinery Systems Standard Fuel Program* supplies a convenient, cost-effective means for providing the research- and motor-method octane numbers of standard fuels. The program is a cooperative exchange between many program members. Sixteen or more independent research- and motor-method ratings are obtained for each fuel and used to report octane number statistics.

## Waukesha CFR Engines

Refinery Systems, is the largest worldwide distributor of Waukesha CFR engines, parts, and service. These versatile CFR fuel-rating units are used extensively by petroleum refiners, research laboratories, engine manufacturers, governmental agencies, and universities for certification of product quality, fuel and additive technology development, and regulatory monitoring.

*The F1 Research, F2 Motor, and F1/F2 Combination Method Octane Rating CFR Engines* are used to determine the octane quality of gasoline and fuel-blending components. Conform to ASTM D2699 and D2700, respectively.

*The F4 Supercharge Method Aviation Gasoline Rating CFR Engine* is used to determine the octane quality of aviation gasolines. This unit is recognized and approved by ASTM D909.

*The F5 Cetane Method Diesel Fuel Rating CFR Engine* is a complete system for diesel fuel cetane number determination, conforming to the ASTM D613 Standard Test Method for Cetane Number of Diesel Fuel Oil.

## CFR Engine Services

Refinery Systems provides on-site engine/analyzer troubleshooting, diagnostic support, and maintenance services worldwide. Repair services include engine repair and overhaul, both in-house and on-site. Refinery Systems offices are strategically located throughout the world. We offer:

- Training classes on crankcase overhaul and engine maintenance
- CFR cylinder overhauls
- CFR crankcase overhaul services
- Repair services

## For More Information

For a complete overview of our products and services, visit our website at [www.corelab.com](http://www.corelab.com), or contact us at (609) 452-8600 (phone), (609) 520-1224 (fax), or [refsys.info@corelab.com](mailto:refsys.info@corelab.com) (e-mail).

