

Reinheldt R 4000 GC System

*Redefining Gas Chromatography
Intelligence, Precision, and Control*



The Next-Generation GC for the Global Laboratory

The **Reinheldt R 4000 GC System** is engineered for high-throughput laboratories that refuse to compromise on analytical performance, regulatory compliance, or operational agility. Built upon a foundation of intelligent system architecture and advanced automation, the R 4000 delivers the high-fidelity, reproducible data required for today's most stringent scientific standards.

From routine quality assurance to the most demanding trace-level analyses, the R 4000 empowers your laboratory to operate with greater speed, smarter integration, and total analytical confidence.

Setting a New Benchmark in Analytical Science

Designed to exceed the evolving demands of modern industry, the R 4000 seamlessly integrates cutting-edge digital technology with world-class engineering:

- **Intelligent Linux-Based Architecture:** Ensuring a stable, secure, and future-proof operating environment.
- **Precision Electronic Pneumatic Control (EPC):** Delivering industry-leading accuracy in gas flow and pressure regulation.
- **Advanced Thermal Management:** Optimized oven kinetics for rapid cycle times and superior peak resolution.
- **Comprehensive Digital Connectivity:** Fully integrated for the modern, networked laboratory.
- **User-Centric Interface:** A high-resolution touch experience designed to minimize downtime.

Performance without compromise: A system that doesn't just execute methods—it adapts and scales to your specific workflow.

Strategic Advantages

1. Remote Intelligence & Global Connectivity

Manage your laboratory assets with unprecedented flexibility. The R 4000 supports secure, real-time monitoring and system control via PC, tablet, or mobile devices. This "anywhere, anytime" access ensures operational continuity in a decentralized professional environment.

2. Unrivaled Precision and Thermal Stability

Every internal component is calibrated to ensure that your first injection is as accurate as your thousandth:

- High-fidelity temperature control for complex separations.
- Rapid oven cooling cycles to maximize daily sample throughput.
- Enhanced EPC stability to maintain retention time consistency across multiple systems.

3. High-Definition User Experience

The **10-inch high-resolution touchscreen** interface streamlines the bridge between the chemist and the data:

- Intuitive method development and parameter setup.
- Proactive real-time system diagnostics and preventative maintenance alerts.
- Reduced training overhead for lab personnel, driving immediate ROI.

4. Regulatory Compliance & Data Integrity

Built to satisfy the requirements of global regulatory bodies, the R 4000 software suite is fully **GMP/GLP compliant**:

- **5-Level User Access Control:** Customizable permissions for total security.
- **Full Audit Trail:** Comprehensive logging of all system modifications.
- **Electronic Signatures:** Facilitating a completely paperless workflow.
- **Seamless LIMS Integration:** LAN-enabled communication for effortless data transfer.

Performance Metrics

- **Trace-Level Sensitivity:** Engineered to detect ultra-low concentrations with exceptional signal-to-noise ratios.
- **Operational Reliability:** Designed for continuous 24/7 operation in industrial environments.
- **Advanced Sampling Versatility:** Compatible with twin-tower autosamplers, automatic liquid samplers, and specialized valve injection modules.

Global Industry Applications

The Reinheldt R 4000 is the trusted platform for critical analytical missions worldwide:

- **Pharmaceuticals:** Impurity profiling and API validation.
- **Environmental Protection:** Monitoring of air, water, and soil contaminants.
- **Food Safety:** Specialized detectors (ECD/FPD) for advanced pesticide residue analysis.
- **Petrochemicals:** High-precision analysis of complex hydrocarbon mixtures.

The Reinheldt Legacy

With decades of leadership in analytical instrumentation, **Reinheldt GmbH** represents the pinnacle of German engineering excellence. Our commitment to innovation-driven development and long-term reliability ensures that our partners remain at the forefront of scientific discovery.



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