

## NEW from Reichert Smart Instruments. Modular Connections. Powerful Systems.

Connect the new Reichert polarimeters, *Polar2* and *Polar3*, to the new *AR9* and *AR5* refractometers, and to Reichert's new density meters, *Density5* and *Density4*, to create powerful analytical systems that perform all of your requirements.

### Advantage Reichert AR Series of Refractometers

Continuing its record of leadership in refractometry, Reichert introduces two new refractometers to the *Advantage Reichert AR Series* adding to its line of sophisticated benchtop analytical instruments. These new instruments, the *AR9* and the *AR5* are reliable, durable, accurate and tough enough for the most demanding applications. The *AR9* is precise, having the capability to provide measurements for the most critically regulated industries. Both the *AR9* and *AR5* offer Peltier temperature control at an attractive price, while providing the connectivity and flexibility inherent in all of Reichert's new products.



**Refractometer AR9**  
Exceptional accuracy  
to 5 decimal places



**Refractometer AR5**  
Exceptional accuracy  
to 4 decimal places

#### AR9 and AR5 AR Series Refractometers Advantages

- Exceptional accuracy and reproducibility
- Flexible, modular – easily connects to Reichert *Density5* and *Density4* meters and Reichert polarimeters, *Polar2* and *Polar3*, for additional measurements
- Powerful software interface, compliant with critically regulated industries
- Continuous reading mode / real time measurement
- *AR9* with YAG (Yttrium Aluminum Garnet) in stainless steel well, provides durable maintenance-free optics, the *AR5* has a sapphire prism
- Extremely low noise
- Built-in solid state Peltier thermostat for accurate temperature control
- Modern, robust design is easy to clean and simplifies service
- Sample temperatures up to 100°C
- Easy to calibrate
- Remote diagnostics and maintenance of data
- Optional 7" color Universal Display touchscreen

### Density5 and Density4 Density Meters Accurate. Quick. Easy.

With the push-of-a-button the *Density5* and *Density4* meters provide accurate density measurements of liquids for analysis and quality control. Condensed into a compact, robust, stand-alone unit these density meters are reliable workhorses for the laboratory, resisting damage from demanding applications. The robust and precise density meters easily connect to other instruments in the Reichert modular system providing the flexibility for enhanced analysis.



**Reichert Density5**  
Exceptional accuracy to 5 decimal places

**Reichert Density4**  
Exceptional accuracy to 4 decimal places



Universal Display

#### Density Meters Advantages

- Easy to exchange measurement module for the most productivity and lowest maintenance
- Robust single-piece system
- Compact size, low weight
- Flexible, modular – easily connect to Reichert *AR Series* refractometers and polarimeters, *Polar2* and *Polar3*
- Built-in Peltier thermostat for accurate temperature control
- Continuous density measurement
- Integrated reference oscillator
- Automatic air bubble detection
- Color 3.5" capacitive touchscreen
- Extremely low noise
- USB and RS232 connectivity
- Powerful software interface, compliant with critically regulated industries, update on site
- Optional 7" color Universal Display touchscreen

## NEW Reichert Polarimeters

## Powerful Instruments from Reichert Measure Everything. Accurately. Quickly. Easily.



## Reichert Established Leadership. Longstanding Innovation.

Reichert Technologies, a company that has created advanced optical and analytical instruments for more than 150 years, continues to pursue the highest level of accuracy and quality today with its expansion and introduction of three high-end instruments, the Reichert AR Series of Refractometers, Density Meters, and Polarimeters. A modular system, these new instruments deliver connectivity and flexibility. Separately or simultaneously they measure refractive index, density, and optical activity determining the concentration and purity of numerous substances. The new instruments are accurate and robust in obtaining critical measurements sought in quality control analysis or sophisticated R&D investigations.



Analytical Instruments



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NEW!  
Polarimeters  
High Quality.  
Modular.  
User-friendly.

The new modular circular polarimeters from Reichert, *Polar1*, *Polar2* and *Polar3*, are designed for analyzing optically active substances. These new robust instruments are the most accurate, with a linear response throughout the measurement range. All results for any application are precise and exact, even at high optical rotations. The new polarimeters are easy to use and are suited for quality control, process control, and research in many industries including the beverage, cosmetic, chemical, food, essential oils and pharmaceutical.

Part of a modular system, the *Polar2* and *Polar3* combine easily with Reichert's other new analytical instruments, the *AR Series (Advantage Reichert)* of refractometers, *AR9* and *AR5*, and the density meters, *Density5* and *Density4*, to determine several different measurements of a sample at the same time. The advanced operating system software equips the new polarimeters for customer-specific methods and measuring scales.

Reichert Polarimeters  
Measure All Industries

- Beverages
- Breweries
- Chemical
- Pharmaceutical
- Confections
- Cosmetics
- Food and Beverage
- Food Ingredients and Additives
- Fragrance and Essential Oils
- Manufacturing and Industrial
- Petroleum

Coming in 2016!  
The Polar2, Optimized for the  
Pharmaceutical Industry



Polar1, Polar2 and Polar3, a polarimeter for every application and budget

*Polar1*, *Polar2* and *Polar3* series of instruments provides a wide range of high-quality polarimeters for research and industry. *Polar1* is the entry level model with 0.01° accuracy and a 589nm fixed wavelength. *Polar3* is precise to 0.005° and includes one fixed wavelength with others available on request. *Polar2* is designed specifically for the pharmaceutical industry and other high-value samples. Backed by Reichert's longstanding knowledge in the analytical instruments industry these instruments are manufactured for reliability and longevity in your lab.

Reichert Polar1 Advantages

- Best accuracy – remains constant throughout measurement range
- Low Maintenance
- Exceptional high-quality analysis
- Ready for all applications
- Energy saving and no maintenance LED light source
- Multiple measurements with statistical evaluation
- Internal storage of up to 999 measurements
- Compliant to international standards, GLP/GMP conformity and 21 CFR Part 11 ready, OIML, ASTM, ICUMSA, Australian K157
- Operating system drives up to 4 customer-specific methods

Reichert Polar3 Advantages

- Best accuracy – remains constant throughout measurement range
- Continuous reading
- Low Maintenance
- Exceptional high-quality analysis
- Modular concept to grow with requirements
- Ready for all applications
- High-resolution 7" TFT touchscreen
- Energy saving and no maintenance LED light source
- Compliant to international standards, GLP/GMP conformity and 21 CFR Part 11 ready, OIML, ASTM, ICUMSA, Australian K157
- Operating system drives up to 1000 customer-specific methods
- Connects to optional Universal Display

Reichert Polar2 (coming in 2016)

- Optimized for pharmaceutical applications
- Best accuracy – remains constant throughout measurement range
- Exceptional high-quality analysis
- Modular concept to grow with requirements
- Different T-Cell polarimeter tubes for normal or small volumes

- Self-calibration automatic wavelength control (AWC)
- Multiple wavelength option
- Continuous reading
- Low Maintenance
- Compliant to international standards, GLP/GMP conformity and 21 CFR Part 11 ready
- Energy saving and no maintenance LED light source

Technical Specifications	Polar1	Polar2	Polar3
Measurement Scales	Optical Rotation, Specific Rotation, °Z International Sugar Scale, % Concentration		
User Definable Scales	7	1,000	1,000
Measuring Range	± 360° / ± 259°Z	±90° / ±259°Z	± 360° / ± 259°Z
Resolution	0.01° / 0.02°Z	0.001° / 0.01°Z	0.001° / 0.01°Z
Accuracy	± 0.01° / ± 0.03°Z		± 0.005° / ± 0.015°Z
Reproducibility	± 0.01° / ± 0.03°Z		± 0.005° / ± 0.015°Z
Sensitivity	Up to OD 2		Up to OD 5
Wavelengths	589nm standard	589nm standard, others on request	
Response Time	6 to 8 sec. over the entire measuring range		≤ 4 sec. over entire measuring range
Tube lengths	10 to 200 mm length	Up to 100mm length	10 to 200 mm length
Tube Materials	Glass, acid-proof stainless steel, stainless steel with temperature sensor		

Temperature Interface

Temperature measurement	NTC Sensor		
Accuracy	± 0.03°C	±0.1°C	± 0.03°C
Temperature range	0°C to 99°C	10°C to 40°C	0°C to 99°C
Resolution	0.01°C		

Other Information

Light Source	LED		
Display	LCD display, monochromatic	4.3" touchscreen Universal Display (optional)	7" color touchscreen Universal Display (optional)
Interfaces	RS232 (2x), Parallel (1x)	RS232, USB, Ethernet	RS232 (1x), USB A (4x), USB B (1x), Ethernet
Dimensions	25.5 x 12.4 x 6.2 inches (650 x 315 x 160mm)	17 x 12 x 6.3 inches (430 x 300 x 160mm)	28.75 x 14.5 x 6.3 inches (730 x 370 x 160 mm)
Weight	26lbs. (11.8kg)		40 lbs. (18.3kg)

Reichert Polarimeter Operating System Software

The operating system (OS) software has been designed with the user in mind. The intuitive touchscreen navigation saves time when defining settings or changing methods. The OS can easily connect the Reichert *Polar2* and the *Polar3*, to the *AR Series* refractometers, *AR9* and *AR5*, and density meters, *Density5* and *Density4*, making your lab ready for all applications. This powerful software makes the instruments part of your workflow communicating with LIMS systems and other laboratory instruments via USB or RS232. The software operates up to 7 customer-specific methods in the *Polar1* and up to 1000 in the *Polar 2* and *Polar3*. Combine the OS with the optional GxP software package, to provide full compliance with 21 CFR Part 11 meeting all security electronic records requirements for the pharmaceutical industry.

Advantages of Reichert Operating System Software

- Context sensitive help to easily customize your workflow and maximize efficiency
- Intuitive interface guides user through menu
- Quick set-up of specific measurement scales
- Storage for more than 1,000 products including up to 1,000 methods
- Password protected administration and user profiles
- Evaluate and calculate displayed values and data
- Easy to calibrate with self-diagnostic options
- Traceability of all calibration procedures
- Export interface to MS Excel, Text file or PDF
- Quick reset to factory defaults
- Quick reset to user specific defaults
- Easy service and support references
- USB interface allows upgrades at user site

Universal Display

- Operation system displayed on 7" color touchscreen
- Drives up to 5 measurement modules
- Program and save testing methods

GxP Software Package

- Provides compliance for 21 CFR Part 11 meeting all security requirements for critically regulated industries

