

ALL YOU NEED

FOR ANALYTICAL CHEMISTRY: PHYSICAL MEASUREMENT

Temperature Measurement

Time Measurement

Moisture Analysis

Density Measurement

Viscosity Measurement

Refractometry & Polarimetry

Microscopy



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How to Use this Catalog

The New VWR All You Need for Analytical Chemistry: Physical Measurement Catalog lists hundreds of products from our comprehensive portfolio along with information on many services available through VWR. In this catalog you will find navigational aids to help you locate the products you need quickly and easily.

Product Organization

Sections are organized by measurement type for easy identification.

Page Headings

Section and subsection listings appear as necessary for you to refine your browsing.

ALL YOU NEED FOR ANALYTICAL CHEMISTRY: PHYSICAL MEASUREMENT

Science should never be limited by insufficient options. VWR is committed to offering broad product choice to a world of accelerating scientific advancement. We bring you direct access to the world's most respected brands of measurement instrumentation and accessories, including products from the VWR Collection, featuring high quality, superior performance, and competitive pricing.

Compounds can act differently based on their physical structure. Whether looking at the refractive index, or the melting point, VWR can provide the instruments, equipment, and standards to optimize your most critical processes.

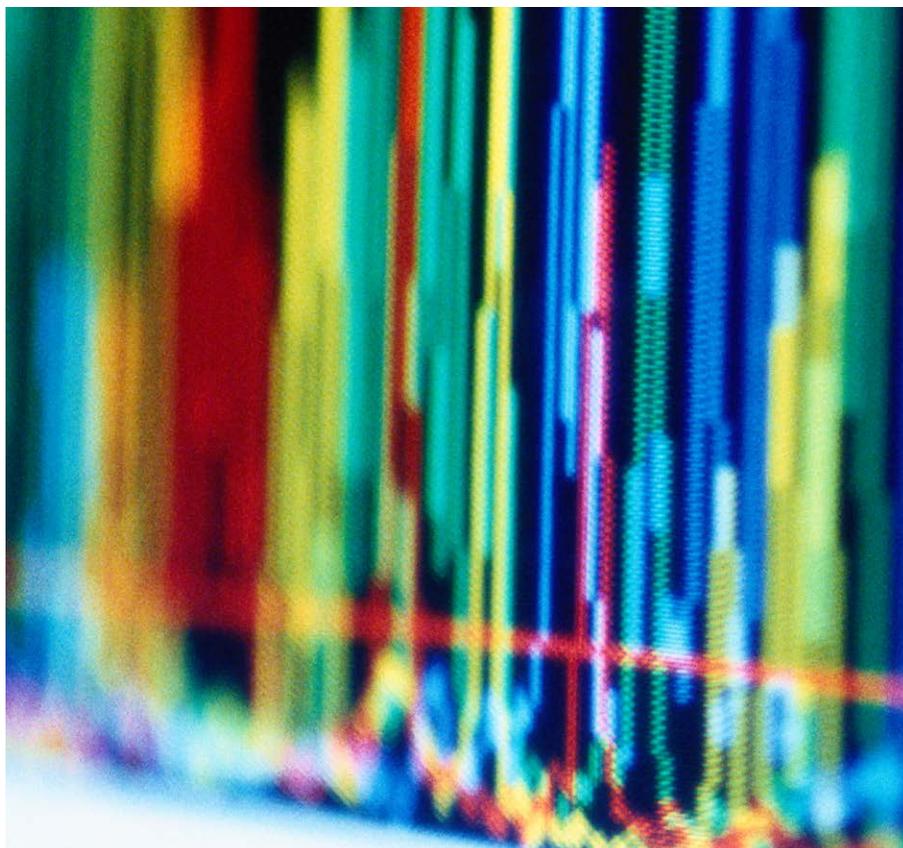


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Quality, Convenience, and Dedicated Support

VWRCATALYST offers calibration, qualification, preventive maintenance, certification, temperature mapping, and warranty management services for all equipment and instruments.

Our team specializes in providing a quick and targeted response to your needs. We also offer consultative and customized solutions. This enables you to:

- Improve efficiency by keeping your equipment in compliance
- Optimize your budget and maximize your equipment investment

With our network of ISO 9001 / IEC17025 accredited service providers, **VWRCATALYST** can be your single point of contact for all equipment and instrument service needs.

Our service offering is focused on helping you in the following areas:

Calibration-**VWRCATALYST** can maintain required accuracy of your equipment through periodic calibration. We can customize a solution that meets your specific needs, from basic accuracy checks to ISO/IEC 17025 accredited calibrations.

Qualification-Our IQ, OQ, and PQ qualification services help you stay in compliance with FDA, GMP/GLP, United States Pharmacopoeia, and ISO standards. **VWRCATALYST** can ensure your equipment and instruments are qualified per manufacturer specifications. Qualification tests are performed by one of our independent, accredited service professionals, and our qualification protocols are set at your level of compliance. Additionally, we customize our IQ/OQ/PQ protocols to meet your compliance needs.

Preventive Maintenance-Our customized preventive maintenance program prevents equipment failures and downtime, and our services can maximize the life and performance of your equipment and computerized instruments.

Certification-**VWRCATALYST** ensures compliance and safety through our cleanroom, critical environment, and equipment testing (including biosafety cabinets, fume hoods, and laminar flow units), cleaning, and certification services.

Temperature Mapping-Temperature mapping is a service dedicated to all temperature controlled devices and storage environments that need to comply with FDA and cGMP regulations. **VWRCATALYST** provides a service suitable to all temperature controlled environments and devices.

Warranty Management-We offer a wide range of laboratory equipment and instruments with full manufacturer warranty. We can also assist you in coordinating your warranty services and after-sale service contracts.

VWRCATALYST provides a network of recognized, highly qualified service providers that ensure compliance with all pertinent FDA, GLP/cGMP, ISO, NCCLS, CAP, CLIA, and 21 CFR requirements.

Our network of recognized, pre-qualified service providers can help you maintain virtually any type of equipment, at your location or through one of our depot service centers.



TEMPERATURE MEASUREMENT

THERMOMETERS

MELTING POINT MEASUREMENT

VWR® General-Purpose Liquid-In-Glass Thermometers



Organic liquid. Each thermometer is individually serialized and includes a Statement of Accuracy indicating accuracy traceable to NIST.

Accurate to the requirements of ANSI/SAMA Z236.1-1983, ASTM, NIST, DKD and/or equivalent standards.

NIST.

Description	Range	Length	Accuracy	Divisions	Immersion	Cat. No.
Thermometers						
General Purpose Blue Spirit Thermometer	-10 to 150°C	200 mm	1.5°C; 2°C above 110°C	2°C	50 mm	89095-624
General Purpose Blue Spirit Thermometer	-10 to 110°C	200 mm	1.5°C	2°C	Total	89095-626
General Purpose Blue Spirit Thermometer	0 to 300°F	300 mm	3°F, 4°F above 212°F	2°F	76 mm	89095-606
General Purpose Blue Spirit Thermometer	0 to 300°F	300 mm	1.5°F; 2°F above 230°F	2°F	Total	89095-618

For additional products, visit vwr.com.

ISO17025 ASTM Certified Liquid-in-Glass Mercury Thermometers, Thermco Products

Thermco's ASTM - Mercury Thermometers listed are made in accordance with specifications of the American Society for Testing and Material. Crafted in Germany under strict manufacturing procedures and quality controls to ensure the fabrication of liquid-in-glass thermometers which meet the requirements of ASTM Specification E-1 and E-77. These high precision liquid-in-glass mercury thermometers are hand blown, which bear graduations, numbers and letters etched into the glass and filled with and inert gas above the mercury column. These thermometers were designed for specific testing and can be calibrated to your specific requirements. Many are available in non-mercury configurations and meet ASTM standards for accuracy tolerance.

ASTM thermometers are used for a variety of specified tests which quantify and qualify repeatable test results in the fields of oil & petroleum testing.

WARNING—Mercury has been designated by EPA and many state agencies as a hazardous material that can cause central nervous system, kidney and liver damage. Mercury, or its vapor, may be hazardous to health and corrosive to materials. Caution should be taken when handling mercury and mercury containing products. See the applicable product Safety Data Sheet (SDS) for details.

A NIST Traceable Certificate of Calibration from Thermco Products ISO/IEC accredited laboratory at the specified certification points.

Ordering Information: Accessories not included.

Range	Accuracy	ASTM No.	Certification Points	Divisions	Immersion	Cat. No.
-1 to +105C	—	4C	0, 50, 100C	0.5C	152 mm	10747-402
-6 to +400C	2C to 260C; 4C above 260C	11C	0, 100, 200, 300, 370C	2.0C	25 mm	10747-430
+100 to +180F	2F	14F	100, 120, 140, 160, 180F	0.2F	79 mm	10747-442
+194 to +338F	1.0F	35F	212, 250, 285, 320, 338F	0.5F	50 mm	10747-508

For additional products, visit vwr.com.



ISO17025 ASTM Certified Liquid-in-Glass Mercury Thermometers, Total Immersion, Thermco Products

Thermco's ASTM - Mercury Thermometers listed are made in accordance with specifications of the American Society for Testing and Material. Crafted in Germany under strict manufacturing procedures and quality controls to ensure the fabrication of liquid-in-glass thermometers which meet the requirements of ASTM Specification E-1 and E-77. These high precision liquid-in-glass mercury thermometers are hand blown, which bear graduations, numbers and letters etched into the glass and filled with and inert gas above the mercury column. These thermometers were designed for specific testing and can be calibrated to your specific requirements. Many are available in non-mercury configurations and meet ASTM standards for accuracy tolerance.

ASTM thermometers are used for a variety of specified tests which quantify and qualify repeatable test results in the fields of oil & petroleum testing.

WARNING—Mercury has been designated by EPA and many state agencies as a hazardous material that can cause central nervous system, kidney and liver damage. Mercury, or its vapor, may be hazardous to health and corrosive to materials. Caution should be taken when handling mercury and mercury containing products. See the applicable product Safety Data Sheet (SDS) for details.

Ordering Information: Accessories not included.

A NIST Traceable Certificate of Calibration from Thermco Products ISO/IEC accredited laboratory at the specified certification points.

Range	Accuracy	ASTM No.	Certification Points	Divisions	Immersion	Cat. No.
+30 to +580F	1F to 300F; 2F above 300C	7F	32, 100, 200, 300, 400, 500, 570F	2.0F	TOTAL	10747-416

For additional products, visit vwr.com.



VWR® Bi-Metallic Dial Thermometers

Thermometers feature stainless steel case and stem, polycarbonate lens and external adjustment nut allows for simple field calibration. Each thermometer offers accuracy to 1%, and is individually packaged with a multi-language (English, French, German, Italian, Portuguese and Spanish) Statement of Test and Calibration. For correct temperature reading, stem must be immersed at least 50mm (2") in liquids and 100mm in gases (4"). Dial thermometers with a stem length of 125mm come with a probe cover with pocket clip. Dial thermometers with a stem length of 200mm come with a beaker clip.

Tested and calibrated in our exclusive triple accredited/registered ISO/IEC 17025:2005, A2LA accredited laboratory against equipment whose calibration is traceable to NIST and DKD.



Range	Stem Length	Dial Diameter	Divisions	Cat. No.
-10 to 110°C	125 mm probe	25 mm	1	89095-710
0 to 150°C	200 mm probe	44 mm	2	89095-734
0 to 250°C	200 mm probe	44 mm	2	89095-740

For additional products, visit vwr.com.

VWR® Bi-Metallic Dial Thermometers, 1/2" NPT Threaded Connection

Thermometers feature a 1/2" NPT threaded connection and polycarbonate lens. External adjustment allows for simple field calibration. For correct temperature reading, stem must be immersed at least 50mm in liquids and 100mm in gases.

Each thermometer features a stainless steel case and stem and is individually packaged with a multi-language (English, French, German, Italian, Portuguese and Spanish) Statement of Test and Calibration.



Range	Diameter	Stem Length	Divisions	Cat. No.
60/400C (150/750F)	75 mm	150 mm probe	5C/10F	61160-918
0/200F	75 mm, with glass lens	610 mm probe	2	89095-766
-20/120C (0/250F)	75 mm	150 mm probe	1C/2F	89095-772

For additional products, visit vwr.com.

VWR® Traceable® Digital Thermometer

Ideal for measuring temperatures in cuvettes, gas systems, reagents, and chemical solutions, or for routine measurements. Units read °C or °F at the touch of a button.

High-contrast LCD features 12.7mm (1/2) digits. Readings are updated three times a second. Features include hold button, minimum/maximum memories, and 50 data logger memories. Units operate on 9V alkaline battery (included) or optional 115V adapter/recharger. Thermometer **61220-601** comes with a standard quick-response, stainless steel triple purpose probe that features a 1.5m (5') cable and can be used with liquids, semi-solids, or air/gas.

The Data Acquisition System captures, displays, and stores readings in Windows®. Data can be read as-is or imported into databases, spreadsheets, word processors, and statistical programs.

A serial numbered certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA to indicate instrument traceability to standards provided by the National Institute of Standards and Technology.

Thermometer **61220-601** is supplied with probe and 1.5m (5') cable, 9V battery, carrying case, and manual. The Data Acquisition System is supplied with an AC adapter, 8.9cm (3 1/2) diskette, and 91.4cm (36") cable that plugs into the instrument and computer serial port.



Accuracy	±0.05°C
Resolution	0.001°
Standard Probe Dimensions	3.2 dia. x 159L mm (1/8 x 6 1/4")
Temperature Range	-50 to 150°C (-58 to 302°F)
Thermometer Dimensions	8.9W x 14H x 3.2D cm (3 1/2 x 5 1/2 x 1 1/4")

Description	Cat. No.
Calibrated Thermometer with NIST Traceable Certificate Digital Thermometer with Probe	61220-601

For additional products, visit vwr.com.

VWR® Traceable® Hi-Accuracy Dual Thermometer

- Available with one probe or two probes
- Monitor inlet and outlet simultaneously
- Visual and audible, high and low settable alarms

Thermometer range is -58 to 158°F and -50 to 70°C with a resolution of 0.01° and accuracy of ±0.3°C. Unit reads in °C and °F. Traceable International Standards Digital Thermometer provides the exact readings required for critical requirements, quality control checks, and routine measurements. Two channel thermometer is available with one probe or two probes. Two probes are useful in monitoring inlets and outlets; tracking two unique tests simultaneously; and measuring temperatures in two locations.

Absolute high-precision thermometer is ideal for measuring temperatures in water baths, cuvettes, gas systems, reagents, incubators, pharmaceuticals, petroleum products, foods, wastewater, and when using pH/conductivity standards.

Display shows minimum/maximum and current temperatures. MIN/MAX monitors readings overnight, on weekends, or for any time period.

It displays the exact time and date when the MIN/MAX temperature occurred. Alarm provides two visual (LEDs) and two audio alerts when temperature rises above or falls below high and low set points. Unit displays the exact time and date when dual thermometer alarms are triggered. Alarms are programmable in 0.1° increments. Visual and audible alarms signal continuously (for days) even if temperature returns to non-alarm range. First thermometer ever designed to permit user one-button calibration

Stainless-steel probe supplied with units shows the slightest temperature change. Probe is triple purpose for liquid, air/gas, and semisolids. Accurate readings with tip penetration of 1/3-inch. Probe has a diameter of 1/8-inch, stem length of 6-1/4 inches, overall length of 9 inches and a cable length of 5 feet.

To assure accuracy an individually serial-numbered Traceable® Certificate is provided by our ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST (National Institute of Standards and Technology). High-impact, chemical-resistant ABS plastic case is 2-3/4 x 4-1/4 x 3/4 inches. Weight is 5 ounces. Stand, Velcro®, magnetic strips, and wall mount allow placing thermometer anywhere. Supplied with a Traceable® Certificate, stainless-steel probe(s), and two AA batteries for continuous, 1-year always-on monitoring.



Description	Cat. No.
Calibrated Thermometer with NIST Traceable Certificate	
Thermometer with One Probe	89204-742
Thermometer with Two Probes	89204-744

For additional products, visit vwr.com.

VWR® Traceable® Platinum High-Accuracy Refrigerator Thermometer

Thermometer displays minimum/maximum temperatures for last 24 hours for each hour and previous 7 days for each day, or last 30 days for every day. Time/date stamp key shows the exact time and date for all minimum and maximum readings. A 4-wire platinum sensor insures linear response and high accuracy across the entire temperature range. Temperature range, accuracy, and resolution fulfills precise requirements for refrigerators/freezers. Sealed bottle version is insulated from rapid temperature changes when the door is opened. Sealed bottle liquid is generally recognized as safe by the Food and Drug Administration. Refrigerator/freezer door closes and seals tightly around micro-thin cable.

Triple display shows current minimum/maximum temperatures. Alarm is settable in 0.1° increments and signals when temperature rises above or falls below set points. Visual LEDs and audible alarm signals continuously, even if temperature returns to non-alarm range.

To assure accuracy, an individually serial-numbered Traceable® Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST.

Ordering Information: Supplied with platinum probe, magnetic mounting strips, Velcro®, wall mount, bench stand, batteries, Traceable® certificate.



Resolution	0.01°
Temperature Accuracy	±0.1°C

Description	Probe	Temperature Range	Cat. No.
Calibrated Thermometer with NIST Traceable Certificate			
Platinum High-Accuracy Refrigerator Thermometer	Bottle probe	-58.00 to 158.00° F (-50.00 to 70.00° C)	89369-146
Platinum High-Accuracy Refrigerator Thermometer	Bullet probe™	-58.00 to 158.00° F (-50.00 to 70.00° C)	89369-148

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NEED HELP?

Click to Chat with a Representative.

Excellence MP50 Benchtop Melting Point System, METTLER TOLEDO®

The METTLER TOLEDO® MP50 benchtop melting point system gives you the ability to record and review melting episodes for investigation of unexpected results. Unlimited grayscale viewing directly on the MP50's integrated video screen with up to 6x magnification enable discrimination powerful enough to observe individual crystals of your preparations melt. Recording also affords you the freedom to perform other important duties while your samples run.

The MP50 utilizes an LED light source and built-in camera to capture and automatically measure both reflected and transmitted light so the color of your sample will not compromise results. This innovative measuring principle combined with the ability to review melting episodes saves you time and money through elimination of obvious outliers caused by events such as decomposition.

The MP50's sophisticated yet intuitive software enables you to easily perform complex statistical evaluation methods so you have full confidence in your data. One Click® shortcuts streamline workflows by allowing you to initiate your most frequent methods via a single icon tap on the color touchscreen. The MP50's elegant ergonomic design, customizable user settings, and multilingual support (English, Spanish, Chinese, German, and Japanese) make the MP50 appealing and easy to use by a wide variety of operators.

The available MP Accessory Kit contains everything you will need to get started including five sample preparation tools, mortar, pestle, capillaries, forceps, and calibration standards with certificates in a reusable hard-shell case.

The optional EQPac (Equipment Qualification Package) provides peace of mind to those working in regulated environments through comprehensive and detailed qualification guidance (DQ/IQ/OQ/PQ). The MP50 measures in Pharmacopeia mode and is compliant with industry standards and regulations including United States Pharmacopeia (USP) <741> European Pharmacopeia (Ph.Eur.) 2.2.60, Japanese Industry Standard (JIS) K 0064, ISO 3146, and ASTM D1519.

METTLER TOLEDO® provides ISO 9001 manufacturing, nationwide ISO 9001 field service, ISO 9001 quality certification, and ISO 14001 environmental certification. CE conformity mark provides you with the assurance that our products comply with the most recent EU directives. This product is CSA certified and UL Listed.

Ordering Information: Accessories and reference standards are also available. Contact your VWR Sales Representative for more information.



Capillary Size	< 1.8 mm
Cooling Time	< 6.5 min. to Tmax
Dimensions	18W x 35L x 19H cm
Display	5.7" VGA color touch screen
Heating Rate	0.1 to 20°C per minute
Heating Time	<4 min. to Tmax
Maximum Samples per Run	4
Measurement Accuracy	± 0.2°C at 30 to 200°C, ± 0.5°C at 200 to 300°C
Temperature Range	RT to 300°C
Weight (kg)	4

Description	Power	Cat. No.
Excellence MP50 Benchtop Automated Melting Point Instrument	120 W	97035-162

Description	Cat. No.
Accessories	
Complete Melting Point Accessory Kit	71005-540
Vanillin Calibration Standard	71005-542
Saccharin Calibration Standard	71005-544

For additional products, visit vwr.com.

MEL-TEMP® Melting Point Apparatuses, Techne Inc.

The new and improved 1101D and 1102D Mel-Temp® Digital Melting Point Apparatuses offers a quick and easy way to measure the melting points of samples at a budget price. They are ideal for multiple users, being ergonomically designed to ensure comfortable viewing for everyone, with a height-adjustable extension arm and a viewing head that may be rotated to suit each user. As a visual aid, the viewing head holds a viewing magnifier that offers up to 8X magnification, and the unit itself has a large LCD display to reduce eye strain. As a further convenience, the extension arm is completely collapsible and can be neatly folded away into the unit, so that the unit can be stored flat to save space.

Performance features include: membrane keypad with simple menus for intuitive use, push button controls are conveniently located to ensure that temperatures can be recorded without looking away from sample, digital microprocessor with 1°C resolution provides fast warm-up and accurate temperature control and samples in 3 capillary tubes may be viewed simultaneously.

Safety and convenience features include: operates without a mercury thermometer, audible beeps indicate that the oven temperature is stable and ready for sample, adjustable object lens for sharp focus, safety eye piece reduces glare and protects the eyes from the hot zone and integral light and wide angle 8x magnifier enhance sample observation, so that all 3 samples can be viewed without eye strain

CE listed

Ordering Information: Features tube guide removal for cleaning and use of cold finger, 32-bit processor, 4x1 melt memory capacity and 13-key membrane keypad.



Description	Electrical	Dimensions	Cat. No.
MEL-TEMP® Digital Melting Point Apparatus	115V	20.3W x 35.6D x 7.6H cm (8 x 14 x 3")	89217-408

For additional products, visit vwr.com.

Temperature Measurement

Melting Point Measurement

Melting Point Apparatus

Featuring built-in illumination and a magnifying lens for viewing the samples, this machine places the block behind a protective screen and uses digital temperature sensing and display rather than a traditional mercury thermometer, making it safer and more accurate than others. The temperature can also be set to just below the melting point using the programmed plateau facility. The instructions printed directly on the instrument make learning to use the instrument easy, while a large LED display clearly shows the temperature. It also features folding feet. **Temperature range:** ambient to 300°C; resolution 1°C ±1% of display temperature; **heat ramp rates:** 20°C per min to plateau, 2°C per min to melt. 110–120 VAC. **Size:** 6 1/4"L x 8 1/2"W x 6 3/4"H; **weight:** 4 lbs.



Description	Cat. No.
Melting Point Apparatus	470003-816
Capillary Tubes, Closed Ends	470019-394
Capillary Tubes, Open Ends	470019-396

For additional products, visit vwr.com.

PYREX® Capillary Melting Point Tubes, Corning®

These PYREX® capillary melting point tubes are made from No. 7740 glass.



Description	Length	O.D.	Type	Cat. No.
Capillary Melting Point Tubes, 0.2 mm Wall Range	100 mm	1.5 to 1.8 mm	Both Ends Open	470156-792
Capillary Melting Point Tubes, 0.25 mm Wall Range	90 mm	1.5 to 1.8 mm	One End Open	32311-086
Capillary Melting Point Tubes, 0.2 mm Wall Range	90 mm	1.5 to 1.8 mm	One End Open	32311-084
Capillary Melting Point Tubes, 0.25 mm Wall Range	100 mm	1.5 to 1.8 mm	Both Ends Open	89091-084
Capillary Melting Point Tubes, 0.2 mm Wall Range	100 mm	1.5 to 1.8 mm	Both Ends Open	32311-080

For additional products, visit vwr.com.

Melting Point Tubes, Chemglass

Closed at one end. Tubes are manufactured from borosilicate glass and packaged 100 tubes per vial. Tube 80061-554 has a smaller I.D. to conform to U.S.P XXI requirements.



Description	Length	Tube Diameter	Cat. No.
Melting Point Tubes	90 mm	1.5–1.8 mm	80061-552
Melting Point Tubes	90 mm	0.8–1.1 mm	80061-554

For additional products, visit vwr.com.

TIME MEASUREMENT

LAB TIMERS

Time Measurement

Lab Timers

VWR® Traceable® Multi-Colored™ Timer

- Traceable
- Four-Channel Alarm Timer
- Displays Countdown Alarm, Stopwatch, or Time-of-Day

Four separate timing channels can be programmed in countdown mode or stopwatch mode up to 99 hours, 59 minutes, 59 seconds. Timer features Automatic Bounceback™ memory for repetitive timing. Timer can also display time of day in 12- or 24-hour mode. Supplied with battery, easel bench stand, magnetic back, and three colorful frames to personalize the timer.

A serial numbered certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA to indicate instrument traceability to standards provided by the National Institute of Standards and Technology.



Accuracy	0.01%
Resolution	1 sec.
Weight	78 g (2.75 oz.)

Dimensions	Cat. No.
7 x 5.7 x 1.3 cm (2 ⁷ / ₁₆ x 2 ¹ / ₄ x 1 ¹ / ₂ ")	89087-400

For additional products, visit vwr.com.

VWR® Traceable® Flashing LED Alert Big-Digit Dual Channel Timer

Allows simultaneous programming of two different activities from 99 hours, 59 minutes, 59 seconds to 1 second. Resolution is 1 second; accuracy is 0.01%. Each channel has a distinct electronic alarm and visual indicator when zero is reached. Audible alarms turns off automatically after one minute or may be silenced automatically.

For repetitive timing, the microcomputer chip permits setting 2 countdown times into memory. The memory recalls the last countdown time set. Large 5/8-inch high LCD digits may be read from 18 feet.

Unique visual indicator for each channel when counting down, green light flashes every second once the countdown time reaches 10 seconds. Red light flashes when zero has been reached and the alarm is sounding. Alarm has three positions which allow setting to high decibel for noisy areas, low decibel for quiet environments, or off the muted setting for silent, visual flashing LED-only operation.

To assure accuracy, an individually serial-numbered Traceable® Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST.

Ordering Information: Supplied with magnetic back, stand/spring-clip, opening for a lanyard, two alkaline batteries and Traceable® Certificate.



Description	L x W x H	Cat. No.
Flashing LED Alert Big-Digit Dual Channel Timer	5 ⁵ / ₈ x 3 x 3 ¹ / ₂ "	89140-196

For additional products, visit vwr.com.

VWR® Traceable® Vibrating Timer

Innovative countdown timer vibrates when time is up.

Select either audible or vibrating alarm with the flip of a switch. Individually numbered keys make setting time fast and easy. Countdown and alarms are on a single channel.

Timers also feature automatic bounceback memory for repetitive timing. Timer counts up during alarming, indicating elapsed time.

To assure accuracy, a Traceable® Certificate is provided from a ISO/IEC 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST.

Ordering Information: Timers are supplied with stand, magnetic back, opening for lanyard, battery and Traceable® Certificate.



Description	Accuracy	Resolution	Timer	Cat. No.
Traceable® Vibrating Timer	' +/- 0.01%	'1 second	9 hours, 99 minutes, 59 seconds	10154-394

For additional products, visit vwr.com.

MOISTURE ANALYSIS

MOISTURE ANALYZERS

Halogen Moisture Analyzer HE53, METTLER TOLEDO®

The HE53 Halogen Moisture Analyzer is a reliable and cost-effective solution for determining moisture content. The instrument is simple to use, thanks to straightforward navigation and on-screen guidance. Simply follow the easy, three-step process that the instrument walks users through and achieve reliable moisture readings in minutes. A metal base and easy-to-clean stainless steel surface ensure this a product that is built to last.

Proper installation and initial calibration are the key to ensuring the moisture analyzer performs properly from day one. A METTLER TOLEDO® authorized service technician performs installation qualification and operational qualification (IQ/OQ).



Dimensions	183 x 161 x 334 mm (7.2 x 6.3 x 13.1")
Display	LCD Back-Lit
Drying Programs	Standard, Rapid
Heater type	Halogen
Interfaces	RS232C
Method storage	1
Minimum Sample Volume	0.5 g
Repeatability	0.15% (2g Sample), 0.05% (10g Sample)
Results	% MC, % DC, % AM, % AD, g
Switch-Off Criteria	Timed, Automatic
Temperature Adjustability	1°C
Temperature Range	50 to 160°C (122 to 320°F)
Weight	4.1 kg (Ready to Measure)

Description	Capacity	Readability	Cat. No.
Halogen Moisture Analyzer HE53	54 g	1 mg (0.01% Moisture Content)	10753-186

For additional products, visit vwr.com.

Halogen Moisture Analyzer HE73, METTLER TOLEDO®

The HE73 Halogen Moisture Analyzer is a reliable and cost-effective solution for determining moisture content. The instrument is simple to use, thanks to straightforward navigation and on screen guidance. Simply follow the easy, three-step process that the instrument walks users through and achieve reliable moisture readings in minutes. A metal base and easy-to-clean stainless steel surface ensure this a product that is built to last.

Additionally, the HE73 includes two programmable methods and added flexibility thanks to additional switch-off criterion and a higher capacity.

Proper installation and initial calibration are the key to ensuring the moisture analyzer performs properly from day one. A METTLER TOLEDO® authorized service technician performs installation qualification and operational qualification (IQ/OQ).



Dimensions	183 x 161 x 334 mm (7.2 x 6.3 x 13.1")
Display	LCD Back-Lit
Drying Programs	Standard, Rapid
Heater type	Halogen
Interfaces	RS232C
Method storage	2
Minimum Sample Volume	0.5 g
Repeatability	0.15% (2g Sample), 0.05% (10g Sample)
Results	% MC, % DC, % AM, % AD, g
Switch-Off Criteria	Timed, Auto, Free
Temperature Adjustability	1°C
Temperature Range	50 to 160°C (122 to 320°F)
Weight	4.1 kg (Ready to Measure)

Description	Capacity	Readability	Cat. No.
Halogen Moisture Analyzer HE73	71 g	1 mg (0.01% Moisture Content)	10753-188

For additional products, visit vwr.com.

Moisture Analyzers, MB Series, Ohaus®

Model MB23 and MB25 basic moisture analyzers combine high quality durable construction with easy one-button setup, ideal for operators of all skill levels. Feature fast and accurate results, large backlit LCD display, standard RS232 port, readabilities from 0.1% to 0.05%, compact footprint, and a choice of halogen or infrared heating.

Model MB35 and MB45 moisture analyzers are suitable for in-process testing. They feature a fast halogen heating element that provides uniform infrared heating and durability, a large backlit 128x64 pixel LCD display, standard RS-232 port for easy communication with printer or computer, multi-language display (English, Spanish, French), and a GLP compliant format when printed results are required. The analyzers also include an auto dry feature that automatically terminates a test when dryness is achieved.

The MB35 standard moisture analyzer features a maximum sample capacity of 35g, with a readability of 0.005g and repeatability of 0.05% (10g sample). The intuitive software establishes a simple user interface with simple three-key navigation for easy setup. The LCD display shows % moisture, actual weight, actual temperature, and test time. Moisture range: 0.05% to 100%. Timer: 1–120 minutes (30-second increments to 60min.; one-minute increments from 60–120min.).

The MB45 advanced moisture analyzer features a maximum sample capacity of 45g, with a readability of 0.001g and repeatability of 0.015% (10g sample). An integrated database stores up to 50 drying procedures for maximizing productivity. Features include four selectable automatic drying programs, four enhanced heating options, a statistical function for simple tracking and recording of standard deviation over time, a choice of three programmed end points for automatic test completion, and an audible signal after timed tests. Moisture range: 0.01% to 100%. Timer: 1–120 minutes (in 10-second increments).

UL listed. CSA certified. FCC approved. CE marked. Manufactured under an ISO 9001:2000 Registered Quality Management System.

Ordering Information: Manufacturer's two-year parts and labor warranty (U.S. and Canada).



Operating Temperature Range	5 to 40°C (41 to 104°F)
Pan Size	90 mm (3 1/2")
Sample Size	3 to 20 g typical, 0.5 g min.
Tare Range	To Capacity by Subtraction

Description	Electrical	Capacity	W x H x D	Readability	Repeatability (Std. Dev.)	Temperature Range	Shipping Weight	Cat. No.
MB35 Basic Moisture Analyzer	120–240V, 50/60Hz	35 g	19 x 15 x 35 cm (7 1/2 x 6 x 13 3/4")	0.02% / 0.002 g	0.18% (3 g sample), 0.02% (10 g sample)	50 to 160°C in 5° increments	6.4 kg (14.1 lbs.)	11377-288
MB45 Advanced Moisture Analyzer	120–240V, 50/60Hz	45 g	19 x 15 x 35 cm (7 1/2 x 6 x 13 3/4")	0.01% / 0.001 g	0.05% (3 g sample), 0.015% (10 g sample)	50 to 200°C in 1° increments	6.4 kg (14.1 lbs.)	46620-408
MB25 Basic Moisture Analyzer	100–240V, 50/60Hz	110 g	17 x 13 x 28 cm (6 1/2 x 5 x 11")	0.05% / 0.005 g	0.2% (3 g sample), 0.05% (10 g sample)	50 to 160°C in 5° increments	3.9 kg (8.5 lbs.)	97021-956
MB23 Basic Moisture Analyzer	100–240V, 50/60Hz	110 g	17 x 13 x 28 cm (6 1/2 x 5 x 11")	0.1% / 0.01 g	0.3% (3 g sample), 0.2% (10 g sample)	50 to 160°C in 5° increments	3.9 kg (8.5 lbs.)	97021-958

For additional products, visit vwr.com.

DENSITY MEASUREMENT

BENCHTOP INSTRUMENTS

CALIBRATION STANDARDS

Densito 30PX Portable Specific Gravity/Density Meter, METTLER TOLEDO®

Ideal for petroleum products, vegetable oils, cosmetics, detergents, beverages, sugar solutions, and organic and nonorganic liquids. Measures density and specific gravity at a measured temperature. Temperature compensation coefficient is programmable for measuring a wide variety of samples. Temperature compensated density values according to API may be displayed as API degrees or as density (g/cm³). Factor calibration is automatic, based on pure water. Unit can store up to 1100 measurement results that can be transmitted to an external printer or computer by infrared interface (IR adapter required, sold separately). To help fulfill GLP regulations the unit features a built-in clock and a user-defined identification name of up to 10 letters and/or numbers. This identification name, along with the time and date when the measurements were performed are transmitted together with the test results. Backlit LCD displays many different measurement units: °C/°F, density/specific gravity, API degrees, BRIX, % alcohol, % H₂SO₄, °Baumé, °Plato, proof, and user-defined units. Backlit display function can be activated to illuminate the display for 10 seconds following the last keystroke. The meter is water-resistant and the measuring cell features a seal that prevents leaks. Uses two AAA batteries (sold separately).



Density Accuracy	±0.001 g/cm ³
Density Range	0 to 2 g/cm ³
Density Resolution	0.0001 g/cm ³
Temperature Accuracy	±0.5°C
Temperature Range	0 to 40°C (32 to 104°F)
Temperature Resolution	0.1°C

Description	Cat. No.
Densito 30PX Meter	11276-896
Accessories	
Density Standard	11278-064

For additional products, visit vwr.com.

METTLER TOLEDO Excellence Benchtop Density Meters, METTLER TOLEDO®

Model DM series digital density meters measure density, specific gravity and other related values with high precision and short measuring time. Results are automatically converted into one or several pre- or user-defined units such as Brix, API degrees and alcohol concentrations. Thanks to innovative One Click™, an operator simply clicks on the type of product to be examined. The measurements are carried out with ideal settings and the results are automatically compared with correct target values and limits. No method to select, no settings to change, no results to judge and therefore no errors! The meters are safe, effortless and very efficient.

Model DM series' One Click® shortcuts streamline workflows by allowing you to initiate your most frequent methods through the single tap of an icon on the color touchscreen. Built-in algorithms reduce your wait time up to 75% while ensuring generation of reproducible results.

Model DM series' oscillating U-tube is brightly illuminated via LED, providing you enhanced transparency of your sample measuring environment. Bubble Check™ automatic error detection, single-point adjustment of the entire temperature range, viscosity correction, and Peltier temperature control assure confidence in your results.

Model DM series' plug-and-play connection of accessories such as the printer, barcode scanner, LogStraight™ biometric fingerprint reader, and ErgoSens™ infrared sensor for hands-free operation is quick and easy. Assisted sample loading and clearing are possible through the addition of FillPal™ and DryPal™ units.

Model DM series meters also give you the power to expand your scope of measurement by adding parameters such as pH, color, and refractive index to your density readings. Simply connect a compatible SevenCompact™ pH or conductivity meter, colorimeter, or refractive index cell to the DM module and define the method. Optional LabX™ Express software captures and manages all of these data points under a single platform. LabX™ also fully supports your CFR 21.11 requirements, provides user management, audit trail, flexible data export options, and fully customized reports.

The DA-100 meter is fast, easy and accurate to 1x10⁻³ g/cm³. Only a small amount of sample is required and the measurement time is short. The DA-100 meter measures density, specific gravity, concentrations and other related values. The DA-100 meter has an internal Peltier thermostat for automatic temperature control and therefore does not require external thermostatic bath circulator. Easy adjustments with air and water can be made since The density table of water at every temperature is stored in the DA-100M. An air pump is equipped as standard to purge and dry the measuring cell. For even more comfortable and convenient operation, a sampling unit ASU-100 is available as option. The DA-100M can output data of density, specific gravity, concentration values date and time, etc., through an RS-232C interface and can be connected to an external computer or an optional printer.

METTLER TOLEDO® provides ISO 9001 manufacturing, nationwide ISO 9001 field service, ISO 9001 quality certification, and ISO 14001 environmental certification. CE conformity mark provides you with the assurance that our products comply with the most recent EU directives. This product is CSA certified and UL listed.

Ordering Information: Additional components, software, and accessories are available. Contact your VWR sales representative for more information.

Display Name	Model DA-100M
Accuracy	Limit of error [g/cm ³] 0.001, Limit of error Brix [% w/w] 0.3%, Limit of error Ethanol [% v/v] 1.0%, Limit of error [°C] 0.1 °C
Dimensions	275W x 350D x 165H mm
Measuring Time	30 s
Minimum Sample Volume	1mL
Model	DA-100M
Power Supply	100–120 or 200–240VAC, 50 or 60Hz



Density Measurement

Benchtop Instruments/Calibration Standards

Continued from previous page

Temperature Range	10.0–40.0°C
Weight	6 kg

Description	Accuracy	Measurement Range	Cat. No.
Model DA100 3-Place Meter	±0.001 g/cm ³	0.000 to 3.000 g/cm ³	11238-464

Description	Cat. No.
Accessories	
Certified Calibration Standard, Combined Density and Refractive Index, Water (H ₂ O)	71005-546
Certified Calibration Standard, Combined Density and Refractive Index, Dodecane	71005-548
Certified Calibration Standard, Combined Density & Refractive Index; 2,4-dichlorotoluene	71005-550
Certified Calibration Standard, Combined Density & Refractive Index, 1-bromonaphthalene	71005-552

For additional products, visit vwr.com.

Ultimate Accuracy Density Meter, Density5, Reichert

The Density 5 is a highly accurate workhorse measuring density to 5 places. The new Density5 density meter continues Reichert's tradition of providing robust and reliable analytical instruments for the needs of many industries. With the push-of-a-button this instrument provides accurate density measurements of liquids for analysis and quality control. Condensed into a compact, robust, stand-alone unit, this density meter is a reliable workhorse for the laboratory, resisting damage from demanding applications. The Density5 features an exclusive plug and play replaceable pre-calibrated measurement cell exchange for the lowest maintenance costs and shortest downtime. Part of the Reichert flexible modular system, this density meter easily combines with Reichert's new AR Series refractometers, AR9 and AR5, and polarimeters, Polar2 and Polar3, for the simultaneous determination of measurements. These out-of-the-box instruments are ready to meet the requirements and demands of all applications in the same lab. The Universal Display is an accessory for this product.



Reichert Density Meter 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 Density5 and the Density4 to the AR Series refractometers, AR9 and AR5 and polarimeters, Polar2 and Polar3, making your lab ready for all applications. This powerful software makes the instrument part of your workflow communicating with LIMS systems and other laboratory instruments via USB or RS232. Programmed in the Universal Display, the software operates up to 5 measurement modules. 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. Reichert Technologies has created advanced optical and analytical instruments for more than 150 years, and continues to pursue the highest level of accuracy and quality today. The Density5 is part of a modular system that delivers connectivity and flexibility to optimize your workflow.

RoHS, GMP/GLP. CE marked.

Ordering Information: The Universal Display is an accessory for this product (sold separately).

Accuracy	0.00005g/cm ³
Display	3.5" color touchscreen
Interfaces	USB and RS232
Light source	n/a
Measurement Method	Single sample or flow through
Measuring range	0-3 g/cm ³
Minimum Sample Volume	2 mL
Pressure Range	0-10 Bar (0-145 psi)
Reproducibility	0.00002g/cm
Scale	N/A
Temperature Accuracy	± 0.03°C
Temperature Control	Peltier Control Range 5-95°C

Description	Cat. No.
Ultimate Accuracy Density Meter, Density5	10836-584

For additional products, visit vwr.com.

VISCOSITY MEASUREMENT

VISCOMETERS

VISCOSITY BATHS

VISCOSITY STANDARDS

VWR® Viscometer with Pear-Shaped Bulbs

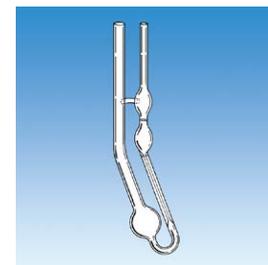
For determination of relative viscosities by measuring time of flow of a definite volume of fluid through a standard capillary. The pear-shaped bulbs provide a gradual slope for delivery of liquid along sides and entrances to capillary. Adjusted to give delivery time of 80–100 seconds for water at 20°C (68°F). Requires minimum sample of 2mL.



Description	Cat. No.
Viscometer with Pear-Shaped Bulbs For additional products, visit vwr.com .	66044-007

Cannon-Fenske Viscometer, Ace Glass Incorporated

For use in obtaining kinematic viscosities. Directions for use are published in ASTM Standards on Petroleum Products and Lubricants, D 445. Viscosities can be measured with a precision of $\pm 0.2\%$ quickly and easily. A sample of approximately 7 mL is necessary. Offered calibrated with certificate or uncalibrated.



Description	Size	Range	Approximate Constant	Cat. No.
Uncalibrated	25	0.5 to 2	0.002	89061-534
Uncalibrated	50	0.8 to 4	0.004	89061-536
Uncalibrated	75	1.6 to 8	0.008	89061-538
Uncalibrated	100	3 to 15	0.015	89061-540
Uncalibrated	150	7 to 35	0.035	89061-542
Uncalibrated	200	20 to 100	0.1	89061-544
Uncalibrated	300	50 to 250	0.25	89061-546
Uncalibrated	350	100 to 500	0.5	89061-548
Uncalibrated	400	240 to 1200	1.2	89061-550
Uncalibrated	450	500 to 2500	2.5	89061-552
Uncalibrated	500	1600 to 8000	8	89061-554
Uncalibrated	600	4000 to 20000	20	89061-556
Uncalibrated	650	9000 to 45000	45	89061-558
Uncalibrated	700	20000 to 100000	100	89061-560
Calibrated	25	0.5 to 2	0.002	89061-562
Calibrated	50	0.8 to 4	0.004	89061-564
Calibrated	75	1.6 to 8	0.008	89061-566
Calibrated	100	3 to 15	0.015	89061-568
Calibrated	150	7 to 35	0.035	89061-570
Calibrated	200	20 to 100	0.1	89061-572
Calibrated	300	50 to 250	0.25	89061-574
Calibrated	350	100 to 500	0.5	89061-576
Calibrated	400	240 to 1200	1.2	89061-578
Calibrated	450	500 to 2500	2.5	89061-580
Calibrated	500	1600 to 8000	8	89061-582
Calibrated	600	4000 to 20000	20	89061-584
Calibrated	650	9000 to 45000	45	89061-586
Calibrated	700	20000 to 100000	100	89061-588

For additional products, visit vwr.com.

Cannon-Fenske Routine Viscometer, Cannon Instrument Company

The Cannon-Fenske Routine Viscometer measures kinematic viscosity of transparent Newtonian liquids according to ASTM D445 and ISO 3104. Available calibrated (CFRC) and uncalibrated (CFRU). Minimum sample volume 7 mL. Minimum bath depth 8 inches.



Description	Size	Range	Approximate Constant	Cat. No.
Uncalibrated	25	0.5 to 2 cSt	0.002 cSt/s	10791-440
Uncalibrated	50	0.8 to 4 cSt	0.004 cSt/s	47734-914
Uncalibrated	75	1.6 to 8 cSt	0.008 cSt/s	10790-816
Uncalibrated	100	3 to 15 cSt	0.015 cSt/s	47734-916
Uncalibrated	150	7 to 35 cSt	0.035 cSt/s	47734-918
Uncalibrated	200	20 to 100 cSt	0.1 cSt/s	10790-834
Uncalibrated	300	50 to 250 cSt	0.25 cSt/s	47734-922
Uncalibrated	350	100 to 500 cSt	0.5 cSt/s	47734-924
Uncalibrated	400	240 to 1200 cSt	1.2 cSt/s	47734-926
Uncalibrated	450	500 to 2500 cSt	2.5 cSt/s	10790-836
Uncalibrated	500	1600 to 8000 cSt	8 cSt/s	10790-838
Uncalibrated	600	4000 to 20000 cSt	20 cSt/s	10791-602
Uncalibrated	650	9000 to 45000 cSt	45 cSt/s	10790-850
Uncalibrated	700	20000 to 100000 cSt	100 cSt/s	10790-852
Calibrated	25	0.5 to 2 cSt	0.002 cSt/s	47734-928
Calibrated	50	0.8 to 4 cSt	0.004 cSt/s	47734-930
Calibrated	75	1.6 to 8 cSt	0.008 cSt/s	47734-932
Calibrated	100	3 to 15 cSt	0.015 cSt/s	47734-934
Calibrated	150	7 to 35 cSt	0.035 cSt/s	47734-936
Calibrated	200	20 to 100 cSt	0.1 cSt/s	47734-938
Calibrated	300	50 to 250 cSt	0.25 cSt/s	47734-940
Calibrated	350	100 to 500 cSt	0.5 cSt/s	47734-942
Calibrated	400	240 to 1200 cSt	1.2 cSt/s	47734-944
Calibrated	450	500 to 2500 cSt	2.5 cSt/s	47734-946
Calibrated	500	1600 to 8000 cSt	8 cSt/s	47734-948
Calibrated	600	4000 to 20000 cSt	20 cSt/s	47734-950
Calibrated	650	9000 to 45000 cSt	45 cSt/s	47734-952
Calibrated	700	20000 to 100000 cSt	100 cSt/s	10790-854

For additional products, visit vwr.com.

Digital Rotational Viscometer ALPHA Series, Fungilab

Alpha Series is a basic digital rotational viscometer for easy viscosity readings. Low budget and easy to use.

Main features include: 4LCD display for easy menu access and results reading, relative and absolute viscosity reading automatically, unit convert SI to CGS; Autotest and Autorange functions; 10 language options. 6 touch keypad. LCD screen. 4 lines.

CE certified. TURV certified. ISO 9001. BS: 6075, 5350. ISO: 2555, 1652. ASTM: 115, 789, 1076, 1084, 1286, 1417, 1439, 1638, 1824, 2196, 2336, 2364, 2393, 2556, 2669, 2849, 2983, 2994, 3232, 3236, 3716.

Ordering Information: Standard delivery includes: head boss, standard spindles (6 spindles for R&H models / 4 spindles for L models), viscometer stand, spindle protector and user's manual. Carrying case not included. No software available. No temperature function.



Dimensions	59x45x33 cm (23.22x13x17.1")
Electrical	110 to 220V
Sample Volume	600 mL
Speed Range	From 0.3 to 100 rpm and 18 speeds
Weight	7 Kg (15.43 Lbs.)

Description	Measurement Range	Cat. No.
Digital Rotational Viscometer ALPHA Series H for High viscosity measurement by Fungilab viscometers.	200 to 106.000.000 cP	89236-996
Digital Rotational Viscometer ALPHA Series R for Regular viscosity measurements by Fungilab viscometers	100 to 13.000.000 cP	89236-998
Digital Rotational Viscometer ALPHA Series L for Low viscosity measurement by Fungilab viscometers	20 to 2.000.000 cP	89237-000
Digital Rotational Viscometer ALPHA Series H for High viscosity measurement by Fungilab viscometers with PPR spindle coupling system	200 to 106.000.000 cP	89237-176
Digital Rotational Viscometer ALPHA Series R for Regular viscosity measurement by Fungilab viscometers with PPR spindle coupling system	100 to 13.000.000 cP	89237-178
Digital Rotational Viscometer ALPHA Series L for Low viscosity measurement by Fungilab viscometers with PPR spindle coupling system	20 to 2.000.000 cP	89237-180

For additional products, visit vwr.com.

Viscosity Measurement

Viscosity Baths

VWR® Viscosity Baths

Uniquely configured to accommodate specific testing and quality control needs, including ASTM D-445. For use with popular capillary viscometers.

Standard digital controllers provide temperature stabilities of $\pm 0.04^{\circ}\text{C}$ and come with two pump speed settings. Both round and square top opening configurations are available. All units come with tap water cooling coil. 29L fully integrated tank.

ETL/CE. Complies with DIN 12876-1 Class I safety requirements for use with non-flammable liquids.

Ordering Information: 240V/50Hz models are also available; contact your VWR sales representative for more information.



Overall Dimensions	54.4L x 22.9W x 52.6H cm
Temperature Stability	$\pm 0.04^{\circ}\text{C}$

Description	Electrical	Capacity	Opening Dimensions	Flow Rate	Pressure	Temperature Range	Cat. No.
Viscosity Bath with 3 Square Holes	120V/60Hz	29 L	(3) 8.9 x 8.9 x 28.6 cm (Viscometer)	11 Lpm (Maximum Pressure)	3.5 psi (Maximum)	Ambient +10°C to 85°C	89202-906
Viscosity Bath with 3 Square Holes	240V/50Hz	29 L	(3) 8.9 x 8.9 x 28.6 cm (Viscometer)	10.2 Lpm (Maximum Pressure)	2.9 psi (Maximum)	Ambient +10°C to 85°C	89202-908
Viscosity Bath with 5 Round Holes	120V/60Hz	29 L	(5) x 5.1 \varnothing x 28.6 cm (Viscometer)	11 Lpm (Maximum Pressure)	3.5 psi (Maximum)	Ambient +10°C to 85°C	89202-902
Viscosity Bath with 5 Round Holes	240V/50Hz	29 L	(5) x 5.1 \varnothing x 28.6 cm (Viscometer)	10.2 Lpm (Maximum Pressure)	2.9 psi (Maximum)	Ambient +10°C to 85°C	89202-904

For additional products, visit vwr.com.

Thermovisc 200 Thermostatic Bath, Fungilab

Digitally controlled immersion thermostat. Circulation pump with adjustable flow rate for external temperature control for viscometers, polarimeters, etc. Cooling cooling coil to maintain ambient temperature using tap water.

External temperature control connection using a Pt 100 probe.

All parts in contact with liquid are made of AISI 304 stainless steel.



Dimensions	59 x 45 x 33 cm (23.22 x 13 x 17.1")
Electrical	110 to 220V
Weight	9 kg (19.84 lbs.)

Description	Sample Volume	Temperature Range	Cat. No.
Thermovisc 200 Only (Includes Headboss)	—	from ambient +5°C (41°F) to 200°C (392°F), external cool from -20°C (4°F) to 200°C (392 °F)	89236-798
Thermovisc 200B9 (Includes 9 L Working Bath Volume, Beaker Support not included)	9 L	from ambient +5°C (41°F) to 200°C (392°F), external cool from -20°C (4°F) to 200°C (392 °F)	89236-802
Thermovisc 200B9S (Includes 9 L Working Bath Volume, Includes Beakers Support)	9 L	from ambient +5°C (41°F) to 200°C (392°F), external cool from -20°C (4°F) to 200°C (392 °F)	89236-804
Thermovisc 200B12 (Includes 12 L Working Bath Volume)	12 L	from ambient +5°C (41°F) to 200°C (392°F), external cool from -20°C (4°F) to 200°C (392 °F)	89236-806
Thermovisc 200B12S (Includes 12 L Working Bath Volume, Includes Beaker Support)	12 L	from ambient +5°C (41°F) to 200°C (392°F), external cool from -20°C (4°F) to 200°C (392 °F)	89236-808
Thermovisc 200B20 (Includes 20 L Working Bath Volume, Beaker Support not included)	20 L	from ambient +5°C (41°F) to 200°C (392°F), external cool from -20°C (4°F) to 200°C (392 °F)	89236-800

For additional products, visit vwr.com.

General Purpose Viscosity Standards, Fungilab

Standards applicable to laboratories that operate in a multitude of business sectors, some of which include automotive, cosmetics, micro-electronics, petro-chemical, pharmaceutical and power generation. Products are tested at every given data point, to assure that the certified value given is the most accurate available.

ISO 17025 / ISO Guide 34 certified viscosity standards are for the calibration and verification of glass capillary viscometers and other viscosity measuring equipment where operating temperature is controlled precisely. Density g/mL in accordance with ASTM D 1480.



Dimensions	32 x 20 x 20 cm (12.6 x 7.87 x 7.87")
Volume	500 mL
Weight	2 Kg (4.4 lbs.)

Description	Cat. No.
Viscosity Standard Oil S2000	89236-990
Viscosity Standard Oil S60	89236-992
Viscosity Standard Oil S600	89236-994
Viscosity Standard Oil S3	89237-146
Viscosity Standard Oil S6	89237-148
Viscosity Standard Oil S20	89237-150
Viscosity Standard Oil S200	89237-152
Viscosity Standard Oil S8000	89237-154
Viscosity Standard Oil S30000	89237-156

For additional products, visit vwr.com.

Flow Cup Viscosity Standards, Fungilab

ISO 17025 / ISO Guide 34 certified flow cup viscosity standards are specifically formulated for use with viscosity flow cups such as Ford, Shell, Zahn.

Certified at 20°C and 25°C, each value is tested to ASTM D 2162 for viscosity measurement and ASTM D 1480 for density measurement. Each value at every test temperature is tested to ASTM D 2162 and are NOT extrapolations. ISO 17025 / ISO Guide 34 dual certified flow cup standards are especially designed for use in DIN, Ford, ISO, Shell and Zahn flow cups and are also dual purpose density standards.



Dimensions	32 x 20 x 20 cm (12.6 x 7.87 x 7.87")
Volume	500 mL
Weight	2 Kg (4.4 lbs.)

Description	Cat. No.
Viscosity Standard Oil C6	89237-158
Viscosity Standard Oil C10	89237-160
Viscosity Standard Oil C20	89237-162
Viscosity Standard Oil C35	89237-164
Viscosity Standard Oil C60	89237-166
Viscosity Standard Oil C100	89237-168
Viscosity Standard Oil C200	89237-170
Viscosity Standard Oil C350	89237-172
Viscosity Standard Oil C600	89237-174

For additional products, visit vwr.com.

REFRACTOMETRY & POLARIMETRY

REFRACTOMETER INSTRUMENTS

POLARIMETER INSTRUMENTS

CALIBRATION STANDARDS

LiquiPhysics™ Excellence Benchtop Refractometers/Refractive Index Meters, METTLER TOLEDO®

LiquiPhysics™ Excellence RM Digital Benchtop Refractometers allow users to determine the refractive index, BRIX, HFCS, or user-defined concentrations of a wide variety of liquids quickly and accurately. A high-resolution optical sensor measures the total reflection of light from the LED after it strikes the sample and the RM reports the results with accuracy up to five decimal places.

Built-in Peltier temperature control provides both reliable temperature stability and rapid heating/cooling rates. The inert sapphire prism facilitates measurement of thin, highly volatile, dark, or viscous liquids. The removable top section provides ease of cleaning with simple tap water without the need for tools.

The RM's sophisticated yet intuitive software enables you to easily perform complex statistical evaluation methods so you have full confidence in your data. One Click™ shortcuts streamline workflows by allowing users to initiate the most frequent methods with a single tap of an icon on the color touchscreen. Elegant ergonomic design, customizable user settings, and multilingual support make the RM family of instruments appealing and easy to use by a wide variety of operators.

Plug-and-play connection of accessories such as the printer, barcode scanner, LogStraight™ biometric fingerprint reader, and ErgoSens™ infrared sensor for hands-free operation is quick and easy. Assisted sample loading and clearing are possible through the addition of FillPal™ and DryPal™ units.

LiquiPhysics™ gives users the power to expand the scope of measurement by adding parameters such as pH, color, and density/specific gravity to refractive index readings. Simply connect a compatible SevenCompact™ pH or conductivity meter, colorimeter, or density cell to the RM module and define the method. Optional LabX™ LiquiPhysics™ Express software captures and manages all of these data points under a single platform. LabX™ also fully supports CFR 21.11 requirements, provides user management, audit trail, flexible data export options, and fully customized reports.

The available EQPac (Equipment Qualification Package) delivers peace of mind to those working in regulated environments by providing comprehensive and detailed qualification guidance (IQ/OQ/PQ).

Finally, METTLER TOLEDO Certified Combined Density and Refractive Index Standards reduce risk, uncertainty, and error-prone sample transfer. The standards arrive complete with certificates including an easy-to-scan barcode containing all information necessary for calibration. Barcodes save valuable time, reduce data entry error, and improve traceability.

METTLER TOLEDO® provides ISO 9001 manufacturing, nationwide ISO 9001 field service, ISO 9001 quality certification, and ISO 14001 environmental certification. CE conformity mark provides the assurance that these products comply with the most recent EU directives. This product is also CSA certified and UL Listed.

Ordering Information: Additional components, software, and accessories are available. Contact your VWR Sales Representative for more information.



Dimensions	372L x 208W x 193H mm (14 ² / ₃ x 8 ¹ / ₅ x 7 ³ / ₅ ")
Languages	English, Spanish, Chinese, German, French, Italian, and Russian
Measurement range (°Brix)	0.00 – 100.00%
Measuring Time	20s (5s after reaching temperature equilibrium)
Minimum Sample Volume	0.5 mL
Power supply	AC 100 to 240 V; 50 to 60 Hz; 40 to 100 W
Weight	5.41 kg (12 lbs.)

Description	Accuracy	Measurement Range	Temperature Range	Cat. No.
LiquiPhysics™ RM40 Benchtop Refractometer/Refractive Index Meter - 4.0 Decimal Place Accuracy	0.0001 nD, 0.1 Brix	1.3200 to 1.7000 nD	5 to 100°C (41 to 212°F)	97049-876
LiquiPhysics™ RM50 Benchtop Refractometer/Refractive Index Meter - 5.0 Decimal Place Accuracy	0.00002 nD, 0.03 Brix	1.32000 to 1.58000 nD	5 to 75°C (41 to 167°F)	97049-878

Description	Cat. No.
Accessories	
Certified Calibration Standard, Combined Density and Refractive Index, Water (H ₂ O)	71005-546
Certified Calibration Standard, Combined Density and Refractive Index, Dodecane	71005-548
Certified Calibration Standard, Combined Density & Refractive Index; 2,4-dichlorotoluene	71005-550
Certified Calibration Standard, Combined Density & Refractive Index, 1-bromonaphthalene	71005-552

For additional products, visit vwr.com.

Economical Benchtop Refractometer, AR5, Reichert

The economical AR5 digital refractometer with Peltier temperature control included makes sophisticated measuring technology available to users on a tight budget. High-end accuracy and a good price point give customers an exceptional advantage in the laboratory. The AR5 is precise, measuring refractive index and % Brix with results accurate to 0.0001 RI and 0.05% Brix. The AR5 is the ideal instrument to perform routine measurements with standard scales and has the ability to be configured for custom measurements. The robust design, sapphire prism and reliable operation make it a workhorse for the laboratory, resisting surface damage from demanding applications.

Reichert AR Series 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 AR9 and AR5 to the Reichert density meters, Density5 and the Density4, and polarimeters, Polar2 and Polar3, making your lab ready for all applications. This powerful software makes the instrument part of your workflow communicating with LIMS systems and other laboratory instruments via USB or RS232. Programmed in the Universal Display, the software operates up to 5 measurement modules. 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. Reichert Technologies has created advanced optical and analytical instruments for more than 150 years, and continues to pursue the highest level of accuracy and quality today. The AR5 is part of a modular system that delivers connectivity and flexibility to optimize your workflow.

RoHS, GMP/GLP. CE marked.

Ordering Information: The Universal Display is an accessory for this product (sold separately).



Continued from previous page

Accuracy	± 0.0001 RI / ± 0.05% Brix
Ambient Operating Temperature	+10 to +40°C
Display	Two line LCD
Interfaces	RS232, USB optional
Light source	Light source - Lifetime LED, interference filter 589nm
Measurement Method	Single sample
Measurement mode	Continuous
Measurement range (°Brix)	1.3200 - 1.5800RI/0 to 100% Brix
Reproducibility	± 0.0001 RI / ± 0.05% Brix
Scales	Refractive index (RI), % Brix and other standard scales included.
Temperature Accuracy	± 0.03°C
Temperature compensation range (°C)	+5° to +50°C (automatic)
Temperature Control	Peltier control range 20°C or 25°C
Temperature measurement	Optimized accuracy – sensor integral to sample surface
Temperature Reproducibility	± 0.02°C

Description	Color	Cat. No.
Economical Benchtop Refractometer, AR5	White/Stainless	10836-582

For additional products, visit vwr.com.

Rhino Series Refractometers, Percent Solids (Brix), Reichert

These automatic temperature-compensated hand refractometers are read directly and instantly without a water bath. No need to make separate temperature readings or refer to conversion tables. The Brix scale is based on percent by weight of sucrose. Useful in monitoring sugar level of soft drinks and juices and to check dissolved solids in ripening fruit crops.

Refractometers are constructed of durable, shock-resistant Xenoy® polycarbonate materials for demanding environments and applications. Water resistant. Dustproof. IP67 rated for entire unit, including eyepiece.



Accuracy	±1 scale division
Dimensions	23.5L x 3.8W x 3.8H cm (9 1/4 x 1 1/2 x 1 1/2")
Weight	162.4 g (5.7 oz.)

Brix Range	Refractive Index Range	Scale Divisions	Cat. No.
0–30%	1.3330–1.3811 nD	0.20/0.5	55680-302
0–50%	1.3330–1.4200 nD	0.25	55680-347
50–90%	1.4201–1.5177 nD	0.2	55680-369

For additional products, visit vwr.com.

Refracto Portable Refractometers, METTLER TOLEDO®

Compact and easy to use, Refracto refractometers are ideal for measurements in laboratory or production environments. They may be used as either benchtop or hand-held refractometers. Simply place a drop of sample directly onto the prism or immerse the sensor in the sample. Temperature compensation coefficient is programmable for up to ten different samples. Units can store up to 1,100 measurement results that can be transmitted to an external printer or computer via infrared interface (PC software included). Backlit LCD displays temperature selection in °C or °F. Calibration is automatic and based on deionized water. Units of measurement include refractive index (nD), nD temperature compensated, % Brix, HFCS42, HFCS55, T.A. 1990, °KMW (Babo), °Baumé, °Oechsle (D, CH), w/w% and v/v% for isopropanol, and user-defined units.



The Refracto 30PX has an optical glass prism held by a stainless steel ring. The Refracto 30GS has a sapphire prism held by a ring of hard gold-plated brass. Sapphire has a higher refractive index and better thermal conductivity than glass. For this reason, the Refracto 30GS has an extended measuring range and registers sample temperature more quickly.

Ordering Information: Refracto refractometers are delivered in the PortableLab™, a case complete with two pipets for sample handling, two flasks for samples and cleaning solutions, five cleaning tissues, operating instructions, a CD-ROM with data transmission software, a tutorial, and two 1.5V AAA batteries.

Accuracy	±0.0005 nD, ±0.2% Brix
Ambient Temperature Range	5 to 35°C (41 to 95°F)
Measurement range	1.32–1.50 nD (Model 30PX), 1.32–1.65 nD (Model 30GS), 0–85% Brix
Resolution	0.0001 nD, 0.1% Brix
Temperature Range	10 to 40°C (50 to 104°F)
Weight	250 g (8.8 oz.)

Description	Cat. No.
Refracto 30PX	11276-898
Refracto 30GS	11276-900
Accessories	
Certified Calibration Standard, Combined Density and Refractive Index, Water (H ₂ O)	71005-546
Certified Calibration Standard, Combined Density and Refractive Index, Dodecane	71005-548
Certified Calibration Standard, Combined Density & Refractive Index; 2,4-dichlorotoluene	71005-550
Certified Calibration Standard, Combined Density & Refractive Index, 1-bromonaphthalene	71005-552

For additional products, visit vwr.com.

Polar1, Polarimeter, Reichert

The new Polar1 circular polarimeter from Reichert is robust polarimeter with +/-0.01 degree accuracy. A linear response throughout the entire measurement range provides consistent accuracy, in a cost effective package. This polarimeter is easy to use and suited for quality control, process control, and research in many industries including the beverage, cosmetic, chemical, food, essential oils and pharmaceutical.



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 instrument part of your workflow communicating with LIMS systems and other laboratory instruments via USB or RS232. Programmed in the Universal Display, the software operates up to 5 measurement modules. 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. Reichert Technologies has created advanced optical and analytical instruments for more than 150 years, and continues to pursue the highest level of accuracy and quality today. The Polar1 is part of a modular system that delivers connectivity and flexibility to optimize your workflow.

RoHS, GMP/GLP. CE marked.

Accuracy	$\pm 0.01^\circ / \pm 0.03^\circ Z$
Display	LCD
Interfaces	2 RS232, Parallel
Light source	LED - 589nm
Measurement Method	Single sample or flow through
Measuring range	$\pm 360^\circ / \pm 259^\circ Z$
Reproducibility	$\pm 0.01^\circ / \pm 0.03^\circ Z$
Scales	Optical Rotation, Specific Rotation, OZ International Sugar Scale, % Concentration
Scales - user defined	7
Sensitivity	Up to OD 2
Temperature accuracy (°C)	$\pm 0.03^\circ C$
Temperature Range	0°C to 99°C
Tube Length	10 to 200 mm
Tube Material	Glass, acid-proof stainless, stainless with temperature sensor

Description

Polar1, Polarimeter

Cat. No.

10836-576

For additional products, visit vwr.com.

Pharmaceutical Polarimeter, Polar2, Reichert

The new Polar2 modular, circular polarimeter from Reichert is designed for analyzing high value, optically active substances. Specifically designed for lower volumes and built in temperature control for optimal accuracy.

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 instrument part of your workflow communicating with LIMS systems and other laboratory instruments via USB or RS232. Programmed in the Universal Display, the software operates up to 5 measurement modules. 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. Reichert Technologies has created advanced optical and analytical instruments for more than 150 years, and continues to pursue the highest level of accuracy and quality today. The Polar2 is part of a modular system that delivers connectivity and flexibility to optimize your workflow.

RoHS, GMP/GLP. CE marked.

Ordering Information: The Universal Display is an accessory for this product (sold separately).

Accuracy	$\pm 0.01^\circ / \pm 0.03^\circ Z$
Display	4.3" Color touchscreen
Interfaces	USB, RS232, Ethernet
Light source	LED - 589nm standard, others upon request
Measurement Method	Single sample or flow through
Measuring range	$\pm 90^\circ / \pm 259^\circ Z$
Reproducibility	$\pm 0.01^\circ / \pm 0.03^\circ Z$
Scales	Optical Rotation, Specific Rotation, OZ International Sugar Scale, % Concentration
Scales - user defined	1000
Sensitivity	Up to OD 2
Temperature accuracy (°C)	$\pm 0.01^\circ C$
Temperature Range	10°C to 40°C
Tube Length	Up to 100 mm
Tube Material	Glass, acid-proof stainless, stainless with temperature sensor

Description

Pharmaceutical Polarimeter, Polar2

Cat. No.

10836-572

For additional products, visit vwr.com.

Modular Polarimeter, Polar3, Reichert

The robust, new Polar3 is 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. This polarimeter is easy to use and 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 Polar3 combines 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 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 instrument part of your workflow communicating with LIMS systems and other laboratory instruments via USB or RS232. Programmed in the Universal Display, the software operates up to 5 measurement modules. 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. Reichert Technologies has created advanced optical and analytical instruments for more than 150 years, and continues to pursue the highest level of accuracy and quality today. The Polar3 is part of a modular system that delivers connectivity and flexibility to optimize your workflow.

RoHS, GMP/GLP. CE marked.

Ordering Information: The Universal Display is an accessory for this product (sold separately).

Accuracy	$\pm 0.005^\circ / \pm 0.015^\circ Z$
Angular scale - accuracy ($^\circ A$)	
Display	7" Color touchscreen
Interfaces	4 USB, RS232, Ethernet
Light source	LED - 589nm standard, others upon request
Measurement Method	Single sample or flow through
Measuring range	$\pm 360^\circ / \pm 259^\circ Z$
Reproducibility	$\pm 0.005^\circ / \pm 0.015^\circ Z$
Scales	Optical Rotation, Specific Rotation, OZ International Sugar Scale, % Concentration
Scales - user defined	1000
Sensitivity	Up to OD 5
Temperature accuracy ($^\circ C$)	$\pm 0.03^\circ C$
Temperature Range	$0^\circ C$ to $99^\circ C$
Temperature Reproducibility	N/A
Tube Length	10 to 200 mm
Tube Material	Glass, acid-proof stainless, stainless with temperature sensor

Description	Cat. No.
Modular Polarimeter, Polar3 For additional products, visit vwr.com .	10836-568

Accessories for Automatic Refractometers, AR6 Series, Reichert

Description	Cat. No.
Calibration Oil	41900-011

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With the industry's leading chemical tracking and management technology, **VWRCATALYST™** can make sure you know the location and usage of every chemical at your site. We provide the information you need to comply with all federal, state, and local regulations. Our programs include:

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MICROSCOPY

MICROSCOPES

MICROSCOPE ACCESSORIES

VWR® Inverted Microscope

The VWR® Inverted Microscope is the ideal device for live cell and advanced applications, as well as routine laboratory, research, and educational needs.

The VWR® Inverted Microscope features a Trinocular Siedentopf trinocular tube with 45° inclination (Light Split = 20/80), Wide Focus PL 10x/22mm high eyepoint eyepiece, side facing quintuple nosepiece, CCIS planachromatic objective PL4X, CCIS planachromatic phase objective Ph10x, LWD PL Ph20x, LWD PL Ph40x, ELWD N.A. 0.30 condenser, centrable phase slider with PH1, PH3, and bright field, phase centering telescope, plain stage with attachable mechanical stage with well plate holders (128x86mm), glass and metal stage inserts, 32mm, 54mm, 65mm Petric dish holder, externally mounted centerable 6V/30W Koehler illumination with intensity control, 45mm blue ground glass and green interference filter, power cord, allen hexagonal key, vinyl dust cover, and universal power supply (100–240V).

C-UL, UL Listed. CSA certified.

Microscope is supplied with all accessories listed above. The VWR® Inverted Microscope is supplied with a one-year warranty on electrical parts, and a five-year warranty on mechanical parts and optics.



Description	Cat. No.
VWR® Inverted Microscope For additional products, visit vwr.com .	89404-462

VWR® Stereo Zoom Trinocular Microscope

High performance Stereo Microscope is ideally suited for life science, industrial and pharmaceutical inspection, electronic assembly, and bonding operations.

Ordering Information: Microscope is supplied with all accessories listed above. The microscope is supplied with a one-year warranty on electrical parts, and a five-year warranty on mechanical parts and optics.



Description	Cat. No.
VWR® Stereo Zoom Trinocular Microscope For additional products, visit vwr.com .	89404-476

VWR® Professional Infinity Planachromatic Trinocular Microscope

The VWR® Professional Infinity Planachromatic Trinocular Microscope is suitable for advanced lab, hospital, research, and university applications.

C-UL, UL Listed. CSA certified.

Ordering Information: Microscope is supplied with all accessories listed above. The microscope is supplied with a one-year warranty on electrical parts, and a five-year warranty on mechanical parts and optics.



Description	Cat. No.
VWR® Professional Infinity Planachromatic Trinocular Microscope For additional products, visit vwr.com .	89404-890

Motic AE2000 Inverted Compound Microscope, Motic Instruments

The Motic AE2000 Inverted microscope is the ideal instrument for routine live cell inspection in both educational and high-grade professional applications. The AE2000 offers flexibility in live cell imaging with brightfield and phase contrast. Larger culture flasks (up to 180mm) are easily accommodated by removing the lower portion of the condenser from its dovetail mount. Upgrading to LED lighting is easily achieved through a simple plug-in module for additional lighting options.

Ordering Information: Microscope is supplied with all accessories listed above. Contact your VWR representative to learn more about this and other Motic solutions. All Motic products come with a one-year electrical and five-year mechanical warranty.



Accessories included	Objectives, Stage Accessories
Condenser	ELWD Zernike Phase (NA = 0.3)
Eyepieces	N-WF 10x/20
Illumination	Halogen
Magnification	40x to 100x
Objectives	CCIS Plan Achromatic PL Ph4x, PL Ph10x, PL Ph20x (Optional)
Optical system	Infinity Corrected
Power	100–240V

Description	Cat. No.
AE2000 Trinocular Inverted Microscope	89168-390

For additional products, visit vwr.com.

BA 410 Elite Compound Upright Microscope, Motic Instruments

The BA410 Elite is the flagship of Motic's biological microscope series, and is intended for a wide array of laboratory and research applications. Modular by design, the BA410 Elite is upgradeable with phase contrast, polarizing, epi-fluorescence, and discussion/teaching devices available to further increase the utility of this microscope. The professional focusing, swing-out Abbe condenser offers focused, consistent lighting across the entire magnification range providing exact, publication quality images when coupled with a Moticam camera.

Ordering Information: Microscope is supplied with all accessories listed above. Contact your VWR representative to learn more about this and other Motic solutions. All Motic products come with a one-year electrical and five-year mechanical warranty.



Accessories included	Micrometer Reticles, Phase Contrast Accessories, Polarizing Accessories, Darkfield Accessories, Epi-Fluorescence Attachments
Condenser	Achromat Swing-Out Condenser with Iris Diaphragm (NA = 0.9)
Eyepieces	N-WF 10x/20
Illumination	Interchangeable Halogen and LED (optional)
Objectives	CCIS EC Plan Achromatic EC PL 4x, 10x, 40x S, 100x S-Oil
Optical system	Infinity Corrected
Power	100–240V

Description	Cat. No.
BA410 Elite Trinocular Upright Compound Microscope	10767-570

For additional products, visit vwr.com.

Motic BA310 Metallurgical Microscope, Motic Instruments

The Motic BA310Met Advanced Metallurgical microscope series is designed to meet the performance demands of engineering professionals who study opaque samples like minerals, metals, and building materials. The specialized M Plan achromatic metallurgical objectives (5x, 10x, 20x, 50x) are set in a reversed quintuple nosepiece, providing faithful reproduction of samples up to 30mm in thickness. The standard halogen epi-illuminator includes adjustable field and aperture diaphragms to minimize reflections and optimize performance. Conversion of the standard halogen illumination to a 3W LED is easily achieved with a simple plug-in module.

Ordering Information: Microscope is supplied with all accessories listed above. Contact your VWR representative to learn more about this and other Motic solutions. All Motic products come with a one-year electrical and five-year mechanical warranty.



Condenser	Abbe Condenser (NA = 0.9)
Eyepieces	N-WF 10x/20
Illumination	Halogen
Magnification	50x to 500x
Objectives	CCIS LM Plan Achromatic LM PL 5x, 10x, 20x, 50x

Description	Cat. No.
BA310Met Trinocular Metallurgical Microscope	10767-560

For additional products, visit vwr.com.

Microscopy

Microscopes/Microscope Accessories

LED Phase Contrast Microscopes, Leica

The DM1000 LED Microscope for Phase Contrast is a great microscope for all clinical and research applications where fungi, casts, crystals, and any specimen that is not easily stained can be viewed. The DM1000 is equipped with a range of Hi-Plan Optics from 4x to 100x oil and features a long working distance 10x objective. The stand is complete with fixed Koehler illumination that eliminates the need for alignment. Light ring sliders included for Phase -1, Phase-2, and Phase-3 are used in combination with an Abbe Condenser.

All Leica DM series microscopes are available in LED versions that eliminate the need to change bulbs while permitting cool operation. Ceramic stage inserts are standard as are patented height adjustable focus knobs, symmetrical operation on each side of the microscope, user selected stage control from either the left or right side, and infinity optics.

UL listed.

Description	Cat. No.
DM1000 LED Microscope with LED Light Source, Phase Contrast Package	10052-386
DM2000 LED Microscope with LED Light Source, Phase Contrast Package	10052-390

For additional products, visit vwr.com.

LED Microscope Basic Packages, Leica

The DM1000 Economy Package is a great choice for general laboratory microscopy. Configured for BF, it is easily upgraded with optional accessories for additional contrast methods. It features a 30w halogen light source and Abbe Condenser, True Blue daylight filter, and a range of Hi-Plan optics with magnifications of 4x, 10x, 40x, and 100x oil. Eyepieces can be used with or without eyeglasses and are 10x with a 20mm field of view. One eyepiece has an adjustable diopter. Immersion oil is included.

The DM2000 LED Lab Package is a great way to get started with a Leica microscope that can be the centerpiece of continued growth for the lab. The microscope is very stable and can support the addition of fluorescence, cameras, and other accessories used for multiple contrast techniques. It features an Aplanatic/Achromatic Flip-in condenser, telescopic stage control with friction adjustment, rubberized control surfaces, and oil immersion object holder. The five N-Plan objectives included provide excellent resolution and cover the full range of magnifications from 5x to 100x oil. Immersion oil is included.

All Leica DM series microscopes are available in LED versions that eliminate the need to change bulbs while permitting cool operation. Ceramic stage inserts are standard as are patented height adjustable focus knobs, symmetrical operation on each side of the microscope, user selected stage control from either the left or right side, and infinity optics.

UL listed.



Description	Cat. No.
DM1000 LED Microscope with LED Light Source, Basic Lab Package	10052-384

For additional products, visit vwr.com.

VWR® V5 Microscope Camera

This easy-to-use still and video digital 5 megapixel camera is adaptable to a variety of applications.

C-UL, UL Listed. CSA certified.

Ordering Information: Microscope camera is supplied with the accessories listed above and one-year warranty.



Description	Cat. No.
VWR® V5 Microscope Camera	89404-504

For additional products, visit vwr.com.

VWR® V10 Microscope Camera

This easy-to-use still and video digital 10 megapixel camera is adaptable to a variety of applications.

C-UL, UL Listed. CSA certified.

Ordering Information: One-year warranty.



Description	Cat. No.
VWR® V10 Microscope Camera	89404-508

For additional products, visit vwr.com.

MotiCam S2

The new MotiCam S2 offers you a 7" screen producing crisp and clear live images, which are ideal for a group of students to share the microscope. An HDMI 1080 port is available for sharing images on an even larger screen. • 1/2.5" 5.0MP CMOS SENSOR

- Standard size sd card slot
- 5.0mp still capture to sd card
- 1080 video capture to sd card
- HDMI output 1080p
- Usb output 1280x720 pixels
- 12mm macro lens; eyepiece adapters
- Motic images plus 2.0
- Power supply 5v; macro tube
- Screen tilt function



Description	Cat. No.
7" Screen	470146-380

For additional products, visit vwr.com.

MotiCam T2

The all new MotiCam T2 offers a 10" Touch Screen powered by a 1.4GHZ processor and runs an Android Operating System. MotiCam T2 includes WiFi capabilities which allow you to share images from MotiCam T2 to other WiFi enabled devices, such as Tablets, Laptops and/or other IOS/Android Smartphones.



Description	Cat. No.
10" Screen	470146-374

For additional products, visit vwr.com.

Moticam® 10 Digital Microscope Camera, Motic Instruments

Moticam® attachable cameras allow the user to turn almost any existing microscope into a digital microscope. These solutions contain everything necessary to get started, including our powerful imaging software. Connect to the eyepiece, a trinocular mount or use the camera on its own with a gooseneck as a Macro-Camera.



All Moticams include a c-ring, Motic 4-dot calibration slide, mini-USB cable, two variable diameter eyepiece adapters, Macro tube, Software and are TWAIN/Direct show compatible.

UL Listed.

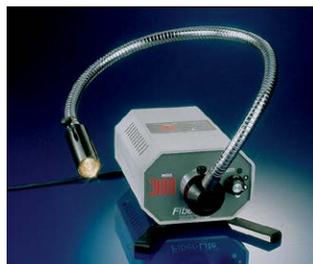
Camera is supplied with all accessories listed above. Contact your VWR representative to learn more about this and other Motic solutions. All Motic products come with a 1 year electrical and 5 year mechanical warranty.

Description	Cat. No.
Moticam® 10 Digital Microscope Camera	89238-604

For additional products, visit vwr.com.

Fiber-Lite® Illumination System 3100-1, Dolan-Jenner

Ideal for stereo microscope applications. Provides affordable fiber optic illumination up to 40X magnification. System features a single gooseneck fiber optic interfaced to a focusing lens and can be used externally, or within the stereo microscope stand ports for incident oblique spot lighting or transmitted illumination. The three-position light intensity setting switch allows the selection of appropriate light levels and significantly increases lamp life at lower settings.



Ordering Information: Supplied with ten-year warranty on light source and one-year warranty on fiber optics. Complete with illuminator adapter, single gooseneck light guide, focusing lens, and 30W halogen bulb. For additional accessories, see 41446-140 series.

Description	Electrical	Cat. No.
Illumination System	115/120V, 50/60Hz	41446-072

For additional products, visit vwr.com.

Fiber-Lite® Illumination System 190-1, Dolan-Jenner

This system can be used independently for incident illumination from any angle or interface directly to stereo microscope ports for both incident and transmitted illumination.

Ordering Information: Supplied with ten-year warranty on light source and one-year warranty on fiber optics. Complete with illuminator, single gooseneck light guide, focusing lens, and 30W halogen bulb. For additional accessories, see 41446-140 series.



Description	Electrical	Cat. No.
Illumination System	115V, 50/60Hz	41446-076

For additional products, visit vwr.com.

Fiber-Lite® Illumination System 181-1, Dolan-Jenner

Compact, quiet system provides accurate light output placement for critical illumination at angles of incidence from near vertical to near horizontal. Slide-lock lenses can be quickly adjusted or removed for diffuse illumination.



UL listed.

Ordering Information: Supplied with ten-year warranty on light source and one-year warranty on fiber optics. Complete with illuminator, illuminator adapter, dual gooseneck light guide, two lenses, and 150W halogen bulb. For additional accessories, see 41446-140 series.

Description	Electrical	Cat. No.
Illumination System	110/120V, 50/60Hz	41446-062

For additional products, visit vwr.com.

Terms and Conditions

1. Acceptance – ALL SALES ARE SUBJECT TO AND EXPRESSLY CONDITIONED UPON THE TERMS AND CONDITIONS CONTAINED HEREIN, AND UPON CUSTOMER'S ASSENT THERETO. THE TERMS AND CONDITIONS CONTAINED HEREIN WILL BE CONTROLLING, AND ANY ADDITIONAL AND/OR INCONSISTENT TERMS AND CONDITIONS SET FORTH IN ANY ACKNOWLEDGMENT, PURCHASE ORDER, OR ACCEPTANCE DOCUMENTS REQUESTED FROM AND/OR PROVIDED BY CUSTOMER ARE EXPRESSLY REJECTED. NO VARIATION OF THESE TERMS AND CONDITIONS WILL BE BINDING UPON VWR UNLESS AGREED TO IN WRITING AND SIGNED BY AN OFFICER OR OTHER AUTHORIZED REPRESENTATIVE OF VWR.

2. Specifications – Product specifications are subject to change without prior notice.

3. Delivery – Delivery of all orders will be FCA (INCOTERMS 2000). Shipping and handling fees, special packaging materials (e.g., blue ice), carrier surcharges (including fuel surcharges) and hazardous material fees imposed by government regulation will be added separately to the invoice.

4. Damaged Shipments – Please inspect your VWR shipment upon receipt. If any external damage is noticed, accept the shipment only after the driver has noted the damage on both his and your copies of the delivery receipt and you have requested an inspection by the carrier. Keep all containers and packing material for inspection. If, upon opening a shipment, you find a shortage or damage, you must request inspection by the carrier within 15 days of delivery or you will relinquish your right to make a claim. VWR International reserves the right to repair a damaged product, where applicable, before replacement or credit is determined.

5. Payment Terms - Individual invoices, net thirty (30) days from date of invoice; summary invoices, if any, will be due as agreed. Payments are to be made in freely available United States dollars, including applicable taxes, and other charges such as government imposed surcharges which VWR may be required to pay or collect with respect to the sale or transportation of the Products, or the provision of Services. Payment is considered late when it is received into VWR's lockbox after the due date, which may result in an additional service charges as described further in this section. Any payments received no later than 2.00 PM Eastern Standard Time at VWR's lockbox will be credited to Customer's account as of the date received, while payments received after 2.00 PM Eastern Standard Time will be credited to Customer's account the following business day. Delinquent accounts will be subject to a service charge on past due amounts of one and one-half percent (1 1/2%) per month (or, if less, the maximum amount permitted by law). VWR recommends payments be made by ACH method to ensure timely receipt by VWR. Payment by credit card may only be used as a prepayment method when placing orders or for past due collections. When a credit card is used to pay monies to satisfy a past due account, Customer will be charged an additional processing fee of 2.5% on the amount charged to the credit card at time of processing. Customer will provide VWR, concurrent with each payment, with remittance information in sufficient detail (to the invoice level or line level as the case may be) to allow VWR to properly apply payments or credit memos to outstand-

ing receivable(s) on VWR's accounts receivable sub-ledger for Customer. Customer shall also include its account number with any remittance. Failure to supply VWR with such remittance detail will result in additional processing delays and may affect the credit status of pending or future Customer purchase orders. When Customer wishes to apply one or more credit memos towards a payment amount owed VWR, Customer agrees to provide VWR, on a timely basis, the specific credit memo number(s) and amount(s) to be applied, in addition to the remittance information requirements above. If Customer does not provide such information on a timely basis, VWR shall apply any such credit memos to outstanding receivables, beginning with the most-aged receivables first. Customer agrees to complete, sign and submit a standard VWR credit application to VWR's Risk Management Department located at 1230 Kennestone Circle, Marietta, Georgia 30066. Customer will provide, or make available to VWR upon request, its latest audited financial statements (or unaudited financial statements, if audits are not performed). VWR agrees to keep such information confidential and to use it exclusively to evaluate and apply a credit score or rating to Customer for extension of credit purposes or pending transactions. Furthermore, Customer agrees to inform VWR of any material adverse change in its business that would reasonably be expected (by an independent 3rd party) to negatively impact its outstanding or future payment obligations and the terms or conditions contained herein. A change shall include, but not be limited to, any change in Customer's credit rating as determined by any single major rating agency, including Standard & Poor's, Moody's, Fitch or Dominion Bond Rating Service.

6. Sales Tax – Sales taxes where applicable (local, state or federal) will be added to the invoice price.

7. Product Return Policy

(a) All returns must be authorized by VWR in order to insure proper credit. NOTE: All returns are subject to 15% restocking charge. Where credits will be issued to the Customer for authorized returns under \$100, the Customer is not required to return the Product to VWR except for Product(s) delivered but not ordered (picking errors). To ensure proper credit, each Product return must include the following information:

- Customer Name and Address
- Purchase Order Number
- VWR Shipping Order Number
- Date of Invoice
- Catalog Number of Returned Item(s)
- VWR Return Authorization Number
- Reason for Return

(b) Products not authorized for return include:

- Products not in completely resaleable condition (including Products with damaged, missing or defaced labeling or packaging)
- Chemicals, reagents, diagnostics, sterile or any controlled products (unless products do not meet specification)
- Laboratory apparatus or instruments that have been used or are without the original packaging, labeling
- and operating manuals.
- Refrigerated products or other perishables
- Products purchased on a Special Order Basis

- Products not purchased from VWR
- Products with an expired shelf life or an expiration date too short for resale
- Discontinued products

(c) Each return shipment of hazardous materials must be packed and labeled in accordance with DOT regulations applying to transportation of hazardous materials. Shipping documents must also meet DOT regulations. When necessary, Customer shall include with each return shipment of equipment, a certification from an authorized representative of the company that the equipment was properly decontaminated in accordance with current regulations and other recommended guidelines. The product should be shipped to the indicated service center and the transportation charges prepaid. To ensure prompt handling, the return authorization number should be placed on the outside of the package.

8. Product and Service Warranties and Limitation of Liability

(a) VWR warrants to the original Customer only that:

i. VWR VistaVision™ microscopes are guaranteed to be free of defects in material or workmanship for three (3) years from delivery, with the exception of the electrical system, which is guaranteed to be free of defects in material or workmanship for one (1) year from delivery; VWR™ symphony™ meters are guaranteed to be free of defects in material or workmanship for three (3) years from delivery; and all VWR Private Label equipment is guaranteed to be free of defects in material or workmanship for two (2) years from delivery;

ii. all VWR Private Label laboratory casework will, under normal use, be free from defects in material or workmanship for one (1) year and corrosion for three (3) years from installation date and, if VWR installs the laboratory casework, the installation labor will be guaranteed for one (1) year;

iii. All software programs are warranted in accordance with the software vendor's license agreement; iv. all other Products, branded and private label, will meet the manufacturer's specifications for a term equal to the warranty period stated in the Product manufacturer's literature or sixty (60) days, whichever is longer; and v. Services provided, if any, will be of the kind and quality designated and will be performed by qualified personnel.

vi. VWR makes no claims or warranties concerning sustainable/green products. Any claims concerning sustainable/green products, including but not limited to, any of the following: green, recycled, recyclable, reusable, refillable, renewable, biodegradable, degradable, photodegradable, compostable, carbon footprint, renewable sources, source reduced, ozone safe, ozone friendly, environmentally friendly, no CFC's, CRC-Free, are the sole claims of the manufacturer and not those of VWR.

(b) VWR HEREBY DISCLAIMS ALL OTHER WARRANTIES OR GUARANTEES WITH RESPECT TO THE SUBJECT MATTER OF THIS AGREEMENT, WHETHER STATUTORY, WRITTEN, ORAL, EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, SUITABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

(c) The liability of VWR under this limited warranty does not extend to any Products which are abused, altered or misused by the Customer or any other persons or entities or which become defective or non-conforming through the actions or inaction of the Customer or any other persons or entities. A defective or non-conforming Product is defined only as a Product which is outside of the manufacturer's defined Product specifications, and shall not include Products that fail to meet any fitness of use by Customer or any unique Customer operating conditions or applications.

(d) If any Product or Service warranted hereunder proves defective or non-conforming, VWR's sole liability and Customer's sole remedy hereunder shall be for VWR, to repair or, at VWR's option, (i) replace (or reperform the Service), at no cost to Customer, any such defective or non-conforming Product with a non-defective or conforming Product (as applicable) or (ii) credit Customer's account for all amounts paid with respect to the defective or non-conforming Product or Service upon VWR's receipt of the defective or non-conforming Product. In the event of replacement, the replacement Product will be warranted for the remainder of the original warranty period or ninety (90) days, whichever is longer.

(e) If a Product should require service, contact the VWR office nearest your location for instruction (for a complete list of offices, see your VWR catalog). When the return of the Product is necessary, a return authorization number will be assigned and the Product shipped, transportation charges prepaid, to the indicated service center. To insure prompt handling, the return authorization number should be placed on the outside of the package and a detailed explanation of the defect enclosed with the Product.

(f) IN NO EVENT SHALL VWR HAVE ANY OBLIGATION OR LIABILITY FOR ANY EXEMPLARY, PUNITIVE, INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES (INCLUDING BUT NOT LIMITED TO LOSS OF PROFITS, USE OR GOODWILL), WHETHER BASED ON CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY, OR ANY OTHER THEORY OR FORM OF ACTION, EVEN IF SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY THEREOF. THE TOTAL LIABILITY OF VWR (INCLUDING ITS SUBCONTRACTORS AND AGENTS), IF ANY, FOR DAMAGES RELATING TO ANY PRODUCTS SOLD UNDER THIS AGREEMENT SHALL BE LIMITED TO THE PRICE PAID FOR SUCH PRODUCT(S) AND THE TOTAL LIABILITY OF VWR (INCLUDING ITS SUBCONTRACTORS AND AGENTS), IF ANY, FOR DAMAGES RELATING TO ANY SERVICES PROVIDED UNDER THIS AGREEMENT SHALL BE LIMITED TO THE FEES PAID FOR THE SERVICE GIVING RISE TO SUCH CLAIM.

9. Export Controls – Products purchased or received under this Agreement are subject to export control laws, restrictions, regulations and orders of the United States. Customer agrees to comply with all applicable export laws, restrictions and regulations of the United States or foreign agencies or authorities, and shall not export, or transfer for the purpose of re-export, any Product to any prohibited or embargoed country or to any denied, blocked, or designated person or entity as mentioned in any such United

States or foreign law or regulation. Customer represents and warrants that it is not on the Denied Persons, Specially Designated Nationals or Debarred Persons List and is not otherwise prohibited by law from purchasing the Products or services hereunder. Customer shall be responsible to obtain any license to export, re-export or import as may be required.

10. Proprietary Information – Each party (a "Recipient") shall maintain in confidence, not disclose to any third party, and not use, except for the specific purpose of performing under this Agreement, all proprietary information furnished to it by the other party (a "Discloser") or any Discloser Affiliate in connection with this Agreement, or derived from the Discloser or any Discloser Affiliate in performance of this Agreement, and shall return to the Discloser or a Discloser Affiliate, upon request, all copies (then in Recipient's possession) of documents and other tangible media furnished by or derived from Discloser or such Discloser Affiliate, respectively, in connection with the performance of this Agreement. The Recipient shall inform its employees, agents, and representatives of these obligations and shall require them to assume equivalent obligations.

11. Miscellaneous

(a) Termination - This Agreement may be terminated by either party for convenience at any time upon reasonable written notice delivered to the other party. In the event of any termination or expiration of this Agreement, Customer shall be billed immediately for Products shipped through the effective date of such termination or expiration and all custom Products purchased for Customer in VWR's inventories at such date, and Customer shall pay the invoiced amount immediately upon receipt of such invoice.

(b) Force Majeure - In the event either party is prevented in whole or in material part from performing its obligations under this Agreement solely as a result of force majeure, upon the prompt giving of notice to the other party detailing such force majeure event and its anticipated duration, the obligations of the party so prevented shall be excused during such period of delay, and such party shall take whatever reasonable steps are necessary to relieve the effect of such cause as rapidly as possible.

(c) Merger, Modification, Waiver - No amendment, modification or waiver of these terms shall be binding on either party unless reduced to writing and signed by an authorized officer of the party to be bound, and in the case of a waiver, shall be effective only in the specific instance and for the specific purpose for which given, and shall not be construed as a waiver of any subsequent breach. The failure of either party to enforce at any time or for any period of time any of the provisions of this Agreement shall not be construed as a waiver of such provisions or of the right of such party thereafter to enforce each and every such provision. No course of dealing, usage of trade or course of performance shall supplement, explain or amend any term, condition or instruction of this Agreement, or any shipment of Products hereunder.

(d) Applicable Law - This Agreement is made pursuant to, and shall be construed and enforced exclusively in ac-

cordance with, the internal laws of the Commonwealth of Pennsylvania (and United States federal law, to the extent applicable), without giving effect to otherwise applicable principles of conflicts of law.

(e) Authority to Enter Into Agreement – Each party represents and warrants that it is authorized to enter into this Agreement and that in so doing it is not in violation of the terms or conditions of any contract or other agreement to which it may be a party.

f) Assignment - This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and permitted assigns and designees; provided, however, neither party shall have the right to transfer, assign or delegate its rights or obligations under this Agreement or any portion thereof without the prior written consent of the other party (except that either party may assign this Agreement to a parent, subsidiary or successor corporation without such consent).

(g) Nature of Relationship - Neither party, its employees or permitted subcontractors or agents shall, under any circumstances, be considered to be an agent, partner, joint venturer or representative of the other party.

Trademarks

VWR, forms of VWR, and the VWR logo and/or design are either registered trademarks ®, trademarks ™, or service marks ™ of VWR International, LLC. in the United States and/or other countries. All other marks referenced herein are registered trademarks, trademarks, or service marks of their respective owner(s). For a complete list of trademark owners, please visit www.vwr.com.

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EQUIPMENT MANAGEMENT

Powered by VEM Technology



A Web-based Asset Management System from VWR

VWRCATALYST offers a wide range of laboratory support services designed to save our customers time and help to improve total operating costs. These services range from centralised laboratory services to research technician activities. They all share a central theme in allowing you to recover valuable research time and increase your lab's productivity.

We can provide support exactly where you need it most - and this includes solutions to optimise equipment in your laboratory.

The Equipment Management Process

In many organisations, equipment becomes a critical asset to any researcher's work. Equipment Management means managing and monitoring equipment across the entire organisation. An Equipment Management system is part of a quality system and as a result is a crucial factor for customers to meet their compliance requirements.

VWRCATALYST has developed new software to help with this challenge; **VEM - Equipment Management System**

VEM keeps track of all equipment, but goes beyond by managing maintenance with numerous service partners. It handles work orders, spare parts as well as related documentation, warranties and service contracts.

The VWR Equipment Management solution effectively manages maintenance, calibrations, repairs, equipment inventory and numerous other regular activities. It will help to maintain equipment accountability for all assets.

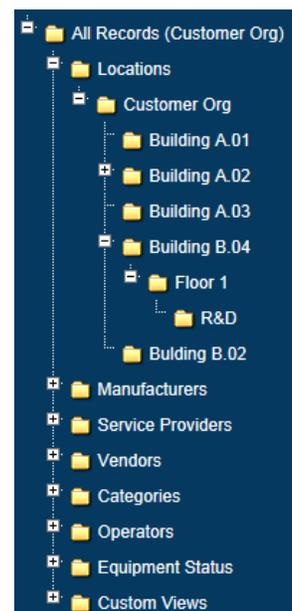
VEM is built around a centralized equipment repository which not only stores the inventory of assets but also spare part lists, consumable lists, documentation, images, SOP's, status of an asset, etc. It tracks equipment by serial number or other ID's and manages warranties, service provider and vendor information as well as service requests and work orders.

VEM constantly records service data and gives procurement managers better information to prepare for the next equipment purchase (down time, repair cost, total cost of ownership).

With a powerful built-in reporting tool, VEM keeps track of all equipment movement. Allows status tracking, documents service activities and allows vendor and service provider metrics.

Managers have **real time visibility** of equipment status and access to equipment related metrics including **total cost of ownership**.

The system features an activity-based notification and messaging system which informs users, managers and administrators about pending tasks such as due dates, pending approvals and other activities.



Hierarchical arrangement of equipment.



Widget-based user-interface.

Cloud-based Services

VEM delivers to the desktop. It is built using the latest and most powerful internet technologies to better support your requirements. VEM offers a modern **widget-based user-interface** that gives users access to all major functionality immediately.



Mobile Support

Extending VWR Equipment Management to mobile devices makes using the system even easier.

Registering new equipment (includes taking photos), inventory assessment, barcode scanning and creating service request directly at the equipment in the laboratory, are just a few of the many features.

Customizable to Your Needs...

A huge set of customisable features combined with numerous user-privileges will give you the right tools to address your needs.

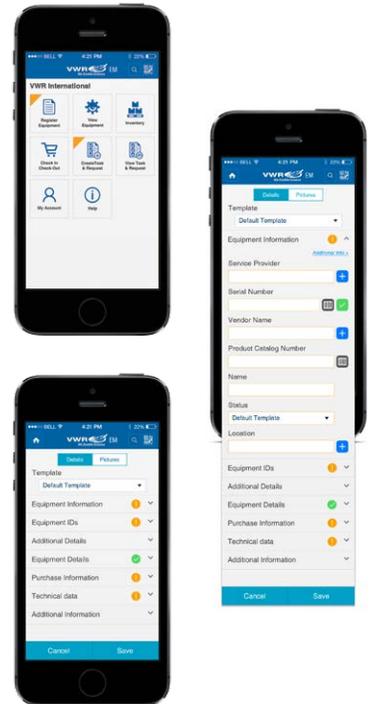
You will benefit from one single cost effective solution to support your daily requirements, therefore minimizing training requirements.

Providing Personalized Support Based on Your Needs

At VWR, we believe that our key differentiator is our people who provide extensive process insight. Our team will work with you to get the Equipment Management process tailored to your needs. Our personalised approach allows us to provide support exactly where our customers need it the most... by providing onsite equipment management with a team of **VWRCATALYST** personnel.

Let us help you achieve your business goals through the experience we have built up through many years of complex system and process implementations. We can help you to implement and operate in the right way.

If you are interested, please contact your account manager or email vwrcatalyst@vwr.com. They will arrange an initial needs analysis for you.



We Enable Science Through Services

From research to production, **VWRCATALYST** can help you re-focus scientific time on initiatives that directly support the strategic mission of your company.

We Enable Science by:

- Powering productivity
- Improving quality, safety, and regulatory compliance
- Reducing total operating costs

Our services include:

- Procurement and Supply Management
- Laboratory and Production Support
- Scientific Support
- Equipment and Instrument Services
- Lean Six Sigma Process Consulting

VWR Custom Manufacturing Services for Laboratories



Many laboratories need custom-formulated chemicals in scaled volumes but lack the necessary capacity, resources, and time to do their own manufacturing for research or analysis.

VWR's commitment to manufacturing high-quality custom chemicals extends from research and testing at the laboratory bench through full-scale production and commercialization.

To help you better manage strategic priorities in your laboratory, we offer scaled volumes of custom formulated powders, solvents, and solutions. VWR Custom Manufacturing Services provide the capacity and breadth of capabilities to test and produce chemicals according to your lab's workflow and specifications.

Our established manufacturing facilities in North America and Europe have the requisite infrastructure and expertise to develop flexible solutions across broad scientific applications, whether you work in university research, food quality testing, clinical reference, or other type of laboratory environment. Our scientists, engineers, production associates, and quality professionals will consult with you to plan, develop, and produce solutions that help you drive quality and efficiency in your lab.

Our Custom Manufacturing Services for Laboratories include:

- Custom Chemicals for Sample Analysis
- Test Analytes
- Acid blends
- Fixative and Dye Solutions
- Aqueous and Non-Aqueous Solutions
- Custom Pack Sizes

We are committed to providing the highest manufacturing services.

As we align with your needs, we remain dedicated to:

- Flexibility and Innovation
- Supply Chain Security
- Quality and Regulatory Compliance
- Operational Excellence
- Breadth of Capabilities
- Product Transfer and Design

For more information, contact VWR Custom Manufacturing Services at **1.800.932.5000** or **VWRCustom@vwr.com**.

vwr.com
1.800.932.5000