Anton Paar

Solutions for Your Supreme Spirits

Spirits Analysis Overview

The Market Leader in Spirits Analysis

Over the 50 years we've spent as market leader in analytical solutions for the beverage industry, we've developed a range of technical innovations that increase the accuracy and speed of your measurements.

50+ years of application experience
Partner with a team backed by over 50 years of industry experience. Access expert application support anytime, anywhere. Trust the same proven expertise relied on by researchers and QC managers worldwide across diverse industries.

18 quality parameters in just 6 minutes
Measure all relevant parameters using a single setup. Automate filling and cleaning for up to 32 non-pressurized samples in a row to save time and effort. Ensure top product quality with handheld devices, advanced measuring systems, automated QC labs, and in-line sensors.

10x faster than distillation
Count on the expertise of the market leader in beverage analysis. Boost measurement accuracy and speed while analyzing alcohol up to 10x faster than distillation. Reduce waste, improve efficiency, and ensure consistent quality for continuous improvement.

Compliance with 16+ industry standards
Our measurement systems fully comply with more than 16 industry standards set by MEBAK, TTB, GB, EBC, BCOJ, ASBC, and AOAC. This ensures reliable, consistent results that meet global regulatory and quality requirements. You can trust our systems to support compliance across diverse markets and applications.

85+ service stations and a 3-year warranty
Our instruments are famously durable, but if support is required, a global service network expert responds within 24 hours – speaking the local language. Every time a new instrument generation is launched, spare parts for predecessor instruments are guaranteed for at least 10 years.

Lab execution system: AP Connect
AP Connect enables paperless, professional data management with access from any computer on your network. It removes transfer errors, centralizes data from all instruments, and streamlines workflows through one interface. Save time, and ensure compliance, with efficient data flows and optional validation documentation.

Always Superior Technology

Our U-Pulse technology, based on the trusted Pulsed Excitation Method, is combined with patented NIR spectroscopy to deliver unmatched performance and set new benchmarks in beverage analysis.

0.01 % v/v alcohol repeatability
U-Pulse technology, backed up by FillingCheck™ and U-View™, is combined with the highest alcohol repeatability to deliver always-superior alcohol and extract analysis.

Tailored setup: 22 instruments and modules
A broad portfolio – from handheld devices to multiparameter systems – serves every stage of analysis. Measurements, from wort to final product, can be performed with ease. All spirit types, from distillates to cream liqueurs, can be analyzed with precision.

Intuitive user interface with 12 guided wizards
The interface offers easy access to favorite menu dialogs via the 10.4" screen and quick-access area. User levels are assignable to prevent unintended changes. System and real-time status alerts of sample changers or measuring modules ensure users stay informed at all times.

Density accuracy: 0.000005 g/cm³
We manufacture the borosilicate glass measuring sensors exclusively in-house. By fully controlling the fabrication of these extraordinary sensors, and therefore every single facet of the ingenious core DMA technology behind them, we ensure we deliver to you the most accurate density meter on the market.

Trusted, patented NIR technology
Selective NIR absorption at 1,200 nm offers fast, precise analysis across all alcoholic beverages. Supreme accuracy and versatility are the trademark of this market-leading technology in beverage quality control. Customers have a choice of Alcolyzer module for the analysis of up to 12 beverage classes from 0 % to 65 %.

Powering Potential

Market Leader

Snap 41:
Portable alcohol meter

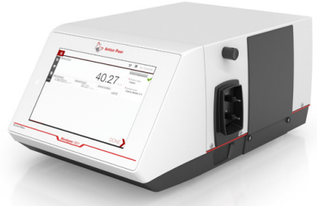
- Ethanol (distillates) accuracy: 0.2 % v/v
- Measurement of alcohol content in all sugar-free distilled spirits at any strength throughout the whole production process
- Sample temperature between 0 °C and 35 °C
- Results in 30 seconds with only 2 mL of sample

Snap 51:
Portable alcohol meter

- Ethanol (distillates) accuracy: 0.1 % v/v
- Measurement of alcohol content in all sugar-free distilled spirits at any strength throughout the whole production process
- Sample temperature between -10 °C and +50 °C
- Replacement of glass hydrometers and pycnometers with one device
- Time saved in the field with an RFID interface and Bluetooth®

Alex 301, Alex 501:
Alcohol and extract meters

- Accuracy:
  Alex 301: 0.25 % v/v for beer, wine, sake, spirits <100 g/L; 0.45 % v/v for non-turbid spirits with >100 g/L extract and up to 47 % v/v
  Alex 501: 0.2 % v/v for beer, wine, sake, spirits <100 g/L; 0.4 % v/v for non-turbid spirits with >100 g/L extract and up to 47 % v/v
- Measurement of alcohol and extract from 0.5 % v/v to 47 % v/v
- Sample preparation kit for cloudy beers and wines included
- One-button operation with results in under three minutes
- Fermentation curve monitoring for up to 40 batches



Alcolyzer 5001:
Alcohol meter

- Alcohol repeatability: 0.03 % v/v
- Measurement of spirits with up to 20 g/L extract content
- Compliance with AOAC, BCOJ, and OIV standards; seamless data transfer
- Analysis of 12 sample types with 0 % v/v to 65 % v/v alcohol content using one device
- Precise results in just two minutes without distillation

Alcolyzer 7001:
Alcohol meter

- Alcohol repeatability: 0.01 % v/v
- Measurement of spirits with up to 20 g/L extract content
- Compliance with AOAC, BCOJ, and OIV standards; seamless data transfer
- Analysis of 12 sample types with 0 % v/v to 65 % v/v alcohol content using one device
- Precise results in just two minutes without distillation
- Upgrade with a sample changer for up to 32 samples in one go
- Upgrade with color option at 430 nm

DMA 4002, DMA 5002, DMA 6002:
Modular benchtop density meters

- Density accuracy:
  DMA 4002: 0.00005 g/cm³
  DMA 5002: 0.00001 g/cm³
  DMA 6002: 0.000005 g/cm³
- U-Pulse, U-Dry, U-View™
- One-touch measurement
- Syringe and status light
- Modular extensions available
- Full automation via Xsample series
- Results with four-digit accuracy in 20 seconds

Applications

Distillation monitoring
Alcohol measurement for tax purposes
Dilution and blending

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Fermentation monitoring
Distillation monitoring
Dilution and blending
Final product analysis

Applications

Fermentation monitoring
Distillation monitoring
Dilution and blending
Final product analysis

Fermentation monitoring
Distillation monitoring
Dilution and blending
Final product analysis

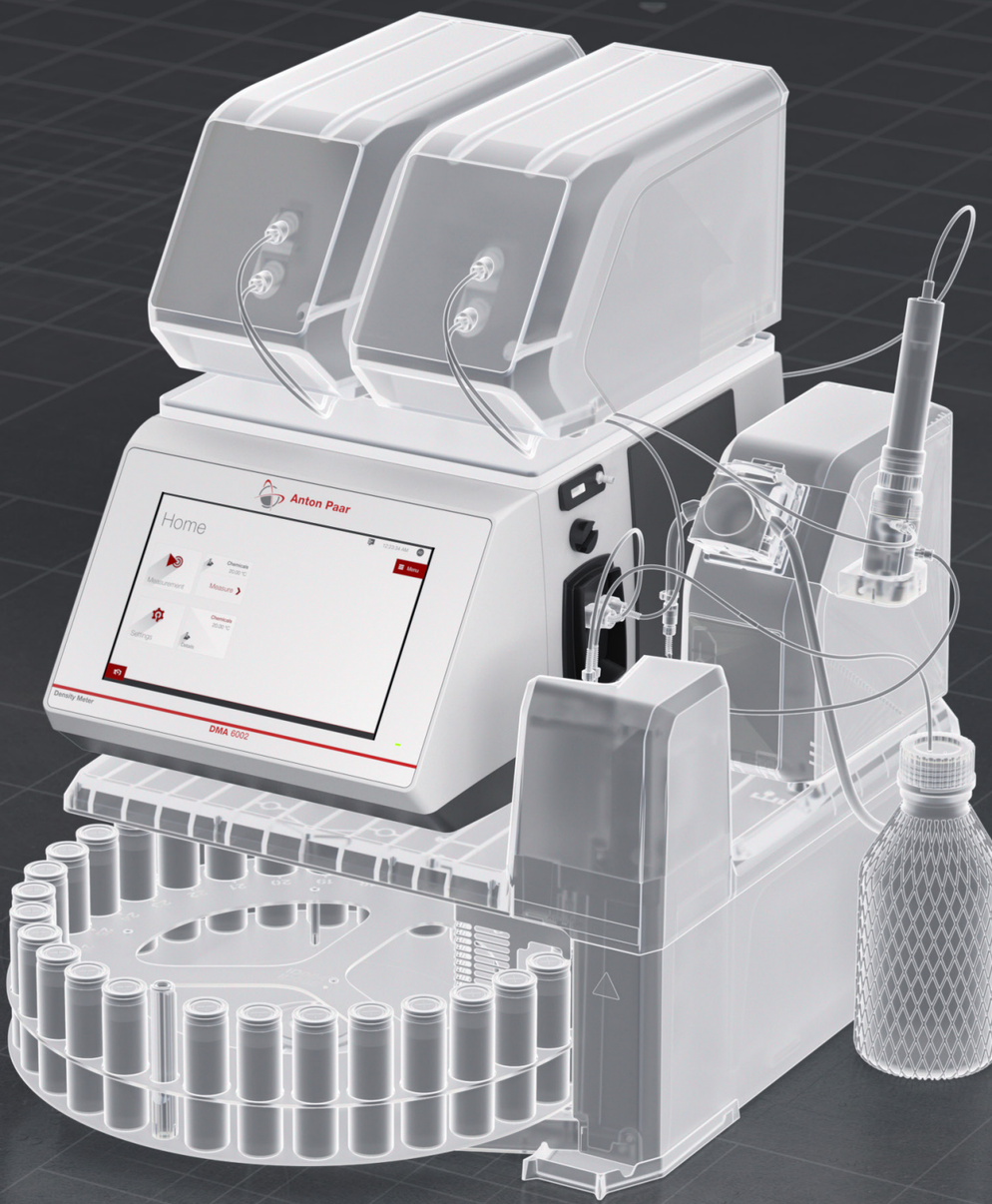
Fermentation monitoring
Alcohol analysis in distillates
Controlling instrument in measurement systems

Measurement System

Find out more

Choose from the following options and primary instruments:

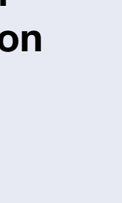
- → DMA 4002
- → DMA 5002
- → DMA 6002
- → DMA 6002 Sound Velocity



pH	Turbidity	Alcohol content	Sample changer	Refractive index	Optical rotation
pH 3101	Haze 3001	Alcolyzer 3001 Spirits	Xsample 3100	Abbemat 5001	MCP 100
pH 3301		Alcolyzer 3001	Xsample 5100	Abbemat 5101	MCP 150
				Abbemat 5201	

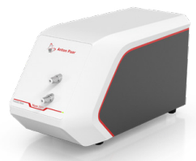
Available options

Modular Extension



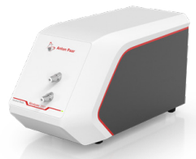
pH

- pH measuring modules enable simultaneous determination of pH and other quality parameters
- Versatile configurations support a wide range of applications
- Suitable for measuring pH in various liquids, from beverages to chemicals



Turbidity

- Haze 3001 uses the approved ratio method for turbidity measurement
- Measures at three angles: Transmission at 0°; scattered light at 25° and 90°
- Eliminates the influence of particle size on turbidity values
- Enables detection of impurities and preservation of visual properties
- Detects chill haze when used with a cooling unit



Alcohol content and color

- Modular setup combines the Alcolyzer (including the color option) with density meters and other modules
- Different variants are tailored for beer, wine, and spirits
- An all-in-one combination is also available
- Modular expansion includes a color option at 430 nm to determine the color of whiskey

Sample changer

- Xsample series offers the widest range of automation on the market
- Supports everything from automatic filling to fully automatic processing
- Samples are automatically measured

Refractive index

- Each Abbemat model offers a method choice for fast, non-destructive measurements of refractive index
- Can be combined with a density meter
- Enables measurement of alcohol and extract content of cream liqueur

Optical rotation

- Compliant with all relevant standards
- Suitable for the pharmaceutical, cosmetics, food, and chemical industries
- Also used in R&D and medical applications
- Can be combined in a liqueur measurement system
- Measures alcohol and sugar content of saccharose-containing liqueurs

Recommended Configurations

Find out more

Design your Spirits Measurement System, one component at a time.

DMA 5002

Alcolyzer 3001 Spirits

pH 3101

Xsample 3100

From wort and juice to final product analysis

- Minimization of extract/sugar loss
- Increase in process consistency
- Saves on time, energy, water, and costs
- Increased mashing efficiency via reduced boil time

DMA 5002

MCP 150

Alcolyzer 3001 Spirits

pH 3301

Xsample 5100

For saccharose-containing liqueurs

- No product-specific calibration necessary
- Measurements up to 10x quicker than with classic distillation
- No initial setup of calibration database and reference analysis needed

DMA 6002

Alcolyzer 3001 Spirits with Option Color

Haze 3001

pH 3301

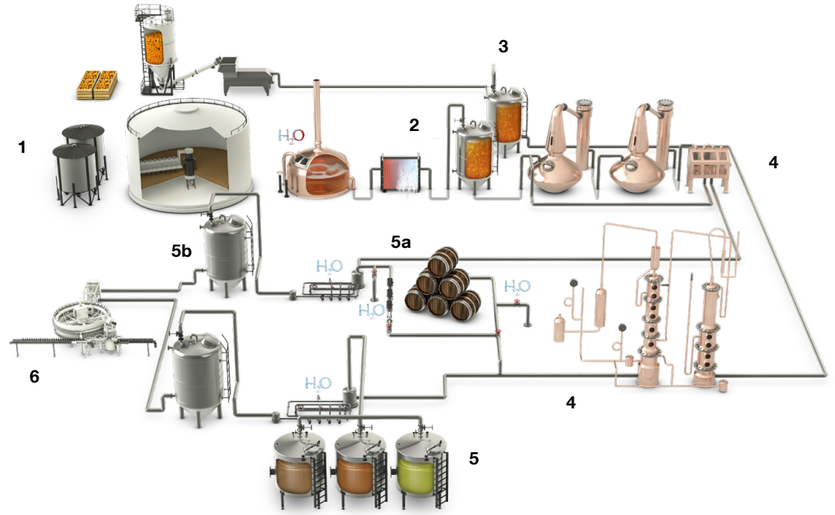
Xsample 5100

For safeguarding of visual properties and product release

- No distillation required for alcohol determination
- Measurement of all samples from mash to spirit
- No influence on alcohol results by other sample elements
- Turbidity analysis to safeguard chill filtration processes
- Fully automatic check/calibration due to built-in SOP

Complete Your Spirits Analysis

Anton Paar is the world's first full-range supplier for spirits analysis. Trace multiple parameters – from incoming raw materials to the final drop of the spirit – measured at any location in the plant with 20+ laboratory and process instruments.



	Wort/juice monitoring		Fermentation and wash analysis	Distillation	Storage and blending			Filtration	Bottling
	Raw material monitoring	Wort/juice monitoring	Fermentation monitoring	Spirits safety monitoring	Liqueur blending monitoring	Spirits blending monitoring	Chill filtration	Bottling and packaging	
	1	2	3	4	5 (Liqueur)	5a (Spirits)	5b (Spirits)	6	
Refractive index	✓	✓	✓		✓			✓	
Optical rotation (°Z)	✓	✓			✓			✓	
Elemental impurities	✓								
Density (°Brix)		✓	✓						
Density (extract)		✓	✓	✓	✓	✓		✓	
Density (total extract)							✓		
Density (°Plato)		✓	✓						
Density (SG)		✓	✓						
Sound velocity (extract)		✓							
pH		✓	✓	✓	✓	✓		✓	
Turbidity		✓	✓		✓		✓	✓	
Color			✓	✓	✓	✓			
Alcohol				✓	✓	✓	✓	✓	
Laboratory measurement		✓	✓	✓	✓	✓	✓	✓	
Process measurement	✓	✓	✓	✓	✓	✓	✓	✓	

Prepare for the Future

Inspired by 50+ years of experience, Anton Paar's analysis solutions anticipate future needs – so that businesses can grow.

AP Connect lab execution system

- Next-level lab data management in existing and new labs
- Effortless compliance with regulatory requirements
- Paperless: elimination of transcription errors for improved accuracy
- Centralization of data from Anton Paar and third-party instruments in one digital space
- Access to, and management of, lab data anytime, anywhere

Edge 7000 process controller

- Connection of process sensors, and display of values exactly where needed – even in the harshest environments
- A powerful process controller with state-of-the-art interfaces and CPUs, offering seamless monitoring across devices
- Cutting-edge performance with a 10.1" projective, multitouch display
- Long-term security and flexibility with a Linux-based operating system
- Platform-independent web-based management and user interface

Reliable. Compliant. Qualified.

Find out more

Our well-trained and certified technicians are ready to keep your instrument running smoothly.

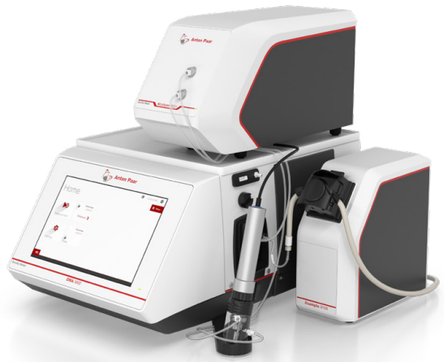
Maximum uptime
Regardless of how intensively you use your instrument, we help you keep your device in perfect shape and safeguard your investment. For at least 10 years after the discontinuation of a device, we'll provide you with any service and spare part that you might need.

Warranty program
We're confident in the high quality of our instruments. That's why we provide a full three-year warranty. Just make sure to follow the relevant maintenance schedule. You can also extend your instrument's warranty beyond its expiration date.

Short response times
We know that sometimes it's urgent. That's why we provide a response to your inquiry within 24 hours. We give you straightforward help from experienced people, not from bots.

Global service network
Our large service network for customers spans 85+ locations with more than 600 certified service technicians. Wherever you're located, there's always an Anton Paar service technician nearby.

Spirits Measurement Systems



	From wort and juice to final product analysis	For saccharose-containing liqueurs	For safeguarding visual properties and product release
Parameters	Alcohol | Extract | Density | pH	Alcohol | Extract | Density | Concentration saccharose | Concentration invert sugar | pH	Color | Alcohol content | Extract | Density | Turbidity | pH
Measuring range			
Alcohol	35 % v/v to 65 % v/v	15 % v/v to 40 % v/v (sucrose-based liqueur)	35 % v/v to 65 % v/v
Density	0 g/cm³ to 3 g/cm³		
Color	-	-	0 EBC to 120 EBC (0 to 60.96 SRM (ASBC))
pH value	pH 0 to pH 14		
Turbidity	-	-	0 EBC to 100 EBC (0 to 6900 SRM (ASBC))
Repeatability s.d.			
Alcohol	0.01 % v/v		
Density	0.000003 g/cm³		0.000001 g/cm³
Color	-	-	0.1 EBC (0.05 SRM (ASBC))
pH value	0.02 in the range pH 3 to pH 7		
Turbidity	-	-	0.3 % of the measured value + 0.02 EBC 1.4 SRM (ASBC) according to formazine reference suspension
General information			
Temperature control	Integrated Peltier thermostat		
Minimum amount of sample	35 mL degassed sample per measurement		
Typical measurement time per sample	4 min (incl. filling)		
Sample throughput	15 to 20 samples per hour		
Power supply	AC 100 to 240 V, 50/60 Hz, fluctuation ±10 %, 190 VA		
Standards			
MEBAK	-	-	Method 956.02 (430 nm)

XDLIP058EN-F

www.anton-paar.com