

# Solutions for Your Excellent Beer

## Beer Analysis Overview



# The Market Leader in Beer Analysis

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

We're always a step ahead of fast-evolving beverage industry trends and applications, providing solutions that position you one step ahead, too. Whether you're analyzing a malty pale ale or a crisp lager, we'll help you save time, analyze with ease, and deliver a premium product.





1



2



3



4



5

1

**One step ahead of beverage industry trends**

- Rely on the know-how from the market leader in offering analytical solutions for the beverage industry
- Increase the accuracy and speed of your measurements
- Analyze alcohol up to 10x faster than with distillation
- Minimize waste, streamline operations, maintain consistent product quality, and drive continuous improvement

WATCH VIDEO



2

**Maximum efficiency, effective QC**

- Measure over 50 quality parameters with one setup within eight minutes
- Automate filling and cleaning of up to 24 samples in a row for non-pressurized systems
- Deliver high-quality products with handheld solutions, measuring systems, automated QC labs, and in-line sensors

WATCH VIDEO



3

**Decades of application experience**

- Know you're working with a partner with over 40 years of experience in the field
- Draw on our application expertise wherever and whenever you need it
- Rely on the same expertise that QC managers from around the world and across every industry have access to

WATCH VIDEO



4

**Features that make market-leading density meters**

- Leverage usability features like 30+ guided workflows and automatic bubble detection to make your density measurements easier than ever before
- Benefit from automatic compensation of the thermal effects on the U-tube and keep these effects at an absolute minimum over the entire lifetime of the instrument
- Streamline your data management with AP Connect, our lab execution software

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5

**Expert service, guaranteed**

- Know you benefit from Anton Paar quality when it comes to durability and service
- Get a 3-year warranty with each product
- Access our global service network whenever you need it
- Enjoy support in your local language
- Know you have access to spare parts for at least 10 years after purchase

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# Always Superior Technology



The core of our density meters?

A handmade, glass U-tube. Powered by our patented Pulsed Excitation Method, it perfectly complements our Alcolyzer portfolio for selective alcohol measurement.

It's the ideal partner for your beer analysis.

#### Enjoy market-leading accuracy

- Select the instrument you need for your accuracy requirements
- Benefit from robust NIR technology with 0.01 % v/v repeatability for alcohol content
- Get exceptional alcohol reproducibility time and time again

#### Your demands, our solutions

- Access a broad portfolio: from handheld devices to multiparameter measurement systems
- Perform the analysis you need: from wort to final product
- Measure a range of beers: from light pilsners to dark stouts

#### Get a live view of the measuring cell with U-View™

- Check the sample-filling process via a high-quality image of the glass cell on the high-resolution screen (1280 x 800 px)
- Verify correct sample filling and measurements with the stored images
- Print results with or without U-View™ pictures or transfer this set of data to your LIMS systems

#### Perform tasks quickly and easily

- Open your favorite menu dialogs from the 10.4" screen using the quick access area
- Assign different user levels to prevent accidental changes
- Get system or operation alerts and see the current status of an automatic sample changer or measuring module

#### Ensure correct sample filling with FillingCheck™

- Enjoy automatic monitoring of filling quality
- Get real-time error detection and automatic documentation for later verification
- Know you have the market's most reliable bubble detection with our patented Pulsed Excitation Method

# Our Product Portfolio for Beer Analysis

Market  
Leader



## DMA 35: Portable density meter

- Perform fast, reliable fermentation monitoring from -10 °Plato to +85 °Plato
- Fill samples at temperatures up to 100 °C (hot wort)
- Get quick results with just 2 mL sample volume
- Store up to 30 measuring methods and up to 250 sample IDs

## Alex 500: Alcohol and extract meter

- Monitor up to 40 fermentation processes simultaneously
- Enjoy patented density and NIR technology in a single instrument
- Get direct, real-time results
- Rely on semi-automated sampling and a standardized sample handling SOP



## Alcolyzer M Beer: Beer analyzing system

- Perform selective alcohol analysis
- Get results in less than three minutes
- Calibrate the instrument easily and perform product-independent adjustments



## TPO 5000: Total package oxygen meter

- Measure total package oxygen directly out of cans, glass bottles, and PET bottles
- Get results in less than four minutes
- Enjoy self-cleaning and minimum maintenance

## DMA 4101, DMA 4501, DMA 5001: The fastest, most-accurate density meters

- Analyze beer and get results with 4-digit accuracy in 20 seconds (up to 6-digit density accuracy available)
- Track and eliminate variations in your production and achieve consistency in every batch
- Enjoy higher throughput with automated filling, measuring, and cleaning options
- Rely on technology that's been in the field for over 40 years

DMA 4501  
Top Seller



# Portable Quality Control: Anywhere, Anytime

Buy online  
shop.anton-paar.com

**DMA 35: A portable density meter for quality control and fermentation monitoring**

## The DMA 35 is durable. But don't just take our word for it.

- IP54 protection class: Harsh industrial and field applications are no problem
- Added rubber protection around measuring cell
- Replace all glass hydrometers in your workplace and get the expected accuracy
- Replaceable measuring cell for DIY maintenance

## On-site measurements just got easier

- Benefit from fast, reliable QC during all process steps on-site and in the field
- Measurements with just 2 mL of sample, no need to transfer it to a lab
- Gesture control: one-handed measurements
- Glove-friendly
- Quick result export to printer or PC for documentation and analysis
- RFID interface and Bluetooth streamline your operations and save time in the field
- Track daily measurements with its fermentation monitor mode

### DMA 35

Density range	0 g/cm <sup>3</sup> to 3 g/cm <sup>3</sup>
Density accuracy	0.001 g/cm <sup>3</sup>



FIND OUT MORE



www.anton-paar.com/  
apb-beer-dma35

# Your Entry Ticket to In-House Lab Analysis

**Alex 500: Perfect for alcohol and extract analysis throughout your whole brewery**

## Visual fermentation monitoring

- Confidently monitor and control your fermentation process
- Track daily measurements with its fermentation monitor mode, which displays a density curve assigned to a tank via sample ID, and swiftly correct any deviations
- Control up to 40 fermentation processes with one device

## Easy calibration and adjustment

- Check Alex 500 for the correctness of your results
- Perform an adjustment with water if results are off track
- Measure all day after a zero adjustment with deionized water

### Alex 500

Density range	0.95 g/cm <sup>3</sup> to 1.20 g/cm <sup>3</sup>
Density repeatability	0.0005 g/cm <sup>3</sup>
Alcohol range (beer)	0.5 % v/v to 15 % v/v
Alcohol repeatability s.d.	0.1 % v/v



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www.anton-paar.com/  
apb-beer-alex500

# One Measuring Solution for Every Beer

**Alcolyzer Beer M: Determine your beer's alcohol content**

## One solution for a wide range of beers

- Measure a range of beers: from non-alcoholic ones all the way to hazy IPAs
- Perfect your brews in breweries big or small

## An easy system for any brewer

- Easily use the system with a user-friendly touchscreen
- Say goodbye to product-specific calibrations
- Save space with your brewery with a compact design

## Flexible production, maximum control

- Maintain precise control over blending and bottled products
- Ensure consistency in flavor profiles, harmonize blends with precision, and guarantee the quality of bottled spirits

### Alcolyzer

<b>Alcohol range</b>	0 % v/v to 12 % v/v
<b>Alcohol repeatability s.d.</b>	0.01 % v/v

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[www.anton-paar.com/apb-beer-alcolyzer-m](http://www.anton-paar.com/apb-beer-alcolyzer-m)



# Access Superior Control

**TPO 5000: The fastest TPO measuring device on the market**

## Automatic handling for a great user experience and fast measurements

- Automatic self-cleaning after measurement
- Self-centering function positions beverage containers for you
- Works with almost every bottle and can type
- 4-minute measurements

## Advanced, dependable technology

- Minimal maintenance due to its optochemical oxygen measurement method
- No need to regularly replace consumables
- Compatible with CarboQC, our CO<sub>2</sub> meter designed to quickly determine carbon dioxide levels
- Ready for harsh environments: stainless steel housing, splash-proof, and glove-friendly

### TPO 5000

<b>Dissolved oxygen range</b>	0 ppm to 2 ppm
<b>Oxygen in the gas phase</b>	0 hPa to 45 hPa
<b>TPO repeatability s.d.</b>	±8 ppb or ±6 %, whichever is higher

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[www.anton-paar.com/apb-beer-tpo5000](http://www.anton-paar.com/apb-beer-tpo5000)



# Next-Level Speed, Next-Level Accuracy

DMA 4101, DMA 4501, DMA 5001: Our fastest, most intelligent benchtop density meters

## Always superior:

### A revolutionary user experience

Accurate density measurement of distilled fractions is the internationally recognized reference method for alcohol determination. Use it as a standalone instrument or extend it to a variety of measuring modules.

## Tech with a kick

- 4-digit density accuracy in 20 seconds
- Patented Pulsed Excitation Method ensures market-leading precision, repeatability, and reproducibility
- Storage for 10,000 measurements
- Ultra-fast measurement mode boosts productivity
- Instant pass/fail QC decisions by defining limits for different samples
- Compliance with a range of industry standards
- Up to 6-digit density accuracy
- Automated conversion to % v/v

## Need multiparameter analysis? No problem

- Connect your device to a variety of Anton Paar measuring modules for a measuring system that monitors QC parameters (specific gravity, extract, and calories)
- Measure over 50 key parameters simultaneously
- Increase efficiency, productivity, and safety with automated sample changers or even a fully automated QC laboratory

## Features to help you make the most of your measurements

- FillingCheck™ detects microbubbles within seconds
- U-View™ shows a zoomable image of the measuring cell
- Automatic compensation of temperature effects thanks to Thermo Balance™
- Guided user workflows
- Compatible with AP Connect, our lab execution software

	DMA 4101	DMA 4501	DMA 5001
Density range	0 g/cm <sup>3</sup> to 3 g/cm <sup>3</sup>	0 g/cm <sup>3</sup> to 3 g/cm <sup>3</sup>	0 g/cm <sup>3</sup> to 3 g/cm <sup>3</sup>
Density repeatability, s.d.	0.00001 g/cm <sup>3</sup>	0.000005 g/cm <sup>3</sup>	0.000001 g/cm <sup>3</sup>
Alcohol range (distilled fractions)	0 % v/v to 100 % v/v	0 % v/v to 100 % v/v	0 % v/v to 100 % v/v
Alcohol accuracy (distilled fractions)	0.05 % v/v	0.025 % v/v	<0.01 % v/v



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[www.anton-paar.com/apb-beer-dma](http://www.anton-paar.com/apb-beer-dma)



# Versatile, for Different Applications

## 1 Wort/juice analysis

Ensure accurate measurement of apparent extract, pH, and density with our measuring systems. Increase consistency, save time, energy, water, and costs, while optimizing mashing efficiency due to a reduced boil time. Extract the maximum potential from your ingredients, which leads to transformative results and keeps you ahead of the competition.

## 2 Fermentation control and wash analysis

Optimize fermentation with density, alcohol, and pH measurement for consistent high-quality products, timely action, precise end point determination, and reduced time and resources. Make real-time adjustments and maximize yield.

## 3 Filtration

Incorporating turbidity, extract, alcohol, and pH monitoring into your beer filtration process optimizes refinement, yeast removal, stability, and early product checking. Taken together, this enhances your beer quality and consistency while also reducing the risk of spoilage.

## 4 Storage

Verify the storage and blending process and thus ensure correct proportions and maintain the desired flavor profile. Adjust the product to achieve the desired output by monitoring all relevant parameters. Conduct QC tests and be confident in the beer you release for bottling.

## 5 Bottling or canning

Packaged beverage analyzers help you guarantee the shelf life of your products and avoid costly recalls. Semi- and fully automated options eliminate sample preparation and operator errors. This will elevate your production process and support your reputation in the beer industry.



# The Dream Experience

You have a dream: of an intelligent instrument that shows you the measurement way, and if you take a wrong turn, guides you straight back to the right path. A superior instrument that tells you your measurement has bubbles in it, shows you via camera image, and asks you to repeat it. An instrument that's as intuitive as a smart phone.

## Usability design

The software that powers our compact and benchtop density meters, others can only dream of. It's the reason measurements are so quick and intuitive. Together with the revolutionary operating systems, it guarantees maximum usability and a smartphone-like experience with industry-specific profiles, 30+ guided user workflows, and 200+ available conversion tables.

## Smart features

An instrument that smart thinks for you: efficient sample throughput, industry profile customization, fast sample diagnostics with the new, automatic algorithm-driven FillingCheck™, and reliable single measurements. The automated setup for the industry-specific user interface delivers an out-of-the-box, out-of-this-world measuring experience.

## Dream data: AP Connect lab execution software

You have a dream: of a liberating paperless lab that eliminates transcription errors and guarantees data quality. You have a dream: of a lab where the data you need to pass audits is available at a snap, right at your fingertips. Just plug the instrument in to our lab execution software AP Connect for a lab without a single piece of paper. AP Connect links your instruments, communicates measurement information, and ensures compliance. Store 10,000 measurements in a single digital space, with user-defined output reports. The software is available in eight different languages.



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[www.anton-paar.com/apv-overview-usability](http://www.anton-paar.com/apv-overview-usability)

# Combine for a Superior Measuring System

AVAILABLE OPTIONS

Xsample 520

Xsample 320

SAMPLE CHANGER

The core of our measuring systems?  
Our always-superior density meters.

Choose from the following:

- PRIMARY INSTRUMENTS**
- DMA 4101
- DMA 4501
- DMA 5001

FIND OUT MORE



[www.anton-paar.com/apb-beer-modulyzer](http://www.anton-paar.com/apb-beer-modulyzer)



- pH**
- pH 1101
- pH 1201
- pH 3101
- pH 3201

- TURBIDITY**
- Haze 3001

- ALCOHOL CONTENT**
- Alcolyzer 1001 Beer
- Alcolyzer 3001
- Alcolyzer 3001 Beer

- CO<sub>2</sub>, O<sub>2</sub>**
- CarboQC 1001
- CarboQC ME
- Option O<sub>2</sub> Plus for CarboQC ME / 1001

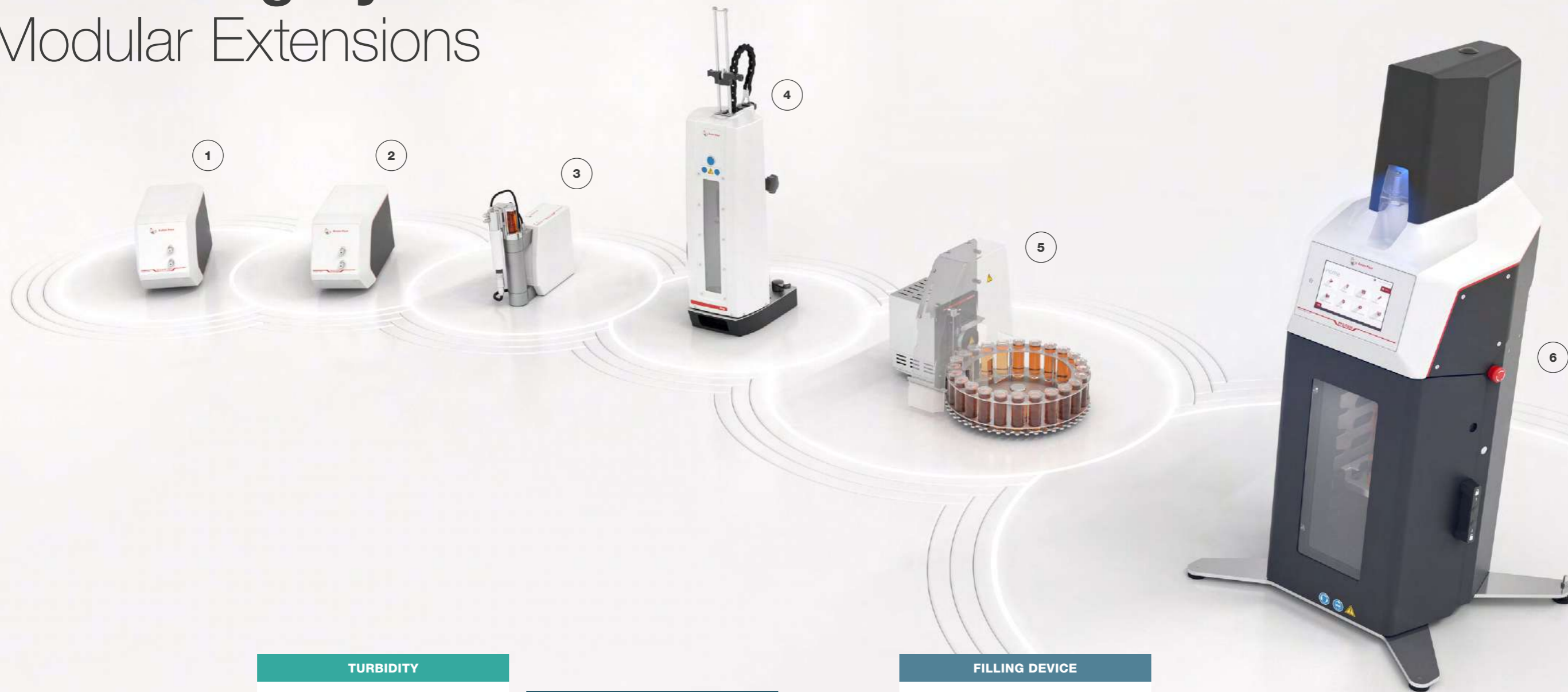
- FILLING DEVICE**
- PFD
- PFD Plus
- Sample Conditioner

- TOTAL PACKAGE OXYGEN**
- TPO 5000

AVAILABLE OPTIONS

# Measuring System

## Modular Extensions



### ALCOHOL CONTENT, COLOR

- 1**
- Selective measurement of alcohol within two minutes
  - Independent sample adjustment with water and a binary ethanol/water solution

Our modular setup combines the Alcozyzer (including the color option) with density meters and other modules. Choose from different variants tailored for beer, wine, spirits, or an all-in-one combination.

### TURBIDITY

- 2**
- Detects impurities of all particle sizes
  - Compliant to different industry norms, such as EBC, MEBAK, and OIV

Haze 3001 applies the approved ratio method with measurement at three angles (transmission 0°, scattered light at 25°, and 90°) to eliminate particle size influence on the turbidity value. This lets you detect impurities as well as safeguard visual properties and even chill haze if combined with a cooling unit.

### CO<sub>2</sub>, O<sub>2</sub>

- 3**
- Detect CO<sub>2</sub> in 55 seconds, CO<sub>2</sub> and O<sub>2</sub> in 90 seconds
  - No influence from other dissolved gases

Obtain a repeatability of 0.005 vol. Rely on automatic filling error detection for the density and CO<sub>2</sub> measuring cell for error-free operation. Add the (optional) high-resolution optochemical oxygen sensor for the simultaneous determination of the O<sub>2</sub> concentration in your beverage.

### FILLING DEVICE

- 4**
- Filling from glass bottles, PET bottles, and cans
  - No loss of CO<sub>2</sub> or O<sub>2</sub> due to pressurized filling

The PFD Filling Device transfers your sample directly from a closed container – either a bottle or a can – into the measuring chamber of a measuring instrument. As a result of sealed and pressure-driven filling, the samples are transferred without losing CO<sub>2</sub>. A sample conditioner enables measurement below 15 °C and reduces measuring time.

### SAMPLE CHANGER

- 5**
- Eliminate handling errors and save time with automation
  - Reduce costs per measurement

Benefit from a range of automation options. From single measurements to high-throughput solutions for large quantities of samples per day, we have an automated solution to fit your business.

### TOTAL PACKAGE OXYGEN

- 6**
- Selective measurement of total package oxygen
  - Enables full analysis from a single package

In a measuring system, the TPO 5000 automates the piercing and filling process. In addition to the oxygen measurement, it also provides information about the headspace volume, simplifies rinsing, and enables special deep cleaning.

# Recommended Configurations: Non-Pressurized

Design your beer measuring system, one component at a time. Degassing is required if CO<sub>2</sub> is present in the sample.

1

Quality control for craft breweries and small batch productions

- DMA 4101
- + Alcolyzer 1001 Beer
- + pH 1101
- + Xsample 320

- The Alcolyzer Analyzing System dedicated to craft brewing
- Measurement of key parameters in-house
- Ready for every type of beer: no product-specific calibration
- Selective determination of alcohol; compliance with distillation (reference)
- Leading technology recommended by EBC, ASBC, MEBAK, and BCoJ

2

Quality control for large and industrial breweries

- DMA 4501
- + Alcolyzer 3001 Beer
- + pH 3101
- + Xsample 520

- Verify your blending process
- Adjust the product to achieve the desired output
- Confirm your product specifications
- Release your product for bottling

3

The modular solution, for perfect fermentation and storage

- DMA 5001
- + Alcolyzer 3001 Beer with option Color
- + Haze 3001
- + pH 3101
- + Xsample 520

- Entire production process monitoring: from wort to finished beer
- Direct and selective alcohol determination
- All types of beer, cider, hard seltzer, and kombucha
- Four measuring modules, 30+ industry-specific parameters
- Fully automatic check/calibration thanks to built-in SOP

MANY MORE CONFIGURATIONS



[www.anton-paar.com/apb-beer-modulyzer](http://www.anton-paar.com/apb-beer-modulyzer)



# Recommended Configurations: Pressurized

Design your packaged beer measuring system, one component at a time. No sample preparation is required.

4

## Package control for craft breweries

DMA 4101
+ Alcolyzer 1001
+ pH 1201
+ CarboQC 1001
+ PFD

- Craft beer quality verification
- Selective alcohol determination via unique Alcolyzer technology
- Readiness for every type of beer: no product-specific calibration
- Selective CO<sub>2</sub> analysis

5

## Package control for large breweries

DMA 4501
+ Sample conditioner
+ Alcolyzer 3001 Beer with option Color
+ Haze 3001
+ pH 3201
+ CarboQC ME with Option O <sub>2</sub> Plus
+ PFD Plus

- Safeguard your product specifications in only three minutes
- Fulfill legal requirements
- Eliminate loss of alcohol due to evaporation
- Eliminate sample preparation and operator influences

6

## The most comprehensive analysis from a single package

DMA 5001
+ Sample conditioner
+ Alcolyzer 3001 Beer with option Color
+ Haze 3001
+ pH 3201
+ CarboQC ME
+ TPO 5000

- Safeguard your filler performance
- Measure 50+ quality parameters from a single package
- Obtain all data at the push of a button in a single data set
- Fully automated cleaning and leak test

MANY MORE CONFIGURATIONS



[www.anton-paar.com/apb-beer-modulyzer](http://www.anton-paar.com/apb-beer-modulyzer)



Recommended Configuration	1	2	3
Parameters	Alcohol   Extract   pH	Alcohol   Extract   pH	Alcohol   Extract   pH   Turbidity
MEASURING RANGE			
Alcohol	0 % v/v to 12 % v/v		
Density	0 g/cm <sup>3</sup> to 3 g/cm <sup>3</sup>		
Original extract	0 °Plato to 30 °Plato		
Color	-	0 EBC to 120 EBC (0 ASBC to 60.96 ASBC)	
pH value	pH 0 to pH 14		
Turbidity	-	-	0 EBC to 100 EBC (0 ASBC to 6900 ASBC)
REPEATABILITY, S.D.			
Alcohol	0.05 % v/v	0.01 % v/v	
Density	0.00001 g/cm <sup>3</sup>	0.000005 g/cm <sup>3</sup>	0.000001 g/cm <sup>3</sup>
Original extract	0.1 °Plato	0.03 °Plato	
Real extract	0.025 % w/w	0.015 % w/w	< 0.01 % w/w
Color	-	0.1 EBC (0.05 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 ASBC according to formazine reference suspension

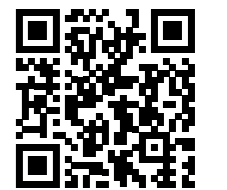
ADDITIONAL INFORMATION	
Power features	U-View™, FillingCheck™, ThermoBalance™, full-range viscosity correction, ultra-fast measuring mode
Minimum amount of sample per measurement	35 mL
Typical measurement time per sample	4 minutes (incl. filling)
Sample throughput	15 - 20 samples per hour
Dimensions (L x W x H)	482 mm x 390 mm x 446 mm (19.0 in x 15.4 in x 17.6 in) / 482 mm x 730 mm x 446 mm (19.0 in x 28.9 in x 17.6 in)
Power supply	AC 100 V to 240 V, 50/60 Hz, fluctuation ±10 %, 190 VA
Ambient temperature	15 °C to 32 °C (59 °F to 89.6 °F)
Air humidity	non-condensing 20 °C: <90% relative humidity; 25 °C: <60% relative humidity; 30 °C: <45% relative humidity

Recommended Configuration	1	2	3
Parameters	Alcohol   Extract   pH	Alcohol   Extract   pH	Alcohol   Extract   pH   Turbidity
STANDARDS			
MEBAK	Chapter 2.9.6.3 (B-590.10.181) Chapter 2.12.2 (B-420.01.272)		Chapter 2.9.6.3 (B-590.10.181) Chapter 2.12.2 (B-420.01.272) Chapter 2.14.1.2 (B-420.01.271)
TTB	-	Density measurement in proofing alcohol for tax purposes	
GB	T 4928-2008		
EBC	Chapter 8.2.2, Chapter 9.2.6, Chapter 9.43.2		Chapter 8.2.2, Chapter 9.2.6, Chapter 9.43.2, Chapter 8.5, Chapter 8.6
BCOJ	8.3.6 Alcoalyzer for alcohol contents 8.4.3 Alcoalyzer for real extract Analytical method for beer		
ASBC	Beer-4G: Near-infrared and original extract content (2004)		
AOAC	-	Method 956.02 (430 nm)	
Trademarks	FillingCheck (006834725), U-View (006834791), ThermoBalance (006835094)		

Reliable.  
Compliant.  
**Qualified.**

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

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www.anton-paar.com/  
service



Maximum uptime



Warranty program



Short response times



A global service network

<b>Recommended Configuration</b>	4	5	6
	↓	↓	↓
<b>Parameters</b>	Alcohol   Extract   pH   CO <sub>2</sub>	Alcohol   Extract   pH   Turbidity DO   CO <sub>2</sub>	Alcohol   Extract   pH   Turbidity TPO   DO   HSO   HSV   CO <sub>2</sub>

MEASURING RANGE			
<b>Alcohol</b>	0 % v/v to 12 % v/v		
<b>Density</b>	0 g/cm <sup>3</sup> to 3 g/cm <sup>3</sup>		
<b>Original extract</b>	0 °Plato to 30 °Plato		
<b>Color</b>	-	0 EBC to 120 EBC (0 ASBC to 60,96 ASBC)	
<b>pH value</b>	pH 0 to pH 14		
<b>Turbidity</b>	-	0 EBC to 100 EBC (0 ASBC to 6900 ASBC)	
<b>CO<sub>2</sub> concentration</b>	0 vol. to 5.5 vol. at 35 °C, 0 vol. to 10 vol. <10 °C		
<b>O<sub>2</sub> concentration</b>	-	DO: 0 ppm to 4 ppm	DO: 0 ppm to 2 ppm HSO: 0 hPa to 45 hPa

REPEATABILITY, S.D			
<b>Alcohol</b>	0.05 % v/v	0.01 % v/v	0.01 % v/v
<b>Density</b>	0.00001 g/cm <sup>3</sup>	0.000005 g/cm <sup>3</sup>	0.000001 g/cm <sup>3</sup>
<b>Original extract</b>	0.1 °Plato	0.03 °Plato	
<b>Real extract</b>	0.025 % w/w	0.015 % w/w	< 0.01 % w/w
<b>Color</b>	-	0.1 EBC (0.05 ASBC)	
<b>pH value</b>	0.02 in the range pH 3 to pH 7		
<b>Turbidity</b>	-	0.3 % of the measured value + 0.02 EBC / 1.4 ASBC according to formazine reference suspension	
<b>CO<sub>2</sub> concentration</b>	0.025 vol. (0.05 g/L)	0.005 vol. (0.01 g/L)*	
<b>O<sub>2</sub> concentration</b>	-	DO: 2 ppb (below 200 ppb)	TPO: ±8 ppb or ±6 %, whichever is higher**

ADDITIONAL INFORMATION			
<b>Power features</b>	U-View™, FillingCheck™, ThermoBalance™, full-range viscosity correction, ultra-fast measuring mode		
<b>Minimum amount of sample per measurement</b>	30 mL	150 mL	260 mL
<b>Typical measurement time per sample</b>	3 minutes (incl. filling)		8 min (incl. filling)
<b>Sample throughput</b>	15 samples per hour		7 samples per hour
<b>Dimensions (L x W x H)</b>	482 mm x 730 mm x 446 mm (19.0 in x 28.7 in x 17.6 in)	482 mm x 750 mm x 670 mm (19.0 in x 29.5 in x 26.4 in)	515 mm x 1200 mm x 1120 mm (20.3 in x 47.3 in x 44.1 in)
<b>Power supply</b>	AC 100 V to 240 V, 50/60 Hz, fluctuation ±10 %, 190 VA		
<b>Ambient temperature</b>	15 °C to 35 °C (59 °F to 95 °F)		
<b>Air humidity</b>	20 °C, <90% relative humidity; 25 °C, <60% relative humidity; 30 °C, <45% relative humidity		

<b>Recommended Configuration</b>	4	5	6
	↓	↓	↓

STANDARDS		
<b>MEBAK</b>	Chapter 2.9.6.3 (B-590.10.181) Chapter 2.12.2 (B-420.01.272)	Chapter 2.9.6.3 (B-590.10.181) Chapter 2.12.2 (B-420.01.272) Chapter 2.14.1.2 (B-420.01.271)
<b>TTB</b>	-	Density measurement in proofing alcohol for tax purposes
<b>GB</b>	T 4928-2008	
<b>EBC</b>	Chapter 8.2.2, Chapter 9.2.6, Chapter 9.43.2	Chapter 8.2.2, Chapter 9.2.6, Chapter 9.43.2, Chapter 8.5, Chapter 8.6
<b>BCOJ</b>	8.3.6 Alcolyzer for alcohol contents 8.4.3 Alcolyzer for real extract Analytical method for beer	
<b>ASBC</b>	Beer-4G: Near-infrared and original extract content (2004)	
<b>AOAC</b>	-	Method 956.02 (430 nm)

**Trademarks** FillingCheck (006834725), U-View (006834791), ThermoBalance (006835094)

\* Due to sample handling and preparation in TPO 5000, CO<sub>2</sub> mean values may deviate by 1 % absolute compared to filling by a PFD (piercing and filling device)

\*\* At ambient and sample temperature of 23 °C (73.4 °F) if standard cleaning is applied. Please note that the first measurement of a set is not considered for the determination of the repeatability of a set.

Note: For information about tested package sizes please see the TPO 5000 instruction manual or contact your Anton Paar representative.



# Complete Your Beer Analysis

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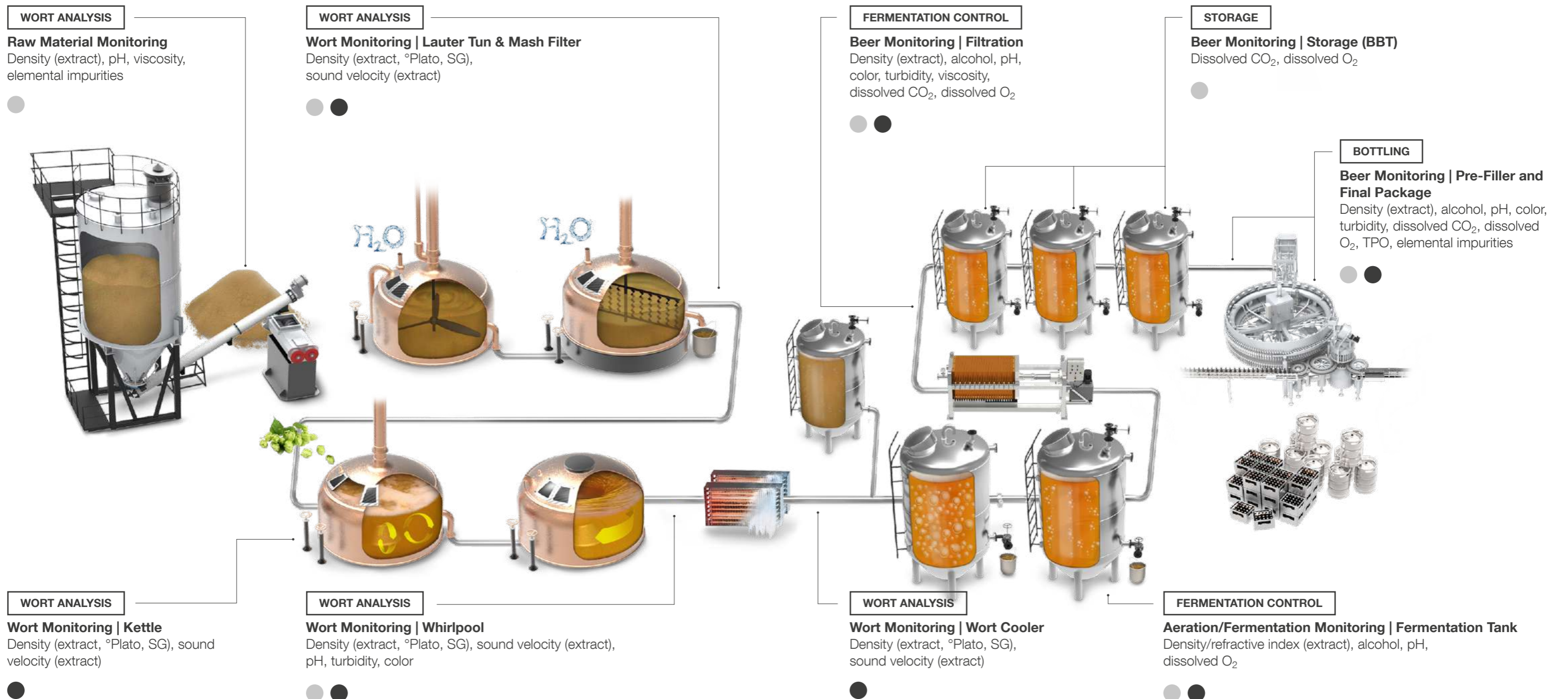


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