Anton Paar

Pressurized and
Non-pressurized
Analyzing Systems

Solutions for Optimized Beer Analysis

Prepared for all circumstances

The heart of Alcolyzer Beer ME is its patented, selective alcohol measurement: It utilizes a narrow, highly alcohol-specific range in the NIR spectrum to quantify the alcohol content in all types of beers.

Capabilities at a glance:

- Analysis of beers and beer mixtures
- Analysis of low-alcohol and non-alcoholic beers
- Analysis in hot and humid environments

Basic configurations

Alcolyzer Beer Analyzing System

DMA™ M
Alcolyzer Beer ME

to determine alcohol and extract content

Alcolyzer Beer Analyzing System PBA-B M

DMA™ M
Alcolyzer Beer ME
CarboQC ME

to determine alcohol, extract, and CO_2 content

Optional modules for each production step

Alcolyzer Beer Analyzing System

Xsample™ 320 or

Xsample™ 520 sample changer for automatic analyses

pH ME Beverage
to determine pH

Lovis 2000 ME
to determine viscosity

Alcolyzer Beer Analyzing System PBA-B M

pH ME/pH ME Beverage
to determine pH

HazeQC ME
to determine turbidity

Option Color ME
to determine color

PBA-B M

Alcolyzer Beer ME Heavy Duty
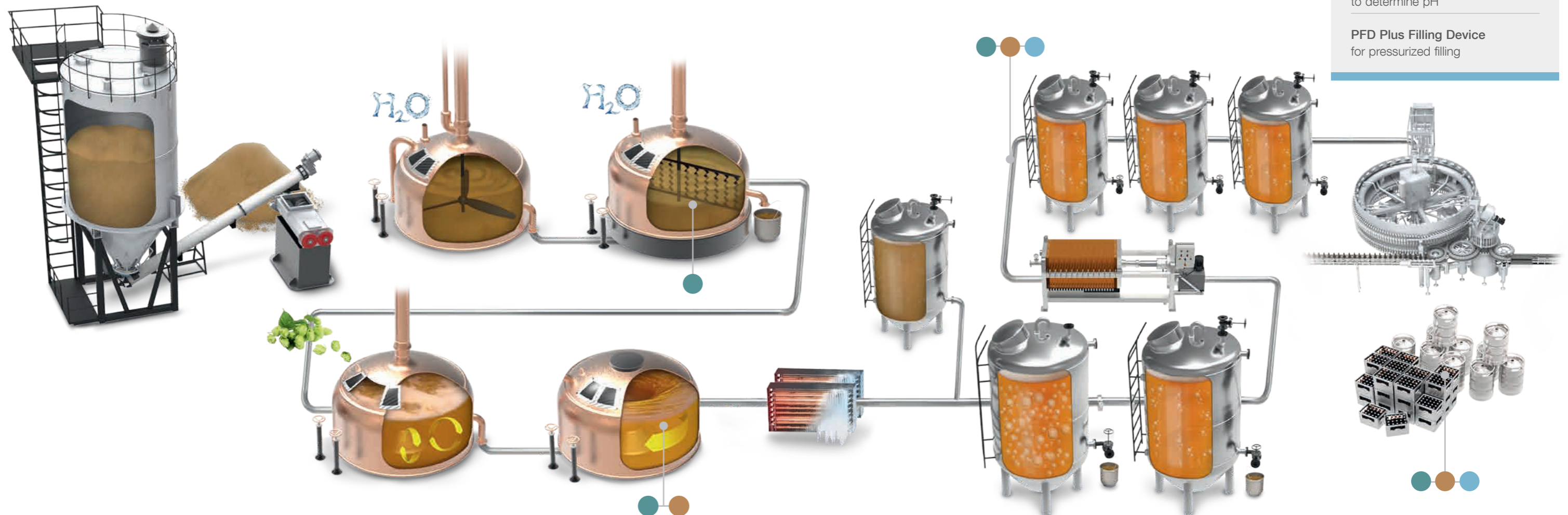to determine the alcohol content, designed for use in hot and humid areas

Option O$_2$ Plus for CarboQC ME
to determine O_2 content

HazeQC ME
to determine turbidity

Option Color ME
to determine color

pH ME
to determine pH

PFD Plus Filling Device
for pressurized filling

Alcolyzer Beer Analyzing System

Thanks to its modularity the Alcolyzer Beer Analyzing System is custom-tailored to your needs. Connect measuring modules for the analysis of additional beer-specific parameters such as the pH, color, or turbidity value and the system will exactly fulfill your requirements. Combining the system with an automatic sample changer enables handling of high sample throughput at the highest level of automation.

One sample – all parameters

Alcolyzer Analyzing Systems determine the alcohol content and further important QC parameters such as original extract, real extract, degree of fermentation and optionally also color, viscosity, pH, and turbidity – all in one measuring cycle, all from one single sample.

The power of modularity

In its basic version, the Alcolyzer Beer Analyzing System determines the three most important beer parameters: alcohol, original extract, and real extract. Extend your system with additional measuring modules for color, turbidity, viscosity, or pH and let it fulfill your needs.

Your portfolio is covered – from standard to alcohol-free beer

The Alcolyzer Beer ME measuring module is capable of analyzing standard beers and beer mix drinks as well as tracing low alcohol contents in alcohol-free samples. This valuable benefit enables the analysis of all types of products with one single system.

Beer Analysis Throughout Production

Alcolyzer Beer Analyzing System

- Analyze your entire product portfolio ranging from non-alcoholic beer to low-alcohol beer and standard beer.
- Monitor your entire process – from wort analysis to the finished product.
- Manage high sample throughput easily with the help of the built-in sample changer.
- Benefit from selective alcohol measurement without the influence of other sample ingredients.
- Allow the built-in standard operating procedure to maintain the instrument's performance automatically.


Sample filling unit: Xsample™ 320

The simply installed, versatile Xsample™ 320 sample filling unit saves space and is easily used with all DMA™ M, Lovis M/ME, and Alcolyzer M instruments. At the press of a button Xsample™ 320 automatically fills the sample into the measuring cells.

Sample changer: Xsample™ 520

Samples are filled from a 24-position magazine with a peristaltic pump. Xsample™ 520 takes on routine work and allows you to get on with other tasks while your samples are processed. There are five sample loading modes for bubble-free filling.
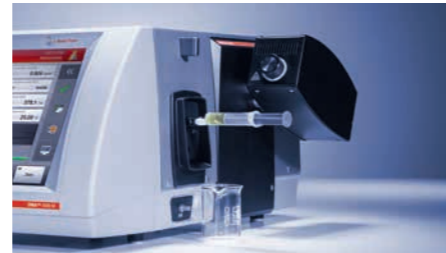
Viscosity: Lovis 2000 ME

Lovis 2000 ME enables precise and reliable viscosity determination by measuring the rolling time of a ball in a sample-filled capillary. Wort viscosity directly correlates to several quality parameters such as beer filterability, foam stability, and beer taste. Viscosity measurement of wort with Lovis 2000 ME is compliant with EBC and MEBAK guidelines.

pH ME / pH ME Beverage measuring modules

Combining a pH ME measuring module with your system of choice enables the simultaneous measurement of the pH value along with other beer-specific parameters. The pH ME Beverage module is designed for beverages and similar samples without pressure. Use the pH ME module for samples measured under pressure.

	Alcolyzer Beer Analyzing System	PBA-B M
DMA™ M	●	●
Alcolyzer Beer ME	●	●
Alcolyzer Beer ME Heavy Duty	○	●
Option Color ME	●	●
Xsample™ 320	●	○
Xsample™ 520	●	○
Lovis 2000 ME	●	○
pH ME	○	●
pH ME Beverage	●	○
HazeQC ME	●	●
CarboQC ME	○	●
Option O$_2$ Plus	○	●
PFD/PFD Plus	○	●

Final Analysis of Bottled Alcoholic Beverages

PBA-B M

- Save time: parallel analyses of alcohol, extract, CO_2, and more from a single sample
- Modular measuring system concept: start with the essential parameters and upgrade later
- No sample preparation required: pressurized filling directly from the package
- Heavy Duty configuration for use in areas with high temperatures and humidity
- One QC solution for all packages such as cans, glass bottles, and PET bottles

Turbidity: HazeQC ME

HazeQC ME is a module for Anton Paar laboratory measuring instruments used to measure the turbidity of all kinds of liquids, especially beer and beer mixtures. HazeQC ME's measuring cell is temperature-controlled with a solid-state Peltier thermostat ensuring a reliable reading exactly at the set temperature – an essential factor for analysis.

CO_2 content: CarboQC ME

CarboQC ME precisely and reliably determines the dissolved CO_2 content in beverages. The patented multiple volume expansion method eliminates the influence of other dissolved gases (e.g. N_2 and O_2) on your measuring result.

Alcohol content: Alcolyzer Beer ME Heavy Duty

Alcolyzer Beer ME Heavy Duty precisely determines the alcohol content in standard, low-alcohol, and as well as beer mixtures. In comparison to Alcolyzer Beer ME the special design enables reliable analysis under the harsh conditions of up to 35 °C ambient temperature and 90 % relative humidity.

O_2 content & TPO determination: Option O_2 Plus for CarboQC ME

The optochemical oxygen sensor in the Option O_2 Plus provides a proven and reliable way of oxygen determination. Option O_2 Plus can also be easily retrofitted in your existing CarboQC ME and PFD (Plus). Measuring the O_2 content of a sample is essential for estimating the shelf-life of the finished product.

Option Color 430nm ME

The Option Color ME is an extension to your Alcolyzer Beer ME which enables the simultaneous measurement of beer color at 430 nm. The results provided by the Option Color ME comply with standards such as the MEBAK or the EBC.

PBA-B M

The Packaged Beverage Analyzer for Beer

Conventional analysis methods require sample degassing before measurements as dissolved CO_2 may falsify the measured density and other parameters. As the PBA-B M system fills the sample into the measuring cells directly from the package, no sample preparation – no preheating, no degassing, no filtering – is required. PBA-B M performs all measurements (alcohol, extract, CO_2 and optionally O_2, color, pH, and turbidity) in one cycle, with one single sample. It automatically corrects the influence of the dissolved CO_2 on the measured sample density and determines CO_2-corrected beer parameters.

No operator influence

PBA M systems are not only much faster, but also more reliable than previous routine analyses. Possible errors during sample preparation are completely avoided. PBA M systems are easy to use and guarantee excellent measuring results, since no sample preparation is required.

Six times quicker than conventional methods

Automatic pressurized filling directly from the package and automatic CO_2 correction of the obtained results enable PBA-B M to finish the analysis of your packaged beverage up to six times quicker than conventional methods. This makes PBA-B M the ideal solution for time-critical analyses.

Ready for „heavy duty" conditions

Alcolyzer Beer ME Heavy Duty enables the operation of PBA-B M at ambient temperatures of up to 35 °C/95 °F and at 90 % relative humidity. This allows the installation of the system in production areas where bottled products can be analyzed directly.

No sample preparation required

Pressure-driven filling and automatic CO_2 correction make time-consuming sample preparation a thing of the past.

	Conventional systems	PBA-B M
Heating the cold sample	5 minutes	Not required (when using the sample conditioner option)
Degassing and filtering the sample	5 minutes	Not required
Alcohol and density	4 minutes	4 minutes
CO_2	2 minutes	
O_2 (optional)	2 minutes	
pH (optional)	2 minutes	With no increase in measurement time
Turbidity (optional)	2 minutes	
Color (optional)	2 minutes	
Total time	**24 minutes**	**4 minutes**

Specifications

Systems

Measuring range	Alcohol content	0 %v/v to 12 %v/v
	Original extract	0 °Plato to 30 °Plato
	Extract content	0 %w/w to 20 %w/w
	Density	0 g/cm³ to 3 g/cm³
	Color (optional)	0 EBC to 120 EBC
	Viscosity (optional)	0.3 to 10,000 mPa.s
	pH (optional)	0 pH to 14 pH
	Turbidity (optional)	0 EBC to 100 EBC (values up 200 EBC are displayed)
Repeatability s.d.	Alcohol content	0.01 %v/v
	Original extract	0.03 °Plato
	Extract content	0.01 %w/w
	Density	0.00001 g/cm³ (DMA™ 4500 M) 0.000001 g/cm³ (DMA™ 5000 M)
	Color (optional)	0.1 EBC
	Viscosity (optional)	0.1 % *
	pH (optional)	0.02 pH (in the range 3 pH to 7 pH)
	Turbidity (optional)	0.02 EBC
Temperature control		Integrated Peltier thermostat
Temperature control, turbidity		0.01 °C repeatability s.d. in the range -5 °C to 40 °C
Sample volume		120 mL to 150 mL
Typical measuring time per sample		3 min to 4 min
Pressurized gas supply		6 bar ±0.5 bar (87 psi ±7 psi), relative

* For more information please contact your Anton Paar representative

Additional Specifications – PBA M

Measuring range	Alcohol content	0 %v/v to 12 %v/v
	Original extract	0 °Plato to 30 °Plato
Repeatability s.d.	CO_2	0.01 g/L (0.005 vol.)
	O_2 (optional)	±2 ppb

General

Touchscreen	10.4" TFT PCAP touchscreen 640 x 480 px
Memory	1000 measuring values with/without camera pictures
Interfaces	4 x USB (2.0 full speed); 1 x Ethernet (100 Mbit); 1x CAN Bus; 1 x RS-232; 1 x VGA
RS-232 printer settings	Interface: RS-232 C; Baud rate: 9600; Parity: none; Stop bit: 1; Data bits: 8
Voltage	AC 100 to 240 V, 50/60 Hz
Environmental conditions (EN 61010)	Indoor use only
Ambient temperature	15 °C to 35 °C (59 °F to 95 °F)
Air humidity	non-condensing 20 °C, < 90% relative humidity 25 °C, < 60% relative humidity 30 °C, < 45% relative humidity 35 °C, < 90% relative humidity (Alcolyzer Beer ME Heavy Duty only)
Pollution degree	2
Overvoltage category	II

710 mm (28.0 in) 495 mm (19.5 in) 440 mm (17.3 in)

750 mm (29.5 in) 495 mm (19.5 in) 670 mm (26.4 in)

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