

Alcolyzer Spirits



Alcohol Meter
for Spirits

Alcohol Determination and More

Accurate spirits analysis ensures excellent product quality. Spirits analysis therefore constitutes an essential part of daily work in the distillery.

The modular compact design of the Alcolyzer Spirits M/ME is virtually maintenance-free and can be configured to meet your needs now and in the future.

Buy a master instrument (M) first, and upgrade it with the needed modular extension (ME) later.

Depending on your requirements, you can optionally extend your system with instruments to measure density, pH, color and turbidity, which are all controlled via one single central and convenient user interface.

The modular system

- ▶ **Alcolyzer Spirits M/ME** for precise alcohol determination (%v/v) of spirits such as whisky, cognac, brandy, vodka, gin, tequila and rum
- ▶ **Color Option** for Alcolyzer Spirits M/ME determines the light absorption of the sample
- ▶ **DMA 5000 M** combined with an Alcolyzer Spirits ME for simultaneous calculation of alcohol %w/w, specific gravity and total extract (g/L)
- ▶ **HazeQC ME** measures turbidity at exact set temperatures of -5 °C to +40 °C with highest precision for filter control and quality control of the final product. Due to the unique flow-through cell with Peltier temperature control, annoying water bath maintenance and laborious calibrations for bottle sizes and colors are no longer required.
- ▶ **pH ME** optionally connected to sample loop
- ▶ **Xsample 22** sample filling unit for automatic filling out of a sample vial or directly out of a bottle
- ▶ **Xsample 122** sample changer optionally added for increased efficiency – fully automatic measurement of up to 24 samples



The Ideal Setup for Your Requirements

There are two different measuring systems available: One for the laboratory and one for use at the production line.

System for the laboratory

The measuring system for the laboratory consists of a DMA 5000 M and an Alcolyzer Spirits ME plus Xsample 122 or Xsample 22 filling unit. Xsample 122 loads up to 24 samples automatically into the system. The typical sample throughput is 15 samples per hour. While the Alcolyzer Spirits ME determines the alcohol content, Anton Paar's oscillating U-tube density meter determines the density of the samples in order to measure total extract (g/L, °Brix).

These components are stacked on top of each other to take up minimum lab space.

The system consisting of a DMA 5000 M and an Alcolyzer Spirits ME provides the measurement accuracies required by taxation authorities for determining the alcohol strength.

System for use at the production line

The measuring system for quality control during production consists of an Alcolyzer Spirits M master instrument with an integrated Xsample 22 sample filling unit. Xsample 22 utilizes a peristaltic pump for filling and replacing samples. The sample can be measured directly out of the bottle. The typical sample throughput is 20 samples per hour.

Flexibility

Measuring modules for determining pH, color and turbidity can be integrated into both systems.

Generation M systems also provide full flexibility concerning data handling and output via USB, RS-232, printer or Ethernet (LAN).

When measuring low level alcohol samples (e.g. 15 %v/v) outside the specified measuring range, it is possible to store user-defined correction formulas (offsets, free formulas) in the instrument in order to yield accurate results.



Results in Less than Five Minutes

Alcolyzer Spirits M/ME has a built-in Peltier thermostat to ensure accurate and automatic control of the temperature in the shortest time. Consequently, there is no need for manual temperature adjustment and correction.

There is no need to develop calibrations as required by conventional NIR systems.

Press "Start" and get results for up to five parameters - density, alcohol, pH, color and turbidity - in just five minutes and in five times less lab space. To increase your efficiency even more, connect a Plug and Play Xsample 122 sample changer to automate up to 24 measurements at once.

Fast, practical, easy to operate

The system is simply adjusted with water and occasionally with an alcohol/water solution. This adjustment is valid for all types of spirits and offers traceability to recognized methods for alcohol determination in spirits.

Why adjust four instruments one by one? Generation M systems with Xsample 122 provide an SOP to perform one fully automatic adjustment cycle for four parameters in one sweep: alcohol, turbidity, color and pH.

Patented method for precise results

Alcolyzer Spirits M/ME uses a patented, selective alcohol measurement (US 6,690,015 B1, AT 406 711) which evaluates a narrow, highly alcohol-specific range of the NIR spectrum. In this particular spectral range, the influence of other spirits ingredients is so small that extremely accurate alcohol results are obtained.

Simple, fast and safe

Generation M systems are easy to operate - no specially trained operators are needed, neither for measurement nor for maintenance. Measure up to five parameters (alcohol, density, pH, color and turbidity) in one go. The user interface is available in more than 10 languages, including Japanese and Chinese.



Quick and Easy to Operate

- ▶ Highly accurate results in the range from 35 %v/v to 65 %v/v alcohol
- ▶ For spirits such as whisky, cognac, brandy, vodka, gin, tequila and rum
- ▶ Space-saving, compact, modular design
- ▶ The measuring data are displayed, stored and sent to a printer, USB flash drive, PC or LIMS system via Ethernet (LAN) or RS-232
- ▶ Data storage for 1000 results
- ▶ Sample identification is either assigned automatically or entered via a keyboard, mouse or bar code reader
- ▶ Virtually maintenance-free
- ▶ Easy-to-use data processing software: Free Anton Paar SoftPrint Microsoft Excel add-in for reading out measurement data

Technical Data

Measuring range	35 %v/v to 65 %v/v (data is displayed from 0 %v/v to 90 %v/v) Color (optional) 0 EBC to 120 EBC pH (optional) 0 pH to 14 pH Turbidity (optional) 0 NTU to 400 NTU (values are displayed up to 800 NTU)
Repeatability (s. d.)	± 0.01 %v/v alcohol (automatic filling) ± 0.03 %v/v alcohol (manual filling) Color (optional) 0.1 EBC pH (optional) 0.02 pH (in the range 3 pH to 7 pH) Turbidity (optional) 0.08 NTU
Temperature control	Integrated Peltier thermostat Repeatability: ± 0.01 °C
Temperature control, turbidity	0.01 °C repeatability s.d. in the range -5 °C to +40 °C
Minimum amount of sample	approx. 30 mL
Typical measuring time per sample	Lab system: approx. 5 minutes incl. filling Production system: approx. 3 minutes incl. filling
Sample throughput	Lab system: approx. 12 samples per hour Production system: approx. 20 samples per hour
Alcolyzer Spirits M stand-alone instrument	
Dimensions (L x W x H)	495 mm x 330 mm x 230 mm (19.5 in x 13 in x 9.1 in)
Weight	approx. 17.6 kg (38.8 lbs)
Power supply	AC 100 V to 240 V; 50 Hz to 60 Hz
Power consumption	50 VA - 80 VA
Interfaces	Ethernet (LAN), 4x USB, RS-232, CAN, VGA

