Anton Paar

**Spirits Analysis**
Overview

# Analyzing Systems for Spirits and Liqueurs

# Tailor-made quality control of spirits and liqueurs

The heart of Alcolyzer Spirits M/ME is its patented, selective alcohol measurement: A narrow, exclusively alcohol-specific range of the NIR spectrum is evaluated with a specially developed high-resolution spectrometer with an improved level of stability and suitable algorithms. In this particular spectral range the influence of other sample ingredients is so small that Alcolyzer Spirits M/ME delivers extremely accurate alcohol results.

Start by using an Alcolyzer Spirits Generation M master instrument and upgrade it with the modules that you require to measure density, pH, color and turbidity. These extensions are controlled by means of one single central and convenient user interface.

Accurate analysis of the alcohol content and other quality parameters is essential to ensure excellent product quality. **Alcolyzer Spirits Generation M** determines the alcohol content of spirits such as **whisky, vodka, gin, tequila and rum, as well as cognac and brandy.**

The modular, compact Alcolyzer Spirits Analyzing System is virtually maintenance-free and can be configured to meet your needs now and in the future.

Combining the Alcolyzer Spirits M/ME alcohol meter with a **Generation M density meter** results in an Alcolyzer Analyzing System for Spirits which allows the simultaneous determination of alcohol and additional parameters such as **total extract.**

**Adding an MCP 100** polarimeter to the existing Alcolyzer Analyzing System for Spirits enables you to directly analyze **liqueurs containing high levels of sugar.** The optical rotation is measured to correct the impact of sugar on the alcohol analysis and to estimate the saccharose and invert sugar contents of the sample.


Alcolyzer Spirits Generation M


Alcolyzer Analyzing System for Spirits

Alcolyzer Analyzing System for Liqueurs

# Alcolyzer Analyzing Systems for Spirits and Liqueurs

Anton Paar's modular and versatile measuring solutions for spirits and liqueurs provide exactly what you need to accomplish your daily tasks in the most efficient way. Rely on cutting-edge technology assembled in a smart, user-friendly system, measuring all relevant QC parameters in one single measuring cycle.

## The power of modularity

In its basic version, the Alcolyzer Analyzing System for Spirits determines the most important parameters for spirits: alcohol and total extract. Extend your system with additional modules for measuring color, turbidity or pH and let the Alcolyzer Analyzing System fulfill all your beverage analysis needs.

## One sample – all parameters

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

## FillingCheck™

Your density meter automatically detects filling errors such as bubbles in the sample in real time, alerts you and documents the incident. You can be sure of correct sample filling, whatever the conditions.

## The sweeter, the better

By adding an MCP 100 polarimeter to the system you can analyze liqueurs with sugar contents higher than 20 g/L. An implemented mathematical algorithm eliminates the impact of saccharose and invert sugar on the NIR alcohol analysis and allows the estimation of the concentration of these types of sugars in the sample.


| | Conventional Analysis | Alcolyzer Analyzing System for Liqueurs |
|---|---|---|
| Distillation | 45 minutes | Not required |
| Alcohol analysis | 4 minutes | 4 minutes |
| Extract analysis | 4 minutes | |
| Color (optional) | 2 minutes | With no increase in measurement time |
| pH (optional) | 2 minutes | |
| Turbidity (optional) | 2 minutes | |
| **Total time** | **59 minutes** | **4 minutes** |


remote
MCP 100
Anton Paar
Concentration Total Extract
132,3 g/l
Concentration Saccharose
125 g/l
Concentration Inverted Sugar
8 g/l
valid
Quick Settings
Method
Start
DMA 5000 M

# The choice is yours

## Sample filling unit: Xsample 22

The easy-to-install, versatile Xsample 22 sample filling unit saves space and is easily used with all DMA Generation M density meters, the Lovis M/ME viscometer and Alcolyzer M alcohol meters. At the press of a button Xsample 22 automatically fills the sample into the measuring cells.

## Sample changer: Xsample 122

The automatic sample changer enables automatic sample filling by means of a built-in peristaltic pump from a 24-position magazine. Xsample 122 takes on routine work and allows you to get on with other tasks while your samples are processed.

## pH ME beverage measuring module

Combining a pH ME measuring module with your system of choice allows the simultaneous measurement of the pH value along with other quality parameters in the same measuring cycle.

## Turbidity module: HazeQC ME

The HazeQC ME module measures the turbidity of all kinds of liquids, especially liquids with low turbidities. HazeQC'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.

## Option Color for Alcolyzer Spirits ME

The Option Color ME is an extension to the Alcolyzer M/ME which enables the simultaneous measurement of color. This saves you valuable time and sample in your beverage analysis.

## Modular Circular Polarimeter: MCP 100

Measurement of the optical rotation allows the estimation of the saccharose and invert sugar content of the measured liqueur. The results are required to automatically correct their influence on the alcohol measurement.

# Specifications

| | | |
|---|---|---|
| **Measuring range** | **Alcohol** | 35 %vol to 65 %vol (for spirits)<br>15 %vol to 40 %vol (for liqueurs, in combination with MCP 100 only)<br>(data can be displayed from 0 %vol to 90 %vol) |
| | **pH value (optional)** | 0 to 14 |
| | **Color (optional)** | 0 EBC to 120 EBC |
| | **Density (optional)** | 0 g/cm³ to 3 g/cm³ |
| | **Turbidity (optional)** | 0 EBC to 100 EBC |
| **Repeatability - standard deviation** | **Alcohol** | 0.01 %vol |
| | **pH value (optional)** | 0.02 |
| | **Color (optional)** | 0.1 EBC |
| | **Density (optional)** | 0.00001 g/cm³ (DMA 4500 M) or<br>0.000001 g/cm³ (DMA 5000 M) |
| | **Turbidity (optional)** | 0.02 EBC |
| **Available methods** | **Whisky** | For spirits with an extract content up to 5 g/L (e.g. whisky, vodka, gin, tequila and rum) |
| | **Cognac** | For spirits with an extract content up to 20 g/L (e.g. cognac and brandy) |
| | **Liqueur (in combination with MCP 100 only)** | For liqueurs with an extract content higher than 20 g/L |
| **Additional information** | **Interfaces (master instrument)** | 4x USB (for USB flash drive, keyboard, mouse, bar code reader or printer), Ethernet (LAN), RS-232, CAN |
| | **Interfaces (module)** | CAN |
| | **Sample volume** | 35 mL per measurement |
| | **Typical measuring time per sample** | 4 minutes (incl. filling) |
| | **Sample throughput** | 15 samples per hour |

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