FTIR analyzer

Anton Paar

LYZA 5000 WINE

The evolution of wine analysis

The novel multiparameter FTIR analyzer Lyza 5000 Wine is your solution for the analysis of must, must in fermentation, and wine.

Fast measurements for a multitude of parameters ensure that you have all the information you need – during all stages of wine production. Thanks to a quick setup and pre-installed models all important results for wine analysis, including ethanol, sugars, and acid profile, are just a tap away.

Lyza 5000 Wine can be used as a stand-alone device, automated for high throughput, or connected to your benchmark instruments – Anton Paar density and alcohol meters – for the most powerful wine analysis.

Precise and profound wine analysis right at your fingertips

Lyza 5000 Wine: Features

Fast measurements and stable results

Lyza 5000 Wine is the ideal solution for the widest range of wine samples – it measures even turbid samples in less than one minute. The precisely temperature-controlled 12-bounce ATR measurement cell delivers stable measurements resulting in high repeatability and reliable results throughout the whole wine production process.

User-friendly touchscreen interface

With Lyza 5000 Wine's state-of-the-art user interface, single measurements, adjustment of models, or even complex measurement routines are only one tap away. Quick setup and minimal measurement times for more than 15 parameters in one go let you handle huge workloads with ease.

Live notifications and guided workflows

Lyza 5000 Wine automatically reminds you to perform water reference measurements and recommends what action to take to keep your instrument in perfect condition for precise results. Integrated workflows guide you through water and ethanol reference measurements – no proprietary reference standards are necessary.

Automation with Xsample 520

Together with Lyza 5000 Wine, the Xsample 520 sample changer automates the filling and measurement of up to 48 samples in a row. New measurements can be queued at any time, even during running measurements. Use Xsample 520 to increase your sample throughput and to simplify your daily routines – all at an affordable price.

More parameters in one setup

The combination of Lyza 5000 Wine with other Anton Paar instruments such as a density meter, alcohol meter, pH meter, turbidity meter, and a sample changer provides the most powerful measurement system in wine analysis. Receive results from all instruments in a single report with only one sample preparation, one filling, and one measurement.

Data handling and LIMS integration

Lyza 5000 Wine supports you in every way to efficiently process and distribute your measurement results. Reports can be automatically printed and digitally exported to your hard drive or network storage. For the highest degree of automation, Lyza 5000 Wine is completely integrated into your LIMS system via Ethernet and WiFi.

Specifications

Measurement specifications

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Parameter	Units	Range	Repeatability (s.d.)[1]	RMSEP[2]
Ethanol	%v/v	0 to 14	0.02	0.1
Fructose	g/L	0 to 6	0.35	0.5
Fructose	g/L	6 to 50	0.35	2.5
Fructose	g/L	50 to 160	0.35	5.5
Glucose	g/L	0 to 6	0.2	0.5
Glucose	g/L	6 to 50	0.2	2
Glucose	g/L	50 to 160	0.2	4
Reducing sugars	g/L	0 to 300	0.75	5.5
Titratable acidity	g/L	2 to 13	0.06	0.65
Volatile acids	g/L	0 to 1.5	0.02	0.12
Malic acid	g/L	0 to 7	0.06	0.55
Tartaric acid	g/L	1 to 9	0.06	0.6
Lactic acid	g/L	0 to 2	0.05	0.3
pH	-	3 to 4	0.01	0.08
Density	g/mL	0.99 to 1.12	0.0002	0.001
Must weight[3]	°Bx	-2 to 29	0.05	0.25
Extract	g/L	0 to 350	0.4	2
Glycerol	g/L	0 to 10	0.1	0.5
Yeast assimilable nitrogen	mg/L	0 to 300	8	45

<div style="writing-mode: vertical">WINE</div>

Parameter	Units	Range	Repeatability (s.d.)[1]	RMSEP[2]
Ethanol	%v/v	6 to 20	0.02	0.1
Fructose	g/L	0 to 6	0.2	0.45
Fructose	g/L	6 to 160	0.5	2.0
Glucose	g/L	0 to 3	0.2	0.45
Glucose	g/L	3 to 150	0.5	1.5
Sucrose	g/L	1.5 to 10	0.1	0.8
Sucrose	g/L	10 to 50	0.3	2.2
Reducing sugars	g/L	0 to 100	0.75	3.5
Titratable acidity	g/L	2 to 12	0.02	0.35
Volatile acids	g/L	0 to 1.5	0.02	0.12
Malic acid	g/L	0 to 7	0.05	0.45
Tartaric acid	g/L	0 to 5	0.05	0.35
Lactic acid	g/L	0 to 3	0.05	0.30
Gluconic acid	g/L	0 to 5.5	0.01	0.40
pH	-	3 to 4	0.01	0.08
Density	g/mL	0.98 to 1.1	0.0002	0.001
Must weight[3]	°Bx	-4 to 24	0.05	0.25
Extract	g/L	0 to 350	0.3	2.0
Glycerol	g/L	0 to 25	0.2	1.0
Total polyphenols	g/L	0 to 3	0.05	0.45

[1] Repeatability as mean standard deviation according to ISO 5725, using a set of representative wines
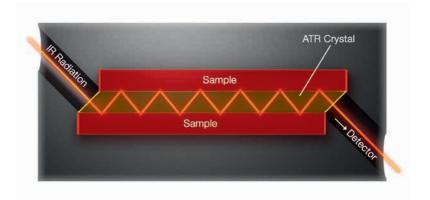[2] Root mean square error of prediction for a set of representative wines; under ideal conditions
[3] Available units: °Bx, °Oe, °KMW, °Bé, g/L
[4] After temperature equilibration
[5] Via external WiFi/Bluetooth® dongle

Technical specifications

Ambient temperature	15 °C to 32 °C (59 °F to 89.6 °F), non-condensing
Sample temperature	15 °C to 35 °C
Cell type	12-bounce ATR ZnSe flow-through cell
Minimum sample volume	14 mL
Measurement time per sample[4]	31 seconds
Dimensions (L x W x H)	450 mm x 340 mm x 240 mm (17.7 in x 13.4 in x 9.4 in)
Cell temperature control	Peltier element / Stability ±0.005 °C / Accuracy ±0.03 °C
Power supply	AC 100 V to 240 V / 47 to 63 Hz / DC 24V, 3A
Weight	15.2 kg (33.5 lbs)
Communication interfaces	5 x USB / RS-232 / CAN / Ethernet / Bluetooth®[5] / WiFi[5]
Display	10.1 in PCAP touchscreen, TFT WXGA (1280 Px x 800 Px)

How to achieve superior performance

A hermetically sealed, desiccated spectrometer core contains all optical components to ensure the most stable conditions for precise measurements: a permanently aligned cube-corner interferometer with potassium bromide beam splitter, gold-coated mirrors, and a pyroelectric DLaTGS detector.

The heart of Lyza 5000 Wine, the 12-bounce attenuated total reflection (ATR) measurement cell, consists of ZnSe coated with a protective layer for maximum robustness. 12 interactions with the sample and accurate cell temperature control result in ideal signal intensities.

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