BioSystems
SPICA

Multiparameter analysis
system for oenology



Connectivity, assistance & precision for oenology

Food & Beverage analysis

human - centred biotech

BioSystems SPICA automates tasks and simplifies the analytical processes in your winery.





- **Assisted system.**
  The clear interface guides users through preparing and monitoring analyses and facilitates integration into laboratories.

- **Limitless connectivity.**
  You can access the analyser's monitoring and management functions from any device at any time.

- **Fewer manual steps.**
  The continuous loading process, automatic sample and reagent handling, and automated dilutions all help to streamline the workflow and reduce the risk of errors.

- **Measurement at 280 nm.**
  This long-life LED light bar ensures optimum reading conditions.

- **Accuracy in every analysis.**
  The ceramic pump and temperature control of the rotor and prove optimise the analytical system's precision and robustness.

Do you want to know more about BioSystems SPICA? Scan the code.

Analyser Overview

Highlights

- Multiparameter enzymatic system with an average throughput of 50 results per hour.
- Maintenance-free LED optical bench with direct measurement at 280 nm.
- Two-arm system: dosing arm with liquid detection and dedicated stirring arm.
- Continuous improvement through online software updates.
- Reagent bottles specifically for the analyser, with no mixing required and minimal handling.

Dimensions



Product configuration

	QUANTITY	CODE
BioSystems SPICA	1 unit	83100
Reaction rotor	10 units	AC11485
Sample wells	1000 units	AC10770
Concentrated washing solution	100 mL / 500 mL	BO13416 / AC16434
Acid washing solution (WS1)	4 x 20 mL	AC17201
Basic washing solution (WS2)	4 x 15 mL	AC17205
Reagent bottles 60 mL + caps	10 units	AC16362
Reagent bottles 20 mL + caps	10 units	AC16363
Opaque reagent bottles 60 mL + caps	10 units	AC16364
Opaque reagent bottles 20 mL + caps	10 units	AC16365
Open adapter	90 units	AC16360
Sample tube adapter	45 units	AC17268
Dosing tip	1 unit	AC11500
Sample and reagent rack	3 units	AC17706

Intended use:

The SPICA analyser determines concentrations of analytes using colorimetric measurements in samples of various types of drinks, such as wines, wine products and juices.

Technical Specifications

GENERAL FEATURES

Average throughput	50 results/hour*
Principle of analysis	Photometry, turbidimetry

SOFTWARE AND UPDATES

Version updates	Online, automatic
Technical updates	Online, automatic
Reports	Online, automatic

SAMPLE AND REAGENT MANAGEMENT

Sample types	Wine and wine products, cider and other fermented products
Rotor capacity for samples and reagents	Up to 90 samples and 60 reagents (7 racks, each with 15 positions)
Barcode scanner	Optional
Number of samples with barcodes	70
Size of sample or reagent tubes	From 12 mm to 16 mm in diameter (maximum height 100 mm)
Sample well	13,5 mm in diameter
Volume of the reagent bottle	20 mL or 60 mL
Dispensing pump	Low-maintenance ceramic piston
Reagent management by test	No limit on the number of reagents
Piston diameter	8 mm
Handling limits for liquids	2 - 600 µL
Dilution ratio	1:1 to 1:100
Dispensing resolution	1 µL
Level detection	Yes
Tip washing	Yes
Vertical collision detector	Yes
Thermostated probe	Yes

REACTION ROTOR

Reaction volume	180 µL – 800 µL
Number of wells	120
Material rotor	UV methacrylate
Dispensing time for the second reagent	With regard to the dispensing of the first reagent (variable)
Thermostatization	37 °C
Temperature accuracy	± 0.2 °C
Temperature stability	± 0.1 °C



OPTICAL SYSTEM

Light source	LED + Hard Coating filter
Wavelengths	280, 340, 405, 420, 505, 520, 560, 600, 620, 635 and 750 nm
Filter bandwidth	- 0,2 A at 3,5 A
Wavelength accuracy	±2 nm
Internal resolution	CV <1% at 0,1 A
Photometric range	Principal photodiode + reference photodiode
Accuracy of measurements (340 nm, 405 nm and 505 nm)	CV <0,1% at 2 A

FLUIDIC SYSTEM

Water type	Type II purification (NCCLS)
Water tank	3 L
Waste tank	3 L
Washing solution tank	1 L

WEIGHT

Weight	75 Kg

ELECTRICAL AND ENVIRONMENTAL REQUIREMENTS

Mains voltage	115–230 V
Mains frequency	50 or 60 Hz
Electrical power	450 VA
Mains voltage fluctuations	± 10%
Room temperature	10–35 °C
Relative humidity	<85%
Maximum altitude	<2000 m
Contamination grade	2
Uninterruptible power supply (UPS)	Optional / external (ref. AC17262)

* Average value; the final throughput will depend on the configuration of the worklist and its analytes.

Available Parameters

Organic acids

Acetic Acid 21810/23810
Acetic Acid (liquid) 21930/23930
Ascorbic Acid 12828
Citric Acid 12825
D-Gluconic Acid / Gluconolactone 21811
D-Lactic Acid 12801
L-Lactic Acid 21802
L-Malic Acid 21803/23803
Sorbic Acid 12880
Tartaric Acid 12808

Sugars

D-Glucose/D-Fructose 21800/23800
D-Glucose / D-Fructose / Sucrose 12819

Nitrogenous substances and sulphites

Ammonia 21809
Primary Amine Nitrogen (PAN) 21807
Free Sulfite 21813
Total Sulfite 21806

Ions

Calcium 21824
Copper 12814
Iron 12817
Potassium 21823

Other parameters

Acetaldehyde 12820
Total Acidity 21846
Anthocyanins 12831
Catechins 12834
CO_2 12832
Colour 21816
Glycerol 12812
Gluten 31000
Total Polyphenol Index (TPI)
pH (3.0-4.4) 12876
Polyphenols 12815
Polymeric Pigments 21851
Tannins (precipitable) 12850
Tannins (predictive) 12815+12831+12834+21816

↗ Enzymatic and chromogenic methods with standards included.

Reference material

Red wine control 12822
White wine control 12821
High D-Glucose/D-Fructose Control 18069
Free & Total Sulfite Control (2 Levels) 12817

Ions Multical 12841
Ions Multireference 12935
Multical 12818
Multireference 12933
Sugar Multireference 12934

We offer comprehensive analytical solutions —analyser, software, reagents, and reference materials— specifically designed to simplify the work of wineries and winemaking labs.



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