

# OenoFoss™



*OenoFoss™ Instant Quality Control of wine*

## Features and Benefits

- Fast analysis from a single drop of a sample – up to seven main parameters of must, must under fermentation or finished wine measured within two minutes
- No laboratory skills required
- Unlimited analyses at no extra cost
- Instant quality control throughout the winemaking process allows immediate correction to secure the final quality of the finished wine
- No use of costly reagents saves both time and costs
- Ready-made global calibrations
- Quick installation and integration
- Compact size
- Powerful data management facilities

## Description

OenoFoss™ is a compact and simple-to-use analysis instrument that provides instant quality control for winemakers.

It measures grape must, must under fermentation and wine, delivering up to seven main quality parameters from a single drop of a sample within two minutes. The speed and convenience of analysis provides winemakers with the information they need to make the right decisions in pursuit of their quality targets. The robust design ensures high uptime and low cost of ownership. The ready-to-use calibrations guarantee reliable analysis throughout the winemaking process.

## Technology

The OenoFoss design includes the world's smallest FTIR (Fourier Transform Infrared Spectroscopy) interferometer. The sample is analysed at two optical pathlengths with patented self instrument calibration after each measurement.

# FOSS

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Dedicated Analytical Solutions

# FOSS

## System Description

The OenoFoss™ consists of two modular units built on identical platforms. A FTIR wine analysis unit and an optional VIS Colour unit. The total solution consists of the instrument together with a PC and OenoFoss software. The software displays the results of the analysis and offers data management facilities. OenoFoss is available in three versions, shown in the table below. Each version can be combined with an optional colour unit.

## VIS Colour unit (Optional)

The VIS Colour unit is a colour detection module developed to determine the colour of a wine sample according to international standards. The different colour descriptors are based on the absorption of the visual light at three specific wavelengths: 420, 520 and 620 nm. The performance of the OenoFoss colour is outlined in the table below.

## Specifications

Up to six parameters can be analysed simultaneously with 600µl of must, must under fermentation or finished wine placed in the FTIR module. With the optional VIS Colour module, finished wine can also be analysed for colour at the same time.

Analysis time:	FTIR wine unit; 2 minutes
Sample ambient temperature:	Temperature 10°C - 35°C
Sample volume:	600µl of must, must under fermentation or finished wine with a manual pipette. Close the lid and start analysis within 6 seconds to ensure reliable results
Instrument warm up time:	15 min
Cleaning:	With a regular tissue and commonly used cleaning liquids
Sample preparation:	Clarify sample using a centrifuge or filtration. Particle size <10 µm. (See table below <sup>▲</sup> .) In case of excess CO <sub>2</sub> degassing is necessary (e.g. use vacuum pump or ultrasonic treatment)
Calibration routines:	Slope & Intercept Adjustment
SW package:	Foss Integrator with PLS calibrations

## Cuvette

FTIR wine unit:	Cuvette with variable light pathways
VIS colour unit:	2 mm (700µl)

## Standards and Approvals

OenoFoss is CE labelled and complies with the following directives:

- EMC Directive 89/336/EC and amendments
- EN 61000-6-3 and EN 61000-6-2 (covering by this 61000-6-1 and 61000-6-4)
- Low voltage directive 2006/95/EC and amendments
- EN/IEC 61010-1, 2001
- Classification, packaging and labeling of dangerous preparations directive 99/45/EC and amendments
- Packaging and waste directive 94/62/EC
- ROHS directive (2002/95/EC)




## Installation Requirements

Power supply:	100-240 VAC ± 10 %, 50-60 Hz
Power consumption:	66 VA [max of Power supply]
Ambient temperature:	10°C - 35°C
Ambient humidity:	up to 93% RH
Weight:	Wine unit: 6,3 kg Colour unit: 3,8 kg
Dimensions (H×W×D):	189 × 154 × 321 mm (excl PC), same size for each module
Environment:	Place the instrument on a stable surface away from excessive and continuous vibration. Do not place the instrument in direct sunlight or close to an open window
Degree of ingress protection:	IP40
Noise level:	<70dB (measured value typically lower than 45 dB)
Altitude:	up to 2000m

## PC Requirements (minimum)

- Min. 1 GHz CPU speed
- 1 GB RAM
- 4 GB free disk space
- 100M Ethernet network adapter
- SVGA at 1024\*768, min. 16bit colours
- Windows® Vista or Windows® XP Service Pack 2
- Microsoft® Office 2003 SP1

## Performance data & System overview

Product	Parameter	OenoFoss™	OenoFoss™	OenoFoss™	OenoFoss™	Accuracy*	Repeatability**	Range	Unit
		Wine	Flex	Versatile	Colour				
 Must <sup>▲</sup>	Brix			X		0.45	0.1	12-27	°Brix
	pH			X		0.05	0.01	2.6-4.0	pH
	Volatile Acid			X		0.05	0.018	0-0.6	g/l
	Total Acid			X		0.30	0.06	2-12	g/l
 Must under fermentation <sup>▲</sup>	Glu+Fru		X	X		2.30	0.75	0-240	g/l
	pH		X	X		0.08	0.01	2.6-4.0	pH
	Total Acid		X	X		0.20	0.05	2.0-6.5	g/l
	Malic Acid		X	X		0.30	0.08	0-7	g/l
	Volatile Acid		X	X		0.05	0.018	0-0.6	g/l
	Ethanol		X	X		0.20	0.04	0-13	Vol %
 Finished wine <sup>▲</sup>	Glu+Fru	X	X	X		0.45	0.10	0-5	g/l
	Glu+Fru	X	X	X		0.70	0.15	0-10	g/l
	pH	X	X	X		0.08	0.02	2.6-4.0	pH
	Total Acid	X	X	X		0.20	0.05	2-5	g/l
	Malic Acid	X	X	X		0.35	0.08	0-6	g/l
	Volatile Acid	X	X	X		0.08	0.014	0-1.0	g/l
	Ethanol	X	X	X		0.15	0.04	8-16	Vol %
	Colour abs 420	(X)	(X)	(X)	X	0.04	0.012	0-1.2	
	Colour abs 520	(X)	(X)	(X)	X	0.04	0.012	0-3.0	
	Colour abs 620	(X)	(X)	(X)	X	0.02	0.012	0-0.6	

\* Accuracy: the degree of conformity of a measured or calculated quantity to its actual absolute value determined by reference analysis. I.e. with 95% certainty the maximum difference (+/-) between the reference analysis and the OenoFoss™ result is (+/-) 2 × 0.08 for pH in finished wine.

\*\* Repeatability: the standard deviation calculated from using the same measurement process on the same sample and instrument on two or more consecutive measurements. I.e. with 95% certainty the maximum difference (+/-) between the reference analysis and the OenoFoss™ result is (+/-) 2 × 0.02 for pH in finished wine.

▲ Sample preparation necessary according to recommendations (see Sample preparation.).