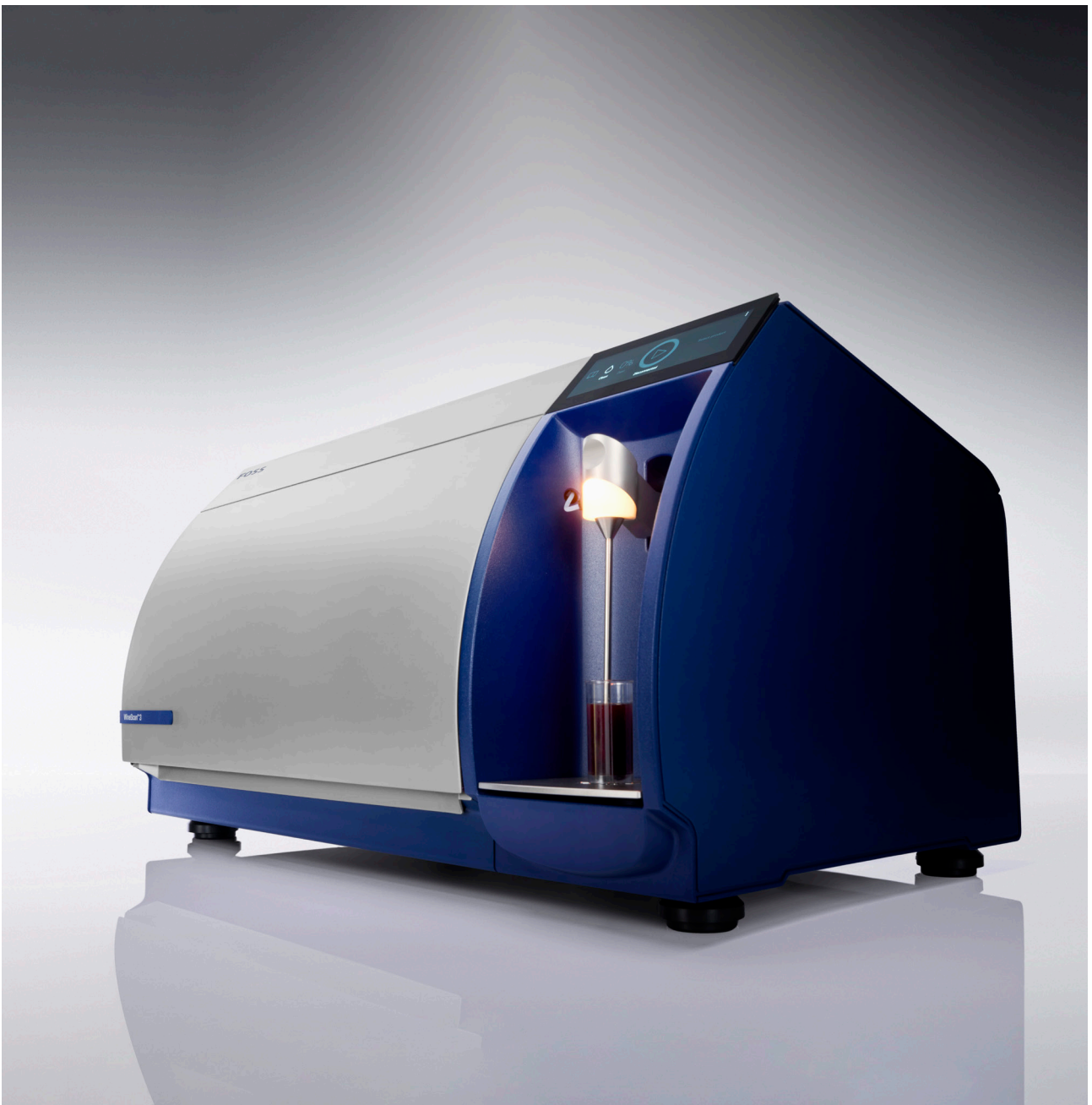


FOSS

WineScan™ 3 & WineScan™ 3 SO₂

Your expanding world of analytical insight



ANALYTICS BEYOND MEASURE

The quality-control revolution continues

Knowledge that supports the traditional art of winemaking is increasingly important for protecting wine quality in an era of challenging growing conditions and evolving consumer tastes.

In the past, this knowledge was acquired by trial and error, and transferred from generation to generation, year by year. Then, in 1999, the advent of ground-breaking FOSS WineScan™ instrument made it possible to monitor the whole winemaking process with objective tests for multiple parameters delivered in seconds. It is an ability that has become indispensable for reducing errors throughout the winemaking process. While still essential, intuition and tasting are no longer enough. Now, decisions must always be supported by precise and in-depth analyses that is also easy and simple to perform day in, day out.



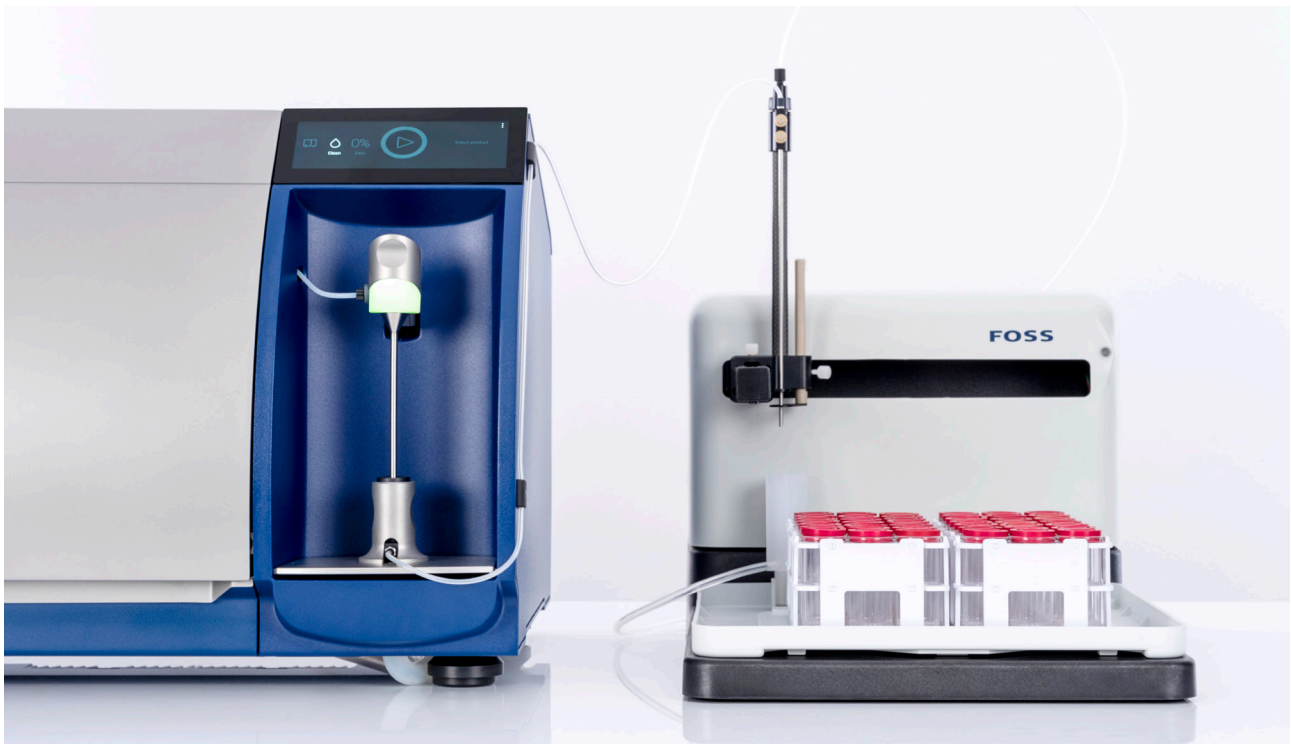
LATEST GENERATION ANALYSIS ADDS A NEW DIMENSION TO YOUR WINEMAKING

The WineScan™ 3 and WineScan™ 3 SO₂ solutions provide an all-new analytical platform, faithful to the creed of rapid, multi-parameter wine analysis, but improved in its implementation on every level. Your wine testing is brought up-to-date with the latest advances in analytical technology, ensuring trustworthy results with far less work than with earlier solutions.

With the WineScan 3 solutions, the flow of insightful test data becomes a simple and natural part of winemaking and laboratory operations. You can find more time and creativity to push the envelope on wine style and quality in step with new market opportunities and the demands of an ever-changing climate.

WineScan™ 3 and WineScan™ 3 SO₂

- A whole new take on the proven WineScan concept
- Latest generation analytical technology keeps the results flowing with minimal maintenance
- Improvements such as the powerful flow system and faster SO₂ analysis allows you to test more with less work
- Outstanding reliability built on the unique referenced WineScan database
- An expanding range of analytical options such as tannins, additives and YAN during fermentation



Over 20 parameters in 30 seconds, 130 unattended tests per hour, SO₂ in two minutes - just some of the gains delivered by latest generation technology behind the all new WineScan 3. It is so smart that it even checks its performance at regular intervals.

TRUSTWORTHY DATA TO CONTROL YOUR WINEMAKING FROM GRAPE TO BOTTLE



Harvest decisions

Rapid analysis of grape must allows you to follow the development of grape maturity from the start of the veraison period to harvest. Grape pulp parameters such as sugars, YAN, total acidity and others can be analyzed/tracked to help you achieve the balance you are looking for between sugars and acids. Get an overview of ripeness, both in terms of the technical maturity of the grapes and through insight into quality characteristics that contribute to the final quality of the wine.

Key parameters to consider:

Total soluble solids (sugar), density, tartaric acid, malic acid, total acidity

Spot potential disorders before they affect your wine

The quality of grapes can be assessed and quantified in connection with payment schemes. In addition, the frequent test data helps you to avoid the mistakes and costs associated with poor quality grapes. For instance, test data on ethanol provides a valuable supplement to your local knowledge. This allows a more complete indication of potential disorders, for instance with soundness biomarkers such as glycerol and gluconic acid.

Key parameters to consider:

Glycerol, gluconic acid, acetic acid, ethanol



Fermentation insights

Track alcoholic and malolactic fermentation and react in time to avoid potential issues. For instance, you can check that the yeast has the right nutrients to grow. A test for yeast assimilable nitrogen (YAN) allows you to supplement nitrogen deficient must with diammonium phosphate at the start of fermentation to provide adequate nitrogen levels. The consistent and highly repeatable measurements also provide a valuable reference when tasting for those complex components only discernable to the experienced palate. Likewise, for malolactic fermentation, rapid analysis tracks the conversion of malic acid to lactic acid with a simple and convenient test. If you are using barrels, you can test each one at no extra cost and with very low sample volume (less than 10 mL) per test.

Key parameters to consider:

Ethanol, alpha amino nitrogen, ammonia, malic acid, lactic acid, glucose+fructose, volatile acidity



Perfect blending and bottling

Ensure stability of wine for bottling and measure finished wine for correct blending. You can also complete documentation with minimal administration work. For instance, the multiple analysis results from a single sample will help you meet demands from customers for increasingly detailed product information. And you can complete labeling and administrative tasks precisely with accurate analysis using a small sample volume.

Key parameters to consider:

Ethanol, pH, acetic acid, malic acid, total acidity, glucose+fructose, volatile acidity, sucrose, fumaric acid, ascorbic acid, SO₂ and color

AN EXPANDING WORLD OF ANALYTICAL INSIGHT

Building on a well-proven concept, WineScan™ 3 solutions offer a unique range of options to grow your analytical capability at less cost. These include:

- A comprehensive range of tests, including new options such as tannins in wine and yeast assimilable nitrogen during fermentation
- Faster SO₂ tests with less maintenance involved
- Software features such as the ability to run tests from the touch screen interface
- Connectivity features improve support and lay the foundation for growth of your analytical operations
- Test with little or no sample preparation. Finished wine can be tested directly, sparkling wine can be tested without having to degas the sample and must under fermentation can be tested after a simple filtration step

In addition, they offer a new level of flexibility in your analytical strategy, for example, with the option to add functionality such as color and SO₂, when you need it.

A unique range of options for wine-makers

- A comprehensive range of tests allows you to build the perfect portfolio for your winery, including unique new test options such as tannins in wine, yeast assimilable nitrogen during fermentation or additives such as sucrose, fumaric acid and ascorbic acid
- If you are using WineScan 3, you have the option to include SO₂ functionality whenever you need it
- Automatic backup and reporting keeps data safe and connectivity ensures accessibility for traceability



Grow your analytical capability at less cost with the all-new WineScan™ 3.



The pursuit of precision

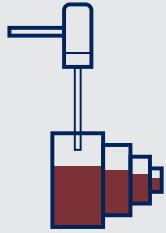
Just like its predecessors, the performance of WineScan™ 3 tests can be accredited by independent reference laboratory tests. Further, the application models for the WineScan 3 are developed using a unique pool of data. This has been collected since FOSS first launched the WineScan™ in 1999. It has been accrued from well over 100,000 samples. These have been tested both by accredited reference methods and from WineScan tests made around the world and across growing seasons and regions.

It all adds up to why the WineScan 3 is so precise against a wine's true chemical composition.

Depending on the sample, the parameters that can be tested with WineScan 3 include:

- Absorbance A420 nm
- Absorbance A520 nm
- Absorbance A620 nm
- Alpha amino nitrogen
- Ammonia
- Tannins
- Citric acid
- CO₂
- Density
- Ethanol
- Extract
- Fructose
- Gluconic acid
- Glucose
- Glucose+ fructose
- Glycerol
- Lactic acid
- Malic acid
- pH
- Potassium
- Reducing sugar
- Sorbic acid
- Tannins
- Tartaric acid
- Total acidity
- Total polyphenols (folin C)
- Total soluble solids
- Volatile acidity
- Free and total sulphur dioxide
- Sucrose
- Fumaric acid
- Ascorbic acid

INSIDE THE NEW WINESCAN™ 3 SOLUTIONS



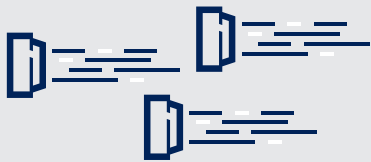
Smartflow

- As one sample completes, a new one starts
- Option to use high-throughput autosampler giving up to 130 unattended tests per hour



Less sample prep and no degassing

- Save time on degassing
- Handle samples such as must with ease
- Avoid the risk of incorrect sample prep



Intelligent diagnostics

- Over 30 sensors
- Saves downtime
- Saves calls to service support

FOSS

REFERENCE



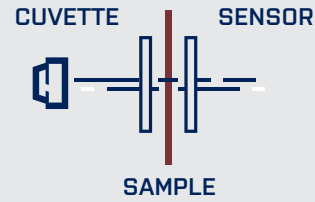
Always standardized

- Adjusts for tiny effects of wear on instrument and environmental conditions
- No more manual operations using standardization liquid and no time and costs involved compared to earlier instrument versions
- Peace of mind that performance is always spot-on



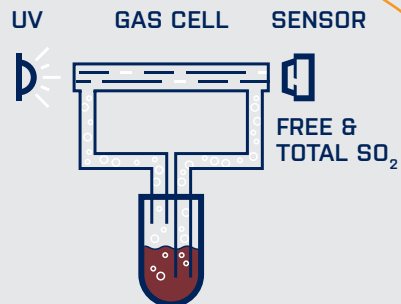
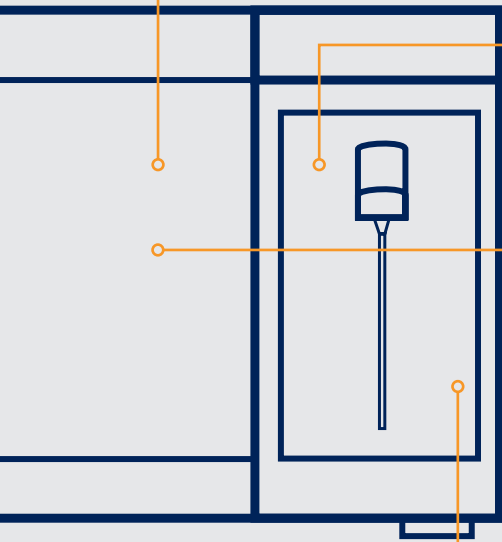
Powerful flow system

- Handles samples such as must with ease
- Robust, low maintenance



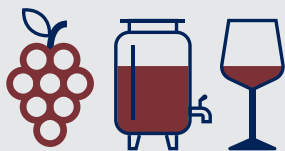
High repeatability

- Accurate
- 40 subsamples per test
- No need for replicates to check results



SO₂ measurements made simple

- Aeration-oxidation method
- Optional add-on
- Low cost per sample



Expanding portfolio of innovative applications, for example:

- Tannins based on bovine serum albumine assay model (BSA) & methyl cellulose precipitable assay model (MCP)
- Yeast assimilable nitrogen (YAN) during fermentation
- Advanced grape quality biomarkers
- Sucrose, fumaric acid and ascorbic acid



RESULTS THAT JUST KEEP ON FLOWING

The WineScan™ 3 and WineScan™ 3 SO₂ solutions bring rapid wine analysis up to date by providing trustworthy analysis with far less of the work of earlier solutions. Less interruption to analytical operations, fewer concerns about instruments running right, more tests in less time, a faster time to result for SO₂, less training of staff – the list of gains offered by the latest analytical technology goes on.

More results with less work

- Smart instrument adjusts itself for wear at regular intervals, avoiding need to interrupt operations for maintenance procedures and the risk of operator error when performing procedures
- High throughput flow system and high throughput autosampler get more tests done in less time
- The robust and low maintenance SO₂ module delivers results faster than with earlier WineScan SO₂ instruments (now two minutes instead of two and a half)

Intelligent troubleshooting

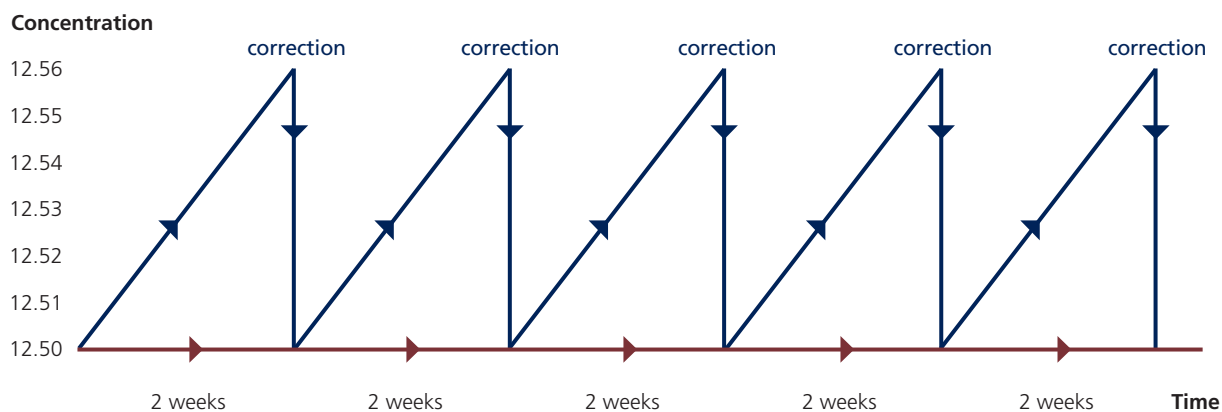
A unique and advanced self-diagnostic system continuously monitors a unique and advanced self-diagnostic system that continuously monitors the condition of all the vital components and provides fast and easy troubleshooting. If maintenance is required, it automatically sends a notification to the operator. It can also be used during troubleshooting to resolve issues before they become a problem.



Always standardized and no more instrument drift

A patented standardization procedure runs automatically at regular intervals. This eliminates instrument drift and ensures stable results over time. There is no need to perform time-consuming standardization checks with associated use of chemical reagents and significantly reducing the need for costly reference analysis.

— Standardization today — with WineScan™ 3



MORE TIME FOR WINEMAKING

WineScan™ 3 solutions make owning and running a wine analysis solution simple and worry-free.

What's more, every test result is based on 40 sub-samples. A highly representative result is obtained which avoids the need for replicate measurements to confirm the validity of results for the sample in question.

Further, the instrument is smart-enabled to provide a close level of support while ensuring that valuable analysis data is always safe, traceable and easy-to-access and share. Networking software and connectivity also allows you to build your own quality control universe with multiple instruments across sites and locations.

The instruments can be either of the WineScan 3 solutions and others such as the OenoFoss™ 2.

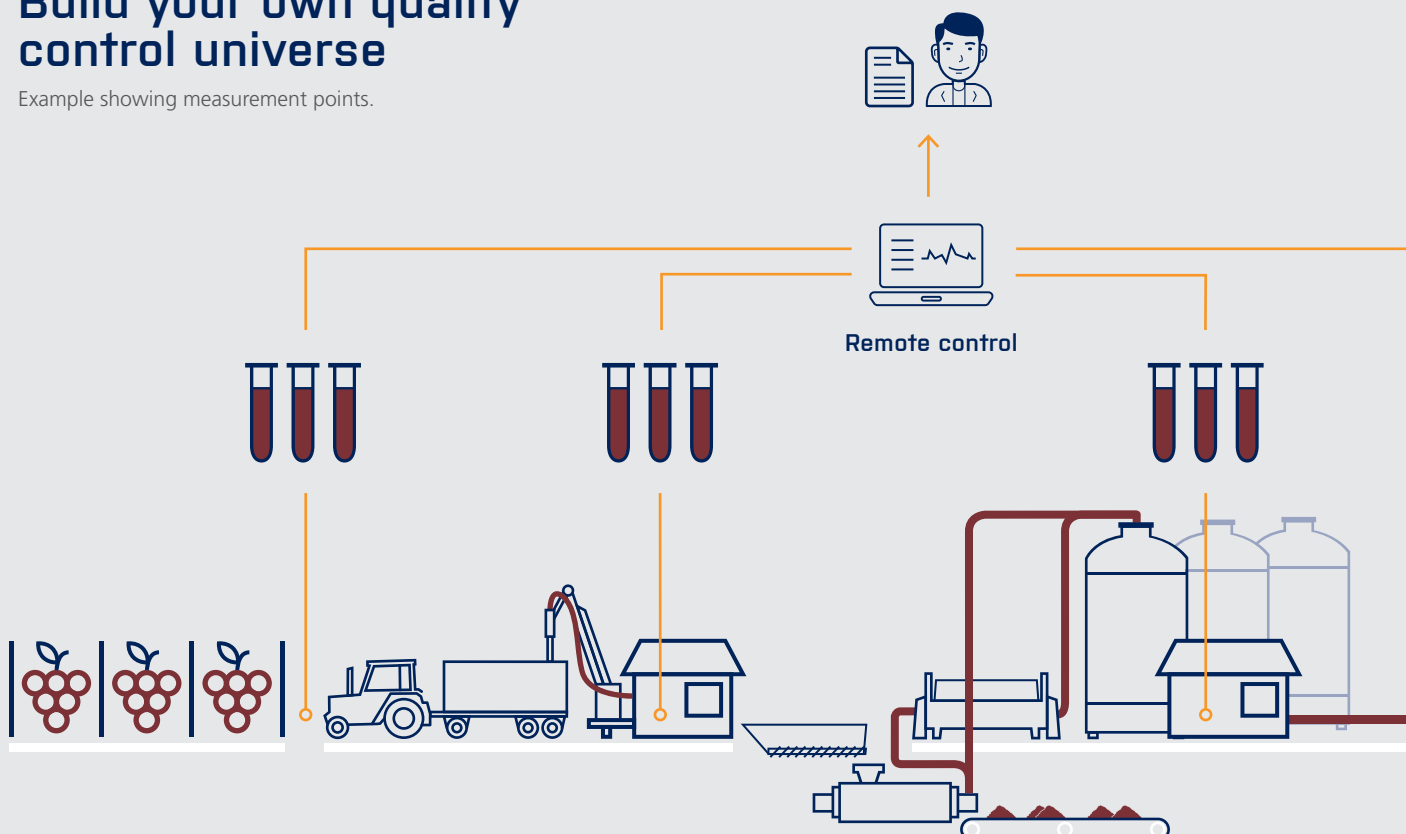
All of the advances made by WineScan 3 combine to ensure more time for winemaking and less time thinking about making tests. You are empowered to be more precise and make key decisions quickly while dedicating more time to be creative.

Less work, more creativity

- Automatic guidance for operators via multiple sensors
- High repeatability of results avoids the need for extra tests to check repeatability of test results
- Comprehensive digital and on-site offerings available through FOSS SmartCare™

Build your own quality control universe

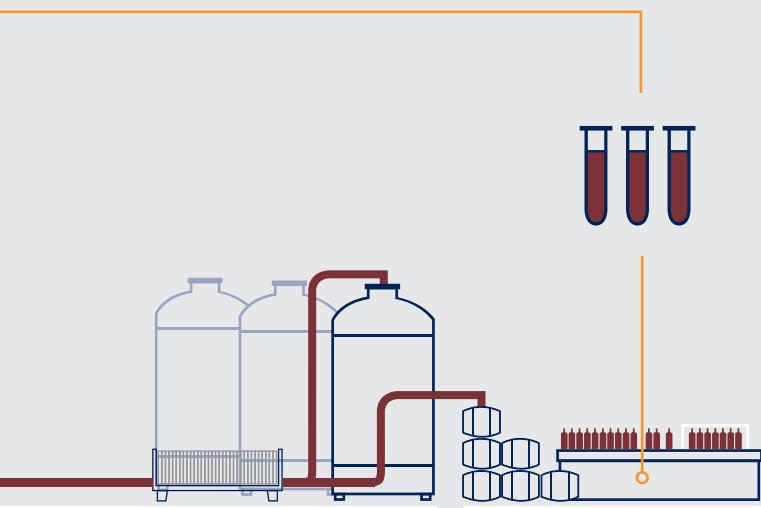
Example showing measurement points.





Future proof the winery with a connected quality control universe

WineScan™ 3 and WineScan™ 3 SO₂ add value throughout the winemaking process. For flexibility across your operation, it can be used together with the handy OenoFoss™ 2 instrument.

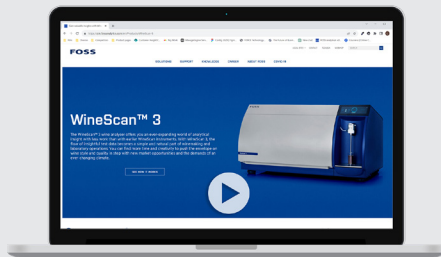


- Automatic backup and reporting keep data safe, traceable and accessible
- FOSS SmartCare™ program provides the most comprehensive digital and onsite service offerings
- Connectivity ensures that operators need never feel alone with instrument operation
- Build a network of instruments across locations and sites

FOSS IN WINE

From busy wine laboratories serving hundreds of customers to small-volume producers with little time for analysis, FOSS helps you exploit the power of routine analysis to complement your skills, experience and knowledge. Together, we form a unique partnership that paves the way for even higher levels of quality wine throughout the industry.

Whether you are a small winemaker, large bottling plant or independent wine analysis lab, FOSS can provide the wine analysis methods and solutions to suit your business.



LEARN MORE



Learn more about the WineScan™ 3 SO₂ and see how it works:

fossanalytics.com/en/products/WineScan-3-SO2



If you are interested in the WineScan™ 3 without SO₂ functionality, see more here:

fossanalytics.com/en/products/WineScan-3



Discover how analytical solutions can improve winemaking throughout the process. Learn more on our wine industry web page:

fossanalytics.com/en/industry/wine-laboratories





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