

Benefits of R.I. measurement

- By incorporating the KxS DCM-20 Inline Brix Refractometer into the wine grape processing workflow, cooperatives and wineries can achieve more accurate quality assessments, enhance operational efficiency, and maintain high standards of food safety.

Overview

Wine production involves two primary stages: cultivating grapes and transforming them into wine. While some producers manage both vineyards and winemaking, others may focus solely on one aspect. In cases where wineries source grapes from multiple growers, each batch is processed individually.

The compensation for each batch is determined by its quantity and quality, with sugar content being a critical quality indicator, as it directly influences the potential alcohol content of the wine.

Refractive index measurement applications

Upon arrival at the winery, grapes undergo sorting and crushing to produce must—a sugar-rich juice essential for fermentation.

The sugar concentration in the must, commonly measured in degrees Brix (°Bx), Oechsle (°Oe), or Baumé (°Baumé), varies within each batch. Accurately assessing the average sugar content is challenging yet vital for determining fair payment to growers and ensuring consistent wine quality.

Instrumentation and installation considerations

Implementing continuous, real-time monitoring of sugar concentration in the must enhances both quality assessment and operational efficiency. The KxS DCM-20 Inline Brix Refractometer is designed for precise, real-time Brix and concentration measurements in food and

beverage applications, including wine production.

It offers a full measurement range of 0-100 Brix and utilizes two independent 4-20mA outputs along with a digital Ethernet output for seamless integration into automatic process control systems. An optional HMI unit provides a local display and user-friendly interface for enhanced functionality.

The DCM-20 refractometer can be installed directly in the must lines, before the must is distributed between the various tanks. The installation is via sanitary tri-clamp, Varinline® connection or APV tank bottom flange.

Its compact design allows for easy integration into existing pipelines, and the hygienic process connections facilitate straightforward installation and maintenance.

The refractometer's digital sensing technology remains unaffected by suspended solids such as seeds and skins, ensuring accurate measurements even in the presence of grape solids. Typical measurement range is 0-140 °Oechsle and the temperature is 15-25 °C (59-77 °F).

Benefits of refractive index measurement in wine grape processing

Utilizing inline refractometer KxS DCM-20 in wine grape processing offers several advantages:

- Real-time monitoring:** Continuous measurement of sugar content

allows for immediate adjustments during processing, ensuring optimal fermentation conditions and consistent product quality.

- Accurate quality assessment:** Precise determination of sugar concentration facilitates fair compensation for growers and aids in classifying the must for different wine styles.
- Operational efficiency:** Automation of sugar content measurement reduces the need for manual sampling and laboratory analyses, streamlining operations and reducing labor costs.
- Enhanced food safety:** The DCM-20's hygienic design, featuring 3A Sanitary Symbol authorization and EHEDG certification, ensures compliance with stringent food safety standards.
- Compact and easy installation:** The small footprint and versatile mounting options of the DCM-20 allow for straightforward integration into existing processing lines without significant modifications.

