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DSG Series Density Meters

THE QUICK AND PRECISE DENSITY METER FOR BUSY LABORATORIES AND FACTORIES

BS Bellingham + Stanley

a **xylem** brand

Simple. Reliable. Precise.

The quick and precise density meter for busy labs and factories

The DSG Series from Bellingham + Stanley answers a call from customers looking for highly reliable, premium quality instruments to complete a suite of instrumentation from a brand they trust. DSG Series Density Meters from Bellingham + Stanley are available in 2 unique models offering great flexibility as well as ease of use.

Simple to use. Easy to clean. Accurate Results.

Having an accurate density meter that produces reliable results is only part of the equation. Your instrumentation also needs to be simple to use, easy to clean and offer superior traceability. The DSG Series features a large and vibrant capacitive touchscreen, and intuitive GUI from the makers of ADP Polarimeters and RFM Refractometers. This colour coded interface guides users through common tasks and administrative setup procedures with ease.

A powerful internal air pump and integrated desiccant means the DSG Series has no need for external devices for venting after cleaning, so your precious bench space isn't taken up by needless peripherals.

Peltier Temperature Control and precision ventilation ports give rapid temperature stabilisation, whilst synergy between hardware and software give accurate results from 15 seconds.

Simple

- Easy to use and clean
- Touchscreen operated
- METHODS based
- Optional keyboard & mouse support
- Choice of 2 unique models

Reliable

- Strong air pump for thorough cleaning
- High quality construction
- Standard Leur connectors
- Manufactured in Germany
- Local customer support
- Comprehensive customisation

Precise

- Excellent reproducibility
- 15 second read time
- Peltier Temperature Control
- FDA 21 CFR Part 11 compatible
- Detailed audit trails

Comprehensive software, support, and functionality right out of the box

Easy to use software & intuitive instrumentation for your laboratory

The DSG Series Density Meters use Bellingham + Stanley's proven touchscreen interface. The GUI has been enabling users of touchscreen RFM Refractometers and ADP Polarimeters to quickly and easily take measurements, calibrate, and analyse data over many years. Bellingham + Stanley customers will be instantly at home with the familiar bright and bold design. Users new to the system will appreciate the intuitive layout, and quick access to regularly used controls including "READ" and "METHODS".

DSG includes 4 common measurement standards and 1 calibration standard. Calibration is performed with air and water and can be verified using accredited CRMs. The in-built barometric sensor checks that the cell chamber is dry, whilst the smart software corrects for pressure, allowing you to focus on sample preparation and other tasks.

Joined up thinking from Bellingham + Stanley

The common design language used throughout Bellingham + Stanley's high-quality engineering means that the DSG Series Density Meters not only sport a great touchscreen (usable with PPE gloves), but also fast networking abilities, USB functionality for optional mouse/keyboard support and exporting of data (via PDF/.CSV) to USB drives. Large capacity memory means room for over 100,000 readings without the need to purchase costly storage.

Density measurements are extremely sensitive to temperature, so all DSG models are fitted with Peltier temperature control as standard, allowing for smart automatic corrections to be made, so that you don't have to.

U-Tube

DSG Density Meters measure using the oscillating u-tube principle. Using a secondary oscillator allows the instrument to monitor and adapt to long-term instrument drifts and environmental influences, meaning calibration can hold and be relevant for a long time.

METHODS System

METHODS are a simple way to get to the measurements you require, fast. This effective system simplifies the process by means of 4 separate values split between: Density, Density + Specific Gravity (SG), Density + Brix, Density + Ethanol %v/v + Ethanol %m/m. (Other scales are available on request, subject to technical feasibility and data availability.)

Fast Read Time

Results displayed in less than 15 seconds, depending on mode selected. Smart temperature stabilisation is activated prior to reading to give the most accurate results in super-fast time.

21 CFR part 11 Compliant

Designed with FDA regulation 21 CFR part 11 in mind. On-board data protection, and compliance without an intermediate PC. Electronic signatures including multi-verification. Full audit trail and print to secure PDF features as standard.

High Performance Across Applications

High accuracy and premium features no matter which industry

With great precision, application compliance (including electronic signatures), and a temperature measuring range up to 95 °C, DSG Density Meters have been designed with a variety of industries in mind. From flavours and fragrances and soft drinks in food & beverage, to raw materials testing in pharmaceutical. Density measurement is key to production control and quality assurance. Used alongside complementary instrumentation from Xylem, DSG Density Meters can aid in complete production control workflows. An example of the industries that DSG Density Meters are suitable for, but not limited to, are mentioned below.

Pharmaceutical

The measurement of density within pharmaceutical is applicable across multiple areas including for batch testing, production control, and even the analysis of raw materials at Goods In. With density measurement mentioned in over 100 monographs within US/EU/JP/BP pharmacopeia it's important to have an instrument that complies to strict standards. DSG Density Meters fulfil this need. **Primary METHOD selection: Density + SG**

Alcohol (Beer, Wine, Cider & Spirits)

Producers of beer, wine, cider and spirits the world over use scientific instrumentation to monitor quality and calculate alcohol percentage. Whilst homebrewers might rely on a simple hydrometer, a density meter provides a far more accurate reading using a lot less sample. DSG Density Meters provide users with enough information from one sample to accurately determine alcohol whether by volume or weight, essential for precise declaration, duty payments, as well as for quality control.
Primary METHOD selection: Density + Ethanol %Vol/v + Ethanol %Mass/m (ABV/ABW)

Industrial

Whilst certain chemicals could be measured by another device, such as a digital refractometer, the closed-loop nature of the DSG Density Meter prevents evaporation away from the volatile organic compounds allowing for far greater accuracy of results. Post-measurement cleaning is handled automatically by the instrument, making it safer when dealing with harsh chemicals. Biodiesel and petroleum based products such as E10 can be easily measured, whilst waxes, glycols and battery acids can also be safely read. **Primary METHOD selection: Density + SG**

Food & Beverage

Predominately used for quality control, measuring density within food and beverage is an important factor throughout the process; from raw materials testing to quality checks at the end of the line. DSG Density Meters can be used to assess the sugar content of soft drinks, and even the "creaminess" of milk in the dairy industry.
Primary METHOD selection: Density + Brix

DSG Specifications

Physical Specifications

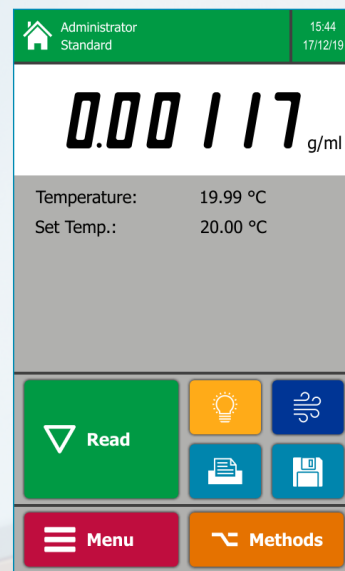|	
Measuring System	Oscillating U-tube with reference oscillator for enhanced drift protection
Temperature Control	Intelligent Peltier temperature control system
Wetted Parts	Borosilicate glass, PTFE
Pressure	0 – 10 bar (0 – 145 PSI)
Sample Size	Approx. 2ml
Air Drying	Integrated air pump and humidity sensor
User Interface	Full colour, 7", capacitive touchscreen with optional mouse & keyboard support
Memory	100,000+ Readings (4GB expandable memory)
Interfaces	Serial Interface, USB, LAN
Application Compliance	European & American Pharmacopoeia & various ASTM & ISO standards. Electronic Signatures
Power	90-265 VAC; 50/60 Hz; 150 VA max
Humidity	< 85% not condensing
Ambient Temp	Temperature 10 °C – 35 °C
Weight	8.8kg + 0.3kg dry air cartridge (approximate)
Dimensions	430 x 290 x 300mm (WxDxH)
Certificates	Conformity or optional Certificate of Calibration on request

Fig 1. DSG Series GUI (Read screen)

Measurement Specifications

	DSG40	DSG50
Range	0 – 3 g/cm^3	
METHODS	Density (g/cm^3), Specific Gravity, Sucrose %w/w (°Brix), Ethanol (%w/w, %v/v), user request	
Reading Type	Single shot (discreet)	
Reading Time	15 seconds (not including temperature stabilization time)	
Resolution	0.0001 g/cm^3	0.00001 g/cm^3
Accuracy	0.0001 g/cm^3	0.00005 g/cm^3
Precision (Reproducibility)	0.0001 g/cm^3	0.00002 g/cm^3
Temperature Accuracy	±0.05 °C	±0.03 °C
Temp. Reproducibility	±0.02 °C	±0.01 °C
Temperature Range	10 – 95 °C	
Temperature Resolution	±0.01 °C	
Temp. Stabilisation Time	Smart stabilisation based on sample detected	

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1) The tissue in plants that brings water upward from the roots;
2) a leading global water technology company.

Bellingham + Stanley is part of Xylem Analytics and a leading provider of refractometers and polarimeters.

Xylem Analytics' global brands have been leaders in the laboratory instrumentation market for decades, and are relied upon every day across more than 150 countries. Working in true partnership with our clients, we listen, learn and adapt to individual needs, offering deep application expertise built upon our long history of innovation in instruments and services. Our solutions for analysis, measurement and monitoring help enable many of today's modern laboratories and industrial processes, and provide our customers the trusted and high performing solutions they need to succeed.

Xylem Analytics is part of Xylem Inc., a global company focused on solving the world's most challenging and fundamental water issues. As accurate analysis is crucial to the water industry, Xylem Analytics taps its diverse product brands for leadership in that field and beyond, providing the best laboratory and field monitoring instrumentation across a wide variety of industries.

For more information on how Xylem can help you, go to www.xylem.com

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ISO 45001

UKAS
MANAGEMENT
SYSTEMS
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Bellingham + Stanley, a Xylem brand, operates an Integrated Management System complying with ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018.

xylem
Let's Solve Water

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