

A great flavor profile with consistent quality



The laboratory instrumentation you use to measure important parameters during the beer production process is critical to a successful outcome for your beer. You need simple, long-lasting equipment and tools that provide results you can trust. Thermo Scientific™ Orion™ laboratory instruments and sensors are designed to provide you with information about critical parameters throughout the beer production process – from monitoring incoming water to final quality checks. Choose Thermo Scientific products to help you achieve your testing needs today, tomorrow, and as your operation grows. Educational materials and technical support are also available to provide help when you need it.

All Temperature pH Monitoring

When determining the pH of mash, temperature should also be measured to obtain an accurate pH determination. Since pH is a temperature dependent measurement, the same mash measured at different temperatures will produce a different pH result. Whether your need is a benchtop or portable pH meter, Thermo Scientific™ Orion™ meters and sensors can provide simultaneous temperature and pH measurement to enable accurate determination of pH.

The **Thermo Scientific™ Orion™ ROSS Ultra™ Triode™ pH/ATC electrode** is designed to provide fast and accurate pH measurements at varying sample temperatures. The sensor has a special reference system which reaches equilibrium quickly and enables a fast pH reading with minimal drift. An 18 month warranty* means your sensor keeps working longer without replacement, which can reduce your operating costs.

The **Thermo Scientific™ Orion Star™ A221 portable pH meter** provides simultaneous temperature and pH readings using simple, step-by-step menus. Rugged IP67-rated waterproof housing and protective armor make it an ideal brew house instrument.

For benchtop pH analysis, the **Orion Star A211 pH benchtop meter food and beverage kit** includes a Thermo Scientific™ Orion™ Sure-Flow™ 9165BNWP pH electrode. This epoxy-body electrode can be easily flushed out after every use by pressing on the cap. This capability prevents viscous or solid containing samples from clogging the electrode junction, which can reduce the effectiveness of the electrode. This kit includes a separate temperature probe for simultaneous pH and temperature measurement.



Description	Cat. No.
Thermo Scientific Orion Star A221 pH portable meter kit	STARA2215
Thermo Scientific Orion Star A211 pH benchtop meter kit	STARA2119

* See manufacturer's standard warranty terms

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Versatile pH and Ion Specific Measurement

Whether testing incoming raw material, brewing process grab samples or performing quality checks on the final product, your instruments need to support a variety of tests. The **Orion Star A214 pH/ISE benchtop meter kit** provides the basic tools for monitoring important parameters (alkalinity, sodium and other ionic species levels) in incoming water, as well as measuring pH and total acidity in beer, sugars, syrups, and other key ingredients throughout the brewing process.

The kit includes an Orion 8102BNUWP ROSS Ultra pH electrode, a separate ATC probe and an Orion Star stirrer probe, making it ready to provide accurate, stable measurements in a wide range of samples.

By adding an ion specific electrode, you can use the same meter to measure sodium, calcium or other ion levels in water, or the protein content in wort (by Kjeldahl digestion and ammonia ISE).



For the ultimate in versatility, the Thermo Scientific™ Orion™ Versa Star™ multi-parameter meter can perform pH, ion-specific, conductivity and dissolved oxygen measurements simultaneously with four interchangeable measurement modules, Cat. No. VSTAR93.

Description	Cat. No.
Thermo Scientific Orion Star A214 pH/ISE benchtop meter kit	STARA2145
Thermo Scientific Orion calcium ISE	9720BNWP
Thermo Scientific Orion ROSS sodium ISE	8611BNWP
Thermo Scientific Orion Sure-Flow epoxy body pH electrode	9165BNWP
Thermo Scientific Orion high-performance ammonia electrode	9512HPBNWP

Total Dissolved Solids and Conductivity Monitoring

Monitoring the total dissolved solids (TDS) of the incoming water before and after the ion exchange and/or membrane treatment helps verify treatment efficacy and detect breakthrough. Measuring conductivity also helps to verify whether the rinse water is free of cleaning agents after system cleaning.

The **Orion Star A212 benchtop conductivity meter** can measure conductivity with temperature and calculate/report out TDS in mg/L. On-screen instructions guide you through the calibration process. The Orion conductivity sensor is designed to offer high accuracy across a wide measurement range (1µS to 200mS/cm) with rugged epoxy/graphite body and built-in temperature sensor. If portability is preferred, the **Orion Star A222 portable conductivity meter** is equipped with the same Orion conductivity sensor and a 3 meter cable for flexible positioning in a variety of industrial containers.



Description	Cat. No.
Thermo Scientific Orion Star A212 conductivity benchtop meter kit	STARA2125
Thermo Scientific Orion Star A222 conductivity portable meter kit	STARA2225

Beer Haze and Water Turbidity Testing

Beer haze and water turbidity are easy to measure in the lab or in the plant with the **Thermo Scientific™ Orion™ AQUAfast™ AQ3010 portable turbidity meter**.

Featuring a large LCD screen and auto ranging capabilities from 0 to 1000NTUs, this compact waterproof meter delivers simplified calibration with step-by-step prompts and includes polymer bead primary standards (can also be used for calibration checks to verify that your readings are accurate). The Orion AQUAfast AQ3010 turbidity meter comes with its own sturdy carrying case for easy storage and transport and is covered by a 3 year warranty*.

Description	Cat. No.
Thermo Scientific Orion AQUAfast AQ3010 turbidity meter	AQ3010



* See manufacturer's standard warranty terms

UV/Visible Methods for Chlorine, Alkalinity, Aluminum, Bromine, Chloride, Color, Copper, Hardness, Iron, Manganese, Nitrate, Nitrite, Phosphate, Silica, Sulfate, Zinc and More

Various constituents in incoming water can affect the performance of the water treatment equipment, brewing process and final taste of the beer. Chlorine or chloramine can damage membrane treatment equipment and add off-flavors to the beer. The sulfate-to-chloride ratio of the water influences the flavor balance. Calcium and magnesium can influence the mash chemistry and yeast metabolism. A spectrophotometer for your lab or brewery is designed to provide simple and accurate analysis for these ions and other constituents.

The **Thermo Scientific™ Orion™ AquaMate™ 8000 UV-Vis spectrophotometer** offers 190 to 1100nm selectable wavelengths and 1.8 nm spectral bandwidth. A dual-beam optical geometry and instant-on xenon lamp are utilized for up to 7 years of virtually maintenance-free operation. In addition to its over 260 preprogrammed methods offering measurement capabilities for several ions and compounds common for water analysis, the AquaMate 8000 spectrophotometer boasts additional capability including the ability to create custom methods for absorbance, % transmittance and concentration testing.



Description

Thermo Scientific Orion AquaMate 8000 UV-Vis spectrophotometer

Cat. No.

AQ8000

Dissolved Oxygen Testing

Use optical sensor technology to measure ppm levels of dissolved oxygen when monitoring must aeration or yeast oxygen uptake during fermentation. Optical dissolved oxygen sensors in the **Thermo Scientific Orion Star A323 portable optical DO meter kit** are robust and require virtually no maintenance - just connect and go! The RDO probe comes with a protective stainless steel guard and calibration sleeve. The durable sensor cap stores the probe calibration information and helps the instrument withstand harsh environments without degradation in performance.

Description

Thermo Scientific Orion Star A323 RDO/DO portable meter kit

Cat. No.

STARA3235



Orion polarographic dissolved oxygen probes are also available, which offer compatibility with the Orion Star A323 meter.

Ordering Information

Description	Cat. No.
Thermo Scientific Orion Star A211 pH benchtop meter food and beverage kit	STARA2119
Thermo Scientific Orion Star A221 pH portable meter kit	STARA2215
Thermo Scientific Orion Star A214 pH/ISE benchtop meter kit	STARA2145
Thermo Scientific Orion Sure-Flow calcium ISE electrode	9720BNWP
Thermo Scientific Orion ROSS Sure-Flow sodium ISE electrode	8611BNWP
Thermo Scientific Orion Sure-Flow epoxy body pH electrode	9165BNWP
Thermo Scientific Orion high-performance ammonia electrode	9512HPBNWP
Thermo Scientific Orion Versa Star pH, ISE, conductivity and dissolved oxygen meter kit	VSTAR93
Thermo Scientific Orion Star A212 conductivity benchtop meter kit	STARA2125
Thermo Scientific Orion Star A222 conductivity portable meter kit	STARA2225
Thermo Scientific Orion AquaMate 8000 UV-Vis spectrophotometer	AQ8000
Thermo Scientific Orion AQUAfast AQ3010 turbidity meter	AQ3010
Thermo Scientific Orion Star A323 RDO/DO portable meter kit	STARA3235



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