

Meeting water quality standards – the role of turbidimeters

In the UK, all drinking water must be safe and have the trust of consumers. An integral part of this is to ensure tap water meets strict standards laid out in the EU drinking water directive and prescribed in our local legislation, both of which follow World Health Organisation (WHO) guidelines.



Improved water quality is being demanded by regulators with the public and utilities facing an increasingly challenging and changing climate. The challenge is to mitigate these emerging risks, continue to improve drinking water without the cost being passed onto consumers.

Accurate and rigorous assessments of quality have a huge role to play in meeting this challenge and one of the key measures of water quality is turbidity. If water looks turbid, it may not only look unpalatable, but may also contain other harmful material.

Low turbidity following pre-treatment is a prerequisite to effective disinfection and essential to ensure consumer confidence is maintained. As well as meeting parametric standards, water suppliers must ensure tap water is 'wholesome', i.e. it looks good, tastes good and doesn't do you any harm.

Measuring turbidity

Turbidity has traditionally been measured using contact turbidimeters, nephelometry-based instruments, which measure how light is scattered by the particles at an angle of 90° to the incident beam.

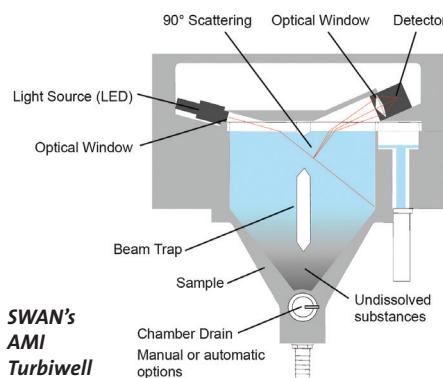
The reliability of some instruments has proven problematic, with contamination a repeated issue, increasing maintenance costs and downtime. Typically, the optics require cleaning, the light sources, and other components, would need to be replaced, and the instruments recalibrated at regular intervals.

Turbidimeters – a new approach

A turbidimeter new to the UK market is addressing these concerns. SWAN's AMI Turbiwell is a single beam turbidimeter, distinct from others, as it is a non-contact system, meaning it avoids the shortcomings of more traditional instruments.

Benefits of SWAN's non-contact turbidimeter

SWAN's AMI Turbiwell is easy to install, comprising of a complete, panel mounted system; tested, calibrated and ready for operation, minimising downtime and disruption during installation.



SWAN's AMI Turbiwell

A resilient design

A number of features underpin the instrument's reliability, including the unique sample chamber design.

Extremely durable; at no point are the optics in direct contact with the water, so the likelihood of contamination is significantly lower.

Condensation is prevented due to the naturally heated optics, therefore reducing maintenance and negating the need for drying agents.

Whilst the drain ensures the measurement chamber is cleared of settled particles when checking and/or verifying the unit.

Robust Electronics

Incorporating long-lasting components, like the LED, with a lifetime of over 100,000 operating hours and a photodiode that monitors the LED's performance, thus the need for replacement is unnecessary and recalibration negated. As the instrument incorporates no moving parts, the Turbiwell is particularly robust.

Quality Assurance

The fully integrated flow monitoring system ensures quality assurance of the sample flow is maintained at all times.

Optionally, a degassing unit ensures the samples are uniform and non-gaseous, so measurements are accurate, and false positive readings avoided.

Off the beaten track?

Remote, unstaffed sites particularly benefit from this tough, easy to install, low maintenance, low-flow system, as it minimises the time and frequency with which staff have to be onsite.

Reduced maintenance

All in all, the unique non-contact design and components that endure, mean maintenance costs, downtime and disruption are vastly reduced, operations run more smoothly, and operation costs are kept to a minimum.

In short, SWAN's AMI Turbiwell is a non-contact turbidimeter for the automatic and continuous measurement of turbidity in drinking water, as well as, surface and waste water, meeting the requirements of ISO 7027.

Put through its paces

SWAN's AMI Turbiwell is now the turbidimeter of choice for South West Water and their suppliers, after undergoing rigorous testing, alongside their competitors, over an 18-month period.

To date, over 120 units have been installed for the water and wastewater service provider supplier, benefiting their circa 1.7million customers

South West Water's Head of Water Quality, Chris Rockey said:

"In recent years we have been focussed on finding a reliable low maintenance, low level turbidity meter to verify disinfection conditions and assure optimised pre-treatment. Our goals also included the need for an accurate and easily verifiable measurement. Following extensive trials, we determined the Turbiwell best suited our needs in this situation and we have recently extended its use into other low-level applications such as monitoring trunk main conditioning schemes. We have worked closely with SWAN and appreciate their approach to developing their instrumentation to meet our local needs. The provision of a pre-assembled, pre-tested instrument and the approach to instrument quality control are two examples of how we have benefitted from the collaboration; the latter is increasingly important as we now rely on these measurements so heavily to ensure our consumers can trust their tap water."

For a turbidimeter that is straightforward to use, provides reliable data and needs minimal maintenance install SWAN's AMI Turbiwell.

Contact SWAN Analytical.

To discuss your requirements and to find out more about SWAN's AMI Turbiwell call **01780 755 500** or email **sales@SWAN-analytical.co.uk**