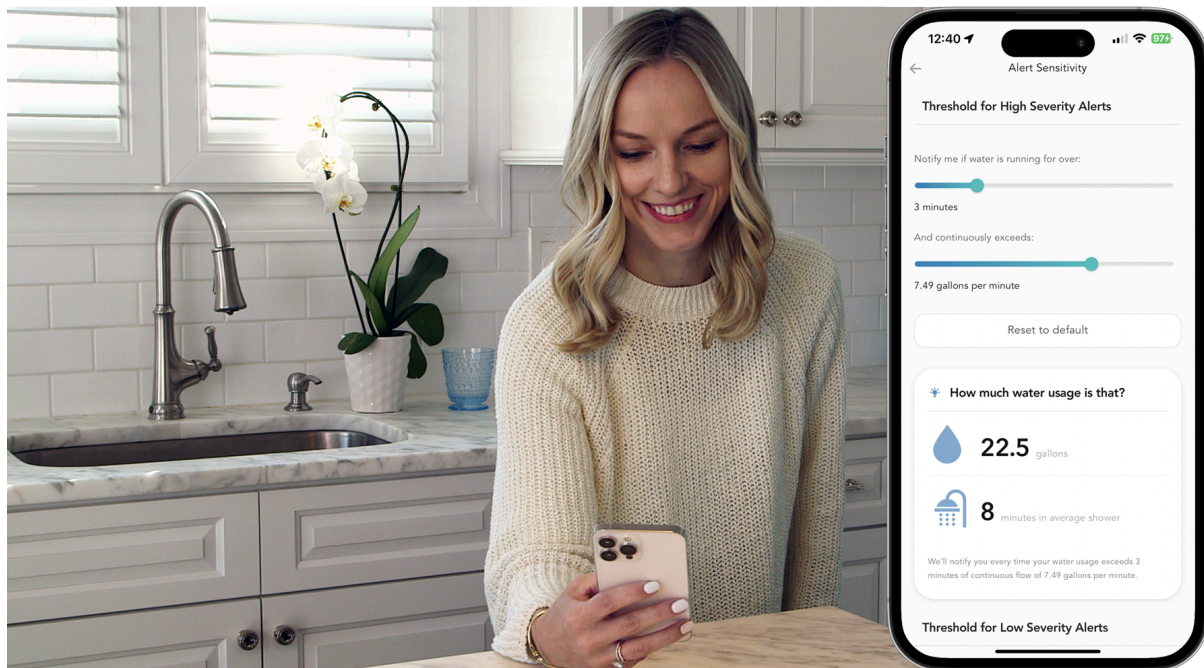


One drop at a time: how a new water sensor is helping to detect leaks and save you money

With water scarcity a growing concern across the globe, smart tech and greater insights into water usage can help people take control of their consumption

BY: Mark Hillsdon

Non-independent content produced as part of a commercial deal with Guardian Labs



In North America, for instance, an estimated [20% to 50% of water is lost to leaks](#). In Europe, agricultural areas, tourist hotspots and major conurbations are all becoming vulnerable to water stress.

Despite its growing scarcity, fresh, running water can still feel ubiquitous, with people taking it for granted in their day-to-day lives. To help people change their habits and start to use water more efficiently, a simple trigger is needed – something intuitive that can be integrated into their everyday lives.

This is the thinking behind [Droplet](#), a small but powerful water-use sensor. It has been designed to give homeowners real-time data on their water usage, helping them to use water efficiently but also pinpoint leaks so they can act quickly to stop water being wasted, avoid surprise bills and prevent serious damage to their homes.

[Droplet](#) has been developed by Hydrific, a startup business that's part of Lixil, a global pioneer of water and housing products. Lixil's purpose to make better homes a reality for everyone, everywhere drives its commitment to innovate. Water sustainability emerged as a critical focus area, sparking the creation of the Hydrific team and ultimately the Droplet solution as a complement to Lixil's existing broad portfolio of water-efficient toilets, showers, and taps.

The market quickly recognised Droplet's potential – it raised \$114,000 (£88,000) as part of a Kickstarter campaign, more than 10 times its original funding goal. Droplet has also been shortlisted in two categories in Fast Company's 2024 Innovation by Design Awards, while being named a CES Innovation Awards 2025 honoree. Now [available for purchase](#), Droplet empowers homeowners to take control of their water use, making water conservation easy and enjoyable.

The focus for Droplet is family homes, says Julia Deister, leader of the Hydrific team. “We believe that by supporting the needs of home and property owners and bringing them targeted awareness around their daily water use, we can begin to spark a stronger collective interest and public involvement in water,” she says.



With a large amount of water being lost to leaks, customers are being encouraged to better understand their water use. Photo:monkeybusinessimages/Getty Images/iStockphoto

During Droplet's development phase, two key learnings stood out, she says. “The first was when it comes to water management, and trying to control usage – people really don't

know where to start. The second was that people lacked context and really don't know what level of water use is considered normal.

“It's difficult to save water or make an impact without a frame of reference or benchmark for household water consumption. The data from Droplet provides a starting point in understanding how water is being used and optimised.”

A little bigger than a tennis ball, one of Droplet's key features is ease of installation – with an adjustable clamp that attaches the device to the main water pipe, there is no need for tools or a plumber. Once attached, Droplet uses an ultrasonic sensor to measure water flow through the pipe, capturing high-precision data 50 times a second, and detecting flows as low as 0.1 litres a minute.



The Droplet sensor pairs with an apps, showing water usage on a simple dashboard

Every water appliance in the home also has a unique flow signature, from the flush of a toilet to the opening of a tap. Droplet uses machine learning and data science to identify and categorise water activity, as well as specially developed algorithms that detect unusual patterns in water use, alerting homeowners to potential leaks or unexpected high consumption.



It is also easily controlled using a mobile app with a simple but comprehensive dashboard that creates a snapshot of water consumption, breaking down water use by appliance and fixture. It provides data on an annual basis, to help identify trends as well as second-by-second data, which can pinpoint areas for immediate water efficiency improvements.

“Most of our customers are looking for deeper insights into their water consumption,” says Deister. “They feel in the dark about how much

water they consume, and from which appliances and fixtures. They want a water ‘companion’, which they can consult for actionable insights and can bring visibility to their everyday water habits.”

Lixil is partnering with the not-for-profit [Alliance for Water Efficiency](#) to produce a study that examines in greater detail behaviour change among Droplet users, and how the device can shift people’s thinking on water use and water policies.

As well as homeowners, there has also been a positive reaction from US utility companies, says Deister – a reaction she expects to see from their European counterparts, too.

“Providing an accessible solution that helps people optimise their water efficiency will support utilities’ mission, especially in water-stressed regions that experience droughts and volatile water demand. It can also help them prepare for an emerging regulatory environment,” she says.

“Encouraging customers to monitor and use water more efficiently can help providers manage resources, avoid waste and minimise the costs of lost water from leaks.”

There are differences in how people use water on both sides of the Atlantic, with the average person in the US consuming about [385 litres a day \[pdf\]](#), compared with [144 litres a day in Europe](#). This is down to factors such as larger houses, more bathrooms and more outdoor water use in the US, as well as more efficient appliances in Europe.

But water efficiency remains a priority wherever you live, says Deister. “In both Europe and the US, we see that consumers are developing a growing awareness of the need to conserve water while maintaining safe access to it. While attitudes and lifestyles may differ, households in both regions increasingly consider water as a valuable resource and feel a responsibility to use it wisely within their own homes.

“After all, water is a fundamental human right that we must protect for future generations.”

Find out more

To find out more about Hydrific, part of Lixil, visit hydrificwater.com