

Whitepaper shows how small changes can have a dramatic impact

As more laboratories and research institutions take the lead in decarbonization and sustainability efforts within their organisations, it becomes increasingly important to match your autoclave to your workload. A Whitepaper by the University of Alabama at Birmingham, has show that whilst steam-jacketed autoclaves are ideal for the most intense high-throughput environments, such as hospitals, because they have both the capacity and workload to complete over 12 cycles in a workday. Jacketed autoclaves do use large amounts of water and energy because they are optimized for such around-the-clock operation. However, this throughput isn't always necessary for research environments. While some labs might require sterilisation to occur all the time, most do not. This is where a non-jacketed autoclave has been shown to greatly outperform its jacketed autoclave equivalent. On average, without any added water-saving features, jacketed autoclaves typically use between 166 litres and 190 litres of water per sterilization cycle, depending on cycle type. The equivalent non-jacketed autoclave uses less than 8 litres of water per cycle, regardless of cycle type.

Most research labs rely on autoclaves to ensure their equipment, reagents, glassware, and other tools are sterile. Autoclaves achieve this level of sterility by utilising a combination of steam/pressure/time, to reliably kill or deactivate harmful bacteria, viruses, fungi, spores, and pathogens on lab items or in waste loads before disposal. The shape of the chamber used can have a dramatic impact on both cost of operation and performance. If you do not plan to sterilise flat trays of medical instruments regularly, then a rectangle autoclave chamber might not be right for you. On an annual basis, a cylindrical-vessel front-loading autoclave, such as Priorclave's [EH400-SMART 400 Litre autoclave](#) can be expected to use a sixth or less as much water and energy when compared to an almost identical rectangular model autoclave—that's added savings on top of the lower initial purchase price. By eliminating corners, the cylindrical chamber can improve steam circulation, preventing cold pockets and ensuring complete sterilization without excessive cycle times or chronic failed loads.

Correctly pairing the right type of autoclave to your workload has been shown to save time, water, and electricity. Priorclave and its global network of exclusive distributors and factory-certified authorised service agents (ASAs) can expertly guide you in every aspect of steam autoclave specification to ensure the perfect match. Most importantly, your local Priorclave distributor is intimately familiar with the on-the-ground realities within your region, from water quality and power-grid stability issues to regulatory and statutory minutia. To discover just how affordable and impactful a new Priorclave autoclave can be, contact sales@priorclave.co.uk or visit the [website](#) to find your local distributor.