



# THE AES TEST CHAMBER DIFFERENCE

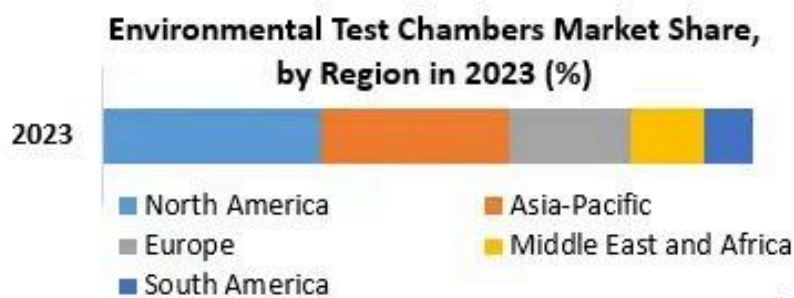
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Saving You Time & Money



## Abstract

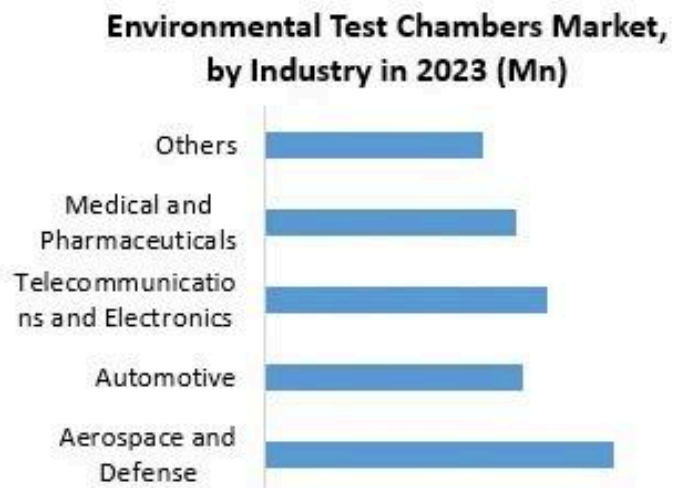
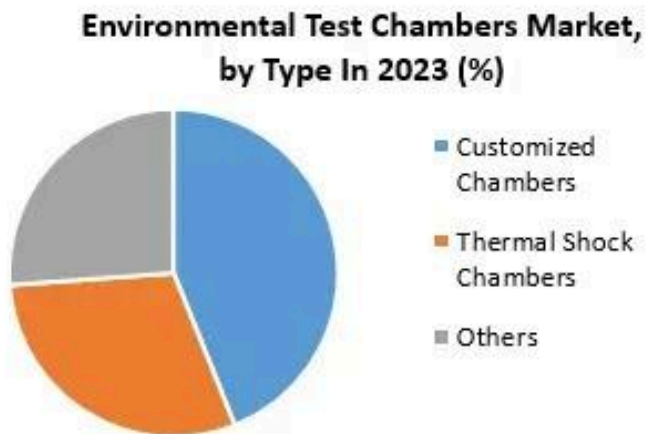
Companies across industries are looking for effective environmental test chambers that will not only bring their product to market fast but save them time and money. Time is money, and those that best utilize it set a path for success. Associated Environmental Systems (AES) is a test chamber manufacturer that understands this well. Our company has developed processes to build high-performing, custom test chambers for customers with exact specifications. We also offer ongoing support with highly responsive sales and service teams. Learn more about how AES operates on the “time is money” axiom and why brands across industries turn to us for their testing needs.



**Global Market Size**

Year	Market Size (Million USD)
2023	USD 1272.55
2030	USD 1461.76

Market Size in Million



# Introduction: Test Chamber Costs

There's no denying that environmental test chamber costs can add up quickly. Depending on the size, temperature range, and additional features needed, a chamber can cost upwards of hundreds of thousands of dollars. The total time and resources required to build a test chamber can quickly tally up, leading companies to creatively look for ways to save on manufacturing costs.

Across the world, there is a heightened need for specialized testing environments worldwide as strict testing regulations continue to arise. Governments and private sectors pour resources into upcoming technologies and look to upgrade existing systems. This surge is pushing various industries, including aerospace, consumer electronics, and automotive, to look for chambers that enable them to conduct testing effectively and efficiently. Staying adaptive and flexible is the key to success.

## Leading Test Chamber Manufacturers

AES is a full-service expert provider that evolves with companies and their needs. Our high-performing, adaptable test chambers and our responsive test chamber services engineers ensure you get the most out of your testing and stay ahead of the competition. We are in the business of partnerships and want to provide you with chambers that save you time and money in the long run. You can rely on us to keep you moving forward.

# Advantages of AES Environmental Test Chambers

## A LEAN Approach to Testing

When conducting environmental testing, waste, quantified and unquantified, can accumulate quickly. Whether due to overproduction, excess inventory, halted processes, or delayed transportation, waste can cause you to spend more money than anticipated on a project and slow down the time it takes to bring the product to market.

AES uses lean manufacturing principles to improve operations and ensure that you're reducing costs and expectancy. Implementing Lean manufacturing principles has the potential to maximize resources by eliminating waste and encourages the usage of five principles. These five principles should help guide teams and interactions with customers:

### 1. Value

Value is always determined by the customer's need for a specific product. Understand the timeline for manufacturing and delivery, the price point, and important requirements or expectations that must be met.

### 2. Value Stream Mapping

Once the value is identified, map out the value stream. This covers all the steps involved from beginning to end. Value stream mapping helps determine every step that does not create value and then finds ways to eliminate wasteful steps.

### 3. Create Flow

After removing waste, it's important to ensure no interruptions. Teams come together to brainstorm new ways to be more efficient during production.

### 4. Pull System

An effective pull system improves your time to market. Products become much easier to deliver, ensuring they don't have to be stockpiled or built in advance. Overall, this saves time and money for the manufacturer.

### 5. Continuous Movement

Implementing lean principles in one project is not enough—they should be carried out across all projects. Teams must be vigilant to ensure that these principles are not compromised and use the proper tools to reduce waste continually.



# Advantages of AES Environmental Test Chambers Cont.

When it comes to battery testing, you want to avoid non-value added work, this can include setting up test profiles on a chamber to setting up individual connections between your battery cyclers and each cell channel in your environmental test chambers. This is non-value work because it takes so much time waiting, connecting, and troubleshooting messy wires and unorganized channels. AES leverages lean methodologies to save valuable time and money in our ATP systems. We not only mistake-proof our battery chambers and battery fixtures, but small chambers can be optimized to ensure greater price-per-channel with pre-labeled wiring and channels yielding faster results, stronger temperature uniformity, maintaining chamber ergonomics, and much more. Lean manufacturing keeps your productivity levels high and prepares you for unseen changes ahead.

## Built to Adapt

Regulations, requirements, and technologies will continue to evolve. Industries must be prepared for change, but they shouldn't have to experience financial losses to stay ahead. At AES, we want you to save time and money, which is why we developed our ATP series to help ease your ongoing challenges.

For industries that test batteries, the ATP series is essential. While the lineup started with the patented ATPPRIME, other fixtures have been introduced, such as the ATPFLEX (battery testing fixtures that can be added to existing chambers) and the patent-pending ATPHEAVY (battery testing fixtures for large format and prismatic cells, capable of testing up to 1200 amps per channel). As industries begin testing large format batteries and higher capacity cells, the ATP series continues to grow, welcoming its newest addition, the ATP ADAPTABLE. This innovative fixture allows you to test new battery form factors and types, so if you find yourself needing to reach new requirements or wanting to explore different battery chemistries, the Adaptable can meet your needs.

Typically, older test chambers cannot adapt to technological shifts, resulting in companies spending more money to meet changes and failing to meet deadlines routinely. But at AES, we're a manufacturer you can trust to stay on course and not overutilize resources. Our chambers, such as the Super 512, the SC-512-4-SAFE benchtop test chamber, is not only the most powerful temperature-only benchtop test chamber, but it can integrate with our ATP® battery testing fixtures. As your cell formats, sizes, and amperages change, our battery fixtures will adapt with you instead of forcing you to find another manufacturer and chamber. Our experience with your specific cell type will enable us to continually provide you with the best products, saving you immediate time and money.

# Efficient & Effective Manufacturing Process

## Optimizing Performance With Cutting-Edge Technology

Often, purchasing an environmental test chamber must be completed quickly to keep up with testing demands. Companies cannot afford to wait several months for a chamber to be built. However, stocking a large volume of chambers conflicts with customization requirements for individual end users. To meet lead time demands, the AES factory floor picks up directly where the sales team leaves off.

## Test Chamber Technology

At AES, we house impressive manufacturing technology to maximize efficiency. Our in-house, state-of-the-art sheet metal fabrication facility includes a sheet metal CNC laser machine that can cut half-inch steel with precision and speed. AES also utilizes a robotic welding machine capable of producing welds at 12 times the speed of conventional TIG welders and an efficient powder coating oven that quickly coats parts without sacrificing high-quality coverage. LEAN training combined with established procedures and an optimized shop floor layout allows the AES manufacturing teams to pull orders through the systems efficiently while remaining flexible to customization and staying true to our commitment to producing quality products.

Apart from our manufacturing technology, the technology embedded in our products is exceptional. With the rise of advancements such as touch screens, smartphones, and tablet technology, we realize that it's no longer a luxury to have information at your fingertips—it's expected. To keep pace, our team at AES decided to work with evolving technologies and provide customers with revolutionary capabilities, including the full ability to monitor testing while working remotely.

AESONE CONNECT, a combination hardware (AESONE XCHANGE) and software (AESONE CONSOLE), allows you to operate your test chamber and view real-time and historical data anywhere. This gives you flexibility in your testing schedule. If, for any reason, you have to be away from the lab during an ongoing test, you can monitor the progress and make changes (even stop the test) so long as you have internet access. In other words, the days of standing next to the chamber, scrolling through small LED screens or layers of pages on a 4" touchscreen, are over.

AESONE CONNECT comes standard on most new chambers, but the technology is also available for older chambers through AESONE RETROFIT. AES will assess your chamber configuration, then, if it's compatible, have a service team member install a retrofit that will enable your controller to communicate with your network. Networked chambers create a variety of benefits and efficiencies, including easy collaboration for distributed teams, enhanced security features, and the potential to save money in the long run. Instead of spending money routinely to meet ongoing project needs and have the latest technology, AES's dynamic solutions help you save on resources.

# Expert Service & Support

## Constant Communication Throughout the Buying Process

Test chambers are used in just about every industry imaginable. When every customer is different, almost every chamber sold must be modified to accommodate a unique sample or test design. Whether it's a simple customization, such as an extra port, or a complex one requiring re-engineering, prompt communication between the customer and the build team is crucial.

While many environmental chamber manufacturers use third-party sales representatives to sell their products, AES employs a direct response sales team, which allows prospects to be contacted and quoted from the company's factory. Our sales team works directly with our engineering team to design your ideal chamber. Our sales team ensures you will be happy and hit all your testing requirements, whether they are needed now or later. In doing so, you can set a testing schedule ahead of time as you track the test chamber from the factory to the lab. Even well after your chamber is shipped to your door, our team is more than happy to provide you with preventative maintenance and annual calibrations, which can help you avoid financial penalties, production delays, and more.

## A Customer-First Approach

Business continues to move at an increasingly fast rate. New technologies are just around the corner. To keep up with testing demands, test chamber manufacturers need to adapt their products and practices. AES remains a leader in the industry by constantly revamping its processes to better serve its customers and push innovation.

Simply put, we're here for you. We're always looking for new ways to save you time and money and looking to truly understand what problems are fixable and which require replacement chambers. If you have test chambers from multiple manufacturers—and at various stages of their lifespans—leveraging us as your sole service provider will save you significant financial resources. Instead of turning to individual manufacturers for individual parts and services, choose AES as your full-service expert provider. We can construct a plan that best fits your budget and needs. You say, "I wish I could." We respond, "Well, you can."



## Conclusion

At AES, we are dedicated to providing the best solutions. Your big ideas matter, and we want to design and build a test chamber that propels change worldwide. Let us know your needs, and we'll get started on a plan that matches your project timeline, meets regulations and requirements, and is built to last. Saving you time and money is our priority.

[View our products](#) and [contact](#) a sales engineer at AES today. If you have any questions regarding environmental test chamber prices or even want to know more about the [benefits of testing chambers](#), we'll be ready to answer questions. We look forward to forming a lasting relationship with you.



# Resources

ASME ,[5 Lean Principles Every Engineer Should Know](#)

OpenPR Worldwide Public Relations, [Environmental Test Chambers Market](#)