



The most sensitive  
The most reliable

## VeriPac LPX

### 100% In-line Automated Package Leak Detection

- Connecting sensitivity, reliability, and speed
- In-Production Testing with the highest level of control and confidence

VeriPac vacuum decay technology has been **proven to be the most sensitive, most reliable** vacuum-based leak test method on the market, backed by decades of dependable performance in the pharmaceutical, biologics and medical device industries.

The VeriPac LPX Series is PTI's line of fully automated package quality inspection systems for 100% inline testing. The LPX enables enhanced automated testing that provides a **high level of confidence** in packaging line performance. The LPX is a practical and reliable solution to the problems associated with performing infrequent testing, allowing for process-related quality issues to be recognized and corrected sooner rather than later.

The VeriPac LPX features a dynamic robotic design, tailored to fit your production requirements. The LPX Series are scalable, modular solutions to meet production line demands. This adaptable platform provides reliable automated handling of a variety of packaging formats. Applications for LPX automation range from flexible packaging to rigid containers, and parenteral products.

### Vacuum Decay Technology

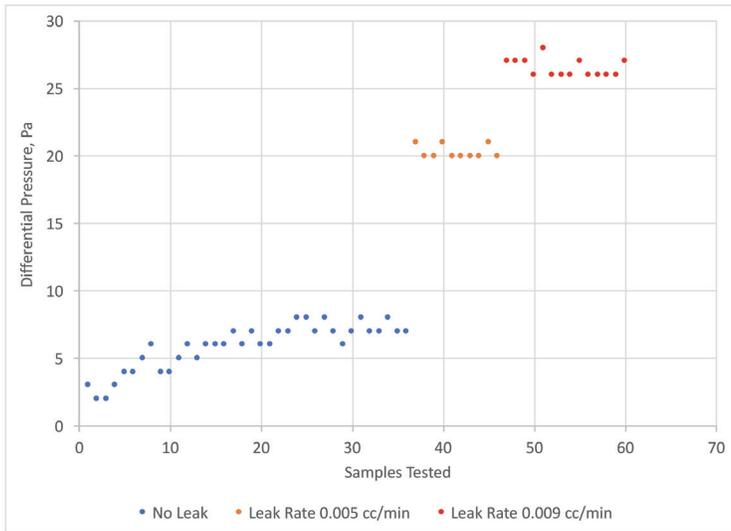


Figure 1. PTI's VeriPac vacuum decay technology reduces the baseline measurement for good samples and amplifies the test result for defective samples.

Vacuum decay is a deterministic method to provide reproducible and reliable results for leak testing of high-risk package applications. It can be applied to a wide variety of package formats and product types. The test involves placing a package in a test chamber, applying vacuum, and monitoring the vacuum level for any change, which would indicate the presence of a leak. Test chambers are configured according to package specifications, test sensitivity and handling requirements. The VeriPac LPX is modular providing the flexibility and versatility of easy changeover for testing different size packages on the same system.

VeriPac LPX systems utilize PTI's vacuum decay technology, an ASTM Test Method F2338, developed using the VeriPac platform.

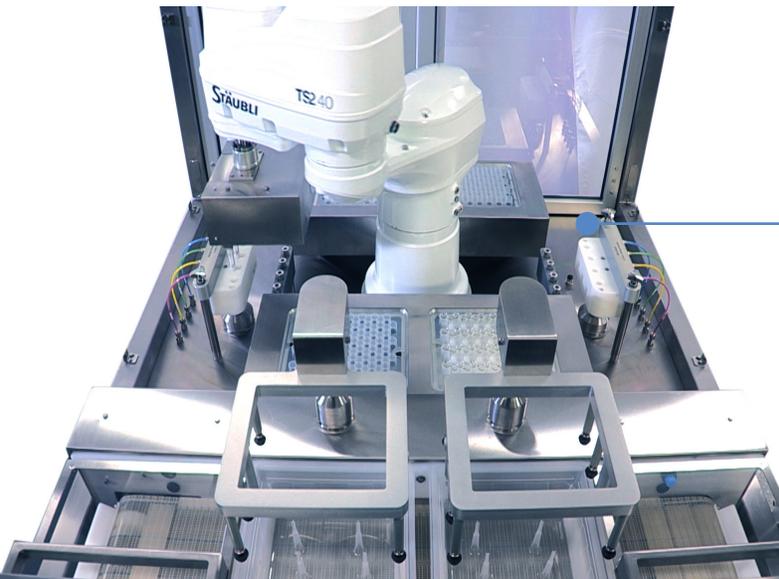
- Test method is recognized by the FDA as a consensus standard for package integrity testing.
- Listed in ISO 11607 and USP Chapter <1207> guidance.

### VeriPac LPX Automates CCI For Parenteral Products

Sensitivity and reliability go hand in hand with CCI testing. The VeriPac LPX 430.8S is the next generation automated inspection system for container closure integrity testing of parenteral products. Automated for 100% testing or batch release, the VeriPac 430.8S is an eight-station dual chamber design robotic testing platform for pre-filled syringes and vials, testing products filled with lyophilized product, small molecule liquids and Water for Injection (WFI).

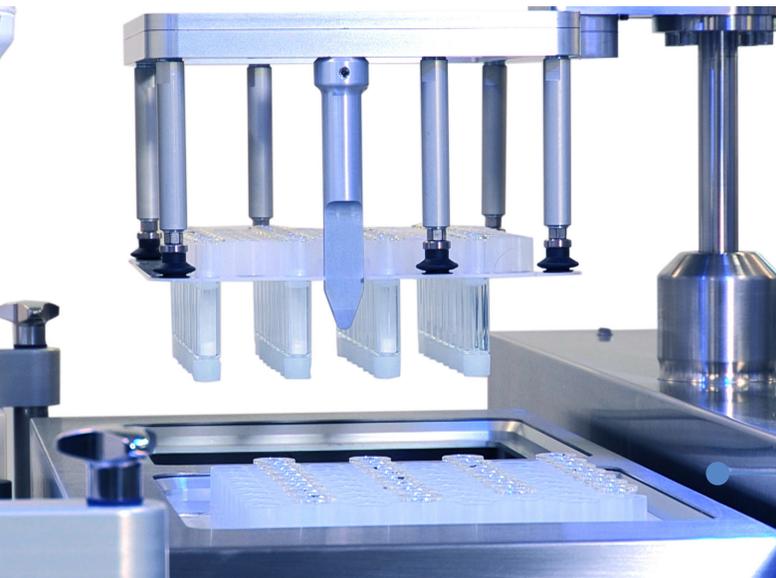


Veripac LPX 430.8S



An eight-station dual chamber design robotic testing platform for pre-filled syringes and vials

The robotic arm picks the syringes from the nested syringe trays and places them in the test chambers.



Defects are automatically placed in the reject tray, while pass syringes are returned to the nested tray.



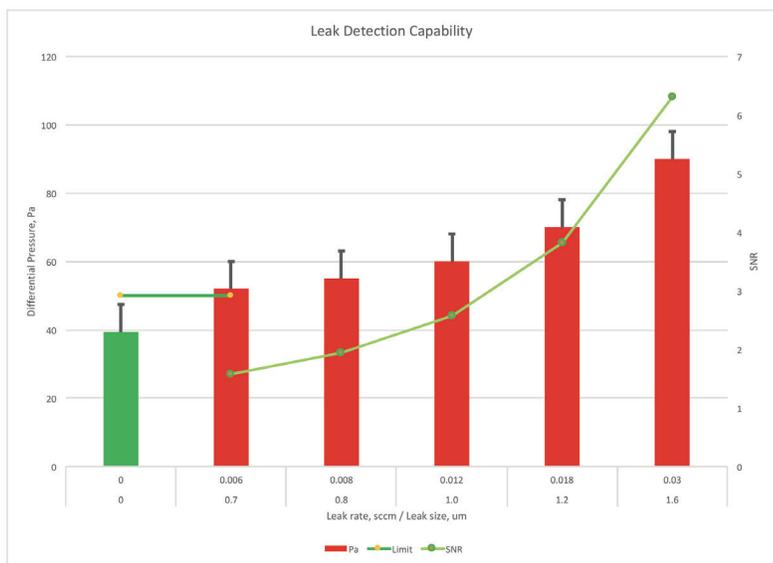


Figure 2. PTI's VeriPac vacuum decay technology is geared towards detecting leaks in the maximum allowable leakage limit (MALL) range for parenteral packaging and can also be applied to flexible and semi flexible package formats. The technology allows for control of the test system volume and maximizes the signal-to-noise ratio (SNR) between good and defective samples.

## PTI's Vacuum Decay Difference

Achieves highly sensitive testing with leak detection of critical defects down to the 1 micron range. Parenteral applications require this level of sensitivity, with the maximum allowable leakage limit (MALL) at the single digit micron level to eliminate any risk to the patient. The VeriPac LPX for parenterals also features a small footprint design. The test chambers can be swapped out for easy changeover to test vials or syringes with different fill volumes.

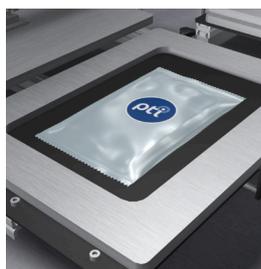
## VeriPac LPX for Flexible Packaging

The VeriPac LPX for flexible packaging enables continuous testing and throughput of pouches, stick packs, sachets and other flexible packaging formats.

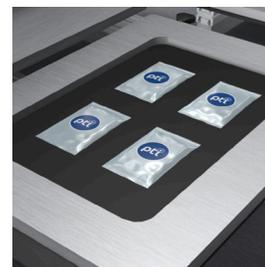
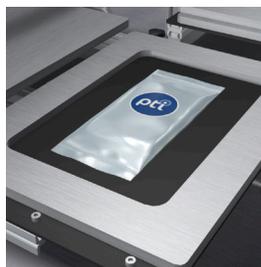


### Automated Testing Benefits:

- Increased sampling rate
- Automated data processing
- Eliminates live intervention



VeriPac LPX FLEX chambers can accommodate various size pouches and test multiple pouches in a single cycle.



A high-speed robotic gripper arm will pick & place the packages into the VeriPac LPX test chambers where a rapid vacuum-based test is performed. A definitive PASS/FAIL result is displayed along with quantitative test result data. The packages will then be reintroduced to the product line to ensure continuous flow and seamless downstream handling. Rejects are automatically removed from the production line.

## VeriPac LPX Benefits

- Automated testing enables the highest level of container quality assurance
- Deterministic, quantitative test method
- ASTM Test Method F2338 and FDA standard, ISO 11607
- Distinct PASS/FAIL results
- Highly accurate test results - low false positives and false negatives
- High Signal Noise Ratio (SNR) for peak sensitivity and reliability
- Non-destructive, non-subjective, no sample preparation
- Pick-and-Place option back into the production line
- Auto reject option of defects removed from the production line
- USP <1207> compliant

### Additional PTI automated technology platforms:

- **E-Scan MicroCurrent HVLD<sup>mc</sup>** for parenterals
- **Force Decay** for blister packs and low headspace packaging
- **Airborne Ultrasound** for pouch seal quality inspection



## SPECIFICATIONS

	VeriPac LPX
<b>Inspection Platform</b>	Rotary and in-line configurations
<b>Package Type</b>	Flexible and rigid containers <ul style="list-style-type: none"> <li>• Pouches</li> <li>• Stick packs and sachets</li> <li>• Cups, trays, bottles</li> <li>• Vials and pre-filled syringes</li> </ul>
<b>Package Materials</b>	Tyvek®, paper, foil, film, poly, aluminum, plastic, glass, laminated materials
<b>Test Configuration</b>	Automated for production line applications
<b>Test Method</b>	Vacuum Decay - Single or Dual Transducer PERMA-VAC Technology
<b>Operator Interface HMI</b>	Color Touch Screen
<b>Data Collection</b>	<ul style="list-style-type: none"> <li>• View on HMI screen and electronic data collection</li> <li>• PTI-ETHOS, CFR 21 Part 11 capability</li> </ul>
<b>Test Frame Enclosure</b>	<ul style="list-style-type: none"> <li>• Stainless steel frame</li> <li>• Lexan protective shielding for moving systems</li> </ul>
<b>Test Chamber</b>	Test Chamber design and number of test stations determined by package specifications, test sensitivity and handling speed
<b>Pick &amp; Place</b>	Robotic Arm (4-axis or 6-axis) application dependent
<b>Recognized Test Method</b>	<ul style="list-style-type: none"> <li>• ASTM F2338 vacuum decay technology</li> <li>• USP&lt;1207&gt; chapter guidance</li> <li>• Annex 1</li> </ul>
<b>Options</b>	Validation Qualification Package (IQ/OQ)