

OPTIMIZE LABORATORY PROCESSES

# INNOVATIVE TECHNOLOGIES

Systemec – Your solution for efficient sterilization

New  
Generation



MADE IN  
GERMANY

[systemec-lab.com](http://systemec-lab.com)

**Systemec**  
the autoclave company



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# WELCOME TO SYSTEC

## Your partner for high-quality sterilization solutions

For over **30 years**, Systec has been the leading supplier of laboratory auto-claves and equipment for the preparation and sterilization of culture media. **Precise results** are essential in research, and complex laboratory processes often cost valuable time and resources. That is why our mission is to increase efficiency and safety in laboratories worldwide through innovative technologies.

Our autoclaves stand for **maximum safety and quality**. We place great importance on comprehensive safety standards in the development and manufacture of our devices. Strict quality criteria are applied right from the selection and processing of the individual components, and these are continuously monitored throughout the entire production process. Each component is carefully checked before it is installed in the device. In addition, all devices undergo comprehensive functional tests at a specially equipped test site to ensure that they meet the high requirements of practical use at all times. These measures are supplemented by long-term tests of components under realistic load conditions, ensuring a consistently high level of quality and maximum operational safety.

**We have the  
knowledge to  
achieve better  
results!**

With specialized  
local partners,  
our services are  
available to you  
worldwide.

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**ISO 9001  
ISO 14001**

**MADE IN  
GERMANY**



## Corporate philosophy

Our philosophy is based on the values of quality, innovation, and customer focus. We develop systems that reduce the workload in laboratories, simplify processes, and create space for discover-

ies, insights, and progress. We see ourselves not only as a manufacturer, but also as a partner who understands the individual requirements of each laboratory and offers solutions that go far beyond standard offerings.



## Systec laboratory autoclaves

Developed for specific sterilization tasks in the laboratory, Systec laboratory autoclaves make processes safer, simpler, more accurate, reproducible, and validatable.

Systec autoclaves can be used for all laboratory applications, even for demanding sterilization processes.

## STERILIZATION OF



**Liquids**  
(e.g., culture media)



**Solids**  
(e.g., instruments, pipettes, glassware)



**Waste**  
(destruction sterilization of liquid waste in bottles or solid waste in destruction bags)



**Biological hazards**  
in safety laboratories

# DISCOVER OUR PRODUCTLINES!

Autoclaves for all applications –  
the right solution for every laboratory

In today's laboratory environment, efficiency and safety are of utmost importance. Systec offers a wide range of products specifically designed to meet these requirements. Here are our main product lines:



## SYSTEC VX-SERIES

Vertical autoclaves

- ▶ 8 models
- ▶ 40 to 150 liters of usable space
- ▶ Low space requirement
- ▶ Large usable room height



## SYSTEC DX-SERIES

Horizontal tabletop autoclaves

- ▶ 7 models
- ▶ 25 to 200 liters of usable space
- ▶ Compact exterior
- ▶ Interior with ideal usable space





### SYSTEC HX-SERIES

Horizontal vertical autoclaves

- ▶ 16 models
- ▶ 65 to 1580 liters of usable space
- ▶ Large usable volume with low space requirements
- ▶ Simple and efficient installation and commissioning



### SYSTEC HX-SERIES 2D

Double-door autoclaves

- ▶ 13 models
- ▶ 90 to 1580 liters of usable space
- ▶ For the sterile transfer of material between safety areas
- ▶ For maximum safety during sterilization in safety laboratories and clean rooms



SYSTEC VX-SERIES

# VERTICAL FLOOR-STANDING AUTOCLAVES

Maximum efficiency and user-friendliness for your laboratory needs

The Systec VX series combines **innovative technology** and sophisticated design to offer an efficient and space-saving solution for sterilization in laboratories. These **vertical freestanding autoclaves** are characterized by their small footprint and impressive usable height, making them particularly suitable for laboratories with limited space resources.

The VX series can efficiently sterilize both liquids and solids, making it ideal for a wide range of applications in the laboratory environment. An outstanding advantage of this autoclave is its optimal loading capacity, with a **loading advantage of up to 50%** when loading with standard medium bottles and Erlenmeyer flasks. This maximizes efficiency and reduces the number of sterilization cycles required, **saving time and resources**. The Systec VX series is therefore the perfect choice for laboratories that value efficiency and space savings.



New  
Generation

FURTHER  
INFORMATION



## TECHNICAL SPECIFICATIONS

- ▶ **Models:** Available in 8 models with a usable volume of 40 to 150 liters
- ▶ **Heating capacity:** Varies between 3.5 kW and 9.3 kW, depending on the model
- ▶ **Voltage options:**  
Systec VX-40 und Systec VX-55:  
Voltage 220-240 V, 50/60 Hz, 16A  
Systec VX-65 bis Systec VX-150:  
Voltage 380-400V, 50/60 Hz, 16A

## ADVANTAGES

- ▶ **Space saving:** Ideal for laboratories with limited space
- ▶ **Increased capacity:** Up to 50% more loading capacity compared to conventional autoclaves
- ▶ **Easy to use:** Touch display enables intuitive control

## APPLICATION

- ▶ Sterilization of culture media, nutrient media, and laboratory glassware
- ▶ Use in various laboratory environments, from research laboratories to universities



## ALL MODELS IN THE SYSTEC VX-SERIES



## SYSTEC DX-SERIES

# HORIZONTAL BENCH-TOP AUTOCLAVES

Maximum efficiency and flexibility for your laboratory needs

The **Systec DX series** offers innovative solutions for horizontal sterilization in laboratories. These front-loading tabletop autoclaves are available in seven sizes from 25 to 200 liters and are characterized by their **compact exterior design and optimal interior space**. Each size offers excellent loading capacity for most standard medium bottles and Erlenmeyer flasks, making them the ideal choice for a wide range of laboratory applications.

The DX series is designed to efficiently sterilize both liquids and solids, enabling flexible use in various laboratory environments.



New Generation



FURTHER INFORMATION



## TECHNICAL SPECIFICATIONS

- ▶ **Models:** Available in 7 models with a usable volume of 25 to 200 liters
- ▶ **Heating capacity:** Depending on the model, from 3.5 kW to 9.3 kW
- ▶ **Voltage options:**  
DX-25 and DX-40: 220-240 V, 50/60 Hz, 16A  
DX-65 to DX-200: 380-400 V, 50/60 Hz, 16A

## ADVANTAGES

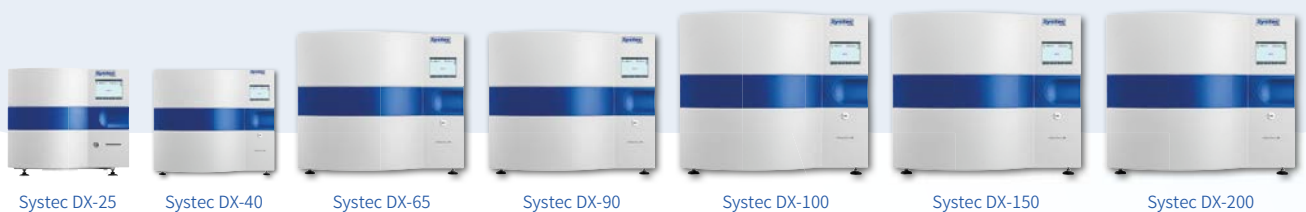
- ▶ **Optimal use of space:** Compact design, ideal for laboratories with limited space
- ▶ **Increased capacity:** High loading capacity for a wide range of containers
- ▶ **Easy operation:** Intuitive control via a user-friendly display

## APPLICATION

- ▶ Sterilization of liquid media and solids in research laboratories
- ▶ Use in universities, educational institutions, industry, life sciences, and biotech



## ALL MODELS IN THE SYSTEC DX-SERIES



SYSTEC HX-SERIES

# HORIZONTAL STANDING AUTOCLAVES

The new generation for the highest demands

The **Systec HX series** represents the latest generation of horizontal benchtop autoclaves and has been specially developed for large laboratories, research institutes, and industrial applications. With 16 models ranging from 65 to 1,580 liters of usable space, the series covers a wide range of requirements.

The completely redesigned construction combines robust construction with state-of-the-art control technology. The result is more **precise processes, shorter cycle times, and easier maintenance.**

Thanks to their modular design, the autoclaves can be flexibly expanded, e.g., with rapid re-cooling, vacuum systems, or exhaust air filtration. This enables validatable sterilization processes that meet the highest standards in research, biotechnology, and industry.



New  
Generation

FURTHER  
INFORMATION



## TECHNICAL SPECIFICATIONS

- ▶ **Models:** Available in 16 sizes (65–1,580 liters)
- ▶ **Temperature and pressure range:** up to 140 °C / 4 bar
- ▶ **Touchscreen control:** Enables easy programming and monitoring
- ▶ **Memory:** Internal data backup for at least 10 years

## ADVANTAGES

- ▶ **Optimized process times:** Faster sterilization cycles thanks to innovative technology
- ▶ **Easy maintenance:** User-friendly design for uncomplicated maintenance work
- ▶ **Modularity:** Adjustments and expansions are easily possible
- ▶ **Wide selection:** Chamber sizes for every application

## APPLICATION

- ▶ Pharmaceutical and biotechnology laboratories
- ▶ High-throughput industrial and research laboratories
- ▶ Sterilization of liquids, solids, and waste

## MODELS

16 sizes  
65 to 1580 liters  
chamber capacity



# SYSTEC HX-SERIES 2D

# DOUBLE-DOOR

# AUTOCLAVES

Efficient sterilization for high-security areas

The **Systec HX Series 2D** was specially developed for gas-tight installation in partition walls and is available in 13 models ranging from 90 to 1,580 liters. With two doors, the devices ensure strict separation of clean and unclean areas.

These autoclaves meet the most stringent requirements for **cleanroom and safety conditions**, as required in biological safety laboratories or in pharmaceutical production.

The new generation impresses with its maintenance-friendly design, more precise processes, and shorter cycle times.



FURTHER  
INFORMATION



## TECHNICAL SPECIFICATIONS

- ▶ **Models:** Available in 13 sizes (90–1,580 liters)
- ▶ **Control:** New touchscreen technology
- ▶ **Safety:** Double locking system and automatic door control
- ▶ **Temperature/pressure range:** Up to 150 °C / 5 bar (optional)
- ▶ **Energy efficiency:** Optimized energy use for sustainable operation

## ADVANTAGES

- ▶ **Maximum safety:** Ideal for biological safety laboratories
- ▶ **Easy handling:** Intuitive controls for simple operation
- ▶ **Versatility:** Suitable for a wide range of sterilization applications
- ▶ **Maximum safety** thanks to gas-tight installation
- ▶ **Strict separation** of clean and unclean areas
- ▶ Modular expandability with options from the Systec HX series

## APPLICATION

- ▶ Biological safety laboratories
- ▶ Clean rooms in research and production
- ▶ High-security pharmaceutical environments

## MODELS



# THE FEATURES

## STANDARD FEATURES



Systec autoclaves offer a wide range of standard features to ensure maximum efficiency and user-friendliness. These include:

- ▶ **Easy operation via 5.7" touchscreen** for intuitive operation with excellent readability
- ▶ **Fully automatic process sequence** via state-of-the-art microprocessor control
- ▶ **Up to 100 sterilization programs**, freely configurable, with seven programs already predefined
- ▶ **Internal memory** for data backup for at least 10 years
- ▶ **Innovative and fully automatic safety door lock** that automatically locks the door with a surrounding locking ring after pressing it shut
- ▶ **Adjustable automatic door opening after the end of the program:** The door opens automatically – either at the touch of a button or automatically after the end of the program (adjustable)
- ▶ **Housing, support frame, and pressure vessel made of corrosion-resistant stainless steel**
- ▶ **Pressure and temperature range of the pressure vessels** are designed for 4 bar absolute pressure / 140 °C



FURTHER  
INFORMATION



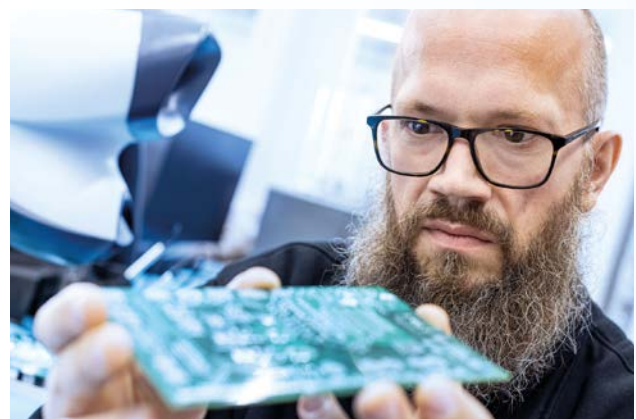
 optionally available

 Standard included

## TOP-FEATURES

In addition, Systec autoclaves offer optional top features that further improve functionality:

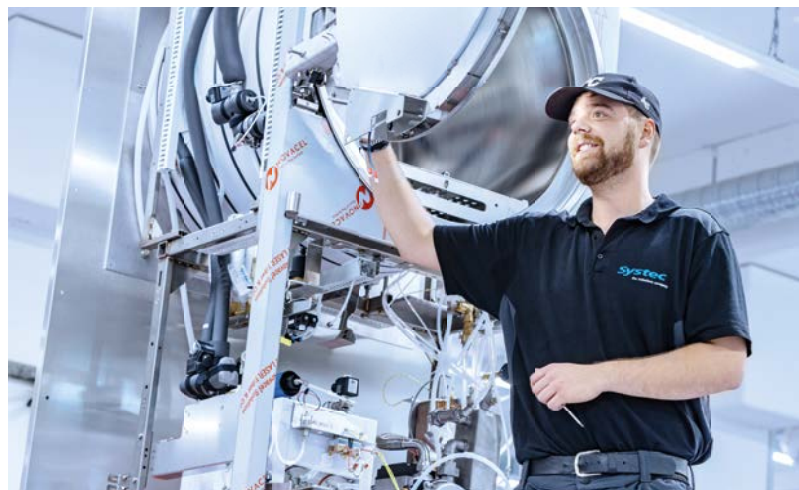
- ▶ **Extended temperature and pressure range** up to 150 °C and 5 bar, possible for all device sizes
- ▶ **Rapid recooling** for efficient and safe cooling of liquids
- ▶ **Radial fan and ultracooler** for efficient acceleration of the cooling process
- ▶ **Spray cooling** with hot water or soft water sprinkling for minimal heating and cooling times (from model VX-65/DX-65)
- ▶ **Steam-air mixture process:** Support pressure during the heating, sterilization, and cooling phases. Particularly suitable for vessels that are prone to bursting or deformation and sealed vessels
- ▶ **Vacuum system** for the validatable sterilization of solids and waste in sterilization bags.
- ▶ **Superdry** for drying solids (only in conjunction with optional vacuum system)
- ▶ **Exhaust air filtration** including condensate deactivation for safe sterilization of biological hazardous materials
- ▶ **Double exhaust air filtration** for safe sterilization in safety laboratories
- ▶ **Extended documentation** (AuditTrail, FDA 21 CFR Part 11)



### OPTIONS DOCUMENTATION



- ▶ **Electronic data output:** The integrated documentation feature is used for comprehensive batch documentation and for exporting electronic data as PDF or CSV files via network interface or USB
- ▶ **Printer:** Optional integrated printer for documenting program type, batch number, date/time
- ▶ **System Connect USB:** Integrated USB interface for exporting electronic data as PDF or CSV files via USB stick
- ▶ **System Connect DS (documentation system)** with the new System Connect DS, you can access all information about your autoclaves from any device that is connected to the same network as the autoclaves
- ▶ **System Connect App:** The System Connect app is available free of charge for iOS (Apple) and Android devices



**ADDITIONAL ITEMS**



**FOR THE SYSTEC DX-SERIES**



Stainless steel tub



Rack system



Basket



Support Tables

**FOR THE SYSTEC VX-SERIES**



Stainless steel bucket



Basket

Lifting device



**PRODUCT COMPARISON AND SERIES SELECTION**

Discover the perfect solution for your specific laboratory needs by visiting our website. There you will find a detailed comparison of the different models. Take the opportunity to compare the specifications and features of the models in detail. Scan the QR code to go directly to the comparison information.



**OVERVIEW**



# PROCESSES AND APPLICATIONS

# STERILIZATION OF LIQUIDS

Learn more about sterilizing liquids



## HEATING UP

The actual sterilization time of, for example, 15 to 20 minutes at 121 °C is only a fraction of the total process time of an autoclaving process. Especially when sterilizing liquids, the heating and cooling times are many times longer.

### The conventional method

In conventional systems, although the specified sterilization temperature is reached in the autoclave, the liquids to be sterilized are only heated to approx. 100 °C; the temperature equalization time between the chamber and liquid temperature usually takes considerably longer.

### Up to 50% shorter heating time as standard

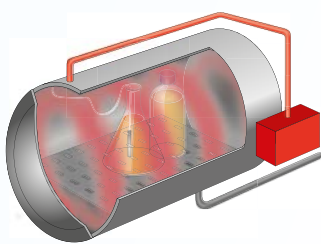
During the heating phase, the chamber temperature is raised above the sterilization temperature so that the target temperature is reached more quickly. The result: significantly faster temperature equalization of the liquids with a shorter heating time.

## COOLING

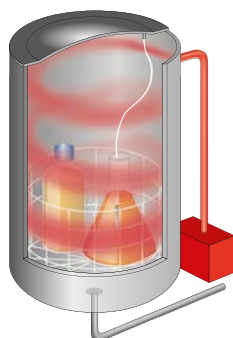
The **cooling process for liquids** is also very slow, as heat below 100 °C can only be dissipated via convection through the chamber insulation without active rapid cooling.

**New system and process technologies** make it possible to significantly reduce the overall batch time. This saves several hours! In addition, the media are not exposed to elevated temperatures for unnecessarily long periods of time.

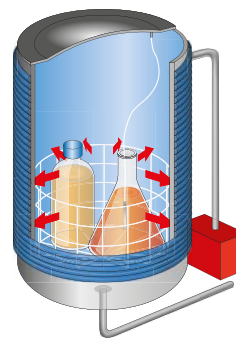
With regard to precise **sterilization processes**, safe handling, and increased productivity, Systec autoclaves offer a wide range of functions for liquid sterilization. Many functions are already included as standard or can be added to the autoclave as options, depending on the model and performance category.



Systec DX-Serie/HX-Serie



Systec VX-Serie



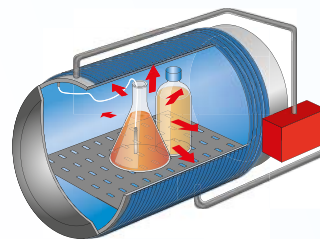
Systec VX-Serie

Recooling time reduced by up to 60%

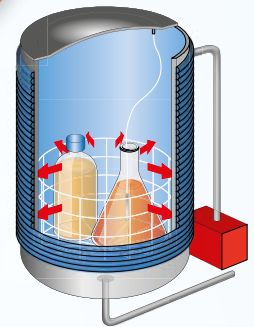
## JACKET COOLING AND SUPPORT PRESSURE

Jacket cooling via pipe coil, plus support pressure. Water circulates in it during the cooling phase, which speeds up the entire process. The use of support pressure from sterile-filtered compressed air during the cooling phase ensures that no liquid boils over during the cooling phase – otherwise this would cause losses through evaporation or could lead to foaming. Reduction of the recooling time by up to 60%.

Reduction  
in recooling  
time by up to  
60%



Systec DX-Serie/HX-Serie

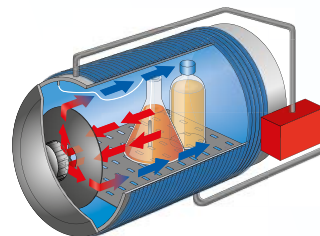


Systec VX-Serie

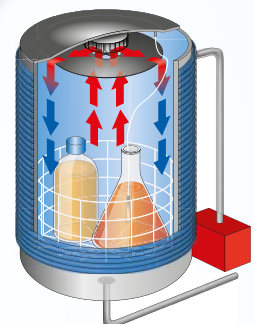
## CENTRIFUGAL FAN

In conjunction with optional jacket cooling with support pressure through air circulation, this **ensures accelerated heat transfer** from the sterilized items to the cooled chamber jacket. The fan wheel is located in the door of the usable space. Reduction of the recooling time by up to 70%.

Reduction  
in recooling  
time by up to  
70%



Systec DX-Serie/HX-Serie



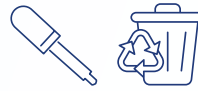
Systec VX-Serie

## ULTRACOOLER

This is an additional heat exchanger that is installed behind the radial fan. Reduction of recooling time by up to 90%.

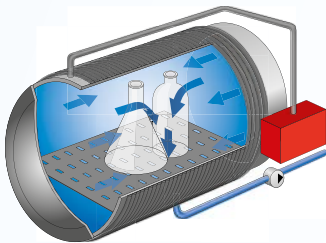
## PROCESSES AND APPLICATIONS

# STERILIZATION OF SOLID MATERIALS AND WASTE



### VACUUM DEVICE

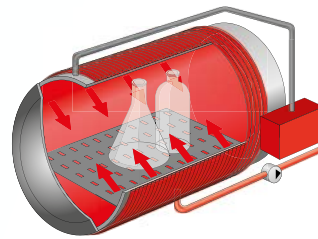
For **solids, tubes, porous materials, textiles, and waste** in bags, it is important to completely remove the air present in the sterile goods in order to ensure accurate, reproducible, and validatable sterilization. This is achieved by means of a fractionated pre-vacuum in conjunction with the standard steam generator.



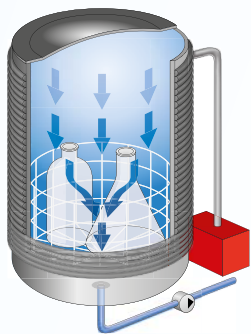
Systec DX-Serie/HX-Serie

### SUPERDRY

Increases the efficiency of drying **solids**. Here, heat energy for drying is supplied via the standard steam generator of the external sterile chamber heater. The optional vacuum device in conjunction with Superdry makes post-drying unnecessary.

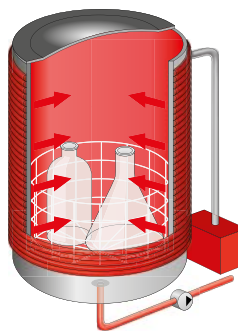


Systec DX-Serie/HX-Serie



Systec VX-Serie

For porous materials, solids, and waste



Systec VX-Serie

# STERILIZATION OF BIOLOGICAL HAZARDS

## EXHAUST AIR FILTRATION WITH CONDENSATE INACTIVATION

The optional exhaust air filtration system ensures safe handling of **biological hazardous substances**. An autoclavable sterile air filter in the form of a filter cartridge made of a 0.2 µm PTFE membrane reliably retains particles and microorganisms.

The filter cartridge is installed in a pressure-resistant stainless steel housing, monitored by a Pt-100 temperature sensor, and sterilized inline during each sterilization process.

The condensate produced during the sterilization cycles is collected in the pressure vessel and safely inactivated together with the steam. This prevents any germs, aerosols, or liquids from escaping before the end of the sterilization process. This is a decisive factor for use in safety laboratories (BSL-2 to BSL-4).



## BENEFITS

- ▶ Safe sterilization of biological hazardous substances
- ▶ Inline sterilization of the exhaust air filter during each cycle
- ▶ No escape of germs, aerosols or liquids
- ▶ Validatable processes for laboratory and safety environments

## FURTHER INFORMATION



SYSTEC CONNECT

# ALL AUTOCLAVES AT A GLANCE

With Systec Connect, you can easily access all the information about your autoclaves from your office via a browser

## More clarity. Less effort.

Unclear processes, scattered data, and uncertain operation cost valuable time every day. This is especially true when multiple devices or changing users are involved.

Systec autoclaves are the result of decades of development work and continuous innovation. At the heart of this technology is our proprietary control solution: a powerful, real-time capable controller (programmable logic controller) combined with an intuitive user interface and a comprehensive documentation and safety concept.

To make everyday laboratory work even more efficient and safer, you can now connect our autoclaves to the modular Systec Connect platform and view all relevant information centrally.



FREE APP



SYSTEC-CONNECT APP




Download for iOS



Download for Android

 optionally available





 included as standard

## STANDARD FEATURES

- ▶ **Ethernet interface:** Network connection (LAN) via RJ45 Ethernet
- ▶ **Internal memory**
- ▶ **Electronic data output**
- ▶ **Mobile app (Systec Connect app):** This is a free standard feature
- ▶ **Compatibility**



## OPTIONAL FEATURES

	<b>Systec Connect Wi-Fi</b>	With Systec WiFi adapter. For Systec DX/HX/VX series
	<b>Systec Connect STF (Save to Folder)</b>	Automatic data transfer via FTP/SFTP/FTPS. Process data is automatically saved to a user-definable folder on the computer network (e.g., on a server, on a PC, or on other storage devices connected to the network). For Systec DX/HX/VX series
	<b>Advanced 21 CFR Part 11</b>	Audit trail, electronic signatures, and advanced user account control
	<b>Systec Connect OPC-UA</b>	Feature for integration into external software systems via OPC-UA (e.g., SCADA, Lims systems) For Systec DX/HX/VX series

**Live monitoring without inspection rounds**  
Systec Connect DS is the platform's central monitoring module. It allows you to easily access all autoclaves in the network via your browser. This makes the documentation of your sterilization processes transparent – **live, clear, and without the need for inspection rounds.**

## YOUR BENEFITS

- ▶ Real-time monitoring via browser
- ▶ Color-coded status indicators
- ▶ Accessible only to authorized users
- ▶ No changes possible (read-only)
- ▶ Access to process, error, and audit data



Go directly to the Systec Connect page for more information!

# SUSTAINABILITY AND QUALITY

# OUR HONEST PROMISE TO YOU

Certified environmental management and quality assurance for your reassurance

## Quality that has been tested!

Our quality management systems are certified to **ISO 9001**, ensuring that all our products meet the highest quality standards. In addition, our environmental management system is certified to **ISO 14001**, underscoring our commitment to sustainable practices.

## customer benefit

Our certifications mean we offer not only **high quality**, but also **environmentally friendly solutions** that meet the requirements of **modern laboratories**.



MADE IN GERMANY

## SERVICES

# RELIABLE IN USE

Qualification, validation, and technical support – we are here for you!

### 1. Qualification and validation

Our services include comprehensive qualification and validation work that meets the highest standards. We offer the following services:

- ▶ **IQ (Installation Qualification):** Verification of the installation in accordance with the design specifications
- ▶ **OQ (Operation Qualification):** Ensuring that the device functions as defined
- ▶ **PQ (Performance Qualification):** Validation of the sterilization process in accordance with predefined specifications
- ▶ **SAT, FAT, and process evaluations**



### 2. Service & Support

Our dedicated service team is always at your disposal. We offer:

- ▶ **Installation and commissioning** of your equipment
- ▶ **Special technical development** for specific applications
- ▶ **Testing and process development** to optimize your processes
- ▶ **Individual on-call service and service contracts** for long-term support



Find a service center near you now!

### 3. Customized solutions

We offer customized solutions tailored to the specific requirements of your laboratory. These include:

- ▶ **Development of special products:** Adaptation of our devices to your specific needs
- ▶ **Advice on sterilization processes** and special requirements



Inquire now!



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