



The Atmosphere of Trust for Life Science Industries

Exyte Technology

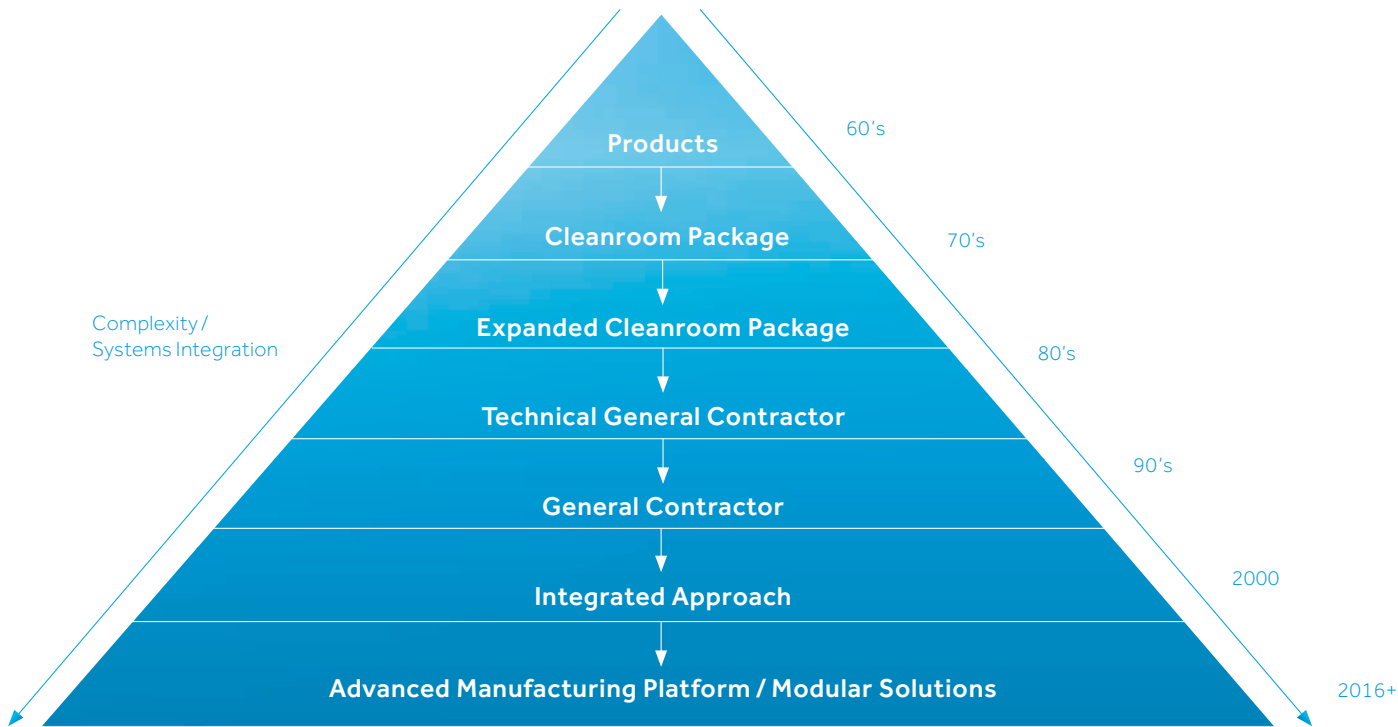


Creating your Atmosphere of Trust ...

... is our Commitment

Exyte Group at a Glance

Exyte Group is the leading global engineering, construction and project management company in the fields of Advanced Technology Facilities, Life Science & Chemicals, Energy & Environment Technologies and High-Tech Infrastructure. In 2017, with more than 4.800 employees the Group reached an order intake of over \$ 2.4 billion. In 2012 Exyte Group celebrated its 100th anniversary and in 2016 its 50 years in cleanroom technology.

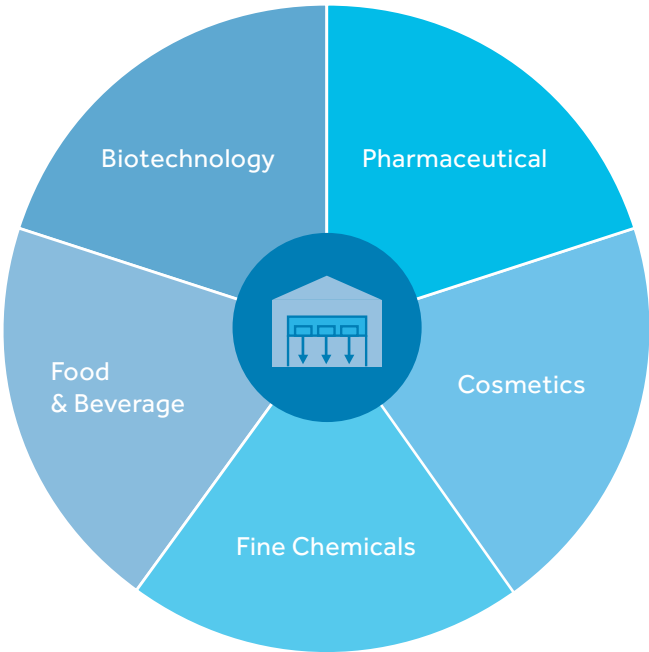


Linking Process Technologies, Products and Automation within complex Facilities in Life Science Industries

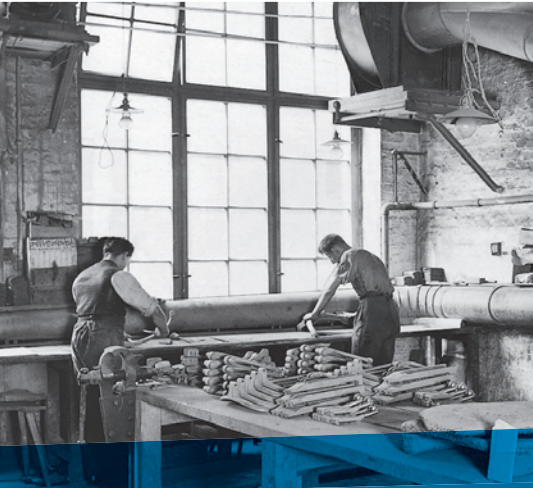
As a globally operating company the ability to link process technologies, products and automation within complex facilities to provide integrated solutions is a key ingredient in continuously providing the atmosphere of trust for our clients.

From traditional construction to the latest in modular solutions, for newly planned or existing operations around the globe Exyte Group puts safety first whilst helping you to meet GMP standards for life science environments.

Exyte is committed to **Leadership in Energy and Environmental Design (LEED)** and green solutions.



Splint Extraction Systems 1912



Chemical Laboratory



Outdoor Air System



Tunnel Air Shower



Pharmaceutical Production Facility



Filling Line



Approaching your Atmosphere of Trust ...

... for Life Sciences

Protecting your Products, Employees and Processes

Working side-by-side with our customers, we offer collaboration, expertise, execution and services others simply can't match.

You can count on us to design, deliver and service specific environments for critical cleanroom operations requiring ultra-clean air and controlled ultra-pure atmospheres.

We ensure your manufacturing processes and equipment are clean, productive, safe and cost efficient both in new systems and upgraded existing systems.

Our technologies and services protect people and products with energy efficient, environmentally friendly solutions.

Exyte Products:

- Over 50 years experience in cleanroom technology
- Leading technologies
- Standard products and customized solutions

Technology for Today's Need and Tomorrow's Roadmaps

Our expertise and culture of building long-term customer partnerships give us in-depth understanding of today's demands and the requirements of next-generation technologies.

For the life science industries we offer a comprehensive range of solutions.

Air Handling	Environments	Solutions
<ul style="list-style-type: none">• Make-up air handling• Filter fan units• Laminar air flow solutions• Unidirectional air flow systems• HEPA filters• Gowning solutions• Air showers• De-dusting solutions• Special solutions	<ul style="list-style-type: none">• Ceilings, walls, floors• Switchable LED lighting solutions• Isolation technologies• Compounding solutions• Biosafety (BSL) containment solutions• Modular construction• Mobile solutions• Monitoring and control solutions	<ul style="list-style-type: none">• Design and engineering• In house production• Installation and commissioning• Documentation support• Design qualification• Installation qualification• Operational qualification• Annual maintenance support



Cleanroom Ceiling System

Ventilator

Control System

Pharma Application



The Atmosphere of Trust ...

CWIC® System

Individual Filter Fan Units (CWIC® modules) can be connected to form different size cleanroom ceilings, e.g. for clean benches or clean work cabins. The modular design enables fast and low-cost cleanroom construction that can be suspended from the ceiling or supported from the floor by pedestals.

- Class A, B, C or D according to EC Guide (GMP)



Plenum Integrated Filter Fan (PIFF)

A self-sustaining return air unit with integrated filter fan, H14 filter, cooling coil and air grill. No return air shafts are needed. Connectable to make-up air or exhaust air in order to pressurize the cleanroom. Especially suited for pharmaceutical laboratories with turbulent airflow and for corridor areas in pharmaceutical companies.

- Class B, C and D according to EC Guide (GMP)



Filter Fan Unit (FFU) SILENT

- Optimized regarding sound power level and airflow
- Uni-directional airflow (laminar) cleanroom areas
- Advanced requirements on the uniformity of the uni-directional airflow
- Advanced sound pressure level requirements in the room
- Class A, B, C, D according to EC Guide (GMP)



... from one source: Exyte Technology

Air Shower Systems

Air showers minimize the transfer of dust particles on cleanroom clothing into clean-rooms. Our tunnel air showers can be used for applications where there is a high volume of personnel traffic or can even be used for the de-dusting of equipment or goods which are to be taken into the cleanroom.

These air showers offer a high cleaning effect and are designed for use with all cleanroom classes.



From-Pick-and-Place-Orders ...

... to complete solutions

Air Handling Units

Exyte Technology air handling units are characterized by an energy-efficient design. They include the latest technical features available and are backed by a strong R&D team.

Our units have been designed for high tech industries such as electronics. Commonly handling air volumes between 1,000 and 150,000 cmh they treat air for:

- Particulate contamination
- Thermal air treatment
- Humidification and dehumidification

Furniture

We offer cleanroom furniture and equipment which is produced to a high quality design and manufactured to equally high standards.

Laminated materials:

- Cabinets
- Working tables and benches
- Shelving and storage units

Stainless Steel materials:

- Trolleys and racks
- Containers and sinks
- Working and washing tables

Floor Finishes

We advise and offer a wide range of GMP suitable floor finishes whereby with all we are equally focused on both the process and project needs and on our clients requirements. The possibilities of coating include:

- PVC or Caoutchouc
- Ceramic or stone ware
- Single and double component epoxy coating
- Pharma Terrazzo
- Conductive or non-conductive

Wall Systems

Fully modular solutions including stud and stud less design; a range from 13 mm to 100 mm thickness and up to 6,000 mm height. Options in glass materials. With an unlimited range of accessories our wall system is the perfect solution for your cleanroom requirements.

- Single and double sided partitions
- (stainless) sheet steel infillings
- Powder coated surfaces
- Wide RAL/NCS colour range
- Swinging and sliding doors
- Material pass throughs

Ceiling Systems

All parts of our ceilings are designed to match one another and all built-in components fit perfectly together. Total modularity means we meet all of our clients needs:

- Vertical and horizontal bulkheads
- Walkable and non-walkable
- Crosspoint systems
- T-bar systems
- Coffered systems

Sprinklers & Accessories

- Recessed sprinkler systems integrated into ceiling grid system
- Flexible hose pipe
- PuridraIl Air Outlets for turbulent air stream
- PVC curtains with smart railing system

Light Fixtures

Luminaires and ceilings should always accompany each other. Our lights and ceilings are designed to form one single unit. We meet all demands of modern lighting:

- IPA certified up to GMP-class A
- Standard and LED-Technology
- VDU workstation suitable
- Integrated fully flush into the ceiling
- Surface mounted
- Customized calculation of Lighting

Control Systems and Monitoring

From simple solutions such as a speed controller for a single filter fan unit via a "closed loop regulation" through to complex controlling and monitoring systems for a large cleanroom, Exyte Technology offers a wide range of products and services for operating cleanroom components and facilities. Our professional experience in control systems includes more than 50 years in design and installation of cleanrooms and a broad installed base around the world.

Besides hardware like manual speed controllers and pre-manufactured power supply and bus-cabling systems for filter fan units, we also provide control and monitoring systems, including all hardware and software required to monitor the cleanroom conditions such as air humidity and temperature as well as the overall air handling technology from a monitoring desk. Customized software applications allow online visualization and monitoring of the operating state of cleanroom facilities through a graphical user interface.



Ceilings Systems UFR



Control Terminal CT3

Air Handling Unit



Ultraflex Cleanroom



Montage Filter Fan Unit



Control Panel



Effective H₂O₂ destruction

Highly efficient filtration products

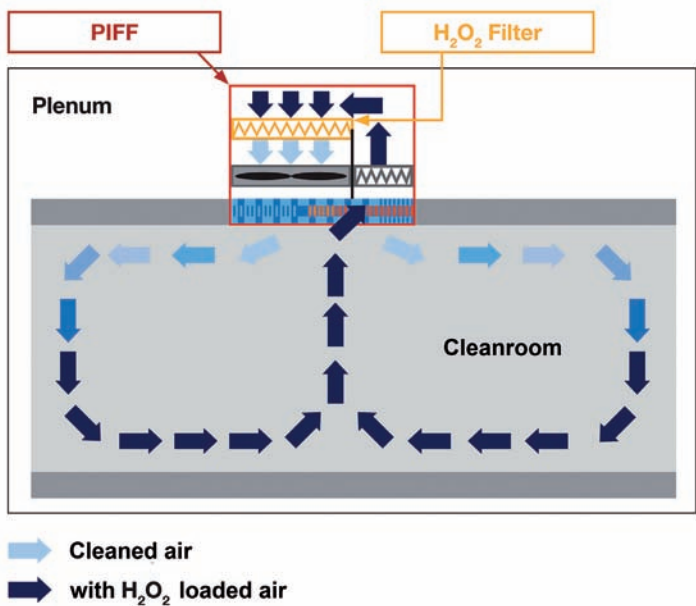
During recent times hydrogen peroxide is used increasingly in the pharmaceutical industry as strong oxidizing agent for disinfection and sterilization of whole cleanroom areas.

As the natural decay-process would last for many hours, Exyte Technology GmbH has developed specialized and highly-efficient filters in its in-house technology center for a fast catalytic reduction of hydrogen peroxide (H₂O₂).

With their help the so-called "scavenging-time" is dramatically reduced, increasing the overall plant up-time.

Exyte Technology is your specialist when it comes to contamination control and is able to offer solutions and services for all of your cleanroom requirements.

Our complete portfolio includes HEPA/ULPA and AMC (air-borne molecular contamination) filters offering solutions for all of your production processes in a clean environment.



Most sophisticated Product Solutions

Flexible Laminar Airflow (LAF) Units

They can be used in combination with:

- Ceiling suspensions and pedestals
- Curtains and window or wall panels
- Mobile trolleys

The flexibility of design supports any configuration or size and is a cost-effective way to install clean islands or clean-room facilities in any application.

This system is suitable for all GMP classes A, B, C and D.

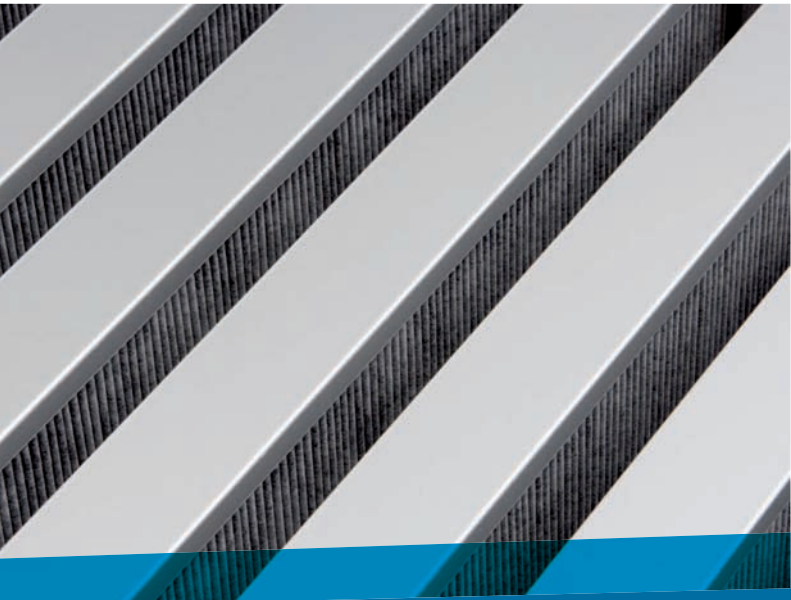
Trusted stand-alone Solutions

Laminar flow solutions are available in various configurations and are designed to offer safe local working areas for a wide range of applications. Equipped with their own air circulation system and appropriate filtration they provide a controlled air stream that serves to protect both the operator and product from contamination.

According to specification they can be designed to be free standing or workbench mounted and always providing the operators with comfortable access to equipment and materials, functional access and space to work and of course can be effectively maintained and cleaned to necessary standards.

From basic fume hoods to laminar flow boxes and microbiological safety cabinets Exyte can provide you with a solution that will fit exactly to your needs.

AMC Filter



Plenum Integrated Filter Fan Unit



Laminar Airflow Unit



Manufacturing and Testing

Excelling at the extra in Cleanroom Products and Controlled Environments

Our centers of excellence and manufacturing in Stuttgart and Shanghai leverage our best-in-class capabilities. In more than 24,000 square meters of production space these facilities offer scalable manufacturing resources and have been optimized for maximum process efficiency through our Just-in-Time and Kanban systems.

Renningen

- Manufacturing Plant 95,000 sq ft (8,800 m²)
- Cleanroom Class 7
- Cleanroom Class 5
- Cleanroom Class 1–3
- Technology Center

Teplice

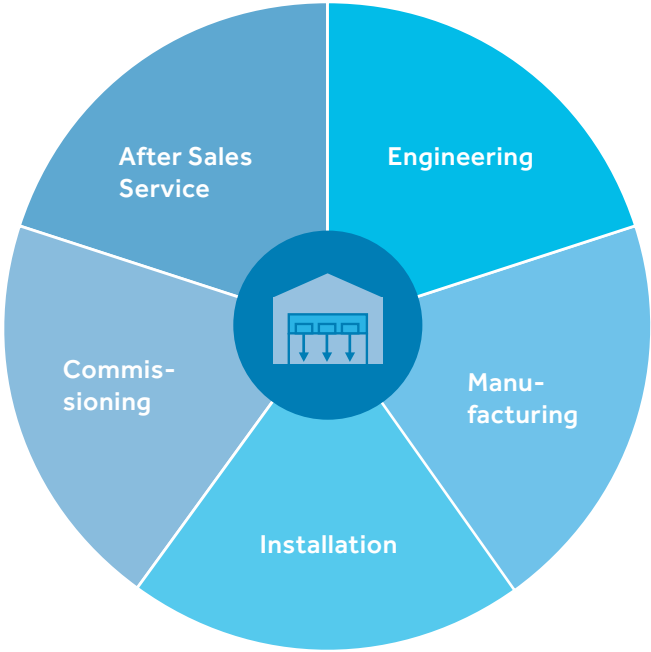
- Manufacturing Plant 75,000 sq ft (7,000m²)

Shanghai

- Manufacturing Plant 97,000 sq ft (9,000 m²)
- Cleanroom Class 6
- Cleanroom Class 1–3
- Regeneration Plant
- Technology Center

Exyte Technology offers more than just Products

Customer demands for highly reliable systems are more than satisfied by our comprehensive and worldwide **After Sales Service**. This is based on our experienced and highly qualified specialists in the areas of service, product management and development.



Technology Center Services

Scope of supply and services

Our technology center is installed with benches and decreasing spaces for climate simulation available for:

- Validation of new processes
- Acceptance of equipment and functional tests
- Decrease under specified conditions
- Temperature and air conditioning
- Precision tempering of ultrapure water for critical processes
- Optimize of sound performance in terms of sound insulation and sound reduction

Approval and Qualification

- System optimization
- Qualification measurements
- Benchmark tests
- Validation

Test Rigs

- Cleanrooms ISO class 1–7
- Filter test rigs
- Air handling units
- Climate chambers
- UPW facilities
- Development of filters

Development and Engineering

- Conceptual design
- Feasibility studies
- Cost of ownership investigations
- Risk assessment
- System integration on-site

Raw Materials Stock



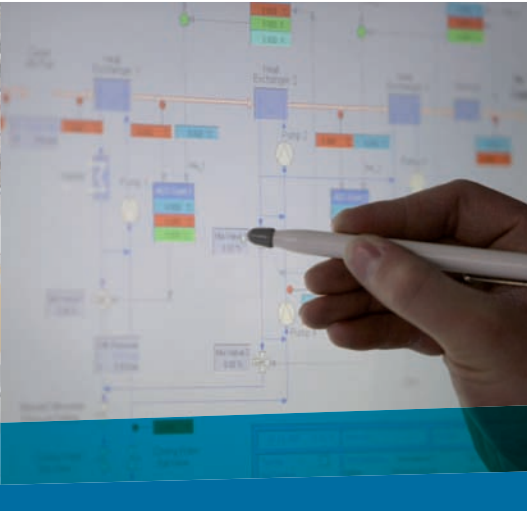
Welding



Final Assembly



Control Panel



Material Test Station



Approval and Qualification



Trace Analysis

Validating new Ideas for Evolving Markets

Exyte Technology trace analysis sector is critical in the development of advanced technology. They clearly differentiate us in the market and as life science applications continue to develop we are ready to support our customers globally with next generation innovation and help to validate design and manufacturing requirements to the highest standards.

Thorough testing and analysis go hand in hand with creating your atmosphere of trust and we welcome the chance to discuss any needs you have.

Ultra-trace analysis for ions, metals and organic compounds in UPW
Cleanroom qualification and contamination control / trouble shooting
AMC Filter development and filter testing
Particle detection and particle removal
Component and material testing and qualification

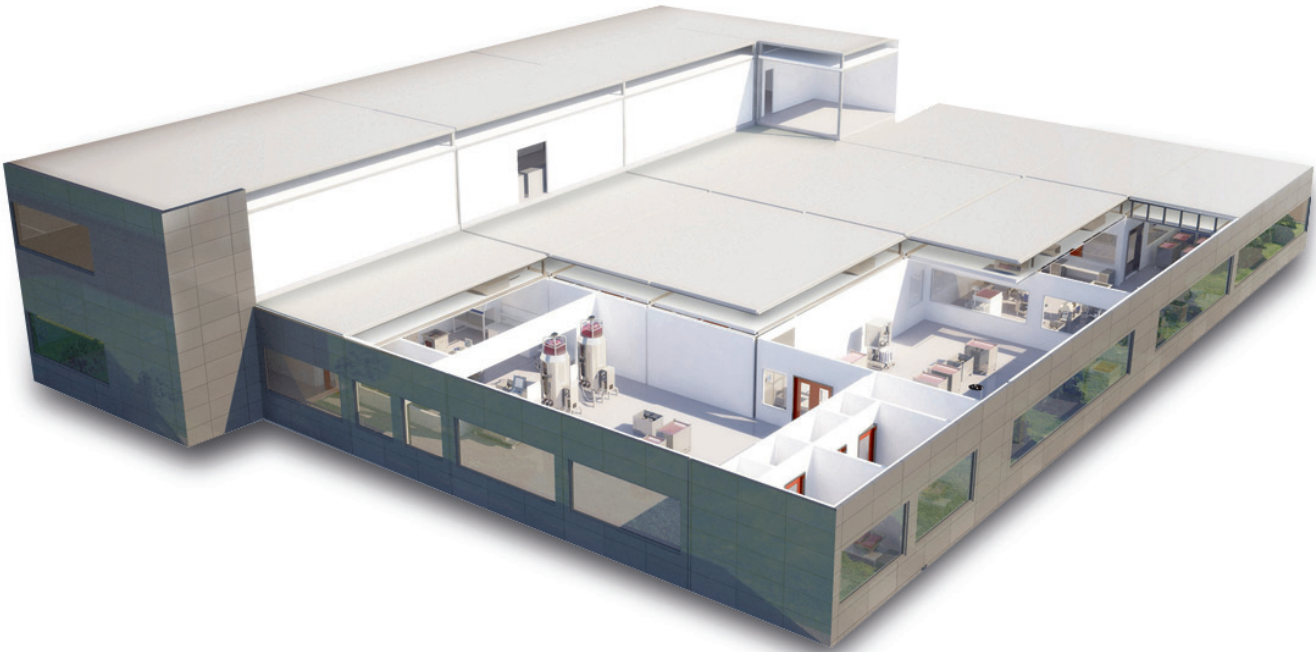
Modular Systems

Prefabricated Laboratories

BIOTECH Clean Cabins (BCC) are prefabricated laboratories in a compact modular design.

They provide a Class A working environment (according to GMP guidelines). The main focus of application is product protection against contamination (as biological material etc.). Changing areas are equipped with airlock function, material transfer lock, optional gas supply and autonomous air supply are integral features.

The BCC's are designed to operate as "stand-alone cabins" or as part of a laboratory or an entire production facility.



Trace Analysis

Material Testing

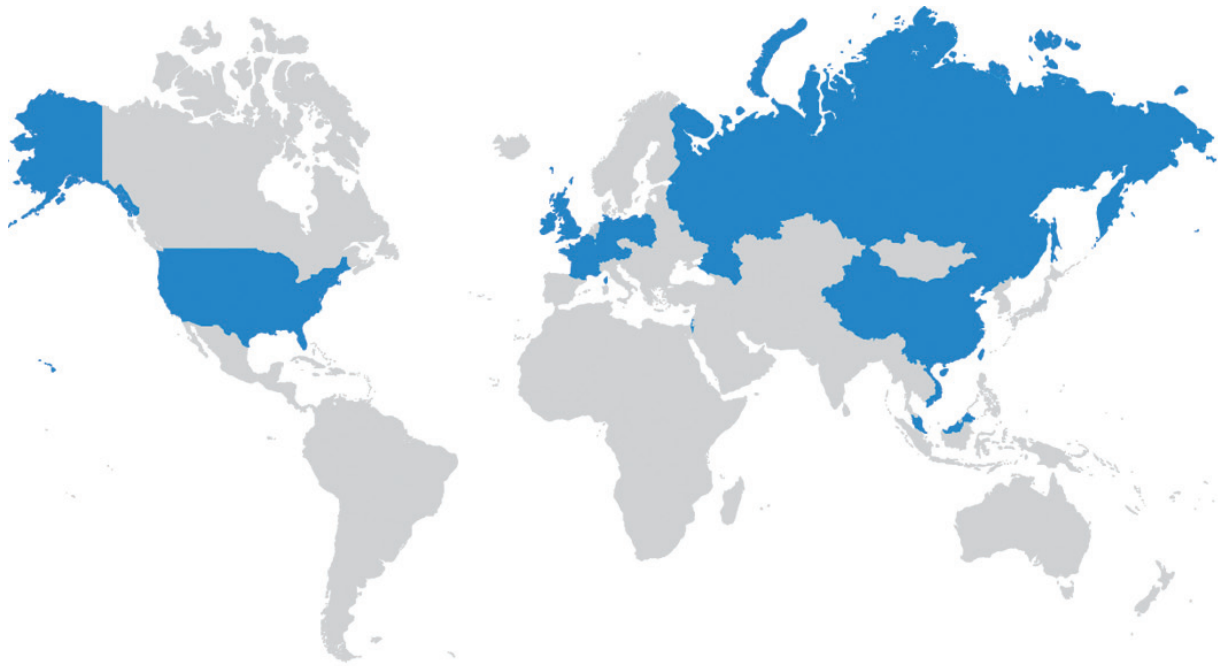
Approval and Qualification

Biotech Cabin

Ultraflex Cleanroom



Local Support Wherever You Need Us



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