VIESSMANN TECHNOLOGIES

CLEANROOMS FOR ADVANCED TECHNOLOGIES

Renowned partner of the high-tech industry

Viessmann Technologies - Founded on experience

Where we come from

In 1917, Johann Viessmann opened his small independent locksmith in the city of Hof in Bavaria and so started a great development process. Since then, Viessmann has developed into a leading player in energy and climate solutions.

The cleanroom product line was conceptualised in 2003 and is today successfully marketed and developed by Viessmann Technologies GmbH from its Hof headquarters. A team of international experts is in charge of ambitious projects throughout the world.

Holistic partners for cleanrooms

Viessmann Technologies is not just an innovative supplier of components but places the focus above all on customer-oriented system solutions – from individual development to an integrated approach. Sustainability in the sense of economic, environmental and social responsibility and the use of durable and reusable materials is very important.

Added to this, we give top priority to reliability and forming a cooperative partnership with customers, suppliers and employees, while maximising efficiency in our use of labour, materials and energy is one of our core corporate principles.

BENEFIT FROM:

+ Uncompromising customer focus
+ Diverse industry expertise
+ Innovative hygienic concepts
+ Highest quality standards right from the start
+ Local roots- international activity

Nanosatellite manufacturing at EnduroSat

EnduroSat is a nanosatellite manufacturer based in Sofia, Bulgaria. The company was founded in 2015 as a start-up with 5 employees and within a short period of time it has grown to a team of over 100 people.

Nanosatellites consist of several cubesat modules depending on the requirements and are sent into space for different purposes of data acquisition.

To improve the processes and quality of the nanosatellites, EnduroSat decided to install a cleanroom in its own office building. This also enables internal testing capabilities that previously had to be outsourced.

Cleanroom production environment improves quality and processes

On their way into space alone, countless forces act on rockets and nanosatellites. This fact makes it even more important to ensure the quality of the nanosatellites for data acquisition and to avoid any contamination of the lenses and other components by dust grains. Manufacturing the nanosatellites in a cleanroom creates the best conditions for this. Filter Fan Units create ISO5 class cleanroom environments at the workstations in an ISO7 environment.

Special design on customer request

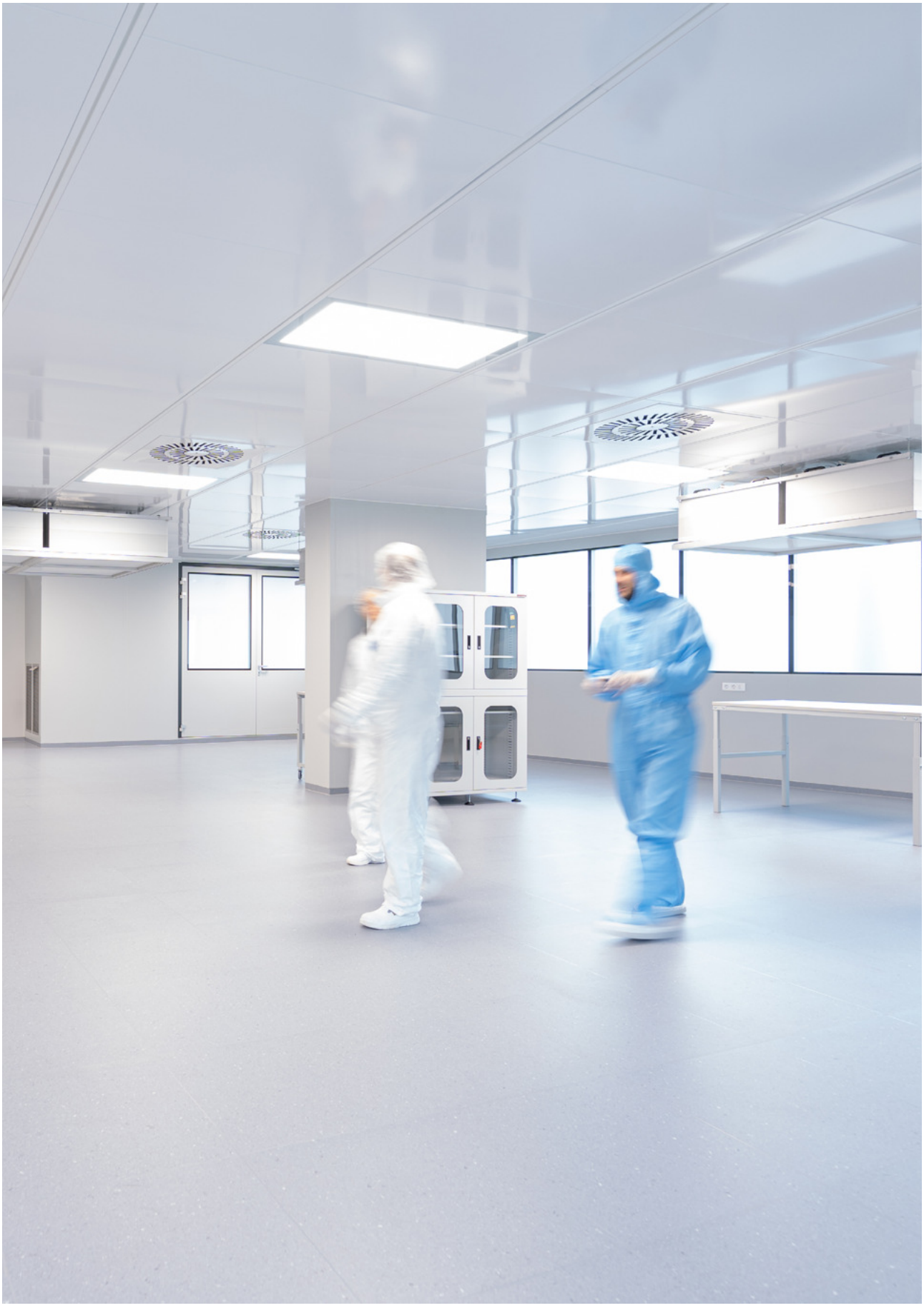
To meet the customer's design requirements, the cleanroom was designed in various shades of gray with a white ceiling. A special highlight, a blue airlock device matching the EnduroSat logo.

Complete solution from Vitec

Vitec acted as a complete supplier for this project, from the walls, including matching glazing, ceiling, floor to a personnel airlock with airlock control. Vitec also supplied the complete ventilation system, including central unit, chiller, controls, as well as the FFUs to increase cleanliness in the work area above each workstation.

TECHNICAL DETAILS:

+ approx. 200m² cleanroom
+ 1x personnel airlock with airlock control
+ Cleanroom class ISO7
+ ISO5 in the area of the workstations by FFUs
+ Cleanroom walls including glazing
+ Cleanroom ceiling
+ Cleanroom floor
+ Ventilation system: air handling unit, air distribution system, H14 outlets, FFUs, refrigeration and EMSR technology



ISO compatible solutions for industrial applications

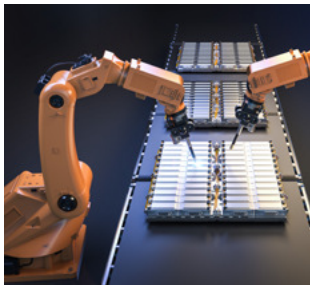
Modular cleanrooms from Viessmann Technologies offer customised individual solutions with a high degree of industrial prefabrication.

Our portfolio includes all functional elements for ISO and industrial cleanrooms.

1. System walls
2. Ceiling and lighting systems
3. Cleanroom glazing
4. Door systems
5. Media modules
6. Lock systems
7. Laminar flow modules
8. Control and monitoring systems
9. Lock fitments
10. Ultra clean workspaces
11. Explosion and radiation protection
12. Cleanroom flooring

We are a competent partner for industry-specific requirements in all applications of cleanroom technology. Our multidisciplinary system solutions make us one of the leading companies in the industry and we incorporate the ever-increasing demands of quality, precision and complexity of products into our development processes. No two projects are alike – this means that our customers benefit from individual solutions that protect people, processes and products from harmful or undesirable environmental influences.

Cleanrooms ensure the purity of air and control of all physical parameters



BATTERY / E-MOBILITY

Controlled environments for process- and product protection in battery- and fuel cell facilities and the dedicated steering technology: Our large dry cleanrooms in combination to process adapted, taylormade Mini- Environments ensuring the precious and demanding working atmosphere.

SEMICONDUCTORS

Manufacturing facilities for chip and wafer production require the very highest air purity as well as controls on all physical parameters within very tight tolerances.

Beyond the proven cleanroom products, Viessmann Technologies offers a complete range of active airlocks for personnel and material movement.

AEROSPACE AND DEFENSE INDUSTRY

Modern aircraft engines, solar sails and precision optics of satellites and many other sensitive aviation and aerospace components are built, assembled and tested in cleanrooms.

Viessmann Technologies offers sophisticated re-circulating air systems with multi-stage filtration up to U17 and application-specific AMC active filters.

Precise and highest demands on product quality and functionality

PLASTICS

Strict compliance with contamination limits – plastics processing presents cleanroom producers with a wide range of challenges. Viessmann Technologies offers a complete portfolio of machine environments, satellite and ballroom solutions including air disinfection and ionisation.

OPTICS

The manufacture, assembly and testing of optical assemblies requires a high level of air purity and a technological infrastructure that meets the strictest quality standards.

Our airlock systems for optical components meet VDI 2083 and EN 14644-4 standards over their entire life cycle.

PRECIOSION MECHANICS

The increasing miniaturisation of precision mechanical components and the highest accuracy requirements mean that a low-particle and temperature-controlled environment is needed for many applications.

Viessmann Technologies offers a full product protection range, from compact mobile solutions to fully integrated cleanrooms according to EN-ISO 14644.

Door and gate systems tailored to protect your sensitive operations

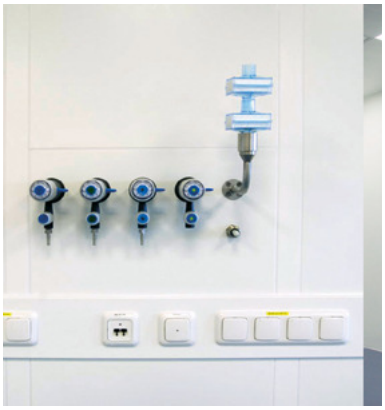
+ Single and double-leaf pivot doors in aluminium precision profiles, flush on both sides, hermetically closing with two sealing levels
+ Single and double-leaf sliding door systems, manual or automatically operated
+ Fire, radiation and acoustic doors, gas-tight doors
+ All door systems are available with electromagnetic or mechanical interlocks and BMS-compatible control modules
+ Cleanroom-compatible lifting and high-speed doors

+ Detector assembling and testing cleanroom for quantum physics/ particle accelerators in ISO class 3

Extensive system components for clean and controlled air flows

CLEANROOM GLAZING

+ Double-sided flush-mounted cleanroom glazing in VSG/laminated glass or ESG/tempered glass
+ Functional glazing for lithography
+ Radiation, fire and sound insulation
+ For maximum transparency: double glazing without vertical posts



MEDIA MODULES

+ Built-in wall and ceiling media modules
+ GMP-compliant double partitioning
+ Flexible „point of use“ design
+ Internal media feed into the cleanroom components

CONTROL AND MONITORING SYSTEMS

+ State-of-the-art PLC modules
+ High-quality electromechanical 'Made in Germany' fittings
+ Latest analogue and digital systems for capturing, visualisation and archiving of relevant parameters

ULTRA CLEAN WORKSPACES

+ Innovative, energy-optimised stand-alone solutions for highly sensitive processes are easily found in Viessmann Technologies cleanroom components.

MATERIAL AND PERSONNEL LOCKS

+ Our lock systems, from the material hatch to active multi-chamber lock-up, are the key to GMP and EN-compliant material and personnel flow.
+ In active or passive equipment, with integrated UV sterilization or H2O2 gas decontamination, we meet the demands of modern cleanroom technology.

LOCK FITMENTS

+ Functionally designed stainless steel or HPL airlock systems ensure compliance with cleanroom guidelines for entering sensitive areas.

CEILING SYSTEMS

+ Variety of different cleanroom ceiling systems from the inaccessible coffered ceiling to easily reached, fluid-sealed ceiling grids with various profile dimensions.
+ Functional units, as lighting elements, air intake and outlet modules, air duct bulkheads, safety installations and monitoring devices, can easily be integrated and readily removed for inspection purposes

LIGHTING SYSTEMS

+ Ceiling or wall integrated light elements, flush-mounted, fitted to be air and particle-tight
+ Meet highest ergonomic requirements
+ Our ceiling profile integrated LED lights, combined with IP65 surface lights, define the standard of modern cleanroom lighting
+ Product range includes special designs, such as explosion protected or yellow lights

CLEANROOM FLOORS

+ Chemical-resistant, dissipative, slip-resistant and mechanically robust floor systems made of PVC, rubber, epoxy resin coatings and terrazzo are part of the product portfolio.

LAMINAR FLOW MODULES

+ Energy-optimised, customised laminar flow modules in freely selectable sizes, equipped with stainless steel or textile laminators provide maximum protection for sensitive processes and products.
+ Multistage pre-filters are combined with terminal HEPA or ULPA filters.

EXPLOSION AND RADIATION PROTECTION

+ Viessmann Technologies has many years of experience in radiopharmaceuticals and in the implementation of cleanroom projects with strict explosion protection requirements.
+ Room and functional components are checked several times and certified.

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1 Berliner Glas, Berlin, Germany

2 Airbus, Madrid, Spain

3 Airbus Defence and Space, Immenstaad, Germany

4 Decontam,Beelitz, Germany

5 IMS Nanofabrication GmbH, Austria

6 EnduroSat, Sofia, Bulgaria

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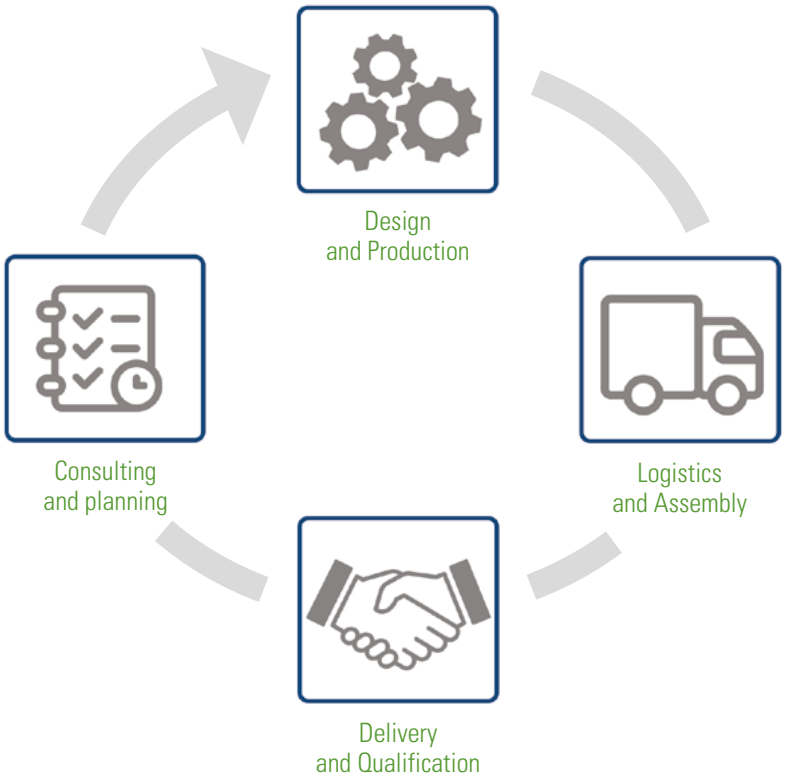
All-in-one service provider for cleanrooms

Consulting and planning

- Optional needs-based consulting and design
- Technical execution planning for cleanrooms
- Individual project consulting from the start by a personal project manager
- Individually hand-picked project team

Design and production

- Development of individual solutions based on modular Viessmann components and precise technologies
- Certified “Made in Germany” quality
- Modular design for fast and easy assembly and flexible adjustments in case of changes



Logistics and assembly

- Professional employees with practical experience and our logistics partners ensure fast and seamless delivery processing
- Our experienced assembly teams quickly install premium clean rooms with consistent quality around the world
- Expert in handling a project from logistics packaging and customer clearance

Delivery and qualification

- Complete verification of physical and microbiological parameters
- Professional commissioning and handover

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