

# CLEAN ROOM SYSTEMS

# MISSION PUR



# ENESS

Pureness is the goal. Perfection the way. The unproblematic execution of your project is dependent on the choice of the right partner. A partner whose team of specialists does not just provide components, but also experience. Who knows how to guide, plan, and execute – while being flexible from beginning to end. Whose dedication to your project is reflected in the large variety of products on offer. And who offers a maximum of diversity with their intelligent, modular systems. For every business. Every cleanroom class. Every requirement.

# EXPERIE ADDED VALUE

A close-up photograph of a scientist in a laboratory setting. The scientist is wearing a white lab coat, a white hairnet, safety glasses, and a white face mask. They are holding a white plastic bottle with a blue liquid inside. The background is a plain, light-colored wall.

# NCE



## SKILLS

---

We offer:

- a complete and thorough completion of your project
- advice, planning and execution
- variability through a flexible system
- sturdy products
- individual and professional consultancies
- our own development department
- continuity thanks to 48 years of OCTANORM
- flexibility from beginning to end
- the best value for money
- a reliable network of partners for every business
- international project experience
- more than 500 cleanroom project references



# SYSTEM DIVERSITY CITY





# MICROBIOLOGICAL PURITY PRESSURE-TIGHT DISINFECTABLE

## FOR PHARMACY AND HEALTHCARE

Requirement No. 1 for pharmacy and healthcare: microbiological purity. This asks for an environment with a minimum number of particles to prevent microbes from cultivating. Which demands a lot from the materials used, the surfaces and the execution. On the one hand, disinfectability and sturdiness are prerequisite. On the other, it needs to be pressure-tight. This calls for absolutely flush surfaces and disposal possibilities. To prevent cross contamination. And increase both quality and safety.







**THE WORLDWIDE HEALTH  
MARKET WILL GROW BY 350 %  
BETWEEN 2008 TO 2013.**



# PHARMACY AND HEALTHCARE



## Wall systems

Ceiling systems

Door systems

In addition to double walls made from powder-coated steel, and full glass systems, we offer sandwich wall systems with pre-coated sheet steel, with polyurethane, mineral wool, or aluminium honeycomb filling.

The wall cladding is pre-assembled and will be mounted onto the foundations on site to create partitioning walls. Installations can be integrated in the hollow space. The surface is edge-free and smooth, a horizontal collection of particles is avoided. Joint sealing ensures the room is pressure-tight.

All elements can easily be moved or replaced, without changing the structure or additional work or material. The double glazing with divided glass frames allows for a single-sided exchange of glass panes.

Advantages: quick assembly, easy handling, no production stops.

## Technical data

- standard wall depth 20 – 150 mm
- uprights and extrusions from aluminium or steel
- surfaces anodized or powder-coated
- different wall panels
- easy integration of switches and sockets
- noise protection

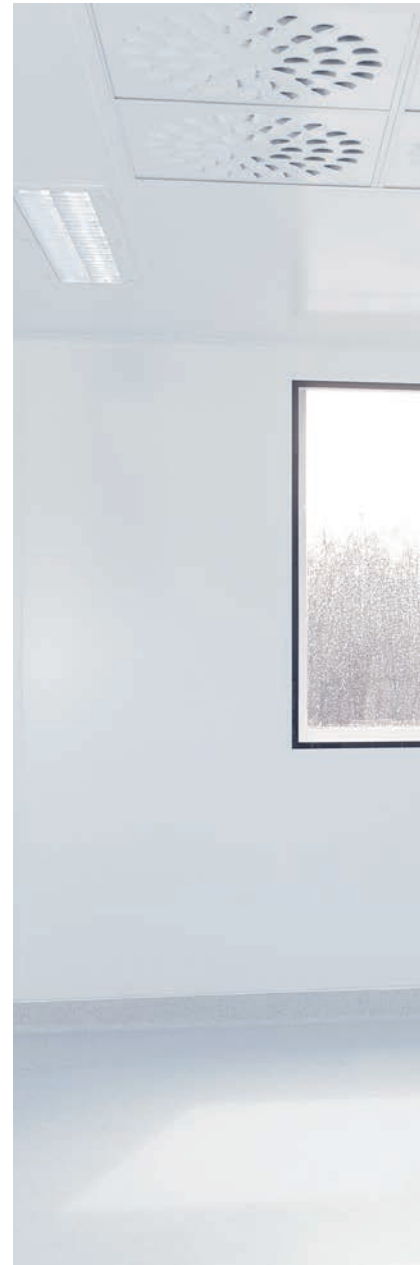
## Application areas

- pharmaceutical industry
- chemical industry
- health care and hospitals
- laboratory and chemist
- medical technology
- cosmetics industry
- food industry





**THE PUREST CLEANROOM IS  
10 TIMES CLEANER THAN THE  
ISO CLASS 1.**



# PHARMACY AND HEALTHCARE



Wall systems  
**Ceiling systems**  
Door systems

Depending on your requirements, different ceiling systems and types, like clip in, bandraaster or sandwich ceilings, can be used. All ceilings can easily be combined with one another.

The modular construction, as well as the flexible grid sizes and wall connections allow for utmost individuality during the planning process and execution. All elements are flush and with high quality surfaces.

Most ceiling solutions are accessible. Lights and ventilation are installed completely flush – maintenance access can be from below or above, depending on your requirements.

## Technical data

- bandraaster width 60 – 100 mm
- grid sizes from 600 × 600 to 1200 × 2400 mm
- self-supporting construction is possible
- anodized or powder-coated surfaces
- different ceiling panels

## Application areas

- pharmaceutical industry
- chemical industry
- health care and hospitals
- laboratory and chemist
- medical technology
- cosmetics industry
- food industry





# PHARMACY AND HEALTHCARE

Wall systems  
Ceiling systems  
**Door systems**

We offer one, one-and-a-half, and two-winged doors – closed or partly glazed – with door leaves flush to the wall extrusions on one or both sides. If required, doors can be delivered with transom windows. All doors are fitted into the wall grid. The door glazing is the same as used in the partitioning wall glazing.

The frames are welded, slurred and painted a posteriori. Door frames are fitted with highly elastic seals on three sides, all inner and outer joints are sealed elastically as well. The 3-dimensionally adjustable door hinges are invisibly integrated or mounted – just like the submersible floor sealing and the optional overhead door closers.

Retrofitting: electrical door openers, fitting door closers and panic fittings can be added to all doors. Combination with double door or access control systems is possible as well.

## Technical data

---


- extrusion width 60 – 86 mm
- door width 600 – 3000 mm
- door height up to 4000 mm
- anodized or powder-coated surfaces

## Application areas

---

- pharmaceutical industry
- chemical industry
- health care and hospitals
- laboratory and chemist
- medical technology
- cosmetics industry
- food industry
- mechanical engineering



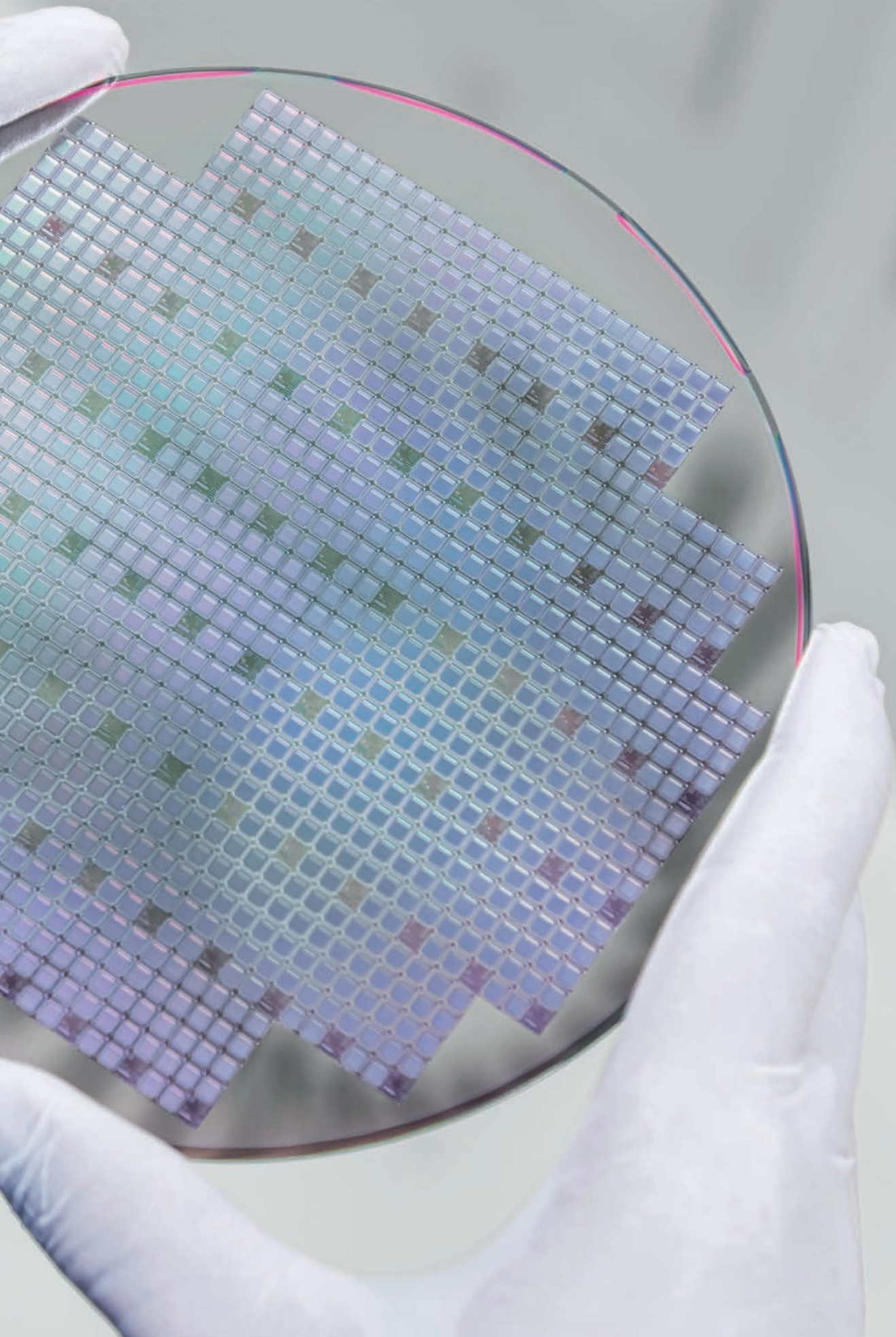


# **PARTICLE FREE MODULAR FLEXIBLE**

## **FOR ELECTRONICS AND SEMICONDUCTORS**

The innovation and production cycles of the electronics and semiconductor industry are extremely short. Not only does this create constant demand for new machinery, but also new cleanrooms. Hence, three requirements are prerequisite: modularity, flexibility, and cleanroom suitability. Guaranteed through a standardized system with many modules: reusable, expandable and quick delivery for fast conversions in pure conditions.







**70% OF ALL ELECTRONIC  
COMPONENTS ARE  
MANUFACTURED IN  
CLEANROOMS.**



# ELECTRONICS AND SEMICONDUCTORS

## Wall systems

Ceiling systems

Door systems

All wall systems comply with the EN ISO 14644-4 cleanroom specification and are certified by the Fraunhofer institute. They are flexible in height and width, are built flush, and with non-reflective, antistatic surfaces. Service hatches, doors, switches etc. can easily be integrated.

The following systems are available:

### Full wall systems:

- double walls for all possible filling requirements like noise or heat insulation and high flexural strength
- single walls for areas leading return air, or as wall cladding, e.g. for machine containment
- service walls for machinery

### Glazed wall systems:

- single, double, or triple-glazing
- safety glass with different material thickness
- yellow glazing for photolithography areas

## Technical data

- wall strength 40 mm (100 mm on request)
- extrusions and uprights from aluminium
- anodized surfaces (powder-coating on request)
- different wall panels
- electrically conductive (on request)
- easy integration of switches and sockets

## Application areas

- semiconductor industry
- car industry
- microelectronics
- nanotechnology
- optics
- solar industry
- aerotechnics
- MEMS
- medical technology
- mechanical engineering





# ELECTRONICS AND SEMICONDUCTORS



Wall systems

**Ceiling systems**

Door systems

Our ceiling systems offer an individually adjusted contamination control for all cleanroom classes. They are modularly expandable and easily fitted with lights and filters. The ceiling panels are available in single or double, and in the standard grids 600 × 1200 mm and 1200 × 1200 mm – on request grids starting at 150 mm × 150 mm are possible. All ceiling systems comply with the EN ISO 14644-4 cleanroom specification and are certified by the Fraunhofer institute.

## Light ceilings:

- modularly constructed grid ceiling
- light weight, quick and easy assembly

## Ceilings with 100 kg/m<sup>2</sup> single load:

- modularly constructed grid ceiling
- can be walked on for maintenance work
- machinery can be mounted to the ceiling and above the cleanroom

## Ceilings with 200 kg/m<sup>2</sup> single/point load:

- modularly constructed cassette ceilings
- can be walked on for maintenance work
- heavy machinery can be mounted to the ceiling and above the cleanroom

## Technical data

- profile depth 58 mm, profile height 40 mm
- grid sizes 600 × 1200 or 1200 × 1200 mm
- other grid sizes from 150 × 150 mm possible
- anodized aluminium ceiling extrusions
- different ceiling panels, single or double

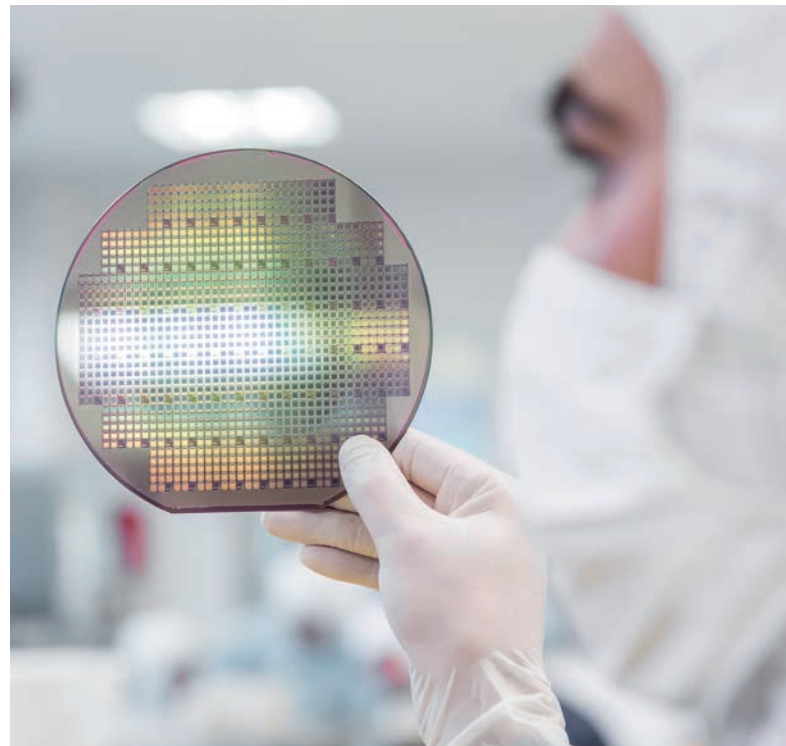
## Application areas

- semiconductor industry
- car industry
- microelectronics
- nanotechnology
- optics
- solar industry
- aerotechnics
- MEMS
- medical technology
- mechanical engineering





**WITH THE BEGINNING OF SPACE TRAVEL, THE DEVELOPMENT OF CLEANROOMS INCREASED SIGNIFICANTLY.**



# ELECTRONICS AND SEMICONDUCTORS

Wall systems  
Ceiling systems  
**Door systems**



The right door system for every requirement – always supplied with aluminium door handles, aluminium door hinges, tubular frame lock, and highly elastic EPDM sealing between door frame and door extrusion.

## Variations:

- one-winged doors (DIN left or DIN right opening)
- two-winged doors for bigger equipment (DIN left or DIN right opening)
- special-purpose solutions, e.g. 4-winged doors for large-sized construction parts
- sliding doors
- powder-coating possible
- electrically controlled doors
- integration of overflow grilles into door leaf

## Optional configurations:

- drop down seal, panic fitting, access control and locking systems (mechanical or electrical)

## Technical data

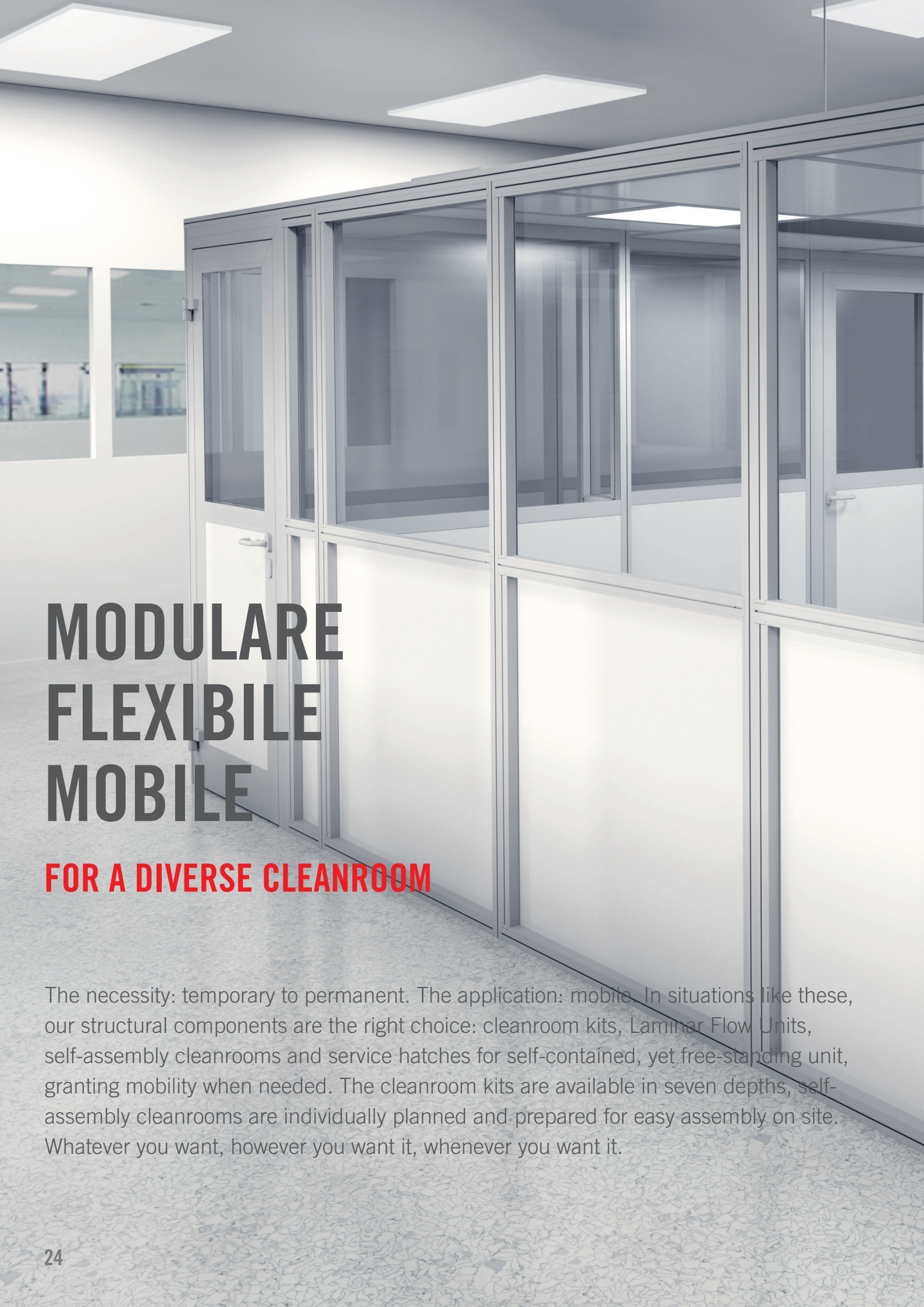
---

- 40 mm door thickness
- tubular frame construction
- anodized surfaces
- door panels and glazing same as wall panels and glazing

## Application areas

---

- semiconductor industry
- car industry
- microelectronics
- nanotechnology
- optics
- solar industry
- aerotechnics
- MEMS
- medical technology
- mechanical engineering



# MODULARE FLEXIBILE MOBILE

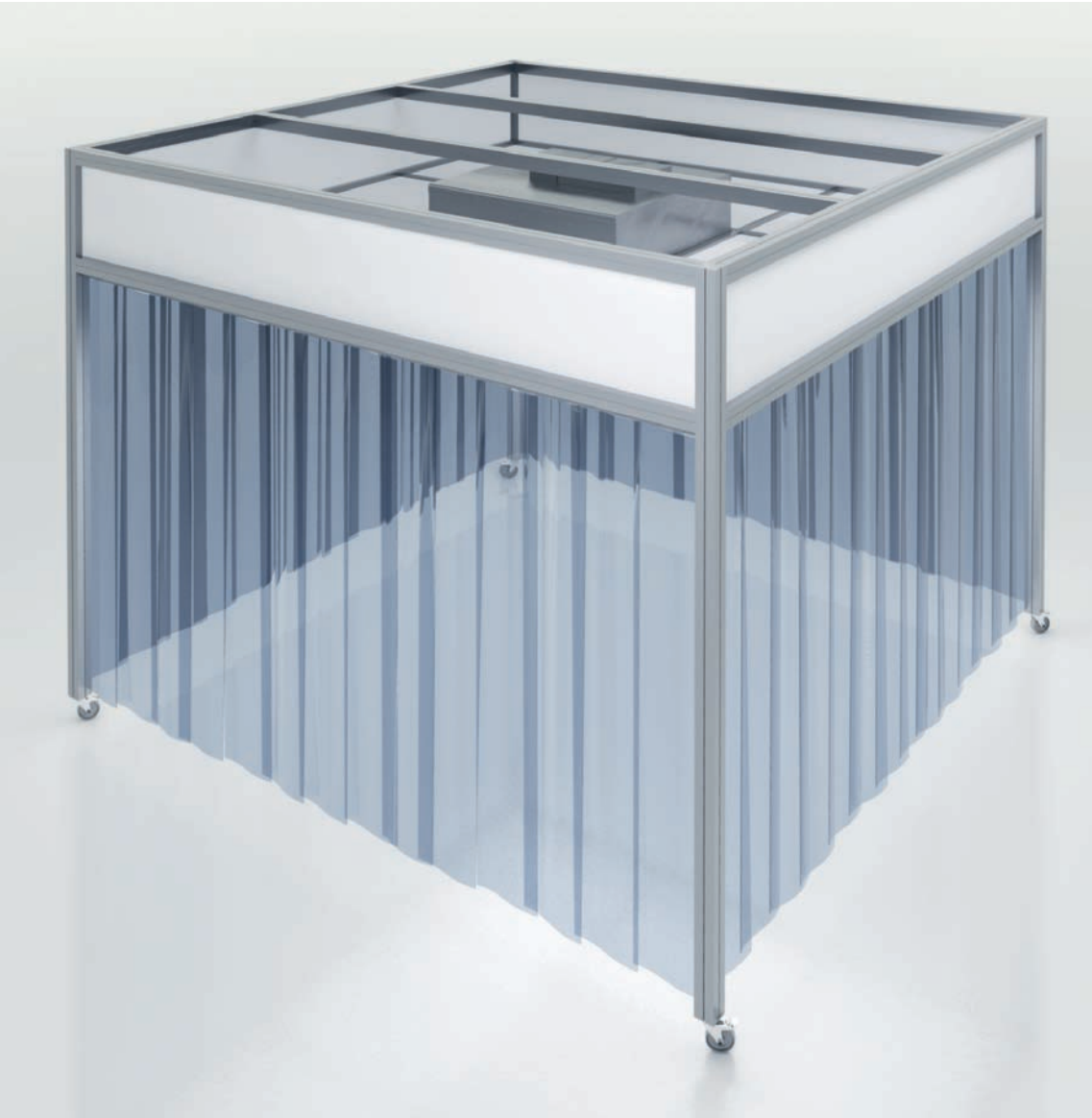
## FOR A DIVERSE CLEANROOM

The necessity: temporary to permanent. The application: mobile. In situations like these, our structural components are the right choice: cleanroom kits, Laminar Flow Units, self-assembly cleanrooms and service hatches for self-contained, yet free-standing unit, granting mobility when needed. The cleanroom kits are available in seven depths, self-assembly cleanrooms are individually planned and prepared for easy assembly on site. Whatever you want, however you want it, whenever you want it.



## STRUCTURAL COMPONENTS





**THE CLEANROOM CLOTHING  
FOR ONE EMPLOYEE COSTS  
ROUGHLY US\$ 5 PER DAY.**



# STRUCTURAL COMPONENTS

## Laminar Flow Units

Self-assembly cleanrooms

Cleanroom kits

Service hatches

Whenever a pure workplace is needed, but no permanently installed cleanroom, our mobile Laminar Flow Units are the perfect solutions. And since their construction and deconstruction is as simple as their transportation, relocation is possible at any time.

The laminar air flow ensures a low particle environment and reliable functionality. Lighting and filter fan units are integrated, bottom rollers and antistatic curtains are optional.

Additional use: If used within a cleanroom, the Laminar Flow Units can punctually increase the GMP-/ISO-class.

### Laminar Flow Units

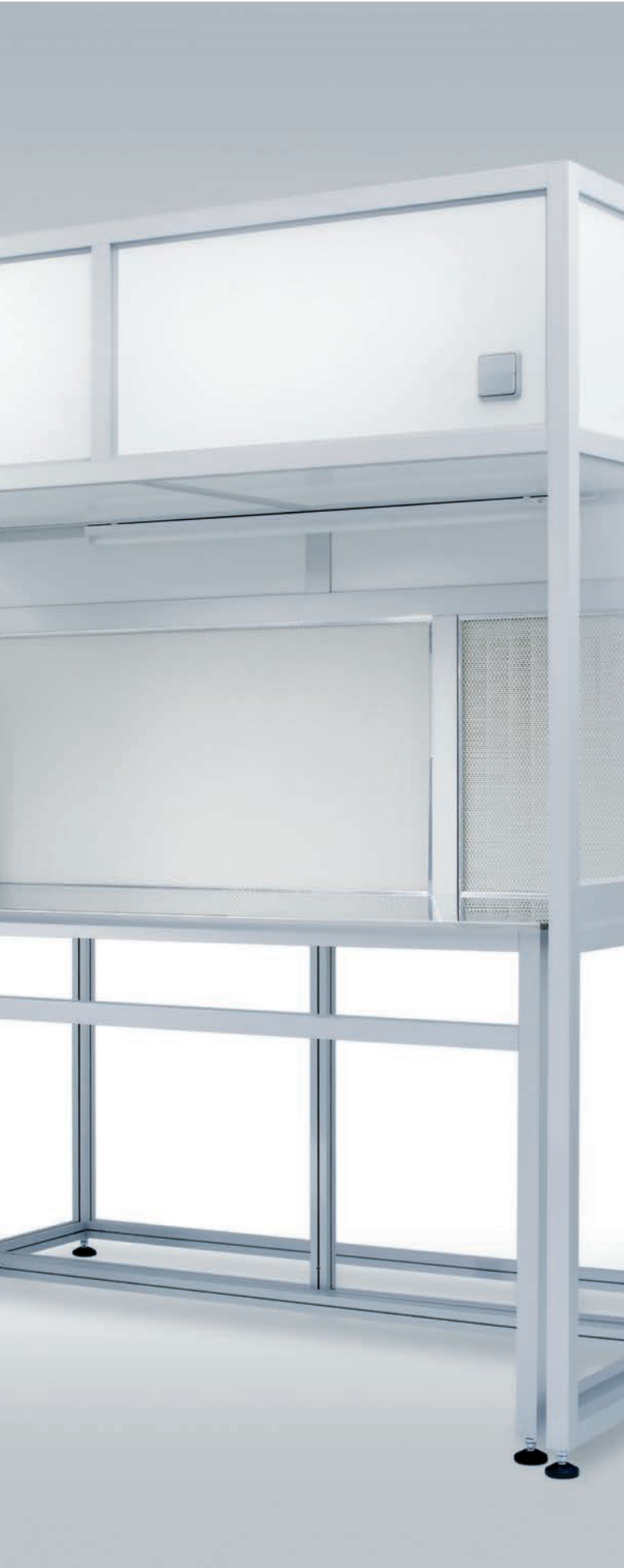
- softwall units with curtains in the desired dimensions
- desk module/workbench:  
(W × H × L) 698 × 1100 × 658/958/1258 mm
- special solutions

### Technical data

- extrusions and uprights from aluminium
- anodized surfaces
- galvanized adjustable feet
- PVC curtains
- HEPA filter
- acrylic glass panes, 4 mm

### Application areas

- semiconductors
- microelectronics
- optics
- MEMS
- medical technology
- industry
- mechanical engineering





**NANOBACTERIA IS ONLY  
10–200 NM ( $10^{-9}$  M) SMALL.**



## STRUCTURAL COMPONENTS

---

Laminar Flow Units

**Self-assembly cleanrooms**

Cleanroom kits

Service hatches

Our self-assembly cleanrooms have a rather simple approach: do it yourself.

The pre-assembled wall elements, which are easily mounted on site, save both travel and assembly expenses. And thanks to the flexible grid sizes, your individual wishes are easily integrated in the early planning stages.

The wall elements, flush on one side, are available in four heights (2250, 2500, 2750 and 3000 mm) and four widths (300, 600, 900 and 1200 mm); doors, service hatches, and air locks can be added as required. Also, you have the choice between closed and glazed wall elements.

### Technical data

---

- profile width 40 mm
- uprights and extrusions from aluminium
- anodized surfaces
- 6 mm toughened safety glass
- silicone free materials
- connections in compliance with cleanroom regulations

### Application areas

---

- semiconductors
- microelectronics
- optics
- MEMS
- medical technology
- industry
- mechanical engineering





## STRUCTURAL COMPONENTS

---

Laminar Flow Units

Self-assembly cleanrooms

**Cleanroom kits**

Service hatches

Pre-assembled in seven versions – therefore readily available: our cleanroom kits, consisting of modular wall and ceiling elements, are quick and simple to assemble.

Made of aluminium system profiles, acrylic glass walls, aluminium composite elements between ceiling panels, and plastic strip curtain doors, the kits have a fixed width (2624 mm) and height (2340 mm), but are flexible in depth. All kits are supplied with a Filter Fan Unit, a ceiling luminaire, and cleanroom-approved surfaces.

Available depths are: 1968, 2319, 2624, 2929, 3280, 3585, and 3890 mm.

### Technical data

---

- profile width 16 mm
- uprights and extrusions from aluminium
- anodized surfaces
- plastic strip curtain made from PVC
- silicone free materials
- connections in compliance with cleanroom regulations

### Application areas

---

- semiconductors
- microelectronics
- optics
- MEMS
- medical technology
- industry
- mechanical engineering





## STRUCTURAL COMPONENTS

---

Laminar Flow Units  
Self-assembly cleanrooms  
Cleanroom kits  
**Service hatches**

Service hatches are used for a safe and space-saving transfer of documents and materials between cleanrooms of different classes. They guarantee utmost safety when introducing materials, tools, etc. into the cleanroom.

Optimal sealing and the use of sheet steel, stainless steel, abrasion resistant hardboard or aluminium guarantee cleanroom classes up to ISO 4 or GMP classes A-D. The service hatches are fitted with two electronically interlocking doors. A red/green light shows whether the door is locked or open.

### Technical data

---

- aluminium profiles
- anodized or powder-coated surfaces
- various corpus materials
- safety glass, 4/6 mm
- powder-coated sheet steel or stainless steel

### Application areas

---

- semiconductors
- microelectronics
- optics
- MEMS
- medical technology
- industry
- mechanical engineering
  
- pharmaceutical industry
- chemical industry
- health care and hospitals
- laboratory and chemist
- cosmetics industry
- food industry

**THE COLOR WHITE IS  
ASSOCIATED WITH PURENESS  
AND SCIENCE.**

A person wearing a blue cleanroom suit and a white hood is pushing a metal cart through a cleanroom hallway. The hallway has white walls, a polished floor, and a window on the right side. The person is in motion, and the cart is also in motion, creating a slight blur effect.

# **COST-EFFICIENCY LONGEVITY NON-GLARING**

## **LED TECHNOLOGY FOR EVERY CLEANROOM CLASS**

The biggest advantage of LEDs in cleanrooms? Perfect light conditions. Which make your controlling shine as well, by the way. Because the quality increases – and costs ultimately decrease. Because even if the initial costs are higher than for conventional illumination, are LED systems amortized quicker than other solutions. Because they need less power, and last a great deal longer. And if it lasts longer, it needn't be changed so often – cutting down on additional costs.





**LEDS LAST 25 TIMES LONGER  
WHILE NEEDING 90 % LESS  
ENERGY THAN LIGHTBULBS.**



## LED ILLUMINATION

---



What makes our cleanroom lighting so outstanding? The LEDs emit an even, non-glaring light, and are integrated into the ceiling profiles. This leaves significantly more space than large-size lamps, allowing for more FFUs to be integrated. Ultimately, it means a higher cleanroom class.

The plus in quality comes with a minus in costs. On the one hand, LEDs need 17–60% less power than a T5 fluorescent lamp. This can save several hundred Dollars per year in a 500 m<sup>2</sup> cleanroom. On the other hand, LEDs emit significantly less warmth than conventional lamps, which has a positive effect on costs for cooling.

Additionally, the time and effort of exchanging lights is decreased. LEDs have a life expectancy of at least 40,000 hours — about 10 years of 250 work days with 2 shift operation. Conventional T5 or T8 lamps only last 20,000 hours on average, losing most of their luminosity along the way.

---

### Technical data

- profile width 58 mm
- uprights and extrusions from aluminium
- anodized surfaces

---

### Application areas

- semiconductors
- microelectronics
- optics
- MEMS
- medical technology
- industry
- mechanical engineering
  
- pharmaceutical industry
- chemical industry
- health care and hospitals
- laboratory and chemist
- cosmetics industry
- food industry



EXHIBITION SYSTEMS  
PROJECT SOLUTIONS  
PRESENTATION  
INTERIOR DESIGN  
CLEANROOM SYSTEMS



---

**OCTANORM® Germany****Head Office**

Raiffeisenstraße 39  
70794 Filderstadt  
T. +49 711 77003-0  
F. +49 711 77003-53  
info@octanorm.de  
www.octanorm-cleanroom.com

---

**EUROPE****OCTANORM® Nordic AB renrum**

Tel. +46 8 621 6500  
www.octanorm-cleanroom.com

**OCTANORM® UK**

Tel. +44 20 85 45 2945  
www.octanorm-cleanroom.com

**OCTANORM® Nederland**

Tel. +31 50 309 5133  
www.octanorm-cleanroom.com

---

**AMERICA****OCTANORM® USA**

Tel. +1 770 7 32 1520  
www.octanorm-cleanroom.com

---

**AFRICA****OCTANORM® South Africa**

Tel. +27 11 433 2010  
www.octanorm-cleanroom.com