

**EFAFLEX**   
safe high-speed doors

*CR Series*



*Special doors for clean room applications*



# SEARCHING FOR THE VERY BEST

## THE BEST DOOR FOR ANY CLEAN ROOM

Which is the best door for clean rooms?  
The one with the most powerful drive?  
The one with the most impressive design?  
The one with the lowest purchase price?

The best door for clean rooms is not actually a door but  
a system where all the components are compatible.  
The drive: customised.  
The design: purposeful, smart.  
The cost-benefit ratio: superior.

The best door system is one that does its job perfectly.  
And impresses all over again every time, in every respect  
from consultancy to installation, operation and service.

It's really easy to recognise it by the EFAFLEX trademark.

**EFAFLEX**   
*safe high-speed doors*



# THE RIGHT DOOR FROM EFAFLEX

IT'S THE PROCESS THAT MATTERS



Every clean room door has its own individual application profile. This emerges from its function within a process, regardless of whether it's working in production or an institution.

Your EFAFLEX consultant asks the right questions so that they can recommend the door that fits your process, like a glove. If an EFAFLEX door is simply too large for your specific case, they will advise you on a simpler solution.





### **We know your industry**

EFAFLEX doors for clean rooms are used in the semi-conductor industry, automotive sector, food industry, medicine and biotechnology, aviation, space travel and with life science products. In addition, EFAFLEX doors can be found in hospitals, for example in sterile areas.

#### **Nothing but the truth**

"The more powerful the motor the better?"

#### **The truth is:**

A poorly designed door needs a powerful motor. By contrast, a door that works with low friction and where the mass balance and spring forces are tuned to each other needs little power. What is far more crucial are motors whose torque curve is tuned to the size-dependent kinematics. This reduces power consumption and extends the life of every EFAFLEX door.

# THE EFAFLEX DOORS FOR CLEAN ROOMS

PAY ATTENTION TO EVERY DETAIL!



## EFA-SRT® CR Premium

- Compact structure
- Control system integrated into the frame
- Standard V2A stainless steel surface
- Mechanical/electrical emergency opening (optional)

The premium door for GMP-compliant clean rooms is suitable for installation in clean rooms up to ISO Class 5 due to its shape and high level of air tightness.

The EFA-SRT® CR Premium is the perfect closure for rooms with different pressure ratios. Rapid opening and closing increases the economy in the clean room, reduces the air loss and keeps the burden on the filter low.

- Significantly lower maintenance costs than a conventional ISO class 5 door with the same number of load cycles
- Designed for 150,000 load cycles p. a. as part of programmed maintenance with customised inspection intervals



## EFA-SRT® CR Efficient

- Powder coating
- Extremely slim frame (75 mm)
- Low lintel requirement (380 mm)
- Certified up to ISO Class 6
- Emergency opening via hand crank

The high speed EFA-SRT® CR Efficient roller doors were designed especially for use in clean rooms in the mid-range of requirements.

The door is certified in accordance with TÜV for use in clean rooms up to ISO Class 6. Due to a special folding mechanism (active lintel seal) and the low cover, the lintel requirement is low.

- Considerably lower maintenance costs than a conventional ISO class 6 door with the same number of load cycles
- Designed for 100,000 load cycles p. a. as part of programmed maintenance with customised inspection intervals



## EFA-STT® CR

If door speed is a high priority, you will find no better solution than the transparent clean room door EFA-STT® CR. It is TÜV-certified for use in clean rooms up to ISO class 6.

Thanks to the spiral, the high-speed door opens and closes with up to 2.5 m/s under constant use. It is ideally suited to minimise pressure exchange. The single walled transparent laths form a solid door blade and are kept in distance when the door opens thanks to the patented spiral guidance. Therefore, the EFA-STT® model from the CR Series will remain transparent with door sizes of up to 4 x 5 metres for many years!

- Lower maintenance costs than a conventional transparent door for clean rooms
- 5 years' transparency warranty!
- Designed for 200,000 load cycles p. a. as part of programmed maintenance with customised inspection intervals

The GMP compliant doors in the CR Series conform to the following international standards and guidelines for clean room applications:

ISO EN 14644-1  
VDI 2083

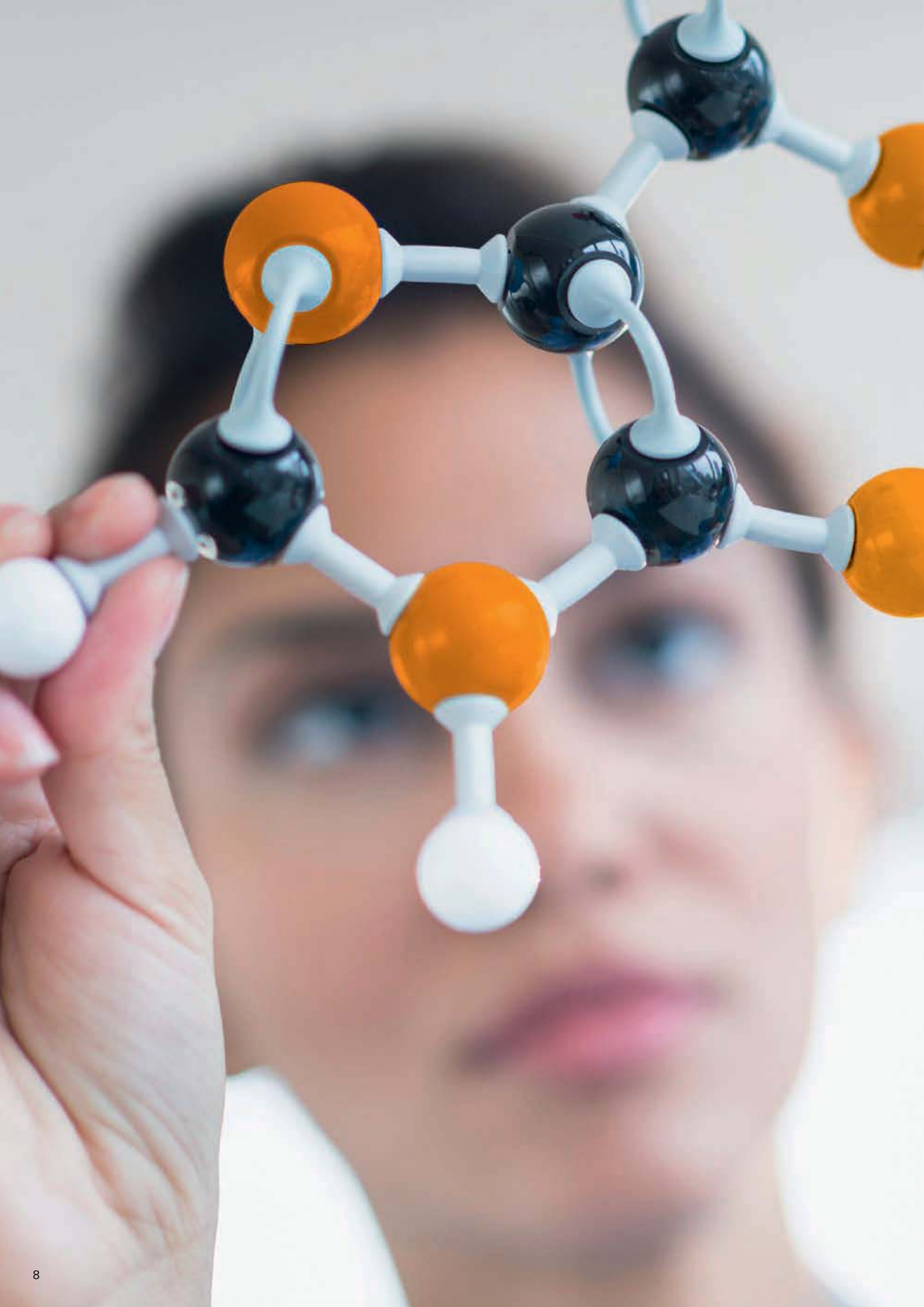
The EFA-SRT® CR roller doors are TÜV approved and clean room compliance has been certified up to ISO class 5 and 6 according to EN ISO 14644-1.

### Nothing but the truth

"All doors for clean rooms have roughly the same hermetic seal."

#### The truth is:

The air loss from all EFAFLEX doors is minimal even with high differential pressures. What's special about this is that our doors for clean rooms also retain this tightness permanently. As EFAFLEX doors for clean rooms are produced with extremely low tolerances wherever it is really essential. Hinges and other moving parts are almost as air-tight on the very first day, as after many thousands of load cycles.





## Nothing but the truth

“The best thing is service that you don’t need!”

### The truth is:

Doors for clean rooms are an integral part of a production process. To guarantee 100% reliability they have to be serviced just like any other technical equipment.

EFAFLEX doors have a highly modular structure, all the parts are quickly and easily accessible and can be replaced quickly. Fast, good service is an integral part of the door system for clean rooms at EFAFLEX.

# OUR BLUEPRINT FOR SUCCESS

## WHAT SETS US APART

- 1 | EFAFLEX** knows your industry. You benefit from a wealth of experience in a class of its own.
- 2 | EFAFLEX** is the inventor of the high-speed secure door. We set the benchmark when it comes to safety, reliability and economic efficiency in operation and the perfect maintenance of doors.
- 3 | EFAFLEX** monitors every phase from planning to production, installation and maintenance to replacement, extension or exchange. We do not sell doors for clean rooms – we provide solutions.
- 4 | EFAFLEX** is a quality company. You will only find components installed in every EFAFLEX door that are designed without any compromise on functionality and durability right down to the very smallest screw.
- 5 | EFAFLEX** takes responsibility. People are what make a solution good quality. Even if we are one of the giants in the industry it is the commitment of every single employee that makes the crucial difference. We’re only happy if our customers are happy.



### Nothing but the truth

“Doors for clean rooms do not emit any particles. That’s the assumption anyway.”

#### The truth is:

An emission-free door does not exist. You just need to think about the number of moving parts that are at work in a door for clean rooms. Despite this, every EFAFLEX door for clean rooms is a role model in this respect, especially when it comes to the low-tolerance design, friction-free hangings or superior, unique engineering solutions.

As a result, we use far fewer moving components than anyone else. Fewer components = less friction = fewer particles.

# DOORS FOR CLEAN ROOMS FROM SERVICE WAY BEYOND JUST THE DOOR

#### ■ Professional project management: the path to success

Use our expertise: involve us early in the planning phase for your clean room. As a result of our more than 40 years of experience we know which clean room door and specifications will solve your problem perfectly. When it comes to clean rooms in particular, it’s not just the number and position of the doors that matter but their integration into the entire logistics concept.

#### ■ Applied development, fast production – punctual delivery

Sometimes it’s not just the speed of the door that matters but also how quickly it can be at the installation site. Thanks to a strong development department, modern and highly flexible production and highly qualified trained staff we produce customised door systems for clean rooms at extremely short notice too.

#### ■ Assembly: inspection and responsibility

Before a door leaves our plant, all the assembly groups are thoroughly tested and faultless. To ensure this quality is maintained for the product and function, we only accept qualified personnel trained or certified by us in assembly. EFAFLEX accepts responsibility for the entire “door system for clean rooms” all over the world.



# EFAFLEX

## ■ Life cycle management: keeping operating costs under control

Purchase prices can be compared quickly. It's far more difficult to do this with operating costs. EFAFLEX keeps these as low as possible. Maintenance and service intervals are kept to the minimum. Unplanned downtime, incalculable costs can practically be ruled out. A few easy to reach maintenance and service positions, easy disassembly and as few custom parts as possible reduce the operating costs even further.

## ■ Eternal life: recycling as it should be

EFAFLEX offers a return service for doors for clean rooms, on request. Many components are designed to be wear-free and are returned to the recycling loop along with high-quality raw materials. Let us know at the end of your EFAFLEX door's phase of use and we will take back the components free of charge, possibly even with compensation if a new equivalent EFAFLEX door is used.

## Nothing but the truth

"Operating costs play a minor role with doors for clean rooms."

### The truth is:

That maybe right with power consumption. But when you consider the entire package of maintenance costs, service periods and potential downtime, things look a bit different. Fairly calculated spare parts, extremely easy servicing and a long lifetime ensure that an EFAFLEX door for clean rooms produces up to 40% less operating costs than a comparable door for clean rooms in terms of performance seen over the entire phase of use.

# TECHNICAL DATA: CR SERIES

		EFA-SRT® CR Premium	EFA-SRT® CR Efficient	EFA-STT® CR	EFA-HVS® CR
Certificate for air particle purity	ISO 14644-1	ISO class 5	ISO class 6	ISO class 6	not tested
Application	Interior door	●	●	●	●
	Hall closing door	–	–	●	–
Operating forces / secure opening	According to DIN EN 13241-1	fulfilled	fulfilled	fulfilled	fulfilled
Max. leakage rate at max. door size*	in m³/h at 30 Pa	< 20	< 40	< 50	< 50
Application temperature	in °C	5 – 30	5 – 30	5 – 30	5 – 30
Door size (in mm)	Width W max.	2.500	3.000	4.000	1.300
	Height H max.	3.000	3.500	5.000	1.500
Maximum opening speed*	in m/s	1,5	1,0	2,5	1,0
Maximum closing speed*	in m/s	0,5	0,4	0,75	0,75
Door moving direction		vertical	vertical	vertical	vertical
Average speed, ca.*	Opening in m/s	1,0	0,8	2,5	1,0
	Closing in m/s	0,5	0,5	0,75	0,75
Door blade guidance	Round Spiral	–	–	●	–
Steel structure	Galvanized sheet steel frame	–	–	●	–
	Stainless steel	●	●	●	●
	Powder-coated according to RAL	–	●	●	–
Door blade	Aluminium with acrylic glass, transparent	–	–	●	–
	EFA-CLEAR® single-walled / anodized	–	–	●	–
	Colour according to RAL (without window panel)	●	●	●	–
	Non transparent infill single-walled / double-walled	–	–	●	–
	Flexible fabric in different colours with / without window	●	●	–	–
	Stainless steel	–	–	–	●
	Stainless steel with window	–	–	–	●
Fire class	Building Material DIN 4102	B2	B2	B2	B2
Weight balancing by		Spring	–	Spring	Weight
Designed for approx. ... load cycles per year		150.000	100.000	200.000	150.000
Drive	Electric motor with frequency converter	●	●	●	●
Control	EFA-TRONIC®	● integrated	●	●	●
	Frequency converter	●	●	●	●
	EFA-TRONIC® PROFESSIONAL	–	●	●	●
	Main switch and membrane key-pad	●	●	●	●
Lead	Power supply 230 V / 50 Hz	●	●	●	●
	Electric drive / fuse	16 A(K)	16 A(K)	16 A(K)	16 A(K)
Manual locking		–	–	●	–
Emergency opening	Automatic after manual activation	●	–	●	–
	Manual activation	–	●	–	●
	Mechanically released (pull knob / handle)	●	–	●	–
	Electrically triggered via button for brake release	●	–	–	–
	Manually via hand crank	–	●	–	●
	Complete opening via USV (in separate control box)	●	●	●	●
Safety equipment	EFA-TLG® Door light-line grid at door closing line	●	–	●	–
	Contact edge	●	●	●	●
	Light barrier	●	●	●	●
	Approach area monitoring	●	●	●	●
	External light grid	●	●	●	–
Safety system including activator	EFA-SCAN® frame / bollard	– / ●	– / ●	– / ●	– / ●
Activator	Connection of all common activators possible	●	●	●	●

● Standard ● on request – not available, \*depending on installation side and door size, we reserve the right to make technical alterations.

# A TECHNOLOGICAL

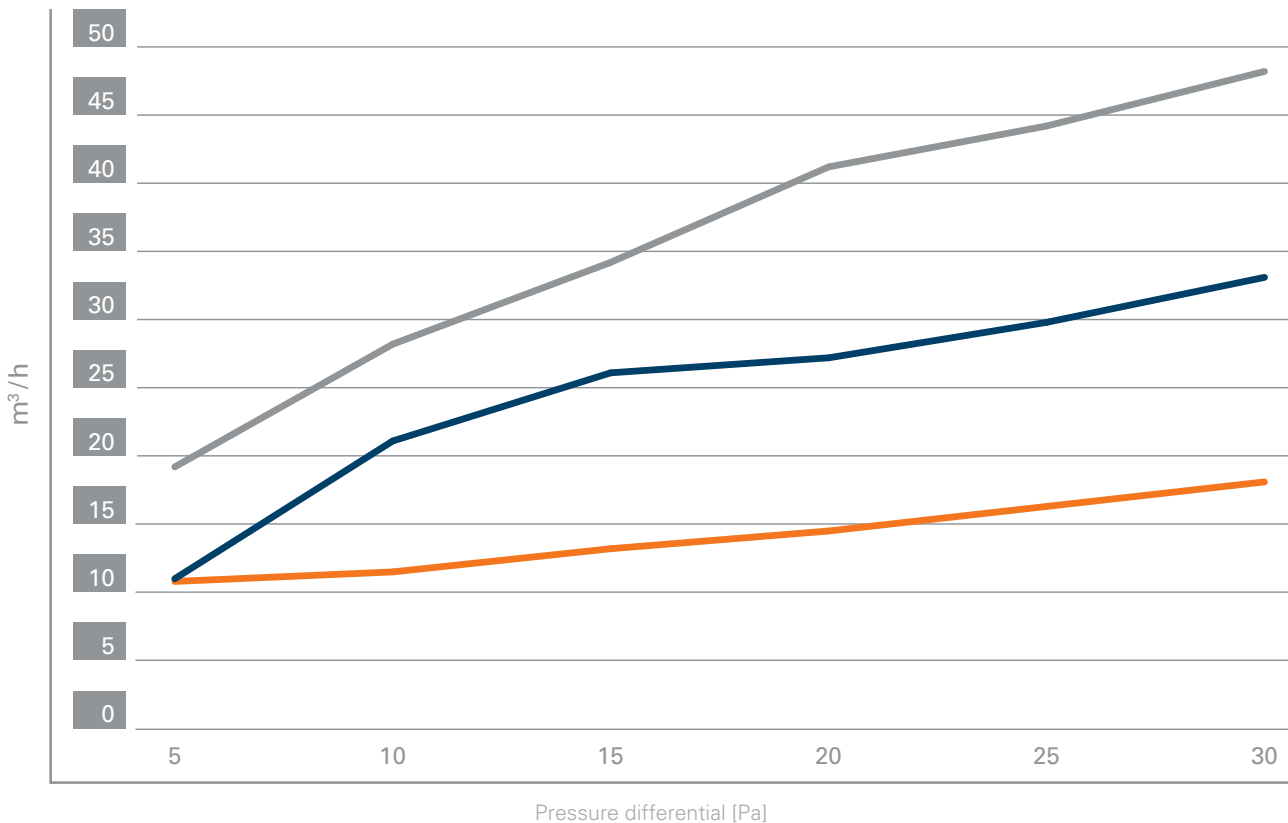
# EDGE

## PIONEERING DESIGN

### Measured air loss (m<sup>3</sup>/h)

(measured using positive pressure on the installation side)

Air loss dependent on door size, cannot be interpolated in a linear manner.



**EFA-STT® CR**  
Door size 2.500 x 2.500 mm

**EFA-SRT® CR Efficient**  
Door size 2.500 x 2.300 mm

**EFA-SRT® CR Premium**  
Door size 2.500 x 2.500 mm

The low air loss in EFAFLEX doors for clean rooms increases the economic efficiency of clean rooms, among other things by keeping the filter load low.

The superior tightness of EFAFLEX doors for clean rooms is even maintained in the long-term as it is the result of extremely low production tolerances and high-quality, durable, technically detailed solutions.

EFAFLEX  
Tor- und Sicherheitssysteme  
GmbH & Co. KG  
Fliederstraße 14  
DE-84079 Bruckberg/Germany  
Telephone +49 8765 82-0  
www.efaflex.com  
info@efaflex.com



## Technological advancement. Pioneering design.

EFAFLEX® is a registered and legally protected trademark. Subject to technical changes.  
Some diagrams depict special features.  
Overall design:  
www.creativconcept.de 08 | 17

For more than 40 years, EFAFLEX has developed and designed reliable and highly-efficient high-speed doors. With innovative technology and pioneering solutions for special requests, EFAFLEX continually provides the market with new stimuli. This leadership role through superior technology, the best quality and a maximum degree of security is part of EFAFLEX's identity. More than 1,000 employees guarantee competent consultation and excellent service. Worldwide and always near you.

**EFAFLEX**   
*safe high-speed doors*