



*CR Series*



*Special doors for clean room applications*



# The CR Series

An increasing number of defined standards require reliable special doors for clean room application, for example in the pharmaceutical, medicine, biotechnology, aeronautical, electronics, automotive and process engineering areas. Specifying the correct door is one of the most important components in the clean room – with the CR Series, EFAFLEX offers you specialist doors for controlled production environments.





# CR Series



# Special doors for clean rooms.

## A glance at the advantages of the CR Serie:

- Nearly airtight sealing when under pressure
- Certified particle emission of the roller doors
- GMP compliant
- Anti-static curtains (ESD-resistant)
- High speed
- Easy to clean
- Up to 200,000 load cycles per year

## The CR Series fulfils demanding criteria

EFAFLEX clean room doors contribute significantly to high productivity, cost-effectiveness, efficiency and operational safety in controlled production zones all over the world. Doors of the CR Series from EFAFLEX meet the demands of clean rooms perfectly. The high-performance high speed doors are very air-tight and have a smooth surface structure without any protruding edges.

This means they can be cleaned easily and particle deposits are largely excluded. 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

FED STD 209

## Additional features included

As well as perfect suitability for clean rooms, the special doors from the CR Series can be used for other purposes. Due to their high density, they are particularly well suited to inertisation plants. EFAFLEX clean room doors are also tremendously resilient and low-maintenance due to their outstanding quality.



*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.*



EFA-SRT® CR Premium



EFA-SRT® CR Efficient

# Quick and safe access to clean rooms.

## 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.



## 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.

# Perfect application: Further design types.



## EFA-STT® CR spiral door for turbo speed and full transparency

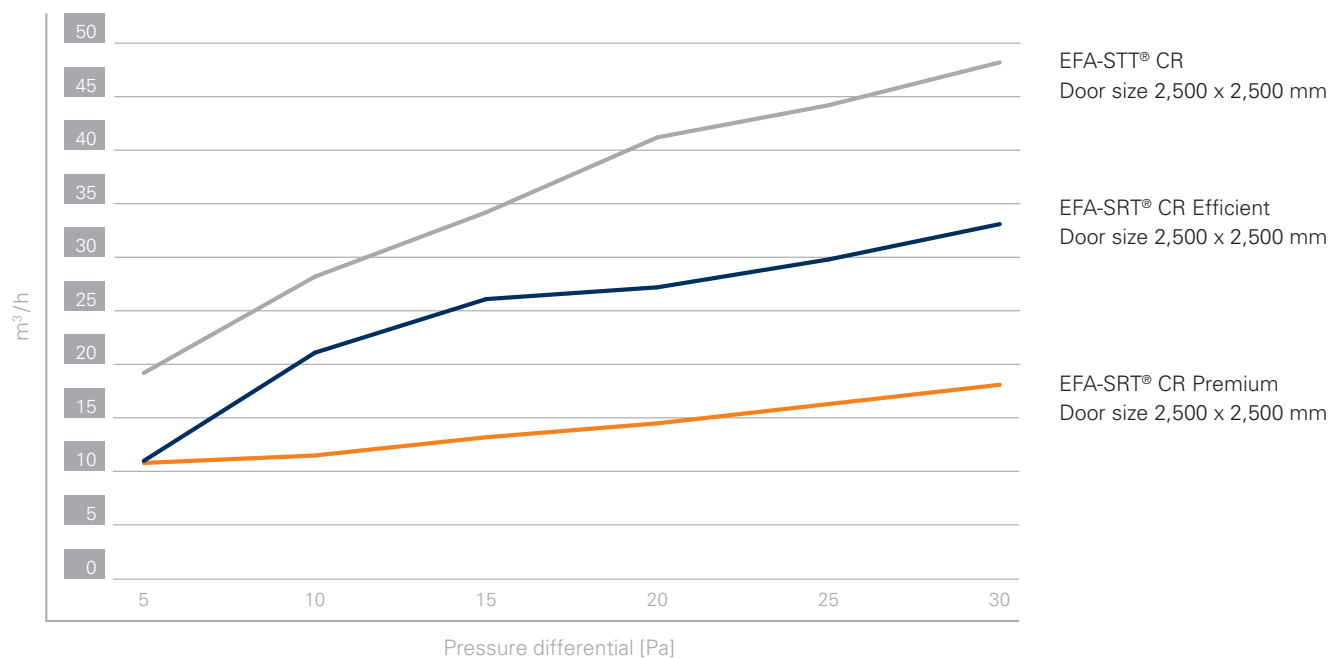
If door speed is a high priority, you will find no better solution than the transparent clean room door EFA-STT® CR. Thanks to the patented spiral, the high-speed door opens and closes with up to 2.5 m/s under constant use. It is ideally suited to minimise pressure exchange.

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!

## Measured air loss ( $\text{m}^3/\text{h}$ )

(measured using positive pressure on the installation side)

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





# EFA-SRT® CR

## Surface

The complete door (frame, bottom end shield, motor and roll cover) are made of stainless steel. The smooth surface makes it easy to clean and avoids the deposit of any particles.

## LED display

A clean room-compliant LED display can be integrated into the frame if required.

## Door control

The door control unit is located in the door frame and can be operated with a membrane keyboard with display and OPEN-STOP-CLOSE buttons. An activator and interfaces (potential-free contacts) can also be connected to the control unit if required.

The frame with integrated motor, control unit and operating elements can be fitted to the left or right side.

## Non-contact switch

A non-contact activator can also be integrated into the frame if required to ensure hygienic opening.

## Emergency release

Emergency release of the door system (e.g. in case of a power failure) is always possible using an electric button (option) or mechanical pull lever. When the emergency release is activated, the motor brake is triggered and the pre-tensioned springs that are integrated into the frame pull the door up, allow an immediate partial opening.

## Emergency stop

EMERGENCY STOP button

## Door leaf guide

The particularly tight door leaf guide ensures minimal air loss.







## Cover

The complete cover is designed as standard with a 15° incline. A 45° incline or 90° cover up to the ceiling are also possible.

## Door curtain

The door curtain is made of transversely stable polyester with anti-static properties and can also be equipped with a PVC window. The special surface structure of the curtain reduces particle adhesion to a minimum.

## Light barrier

Up to two safety light barriers can also be integrated if required, which prevents the door from closing if objects or people are within the door closing line.

## Safety

For safety, the door system comes as standard with a radio contact strip, which is wirelessly connected to the control unit.

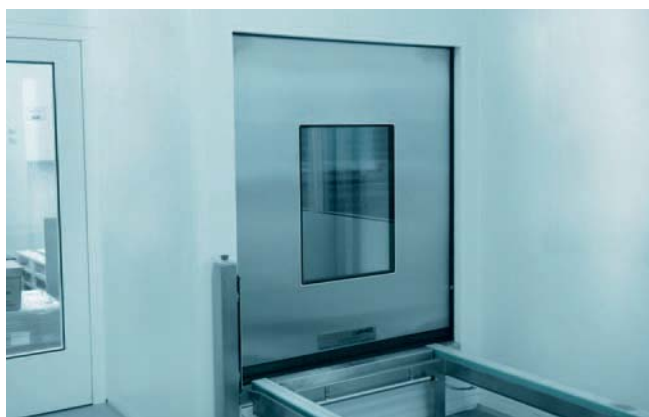
## Service advantages

Frames offset on both sides near the floor make accessibility to the door easier for servicing and the replacement of grouting and channelling is avoided.

# Airlocks and special applications.

It is often necessary to link two doors to an airlock – for this, we have again various options here for you too. Whether as an airlock between the exterior space and the clean room or between different clean rooms. Combine the two high speed doors with the respective special advantages of EFAFLEX to the suitable solution. Depending on the spatial installation possibilities, different airlock combinations are possible. Your EFAFLEX consultant is happy to advise you.

*EFA-SRT® CR Premium in the sterile department of a clinic*



## For ideal conveying processes and optimal materials handling

EFAFLEX clean room doors are optimally suited for conveyor systems between plant sections and storage rooms. CR Series high-speed doors are also used in high rack warehouses and inertisation applications.

*EFA-HVS CR in a material airlock*



## Technical data:

		CR Serie			
		EFA-SRT® CR PREMIUM	EFA-SRT® CR EFFICIENT	EFA-STT® CR	EFA-HVS® CR
Certificate for air particle purity	ISO 14644-1	ISO Klasse 5	ISO Klasse 6	ISO Klasse 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	3.0	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	–	–	○	–
	Door curtain made of flexible PVC, transparent with warning stripes in different colours	●	●	–	–
	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-CON®	● integrated	●	●	●
	Frequency converter	●	●	●	●
	MCP2 with BUS technology	–	–	○	–
	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.



EFAFLEX  
Tor- und Sicherheitssysteme  
GmbH & Co. KG  
Fliederstrasse 14  
D-84079 Bruckberg  
Telephone +49 8765 82-0  
Facsimile +49 8765 82-100  
[www.efaflex.com](http://www.efaflex.com)  
[info@efaflex.com](mailto: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](http://www.creativconcept.de) 07115

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