

CR Series

Special doors for clean room application



EFAFLEX 
safe high-speed doors

The CR Series: Special doors for clean rooms

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 cor-

rect door is one of the most important components in the clean room – with the CR Series, EFAPLEX offers you specialist doors for controlled production environments.



Summary of the CR Series at a glance:

- Ideal door systems for clean rooms
- Up to 200,000 load changes per year
- High speed
- Near airtight sealing
- High compressive strength
- GMP compatible

The CR Series fulfils demanding criteria

CR Series clean room doors from EFAFLEX are perfectly suited to the requirements in many controlled environments. They offer near air-tight sealing. These high performance doors have a smooth surface structure and no protruding edges. They can easily be cleaned and particle deposits are largely excluded. The GMP-compatible door types of the CR Series are mainly made of V2A stainless steel and conform to the following international standards and guidelines for clean room applications.

EN 14644
FED STD 209
VDI 2083



EFA-SRT®-CR in a material lock

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



Additional features included

In addition to their suitability for clean rooms, the CR door Series offers a considerable number of advantages. As with all EFAFLEX high-speed doors, they reduce noise levels, prevent draught and help save energy through their unprecedented opening and closing speeds. As a result of careful attention to detail the EFAFLEX clean room doors are low maintenance.

The fastest door in the clean room

Increased cost-efficiency in the clean room thanks to the fast opening and tight closing, the measured air losses with the CR versions of the two high-speed doors are very low. This keeps the filter load low.



EFA-SRT®-CR Near air-tight high-speed roll-up door

The standard door for GMP-compatible clean rooms is, among others, suitable for installation in Class 8 clean rooms according to EN ISO 14644, also suitable for sealing off Class 7 clean rooms. Of course, the EFA-SRT®-CR is also suitable for installation in clean rooms of other classes. The CR version of the EFA-SRT® is the ideal closing process for rooms with differing pressure conditions.

Fast opening and closing increases the cost effectiveness in the clean room. This reduces the loss of air and keeps the filter load low.



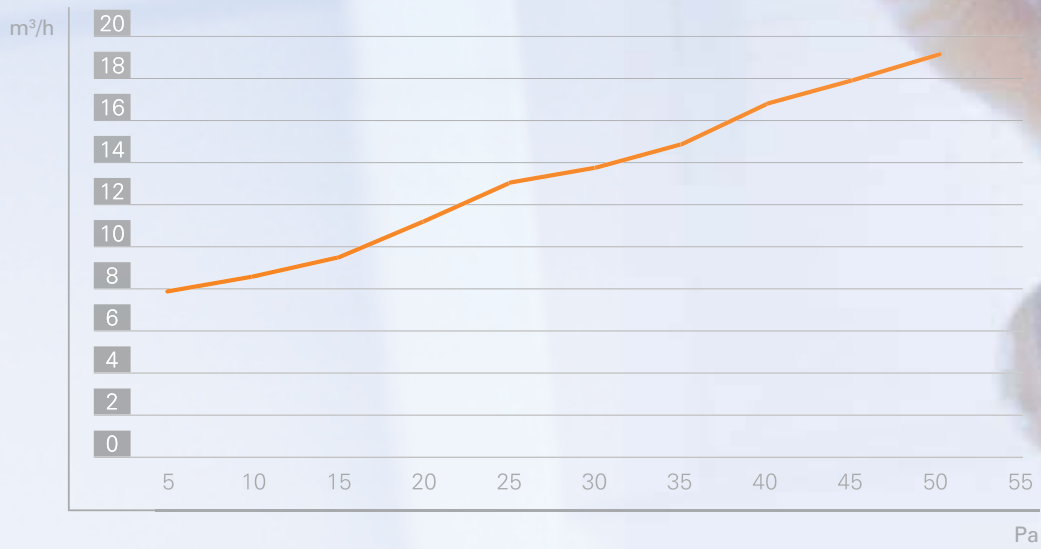
EFA-STT®-CR Spiral door for turbo speed and full transparency

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 and atmosphere exchange, for example for the inertisation for dry prevention. Compared with a standard EFA-STT® door, the clean room version achieves its sealing through a so-called labyrinth sealing.

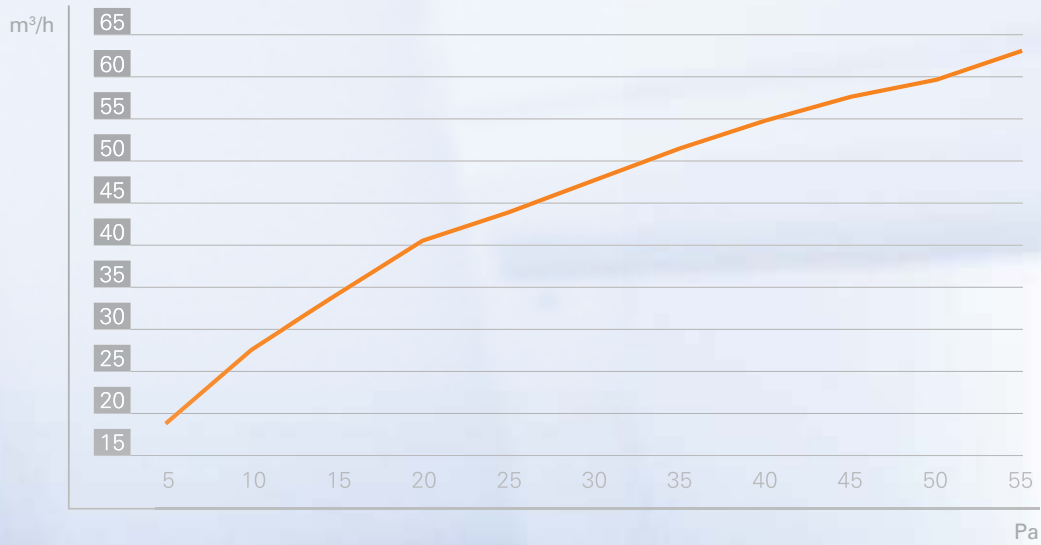
The single walled transparent laths are kept in distance when the door opens thanks to the patented spiral guidance. Therefore, the EFA-STT® model from the CR Series will remain transparent with door sizes of up to 4 x 5 metres for many years!

Effectively measured air loss in laboratory tests with typical door sizes:

EFA-SRT®-CR
Door size 1400 x 2000 mm



EFA-STT®-CR
Door size 2500 x 2500 mm



Perfect application: Further design types



EFA-HHS-CR Hermetically sealed horizontal sliding door

In the case of insufficient space above the door, a horizontal sliding door is installed: The EFA-HHS-CR for the hermetic closure is the perfect solution. The door leaf offers a considerable freedom of design with any installation size. The EFA-HHS-CR can also be delivered with a window. Moreover, choose between stainless steel and laminate finish.

The EFA-HHS-CR.



EFA-HVS-CR Hermetically sealed vertical sliding hatch

If there is not much space or no space at the sides, the EFA-HVS-CR sliding hatch which opens and closes vertically, is fitted. The door leaf closes flush with the guides and closes hermetically. Typical areas of applications of the EFA-HVS-CR are logistics, transportation as well as material and lift shafts in controlled zones. The door leaf of the hermetical vertical sliding hatch, which is made of stainless steel, is available with or without a vision window.

Hermetical closures of a material lift with the EFA-HVS-CR.

Additional features of the CR Series

Contactless Switch

A simple hand movement in front of the sensor, at a distance of between 10 and 50 cm – depending on the individual setting – triggers the opening of the door; this is hygienic, fast and reliable. It is not necessary to touch the switch. This is the optimum in sensitive environments. On each registration, the LED display is lit. The clean room door closes automatically after passing through the doorway.

To be protected, the switch can be hidden completely behind a cover, as long as this does not contain any metal elements. Activation of the door is unaffected.

*The sensor illuminates
in the dark.*



Clean-room compatible LED-display

An LED display specifically adjusted to the requirements in the clean room indicates whether the door can be safely passed. If the lower half lights up green, the door is completely open. Now you may pass. If the upper half of the display lights up red, the opening process is still not concluded and the clean room door is closing. We can also set the mode for you separately. The clean-room compatible LED display is extremely flat and offers no surface for dust.

*Green: The door
may be passed.*



Airlocks and special applications



It is often necessary to link two doors to an airlock. 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.



Two EFA-SRT®-CR doors coupled to an airlock. Airlock comprised of EFA-STT®-CR and EFA-HVS-CR.

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 materials handling.



CR Series

Technical data:

		EFA-SRT®-CR	EFA-STT®-CR	EFA-HHS-CR	EFA-HVS-CR
Application	Interior door	•	•	•	•
	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	< 60	< 100	< 50	< 50
Application temperature	in °C	5 – 30	18 – 25	5 – 30	18 – 25
Door size (in mm)	Width W max.	2500	4000	2000	1300
	Height H max.	3000	5000	2450	1500
Maximum opening speed*	in m/s	1,0	2,5	0,8	1,0
Maximum closing speed*	in m/s	0,5	0,75	0,4	0,75
Door moving direction		vertical	vertical	horizontal	vertical
Steel structure	Galvanized sheet steel frame	–	•	–	–
	Stainless steel	•	o	•	•
	Powder-coated according to RAL	–	o	–	–
Door blade	Aluminium with acrylic glass, transparent	–	•	–	–
	Non transparent infill	–	o	–	–
	Flexible material, different colours	•	–	–	–
	Flexible material, with vision window	o	–	–	–
	Laminate	–	–	o	–
	Stainless steel	–	–	•	•
	Laminate with window	–	–	o	–
	Stainless steel with window	–	–	o	o
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	200.000	120.000	150.000
Control	EFA-CON®	•	•	•	•
	MCP2	–	o	–	–
	Frequency converter	•	•	•	•
	Main switch and membrane key-pad	•	•	•	•
Lead	Power supply	230V/50Hz	230V/50Hz	230V/50Hz	230V/50Hz
	Electric drive / fuse	16A(K)	16A(K)	16A(K)	16A(K)
Emergency opening	Automatic after manual activation	•	•	–	–
	Manual activation	–	–	•	•
Safety equipment	EFA-TLG® Door light-line grid at door closing line	–	o	–	–
	Contact edge	•	•	–	•
	Light barrier	•	•	o	•
	Approach area monitoring	o	o	o	o
	External light grid	o	o	o	o
	Force limitation / automatic reversal	–	–	•	–
Activator	Connection of all common activators possible	•	•	•	•

• Standard, o on request, – not available, * depending on door blade and door size, we reserve the right to make technical alterations.



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