

# High-Speed Spiral Doors



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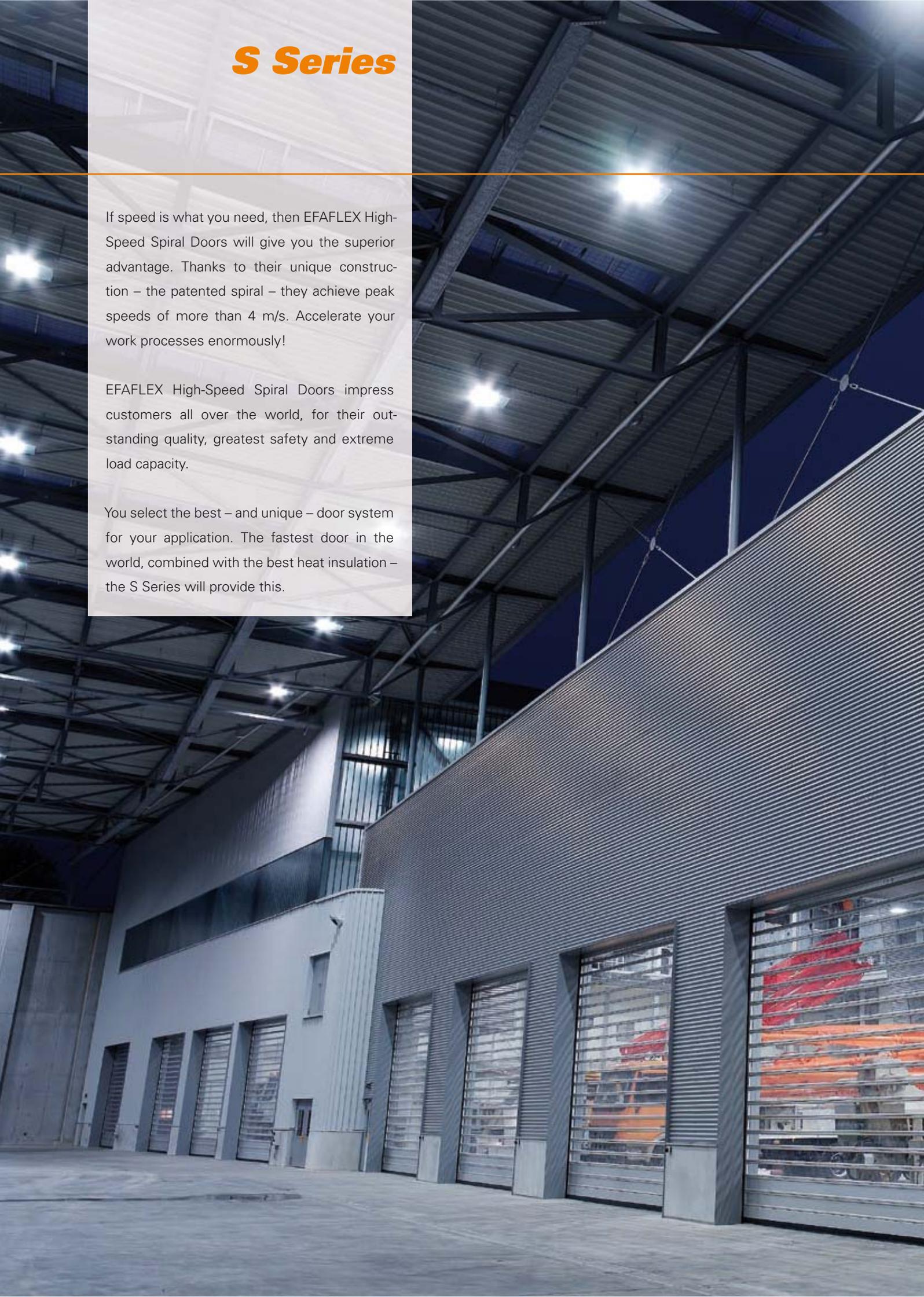
**EFAFLEX**   
*safe high-speed doors*

# S Series

If speed is what you need, then EFAFLEX High-Speed Spiral Doors will give you the superior advantage. Thanks to their unique construction – the patented spiral – they achieve peak speeds of more than 4 m/s. Accelerate your work processes enormously!

EFAFLEX High-Speed Spiral Doors impress customers all over the world, for their outstanding quality, greatest safety and extreme load capacity.

You select the best – and unique – door system for your application. The fastest door in the world, combined with the best heat insulation – the S Series will provide this.





# Everything revolves around the patented spiral technology

Copied a thousand times, yet still unequalled. The tried and tested fundamental principle of EFAFLEX High-Speed Spiral Doors remains unbeatable! The door blade is not rolled up on a shaft, but is guided into the patented EFAFLEX spiral instead, saving space and keeping it in distance.

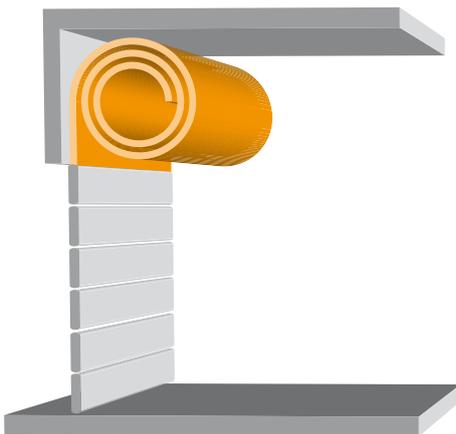
## Perfection of the door blade guidance

EFAFLEX has patented this principle of operation internationally. It guarantees you a series of unique advantages: no other construction combines high opening speeds, longevity and efficiency anywhere in a comparable way.

## Oval spiral and low-header design

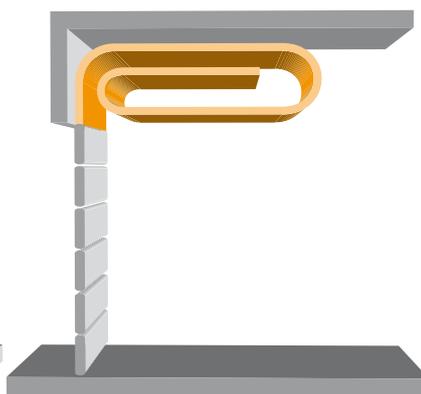
EFAFLEX provides High-Speed Spiral Doors of various different designs. The circular spiral is the standard solution, and also boasts the fastest opening/closing times. If you only have limited space above the door, then you have two space-saving variants to choose from for many door types in the S Series. Oval spiral and low-header

Round Spiral



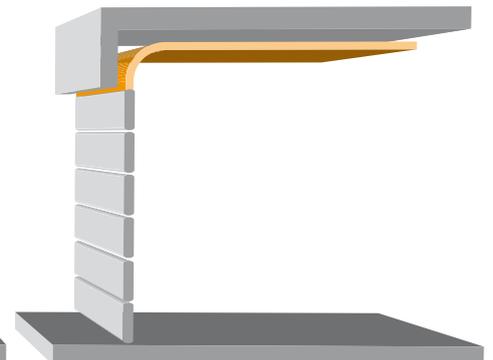
*The round spiral is the standard and best solution when you have ample space above the door.*

Oval Spiral



*Oval spirals are space-saving shapes to be used in cases of structural limitations.*

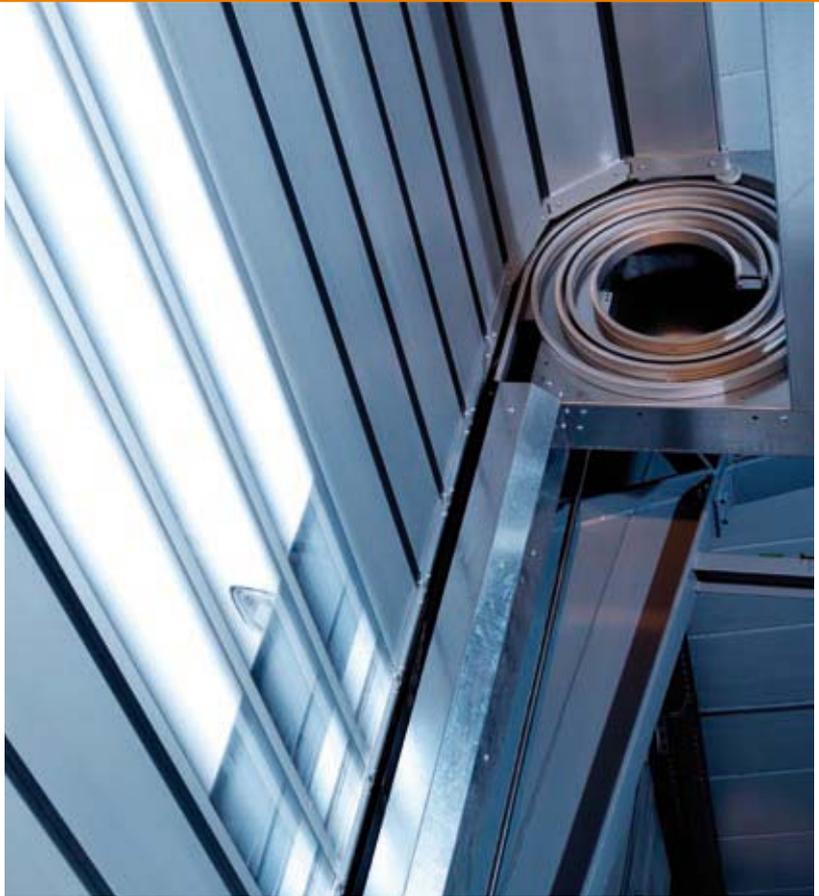
Low-header



*The low-header design guarantees greatest safety for people and vehicles, for example in underground garages and parking centres!*

## Minimum mechanical load = Maximum service life

High-speed doors of the EFAFLEX S Series run quietly and with no wear, thanks to the spiral system. Your door will look new for years and years. No other mechanical principle comes even close to handling the hard challenges of daily operation so smoothly.



*The laths are screwed together with large strap hinges. The laths are guided by especially smooth-running, quiet rollers. That means there are no driving or transmitted forces acting within the door blade.*

# EFA-SST® The energy-saving door for closing large halls

## The EFA-SST® at a glance

- Unrivalled noise and heat insulation
- Fitted with EFA-THERM® laths by standard
- Maximum speeds of up to 2.5 m/s
- Class 4 wind resistance
- Completely weatherproof
- Up to 250,000 load cycles per year

## The original spiral door

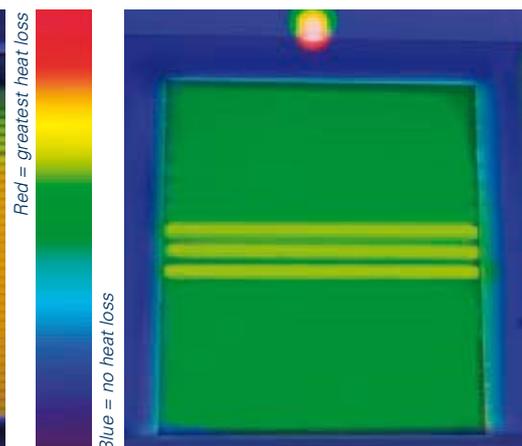
EFA-SST® is the classic among EFAFLEX High-Speed Doors, and our most successful series. We have developed three different variants to meet all different requirements you may have for a high-speed door.

## Your door to a better environment

Responsible use of valuable resources is indispensable – for the sake of an intact environment today and a better future for coming generations. By choosing the EFA-SST®, you contribute your share towards active environmental protection – and are also optimally equipped for the future.



*This thermal image of a conventional sectional door clearly shows the loss of heat to the outside.*



*The thermally insulated EFA-THERM® laths of the EFA-SST® considerably improve the thermal insulation, thus lowering your energy costs.*



## EFA-SST® PREMIUM

Designed for permanent industrial application, this variant will execute easily up to 250,000 load cycles per year. Opening speeds are in excess of 2.5 m/s. Each door comes with its own burglar-proof lock and the TÜV certified safety system EFA-TLG®.

## EFA-SST® ECO

Capable of up to 200,000 cycles per year, the EFA-SST ECO® is of far superior capacity. The most significant features of this variant of EFA-SST® are robust quality and the usual EFAFLEX reliability, combined with opening speeds of approx. 1.0 m/s.

## EFA-SST® BASIC

This variant focuses not on speed but on high quality and extreme capacity. The BASIC variant of the EFA-SST® fulfils all demands on a modern high-speed door. Top quality, up to 100,000 cycles per year and opening speeds in excess of 0.5 m/s.



# The latest generation of EFA-SST®

In light of rising energy prices, energy saving is right at the top of everyone's agenda – which naturally also goes for EFAFLEX. That is why we have now completely redesigned our High-Speed Spiral doors for you.

## Revolutionary and advanced: the new EFA-THERM® laths

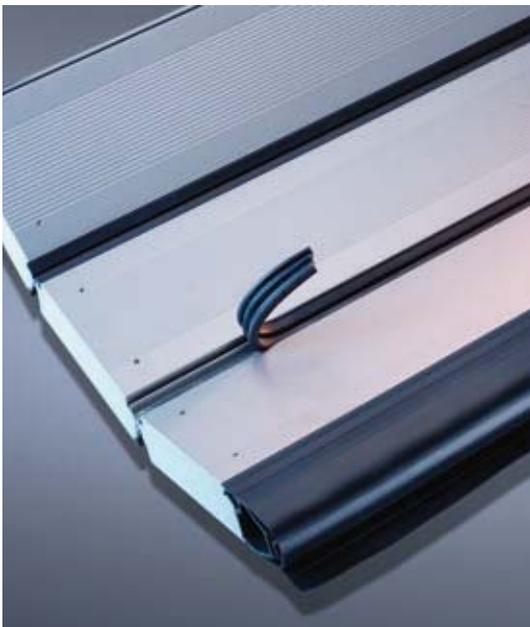
We are the world's first manufacturer to provide a series of thermally insulated EFA-THERM® insulation laths for EFA-SST®. These achieve outstanding heat insulation between 0.7 and 1.5 W/m<sup>2</sup>K depending on door size. The latest door blade is extraordinarily robust, long-lasting, tight and sound-insulating. Depending on how much light you wish to allow in, we can incorporate as many EFA-CLEAR transparent acrylic glass laths as you like into the blade of your EFA-SST®. These are also available in double-walled, thermally insulated design.

EFA-THERM® laths of EFAFLEX's own production are available in different thicknesses, at 40, 60 or 80 mm, and in many different designs. In addition to the standard aluminium coloured coating, we also paint the laths in your individual "corporate identity" colours – every colour from the RAL system is available.



## With EFAFLEX High-Speed Doors, you save massively on energy costs

Due to its outstanding heat insulation, EFA-SST® is the most economical solution for a highly frequented building closure. The temperature remains constant inside, and no undesired heat or cold comes in from outside. As the door opens and closes, its high speed ensures that energy loss is kept to the absolute minimum.



*All rubber seals between the EFA-THERM® laths are built in using elaborate “clip” technology. The EFA-SST® can continue to be operated even with one or more laths missing.*



## Top in all respects

The new EFA-SST generation fulfills highest expectations even under heaviest continuous operation. The EFA-SST® is extremely stable and weather-proof. It boasts outstanding heat and noise insulation, and surpassing wind resistance. The new high-speed spiral doors “undyingly” withstand up to 250,000 load cycles per year with minimal maintenance requirements. You can expect a long service life from the EFA-SST®!

## Special models

EFAFLEX offers the EFA-SST® in a model that fulfills all standards for explosion-protected rooms. All electrical components are certified according to the applicable EU directives. The mechanical protection consists of brushes for electrostatically discharging the door blade, full grounding of the door installation and non-isolated installation of all metallic parts.

In cooperation with the automotive industry, we have also developed a special model that complies with all regulations regarding laser beam strike.

## World innovation: EFA-SST® with EFA-ACS self-repairing door blade Top in all respects

*A milestone in economy and safety:  
The EFA-ACS active crash system prevents ex-  
pensive damages, unnecessary downtimes and  
a lot of hassle!*



As the world's first and only high-speed door with a solid door blade, the premium model of the EFA-SST® can be equipped with the EFA-ACS active crash system on request. This mechanically and electronically unique safety mechanism not only protects the door against damage and therefore downtimes and repairs – the EFA-ACS fully automatically repairs the door in just a few seconds! Should there ever be a collision, your door will still be serviceable again immediately.

### How the world innovation works

In the event of a collision, the detachably connected laths are pushed out of their guide rails, undamaged. An inductive sensor system records this and, while slowly retracting the door upwards, safely and properly restores the door blade and frame to their proper condition.

### Powerful core

We always deliver the EFA-ACS in conjunction with direct synchronous drive (DC), where the load is applied directly to the topmost door blade lath. That eliminates wearing power transmission elements such as motor drive belts and pulleys. This compact, low-maintenance construction guarantees an even longer service life, quiet and precise running, and dependable EFA-ACS triggering every time.





## EFA-SST®: unbeatable in materials handling

In automated logistics, doors are often under very heavy goods traffic. This is where the advantages of EFA-SST® come in most clearly. Our High-Speed Spiral Doors ensure extreme speed for rapid material flow, and can withstand extraordinary numbers of load cycles. The EFA-SST® can be connected over interfaces to a controlling computer.

In materials handling, a high-quality High-Speed Spiral Doors such as the EFA-SST® offers yet further advantages: in particular, unrivalled heat insulation pays off when storing fresh goods, for example. The EFA-SST® also seals tightly against dust. High-Speed Spiral Doors also make an important contribution to the safety of the conveyed goods.

# EFA-SST® Low-header model

*We create individual low-header door solutions for washing bays, fire brigades, underground parking, banks and insurance companies, cooling zones and many other applications.*



## Optimized door solutions in limited space

The EFA-SST® is available in a special model for low headroom situations. It reaches opening speeds of up to 2.0 m/s, and guarantees greatest safety for people and vehicles. System solutions for traffic control can be individually produced, for example by combining traffic lights, induction loop(s) and magnetic card readers.

The latest safety precautions combined with high closing speeds offer effective protection. With state of the art technology, the low-header model measures up to the increasing security requirements for people and cars in underground parking, for example. On request, we can also supply ventilation laths instead of transparent laths.

# EFA-SST-ISO Tight sealing door

## for controlled temperature zones

### The EFA-SST-ISO at a glance

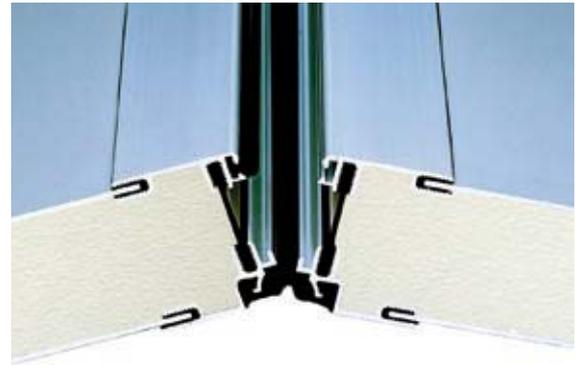
- Optimum solution for cold storage rooms
- Maximum speeds of up to 1,5 m/s
- Heat insulation of up to 0.5 W/m<sup>2</sup>K
- Double-walled, thermally separated and insulated laths as standard
- Easily 150,000 load cycles per year

Doors in cold storage rooms must withstand enormous stresses. Top quality and perfect workmanship are prerequisites if all components are to defy cold and moisture. EFA-SST-ISO is the ideal tight sealing door if effective insulation is demanded of heavily frequented openings, such as those to cold storage rooms.



### Insulates perfectly, saves energy

The EFA-SST-ISO combines two EFAFLEX door technologies into an innovative solution: the multiply patented spirals and highly insulating laths. Elaborate seals additionally prevent air and heat exchange. An excellently insulated door such as the EFA-SST-ISO, which opens and closes very rapidly, helps you substantially lower your costs and creates constant climatic conditions at your establishment.



## Perfection is in the detail

Double-walled, thermally separated laths with double rubber seals between the individual segments (see the photo above) guarantee the best thermal insulation. You can also order grey hard PVC fillings or completely transparent acrylic glass laths. Outer ridges and finishing are generally made of aluminium. A flexible rubber profile provides the perfect seal against the ground. The 60 mm thick door blade has a thermally separated, double seal against the frames. Undesired air and heat exchange are prevented by the entire door construction.



With laths of crystal-clear acrylic glass, the door blade of the EFA-STT® is more than 70% transparent, and yet extremely robust – making it a worldwide unique high-speed door of extreme practicality.

# EFA-STT® The transparent lath

The EFA-STT® transparent laths provide a clear view to the other side for years. The door blade is held apart in the spiral. Given frictionless retraction, the high-speed door is extremely fast and the laths remain unscratched. Your premises become brighter, you save electricity and you have a clear view. Furthermore, the EFA-STT® ensures constantly gleaming appearances even under hard working conditions.

## •The EFA-STT® at a glance

- Impressive transparency
- Maximum speeds of up to 3,0 m/s
- Highest quality and economy
- Suitable as interior and exterior doors
- Easily 150,000 load cycles per year



## Advantages clear to everyone

At every intersection in your company – often approached from both sides at once – a free view through the door gives you a decisive advantage: accidents are avoided and smooth transport processes are guaranteed.



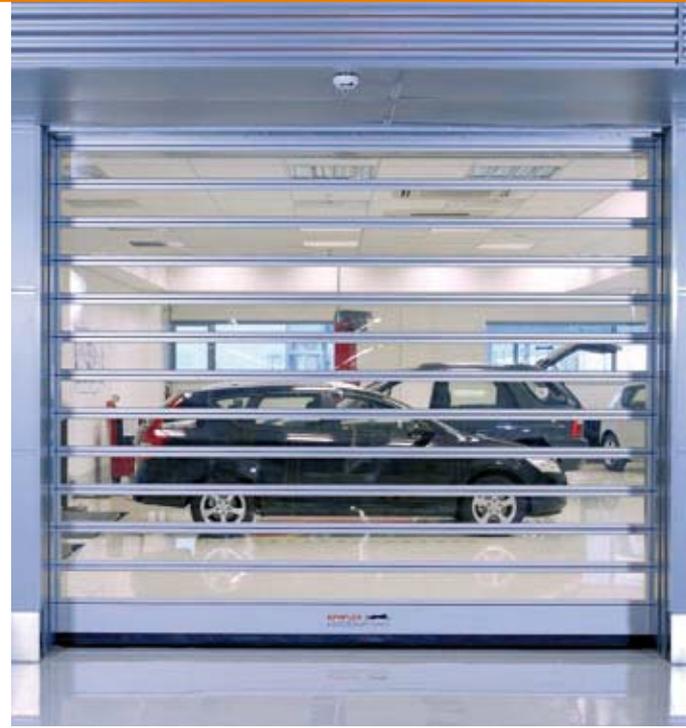
# Clear vision for your premises



## Quality you can trust

The EFA-STT® is designed for extreme use; there are cases in which the doors will withstand 100,000 load cycles or more between annual maintenance intervals. Thanks to its sturdy construction, this EFAFLEX High-Speed Turbo Door remains fully functional perfectly even under winds of up to 120 km/h. That is the absolute top class in the industry: as such, also EFA-STT® makes for a perfect exterior door.

All transparent sections of the EFA-STT® are made of PVC-free acrylic glass as standard. Employing the proven spiral technology, the door blade rolls up free of contact, so that the transparent laths remain transparent for many years. Also, any combinations with grey laths can be made at request. Another option is translucent lath optics. That ensures full light incidence while protecting against prying eyes.



## A bright light in airlocks

In airlocks such as those used in the automotive industry, the transparent laths of the EFA-STT® can let a lot of light into your plant. They do not only provide a clear view – they are also truly a bright light, creating an atmosphere of freedom with free lines of sight between the rooms. That makes for a much more pleasant working environment!

## High performance for materials handling

Given the constant traffic of goods, doors in materials handling systems must withstand an enormous number of load cycles. The EFA-STT®, with its extreme load capacity, is in its element here! In addition to the familiar advantages of an EFAFLEX High-Speed Spiral Door, such as quality and speed, the EFA-STT® also stands out for its highly transparent door blades.

# EFA-STR® The fastest door in the world



*The flexible, light-weight door blade of the EFA-STR® is practically wear-free. It consists of fabric-reinforced PVC with aluminium outer ridges. You can choose between four*

*colours for the curtain (similar to RAL 5002, 3000, 1021 and 7035). At request, you can have a permanently transparent section in your EFA-STR®.*

## Advantage included – thanks to dependable speed

With the patented spiral technology, EFA-STR® opens with a phenomenal speed in excess of 4 m/s – that is the world record! This high-speed door will also certainly accelerate the processes in your business. With the EFA-STR®, your logistics gains speed and efficiency. No brakes. No waiting. When every second counts, you have a distinct advantage with EFA-STR®. Our fastest door, a combination of a spiral-shaped door blade guidance and flexible curtain, guarantees you smooth business operations and an optimum flow of traffic!

## Extreme load capacity and extreme stability

The EFA-STR® is not only unbelievably fast, it is also low-maintenance, highly resilient and extremely stable. The flexible door blade is guided on the sides and spring-actuated upwards and downwards. Linear expansion is ruled out. It consists of individually changeable, 4-field modular segments. Aluminium profiles every 225 mm reinforce the curtain. That achieves first-class sealing in all climatic conditions. Extreme wind resistance is also guaranteed.

## The EFA-STR® at a glance

- World speed record at 4 m/s
- Class 3 wind resistance
- Suitable as interior door
- Flexible PVC door blade
- Easily 150,000 load cycles per year

## Power is nothing without control

Speed results from power, which in this case is delivered by an innovative, electronically controlled high-speed drive. The motor does not start at full force, so the drive elements are not loaded with a jerk, but smoothly instead. This gentle acceleration and soft braking upon opening and closing protects the door and ensures a long service life. Also, undesirable linear expansion is a thing of the past – the door blade is spring-actuated upwards and downwards.



## Fast and save: EFA-STR® with EFA-ACS self-repairing door blade

Especially at extremely high speeds, safety is a major concern. The EFA-ACS Active Crash System gives you the best protection, with which the door blade repairs itself. The completely innovative collision protection ensures fully automatic, electronically monitored retraction of the door blade after a collision. Should there ever be a collision, your door will still be serviceable again immediately – the EFA-STR® with EFA-ACS repairs the door for you in a matter of seconds.



### How the safety system works

Given that more than 85% of all collisions occur in the lower area of the door, the lower door blade module of the EFA-STR® dislodges on both sides upon a collision up to a nominal height of approx. 100 cm. The door immediately stands still.

Integrated sensors initiate the controlled onward movement to the upper end position. The door blade is then moved upwards in crash mode at a reduced speed, running through return guides on both sides. The inner and outer hinges are fully automatically connected again.

The door blade is electronically checked for correct connection. Regular automatic operation then continues already when the door closes again. Your EFA-STR® is ready again for operation after a few seconds.

### Reliable triggering and high wind resistance

EFA-STR® with EFA-ACS is impressive for its enormous speed, effective protection and high wind resistance, thanks to special adjustable blocking bolts in the hinges, which can be individually adjusted in tension.

### Innovative drive for EFA-ACS

The direct synchronous DS combines practically wear-free drive with greatest smoothness of running. The fall safety has been greatly enhanced by unique securing mechanisms. Important components now have a considerably longer service life, since we have replaced the transportation belt by a leaf chain.

# The best periphery



## EFA-TLG® door light-line curtain

In order to prevent collisions with the lower part of the door – where nearly 90% of all collisions take place – you are on the safe side with our TÜV certified EFA-TLG® infrared door light-line curtain. This system is unique in the world, and entirely self-monitoring. We build it directly into the side door tracks, where it is well protected. EFA-TLG® monitors the closing level of the door up to a height of 2.5 metres.

Intersecting infrared beams create a practically gapless light-line curtain that can perceive even the smallest of obstacles without contact. If something gets in the way, the closing motion stops immediately, or is prevented from starting. This unique technique protects the door, vehicles, materials and people.

## EFA-AIS infrared sensors



A considerable safety advantage: The EFA-AIS infrared sensor monitors a radius of about four metres in front or behind the high-speed door, and responds to moving and unmoving objects. The system is activated when the door is open and during the closing motion. If it is triggered, it initiates the reverse movement of the door. That is an effective accident prevention mechanism – say if a forklift is on a collision course!

## EFA-CON® switch cabinet

As of now, the new standard of EFAFLEX controllers is the new generation EFA-CON®. The sleek housing of black polycarbonate in a compact frame format (160 x 430 x 155 mm) needs considerably less space than ever before. At the same time, EFAFLEX has considerably increased its performance.

## Latest microelectronics

The microprocessor control developed by EFAFLEX is a perfectly concerted technological unit with motor, brake and frequency converter. The control is equipped with an extremely fast processor. The result: highest speeds, greatest safety and best adaptability!



Technical data:

		PREMIUM			
		L	S	ÜS	ACS-DS
Application	Interior door Lock-up doors	• •	• •	• •	• •
Wind load max. *	Acc. to DIN EN 12424 class or in km/h	2-4 -	2-4 -	2-4 -	0 -
Operating forces / safe opening	According to DIN EN 13241-1	fulfilled	fulfilled	fulfilled	fulfilled
Resistance against water ingress	Acc. to DIN EN 13241-1 class	3	3	3	0
Air permeability	Acc. to DIN EN 13241-1 class	3	3	3	0
Direct airborne sound insulation R <sub>w</sub>	in dB(A) according to DIN EN 717-1	24	25	26	22
U value maximum (depending on hanging)	in W/m2K according to DIN EN 13241-1	1,4	0,9	0,7	1,8
Door size (in mm)	Width W max.	4500	6000	8000	4000
	Height H max.	5000	6000	8000	5000
Maximum door blade speed	in m/s	2,5	1,5	1,2	2,5
Factory setting* (average speed max.)	Opening in m/s	1,5	1,2	1,0	2,0
	Closing in m/s	1,0	1,0	0,8	1,0
	Closing in m/s, with EFA-TLG® door light-line grid	-	-	-	-
Door blade guidance	Round Spiral	•	•	•	•
	Oval Spiral	•	•	-	-
	Low-header	-	-	-	-
Steel design	Galvanized sheet steel frame	•	•	•	•
	Stainless steel	o	o	-	o
	Powder coated in RAL colours	o	o	o	o
Door blade	EFA-THERM® laths, double walled, insulated/painted	•	•	•	•
	EFA-CLEAR double walled, thermally separated / anodized	o	o	o	o
	EFA-CLEAR single-walled / anodized	o	o	-	o
	Ventilation laths	o	o	-	o
	Painted in RAL colours	o	o	o	o
	Single-walled / double-walled / insulated	-	-	-	-
	Aluminium E6 / EV1 anodized	-	-	-	-
	Aluminium with acrylic glass, transparent	-	-	-	-
	Powder coated in RAL colours / specially anodized	-	-	-	-
	Flexible PVC, fully transparent	-	-	-	-
Flexible fabric, various colours	-	-	-	-	
Flexible fabric, with added window strips	-	-	-	-	
Fire class		B2	B2	B2	B2
Weight balancing by		Spring	Spring	Spring	Spring
Designed for approx... Load cycles per year		250.000	250.000	250.000	250.000
Collision protection	Active Crash System EFA-ACS / EFA-EAS	- / -	- / -	- / -	• / -
Drive	Electric motor with frequency converter	•	•	•	•
	Pneumatic with electric controller	-	-	-	-
Control	EFA-CON®	•	•	-	•
	Frequency converter	•	•	•	•
	MCP2 with BUS technology	o	o	•	o
	Main switch and foil keypad	•	•	•	•
	Reversing contactor control / comfort	-	-	-	-
Lead	Electricity connection 230V/50Hz	•	•	-	•
	Electricity connection 400V/50Hz	-	-	•	-
	Electric drive / fuse	16A(K)	16A(K)	20A(C)	16A(K)
	Compressed air (1/2 ) / fuse	-	-	-	-
Manual locking		•	•	•	-
Emergency opening	Automatic after manual activation	•	•	•	•
	Manual activation	-	-	-	-
Safety Devices	Door light-line grid (EFA-TLG®) in door closing line	•	•	•	•
	Contact edge	-	-	-	-
	Light barrier	-	-	-	-
	Approach area monitoring (EFA-AIS)	o	o	o	o
	Light grid, external	-	-	-	-
Activators	Connection of all common activators possible	•	•	•	•

• Standard, or upon request, - Not available, \* Depending on door blade and door size, we reserve the right to make technical alterations.



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