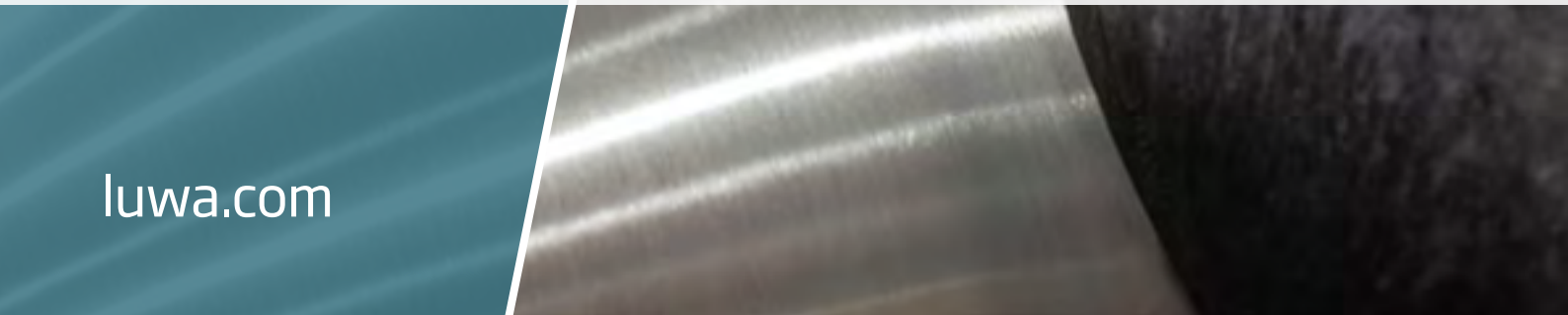
Luwa

Part of the Nederman Group

Axial Flow Fan

with Carbon Fibre Fan Blades

Textile Air Engineering



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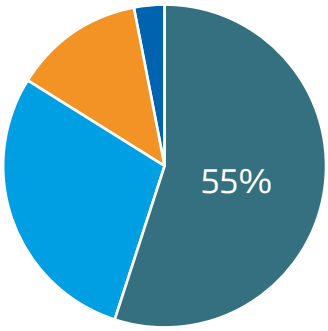
Significantly reduce your Energy Consumption

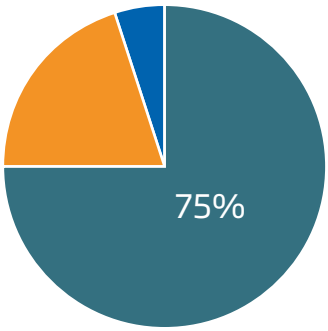
Axial fans are the main power consumer in an air conditioning or filtration system in a textile mill. In a spinning mill they account for about 55% and in a weaving mill up to 75% of the total electrical energy consumed. Luwa has taken measures to reduce this electricity consumption.

Spinning Plant
50´000 Spindles



- Axial flow fans
- Waste collecting plant
- Washer pump
- Room return air filter

Weaving Plant
228 Looms



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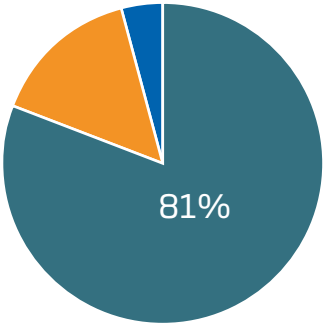
Knitting Plant
352 Machines



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- Washer pump
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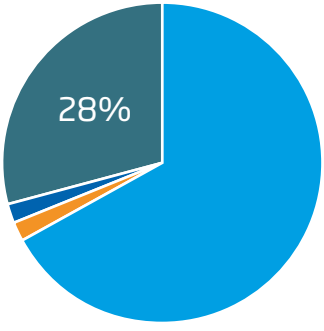
Nonwovens Plant



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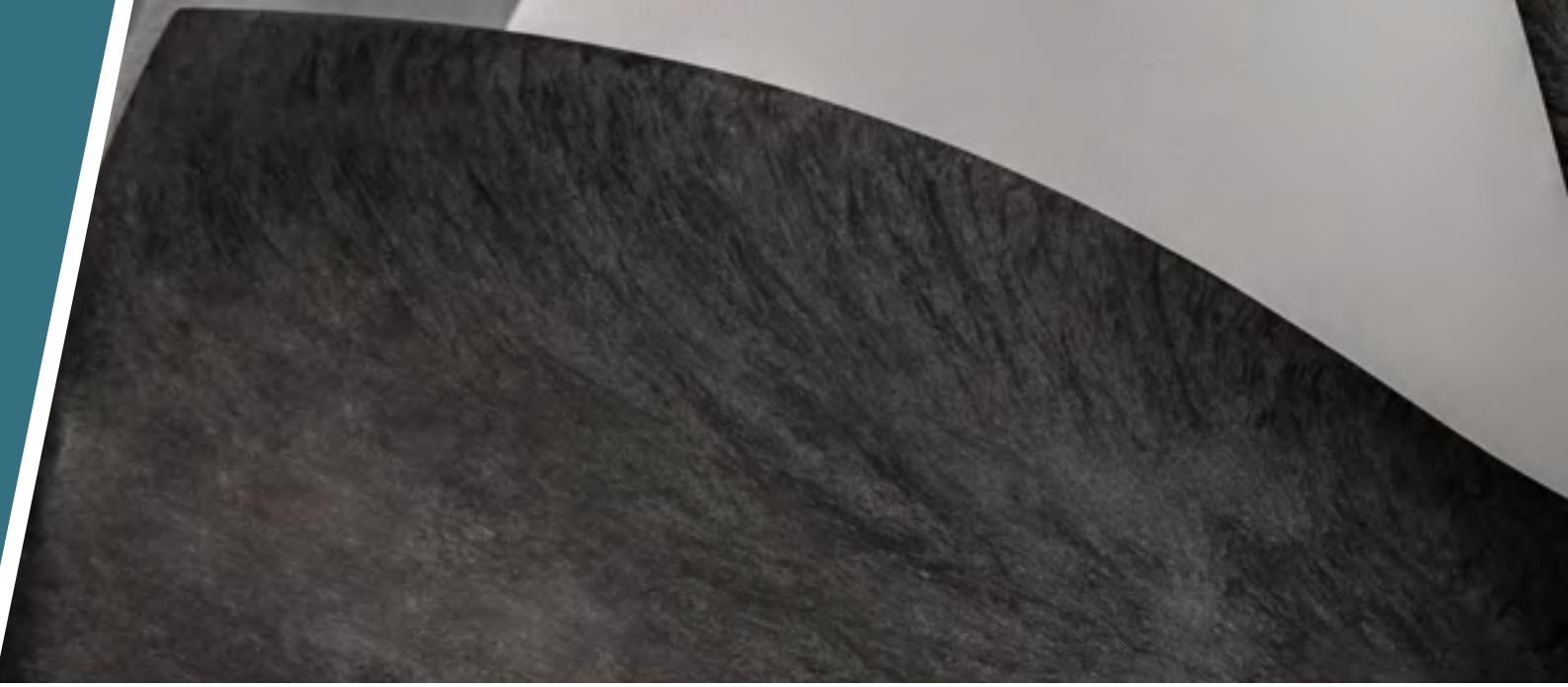


Characteristics & Benefits

The fan blades of the new Axial Flow Fan **B800CF** are made of the very light and high-strength "Hybrid Long-Carbon Fibre-Compound" (LCF) material. Compared to aluminum fans, LCF material allows new possibilities in design:

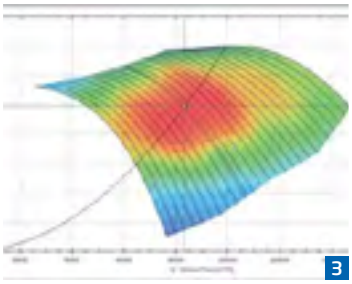
- larger blades,
- wider chord lengths at lower weight and
- lower mechanical stresses and thus
- more usable aerodynamic surface on the blade.

Benefits & Features

- Improved aerodynamics / efficiency
- Optimal performance and efficiency in typical P/V working ranges for industrial fans in textile air conditioning systems
- Designed for a wider operating range with consistently high energy efficiency even under changing operating and pressure conditions (e.g. condition and aging of filter media, changing number of running machines, etc.)
- To increase the efficiency of existing systems, the B800CF can be retrofitted to most Luwa Axial Flow Fans

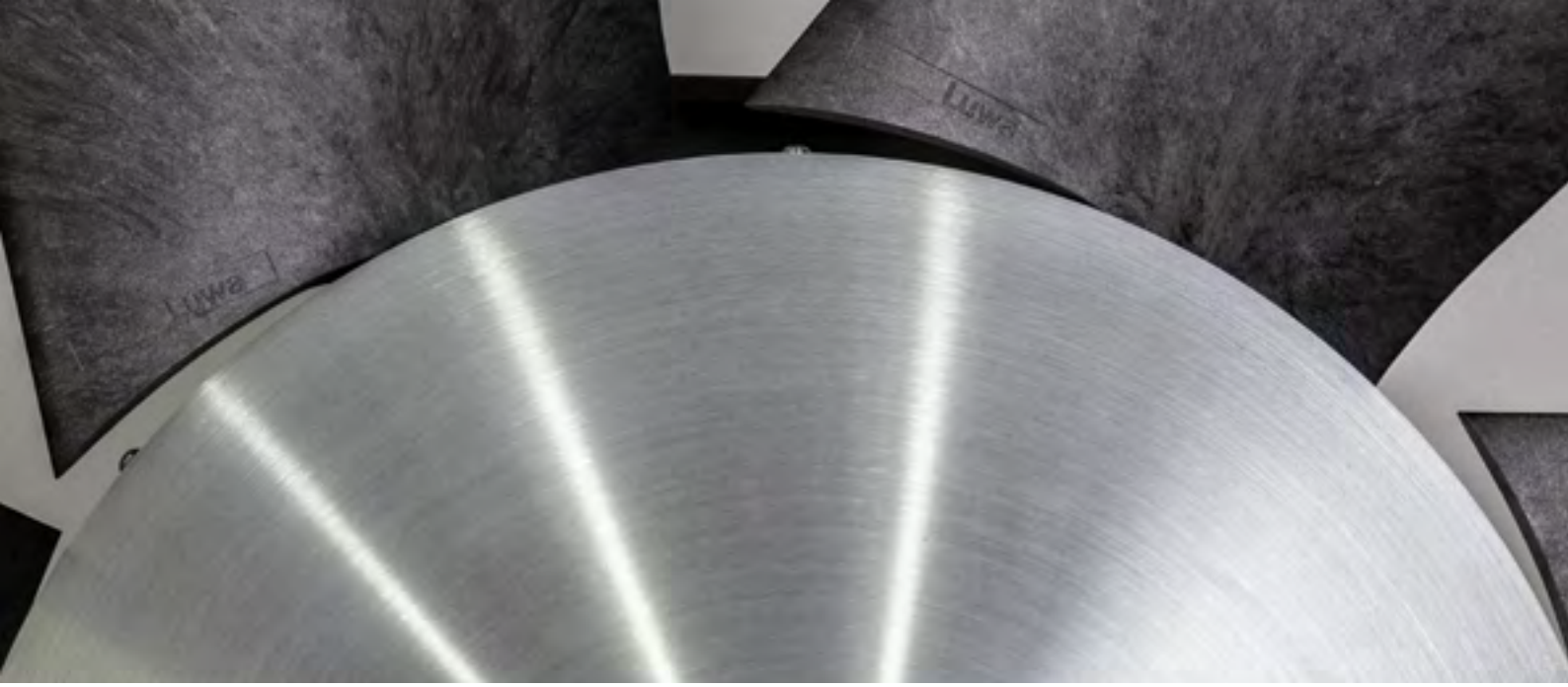
1 Development of fan blades in partnership with Prof. Th. Carolus

2 Carbon fibre fan blades



3 Selection software to determine best fan configuration

4 Axial flow fan B800CF, 7 fan blades with housing and floor support

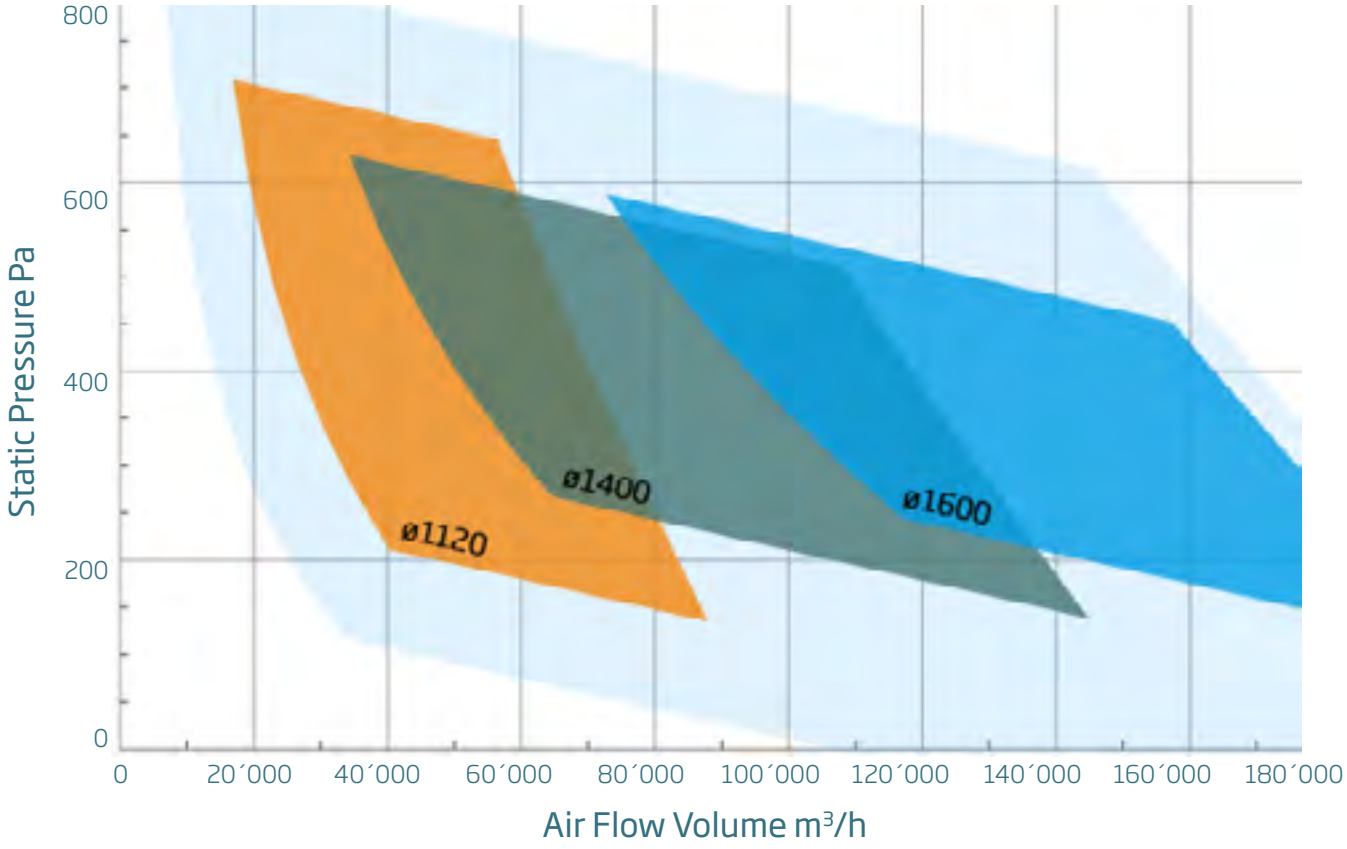


Increased performance

The impeller with its characteristic sickle-shaped blades is designed for optimal aerodynamic performance and efficient operation. The use of high-quality materials and modern production methods allow for the unique shape of the blades – a factor that contributes significantly to the outstanding performance of the Axial Flow Fan with carbon fibre blades. The benefits of the Luwa Axial Flow Fan series B800CF are reduced power consumption, higher fan performance, lower weight and reduced noise level. Compared to the current Luwa Axial Flow Fan B600 with aluminum blades, the efficiency is significantly higher.

Fan selection

The Luwa selection software calculates the best combination of the fan type, fan size and blade pitch angle.
To adapt the airflow to the exact operating point, the impeller blade pitch can be changed at any time.



Material properties & manufacturing process

Long fibre carbon – different material components are processed into LCF pellets suitable for injection molding in a novel process.
In the injection molding process, the individual impeller blades are formed into a solid, high-strength body under heat and pressure. With high dimensional accuracy, high surface quality, thinner wall thicknesses and, above all, thinner leading and trailing edges allow aerodynamic improvements. Further weight saving due to lighter overall hub design enabled reduction of fan weight by **>60%**.

Recycling

Today, waste with carbon fibres (CF) is mostly reprocessed, and processed as high quality additives for reinforced plastics. The high demand for CF continuously promotes the development of new CF recycling processes suitable for industrial use - especially for short fibers. The focus is currently on the use of CF recycled fibers in thermoplastic processes for sheet and profile extrusion. In addition, new processes are constantly being developed to form flat mats (similar to the paper industry).

Size 1600

Size 1400

Size 1120

SCAN ME
to learn more about
our B800CF fan series

PATENT PENDING
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The brochure has been compiled to the best of our knowledge and in good faith with the utmost care. However, it may be subject to type errors or technical changes for which we assume no liability. The photos and illustrations are purely informative in nature and in part show special equipment options which do not feature in the standard scope of delivery. Depending on the specific design and configuration of the system, the scope of delivery may change.
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Luwa Air Engineering, founded in Switzerland in 1935, is a global market leader in textile air engineering and a quality and performance leader with a global brand in the fibre and textile industry. Luwa has been part of the Nederman Group since 2018. The Luwa Group's activities include the design and engineering of single components and whole systems as well as manufacturing, assembly, installation and after sales services. With subsidiaries in China, India, Singapore, US and Turkey, the group has a significant global installed base that is the source of Luwa's deep understanding of the technical demands as well as the local requirements of customers.

Luwa Air Engineering AG
Weiherallee 11a
8610 Uster
Switzerland
P: +41-44-943 1100
E: info@luwa.com

Luwa India Pvt. Ltd.
3P-5P, Gangadharanapalya
Kasaba Hobli, Off Tumkur Road
Nelamangala, Bangalore North
562 123 India
P: +91-80-2951 1930/31/32
E: info@luwa.in

Luwa Air Engineering (Shanghai) Co., Ltd.
310 Shenxia Lu
Jiading District, Shanghai 201 818
P.R. China
P: +86-21-5990 0187
E: info@luwa.com.cn

Luwa Engineering (Pte) Ltd.
1 Scotts Road #26-09
Shaw Centre Singapore
228 208 Singapore
P: +65-6737 5033
E: les@luwa.com

Luwa Americas
4433 Chesapeake Drive
Charlotte, NC 28216
USA
P: +1-704-286-1092
E: info@luwa.us

Luwa Havalandırma Teknikleri
San. ve Tic. Ltd. Şti.
Küçükbakkalköy Mah. Dereboyu Cad.
Brandium AVM R5 Blok K:11 D:70
Ataşehir/Istanbul
Turkey
P: +90 216 313 50 61
E: info@luwa.com.tr

luwa.com