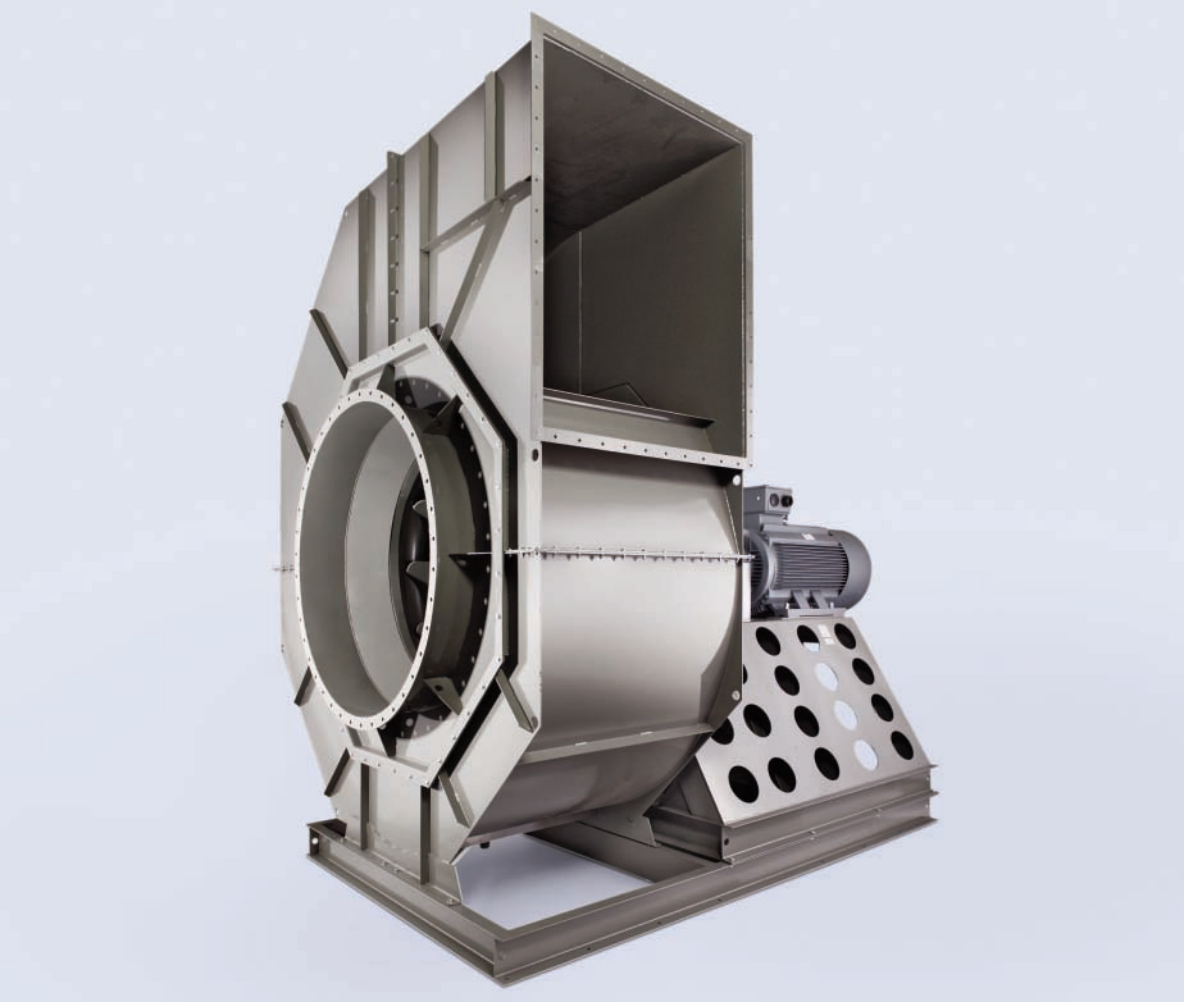
1. Air Ventilation



BerlinerLuft.

1. Air Ventilation

Product range

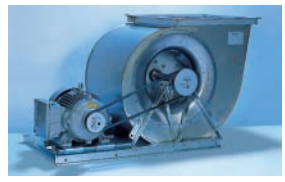
The Air Ventilation product division encompasses a range of gases which can be physically pure, damp, aggressive and dust-laden.

Fan technology for the most diverse of applications
- robust
- reliable
- easy to maintain
- reliable

Decades of experience in fan construction, highly qualified designers and engineers, continious research and development and a modern plant all guarantee a state-of-the-art product with the highest standards of safety and cost-effectiveness.

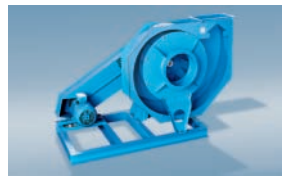
Our aim - your benefit: **Customer satisfaction**

1.1.1 Centrifugal fans, single inlet



1.1.2 Centrifugal fans, double inlet

1.1.3 Plug fans without housing, freewheeling
see brochure "Plenum/plug fans"



1.1.9 Special fans

1. Air Ventilation

Our Fan Range - Technical Information

Models

Unidirectional and bidirectional high-performance radial fans with backward curved blades. Optimum supply of any medium is ensured by 17 different impeller shapes with different aerodynamic properties depending on material, number of blades, blade configuration and impeller geometry. The impeller geometry can also be specially adapted on request to suit individual customer requirements. The housings are produced in grooved,welded and gas-proof versions.

Special requirements such as tightness class as per DIN 24194 or DIN 25496 for ventilation components in nuclear power stations are met. Spark-restraining designs are made on the basis of the European directive ATEX 100a.

Supply medium

Standard model
Mechanically pure, non-corrosive gases with a dust content of up to 0,5g/m³ (dry, non-adhesive) in a temperature range of -20 °C to 85 °C. Other uses require detailed specification in order to ensure that the correct design, material and accessories are selected.

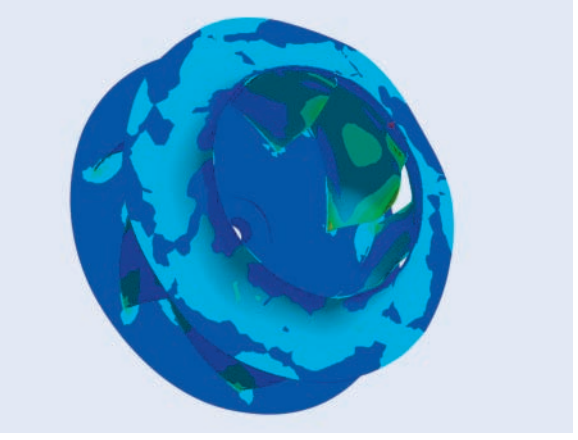
Special model
Humid, corrosive and dust-laden gases up to 3 g/m³ (abrasive or adhesive), fibre or shaving carrying to contaminated media. Temperature range from -50 °C to 890 °C.

Materials

Structural steels as per DIN EN 10025 are used as the base material. Corrosion protection is provided by coating with powder enamel coating on a phosphate-treated base or by using special enamelling systems or hot galvanising. Special treatments such as heavy corrosion protection heat-resistant coatings and protection against corrosive atmospheres can also be undertaken, but only by prior agreement. The assemblies can be manufactured from aluminium or stainless steel. The material used is based on relevant specifications or individual customer requirements. Fans for use in the range from 200 °C to 350 °C are manufactured from steels with good high-tempreature characteristics. Stainless steels or heat-resistant steels are used for temperatures exeeding 350 °C.

Design

The finite element method (FEM) is used to design impellers and other fan components from BerlinerLuft. In this way, individual equipment requirements can be already simulated in the design phase and appropriate material qualities in conjunction with design and sheet steel thickness determined in an optimal manner. Moreover, the FEM can also be used to optimise existing plants based on local operating conditions without the need to stop the plant.



Impeller strength calculation using the finite element method FEM.

Power

Gearless drive
using three-phase asynchronous motors (impeller mounted overhung on motor shaft). For special requirements this drive is also available with an extended motor shaft.

V-belt drive
using standard V-belt pulleys, pulleys and standard asynchronous motors, which make it possible to adjust the required speed to the operating point of the system.

Drive using flexible coupling
and intermediate shaft for large and heavy impeller versions with large inertial forces or for pumping medium temperatures over 100 °C.

All types of drive can also be fitted as required with a frequency transformer for infinitely variable speed adjustment and hence optimum energy performance.

1. Air Ventilation

Our Fan Range

Overview

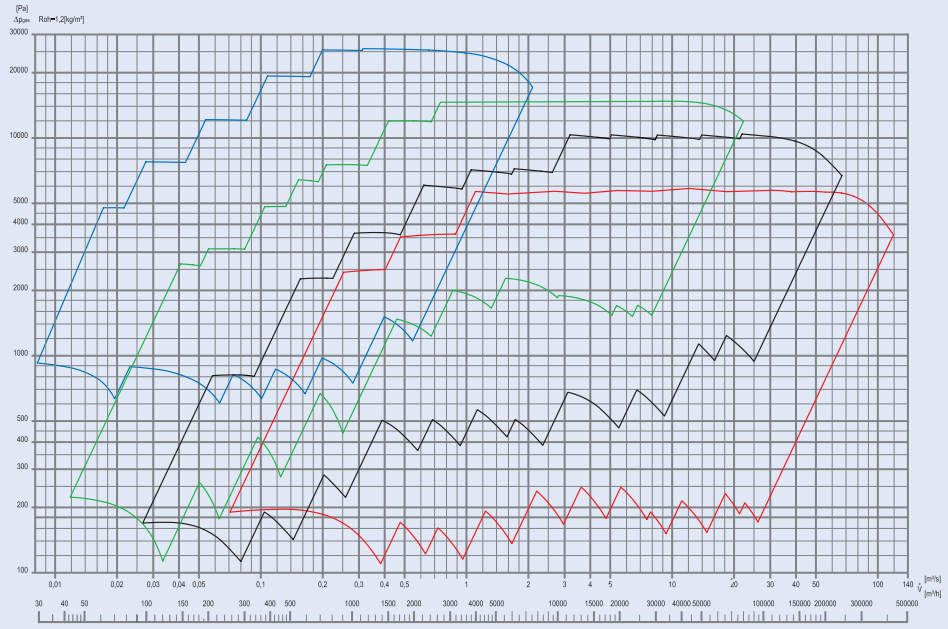
BerlinerLuft.'s fan range includes housing fans with impellers in radial design within a spiral (scroll) housing and box-type units with freewheeling impeller (e.g. air-conditioning units, dryers, tunnel kilns). For housing fans, 12 different impeller designs (ranges) are available - from high pressure via medium pressure up to low pressure variants. These enable an optimal adaption of the fan to the required plant behaviour depending on the required working point (pressure and volume flow) and the type of conveyed medium (clean air, solid matters load, technical gases, etc.).

Graduated impeller sizes (graduation of the impeller diameters in steps of R20) in a diameter range from 250 mm up to 2.500 mm cover a flow rate range up to 350.000 m³/h and a pressure rise up to 25.000 Pa.
Our freewheeling impeller fan REU 737- ...("Freewheelers, recirculators") is a new development and - compared to its predecessor - it excels by a dramatically increased efficiency factor and thus by an improved energy efficiency and a lower noise level. Given the size range graduated in steps of R20, a flow rate range up to 200.000 m³/h within a pressure range up to 3.000 Pa is covered.

Characteristic diagram for the ranges RE 21 through RE 77

Characteristic of single inlet fans RE21 - RE77

RE 21	NW 250 - 1250	High pressure
RE 3..	NW 250 - 1400	High-medium pressure
RE 5..	NW 200 - 2000	Medium-high pressure
RE 7	NW 200 - 2500	Medium-low pressure



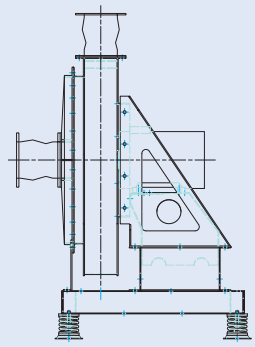
Density = 1,2 kg/m³, temperature = 20 °C

1. Air Ventilation

Our Fan Range

Ranges

Range RE 21
Our single inlet radial fan range RE 21 is designed for the high pressure range up to 25.000 Pa. It is available with impeller diameters ranging from 355 to 1.250 mm. This fan has backward curved blades and is suited for the conveyance of dustfree media.

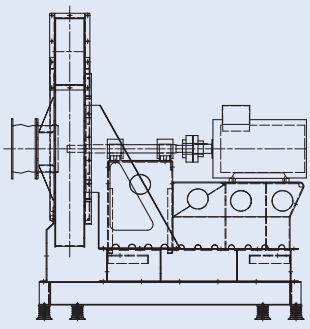


lateral view

Range RE 5
Unlike the RE 3 range, radial fans of the RE 5 range are used in the high-medium pressure range. They are manufactured with diameters ranging from 250 to 2.000 mm and are designed for higher flow rates compared to the RE 3 range. All the three different impeller designs of the RE 5 range have backward curved blades. A special impeller with straight blades is suited for the conveyance of contaminated gases having a dust content up to 3 g/m³.

This impeller, also called open impeller, ensures also a safe fibre transport. Given the same size, the housing dimensions are the same for all different impeller designs.

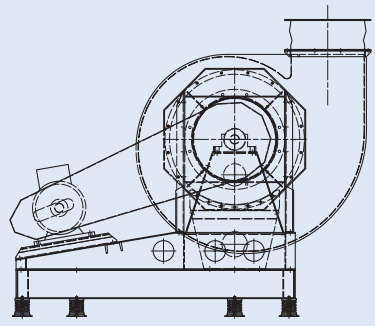
Range RE 3
Single inlet radial fans of the RE 3 range are designed for the high-medium pressure range and are available with impeller diameters from 250 to 1.400 mm. The RE 3 has a steep characteristic resulting in a largely constant flow rate in case of pressure variations, e.g. due to filter contamination. Therefore, fans of the RE 3 range are particularly suited for the use with HEPA filters or in dedusting systems. For dust-laden media (dust content up to 0,3 g/m³) the impeller type RE 32 with straight blading is ideal. The spiral housing's dimensions are the same for both impeller types.



lateral view

Range RE 7
Single inlet radial fans of the RE 7 range are designed for very high flow rates and preferably for use in the low pressure range. Available impeller diameters range from 250 to 2.500 mm. There are four different impeller geometries available for the RE 7 range.

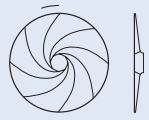
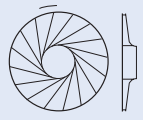
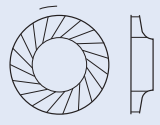
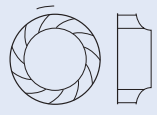
All the three different impeller designs of the RE 7 range have backward curved blades. The design with straight blading is ideal for the conveyance of contaminated gases having a dust content up to 3 g/m³. Given the same size, the housing dimensions are the same for all different impeller designs.



lateral view

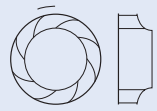
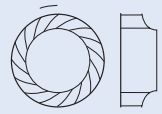
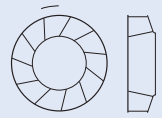
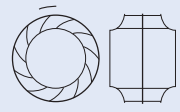
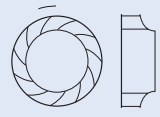
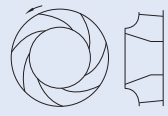
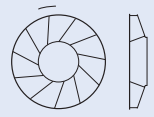
1. Air Ventilation

Range

Ranges	Impeller Design	Volumetric flow rate	Total pressure	Impeller diameter acc. to the numerical series R 20
RE 21		30 to 10.000 m³/h	800 to 25.000 Pa	NW 250 to 1.250 mm
RE 31		30 to 30.000 m³/h	150 to 18.000 Pa	NW 200 to 1.400 mm
RE 32		30 to 30.000 m³/h	150 to 18.000 Pa	NW 200 to 1.400 mm
RE 51		100 to 75.000 m³/h	100 to 10.000 Pa	NW 200 to 1.600 mm
RE 52		100 to 150.000 m³/h	100 to 10.000 Pa	NW 200 to 2.000 mm
RE 55		250 to 50.000 m³/h	200 to 7.000 Pa	NW 200 to 1.400 mm
RE 71		250 to 400.000 m³/h	150 to 5.000 Pa	NW 250 to 2.500 mm

1. Air Ventilation

Range

Ranges	Impeller Design	Volumetric flow rate	Total pressure	Impeller diameter acc. to the numerical series R 20
RE 72		250 to 400.000 m³/h	150 to 5.000 Pa	NW 250 to 2.500 mm
RE 77		400 to 180.000 m³/h	150 to 5.000 Pa	NW 250 to 2.000 mm
RE 75		1.500 to 170.000 m³/h	400 to 4.500 Pa	NW 500 to 2.000 mm
RD 71*		500 to 300.000 m³/h	160 to 3.200 Pa	NW 250 to 2.000 mm
REU 729		720 to 280.000 m³/h	12 to 4.000 Pa	NW 250 to 2.000 mm
REU 737		1000 to 200.000 m³/h	200 to 3.000 Pa	NW 250 to 1.600 mm
RET 5		400 to 25.000 m³/h	250 to 6.000 Pa	NW 355 to 1.000 mm

* Double inlet

1. Air Ventilation

Track record

Overview by industries

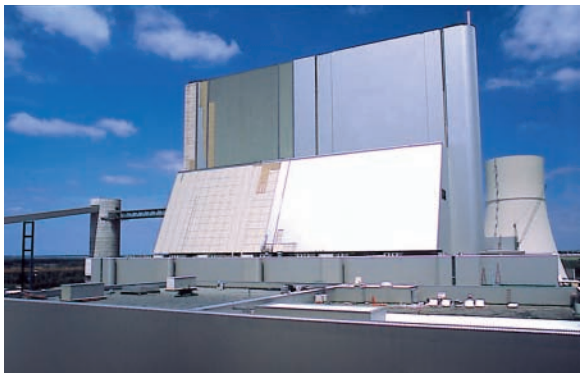
High-performance fans from BerlinerLuft. are used as tailored solutions in a variety of industries all over the world.

Automotive:
Fans for inlet/outlet air systems, enamelling systems
Locations: Belgium, Germany, France, Poland, Portugal, Spain,Turkeyi, Russia, Canada, Venezuela, Thailand, China

Environmental Technology
Stainless steel fans for recycling and disposal plants, fans for thermal and regenerative after-burning installations
Locations: Germany, France, Austria, Spain

Mining / Power Stations
Fans in shock-proof design
ATEX-conform
Locations: Germany, Russia

Industrial Furnaces
Fans made from special steels for hot gas conveyance
Location: Germany, Austria



Foodstuff / Pharma
High-quality stainless steel fans
Locations: Germany, Switzerland

Dedusting / Filter Technology
Fans according to project-specific requirements
Locations: Belgium, Germany, Netherlands, Poland

1. Air Ventilation

Track record

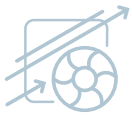
Overview by industries

Agriculture
Fans for grain drying and bulk goods
Locations: Germany, Latvia, Ukraine

Paper Industry
Process air fans for drying
Locations: Germany, Italy, Austria

Shipbuilding
Fans for ship air-conditioning
Ships: Pourqoi Pas/Frigates F124

Silo and Bulk Goods Technology
Fans for dedusting plants
Locations: Egypt, Russia



1. Air Ventilation

Accesories and spare parts

The Air Ventilation product division is completed by a wide range of accesories and spare parts.

Accesories and spare parts:

Base frame

Counter frame to base frame

Vibration dampers
Standard – with hard rubber components
Optional – with steel spring vibration dampers

Inlet and pressure compensators
Standard up to 85 °C
Optional up to 300 °C
Optional up to 650 °C
Optional for chemical-loaded applications
condensat-resp. and gas-proof

Connecting frame
Outlet counter frame,
DIN 24193/T2

Connection flange
Inlet flange,
DIN 24154/R2

Inlet vent with inlet guard

Condensal flange

Inspection cover

Inletfilter
Bag or pipe filter

Housing case

Accoustic module casing

Accoustic compartment
Accesible complete casing, unpressurised or pressure tight, in module form or fully preassembled, self-supporting

Silencer
Pipe or sliding silencer

Shaft gland
Standard-gland
Optimal-grease inhibiting seal
Labyrinth seal and gas inhibitor

Automatic grease lubrication

Grease lubrication leads

Pressure gauge leads

Vane controller

Frequency transformer

Cushioned-start device

Customer service

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