

## AR Axial Fans

### Low pressure axial duct fan

- Available with AC motors for 50 and 60Hz
- Installation in any position
- Noise and energy optimized impeller

[Find more details in our online catalogue](#)



### Flexible

The AR fans are **designed** for extracting air in **low pressure systems**. They can be installed in any position and way according to your demands.

This ensures that the fans can be used in a variety of **commercial** and **industrial** applications.

### Performance

The **noise optimized** axial impellers together with the **high efficient** external rotor motors are designed to ensure high-level performance to **minimize power consumption** and **maximize efficiency**.

## Features

### Construction

The round casing is made of galvanized steel with powder coating in RAL9005.

The **complete** range is provided **with inlet protection grid**. An **outlet protection grid** is **available as accessory**.

Depending on type, the fans are equipped with an external **terminal box**, protection class **IP44** or **IP54**.

### Impeller

The AR fans use **axial impellers**. These are made of **coated steel**, **composite** material or **aluminum**, are dynamically **balanced** and are paired with corresponding external rotor motors.

### Motor

AR fans are equipped with an **AC external rotor motor**. The motors are suitable for **50Hz** and **60Hz**.

### Motor protection

The **AC** motors are equipped with prewired integral **thermal contact** with leads to be connected to a **motor protection unit**.

### Control

The **AC motor** can be controlled by **5-step**, **stepless** speed regulator or **frequency inverter**.

### Installation

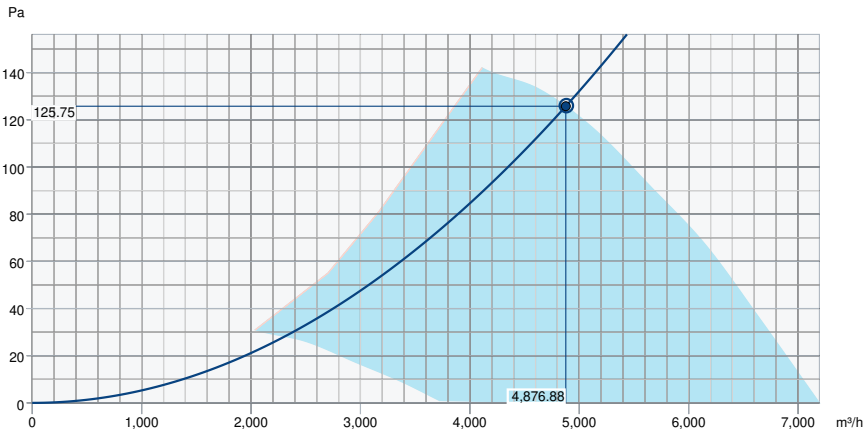
The AR fans can be installed in **any position** in the **duct** in **indoor** environments.

## Technical parameters

Nominal data		
Voltage (nominal)	400	V
Frequency	50	Hz
Phases	3~	
Motor circuit connection	Y; D	
Input power	540	W
Input power kW	0.54	kW
Input current	1.1	A
Impeller speed	1,350	rpm
Air flow	max 7,196	m³/h
Air flow at max. efficiency	4,604	m³/h
Specific ratio	1	
Temperature of transported air	max 70	°C
Max temperature of transported air, when speed controlled	70	°C
Protection/Classification		
Enclosure class, motor	IP54	
Insulation class	F	
Data according to ErP		
ErP ready	ErP 2018	
Measurement category	A	
Efficiency grade	42	$\eta_{actual}$
Efficiency, static	34	$\eta_{statA}$
Target efficiency grade ErP2013	36	$\eta_{target2013}$
Target efficiency grade ErP2015	40	$\eta_{target2015}$
Dimensions and weights		
Duct dimension; Circular, inlet	450	mm
Duct dimension; Circular, outlet	450	mm
Weight	15.4	kg
Others		
Duct connection type	Circular	
Color name, casing	Black	
Motor type	AC	

Performance

Performance curve



Hydraulic data

Required air flow	4,882 m³/h
Required static pressure	126 Pa
Working air flow	4,877 m³/h
Working static pressure	126 Pa
Air density	1.204 kg/m³
Power	534.1 W
Fan control - RPM	1,356 rpm
Current	1.10 A
SFP	0.394 kW/m³/s
Control voltage	400.0 V
Supply voltage	400 V

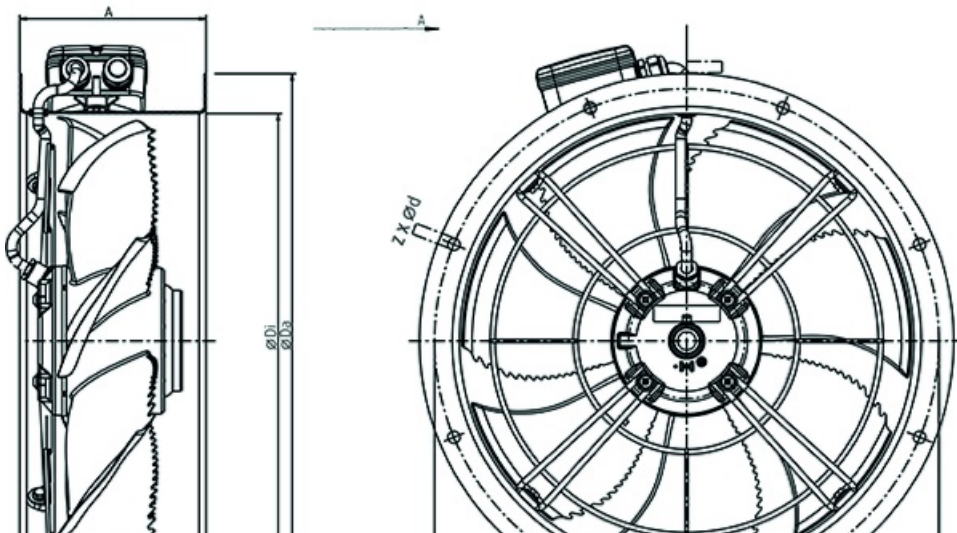
Sound power level		63	125	250	500	1k	2k	4k	8k	Total
Inlet	dB(A)	46	54	56	62	65	66	60	52	70
Outlet	dB(A)	48	55	59	63	65	65	60	51	70

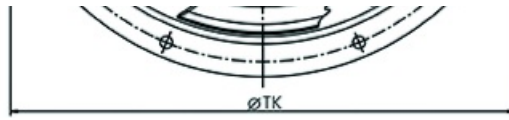
## Ecodesign

### Ecodesign 327

Manufacturer	Systemair GmbH
Type	AR 450DV
Year of manufacture	See name plate of the fan
Air flow $q_v$	4,605 m <sup>3</sup> /h
Efficiency category	static
Efficiency grade N	42
Efficiency grade target N	40
Speed (rpm) $n$	1,365 rpm
Pressure increase total $p_{sf}$	140 Pa
Power consumption $P_{ed}$	540 W
Overall efficiency	34 %
Variable speed drive	No
Additional components	Components used to calculate the energy efficiency that are not apparent from the measurement category are detailed in the CE declaration.
Maintenance	Information on installation, operation and maintenance is provided in the operating instructions.
Recycling / disposal	Information on recycling and disposal is provided in the operating instructions.

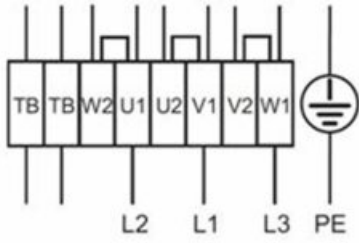
## Dimension





	A	ØDi	ØDa	ØTK	z x Ød
AR 450 sileo	185	451	530	500	8 x Ø12

## Wiring

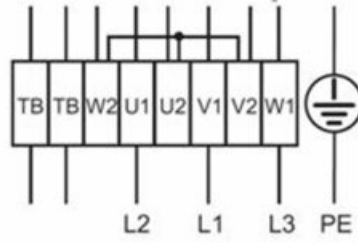


High speed

Low Speed

Δ-Connection

Y-Connection



## Accessories

- AWE-SK Motorprotection 2A/230V (5138)
- Frequency converter FRQ5S-4A (36233)
- Frequency converter FXDM5AM (31387)
- MFA-AXC/AM 450 mounting foot (311286)
- Motor protect. switch S-DT 16E (161207)
- RTRD 2 Speed Cont. Systemair (5941)
- SG AXC/AM/AR 450 guard grill (310688)
- VK-45 Louvre shutter (87693)
- SG-20 AXC450 protection grill (254255)
- EV-AR/AXC 450 flex.conn. 70°C (8355)
- Frequency converter FRQS-4A (36231)
- GFL-AR/AXC 450 counter flange (8379)
- Motor protect. switch S-DT 16 (161206)
- REV-5POL/07-7,5kW R/Y (33980)
- RTRDU 2 Speed contr. Systemair (5945)
- Step switch S-DT2SKT, Y/D (2697)
- REV-5POL/07-7,5kW B/G (281742)

## Documents

- L-BAL-001-SYSTEMAIR.PDF
- EU Declaration of Conformity\_002
- installation variations\_1\_AR\_AW.pdf