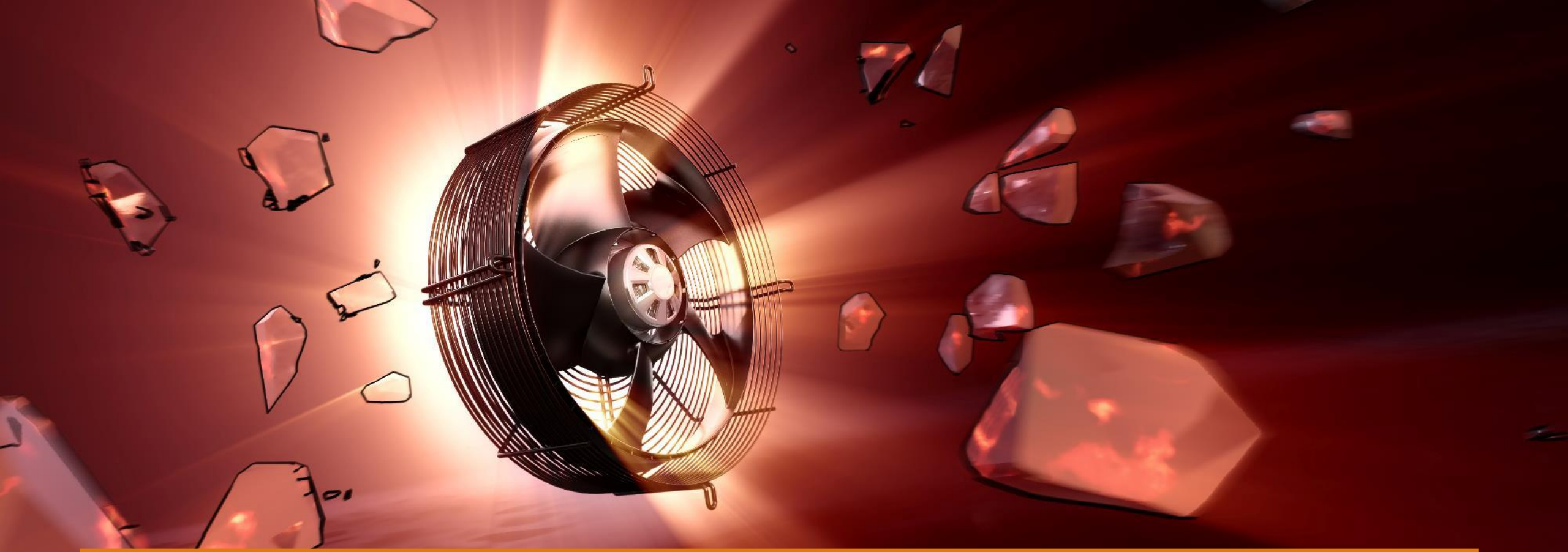
CHILLVENTA eSPECIAL

Refrigeration | AC & Ventilation | Heat Pumps

13.–15.10.2020

CONNECTING EXPERTS.

NÜRNBERG MESSE



AxiEco Protect

Highly efficient axial fan for a wide range of applications

ebmpapst

the engineer's choice

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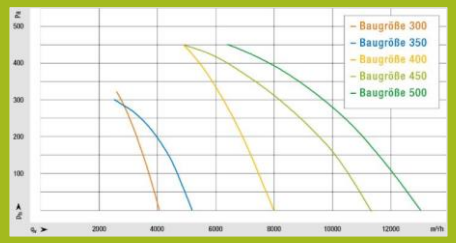
Agenda

Product

Characteristics



How YOU benefit

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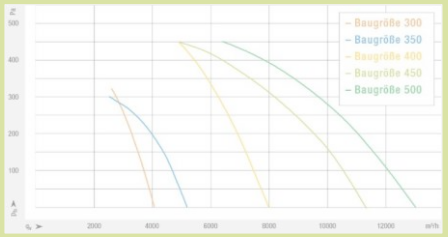

How YOU benefit

AxiEco Protect

Visual appearance

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Impeller design of the brand new *AxiEco*

Impeller design of previous generations of axial fans

AxiEco Protect

What hides behind the design?

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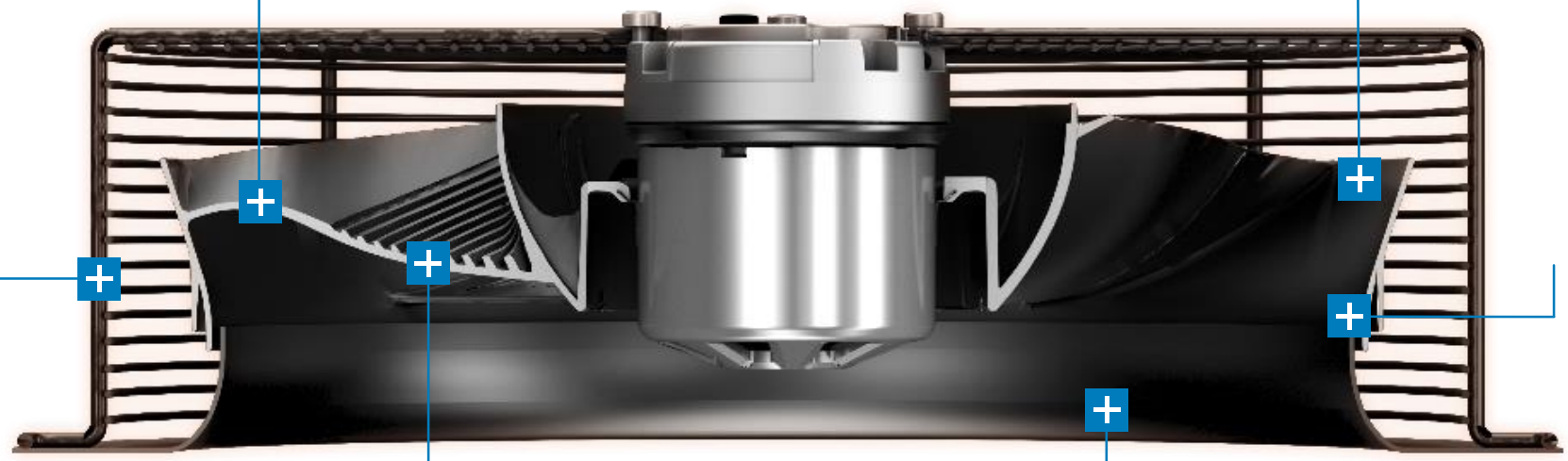

Impeller with improved geometry

Diffusor for increasing pressure

Robust guard grille

No tip gap

Grooved blades

Optional inlet ring

AxiEco Protect

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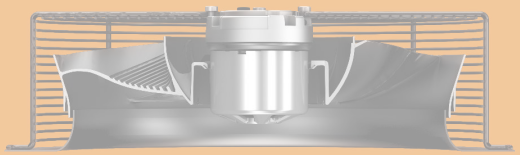

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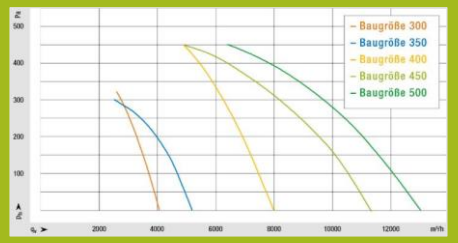

How YOU benefit

Characteristics
of the AxiEco Protect

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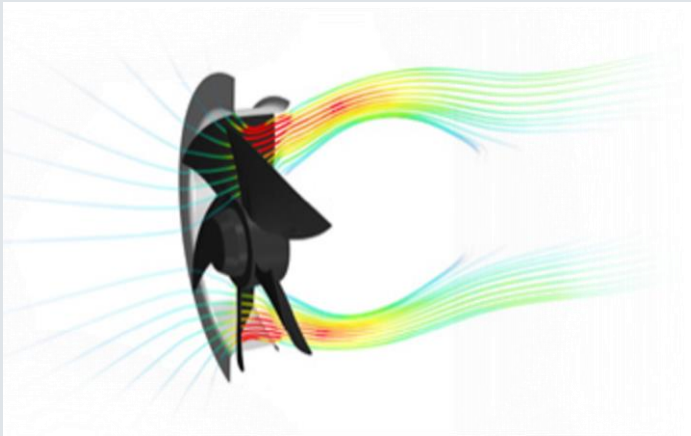
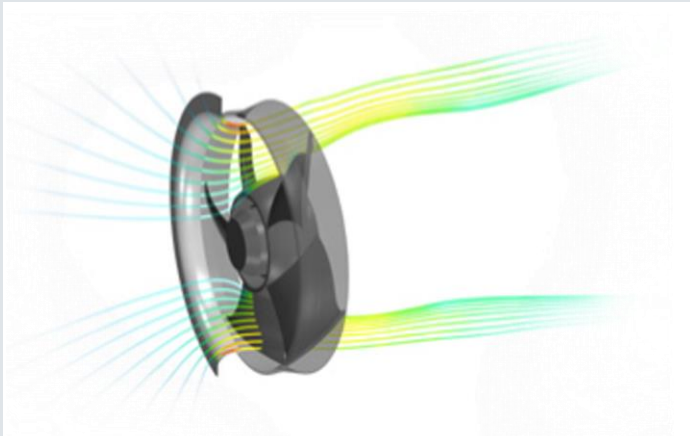
What makes the outflow characteristic of the AxiEco Protect so special?

- Circumferential wall ring, inner and outer diffusor and a three dimensional optimized impeller → Improved flow characteristic
- Improvements lead to a more laminar air flow and no backflow
- Improved outflow behavior over the complete performance curve



Existing solution: HyBlade



New solution: AxiEco Protect

Characteristics
of the AxiEco Protect

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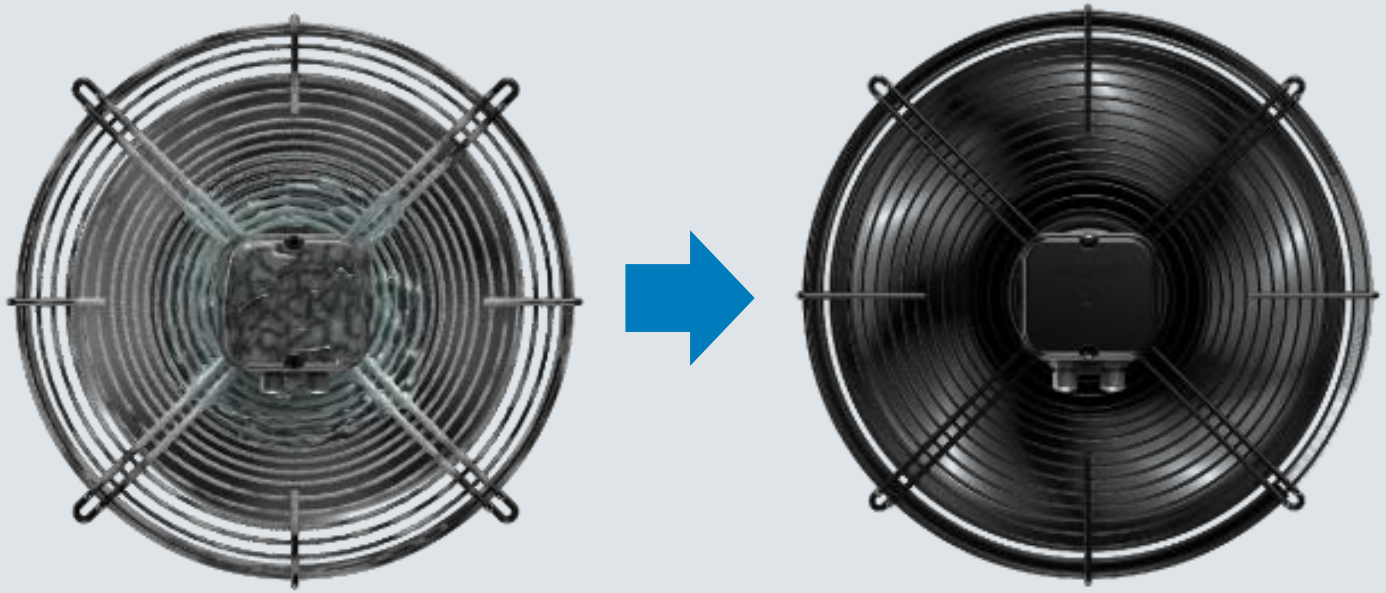
How does the AxiEco Protect fight ice formation?

- No backflow means less ice formation on the guard grille
- Less ice formation means a longer service life between two defrosting cycles
- No tip gap makes it unlikely that the impeller freezes up
- More pressure reserves than other axial fans in comparable sizes



Characteristics
of the AxiEco Protect

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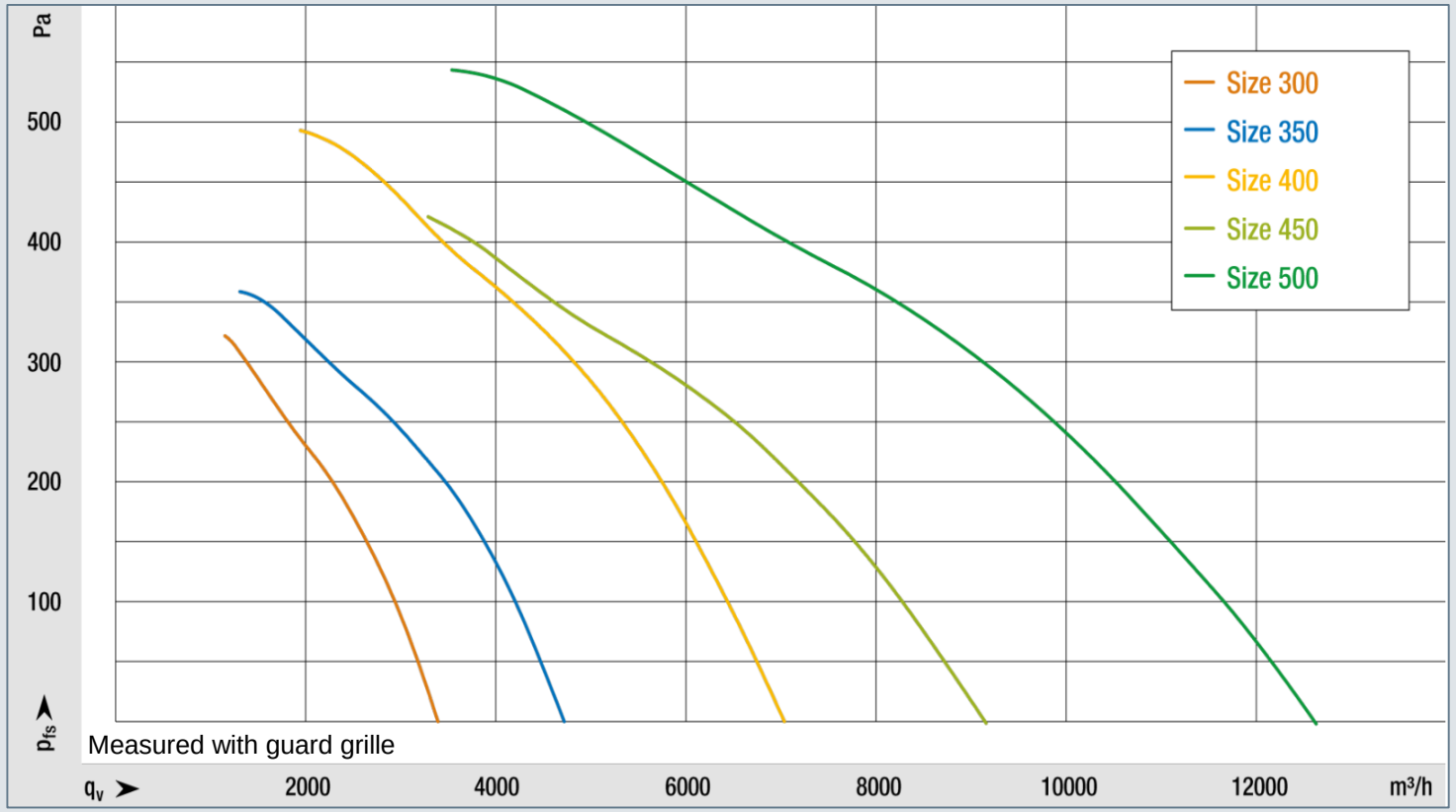
How big is the benefit of the AxiEco Protect in terms of performance?

- Higher power density due to higher speed
- Fewer or smaller fans are sufficient
- High back pressures achievable



Characteristics
of the AxiEco Protect

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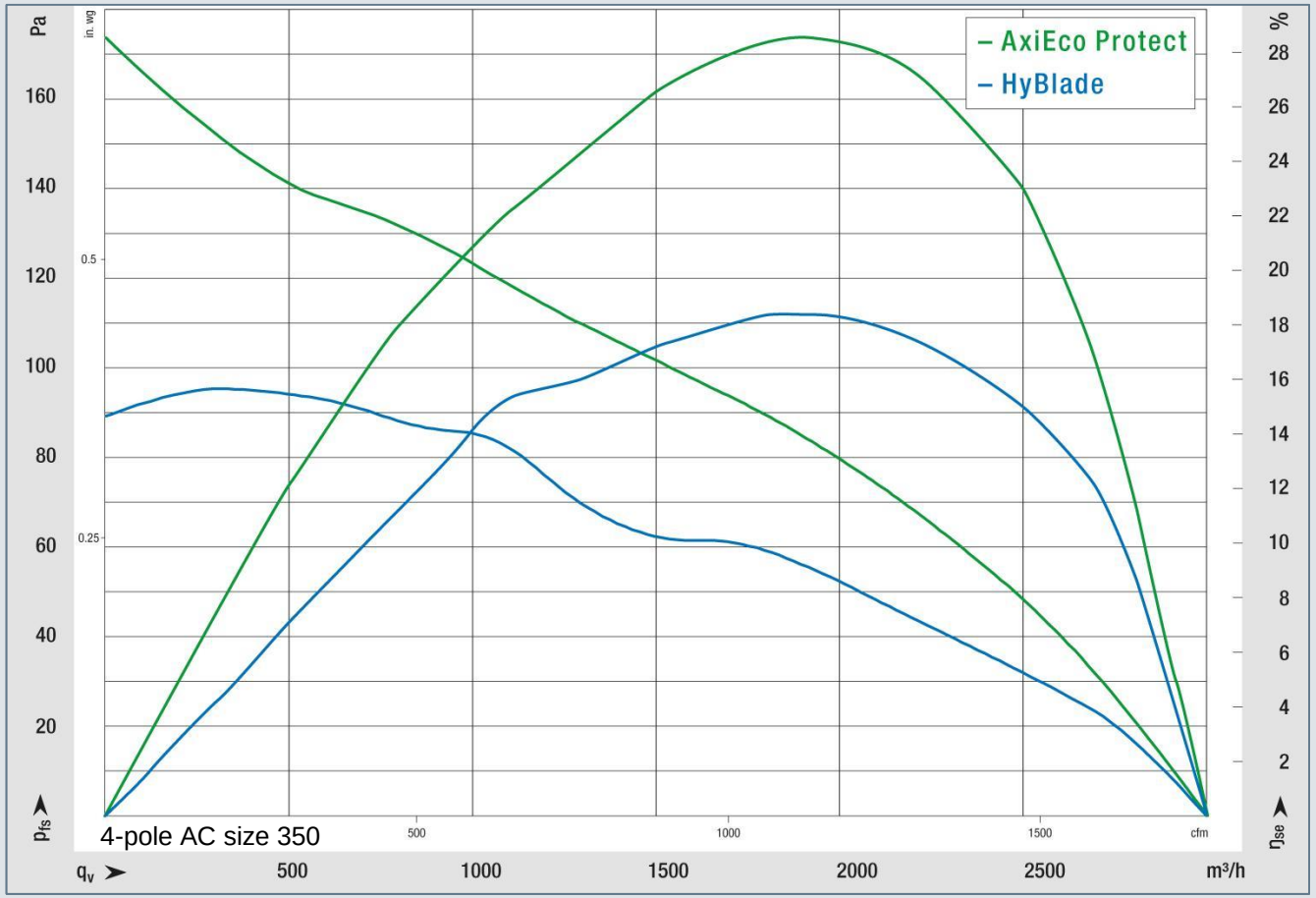
What about the AxiEco Protect and efficiency?

- The AxiEco achieves significant increases in efficiency
- A higher efficiency results in less heat radiation
- Next stage of EU commission regulation 327/2011 (ErP) around the corner



Characteristics
of the AxiEco Protect

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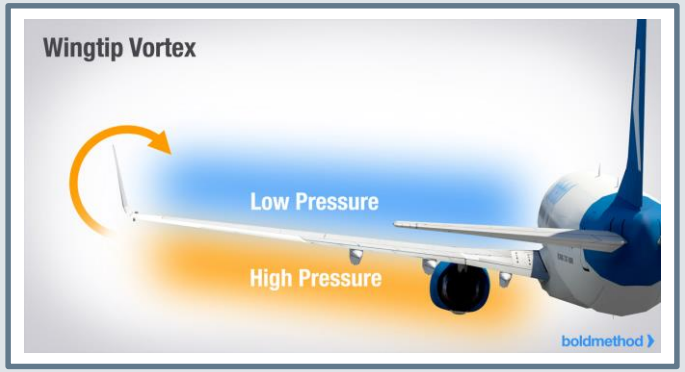
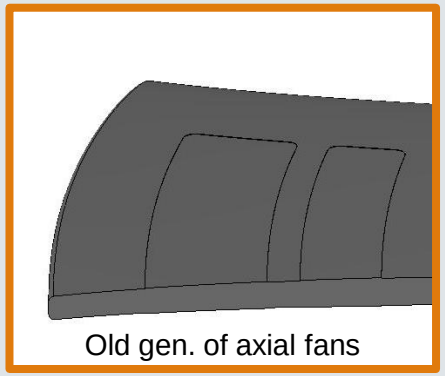
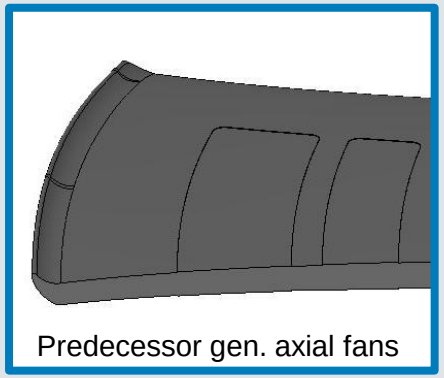
Why is the AxiEco Protect so incredibly quiet?

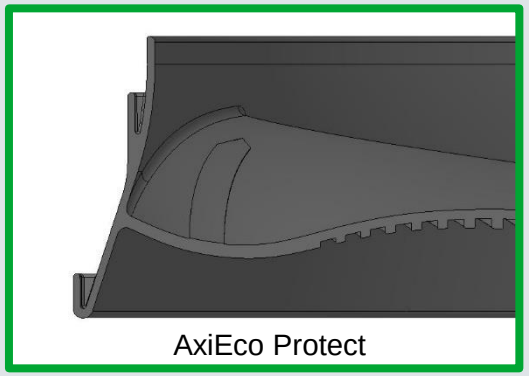
- Up to 6 dB(A) quieter than the predecessor generation HyBlade
- Optimized flow characteristic boosts the fluidic efficiency
- Hardly any turbulences at the blade tips



Source: https://cdn.boldmethod.com/images/learn-to-fly/aerodynamics/winglets-and-wingtip-vortices/1-vortex.jpg


Old gen. of axial fans


Predecessor gen. axial fans


AxiEco Protect

Evolution

Characteristics
of the AxiEco Protect

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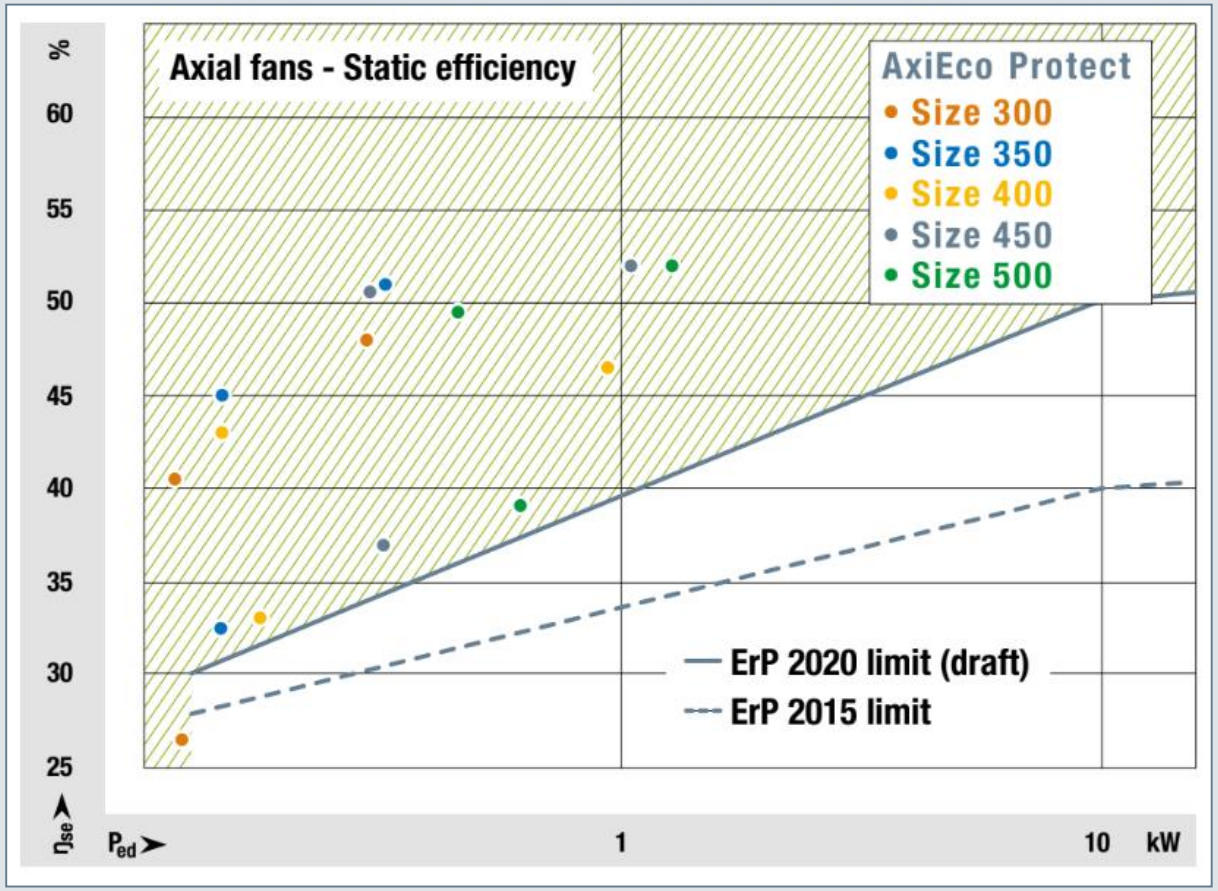
Why is it beneficial to me that the AxiEco Protect conforms to the ErP?

- Next stage of EU commission regulation 327/2011 (ErP) around the corner
- Strong increase in minimum efficiency requirements
- AxiEco Protect already meets the future ErP202x requirements – even with AC motors



Characteristics
of the AxiEco Protect

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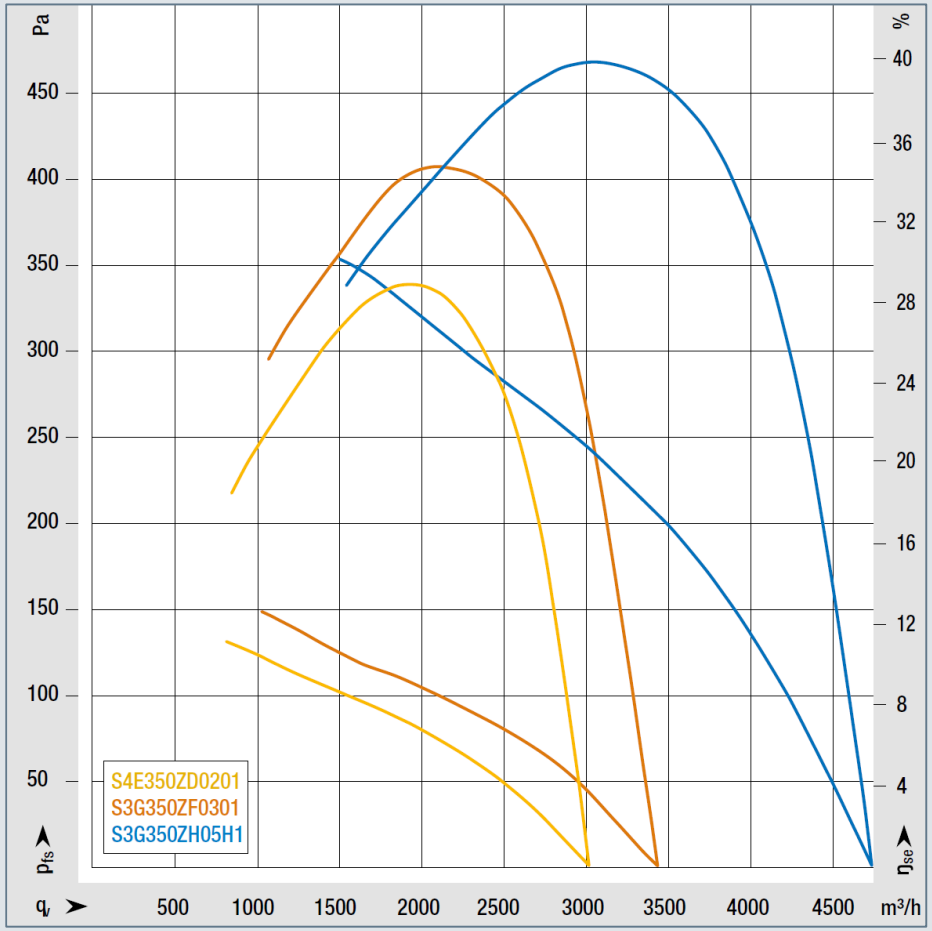
What are the advantages of using EC motor technology?

- Improved efficiency compared to AC motors
- EC motors offer higher performance
- Less waste heat and therefore lower energy consumption
- Demand-based control via analog 0-10V signal
- Some motor variants can also be controlled via a digital interface with MODBUS-RTU



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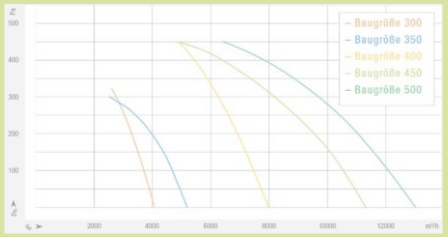

How YOU benefit

It withstands pressure and ice formation like no other:

The AxiEco Protect in refrigeration technology.

+ High efficiency (with future ErP conformity) and less ice build up due to the clever design and optimized outflow characteristic of the AxiEco Protect

+ The steep characteristic curve and the high pressure capability of the AxiEco Protect allow an efficient and powerful operation even when ice forms on the heat exchanger

+ Improvements lead to longer service life of the evaporator, fewer defrosting cycles, and improved efficiency of the entire system
→ savings of operational costs

Conquering new power ranges:

The AxiEco Protect in ventilation and air conditioning technology.

+ Optimum efficiency thanks to aerodynamic optimization even with increasing back pressure

+ Higher power density:
  Fewer or smaller fans are sufficient to generate the same performance

+ Greater performance, less noise:
  Relevant for applications in residential areas (e.g. heat pumps)

Delivers top performance in the smallest of spaces:

The AxiEco Protect in mechanical engineering.

+ Ideal for various applications in mechanical engineering thanks to numerous design details like the robust guard grille

+ Higher power density allows to use smaller or fewer fans to provide the same performance (e.g. allows a reduction of devices used in control cabinet constructions)

+ Compact design for tight spaces in electronics and compressor cooling systems

One fan for a wide range of applications

The new AxiEco Protect.

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Withstands pressure and ice formation like no other

the AxiEco Protect in refrigeration technology

Conquering new power ranges

the AxiEco Protect in ventilation and air conditioning technology

Top performance in extremely confined spaces

the AxiEco Protect in mechanical engineering

Contact

ebm-papst
Mulfingen GmbH & Co. KG

Bachmühle 2
74673 Mulfingen

Nico Timmermann
Team Leader Sales Refrigeration

Nico.Timmermann@de.ebmpapst.com

http://www.ebmpapst.com

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Thank you for your attention.

CONNECTING EXPERTS.