

iQC

*Energy-saving Motor*

**ebmpapst**

engineering a better life



# About ebm-papst

ebm-papst is a leader in ventilation and drive engineering technology and a much sought-after engineering partner in many industries. With around 20,000 different products, we have the perfect solution for practically every requirement. We have placed the highest emphasis on economy and ecology for many years.

We believe the consistent further development of our highly-efficient GreenTech EC technology provides our customers with the best opportunities for the future in industrial digitization. With GreenIntelligence, ebm-papst already offers intelligent networked complete solutions that are unique anywhere in the world today and that secure our customers a decisive advantage.

The logo for ebm-papst, featuring the company name in a bold, sans-serif font. 'ebm' is in black and 'papst' is in blue.The tagline 'engineering a better life' in white text on a blue rectangular background.

## Six reasons that make us the ideal partner:

### **Our systems expertise.**

You want the best solution for every project. The entire ventilation system must thus be considered as a whole. And that's what we do – with motor technology that sets standards, sophisticated electronics and aerodynamic designs – all from a single source and perfectly matched.

### **Our spirit of invention.**

Our 600 engineers and technicians will develop a solution that precisely fits your needs.

### **Our lead in technology.**

With our EC technology and GreenIntelligence, we combine the highest energy efficiency with the advantages of IoT and digital networking.

### **Closeness to our customers.**

ebm-papst has 26 production locations worldwide (including facilities in Germany, China and the USA), together with 51 sales offices, each of which has a dense network of sales representatives. You will always have a local contact, someone who speaks your language and knows your market.

### **Our standard of quality.**

Our quality management is uncompromising, at every step in every process. This is underscored by our certification according to international standards including DIN EN ISO 9001, IATF 16949 and DIN EN ISO 14001.

### **Our sustainable approach.**

We assume responsibility with our energy-saving products, environmentally-friendly processes, and social commitment.

# *Exceptionally economical, energy efficient, and durable.*

Designed specifically for tough environments, the iQC is a more efficient and durable version of the existing Q and iQ motors. Using GreenTech EC technology our successful iQ motor range is far more intelligent, ecological and energy-saving. With the iQC we have enhanced the existing advantages and reduced economic and environmental costs.

#### **Cost effective.**

In developing the iQC, cost reduction without sacrificing quality was central. With improved technology and manufacturing processes the iQC is our most economical model yet. More energy efficient than the iQ and Q motors, with a maintenance free design and night time/daytime mode to ensure optimal operation and long lifetime.

#### **Reliable and durable.**

Localized to achieve high performance in a wide range of tough environments, including high levels of dust. The iQC is rated at IP65 so it is able to handle fine particles and high-pressure water cleaning. Able to spin forward and reverse, the iQC is able to help clean off the dirt from vents and fan blades.

#### **Retrofitting.**

As with all ebm-papst motors in the iQ range, the iQC is a direct one-to-one replacement with existing Q and shade-pole motors. With the huge cost savings when compared to outdated AC technology, the iQC is the smart choice for new installations and retrofitting in existing applications.



# Made for tough conditions *and optimal performance*



## Technical Data

<b>Nominal voltage range</b>	220 - 240VAC, 100 - 240 VAC, 50/60Hz
<b>Rotation speed range</b>	300 - 1800 rpm
<b>Material</b>	PBT
<b>Airflow direction</b>	Air exhaust or air intake (depending on impeller)
<b>Direction of rotation</b>	CCW (view on drive end)
<b>Degree of protection</b>	IP65
<b>Insulation class</b>	"B" VDE, "F" UL
<b>Installation position</b>	Any
<b>Mode of operation</b>	Continuous operation (S1)
<b>Bearings</b>	Maintenance-free ball bearing system
<b>Motor protection</b>	By electronics
<b>Electrical hook-up</b>	Power cables
<b>Protection class</b>	II (without grounding conductor)
<b>Approvals</b>	CCC; EAC; VDE, EN 60335-2-24, EN 60335-2-89, EN 60335-1 (seperate version); CE; UL, UL 1004-1, UL 1004-7
<b>Fitting of attachments</b>	Guard grille and wall ring are attached to the projecting thread ends on the A side
<b>Mounting of axial impeller</b>	A plastic adapter with catching peg and M4 screw is used to secure the impeller on the motor shaft
<b>Ambient temperature</b>	-40°C to +50°C



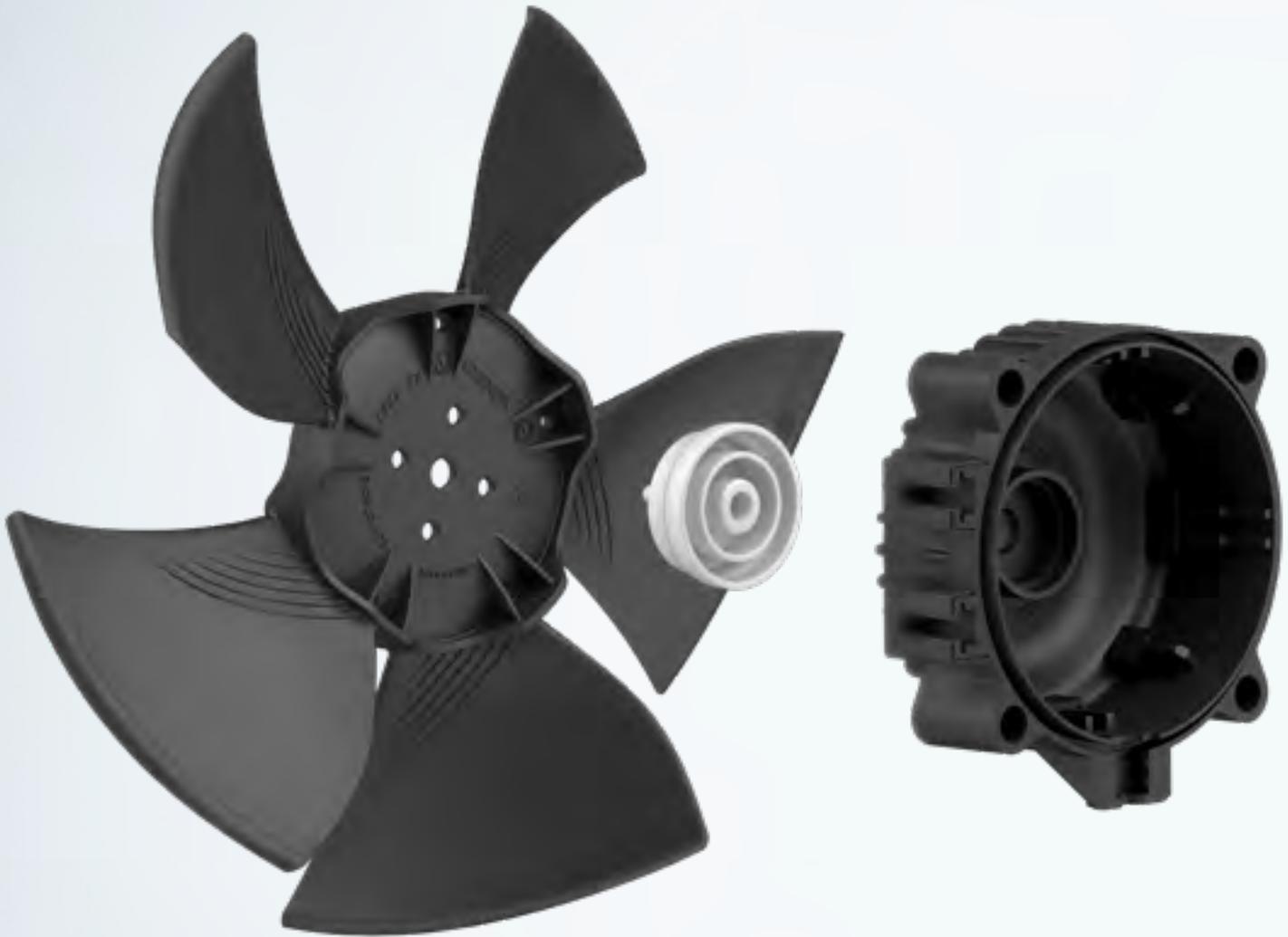
**Refrigeration applications.**

Energy efficiency requirements are here. Fans offer great potential for energy saving as they are often in operation for long periods, such as in refrigerated display cases and bottle coolers.

Our iQC motor is the smart step for ensuring cost and energy savings from start to finish. Able to spin forward and reverse, the iQC is able to help clean off the dirt from vents and fan blades.



# Developed to meet your needs



Absolute static efficiency gains up to 6% and noise reductions up to 8 dBA



Same accessories as Q and iQ motors



IP65 certification design with dust proof design and able to withstand water jet cleaning



Direct one-to-one replacement with Q motors

\*Wall ring and other accessories are available on request.

By the integrated changes of impeller and wall ring, maximum efficiency increasing and noise reduction will be up to 8% and 10 dBA.



Constant speed even with fluctuating voltage



Long service life thanks to maintenance free bearing system



Intelligent electronics with speed control

# Exceptional efficiency

## Increase more than 40% efficiency from start.

The iQC motors pay for themselves in energy savings across their lifetime thanks to the energy efficient design.

They also have a day-time mode, where they run at full speed; and a night-time mode, where they slow down to save energy in the non-peak periods.

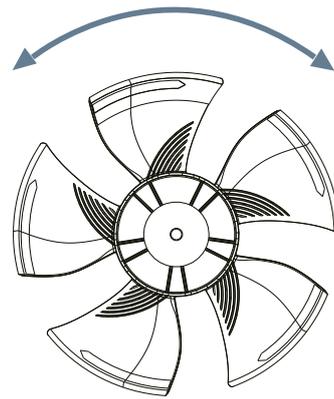
Comparison of efficiency between Q motor and iQC 3612



# Modes of operation

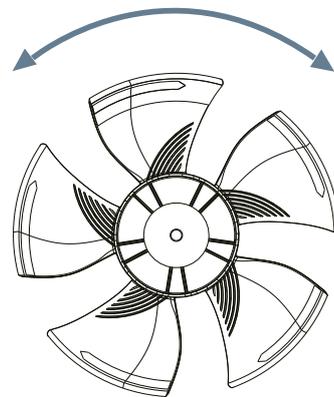
## Reverse on start.

The reverse on start automatically runs in reverse for a pre-programmed time on starting. An important function for refrigeration devices, as it blows the accumulated dust out of the heat exchanger of the condenser – thus ensuring constant high cooling capacity.



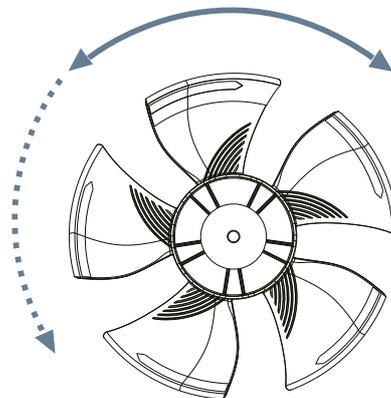
## Reverse on demand.

With reverse on demand it is possible to define the time and duration of reverse operation as required. This means that the evaporator defrost cycle can be used to remove dust from the heat exchanger of the condenser for example.



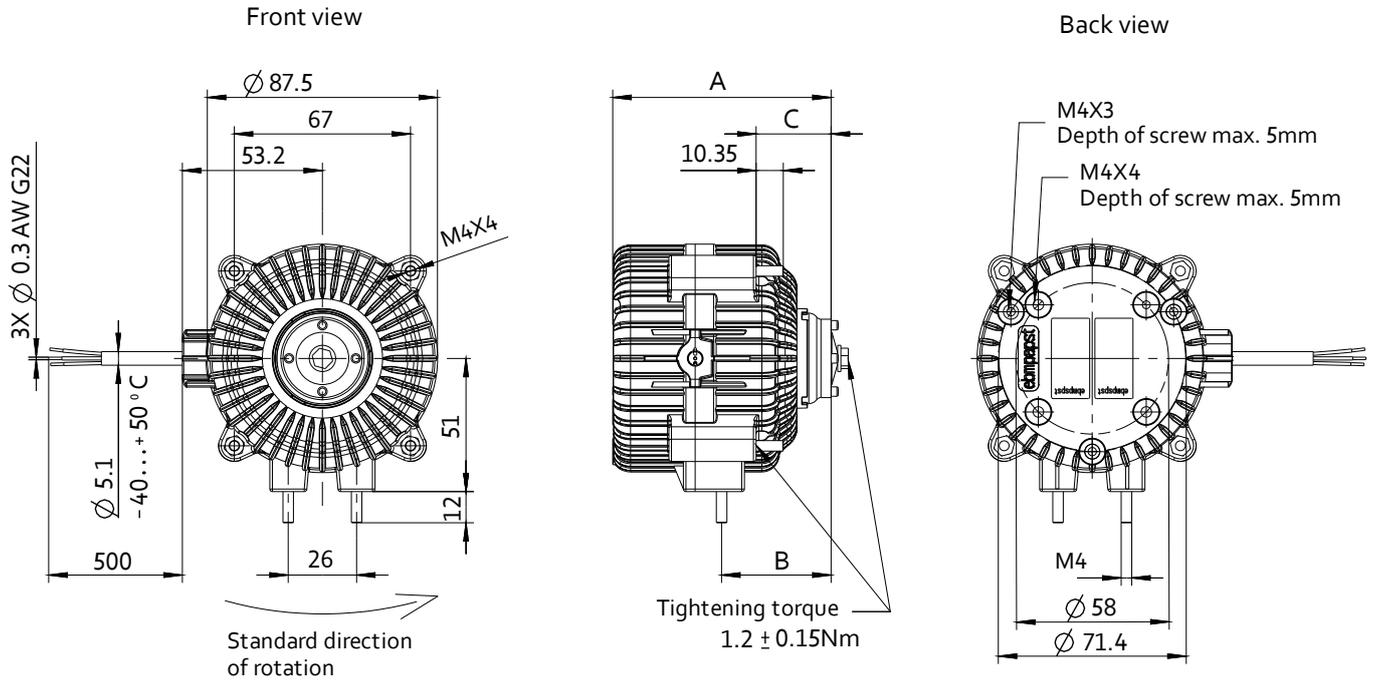
## Two speeds.

The particular feature of the two speeds is that it is supplied with two factory-programmed speed levels. This makes it possible to run the application in different day and night modes for even greater energy savings.



# Technical data

## Standard version

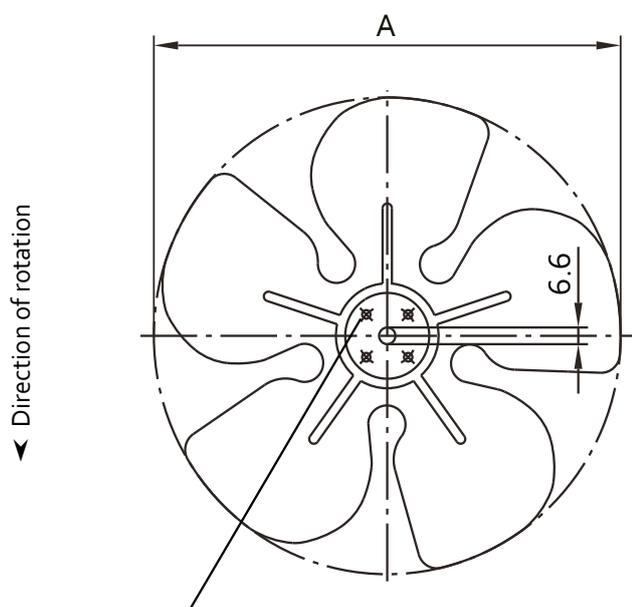


Nominal data		Nominal voltage	Frequency	Speed/rpm	Output power	Perm. Amb. Temp.	Mass	Approvals	Dimensions		
Type	Feature	V	Hz	rpm	W	$^\circ\text{C}$	Kg		A	B	C
iQC 3608	ROS**, 1 Speed	220-240	50/60	Max. 1800	6.5	$-40 \dots +50$	0.5	CCC EAC VDE	83	41.5-43.5	28.5
	ROS**, 2 Speed			900*/1800							
	ROD			Max. 1800							
iQC 3612	ROS**, 1 Speed	220-240	50/60	Max. 1800	15	$-40 \dots +50$	0.5	CCC EAC VDE	85	43.5-45.5	30.5
	ROS**, 2 Speed			900*/1800							
	ROD			Max. 1800							
iQC 3608	ROS**, 1 Speed	100-240	50/60	Max. 1800	6.9	$-40 \dots +50$	0.5	CCC EAC UL, CE	83	41.5-43.5	28.5
	ROS**, 2 Speed			900*/1800							
	ROD			Max. 1800							
iQC 3612	ROS**, 1 Speed	100-240	50/60	Max. 1800	15	$-40 \dots +50$	0.5	CCC EAC UL, CE	85	43.5-45.5	30.5
	ROS**, 2 Speed			900*/1800							
	ROD			Max. 1800							
iQC 3612+	ROS**, 1 Speed	100-240	50/60	Max. 1800	15.7	$-40 \dots +50$	0.5	CCC EAC UL, CE	85	43.5-45.5	30.5
	ROS**, 2 Speed			900*/1800							
	ROD			Max. 1800							

\*900rpm could be changed on demand(100 integer multiple)

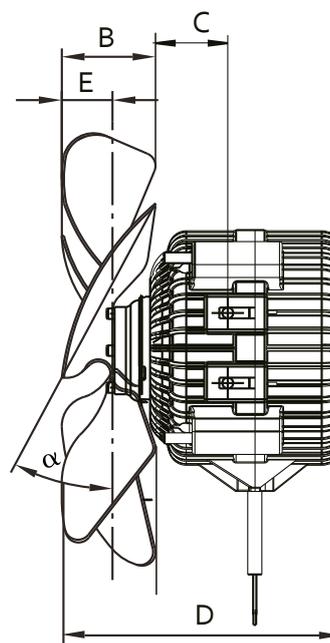
\*\*ROS could be cancelled on demand, ROS: reverse on start 700rpm, ROD: reverse on demand 500rpm

# Metal impellers



4 x Ø 4.0 with pitch circle for holes Ø 25.4 mm

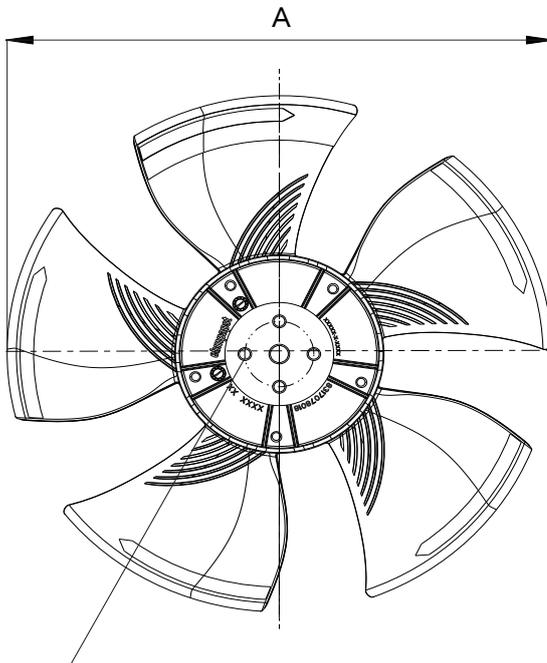
**Material:** Sheet aluminium



Part no. for dlr. of air flow "V"	Part no. for dlr. of air flow "A"	Blade angle $\alpha$	A	B	Dimensions base on iQC 3612 C	D	E
73801-2-3634	73761-2-3634	22°±1°30'	154	27.5	32	99	14
73802-2-3634	73762-2-3634	28°±1°30'	154	32	29.5	101	16
73803-2-3634	73763-2-3634	34°±1°30'	154	37	26.5	103	18
73804-2-3634	73764-2-3634	22°±1°30'	172	31	29	99.5	14.5
73805-2-3634	73765-2-3634	28°±1°30'	172	36	26.5	102	17
73806-2-3634	73766-2-3634	34°±1°30'	172	42	24.5	106	21
73807-2-3634	73767-2-3634	22°±1°30'	200	32	29	100.5	15.5
73808-2-3634	73768-2-3634	28°±1°30'	200	37.5	26	103	18
73809-2-3634	73769-2-3634	34°±1°30'	200	45	22.5	107	22
73810-2-3634	73710-2-3634	22°±1°30'	230	35	28	102.5	17.5
73811-2-3634	73711-2-3634	28°±1°30'	230	43	24	106.5	21.5
73812-2-3634	73712-2-3634	34°±1°30'	230	50	19.5	109	24
73813-2-3634	73713-2-3634	22°±1°30'	254	37	27.5	104	19
73814-2-3634	73714-2-3634	28°±1°30'	254	45	24	108.5	23.5
73815-2-3634	73715-2-3634	34°±1°30'	254	52	NA	NA	26
73816-2-3634	73716-2-3634	22°±1°30'	300	43	NA	NA	21.5
73817-2-3634	73717-2-3634	28°±1°30'	300	53	NA	NA	26.5
73818-2-3634	73718-2-3634	34°±1°30'	300	61	NA	NA	30

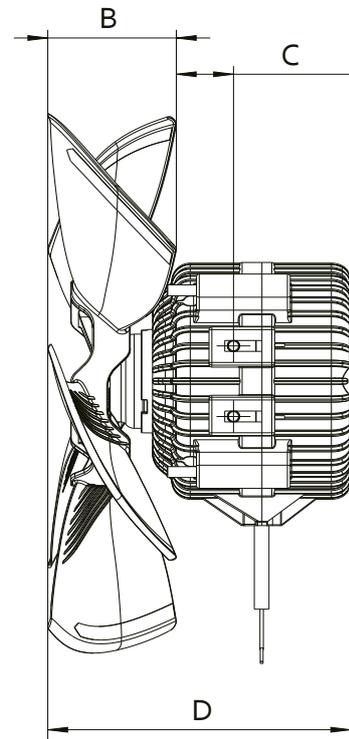
Subject to alterations

# Composite impellers



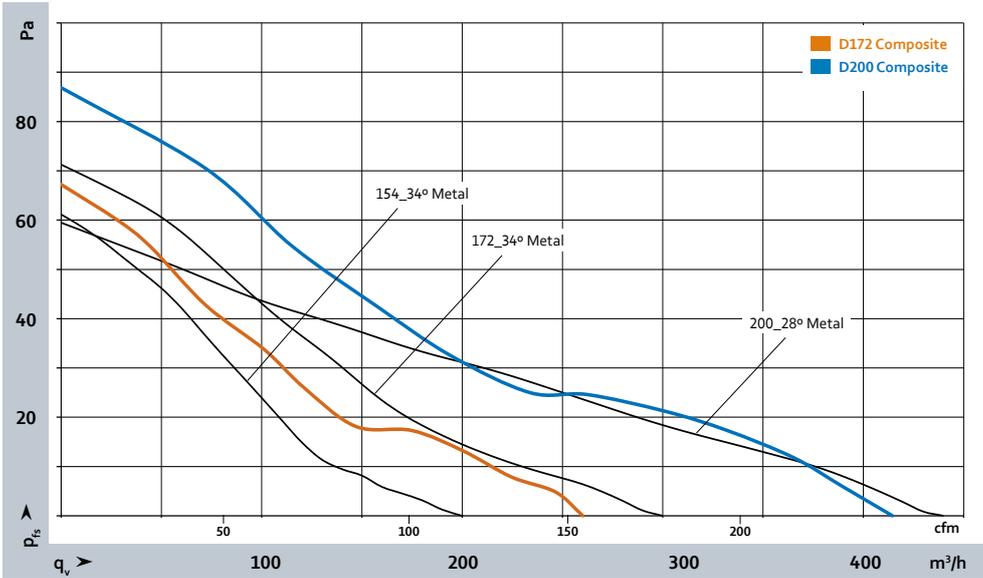
4 x Ø 4.0 with pitch circle for holes Ø 25.4 mm

**Material: composite material**



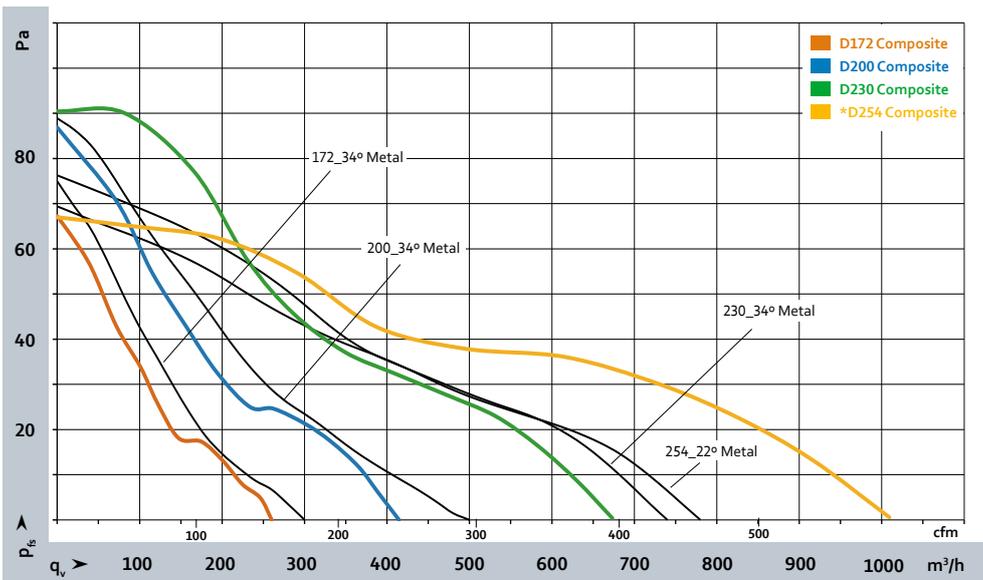
Ø	Part number	Dimensions				
		Impeller	A	B	C	D
mm						
172	8317078019		172	39	22	103
200	8317078018		200	45.5	20.2	108
230	8317078020		230	45	23	109
254	8317078021		254	45	22	109

# Characteristic curves at 1300 rpm



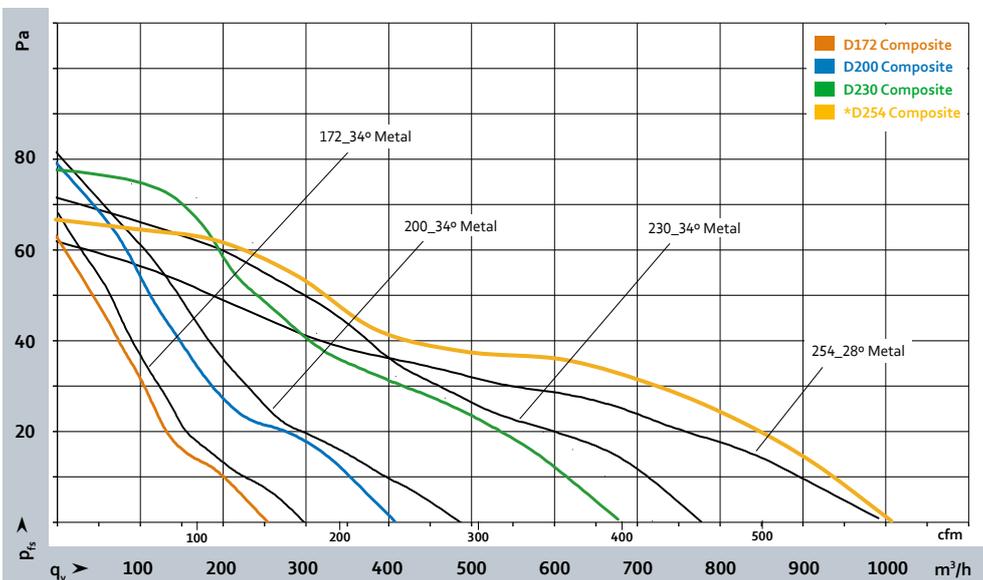
## iQC 3608

Subject to alterations



## iQC 3612

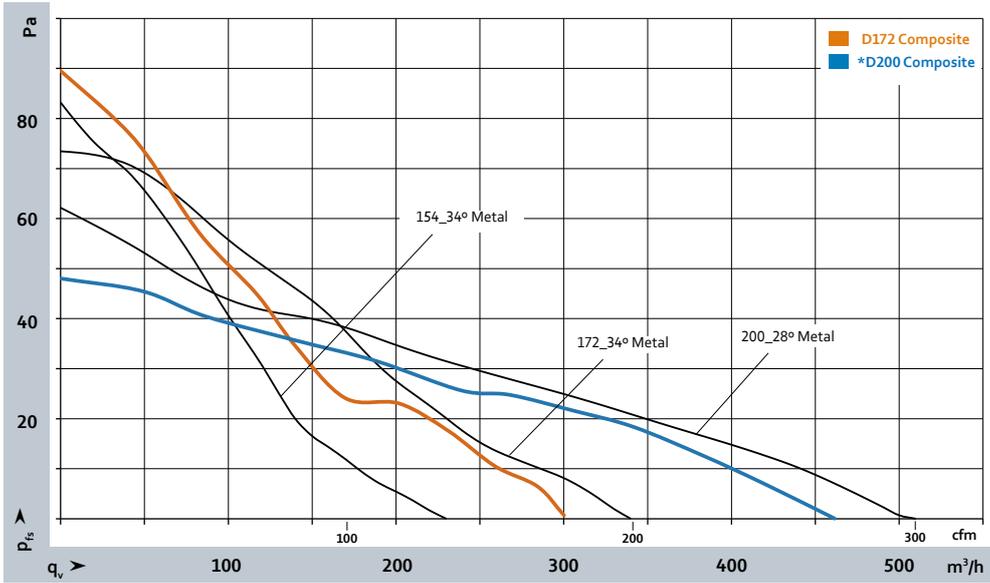
Subject to alterations  
For diameter 172 and 200 composite impeller  
the 3608 is strong enough to reach 1300rpm



## iQC 3612 +

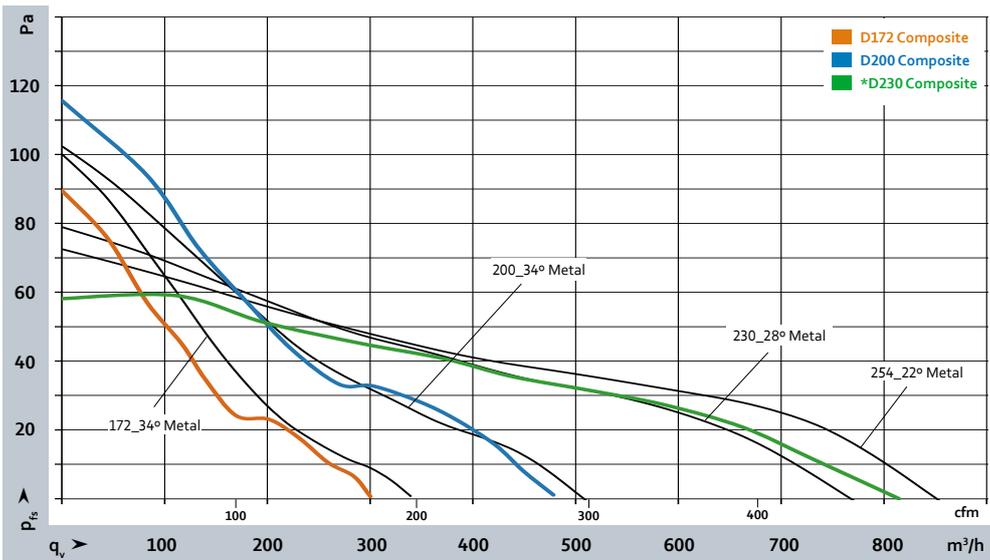
Subject to alterations

# Characteristic curves at 1500 rpm



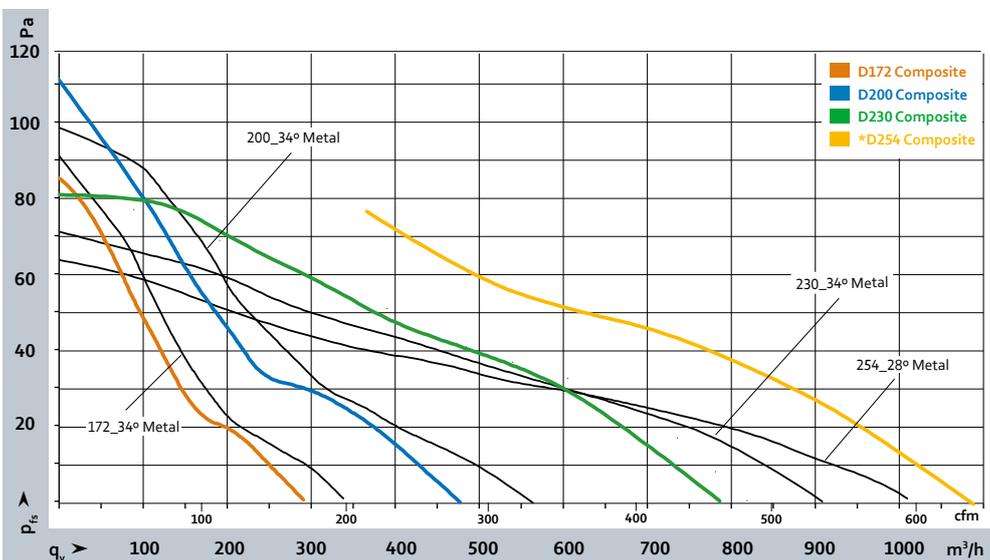
## iQC 3608

Subject to alterations



## iQC 3612

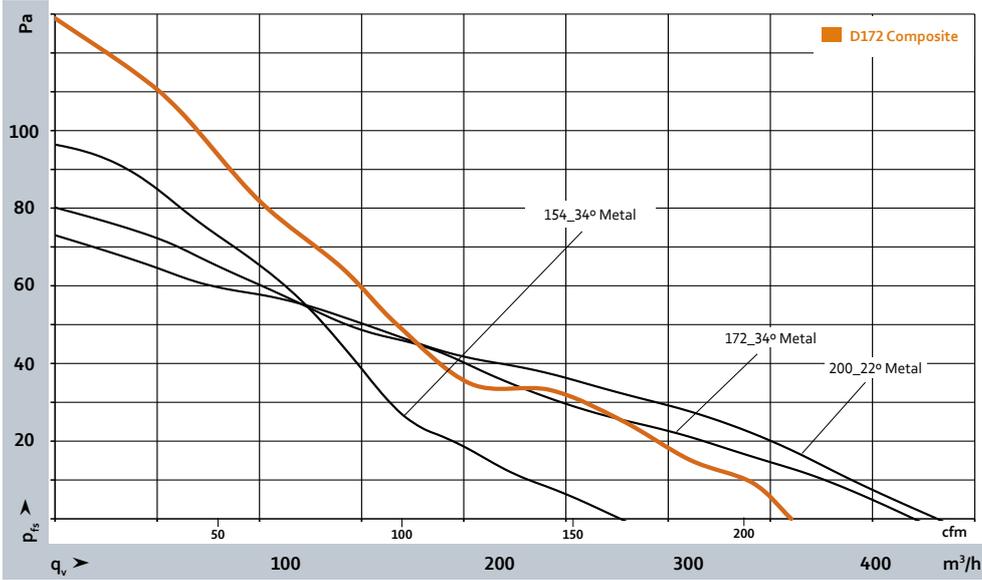
Subject to alterations  
For diameter 172 composite impeller the 3608 is strong enough to reach 1500rpm



## iQC 3612 +

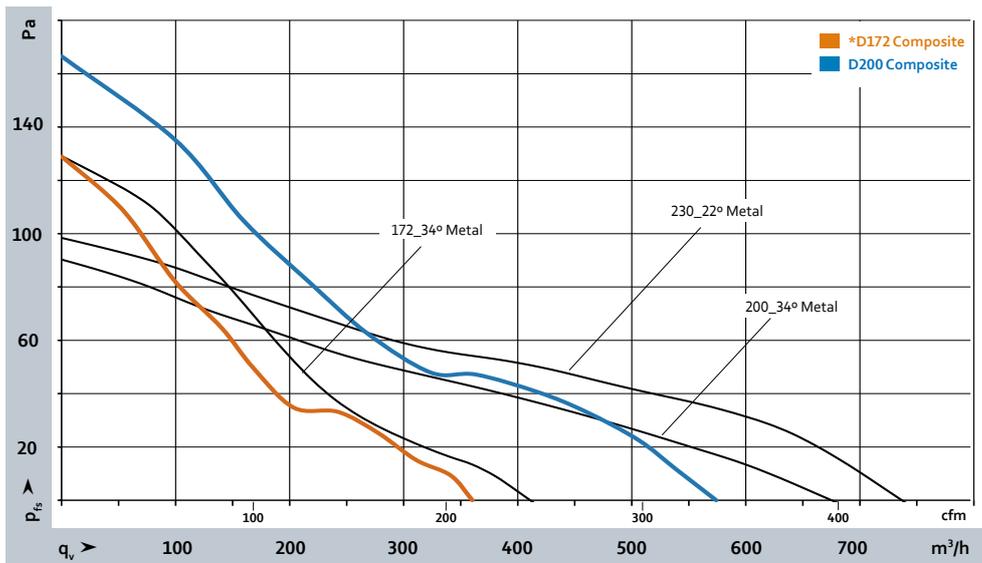
Subject to alterations

# Characteristic curves at 1800 rpm



## iQC 3608

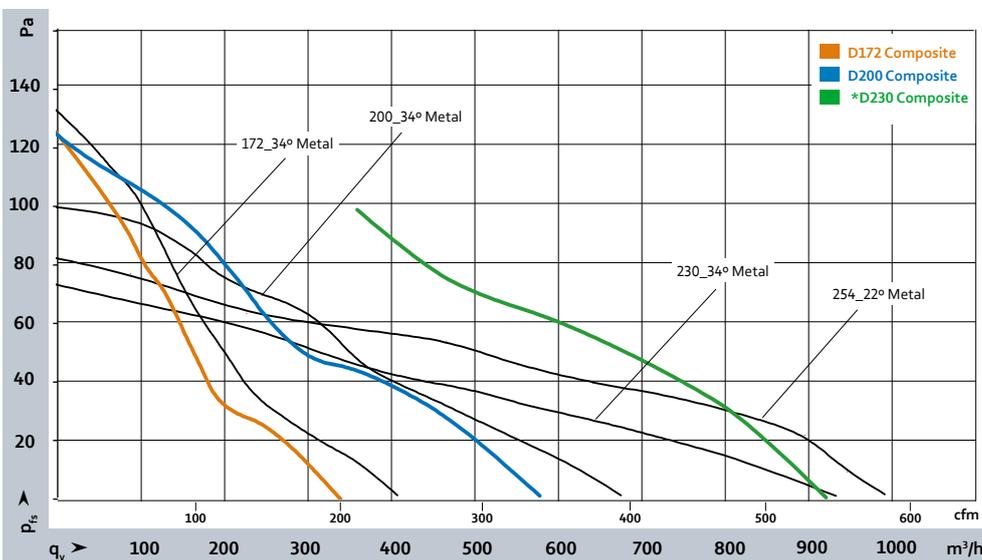
Subject to alterations



## iQC 3612

Subject to alterations

\*For diameter 172 composite impeller the 3608 is strong enough to reach 1800rpm



## iQC 3612 +

Subject to alterations

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