



ECM C - HC - HBS
Energy Saving Motors



IL PRODOTTO

ECM C - HC - HBS ENERGY SAVING MOTORS

I motori tipo ECM (Electronic Commutated Motors) a magneti permanenti sono appositamente progettati da ELCO® per le applicazioni nel campo della refrigerazione commerciale.

Hanno un'elevata efficienza rispetto ai motori tradizionali, garantendo risparmi fino all'80% nel consumo di energia e riducendo in maniera significativa le emissioni di CO₂.

Limitate dissipazioni di calore consentono inoltre un'importante riduzione dei consumi associati al ciclo frigorifero.

I motori ECM sviluppano potenze elevate in rapporto alla massa complessiva, permettendo quindi di mantenere dimensioni più contenute.

CARATTERISTICHE PRINCIPALI

- Motore chiuso, grado di protezione IP65 (a richiesta IP66).
- Corpo motore in materiale termoplastico dal design compatto.
- Doppio isolamento classe B (eliminazione del cavo di messa a terra).
- Tensione di alimentazione 230V/115V-50/60 Hz.
- Accoppiamento possibile con ventole assiali da 154 a 300 mm di diametro.
- Velocità di rotazione disponibili in varie opzioni:
 - Da 1 a 4 velocità pre-programmate da ELCO®
 - Diverse modalità di reverse, via software e hardware
 - Velocità programmabili dal cliente via NFC standard
 - Velocità controllabile via segnale 0-10 Vdc o 0-24 Vdc.
- Temperatura di esercizio tra -30°C e +60°C.
- Classe isolamento B.

La scheda di controllo è stata progettata e realizzata da ELCO® per funzionare correttamente anche nelle condizioni ambientali più severe. È inoltre equipaggiata con un sistema di protezione che salvaguarda il motore da sollecitazioni esterne del tipo sovratensione e/o sovracorrente.

I prodotti ELCO® sono progettati per fornire una prestazione qualitativa e duratura nel tempo. Applicando questa filosofia alla progettazione ed alla realizzazione dei motori ECM, siamo in grado di garantire un'aspettativa di vita di oltre 90.000 ore di funzionamento continuativo. Questo risponde alla crescente richiesta di prodotti duraturi e sostenibili.

THE PRODUCT

ECM C - HC - HBS ENERGY SAVING MOTORS

Electronic Commutated Motors, with permanent magnet, are specially designed by ELCO® for commercial refrigeration applications.

These motors efficiency is higher than the traditional motors assuring an energy saving up to 80% of power consumption with consequent CO₂ emission reduction.

Limited heat dissipation brings to significant reduction of consumptions associated to the refrigeration cycle.

A highest power output in respect of the total motor mass is developed, hence smaller dimensions are possible.

MAIN FEATURES

- Closed motor, protection degree IP65 (IP66 on request).
- Thermoplastic body compact design.
- Double insulation class B (earth cable eliminated).
- Supply 230V/115V-50/60 Hz.
- Possible coupling with axial fans with diameter from 154 to 300 mm.
- Rotation speeds available with different options:
 - From 1 to 4 ELCO® pre-set speeds
 - Different reverse modes via SW and HW
 - Speed set by the customer via NFC standard
 - Full speed control with 0-10 Vdc or 0-24 Vdc signal.
- Working temperature between -30°C and +60°C.
- Insulation class B.

ELCO® designed and realized a control card suitable to work properly even in the most severe environments.

Additionally, it is equipped with a protection system that limits the motor damages due to external surge: overcurrent or overvoltage.

All ELCO® products are designed to give high level quality performances and long durability. Applying this philosophy to the ECM motor design and production, we achieve a life expectancy of over 90.000 hours in continuous working conditions. This is ELCO® response to the growing request of durable and sustainable products.



IL PRODOTTO

Gli anelli, le reti, le ventole ed i supporti tradizionali di produzione ELCO® sono compatibili con questa gamma di motori.

È altresì disponibile una nuova gamma di accessori specifici per gli ECM.

L'efficienza energetica del ventilatore è in buona parte legata all'efficienza aeraulica. ELCO® ha quindi appositamente progettato una nuova serie di ventole assiali, che ne migliora l'efficienza complessiva.

Tutti i motori ELCO® sono progettati e costruiti in ottemperanza alle Direttive di Bassa Tensione 2006/95/EC e di Compatibilità Elettromagnetica 2004/108/EC con riferimento alla
EN 55014-1,
EN 61000-3-2,
EN 61000-3-3,
così come alla Direttiva Macchine 2006/42/EC, ed in accordo con le Norme Standard CENELEC
EN 60335-1,
EN 60335-2-24,
EN 60335-2-89,
EN 60529,
EN 60034-1.

THE PRODUCT

The ELCO® traditional rings, grids, fan blades and supports are suitable to be used also with these ECM motors.

In addition, a new range of specific accessories for the ECM motors is available.

The energetic efficiency of the fans is linked in majority to the aeraulic efficiency. Hence ELCO® designed a new axial fan series that improves the total efficiency.

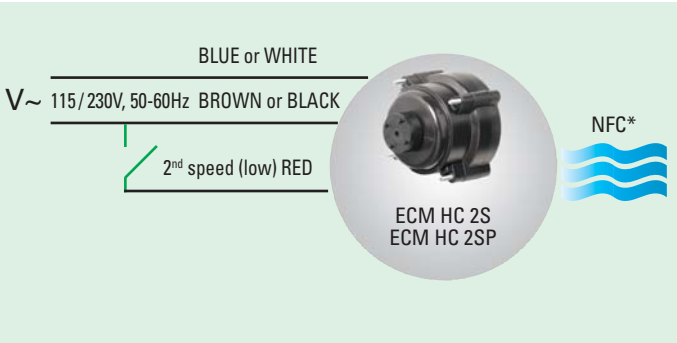
All ELCO® motors are designed and manufactured in compliance with the Low Voltage 2006/95/EC and Electromagnetic Compatibility 2004/108/EC Directives with reference to
EN 55014-1,
EN 61000-3-2,
EN 61000-3-3
as well as the Machinery Directive 2006/42/EC and in accordance with the Standards CENELEC
EN 60335-1,
EN 60335-2-24,
EN 60335-2-89,
EN 60529,
EN 60034-1.

	DESCRIZIONE	DESCRIPTION
ECM C	1 Velocità pre-settata	1 Speed pre set
ECM HC 2S	2 Velocità pre-settate	2 Speeds pre set
ECM HC 2SP	2 Velocità settate dal cliente tramite programmazione NFC*	2 Speeds set by the customer through NFC*
ECM HC R2S	2 Velocità pre-settate + diverse tipologie di reversibilità	2 Speeds pre set + several types of reversibility
ECM HC R2SP	2 Velocità settate dal cliente + diverse tipologie di reversibilità	2 Speeds set by the customer + several types of reversibility
ECM HC R	1 Velocità reversibile	1 Reversible speed
ECM HC VS	Full control 0-10 Vdc 0-24 Vdc	Full control 0-10 Vdc 0-24 Vdc
ECM HBS 2S/3S/4S	2/3/4 Velocità pre-settate	2/3/4 Speeds pre set
ECM HBS R2S	2 Velocità pre-settate + diverse tipologie di reversibilità	2 Speeds pre set + several types of reversibility
ECM HBS R	1 Velocità reversibile	1 Reversible speed

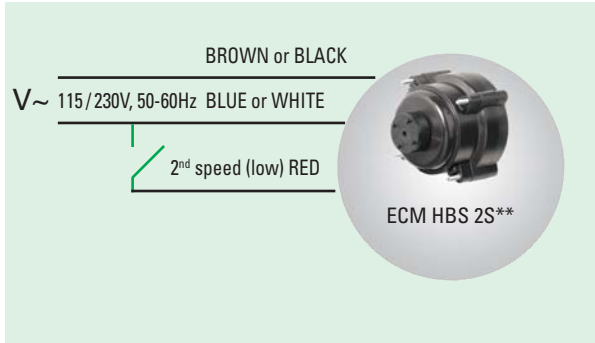
*NFC (RFID Secure Protocol)



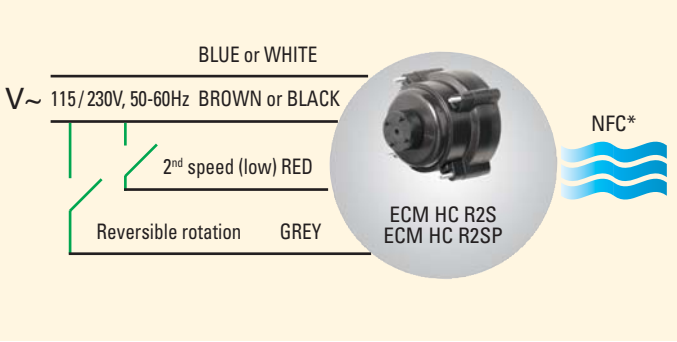
ECM HC 2S - ECM HC 2SP



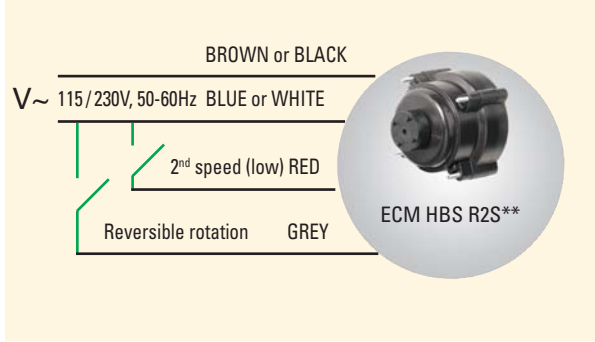
ECM HBS 2S



ECM HC R2S - ECM HC R2SP



ECM HBS R2S



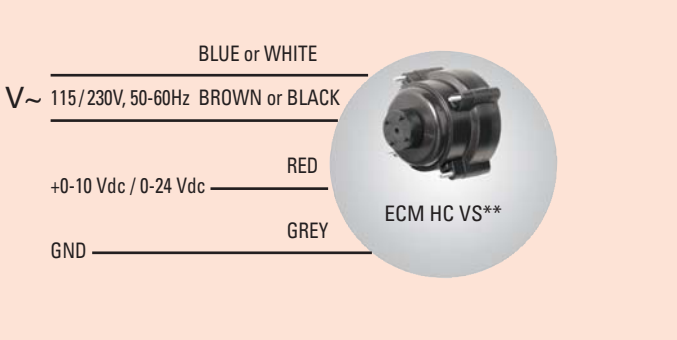
ECM HC R



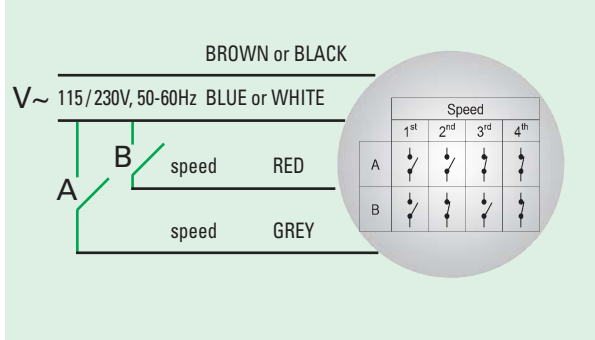
ECM HBS R



ECM HC VS



ECM HBS 2S/3S/4S



*NFC (RFID Secure Protocol)

**Third parties' approval may be pending



MATCHING MOTOR-FAN
ECM C-HC-HBS 230V - 50Hz - High speed

		Fan Ø / α					
		154	172	200	230	254	300
1300 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						
1400 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						
1600 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						
1850 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						
2200 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						

- ECM C-HC-HBS 12-10
- ECM C-HC-HBS 20-25
- ECM C-HC-HBS 12-10 with Ø254x22 integrated only
- ECM C-HC-HBS 25-25
- ECM C-HC-HBS 30-25

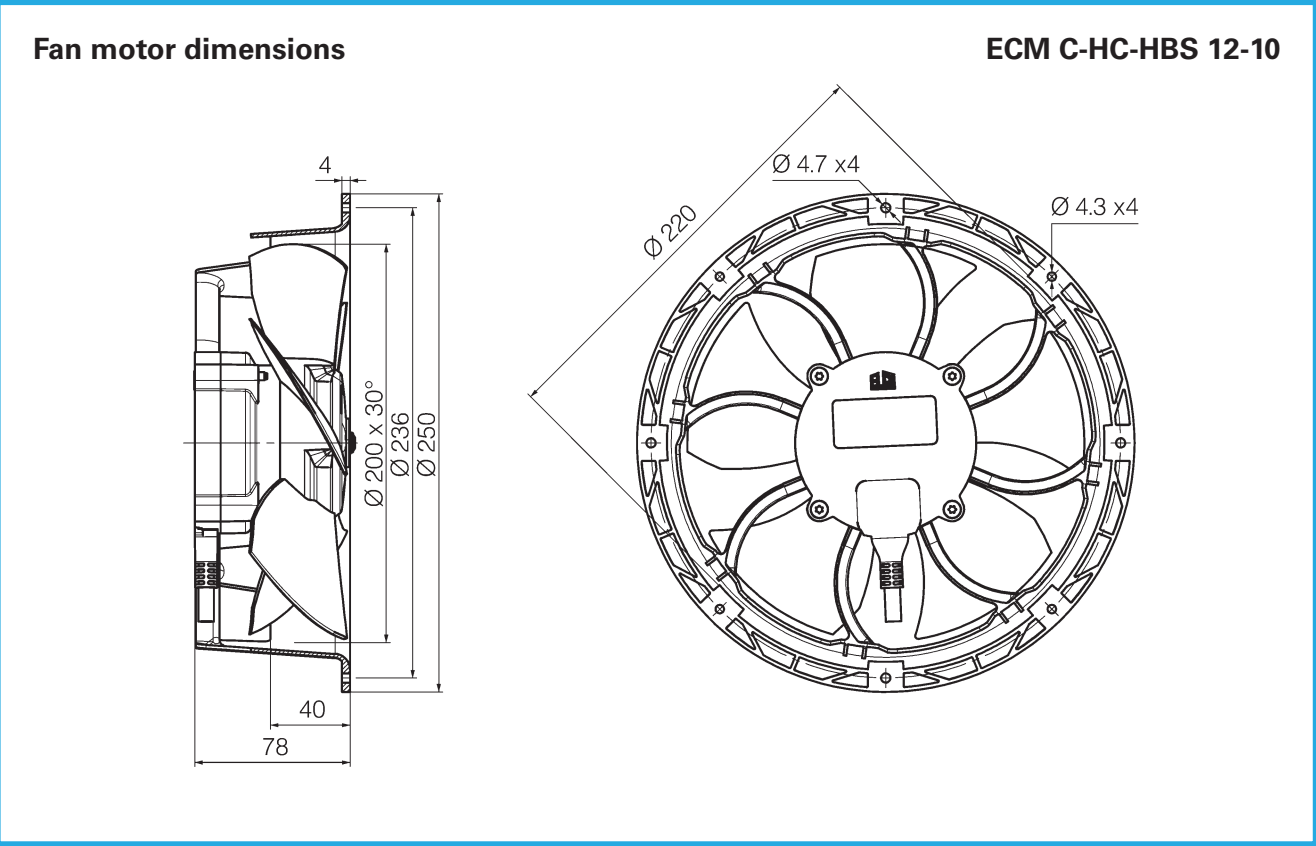


MATCHING MOTOR-FAN
ECM C-HC-HBS 115V - 60Hz - High speed

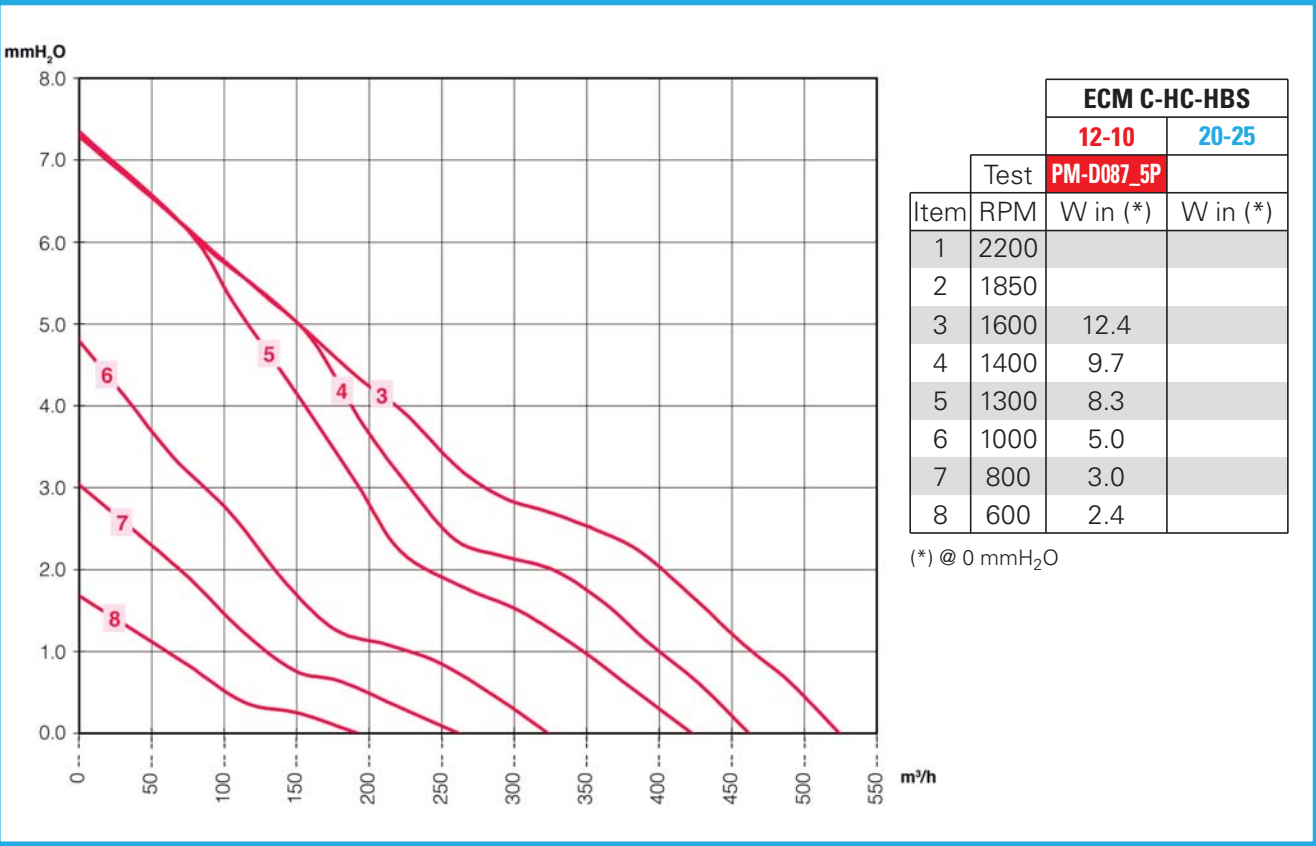
		Fan Ø / α					
		154	172	200	230	254	300
1300 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						
1400 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						
1600 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						
1850 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						
2200 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						

- ECM C-HC-HBS 12-10
- ECM C-HC-HBS 20-25
- ECM C-HC-HBS 12-10 with Ø254x22 integrated only
- ECM C-HC-HBS 25-25
- ECM C-HC-HBS 30-25

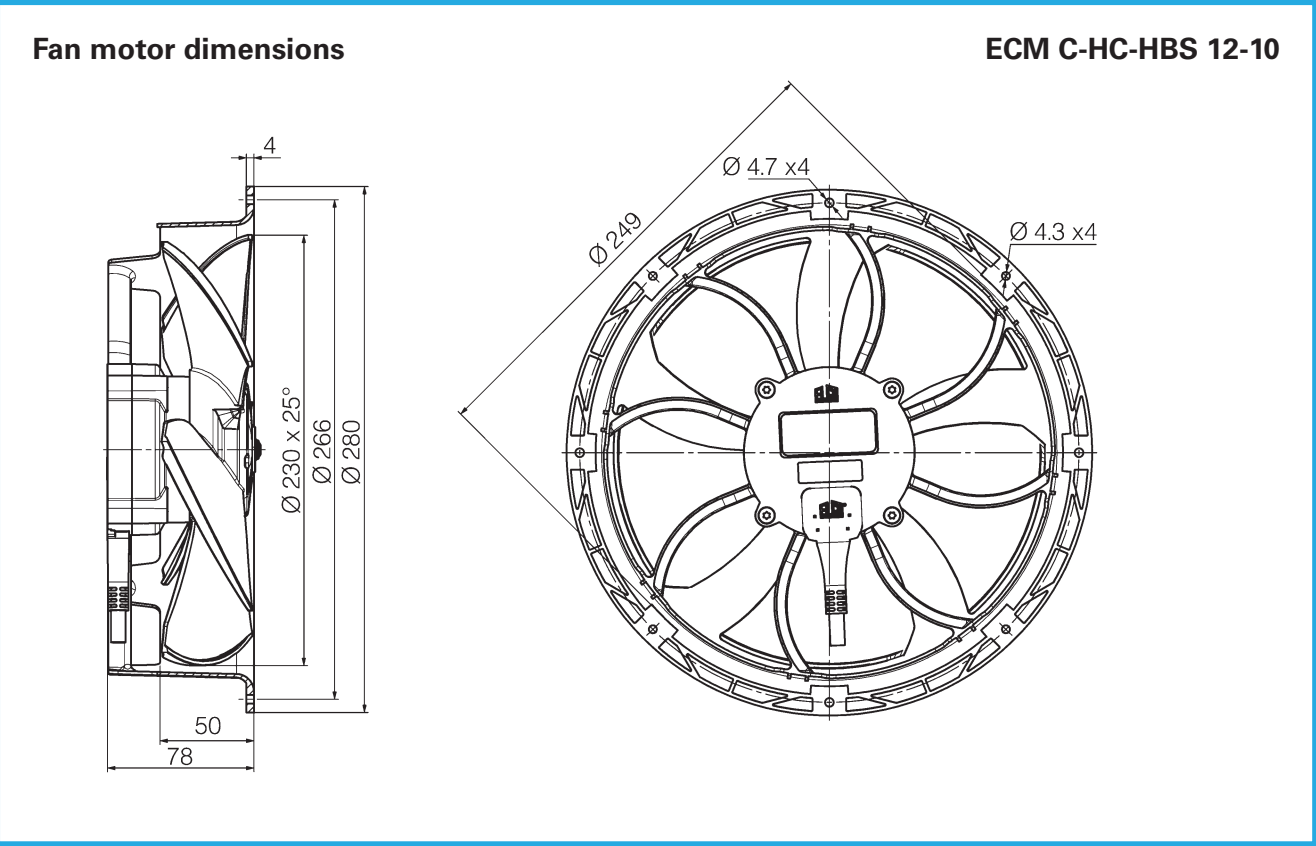
COMPACT FAN MOTOR 200



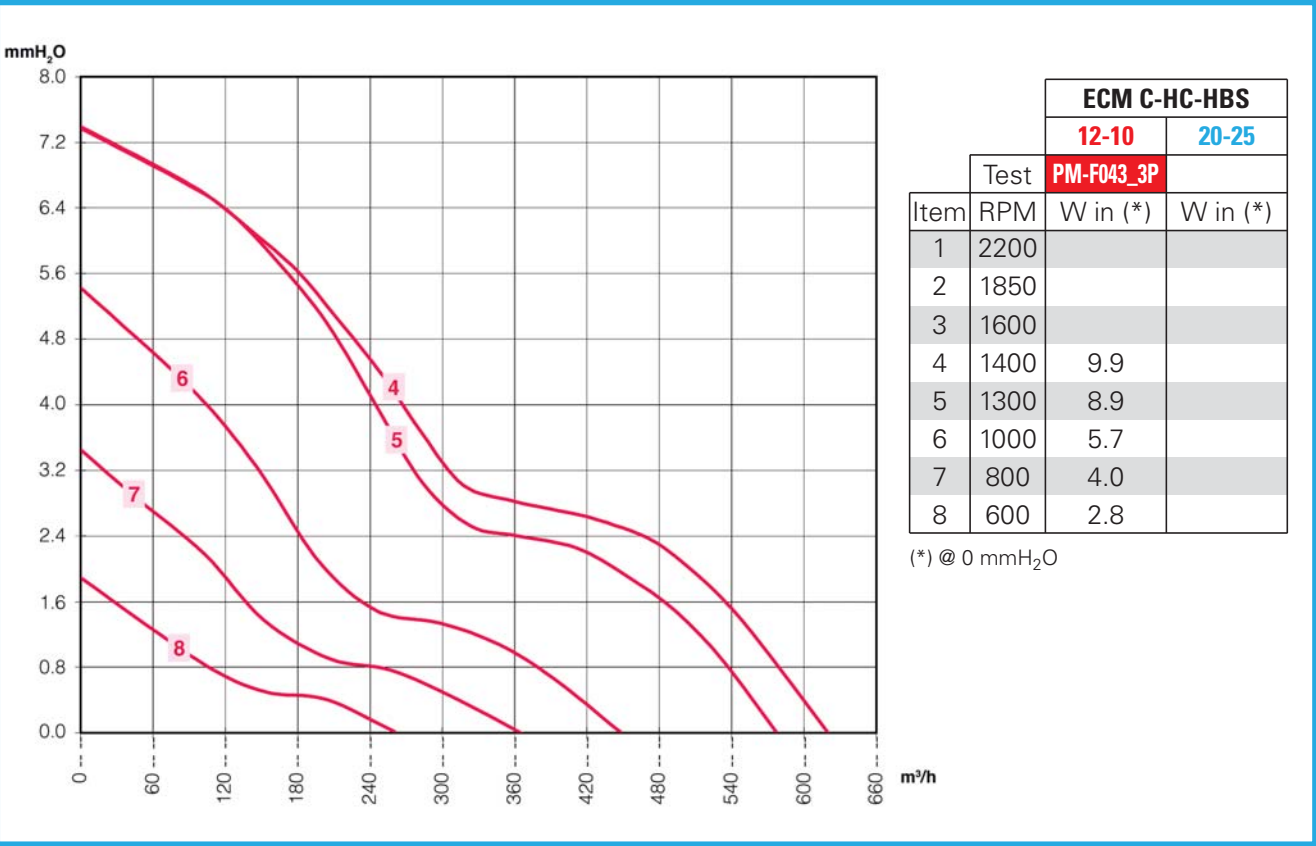
Compact fan motor air performance curves Ø 200x30°



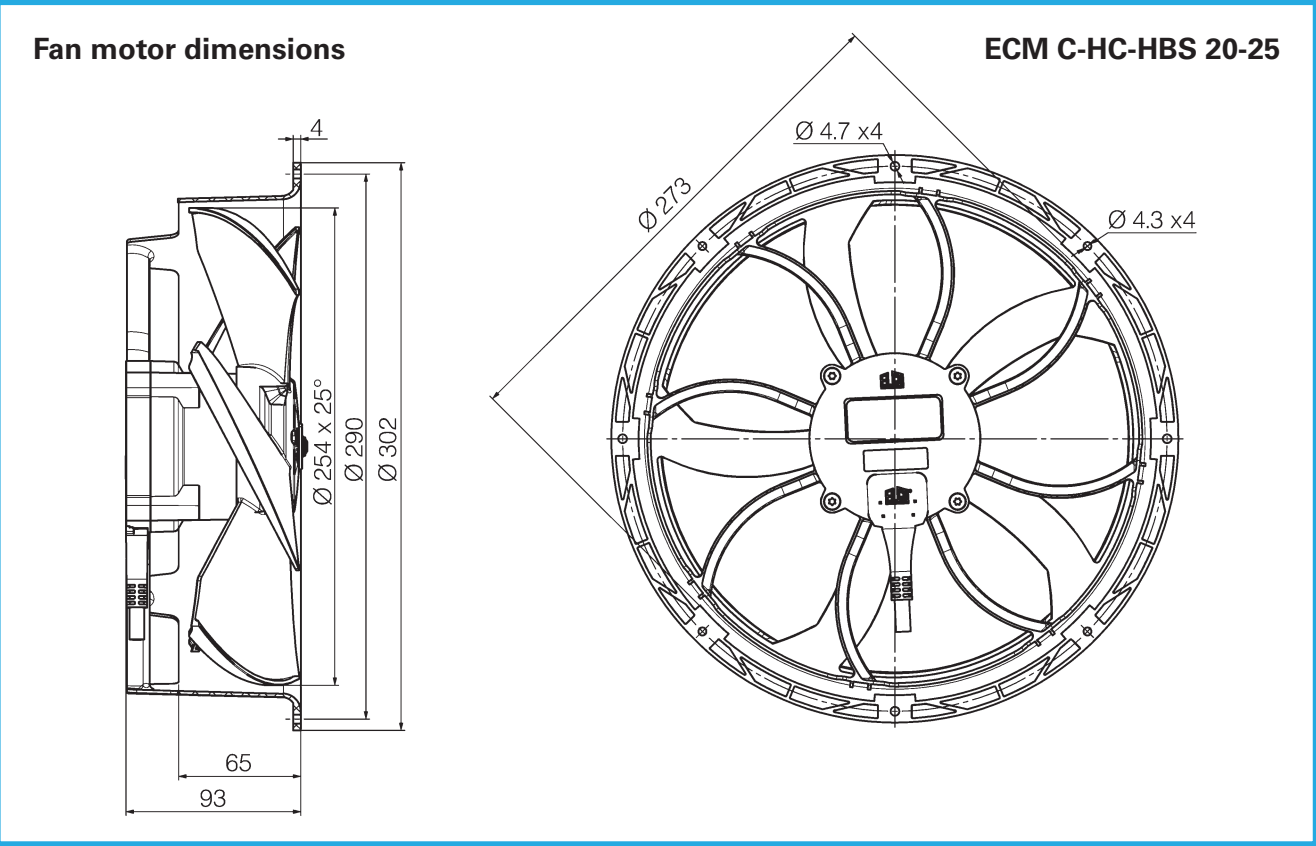
COMPACT FAN MOTOR 230



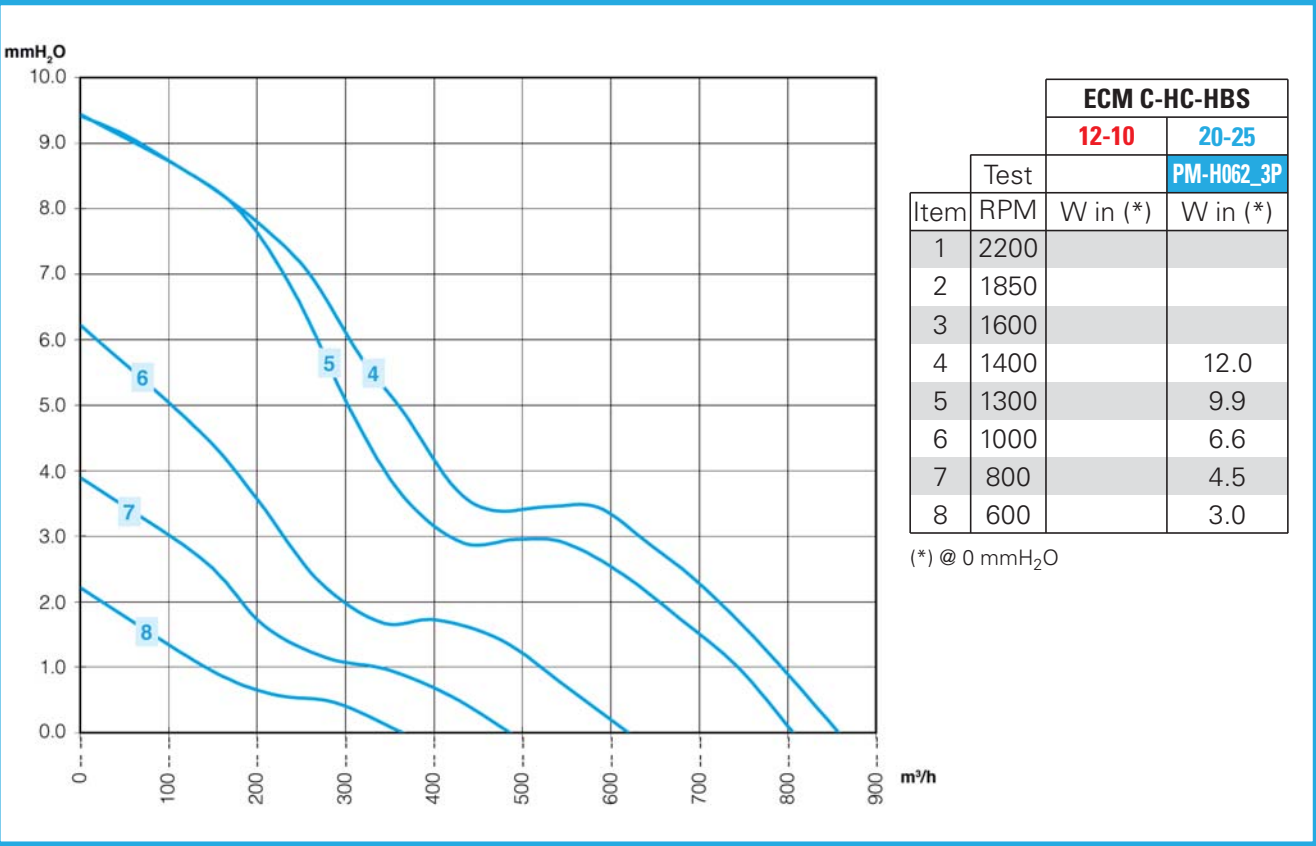
Compact fan motor air performance curves Ø 230x25°



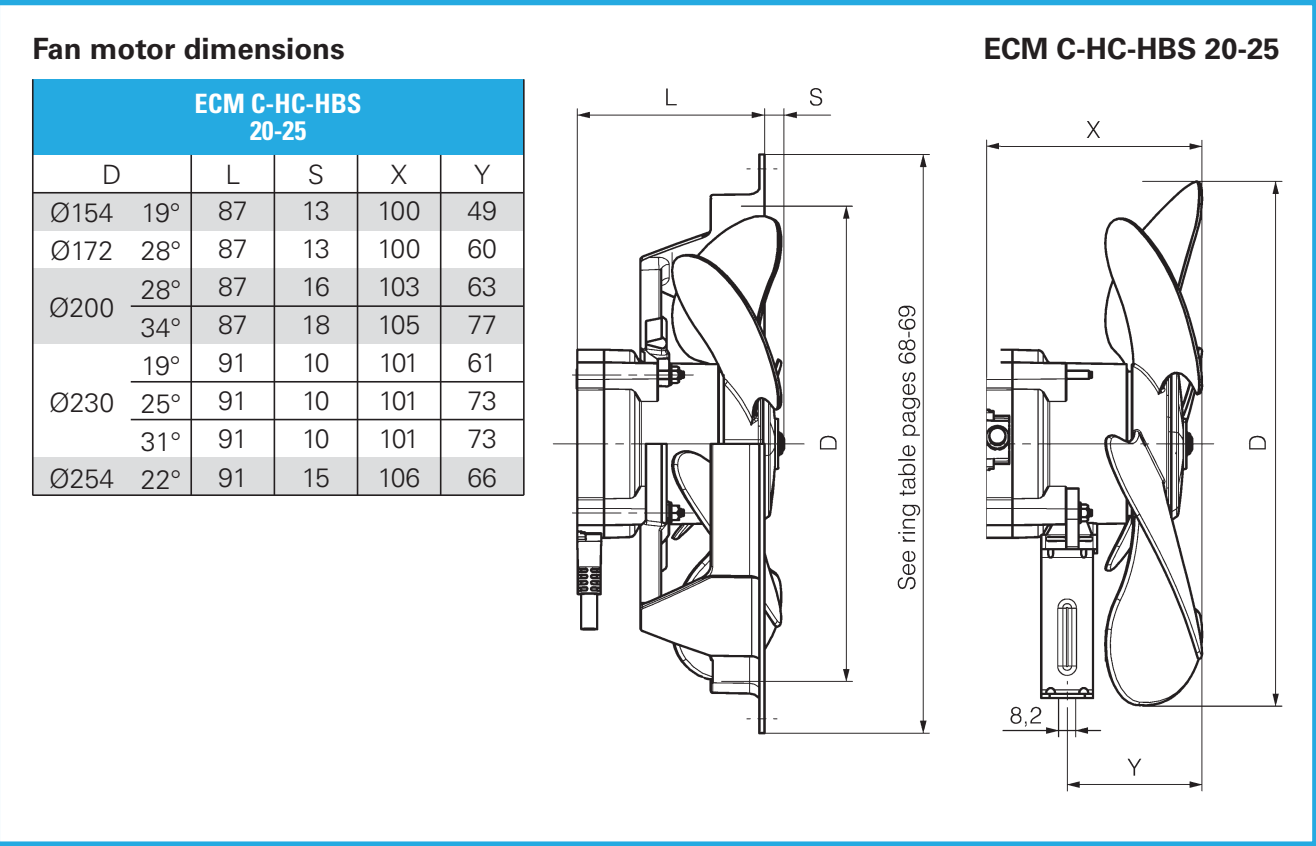
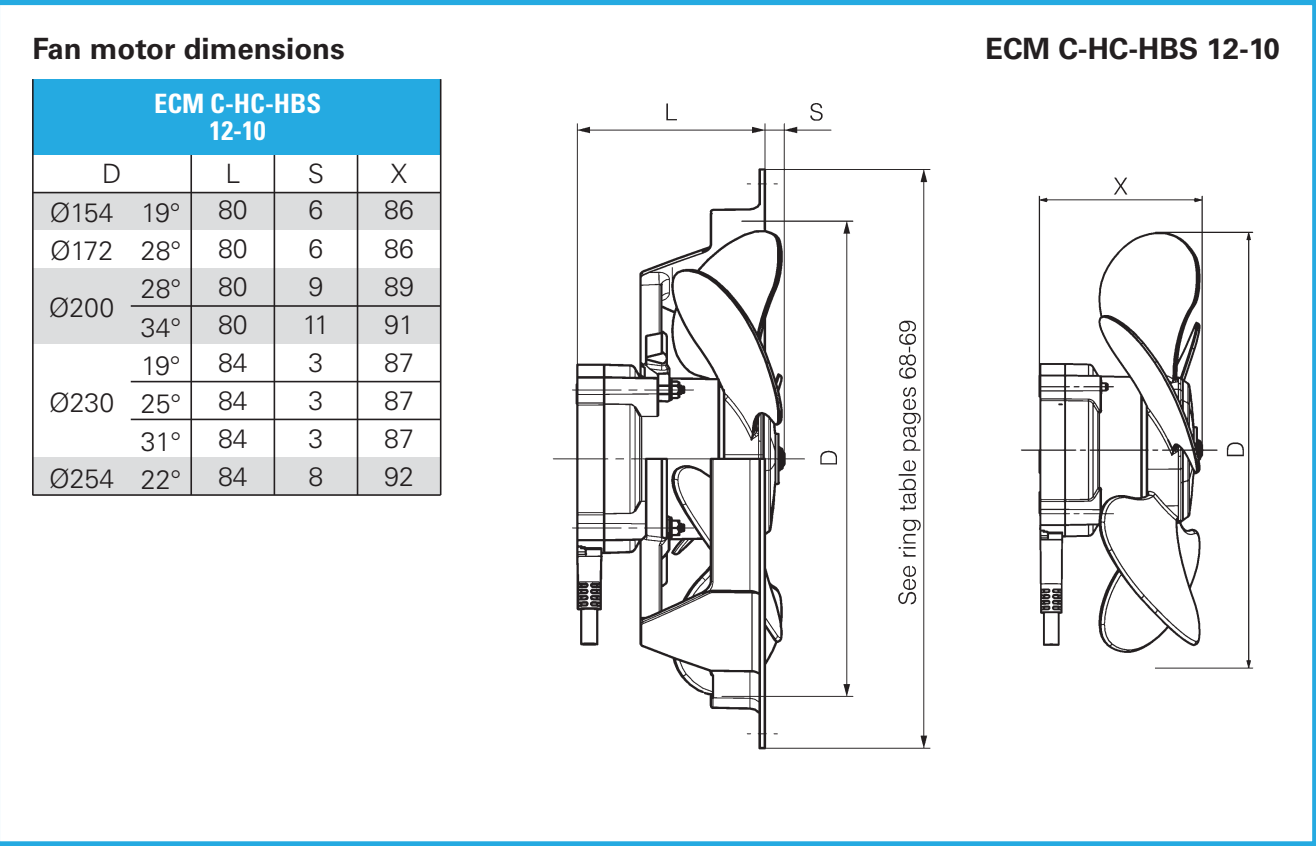
COMPACT FAN MOTOR 254



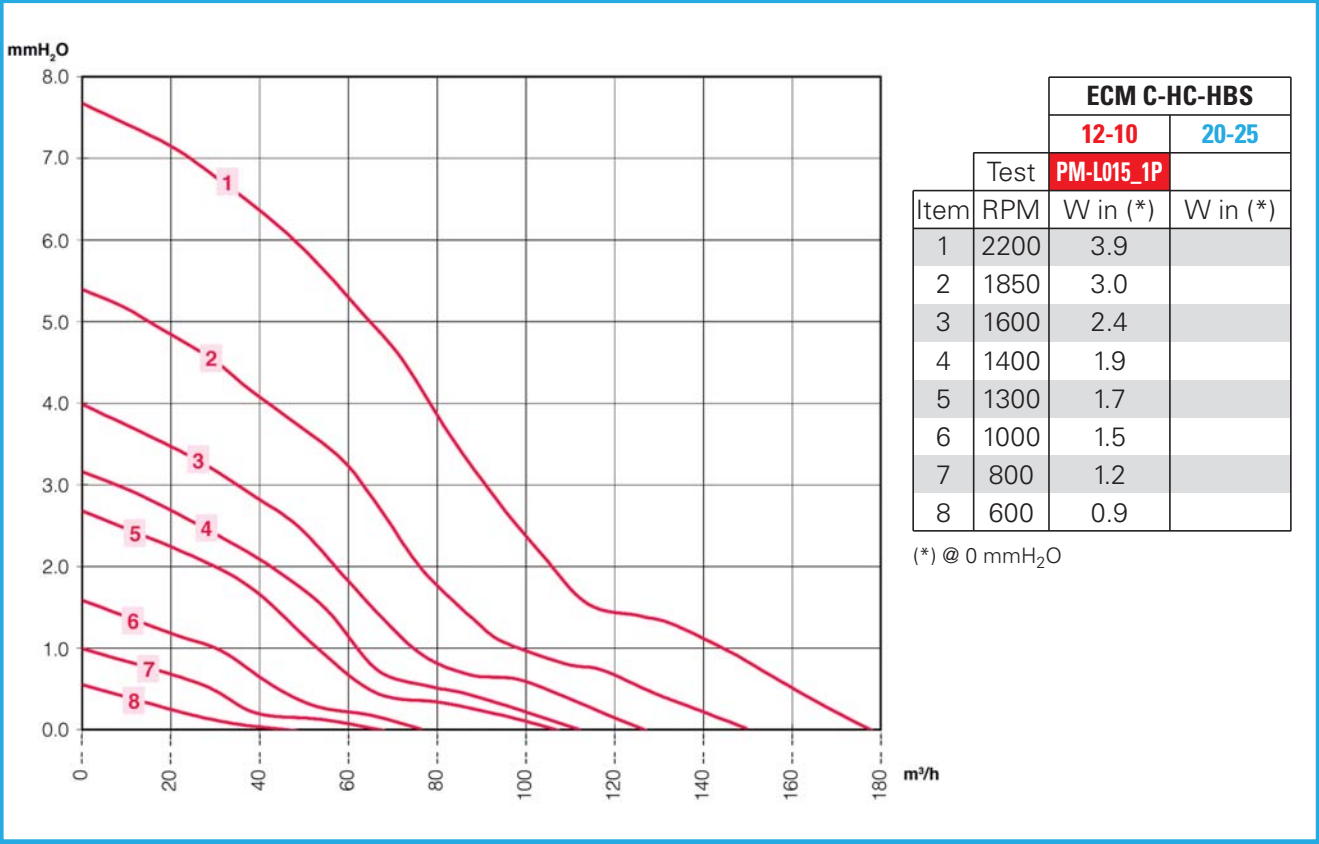
Compact fan motor air performance curves Ø 254x25°



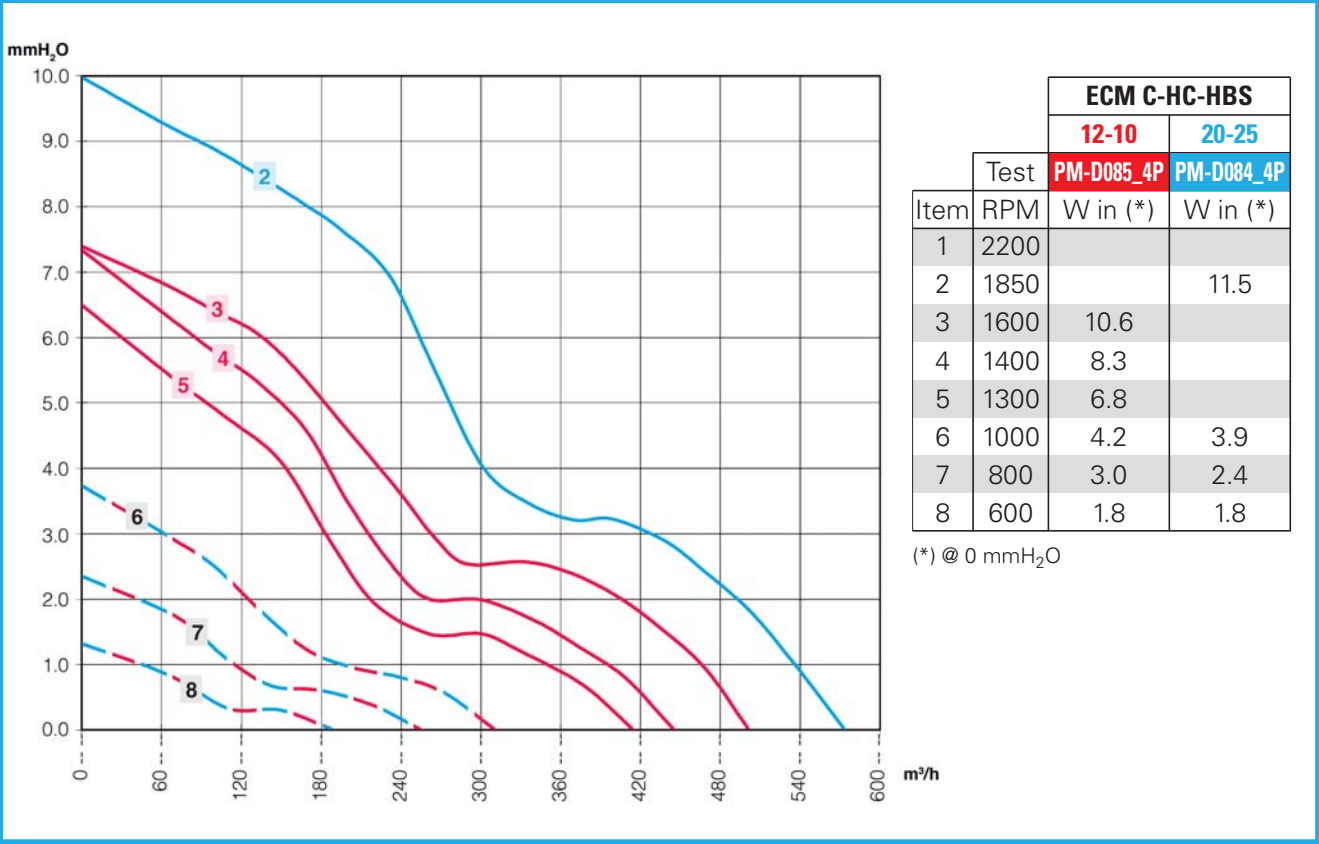
PLASTIC INTEGRATED FAN MOTORS



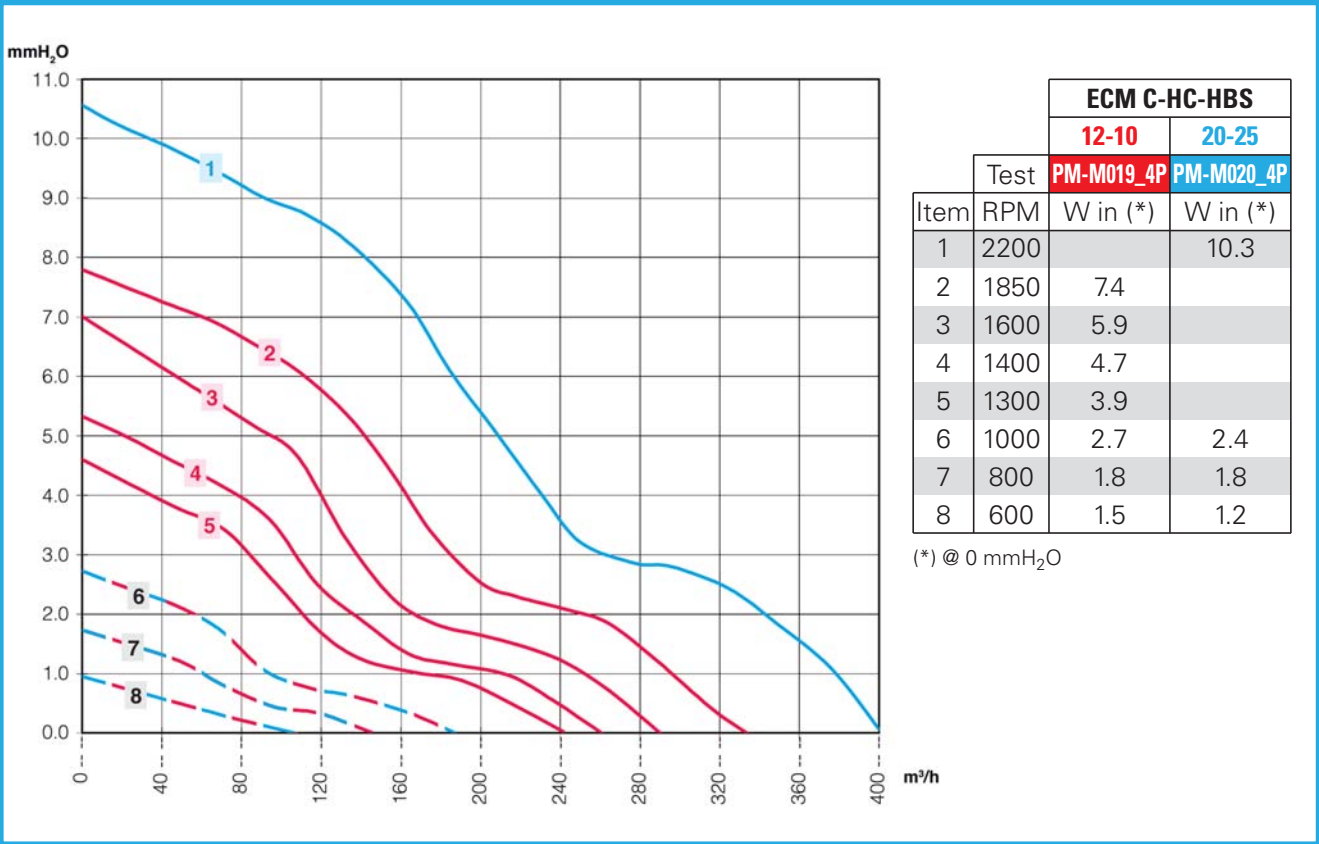
Integrated fan blade air performance curves Ø 154x19°



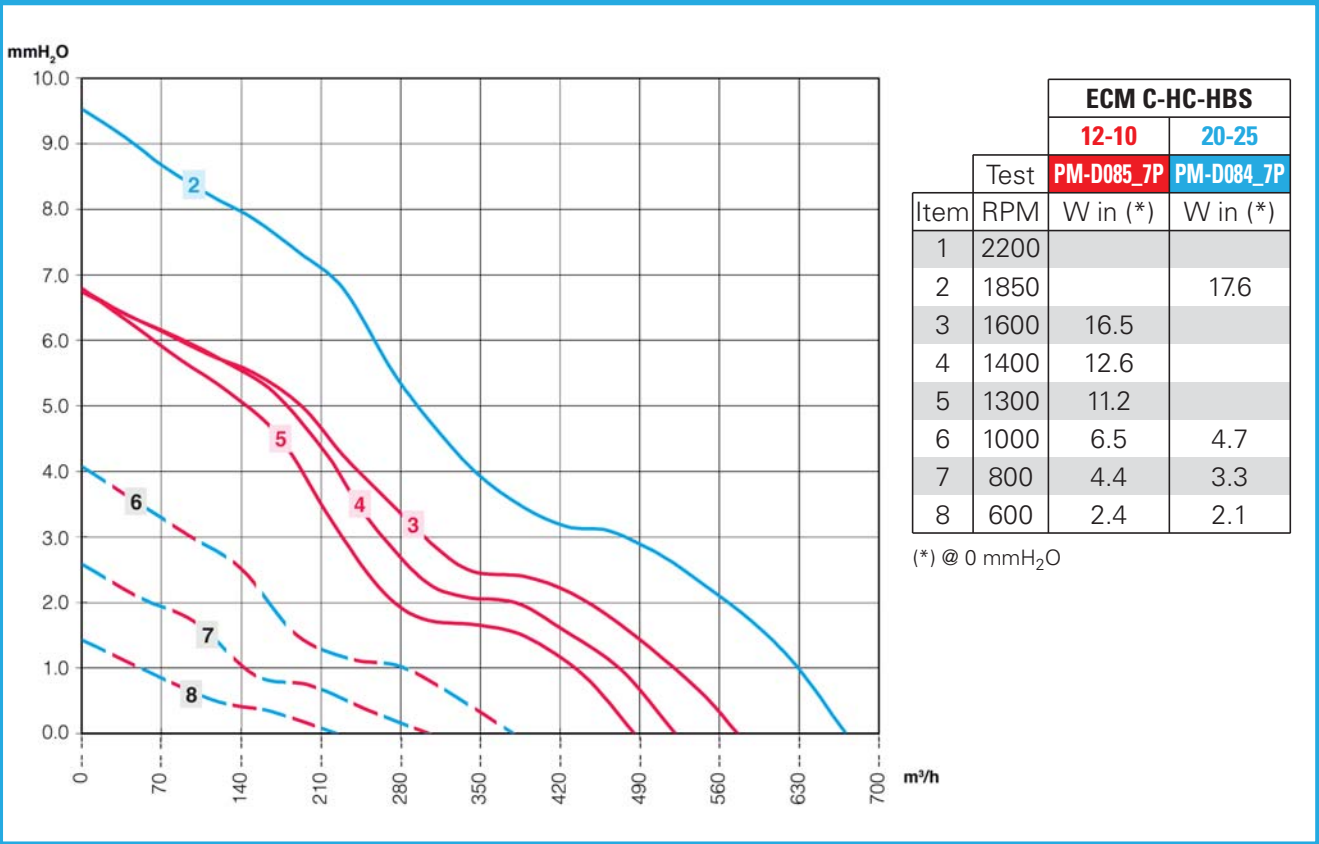
Integrated fan blade air performance curves Ø 200x28°



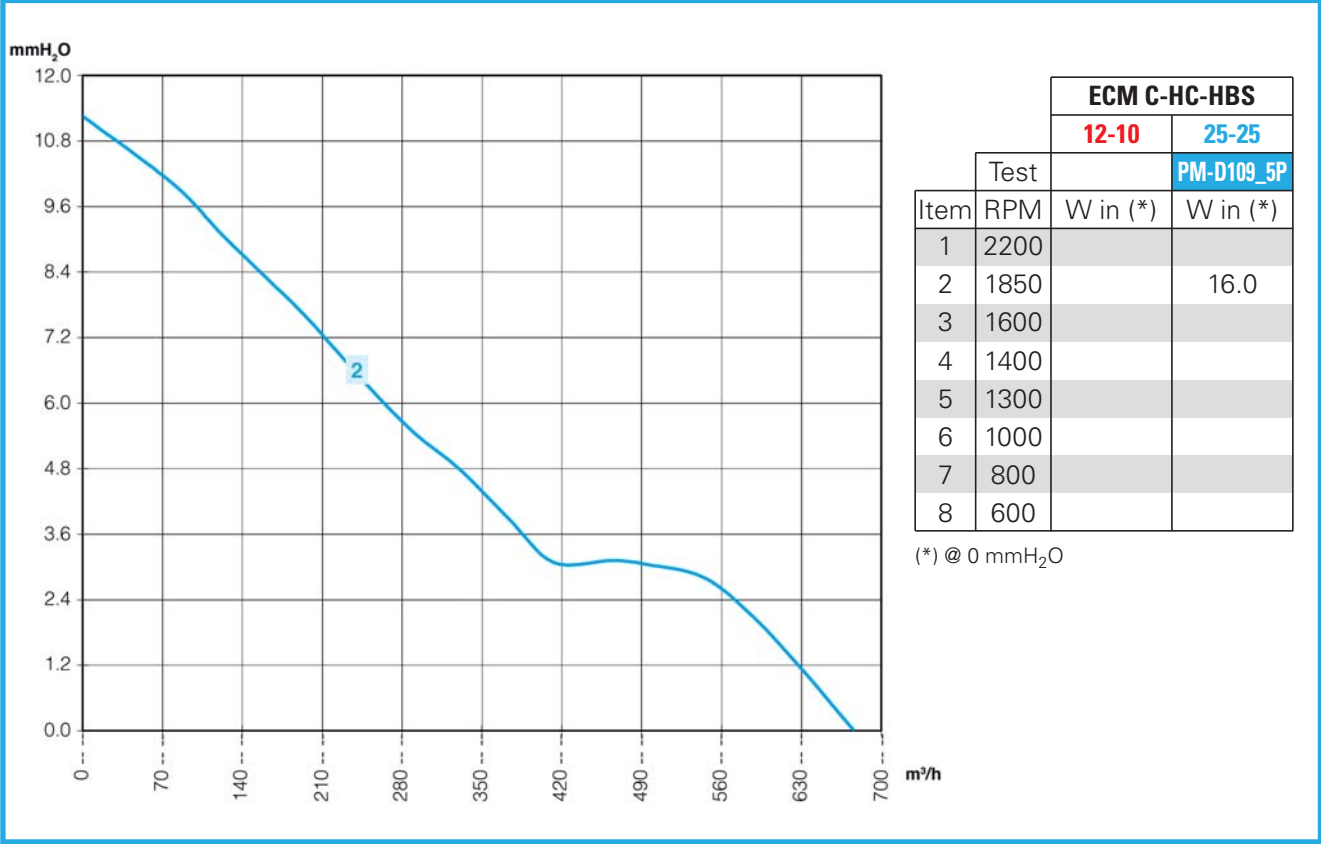
Integrated fan blade air performance curves Ø 172x28°



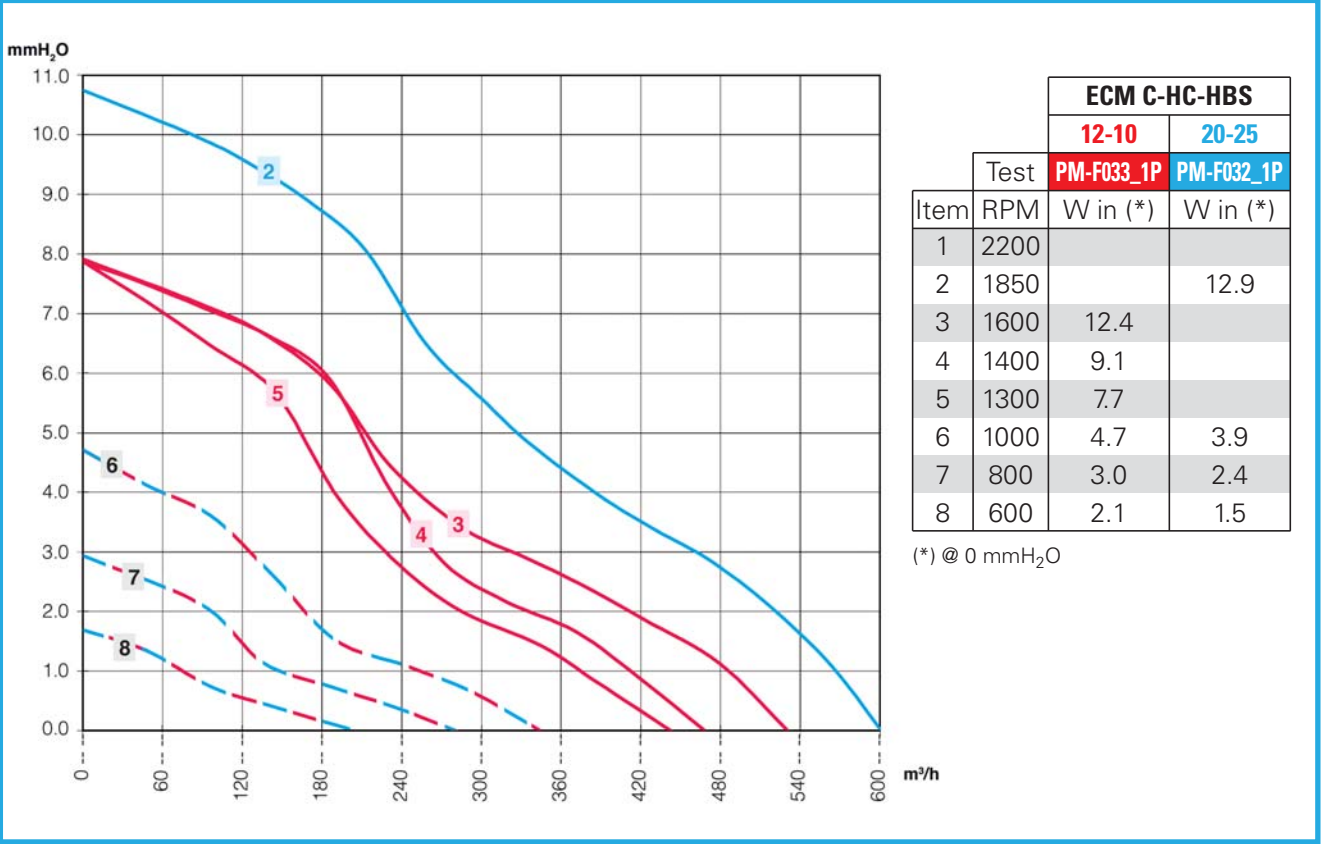
Integrated fan blade air performance curves Ø 200x34°



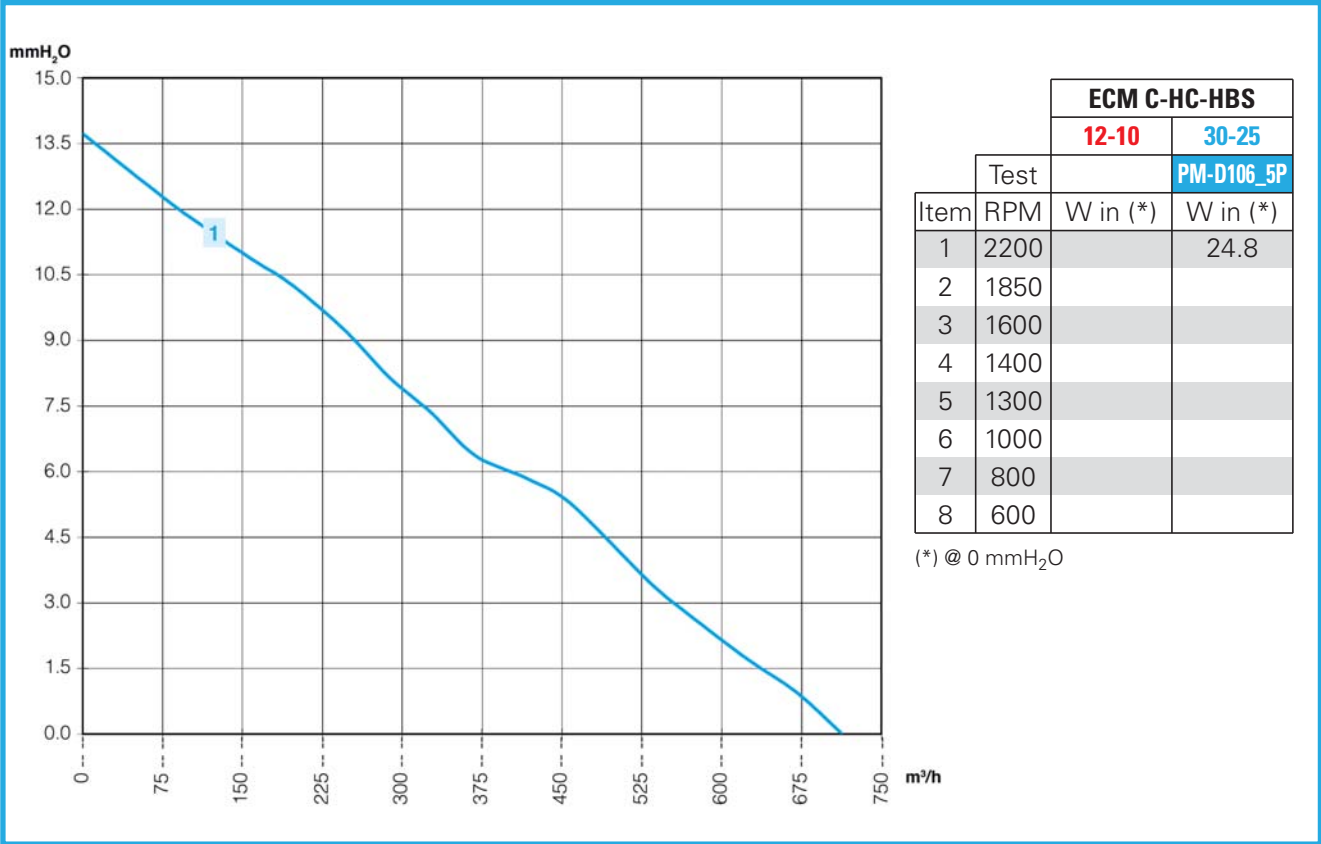
Integrated fan blade air performance curves Ø 200x30°



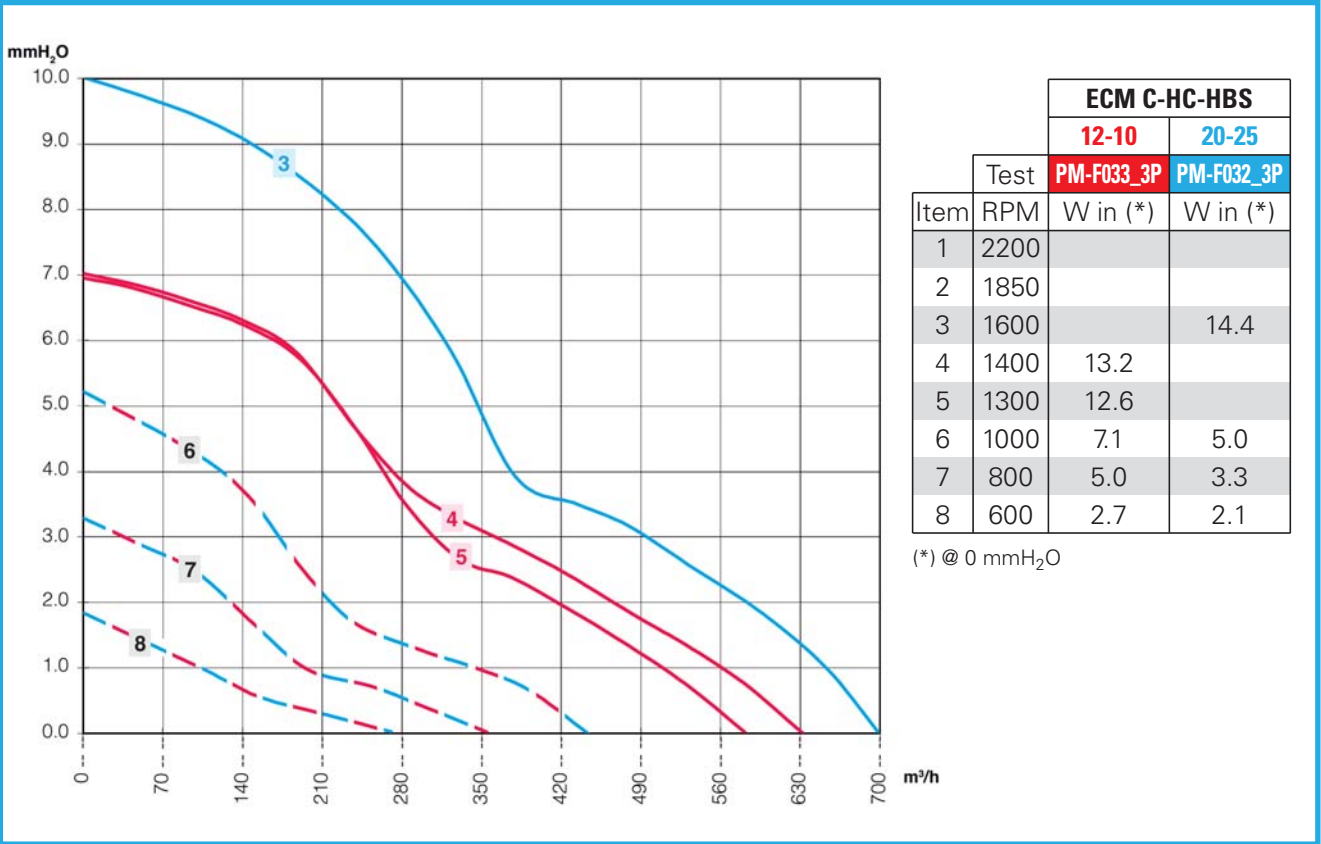
Integrated fan blade air performance curves Ø 230x19°



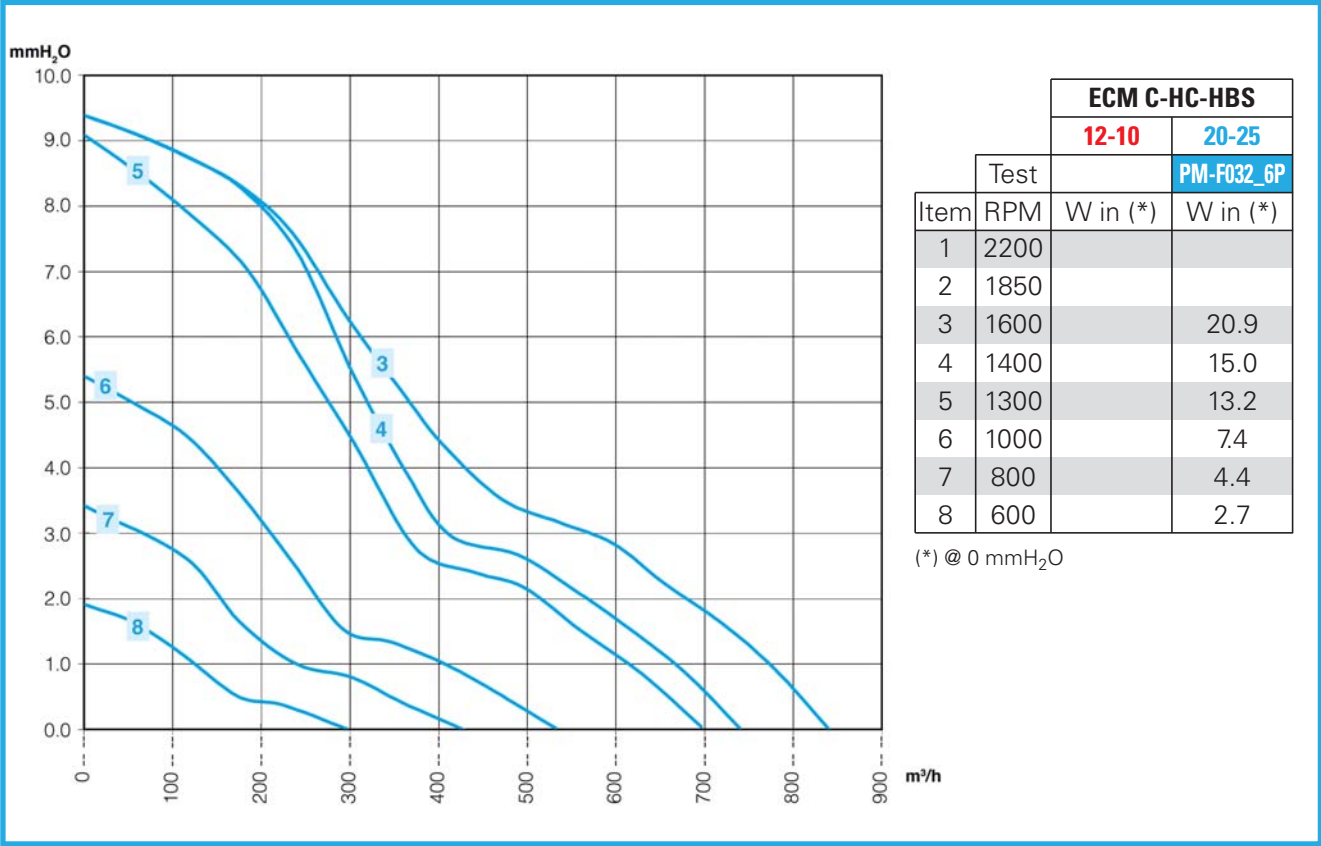
Integrated fan blade air performance curves Ø 200x30°



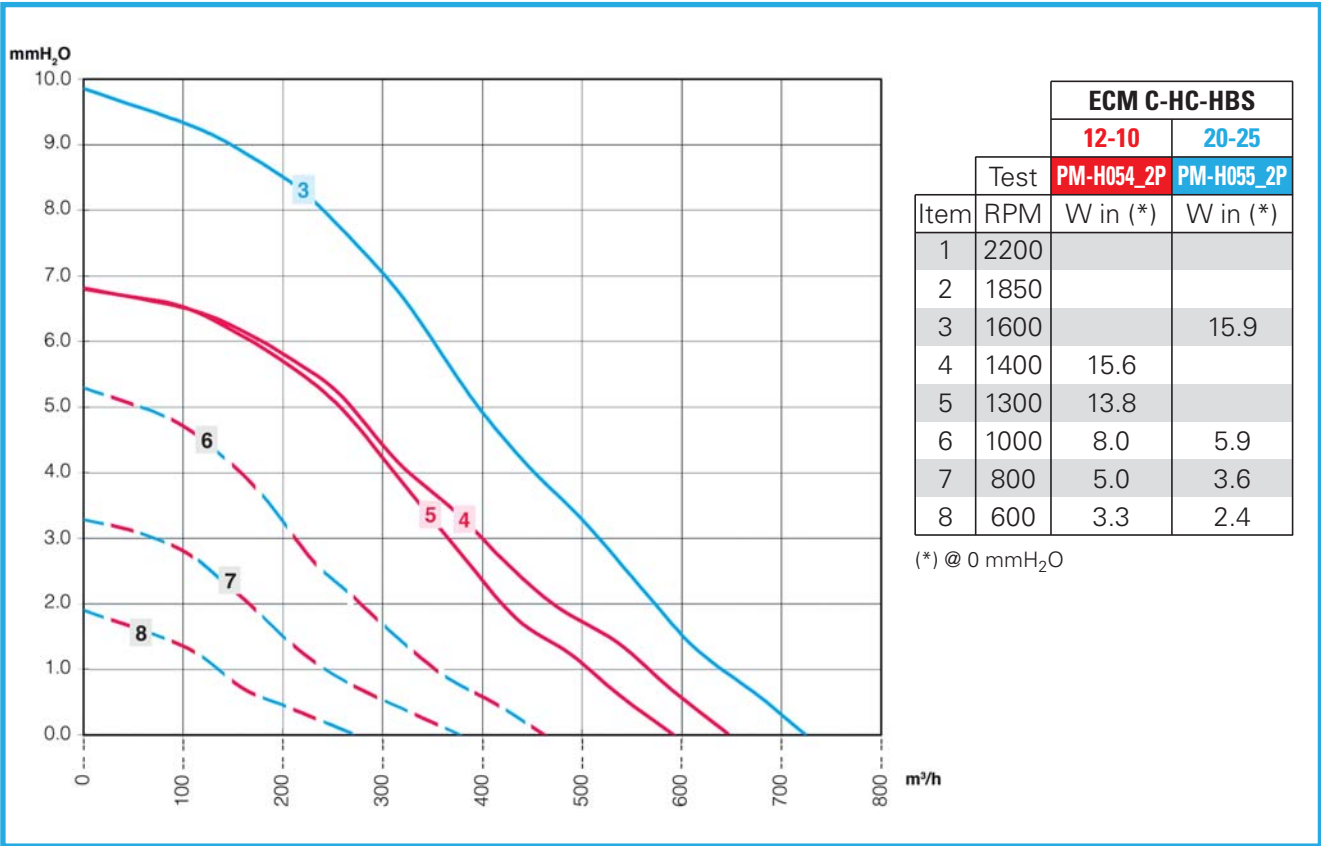
Integrated fan blade air performance curves Ø 230x25°



Integrated fan blade air performance curves Ø 230x31°



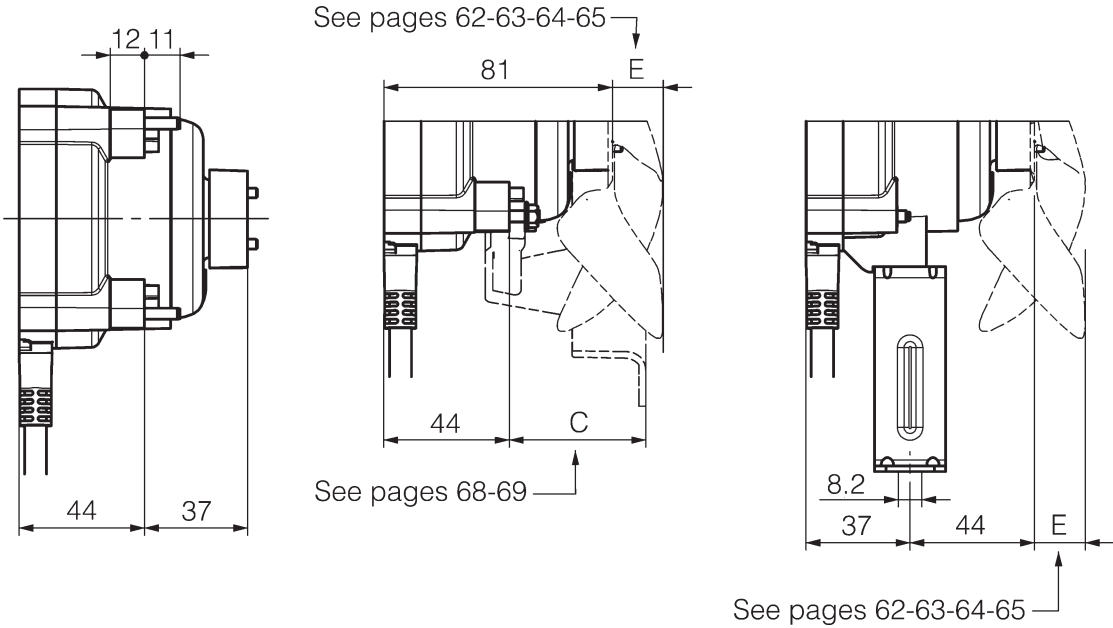
Integrated fan blade air performance curves Ø 254x22°



PLASTIC OR ALUMINIUM FAN MOTORS

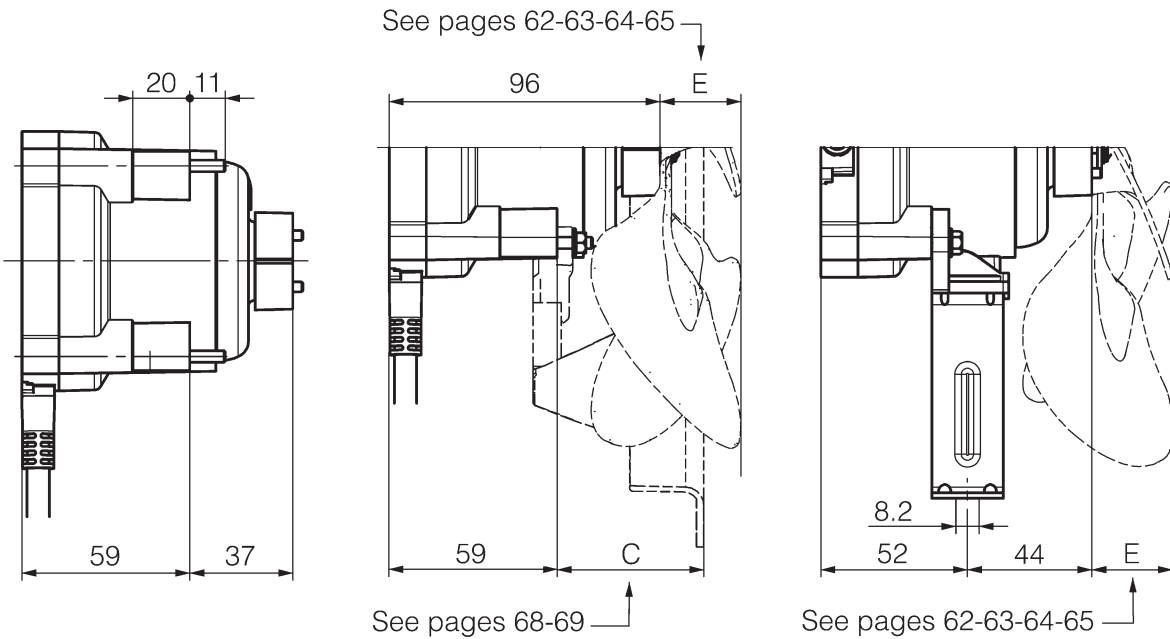
Fan motor dimensions

ECM C-HC-HBS
12-10

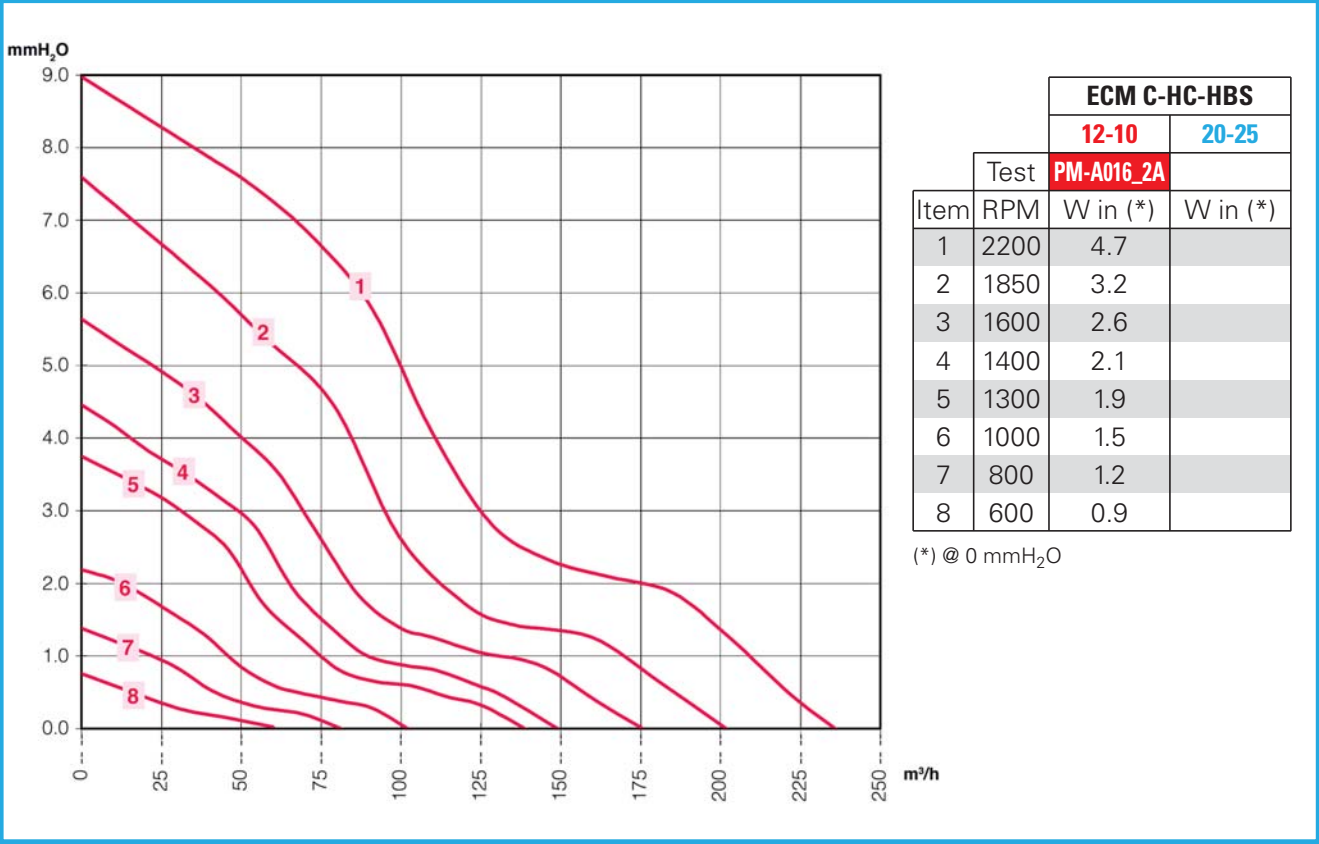


Fan motor dimensions

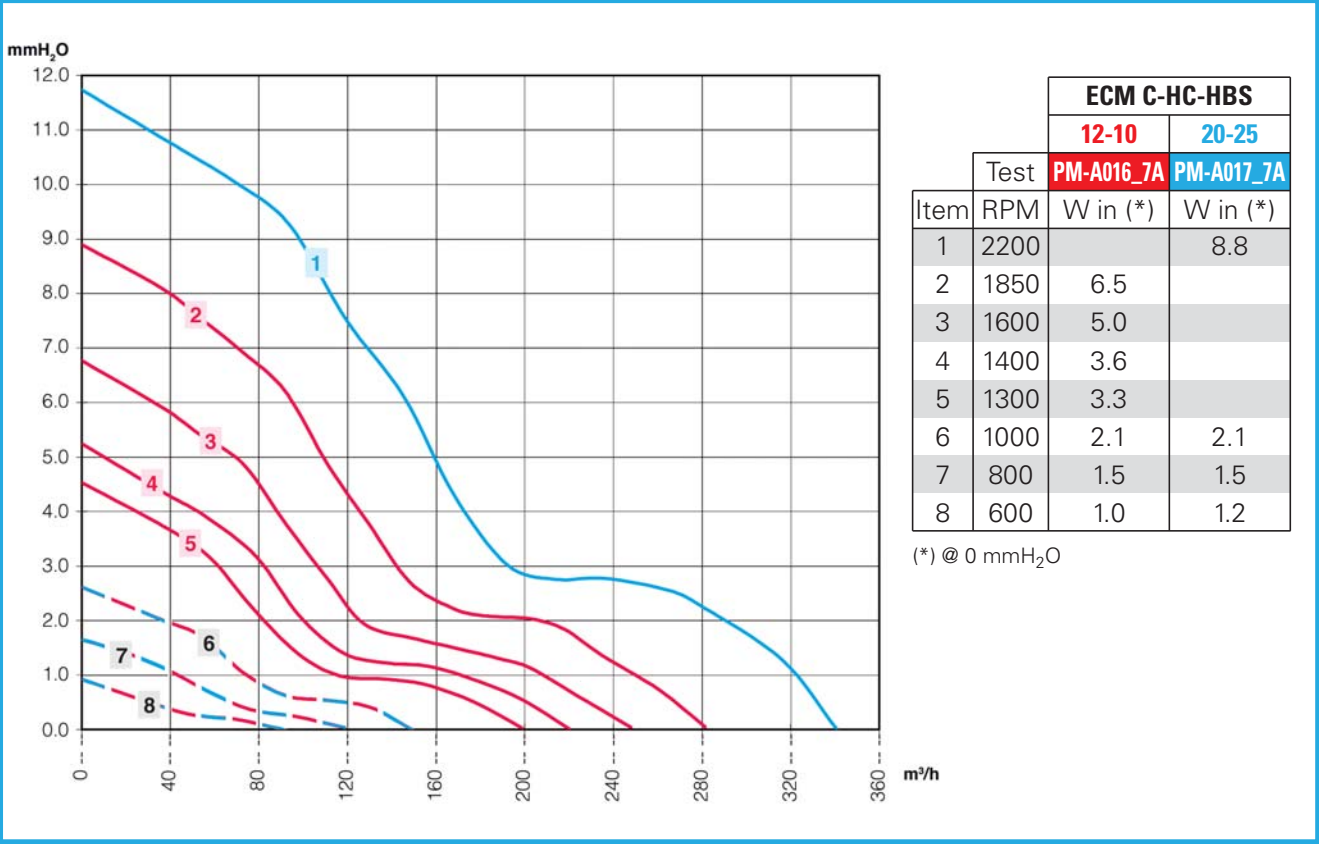
ECM C-HC-HBS
20-25
25-25
30-25



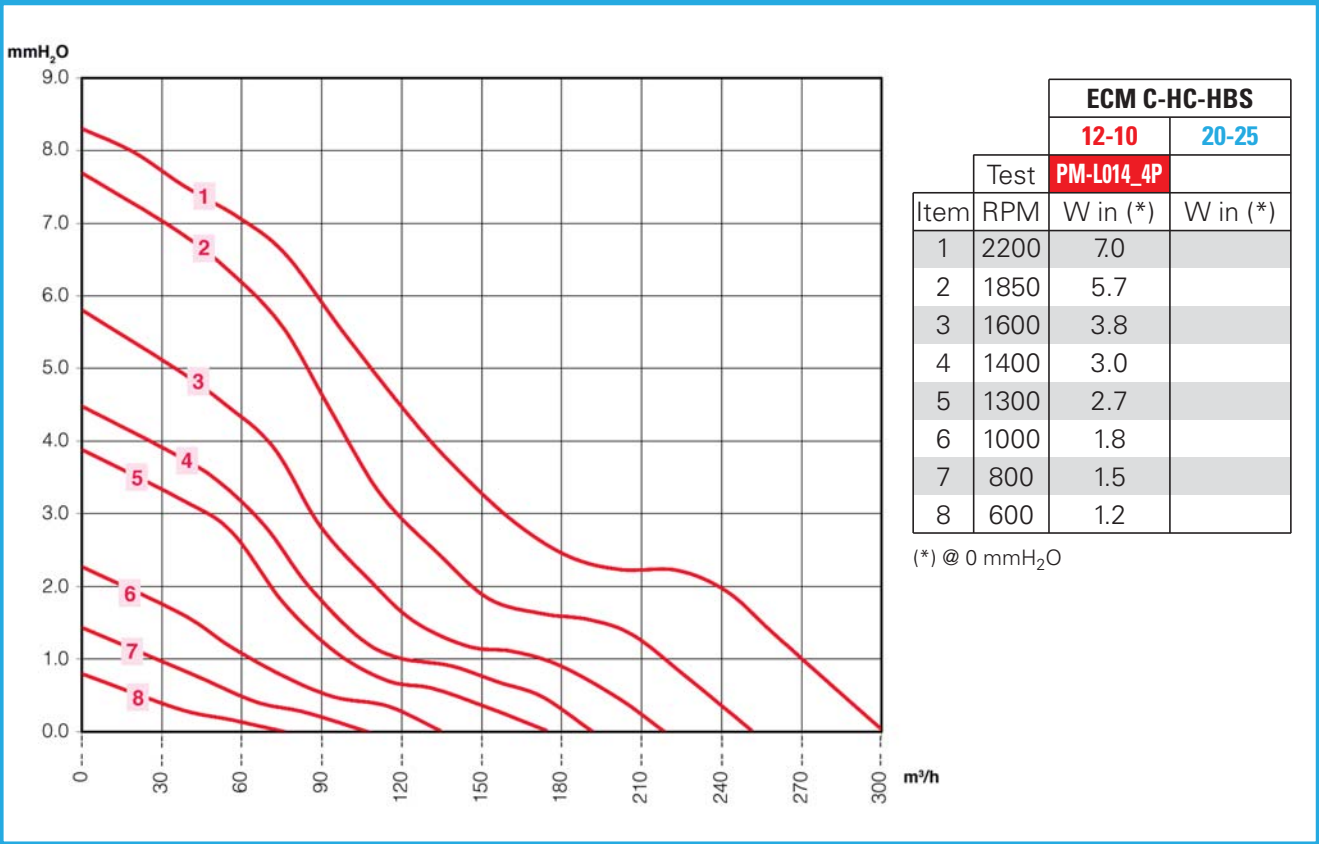
Fan blade air performance curves Ø 154x22°



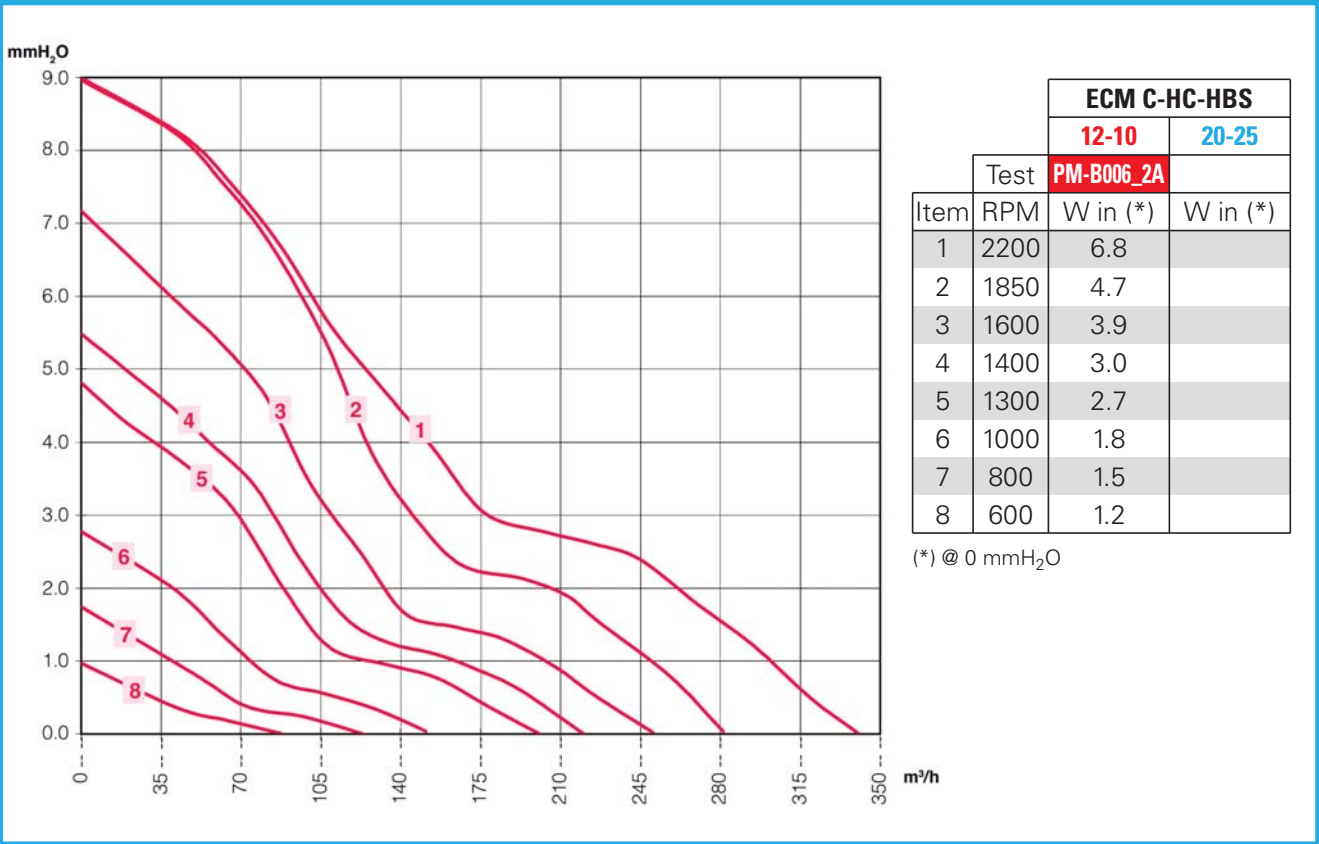
Fan blade air performance curves Ø 154x34°



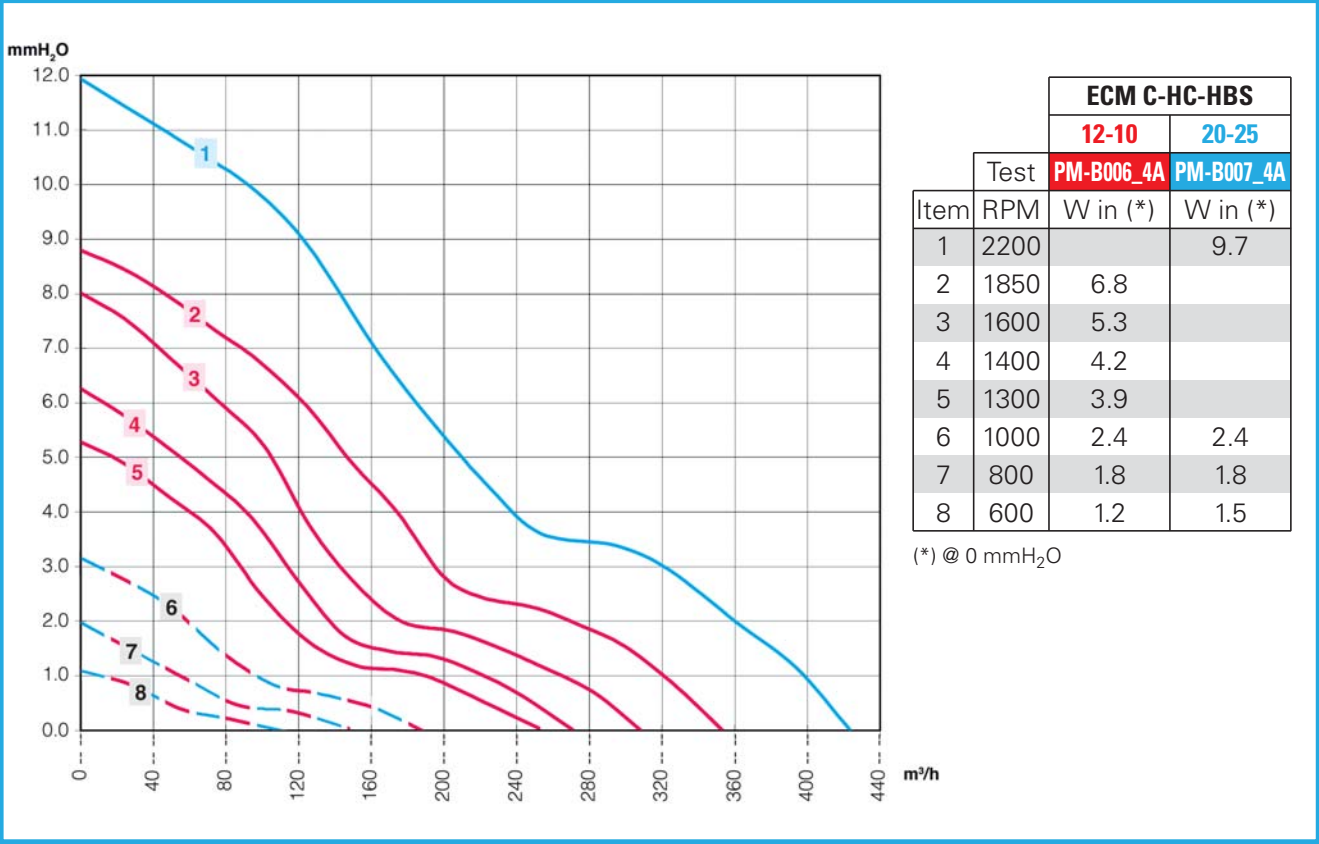
Fan blade air performance curves Ø 154x28°



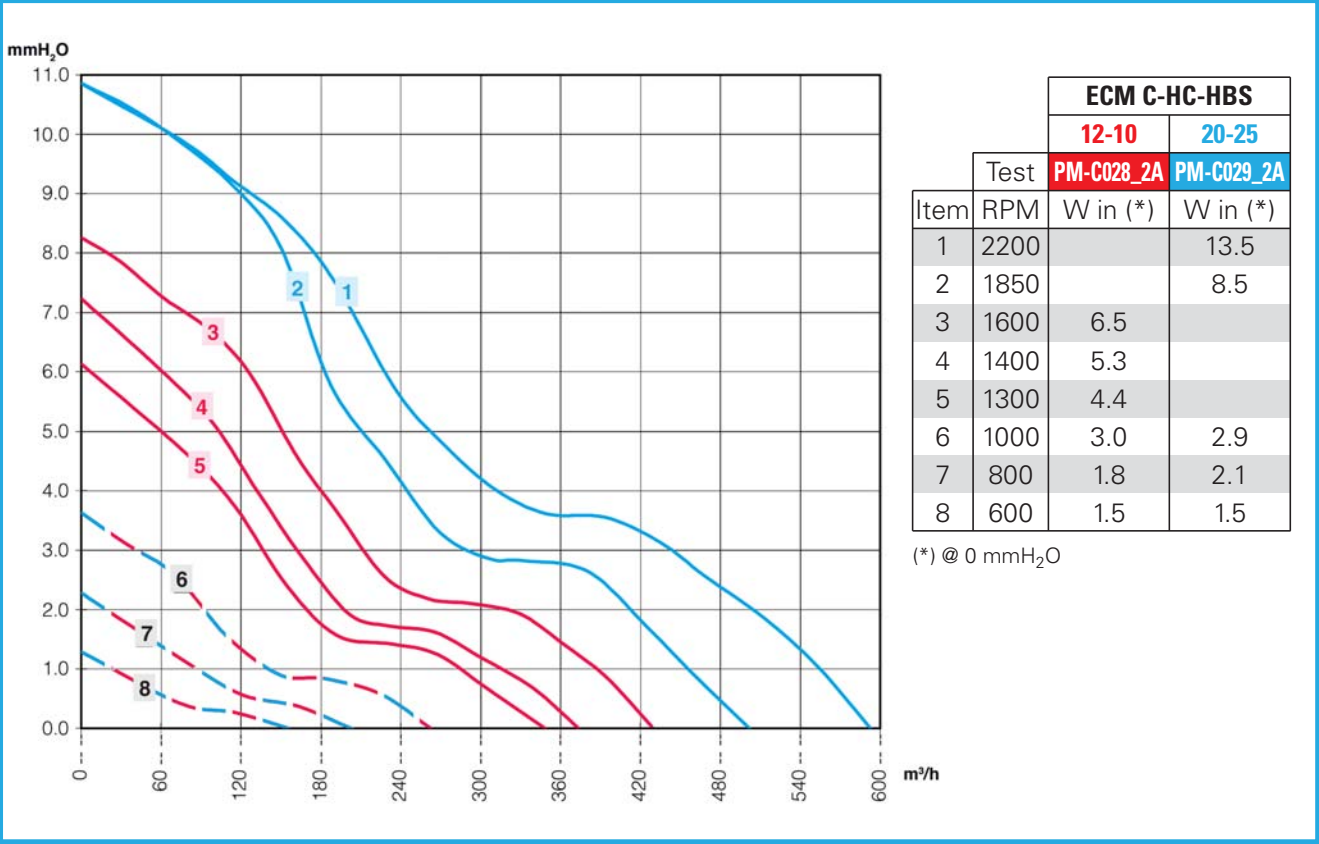
Fan blade air performance curves Ø 172x22°



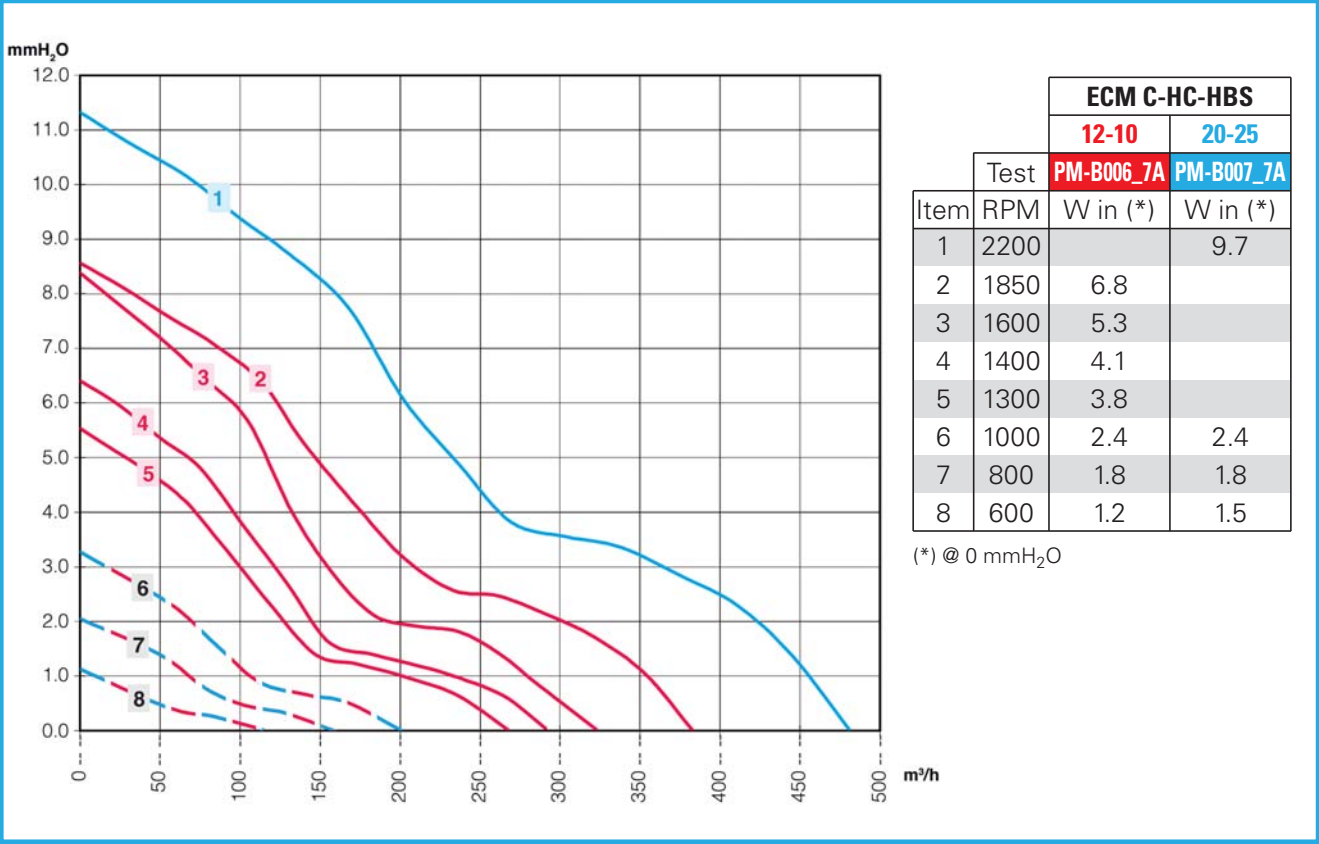
Fan blade air performance curves Ø 172x28°



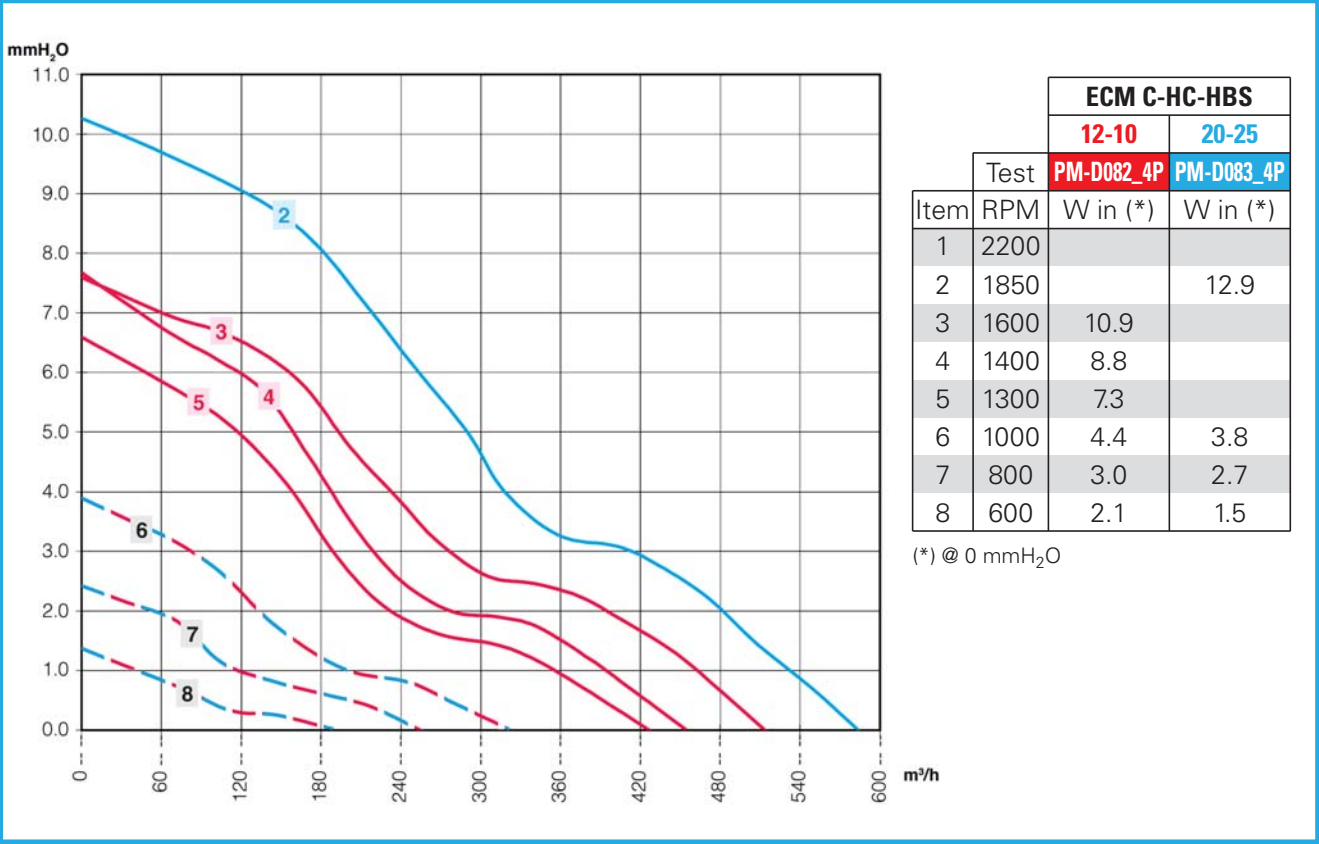
Fan blade air performance curves Ø 200x22°



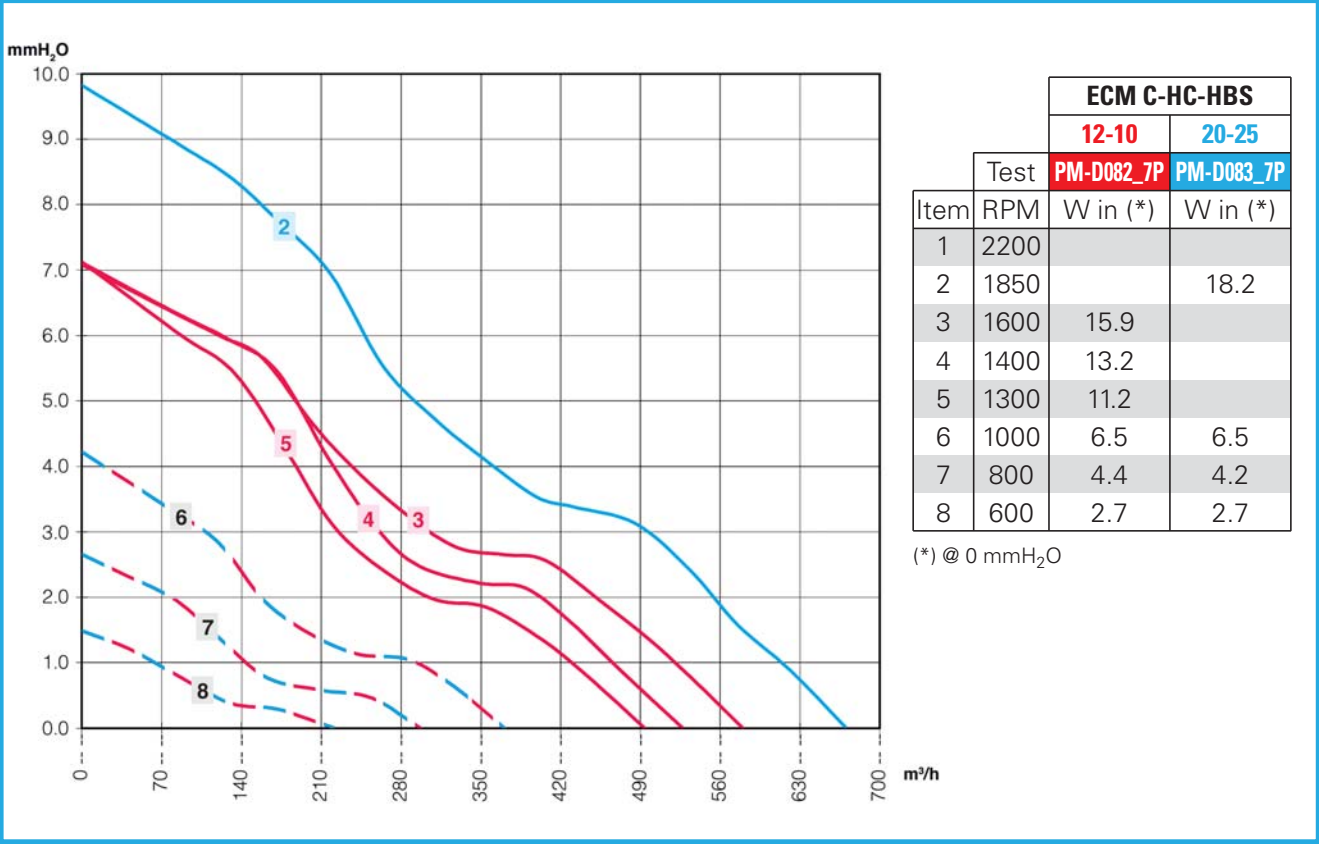
Fan blade air performance curves Ø 172x34°



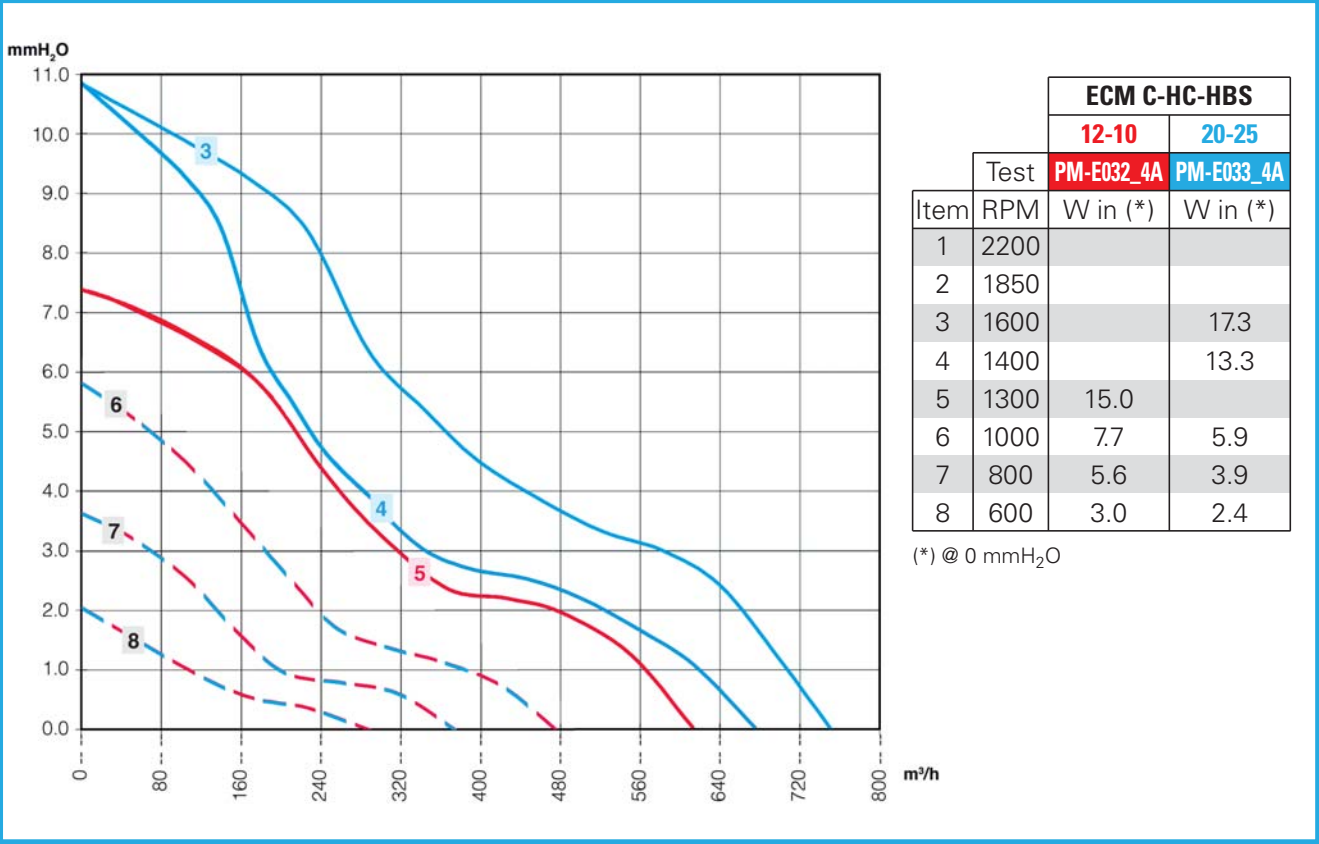
Fan blade air performance curves Ø 200x28°



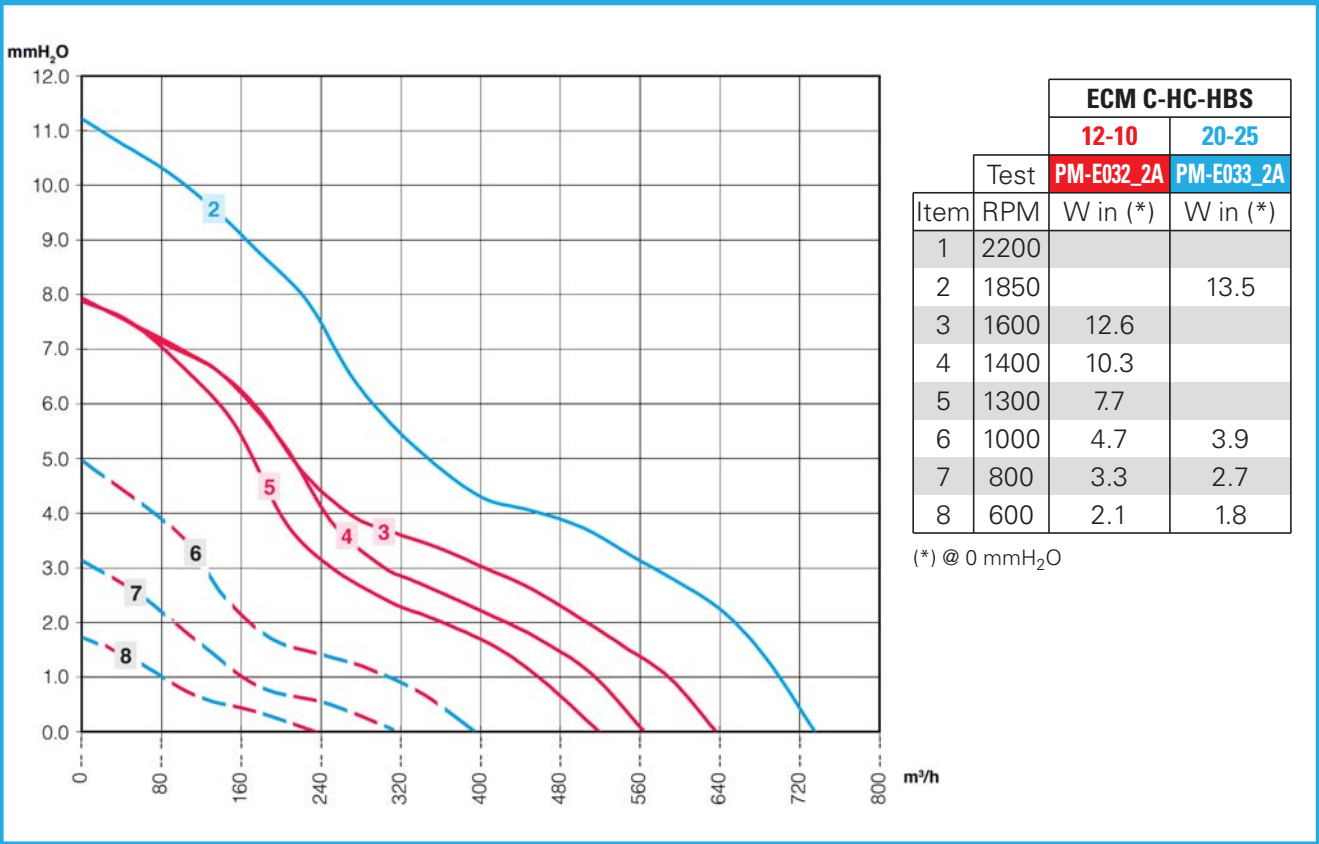
Fan blade air performance curves Ø 200x34°



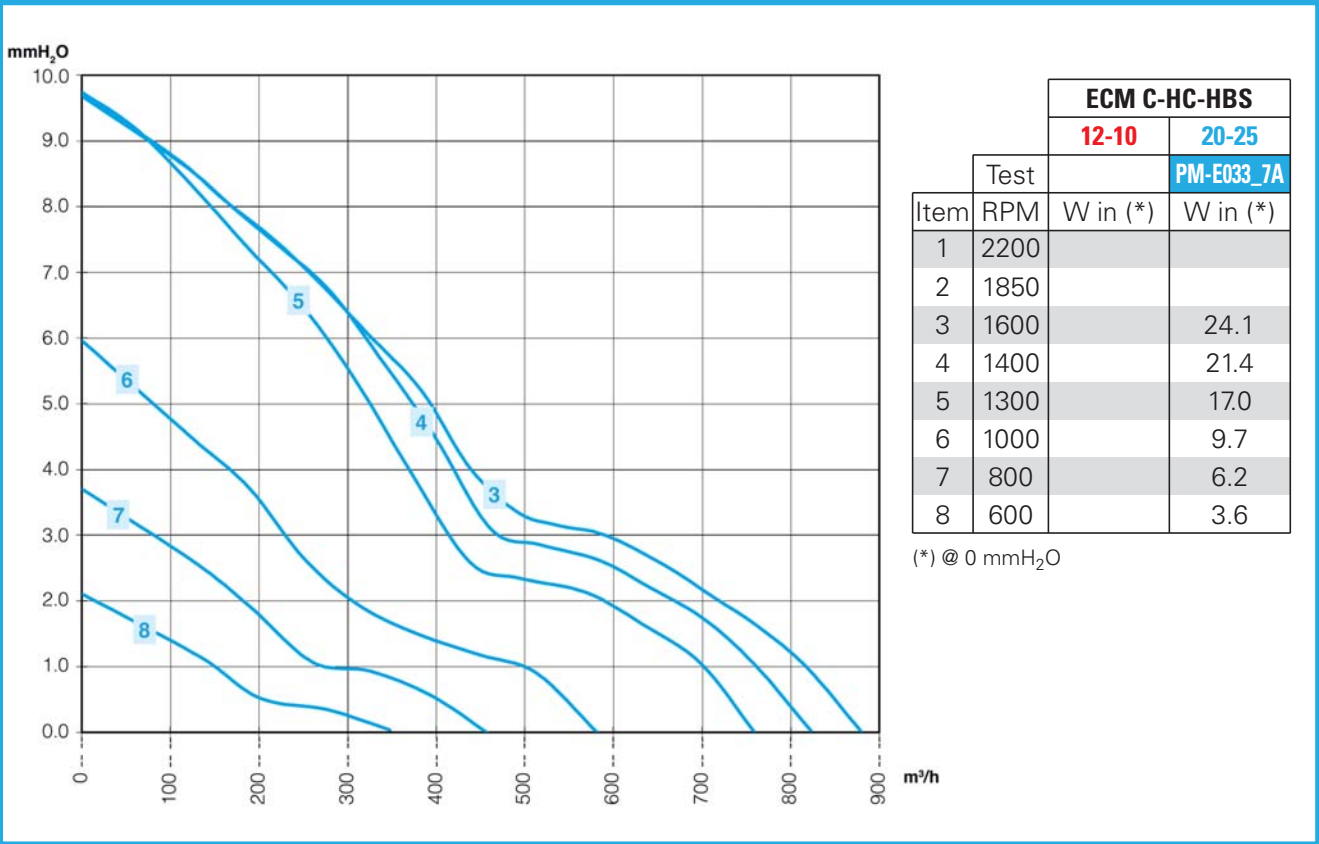
Fan blade air performance curves Ø 230x28°



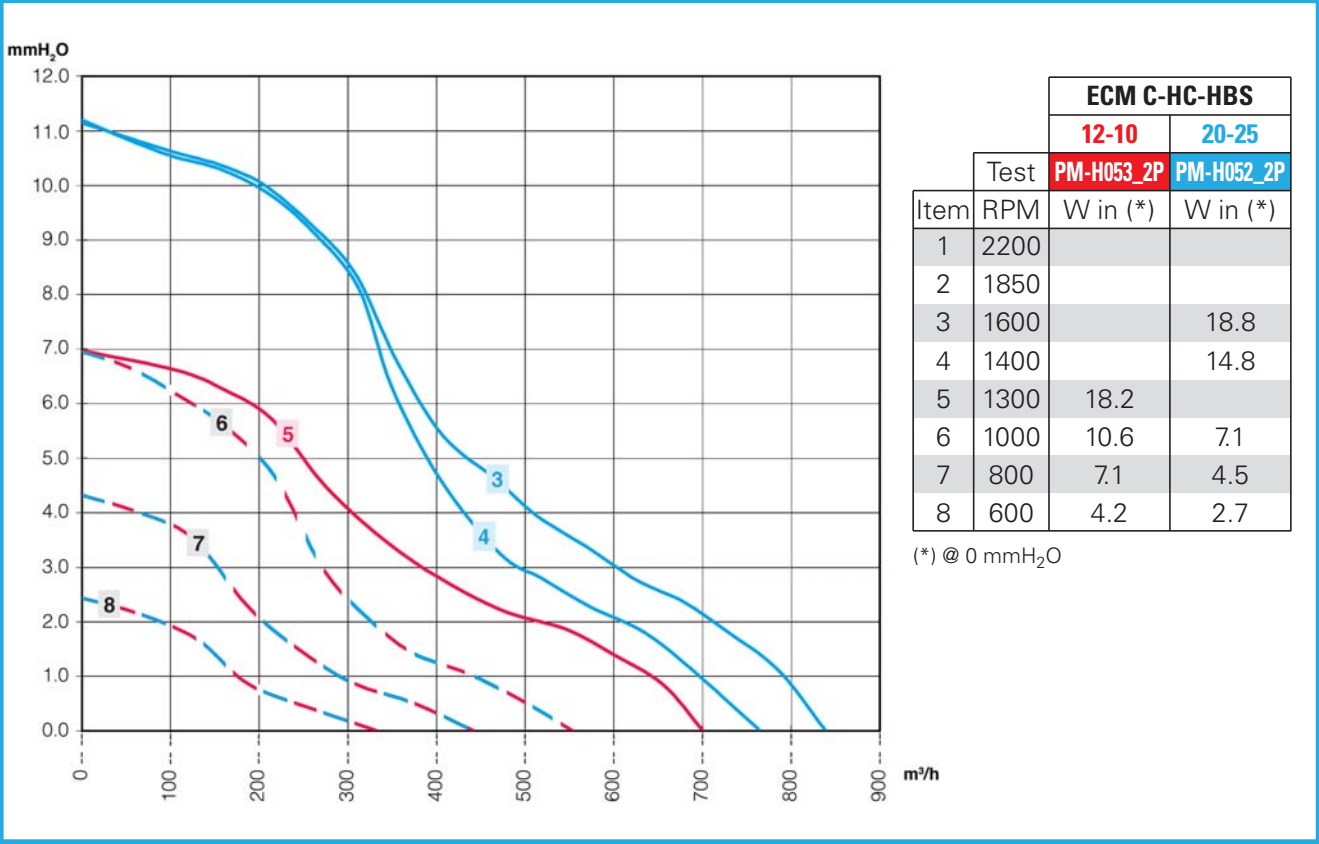
Fan blade air performance curves Ø 230x22°



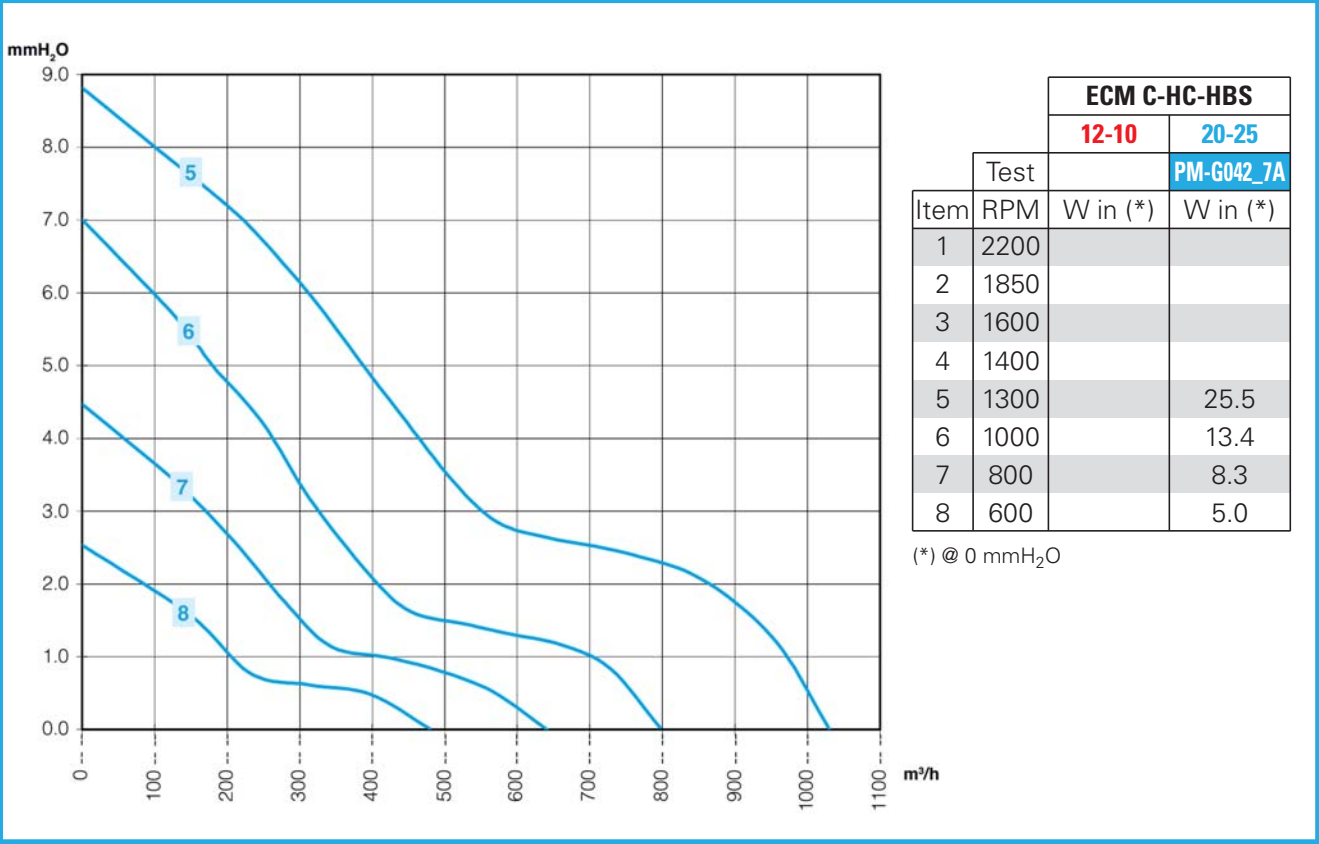
Fan blade air performance curves Ø 230x34°



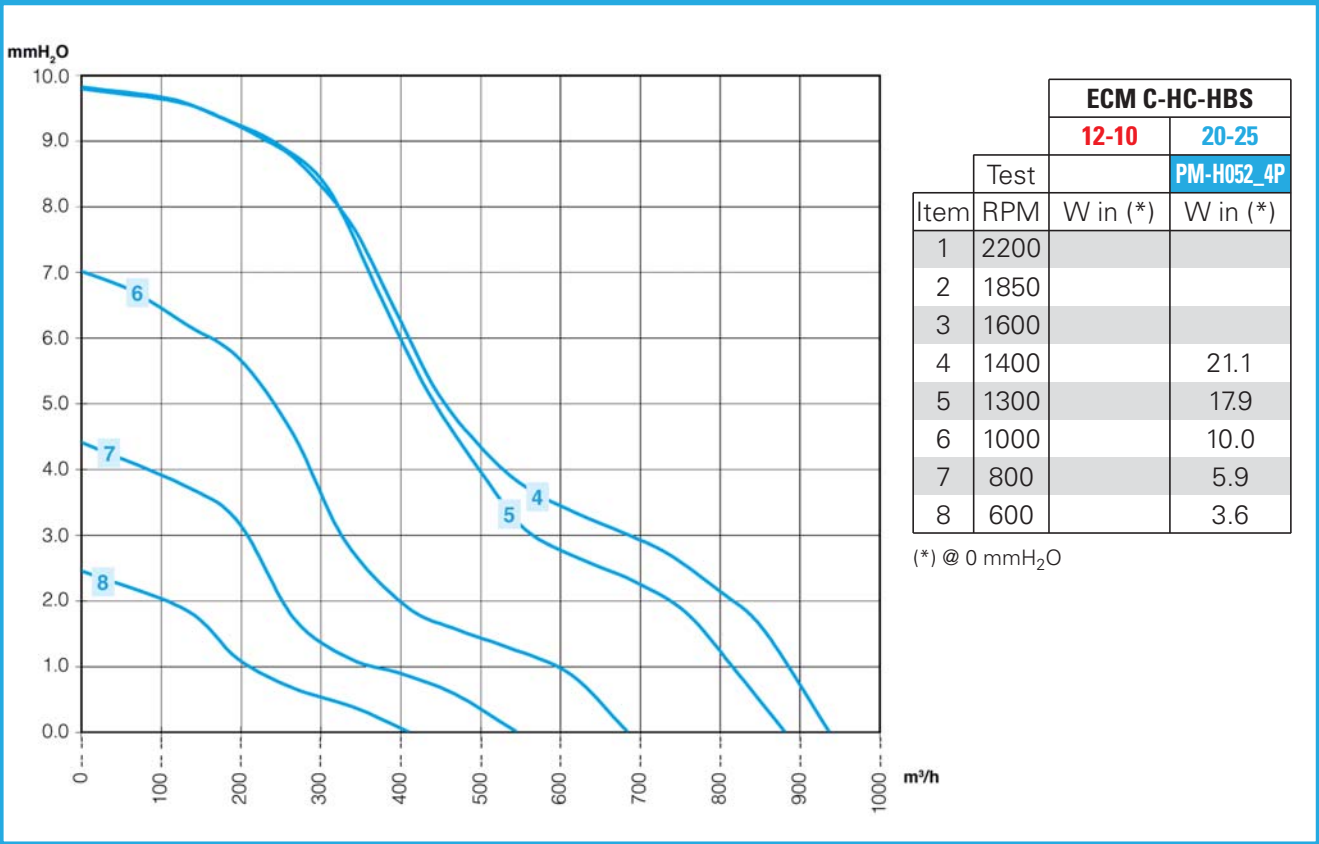
Fan blade air performance curves Ø 254x22°



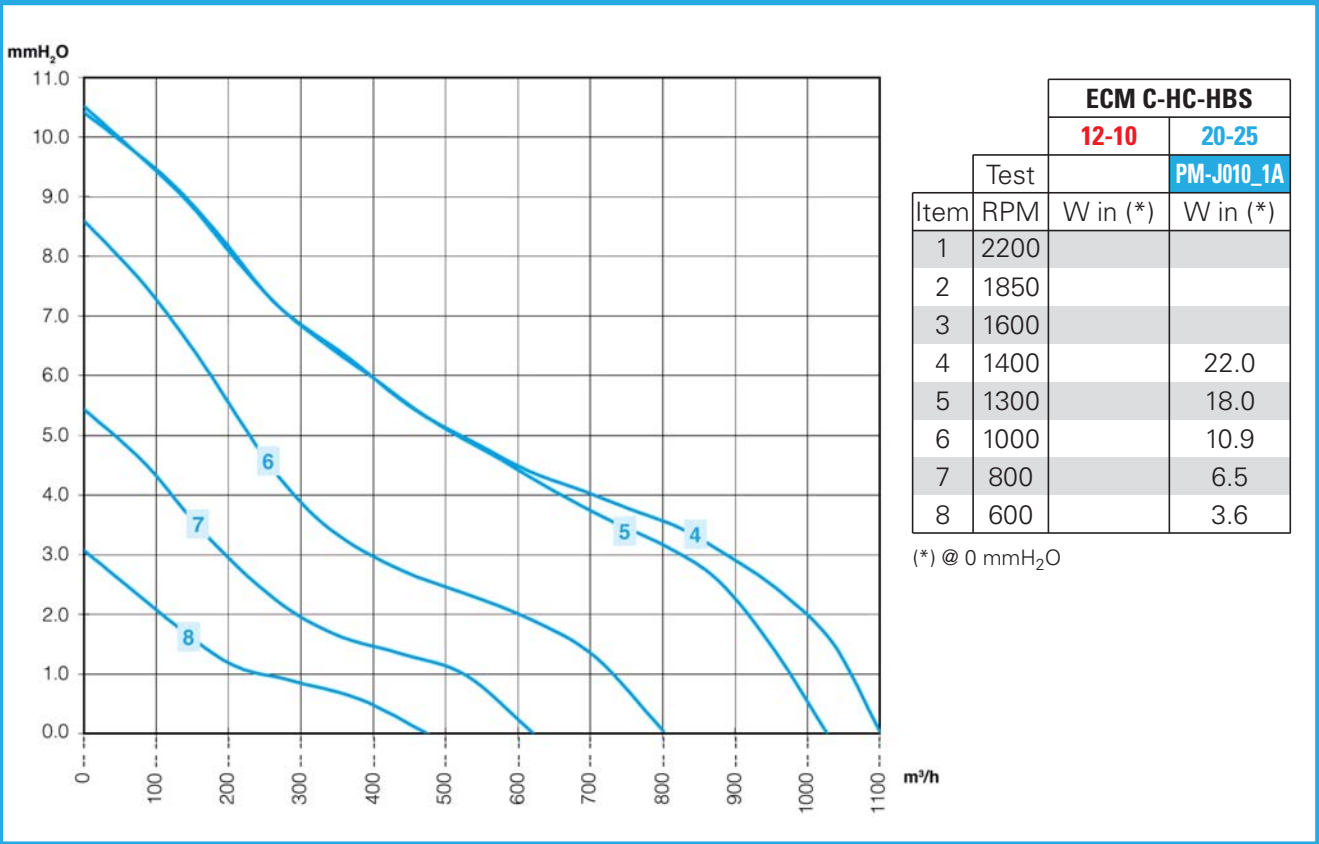
Fan blade air performance curves Ø 254x34°



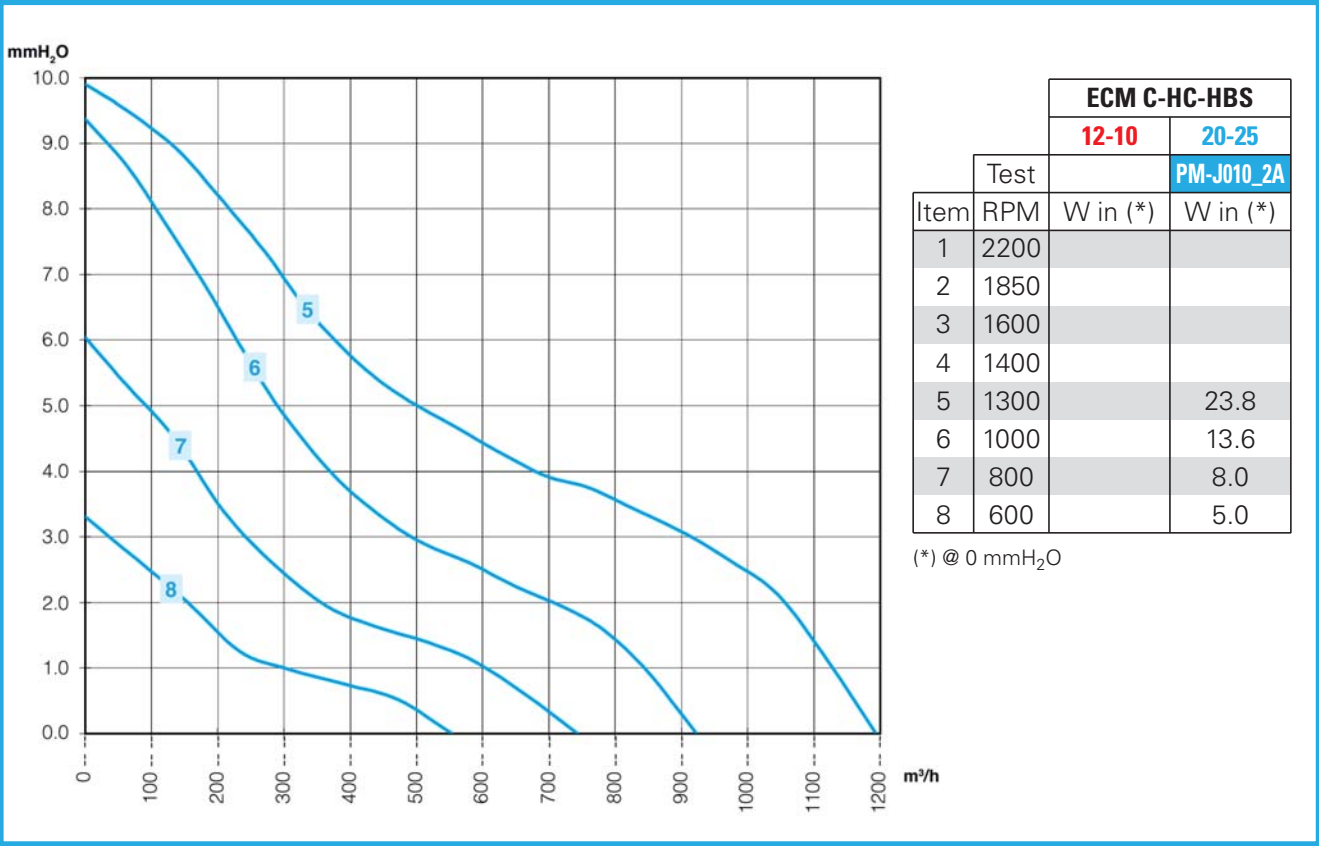
Fan blade air performance curves Ø 254x28°



Fan blade air performance curves Ø 300x19°



Fan blade air performance curves Ø 300x22°



SENTINEL

- Deliveries
- Project developed on the existing motor design = full plenum compatibility
 - Cabling simplified and standardized on existing plug = time efficient retrofitting
 - RPM/T/Torque monitoring = predictive maintenance
 - On-the-cabinet Andon signal = easier and on-the-store monitoring
 - Full compatibility with existing monitoring systems = seamless embedding
 - Precise indication of cabinet and motor within to monitoring system

