

ENKELBOX EEC



CENTRIFUGAL BOX WITH EXTERNAL ROTOR EC MOTOR

MANUFACTURING FEATURES

- Inline ventilation box made of galvanized steel for duct connection.
- Plug-type fan with self-cleaning impeller with back curved blades (backward), high performance and single inlet, direct driven. Dynamically balanced to minimize noise and vibration. Polyamide reinforced impeller for models 155 and 190 and aluminum impellers for the rest.
- High efficiency (IE4 for three phase motors and IE5 for single motors), low noise external rotor EC motor. Speed control through a 0-10V or PWM signal. Single-phase 230V 50/60Hz power supply for models 155 to 310 and three-phase 400V 50/60Hz for sizes 355 and 450. IP54 motor and class B insulation.
- The box is supplied with a safety switch with potentiometer for a total regulation
- Circular suction mouth to facilitate duct connection. Open outlet.

APPLICATIONS

Designed for duct installation, they are indicated for:

- Air renewals in simple flow residential, commercial and controlled mechanical ventilation (CMV) applications.

Working temperature range from -20°C to 60°C.

UNDER REQUEST

- Fan (size between 250 and 450) with k-factor reading.

Accessories



REGC



**TBIC
ENKEL
BOX-E
NKELB
OX
PLUS**



**TIC
ENKEL
BOX-E
NKELB
OX
PLUS**



VISC

Technical data

Single-phase motor

Code	Model	R.P.M.	Rated I. A 230V	Rated power kW	Max. Airflow m ³ /h	Sound db (A)**	Weight kg	Connect. diagram
ENKBEC155	ENKELBOX 155 EEC	3950	0,25	0,06	450	-	6,50	1
ENKBEC190	ENKELBOX 190 EEC	3570	0,6	0,09	740	-	8,60	1
ENKBEC250	ENKELBOX 250 EEC	2500	1,00	0,15	1.590	-	14	1
ENKBEC310	ENKELBOX 310 EEC	2350	1,7	0,36	3.060	-	22,50	2

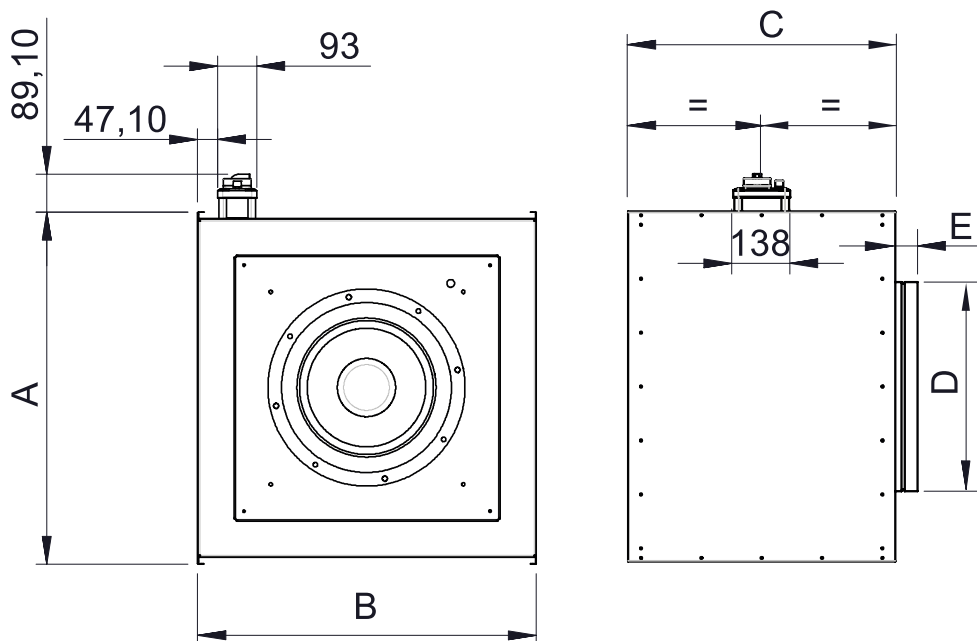
Three-phase motor

Code	Model	R.P.M.	Rated I. A 400V	Rated power kW	Max. Airflow m ³ /h	Sound db (A)**	Weight kg	Connect. diagram
ENKBEC355	ENKELBOX 355 EEC	2100	1,63	0,99	4.750	-	34	3
ENKBEC450	ENKELBOX 450 EEC	1450	1,67	1,01	6.730	-	51	3

Notes:

** Total sound pressure level at the point of maximum flow measured in dB(A) in the suction measured in free field at a distance of 6m from the source

Dimensions



Model	A	B	C	D	E
ENKELBOX 155 EEC	283	314	270	160	54
ENKELBOX 190 EEC	353	384	270	200	54
ENKELBOX 250 EEC	453	484	363.5	300	54
ENKELBOX 310 EEC	553	584	447	315	54
ENKELBOX 355 EEC	653	684	565	400	64
ENKELBOX 450 EEC	803	834	645	500	64


Wiring diagram

Wiring diagram N° 1

Nº	Signal Señal	Colour Color	Specification Especificación
1	L	Brown Marrón	AC 220V/50Hz
2	N	Blue Azul	AC 220V/50Hz
3	Pe	Yellow-Green Amarillo-Verde	


Nº	Signal Señal	Colour Color	Specification Especificación
1	GND	Blue Azul	
2	Vsp	Yellow Amarillo	0-10 V/PWM
3	Vcc	Red Rojo	DC 10V
4	FG	White Blanco	1 Pulse/R

Wiring diagram N° 2

Nº	Signal Señal	Colour Color	Specification Especificación
1	L	Brown Marrón	AC 220V-50/60 Hz
2	N	Blue Azul	AC 220V-50/60 Hz
3	Pe	Yellow-Green Amarillo-Verde	

Nº	Signal Señal	Colour Color	Specification Especificación
1	GND	Blue Azul	
2	Vsp	Yellow Amarillo	0-10 V/PWM
3	Vcc	Red Rojo	DC 10V
4	FG	White Blanco	12 Pulse/R

Wiring diagram N° 3

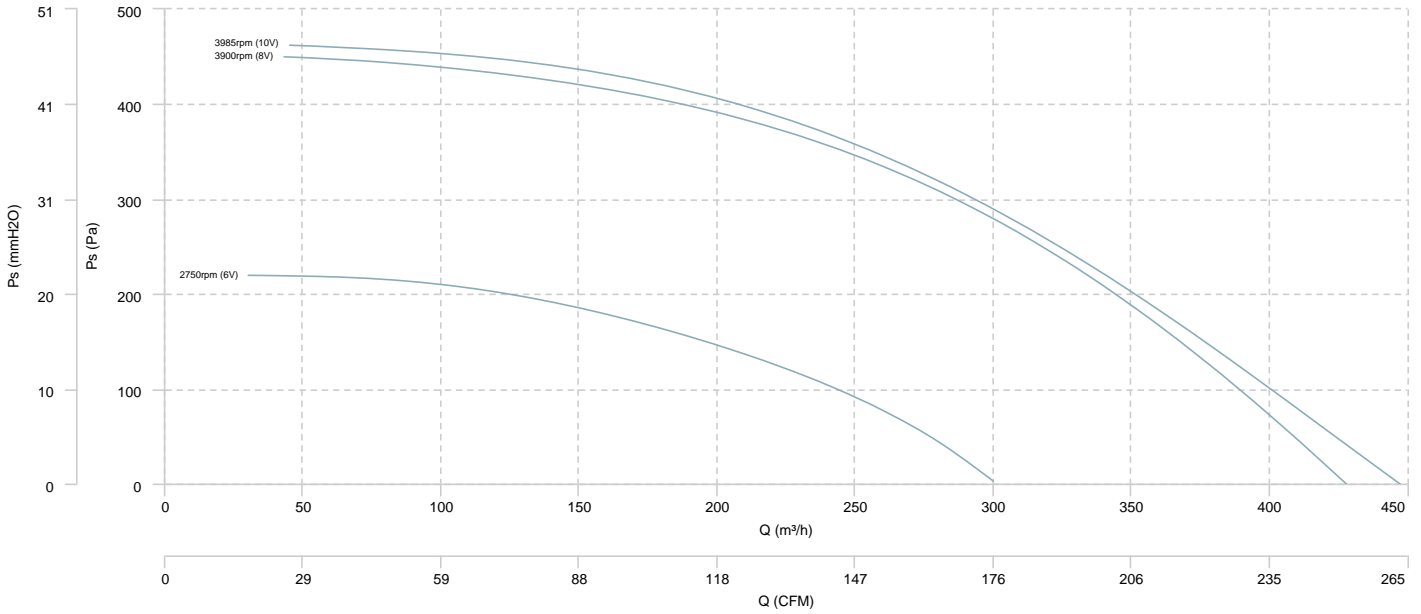
N°	Signal Señal	Colour Color	Specification Especificación
1	L1	Black Negro	AC380V-50/60Hz
2	L2	Black Negro	AC380V-50/60Hz
3	L3	Black Negro	AC380V-50/60Hz
4	Pe	Yellow-Green Amarillo-Verde	

N°	Signal Señal	Colour Color	Specification Especificación
1	Vcc	Red Rojo	DC10V
2	Vsp	Yellow Amarillo	0-10VDC/PWM
3	GND	Blue Azul	
4	FG	White Blanco	12 Pulse/R

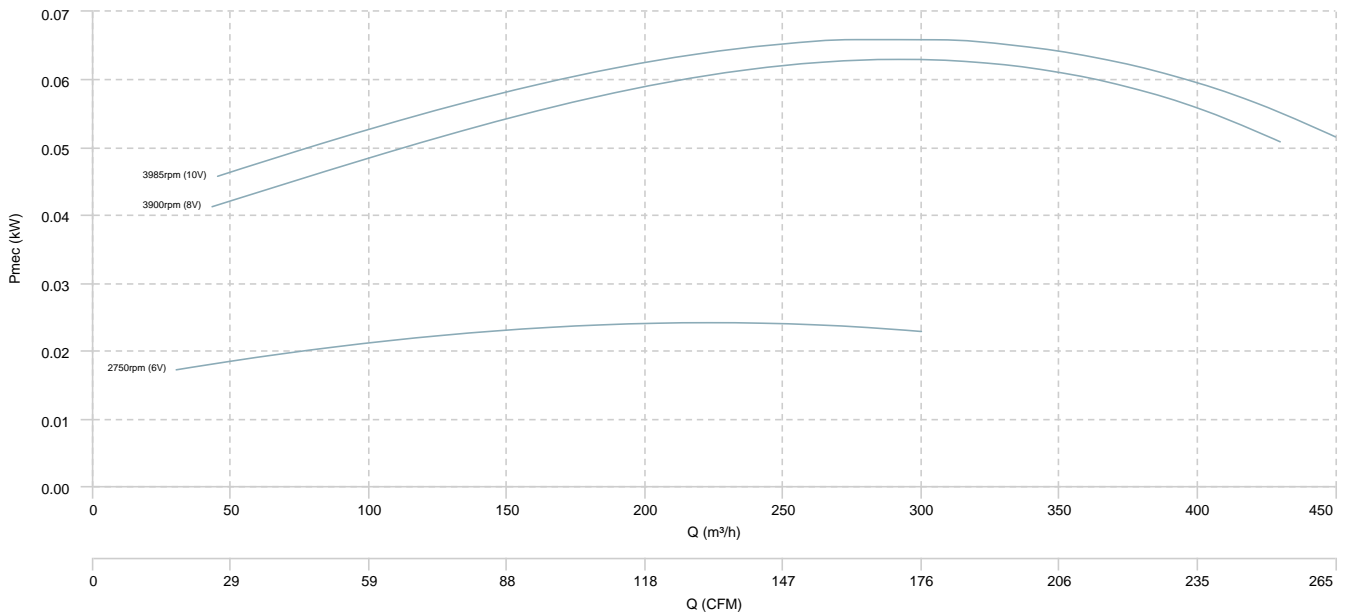
CHARACTERISTIC CURVE

ENKELBOX 155 EEC

AIR FLOW - PRESSURE

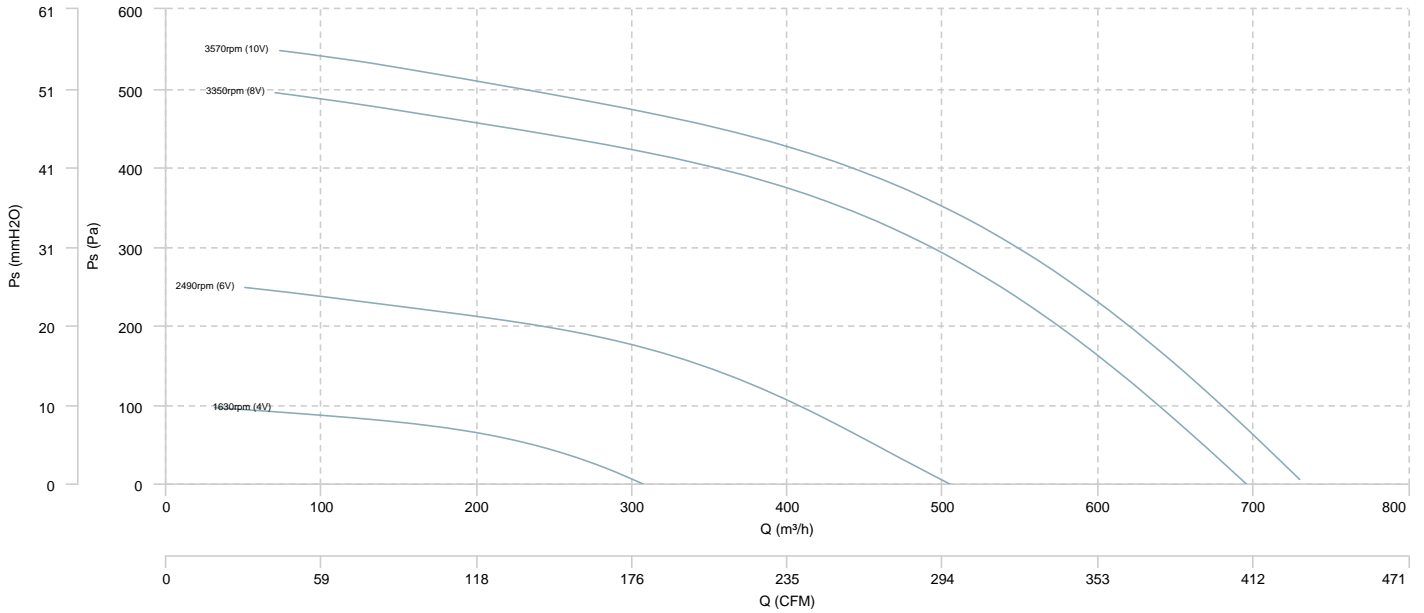


AIR FLOW - MECHANICAL POWER

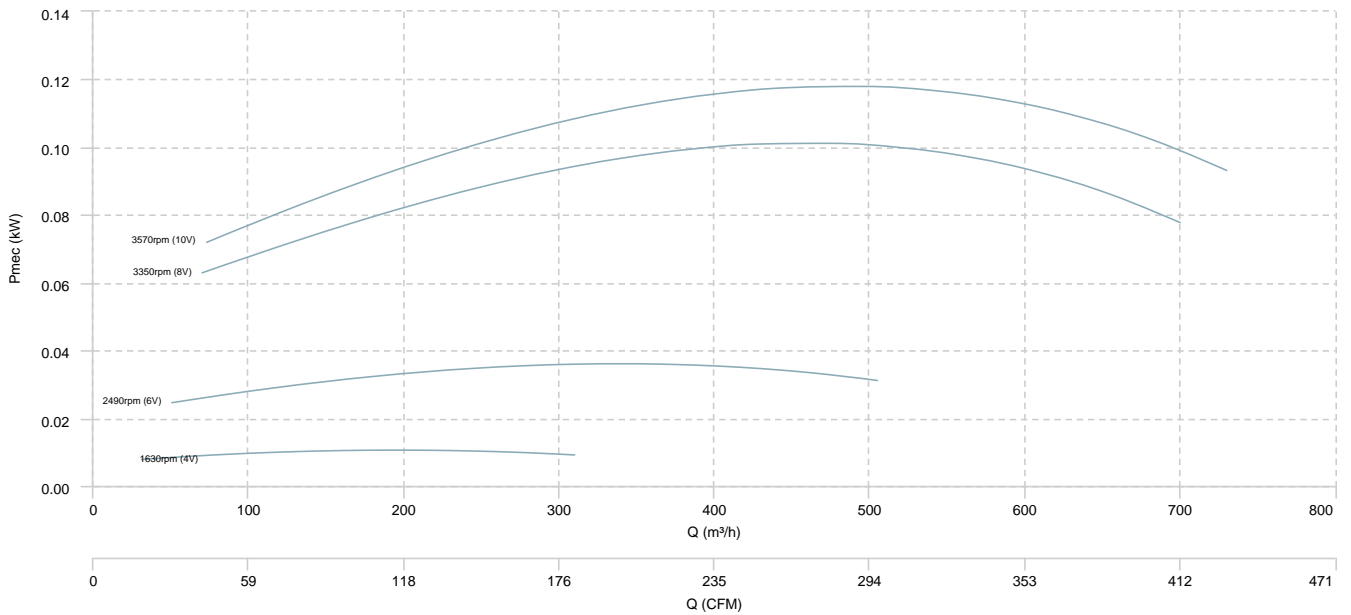


ENKELBOX 190 EEC

AIR FLOW - PRESSURE

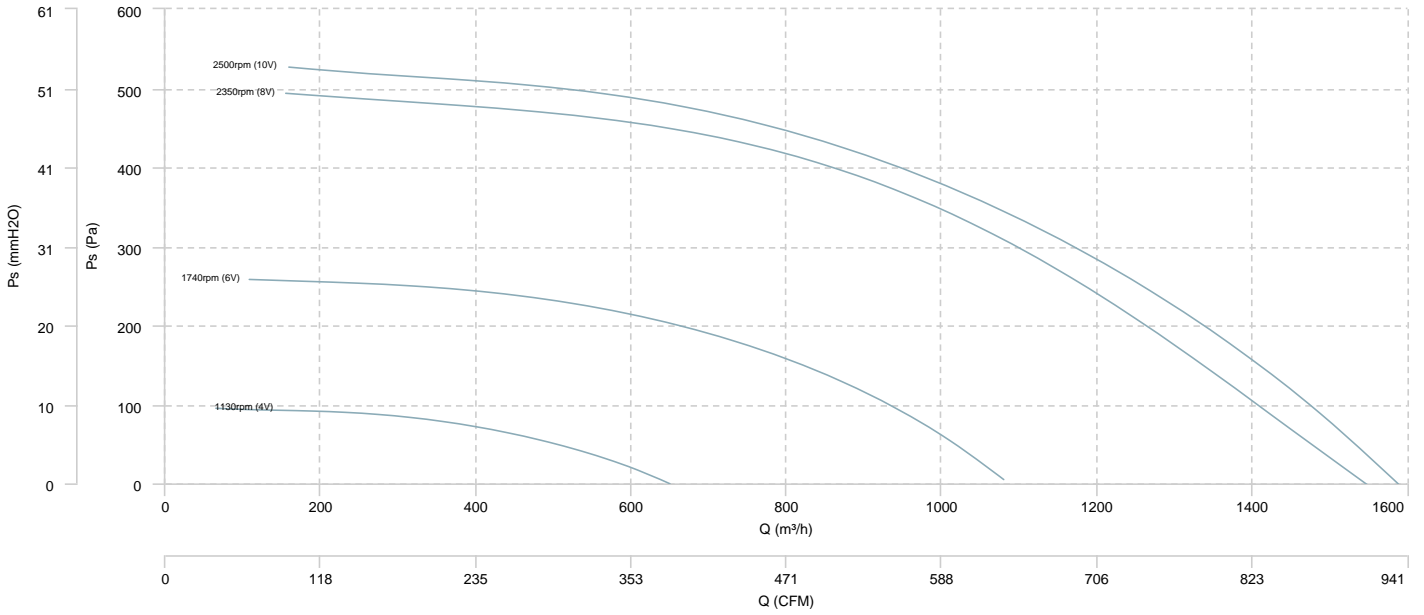


AIR FLOW - MECHANICAL POWER

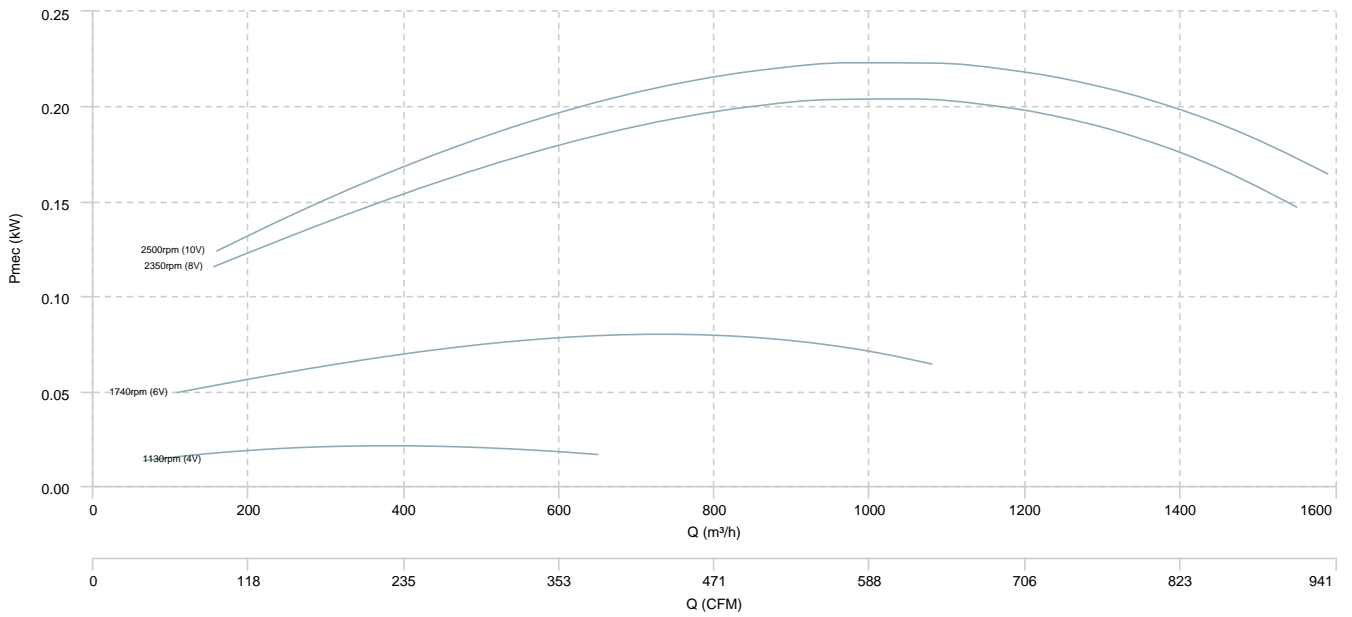


ENKELBOX 250 EEC

AIR FLOW - PRESSURE

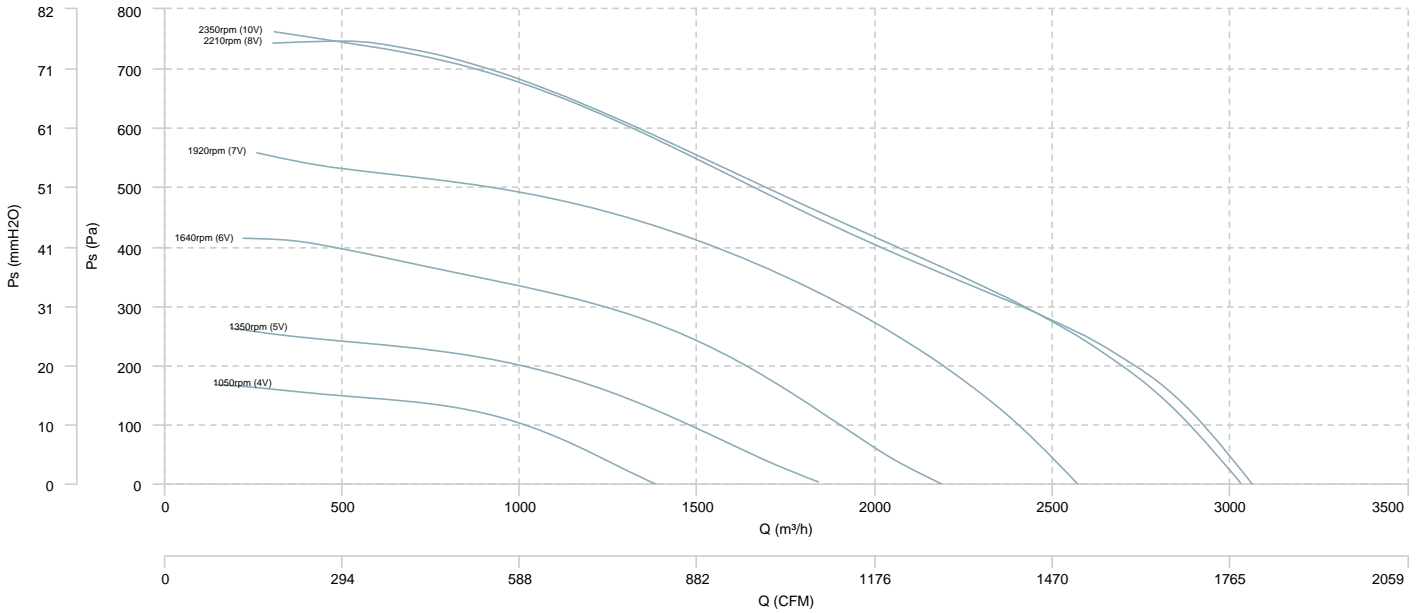


AIR FLOW - MECHANICAL POWER

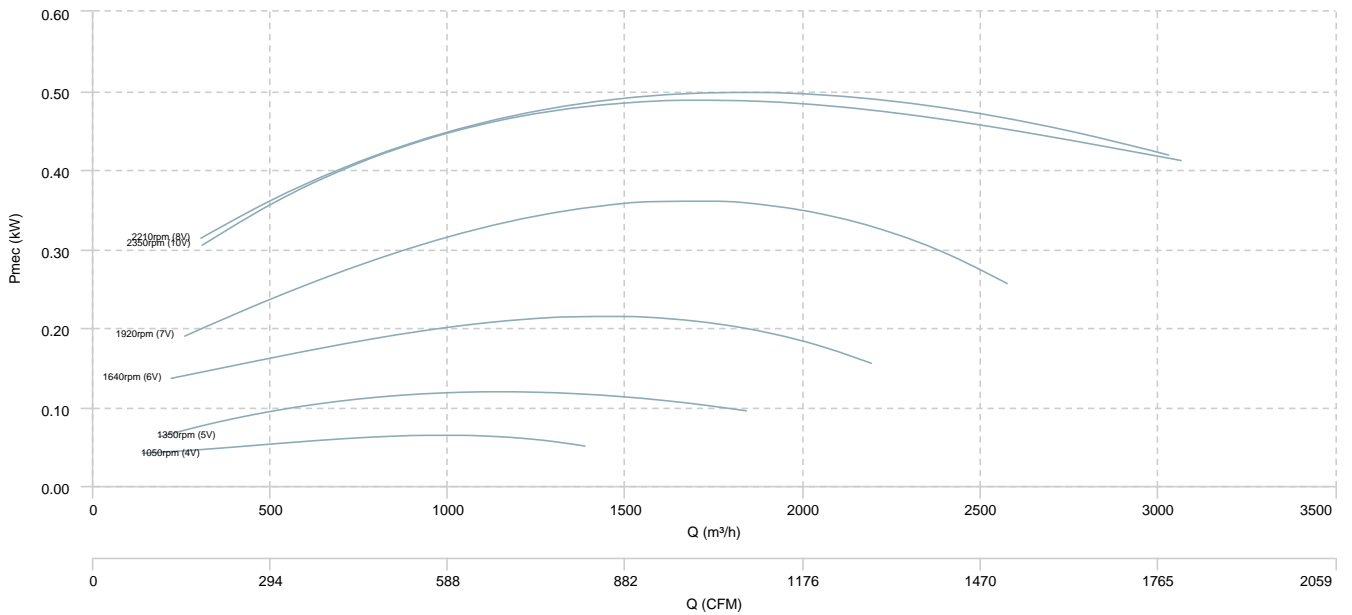


ENKELBOX 310 EEC

AIR FLOW - PRESSURE

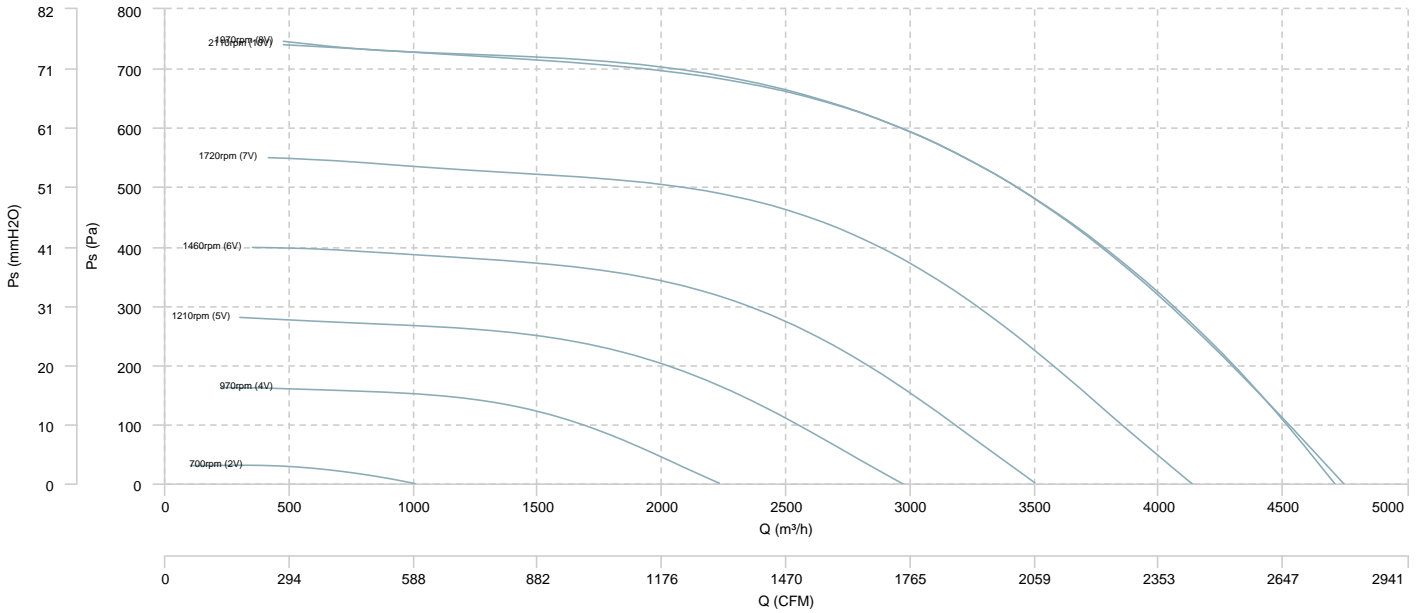


AIR FLOW - MECHANICAL POWER

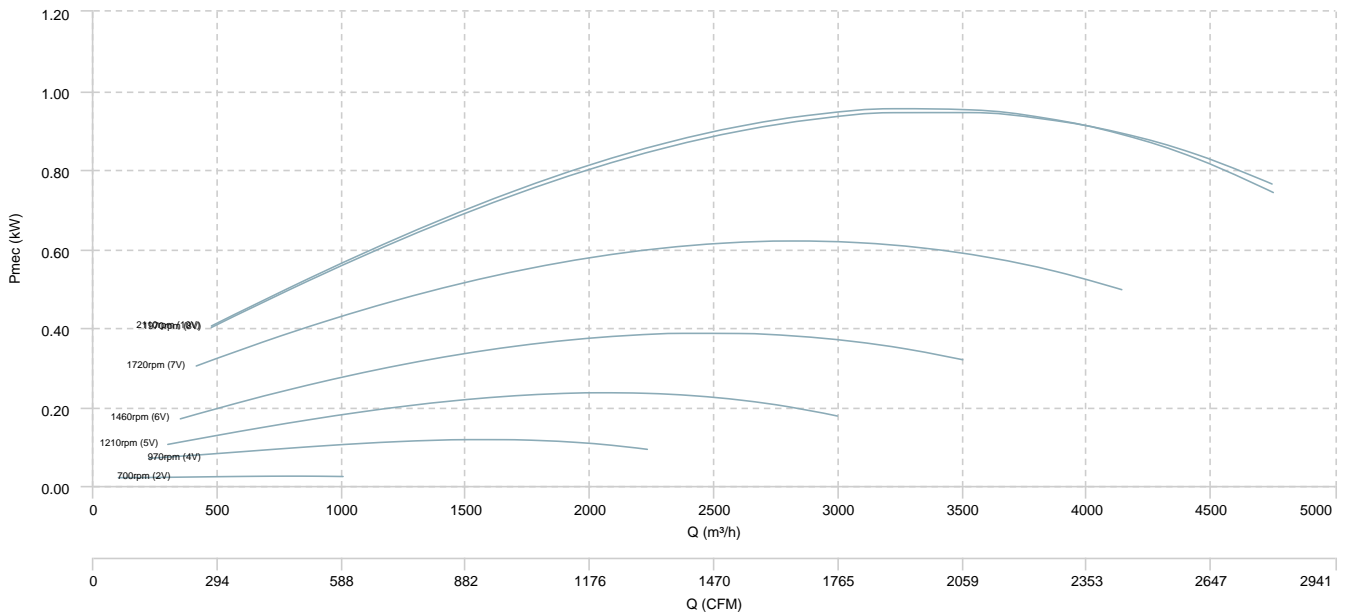


ENKELBOX 355 EEC

AIR FLOW - PRESSURE

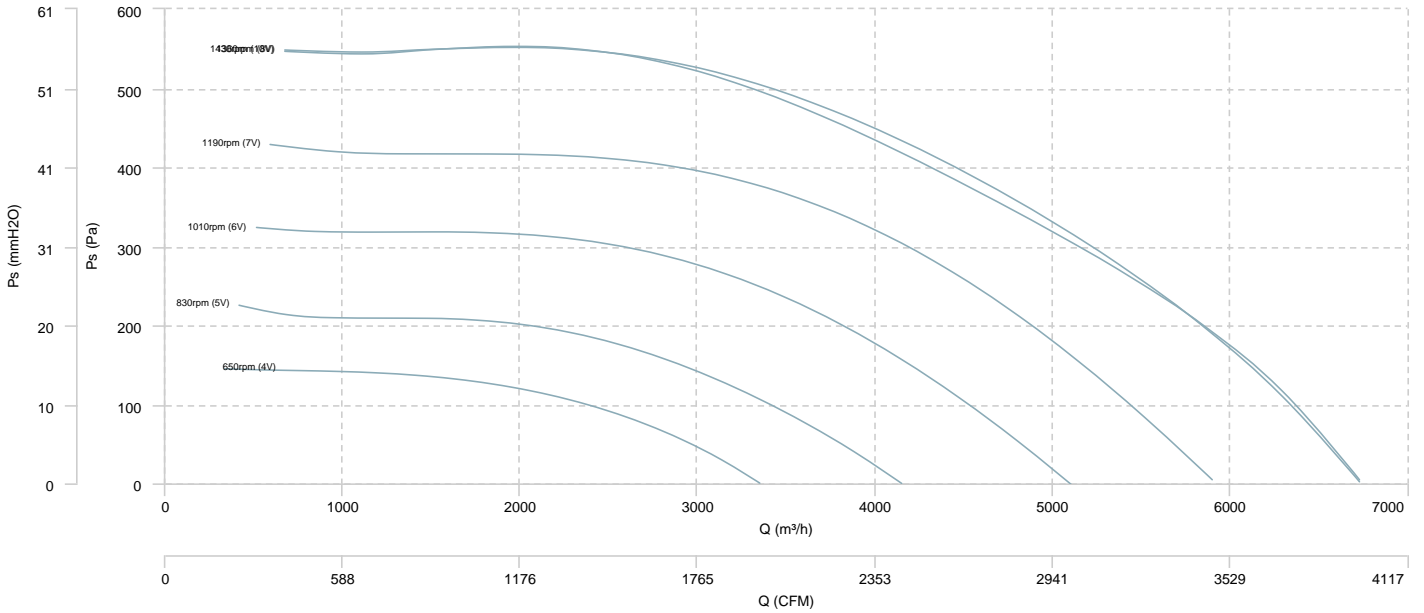


AIR FLOW - MECHANICAL POWER

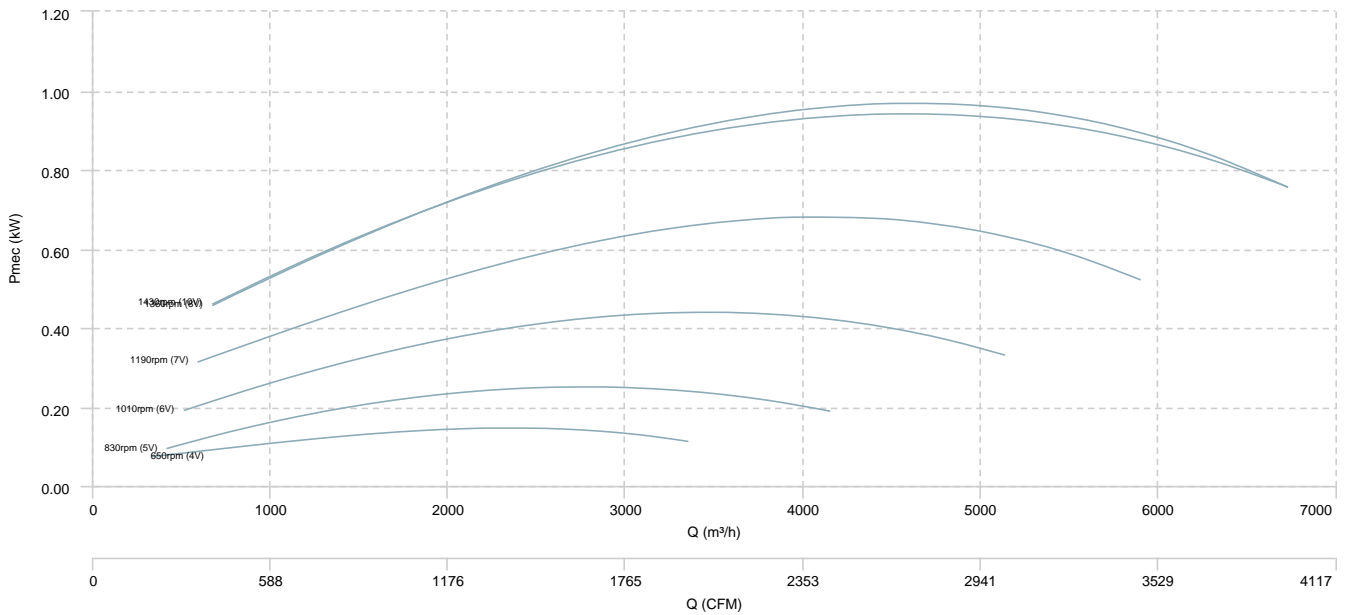


ENKELBOX 450 EEC

AIR FLOW - PRESSURE



AIR FLOW - MECHANICAL POWER



Sound data

Sound power Lw dB (A)										
Model		63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Total
ENKELBOX 155 EEC (2750rpm (6V))	Radiated	30	20	37	49	54	59	49	42	61
ENKELBOX 190 EEC (1630rpm (4V))	Radiated	6	13	28	41	49	52	45	37	54
ENKELBOX 250 EEC (1130rpm (4V))	Radiated	4	18	42	49	52	51	43	29	56
ENKELBOX 310 EEC (1050rpm (4V))	Radiated	2	21	37	47	48	43	35	27	51
ENKELBOX 355 EEC (700rpm (2V))	Radiated	9	25	42	47	49	43	35	25	53
ENKELBOX 450 EEC (650rpm (4V))	Radiated	19	35	39	49	51	44	34	26	53

Notes:

* To calculate the sound power level at different rpm from those indicated above, use the following formula:

$$Lw \text{ dB(A)}_{rpmA} = Lw \text{ dB(A)}_{rpmB} + 52.5 \cdot \log_{10} \frac{rpmA}{rpmB}$$