

## ENKELBOX FILTER EEC



### CENTRIFUGAL BOX WITH FILTER AND EXTERNAL ROTOR EC MOTOR

#### MANUFACTURING FEATURES

- Inline ventilation box made of galvanized steel for duct connection. Box with particle filter(s) integrated. The box is available with a filter ISO Coarse $\geq$ 60% (G4) or with double filtration satge ISO Coarse $\geq$ 60% (G4) + ePM1 $\geq$ 50% (F7). Easy filter maintance due to Removable filter holder frame from both from the top and from de bottom. Optimized air intake to maximize performance.
- 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, 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



**CFF**



**CHEF**



**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 <sup>3</sup> /h	Sound db (A)**	Weight kg	Connect. diagram
ENKBEC155G4	ENKELBOX FILTER (ISO Coarse≥60%) 155 EEC	3950	0,25	0,06	415	-	7	1
ENKBEC190G4	ENKELBOX FILTER (ISO Coarse≥60%) 190 EEC	3570	0,6	0,09	700	-	9	1
ENKBEC250G4	ENKELBOX FILTER (ISO Coarse≥60%) 250 EEC	2500	1,00	0,15	1.440	-	15	1
ENKBEC310G4	ENKELBOX FILTER (ISO Coarse≥60%) 310 EEC	2350	1,7	0,36	2.870	-	25	2
ENKBEC155G4F7	ENKELBOX FILTER (ISO Coarse≥60%+ePM1≥50%) 155 EEC	3950	0,25	0,06	330	-	8,50	1
ENKBEC190G4F7	ENKELBOX FILTER (ISO Coarse≥60%+ePM1≥50%) 190 EEC	3570	0,6	0,09	585	-	11	1
ENKBEC250G4F7	ENKELBOX FILTER (ISO Coarse≥60%+ePM1≥50%) 250 EEC	2500	1,00	0,15	1.065	-	18	1
ENKBEC310G4F7	ENKELBOX FILTER (ISO Coarse≥60%+ePM1≥50%) 310 EEC	2350	1,7	0,36	2.350	-	32	2

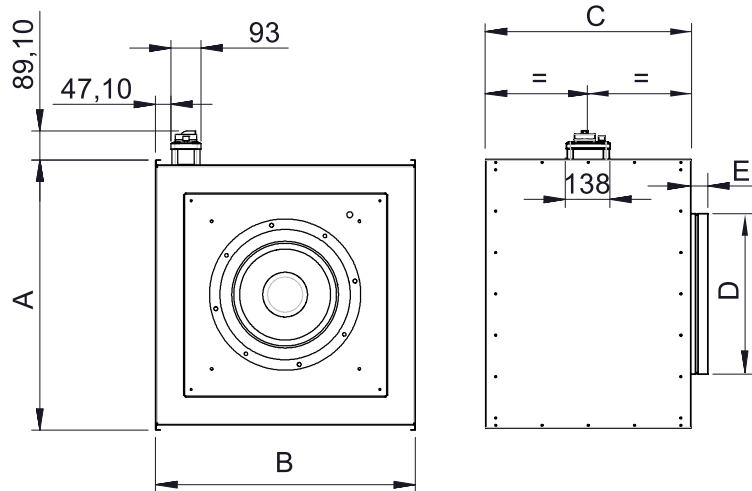
### Three-phase motor

Code	Model	R.P.M.	Rated I. A 400V	Rated power kW	Max. Airflow m <sup>3</sup> /h	Sound db (A)**	Weight kg	Connect. diagram
ENKBEC355G4	ENKELBOX FILTER (ISO Coarse≥60%) 355 EEC	2100	1,63	0,99	4.390	-	39	3
ENKBEC450G4	ENKELBOX FILTER (ISO Coarse≥60%) 450 EEC	1450	1,67	1,01	6.190	-	58	3
ENKBEC355G4F7	ENKELBOX FILTER (ISO Coarse≥60%+ePM1≥50%) 355 EEC	2100	1,63	0,99	3.770	-	47	3
ENKBEC450G4F7	ENKELBOX FILTER (ISO Coarse≥60%+ePM1≥50%) 450 EEC	1450	1,67	1,01	5.020	-	70	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 FILTER (ISO Coarse $\geq$ 60%) 155 EEC	283	314	270	160	54
ENKELBOX FILTER (ISO Coarse $\geq$ 60%) 190 EEC	353	384	270	200	54
ENKELBOX FILTER (ISO Coarse $\geq$ 60%) 250 EEC	453	484	363.5	300	54
ENKELBOX FILTER (ISO Coarse $\geq$ 60%) 310 EEC	553	584	447	315	54
ENKELBOX FILTER (ISO Coarse $\geq$ 60%) 355 EEC	653	684	565	400	64
ENKELBOX FILTER (ISO Coarse $\geq$ 60%) 450 EEC	803	834	645	500	64
ENKELBOX FILTER (ISO Coarse $\geq$ 60%+ePM1 $\geq$ 50%) 155 EEC	283	314	270	160	54
ENKELBOX FILTER (ISO Coarse $\geq$ 60%+ePM1 $\geq$ 50%) 190 EEC	353	384	270	200	54
ENKELBOX FILTER (ISO Coarse $\geq$ 60%+ePM1 $\geq$ 50%) 250 EEC	453	484	363.5	300	54
ENKELBOX FILTER (ISO Coarse $\geq$ 60%+ePM1 $\geq$ 50%) 310 EEC	553	584	447	315	54
ENKELBOX FILTER (ISO Coarse $\geq$ 60%+ePM1 $\geq$ 50%) 355 EEC	653	684	565	400	64
ENKELBOX FILTER (ISO Coarse $\geq$ 60%+ePM1 $\geq$ 50%) 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

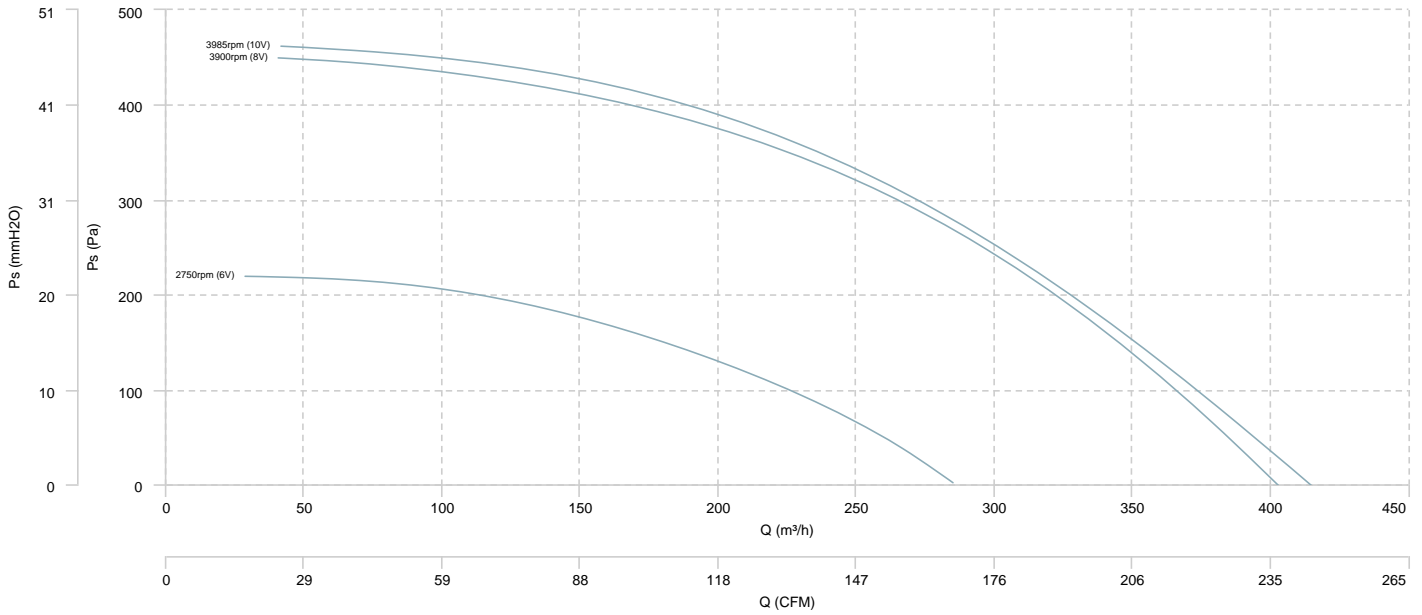
N°	Signal Señal	Colour Color	Specification Especificación
1	L1	Black Negro	AC380V-50/60Hz
2	L2	Black Negro	AC380V-50/60Hz
3	L3	Black Negro	AC380V-50/60Hz
4	Pe	Yellow-Green Amarillo-Verde	

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

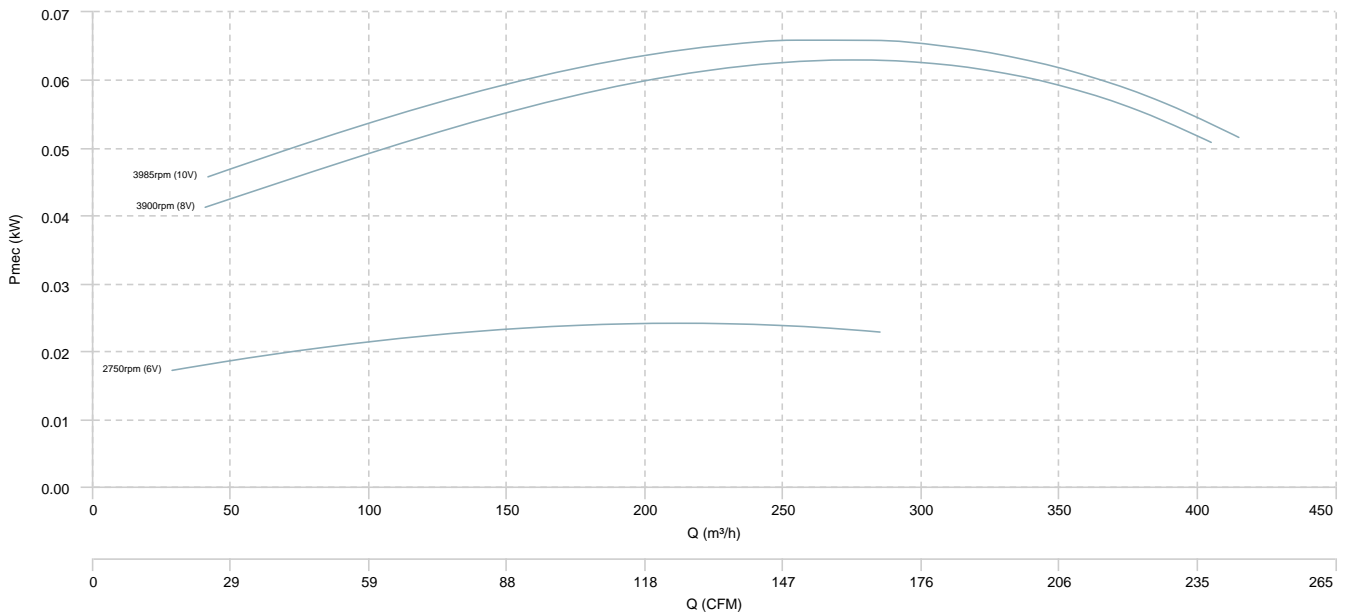
# CHARACTERISTIC CURVE

ENKELBOX FILTER (ISO Coarse $\geq$ 60%) 155 EEC

## AIR FLOW - PRESSURE

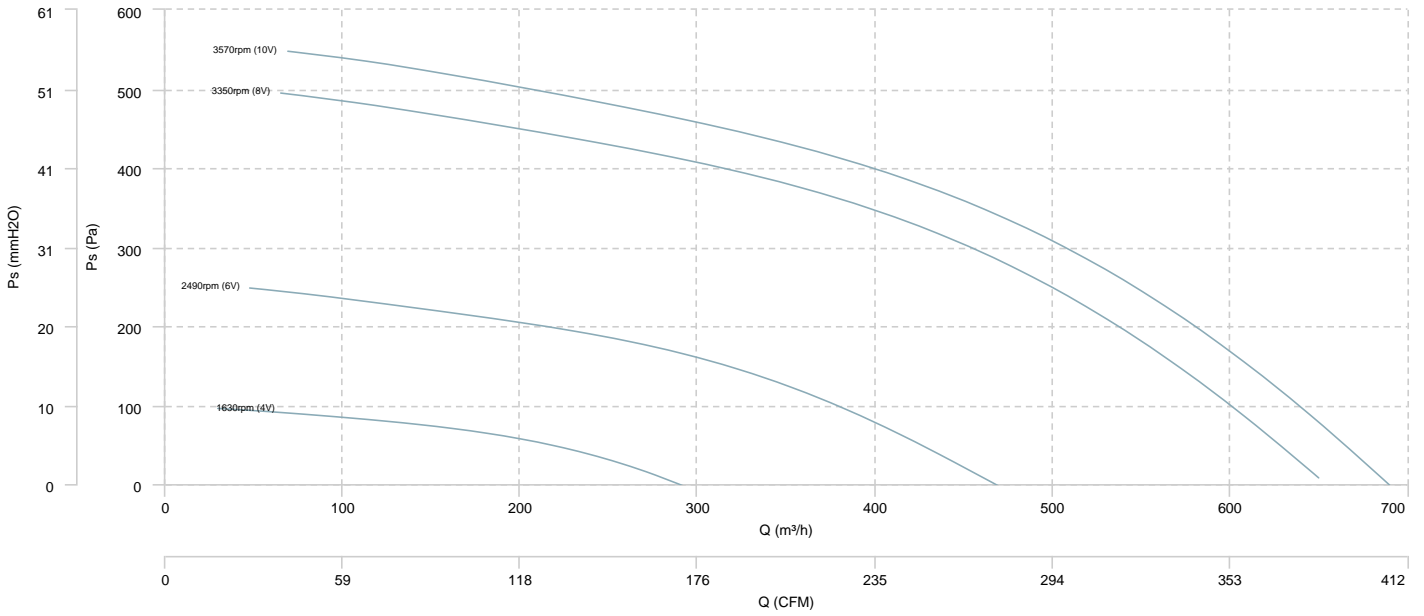


## AIR FLOW - MECHANICAL POWER

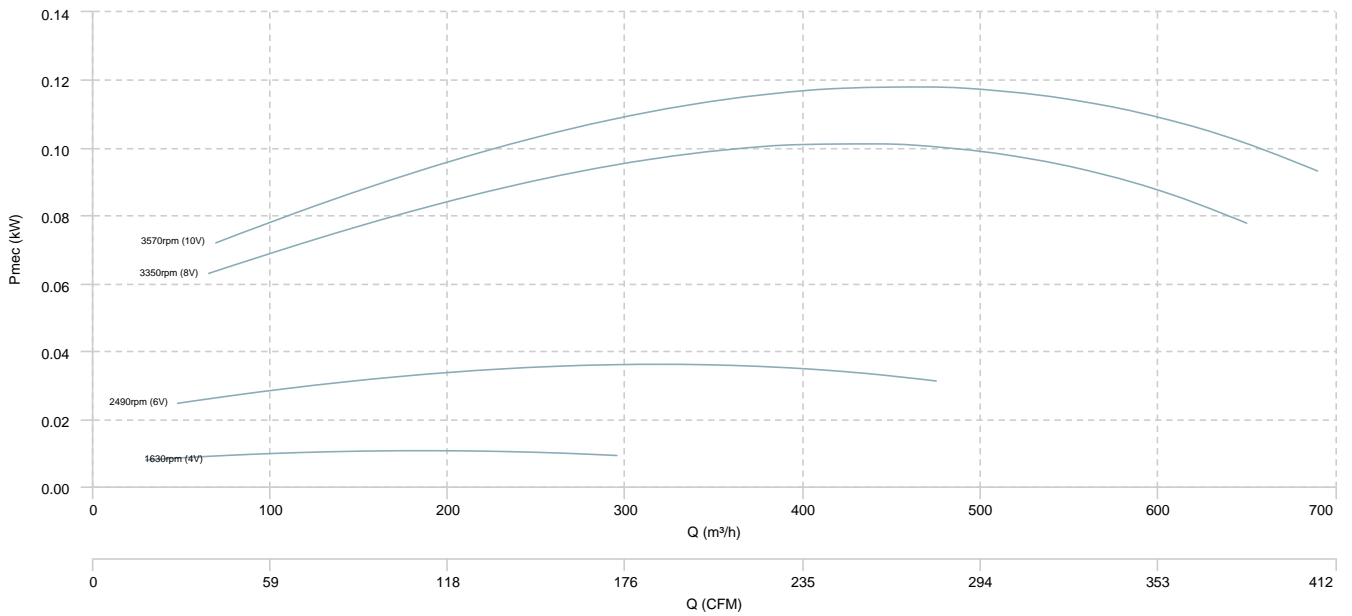


ENKELBOX FILTER (ISO  
Coarse $\geq$ 60%) 190 EEC

**AIR FLOW - PRESSURE**

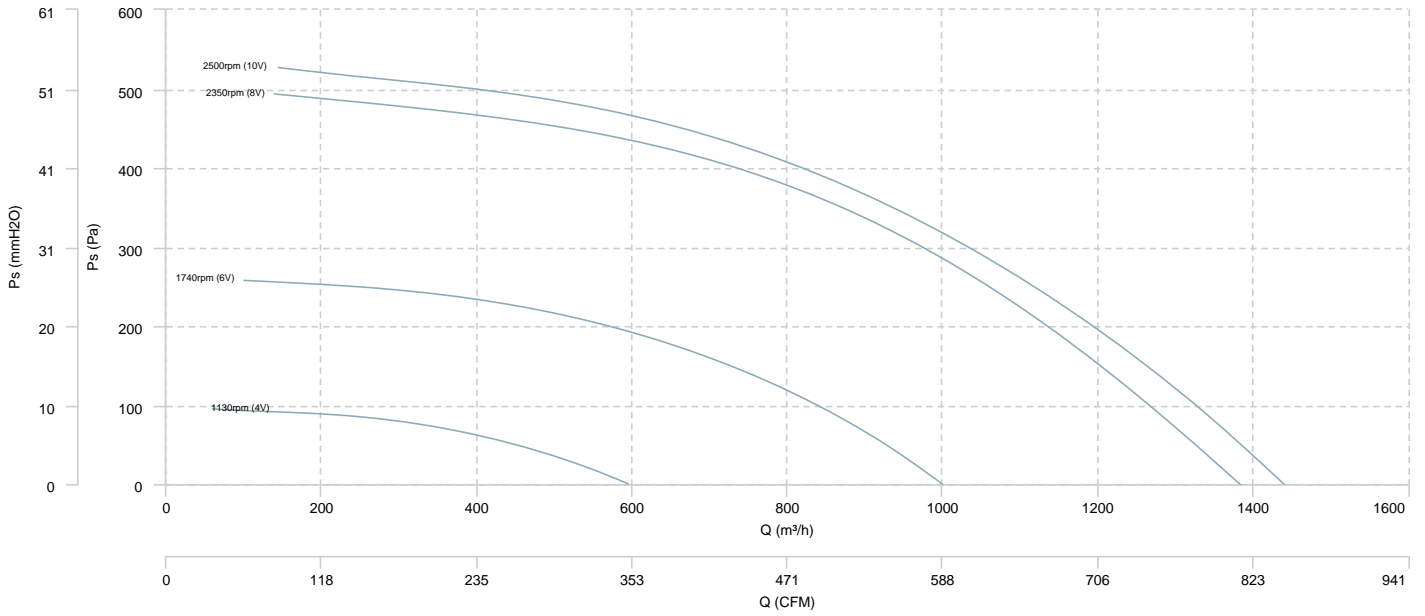


**AIR FLOW - MECHANICAL POWER**

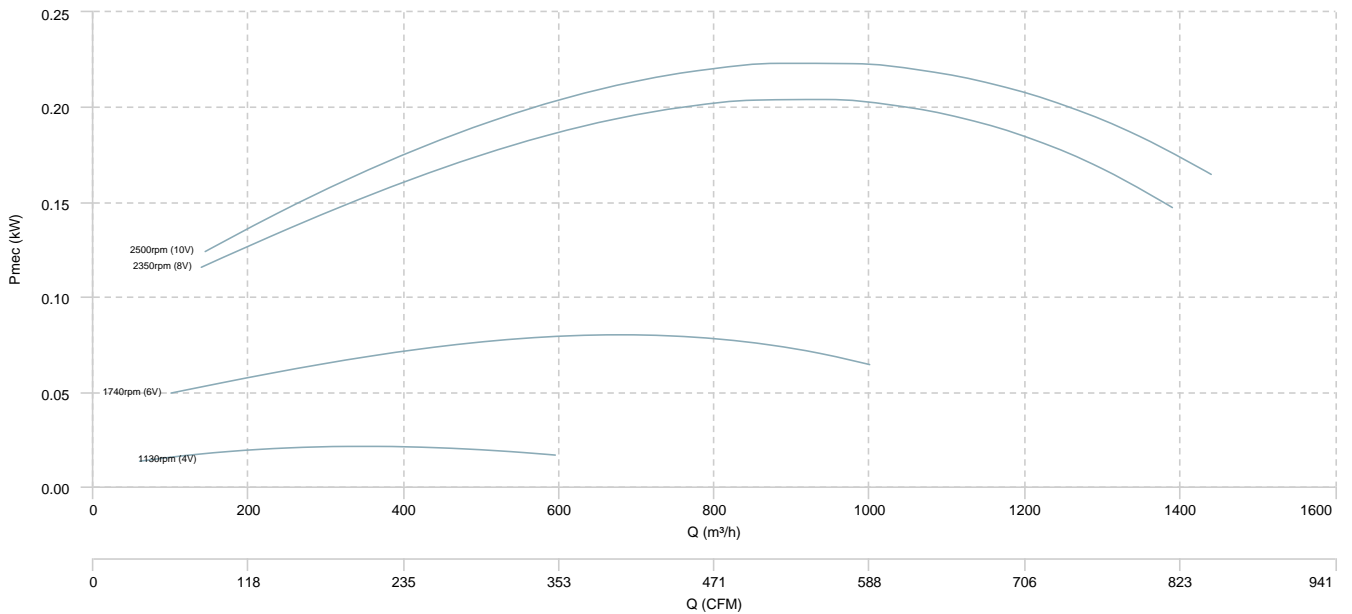


ENKELBOX FILTER (ISO  
Coarse $\geq$ 60%) 250 EEC

**AIR FLOW - PRESSURE**



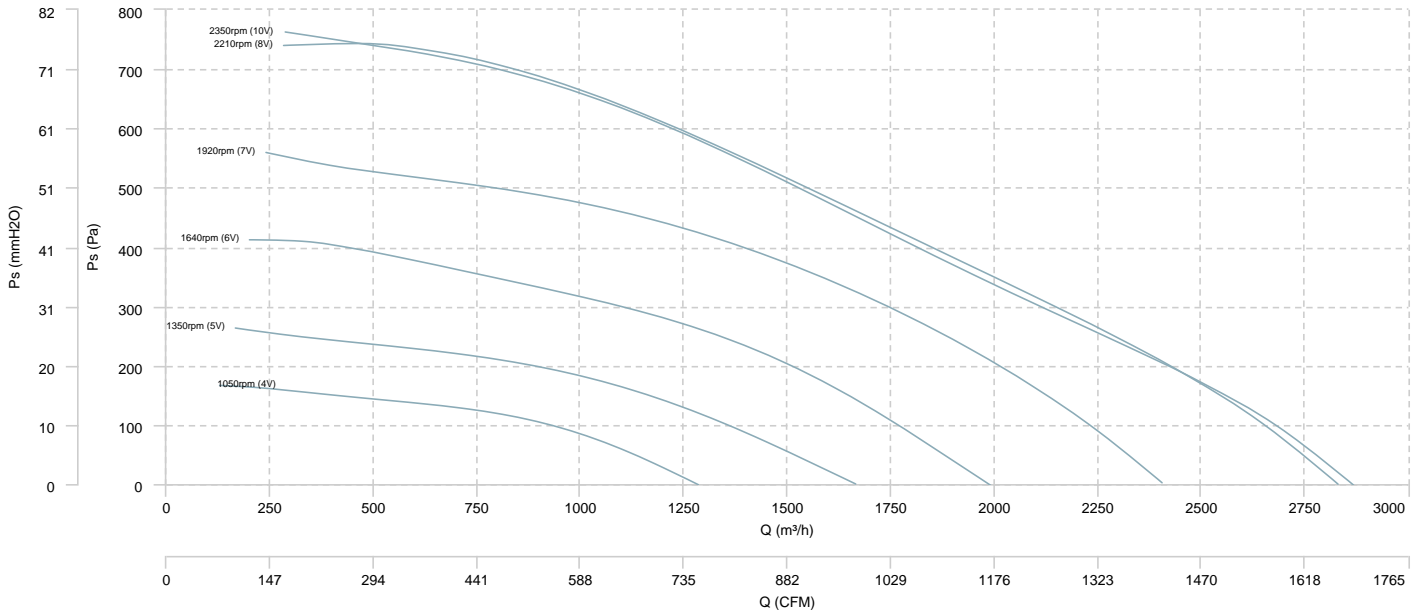
**AIR FLOW - MECHANICAL POWER**



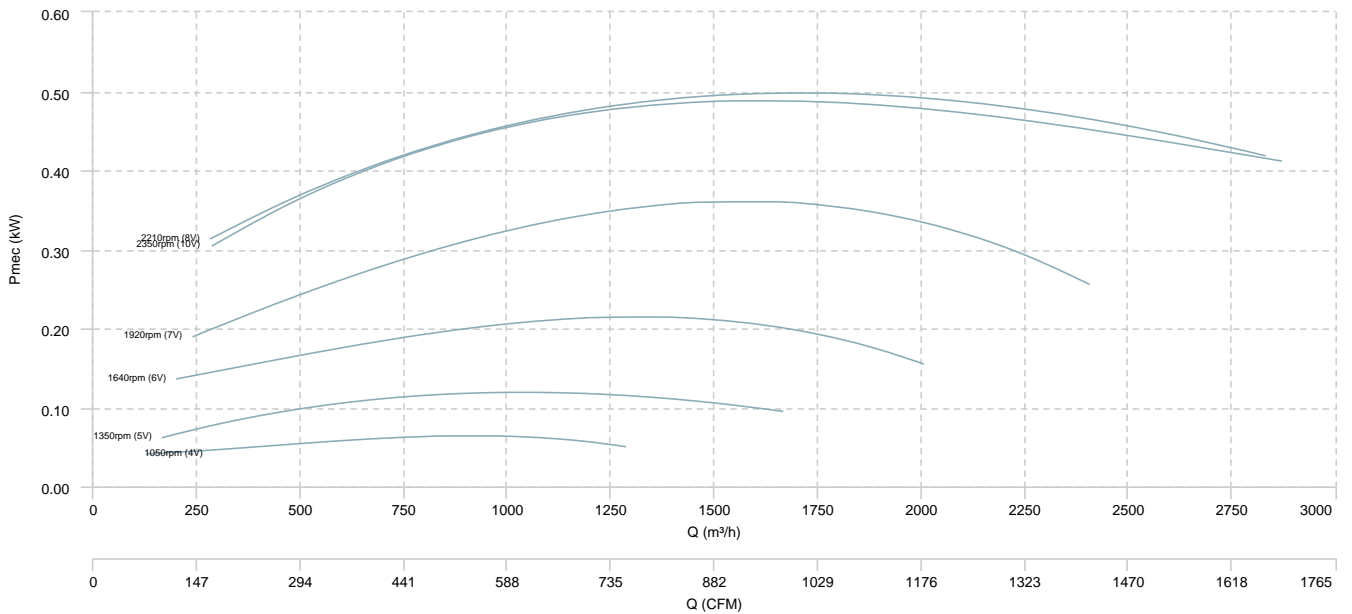


ENKELBOX FILTER (ISO  
Coarse≥60%) 310 EEC

**AIR FLOW - PRESSURE**

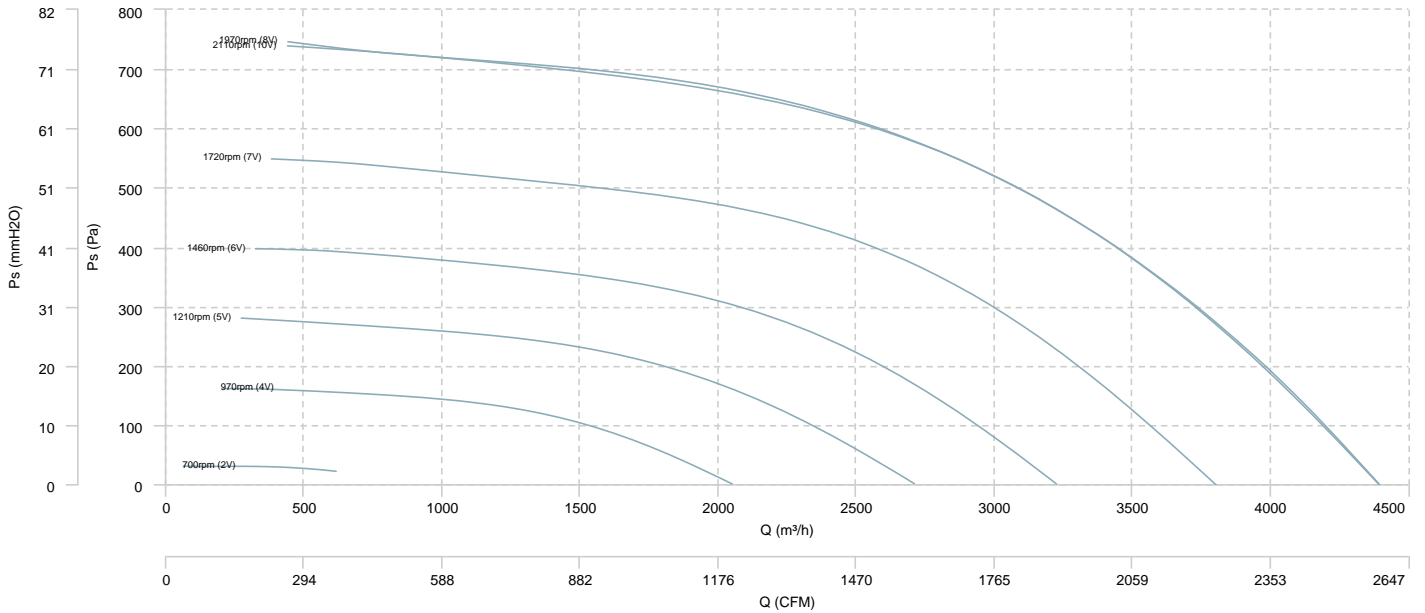


**AIR FLOW - MECHANICAL POWER**

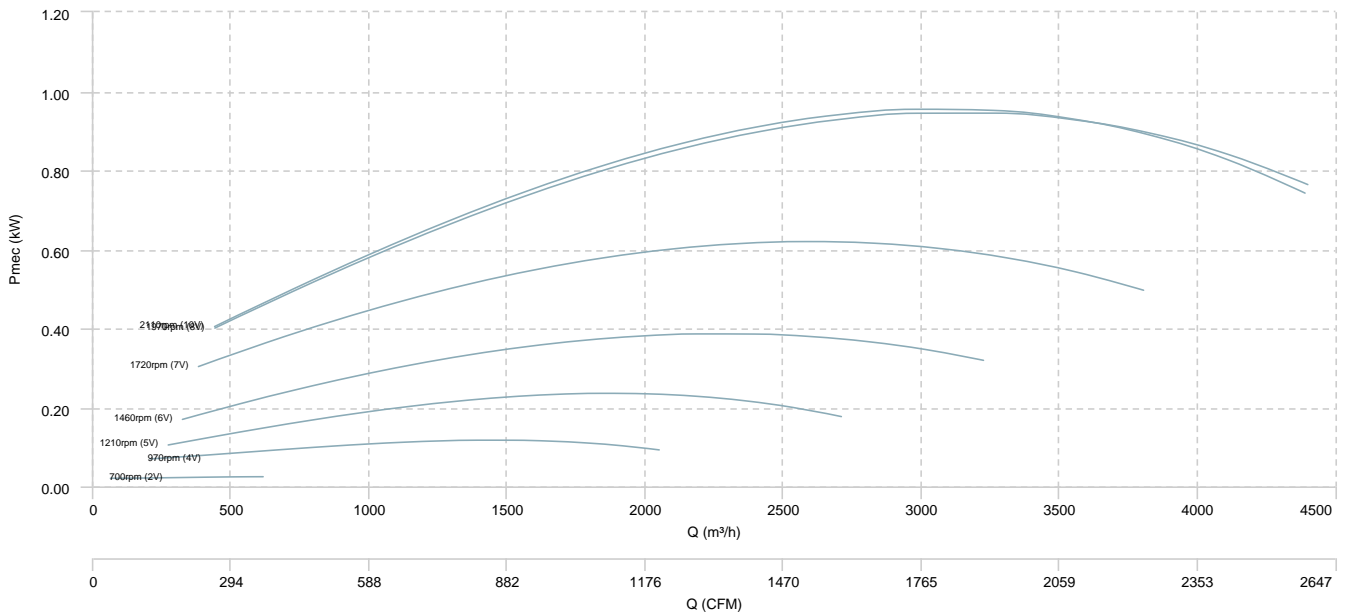


ENKELBOX FILTER (ISO  
Coarse≥60%) 355 EEC

**AIR FLOW - PRESSURE**

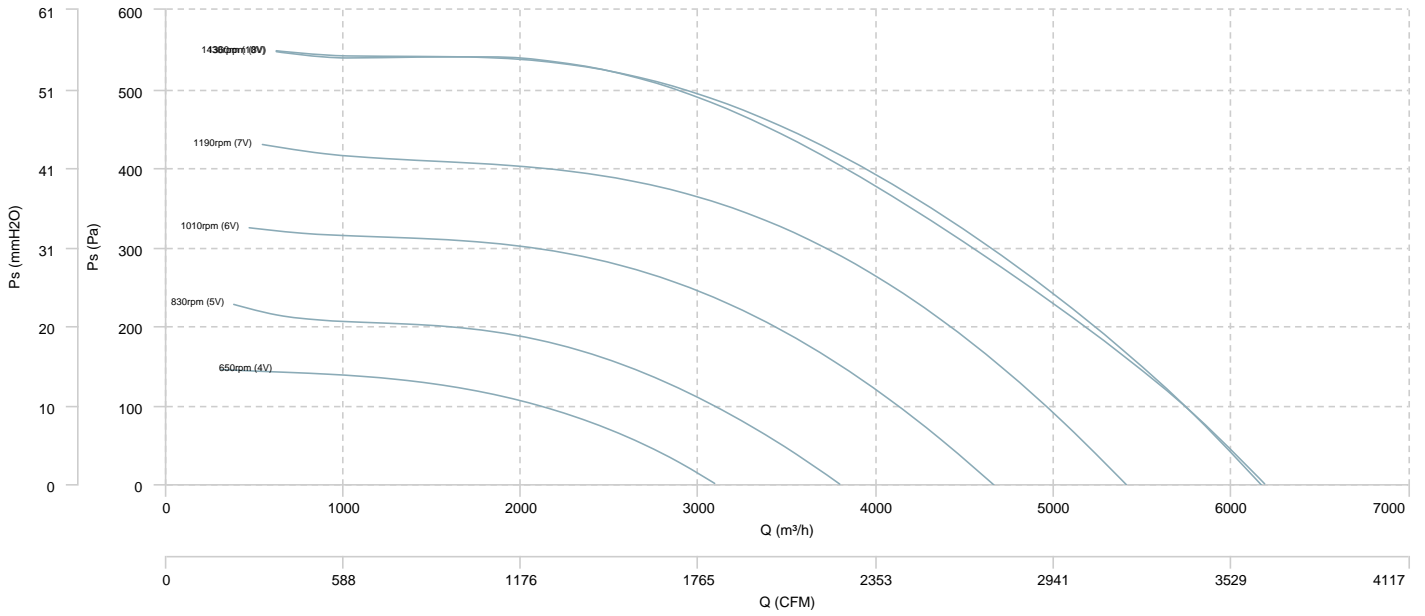


**AIR FLOW - MECHANICAL POWER**

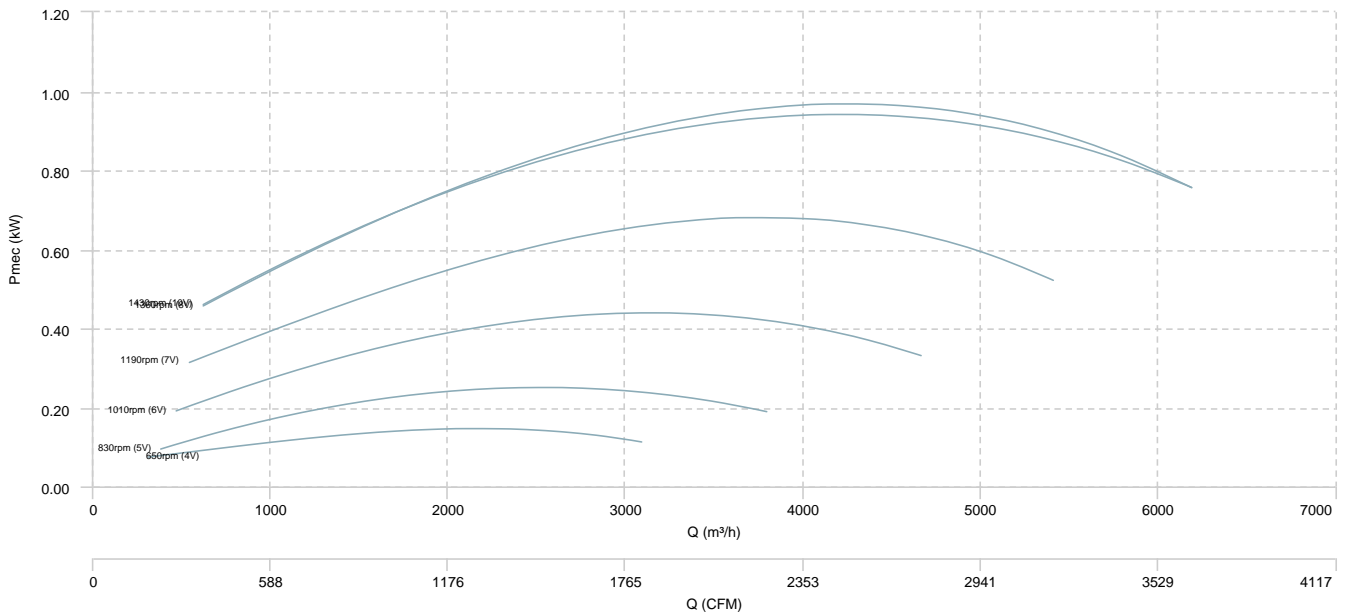


ENKELBOX FILTER (ISO  
Coarse $\geq$ 60%) 450 EEC

**AIR FLOW - PRESSURE**

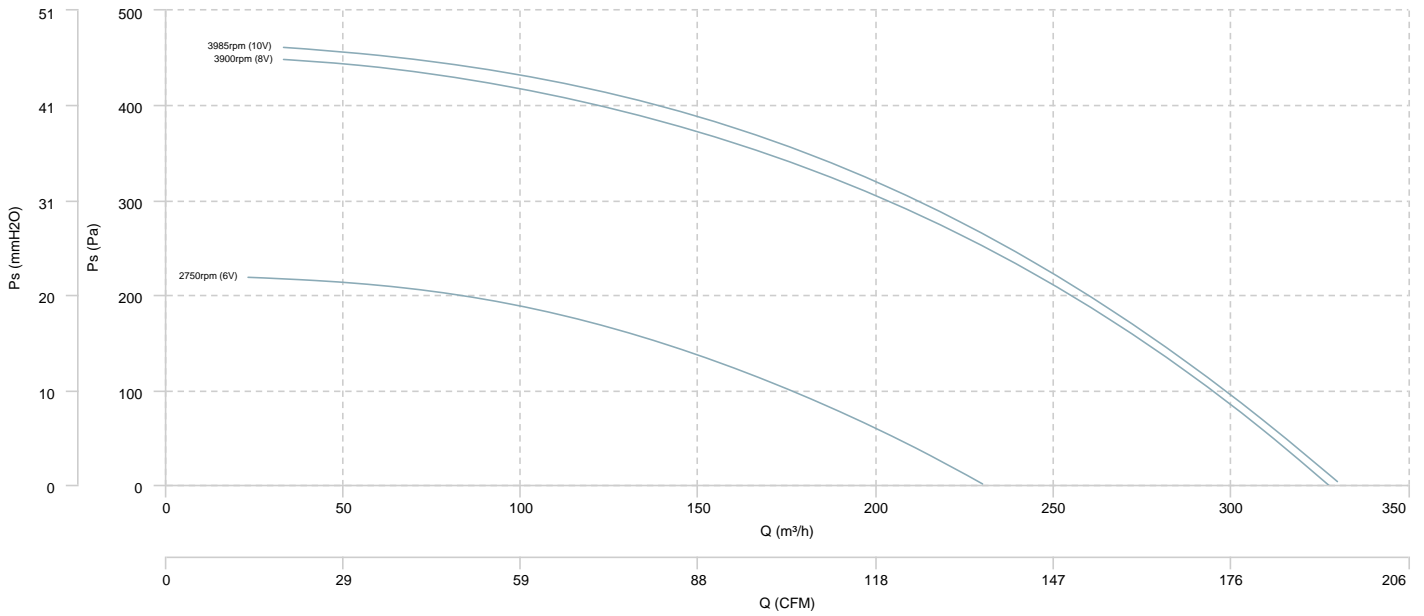


**AIR FLOW - MECHANICAL POWER**

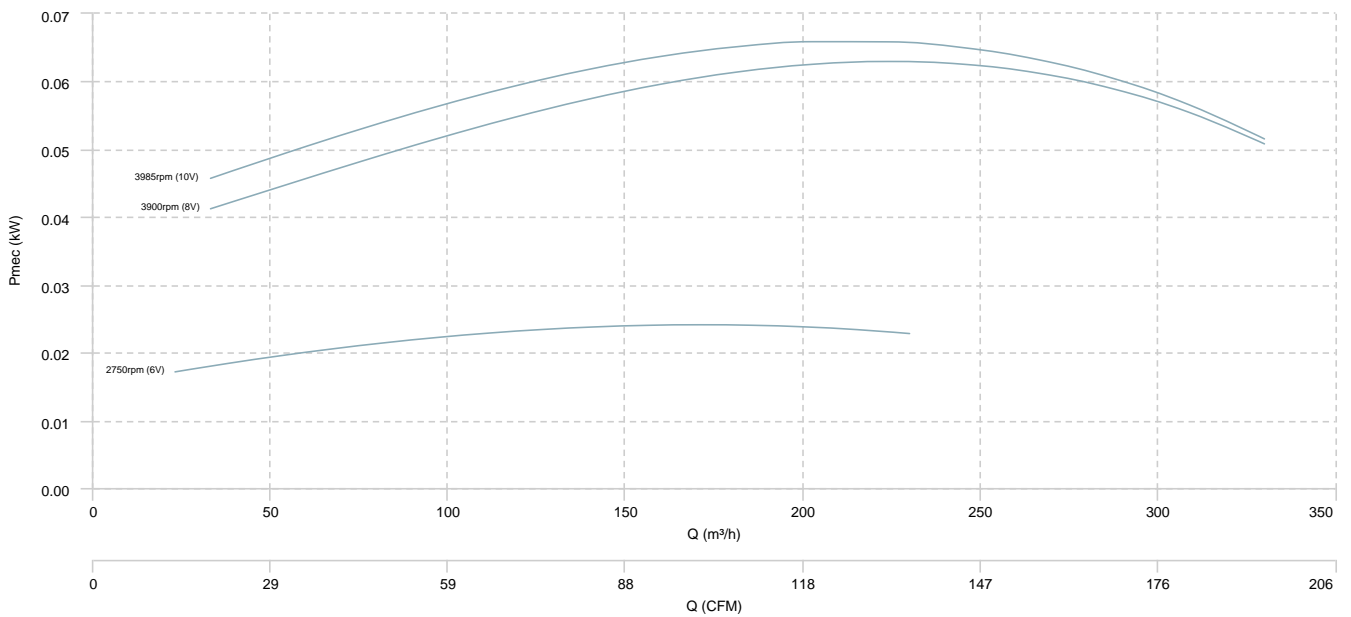


**ENKELBOX FILTER (ISO**  
Coarse $\geq$ 60%+ePM1 $\geq$ 50%  
) 155 EEC

**AIR FLOW - PRESSURE**

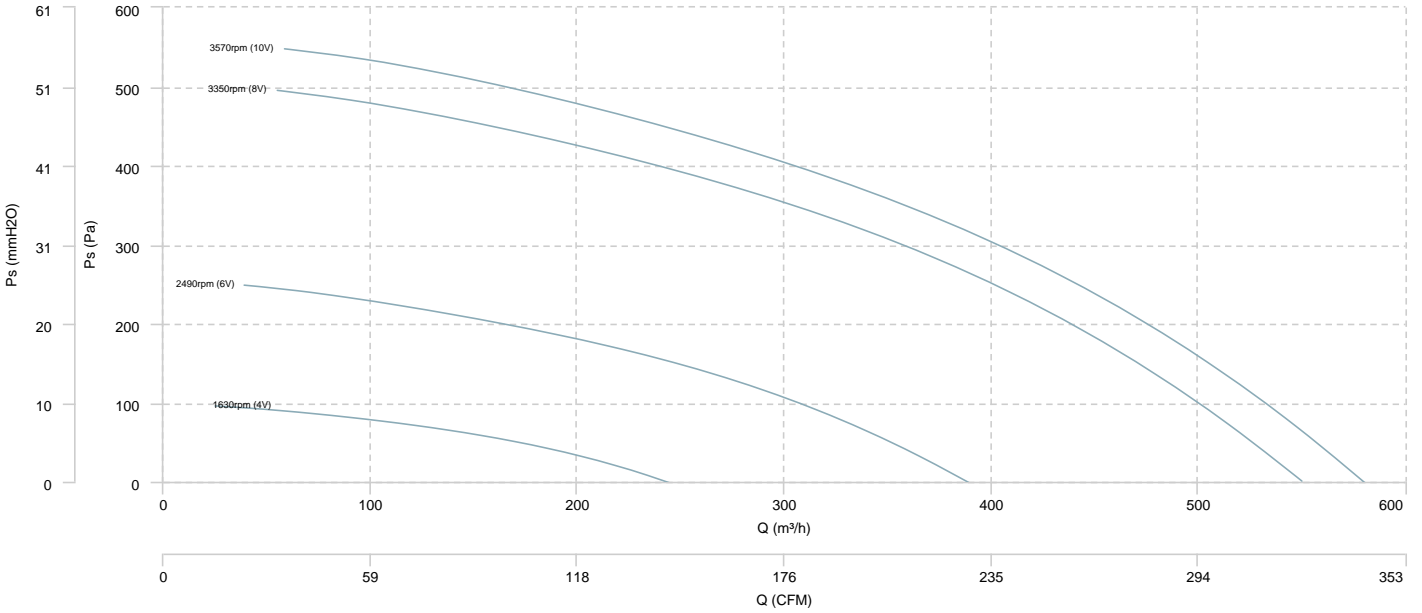


**AIR FLOW - MECHANICAL POWER**

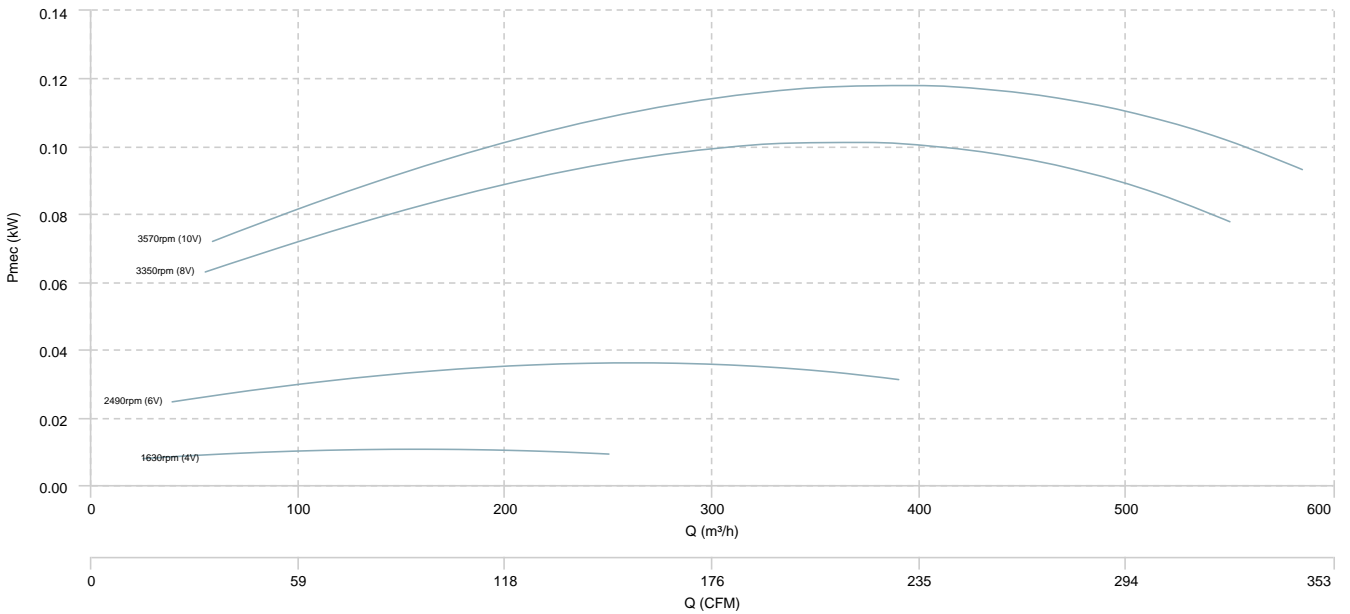


ENKELBOX FILTER (ISO  
Coarse $\geq$ 60%+ePM1 $\geq$ 50%  
) 190 EEC

**AIR FLOW - PRESSURE**

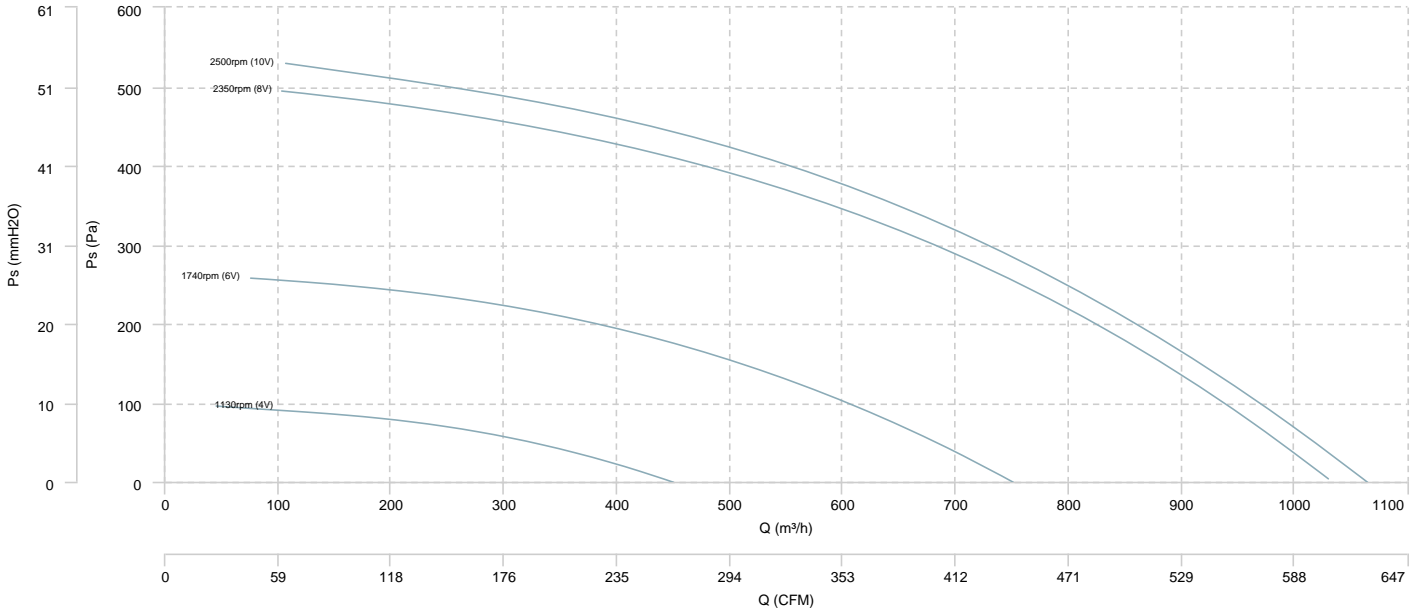


**AIR FLOW - MECHANICAL POWER**

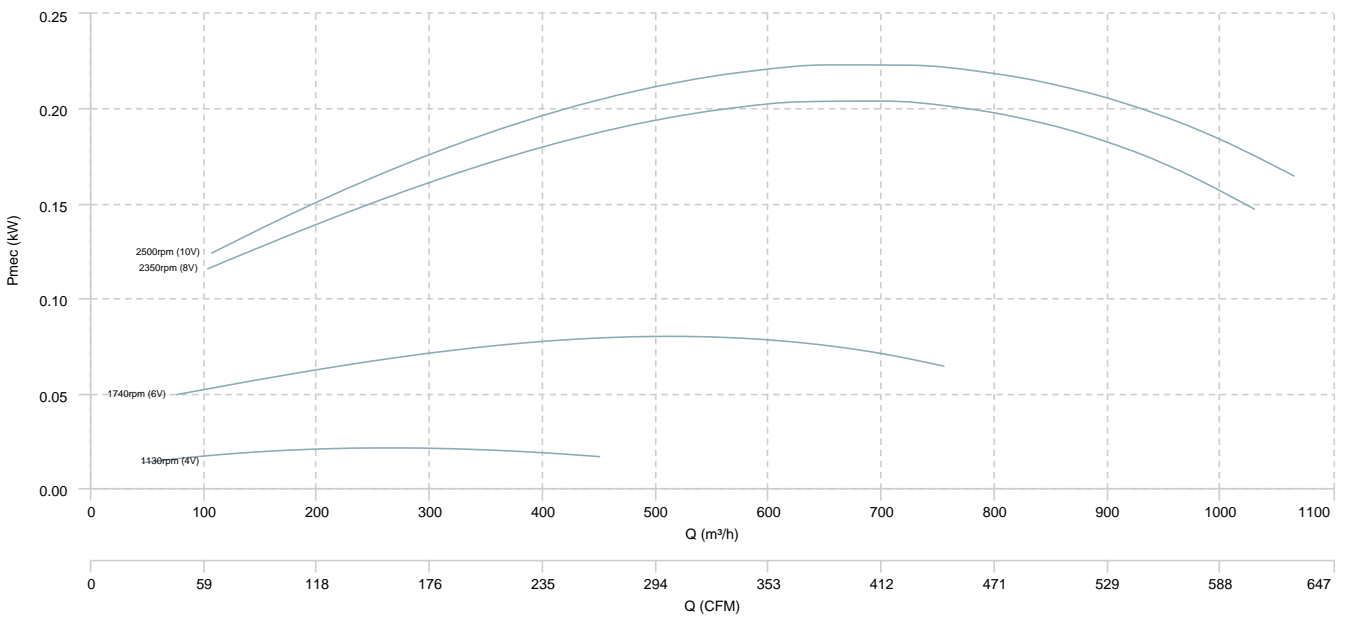


ENKELBOX FILTER (ISO  
Coarse $\geq$ 60%+ePM1 $\geq$ 50%  
) 250 EEC

**AIR FLOW - PRESSURE**

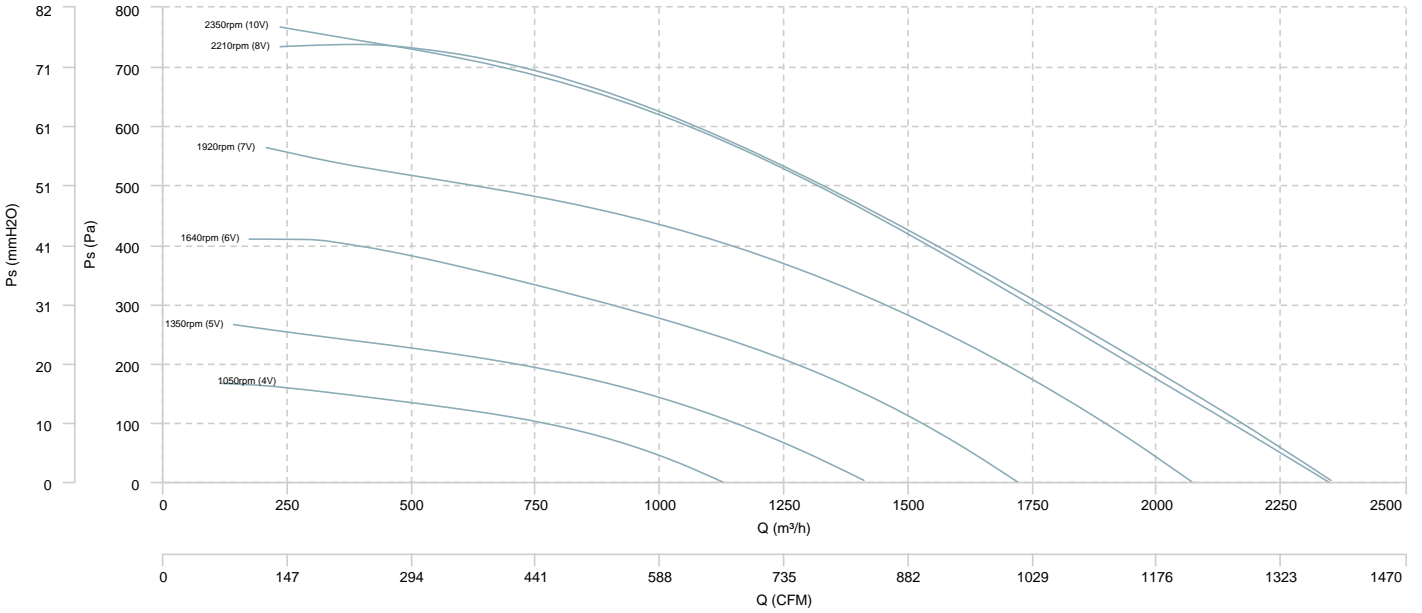


**AIR FLOW - MECHANICAL POWER**

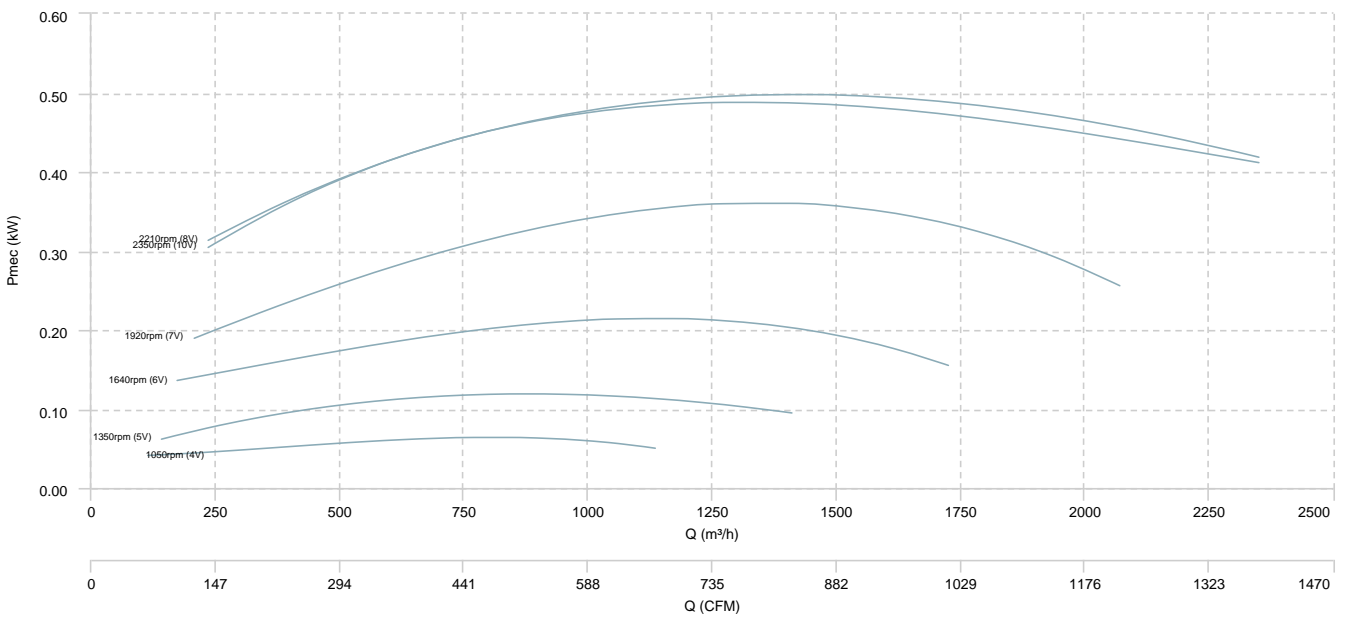


ENKELBOX FILTER (ISO  
Coarse $\geq$ 60%+ePM1 $\geq$ 50%  
) 310 EEC

**AIR FLOW - PRESSURE**

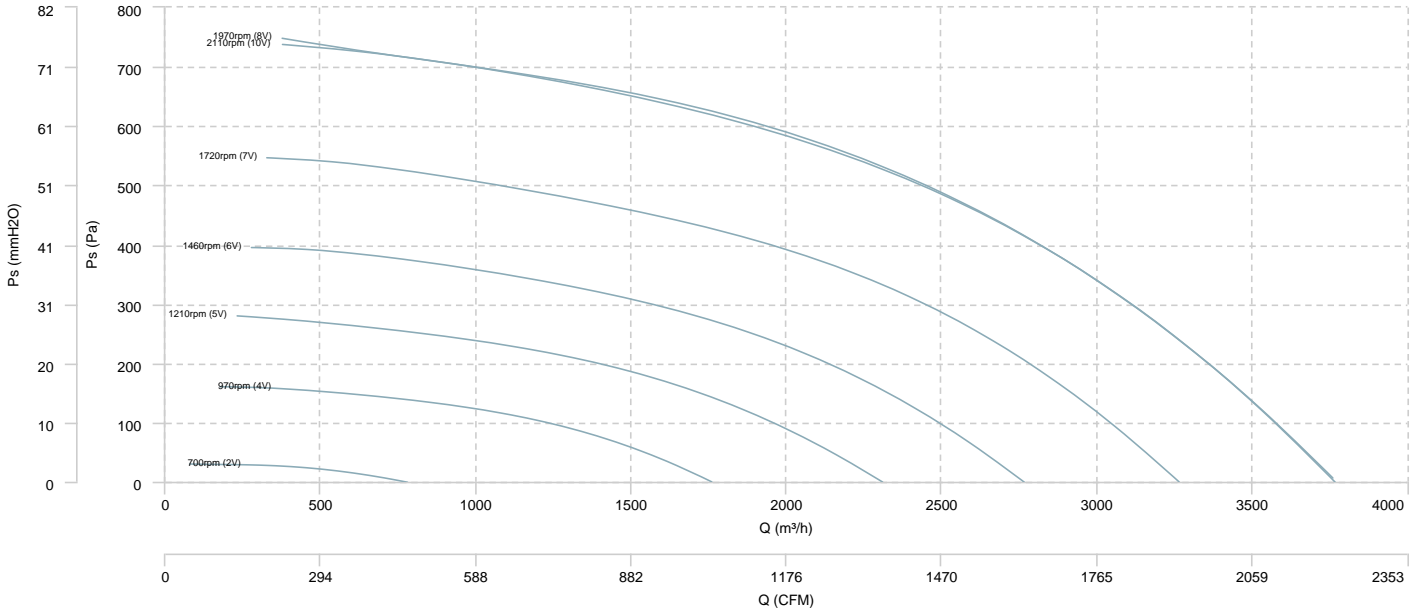


**AIR FLOW - MECHANICAL POWER**

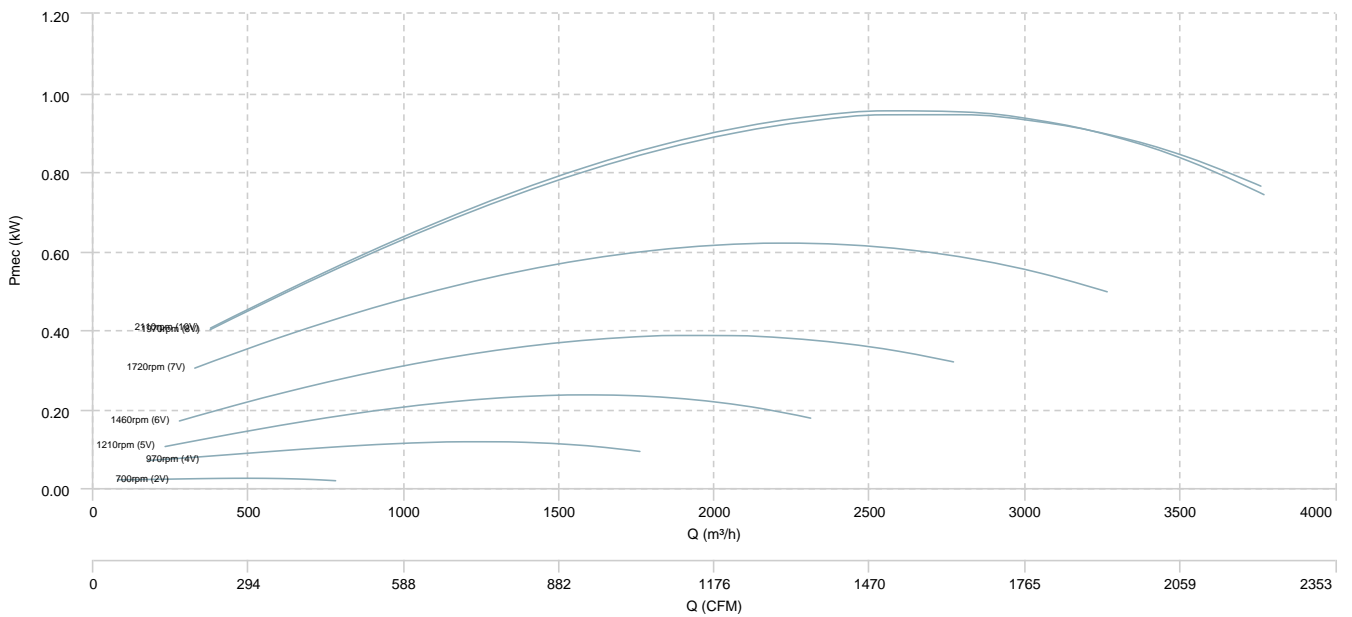


ENKELBOX FILTER (ISO  
Coarse $\geq$ 60%+ePM1 $\geq$ 50%  
) 355 EEC

**AIR FLOW - PRESSURE**



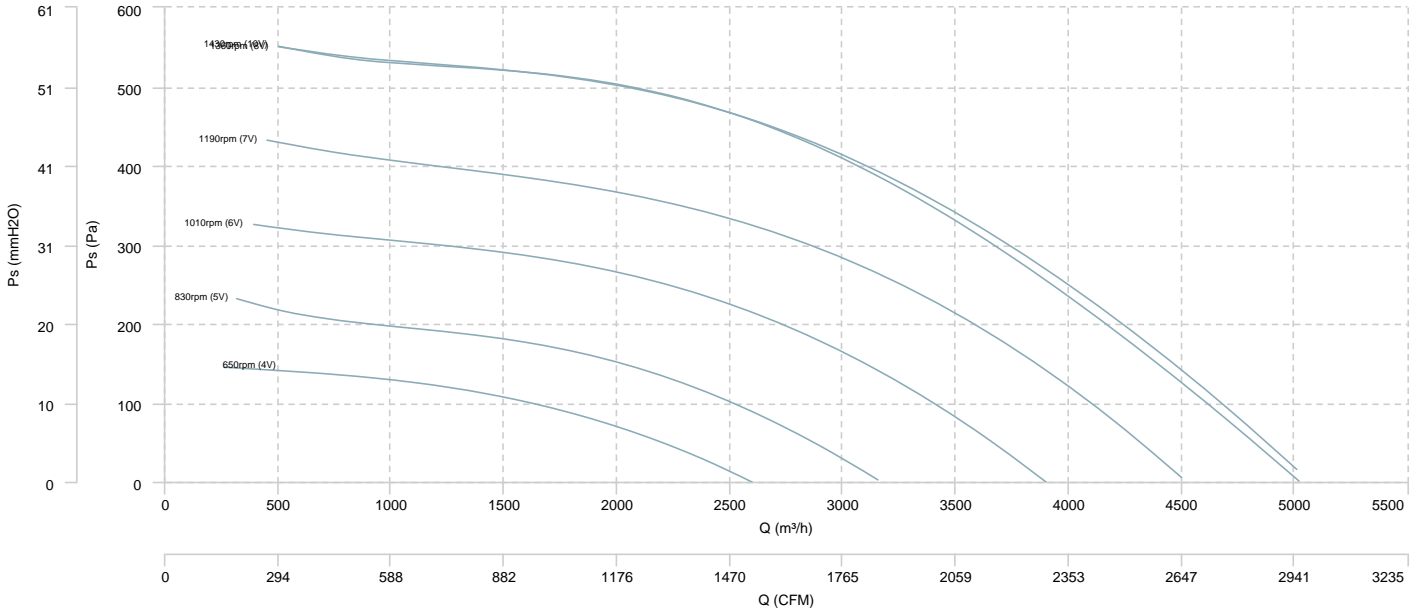
**AIR FLOW - MECHANICAL POWER**



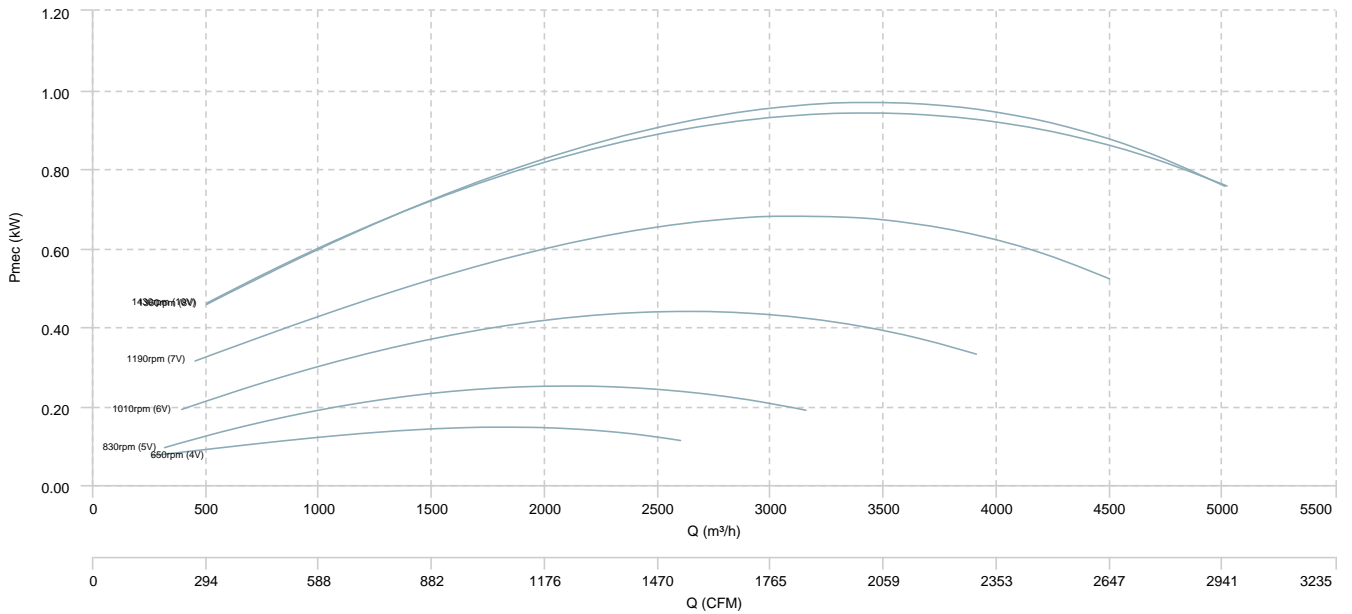


ENKELBOX FILTER (ISO  
Coarse $\geq$ 60%+ePM1 $\geq$ 50%  
) 450 EEC

**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 FILTER (ISO Coarse≥60%) 155 EEC (2750rpm (6V))	Radiated	-	30	20	37	49	54	59	49	61
ENKELBOX FILTER (ISO Coarse≥60%) 190 EEC (1630rpm (4V))	Radiated	-	6	13	28	41	49	52	45	54
ENKELBOX FILTER (ISO Coarse≥60%) 250 EEC (1130rpm (4V))	Radiated	-	4	18	42	49	52	51	43	56
ENKELBOX FILTER (ISO Coarse≥60%) 310 EEC (1050rpm (4V))	Radiated	-	2	21	37	47	48	43	35	51
ENKELBOX FILTER (ISO Coarse≥60%) 355 EEC (700rpm (2V))	Radiated	-	9	25	42	47	49	43	35	53
ENKELBOX FILTER (ISO Coarse≥60%) 450 EEC (650rpm (4V))	Radiated	-	19	35	39	49	51	44	34	53
ENKELBOX FILTER (ISO Coarse≥60%+ePM1≥50%) 155 EEC (2750rpm (6V))	Radiated	-	30	20	37	49	54	59	49	61
ENKELBOX FILTER (ISO Coarse≥60%+ePM1≥50%) 190 EEC (1630rpm (4V))	Radiated	-	6	13	28	41	49	52	45	54
ENKELBOX FILTER (ISO Coarse≥60%+ePM1≥50%) 250 EEC (1130rpm (4V))	Radiated	-	4	18	42	49	52	51	43	56
ENKELBOX FILTER (ISO Coarse≥60%+ePM1≥50%) 310 EEC (1050rpm (4V))	Radiated	-	2	21	37	47	48	43	35	51
ENKELBOX FILTER (ISO Coarse≥60%+ePM1≥50%) 355 EEC (700rpm (2V))	Radiated	-	9	25	42	47	49	43	35	53
ENKELBOX FILTER (ISO Coarse≥60%+ePM1≥50%) 450 EEC (650rpm (4V))	Radiated	-	19	35	39	49	51	44	34	53

### Notes:

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

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